

Air Cap and Nozzle Replacement

1. **Prepare the Gun for Service**, page 43.
2. Remove the retaining ring (1) and air cap (2). See FIG. 30.
3. Remove piston cap (14) and springs (12 and 13) from the rear of the gun. See FIG. 35, page 49.
4. Remove the fluid nozzle (3) assembly with the multi-tool (40).

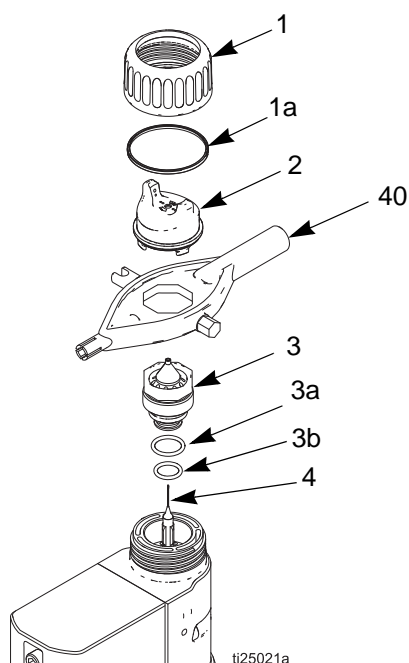


FIG. 30. Air Cap/Nozzle Replacement

<p>The nozzle contact ring (3a) is a conductive contact ring, not a sealing o-ring. To reduce the risk of sparking or electric shock:</p> <ul style="list-style-type: none"> • Do not remove the nozzle contact ring (3a) except to replace it. • Never operate the gun without the contact ring in place. • Do not replace the contact ring with anything but a genuine Graco part. 				

NOTE: Use non-silicone grease (111265) on the small o-ring (3b). Do not over-lubricate. Do not lubricate the contact ring (3a).

5. Lightly lubricate the o-ring (3b). Install it and the contact ring (3a) on the nozzle (3).

NOTE: Make sure the electrode needle (4) is finger-tight (see **Electrode Replacement**, page 46).

6. Install the fluid nozzle (3) with the multi-tool (40), and tighten until the fluid nozzle seats in the gun body (1/8 to 1/4 turn past hand-tight).
7. Carefully install the air cap (2). Be sure to insert the electrode (4) through the center hole of the air cap.
8. Rotate the air cap (2) to the desired position.
9. Make sure the u-cup (1a) is properly in place on the retaining ring (1). The lips must face forward.
10. Tighten the retaining ring until the air cap is held firmly in place; you should not be able to rotate the air cap horns by hand.
11. **Test Gun Resistance**, page 36.
12. Install the gun onto the manifold and bracket.

Electrode Replacement

1. Follow the steps in **Prepare the Gun for Service**, page 43.
2. Remove the air cap and nozzle. See **Air Cap and Nozzle Replacement**, page 45.
3. Unscrew the electrode (4) with the multi-tool (40) from the front of the gun body (7). FIG. 31.

NOTICE

To avoid damaging the plastic threads, be very careful when installing the electrode.

4. Apply low-strength (purple) Loctite® or equivalent thread sealant to the electrode and packing rod threads. Install the electrode finger-tight. Do not over tighten. NOTE: Loctite® is a registered trademark of the Loctite Corporation.
5. Install the fluid nozzle. See **Air Cap and Nozzle Replacement**, page 45.
6. **Test Gun Resistance**, page 36.
7. Install the air cap. See **Air Cap and Nozzle Replacement**, page 45.
8. Install the gun onto the manifold and bracket.

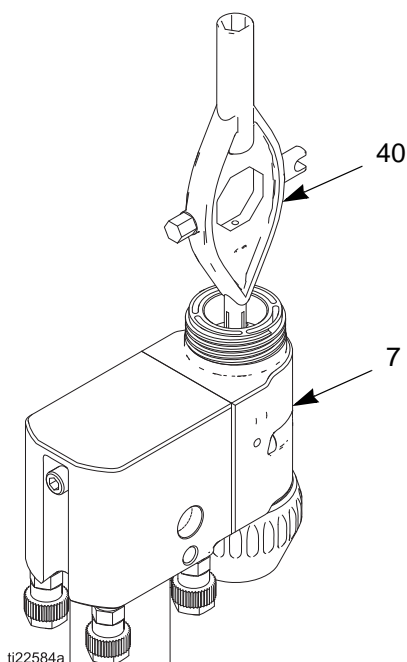


FIG. 31. Electrode Replacement

Manifold HV Contact Repair

1. Follow the steps in **Prepare the Gun for Service**, page 43.
2. Remove the plunger retainer nut (15a).
3. Remove the plunger (15b) and spring (15c).
4. Inspect for damage, replace if needed.
5. Carefully align and place the spring (15c) in the manifold.
6. Place the large end of the plunger (15b) into the hole in the manifold.
7. Install the plunger retainer nut (15a). Torque to 10 in-lbs (1.1 N·m).

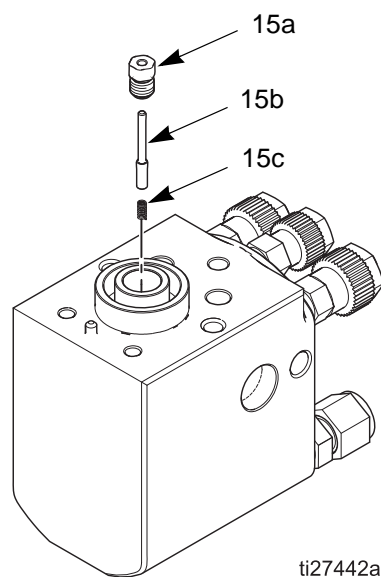


FIG. 32. Manifold HV Contact Repair

Packing Rod Removal

1. Follow the steps in **Prepare the Gun for Service**, page 43.
2. Remove the air cap and fluid nozzle. See **Air Cap and Nozzle Replacement**, page 45.
3. Remove the electrode. See **Electrode Replacement**, page 46.
4. Remove piston cap (14) and springs (12 and 13) from the rear of the gun. See FIG. 35.
5. Unscrew the set screw (10) and remove from the needle stop (11).
6. Remove the packing rod assembly (5), using the multi-tool (40).
7. Check all parts for wear or damage and replace if necessary. See **Packing Rod Repair**, page 48.

Packing Rod Installation

1. Install the packing rod assembly (5) into the gun body. Using the multi-tool (40), tighten the assembly until just snug.
2. Install the electrode. See **Electrode Replacement**, page 46.
3. Install the nozzle and air cap. See **Air Cap and Nozzle Replacement**, page 45.
4. Follow the steps in **Test Gun Resistance**, page 36.

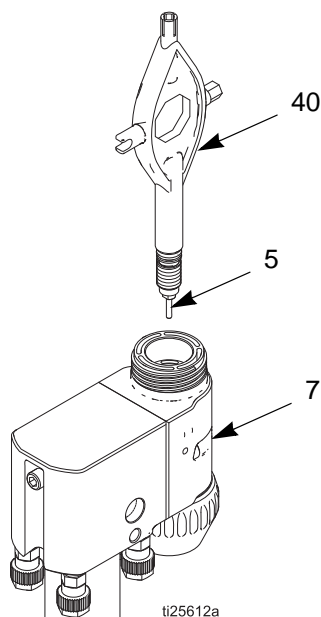


FIG. 33. Fluid Packing Rod Removal

Packing Rod Repair

NOTE: You may replace the packing rod (5) components as individual parts or as an assembly. The fluid rod drag force is pre-adjusted at the factory but must be checked each time work is done on the packing rod assembly.

Disassembly

After the packing rod assembly has been removed from the gun, perform the following to disassemble the packing rod assembly.

1. Remove the packing rod (103).
2. Use the multi-tool to loosen the packing nut (102). Remove the packing nut.
3. Use the packing rod (103) inserted in the small hole of the packing housing (101) to help push the components out of the packing housing.
4. Separate remaining items and inspect for damage. Replace any damaged parts.

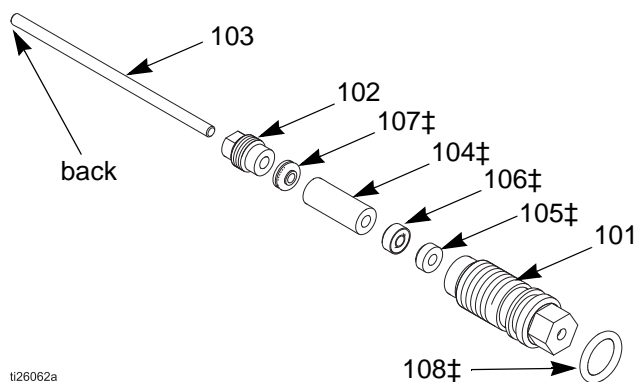


FIG. 34 Packing Rod Repair

Assembly

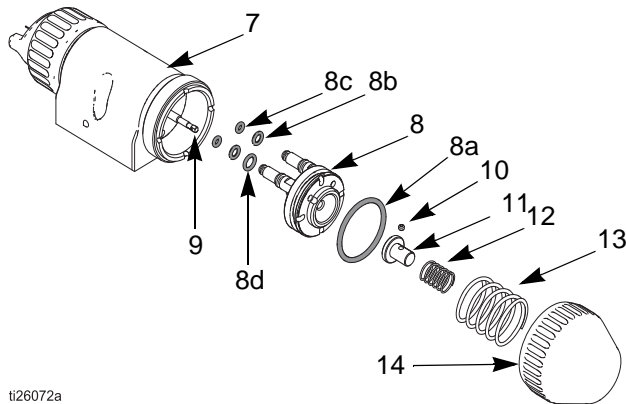
NOTE: Before installing the packing rod into the gun body, make sure the internal surfaces of the gun are clean. Remove any residue with a soft brush or cloth. Check the inside of the gun for marks from high voltage arcing. If marks are present, replace the body.

NOTE: To provide an orientation reference during assembly, the end of the fluid rod that is exposed beyond the packing flats is referred to as the back end of the fluid rod.

1. Place the packing nut (102) and seal (107) on the fluid rod (103). Flats on the packing nut must face away from all other components installed on the packing rod. The seal lips must face away from the packing nut.
2. Fill the inner cavity of the spacer (104) with dielectric grease (43). Place the spacer on the fluid rod (103) in the direction shown. Generously apply dielectric grease to the outside of the spacer.
3. Place the fluid packing (106) on the packing rod (103) with its lips facing the front of the rod. Install the needle packing (105) with the male end toward the fluid packing, then insert the combined components into the housing (101).
4. Lightly tighten the packing nut (102). The packing nut is properly tightened when there is 3 lb (13.3N) of drag force when sliding the packing housing (101) assembly along the rod.
5. Install the o-ring (108) on the outside of the housing (101). Lubricate the o-ring with non-silicone grease (111265). Do not over-lubricate.
6. Install the packing rod assembly (5) into the gun. See **Packing Rod Installation**, page 47.

Piston Repair

1. Follow the steps in **Prepare the Gun for Service**, page 43.
2. Remove piston cap (14) and springs (12 and 13) from the rear of the gun. See FIG. 35.
3. Unscrew the set screw (10) and remove from the needle stop (11).
4. Remove piston (8) from gun by threading an 8-32 bolt into the hole provided in the back of the piston and pulling the piston out.
5. Inspect the o-rings (8a, 8b, 8c, and 8d) for damage. Replace if damaged.
6. Lubricate the o-rings with non-silicone grease (111265). Do not over-lubricate.
7. Align the two stems with the holes in the gun body (7) and press assembly back into the back of the gun until it bottoms out.
8. Install the needle stop (11). Press until it bottoms on the shaft.
9. Apply medium strength (blue) thread sealant to the set screw (10) and tighten.
10. Install the two springs (12 and 13) and piston cap (14).



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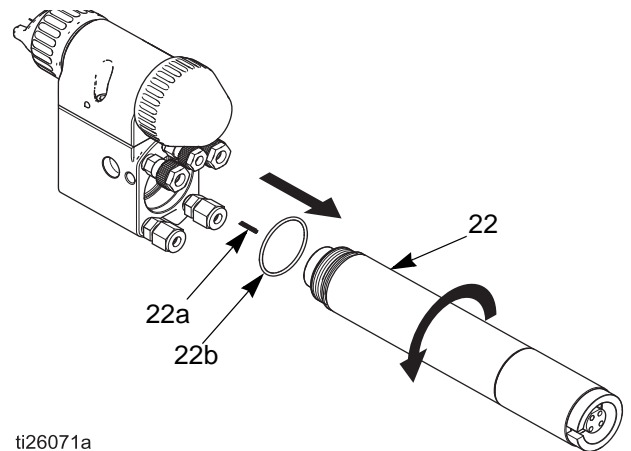
FIG. 35 Piston Removal

Power Supply Repair



Installing and servicing this equipment requires access to parts which may cause an electric shock or other serious injury if the work is not performed properly. Do not install or repair this equipment unless you are trained and qualified.

1. Follow the steps in **Prepare for Power Supply Service**, page 44.
2. Unscrew the power supply (22) from the gun manifold. See FIG. 36.
3. Inspect the o-ring (22b) and spring (22a) on front of the power supply (22) for damage, and replace if damaged.
4. Follow the steps in **Test Power Supply Resistance**, page 35.
5. Apply dielectric grease to the concentric rings on the front of the power supply (22).
6. Screw the power supply (22) into the manifold until hand tight.
7. Follow the steps in **Test Full Gun with Power Supply**, page 34.



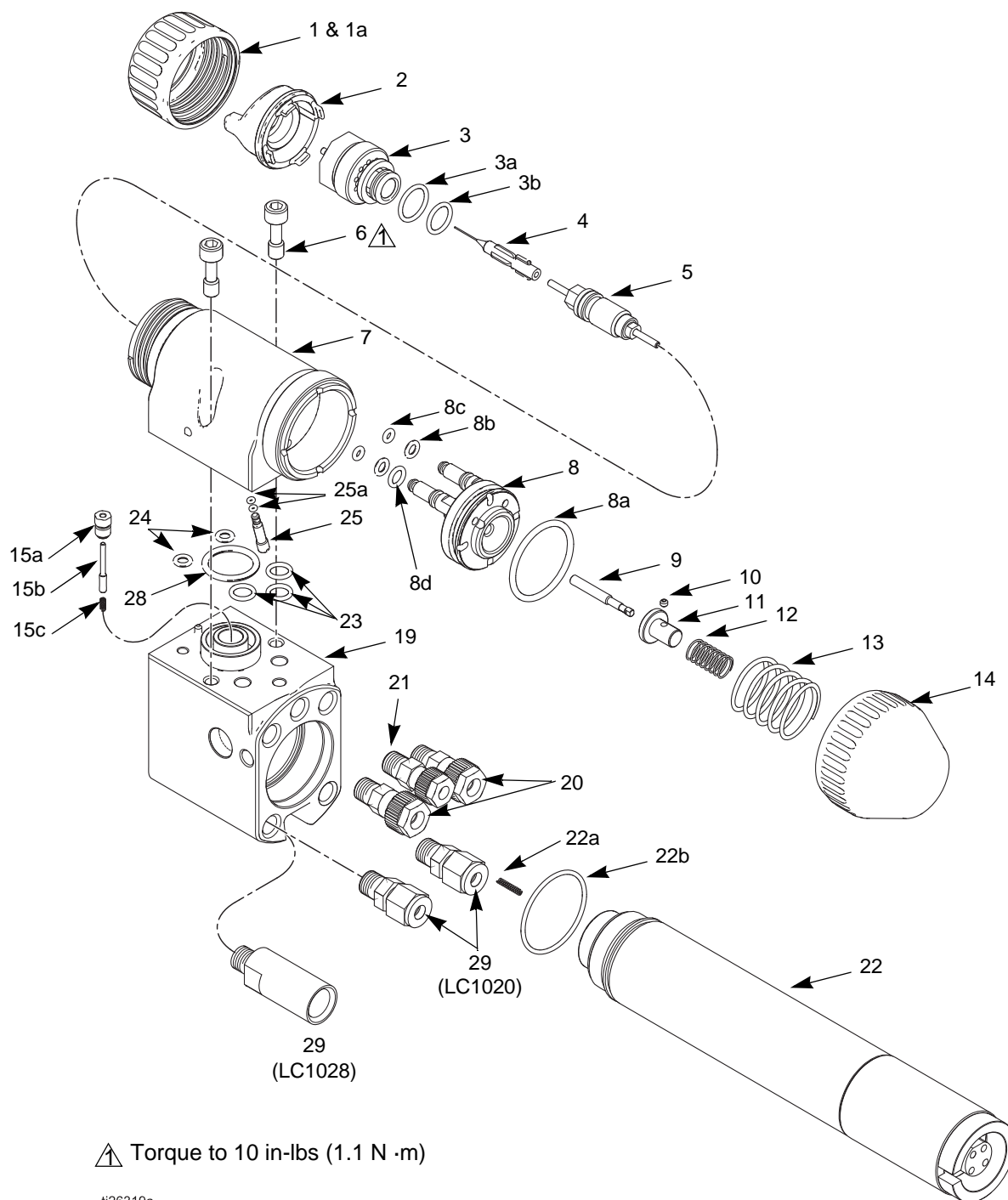
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FIG. 36 Power Supply Removal

Parts

Pro Xpc Auto Rear Mount Air Spray Gun

LC1020, LC1028



LC1020, LC1028

Ref. No.	Part No.	Description	Qty
1	24N644	Retaining ring kit (includes 1a)	1
1a	198307	U-cup Packing	1
2	24N477	Air cap kit	1
3	24N616	1.5 mm Nozzle Kit (includes 3a & b)	1
3a	24N645	Conductive O-ring Kit	1
3b	111507	O-ring Packing	1
4		Electrode Needle Kit	1
	24N651	LC1020	
	24N652	LC1028	
5	24X828	Packing Rod Assembly Kit (see page 54)	1
6	24X790	Screw Kit (pack of 2)	2
7		Pro Xpc Auto Spray Head Kit (includes 1-14, 23-25)	1
	24X827	LC1020	
	24Y856	LC1028	
8	24X829	Piston Assembly (includes 8a-8d)	1
8a ■	125249	FX75 O-ring	1
8b ■	112319	FX75 O-ring	2
8c ■	111504	FX75 O-ring	2
8d ■	111450	FX75 O-ring	1
9	24X830	Piston Shaft	1
10	114137	Set Screw	1
11	192452	Needle Stop	1
12	114138	Compression Spring	1
13	114139	Compression Spring	1
14	24X831	Piston Cap	1
15	24X849	Contact Plunger Kit (includes 15a, 15b, & 15c)	1
15a	- - -	Plunger Retainer	1
15b	- - -	Contact Pin	1
15c	- - -	Spring	1
19		Rear Mount Manifold (includes 15, 20, 21, 28, & 29)	1
	24X826	LC1020	
	24Y892	LC1028	
20	16W734	Air fitting, 8mm	2
21	16W733	Air fitting, 6mm	1
22	24X832	Power Supply (includes 22a & 22b)	1
22a	24Y773	Spring	1
22b ■	102895	O-ring	1
23 ■	113137	O-ring	3
24 ■	112319	O-ring	2

Ref. No.	Part No.	Description	Qty
25	25A193	Recirculation Plug (includes 25a)	1
25a ■	- - -	O-ring	2
28 ■	122530	O-ring	1
29		Fluid Fitting	2
	111157	LC1020	
	17J394	LC1028	
40	276741	Multi tool (not shown)	1
41	101821	Hex Wrench - 3/16 in. (not shown)	1
42	114141	Hex Wrench - 1/16 in. (not shown)	1
43‡	24X793	Fluid Bracket Kit (see page 54)	1
44‡	24Y323	Fluid Tube Kit (not shown)	2
45	116553	Dielectric Grease, 1 oz. (30 ml) tube (not shown)	1
46▲	16P802	Sign, Warning (not shown)	1
	17H128	Solventborne systems only	
	17J075	Waterborne systems only	
47▲	179791	Tag, Warning (not shown)	1
48	24Y403	Cover, gun; package of 10 (not shown)	1

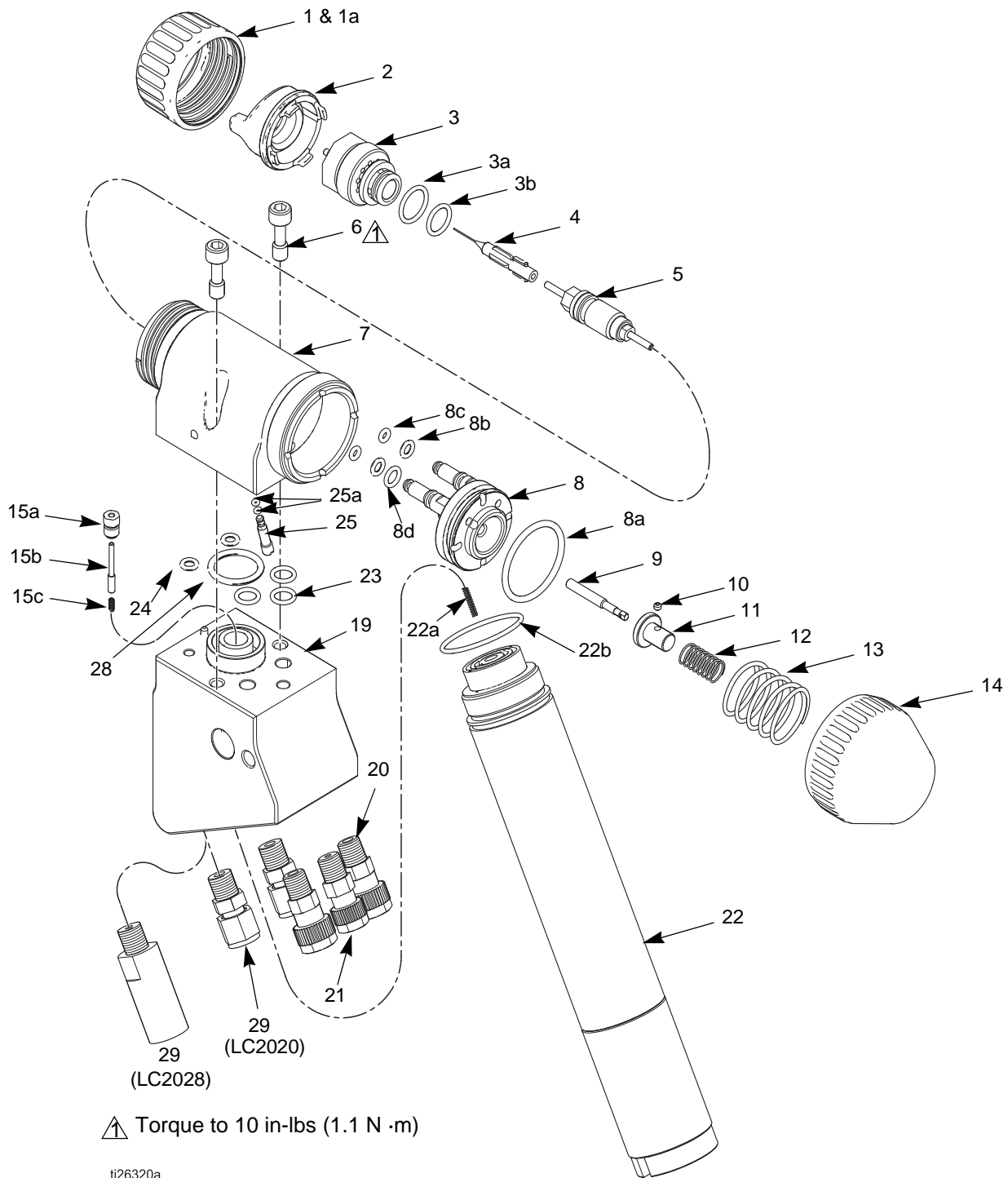
▲ Replacement warning labels, signs, tags, and cards are available at no cost.

■ Included in o-ring repair kit 24X789

‡ Included in solventborne systems only

Pro Xpc Auto Bottom Mount Air Spray Gun

LC2020, LC2028



LC2020, LC2028

Ref. No.	Part No.	Description	Qty
1	24N644	Retaining ring kit (includes 1a)	1
1a	198307	U-cup Packing	1
2	24N477	Air cap kit	1
3	24N616	1.5 mm Nozzle Kit (includes 3a & b)	1
3a	24N645	Conductive O-ring Kit	1
3b	111507	O-ring Packing	1
4		Electrode Needle Kit	1
	24N651	LC2020	
	24N652	LC2028	
5	24X828	Packing Rod Assembly Kit (see page 54)	1
6	24X790	Screw Kit (pack of 2)	2
7		Pro Xpc Auto Spray Head Kit (includes 1-14, 23-25)	1
	24X827	LC2020	
	24Y856	LC2028	
8	24X829	Piston Assembly (includes 8a-8d)	1
8a ■	125249	124 FX75 O-ring	1
8b ■	112319	008 FX75 O-ring	2
8c ■	111504	006 FX75 O-ring	2
8d ■	111450	010 FX75 O-ring	1
9	24X830	Piston Shaft	1
10	114137	Set Screw	1
11	192452	Needle Stop	1
12	114138	Compression Spring	1
13	114139	Compression Spring	1
14	24X831	Piston Cap	1
15	24X849	Contact Plunger Kit (includes 15a, 15b, & 15c)	1
15a	- - -	Plunger Retainer	1
15b	- - -	Contact Pin	1
15c	- - -	Spring	1
19		Bottom Mount Manifold (includes 15, 20, 21, 28, & 29)	1
	24Y262	LC2020	
	24Y893	LC2028	
20	16W734	Air fitting, 8mm	2
21	16W733	Air fitting, 6mm	1
22	24X832	Power Supply (includes 22a & 22b)	1
22a	24Y773	Spring	1
22b ■	102895	O-ring	1
23 ■	113137	O-ring	3
24 ■	112319	O-ring	2

Ref. No.	Part No.	Description	Qty
25	25A193	Recirculation Plug (includes 25a)	1
25a ■	- - -	O-ring	2
28 ■	122530	O-ring	1
29		Fluid Fitting	2
	111157	LC2020	
	17J394	LC2028	
40	276741	Multi tool (not shown)	1
41	101821	Hex Wrench - 3/16 in. (not shown)	1
42	114141	Hex Wrench - 1/16 in. (not shown)	1
43‡	24X793	Fluid Bracket Kit (see page 54)	1
44‡	24Y323	Fluid Tube Kit (not shown)	2
45	116553	Dielectric Grease, 1 oz. (30 ml) tube (not shown)	1
46 ▲	16P802	Sign, Warning (not shown)	1
	17H128	LC2020	
	17J075	LC2028	
47 ▲	179791	Tag, Warning (not shown)	1
48	24Y404	Cover, gun; package of 10 (not shown)	1

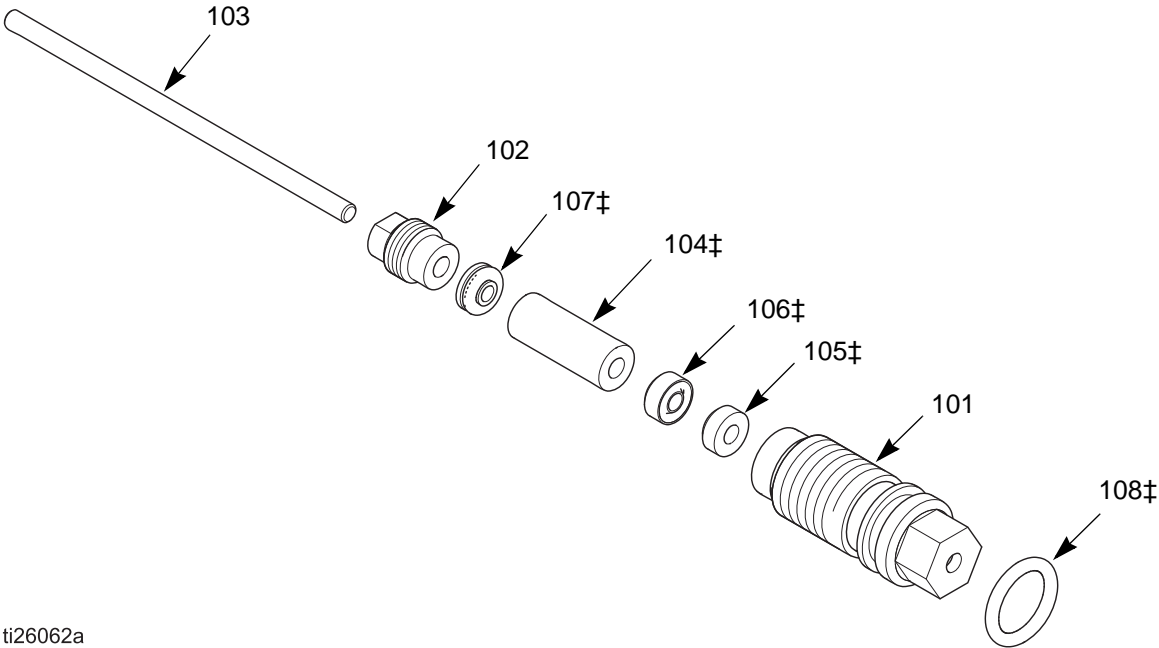
▲ Replacement warning labels, signs, tags, and cards are available at no cost.

■ Included in o-ring repair kit 24X789

‡ Included in solventborne systems only

Packing Rod Assembly

Part No. 24X828 Packing Assembly
Includes items



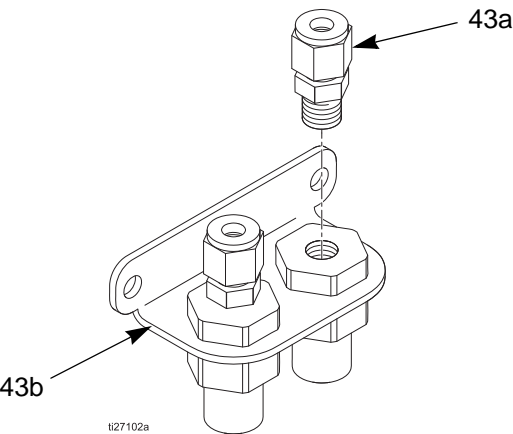
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Ref. No.	Part No.	Description	Qty
101	185495	Packing housing	1
102	197641	Packing nut	1
103	25A194	Packing rod	1
104†	186069	Packing spacer	1
105†	178763	Needle packing	1
106†	178409	Fluid packing	1
107†	116905	Seal	1
108†	111316	O-ring	1
109	070321	Grease lubricant (not shown)	1
†	These parts are included in the Fluid Seal Repair Kit 17H258 (purchase separately).		

Fluid Bracket Kit

For solventborne systems only.

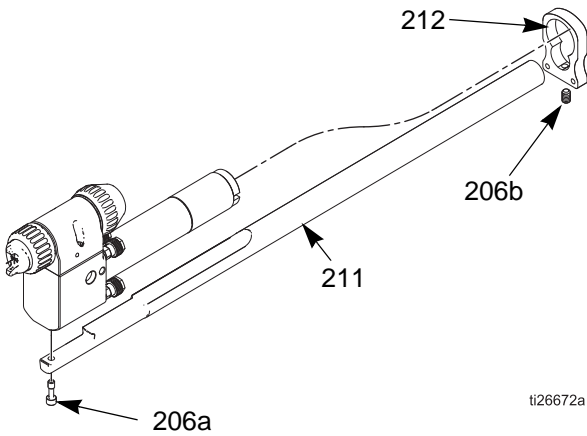
Part No. 24X793 Fluid Bracket Kit
Includes items



Ref. No.	Part No.	Description	Qty
43	24X793	Fluid Bracket (includes 43a-43c)	1
43a	111157	Fluid Fitting	2
43b	- - -	Bracket Assembly	1
43c	223547	Ground Wire (not shown)	1

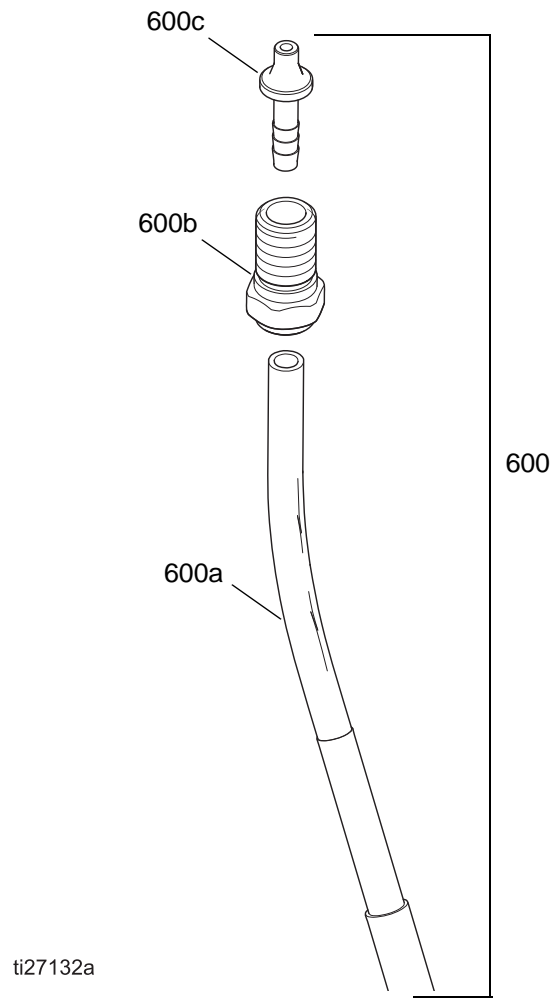
Rear Mount Bracket Assembly

Part No. 24L044 Rear Mount Reciprocator Kit
Includes items



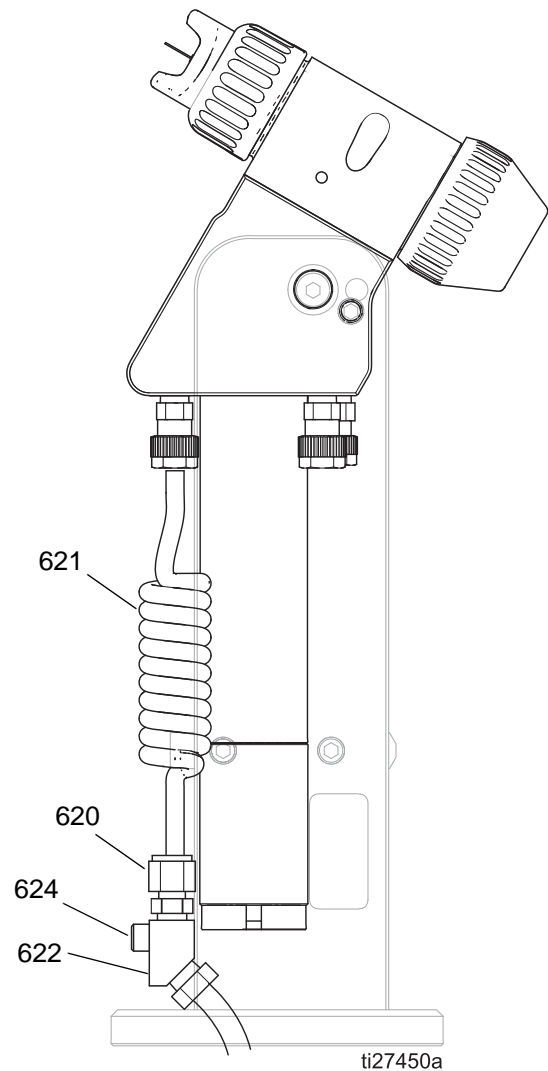
Ref. No.	Part No.	Description	Qty
206a	24X790	Screw (pack of 2)	1
206b	17K153	Setscrew	1
211	- - -	Mounting rod	1
212	- - -	Mounting plate	1

Shielded Waterborne Fluid Hose
24S112, 24S113



Ref. No.	Part No.	Description	Qty
600	24S112	HOSE, 25 ft (7.6m)	1
	24S113	HOSE, 50 ft (15.2 m)	
600a	537107	HOSE, PTFE 1/4 ID	1
600b	17J395	FITTING, connector, barrel	1
600c	17J392	FITTING, seal, fluid	1

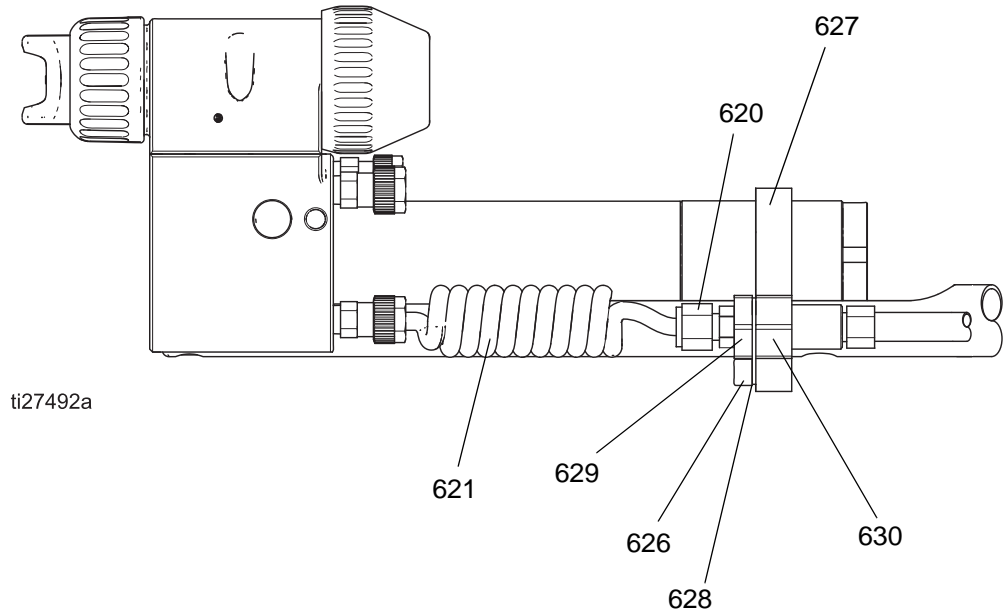
Coil Fluid Hose Kit
24Y328



Ref. No.	Part No.	Description	Qty
620	111157	Fluid Fitting	2
621	25A346	Tube, coiled	1
622	---	Manifold	1
623	223547	Wire, ground (not shown)	1
624	124588	Screw, cap, hex head	2
625	---	Screw, ground (not shown)	1

Coil Fluid Hose Kit

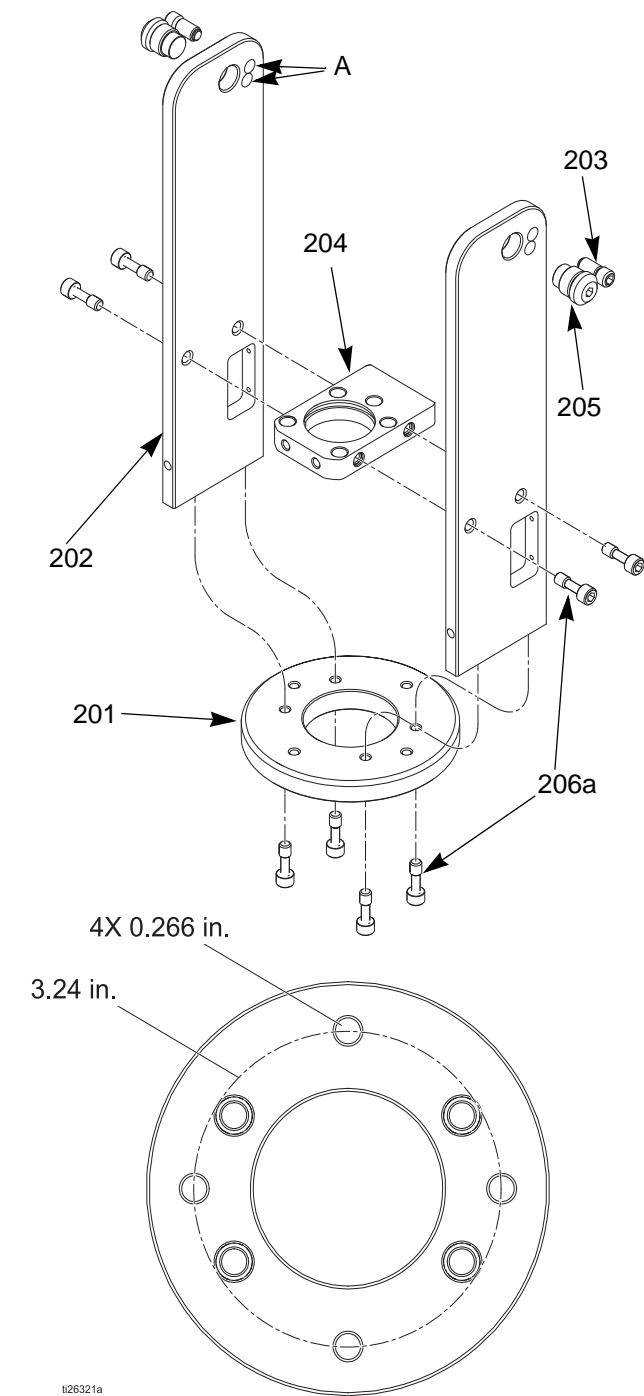
24Y325



Ref. No.	Part No.	Description	Qty
620	111157	Fluid Fitting	2
621	25A346	Tube, coiled	1
623	223547	Wire, ground (not shown)	1
626	GC2248	Screw, cap, socket head	2
627	---	Plate, mounting, acetal	1
628	---	Bracket, mounting, SST	1
629	---	Fitting	2
630	---	Nut	2

Robot Mount Bracket Assembly

Part No. 24L050 Mounting Bracket Assembly
Includes items



Ref. No.	Part No.	Description	Qty
201	16U245	Mounting plate	1
202	16N406	Gun plate	2
203	24Y771	Locking pin (pack of 2)	2
204	16P858	Center plate	1
205	24Y772	Mounting pin (pack of 2)	2
206a	24X482	Retainer fastener, plastic (pack of 4)	8
207	GC2248	Screw	4
	- - -	Robot adapter plates (not shown; order separately); See Table 1 on page 59	

NOTE: Alignment holes (A) enable orienting gun spray angle at either 60° or 90° for either gun type.

Table 1. Robot Adapter Plates

Adapter Plate	Robot	Bolt Circle	Mounting Screws	Locating Pin Circle	Locating Pins
24Y128	MOTOMAN EPX1250	27.5 mm (1.083 in)	4X M5 x 0.8	27.5 mm (1.083 in)	5 mm
24Y129	MOTOMAN PX1450	32 mm (1.260 in)	8X M6 x 1.0	---	---
	MOTOMAN EPX2850, Three-roll type				
24Y634	MOTOMAN EPX2050	102 mm (4.02 in)	6X M6 x 1.0	102 mm (4.02 in)	2X 4 mm
	ABB IRB 580				
	ABB IRB 5400				
24Y650	MOTOMAN EPX2700	102 mm (4.02 in)	6X M6 x 1.0	102 mm (4.02 in)	2X 5 mm
	MOTOMAN EPX2800				
	MOTOMAN EPX2900				
	KAWASAKI KE610L				
	KAWASAKI KJ264				
	KAWASAKI KJ314				
24Y172	ABB IRB 540	36 mm (1.42 in)	3X M5	---	---
24Y173	ABB IRB 1400	40 mm (1.58 in)	4X M6	---	---
24Y768	FANUC PAINT MATE 200iA	31.5 mm (1.24 in)	4X M5	31.5 mm (1.24 in)	1X 5 mm
	FANUC PAINT MATE 200iA/5L				
24Y769	FANUC P-250	100 mm (3.94 in)	6X M5	100 mm (3.94 in)	1X 5 mm

Air Caps and Fluid Nozzles

Fluid Nozzle Selection Chart

				
<p>To reduce the risk of an injury, follow the Pressure Relief Procedure before removing or installing a fluid nozzle and/or air cap.</p>				

Fluid Nozzle Part No.	Orifice Size, mm (in.)	Color	Description
24N619	0.55 (.022)	Black	Standard nozzles (STD) for standard coatings
24N613	0.75 (.029)	Black	
25N895	1.0 (.042)	Green	
25N896	1.2 (.047)	Gray	
24N616	1.5 (.055)	Black	
25N897	1.8 (.070)	Brown	
24N618	2.0 (.079)	Black	
24N620	0.75 (.029)	Blue	High wear nozzles (HW) with hardened ceramic seat, for abrasives and metalics
24N621	1.0 (.042)		
24N622	1.2 (.047)		
24N623	1.5 (.055)		
24N624	1.8 (.070)		
24N625	2.0 (.079)		