yamada

High Performance
Air Powered Piston Pumps

www.yamadacorp.co.jp/global

Pump Selection Guide

The Yamada Piston Pump Series was designed with a wide variety of applications in mind. Therefore when selecting the correct pump, many factors must be first taken into account. The pump's materials of construction, the size and ratio of the air motor, the material to be pumped, chemical compatibility, viscosity and density. Also the conditions effecting the pump and piping system. For example, what is the height, length and diameter of the pipe. What are the inlet and outlet pressures and the required output volume?
The entire Yamada Piston Pump Series is classified in the general below table. While also taking into account the above conditions, use this chart when selecting your pump.
For more information please contact your nearest Yamada Pump Dealer or Yamada Corporation directly.

LOW PRESSURE SUPPLY PUMPS

Inline Pumps. (Steel)

For lubricants similar to engine oils, gear oils and machine oils etc. Generally the material must provide a certain amount of lubrication, be non-corrosive and have a low viscosity.
<Ex.> Engine oil, Gear oil, Machine oil, etc.

Divorced Pumps. (Steel)

For fluids that are air-drying like paints and certain chemical solutions. The material must provide a certain amount of lubrication, be non-corrosive and have a low viscosity. Different packing materials may be required depending on the application.
<Ex.> Paint, Chemical solution, etc.

Inline Stainless Steel Pumps.

For fluids similar to water and cutting oils etc that have a low viscosity, are corrosive and non air-drying.
<Ex.> Water, Cutting oil, etc.

Divorced Stainless Steel Pumps.

For fluids like chemical agents and acids etc, that are corrosive and air-drying. Teflon packing is used in these pumps. *
<Ex.> Chemical agents, etc.
*PTFE packing is used.

HIGH PRESSURE SUPPLY PUMPS

Inline Pumps.

Used for high viscosity materials like grease and putty. The material must provide a certain amount of lubrication and be non-corrosive.
<Ex.> Grease

Divorced Pumps.

Used for highly viscous materials that are air-drying similar to adhesives ink putty and grease. The material must be non-corrosive to the pump.
<Ex.> Adhesive, Putty, Ink and Grease

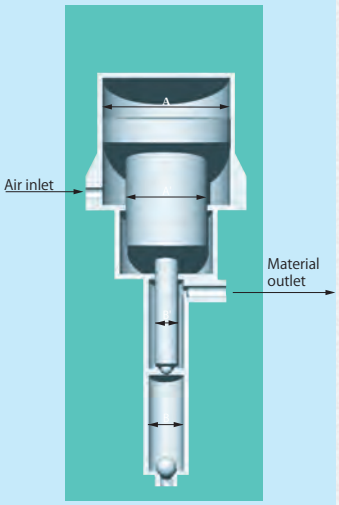
Pump Selection Guide

Pump Ratio

The pump ratio is the ratio between the effective areas of the air motor (A) and of the lower pump (B). Where the area (B) is usually indicated as the base (i.e., as 1). For example when A is 100cm^2 and B is 20cm^2 the pump ratio would be 100:20 or 5 times 1, (=5:1). This ratio is one of the most important factors determining pump characteristics.

The maximum (theoretical) outlet discharge pressure can be calculated by multiplying the pump ratio by the supplied air pressure. For example if the above pump with a 5:1 ratio is used with an air supply of 0.7 Mpa, then the maximum discharge pressure would be 3.5Mpa, (=. 7 times 5). By using pumps with different pump ratios even with the same inlet air pressure it is possible to achieve low to extremely high discharge pressure.

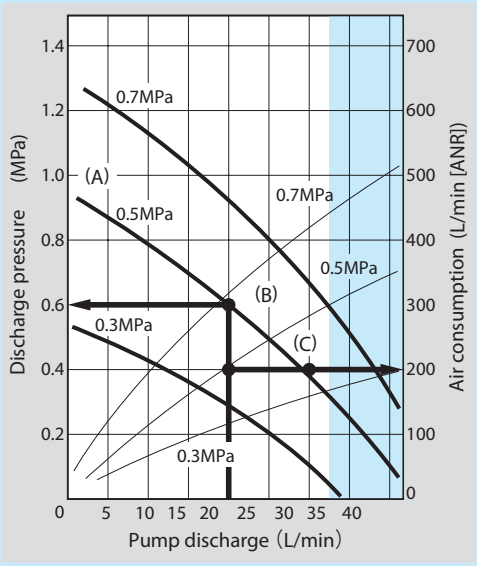
The Yamada line up of Air PoweredTM Pumps covers all ranges of pump ratio from a 1:1 to 60:1. Therefore from the same 0.7Mpa air supply, it's possible to achieve up to 42Mpa of outlet pressure. In general the pump required often depends on the viscosity of the material. To pump very high viscosity materials, a pump with a high pump ratio is required.



Performance Curve

As explained above, you can get the maximum theoretical discharge pressure by multiplying the supplied air pressure by the pump ratio. The higher the discharge pressure the smaller the pump discharge will be under the same supplied air pressure. For this reason the pump with a bigger air motor will be required as the required discharge pressure becomes higher. The air poweredTM pumps have characteristics that the discharge pressure will decrease as the pump discharge increase.
Putting all these factors together, the correlations between the supplied air pressure, the discharge pressure and the pump discharge are plotted for each pump. Their relations with the air consumption are also included in the plot. The plot is termed the performance curve, and this will provide you with the pump performance in general.

How to use the performance curve



a Three down-sloping curves indicate the relation between the discharge pressure and the pump discharge for the supplied air pressure of 0.3, 0.5 and 0.7MPa. Choose one of the curves that corresponds to your supplied air pressure.

b Let assume here that the supplied air pressure is 0.5MPa. Then, the middle curve is used in the example

- When the pump discharge is 0 L/min (i.e., when the outlet valve is closed), the discharge pressure (pumps inner pressure) is maximum as shown at point (A).
- As the outlet valve is opened, the material starts flowing out, and the discharge pressure slowly falls down. The discharge pressure will be 0.6MPa when the pump discharge reaches 20 L/min (point B.)
- A further increase in the pump discharge to 30L/min will lower the discharge pressure to 0.4MPa (point C.)

By referring to this figure, it is possible to see if a particular pump can provide the required pump discharge and discharge pressure.
If the required pump discharge of a particular pump falls into the blue zone in the figure, then the pump is not suitable for the continuous operation. If the is the case, please choose the pump with bigger capability.

c These curves also show the air consumption for the supplied air supply pressure of 0.3MPa, 0.5MPa and 0.7MPa. As you can see, the air consumption is 200L.min when the supplied air pressure is 0.5MPa and the pump discharge is 20L/min (point C.)

Pump Selection Guide

Construdtion and Features

AIR POWERED™ pump

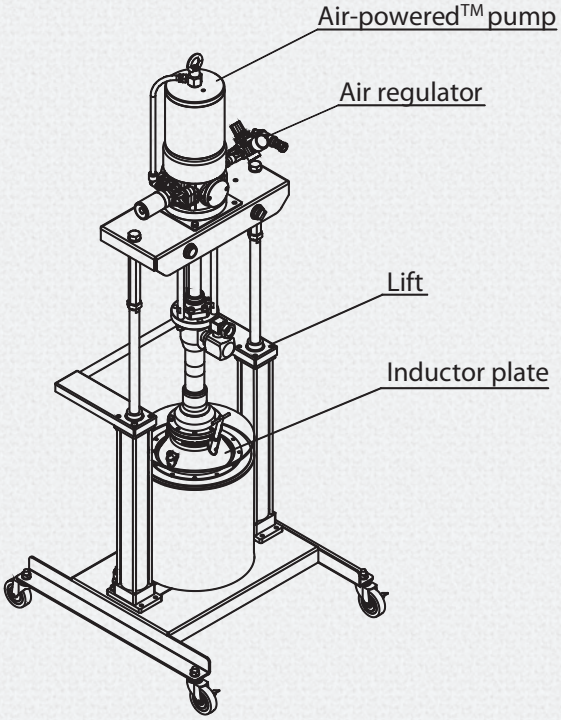
The Yamada reciprocating pump series is comprised of pumps with air motors ranging from 50 to 250MPa in size, and ratios from 1to1up to 55to1.

AIR REGULATOR

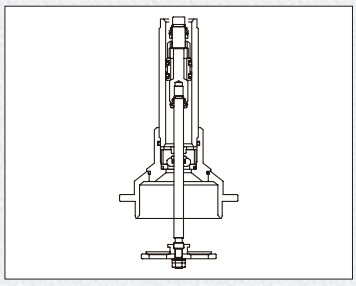
An air regulator is used to control the air pressure supplied to the pump.

Lift

A pump fitted with an airlift is designed so that it can be raised using compressed air enabling the material container to be replaced with ease. The second type of airlift (air ram type) is designed especially for high viscosity materials and as well as being able to raise the pump are also able to forcefully press down on the material to help with feeding.

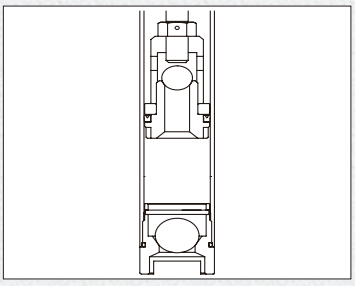


SUCTION TYPE



•Shovel type

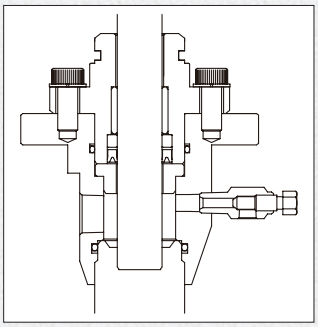
Shovel type pumps are designed to supply highly viscose and semisolid materials. The pumps shovel, scrapes up material and sends it into the foot valve for delivery.
High viscosity material pumps of this kind include both double and single action types. Single action types scrape up the material on the up stroke and deliver it on the down stroke.



•Ball type

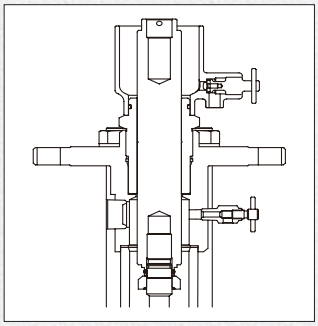
Ball type pumps are especially designed to pressure feed low viscosity fluids. The foot valve has a large ball that is designed to deliver a large volume at full powe r. The most common ball type valve is a double action type that pumps fluid on both the up and down strokes .High viscosity airless supply pumps and oil supply pumps fall into this category.

GLAND SEAL TYPE



•Packing seal Type

This type of pump is suitable for paint and grease.
Rubber packing is used in the gland seal section.



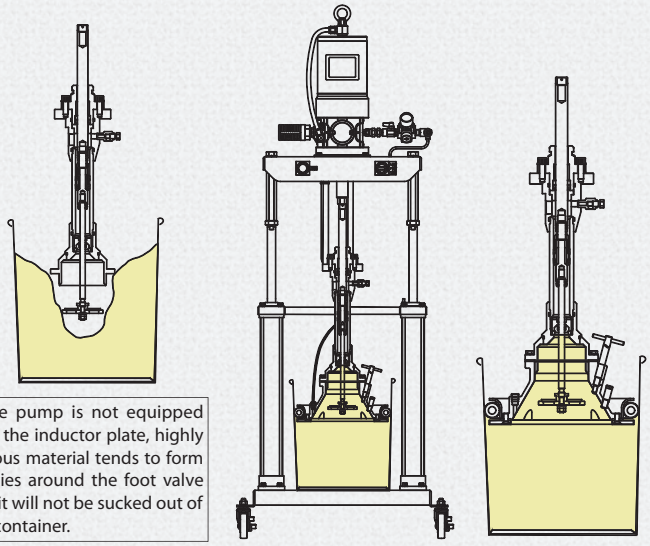
•Metal sealed

This type of pump uses precision alloy steel in the gland section and is suitable for solvent based materials.

Pump Selection Guide

INDUCTOR PLATE

Some Yamada Pumps are fitted with an inductorplate.
Semi solid and highly viscous materials are of a nature that they adhere to the inner wall of their container. They also tend to make acavity around the pump inlet and generally cannot be pumped smoothly. When using an inductorplate it sticks to the surface of the grease and an airtight seal is created. When the pump is operating a vacuum is formed inside the material container and thus pulls the inductorplate down. As the grease level decreases the plate will also move down the inside of the container. This action is combined with either downward pressure from the weight of the pump or if required by using a ram inductor to force the material down. These 3 forces (vacuum, weight or force) constantly push the material up to the pump inlet, and t hus facilitate the transfer of material effectively.
The airtight seal also prevents contaminants or dampness from entering the drum as well as enabling the total use of the containers contents preventing wastage.



If the pump is not equipped with the inductor plate, highly viscous material tends to form cavities around the foot valve and it will not be sucked out of the container.

Standards of Grease

Spray *Manual/Pump* *Air/Pump* *Pressure supply pump*

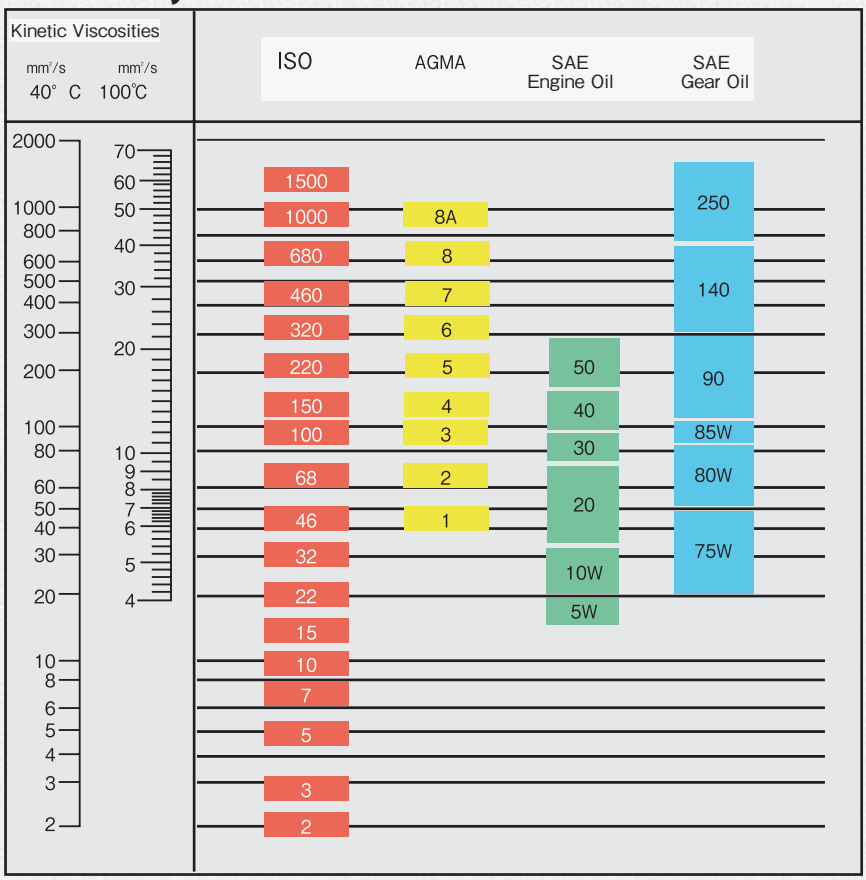
Consistency of Grease

NLGI No.	JIS No.	ASTM Consistency (25℃ and 60W)	Appearance	Supplying method
№ 000	000	445～475	Semi-fluid	
№ 00	00	400～430	〃	
№ 0	0	355～385	Semi-fluid or Soft	
№ 1	1	310～340	Soft	
№ 2	2	265～295	Standard	
№ 3	3	220～250	Standard	
№ 4	4	175～205	Semi-firm	
№ 5	5	130～160	firm	Please Consult Yamada.
№ 6	6	85～115	Solid	

Pump Selection Guide

Viscosity

Oil Grade Systems



Reference

Material	Viscosity at 20℃ (CPS)	Material	Viscosity at 20℃ (CPS)
Water	1	Gear oil	2200～30000
Turpentine	1	Syrup (Thin)	2500
Sulfuric acid	2	Syrup (Thick)	3200
Milk	3	Maximum viscosity of self-suction limit	
Light oil, Kerosene	4	Grease (#0)	20000※
Ethylene glycol	16	Grease (#1)	30000※
Crude oil	28	Mayonnaise	60000
Boiled oil	64	Vaseline	64000
Motor oil SAE20	125	Grease (#2)	70000※
Motor oil SAE30	200	Mustard	70000
Castor oil	240	Grease (#3)	100000※
Motor oil SAE40	319	Tomato paste	190000
Gear oil 80	240～1900	Peanut butter	250000
Gear oil 90	590～5100		

※This number is apparent viscosity.

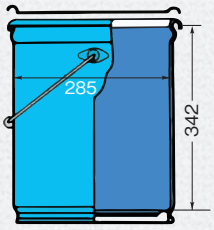
Pump Selection Guide

Unit

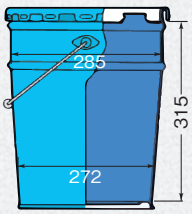
Unit	Old Unit	SI Unit	Remark
Pressure	1kgf/cm² →	0.1MPa.	
	10kgf/cm² →	1MPa. →100kPa.	
	1kgf/cm² →	100kPa.	
Volume	1L/min →	1L/min.	1000L/min.→1m³/min.
	1cc/min →	1mL/min.	1000cc→1L
Weight	1kg →	1kg	1000kg→1t
	1g →	1g	1000g→1kg
Viscosity	1cP →	1mPa・s	
	1P →	0.1Pa・s	10P（1000cPs）→1Pa・s
Kinetic Viscosity	1cSt →	1mm²/s	
Torgue	100kg・cm →	10Nm	
Noise	1phon →	1db	
Frequency	1Cycle →	1Hz	

Standard Size of Containers

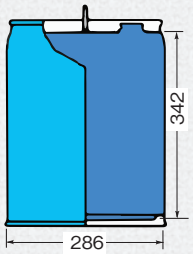
18kg Pail



Open Head Straight Pail

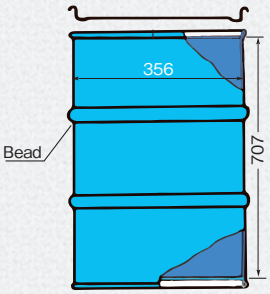


Open Head Taperd Pail



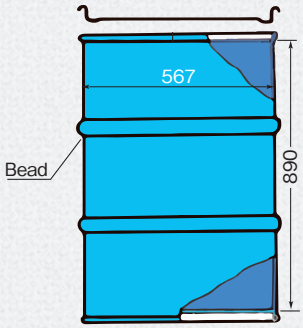
Tight Head Pail

55kg Drum

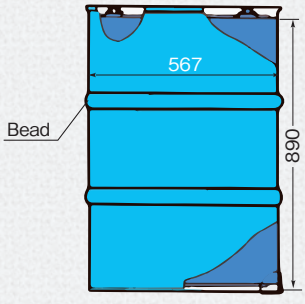


Open Head Drum

180kg Drum



Open Head Drum



Tight Head Drum

Pump Selection Guide

Model Indicator

LOW PRESSURE SUPPLY PUMPS

DR- XX A 1 -SUS

PUMP TYPE
DR=DRUM TYPE
SH=SIPHON TYPE

PUMP SIZE: (DIA.OF AIR PISTON):
50= 50mm
90= 90mm
110= 110mm
125= 125mm
250= 250mm

PUMP CLASSIFICATION
A= INLINE PUMP
B= DIVORCED PUMP
C= CIRCULATE PUMP

PUMP RATIO:
1= 1 x 1
1.5= 1.5 x 1
2= 2 x 1
3= 3 x 1
3.5= 3.5 x 1
5= 5 x 1
6= 6 x 1
10= 10 x 1
13= 13 x 1
15= 15 x 1

HIGH PRESSURE SUPPLY PUMPS

SKR- XX M 50 -PAL

PUMP SIZE: (DIA.OF AIR PISTON):
110= 110mm
125= 125mm
140= 140mm
250= 250mm

GLAND SEAL TYPE:
M=METAL SEAL
A=INLINE
P=PACKING SEAL

PUMP RATIO:
10= 10 x 1
13= 13 x 1
20= 20 x 1
25= 25 x 1
38= 38 x 1
40= 40 x 1
47= 47 x 1
50= 50 x 1
55= 55 x 1

LIFT TYPE:
PAL : Air Ram Single Post Lift for Pail
PW AL: Air Ram Double Post Lift for Pail
AL: Air Single Lift for Drum
DAL: Air Ram Single Post Lift for Drum
DW AL: Air Ram Double Post Lift for Drum

REMARKS

SUITABLE MATERIAL FOR USE

- NLGI No.0 Grease
- NLGI No.1 Grease
- NLGI No.2 Grease
- NLGI No.3 Grease
- High viscosity material such as adhesive and sealant
- Oils
- Solvents such as thinner
- Paints
- Chemicals

SUITABLE CONTAINER

- 18L (16KGS) Pail
- 200L (180KGS) Drum

LOW PRESSURE SUPPLY PUMPS

Low Pressure Supply Pumps

Inline Pump 1×1 ratio

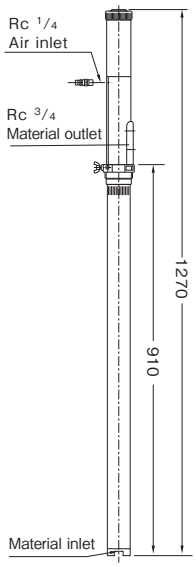
oil drum

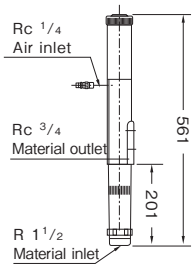
50 series

DR-50A1 (Drum pump)
SH-50A1 (Siphon pump)

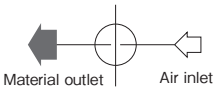
DR-50A1
(852628)

SH-50A1
(852629)

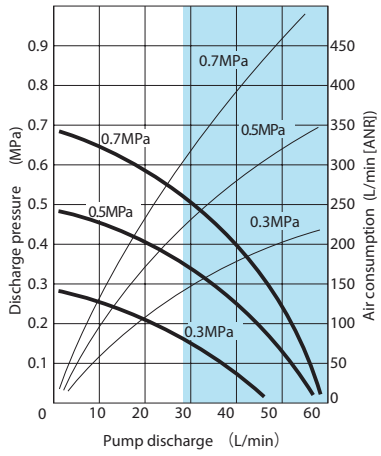




Mounting Dimensions



Performance curve



●Material

Suction Tube	Piston Packing	Gland Packing
STKM12B	Buna N	Buna N

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
852628	DR-50A1	1×1	—	Rc3/4	Rc1/4 w/PS-20PM Air Coupler	0.3~0.7	0~60	0~80	70	5.0
852629	SH-50A1	1×1	R1-1/2	Rc3/4		0.3~0.7	0~60	0~80	70	2.6

Inline Pump 3×1 ratio

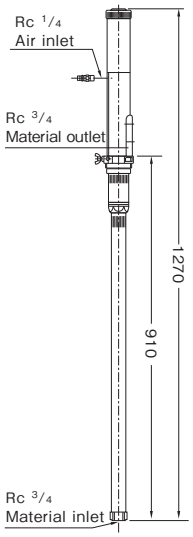
oil drum

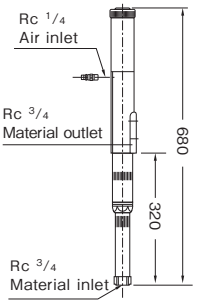
50 series

DR-50A3 (Drum pump)
SH-50A3 (Siphon pump)

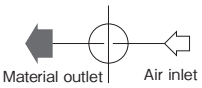
DR-50A3
(852633)

SH-50A3
(852634)

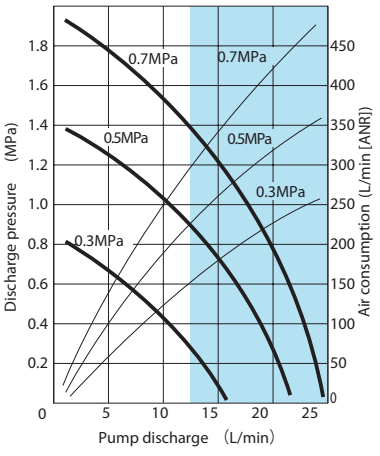




Mounting Dimensions



Performance curve



●Material

Suction Tube	Piston Packing	Gland Packing
STKM12B	Buna N	Buna N

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
852633	DR-50A3	3×1	Rc3/4	Rc3/4	Rc1/4 w/PS-20PM Air Coupler	0.3~0.7	0~60	0~80	70	5.4
852634	SH-50A3	3×1	Rc3/4	Rc3/4		0.3~0.7	0~60	0~80	70	3.3

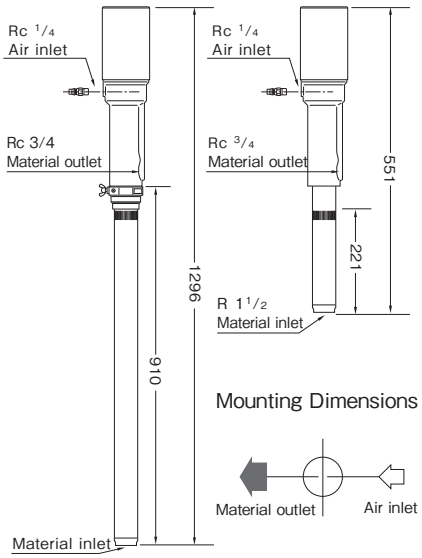
Inline Pump 3×1 ratio

90 series

DR-90A3 (Drum pump)
SH-90A3 (Siphon pump)

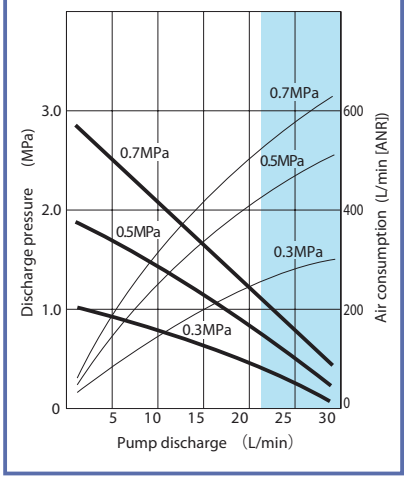
DR-90A3
(880966)

SH-90A3
(880967)



Mounting Dimensions

Performance curve



●Material

Suction Tube	Piston Packing	Gland Packing
STKM12B	Buna N	Buna N

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
880966	DR-90A3	3×1	—	Rc3/4	Rc1/4 w/PS-20PM Air Coupler	0.3~0.7	0~60	0~80	70	7.1
880967	SH-90A3	3×1	R1-1/2	Rc3/4		0.3~0.7	0~60	0~80	70	4.5

Wall/Floor Mounting Sets

Wall/Floor mounting sets for Oil Transfer Siphon Pumps.

PKT-50S
(881150)

PKT-90S
(881152)

854800 PKT-P1300
854799 PKT-P900

805062 PKT-KP

Components

Description	Wall Mounting Set		Floor Mounting Set	
Model No.	881149	881151	881150	881152
Model	PKT-50	PKT-90	PKT-50S	PKT-90S
Pump	852634 SH-50A3	880967 SH-90A3	852634 SH-50A3	880967 SH-90A3
Regulator	802558 AR-110PKT (with R1/4×1.5m Hose)			
Suction Hose	854801 SCH-200D			
Discharge Hose	854802 Discharge Hose (R3/4×1.5M)			
Pressure Relief Valve	682428 PRV-7			
Return Hose	695358 Return Hose			
Mounting Bracket	800400 MTB-SH			
Floor Mount Stand	----------		804943 PKT-ST	

Optional Accessories

Model No.	Model	Description	Remark
854799	PKT-P900	Suction Pipe for 200L Drum	L=906mm
854800	PKT-P1300	Suction Pipe for Tank	L=1,300mm
805062	PKT-KP	Wall Mounting Panel	Fits to PKT-50,PKT-90

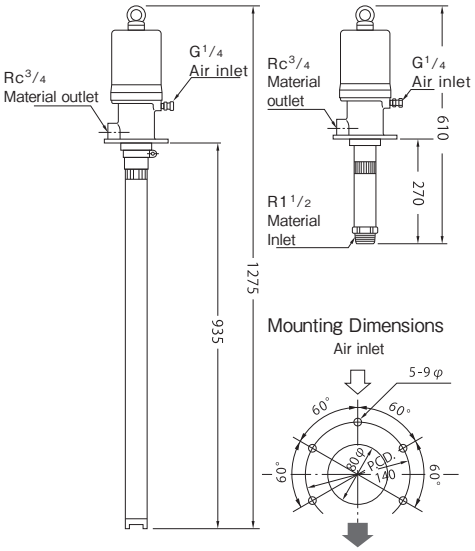
Low Pressure Supply Pumps

Inline Pump 5×1 ratio

110 series — **DR-110A5** (Drum pump) / **SH-110A5** (Siphon pump)

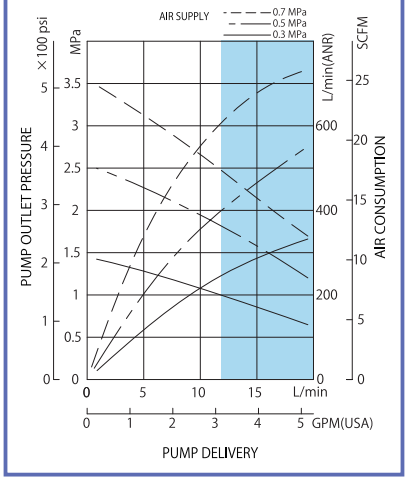
851754
DR-110A5

851753
SH-110A5



Mounting Dimensions

Performance curve



●Material

Suction Tube	Piston Packing	Gland Packing
STKM12B	Buna N	Buna N

●Specifications

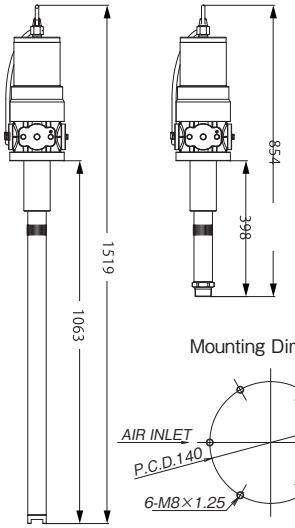
Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
851754	DR-110A5	5×1	—	Rc3/4	G1/4	0.2~0.7	0~60	0~80	60	12.0
851753	SH-110A5	5×1	R1-1/2	Rc3/4		0.2~0.7	0~60	0~80	60	8.3

Inline Pump 13×1 ratio

125 series — **DR-125A13** (Drum pump) / **SH-125A13** (Siphon pump)

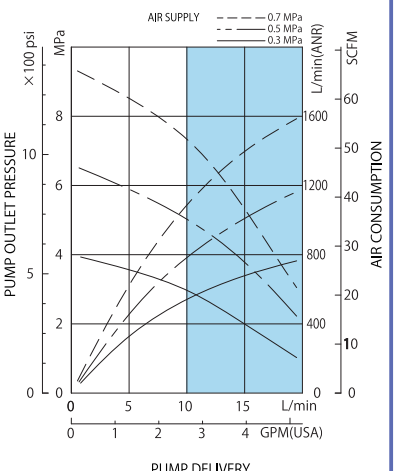
854620
DR-125A13

854619
SH-125A13



Mounting Dimensions

Performance curve



●Material

Suction Tube	Piston Packing	Gland Packing
STKM12B	Special cowhide	Buna N

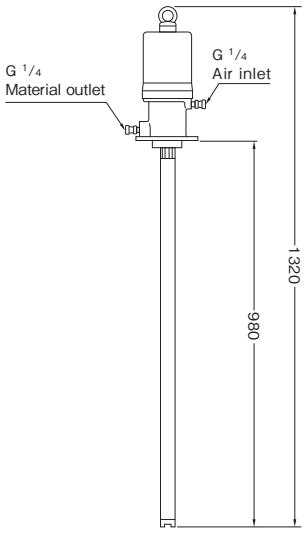
●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
854620	DR-125A13	13×1	—	Rc3/4	Rc3/8	0.2~0.7	0~60	0~80	100	21.2
854619	SH-125A13	13×1	R1-1/2	Rc3/4		0.2~0.7	0~60	0~80	100	17.6

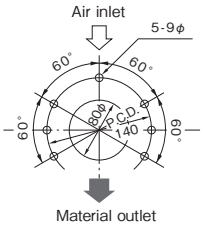
Inline Pump 15×1 ratio

110 series DR-110A15 (Drum pump)

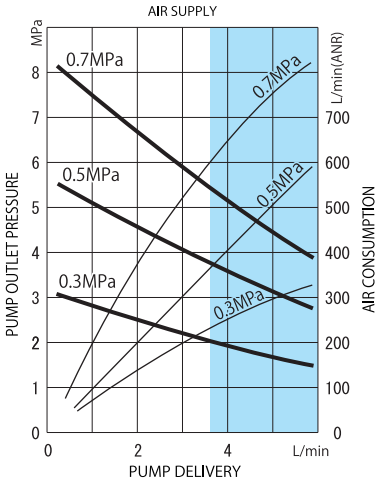
DR-110A15
(851826)



Mounting Dimensions



Performance curve



●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
851826	DR-110A15	15×1	—	G1/4	G1/4	0.2~0.7	0~60	0~80	60	9.0

Wall/Floor Mounting Sets

Wall/Floor mounting sets for Oil Transfer Siphon Pumps.

PKT-110S
(881154)

PKT-125S
(881156)

854800 PKT-P1300
854799 PKT-P900

Components

Description	Wall Mounting Set		Floor Mounting Set	
Model No.	881153	881155	881154	881156
Model	PKT-110	PKT-125	PKT-110S	PKT-125S
Pump	851753 SH-110A5	854619 SH-125A13	851753 SH-110A5	854619 SH-125A13
Regulator	802558 AR-110PKT	803521 AR-125PKT	802558 AR-110PKT	803521 AR-125PKT
Suction Hose	854801 SCH-200D			
Discharge Hose	854802 Discharge Hose (R3/4×1.5M)			
Pressure Relief Valve	682428 PRV-7	686685 PRV-14	682428 PRV-7	686685 PRV-14
Return Hose	695358 Return Hose			
Mounting Bracket	800400 MTB-SH			
Floor Mount Stand	----------		804943 PKT-ST	

805062 PKT-KP

Optional Accessories

Model No.	Model	Description	Remark
854799	PKT-P900	Suction Pipe for 200L Drum	L=906mm
854800	PKT-P1300	Suction Pipe for Tank	L=1,300mm
805062	PKT-KP	Wall Mounting Panel	Fits to PKT-110,PKT-125

Low Pressure Supply Pumps

Divorced Circulation Pump 1.5×1 ratio

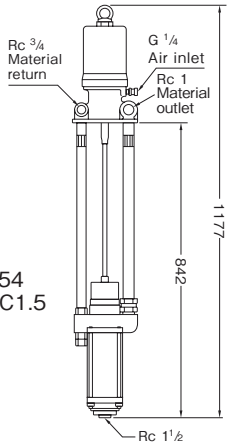
oil Solvent Paint drum

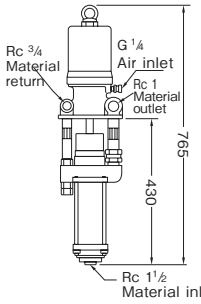
110 series

DR-110C1.5P (Drum pump)
SH-110C1.5P (Siphon pump)

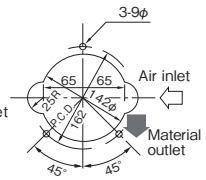
851856
DR-110C1.5P

851854
SH-110C1.5

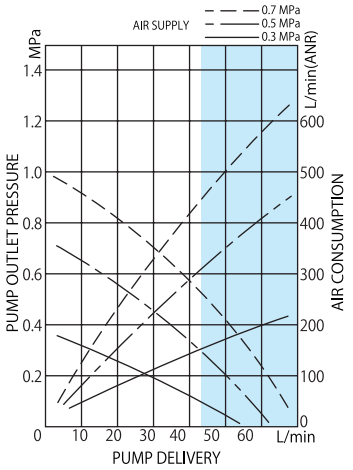




Mounting Dimensions



Performance curve



●Material

Suction Tube	Piston Packing	Gland Packing
STKM12B	Special cowhide	Buna N

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
851856	DR-110C1.5P	1.5×1	Rc1-1/2	Rc1	G1/4	0.2~0.7	0~60	0~80	60	24
851854	SH-110C1.5	1.5×1	Rc1-1/2	Rc1		0.2~0.7	0~60	0~80	60	21

Divorced Circulation Pump 2×1 ratio

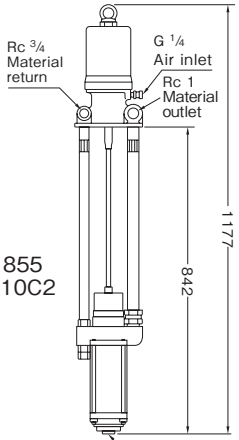
oil Solvent Paint drum

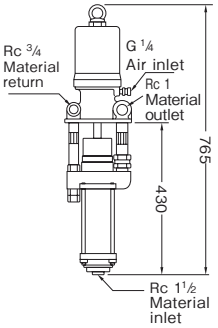
110 series

DR-110C2P (Drum pump)
SH-110C2 (Siphon pump)

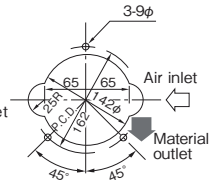
851857
DR-110C2P

851855
SH-110C2

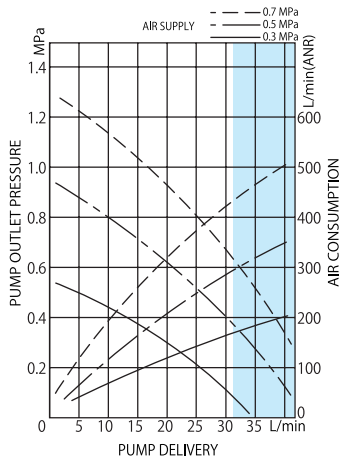




Mounting Dimensions



Performance curve



●Material

Suction Tube	Piston Packing	Gland Packing
STKM12B	Special cowhide	Buna N

●Specifications

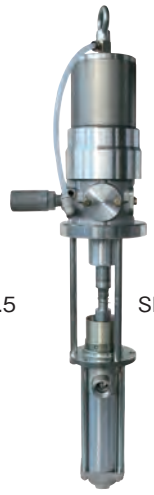
Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
851857	DR-110C2P	2×1	Rc1-1/2	Rc1	G1/4	0.2~0.7	0~60	0~80	60	22
851855	SH-110C2	2×1	Rc1-1/2	Rc1		0.2~0.7	0~60	0~80	60	19

Divorced Pump 3.5×1 ratio

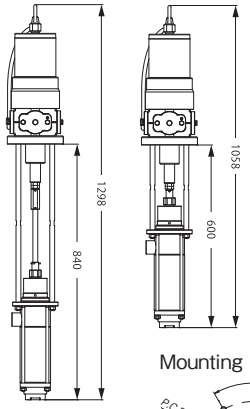
125 series

DR-125B3.5 (Drum pump)
SH-125B3.5 (Siphon pump)

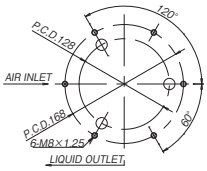
854593
DR-125B3.5



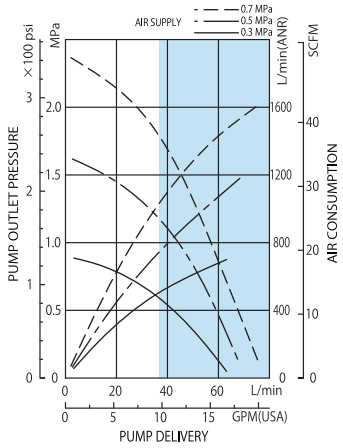
854592
SH-125B3.5



Mounting Dimensions



DR/SH-125B3.5 Performance Curve



●Material

	Suction Tube	Piston Packing	Gland Packing
Standard Model	STKM12B	Special cowhide	Buna N
"V" Model	STKM12B	Special cowhide	Special cowhide

●Specifications

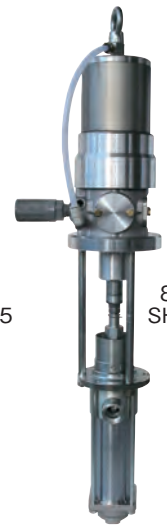
Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
854593	DR-125B3.5	3.5×1	R1-1/2	Rc1	Rc3/8	0.2~0.7	0~60	0~80	100	30.5
854592	SH-125B3.5									28.9
854599	DR-125B3.5V	3.5×1	R1-1/2	Rc1	Rc3/8	0.2~0.7	0~60	0~80	100	30.5
854598	SH-125B3.5V									28.9

Divorced Pump 5×1 ratio

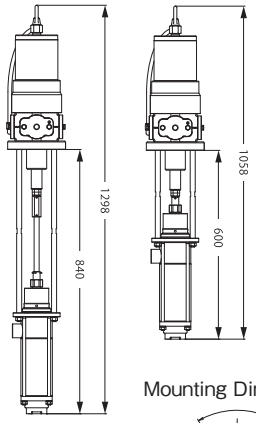
125 series

DR-125B5 (Drum pump)
SH-125B5 (Siphon pump)

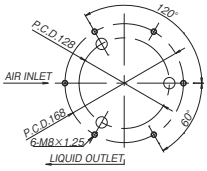
854595
DR-125B5



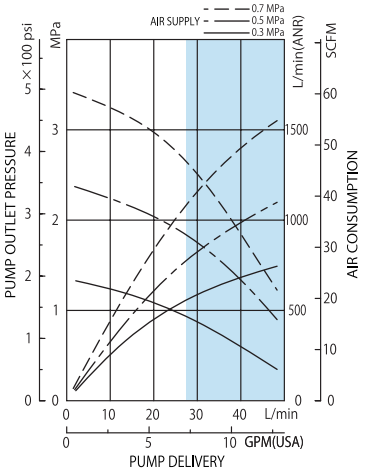
854594
SH-125B5



Mounting Dimensions



DR/SH-125B5 Performance Curve



●Material

	Suction Tube	Piston Packing	Gland Packing
Standard Model	STKM12B	Special cowhide	Buna N
"V" Model	STKM12B	Special cowhide	Special cowhide

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
854595	DR-125B5	5×1	R1-1/2	Rc1	Rc3/8	0.2~0.7	0~60	0~80	100	28.9
854594	SH-125B5									27.3
854601	DR-125B5V	5×1	R1-1/2	Rc1	Rc3/8	0.2~0.7	0~60	0~80	100	28.8
854600	SH-125B5V									27.2

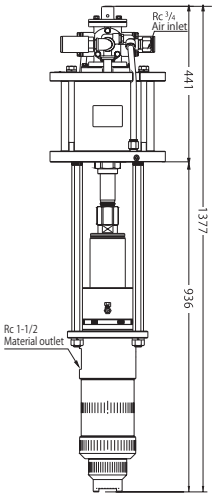
Low Pressure Supply Pumps

Divorced Pump 6×1 ratio

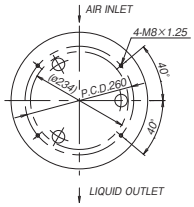
oil drum

250 series DR-250P6 (Drum pump)

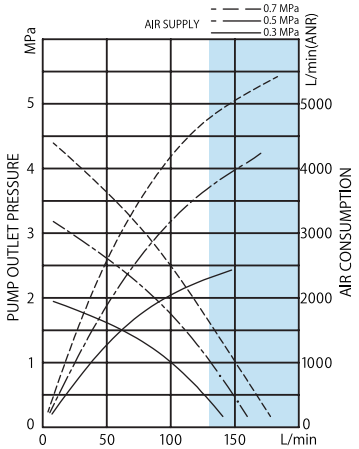
854291
DR250P6



Mounting Dimensions



Performance curve



●Material

Suction Tube	Piston Packing	Gland Packing
STKM12B	Buna N	Buna N

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
854291	DR-250P6	6×1	Rc2	Rc1-1/2	Rc3/4	0.2~0.7	0~70	0~80	100	78

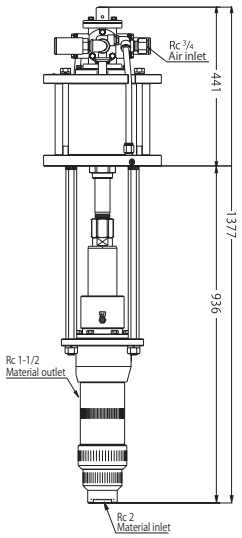
Divorced Pump 10×1 ratio

oil Solvent Paint drum

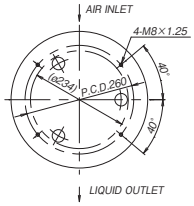
250 series DR-250P10 (Drum pump)

854292
DR250P10

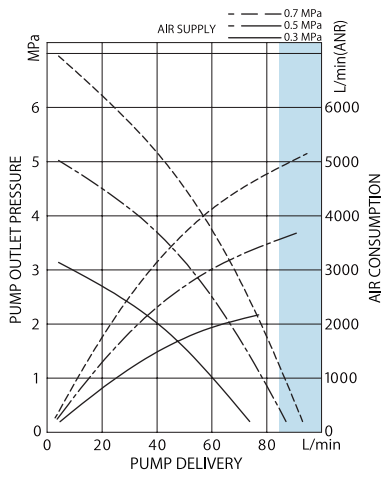
*Discharge pipekit in the photo is an optional.



Mounting Dimensions



Performance curve



●Material

Suction Tube	Piston Packing	Gland Packing
STKM12B	Special cowhide	Buna N

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
854292	DR-250P10	10×1	Rc2	Rc1-1/2	Rc3/4	0.2~0.7	0~70	0~80	100	75

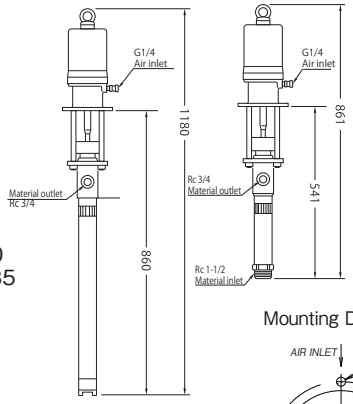
Divorced Pump 5×1 ratio

110 series

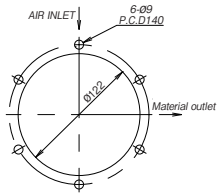
DR-110B5 (Drum pump)
SH-110B5 (Siphon pump)

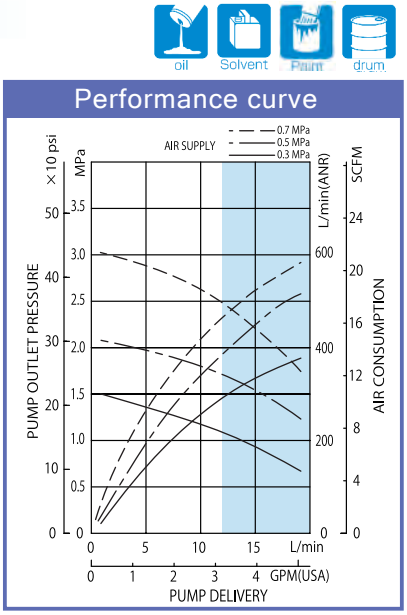
851831
DR-110B5

851830
SH-110B5



Mounting Dimensions





●Material

Suction Tube	Piston Packing	Gland Packing
STKM12B	Special cowhide	Special cowhide

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
851831	DR-110B5	5×1	—	Rc3/4	G1/4	0.3~0.7	0~60	0~80	60	17.0
851830	SH-110B5	5×1	Rc1-1/2	Rc3/4		0.3~0.7	0~60	0~80	60	12.0

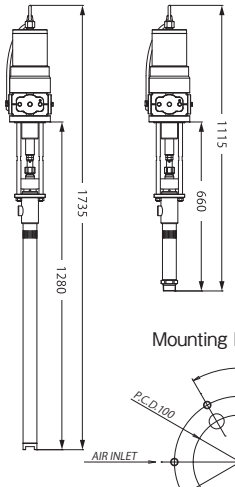
Divorced Circulation Pump 13×1 ratio

125 series

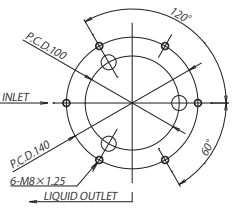
DR-125B13 (Drum pump)
SH-125B13 (Siphon pump)

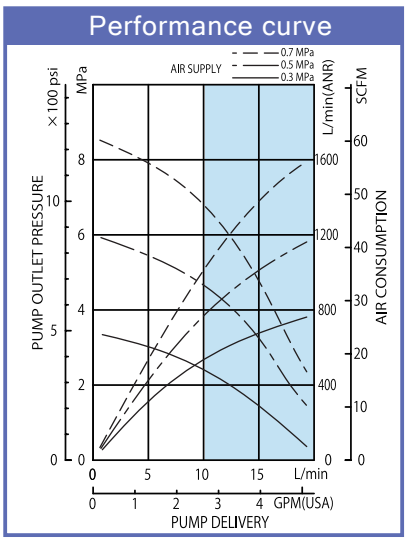
854597
DR-125B13

854596
SH-125B13



Mounting Dimensions





●Material

	Suction Tube	Piston Packing	Gland Packing
Standard Model	STKM12B	Special cowhide	Buna N
"V" Model	STKM12B	Special cowhide	Special cowhide

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
854597	DR-125B13	13×1	------	Rc3/4	Rc3/8	0.2~0.7	0~60	0~80	100	26.0
854596	SH-125B13		R1-1/2							22.6
854603	DR-125B13V	13×1	------	Rc3/4	Rc3/8	0.2~0.7	0~60	0~80	100	26.0
854602	SH-125B13V		R1-1/2							22.6

Low Pressure Supply Pumps

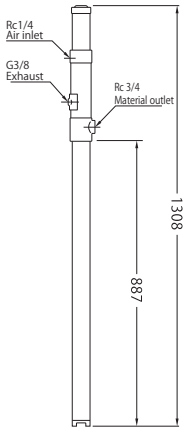
Inline Stainless Steel Pump 1×1 ratio

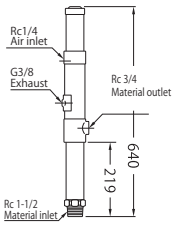
Solvent chemical drum Paint

50 series OPG-1DR SUS (Drum pump)
OPG-1SH SUS (Siphon pump)

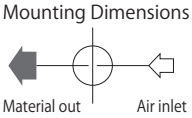
850435
OPG-1DR SUS

850434
OPG-1SH SUS

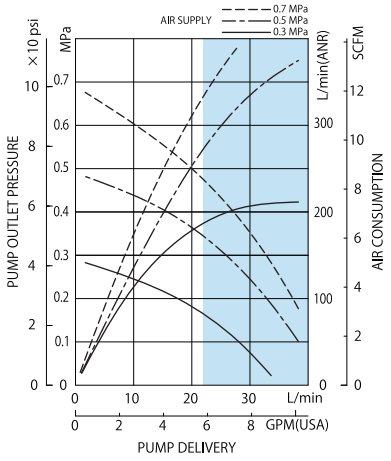




Mounting Dimensions



Performance curve



●Material

Suction Tube	Piston Packing	Gland Packing
SUS304	PTFE	PTFE,FKM

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
850435	OPG-1DR SUS	1×1	—	Rc3/4	Rc1/4	0.3~0.7	0~60	0~80	89	9.1
850434	OPG-1SH SUS	1×1	Rc1-1/2	Rc3/4		0.3~0.7	0~60	0~80	89	7.0

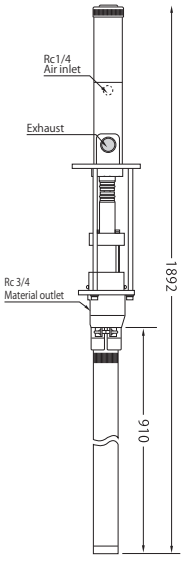
Divorced Stainless Steel Pump 1×1 ratio

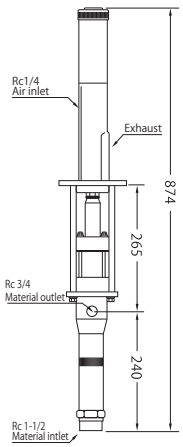
Solvent chemical drum Paint

50 series DR-50B1 SUS (Drum pump)
SH-50B1 SUS (Siphon pump)

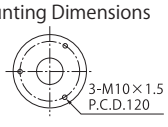
880996
DR-50B1 SUS

880997
SH-50B1 SUS

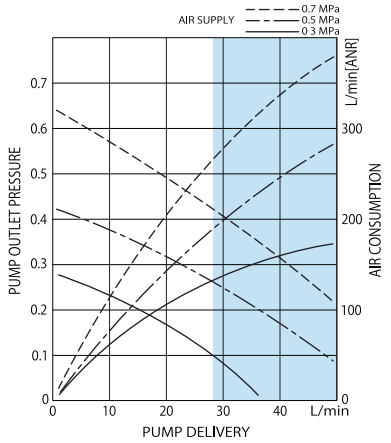




Mounting Dimensions



Performance curve



●Material

Suction Tube	Piston Packing	Gland Packing
SUS304	FKM	FKM

●Specifications

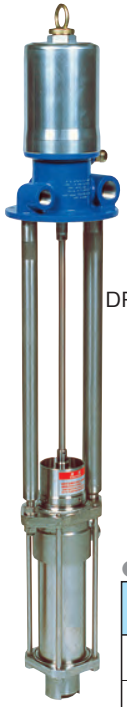
Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
880996	DR-50B1 SUS	1×1	—	Rc3/4	Rc1/4	0.3~0.7	0~60	0~80	69.0	12.6
880997	SH-50B1 SUS	1×1	Rc1-1/2	Rc3/4		0.3~0.7	0~60	0~80	69.0	9.9

Divorced Stainless Steel Pump 1.5×1 ratio

Solvent chemical drum Paint

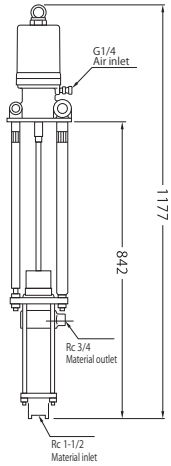
110 series

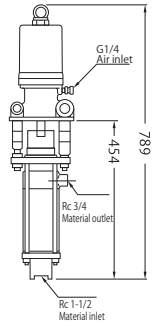
DR-110B1.5 SUS (Drum pump)
SH-110B1.5 SUS (Siphon pump)



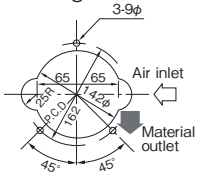
851860
DR-110B1.5 SUS

851858
SH-110B1.5 SUS

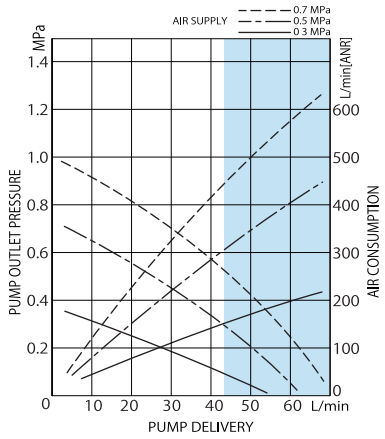




Mounting Dimensions



Performance curve



●Material

Suction Tube	Piston Packing	Gland Packing
SUS304	PTFE (Glass-fiber reiuforced)	PTFE (Glass-fiber reiuforced)

●Specifications

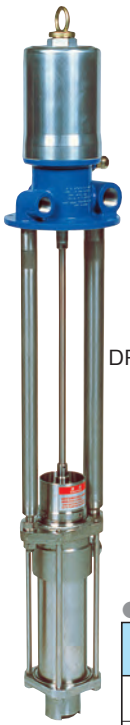
Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
851860	DR-110B1.5SUS	1.5×1	Rc1-1/2	Rc3/4	G1/4	0.2~0.7	0~60	0~80	60	21.3
851858	SH-110B1.5SUS	1.5×1	Rc1-1/2	Rc3/4		0.2~0.7	0~60	0~80	60	18.3

Divorced Stainless Steel Pump 2×1 ratio

Solvent chemical drum Paint

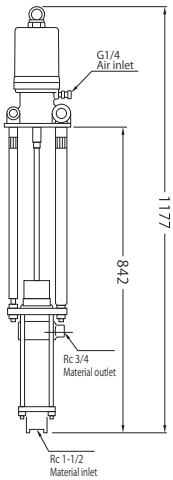
110 series

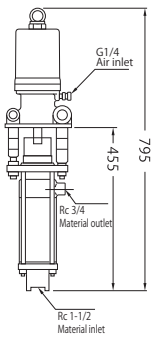
DR-110B2 SUS (Drum pump)
SH-110B2 SUS (Siphon pump)



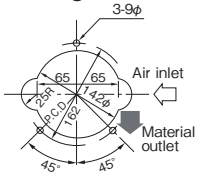
851861
DR-110B2 SUS

851859
SH-110B2 SUS

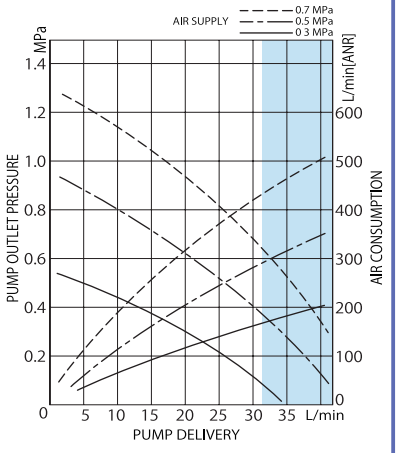




Mounting Dimensions



Performance Curve



●Material

Suction Tube	Piston Packing	Gland Packing
SUS304	PTFE (Glass-fiber reiuforced)	PTFE (Glass-fiber reiuforced)

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
851861	DR-110B2 SUS	2×1	Rc1-1/2	Rc3/4	G1/4	0.2~0.7	0~60	0~80	60	19.6
851859	SH-110B2 SUS	2×1	Rc1-1/2	Rc3/4		0.2~0.7	0~60	0~80	60	17.5

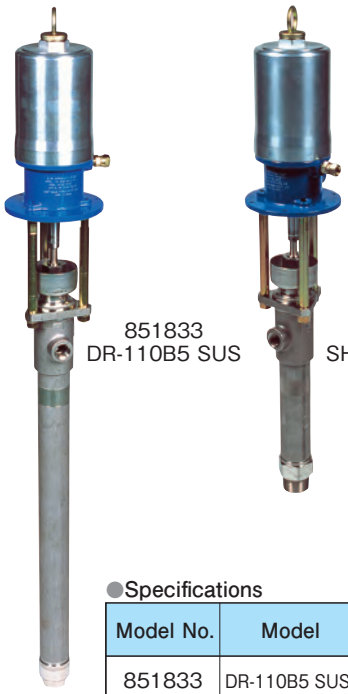
Low Pressure Supply Pumps

Divorced Stainless Steel Pump 5×1 ratio

Solvent chemical drum Paint

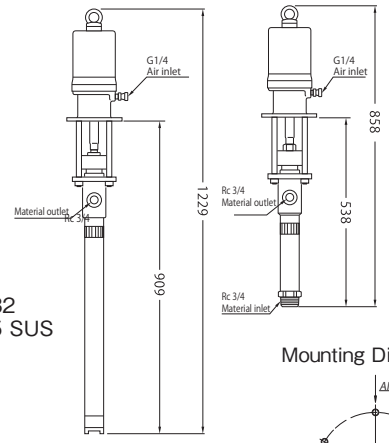
110 series

DR-110B5 SUS (Drum pump)
SH-110B5 SUS (Siphon pump)

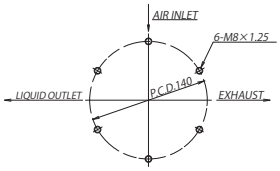


851833
DR-110B5 SUS

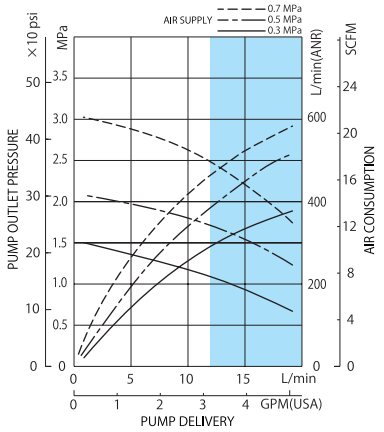
851832
SH-110B5 SUS



Mounting Dimensions



Performance Curve



●Material

Suction Tube	Piston Packing	Gland Packing
SUS304	PTFE (Glass-fiber reiuforced)	PTFE (Glass-fiber reiuforced)

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
851833	DR-110B5 SUS	5×1	—	Rc3/4	G1/4	0.2~0.7	0~60	0~80	60	16.0
851832	SH-110B5 SUS	5×1	Rc1-1/2	Rc3/4		0.2~0.7	0~60	0~80	60	15.0

Divorced Stainless Steel Pump 3.5×1 ratio

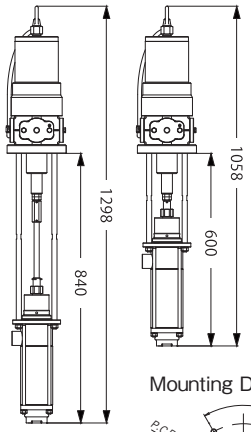
Solvent chemical drum Paint

125 series

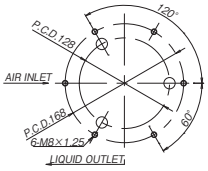
DR-125B3.5 SUS (Drum pump)
SH-125B3.5 SUS (Siphon pump)

854606
DR-125B3.5 SUS

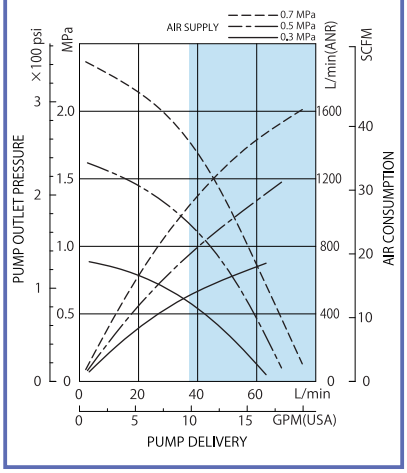
854605
SH-125B3.5 SUS



Mounting Dimensions



Performance Curve



●Material

Suction Tube	Piston Packing	Gland Packing
SUS304	PTFE (Glass-fiber reiuforced)	PTFE (Glass-fiber reiuforced)

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
854606	DR-125B3.5 SUS	3.5×1	Rc1-1/2	Rc3/4	Rc3/8	0.2~0.7	0~60	0~80	100	30.0
854605	SH-110B3.5 SUS	3.5×1	Rc1-1/2	Rc3/4		0.2~0.7	0~60	0~80	100	28.4

Divorced Stainless Steel Pump 5×1 ratio

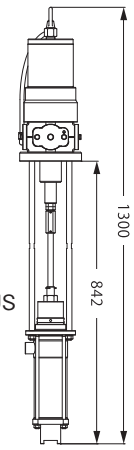
Solvent chemical drum Paint

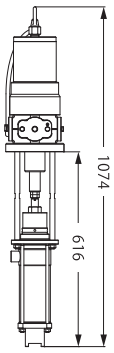
125 series

DR-125B5 SUS (Drum pump)
SH-125B5 SUS (Siphon pump)

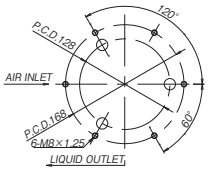
854608
DR-125B5 SUS

854607
SH-125B5 SUS

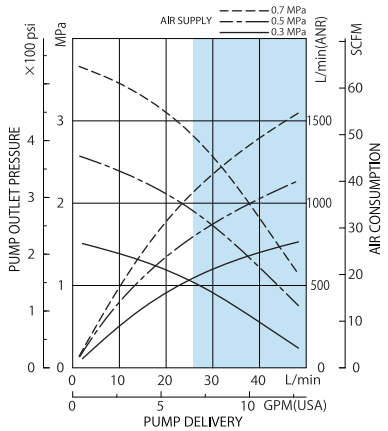




Mounting Dimensions



Performance Curve



●Material

Suction Tube	Piston Packing	Gland Packing
SUS304	PTFE (Glass-fiber reuforced)	PTFE

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
854608	DR-125B5 SUS	5×1	Rc1-1/2	Rc3/4	Rc3/8	0.2~0.7	0~60	0~80	100	29.4
854607	SH-125B5 SUS	5×1	Rc1-1/2	Rc3/4		0.2~0.7	0~60	0~80	100	27.8

Divorced Stainless Steel Pump 13×1 ratio

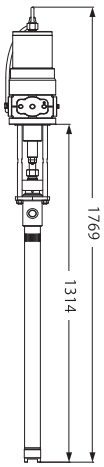
Solvent chemical drum Paint

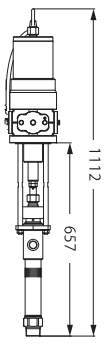
125 series

DR-125B13 SUS (Drum pump)
SH-125B13 SUS (Siphon pump)

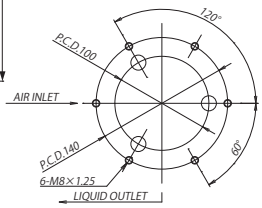
854610
DR-125B13 SUS

854609
SH-125B13 SUS

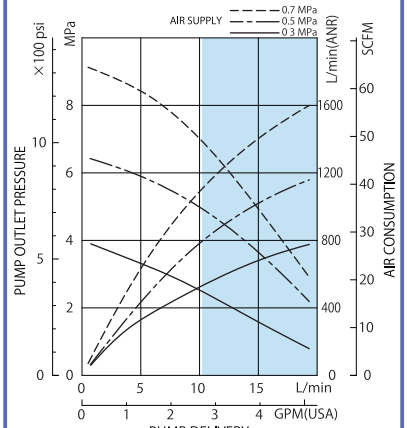




Mounting Dimensions



Performance Curve



●Material

Suction Tube	Piston Packing	Gland Packing
SUS304	PTFE (Glass-fiber reuforced)	PTFE

●Specifications

Model No.	Model	Ratio	Port		Air Inlet Port	Air Supply Pressure(MPa)	Temp. Range (℃)		Stroke (mm)	Weight (kg)
			Intake	Discharge			Ambient	Material		
854610	DR-125B13 SUS	13×1	—	Rc3/4	Rc3/8	0.2~0.7	0~60	0~80	100	25.5
854609	SH-125B13 SUS	13×1	Rc1-1/2	Rc3/4		0.2~0.7	0~60	0~80	100	22.3

Accessories

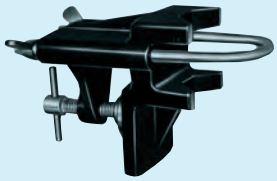
803488 804098
802857 802373

850126

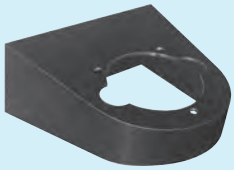
800400

800383,800412

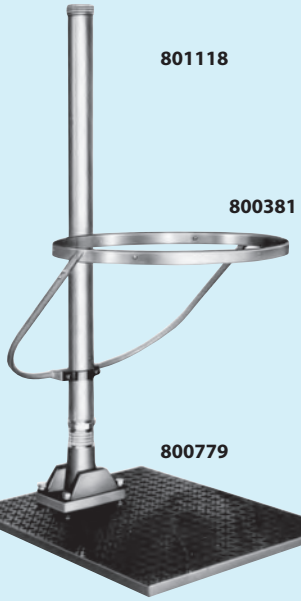
800402



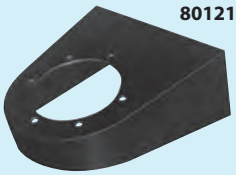
801214



801118



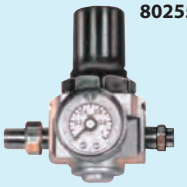
801215



800381

800779

802553



800434

802857,850373 Bung adapter

Adapter for inline drum pump for mounting to bung hole (2") of 200L drum

803488
Material: ADC12
Fits pump: DR-50A1, DR-90A3, DR-110A5

802857
Material: ADC12
Fits pump: DR-110A5, DR-90A3, DR-110A5

804098
Material: SUS304
Fits pump: DR-50B1 SUS

802373
Material: SUS304
Fits pump: OPG-1DR SUS,DR-125B13 SUS

800400 MTB-SH Mounting bracket

Bracket for inline siphon pump for mounting to the wall
Material: ADC12, SPCC
Mounting holes: 4-ϕ11.5 (W84mm x H100mm)
Fits pump: SH-50A1, SH-90A3, SH-110A5, SH-125A13

800402 PC-200DR Pump clamp

Clamp for inline drum pump for mounting to 200L open top drum
Material FC-20, SS34B
Fits pump: DR-50A1, DR-90A3, DR-110A5, DR-125A13

Elevator unit for drum

It is composed of Air lift **(801118)**, Support ring **(800381)**, Base plate **(800779)** for the purpose of ease of change of drum
Should be used with drum cover suitable to type of pump

800434 AR-160HL Air regulator

Adjustable range: 0.1MPa to 1.0MPa
Inlet: G3/8" with union adapter
Outlet: G3/8"
Fits pump: 125 series

802553 AR-110A Air regulator

Adjustable range: 0.1MPa to 1.0MPa
Inlet: G1/4" with PS-20PM Air Coupler Plug
Outlet: G1/4"
Fits pump: 90 and 110 series

850126 SCK-200D Suction Tube Hose Kit

Suction tube with bung adapter and hose (3/4"-1.8M) kit for siphon pumps for mounting to bung hole (2") of 200L drum
Tube material: STKM12B
Hose material: NBR
Connection: Rc1-1/2"

800383 DC-160C Drum Cover

Drum cover for divorced/circulation drum pumps
Material: SPCC
Fits pump: DR-110C1.5P, DR-110C2P

800412 DC-110DR Drum cover

Drum cover for inline drum pumps
Material: SPCC
Fits pump: DR-110A5, DR-110A15, DR-125A13

801214 WMB-C Wall mounting bracket

Wall mounting bracket for divorced/circulation siphon pumps
Material: SPCC
Fits pump: SH-110C1.5P, SH-110C2P

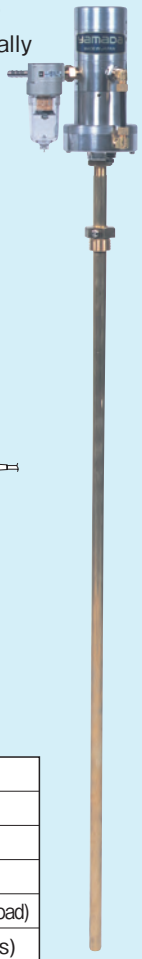
801215 WMB-B Wall mounting bracket

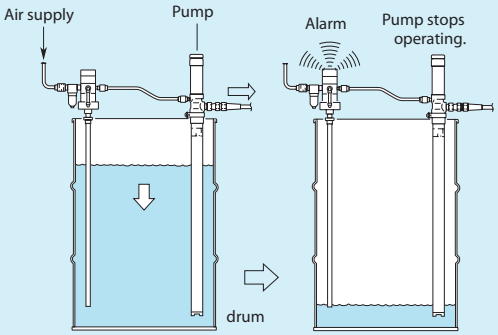
Wall mounting bracket for divorced siphon pumps
Material: SPCC
Fits pump: SH-110B5,SH-125B13

Liquid Level Alarm Series

Low Level Alarm

When the liquid level reaches a predetermined limit, this fully-pneumatic liquid level sensor shuts the air supply to the pumps automatically and it blows the whistle instead.
The Low level alarm can protect the pump from dry-running, and can prevent the mixing of bubbles into the material.
It can be mounted to the bung hole (3/4") of 200L drum directly.
Mateial of detecting tube: Brass



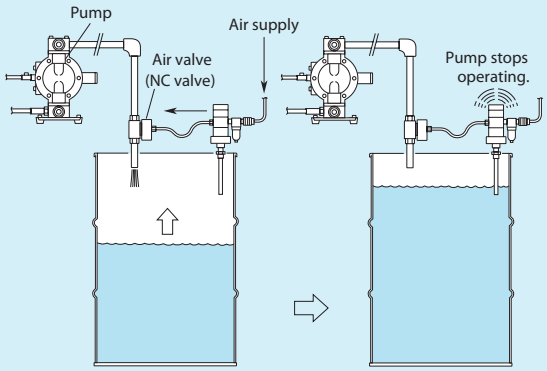


Specifications

Model No.	480007
Model	SA-4100 Low level alarm
Type	Lower limit detection
Air pressure	0.25~0.7MPa
Air consumption	Max. 1000 L/min (ANR) (at 0.5MPa load)
Max. viscosity	Less than 2.5Pa·s (2,500cPs)
Weight	2.2kg
Accessories	PS-20PM Air coupler

High Level Alarm

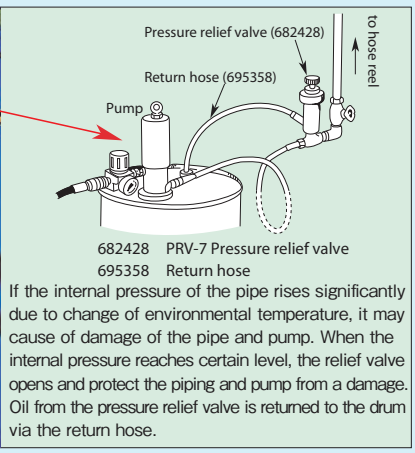
When the liquid level reaches a predetermined limit, this fully-pneumatic liquid level sensor shuts the air supply to the pumps automatically and it blows the whistle instead.
The high level alarm can prevent the overflow of drums and tanks.
It can be mounted to the bung hole (3/4") of 200L drum directly.
Mateial of detecting tube: Brass



Specifications

Model No.	480008
Model	SA-4110 High level alarm
Type	Upper limit detection
Air pressure	0.25~0.7MPa
Air consumption	Max. 1000 L/min (ANR) (at 0.5MPa load)
Max. viscosity	Less than 2.5Pa·s (2,500cPs)
Weight	2.2kg
Accessories	PS-20PM Air coupler

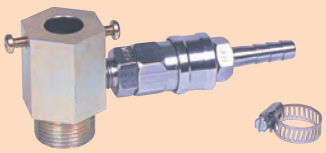
Pressure Relief Valve



682428 PRV-7 Pressure relief valve
695358 Return hose

If the internal pressure of the pipe rises significantly due to change of environmental temperature, it may cause of damage of the pipe and pump. When the internal pressure reaches certain level, the relief valve opens and protect the piping and pump from a damage. Oil from the pressure relief valve is returned to the drum via the return hose.

802781 RS-SA Return hose adapter



When installing the Level alarm and Pressure relief valve, please use the RL-SA return hose adapter.

Table of Corrosion Resistance

■This chart data has been compiled as a guide only. For more information please consult your Yamada Pump Dealer or Yamada Corporation.

		Aluminium	Stainless steel	NBR	EPR	FKM	PTFE	PPG
A	Acetic acid	○	○		○		○	○
	Acetic acid	○	○		○		○	
	Acetone	○	○		○		○	
	Acetylene	○	○	○			○	
	Alcoho- Methyl alcohol		○	○	○		○	○
	Alcohol - Ethyl alcohol	○	○		○	○	○	○
	Alum		○	○			○	○
	Aluminum fluoride (Dry)	○	○	○			○	○
	Aluminum nitrate		○	○			○	○
	Aluminum sulfate	○	○	○			○	
	Ammonia liquor	○	○	○			○	○
	Ammonium nitrate		○	○			○	○
	Ammonium sulfate		○	○			○	○
	Ammoniumhydroxide	○	○	○			○	
	Anhydrous alcohol		○	○			○	
	Aniline	○	○	○		○	○	
	Asphalt		○				○	○
B	Barium chloride		○	○			○	○
	Barium hydroxide		○	○		○	○	○
	Barium monosulfide		○	○			○	○
	Beer	○	○		○		○	○
	Benzene	○	○			○	○	
	Benzene	○	○	○			○	
	Boracic acid	○	○	○			○	○
	Butadiene	○	○	○			○	
	Butane	○	○	○			○	
	Butanol	○	○	○			○	○
	Butyl acetate	○	○				○	
	Butyl stearate	○	○	○			○	
C	Calcined soda		○	○			○	
	Calcium acetate		○	○			○	
	Calcium hydroxide		○	○			○	○
	Calcium nitrate	○	○	○			○	○
	Calciumhydrogen sulfite		○	○			○	○
	Carbamide	○	○	○			○	
	Carbon disulfide	○	○			○	○	
	Carbonic acid	○	○	○			○	
	Castor oil		○		○		○	
	Chlorine (Dry)		○			○	○	
	Chloroform	○	○			○	○	
	Citric acid		○		○		○	
	Copper chloride (Dry)		○	○			○	○
	Corn oil		○		○		○	○
	Cottonseed oil		○		○		○	○
	Creosote	○	○			○	○	
	Cresylic acid	○	○		○		○	
	Cyanic acid	○	○		○		○	
	Cyclohexane	○	○			○	○	
D	Diammonium hydrogen phosphate		○	○			○	○
	Diesel fuel	○	○	○			○	
E	Ethanolamine	○	○	○			○	
	Ether	○	○	○			○	
	Ethyl acetate		○		○	○	○	
	Ethyl alcohol	○	○			○	○	○
	Ethyl chloride (Dry)		○	○			○	
	Ethylene dichloride	○	○	○			○	
	Ethylene glycol	○	○	○			○	○
F	Fatty acid		○	○			○	
	Ferric nitrate		○	○			○	
	Ferric sulfate		○	○			○	
	Formaldehyde	○	○		○		○	○
	Formalin	○	○		○		○	○
	Formic acid	○	○	○	○		○	○
	Freon	○	○	○			○	
G	Gasoline (Refined)	○	○	○			○	
	Gelatin	○	○		○		○	○
	Gelatin	○	○	○			○	○
	Glycerol	○	○	○			○	○
	Glycol	○	○		○		○	○
	Grape sugar	○	○		○		○	
	Grease	○	○	○			○	
H	Hexane	○	○	○	○		○	
	Hydrated lime	○	○	○			○	
	Hydrogen chloride gas (Dry)		○			○	○	
	Hydrogen gas	○	○	○	○		○	
I	Isobutyl acetate	○	○				○	
	Isopropyl acetate		○				○	
	Jet fuel	○	○	○		○	○	
K	Kerosene	○	○	○			○	
	Lacquer	○	○	○			○	
	Lactic acid		○		○	○	○	○
	Lard		○		○		○	○
	Lime sulfur		○	○			○	
	Linolenic acid		○	○			○	○

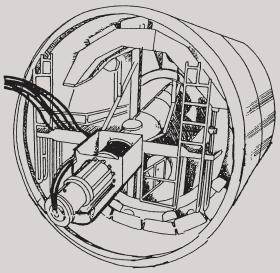
		Aluminium	Stainless steel	NBR	EPR	FKM	PTFE	PPG
L	Linseed oil		○		○		○	
	LPG		○	○			○	
M	Magnesium carbonate	○	○	○			○	○
	Magnesium chloride		○	○			○	○
	Magnesium hydroxide		○	○			○	○
	Magnesium nitrate	○	○	○			○	○
	Magnesium sulfate	○	○	○			○	○
	Mercury		○	○			○	
	Methane	○	○	○			○	
	Methyl alcohol		○	○	○		○	○
	Methylbenzene	○	○			○	○	
	Methylbenzene	○	○			○	○	
	Methylene chloride		○			○	○	
	Milk	○	○		○		○	○
	Molasses	○	○		○		○	○
N	Naphtha	○	○	○			○	
	Naphtha (Unrefined gasoline)	○	○	○			○	
	Naphtha (Unrefined gasoline)	○	○	○			○	
	Naphthalene	○	○			○	○	○
	Naphthenic acid		○	○			○	
	Natural gas	○	○	○			○	
	Nectar		○		○		○	
	Nickel chloride		○	○			○	○
	Nitric acid		○	○	○		○	
	Nitro lime		○	○			○	
O	Octane	○	○			○	○	
	Oleic acid		○	○			○	
	Oxalic acid		○	○	○		○	○
	Oxygen	○	○	○			○	
P	Palmitic acid		○	○			○	○
	Paraffin	○	○	○			○	○
	Perchloroethylene		○			○	○	○
	Peroxyboric sodium acid		○				○	
	Petroleum - Crude oil		○	○			○	
	Petroleum- Refined oil	○	○	○			○	
	Phenol		○			○	○	
	Phthalic anhydride		○		○		○	
	Pickling acid		○			○	○	
	Potassium cyanide		○	○			○	○
	Potassium dichromate	○	○	○			○	○
	Potassium nitrate	○	○	○			○	○
	Potassium sulfate	○	○	○			○	○
	Propane	○	○	○			○	
	Propylene glycol	○	○	○			○	○
R	Rosin	○	○	○	○		○	○
S	Salt water		○	○			○	○
	Silicone oil		○	○	○		○	
	Soap water		○	○			○	○
	Sodium bicarbonate		○	○	○		○	○
	Sodium borate	○	○	○			○	
	Sodium carbonate		○	○	○		○	
	Sodium chloride		○	○			○	○
	Sodium cyanide (Rarified)		○	○			○	○
	Sodium hydroxide		○		○		○	○
	Sodium nitrate	○	○	○	○		○	○
	Sodium peroxide		○	○			○	
	Sodium phosphate		○	○	○		○	○
	Sodium sulfate		○		○		○	○
	Sodium sulfate		○	○			○	○
	Sodium sulfide		○	○			○	○
	Sodium thiosulfate		○	○			○	
	Soybean oil		○		○		○	
	Stearic acid,		○	○	○		○	○
	Sugar solution - Sugar corn	○	○		○		○	○
	Sugar solution - Beet Sugar	○	○		○		○	○
	Sulfite solution		○			○	○	
	Sulfuric anhydride	○	○		○		○	
	Synthetic detergent		○	○			○	
T	Tannic acid (rarified)	○	○		○		○	○
	Tar	○	○	○			○	
	Tartaric acid	○	○	○	○		○	○
	Tetrachloroethylene		○			○	○	
	Trichloroethylene		○			○	○	
V	Varnish	○	○			○	○	
	Vegetable oil	○	○	○	○		○	
W	Whiskey		○		○		○	○
	White liquor (Waste from mill)		○	○			○	
	Wine		○		○		○	○
X	Xylene / Xylol	○	○			○	○	
Z	Zinc chloride		○	○			○	○
	Zinc nitrate	○	○	○			○	
	Zinc sulfate	○	○	○			○	○

HIGH PRESSURE SUPPLY PUMPS

Applications

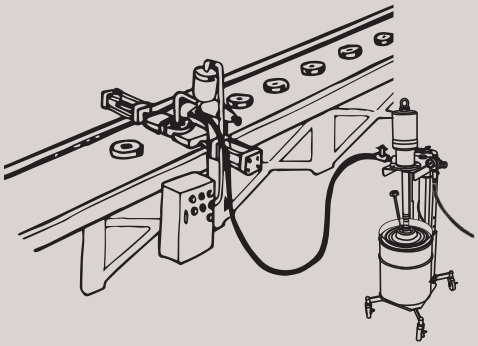
TUNNEL BUILDING

High-pressure supply pumps are driven by compressed air, not electricity and are therefore very safe. They are often used to lubricate the drive trains of vehicles or machines, and due to their high-pressure output are used for sealing or plugging of tunnel walls against water seepage.



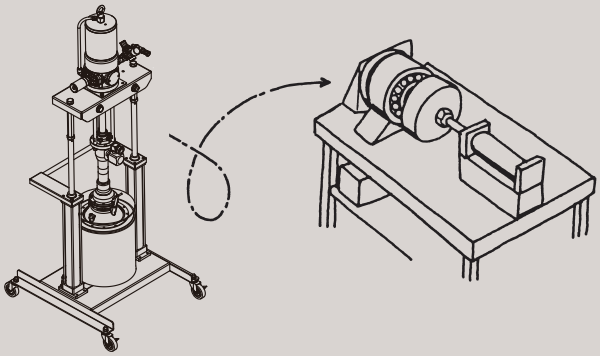
GREASE METERING

By using a pump unit fitted with a grease meter, it is possible to carryout accurate and efficient lubrication. Used for applications such as metering systems and bearing grease packers, they are commonly used in the manufacturing and vehicle industries.



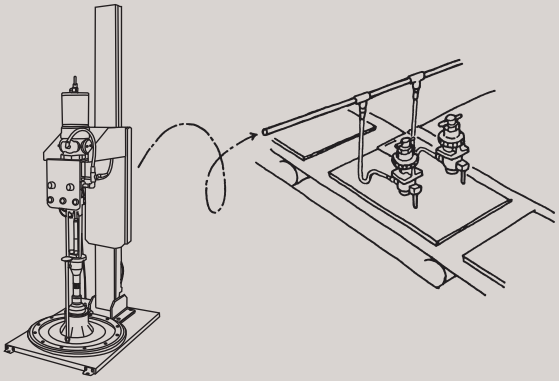
Bearing grease applications

Using this system grease can be supplied from the pump usually through a special metering device directly into the bearing of a vehicle. A variety of systems and different guns and outlets are available.



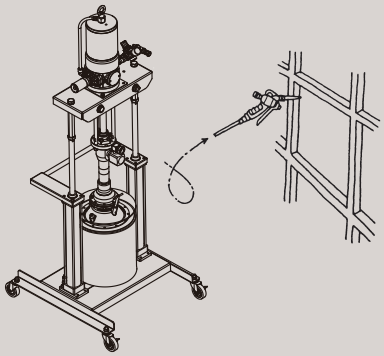
CENTRALIZED SEALER

This type of pump can be used for adhesive and spot sealing applications and is often seen in mass production plants. Material can be piped to any point in the plant thus the entire plant space is used effectively. Often used in conjunction with a flow control valve etc.



APPLICATION OF SEALER AND CAULKING

By connecting a hose and flow gun to a portable high-pressure pump unit, a uniform and smooth delivery of material can be carried out efficiently at any location. This type of unit saves on time and material costs and is very efficient.



Inline High Pressure Supply Pump Unit 50×1 ratio

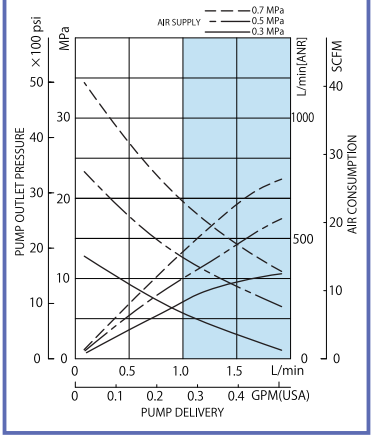
SKR110A50PAL

The SKR110A50PAL is the successor model of SKR110M50SAL that is one of bestseller of Yamada.
Proven and reliable 110 series high performance Air-Powered® pump is fitted with inductor plate and pneumatic ram lift.
This is one of the most highly efficient and extremely versatile grease pump units for manufacturing line use.

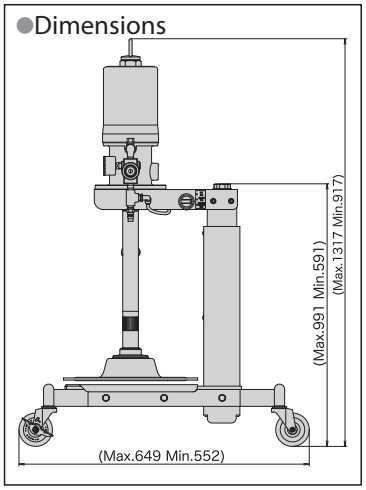
Material outlet: G1/4
Air inlet: Rc1/4 with PS-20PM Air Coupler

- **Successor model of SKR110M50SAL**
- **Proven and reliable 110 series Air-Powered® pump**
- **Low-profile pump lift**
- **Flat shaped base**
- **Complies with CE**

PD110A50 Performance Curve



●Dimensions



●**Optional Accessory**

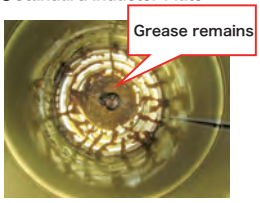
Flat Bottom Inductor Plate Kit for Straight Pail

805016 IDP-PAL/PM

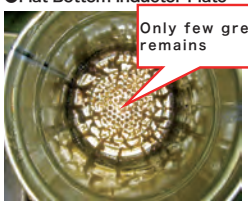
Inductor Plate Kit for Straight Pail

SP-8649 IDP-PAL/SP

●Standard Inductor Plate



●Flat Bottom Inductor Plate



Pail Stopper kit

805019 ST-PAL

●Material

Piston Packing	Gland Packing	Inductor Plate Wiper
Polyurethane	Polyurethane	NBR (Flat type)

●Specifications

Model No.	Model	Container	Air Supply Pressure (MPa)	Pump Spec		Main component	Weight (kg)
				Model	Ratio		
881122	SKR110A50PAL	Pail (16-18kg)	0.2-0.7	851728 PD110A50	50×1	685405 Air Regulator……1 680743 PS−20PM Air Coupler…1 802629 IDP-110Inductor Plate… 1 831384 Caster Base……1	34.0
881123	SKR110A50PAL-SL (for silicon grease)			851999 PD110A50T-SL			

*Pail empty detection sensor is available upon request

High Pressure Supply Pumps

Inline High Pressure Supply Pump Unit 50×1 ratio

HPP110A50

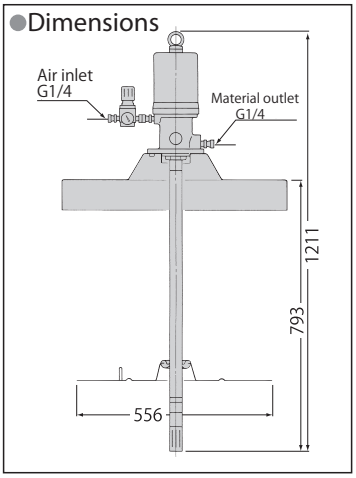
110 series high performance Air-Powered® pump fitted with drum cover and follower plate.
An airtight seal created by the follower plate helps with the delivery of material into the pump suction.
Suitable for soft grease (NLGI No.0–1).

Material outlet: G1/4 (Union Adapter)
Air inlet: G1/4 (Union Adapter)

●Material

Piston Packing	Gland Packing
Polyurethane	Polyurethane

●Dimensions



●Specifications

Model No.	Model	Container	Air Supply Pressure (MPa)	Pump Spec		Main component	Weight (kg)
				Model	Ratio		
880629	HPP110A50	Drum (180kg)	0.2-0.7	851783 DR110A50	50x1	800412 DC-110DR Drum Cover·····1 800413 FP-110H Follower Plate·····1 802552 PAR-110 Air Regulator·····1	11.0 (Pump Only)

Inline High Pressure Supply Pump Unit 50×1 ratio

HPP110A50AL

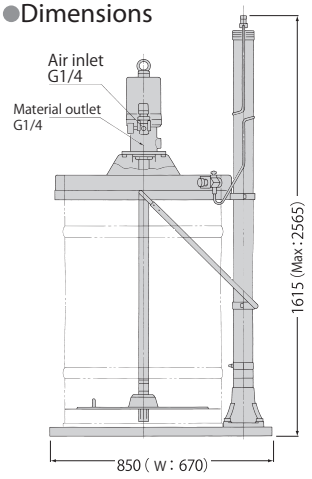
HPP110A50 fitted with pneumatic pump lift.
Replacement of the drum is easy.

Material outlet: G1/4 (Union Adapter)
Air inlet: G1/4 (Union Adapter)

●Material

Piston Packing	Gland Packing
Polyurethane	Polyurethane

●Dimensions



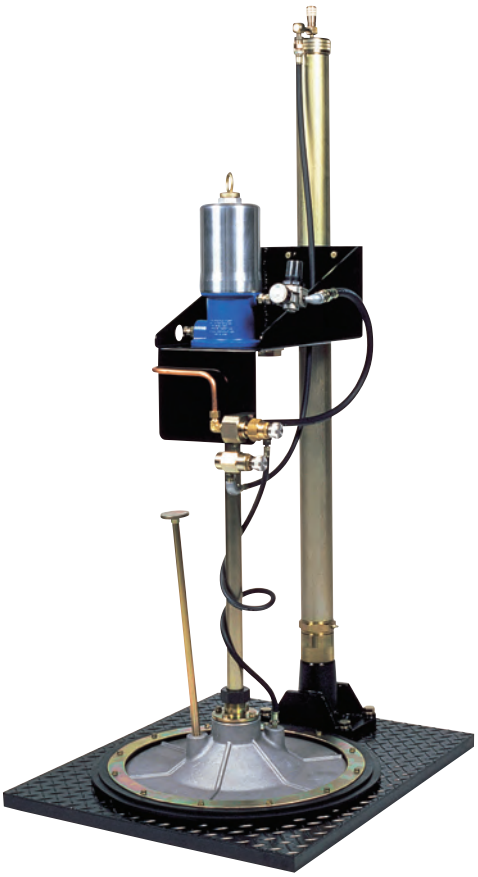
●Specifications

Model No.	Model	Container	Air Supply Pressure (MPa)	Pump Spec		Main component	Weight (kg)
				Model	Ratio		
880630	HPP110A50AL	Drum (180kg)	0.2-0.7	851783 DR110A50	50x1	800412 DC-110DR Drum Cover·····1 800413 FP-110H Follower Plate·····1 802552 PAR-110 Air Regulator·····1 800779 Base·····1 801118 Air Lift·····1 800381 SL-110HPP Support Ring·····1	11.0 (Pump Only)

Inline High Pressure Supply Pump Unit 50×1 ratio

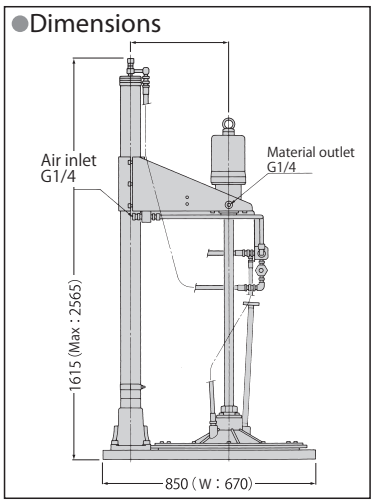
DR110A50AL

110 series high performance Air-Powered® pump fitted with inductor plate and pneumatic pump lift.
A strong airtight seal created by the inductor plate and the pump weight helps with the delivery of material into the pump suction.
Suitable for normal grease (NLGI No.1–2).



Material outlet: G1/4 (Union Adapter)
Air inlet: G1/4 (Union Adapter)

●Dimensions



●Material

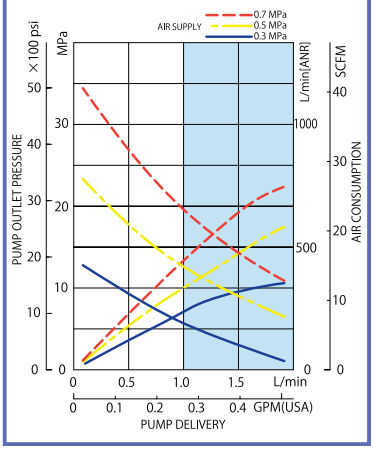
Piston Packing	Gland Packing	Inductor Plate Wiper
Urethane	Polyurethane	NBR (Flat type)

●Specifications

Model No.	Model	Container	Air Supply Pressure (MPa)	Pump Spec		Main component	Weight (kg)
				Model	Ratio		
880628	DR110A50AL	Drum (180kg)	0.2-0.7	851783 DR110A50	50x1	801118 Air Lift·····1 802555 IDP-110AL Inductor Plate·····1 802556 BC-110AL Bracket·····1 800779 Lift Base·····1	105.0

*Drum empty detection sensor is available upon request.

DR110A50 Performance Curve



High Pressure Supply Pumps

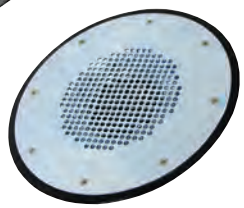
Divorced High Pressure Supply Pump Unit 25x1, 38x1 and 50x1 Ratio

NO.1 Grease NO.2 Grease NO.3 Grease Pail Adhesive Sealant

SR140P 25 38 50 PWAL-F series

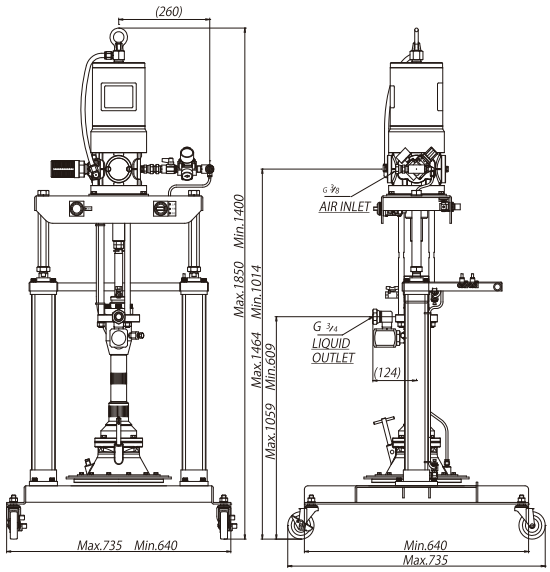
The Yamada's latest 140 series high performance Air-Powered® pump fitted with inductor plate and double post pneumatic ram pump lift. Very strong airtight seal created by the inductor plate and downward force by ram pump lift helps with the delivery of material into the pump suction.
Flat bottom inductor plate is equipped as a standard.

Material outlet: G1/4 (Union Adapter)
Air inlet: G3/8 (Union Adapter)



Flat bottom inductor plate minimizes remaining amount of the grease.

●Dimensions



●Material

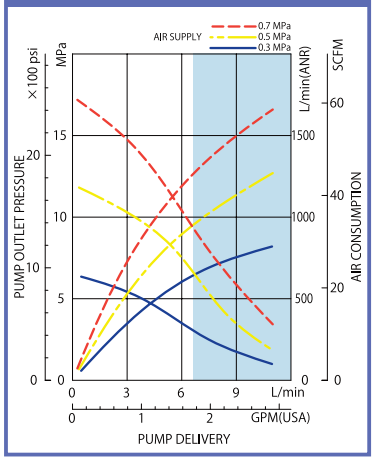
Piston Packing	Gland Packing	Inductor Plate Wiper
Polyurethane	Polyurethane	NBR (Flat type)

●Specifications

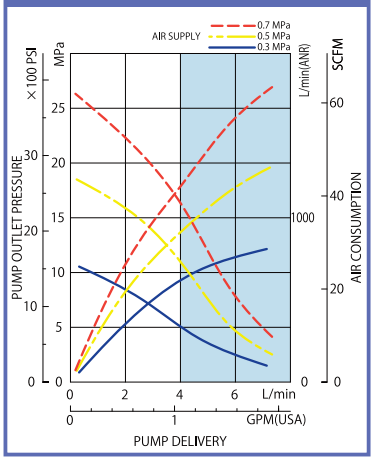
Model No.	Model	Container	Air Supply Pressure (MPa)	Pump Spec		Main component	Weight (kg)
				Model	Ratio		
881107	SR140P25PWAL-F	Pail (16-18kg)	0.2-0.7	854557 SR140P25-P	25x1	804819 Inductor Plate Assy……1 680743 PS-20PM Air Coupler…1	61.0
881108	SR140P38PWAL-F			854558 SR140P38-P	38x1		
881109	SR140P50PWAL-F			854559 SR140P50-P	50x1		

*Pail empty detection sensor is available upon request.

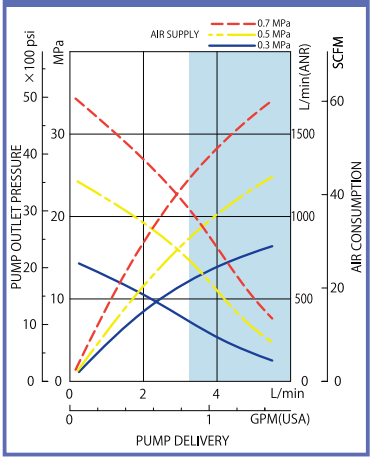
SR140P25 Performance Curve



SR140P38 Performance Curve



SR140P50 Performance Curve



Divorced High Pressure Supply Pump Unit 25x1, 38x1 and 50x1 Ratio

NO.1 Grease NO.2 Grease NO.3 Grease Pail Adhesive Sealant

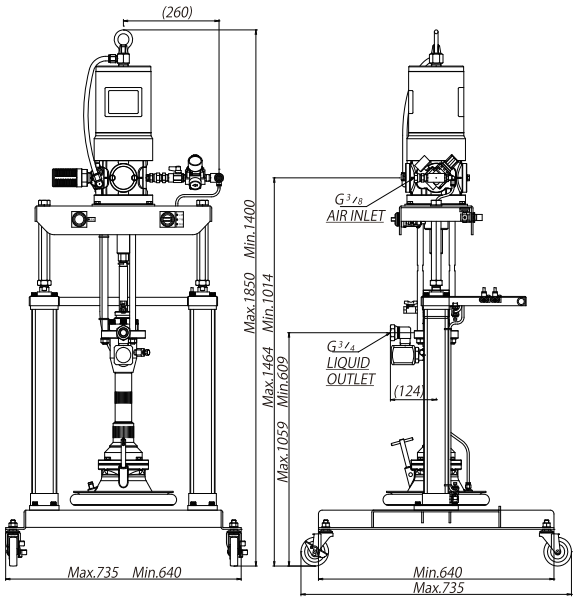
SR140P$^{25}_{38}_{50}$PWAL-T series

By means of the tube wiper fitted inductor plate, this is available to pump very high viscosity materials such as adhesive and sealant.

Material outlet: G1/4 (Union Adapter)
Air inlet: G3/8 (Union Adapter)

804820
Inductor Plate (Tube Wiper)
*NOT flat bottom

●Dimensions



●Material

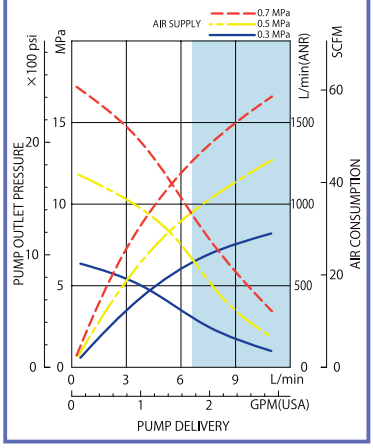
Piston Packing	Gland Packing	Inductor Plate Wiper
Polyurethane	Polyurethane	NBR (Tube type)

●Specifications

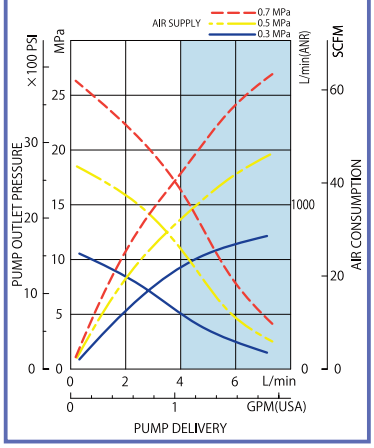
Model No.	Model	Container	Air Supply Pressure (MPa)	Pump Spec		Main component	Weight (kg)
				Model	Ratio		
881110	SR140P25PWAL-T	Pail (16-18kg)	0.2-0.7	854557 SR140P25-P	25x1	804820 Inductor Plate Assy……1 680743 PS-20PM Air Coupler…1	63.0
881111	SR140P38PWAL-T			854558 SR140P38-P	38x1		
881112	SR140P50PWAL-T			854559 SR140P50-P	50x1		

*Pail empty detection sensor is available upon request.

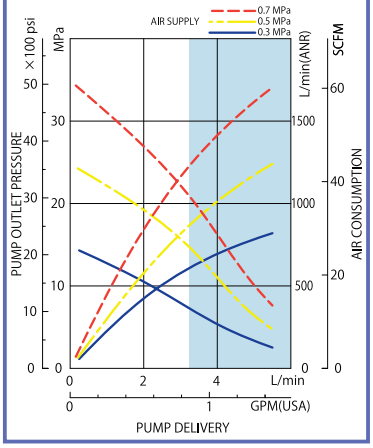
SR140P25 Performance Curve



SR140P38 Performance Curve



SR140P50 Performance Curve



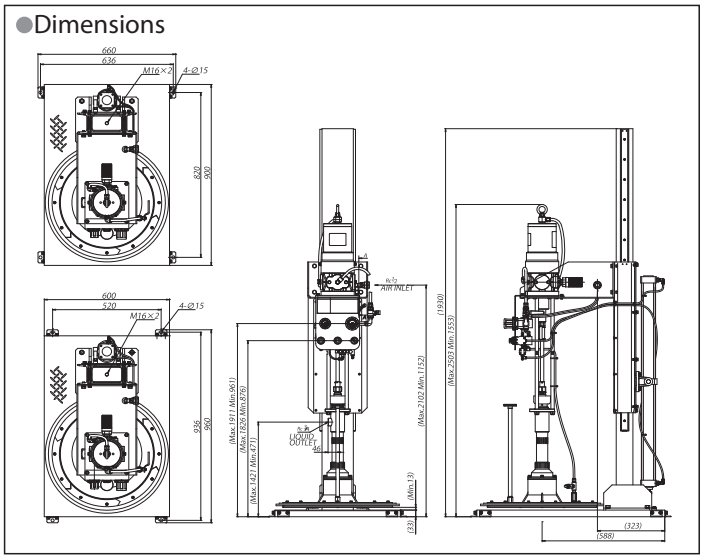
Divorced High Pressure Supply Pump Unit 13x1 Ratio

NO.0 Grease NO.1 Grease NO.2 Grease drum

SR125D13DAL

Material outlet: G3/4 (Union Adapter)
Air inlet: Rc1/2 (Union Adapter)

●Dimensions



Flat bottom inductor plate minimizes remaining amount of the grease.

●Material

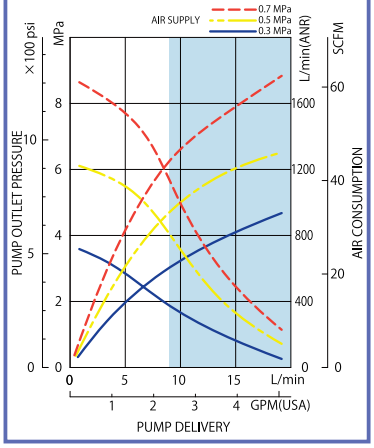
Piston Packing	Gland Packing	Inductor Plate Wiper
Special cowhide	Special cowhide	NBR (Flat type)

●Specifications

Model No.	Model	Container	Air Supply Pressure (MPa)	Pump Spec		Main Component	Weight (kg)
				Model	Ratio		
881125	SR125D13DAL	Drum (180kg)	0.2-0.7	854664 SR125D13-P	13x1	854564 Drum Lift Assy……1 804823 Inductor Plate Assy……1	173.0

*Drum empty detection sensor is available upon request.

SR125D13-P Performance Curve



Divorced High Pressure Supply Pump Unit 25x1, 38x1 and 50x1 Ratio

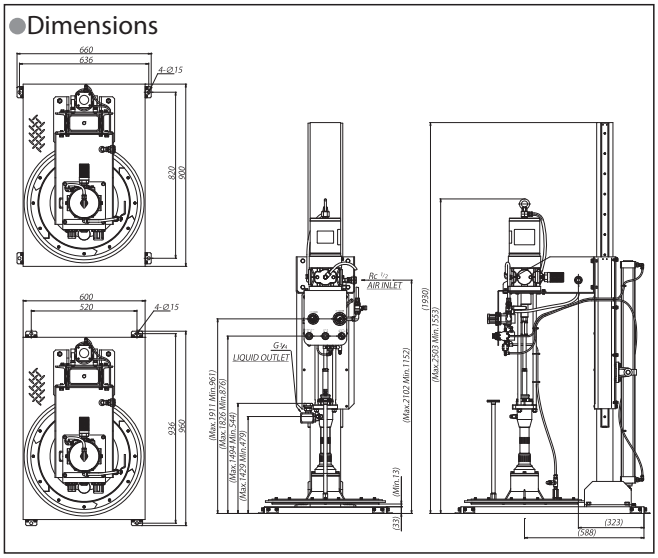
SR140P$^{25}_{38}_{50}$DAL series

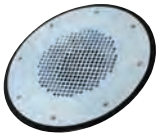
NO.0 Grease NO.1 Grease NO.2 Grease drum

The Yamada's latest 140 series high performance Air-Powered® pump fitted with inductor plate and single post pneumatic ram pump lift.
Very strong airtight seal created by the inductor plate and downward force by ram pump lift helps with the delivery of material into the pump suction.
Flat bottom inductor plate is equipped as a standard.

Material outlet: G1/4 (Union Adapter)
Air inlet: Rc1/2(Union Adapter)

●Dimensions





Flat bottom inductor plate minimizes remaining amount of the grease.

●Material

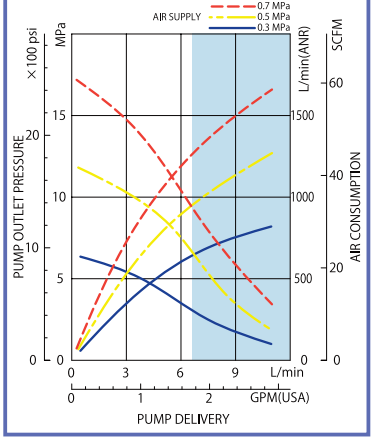
Piston Packing	Gland Packing	Inductor Plate Wiper
Polyurethane	Polyurethane	NBR (Flat type)

●Specifications

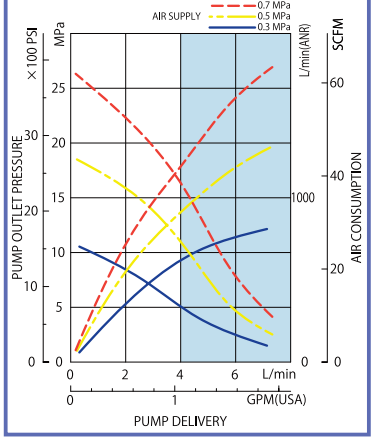
Model No.	Model	Container	Air Supply Pressure (MPa)	Pump Spec		Main Component	Weight (kg)
				Model	Ratio		
881113	SR140P25DAL	Drum (180kg)	0.2-0.7	854560 SR140P25-D	25x1	854564 Drum Lift Assy·····1 804823 Inductor Plate Assy···1	173.0
881114	SR140P38DAL			854561 SR140P38-D	38x1		
881115	SR140P50DAL			854562 SR140P50-D	50x1		

*Drum empty detection sensor is available upon request.

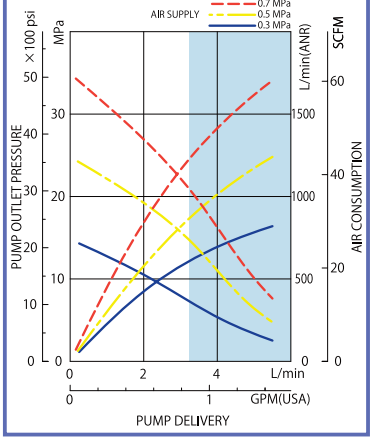
SR140P25-D Performance Curve



SR140P38-D Performance Curve



SR140P50-D Performance Curve



High Pressure Supply Pumps

Divorced High Pressure Supply Pump Unit 10x1, 20x1, 40x1, 47x1 and 55x1 Ratio

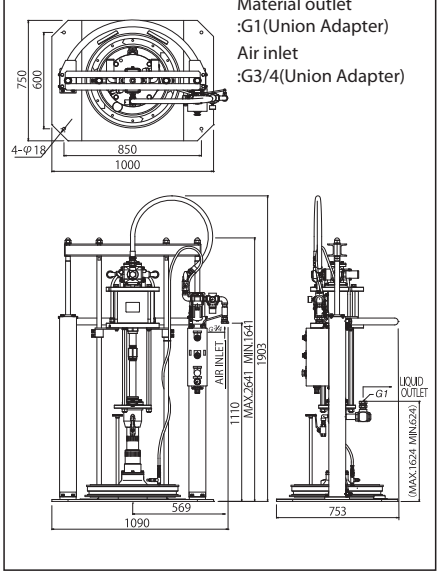
NO.1 Grease NO.2 Grease NO.3 Grease Adhesive Sealant drum

SR250P$^{10}_{20}{}^{40}_{55}$DWAL *Packing seal*

SR250M47DWAL *Metal seal*

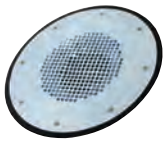
The Yamada's largest 250 series high performance Air-Powered® pump fitted with inductor plate and double post pneumatic ram pump lift.
By the latest design, noise level have been reduced 10% compare with previous model.
SR250P series is fitted with packing seal at the gland, and NBR flat type wiper at the inductor plate. It is suitable for grease.
SR250M series is fitted with metal seal at the gland, and FKM tube type wiper at the inductor plate. It is suitable for adhesive, etc.
All model is equipped with drum empty detection sensor as a standard.
SR250P series is equipped with Flat Bottom Inductor Plate as a standard.

●Dimensions



●Material

	Piston Packing	Gland Packing	Inductor Plate Wiper
SR250P10	NBR	Polyurethane	NBR (Flat type)
SR250P20,40,55	Polyurethane	Polyurethane	NBR (Flat type)
SR250M47	NBR	SACM645	FKM (Tube type)

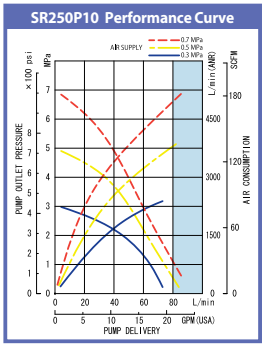


Flat Bottom Inductor Plate minimizes remaining amount of the grease. (SR250P series only)

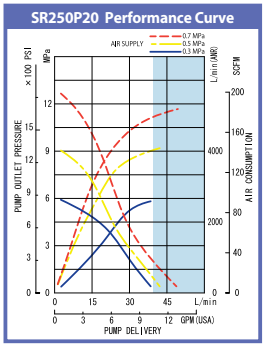
●Specifications

Media	Model No.	Model	Container	Air Supply Pressure (MPa)	Pump Spec Model	Pump Spec Ratio	Main component	Weight (kg)
Grease	881101	SR250P10DWAL	Drum (180kg)	0.2-0.7	854298 SR250P10	10x1	853871 Double Elevator Assy·····1 [Low limit sensor DC12/24V; AC100/200V with duplex cable]	265.0
	881102	SR250P20DWAL			854299 SR250P20	20x1		260.0
	881057	SR250P40DWAL			853869 SR250P40	40x1		255.0
	881058	SR250P55DWAL			853870 SR250P55	55x1		255.0
Adhesive, etc.	881104	SR250M47DWAL			854301 SR250M47	47x1	854302 Double Elevator Assy·····1 [Low limit sensor DC12/24V; AC100/200V with duplex cable]	250.0

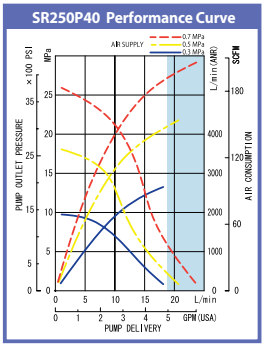
SR250P10 Performance Curve



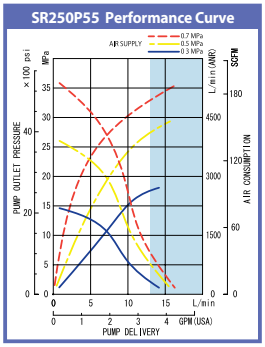
SR250P20 Performance Curve



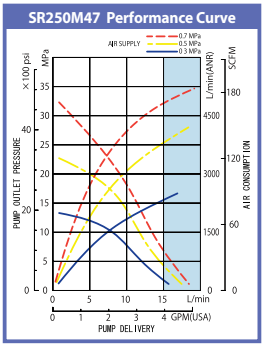
SR250P40 Performance Curve



SR250P55 Performance Curve



SR250M47 Performance Curve

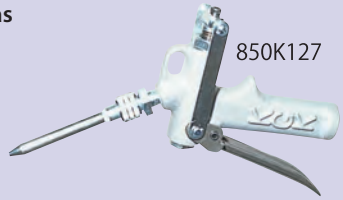


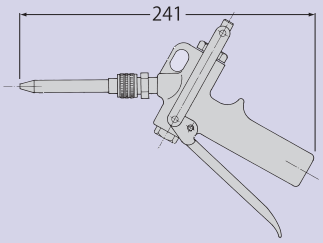
Control Valves and Accessories (For high pressure supply pumps)

850K127 KGK-127EF Flow Gun

This pistol type flow gun is compact and lightweight and has a special device in the valve control (open/close) mechanism, which allows an operator to operate the lever with ease even under the high pressure.

Material inlet: Rc1/4
Normal operation pressure: 40MPa

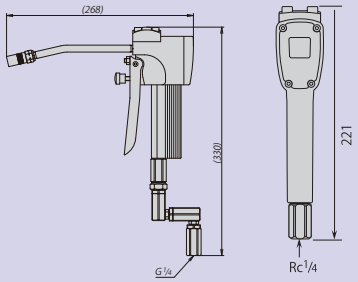




853502 GMN-500 Digital Grease Gun

The digital Grease Meter GMN-500 is equipped with an Over Gear weight meter and a digital display. It helps and improves lubricant management for all kinds of applications from heavy industry to assembly plants.

● Specifications
Model No.: 853502 / Model: GMN-500 / Maximum operating proof pressure: 55MPa
Maximum operating temperature: 60℃ / Measurement accuracy: +/-3% / Weight: 0.98kg
Power supply: Two AA batteries / Unit shown on LCD display while in operation: g and total kg
Functions: Zero reset and calibration functions



Automatic Flow Valves

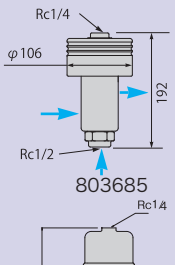
The valve in this automatic flow gun is controlled (open/close) by air pressure and the gun can easily be operated in synchronous with the production line.

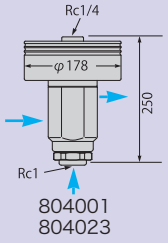
803685 AF30M-15A Valve ratio 45x1
Material: Max pressure 30MPa, Port size Rc1/2
Air: Max pressure 0.7MPa, Port size Rc1/4

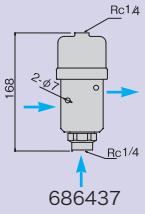
804001 AF20M-25A Valve ratio 30x1
Material: Max pressure 20MPa, Port size Rc1
Air: Max pressure 0.7MPa, Port size Rc1/4

804023 AF20M-25AS (with sensor) Valve ratio 30x1
Material: Max pressure 20MPa, Port size Rc1
Air: Max pressure 0.7MPa, Port size Rc1/4
Sensor: DC12～24V with double wire (2m)

686437 KGK-02AFG
Material: Max pressure 20MPa, Port size Rc1/4
Air: Max pressure 0.7MPa, Port size Rc1/4



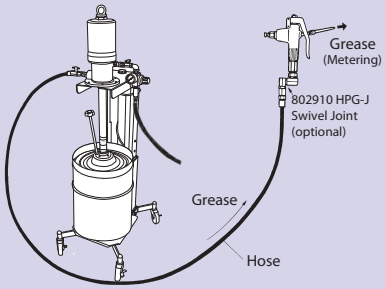


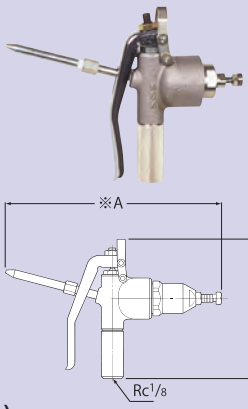


Automatic Metering Valve: KGK-100 Series

The KGK-100 series-metering gun is accurate from 1Ml to 20Ml and suitable for metering, dispensing or applying grease or adhesives. Once the volume has been preset, this unit with a simple pull of the trigger will dispense the required amount of material accurately and efficiently.

Material — Grease (Oil) Adhesive (only with the gun with PTFE packing)
Metering range — 0 to 20mL (See next table for details)





● For grease (NBR packing)

Model No.	Model	Metering range (mL)	※A Dimensions (mm)
686427	KGK-112	0.3～1	255
686428	KGK-114	0.5～3	272
686429	KGK-115	1～5	290
686430	KGK-116	3～10	328
686431	KGK-117	5～20	398

● For adhesive (PTFE packing)

Model No.	Model	Metering range (mL)	※A Dimensions (mm)
686432	KGK-112T	0.3～1	241
686433	KGK-114T	0.5～3	255
686434	KGK-115T	1～5	275
686435	KGK-116T	3～10	298
686436	KGK-117T	5～20	347

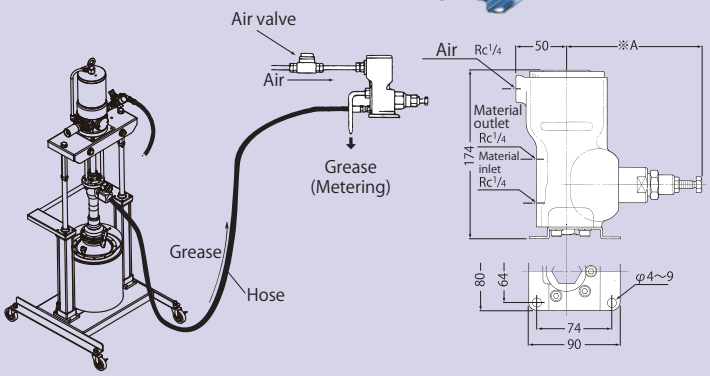
Automatic Metering Valve: KGK-400 Series

The KGK series metering valves can discharge preset amount of grease or adhesive with single action by pneumatic 3-port valve.
The material is extruded by a piston after being charged in the metering cylinder.
"MS" series, which is equipped with piston stroke sensors, can output signal of charge/discharge completions.
Silicon grease spec is also available.

<Usable media> - Grease (KGK-400M&MS series)
Adhesive (KGK-400T series)
<Metering range> - 0 – 100mL

● Working Principle
Pumped material is charged to the metering cylinder.
When the metering valve receives actuation air, the air piston opens the switching valve. The pumped material, reversely, pushes metering piston from behind, and material in the metering cylinder is discharged.
The metering range can be adjusted by stroke length of the metering piston.

KGK-400M series



● For grease (NBR packing, Metal sealed)

Model No.	Model	Metering range (mL)	※A Dimensions (mm)
686405	KGK-401M	0.05～0.5	128
686406	KGK-402M	0.2～1	118.5
851056S	KGK-402M for Silicon Grease		
686407	KGK-404M	0.3～3	133.5
851057S	KGK-404M for Silicon Grease		
686408	KGK-405M	2～5	154.5
851058S	KGK-405M for Silicon Grease		
686409	KGK-406M	4～10	186.5
851059S	KGK-406M for Silicon Grease		
686410	KGK-407M	8～20	259.6
851060S	KGK-407M for Silicon Grease		
686411	KGK-408M	15～50	285.5
851061S	KGK-408M for Silicon Grease		
686425	KGK-409M	40～100	-----

● For adhesive (PTFE packing, Metal sealed)

Model No.	Model	Metering range (mL)	※A Dimensions (mm)
686412	KGK-402T	0.2～1	104
686413	KGK-404T	0.3～3	118
686414	KGK-405T	2～5	118
686415	KGK-406T	4～10	163
686416	KGK-407T	8～20	212
686417	KGK-408T	15～50	261

● For grease (NBR packing, Metal sealed) with limit switch

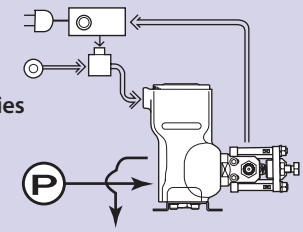
Model No.	Model	Metering range (mL)	※A Dimensions (mm)
686418	KGK-401MS	0.05～0.5	176.5
686419*	KGK-402MS	0.2～1	135
850K214S*	KGK-402MS for Silicon Grease		
686420*	KGK-404MS	0.3～3	170
850K215S	KGK-404MS for Silicon Grease		
686421	KGK-405MS	2～5	196.5
850K143S	KGK-405MS for Silicon Grease		
686422	KGK-406MS	4～10	215
850K151S	KGK-406MS for Silicon Grease		
686423	KGK-407MS	8～20	259
850K222S	KGK-407MS for Silicon Grease		
686424	KGK-408MS	15～50	326
850K221S	KGK-408MS for Silicon Grease		
686426	KGK-409MS	40～100	-----
850K223S	KGK-409MS for Silicon Grease		

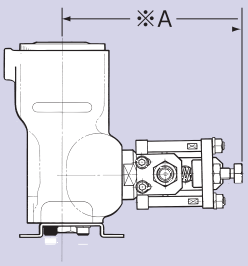
*The sensor (limit switch) on the models 686419,686420 and 850K214S is OMRON's E2CX2A. As for the amplifier unit for these models, please use E2C-AK4A (which is an optional part.) The sensor on the other models is OMRON's Z-15GW22B.

REMARKS

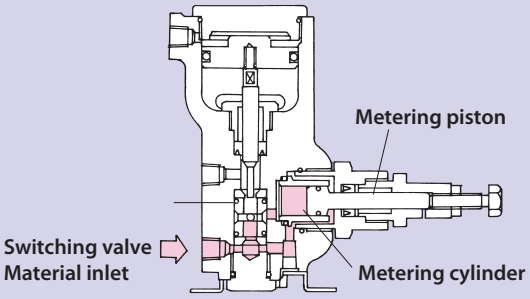
✓Charging time is required between material discharges.
✓Please consult Yamada for models with metering range more than 100mL

KGK-400MS series



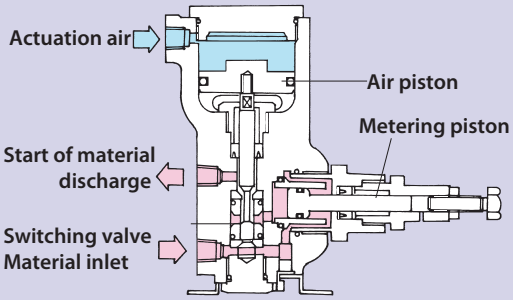


Principle of Operation



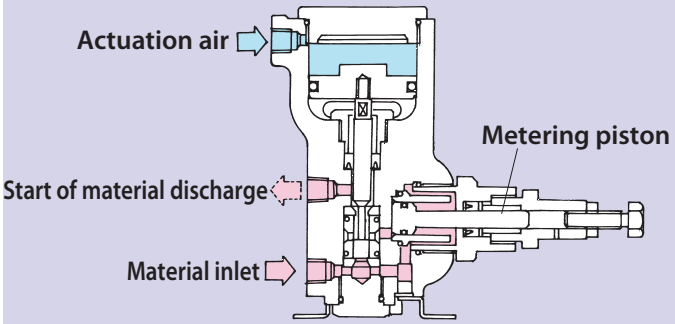
Standby mode

Material is forced into the metering valve and due to pressure the outlet is closed and the metering cylinder is filled with material. Due to material pressure the metering piston is always being pushed forward. (To the left in the above figure.)



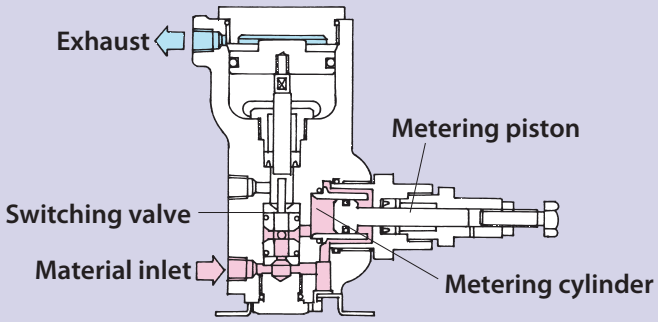
Start of discharge

Once the air switch is triggered and air enters the meter, the air piston is pushed down, the material inlet port is closed and the material discharge port in opened. The piston then moves (to the left in diagram) and discharges the material contained in the metering cylinder.



Completion of discharge

The metering piston completes its stroke and the entire amount of material is discharged.



Return to standby

Once all air has been exhausted, the material discharge valve is closed and material moves into and totally fills the metering cylinder pushing the piston back to the original position.

High Pressure Supply Pumps

Accessories (For high pressure supply pumps)

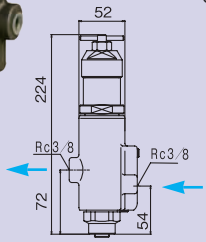
High pressure regulator

686438 KGK-106HR(1-6MPa)

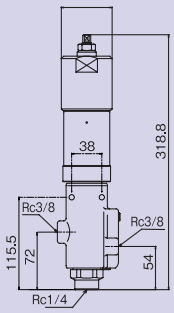
686439 KGK-313HR(4-13MPa)

686440 KGK-820HR(8-20MPa)

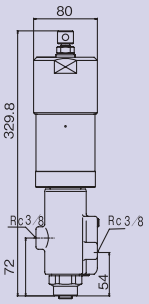
Pressure regulator for heavy viscosity material.
Max pressure:42MPa



686438



686439

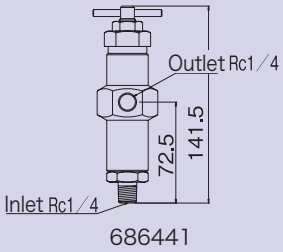


686440

Restrictor

686441 KGK-392RL Restrictor

It is used for multi-discharge point application.
Max pressure:25MPa

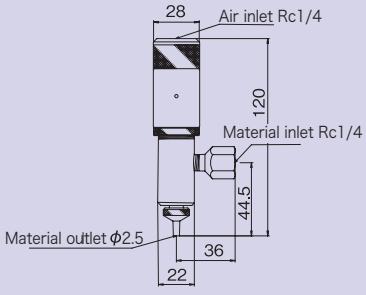


686441

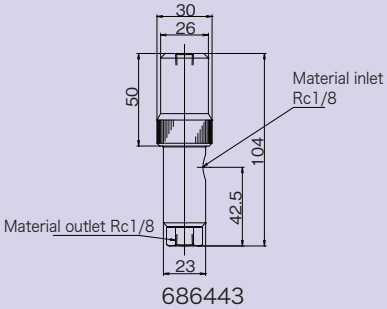
Pneumatic discharge nozzle

686442 KGK-097AV Automatic nozzle
686443 AV-6162 Nozzle

It is used if discharge point is far from metering valve.
Max pressure:20MPa



686442



686443

REQUEST SHEET

YAMADA CORPORATION
International Department
Phone:81-(0)3-3777-0241
FAX:81(0)3-3777-0584

For help and recommendations for pump choice and applications, please complete this form with as many details as possible.
Please send it by fax to Yamada Corporation and we will get straight back to you.

- Are you already using Yamada products ? (YES･NO)
- Have you dealt directly with Yamada Corporation in the past ? (YES･NO)
- How did you learn about Yamada Corporation.
  ( )

Purpose of this request.

- ☐ Request for technical information.
- ☐ Request for quotation.
- ☐ Request to purchase products.
- ☐ Request for more information.
- ☐ Request for catalogues of flyers.
- ☐ Request for local dealer contact details.
- ☐ Other.

Company

Address (with Postcode):

Phone: ( ) Fax: ( )

Department/Section/Group: Name

To: YAMADA CORPORATION, International Department

Please provide a sketch of your system including as many details as possible

1) Potential product: Model Diameter A

2) Objectives:

3) Specifications of fluid:

Name Fluid properties Concentration %

Specific gravity Viscosity cp Temperature ℃

Slurry included? ☐ Yes ／ ☐ No →Concentration Wt% Diameter mm

4) Pump output (Flow rate) Nominal rate /min /hr Max. rate /min /h

Total stroke M MPa

Ambient temperature

5) Fluid container: ☐ 200L Drum container ☐ 20L Pail container ☐ 18L square container

☐ Custom container: Specifications

6) Operation conditions: ☐ Outdoor／☐ Indoor

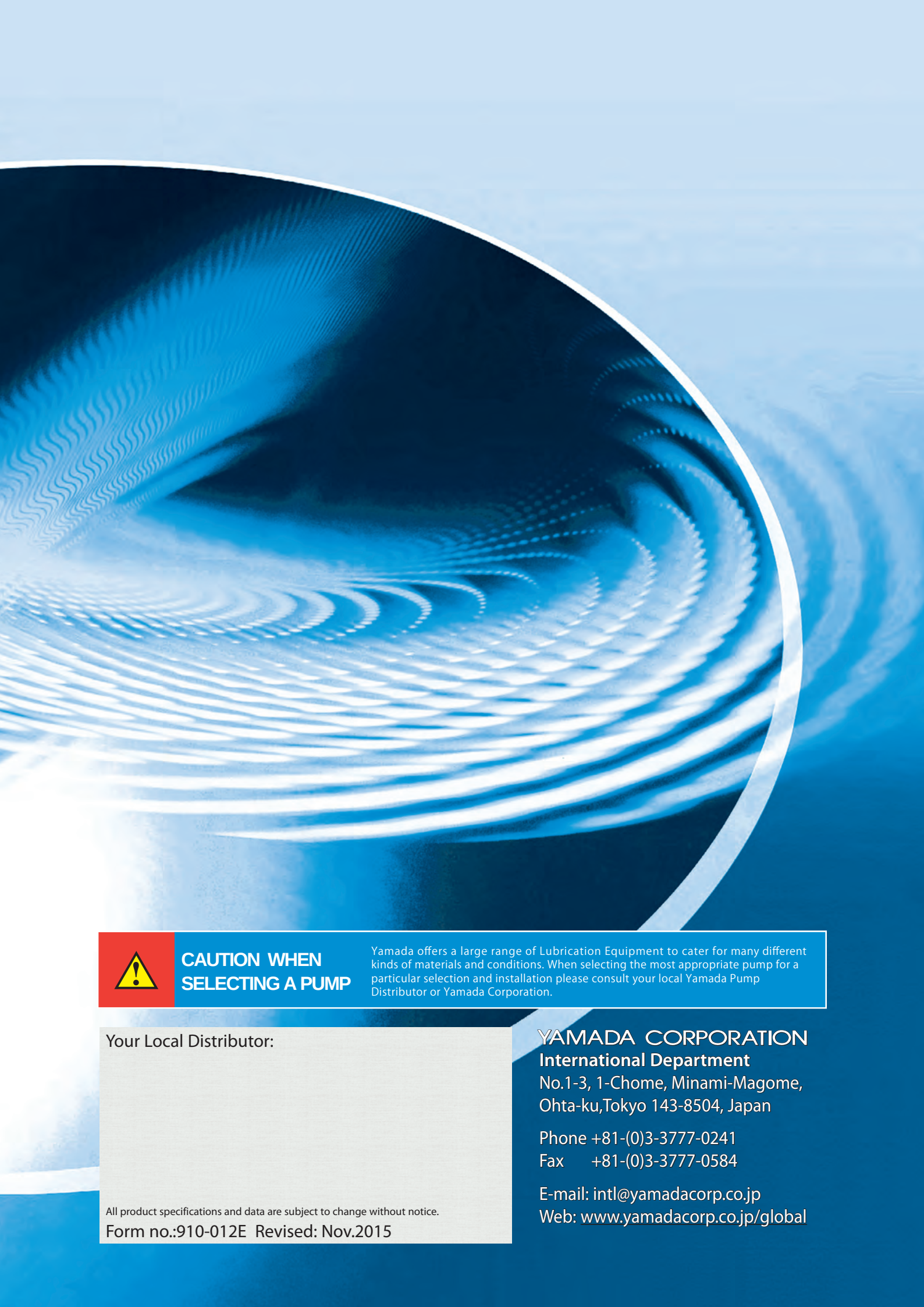
Operation frequency (How often do you run your pump?) Continuous / Intermittent hr/day or hr/week or hr/month

7) Air supply condition: MPa

8) Number of units: unit(s)

9) Expected commercial conditions

10) Other requirements



CAUTION WHEN SELECTING A PUMP

Yamada offers a large range of Lubrication Equipment to cater for many different kinds of materials and conditions. When selecting the most appropriate pump for a particular selection and installation please consult your local Yamada Pump Distributor or Yamada Corporation.

Your Local Distributor:

Form no.:910-012E Revised: Nov.2015

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