

# REACTOR™

312063F

**Hydraulic, Heated, Plural Component Proportioner**  
***For spraying polyurethane foam and polyurea coatings.***  
***Not for use in explosive atmospheres.***

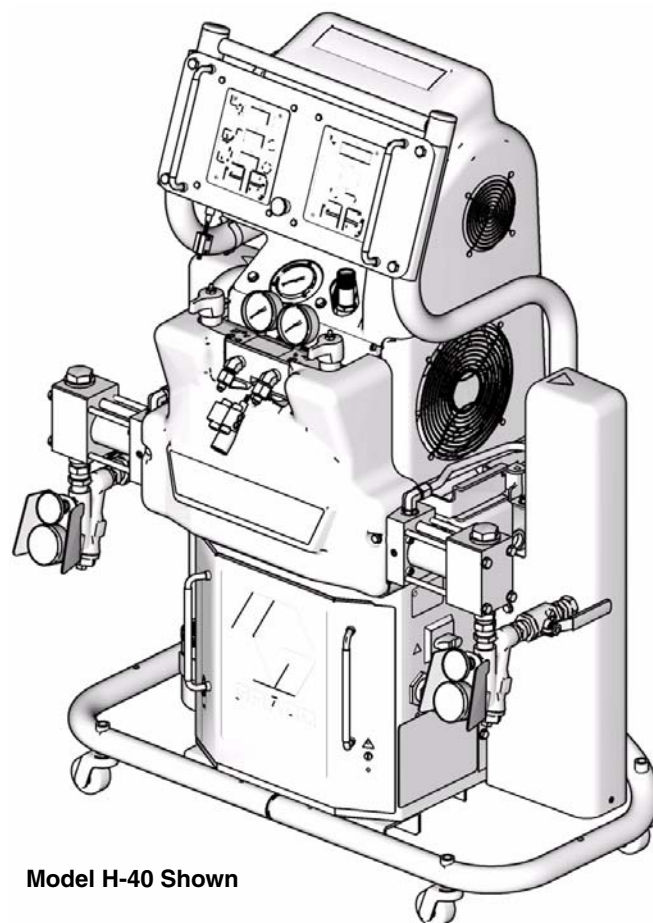
U.S. Patent Pending



### Important Safety Instructions

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

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



Model H-40 Shown

TI9830a



9902471  
Conforms to ANSI/UL  
Std. 499 Certified to  
CAN/CSA Std.  
C22.2 No. 88

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# Models

## H-25 SERIES

Part, Series	Full Load Peak Amps* Per Phase	Voltage (phase)	System Watts†	Primary Heater Watts	Max Flow Rate◆ lb/min (kg/min)	Approximate Output per Cycle (A+B) gal. (liter)	Hydraulic Pressure Ratio	Maximum Fluid Working Pressure psi (MPa, bar)
255400, D	69	230V (1)	15,960	8,000	22 (10)	0.063 (0.24)	1.91:1	2000 (13.8, 138)
255401, D	46	230V (3)	15,960	8,000	22 (10)	0.063 (0.24)	1.91:1	2000 (13.8, 138)
255402, D	35	400V (3)	15,960	8,000	22 (10)	0.063 (0.24)	1.91:1	2000 (13.8, 138)
255406, D	100	230V (1)	23,260	15,300	22 (10)	0.063 (0.24)	1.91:1	2000 (13.8, 138)
255407, D	59	230V (3)	23,260	15,300	22 (10)	0.063 (0.24)	1.91:1	2000 (13.8, 138)
255408, D	35	400V (3)	23,260	15,300	22 (10)	0.063 (0.24)	1.91:1	2000 (13.8, 138)

## H-40 SERIES

Part, Series	Full Load Peak Amps* Per Phase	Voltage (phase)	System Watts†	Primary Heater Watts	Max Flow Rate◆ lb/min (kg/min)	Approximate Output per Cycle (A+B) gal. (liter)	Hydraulic Pressure Ratio	Maximum Fluid Working Pressure psi (MPa, bar)
★253400, D	100	230V (1)	23,100	12,000	45 (20)	0.063 (0.24)	1.91:1	2000 (13.8, 138)
253401, D	71	230V (3)	26,600	15,300	45 (20)	0.063 (0.24)	1.91:1	2000 (13.8, 138)
253402, D	41	400V (3)	26,600	15,300	45 (20)	0.063 (0.24)	1.91:1	2000 (13.8, 138)
253407, D	95	230V (3)	31,700	20,400	45 (20)	0.063 (0.24)	1.91:1	2000 (13.8, 138)
253408, D	52	400V (3)	31,700	20,400	45 (20)	0.063 (0.24)	1.91:1	2000 (13.8, 138)

## H-50 SERIES

Part, Series	Full Load Peak Amps* Per Phase	Voltage (phase)	System Watts†	Primary Heater Watts	Max Flow Rate◆ lb/min (kg/min)	Approximate Output per Cycle (A+B) gal. (liter)	Hydraulic Pressure Ratio	Maximum Fluid Working Pressure psi (MPa, bar)
‡★253725, D	100	230V (1)	23,100	12,000	52 (24)	0.073 (0.28)	1.64:1	1700 (11.7, 117)
‡253726, D	71	230V (3)	26,600	15,300	52 (24)	0.073 (0.28)	1.64:1	2000 (13.8, 138)
‡253727, D	41	400V (3)	26,600	15,300	52 (24)	0.073 (0.28)	1.64:1	2000 (13.8, 138)
‡256505, D	95	230V (3)	31,700	20,400	52 (24)	0.073 (0.28)	1.64:1	2000 (13.8, 138)
‡256506, D	52	400V (3)	31,700	20,400	52 (24)	0.073 (0.28)	1.64:1	2000 (13.8, 138)

**H-XP2 SERIES**

Part, Series	Full Load Peak Amps* Per Phase	Voltage (phase)	System Watts†	Primary Heater Watts	Max Flow Rate◆ gpm (lpm)	Approximate Output per Cycle (A+B) gal. (liter)	Hydraulic Pressure Ratio	Maximum Fluid Working Pressure psi (MPa, bar)
255403, D	100	230V (1)	23,260	15,300	1.5 (5.7)	0.042 (0.16)	2.79:1	3500 (24.1, 241)
255404, D	59	230V (3)	23,260	15,300	1.5 (5.7)	0.042 (0.16)	2.79:1	3500 (24.1, 241)
255405, D	35	400V (3)	23,260	15,300	1.5 (5.7)	0.042 (0.16)	2.79:1	3500 (24.1, 241)

**H-XP3 SERIES**

Part, Series	Full Load Peak Amps* Per Phase	Voltage (phase)	System Watts†	Primary Heater Watts	Max Flow Rate◆ gpm (lpm)	Approximate Output per Cycle (A+B) gal. (liter)	Hydraulic Pressure Ratio	Maximum Fluid Working Pressure psi (MPa, bar)
★253403, D	100	230V (1)	23,100	12,000	2.8 (10.6)	0.042 (0.16)	2.79:1	3500 (24.1, 241)
253404, D	95	230V (3)	31,700	20,400	2.8 (10.6)	0.042 (0.16)	2.79:1	3500 (24.1, 241)
253405, D	52	400V (3)	31,700	20,400	2.8 (10.6)	0.042 (0.16)	2.79:1	3500 (24.1, 241)


\* Full load amps with all devices operating at maximum capabilities. Fuse requirements at various flow rates and mix chamber sizes may be less.

† Total system watts, based on maximum hose length for each unit:

- Parts 255400 through 255408, 310 ft (94.6 m) maximum heated hose length, including whip hose.
- Parts 253400 through 253408, 253725 through 25372, 256505, and 256506, 410 ft (125 m) maximum heated hose length, including whip hose.

◆ Maximum flow rate given for 60 Hz operation. For 50 Hz operation, maximum flow rate is 5/6 of 60 Hz maximum flow.

★ CE approval does not apply.

‡  does not apply

# Supplied Manuals

The following manuals are shipped with the Reactor™ Proportioner. Refer to these manuals for detailed equipment information.

Order Part 15M334 for a compact disk of Reactor manuals translated in several languages.

Manuals are also available at [www.graco.com](http://www.graco.com).

Reactor Hydraulic Proportioner	
Part	Description
312062	Reactor Hydraulic Proportioner, Operation Manual (English)
Reactor Electrical Diagrams	
Part	Description
312064	Reactor Hydraulic Proportioner, Electrical Diagrams (English)
Proportioning Pump	
Part	Description
312068	Proportioning Pump Repair-Parts Manual (English)

## Translations

The Reactor Repair-Parts manual is available in the following languages. See the following chart for specific languages and corresponding part numbers.

Part	Language
312063	English
312428	Chinese
312429	Dutch
312430	French
312431	German
312432	Italian
312433	Japanese
312434	Korean
312435	Russian
312436	Spanish

## Related Manuals






The following manuals are for accessories used with the Reactor™.







Order Part 15M334 for a compact disk of Reactor manuals translated in several languages. Order Part 15B381 for a compact disk of Fusion manual translated in several languages.

Feed Pump Kits	
Part	Description
309815	Instruction-Parts Manual (English)
Air Supply Kit	
Part	Description
309827	Instruction-Parts Manual (English) for Feed Pump Air Supply Kit
Circulation and Return Tube Kits	
Part	Description
309852	Instruction-Parts Manual (English)
Heated Hose	
Part	Description
309572	Instruction-Parts Manual (English)
Circulation Kit	
Part	Description
309818	Instruction-Parts Manual (English)
Circulation Valve Kit	
Part	Description
312070	Instruction-Parts Manual (English)
Data Reporting Kit	
Part	Description
309867	Instruction-Parts Manual (English)
Rupture Disk Assembly Kit	
Part	Description
309969	Instruction-Parts Manual (English)
Proportioning Pump Repair Kits	
Part	Description
312071	Seal Kits Instruction-Parts Manual (English)

# 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 symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

 <b>WARNING</b>	
	<p><b>ELECTRIC SHOCK HAZARD</b></p> <p>Improper grounding, setup, or usage of the system can cause electric shock.</p> <ul style="list-style-type: none"> <li>• Turn off and disconnect power cord before servicing equipment.</li> <li>• Use only grounded electrical outlets.</li> <li>• Use only 3-wire extension cords.</li> <li>• Ensure ground prongs are intact on sprayer and extension cords.</li> <li>• Do not expose to rain. Store indoors.</li> </ul>
	<p><b>TOXIC FLUID OR FUMES HAZARD</b></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"> <li>• Read MSDS's to know the specific hazards of the fluids you are using.</li> <li>• Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> <li>• Always wear impervious gloves when spraying or cleaning equipment.</li> </ul>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• Protective eyewear</li> <li>• Clothing and respirator as recommended by the fluid and solvent manufacturer</li> <li>• Gloves</li> <li>• Hearing protection</li> </ul>
	<p><b>SKIN INJECTION HAZARD</b></p> <p>High-pressure fluid from gun, 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. <b>Get immediate surgical treatment.</b></p> <ul style="list-style-type: none"> <li>• Do not point gun at anyone or at any part of the body.</li> <li>• Do not put your hand over the spray tip.</li> <li>• Do not stop or deflect leaks with your hand, body, glove, or rag.</li> <li>• Do not spray without tip guard and trigger guard installed.</li> <li>• Engage trigger lock when not spraying.</li> <li>• Follow <b>Pressure Relief Procedure</b> in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.</li> </ul>

 <b>WARNING</b>	
	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Use and clean equipment only in well ventilated area.</li> <li>• Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.</li> <li>• Ground equipment, personnel, object being sprayed, and conductive objects in work area. See <b>Grounding</b> instructions.</li> <li>• Use only Graco grounded hoses.</li> <li>• Check gun resistance daily.</li> <li>• If there is static sparking or you feel a shock, <b>stop operation immediately</b>. Do not use equipment until you identify and correct the problem.</li> <li>• Do not flush with gun electrostatics on. Do not turn on electrostatics until all solvent is removed from system.</li> <li>• Keep a working fire extinguisher in the work area.</li> </ul>
	<p><b>PRESSURIZED ALUMINUM PARTS HAZARD</b></p> <p>Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.</p>
	<p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• This equipment is for professional use only.</li> <li>• Do not leave the work area while the equipment is energized or under pressure. Turn off all equipment and follow the <b>Pressure Relief Procedure</b> in this manual when the equipment is not in use.</li> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Data</b> in all equipment manuals.</li> <li>• Use fluids and solvents that are compatible with equipment wetted parts. See <b>Technical Data</b> in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS forms from distributor or retailer.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>• Do not alter or modify equipment.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or over bend hoses or use hoses to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul>
	<p><b>MOVING PARTS HAZARD</b></p> <p>Moving parts can pinch or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> in this manual. Disconnect power or air supply.</li> </ul>
	<p><b>BURN HAZARD</b></p> <p>Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns, do not touch hot fluid or equipment. Wait until equipment/fluid has cooled completely.</p>

5. Place a rag around base of oil filter (135) to prevent oil from spilling. Unscrew filter 1/4-3/4 turn to break air lock in filter. Wait five minutes to allow oil in filter to drain back into reservoir. Unscrew filter and remove.
6. Reinstall drain plug (110k).
7. Replace filter (135):
  - a. Coat filter seal with fresh oil.
  - b. Screw filter on snug, then an additional 1/4 turn.
8. Refill reservoir with approved hydraulic fluid. See Table 9.
9. Proceed with normal operation.



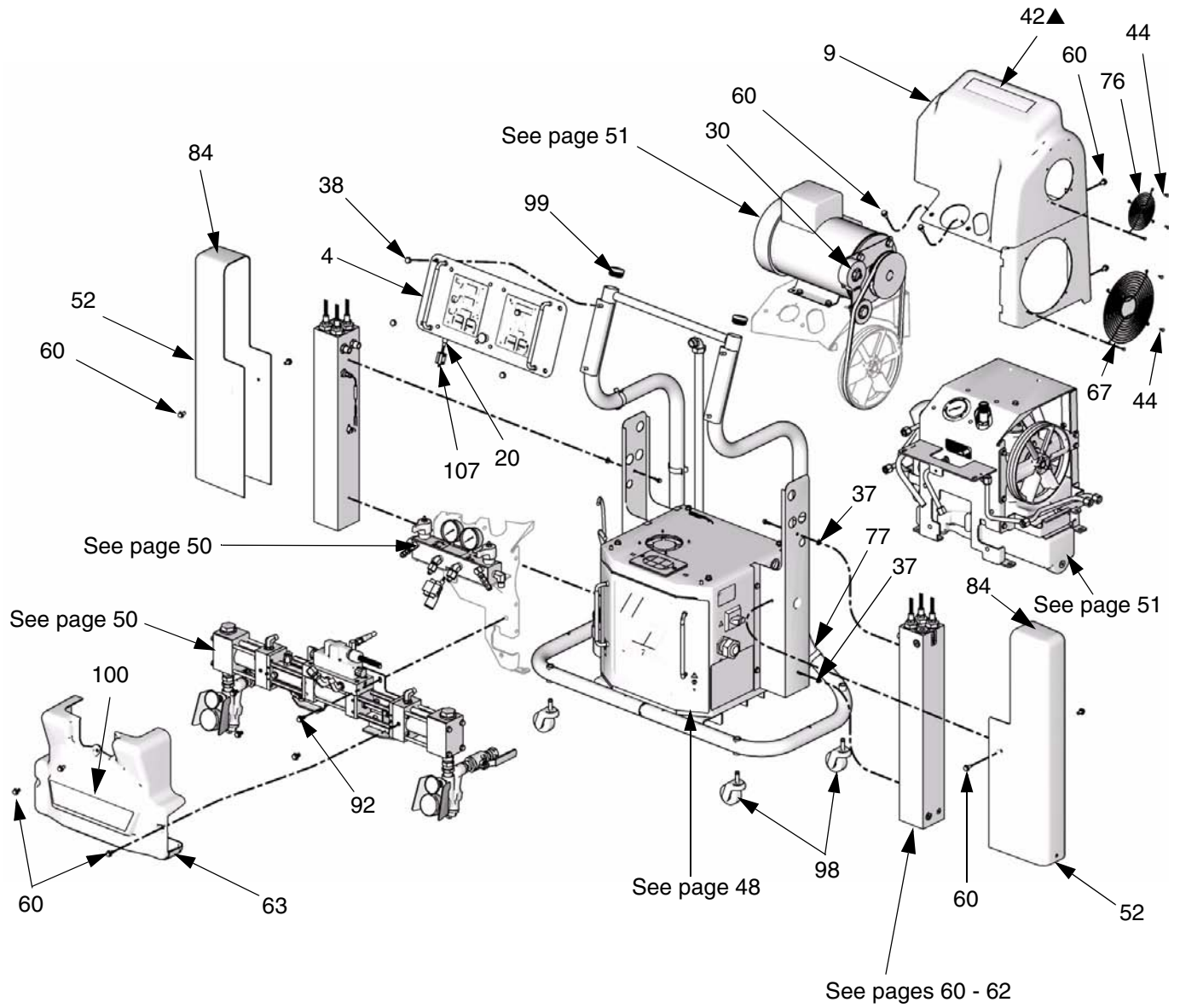
Upon starting motor, hydraulic pump may make a screeching noise until primed. If this noise continues for more than 30 seconds, switch off motor control. See **Hydraulic Drive System**, page 21.

**Table 9: Approved Anti-Wear (AW) Hydraulic Oils**

Supplier	Name
Citgo	A/W ISO Grade 46
Amsoil	AWI ISO Grade 46 (synthetic*)
BP Oil International	Energol <sup>®</sup> HLP-HM, ISO Grade 46
Carl Bechem GmbH	Staroil HVI 46
Castrol	Hyspin AWS 46
Chevron	Rykon <sup>®</sup> AW, ISO 46
Exxon	Humble Hydraulic H, ISO Grade 46
Mobil	Mobil DTE 25, ISO Grade 46
Shell	Shell Tellus, ISO Grade 46
Texaco	Texaco AW Hydraulic, ISO Grade 46
* Note: Do not mix mineral-based and synthetic hydraulic oils. Completely drain oil from reservoir and pump prior to converting between oils.	
If the approved oils are not available in your area, use an alternative hydraulic oil meeting the following requirements:	
Oil Type: . . . . . Anti-Wear (AW) Hydraulic ISO Grade: . . . . . 46 Viscosity, cSt at 40°C: . . . . . 43.0-47.0 Viscosity, cSt at 100°C: . . . . . 6.5-9.0 Viscosity Index: . . . . . 95 or higher Pour Point, ASTM D 97: . . . . . -15°F (-26°C) or lower Other essential properties: . . . . . Formulated for anti-wear, anti-foaming, oxidation stability, corrosion protection, and water separation	



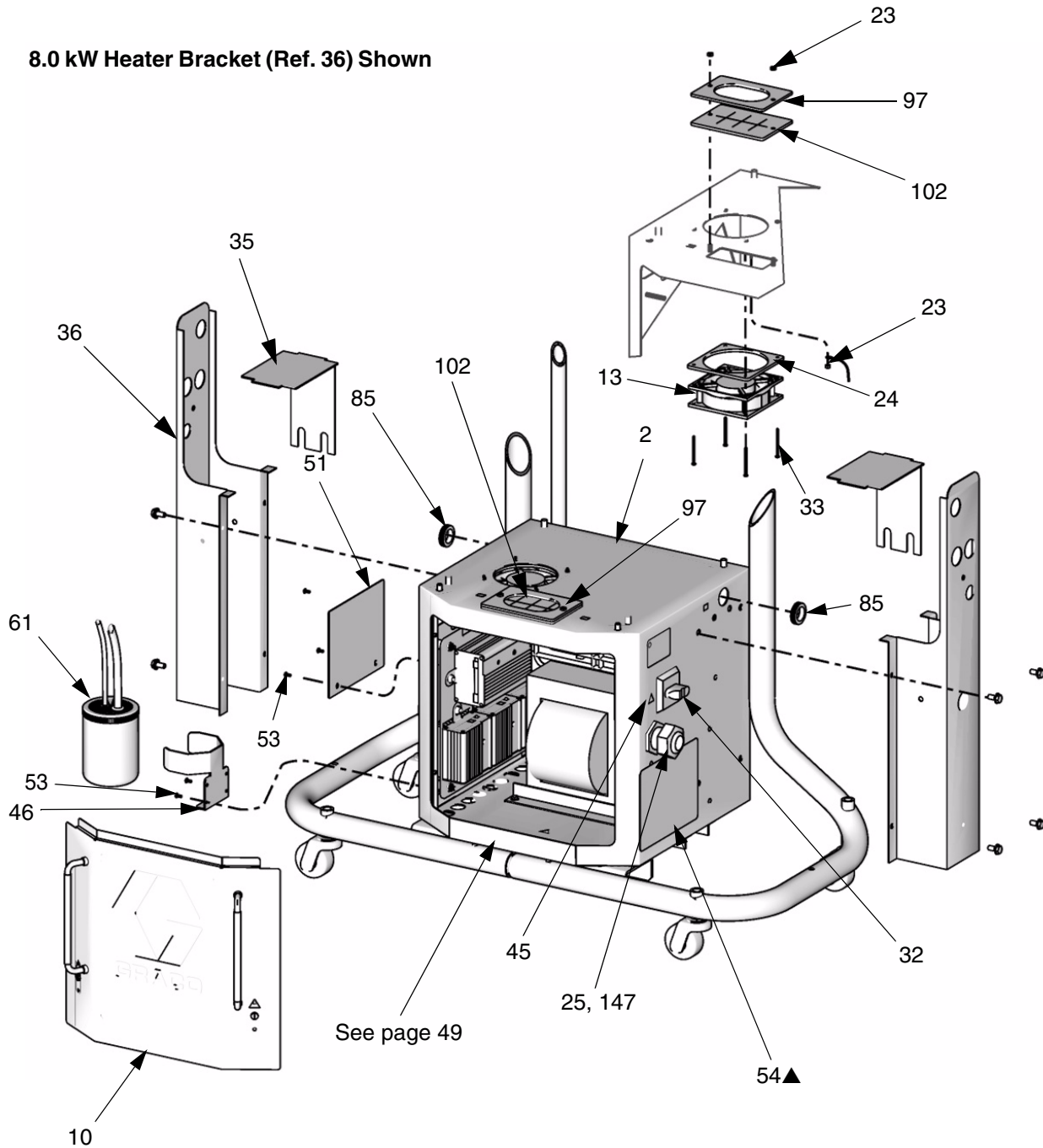
# Parts



ti9831a

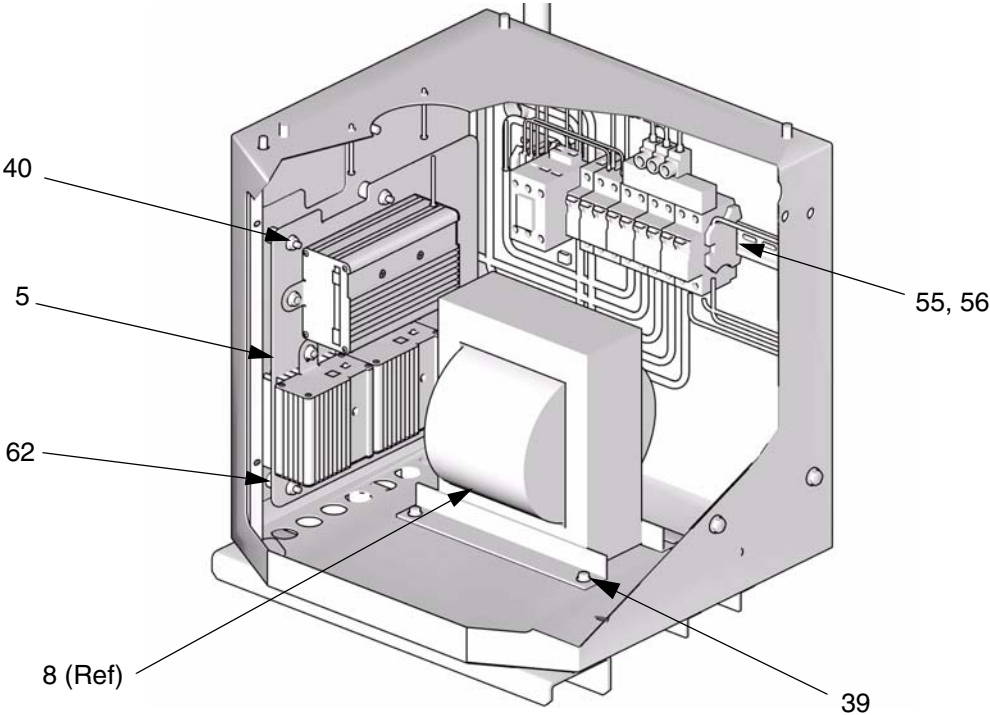
## Detail of Cabinet Area

8.0 kW Heater Bracket (Ref. 36) Shown



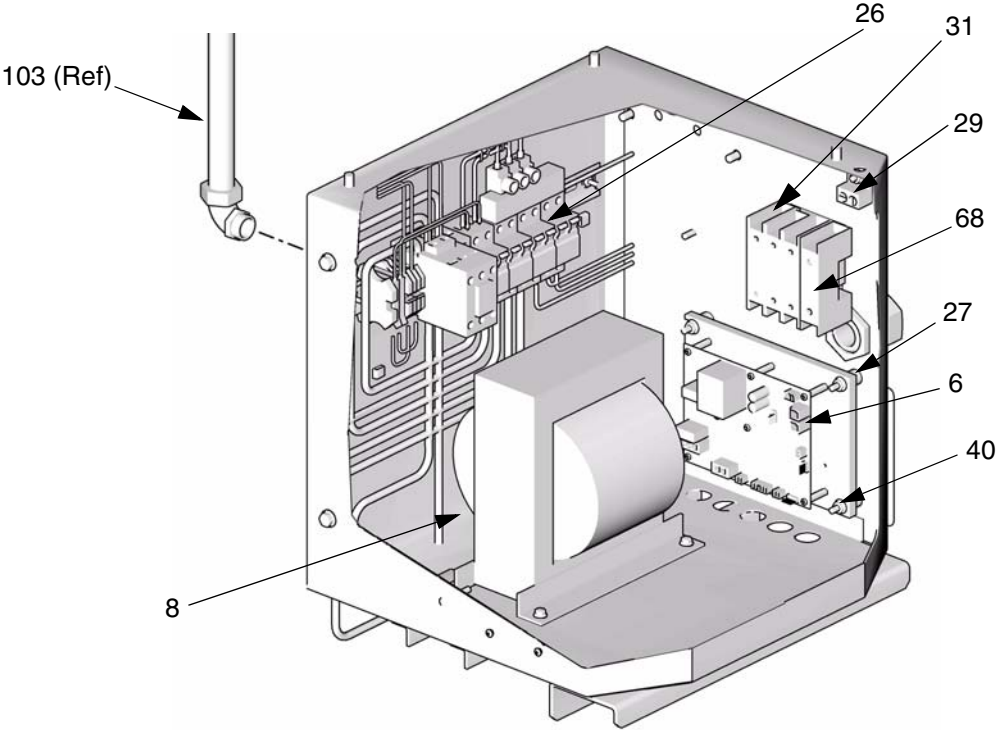
TI9834a

**Left Side of Cabinet**



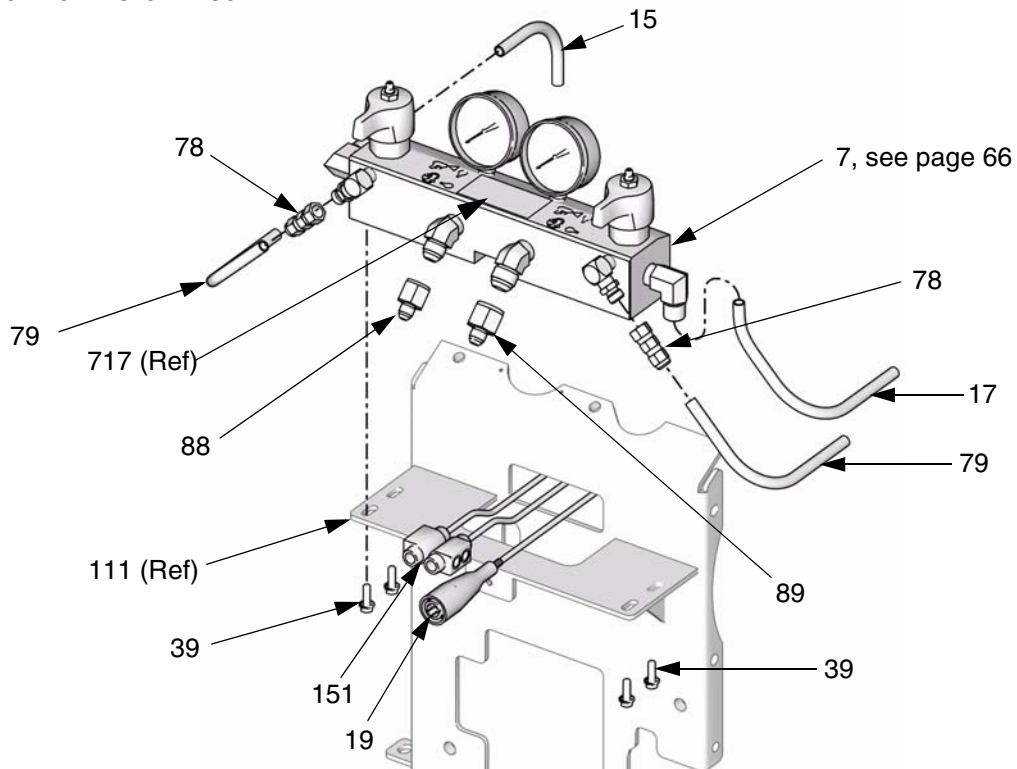
T19835a

**Right Side of Cabinet**



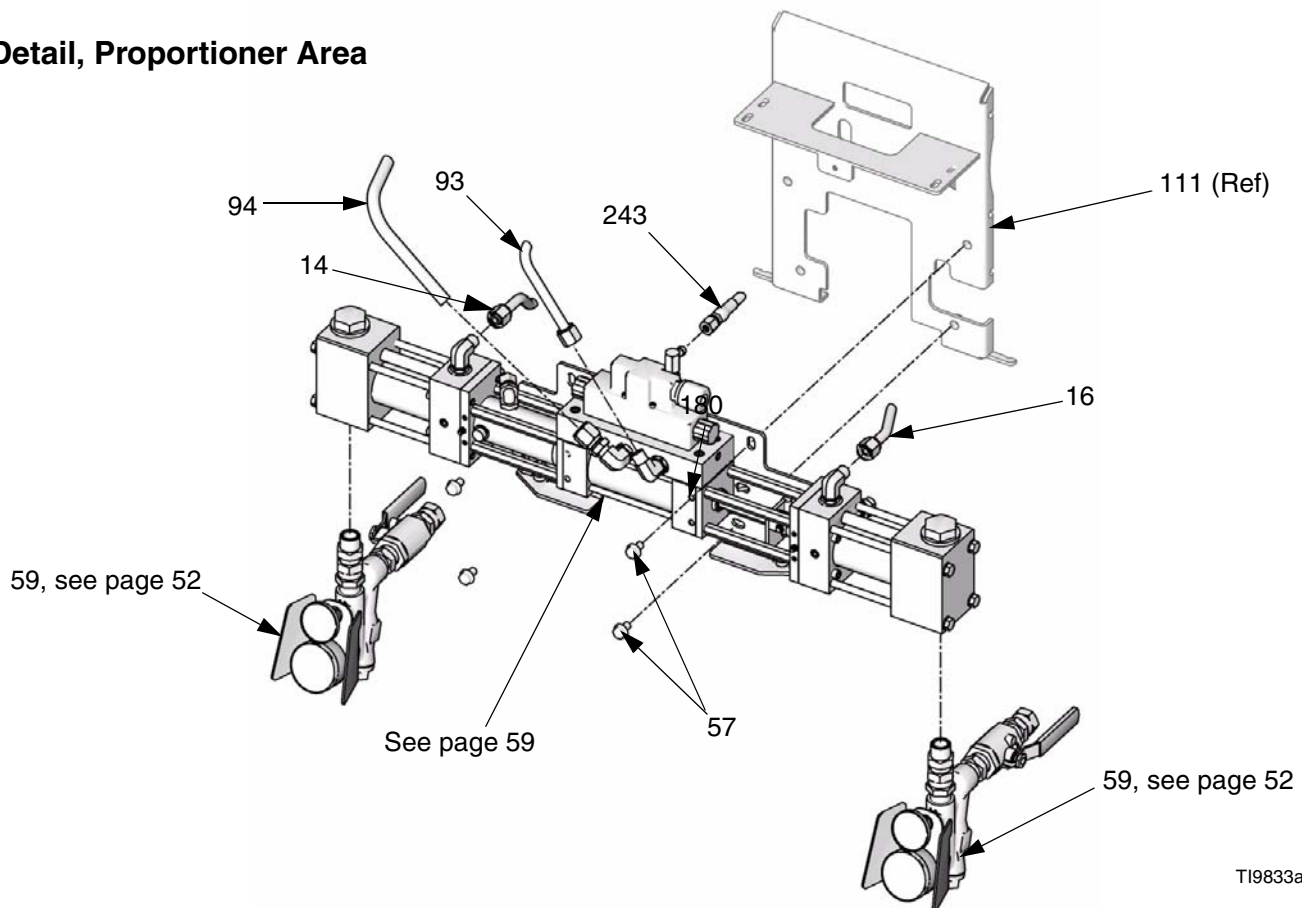
T19836a

## Detail, Fluid Manifold Area

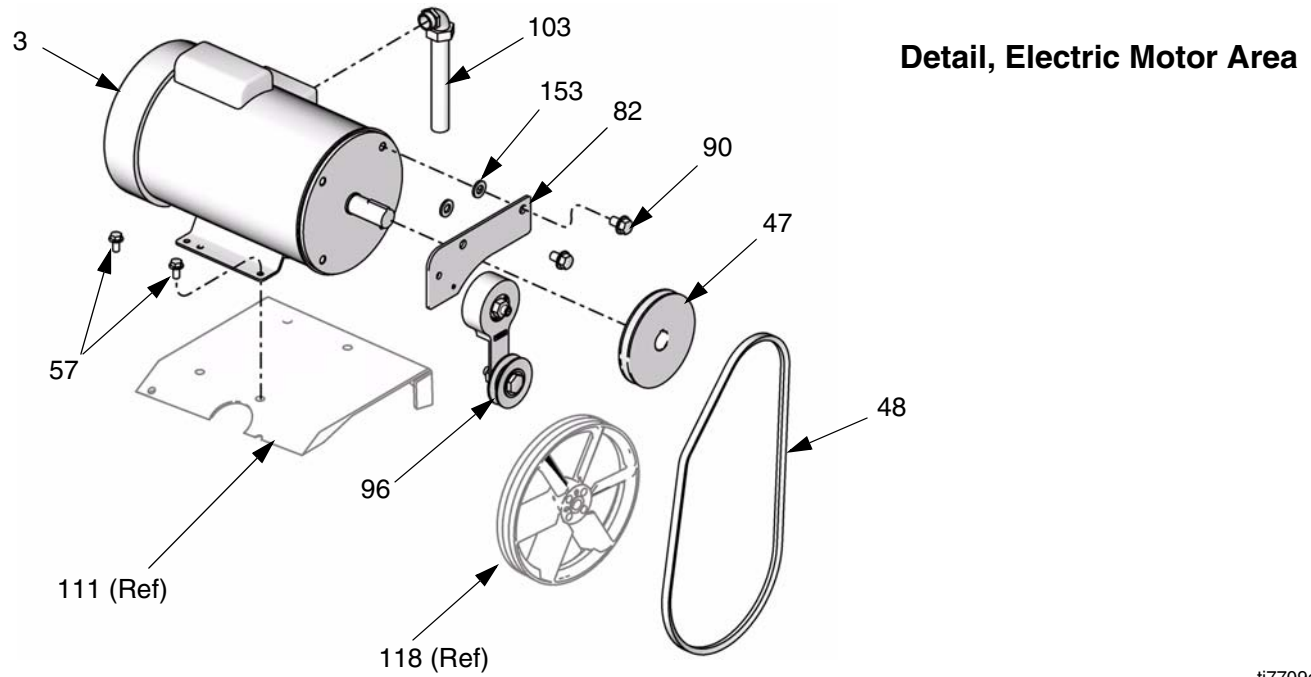


TI9838a

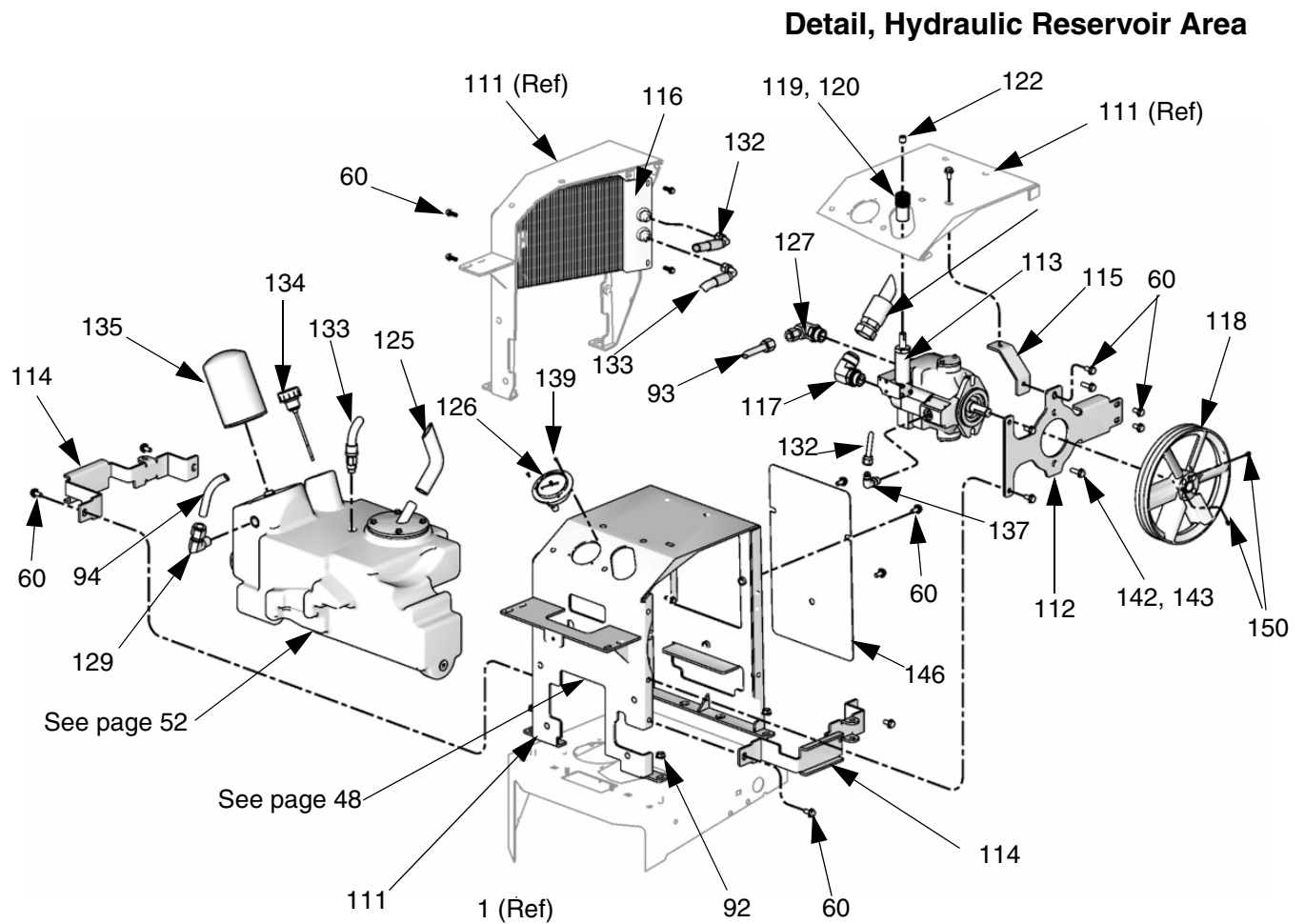
## Detail, Proportioner Area



TI9833a



ti7709a

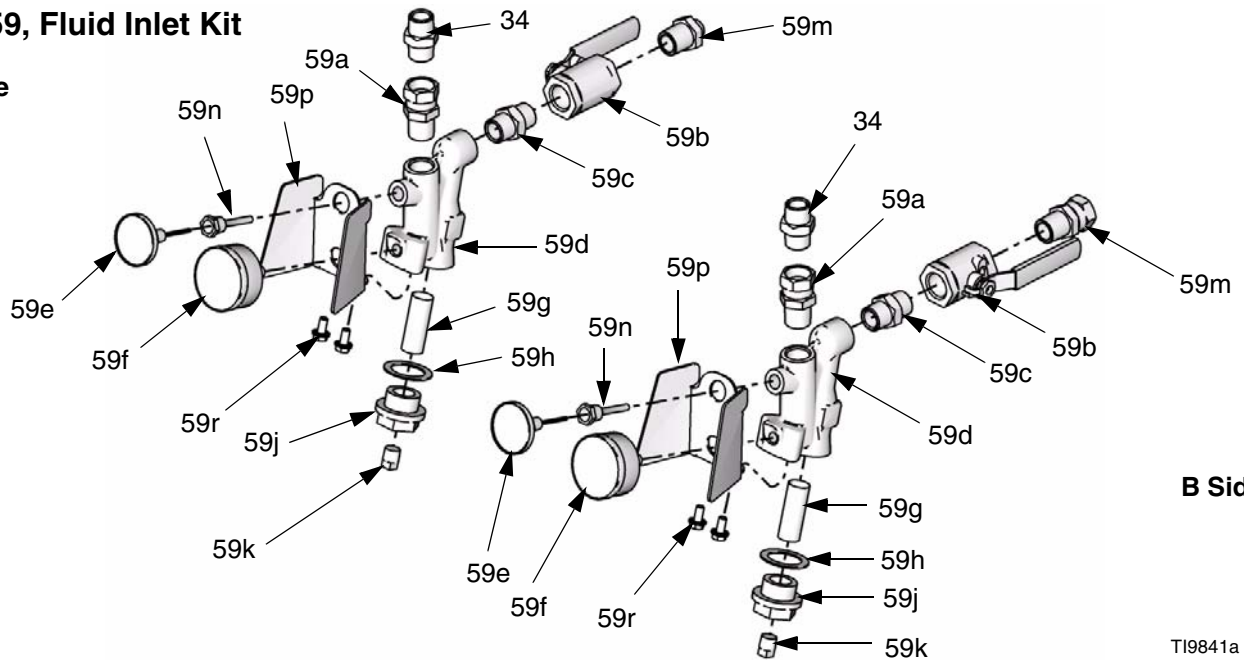


Ti9832b



## Ref. 59, Fluid Inlet Kit

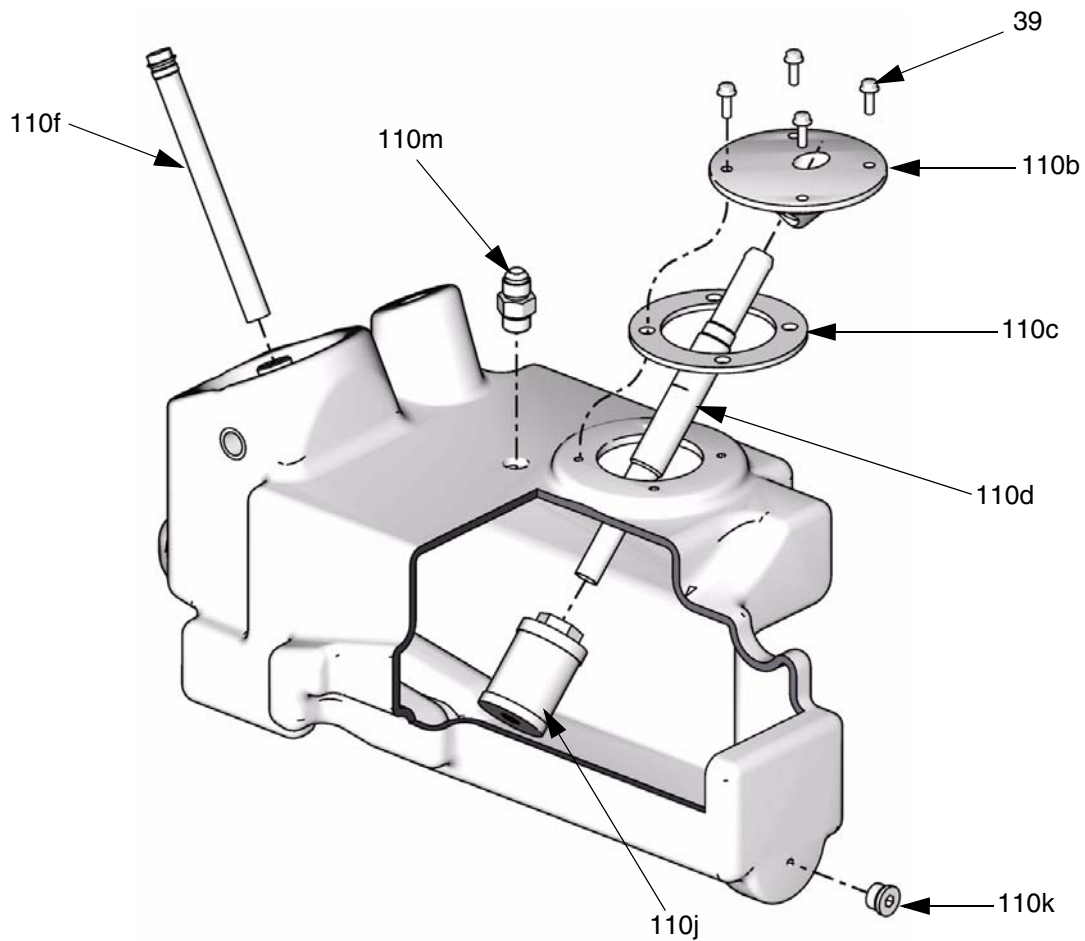
A Side



B Side

TI9841a

## Ref. 110, Hydraulic Reservoir



ti9840a

## Parts Used on All Models

Ref	Part	Description	Qty.	Ref	Part	Description	Qty.
2		HEATER; see page 55 for part numbers	2	45▲	189930	LABEL, caution	2
3		MOTOR; see page 55 for part numbers	1	46	247844	BRACKET, reservoir, lube	1
4	245974	DISPLAY; page 64	1	47	247845	PULLEY, drive	1
5		CONTROL, temperature; see page 55 for part numbers	1	48	803889	BELT	1
6		BOARD, circuit, motor control; see page 55 for part numbers	1	49★	15B593	SHIELD, membrane switch	1
7	247823	MANIFOLD, fluid; page 66	1	50★	308212	PAD, pamphlet safety	1
8		TRANSFORMER; see page 55 for part numbers	1	51	15B775	COVER, wire access	1
9	247832	COVER, motor	1	52		COVER, heater; see page 55 for part numbers	2
10	246976	COVER, main cabinet	1	53		SCREW, machine, pan hd; 8-32 x 3/8	7
11		PUMP, proportioning; see page 55 for part numbers	1	54▲	15G280	LABEL, warning	1
13	115834	FAN, cooling	1	55	113505	NUT, KEPS, hex hd	4
14		TUBE, inlet, component A; see page 55 for part numbers	1	56	112776	WASHER, plain	2
15		TUBE, outlet, component A; see page 55 for part numbers	1	57	113802	SCREW, hex hd, flanged	8
16		TUBE, inlet, component B; see page 55 for part numbers	1	58★		STRAP, tie, wire	20
17		TUBE, outlet, component B; see page 55 for part numbers	1	59	255159	KIT, inlet, fluid; includes 59a-59r; see page 52	1
18★	247787	CABLE, harness, heater overtemp., includes 12-pin connector	1	59a		. UNION, swivel; 3/4 npt(m) x 3/4 npsm(f)	3
19	15B380	CABLE, hose, control; see manual 312064	1	59b		. VALVE, ball; 3/4 npt (fbe)	2
20	15B383	CABLE, display	1	59c		. NIPPLE; 3/4 npt	2
21★	261669	KIT, fluid temp sensor, coupler	1	59d	247503	. MANIFOLD, strainer, inlet	2
23	103181	WASHER, lock ext	1	59e	102124	. THERMOMETER, dial	2
24	15B360	GASKET, fan	1	59f	120300	. GAUGE, pressure, fluid	2
25	255047	STRAIN RELIEF, M40 thread	1	59g	180199	. ELEMENT, filter; 20 mesh (standard)	2
26		MODULE; see page 55 for part numbers	1	59h	15H200	. GASKET, strainer; PTFE	2
27	116149	SPACER	4	59j	15H199	. PLUG, strainer	2
29	117666	TERMINAL, ground	1	59k		. PLUG, pipe; 3/8 npt	2
30	C19843	SCREW, CAP, socket hd	1	59m		. UNION, swivel; 3/4 npt(m) x 1/2 npt(f); A side only	1
31	247841	SWITCH, disconnect	1	59n	15D757	. HOUSING, thermometer	2
32	247842	KNOB, operator disconnect	1	59p	253481	. GUARD, gauge	2
33	117723	SCREW, mach, slotted hd	4	59r	111800	. SCREW, cap, hex hd; 5/16-18 x 5/8 in. (16 mm)	4
34	C20487	NIPPLE, hex	2	60	111800	SCREW, cap, hex hd	35
35		COVER, heater wire; see page 55 for part numbers	2	61	247849	RESERVOIR, lube hose assy	1
36		BRACKET, heater; see page 55 for part numbers	2	62	247782	SPACER	4
37	167002	INSULATOR, heat	4	63	247850	COVER, front	1
38	117623	NUT, cap (3/8-16)	4	65	15H185	WIRE, mechanical switch cable; see page 58	1
39	113796	SCREW, flanged, hex hd	14	66★		CONNECTOR, 2 PIN, motor power; see page 55 for part numbers	1
40	115942	NUT, hex, flange head	9	67	117284	GRILL, fan guard	1
42	15K817	LABEL, fault codes	1	68		SWITCH, added pole; see page 55 for part numbers	1
44		RIVET, pop; 3/16 in. (5 mm) x 0.4 in. (10 mm)	8	74★	206995	THROAT SEAL LIQUID; 1 quart	1
				76	115836	GUARD, finger	1
				77	186494	CLIP, spring	5
				78	205447	COUPLING, hose	2
				79	054826	TUBE, PTFE; 1/4 in. (6 mm) ID; 8 ft (2.4 m)	8

Ref	Part	Description	Qty.	Ref	Part	Description	Qty.
82	15H207	BRACKET, tensioner	1	118		PULLEY, fan	1
84▲	189285	LABEL, caution	2		247856	H-40, H-50, H-XP3 models only	
85	114269	GROMMET, rubber	2		247857	H-25, H-XP2 models only	
88	247851	FITTING, reducer #5 x #8 JIC	1	119	15H512	LABEL, control	1
89	247852	FITTING, reducer #6 x #10 JIC	1	120	15H204	KNOB, pressure	1
90	111802	SCREW, cap, hex hd; 1/2-13 x 3/4 in. (19 mm)	2	122	117560	SCREW, set, socket hd	1
				125	247793	HOSE, inlet, coupled	1
92	112958	NUT, hex, flanged; 3/8-16	4	126	255029	GAUGE, pressure, fluid, panel mount	1
93	15T895	HUSE, supply	1				
94	247784	TUBE, return	1	127		ELBOW	1
96	247853	ADJUSTER, belt, tensioner	1		121320	H-40, H-50, H-XP3 models only	
97	15G816	COVER, plate, wire way	1		121321	H-25, H-XP2 models only	
98	120302	CASTER	4	129	255036	ELBOW, male	1
99	112125	PLUG, tube	2	130★	117792	GUN, grease	1
100		LABEL; see page 55 for part numbers	1	131★	117773	GREASE, lubricant	1
				132	15G782	HOSE, coupled	1
102	15H189	BOOT, wire feed through	1	133	15G784	HOSE, coupled	1
103		CONDUIT, assembly, motor power; see page 55 for part numbers	1	134	116915	DIPSTICK with breather cap	1
107	119253	SUPPRESSOR, ferrite; 151 ohm	1	135	247792	FILTER, oil, 18-23 psi bypass	1
110	247826	RESERVOIR, hydraulic; includes 110b-110m; see page 52	1	137		FITTING	1
					116793	H-40, H-50, H-XP3 models only	
110b	247778	. HOUSING, inlet	1		110792	H-25, H-XP2 models only	
110c	247771	. GASKET, inlet	1	139	107156	SCREW, cap socket head	3
110d	247777	. TUBE, inlet	1	140★	115764	FITTING, npt (part of hydraulic pump assembly); H-25, H-XP2 models only	1
110f	247770	. TUBE, return	1				
110j	116919	. FILTER, inlet	1	141★	112161	SCREW (part of hydraulic pump assembly); H-25, H-XP2 models only	2
110k	255032	. PLUG	1				
110m	255021	. FITTING, straight	1	142	112586	SCREW, cap, hex hd	2
111	247822	BRACKET, motor mount	1	143	110996	NUT, hex, flange hd; 5/16-18	2
112		BRACKET, mounting, pump	1	144	C19862	NUT, lock, hex	1
	247819	H-40, H-50, H-XP3 models only		146	247836	COVER, access	1
	247830	H-25, H-XP2 models only		147	255048	NUT, strain relief, M40 thread	1
113		PUMP, hydraulic	1	148★	255039	CONNECTOR, heater	1
	255019	H-40, H-50, H-XP3 models only		150		SCREW, set; 1/4 x 1/2 (13 mm)	2
	247855	H-25, H-XP2 models only		151	261821	CONNECTOR, wire, 6 AWG (pair)	1
114	247821	BRACKET, reservoir, hydraulic	2	153	104373	WASHER, thrust	2
115	247820	BRACKET, support, pumpmount	1				
116	247829	COOLER, hydraulic	1				
117		ELBOW; 1-1/16 npt(m) x 1/2 in. (13 mm) tube	1				
	255020	H-40, H-50, H-XP3 models only					
	255035	H-25, H-XP2 models only					

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

★ Not shown.



## Parts that Vary by Model

Use the following tables to find parts that vary by model. See **Parts**, starting on page 47 for parts used on all models.

### H-25 and H-XP2 Models

Ref	Description	255400 H-25 8.0 kW (230V, 1 phase)	255401 H-25 8.0 kW (230V, 3 phase)	255402 H-25 8.0 kW (400V, 3 phase)	255403 H-XP2 15.3 kW (230V, 1 phase)	255404 H-XP2 15.3 kW (230V, 3 phase)	255405 H-XP2 15.3 kW (400V, 3 phase)	255406 H-25 15.3 kW (230V, 1 phase)	255407 H-25 15.3 kW (230V, 3 phase)	255408 H-25 15.3 kW (400V, 3 phase)	Qty
2	HEATER; pages 60-62	247815 (Qty. 1)	247815 (Qty. 1)	247815 (Qty. 1)	247813 (Qty. 2)	247813 (Qty. 2)	247813 (Qty. 2)	247813 (Qty. 2)	247813 (Qty. 2)	247813 (Qty. 2)	
3	MOTOR; page 51	247816	247816	247816	247816	247816	247816	247816	247816	247816	1
6	BOARD, motor control; page 49	247839	247839	247839	247839	247839	247839	247839	247839	247839	1
8	TRANSFORMER; page 49	247812	247812	247812	247812	247812	247812	247812	247812	247812	1
11	PUMP, proportioning; page 58	Model 120	Model 120	Model 120	Model 80	Model 80	Model 80	Model 120	Model 120	Model 120	1
14	TUBE, inlet, component A; page 50	15R648	15R648	15R648	15R646	15R646	15R646	15R646	15R646	15R646	1
15	TUBE, outlet, component A; page 50	15R649	15R649	15R649	15R645	15R645	15R645	15R645	15R645	15R645	1
16	TUBE, inlet, component B; page 50	15R653	15R653	15R653	15R650	15R650	15R650	15R650	15R650	15R650	1
17	TUBE, outlet, component B; page 50	15R651	15R651	15R651	15R644	15R644	15R644	15R644	15R644	15R644	1
26	MODULE, breaker; page 67	C	A	B	C	A	B	C	A	B	1
35	COVER, heater wire				247502	247502	247502	247502	247502	247502	2
36	BRACKET, heater; page 47	247831	247831	247831	247843	247843	247843	247843	247843	247843	2
52	COVER, heater	247847	247847	247847	247846	247846	247846	247846	247846	247846	2
66	CONNECTOR, 2-pin, motor power	120871	120871	120871	120871	120871	120871	120871	120871	120871	1
68	SWITCH, added pole; 400V only			117553			117553			117553	1
100	LABEL	15H194	15H194	15H194	15H195	15H195	15H195	15H194	15H194	15H194	1
103	CONDUIT, assy, motor power	247814	247814	247814	247814	247814	247814	247814	247814	247814	1

**H-40 and H-XP3 Models**

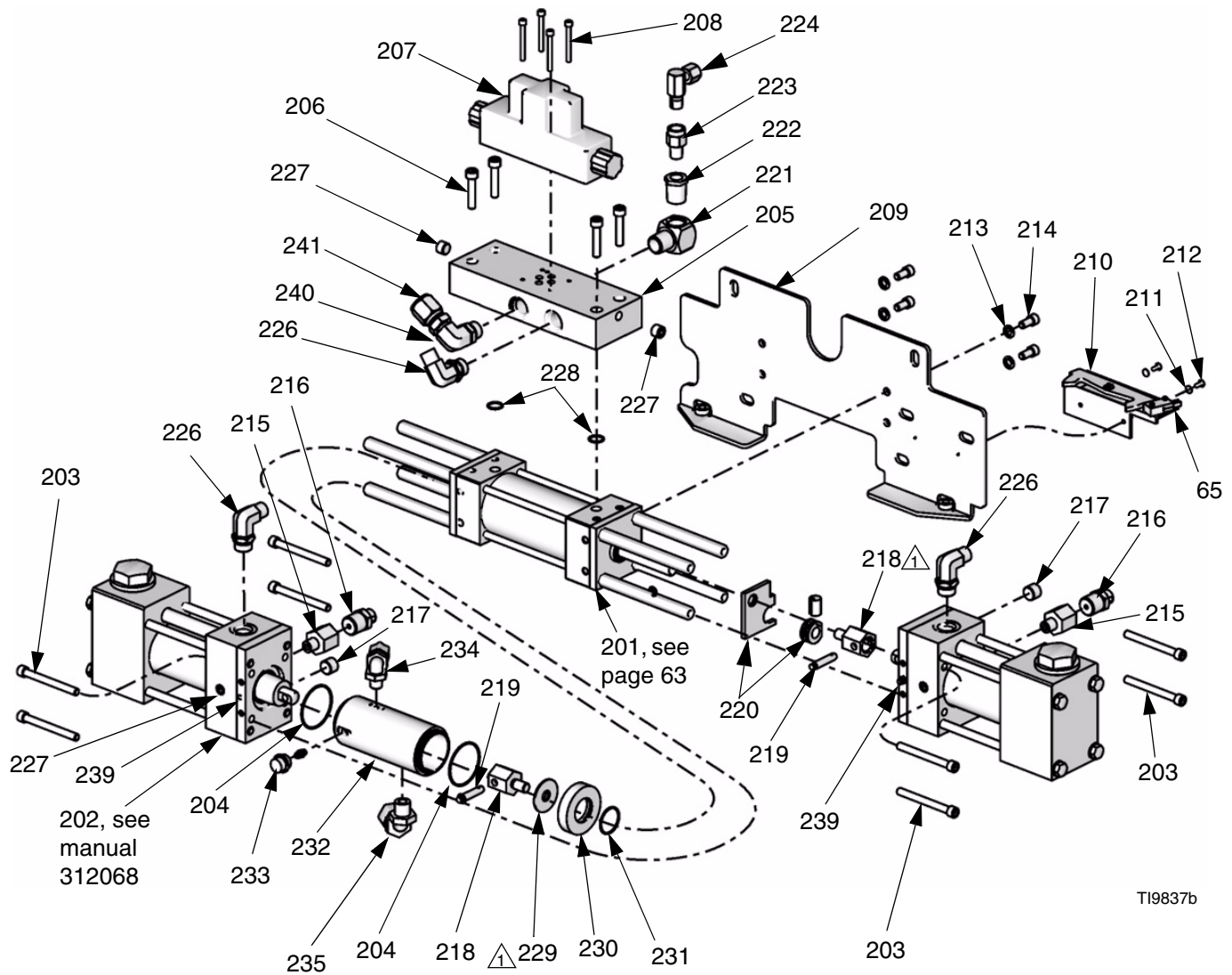
Ref	Description	253400 H-40 12.0 kW (230V, 1 phase)	253401 H-40 15.3 kW (230V, 3 phase)	253402 H-40 15.3 kW (400V, 3 phase)	253403 H-XP3 12.0 kW (230V, 1 phase)	253404 H-XP3 20.0 kW (230V, 3 phase)	253405 H-XP3 20.0 kW (400V, 3 phase)	253407 H-40 20.4 kW (230V, 3 phase)	253408 H-40 20.4 kW (400V, 3 phase)	Qty
2	HEATER; pages 60-62	247834	247813	247813	247834	247833	247833	247833	247833	2
3	MOTOR; page 51	247810	247785	247785	247810	247785	247785	247785	247785	1
6	BOARD, motor control; page 49	247835	247835	247835	247835	247835	247835	247835	247835	1
8	TRANS- FORMER; page 49	247786	247786	247786	247786	247786	247786	247786	247786	1
11	PUMP, proportioning; page 58	Model 120	Model 120	Model 120	Model 80	Model 80	Model 80	Model 120	Model 120	1
14	TUBE, inlet, component A; page 50	15R646	15R646	15R646	15R646	15R646	15R646	15R646	15R646	1
15	TUBE, outlet, component A; page 50	15R645	15R645	15R645	15R645	15R645	15R645	15R645	15R645	1
16	TUBE, inlet, component B; page 50	15R650	15R650	15R650	15R650	15R650	15R650	15R650	15R650	1
17	TUBE, outlet, component B; page 50	15R644	15R644	15R644	15R644	15R644	15R644	15R644	15R644	1
26	MODULE, breaker; page 67	C	D	E	C	D	E	D	E	1
35	COVER, heater wire	247502	247502	247502	247502	247502	247502	247502	247502	2
36	BRACKET, heater; page 47	247843	247843	247843	247843	247843	247843	247843	247843	2
52	COVER, heater	247846	247846	247846	247846	247846	247846	247846	247846	2
66	CONNEC- TOR, 2-pin, motor power	120871			120871					1
68	SWITCH, added pole; 400V only			117553			117553		117553	1
100	LABEL	247780	247780	247780	247781	247781	247781	247780	247780	1
103	CONDUIT, assy, motor power	247814	247790	247790	247814	247790	247790	247790	247790	1

**H-50 Models**

Ref	Description	253725 H-50 12.0 kW (230V, 1 phase)	253726 H-50 15.3 kW (230V, 3 phase)	253727 H-50 15.3 kW (400V, 3 phase)	256505 H-50 20.4 kW (230V, 3 phase)	256506 H-50 20.4 kW (400V, 3 phase)	Qty
2	HEATER; pages 60-62	247834	247813	247813	247833	247833	2
3	MOTOR; page 51	247810	247785	247785	247785	247785	1
6	BOARD, motor control; page 49	247835	247835	247835	247835	247835	1
8	TRANSFORMER; page 49	247786	247786	247786	247786	247786	1
11	PUMP, proportioning; page 58	Model 140	Model 140	Model 140	Model 140	Model 140	1
14	TUBE, inlet, component A; page 50	15R646	15R646	15R646	15R646	15R646	1
15	TUBE, outlet, component A; page 50	15R645	15R645	15R645	15R645	15R645	1
16	TUBE, inlet, component B; page 50	15R650	15R650	15R650	15R650	15R650	1
17	TUBE, outlet, component B; page 50	15R644	15R644	15R644	15R644	15R644	1
26	MODULE, breaker; page 67	C	D	E	D	E	1
35	COVER, heater wire	247502	247502	247502	247502	247502	2
36	BRACKET, heater; page 47	247843	247843	247843	247843	247843	2
52	COVER, heater	247846	247846	247846	247846	247846	2
66	CONNECTOR, 2-pin, motor power	120871					1
68	SWITCH, added pole; 400V only			117553		117553	1
100	LABEL	256509	256509	256509	256509	256509	1
103	CONDUIT, assy, motor power	247814	247790	247790	247790	247790	1

## Sub Assemblies

### Proportioner Assembly



**1** Torque to 10-15 ft-lb (13.6 - 20.3 N•m).

**Proportioner Assembly**

<b>Ref</b>	<b>Part</b>	<b>Description</b>	<b>Qty.</b>	<b>Ref</b>	<b>Part</b>	<b>Description</b>	<b>Qty.</b>
201	295027	CYLINDER, hydraulic, w/spacers; see page 63 for parts	1	222	100206	BUSHING	1
202		PUMP; see manual 312068	2	223	15H524	ACCUMULATOR, pressure; 1/4 npt	1
203	295824	SCREW, socket hd; 5/16-24 x 3 in. (76 mm)	8	224	155541	FITTING, union, swivel, 90 degrees	1
204	106258	O-RING	2	226	121312	ELBOW; 3/4 SAE-ORB x 1/2 in. JIC	3
205	298040	MANIFOLD, hydraulic	1	227	295225	PLUG, pipe, flush	4
206	113467	SCREW, socket hd	4	228	112793	O-RING	2
207	120299	VALVE, directional, hydraulic	1	229	295852	NUT	1
208	C19986	SCREW, socket hd	4	230*		ADAPTER, lube, cylinder	1
209	247817	BRACKET, mounting	1	231	177156	O-RING	1
210	247818	SWITCH, reversing	1	232*		CYLINDER, lube	1
211	157021	WASHER, lock	2	233	295829	PLUG; 3/8 mpt x 0.343 in.	1
212		SCREW, pan hd; 8-32 x 3/8	2	234	295826	ELBOW, 90 degree; 1/4 npt(m) x 3/8 in. (9.5 mm) OD tube	1
213	100214	WASHER, lock	4	235	295397	ELBOW; 3/4 npt(m) x 1/2 in. (13 mm) OD tube	1
214	108751	SCREW, socket hd	4	239	295229	FITTING, grease; 1/4-28	2
215	159842	ADAPTER	2	240	255037	ELBOW; 3/4 npt(f)	1
216	248187	HOUSING, rupture, disc; kit, see manual 309969	2	241	255038	CONNECTOR	1
217	M70430	SCREW, socket hd; 1/4-28 x 0.19	2	242★	15H184	WIRE, bidirectional cable assy	1
218	261864	CLEVIS, hex	2	243	15H253	HOSE, gauge, hydraulic, 3000 psi; shown on page 50	1
219	296653	PIN, clevis	2	244★	296607	TOOL, clevis pin, extractor	1
220	261862	KIT, activator and bushing	1				
221	158683	ELBOW, 90 degree	1				

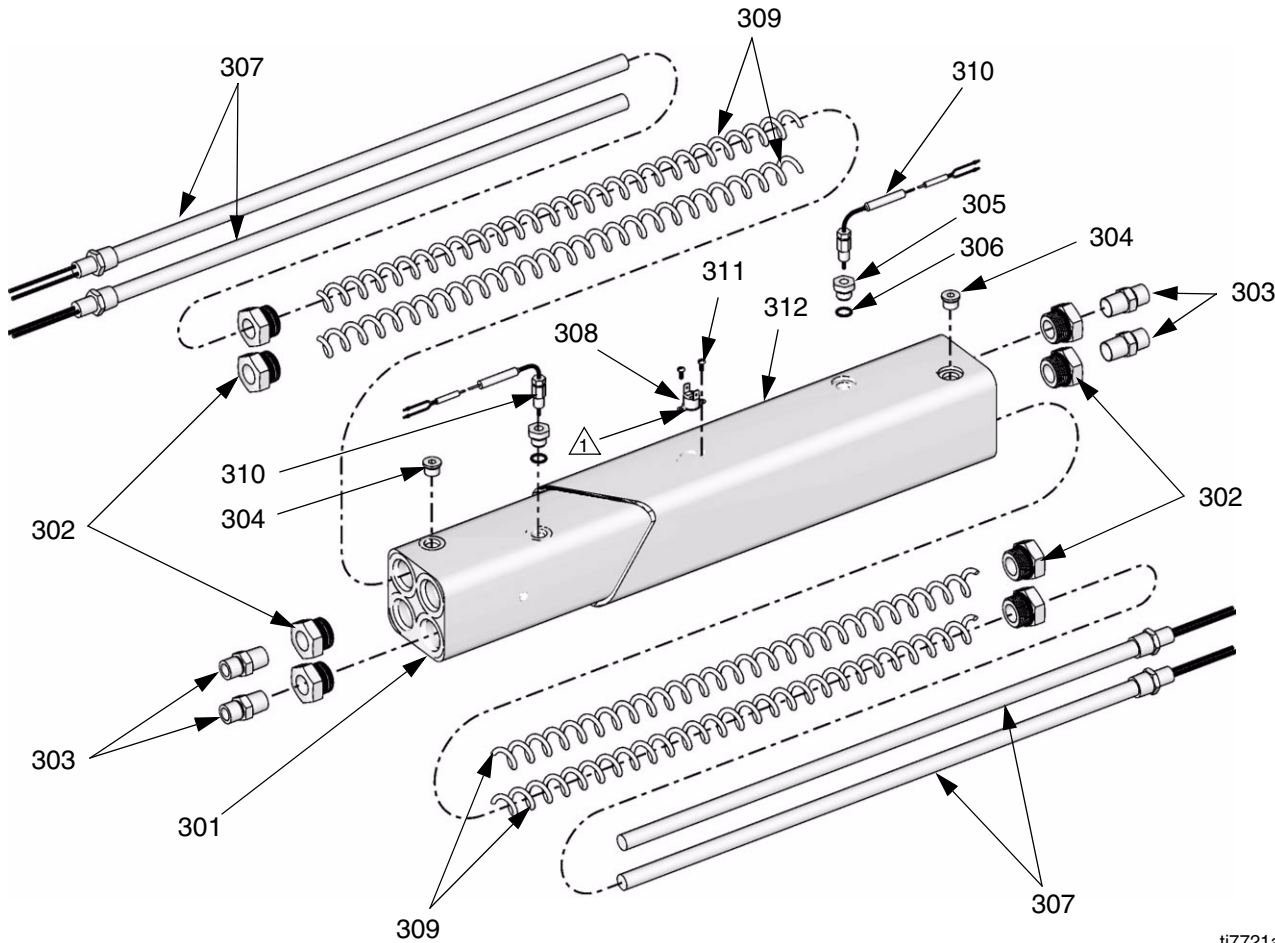
★ *Not shown.*\* *Parts available in Kit 261863.*




# 8.0 kW Dual Zone Heater

(One Per Machine)

Part 247815



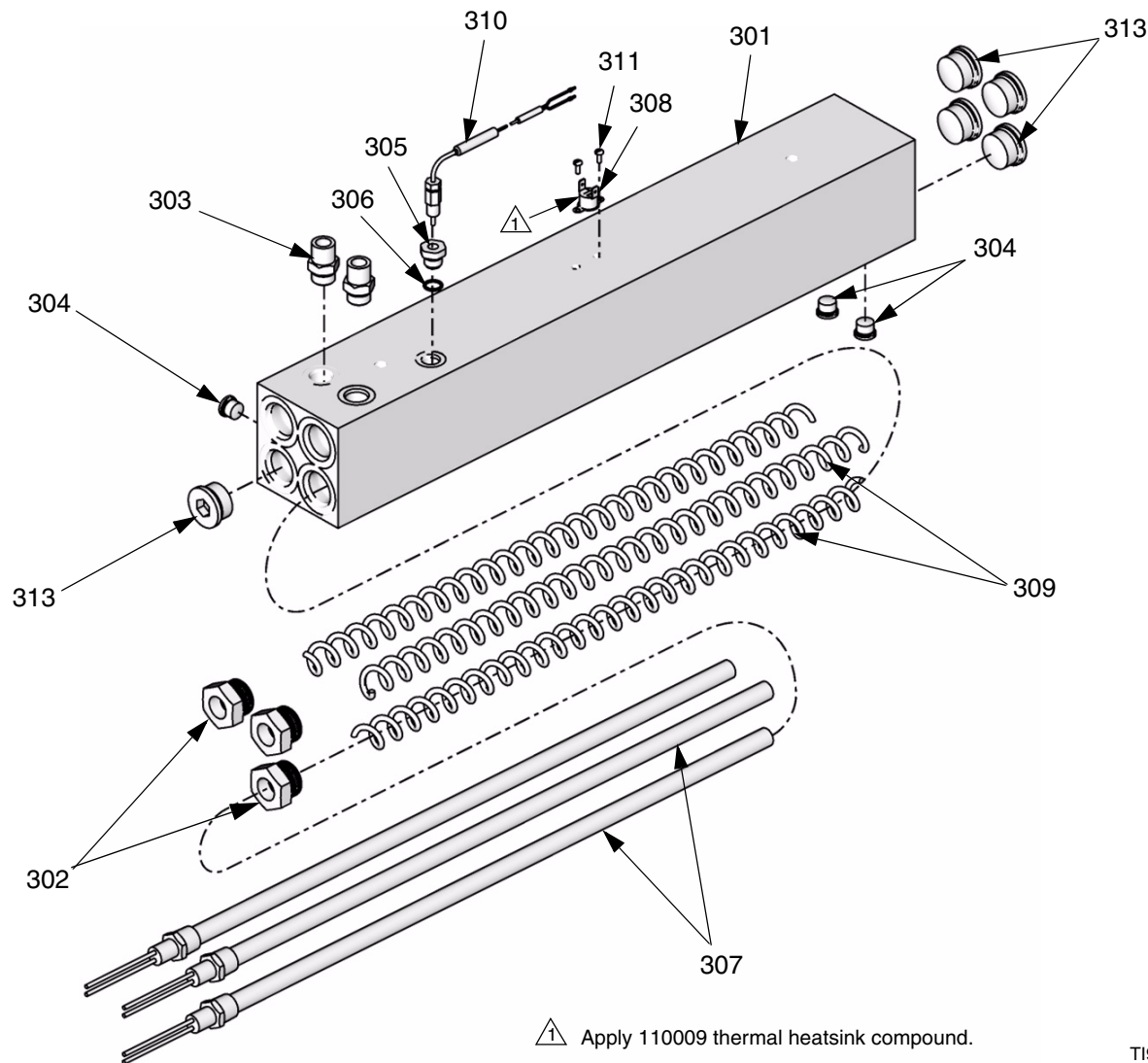
ti7721a


 Apply 110009 thermal heatsink compound.

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
301		HOUSING, heater	1	308	15B137	SWITCH, over temperature	1
302	15H302	FITTING, reducer	8	309	15B135	MIXER, immersion heater	4
303	121319	ADAPTER, 1/2 npt(m) x 1/2 in. JIC	4	310	117484	SENSOR	2
304	15H304	PLUG	2	311	100518	SCREW, machine, pan hd	2
305	15H306	ADAPTER, thermocouple	2	312	15H205	INSULATOR	1
306	120336	O-RING; fluoroelastomer	2				
307	15B139	HEATER, immersion; 2000 W	4				

7.65 kW Single Zone Heater  
(Two Per Machine)

Part 247813



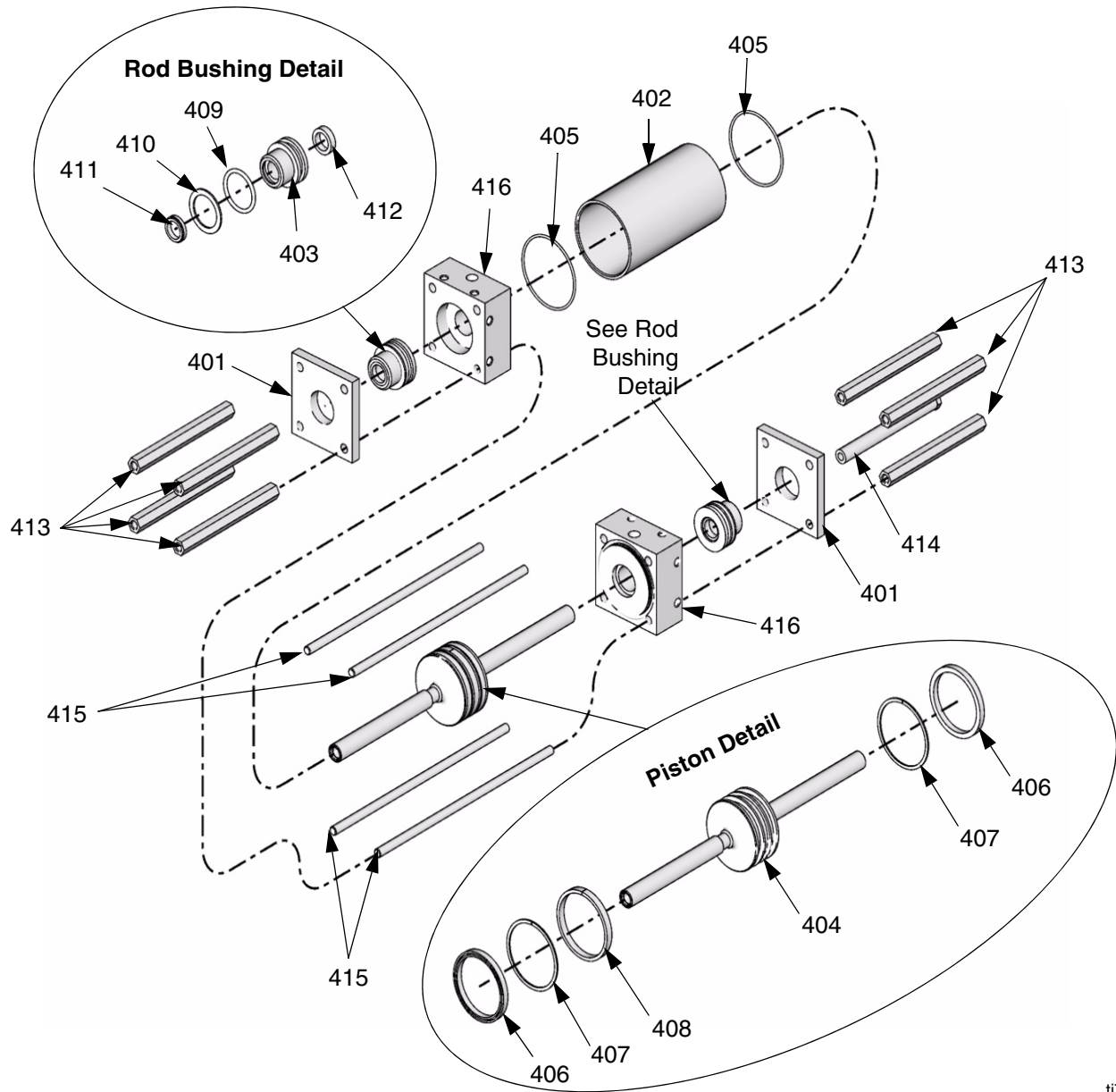
 Apply 110009 thermal heatsink compound.

TI9842a

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
301		HOUSING, heater	1	308	15B137	SWITCH, overtemperature	1
302	15H302	FITTING, reducer	3	309	15B135	MIXER, immersion heater	3
303	121309	ADAPTER, 3/4 SAE-ORB x 1/2 in. JIC	2	310	117484	SENSOR	1
304	15H304	PLUG	3	311	100518	SCREW, machine, pan hd	2
305	15H306	ADAPTER, thermocouple	1	313	15H305	PLUG, hollow	5
306	120336	O-RING; fluoroelastomer	1				
307	15B138	HEATER, immersion; 2550 W	3				



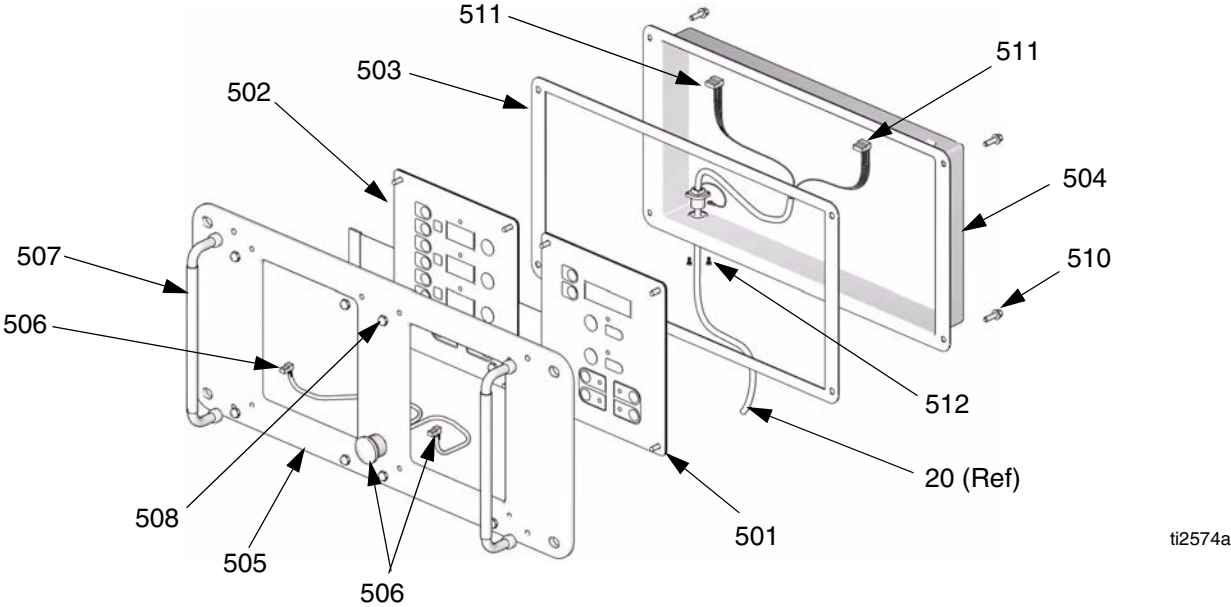
# Hydraulic Cylinder



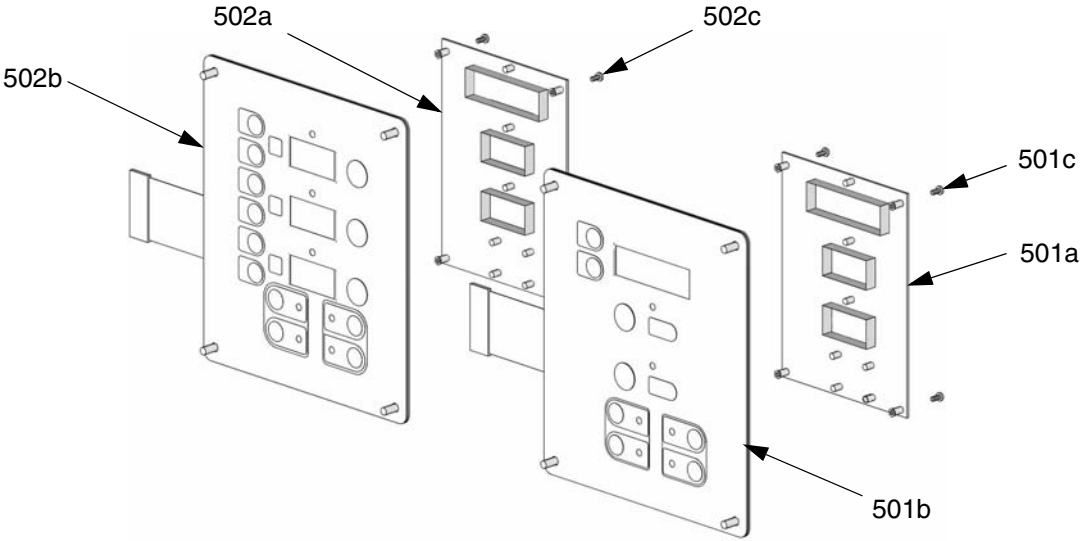
ti7727a

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
401	295029	PLATE, retainer	2	409	158776	O-RING	2
402	295030	CYLINDER	1	410	295644	RING, backup	2
403	295031	BUSHING, rod	2	411	295645	WIPER, rod	2
404	296642	PISTON	1	412	296644	SEAL, shaft	2
405	295640	O-RING	2	413	295032	SPACER, proportioning pump	7
406	295641	U-CUP	2	414	261861	SPACER, reverse switch	1
407	295642	RING, backup	2	415	295034	ROD, tie	4
408	296643	RING, wear	1	416	295035	BLOCK, port	2

Display



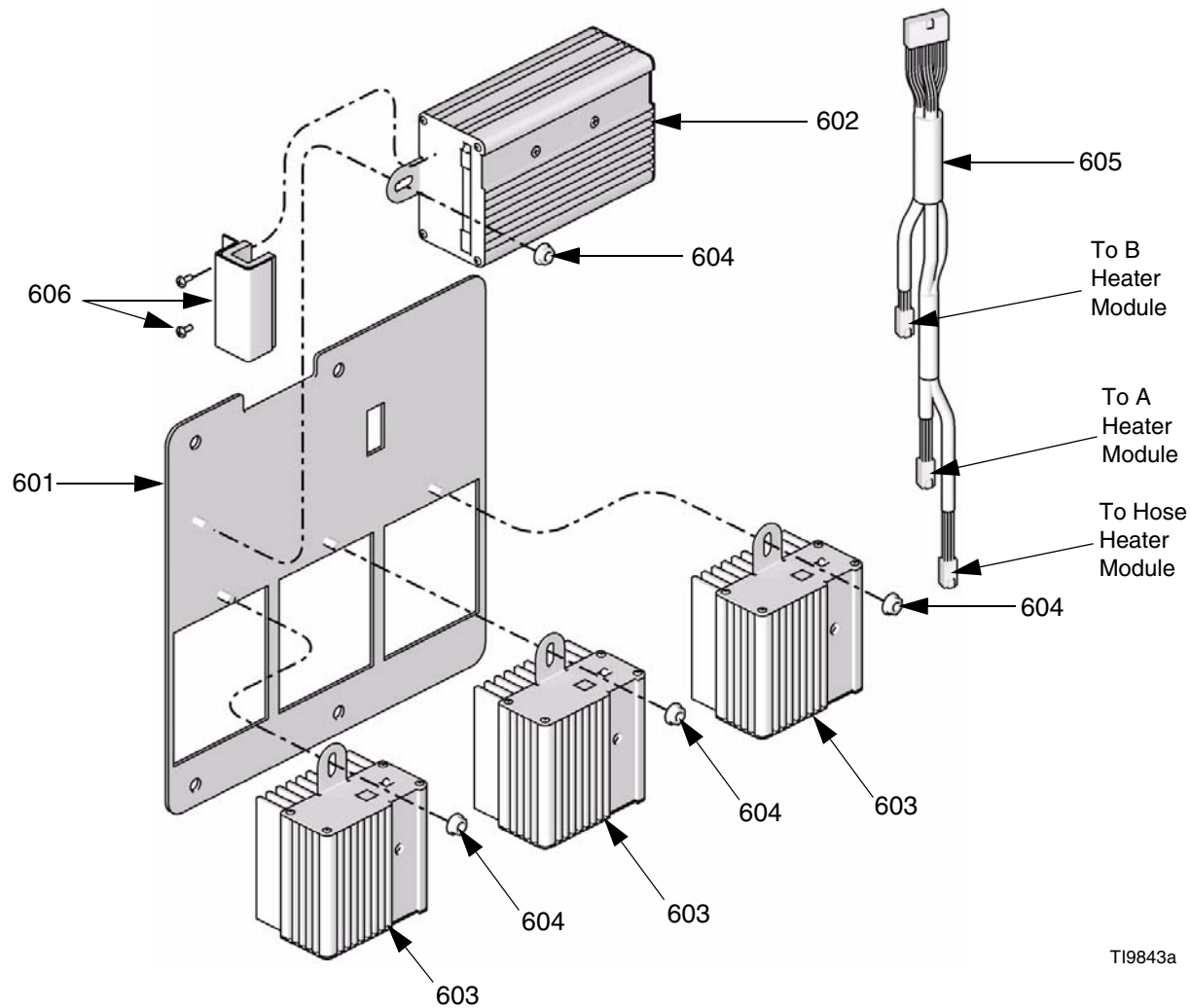
ti2574a



ti3172a

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
501	245978	DISPLAY, pressure; includes 501a-501c	1	505	15B291	PLATE	1
501a	246130	.BOARD, circuit	1	506	246287	HARNESS, wire, red stop button	1
501b	246478	.SWITCH, membrane	1	507	117499	HANDLE	2
501c	112324	.SCREW	4	508	117523	NUT, cap; 10-24	8
502	245977	DISPLAY, temperature; includes 502a-502c	1	510		SCREW, machine, pan-hd; M5 x 0.8; 16 mm	4
502a	246130	.BOARD, circuit	1	511	15B386	CABLE, display	1
502b	246479	.SWITCH, membrane	1	512	195853	SCREW, machine; M2.5 x 6	2
502c	112324	.SCREW	4				
503	15B293	GASKET	1				
504	15B292	COVER	1				

# Temperature Control



TI9843a

Ref.	Part	Description	Qty.
601	247772	PANEL, module mounting	1
602	247827	HOUSING, control module	1
603	247828	HOUSING, heater module	3
604	115942	NUT, hex	4
605	247801	CABLE, communication	1
606	247825	KIT, cover, connector with screws	1

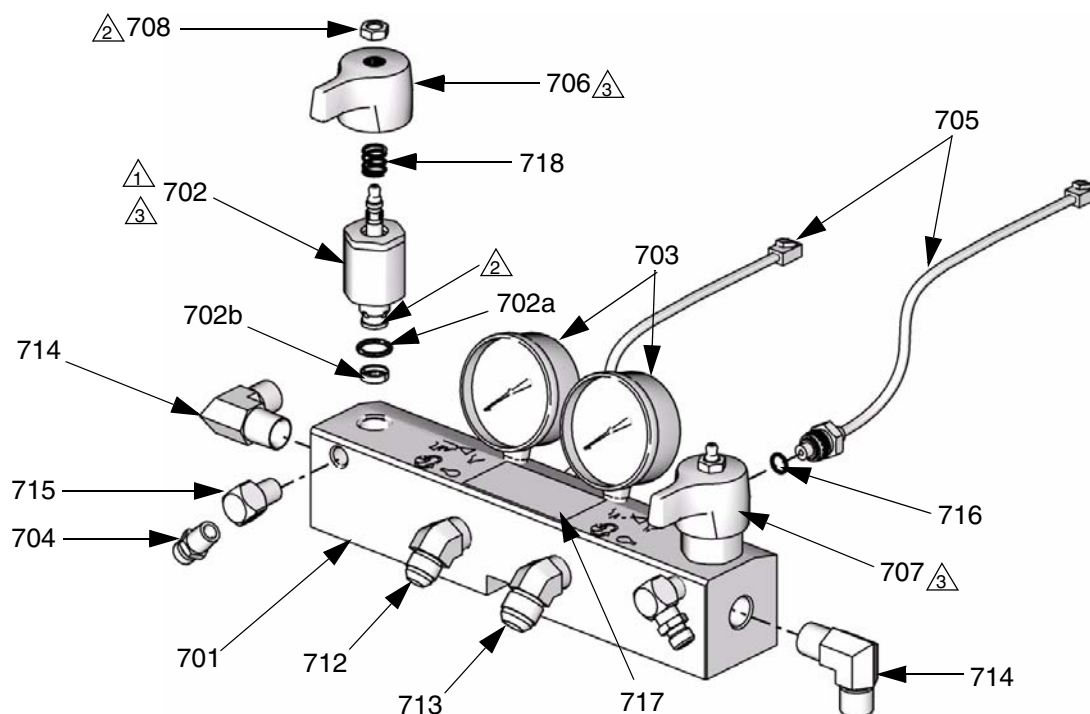
## Fluid Manifold

△1 Torque to 355-395 in-lb (40.1-44.6 N•m).

△2 Apply sealant (113500) to threads.

△3 Valve must be closed with handle position as shown on drawing.

\*\* Apply PTFE tape or thread sealant to tapered threads.



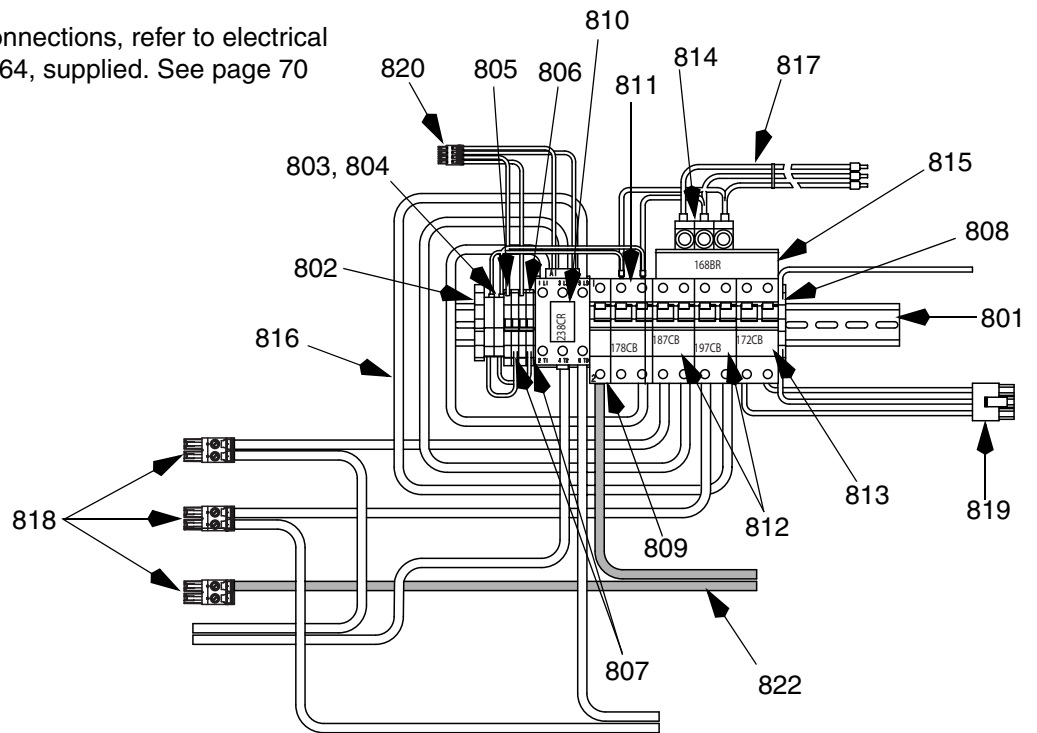
TI9839a

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
701	247837	MANIFOLD, fluid	1	714	121312	ELBOW, 90 degrees	2
702†	247824	VALVE, drain cartridge	2	715	100840	ELBOW, street; 1/4 npsm x 1/4 npt	2
702a†	158674	. O-RING	1	716	111457	O-RING, PTFE	2
702b†	247779	. SEAL, seat, valve	1	717▲	189285	LABEL, caution	1
703	102814	GAUGE, pressure, fluid	2	718†	150829	SPRING, compression	2
704	162453	FITTING, 1/4 npsm x 1/4 npt	2	▲ Replacement Warning labels, signs, tags, and cards are available at no cost.			
705	246123	TRANSDUCER, pressure, control	2	† Included in the following complete valve kits*: ISO Valve Kit (left/red handle) 255149. Resin Valve Kit (right/blue handle) 255150. Valve Set Kit (both handles and grease gun) 255148.			
706	247788	HANDLE, red	1	* Complete valve kits also include thread sealant. (Purchase kits separately).			
707	247789	HANDLE, blue	1				
708†	112309	NUT, hex, jam	2				
712	117556	NIPPLE, #8 JIC x 1/2 npt	1				
713	117557	NIPPLE, #10 JIC x 1/2 npt	1				

# Circuit Breaker Modules

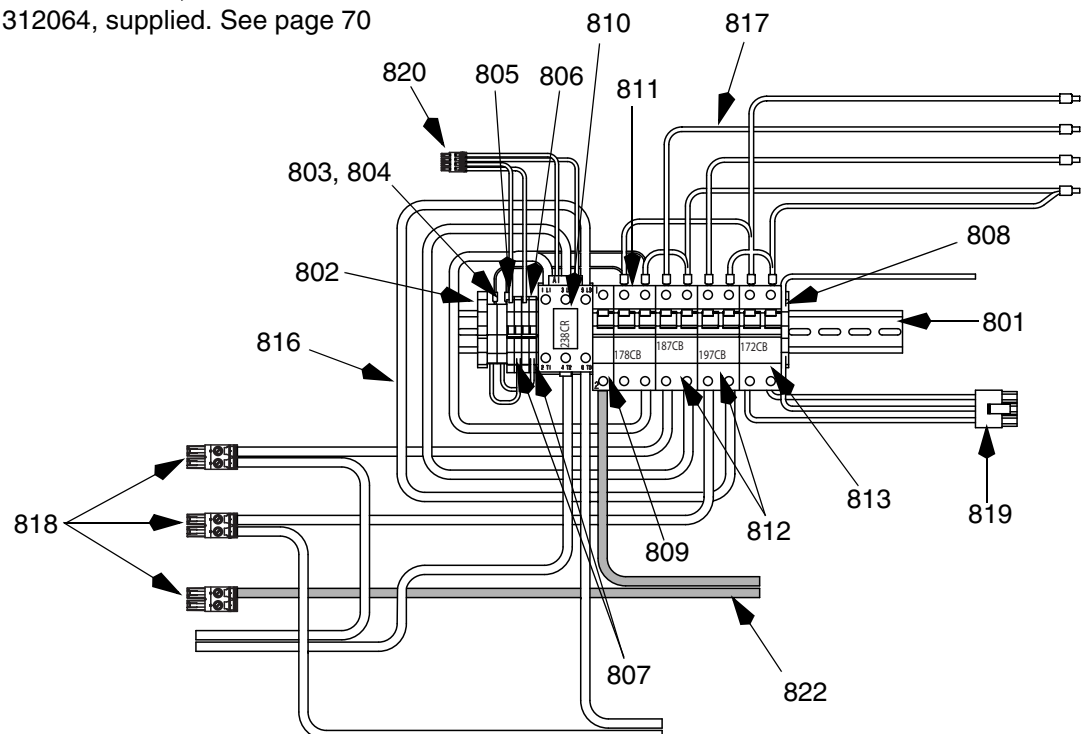
## A - 230V, 3 Phase Circuit Breaker Modules

For wiring and cable connections, refer to electrical diagrams manual 312064, supplied. See page 70 for parts.



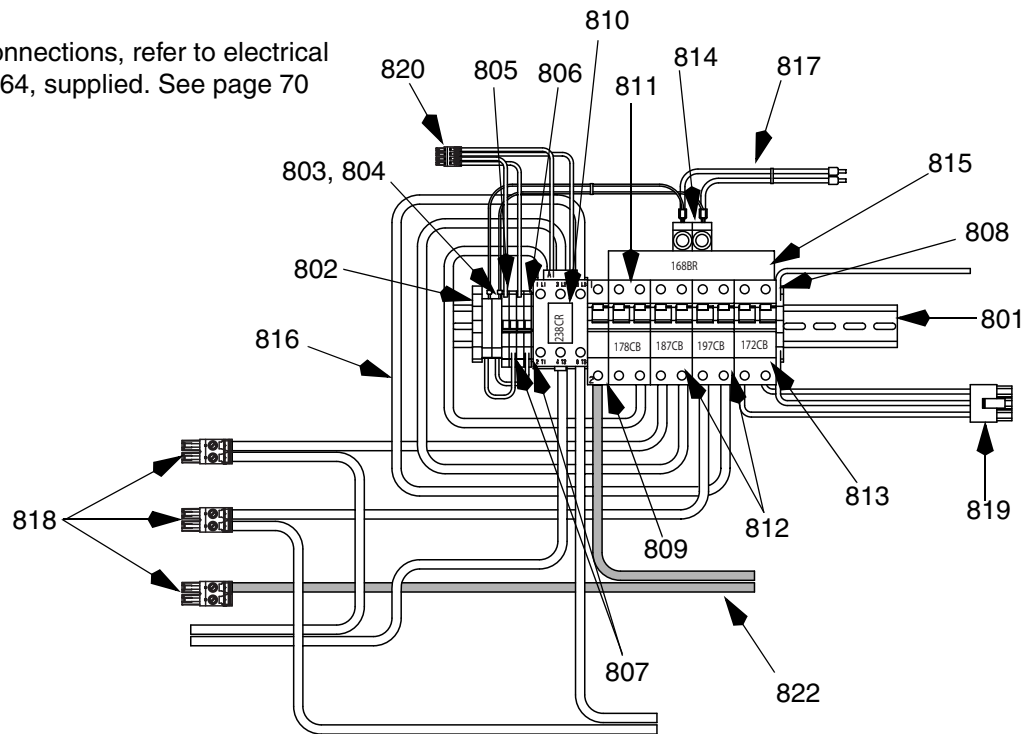
## B - 400V, 3 Phase Circuit Breaker Modules

For wiring and cable connections, refer to electrical diagrams manual 312064, supplied. See page 70 for parts.



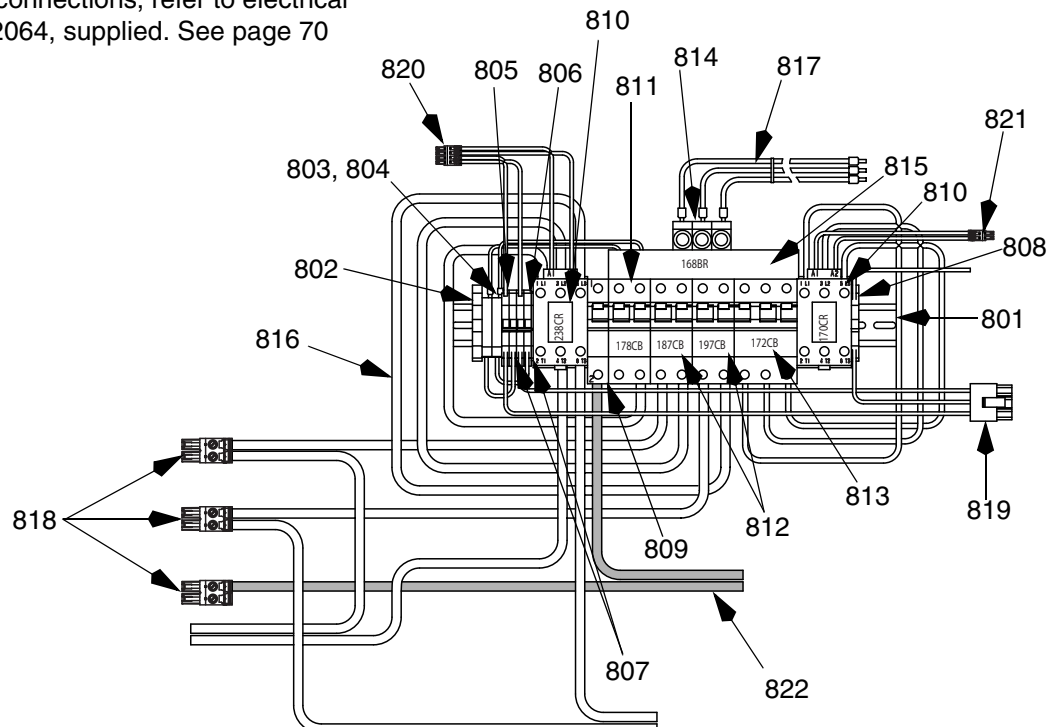
## C - 230V, 1 Phase Circuit Breaker Modules

For wiring and cable connections, refer to electrical diagrams manual 312064, supplied. See page 70 for parts.




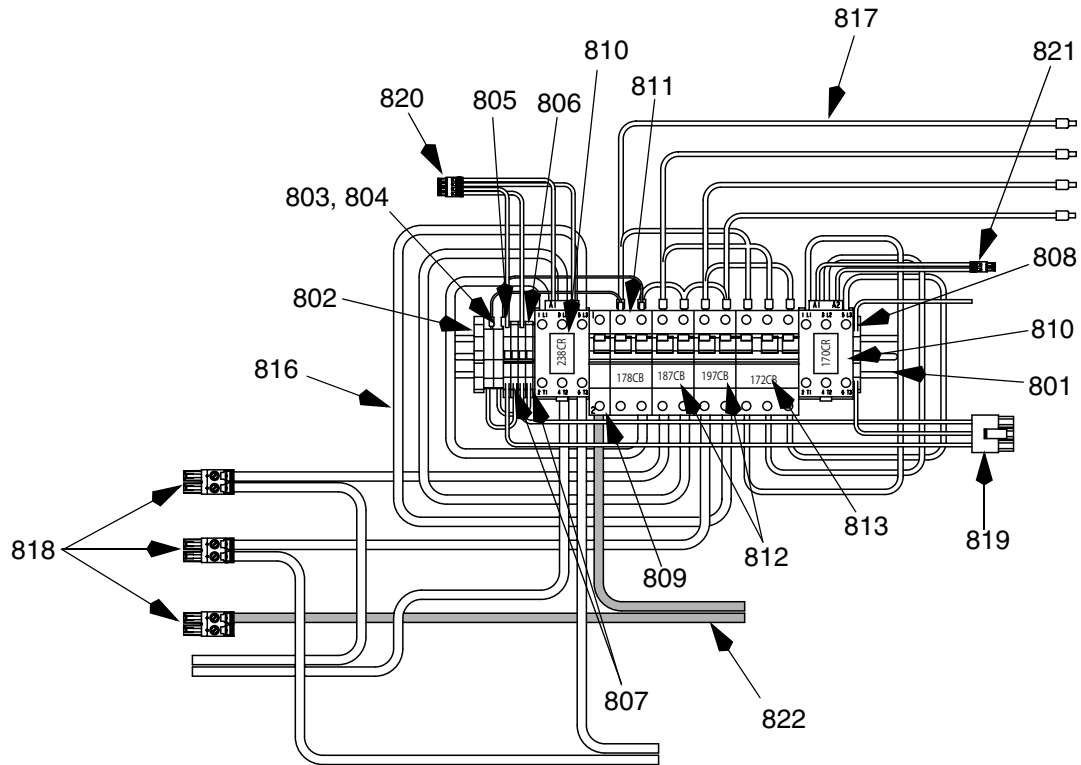
## D - 230V, 3 Phase Circuit Breaker Modules

For wiring and cable connections, refer to electrical diagrams manual 312064, supplied. See page 70 for parts.



## E - 400V, 3 Phase Circuit Breaker Modules

 For wiring and cable connections, refer to electrical diagrams manual 312064, supplied. See page 70 for parts.



## Circuit Breaker Modules Parts List

Ref.	Description	Breaker Modules					Qty
		A 230V, 3 phase	B 400V, 3 phase	C 230V, 1 phase	D 230V, 3 phase	E 400V, 3 phase	
801	RAIL, mounting	255028	255028	255028	255028	255028	1
802	CLAMP, block, end	255045	255045	255045	255045	255045	1
803	HOLDER, fuse terminal, block	255043	255043	255043	255043	255043	2
804	FUSE	255023	255023	255023	255023	255023	2
805	TERMINAL, block	255042	255042	255042	255042	255042	4
807	BRIDGE, plug in, jumper	255044	255044	255044	255044	255044	2
808	BLOCK, terminal ground	255046	255046	255046	255046	255046	1
809	BREAKER, 1 pole, 50A	255026	255026	255026	255026	255026	1
810	CONTACTOR, relay, 65A	255022	255022	255022			1
	CONTACTOR, relay, 65A				255022	255022	2
811	BREAKER, 2 phase, 40A	247768	247768	247768	247768	247768	1
812	BREAKER, 2 phase, 25A	*255050	*255050	*255050			2
	BREAKER, 2 phase, 40A	†247768	†247768	†*247768			2
	BREAKER, 2 phase, 50A				120579	120579	2
813	BREAKER, 2 phase, 20A	255049	255049	*†255049			1
	BREAKER, 3 pole, 20A				255025	255025	1
	BREAKER, 2 phase, 30A			*255041			1
814	CONNECTOR, power lug	117679			117679		3
	CONNECTOR, power lug			117679			2
815	BAR, power buss, 3 phase	117805					1
	BAR, power buss, 1 phase			117678			1
	BAR, power buss, 3 phase, 3x3				255024		1
816	CABLE, harness lower	247802	247802	247802	247803	247803	1
817	CABLE, harness upper	247805	247806	247804	247808	247807	1
818	CONNECTOR, 2 pin large	255027	255027	255027	255027	255027	3
819	CONNECTOR, 3 pin	120895	120895	120895	120895	120895	1
820	CONNECTOR, 4 pin	255031	255031	255031	255031	255031	1
821	CONNECTOR, 2 pin small				255030	255030	1
822	CABLE, harness, hose wire	247791	247791	247791	247791	247791	1

\* 8 kW H-25 models only.

† 15.3 kW H-25, H-XP2, H-40, H-50 models only.

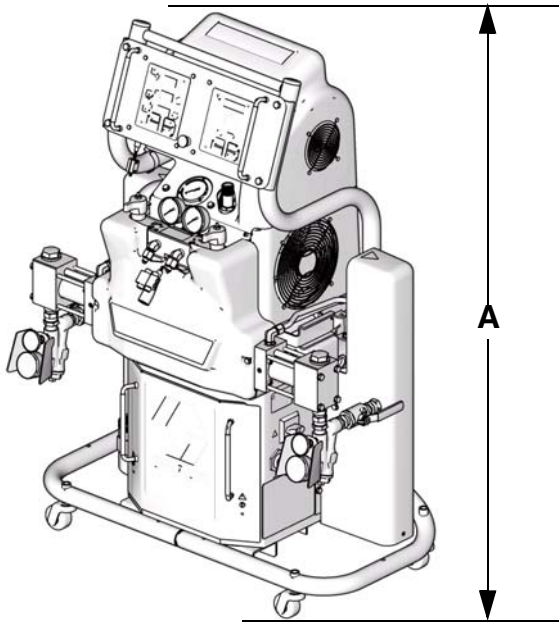
\* 12kW H-40, H-50 models only.



[illegible]

# Dimensions

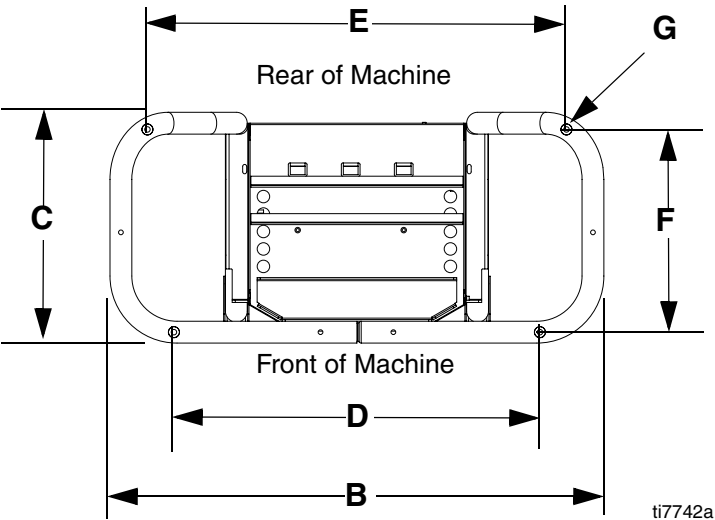
Dimension	in. (mm)	Dimension	in. (mm)
A (height)	55.0 (1397)	F (side mounting holes)	16.25 (413)
B (width)	39.6 (1006)	G (mounting post inner diameter)	0.44 (11)
C (depth)	18.5 (470)	H (front mounting post height)	2.0 (51)
D (front mounting holes)	29.34 (745)	J (rear mounting post height)	3.6 (92)
E (rear mounting holes)	33.6 (853)		



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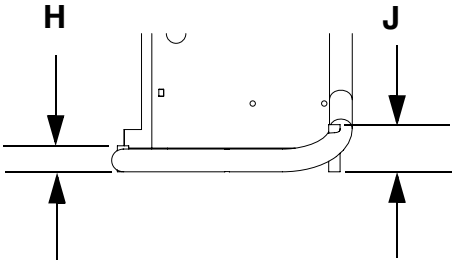
## Top View

## Side View



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Detail of mounting post height,  
to correctly size mounting bolts



ti7743a

# Technical Data

Category	Data
Maximum Fluid Working Pressure	Models H-25 and H-40: 2000 psi (13.8 MPa, 138 bar) Model H-50 1 phase: 1700 psi (11.7 MPa, 11.7 bar) Model H-50 3 phase: 2000 psi (13.8 MPa, 138 bar) Models H-XP2 and H-XP3: 3500 psi (24.1 MPa, 241 bar)
Fluid:Oil Pressure Ratio	Models H-25 and H-40: 1.91:1 Model H-50: 1.64:1 Models H-XP2 and H-XP3: 2.79:1
Fluid Inlets	Component A (ISO): 1/2 npt(f), 250 psi (1.75 MPa, 17.5 bar) maximum Component B (RES): 3/4 npt(f), 250 psi (1.75 MPa, 17.5 bar) maximum
Fluid Outlets	Component A (ISO): #8 (1/2 in.) JIC, with #5 (5/16 in.) JIC adapter Component B (RES): #10 (5/8 in.) JIC, with #6 (3/8 in.) JIC adapter
Fluid Circulation Ports	1/4 npsm(m), with plastic tubing, 250 psi (1.75 MPa, 17.5 bar) maximum
Maximum Fluid Temperature	190°F (88°C)
Maximum Output (10 weight oil at ambient temperature)	Model H-25: 22 lb/min (10 kg/min) (60 Hz) Model H-XP2: 1.5 gpm (5.7 liter/min) (60 Hz) Model H-50: 52 lb/min (24 kg/min) (60 Hz) Model H-40: 45 lb/min (20 kg/min) (60 Hz) Model H-XP3: 2.8 gpm (10.6 liter/min) (60 Hz)
Output per Cycle (A and B)	Models H-25 and H-40: 0.063 gal. (0.23 liter) Model H-50: 0.073 gal. (0.28 liter) Models H-XP2 and H-XP3: 0.042 gal. (0.16 liter)
Line Voltage Requirement	230V 1 phase and 230V 3 phase units: 195-264 Vac, 50/60 Hz 400V 3 phase units: 338-457 Vac, 50/60 Hz
Amperage Requirement	See <b>Models</b> , page 3.
Heater Power (A and B heaters total, no hose)	See <b>Models</b> , page 3.
Hydraulic reservoir capacity	3.5 gal. (13.6 liters)
Recommended hydraulic fluid	Citgo A/W Hydraulic Oil, ISO Grade 46
Sound power, per ISO 9614-2	90.2 dB(A)
Sound pressure, 1 m from equipment	82.6 dB(A)
Weight	Units with 8.0 kW Heaters: 535 lb (243 kg) Units with 12.0 kW Heaters: 597 lb (271 kg) Units with 15.3 kW Heaters (H-25/H-XP2 models): 562 lb (255 kg) Units with 15.3 kW Heaters (H-40/H-XP3/H-50 models): 597 lb (271 kg) Units with 20.4 kW Heaters: 597 lb (271 kg)
Wetted Parts	Aluminum, stainless steel, zinc-plated carbon steel, brass, carbide, chrome, fluoroelastomer, PTFE, ultra-high molecular weight polyethylene, chemically resistant o-rings

*All other brand names or marks are used for identification purposes and are trademarks of their respective owners.*

# Graco Standard Warranty

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.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

**GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO.** These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

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# Graco Information

**TO PLACE AN ORDER,** contact your Graco distributor or call to identify the nearest distributor.

**Phone:** 612-623-6921 **or Toll Free:** 1-800-328-0211, **Fax:** 612-378-3505

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