

High-Flo[®] 4-Ball and High-Flo[®] Plus 4-Ball Pumps with XL Air Motor

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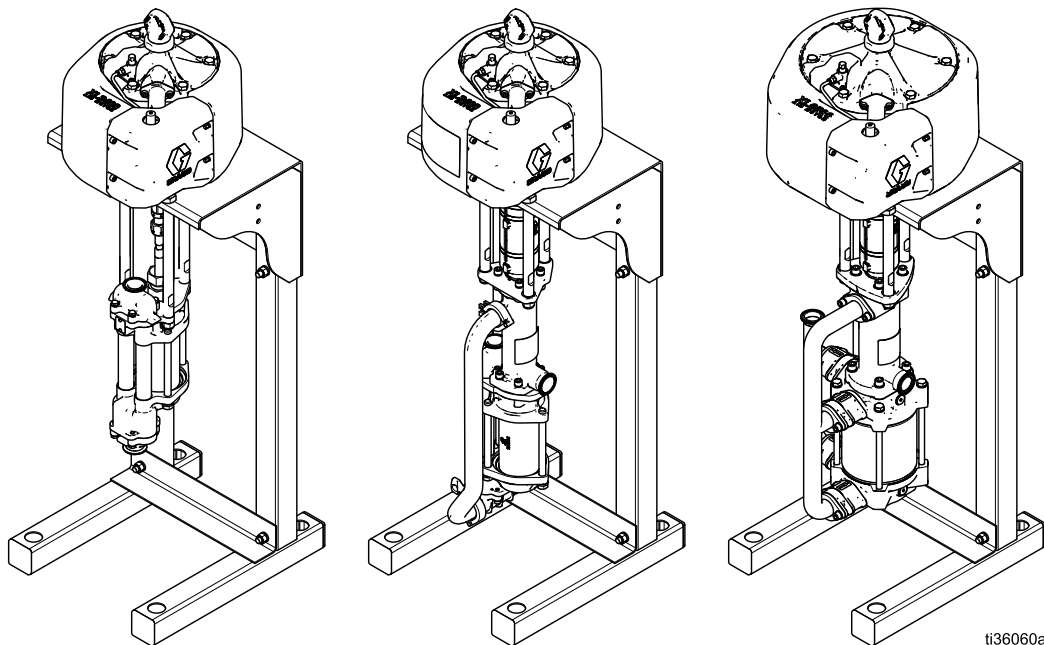
Air-powered pumps for low pressure, high volume circulation of finishing materials. Do not use for flushing or purging lines with caustics, acids, abrasive line strippers, and other similar fluids. For professional use only.



Important Safety Instructions

Read all warnings and instructions in this manual before using the equipment.
Save these instructions.

See **Models**, page 3, for model information.



ti36060a

Pumps are shown on optional floor stands.



II 2 G Ex h IIB T3 Gb
0°C ≤ Ta ≤ 60°C

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Related Manuals

Manual in English	Description
3A5423	XL™ 6500 and 3400 Air Motors
3A5348	Repair/Parts Manual, Sealed 4-Ball Plus Lowers
333022	Sealed 4-Ball Lowers
3A3452	4-Ball Lowers with Open Wet Cup
311619	Pump Mounting Kits

Models

Your model number is marked on the pump identification plate located toward the rear of the air motor.

To determine the model number of your pump from the following matrix, select the six digits which describe your pump. The first digit is always J for circulation pumps. The remaining five digits define the construction.

For example, a circulation pump with stainless steel construction, a 1.7:1 ratio, low noise exhaust, no DataTrak option, a sealed lower with tri-clamp fittings, and an Ultralife rod and cylinder is model number **J S 17 A 8**.

To order replacement parts, see page 16.

J	S	17			A			8			
First Digit	Second Digit	Third and Fourth Digit			Fifth Digit			Sixth Digit			
	Pump Fluid Component Material	Ratio Code ‡	Motor Size	Lower Size		Exhaust	DataTrak™		Lower Style and Fittings*	Rod	Cylinder
J (all circulation pumps)	C (carbon steel)	17	3400	4000	A	Low Noise	No	5	Sealed, tri-clamp, NPT	Chrome	Chrome
	S (stainless steel)	23	3400	3000	B	Low Noise	Yes	6	Sealed, tri-clamp, NPT	Ultralife	Ultralife
		28	3400	2500	C	Remote	No	8	Sealed, tri-clamp	Ultralife	Ultralife
		33	6500	4000	D	Remote	Yes	9	Open Wet Cup, NPT	Ultralife	Ultralife
		35	3400	2000				0	Open Wet Cup, tri-clamp	Ultralife	Ultralife
		44	6500	3000							
		45	3400	1500							
		53	6500	2500							
		90	3400	750							
		‡ Ratio Code XX = X.X:1 ratio									

*Not all lower combinations are available. Consult the product brochure for available models.

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 WARNING	
    	FIRE AND EXPLOSION HAZARD Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion: • Use equipment only in well ventilated area. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking). • Ground all equipment in the work area. See Grounding instructions. • Never spray or flush solvent at high pressure. • Keep work area free of debris, including solvent, rags and gasoline. • Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present. • Use only grounded hoses. • Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive. • Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem. If there is static sparking or you feel a shock, stop operation immediately. Do not use equipment until you identify and correct the problem. Static charge may build up on plastic parts during cleaning and could discharge and ignite flammable vapors. To help prevent fire and explosion: • Clean plastic parts only in a well ventilated area. • Do not clean with a dry cloth. • Keep a working fire extinguisher in the work area.
  	PRESSURIZED EQUIPMENT HAZARD Fluid from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury. • Follow the Pressure Relief Procedure when you stop spraying/dispensing and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.

! WARNING



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheet (SDS) from distributor or retailer.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.



MOVING PARTS HAZARD

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.



TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read Safety Data Sheet (SDS) to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

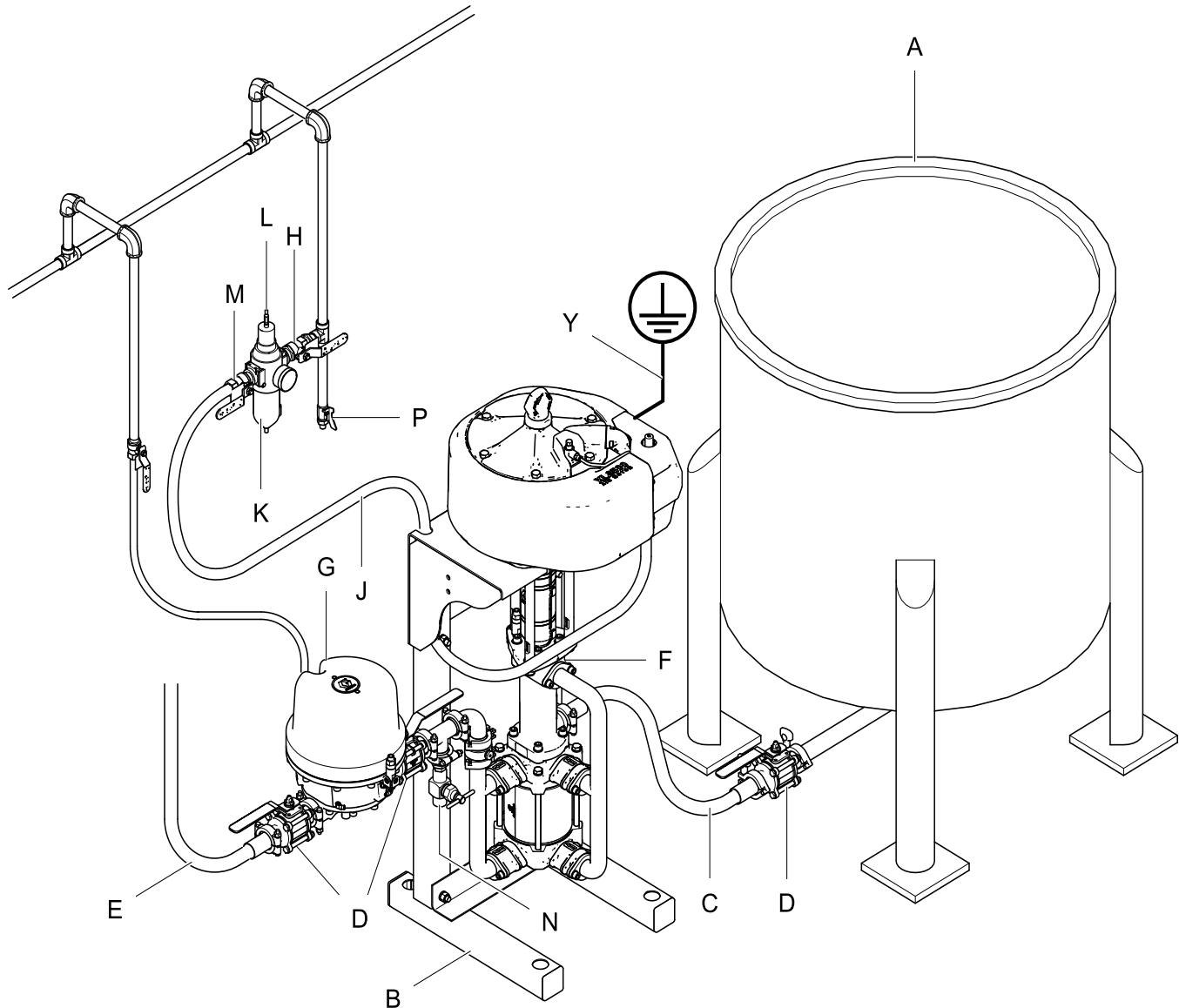


PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Typical Installation



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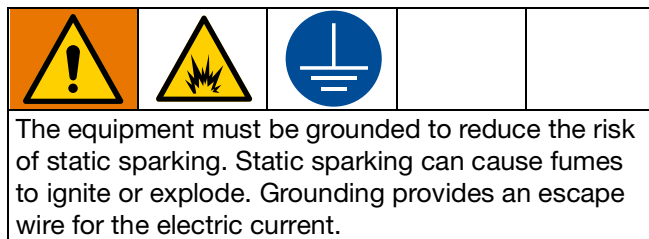
FIG. 1. Typical Installation

Key:

- | | | | |
|---|---|---|--|
| A | Mix Tank | H | Air Shutoff Valve (bleed-type) |
| B | Pump Stand | J | Air Supply Line |
| C | Fluid Supply Line; 1-1/2 in. (38 mm) minimum diameter | K | Air Line Filter |
| D | Fluid Shutoff Valve | L | Air Regulator and Gauge |
| E | Fluid Line | M | Master Air Valve (bleed-type) |
| F | Pump | N | Fluid Drain Valve |
| G | Surge Tank | P | Air Line Drain Valve |
| | | Y | Pump Ground Wire (required, see page 7 for installation) |

Installation

Grounding



Pump: use a ground wire and clamp (not included). See FIG. 2. Remove the green ground screw (Z) from the bottom of the air motor. Insert the screw through the loop on the end of the ground wire (Y) and reattach the screw to the air motor. Connect the ground clamp to a true earth ground. Order Part No. 244524, Ground Wire and Clamp.

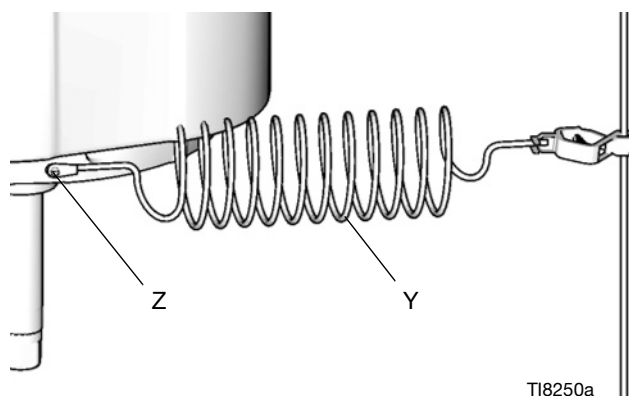


FIG. 2. Ground Wire

Air and fluid hoses: use only electrically conductive hoses with a maximum of 500 ft. (150 m) combined hose length to ensure grounding continuity. Check the electrical resistance of hoses. If the total resistance to ground exceeds 25 megohms, replace hose immediately.

Air compressor: follow manufacturer's recommendations.

Surge tank: use a ground wire and clamp.

Dispense valve: ground through a connection to a properly grounded fluid hose and pump.

Fluid supply container: follow local code.

Object being sprayed: follow local code.

Solvent pails used when flushing: follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts grounding continuity.

To maintain grounding continuity when flushing or relieving pressure: hold metal part of the spray gun or valve firmly to the side of a grounded metal pail, and then trigger the gun or open the valve.

Mounting

The pump can be mounted using one of the following options:

- Stand mount: Kit 253692
- Wall mount: Kit 255143
- Floor mount:
 - Kit 19Y313—Complete kit
 - Kit 19Y286—Plate for mounting to an existing floor mount

Pump Mounting Kits manual 311619 describes the mount parts and how to install each.

Plumbing

NOTICE

To prevent a bellows failure in a sealed 4-ball pump:

- Do not exceed fluid inlet pressure of 15 psi (0.1 MPa, 1.0 bar).
- Do not use a ball check pump on the inlet side of this pump.
- Do not use a suction tube with a check valve on the inlet side of this pump.

Install a fluid shutoff valve (D) between the mix tank (A) and the pump (F).

When using a stainless steel pump, use stainless steel plumbing to maintain a corrosion-resistant system.

Flush Before Using Equipment

The equipment was tested with lightweight oil, which is left in the fluid passages to protect parts. To avoid contaminating your fluid with oil, flush the equipment with a compatible solvent before using the equipment. See **Flushing the Fluid Supply Lines**, page 11.

Accessories

Install the following accessories in the order shown in FIG. 1, page 6, using adapters as necessary.

Fluid Line

See FIG. 1, page 6.

- **Fluid shutoff valve (D):** shuts off fluid flow.
- **Fluid filter:** with a 60 mesh (250 micron) stainless steel element to filter particles from the fluid as it leaves the pump.
- **Fluid drain valve (N):** required in your system, to relieve fluid pressure in the hose and gun.

Air Line

See FIG. 1, page 6.

- **Second bleed-type air valve (H):** isolates air line accessories for servicing. Locate upstream from all other air line accessories.
- **Air line filter (K):** removes harmful dirt and moisture from compressed air supply.
- **Pump air regulator (L):** to control pump speed and outlet pressure. Locate close to the pump.
- **Bleed-type master air valve (M):** required in your system to relieve air trapped between it and the air motor when the valve is closed.



Trapped air can cause the pump to cycle unexpectedly, which could result in serious injury from splashing or moving parts. Be sure the valve is easily accessible from the pump and located downstream from the air regulator. Be sure the air bleed hole points away from the operator. To help prevent fluid over pressurization, do not exceed the maximum air inlet pressure rating to the air motor (see page 27). If you can apply more than the maximum air input pressure to the system, install a safety relief valve between the bleed-type master air valve and the air motor. The safety relief valve must be set to open if the air inlet pressure to the motor exceeds the motor rating.

Operation

Pressure Relief Procedure



Follow the **Pressure Relief Procedure** whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from splashing fluid and moving parts, follow the **Pressure Relief Procedure** when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Close the bleed-type master air valve (M).
2. Open the dispensing valve, if used.
3. Open all fluid drain valves (N) in the system, having a waste container ready to catch drainage.
4. Leave drain valve(s) open until you are ready to pump again.

Prime the Pump

NOTICE

Do not allow the pump to run quickly for a long period of time as this may damage the packings.

1. Fill the wet cup with Throat Seal Liquid (TSL).

NOTE: Sealed 4-ball lowers with bellows do not require TSL.

NOTE: During operation the TSL level in the wet cup will fluctuate slightly at pump changeover.

2. Close pump air regulator (L) by turning the knob counterclockwise, reducing pressure to zero. Close the bleed-type air valve (H). Also verify that all drain valves (N) are closed.

3. Connect air line (J) to bleed type air valve (H).
4. Check that all fittings throughout system are tightened securely.
5. Connect the fluid supply line (C) from the mix tank shutoff valve (D) to the pump.
6. Connect the fluid line (E) to the pump outlet or surge suppressor outlet (G), if used.

NOTE: If your pump has DataTrak, see your separate XL air motor manual for DataTrak instructions.

7. *DataTrak equipped units with runaway protection only:* enable the prime/flush function by pushing the prime/flush button on the DataTrak.
8. Open bleed-type air valve (H). Slowly turn pump air regulator (L) clockwise, increasing pressure until pump starts.
9. Cycle pump slowly until all air is pushed out and pump and hoses are fully primed.
10. *DataTrak equipped units with runaway protection only:* disable the prime/flush function by pushing the prime/flush button on the DataTrak.
11. Close the fluid shutoff valve (D) downstream of the pump. The pump should stall against pressure.

NOTE: In a circulation system, the pump operates continuously until the power supply is shut off. In a direct-supply system, the pump starts when the dispense valve is opened, and stops when the dispense valve is closed.

Stop Pump at Bottom of Stroke



Relieve the pressure when you stop the pump for any reason. Stop the pump on the down stroke, before the air motor changes over.

NOTICE

Failure to stop the pump at the bottom of its stroke allows fluid to dry on the piston rod (R), which can damage the throat seal.

Shutdown

Follow the **Pressure Relief Procedure**, page 9.

Always flush the pump before the fluid dries on the displacement rod. See **Flushing the Fluid Supply Lines** on page 11.

Maintenance

Preventive Maintenance Schedule

The operating conditions of your particular system determine how often maintenance is required. Establish a preventive maintenance schedule by recording when and what kind of maintenance is needed, and then determine a regular schedule for checking your system.

Your schedule should include the maintenance activities described in the following sections.

Flushing the Fluid Supply Lines



To avoid fire and explosion, always ground equipment and waste container. To avoid static sparking and injury from splashing, always flush at the lowest possible pressure.

- Flush before changing colors, before fluid can dry in the equipment, at the end of the day, before storing, and before repairing equipment.
- Flush at the lowest pressure possible. Check connectors for leaks and tighten as necessary.
- Flush with a fluid that is compatible with the fluid being dispensed and the equipment wetted parts.

Cleaning the Air Line Filter

Drain and clean as necessary.

Checking the Mix Tank Volume

NOTICE

Do not let the mix tank run dry. When the tank is empty, the pump demands more power as it tries to suck in some fluid. This causes the pump to run too fast, which can seriously damage the pump.

Performing a Stall Test

Perform a stall test periodically to ensure the piston seal is in good working condition and to prevent system over-pressurization:

Close the fluid shutoff valve (D) closest to the pump on the down stroke and be sure that the pump stalls. Open the fluid shutoff valve to restart the pump. Close the fluid shutoff valve (D) closest to the pump on the upstroke and be sure that the pump stalls.

NOTICE

Do not allow the pump to run quickly for a long period of time as this may damage the seal.

Stop the pump on the down stroke, before the air motor changes over.

NOTICE

Failure to stop the pump at the bottom of its stroke allows fluid to dry on the piston rod (R), which can damage the throat seal when the pump is restarted.

Changing the TSL On Wet Cup Models

On Wet Cup Models check the condition of the TSL and the level in the wet cup every week, minimum. TSL should be changed at least every month.

Troubleshooting



1. Follow the **Pressure Relief Procedure**, page 9, before checking or servicing pump.

Problem	Cause	Solution
Pump output low on both strokes.	Restricted air supply lines.	Clear any obstructions; be sure all shut-off valves are open; increase pressure, but do not exceed maximum working pressure.
	Exhausted fluid supply.	Refill and reprime pump.
	Clogged fluid outlet line, valves, etc.	Clear.
	Worn piston packing.	Replace. See lower manual.
Pump output low on only one stroke.	Held open or worn ball check valves.	Check and repair.
	Worn piston packings.	Replace. See lower manual.
No output.	Improperly installed ball check valves.	Check and repair.
Pump operates erratically.	Exhausted fluid supply.	Refill and reprime pump.
	Held open or worn ball check valves.	Check and repair.
	Worn piston packing.	Replace. See lower manual.
Pump will not operate.	Restricted air supply lines.	Clear any obstructions; be sure all shut off valves are open; increase pressure, but do not exceed maximum working pressure.
	Exhausted fluid supply.	Refill and reprime pump.
	Clogged fluid outlet line, valves, etc.	Clear.
	Damaged air motor.	See air motor manual.
	Fluid dried on piston rod.	Disassemble and clean pump. See lower manual. In future, stop pump at bottom of stroke.

Repair

Disassembly

				
This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from splashing fluid and moving parts, follow the Pressure Relief Procedure before servicing the equipment.				

1. Relieve the pressure. Follow the **Pressure Relief Procedure**, page 9.
2. Disconnect the hoses from the lower and plug the ends to prevent fluid contamination.
3. Remove the 2-piece shield (22) by inserting a screwdriver straight into the slot, and using it as a lever to release the tab. Repeat for all tabs. **Do not** use the screwdriver to pry the shields apart. See FIG. 3.

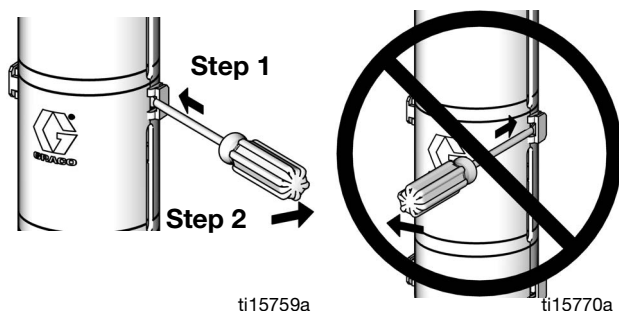


FIG. 3. Shield Disassembly

4. Loosen the coupling nut (3) and remove the collars (4). Remove the coupling nut from the piston rod (R). Unscrew the lock nuts (7) from the tie rods (6). Separate the motor (1) and lower (2). See **Parts**, on page 16.
5. To repair the air motor or lower, see the separate manuals listed under **Related Manuals**, on page 2.

Reassembly

1. If the coupling adapter (5) and tie rods (6) have not been disassembled from the motor, skip to step 2.

If the coupling adapter (5) and tie rods (6) have been disassembled from the motor, follow these steps:

- a. Screw the tie rods (6) into the motor (1) and torque to 50-60 ft-lb (68-81 N•m). See **Parts**, page 16.
 - b. Apply red Loctite® to the coupling adapter (5).
 - c. Screw the coupling adapter (5) into the motor shaft and torque to 90-100 ft-lb. (122-136 N•m).
 - d. Continue to step 2.
2. Assemble the coupling nut (3) over the piston rod (R).
 3. Orient the lower (2) to the motor (1). Position the lower on the tie rods (6).
 4. If you are reusing lock nuts (7) and the nylon of the lock nut is worn or cut, add blue Loctite to the tie rod threads.
 5. Screw the lock nuts (7) onto the tie rods. Leave the lock nuts (7) loose enough to allow the lower to move so that it can be aligned correctly.
 6. Insert the collars (4) into the coupling nut (3). Tighten the coupling nut onto the coupling adapter (5) and torque to 90-100 ft-lb. (122-136 N•m) to align the motor shaft with the piston rod (R).
 7. Tighten the lock nuts (7) and torque to 50-60 ft-lb (68-81 N•m).

8. Install the shields (22) by engaging the bottom lips with the groove in the top plate. Snap the two shields together.

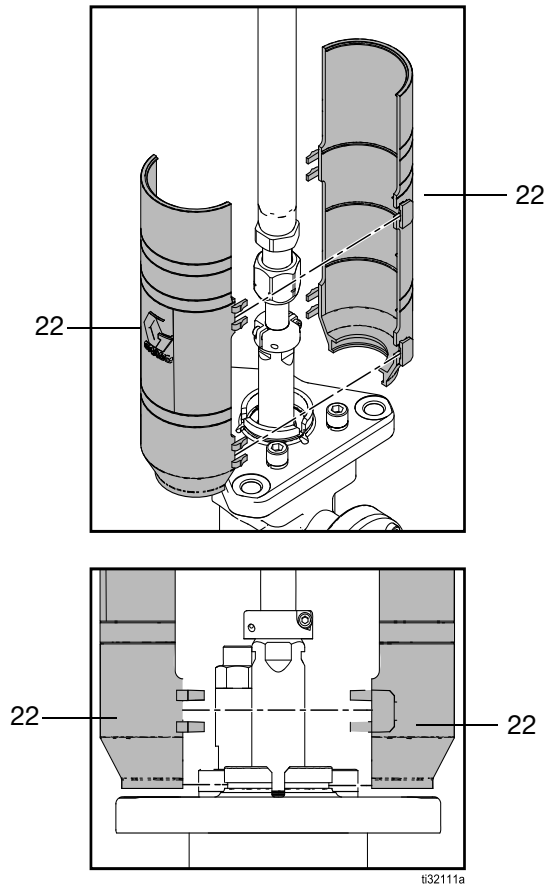


FIG. 4. Shield Reassembly

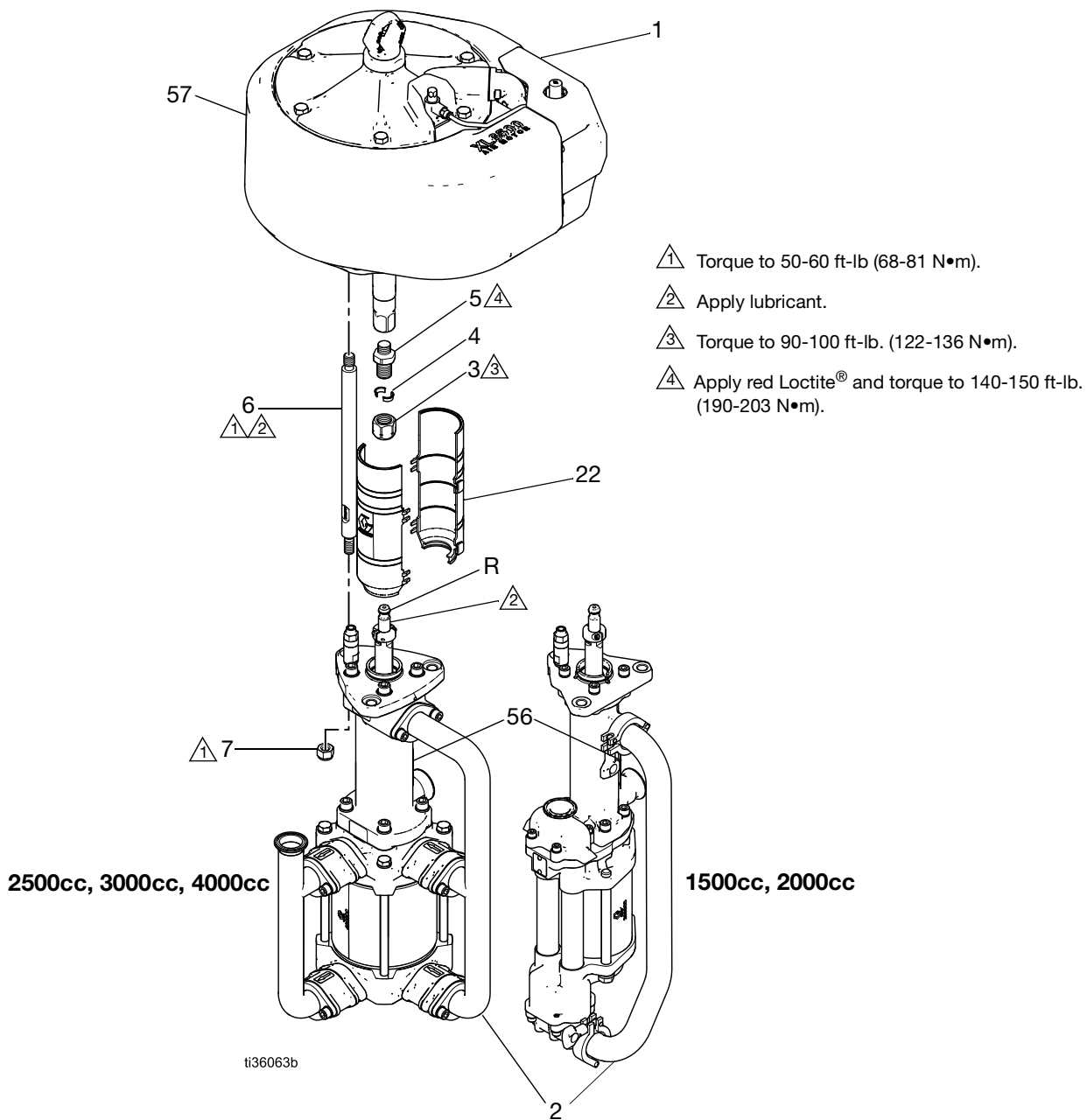
9. Flush and test the pump before reinstalling it in the system. Connect hoses and flush the pump. While it is pressurized, check for smooth operation and leaks. Adjust or repair as necessary before reinstalling in the system.
10. Reconnect the pump ground wire before operating.

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Parts

High-Flo Pumps 1500cc or 2000cc with Sealed 4-Ball Lower

High-Flo Plus Pumps 2500cc, 3000cc, or 4000cc with Sealed 4-Ball Lower



Common Parts

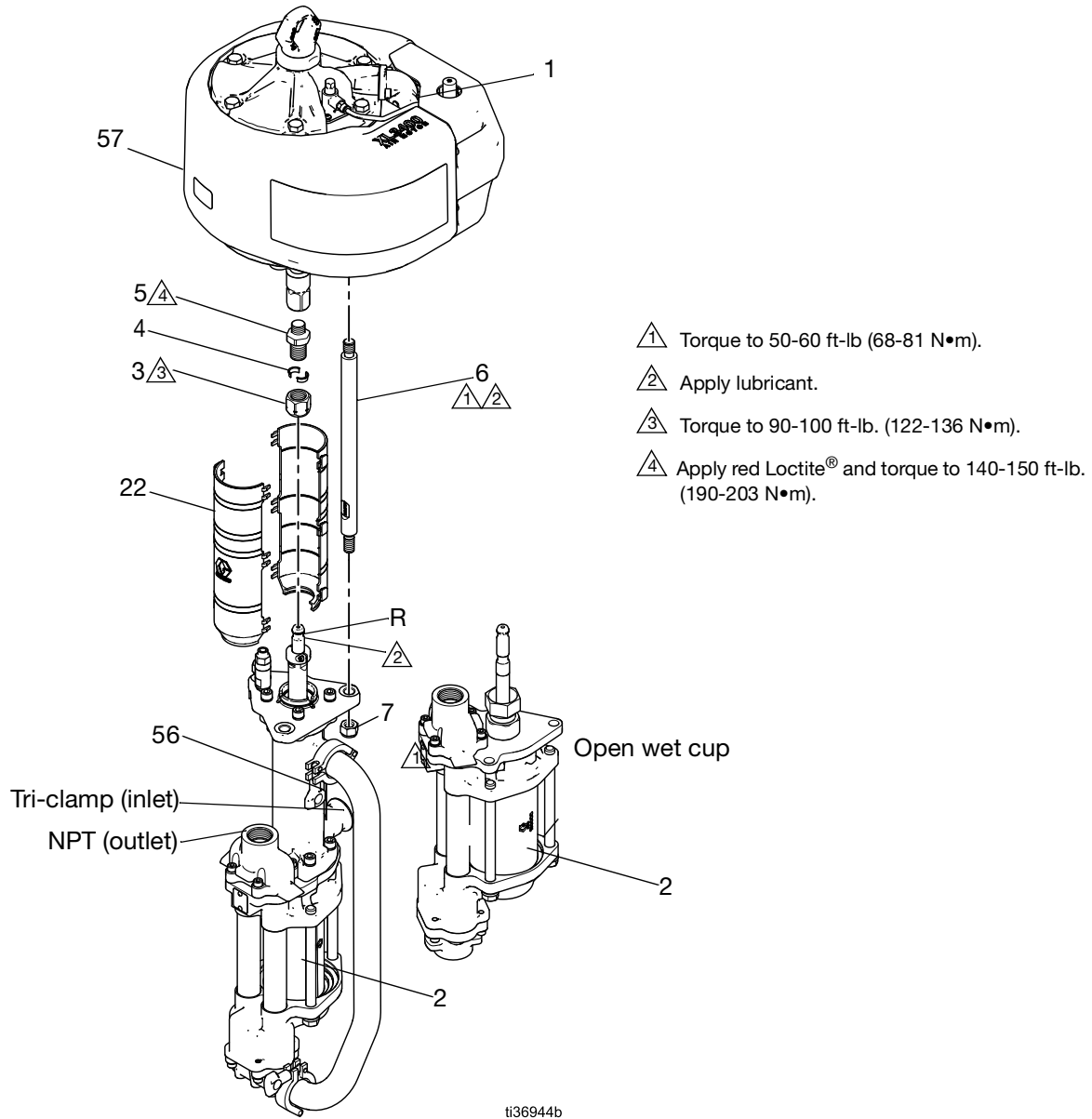
Ref.	Part	Description	Qty.
1	See pages 20-21	MOTOR, XL	1
2		LOWER, 4-Ball	1
3	17F000	NUT, coupling, M22 x 1.5	1
4	184128	COLLAR, coupling	2
5	15H369	ADAPTER, coupling, M22 x 1.5	1
6	16X771	TIE ROD, 14.37 in (365 mm) - 12.09 in. (307.09 mm) between shoulders	3
7	108683	NUT, lock, hex; 9/16-12 unc	3
10	See pages 20-21	KIT, DataTrak with solenoid (not shown)	1
13†	111337	FITTING, tee (not shown)	1
14†	100615	BUSHING, hex (not shown)	1
15†	116643	VALVE, safety (not shown)	1
16†	157785	FITTING, swivel (not shown)	1
22	25P848	SHIELD, kit; includes 2 shields	1
56▲	16K116	LABEL, notice	1
57▲	15F674	LABEL, safety	1
58▲	172479	TAG, safety (1500cc, 2000cc only; not shown)	1

† Used only on Jx33xx, Jx44xx, and
Jx53xx assemblies.

▲ Replacement safety labels, tags, and cards are
available at no cost.

High-Flo Pumps with 1500cc or 2000cc Open Wet Cup 4-Ball Lowers

High-Flo Pumps with 750cc Sealed 4-Ball Lowers



Common Parts

Ref.	Part	Description	Qty.
1	See pages 20-21	MOTOR, XL	1
2		LOWER, 4-Ball	1
3	17F000	NUT, coupling, M22 x 1.5	1
4	184128	COLLAR, coupling	2
5	15H369	ADAPTER, coupling, M22 x 1.5	1
6	15G924	TIE ROD, 14.37 in (365 mm) - 12.09 in. (307.09 mm) between shoulders	3
7	108683	NUT, lock, hex; 9/16-12 unc	3
10	See pages 20-21	KIT, DataTrak with solenoid (not shown)	1
22	25P848	SHIELD, kit; includes 2 shields	1
56▲	16K116	LABEL, notice	1
57▲	15F674	LABEL, safety	1
58▲	172479	TAG, safety (not shown)	1

▲ Replacement safety labels, tags, and cards are available at no cost.

1.7:1 Ratio, 4000cc Pump

		Ref. 1	Ref. 2	Ref. 10
Pump (See page 3)	Pump Series	XL Air Motor (See 3A5423)	4-Ball Lower (See 3A5348)	DataTrak
JS17A8	A	XL34L0	17Z389	N/A
JS17B8	A			24X550
JS17C8	A	XL34R0		N/A
JS17D8	A			24X550

2.3:1 Ratio, 3000cc Pump

		Ref. 1	Ref. 2	Ref. 10
Pump (See page 3)	Pump Series	XL Air Motor (See 3A5423)	4-Ball Lower (See 3A5348)	DataTrak
JS23A8	A	XL34L0	17Z388	N/A
JS23B8	A			24X550
JS23C8	A	XL34R0		N/A
JS23D8	A			24X550

2.8:1 Ratio, 2500cc Pump

		Ref. 1	Ref. 2	Ref. 10
Pump (See page 3)	Pump Series	XL Air Motor (See 3A5423)	4-Ball Lower (See 3A5348)	DataTrak
JS28A8	A	XL34L0	17Z387	N/A
JS28B8	A			24X550
JS28C8	A	XL34R0		N/A
JS28D8	A			24X550

3.3:1 Ratio, 4000cc Pump

		Ref. 1	Ref. 2	Ref. 10
Pump (See page 3)	Pump Series	XL Air Motor (See 3A5423)	4-Ball Lower (See 3A5348)	DataTrak
JS33A8	A	XL65L0	17Z389	N/A
JS33B8	A			24X550
JS33C8	A	XL65R0		N/A
JS33D8	A			24X550

3.5:1 Ratio, 2000cc Pump

		Ref. 1	Ref. 2	Ref. 10
Pump (See page 3)	Pump Series	XL Air Motor (See 3A5423)	4-Ball Lower (See 333022 for sealed lowers and 3A3452 for open lowers.)	DataTrak
JS35A0	A	XL34L0	17K667 (Open)	N/A
JS35B0	A			24X550
JS35C0	A	XL34R0		N/A
JS35D0	A			24X550
JS35A8	A	XL34L0	17K659 (Sealed)	N/A
JS35B8	A			24X550
JS35C8	A	XL34R0		N/A
JS35D8	A			24X550
JS35A9	A	XL34L0	17K671 (Open)	N/A
JS35B9	A			24X550
JS35C9	A	XL34R0		N/A
JS35D9	A			24X550
JC35A9	A	XL34L0	17K663 (Open)	N/A
JC35B9	A			24X550

4.4:1 Ratio, 3000cc Pump

		Ref. 1	Ref. 2	Ref. 10
Pump (See page 3)	Pump Series	XL Air Motor (See 3A5423)	4-Ball Lower (See 3A5348)	DataTrak
JS44A8	A	XL65L0	17Z388	N/A
JS44B8	A			24X550
JS44C8	A	XL65R0		N/A
JS44D8	A			24X550

4.5:1 Ratio, 1500cc Pump

		Ref. 1	Ref. 2	Ref. 10
Pump (See page 3)	Pump Series	XL Air Motor (See 3A5423)	4-Ball Lower (See 333022 for sealed lowers and 3A3452 for open lowers.)	DataTrak
JS45A0	A	XL34L0	17K666 (Open)	N/A
JS45B0	A			24X550
JS45C0	A	XL34R0		N/A
JS45D0	A			24X550
JS45A8	A	XL34L0	17K658 (Sealed)	N/A
JS45B8	A			24X550
JS45C8	A	XL34R0		N/A
JS45D8	A			24X550
JS45A9	A	XL34L0	17K670 (Open)	N/A
JS45B9	A			24X550
JS45C9	A	XL34R0		N/A
JS45D9	A			24X550
JC45A9	A	XL34L0	17K662 (Open)	N/A
JC45B9	A			24X550

5.3:1 Ratio, 2500cc Pump

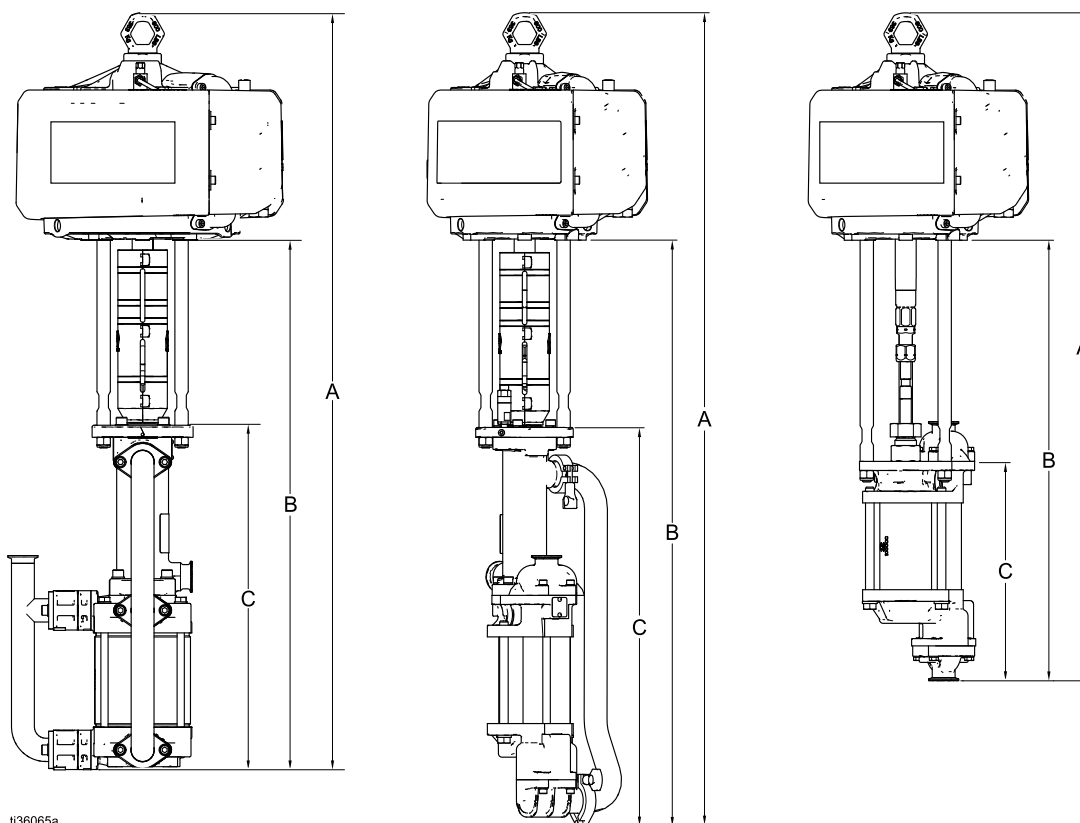
		Ref. 1	Ref. 2	Ref. 10
Pump (See page 3)	Pump Series	XL Air Motor (See 3A5423)	4-Ball Lower (See 3A5348)	DataTrak
JS53A8	A	XL65L0	17Z387	N/A
JS53B8	A			24X550
JS53C8	A	XL65R0		N/A
JS53D8	A			24X550

9.0:1 Ratio, 750cc Pump

		Ref. 1	Ref. 2	Ref. 10
Pump (See page 3)	Pump Series	XL Air Motor (See 3A5423)	4-Ball Lower (See 3A5348)	DataTrak
JS90A5	A	XL34L0	26B218	N/A
JS90B5	A	XL34L0		24X550
JS90C5	A	XL34R0		N/A
JS90D5	A	XL34R0		24X550
JS90A6	A	XL34L0	26B217	N/A
JS90B6	A	XL34L0		24X550
JS90C6	A	XL34R0		N/A
JS90D6	A	XL34R0		24X550

Dimensions

High-Flo Pumps, Sealed, 4- Ball, Plus

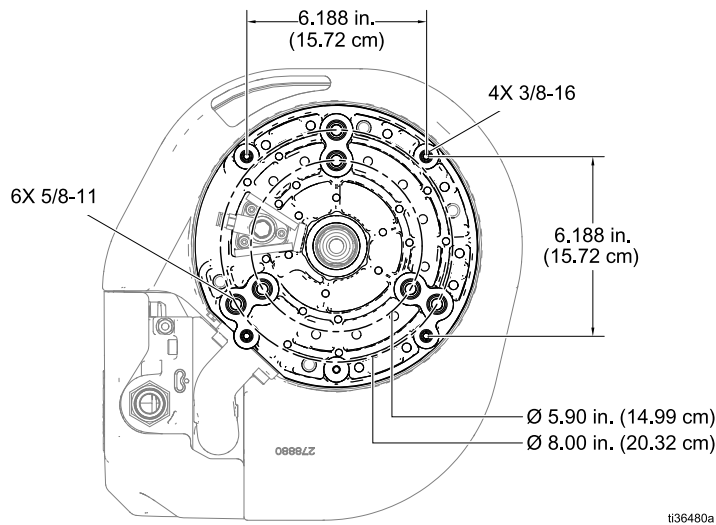


Model	Motor	Lower Size	A in. (mm)	B in. (mm)	C in. (mm)	Approx. Weight* lb (kg)
Jx17x8	XL3400	4000cc	48.6 (1234)	33.9 (861)	22 (559)	137 (62)
Jx23x8		3000cc				135 (61)
Jx28x8		2500cc				134 (61)
Jx33x8	XL6500	4000cc				156 (71)
Jx44x8		3000cc				154 (70)
Jx53x8		2500cc				153 (69)
Jx35x0	XL3400	2000cc	43.1 (1094)	28.7 (729)	13.9 (353)	106 (48)
Jx35x8		2000cc	52.6 (1336)	37.8 (960)	25.7 (653)	125 (57)
Jx35x9		2000cc	42.8 (1087)	28.4 (721)	14.1 (358)	106 (48)
Jx45x0		1500cc	43.1 (1094)	28.7 (729)	13.2 (335)	104 (47)
Jx45x8		1500cc	52.6 (1336)	37.8 (960)	25.7 (653)	122 (55)
Jx45x9		1500cc	42.8 (1087)	28.4 (721)	14.1 (358)	104 (47)
Jx90xx		750cc	52.6 (1336)	37.8 (960)	25.7 (653)	120 (54)

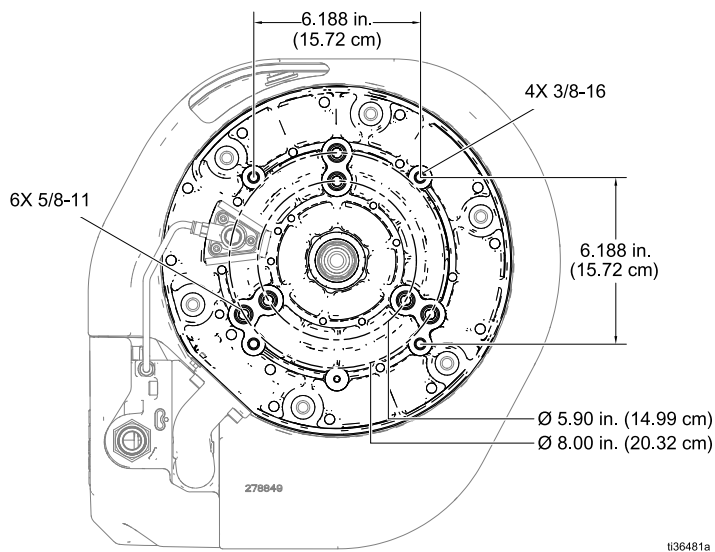
*Add 2 lb (1 kg) for models with DataTrak.

Motor Mounting Hole Diagrams

XL Model 3400



XL Model 6500



Performance Charts

Fluid Outlet Pressure - Solid Line Curves

To find Fluid Outlet Pressure (psi/MPa/bar) at a specific fluid flow (gpm/lpm) and operating air pressure (psi/MPa/bar):

1. Locate the desired flow along the bottom of the chart.
2. Follow the vertical line up to the intersection with the selected fluid outlet pressure curve (solid line).
3. Follow left to the scale to read the fluid outlet pressure.

Key:

- A 100 psi (0.7 MPa, 7.0 bar) air pressure
 B 70 psi (0.49 MPa, 4.9 bar) air pressure
 C 40 psi (0.28 MPa, 2.8 bar) air pressure

Air Consumption - Dashed Line Curves

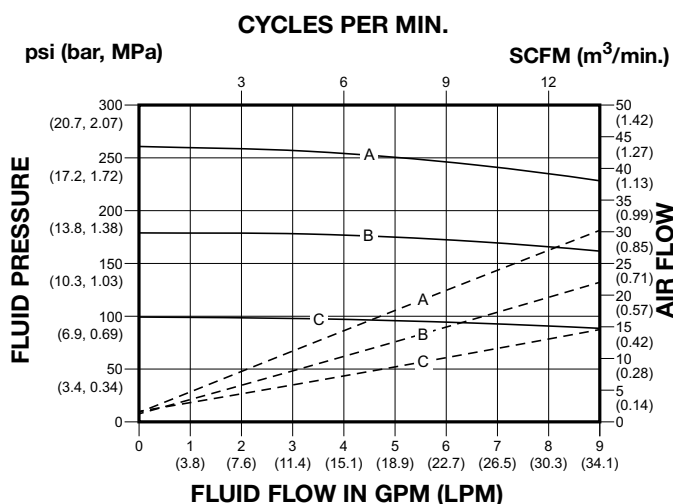
To find Pump Air Consumption (scfm or m³/min.) at a specific fluid flow (gpm/lpm) and air pressure (psi/MPa/bar):

1. Locate the desired flow along the bottom of the chart.
2. Read the vertical line up to the intersection with the selected air consumption curve (dashed line).
3. Follow right to the scale to read the air consumption.

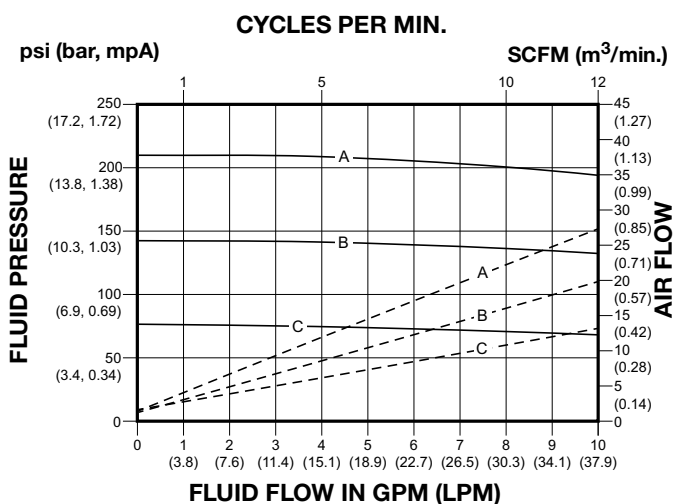
Fluid outlet pressure	—————
Air consumption	- - - - -

NOTE: See **Models** on page 3 for your pump part number.

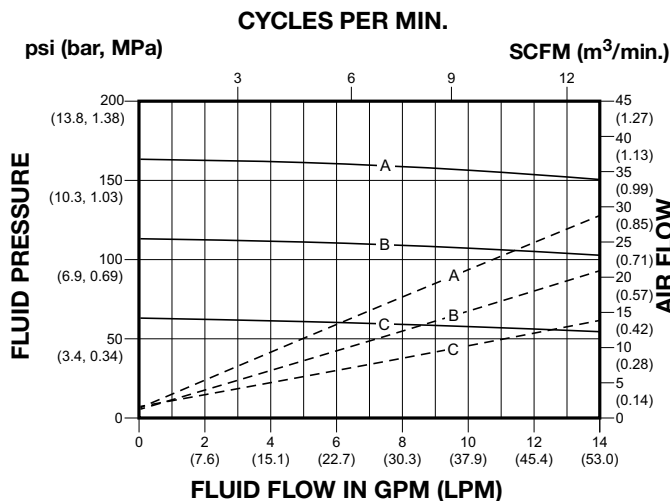
XL 3400 Air Motor, 2500cc Lower (Jx28xx)



XL 3400 Air Motor, 3000cc Lower (Jx23xx)



XL 3400 Air Motor, 4000cc Lower (Jx17xx)



NOTE: See **Models** on page 3 for your pump part number.

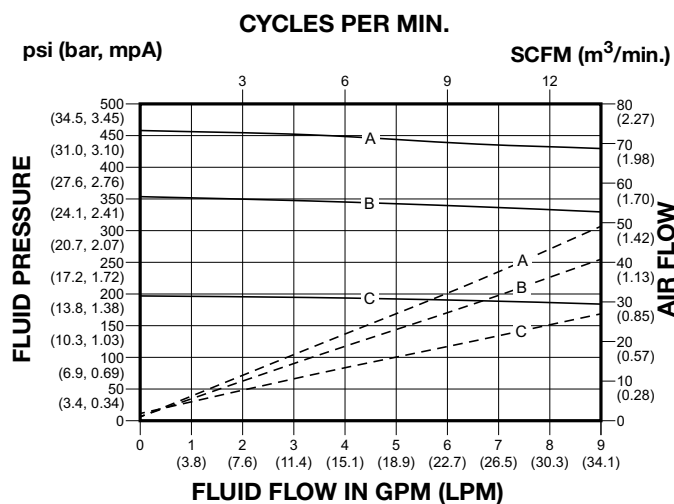
Key:

- A 90 psi (0.62 MPa, 6.2 bar) air pressure
- B 70 psi (0.49 MPa, 4.9 bar) air pressure
- C 40 psi (0.28 MPa, 2.8 bar) air pressure

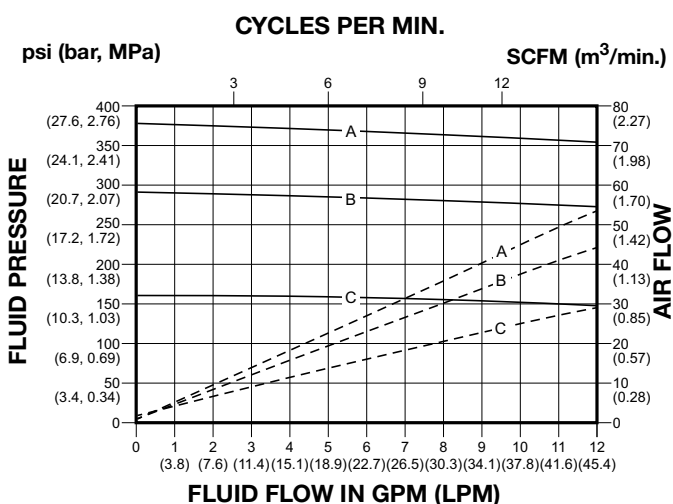
Fluid outlet pressure —————

Air consumption - - - - -

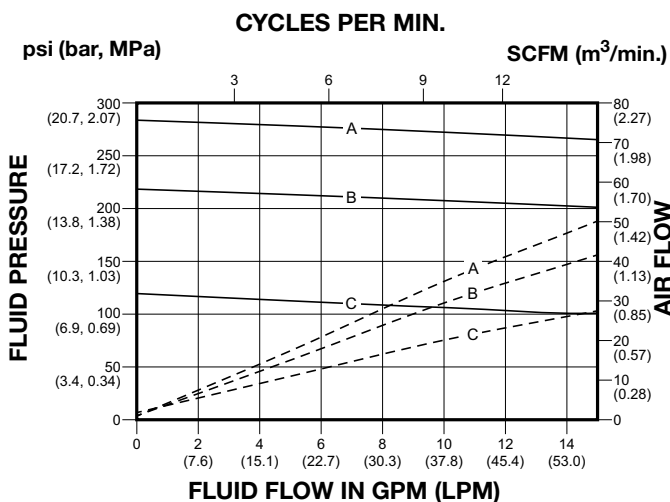
XL 6500 Air Motor, 2500cc Lower (Jx53xx)



XL 6500 Air Motor, 3000cc Lower (Jx44xx)



XL 6500 Air Motor, 4000cc Lower (Jx33xx)



NOTE: See **Models** on page 3 for your pump part number.

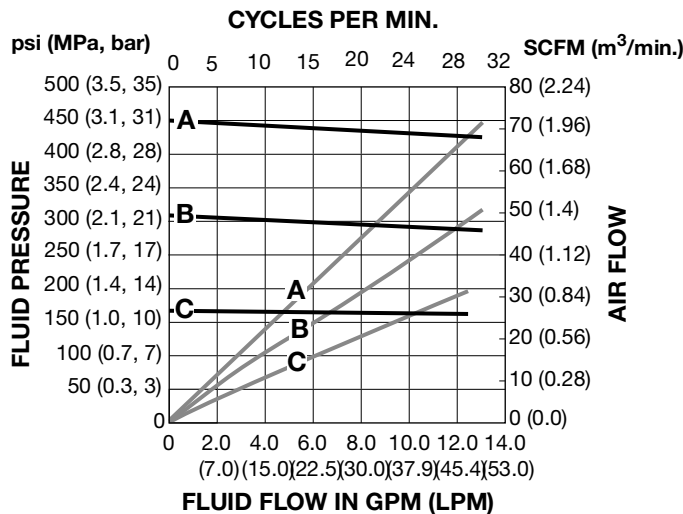
Key:

- A 100 psi (0.7 MPa, 7.0 bar) air pressure
- B 70 psi (0.49 MPa, 4.9 bar) air pressure
- C 40 psi (0.28 MPa, 2.8 bar) air pressure

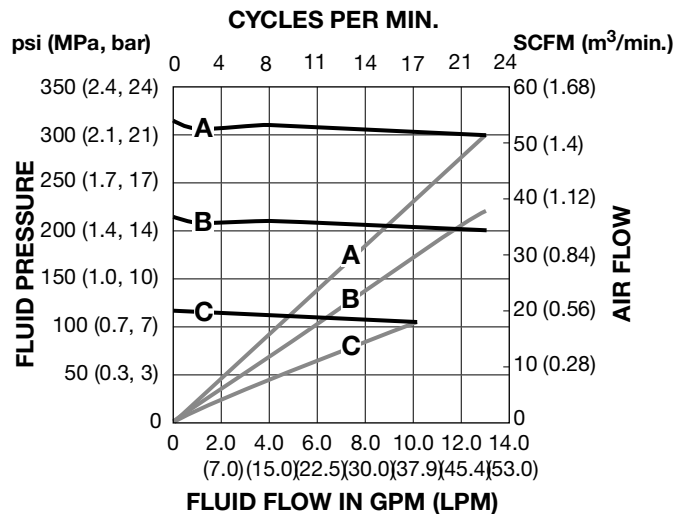
Fluid outlet pressure	
Air consumption	

The shaded area within the table shows the recommended range for continuous duty circulation applications.

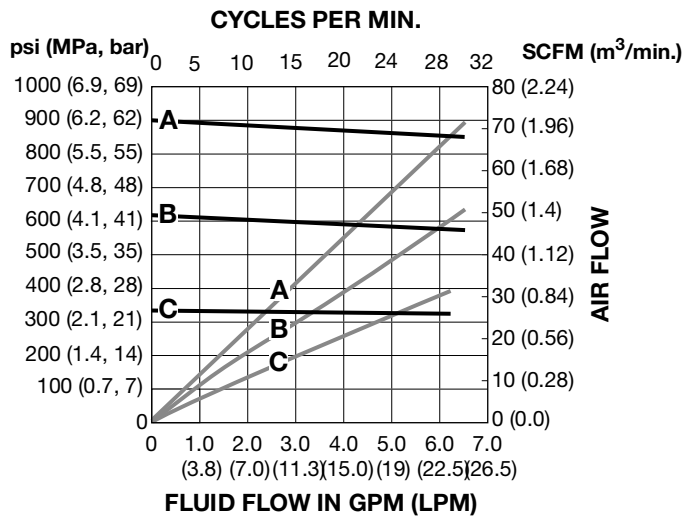
XL 3400 Air Motor, 1500cc Lower (Jx45xx)



XL 3400 Air Motor, 2000cc Lower (Jx35xx)



XL 3400 Air Motor, 750cc Lower (Jx90xx)



Technical Specifications

High-Flo 4-Ball and High-Flo Plus 4-Ball Pumps		
	U.S.	Metric
Maximum Working Pressure		
Models Jx17xx and Jx33xx	300 psi	2.1 MPa, 20.7 bar
Models Jx23xx and Jx44xx	400 psi	2.8 MPa, 27.6 bar
Models Jx28xx, Jx35xx, Jx45xx, and Jx53xx	460 psi	3.2 MPa, 31.7 bar
Model Jx90xx	900 psi	6.2 MPa, 62 bar
Maximum Fluid Inlet Pressure (Sealed Pump)	15 psi	0.1 Mpa, 1.0 bar
Maximum Air Input Pressure		
Models Jx17xx, Jx23xx, Jx28xx, Jx35xx, Jx45xx, and Jx90xx	100 psi	0.7 MPa, 7.0 bar
Models Jx33xx, Jx44xx, and Jx53xx	90 psi	0.6 MPa, 6.2 bar
Maximum recommended cycle rate for continuous duty	20 cycles per minute.	
Motor Air Inlet Size	See manual 3A5423.	
Fluid Inlet and Outlet Sizes	See manual 333022 or manual 3A3452.	
Air Consumption	See Performance Charts , page 24.	
Dimensions	See Dimensions , page 22.	
Weight	See Dimensions , page 22.	
Output per Cycle gal (cc)		
Models Jx17xx and JX33xx	1.1 gal (4000cc)	
Models Jx23xx and JX44xx	0.8 gal (3000cc)	
Models Jx28xx and JX53xx	0.7 gal (2500cc)	
Model Jx35xx	0.5 gal (2000cc)	
Model Jx45xx	0.4 gal (1500cc)	
Model Jx90xx	0.2 gal (750cc)	
Maximum Fluid Temperature Rating	150°F	66°C
Notes		
Sound data: See XL™ 6500 and 3400 Air Motors manual 3A5423.		
Wetted parts: See Sealed 4-Ball Plus Lowers manuals 3A5348, 333022, and 3A3452.		
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Original instructions. This manual contains English. MM 3A6938

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