



IP-05/IP10-INST

5:1 & 10:1 RATIO TRANSFER PUMPS
OPERATING MANUAL



IPM INC.

Manufactured by International Pump Manufacturing, Inc.

Covers models: IP05S-SST, IP-05, IP-10 & IP10S-SST

Manual Number: MOP3012009

IP-05/IP10-INST

5:1 & 10:1 RATIO TRANSFER PUMPS

OPERATING MANUAL WITH PARTS IDENTIFICATION

This manual contains **IMPORTANT WARNINGS** and **INSTRUCTIONS**. Read and retain for future reference.

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*****WARNING*****

The equipment described herein must only be operated and/or serviced by properly trained individuals thoroughly familiar with the operating instructions and limitations of the equipment.

Notice: All statements, information and data given herein are believed to be accurate and reliable but are presented without guarantee, warranty or responsibility of any kind expressed or implied. Statements or suggestions concerning possible use of IPM equipment are made without representation or warranty that any such use is free of patent infringement, and are not recommendations to infringe any patent. The user should not assume that all safety measures are indicated or that other measures may not be required.

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1.0 SAFETY WARNINGS

Please read and observe all warnings contained in this operations manual before making any attempt to operate this equipment.

Misuse of Equipment

Misuse of the equipment can cause serious injury. Use the equipment only for its intended purpose. Care should be taken to prevent over-pressurization of the pump or accessories connected to it. Use only proper parts in good condition. Use the pump only with compatible fluids. Improper use or misuse of this equipment could result in fluid being splashed on the skin or in the eyes, causing serious bodily injury, property damage, fire and/or explosion.

- Make daily checks on the equipment and repair damaged or worn parts immediately.
- Do not alter this equipment. Altering this equipment could cause it to function incorrectly and could cause serious injury.

Material & Fluid compatibility

Always ensure the chemical compatibility of the fluids and solvents which contact the wetted parts in the pump and/or any of its components. Check the fluid manufacturer's material safety data sheets (MSDS) and specifications before using any fluids or solvents in this pump.

Pressurized Hoses

Because the hoses are pressurized, they present a danger should the fluid escape at high pressure. This escaping fluid pressure can spray out and cause serious bodily injury or property damage. Ensure that the hoses do not leak or rupture due to wear, misuse or damage.

The hoses should be handled properly - do not pull on the hoses to move the equipment around. Use the hoses only for fluids for which they are compatible; both for the inner liner of the hose and the outer covering. Use care not to exceed the temperature/pressure rating of the hoses.

Before each use, ensure that the fluid couplings are tight and that the entire length of hose is free from damage and wear. This includes leaks, bulging cover, damage, abrasion or cuts. These conditions may cause the hose to fail, which will result in splashing/spraying of the pressurized fluid on the skin, in the eyes and could cause serious bodily injury or property damage.

Pressure Specification

The maximum working fluid pressure of this equipment is **1160 PSI (125 bar)** with a maximum incoming air pressure of **180 PSI (12.5 bar)**. Ensure that all equipment and accessories used with this pump are rated to withstand the maximum working pressure of this pump. Never exceed the maximum working pressure of the pump or any device attached to the pump.

Hazards From Moving Parts:

Use the **Pressure Relief Procedure** (page 7) to prevent the pump from starting unintentionally when not desired. Take care that moving parts present a pinching hazard to fingers or other body parts. Stay clear of these moving parts when starting or operating the pump. Never operate the pump with the air motor plates removed.

1.1 Procedure for Pressure Relief

In order to avoid the risk of serious bodily injury such as: splashing fluid on the skin, in the eyes, or injury from moving parts- the following procedure should be used. This procedure should be used when: shutting down the pump, servicing or repairing the pump or any part of the system, replacing or cleaning components, and/or when fluid ceased pumping.

1. Close the air valve to the pump.
2. Use the air bleed down valve (see installation instructions) to relieve the air pressure in the system.
3. Relieve the fluid pressure by holding a grounded metal pail in contact with the metal part of the fluid dispensing valve and slowly open the valve.
4. With a container ready to catch the fluid, open the drain valve (see installation instructions).
5. It is a good practice to leave the drain valve open until it is time to dispense fluid again.

If you are unsure that the fluid pressure has been relieved (due to a blockage in a component or a hose) be careful to relieve the pressure by slowly loosening the hose end coupling to allow the fluid pressure to escape slowly. After the pressure has been relieved, the fitting can be removed completely and any blockages removed.

Hazards from Fire or Explosion

Hazards exist when sparks occur. They can ignite vapors/fumes from flammable or combustible materials or other hazardous conditions (like explosive dusts, etc). These sparks can be created from plugging in or unplugging an electrical supply cord. Sparks can also be created from the static electricity generated by the flow of fluid through the pump and hose.

Every part of the equipment must be properly grounded to prevent static electricity from generating a spark, and causing the pump or system to become hazardous. These sparks can cause a fire, explosion, and serious bodily injury and property damage. Ensure that the pump and all it's components/accessories are properly grounded and that electrical supply cords are not plugged in or unplugged when these hazards exist.

Should any evidence of static electricity (sparks or small shocks while in contact with the equipment) exist, discontinue the operation immediately. Investigate the source of the static electricity and correct the grounding problem. **Do not use the system until the grounding problem is repaired.**

Grounding Procedures

Grounding of the pump and all other dispensing equipment is necessary to minimize the possibility of sparks due to static electricity. Grounding must be in compliance with local electrical codes. Check with local authorities for requirements in your area and with the type of equipment being used. Ensure that all the following equipment is grounded:

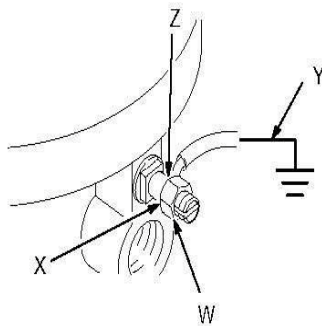
1. Air Compressor: Follow the grounding procedures as recommended by the manufacturer.
2. Air Hoses: Use grounded air hoses.
3. Fluid Container used to supply the system: Grounding must be done according to local codes.
4. Pump: Follow the procedures included referring to Figure 1.

5. Fluid Hoses: Use grounded fluid hoses.
6. Dispensing Valve: The valve must be metal to conduct through the fluid hose to the pump which must also be properly grounded.
7. Dispensing Point: Grounding must be done according to local codes.
8. Solvent Containers: Grounding must be done according to local codes. Use conductive metal pails that are properly grounded.
9. Grounding while dispensing, cleaning, or relieving pressure: Maintain conductivity by firmly holding the metal part of the dispensing valve to the side of a grounded metal container.

FIGURE 1

Grounding the Pump:

Follow these procedures for grounding the pump. Loosen the lock screw (W) to allow insertion of one end of a 12 ga. (1.5 mm²) minimum size wire into the hole in the side of the lug (Z). Insert the wire (Y) and tighten the lock screw securely. The other end of the ground wire must be secured to a true earth ground.



.Fig. 1

Hose Grounding:

It is very important that the hoses used for both air and fluid be of a grounding type and that the ground continuity is maintained. Regular checks of the hose's ground resistance (with a resistance meter using a suitable range) and a comparison to the Manufacturer's Specification will ensure the ground is within specifications. If it is not within specified limits it should be replaced immediately.

Solvent Cleaning:

When cleaning the system with solvent, hold the metal part of the dispensing valve in contact with a grounded metal pail to minimize the possibility of splashing fluid on the skin or in the eyes or static sparks. Use low fluid pressure for additional safety.

Safety Standards:

Safety standards have been established by the United States Government under the Occupational Safety and Health Act. These standards should be consulted as they apply to the various hazards and differing types of equipment being used.

2.0 INSTALLATION

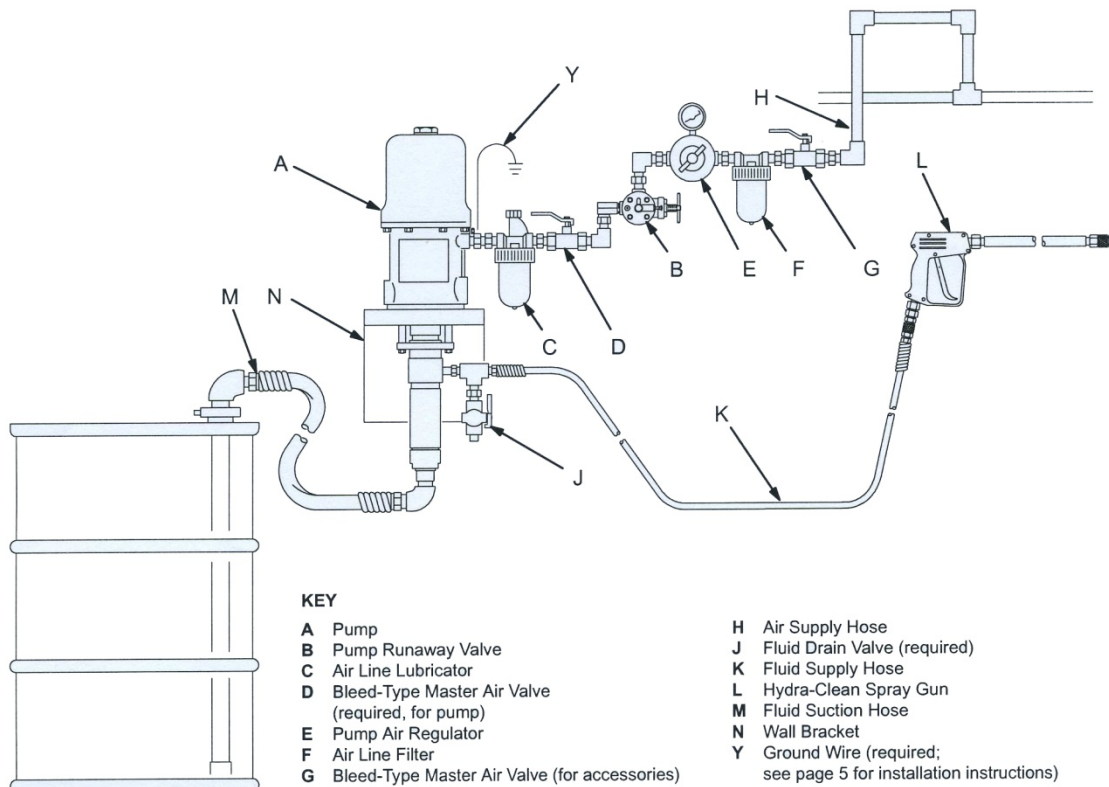


Fig. 2

Figure 2 depicts a typical installation provided as a guide for your reference. Select and install optional accessories as required. Feel free to call an IPM representative or IPM Technical Department for assistance.

2.1 System Accessories

Install the necessary accessories in sequence using Figure 2 as a guide.

- A bleed-type master air valve (D) and a fluid drain valve (J) are required in your system. These accessories help reduce serious injury including: fluid injection (into the skin), splashing fluid on the skin/in the eyes, and risk of injury from moving parts if you are adjusting or repairing the pump.

Air Line Accessories

- **The bleed-off master air valve (D)** is required in the system to relieve air trapped within the system after the pump is stopped. Air that is trapped between this valve and the pump can cause the pump to reciprocate unintentionally, which may cause harm to the operator. Locate the valve close to the pump.
- **Air line lubricator (C)** provides automatic air motor lubrication. For manual lubrication schedule, see page 11.

- **A pump runaway valve (B)** senses when the pump is running too fast and automatically shuts off air to the motor. A pump which runs too fast can be seriously damaged.
- **An air regulator (E)** controls the pump speed and outlet pressure by adjusting the air pressure to the pump. Place the regulator close to the pump, but upstream from the bleed-type master air valve.
- **An air line filter (F)** removes harmful dirt and moisture from the inbound air supply.
- **A second bleed-type air Valve (G)** isolates the air line accessories for servicing. Place it upstream from all other air line accessories.

Fluid Line Accessories

- **A fluid drain valve (J)** is required in the system to relieve fluid pressure in the hose and the gun. Install with the drain valve pointing down, so the handle points up when opened.

3.0 OPERATION

Start up and Adjustment of the Pump

Ensure that installation is fully completed before proceeding to start up operations.

1. See Fig 2 on page 9. Close the air regulator (E), bleed-type master air valves (D), and fluid drain valve (J). ***Do not install the spray tip yet!***
2. Place the suction kit (M) into the fluid supply drum, or the entire pump in the drum.
3. Hold a metal part of the spray gun (L) firmly to the side of the supply drum and hold the trigger open.
4. Open the pump's bleed-type master air valve (D).
5. Slowly open the air regulator (E) until the pump starts, about 40 psi (2,8 bar).
6. Cycle the pump slowly until all the air is pushed out and the pump, hoses are fully primed.
7. Release the spray gun trigger and lock the safety. The pump should completely stall under pressure when the trigger is released.
8. With the pump and lines primed, and adequate air pressure and volume supplied, the pump will start and stop as the spray gun is opened and closed.
9. Relieve the pressure, following the pressure relief procedure. Then install the tip guard and the spray tip in the gun.
10. Use an adequately sized air regulator (E) to control the pump speed and the fluid pressure. Always use the lowest air pressure necessary to get desired results. Higher pressures waste fluid and cause premature wear of the pump packings and nozzles.
11. Into a grounded metal container, open the dispensing valve (J) slowly. Ensure metal-to-metal contact between the container and the valve.

*****Caution*****

The pump should never be allowed to run dry of the fluid being pumped. When running empty, the pump speed will become extremely fast and will damage itself. During operation, should the pump be found running too fast, stop it immediately and check the fluid supply. Is the fluid level in the drum empty or low? If air has gotten into the system, do a priming procedure. Ensure that all air has been expelled from the lines before resuming normal operations. Flush the pump or leave it filled with a suitable solvent when not in use.

Always follow the Pressure Relief Procedure should the pump be put away for any period of time or during system shut off at the end of the day.

Daily Maintenance Check

1. Ensure sufficient lubricant in the air lubricator.
2. Drain the moisture trapped in the air pressure regulator.

Clean and flush the pump thoroughly with care using an appropriate cleaning fluid to obtain the maximum service life of the equipment.

Lubrication

Adjust the air line lubricator (C) to feed 1 to 3 drops of oil per hour. Check the lubricator sight glass regularly, and keep it filled to the level mark in the sight glass. Use high quality SAE 10 type oil.

To manually lubricate the motor, disconnect the air lines at the motor and place 10 to 15 drops of oil in the air inlet. Reconnect the air line and turn on the air to blow oil into the motor. This should be done daily.

Packing Nut/Wet Cup

Keep the packing nut/wet-cup filled with Throat Seal Liquid (TSL) or compatible solvent. This helps prolong the packing life. Adjust the packing nut weekly so it is just tight enough to prevent leakage, but do not over-tighten.

Pressure Relief Procedure For Guns

In order to avoid the risk of serious bodily injury such as spraying fluid on the skin or in the eyes, or risk of injury from the moving part, the following procedure should be used. This procedure should be used when shutting down the pump, when servicing or repairing the gun/pump, or any part of the system. It should also be followed when replacing or cleaning components, and if the fluid being pumped is stopped.

1. Lock the gun trigger safety.
2. Close the bleed-type master air valve (D) of the pump.
3. Unlock the gun trigger safety.

4. Hold a metal part of the gun firmly to the side of a grounded metal pail, and trigger the gun to relieve pressure.
5. With a container ready to catch the fluid, slowly open drain valve (E) to release the fluid.
6. Leave drain valve (J) open until you are ready to spray again.

If you suspected that the spray tip or hose is completely clogged, or the pressure has not been fully relieved after following the steps above, very slowly loosen the hose end coupling or the tip guard retaining nut to allow the fluid pressure to release slowly. After the pressure has been relieved, the fitting can be removed completely and clear any blockages in the hose or spray tip.

Flush The Pump Before Using It

1. The pump is tested with lightweight DOP oil, which is left in to protect the pump parts. If the fluid you are pumping may be contaminated by this oil, flush out the oil with a compatible solvent before using the pump. Follow the **Flushing Instructions** below.

Warning

To reduce the risk of static sparking or splashing fluid in the eyes or on the skin, follow the *Pressure Relief Procedure Warning* before Flushing.

For your safety, read the ***Fire or Explosion Hazard*** before flushing and follow all the recommendations give them.

2. If you are pumping fluid that dries, hardens or sets up, flush the system with a compatible solvent as often as necessary to prevent the build-up of dried fluid in the pump or hoses.
3. If the pump is being used to supply a circulating system, allow the solvent to circulate through the entire system for at least 30 minutes every 48hrs, or more often if the necessary to prevent settling.

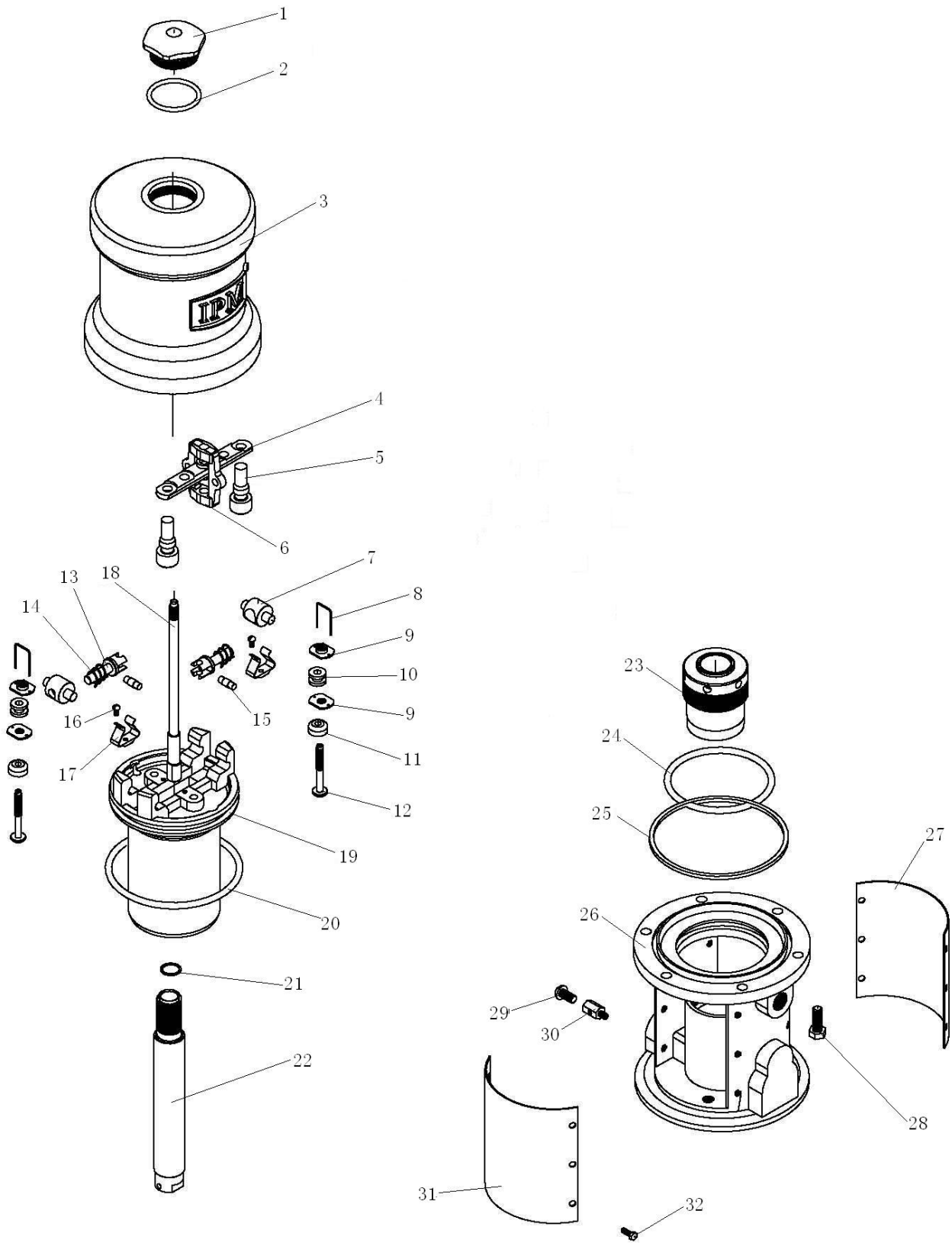
SHUT DOWN & CARE OF THE PUMP

For Overnight shut down, follow the Pressure Relief Procedure Warning.

Always stop the pump at bottom of the stroke to prevent the fluid from drying on the exposed displacement rod and damaging the throat packing.

4.0 PARTS IDENTIFICATION

4.1 Parts Diagram Air Motor Section IP-05

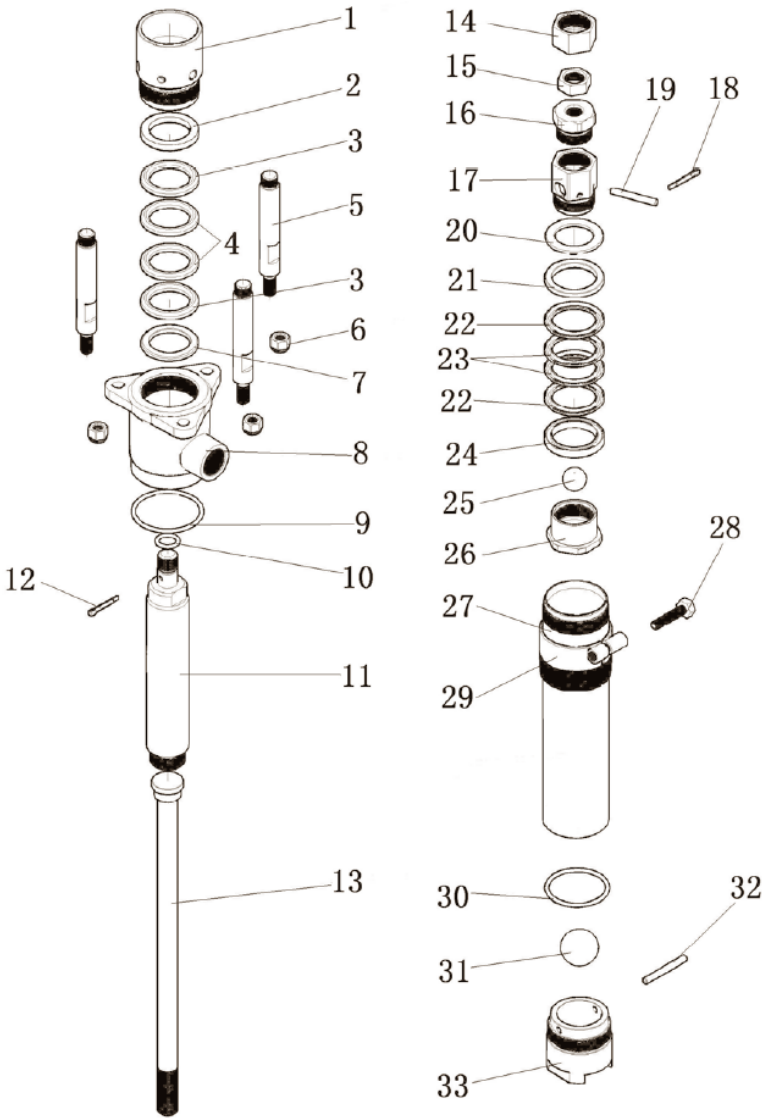


4.2 Parts List Air Motor Section IP-05

Ref No.	P/N #	Description	QTY.
1	500300	Cap Nut	1
2	500206	O-Ring	1
3	500301	Air Cylinder	1
4	500303	Actuator Valve	1
5	500304*	Poppet Valve	2
6	500312	Trip Rod Yoke	1
7	500313	Rocker Toggle	2
8	500307*	Locking Wire	2
9	500309*	Adjusting Nut	4
10	500308*	Grommet	2
11	500311*	Poppet Valve	2
12	500310*	Stem Valve	2
13	500314	Toggle Arm	2
14	500315	Spring	2
15	500316	Toggle Pin	2
16	500305	Screw	2
17	500306	Spring Clip	2
18	500302	Trip Rod	1
19	500320	Piston Assembly	1
20	500317*	O-Ring	1
21	500321*	Copper Gasket	1
22	500324	Piston Rod	1
23	700032	Bearing Housing Assembly	1
24	500319	O-Ring	1
25	500318*	O-Ring	1
26	500323	Base	1
27	500326	Identification Plate	1
28	500322	Hex Head Screw	6
29	500108	Screw	1
30	500107	Grounding Lug	1
31	500327	Warning Plate	1
32	500325	Hex Head Screw	12

**Denotes repair kit component. See the kits on page 23-24 for complete details.*

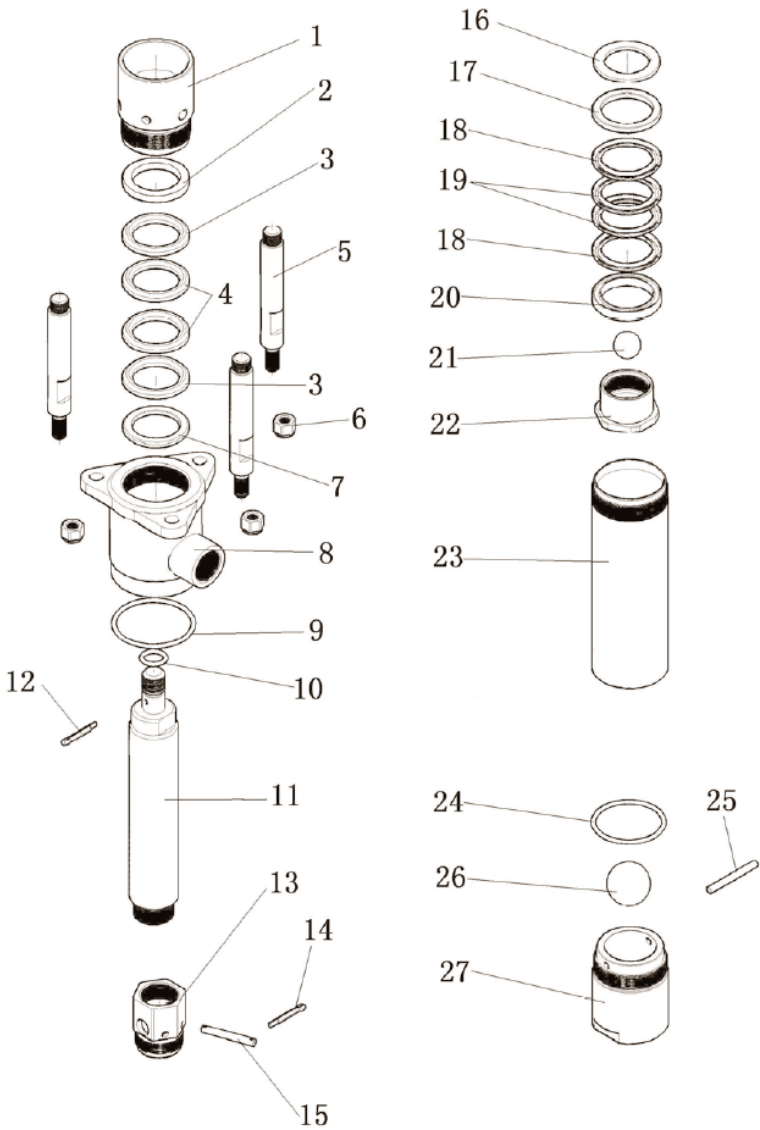
4.3 Parts Diagram Fluid Section IP-05



4.4 Parts List Fluid Section IP-05

Ref No.	P/N #	Description	Qty.
1	500450	Packing Nut	1
2	500451*	Female Throat Gland	1
3	500421*	Throat V-Packing	2
4	500422*	Throat V-Packing	2
5	500447	Tie Rod	3
6	500448	Lock Nut	3
7	500452*	Male Throat Gland	1
8	500424	Outlet Housing	1
9	500425*	O-Ring	1
10	500402*	O-Ring	1
11	500453	Displacement Rod	1
12	500449*	Cotter Pin	1
13	700033	Connecting Rod	1
14	500456	Coupling Nut	1
15	500457	Jam Nut	1
16	500458	Connecting Rod Adaptor	1
17	500459	Piston Mounting Stud	1
18	500461*	Cotter Pin	1
19	500460*	Ball Stop Pin	1
20	500462*	Piston Washer	1
21	500463*	Male Piston Gland	1
22	500437*	Piston V-Packing	2
23	500438*	Piston V-Packing	2
24	500464*	Female Piston Gland	1
25	500269*	Ball	1
26	500465	Piston Stud	1
27	500493	Cylinder	1
28	500472	Screw	1
29	700035	Bung Adapter	1
30	500066	O-Ring	1
31	500466*	Ball	1
32	500468*	Intake Ball Stop Pin	1
33	500492	Foot Valve	1

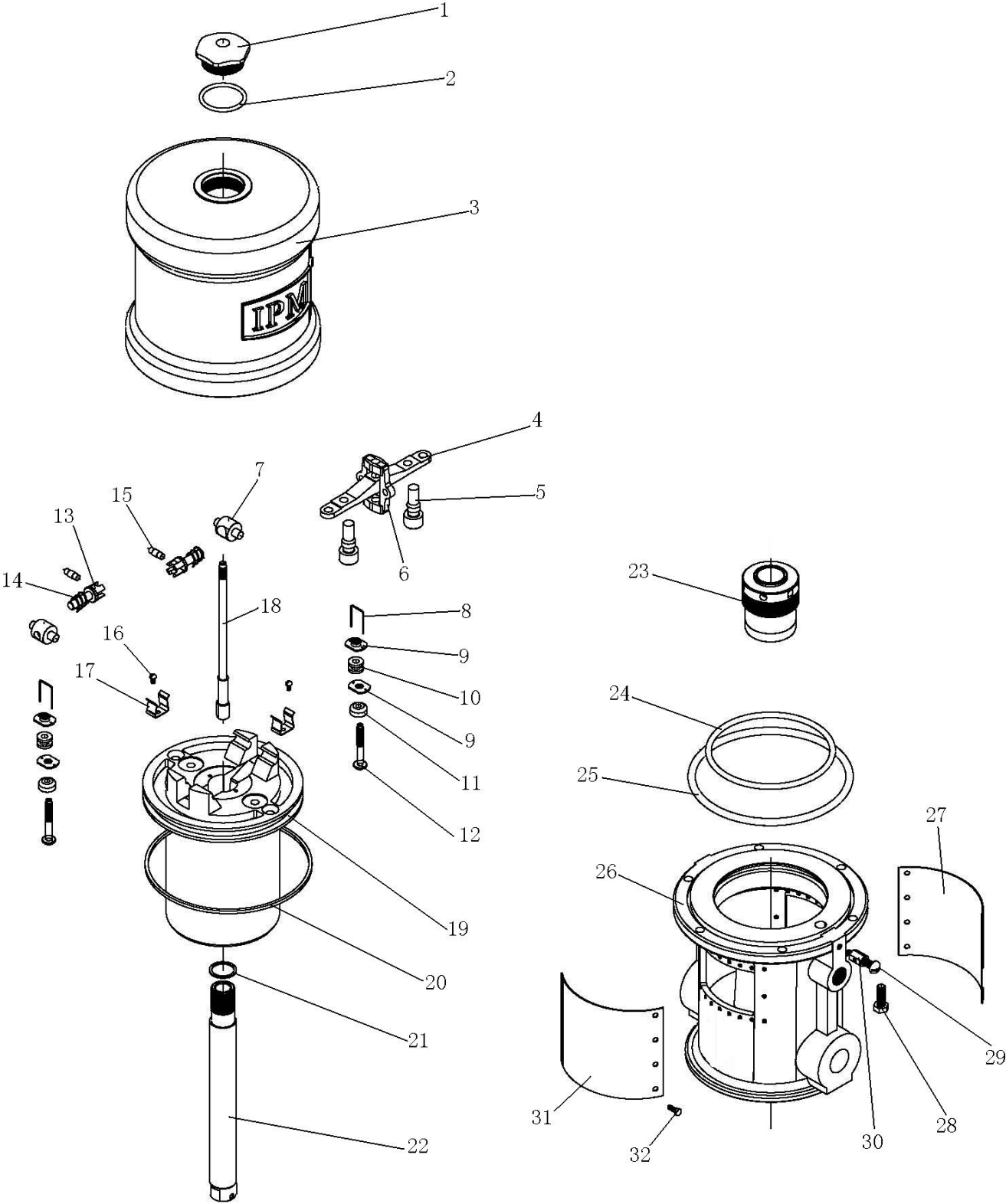
4.5 Parts Diagram Fluid Section IP05S-SST (Stubby)



4.6 Parts List IP05S-SST (Stubby)

Ref No.	P/N #	Description	Qty.
1	500450	Packing Nut	1
2	*500451	Female Throat Gland	1
3	*500421	Throat V-Packing	2
4	*500422	Throat V-Packing	2
5	500447	Tie Rod	3
6	500448	Lock Nut	3
7	*500452	Male Throat Gland	1
8	500424	Outlet Housing	1
9	*500425	O-Ring	1
10	*500402	O-Ring	1
11	500453	Displacement Rod	1
12	*500449	Cotter Pin	1
13	500459	Piston Mounting Stud	1
14	*500461	Cotter Pin	2
15	*500460	Ball Stop Pin	1
16	*500462	Piston Washer	1
17	*500463	Male Piston Gland	1
18	*500437	Piston V-Packing	2
19	*500438	Piston V-Packing	2
20	*500464	Female Piston Gland	1
21	*500269	Ball	1
22	500465	Piston Stud	1
23	500497	Cylinder	1
24	*500066	O-Ring	1
25	*500468	Intake Ball Stop Pin	1
26	*500466	Ball	1
27	500496	Foot Valve	1

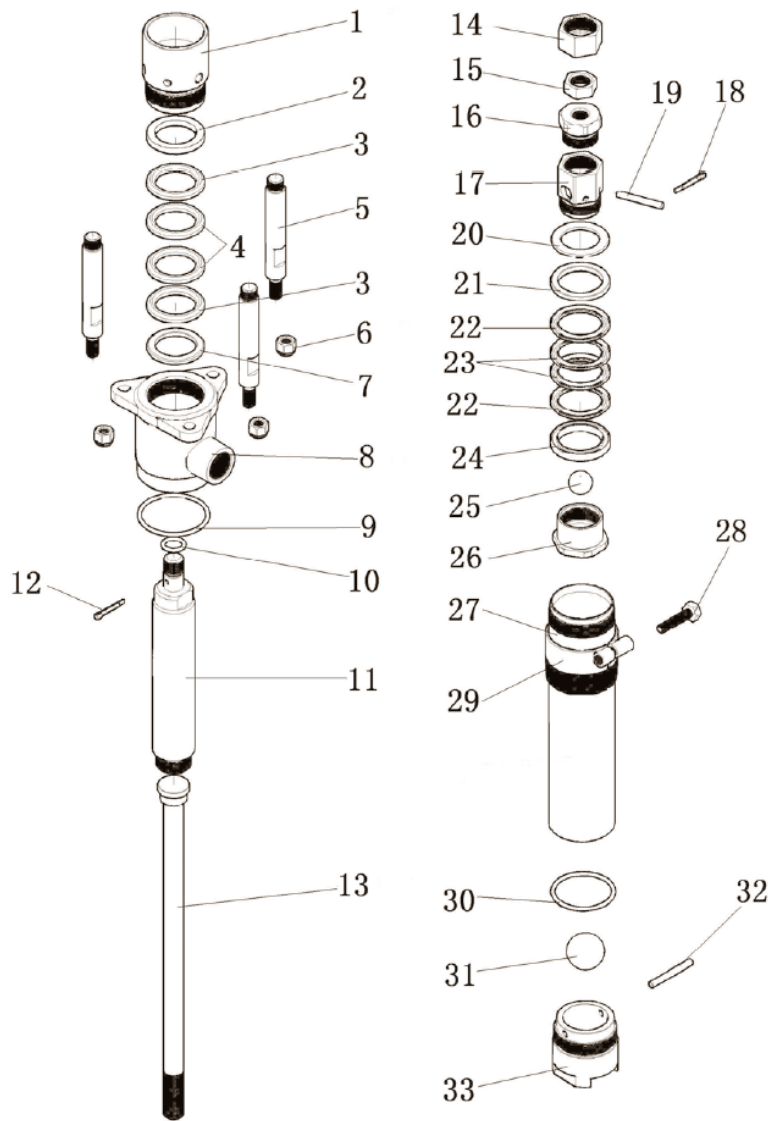
4.7 Parts Diagram Air Motor Section IP-10



4.8 Parts list for the Air Motor section IP-10

Ref No.	P/N #	Description	Qty.
1	500300	Cap Nut	1
2	500206	O-Ring	1
3	500404	Air Cylinder	1
4	500405	Actuator Valve	1
5	500304*	Poppet Valve	2
6	500312	Trip Rod Yoke	1
7	500313	Rocker Toggle	2
8	500307*	Locking wire	2
9	500309*	Adjusting Nut	4
10	500308*	Grommet	2
11	500311*	Poppet Valve	2
12	500310*	Stem Valve	2
13	500314	Toggle Arm	2
14	500315	Spring	2
15	500316	Toggle Pin	2
16	500305	Screw	2
17	500407	Spring Clip	2
18	500406	Trip Rod	1
19	500408	Piston Assembly	1
20	500409*	O-Ring	1
21	500410*	Copper Gasket	1
22	500411	Piston Rod	1
23	700032	Bearing Housing Assembly	1
24	500414*	O-Ring	1
25	500415	O-Ring	1
26	500416	Base	1
27	500418	Identification Plate	1
28	500322	Hex Head Screw	6
29	500108	Screw	1
30	500107	Grounding Lug	1
31	500417	Warning Plate	1
32	500325	Hex Head Screw	12

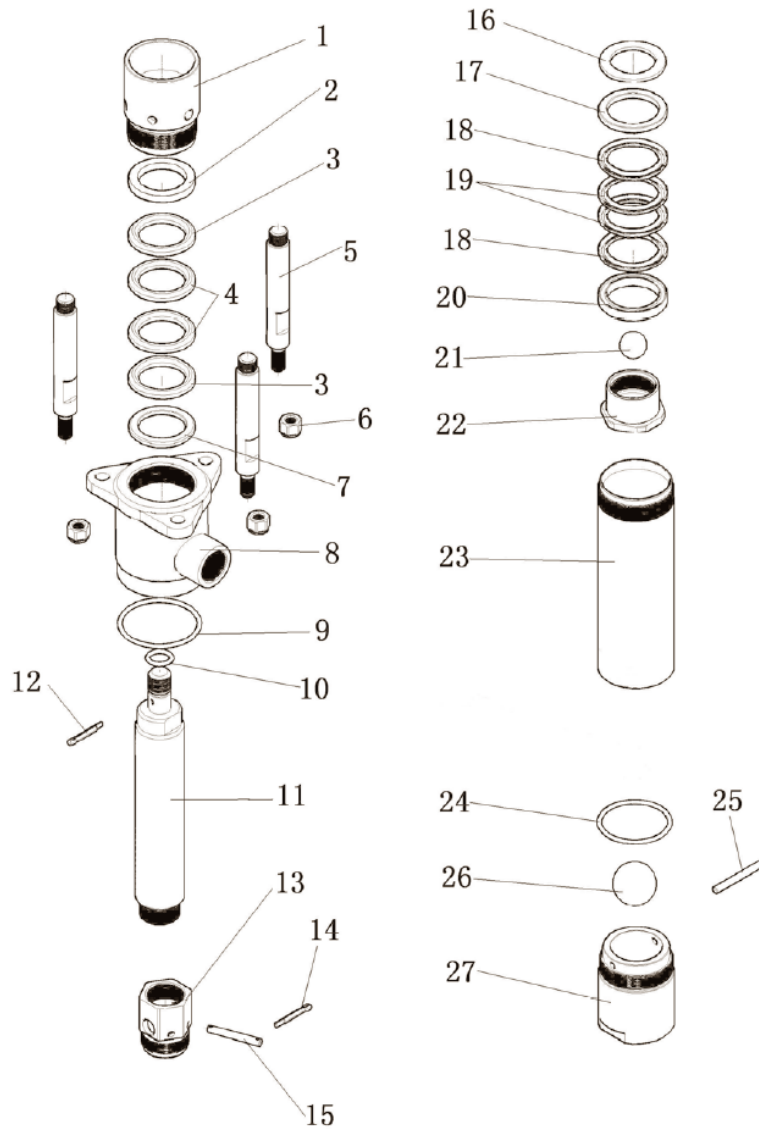
4.9 Parts diagram for the Fluid Section IP-10



4.10 Parts list for the Fluid Section IP-10

Ref No.	P/N #	Description	Qty.
1	500450	Packing Nut	1
2	500451*	Female Throat Gland	1
3	500421*	Throat V-Packing	2
4	500422*	Throat V-Packing	2
5	500447	Tie Rod	3
6	500448	Lock Nut	3
7	500452*	Male Throat Gland	1
8	500424	Outlet Housing	1
9	500425*	O-Ring	1
10	500402*	O-Ring	1
11	500453	Displacement Rod	1
12	500449*	Cotter Pin	1
13	700033	Connecting Rod	1
14	500456	Coupling Nut	1
15	500457	Jam Nut	1
16	500458	Connecting Rod Adaptor	1
17	500459	Piston Mounting Stud	1
18	500461*	Cotter Pin	1
19	500460*	Ball Stop Pin	1
20	500462*	Piston Washer	1
21	500463*	Male Piston Gland	1
22	500437*	Piston V-Packing	2
23	500438*	Piston V-Packing	2
24	500464*	Female Piston Gland	1
25	500269*	Ball	1
26	500465	Piston Stud	1
27	500493	Cylinder	1
28	500472	Screw	1
29	700035	Bung Adapter	1
30	500066	O-Ring	1
31	500466*	Ball	1
32	500468*	Intake Ball Stop Pin	1
33	500492	Foot Valve	1

4.11 Parts Diagram Fluid Section IP10S-SST (Stubby)



4.12 Parts List Fluid Section IP10S-SST (Stubby)

Ref No.	P/N #	Description	Qty.
1	500450	Packing Nut	1
2	500451*	Female Throat Gland	1
3	500421*	Throat V-Packing	2
4	500422*	Throat V-Packing	2
5	500447	Tie Rod	3
6	500448	Lock Nut	3
7	500452*	Male Throat Gland	1
8	500424	Outlet Housing	1
9	500425*	O-Ring	1
10	500402*	O-Ring	1
11	500453	Displacement Rod	1
12	500449*	Cotter Pin	1
13	500459	Piston Mounting Stud	1
14	500461*	Cotter Pin	2
15	500460*	Ball Stop Pin	1
16	500462*	Piston Washer	1
17	500463*	Male Piston Gland	1
18	500437*	Piston V-Packing	2
19	500438*	Piston V-Packing	2
20	500464*	Female Piston Gland	1
21	500269*	Ball	1
22	500465	Piston Stud	1
23	500497	Cylinder	1
24	500066*	O-Ring	1
25	500468*	Intake Ball Stop Pin	1
26	500466*	Ball	1
27	500496	Foot Valve	1

5.0 REPAIR KITS

5.1 IP-05 Air Motor Repair Kit*

N/A	601001	Air Motor Repair Kit IP-05	1
<i>Kit Components</i>			
5	500304	Poppet Valve	2
8	500307	Locking Wire	2
9	500309	Adjusting Nut	4
10	500308	Grommet	2
11	500311	Poppet Valve	2
12	500310	Stem Valve	2
20	500317	O-Ring	1
21	500321	Copper Gasket	1
25	500318	O-Ring	1

5.2 IP-05 (and IP-05S-SST) Fluid Section Repair Kit*

N/A	601020	Fluid Section Repair Kit IP-05	1
<i>Kit Components</i>			
2	500451	Female Throat Gland	1
3	500421	Throat V-Packing	2
4	500422	Throat V-Packing	2
7	500452	Male Throat Gland	1
9	500425	O-Ring	1
10	500402	O-Ring	1
12	500449	Cotter Pin	1
18	500461	Cotter Pin	1
19	500460	Ball Stop Pin	1
20	500462	Piston Washer	1
21	500463	Male Piston Gland	1
22	500437	Piston V-Packing	2
23	500438	Piston V-Packing	2
24	500464	Female Piston Gland	1
25	500269	Ball	1
30	500442	O-Ring	1
31	500466	Ball	1
32	500468	Intake Ball Stop Pin	1

*Combination Fluid and Air Section Repair Kit available under P/N 601023.

5.3 IP-10 Air Motor Repair Kit*

N/A	601002	Rebuild Kit	1
<i>Kit Components</i>			
5	500304	Poppet Valve	2
8	500307	Locking wire	2
9	500309	Adjusting Nut	4
10	500308	Grommet	2
11	500311	Poppet Valve	2
12	500310	Stem Valve	2
20	500409	O-Ring	1
21	500410	Copper Gasket	1
24	500414	O-Ring	1

5.4 IP-10 (and IP-10S-SST) Fluid Section Repair Kit*

N/A	601020	Rebuild kit	1
<i>Kit Components</i>			
2	500451	Female Throat Gland	1
3	500421	Throat V-Packing	2
4	500422	Throat V-Packing	2
7	500452	Male Throat Gland	1
9	500425	O-Ring	1
10	500402	O-Ring	1
12	500449	Cotter Pin	1
18	500461	Cotter Pin	1
19	500460	Ball Stop Pin	1
20	500462	Piston Washer	1
21	500463	Male Piston Gland	1
22	500437	Piston V-Packing	2
23	500438	Piston V-Packing	2
24	500464	Female Piston Gland	1
25	500269	Ball	1
30	500442	O-Ring	1
31	500466	Ball	1
32	500468	Intake Ball Stop Pin	1

*Combination fluid and Air Section Repair Kit available under P/N 601024.


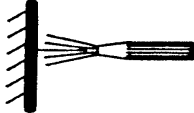

6.0 TROUBLESHOOTING

Problem	Causes	Recommended Solutions
Pump does not operate.	Air supply or pressure is inadequate. Air lines restricted.	Increase air pressure. Check for any restrictions in air line.
	Dispensing valve is not open or clogged.	Open and/or clear foot valve.
	Clogged fluid lines, valves, hoses or damaged air motor.	Follow pressure relief procedure to clear obstruction. Service air motor. Replace parts as necessary.
	Depleted or exhausted fluid supply.	Refill fluid. Prime system or flush it.
	Worn or damaged air motor gasket, packing, seal, etc	Service air motor. Replace parts as necessary.
Non-stop air exhaust.	Intake valve or packing worn off.	Replace worn parts
Erratic pump operation.	Intake valve is not completely closed.	Clear obstruction and service pump. Replace parts as necessary.
	Held open or worn intake valve.	Clear obstruction and service pump. Replace parts as necessary.
Low output on upstroke.	Held open or worn piston valve.	Clear obstruction and service pump. Replace parts as necessary.
Low output on down stroke.	Restriction in air lines or air pressure low.	Increase air pressure or supply.
Low output on both strokes.	Closed or clogged valves.	Open valve or clear valve.
	Fluid supply is insufficient or exhausted.	Refill fluid. Prime system or flush it.
	Obstructions in fluid lines, hoses, valves, etc.	Follow pressure relief procedure, then clear obstruction.

7.0 TECHNICAL SPECIFICATIONS

7.1 IP-05 (Stainless Steel Drum/Stubby Length)

(A) Recommended Application Chart

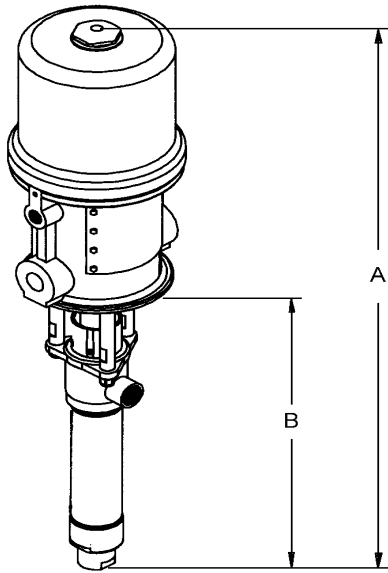
Industry	Application	Viscosity Range(CPS)
 Chemical	Alcohol	0-100
	Dye	0-1000
	Methyl Chloride	0-200
	Solvents	0-500
 Surface Finishing Material	Paint(Latex)	100-1000
	Paint(Oil base)	100-800
	Sealer(Wood)	100-800
	Stain(Oil base)	100-1000
 Lubricant	Anti-Freeze	30-100
	Die Lubricant	30-50
	Gear Oil	200-1000
	Lubricant	100-1500
	Mold Release Agent	30-100
	Oil	100-500

(B) Technical Specifications (5:1 Pump)

Category	Data
Maximum fluid flow	3 GPM (11.4 Liters/min)
Maximum fluid working pressure	1800 psi (125bar)
Air input pressure range	30 – 180 psi (2 – 12.5 Bar)
Air inlet size	3/8" NPT (f)
Fluid inlet size	3/4" NPT (f)
Fluid outlet size	3/4" NPT (f)
Recommended speed for optimum pump life	15-25 cycles/min
Weight IP-05/ Weight IP05S-SST	31 lbs (14 Kg)/22 lbs (10 Kg)
Packing	Teflon, UHMWPE
Rod and cylinder	SST 304

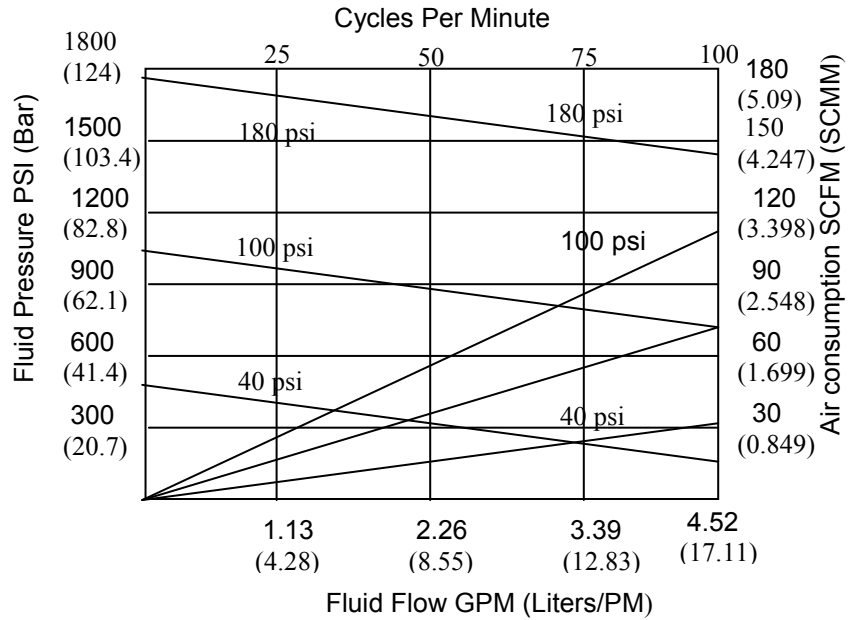
7.2 Technical Specifications IP-05 Continued

(C) Pump Dimensions

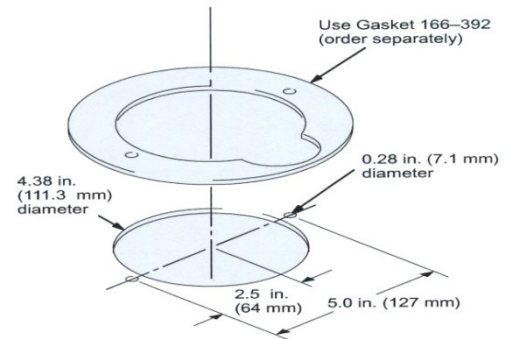


Model	A	B
IP-05 SST	54.75" (1390mm)	42.625" (1082mm)
IP05S-SST	25.21" (641mm)	13.75" (349mm)

(D) Performance

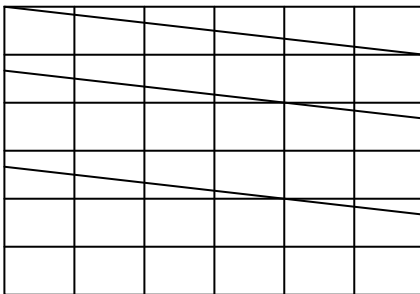


Mounting Hole Layout



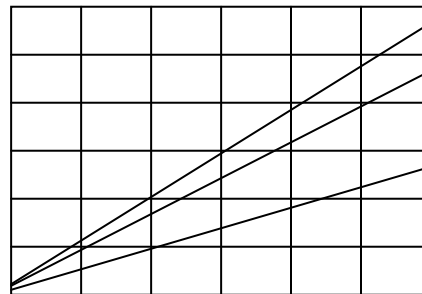
How to Read Performance

Pressure/Flow



1. Locate required flow along bottom edge of chart.
2. Follow vertically to bold line for input air pressure.
3. Follow horizontally to left edge of chart to read maximum available fluid pressure.


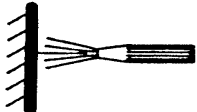
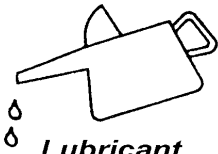
Air Consumption



1. Locate fluid flow along bottom edge of chart.
2. Follow vertically to bold line for input air pressure.
3. Follow horizontally to right edge of chart to read air consumption.

7.3 Technical Specifications IP-10

(A) Recommended Application Chart

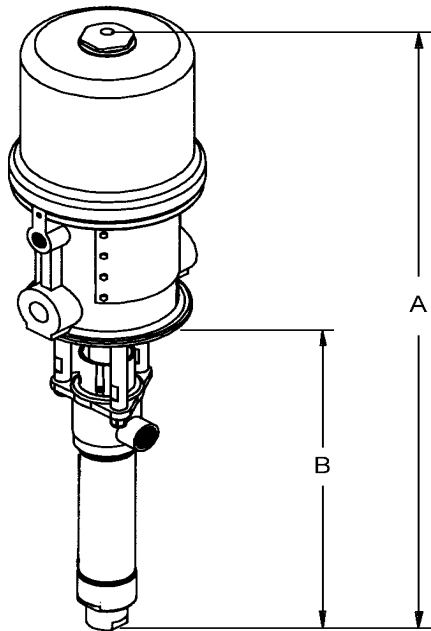
Industry	Application	Viscosity Range(CPS)
 Chemical	Alcohol	0-100
	Dye	0-1000
	Methyl Chloride	0-200
	Solvents	0-500
 Surface Finishing Material	Paint(Latex)	100-1000
	Paint(Oil base)	100-800
	Sealer(Wood)	100-800
	Stain(Oil base)	100-1000
 Lubricant	Anti-Freeze	30-100
	Die Lubricant	30-50
	Gear Oil	200-1000
	Lubricant	100-1500
	Mold Release Agent	30-100
	Oil	100-500

(B) Technical Specifications (10:1 Pump)

Category	Data
Maximum fluid flow	3 GPM (11.4 Liters/min)
Maximum fluid working pressure	1800 psi (125bar)
Air input pressure range	30 – 180 psi (2 – 12.5 Bar)
Air inlet size	1/2" NPT (f)
Fluid inlet size	3/4" NPT (f)
Fluid outlet size	3/4" NPT (f)
Recommended speed for optimum pump life	15-25 cycles/min
Weight IP-10/ Weight IP10S-SST	41 lbs (18.6 Kg) 31 lbs (14 Kg)
Packing	Teflon, UHMWPE
Rod and cylinder	SST 304

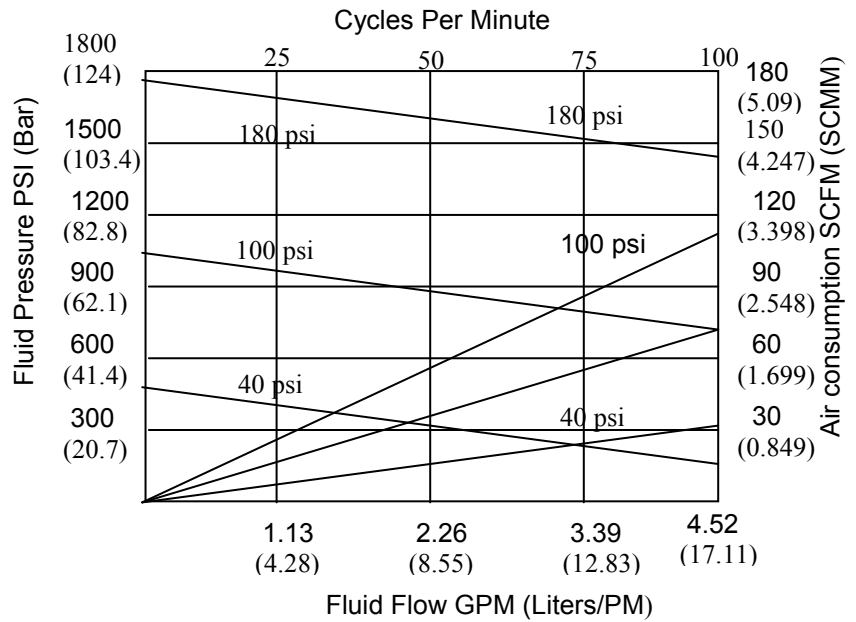
7.4 IP-10 Continued

(C) Pump Dimensions

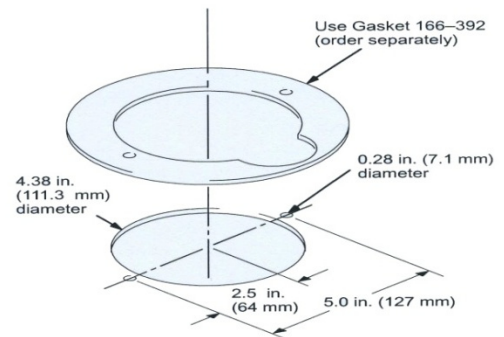


Model	A	B
IP-10 SST	57.37" (1457mm)	42.75" (1082mm)
IP10S-SST	28.38" (721mm)	13.75" (349mm)

(D) Performance

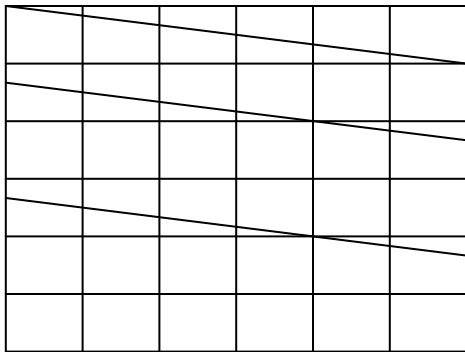


Mounting Hole Layout



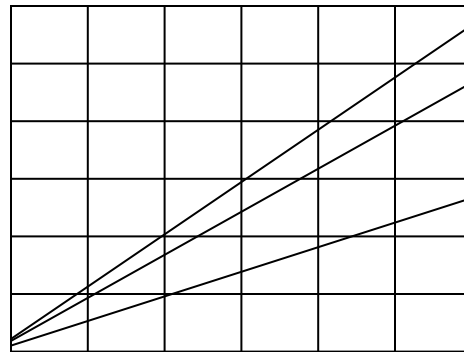
How to Read Performance

Pressure/Flow



1. Locate required flow along bottom edge of chart.
2. Follow vertically to bold line for input air pressure.
3. Follow horizontally to left edge of chart to read maximum available fluid pressure.

Air Consumption



1. Locate fluid flow along bottom edge of chart.
2. Follow vertically to bold line for input air pressure.
3. Follow horizontally to right edge of chart to read air consumption.

8.0 WARRANTY

IPM provides a limited warranty to the original purchaser (Customer) of IPM manufactured parts and equipment (Product) against any defects in material or workmanship for a period of one year from the date of shipment from IPM facilities.

In the event Product is suspected to be defective in material or workmanship, it must be returned to IPM, freight prepaid. If product is found to be defective in material or workmanship, as determined solely by IPM, IPM will issue full credit to Customer for the freight charges incurred in returning the defective Product, and either credit will be issued for the replacement cost of the Product or a replacement part will be forwarded no-charge, freight prepaid to Customer.

This warranty shall not apply Product IPM finds to be defective resulting from: installation, use, maintenance, or procedures not accomplished in accordance with our instructions; normal wear; accident; negligence; alterations not authorized in writing by IPM; or Product Use in conjunction with any other manufacturer's pumping or proportioning equipment. Further, the terms and conditions of this warranty shall not apply to services or repairs made to Product by any third party not authorized in writing by IPM. For such Product, a written estimate will be submitted to Customer, except as approved in writing by IPM at a nominal service charge, itemizing the cost for repair. Disposition of Product will be done in accordance with the terms stated on the written estimate.

The warranty provisions applied to Product that are not manufactured by IPM will be solely in accordance with the warranty provided by the original manufacturer of the Product.

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