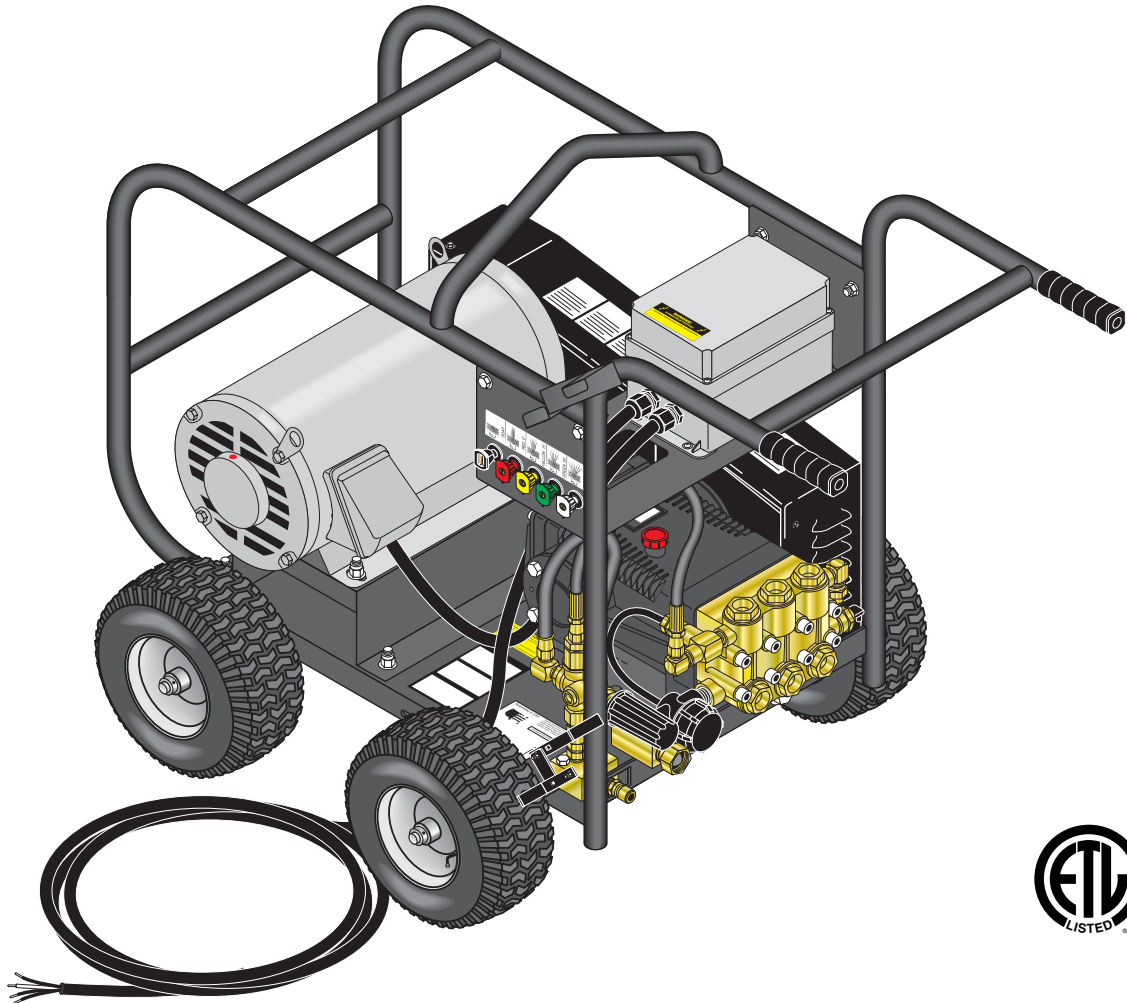


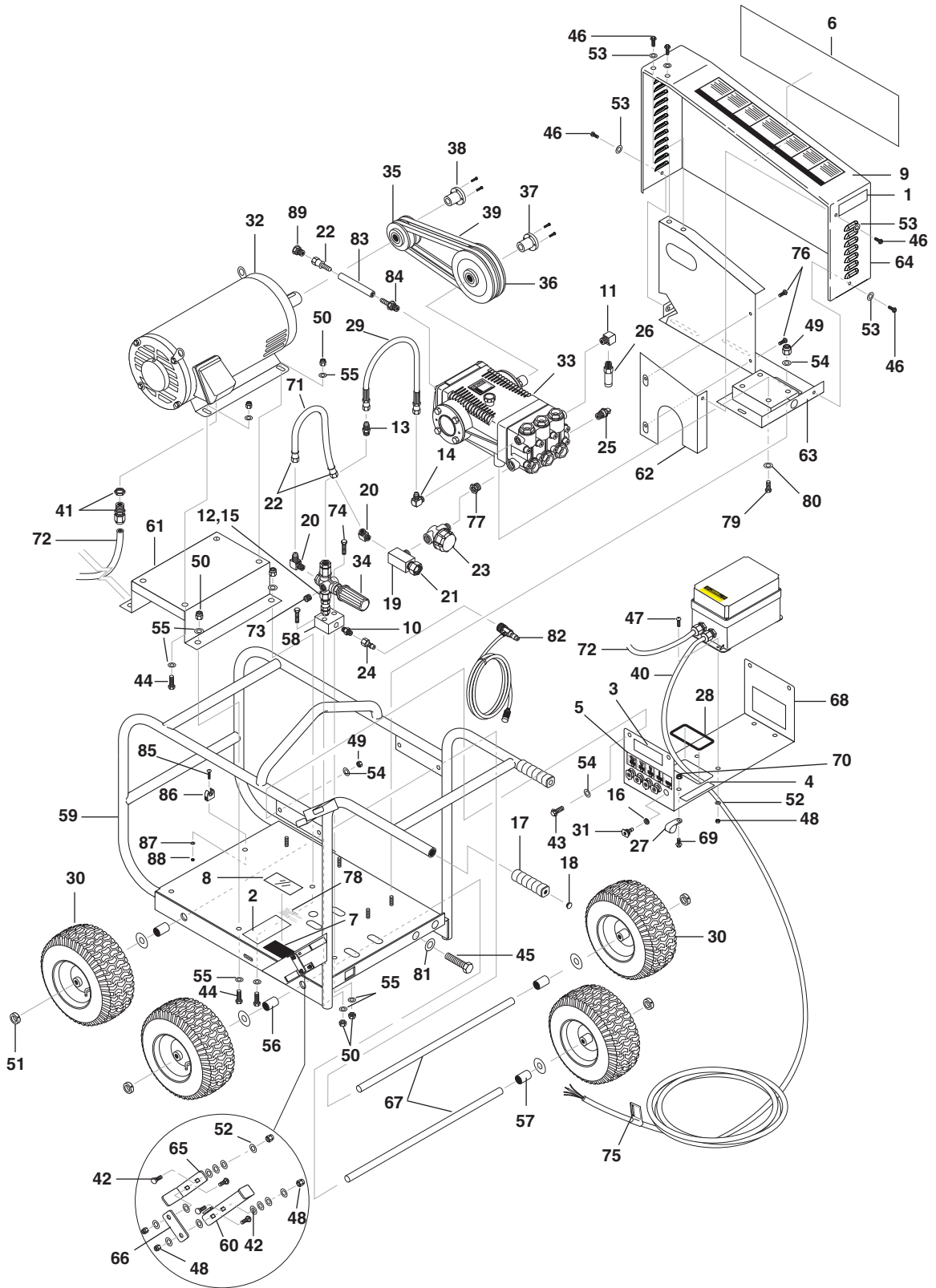
# SERVICE MANUAL



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**MODEL #****ORDER #****BDE-505009B****1.107-085.0****BDE-505009C****1.107-086.0****MPE5-50024B****1.106-001.0****MPE5-50024C****1.106-002.0****HD 5.0/50 Eb CAGE****1.107-084.0****HD 5.5/50 Ec CAGE****1.107-087.0****BRE-505007B****1.106-060.0****BRE-505007C****1.106-059.0**

# EXPLODED VIEW



## EXPLODED VIEW PARTS LIST

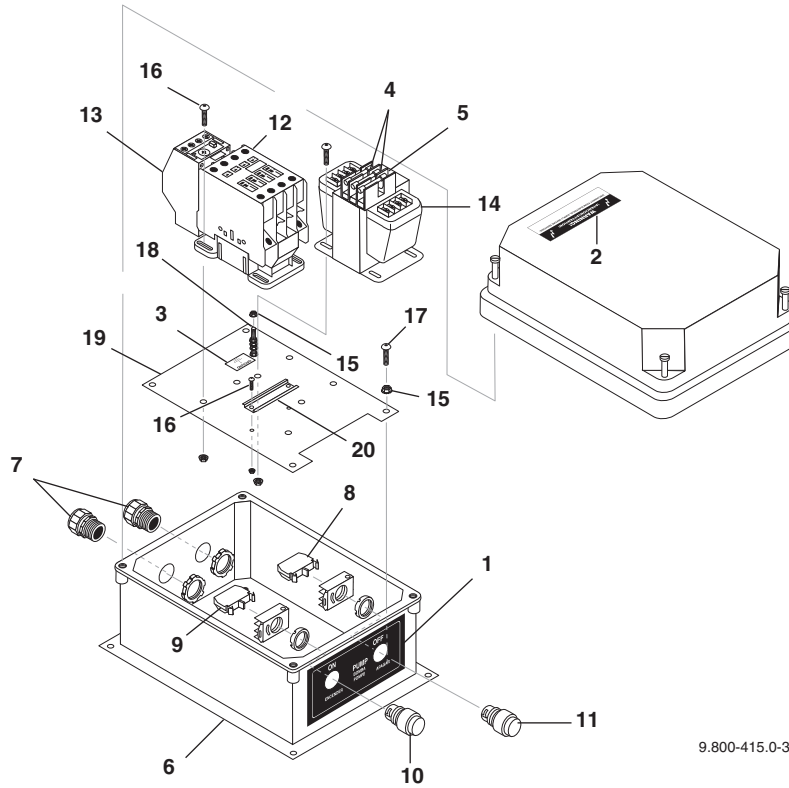
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	8.932-965.0	Label, Warning-Exposed Pulleys	1	31	9.803-810.0	Nozzle, SAQCMEG 0004.5, Red	1
2	9.803-842.0	Label, Operating Instr. (Lexan)	1		9.803-811.0	Nozzle, SAQCMEG 15045, Yellow	1
3	9.803-993.0	Label, Relieve Pressure	1		9.803-812.0	Nozzle, SAQCMEG 25045, Green	1
4	9.803-994.0	Label, Equipment Operated by Trained	1		9.803-813.0	Nozzle, SAQCMEG 4004.5, White	1
5	8.932-967.0	Label, Nozzle, 0, 15, 25, 40, & Soap	1		9.802-311.0	Nozzle Compl, QCEM-6540 Brass	1
6	8.900-271.0	Label, MVC Frame, Logo	1	32	8.730-515.0	Motor, 20HP 3PH, 230/460V 1760 RPM, M2515T	1
	8.901-144.0	Label, Logo, Belt Guard, BD	1		9.800-040.0	▲ Label, Ground (Motor)	1
	9.800-047.0	Label, Belt Guard, HD	1		9.802-487.0	▲ Wire Nut, Brown (230V/3PH)	3
	8.900-870.0	Label, Logo, BR	1		8.716-357.0	▲ Wire Nut, Red (460V/3PH)	3
7	9.800-013.0	Label, Intended For Indoor Use	1		8.716-013.0	▲ Bolt, Split (230V/3PH)	4
8	9.800-034.0	Label, Clear Lexan, 2-1/4" x 4-1/2"	1	33	8.749-518.0	Pump, Landa LH5050/R, 5@5000, 1650 RPM	1
9	9.800-036.0	Label, Warning, Pictorial, Small	1		8.749-519.0	Pump, Hotsy, HH5050/R, 5@5000, 1650 RPM	1
10	9.802-011.0	Nipple, 3/8" Hex Steel	1		9.804-491.0	Pump, Kärcher KH5050/R 5@5000, 1650 RPM	1
11	9.802-030.0	Elbow, 3/8" Street, Female	1	34	9.802-360.0	Unloader, PA 10.5 GPM @ 5100PSI, VB350/4	1
12	9.802-036.0	Nipple, 1/2" JIC, 3/8" Pipe	1	35	9.802-394.0	Pulley, 3TB40	1
13	9.802-037.0	Nipple, 1/2" JIC, 3/8" Female	1	36	9.803-979.0	Pulley, 3BK 50 H	1
14	9.802-039.0	Elbow, 1/2" JIC, 3/8", 90°	1	37	9.802-403.0	Bushing, H x 25MM	1
15	9.802-048.0	Swivel, 1/2" JIC Fem, 3/8" Male	1	38	9.803-980.0	Bushing, P1 x 1-5/8"	1
16	9.802-064.0	Grommet, Rubber, Nozzle Holder	5	39	8.749-965.0	Belt, 3/BX 42	1
17	9.802-070.0	Grip, 1" Sqr, Handle,	2	40	9.803-992.0	Cord,Service,SO,4/4 (230V/3PH)	15 ft.
18	9.802-107.0	Fastener, Ratchet, Black Nylon	2		9.802-437.0	Cord, Serv, SEO 10/4, Coleman (460V)	15 ft.
19	9.802-118.0	Tee, 1/2" Branch Male	1	41	9.804-052.0	Connector, 1" Cord, 50 Amp (230V/3PH)	1
20	9.802-131.0	Elbow, 1/2" JIC x 1/2", 90°	2		9.803-279.0	Strain Relief, 1", 460V	1
21	9.802-146.0	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1		9.803-280.0	Locknut, 1"	1
22	9.802-151.0	Swivel, 1/2" JIC Fem, Push-On	2	42	9.802-705.0	Bolt, Carriage, Zinc, 1/4-20 x 1.0 PLT	4
23	9.802-163.0	Strainer, 1/2" PA, Inline Plastic	1	43	9.802-722.0	Bolt, 5/16" x 1", NC HH	4
24	9.802-168.0	Nipple, 3/8" Fem, 11,000 PSI	1	44	9.802-720.0	Bolt, 3/8" x 1", NC HH	8
25	9.802-182.0	Pump Protector, 1/2" PTP	1	45	9.803-845.0	Bolt, 1/2" x 5" NC HH TAP, All Thread	1
26	9.803-843.0	Valve, Safety Relief, 6000 PSI	1	46	9.802-765.0	Screw, 1/4" x 1/2" BH SOC	5
27	9.802-204.0	Clamp, Hose (460V)	1	47	9.802-770.0	Screw, 1/4" x 1", BH SOC	4
	9.802-206.0	Clamp, Hose (230V)	1	48	9.802-773.0	Nut, 1/4" ESNA, NC	8
28	9.802-071.0	Trim, 750 x 1/16", Black	1.66 ft.	49	9.802-776.0	Nut, 5/16", ESNA, NC	8
29	8.918-430.0	Hose, 3/8" x 14", 5800, 2 Wire, Pressure Loop	1	50	9.197-003.0	Nut, 3/8", ESNA, NC	10
30	9.802-271.0	Wheel & Tire Assy, 6" Steel Rim w/Tube	4	51	9.802-782.0	Collar, 5/8" Bore Shaft	8
				52	9.802-802.0	Washer, 1/4" Flat, SAE	16

▲ Not Shown

## EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
53	9.802-803.0	Washer, 1/4" Flat, SAE, Black Zinc	5	71	9.802-259.0	Hose, 1/2" Push-On	15"
54	9.802-804.0	Washer, 5/16" Flat, SAE	12	72	9.803-992.0	Cord, Service 4/4 (230V/3PH)	37"
55	9.802-807.0	Washer, 3/8" SAE, Flat	16		9.802-437.0	Cord, Service 10/4 (460V/3PH)	37"
56	9.802-810.0	Washer, 5/8" Flat, SAE	8	73	9.802-124.0	Plug, 1/4" Countersunk	1
57	9.802-820.0	Washer, Nylon Spacer, 0.656 x 1.25 x 0.65	4	74	9.802-728.0	Bolt, 3/8" x 2"	2
58	9.802-870.0	Block, Unloader, 3/8" x 3/8", 1.25, Steel	1	75	8.932-969.0	Label, Warning, Service Cord	1
59	9.802-964.0	Assy, Weld, Cage, CW Black	1	76	9.802-765.0	Screw, 1/4" x 1/2" BH SOC CS	2
	8.912-486.0	Assy, Weld, Cage, CW Red	1	77	9.802-148.0	Adaptor, 1/2" x 1/2"	1
60	9.802-966.0	Handle, Brake, CW Cage, Black	1	78	9.800-049.0	Label, Manufacturer's Cleaning Solution	1
	8.912-495.0	Handle, Brake, CW Cage Red	1	79	9.802-744.0	Bolt, 10mm x 20mm, HH	4
61	9.804-008.0	Assy, Weld, Motor Rail, Elec, CW Large, Black	1	80	9.802-816.0	Washer, 7/16", Lock Split Ring	4
	8.917-411.0	Assy, Weld, Motor Rail, Elec, CW Large, Red	1	81	9.802-809.0	Washer, 1/2"	1
62	9.804-009.0	Assy, Weld, Elec, Guard Rear, CW Large	1	82	9.802-226.0	Assy, Downstream Injector	1
63	9.804-010.0	Assy, Weld, Slider, Elec, CW Large, Black	1	83	9.802-259.0	Hose, 1/2" Push-On	20"
	8.917-412.0	Assy, Weld, Slider, Elec, CW Large, Red	1	84	9.802-156.0	Push-On 1/2" x 3/8"	1
64	9.804-011.0	Guard, Belt, Front, Elec, CW Large	1	85	9.802-771.0	Screw 10/32"	1
65	9.802-996.0	Bracket, Brake Pad, Black	1	86	9.802-203.0	Clamp 1/2"	1
	8.912-019.0	Bracket, Brake Pad, Red	1	87	9.802-802.0	Washer	1
66	9.802-997.0	Linkage, Brake, Black	1	88	9.804-567.0	Nut 10/32"	1
	8.912-020.0	Linkage, Brake, Red	1	89	9.802-126.0	Plug 1/2" JIC	1
67	8.918-839.0	Axle, Lrg, Cw Cage 31.25"	2				
68	9.804-012.0	Bracket, E-Box, CW Cage, Large, Black	1				
	8.917-493.0	Bracket, E-Box, CW Cage Large, Red	1				
69	9.802-759.0	Screw, 10/32" x 1/2" BHSOC (460V/3PH)	1				
	9.802-770.0	Screw, 1/4" x 1", BH SOC CS (230V/3PH)	1				
70	9.802-695.0	Nut, 10/32" Keps 460V/3PH	1				
	9.802-773.0	Nut, 1/4" ESNA, NC (230V/3PH)	1				

# EXPLODED VIEW - ELECTRICAL BOX



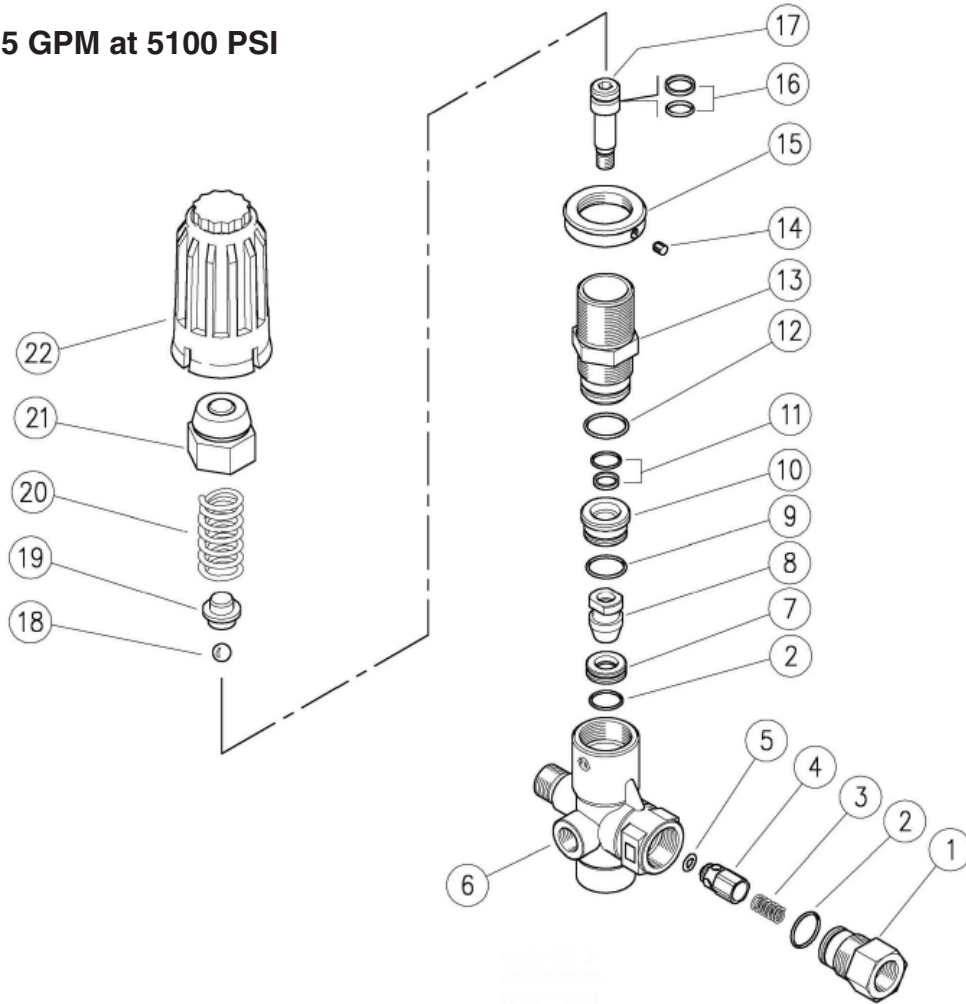
9.800-415.0-3

## ELECTRICAL BOX PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	8.900-315.0	Label, On/Off, PE Push Buttons	1	10	9.803-974.0	Switch, Green PB, CH E22PB3	1
2	9.800-016.0	Label, Disconnect Power Supply	1	11	9.803-973.0	Switch, Red PB, CH E22EB2	1
3	9.800-040.0	Label, Ground	1	12	8.724-284.0	Contact 1 (230V/3PH)	1
4	8.933-007.0	Fuse, KTK-R1 600V Midget Fuse (230V/3PH)	2	13	8.724-281.0	Contact 2 (460V/3PH)	1
	9.802-462.0	Fuse, KTK-R-1/2 600V Midget Fuse (460V/3PH)	2	13	8.724-307.0	Overload (230V/3PH)	1
5	9.802-463.0	Fuse, Paper, Buss FNM-1/2, 250V Midget TD	1	13	8.724-305.0	Overload (460V/3PH)	1
6	9.803-976.0	Box, Plastic, 10X8X6.19, RVJ1008W	1	14	9.802-551.0	Transformer, Micron, 240/480V-120V,50/60HZ,.050KVA	1
7	9.804-052.0	Connector, 1" Cord, 50 Amp (5-50024B)	2	15	9.802-695.0	Nut, 10/32" Keps	7
	9.803-280.0	Locknut, 1" Cond. (230V/3PH)	2	16	9.802-750.0	Screw, 8-32 x 1/2" M TPG PH PNH, Black	7
	9.802-518.0	Strain Relief, 3/4" (460V/3PH)	2	17	9.802-759.0	Screw, 10/32" x 1/2" BHSOC Black	4
	9.802-526.0	Locknut, 3/4" Conduit (460V/3PH)	2	18	9.802-762.0	Screw, 10/32" x 11/4" RH, SL, Black	1
8	9.802-534.0	Block, Contact, N/C, CH E22B1	1	19	9.803-990.0	Standoff, CW Cage, Lrg. MPE1	1
9	9.802-535.0	Block, Contact, N/O, CH E22B2	1	20	9.802-457.0	Din Rail, 35mm	3"

## VB UNLOADER EXPLODED VIEW

**9.802-360.0**  
**VB350/4 10.5 GPM at 5100 PSI**



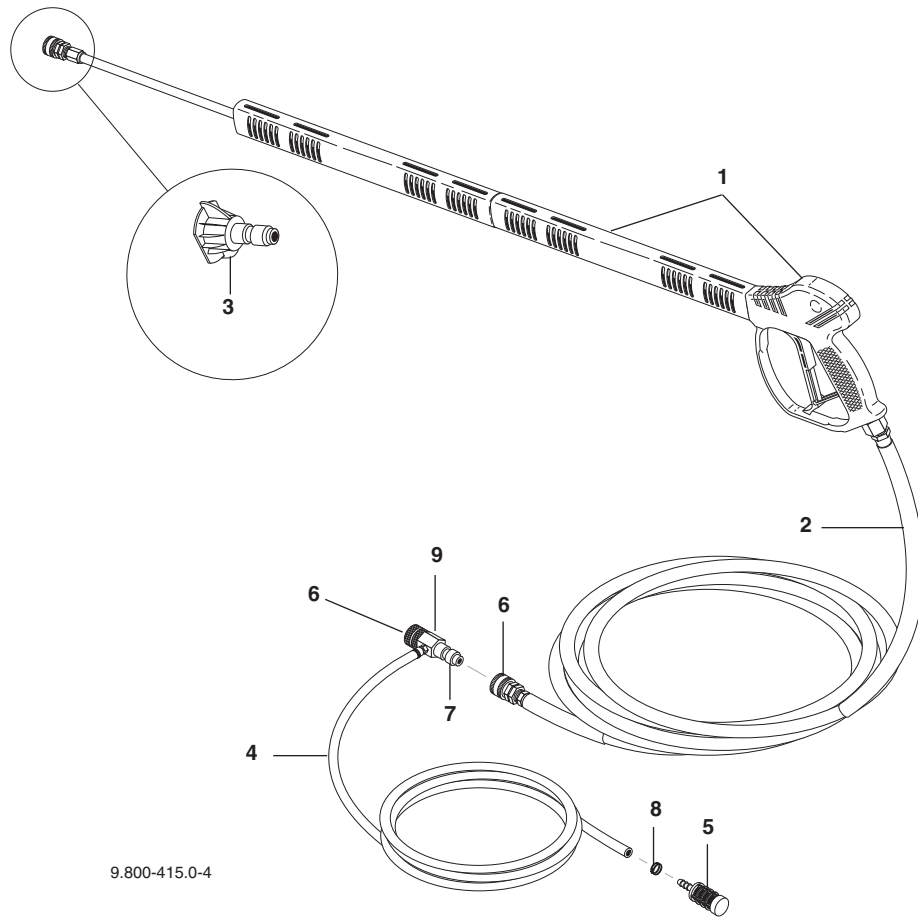
### VB UNLOADER EXPLODED VIEW PARTS LIST

ITEM	PART #	DESCRIPTION	QTY	ITEM	PART #	DESCRIPTION	QTY
1		3/8 Bsp F Nipple	1	16	*	VB280-350 Val. Pist. Seal	1
2	*	O-Ring, 1.78 x 15.6 mm	2	17		M8 Piston	1
3		Spring	1	18	*	Sst 11/32" Ball	1
4		SST Check Valve	1	19		Spring Guide	1
5	*	O-Ring, 3 x 6mm	1	20		4.5 x 47 mm Spring (60.1700.00)	1
6		VB280-350 Brass Body	1	21		Brass Cap	1
7	*	Seat	1	22		VB350.4 Red Plastic Knob (60.1700.00)	1
8	*	M 8 Shutter	1				
9	*	O-Ring, 1.78 x 17.17 mm	1				
10		Spacer	1				
11	*	VB280-350 Val. Pist. Seal	1				
12	*	O-Ring, 1.78 x 20.35 mm	1				
13		Piston Housing (60.1700.00)	1				
14		M 4 x 4 mm Dowel	1				
15		Lock Nut	1				

\* Available in Repair Kit :

K1 9.800-106.0 VB350 Repair Kit

# HOSE & SPRAY GUN ASSEMBLY

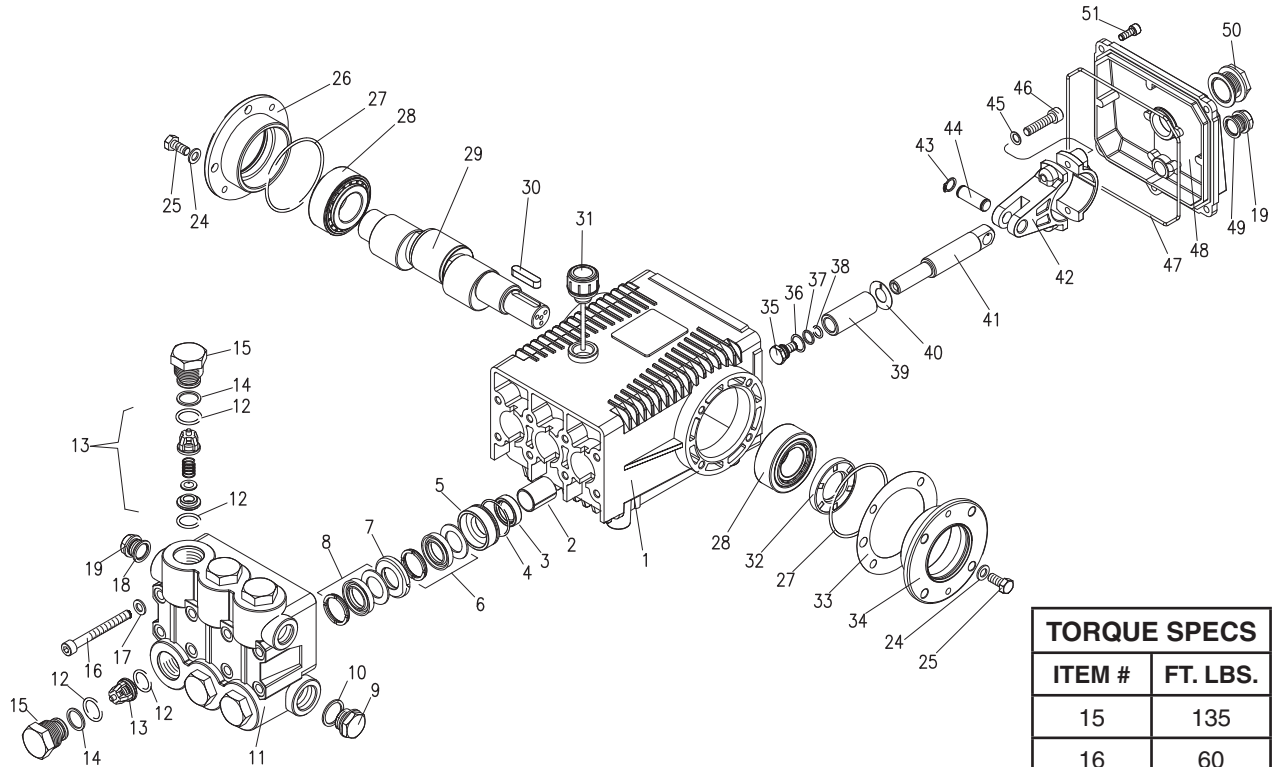


9.800-415.0-4

## HOSE & SPRAY GUN ASSEMBLY PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	9.802-228.0	Gun w/Wand (5000 PSI), w/Coupler	1	4	9.802-251.0	Hose, 1/4" x 1/2" Clear Vinyl	6 ft.
2	8.739-346.0	Hose, 3/8" x 50', 2 Wire, TS KA, SO-SW HP CP (BRE, HD)	1	5	9.802-160.0	Strainer, Plastic, 1/4" Hose Barb	1
	8.918-088.0	Hose, 3/8" x 50', 2W,TS,SO-SW HIGH PRESS CP (MPE)	1	6	9.802-167.0	Coupler, 3/8" Fem, 11,000 PSI, Snap-Tite	1
	8.739-322.0	Hose, 3/8" x 50' 2W TS, HO, SO-SW, HP CP (BDE)	1	7	9.802-168.0	Nipple, 3/8" Fem, 11,000 PSI	1
3	9.803-810.0	Nozzle, SAQCMEG 0004.5, Red	1	8	6.390-126.0	Clamp, Hose, .46-.54 ST	2
	9.803-811.0	Nozzle, SAQCMEG 15045, Yellow	1	9	9.802-167.0	Injector, SS, Non Adj, 2.0-4.0 GPM, 5500 PSI	1
	9.803-812.0	Nozzle, SAQCMEG 25045, Green	1				
	9.803-813.0	Nozzle, SAQCMEG 4004.5, White	1				
	9.802-311.0	Nozzle COMPL, QCEM-6540 Brass	1				

## H-SERIES PUMP EXPLODED VIEW



TORQUE SPECS	
ITEM #	FT. LBS.
15	135
16	60
25	18
35	4.5
46	30
51	7.6

## H-SERIES PUMP EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	9.803-163.0	Crankcase	1	17	9.802-890.0	Lock Washer	8
2	9.803-195.0	Plunger Guide	3	18	9.803-198.0	Copper Washer 3/8	1
3*	See Kit Below	Plunger Oil Seal	3	19	9.802-925.0	Brass Plug 3/8	2
4*	See Kits Below	O-Ring Ø1.78 x 37.82	3	24	9.802-884.0	Washer	8
5*	See Kits Below	Pressure Ring 18mm	3	25	9.802-944.0	Hex Screw	8
6*	See Kit Below	U Seal, Dia. 18 x 28mm	3	26	9.804-501.0	Closed Bearing Housing	1
7*	See Kits Below	Support Ring 18mm	3	27	9.803-186.0	O-Ring Ø2.62 x 71.12	2
8*	See Kits Below	U Seal, Dia 18 x 28mm	3	28	9.804-502.0	Roller Bearing	2
9	9.802-926.0	Brass Plug, 1/2	1	29	9.803-289.0	Crankshaft	1
10	9.803-199.0	Copper Washer 1/2	1	30	9.803-293.0	Crankshaft Key	1
11	8.717-516.0	Manifold Housing	1	31	9.802-923.0	Oil Dip Stick	1
12*	9.804-498.0	O-Ring Ø2.62 x 17.13	12	32	9.803-139.0	Crankshaft Seal	1
13*	See Kit Below	Valve Assembly	6	33	9.803-177.0	Shim	2
14*	9.804-500.0	Teflon Ring	6	34	9.804-503.0	Bearing Housing	1
15	9.803-292.0	Valve Plug	6	35*	9.802-936.0	Plunger Bolt	3
16	9.802-942.0	Manifold Stud Bolt	8	36*	9.802-885.0	Copper Spacer	3

## H-SERIES PUMP EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
37*	9.803-188.0	O-Ring Ø1.78x7.66	3
38*	9.803-155.0	Teflon Ring	3
39*	See Kit Below	Plunger 18mm	3
40*	9.802-888.0	Copper Spacer	3
41	9.803-294.0	Plunger Rod	3
42	9.803-157.0	Connecting Rod	3
43	9.802-912.0	Snap Ring	6
44	9.802-915.0	Connecting Rod Pin	3
45	9.802-889.0	Spring Washer	6
46	9.802-937.0	Connecting Rod Screw	6
47	9.803-194.0	O-Ring Ø2.62 x 152.07	1
48	9.803-166.0	Crankcase Cover	1
49	9.803-197.0	Gasket, G3/8	1
50	9.803-202.0	Sight Glass G3/4	1
51	9.802-939.0	Cover Screw	5

\* Available in kit (See below)

KIT NUMBERS	9.804-492.0	9.804-493.0	9.802-629.0	9.802-604.0	9.802-606.0
KIT DESCRIPTION	Plunger Seal 18 mm	Seal Packing 18 mm	Plunger 18 mm	Complete Valve	Plunger Oil Seals
ITEMS NUMBERS INCLUDED	4, 6, 8	4, 5, 6, 7, 8	35, 36, 37, 38, 39, 40	12, 13, 14	3
NUMBER OF CYLINDERS KIT WILL SERVICE	3	1	1	6	3