

Instructions-Parts



WolverineTM Chemical Injection Pump

334513A

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Electrical pump for injecting chemicals at well sites. For professional use only.

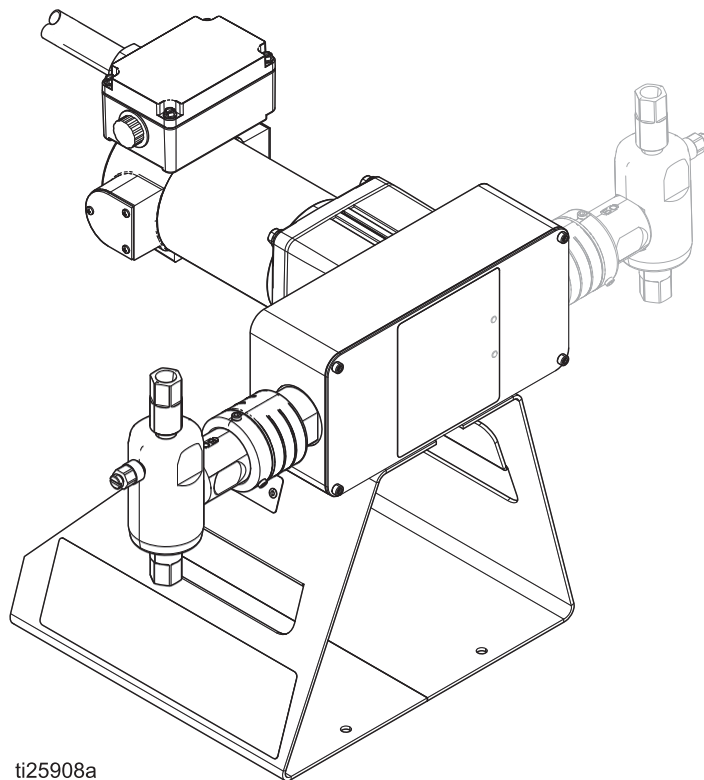
Not approved for use in explosive atmospheres or hazardous locations.

See page 3 for model information, including maximum working pressure.

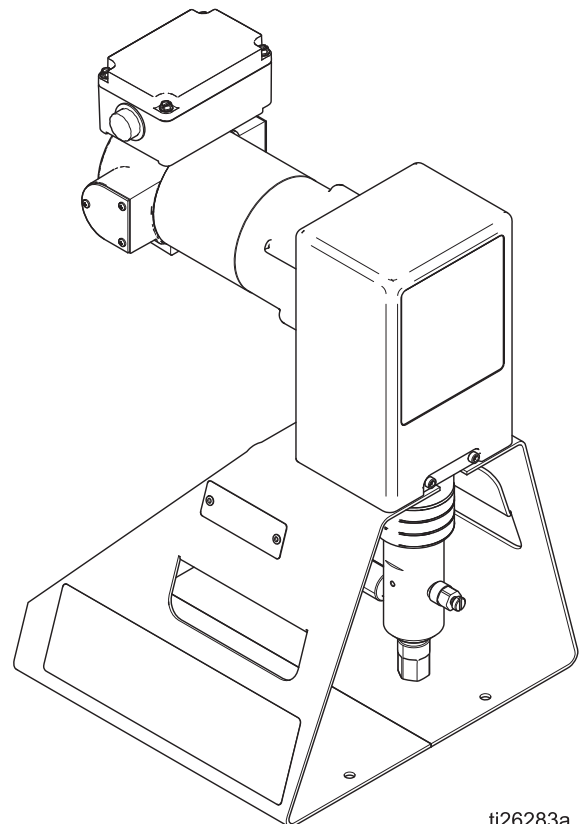


Important Safety Instructions

Read all warnings and instructions in this manual.
Save all instructions.



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Models

Part No.	Configuration	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Maximum Working Pressure psi (MPa, bar)
A26000	CI-121S-150-SA-0	12 VDC	Basic	Small	1	1/2 in.	800 (5.5, 55)
A26001	CI-121S-138-SA-0	12 VDC	Basic	Small	1	3/8 in.	1500 (10.3, 103)
A26002	CI-121S-125-SA-0	12 VDC	Basic	Small	1	1/4 in.	3500 (24.1, 241)
A26003	CI-121S-150-SB-0	12 VDC	Basic	Small	1	1/2 in.	800 (5.5, 55)
A26004	CI-121S-138-SB-0	12 VDC	Basic	Small	1	3/8 in.	1500 (10.3, 103)
A26005	CI-121S-125-SB-0	12 VDC	Basic	Small	1	1/4 in.	3500 (24.1, 241)
A26006	CI-121S-150-SC-0	12 VDC	Basic	Small	1	1/2 in.	800 (5.5, 55)
A26007	CI-121S-138-SC-0	12 VDC	Basic	Small	1	3/8 in.	1500 (10.3, 103)
A26008	CI-121S-125-SC-0	12 VDC	Basic	Small	1	1/4 in.	3500 (24.1, 241)
A26009	CI-121S-150-SD-0	12 VDC	Basic	Small	1	1/2 in.	800 (5.5, 55)
A26010	CI-121S-138-SD-0	12 VDC	Basic	Small	1	3/8 in.	1500 (10.3, 103)
A26011	CI-121S-125-SD-0	12 VDC	Basic	Small	1	1/4 in.	3500 (24.1, 241)
A26100	CI-122S-150-XA-0	12 VDC	Advanced	Small	1	1/2 in.	800 (5.5, 55)
A26101	CI-122S-138-XA-0	12 VDC	Advanced	Small	1	3/8 in.	1500 (10.3, 103)
A26102	CI-122S-125-XA-0	12 VDC	Advanced	Small	1	1/4 in.	3500 (24.1, 241)
A26105	CI-122S-163-XA-0	12 VDC	Advanced	Small	1	5/8 in.	500 (3.4, 34)
A26106	CI-122S-175-XA-0	12 VDC	Advanced	Small	1	3/4 in.	350 (2.4, 24)
A26107	CI-122S-150-XB-0	12 VDC	Advanced	Small	1	1/2 in.	800 (5.5, 55)
A26108	CI-122S-138-XB-0	12 VDC	Advanced	Small	1	3/8 in.	1500 (10.3, 103)
A26109	CI-122S-125-XB-0	12 VDC	Advanced	Small	1	1/4 in.	3500 (24.1, 241)
A26112	CI-122S-163-XB-0	12 VDC	Advanced	Small	1	5/8 in.	500 (3.4, 34)
A26113	CI-122S-175-XB-0	12 VDC	Advanced	Small	1	3/4 in.	350 (2.4, 24)
A26114	CI-122S-150-XC-0	12 VDC	Advanced	Small	1	1/2 in.	800 (5.5, 55)
A26115	CI-122S-138-XC-0	12 VDC	Advanced	Small	1	3/8 in.	1500 (10.3, 103)
A26116	CI-122S-125-XC-0	12 VDC	Advanced	Small	1	1/4 in.	3500 (24.1, 241)
A26119	CI-122S-163-XC-0	12 VDC	Advanced	Small	1	5/8 in.	500 (3.4, 34)
A26120	CI-122S-175-XC-0	12 VDC	Advanced	Small	1	3/4 in.	350 (2.4, 24)
A26121	CI-122S-150-XD-0	12 VDC	Advanced	Small	1	1/2 in.	800 (5.5, 55)
A26122	CI-122S-138-XD-0	12 VDC	Advanced	Small	1	3/8 in.	1500 (10.3, 103)
A26123	CI-122S-125-XD-0	12 VDC	Advanced	Small	1	1/4 in.	3500 (24.1, 241)
A26126	CI-122S-163-XD-0	12 VDC	Advanced	Small	1	5/8 in.	500 (3.4, 34)
A26127	CI-122S-175-XD-0	12 VDC	Advanced	Small	1	3/4 in.	350 (2.4, 24)
A26128	CI-122S-250-XA-0	12 VDC	Advanced	Small	2	1/2 in.	800 (5.5, 55)
A26129	CI-122S-238-XA-0	12 VDC	Advanced	Small	2	3/8 in.	1500 (10.3, 103)
A26130	CI-122S-225-XA-0	12 VDC	Advanced	Small	2	1/4 in.	3500 (24.1, 241)

Models

Part No.	Configuration	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Maximum Working Pressure psi (MPa, bar)
A26133	CI-122S-263-XA-0	12 VDC	Advanced	Small	2	5/8 in.	500 (3.4, 34)
A26134	CI-122S-275-XA-0	12 VDC	Advanced	Small	2	3/4 in.	350 (2.4, 24)
A26135	CI-122S-250-XB-0	12 VDC	Advanced	Small	2	1/2 in.	800 (5.5, 55)
A26136	CI-122S-238-XB-0	12 VDC	Advanced	Small	2	3/8 in.	1500 (10.3, 103)
A26137	CI-122S-225-XB-0	12 VDC	Advanced	Small	2	1/4 in.	3500 (24.1, 241)
A26140	CI-122S-263-XB-0	12 VDC	Advanced	Small	2	5/8 in.	500 (3.4, 34)
A26141	CI-122S-275-XB-0	12 VDC	Advanced	Small	2	3/4 in.	350 (2.4, 24)
A26142	CI-122S-250-XC-0	12 VDC	Advanced	Small	2	1/2 in.	800 (5.5, 55)
A26143	CI-122S-238-XC-0	12 VDC	Advanced	Small	2	3/8 in.	1500 (10.3, 103)
A26144	CI-122S-225-XC-0	12 VDC	Advanced	Small	2	1/4 in.	3500 (24.1, 241)
A26147	CI-122S-263-XC-0	12 VDC	Advanced	Small	2	5/8 in.	500 (3.4, 34)
A26148	CI-122S-275-XC-0	12 VDC	Advanced	Small	2	3/4 in.	350 (2.4, 24)
A26149	CI-122S-250-XD-0	12 VDC	Advanced	Small	2	1/2 in.	800 (5.5, 55)
A26150	CI-122S-238-XD-0	12 VDC	Advanced	Small	2	3/8 in.	1500 (10.3, 103)
A26151	CI-122S-225-XD-0	12 VDC	Advanced	Small	2	1/4 in.	3500 (24.1, 241)
A26154	CI-122S-263-XD-0	12 VDC	Advanced	Small	2	5/8 in.	500 (3.4, 34)
A26155	CI-122S-275-XD-0	12 VDC	Advanced	Small	2	3/4 in.	350 (2.4, 24)
A26200	CI-122L-150-XA-0	12 VDC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26201	CI-122L-138-XA-0	12 VDC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26202	CI-122L-125-XA-0	12 VDC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26205	CI-122L-163-XA-0	12 VDC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26206	CI-122L-175-XA-0	12 VDC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26207	CI-122L-150-XB-0	12 VDC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26208	CI-122L-138-XB-0	12 VDC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26209	CI-122L-125-XB-0	12 VDC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26212	CI-122L-163-XB-0	12 VDC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26213	CI-122L-175-XB-0	12 VDC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26214	CI-122L-150-XC-0	12 VDC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26215	CI-122L-138-XC-0	12 VDC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26216	CI-122L-125-XC-0	12 VDC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26219	CI-122L-163-XC-0	12 VDC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26220	CI-122L-175-XC-0	12 VDC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26221	CI-122L-150-XD-0	12 VDC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26222	CI-122L-138-XD-0	12 VDC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26223	CI-122L-125-XD-0	12 VDC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26226	CI-122L-163-XD-0	12 VDC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26227	CI-122L-175-XD-0	12 VDC	Advanced	Large	1	3/4 in.	600 (4.1, 41)

Part No.	Configuration	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Maximum Working Pressure psi (MPa, bar)
A26228	CI-122L-250-XA-0	12 VDC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26229	CI-122L-238-XA-0	12 VDC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26230	CI-122L-225-XA-0	12 VDC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26233	CI-122L-263-XA-0	12 VDC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26234	CI-122L-275-XA-0	12 VDC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26235	CI-122L-250-XB-0	12 VDC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26236	CI-122L-238-XB-0	12 VDC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26237	CI-122L-225-XB-0	12 VDC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26240	CI-122L-263-XB-0	12 VDC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26241	CI-122L-275-XB-0	12 VDC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26242	CI-122L-250-XC-0	12 VDC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26243	CI-122L-238-XC-0	12 VDC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26244	CI-122L-225-XC-0	12 VDC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26247	CI-122L-263-XC-0	12 VDC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26248	CI-122L-275-XC-0	12 VDC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26249	CI-122L-250-XD-0	12 VDC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26250	CI-122L-238-XD-0	12 VDC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26251	CI-122L-225-XD-0	12 VDC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26254	CI-122L-263-XD-0	12 VDC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26255	CI-122L-275-XD-0	12 VDC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26500	CI-1A2L-150-XA-0	115 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26501	CI-1A2L-138-XA-0	115 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26502	CI-1A2L-125-XA-0	115 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26505	CI-1A2L-163-XA-0	115 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26506	CI-1A2L-175-XA-0	115 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26507	CI-1A2L-150-XB-0	115 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26508	CI-1A2L-138-XB-0	115 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26509	CI-1A2L-125-XB-0	115 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26512	CI-1A2L-163-XB-0	115 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26513	CI-1A2L-175-XB-0	115 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26514	CI-1A2L-150-XC-0	115 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26515	CI-1A2L-138-XC-0	115 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26516	CI-1A2L-125-XC-0	115 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26519	CI-1A2L-163-XC-0	115 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26520	CI-1A2L-175-XC-0	115 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26521	CI-1A2L-150-XD-0	115 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26522	CI-1A2L-138-XD-0	115 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)

Models

Part No.	Configuration	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Maximum Working Pressure psi (MPa, bar)
A26523	CI-1A2L-125-XD-0	115 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26526	CI-1A2L-163-XD-0	115 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26527	CI-1A2L-175-XD-0	115 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26528	CI-1A2L-250-XA-0	115 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26529	CI-1A2L-238-XA-0	115 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26530	CI-1A2L-225-XA-0	115 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26533	CI-1A2L-263-XA-0	115 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26534	CI-1A2L-275-XA-0	115 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26535	CI-1A2L-250-XB-0	115 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26536	CI-1A2L-238-XB-0	115 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26537	CI-1A2L-225-XB-0	115 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26540	CI-1A2L-263-XB-0	115 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26541	CI-1A2L-275-XB-0	115 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26542	CI-1A2L-250-XC-0	115 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26543	CI-1A2L-238-XC-0	115 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26544	CI-1A2L-225-XC-0	115 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26547	CI-1A2L-263-XC-0	115 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26548	CI-1A2L-275-XC-0	115 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26549	CI-1A2L-250-XD-0	115 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26550	CI-1A2L-238-XD-0	115 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26551	CI-1A2L-225-XD-0	115 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26554	CI-1A2L-263-XD-0	115 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26555	CI-1A2L-275-XD-0	115 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26600	CI-2A2L-150-XA-0	230 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26601	CI-2A2L-138-XA-0	230 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26602	CI-2A2L-125-XA-0	230 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26605	CI-2A2L-163-XA-0	230 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26606	CI-2A2L-175-XA-0	230 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26607	CI-2A2L-150-XB-0	230 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26608	CI-2A2L-138-XB-0	230 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26609	CI-2A2L-125-XB-0	230 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26612	CI-2A2L-163-XB-0	230 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26613	CI-2A2L-175-XB-0	230 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26614	CI-2A2L-150-XC-0	230 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26615	CI-2A2L-138-XC-0	230 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26616	CI-2A2L-125-XC-0	230 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26619	CI-2A2L-163-XC-0	230 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)

Part No.	Configuration	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Maximum Working Pressure psi (MPa, bar)
A26620	CI-2A2L-175-XC-0	230 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26621	CI-2A2L-150-XD-0	230 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26622	CI-2A2L-138-XD-0	230 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26623	CI-2A2L-125-XD-0	230 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26626	CI-2A2L-163-XD-0	230 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26627	CI-2A2L-175-XD-0	230 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26628	CI-2A2L-250-XA-0	230 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26629	CI-2A2L-238-XA-0	230 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26630	CI-2A2L-225-XA-0	230 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26633	CI-2A2L-263-XA-0	230 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26634	CI-2A2L-275-XA-0	230 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26635	CI-2A2L-250-XB-0	230 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26636	CI-2A2L-238-XB-0	230 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26637	CI-2A2L-225-XB-0	230 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26640	CI-2A2L-263-XB-0	230 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26641	CI-2A2L-275-XB-0	230 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26642	CI-2A2L-250-XC-0	230 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26643	CI-2A2L-238-XC-0	230 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26644	CI-2A2L-225-XC-0	230 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26647	CI-2A2L-263-XC-0	230 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26648	CI-2A2L-275-XC-0	230 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26649	CI-2A2L-250-XD-0	230 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26650	CI-2A2L-238-XD-0	230 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26651	CI-2A2L-225-XD-0	230 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26654	CI-2A2L-263-XD-0	230 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26655	CI-2A2L-275-XD-0	230 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26700	CI-4A2L-150-XA-0	230/480 3 Phase VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26701	CI-4A2L-138-XA-0	230/480 3 Phase VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26702	CI-4A2L-125-XA-0	230/480 3 Phase VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26705	CI-4A2L-163-XA-0	230/480 3 Phase VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26706	CI-4A2L-175-XA-0	230/480 3 Phase VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26707	CI-4A2L-150-XB-0	230/480 3 Phase VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26708	CI-4A2L-138-XB-0	230/480 3 Phase VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26709	CI-4A2L-125-XB-0	230/480 3 Phase VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26712	CI-4A2L-163-XB-0	230/480 3 Phase VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26713	CI-4A2L-175-XB-0	230/480 3 Phase VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26714	CI-4A2L-150-XC-0	230/480 3 Phase VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)

Part No.	Configuration	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Maximum Working Pressure psi (MPa, bar)
A26715	CI-4A2L-138-XC-0	230/480 3 Phase VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26716	CI-4A2L-125-XC-0	230/480 3 Phase VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26719	CI-4A2L-163-XC-0	230/480 3 Phase VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26720	CI-4A2L-175-XC-0	230/480 3 Phase VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26721	CI-4A2L-150-XD-0	230/480 3 Phase VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A26722	CI-4A2L-138-XD-0	230/480 3 Phase VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A26723	CI-4A2L-125-XD-0	230/480 3 Phase VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A26726	CI-4A2L-163-XD-0	230/480 3 Phase VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A26727	CI-4A2L-175-XD-0	230/480 3 Phase VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A26728	CI-4A2L-250-XA-0	230/480 3 Phase VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26729	CI-4A2L-238-XA-0	230/480 3 Phase VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26730	CI-4A2L-225-XA-0	230/480 3 Phase VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26733	CI-4A2L-263-XA-0	230/480 3 Phase VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26734	CI-4A2L-275-XA-0	230/480 3 Phase VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26735	CI-4A2L-250-XB-0	230/480 3 Phase VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26736	CI-4A2L-238-XB-0	230/480 3 Phase VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26737	CI-4A2L-225-XB-0	230/480 3 Phase VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26740	CI-4A2L-263-XB-0	230/480 3 Phase VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26741	CI-4A2L-275-XB-0	230/480 3 Phase VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26742	CI-4A2L-250-XC-0	230/480 3 Phase VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26743	CI-4A2L-238-XC-0	230/480 3 Phase VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26744	CI-4A2L-225-XC-0	230/480 3 Phase VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26747	CI-4A2L-263-XC-0	230/480 3 Phase VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26748	CI-4A2L-275-XC-0	230/480 3 Phase VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A26749	CI-4A2L-250-XD-0	230/480 3 Phase VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A26750	CI-4A2L-238-XD-0	230/480 3 Phase VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A26751	CI-4A2L-225-XD-0	230/480 3 Phase VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A26754	CI-4A2L-263-XD-0	230/480 3 Phase VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A26755	CI-4A2L-275-XD-0	230/480 3 Phase VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29100	CI-122S-150-XA-C	12 VDC	Advanced	Small	1	1/2 in.	800 (5.5, 55)
A29101	CI-122S-138-XA-C	12 VDC	Advanced	Small	1	3/8 in.	1500 (10.3, 103)
A29102	CI-122S-125-XA-C	12 VDC	Advanced	Small	1	1/4 in.	3500 (24.1, 241)
A29105	CI-122S-163-XA-C	12 VDC	Advanced	Small	1	5/8 in.	500 (3.4, 34)
A29106	CI-122S-175-XA-C	12 VDC	Advanced	Small	1	3/4 in.	350 (2.4, 24)
A29107	CI-122S-150-XB-C	12 VDC	Advanced	Small	1	1/2 in.	800 (5.5, 55)
A29108	CI-122S-138-XB-C	12 VDC	Advanced	Small	1	3/8 in.	1500 (10.3, 103)
A29109	CI-122S-125-XB-C	12 VDC	Advanced	Small	1	1/4 in.	3500 (24.1, 241)

Part No.	Configuration	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Maximum Working Pressure psi (MPa, bar)
A29112	CI-122S-163-XB-C	12 VDC	Advanced	Small	1	5/8 in.	500 (3.4, 34)
A29113	CI-122S-175-XB-C	12 VDC	Advanced	Small	1	3/4 in.	350 (2.4, 24)
A29114	CI-122S-150-XC-C	12 VDC	Advanced	Small	1	1/2 in.	800 (5.5, 55)
A29115	CI-122S-138-XC-C	12 VDC	Advanced	Small	1	3/8 in.	1500 (10.3, 103)
A29116	CI-122S-125-XC-C	12 VDC	Advanced	Small	1	1/4 in.	3500 (24.1, 241)
A29119	CI-122S-163-XC-C	12 VDC	Advanced	Small	1	5/8 in.	500 (3.4, 34)
A29120	CI-122S-175-XC-C	12 VDC	Advanced	Small	1	3/4 in.	350 (2.4, 24)
A29121	CI-122S-150-XD-C	12 VDC	Advanced	Small	1	1/2 in.	800 (5.5, 55)
A29122	CI-122S-138-XD-C	12 VDC	Advanced	Small	1	3/8 in.	1500 (10.3, 103)
A29123	CI-122S-125-XD-C	12 VDC	Advanced	Small	1	1/4 in.	3500 (24.1, 241)
A29126	CI-122S-163-XD-C	12 VDC	Advanced	Small	1	5/8 in.	500 (3.4, 34)
A29127	CI-122S-175-XD-C	12 VDC	Advanced	Small	1	3/4 in.	350 (2.4, 24)
A29128	CI-122S-250-XA-C	12 VDC	Advanced	Small	2	1/2 in.	800 (5.5, 55)
A29129	CI-122S-238-XA-C	12 VDC	Advanced	Small	2	3/8 in.	1500 (10.3, 103)
A29130	CI-122S-225-XA-C	12 VDC	Advanced	Small	2	1/4 in.	3500 (24.1, 241)
A29133	CI-122S-263-XA-C	12 VDC	Advanced	Small	2	5/8 in.	500 (3.4, 34)
A29134	CI-122S-275-XA-C	12 VDC	Advanced	Small	2	3/4 in.	350 (2.4, 24)
A29135	CI-122S-250-XB-C	12 VDC	Advanced	Small	2	1/2 in.	800 (5.5, 55)
A29136	CI-122S-238-XB-C	12 VDC	Advanced	Small	2	3/8 in.	1500 (10.3, 103)
A29137	CI-122S-225-XB-C	12 VDC	Advanced	Small	2	1/4 in.	3500 (24.1, 241)
A29140	CI-122S-263-XB-C	12 VDC	Advanced	Small	2	5/8 in.	500 (3.4, 34)
A29141	CI-122S-275-XB-C	12 VDC	Advanced	Small	2	3/4 in.	350 (2.4, 24)
A29142	CI-122S-250-XC-C	12 VDC	Advanced	Small	2	1/2 in.	800 (5.5, 55)
A29143	CI-122S-238-XC-C	12 VDC	Advanced	Small	2	3/8 in.	1500 (10.3, 103)
A29144	CI-122S-225-XC-C	12 VDC	Advanced	Small	2	1/4 in.	3500 (24.1, 241)
A29147	CI-122S-263-XC-C	12 VDC	Advanced	Small	2	5/8 in.	500 (3.4, 34)
A29148	CI-122S-275-XC-C	12 VDC	Advanced	Small	2	3/4 in.	350 (2.4, 24)
A29149	CI-122S-250-XD-C	12 VDC	Advanced	Small	2	1/2 in.	800 (5.5, 55)
A29150	CI-122S-238-XD-C	12 VDC	Advanced	Small	2	3/8 in.	1500 (10.3, 103)
A29151	CI-122S-225-XD-C	12 VDC	Advanced	Small	2	1/4 in.	3500 (24.1, 241)
A29154	CI-122S-263-XD-C	12 VDC	Advanced	Small	2	5/8 in.	500 (3.4, 34)
A29155	CI-122S-275-XD-C	12 VDC	Advanced	Small	2	3/4 in.	350 (2.4, 24)
A29200	CI-122L-150-XA-C	12 VDC	Advanced	Small	1	1/2 in.	1250 (8.6, 86)
A29201	CI-122L-138-XA-C	12 VDC	Advanced	Small	1	3/8 in.	2500 (17.2, 172)
A29202	CI-122L-125-XA-C	12 VDC	Advanced	Small	1	1/4 in.	6000 (41.3, 413)
A29205	CI-122L-163-XA-C	12 VDC	Advanced	Small	1	5/8 in.	900 (6.2, 62)
A29206	CI-122L-175-XA-C	12 VDC	Advanced	Small	1	3/4 in.	600 (4.1, 41)

Models

Part No.	Configuration	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Maximum Working Pressure psi (MPa, bar)
A29207	CI-122L-150-XB-C	12 VDC	Advanced	Small	1	1/2 in.	1250 (8.6, 86)
A29208	CI-122L-138-XB-C	12 VDC	Advanced	Small	1	3/8 in.	2500 (17.2, 172)
A29209	CI-122L-125-XB-C	12 VDC	Advanced	Small	1	1/4 in.	6000 (41.3, 413)
A29212	CI-122L-163-XB-C	12 VDC	Advanced	Small	1	5/8 in.	900 (6.2, 62)
A29213	CI-122L-175-XB-C	12 VDC	Advanced	Small	1	3/4 in.	600 (4.1, 41)
A29214	CI-122L-150-XC-C	12 VDC	Advanced	Small	1	1/2 in.	1250 (8.6, 86)
A29215	CI-122L-138-XC-C	12 VDC	Advanced	Small	1	3/8 in.	2500 (17.2, 172)
A29216	CI-122L-125-XC-C	12 VDC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29219	CI-122L-163-XC-C	12 VDC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29220	CI-122L-175-XC-C	12 VDC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29221	CI-122L-150-XD-C	12 VDC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29222	CI-122L-138-XD-C	12 VDC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A29223	CI-122L-125-XD-C	12 VDC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29226	CI-122L-163-XD-C	12 VDC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29227	CI-122L-175-XD-C	12 VDC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29228	CI-122L-250-XA-C	12 VDC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29229	CI-122L-238-XA-C	12 VDC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29230	CI-122L-225-XA-C	12 VDC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29233	CI-122L-263-XA-C	12 VDC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29234	CI-122L-275-XA-C	12 VDC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29235	CI-122L-250-XB-C	12 VDC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29236	CI-122L-238-XB-C	12 VDC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29237	CI-122L-225-XB-C	12 VDC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29240	CI-122L-263-XB-C	12 VDC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29241	CI-122L-275-XB-C	12 VDC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29242	CI-122L-250-XC-C	12 VDC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29243	CI-122L-238-XC-C	12 VDC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29244	CI-122L-225-XC-C	12 VDC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29247	CI-122L-263-XC-C	12 VDC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29248	CI-122L-275-XC-C	12 VDC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29249	CI-122L-250-XD-C	12 VDC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29250	CI-122L-238-XD-C	12 VDC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29251	CI-122L-225-XD-C	12 VDC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29254	CI-122L-263-XD-C	12 VDC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29255	CI-122L-275-XD-C	12 VDC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29500	CI-1A2L-150-XA-C	12 VDC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29501	CI-1A2L-138-XA-C	12 VDC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)

Part No.	Configuration	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Maximum Working Pressure psi (MPa, bar)
A29502	CI-1A2L-125-XA-C	12 VDC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29505	CI-1A2L-163-XA-C	12 VDC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29506	CI-1A2L-175-XA-C	12 VDC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29507	CI-1A2L-150-XB-C	12 VDC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29508	CI-1A2L-138-XB-C	12 VDC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A29509	CI-1A2L-125-XB-C	12 VDC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29512	CI-1A2L-163-XB-C	12 VDC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29513	CI-1A2L-175-XB-C	12 VDC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29514	CI-1A2L-150-XC-C	12 VDC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29515	CI-1A2L-138-XC-C	12 VDC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A29516	CI-1A2L-125-XC-C	115 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29519	CI-1A2L-163-XC-C	115 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29520	CI-1A2L-175-XC-C	115 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29521	CI-1A2L-150-XD-C	115 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29522	CI-1A2L-138-XD-C	115 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A29523	CI-1A2L-125-XD-C	115 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29526	CI-1A2L-163-XD-C	115 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29527	CI-1A2L-175-XD-C	115 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29528	CI-1A2L-250-XA-C	115 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29529	CI-1A2L-238-XA-C	115 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29530	CI-1A2L-225-XA-C	115 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29533	CI-1A2L-263-XA-C	115 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29534	CI-1A2L-275-XA-C	115 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29535	CI-1A2L-250-XB-C	115 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29536	CI-1A2L-238-XB-C	115 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29537	CI-1A2L-225-XB-C	115 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29540	CI-1A2L-263-XB-C	115 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29541	CI-1A2L-275-XB-C	115 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29542	CI-1A2L-250-XC-C	115 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29543	CI-1A2L-238-XC-C	115 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29544	CI-1A2L-225-XC-C	115 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29547	CI-1A2L-263-XC-C	115 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29548	CI-1A2L-275-XC-C	115 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29549	CI-1A2L-250-XD-C	115 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29550	CI-1A2L-238-XD-C	115 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29551	CI-1A2L-225-XD-C	115 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29554	CI-1A2L-263-XD-C	115 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)

Part No.	Configuration	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Maximum Working Pressure psi (MPa, bar)
A29555	CI-1A2L-275-XD-C	115 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29600	CI-2A2L-150-XA-C	115 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29601	CI-2A2L-138-XA-C	115 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A29602	CI-2A2L-125-XA-C	115 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29605	CI-2A2L-163-XA-C	115 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29606	CI-2A2L-175-XA-C	115 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29607	CI-2A2L-150-XB-C	115 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29608	CI-2A2L-138-XB-C	115 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A29609	CI-2A2L-125-XB-C	115 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29612	CI-2A2L-163-XB-C	115 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29613	CI-2A2L-175-XB-C	115 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29614	CI-2A2L-150-XC-C	115 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29615	CI-2A2L-138-XC-C	115 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A29616	CI-2A2L-125-XC-C	230 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29619	CI-2A2L-163-XC-C	230 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29620	CI-2A2L-175-XC-C	230 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29621	CI-2A2L-150-XD-C	230 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29622	CI-2A2L-138-XD-C	230 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A29623	CI-2A2L-125-XD-C	230 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29626	CI-2A2L-163-XD-C	230 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29627	CI-2A2L-175-XD-C	230 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29628	CI-2A2L-250-XA-C	230 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29629	CI-2A2L-238-XA-C	230 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29630	CI-2A2L-225-XA-C	230 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29633	CI-2A2L-263-XA-C	230 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29634	CI-2A2L-275-XA-C	230 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29635	CI-2A2L-250-XB-C	230 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29636	CI-2A2L-238-XB-C	230 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29637	CI-2A2L-225-XB-C	230 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29640	CI-2A2L-263-XB-C	230 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29641	CI-2A2L-275-XB-C	230 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29642	CI-2A2L-250-XC-C	230 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29643	CI-2A2L-238-XC-C	230 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29644	CI-2A2L-225-XC-C	230 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29647	CI-2A2L-263-XC-C	230 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29648	CI-2A2L-275-XC-C	230 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29649	CI-2A2L-250-XD-C	230 VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)

Part No.	Configuration	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Maximum Working Pressure psi (MPa, bar)
A29650	CI-2A2L-238-XD-C	230 VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29651	CI-2A2L-225-XD-C	230 VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29654	CI-2A2L-263-XD-C	230 VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29655	CI-2A2L-275-XD-C	230 VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29700	CI-4A2L-150-XA-C	230 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29701	CI-4A2L-138-XA-C	230 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A29702	CI-4A2L-125-XA-C	230 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29705	CI-4A2L-163-XA-C	230 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29706	CI-4A2L-175-XA-C	230 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29707	CI-4A2L-150-XB-C	230 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29708	CI-4A2L-138-XB-C	230 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A29709	CI-4A2L-125-XB-C	230 VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29712	CI-4A2L-163-XB-C	230 VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29713	CI-4A2L-175-XB-C	230 VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29714	CI-4A2L-150-XC-C	230 VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29715	CI-4A2L-138-XC-C	230 VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A29716	CI-4A2L-125-XC-C	230/480 3 Phase VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29719	CI-4A2L-163-XC-C	230/480 3 Phase VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29720	CI-4A2L-175-XC-C	230/480 3 Phase VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29721	CI-4A2L-150-XD-C	230/480 3 Phase VAC	Advanced	Large	1	1/2 in.	1250 (8.6, 86)
A29722	CI-4A2L-138-XD-C	230/480 3 Phase VAC	Advanced	Large	1	3/8 in.	2500 (17.2, 172)
A29723	CI-4A2L-125-XD-C	230/480 3 Phase VAC	Advanced	Large	1	1/4 in.	6000 (41.3, 413)
A29726	CI-4A2L-163-XD-C	230/480 3 Phase VAC	Advanced	Large	1	5/8 in.	900 (6.2, 62)
A29727	CI-4A2L-175-XD-C	230/480 3 Phase VAC	Advanced	Large	1	3/4 in.	600 (4.1, 41)
A29728	CI-4A2L-250-XA-C	230/480 3 Phase VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29729	CI-4A2L-238-XA-C	230/480 3 Phase VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29730	CI-4A2L-225-XA-C	230/480 3 Phase VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29733	CI-4A2L-263-XA-C	230/480 3 Phase VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29734	CI-4A2L-275-XA-C	230/480 3 Phase VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29735	CI-4A2L-250-XB-C	230/480 3 Phase VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29736	CI-4A2L-238-XB-C	230/480 3 Phase VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29737	CI-4A2L-225-XB-C	230/480 3 Phase VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29740	CI-4A2L-263-XB-C	230/480 3 Phase VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29741	CI-4A2L-275-XB-C	230/480 3 Phase VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29742	CI-4A2L-250-XC-C	230/480 3 Phase VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29743	CI-4A2L-238-XC-C	230/480 3 Phase VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29744	CI-4A2L-225-XC-C	230/480 3 Phase VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)

Models

Part No.	Configuration	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Maximum Working Pressure psi (MPa, bar)
A29747	CI-4A2L-263-XC-C	230/480 3 Phase VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29748	CI-4A2L-275-XC-C	230/480 3 Phase VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)
A29749	CI-4A2L-250-XD-C	230/480 3 Phase VAC	Advanced	Large	2	1/2 in.	1250 (8.6, 86)
A29750	CI-4A2L-238-XD-C	230/480 3 Phase VAC	Advanced	Large	2	3/8 in.	2500 (17.2, 172)
A29751	CI-4A2L-225-XD-C	230/480 3 Phase VAC	Advanced	Large	2	1/4 in.	6000 (41.3, 413)
A29754	CI-4A2L-263-XD-C	230/480 3 Phase VAC	Advanced	Large	2	5/8 in.	900 (6.2, 62)
A29755	CI-4A2L-275-XD-C	230/480 3 Phase VAC	Advanced	Large	2	3/4 in.	600 (4.1, 41)

Configuration Number Matrix

Check the identification plate (ID) for the 12-digit Configuration Number of your pump. Use the following matrix to define the components of your pump.

NOTE: Not all combinations are possible.











Sample Configuration Number: CI-121S-119-SA-0

CI	12	1	S	1	19	S	A	0
Chemical Injection	Voltage	Pump Type	Motor	Number of Pumps	Plunger Size	Plunger Material	Seal Material	Qualifier







Voltage		Pump Type		Motor		Number of Pumps		Plunger Size (diameter)		Plunger Material		Seal Material		Qualifier	
12	12 VDC	1	Basic	S	Small	1	1	25	1/4"	S	17-4 PH Stainless	A	FKM	0	None
1A	115 VAC	2	Advanced	L	Large	2	2	38	3/8"	X	Chromex-Coated 17-4 PH Stainless	B	FKMET P	C	Cycle Count
2A	230 VAC							50	1/2"			C	HNBR		
4A	480 VAC							63	5/8"			D	FFKM		
								75	3/4"						

Warnings

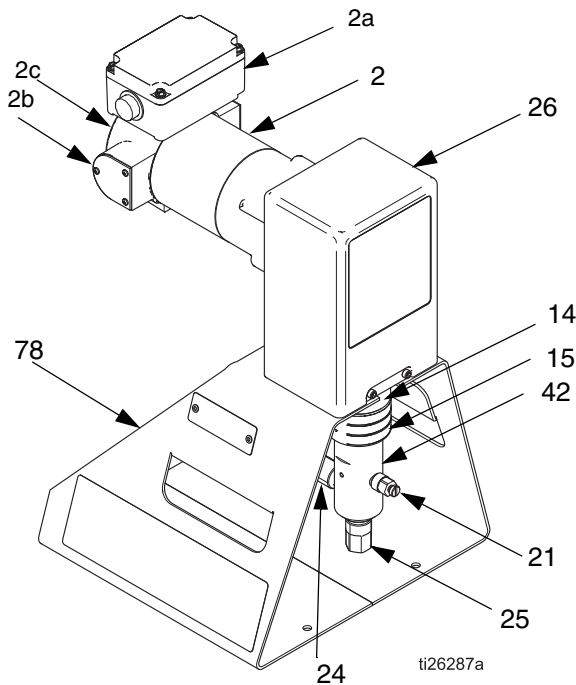
The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer 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.

 <h1 style="margin: 0;">WARNING</h1>	
 	<p>FIRE AND EXPLOSION HAZARD</p> <p>When flammable fluids are present in the work area be aware that flammable fumes can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Use equipment only in well ventilated area. • Eliminate all ignition sources, such as cigarettes and portable electric lamps. • Ground all equipment in the work area. • Keep work area free of debris, including rags and spilled or open containers of solvent. • Do not plug or unplug power cords or turn lights on or off when flammable fumes are present. • Use only grounded hoses. • Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area.
    	<p>SKIN INJECTION HAZARD</p> <p>High-pressure fluid from dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. Get immediate surgical treatment.</p> <ul style="list-style-type: none"> • Do not put your hand over the fluid outlet. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses and couplings daily. Replace worn or damaged parts immediately.
 	<p>ELECTRIC SHOCK HAZARD</p> <p>This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.</p> <ul style="list-style-type: none"> • Turn off and disconnect power at main switch before disconnecting any cables and before servicing or installing equipment. • Connect only to grounded power source. • All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

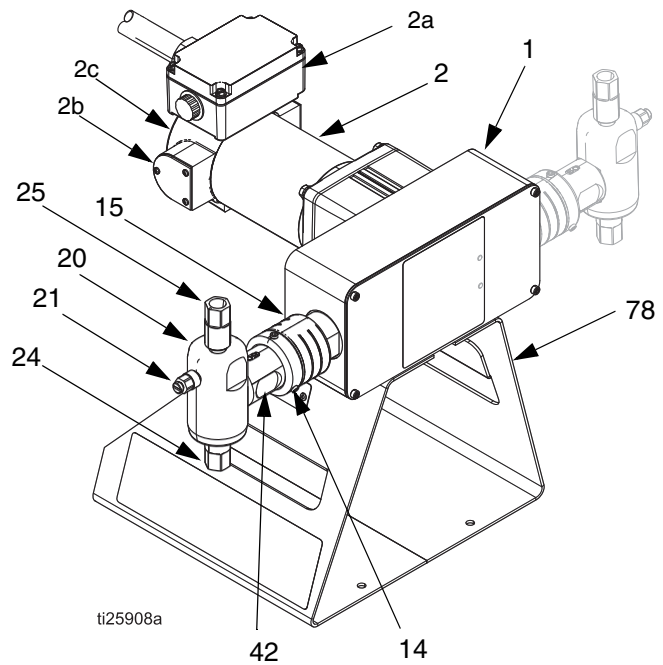
! WARNING

 	<p>MOVING PARTS HAZARD</p> <p>Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> • 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.
	<p>TOXIC FLUID OR FUMES HAZARD</p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> • 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.
	<p>PERSONAL PROTECTIVE EQUIPMENT</p> <p>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:</p> <ul style="list-style-type: none"> • Protective eyewear, and hearing protection. • Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.
 	<p>EQUIPMENT MISUSE HAZARD</p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • 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 Data in all equipment manuals. • Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data 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 regularly. 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.

Component Identification



Wolverine Basic



Wolverine Advanced

FIG. 1 Pump Components





Numbered items in the key below correspond to the numbers in the Parts Lists starting on page 40.

Key:

- 1 Drive Housing
- 2 Motor
- 2a Motor Junction Box
- 2b Motor Dust Cover
- 2c End ring
- 14 Drive Cylinder
- 15 Pump Dust Cover
- 20 Check Valve Housing (Wolverine Advanced only)
- 21 Prime/Bleed Valve
- 24 Inlet Check Valve
- 25 Outlet Check Valve
- 26 Molded Guard and Motor/Pump Support
- 42 Pump Cylinder
- 78 Stand

Installation

Grounding

				
<p>The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current.</p>				

Pump: grounded through motor **Electrical Connections** on page 22.

Fluid lines: use only electrically conductive lines.

Fluid supply container: follow local code.

Accessories

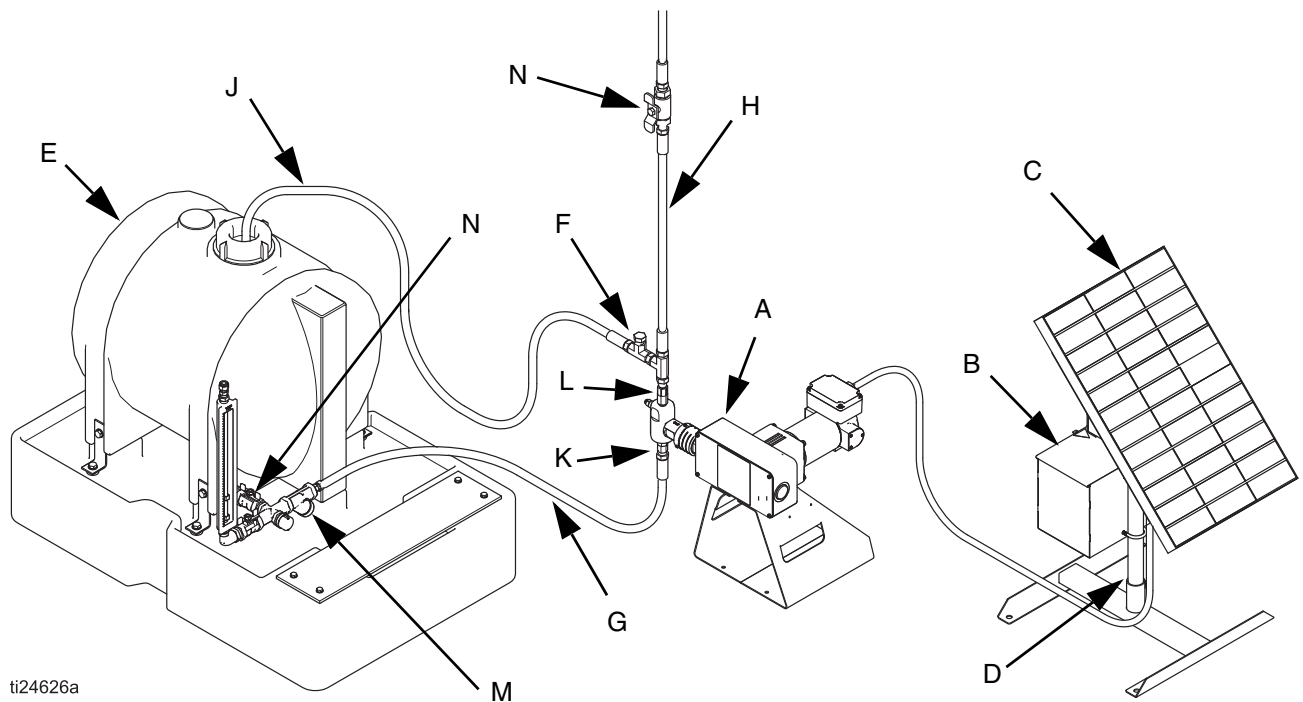
Install the following required accessories in the order shown in FIG. 2, using adapters as necessary. See **Kits and Accessories** starting on page 48.

- **Fluid filter (Y-Strainer) (included in M):** with a 60 mesh (250 micron) stainless steel element to filter particles from the fluid before it reaches the pump.
- **Fluid shutoff valves (N):** shuts off fluid flow.
- **Pressure relief valve (F):** overload protection.

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 **Flush the Equipment**, page 23.

Typical Installation



ti24626a

FIG. 2 Typical Installation with a Solar Panel

FIG. 2 is an example of an installation with a Wolverine chemical injection pump. Your installation may differ from what is shown here. The Wolverine pump (A) is the only component in FIG. 2 supplied by Graco. All other components are supplied by customer.

Key:

- A Pump
- B Control Box
- C Solar Panel
- D Stand Unit
- E Tank
- F Pressure Relief Valve
- G Inlet Line
- H Outlet Line
- J Pressure Relief Line
- K Inlet Port
- L Outlet Port
- M Manifold Assembly (includes y-strainer and fluid shutoff valve (N))
- N Fluid Shutoff Valve (inlet & outlet)





Choosing an Installation Location

- Select a location that will adequately support the weight of the pump, as well as all plumbing and electrical connections.
- Refer to the mounting hole layout provided in **Dimensions** starting on page 49.
- Always mount the pump upright.
- If you have a mounting configuration that requires installation in a manner different than depicted in FIG. 2, please contact your Graco distributor for assistance.

Fluid Connections



1. Remove and discard plugs on check valves.
2. Connect a 1/4 npt(f) fluid line from the fluid source to the inlet check valve (K). See FIG. 2 on page 20.
3. Install a pressure relief valve (F) on the outlet side of the pump.

NOTE: The pressure relief valve is available from Graco and can be connected back to the tank or directly to the inlet side of the pump. See **Kits and Accessories** on page 48.

				
In the event of an injection line blockage, to reduce the risk of skin injection and damage to the pump, ensure the pressure relief valve is set at or below the maximum working pressure of the pump.				

4. Set the pressure relief valve at or below the maximum working pressure of the pump.
5. Connect a 1/4 npt(f) fluid line from the outlet check valve (L) to the injection point.
6. Connect a 10-32 UNF fluid outlet from the prime/bleed valve (21) to the fluid source or waste reservoir.

Electrical Connections

				
<p>To reduce the risk of electrical shock;</p> <ul style="list-style-type: none"> All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations. Install the pump with a dedicated means to disconnect the main power to the pump. 				

NOTICE
<p>Fuses (user supplied) are required on all models. To avoid equipment damage:</p> <ul style="list-style-type: none"> Never operate the pump without a fuse installed. A fuse of the correct voltage and amperage must be installed in line with the power entry to the system. See table below for fuse rating.

Model	Minimum Voltage	Fuse Rating
CI-12S-XXX-XXX-X	12 VDC	15 A
CI-12L-XXX-XXX-X	12 VDC	20 A
CI-1AX-XXX-XXX-X	115 VAC	3 A
CI-2AX-XXX-XXX-X	230 VAC	2 A
CI-4AX-XXX-XXX-X	230 3 Phase VAC	1 A
CI-4AX-XXX-XXX-X	460 3 Phase VAC	1 A

For all models, except A267xx and A297xx

The pump assembly has 10 feet (3 m) of 1/2-inch, flexible conduit connected to the motor with 12 feet (3.7 m) of motor leads.

1. Connect the conduit to the control box (B) with the included conduit fitting.
2. Connect the green motor wire to a ground location.
3. Connect the white motor wire to the positive (+) output of the controller.
4. Connect the black motor wire to the negative (-) output of the controller.

For models A267xx and A297xx (3 Phase pumps)

The pump assembly has nine motor leads housed inside the motor junction box (2a). See FIG. 1 on page 18.

1. Connect the conduit to the control box (B) with a conduit fitting.
2. Remove motor junction box cover.
3. Connect wires (user supplied) rated per local electrical code. See FIG. 3 for wiring diagram.

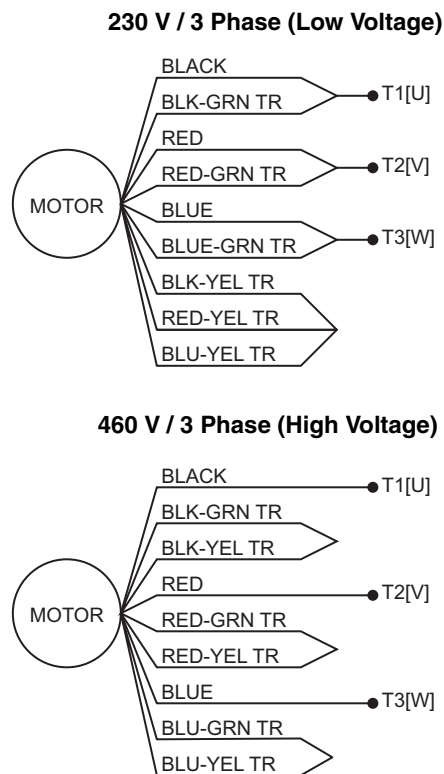


FIG. 3 Electrical Connections for 3 Phase Pump

4. Connect a ground wire to the ground stud inside the motor junction-box.
5. Replace motor junction box cover (2a).

Operation

Pressure Relief Procedure



Follow the Pressure Relief Procedure whenever you see this symbol.

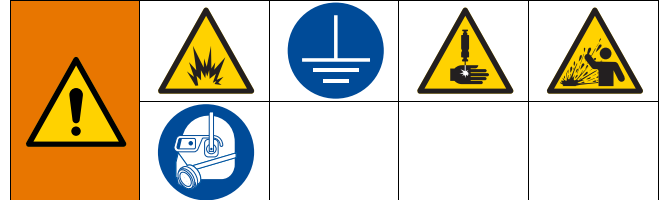


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection and splashing fluid, follow the **Pressure Relief Procedure** when you stop dispensing and before cleaning, checking, or servicing the equipment.

NOTE: Always discharge fluid into an approved container or location.

1. Disconnect main power from pump.
2. Shut off the inlet and outlet lines using shutoff valves (N).
3. Slowly crack the fitting connected to the outlet check valve (25) to relieve downstream fluid pressure.
4. Open bleed valve (21) by turning needle counter-clockwise with a flathead screwdriver to relieve internal pump fluid pressure.
5. Disconnect and cap inlet and outlet fluid lines.

Flush the Equipment



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.

- Check fittings for leaks and tighten as necessary.
 - Flush with a fluid that is compatible with the fluid being dispensed and the equipment's wetted parts.
1. Follow the **Pressure Relief Procedure**.
 2. Connect inlet to the supply source of the flushing fluid.
 3. Connect outlet to a waste reservoir.
 4. Run the pump until the dispensed fluid is predominately flushing fluid.
 5. Follow the **Pressure Relief Procedure**.

Prime the Pump

1. Verify all connections and fluid lines are tight.
2. In order to prime the pump, turn the prime valve (21) counter-clockwise.
3. Turn the pump on and begin cycling.
4. The pump is primed when discharge from the prime valve (21) has transitioned from air, to bubbly liquid chemical, to pure liquid chemical.
5. Close the prime valve (21) tightly and verify that fluid has stopped draining from the port.

Calibrate Chemical Dosage



1. Begin the process by setting the cycle rate and/or stroke adjustment of the pump to an estimated setting for a desired flow rate. See **Baseline Chemical Dosage Settings**, page 26, for tables of cycles per minute (CPM) and corresponding gallons per day (GPD).
2. Follow the instructions provided with your calibration gauge in conjunction with the table below.
3. Adjust the cycle rate and/or stroke adjustment accordingly after the test is performed. Increasing the cycle rate and/or stroke adjustment of the pump will increase the pump flow rate, while decreasing it will decrease the flow rate.
4. Repeat the test procedure to verify your changes. Repeat as necessary until the desired flow rate is achieved.

Stroke Adjustment



Wolverine Basic

This pump has three defined stroke adjustment positions.

1. Disconnect main power from pump.
2. Expose the drive shaft (33) by loosening the cap screws (27) and removing the molded guard (26). The cap screws will remain with the molded guard.
3. Remove the spring pin (34) from the drive shaft (33) and stroke adjuster (35).

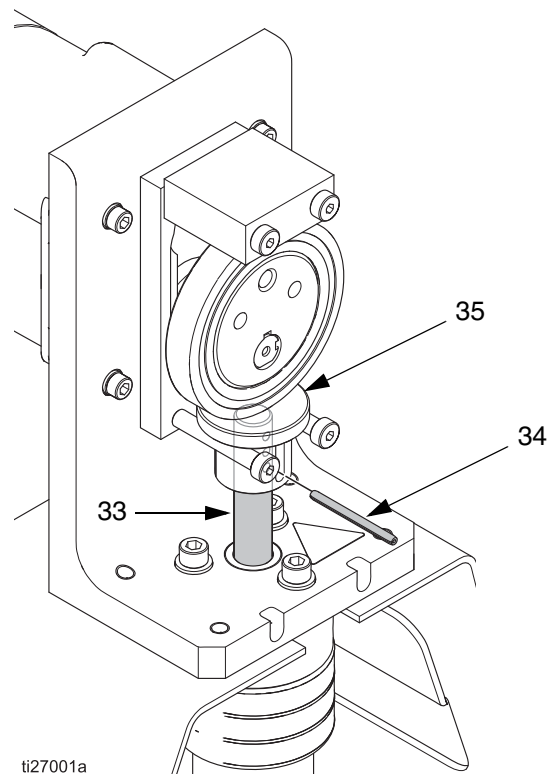


FIG. 4 Wolverine Basic stroke adjustment

- Reinstall spring pin (34) in desired stroke position.

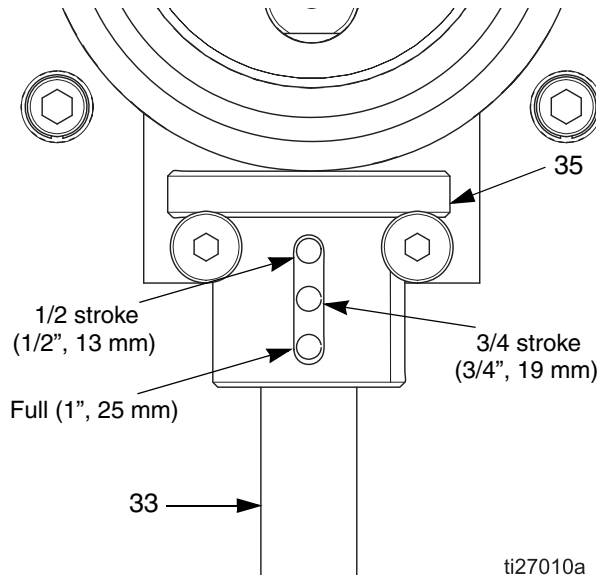


FIG. 5 Wolverine Basic stroke adjustment positions

- Reassemble the molded guard (26) to pump.

Wolverine Advanced

This pump has infinite stroke adjustment positions between full stroke and half stroke.

- Disconnect main power from pump.
- Expose the drive shaft (33) by loosening the cap screws (27) and removing the drive guard (26). The cap screws will remain with the drive guard.
- Loosen the stroke adjustment nuts (36), and move to desired stroke location and re-tighten.

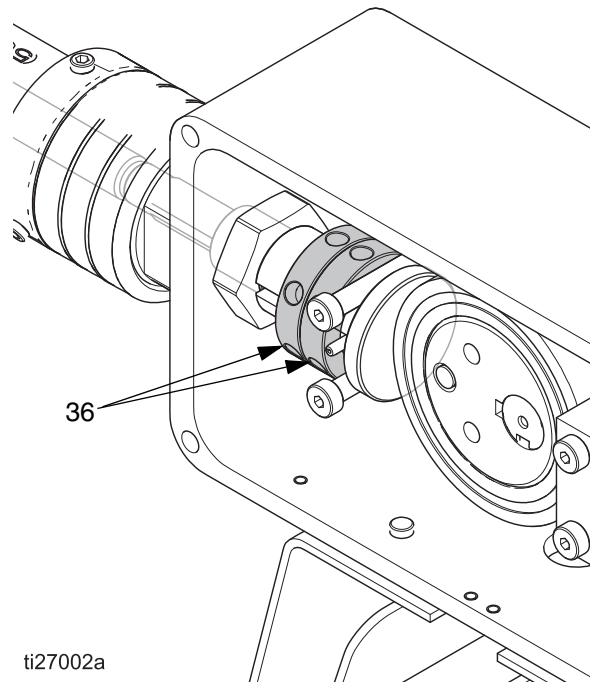


FIG. 6 Wolverine Advanced stroke adjustment

- Reassemble the drive guard (26) to pump.

Baseline Chemical Dosage Settings

See **Stroke Adjustment**, page 24, for stroke adjust settings.

NOTE: Double values in the charts below for configurations with two pumps.

CPM	1/4 in. Fluid Plunger Pumps			3/8 in. Fluid Plunger Pumps			1/2 in. Fluid Plunger Pumps			5/8 in. Fluid Plunger Pumps			3/4 in. Fluid Plunger Pumps		
	GPD (LPD)			GPD (LPD)			GPD (LPD)			GPD (LPD)			GPD (LPD)		
	Full Stroke	3/4 Stroke	1/2 Stroke	Full Stroke	3/4 Stroke	1/2 Stroke	Full Stroke	3/4 Stroke	1/2 Stroke	Full Stroke	3/4 Stroke	1/2 Stroke	Full Stroke	3/4 Stroke	1/2 Stroke
5	1.5 (5.8)	1.1 (4.3)	0.8 (2.9)	3.4 (13.0)	2.6 (9.8)	1.7 (6.5)	6.1 (23.2)	4.6 (17.4)	3.1 (11.6)	9.6 (36.2)	7.2 (27.1)	4.8 (18.1)	13.8 (52.1)	10.3 (39.1)	6.9 (26.1)
10	3.1 (11.6)	2.3 (8.7)	1.5 (5.8)	6.9 (26.1)	5.2 (19.5)	3.4 (13.0)	12.2 (46.3)	9.2 (34.7)	6.1 (23.2)	19.1 (72.4)	14.3 (54.3)	9.6 (36.2)	27.5 (104.2)	20.7 (78.2)	13.8 (52.1)
15	4.6 (17.4)	3.4 (13.0)	2.3 (8.7)	10.3 (39.1)	7.7 (29.3)	5.2 (19.5)	18.4 (69.5)	13.8 (52.1)	9.2 (34.7)	28.7 (108.6)	21.5 (81.4)	14.3 (54.3)	41.3 (156.4)	31.0 (117.3)	20.7 (78.2)
20	6.1 (23.2)	4.6 (17.4)	3.1 (11.6)	13.8 (52.1)	10.3 (39.1)	6.9 (26.1)	24.5 (92.7)	18.4 (69.5)	12.2 (46.3)	38.2 (144.8)	28.7 (108.6)	19.1 (72.4)	55.1 (208.5)	41.3 (156.4)	27.5 (104.2)
25	7.6 (29.0)	5.7 (21.7)	3.8 (14.5)	17.2 (65.2)	12.9 (48.9)	8.6 (32.6)	30.6 (115.8)	22.9 (86.9)	15.3 (57.9)	47.8 (181.0)	35.9 (135.7)	23.9 (90.5)	68.8 (260.6)	51.6 (195.5)	34.4 (130.3)
30	9.2 (34.7)	6.9 (26.1)	4.6 (17.4)	20.7 (78.2)	15.5 (58.6)	10.3 (39.1)	36.7 (139.0)	27.5 (104.2)	18.4 (69.5)	57.4 (217.2)	43.0 (162.9)	28.7 (108.6)	82.6 (312.7)	62.0 (234.6)	41.3 (156.4)
35	10.7 (40.5)	8.0 (30.4)	5.4 (20.3)	24.1 (91.2)	18.1 (68.4)	12.0 (45.6)	42.8 (162.2)	32.1 (121.6)	21.4 (81.1)	66.9 (253.4)	50.2 (190.0)	33.5 (126.7)	96.4 (364.9)	72.3 (273.7)	48.2 (182.4)
40	12.2 (46.3)	9.2 (34.7)	6.1 (23.2)	27.5 (104.2)	20.7 (78.2)	13.8 (52.1)	49.0 (185.3)	36.7 (139.0)	24.5 (92.7)	76.5 (289.6)	57.4 (217.2)	38.2 (144.8)	110.2 (417.0)	82.6 (312.7)	55.1 (208.5)
45	13.8 (52.1)	10.3 (39.1)	6.9 (26.1)	31.0 (117.3)	23.2 (88.0)	15.5 (58.6)	55.1 (208.5)	41.3 (156.4)	27.5 (104.2)	86.1 (325.8)	64.5 (244.3)	43.0 (162.9)	123.9 (469.1)	92.9 (351.8)	62.0 (234.6)
50	15.3 (57.9)	11.5 (43.4)	7.6 (29.0)	34.4 (130.3)	25.8 (97.7)	17.2 (65.2)	61.2 (231.7)	45.9 (173.7)	30.6 (115.8)	95.6 (362.0)	71.7 (271.5)	47.8 (181.0)	137.7 (521.2)	103.3 (390.9)	68.8 (260.6)
55	16.8 (63.7)	12.6 (47.8)	8.4 (31.9)	37.9 (143.3)	28.4 (107.5)	18.9 (71.7)	67.3 (254.8)	50.5 (191.1)	33.7 (127.4)	105.2 (398.2)	78.9 (298.6)	52.6 (199.1)	151.5 (573.4)	113.6 (430.0)	75.7 (286.7)
60	18.4 (69.5)	13.8 (52.1)	9.2 (34.7)	41.3 (156.4)	31.0 (117.3)	20.7 (78.2)	73.4 (278.0)	55.1 (208.5)	36.7 (139.0)	114.7 (434.4)	86.1 (325.8)	57.4 (217.2)	165.2 (625.5)	123.9 (469.1)	82.6 (312.7)

Maintenance

Preventive Maintenance Schedule

The operating conditions of your particular pump 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 pump.

Tighten Threaded Connections

Check that all threaded connections are tight at routine intervals.

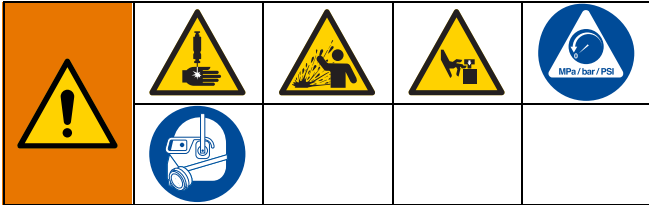
Tighten Packings

The packings included in your pump have the ability to be adjusted to stop leaks that develop when the seals are worn. If a leak develops in the pump's fluid section, tighten the packing nut clockwise by 1/16th of a turn, or lower, until the leak is eliminated. The life of the packing can be affected by over-tightening the packings. If the packing nut needs to be tightened repeatedly after short intervals, replace the packing.

Storage

If the pump is going to be stored for long periods, it is recommended that the pump be flushed with a light-weight oil or rust prohibiter to protect pump components. Store the pump with protective fluid inside whenever possible.

Troubleshooting



1. Follow **Pressure Relief Procedure**, page 23, before checking or repairing the pump.
2. Check all possible problems and causes before disassembling the pump.

Problem	Cause	Solution
Air bubbles in fluid	Suction line is loose	Tighten
Fluid leaking	Loose fittings	Tighten fittings
	Worn or damaged seals and/or packing	Adjust or tighten seals and/or packing. If leak persists, replace seals and/or packing.
Motor running but no fluid moving	Pump stalled	Check pump for contamination
	Air in pump	Prime pump
	Worn or damaged check valve seals	Rebuild inlet and outlet check valves
Motor not running	Motor brushes worn or damaged	Replace motor brushes
	Electrical	Check electrical connectors
	Blown fuse	Replace fuse
	Packings too tight	Loosen or replace packing

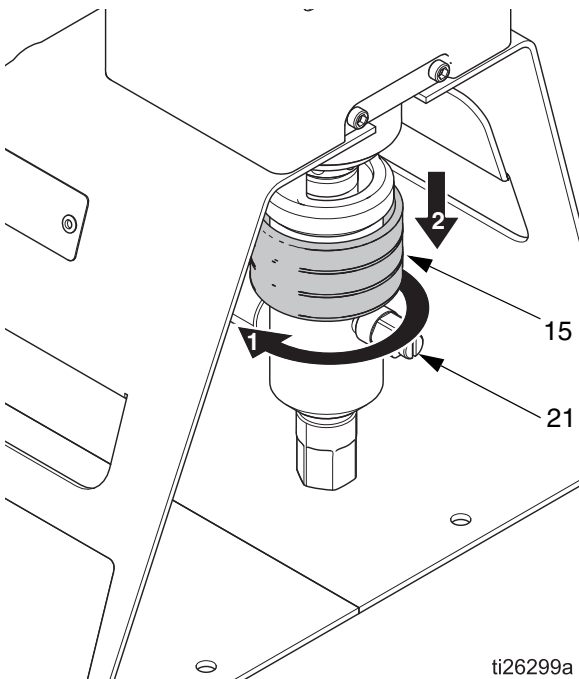
Repair

Wolverine Basic Pump Repair



Disconnect Pump

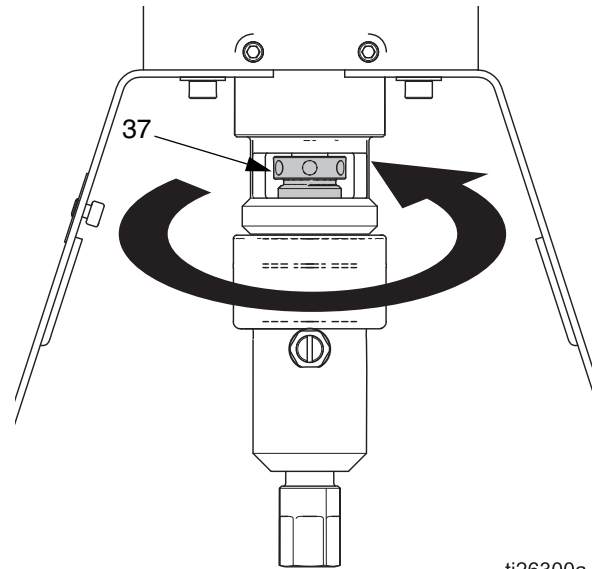
1. Follow **Pressure Relief Procedure**, page 23.
2. Expose the packing nut (37) by rotating the dust cover (15) clockwise and sliding down when loose.



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FIG. 7 Expose packing nut

3. Loosen, but do not remove, the packing nut (37).



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FIG. 8 Loosen packing nut

4. Expose the cam (8) by loosening the cap screws (27) and removing the molded guard (26). The cap screws will remain with the molded guard.

5. Rotate the cam (8) until the drive shaft (33) is all the way down.

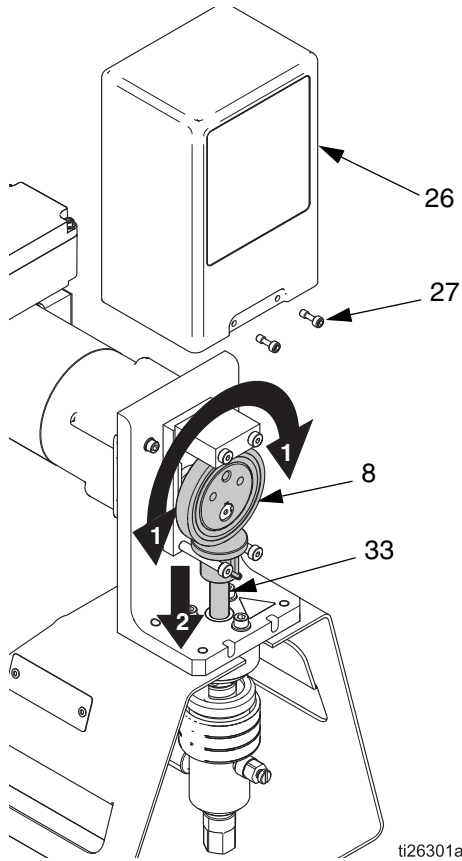


FIG. 9 Rotate cam to depress drive shaft

6. Remove the fluid cylinder (42) from the drive cylinder (14).

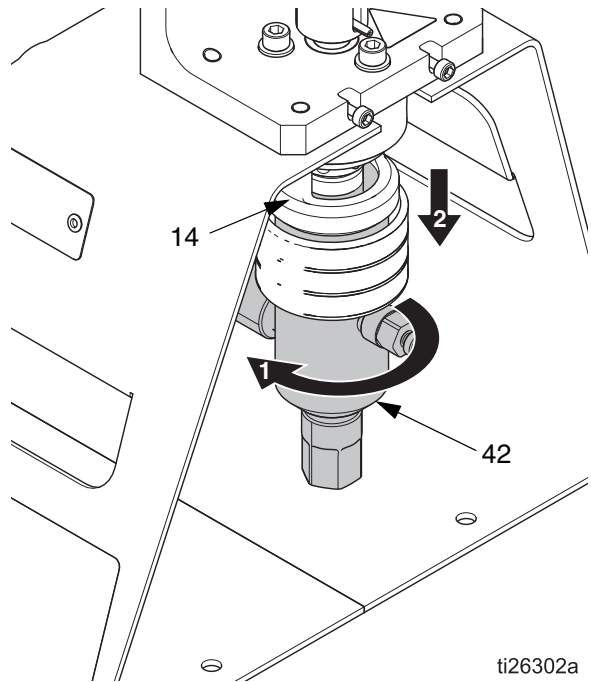


FIG. 10 Remove fluid cylinder from drive cylinder

7. Disconnect the plunger (43) from the drive shaft (33) by sliding the head of the piston sideways out of the slot in the bottom of the drive shaft, and pulling straight down.

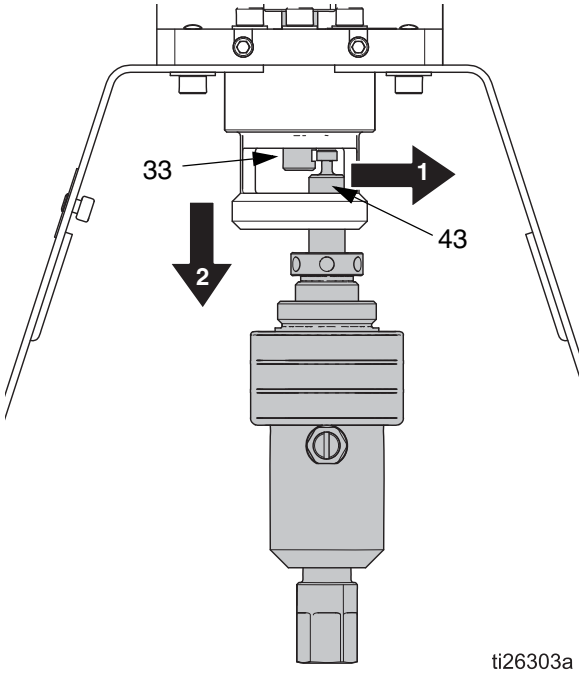


FIG. 11 Disconnect plunger from drive shaft

Pump Repair

1. Carefully remove plunger (43) from fluid cylinder (42).
2. Remove packing nut (37) from fluid cylinder (42).

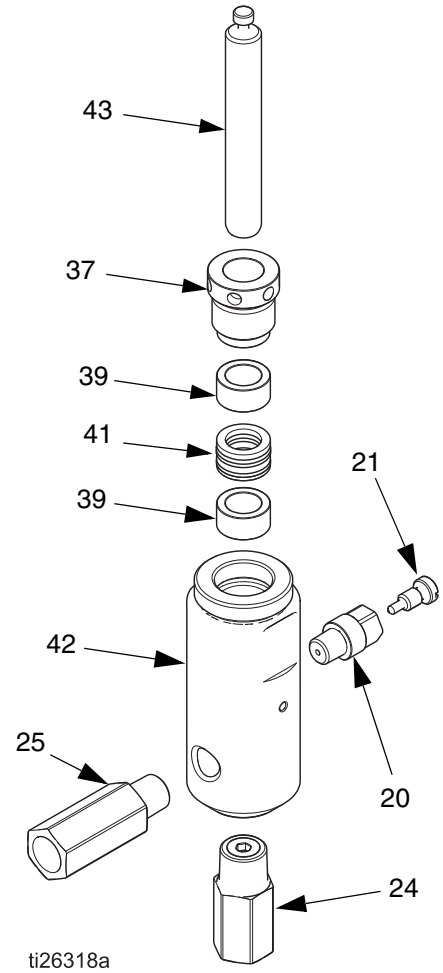
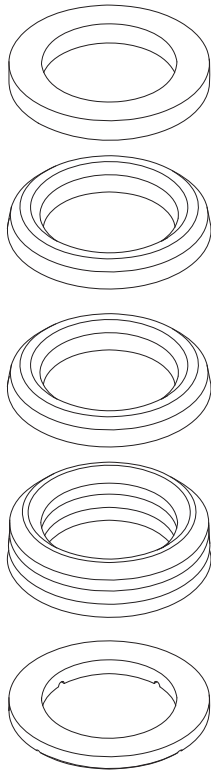


FIG. 12 Wolverine Basic Pump Repair

3. Carefully remove bearings (39) and packing (41) from the fluid cylinder (42).

4. Replace packing (41) and bearings (39). Lubricate prior to reassembly.



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FIG. 13 Packing (41) detailed view

5. Replace packing nut into fluid cylinder. Tighten hand tight and back off 1/2 of a turn to prevent damage to seals during reassembly.

Reconnect Pump

1. Rotate the cam (8) until the drive shaft (33) is all the way down.

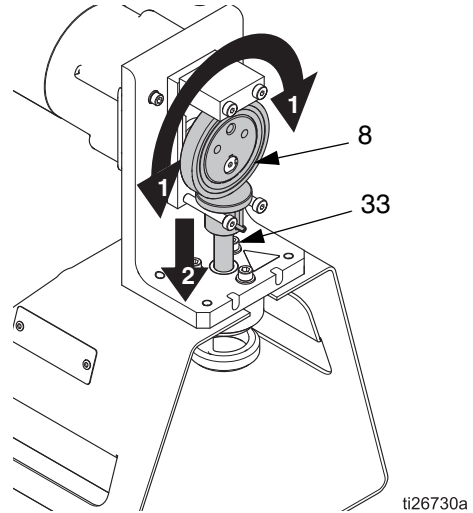


FIG. 14 Rotate cam to depress drive shaft

2. Connect the plunger (43) to the drive shaft (33) by pushing the plunger straight up before horizontally sliding the head of plunger into the slot at the bottom of the drive shaft.

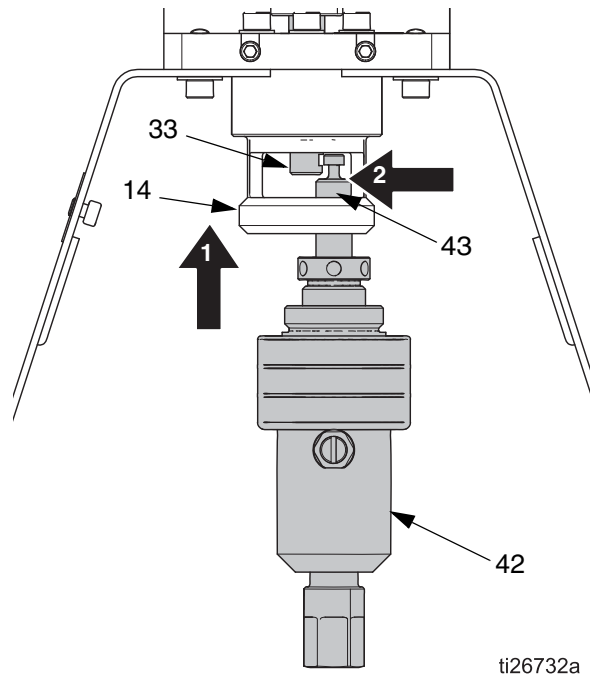


FIG. 15 Connect plunger to drive shaft

3. Secure the fluid cylinder (42) to the drive cylinder (14) by pushing up on the fluid cylinder. Torque to 30 ft-lbs (40 N•m).
4. Tighten the packing nut (37) to a torque of 15 in-lbs (1.7 N•m), then loosen and tighten again it to a final torque of 5 in-lbs (0.6 N•m).

NOTE: If a torque wrench is not present in the field, an alternative method is to tighten the packing nut (37) finger tight through the window, then use a small punch or hex wrench to further tighten by approximately 10 degrees.

NOTE: If the packing nut (37) is over-tightened, the pump may not complete a full stroke and seal life will be compromised.

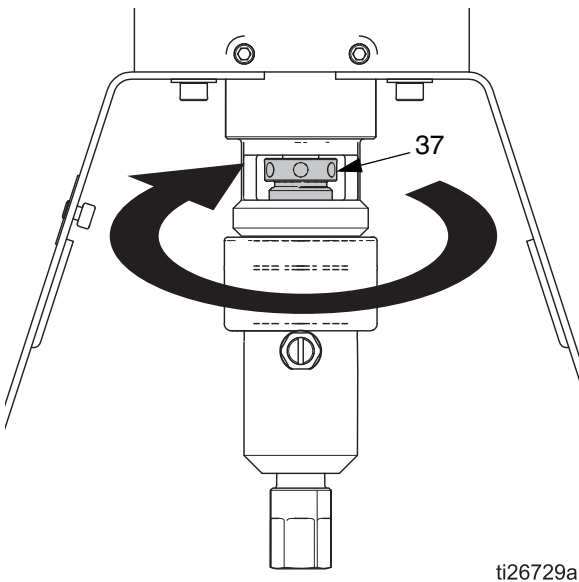


FIG. 16 Tighten packing nut

5. Cover the packing nut (37) by pushing up the dust cover (15) until the threads take hold.

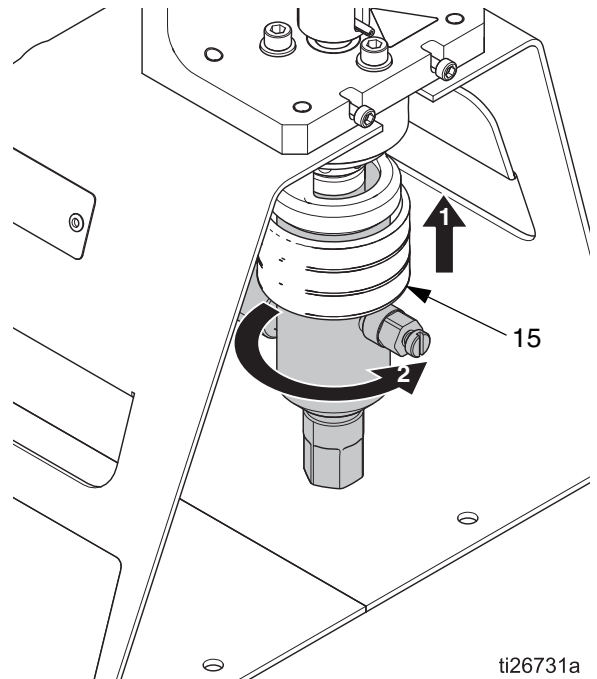


FIG. 17 Cover packing nut

6. Uncap and connect the inlet and outlet fluid lines to the pump.
7. **Prime the Pump**, page 23.
8. **Calibrate Chemical Dosage**, page 24.

Wolverine Advanced Pump Repair



Disconnect Pump

1. Follow **Pressure Relief Procedure**, page 23.
2. Expose the packing nut (37) by loosening the dust cover (15) and sliding it towards the drive housing (1).

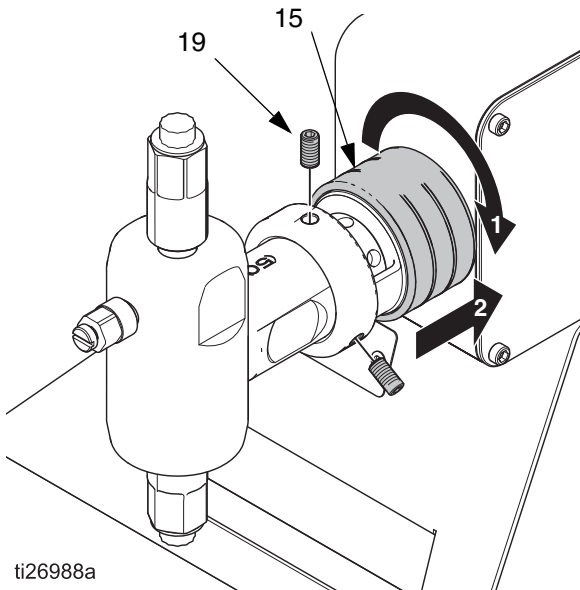


FIG. 18 Remove dust cover

3. Loosen, but do not remove, packing nut (37).

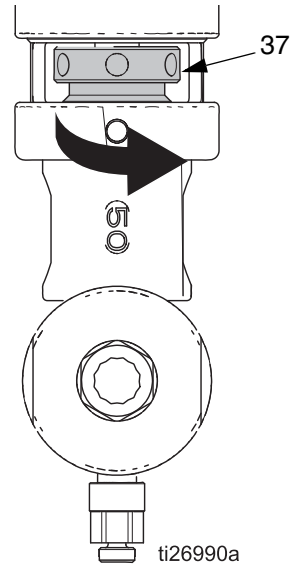


FIG. 19 Loosen packing nut

4. Loosen the three set screws (19) from the drive cylinder (14) to release and remove the fluid cylinder (42)

5. Place two Allen wrenches (or similar tools) in the holes on the cam (8) and use them to rotate the cam until the key is towards the pump being repaired.

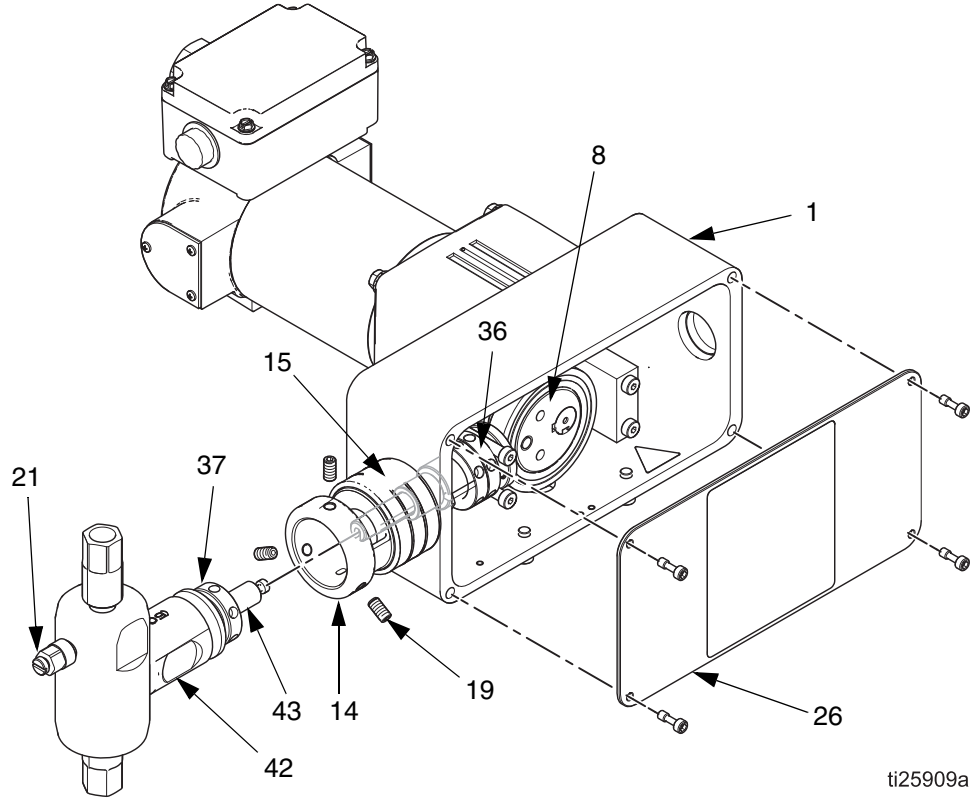


FIG. 20 Disconnect Wolverine Advanced Pump

6. Carefully remove the plunger (43) from the drive shaft (33).

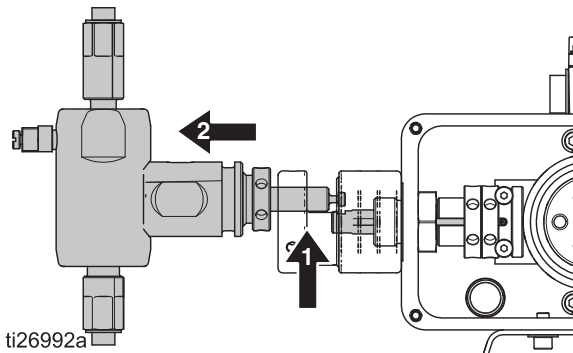
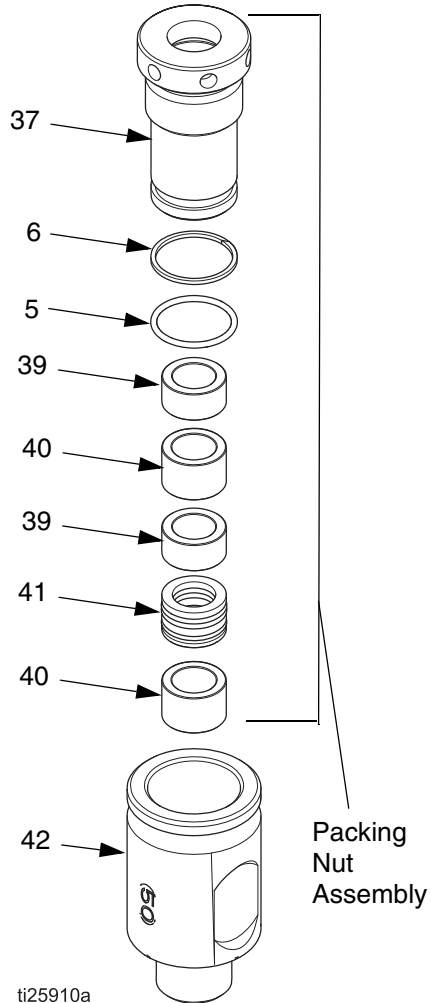


FIG. 21 Disconnect plunger from drive shaft

Pump Repair

1. Remove packing nut assembly from fluid cylinder (42).

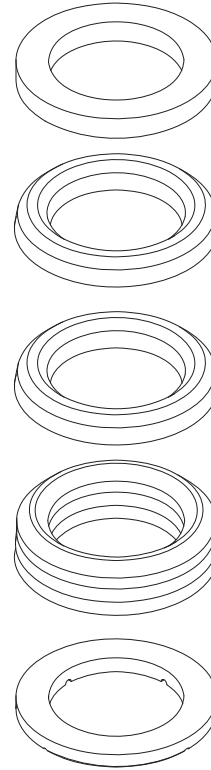


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FIG. 22 Wolverine Advanced Pump Repair

2. Use a socket or flat punch to press out the packing nut assembly.

3. Replace packing (41) and bearings (39). Inspect spacers and replace, if necessary. Lubricate prior to reassembly.



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FIG. 23 Packing (41) detailed view

4. Replace the o-ring (5) and back-up ring (6) on the outside of the packing nut (37). Lubricate prior to reassembly.
5. Replace packing nut assembly into fluid cylinder. Tighten hand tight and back off 1/2 of a turn to prevent damage to packing during reassembly.

Reconnect Pump

1. Reconnect the pump plunger (43) to the drive shaft (33).

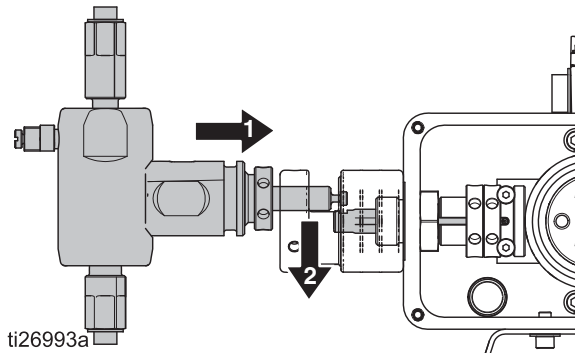


FIG. 24 Reconnect plunger to drive shaft

2. While guiding the plunger (43) back into the fluid cylinder (42), guide the fluid cylinder into the drive cylinder (14).
3. Tighten the three set screws (19) to restrain the fluid cylinder (42) to the drive cylinder (14).
4. Verify the set screws (19) are in the groove of the drive cylinder (14).

5. Tighten packing nut assembly hand tight plus a 1/16th turn.

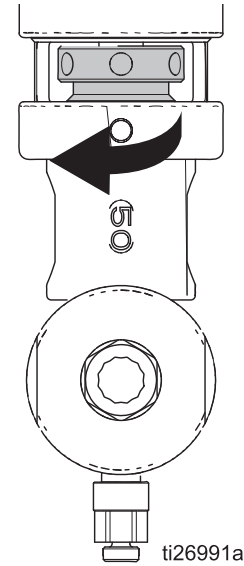


FIG. 25 Tighten packing nut

6. Cover the packing nut (37) by pushing up the dust cover (15).

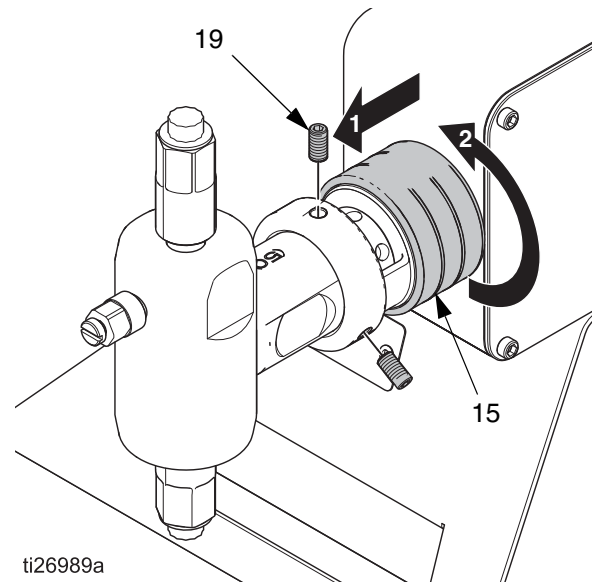


FIG. 26 Replace dust cover

7. Reconnect inlet and outlet fluid lines to the pump.
8. Reconnect power to the motor.

9. **Prime the Pump**, page 23.
10. If necessary, **Calibrate Chemical Dosage**, page 24.
11. Tighten packing nut as necessary to seal pump plunger.

Motor Brush Repair (DC Pumps only)



1. Disconnect pump from power source.
2. Remove dust cover screws and dust cover (2b) and o-ring. See FIG. 20 on page 35.
3. Remove brush retainer using a flathead screwdriver.
4. Remove and replace motor brush.
5. Reinstall brush retainer.
6. Ensure o-ring is in place in motor end ring (2c), and reinstall dust cover (2b) and dust cover screws.
7. Repeat steps 2-6 for the other side of the motor.

Check Valve Repair



The following procedures apply to the check valves on both Wolverine Basic and Wolverine Advanced pumps. FIG. 27 shows the placement of the check valves on a Wolverine Advanced pump. On a Wolverine Basic pump, the outlet check valve (25), is on the side of the fluid cylinder.

Inlet Check Valve

1. Follow the **Pressure Relief Procedure** on page 23.
2. Remove the inlet check valve assembly (24).
3. Remove the retaining nut (24d) and piston (24c).
4. Remove the piston o-ring (24b) from the piston (24c).
5. Inspect parts for wear, and replace as needed.
6. Install the piston o-ring (24b).
7. Reassemble the piston (24c) and retaining nut (24d).
8. Reconnect the inlet check valve assembly (24).
9. Reconnect and tighten fluid lines.
10. **Prime the Pump**, page 23.
11. If necessary, **Calibrate Chemical Dosage**, page 24.

12. Reconnect the inlet hose to the pump and reprime the pump.

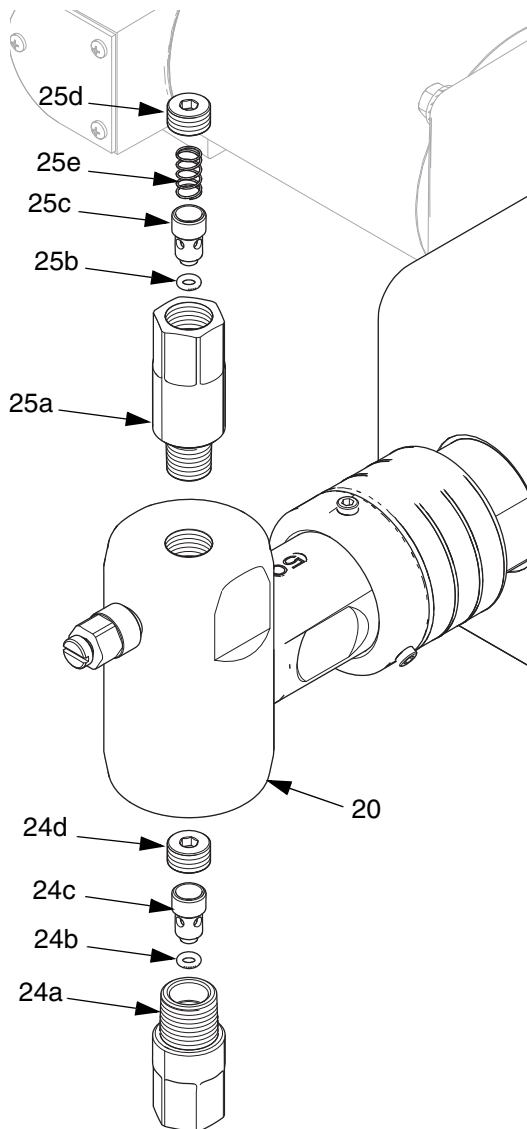


FIG. 27 Check Valve Repair

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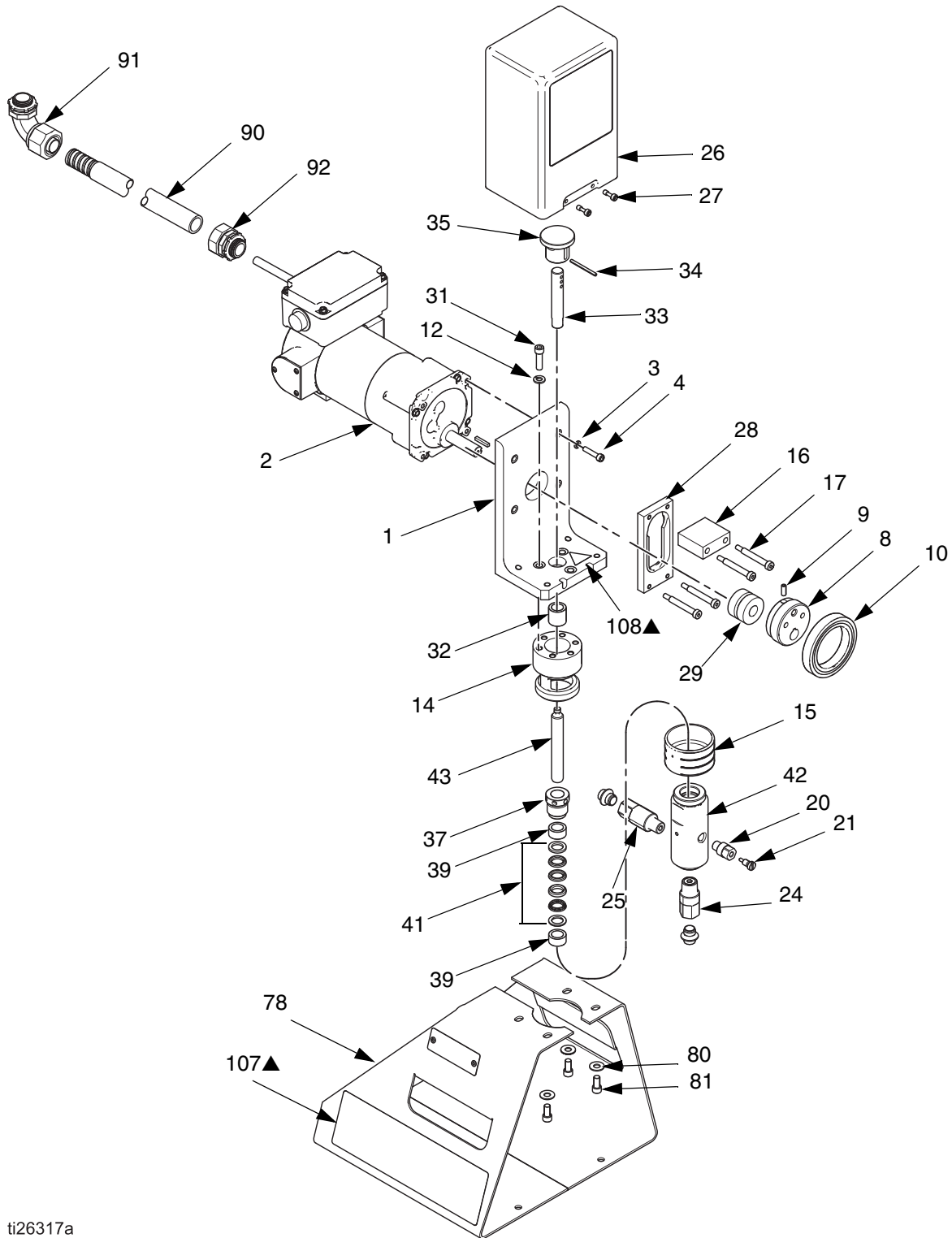
Outlet Check Valve

1. Follow the **Pressure Relief Procedure** on page 23.
2. Remove the outlet check valve assembly (25).
3. Remove the retaining nut (25d), spring (25e), and piston (25c).
4. Remove the piston o-ring (25b) from the piston (25c).
5. Inspect parts for wear, and replace as needed.
6. Install the piston o-ring (25b).
7. Reassemble the piston (25c), spring (25e), and retaining nut (25d).
8. Reconnect the outlet check valve assembly (25).
9. Reconnect and tighten fluid lines.
10. **Prime the Pump**, page 23.
11. If necessary, **Calibrate Chemical Dosage**, page 24.

Parts

Wolverine Basic Pump

Model A26000 shown



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Wolverine Basic Parts List

Ref.	Part	Description	Qty
1	B32415	Motor & pump support	1
2	B32108	Motor	1
3	--	Lock washer, included with motor (ref. 2)	4
4	--	Socket head cap screw, included with motor (ref. 2)	4
7	--	Square key, included with motor (ref. 2) & cam (ref. 8) & plunger return carriage (ref. 28) & carriage bearing (ref. 29)	1
8	B32084	Cam	1
9	--	Set screw, included with motor (ref. 2) & cam (ref. 8) & plunger return carriage (ref. 28) & carriage bearing (ref. 29)	1
10	--	Deep groove ball bearing, included with cam (ref. 8)	1
12	--	Flat washer, included with drive cylinder (ref. 14)	3
14	B32412	Drive cylinder	1
15	B32426	Dust cover	1
16	B32406	Plunger return block	1
17	B32410	Shoulder screw, included with plunger return carriage (ref. 28) & plunger return block (ref. 16)	4
20	B32191	Bleed valve housing	1
21	--	Bleed valve, included with bleed valve housing (ref. 20)	1
24	B32024	Inlet check valve, FKM	1
	B32026	Inlet check valve, FKM ETP	1
	B32028	Inlet check valve, FFKM	1
	B32113	Inlet check valve, HNBR	2
25	B32025	Outlet check valve, FKM	1
	B32027	Outlet check valve, FKM ETP	1
	B32029	Outlet check valve, FFKM	3
	B32114	Outlet check valve, HNBR	1
26	B32400	molded guard	1

Ref.	Part	Description	Qty
27	--	Captive fastener, included with molded guard (ref. 26)	1
28	B32083	Plunger return carriage	1
29	B32408	Carriage bearing, included with plunger return carriage (ref. 28)	1
31	--	Screw, included with drive cylinder (ref. 14)	2
32	--	Sleeve bearing, included with motor and pump support (ref. 1)	1
33	B32404	Drive shaft	1
34	--	Spring pin, included with drive shaft (ref. 33) & stroke adjuster (ref. 35)	1
35	B32402	Stroke adjuster	1
37	See Table 1	Packing nut	1
39	--	Plunger bearing, included with packing (ref. 41)	2
41	See Table 2	Packing	1
42	See Table 3	Fluid cylinder	1
43	See Table 4	Plunger	1
78	--	Pump base	1
80	--	Flat washer	4
81	--	Socket head cap screw	4
90	--	Liquid-tight flex metal conduit	1
91	--	09-degree liquid-tight conduit connector	1
92	--	Liquid-tight conduit connector	1
107▲	17G318	Multiple warning safety label	1
108▲	15H108	Pinch hazard warning label	1

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

Table 1: Packing Nut

Ref	Part Numbers by Fluid Plunger Size Diameter			Qty.
	1/4 in.	3/8 in.	1/2 in.	
37	B32187	B32188	B32203	1

Table 2: Packing, including Plunger Bearings, qty 2 (ref. 39)

Ref	Part Numbers by Fluid Plunger Size Diameter			Qty.
	1/4 in.	3/8 in.	1/2 in.	
FKM				
41	B32094	B32098	B32102	1
FKMETP				
41	B32095	B32099	B32103	1
HNBR				
41	B32096	B32100	B32104	1
FFKM				
41	B32097	B32101	B32105	1

Table 3: Fluid Cylinders

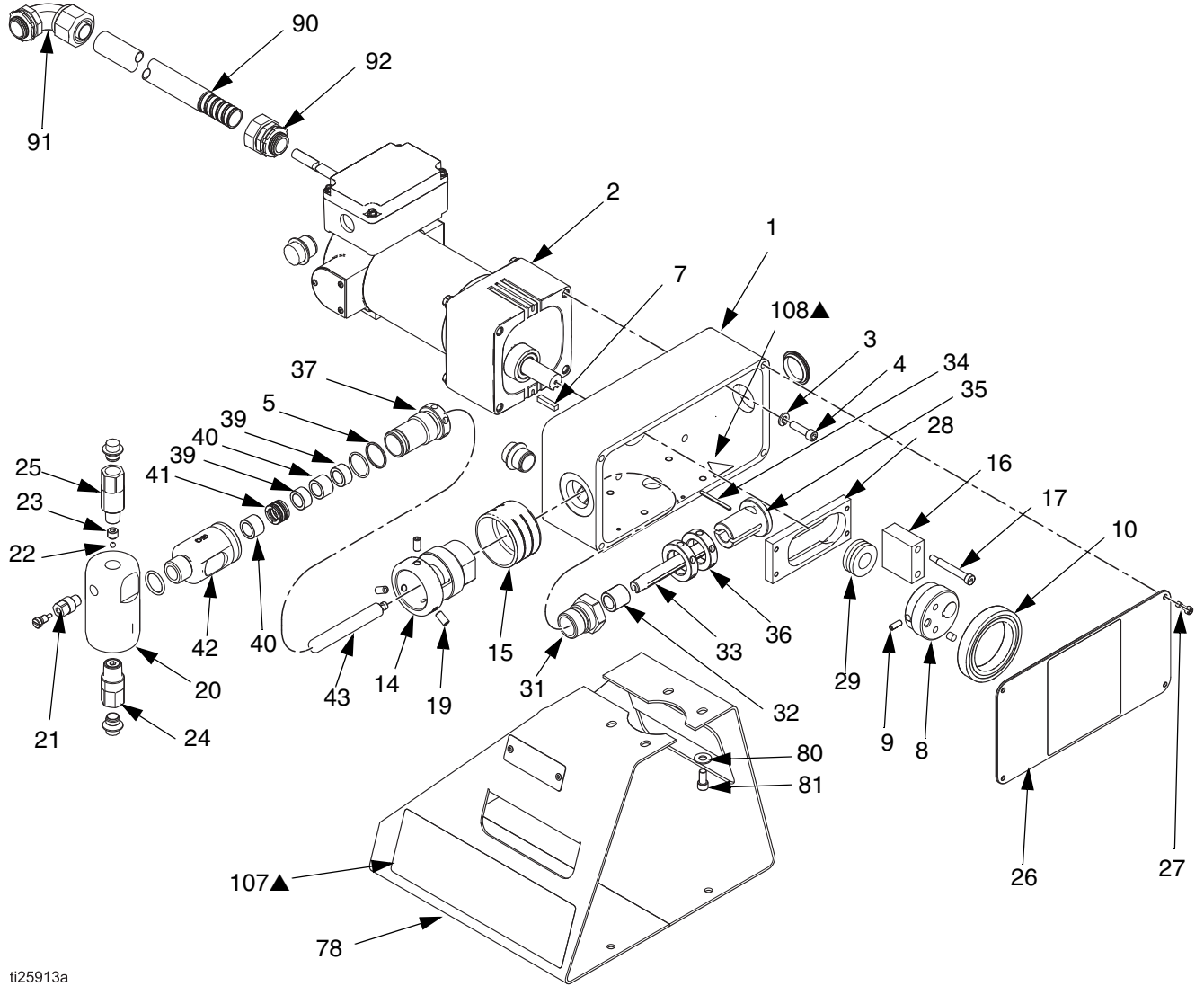
Ref	Part Numbers by Fluid Plunger Size Diameter			Qty.
	1/4 in.	3/8 in.	1/2 in.	
42	B32182	B32183	B32184	1

Table 4: Fluid Plungers

Ref	Part Numbers by Fluid Plunger Size Diameter			Qty.
	1/4 in.	3/8 in.	1/2 in.	
17-4 Stainless Steel Fluid Plungers				
43	B32054	B32055	B32056	1
Chromex-Coated Fluid Plungers				
43	B32061	B32062	B32063	1

Wolverine Advanced Pump

Model A26100 shown



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Wolverine Advanced Parts List

Ref.	Part	Description	Qty
1	B32416	Drive housing for small motor	1
	B32417	Drive housing for large motors	1
2	B32108	Motor: small, 12 VDC	1
	B32109	Motor: large, 12 VDC	1
	B32146	Motor: large, 115 VAC	1
	B32147	Motor: large, 230 VAC	1
	B32151	Motor: large, 230/460 VAC 3 Phase	1
3	--	Lock washer, included with motor (ref. 2)	4
4	--	Socket head cap screw, included with motor (ref. 2)	4
6	See Table 6 & 7	O-Ring, included with packing nut (ref 37) & packing stack (ref 41)	1
5	See Table 6 & 7	O-Ring, included with packing nut (ref 37) & packing stack (ref 41)	1
7	--	Square key, included with motor (ref. 2) & cam (ref. 8) & plunger return carriage (ref. 28) & carriage bearing (ref. 29)	1
8	B32084	Cam for small motors	1
	B32411	Cam for large motors	1
9	--	Set screw, included with motor (ref. 2) & cam (ref. 8) & plunger return carriage (ref. 28) & carriage bearing (ref. 29)	1
10	--	Deep groove ball bearing, included with cam (ref. 8)	1
11	See Table 5	Check / bleed housing	1
13	--	Magnet	
14	B32413	Drive cylinder for plunger sizes 1/4", 3/8", 1/2"	1
	B32414	Drive cylinder for plunger sizes 1/8", 3/16", 5/8", 3/4"	1
15	B32426	Dust cover for plunger sizes 1/4", 3/8", 1/2"	1
	B32427	Dust cover for plunger sizes 1/8", 3/16", 5/8", 3/4"	1
16	B32406	Plunger return block	1

Ref.	Part	Description	Qty
17	B32410	Shoulder screw, included with plunger return carriage (ref. 28) & plunger return block (ref. 16)	4
19	--	Set screw, included with drive cylinder (ref. 14) & fluid cylinder (ref. 42)	3
20	B32191	Bleed housing	1
21	--	Bleed valve, included with bleed housing (ref. 20)	1
22	--	Ball, included with check/bleed housing (ref 11)	1
23	--	Ball retainer, included with check/bleed housing (ref 11)	1
24	B32024	Inlet check valve, FKM	1
	B32026	Inlet check valve, FKM ETP	1
	B32028	Inlet check valve, FFKM	1
	B32113	Inlet check valve, HNBR	1
25	B32025	Outlet check valve, FKM	1
	B32027	Outlet check valve, FKM ETP	1
	B32029	Outlet check valve, FFKM	1
	B32114	Outlet check valve, HNBR	1
26	B32401	Drive cover	1
27	--	Captive fastener, included with molded guard (ref. 26)	4
28	B32083	Plunger return carriage for 12 VDC 78 in-lb motor	1
	B32407	Plunger return carriage for 12 VDC 78 in-lb motor	1
29	B32408	Carriage bearing for small motors, included with plunger return carriage (ref. 28)	1
	B32409	Carriage bearing for large motors, included with plunger return carriage (ref. 28)	1
31	--	Screw, included with drive cylinder (ref. 14)	3
32	--	Sleeve bearing, included with drive cylinder (ref. 14)	1
33	B32405	Drive shaft	1
34	--	Spring pin, included with drive shaft (ref. 33) & stroke adjuster (ref. 35)	1

Ref.	Part	Description	Qty
35	B32403	Stroke adjuster	1
36	B32418	Stroke adjust nut	2
37	See Table 6	Packing nut	1
38	See Table 5 & 8	O-Ring, included with check/bleed housing (ref. 11) & fluid cylinder (ref. 42)	1
39	--	Plunger bearing, included with packing (ref. 41)	2
40	--	Spacer	2
41	See Table 7	Packing	1
42	See Table 8	Fluid cylinder	1

Ref.	Part	Description	Qty
43	See Table 9	Plunger	1
44	--	Plug	1
78	--	Pump base	1
80	--	Flat washer	4
81	--	Socket head cap screw	4
90	--	Liquid-tight flex metal conduit	1
91	--	90-degree liquid-tight conduit connector	1
92	--	Liquid-tight conduit connector	1
107▲	17G318	Multiple warning safety label	1
108▲	15H108	Pinch hazard warning label	1

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

Table 5: Check / Bleed Housing)

Ref	Part Numbers by Fluid Plunger Size Diameter					Qty.
	1/4 in.	3/8 in.	1/2 in.	5/8 in.	3/4 in.	
FKM						
11	B32477	B32477	B32477	B32478	B32478	1
FKMETP						
11	B32509	B32509	B32509	B32512	B32512	1
HNBR						
11	B32510	B32510	B32510	B32513	B32513	1
FFKM						
11	B32511	B32511	B32511	B32514	B32514	1

Table 6: Packing Nut

Ref	Part Numbers by Fluid Plunger Size Diameter					Qty.
	1/4 in.	3/8 in.	1/2 in.	5/8 in.	3/4 in.	
FKM						
37	B32421	B32422	B32423	B32424	B32425	1
FKMETP						
37	B32490	B32491	B32492	B32493	B32494	1
HNBR						
37	B32497	B32498	B32499	B32500	B32501	1
FFKM						
37	B32504	B32505	B32506	B32507	B32508	1

Table 7: Packing, including Plunger Bearing, qty 2 (ref. 39)

Ref	Part Numbers by Fluid Plunger Size Diameter					Qty.
	1/4 in.	3/8 in.	1/2 in.	5/8 in.	3/4 in.	
FKM						
41	B32430	B32431	B32432	B32433	B32434	1
FKMETP						
41	B32437	B32438	B32439	B32440	B32441	1
HNBR						
41	B32444	B32445	B32446	B32447	B32448	1
FFKM						
41	B32451	B32452	B32453	B32454	B32455	1

Table 8: Fluid Cylinder

Ref	Part Numbers by Fluid Plunger Size Diameter					Qty.
	1/4 in.	3/8 in.	1/2 in.	5/8 in.	3/4 in.	
FKM						
42	B32483	B32484	B32485	B32486	B32487	1
FKMETP						
42	B32517	B32518	B32519	B32520	B32521	1
HNBR						
42	B32524	B32525	B32526	B32527	B32528	1
FFKM						
42	B32531	B32532	B32533	B32534	B32535	1

Table 9: Fluid Plunger

Ref	Part Numbers by Fluid Plunger Size Diameter					Qty.
	1/4 in.	3/8 in.	1/2 in.	5/8 in.	3/4 in.	
17-4 Stainless Steel						
43	B32054	B32055	B32056	B32057	B32058	1
Chromex-Coated 17-4 Stainless Steel						
43	B32061	B32062	B32063	B32064	B32065	1

Kits and Accessories

Wolverine (Both)

Part No.	Description
B32038	FKM Inlet and Outlet Check Valve Repair Kit (includes ref. 24b,25b,25e)
B32039	FKM ETP Inlet and Outlet Check Valve Repair Kit (includes ref. 24b,25b,25e)
B32040	FFKM Inlet and Outlet Check Valve Repair Kit (includes ref. 24b,25b,25e)
B32111	HNBR Inlet and Outlet Check Valve Repair Kit (includes ref. 24b,25b,25e)
B32157	316 SST Ball Valve Kit, 3/4 NPT (F)
B32075	Electric Motor Brush Repair Kit
B32045	225-750 PSI Pressure Relief Valve Kit
B32046	750-1500 PSI Pressure Relief Valve Kit
B32047	1500-2250 PSI Pressure Relief Valve Kit
B32048	2250-3000 PSI Pressure Relief Valve Kit
B32049	3000-4000 PSI Pressure Relief Valve Kit
B32050	4000-5000 PSI Pressure Relief Valve Kit
B32051	5000-6000 PSI Pressure Relief Valve Kit

Wolverine Advanced

Part No.	Description
B32076	1/8" FKM Fluid Section Conversion Kit*
B32077	3/16" FKM Fluid Section Conversion Kit*
B32078	1/4" FKM Fluid Section Conversion Kit*
B32079	3/8" FKM Fluid Section Conversion Kit*
B32080	1/2" FKM Fluid Section Conversion Kit*
B32081	5/8" FKM Fluid Section Conversion Kit*
B32082	3/4" FKM Fluid Section Conversion Kit*
B32456	1/8" FKM ETP Fluid Section Conversion Kit*
B32457	3/16" FKM ETP Fluid Section Conversion Kit*
B32458	1/4" FKM ETP Fluid Section Conversion Kit*
B32459	3/8" FKM ETP Fluid Section Conversion Kit*
B32460	1/2" FKM ETP Fluid Section Conversion Kit*

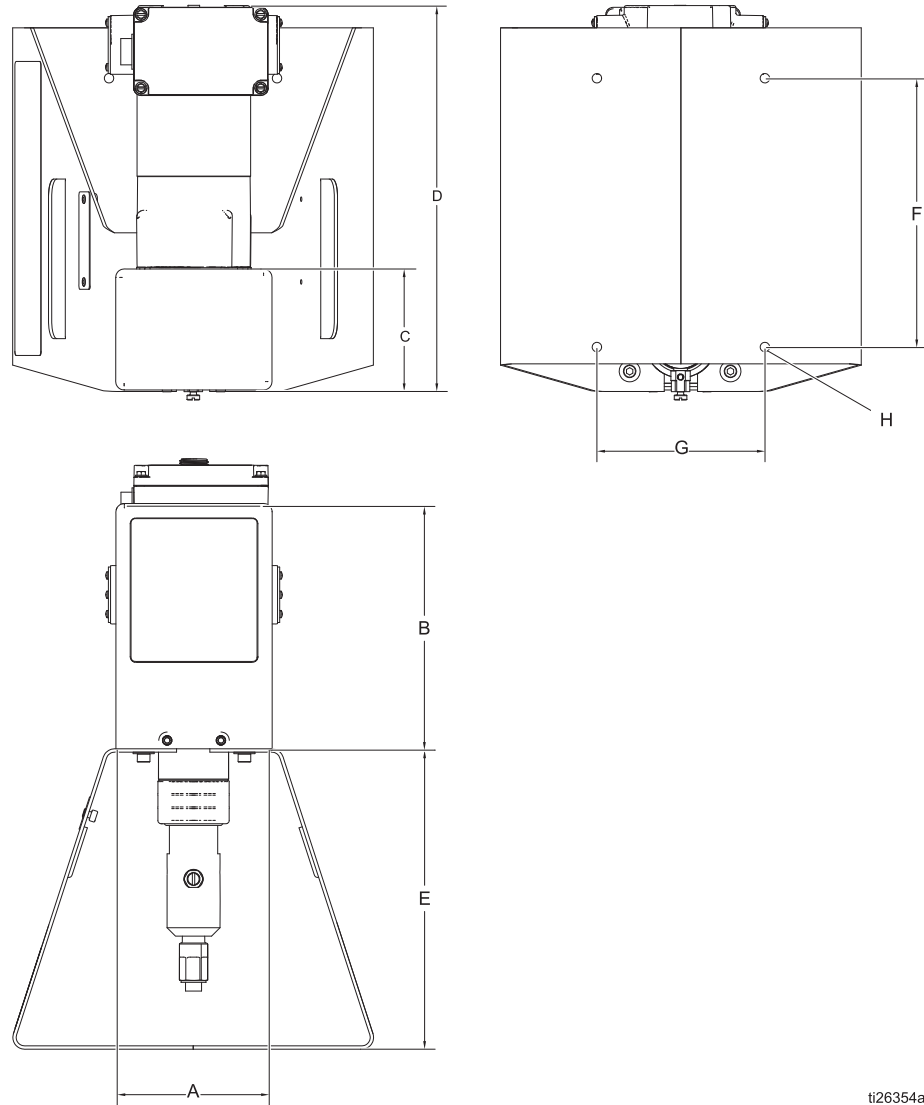
B32461	5/8" FKM ETP Fluid Section Conversion Kit*
B32462	3/4" FKM ETP Fluid Section Conversion Kit*
B32463	1/8" HNBR Fluid Section Conversion Kit*
B32464	3/16" HNBR Fluid Section Conversion Kit*
B32465	1/4" HNBR Fluid Section Conversion Kit*
B32466	3/8" HNBR Fluid Section Conversion Kit*
B32467	1/2" HNBR Fluid Section Conversion Kit*
B32468	5/8" HNBR Fluid Section Conversion Kit*
B32469	3/4" HNBR Fluid Section Conversion Kit*
B32470	1/8" FFKM Fluid Section Conversion Kit*
B32471	3/16" FFKM Fluid Section Conversion Kit*
B32472	1/4" FFKM Fluid Section Conversion Kit*
B32473	3/8" FFKM Fluid Section Conversion Kit*
B32474	1/2" FFKM Fluid Section Conversion Kit*
B32475	5/8" FFKM Fluid Section Conversion Kit*
B32476	3/4" FFKM Fluid Section Conversion Kit*
B32107	Cycle Count Accessory Kit for 12 VDC 78 in-lb Motor**
B32479	Cycle Count Accessory Kit for 12 VDC 150 in-lb Motor**
B32480	Cycle Count Accessory Kit for all VAC Motors**

* Includes ref. 5, 6, 19, 38, 39, 40, 41, 42, and 43.

** Includes ref. 91, 92, 93, 94, 95, 96, 97, and 98.

Dimensions

Wolverine Basic Pump Dimensions

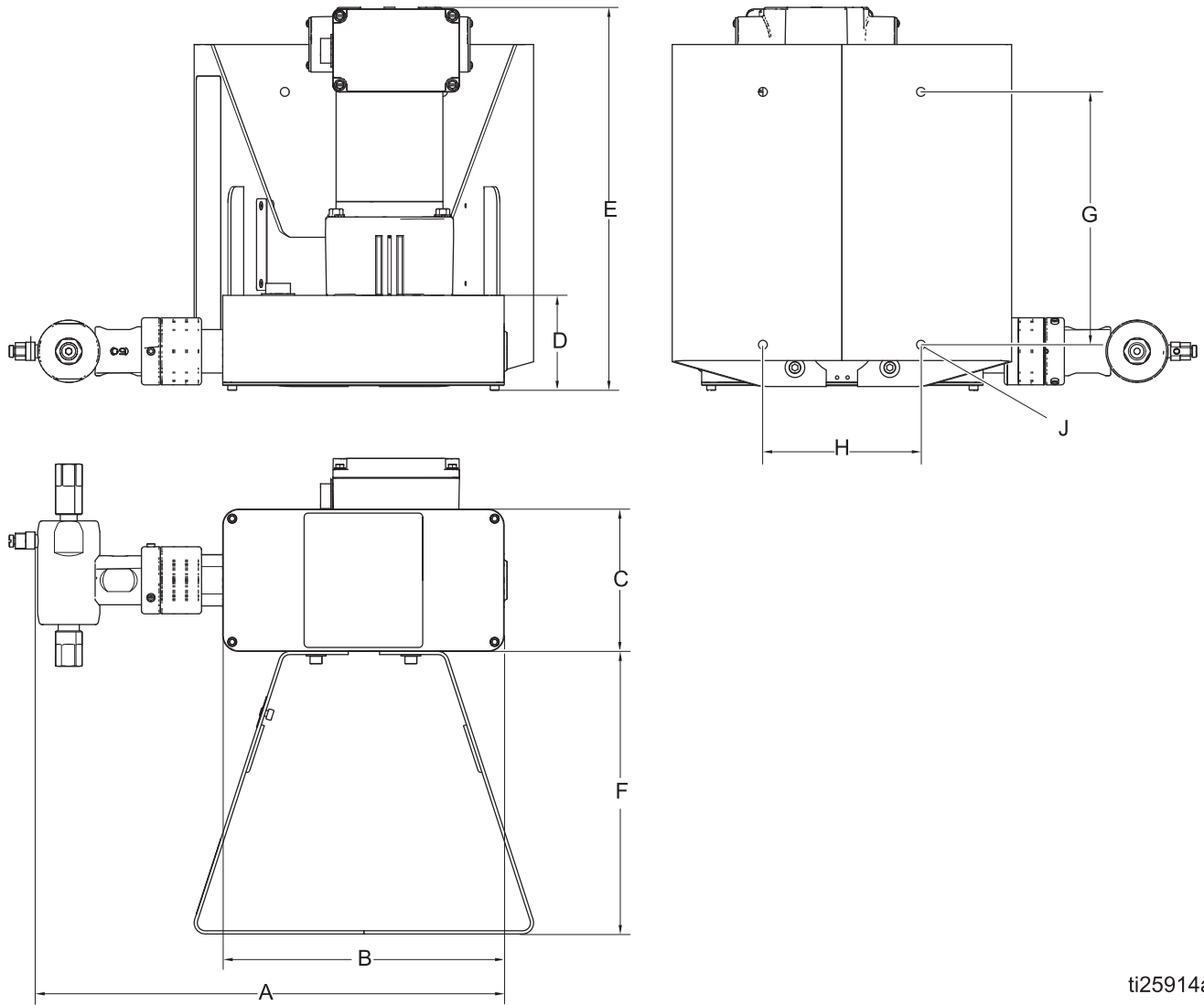


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FIG. 28 Wolverine Basic Pump Dimensions

A	B	C	D	E	F	G	H
4.65 in. (11.8 cm)	7.35 in. (18.7 cm)	3.6 in. (9.1 cm)	11.5 in. (29.2 cm)	8.9 in. (22.7 cm)	8.0 in. (20.3 cm)	5.0 in. (12.7 cm)	0.281 in. dia (0.714 cm)

Wolverine Advanced Pump Dimensions



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FIG. 29 Wolverine Advanced Pump Dimensions

A	B	C	D	E	F	G	H	J
15.65 in. (39.8 cm)	8.9 in. (22.6 cm)	4.5 in. (11.4 cm)	2.85 in. (7.2 cm)	11.9 in. (30.2 cm)	8.9 in. (22.7 cm)	8.0 in. (20.3 cm)	5.0 in. (12.7 cm)	0.281 in. dia (0.714 cm)

Technical Data

Wolverine Chemical Injection Pump		
	US	Metric
Maximum fluid working pressure	Varies by model. See Models on page 3.	
Input Voltage		
CI-12X-XXX-XXX-X	12 VDC	
CI-1AX-XXX-XXX-X	115 VAC	
CI-2AX-XXX-XXX-X	230 VAC	
CI-4AX-XXX-XXX-X	230 VAC or 460 VAC 3 Phase	
Input Current		
CI-12S-XXX-XXX-X	11 A maximum (small motor)	
CI-12L-XXX-XXX-X	16 A maximum (large motor)	
CI-1AX-XXX-XXX-X	2.0 A	
CI-2AX-XXX-XXX-X	1.2 A	
CI-4AX-XXX-XXX-X	0.59 A @ 230 VAC 3 Phase	
CI-4AX-XXX-XXX-X	0.30 A @ 460 VAC 3 Phase	
Power Connection	See Electrical Connections on page 22.	
Environmental temperature range	-40°–176°F	-40°–80°C
Noise (dBa)		
Maximum sound pressure	<70 dBa	
Inlet/Outlet Sizes		
Fluid inlet size	1/4 in. npt(f)	
Fluid outlet size	1/4 in. npt(f)	
Materials of Construction		
Pump/Check Valve Seal Material	See Configuration Chart on page 15 for seal material. All other packing materials are PEEK and PTFE unless otherwise noted.	
Wetted Parts	See Configuration Chart on page 15 for plunger material. All other materials are 316 stainless steel unless otherwise noted.	
Weight		
Wolverine Basic	31 lb.	14 kg
Wolverine Advanced Simplex	35 lb.	16 kg
Wolverine Advanced Duplex	39 lb.	18 kg

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Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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