

TD914

Asada

Full Line Product Catalog



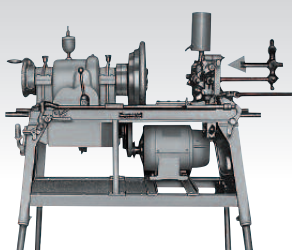
Q

Quality

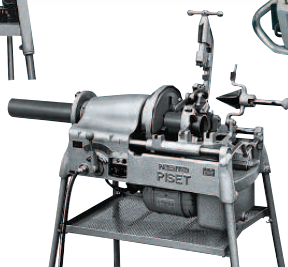
Seeking for the optimum quality in every product, engineering and culture.

We have been working to provide high quality products for over 60 years. For example, our core product, the pipe threading machine, was first developed and marketed in 1953, but we continuously improve the quality of the unit.

We continue to improve.



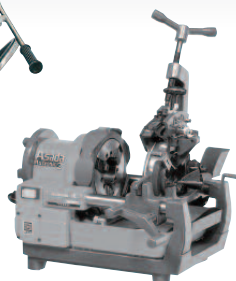
Piset No. 1



Piset 2S-J



Panda 50



Astronic 2



Beaver 50

I

Innovation

The most advanced technology and ASADA's basic engineering skills.

New fundamental technology for the next generation.

Innovation. It's the revolution. It means a challenge to incorporate new ideas without fear. It's our traditional attitude in manufacturing. It's the spirit of every one of our employees. A new conception apart from the existed engineering is needed to achieve the innovation. And, the corporate philosophy to challenge without fear for failure creates an invention.

70 years history is providing us the new engineering skill to support the company in the 21st century.



High speed refrigerant recovery machine
Ecosaver Tetra



Electrostatic refrigerant reclaim machine
Ecocycle Aurora



Plasma refrigerant decomposition device
Plasma X



Globalization

Manufacturing products and educating employees which meet the global standards in worldwide views.

In May 2008, ASADA received the "Ozone Layer Protection Award" from U.S. Environmental Protection Agency. Since we started sales the first refrigerant recovery machine with oil-less compressor in Japan in 1995, we have been developing various refrigerant recovery machines, reclaim machines, SF6 recovery machines, decomposition device. Additionally we have been training many technicians not only in Japan but also in Thailand, Mongolia and so in the field of refrigerant recovery. We are proud that our efforts were recognized.

We are going to contribute to the environmental protection spreading our technology to developing countries.



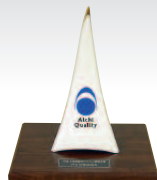
"2008 Ozone Layer Protection Award" from EPA



Refrigerant recovery technical seminar in Mongolia



2003.3. Received "Brand Creator Nagoya" prize by the Nagoya Chamber of Commerce



2004.3. Recognized as the "Aichi Brand Enterprise" by Aichi Prefecture government.



2006.2. Received 2006 Aichi Environment Award, "Mayer of Nagoya Prize".



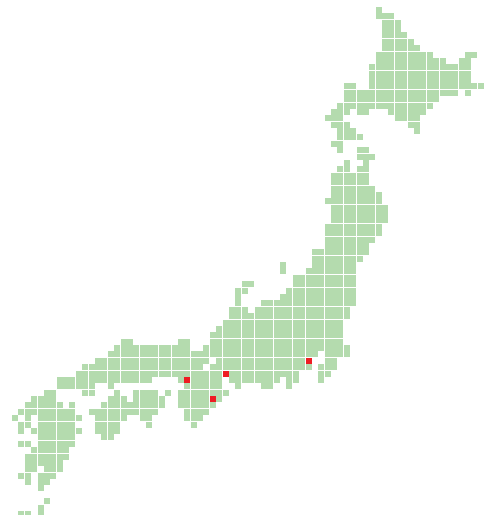
2007.9. Received "Protection of Ozone Layer and Prevention of Global Warming Award", Ministry of Environment Prize.

Refrigerant recovery business

We support CO2 emission reduction by recovering and reclaiming refrigerant and green house gases.

Doctor Homes

Our subsidiary company, Doctor Homes recovers/reclaims/destroys various refrigerant and recovers/reclaims SF6, lithium bromide and so on. They have offices in Nagoya, Tokyo, Mie and Osaka.





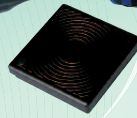
Equipments for Installation of Steel Pipe



Equipments for Cleaning



Tools for Installation of Copper Tube



**Equipments for
Plant Construction**

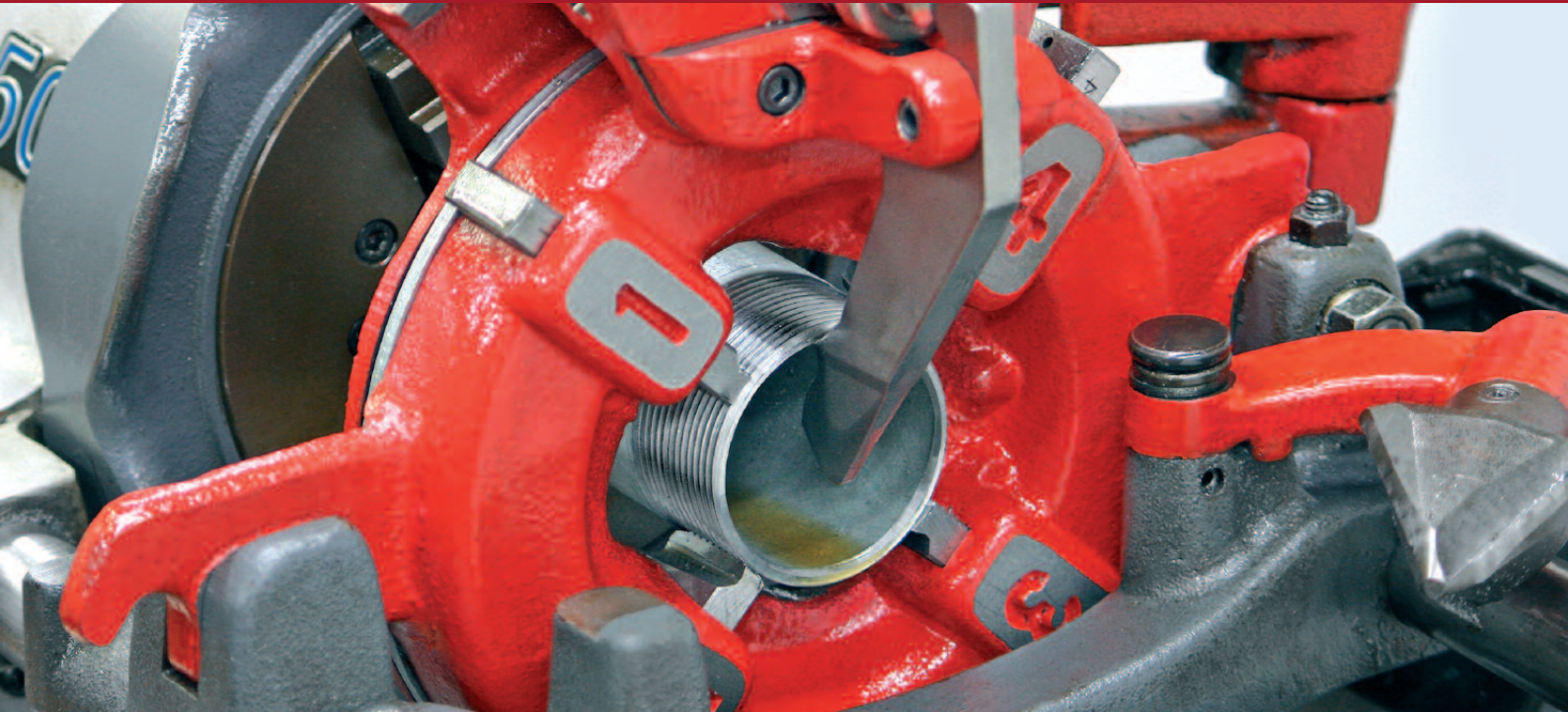
HVAC & R Service Tools



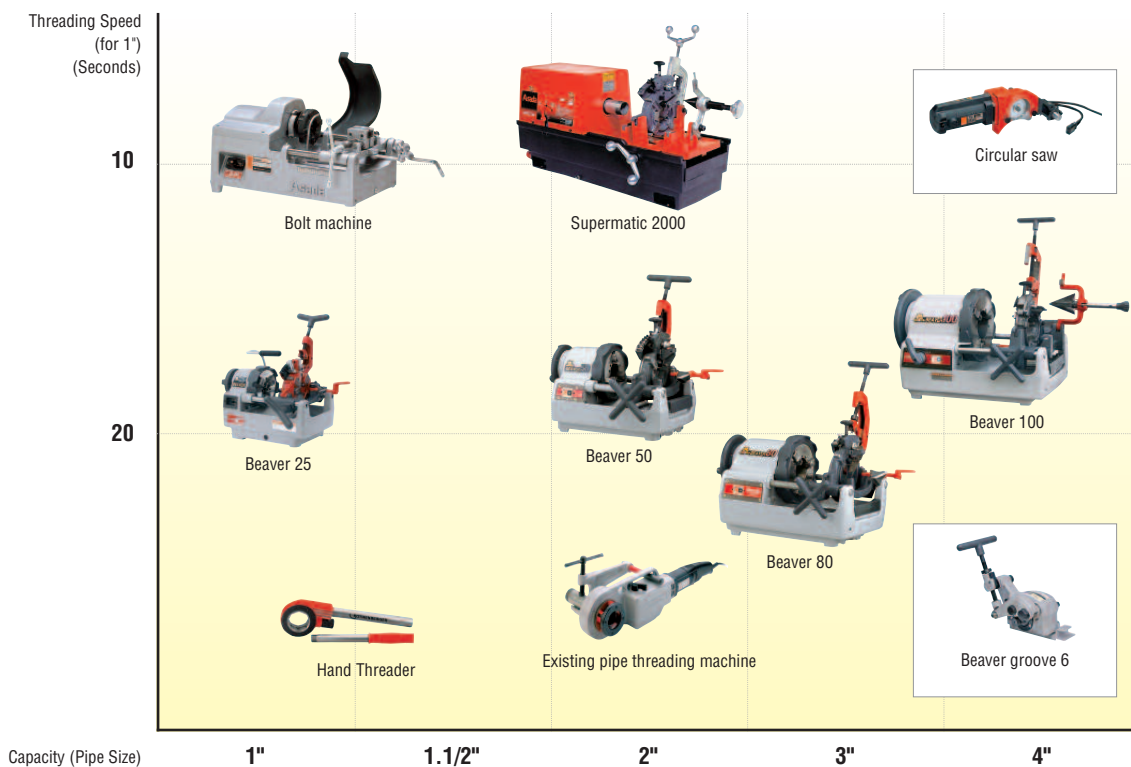
**Refrigerant Handling
Equipments**

1	THREADING MACHINES	
2	CUTTING MACHINES	
3	WELDING MACHINES	
4	PLUMBING TOOLS	
5	COPPER PIPE TOOLS	
6	REFRIGERANT RECOVERY MACHINES	
7	REFRIGERANT RECOVERY · RECLAIM MACHINES	
8	AUTOMOBILE A/C SERVICING	
9	MANIFOLDS · CHARGING HOSES	
10	VACUUM PUMPS · ELECTRONIC MEASURING INSTRUMENTS	
11	HYDRAULIC · PNEUMATIC LIFT · UPPER	
12	HIGH PRESSURE CLEANER	
13	PORTABLE DRAIN CLEANING MACHINES	
14	TECHNICAL INFORMATION	

THREADING MACHINES



A precision machine designed to produce
The accurate and precise threads

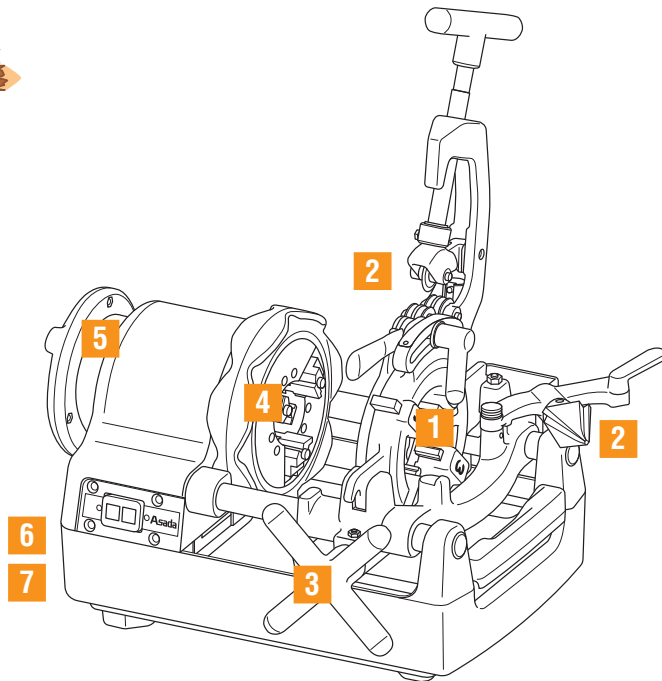
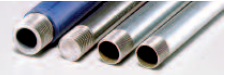


Main features of beaver threading machine series

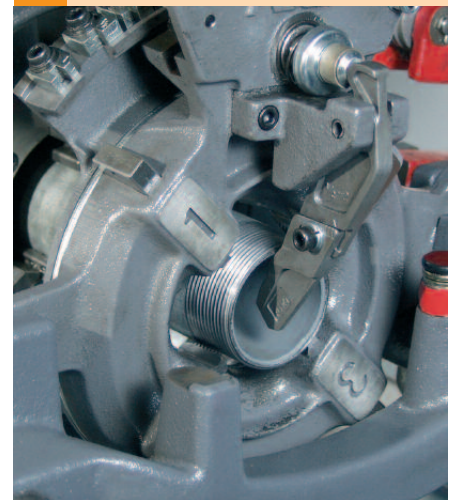
**THE MACHINES DESIGNED TO THREAD,
"DURABLE THREAD FOR HIGH PRESSURE AND AIRTIGHT THREADING".**

Purpose

For Water, Gas, Electricity Pipe threading and Stainless Steel Pipe threading and also for Bolt threading.

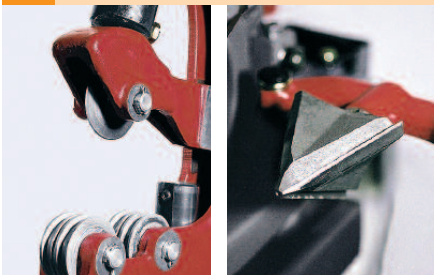


1 Automatic die head and dies



- Die head equipped with automatic profiling system and designed to reduce cut resistance for precise threads.
- Dies made of special pre-heat treated steel, ensuring long life and easy threading.

2 Cutter blade and reamer blade



- Designed for Beaver series, with the most suitable shaped blade tip allows for sharp cut and durability.

3 Rack handle



- Can be easily gripped for smooth operation.

4 Hammer chuck



- Outer ring designed to grip easily and to grab pipes firmly with less power.
- The Jaw Body is wider giving greater load capacity and durability.
- Jaw Insert improves the centripetal clamping feature.

5 Spindle support



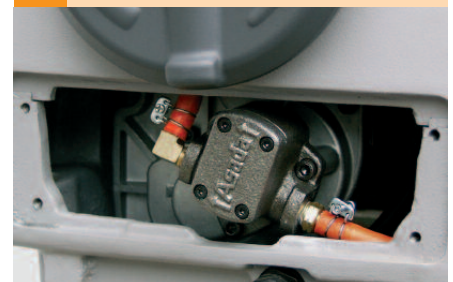
- Spindle is supported by Sealed Ball Bearing, ensuring correct alignment and continued accuracy through lack of wear.

6 Powerful electric motor



- Class F insulation grade on the motor allows continuous operation.
- More than sufficient Horse Power; Beaver 50 - 750W, Beaver 80 & 100 - 1,140W

7 Cutting oil pump



- The high capacity Gear Pump operates even at low revolutions to assure precise threads.

Beaver 25

PAT.

1/4 ~ 1"



- Equipped powerful motor of 350W.
- Spindle is supported by Sealed Ball Bearing to prevent from abrasion.
- The high capacity Gear Pump operates even at low revolutions to assure precise threads.

Model	Beaver 25	Beaver 25-MN (with circular saw)
Code No.	BE25B	BE25M
Threading capacity	1/4 ~ 1"	
Water/Gas pipe	1/4 ~ 1"	
Bolt	3/8 ~ 1" M10 ~ 24mm	
Conduit	19 ~ 39mm 1/2 ~ 1"	
Weight	19kg	22kg
Spindle Speed	52 rpm (No load)	
Motor	100V (Voltage made to order) 350W 50/60Hz	
Dimensions	(L)400 x (W)317 x (H)320mm	
Standard Accessories	Die Head Automatic 1/2 ~ 1" Dies AM1/2" ~ 3/4", AM1" ~ 1.1/2" Others Threading oil white 1lit.(1can), Machine Cover	

Main Applicable Die-Head			
Type	Standard	Size	Code No.
Beaver (Auto)		BSPT	BE1/2 ~ 1" BE380
		NPT	BE1/2 ~ 1" BE389
Manual		BSPT (BSW)	1/4 ~ 3/8" (3/8 ~ 1") AS109
		NPT	1/4 ~ 3/8" AS122

Main Applicable Dies			
Type	Standard	Size	Code No.
Auto		BSPT	AM 1/2 ~ 3/4" AS086
			AM 1 ~ 1.1/2" AS087
		NPT	AM 1/2 ~ 3/4" AS120
			AM 1 ~ 1.1/2" AS121
Manual		BSPT	1/4 ~ 3/8" 89046
			1/4 ~ 3/8" 89100
		NPT	1/4 ~ 3/8" 89100
			1/4 ~ 3/8" 89100

Beaver 50

PAT.

1/4 ~ 2"



- Equipped powerful motor of 750W.
- Maintenance free ball bearing protects spindle support from abrasion.
- High capacity oil pump keeps enough oil even at low rotation, assuring precise threads.

Model	Beaver50	Beaver 50AT	Beaver50ATII	Beaver50ATII-MN (with Circular saw)
Code No.	BE511	BE5AT	BE5AA	BE5AM
Threading capacity	1/4 ~ 2"			
Water/Gas pipe	1/4 ~ 2"			
Bolt	3/8 ~ 2" 10 ~ 36mm			
Conduit	19 ~ 51mm 1/2 ~ 2"			
Weight	44kg			
Spindle Speed	40 rpm (No load)			
Motor	100V (Voltage made to order) 750W 50/60Hz			
Dimensions	(L)535 x (W)430 x (H)340mm			
Standard Accessories	Die-Head Manual 1/2 ~ 2" Dies BE1/2 ~ 3/4" BE1 ~ 1.1/2"(2) Others Threading oil white 4 lit.(1can), Machine Cover, Legs	Auto.1/2 ~ 2" BE1/2 ~ 3/4" BE1 ~ 1.1/2"(2)	Auto.1/2 ~ 3/4", Auto.AT1 ~ 2" BE1/2 ~ 3/4" BE1 ~ 1.1/2"(2)	BE1/2 ~ 3/4" BE1 ~ 1.1/2"(2)

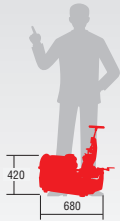
Main Applicable Die-Head			
Type	Standard	Size	Code No.
Beaver (Auto)		BSPT	BE1/2 ~ 2" BE001
		NPT	BE1/2 ~ 2" BE01N
Manual		BSPT (BSW)	1/4 ~ 3/8" (3/8 ~ 1") 20114
		NPT	1/4 ~ 3/8" 20165
		BSPT / NPT	1/2 ~ 2" 63090

Main Applicable Dies			
Type	Standard	Size	Code No.
Auto		BSPT	M/AT 1/2 ~ 3/4" 89211
			BE 1/2 ~ 3/4" 89266
			M/AT 1 ~ 2" 89227
		NPT	BE 1 ~ 2" 89267
			M/AT 1/2 ~ 3/4" 89101
			M/AT 1 ~ 2" 89102
Manual		BSPT	1/4 ~ 3/8" 89046
			M/AT 1/2 ~ 3/4" 89211
			BE 1/2 ~ 3/4" 89266
		NPT	M/AT 1 ~ 2" 89227
			BE 1 ~ 2" 89267
			1/4 ~ 3/8" 89100
Manual		NPT	M/AT 1/2 ~ 3/4" 89101
			M/AT 1 ~ 2" 89102

Beaver 80

PAT.

1/4 ~ 3"



- Equipped powerful motor of 1140W.
- Maintenance free ball bearing protects spindle support from abrasion.
- Easily grabbed handle provides for active operation.
- High capacity oil pump keeps enough oil even at low rotation, assuring precise threads.

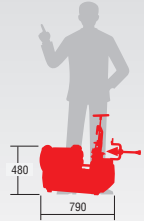
Model	Beaver80	Beaver 80AT	Beaver80ATII	Beaver80 ATII-MN (with Circular saw)
Code No.	BE800	BE8AT	BE8AA	BE8AM
Threading capacity	Water/Gas pipe 1/4 ~ 3"			
	Bolt 3/8 ~ 2" 10 ~ 36mm			
	Conduit 19 ~ 75mm 1/2 ~ 3"			
Weight	74kg			73kg
Spindle Speed	33 rpm (No load)			
Motor	100V (Voltage made to order) 1140W 50/60Hz			
Dimensions	(L)680x (W)480 x (H)420mm			
Standard Accessories	Die-Head	Manual 1/2 ~ 2" Manual 2 ~ 3"	Auto. 1/2 ~ 2" Auto. AT2.1/2 ~ 3"	Auto. 1/2 ~ 3/4", Auto. AT1 ~ 2" Auto. AT2.1/2 ~ 3"
	Dies	BE1/2 ~ 3/4" BE1 ~ 1.1/2"(2") AT2 ~ 3"	BE1/2 ~ 3/4" BE1 ~ 1.1/2"(2") AT2.1/2 ~ 3"	BE1/2 ~ 3/4" BE1 ~ 1.1/2"(2") AT2.1/2 ~ 3"
Others	Threading oil white 4 lit.(1can), Machine Cover, Legs			

Main Applicable Die-Head				
Type	Item	Size	Code No.	
Beaver (Auto)	BSPT	BE1/2 ~ 2"	BE001	
		NPT	BE01N	
	BSPT	AT2.1/2 ~ 3"	52200	
		AT2.1/2 ~ 4"	64200	
		NPT	AT2.1/2 ~ 3"	52600
			AT2.1/2 ~ 4"	64350
Manual	BSPT (BSW)	1/4 ~ 3/8" (3/8 ~ 1")	20114	
		NPT	1/4 ~ 3/8"	20165
	BSPT/NPT	1/2 ~ 2"	63090	
		2 ~ 3"	20127	
	BPST	3.1/2 ~ 4"	04110	

Beaver 100

PAT.

1/4 ~ 4"



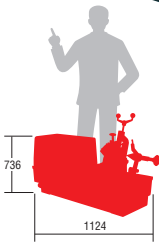
- Equipped powerful motor of 1140W.
- Maintenance free ball bearing protects spindle support from abrasion.
- Easily grabbed handle provides for active operation.
- High capacity oil pump keeps enough oil even at low rotation, assuring precise threads.
- 2 stage speed system helps to cut off any sizes of pipe.

Model	Beaver100ATII	Beaver100ATII-MN (with Circular saw)
Code No.	BE1AT	BE1AM
Threading capacity	Water/Gas pipe 1/4 ~ 4"	
	Bolt 3/8 ~ 2" 10 ~ 36mm	
	Conduit 19 ~ 75mm 1/2 ~ 3"	
Weight	105kg	103kg
Spindle Speed	48- 18 rpm (2 speed) (No load)	
Motor	100V (Voltage made to order) 1140W 50/60Hz	
Dimensions	(L)790 x (W)570 x (H)480mm	
Standard Accessories	Die-Head	Auto.1/2 ~ 2", Auto.AT2.1/2 ~ 4"
	Dies	BE1/2 ~ 3/4", BE1 ~ 1.1/2"(2"), AT2.1/2-4"
Others	Threading oil, white, 4 lit.(1 can), Machine Cover, Legs	

Main Applicable Dies			
Type	Item	Size	Code No.
Automatic	BSPT	M/AT 1/2 ~ 3/4"	89211
		BE 1/2 ~ 3/4"	89266
		M/AT 1 ~ 2"	89227
		BE 1 ~ 2"	89267
		AT 2.1/2 ~ 3"	89228
		AT 2.1/2 ~ 4"	59803
	NPT	M/AT 1/2 ~ 3/4"	89101
		M/AT 1 ~ 2"	89102
		AT 2.1/2 ~ 3"	89245
		AT 3.1/2 ~ 4"	89246
		1/4 ~ 3/8"	89046
		M/AT 1/2 ~ 3/4"	89211
Manual	BSPT	BE 1/2 ~ 3/4"	89266
		M/AT 1 ~ 2"	89227
		BE 1 ~ 2"	89267
		2 ~ 3"	89051
		3.1/2 ~ 4"	89052
	NPT	1/4 ~ 3/8"	89100
		M/AT 1/2 ~ 3/4"	89101
		M/AT 1 ~ 2"	89102
		2.1/2 ~ 3"	89258

HIGH SPEED THREADING MACHINE, SUPERMATIC 2000


1/2 ~ 2"




High speed threading machine! Increase efficiency and shorten 2/3 threading time

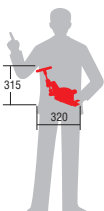
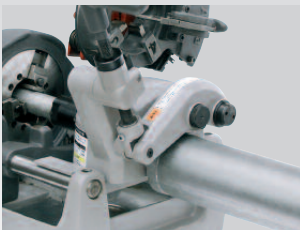
- Equipped with auto chuck and 1700W high speed motor to shorten threading time.
- Applicable for mass production of pipe up to 2"00.
- Specialized for steel pipe. (inapplicable for lining pipe)

Model	Supermatic 2000	
Code No.	SM207	
Threading capacity	Water/Gas pipe	1/2 ~ 2"
	Bolt	3/8 ~ 2" 10 ~ 24mm
	Conduit	19 ~ 51mm 1/2 ~ 2"
Weight	113kg	
Spindle Speed	63 rpm (No load)	
Motor	200-220V 1700W	
Dimensions	(L)1124 x (W)496 x (H)736mm	
Standard Die-Head	Auto.AT1/2 ~ 3/4", Auto.AT1 ~ 2"	
Accessories	Dies AT1/2 ~ 3/4"(HSS), AT1 ~ 2"(HSS)	

Standard Die-Head				
Automatic	Item	Size	Code No.	
		For water and gas pipe	AT1/2 ~ 3/4"	52143
			AT1 ~ 2"	52144

Standard Dies				
Automatic	Item	Size	Code No.	
		HSS for steel pipe	AT1/2 ~ 3/4"	89255
			AT1 ~ 2"	89256

BEAVER GROOVE 6



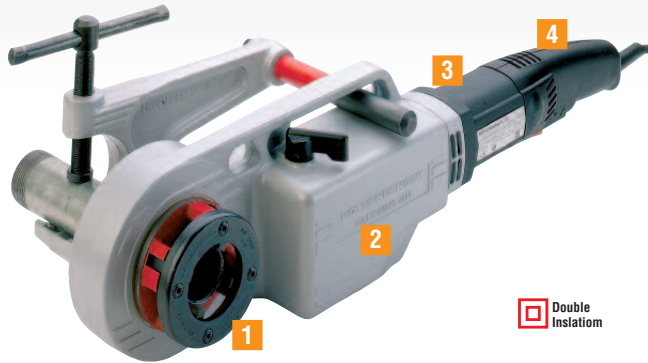
- For grooving pipe.
- Quick Clamp type for fast set up.

Item	Beaver Groove 6		
	Suit for Beaver 50	Suit for Beaver 80	Suit for Beaver 100
Code No.	BE4B5E	BE4B8E	BE4B1E
Capacity	Sch10	1" ~ 6"	
	Sch40	1" ~ 3"	
Weight	11.0kg		
Dimensions	(L)250 x (W)320 x (H)315mm		
Standard accessories	Roll Assembly for 2"-6", Depth Gauge, Wrench Holder, Coupling, Hex Wrench (3, 5, 6mm), Case		

Optional Accessories	
Item	Code No.
Base Bracket for Beaver 50	BE485
Base Bracket for Beaver 80	BE486
Base Bracket for Beaver 100/Astronic 4	BE487
Base Bracket for Astronic 3	BE488
Base Bracket for 3SG	BE489
Base Bracket for PISET 60	BE490
Base Bracket for PISET 90	BE491
Base Bracket for 4SB	BE492
Roll Assembly for 1"pipe	BE455
Roll Assembly from 1.1/4 to 1.1/2"	BE456

Supertronic 2

1/4 ~ 2"



Double Insulation

1 Die-Head fixing ring

- Easy to install / uninstall Die-Heads (1/4"-1.1/4").



2 Gear Box

- Compact Gear Box makes operation in a limited space possible.



3 Motor

- High Power without big noise.

4 Grip

- Designed for easy grip based on Ergonomics.

Item	Supertronic 2
Code No.	ST504
Threading capacity	BSPT1/4 ~ 2"
Motor	100V (Voltage made to order) 900W 50/60Hz
RPM	25 rpm
Weight	7.2kg
Dimensions	(L)580 x (W)95 x (H)140mm
Standard Accessories	Die-Head with Dies (1/2", 3/4", 1", 1.1/4", 1.1/2", 2"), Pipe Grip, Adaptor (1/4" ~ 1.1/4"), Threading oil (White), Carrying case

Optional Accessories

Item	Size	Code No.
Die-Head with Dies	BSPT 1/4"	R70821
	BSPT 3/8"	R70822
	BSPT 1/2"	R70823
	BSPT 3/4"	R70824
	BSPT 1"	R70825
	BSPT 1.1/4"	R70826
	BSPT 1.1/2"	R70842
	BSPT 2"	R70843

- Suitable for threading additional piping and repair in a limited work space.
- Small and light weight (7.2kg) for easy carrying.
- For Steel Pipe. (Not Applicable for Out-side lining pipes)

Hand Threader Set 3

1/4 ~ 1.1/4"



- Manual threading set with ratchet handle for threading additional pipe or repair the existing system.
- High quality with light weight aluminum body.
- For Steel Pipe. (Not Applicable for Out-side lining pipes)

Item	Hand Threader Set 3
Code No.	R70881
Threading capacity	BSPT 1/4" ~ 1.1/4"
Standard Accessories	Die-Head with Dies (1/2", 3/4") Ratchet handle, Case

Optional Accessories		
Item	Size	Code No.
Die-Head with Dies	BSPT 1/4"	R70821
	BSPT 3/8"	R70822
	BSPT 1/2"	R70823
	BSPT 3/4"	R70824
	BSPT 1"	R70825
	BSPT 1.1/4"	R70826

BOLT THREADING MACHINE, Bolt Machine No.1



- Compact design of 48 kg for smooth moving work site.
- A fixed size thread can be cut by automatic Dies opening system.
- High power motor for powerful threading.

Model	Bolt Machine No.1	
Code No.	10000	
Threading capacity	Right BSW5/16 ~ 1", Left BSW3/8-1", Right M8 ~ 24mm, Left M8 ~ 24mm	
Weight	48kg	
Spindle Speed	100 rpm (No load)	
Motor	100V (Voltage made to order) 650W 50/60Hz	
Stroke	120mm	
Dimensions	(L)770 x (W)415 x (H)380mm	
Standard Accessories	Die-Head	BSW (R) 5/16 ~ 1" or Metric (R) 8 ~ 24mm
	Dies	BSW (R) 1/2" & 5/8" or Metric (R) 12mm & 14 ~ 16mm
	Others	Threading Oil Red 4L (1can), Tools, Machine Cover, Legs

Taper Thread Gauge



- Inspection of accuracy of the tapered thread.
- Threads accuracy can be checked easily before and during threading.
- and when changing the Dies.
- Durable die-steel is used.

Item	Taper Thread Gauge Set 1/2" ~ 1"	Taper Thread Gauge Set 1/2" ~ 2"
Code No.	56100	56127
Contents	Taper Thread Gauge (1/2", 3/4", 1"), Case	Taper Thread Gauge (1/2", 3/4", 1", 1.1/4", 1.1/2", 2"), Case

Taper Thread Gauge			
Size	Code No.	Size	Code No.
1/2"	56103	2"	56116
3/4"	56104	2.1/2"	56117
1"	56105	3"	56118
1.1/4"	56114	4"	56119
1.1/2"	56115		

Nipple Chuck



- Easy to make short nipple.
- Easy operation and can be attached to other brands threading machines.

Item	Nipple Chuck Set	
	BSPT 1/2" ~ 2"	NPT 1/2" ~ 2"
Code No.	01810	01850
Contents	Cap (1/2", 3/4", 1", 1.1/4", 1.1/2", 2"), Handle, Shaft, Case	

Nipple Max Set

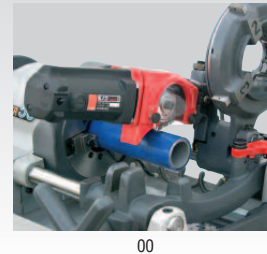


- Easy set up only insert to pipe threading machines to make small nipple. (Not applicable for Out-side lining pipes)
- Can be attached to other brands threading machines.

Item Nipple Max	1/2" ~ 3/4" Set
Code No.	36003
Contents	Nipple Max 1/2", 3/4", Case

Nipple Max			
Size	Code No.	Size	Code No.
1/2"	36100	2"	36150
3/4"	36110	2.1/2"	36160
1"	36120	3"	36170
1.1/4"	36130	3.1/2"	36180
1.1/2"	36140	4"	36190

Circular Saw



- Cuts at right angle without peeling or melting pipe coating.
- No adjustment for different size pipes.
- Can be attached easily to ASADA threading machine.

Item	BE25	BE50	BE80	BE100
Code No.	MNA13	MNB53	MNB83	MNA43
Motor	100V (Voltage made to order) 390W 50/60Hz			
Weight	3.7 kg			
Applicable Model	BE25/AS1	BE50	BE80	BE100/AS4

Replacement Blade for Circular Saw		
Item	Code No.	
Circular saw blade	MN080	
Circular saw blade for stainless steel pipe	MN081	

Pipe Support



For Beaver 25

For Beaver 50, 80, 100,
Astronic, Piset

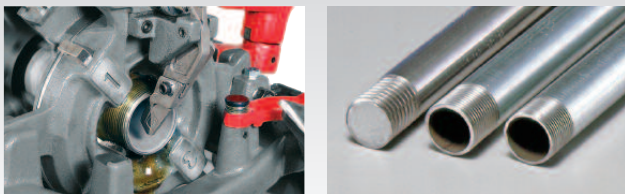
For MINI-CON PAT.

PIPE JACK

· Essential to work on accurate fabrication of long pipe.

Item	Code No.	Hight (mm)		Applicable Mode
		Minimum	Maximum	
Pipe support (when Legs are not used for the machine)	AS105	145	230	Beaver 25, Astronic 1
	88901	187	244	Beaver 50, Astronic 1.5, 2, 3, Piset 40, 60, 90
	59920	261	342	Beaver 80, 100, Astronic 4
	21757	366	541	Piset No.6
	33800	150	198	Mini-Con 82,104
Pipe Jack Ball H	S781305	710	1190	All models (when Legs are used for the machine)

Threading Oil, WHITE



- Meet the specification JWWA K137 of Japan Water Supply Association.
- Good for water supply pipe for water soluble oil which can be washed out easily with water.
- Sharp cutting without distortion.
- Effective cooling and keeps long life to the Dies.

Item	Code No.	Master pack
Threading Oil White	4L	85629
	16L	85639
	200L	85630
Supertronic Threading Oil White	0.3L	ST014

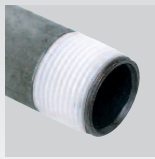
Threading Oil, RED



- Good for bolt and conduit pipe.
- Sharp cutting without distortion.
- Effective cooling and keeps long life to the Dies.

Item	Code No.	Master pack
Threading Oil RED	4L	85628
	16L	85633
	200L	85632

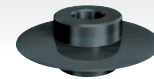
Seal Tape



- To seal steel, aluminum, stainless and plastic pipe -100 ~ 230°C
- For smooth installation and remove.

Item	Code No.	Thickness x Width x Length	Master pack
Seal Tape	R50356	0.1mm x 13mm x 15m	500
	R50356C		

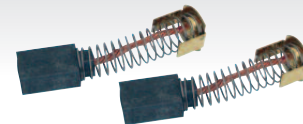
Pipe Cutter Blade



- Cutter blade for pipe threading machines.
- Smooth cut surface. · Long life.

Item		Code No.	Applicable Model
Cutter Blade for Beaver 25	Alloy	AS058	Beaver25, Astronic1
	Stainless	AS113	
Cutter Blade	Alloy	04510	Except Beaver25, Astronic1
	Stainless	70076	

Carbon Brushes



- For pipe threading machine motor.

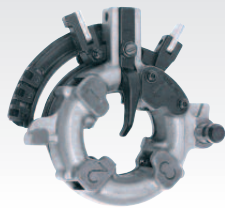
Item	Code No.	Applicable Model
Carbon Brushes	70819	Beaver25, Astronic1
	70851	Beaver50, Astronic1.5, 2
	70858	Beaver80, 100, Astronic4
	70886	Astronic3
Carbon Brushes MD (for Mitsubishi Motor)	70706	Piset40, 60, 90, Bolt Machine No.1

Die-Head

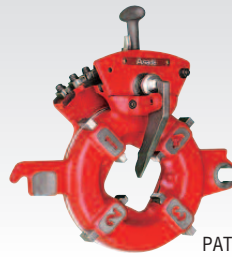
For Pipe Threading Machine



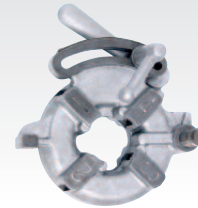
Beaver Auto(BE)



Auto Mini



Astronic Auto(AT)



Manual

Item			Code No.	Applicable Model					
				Beaver 25, Astronic 1	Astronic 1.5	Beaver 50, Supermatic, AS2, P40, P60	Beaver 80, AS3, P90, 3SG	Beaver 100, AS4, 4SB	No.6
Type	Standard	Size							
Beaver (Auto)		BE1/2-1"	BE380	●	●				
		BE1/2-2"	BE001			●	●	●	●
Auto Mini (Auto)		AM1/2-1.1/2"	AM001	●	●				
Astronic (Auto)	BSPT	AT1/2-3/4"	52143			●	●	●	
		AT1-2"	52144			●	●	●	●
		AT1/2-2"	52100			●	●	●	●
		AT2.1/2-3"	52200				●	●	●
		AT2.1/2-4"	64200					●	●
		AT 5-6"	52400					●	
Manual		1/4-3/8"	AS109	●	●				
		1/4-3/8"	20114			●	●	●	
		1/2-2"(NPT)	63090			●	●	●	●
		2-3"(NPT)	20127				●	●	●
		3.1/2-4"	04110					●	●
Beaver(Auto)		BE1/2-1"	BE389	●	●				
		BE1/2-2"	BE01N			●	●	●	●
		BE1/2-2"(Type RD)	BE057			●	●	●	●
Auto Mini (Auto)		AM1/2-1.1/2"	AM001	●	●				
Astronic(Auto)	NPT	AT1/2-2"	52500			●	●	●	●
		AT2.1/2-3"	52600				●	●	●
		AT2.1/2-4"	64350					●	●
		AT 5-6"	52800					●	●
Manual		1/4-3/8"	AS122	●	●				
		1/4-3/8"	20165			●	●	●	
		1/2-2"(BSPT)	63090			●	●	●	●
		2-3"(BSPT)	20127				●	●	●
For Bolt Thread (Manual)	BSW	3/8-1"	AS109	●	●				
		3/8-1"	20114			●	●	●	
		1.1/8-2"	63096			●	●	●	
	ISO Metric	10-24mm	AS110	●	●				
		10-24mm	20158			●	●	●	
	UNC	27-36mm	63095			●	●	●	
		1.1/8-1.1/2"	20162			●	●	●	
For Conduit Thread (Manual)	BSPS(C)	1/2-1.1/4: C19-39mm	AS124	●	●				
		1/2-1.1/4: C19-39mm	20147			●	●	●	
		1.1/2-3": C51-75mm	20157			●	●	●	●
	NPSM	1/2-1.1/4"	20171				●	●	
		1.1/2-3"	20172				●	●	
	ISO Metric	16-25mm	AS134	●	●				
	16-32mm	63094			●	●	●		

● 1.1/2" is not applicable

Die-Head

For Conduit Machine



Type (Manual)	Item		Code No.	Applicable Model	
	Standard	Size		Mini-Con 82	Mini-Con 104
For Conduit Thread	BSPS(C)	1/2-1.1/4": C19-39mm	17100	●	
		1.1/2-3": C51-75mm	19100	●	
	NPSM	1/2-1.1/4"	17134	●	
		1.1/2-3"	19119	●	
	ISO Metric	16-32mm	17135	●	
		40-63mm	19122	●	
For Taper Pipe Thread	BSPT	1/4-3/8"	17136	●	
		1/2-1.1/4"	17132	●	
For Bolt Thread	BSW	5/16-1"	17200	●	
	ISO Metric	8-24mm	17300	●	
For Conduit Thread	BSPS(C)	1/2-1.1/4": C19-39mm	33112		●
		1.1/2-3": C51-75mm	33114		●
		3.1/2-4"	33100		●
	NPSM	1/2-1.1/4"	33238		●
		1.1/2-3"	33239		●
		3.1/2-4"	33109		●
For Taper Pipe Thread	BSPT	1/2-1.1/4"	33117		●
For Bolt Thread	BSW	5/16-1"	33116		●

For Bolt Threading Machine



Bolt Machine No.1 (Right)



Bolt Machine No.1 (Left)



Bolt Machine No.2 (Right)



Bolt Machine No.2 (Left)

Type (Manual)	Item		Code No.	Applicable Model	
	Standard	Size		Bolt Machine No.1	Bolt Machine No.2
For Bolt Thread	BSW	5/16-1"	10100	●	
	BSW Left	3/8-1"	10117	●	
	ISO Metric	8-24mm	10118	●	
	ISO Metric Left	8-24mm	10126	●	
	UNC	5/16-1"	10119	●	
	UNF	3/8-1"	10120	●	
For Bolt Thread	BSW	5/16-1"	18134		●
		1.1/8-1.1/2"	18136		●
	BSW Left	3/8-1"	18135		●
		1.1/8-1.1/2"	18137		●
	ISO Metric	8-24mm	18166		●
		27-36mm	18167		●
	ISO Metric Left	8-24mm	18177		●
	UNC	5/16-1"	18193		●
		1.1/8-1.1/2"	18194		●
	UNF	3/8-1"	18195		●

Dies

For Taper Pipe Thread (Beaver, Astronic, Piset, Mini-Con)

Standard	Size	Code No.	Material	T.P.I.	Suitable Die-Head		
BSPT	AM 1/2 ~ 3/4"	AS086	Alloy	14	Auto (Beaver25, AS1, 1.5)		
	AM 1 ~ 1.1/2"	AS087		11			
	AM 1/2 ~ 3/4"	AS111	HSS	14	Auto (Beaver25, AS1, 1.5)		
	AM 1 ~ 1.1/2"	AS112		11			
	BE 1/2 ~ 3/4"	89266	Alloy	14	Auto (Beaver, Astronic)		
	BE 1 ~ 2"	89267		11			
	M/AT 1/2 ~ 3/4"	89211		14			
	M/AT 1 ~ 2"	89227		11			
	AT 2.1/2 ~ 3"	89228		11			
	AT 2.1/2 ~ 4"	59803		11			
	AT 3.1/2 ~ 4"	89229		11			
	AT 5 ~ 6"	89244		11			
	AT 1/2 ~ 3/4"	89203		HSS		14	Auto (Beaver, Astronic)
	AT 1 ~ 2"	89248				11	
	AT 2.1/2 ~ 3"	89249	11				
	AT 2.1/2 ~ 4"	59966	Alloy	14	Automatic (A-Die-head)		
	M/AT 1/2 ~ 3/4"	89211		11			
	M/AT 1 ~ 2"	89227		11			
	A 1 ~ 2" (LARGE)	89133		11			
	A 1.1/2 ~ 2" (LARGE)	89116		11			
	A 2.1/2 ~ 3" (LARGE)	89118		11			
	A 3.1/2 ~ 4" (LARGE)	89131		11			
	A 5 ~ 6" (LARGE)	89132		11			
	A 1/2 ~ 3/4" (LARGE)	89203		HSS		14	Automatic (A-Die-head)
	A 1 ~ 2" (LARGE)	89160				11	
	A 2.1/2 ~ 3" (LARGE)	89205	11				
	1/4 ~ 3/8"	89046	Alloy	19	Manual		
	M/AT 1/2 ~ 3/4"	89211		14			
	M/AT 1 ~ 2"	89227		11			
	1.1/2 ~ 2"	89049		11			
2 ~ 3"	89051	11					
3.1/2 ~ 4"	89052	11					
1/4 ~ 3/8"	89053	HSS	19	Manual			
1/2 ~ 3/4"	89203		14				
1 ~ 1.1/2"	89248		11				
1.1/2 ~ 2"	89056		11				
2 ~ 3"	89142		11				
3.1/2 ~ 4"	89184	11					
1/2 ~ 3/4" Mini-Con	89036	Alloy	14	Mini-Con82, 104			
1 ~ 1.1/4" Mini-Con	89037		11				
AT 1/2 ~ 3/4" (For Steel Pipe)	89255	HSS	14	Auto (Beaver, Astronic, Supermatic)			
AT 1 ~ 2" (For Steel Pipe)	89256		11				

Standard	Size	Code No.	Material	T.P.I.	Suitable Die ~ Head
NPT	AM 1/2 ~ 3/4"	AS120		14	Auto (Beaver25, AS1, 1.5)
	AM 1 ~ 1.1/2"	AS121		11.5	
	M/AT 1/2 ~ 3/4"	89101	Alloy	14	Auto (Beaver, Astronic)
	M/AT 1 ~ 2"	89102		11.5	
	AT 2.1/2 ~ 3"	89245		8	
	AT 2.1/2 ~ 4"	59912		8	
	AT 3.1/2 ~ 4"	89246		8	
	AT 5 ~ 6"	89247		8	
	1/2 ~ 3/4"	89157	HSS	14	Auto (Beaver, Astronic)
	1 ~ 2"	89158		11.5	
	2.1/2 ~ 3"	89282		8	
	2.1/2 ~ 4"	59997	8		
	1/4 ~ 3/8"	89100	Alloy	18	Manual
	M/AT 1/2 ~ 3/4"	89101		14	
	M/AT 1 ~ 2"	89102		11.5	
	1.1/2 ~ 2"	89103		11.5	
	2.1/2 ~ 3"	89258		8	
	3.1/2 ~ 4"	89105		8	
	1/2 ~ 3/4"	89157	HSS	14	Manual
	1 ~ 2"	89158		11.5	
	1.1/2 ~ 2"	89159		11.5	
	2.1/2 ~ 3"	89273		8	
	2.1/2 ~ 3" (LARGE)	89171		8	
	3.1/2 ~ 4" (LARGE)	89172		8	
	A 1 ~ 2" (LARGE)	89195	Alloy	11.5	Automatic (A-Die-head)
	A 2.1/2 ~ 3" (LARGE)	89134		8	
	A 3.1/2 ~ 4" (LARGE)	89135		8	
	A 5 ~ 6" (LARGE)	89136		8	

Standard	Size	Code No.	Material	T.P.I.	Suitable Die-Head
BSPT	1/4 ~ 3/8" Type RD	89276		19	Type RD Die-Head
	1/2 ~ 3/4" Type RD	89270		14	
	1/2" Type RD	89271		11	
NPT	1/4 ~ 3/8" Type RD	89277	Alloy	18	Type RD Die-Head
	1/2 ~ 3/4" Type RD	89278		14	
	1/2" Type RD	89279		11.5	
BSPS (BSPP)	1/2 ~ 3/4" Type RD	89280		14	Type RD Die-Head
	1/2" Type RD	89281		11	

For Parallel Pipe (Condit) Thread (Beaver, Astronic, Piset, Mini-Con)

Standard	Size	Code No.	Material	T.P.I.	Suitable Die-Head
C	19 ~ 25mm	89021	Alloy	16	Mini-Con, For Conduit (Manual) (0.25kgs)
	31 ~ 39mm	89022		16	
	51 ~ 75mm	89023		16	

Standard	Size	Code No.	Material	T.P.I.	Suitable Die-Head
BSPP (BSPP)	1/2 ~ 3/4"	89024	Alloy	14	Mini-Con, For Conduit (Manual) (0.25kgs)
	1 ~ 1.1/4"	89025		11	
	1.1/2 ~ 2"	89026		11	
	2.1/2 ~ 3"	89027		11	
	3.1/2 ~ 4"	89145		11	
	3.1/2 ~ 4" (LARGE)	89071	11	Mini-Con 104(0.25kgs) For Conduit (Manual)(0.7kgs)	
	1/2 ~ 3/4"	89259	HSS	14	Mini-Con, For Conduit (Manual) (0.25kgs)
	1 ~ 1.1/4"	89260		11	
	1.1/2 ~ 2"	89261		11	
	2.1/2 ~ 3"	89262		11	

Standard	Size	Code No.	Material	T.P.I.	Suitable Die-Head
NPSM	1/2 ~ 3/4"	89148	Alloy	14	Mini-Con, For Conduit (Manual) (0.25kgs)
	1 ~ 1.1/4"	89149		11.5	
	1.1/2 ~ 2"	89150		11.5	
	2.1/2 ~ 3"	89151		8	
	3.1/2 ~ 4"	89152		8	
	3.1/2 ~ 4"	89272	8	Manual (04110) (0.7kgs)	

Standard	Size	Code No.	Material	T.P.I.	Suitable Die-Head
Metric Conduit	16 ~ 20mm	89110	Alloy	1.5mm	For Conduit (Manual) (0.6kgs)
	25 ~ 32mm	89111		1.5mm	
	16 ~ 32mm	89208		1.5mm	Auto (Beaver25,AS1,1.5) Mini-Con 82 (0.25kgs)
	40 ~ 63mm	89209		1.5mm	Mini - Con 82 (0.25kgs)

For Bolt Thread (Beaver, Astronic, Piset, Mini-Con, Bolt Machine)

Standard	Size	Code No.	Material	T.P.I.	Suitable Die-Head	
BSW	5/16"	89079	Alloy	18	No.1, Mini-Con	
	3/8"	89080		16	No.1, No.2, For Bolt (Manual)	
	1/2"	89081		12		
	5/8"	89082		11		
	3/4"	89083		10		
	7/8"	89084		9		
	1"	89085		8		
	1.1/8 ~ 1.1/4"	89143		7		
	1.3/8 ~ 1.1/2"	89144		6		For Bolt (Manual)
	1.5/8 ~ 1.3/4"	89199		5		
	1.7/8 ~ 2"	89200		4.5		
	Left 3/8"	89086		16		
	Left 1/2"	89087		12		
	Left 5/8"	89088		11		
	Left 3/4"	89089		10	No.1	
	Left 7/8"	89090		9		
	Left 1"	89091		8		
	5/16"	18503		HSS		18
	3/8"	18504	16		No.1, No.2, Mini-Con, For Bolt (Manual)	
	1/2"	18505	12			
	5/8"	18506	11			
	3/4"	18507	10			
	7/8"	18508	9			
	1"	18509	8			
	1.1/8 ~ 1.1/4"	18510	7			
	1.3/8 ~ 1.1/2"	18512	6			No.2
	1.1/8 ~ 1.1/4"	89225	7			
	1.3/8 ~ 1.1/2"	89226	6			For Bolt (Manual)
1.5/8 ~ 1.3/4"	89275	5				
Left 3/8"	18513	16				
Left 1/2"	18514	12				
Left 5/8"	18515	11				
Left 3/4"	18516	10				
Left 7/8"	18517	9	No.1, No.2			
Left 1"	18518	8				
Left 1.1/8 ~ 1.1/4"	18519	7				
Left 1.1/2"	18521	6		No.2		

Standard	Size	Code No.	Material	T.P.I.	Suitable Die-Head	
Metric	8mm	89001	Alloy	1.25mm	No.1, Mini-Con	
	10mm	89002		1.5mm	No.1, No.2, For Bolt (Manual)	
	12mm	89003		1.75mm		
	14 ~ 16mm	89140		2mm		
	18 ~ 22mm	89141		2.5mm		
	24mm	89009		3mm		
	27mm	89192		3mm		
	30 ~ 33mm	89193		3.5mm	For Bolt (Manual)	
	36mm	89194		4mm		
	42mm	89234		4.5mm		
	Left 8mm	89164		1.25mm		
	Left 10mm	89165		1.5mm		
	Left 12mm	89166		1.75mm		
	Left 14 ~ 16mm	89167		2mm	No.1	
	Left 18 ~ 22mm	89168		2.5mm		
	Left 24mm	89169		3mm		
	Left 27mm	89230		3mm		
	Left 30 ~ 33mm	89231		3.5mm	For Bolt (Manual)	
	Left 36mm	89232	4mm			
	Left 42mm	89233	4.5mm			
	8mm	18522	HSS	1.25mm		No.1, No.2, Mini-Con
	10mm	18523		1.5mm		No.1, No.2, Mini-Con, For Bolt (Manual)
	12mm	18524		1.75mm		
	14 ~ 16mm	18538		2mm		
	18 ~ 22mm	18539		2.5mm		
	24mm	18530		3mm		
	27mm	18531		3mm		
	30 ~ 33mm	18532		3.5mm	No.2	
	36mm	18534		4mm		
	Left 8mm	18556		1.25mm		
Left 10mm	18541	1.5mm				
Left 12mm	18542	1.75mm				
Left 14 ~ 16mm	18543	2mm				
Left 18 ~ 22mm	18544	2.5mm		No.1, No.2		
Left 24mm	18555	3mm				

Standard	Size	Code No.	Material	T.P.I.	Suitable Die-Head
UNC	5/16"	89137	Alloy	18	No.1, No.2, For Bolt (Manual)
	3/8"	89015		16	
	7/16"	89138		14	
	1/2"	89016		13	
	9/16"	89139		12	
	5/8"	89017		11	
	3/4"	89018		10	
	7/8"	89019		9	
	1"	89020		8	
	1.1/8 ~ 1.1/4"	89197		7	
	1.3/8 ~ 1.1/2"	89198	6		
	1.1/4"	18536	HSS	7	No.2
	1.1/2"	18537		6	

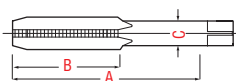
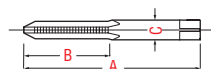
Standard	Size	Code No.	Material	T.P.I.	Suitable Die-Head
UNF	3/8"	89038	Alloy	24	No.1, No.2, For Bolt (Manual)
	7/16"	89039		20	
	1/2"	89040		20	
	9/16"	89041		18	
	5/8"	89042		18	
	3/4"	89043		16	
	7/8"	89044		14	
	1"	89045		12	

Hand Taps

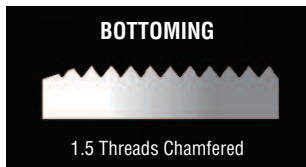
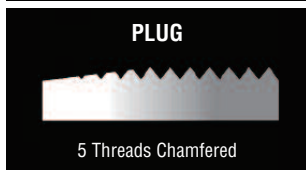
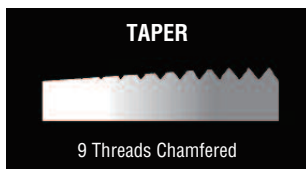
Tungsten Steel (SKS)



- Asada Taps are made of high quality materials and excellent craftsmanship.
- Manufactured from tough Tungsten Steel (SKS).



Nominal Diameter	Pitch Metric (60°)				Length		Shank Diameter (C)
					Overall (A)	Thread (B)	
1.7 mm	0.35 mm				36 mm	13 mm	3.0 mm
2 mm	0.40 mm				40 mm	15 mm	3.0 mm
2.3 mm	0.40 mm				42 mm	15 mm	3.0 mm
2.5 mm	0.45 mm				44 mm	16 mm	3.0 mm
2.6 mm	0.45 mm				44 mm	16 mm	3.0 mm
3 mm	0.50 mm	0.60 mm			46 mm	18 mm	4.0 mm
3.5 mm	0.60 mm				48 mm	18 mm	4.0 mm
4 mm	0.70 mm	0.75 mm	0.50 mm		52 mm	20 mm	5.0 mm
4.5 mm	0.75 mm	0.50 mm			55 mm	20 mm	5.0 mm
5 mm	0.80 mm	0.90 mm	0.50 mm		60 mm	22 mm	5.5 mm
5.5 mm	0.90 mm				60 mm	22 mm	5.5 mm
6 mm	1.00 mm	0.75 mm	0.50 mm		62 mm	24 mm	6.0 mm
7 mm	1.00 mm	0.75 mm			65 mm	26 mm	6.2 mm
8 mm	1.25 mm	1.00 mm	0.75 mm		70 mm	30 mm	6.2 mm
9 mm	1.25 mm	1.00 mm	0.75 mm		72 mm	30 mm	7.0 mm
10 mm	1.50 mm	1.25 mm	1.00 mm	0.75 mm	75 mm	32 mm	7.0 mm
11 mm	1.50 mm	1.25 mm			80 mm	38 mm	8.0 mm
12 mm	1.75 mm	1.50 mm	1.25 mm	1.00 mm	82 mm	38 mm	8.5 mm
13 mm	1.75 mm	1.50 mm			82 mm	38 mm	9.5 mm
14 mm	2.00 mm	1.50 mm	1.25 mm	1.00 mm	88 mm	42 mm	10.5 mm
15 mm	2.0 mm				88 mm	42 mm	10.5 mm
16 mm	2.0 mm	1.5 mm	1.0 mm		95 mm	45 mm	12.5 mm
17 mm	2.0 mm				95 mm	45 mm	13.0 mm
18 mm	2.5 mm	2.0 mm	1.5 mm		100 mm	48 mm	14.0 mm
19 mm	2.5 mm				100 mm	48 mm	14.0 mm
20 mm	2.5 mm	2.0 mm	1.5 mm		105 mm	50 mm	15.0 mm
22 mm	2.5 mm	2.0 mm	1.5 mm		115 mm	55 mm	17.0 mm
24 mm	3.0 mm	2.0 mm	1.5 mm		120 mm	58 mm	19.0 mm
25 mm	3.0 mm	1.5 mm			120 mm	58 mm	19.5 mm
26 mm	3.0 mm	2.0 mm	1.5 mm		125 mm	60 mm	19.5 mm
27 mm	3.0 mm	2.0 mm	1.5 mm		130 mm	62 mm	20.0 mm
28 mm	3.0 mm	2.0 mm	1.5 mm		130 mm	62 mm	21.5 mm
30 mm	3.5 mm	3.0 mm	2.0 mm	1.5 mm	135 mm	65 mm	23.0 mm
32 mm	3.5 mm	3.0 mm	2.0 mm	1.5 mm	135 mm	65 mm	23.0 mm
33 mm	3.5 mm	3.0 mm	2.0 mm		145 mm	70 mm	25.0 mm
34 mm	3.5 mm	3.0 mm	2.0 mm		145 mm	70 mm	26.0 mm
35 mm	3.5 mm				145 mm	70 mm	26.0 mm
36 mm	4.0 mm	3.0 mm	2.0 mm	1.5 mm	155 mm	75 mm	28.0 mm
38 mm	4.0 mm	3.0 mm	2.0 mm	1.5 mm	155 mm	75 mm	29.0 mm



Hand Taps

Tungsten Steel (SKS)



Nominal Diameter	T. P. I		Length		Shank Diameter (C)
	BSW (55°)	BSF (55°)	Overall (A)	Thread (B)	
1/16"	60		36 mm	13 mm	3.0 mm
3/32"	48		42 mm	16 mm	3.0 mm
1/8"	40		46 mm	18 mm	4.0 mm
5/32"	32		52 mm	20 mm	5.0 mm
3/16"	24		60 mm	24 mm	5.5 mm
7/32"	24		61 mm	25 mm	6.0 mm
1/4"	20	26	62 mm	24 mm	6.0 mm
5/16"	18	22	70 mm	30 mm	6.1 mm
3/8"	16	20	75 mm	35 mm	7.0 mm
7/16"	14	18	80 mm	38 mm	8.0 mm
1/2"	12	16	85 mm	42 mm	9.0 mm
9/16"	12	16	90 mm	42 mm	10.5 mm
5/8"	11	14	95 mm	45 mm	12.0 mm
3/4"	10	12	105 mm	50 mm	14.0 mm
7/8"	9	11	115 mm	55 mm	17.0 mm
1"	8	10	125 mm	60 mm	20.0 mm
1.1/8"	7	9	135 mm	65 mm	22.0 mm
1.1/4"	7	9	145 mm	70 mm	24.0 mm
1.3/8"	6	8	155 mm	75 mm	26.0 mm
1.1/2"	6	8	160 mm	78 mm	30.0 mm

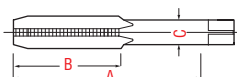
Nominal Diameter	T. P. I		Length		Shank Diameter (C)
	UNC (60°)	UNF (60°)	Overall (A)	Thread (B)	
0		80	34 mm	11 mm	3.0 mm
1	64	72	36 mm	13 mm	3.0 mm
2	56	64	44.5 mm	11.1 mm	3.0 mm
3	48	56	46 mm	12.7 mm	3.0 mm
4	40	48	47.6 mm	14.3 mm	4.0 mm
5	40	44	49.2 mm	15.9 mm	4.0 mm
6	32	40	50.3 mm	17.5 mm	4.0 mm
8	32	36	54 mm	19 mm	5.0 mm
10	24	32	60 mm	24 mm	5.5 mm
12	24	28	60 mm	24 mm	5.5 mm
1/4"	20	28	62 mm	24 mm	6.0 mm
5/16"	18	24	70 mm	30 mm	6.1 mm
3/8"	16	24	75 mm	35 mm	7.0 mm
7/16"	14	20	80 mm	38 mm	8.0 mm
1/2"	13	20	85 mm	42 mm	9.0 mm
9/16"	12	18	90 mm	42 mm	10.5 mm
5/8"	11	18	95 mm	45 mm	12.0 mm
3/4"	10	16	105 mm	50 mm	14.0 mm
7/8"	9	14	115 mm	55 mm	17.0 mm
1"	8	12	125 mm	60 mm	20.0 mm
1.1/8"	7	12	135 mm	65 mm	22.0 mm
1.1/4"	7	12	145 mm	70 mm	24.0 mm
1.3/8"	6	12	155 mm	75 mm	26.0 mm
1.1/2"	6	12	160 mm	78 mm	30.0 mm

Nominal Diameter BA	Length		Shank Diameter (C)
	Overall (A)	Thread (B)	
0 BA	62 mm	24 mm	6.5 mm
1	60 mm	22 mm	6.0 mm
2	60 mm	22 mm	5.5 mm
3	52 mm	20 mm	5.0 mm
4	50 mm	18 mm	4.0 mm
5	50 mm	16 mm	4.0 mm
6	48 mm	15 mm	4.0 mm
7	46 mm	13 mm	4.0 mm
8	44 mm	11 mm	4.0 mm
9	42 mm	10 mm	3.0 mm
10	40 mm	8 mm	3.0 mm

Nominal Diameter	Nominal Diameter Brass (55°)	Length		Shank Diameter (C)
		Overall (A)	Thread (B)	
1/4"	26	63.50 mm	25.40 mm	6.50 mm
5/16"	26	69.85 mm	28.60 mm	8.80 mm
3/8"	26	74.60 mm	31.75 mm	9.70 mm
7/16"	26	76.20 mm	31.75 mm	8.20 mm
1/2"	26	76.20 mm	31.75 mm	9.32 mm
9/16"	26	76.20 mm	31.75 mm	10.89 mm
5/8"	26	76.20 mm	31.75 mm	12.19 mm
3/4"	26	82.55 mm	38.10 mm	14.98 mm
7/8"	26	82.55 mm	38.10 mm	17.70 mm
1"	26	82.55 mm	38.10 mm	20.32 mm

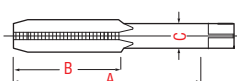
THREADING MACHINES

Hand Taps



Pipe Taps			Tungsten Steel (SKS)		
Nominal Diameter	T.P.I		Length		Shank Diameter (C)
	BSPT (55°)	BSP (PF)	Overall (A)	Thread (B)	
1/8"	28	28	55 mm	19 mm	8 mm
1/4"	19	19	62 mm	28 mm	11 mm
3/8"	19	19	65 mm	28 mm	14 mm
1/2"	14	14	80 mm	35 mm	18 mm
5/8"	14	14	85 mm	35 mm	20 mm
3/4"	14	14	85 mm	35 mm	23 mm
7/8"	14	14	90 mm	40 mm	24 mm
1"	11	11	95 mm	45 mm	26 mm
1.1/8"	11	11	105 mm	45 mm	30 mm
1.1/4"	11	11	105 mm	45 mm	32 mm
1.3/8"	11	11	110 mm	45 mm	35 mm
1.1/2"	11	11	110 mm	45 mm	38 mm
1.3/4"	11	11	115 mm	45 mm	40 mm
2"	11	11	120 mm	50 mm	46 mm

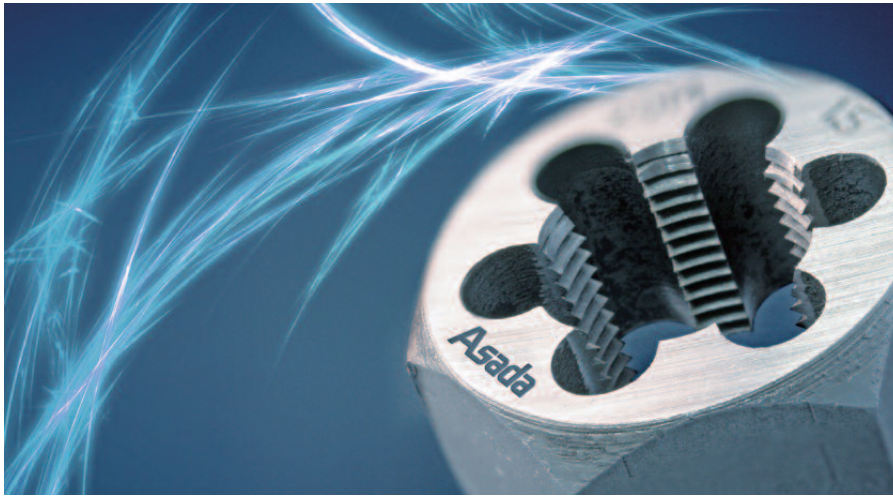
Nominal Diameter	T.P.I		Length		Shank Diameter (C)
	NPT (60°)	NPS	Overall (A)	Thread (B)	
1/16 "	27		55 mm	17.5 mm	6 mm
1/8"	27	27	55 mm	19.0 mm	8 mm
1/4 "	18	18	62 mm	28.0 mm	11 mm
3/8 "	18	18	65 mm	28.0 mm	14 mm
1/2 "	14	14	80 mm	35.0 mm	18 mm
5/8"	14	14	85 mm	35.0 mm	20 mm
3/4"	14	14	85 mm	35.0 mm	23 mm
7/8"	14	14	90 mm	40.0 mm	24 mm
1"	11.1/2	11.1/2	95 mm	45.0 mm	26 mm
1.1/4"	11.1/2	11.1/2	105 mm	45.0 mm	32 mm
1.1/2"	11.1/2	11.1/2	110 mm	45.0 mm	38 mm
2"	11.1/2	11.1/2	120 mm	50.0 mm	46 mm



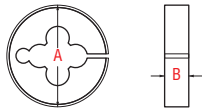
Spiral Flute Machine Taps		High Speed Steel (HSS)		
Nominal Diameter	Pitch Metric (60°)	Length		Shank Diameter (C)
		Overall (A)	Thread (B)	
3 mm	0.5	46 mm	18 mm	4.0 mm
4 mm	0.7	52 mm	20 mm	5.0 mm
5 mm	0.8	60 mm	24 mm	5.5 mm
6 mm	1.0	62 mm	24 mm	6.0 mm
8 mm	1.25	70 mm	30 mm	6.2 mm
10 mm	1.5	75 mm	32 mm	7.0 mm
12 mm	1.75	82 mm	38 mm	8.5 mm

Nominal Diameter	T.P.I. Inch (BSW, 55°)	Length		Shank Diameter (C)
		Overall (A)	Thread (B)	
1/8"	40	46 mm	18 mm	4.0 mm
1/4"	20	62 mm	24 mm	6.0 mm
5/16"	18	70 mm	30 mm	6.1 mm
3/8"	16	75 mm	35 mm	7.0 mm
1/2"	12	85 mm	42 mm	9.0 mm

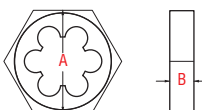
Dies



Round Dies			Tungsten Steel (SKS)	
Outside Diameter (A)	Thickness (B)	Metric	UNC / UNF / BSW	BSP / BSPT / NPS / NPT
13/16" (20mm)	7 mm	2 ~ 6	3/32 ~ 1/4"	
1" (25mm)	9 mm	3 ~ 10	1/8 ~ 3/8"	
1.1/2" (38mm)	13 mm	6 ~ 16	1/4 ~ 5/8"	1/8 ~ 1/4"
2" (50mm)	16 mm	10 ~ 24	3/8 ~ 1"	3/8 ~ 1/2"
2 1/2" (63mm)	20 mm	20 ~ 32	3/4 ~ 1.1/4"	1/2 ~ 3/4"
3" (75mm)	25 mm	25 ~ 42	7/8 ~ 1.1/2"	3/4 ~ 1.1/4"



Round Dies



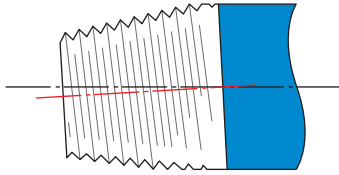
Hex Die Nuts

Hex Die Nuts			Carbon Steel	
AF (A)	Thickness (B)	Metric	UNC / UNF / BSW	BSP / BSPT / NPS / NPT
15.0	6.3	3 x 0.50	1/8"	
		4 x 0.70	5/32"	
		5 x 0.80	3/16"	
		6 x 1.00	1/4"	
17.0	7.9	7 x 1.00	5/16"	
		8 x 1.25		
20.0	9.5	10 x 1.50	3/8"	1/8"
		11.1	7/16"	
27.0	12.7	12 x 1.75	1/2"	1/4"
		14 x 2.00	9/16"	
		16 x 2.00	5/8"	3/8"
38.5	19.0	18 x 25	3/4"	1/2"
		20 x 25	7/8"	5/8"
		22 x 25	1"	3/4"
		24 x 30		
50.0	25.4	26 x 30	1.1/8"	7/8"
		27 x 30		
		28 x 30	1.1/4"	1"
60.0	25.4	30 x 35		
		33 x 35		
		36 x 40	1.3/8"	
65.0	25.4	39 x 40	1.1/2"	1.1/8"

Causes and solutions of defective threads

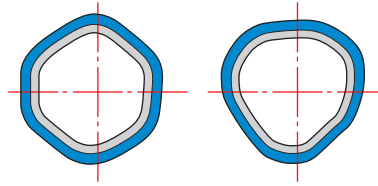
Some of these defective threads may happen while threading

1 Single-sided threads



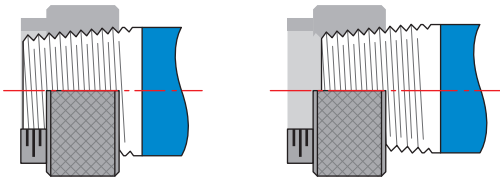
Sign Un-centered and one side uncompleted thread.
Cause Un-right-angled cutting surface cut by like a grinding machine.
Solution Make cut surface right angle using band saw.

2 Multi-angled threads



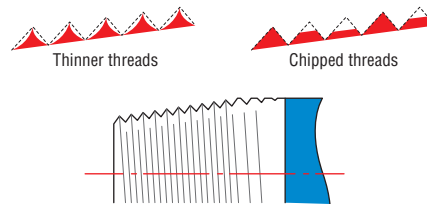
Sign Cutting surface of pipe is deformed to multi-angle.
Cause Slanted or ridged cut surface, past life of dies, insufficient or wrong quality of oil.
Solution Make cut surface right angle using band saw, Check condition of dies or oil.

3 Detective diameter of threads (smaller or larger)



Sign Effective diameter of thread is larger or smaller than standard.
Cause Wrong adjustment to the position of threading diameter of die head.
Solution Check the diameter with threading gauge before threading in order to adjust correctly the position of threading diameter of die head.

4 Deformation of threads

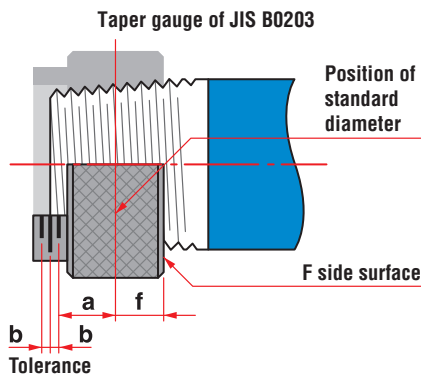


Sign Thinner threads and Chipped threads.
Cause Welded, worn or chipped dies, un-centered chucking, undesirable threading oil.
Solution Replace dies, oil and adjust, maintenance and check the machine.

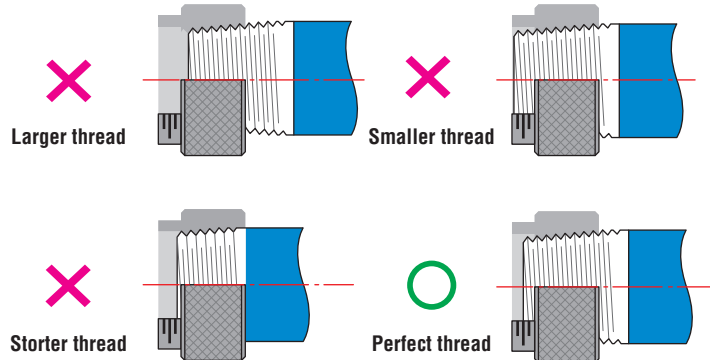
How to check threads by Taper Thread Gauge

It should be inspected before starting operation or having dies replaced to make sure that perfect threads are made.

Please, manually put gauge on thread to the end and decide the perfection or imperfection of thread according to the position of gauge and the edge of pipe.



a: Standard length from the edge of pipe
 b: Acceptable space from the edge of pipe
 c: The length of the effective part of thread that exceeds the position of standard diameter



The length of the effective part of thread, under the condition of correct threading diameter is 0 or 2 tips from the F side surface.

*There is difference in the length of the effective part of thread among companies so that it is advised to let 2 tips.

Correct usage of power supply

Use correct voltage and enough capacity

1 In case of using generator

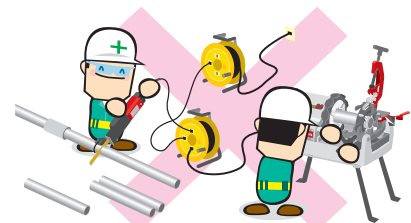
It is advised to use powerful generator of 2KVA, 2.5KVA, 3KVA or upper

In particularly, using generator of over 3KVA for Beaver 50 and Beaver 80

2 In case of using extension cord

Using thin extension cord causes voltage drop.
















It is advised to use extension cord of 2.0 mm² or 3.5 mm² thick of 3 core cabtyre cord to keep the voltage drop smaller.



CUTTING MACHINES



Portable cutting machines designed for professional pipe work

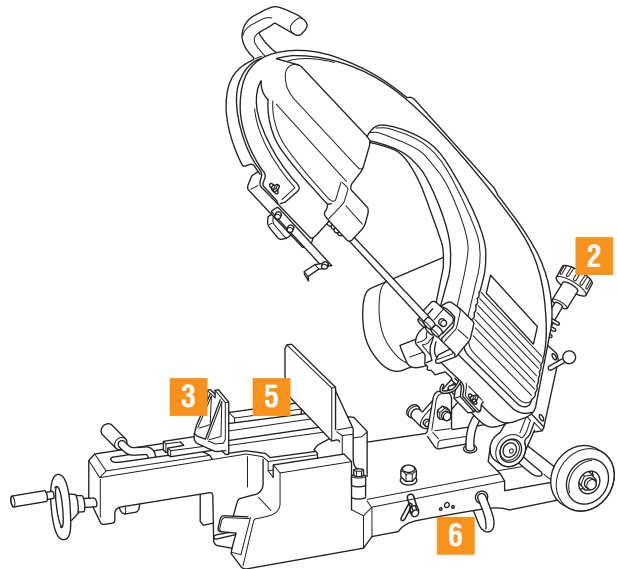
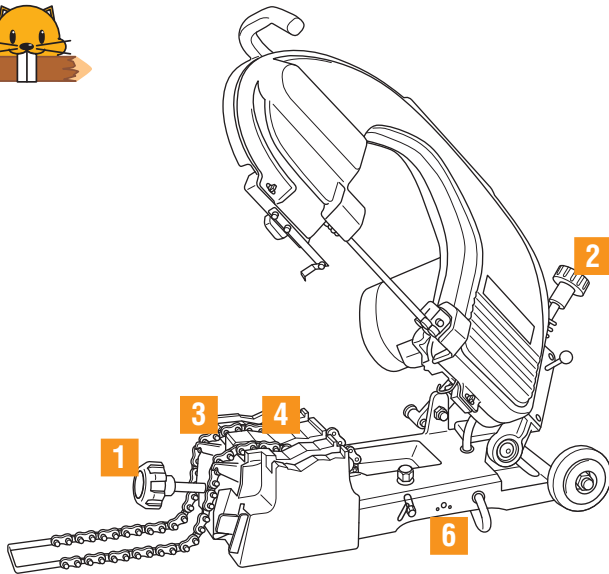
Capacity (Large)	Chain vice style	Flat vice style	Beaver Saw	Reciprocating cutting machine for existing pipe		
		 Band Saw 32F	 Beaver Saw 360	 Pipe Saw 350A	 Pipe Saw 350	 Pipe Saw 380S
	 Band Saw 222	 Band Saw 22F	 Beaver Saw 220A	 Pipe Saw 300		
	 Band Saw Beaver 6	 Band Saw Beaver 6F				 Pipe Saw 165S
	 Band Saw 125	 Band Saw 12F	 Beaver Saw 170 Eco Beaver Saw 170E Eco			
	Band Saw		Beaver Saw	Reciprocating cutting machine for existing pipe		

Characteristics of band saw series

Professionally right angle and high speed cut for cutting steel pipe and section steel.

Purpose

For cutting steel pipe, lined water pipe, conduit, poly vinyl pipe, cast iron pipe, stainless steel pipe, steel materials, square pipe, round bar, aluminum frame, etc.



Safety and harmlessness

- Cutting safely and harmlessly without sparks, cutting dust and noise.

High speed cut

- High speed cut for increasing productivity of your work.

1 Easy clamp system (chain vice)



- Strong quick clamp enables to fast forward. (Beaver 6)

2 Precision cutting adjustment device



- Easily make change with precision cutting adjustment device according to material of pipes.

3 Cut at right angle (chain, flat vice)



- Ideal for precision cutting at right angle.

4 Bundle cut (chain vice)



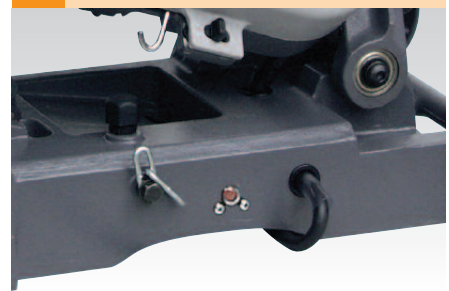
- Possible to cut in bundle of same material pipe. (Beaver 6)

5 Angle cut (flat vice)



- Possible to cut at an angle of 45 degrees. (Beaver 6F)

6 Overload protection device



- Equipped with overload protection device to prevent motor from incineration.

Band Saw Beaver 6

PAT.

~ Ø180mm

Chain vice



- Highly appreciated with precision cut, especially at right angle.
- Extremely high speed cut.
- Easy to replace saw blade from the front.
- Single action saw blade tension system.
- Quick clamp system with power bunding.
- Equipped with overload protection device.

Standard saw blade

Item	14 TPI HSS blade
Code No.	70114

Item	Band Saw Beaver 6	
Code No.	BB003	
Angle	90°	
Cutting Capacity	Steel pipe	Ø180mm
	H steel	150mmx150mm
	Square pipe	150mm
	Round bar	Ø80mm
Weight	42kg	
Dimensions	(L)975x(W)415x(H)415mm	
Motor	Condenser 100V (Voltage made to order) 200W 50/60Hz	
Standard accessories	14 TPI HSS blade (1 pce)	

Band Saw Beaver 6F

PAT.

~ Ø180mm

Flat vice



- Highly appreciated with precision cut, especially at right angle.
- Extremely high speed cut.
- Easy to replace saw blade from the front.
- Single action saw blade tension system.
- Quick clamp system with power bunding.
- Equipped with overload protection device.

Standard saw blade

Item	14 TPI HSS blade
Code No.	70114

Item	Band Saw Beaver 6F	
Code No.	BB103	
Angle	90°	45°
Cutting Capacity	Steel pipe	Ø180mm / Ø77mm
	H steel	150mmx150mm / -
	Square pipe	150mm / 75mm
	Round bar	Ø80mm / Ø75mm
Weight	47kg	
Dimensions	(L)975x(W)415x(H)415mm	
Motor	Condenser 100V (Voltage made to order) 200W 50/60Hz	
Standard accessories	14 TPI HSS blade (1 pce)	

Band Saw 125

~ Ø130mm

Chain vice



- Proud of high speed and precision cut.
- Easy to replace saw blade from the front.
- Single action saw blade tension system.
- Contour function makes it possible to be widely used.
- Frame falling down protection system assures safe work.
- Equipped with overload protection device.

Standard saw blade

Item	14 TPI HSS blade
Code No.	88915

Item	Band Saw 125	
Code No.	BS125	
Angle	90°	
Cutting Capacity	Steel pipe	Ø130mm
	H steel	100mmx100mm
	Square pipe	100mm
	Round bar	Ø60mm
Weight	30kg	
Dimensions	(L)740x(W)390x(H)330mm	
Motor	Condenser 100V (Voltage made to order) 200W 50/60Hz	
Standard accessories	14 TPI HSS blade (1 pce)	

Band Saw 12F

~ Ø120mm

Flat vice



- Proud of high speed and precision cut.
- Easy to replace saw blade from the front.
- Single action saw blade tension system.
- Contour function makes it possible to be widely used.
- Quick clamp system helps to set pipe quickly.
- Frame falling down protection system assures safe work.
- Equipped with overload protection device.

Standard saw blade

Item	14 TPI HSS blade
Code No.	88915

Item	Band Saw 12F	
Code No.	BS12F	
Angle	90°	45°
Cutting Capacity	Steel pipe	Ø120mm / Ø50mm
	H steel	100mmx100mm / -
	Square pipe	100mm / 50mm
	Round bar	Ø60mm / Ø50mm
Weight	32kg	
Dimensions	(L)740x(W)390x(H)330mm	
Motor	Condenser 100V (Voltage made to order) 200W 50/60Hz	
Standard accessories	14 TPI HSS blade (1 pce)	

Band Saw 222

PAT.

~ Ø220mm

Chain vice



- Small style, light weight and castors makes transportation easily.
- Guide arm allows for right angle cut.
- Simple to replace saw blade with New Tension Handle.
- Frame falling down protection system assures safe work. Equipped with overload protection device.

Standard saw blade	
Item	14 TPI HSS blade
Code No.	70446

Item	Band Saw 222	
Code No.	BS222	
Angle	90°	
Cutting Capacity	Steel pipe	Ø220mm
	H steel	200mmx150mm
	Square pipe	170mm
	Round bar	Ø100mm
Weight	53kg	
Dimensions	(L)1050x(W)360x(H)500mm	
Motor	Condenser 100V (Voltage made to order) 250W 50/60Hz	
Standard accessories	14 TPI HSS blade (1 pce)	

Band Saw 22F

PAT.

~ Ø220mm

Flat vice



- Small style, light weight and castors makes transportation easily.
- Guide arm allows for right angle cutting.
- Simple to replace saw blade with New Tension Handle.
- Frame falling down protection system assures safe work.
- Quick clamp system helps to set pipe quickly.

Standard saw blade	
Item	14 TPI HSS blade
Code No.	70446

Item	Band Saw 22F	
Code No.	BS222	
Angle	90°	45°
Cutting Capacity	Steel pipe	Ø220mm
	H steel	200mmx150mm
	Square pipe	170mm
	Round bar	Ø100mm
Weight	62kg	
Dimensions	(L)1060x(W)360x(H)500mm	
Motor	Condenser 100V (Voltage made to order) 250W 50/60Hz	
Standard accessories	14 TPI HSS blade (1 pce)	

Band Saw 32F

~ Ø320mm

Flat vice

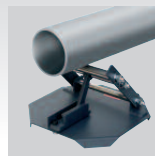


- 100V, potable design, dry type machine ideals for active pipe work.
- Possible to cut up to 300A even with compact size.
- Oil dumper system makes it possible to cut at right angle of large diameter pipe.
- Quick clamp system helps to set pipe quickly.

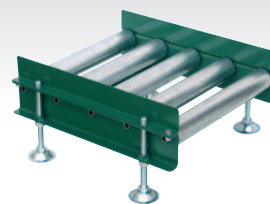
Standard saw blade	
Item	10 TPI HSS blade
Code No.	BS905

Item	Band Saw 32F	
Code No.	BS324	
Angle	90°	45°
Cutting Capacity	Steel pipe	Ø320mm
	H steel	300mmx300mm
	Square pipe	300mm
	Round bar	Ø150mm
Weight	114kg	
Dimensions	(L)1530x(W)620x(H)640mm	
Motor	Condenser 100V (Voltage made to order) 300W 50/60Hz	
Standard accessories	10 TPI HSS blade (1 pce)	

Pipe support for Band Saw



Item	Pipe support	
Code No.	BS620	
Height	Max	165mm
	Min	105mm
Suitable Models	125, 12F, Beaver 6, Beaver 6F, 222, 22F	



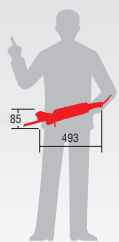
Item	Pipe support for 32F	
Code No.	BS825	
Height	Max	295mm
	Min	105mm
Suitable Models	Band Saw 32F	

Pipe Saw 165S

PAT.

1/2 ~ 6"

(*~8")



1 Electric variable speed switch

- Dial type, variable speed controller for a stroke of 850 ~ 2300/minute.
- Perfect for cutting steel pipe.



Item	Pipe Saw 165S
Code No.	PS165S
Cutting Capacity	~ 165mm (*220mm)
Motor	100V (Voltage made to order) 1050W 50/60Hz
Power transmission	Direct connection to motor
Stroke length	26mm
Weight	5.3kg
Dimensions	(L)493x(W)90x(H)85mm
Standard accessories	Carrying case, Chain vice, 140x8TPI, 200x8TPI, 290x6/8TPI (1 pce each)

- For cutting existing facilities such as steel pipe, stainless steel pipe, plastic pipe etc.
- Ideal for working at tight spaces like ceiling.
- Steel pipe of 165mm is cut at extremely high speed.
- Saw is fixed firmly to pipe during operation, preserving blade for long life.
- Light weight and small design make it active for any work sites.
- Double insulated motor and overload protection system assure safe work.

Chain vice 200

Optional accessories

- For cutting 220mm.

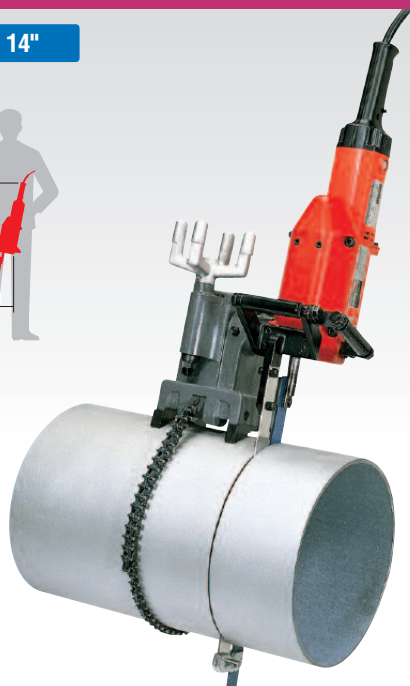
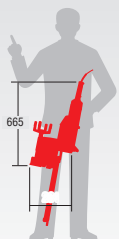
Item	Chain vice 200
Code No.	PS022



Pipe Saw 380S

PAT.

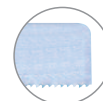
2 ~ 14"



Item	Pipe Saw 380S (HSS saw blade)	Pipe Saw 380S (Grit saw blade)
Code No.	PS380S	PS381
Cutting Capacity	50 ~ 380mm	
Motor	100V (Voltage made to order) 1050W 50/60Hz	
Power transmission	Direct connection to motor	
Stroke length	57mm	
Weight	18kg	
Dimensions	(L)665x(W)301x(H)261mm	
Standard accessories	1HSS 380, 490mm	Grit saw 380, 490mm
Guide plate	220mm, 320mm (each for one)	220mm, 320mm (each for one)

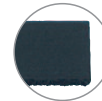
HSS saw blade

- For cutting gas pipe of ductile cast iron, steel pipe, plastic.



Grit saw blade

- For cutting water pipe of mortar lining cast iron.



Angle vice set

(for plastic pipe) Optional accessories

- Vice set (optional accessory), for cutting plastic pipe at an angle of 0 ~ 30°, up to 320mm.



Item	Angle vice set (for plastic pipe)
Code No.	PS337

Vice set up attachment

(for vertical pipe) Optional accessories

- Vice set up attachment (optional accessory) for cutting vertical pipe.



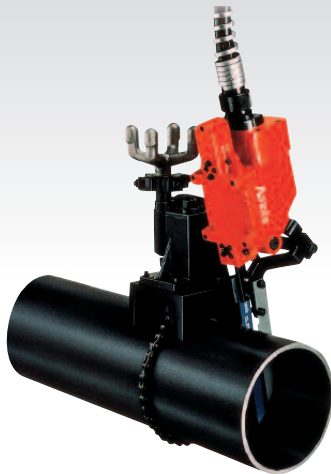
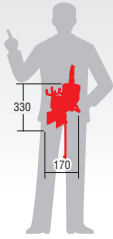
Item	Vice set up attachment
Code No.	PS350

- Cut existing facilities such as ductile cast iron pipe, steel pipe, mortar lining cast iron pipe, stainless steel pipe etc.
- Light weight and small design with only 18kg, suit for even high work place.
- Built-in speed controller enables to cut stainless steel and plastic pipe.
- Asada's unique angle-parking protection system allows for precision cut.
- Double insulated motor and overload protection system assure safe work.

Pipe Saw 300

PAT.

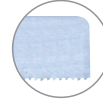
2 ~ 12"



- For cutting ductile cast iron pipe, steel pipe etc.
- Ideal for dismantling and assembling underground gas pipe.
- Flexible shaft system eliminates the problem of sparks and makes it possible to cut pipe with water inside.
- Equipped with low noise condenser motor allows you to work at night.

HSS saw blade

- For cutting gas pipe of ductile cast iron, steel pipe, plastic etc.

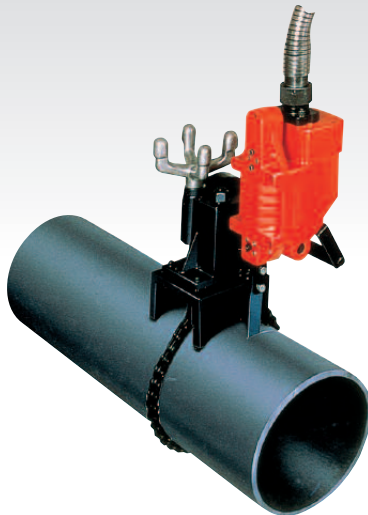
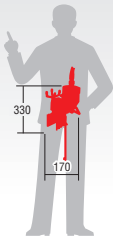


Item	Pipe Saw 300
Code No.	58003
Cutting Capacity	50 ~ 320mm
Motor	Condenser 100V (Voltage made to order) 750W 50/60Hz
Power transmission	Flexible shaft system
Stroke length	57mm
Weight	57kg
Dimensions	(L)330x(W)115x(H)170mm
Standard accessories	HSS 320, 380, 490mm (1 pce each)
Guide plate	260, 320, 380mm

Pipe Saw 350

PAT.

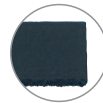
2 ~ 14"



- Ideal for cutting water pipe of mortar lining cast iron.
- Flexible shaft system eliminates the problem of sparks and makes it possible to cut pipe with water inside.
- Equipped with low noise condenser motor allows you to work at night.

Grit saw blade

- For cutting water pipe of mortar lining cast iron.

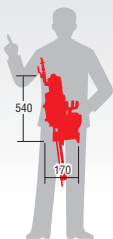


Item	Pipe Saw 350
Code No.	58013
Cutting Capacity	50 ~ 380mm
Motor	Condenser 100V (Voltage made to order) 750W 50/60Hz
Power transmission	Flexible shaft system
Stroke length	57mm
Weight	57kg
Dimensions	(L)330x(W)115x(H)170mm
Standard accessories	Grit saw 320, 380, 430, 480, 530mm (1 pce each)
Guide plate	260, 320, 380mm

Pipe Saw 350A

PAT.

2 ~ 14"



- For cutting gas pipe of ductile cast iron, steel pipe.
- Ideal for removing gas and water pipe at factory.
- No worries about sparks with air motor equipped to assure safe work.
- Air hose can be extended to work at a far distance.

Item	Pipe Saw 350A
Code No.	58021
Cutting Capacity	50 ~ 380mm
Motor	Air motor 1120W (*Operated by compressor over 15HP)
Power transmission	Pneumatic motor
Stroke length	57mm
Weight	25kg
Dimensions	(L)540x(W)115x(H)170mm
Standard accessories	HSS 320, 380, 490, 530mm (1 pce each)
Guide plate	260, 320, 380mm

Main feature of Beaver Saw series

Easy, fast and straight pipe cutting despite of Small body.

Purpose

For cutting steel pipe, lining pipe, cast iron pipe, stainless steel pipe, copper pipe, aluminum pipe, spiral pipe and various plastic pipes.

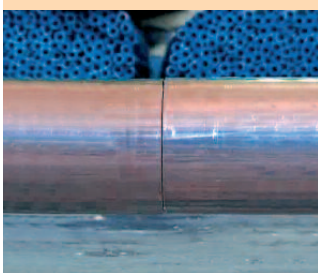


High speed cut of large diameter pipes



- No need to move heavy pipes because the machine takes hold of pipes and presses itself during cut for easy process.

Straight cut



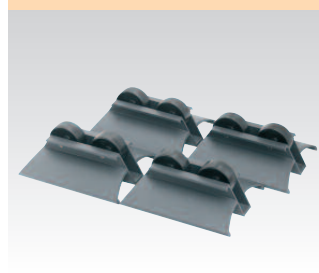
- Beaver Saw fits firmly on the pipe and the saw blade is always in the correct position. It ensures the cut edges straight to be ready for welding.

Versatile



- Very wide cutting range.
- All commonly used pipe materials can be cut.

Pipe support



- Long and large diameter pipes are easily set to cut.

Super small body and lightweight



- Convenient to carry to work site and take measurements of pipe.

Safe working environment



- Differ from other machines Beaver Saw operates with minimum of sparks to assure your safety.

Easy to use even in confined spaces



- Can be used at tight place.

Handy and quick



- Simple to cut small diameter pipes in exact length on a bench. Saw blade can be changed easily and quickly.

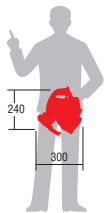
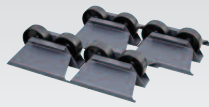
Beaver Saw 170 Eco

PAT.

Ø15 ~ 170mm



With carrying bag as standard accessories.



- Strong clamp allows for exactly straight cut.
- Small size and lightweight, only 5.8kg suits for carrying to work site.
- High speed cut of pipes with diameter up to 170mm.

Item	Beaver Saw 170 Eco
Code No.	EX1702
Cutting capacity	Ø15mm ~ 170mm
Max, pipe wall thickness	Steel: 6mm, Stainless steel: 2mm, plastics:14mm
Blade cutting width max	2mm
Motor	220-230V 1010W 50/60Hz
Intermittent operation	25%
Blade speed	4000rpm (no load)
Weight	5.8kg
Dimensions	(L)300 x (W)220 x (H)240mm
Standard accessories	Carrying case, TCT blade B140, Cutting supports x4, Hex socket key 2mm, 5mm, safety glasses, operating instructions

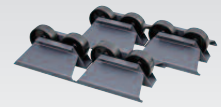
Beaver Saw 170E Eco

PAT.

Ø15 ~ 170mm



With carrying bag as standard accessories.



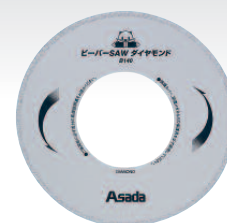
Speed control dial



- Strong clamp allows for exactly straight cut.
- Small size and lightweight, only 5.8kg suits for carrying to work site.
- High speed cut of pipes with diameter up to 170mm.

Item	Beaver Saw 170E Eco
Code No.	EX1702E
Cutting capacity	Ø15mm ~ 170mm
Max, pipe wall thickness	Steel: 8mm, Stainless steel: 6mm, plastics:14mm
Blade cutting width max	2mm
Motor	220-230V 1200W 50/60Hz
Intermittent operation	25%
Blade speed	1600 ~ 3500rpm (no load)
Weight	5.8kg
Dimensions	(L)300 x (W)220 x (H)240mm
Standard accessories	Carrying case, TCT blade B140, Cutting supports x4, Hex socket key 2mm, 5mm, safety glasses, operating instructions

Beaver Saw Blades



- Special designed only for Beaver Saw, keeping sparks and chips minimum.
- Remain no burns and finish with smooth cutting surface.
- The best for sharp cut.

Items	TCT Saw Blade B140	TCT Saw Blade B150	Cermet Saw Blade B140	Diamond Disk B140
Code No.	EX10486	EX10488	EX10496	EX10491
Cutter size	Outer diameter	140mm	140mm	140mm
	Inter diameter	62mm	62mm	62mm
Function	Steel pipe, lining steel pipe, copper pipe, aluminum	Plastic pipe Note: unsuitable for Beaver saw 220, not	Ideal for cutting long life pipe and stainless steel	Cast iron pipe

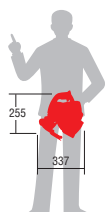
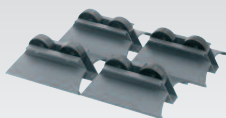
Beaver Saw 220A

PAT.

Ø20 ~ 220mm **CE**



With carrying bag as standard accessories.



- Strong clamp allows for exactly straight cut.
- Small size and lightweight, only 8.9kg suits for carrying to work site.
- High speed cut of pipes with diameter up to 220mm.

Item	Beaver Saw 220A
Code No.	EX220A
Cutting capacity	Ø20mm ~ 220mm
Max, pipe wall thickness	Steel: 8mm, Stainless steel: 6mm, plastics:13mm
Blade cutting width max	2mm
Motor	220-230V 1600W 50/60Hz
Intermittent operation	25%
Blade speed	4000rpm (no load)
Weight	8.9kg
Dimensions	(L)337 x (W)225 x (H)255mm
Standard accessories	Carrying case, TCT blade B140, Cutting supports x4, Hex socket key 2mm, 5mm, safety glasses, operating instructions

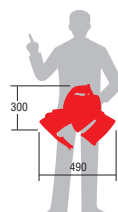
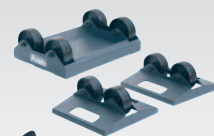
Beaver Saw 360

PAT.

Ø75 ~ 360mm **CE**



With carrying bag as standard accessories.



- Strong clamp allows for exactly straight cut.
- Small size and lightweight, only 14.3kg suits for carrying to work site.
- High speed cut of pipes with diameter up to 360mm.

Item	Beaver Saw 360
Code No.	EX360
Cutting capacity	Ø75mm ~ 360mm
Max, pipe wall thickness	Steel: 8mm, Stainless steel: 6mm, plastics:20mm
Blade cutting width max	2mm
Motor	220-230V 1600W 50/60Hz
Intermittent operation	25%
Blade speed	4000rpm (no load)
Weight	14.3kg
Dimensions	(L)490 x (W)220 x (H)300mm
Standard accessories	Carrying case, TCT blade B140, Cutting supports x3, Hex socket key 2mm, 5mm, safety glasses, operating instructions

Cut Aid



- Can cut Full Thread with Beaver Saw 170Eco/ 170E Eco and 220A.
- Leave cutting edge strait to be ready for immediate use.

Item	Cut Aid
Code No.	EX018
Capacity	5/16", 3/8", 1/2" / 6, 8, 10, 12mm

Saw blade for Band Saw

Band Saw Blades of Asada are designed for Asada Band Saw with suitable type of tooth set and TPI.

Realized blades for " Straight Cut ", " High Speed Cut " and " Long Life ".

Ideal for cutting steel pipe (SK Saw Blade)

Main feature of SK saw blade

- Ideal for cutting steel pipe, geometrical steel.
- Multipurpose saw blade economizes on cost.

Suit for normal metallic pipes and lining steel pipes such as

- Round pipe, square pipe, angle pipe, H pipe, round bar etc.

HSS Saw blade suits for cutting stainless steel pipes

Main feature of HSS saw blade

- Ideal for cutting stainless steel pipe, geometrical stainless steel.
- The tip of HSS Saw blade is made of cobalt.
- Preminent at high speed and high pressure cut, hardly worn out for long life.

Suit for stainless steel materials such as

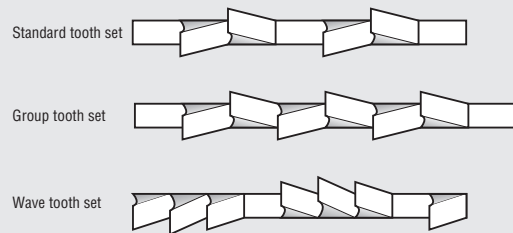
- Round pipe, square pipe, angle pipe, H pipe, round bar etc.

Some questions and answers about Asada Band Saw

Q. What is " Tooth Set " ?

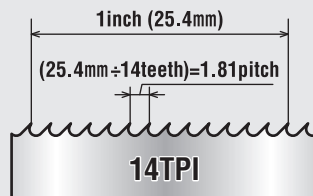
A. " Tooth Set " is the structure of Saw Blade Teeth which alternately protrude to the left and right beyond the Saw Blade body in order to reduce friction restriction between saw blade and cutting materials to a minimum, it also helps to take chips and dust out easily not to clogged.

Band Saw Blades of Asada are adopted the most suitable type of tooth set for Asada Band Saw, " Standard tooth set ".



Q. What is TPI ?



A. TPI is the number of teeth per inch. (25.4mm)



Q. Relation between cutting materials and pitch ?

A. For example of 14-TPI saw blade $25.4\text{mm} \div 14\text{tips} = 1.8\text{mm}$ (pitch) In this case, if one uses saw blade of pitch under 1.8mm, cutting chips may attach to the space between tips that may cause tips broken.

Saw Blades for Band Saw 125 / 125F

Item	Code No.	Master pack	Applicable Model	Recommended Cutting Material			
				Water Pipe (size)	Stainless Pipe (Thickness)	Steel (Thickness)	Asbestos Pipe
	8 TPI	70078	10	-	-	10mm ~	-
	10 TPI	88916		1" ~	-	8mm ~	-
	14 TPI	88887		1/2" ~	-	6mm ~	-
	18 TPI	70077		1/8" ~	-	4mm ~	-
	24 TPI	88888		1/8" ~	-	~ 4mm	-
	8 TPI	70132	5	-	7mm ~	10mm ~	-
	10 TPI	70075		1" ~	7mm ~	8mm ~	-
	14 TPI	88915		1/2" ~	4mm ~	6mm ~	-
	18 TPI	70603		1/2" ~	2mm ~	4mm ~	-
	24 TPI	70413		1/8" ~	~ 2mm	~ 4mm	-
	32 TPI	70560		1" ~	~ 1.2mm	-	-
GRIT SAW	70141	5	-	-	-	●	

Band Saw Blades



Saw Blades for Band Saw Beaver 6 / 6F

	Item	Code No.	Master pack	Applicable Model	Recommended Cutting Material				
					Water Pipe (size)	Stainless Pipe (Thickness)	Steel (Thickness)	Asbestos Pipe	
	ALLOY	8 TPI	70120	10	Band Saw Beaver 6 Band Saw Beaver 6F	-	-	10mm ~	-
		10 TPI	70121			1" ~	-	8mm ~	-
		14 TPI	70110			1/2" ~	-	6mm ~	-
		18 TPI	70111			1/8" ~	-	4mm ~	-
		24 TPI	70112			1/8" ~	-	~ 4mm	-
	Bi-metal (HSS)	8 TPI	70133	5	Band Saw 185 Band Saw 18F Band Saw 170 Band Saw 170A	-	7mm ~	10mm ~	-
		10 TPI	70113			1" ~	7mm ~	8mm ~	-
		14 TPI	70114			1/2" ~	4mm ~	6mm ~	-
		18 TPI	70602			1/2" ~	2mm ~	4mm ~	-
		24 TPI	70257			1/8" ~	~ 2mm	~ 4mm	-
	GRIT SAW	70142	5		-	-	-	●	

Saw Blades for Band Saw 222 / 22F

	Item	Code No.	Master pack	Applicable Model	Recommended Cutting Material				
					Water Pipe (size)	Stainless Pipe (Thickness)	Steel (Thickness)	Asbestos Pipe	
	ALLOY	8 TPI	70439	10	Band Saw 222 Band Saw 22F	-	-	10mm ~	-
		10 TPI	70440			1" ~	-	8mm ~	-
		14 TPI	70441			1/2" ~	-	6mm ~	-
		18 TPI	70442			1/8" ~	-	4mm ~	-
		24 TPI	70443			1/8" ~	-	~ 4mm	-
	Bi-metal (HSS)	8 TPI	70444	5	Band Saw 222 Band Saw 22F	-	7mm ~	10mm ~	-
		10 TPI	70445			1" ~	7mm ~	8mm ~	-
		14 TPI	70446			1/2" ~	4mm ~	6mm ~	-
		18 TPI	70493			1/2" ~	2mm ~	4mm ~	-
		24 TPI	70447			1/8" ~	~ 2mm	~ 4mm	-






Saw Blades for Band Saw 32F

	Item	Code No.	Master pack	Applicable Model	Recommended Cutting Material				
					Water Pipe (size)	Stainless Pipe (Thickness)	Steel (Thickness)	Asbestos Pipe	
	Bi-metal (HSS)	4/6 TPI	BS912	3	Band Saw 32F	-	13mm ~	13mm ~	-
		6/10 TPI	BS911			-	~ 13mm	~ 13mm	●
		10 TPI	BS905			~ 12"	~ 7mm	-	●
		14 TPI	BS946			~ 2"	~ 4mm	~ 4mm	-

Saw Blades for Band Saw 7724




	Item	Code No.	Master pack	Applicable Model	Recommended Cutting Material				
					Water Pipe (size)	Stainless Pipe (Thickness)	Steel (Thickness)	Cable	
	Bi-metal (HSS)	10 TPI	P45273	5	Band Saw 7724	-	7mm ~	8mm ~	-
		14 TPI	P45275J			1/2" ~	4mm ~	6mm ~	-
		18 TPI	P45277			1/8" ~	2mm ~	4mm ~	●
		24 TPI	P45279			~ 1/8"	~ 2mm	~ 4mm	●

Saw Blades for Pipe Saw 150 / 165S

Item	Thickness	Code No.	Master pack	Capacity	Recommended Cutting Material (Thickness)
 HSS Blade	140x8TPI	61210	5	~ 2"	Steel Pipe, Angle Steel
	200x8TPI	61305	5	~ 4"	Steel Pipe, Angle Steel
	200x6/8TPI	61327	5	~ 4"	Steel Pipe, Angle Steel
	290x6/8TPI	61337	5	~ 6"	Steel Pipe, Angle Steel
	320x6/8TPI	61471	5	~ 8"	Steel Pipe, Angle Steel
 Super HSS Blade	140x14TPI	61369	5	~ 2"	Stainless Pipe Thick Wall
	140x6TPI	61370	5	~ 2"	Stainless Pipe Thick Wall
	200x8TPI	61371	5	~ 4"	Stainless Pipe Thick Wall
	200x6TPI	61372	5	~ 4"	Stainless Pipe Thick Wall
	270x6TPI	61458	5	~ 6"	Stainless Pipe Thick Wall
	270x8TPI	61459	5	~ 6"	Stainless Pipe Thick Wall
 Super HSS Blade	100x18TPI	61363	10	~ 1"	Steel Pipe, Angle Steel (3-5mm)
	150x10TPI	61358	10	~ 2"	Steel Pipe, Angle Steel (3-12mm)
	150x14TPI	61359	10	~ 2"	Steel Pipe, Angle Steel (3-8mm)
	150x18TPI	61360	10	~ 2"	Steel Pipe, Angle Steel (3-5mm)
	200x14TPI	61361	10	~ 4"	Steel Pipe, Angle Steel (3-8mm)
	200x18TPI	61362	10	~ 4"	Steel Pipe, Angle Steel (3-5mm)
	250x14TPI	61460	10	~ 5"	Steel Pipe, Angle Steel (3-8mm)
	250x18TPI	61461	10	~ 5"	Steel Pipe, Angle Steel (3-5mm)
	150x10TPI	P12492	5	~ 2"	Steel Pipe, Nonferrous Materials (5-12mm)
	150x10/14TPI	P12494	5	~ 2"	Steel Pipe, Nonferrous Materials (4-10mm)
	150x14TPI	P12493	5	~ 2"	Steel Pipe, Nonferrous Materials (3-8mm)
	150x18TPI	P12495	5	~ 2"	Steel Pipe, Nonferrous Materials (3-5mm)
	150x24TPI	P12496	5	~ 2"	Steel Pipe (~3mm)
	225x10/14TPI	P12498	5	~ 4"	Metals (4-10mm)
225x18TPI	P12497	5	~ 4"	Steel Pipe, Nonferrous Materials (3-5mm)	
300x10/14TPI	P12499	5	~ 4"	Metals (4-10mm)	
 Bi-Metal Blade					
 Bi-Metal Blade					

*Bi-Metals fit Makita, Hitachi, Rockwell, Bosch, Flex, B&D Reciprocating Saw

Saw Blades for Pipe Saw 300 / 350 / 350M / 380S / 350A









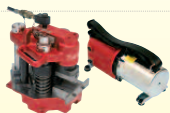

 HSS Blade					
 HSS Blade (for stainless pipe)					
 Grit Saw					

Item	Thickness	Nominal Size	Code No.	Master pack	Capacity	Recommended Cutting Material
HSS Blade	320x8TPI	150A	70310	5	~ 6"	Steel Pipe, Cast Iron Pipe
	380x8TPI	200A	70311	5	~ 8"	Steel Pipe, Cast Iron Pipe
	440x8TPI	250A	70278	5	~ 10"	Steel Pipe, Cast Iron Pipe
	490x8TPI	300A	70279	5	~ 12"	Steel Pipe, Cast Iron Pipe
	530x8TPI	350A	70295	5	~ 14"	Steel Pipe, Cast Iron Pipe
	440x8TPI	250A	70305	5	~ 10"	Stainless Pipe
	490x8TPI	300A	70304	5	~ 12"	Stainless Pipe
Grit Saw	320mm	150A	70288	5	~ 6"	Mortared Cast Iron Pipe
	380mm	200A	70289	5	~ 8"	Mortared Cast Iron Pipe
	430mm	250A	70260	5	~ 10"	Mortared Cast Iron Pipe
	480mm	300A	70261	5	~ 12"	Mortared Cast Iron Pipe
	530mm	350A	70262	5	~ 14"	Mortared Cast Iron Pipe

WELDING MACHINES



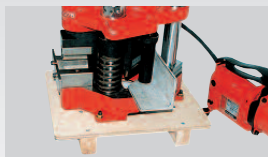
For Cutting, Welding and Bending of Steel pipe or sheet and Angle steel

Capacity	Plasma Cutting Machine	Welding Machine	Angle Machine
	 Cut Master 102		
	 Cut Master 82	 Cutting Machine 30PC	
	 Cut Master 52	 Cutting Machine 30P	 TIG series
	 Cut Master 39	 Cutting Machine 15PC	 Angle Machine 75
		 ARC series	

Angle Machine 75

PAT.P

~75 x 75 x 6mm

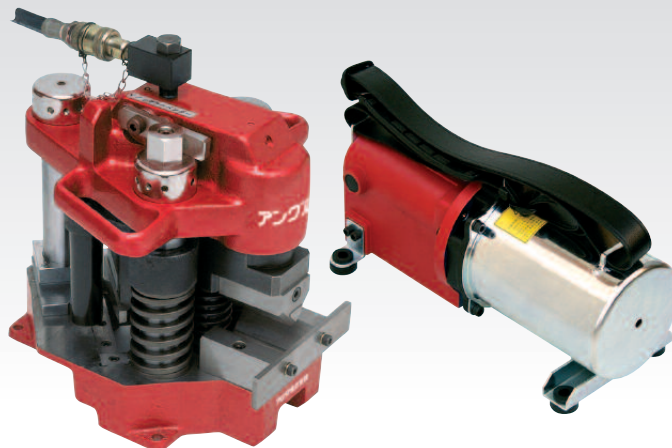


90° V Notch



Angle Bender

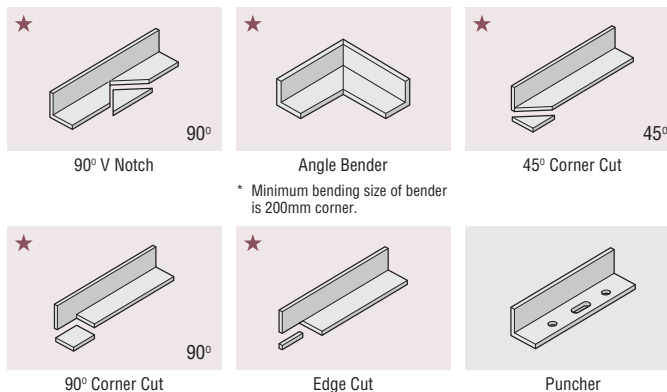
Processing of 5 types of angle without changing mold.



Purpose Angle processing for making platform of air-conditioning works, piping, electrical works and frame works of sign board, metal mold making.

- Compact and light weight. Processing stainless angle steel 75x75x6mm is the best in its class.
- One mold processes angle in 5 different patterns without changing mold.
- Main Unit and Hydraulic Pump Unit are separated for easy transport to working site.
- Double cylinder system is used.

★ Can be processed by the standard accessory



* Minimum bending size of bender is 200mm corner.

Specification of Main Unit			
Item	Angle Machine 75 (Hand Switch)	Angle Machine 75F (Foot Switch)	Angle Machine 75 (Main Unit)
Code No.	NZ750	NZ751	NZ761
Maximum bending capacity	SS400 : 75 x 75 x 6mm SUS304 : 75 x 75 x 6mm		
Output	17t (Bender) · 23t (V Notch)		
Stroke	30mm		
Weight of Main Unit	50kg		
Dimensions	(L)316 x (W)220 x (H)295mm		
Standard Accessories Unit	Main Unit (V notch, Bender one unit type),	Main Unit (V notch, Bender one unit type)	Hydraulic Pump

Specification of Hydraulic Pump Unit		
Item	FL-FLF (Standard Accessory)	High Speed Hydraulic Pump Unit (Optional accessory)
Maximum working pressure	68.7Mpa (700kgf/cm ²)	68.7Mpa (700kgf/cm ²)
Volume of discharge	0.2L/minute	0.35L/minute
Effective oil volume	0.8L	2L
Motor	100V 350W (50/60Hz) (Voltage made to order)	100V 450W (50/60Hz) (Voltage made to order)
Weight	7.5kg	17.2kg
Dimensions	(L)322 x (W)120 x (H)145mm	(L)212 x (W)211 x (H)340mm

Optional Accessories for Angle Machine for Angle Machine 75		
Item	Code No.	Note
High Speed Hydraulic Pump Unit	NZ45SV	Foot Switch
Hydraulic Pump Unit	NZ35FL	Hand Switch
	NZ35FLF	Foot Switch
Puncher P-75	NZ775	Holder Upper . Lower only
	11	Ø11mm
Punch & Dies	11 elongated hole	NZ527
	13	NZ528
	14	NZ529
	14 elongated hole	NZ530
	15	NZ531
18	NZ532	

Air Plasma Cutting Machine Cut Master 39

Compact and light weight model can cut up to 15mm.

Purpose

- This unit produces quality cuts from gauge all the way up to maximum cut of 15mm.



Feature

- New design, Light weight and Portable.
- High power to cuts from gauge all the way up to Maximum cut of 15mm.
- Torch quick disconnect and automatic voltage selection.
- Long warranty (4 years) on the machine.

Item	Cut Master 39	
Code No.	PZ241	
Cutting Capacity	15mm	
Power source	Output	20 ~ 30A
	Frequency	50/60Hz
	Input	Three phase 187V ~ 250V 18A (Voltage made to order)
Duty cycle	35%	
Weight	18.5kg	
Dimensions	(L)580 x (W)315 x (H)392mm	
Standard accessories	Torch Cable (with 75° Torch 6.1m), Electrode, Gas Distributor, Chip (30Ax2), Shield Cap, Work Cable (with Grip, 5.6m)	

* Cutting ability is at good condition of input power.

Air Plasma Cutting Machine Cut Master 52

Compact and light weight model can cut up to 30mm.

Purpose

- This unit cuts through mild, stainless, or aluminum up to 30mm thick.



Feature

- New design, Light weight and Portable.
- Cuts through mild, stainless, or aluminum up to 30mm thick.
- Torch quick disconnect and automatic voltage selection.
- Long warranty (4 years) on the machine.

Item	Cut Master 52	
Code No.	PZ261	
Cutting Capacity	30mm	
Power source	Output	20 ~ 60A
	Frequency	50/60Hz
	Input	Three phase 187V ~ 250V 18A (Voltage made to order)
Duty cycle	40%	
Weight	19.5Kg	
Dimensions	(L)615 x (W)315 x (H)390mm	
Standard accessories	Torch Cable (with 75° Torch 6.1m), Electrode, Gas Distributor, Chip (60Ax2), Shield Cap, Work Cable(with Grip, 5.6m)	

* Cutting ability is at good condition of input power.

Air Plasma Cutting Machine Cut Master 82

Compact and light weight model can cut up to 40mm.

Purpose

- This unit produces quality cuts from gauge all the way up to maximum cut of 40mm.



Feature

- New design, Light weight and Portable.
- High power to cuts from gauge all the way up to Maximum cut of 40mm.
- Torch quick disconnect and automatic voltage selection.
- Long warranty (4 years) on the machine.

Item	Cut Master 82	
Code No.	PZ282	
Cutting Capacity	40mm	
Power source	Output	20 ~ 30A
	Frequency	50/60Hz
	Input	Three phase 187V ~ 250V 35A (Voltage made to order)
Duty cycle	40%	
Weight	21.0Kg	
Dimensions	(L)615 x (W)315 x (H)390mm	
Standard accessories	Torch Cable (with 75° Torch 6.1m), Electrode, Gas Distributor, Chip (80Ax2), Shield Cap, Work Cable(with Grip, 5.6m)	

* Cutting ability is at good condition of input power.

Air Plasma Cutting Machine Cut Master 102

Compact and light weight model can cut up to 45mm.

Purpose

- This unit cuts through mild, stainless, or aluminum up to 45mm thick.



Feature

- New design, Light weight and Portable.
- High power to cuts from gauge all the way up to Maximum cut of 45mm.
- Torch quick disconnect and automatic voltage selection.
- Long warranty (4 years) on the machine.

Item	Cut Master 102	
Code No.	PZ2102	
Cutting Capacity	45mm	
Power source	Output	20 ~ 100A
	Frequency	50/60Hz
	Input	Three phase 187V ~ 250V 51A (Voltage made to order)
Duty cycle	50%	
Weight	28.8Kg	
Dimensions	(L)770 x (W)320 x (H)395mm	
Standard accessories	Torch Cable (with 75° Torch 6.1m), Electrode, Gas Distributor, Chip (100Ax2), Shield Cap, Work Cable(with Grip, 5.6m)	

* Cutting ability is at good condition of input power.

Optional Accessories for Air Plasma Cutting Machine

Item	Code No.	Cut Master			
		39	52	82	102
Torch Cable (with 75° Torch 6.1m)	PZ75204	●	●	●	
	PZ75206				●
Electrode	PZ98215	●	●	●	●
Chip 30A	PZ98206	●	●	●	●

● Standard Accessories

● Optional Accessories

Item	Code No.	Cut Master			
		39	52	82	102
Chip (untouchable type)	60A PZ98210		●	●	●
	80A PZ98211			●	●
	100A PZ98212				●
Gas Distributor	PZ98213	●	●	●	●
Shield Cap	PZ98218	●	●	●	●

Air Plasma Cutting Machine 15PC Eco

Compact and light weight model can cut up to 5mm (stainless).

Purpose

- This unit produces quality cuts up to maximum cut of 5mm (stainless).



Feature

- New design, Light weight.
- This unit comes standard with a built-in air compressor.
- High power to cuts up to Maximum cut of 5mm (stainless).
- Advanced Inverter Technology secures the high reliability of cutting performances.

Item		Air Plasma Cutting Machine 15PC Eco
Code No.		PC015C
Cutting Capacity		4mm
Power source	Output	15A
	Frequency	50/60Hz
	Input	Single 100V 15A (Voltage made to order)
Duty cycle		90%
Weight		13.5Kg
Dimensions		(L)463 x (W)168 x (H)252mm
Standard accessories		Torch Cable (with 70° Torch 6.1m), Electrode, Gas Distributor, Chip (30Ax2), Shield Cap, Work Cable(with Grip, 4.5m)

* Cutting ability is at good condition of input power.

Air Plasma Cutting Machine 35P

Compact and light weight model can cut up to 10mm (stainless).

Purpose

- This unit cuts through stainless pipe up to 10mm thick.



Feature

- New design, Compact & Light for easy transportation.
- High power to cuts from gauge all the way up to Maximum cut of 10mm (stainless).
- Key connector of output terminal makes easy connection to Torch & Cable.
- Advanced Inverter Technology secures the high reliability of cutting performances.

Item		Air Plasma Cutting Machine 35P
Code No.		PC035
Cutting Capacity		10mm
Power source	Output	15~35A
	Frequency	50/60Hz
	Input	Single phase 187V ~ 250V 18A (Voltage made to order)
Duty cycle		60%
Weight		11.5Kg
Dimensions		(L)510 x (W)145 x (H)253mm
Standard accessories		Torch Cable (with 80° Torch 5.6m), Electrode, Gas Distributor, Chip (30Ax2), Shield Cap, Work Cable(with Grip, 2.8m)

* Cutting ability is at good condition of input power.

Air Plasma Cutting Machine 35PC

Compact and light weight model can cut up to 10mm (stainless).

Purpose

- This unit cuts through stainless pipe up to 10mm thick (stainless).



Feature

- New design, Compressor built in.
- Compact & Light for easy transportation.
- Key connector of output terminal makes easy connection to Torch & Cable.
- Advanced Inverter Technology secures the high reliability of cutting performances.

Item		Air Plasma Cutting Machine 35PC
Code No.		PC035C
Cutting Capacity		10mm
Power source	Output	15~35A
	Frequency	50/60Hz
	Input	Single phase 187V ~ 250V 35A (Voltage made to order)
Duty cycle		50%
Weight		23.0Kg
Dimensions		(L)472 x (W)269 x (H)343mm
Standard accessories		Torch Cable (with 80° Torch 5.6m), Electrode, Gas Distributor, Chip (30Ax2), Shield Cap, Work Cable(with Grip, 2.8m)

* Cutting ability is at good condition of input power.

Optional Accessories for Air Plasma Cutting Machine

Item	Code No.	Air Plasma Cutting Machine		
		15PC	35P	35PC
Torch Cable (with 70° Torch 6.1m)	PC702	●		
Torch Cable (with 80° Torch 5.6m)	PC706		●	●
Work Cable (with Grip, 4.5m)	PC703	●		
Work Cable (with Grip, 4.5m)	PC707		●	●
Electrode	PZ918	●		
	PC0110		●	●

Item	Code No.	Air Plasma Cutting Machine		
		15PC	35P	35PC
Gas Distributor	PZ939	●		
	PC0106		●	●
Shield Cap	PZ936	●		
	PC0116		●	●

● Standard Accessories

Oil-less Small Size Compressor FA750

Easy to carry and economic.



Purpose

· For all types of pneumatic tools.

Feature

- High power, yet compact and light weight.
- Oil-less and no maintenance required.
- Easy to set up and disconnect with one action coupler.

Item	FA750
Code No.	FA750
Air discharge	82L/min
Maximum pressure	0.78Mpa(8kgf/cm ²)
Weight	5.4kg
Dimensions	(L)320 x (W)250 x (H)180mm
Power source	Single phase 100V (Voltage made to order)
Rated output	750W

*The length of the air hose is 7.6m.

Oil-less Small Size Compressor FA125

Easy to carry and economic.



Purpose

· For all types of pneumatic tools.

Feature

- High power, yet compact and light weight.
- Oil-less and no maintenance required.
- Automatic ON/OFF with pressure switch.
- Easy to set up and disconnect with one action coupler.

Item	FA125
Code No.	FA231
Air discharge	90L/min
Maximum pressure	0.93Mpa(9.5kgf/cm ²)
Capacity of Air Tank	11.4L
Weight	11.5kg
Dimensions	(L)670 x (W)250 x (H)380mm
Power source	Single phase 100V (Voltage made to order)
Rated output	750W

*The length of the air hose is 7.6m.

Oil-less Compressor Handkon

Easy to carry and economic.



Purpose

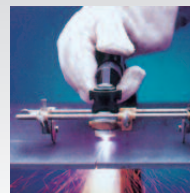
· For all types of pneumatic tools.

Feature

- Compact and light weight.
- Oil-less and no maintenance required.
- Big tank, yet compact.

Item	Handkon 3/4HP		Handkon 1.1HP	
	50Hz	60Hz	50Hz	60Hz
Code No.	PZ055	PZ056	PZ085	PZ086
Air discharge	60L/min		90L/min	
Maximum pressure	0.96Mpa(9.8gf/cm ²)		0.96Mpa(9.8gf/cm ²)	
Capacity of Air Tank	12L		12L	
Weight	20kg		20kg	
Dimensions	(L)418 x (W)495 x (H)230mm			
Power source	100V (Voltage made to order)			
Rated output	550W		825W	

Cutting Guide



Cuts straight line and circle accurately and freely.



Purpose

· Torch guide for cutting straight line and circle.

Feature

- Can be used for stainless steel panel.
- Interchangeable to other manufacturers cutting machine by changing the adapter for torch.

Item	Cutting Guide		
Code No	PZ902	PZ984	PZ949
Totch Diameter (OD)	Ø27mm	Ø29.5mm	Ø30mm

Welding Machine ARC Series



Very compact and light weight.
Suitable welding machine can be taken to the working site.

Welding Machine ARC

160S Eco

160A

Ø1.6 ~ 4.0mm

Welding Machine ARC

180S Eco

180A

Ø1.6 ~ 4.0mm

Welding Machine ARC

230S

230A

Ø1.6 ~ 5.0mm



Purpose For manual welding of ordinary soft steel, high tensile, stainless, etc.

- Compact and light weight for hand carry.
- DC inverter welding machine for high quality welding.
- Inverter control system for excellent ARC start and ARC concentration.

Item	ARC160 Eco		ARC 180S Eco		ARC 230S	
	ARC160 Body	ARC160Set	ARC180 Body	ARC180Set	ARC230Body	ARC230Set
Code No.	AW160	AW160S	AW180	AW180S	AW230	AW230S
Input current(frequency)	50/60Hz					
Power source	Single phase 200V (Voltage made to order)					
Rated Input	8.0KVA		9.5KVA		13.5KVA	
Output	30~160A		30~180A		30~230A	
Duty cycle	40%					
Weight	7.5kg		7.5 kg		12.8kg	
Dimensions(LxWxH)	315x150x205mm		315x150x205mm		410x195x235mm	
Standard Accessories	Welding Holder 160, Earth Cable 160		Welding Holder 180, Earth Cable 180		Welding Holder 230, Earth Cable 230	

Welding Holder

Optional Accessories

Item	Code No.	Length
Welding Holder forARC160	AW030	4m
Welding Holder forARC180	AW033	4m
Welding Holder forARC230	AW036	4m



Earth Cable

Optional Accessories

Item	Code No.	Length
Earth Cable for ARC160	AW031	4m
Earth Cable for ARC180	AW034	4m
Earth Cable for ARC230	AW037	4m



Welding Machine TIG Series



Very compact and light weight.

Suitable welding machine can be taken to the working site.

Welding Machine TIG
150GTS

150A
0.3 ~ 3.2mm

Welding Machine TIG
200GTS

200A
0.3 ~ 4.0mm

Welding Machine TIG
300GTS

300A
0.3 ~ 4.0mm



Purpose For TIG welding of ordinary soft steel, high tensile steel, stainless steel and also thin plate of low alloy metal, nickel alloy, titan, etc.

- Compact and light weight for hand carry.
- Equipped with high frequency start and touch start function.
- High quality welding with inverter control system

Item	150GTS		200GTS		300GTS	
	150GTS Body	150GTS Set	200GTS Body	200GTS Set	300GTS Body	300GTS Set
Code No.	TW150GP	TW150S	TW200SP	TW200S	TW300SP	TW300S
Power source	Single phase (Voltage made to order)		Single/Three phase (Voltage made to order)		Single/Three phase (Voltage made to order)	
Input current (frequency)	50/60Hz					
Output	Manual welding	~150A	10~100A (single phase) 10~135A (three phase)		10~145A (single phase) 10~200A (three phase)	
	TIG welding	~150A	10~123A (single phase) 10~200A (three phase)		10~185A (single phase) 10~300A (three phase)	
Welding capacity	Manual welding (welding rod)	Ø1.6 ~ Ø4.0mm	Ø1.6 ~ Ø3.2mm		Ø1.6 ~ Ø5.0mm	
	TIG welding (plate thickness)	0.3 ~ 3.2mm	0.3 ~ 4.0mm		0.3 ~ 4.0mm	
Duty cycle	40%					
Weight	9kg		23kg		23kg	
Dimensions(LxWxH)	328 x 174 x 215mm		425 x 225 x 320mm		425 x 225 x 320mm	
Standard Accessories	TIG Torch 15°, Grounding Cable, Gas Hose 4m, Argon Gas Regulator		TIG Torch 15°, Grounding Cable, Gas Hose 4m, Argon Gas Regulator		TIG Torch 15°, Grounding Cable, Gas Hose 4m, Argon Gas Regulator	

TIG Torch Cable		Optional Accessories	
Item	Code No.	Length	
TIG Torch 15° Cable for 150GTS	TW018	4m	
TIG Torch 30° Cable for 200/300GTS	TW034	6m	



TIG Earth Cable		Optional Accessories	
Item	Code No.	Length	
TIG Earth Cable for 150GTS	TW019	3m	
TIG Earth Cable for 200/300GTS	TW038	3m	



Welding Helmet AW20000 α



Purpose

- Protect eyes from glaring ray.

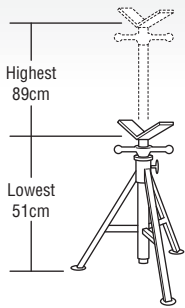
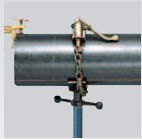
Feature

- Cuts harmful ray by instantaneous response.
- Responds mild ray by sensitivity adjusting system.
- Solar LCD type and do not require battery.
- For kinds of welding like Arc welding and TIG welding.

Item	Welding Helmet AW20000 α
Code No.	AW811
Ray changing speed	1/20,000 second
Ray blocking before welding	#3.5
Ray blocking during welding	#9~13
Viewing angle	98x46mm
Weight	540g

HD Pipe Jack L

PAT.



Purpose

- Convenient pipe supporter when welding pipe.

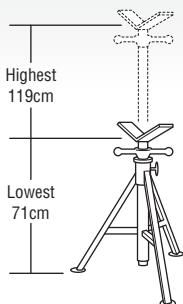
Feature

- For pipe and section steel.
- Easy to adjust the height.
- * L type can not be fold.

type	V	Ball transfer
item	HD pipe jack LV	HD pipe jack L
Code No.	S780385	S780390
Capacity	Weight load	1135kg
	Pipe diameter	1/8-36" 3-900mm
Capacity	Weight load	450kg
	Pipe diameter	3/8-12" 10-300mm

Pipe jack H

PAT.



Purpose

- Convenient pipe supporter when welding pipe.

Feature

- For pipe and section steel.
- Easy to adjust the height.
- * H type can be fold.

type	V	Ball transfer
item	Pipe jack HV	Pipe jack H ball
Code No.	S781300	S781305
Capacity	Weight load	900kg
	Pipe diameter	1/8-36" 3-900mm
Capacity	Weight load	450kg
	Pipe diameter	3/8-12" 10-300mm

Ultra Fit

Centering for temporary Welding



Purpose

- Quick and accurate holding, centering and temporary welding of pipe and pipe · joint · flange · tee.

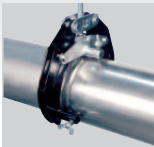
Feature

- Easy to use and gate shape cramping tool.
- Thin body and easy to be set.
- Stainless steel adjusting screw.
- Accurate centering by fine screw.

Item	Ultra fit1-1.1/2	Ultra fit2-6	Ultra fit5-12
Code No.	S781265	S781275	S781285
Clamping capacity	Ø25~64mm	Ø50~153mm	Ø127~305mm
Weight	1.4kg	3.6kg	6.1kg

Ultra Clamp

Marking



Purpose

- Quick and accurate holding, centering and temporary welding of pipe and pipe · joint · flange · tee.

Feature

- Easy to use and gate shape cramping tool.
- Light weight aluminum body.
- Stainless steel adjusting screw.
- Accurate centering by fine screw.

Item	Code No.	Clamping capacity
Ultra Clamp	No.1	Ø1~1.1/2"
	No.2	Ø2~6
	No.3	Ø5~12"

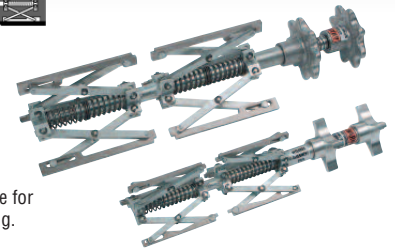
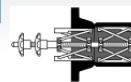
Inner Clamp

PAT.

Centering for temporary Welding



Angle setting



Purpose

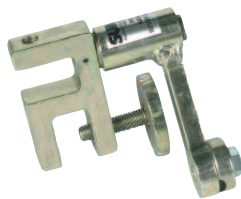
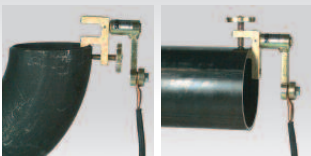
- Hold pipe and flange from inside for centering and temporary welding.

Feature

- Easy to use and hold firm without slipping.

Item	Code No.	Pipe diameter
Inner Clamp	2-4	Ø50~100mm
	4-8	Ø100~200mm

Rotary Ground Clamp



Purpose

- Clamping tool for grounding cord of arc welding.
- Rotary and prevents tangle of cord.

Feature

- Up to 400 ampere.
- Easy to set and remove.
- Fixing in 2 directions.

Item	Code No.	Weight
Rotary Ground Clamp	S780435	2.3kg

Chain Clamp



Purpose

- Fix and tighten pipe and section steel on Pipe Jack by chain.

Feature

- Pipe diameter up to Ø12" can be tightened.

Item	Code No.	Chain length
Chain clamp	S781050	1.4m

Jumbo Centering Head PAT.

Leveling

Purpose

- Centering of branch pipe and marking of center line of pipe.

Feature

- Makes accurate judgment with level vial.



Item	Code No.	Applicable pipe diameter
Jumbo Centering Head	PZ72106	1"~

Contour Marker - Jumbo Marker PAT.

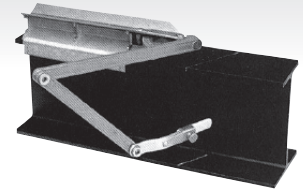
Marking

Purpose

- Marking of pipe and section steel.

Feature

- Comes with protractor for marking slant cutting.



Item	Code No.	Round pipe	Section steel(□mm)
Contour Marker	PZ400	Ø1.1/2-18"	450
Jumbo Marker	PZ403	Ø8-48"	200-1200

Circle Projector PAT.

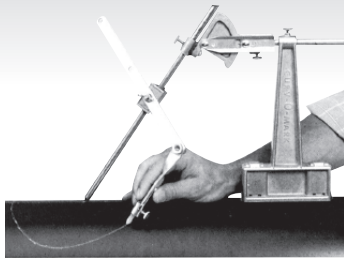
Marking

Purpose

- Marking circle or oval on curved or round surface.

Feature

- Holds pipe firmly with permanent magnet in the body.
- Marking on branch pipe within angle range of 20-90° (diameter Ø40-300mm)



Item	Code No.
Circle Projector	PZ414

Chalk Holder

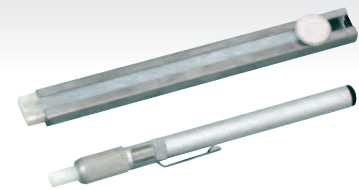
Marking

Purpose

- Holder of marking chalk.

Feature

- 90% of chalk is usable
- 2 types available; round and flat.



Item	Code No.	Size	Quantity in Box
Chalk Holder Round	PZ72123	Ø6.35 x (length)127mm	10
Chalk Holder Flat	PZ72124	(L)127 x (W)12.7 x (T)6.35mm	10

Multi Square PAT.

Angle setting

Purpose

- Angle settings of 45° and 90° for up to 8" flange, 14" joint.

Feature

- Angle setting of 45° and 90° by combination of durable duralumin body and 45° plate.
- Fix the panel by twisting the locking knob.
- Weights only 700g and easy to carry to the work site.



Item	Code No.	Weight
Multi Square	S790000	0.7kg

Flange Square PAT.

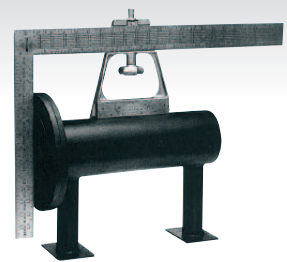
Angle setting

Purpose

- Attach a square and use it to set right angle of flange.

Feature

- 20-50mm square can be attached.
- Permanent magnet in the body holds pipe firmly.



Item	Code No.	Applicable pipe diameter
Flange Square	PZ429	1"~

* Square is not included.

Universal Level PAT.

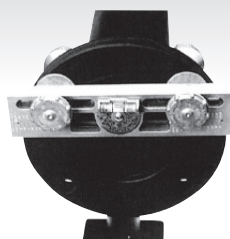
Leveling

Purpose

- For flange leveling.

Feature

- Level setting by a set of Protractor, Level Vial and Flange Pin.



Item	Code No.	Flange hole pitch	Diameter of bolt hole
Universal Level	PZ430	60-195mm	16-41mm

Protractor for Welding PAT.

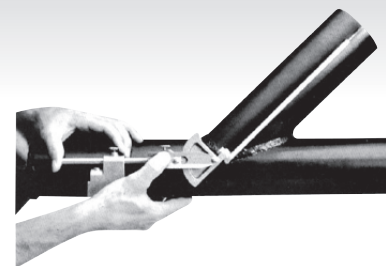
Angle setting

Purpose

- Angle setting of branch pipe, flange, etc.

Feature

- Accurately measures 0-90° angle.



Item	Code No.	Applicable pipe diameter
Protractor for Welding	PZ408	1"~

PLUMBING TOOLS



Leak test of various piping, tank, valve, joint, etc. by pressure

Powers



Chain vice



Seal tape



Pulsation test pump MP30



Electronic Test Pump EP440



Air test compressor



Test pump TP50S



Test pump TP50B

Manual
(water pressure)

Manual+Electric
(water pressure)

Electric
(water pressure)

Electric
(air pressure)

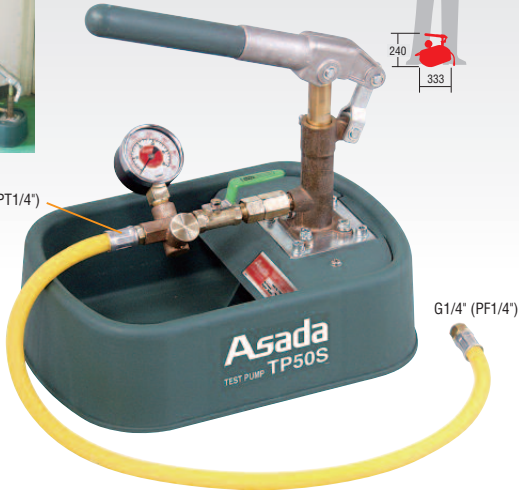
Hand Test pump TP50S

Static water pressure

Manual



Discharge: R1/4" (PT1/4")



Purpose · Leak test of various piping, tank, valve, joint, etc. by pressure.

Tank

- Easy to use with stable shape.
- Tank and the cover is made of non-corroding plastic.



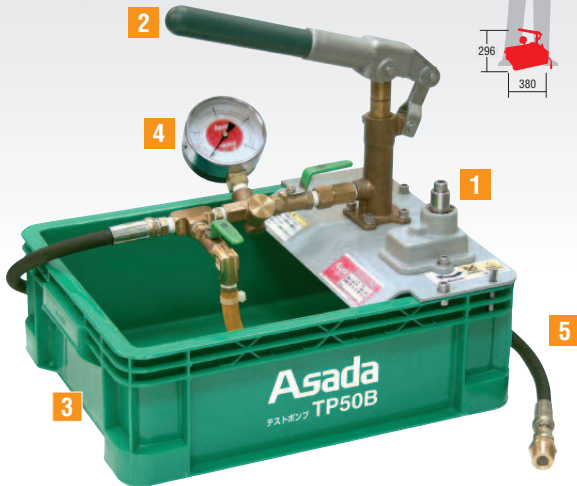
Item	Test pump TP50S
Code No.	TP50S
Maximum pressure	50kgf/cm ² , 711.2psi
Discharge water volume	16ml/each time
Tank capacity	3.0L
Weight	3.2kg
Dimensions	(L)333 x (W)233 x (H)240mm
Standard accessory	Nipple R1/2" (PT1/2") x G1/4" (PF1/4")

- Lightweight and small-sized for easy carrying.
- Capable of continuous running by use of an air relief valve.

Hybrid Test pump TP50B

Static water pressure

Manual +electric



Purpose · Leak test of various piping, tank, valve, joint, etc. by pressure.

1 High-speed water supply



- Quickly water supply by using a rechargeable screwdriver to revolve pump at high speed.

2 Hand-powered pressurization 4.0MPa



- Maximum pressure, achieved by hand power is 50kgf/cm², 771.2psi.

3 The 10.5 L tank capacity

- Efficient working by large-sized tank.

4 Ø75mm gauge

- The large 75mm dia. pressure gauge means the scale is easy to read.

5 High pressure hose

- The high pressure rubber hose is rated for maximum pressure of 229.4kgf/cm², 3263.4psi.

Item	Hybrid Test pump TP50B
Code No.	TP50B
Maximum pressure	Hand powered:50kgf/cm ² , 711.2psi Gear pump:2kgf/cm ² , 29psi
Discharge water volume	By hand:16ml/each time By pump:3.5L/mim.
Tank capacity	10.5L
Weight	5.5kg
Dimensions	(L)380 x (W)292 x (H)296mm
Standard accessory	Nipple with suction filter PT1/2" x PF1/4", Hex bit

- More efficient working with high-speed water supply by using a rechargeable screwdriver and pressurization by hand-powered.
- Capable of continuous running by use of an air relief valve.

Optional accessory

Ø100mm Pressure Gauge



Item	Ø100mm Pressure Gauge	
Code No.	TP039	TP038
Scale Range	0 ~ 2.5MPa	0 ~ 4.0MPa
Connection	3/8"	

Pressure Gauge Unit



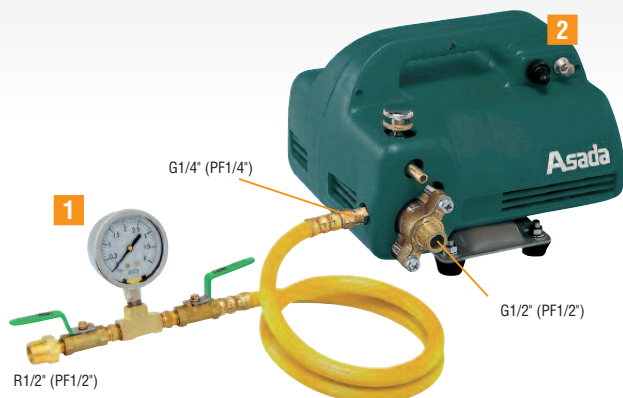
Item	Pressure Gauge Unit
Code No.	TP041
Connection	For Pipe Line : 1/2" For Pump : 1/4"

Electronic Test Pump EP440

PAT.P

Static water pressure

Electric



- Weighs only 9kg with water tank/carrying case is easy to carry.
- Can be connected to water outlet or to the self supply water tank.

Purpose · Leak test of various piping, tank, valve, joint, etc. by pressure.

1 Gauge

- Equipped with easy to read and vibration-resistant gauge with glycerine.

2 Over loaded protector

- Safety designed with overloaded protection.

Item	Electronic test pump EP440
Code No.	EP470
Maximum pressure	40kgf/cm ² , 568.9psi
Discharge water volume	3.0L/min(50Hz) 3.7L/min(60Hz)
Motor	200W *voltage made to order
Weight	9kg
Dimensions	(L)270 x (W)230 x (H)210mm
Standard accessory	Pressure gauge unit, High pressure hose 1m, Suction hose 2.6m, Filter, Relief hose 2.6m, 2 wrenches, Case

Optional accessory

Item	Code No.	Details
Test pump kit(*1)	EP101	Pressure gauge unit + High pressure hose 1m
Pressure gauge unit	EP105	-
Spray gun kit(*2)	EP201	Spray gun+High pressure hose 8m
Spray gun	EP430	-

(*1) Kit which converts the high pressure cleaner 440 to electric test pump.

(*2) Kit which converts the EP440 to high pressure cleaner.

Air test compressor

Air pressure

Electric



- For air-tight pressure test of water supply and air conditioning piping.
- Maintenance free oil-less type compressor.
- Adjustable air pressure.

Item	Air test compressor
Code No.	FA150
Maximum pressure	10.5kgf/cm ² , 149.4psi
Standard accessory	Pressure gauge unit (10.2kgf/cm ² , 145psi), Rotest, Air hose 7.6m

Optional accessory

Item	Code No.
Pressure gauge 10.2kgf/cm ² , 145psi	FA032
Pressure gauge unit 10.2kgf/cm ² , 145psi	FA035

Pulsation test pump MP30

Pulsation pressure

Electric



R1/2" (PF1/2")

Compact design

Both the pump and pulsation unit are of compact design.



Gauge

Equipped with easy to read and vibration-resistant gauge with glycerin.



Over loaded protector

Safety designed with overloaded protection.



1 Pulsation light

Blinking the light during pulsation pressure test.

2 Pump light

Light it during turning on the power.

3 Pulsation switch

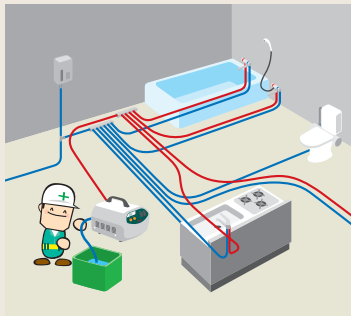
Turn on pulsation switch to start pulsation pressure test.

4 Pump switch

Turn on pump switch to start hydrostatic pressure test.

Purpose

- Leak test of resin pipe for water or hot-water pipe or mechanical joints after pipe plumbing.
- For detection of improper depth of mechanical joints and insufficient tightening of polyethylene pipe or polybutene pipe.
- Find missing or insufficient epoxy application at the joint of vinyl chloride pipes.
- Find deflection of soldering with copper pipes.



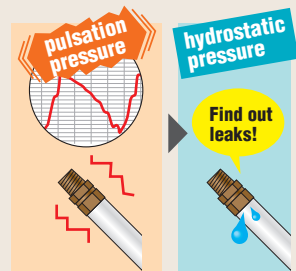
Features

Can find water leaks which are hard to find by hydrostatic pressure test, because of the changes pressure up and down.

Can find small water leaks, such as by mistake of driving in a nail, in a short time.

Can be connected to water outlet or to the self supply water tank.

Both pulsation and hydrostatic pressure test can be performed.



Item	Pulsation Test Pump MP30
Code No.	MP300
Maximum pressure	For spring water 25.5kgf/cm ² , 362.6psi
	For pulsation 20.4kgf/cm ² , 290.1psi
Discharge water volume	3.0L/min(50Hz) · 3.7L/min(60Hz)
Number of pulsation	24 times/min
Motor	200W *voltage made to order
Dimensions	(L)329 x (W)255 x (H)240mm
Weight	13kg
Standard accessory	Pressure gauge unit, High pressure hose 1m, Suction hose 2.6m, Filter, Relief hose 2.6m, Case

* In case of pulsation pressure test, set up more than 10.2kgf/cm² as maximum pressure and check more than 6kgf/cm² as a disparity between maximum pressure and minimum pressure.

Aluminum pipe wrench



- Improves work efficiency with light weight aluminum alloy pipe wrench.
- Light weight aluminum makes the work easy on large diameter pipe.

Item	Code No.	Capacity		Packing Quantity
		in.	mm	
Aluminum pipe wrench	250mm R70159	1.1/2"	49	6
	350mm R70160	2"	60	6
	R70122(*)			6
	450mm R70161	2.1/2"	76	6
	600mm R70162	3"	90	1
	900mm R70163	5"	140	1
1200mm R70164	6"	166	1	

* For coated pipe.

Aluminum offset wrench



- Effective for the work near wall, over the head and in small work space.
- One solid piece made of light weight aluminum alloy.

Item	Code No.	Capacity		Packing Quantity
		in.	mm	
Aluminum offset wrench	350mm R70115	2"	60	6
	450mm R70116	2.1/2"	76	6

Offset pattern heavy duty wrench



- Effective for the work near wall, over the head and in small work space.

Item	Code No.	Capacity		Packing Quantity
		in.	mm	
Offset pattern heavy duty wrench	250mm R70166	2.1/2"	49	6
	350mm R70167	2"	60	6

Basin wrench



- Suitable for tightening and loosening nut under the basin.
- Single action adjustable telescopic handle.

Item	Code No.	Capacity	
		Size of pipe	● B(mm)
Basin wrench	R70225	3/8"~1.1/4"	10~32

Chain wrench



- Tightening or loosening pipe joint.
- Light weight forged finish and easy to work where space is extremely tight.
- Dual sided teeth for working in both directions.

Item	Code No.	Capacity		Chain
		in.	mm	
Chain wrench	300mm R70235	4"	115	400mm

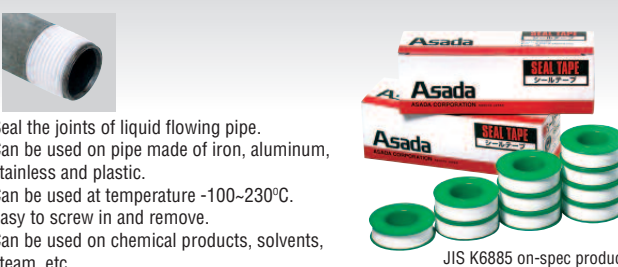
Strap wrench



- Holds firm and tightens plastic pipe without scratches.
- Nylon belt firmly holds pipes of finished surface, plated and plastic pipe.
- Solid handle of special aluminum alloy.

Item	Code No.	Capacity		Belt
		in.	mm	
Strap wrench	300mm R70240	1/8~3"	90	450 x 27
	R70241	1/8~8"	220	1000 x 27

Seal tape

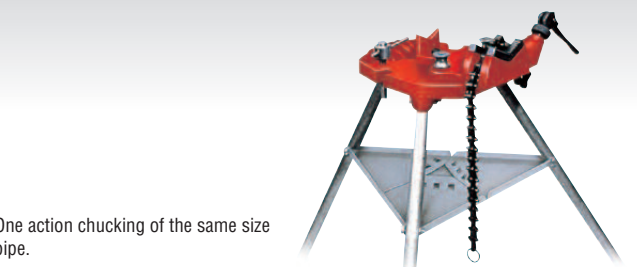


- Seal the joints of liquid flowing pipe.
- Can be used on pipe made of iron, aluminum, stainless and plastic.
- Can be used at temperature -100~230°C.
- Easy to screw in and remove.
- Can be used on chemical products, solvents, steam, etc.

JIS K6885 on-spec product

Item	Code No.	Size	Quantity
Seal tape	R50356	0.1mm x 13mm x 15m	500
	R503356C		

Chain Vice (with stand)



- One action chucking of the same size pipe.

Item	Code No.	Capacity
Chain vice (with stand)	2.1/2"	R70716 1/8~2.1/2"
	4"	R70717 1/8~4"
	6"	R70718 1/8~6"

Ro-Cut



- For cutting polyethylene pipe and polybutene pipe.
- Excellent cutting with smooth cutting face.
- Lightweight and compact size.

Item	Code No.	Cutting capacity
Ro-Cut 26TC	R52005	~Ø26mm
46TC	R52000	~Ø42mm
50TC	R52010	~Ø50mm

PVC pipe cutter 25



- For cutting vinyl plastic and plastic pipe.
- Excellent cutting with smooth cutting face.
- Lightweight and compact size.

Item	Code No.	Cutting capacity(Ømm)		Quantity
		Nominal size	Outer diameter	
PVC pipe cutter 25	VC025	13~25	18~32	6
Optional accessory				
Item	Code No.			
Spare blade For 25	VC101			

PE cutter

PAT.

- For cutting larger diameter polyethylene pipe and polypropylene pipe.
- With a built-in scraper.
- Wide safety roller holds pipe firmly.



Item	Code No.	Cutting capacity	Thickness
PE cutter 70	R70031	Ø6-67mm	~5.5mm
125	R70032	Ø50-124mm	~12mm
165	R70033	Ø100-168mm	~15mm

Optional accessory			
Item	Code No.	Quantity	
Cutter wheel	For70	R70028	10
	For125, 165	R55074	10

Flexible tube cutter

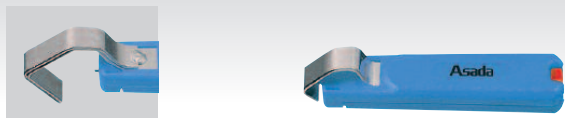


- Most suited to cut flexible tube for gas and water supply.

Item	Code No.	Cutting capacity
Flexible tube cutter	R70018R	~20A

Optional accessory	
Item	Code No.
Cutter wheel F	R70009R

Gas flexible tube stripper

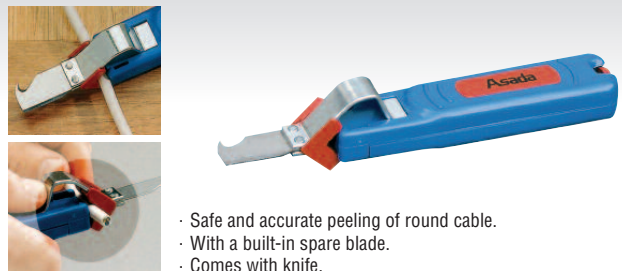


- Coating film can be peeled off by single action.
- No size setting is required. Can be set easily.

Item	Code No.	Capacity
Gas flexible tube stripper 27	W00227	8-20A
35	W00435	25A

Optional accessory	
Item	Code No.
Stripper blade	W00600

Cable stripper



- Safe and accurate peeling of round cable.
- With a built-in spare blade.
- Comes with knife.

Item	Code No.	Usable size	Length
Cable stripper	W54328	Ø4.0-28mm	170mm

Wire stripper No.5



- Peeling of twisted wire and single wire.
- Simple operation by setting wire and grip the handle.
- Uniform length with adjustable stopper.
- Comes with cutter.

Item	Code No.	Usable size	Peeling length	Cutting
Wire stripper No.5	W00005	0.2~6.0mm ² (AWG24~10)	5~12mm	~Ø2mm

Multi stripper No.400








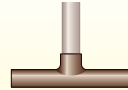








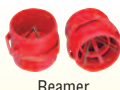


- Peeling coating of twisted wire, single wire and cable.
- Simple operation by setting wire and grip the handle.
- Can be used in a tight space such as ceiling, circuit board, etc.
- Comes with cutter.

Item	Code No.	Usable size		Cutting		Length
		Wire	Cable	Soft wire	Hard wire	
Multi stripper No.400	W00400	0.5~6.0mm ² (AWG20~10)	Ø8~13mm	~6.0mm ² (AWG10)	~4.0mm ² (AWG12)	150mm

COPPER PIPE TOOLS



Copper Pipe Tools

Expander method	Bender method	T-make method	
  Expander	  Robend 3000  Maxi-Bender	  T-Drill  T Making	
Expanding pipe	Bending	Branching	
 Tube cutter  Mini cutter	  Flaring tool	 Electric soldering machine  Burner  Reamer  Scraper  Nylon Brush	
Cutting	Flaring	Soldering	Others

Tube cutter · Mini cutter series

Fine cutting is important for pipe working

Improper cutting



Improper flaring
Put cutting chips in the tube



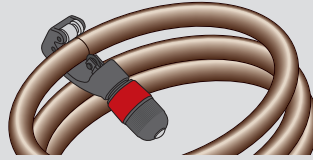
Problems



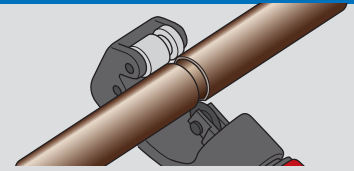
Solution

Cut the tube with a sharp cutter after straightening.

Cut a rolled tube



Use a blunt cutter

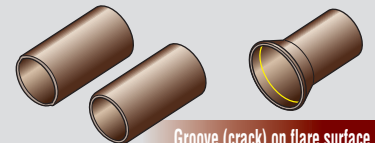


Oblique cutting



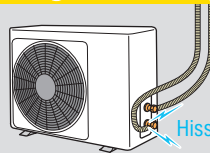
Deformed flare

Deformed cutting edge

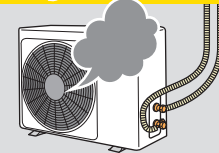


Groove (crack) on flare surface

Refrigerant leaking



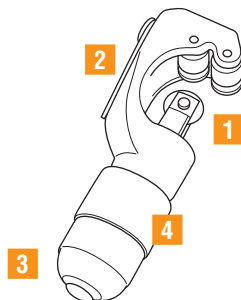
System failure



You have to pay more attention to prevent foreign matters (particles, moisture, etc.) from getting into the tube for the systems which has HFC refrigerant. A rolled copper tube must be straightened and be cut with a cutter which has a sharp strong thin blade. You have to pay attention to prevent cutting chips from getting into the tube when you use a reamer for it.

Purpose Accurate cutting for copper, brass, aluminum, thin steel pipe.

Tube Cutter



1 Strong thin sharp cutter wheel



- High precision cutter.

2 Built in reamer or scraper



- Tube cutter 28, 42, 42PL, 42PC come with reamer.



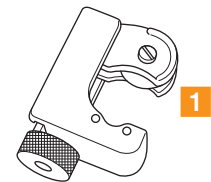
- Tube cutter 35, 35 stainless steel, 70 come with scraper.

3 Comes with one spare cutter wheel



4 Smooth rotating handle Compact and light weight

Mini cutter

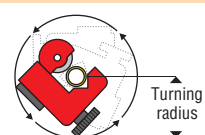


1 Strong thin sharp cutter wheel



- High precision cutter.
- Convenient to work in tight space.

Short turning radius



Turning radius

Tube cutter

Tube cutter 28

Cutting capacity
ø5~28mm



- With reamer.

Code No.	R70010A
Turning radius	85mm
Total lengths	120mm
Quantity in box	10

Tube cutter 42

Cutting capacity
ø5~42mm



- With reamer.

Code No.	R70011A
Turning radius	105mm
Total lengths	140mm
Quantity in box	10

Tube cutter 42PL

Cutting capacity
ø5~32mm
covered outside diameter



- For covered copper pipe.
- With reamer.

Code No.	R70013A
Turning radius	105mm
Total lengths	140mm
Quantity in box	10

Tube cutter 42PC

Cutting capacity
ø5~32mm
covered outside diameter



- For covered copper pipe.
- With guard for spiral cutting.
- With reamer.

Code No.	R70016
Turning radius	105mm
Total lengths	140mm
Quantity in box	10

Tube cutter 35 · 35 Stain

Cutting capacity
ø6~35mm



- Installed scraper.

Code No.	R70027	R70055
Turning radius	123mm	
Total lengths	150mm	
Quantity in box	10	

Tube cutter 70

Cutting capacity
ø5~67mm



- Quick cutting for ratchet mechanism.
- Installed scraper.

Code No.	R70030
Turning radius	210mm
Total lengths	210mm
Quantity in box	1

Optional accessories

Description	Code No.	Standard accessories								Optional accessories	
		28	35	35stain	42	42PL	42PC	70	Quantity in box		
Cutter wheel (for copper tube)	R70007	● x2			● x2	●	●		10		
	R70017		● x2	●				● x2	5		
Cutter wheel (for copper, sus)	R90007	●			●	●	●		10		
	R70056		●	● x2				●	5		
Cutter wheel (for coated copper tube)	R70014					●	●		10		
Cutter shaft 28, 42, 42PL	R99015	●			●	●	●		10		
Cutter shaft assembly	28 R70041		●	●					1		
	70 R7500042						●				
E-stop ring 28, 42, 42PL, 42PC	R99010	●			●	●	●		10		

Mini cutter

Mini cutter 16 pro

Cutting capacity
ø3~16mm



- Cutting Capillary Tube.

Code No.	R70401
Turning radius	32mm
Total lengths	45mm
Quantity in box	12

Mini cutter 22 pro

Cutting capacity
ø6~22mm



- Cutting Capillary Tube.

Code No.	R70402
Turning radius	42mm
Total lengths	54mm
Quantity in box	12

Mini cutter 28

Cutting capacity
ø3~28mm



- Until 1 1/8".

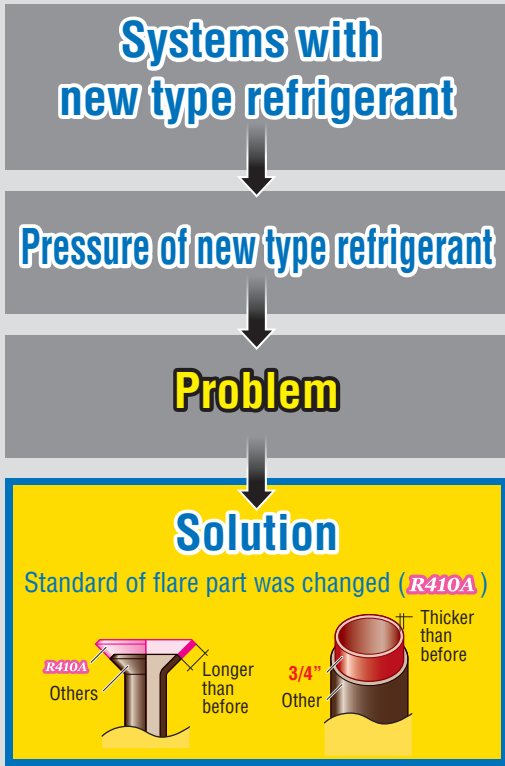
Code No.	R70015
Turning radius	58mm
Total lengths	80mm
Quantity in box	12

Optional accessories

Description	Code No.	Standard accessories				Optional accessories	
		16	16Pro	22	22Pro	28	Quantity in box
Cutter wheel (for copper)	R70003	●		●			10
	R70017		●		●	●	5
Cutter shaft 16, 22	R70006	●		●			10
Cutter shaft assembly	R70041		●		●	●	1

Flaring Tools

Changes on Flaring tools



Room air conditioners

HFC

Packaged air conditioners

HFC

R410A High pressure

compared with R22 1.6 times

High possibility of refrigerant leaking from the flare part

The standard of flaring size (JIS B8607)

Normal size	Diameter	A size ⁺⁰ _{-0.4}	
		R410A(*1)	Others(*2)
1/4"	6.35mm	9.1mm	9.0mm
3/8"	9.52mm	13.2mm	13.0mm
1/2"	12.70mm	16.6mm	16.2mm
5/8"	15.88mm	19.7mm	19.4mm
3/4"	19.05mm	24.0mm	23.3mm

(*1) R410A (*2) R407C(E), R404A, R507A, R134a, and usual refrigerant

1 Clutch type

· When flaring is completed, the clutch makes the handle run idle to take load off.

2 Ratchet mechanism (645Q only)

· Continuous feeding is possible with the ratchet mechanism and suitable for operation in a confined space.

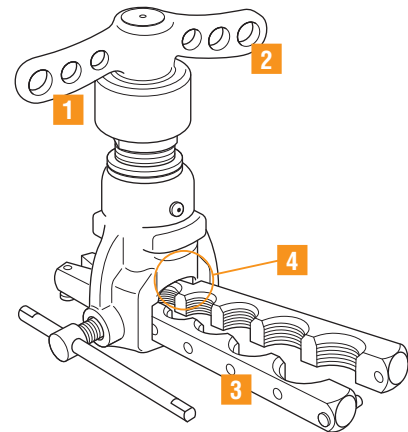
3 Flare sizes (suitable for new type refrigerant)

· 1/4", 5/16", 3/8", 1/2"~5/8", 3/4"

4 Off-center cone



· Off-center cone produces a rolling action for uniform flare walls.



Flaring Tool 645Q (ratchet type)

1/4" ~ 3/4"

- High quality flaring with clutch.
- Off-center cone produces a rolling action for uniform flare walls.
- Continuous feeding is possible with the ratchet mechanism and suitable for operation in a confined space.
- Push the handle for normal rotation (right) and pull the handle for reverse rotation (left).



Code No.	FT645Q
Flare sizes	1/4", 5/16", 3/8", 1/2", 5/8", 3/4"

*Suitable for new type refrigerant for R410A packaged A/C.

Flaring Tool 645Q set

1/4" ~ 3/4"



Code No.	FT645QS
Flare size	1/4", 5/16", 3/8", 1/2", 5/8", 3/4"
Standard accessories	Flaring Tool 645Q, Tube Cutter 28, Reamer, Case

*Suitable for new type refrigerant for R410A packaged A/C.

Flaring Tool 645P

1/4" ~ 3/4"



- High quality flaring with clutch.
- Off-center cone produces a rolling action for uniform flare walls.

Code No.	FT645P
Flare size	1/4", 5/16", 3/8", 1/2", 5/8", 3/4"

*Suitable for new type refrigerant for R410A packaged A/C.

Flaring Tool 645P set

1/4" ~ 3/4"



Code No.	FT645PS
Flare size	1/4", 5/16", 3/8", 1/2", 5/8", 3/4"
Standard accessories	Flaring Tool 645P, Tube Cutter 28, Reamer, Case

*Suitable for new type refrigerant for R410A packaged A/C.

Flaring Tool 645PR (Ratchet handle)

1/4" ~ 3/4"



- High quality flaring with clutch.
- Off-center cone produces a rolling action for uniform flare walls.
- Continuous feeding is possible with the ratchet mechanism and suitable for operation in a confined space.

Code No.	FT645PR
Flare size	1/4", 5/16", 3/8", 1/2", 5/8", 3/4"

*Suitable for new type refrigerant for R410A packaged A/C.

Flaring Tool 645PR set

1/4" ~ 3/4"



Code No.	FT645PRS
Flare size	1/4", 5/16", 3/8", 1/2", 5/8", 3/4"
Standard accessories	Flaring Tool 645PR, Tube Cutter 28, Reamer, Case

*Suitable for new type refrigerant for R410A packaged A/C.

Flaring Tool 645PE (Manual / Electric type)

1/4" ~ 3/4"



- High quality flaring with clutch.
- Off-center cone produces a rolling action for uniform flare walls.
- Both for manual flaring and by electric drill.

Code No.	FT645PE
Flare size	1/4", 5/16", 3/8", 1/2", 5/8", 3/4"

*Suitable for new type refrigerant for R410A packaged A/C.

Flaring Tool 645PE set

1/4" ~ 3/4"

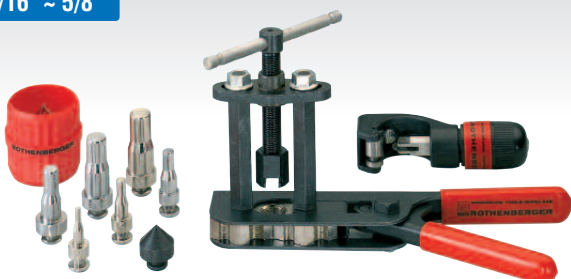


Code No.	FT645PES
Flare size	1/4", 5/16", 3/8", 1/2", 5/8", 3/4"
Standard accessories	Flaring Tool 645PE, Tube Cutter 28, Reamer, Case

*Suitable for new type refrigerant for R410A packaged A/C.

Flare Swaging Set

3/16" ~ 5/8"



- By exchanging Flare Cone and Swaging Set, one tool does both flaring and swaging.
- Convenient set which does 45. flaring, swaging, cutting and chamfering.



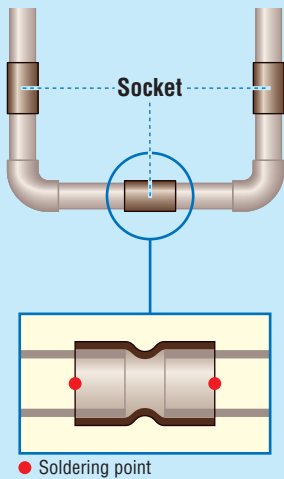
Description	Flare Swaging Set
Code No.	R26715
Flare size	3/16", 1/4", 5/16", 3/8", 1/2", 5/8"
Standard accessories	Flare main body, Tube Cutter 28, Reamer, Swaging head (3/16", 1/4", 5/16", 3/8", 1/2", 5/8"), Flare Cone, Case

Expander series

Socket Joint method and Expander (Fitting-free) method

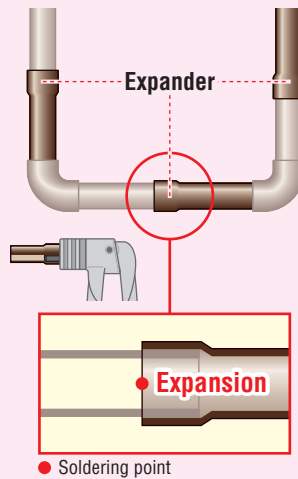
Socket Joint method

Old method / Socket (fitting) joint



Expander (Fitting-free) method

R-system / Expansion by expander



Expansion by expander

No socket needed Save 50% on soldering material

Save cost

Soldering points can be reduced

Trouble free

Various choices

Manual

Hydraulic

Power torque

Ratchet

Pneumatic

Expander power torque



Expander A0 type



Expander A1 type



Power expander H1



Expansion up to 1.3/4"

Expansion 2 ~ 2.5/8"

Expander head



Expander head + adaptor



Expander power torque



King of Expander !!



Purpose For expanding soft copper tube.

1 Tapered pin



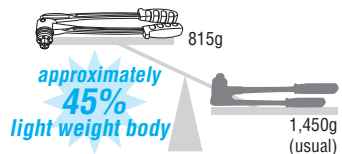
· Long life with TiN coating.

2 Torque transmission



· Low friction factor reduced effort required.

3 Body



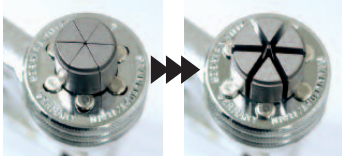
· High strength, forged aluminum body.

4 Handles



· Ergonomic handles.
· Non slip, no jamming of fingers.

6 channel head



· Produces nearly perfect round expansion by 6 precision rivets and 6 channel head.

Expander power torque P5 type

5/16" ~ 2.5/8"
Refrigerant piping
Hot water piping
Water supply piping



Expander power torque P2 type

5/16" ~ 2.5/8"
Hot water piping
Water supply piping



Description	Expander power torque P5 type	Expander power torque P2 type
Code No.	R12317	R12328
Expansion capacity	Soft copper tube, O/D 5/16" ~ 2.5/8" thickness 2.0mm (need optional adaptor for above 2")	
Weight	2.9kg	2.5kg
Standard accessories	Head (3/8", 1/2", 5/8", 3/4", 1"), Reamer, Hexagon wrench, Case	Head (5/8", 7/8"), Reamer, Hexagon wrench, Case

Expander head

Optional accessory



· Produces nearly perfect round expansion by 6 precision rivets and 6 channel head.

Adaptor

Optional accessory



· Need optional adaptor for above 2".

Description	Code No.
Adaptor	R11007

Expander Set A0

7/8" ~ 2.5/8"



- Soft copper tube O/D 7/8" ~ 2.5/8"
- Precise expansion by expansion adjustment ring.
- Strong expansion strength by ratchet handle.
(Expander heads are optional)

Description	Expander Set A0
Code No.	R11090
Expansion capacity	Soft copper tube O/D 7/8 ~ 2.5/8" thickness 2.5mm
Weight	3.1kg
Standard accessories	Handle, Ratchet handle

Expander Set A1

1.3/8" ~ 4.1/8"



- Soft copper tube O/D 1.3/8" ~ 4.1/8"
- Precise expansion by expansion adjustment ring.
- 6 different sizes can be expanded with one Head.

Description	Expander Set A1
Code No.	R11091
Expansion capacity	Soft copper tube O/D 1.3/8" ~ 4.1/8" thickness 2.5mm
Weight	5.3kg
Standard accessories	Handle, Ratchet handle, Head (1.3/8", 1.5/8", 2.1/8", 2.5/8", 3.1/8", 4.1/8")

Power expander H1 (Hydraulic type)

5/16" ~ 2.5/8"

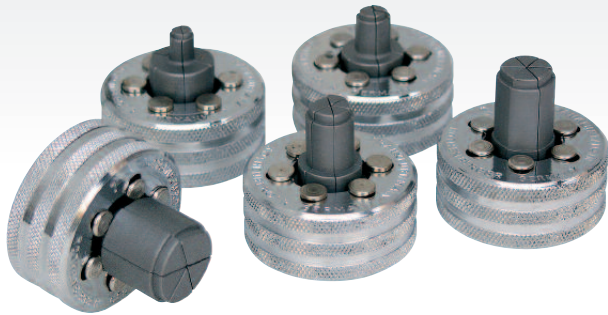


- 600 tubes can be expanded per hour by the hydraulic pump.
- Air compressor is used for power source.
- For mass production.

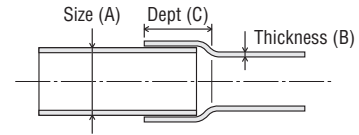
Description	Power expander H1
Code No.	R11092
Expansion capacity	Soft copper tube O/D 5/16" ~ 25/8" (Need optional adaptor for more than 2")
Weight	8.9kg
Standard accessories	Pistol for H1, Air drive pump, oil pressure hose etc.

Expander head

Optional accessory



For Expander power torque P type, Expander R type, Expander AO type, and Power expander H1.



Code No.	Size (A)	Thickness (B)	Depth (C)
R11008	5/16"=8mm	1.0mm	6.0mm
R11052	3/8"	1.0mm	7.4mm
R11053	1/2"	1.2mm	11.0mm
R11054	5/8"	1.2mm	14.0mm
R11055	3/4"	1.2mm	18.1mm
R11056	7/8"	1.2mm	18.0mm
R11057	1"	1.5mm	15.8mm
R11058	1.1/8"	1.6mm	17.0mm
R11059	1.1/4"	1.6mm	17.0mm
R11035	1.3/8" = 35mm	1.6mm	17.0mm
R11038	1.1/2" = 38mm	1.6mm	17.0mm
R11062	1.5/8"	1.6mm	17.5mm
R11063	1.3/4"	1.6mm	17.5mm
R11364	2"	2.0mm	17.0mm
R11346	2.1/8"	2.5mm	17.0mm
R11348	2.1/2"	2.5mm	17.0mm
R11380	2.5/8"	2.5mm	17.0mm

*Heads for 10mm - 52mm size are available.

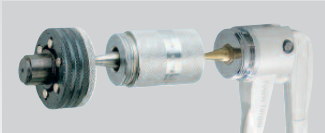
6 channel head

· Produces nearly perfect round expansion by 6 precision rivets and 6 channel head.



Adaptor

Optional accessory



· Need optional adaptor (R11007) for above 2"(AO / A1 type is excluded).

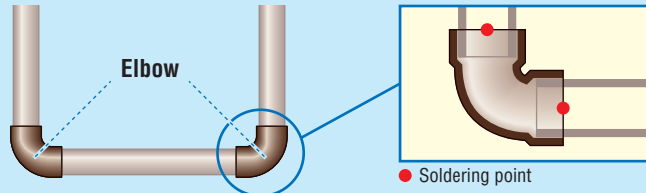
Description	Code No.
Adaptor	R11007

Bender series

Elbow joint method and bending (laborsaving) method

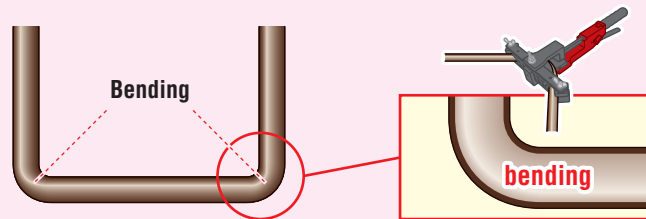
Elbow joint method

Old method / Elbow (coupling) joint use



Bending method (laborsaving)

R-system / Bending method



Bending works

No elbow and no soldering point.

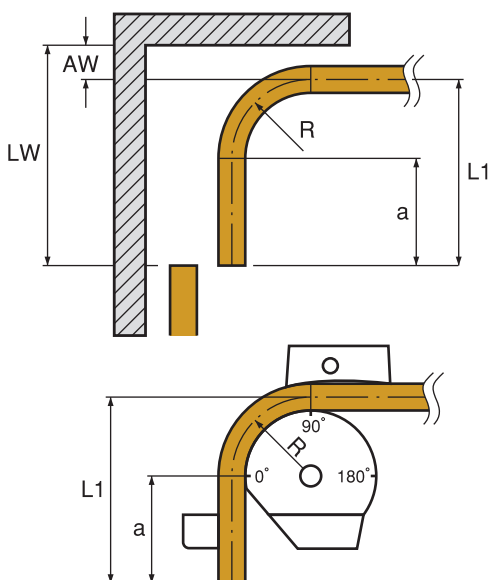
Cost reduction

No soldering

Trouble free

Bending tables

Calculation examples



In case of bending 90 degree 1/2" pipe LW=1200mm, AW=30mm.

$L1=1200\text{mm} - 30\text{mm}=1170\text{mm}$
 $a=1170\text{mm} - 45\text{mm}=1125\text{mm}$

$L1=LW-AW$ $a=L1-LR$ $L=L1+L2-LM$	L : Total length of pipe LW : Length on pipe edge side from wall AW : Length from wall to pipe center a : Length on pipe edge side from bend processing position
---	---

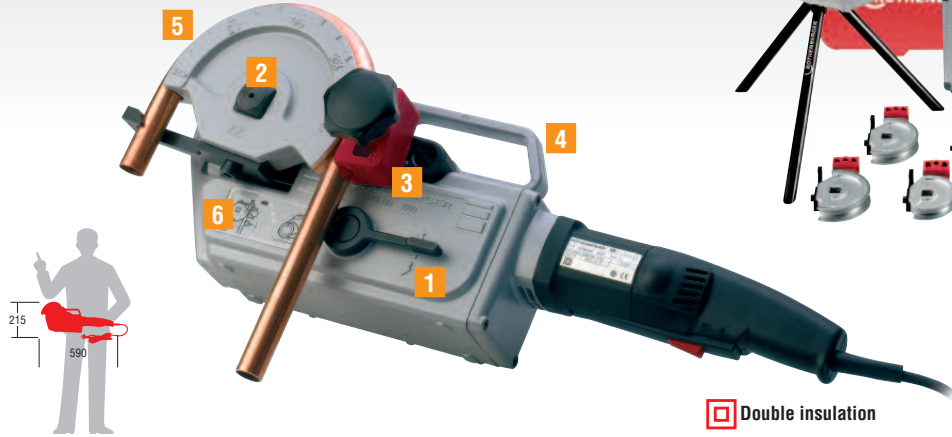
Pipe diameter (Ø)	Bend radius R (mm)	45°		90°		180°	
		LR (mm)	LM (mm)	LR (mm)	LM (mm)	LR (mm)	LM (mm)
1/2"	45.0	18	-	45	26	45	74
5/8"	56.0	23	-	56	32	56	93
3/4"	80.0	31	-	80	46	80	103
7/8"	88.0	35	-	88	50	88	119
1"	112.0	44	-	112	64	112	148
1.1/8"	115.0	45	-	115	66	115	152

Robend 3000 (electric type)

1/2" ~ 1.1/8"

Electric type

Light weight (13kg) and can be carried by one hand to the working site!!



Robend 3000S

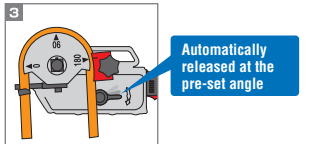
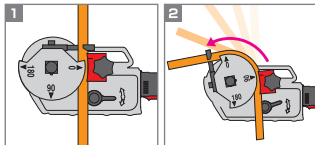
Robend 3000A

Double insulation

· It takes only 8 seconds to bend 1.1/8" (28.58mm) hard copper pipe by 90 degrees.

1 Safety mechanism

· The gear is automatically released at the pre-set angle to protect motor.



Automatically released at the pre-set angle

2 Adjustment dial

· Pre-adjustment of the bending angle without tools.



4 Light weight

· Light weight (13kg) and can be carried by one hand to the working site.

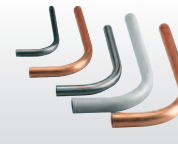


3 High quality

· Forged aluminum shoe with bending radius scale.

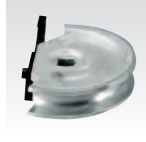


· Bending of pipes made of various materials possible.



5 Aluminum shoe

· Special aluminum strong shoe. Can be set without tools.



6 Motor

· Long-life motor with 9 gears.

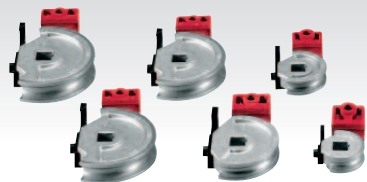


Description	Robend 3000S										
Code No.	R25703										
Suitable copper pipe	Soft copper tube, half hard copper tube, hard copper tube, thin stainless tube, and steel tube										
Bending angle	0~180°										
Copper tube size	Soft copper, half hard copper, hard copper					Thin stainless tube					
	Inch	1/2"	5/8"	3/4"	7/8"	1"	1.1/8"	SU	10	13	20
	mm	12.70	15.88	19.05	22.22	25.40	28.58	mm	12.70	15.88	22.22
Bending radius(mm)	45	56	80	88	112	115		45	56	88	
Weight	13.1kg										
Dimensions	(L)590 x (W)145 x (H)215mm										
Voltage	900W (*made to order)										
Standard accessories	Shoe & Guide (1/2", 5/8", 3/4", 7/8", 1", 1.1/8"), Set pin, Case x 2, Tripod, Tripod adaptor										

Description	Robend 3000A							
Code No.	R25850							
Suitable copper pipe	Soft copper tube, half hard copper tube, hard copper tube, thin stainless tube, and steel tube							
Bending angle	0~180°							
Copper tube size	Soft copper, half hard copper, hard copper			Thin stainless tube				
	Inch	7/8"	1"	1.1/8"	SU	10	13	20
	mm	22.22	25.40	28.58	mm	12.70	15.88	22.22
Bending radius(mm)	88	112	115		45	56	88	
Weight	13.1kg							
Dimensions	(L)590 x (W)145 x (H)215mm							
Voltage	900W (*made to order)							
Standard accessories	Shoe & Guide (7/8", 1", 1.1/8"), Set pin, Case							

Shoe & Guide

Optional accessories



Description	Code No.
1/2"	R25652
5/8"	R25616
3/4"	R25619
7/8"	R25622
1"	R25625
1.1/8"	R25628
1.1/4"	R25661(*)

* Bending radius:112mm

Tripod

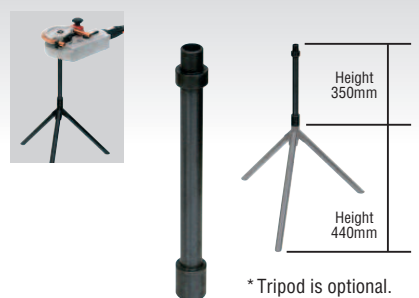
Optional accessory



Description	Code No.
Tripod	R25748

Tripod adaptor

Optional accessory



· Installation use of tripod.

Description	Code No.
Tripod	XP548

* Tripod is optional.

Maxi-Bender 22

3/8" ~ 7/8"



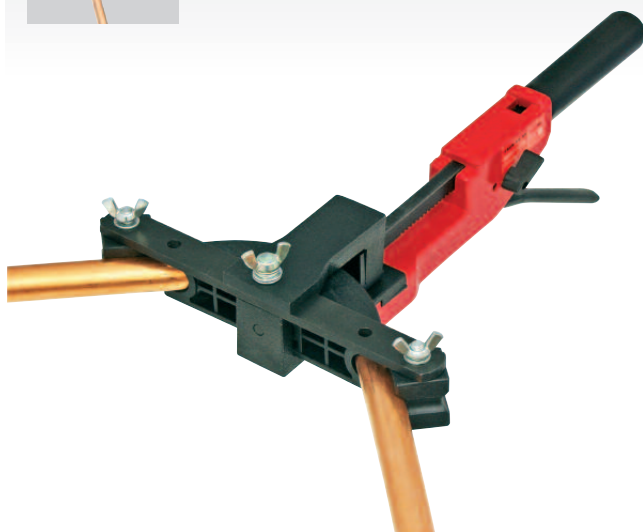
Description	Maxi-Bender 22					
Code No.	R23022					
Suitable copper tube	Soft copper tube					
Degree of bending	~ 90°					
Copper tube size	Inch	3/8"	1/2"	5/8"	3/4"	7/8"
	mm	Ø9.52	Ø12.70	Ø15.88	Ø19.05	Ø22.22
Bending radius		35mm	35mm	49mm	74mm	87mm
Weight	3.4kg					
Standard accessories	Guide bar assembly, Shoe (3/8", 1/2", 5/8", 3/4", 7/8"), Insert, Case					

- It can do banding for soft copper tube up to 7/8" with one hand.
- For bending HVAC copper tubes.
- Friendly to copper tube with strong plastic shoe.
- Easy release with lever.

Maxi-Bender 22 Reversible Set

3/8" ~ 7/8"

Reversible



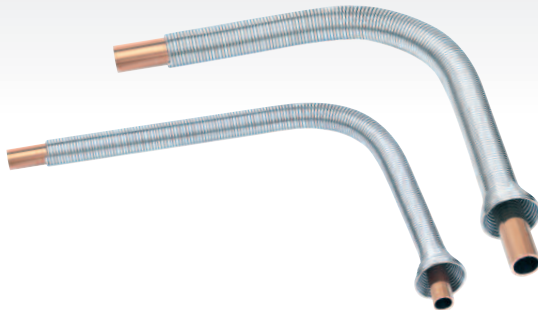
Reversible	· Can do reverse bending.
Easy operation	· Can work along wall to match the wall angle and avoid excessive bending.

Description	Maxi-Bender 22					
Code No.	R23020					
Suitable copper tube	Soft copper tube					
Degree of bending	~ 90°					
Copper tube size	Inch	3/8"	1/2"	5/8"	3/4"	7/8"
	mm	Ø9.52	Ø12.70	Ø15.88	Ø19.05	Ø22.22
Bending radius		35mm	35mm	49mm	74mm	87mm
Weight	4.5kg					
Standard accessories	Guide bar assembly, Shoe (3/8", 1/2", 5/8", 3/4", 7/8"), Insert, Reversible adaptor, Case					

- For bending soft copper tubes.
- For bending HVAC copper tubes.
- Friendly to copper tube with strong plastic shoe.
- Easy release with lever.

Spring bender set

1/4" ~ 3/4"



Description	Spring bender set						
Code No.	R25184						
Suitable copper tube	Soft copper tube						
Copper tube size	Inch	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
	mm	Ø6.35	Ø8	Ø9.52	Ø12.70	Ø15.88	Ø19.05
Standard accessories	Spring bender (1/4", 5/16", 3/8", 1/2", 5/8", 3/4")						

Spring bender

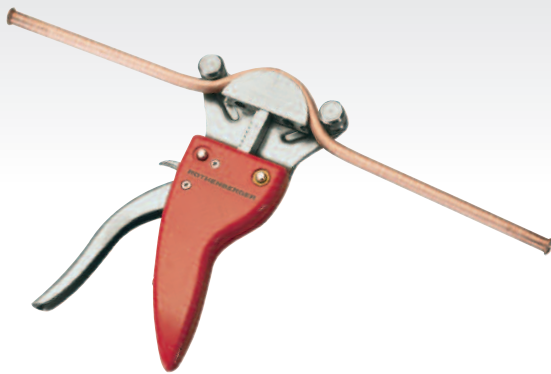
Optional accessories

Size	Code No.	Size	Code No.
1/4"	R25187	1/2"	R25190
5/16"	R25181	5/8"	R25186
3/8"	R25188	3/4"	R25185

· Spring benders slip over soft copper tube during bending to help prevent tube collapse.

Mini bender set

1/4" ~ 1/2"

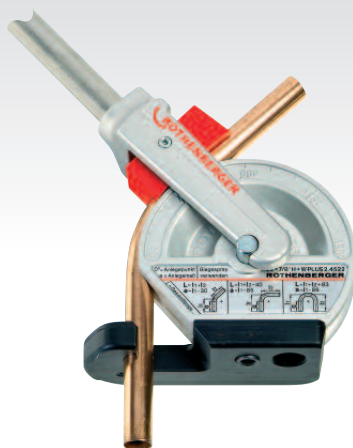


Description	Mini bender set				
Code No.	R24114				
Suitable copper tube	Soft copper tube				
Bending angle	~ 90°				
Copper tube size	Inch	1/4"	5/16"	3/8"	1/2"
	mm	Ø6.35	Ø8	Ø9.52	Ø12.70
Bend radius	23.5mm	28mm	35mm	35mm	
Weight	2.9kg				
Standard accessories	Mini bender body, Mini bender guide (1/4", 5/16", 3/8", 1/2", 5/8", 3/4"), Insert, Case				

· Compact and light weight set which can bend soft copper tube and aluminum tube accurately up to 90° easily with one hand.

R bend H+W PLUS

1/2" ~ 7/8"



Description	R bend H+W PLUS			
Code No.	R24504			
Suitable copper tube	Soft copper tube, Half hard copper tube, Hard copper tube			
Bending angle	~ 180°			
Copper tube size	Inch	1/2"	5/8"	7/8"
	mm	Ø12.70	Ø15.88	Ø22.22
Bend radius	38mm	64mm	81mm	
Weight	13.7kg			
Standard accessories	R Bender H+W(1/2", 5/8", 7/8"), Handle (3 pieces), Case			

· For bending copper tube for hot water supply, refrigeration, air-conditioning and thin stainless steel pipe.

T-Drill · T-Making

T joint method and T-Drill (laborsaving) method

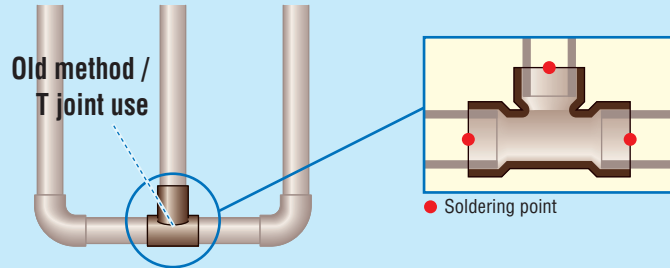
T joint method



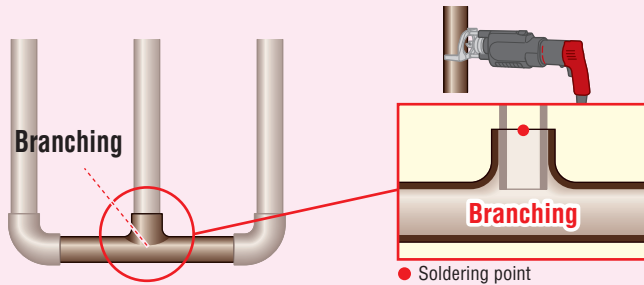
T-Drill method
(laborsaving)



Old method / Elbow (coupling) joint use



R system / T-Drill brunching process



Header making by T-Drill

No T joint, 1/3 soldering point

Cost reduction

1/3 branching

Trouble free

T-making B type set

3/8" ~ 2.1/8"

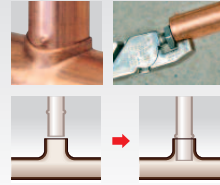


- Manual T- making tool to process branching with high accuracy.
- Easy T-making with ratchet.

Description	T-making B type set
Code No.	R22116
Branching capacity	3/8" ~ 2.1/8"
Weight	3.1kg
Standard accessories	Head(3/8", 1/2", 3/4"), Uni-Drill automatic, Hand punch 42, Ratchet handle, Case

Hand punch 42

1/2" ~ 1.1/2"

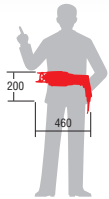


- For proper positioning.

Description	Hand punch 42
Code No.	R22080
Size	1/2" ~ 1.1/2" (10 ~ 42mm)
Weight	0.17kg

T-Drill T-D35 set

5/16" ~ 1.3/8"



- Branching process for copper tube.
- Compact size and light weight.
- T making system using electric power can process branching of copper pipe in high accuracy at high speed.

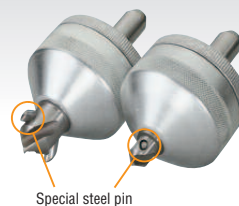
Item		T-Drill T-D35 Set	
Code No.		R50344	
Branching capacity	Rib making range	Copper tube	Ø5/16" ~ 1.3/8" (Ø8 ~ 35mm)
		Stainless steel pipe	-
	Thickness	Copper tube	0.8 ~ 1.5mm (*1)
		Stainless steel pipe	Ø3" (Ø76mm)
Weight		4.3kg	
Motor		620W Voltage made to order	
Standard accessories		Main body, Collaring Head (5/8", 3/4"), Case	

* Anneal before making rib for 1.5mm copper tube.

* Thickness varies according to the size of Collaring Head. Refer to the maximum thickness of Collaring head list.

Collaring head

Optional accessories



- For copper tube
- Special steel pin ensures fine T-making.
- Long life.

Code No.	Size	Maximum Thickness
R50275	5/16"= 8mm	0.8mm
R50276	3/8"=10mm	1.2mm
R50277	1/2"=12mm	
R50200	5/8"=15mm	1.5mm*
R50205	3/4"=18mm	
R50210	7/8"=22mm	
R50319	1"=25mm	
R50216	1.1/8"=28mm	
R56002	1.1/4"=32mm	
R50220	1.3/8"=35mm	

* Anneal before making rib for 1.5mm copper tube.

Features of cartridge burner

Purpose

Hard and soft soldering for various copper tubes, bending plastic pipe, thawing frozen pipe, burning grass, heat tempering metal, soil pasteurization, pest control, etc.

Electronic ignition

Ignite without lighter.

Concentrated flame

Widely useable from bending plastic pipe to brazing by strong concentrated flame.

Turbo flame

Flame reaches to the back side of copper tube by strong turbo flame (whirlpool flame). Highly efficient and heat up fast.

Usable upside down

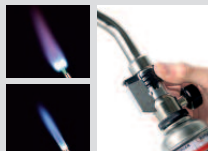
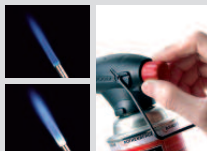
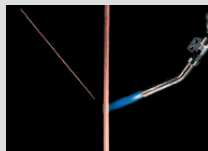
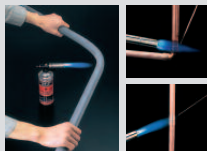
Gas absorbing substance in the cylinder makes upside down use possible. Stable flame at any angle direction.

Adjustable flame

Adjustable flame to your desired amount.

Adjustable airflow

Adjustable from soft flame to strong flame by adjusting the amount of airflow mix.



5 Handy Turbo

2,100 °C

~ Ø2"

Upright type burner

Electronic ignition

Ignite with one hand

Turbo flame

Usable upside down

Adjustable flame

Adjustable airflow



- High efficiency as the strong turbo flame (whirlpool flame) reaches backside of pipe.
- Freely adjustable flame by airflow adjustment.
- Stable flame at any position.

Item	Handy Turbo
Code No.	HT160
Temperature of flame	2100°C
Soft soldering	~ Ø2"
Hard soldering	~ Ø1.1/8"
Burning time	70 minutes
Type of torch	Turbo flame
Torch size	Ø16mm
Dimensions	(L)85 x (W)68 x (H)370mm
Type of gas used	Multi Gas 250AP, Multi Gas High Power 300AP
Quantity in box	10

* When used with Multi gas 250AP.

Turbo Star

2,100 °C

~ Ø2"

Upright type burner

Turbo flame

Usable upside down

Adjustable flame



Item	Turbo Star
Code No.	R35650
Temperature of flame	2100°C
Soft soldering	~ Ø2"
Hard soldering	~ Ø1.1/8"
Burning time	75 minutes
Type of torch	Turbo flame
Torch size	Ø15mm
Dimensions	(L)90 x (W)85 x (H)410mm
Type of gas used	Multi Gas 250AP, Multi Gas High Power 300A
Quantity in box	10

* When used with Multi gas 250AP.

Turbo Fire

2,100 °C

~ Ø 2"

Sideway type burner

Electronic ignition

Ignite with one hand

Turbo flame

Usable upside down

Adjustable flame

Adjustable airflow



- High efficiency as the strong turbo flame (whirlpool flame) reaches backside of pipe.

Item	Turbo Fire
Code No.	HT168
Temperature of flame	2100°C
Soft soldering	~ Ø2"
Hard soldering	~ Ø1.1/8"
Burning time	70 minutes
Type of torch	Turbo flame
Torch size	Ø16mm
Dimensions	(L)180 x (W)68 x (H)228mm
Type of gas used	Multi Gas 250AP, Multi Gas High Power 300AP
Quantity in box	10

* When used with Multi gas 250AP.

Ro Torch

1,800 °C

~ Ø 1.1/2"

Sideway type burner

Concentrated flame

Usable upside down

Adjustable flame



- Can be used in upright position with stand.

Item	Ro Torch
Code No.	R35501
Temperature of flame	1800°C
Soft soldering	~ Ø1.1/2"
Hard soldering	~ Ø7/8"
Burning time	40 minutes
Type of torch	Concentrated flame
Torch size	Ø22mm
Dimensions	(L)175 x (W)68 x (H)245mm
Type of gas used	Multi Gas 250AP, Multi Gas High Power 300A
Quantity in box	10

* When used with Multi gas 250AP.

Handy Torch

1,650 °C

~ Ø 1.1/8"

Sideway type burner

Electronic ignition

Ignite with one hand

Concentrated flame

Usable upside down

Adjustable flame



- Can be used at any angle for soft soldering, bending plastic pipe with strong stable flame.

Item Handy	Handy Torch
Code No.	HT220
Temperature of flame	1650°C
Soft soldering	~ Ø1.1/8"
Hard soldering	~ Ø1/2"
Burning time	70 minutes
Type of torch	Concentrated flame
Torch size	Ø22mm
Dimensions	(L)123 x (W)68 x (H)220mm
Type of gas used	Multi Gas 250AP, Multi Gas High Power 300AP
Quantity in box	10

* When used with Multi gas 250AP.

Roxy 400L kit

3,100 °C

Ø1/4" ~ 4"



- Suitable for installation of refrigerant and air-conditioning system.
- Hard brazing of up to 4" copper tube is possible by 3100°C flame by mixing oxygen and high quality Maxi Gas 400.
- Compact and light weight 8kg is easy to carry.
- Safety by adjusting device with back fire prevention.

Description	Roxy 400L kit	
Code No.	R35780	
Iron plate welding	3mm	
Hard soldering	Ø1/4" ~ 4"	
Flame temperature	3100°C	
Weight	8kg	
Consuming time	Oxygen	1 hour (with welding nozzle Ø2mm is used)
	Maxi gas	2.5 hours (with welding nozzle Ø2mm is used)
Standard accessories	Oxygen cylinder 2L (without gas), Regulator, Maxi gas 400, Micro tip 0.3 · 0.5 · 0.7mm, Welding nozzle 1.5 · 2.0mm, Micro tip adaptor, Mixing tube, Double hose 3m, Welding handle, Stand, Regulator valve, Lighter, Safety goggle, Wrench	

Astro-Turbo acetylene burner

2,350 °C

~ Ø3"



*Tips can be changed.

- Professional burner for hard soldering.
- With the special intake method of air, hard soldering can be done with acetylene gas only.
- Save time by powerful turbo flame.
- Electronic ignition without lighter.
- Safety by backfire prevention.



Description	Astro-Turbo acetylene burner	
Code No.	PZ386832	
Soldering capacity	Soft solder	~ Ø3"
	Hard solder	~ Ø2.1/8" (~Ø50mm)
Flame temperature	2350°C	
Weight	3.1kg	
Standard accessories	Tip (Ø6.4 · Ø7.9 · Ø9.5mm), Handle, Regulator (with back fire protection), Gatt, Acetylene hose 3.6m, Carrying case, Flameproof sheet	

Acetylene burner set

2,350 °C

~ Ø4.1/8"



1 No oxygen cylinder required

- Necessary oxygen is taken from the air through automatic gas mixing unit.

2 Adjustable flame

- The amount of the gas used can be saved with flame adjusting lever.

Description	Acetylene burner set	
Code No.	R35000	
Soldering capacity	Soft solder	~ Ø4.1/8"
	Hard solder	~ Ø2.1/8"
Flame temperature	2350°C	
Weight	2.8kg	
Standard accessories	Airac, Bend, Burner (2 · 3 · 4), Lighter, Lighter flint, Wrench (14 x 19mm), Hose 2.5m, Case	

- Burner for all types of soldering.
- No oxygen cylinder required.

Turbo burner set (Propane type)

2,100°C

~ Ø4.1/8"



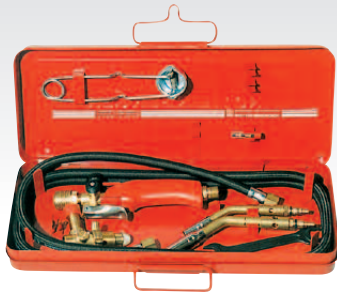
- Burner for soft and hard soldering.
- Propane alone produces 2100C° by the turbine divid in 4 sections and automatic mixing system.
- Strong turbo flame covers behind the pipe and reduces soldering time.

Description		Turbo burner set (Propane type)
Code No.		R31047
Soldering capacity	Soft solder	~Ø4.1/8"
	Hard solder	~Ø1.5/8"
Flame temperature		2100°C
Weight		3.0kg
Standard accessories		Air-prop, Regulator, Turbo burner (12 · 18), Lighter, Lighter flint, Wrench (14 x19 mm), Hose 2.5m, Case

Propane burner set

2,000°C

~ Ø2.1/8"



- Burner for soft and hard soldering.
- 2000C° without oxygen cylinder.

Description		Propane burner set
Code No.		R31128
Soldering capacity	Soft solder	~Ø2.1/8"
	Hard solder	~Ø1.1/8"
Flame temperature		2000°C
Weight		3.0kg
Standard accessories		Air-prop, Regulator, Propane burner (12 · 19), Lighter, Lighter flint, Wrench (14 x19 mm), Hose 2.5m, Case

Propane heating set 1

1,800°C



- For wide range heating operation; melting road paint grass, burning, roofing, etc.

Description		Propane heating set 1
Code No.		R56261
Crater		45mm
Bender length		600mm
Flame temperature		1800°C
Weight		1kg
Standard accessories		Handle 2, Propane bend 600, Heating burner Ø45, Propane hose with adaptor 2.5m, Gasket for heating x 1, Wrench 22

Two ream type Propane heating set 2

1,800°C



- Twin propane heating set of increased efficiency.
- For wide range heating operation; melting road point, grass burning, roofing, etc.

Description		Twin propane heating set 2
Code No.		R56262
Crater		45mm
Bender length		600mm
Flame temperature		1800°C
Weight		1.5kg
Standard accessories		Handle 2, Propane bend 600, Heating burner Ø45 x 2, Propane hose with adaptor 2.5m, Gasket for heating x 2, Forked bend, Wrench 22

Multi Gas 250AP

- Stable gas in upside down use.
- Strong flame by propane 30% and butane 70%.



Multi Gas High Power 300AP

- Suitable in cold climate as flame power stays the same though container gets cold.
- High calorie with 50% propane and 50% butane.
- Seamless can is used for safety.



Maxi Gas 400

- Blended with propane, propane, butane, acetone, etc. of large 338g capacity.
- High temperature 3100°C by using together with Roxy 400L.



Item	Multi Gas 250AP
Code No.	R355091
Gas volume	190g
Suitable burner	Ro Torch, Turbo Star, Handy Torch, Ro Fire, Turbo Fire, Handy Turbo
Quantity in box	48 pieces

Item	Multi Gas High Power 300AP
Code No.	R355094
Gas volume	190g
Suitable burner	Ro Torch, Turbo Star, Handy Torch, Ro Fire, Turbo Fire, Handy Turbo
Quantity in box	48 pieces

Item	Maxi Gas 400
Code No.	R35570
Gas volume	338g
Suitable burner	Roxy 400L Kit
Quantity in box	24 pieces

Coldshield spray



- Protects from distortion of light metal and spatter on painted surface during soldering and welding.
- Protects solenoid valve and parts from heat during soldering and welding.
- Makes barrier at the flame contacting area to protect object from heat and flame.
- Friendly to environment as 100% biodegrading, non-toxic, non-inflammable.
- Protects discoloration of stainless steel surface.
- Spray jell type covers wide area.



Item	Coldshield Spray
Code No.	R45250
Content volume	907g
Quantity in box	6

Coldshield paste



- Protects solenoid valve and parts from heat during soldering and welding.
- Protects from distortion of light metal and spatter on painted surface during soldering and welding.
- Makes barrier at the flame contacting area to protect object from heat and flame.
- Can be used repeatedly for economy.(paste).
- Friendly to environment as 100% biodegrading, non-toxic, non-inflammable.
- Protects discoloration of stainless steel surface.
- Paste type can be applied thick.



Item	Coldshield Paste
Code No.	R45251
Content volume	800g
Quantity in box	6

Heatproof Mat

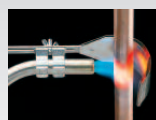


- To shut out from fire flame heat of up to 1000°C during soldering of copper tube.



Item	Heatproof Mat
Code No.	R31050N
Size	(L)300 x (W)500mm

Flame Guard 14-22



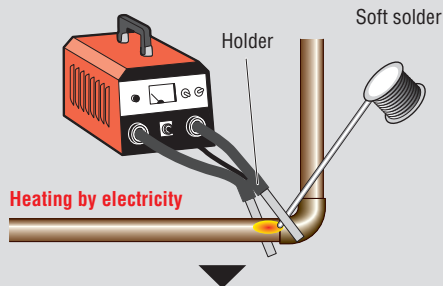
- Attach to the burner of torch size Ø14 ~ 22mm and increase heat efficiency by 30%.



Item	Flame Guard
Code No.	R31043
Size	Ø14mm ~ Ø22mm

Electric soldering machines

Purpose Most suitable for soldering work of copper tubes.



For copper tube soldering without flame

- Safe soldering work without flame.
- Suitable for soldering work where fire hazard exists.

Electric soldering machine R-10

~ Ø1.5/8"



- Safe soldering work without flame.
- Light weight and compact in metal carrying case.

Item	Electric soldering machine R-10
Code No.	44027
Soft soldering	~1.5/8"
Hard soldering	~5/8"
Weight	10.8kg
Dimensions	(L)390 x (W)155 x (H)275mm
Input voltage	Single phase *voltage made to order (50/60Hz)
Input current(maximum)	1.5KVA(15A)(100V)

*Power code length:3m

Electric soldering machine R-15

~ Ø1.5/8"



- Suitable for soldering work where fire hazard exists.
- Check electric current by ammeter for safe and accurate work.

Item	Electric soldering machine R-15
Code No.	27700
Soft soldering	~1.5/8"
Hard soldering	~1/2"
Weight	20.5kg
Dimensions	(L)295 x (W)203 x (H)182mm
Input voltage	Single phase *voltage made to order (50/60Hz)
Input current(Maximum)	1.5KVA(15A)(100V)

*Power code length:3m

Electric soldering machine R-30

~ Ø1.5/8"



- Suitable for soldering work without flame.
- With the common circuit for 100/200V, necessary current and voltage is maintained.
- Check electric current by ammeter for safe and accurate work.

Item	Electric soldering machine R-30
Code No.	27703
Soft soldering	~1.5/8"
Hard soldering	~7/8"
Weight	22kg
Dimensions	(L)295 x (W)203 x (H)182mm
Input voltage	Single phase *voltage made to order (50/60Hz)
Input current(Maximum)	100V2KVA(20A) 200V3KVA(15A)

*Power code length:3m

Optional accessories

Item	Code No.	Suitable model			Notes
		R-10	R-15	R-30	
Holder 42 (with automatic switch)	44133	●			1.8m
	27900		●	●	
Carbon electrode	44106	●	●	●	
	44110	●	●	●	
Extension cord 5m	87068		●	●	5m
Extension cord for remote control	87071		●	●	
Extension cord (with micro-switch cord) 3m	44903	●			3m

Silver Solder BS-0

phosphoric copper soldering material



· Soldering copper + copper without flux.

Item	Silver Solder BS-0 Ø1.6mm	Silver Solder BS-0 Ø2.4mm
Code No.	R50308	R50309
Length	500mm	
Weight	1kg	
JIS specification	Bcup-2	
Soldering temperature	735 ~ 845°C	
Material can be soldered	Copper + copper (no flux)	

Silver Solder BS-2

phosphoric copper soldering material

Silver 2%



· Soldering copper + copper.

Item	Silver Solder BS-2 Ø1.6mm	Silver Solder BS-2 Ø2.4mm
Code No.	R50310	R50311
Length	500mm	
Weight	1kg	
JIS specification	Bcup-6	
Soldering temperature	730 ~ 815°C	
Material can be soldered	Copper + copper (no flux)	Copper + copper alloy

Silver Solder BS-5

phosphoric copper soldering material

Silver 5%



· Easy to work with 5% silver contents.
· Certified by the Housing Urban Development Bureau (JIS specification group-3)(Japan).

Item	Silver Solder BS-5 Ø1.6mm	Silver Solder BS-5 Ø2.4mm
Code No.	R50312	R50313
Length	500mm	
Weight	1kg	
JIS specification	Bcup-3	
Soldering temperature	720 ~ 815°C	
Material can be soldered	Copper + copper (no flux)	Copper + copper alloy

Silver Solder BS-5 · 10 piece pack

phosphoric copper soldering material

Silver 5%



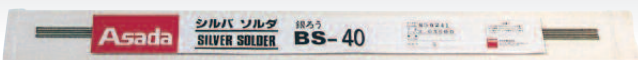
· Soldering copper + copper and copper + copper alloy
· Certified by the Housing Urban Development Bureau (JIS specification group-3)(Japan).

Item	Silver Solder BS-5, 10 pieces/pack Ø2.4mm
Code No.	R56240
Length	500mm
JIS specification	Bcup-3
Soldering temperature	720 ~ 815°C
Material can be soldered	Copper + copper (no flux) Copper + copper alloy

Silver Solder BS-40 · 5 pieces pack

silver soldering material

Silver 40%



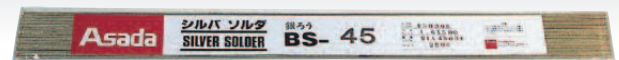
· Soldering copper + iron, copper + brass and contains no cadmium.

Item	Silver Solder BS-40, 5 pieces/pack Ø2.0mm
Code No.	R56241M
Length	500mm
Soldering temperature	720 ~ 810°C
Material can be soldered	Copper + iron Copper + brass

Silver Solder BS-45

silver soldering material

Silver 45%



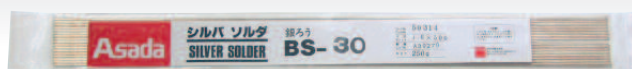
· Soldering copper + iron, copper + brass and contains no cadmium.

Item	Silver Solder BS-45 Ø1.6mm	Silver Solder BS-45 Ø2.4mm
Code No.	R50305M	R50306M
Length	500mm	
Weight	250g	
Soldering temperature	700 ~ 800°C	
Material can be soldered	Copper + iron Copper + brass	

Silver Solder BS-30

silver soldering material

Silver 30%



· Soldering copper + iron, copper + brass and contains no cadmium.

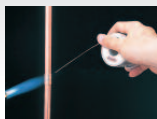
Item	Silver Solder BS-30 Ø1.6mm	Silver Solder BS-30 Ø1.6mm	Silver Solder BS-30 Ø2.0mm
Code No.	R56245M	R50314M	R50315M
Length	500mm		
Weight	100g	250g	250g
Soldering temperature	768 ~ 870°C		
Material can be soldered	Copper + iron Copper + brass		



Hard soldering

Solder Wire A (solder)

Silver 0.5%

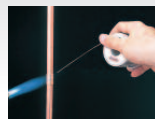


- Soldering water supply, hot water supply copper tube.
- Complies to the revised Water Supply Law of April 1, 2003 (Japan).

Item	Solder Wire A
Code No.	R50350
Wire diameter	Ø2.0mm
Weight	0.5kg
Soldering temperature	250 ~ 300°C
Material can be soldered	Copper tube only
Quantity in box	10

Solder Wire S (solder)

Silver 3.5%



- Soldering water supply, hot water supply copper tube.
- Complies to the revised Water Supply Law of April 1, 2003 (Japan).
- Certified by the Housing & Urban Development Bureau (JIS specification group-3) (Japan).

Item	Solder Wire S
Code No.	R50331
Wire diameter	Ø2.0mm
Weight	0.5kg
Soldering temperature	260 ~ 300°C
Material can be soldered	Copper tube only
Quantity in box	10

Flux (for hard soldering)



- For general hard soldering.

Item	Flux
Code No.	R50316
Suitable Solder	Silver soldering material, Phosphoric copper soldering material
Active temperature	600 ~ 850°C
Material can be used	Iron, nonferrous metals and their alloy
Weight	100g

Flux B-1 (for hard soldering)



- The most suitable for stainless.

Item	Flux BS-1
Code No.	R50317
Suitable Solder	Silver soldering material, Phosphoric copper soldering material
Active temperature	600 ~ 900°C
Material can be used	Iron, nonferrous metals and their alloy, high chromium stainless steel, tungsten carbide, chromium carbide molybdenum alloy, etc.
Weight	100g

S Flux (for soft soldering only)



- Complies to the soldering work promotion by the Japan Copper Center Guideline.

Item	S Flux (for soft soldering only)
Code No.	R50332N
Active temperature	180 ~ 400°C
Material can be used	Copper tube only
Content volume	100mL
Quantity in box	10 pieces

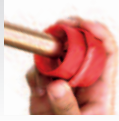
Nylon brush (for polishing copper tube)



- Removes oxidized objects, corrosion, and dust before soldering.
- Ideal polish before soldering.
- Usable for all size pipe.
- 10 pieces in 1 pack.

Item	Nylon Brush
Code No.	R45268
Quantity in carton	30 packs

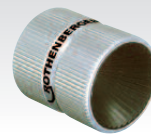
Reamer



- Hexagon shape for easy work.

Description	Reamer
Code No.	R11006
Copper tube size	Ø4~36mm
Suitable material	Copper, Aluminum, Soft Steel
Weight	30g

Universal Reamer



Universal Reamer S

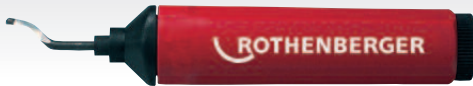


Universal Reamer

- Strong burr removing for stainless steel pipe.
- Smooth chamfering with 39 blades.
- Easy to hold and knurled finish to avoid slipping.

Description	Universal Reamer S	Universal Reamer
Code No.	R11006X	R70075
Copper tube size	Ø3 ~ 36mm	Ø10 ~ 54mm
Suitable material	Copper, Iron, Stainless, Aluminum, Brass, Plastic tube	
Weight	196g	390g

Scraper



- Clean and simple chamfering regardless copper, steel, aluminum, plastic, etc.

Description	Scraper	Optional accessories			
		Description	Code No.	Purpose	Quantity in package
Code No.	R21651	1	R21652	General use	10
		2	R21653	Blade Brass, cased item	
		3	R21654	Straight chamfering	

Pinch-off pliers



- Pinching the tube end.

Description	Pinch-off pliers
Code No.	R70250
Copper tube size	3/16" ~ 5/8"

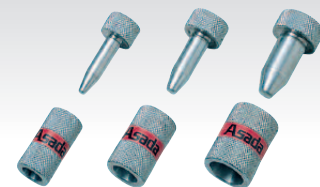
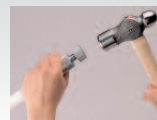
Coated tube stripper



- Removal of coating from hot water, water supply coated copper tube.

Description	Coated tube stripper No.3
Code No.	IS003
Size	3/8"

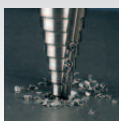
Sizing tool set



- Pipe end can be re-finished by simply tapping by hammer.

Description	Sizing tool set	Optional accessories	
Code No.	ST010	Description	Code No.
Suitable copper tube	Copper pipe for construction M type	3/8"	ST113
Contents	Sizing tool (3/8", 1/2", 3/4"), Case	1/2"	ST114
		3/4"	ST116

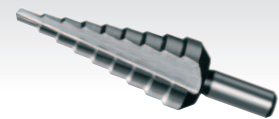
Step Drill Set



- Drill holes in metal, non-metal and plastic material.
- Can make holes of various sizes by one drill.
- Can drill hole while chamfering.

Description	Step Drill Set
Code No.	RK430S
Contents	Step Drill 0 / 1 / 2, Case

Step Drill



















- Drill holes in metal, non-metal and plastic material.
- Can make holes of various sizes by one drill.

Item	Code No.	Number of step	Size(mm)	Diameter of shank	
Step Drill	0	RK412	9	4, 5, 6, 7, 8, 9, 10, 11, 12	6mm
	1	RK420	9	4, 6, 8, 10, 12, 14, 16, 18, 20	8mm
	2	RK430	14	4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30	9mm
	5	RK439	13	4, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39	10mm
	7	RK528	7	5, 8.8, 11.8, 15.3, 19, 24.5, 28	9mm

REFRIGERANT RECOVERY MACHINES



High quality recovery machines contribute to various refrigerant / SF6 gas recovery

Capacities	Low pressure refrigerant		High pressure refrigerant				Super high pressure (Low boiling point) refrigerant	
								
								
								
	Refrigerant recovery cylinders							
Applicable refrigerant	Low pressure refrigerant		High pressure refrigerant				Super high pressure (Low boiling point) refrigerant	

ECO saver mini

PAT.P

High power vapor recover

70 g/minute

Cope with new · usual refrigerant
CFC · HCFC · HFC



With 1L cylinder

Without 1L cylinder



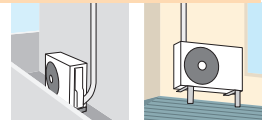
Easy to carry

- 9.3 kg without cylinder.
- Shoulder belt for convenience in carrying up stairs and ladders.



Compact design

- The most suitable height and narrowness place Air - Conditioning service.



1L removable cylinder

- Smallest refrigerant recovery machine in the world with 1L capacity.



High Torque motor

- Enables easy start under adverse conditions such as high ambient temperature, high pressure or low voltage supply.

Sub Cooling function

- No need to change connection when changing to sub-cool function.

Installed mesh strainer

- Protect recovery machine circuit from contaminated refrigerant for installed 150 micron mesh filter.

Self cleaning function

- The rest of liquid refrigerant in this machine can be recovered to cylinder, to protect from mixing of refrigerant.

Oil-less method

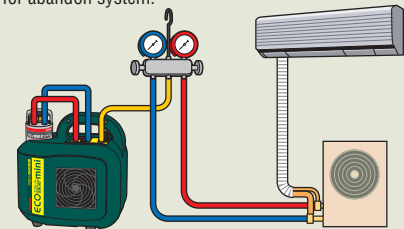
Vapor / liquid / Push-Pull

Manual / Automatic stop

Limit scale applicable

Applications

Air - conditioner, Auto mobile Air - conditioner, Small package Air - conditioner, and Vending machine, Repair of Air-conditioning equipment, and refrigerant recover for abandon system.



Refrigerant recovery cylinder (with sensor)

Optional accessories



Code No. TF040

Capacity 1L

Code No. TF090

Capacity 6L

Description	ECO saver mini (with 1L cylinder)	ECO saver mini (without 1L cylinder)
Code No.	ES401	ES400
Applicable refrigerant	R12, R134a, R410A, R407C, R404A, R507A, R412A, R509A, R22, R403B, R124, R413A, R417A, R422A, R422D, R423A, R114, R500, R502, R407D	
Recovery method	Compressed vapor recovery method / Push-Pull method	
Voltage	made to order	
Compressor	250W (1/3 HP) Oil less	
Dimensions	(L)240 x (W)350 x (H)360mm	
Weight	11.0kg	9.3kg
Noise value	68db	
Operating temperature	0 ~ 40°C	
Ultimate vacuum	Auto-stop -0.02MPa(-150mmHg) Manual-stop: Max-0.091MPa(-682mmHg)	
Standard accessories	Charging hose with 1/4" ball valve x 3, Shoulder belt x 1, Adapter for R410A 5/16" female x 1/4" male x 1, Recovery cylinder 1L x 1 (*only with 1 L version)	

Recovery rate

Refrigerant	R22	R134a	R407C	R410A
Vapor (g/min)	70	60	65	70
Liquid (g/min)	500	330	510	300
Push Pull (g/min)	4,400	3,500	4,400	4,300

*Rates vary under different conditions.

Recover XLT

PAT.P

High power vapor recover

150 g/minute

Cope with new · usual refrigerant
CFC · HCFC · HFC

YELLOW JACKET®



Easy operations for 1 valve

- Easy operation to use 1 valve changing
Liquid ▶ Vapor,
Purge ▶ Off.



SPR function (Suction pressure relief valve)

- SPR enables easy recovery in summer climate and R410A.

Air flow system

- Large airflow system gives excellent cooling effect for recovery.



Compact and light weight



- Light weight and compact recovery machine is easy carrying at the working site.
- Power code can be set up with behind main body.

Installed mesh strainer

- Protect recovery machine circuit from contaminated refrigerant for installed 200 micron mesh filter.

Self cleaning function

- The rest of liquid refrigerant in this machine can be recovered to cylinder, to protect from mixing of refrigerant.

Low noises while operating

Oil less

Vapor / Liquid / Push Pull

Automatic / manual stop

Evaevuation

Limit scale applicable

Description	Recover XLT
Code No.	Y95769
Applicable refrigerant	R12, R134a, R410A, R407C, R404A, R507A, R412A, R509A, R22, R403B, R124, R413A, R417A, R422A, R422D, R423A, R114, R500, R502, R407D
Recovery method	Compressed vapor recovery method / Push-Pull method
Voltage	made to order
Compressor	375W (1/2 HP) Oil less
Dimensions	(L)490 x (W)315 x (H)317mm
Weight	15kg
Noise value	64dB
Operating temperature	0 ~ 40°C
Ultimate vacuum	-0.044MPa(-330mmHg)
Standard accessories	1/4" charging hose 183cm x 1, 1/4" charging hose with ball valve 183cm x 1, Adapter for 410A 5/16" female x 1/4" male.

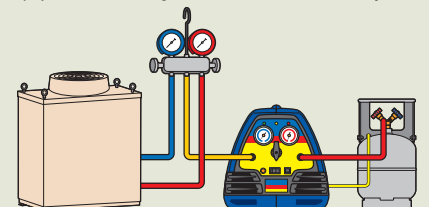
Recovery rate

Refrigerant	R22	R134a	R410A
Vapor (g/min)	150	120	135
Liquid (g/min)	800	880	560
Push Pull (g/min)	4,800	4,600	3,700

*Rates vary under different conditions.

Applications

Air- conditioner, Auto mobile Air- conditioner, Small package Air- conditioner, and Vending machine, Large Air-conditioning, Repair refrigerant Air-conditioning equipment, and refrigerant recover for abandon system.



G5 TWIN

PAT.P

High power vapor recover

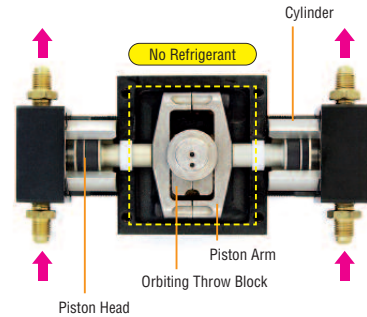
200 g/minute

NEW



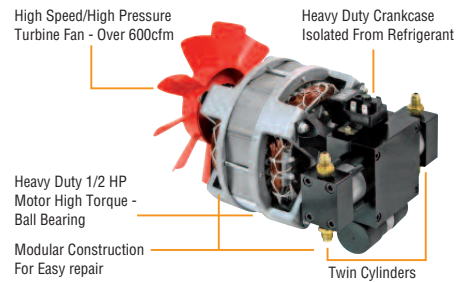
Twin Compressor

- Recovery speed widely up for use twin cylinder.
- Bearing and inside parts for compressor is long life without contamination for refrigerant not go in to crankcase.
- Protect for compression fail for do not install Wrist Pin and Bushing Wear.



High durability and Long life

- The G5 Twin's crankcase is completely isolated from the refrigerant flow.
- As a result, the main drive of the unit will last much longer too. Liquid slugging is now a thing of the past.



Light weight & Compact

- Easily portable. Compact design. Weighs only 11kg.

Easy Operation

- High speed liquid /vapor recovery without need for valve adjustment. No need to equalize pressure of the high and low sides when starting machine.

Outstanding recovery power

- The most suitable for recovery of R410A and summer time work when ambient temperature is high.

Oil-less Compressor

- Compressor design ensures oil contaminated refrigerant does not enter compressor.

Suitable for use with Limit Scale

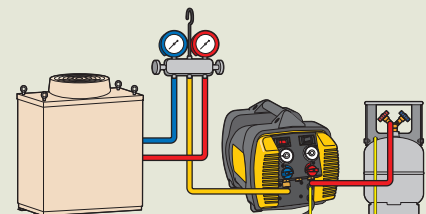
200 micron mesh filter

- This filter will remove unwanted particulate from the Recovery process.



Applications

Air- conditioner, Auto mobile Air- conditioner, Small package Air- conditioner, and Vending machine. Large Air-conditioning, Repair refrigerant Air-conditioning equipment, and refrigerant recover for abandon system.



Description	G5 TWIN
Code No.	AP502P
Applicable refrigerant	R12, R134a, R410A, R407C, R404A, R507A, R412A, R509A, R22, R403B, R124, R413A, R417A, R422A, R422D, R423A, R114, R500, R502, R407D
Recovery method	Compressed vapor recovery method / Push-Pull method
Voltage	made to order
Compressor	375W (1/2 HP) Oil less
Dimensions	(L)397 x (W)239 x (H)262mm
Weight	11kg
Noise value	67dB
Operating temperature	0 ~ 40°C
Ultimate vacuum	-0.044MPa(-330mmHg)

Recovery rate

Refrigerant	R22	R410A
Vapor (g/min)	150	135
Liquid (g/min)	800	560
Push Pull (g/min)	4,800	3,700

*Rates vary under different conditions.

ECO saver Tetra

PAT.P

High power vapor recover

400 g/minute



· 3/8 recovery cylinder 24L or 117L (Code No. TF128 or TF129) and Cooling unit CL3 (Code No. ES801) should be used with ECO SAVER Tetra.

Description	ECO saver Tetra	
Code No.	ES800	
Applicable refrigerant	R12, R134a, R410A, R407C, R404A, R507A, R412A, R509A, R22, R403B, R124, R413A, R417A, R422A, R422D, R423A, R114, R500, R502, R407D	
Recovery method	Compressed vapor recovery method / Push-Pull method	
Voltage	made to order	
Compressor	750W (1HP) Oil less	
Dimensions	(L)560 x (W)250 x (H)380mm	
Weight	20kg	
Noise value	70dB	
Operating temperature	0 ~ 40°C	
Ultimate vacuum	Auto-stop -0.04MPa (-300mmHg) Manual-stop max. -0.09MPa(-675mmHg)	
Applicable cylinder	Float sensor type ... Refrigerant recovery cylinder (with sensor) 6L, 12L, 24L, 117L Weighing type ... With Limit Scale : Refrigerant recovery cylinder (without sensor) 12L, 21L, 24L, 117L	
Standard accessories	3/8" charging hose 183cm x 2, 3/8" filter, Adapter for R410A 5/16" female x 3/8" male	

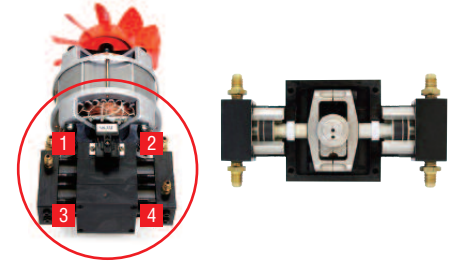
Recovery rate

Refrigerant	R22	R134a	R410A
Vapor (g/min)	400	315	325
Liquid (g/min)	2,550	2,550	3,250
Push Pull (g/min)	17,200	11,700	16,200

*Rates vary under different conditions.

Quadruple Compressor

- Liquid/Vapor recovery speed is increased with a new designed horizontally-opposed quadruple compressor.
- Horizontally-opposed pistons are free from poor compression due to wearing and maintain the maximum capacity.



High durability and Long life

- High speed turbine fan realized high efficiency and high durability for strong cooling of compressor head and condenser.
- The crankcase is completely isolated from the refrigerant flow. As a result, the main drive of the unit will last much longer.
- It is possible to recover virgin refrigerant.

Powerful high torque 750W motor

High speed/High pressure Turbine Fan

Heavy Duty Crankcase isolated from refrigerant

Light weight & Compact

- Can be carried by one person as it weighs only 20kg.

Easy Operation

- High speed liquid/vapor recovery without need for valve adjustment.
- No need to equalize pressure of the high and low sides when starting machine.

Outstanding recovery power

- The most suitable for recovery large amount of refrigerant from large systems.

Self cleaning function

- Residual liquid refrigerant in the machine can be recovered to cylinder to prevent from mixing of refrigerant.

Evacuation

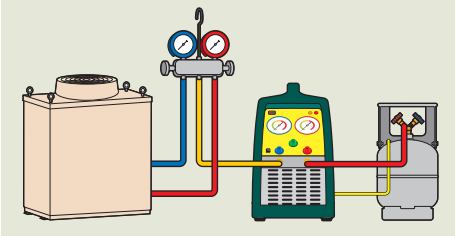
Oil less

Vapor / Liquid / Push Pull

Limit scale applicable

Applications

For refrigerant recover from a commercial refrigeration/air-conditioning equipment which has large amount of refrigerant such as centrifugal chiller, gas heating pump A/C, and package A/C.



ECO saver R350

High power vapor recover

700 g/minute

High power Push Pull recover

25,000 g/minute

Cope with new · usual refrigerant
CFC · HCFC · HFC



Push Pull speed: 700g/min (using standard accessories)

Vapor recover speed is:25kg/min (using standard accessories)

Strong cooling for large Condenser and large Fan

- R350 has a large cooling fan, and condenser to keep refrigerant from over-heating during recovery process.

Easy operation

- Easy to switch from vapor to push-pull recovery -only three valves to turn. No need to change the hose nnections.

Automatic stop function operates when vacuum reaches

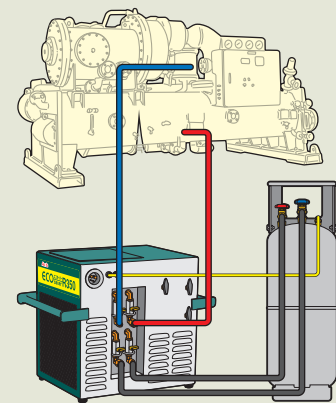
- 0.044Mpa (735mmHg)
- This function is optional

Summary

- Eco saver R350 is the ideal machine for refrigerant recovery from large or small A/C systems, centrifugal chillers and high pressure refrigeration installations. Also for moving refrigerant from small to larger tanks.

Applications

For recovery and transfer/charging refrigerant from large air-conditioning, refrigeration, chiller and high pressure turbo refrigeration system.



Push Pull Recover

1/2" Refrigerant recovery cylinder 120L (with sensor)

Optional accessory



- The most suitable recovery large amount of refrigerant for big diameter port.
- Port, valve, and siphon tube all using big diameter.
- Protect liquid over fill to use sensor.

Code No.	TF097
Capacity	120L
Port	1/2" flare

Description	ECO saver R350
Code No.	ES350
Applicable refrigerant	R12, R134a, R410A, R407C, R404A, R507A, R412A, R509A, R22, R403B, R124, R413A, R417A, R422A, R422D, R423A, R114, R500, R502, R407D
Recovery method	Compressed vapor recovery method / Push-Pull method
Voltage	made to order
Compressor	1500W 2 piston open drive (oil in) compressor
Dimensions	(L)482 x (W)356 x (H)534mm
Weight	45.4kg
Operating temperature	0 ~ 40°C
Ultimate vacuum	Automatically stop: -0.044Mpa(-735mmHg) Manual stop: -0.098Mpa(-735mmHg)
Standard accessories	1/2" charging hose 3m x 2, 1/2" charging hose 6m x 2, 1/2" ball valve x 2, Adapter 1/4" female x 1/2" male x 2, Filter dryer x 2

Recovery rate

Refrigerant	R22	R12	R134a	R502	R407C	R410A
Vapor (g/min)	700	700	700	700	700	700
Push Pull (g/min)	25,000	25,000	25,000	25,000	25,000	25,000

*Rates vary under different conditions.

ECO saver R1400

High power vapor recover

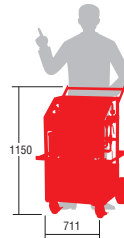
2,700 g/minute

High power push pull recover

147,000 g/minute

Cope with new · usual refrigerant

CFC · HCFC · HFC



Description	ECO saver R1400
Code No.	ES140
Applicable refrigerant	R12, R134a, R410A, R407C, R404A, R507A, R412A, R509A, R22, R403B, R124, R413A, R417A, R422A, R422D, R423A, R114, R500, R502, R407D
Recovery method	Compressed vapor recovery method / Push-Pull method
Voltage	made to order
Compressor	2250W(3HP) 2 piston open drive (oil in) compressor
Dimensions	(L)711 x (W)774 x (H)1,150mm
Weight	124.7kg
Operating temperature	0 ~ 40°C
Ultimate vacuum	Automatically stop: -0.044Mpa(-735mmHg) Manual stop: -0.098Mpa(-735mmHg)
Standard accessories	3/4" charging hose 6m x 1, 3/4" charging hose 3m x 2, 3/4" ball valve x 4, Adapter 3/4" female x 1/4" male x 3, Adapter 1/4" female x 3/4" male x 3.

Recovery rate

Refrigerant	R22	R12	R134a	R502	R407C	R410A
Vapor (g/min)	2,700	2,700	2,700	2,700	2,700	2,700
Push Pull (g/min)	147,000	147,000	147,000	147,000	147,000	147,000

*Rates vary under different conditions.

Powerful cooling due to large capacity condenser / fan & water cooling condenser

- Water cooled condenser enables high speed recovery even when ambient temperatures are high.

Push Pull recover

- High speed liquid recovery for Push Pull and high speed vapor recovery.

Vapor recover

- High speed vapor recover 2.7kg / min of gaseous refrigerant.

High capacity / long life Oil-In 2 piston compressor

- Deep vacuum can be drawn, and a large amount of refrigerant can be recovered.

Strong flamed construction and handle protect the unit at work and transportation.

Recycling by large filter dryer

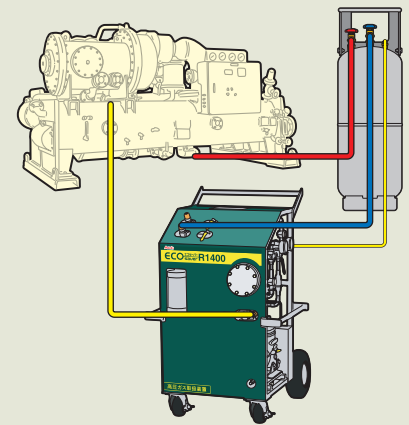
- Large filter dryer allows simple recycling.
- Protects compressor when recovering from burnt system and saves life of the machine.

Automatic Stop function

Suitable for use with Limit Scale.

Applications

For recovery and transfer/charging refrigerant from large air-conditioning, refrigeration, chiller and high pressure turbo refrigeration system.



Push Pull Recover

*Incase of use this machine, need 3/4" Port big diameter cylinder.

3/4" Refrigerant recovery cylinder 120L (with sensor)

Optional accessory



- The most suitable recovery large amount of refrigerant for big diameter port.
- Port, valve, and siphon tube all using big diameter.
- Protect liquid over fill to use sensor.

Code No.	TF098
Capacity	120L
Port	3/4" flare

Low pressure refrigerant recovery machine ECO saver R11

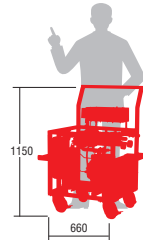
High power vapor recover

300 g/minute

High power push pull recover

45,000 g/minute

Low pressure refrigerant applicable



Description	ECO saver R11
Code No.	ESR11
Applicable refrigerant	R11,R113,R123
Recovery method	Push-pull method/compressed gas recovery method
Voltage	made to order
Compressor	1500W(2HP) 2 pistons oil-in compressor
Dimensions	(L)660 x (W)635x (H)1,150mm
Weight	96kg
Operating temperature	0 ~ 40°C
Ultimate vacuum	-0.098MPa (-735mmHg)
Applicable cylinder (other than over-fill protection system)	3/4 port recovery cylinder or drum for refrigerant
Standard accessories	Filter for R11, 3/4" hose 6m x 1, 3/4" hose 3m x 2, 3/4" ball valve x 4, Safety cable x 1, Hose adapter for water cooling condenser x 2

Recovery rate

Refrigerant	R11
Vapor (g/min)	300
Push Pull (g/min)	45,000

*Rates vary under different conditions.

Low pressure liquid and vapor refrigerant can be recovered without leakage

- Low pressure refrigerant R11, R113, and R123.

Powerful water cooled condenser

- This condenser make it possible to use a Drum Can Jig to recover R11,R113 & R123 without leaking to atmosphere, and will even recover to a Drum Can at the place location with high ambient temperatures.

High speed recovery

- Hard to recover low pressure refrigerants can be easily recovered using push-pull method for vapor recovery.

Easy Operations

- Easy operation by manipulating 3 valves.

Automatic stop function

- Operation stops automatically when vacuum level reaches 0.098Mpa. If pressure increases the recovery operation will restart after 2 minutes.

High capacity long-life vacuum pump

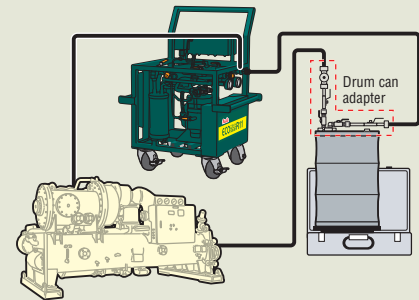
- Has oil-in, long life, two piston compressor with large capacity, and can draw a deep vacuum, ensuring safe recovery of large quantities of refrigerant.

Large Filter Drier

- Strong protection of compressor to be installing large filter drier.

Applications

For recovery of low pressure refrigerant from large Air-conditioning, Refrigeration Chiller systems.



Drum can adapter

Optional accessory

- For 100L Drum can. It can be recover refrigerant without leaking to the air for use Drum can adapter.



Code No.

XP532

Distillation cleaning pump ECO PUMP P-1100

Optional accessory

- Liquefy recover of low pressure refrigerant.
- Flushing for Retro fitting.
- High speed cleaning of Pipe plumbing for use cleaner; R141b and System cleaner etc.



Code No.

XP507

Discharge amount

18L/min(50Hz)

Maximum discharge pressure

21.6L/min(60Hz)

Applicable cleaner

0.45MPa

Applicable cleaner

Bromide lithium, R141b, System cleaner CF-20, etc.

Super-high pressure (low boiling point) refrigerant recovery machine

ECO saver RS13

PAT.

High power vapor recover

130g/minute

Super-high pressure (low boiling point) refrigerant applicable



Description	ECO saver RS13
Code No.	ESRS13
Applicable refrigerant	R13, R23, R503, R508A, R13B1, PFC (R14-R116)
Recovery method	Compressed vapor 2-stage recovery method
Voltage	made to order
Compressor	Multi-stage compressor
Dimensions	(L)533 x (W)330x (H)533mm
Weight	52kg
Operating temperature	0 ~ 40°C
Ultimate vacuum level	3 stage setting : -0MPa, -0.034MPa, -0.068MPa Final highest vacuum : -0.084MPa(-630mmHg)
Function	Recovery(simple recycling by filter dryer is available), charging
Applicable cylinder	Special cylinder for R13
Over-fill protection	Weight method by Special R13 cylinder + Limit Scale
Standard accessories	Limit Scale LS-45RSII, Down transformer, Super-high pressure stainless hose, Safety cable, Valve adapter with quick connector, 1/4" flare x valve adapter, 4 types spare gasket x 2 pcs. each, Cylinder adapter 1/4" flare x W26

Recovery rate

Vapor	(g/min)	130
-------	---------	-----

*Rates vary under different conditions.

Recovery and charging of low boiling point refrigerant

- Easy operation to use 1 valve changing Liquid ▶ Vapor · Purge ▶ Off.

Select recovery vacuum level

- Select depth of vacuum for recovery. (0MPa, -0.034MPa, -0.068MPa can be selected.)

Recover without special cooling system

- Powerful recovery without using special cooling system.

Automatic pressure balancing function

- Re-starts easily by automatic pressure balancing.

Twin compressors

Twin fan & condenser

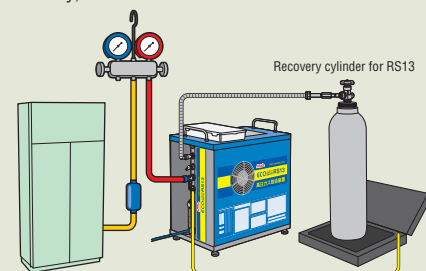
Oil less type

Microprocessor system auto recoveries charging

Limit Scale can be used

Applications

Recovery of refrigerant from environment testing unit, super low temperature creating machine, snow making machine, equipment of low temperature chemical industry, etc.



Recovery cylinder for RS13

Optional accessories



- Seamless container

application refrigerant	R13	R23	R503
Code No.	TF091	TF092	TF093
application refrigerant	R508A	R14	R13B1
Code No.	TF094	TF095	TF096
Max. pressure	10.2L/24.5MPa		

Regulator for charging

Optional accessories



- Use for charging

Code No.	ES117
----------	-------

Flare adapter for regulator

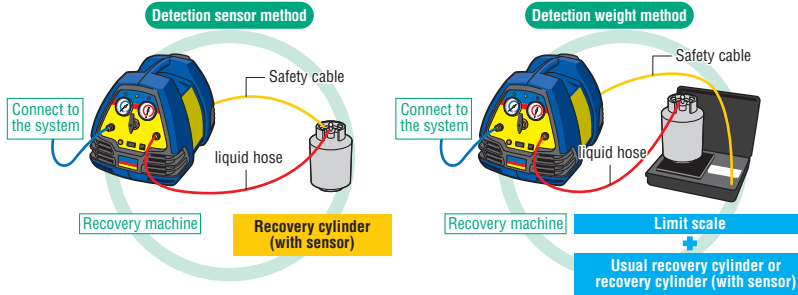
Optional accessories

Code No.	ES118
----------	-------

Recovery cylinder

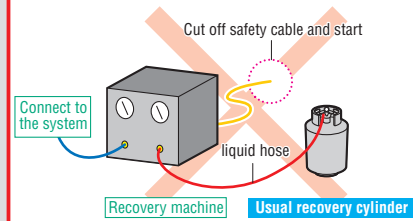
Safe recovery operations

Automatic stop under 90 % cylinder capacities for over-charge protect function. Protect over liquid charge, safety operation.



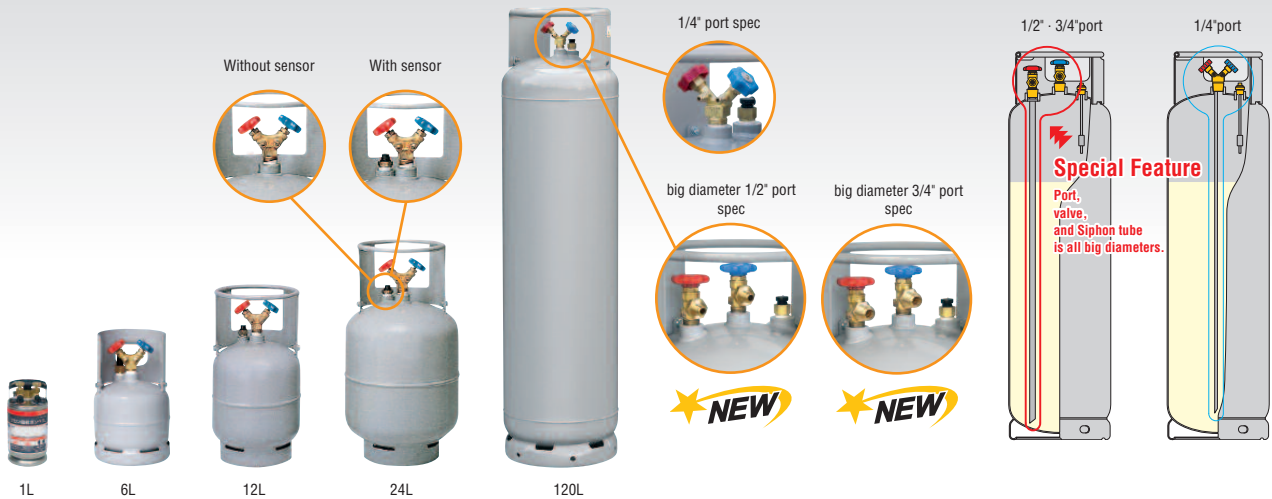
Dangerous recovery operations

No protection from over filling may create explosion hazard.



Refrigerant recovery cylinder

FC3 : R410A, R407C, R404A, R507A, R134a, R12, R22, R403B, R124, R413A, R417A, R422A, R422D, R423A, R114, R500, R502



- FC3(5Mpa)spec, 1L cylinder is same as FC3. For use under 5 Mpa pressure refrigerant.
- Float sensor stops filling when reached 90% of inner volume.

- Parkerizing finish inside (remove 1L type). except for 1L cylinder size

Recovery cylinder (with sensor)

Description	Refrigerant recovery cylinder (with float sensor)					
	1/4" port			1/2" port	3/4" port	
	6L	12L	24L	120L	120L	120L
Code No.	TF090	TF056	TF057	TF110	TF097	TF098

Recovery cylinder (without sensor)

Item	General refrigerant recovery cylinder (without float sensor)	
	1/4" port	
	24L	120L
Code No.	TF080	TF070

White marker for cylinder

Optional accessories



- For writing refrigerant name on the cylinder

Description	White marker for cylinder
Code No.	XP581

Limit Scale LS-45II

Refrigerant weight & Limit Scale



- Use together with common refrigerant recovery cylinder (without over-fill float sensor) to automatically stop at 90% cylinder filled condition and alarms to stop over filling. (Lawful)
- No weighing tolerance by platform supporting system with 4 load cells.
- Warning alarm when cylinder is fully filled.
- Usable for both common cylinder and over-fill protected cylinder by float sensor.

Item		Limit Scale LS-45II
Code No.		LS452
Weighing method		Electronic resistor type load cell
Capacity		45kg
Calibration		5g
Resolution		1/9,000
Dimensions		(L)363 x (W)480 x (H)147mm
Platform		230 x 230mm
Weight		10Kg
Working temperature range		-5 ~ 40°C
Voltage		made to order
Usable cylinder	General cylinder	21L, 24L
	Float sensor type	12L, 24L

Limit Scale LS-45V

Automatic refrigerant charging / refrigerant weight & Limit Scale



- Recovery machine stops automatically at 90% full.
- Equipped with system for preventing selection of wrong cylinder.
- High quality automatic stop function.
- Prints work details at work site. (LS-45VP)

Item		Limit Scale LS-45V	Limit Scale LS-45V (with Printer)
Code No.		LS045V	LS045VP
Weighing method		Electronic resistor type load cell	
Capacity		45kg	
Calibration		5g	
Resolution		1/9,000	
Dimensions		(L)350 x (W)470 x (H)130mm	
Platform		230 x 230mm	
Weight		11Kg	
Working temperature range		-5 ~ 40°C	
Voltage		made to order	
Usable cylinder	General cylinder	21L, 24L	
	Float sensor type	12L, 24L	

*LS-45VP is made to order.

Printer for LS-45VP

Optional accessory



Limit Scale LS-150II

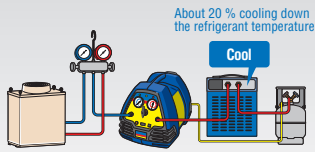
Refrigerant weight & Limit Scale



- Use together with common refrigerant recovery cylinder (without over-fill float sensor) to automatically stop at 90% cylinder filled condition and alarms to stop over filling. (Lawful)
- No weighing tolerance by platform supporting system with 4 load cells.

Item		Limit Scale LS-150II
Code No.		LS152
Weighing method		Electronic resistor type load cell
Capacity		150kg
Calibration		50g
Resolution		1/3,000
Dimensions		(L)450 x (W)560 x (H)178mm
Platform		370 x 370mm
Weight		23Kg
Working temperature range		-5 ~ 40°C
Voltage		made to order
Usable cylinder	General cylinder	21L, 24L, 120L
	Float sensor type	24L, 120L

Cooling Unit



- Cooling support system for recovery machine.
- The necessity of recovery operation in summer time.
- Improves recovery in summer climate or large volume by using together with recovery machine.
- Reduces refrigerant temperature by about 20%.
- With one extra receptacle.

Description	Cooling Unit
Code No.	ES110
Refrigerant applicable	R410A, R407C, R404A, R507A, R412A, R509A, R134a, R12, R22, R403B, R124, R413A, R417A, R422A, R422D, R423A, R114, R500, R502
Power consumption	25W
Connecting port	1/4" Flare
Weight	7.0kg
Dimensions	(L)290 x (W)150 x (H)346mm

Trap Separator

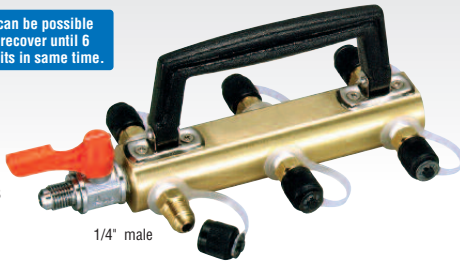
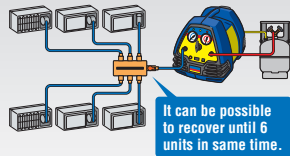


- Removal "sealant" for gas leak prevention from added refrigerant in Car air-conditioner.
- Protect recovery machine for removal "sealant", "contamination", and "sludge".
- Usable all Air - conditioning service function.
- Replaceable Filter.
- * For single Air - conditioning 50 units.

Description	Trap Separator
Code No.	Y38087
Weight	0.65kg
Dimensions	(H)300 x Ø68mm

Optional accessory	
Description	Replacement Filter for Trap Separator
Code No.	Y38081

Header

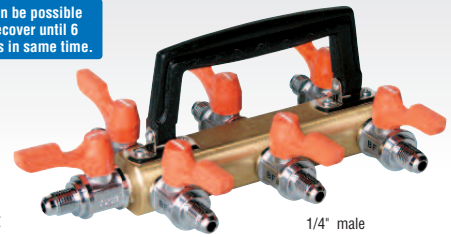
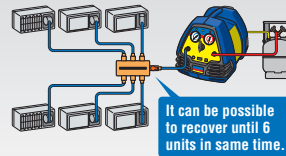


- Recovery of up to 6units at the same time.
- Increase efficiency and save the working time.

1/4" male

Description	Header
Code No.	TF013
Screw diameter	Flare 1/4" male

Header (with ball valve)

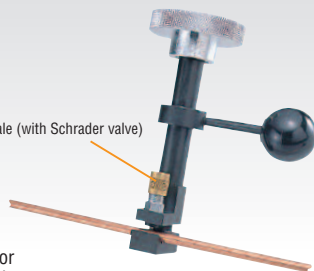
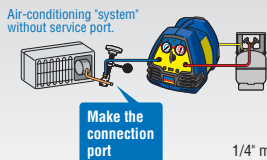


- Recovery of up to 6units at the same time.
- Increase efficiency and save the working time.
- The hoses can be connect and detach while recovering operation.

1/4" male

Description	Header (with ball valve)
Code No.	TF039
Screw diameter	Flare 1/4" male

Piercing valve



- Make connection port for recovery for equipment which has no service port, such as home use refrigerator, etc.

1/4" male (with Schrader valve)

Description	Piercing valve
Code No.	TF014
Copper pipe size	3/16" ~ 1"
Connection port	1/4" Flare (with Schrader valve)

Optional accessories	
Description	Code No.
Substitution blade	TF015
Gasket	TF016

Heater belt



- Helps vaporization of refrigerant in the cylinder.
- Built-in thermostat keeps the surface at the fixed temperature.

Item	Heater belt
Code No.	Y68848
Power source	*made to order
Size	153 x 658mm (heating part)
Weight	0.51kg

Recovery machine wagon (for G 5 Twin)

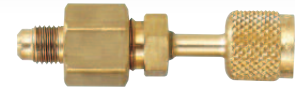
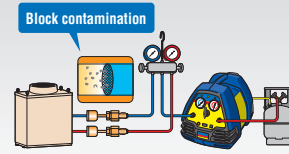


Cylinder set up chain

- Can load 2 pieces 12L / 24L cylinder or 4 pieces 6L cylinder with recovery machine.
- Can load Limit scale.

Description	Recovery machine wagon (for G 5 Twin)
Code No.	TF450
Weight	17kg
Dimensions	(L)650 x (W)581 x (H)930mm
Loadable machine	G5 Twin, ECO saver mini

Manifold filter

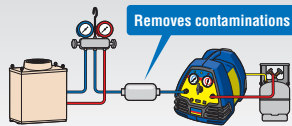


with Schrader valve

- Removal filter against dirt in the refrigerant.
- Removes dirt such as sludge and protects O-rings and seals from damage.

Description	Code No.	Screw diameter	
		Female	Male
Manifold filter	Y41119	1/4"	1/4"
	Y41120	3/8"	3/8"
	Y41121	1/2"	1/2"

Filter



1/4" male

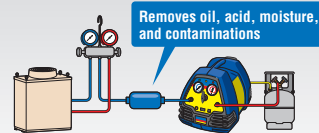
1/4" female

Refrigerant flow

- Removes particles, cutting chips, etc. to protect recovery machine.

Description	Code No.	Screw diameter	
		IN	OUT
Filter	TF011	1/4" flare male	1/4" flare female

Filter Dryer



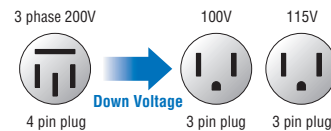
1/4" male

Refrigerant flow

- Removes oil, moisture, acid, particles, cutting chips during recovery and protects recovery machine.

Description	Code No.	Screw diameter	
		IN	OUT
Filter dryer	ES006	1/4" flare male	1/4" flare female

Down transformer



- In case of unusable 100 voltage over 25A, down the voltage from 200V to 100V.

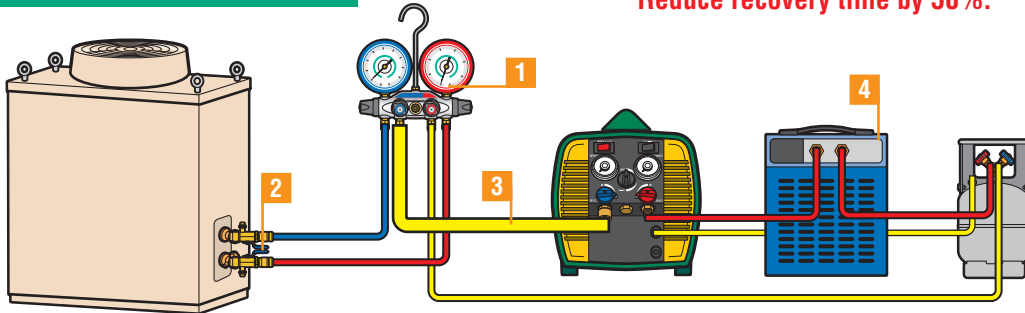
Description	Down transformer
Code No.	ES046
Capacity	3KVA (Maximum output 30A)
Input voltage	200V (50/60Hz)
Output voltage	100V(3P) x 2, 115V(3P) x 2
Input plug	3 phase 200V for 20A 4 pin plug
Breaker	15A (Input side)
Dimensions	(L)260 x (W)210 x (H)160mm

Efficient recovery method

Greatly reduce cost of recovery

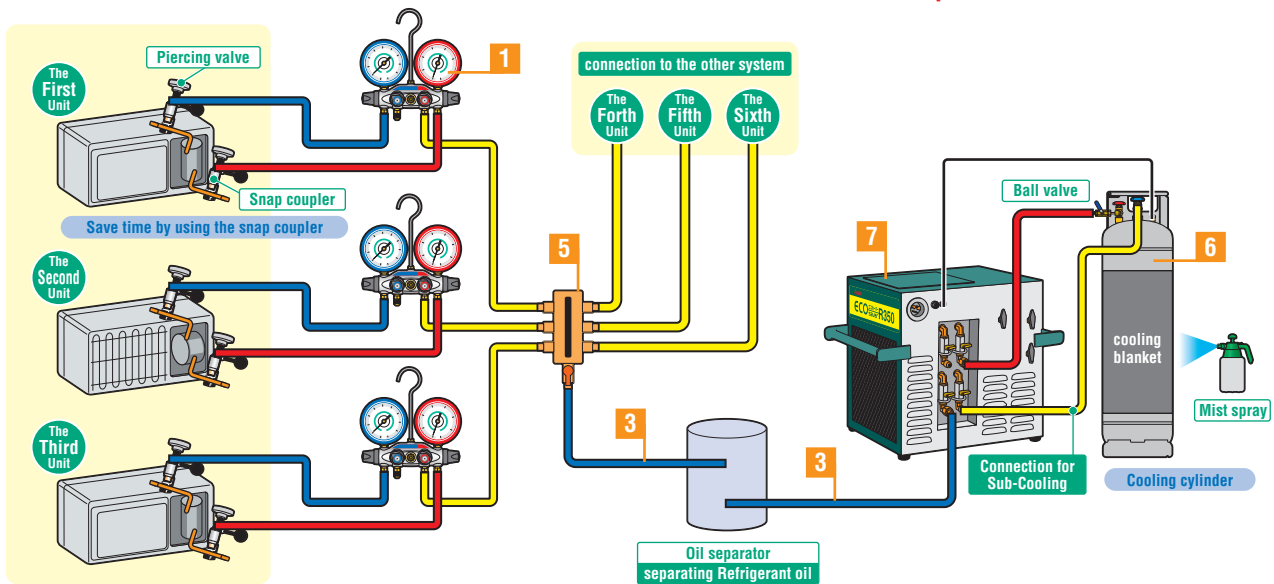
Recover refrigerant from Package Air-condition

Reduce recovery time by 50%.



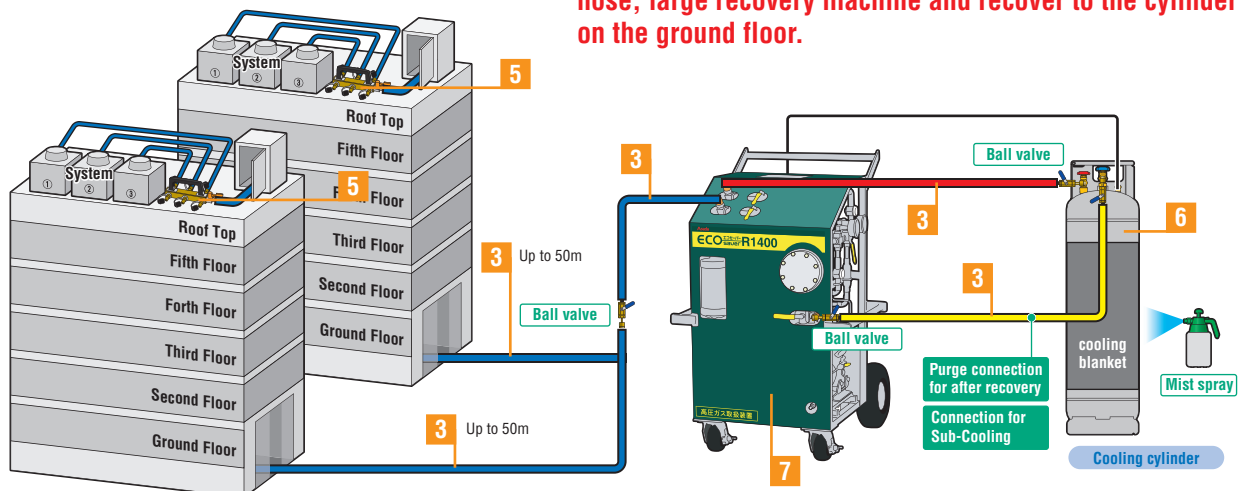
Recover refrigerant from multiple units

Use Header to recover multiple units at the same time.



Recover refrigerant up to 50m away

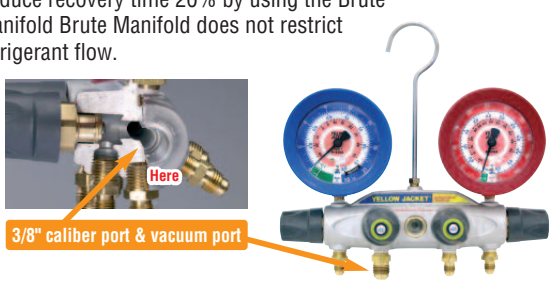
Use Header to recover multiple units at the same time. With this equipment it is possible to use a long charging hose, large recovery machine and recover to the cylinder on the ground floor.



1 3/8" large diameter manifold

Brute II Manifold series

- Reduce recovery time 20% by using the Brute Manifold. Brute Manifold does not restrict refrigerant flow.



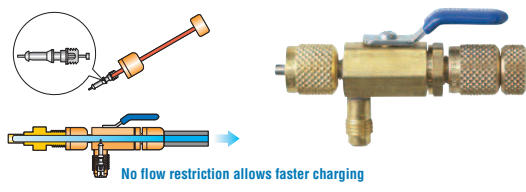
3/8" caliber port & vacuum port

R410A
R407C, R404A, R507A, R134a R12, R22, R502

2 Schrader valve removal tool

Quick charging valve

- 40% reduction in charging time using the Ball Valve Tool.
- Remove and replace Schrader cores without losing charge.




No flow restriction allows faster charging

3 Large diameter charging hose

Long Charging Hose / Heavy Duty Charging Hose

- No flow restriction allows faster charging.




3/8" Long type 3/8" Long type (with hose reel) 1/2" · 5/8" · 3/4" Heavy Duty Hose

4 Refrigerant cooling support unit

Cooling Unit

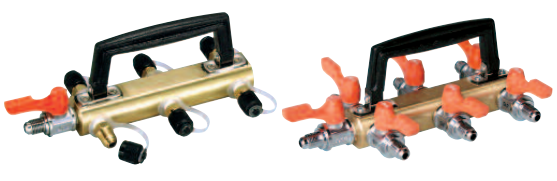
- Effectively cools down the refrigerant when the ambient temperature is high.
- Increase efficient recover for large amount of high pressure refrigerant and R410A.



5 Multiple Unit Recovery Equipment

Header

- Recover refrigerant from 6 units at the same time.
- Save time when recovering multiple units and increase work efficiency.



6 Large diameter 120 L refrigerant recover cylinder

1/2" · 3/4" refrigerant recovery cylinder (with sensor)

- Large diameter port and valve / siphon tube Allows free slow to increase efficient recovery.
- Receive maximum performance from the recovery machine by using large diameter recovery cylinder.
- With float sensor
- FC3(5Mpa applicable) spec.



Special feature

7 Large refrigerant recovery machines

ECO saver R350, R1400

- Large, high speed recovery machines for larger systems.

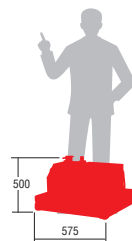


Recover and charge SF6 gas (sulfur hexafluoride) ECO saver SF6

High power vapor recover

220 g/minute

For SF6 gas
(sulfur hexafluoride)



Item	ECO saver SF6
Code No.	ESSF6
Applicable gas	SF6 (sulfur hexafluoride) gas
Recovery / Charging method	Vapor recovery · Vapor charging
Voltage	made to order
Compressor	400W Oil-less compressor
Dimensions	(L)550 x (W)575 x (H)500mm
Weight	36.3kg
Operating temperature	0 ~ 40°C
Ultimate vacuum	Max. vacuum :-0.09MPa (675mmHg)
Function	Recovery · Charging (Simple recycling recovery and recycling charge by filter dryer can be done.)
Cylinder (with over-fill protection)	40L · 100L for SF6 (sulfur hexafluoride) gas only Weight type: Use Limit Scale
Standard accessories	Limit Scale LS-150II, Suction hose coupler, Vacuum pump adapter, 1/4" Plus II hose 15cm, 1/4"Flare adapter, Filter dryer, Jumper plug

*If you need higher vacuum rate, please contact us.

Recovery rate

Vapor	(g/min)	220
-------	---------	-----

Rates vary under different conditions.

Compact and light weight

- Compact and light weight in convenient case to carry.

Reclaim in recovery process by Filter Dryer

- It is possible to recovery during reclaim for use filter dryer.

Can recharge safely

- Pressure of the recovered gas is reduced within the machine and re-charging is safe.

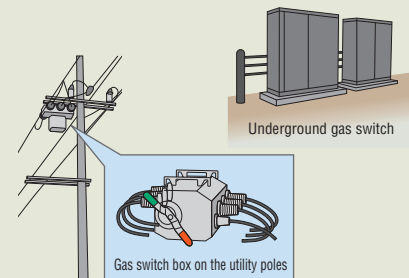
Oil-less compressor is used

- No special maintenance required with the oil-less compressor.

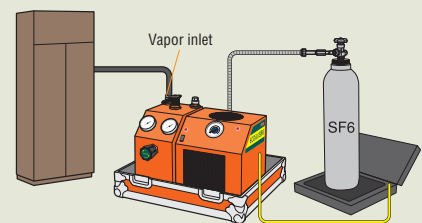
Purposes

For recycle recovery and recycle charging of SF6 gas from breaker, switching equipment, etc.

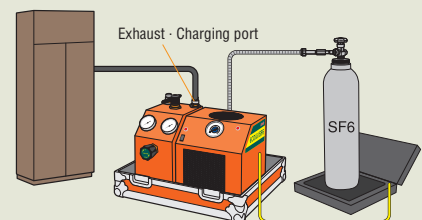
Mainly machine / system contained SF6 gas



Recovery / Reclaim



Reclaim / Charge



Recovery cylinder for SF6 gas Optional accessory

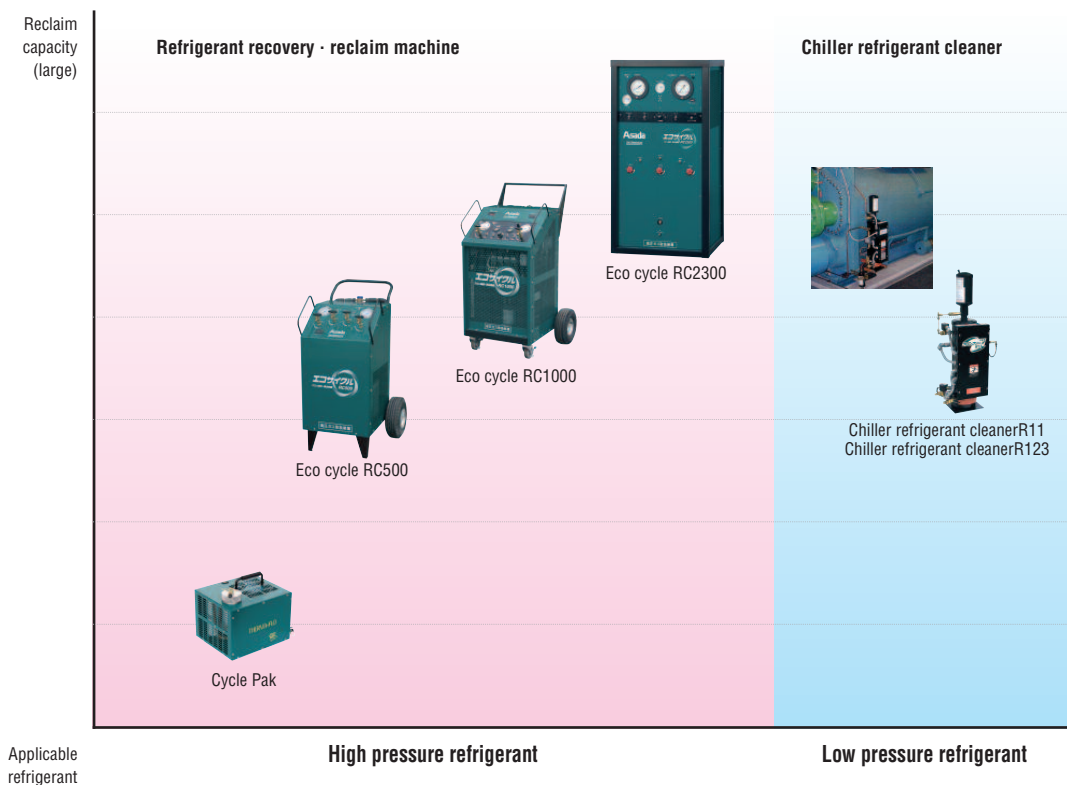


Code No.	TF044	TF043
Capacity	109L	40L

REFRIGERANT RECOVERY · RECLAIM MACHINES



Refrigerant recovery · reclaim machine and Chiller refrigerant cleaner which contribute to refrigerant recycling and energy saving

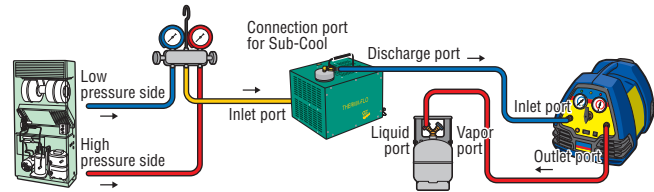


Refrigerant reclaim machine Cycle Pak

PAT.



- For reclaiming used refrigerant.
- Applicable for vapor / liquid refrigerant.
- Simple distillation type unit which separates refrigeration oil from refrigerant by evaporating with a heater.
- Moisture and acid can be removed with a filter.
- High purity reclaiming can be done by using it together with a recovery machine.



Description	Cycle Pak
Code No.	TF4100
Applicable refrigerant	R134a, R12, R22, R500, R502
Reclaiming method	Simple distillation
Voltage	650W (50/60Hz) made to order
Dimensions	(L)290 x (W)275 x (H)362mm
Weight	7.1kg
Standard accessories	Filter dryer

Reclaiming capacity

Refrigerants	R12	R22	R500	R502	R134a
Moisture (ppm)	20	70	27	34	100
Acid (ppm)	1	2	1	1	1
Total residue on evaporation (%)	0.01	0.03	0.01	0.01	0.02
Non condensable gas (%)	1.00	1.00	1.20	1.10	1.00

Filter Dryer

Optional accessory

- Removes acid and moisture efficiently from the refrigerant to be reclaimed.



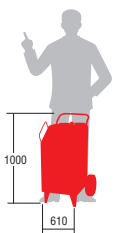
Description	Filter Dryer
Code No.	TF012

Refrigerant recovery · reclaim machine Eco Cycle RC500

High power liquid recovery · reclaim

520g/minute

Cope with new · usual refrigerant
CFC · HCFC · HFC



High speed / purity reclaiming

- The most suitable of high speed / purity reclaim for recovery / reclaim operation at one time.

Suitable for Flushing operation

Strong separations for impurities

- Strong separation of oil / acid / moisture / particles.

Increase ability of Dryer

- Efficient dryer for high quality filter dryer.

Purposes

- High purity reclaiming of used refrigerant.
- Recovery from large chiller and Air conditioning system.
- Refrigerant moving charge.
- For flushing

Description	ECO Cycle RC500
Code No.	VS500
Applicable refrigerant	R404A, R507A, R412A, R509A, R12, R22, R500, R502, R134a and more
Recovery method	Liquid recovery method
Reclaiming method	Distillation
Voltage	made to order
Compressor	375W (1/2HP) Hermetic(Oil-in)
Dimensions	(L)530 x (W)610 x (H)1,000mm
Weight	55kg
Operation temperature	0 ~ 40°C

Recovery · Reclaim speed

Refrigerant	R22	R12
Liquid (g/min)	340	520

* Rates vary under different conditions.

Reclaiming capacity

Refrigerants	R12	R22	R500	R502	R134a
Moisture (ppm)	~10	~10	~10	~10	~10
Acid (ppm)	~0.1	~0.1	~0.1	~0.1	~0.1
Total residue on evaporation (%)	~0.01	~0.01	~0.01	~0.01	~0.01
Non condensable gas (%)	~0.5	~0.5	~0.5	~0.5	~0.5

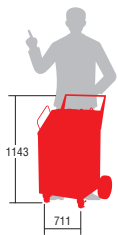
* Rates vary under different conditions.

Refrigerant recovery · reclaim machine **Eco Cycle RC1000**

High power liquid recovery · reclaim

1,040g/minute

Cope with new · usual refrigerant
CFC · HCFC · HFC



High level reclaiming of recovered refrigerant

- For use separate / cooling chamber, it can be high level reclaim of recovered refrigerant.

High speed / purity reclaiming can be change

- It is possible to change high speed 1pass / circulate reclaiming.

High speed / purity reclaiming

- The most suitable of high speed / purity reclaim for recovery / reclaim operation at one time.

The most suitable flushing operation

Increase ability of Dryer

- Efficient dryer for high quality filter dryer.

Purposes

- High purity reclaiming of used refrigerant.
- Refrigerant moving charge.
- Recovery from large chiller and Air conditioning system.
- For flushing

Description	ECO Cycle RC1000
Code No.	VS1000
Applicable refrigerant	R404A, R507A, R412A, R509A, R12, R22, R500, R502, R134a and more
Recovery method	Liquid recovery method
Reclaiming method	Distillation
Voltage	made to order
Compressor	750W (1HP) Hermetic(Oil-in)
Dimensions	(L)610 x (W)711 x (H)1,143mm
Weight	101kg
Operation temperature	0 ~ 40°C

Recovery · Reclaim speed

Refrigerant	R22	R12
Liquid (g/min)	770	1,040

* Rates vary under different conditions.

Reclaiming capacity

Refrigerants	R12	R22	R500	R502	R134a
Moisture (ppm)	3.6	9.1	7.0	3.6	6.5
Acid (ppm)	~0.1	~0.1	~0.1	~0.1	~0.1
Total residue on evaporation (%)	0.005	0.008	~0.1	0.005	0.005
Non condensable gas (%)	0.1	0.29	~0.5	0.28	0.18

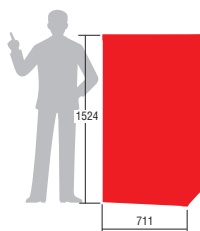
* Rates vary under different conditions.

Refrigerant recovery · reclaim machine **Eco Cycle RC2300**

High power liquid recovery · reclaim

2,270g/minute

Cope with new · usual refrigerant
CFC · HCFC · HFC



High level reclaiming of recovered refrigerant

- For use separate / cooling chamber, it can be high level reclaim of recovered refrigerant.

The most suitable flushing operation

- It is possible to change high speed 1pass / circulate reclaiming.

High speed / purity reclaiming

- The most suitable of high speed / purity reclaim for recovery / reclaim operation at one time.

Increase ability of Dryer

- Efficient dryer for high quality filter dryer.

Purposes

- High purity reclaiming of used refrigerant.
- Refrigerant moving charge.

Description	ECO Cycle RC2300
Code No.	VS2300
Applicable refrigerant	R404A, R507A, R412A, R509A, R12, R22, R500, R502, R134a and more
Recovery method	Liquid recovery method
Reclaiming method	Distillation
Voltage	made to order
Compressor	1500W (2HP) Hermetic(Oil-in)
Dimensions	(L)610 x (W)711 x (H)1,524mm
Weight	209kg
Operation temperature	0 ~ 40°C

Recovery · Reclaim speed

Refrigerant	R22	R12
Liquid (g/min)	2,180	2,270

* Rates vary under different conditions.

Reclaiming capacity

Refrigerants	R12	R22	R500	R502	R134a
Moisture (ppm)	8.3	6.5	3.1	3.6	1.8
Acid (ppm)	~0.1	~0.1	~0.1	~0.1	~0.1
Total residue on evaporation (%)	0.005	0.005	0.007	0.005	~0.01
Non condensable gas (%)	0.81	1.02	0.24	1.4	0.26

* Rates vary under different conditions.

Saves money and increases cooling ability of low pressure chiller

Restores chiller to peak operating capacity and saves money in energy costs.

Cooling effect decreased

Accumulated oil



Accumulated oil will decrease the cooling efficiency of the system.

Reduced cooling ability

Cooling ability is reduced when oil is mixed in the refrigerant.

Increased cost

In case of 500 refrigerator ton turbo chiller, average 24,000 US \$ lose energy per year.

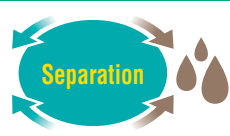
Automatic

Non stop recycling ▶ return



24-hour nonstop filtering whether the chiller is on or off. Continuous filtering and recycling of the refrigerant.

Removes oil in the refrigerant



Restores chiller to optimal condition.

Oil / refrigerant recycling ▶ return Recycling

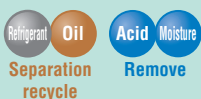


Separates refrigerant and refrigerant oil. Automatically returns refrigerant to the chiller.

Use the Chiller Cleaner

Improved cooling
Save money

Oil return



Contribute to the system ability and operating cost for use Chiller refrigerant cleaner.

Cooling ability up

Recover peak cooling rate and remove oil, moisture, and acid from waste refrigerant. Prevent sudden breakdown of the system.

Cost Reductions

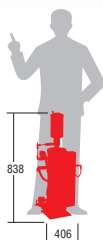
COOLING ABILITY GOES UP! COSTS GO DOWN! Significant reduction in energy use and operating cost.

Chiller Refrigerant Cleaner

PAT.P

Maximum capacity

560kg/week



Chiller refrigerant cleaner R11



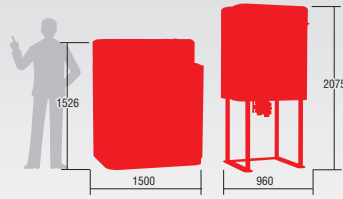
Chiller refrigerant cleaner R123



Model	R11	R123
Code No.	FCR11	FCR123
Applicable refrigerant	R11,R113	R123
Voltage	AC100V (50/60Hz)	
Working pressure	0.1MPa	
Capacity	385-560kg /week (average)	
Distillation temperature	68°C	
Operating environment	20 ~ 40°C, 5 ~ 80% relative humidity, non condensing	
Storage environment	-17 ~ 54°C, 5 ~ 80% relative humidity, non condensing	
Connecting port	1/4" male flare port	
Dimensions	(L)305 x (W)406 x (H)838mm	
Weight	27.2kg	
Main accessories	Down transformer, various Connection, various Heat Insulator, Set up Manual, Operation manual	

Refrigerant decomposition device **Plasma X**

Processing Capacity
2 kg/hour



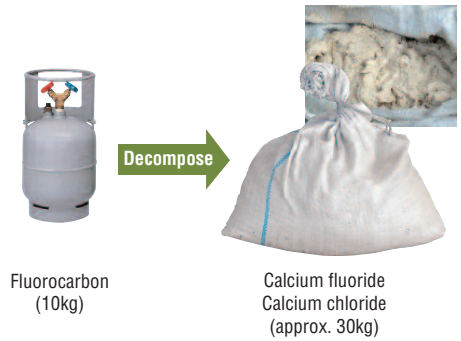
Purposes

- Detoxifying processing of non-reclaimable refrigerant.
- For operation in a factory or a working site where it is impossible to remove refrigerant.

Asada Plasma technology decompose fluorocarbon 99.99%



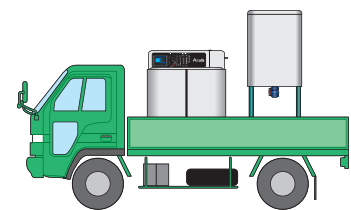
· Plasma decomposes fluorocarbon and detoxifies as calcium fluoride and calcium chloride.



Fluorocarbon (10kg)

Calcium fluoride
Calcium chloride (approx. 30kg)

Small, compact and Transportable to factory and work site



- Currently decomposition is carried out at plant facility which requires a large space.
- Plasma X is so small that it is possible to transport it to the factory or working site!
- This device can be used when decomposing inside a factory or working site where it is impossible to remove refrigerant from the site.

Description	Plasma X	
Code No.	FP100	
Applicable refrigerant	R12, R22, R134a, R407C, R410A, and more	
Method	Torch Plasma	
Voltage	3 phase 200V (*)	
Processing Capacity	2kg / hour (R22)	
	2kg / hour (R134a)	
	1kg / hour (R12)	
Decomposition Rate	More than 99.9%	
Dimension	Decomposition unit	(L)1500 x (W)930 x (H)1526mm
	Dehydration unit	(L)960 x (W)800 x (H)2075mm

*Other voltages available

Preparation works required for installation

1. Installation : Concrete floor foundation (weight of unit-700kg). Need to keep the room temperature at below 40°C.
2. Power Source : 3 phase 200V, capacity of more than 10KW is required.
3. Water Supply Piping : 500 L per day water consumption.
4. Plumbing for Waster Disposal : Plumbing sufficient for 50 L/minute water disposal is required.
5. Piping for Air : Compressor of 2.2 KW (while operating nitrogen emission device) is required.
6. Piping for Exhaust Gas : Duct for Ø100 ~ Ø150mm is required.
7. Cooling Device : Cooling tower (accessory part) must be installed at outside.
8. Nitrogen Gas : Approx. two 7 m³ cylinders are required per day, although it is depending on the processing volume.

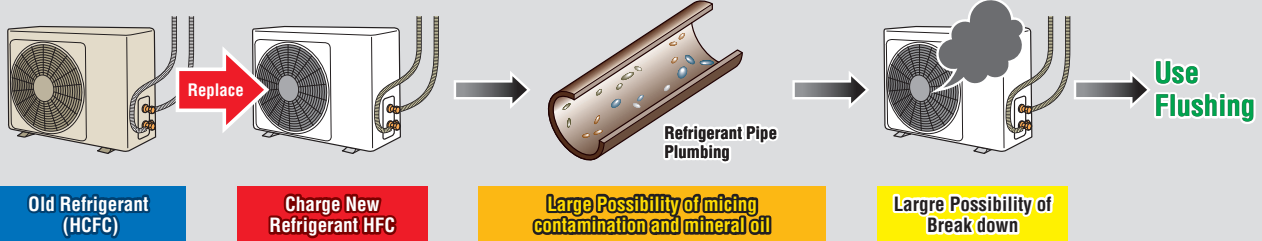
Easy operation



· Operated by a touch panel.

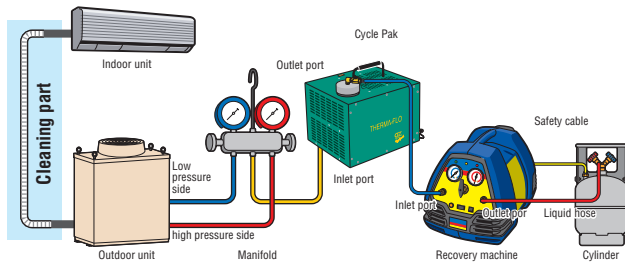
Cleaning the Refrigeration System

When the Refrigeration/Air Conditioning system is converted from "CFC" or "HCFC" to "HFC", contamination of the new refrigerant oil (Synthetic Oil) by the old refrigerant oil (Mineral Oil) can cause the refrigeration system to break down. Therefore, the system must be properly cleaned.



Normal cleaning methods

1 Refrigerant recover



1. Recover refrigerant from the system when retrofitting the system. (Use the method indicated in the drawing.)

2. Remove the pipe connection for Out/Indoor unit after recovery and bypass the indoor unit high pressure side and low pressure side pipe. Please check this sentence.



3. Prepare the refrigerant for cleaning; connect to the pipe of the outdoor unit as indicated on Page 109. Fill with the liquid refrigerant after purging the non condensable gas with a vacuum pump.

2 Start cleaning operation

To start circulating cleaning.

3 Complete

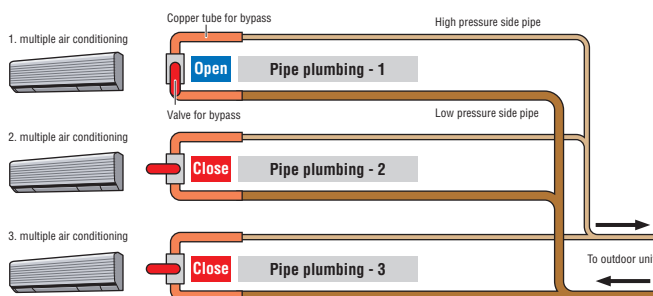
1. Recovery / purge operation of cleaning refrigerant.
2. Remove connection.
3. Remove the bypass.
4. Close and protect of the pipe tip flare part.

4 Flush the system pipes

Necessary amount of refrigerant and minimum cleaning time

Size High pressure x Low pressure	R22 full charge weight	Pipe length 10m			R22 full charge weight	Pipe length 20m		
		Needful cleaning time for 1 pass way				Needful cleaning time for 1 pass way		
		Cycle Pak (min)	RC500 (min)	RC1000 (min)		Cycle Pak (min)	RC500 (min)	RC1000 (min)
1/4" x 3/8"	0.799 kg	9	3	2	1.598 kg	18	6	4
1/4" x 1/2"	1.365 kg	16	5	2	2.730 kg	32	10	4
1/4" x 5/8"	2.120 kg	24	7	3	4.240 kg	48	14	6
3/8" x 1/2"	1.740 kg	20	6	3	3.480 kg	40	12	6
3/8" x 5/8"	2.495 kg	28	8	4	4.990 kg	56	16	8
3/8" x 3/4"	3.307 kg	37	10	5	6.614 kg	74	20	10
1/2" x 5/8"	3.061 kg	35	10	4	6.122 kg	70	20	8
1/2" x 3/4"	3.873 kg	44	12	6	7.746 kg	88	24	12
5/8" x 3/4"	4.628 kg	52	14	7	9.256 kg	114	28	14
5/8" x 1"	6.857 kg	77	21	9	13.714 kg	154	42	18

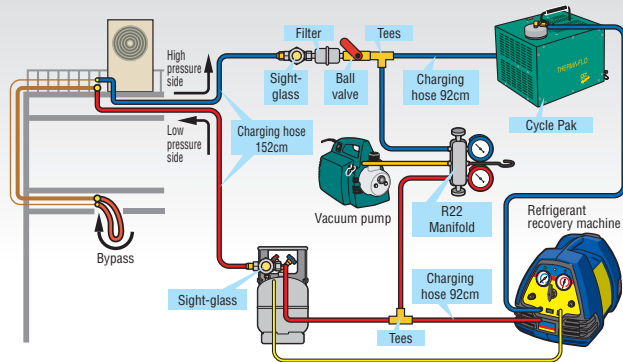
Case of multiple air conditioning systems



Normally commercial air conditioning systems use multiple air conditioning units. Each system has to be separately cleaned.

Refrigeration System Pipe Cleaning Refrigerant Recovery / Reclaim machine

Cleaner kit for piping



Purpose To clean system piping after retrofitting to HFC or repair service to replace burnt out compressor.

Easy to wash off refrigerant oil in the piping.

Maintains clean refrigerant at all times.

- Easy to flush out refrigeration oil in the piping since the same refrigerant is used.
- Uses clean refrigerant at all times since the refrigerant is recycled while the cleaning is in process.
- Economical since the refrigerant for cleaning is re-used.
- No harm to the system since the cleaner refrigerant is removed completely after cleaning.

Refrigeration cleaner kit for piping

· Kit for the contractor who already has refrigerant recovery machine, recovery cylinder and vacuum pump.

Item	Cleaner kit for piping
Code No.	ES097
Component of kit	CyclePak, R22 Manifold kit, Sight-glass 2 pcs., Filter, Flare tees 1/4" 2 pcs., 1/4" Ball valve (male x female), 1/4" Charging hose for R22 92cm (red, blue), 152cm (red, blue) 1 each, Case

Refrigeration cleaner E kit for piping

· For the contractor who already has refrigerant recovery machine, recovery cylinder, vacuum pump, recycling machine and R22 manifold.

Item	Cleaner E kit for piping
Code No.	ES097E
Component of kit	Sight-glass 2 pcs., Filter, Flare tees 1/4" 2 pcs., 1/4" Ball valve(male x female) Charging hose for R22 92cm (red, blue) 152cm (red, blue) 1 each, Case

Optional useful accessories

Recovery machine



Recovery cylinder

· Capacity : 24L & 117L



Vacuum pump



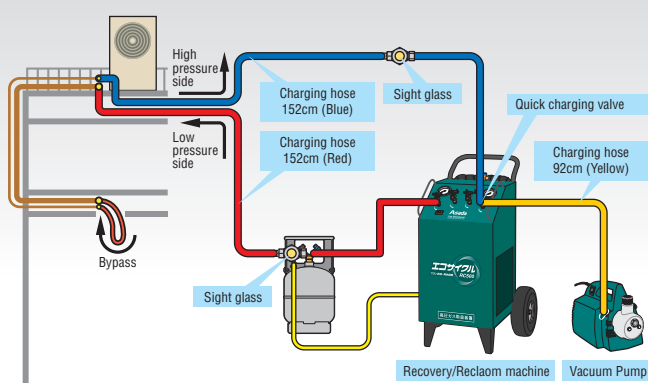
Convenient items

Limit scale

· Use for cylinder without sensor.



Flushing for use " Eco Cycle "



Purpose To clean system piping after retrofitting to HFC or repair service to replace burnt out compressor.

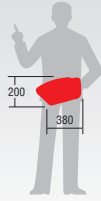
Easy to wash !

Easy to connect !

High speed and Clean to wash !

- Easy to flush out refrigeration oil in the piping since same refrigerant is used.
- Uses clean refrigerant at all times since the refrigerant is recycled while the cleaning is in process.
- Economical since the refrigerant for cleaning is re -used.
- No harm to the system since the cleaning refrigerant is removed completely after cleaning.

Refrigerant analyzer Ultima HV



Description	Ultima HV	Ultima HVP
Code No.	NT2004HV	NT2004HVP
Refrigerant	R12, R134a, R22, HC, and R410A.	
Weight	1.3kg	1.45kg
Dimension	(L)200 x (W)395 x (H)100mm	
Analyze accuracy	±1%	
Standard accessories	1/4" sample hose, AC adaptor, sample filter, carrying case	

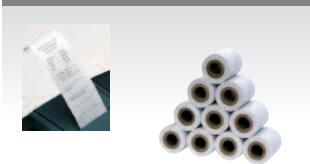
Sample filter Optional accessory



- Removes contaminations and oil mist.

Description	Sample filter
Code No.	NT626081

Printer form Optional accessory



- 10 pieces in case.

Description	Printer form
Code No.	NT531080

- Dispersive infrared (NDIR) technology determines the weight concentrations of R12, R134a, and R22 hydrocarbons and air.
- "Blend-ID" analytical software quickly and accurately indicates the presence of R410A blend refrigerant.
- Automatically determines the purity of R134a refrigerants, reducing the potential for human error.

System cleaner CF-20

PAT.



- Decomposes tar, carbon, oil and cleans the system by removing acid.
- Can also clean recovery and recycling machine.

Item	System cleaner CF-20
Code No.	CS90501
Net volume	19L

Cleaning pump CF-1



- High quality cleaning pump not damaged by contaminants.
- Light weight, low noise and excellent durability.
- Use for cleaning of system up to 10 ton of refrigeration.

Item	Cleaning pump CF-1
Code No.	CS75500
Volume of discharge	2.4L/min.
Highest discharge pressure	0.7MPa

Acid test kit



- Contains 4 tests
- Results in seconds
- Easy to see colors
- Fast & easy
- Biodegradable
- Non-flammable

Acids contained	Alkyl benzene	Mineral oil	POE oil
No acid	Green pH 7.0	Yellow pH 6.5	Orange pH 6.0
Small amount of acid	Vermilion pH 5.0		
Small - middle amount acid contained	Vermilion pH 4.5		
Middle - large amount acid contained	Red pH 4.0		

Description	Acid test kit
Code No.	CS90311
Contents	test bottle x 4 pieces, case

AUTOMOBILE A/C SERVICING



Mobile recovery set for automobile A/C

For automobile A/C		
		
Manifolds	Charging hoses	Recovery accessories for auto mobile A/C
		Automatic refrigerant recovery · recycle · vacuum pulling · oil charge · refrigerant charging
RecoverXLT Set for auto A/C Wagon set for auto A/C	Trap separator	
		
	Recycle unit	
		Refrigerant Cleaner Eco Refrigerant Cleaner C60G · C60GS

Applicable refrigerant

R12 · R134a

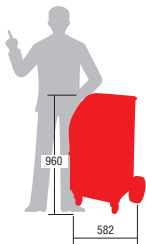
R134a

Please refer to the information about refrigerant recovery and so on.

Refrigerant cleaning system for automobile A/C **Refrigerant Cleaner Eco**

One machine does all 5 jobs;

**Refrigerant recovery · Charging ·
Recycle · Vacuum pulling and
Oil charge**

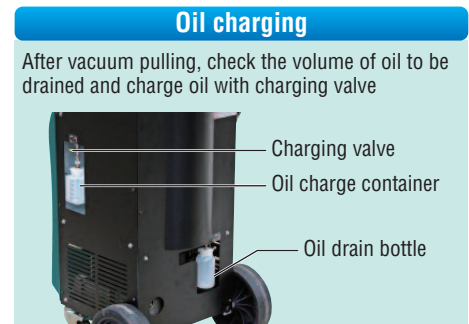
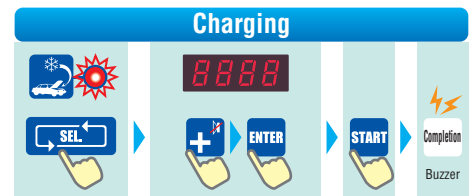
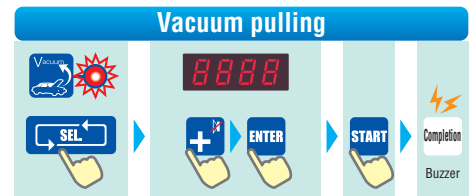
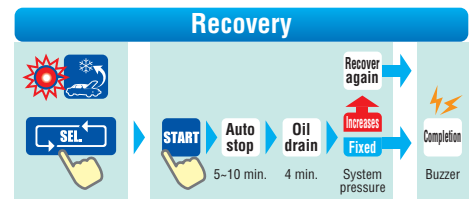


Item	Refrigerant Cleaner Eco	
Code No.	FC505	
Applicable refrigerant	R134a	
Function	Recovery/recycling , evacuating , charging	
Power source	Voltage made to order (50/60Hz)	
Compressor	280W (3/8HP) Oil-in type	
Dimensions	(L)582 X (W)600 X (H)960mm	
Weight	80kg	
Operating temperature	5 ~ 40°C	
Vacuum pump	Displacement	100 . 114L/min (50/60Hz)
	Ultimate vacuum	5.0Pa abs. (37.5 micron)
Equipped cylinder	12L cylinder (stationary)	
Weighing method	By load cell	
Standard accessories	1/4" High pressure and low pressure charging hose x 1pce. each, High and low pressure quick joint x 1 pce. each, Filter dryer x 2 pcs.	

Recovery rate

Vapor (g/min)	250
---------------	-----

- Rates are result of actual test by ASADA.
- Rates varies under different conditions.



Easy operation

- Select mode and push the start button. (manual mode selection)

Easy to read front panel

- Large pressure gauge (Ø75mm) and clear LED display.

Convenient tool pocket

- Convenient pocket to keep tools.

Equipped with a large cylinder

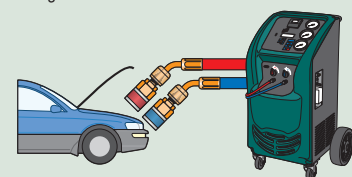
- Built-in 12L cylinder.

Easy moving

- Large (Ø250mm) casters.

Purpose

- Recovery and recycling of refrigerant from auto A/C.
- Charging refrigerant, oil to auto A/C and vacuum pulling.
- Improves cooling power of the auto A/C by cleaning the refrigerant.



Fully automatic refrigerant cleaning system for automobile A/C Refrigerant Cleaner

One machine does all 5 jobs;

**Refrigerant recovery · Charging ·
Recycle · Vacuum pulling and
Oil charge** (*except C60GS).



Refrigerant Cleaner C60 Operating time	15~25min.	Refrigerant Cleaner C60S Operating time	10~20min.
---	-----------	--	-----------

Fully automatic easy operation!!

- Improves cooling power** 1. **Recovery · recycle**
Special filters clean contaminated refrigerant.
- Maintains cooling power** 2. **Vacuum pulling (*except C60S)**
Vacuum pump eliminates moisture in the A/C system.
- Easy and safe operation** 3. **Charging**
Accurate charging by the high performance scale.

Fully automatic operation with easy setting

· Fully automatic recovery, recycling, vacuum pulling and charging with easy setting (refrigerant charging amount/vacuum pulling time/oil charging amount).
* Vacuum pulling can be done only with C60 (equipped with a vacuum pump)

Equipped with 2 special filters

· Cleans contaminated refrigerant when recovered and improves cooling ability.

Equipped with a 2 stage vacuum pump (*except C60S)

· Dries the A/C system and eliminates moisture shortly.

Equipped with a heat exchange type oil separator

· Separates refrigerant and oil.

Large display

· Large and easy to read LED display indicates amount/time.
· Illuminated indication.
· Amount/time setting with ten-key.



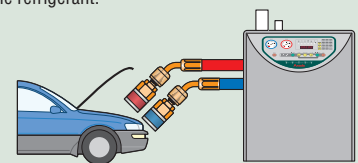
Oil-less system

Equipped with a 6L cylinder

Conventional refrigerant can and oil can are applicable.

Purpose

- Recovery and recycling of refrigerant from auto A/C.
- Charging refrigerant to auto A/C.
- Charging oil · vacuum pulling
* Vacuum pulling can be done only with C60.
- Improves cooling power of the auto A/C by cleaning the refrigerant.



Item	C60G (with vacuum pump)	C60GS (without vacuum pump)
Code No.	FC060G	FC060GS
Applicable refrigerant	R134a	
Function	Cleaning mode	Recovery/recycling · evacuating · charging
	Additional charging mode	Recovery/recycling · charging
Power source	Voltage made to order (50/60Hz)	
Compressor	375W (1/2HP) Oil-less type	
Dimensions	(L)680 X (W)718 X (H) 1100mm	
Weight	83kg	75kg
Operating temperature	5 ~ 40°C	
Vacuum pump	Displacement	22.5 · 27L/min (50/60Hz)
	Ultimate vacuum	42 · 50L/min (50/60Hz)
Equipped cylinder	6L cylinder (stationary)	
Oil Separator	Separating system : Heat exchange type Capacity : 900mL	
Weighing method	By load cell	
Standard accessories	1/4" High pressure and low pressure charging hose (2.5m), x 1 pce. each, Thermometer, Filter dryer x 2 pcs., High and low pressure quick joint x 1 pce. each	

Recovery rate

Vapor (g/min)	300
---------------	-----

- Rates are result of actual test by ASADA.
- Rates varies under different conditions.

Wagon set for auto A/C

Applicable refrigerant : R12 · R134a

[R410A · R407C · R404A · R507A · R412A · R509A · R22 · R403B · R124 · R413A · R417A · R422A · R422D · R423A · R114 · R500 · R502]



Example of connection from auto A/C



RecoverXLT-C recovery II set



RecoverXLT-C recovery/recycle II set



· Refrigerant recovery/recycle set for auto A/C

Item	Refrigerant	Code No.	Configuration			
			Recovery machine(*)	24L cylinder	Wagon	Recycle unit
RecoverXLT-C recovery II set	Both for R12 · R134a	Y95769CW				-
RecoverXLT-C recovery/recycle II set	Both for R12 · R134a	Y95769CF		2 pcs. With float sensor	XP545	2 pcs.

* See below for the configuration of RecoverXLT-C

RecoverXLT-C (for auto A/C)

Applicable refrigerant : R12 · R134a

[R410A · R407C · R404A · R507A · R412A · R509A · R22 · R403B · R124 · R413A · R417A · R422A · R422D · R423A · R114 · R500 · R502]



Hose with ball valve

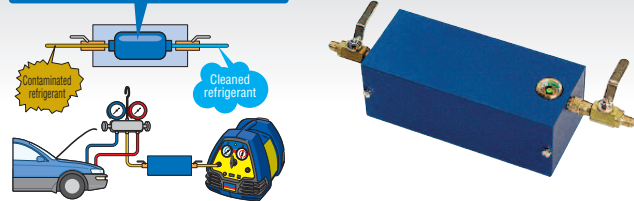
Low pressure quick joint

1/4" charging hose (blue)
1/4" charging hose with ball valve (red)

Item	RecoverXLT-C
Code No.	Y95769C
Recovery method	Compressed vapor recovery method/ push-pull method (pressurized liquid)
Power source	Voltage made to order (50/60Hz)
Compressor	375W (1/2HP) oil-less type
Dimensions	(L)490 X (W)315 X (H)317mm
Weight	14.78kg
Operating temperature	0~40°C
Ultimate vacuum	Auto stop : -0.044MPa (-330mmHg) Manual stop : max. -0.084MPa (-630mmHg)
Configuration	RecoverXLT main unit, Hose with ball valve, Low pressure quick joint, 1/4" charging hose, 1/4" charging hose with ball valve

Recycle unit (for refrigerant recycle)

Removes oil, moisture, acid, particles, cutting chips, etc.



- Recycling of contaminated refrigerant from auto A/C and protection of recovery machine.
- Removes moisture, acid, etc. by connecting between the car and recovery machine.
- * Use separate unit for R12 and for R134a.

Item	Recycle unit
Code No.	ES080
Size of port	1/4" flare (UNF 7/16-20)
Standard accessory	1/4" charging hose (yellow 92cm)
Optional accessory	
Item	Replacement dry filter L
Code No.	ES082



Trap separator



- Removes sealant charged in auto A/C.
- * Recovery machine may be damaged when used without removing sealant.
- Protect recovery machine removing sealant, particles and sludge.
- Applicable for all kinds of A/C unit.
- Filter is replaceable. * Good for 50 pieces of single A/C unit.

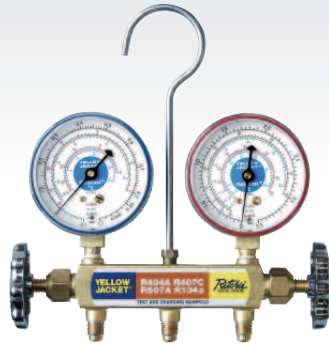
Item	Trap separator	Optional accessory	
Code No.	Y38087	Item	Trap separator replacement filter
Weight	0.65kg	Code No.	Y38081
Dimensions	(H)300 x Ø68mm		

Manifold set for R134a auto A/C

R134a

Ø68 mm

YELLOW JACKET®



1/4" flare male (UNF 7/16-20)



1/4" flare female
1/4" flare female (with valve opener)

Low pressure gauge -0.1 ~ 1.7MPa

High pressure gauge 0 ~ 3.5MP

Connecting port size : 1/4" flare (UNF 7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

- The set consists of Manifold, Quick joint and Adapter for different diameter which are necessary for recovery from auto A/C.
- Excellent air-tightness by double O-ring and high quality nylon gasket.
- Large handle which opens for full flow by 1.1/2 turn.
- Sliding type for easy replacement of piston.

Code No.	Gauge size	Configuration
Y40967A	Ø68mm	Manifold body for R407C · R404A · R507A · R134a, 1/4" charging hose 92cm x 3 pcs., High pressure quick joint 1/4", Low pressure quick joint 1/4", Adapter for different diameter M10 female x 1/4" male

Manifold set for R134a auto A/C 2 cans type

R134a

Ø80 mm

Sight-glass

Aluminum body

Access port

YELLOW JACKET®



1/4" flare male (UNF 7/16-20)



1/4" flare female
1/4" flare female (with valve opener)

Low pressure gauge -0.1 ~ 2.4MPa

High pressure gauge -0.1 ~ 3.5MP

Connecting port size : 1/4" flare (UNF 7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

- The set consists of Manifold, Quick joint, Refrigerant can valve, 2 Cans multi joint and Adapter for different diameter which are necessary for recovery from auto A/C.
- Two refrigerant cans can be connected in one time.
- Excellent air-tightness by double O-ring and high quality nylon gasket.
- All ports have 100 micron mesh filters which prevent particles from entering.

Code No.	Gauge size	Configuration
Y409272C	Ø80mm	Titan manifold body for R407C · R404A · R507A · R134a, Sight-glass(built-in), 1/4" charging hose 152cm x 3 pcs., 1/4" charging hose 183cm x 1 pce., High pressure quick joint 1/4", Low pressure quick joint 1/4", Refrigerant can valve x 2 pcs., 2 cans multi joint, Adapter for different diameter M10 female x 1/4" male, Case

Manifold set for R134a auto A/C 4 cans type

R134a

Ø80 mm

Sight-glass

Aluminum body

Access port

YELLOW JACKET®



1/4" flare male (UNF 7/16-20)



1/4" flare female
1/4" flare female (with valve opener)

Low pressure gauge -0.1 ~ 2.4MPa

High pressure gauge -0.1 ~ 3.5MP

Connecting port size : 1/4" flare (UNF 7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

- The set consists of Manifold, Quick joint, refrigerant can valve, 4 Cans multi joint and Adapter for different diameter which are necessary for recovery from auto A/C.
- Four refrigerant cans can be connected in one time.
- Excellent air-tightness by double O-ring and high quality nylon gasket.
- All ports have 100 micron mesh filters which prevent particles form entering.

Code No.	Gauge size	Configuration
Y409273C	Ø80mm	Titan manifold body for R407C · R404A · R507A · R134a, Sight-glass(built-in), 1/4" charging hose 152cm x 3 pcs., 1/4" charging hose 183cm x 1 pce., High pressure quick joint 1/4", Low pressure quick joint 1/4", Refrigerant can valve x 4 pcs., 4 cans multi joint, Adapter for different diameter M10 female x 1/4" male, Case

R134a Applicable refrigerant **Ø80 mm** Gauge size **Sight-glass** The condition of refrigerant can be checked **Aluminum body** Light-weight aluminum forged body **Access port** Access port with Schrader valve which can be used for vacuum pulling and/or refrigerant charging

Charging hose for R134a auto A/C

R134a



M12 flare female



M10 flare female



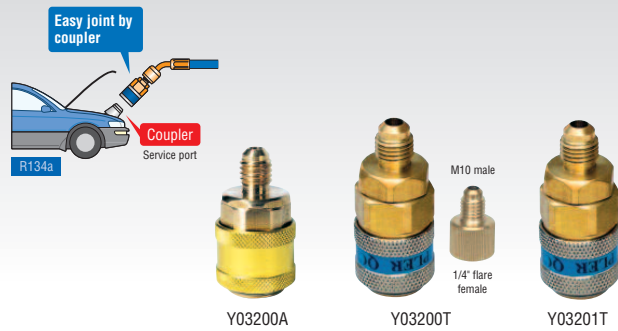
Length	Color	Code No.	Screw size	Working pressure	Burst pressure
92cm	Yellow	Y02209A	M10	3.4MPa	17.2MPa
	Blue	Y02409A	M10		
	Red	Y02309A	M12		
152cm	3 pcs. pack	Y02909A	Y · B M10, R M12		
	Yellow	Y02215A	M10		
	Blue	Y02415A	M10		
	Red	Y02315A	M12		
244cm	3 pcs. pack	Y02915A	Y · B M10, RM12		
244cm	3 pcs. pack	Y02924A	Y · B M10, RM12		

* Optional accessory : Hose gasket M12 10 pcs. pack (Code No. Y02502A)

* Hose with valve opener available

* See P.136 for 1/4" Hose

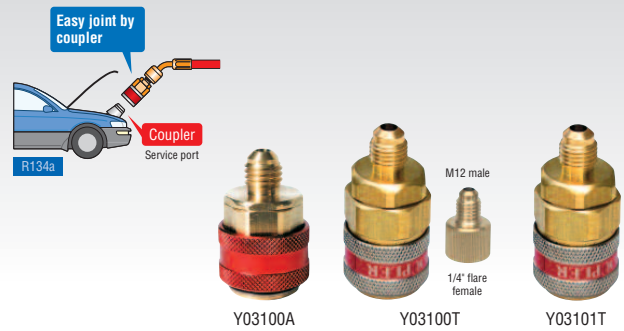
Low pressure quick joint



· One-action to connect to the service port of auto A/C.

Item	Code No.	Hose connection	Note
Low pressure quick joint	Y03200A	M10	
	Y03200T	M10	With M10 x 1/4" adapter
	Y03201T	1/4"	

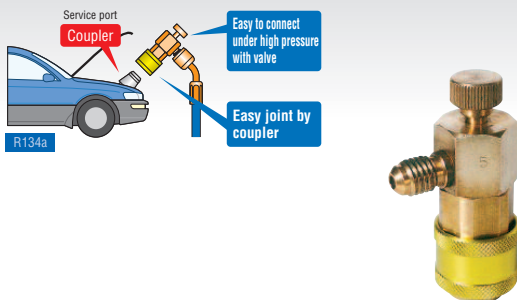
High pressure quick joint



· One-action to connect to the service port of auto A/C.

Item	Code No.	Hose connection	Note
High pressure quick joint	Y03100A	M12	
	Y03100T	M12	With M12 x 1/4" adapter
	Y03101T	1/4"	

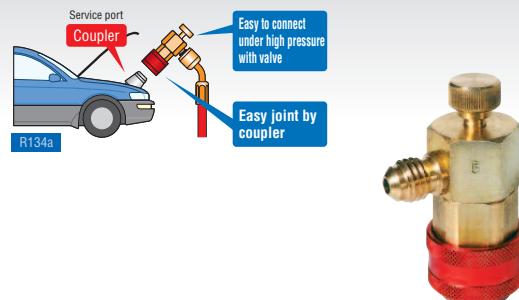
Low pressure quick control valve



· One-action to connect to the service port of auto A/C.
· Easy to connect under high pressure with valve.

Item	Code No.	Hose connection
Low pressure quick control valve	Y03350A	M10

High pressure quick control valve

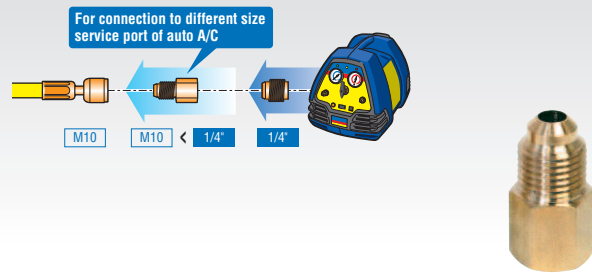


· One-action to connect to the service port of auto A/C.
· Easy to connect under high pressure with valve.

Item	Code No.	Hose connection
High pressure quick control valve	Y03300A	M12

Adapter for different diameter for auto A/C

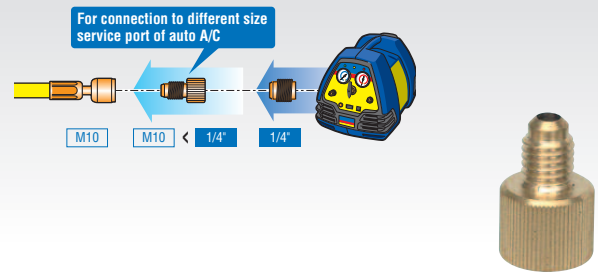
Wrench tightening type



· For connection to different size service port of auto A/C.

Item	Code No.	Size
Adapter for different diameter for auto A/C (wrench tightening type)	Y06111A	M10 female x 1/4" male
	Y06101A	1/4" female x M10 male
	Y06112A	M12 female x 1/4" male

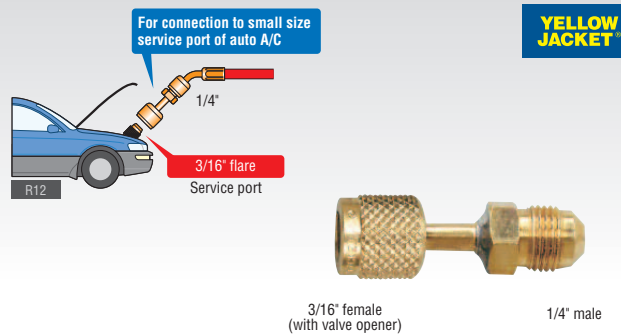
Hand tightening type



· For connection to different size service port of auto A/C.

Item	Code No.	Size
Adapter for different diameter for auto A/C (hand tightening type)	Y06111K	M10 female x 1/4" male
	Y06101K	1/4" female x M10 male
	Y06112K	M12 female x 1/4" male
	Y06102K	1/4" female x M12 male

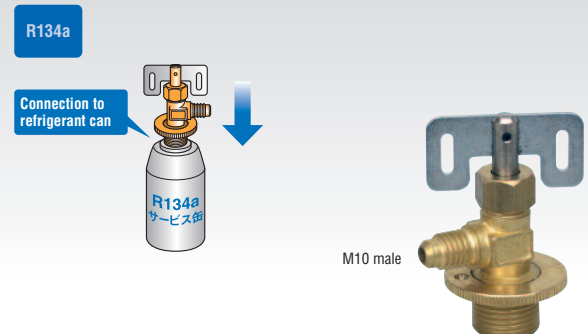
Adapter for different diameter for auto A/C (quick type)



· For connection to different size service port of auto A/C.

Item	Code No.	Size
Adapter for different diameter for auto A/C (quick type)	Y19120	3/16" female x 1/4" male

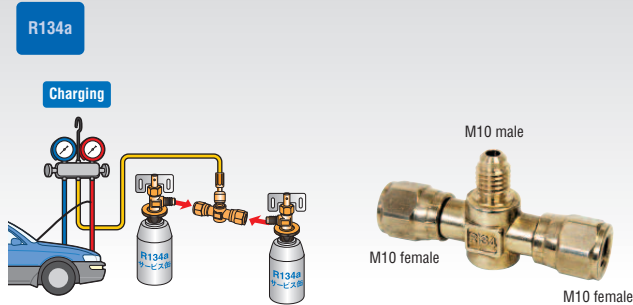
Refrigerant can valve for R134a



· Valve to connect to refrigerant can.

Item	Code No.
Refrigerant can valve for R134a	Y04100A

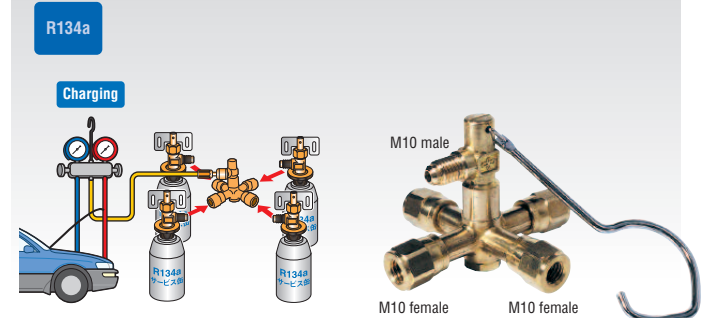
2 cans multi joint for R134a



· To improve efficiency of charging.
· For connection to 2 refrigerant cans with 2 refrigerant can valves.

Item	Code No.
2 cans multi joint for R134a	Y05200A

4 cans multi joint for R134a



· To improve efficiency of charging.
· For connection to 4 refrigerant cans with 4 refrigerant can valves.

Item	Code No.
4 cans multi joint for R134a	Y05100A

AUTOMOBILE A/C SERVICING

Oil injector for R134a (quick joint type)

R134a

YELLOW JACKET®



- For adding oil to system.
- For adding fluorescent solution.
- Refrigerant sampling from system.
- Aluminum container.
- Can add oil together with fluorescent solution.

Item		Code No.	Cylinder capacity	Max. working pressure
Oil injector for R134a(quick joint type)	S	Y69565	14.8mL	4.1MPa
	M	Y69566	59mL	
	L	Y69567	118mL	

1/4" Oil injector

R12

YELLOW JACKET®

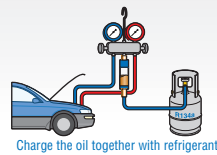
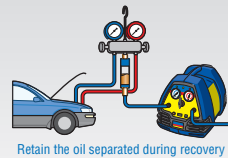


- For adding oil to system.
- For adding fluorescent solution.
- Refrigerant sampling from system.
- Aluminum container.
- Can add oil together with fluorescent solution.

Item		Code No.	Cylinder capacity	Max. working pressure
1/4" Oil injector	S	Y69560	14.8mL	4.1MPa
	M	Y69561	59mL	
	L	Y69562	118mL	

Oil retainer 60 for R134a

R134a

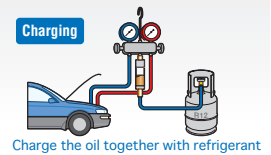
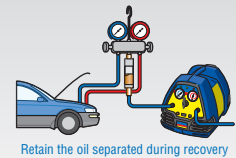


- Maintenance of refrigeration oil for auto A/C.
- Check the amount of oil during refrigerant recovery and charge of oil with refrigerant.
- Retain the oil and put back in to the compressor when charging.

Item	Code No.	Port size	Capacity
Oil retainer 60 for R134a	ES085	M10 flare	60mL

Oil retainer 60 for R12

R12











- Maintenance of refrigeration oil for auto A/C.
- Check the amount of oil during refrigerant recovery and charge of oil with refrigerant.
- Retain the oil and put back in to the compressor when charging.

Item	Code No.	Port size	Capacity
Oil retainer 60 for R12	ES084	1/4" flare	60mL

MANIFOLDS - CHARGING HOSES



Manifolds

Capacity (larger)	Manifolds			Ammonia manifold	
	System analyzer 				
	Brute II manifolds 				
	Titan 4 valve manifolds 	Titan manifolds 			
		Bantam manifolds 			
	Manifolds 	4 valve manifolds 			
Applicable refrigerant	R410A	R407C, R404A R507A, R134a	R12, R22, R502		Ammonia NH3(R717)

**Please refer to the information about refrigerant recover and so on.*

Refrigeration system analyzer **System Analyzer**

YELLOW JACKET®

NEW

Digital color TFT display with adjustable brightness and contrast protected by anti-glare, scratch resistant lens



- The new YELLOW JACKET® refrigeration system analyzer features a full color graphics display for intuitive, easy reading. The display reads in analog, digital or a combination of both, and monitors two pressures, two live temperatures, subcooling and superheat, and saturation temperatures (liquid and vapor) for 84 refrigerants.
- The analyzer comes standard with the 4-valve TITAN™ manifold, an external, replaceable vacuum sensor and a blow-molded instrument case. No other refrigeration system analyzer on the market today offers all of these features in one unit:

Item	System Analyzer
Code No.	Y40815
Pressure sensing resolution (low and high sides)	0.1 psi, 0.01 bar, 1 kPa, 0.1 MPA, 0.01 kg/cm ²
Pressure sensing accuracy	0.5% of full scale at 25°C 1% of full scale at 55°F to 130°F 2% of full scale -40°C to 120°C
Working pressure (maximum measurable pressure)	Low side: 0 - 350 psia High side: 0 - 700 psia
Proof pressure (low and high sides)	1000 psi
Burst pressure (low and high sides)	1500 psi
Temperature sensor range	-100 to 600°F (-73 to 315°C)
Temperature display resolution	0.1° For C°
Temperature accuracy	±1.8°F(±1°C)
Vacuum display resolution	Shows two most significant digits in microns (25xxx-10xxx, 99xx-10xx, 99x-10x, 99-10) Other units are direct conversions from the micron value
Vacuum accuracy	20% of reading
Operating temperature	-4 to 122°F (-20 to 50°C)
Storage temperature	-20 to 170°F (-29 to 77°C)
Dimensions	21 cm x 17 cm x 9 cm excluding manifold
Weight	1.45 kg excluding manifold
Power	AA batteries (8); alkaline, NiCd, NiMH, A-A Lithium, Li Ion, Li Pol (approximately one day of continuous operation with fresh or healthy rechargeable batteries)Standard accessories TITAN™ 4-valve test and charging manifold, 60" PLUS II charging hoses (RYB), Carrying case, Vacuum sensor cordset, Battery holder ('AA' Size, 2X4), Instrument boot, Bumper, Plug, and Sensor/probe boots, USB cable, Vacuum sensor and two general purpose "K-Type" probes

Applicable refrigerant

R12, R22, R134a, R290, R401A, R401B, R402A, R402B, R404, R406, R407C, R408A, R409A, R410A, R414B, R416A, R417, R420A, R422A, R502, R507, R508B, R600A

Low pressure side

-0.1~1.35MPa

High pressure side

0.1~3.79MPa

Connecting port size : 1/4" flare (UNF 7/16-20)

Working pressure of hose : 5.5MPa
Burst pressure of hose : 27.5MPa

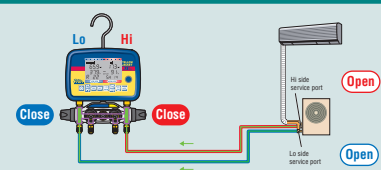
Connecting port size : 3/8" flare (UNF 5/8-18)

Working pressure of hose : 4.1MPa
Burst pressure of hose : 20.7MPa

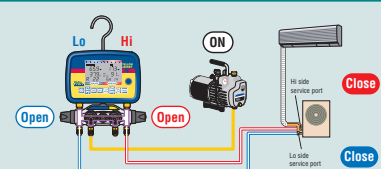
- 84 NIST refrigerant profiles included (upgradeable via USB for new refrigerants)
- Built-in pressure/temperature chart reference screen for all refrigerants
- Built-in full scale vacuum sensor reads deep vacuum down to 10 microns
- Dual K-Type temperature-compensated sensor ports allow for simultaneous suction and liquid readings
- High accuracy and resolution pressure transducers for fast and sensitive leak detection
- Provides real-time pressure data in selectable time increments: 0.1, 0.2, 0.5, 1 and 2 seconds
- Automatic superheat and subcooling calculations
- Corresponding bubble point and dew points for current high side and low side pressures, respectively
- Displays and records max/min pressures
- Holds current reading/scrolls back to past readings
- Data logging for onscreen review or USB export to PC to generate performance/Excel™ work reports
- Tracks and exports date and time, useful for data logging
- Elevation may be entered manually for accurate, automatic pressure compensation
- Press key in set-up menu to zero pressures
- Selectable "auto power off" and "power saving mode"
- Low battery indicator
- 360° swivel hook stows when not in use
- Highly weather resistant, glass fiber reinforced, engineering grade thermoplastic housing – fully gasketed for water and dust resistance

Applications

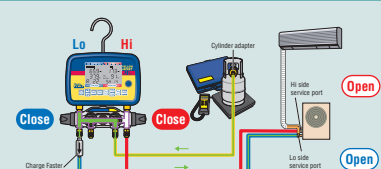
Check pressure and temperature of the system and so on



Check vacuum and drying of the system and so on



Refrigerant charging to the system

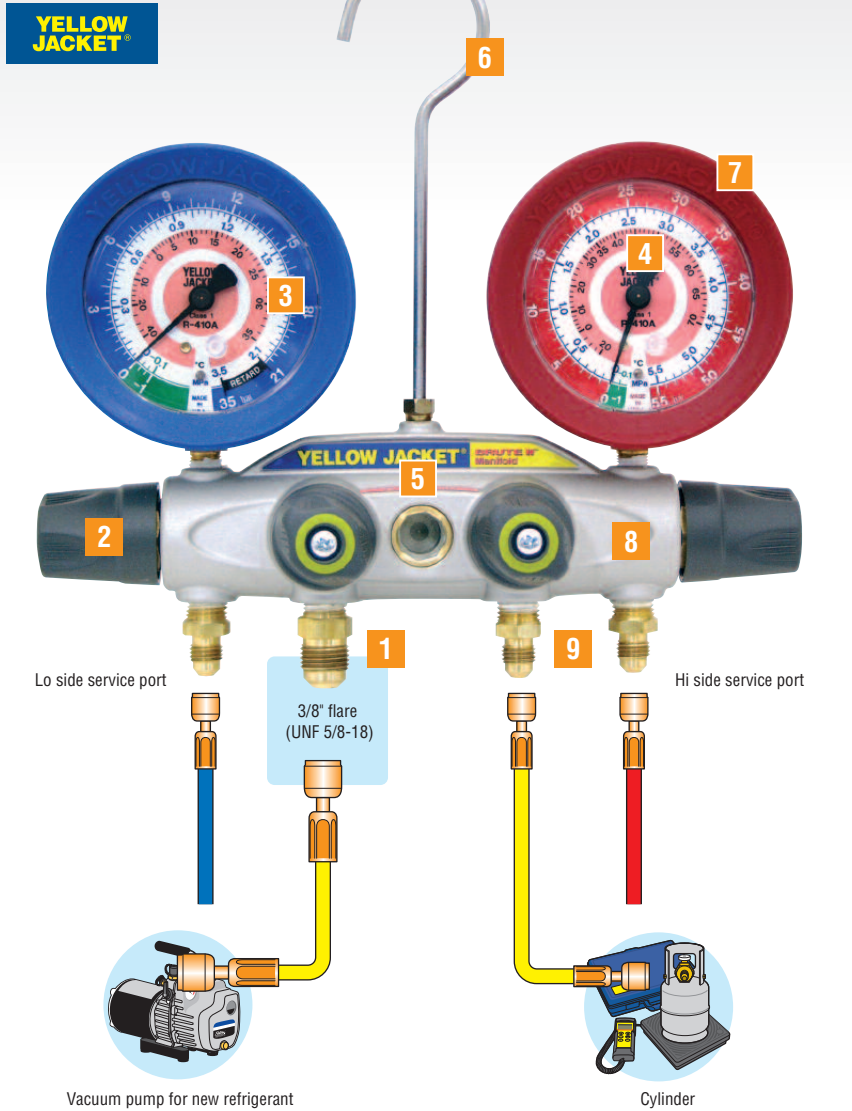


* HFC should be charged in liquid with Charge Faster or Liquid charge adapter.

Features of Brute II manifold series

*3/8" bore with vacuum port.
Faster vacuum and charging with large flow!!
Yellow Jacket superior model.*

For R410A : P.115 For R407C, R404A, R507A, R134a : P.117 For R12, R22, R502 : P.119



1&8 Large port size & large flow

· 3/8" bore (through the body) & vacuum port can reduce evacuation time up to 50% in the maximum.



1&9 Ports

· Exclusive 100 microns mesh filter in-line on all ports prevents particles from entering.



2 Handle

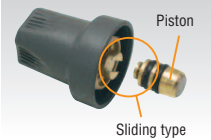
· Fully opens by 1.1/2 turns.

Double O-ring valve



· Excellent air-tightness.

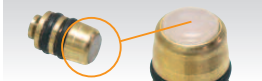
Sliding type piston



· Easy piston replacement.

High quality nylon gasket

· Excellent air-tightness



3 Gauge

· Large, easy-to-read 80mm gauge,
· Strong crystal.
· With saturation temperature reading and recalibration screw.

4 Needle

· Flutterless technology.

5 Sight-glass

· Built-in sight-glass allows you check the refrigerant condition.

6 Hook

· Heavy-duty swivel hook.

7 Protective gauge boot

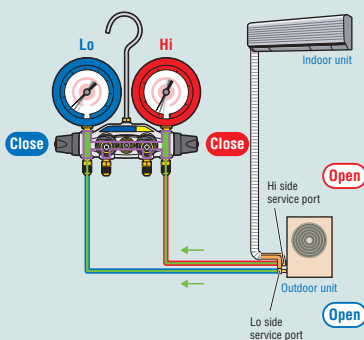
· Protects gauge from impact.

8 Body

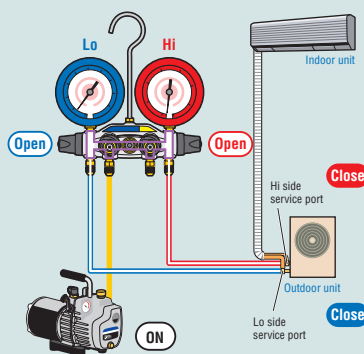
· Light weight strong aluminum forged body.

Applications

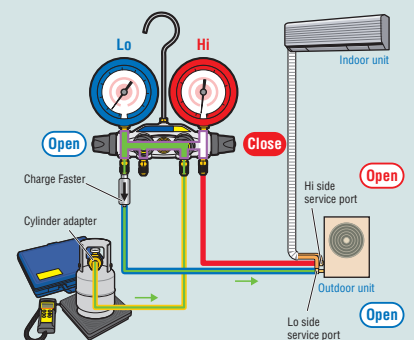
Checking pressure and temperature of system and so on



Vacuum pulling and drying check of system and so on



Refrigerant charging to system



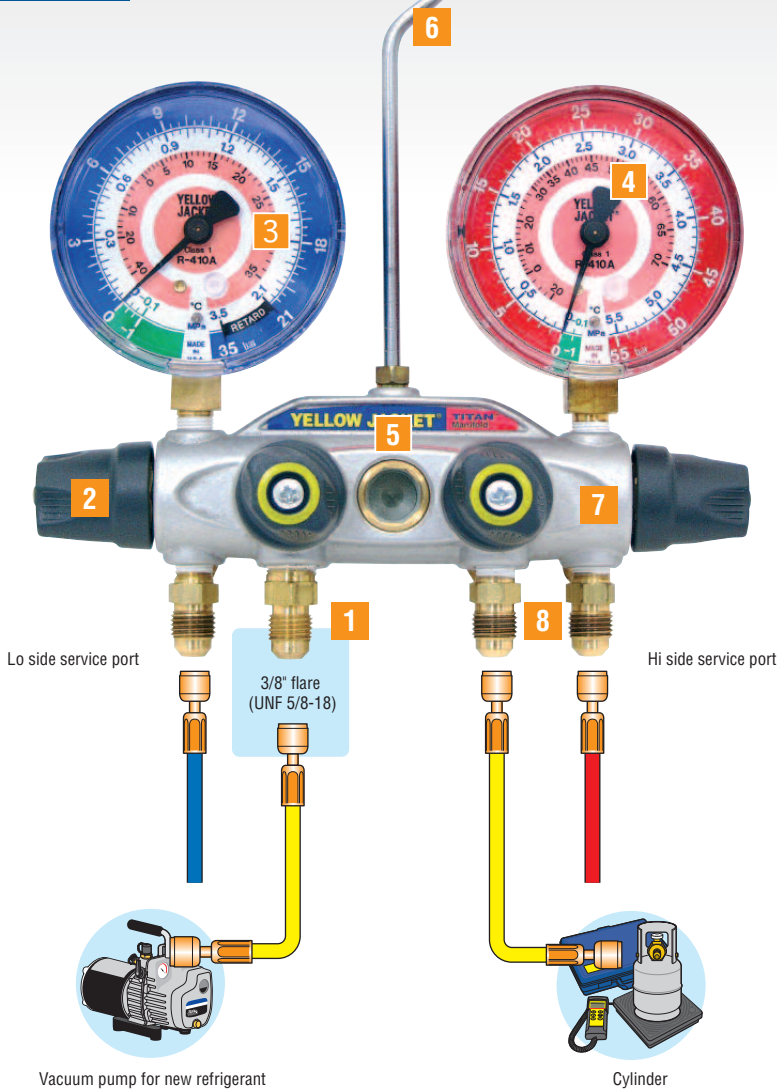
* HFC should be charged in liquid with Charge Faster or Liquid charge adapter.

Features of Titan 4 valve manifold series

Higher work efficiency with 4 valves and 4 ports!
Faster vacuum with 3/8" vacuum port!!

For R410A : P.116 For R407C, R404A, R507A, R134a : P.118 For R12, R22, R502 : P.120

YELLOW JACKET®



1 Large port size & large flow

- 3/8" vacuum port can reduce evacuation time up to 50% in the maximum.

1&9 Ports

- Exclusive 100 microns mesh filter in-line on all ports prevents particles from entering.



2 Handle

- Fully opens by 1.1/2 turns.

Double O-ring valve



- Excellent air-tightness.

Sliding type piston



- Easy piston replacement.

High quality nylon gasket

- Excellent air-tightness



3 Gauge

- Large, easy-to-read 80mm gauge,
- Strong crystal.
- With saturation temperature reading and recalibration screw.

4 Needle

- Flutterless technology.

5 Sight-glass

- Built-in sight-glass allows you check the refrigerant condition.

6 Hook

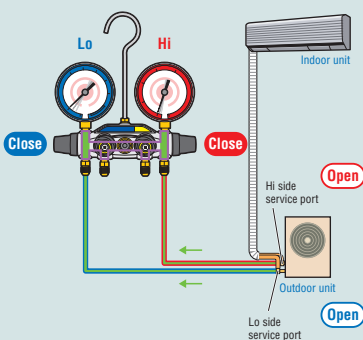
- Heavy-duty swivel hook.

7 Body

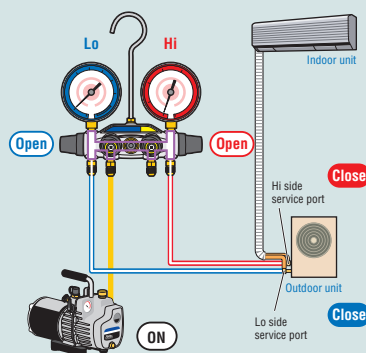
- Light weight strong aluminum forged body.

Applications

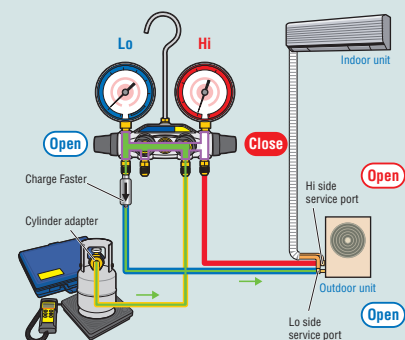
Checking pressure and temperature of system and so on



Vacuum pulling and drying check of system and so on



Refrigerant charging to system



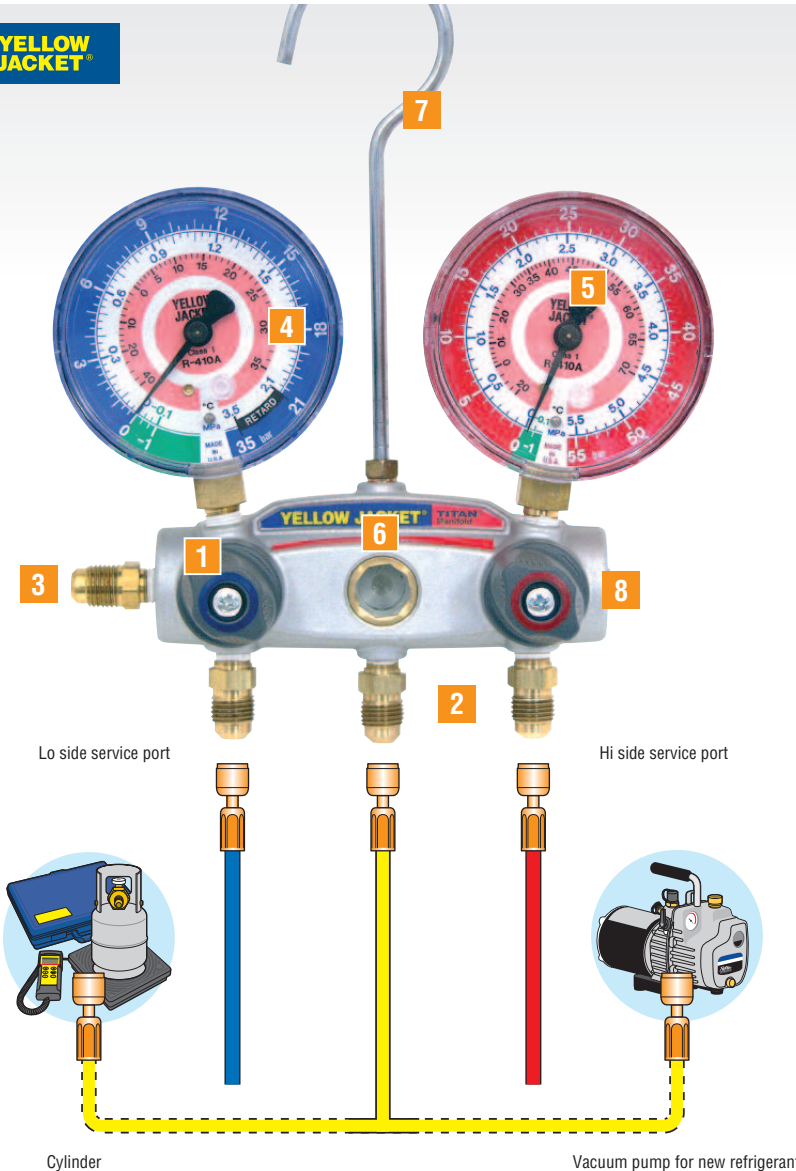
* HFC should be charged in liquid with Charge Faster or Liquid charge adapter.

Features of Titan manifold series

Light weight strong aluminum forged body

For R410A : P.116 For R407C, R404A, R507A, R134a : P.118 For R134a auto A/C : P.105
For R134a (M10) : P.119 For R12, R22, R502 : P.120

**YELLOW
JACKET®**

**1 Handle**

- Fully opens by 1.1/2 turns.

Double O-ring valve

Double O-ring

- Excellent air-tightness.

Sliding type piston

Piston

Sliding type

- Easy piston replacement.

High quality nylon gasket

- Excellent air-tightness

**2 Ports**

- Exclusive 100 microns mesh filter in-line on all ports prevents particles from entering.

**3 Access port with Schrader valve**

- Can be used for vacuum pulling and refrigerant charging.

4 Gauge

- Large, easy-to-read 80mm gauge,
- Strong crystal.
- With saturation temperature reading and recalibration screw.

5 Needle

- Flutterless technology.

6 Sight-glass

- Built-in sight-glass allows you check the refrigerant condition.

7 Hook

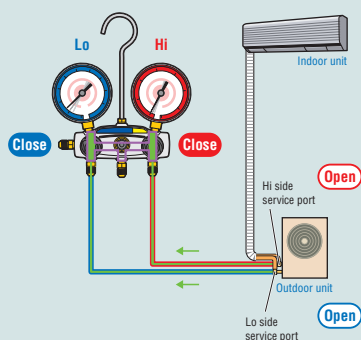
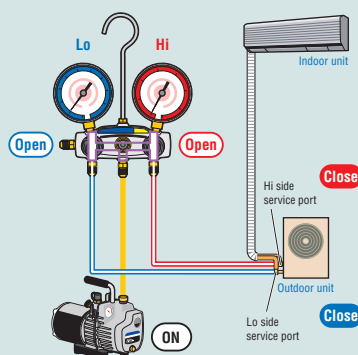
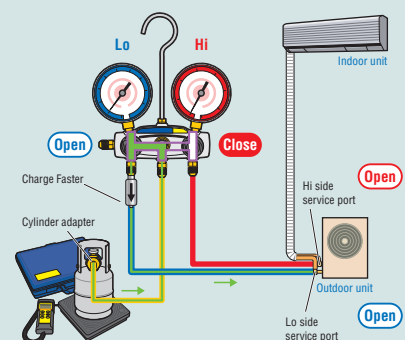
- Heavy-duty swivel hook.

8 Body

- Light weight strong aluminum forged body.

9

Applications

Checking pressure and temperature of system and so on**Vacuum pulling and drying check of system and so on****Refrigerant charging to system**

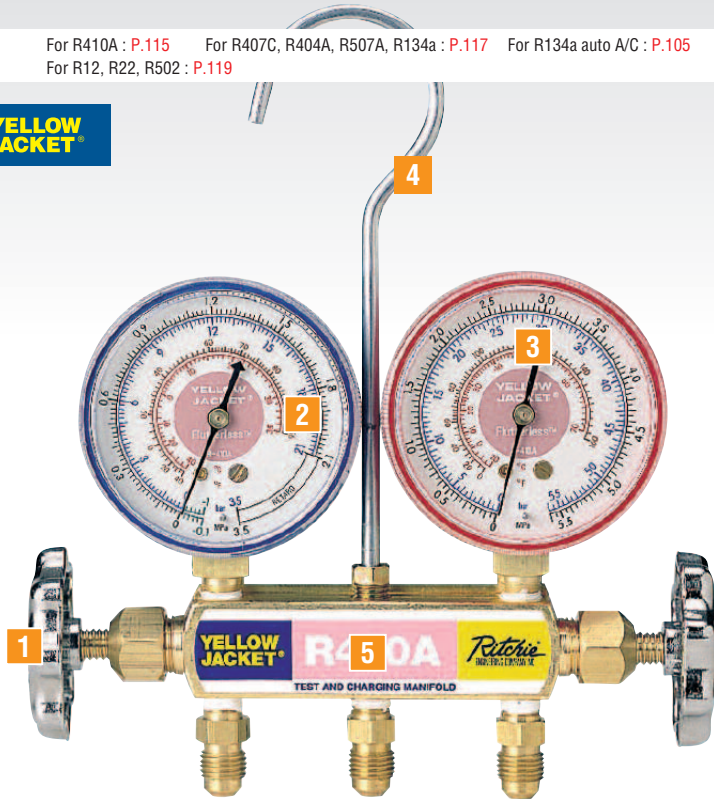
* HFC should be charged in liquid with Charge Faster or Liquid charge adapter.

Features of standard manifold series

Yellow Jacket standard manifolds

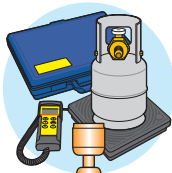
For R410A : P.115 For R407C, R404A, R507A, R134a : P.117 For R134a auto A/C : P.105
 For R12, R22, R502 : P.119

YELLOW JACKET®

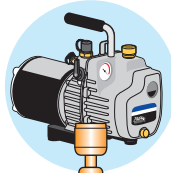


Lo side service port

Hi side service port



Cylinder

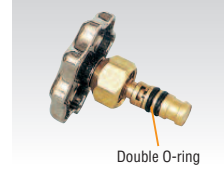


Vacuum pump for new refrigerant

1 Handle

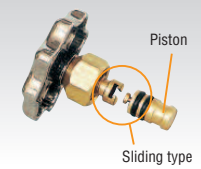
- Fully opens by 1.1/2 turns.

Double O-ring valve



- Excellent air-tightness.

Sliding type piston



- Easy piston replacement.

High quality nylon gasket

- Excellent air-tightness



2 Gauge

- Strong crystal gauge.
- With saturation temperature reading.
- With recalibration screw.

3 Needle

- Flutterless technology.

4 Hook

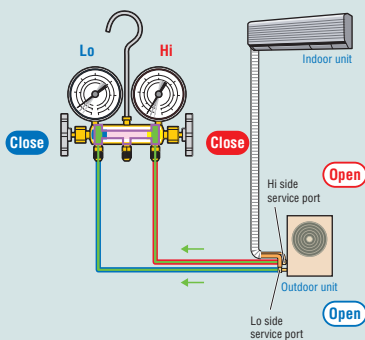
- Heavy-duty swivel hook.

5 Body

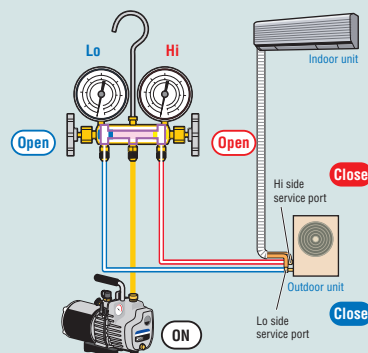
- Light weight strong aluminum forged body.

Applications

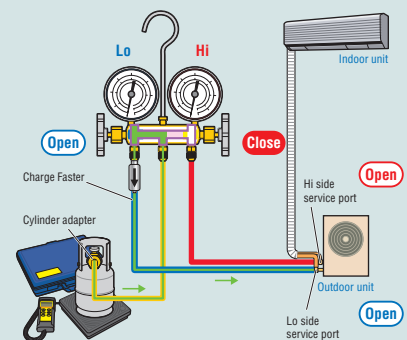
Checking pressure and temperature of system and so on



Vacuum pulling and drying check of system and so on

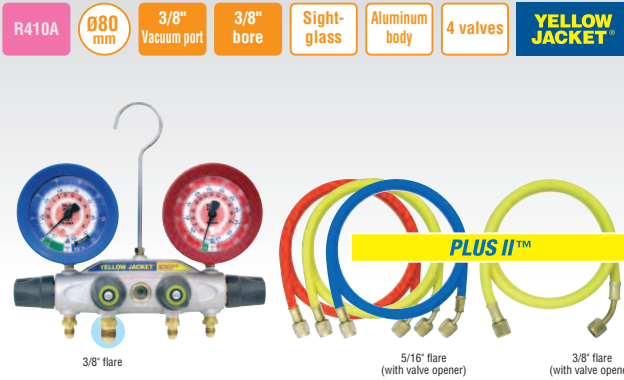


Refrigerant charging to system



* HFC should be charged in liquid with Charge Faster or Liquid charge adapter.

Brute II manifold kit for R410A



Low pressure gauge **-0.1~3.5MPa** High pressure gauge **-0.1~5.5MPa**

Connecting port size : **5/16" flare (UNF 1/2-20)**

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Connecting port size : **3/8" flare (UNF 5/8-18)**

Working pressure of hose : 4.1MPa Burst pressure of hose : 20.7MPa

· 3/8" bore (through the body) & vacuum port can reduce evacuation time up to 50% in the maximum.

Code No.	Gauge size	Standard accessories
Y40938	Ø80mm	5/16" charging hose 92cm x 3 pcs., 3/8" charging hose 92cm x 1 pce., Sight-glass (built-in), Protective gauge boots

Manifold kit for R410A



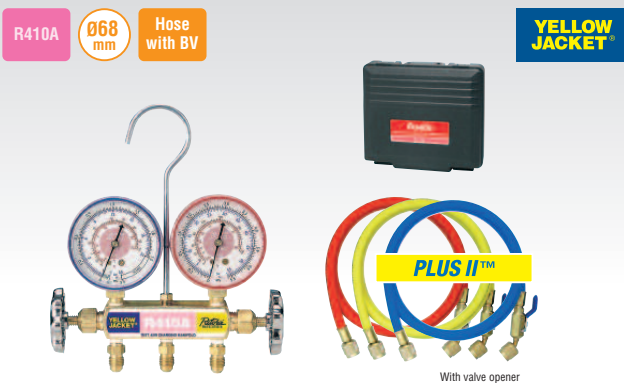
Low pressure gauge **-0.1~3.5MPa** High pressure gauge **0~5.5MPa**

Connecting port size : **5/16" flare (UNF 1/2-20)**

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Code No.	Gauge size	Standard accessories
Y40951	Ø68mm	5/16" charging hose 92cm x 3 pcs.
Y40951C		5/16" charging hose 92cm x 3 pcs., Case
Y41715		5/16" charging hose 152cm x 3 pcs.
Y41715C		5/16" charging hose 152cm x 3 pcs., Case

Manifold kit for R410A (with ball valve)



Low pressure gauge **-0.1~3.5MPa** High pressure gauge **0~5.5MPa**

Connecting port size : **5/16" flare (UNF 1/2-20)**

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Code No.	Gauge size	Standard accessories
Y41711	Ø68mm	5/16" charging hose with ball valve 92cm x 3 pcs.
Y41711C		5/16" charging hose with ball valve 92cm x 3 pcs., Case
Y40954		5/16" charging hose with ball valve 152cm x 3 pcs.
Y40954C		5/16" charging hose with ball valve 152cm x 3 pcs., Case

Single manifold kit for R410A



Low pressure gauge **-0.1~3.5MPa**

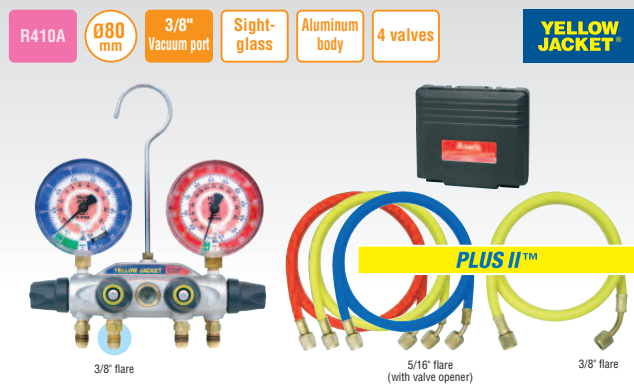
Connecting port size : **5/16" flare (UNF 1/2-20)**

- Excellent air-tightness with Double O-ring valve and high quality nylon gasket. (can be used for R410A).
- Fully opens by 1.1/2 turns.
- Easy piston replacement.



Code No.	Gauge size	Standard accessories
Y41215	Ø68mm	5/16" charging hose 92cm x 2 pcs., Case

Titan 4 valve manifold kit for R410A

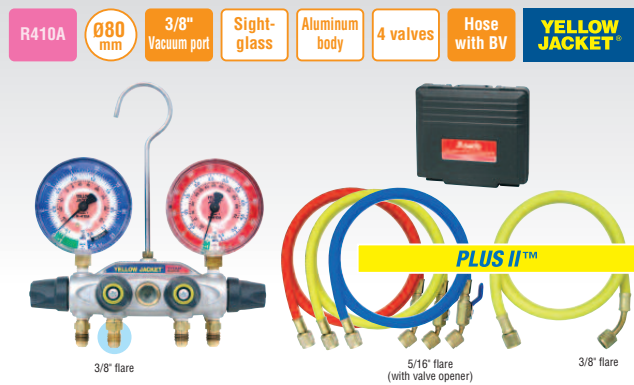


Low pressure gauge -0.1~3.5MPa High pressure gauge -0.1~5.5MPa
 Connecting port size : 5/16" flare (UNF 1/2-20)
 Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa
 Connecting port size : 3/8" flare (UNF 5/8-18)
 Working pressure of hose : 4.1MPa Burst pressure of hose : 20.7MPa

· Higher work efficiency with 4 valves and 4 ports.

Code No.	Gauge size	Standard accessories
Y40935	Ø80mm	5/16" charging hose 92cm x 3 pcs., 3/8" charging hose 92cm x 1 pce., Sight-glass (built-in)
Y40935C		5/16" charging hose 92cm x 3 pcs., 3/8" charging hose 92cm x 1 pce., Sight-glass (built-in), Case

Titan 4 valve manifold kit for R410A (with ball valve)



Low pressure gauge -0.1~3.5MPa High pressure gauge -0.1~5.5MPa
 Connecting port size : 5/16" flare (UNF 1/2-20)
 Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa
 Connecting port size : 3/8" flare (UNF 5/8-18)
 Working pressure of hose : 4.1MPa Burst pressure of hose : 20.7MPa

· Higher work efficiency with 4 valves and 4 ports.

Code No.	Gauge size	Standard accessories
Y40936	Ø80mm	5/16" charging hose with ball valve 92cm x 3 pcs., 3/8" charging hose with ball valve 92cm x 1 pce., Sight-glass (built-in)
Y40936C		5/16" charging hose with ball valve 92cm x 3 pcs., 3/8" charging hose with ball valve 92cm x 1 pce., Sight-glass (built-in), Case

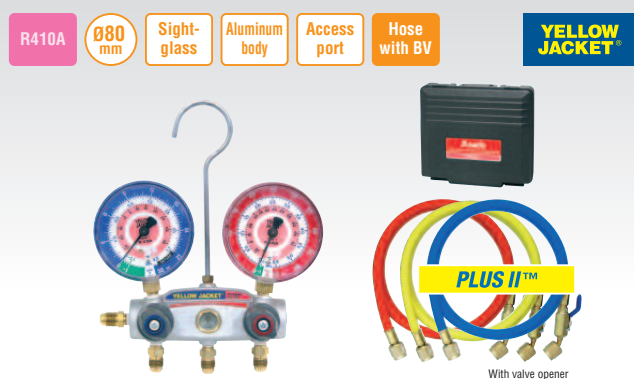
Titan manifold kit for R410A



Low pressure gauge -0.1~3.5MPa High pressure gauge -0.1~5.5MPa
 Connecting port size : 5/16" flare (UNF 1/2-20)
 Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Code No.	Gauge size	Standard accessories
Y40929	Ø80mm	5/16" charging hose 92cm x 3 pcs., Sight-glass(built-in)
Y40929C		5/16" charging hose 92cm x 3 pcs., Sight-glass(built-in), Case

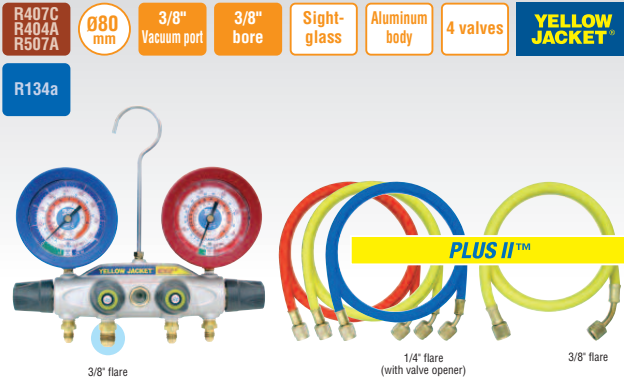
Titan manifold kit for R410A (with ball valve)



Low pressure gauge -0.1~3.5MPa High pressure gauge -0.1~5.5MPa
 Connecting port size : 5/16" flare (UNF 1/2-20)
 Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Code No.	Gauge size	Standard accessories
Y40930	Ø80mm	5/16" charging hose with ball valve 92cm x 3 pcs., Sight-glass (built-in)
Y40930C		5/16" charging hose with ball valve 92cm x 3 pcs., Sight-glass (built-in), Case

Brute II manifold kit for R407C, R404A, R507A, R134a



Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.5MPa

Connecting port size : 1/4" flare (UNF 7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Connecting port size : 3/8" flare (UNF 5/8-18)

Working pressure of hose : 4.1MPa Burst pressure of hose : 20.7MPa

· 3/8" bore (through the body) & vacuum port can reduce evacuation time up to 50% in the maximum.

Code No.	Gauge size	Standard accessories
Y40923	Ø80mm	1/4" charging hose 92cm x 3 pcs., 3/8" charging hose 92cm x 1 pce., Sight-glass (built-in), Protective gauge boots

Manifold kit for R407C, R404A, R507A, R134a



Low pressure gauge -0.1~1.7MPa High pressure gauge 0~3.5MPa

Connecting port size : 1/4" flare (UNF 7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Code No.	Gauge size	Standard accessories
Y40967	Ø68mm	1/4" charging hose 92cm x 3 pcs.
Y40969		1/4" charging hose 92cm x 3 pcs., Case

Manifold kit for R407C, R404A, R507A, R134a (with ball valve)



Low pressure gauge -0.1~1.7MPa High pressure gauge 0~3.5MPa

Connecting port size : 1/4" flare (UNF 7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Code No.	Gauge size	Standard accessories
Y40970	Ø68mm	1/4" charging hose with ball valve 152cm x 3 pcs.
Y40972		1/4" charging hose with ball valve 152cm x 3 pcs., Case

Single manifold kit for R407C, R404A, R507A, R134a



Low pressure gauge -0.1~1.7MPa

Connecting port size : 1/4" flare (UNF 7/16-20)

· Excellent air-tightness with double O-ring valve and high quality nylon gasket (can be used for R410A).

· Fully opens by 1.1/2 turns.

· Easy piston replacement.



Code No	Gauge size	Standard accessories
Y41214	Ø68mm	1/4" charging hose 92cm x 2 pcs., Case

Sight-glass

Can check the refrigerant condition

Aluminum body

Light weight aluminum forged body

4 valves

No need to change the connection to vacuum pump - cylinder

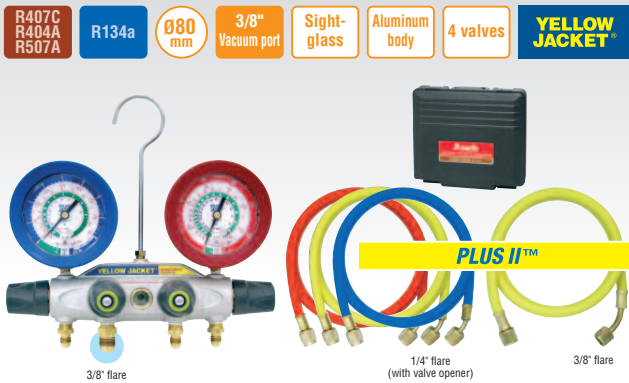
Access port

Access port with valve opener which can be used for vacuum pulling and refrigerant charging

Hose with BV

Minimum vapor kick and refrigerant discharge

Titan 4 valve manifold kit for R407C, R404A, R507A, R134a



Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.5MPa

Connecting port size : 1/4" flare (UNF7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

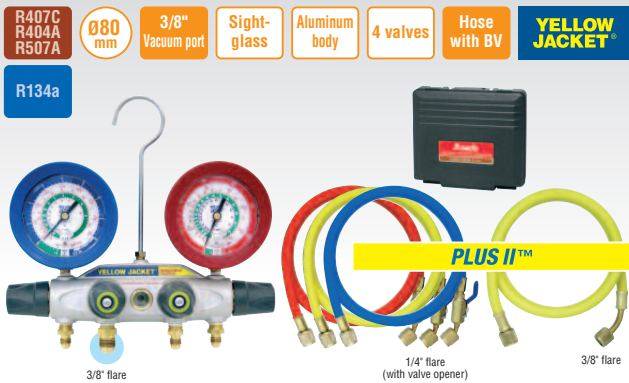
Connecting port size : 3/8" flare (UNF 5/8-18)

Working pressure of hose : 4.1MPa Burst pressure of hose : 20.7MPa

· Higher work efficiency with 4 valves and 4 ports.

Code No.	Gauge size	Standard accessories
Y40933	Ø80mm	1/4" charging hose 92cm x 3 pcs., 3/8" charging hose 92cm x 1 pce., Sight-glass (built-in)
Y40933C		1/4" charging hose 92cm x 3 pcs., 3/8" charging hose 92cm x 1 pce., Sight-glass (built-in), Case

Titan 4 valve manifold kit for R407C, R404A, R507A, R134a (with ball valve)



Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.5MPa

Connecting port size : 1/4" flare (UNF7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Connecting port size : 3/8" flare (UNF 5/8-18)

Working pressure of hose : 4.1MPa Burst pressure of hose : 20.7MPa

· Higher work efficiency with 4 valves and 4 ports.

Code No.	Gauge size	Standard accessories
Y40934	Ø80mm	1/4" charging hose with ball valve 152cm x 3 pcs., 3/8" charging hose 152cm x 1 pce., Sight-glass (built-in)
Y40934C		1/4" charging hose with ball valve 152cm x 3 pcs., 3/8" charging hose 152cm x 1 pce., Sight-glass (built-in), Case

Titan manifold kit for R407C, R404A, R507A, R134a



Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.5MPa

Connecting port size : 1/4" flare (UNF7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Code No.	Gauge size	Standard accessories
Y40927	Ø80mm	1/4" charging hose 92cm x 3 pcs., Sight-glass (built-in)
Y40927C		1/4" charging hose 92cm x 3 pcs., Sight-glass (built-in), Case

Titan manifold kit for R407C, R404A, R507A, R134a (with ball valve)



Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.5MPa

Connecting port size : 1/4" flare (UNF7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Code No.	Gauge size	Standard accessories
Y40928	Ø80mm	1/4" charging hose with ball valve 152cm x 3 pcs., Sight-glass (built-in)
Y40928C		1/4" charging hose with ball valve 152cm x 3 pcs., Sight-glass (built-in), Case

R407C
R404A
R507A

R134a

R12
R22
R502

Applicable
refrigerant

Ø80
mm

Gauge size

3/8"
Vacuum port

Large port
size & large
flow

3/8"
bore

Large port
size & large
flow

Titan manifold kit for R134a (M10)

R134a Ø80 mm Sight-glass Aluminum body Access port **YELLOW JACKET™**

M10 flare M10 flare M10 flare (with valve opener)

Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.5MPa
 Connecting port size : M10 flare
 Working pressure of hose : 3.4MPa Burst pressure of hose : 17.2MPa

- M10 system port for refrigeration and A/C equipment.
- Set of manifold and charging hoses with M10 ports and hose fittings.

Code No.	Gauge size	Standard accessories
Y40924A	Ø80mm	M10 charging hose 92cm x 3 pcs., Sight-glass (built-in)

* Please refer to P.114 for the information about manifolds for R134a auto A/C.

Bantam manifold kit for R407C, R404A, R507A, R134a

R407C R134a R404A R507A Ø80 mm Sight-glass Access port **YELLOW JACKET™**

With valve opener

Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.5MPa
 Connecting port size : 1/4" flare (UNF7/16-20)
 Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

- Excellent air-tightness with high quality nylon gasket.
- Easy piston replacement.
- Exclusive 100 microns mesh filter in-line on all ports prevents particles from entering.

Code No.	Gauge size	Standard accessories
Y40984	Ø80mm	1/4" charging hose 92cm x 3 pcs., Sight-glass (built-in)
Y40984C		1/4" charging hose 92cm x 3 pcs., Sight-glass (built-in), Case

Brutell manifold kit for R12, R22, R502

R12 R22 R502 Ø80 mm 3/8" Vacuum port 3/8" bore Sight-glass Aluminum body 4 valves **YELLOW JACKET™**

3/8" flare 1/4" flare (with valve opener) 3/8" flare

Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.5MPa
 Connecting port size : 1/4" flare (UNF7/16-20)
 Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa
 Connecting port size : 3/8" flare (UNF 5/8-18)
 Working pressure of hose : 4.1MPa Burst pressure of hose : 20.7MPa

- 3/8" bore (through the body) & vacuum port can reduce evacuation time up to 50% in the maximum.

Code No.	Gauge size	Standard accessories
Y40937	Ø80mm	1/4" charging hose 92cm x 3 pcs., 3/8" charging hose 92cm x 1 pce., Sight-glass (built-in), Protective gauge boots

Manifold kit for R12, R22, R502

R12 R22 R502 Ø68 mm **YELLOW JACKET™**

With valve opener

Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.4MPa
 Connecting port size : 1/4" flare (UNF7/16-20)
 Working pressure of hose : 3.4MPa Burst pressure of hose : 17.2MPa

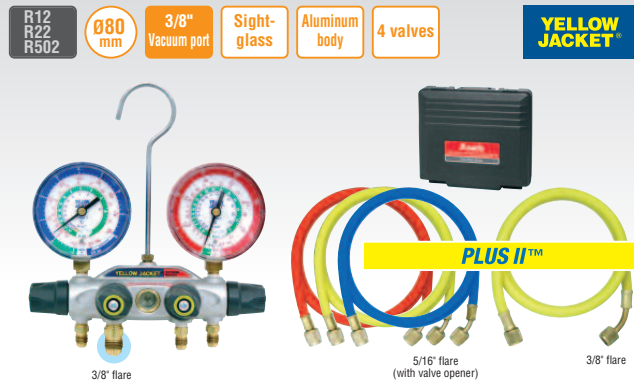
Code No.	Gauge size	Standard accessories
Y41273	Ø68mm	1/4" charging hose 92cm x 3 pcs.
Y41274		1/4" charging hose 92cm x 3 pcs., Case
Y41270		1/4" charging hose 92cm x 3 pcs., Port with Schrader valve , Case
Y41280		1/4" charging hose 92cm x 3 pcs., Sight-glass, Case
Y41280		1/4" charging hose 92cm x 3 pcs., Sight-glass, Case
Y41373*		1/4" charging hose 92cm x 3 pcs. (* both high and low pressure gauges : -0.1~3.4MPa)

* for heat pump.

- Sight-glass** Can check the refrigerant condition
- Aluminum body** Light weight aluminum forged body
- 4 valves** No need to change the connection to vacuum pump - cylinder
- Access port** Access port with valve opener which can be used for vacuum pulling and refrigerant charging

- Hose with BV** Minimum vapor kick and refrigerant discharge

Titan 4 valve manifold kit for R12, R22, R502



Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.5MPa

Connecting port size :1/4" flare (UNF 7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

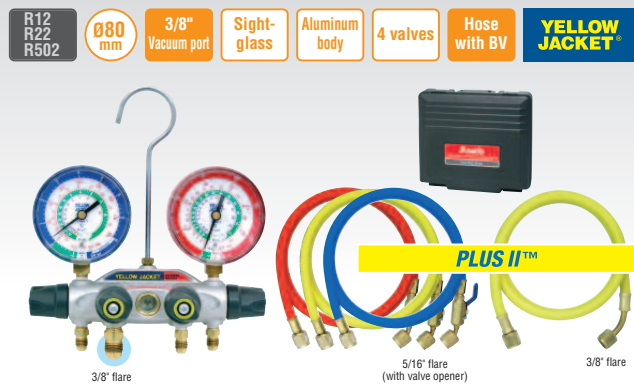
Connecting port size : 3/8" flare (UNF 5/8-18)

Working pressure of hose : 4.1MPa Burst pressure of hose : 20.7MPa

· Higher work efficiency with 4 valves and 4 ports.

Code No.	Gauge size	Standard accessories
Y40931	Ø80mm	1/4" charging hose 92cm x 3 pcs., 3/8" charging hose 92cm x 1 pce., Sight-glass (built-in)
Y40931C		1/4" charging hose 92cm x 3 pcs., 3/8" charging hose 92cm x 1 pce., Sight-glass (built-in), Case

Titan 4 valve manifold kit for R12, R22, R502 (with ball valve)



Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.5MPa

Connecting port size :1/4" flare (UNF 7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

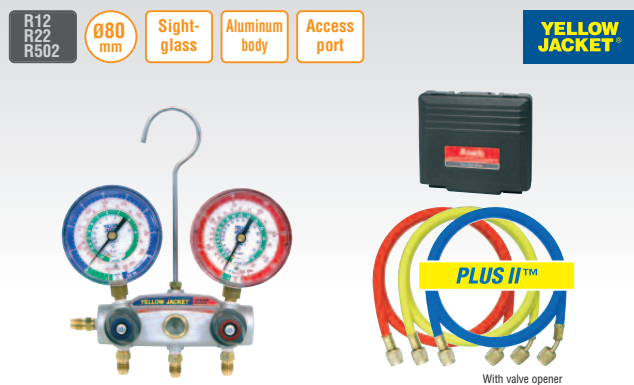
Connecting port size : 3/8" flare (UNF 5/8-18)

Working pressure of hose : 4.1MPa Burst pressure of hose : 20.7MPa

· Higher work efficiency with 4 valves and 4 ports.

Code No.	Gauge size	Standard accessories
Y40932	Ø80mm	1/4" charging hose with ball valve 152cm x 3 pcs., 3/8" charging hose with ball valve 152cm x 1 pce., Sight-glass (built-in)
Y40932C		1/4" charging hose with ball valve 152cm x 3 pcs., 3/8" charging hose with ball valve 152cm x 1 pce., Sight-glass (built-in), Case

Titan manifold kit for R12, R22, R502



Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.5MPa

Connecting port size :1/4" flare (UNF 7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Code No.	Gauge size	Standard accessories
Y40925	Ø80mm	1/4" charging hose 92cm x 3 pcs., Sight-glass (built-in)
Y40925C		1/4" charging hose 92cm x 3 pcs., Sight-glass (built-in), Case

Titan manifold kit for R12, R22, R502 (with ball valve)



Low pressure gauge -0.1~2.4MPa High pressure gauge -0.1~3.5MPa

Connecting port size :1/4" flare (UNF 7/16-20)

Working pressure of hose : 5.5MPa Burst pressure of hose : 27.5MPa

Code No.	Gauge size	Standard accessories
Y40926	Ø80mm	1/4" charging hose with ball valve 152cm x 3 pcs., Sight-glass (built-in)
Y40926C		1/4" charging hose with ball valve 152cm x 3 pcs., Sight-glass (built-in), Case

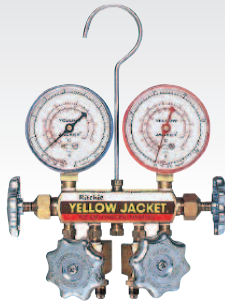
4 valve manifold kit for R12, R22, R502

R12
R22
R502

Ø68
mm

4 valves

**YELLOW
JACKET**



With valve opener

Low pressure gauge -0.1~2.4MPa

High pressure gauge -0.1~3.4MPa

Connecting port size :1/4" flare (UNF 7/16-20)

Working pressure of hose :3.4MPa Burst pressure of hose : 17.2MPa

- Higher work efficiency with 4 valves and 4 ports.

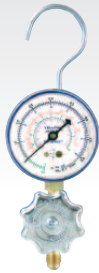
Code No.	Gauge size	Standard accessories
Y41473	Ø68mm	1/4" charging hose 92cm x 4 pcs.
Y41474		1/4" charging hose 92cm x 4 pcs., Case

Single manifold kit for R12, R22, R502

R12
R22
R502

Ø68
mm

**YELLOW
JACKET**



With valve opener

Low pressure gauge -0.1~2.4MPa

Connecting port size :1/4" flare (UNF 7/16-20)

- Excellent air-tightness with Double O-ring valve and high quality nylon gasket (can be used for R410A).
- Fully opens by 1.1/2 turns.
- Easy piston replacement.



Code No.	Gauge size	Standard accessories
Y41213	Ø68mm	1/4" charging hose 92cm x 2 pcs., Case

Manifold case



- Indicates the applicable refrigerant of the manifold stored.



Code No.	Item
XP8411P	Manifold case for R410A
XP8411B	Manifold case for R407C, R404A, R507A, R134a
XP8411G	Manifold case for R12, R22, R502

Aluminum body

Light weight aluminum forged body

4 valves

No need to change the connection to vacuum pump - cylinder

Access port

Access port with valve opener which can be used for vacuum pulling and refrigerant charging

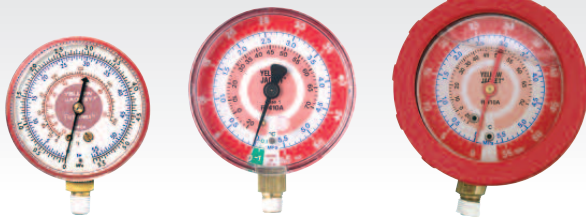
Hose with BV

Minimum vapor kick and refrigerant discharge

High pressure manifold gauge for R410A

R410A

YELLOW JACKET®



High pressure gauge Ø68mm

High pressure gauge Ø80mm

High pressure glycerine-filled gauge Ø80mm

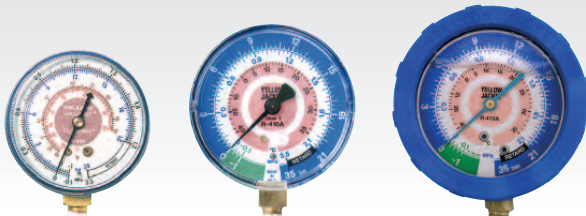
- Indicates accurate pressure by flutterless technology.
- Crystal cover absorbs shock.
- Zero adjusting screw.
- Gauges with calibration certificate are suitable for severe accuracy control.
- Glycerine-filled gauges dampen pulsation for easy reading.

Item	Code No.	Gauge size	Connecting screw	Pressure reading
High pressure gauge	Y49053	Ø68mm	1/8" NPT	0~5.5MPa
High pressure gauge	Y49153	Ø80mm		-0.1~5.5MPa
High pressure gauge with calibration certificate	Y49253	Ø80mm		-0.1~5.5MPa
Glycerine-filled high pressure gauge	Y49175	Ø80mm		0~5.5MPa

Low pressure manifold gauge for R410A

R410A

YELLOW JACKET®



Low pressure gauge Ø68mm

Low pressure gauge Ø80mm

Low pressure glycerine-filled gauge Ø80mm

- Indicates accurate pressure by flutterless technology.
- Crystal cover absorbs shock.
- Zero adjusting screw.
- Gauges with calibration certificate are suitable for severe accuracy control.
- Glycerine-filled gauges dampen pulsation for easy reading.

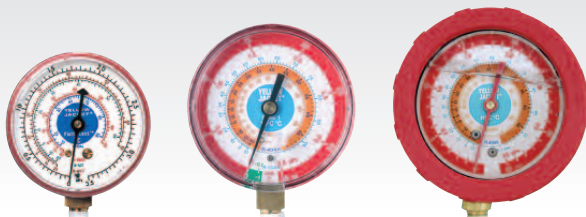
Item	Code No.	Gauge size	Connecting screw	Pressure reading
Low pressure gauge	Y49054	Ø68mm	1/8" NPT	-0.1~3.5MPa
Low pressure gauge	Y49154	Ø80mm		-0.1~3.5MPa
Low pressure gauge with calibration certificate	Y49254	Ø80mm		-0.1~3.5MPa
Glycerine-filled low pressure gauge	Y49176	Ø80mm		-0.1~3.5MPa

High pressure manifold gauge for R407C, R404A, R507A, R134a

R407C
R404A
R507A

R134a

YELLOW JACKET®



High pressure gauge Ø68mm

High pressure gauge Ø80mm

High pressure glycerine-filled gauge Ø80mm

- Indicates accurate pressure by flutterless technology.
- Crystal cover absorbs shock.
- Zero adjusting screw.
- Gauges with calibration certificate are suitable for severe accuracy control.
- Glycerine-filled gauges dampen pulsation for easy reading.

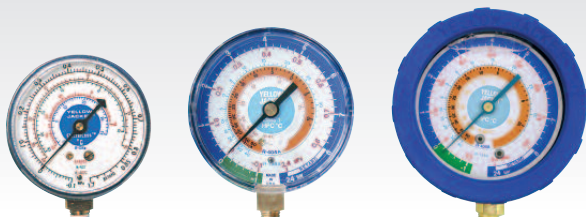
Item	Code No.	Gauge size	Connecting screw	Pressure reading
High pressure gauge	Y49059	Ø68mm	1/8" NPT	0~3.5MPa
High pressure gauge	Y49163	Ø80mm		-0.1~3.5MPa
High pressure gauge with calibration certificate	Y49263	Ø80mm		-0.1~3.5MPa
Glycerine-filled high pressure gauge	Y49173	Ø80mm		0~3.5MPa

Low pressure manifold gauge for R407C, R404A, R507A, R134a

R407C
R404A
R507A

R134a

YELLOW JACKET®



Low pressure gauge Ø68mm

Low pressure gauge Ø80mm

Low pressure glycerine-filled gauge Ø80mm

- Indicates accurate pressure by flutterless technology.
- Crystal cover absorbs shock.
- Zero adjusting screw.
- Gauges with calibration certificate are suitable for severe accuracy control.
- Glycerine-filled gauges dampen pulsation for easy reading.

Item	Code No.	Gauge size	Connecting screw	Pressure reading
Low pressure gauge	Y49060	Ø68mm	1/8" NPT	-0.1~1.7MPa
Low pressure gauge	Y49164	Ø80mm		-0.1~2.4MPa
Low pressure gauge with calibration certificate	Y49264	Ø80mm		-0.1~2.4MPa
Glycerine-filled low pressure gauge	Y49174	Ø80mm		-0.1~2.4MPa

High pressure manifold gauge for R12, R22, R502

R12
R22
R502

**YELLOW
JACKET™**



High pressure gauge Ø68mm

High pressure gauge Ø80mm

High pressure glycerine-filled gauge Ø80mm

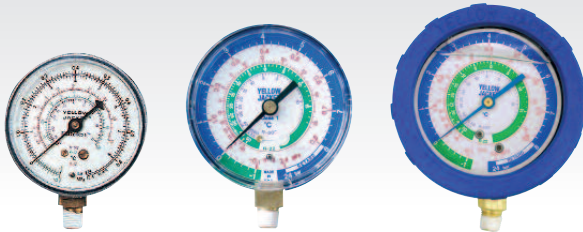
- Indicates accurate pressure by flutterless technology.
- Crystal cover absorbs shock.
- Zero adjusting screw.
- Gauges with calibration certificate are suitable for severe accuracy control.
- Glycerine-filled gauges dampen pulsation for easy reading.

Item	Code No.	Gauge size	Connecting screw	Pressure reading
High pressure gauge	Y49025	Ø68mm	1/8" NPT	-0.1~3.4MPa
High pressure gauge	Y49143	Ø80mm		-0.1~3.5MPa
High pressure gauge with calibration certificate	Y49243	Ø80mm		-0.1~3.5MPa
Glycerine-filled high pressure gauge	Y49171	Ø80mm		0~3.5MPa

Low pressure manifold gauge for R12, R22, R502

R12
R22
R502

**YELLOW
JACKET™**



Low pressure gauge Ø68mm

Low pressure gauge Ø80mm

Low pressure glycerine-filled gauge Ø80mm

- Indicates accurate pressure by flutterless technology.
- Crystal cover absorbs shock.
- Zero adjusting screw.
- Gauges with calibration certificate are suitable for severe accuracy control.
- Glycerine-filled gauges dampen pulsation for easy reading.

Item	Code No.	Gauge size	Connecting screw	Pressure reading
Low pressure gauge	Y49026	Ø68mm	1/8" NPT	-0.1~2.4MPa
	Y49144	Ø80mm		-0.1~2.4MPa
Low pressure gauge with calibration certificate	Y49244	Ø80mm		-0.1~2.4MPa
Glycerine-filled low pressure gauge	Y49172	Ø80mm		-0.1~2.4MPa
Low pressure gauge for heat pump	Y49029	Ø80mm		-0.1~3.4MPa

Protective gauge boots (2 pcs. pack)

**YELLOW
JACKET™**

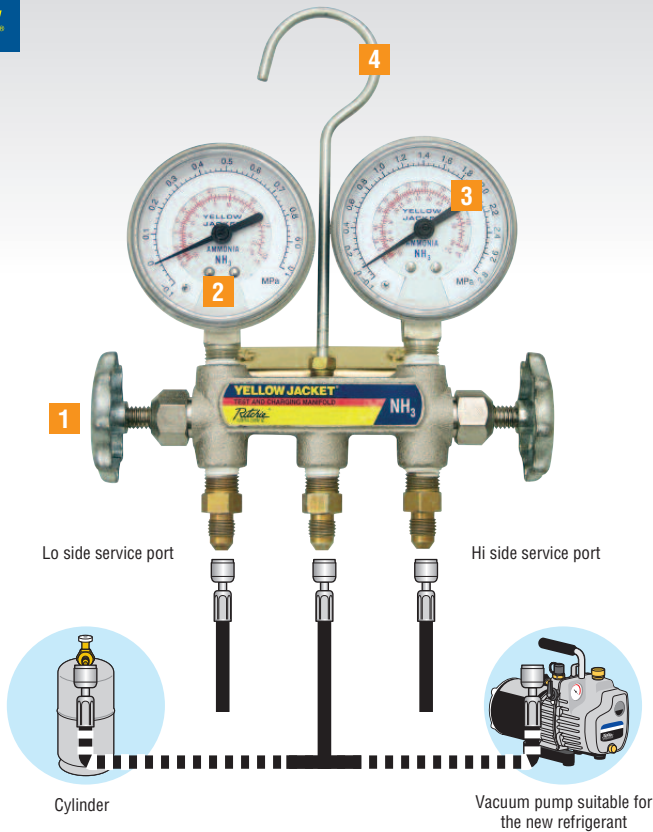


- Protector for manifold gauges.
- Absorbs shock to the gauge and prevent off position of the needle.
- For protection of gauges from damage.

Item	Code No.	Gauge size
Protective gauge cover	for Ø68mm	Y49090
	for Ø80mm	Y49190

Features of ammonia manifold

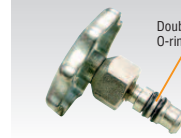
YELLOW JACKET



1 Handle

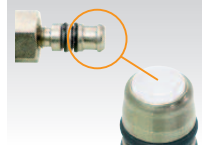
- Fully opens by 1.1/2 turns.

Double O-ring valve



- Excellent air-tightness.

High quality nylon gasket



- Excellent air-tightness.

2 Gauge

- Strong crystal gauge.
- With saturation temperature reading.
- With recalibration screw.

3 Needle

- Flutterless technology.

4 Hook

- Heavy-duty swivel hook.

Applications

Checking pressure and temperature of system and so on · vacuum pulling and drying check of system and so on · refrigerant charging to system

Ammonia manifold kit

NH3 (R717)

Ø68 mm

YELLOW JACKET



Low pressure gauge -0.1~1.0MPa

High pressure gauge -0.1~2.8MPa

Connecting port size : 1/4" flare (UNF 7/16-20)

Working pressure of hose : 6.2MPa Burst pressure of hose : 24.0MPa

- Heavy-duty charging hose.
- Special nylon prevents penetration into the hose.

Code No.	Gauge size	Standard accessories
Y40193	Ø68mm	1/4" heavy-duty ammonia charging hose 122cm x 3pcs.

Ammonia manifold gauge

NH3 (R717)

YELLOW JACKET



Item	Code No.	Gauge size	Connecting screw	Pressure reading
High pressure gauge	Y40201	Ø68mm	1/4" NPT	-0.1~2.8MPa
	Y40206	Ø89mm		-0.1~2.8MPa
Low pressure gauge	Y40202	Ø68mm		-0.1~1.0MPa
	Y40205	Ø89mm		-0.1~1.0MPa

1/4" heavy-duty ammonia charging hose

NH3 (R717)

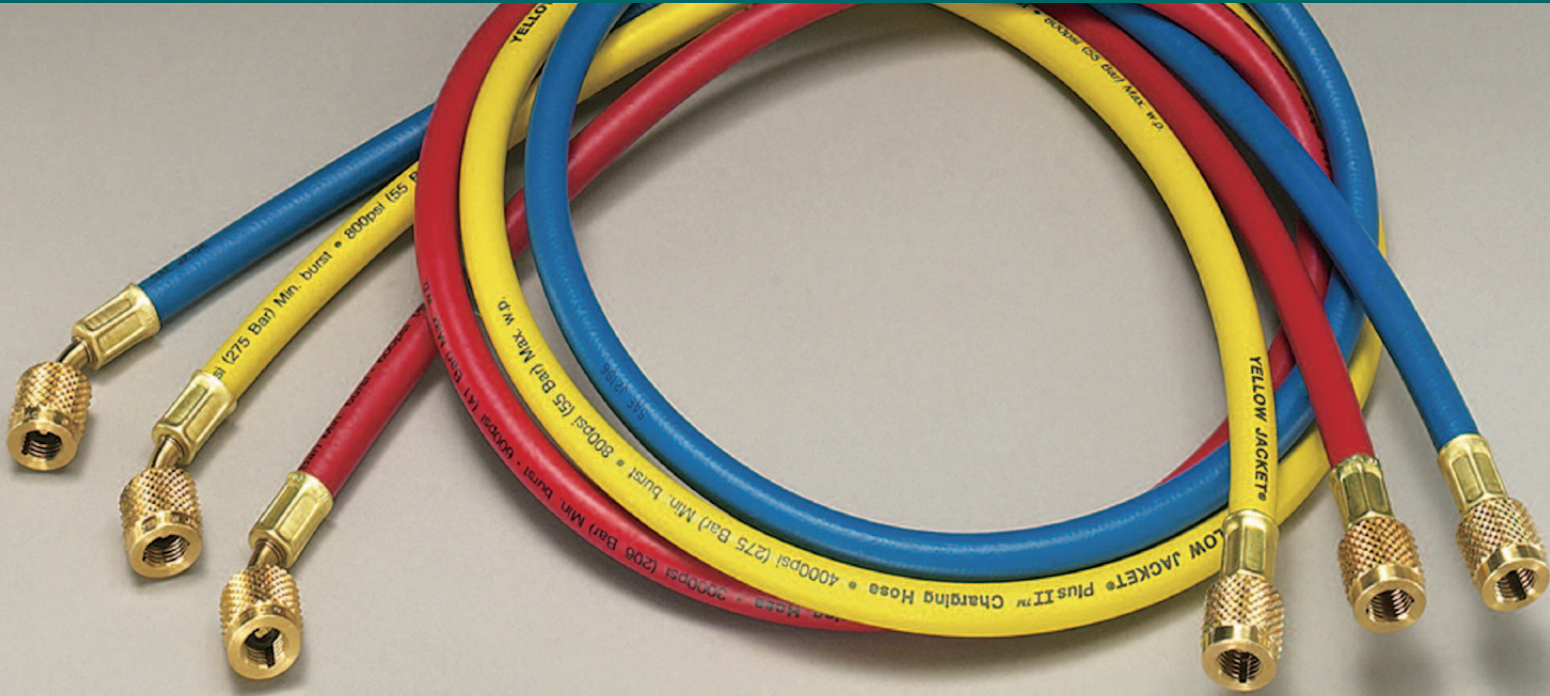
YELLOW JACKET














- Special nylon prevents penetration into the hose.

Length	Code No.	Connecting screw	Working pressure	Burst pressure
122cm	Y16848	1/4" flare (UNF 7/16-20)	6.2MPa	24.0MPa
183cm	Y16872			
244cm	Y16896			
305cm	Y16910			
366cm	Y16912			

MANIFOLDS · CHARGING HOSES



Charging hoses

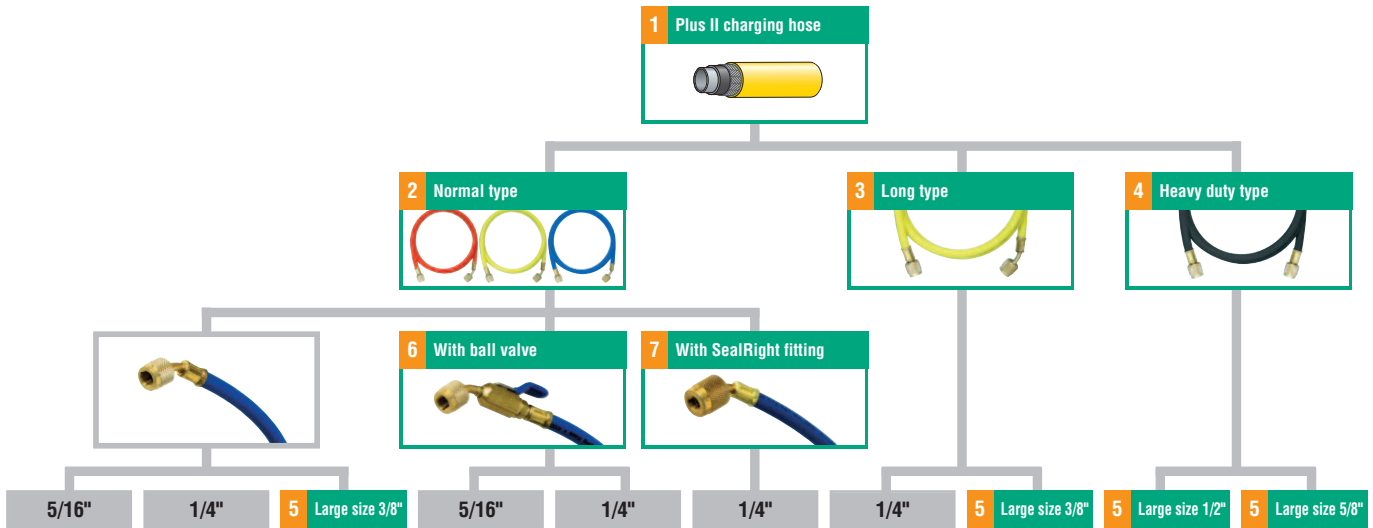
Stainless steel braid	1/4"			
Large size and long type	3/8"		Heavy duty type 1/2", 5/8", 3/4"	
				3/8" 
Large size	3/8"			
Long type	1/4"			1/4" 
Normal type	5/16"		1/4" M10 M12	1/4" 
				
Applicable refrigerant	R410A	R407C, R404A R507A, R134a	R12, R22, R502	Ammonia NH3(R717)

*Please refer to the information about refrigerant recover and so on.

Features of plus II charging hose series

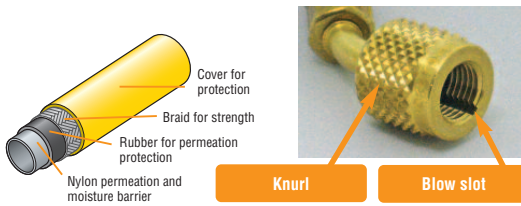
YELLOW JACKET

**Suitable for new type refrigerant !
High quality hose, high pressure resistance for safe work !!**



1 Common features

Plus II charging hose



- High quality hose with high pressure resistance for new refrigerants assures safe work.
- Four-layer double protection with rubber for permeation protection and special nylon for CHC, HCFC, HFC.
- Special nylon prevents refrigerant from contamination with moisture.
- Regardless of many layers, strong but flexible and easy to use.
- Large fitting with knurl is easy to turn by hand with a glove.
- Blow slot prevents the residual refrigerant from blowing against the operator.

2 Adjustable valve opener

3 Normal & 1/4" long type

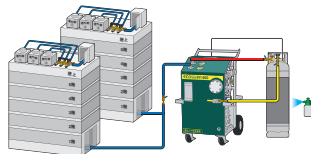
- Can be adjusted with pliers or pinchers.
- Standard valve opener of service port on the system side can be treated.



3 Higher work efficiency

4 Long & heavy duty type

- It is possible to work at a distance.
- Long type: ~30m
- Heavy duty type: ~30m (~50m made to order)



4 Long life

Heavy duty type

- Stronger and longer life than normal type.
- Hard to be crushed and suitable for vacuum pulling.



5 Faster operation with large flow

Large size

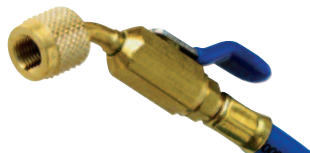
- Faster vacuum pulling, refrigerant charging and refrigerant recovery. (Approximately 8 times faster compared 1/4" with 1/2")



6 Can stop refrigerant manually

With ball valve

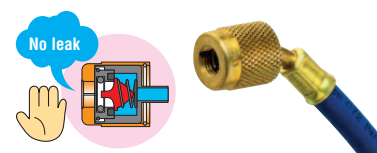
- Ball valve to prevent refrigerant from venting.
- Minimum gas reaction and refrigerant venting during operation.
- Can identify the open/close position easily from the direction of lever.



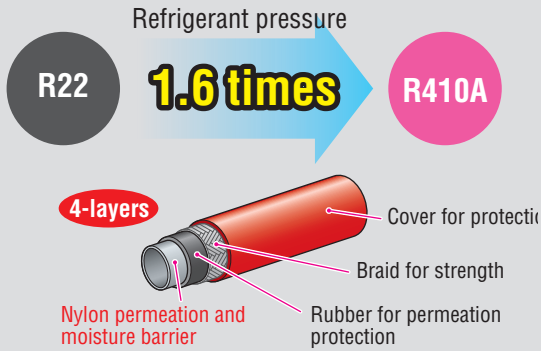
7 Stops refrigerant automatically

SealRight fitting

- With SealRight fitting to prevent refrigerant from venting. Refrigerant is stopped automatically when disconnecting.
- Minimum gas reaction and refrigerant venting during operation.



Charging hose plus II for R410A

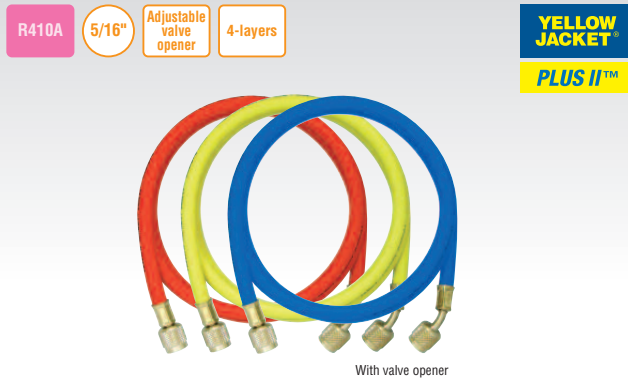


High pressure resistance, suitable for new type refrigerants.

Screw size	5/16" flare (UNF 1/2-20)
Working temperature	-28.8 ~ 82.2°C
Burst pressure	27.5 MPa
Working pressure	5.5 MPa
Safety factor (working pressure: burst pressure)	1 : 5
Max length of hose	~30m

Charging hose plus II for R410A

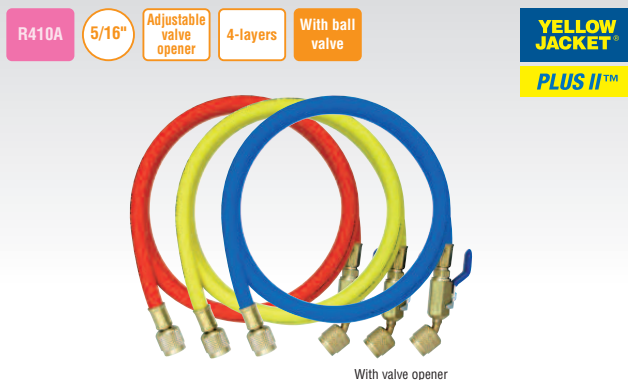
PAT.



Length	Color	Code No.	Thread size	Working pressure	Burst pressure
92cm	Yellow	Y21503	5/16" flare (UNF 1/2-20)	5.5MPa	27.5MPa
	Blue	Y21523			
	Red	Y21563			
	3 pcs. pack	Y21583			
152cm	Yellow	Y21505			
	Blue	Y21525			
	Red	Y21565			
	3 pcs. pack	Y21585			
244cm	3 pcs. pack	Y21588			

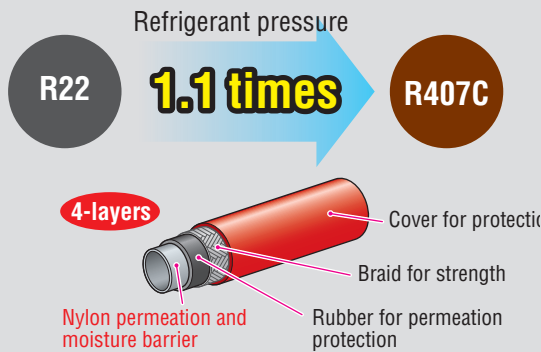
Charging hose plus II for R410A (with ball valve)

PAT.



Length	Color	Code No.	Thread size	Working pressure	Burst pressure
92cm	Yellow	Y29003	5/16" flare (UNF 1/2-20)	5.5MPa	27.5MPa
	Blue	Y29203			
	Red	Y29603			
	3 pcs. pack	Y29993			
152cm	Yellow	Y29005			
	Blue	Y29205			
	Red	Y29605			
	3 pcs. pack	Y29995			
244cm	3 pcs. pack	Y29998			

Charging hose plus II for R407C, R404A, R507A, R134a



High pressure resistance, suitable for new type refrigerants.

Screw size	1/4" flare (UNF 7/16-20)
Working temperature	-28.8 ~ 82.2 °C
Burst pressure	27.5 MPa
Working pressure	5.5 MPa
Safety factor (working pressure: burst pressure)	1 : 5
Max length of hose	~30m

Charging hose plus II for R407C, R404A, R507A, R134a

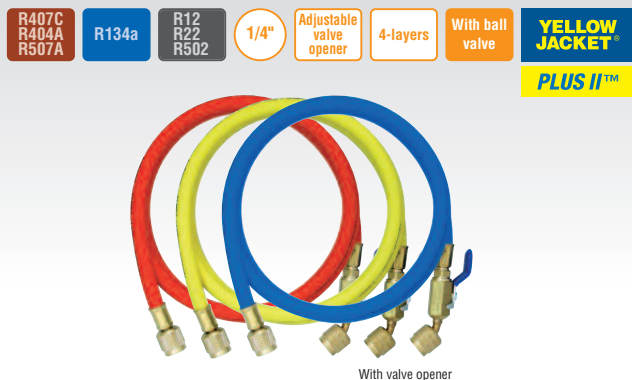
PAT.



Length	Color	Code No.	Thread size	Working pressure	Burst pressure
92cm	Yellow	Y21036	1/4" flare (UNF 7/16-20)	5.5MPa	27.5MPa
	Blue	Y21236			
	Red	Y21636			
152cm	3 pcs. pack	Y21983			
	Yellow	Y21060			
	Blue	Y21260			
183cm	Red	Y21660			
	3 pcs. pack	Y21985			
	Yellow	Y21072			
244cm	Blue	Y21272			
	Red	Y21672			
	3 pcs. pack	Y21986			
	3 pcs. pack	Y21988			

Charging hose plus II for R407C, R404A, R507A, R134A (with ball valve)

PAT.



Length	Color	Code No.	Thread size	Working pressure	Burst pressure
92cm	Yellow	Y29036	1/4" flare (UNF 7/16-20)	5.5MPa	27.5MPa
	Blue	Y29236			
	Red	Y29636			
152cm	3 pcs. pack	Y29983			
	Yellow	Y29060			
	Blue	Y29260			
244cm	Red	Y29660			
	3 pcs. pack	Y29985			
	3 pcs. pack	Y29988			

Charging hose plus II for R407C, R404A, R507A, R134A (with SealRight fitting)

PAT.



Length	Color	Code No.	Thread size	Working pressure	Burst pressure
92cm	Yellow	Y22036	1/4" flare (UNF 7/16-20)	5.5MPa	27.5MPa
	Blue	Y22236			
	Red	Y22636			
152cm	3 pcs. pack	Y22983			
	Yellow	Y22060			
	Blue	Y22260			
244cm	Red	Y22660			
	3 pcs. pack	Y22985			
	3 pcs. pack	Y22988			

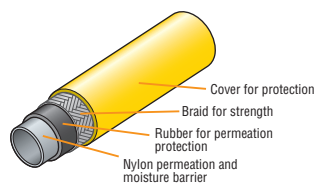
1/4" charging hose plus II

PAT.

R410A R407C
R404A
R507A 1/4" Adjustable
valve
opener 4-layers Long

R134a R12
R22
R502

**YELLOW
JACKET™**
PLUS II™



Working temperature	-28.8 ~ 82.2°C
Safety factor (working pressure: burst pressure)	1 : 5
Max length of hose	~30m

Length	Code No.	Thread size	Working pressure	Burst pressure
500cm	Y21117	1/4" flare (UNF 7/16-20)	5.5MPa	27.5MPa
1000cm	Y21133			
1500cm	Y21150			
3000cm	Y21200			

* Please refer to P.148 for Adapter for different diameter 5/16" female X 1/4" male (Y06110K, Y06110A), (Y06110K, Y06110A).

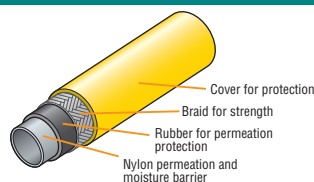
3/8" charging hose plus II

PAT.

R410A R407C
R404A
R507A 3/8" 4-layers Large
flow Long

R134a R12
R22
R502

**YELLOW
JACKET™**
PLUS II™



Working temperature	-28.8 ~ 93.3°C
Safety factor (working pressure: burst pressure)	1 : 5
Max length of hose	~30m

Length	Code No.	Thread size	Working pressure	Burst pressure
92cm	Y14536	3/8" flare (UNF 5/8-18)	4.1MPa	20.7MPa
152cm	Y14560			
244cm	Y14596			
762cm	Y14625			
1500cm	Y14650			
3000cm	Y14699(*)			

* Please refer to P.142 for Hose reel with charging hose.

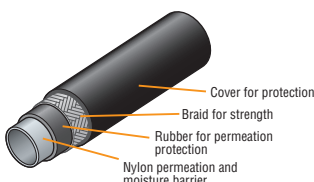
1/2" heavy duty charging hose plus II

PAT.

R410A R407C
R404A
R507A 1/2" 4-layers Large
flow Long Long life

R134a R12
R22
R502

**YELLOW
JACKET™**
PLUS II™



Working temperature	-28.8 ~ 93.3°C
Safety factor (working pressure: burst pressure)	1 : 5
Max length of hose	~30m (*50m)

Length	Code No.	Thread size	Working pressure	Burst pressure
244cm	Y15896	1/2" flare	4.1MPa	20.7MPa
762cm	Y15925			
1500cm	Y15950			
3000cm	Y15999			

* Other length available (max 50m).

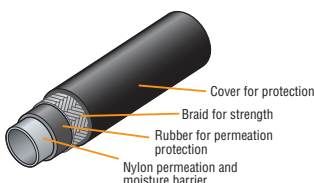
5/8" heavy duty charging hose plus II

PAT.

R410A R407C
R404A
R507A 5/8" 4-layers Large
flow Long Long life

R134a R12
R22
R502

**YELLOW
JACKET™**
PLUS II™



Working temperature	-28.8 ~ 93.3°C
Safety factor (working pressure: burst pressure)	1 : 5
Max length of hose	~30m (*50m)

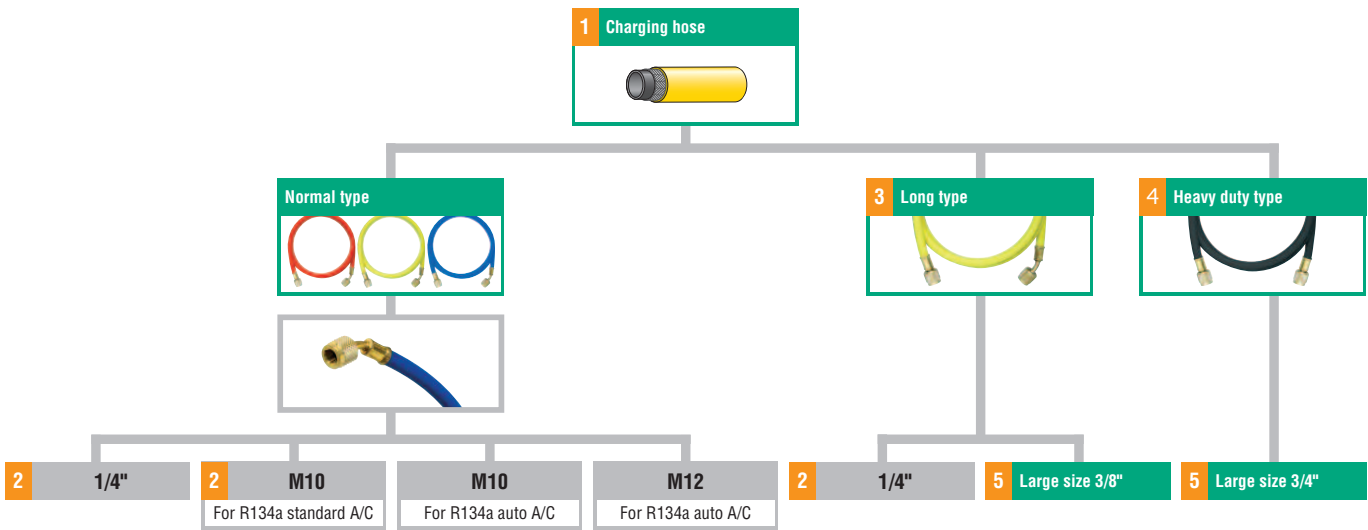
Length	Code No.	Thread size	Working pressure	Burst pressure
244cm	Y16096	5/8" flare	4.1MPa	20.7MPa
1000cm	Y16133			
3000cm	Y16199			

* Other length available (max 50m).

Features of charging hose series

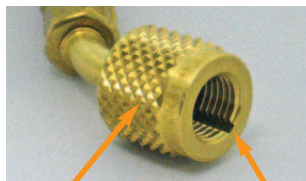
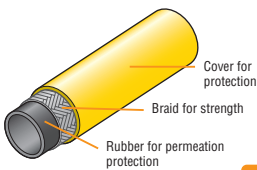
YELLOW JACKET

Yellow Jacket standard hoses have been the standard of the industry for more than 50 years !



1 Common features

Charging hose



Knurl

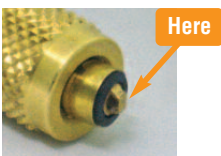
Blow slot

- Reliable Yellow Jacket standard charging hose.
- Large fitting with knurl is easy to turn by hand with a glove.
- Blow slot prevents the residual refrigerant from blowing against the operator.

2 Adjustable valve opener

1/4", M10 for standard A/C

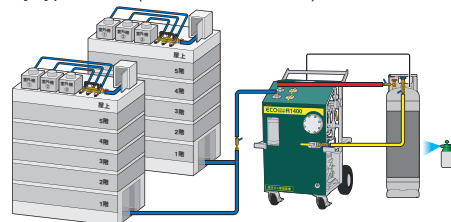
- Can be adjusted with pliers or pinchers.
- Substandard valve opener of service port on the system side can be treated.



3 Higher work efficiency

4 Long & heavy duty type

- It is possible to work at a distance.
- Long type: ~30m
Heavy duty type: ~30m (~50m made to order)



4 Long life

Heavy duty type

- Stronger and longer life than normal type.
- Hard to be crushed and suitable for vacuum pulling.



5 Faster operation with large flow

Large size

- Faster vacuum pulling, refrigerant charging and refrigerant recovery.



1/4" charging hose for R12, R22, R502

PAT.

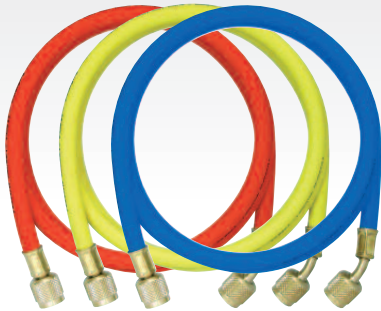
R12
R22
R502

1/4"

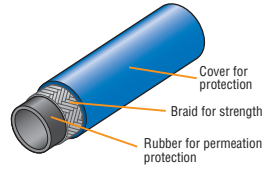
Adjustable
valve
opener

3-layers

YELLOW
JACKET™



With valve opener



Working temperature	-28.8 ~ 82.2°C
Safety factor (working pressure: burst pressure)	1 : 5
Max length of hose	~30m

Length	Color	Code No.	Thread size	Working pressure	Burst pressure
92 cm	Yellow	Y11036	1/4" flare (UNF 7/16-20)	3.4MPa	17.2MPa
	Blue	Y11236			
	Red	Y11636			
	3 pcs. pack	Y11983			
152 cm	Yellow	Y11060			
	Blue	Y11260			
	Red	Y11660			
	3 pcs. pack	Y11985			
183 cm	Yellow	Y11072			
	Blue	Y11272			
	Red	Y11672			
	3 pcs. pack	Y11986			
244 cm	Yellow	Y11096			
	Blue	Y11296			
	Red	Y11696			

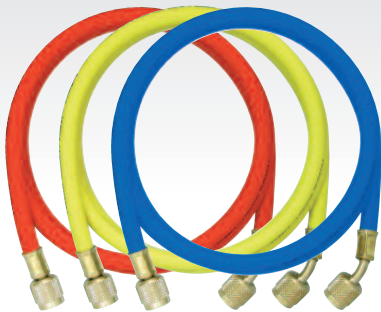
Charging hose for R134a M10

R134a

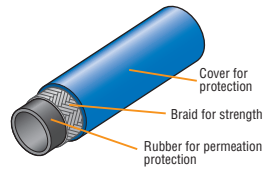
M10

Adjustable
valve
opener

3-layers



M10 flare (with valve opener)



Working temperature	-10 ~ 40°C
Safety factor (working pressure: burst pressure)	1 : 5
Max length of hose	~100m

Length	Color	Code No.	Thread size	Working pressure	Burst pressure
92 cm	Yellow	Y02209M	M10	3.4MPa	17.2MPa
	Blue	Y02409M			
	Red	Y02109M			
	3 pcs. pack	Y02809M			

* With valve opener which can be used for standard A/C units.

*Optional accessory : Hose gasket for M10 (10 pcs. pack) (Code No. Y02501A)

1/4" charging hose for R12, R22, R502

PAT.

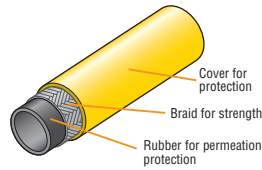
R12
R22
R502

1/4"

Adjustable
valve
opener

3-layers

Long



Working temperature	-10 ~ 40°C
Safety factor (working pressure: burst pressure)	1 : 5
Max length of hose	~100m

Length	Color	Code No.	Thread size	Working pressure	Burst pressure
500cm	Yellow	Y22050A	1/4" flare (UNF 7/16-20)	2.9MPa	14.7MPa
1000cm	Yellow	Y22100A			

*Optional accessory : Hose gasket for 1/4" (10 pcs. pack) (Code No. Y08000K)

3/8" charging hose for R12, R22, R502

PAT.

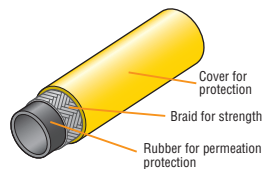
R12
R22
R502

3/8"

3-layers

Large
flow

Long



Working temperature	-10 ~ 40°C
Safety factor (working pressure: burst pressure)	1 : 5
Max length of hose	~50m

Length	Color	Code No.	Thread size	Working pressure	Burst pressure
500cm	Yellow	Y23050A	3/8" flare (UNF 5/8-18)	2.9MPa	14.7MPa
1000cm	Yellow	Y23100A			

*Optional accessory : Hose gasket for 3/8" (10 pcs. pack) (Code No. Y08001K)

3/4" heavy duty charging hose

PAT.

R410A

R407C
R404A
R507A

3/4"

3-layers

Large
flow

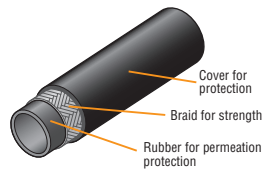
Long

Long life

**YELLOW
JACKET®**

R134a

R12
R22
R502



Working temperature	-28.8 ~ 93.3°C
Safety factor (working pressure: burst pressure)	1 : 5
Max length of hose	~30m (*~50m)

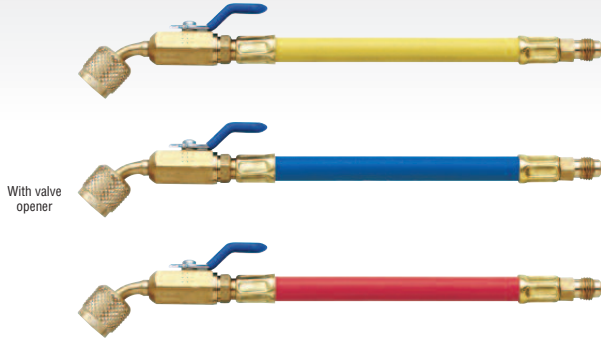
Length	Code No.	Thread size	Working pressure	Burst pressure
244cm	Y18496	3/4" flare	4.1MPa	20.7MPa
1500cm	Y18550			
2200cm	Y18575			
3000cm	Y18599			

*Other length available (max 50m).

1/4" hose with ball valve (female x male)

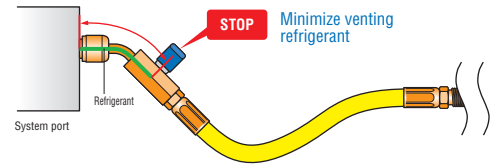
PAT.

R410A
R407C
R404A
R507A
R134a
R12
R22
R502
1/4"
Adjustable
valve
opener
4-layers
**YELLOW
JACKET™**
PLUS II™



With valve
opener

- Stop venting refrigerant when removing the hose.
- Friendly to environment as the hose has ball valve to stop venting refrigerant.

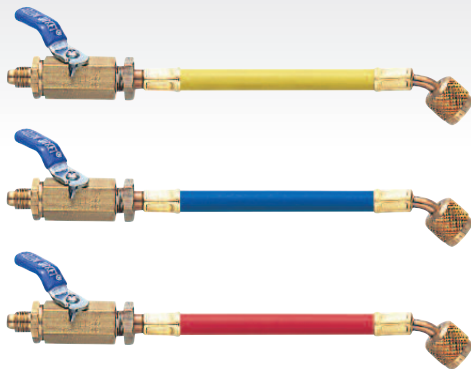


Item	Code No.	Length
Yellow	Y29001	15cm
Blue	Y29201	
Red	Y29601	
3 pcs. pack	Y29980	

1/4" hose with ball valve (male x female)

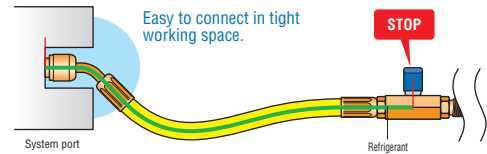
PAT.

R410A
R407C
R404A
R507A
R134a
R12
R22
R502
1/4"
Adjustable
valve
opener
4-layers
**YELLOW
JACKET™**
PLUS II™



With valve
opener

- Stop venting refrigerant when removing the hose.
- Easy to connect in tight working space.



Item	Code No.	Length
Yellow	Y25002	15cm
Blue	Y25202	
Red	Y25602	
3 pcs. pack	Y25980	

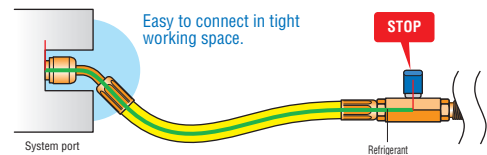
3/8" hose with ball valve (male x female)

PAT.

R410A
R407C
R404A
R507A
R134a
R12
R22
R502
3/8"
4-layers
Large
flow
**YELLOW
JACKET™**
PLUS II™



- Stop venting refrigerant when removing the hose.
- Easy to connect in tight working space.



Item	Code No.	Length
Yellow	Y26202	15cm

Stainless steel braid charging hose

R410A R407C R404A R507A R134a R12 R22 R502 1/4"

YELLOW JACKET



- For applications where temperature and pressure could be a problem.
- Suitable for high vacuum pulling.
- Applicable for HFC, HCFC, CFC, CO2 and other refrigeration oils.

Minimum bend radius	140mm or more
Safety factor (working pressure: burst pressure)	1 : 4

Length	Code No.	Thread size	Working pressure
92cm	Y81636	1/4" flare (UNF 7/16-20)	8.8MPa
152cm	Y81648		
244cm	Y81660		

*Other screw size and hose length available.

Hose gasket

Optional accessory

R410A R407C R404A R507A R134a R12 R22 R502

YELLOW JACKET



- Replacement gaskets for rubber charging hoses.
- 10 pcs. pack

Item	Code No.	Size
Hose gasket	Y19020	For 1/4" · 5/16"
	Y19011	For 3/8"
	Y19015	For 1/2" ~ 5/8"
	Y19012	For 3/4"

* Please refer to P.106, 131, 132 for hose gaskets for charging hoses whose code numbers end A or M.

Valve opener

Optional accessory

R410A R407C R404A R507A R134a R12 R22 R502

YELLOW JACKET



- Replacement valve opener for charging hoses
- 10 pcs. pack

Item	Code No.	Size
Valve opener	Y19302	For 1/4" · 5/16"

Hose reel with charging hose

R410A R407C R404A R507A 3/8" 4-layers Large flow Long R134a R12 R22 R502

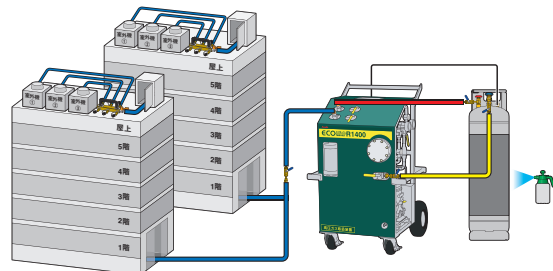
YELLOW JACKET

PLUS II™



- For 3/8" charging hose.
- Can reel up to 40m
- Convenient for refrigerant recovery from a distant system.

Refrigerant recovery from a distant system





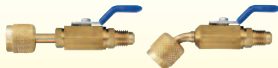









Item	Hose reel with charging hose	
Code No.	XP582	
Applicable	Diameter	3/8"
	Length	~40m
Contents	3/8" charging hose plus II 30m, Hose reel	

MANIFOLDS - CHARGING HOSES

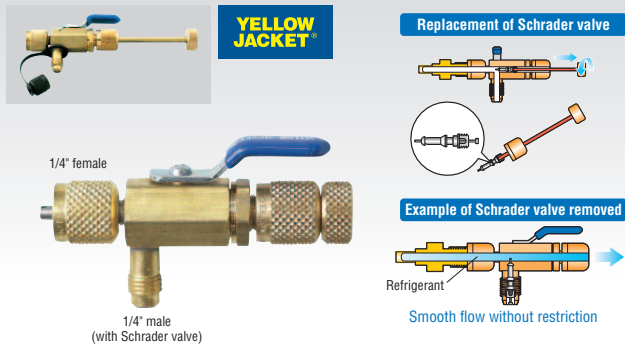


Convenient hose adapters and ball valves

 <p>Adapter for different diameter (different diameter)</p>	 <p>Quick adapter (different - same diameter)</p>	 <p>SealRight quick adapter (different - same diameter)</p>	 <p>Snap coupler (same diameter)</p>	
 <p>Ball valve female x male (same diameter)</p>	 <p>Ball valve male x male (same diameter)</p>	 <p>Ball valve female x male (different diameter)</p>		
 <p>Access control valve</p>	 <p>Quick charging valve</p>	 <p>Cylinder adapter</p>	 <p>Sight-glass</p>	 <p>Charge faster Liquid charge adapter</p>

*Please refer to the information about refrigerant recovery and so on.

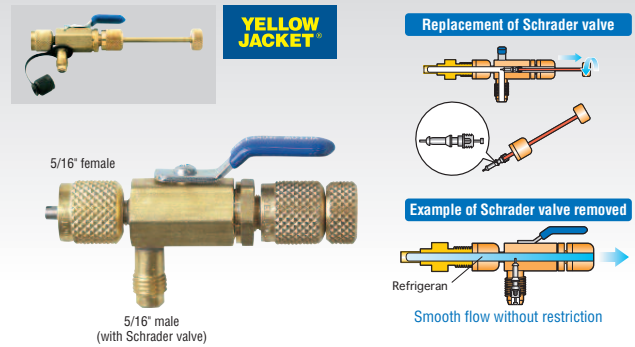
1/4" quick charging valve A



- Removes Schrader valve for replacement without leaking.
- Can speed up vacuum pulling, charging and recovery by removing Schrader valve on the service port.
- Vacuum gauge can be attached.

Item	1/4" quick charging valve A
Code No.	Y18975
Thread size	1/4" male x 1/4" female

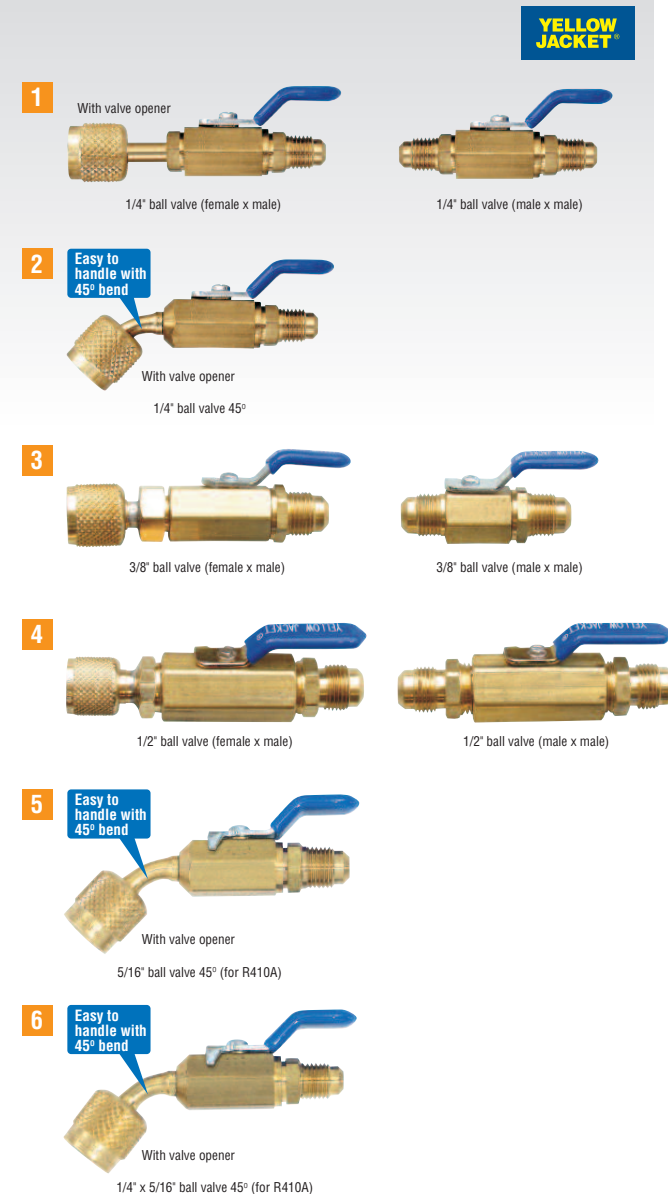
5/16" quick charging valve A



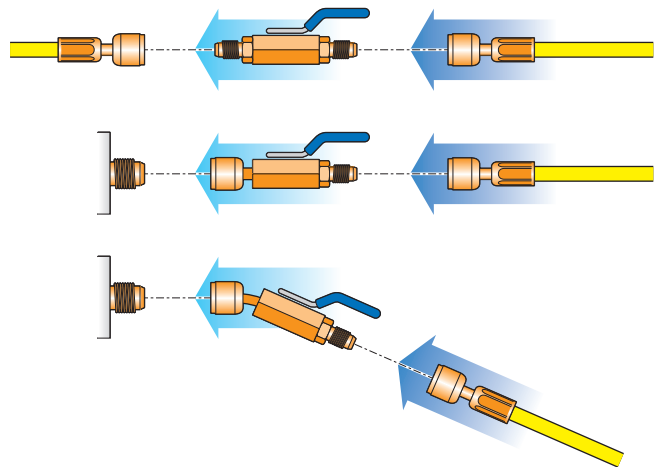
- Removes Schrader valve for replacement without leaking.
- Can speed up vacuum pulling, charging and recovery by removing Schrader valve on the service port.
- Vacuum gauge can be attached.

Item	5/16" quick charging valve A
Code No.	Y18985
Thread size	5/16" male x 5/16" female

Ball valve

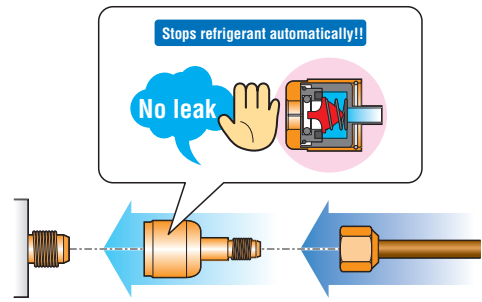
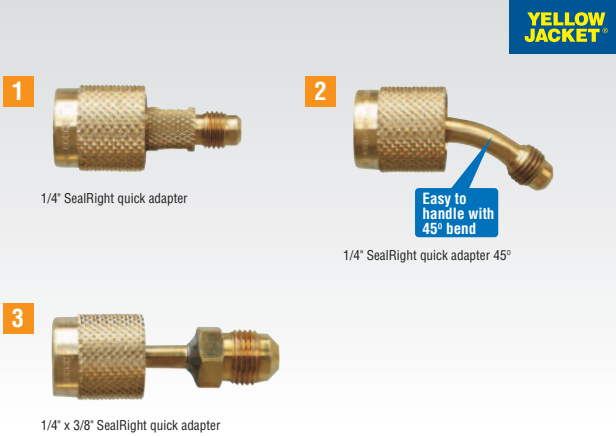


- Stops venting refrigerant.



Item	Code No.	Size		
		Female	Male	
1 1/4" ball valve	female x male	Y93844	1/4"	1/4"
	male x male	Y93834	-	1/4"
2 1/4" ball valve 45°	female x male	Y93843	1/4"	1/4"
	male x male	Y93836	-	1/4"
3 3/8" ball valve	female x male	Y93846	3/8"	3/8"
	male x male	Y93836	-	3/8"
4 1/2" ball valve	female x male	Y93848	1/2"	1/2"
	male x male	Y93838	-	1/2"
5 5/16" ball valve 45° (for R410A)	female x male	Y93827	5/16"	5/16"
6 1/4" x 5/16" ball valve 45° (for R410A)	female x male	Y93826	1/4"	5/16"
	female x male	Y93825	5/16"	1/4"

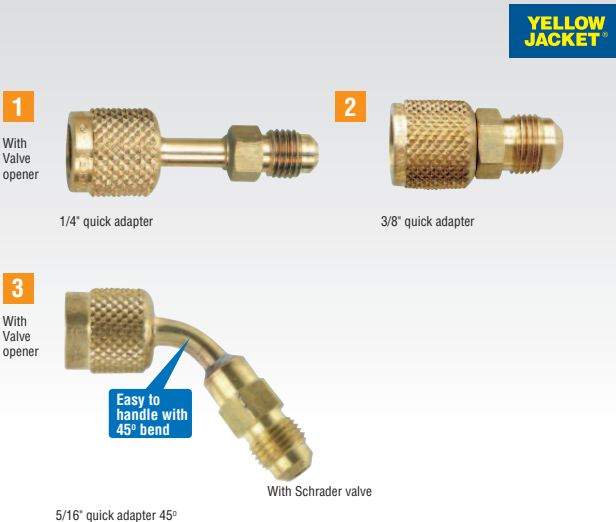
SealRight quick adapter



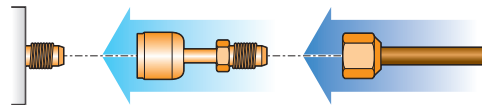
Item	Code No.	Size	
		Female	Male
1 1/4" SealRight quick adapter	Y19109	1/4"	1/4"
2 1/4" SealRight quick adapter 45°	Y19208	1/4"	1/4"
3 1/4" x 3/8" SealRight quick adapter	Y19117	1/4"	3/8"

· Stops refrigerant automatically when disconnecting and prevent refrigerant from venting.

Quick adapter

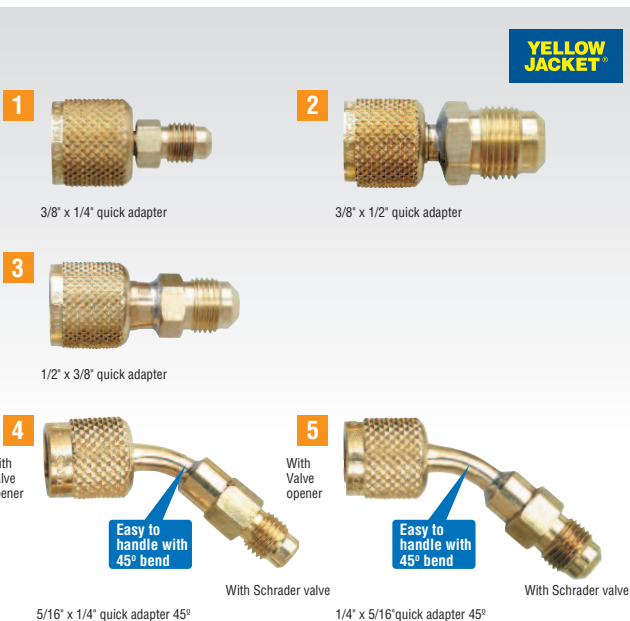
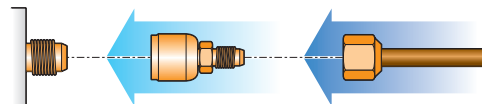


· For quick connection of a copper tube to a service port.



Item	Code No.	Size	
		Female	Male
1 1/4" quick adapter	Y19101	1/4"	1/4"
2 3/8" quick adapter	Y19103	3/8"	3/8"
3 5/16" quick adapter 45° (for R410A)	Y19175	5/16"	5/16"

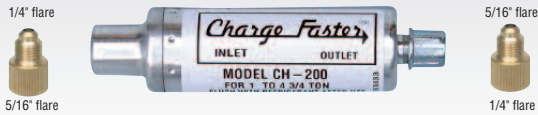
· For connection to a port of different diameter.



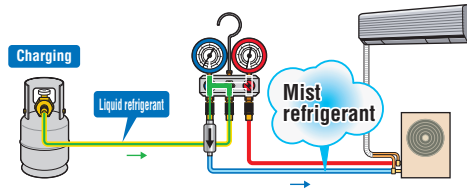
Item	Code No.	Code No.	
		Female	Male
1 3/8" x 1/4" quick adapter	Y19104	3/8"	1/4"
2 3/8" x 1/2" quick adapter	Y19114	3/8"	1/2"
3 1/2" x 3/8" quick adapter	Y19115	1/2"	3/8"
4 5/16" x 1/4" quick adapter 45° (for R410A)	Y19173	5/16"	1/4"
5 1/4" x 5/16" quick adapter 45° (for R410A)	Y19174	1/4"	5/16"

Charge faster for R410A

R410A



- Changes refrigerant from liquid to vapor (mist) and charges to the system safely without load.
- Built-in mesh filters prevent foreign matters from entering.
- Comes with 1 pce. each of adapter for different diameter 5/16" female x 1/4" male and 1/4" female x 5/16" male.



Item	CH-100	CH-200	CH-300
Code No.	WA6628	WA6629	WA6630
Application	Small system (~3/4t)	Medium system (1~4 3/4t)	Large system (5~10t)
Thread size	5/16" flare female x 5/16" flare male		

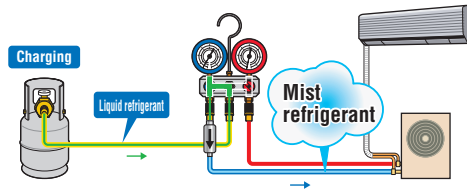
Charge faster for R407C, R404A, R507A, R134a

R407C
R404A
R507A

R134a



- Changes refrigerant from liquid to vapor (mist) and charges to the system safely without load.
- Built-in mesh filters prevent foreign matters from entering.



Item	CH-100	CH-200	CH-300
Code No.	WA6625	WA6626	WA6627
Application	Small system (~3/4t)	Medium system (1~4 3/4t)	Large system (5~10t)
Thread size	1/4" flare female x 1/4" flare male		

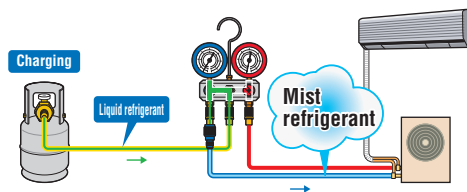
Liquid charge adapter for R410A

R410A

YELLOW JACKET®



- Changes refrigerant from liquid to vapor (mist) and charges to the system safely without load.



Item	Liquid charge adapter for R410		
Code No.	Y41124		
Application	Small system		
Thread size	5/16" flare female x 5/16" flare male		

Liquid charge adapter for R407C, R404A, R507A, R134a

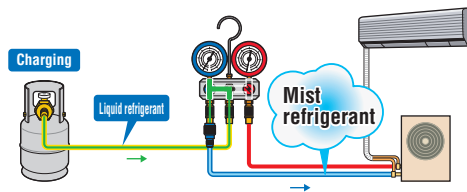
R407C
R404A
R507A

R134a

YELLOW JACKET®



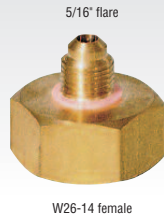
- Changes refrigerant from liquid to vapor (mist) and charges to the system safely without load.



Item	Liquid charge adapter for R407C, R404A, R507A, R134a		
Code No.	Y41123		
Application	Small system		
Thread size	1/4" flare female x 1/4" flare male		

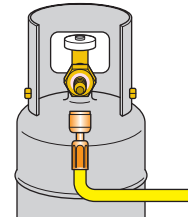
Cylinder adapter for R410A

R410A



W26-14 female

· Adapter for connecting refrigerant cylinder with charging hose.



Item	Cylinder adapter for R410A
Code No.	Y07101A
Size Female	Female W26-14 Male 5/16" flare

Cylinder adapter for R407C, R404A, R507A, R134a, etc.

R407C
R404A
R507A

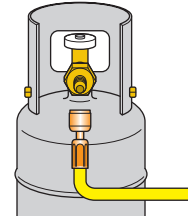
R134a

R12
R22
R502



W 26-14 flare female

· Adapter for connecting refrigerant cylinder with charging hose.



Item	Cylinder adapter for R407C, R404A, R507A, R134a, etc.
Code No.	Y07102A
Size Female	Female W26-14 Male 1/4" flare

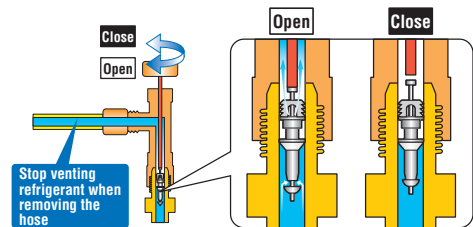
Access control valve for R410A

R410A



5/16" flare

- Valve for connecting to service port (Schrader valve can be opened and closed after connecting to service port).
- Stop venting refrigerant when removing the hose.
- Schrader valve can be opened and closed with a valve.



Item	Access control valve for R410A
Code No.	Y18993A
Size	5/16" (UNF 1/2-20)

Access control valve for R407C, R404A, R507A, R134a

R407C
R404A
R507A

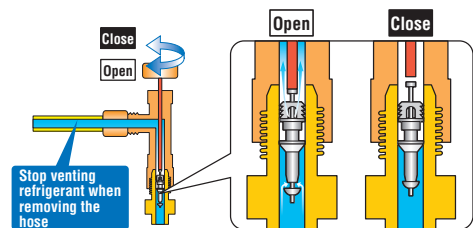
R134a

R12
R22
R502



1/4" flare

- Valve for connecting to service port (Schrader valve can be opened and closed after connecting to service port).
- Stop venting refrigerant when removing the hose.
- Schrader valve can be opened and closed with a valve.



Item	Access control valve for R407C, R404A, R507A, R134a
Code No.	Y18993C
Size	1/4" (UNF 7/16-20)

Adapter for different diameter

1

With valve opener



Adapter for different diameter (quick type)

2



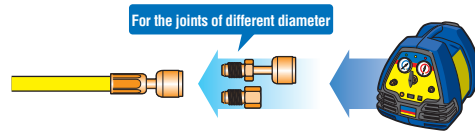
Adapter for different diameter
Wrench tightening type

2



Adapter for different diameter (for R410A)
Hand tightening type

YELLOW JACKET



For the joints of different diameter

Item	Code No.	Size	
		Female	Male
1 Adapter for different diameter (quick type)	Y19102	1/4"	3/8"
	Y19130	3/8"	1/4"
	Y19132	1/2"	1/4"
2 Adapter for different diameter	Y19131	1/2"	3/8"
	Y19132	1/2"	1/4"
3 Adapter for different diameter (for R410A)	Y06110A	5/16"	1/4"
	Y06110K	5/16"	1/4"
4 Adapter for different diameter (for R410A)	Y06114K	1/4"	5/16"

· For the joints of different diameter.

1/4" snap coupler

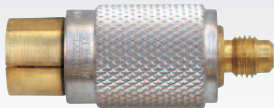
R407C
R404A
R507A

R134a

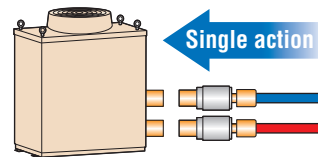
R12
R22
R502

YELLOW JACKET

1/4" flare
(with snap coupler)



1/4" flare



Single action

Item	1/4" snap coupler
Code No.	Y19090
Thread size	1/4" flare male x 1/4" flare female

- Snaps on flare port with Schrader valve for system service port and hose.
- Virtually no gas release to atmosphere.
- Can be used only for flare port with Schrader valve.

Sight-glass



Green: Dry

1/4"

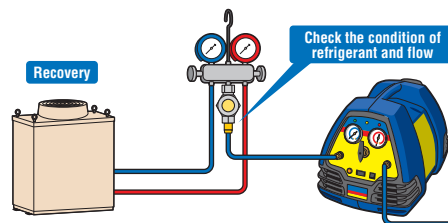


Yellow: Wet

1/4"

1/4"

YELLOW JACKET



Recovery

Check the condition of refrigerant and flow

Item	Sight-glass
Code No.	Y41145
Thread size	1/4" male x 1/4" female

- Check the flow of liquid refrigerant. (Virgin refrigerant is normally charged in liquid.)
- Drying condition can be checked with moisture indicator when vacuum pulling.

Heater belt



YELLOW JACKET

Item	Heater belt
Code No.	Y68848
Power source	*made to order
Size	153 x 658mm (heating part)
Weight	0.51kg

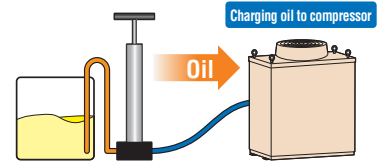
- Helps vaporization of refrigerant in the cylinder.
- Built-in thermostat keeps the surface at the fixed temperature.

Oil pump DX (for charging refrigeration oil)



YELLOW JACKET

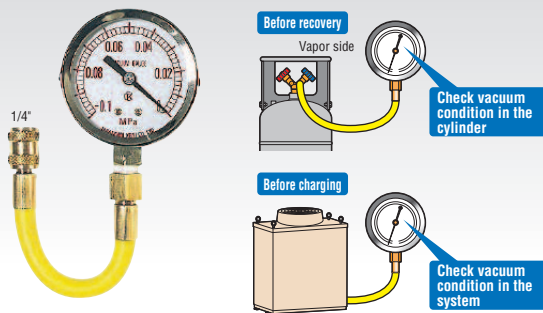
- For charging oil to compressor.
- Can be used when the system is pressurized.



Item	Oil pump DX
Code No.	Y77930
Discharge/stroke	112mL/stroke
Thread size (discharge side)	3/8" flare

- * Use Adapter for different diameter (Y19130/optional accessory) when 1/4" hose is used.
- * Use Adapter for different diameter (Y19130, Y06114K/optional accessory) for R410A.

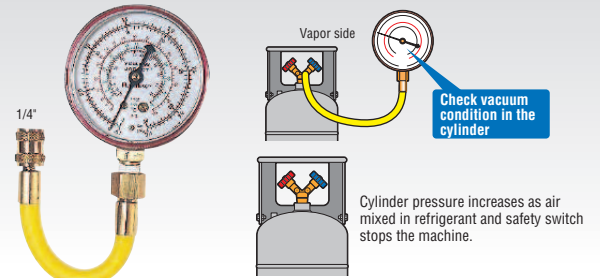
Hose with vacuum gauge



- Check vacuum condition of the system recovered.

Item	Hose with vacuum gauge
Code No.	Y02003A
Thread size	Flare 1/4" female
Pressure indication	0 ~ -0.1MPa

Hose with pressure gauge (pressure gauge for cylinder)



- Check air mixed in refrigerant during recovery.
(If pressure is too high at the ambient temperature, air venting is required)
- * Please refer to P.216 about the relation between the pressure and temperature of refrigerant.

Item	Hose with pressure gauge
Code No.	Y02002A
Thread diameter	Flare 1/4" male
Pressure indication	-0.1 ~ 3.4MPa

Hose gasket

Optional accessory



YELLOW JACKET



- Replacement gaskets for rubber charging hoses.
- 10 pcs. pack

Item	Code No.	Size
Hose gasket	Y19020	For 1/4" · 5/16"
	Y19011	For 3/8"
	Y19015	For 1/2" ~ 5/8"
	Y19012	For 3/4"

* Please refer to P.106, 131, 132 for hose gaskets for charging hoses whose code numbers end A or M.

Valve opener

Optional accessory



YELLOW JACKET



- Replacement valve opener for charging hoses
- 10 pcs. pack

Item	Code No.	Size
Valve opener	Y19302	For 1/4" · 5/16"

1/4" oil injector

YELLOW JACKET



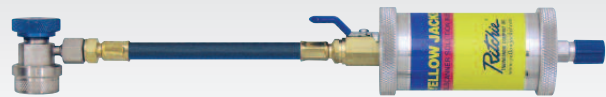
- Add oil to system, put oil in system after repair.
- Add fluorescent solution to system.
- Refrigerant sampling.
- Aluminum body.
- Can add oil and fluorescent solution together.

Item	Code No.	Cylinder capacity	Max operative pressure
1/4" oil injector	S	Y69560	14.8ml
	M	Y69561	59ml
	L	Y69562	118ml
			4.1MPa

Oil injector for R134a (quick joint type)

R134a

YELLOW JACKET



- For adding oil to system.
- For adding fluorescent solution.
- Refrigerant sampling from system.
- Aluminum container.
- Can add oil together with fluorescent solution.

Item	Code No.	Cylinder capacity	Max. working pressure
Oil injector for R134a(quick joint type)	S	Y69565	14.8mL
	M	Y69566	59mL
	L	Y69567	118mL
			4.1MPa

Carrying case Maxim



S type

* Vacuum pump
1.4CFM, 1.8CFM,
3CFM, 5CFM can
be stored.



C type



R type

- Made from ABS resin, hard to get dent and scratch.
- Easy to carry with a shoulder belt.
- Comes with 2 keys.

Item	Carrying case Maxim		
	S	C	R
Code No.	XP511	XP512	XP513
Dimensions (LxWxH)	250x360x290mm	310x390x110mm	330x460x150mm
Weight	2.9kg	2.0kg	3.3kg
Max capacity	20.0kg	15.0kg	20.0kg


















VACUUM PUMPS

ELECTRONIC MEASURING INSTRUMENTS



Profitable evacuation technology — fast, deep vacuum

Capacity (larger)

 <p>7CFM</p>		 <p>8CFM</p>	 <p>Electronic vacuum gauge</p>
 <p>5CFM</p>		 <p>6CFM</p>	 <p>Digital vacuum gauge Pilot</p>
 <p>3CFM</p>		 <p>4CFM</p>	 <p>Digital vacuum gauge</p>
 <p>1.8CFM</p>		 <p>Evacuation manifold</p>	 <p>Digital LCD vacuum gauge</p>
 <p>1.4CFM</p>	 <p>Vacuum pump oil</p>		
Standard vacuum pumps		High performance vacuum pumps	Vacuum gauges

*Please refer to the information about refrigerant recovery and so on.

YELLOW JACKET® EVACUATION SYSTEM

YELLOW JACKET faster & deeper evacuation system protects your profits, reputation and customer's system under any conditions.

Problems at evacuation

Profit

- Price competition with competitors
- Increasing refrigerant cost and so on

Systems which have new type refrigerants

- Sensitive against damage from contaminants
- Sensitive even against small leak

Refrigeration oil for HFC requires deeper vacuum

- Deeper vacuum is required to remove contaminants and moisture.

Use YELLOW JACKET evacuation system

Latest evacuation method & technology

- The latest faster & deeper evacuation technology protects your profits which cannot be got by the improvement of operation.

Deeper vacuum & high speed

- High speed and the ultimate vacuum is 2.0Pa and better. (2.0Pa is deep enough to remove contaminants which could cause system failure.)

Various models available

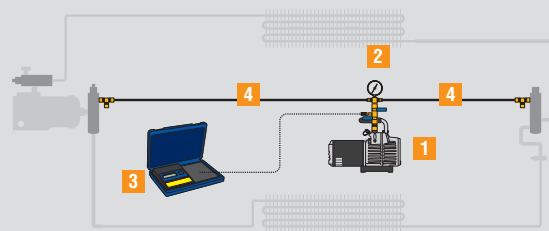
- Various models for every application.

Proper selection for the application

- Select suitable vacuum pump, manifold, vacuum gauge, charging hose and so on for faster and proper evacuation.



Evacuation system hook-up



1 Vacuum pump



2 Evacuation manifold



3 Vacuum gauge



4 3/8" charging hose



Importance of evacuation

Most system complaints can be attributed to moisture. Moisture can be removed completely from the system by evacuating with vacuum pump. During new system set-up, all protective caps are removed allowing moisture and air into the system components.

Moisture in the system can form ice which closes off openings in expansion valves and cap tubes, and prevents adequate cooling. Ultimately moisture and air combined with refrigerants containing chlorine can produce acids and sludge which could cause in-warranty failures.

If air, non-condensable, remains in the system, it collects on the high side reducing system efficiency. This causes a rise in head pressure. The discharge valve gets hotter than normal and organic solids form causing compressor failure.

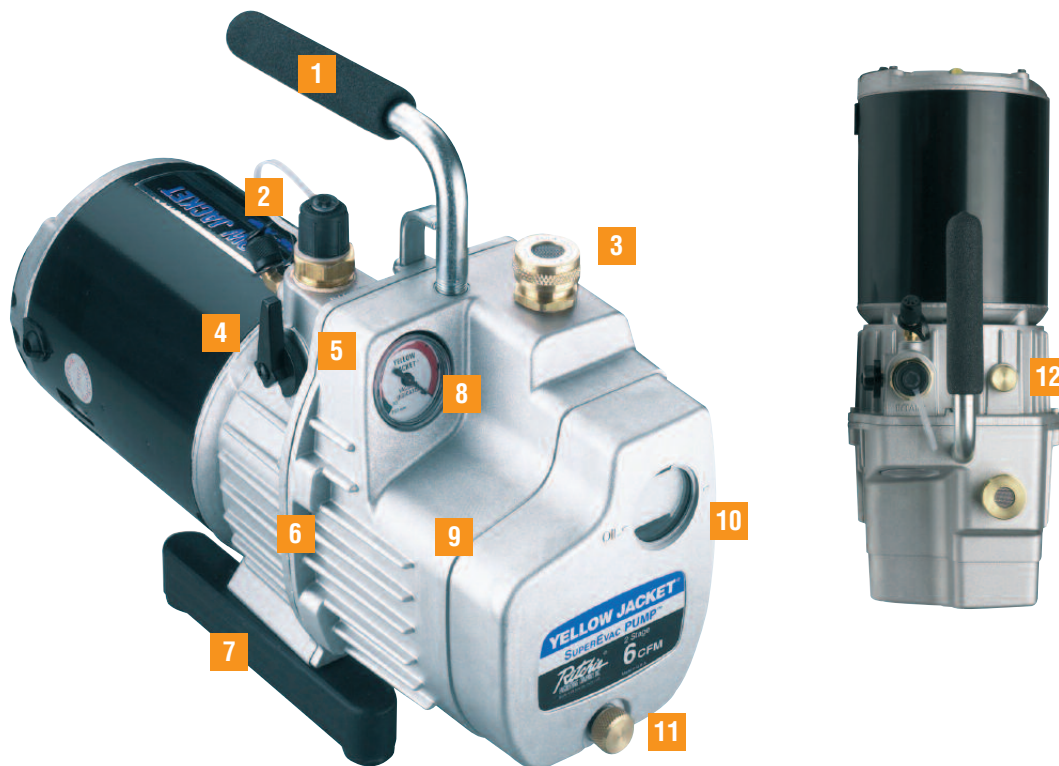
The deeper and more complete the vacuum, the more moisture is removed. That's why YELLOW JACKET vacuum pump is specifically engineered for deep vacuums of 2.0Pa and better. The deeper the vacuum, the more complete the vacuum; and the more complete the vacuum, the lower the number of microns.

Features of YELLOW JACKET® vacuum pump series

Purpose

For the work to evacuate and dry the auto A/C, large refrigerator, commercial refrigeration system, room A/C, package A/C system.

YELLOW JACKET®



1 Handle

· Heavy-duty handle for well-balanced carrying.

2 Intake

3 Large size exhaust port

· Large port used both for oil charging and exhaust.

4 Valve



· Opens and closes intake.

5 Built-in check valve

· Prevents oil back-up into the system and prevents damage to HFC systems.

6 Radiating fin

· Enables long operation.

7 Feet

· Stabilizes the body from vibration.

8 Vacuum gauge



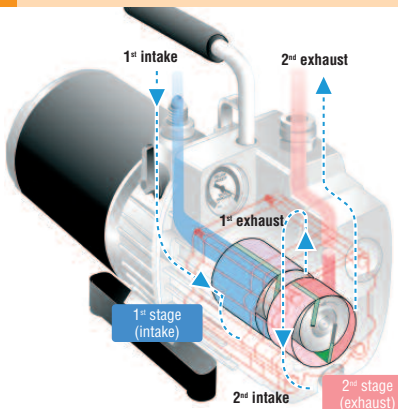
· Checks the vacuum condition.

10 Sight-glass



· Large sight-glass for easy monitoring of the oil level and condition.

9 2-stage rotary pump



· For increase efficiency, the 1st stage exhausts into the 2nd stage similar to using two single stage pumps connected together.

11 Large oil drain plug



· Large oil drain plug with easy access for fast, clean oil changes.

12 Gas ballast valve

· High speed evacuation. Keeps oil cleaner, longer during evacuation of wet systems.



Vacuum pump 4CFM

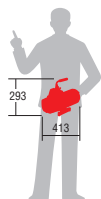
~ 10HP class

Exhaust rate 116L/min
Weight 15.4kg
Ultimate vacuum 2.0Pa abs.

For both new and conventional type refrigerant
CFC, HCFC, HFC

YELLOW JACKET®

- Highly efficient 2-stage.
- Built-in check valve.



Item	Vacuum pump 4CFM
Code No.	Y93549
Exhaust rate	95L/min (50Hz) · 116L/min (60Hz)
Ultimate vacuum	2.0Pa abs. (15 micron)
Pump speed	1,425min ⁻¹ (50Hz) · 1,725min ⁻¹ (60Hz)
Motor	*voltage made to order 375W
Weight	15.4kg
Dimensions	(L) 413 x (W) 156 x (H) 293mm
Oil capacity	0.71L
Intake	1/4", 3/8" (flare male)
Standard accessories	Adapter for different diameter 1/4" female x 5/16" male, Vacuum pump oil 0.95L

* Exhaust rate and ultimate vacuum are according to our own survey.

Vacuum pump 6CFM

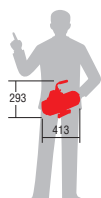
~ Large system

Exhaust rate 172L/min
Weight 16.1kg
Ultimate vacuum 2.0Pa abs.

For both new and conventional type refrigerant
CFC, HCFC, HFC

YELLOW JACKET®

- Highly efficient 2-stage.
- Built-in check valve.



Item	Vacuum pump 6CFM
Code No.	Y93569
Exhaust rate	142L/min (50Hz) · 172L/min (60Hz)
Ultimate vacuum	2.0Pa abs. (15 micron)
Pump speed	1,425min ⁻¹ (50Hz) · 1,725min ⁻¹ (60Hz)
Motor	*voltage made to order 375W
Weight	16.1kg
Dimensions	(L) 413 x (W) 156 x (H) 293mm
Oil capacity	0.80L
Intake	1/4", 3/8" (flare male)
Standard accessories	Adapter for different diameter 1/4" female x 5/16" male, Vacuum pump oil 0.95L

* Exhaust rate and ultimate vacuum are according to our own survey.

Vacuum pump 8CFM

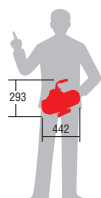
~ Large system

Exhaust rate 229L/min
Weight 17.0kg
Ultimate vacuum 2.0Pa abs.

For both new and conventional type refrigerant
CFC, HCFC, HFC

YELLOW JACKET®

- Highly efficient 2-stage.
- Built-in check valve.



Item	Vacuum pump 8CFM
Code No.	Y93589
Exhaust rate	190L/min (50Hz) · 229L/min (60Hz)
Ultimate vacuum	2.0Pa abs. (15 micron)
Pump speed	1,425min ⁻¹ (50Hz) · 1,725min ⁻¹ (60Hz)
Motor	*voltage made to order 375W
Weight	17.0kg
Dimensions	(L) 442 x (W) 156 x (H) 293mm
Oil capacity	0.95L
Intake	1/4", 1/2" (flare male)
Standard accessories	Adapter for different diameter 1/4" female x 5/16" male, Adapter for different diameter 1/2" female x 3/8" male, Vacuum pump oil 0.95L

* Exhaust rate and ultimate vacuum are according to our own survey.

Oil exhaust filter



YELLOW JACKET®



Purpose For eliminating oil mist

- Screws onto the pump exhaust to eliminate oil mist.
- Maintains the environment in the closed space and relieves the operator.

Item	Oil exhaust filter
Code No.	Y93386
Weight	380g
Thread size	NH 3/4"

Replacement element Optional accessory

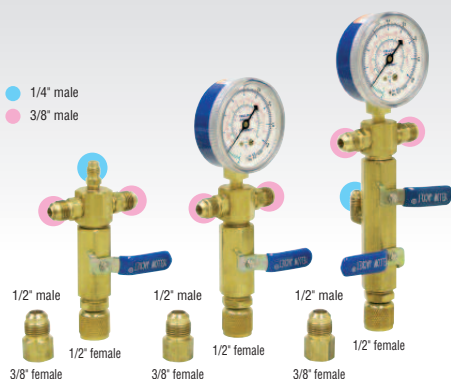
Item	Replacement element
Code No.	Y93387



Evacuation manifold

YELLOW JACKET®

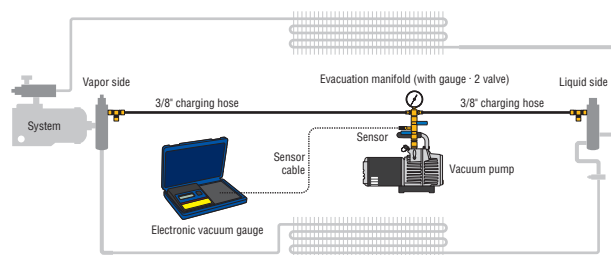
- 1/4" male
- 3/8" male



1/2" male 1/2" male 1/2" male
3/8" female 1/2" female 1/2" female
3/8" female 3/8" female 3/8" female

- For evacuation of systems.
- Decreases vacuum time by over 50%.
- Uses large size valve to reduce resistance.
- Comes with Adapter for different diameter 1/2" male x 3/8" female for 3/8" port on vacuum pump.

Low pressure gauge -0.1~1.7MPa Connecting port size : 3/8" flare (UNF 5/8-18)
Connecting port size : 1/4" flare (UNF 7/16-20)

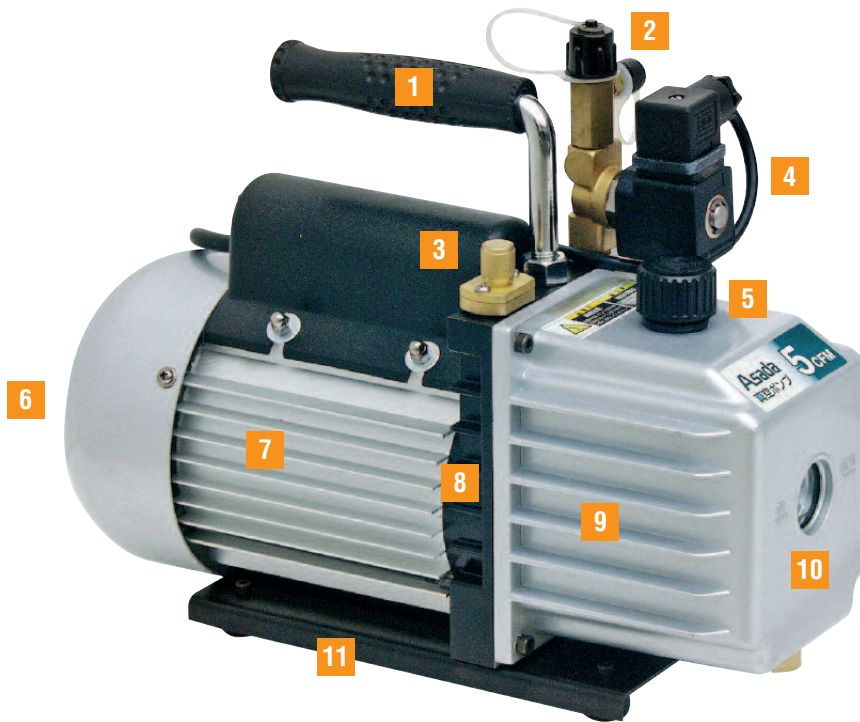


Item	Code No.	Low pressure gauge	Ball valve	Connecting port size		Weight
				1/4"	3/8"	
Evacuation manifold	Y93850	—	○	○	○ 2 pcs.	510g
	Y93855	○	○	—	○ 2 pcs.	630g
	Y93860	○ 2 pcs.	○ 2 pcs.	○	○ 2 pcs.	850g

Features of vacuum pump series

Purpose

For the work to evacuate and dry the auto A/C, large refrigerator, commercial refrigeration system, room A/C, package A/C system.



10

1 Handle

- Heavy-duty handle for well-balanced carrying.

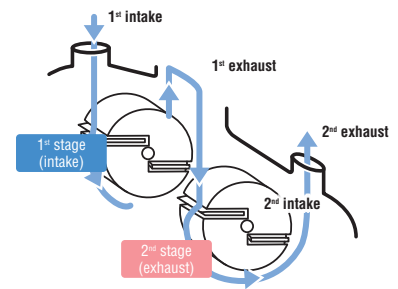


4 Solenoid check valve

- Prevents oil back-up into the system.
- Prevents damage to HFC systems.

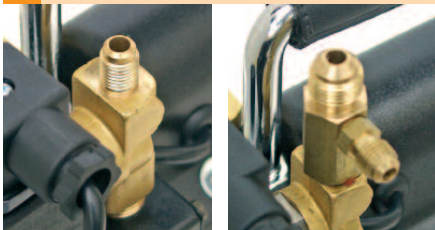


9 2-stage rotary pump



- For increase efficiency, the 1st stage exhausts into the 2nd stage similar to using two single stage pumps connected together.

2 Intake



1/4" (1.8 · 3CFM)

1/4" · 3/8" (5 · 7 · 9CFM)

5 Large size exhaust port

- Large port used both for oil charging and exhaust.

6 Cooling fan

- Sends air from back to front to prevent motor and pump from heating up.



10 Sight-glass

- Large sight-glass for easy monitoring of the oil level and condition.



3 Gas ballast valve

- High speed evacuation. Keeps oil cleaner, longer during evacuation of wet systems. (except 1.8CFM)



7 Overload protector

- Protects motor from damage by overloading.

8 Radiating fin

- Enables long operation.

11 Feet

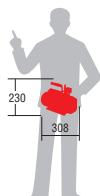
- Stable wide distanced feet.

Vacuum pump 1.8CFM

~ 10HP class

Exhaust rate 50L/min
Weight 7.5kg
Ultimate vacuum 3.0Pa abs.

For both new and conventional type refrigerant
CFC, HCFC, HFC



- Highly efficient 2-stage.
- Solenoid check valve.

Item	Vacuum pump 1.8CFM
Code No.	WV218
Exhaust rate	42L/min (50Hz) - 50L/min (60Hz)
Ultimate vacuum	3.0Pa abs. (25 micron)
Pump speed	2,880min ⁻¹ (50Hz) - 3,440min ⁻¹ (60Hz)
Motor	*voltage made to order 200W
Weight	7.5kg
Dimensions	(L) 308 x (W) 124x (H) 230mm
Oil capacity	0.2L
Intake	1/4" (flare male)
Standard accessories	Adapter for different diameter 1/4" female x 5/16" male, Adapter for different diameter 1/4" female x M10 male, Vacuum pump oil 0.35L

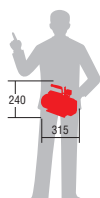
* Exhaust rate and ultimate vacuum are according to our own survey.

Vacuum pump 3CFM

~ 10HP class

Exhaust rate 84L/min
Weight 9.4kg
Ultimate vacuum 3.0Pa abs.

For both new and conventional type refrigerant
CFC, HCFC, HFC



- Highly efficient 2-stage.
- Solenoid check valve.

Item	Vacuum pump 3CFM
Code No.	WV230
Exhaust rate	70L/min (50Hz) - 84L/min (60Hz)
Ultimate vacuum	3.0Pa abs. (25 micron)
Pump speed	2,880min ⁻¹ (50Hz) - 3,440min ⁻¹ (60Hz)
Motor	*voltage made to order 250W
Weight	9.4kg
Dimensions	(L) 315 x (W) 124x (H) 240mm
Oil capacity	0.25L
Intake	1/4" (flare male)
Standard accessories	Adapter for different diameter 1/4" female x 5/16" male, Adapter for different diameter 1/4" female x M10 male, Vacuum pump oil 0.35L

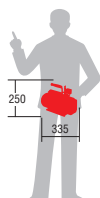
* Exhaust rate and ultimate vacuum are according to our own survey.

Vacuum pump 5CFM

~ 10HP class

Exhaust rate 142L/min
Weight 11.4kg
Ultimate vacuum 3.0Pa abs.

For both new and conventional type refrigerant
CFC, HCFC, HFC



- Highly efficient 2-stage.
- Solenoid check valve.

Item	Vacuum pump 5CFM
Code No.	WV250
Exhaust rate	128L/min (50Hz) - 142L/min (60Hz)
Ultimate vacuum	3.0Pa abs. (25 micron)
Pump speed	2,880min ⁻¹ (50Hz) - 3,440min ⁻¹ (60Hz)
Motor	*voltage made to order 375W
Weight	11.4kg
Dimensions	(L) 335 x (W) 138x (H) 250mm
Oil capacity	0.33L
Intake	1/4", 3/8" (flare male)
Standard accessories	Adapter for different diameter 1/4" female x 5/16" male, Adapter for different diameter 1/4" female x M10 male, Vacuum pump oil 0.35L

* Exhaust rate and ultimate vacuum are according to our own survey.

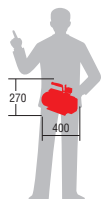
Vacuum pump 7CFM

~ Large system

Exhaust rate 198L/min
Weight 16.5kg
Ultimate vacuum 3.0Pa abs.

For both new and conventional
type refrigerant

CFC, HCFC, HFC



- Highly efficient 2-stage.
- Solenoid check valve.

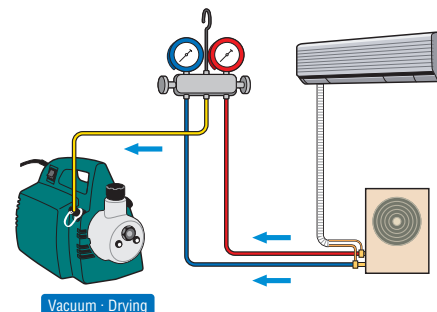
Item	Vacuum pump 7CFM
Code No.	WV270
Exhaust rate	170L/min (50Hz) · 198L/min (60Hz)
Ultimate vacuum	3.0Pa abs. (25 micron)
Pump speed	2,880min ⁻¹ (50Hz) · 3,440min ⁻¹ (60Hz)
Motor	*voltage made to order 550W
Weight	16.5kg
Dimensions	(L) 400 x (W) 145 x (H) 270mm
Oil capacity	0.7L
Intake	1/4", 3/8" (flare male)
Standard accessories	Adapter for different diameter 1/4" female x 5/16" male, Adapter for different diameter 1/4" female x M10 male, Vacuum pump oil 0.35Lx 2 pcs.

* Exhaust rate and ultimate vacuum are according to our own survey.

Features of Vacuum pump 1.4CFM

Purpose

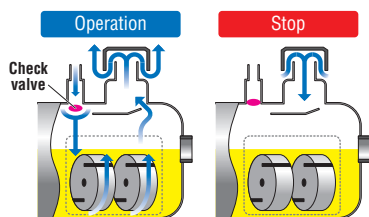
Pulling vacuum from commercial refrigeration and air-conditioning system, package A/C, room A/C, refrigerator, vending machine, auto A/C, show case, etc. for maintenance service.



* "Air" and "moisture" in the system cause trouble to compressor or does not maintain steady cooling.

1 Check valve

- Equipped with check valve applicable for HFC, therefore, solenoid valve is not necessary.



2 Oil mist prevention filter

- Reduces oil mist during exhaust and prevent oil splashing.



3 Gas ballast valve



- Maintains clean oil and life.

4 Keeps the motor cool efficiently.

- Large size cooling fan and the cover shaped for good ventilation keeps the motor cool.

5 Sight-glass

- Large sight-glass for easy monitoring of the oil level and condition.

Ultra light weight

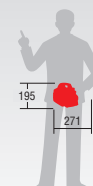
- World lightest vacuum pump of its class with only 3.8 kg!

Vacuum pump 1.4CFM

~ 7HP class

Exhaust rate 40L/min
Weight 3.8kg
Ultimate vacuum 2.0Pa abs.

For both new and conventional type refrigerant
CFC, HCFC, HFC



- Highly efficient 2-stage.

Item	Vacuum pump 1.4CFM	Vacuum pump 1.4CFM (with case)
Code No.	RC140	RC140C
Exhaust rate	33.3L/min (50Hz) - 40.0L/min (60Hz)	
Ultimate vacuum	2.0Pa abs. (15 micron)	
Pump speed	2,700min ⁻¹ (50Hz) - 3,130min ⁻¹ (60Hz)	
Motor	*voltage made to order 150W	
Weight	3.8kg	
Dimensions	(L) 271 x (W) 166 x (H) 195mm	
Oil capacity	0.125L	
Intake	1/4" (flare male)	
Standard accessories	Adapter for different diameter 1/4" female x 5/16" male, Adapter for different diameter 1/4" female x M10 male, Vacuum pump oil 0.25L, Case (RC140C only)	

* Exhaust rate and ultimate vacuum are according to our own survey.

Vacuum pump oil



0.25L



0.47L

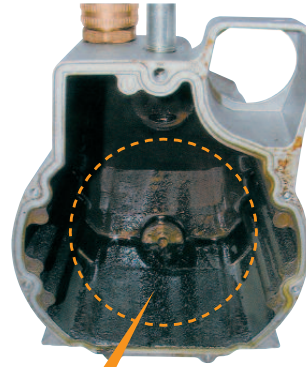


0.95L



3.80L

YELLOW JACKET



Heavily contaminated oil by acids, contaminants and so on.



Pump unit on whose oil has been changed periodically.

Pump unit on whose oil has never changed. 95% of the pumps returned for repair are under this condition.



The oil becomes milky-white color when it contains moisture.



The oil becomes black color when it is contaminated by acids, contaminants and so on.

Change oil as soon as possible!!

Those oil samples were in the pumps which were returned to us for repair.

If the pump is used to this extent without changing oil, the pump unit must be worn out and be corroded.

Consequently the pump unit must be replaced completely at a high repair cost.

- Replacement oil for vacuum pump
- It is recommended to change vacuum pump oil periodically to keep it clean so that the efficiency can be increased and the life of pump is extended. (Once the pump is damaged, it cannot return to the former state even if the oil is changed.)

Item	Code No.	Capacity	Master pack
Vacuum pump oil	RC495340	0.25L	12
	Y93091	0.47L	1
	Y93092	0.95L	12
	Y93094	3.80L	1

Vacuum pump adapter for R410A



Wrench tightening type



Hand tightening type

- For connection of 5/16" flare and 1/4" flare.

Item	Code No.	Size	
		Male	
Vacuum pump adapter for R410A	Wrench tightening type	Y06110A	5/16" 1/4"
	Hand tightening type	Y06110K	5/16" 1/4"
		Y06114K	1/4" 5/16"

Solenoid valve for vacuum pump



1/4" flare

5/16" flare

- Stop back flow of vacuum oil.
- Prevents damage of HFC A/C systems.
- Makes it possible to use for new type refrigerant by connecting to the conventional type vacuum pump.
- Maintains vacuum.

Item	Solenoid valve for vacuum pump
Code No.	Y09340A
Dimensions	(L) 930 x (W) 365 x (H) 550mm
Power source	*voltage made to order (50/60Hz)

Carrying case for 1.4CFM



- For vacuum pump 1.4CFM.

Item	Carrying case for 1.4CFM
Code No.	RC013

Digital vacuum gauge

PAT.P



YELLOW JACKET®



- Automatic shut-off.
- Low battery indicator.
- Automatically compensates for temperature.

Purpose Check vacuum condition in the system and performance of vacuum pump, also piping leak.

1 Display



- Displays 7 different units of vacuum.

2 Thermal conductivity sensor



- Easy replaceable plug-in sensor.

3 Sensor cord

- Coiled sensor cord stretches to 300~600mm for easy reach, connectivity, and readability of display.

Item	Digital vacuum gauge
Code No.	Y69086
Measuring range	3.33x10 ⁵ Pa abs. (25,000 microns) ~1.33Pa abs. (10 microns)
Sensor	Thermal conductivity sensor
Working temperature	0 ~ 49°C
Power source	9V alkaline battery
Weight	0.34kg (including battery)
Dimensions	(L) 165 x (W) 75 x (H) 30mm

Electronic vacuum gauge (high precision vacuum measuring device)

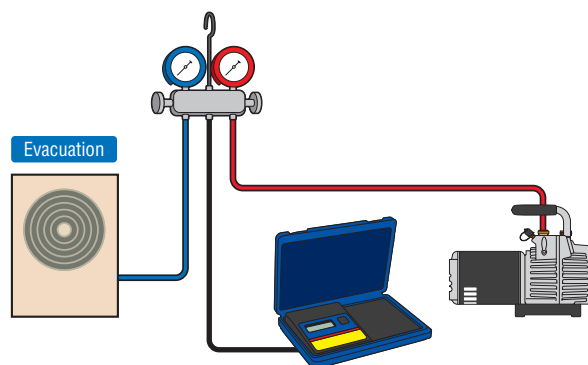
PAT.P

YELLOW JACKET®



- Quick responding detachable electronic sensor.
- Measures degree of vacuum of inside of refrigeration cycle in micron.
- Automatic ambient temperature compensation.

Purpose Check vacuum condition in the system and performance of vacuum pump, also piping leak.



Item	Electronic vacuum gauge
Code No.	Y69075
Measuring range	101x10 ⁵ Pa abs. (760,000 microns) ~0.133Pa abs. (1 micron)
Sensor	Thermocouple
Working temperature	0 ~ 49°C
Power source	Alkaline battery
Weight	1.13kg
Dimensions	(L) 310 x (W) 230 x (H) 60mm

Digital LCD vacuum gauge



YELLOW JACKET



1/4" female (with valve opener)

Purpose Check vacuum condition in the system and performance of vacuum pump, also piping leak.

1 LCD display at 14 stages

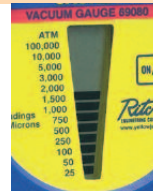
· Track down 14 increments from 760,000 microns (atmosphere) to 25 microns.

3 Power switch

· Simple On/Off controls.

2 Low battery indicator

· Display blinks when battery needs to be replaced.



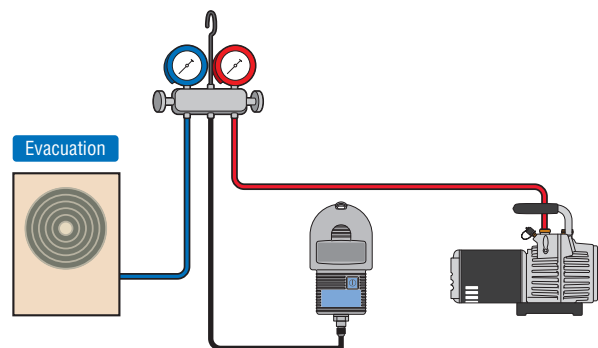
Item	Digital LCD vacuum gauge
Code No.	Y69080
Measuring range	101x10 ³ Pa abs. (760,000 microns) ~ 3.33Pa abs. (25 microns)
Sensor	Thermocouple
Working temperature	0 ~ 49°C
Power source	9V alkaline battery
Weight	0.25kg (including battery)
Dimensions	(L) 42 x (W) 92 x (H) 130mm
Standard accessory	Flare tee 1/4"

- Automatic shut-off.
- Battery lasts 25 hours.

Digital vacuum gauge Pilot (pirany vacuum gauge)



Purpose Check vacuum condition in the system and performance of vacuum pump, also piping leak.

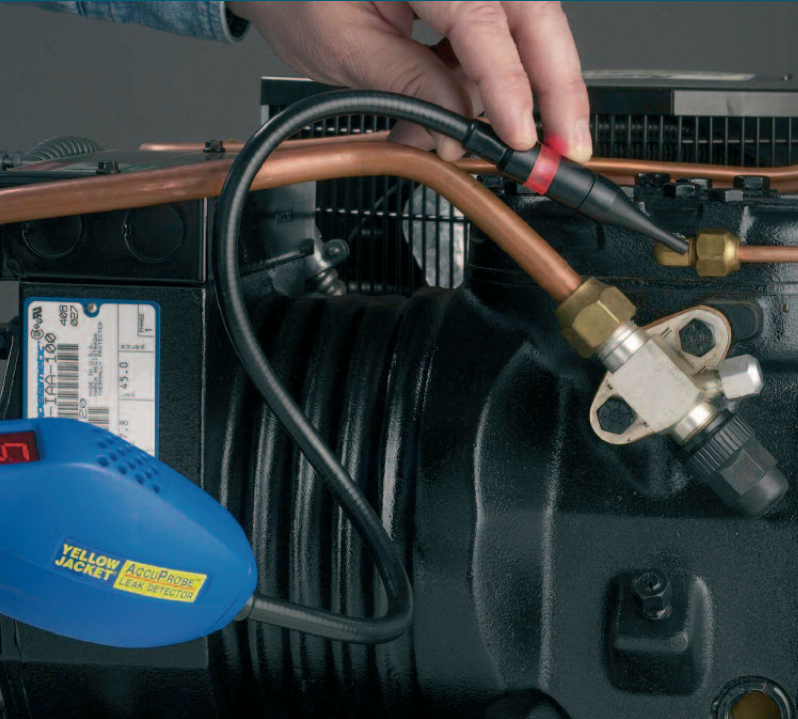


Item	Pilot
Code No.	LB710202
Measuring range	101x10 ³ Pa abs. (760,000 microns) ~ 0.133Pa abs. (1 micron)
Sensor	Pirany
Working temperature	0 ~ 50°C
Power source	9V alkaline battery
Weight	0.2kg
Dimensions	(L) 180 x (W) 80 x (H) 25mm

- Low battery indicator and automatic shut-off after 1 hour.
- Stores reading after shut-off by the back-up function.
- Display unit can be changed in Pascal, Barr and micron.

VACUUM PUMPS

ELECTRONIC MEASURING INSTRUMENTS



Measuring instruments to find the problem quickly and
Certainly for cost saving

Capacity (larger)	Freon	Leak detecting CO2	Combustible gas	Limit scale	Charging scale
HLD5000 smart					
AccuProbe II					
D-TEK Select			Combustible gas detector	LS-150II	CS-100 series
TEK-Mate		D-TEK CO2	GAS-Mate	LS-45V	
Micro UV A/C kit					
Big Blu				LS-45II	CS-50 series
Rotest					

* Please refer to the information about refrigerant recover and so on.

Refrigerant leak detecting

Detect refrigerant leak quickly! Protect the global environment and save the cost !!

Merits for quick leak detecting

Protection of the Ozone layer

- Detect and stop the leak of fluorocarbons (CFC · HCFC) and protect the Ozone layer.

Prevent global warming

- Detect and stop the greenhouse gases such as CO₂, Methane, fluorocarbons (CFC · HCFC · HFC), SF₆ and prevent global warming.

Cost saving

- When you find a leak early while still small, you can repair at a small cost.
- When you find a leak early, you have only to add a small amount of refrigerant.
- You can save the increasing refrigerant cost.

Leak detecting methods

You can select the most suitable product considering the point of leak, amount of leak, kind of refrigerant, cost and easiness of use.

1 Easy & inexpensive

Spray type

The leak point is detected with bubbles when the detecting liquid is sprayed onto the pipe.
Easy to use and inexpensive.



Fluorocarbons · CO₂ · Methane · SF₆ and so on

Big Blu



Rotest



2 Pinpoint leak sources

Fluorescent type

Inject dye in the piping and the leak can be found with a UV lamp.
The leak can be found early and no misdetection.



Fluorocarbons

Micro UV A/C kit



Micro UV 134a auto A/C kit



3 Detection for each kind of refrigerant

Sensor type

Bring the sensor to the piping and trace it.
The leak can be detected with audible signal.
Very small leak can be detected and detection for each kind of refrigerant can be done.
Can be used near live parts.



Fluorocarbons · SF₆

TEK-Mate



D-TEK Select



Fluorocarbons

Accuprobe II



Fluorocarbons (CO₂ · SF₆)

HLD5000 smart



CO₂

D-TEK CO₂



Methane and so on

Combustible gas leak detector



Methane and so on

GAS-Mate



Leak detector AccuProbe II

PAT.P

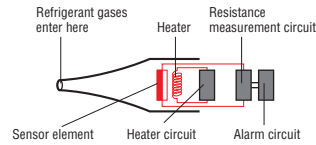
Fluorocarbon

YELLOW JACKET®



· Refrigerant leak check for large A/C system, commercial refrigeration system, package A/C system, room A/C, showcase, refrigerator, automatic vending machine, auto A/C and so on.

1 Heated semiconductor sensor



- When the heated sensing element is exposed to refrigerant, an electrochemical reaction changes the electrical resistance within the element causing an alarm.
- The sensor is refrigerant specific with superior sensitivity to all HFCs, HCFCs, and CFCs and minimal chance of false alarms.
- High sensitivity.
- Sensitivity will not decrease with exposure to dirt, oils and water.
- Service life is more than 300 hours with minimal cleaning and no adjustments.
- Sensor is replaceable.



2 Flexible probe

- Probe can be maintained while bent.

3 Operation panel

Low battery indicator

Sensitivity levels

Lo Norm Hi

● ● ●

Sensitive mode switch

Power switch



4 Automatic calibration

Item	AccuProbe II
Code No.	Y69354
Applicable refrigerant	Fluorocarbon such as R410A, R407C, R404A, R507A, R134a, R12, R22, R500, R502
Detecting method	Heated sensor
Gas introduction method	Gas suction
Power source	Alkaline battery x 4 pcs.
Weight	420g (including batteries)
Dimensions	(L) 52 x (W) 50 x (H) 265mm
Working temperature	-4 ~ 43°C
Standard accessories	Alkaline battery x 4 pcs., Sensor, Spare filter, Leak sensor bottle, Carrying pouch

Refrigerant	R410A	R407C	R404A	R507A	R134a	R12	R22	R502
Sensitivity/year	1.7g	1.7g	1.7g	1.7g	1.7g	1.7g	0.9g	1.7g

Leak detector TEK-Mate

PAT.

Fluorocarbon

SF6



- Find amount of refrigerant leak by the pitch of alarm (strong · soft) sound.
- The automatic background compensation feature continuously monitors and automatically compensates for changing background "noise" without the need for manual adjustments by the operator.

Item	TEK-Mate
Code No.	LB001
Applicable refrigerant	Fluorocarbon such as R410A, R407C, R404A, R507A, R134a, R12, R22, R500, R502, R14 and SF6 gas
Detecting method	Electro chemical
Gas introduction method	Gas suction
Power source	Alkaline battery x 2 pcs.
Weight	700g (including batteries)
Dimensions	(L) 57 x (W) 88 x (H) 215mm
Working temperature	-27 ~ 60°C
Standard accessories	Sensor, Alkaline battery x 2 pcs., Spare filter, Case

Refrigerant	R410A	R407C	R404A	R507A	R134a	R22	R502	R14
Sensitivity/year	7.6g	9.3g	11.2g	10.4g	11g	14g	8g	11g

High sensitivity leak detector D-TEK Select

Fluorocarbon SF6



- Highly sensitive by an infrared absorption sensor.
- Sensitive to refrigerant only and no false response to smoke, moisture, wind, etc.
- Find the size of leak by the sound of warning signal and lamp on LED display.
- Infrared sensor lasts for approximately 800 hours.
- Automatic background compensation (automatic zero setting). (On/Off)

Item	D-TEK Select									
Code No.	LB003									
Applicable refrigerant	Fluorocarbon such as R410A, R407C, R404A, R507A, R134a, R12, R22, R500, R502, R14 and SF6 gas									
Detecting method	Infrared sensor									
Gas introduction method	Gas suction									
Voltage	*Voltage made to order or rechargeable battery									
Weight	540g (including battery)									
Dimensions	(L) 48 x (W) 73 x (H) 227mm									
Working temperature	0 ~ 50°C									
Standard accessories	AC adapter, NiMH power stick battery, Infrared sensor, 12V adapter to cigarette lighter, Spare filter, Case									
Refrigerant	R410A	R407C	R404A	R507A	R134a	R12	R22	R502	R14	
Sensitivity/year	3g	3g	3g	3g	3g	3g	3g	3g	3g	3g

Super sensitive leak detector HLD5000 smart

PAT.P

Fluorocarbon SF6 CO2

* Optional calibration equipment is required for SF6 and R744(CO2).



- Standard unit can detect 5 kinds of refrigerant (R410A, R407C, R404A, R134a, R22).
- Detects refrigerant leak quickly and securely by the latest infrared technology.
- Detects the specified refrigerant only.
- Infrared ray sensor is long life and economic. (one year guarantee)
- Minimal operating cost as there are few consuming parts.
- Internal calibration function.
- Easy transportation and installation.

Item	HLD5000 smart									
Code No.	LB510									
Applicable refrigerant	R410A, R407C, R404A, R134a, R22 [SF6, R744(CO2)]									
Detecting method	Infrared sensor									
Smallest detectable	leak rate 0.5g/year									
Response time	1 second or less									
Warm-up time	30 seconds									
Voltage	made to order									
Weight	4.5kg									
Dimensions	Ø260 x (H) 365mm									
Working temperature	5 ~ 50°C									
Standard accessories	Probe, Tip 100mm, Power cord, Replacement parts (Fuse, Tip filter holder, Silicone filter cartridge)									

*Unit for a specified single refrigerant available.

CO2 leak detector D-TEK CO2

CO2



- Suitable for leak detecting on CO2 A/C systems, hot water supply systems.
- Equipped with an infrared absorption sensor and low risk of false alarms because it equalizes to the CO2 present in the air.
- On-board diagnostics indicate charging status and warn of low battery or infrared cell failure.
- Infrared sensor lasts for approximately 800 hours.
- Rechargeable (AC/DC)

Item	D-TEK CO2									
Code No.	LB716202									
Applicable refrigerant	CO2									
Detecting method	Infrared sensor									
Gas introduction method	Gas suction									
Sensitivity	6g/year									
Voltage	*Voltage made to order or rechargeable battery									
Weight	540g (including battery)									
Dimensions	(L) 225 x (W) 50 x (H) 66mm									
Working temperature	0 ~ 50°C									
Standard accessories	AC adapter, NiMH power stick battery, Infrared sensor, 12V adapter to cigarette lighter, Spare filter, Case									

Combustible gas detector

Combustible gas

*Can detect HC refrigerant

YELLOW JACKET®



- Gas detection of HC refrigeration storage room, gas pipe, gas heater, combustion equipment, and also gas leak in marine bilge and manhole.
- Indicator displays the size of leak in 6 stages.
- Automatic calibration and zero setting.

1 Flexible probe

3 Long life sensor

2 Illuminated bar graph

4 Low battery indicator

- Indicator displays the size of leak in 6 stages.
- LED indicates when the battery should be replaced.

Item	Combustible gas detector
Code No.	Y69373
Applicable gas	Methane, Isobutene, Propane, Methanol, Benzene, Ethan, Gasoline, Acetone, Butane, Acetylene, Toluene, Methyl alcohol, Ethylene, Ammonium, etc.
Detecting method	Electro chemical
Sensitivity	5ppm (Methane)
Power source	Alkaline battery x 4 pcs.
Weight	406g (including battery)
Dimensions	(L) 65 x (W) 52 x (H) 264mm
Working temperature	0 ~ 52°C
Standard accessories	Sensor, Alkaline batteries, Case

Combustible gas detector GAS-Mate

Combustible gas

*Can detect HC refrigerant



- Suitable for gas leak check of heating equipment, gas pipe, combustion equipment.
- Hydrocarbon gas and other gases can be detected with the advanced technology.
- Sensitive to 5ppm methane.
- Auto zero setting for ignoring background gas levels in test area.

Item	GAS-Mate
Code No.	LB706600
Applicable gas	Methane, Natural gas, Propane, Butane, Isobutene, Ammonium, Cyclopentane, Ethan, Ethanol, etc.
Detecting method	Semiconductor
Sensitivity	5ppm (methane)
Power source	1.5V Alkaline battery x 2 pcs. (battery life 60 hours)
Weight	700g (including battery)
Dimensions	(L) 224 x (W) 51 x (H) 760mm
Working temperature	0 ~ 45°C
Standard accessories	Sensor, Alkaline battery x 2 pcs., Case

Ultrasonic leak detector Whisper



- Suitable for leak check of natural gas, LPG, compressed air system, locating worn bearing, diagnosing solenoid valve and so on.
- Unaffected by audible noise, Whisper incorporates an internal noise control allowing for use in extremely noisy environments, such as mechanical rooms, and around operating chillers.

Item	Whisper
Code No.	LB711202
Detecting method	Ultrasonic
Power source	9V Alkaline battery x 1 pce.
Weight	250g (including battery)
Dimensions	(L) 63 x (W) 69 x (H) 300mm
Working temperature	0 ~ 50°C
Standard accessories	9V Alkaline battery, Rubber probe extension, Headphones, Case

Transmitter

Optional accessory

- For quick and accurate leak check in walk-in coolers / freezers, wall and ceiling joints, around doors, windows, ducts, etc.

Item	Transmitter
Code No.	LB711600



Fluorescent leak detection - pinpoint leaks at the speed of light

**Once the solution circulates, leak sources glow in the beam of the UV lamp !
It's that fast and simple !!**



Applicable refrigerant

All fluorocarbons

Applications

- Room A/C · package A/C · Gas heat pump A/C · Spot A/C units and so on
- Showcases in a supermarket and so on
- Automatic vending machines
- Automobile A/C units
- Centrifugal systems including marine refrigeration and A/C
- Commercial refrigeration
- Transportation refrigeration
- Refrigeration trucks
- Chillers

Features of fluorescent leak detection

Pinpoint detection

- Injected dye solution oozes out and can see the exact leak location.
- Very small leak and secluded leak location can be detected.

Exact detection

- Very small leak such as 7g/year can be detected.
- Unaffected by air movement nor by other gases.
- Seeing and fixing every leak saves you the time of no-charge rework.

Marking leak location

- The solution keeps glowing unless it is wiped off.
- Can record the leak location in the past.

Easy & fast

- No special technique. Everybody can detect the leak location easily and accurately.
- Speedy detection by watching.
- Plural leaking locations can be detected in one time and saves the inspection time.

Can detect at any time

- Whether the system runs or not, detection can be done once the solution circulates.
- Once the solution is injected, you do not have to inject the solution again unless the refrigeration oil is changed. Dye is always readily visible with a UV beam.

Safe & harmless

- Suitable for all the type of refrigeration oil and harmless to the system and the recovery units.
- Harmless to the environment and the human body.

Micro UV A/C kit



R410A

R407C
R404A
R507A

R134a

R12
R22
R502

YELLOW JACKET®

- Can see the dye without goggles.

Item	Micro UV A/C kit
Code No.	Y69789
Connecting port size	1/4"
Dye solution volume	30mL(*1)
Standard accessories	Micro UV Lamp (with case), Lithium battery x 2 pcs., Universal A/C dye injector, 1/4" SealRight injector hose, Adapter for different diameter 1/4" male x 5/16" female (*2)

* Please refer to Micro UV flashlight (Y69790) for its specifications.
 *1 Please refer to the injection volume (table 1) for the volume to be injected to the system.
 *2 5/16" female x 1/4" male quick adapter 45°(Y19173) is required for R410A systems.

Micro UV R134a auto A/C kit



R134a

YELLOW JACKET®

- For R134a auto A/C only.
- Can see the dye without goggles.

Item	Micro UV R134a auto A/C kit
Code No.	Y69788
Connecting port size	Quick joint
Dye solution volume	30mL(*1)
Standard accessories	Micro UV Lamp (with case), Lithium battery x 2 pcs., Universal A/C dye injector, 1/4" R134a injector hose

* Please refer to Micro UV flashlight (Y69790) for its specifications.
 *1 Please refer to the injection volume (table 1) for the volume to be injected to the system.

Micro UV Lamp

Micro UV Lamp



With 3 pure UV bulbs and 2 blue bulbs. Suitable for long distance detection and detection in the light.

Micro UV pure lamp



The dye glows clearly with 5 pure UV bulbs and detects very small leak surely.

- Long life LED and lithium battery.
- Can see the dye without goggles.
- LEDs are recessed for protection.
- Sealing locks out moisture.

YELLOW JACKET®

Item	Micro UV Lamp	Micro UV pure lamp
Code No.	Y69790	Y69791
Bulbs	LED x 5 pcs. (3 pcs.:pure UV/2 pcs. blue LED)	LED x 5 pcs. (Pure UV)
Power source	Lithium battery x 2 pcs.	
Dimensions	Ø22 x 121mm	
Weight	102g	
Standard accessories	Lithium battery CR123A x 2 pcs., Case	

Universal A/C dye injector



YELLOW JACKET®

- Dye solution
- Graduated at each 7.5mL for accurate injection.
- Both for Micro UV A/C kit and Micro UV R134a auto A/C kit.

Item	Code No.	Capacity (1 pce.)
Universal A/C dye injector	2 pcs./pack	Y69721
	6 pcs./pack	Y69700
		30mL
		30mL

Volume to be injected (table 1)

Refrigerant volume	Volume to be injected
~ 2kg	7.5mL
2 ~ 10kg	15mL
10kg or more	15mL for each 4L of compressor oil

R134a injector hose



YELLOW JACKET®

- For injecting dye solution to R134a auto A/C.

Item	R134a injector hose
Code No.	Y60706

Spray type gas leak detector Big Blu



Standard type

- Very small leak (18g/year) can be detected surely.

Low temperature type

PAT.

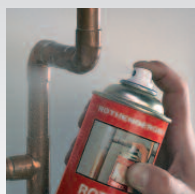
- Hard to freeze and suitable for cold region (can be used at -29°C).

Purpose For checking leak from refrigeration systems and so on.

- Friendly to environment - biodegrading.
- Contains no chlorine. (less corrosive than deionized water)
- No.1 market share in USA.
- Fast detecting by rapid forming bubbles.
- Large bubbles stays for long period to help detecting small leak.
- Spreads on all over the surface due to water-soluble adhesive.

Item	Big Blu (standard type)	Big Blu (low temperature type)
Code No.	RT100S	RT150S
Capacity	0.95L	
Master pack	12	

Spray type gas leak detector Rotest



Purpose For checking leak from refrigeration systems and so on.

- Spray type detector which can detects leak quickly.

Item	Rotest
Code No.	R65000
Capacity	400mL
Master pack	12

Gas leak preventing sealant Nylog

PAT.

Good for new type refrigerant



Purpose Leak prevention for flared surface, gaskets, screws, O-rings, etc.

- Does not harm systems as the component of Nylog is refrigeration oil.
- Nylog Blue for sealing flare surface under high pressure of new type refrigerant. Prevents troubles due to leak of HFC refrigerant.

Item	Nylog blue	Nylog red
Code No.	RT201B	RT200R
Applicable refrigerant	HFC refrigerant	CFC · HCFC refrigerant
Capacity	30mL	
Master pack	12	

Digital alarm thermometer

-50 ~ 200°C

YELLOW JACKET®

- No calibration.
- °F / °C switch able.
- Data hold function.
- Key tone for operation confirmation.
- Maximum / minimum temperature memory.
- Fold away stand.
- Automatic self test after battery installation.



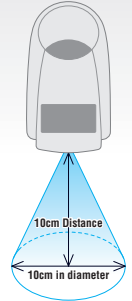
Temperature °F / °C switch able
Auto OFF Hold function

Description	Digital alarm thermometer
Code No.	Y69239
Measurement range	-50 to 200°C
Accuracy	±1°C between -19.9 to 119.9°C ±2°C between 120 to 199.9°C otherwise ±3°C
Battery	Requires one 1.5 volt size AAA/UM4 or equivalent (included)
Weight	100g
Display resolution	0.1° over full range
Alarm resolution	1° over full range
Dimension	(L) 21 x (W) 79 x (H) 109mm

Micro infrared thermometer

-33 ~ 220°C

YELLOW JACKET®



- The most compact infrared thermometer.
- Quick measures -27°C to 428°F (-33°C to 220°C).
- Distance to spot ratio of about 1 : 1.

Temperature °F / °C switch able
Auto OFF

Description	Micro infrared thermometer
Code No.	Y69225
Measurement range	-33 to 200°C
Resolution	0.1°C (-9.9 to 99.9°C)
Accuracy	±2% of reading or 4°F (2°C), whichever is greater
Emissivity	0.05 ~ 1 adjustable
Wave length	5 ~ 14 microns
Power	3V button cell battery included (CR2032)
Weight	32 g
Dimension	(L) 18 x (W) 36 x (H) 68mm
Standard accessories	battery, strap

Digital psychrometer

-20 ~ 50°C

0 to 100%RH

YELLOW JACKET®



- °F / °C switch able.
- Data hold
- Auto power off
- Display relative humidity and temperature simultaneously.
- Response time of 60 seconds to changes in humidity.

Temperature Humidity
°F / °C switch able Auto OFF Hold function

Description	Digital psychrometer
Code No.	Y69008
Measurement range	Temperature: -20 to 50°C / Humidity: 0 to 100% RH
Resolution	Temperature: 0.1°C / Humidity: 0.1% RH
Accuracy	Relative humidity functions (±3% RH at 25°C)
Temperature	±0.6°C
Response time	60 seconds
Power	2AAA batteries
Weight	75 g
Dimension	(L) 178 x (W) 48 x (H) 25mm
Standard accessories	battery

Anemometer

-10 ~ 50°C

0 to 100% RH

YELLOW JACKET®



- Microprocessor controller.
- Calculates CFM air volume.
- Records minimum and maximum readings.
- Averages air velocity
- Display "hold" button. freezes LCD reading.
- °F / °C switch able.
- Auto off after 20 minutes.
- RS232 out put.

Temperature Air velocity Air volume
°F / °C switch able Auto OFF Hold function

Description	Anemometer
Code No.	Y68915
Measurement range	Temperature : -10 to 50°C Air velocity : 0.7 to 25 m/s Resolution
Temperature	0.1°C / Air velocity : 0.001m / s
Accuracy	Air velocity : ±2%
Temperature	±0.6°C
Power	9V battery
Weight	350 g
Dimension	(L) 30 x (W) 71 x (H) 182mm
Standard accessories	battery, case

Automatic charging scale CS-50A

Automatic charging & refrigerant weighing

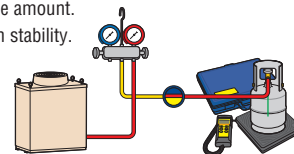
Suitable for ~20kg cylinder

For CFC · HCFC · HFC

YELLOW JACKET®



- Weighing for refrigerant charging.
- Desired amount can be charged by inputting the amount.
- Single point load cell strain gauge for long term stability.



Item	Automatic charging scale CS-50A
Code No.	Y68815
Applicable refrigerant	R410A, R407C, R404A, R507A, R134a, R12, R22, R500, R502
Power source	*Voltage made to order or 9V alkaline battery (Use AC power when Charging module is used)
Battery life	25 hours of continuous operation
Platform size	(L) 228 x (W) 228mm
Weight	5.3kg
Weighing capacity	50kg
Accuracy	±15g
Resolution	10g
Working temperature	0 ~ 50°C
Base unit includes	Charging scale, Charging module, AC adapter, 9V alkaline battery, Quick adapter 45° 1/4" female x 5/16" male x 2 pcs., Case

Automatic charging scale CS-50B

Refrigerant weighing

Suitable for ~20kg cylinder

For CFC · HCFC · HFC

YELLOW JACKET®



- Weighing for refrigerant charging.
- Single point load cell strain gauge for long term stability.

Item	Automatic charging scale CS-50B
Code No.	Y68800
Applicable refrigerant	R410A, R407C, R404A, R507A, R134a, R12, R22, R500, R502
Power source	9V alkaline battery
Battery life	25 hours of continuous operation
Platform size	(L) 228 x (W) 228mm
Weight	4.2kg
Weighing capacity	50kg
Accuracy	±15g
Resolution	10g
Working temperature	0 ~ 50°C
Base unit includes	Charging scale, 9V alkaline battery, Case

Charging module kit Optional accessory

- Upgraded kit for automatic charging.

Item	Charging module kit
Code No.	Y68817



Automatic charging scale CS-50

Refrigerant weighing

Suitable for ~20kg cylinder

For CFC · HCFC · HFC

YELLOW JACKET®



- Weighing for refrigerant charging.
- Single point load cell strain gauge for long term stability.

Item	Automatic charging scale CS-50
Code No.	Y68798
Applicable refrigerant	R410A, R407C, R404A, R507A, R134a, R12, R22, R500, R502
Power source	*Voltage made to order or 9V alkaline battery
Battery life	25 hours of continuous operation
Platform size	(L) 228 x (W) 228mm
Weight	5.0kg
Weighing capacity	50kg
Accuracy	±15g
Resolution	10g
Working temperature	0 ~ 50°C
Base unit includes	Charging scale, AC adapter, 9V alkaline battery, Case

*Optional Charging module can be stored in the case.

Automatic charging scale CS-100A

Automatic charging & refrigerant weighing

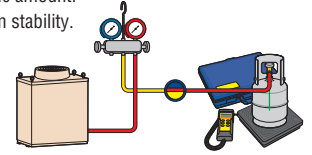
Suitable for ~40kg cylinder

For CFC · HCFC · HFC

YELLOW JACKET®



- Weighing for refrigerant charging.
- Desired amount can be charged by inputting the amount.
- Single point load cell strain gauge for long term stability.



Item	Automatic charging scale CS-100A
Code No.	Y68816
Applicable refrigerant	R410A, R407C, R404A, R507A, R134a, R12, R22, R500, R502
Power source	*Voltage made to order or 9V alkaline battery (Use AC power when Charging module is used)
Battery life	25 hours of continuous operation
Platform size	(L) 287 x (W) 287mm
Weight	6.2kg
Weighing capacity	100kg
Accuracy	±30g
Resolution	10g
Working temperature	0 ~ 50°C
Base unit includes	Charging scale, Charging module, AC adapter, 9V alkaline battery, Quick adapter 45° 1/4" female x 5/16" male x 2 pcs., Case

Automatic charging scale CS-100

Refrigerant weighing

Suitable for ~40kg cylinder

For CFC · HCFC · HFC

YELLOW JACKET®



- Weighing for refrigerant charging.
- Single point load cell strain gauge for long term stability.

Item	Automatic charging scale CS-100
Code No.	Y68799
Applicable refrigerant	R410A, R407C, R404A, R507A, R134a, R12, R22, R500, R502
Power source	*Voltage made to order or 9V alkaline battery
Battery life	25 hours of continuous operation
Platform size	(L) 287 x (W) 287mm
Weight	5.9kg
Weighing capacity	100kg
Accuracy	±30g
Resolution	10g
Working temperature	0 ~ 50°C
Base unit includes	Charging scale, AC adapter, 9V alkaline battery, Case

*Optional Charging module can be stored in the case.

Charging module

Optional accessory

YELLOW JACKET®



Item	Charging Module
Code No.	Y68808

AC adapter

Optional accessory

YELLOW JACKET®

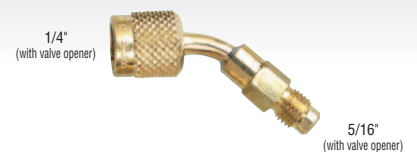


Item	AC adapter
Code No.	Y68797

1/4" x 5/16" quick adapter 45°

Optional accessory

YELLOW JACKET®



Item	1/4" x 5/16" quick adapter 45°
Code No.	Y19174

Over-filling protection equipment for refrigerant recovery machine **Limit scale LS-45II**

Refrigerant weighing & Limit scale



- Alarms and automatically stops Asada recovery machine with a general cylinder when it is filled up to 90% of its capacity.
- Platform supporting system with 4 load cells.
- Can be used as a refrigerant charging scale.
- Applicable for a general cylinder and a float sensor type cylinder.

Item	Limit scale LS-45II
Code No.	LS452
Suitable recovery machine	RecoverXLT, Ecosaver mini, R50, R60, R60S, R100, TC, R120W, R350, R1400, OZsaver 4000J, JII
Weighing method	Electric resistance type load cell
Weighing capacity	45kg
Calibration	5g
Resolution	1/9,000
Dimensions	(L) 363 x (W) 480 x (H) 147mm
Platform size	230 x 230mm
Weight	10kg
Working temperature	-5 ~ 40°C
Power source	*Voltage made to order (50/60Hz)
Applicable cylinder	General type : 21L, 24L Float sensor type : 12L, 24L

Limit scale & automatic charging scale **Limit scale LS-45V**

Automatic refrigerant charging & Refrigerant weighing & Limit scale



- Alarms and automatically stops Asada recovery machine with a general cylinder when it is filled up to 90% of its capacity.
- Equipped with false prevention system from selecting a wrong cylinder. (in case of recovery)
- High accuracy automatic charging function. (in case of charging)
- Can make work records with an optional printer. (LS-45VP : made to order)

Item	Limit scale LS-45II	LS-45VP (with printer)
Code No.	LS045V	LS045VP
Suitable recovery machine	RecoverXLT, Ecosaver mini, R50, R60, R60S, R100, TC, R120W, R350, R1400, OZsaver 4000J, JII	
Weighing method	Electric resistance type load cell	
Weighing capacity	45kg	
Calibration	5g	
Resolution	1/9,000	
Dimensions	(L) 350 x (W) 470 x (H) 130mm	
Platform size	230 x 230mm	
Weight	11kg	
Working temperature	-5 ~ 40°C	
Power source	*Voltage made to order (50/60Hz)	
Applicable cylinder	General type : 21L, 24L Float sensor type : 12L, 24L	

*LS-45VP made to order.

Printer for LS-45VP

Optional accessory



Over-filling protection equipment for refrigerant recovery machine **Limit scale LS-150II**

Refrigerant weighing & Limit scale



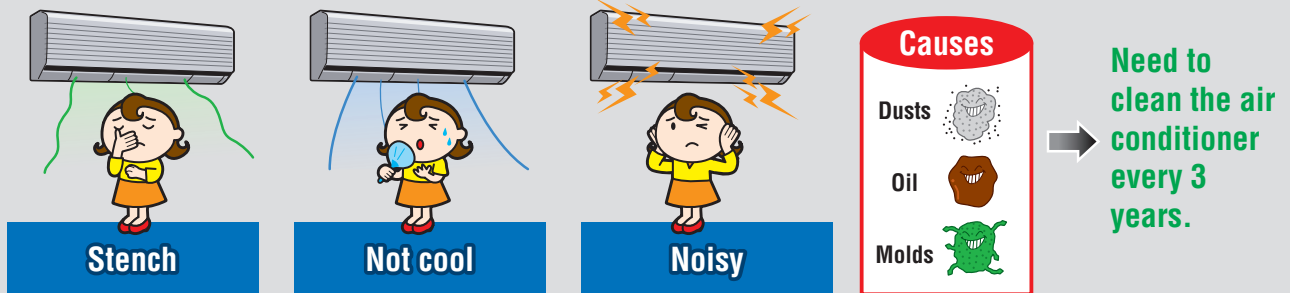
- Alarms and automatically stops Asada recovery machine with a general cylinder when it is filled up to 90% of its capacity.
- Platform supporting system with 4 load cells.


Item	Limit scale LS-150II
Code No.	LS152
Suitable recovery machine	RecoverXLT, Ecosaver mini, R50, R60, R60S, R100, TC, R120W, R350, R1400, OZsaver 4000J, JII
Weighing method	Electric resistance type load cell
Weighing capacity	150kg
Calibration	50g
Resolution	1/3,000
Dimensions	(L) 450 x (W) 560 x (H) 178mm
Platform size	370 x 370mm
Weight	23kg
Working temperature	-5 ~ 40°C
Power source	*Voltage made to order (50/60Hz)
Applicable cylinder	General type : 21L, 24L Float sensor type : 12L, 24L

Air conditioner cleaning


Necessity of air conditioner cleaning

When an air conditioner is used for more than 3 years, dusts, oil, flower powders, etc. are stuck inside the unit and molds, ticks and bacteria breed. It leads to a stench, lower cooling efficiency and damage to the unit. Moreover, it may affect your health such as allergy.






Stench





Not cool




Noisy

Causes

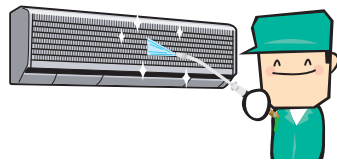
Dusts 

Oil 

Molds 

Need to
clean the air
conditioner
every 3
years.

Effects of air conditioner cleaning



- Cooling efficiency is improved.
- Stench is removed.
- Can save electricity.
- Silent operation.
- Air conditioner stands longer.

Air conditioner cleaning cover (for ceiling unit)



Procedures



Put the protection masking around the unit.



Put the cover.



Adjust the size with hooks.



Turn over the protection masking to make a work space and clean the unit from there.

Item	Air conditioner cleaning cover (for ceiling unit)
Code No.	EP348
Set includes	Cover with hose (560 x 1,000 x 600mm), Chain with hook x 4 pcs., Protection masking, Clip

Protection masking for ceiling unit

Optional accessory

Item	Protection masking for ceiling unit
Code No.	EP350
Size	1,100mm x 25m

- For cleaning of ceiling units.
- Dissolves inside stains, stench and low cooling efficiency.
- Has an excellent durability and can be used repeatedly for 100~200 times.
- Fits from a small unit to a 10HP unit by adjusting chain with hook.
- * Use with High pressure cleaner 440.

Air conditioner cleaning set (for room air conditioner)



- For cleaning of indoor units of room air conditioner.
- Dissolves inside stains, stench and low cooling efficiency.
- Has an excellent durability and can be used repeatedly for 100~200 times.
- Fits to all units with the protection masking.
- * Use with High pressure cleaner 440.

Item	Air conditioner cleaning set (for room air conditioner)
Code No.	EP347
Set includes	Cleaning cover, Aluminum fin cleaner 2L, Pressure spray, Protection masking, Sheet for working, Extension hose for draining, Mask, Gloves, Safety glasses, Brush, Adhesive tape, Towel x 3 pcs., Sponge brush, Chemical for parts cleaning, Bucket

Procedures



Put the protection masking around the unit.



Put the cover.



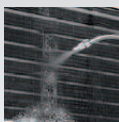
Clean the fins and the fan with Aluminum fin cleaner.

Optional accessories

Item	Code No.	Size
Cleaning cover	EP349	520mm x 1,040mm
Aluminum fin cleaner 2L (5 pcs./set)	EP354	-
Protection masking (10 pcs.)	EP351	550mm x 25m

High pressure cleaner 440 with pressure gauge

PAT.P



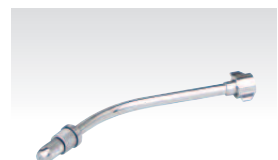
Item	High pressure cleaner 440 with pressure gauge
Code No.	EP45H
Discharge volume	3.0L/min. (50Hz) 3.7L/min. (60Hz)
Pressure	3.9MPa (40kgf/cm ²)
Weight	9.2kg
Dimensions	(L) 270 x (W) 230 x (H) 210mm
Motor	*Voltage made to order 200W
High pressure hose max. length	30m
Standard accessories	High pressure hose 8m, Spray gun, Suction hose 2.6m, Filter, Case, Pressure gauge

Lance 150 set

Optional accessory

- Short type lance which is suitable for cleaning of fins of indoor unit.

Item	Lance 150 set
Code No.	EP275



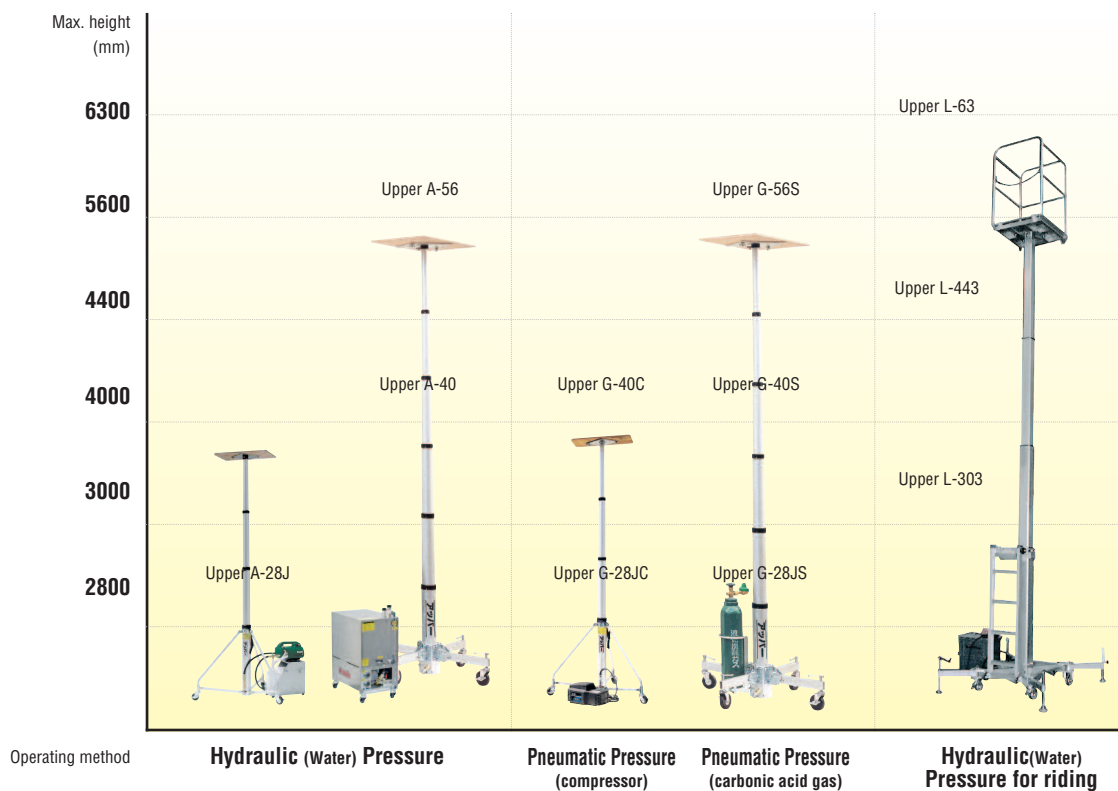
Self-suction type

- For professional cleaning for fins of air conditioner.
- Light weight and compact self-suction type.
- Equipped with a plastic case which can be used as a water reservoir tank.
- Easy to adjust pressure and can be used for spraying for gardening.

HYDRAULIC · PNEUMATIC LIFT · UPPER



Portable lift to deliver equipment at working site.



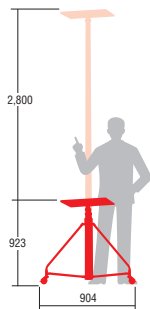
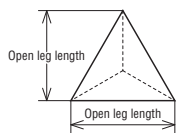
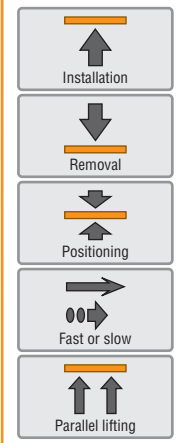
Purpose

Suitable for installing A/C on wall, ceiling and hoisting heavy tools and materials.
Can also be used for piping, electrical works, metal works, carpentry works, etc.

Hydraulic (Water Pressure) Upper A-28J

Water Pressure type

5 Features of Hydraulic System



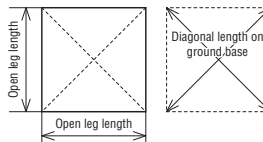
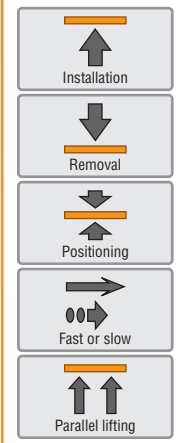
- Weigh only 12kg and easy to carry by one hand.
- Hydraulic type does not have bouncing pressure and safe when unloading.
- Moves smoothly and stops at where you want by fine adjustment.
- Only water and 100V power source is required and it's friendly to environment and economic.
- No wiggling with high supporting position of the tripod.



Hydraulic (Water Pressure) Upper A-40 - A-56

Water Pressure type

5 Features of Hydraulic System



- Hydraulic type does not have bouncing pressure and safe when unloading.
- Keeps level position for stable set up by adjuster.
- Moves smoothly and stops at where you want by fine adjustment.
- Only water and normal power source is required and its friendly to environment and economic.
- Cylinder is made of anodized aluminum finish to prevent scratches and durable.

Item	Upper A-28J
Code No.	UA280
Max. height	2,800mm
Lowest height	923mm
Body weight	12kg
Max. load	160kg
Open leg length	904x784mm
Driving method	Pump Unit P10
Standard accessories	Main Unit, Platform, Pump Unit

Item	Hydraulic Upper A-40	Hydraulic Upper A-56
Code No.	UA400	UA560
Max. height	3,984mm	5,604mm
Lowest height	1,019mm	1,289mm
Body weight	23kg	29kg
Max. load	160kg*	
Diagonal length	926x926mm	1306x1306mm
Open leg length	655x655mm	924x924mm
Driving method	Pump Unit P22	
Standard accessories	Main Unit, Platform, Pump Unit, Remote Control Switch 5m, Hydraulic Hose 1.5m, Power Cord 1.5m, Pressure Tester, Drain Tube, Plastic Chain, Tool Bag	

* For safety reason, use the unit within the recommended load.
(For example, max. load 160kg - within 3m, 130kg - within 4m, 50kg - within 5.6m)

Specification of Pump Unit

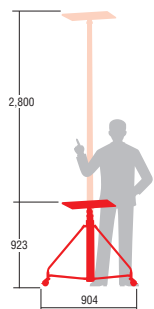
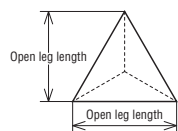
Model	Capacity of tank	Motor	Operating temperature	Relief setting pressure	Weight
P10	10L	*Voltage made to order	-10 ~ 40°C	0.98MPa(10 kgf/cm ²)	16kg
P22	22L	*Voltage made to order	-10 ~ 50°C	0.9MPa (9.2kgf/cm ²)	19kg

Purpose

Suitable for installing A/C on wall, ceiling and hoisting heavy tools and materials.
Can also be used for piping, electrical works, metal works, carpentry works, etc.

Pneumatic Lift · Upper G-28JC · G-28JS

Pneumatic type



Compressor type

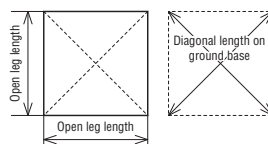
PAT.

- Weigh only 12kg and easy to carry by one hand.
- Speed of moving cylinder downward is faster by having quick exhaustion valve.
- No electric power required for use at anywhere outside. High speed lifting (G-28JS)
- Economic operating cost by using compressor. (G-28JC)
- No wiggling with high supporting position of the tripod.

Item	Pneumatic Upper G-28JC	Pneumatic Upper G-28JS
Code No.	UG281	UG280
Max. height	2,800mm	
Lowest height	923mm	
Body weight	12kg	
Max. load	125kg	160kg
Open leg length	904x784mm	
Driving method	Compressor	Carbonic acid gas (Cylinder and Holder are optional accessories)
Standard accessories	Main Unit, Platform, Hose with Valve 3m, Compressor FA750, Tool Bag	Main Unit, Platform, Pressure Regulator, Hose with Control Switch 5m, Tool Bag

Pneumatic Lift · Upper G-40C-G-40S-G-56S

Pneumatic type



Carbonic acid gas type

PAT.

- Safe lift with adjustable horizontal level and solid legs of outrigger type.
- No electric power required for use at anywhere outside. High speed lifting(G-40S · 56S)
- Speed of moving cylinder downward is faster by having quick exhaustion valve.
- Economic operating cost by using compressor. (G-40C)
- Sturdy and durable top stage type with special material of square aluminum pipe.

Item	Pneumatic Upper G-40C	Pneumatic Upper G-40S	Pneumatic Upper G-56S
Code No.	UG401	UG402	UG562
Max. height	3,984mm		5,604mm
Lowest height	1,019mm		1,289mm
Body weight	23kg		29kg
Max. load	125kg(*1)	160kg(*2)	160kg(*2)
Diagonal length	926x926mm		1306x1306mm
Open leg length	655x655mm		924x924mm
Driving method	Compressor	Carbonic acid gas (Cylinder and Holder are optional accessories)	
Standard accessories	Main Unit, Platform, Hose with Valve 3m, Compressor FA750, Tool Bag	Main Unit, Platform, Pressure Regulator, Hose with Control Switch 5m, Tool Bag	

*1. For safety reason, use the unit within the recommended load.
(For example, max. load 160kg - within 3m, 130kg - within 4m, 50kg - within 5.6m)
*2. For safety reason, use the unit within the recommended load.
(For example, max. load 125kg - within 3m, 100kg - within 4m)

Optional Accessories

Item	Code No.
Pressure Regulator for CO2 Gas	UG004
Cylinder Holder	UG035
CO2 Cylinder 5kg	UG007
Oil less compressor FA750750W, 8.0kgf/cm2 (0.78MPa)	FA750

Item	Code No.
Hose with Control Switch 5m	UG005
Hose with Vale	UG021
Short Leg for work near to wallLength:175mm(247mm)	UG025

Hydraulic(Water pressure) Upper for Riding L-303 · L-443 · L-63

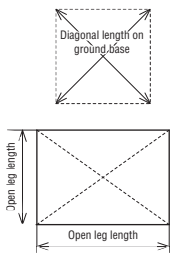
Hydraulic(Water pressure) Upper for Riding



L-303 · L-443



L-63



Purpose Working at high level for inspection and installation of system, maintenance works such as replacing parts, changing lighting fixture, painting, cleaning, etc.

- Safe and nothing will break or fall as it's hydraulic system.
- Safe lift with adjustable horizontal level and solid legs of outrigger type.
- Sturdy and durable top stage type with special material of square aluminum pipe.
- Compact design for easy transport and moving with caster.
- Smooth lifting by electric hydraulic pump.
- Operate on the platform with remote control.

Item	Hydraulic Upper L-303	Hydraulic Upper L-443	Hydraulic Upper L-63
Code No.	UL303	UL440	UL630
Max. height	3,060mm	4,398mm	6,322mm
Lowest height	1,316mm	1,768mm	1,936mm
Body weight	110kg	130kg	160kg
Max. load	1 person(100kg)		1 person(120kg)
Diagonal length	1901x1901mm		
Open leg length	1404x1282mm		
Folded size	1200x780x1400mm	1200x780x1730mm	1200x780x1980mm
Driving method	Pump Unit P15JE		Pump Unit P22
Standard accessories	Main Unit, Stage Platform, Pump Unit, Pressure Tester, Drain Tube, Tool Bag		

Specification of Pump Unit

Model	P15JE	P22
Tank capacity	15L	22L
Motor	250W, 50/60Hz, Voltage made to order	
Operating temperature	-10 ~ 40°C	
Relief setting pressure	0.9MPa(9.2kgf/cm ²)	
Weight	11kg	19kg

Upper for Made-To-Oder

Made-To-Oder available on request

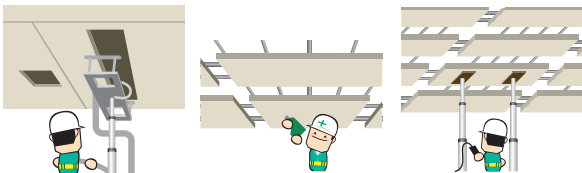


The Maximum height up to 10 Meters

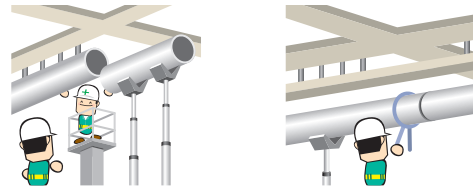


The Maximum load up to 200kg

Suitable for installing / changing lighting fixture and ceiling boards



Hoisting Pipes close to ceiling



Fixing lighting on site or outdoor



Fixing broad casting equipments








Fixing fan



HIGH PRESSURE CLEANER



Diversified selections to suit your need for the type of cleaning at working site.

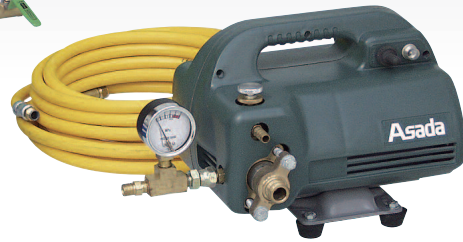
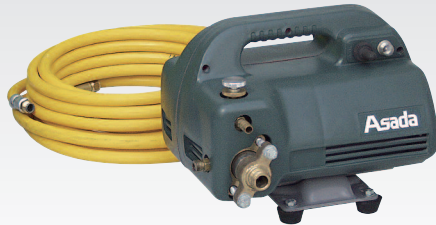
Capacity	Electric Motor		Engine	
	Hot water Series 220V-240V  15/100H 15/80H 7.5/40H		Pipe Cleaning Series  16/200GP 16/150GP 21/90GP 12/80GP 60/50GP 30/50GP	
	Standard Series  16/200G 16/150G 13/150G 10/100G 21/90G 12/80G 30/50G		Low noise Series  16/200GS 16/150GS 30/100GS 21/100GS 13/100GS 21/80GS	
	 440			
Operating method	Electric Motor		Engine	

High Pressure Cleaner 440 · 440 with Pressure Gauge

PAT.P



Cleaning fins of A/C unit.



with Pressure Gauge



- Light weight and compact - self supply type.
- Plastic case which can be used as water reservoir tank.

Purpose Cleaning fins of A/C and spray for gardening.

Item	High Pressure Cleaner 440	High Pressure Cleaner 440 with Pressure Gauge
Code No.	EP44H	EP45H
Discharge volume	3.0L/Min (50Hz) · 3.7L/Min (60Hz)	
Pressure	3.9MPa (40kgf/cm ²)	
Weight	9kg	9.2kg
Dimensions	(L)270 x (W)230 x (H)210mm	
Motor	200W · 50/60Hz, Voltage made to order	
High Pressure Hose max. length	30m	
Standard Accessories	High Pressure Hose 8m, Spray Gun, Water Suction Hose 2.6m, Filter, Plastic Case	High Pressure Hose, Spray Gun, Water Suction Hose 2.6m, Filter, Plastic Case, Pressure Gauge

Optional Accessory		
Item		Code No.
High pressure hose	8m	EP450
	10m	EP207
Spray Gun Kit (Gun & Lance)		EP430
Gun Body		EP442
Lance Assembly		EP273
Lance 150mm Assembly		EP275



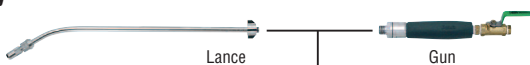
Cleaning fins of A/C unit.

12 Spray Gun Kit (Gun & Lance)

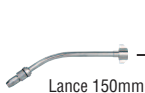
Most suitable for cleaning fins of A/C unit.



Lance Assembly

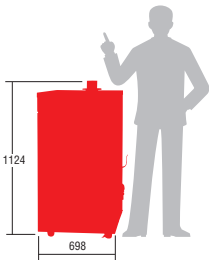
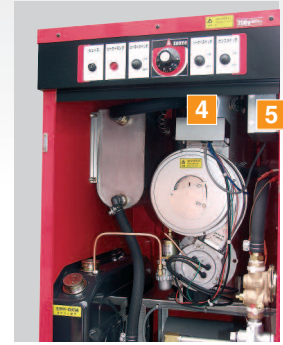


Lance 150mm Assembly



Hot Water Cleaner 7.5/40H · 15/80H · 15/100H

Hot or Cold Water



Purpose Cleaning of construction equipment, agricultural machines, working vehicles, aircraft, railroad train, building, painting work site, also, washing of equipment used at disposal facility, auto repair shop, car, kitchen of hotel/restaurant, animal barracks, etc. Can be also used for simple snow removing.

1 Easy Operating Display



2 Heater for freeze protection



3 Fan Shaped Gun



4 High efficiency stainless steel boiler

5 Prevention device for burning boiler without water

6 Easy to transport by wheels

Flame watching device

Prevention device for over-heating

Heater for freeze protection

Item	7.5/40H (50Hz)	7.5/40H (60Hz)	15/80H (50Hz)	15/80H (60Hz)	15/100H (50Hz)	15/100H (60Hz)
Code No.	HD7504HE	HD7504H	HD1508HE	HD1508H	HD1510HE	HD1510H
Discharge volume	7.5L/Min		15L/Min		15L/Min	
Pressure	3.9MPa (40kgf/cm ²)		7.8MPa (80kgf/cm ²)		10.0MPa (102kgf/cm ²)	
Pipe cleaning capacity	~110mmØ		~150mmØ		~110mmØ	
Discharged water temperature			~80°C			
Weight	103kg		110kg		122kg	
Dimensions	(L)555 x (W)698 x (H)1,124mm					
Motor	Single phase 750W, Voltage made to order		Three phase 2,200W, Voltage made to order		Three phase 3,700W, Voltage made to order	
High Pressure Hose max. length	30m		60m		60m	
Boiler Fuel tank capacity	18L (with Gauge)		35L (with Gauge)		35L (with Gauge)	
Fuel	White kerosene (similar to JIS 1 kerosene)					
Fuel consumption	Approx. 2.5 ~ 3.5L/H		Approx. 4.4 ~ 5.9L/H		Approx. 4.4~5.9L/H	
Water supply port	volute		volute		volute	
Required water supply volume	Approx. 10L/min. or more		Approx. 20L/min. or more		Approx. 20L/min. or more	
Safety device	Overload protection device for motor, Prevention device for burning boiler without water, Flame watching device, Prevention device for over-heating, Heater for freeze protection, Pressure restricting check valve, Safety valve					
Standard Accessories	Hot Water High Pressure Hose 1/4" x 8m, Fan Shaped Gun Hot Water High Pressure Hose 3/8" x 10m, Fan Shaped Gun Hot Water High Pressure Hose 3/8" x 10m, Fan Shaped Gun					

Water Protection Cover for Smoke Stack

Optional Accessories



· Prevents entering rain into boiler in case of outdoor use.

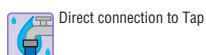
Item Water Protection Cover for Smoke Stack
Code No. HD02014

Hot Water Tap for washing

Optional Accessories



Item Hot Water Tap for washing
Code No. HD02015

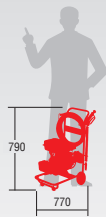


High Pressure Cleaner 12/80G (Self suction type)

Engine Driven



Popular model for professional use.



Purpose Cleaning of water filtration tank, tank, water reservoir, building wall, floor, construction machines, animal shack, chicken shelter, automobile, and cleaning of inside of pipe (Pipe Cleaning Hose is optional).

1 Standard accessory of Variable Gun for wide range of applications



Streight Shape

Fan Shape

3 Durable triple plunger pump for easy maintenance

4 Long life

- Low speed engine and pump assure long life
- Durable triple plunger pump for easy maintenance

2 Large casters for easy transportation

5 Air relief valve for sufficient self suction

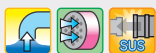
Light weight for one person can load on a car and unload.

Item	12/80G
Code No.	HD128
Discharge volume	12.0L/min
Pressure	7.8MPa (80kgf/cm ²)
Pipe cleaning capacity	~110mmØ
Weight	30kg
Dimensions	(L)770 x (W)439 x (H)790mm
Power	2.1kW
High Pressure Hose max. length	100m
Fuel tank capacity	3.0L
Standard Accessories	High Pressure Hose 3/8" x 10m, Variable Gun, Water Suction Hose 3m

High Pressure Cleaner 13/50G (Self suction type)

Engine Driven

NEW



Purpose Cleaning of water filtration tank, tank, water reservoir, building wall, floor, construction machines, animal shack, chicken shelter, automobile, and cleaning of inside of pipe (Pipe Cleaning Hose is optional).

1 Standard accessory of Variable Gun for wide range of applications



Streight Shape

Fan Shape

4 Air relief valve for sufficient self suction

5 Large casters for easy transportation



2 Unloader Valve protects Pump and Motor

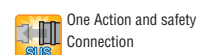
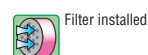
3 Long life

- Low speed engine and pump assure long life
- Durable triple plunger pump for easy maintenance

High one class above performance cleaner with powerful engine

Wide range of use from high to low pressure by pressure adjustment

Item	13/150G
Code No.	HD1315G
Discharge volume	13L/min
Pressure	14.7MPa (150kgf/cm ²)
Pipe cleaning capacity	~110mmØ
Weight	33kg
Dimensions	(L)639 x (W)496 x (H)652mm
Power	3.7kW
High Pressure Hose max. length	100m
Fuel tank capacity	3.6L
Standard Accessories	High Pressure Hose 3/8" x 20m, Turbine Gun, Variable Gun, Water Suction Hose 3m, Residual Water Hose 3m



High Pressure Cleaner 10/100G (Self suction type)

Engine Driven



Purpose

Cleaning of water filtration tank, tank, water reservoir, building wall, floor, construction machines, animal shack, chicken shelter, automobile, and cleaning of inside of pipe (Pipe Cleaning Hose is optional).

1 Plunger Pump

· Durable triple plunger pump for easy aintenance

4 Compact with high performance

· High Power - 10L/min, 10MPa

2 Unloader Valve protects Pump and Motor

Variety of accessory

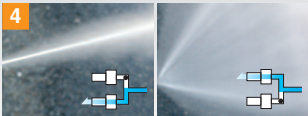


3 Air relief valve for sufficient self suction

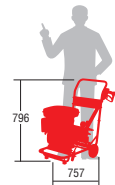
Item	10/100G
Code No.	HD1010G
Discharge volume	10.0L/min
Pressure	10.0MPa (102kgf/cm ²)
Pipe cleaning capacity	~110mm ϕ
Weight	22kg
Dimensions	(L)510 x (W)355 x (H)444mm
Power	2.1kW
High Pressure Hose max. length	60m
Fuel tank capacity	1.7L
Standard Accessories	High Pressure Hose 3/8" x 20m, Dual Gun, Water Suction Hose 3m

High Pressure Cleaner 21/90G · 16/150 · 16/200G (Self suction type)

Engine Driven



Straight spray by twisting right and fan shape spray by twisting left



Purpose

Cleaning of water filtration tank, tank, water reservoir, building wall, floor, construction machines, animal shack, chicken shelter, automobile, and cleaning of inside of pipe (Pipe Cleaning Hose is optional).

1 Plunger Pump

· Equipped with high pressure, high volume ceramic triple plunger pump.

4 Dual Gun

· Two nozzles make enables two types of spray, i.e. straight and fan shape.

· Straight spray by twisting right and fan shape spray by twisting left.

2 Unloader Valve protects Pump and Motor

Wide range of use from car washing to heavy construction equipment.

3 Air relief valve for sufficient self suction

High performance cleaner with powerful engine

Item	21/90G	16/150G	16/200G
Code No.	HD2109G	HD1615G	HD1620G
Discharge volume	21.0/min	16.0L/min	16.0L/min
Pressure	8.8MPa (90kg/cm ²)	14.7MPa (150kgf/cm ²)	19.6MPa (200kgf/cm ²)
Pipe cleaning capacity	~200mm ϕ	~150mm ϕ	~150mm ϕ
Weight	47kg	47kg	57kg
Dimensions	(L)757 x (W)532 x (H)796mm		
Power	4.7kW	4.7kW	5.1kW
High Pressure Hose max. length	100m		
Fuel tank capacity	6.0L		
Standard Accessories	High Pressure Hose 3/8" x 20m, Dual Gun, Water Suction Hose 3m, Residual Water Hose 3m		

High Pressure Cleaner 30/50G

Large volume water, 30L/min

Engine Driven



Purpose

Cleaning of water filtration tank, tank, water reservoir, building wall, floor, construction machines, animal shack, chicken shelter, automobile, and cleaning of inside of pipe (Pipe Cleaning Hose is optional).

1 Plunger Pump

· Equipped with high pressure, high volume ceramic triple plunger pump.

4 Turbine Gun

· Adjustable gun from straight spray to fan shaped spray.

2 Air chamber decreases pulsation of discharge pressure.

5 Hose Reel of Optional Accessory for Pipe Cleaning



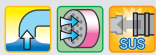
3 Easy transportation with foldable handles and large casters.

Item	30/50G
Code No.	HD3005G
Discharge volume	30.0L/min
Pressure	4.9MPa (50kgf/cm ²)
Pipe cleaning capacity	~250mm ϕ
Weight	51kg
Dimensions	(L)678 x (W)600 x (H) 685mm
Power	2.9kW
High Pressure Hose max. length	50m
Fuel tank capacity	6.0L
Standard Accessories	Turbine Gun, High Pressure Hose 3/8" x 20m, Water Suction Hose 3m, Residual Water Hose 3m

High Pressure Cleaner 13/100GS (Self suction type)

Engine Driven

Low Noise



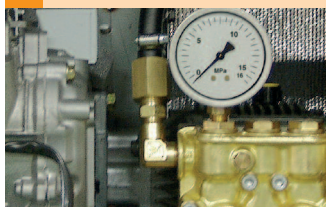
NEW



Purpose

Cleaning of water filtration tank, tank, water reservoir, building wall, floor, construction machines, animal shack, chicken shelter, automobile, and cleaning of inside of pipe (Pipe Cleaning Hose is optional).

1 High self suction power by air vent valve



2 Oil alarm lamp

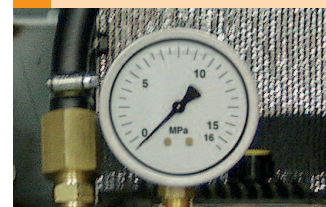


Oil Alarm Lamp shows low volume of engine oil and stop engine automatically

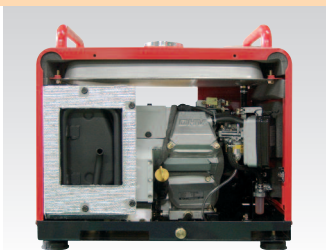
3 Easy to open panel with knob



4 Pressure Gauge with glycerin



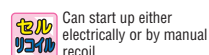
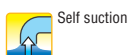
5 Easy maintenance with large opening



Lust proof fuel tank

Powerful Engine, 2.4kW

Item	13/100GS
Code No.	HD1310S2
Discharge volume	13.0L/min
Pressure	10.0MPa (102kgf/cm ²)
Pipe cleaning capacity	~110mmØ
Weight	43kg
Dimensions	(L)501 x (W)409 x (H) 456mm
Power	2.4kW
High Pressure Hose max. length	100m
Fuel tank capacity	5.0L
Standard Accessories	High Pressure Hose 3/8" x 20m, Variable Gun, Water Suction Hose 3m, Residual Water Hose 3m



High Pressure Cleaner 16/150GS · 16/200GS (Self suction type)

Engine Driven

Low Noise



Purpose Cleaning of water filtration tank, tank, water reservoir, building wall, floor, construction machines, animal shack, chicken shelter, automobile, and cleaning of inside of pipe. (pipe cleaning hose is optional)

- High one class above performance cleaner with powerful engine.
- Wide range of use from high to low pressure by pressure adjustment.
- Slow down system. Hour meter is a standard accessory.
- Can start up either electrically or by manual recoil.
- Easy connection by SUS one action coupler.

Item	16/150GS	16/200GS
Code No.	HD1615S	HD1620S
Discharge volume	16.0L/min	16.0L/min
Pressure	14.7MPa (150kgf/cm ²)	19.6MPa (200kgf/cm ²)
Pipe cleaning capacity	~150mmØ	~150mmØ
Weight	96kg	99kg
Dimensions	(L)718 x (W)527 x (H)643mm	
Power	4.4kW	6.5kW
High Pressure Hose max. length	100m	
Fuel tank capacity	11.0L	11.0L
Standard Accessories	High Pressure Hose 3/8" x 20m, Turbine Gun, Variable Gun, Water Suction Hose 3m, Residual Water Hose	

High Pressure Cleaner 21/80GS · 21/100GS · 30/100GS (Self suction type)

Engine Driven

Low Noise

Large volume water



Purpose Cleaning of water filtration tank, tank, water reservoir, building wall, floor, construction machines, animal shack, chicken shelter, automobile, and cleaning of inside of pipe (Pipe Cleaning Hose is optional).

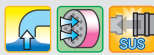
- Large water volume low noise cleaner with powerful engine.
- Slow down system. Hour meter is a standard accessory.
- Can start up either electrically or by manual recoil.
- Easy connection by SUS one action coupler.

Item	21/80GS	21/100GS	30/100GS
Code No.	HD2180S	HD2110S	HD3010S
Discharge volume	21.0 L/min	21.0 L/min	30.0L/min
Pressure	7.8MPa (80kgf/cm ²)	10.0MPa (102kgf/cm ²)	10.0MPa (102kgf/cm ²)
Pipe cleaning capacity	~200mmØ	~200mmØ	~250mmØ
Weight	69kg	96kg	99kg
Dimensions	(L)647 x (W)436 x (H)581mm	(L)718 x (W)527 x (H)643mm	(L)718 x (W)527 x (H)643mm
Power	3.8kW	4.4kW	6.5kW
High Pressure Hose max. length	100m		
Fuel tank capacity	6.0L	11.0L	11.0L
Standard Accessories	High Pressure Hose 3/8" x 20m, Turbine Gun, Water Suction Hose 3m, Residual Water Hose 3m		

High Pressure Cleaner 12/80GP (Self suction type)

Cleaning of drain pipe

Engine Driven



NEW



Purpose Popular series for cleaning pipe by high performance engine. Cleaning of drain pipe and also suitable to clean water filtration tank, water reservoir, etc.

1&2 Easy to pass through in small size of pipe

- With Hand Gun operation.
- With Smooth surface of SUS head.

3 Easy transportation with foldable handles and large casters

4 Plunger Pump

- Equipped with high pressure, high volume ceramic triple plunger pump.

2 Way-Hand Gun

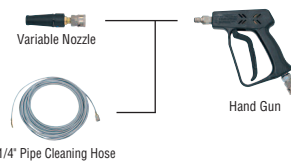


- For wide range of cleaning.

5 Low speed engine and pump assure long life

6 Air chamber decreases pulsation of discharge pressure

Light weight for one person can load on a car and unload

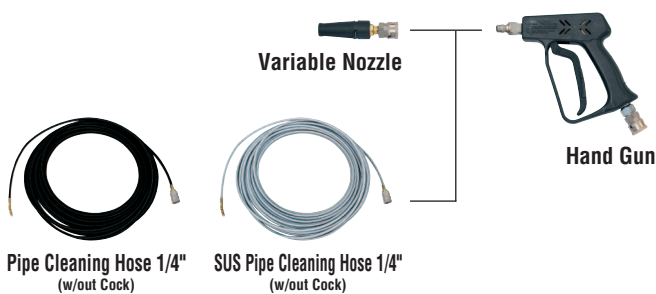


1/4" Pipe Cleaning Hose

- Alternative application with or without Pipe Cleaning Hose.

Item	12/80GP
Code No.	HD1208P
Discharge volume	12L/min
Pressure	7.8MPa (80kgf/cm ²)
Pipe cleaning capacity	~110mmØ
Weight	30kg
Dimensions	(L)770 x(W)439x (H)790mm
Power	2.1kW
High Pressure Hose max. length	100m
Fuel tank capacity	3.0L
Standard Accessories	High Pressure Hose 3/8" x 10m, SUS Pipe Cleaning Hose 1/4" x 20m, Water Suction Hose 3m, Variable Nozzle, Hand Gun

Optional Accessory



Variable Gun

- Adjustable gun from straight spray to fan shaped spray.

Item	Code No. (SUS One Action Coupler)
Variable Gun	HD03007

Dual Gun

- Straight spray by twisting right and fan shape spray by twisting left.

Item	Code No. (SUS One Action Coupler)
Dual Gun	HD03008

Turbine Gun

- For far distance conical spray.

Item	Code No. (SUS One Action Coupler)
Turbine Gun	HD03118

Item		Code No. (SUS One Action Coupler)
Hand Gun (for Variable Nozzle)		HD03151
Variable Nozzle		HD03152
Pipe Cleaning Hose 1/4" (w/out Cock)	20m	HD03153
SUS Pipe Cleaning Hose 1/4" (w/out Cock)	20m	HD03154

High pressure hose



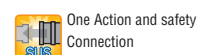
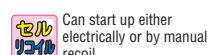
Item		Code No. (SUS One Action Coupler)
High pressure hose	10m	HD03115
	20m	HD03116
	30m	HD03117

Hose Reel

- Connection Hose 1m with 3/8" female.

Item		Code No. (SUS One Action Coupler)
Hose Reel	40m	HD03020
	60m	HD03120

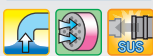
*Need Different Diameter Adaptor(HD01003) for connection to Pipe Cleaning Hose.



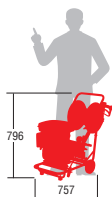
High Pressure Cleaner 21/90GP - 16/150G - 16/200GP (Self suction type)

Cleaning of drain pipe

Engine Driven



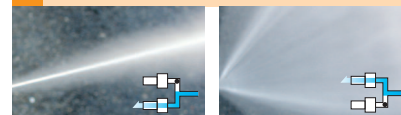
NEW



Purpose

Cleaning of drain pipe and also suitable to clean water filtration tank, water reservoir, etc.
Popular series for cleaning pipe by high performance engine.

- 1 Unloader Valve protects Pump and Motor**
- 2 Equipped with high pressure, high volume ceramic triple plunger pump**
- 3 High self suction power by air vent valve**
- 4 Dual Gun**



Straight spray by twisting right Fan shape spray by twisting left
Two nozzles make enables two types of spray, i.e. straight and fan shape.

High one class above performance cleaner with powerful engine

Wide range of use from car washing to heavy construction equipment.

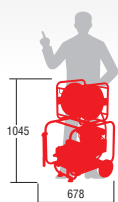
Item	21/90G	16/150G	16/200G
Code No.	HD2109P	HD1615P1	HD1620P1
Discharge volume	21.0/min	16.0L/min	16.0L/min
Pressure	8.8MPa (90kg/cm ²)	14.7MPa (150kgf/cm ²)	19.6MPa (200kgf/cm ²)
Pipe cleaning capacity	~200mmØ	~150mmØ	~150mmØ
Weight	60kg	60kg	70kg
Dimensions	(L)757 x (W)532 x (H)796mm		
Power	4.7kW	4.7kW	5.1kW
High Pressure Hose max. length	100m		
Fuel tank capacity	6.0L		
Standard Accessories	High Pressure Hose 3/8" x 20m, Dual Gun, Water Suction Hose 3m, Residual Water Hose 3m. Pipe Cleaning Hose Set 20m, Hose Reel		

High Pressure Cleaner 30/50GP (Self suction type)

Cleaning of drain pipe

Large volume water, 30L/min

Engine Driven



Purpose Cleaning of large diameter pipe and also suitable to clean water filtration tank, water reservoir, etc.

- 30L water volume though the unit is compactly designed.
- Easy to connect with one SUS one action coupler.

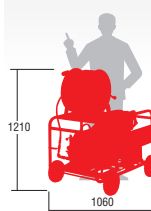
Item	30/50GP
Code No.	HD3005P
Discharge volume	30.0L/min
Pressure	4.9MPa (50kgf/cm ²)
Pipe cleaning capacity	~250mmØ
Weight	58kg
Dimensions	(L)678 x (W)600 x (H) 685mm
Power	2.9kW
High Pressure Hose max. length	50m
Fuel tank capacity	6.0L
Standard Accessories	High Pressure Hose 3/8" x 20m, Turbine Gun, Water Suction Hose 3m, Residual Water Hose 3m, Pipe Cleaning Hose Set 30m, Hose reel

High Pressure Cleaner 60/50GP (Self suction type)

Cleaning of drain pipe

Large volume water, 30L/min

Engine Driven

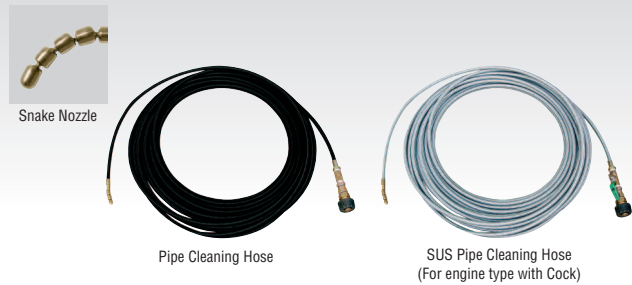


Purpose Cleaning of large diameter pipe up to Ø500mm and manhole.

- Large water volume by powerful 5.9KW engine.
- Suitable for demolishing building and house with far distance spray turbine gun to cover the dust.
- Can start up either electrically or by manual recoil.
- Easy connection by SUS one action coupler.

Item	60/50GP
Code No.	HD605
Discharge volume	60.0L/min
Pressure	4.9MPa (50kgf/cm ²)
Pipe cleaning capacity	~500mmØ
Weight	193kg
Dimensions	(L)1,060 x (W)770 x (H) 1,210mm
Power	5.9kW
High Pressure Hose max. length	6.0L
Fuel tank capacity	30m
Standard Accessories	High Pressure Hose 3/8" x 20m, Turbine Gun, Water Suction Hose 3m, Residual Water Hose 3m, Pipe Cleaning Hose Set 60m, Hose Reel

1/4" Pipe Cleaning Hose



- For cleaning small diameter pipe.
- 4 series snake hose at the top of hose and SUS smooth surface for easy cleaning of bent pipe.

Applicable Model	Item		Code No.	
			With Quick Coupler	With SUS One Action Coupler
10/100G	Cleaning Hose Set (with Cock)	10m	HD30014	—
		20m	HD30015	—
	SUS Cleaning Hose Set (with Cock)	10m	HD30016	—
		20m	HD30017	—
12/80G-GP	Cleaning Hose Set (with Cock)	10m	HD006 (*1)	HD03014
		20m	HD014 (*1)	HD03015
	SUS Cleaning Hose Set (with Cock)	10m	HD030 (*1)	HD03016
		20m	HD031 (*1)	HD03017
	Cleaning Hose Set (w/out Cock)	20m	—	HD03153 (*2)
		SUS Cleaning Hose Set (w/out Cock)	20m	—
16/150G-GP-GS	Cleaning Hose Set (with Cock)	10m	HD1507	HD04005
		20m	HD1508	HD04007
	SUS Cleaning Hose Set (with Cock)	10m	HD1509	HD04008
		20m	HD1510	HD04009
16/200G-GP-GS 13/100GS	Cleaning Hose Set (with Cock)	10m	HD1527	HD06006
		20m	HD1528	HD06007
	SUS Cleaning Hose Set (with Cock)	10m	HD1529	HD06008
		20m	HD1530	HD06009
	Cleaning Hose Set (with Cock)	10m	HD1317	HD10006
		20m	HD1318	HD10007
SUS Cleaning Hose Set (with Cock)	10m	HD1319	HD10008	
	20m	HD1320	HD10009	
21/90G-GP 21/80GS-21/100GS	Cleaning Hose Set (with Cock)	10m	HD2182	HD06007
		20m	HD2183	HD06008
	SUS Cleaning Hose Set (with Cock)	10m	HD2184	HD06009
		20m	HD2185	HD06010

(*1) Quick Coupler only for 12/80GP (*2)w/out cock for close, always use with Hand Gun

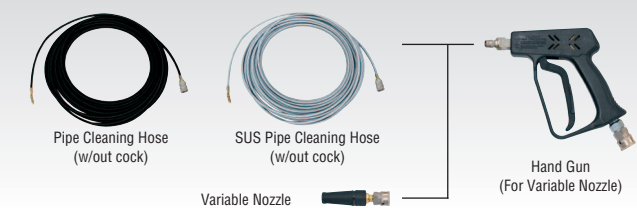
3/8" Cleaning Hose



- For cleaning large diameter pipe.
- Tip of the hose has easy to push with Pipe Cleaning Nozzle.
- Set of Cleaning Hose consist of Cock Kit, Cleaning Hose and Pipe Cleaning Nozzle.

Applicable Model	Item		Code No.	
			With Quick Coupler	With SUS One Action Coupler
16/150G-GP-GS	Cleaning Hose Set	20m	HD215	HD04014
		30m	HD216	HD04015
		40m	HD269	HD04016
		50m	HD217	HD04017
		Pipe Cleaning Nozzle	HD225	
16/200G-GP-GS 13/100GS	Cleaning Hose Set	20m	HD258	HD06013
		30m	HD259	HD06014
		40m	HD271	HD06015
		50m	HD260	HD06016
		Pipe Cleaning Nozzle	HD257	
13/150G	Cleaning Hose Set	20m	HD1321	HD10013
		30m	HD1322	HD10014
		40m	HD1323	HD10015
		50m	HD1324	HD10016
		Pipe Cleaning Nozzle	HD1325	
21/90G-GP 21/80GS-21/100GS	Cleaning Hose Set	20m	HD240	HD08014
		30m	HD241	HD08015
		40m	HD270	HD08016
		50m	HD242	HD08017
		Pipe Cleaning Nozzle	HD248	
30/100GS	Cleaning Hose Set	20m	HD3012	HD13006
		30m	HD3013	HD13007
		40m	HD3014	HD13008
		50m	HD3015	HD13009
		Pipe Cleaning Nozzle	HD3019	
Common to All models	Cock Kit		HD226	HD03021

Hand Gun for 1/4" Pipe Cleaning Hose



- Hand Gun: Suitable for cleaning of tight working space, such as water reservoir.
- Variable Nozzle: Spray can be changed from straight to fan shape without stages.

Applicable Model	Item	Item
12/80G-GP	Hand Gun (For Variable Nozzle)	HD03151
	Variable Nozzle	HD03152

Pipe Cleaning Hose (For large water volume)



- Pipe Cleaning Hose for large water volume with discharge volume of 36L or more per minute.
- Pipe Cleaning Hose and Pipe Cleaning Nozzle for large diameter pipe.
- Hose is available for 3/8" and 1/2".

Applicable Model	Item	Item
30/50G-GP	Pipe Cleaning Hose for large water volume, 3/8" 30m	HD26008
	Pipe Cleaning Nozzle Medium 3/8"	HD26009
60/50GP	Pipe Cleaning Hose for large water volume, 1/2" 60m	HD322
	Pipe Cleaning Nozzle Medium 3/8" Large 1/2"	HD323 HD324

High Pressure Hose

Standard High Pressure Hose (for 8/60)



High Pressure Hose 3/8 (for engine type)



Applicable Model	Item		Code No.	
			With Quick Coupler	With SUS One Action Coupler
440	High Pressure Hose	8m	EP450	—
		10m	EP207	—
For engine type (except 30/50GP)	High Pressure Hose 3/8"	5m	HD301	HD03001(*2)
		10m	HD202	HD03002(*2)
		20m	HD203	HD03003(*2)
		30m	HD204	HD03004(*2)
		40m	HD209	HD03005(*2)
		50m	HD205	HD03006(*2)

Applicable Model	Item		Code No.	
			With Quick Coupler	With SUS One Action Coupler
7.5/40H	High Pressure Hose 1/4" Hot Water	10m	HD02005	—
		20m	HD02006	—
15/80H-15/100H	High Pressure Hose 3/8" Hot Water	10m	HD456	—
		20m	HD457	—
		30m	HD458	—
		40m	HD459	—
		50m	HD460	—
10/100G-12/80G-GP	High Pressure Hose 1/4"	10m	HD002(*5)	HD03115(*2)
		20m	HD011(*5)	HD03116(*2)
		30m	HD012(*5)	HD03117(*2)
30/50G-GP	High Pressure Hose 3/8"	10m	—	HD26002
		20m	—	HD26003
		30m	—	HD26004

(*1) For 10/100G, Quick Coupler only available
 (*2) For 12/80GP, SUS One Action Coupler only available

Hose Reel



For mounting on High Pressure Cleaner (HD04023)



For individual use



For mounting on High Pressure Cleaner (HD220, HD04012)

- Reel for Pipe Cleaning Hose or High Pressure Hose.
- 2 types are available for individual use and for mounting on High Pressure Cleaner.
- With Medium Hose 1m, Hose connection part is 3/8 female.

Applicable Model	Item		Code No.	
			With Quick Coupler	With SUS One Action Coupler
16/150G (HD1615G) 16/150GP (HD1615P1) 16/200G (HD1620G) 16/200GP (HD1620P1) 21/90 G (HD2109G) 21/90 GP (HD2109P)	Hose Reel for mounting 40m roll	40m	—	HD04023
16/150G (HD1615) 16/150GP (HD1615P) 16/200G (HD1620) 16/200GP (HD1620P) 21/90 G (HD219) 21/90 GP (HD219P)	Hose Reel for mounting 40m roll	40m	HD220	HD04012
All model except Model 440	Hose Reel for individual use	40m roll(*1)	HD230 (*2)	HD03020 (*3)
		60m roll(*1)	HD03119 (*2)	HD03120 (*3)

(*1) Need (HD01003) connecting to 1/4" High Pressure Hose and 1/4" Pipe Cleaning Hose.
 (*2) For 12/80GP, SUS One Action Coupler only available.
 (*3) For 10/100G, Quick Coupler only available.

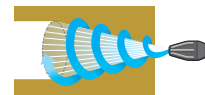
Turbo Gun



Peeling off grape tree bark



Straight spray nozzle of high pressure water rotates to form powerful conical spray.



- Powerful spray gun that doubles the performance of cleaner.
- Cleaning of construction equipment, concrete road
- Removing paint and foundation treatment for roofing.
- Peeling off tree bark, removing shells from hull of ship.

Applicable Model	Item	Code No.	
		With Quick Coupler	With SUS One Action Coupler
10/100G	Turbo Gun	HD10023	—
12/80G · GP, 16/150G · GP · GS, 16/200G · GP · GS, 13/100GS, 13/150G		HD10023(*)	HD03118
21/90G · GP, 21/100GS, 21/80GS		HD237	HD08019

(*) For 12/80GP, SUS One Action Coupler only available

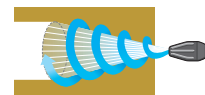
Turbo Lance



Peeling off tree bark



- Powerful spray gun that doubles the performance of cleaner.
- Cleaning of construction equipment, concrete road
- Removing paint and foundation treatment for roofing.
- Removing shells from hull of ship.



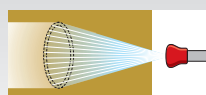
Applicable Model	Item	Code No. (With Quick Coupler)
18/150	Turbo Gun	HD1506

Turbine Gun

Straight spray



Conical spray

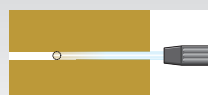


- Protection of dust from demolition of building and house.
- Dust protection for demolition of building and house.
- Changeable from straight spray to conical spray by shift lever.

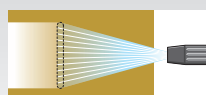
Applicable Model	Item	Code No.	
		With Quick Coupler	With SUS One Action Coupler
60/50GP	Turbine Gun	HD321	HD15001
30/100GS		HD3011	HD13002
30/50G · GP		—	HD26005
16/150G · GP · GS		—	HD04003
16/200G · GP · GS 13/100GS		—	HD06003
21/80GS, 21/90G · GP 21/100GS		—	HD08003
13/150G		—	HD10003

Trigger Gun-Lance

Straight spray



Conical spray



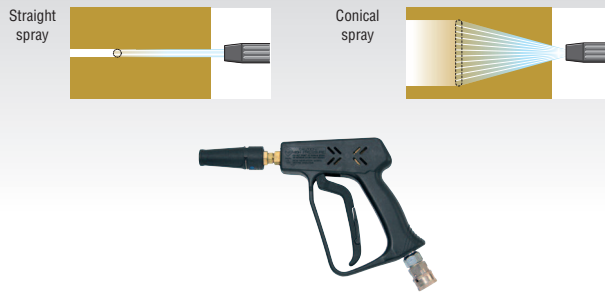
Variable Lance

- Spray can be changed from straight to fan shape without stages.



Trigger Gun

Applicable Model	Item	Code No.
		With Quick Coupler
10/100G	Trigger Gun	HD22035
	Variable Lance	HD22036

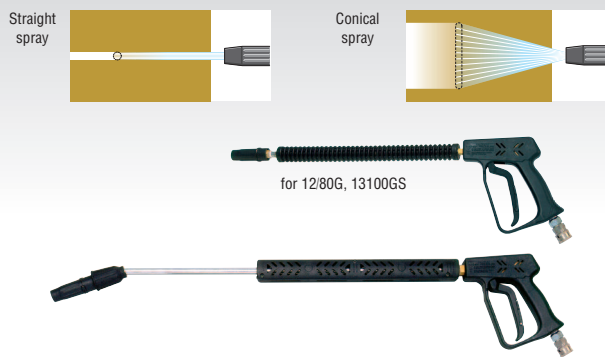
Hand Gun





· Suitable for cleaning of tight working space, such as water reservoir.

Applicable Model	Item	Code No.	
		With Quick Coupler 	With SUS One Action Coupler 
10/100G	Hand Gun	HD22031	—
12/80G · GP		HD007	HD03012
16/150G · GP · GS		HD208	HD04004
16/200G · GP · GS 13/100GS		—	HD06004
21/90G · GP 21/80GS, 21/100GS		HD233	HD08005
13/150G		—	HD10004

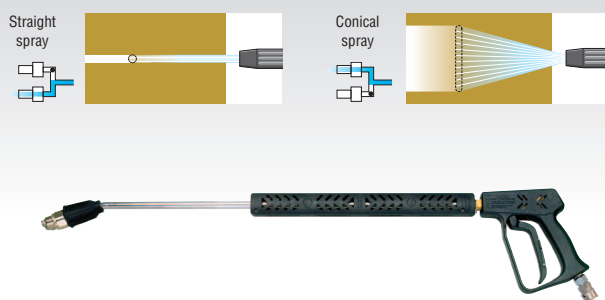
Variable Gun





· Spray can be changed from straight to fan shape without stages.

Applicable Model	Item	Code No.	
		With Quick Coupler 	With SUS One Action Coupler 
10/100G	Variable Gun	HD22028	—
12/80G · GP		HD001	HD03007
16/150G · GP · GS		HD207	HD04001
16/200G · GP · GS 13/100GS		HD250	HD06001
21/90G · GP 21/80GS, 21/100GS		HD235	HD08001
13/150G		HD1316	HD10001

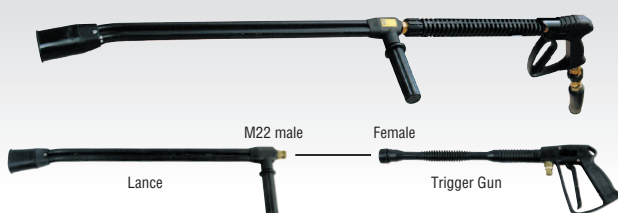
Dual Gun



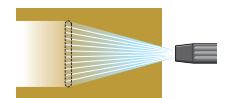
· Two nozzles make enables two types of spray, i.e. straight and fan shape.
· Straight spray by twisting right and fan shape spray by twisting left.


Applicable Model	Item	Code No.	
		With Quick Coupler 	With SUS One Action Coupler 
10/100G	Dual Gun	HD22032	—
16/150G · GP · GS		HD206	HD04002
16/200G · GP · GS 13/100GS		HD249	HD06002
21/90G · GP 21/80GS, 21/100GS		HD232	HD08002
12/80G · GP		—	HD03008
30/150G		—	HD10002
30/100GS		—	HD13001
30/50G · GP		—	HD26011

Fan Shape Spray Gun

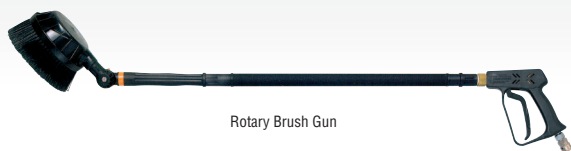


· For washing with detergent for bath room, swimming pool, container, tank, duct, food processing equipment.
· Fan shape spray pressure can be changed between high and low pressure by the pressure adjustment handle.
· Turn the handle for low pressure and detergent can be mixed.





Applicable Model	Item	Code No.
		With Quick Coupler 
7.5/40H	Fan Shape Spray Gun	HD02002
15/80H		HD02003
15/100H		HD02004

Rotary Brush



Rotary Brush Gun

- Suitable for cleaning smooth surface, such as tile.
- Cleaning smooth surface, such as tile, window glass, etc.
- Effective cleaning with rotating brush by water pressure.

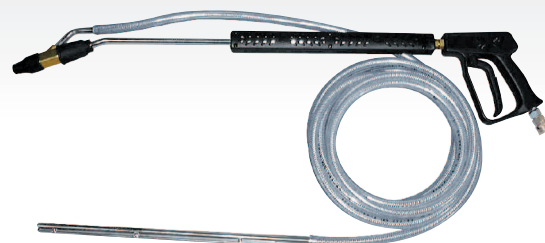
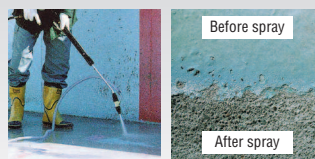
Applicable Model	Item	Code No.	
		With Quick Coupler 	With SUS One Action Coupler 
All Models (except 440, 30/100GS, 30/50G · GP, 60/50GP)	Rotary Brush(*1)	HD008(*3)	HD03011(*2)

(*1) For cold water only



(*2) For 12/80GP, SUS One Action Coupler only available

(*3) For 10/100G, Quick Coupler only available

Sand Blast Kit



- Attach in the same manner as ordinary gun and blast sand with water to remove paint and corrosion.
- Remove hard to clean dirt, paint, corrosion and scale.
- Spray silicon sand #4 with water against object for powerful washing.

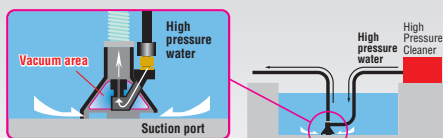
Applicable Model	Item	Code No.	
		With Quick Coupler 	With SUS One Action Coupler 
10/100G 12/80G · GP 16/150G · GP · GS 16/200G · GP · GS 13/100GS	Sand Blast Kit A(*1)	HD450(*2)	HD03010(*3)
21/90G · GP 21/80GS 21/100GS	Sand Blast Kit B	HD451	HD08004

(*1) For cold water only

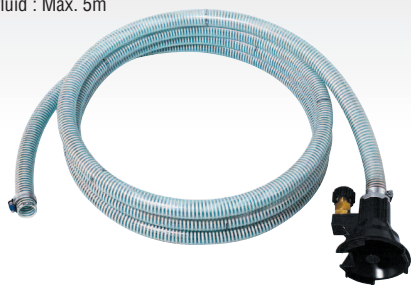
(*2) For 12/80GP, SUS One Action Coupler only available

(*3) For 10/100G, Quick Coupler only available



Residual Water Treatment Kit



Head of fluid : Max. 5m








- Attach to the cleaner and dispose residual water in tank and water reservoir.
- Easily dispose residual water in manhole, tank and water reservoir.
- Creates pressure difference by spraying high pressure water upward and suck out residual water.

Applicable Model	Item	Code No.	
		With Quick Coupler 	With SUS One Action Coupler 
10/100G	Residual Water Treatment Kit	HD22033	—
12/80G · GP		HD023	HD03013
16/150G · GP · GS		HD218	HD04005
16/200G · GP · GS 13/100GS		HD275	HD06005
21/90G · GP 21/80GS, 21/100GS		HD243	HD08006
30/50G · GP		—	HD26010
60/50GP		HD327	HD15002

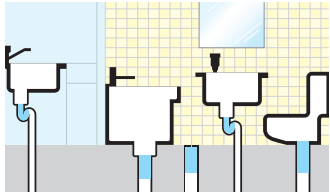
PORTABLE DRAIN CLEANING MACHINES



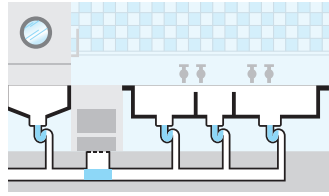
Diversified selection from home use to professional use

Capacity			
	 H-150		 E-150
	 H-75	 B-75	 E-75
	Manual Type	Electric Charging Type	Electric Powered Type

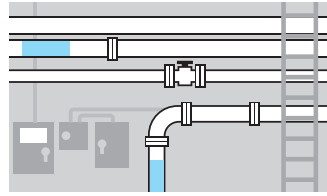
Powerful and professional performance with flexible wire and variety of Heads for



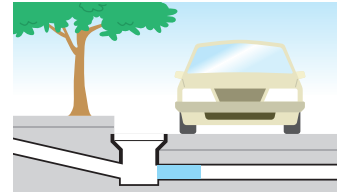
Home use
Kitchen, bathroom, cleaning toilet, etc.



Restaurant
Kitchen, toilet maintenance of piping



Building, factory
Toilet, hot water service room.



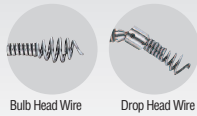
Public facilities
Toilet, drainpipe and water system.

Drain Cleaner Series

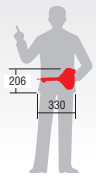
Ø20 ~ 75mm

Drain Cleaner H-75

Manual Type



Bulb Head Wire Drop Head Wire



Ø20 ~ 100mm

Drain Cleaner H-150

Manual Type

PAT.



Necessary equipment to be kept at home, restaurant, apartment, school, etc.

Wire type drain cleaner for washing basin, kitchen sink, bathroom, toilet, etc.

Very effective for clearing clogged pipe in home, kitchen of restaurant, coffee shop, toilet and washing basin.

Cleaning of toilet, bathroom, washing room, kitchen of restaurant and coffee shop.

- Plastic wire drum for easy cleaning after use.
- High quality wire smoothly work for bent pipe.

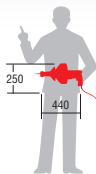
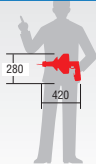
- Head can be changed by one action according to the type of clog.
- 20m wire can be stored though it compact and light weight.

- High quality wire can clear the clog of not only the straight pipe but bent pipe also in short working time.
- 4 rubber feet hold the unit firmly for stable work.

Ø20 ~ 100mm

Drain Cleaner B-75 · E-75

Electric powered Type



Ø20 ~ 100mm

Drain Cleaner E-150

Electric powered Type



Compact design for working in tight space. Suitable for small clogged pipe of kitchen sink, washing basin, toilet.

Without electric power source, the powerful rechargeable battery (1 hour recharge) let you work safe. (Model B-75)

Professional type electric powered drain cleaner for clearing clog of drain pipe.

Wide range of use from toilet and bathroom of house to building, drain pipe, siding pipe, etc.

- Speedy work with one action chuck.
- Compact design enables you to work in tight space.
- Convenient reversible motor rotation at variable speed for clearing clogged pipe

- 15m wire can be stored though it compact and light weight.
- Can pass trap with cross bar, S trap, P trap.
- Safe with double insulation
- High power by 1 hour charged battery. (Model B-75)

- Interchangeable head for the type of clearing work.
- 20m wire can be stored though it compact and light weight.
- Quiet with condenser motor to work inside house.

- Cleans bent pipe by durable PC wire.
- Reversible rotation motor of variable speed is ideal for clog clearing.
- 4 rubber feet hold the unit firmly for stable work.

Item	H-75(Bulb Head)	H-75(Drop Head)	H-150	B-75	E-75	E-150
Code No.	DH75B	DH75D	DH150	DB75B	DE75B	DE150
Cleaning Pipe Diameter	Ø20mm ~ Ø75mm		Ø20mm ~ Ø100mm	Ø20mm ~ Ø100mm	Ø20mm ~ Ø100mm	Ø20mm ~ Ø100mm
capacity	7.5m		20m	15m	15m	20m
Driving power	Manual		Manual	Battery	Electric	Electric
Weight	2.6kg		10.2 kg	4.2kg	5.3kg	18.3kg
Dimensions	(L) 330 x (H) Ø206mm		(L)510 x(W)290x(H)330mm	(L)420x(W)210x(H)280mm	(L)440x(W)210x(H)250mm	(L)430x(W)290x(H)385mm
Usable wire diameter	Ø8mm		Ø8mm · Ø10mm	Ø8mm · Ø10mm	Ø8mm · Ø10mm	Ø8mm · Ø10mm · Ø13mm
Standard Wire	Bulb Head Wire (8m x Ø8mm)	Dop Head Wire (8m x Ø8mm)	Universal Wire (15.5mxØ10mm)	Bulb Head Wire (8mxØ8mm)	Bulb Head Wire (8mxØ8mm)	PC Wire (15.5mxØ13mm)
accessories	-		Funnel 32 · 60	-	-	Double Grease Cutter 40, Bulb 24
Others	-		Wire Key, Hex Wrench	Battery Charger, Case	Case	Wire Key, Hex Wrench


Wire for Drain Cleaner

Diversified selection, high quality wire for perfect cleaning.




· Easy and quick removal of wire connection and Head.

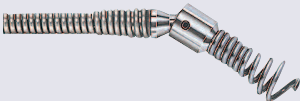
Wire with Bulb Head

- 1 Popular Wire for various types of clogs. 


Coupling Wire

- 4 Capable of fixing the most suitable Head depending type of clogs. 


Wire with Drop Head

- 2 Suitable for complicated piping with bents. 


Universal Wire

- 5 Capable of fixing the most suitable Head depending type of clogs and suitable for complicated piping with bents. 

SC Wire with Bulb Head

- 3 Popular Wire for various types of clogs. 

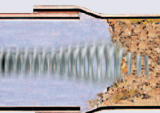

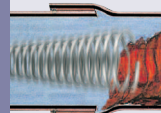
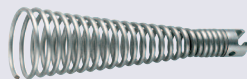
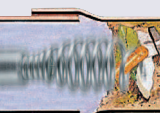


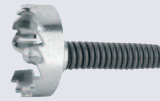
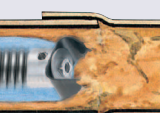

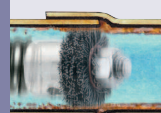

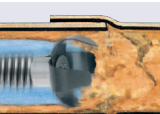

PC Wire

- 6 With plastic core to prevent plugging and Capable of fixing the most suitable Head depending type of clogs. 



Wire for Drain Cleaner

Item (Dia x Length)		Code No.	Pipe Dia Ømm	H-75 	H-150 	B-75 	E-75 	E-150 
1	Wire with Bulb Head	Ø8mm x 8.0m	20~75	●	●	●	●	●
		Ø8mm x 15.5m		●	●	●	●	
		Ø8mm x 20.0m		●	●	●	●	
2	Wire with Drop Head	Ø8mm x 8.0m	20~75	●	●	●	●	●
		Ø8mm x 15.5m		●	●	●	●	
		Ø8mm x 20.0m		●	●	●	●	
3	SC Wire with Bulb Head	Ø8mm x 7.5m	20~75	●	●	●	●	●
4	Coupling Wire	Ø10mm x 8.0m	30~100	●	●	●	●	●
		Ø10mm x 15.5m		●	●	●	●	
		Ø10mm x 20.0m		●	●	●	●	
5	Universal Wire	Ø10mm x 8.0m	30~100	●	●	●	●	●
		Ø10mm x 15.5m		●	●	●	●	
		Ø10mm x 20.0m		●	●	●	●	
6	PC Wire	Ø13mm x 15.5m	50~100					●

Head for Drain Cleaner

1		<p>Bulb Head For easy cleaning of drains with a number of elbows.</p> 	5		<p>Funnel Head To remove blockages caused by rags. Also for retrieving.</p> 
2		<p>Drop Head For cleaning of complicated piping with bents.</p> 	6		<p>Multi Head For stoppages in toilet.</p> 
3		<p>Grease Cutter For piled up grease, destruction of rag.</p> 	7		<p>Wire Brush For final cleaning and regular maintenance work.</p> 
4		<p>Double Grease Cutter For piled up grease, destruction of rag.</p> 			

Heads for Ø10 · 13 · 16mm Wire

Item		Code No.	Pipe Dia Ømm	Head Dia Ømm	H-150 	E-150 
1	Bulb Head	48601	30 ~ 75	24	●	●
		48608	30 ~ 75	15	●	●
2	Drop Head	48606	30 ~ 75	24	●	●
		48613	30 ~ 50	22	●	●
3	Grease Cutter	48616	40 ~ 75	36	●	●
		48617	65 ~ 100	62	●	●
		48602	50 ~ 75	40	●	●
5	Funnel Head	48609	30 ~ 75	24	●	●
		48610	40 ~ 100	32	●	●
		48611	50 ~ 100	38	●	●
		48612	75 ~ 100	60	●	●
6	Multi Head	48621	50 ~ 100	40	●	●
7	Wire Brush	48618	25 ~ 50	20	●	●
		48619	40 ~ 75	30	●	●
		48626	50 ~ 75	40	●	●
		48620	75 ~ 100	50	●	●

Clear Scope

Purpose Most suitable for inspection of short and small diameter pipe. For inspection of piping, engine, heat-exchanger, boiler, etc.

Clear Scope 60 (Interlock Type)



Clear Scope Digital 100



1 Interlock type



· Interlock type and holds the desired bent shape.

3 Power Source

· Operates on 2 dry batteries and easy to carry.

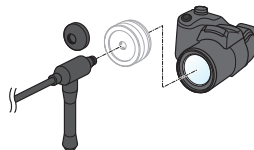


2 Small Size Head

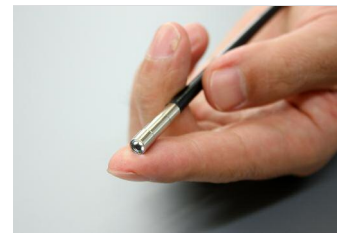
· The diameter of scope tip is small and suitable for inspection of small diameter pipe.



Save picture



· Store data by using digital camera and video.

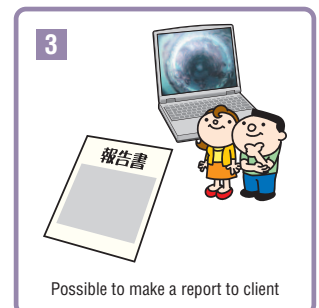
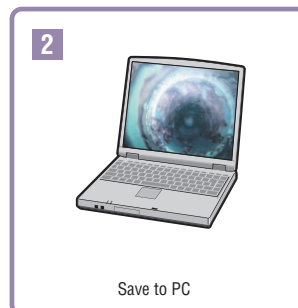
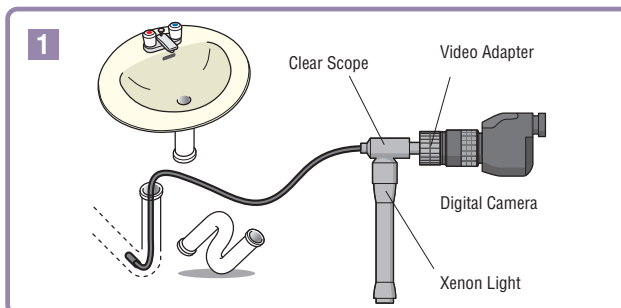


Item	Clear Scope 60(Interlock type)
Code No.	FS060
Length of Fiber	600mm
Maximum bending R	60mm
Focus distance	10mm~
Pixel	3,500
Diameter of tip	Ø7mm
Operating temperature	in air -20~60°C in water 10~30°C
Protective construction	Water-proofing 0.1 atmospheric pressure 0.1 MPa (fiber area only)
Image angle	60°
Standard accessories	Nipple Ball x 1 pce., Protective Cap, Battery x 2 pcs., Case

Item	Clear Scope Digital 100
Code No.	TH100
Length of Fiber	1,000mm
Maximum bending R	50mm
Focus distance	15mm~100mm
Pixel	3.5" TFT LCD Display 320 x 420 Pixel
Diameter of tip	Ø5.5mm
Operating temperature	in air -20~60°C in water 10~60°C
Protective construction	IP57
Image angle	67°
Battery	Rechargeable Li-Polymer charger with charging cable
Standard accessories	AC Adaptor, USB Cable, 1GB SD Card, Carrying Case

Store the picture by using Digital Camera or Video

Possible to take a picture together with Video Adapter, Xenon Light



Digital Camera should have zoom function and more than 2 million pixel

Xenon Light

Optional Accessories

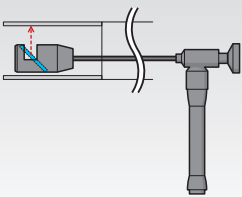


· Light to connect Clear Scope for recording by Digital Camera-Video.

Item	Code No.
Xenon Light	FS321

Side Viewing Attachment

Optional Accessories

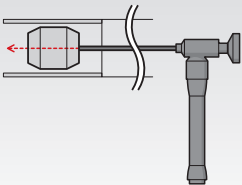


· Attachment to view the side.

Item	Code No.
Side Viewing Attachment	FS307

Clear Head

Optional Accessories

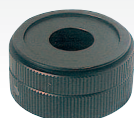
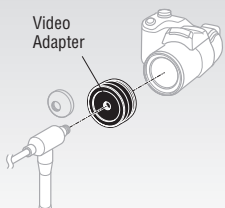


· Hold Clear Scope top at the center of pipe.

Item	Code No.	Pipe Dia
Clear Head Ø18	FS305	Ø20mm ~ Ø40mm
Clear Head Ø30	FS306	Ø35mm ~ Ø50mm

Video Adapter

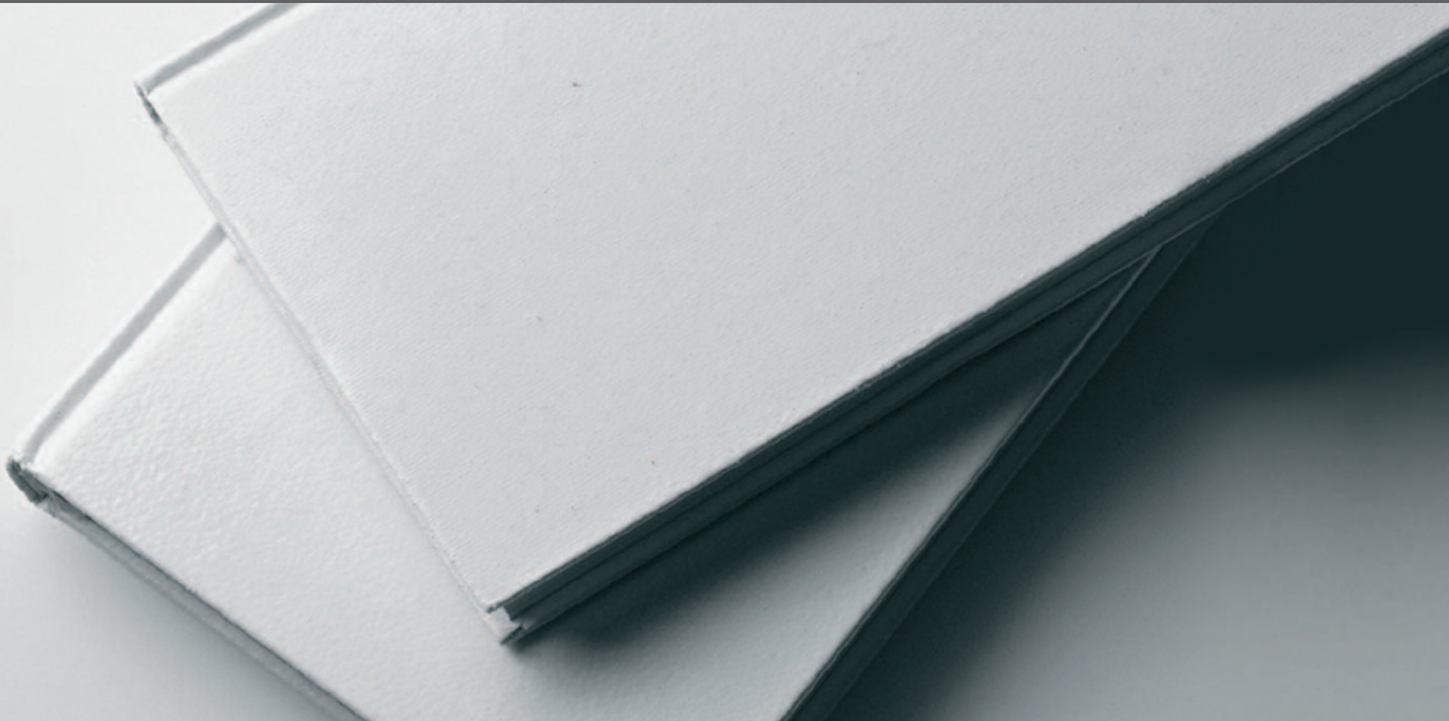
Optional Accessories



· Adapter to connect Clear Scope and Digital Camera-Video.

Item	Code No.	Thread Size	
Video Adapter	27	FS312	27mm
	30	FS313	30mm
	30.5	FS314	30.5mm
	37	FS315	37mm
	43	FS316	43mm
	46	FS317	46mm
	49	FS318	49mm
52	FS319	52mm	

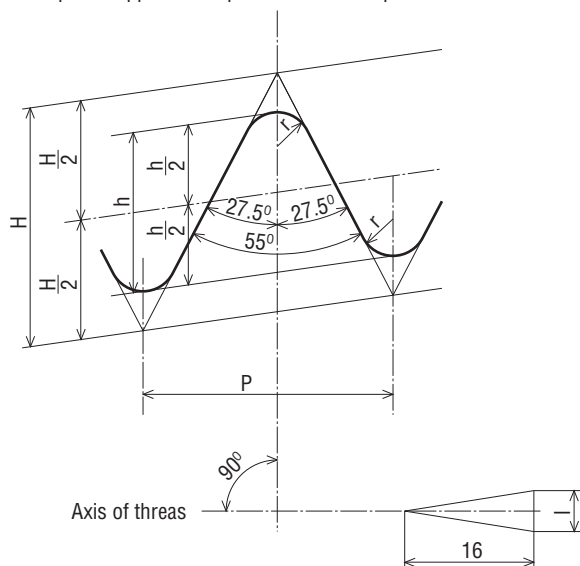
TECHNICAL INFORMATION



TECHNICAL INFORMATION

Taper pipe threads (JIS B0203:1999) (BSPT) Basic Thread Profile, Basic Dimensions and Tolerances

Basic profile applied for taper external and taper internal threads



Thick solid line shows the basic thread profile.

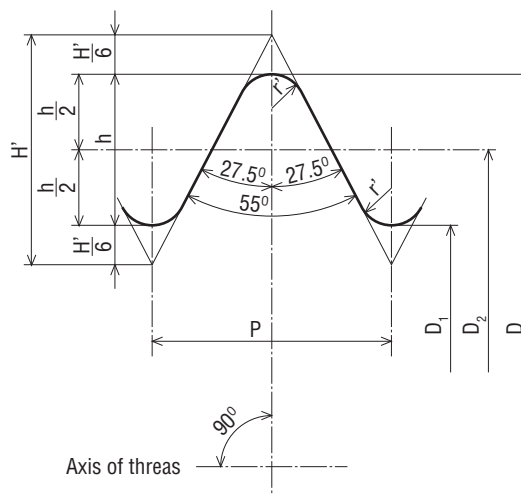
$$P = \frac{25.4}{n}$$

$$H = 0.960\ 237\ P$$

$$h = 0.640\ 327\ P$$

$$r = 0.137\ 278\ P$$

Basic profile applied for parallel internal threads



Thick solid line shows the basic thread profile.

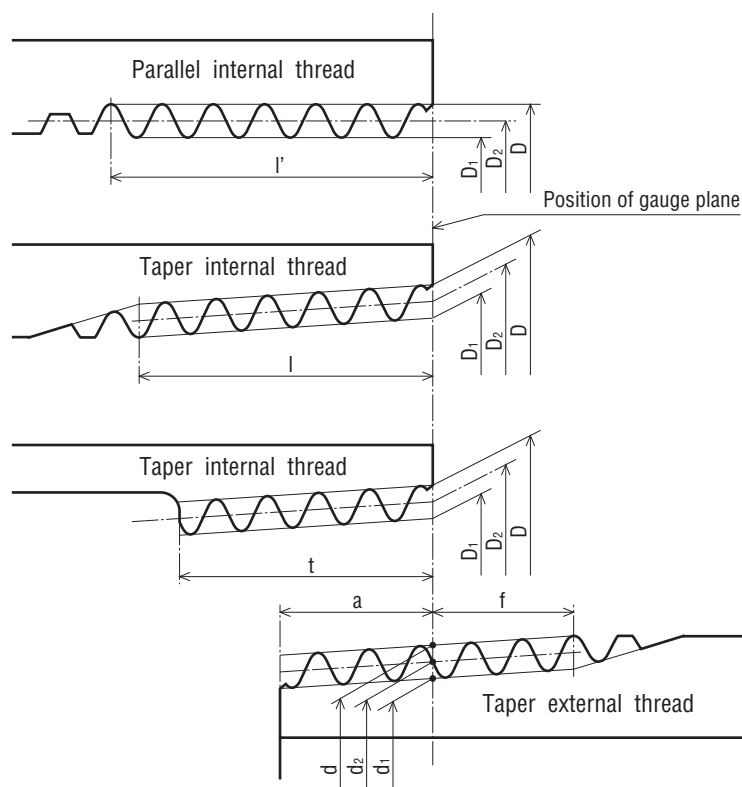
$$P = \frac{25.4}{n}$$

$$H = 0.960\ 491\ P$$

$$h = 0.640\ 327\ P$$

$$r = 0.137\ 329\ P$$

Fitting between taper external thread and taper internal or parallel internal thread



Taper pipe threads (JIS B0203:1999) (BSPT)

Basic Thread Profile, Basic Dimensions and Tolerances (concluded)

(Unit : mm)

Designation of thread size(°)	Thread				Gauge diameter			Position of gauge plane			*Tolerance on D, D2, and D1 of parallel internal thread"	Length of useful (min.)				Size of carbon steel pipe for ordinary piping (Reference)		
	Number of threads (in 25.4mm)	Pitch (informative)	Height of thread	Radius	External thread			External thread		Internal thread		From position of gauge plane to larger diameter end	External thread		Internal thread		Outside diameter	Thickness
					Major dia.	Pitch dia.	Minor dia.	From pipe end		At pipe end			When three is incomplete thread part	When there is no incomplete thread part				
								Gauge length	Axial tolerance	Axial tolerance					Taper internal thread	Parallel internal thread		
					d	d_2	d_1	Gauge length	Axial tolerance	Axial tolerance			From position of gauge plane to smaller diameter end	From end of pipe or coupler	(*)			
					Internal thread													
Major dia.	Pitch dia.	Minor dia.																
D			a	b	c	f	l	l	t									
R1/16	28	0.9071	0.581	0.12	7.7230	7.142	6.561	3.97	±0.91	±1.13	±0.071	2.5	6.2	7.4	4.4	-	-	
R1/8	28	0.9071	0.581	0.12	9.7280	9.147	8.566	3.97	±0.91	±1.13	±0.071	2.5	6.2	7.4	4.4	10.5	2.0	
R1/4	19	1.3368	0.856	0.18	13.157	12.301	11.445	6.01	±1.34	±1.67	±0.104	3.7	9.4	11.0	6.7	13.8	2.3	
R3/8	19	1.3368	0.856	0.18	16.662	15.806	14.950	6.35	±1.34	±1.67	±0.104	3.7	9.7	11.4	7.0	17.3	2.3	
R1/2	14	1.8143	1.162	0.25	20.955	19.793	18.631	8.16	±1.81	±2.27	±0.142	5.0	12.7	15.0	9.1	21.7	2.8	
R3/4	14	1.8143	1.162	0.25	26.441	25.279	24.117	9.53	±1.81	±2.27	±0.142	5.0	14.1	16.3	10.2	27.2	2.8	
R1	11	2.3091	1.479	0.32	33.249	31.770	30.291	10.39	±2.31	±2.89	±0.181	6.4	16.2	19.1	11.6	34	3.2	
R1 1/4	11	2.3091	1.479	0.32	41.910	40.431	38.952	12.70	±2.31	±2.89	±0.181	6.4	18.5	21.4	13.4	42.7	3.5	
R1 1/2	11	2.3091	1.479	0.32	47.803	46.324	44.845	12.70	±2.31	±2.89	±0.181	6.4	18.5	21.4	13.4	48.6	3.5	
R2	11	2.3091	1.479	0.32	59.614	58.135	56.656	15.88	±2.31	±2.89	±0.181	7.5	22.8	25.7	16.9	60.5	3.8	
R2 1/2	11	2.0391	1.479	0.32	75.184	73.705	72.226	17.46	±3.46	±3.46	±0.216	9.2	26.7	30.1	18.6	76.3	4.2	
R3	11	2.0391	1.479	0.32	87.884	86.405	84.926	20.64	±3.46	±3.46	±0.216	9.2	29.8	33.3	21.1	89.1	4.2	
R4	11	2.0391	1.479	0.32	113.03	111.551	110.072	25.40	±3.46	±3.46	±0.216	10.4	35.8	39.3	25.9	114.3	4.5	
R5	11	2.0391	1.479	0.32	138.43	136.951	135.472	28.58	±3.46	±3.46	±0.216	11.5	40.1	43.5	29.3	139.8	4.5	
R6	11	2.0391	1.479	0.32	163.83	162.351	160.872	28.58	±3.46	±3.46	±0.216	11.5	40.1	43.5	29.3	165.2	5.0	

Notes (3) This designation is for taper external threads, and for taper internal threads and parallel internal threads, the notation R shall be substituted by Rc or Rp. (See clause 4.)

Notes (4) In case of the taper thread, length from position of gauge plane to smaller diameter end, and in case of the parallel internal thread, length from the end of pipe or coupler.

Remarks 1 The thread shall be perpendicular to the axis, and the pitch shall be measured in parallel with the axis.

Remarks 2 The length of useful thread is the length of completely screwed parts, except the last several threads which may be truncated at the crest by its intersection with the cylindrical surface of the pipe or coupler. The chamfered end of the pipe or coupler, is included in the length of useful thread part.

Remarks 3 When it is difficult to make the dimension a, f or l conform to the figure in this table, refer it to the appropriate standard of the component.

Steel Pipe (JIS)

Type		Steel Galvanized Pipe		Schedule Pipe						
Nominal Size		O / D (mm)	I / D (mm)	O / D (mm)	Schedule 10	20	30	40	60	80
(A)	(B)									
6	1/8	10.5	2.0	10.5				1.7	2.2	2.4
8	1/4	13.8	2.3	13.8				2.2	2.4	3.0
10	3/8	17.3	2.3	17.3				2.3	2.8	3.2
15	1/2	21.7	2.8	21.7				2.8	3.2	3.7
20	3/4	27.2	2.8	27.2				2.9	3.4	3.9
25	1	34.0	3.2	34.0				3.4	3.9	4.5
32	1 1/4	42.7	3.5	42.7				3.6	4.5	4.9
40	1 1/2	48.6	3.5	48.6				3.7	4.5	5.1
50	2	60.5	3.8	60.5		3.2		3.9	4.9	5.5
65	2 1/2	76.3	4.2	76.3		4.5		5.2	6.0	7.0
80	3	89.1	4.2	89.1		4.5		5.5	6.6	7.6
90	3 1/2	101.6	4.2	101.6		4.5		5.7	7.0	8.1
100	4	114.3	4.5	114.3		4.9		6.0	7.1	8.6
125	5	139.8	4.5	139.8		5.1		6.6	8.1	9.5
150	6	165.2	5.0	165.2		5.5		7.1	9.3	11.0
175	7	190.7	5.3	—		—		—	—	—
200	8	216.3	5.8	216.3		6.4	7.0	8.2	10.3	12.7
225	9	241.8	6.2	—		—	—	—	—	—
250	10	267.4	6.6	267.4		6.4	7.8	9.3	12.7	15.1
300	12	318.5	6.9	318.5		6.4	8.4	10.3	14.3	17.4
350	14	355.6	7.9	355.6	6.4	7.9	9.5	11.1	15.1	19.0
400	16	406.4	7.9	406.4	6.4	7.9	9.5	12.7	16.7	21.4
450	18	457.2	7.9	457.2	6.4	7.9	11.1	14.3	19.0	23.8
500	20	508.0	7.9	508.0	6.4	9.5	12.7	15.1	20.6	26.2

TECHNICAL INFORMATION

Steel Pipe for Structure (JIS)

Type	Nominal Size	D / D (mm)	Thickness (mm)	Rated Pressure	Applications
				(kg/cm ²)	
K Type	1/4(8A)	9.53	0.89	84.8	High Pressure Pipe Line
	3/8(10A)	12.70	1.25	89.7	
	1/2(15A)	15.88	1.25	70.6	
	5/8(16A)	19.05	1.25	58.2	
	3/4(20A)	22.23	1.65	66.3	
	1(25A)	28.58	1.65	50.8	
	1.1/4(32A)	34.93	1.65	41.2	
	1.1/2(40A)	41.28	1.83	38.6	
	2(50A)	53.98	2.11	33.9	
	2.1/2(65A)	66.68	2.41	31.3	
	3(80A)	79.38	2.77	30.2	
	4(100A)	104.78	3.40	28.0	
	5(125A)	130.18	4.06	26.9	
	6(150A)	155.58	4.88	27.0	
L Type	1/4(8A)	9.53	0.76	71.6	Gas Pipe Line, Cold & Hot Pipe Line
	3/8(10A)	12.70	0.89	62.4	
	1/2(15A)	15.88	1.02	56.9	
	5/8(16A)	19.05	1.07	49.4	
	3/4(20A)	22.23	1.14	44.9	
	1(25A)	28.58	1.27	38.7	
	1.1/4(32A)	34.93	1.40	34.8	
	1.1/2(40A)	41.28	1.52	31.9	
	2(50A)	53.98	1.78	28.5	
	2.1/2(65A)	66.68	2.03	26.2	
	3(80A)	79.38	2.29	24.8	
	4(100A)	104.78	2.79	22.9	
	5(125A)	130.18	3.18	20.9	
	6(150A)	155.58	3.56	19.6	

Type	Nominal Size	D / D (mm)	Thickness (mm)	Rated Pressure	Applications		
				(kg/cm ²)			
M Type	3/8(10A)	12.70	0.64	44.1	Cold & Hot Pipe Line and forgeneral		
	1/2(15A)	15.88	0.71	39.0			
	3/4(20A)	22.23	0.81	31.5			
	1(25A)	28.58	0.89	26.8			
	1.1/4(32A)	34.93	1.07	26.4			
	1.1/2(40A)	41.28	1.24	25.9			
	2(50A)	53.98	1.47	23.4			
	2.1/2(65A)	66.68	1.65	21.2			
	3(80A)	79.38	1.83	19.7			
	4(100A)	104.78	2.41	19.7			
	5(125A)	130.18	2.77	18.2			
	6(150A)	155.58	3.10	17.0			
	N Type	1/4(8A)	9.53	0.46		42.0	Ventilation and forgeneral
		3/8(10A)	12.70	0.46		31.3	
1/2(15A)		15.88	0.51	27.7			
3/4(20A)		22.23	0.56	21.6			
1(25A)		28.58	0.61	18.2			
1.1/4(32A)		34.93	0.71	17.4			
1.1/2(40A)		41.28	0.81	16.8			
2(50A)		53.98	0.91	14.4			
2.1/2(65A)		66.68	1.02	13.0			
3(80A)		79.38	1.22	13.1			
4(100A)		104.78	1.22	9.9			
5(125A)		130.18	1.42	9.2			
6(150A)		155.58	1.63	8.9			

Stainless Steel Pipe (JIS G3459)

Nominal Size			Nominal Thickness														
A	B	D / D (mm)	Schedule 5S		Schedule 10S		Schedule 20S		Schedule 40		Schedule 90		Schedule 90		Schedule 90		
			Thickness (mm)	Weight (kg/m)		Thickness (mm)	Weight (kg/m)		Thickness (mm)	Weight (kg/m)		Thickness (mm)	Weight (kg/m)		Thickness (mm)	Weight (kg/m)	
				Type			Type			Type			Type			Type	
				304 304H 304L 321 321H	309 309S 310 310S 316 316H 316L 317 317L 347 347H		304 304H 304L 321 321H	309 309S 310 310S 316 316H 316L 317 317L 347 347H		304 304H 304L 321 321H	309 309S 310 310S 316 316H 316L 317 317L 347 347H		304 304H 304L 321 321H	309 309S 310 310S 316 316H 316L 317 317L 347 347H		304 304H 304L 321 321H	309 309S 310 310S 316 316H 316L 317 317L 347 347H
6	1/8	10.5	1.0	0.237	0.238	1.2	0.278	0.280	1.5	0.336	0.338	1.7	0.373	0.375	2.4	0.484	0.487
8	1/4	13.8	1.2	0.377	0.379	1.65	0.499	0.503	2.0	0.588	0.592	2.2	0.636	0.640	3.0	0.807	0.812
10	3/8	17.3	1.2	0.481	0.484	1.65	0.643	0.647	2.0	0.762	0.767	2.3	0.859	0.865	3.2	1.12	1.13
15	1/2	21.7	1.65	0.824	0.829	2.1	1.03	1.03	2.5	1.20	1.20	2.8	1.32	1.33	3.7	1.66	1.67
20	3/4	27.2	1.65	1.05	1.06	2.1	1.31	1.32	2.5	1.54	1.55	2.9	1.76	1.77	3.9	2.26	2.28
25	1	34.0	1.65	1.33	1.34	2.8	2.18	2.19	3.0	2.32	2.33	3.4	2.59	2.61	4.5	3.31	3.33
32	1 1/4	42.7	1.65	1.69	1.70	2.8	2.78	2.80	3.0	2.97	2.99	3.6	3.51	3.53	4.9	4.61	4.64
40	1 1/2	48.6	1.65	1.93	1.94	2.8	3.19	3.21	3.0	3.41	3.43	3.7	4.14	4.16	5.1	5.53	5.56
50	2	60.5	1.65	2.42	2.43	2.8	4.02	4.06	3.5	4.97	5.00	3.9	5.50	5.53	5.5	7.54	7.58
65	2 1/2	76.3	2.1	3.88	3.91	3.0	5.48	5.51	3.5	6.35	6.39	5.2	9.21	9.27	7.0	12.1	12.2
80	3	89.1	2.1	4.55	4.58	3.0	6.43	6.48	4.0	8.48	8.53	5.5	11.5	11.5	7.6	15.4	15.5
90	3 1/2	101.6	2.1	5.20	5.24	3.0	7.37	7.42	4.0	9.72	9.79	5.7	13.6	13.7	8.1	18.9	19.0
100	4	114.3	2.1	5.87	5.91	3.0	8.32	8.37	4.0	11.0	11.1	6.0	16.2	16.3	8.6	22.6	22.8
125	5	139.8	2.8	9.56	9.62	3.4	11.6	11.6	5.0	16.3	16.9	6.6	21.9	22.0	9.5	30.8	31.0
150	6	165.2	2.8	11.3	11.4	3.4	13.7	13.8	5.0	20.0	20.1	7.1	28.0	28.1	11.0	42.3	42.5
200	8	216.3	2.8	14.9	15.0	4.0	21.2	21.3	6.5	34.0	34.2	8.2	42.5	42.8	12.7	64.4	64.8
250	10	267.4	3.4	22.4	22.5	4.0	26.2	26.4	6.5	42.2	42.5	9.3	59.8	50.2	15.1	94.9	95.5
300	12	318.5	4.0	31.3	31.5	4.5	35.2	35.4	6.5	50.5	50.8	10.3	79.1	79.6	17.4	131	131

Physicality of refrigerants

Refrigerant		Number (ASHRAE34)	Ingredients	Composition (wt%)	Boiling point (°C)	Life duration in the atmosphere (years)	ODP (Ozone Depletion Potential)	GWP (*1) (Global Warming Potential)	Flammability (*2) (ASHRAE34)
CFC	Single	R11	-	-	23.8	45.0	1.0	4,600	Nonflammable (A1)
		R12	-	-	-29.8	100.0	1.0	10,600	Nonflammable (A1)
	Mixture	R502	R22/115	48.8/51.2	-45.4	-	0.334	4,520	Nonflammable (A1)
HCFC	Single	R123	-	-	27.7	1.4	0.02	120	Nonflammable (B1)
		R124	-	-	-11.9	6.1	0.022	620	Nonflammable (A1)
		R22	-	-	-40.8	11.9	0.055	1,700	Nonflammable (A1)
HFC	Single	R23	-	-	-82.1	260.0	0	12,000	Nonflammable (A1)
		R32	-	-	-51.7	5.0	0	550	Low flammable (A2)
		R125	-	-	-48.1	29.0	0	3,400	Nonflammable (A1)
		R134a	-	-	-26.3	13.8	0	1,300	Nonflammable (A1)
		R143a	-	-	-47.2	52.0	0	4,300	Low flammable (A2)
HFC	Mixture	R404A	R125/143a/134a	44/52/4	-46.5	-	0	3,780	Nonflammable (A1/A1)
		R407A	R32/125/134a	23/25/52	-43.6	-	0	1,650	Nonflammable (A1/A1)
		R410A	R32/125	50/50	-51.4	-	0	1,980	Nonflammable (A1/A1)
		R507A	R125/143a	50/50	-46.7	-	0	2,210	Nonflammable (A1/A1)
Hydrocarbon		R290	Propane	-	-42.1	Several months	0	<3	Flammable (A3)
		R600a	Isobutane	-	-11.7	Several weeks	0	<3	Flammable (A3)
Ammonia		R717	-	-	-33.3	14	0	<1	Low flammable (B2)
PFC		R14 (CF4)	-	-	-128.0	50,000	0	6,500	Nonflammable (A1)
		R116 (C2F6)	-	-	-78.3	10,000	0	9,200	Nonflammable (A1)
SF6			-	-	-63.9	3,200	0	23,900	Nonflammable (-)

(*1) IPCC-2001 (integral period 100 years)

(*2) A Low toxic, B Toxic, 1 Nonflammable, 2 Low flammable, 3 High flammable

List of alternative refrigerant

Application	Controlled refrigerant	Alternative refrigerant
Packaged air conditioner	HCFC-22	R407C, R407E
Room air conditioner	HCFC-22	R410A
Chiller	HCFC-22, R502	R404A, R507A
Centrifugal chiller	CFC-12	HCFC-123, HCFC-245ca, HFC-134a
Automobile air conditioner	CFC-12	HFC-134a
Refrigerator	CFC-12	HFC-134a
	R502, HCFC-22	R404A, HFC-134a

Pressure classification of refrigerants

Pressure classification	Kind of refrigerant			
	CFC	HCFC	HFC	PFC
Low pressure gas	R11, R113	R123		
High pressure gas (pressure at the normal temperature is 0.3 to 2MPa)	R12, R114, R115, R500, R502	R22	R134a, R32, R407C, R407E, R410A, R507A, R404A	
High pressure gas (pressure at the normal temperature is 2MPa or more)	R13, R503		R23, R508A	R14, R116

Capacity indication of recovery machines

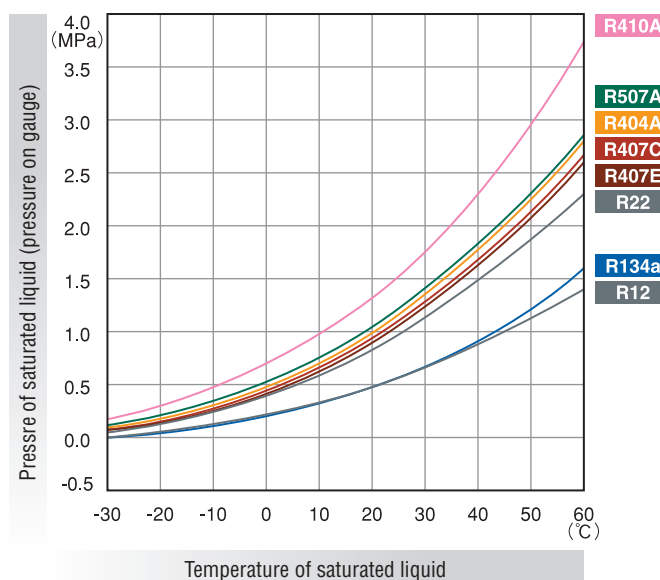
Rated output of the compressor on the recovery machine (W)	Capacity of the recovery machine / vapor recovery (g/min)
250	Approx. 100
375 ~ 400	Approx. 120
580 ~ 700	Approx. 190
750 or more	200 or more

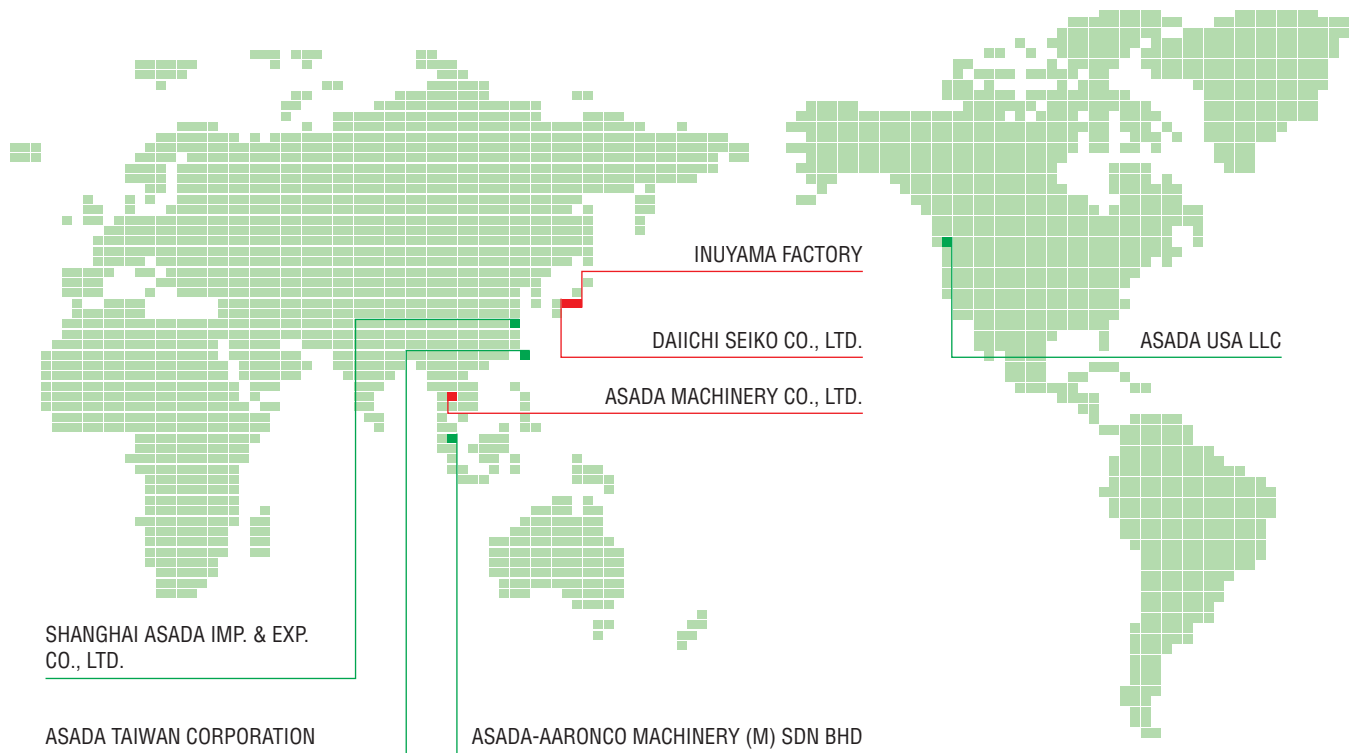
*See each catalogue of the manufacturer for the detailed capacity.

Refrigerant control

Refrigerant	Ozone Depletion Potential	Control	Time limit
CFC	1	Production control	Production was completed at the end of 1995.
HCFC	0.05	Production control	Production will be completed at the end of 2020.
HFC	0	Emission control	-

Relation between pressure of refrigerant and temperature





AFFILIATED COMPANIES

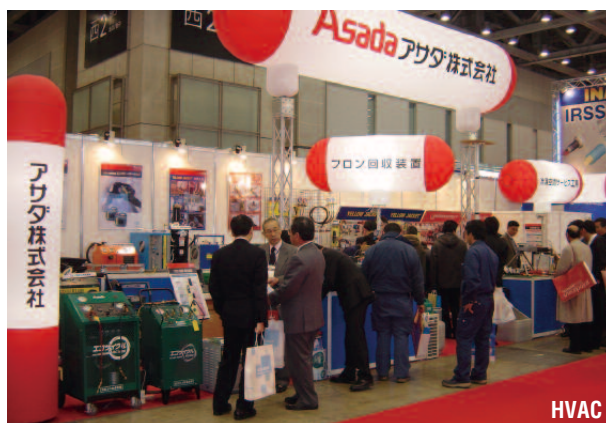
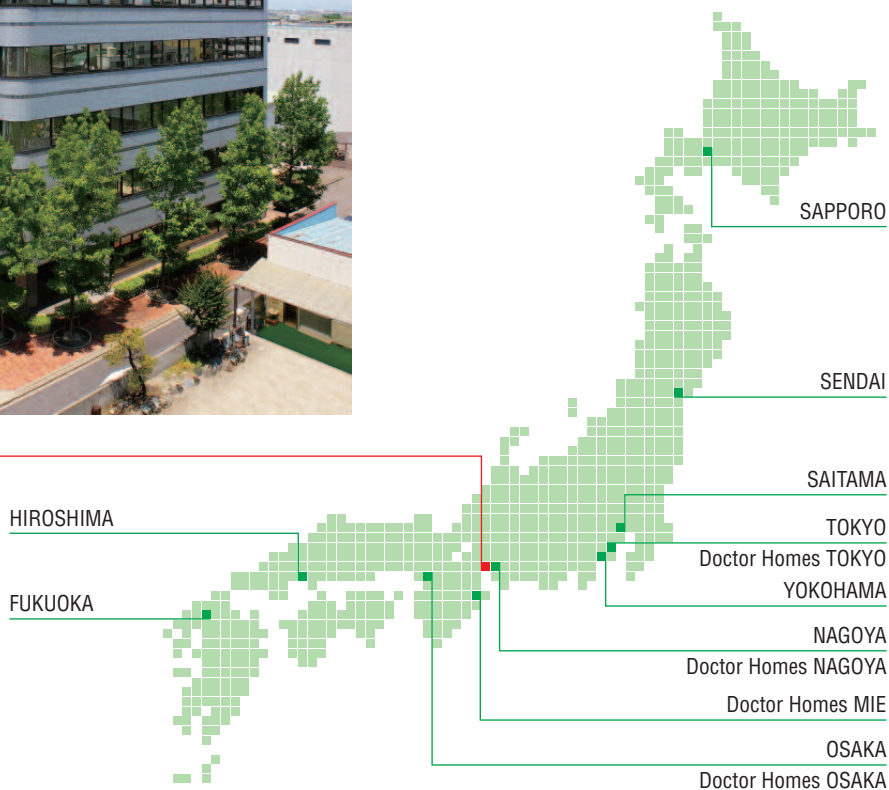
ASADA (THAILAND) CO.,LTD.	No.89/2 Moo 4 Soi G1/11 Latkrabang Industrial Estate, Chalongkrung Road, Lamplathew, Latkrabang District, Bangkok 10520, THAILAND Tel: +66-2-739-4483 • Fax:+66-2-739-4485 Email:sales@asada.co.th • Website:www.asada.co.th
ASADA-AARONCO MACHINERY (M) SDN BHD	No.6 Jalan Metro Perdana Barat 8, Taman Usahawan Kepong, 52100 Kuala Lumpur, Malaysia Tel : +603-62517381 • Fax: +603-62517380 E-mail: sales@asada-aaronco.com • Website: www.asada-aaronco.com
ASADA TAIWAN CORPORATION	5F No.23 Lane 113 Hua-Chen Road Hsinchuang TAIPEI, TAIWAN Tel : +886-2-2998-1107 • Fax:+886-2-2276-2458 E-mail:asada@ms17.hinet.net • Website:www.asada.com.tw
SHANGHAI ASADA IMP. & EXP. CO., LTD.	Lane 439, No.1 Room 204 Guangyue Road, Shanghai, CHINA 200434 Tel: +86-21-6525-0575 • Fax: +86-21-6528-9875 E-mail:shanghaiasada@163.com
ASADA USA LLC	97 Constantine Place, Eugene, OR 97405, USA Tel :+1-541-345-2089 • Fax: +1-541-343-1859 Email:asada.usa@comcast.net

FACTORIES

INUYAMA FACTORY	Inuyama, Aichi, Japan
DAIICHI SEIKO CO., LTD.	Matsuzaka, Mie, Japan
ASADA MACHINERY CO., LTD.	Bangkok, Thailand



HEAD OFFICE



Note

Asada Corporation reserves the right to change specifications of spare parts and accessories without a prior notice.

Guarantee

Every Asada equipment is thoroughly inspected and tested before shipment from the factory.

It is guaranteed against defects in materials or workmanship.

To take advantage of this guarantee, the COMPLETE product must be delivered prepaid to Asada or any Asada Authorized Service Center.

If inspection shows trouble is caused by defective workmanship or material, all repairs will be made without charge.



Asada

ASADA CORPORATION

3-60, Kamiida, Nishi-Machi, Kita-Ku,
Nagoya, Japan 462-8551
TEL +81-52-914-1206 FAX +81-52-914-2011
URL <http://www.asada.co.jp>
E-mail: trade@asada.co.jp

● Distributed by