

To Protect Your Warranty, Use Only ENERPAC Hydraulic Oil.

Enerpac recommends that all kit components be installed to insure optimum performance of the repaired unit.

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■ SECTION I - PRODUCT DATA

PUMP MODEL CODE CHART		
Position	Represents	Letter Code
1	Pressure Range	P = 10,000 psi W = 5,000 psi
2	Power Source	E = electric motor
3	Pump Type	M = manual J = jog R = remote (solenoid) S = pressure switch D = dump
4	Pump Series	1 = 1/2 HP
5	Valve Type	0 = no valve (PER only) 1 = dump 2 = 3-way, 2-pos., N.O. 3 = 3-way, 3 pos., tandem center 4 = 4-way, 3-pos., tandem center 5 = other, must be specified (PER only)
6 & 7	Reservoir Capacity	01 = 1.5 gallon
8	Motor Voltage & Heat Exchanger	B = 115V, 1 phase, 60 Hz* D = 115V, 1 phase, 60 Hz with heat exchanger* E = 230V, 1 phase, 50 Hz** F = 230V, 1 phase, 50 Hz with heat exchanger** I = 230V, 1 phase, 60 Hz**

* Can be operated at 50 Hz if equipped with manual valve.

** Can be operated at 60 Hz if equipped with manual valve.

SPECIFICATIONS		
	5,000 psi Models (model number beginning with "WE")	10,000 psi Models (model number beginning with "PE")
Flow	150 cu.in./min. at 0 to 1000 psi 40 cu. in./min. at 1000 to 5000 psi	150 cu.in./min. at 0 to 1000 psi 20 cu.in./min. at 1000 to 10,000 psi
Electric Motor and Heat Exchanger	B Models - 115V, 1 phase, 60 Hz* D Models - 115V, 1 phase, 60 Hz with heat exchanger* E Models - 230V, 1 phase, 50 Hz** F Models - 230V, 1 phase, 50 Hz with heat exchanger** I Models - 230V, 1 phase, 60 Hz**	
Current Draw	13.5 Amps at maximum pressure @115V 6.75 Amps at maximum pressure @230V	
Relief Valve Adjustment Range	1000 to 5000 psi maximum	1000 to 10,000 psi maximum
Oil Capacity	1.75 gallon total - 1.5 gallon usable	
Pressure Switches • NEMA Classification • Pressure Range • Maximum Differential	NEMA 1 3000 to 5000 psi maximum 200 to 500 psi	NEMA13 700 to 10,000 psi maximum 115 to 500 psi
Sound Level	62-70 dbA	

SECTION II - PUMP COMPONENTS

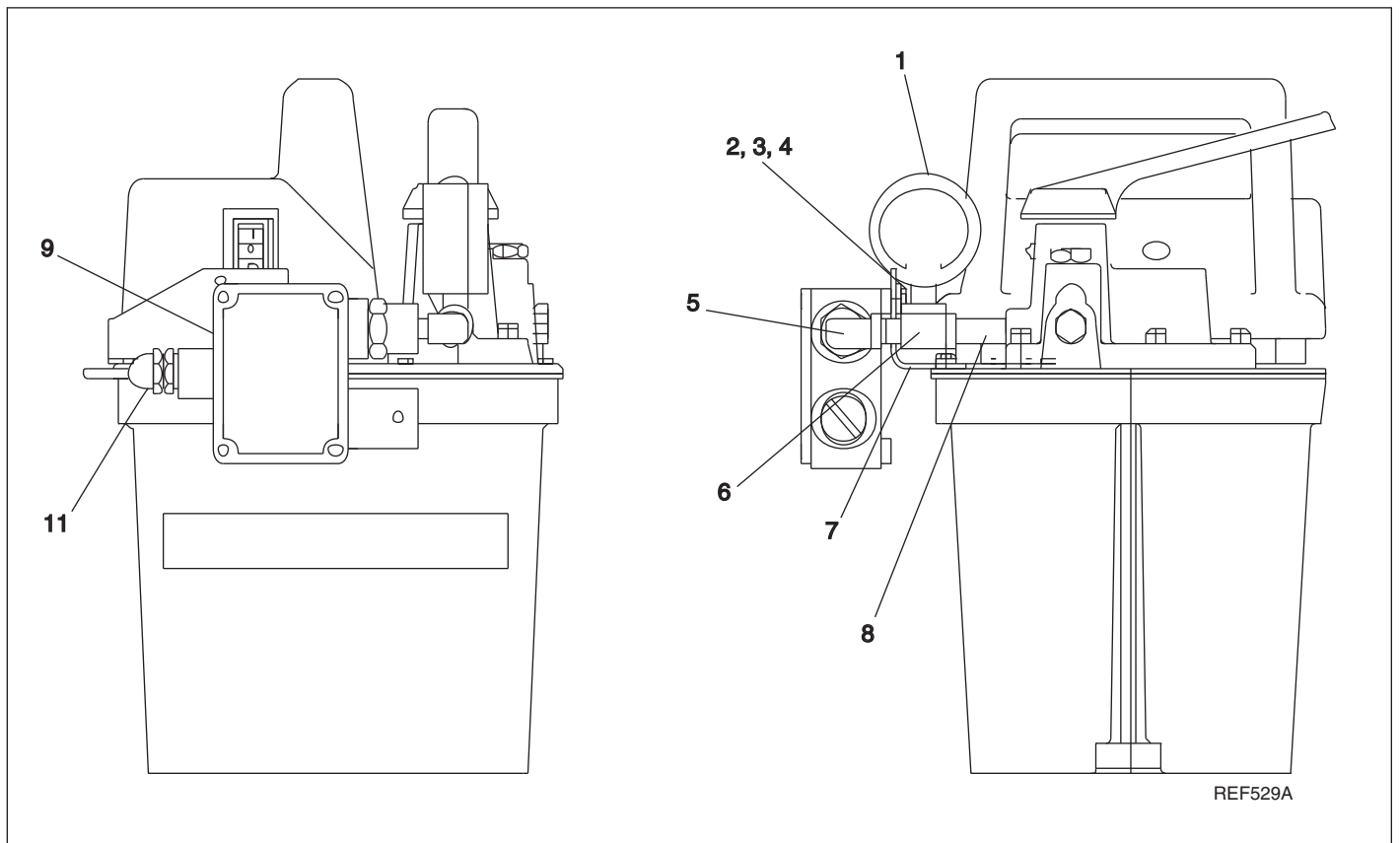


Figure 1 - Pressure Switch, PES, WES and WET Models

Repair Parts List for Figure 1 - PES 10,000 psi Pump

Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
1	G2536L	1	15,000 psi Gauge	6	CH482096	1	Tee
2	B1001046	1	Screw	7	DA2395111	1	Bracket
3	B1001066	1	Lock Washer	8	DA1841431	1	Nipple
4	B1089108	1	Flat Washer	9	DA2270900SR	1	Pressure Switch
5	F100095-7	1	Elbow	11	DA5752007	1	Fitting

All Items listed above included in Repair Parts Kit SUB10000PSK.

Repair Parts List for Figure 1 - WES 5,000 psi Pump

Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
1	G2535L	1	10,000 psi Gauge	6	CH482096	1	Tee
5	F100095-7	1	Elbow	9	PSCK12	1	Pressure Switch

All Items listed above included in Repair Parts Kit SUB5000PSK.

Repair Parts List for Figure 1 - WET 3,500 psi Pump

Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
1	G2517L	1	6,000 psi Gauge	6	CH482096	1	Tee
5	F100095-7	1	Elbow	9	PSCK11	1	Pressure Switch

All Items listed above included in Repair Parts Kit SUB6000PSK.

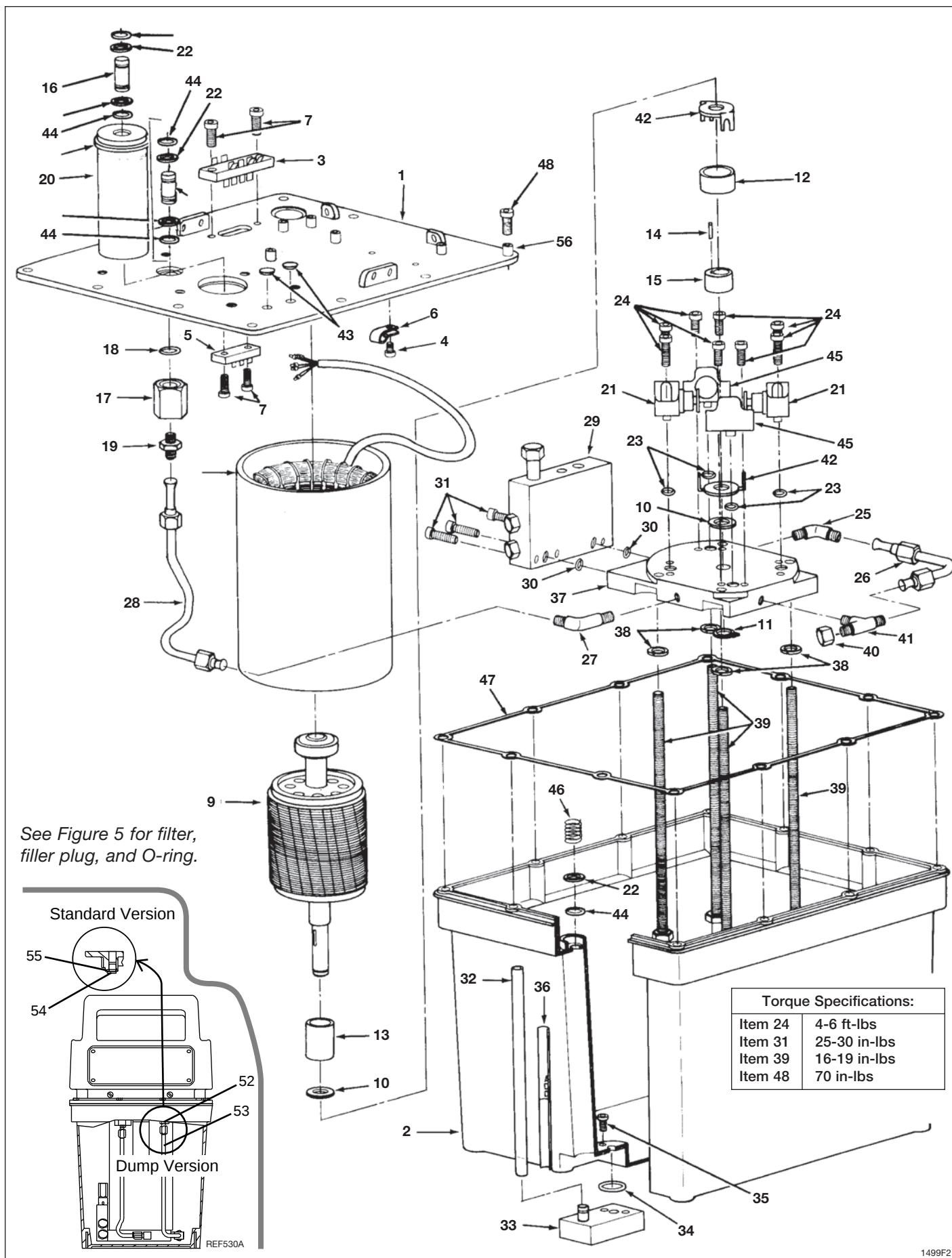


Figure 2 - Pump and Motor Assembly

Repair Parts List for Figure 2

Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
1	DA3520098	1	Cover Plate	28	CR606268	1	Tube
2	CW108025	1	Reservoir	29	WE5000SR	1	Unloader Block 5,000 psi pump
3	(See Fig 6)	1	Terminal Block		PE10000SR	1	Unloader Block 10,000 psi pump
4	CU876028	1	Screw	30	★B1010803	2	O-Ring
5	E1000006	1	Terminal Block	31	B1329028	3	Socket Head Screw
6	F100299-27	1	Cable Clamp	32	CR665885	1	Sight Tube
7	(See Fig 6)	4	Bolt	33	CW142900SR	1	Tube Fitting
8	DA3745900SR	1	Stator	34	★B1228503	1	O-Ring
9	CR764900SR	1	Rotor	35	CW151028	2	Screw
10	CR620108	2	Thrust Washer	36	CU969026	1	Oil Level Decal
11	CR654044	1	Retaining Ring	37	CR686900SR	1	Manifold
12	CW24044	1	Ring	38	B1080066	4	Lock Washer
13	CR653186	1	Spacer	39	CR964107	4	Thru Bolt
14	CR965251	1	Key	40	F100094-12	1	Cap
15	CR510350	1	Eccentric	41	Y530096	1	Tee
16	CN529950	2	Connector Assembly All except PED and WED	42	DA3922017	1	Clip 5,000 psi pump
	CN529950	3	Connector Assembly, PED and WED		DA2952017	1	Clip 5,000 psi pump
17	CR610900SR	1	Check Valve Adaptor		DA2952017	2	Clip 10,000 psi pump
18	★B1910503	1	O-Ring	43	DA2165009	2	Hole Plug
19	A8013094	1	Fitting	44	★B1007503	5	O-Ring
20	DA1062900SR	1	Filter	45	CR367900SR	2	Piston Block
21	CR113950SR	2	Piston Block Assembly: 10,000 psi pump	46	CR757110	1	Spring
	CR114950SR	2	5,000 psi pump	47	★CU877167	1	Gasket
22	★B1012565	5	Back-Up Washer	48	DA3772028	12	Screw
23	★B1012803	4	O-Ring	50	DA2844517	1	Square Ring
24	B1012028	8	Socket Hd. Cap Screw	52	DA2175096	1	Connector
25	B202291	1	Elbow	53	DA1947268	1	Tube
26	CR607900SR	1	Tube	54	B1004006	1	Plug
27	CU913291	1	Male Elbow	55	B1905503	1	O-Ring
				56	DA6954167	12	Gasket

★ Items included in and available only as part of Repair Parts Kit SP1K1.

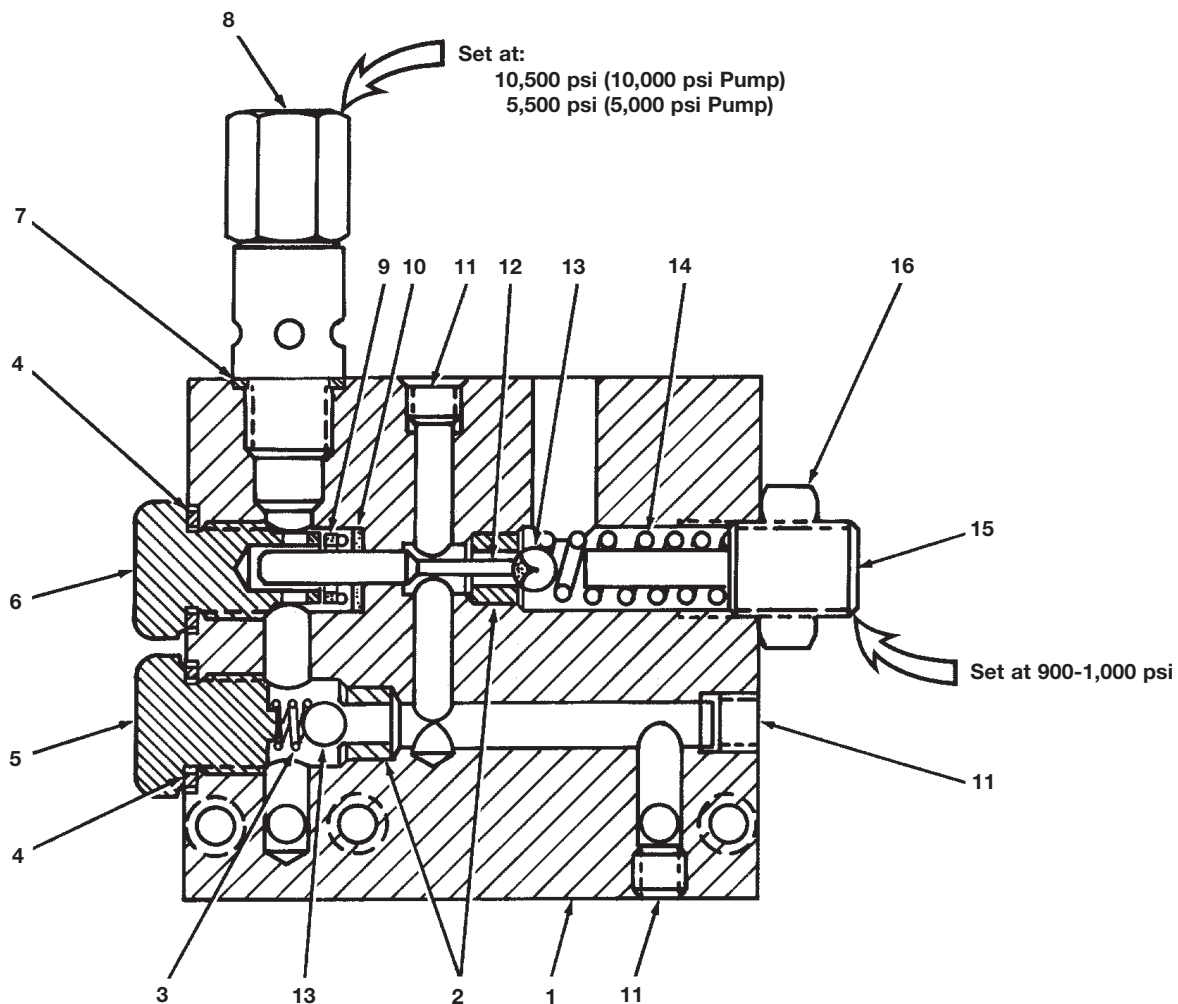


Figure 3 - Unloader Block

Repair Parts List for Figure 3

Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
	WE5000SR	1	Unloader Block 5000 psi pump	7	★B159167	1	Gasket
	PE10000SR	1	Unloader Block 10,000 psi pump	8	P181190W	1	Relief Valve Assembly
1	CR516190	1	Unloader Body Block	9	★DA2232041	1	U-Cup
2	CR351290	2	Ball Seat	10	★SJ100016	1	Back-Up Washer
3	CR360110	1	Compression Spring	11	A1006145	3	Pipe Plug
4	★S15167	2	Gasket	12	CR348339	1	Plunger
5	CR349006	1	Plug	13	★B1007016	2	Ball
6	CR359006	1	Plug	14	CR352110	1	Die Spring
				15	CR361860	1	Actuator Stud
				16	B1010123	1	Jam Nut

★ Items included in and available only as part of Repair Parts Kit SP1K1.

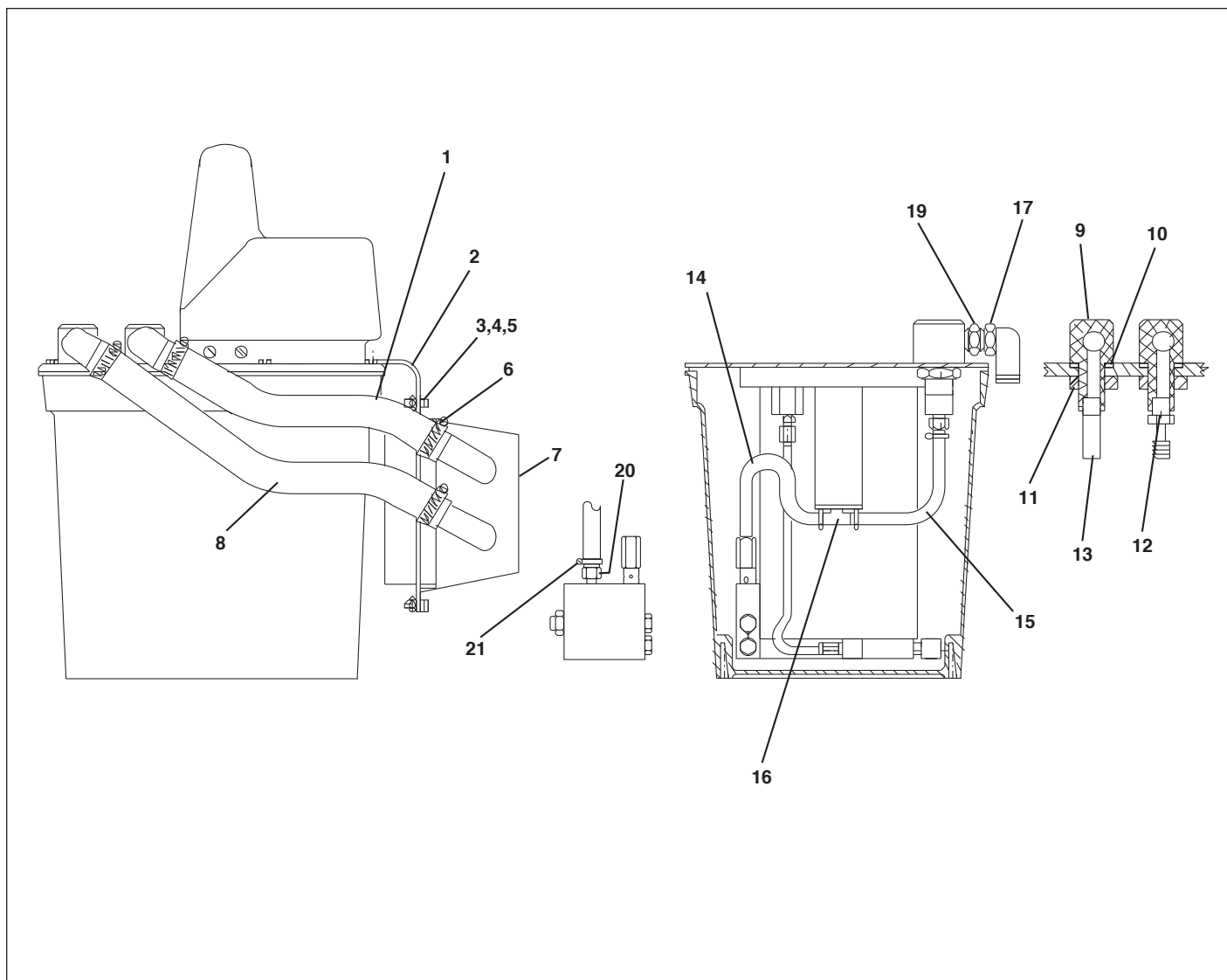


Figure 4 - Heat Exchanger
(Pumps with model numbers ending in "D" or "F".)

Repair Parts List for Figure 4							
Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
	PAC115	1	Replacement Unit: 115V Heat Exchanger	9	DA1034095	2	Fitting
	PAC230	1	230V Heat Exchanger	10	B1016503	2	O-Ring
1	❖DA1658646	1	9" Tube	11	B1016123	2	Hex Nut
2	❖DA3945111	1	Mounting Bracket	12	A8009431	1	Pipe, Steel 1/4" NPT
3	❖B1321028	4	Cap Screw	13	DA1655095	1	Tube Fitting, Male
4	❖B1017121	4	Hex Nut	14	DA1651268	1	Tube
5	❖B1064066	8	Lock Washer	15	DA1652268	1	Tube
6	❖CB40299	4	Hose Clamp	16	DA1653095	1	Tee Fitting
7	DA3946900SR	1	Heat Exchanger Assy: 115V	17	CB46096	2	Coupling
	DA3947900SR	1	Heat Exchanger Assy: 230V	19	DA3031096	2	Adapter
8	❖DA1659646	1	12" Tube	20	DA1654095	1	Male Tube Fitting
				21	DC9639299	4	Hose Clamp
SUB115HEK - 115 Heat Exchanger Repair Kit (contains Items 1-21 listed above and a cord bushing) SUB230HEK - 230V Heat Exchanger Repair Kit (contains Items 1-21 listed above and a cord bushing) PAC115 contains: 2 wire assemblies, SUB115HEK, and a cord bushing PAC230 contains: 2 wire assemblies, SUB230HEK, and a cord bushing ❖ Included with item #7 Heat Exchanger Assy.							

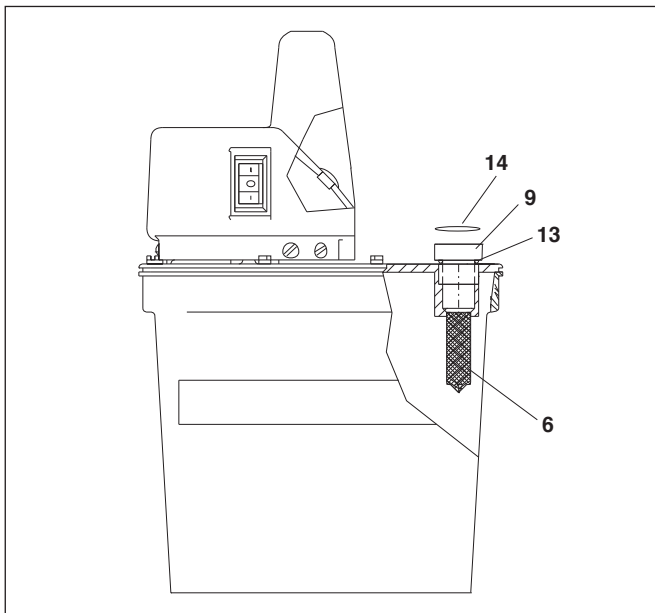


Figure 5 - Vent/Filler Plug Assembly

Repair Parts List for Figure 5			
Item	Part Number	Qty.	Description
6	CR703018	1	Filter
9	CR624024	1	Vent
13	CR516190	1	O-Ring
14	CR516190	1	Decal, Vent

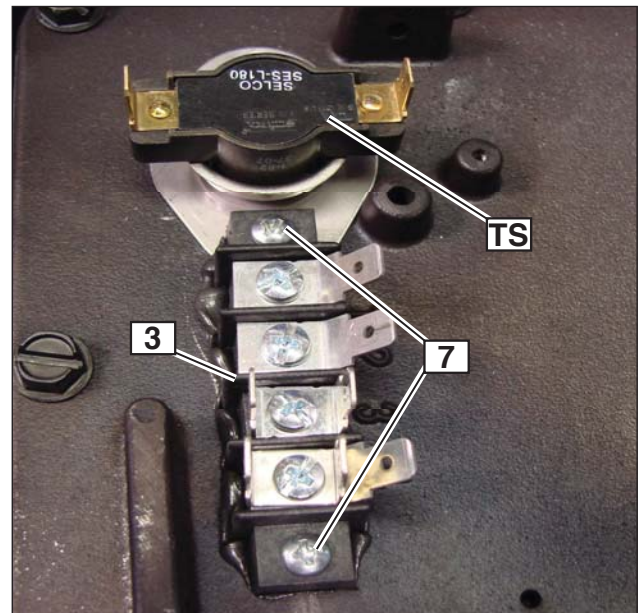


Figure 6 - Temperature Switch and Terminal Block

Repair Parts List for Figure 6			
Item	Part Number	Qty.	Description
3	E1000007	1	Terminal Block
7	DA3927028	2	Bolt
TS	DA5135380	1	Temp Switch, 180°F

Note: Apply gasket sealant between terminal block and pump cover plate.

SECTION III - SHROUD ELECTRICAL

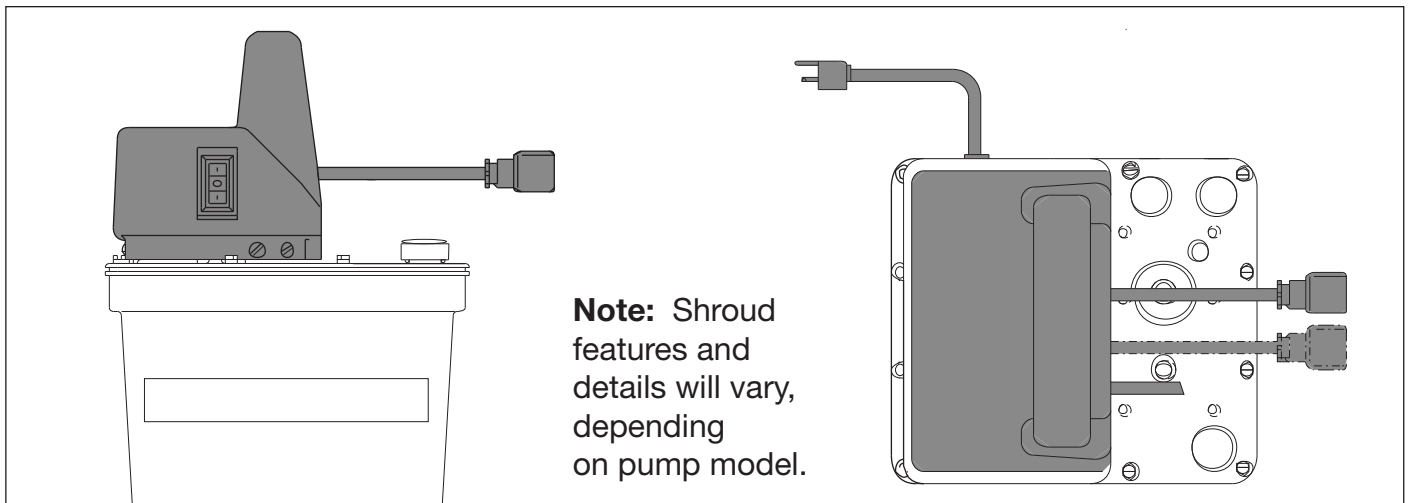


Figure 7 - Shroud Assembly

Notes:

- See tables on pages 9 through 11 for replacement service shroud and pendant information.
- Refer to Figures 8 through 12 for shroud assembly electrical components and wiring diagrams.
- Refer to Figures 13 through 15 for pendant electrical components and wiring diagrams.
- Refer to Figures 16 through 20 for electrical schematics.

The following items are included with a replacement service shroud assembly:

- Electrical power cord.
- Shroud housing and power switch.
- Shroud internal electrical components and wiring (Note: components used will vary depending on pump model).
- Pendant assembly (only for pump models equipped with pendant).
- Solenoid valve cables (only for pump models equipped with electric valve).

Shroud and Pendant Replacement Parts Guide (Continued)

Pump models with prefix: PED1101, PEJ1201, PEJ1301, PEJ1401, PEM1201, PEM1301, PEM1401, PER1301 and PER1401.

MODEL	PUMP DATA				SHROUD AND PENDANT PARTS INFORMATION		
	Valve Type	Heat Exchanger	Voltage	Maximum Pressure	Replacement Service Shroud Model Number	Shroud Replacement Parts List See Figure:	Pendant Replacement Parts List See Figure:
PED1101B	Dump	NO	115V	10,000	DD1227900SR	9	14
PED1101D	Dump	NO	115V	10,000	DD1227900SR	9	14
PED1101E	Dump	NO	230V	10,000	DD1228900SR	9	14
PEJ1201B	3-Way, 2-Position	NO	115V	10,000	DD1225900SR	12	15
PEJ1201D	3-Way, 2-Position	YES	115V	10,000	DD1225900SR	12	15
PEJ1201E	3-Way, 2-Position	NO	230V	10,000	DD1226900SR	12	15
PEJ1301B	3-Way, 3-Position	NO	115V	10,000	DD1225900SR	12	15
PEJ1301D	3-Way, 3-Position	YES	115V	10,000	DD1225900SR	12	15
PEJ1301E	3-Way, 3-Position	NO	230V	10,000	DD1226900SR	12	15
PEJ1401B	4-Way, 3-Position	NO	115V	10,000	DD1225900SR	12	15
PEJ1401D	4-Way, 3-Position	YES	115V	10,000	DD1225900SR	12	15
PEJ1401E	4-Way, 3-Position	NO	230V	10,000	DD1226900SR	12	15
PEM1201B	2-Way Manual	NO	115V	10,000	DD1223900SR	11	(no pendant)
PEM1201D	2-Way Manual	YES	115V	10,000	DD1223900SR	11	(no pendant)
PEM1201E	2-Way Manual	NO	230V	10,000	DD1224900SR	11	(no pendant)
PEM1301B	3-Way Manual	NO	115V	10,000	DD1223900SR	11	(no pendant)
PEM1301D	3-Way Manual	YES	115V	10,000	DD1223900SR	11	(no pendant)
PEM1301E	3-Way Manual	NO	230V	10,000	DD1224900SR	11	(no pendant)
PEM1401B	4-Way Manual	NO	115V	10,000	DD1223900SR	11	(no pendant)
PEM1401D	4-Way Manual	YES	115V	10,000	DD1223900SR	11	(no pendant)
PEM1401E	4-Way Manual	NO	230V	10,000	DD1224900SR	11	(no pendant)
PER1301B	3-Way, 3-Position Tandem Center	NO	115V	10,000	DD1221900SR	8	13
PER1301D	3-Way, 3-Position Tandem Center	YES	115V	10,000	DD1221900SR	8	13
PER1301E	3-Way, 3-Position Tandem Center	NO	230V	10,000	DD1122900SR	8	13
PER1401B	4-Way, 3-Position Tandem Center	NO	115V	10,000	DD1119900SR	8	13
PER1401D	4-Way, 3-Position Tandem Center	YES	115V	10,000	DD1119900SR	8	13
PER1401E	4-Way, 3-Position Tandem Center	NO	230V	10,000	DD1120900SR	8	13
PER1401F	4-Way, 3-Position Tandem Center	YES	230V	10,000	DD1120900SR	8	13
PER1401I	4-Way, 3-Position Tandem Center	NO	230V	10,000	DD1120900SR	8	13
PES1201B	3-Way, 2-Position	NO	115V	10,000	DD1229900SR	10	(no pendant)

Important: The printed circuit board subassembly used on pumps manufactured before January 2009 is out of production and is no longer available for purchase. If circuit board is damaged, a complete replacement service shroud of the latest design must be ordered. See tables on pages 9 through 11 for replacement service shroud model numbers. Contact your Enerpac Authorized Service Center for additional electrical upgrade information.

Shroud and Pendant Replacement Parts Guide (Continued)

Pump models with prefix: PES1201, PES1301, PES1401, WED1101, WEJ1201, WEJ1401, WEM1201, WEM1301, WEM1401, WER1001, WER1301, WER1401, WES1201, WES1301, WES1401 and WET1201.

MODEL	PUMP DATA				SHROUD AND PENDANT PARTS INFORMATION		
	Valve Type	Heat Exchanger	Voltage	Maximum Pressure	Replacement Service Shroud Model Number	Shroud Replacement Parts List See Figure:	Pendant Replacement Parts List See Figure:
PES1201E	3-Way, 2-Position	NO	230V	10,000	DD1230900SR	10	(no pendant)
PES1301B	3-Way, 3-Position	NO	115V	10,000	DD1229900SR	10	(no pendant)
PES1401B	4-Way, 3- Position	NO	115V	10,000	DD1229900SR	10	(no pendant)
PES1401E	4-Way, 3- Position	NO	230V	10,000	DD1230900SR	10	(no pendant)
PES1401F	4-Way, 3- Position	YES	230V	10,000	DD1230900SR	10	(no pendant)
WED1101B	Dump	NO	115V	5,000	DD1227900SR	9	14
WED1101E	Dump	NO	230V	5,000	DD1228900SR	9	14
WEJ1201B	3-Way, 2-Position	NO	115V	5,000	DD1225900SR	12	15
WEJ1201E	3-Way, 2-Position	NO	230V	5,000	DD1226900SR	12	15
WEJ1301B	3-Way, 3-Position	NO	115V	5,000	DD1225900SR	12	15
WEJ1401B	4-Way, 3-Position	NO	115V	5,000	DD1225900SR	12	15
WEJ1401D	4-Way, 3-Position	YES	115V	5,000	DD1225900SR	12	15
WEJ1401E	4-Way, 3 Position	NO	230V	5,000	DD1226900SR	12	15
WEM1201B	2-Way Manual	NO	115V	5,000	DD1223900SR	11	(no pendant)
WEM1201D	2-Way Manual	YES	115V	5,000	DD1223900SR	11	(no pendant)
WEM1201E	2-Way Manual	NO	230V	5,000	DD1224900SR	11	(no pendant)
WEM1201F	2-Way Manual	YES	230V	5,000	DD1224900SR	11	(no pendant)
WEM1301B	3-Way Manual	NO	115V	5,000	DD1223900SR	11	(no pendant)
WEM1301F	3-Way Manual	YES	230V	5,000	DD1224900SR	11	(no pendant)
WEM1401B	4-Way Manual	NO	115V	5,000	DD1223900SR	11	(no pendant)
WEM1401D	4-Way Manual	YES	115V	5,000	DD1223900SR	11	(no pendant)
WEM1401E	4-Way Manual	NO	230V	5,000	DD1224900SR	11	(no pendant)
WER1001B	(no valve)	NO	230V	5,000	DD1119900SR	8	13
WER1301B	3-Way, 3-Position Tandem Center	NO	115V	5,000	DD1221900SR	8	13
WER1301D	3-Way, 3-Position Tandem Center	YES	115V	5,000	DD1221900SR	8	13
WER1301E	3-Way, 3-Position Tandem Center	NO	230V	5,000	DD1222900SR	8	13
WER1401B	4-Way, 3-Position Tandem Center	NO	115V	5,000	DD1119900SR	8	13
WER1401D	4-Way, 3-Position Tandem Center	YES	115V	5,000	DD1119900SR	8	13
WER1401F	4-Way, 3-Position Tandem Center	YES	230V	5,000	DD1120900SR	8	13
WES1201B	3-Way, 2-Position	NO	115V	5,000	DD1301900SR	10	(no pendant)
WES1201D	3-Way, 2-Position	YES	115V	5,000	DD1301900SR	10	(no pendant)
WES1201E	3-Way, 2-Position	NO	230V	5,000	DD1302900SR	10	(no pendant)
WES1301B	3-Way, 3-Position	NO	115V	5,000	DD1301900SR	10	(no pendant)
WES1301E	3-Way, 3-Position	NO	230V	5,000	DD1302900SR	10	(no pendant)
WES1401B	4-Way, 3- Position	NO	115V	5,000	DD1301900SR	10	(no pendant)
WES1401E	4-Way, 3- Position	NO	230V	5,000	DD1302900SR	10	(no pendant)
WET1201B	3-Way, 2-Position	NO	115V	3,500	DD1301900SR	10	(no pendant)

Shroud and Pendant Replacement Parts Guide (Continued)

Pump models with prefix: PER1501 and WER201 (equipped with custom ordered modular style valve)

MODEL	PUMP DATA					SHROUD AND PENDANT PARTS INFORMATION		
	Valve Type	Heat Exchanger	Voltage	Maximum Pressure		Replacement Service Shroud Model Number	Shroud Replacement Parts List See Figure:	Pendant Replacement Parts List See Figure:
				WER Series	PER Series			
PER1501X-VEA- . . . WER1501X-VEA- . . .	4-Way, 3-Position Open Center	OPTIONAL	115V	5,000	10,000	DD1119900SR	8	13
			230V	5,000	10,000	DD1120900SR	8	13
PER1501X-VEC- . . . WER1501X-VEC- . . .	4-Way, 3-Position Tandem Center	OPTIONAL	115V	5,000	10,000	DD1119900SR	8	13
			230V	5,000	10,000	DD1120900SR	8	13
PER1501X-VEF- . . . WER1501X-VEF- . . .	3-Way, 3-Position Tandem Center	OPTIONAL	115V	5,000	10,000	DD1305900SR	8	13
			230V	5,000	10,000	DD1306900SR	8	13

Notes:

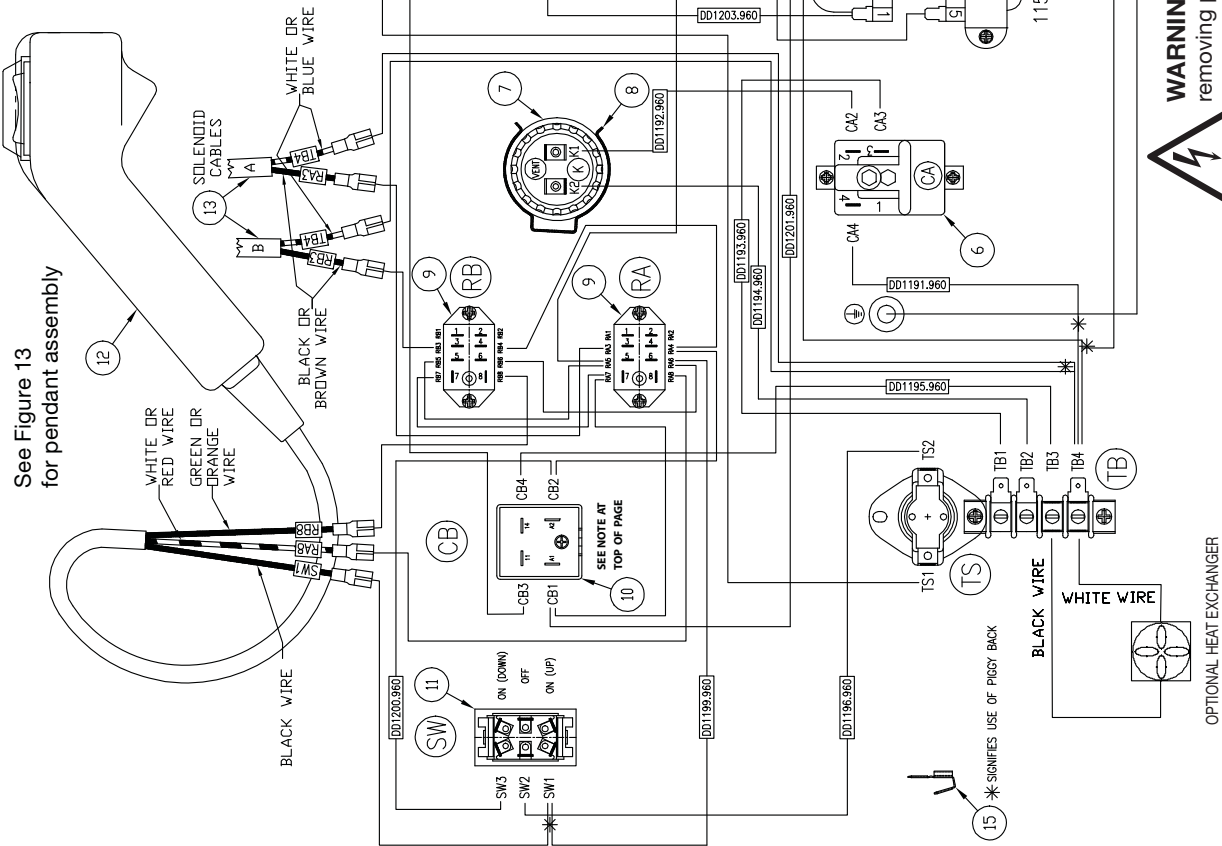
- “X” before dash in model number (see above) will be letter B, D, E, F or I, depending on electrical configuration ordered. Refer to Page 2 for additional information.
- Model number suffix will vary, depending on electrical configuration ordered. Refer to Enerpac catalog for additional information.

Important: The printed circuit board subassembly used on pumps manufactured before January 2009 is out of production and is no longer available for purchase. If circuit board is damaged, a complete replacement service shroud of the latest design must be ordered. See tables on pages 9 through 11 for replacement service shroud model numbers. Contact your Enerpac Authorized Service Center for additional electrical upgrade information.

Alternate wiring arrangement for dual-solenoid PER and WER pumps equipped with Omron contactor relay:

- A - To terminal BR2 of circuit breaker BR (item 4)
- B - To terminal SW3 of switch SW (item 11)
- C - To terminal RA4 of relay RA (item 9)
- D - To terminal TB3 of terminal block TB
- E - To terminal RA7 of relay RA (item 9)
- F - To terminal 8 of transformer TR (item 5)

Note: Contactor relay manufactured by Omron has a **black** housing. Contactor relay manufactured by Finder has a **clear** housing.



WARNING: Disconnect power cord from outlet before removing pump shroud or beginning any repairs.



Figure 8 - Shroud Electrical Components, PER and WER Models (dual solenoid-valve)

Repair Parts List for Figure 8				
Item	Part Number	Qty.	Description	Symbol
1	DC8372378	2	Holder, Fuse	SF, PF
2	DC8370378	1	Fuse, Primary 0.062 Amp (115 V Models)	
	DC8400378	1	Fuse, Primary 0.040 Amp (230 V Models)	
3	DC8371378	1	Fuse, Secondary 0.31 Amp (All Models)	
4	DD1116380	1	Circuit Breaker, 15 Amp (115 V Models)	BR
	DC8366380	1	Circuit Breaker, 10 Amp (230 V Models)	BR
5	DA5875380	1	Transformer, Primary, Dual Voltage	TR
6	DA3482980	1	Relay, Motor Starter	CA
7	DA12447380	1	Capacitor	K
8	CU794017	1	Clip, Spring	
9	DD1163380	2	Relay, Solenoid, 24 V AC Coil	RA, RB
10	E1300008	1	Relay, Motor Contactor, black housing (Omron)	CB
	DD2668380	1	Relay, Motor Contactor, clear housing (Finder)	CB
11	EST0413604	1	Rocker Switch, On-Off-On	SW
12	(See Fig. 13)	1	Pendant Assembly (PER 1301 Models)	
	(See Fig. 13)	1	Pendant Assembly (PER 1401 Models)	
13	DD1164900	2	Cable, Solenoid, with Plug	
14	CR766053	1	Power Cord	
15	DD1239199	1	Connector, Quick Disconnect, 1/4	
-	E1000007	1	Terminal Block	TB
-	DA5135380	1	Temperature Switch, 180°F	TS
Note: Replacement wires and connectors are not available from Enerpac and must be obtained from local sources. Wire assembly part numbers are provided for reference purposes only.				

Alternate wiring arrangement for PED and WED pumps equipped with Omron contactor relay:

- A - To terminal BR2 of circuit breaker BR (item 4)
- B - To terminal SW3 of switch SW (item 11)
- C - To terminal RB8 of relay RB (item 9)
- D - To terminal TB3 of terminal block TB
- E - To terminal RA7 of relay RA (item 9)
- F - To terminal 8 of transformer TR (item 5)

Note: Contactor relay manufactured by Omron has a **black** housing. Contactor relay manufactured by Finder has a **clear** housing.

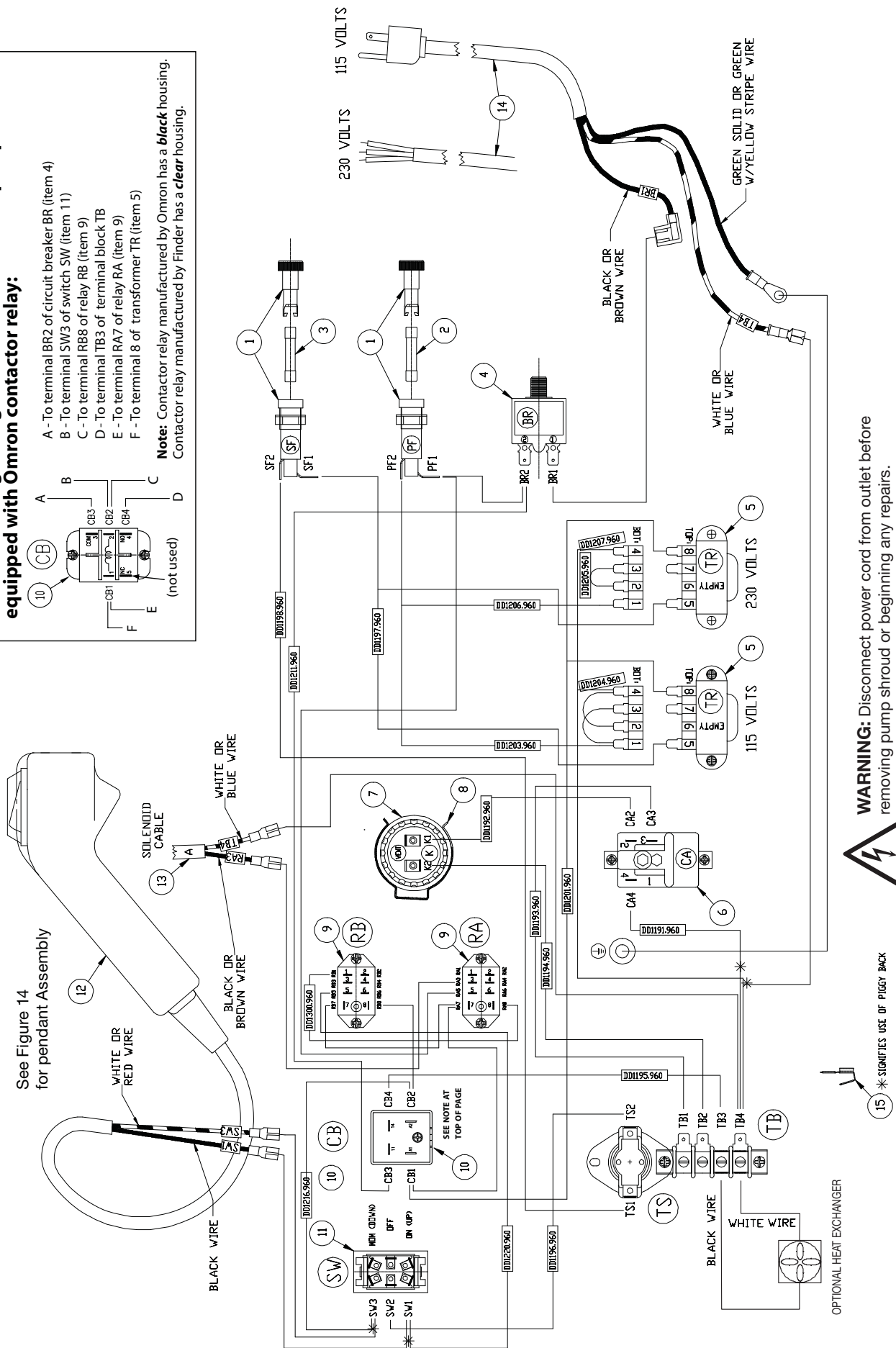


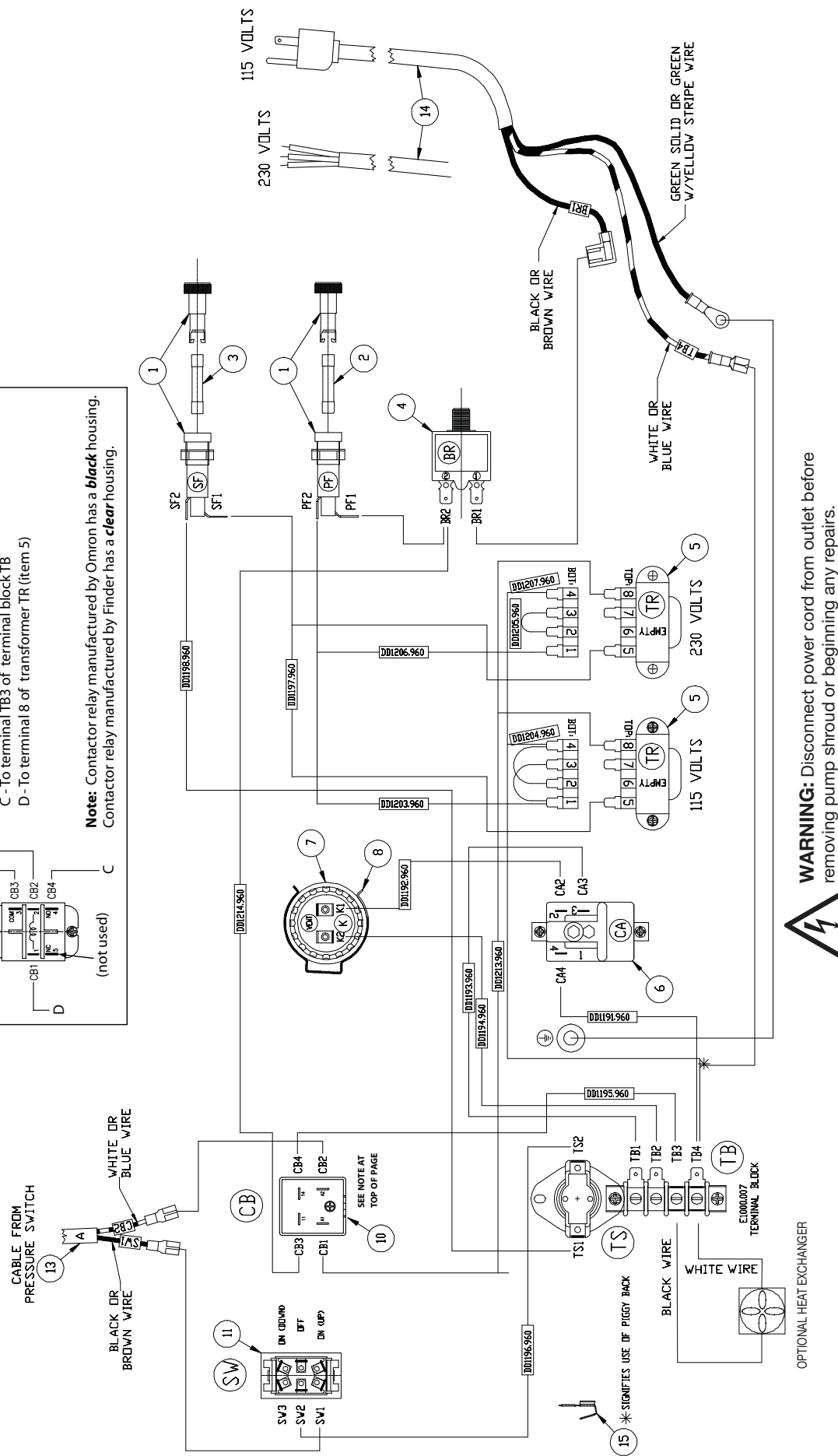
Figure 9 - Shroud Electrical Components, PED and WED Models

Repair Parts List for Figure 9				
Item	Part Number	Qty.	Description	Symbol
1	DC8372378	2	Holder, Fuse	PF, SF
2	DC8370378	1	Fuse, Primary 0.062 Amp (115 V Models)	
	DC8400378	1	Fuse, Primary 0.040 Amp (230 V Models)	
3	DC8371378	1	Fuse, Secondary 0.31 Amp (All Models)	
4	DD1116380	1	Circuit Breaker, 15 Amp (115 V Models)	BR
	DC8366380	1	Circuit Breaker, 10 Amp (230 V Models)	BR
5	DA5875380	1	Transformer, Primary, Dual Voltage	TR
6	DA3482980	1	Relay, Motor Starter	CA
7	DA12447380	1	Capacitor	K
8	CU794017	1	Clip, Spring	
9	DD1163380	2	Relay, Solenoid, 24 V AC Coil	RA
10	E1300008	1	Relay, Motor Contactor, black housing (Omron)	CB
	DD2668380	1	Relay, Motor Contactor, clear housing (Finder)	CB
11	E1500000	1	Rocker Switch, On-Off Momentary	SW
12	(See Fig. 14)	1	Pendant Assembly	
13	DD1215960	1	Cable, Solenoid, with Plug	
14	CR766053	1	Power Cord	
15	DD1239199	1	Connector, Quick Disconnect, 1/4	
-	E1000007	1	Terminal Block	TB
-	DA5135380	1	Temperature Switch, 180°F	TS
Note: Replacement wires and connectors are not available from Enerpac and must be obtained from local sources. Wire assembly part numbers are provided for reference purposes only.				

Alternate wiring arrangement for PES, WES and WET pumps equipped with Omron contactor relay:

- A - To terminal BR2 of circuit breaker BR (item 4)
- B - To white or blue wire of pressure switch cable (item 13)
- C - To terminal TB3 of terminal block TB
- D - To terminal 8 of transformer TR (item 5)

Note: Contactor relay manufactured by Omron has a **black** housing. Contactor relay manufactured by Finder has a **clear** housing.



WARNING: Disconnect power cord from outlet before removing pump shroud or beginning any repairs.

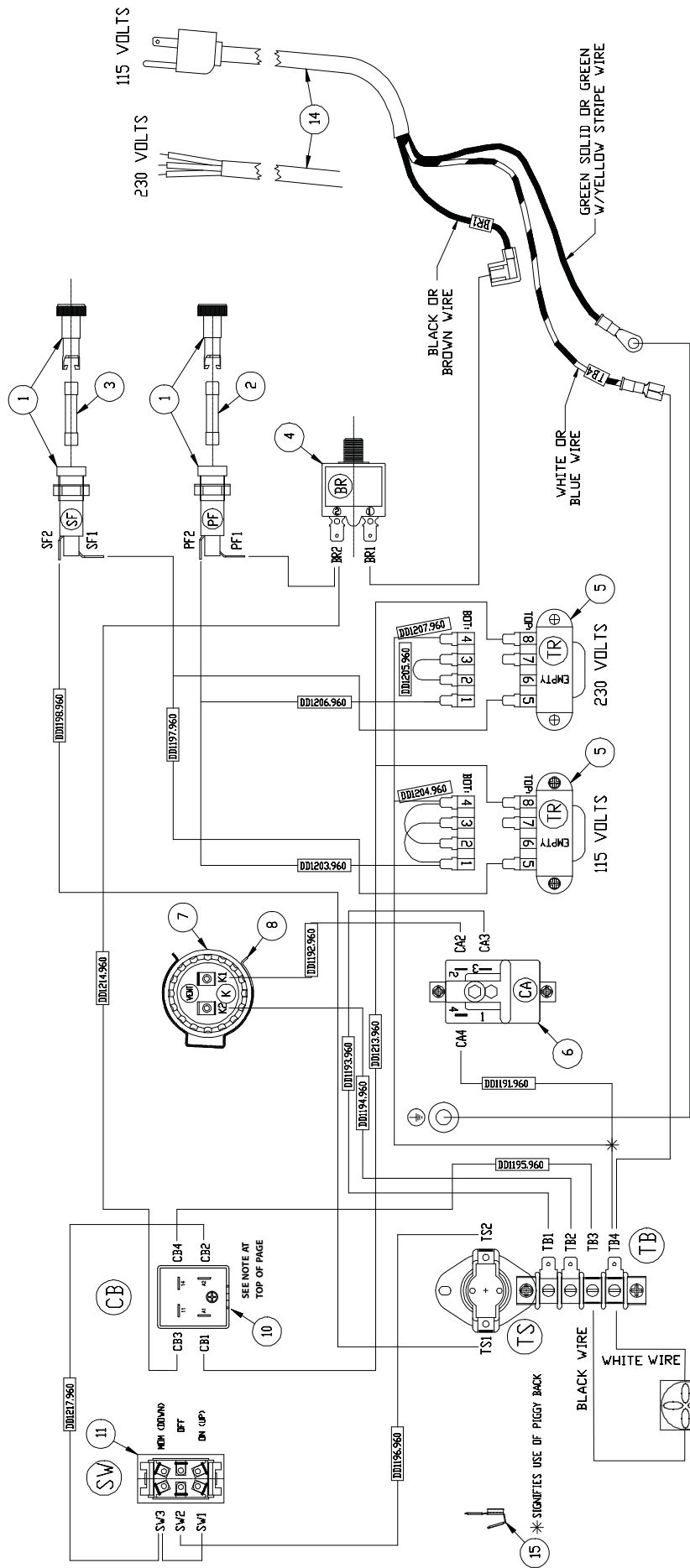
Figure 10 - Shroud Electrical Components, PES, WES and WET Models

Repair Parts List for Figure 10				
Item	Part Number	Qty.	Description	Symbol
1	DC8372378	2	Holder, Fuse	PF, SF
2	DC8370378	1	Fuse, Primary 0.062 Amp (115 V Models)	
	DC8400378	1	Fuse, Primary 0.040 Amp (230 V Models)	
3	DC8371378	1	Fuse, Secondary 0.31 Amp (All Models)	
4	DD1116380	1	Circuit Breaker, 15 Amp (115 V Models)	BR
	DC8366380	1	Circuit Breaker, 10 Amp (230 V Models)	BR
5	DA5875380	1	Transformer, Primary, Dual Voltage	TR
6	DA3482980	1	Relay, Motor Starter	CA
7	DA12447380	1	Capacitor	K
8	CU794017	1	Clip, Spring	
10	E1300008	1	Relay, Motor Contactor, black housing (Omron)	CB
	DD2668380	1	Relay, Motor Contactor, clear housing (Finder)	CB
11	EST0413604	1	Rocker Switch, On-Off-On	SW
13	DD1218960	1	Cable, Solenoid (PES Models)	
	DD1219960	1	Cable, Solenoid w/Plug (WES and WET Models)	
14	CR766053	1	Power Cord	
15	DD1239199	1	Connector, Quick Disconnect, 1/4	
-	E1000007	1	Terminal Block	TB
-	DA5135380	1	Temperature Switch, 180°F	TS
Note: Replacement wires and connectors are not available from Enerpac and must be obtained from local sources. Wire assembly part numbers are provided for reference purposes only.				

Alternate wiring arrangement for PEM and WEM pumps equipped with Omron contactor relay:

- A - To terminal BR2 of circuit breaker BR (item 4)
- B - To terminal SW3 of switch (item 11)
- C - To terminal TB3 of terminal block TB
- D - To terminal 8 of transformer TR (item 5)

Note: Contactor relay manufactured by Omron has a **black** housing. Contactor relay manufactured by Finder has a **clear** housing.



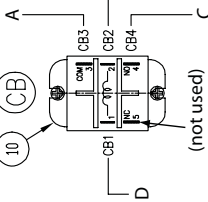
WARNING: Disconnect power cord from outlet before removing pump shroud or beginning any repairs.

Figure 11 - Shroud Electrical Components, PEM and WEM Models

Repair Parts List for Figure 11				
Item	Part Number	Qty.	Description	Symbol
1	DC8372378	2	Holder, Fuse	PF, SF
2	DC8370378	1	Fuse, Primary 0.062 Amp (115 V Models)	
	DC8400378	1	Fuse, Primary 0.040 Amp (230 V Models)	
3	DC8371378	1	Fuse, Secondary 0.31 Amp (All Models)	
4	DD1116380	1	Circuit Breaker, 15 Amp (115 V Models)	BR
	DC8366380	1	Circuit Breaker, 10 Amp (230 V Models)	BR
5	DA5875380	1	Transformer, Primary, Dual Voltage	TR
6	DA3482980	1	Relay, Motor Starter	CA
7	DA12447380	1	Capacitor	K
8	CU794017	1	Clip, Spring	
10	E1300008	1	Relay, Motor Contactor, black housing (Omron)	CB
	DD2668380	1	Relay, Motor Contactor, clear housing (Finder)	CB
11	E1500000	1	Rocker Switch, On-Off-Momentary	SW
14	CR766053	1	Power Cord	
15	DD1239199	1	Connector, Quick Disconnect, 1/4	
-	E1000007	1	Terminal Block	TB
-	DA5135380	1	Temperature Switch, 180°F	TS
Note: Replacement wires and connectors are not available from Enerpac and must be obtained from local sources. Wire assembly part numbers are provided for reference purposes only.				

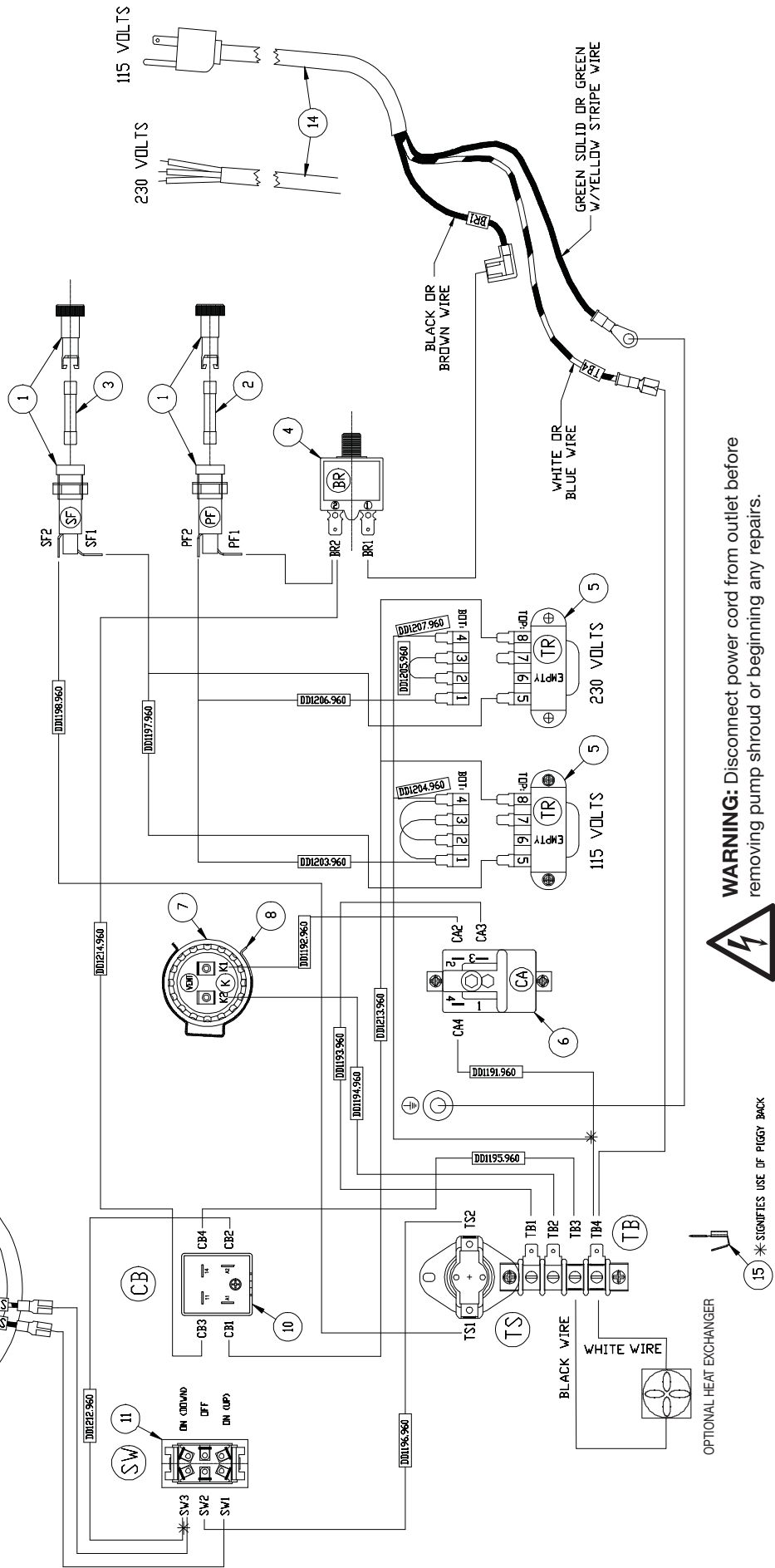
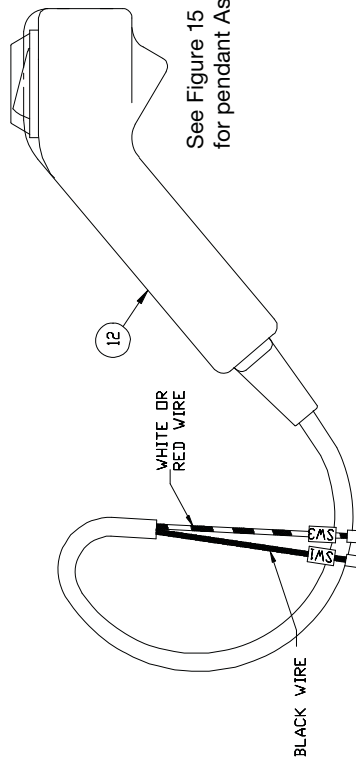
Alternate wiring arrangement for PEJ and WEJ pumps equipped with Omron contactor relay:

- A - To terminal BR2 of circuit breaker BR (item 4)
- B - To terminal SW3 of switch SW (item 11)
- C - To terminal TB3 of terminal block TB
- D - To terminal 8 of transformer TR (item 5)



Note: Contactor relay manufactured by Omron has a **black** housing. Contactor relay manufactured by Finder has a **clear** housing.

See Figure 15 for pendant Assembly



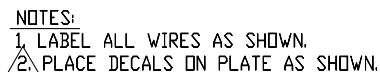
WARNING: Disconnect power cord from outlet before removing pump shroud or beginning any repairs.



15 * SIGNIFIES USE OF PIGGY BACK

Figure 12 - Shroud Electrical Components, PEJ and WEJ Models

Repair Parts List for Figure 12				
Item	Part Number	Qty.	Description	Symbol
1	DC8372378	2	Holder, Fuse	PF, SF
2	DC8370378	1	Fuse, Primary 0.062 Amp (115 V Models)	
	DC8400378	1	Fuse, Primary 0.040 Amp (230 V Models)	
3	DC8371378	1	Fuse, Secondary 0.31 Amp (All Models)	
4	DD1116380	1	Circuit Breaker, 15 Amp (115 V Models)	BR
	DC8366380	1	Circuit Breaker, 10 Amp (230 V Models)	BR
5	DA5875380	1	Transformer, Primary, Dual Voltage	TR
6	DA3482980	1	Relay, Motor Starter	CA
7	DA12447380	1	Capacitor	K
8	CU794017	1	Clip, Spring	
10	E1300008	1	Relay, Motor Contactor, black housing (Omron)	CB
	DD2668380	1	Relay, Motor Contactor, clear housing (Finder)	CB
11	EST0413604	1	Rocker Switch, On-Off-On	SW
12	(See Fig. 15)	1	Pendant Assembly	
14	CR766053	1	Power Cord	
15	DD1239199	1	Connector, Quick Disconnect, 1/4	
-	E1000007	1	Terminal Block	TB
-	DA5135380	1	Temperature Switch, 180°F	TS
Note: Replacement wires and connectors are not available from Enerpac and must be obtained from local sources. Wire assembly part numbers are provided for reference purposes only.				



Item	Part Number	Quantity		Description
		PER and WER 1301 Series	PER and WER 1401 Series	
7	◆❖ L376450	1	1	Cord, Electric
10	◆❖ E1001179	1	1	Terminal, Quick Disconnect, Female
13	◆❖ E1001178	2	2	Terminal, Quick Disconnect, Female
19	◆❖ E1001354	3	3	Terminal, Quick Disconnect, Female Flag
25	◆❖ DA1568007	1	1	Strain Relief
26	◆❖ DA1323190	1	1	Body, Pendant
27	◆ E1500003	1	-	Rocker Switch, MOM-OFF-ON (3-Way Valves)
27A	◆ (included with #27)	1	-	Cover, Dust
28	❖ E1500001	-	1	Rocker Switch, MOM-OFF-MOM (4-Way Valves)
28A	❖ (included with #28)	-	1	Cover, Dust
29	◆❖ DC818003	3	3	Rivets, Snap, Black Nylon
30	◆❖ DA1415101	1	1	Plate, Mounting
31	◆❖ DA1686026	1	1	Decal, ADV
32	◆❖ DA2804026	1	1	Decal, RET

◆ Included as part of replacement pendant assembly DD1243900 (used on PER1301 and WER1301 Series).
❖ Included as part of replacement pendant assembly DD1242900 (used on PER1401 and WER1401 Series).

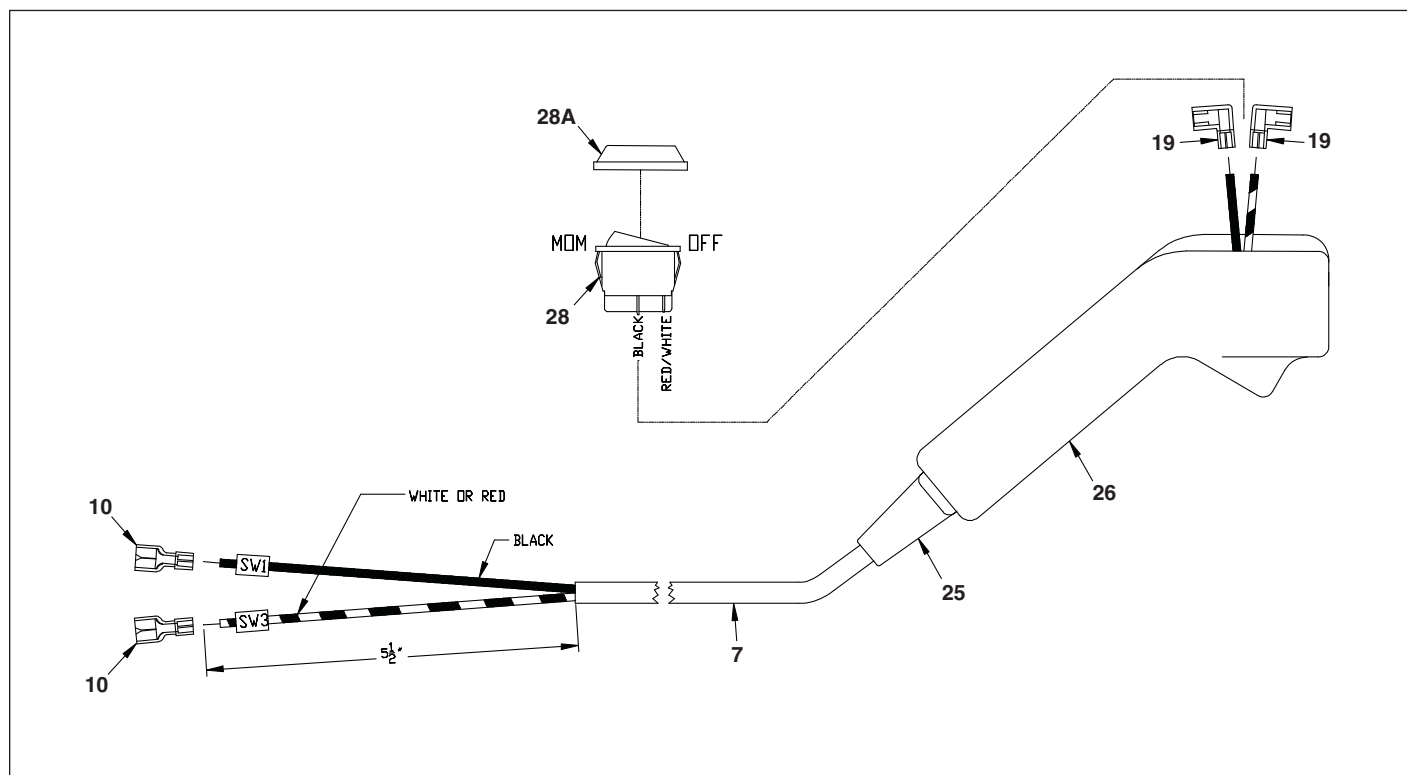


Figure 14 - Dump Pump Pendant Assembly, PED and WED Models

Repair Parts List for Figure 14			
Item	Part Number	Qty.	Description
7	❖ Y667450	1	Cord, Electric
10	❖ E1001179	2	Terminal, Quick Disconnect, Female
19	❖ E1001354	2	Terminal, Quick Disconnect, Female Flag
25	❖ DA1568007	1	Strain Relief
26	❖ CU598190	1	Body, Pendant
28	❖ CU911372	1	Rocker Switch, MOM-OFF
28A	❖ (included w/#28)	1	Cover, Dust
❖ Included as part of replacement pendant assembly DD1240900.			

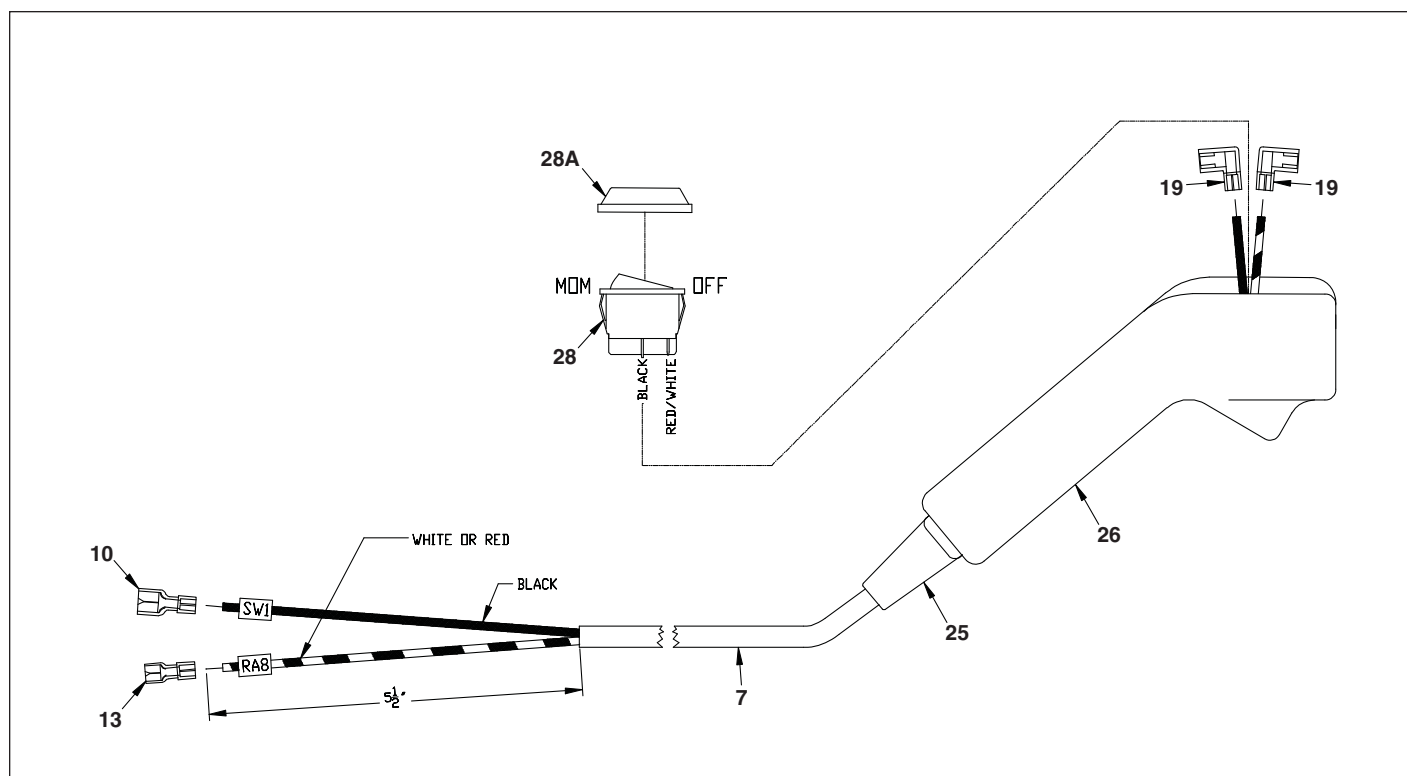
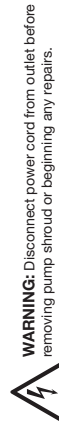


Figure 15 - Jog Pump Pendant Assembly, PEJ and WEJ Models

Repair Parts List for Figures 15			
Item	Part Number	Qty.	Description
7	* Y667450	1	Cord, Electric
10	* E1001179	1	Terminal, Quick Disconnect, Female
13	* E1001178	1	Terminal, Quick Disconnect, Female
19	* E1001354	2	Terminal, Quick Disconnect, Female Flag
25	* DA1568007	1	Strain Relief
26	* CU598190	1	Body, Pendant
28	* CU911372	1	Rocker Switch, MOM-OFF
28A	* (included with #28)	1	Cover, Dust
* Included as part of replacement pendant assembly DD1241900.			



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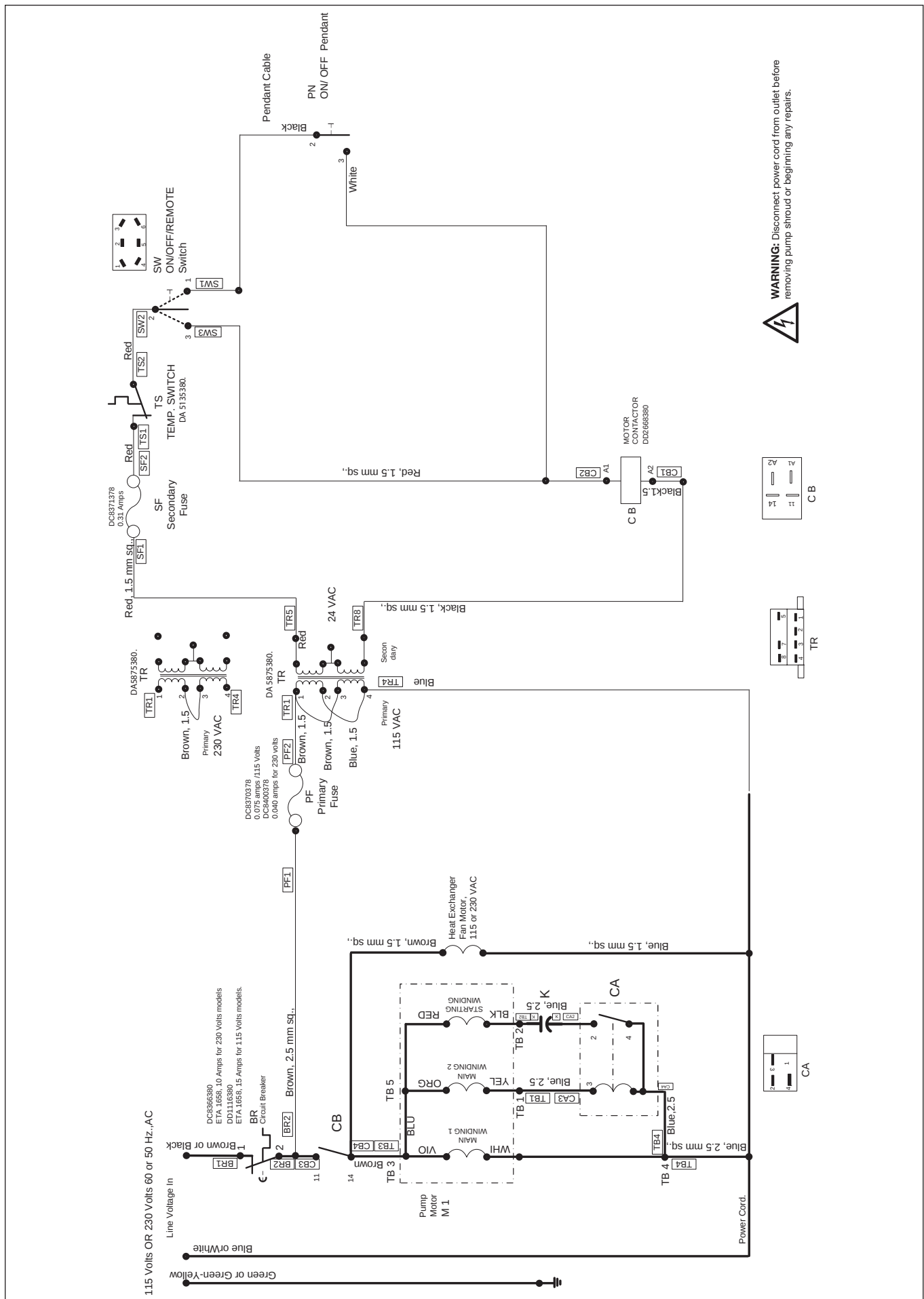


Figure 20 - Electrical Schematic, PEJ and WEJ Models (115 and 230 VAC)

■ SECTION IV - CONTROL VALVES

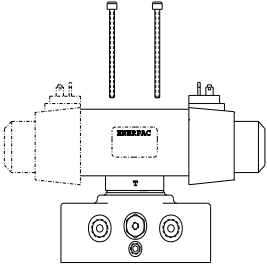
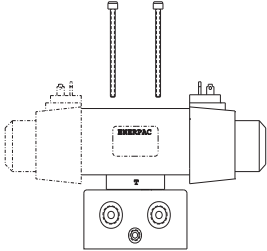
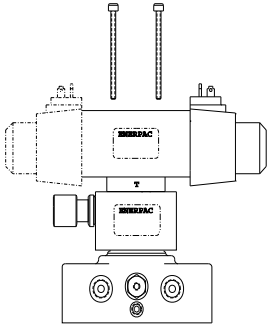
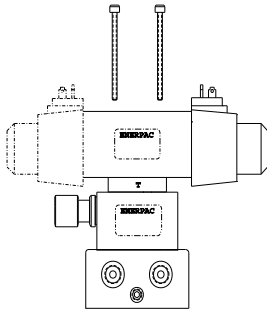
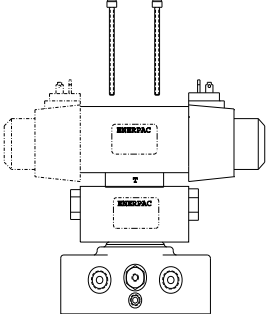
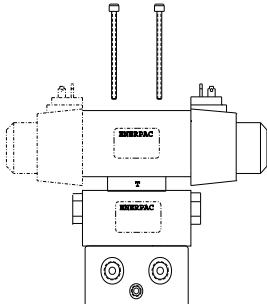
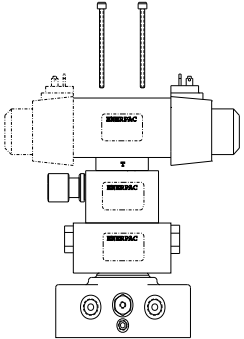
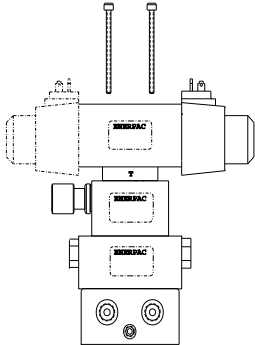
Bolting Configuration	Pump Manifold	Remote Manifold
Use Bolt Kit BK1 Configuration includes: ·solenoid valve ·manifold		
Use Bolt Kit BK2 Configuration includes: ·solenoid valve ·adjustable relief valve ·manifold		
Use Bolt Kit BK2 Configuration includes: ·solenoid valve ·locking (P.O. check) valve ·manifold		
Use Bolt Kit BK3 Configuration includes: ·solenoid valve ·adjustable relief valve ·locking (P.O. check) valve ·manifold		
Torque bolts (4) to 21-26 in-lbs (2,5-3,1 Nm) with lubricated threads.		

Figure 21 - Valve Bolting Configurations

REF531

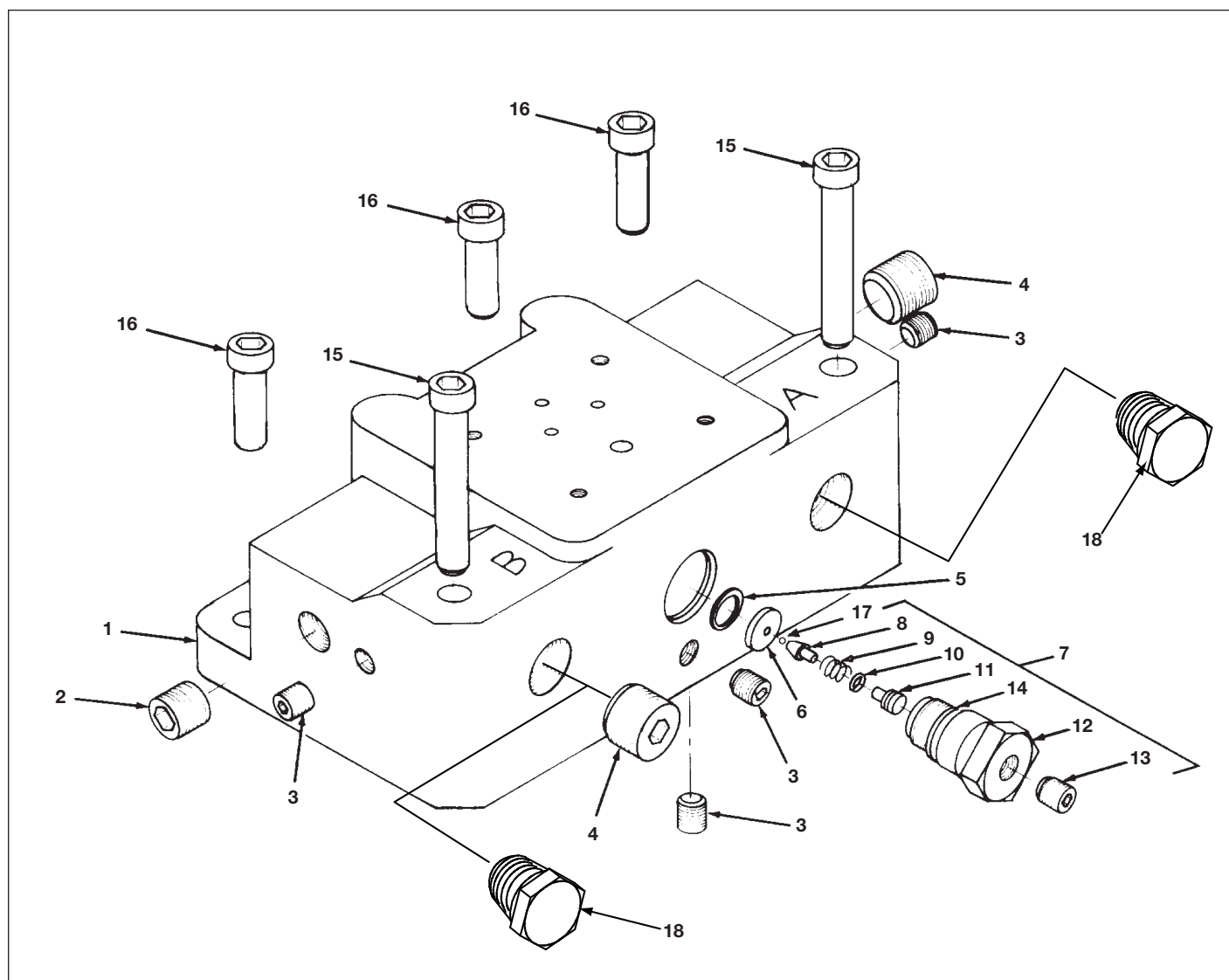


Figure 22 - Pump Manifold, PEM, PER, PES, PET, WES and WET Models
(1301, 1401 and 1501 Series - PER Manifold Shown)

Repair Parts List for Figure 22

Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
1	■ CR910038	1	Solenoid Valve Manifold	10	■ ★ B1003503	1	O-Ring
	CR909038	1	Manual Valve Manifold	11	■ A8005007	1	Plug
2	■ A1008245	1	Plug	12	■ CU13190	1	Valve Body
3	■ A1006245	4	Plug	13	■ L86028	1	Set Screw
4	■ A1009245	1	Plug (3-Way Valve Only)	14	■ ★ B1223503	1	O-Ring
5	■ ★ P20037	1	Gasket	15	B1359028	2	Screw
6	■ CB576290	1	Ball Seat	16	B1349028	3	Screw
7	■ CU460900SR	1	Relief Valve Assembly	17	■ B1003016	1	1/8" Dia. Ball
8	■ CH179013	1	Ball Guide	18	■ R515245-2	1	Shipping Plug (3-Way Valve)
9	■ ★ A8038110	1	Spring		■ R515245-2	2	Shipping Plug (4-Way Valve)

■ Items included in and available only as part of Repair Kit MPK2.

★ Items included in and available only as part of Repair Kit MVK3.

NOTE: This plug (Item 29) replaces the solenoid on 2-position valves.

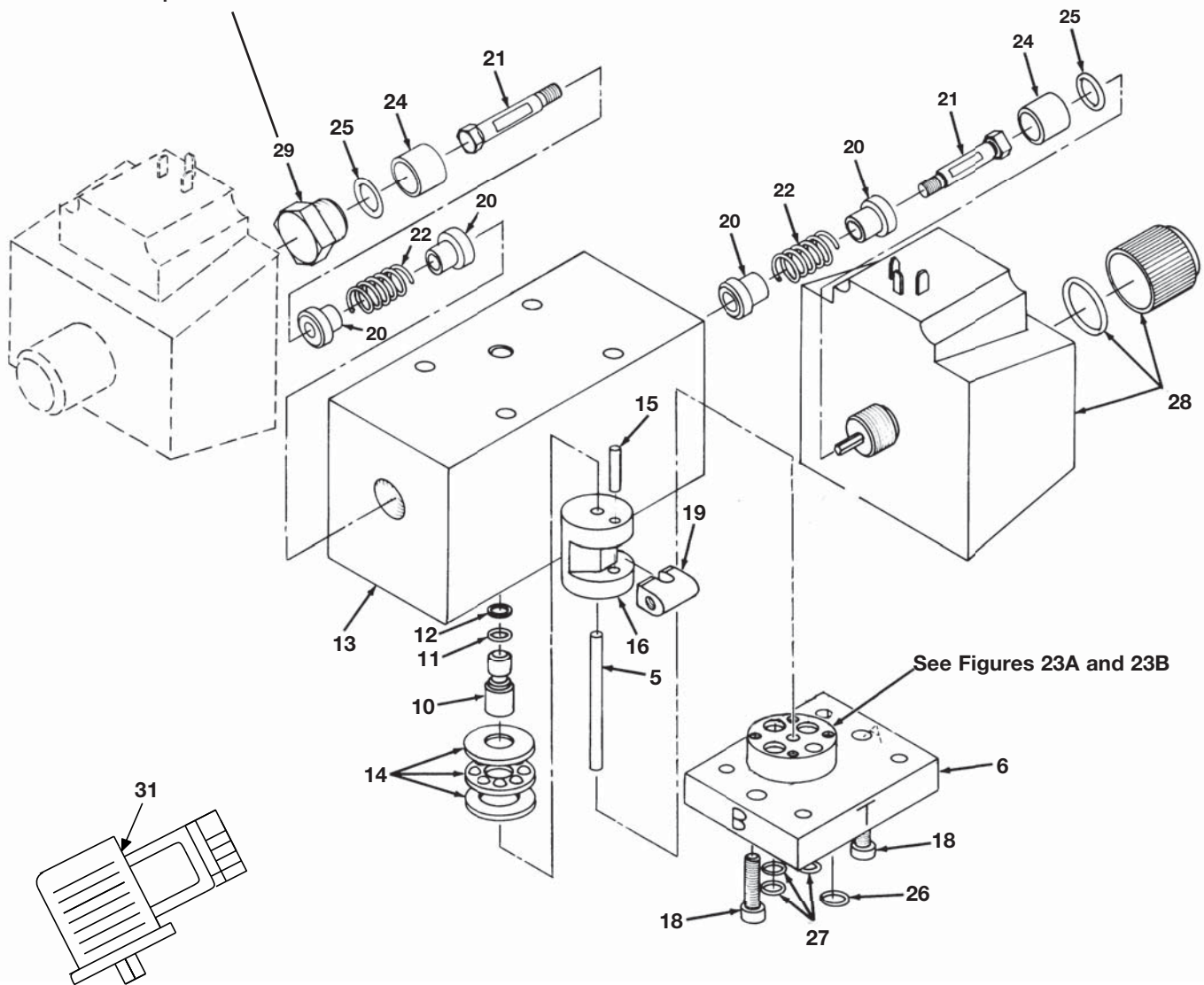


Figure 23 - Modular Valve Assembly, PER and WER Models (1301, 1401 and 1501 Series)

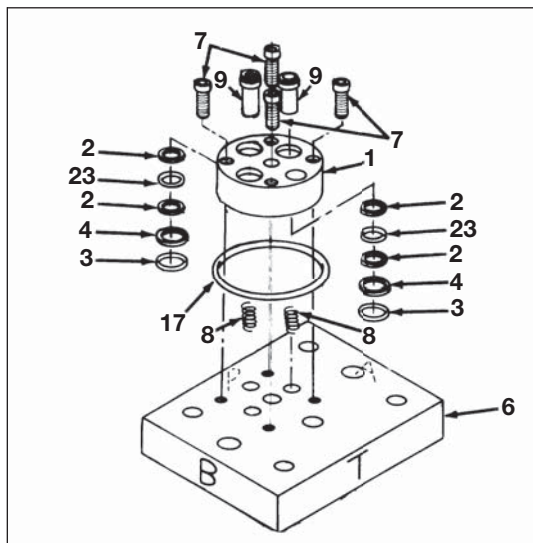


Figure 23A - Seal Assemblies and Springs, Non-Locking 3-Way Valves

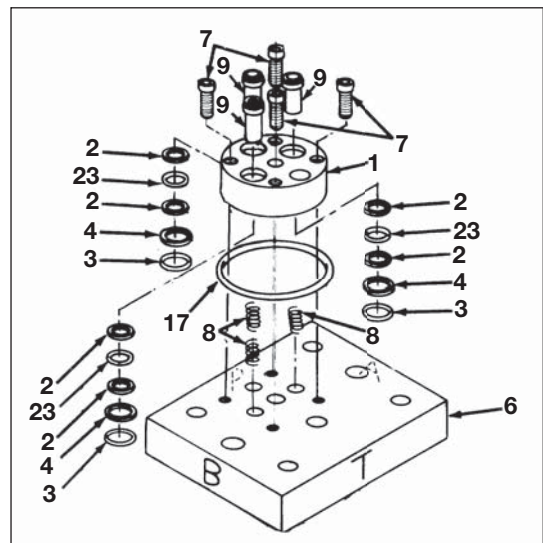
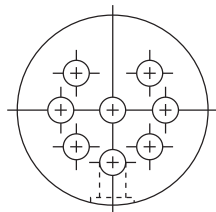


Figure 23B - Seal Assemblies and Springs, All 4-Way Valves and Locking 3-Way Valves

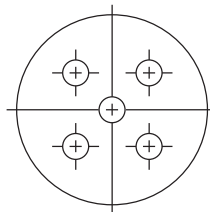
Repair Parts List for Figure 23

Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
1	DC458101	1	Clamp Plate	14	CN552107	1	Bearing
2	★B1009566	6	Back-Up, All 4-Way and Locking 3-Way Valves	15	DA1567061	1	Needle Roller
	★B1009566	4	Back-Up, Non-Locking 3-Way Valve	16	See Figure 24 for Flow Path		Barrel Assembly
3	★B1009903	3	O-Ring, All 4-Way and Locking 3-Way Valves	17	★B1232503	1	O-Ring
	★B1009903	2	O-Ring, Non-Locking 3-Way Valves	18	B1321028	2	Cap Screw
4	★CN620044	3	Ring, All 4-Way and Locking 3-Way Valves	19	CN624190	1	Pivot Block
	★CN620044	2	Ring, Non-Locking 3-Way Valves	20	CN626001	4	Spring Guide
5	CN544061	1	Dowel Pin	21	CN553149	2	Shift Rod
6	DC522190	1	Mounting Plate	22	★DA11757110	2	Spring
7	DC461028	4	Cap Screw	23	★B1004503	3	O-Ring, All 4-Way and Locking 3-Way Valves
8	★DC525110	3	Comp. Spring, All 4-Way and Locking 3-Way Valves		★B1004503	2	O-Ring, Non-Locking 3-Way Valves
	★DC525110	2	Compression Spring, Non-Locking 3-Way Valves	24	CW75186	2	Spacer
9	CN628040	3	Metal Seal, All 4-Way and Locking 3-Way Valves	25	★B1220503	2	O-Ring
	CN628040	2	Metal Seal, Non-Locking 3-Way Valves	26	★B1011903	1	O-Ring
10	CU282416	1	Valve Stem	27	★B1008903	3	O-Ring
11	★B1008564	1	Back-Up	28	E1300007	A/R	Solenoid Assembly: 115V, 60 Hz
12	★B1003503	1	O-Ring		DA3035720	A/R	Solenoid Assembly: 230V, 60 Hz
13	CR967190	1	Elev. Valve Housing		DA3582720	A/R	Solenoid Assembly: 220/240V, 50 Hz
					DA3036720	A/R	Solenoid Assembly: 24VDC
				29	CU574006	1	Plug (2 Position Valves only)
				31	VEP1	A/R	Standard Terminal Plug 250VAC max

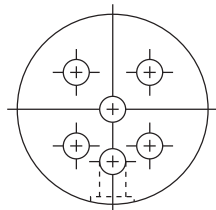
★ Items included in and available only as part of Repair Kit MVK3. A/R = As Required.



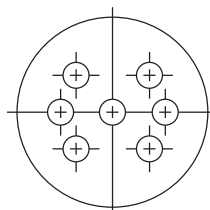
Valve Code	A, P
Part Number	CR378900SR
Description	Open Center



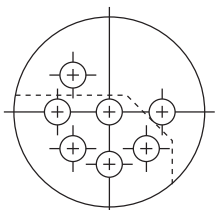
Valve Code	B, G, H
Part Number	CR376900SR
Description	Closed Center



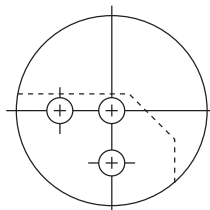
Valve Code	C, F
Part Number	CR377900SR
Description	Tandem Center



Valve Code	D, M
Part Number	CR375900SR
Description	Float Center



Valve Code	E
Part Number	CR380900SR
Description	Crossover Center

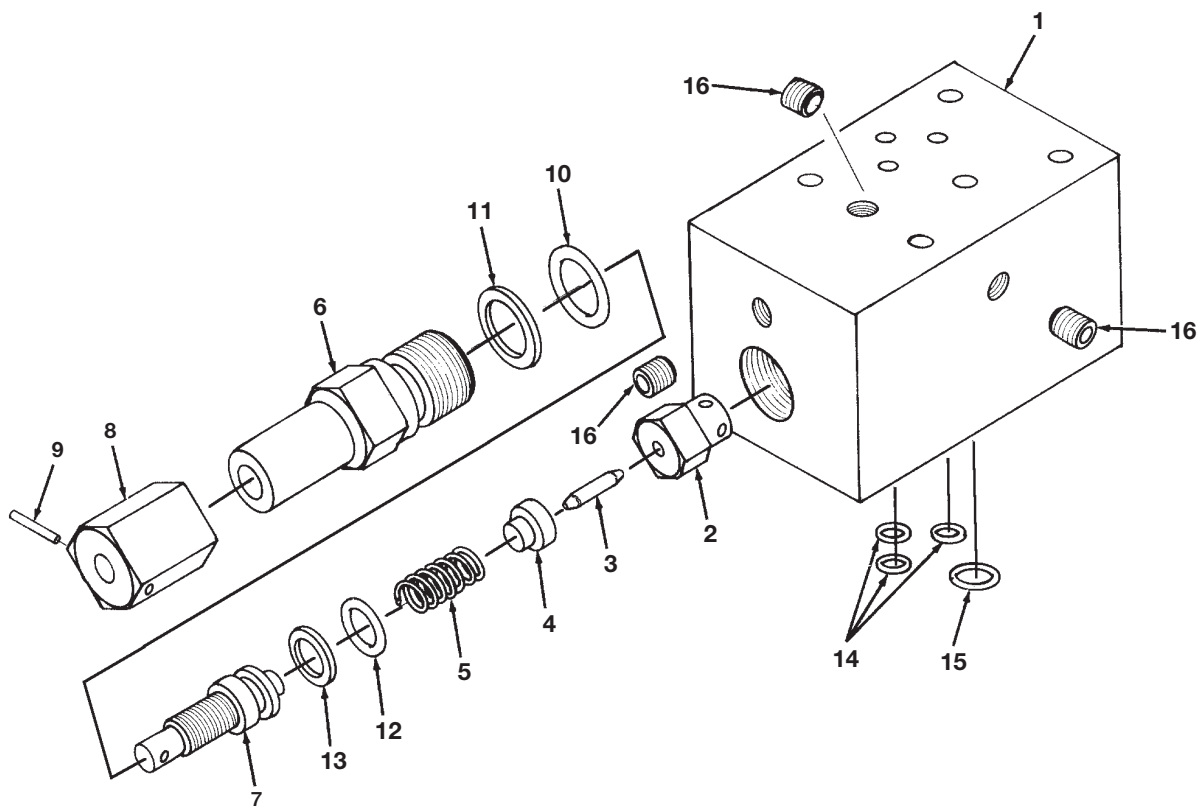


Valve Code	K
Part Number	CR379900SR
Description	Normally Open Center

Valve Flow-path Codes

Symbol	Description	Valve Code	Symbol	Description	Valve Code
	4-way/3-position (4/3) Open Center	A		3-way/3-position (3/3) Closed Center	G
	4-way/3-position (4/3) Closed Center	B		2-way/2-position (2/2) Normally Closed	H*
	4-way/3-position (4/3) Tandem Center	C		2-way/2-position (2/2) Open Center	K*
	4-way/3-position (4/3) Float Center	D		4-way/2-position (4/2) Float Offset	M
	4-way/2-position (4/2) Crossover Offset	E		3-way/2-position (3/2) Normally Open	P
	3-way/3-position (3/3) Tandem Center	F	* Requires use of tank port for dump or unloading (valve codes H and K)		

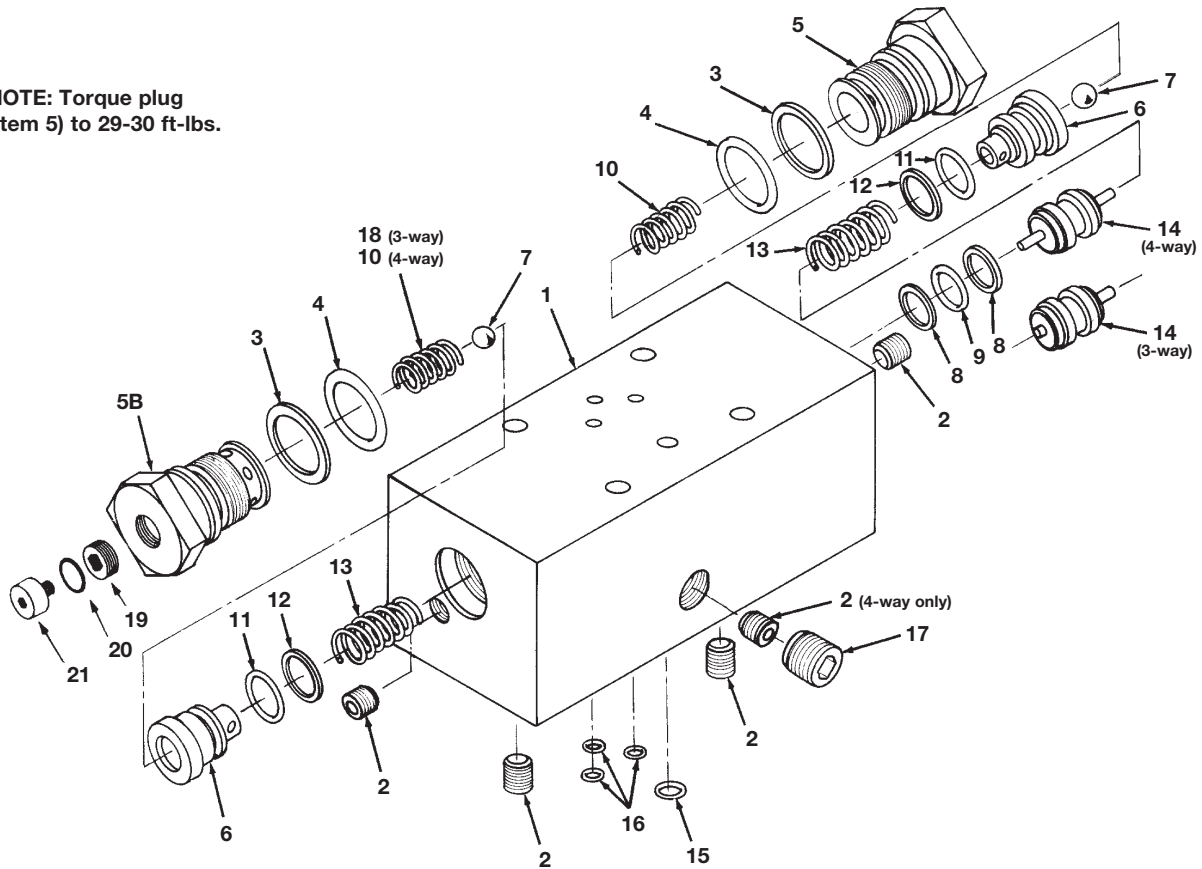
Figure 24 - Barrel Assemblies and Flow Paths, PER and WER Models



**Figure 25 - External Pressure Control Valve, PER and WER Models
(optional - 1301, 1401 and 1501 Series)**

Repair Parts List for Figure 25							
Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
	VS11		Replacement Valve	9	B1057057	1	Spring Pin
1	CW111190	1	Relief Valve Block	10	★B1013503	1	O-Ring
2	CW112290	1	Valve Seat	11	★B1115564	1	Back-Up Washer
3	CW113051	1	Piston	12	★B1219503	1	O-Ring
4	CW114013	1	Spring Guide	13	★B1013564	1	Back-Up Washer
5	★A8072110	1	Spring	14	★B1008903	3	O-Ring
6	CW115190	1	Valve Body	15	★B1011903	1	O-Ring
7	CW116028	1	Adjustment Screw	16	A1006245	4	Pipe Plug
8	CW117020	1	Valve End Cap				
★ Items included in and available only as part of Repair Kit MVK3.							

NOTE: Torque plug
(Item 5) to 29-30 ft-lbs.



**Figure 26 - 3 and 4-Way Locking Pilot-Operated Check Valves, PER and WER Models
(optional - 1301, 1401 and 1501 Series)**

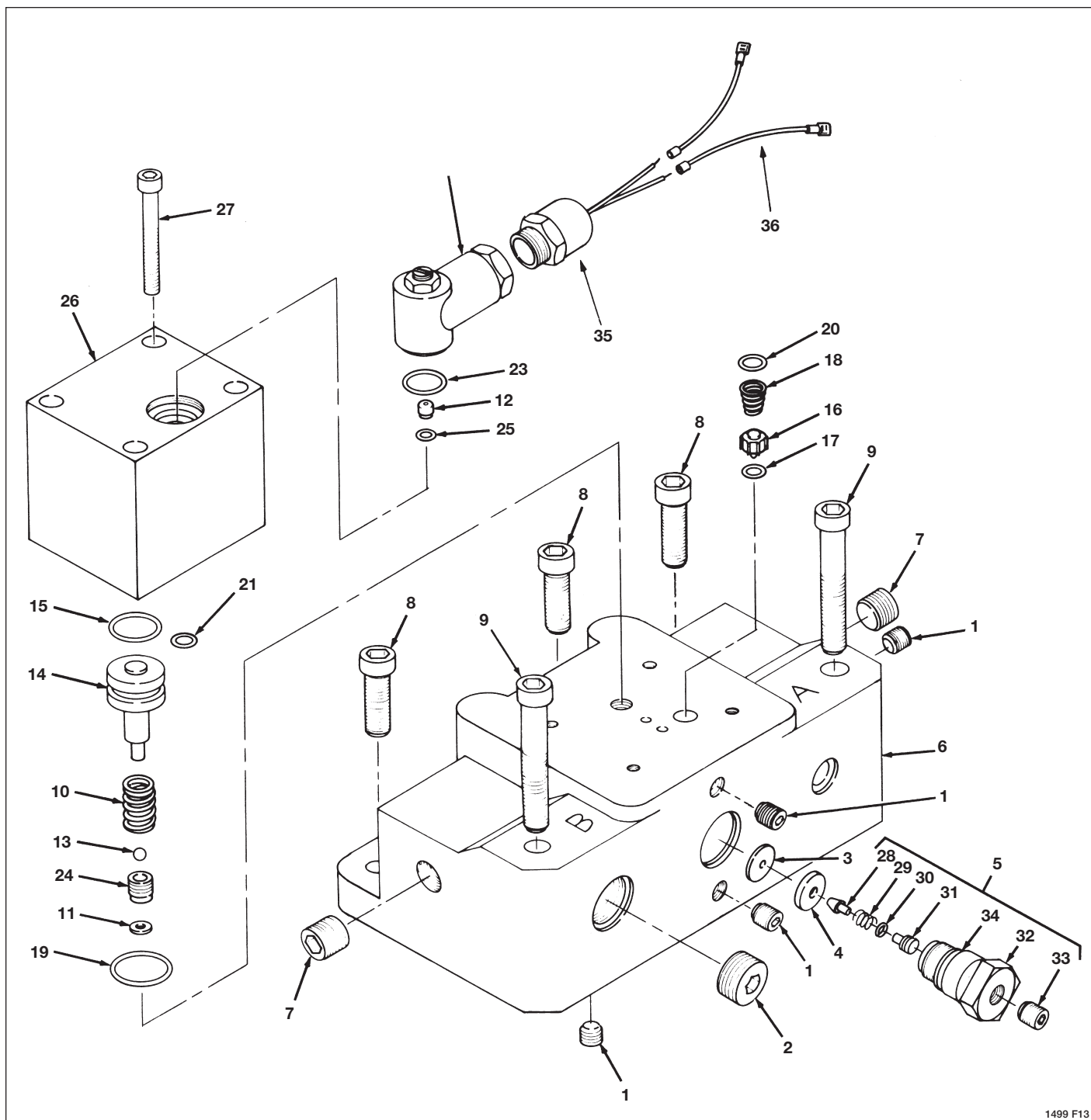
Repair Parts List for Figure 26

Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
	VS51		3-Way P.O. Check	10	CR121110	1	Compression Spring 3-Way Valve
	VS61		4-Way P.O. Check		CR121110	2	Compression Spring 4-Way Valve
1	CR126190	1	Valve Body	11	★B1014903	2	O-Ring
2	A1006245	4	Pipe Plug 3-Way Valve	12	★B1014564	2	Back-Up
	A1006245	5	Pipe Plug 4-Way Valve	13	CR122110	2	Compression Spring
3	★B1019565	2	Split Back-Up	14	DA2945051	1	Piston 3-Way Valve
4	★B1019903	2	O-Ring		CR123051	1	Piston 4-Way Valve
5	CR125006	2	Plug 4-Way Valve	15	★B1011903	1	O-Ring
5B	DA4995006	1 ea. 5&5B	Plug 3-Way Valve	16	★B1008903	3	O-Ring
6	CR124290	2	Seat	17	A1008245	1	Plug
7	★B1008016	2	Ball	18	A8126110	1	Spring, 3-Way Valve
8	★B1110564	2	Back-Up	19	DA4994028	1	Set Screw
9	★B1008503	1	O-Ring	20	★C846037	1	Gasket
				21	B1342028	1	Screw

★ Items included in and available only as part of Repair Kit MVK3.

NOTES:

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Figure 27 - Dump Valve, PED and WED Models (1100 Series)

Repair Parts List for Figure 27

Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
	DA1895900SR		Replacement Valve 120V	19	★B1230503	1	O-Ring
	DA2182900SR		Replacement Valve 240V	20	★B1219503	1	O-Ring
1	A1006245	4	Pipe Plug	21	★B1001503	1	O-Ring
2	R515245-2	1	Plug	22	DA1873720	1	120 V. Solenoid
3	★P20037	1	Gasket		DA2181720	1	240 V. Solenoid
4	CB576290	1	Ball Seat	23	★B1221503	1	O-Ring
5	CU460900SR	1	Relief Valve Assembly	24	DA1810290	1	Seat
6	DA1820038	1	Valve Body	25	DA498503	1	O-Ring
7	A1008245	2	Plug	26	DA1811190	1	Dump Block
8	B1349028	3	Screw	27	B1019028	4	Screw
9	B1359028	2	Screw	28	CH179013	1	Ball Guide
10	★CU906110	1	Spring	29	★A8038110	1	Spring
11	★C846037	1	Gasket	30	★B1003503	1	O-Ring
12	DA1865290	1	Seat	31	A8005007	1	Plug
13	★B1007016	1	Ball	32	CU13190	1	Valve Body
14	DA1818051	1	Piston	33	L86028	1	Set Screw
15	★B1210503	1	O-Ring	34	★B1223503	1	O-Ring
16	DSA8039290	1	Valve Seat	35	DA1522095	1	Fitting
17	★B1002503	1	O-Ring	36	DA1887900	1	Cable
18	★CA978110	1	Spring	37	B1003016	1	1/8" Dia. Ball
★ Items included in and available only as part of Repair Kit DVK1.							

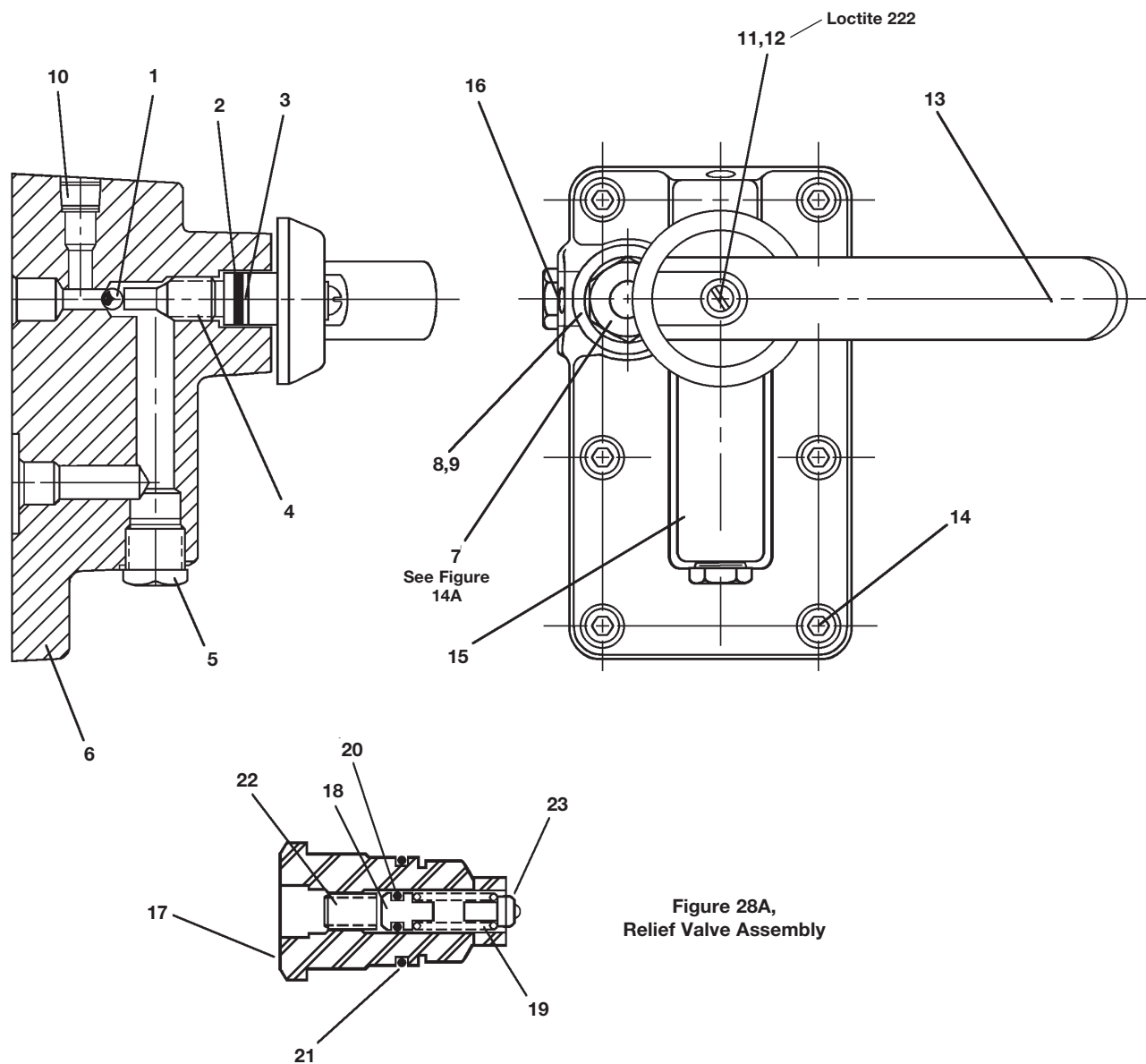


Figure 28A,
Relief Valve Assembly

Figure 28 - 2-Way Manual Valve, PEJ, PEM, PES, WEJ, WEM, WES and WET Models
(1200 Series)

Repair Parts List for Figure 28							
Item	Part Number	Qty.	Description		Item	Part Number	Qty. Description
	VMP10000D		Replacement Valve		13	Y402070	1 Valve Handle
1	★B1009016	1	Ball		14	B1349028	6 Screw
2	★B1111203	1	O-Ring		15	CN677026	1 Decal
3	★B1111564	1	Washer		16	A1006245	1 Pipe Plug (not shown)
4	C790010	1	Stem		17	CU13190	1 Valve Body
5	R515245-2	1	Plug		18	A8005007	1 Plug
6	CR908038	1	Valve Manifold		19	★A8038110	1 Spring
7	See Figure 28A	1	Relief Valve Assembly		20	★B1003503	1 O-Ring
8	★P20037	1	Gasket		21	★B1223503	1 O-Ring
9	★CB576290	1	Ball Seat		22	L86028	1 Set Screw
10	A1008245	1	Hex Plug (not shown)		23	★CH179013	1 1/8" Dia. Ball and Ball
11	★B1086108	1	Washer			★B1003016	Guide Assembly
12	★A8076048	1	Screw				
★ Items included in and available only as part of Repair Kit VMP10000DK.							

Repair Parts List for Figure 29

Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
	VMF10000D		3-Way, 3 Position Manual Valve	19	A8005071	1	Detent Disc
	VMF10500D		3-Way, 3 Position Manual Valve w/ Locking Center	20	Y325070	1	Handle
1	B1326028	2	Socket Hd.Cap Screw	21	★B1086108	1	Washer
2	★B1111803	4	O-Ring (8 in. locking valve)	23	★CB28110	3	Spring
3	DA1264190	1	Valve Body	24	B1389028	4	Capscrew 3-Way Valve
4	★B1006503	3	O-Ring		B1401028	4	Capscrew 3-Way Valve with Locking Center
5	★B1011564	6	Back-Up Ring	25	★A8076048	1	Screw
6	DA9560041	3	Metal Seal	Note: Items 26-38 are for locking center valves only.			
7	★B1269503	1	O-Ring	26	★CR356013	2	Guide Spring
8	★B1109057	1	Spring Pin	27	★B1116803	2	O-Ring
9	CH542950SR	1	Disc Assembly	28	★CJ656110	1	Compression Spring
10	CH536104	1	Shaft	29	★B1008016	1	Ball
11	★B1007503	1	O-Ring	30	★B1011503	1	O-Ring
12	★B1012564	1	Back-Up Ring	31	★B1113564	1	Back-Up Washer
13	CB328281	1	Needle Bearing	32	CK598900	1	Piston Assembly
14	CB327101	1	Bearing Plate	33	★B1009503	1	O-Ring
15	DA1260001	1	Cap	34	★B1111564	2	Back-Up Washer
16	★A8039110	1	Spring	35	Y126290	2	Seat
17	★B1006016	1	Ball	36	CL889950SR	1	Body Assembly with Pin
18	★B1126057	1	Spring Pin	37	★CR355167	2	Gasket
				38	Y383900SR	1	Valve Assembly
★ Items included in and available only as part of Repair Kit VM4K3.							

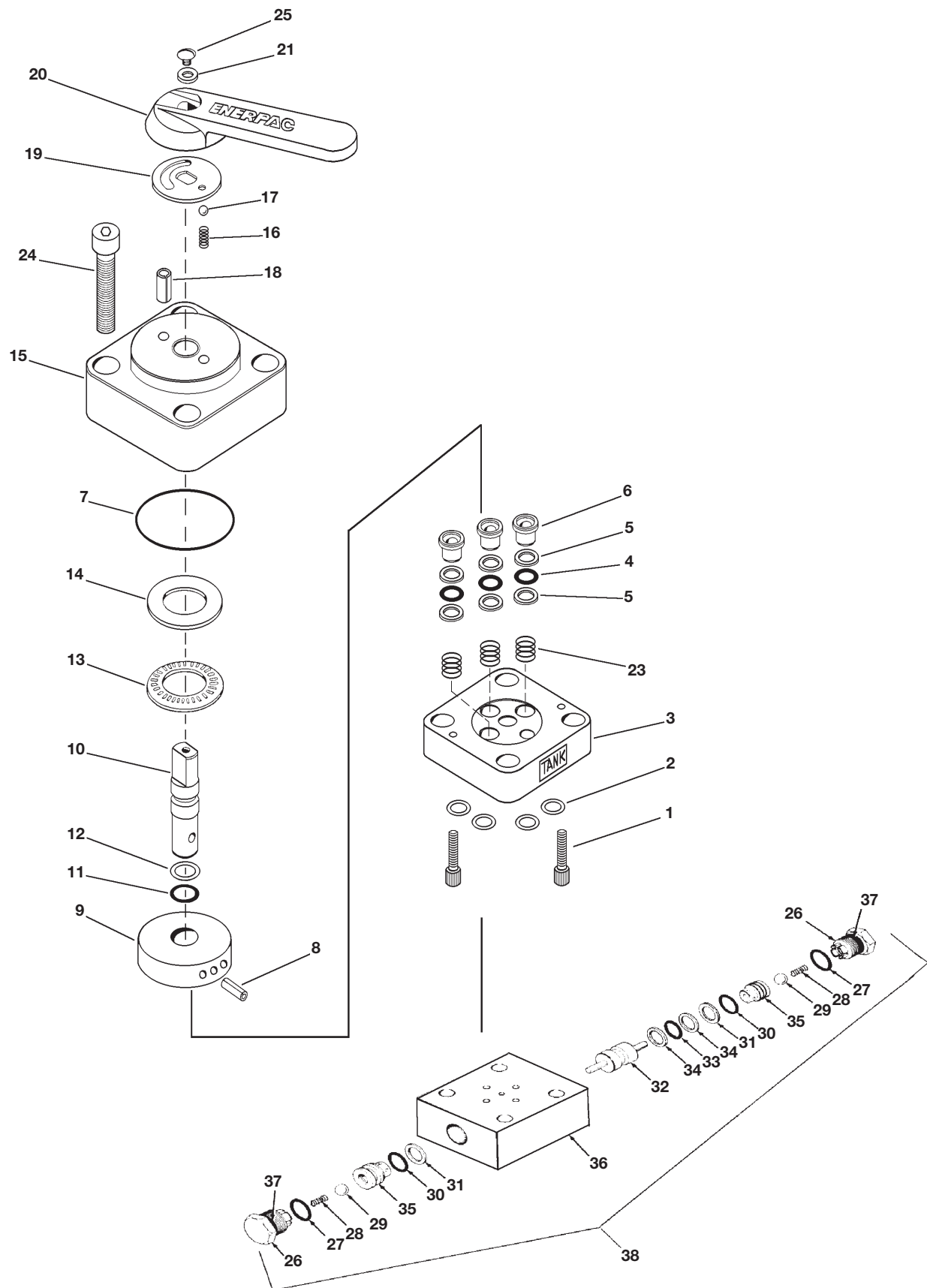


Figure 30 - 4-Way Manual Valve, PEJ, PEM, PES, WEJ, WEM, WES and WET Models
(1401 Series)

Repair Parts List for Figure 30

Item	Part Number	Qty.	Description	Item	Part Number	Qty.	Description
	VMC10000D		4-Way, 3 Position Manual Valve	20	Y325070	1	Handle
	VMC10600D		4-Way, 3 Position Manual Valve w/ Locking Center	21	★B1086108	1	Washer
1	B1326028	2	Socket Hd.Cap Screw	22	CB27013	3	Spring Guide
2	★B1111803	8	O-Ring	23	★CB28110	3	Spring
3	DA1264190	1	Valve Body	24	B1389028	4	Capscrew 4-Way Valve
4	★B1006503	3	O-Ring		B1401028	4	Capscrew 4-Way Valve with Locking Center
5	★CF224041	6	Back-Up Ring Items	25	★A8076048	1	Truss Head Screw
6	CB25041	3	Metal Seal	Note: Items 26-38 are for locking center valves only.			
7	★B1269503	1	O-Ring	26	★CR356013	2	Guide Spring
8	★B1109057	1	Spring Pin	27	★B1116803	2	O-Ring
9	CH542950	1	Disc Assembly	28	★CJ656110	2	Compression Spring
10	CH536104	1	Shaft	29	★B1008016	2	Ball
11	★B1007503	1	O-Ring	30	★B1011503	2	O-Ring
12	★B1012564	1	Back-Up Ring	31	★B1113564	2	Back-Up Washer
13	CB328281	1	Needle Bearing	32	Y128900W	1	Piston Assembly
14	CB327101	1	Bearing Plate	33	★B1009503	1	O-Ring
15	DA1260001	1	Bonnet	34	★B1111564	2	Back-Up Washer
16	★A8039110	1	Spring	35	Y126290	2	Seat
17	★B1006016	1	Ball	36	CL888950SR	1	Body Assembly
18	★B1126057	1	Spring Pin	37	★CR355167	2	Gasket
19	A8005071	1	Detent Disc	38	Y123900SR	1	Valve Assembly

★ Items included in and available only as part of Repair Kit VM4K3.

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