

PHOENIX-22 FLOOR SCRUBBER BRUSH DRIVE



Technical Specifications

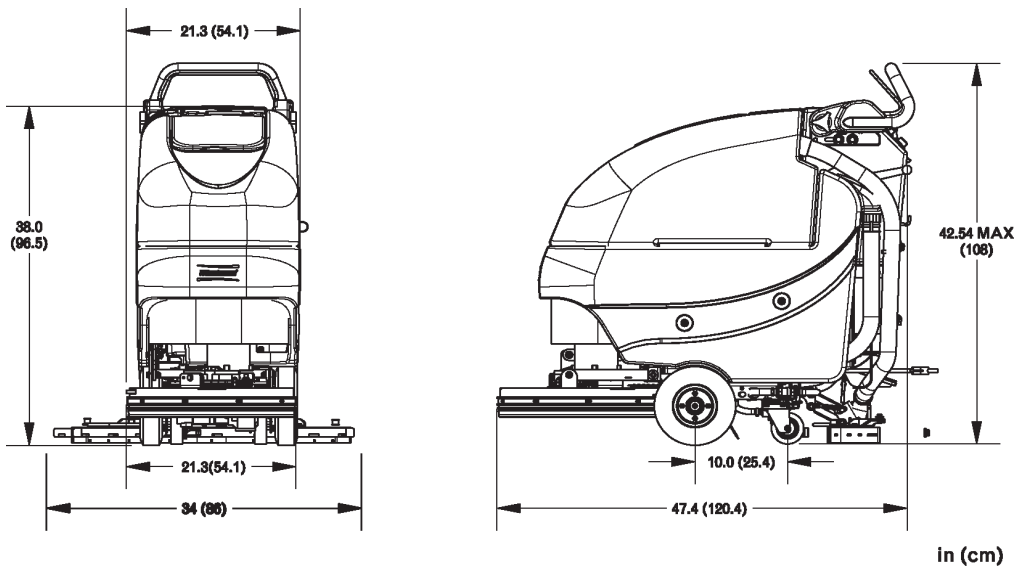
Model *Phoenix 22 Floor Scrubber Brush Drive*

Model No. 3336604QP

Current (Max)
 Battery Capacity (Lead Acid)
 Battery Capacity (Gel)
 Sound Level
 Cleaning path width
 Squeegee width
 Theoretical productivity (Brush Drive)
 Working speed (Brush Drive)
 Transport speed
 Rated voltage
 Vacuum flow
 Vacuum waterlift
 Vacuum power
 Brush type
 Brush motor(s) power
 Number of brushes
 Brush RPM
 Aqua-Stop equipped
 Solution capacity
 Recovery capacity
 Working Grade
 Weight with batteries
 Weight without batteries
 Dimensions (LxWxH)

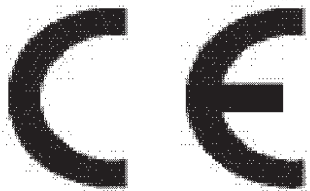
Phoenic 22 Brush Drive

32 amps
 105Ah @20 hr
 95Ah @20 hr
 69 dBA
 20 in (51 cm)
 33 in (84 cm)
 15,000 ft²/hr (1,394 m²)
 1.7 mph (2.7 km per hr)
 3 mph (4.8 km per hr)
 24 volts
 65 cfm (110 m3/hr)
 45 inches (112mbar)
 .60 HP (450 W)
 Disc
 3/4 HP (560W)
 1
 180 RPM
 Coming Soon
 12 Gal (45 liters)
 13 Gal (49 liters)
 2%
 313 lbs (142 kg)
 203lbs (92 kg)
 47.4 x 21.3 x 42.3 (120.4 x 54.1 107.4 cm)



For Safety When Servicing or Maintaining Machine

- Stop on level surface.
- Disconnect the power to the machine by pulling the red Battery Connector located under the recovery tank near the batteries.
- Avoid moving parts. Do not wear loose jackets, shirts, or sleeves when working on machine.
- Avoid contact with battery acid. Battery acid can cause burns. When working on or around batteries, wear protective clothing and safety glasses. Remove metal jewelry. Do not lay tools or metal objects on top of batteries.
- Do not clean machine with a pressure washer.
- Authorized personnel must perform repairs and maintenance. Use PowerBoss supplied replacement parts.



DECLARATION OF CONFORMITY

Manufacturer's Name: PowerBoss Inc.
Manufacturer's Address: 175 Anderson Street
Aberdeen, NC 28315

Equipment Description: Phoenix 22 Walk-Behind Scrubber

Equipment Model:
Designation: 3336074, 3336074QP, 3336074TD,
3336074TDQP, 3336604BD,
3336604BDQP

Application of Council Directives: 98/37EC, 89/336/EEC

Harmonized standards complied with: EN 60335-2-72, EN 60335-1, EN
61000-6-2, EN 6100-6-3

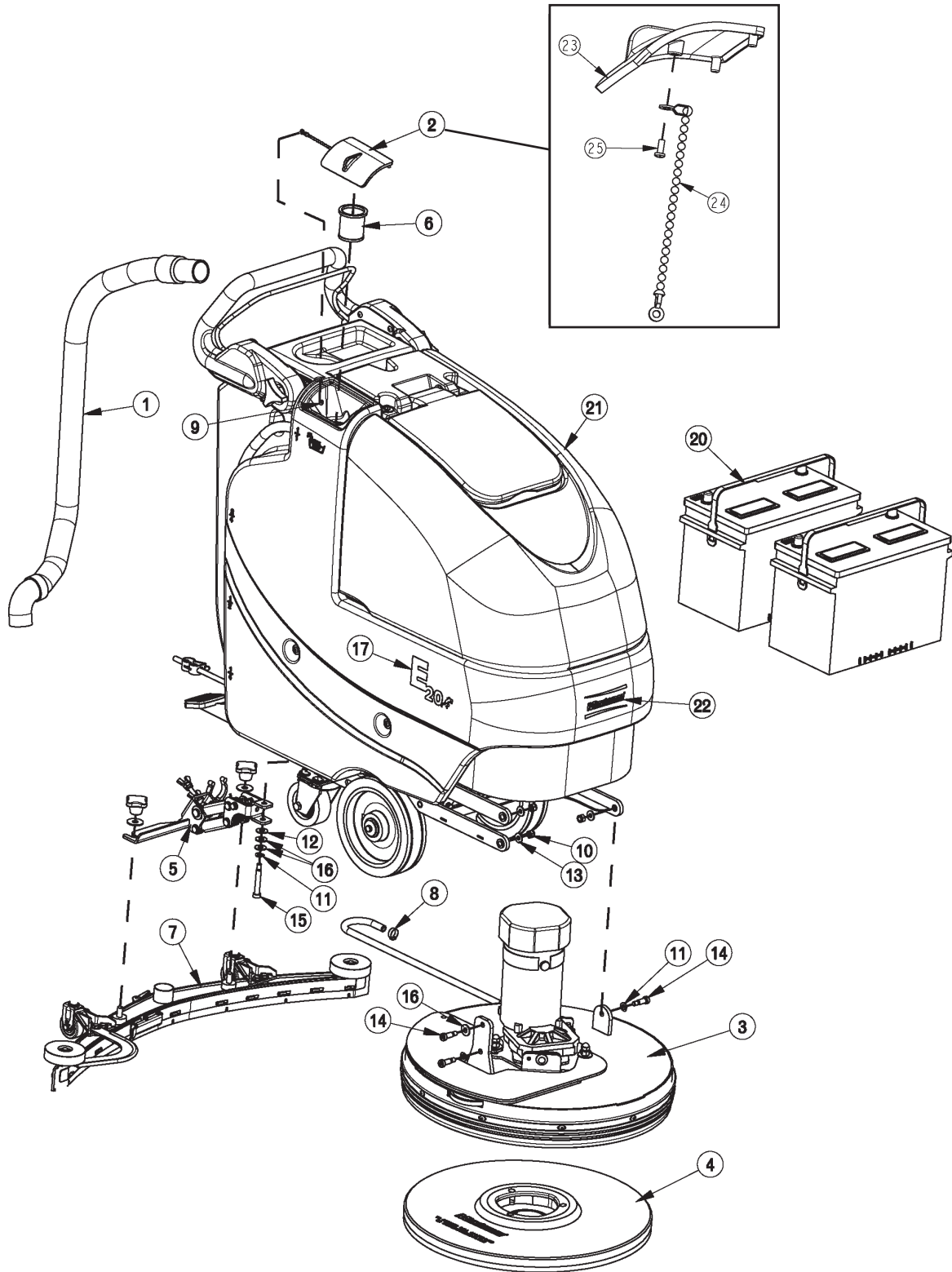
I, the undersigned, hereby declare that the equipment specified
above conforms to the above Directive(s) and Standard(s).

Ruediger Schroeder
Executive Vice President
CFO and COO

December 16, 2008
Date

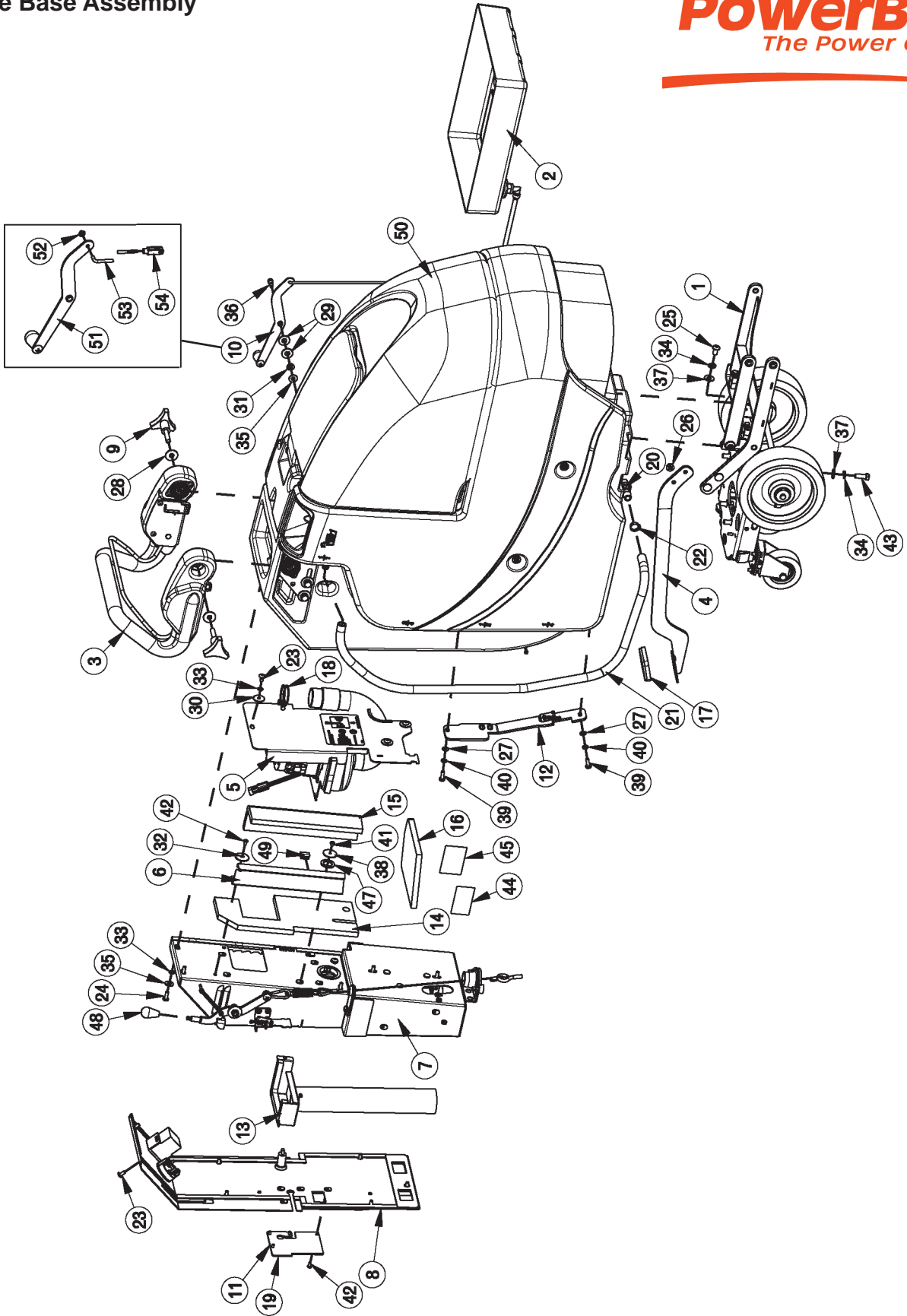
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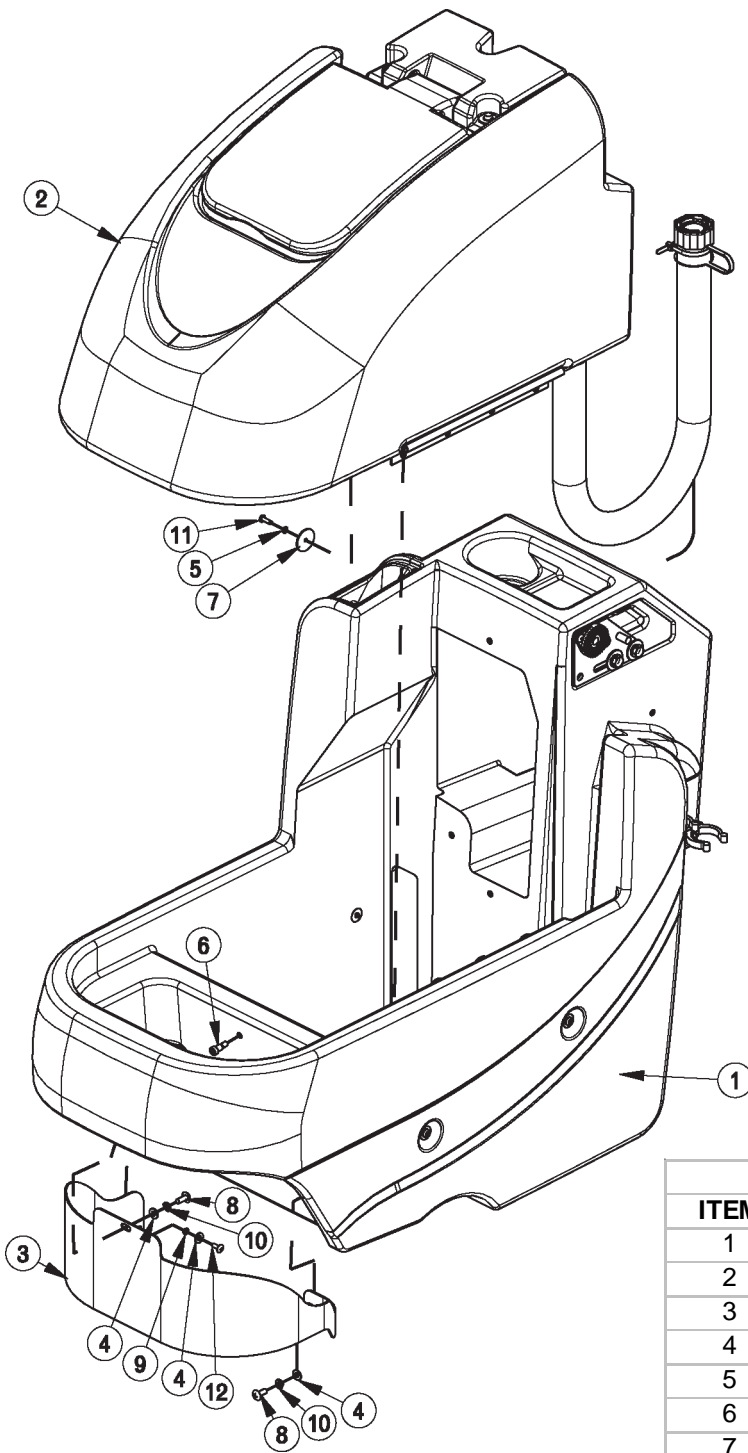
| BILL OF MATERIAL | | | |
|-------------------------|-----------------|--------------|--------------------------------------|
| ITEM | PART NO. | REQ'D | DESCRIPTION |
| 1 | 172010 | 1 | HOSE, CLEAR VAC W/ 45 CUFF |
| 2 | 172018 | 1 | SOLUTION TANK LID ASSY |
| 3 | 172100 | 1 | BRUSH DECK ASSY 20" |
| 4 | 172120-2 | 1 | 20" PAD DRIVER |
| 5 | 172150 | 1 | SQUEEGEE LIFT MECH ASSY |
| 6 | 172159 | 1 | FILTER, FILL PORT, ES1720 |
| 7 | 172270 | 1 | SQUEEGEE, 34" (860) |
| 8 | 450076 | 1 | CLAMP-CRIMP 185R SS |
| 9 | 711118 | 1 | SCR-ST-A 10 X .75 SS |
| 10 | 711374 | 3 | NUT-NYLOC 5/16-18 |
| 11 | 711523 | 3 | WSR-WAVE .37X .68 X .08 |
| 12 | 711569 | 1 | WSR-FLT .390 X .880 X .062 NYL |
| 13 | 711575 | 3 | WSR-FLT .31x.75x.06ST |
| 14 | 712081 | 3 | SHOULDER BLT 5/16-18 X 3/8 X .75 |
| 15 | 712143 | 1 | BLT-SHLD 3/8 X 2.0, 5/16-18 |
| 16 | 712301 | 3 | WSR-FLAT .37 X .87 X .06 |
| 17 | 3343890 | 2 | DECAL, PHOENIX 22 |
| 18 | 740164-1 | 1 | JUMPER CABLE ASSY, RED 4G 12" |
| 19 | 747649 | 1 | CABLE ASSY, BATTERY E17 |
| 20 | 956712 | 2 | BATTERY, 12V 115AH |
| 20G | 956100 | 2 | GEL BATTERY 12V 100AH |
| 21 | 172001BD-121 | 1 | E20 BRUSH DRV MAIN ASSY-120V CHARGER |
| 21CE | 172001BD-231 | 1 | E20BRUSH DRV BASE ASSY-230V CHARGER |
| 22 | 3334902 | 1 | DECAL, POWERBOSS |
| 23 | 172008 | 1 | SOLUTION TANK LID |
| 24 | 172123 | 1 | CHAIN, BEADED SS W/ EYELETS |
| 25 | 712145 | 1 | SCR-MC 6-32 X .37 PPH SS |

| OPTIONAL BRUSHES | | |
|-------------------------|-----------------|------------------------------|
| ITEM | PART NO. | DESCRIPTION |
| 4.1 | 172120-1 | BRUSH, 20" NYLON |
| 4.2 | 172120-3 | BRUSH, 20" POLY GRIT |
| 4.3 | 172120-4 | BRUSH, 20" STRATA GRIT |
| 4.4 | 172120-5 | BRUSH, 20" DYNA-SCRUB 500GR |
| 4.5 | 172120-6 | BRUSH, 20" SCRUB-GRIT2 120GR |



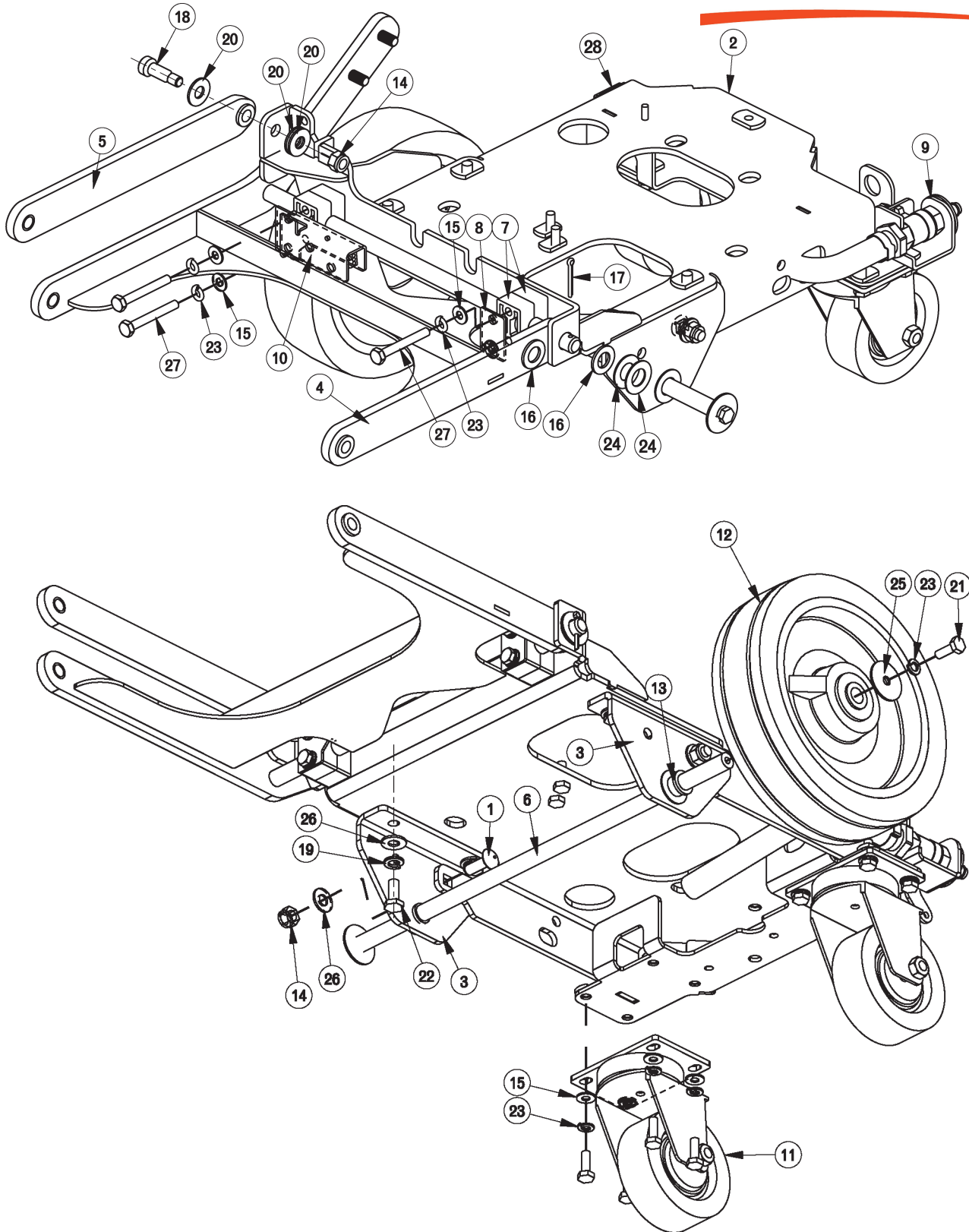
BILL OF MATERIAL - 172001BD-120/230/121/231

| ITEM | PART NO. | REQ'D | DESCRIPTION | ITEM | PART NO. | REQ'D | DESCRIPTION |
|------|------------|-------|----------------------------------|------|------------|-------|--------------------------------|
| 1 | 172002 | 1 | E17 BD CHASSIS ASSY | 28 | 711507 | 2 | WSR-FLAT .37 X 1.12 X .06 |
| 1A | 172002-1 | 1 | E20 BD CHASSIS ASSY | 29 | 711508 | 2 | WSR-FLAT .44X 1.0X.08 |
| 2 | 172012 | 1 | BATTERY TRAY ASSY | 30 | 711519 | 3 | WSR- FLAT .25 X 1.01 X .06 |
| 3 | 172016 | 1 | E1720 BD HANDLE ASSY | 31 | 711523 | 1 | WSR-WAVE .37X .68 X .08 |
| 4 | 172032 | 1 | LIFT PEDAL WMT | 32 | 711543 | 1 | WSR-HELICAL #10 |
| 5 | 172050 | 1 | VAC MOTOR ASSY | 33 | 711544 | 9 | WSR-HELICAL 1/4 |
| 6 | 172055 | 1 | BKT, VAC AREA INSIDE COVER | 34 | 711546 | 6 | WSR-HELICAL 3/8 |
| 7 | 172070-120 | 1 | ELEC BOX BD ASSY 120V | 35 | 711575 | 6 | WSR-FLT .31x.75x.06ST |
| 8 | 172073 | 1 | BD ELEC BOX COVER ASSY | 36 | 712041 | 1 | BLT- SHLDR 1/4-20 X .44 X .37 |
| 9 | 172085 | 2 | KNOB, 3/8-16 STUD, 3 LOBE | 37 | 712301 | 6 | WSR-FLAT .37 X .87 X .06 |
| 10 | 172112 | 1 | SOL CONTROL ASSY | 38 | 712312 | 2 | WSR-FLAT .187 X 1.25 |
| 11 | 172129 | 1 | BKT, PWR CORD MOUNT | 39 | 712562 | 2 | BOLT-HH 1/4-20X3/4 SS |
| 12 | 172157 | 1 | LIFT PEDAL STOP ASSY | 40 | 712758 | 2 | WSR-HELICAL 1/4 SS |
| 13 | 172179 | 1 | CHARGER INLET ASSEMBLY | 41 | 712800 | 1 | SCR-MC 10-24 X .25 ST PL |
| 14 | 172184 | 1 | FOAM COVER, REAR 1 | 42 | 712810 | 5 | SCR-MC 10-24 X .37 ST PL |
| 15 | 172185 | 1 | FOAM COVER, REAR 2 | 43 | 713042 | 4 | BLT-HH 3/8-16 X 1 #5 |
| 16 | 172187 | 1 | FOAM COVER, FRONT 2 | 44 | 715029 | 1 | DECAL-NAME PLATE SERIAL |
| 17 | 210142 | 1 | PEDAL PAD | 45 | 715047 | 1 | DECAL-CLEAR LAMINATE 2X3 |
| 18 | 260203 | 1 | WIRE GRIP HOSE CLAMP | 46 | 715950 | 1 | LABEL, PATENT NUMBERS |
| 19 | 293080 | 1 | STRAIN RELIEF-HEYCO 1207 | 47 | 717025 | 1 | WSR-FLAT 13/16ID X 1.25 X .08 |
| 20 | 342440 | 1 | FITTING, TEE 3/4MPT 1/2BARB PP | 48 | 760592 | 1 | KNOB, OVAL TAPERED |
| 21 | 430156 | 1 | HOSE, 1/2 X 42 CLEAR | 49 | 809443 | 1 | CLIP-WIRE & CORD |
| 22 | 450093 | 2 | CRIMP CLAMP 3/4" STEPLESS | 50 | 172001BASE | 1 | ES1720 BASE ASSY |
| 23 | 710178 | 10 | SCR-MC 1/4-20 X .50 TRUSS STPL | 51 | 172115 | 1 | SOL CNTRL LEVER ASSY |
| 24 | 710380 | 5 | SCR-MC RD HD 1/4-20 X .75 STL PL | 52 | 172122 | 1 | NUT, PUSH-ON WSR CAP, 3/16 |
| 25 | 710985 | 2 | SCR-SC 3/8-16 X .62 ST PL | 53 | 172069 | 1 | ROD, SOL. CTRL, ES1720 |
| 26 | 711379 | 2 | NUT, FLANGED WIZZ 5/16-18 | 54 | 172062 | 1 | YOKE, 3/16 CLEVIS, 10-32, LONG |
| 27 | 711504 | 2 | WSR-FLAT 1/4 ID SS | | | | |

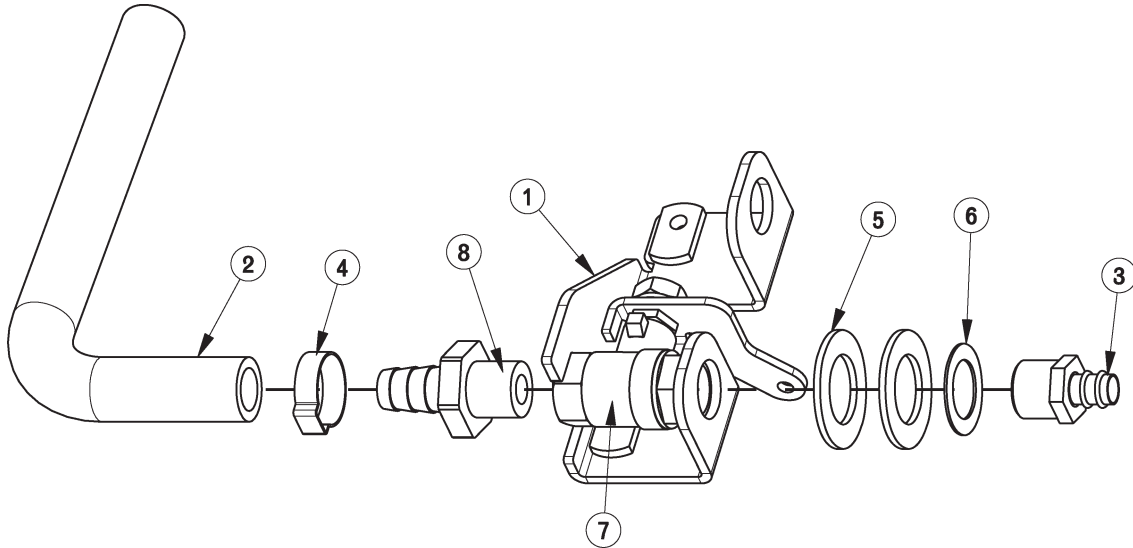


BILL OF MATERIAL - 172001BASE

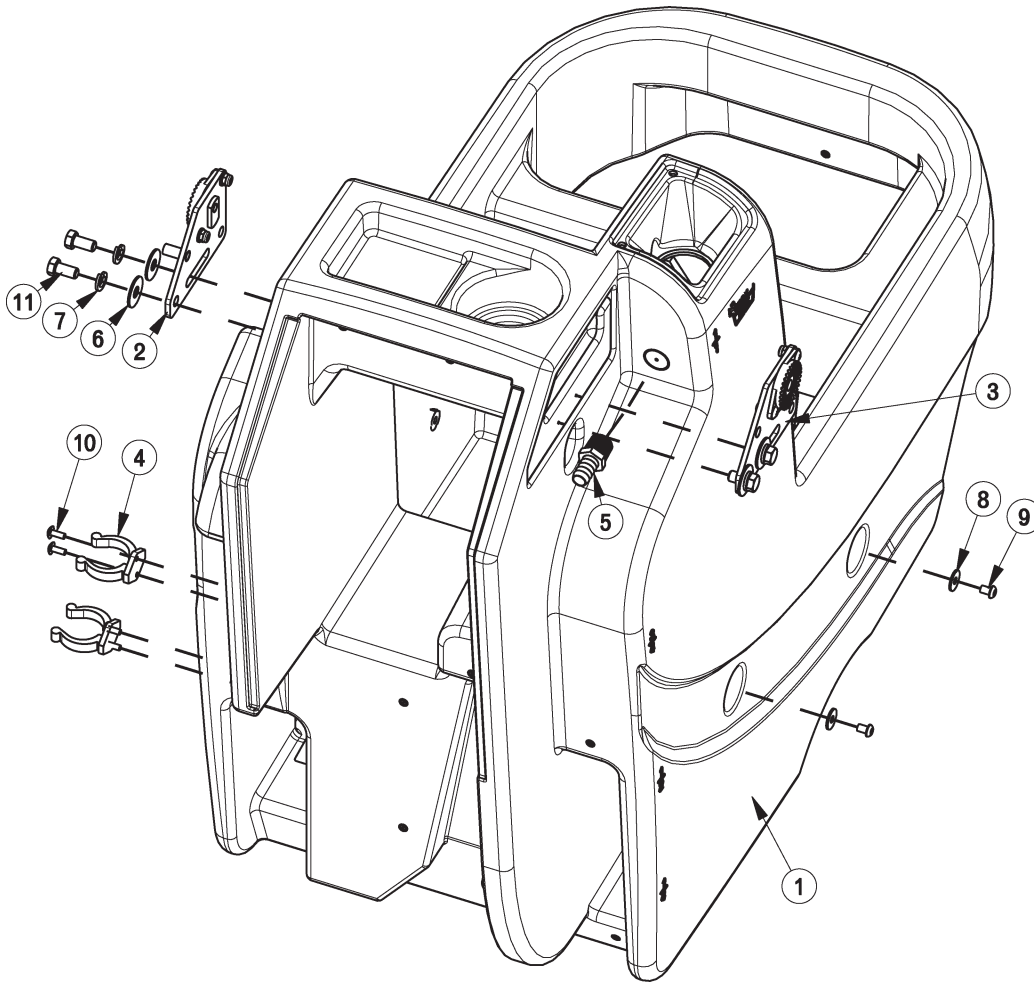
| ITEM | PART NO. | REQ'D | DESCRIPTION |
|------|----------|-------|-------------------------------|
| 1 | 172013 | 1 | SOL TANK ASSY, E1720 |
| 2 | 172014 | 1 | REC TANK ASSY |
| 3 | 172144 | 1 | PANEL, FRONT 1720 |
| 4 | 711504 | 3 | WSR-FLAT 1/4 ID SS |
| 5 | 711543 | 4 | WSR-HELICAL #10 |
| 6 | 712041 | 1 | BLT- SHLDR 1/4-20 X .44 X .37 |
| 7 | 712312 | 4 | WSR-FLAT .187 X 1.25 |
| 8 | 712565 | 2 | SCR-MC 1/4-20X.63 SS TR HD |
| 9 | 712757 | 1 | WSR - HELICAL #10 SS |
| 10 | 712758 | 2 | WSR-HELICAL 1/4 SS |
| 11 | 712812 | 4 | SCR-MC 10-24 X .62 PPH ST PL |
| 12 | 712822 | 1 | SCR-MC TR HD 10-24 X .50 SS |



| BILL OF MATERIAL - 172002 / 172002-1 | | | |
|--------------------------------------|-----------|-------|----------------------------------|
| ITEM | PART NO. | REQ'D | DESCRIPTION |
| 1 | 70-516-16 | 2 | BLT-CAR 5/16-18 X 1.00 |
| 2 | 172020 | 1 | MAIN FRAME WMNT, ES1720 |
| 3 | 172024 | 2 | WHEEL BRACKET, ES1720 |
| 4 | 172025 | 1 | DECK LIFT ASSY |
| 5 | 172030 | 1 | BAR, UPPER DECK LIFT W/ BUSH |
| 6 | 172035 | 1 | WHEEL ROD, ES1720 |
| 7 | 172038 | 4 | BEARING BLOCK |
| 8 | 172039 | 1 | BEARING BLOCK PLATE |
| 9 | 172064 | 1 | SOLUTION VALVE ASSY |
| 10 | 172110 | 1 | DECK SWITCH ASSY |
| 11 | 172167 | 2 | CASTER, 3-1/2 POLYURETHANE |
| 12 | 172130 | 2 | WHEEL 8 X 2.0 X .5 BORE, E17 |
| 12A | 172265 | 2 | WHEEL, 8 X 2 X .5, 75A, E20 |
| 13 | 260041 | 2 | OILITE FLANGE BUSHING |
| 14 | 711374 | 3 | NUT-NYLOC 5/16-18 |
| 15 | 711504 | 12 | WSR-FLAT 1/4 ID SS |
| 16 | 711592 | 2 | WSR-FLAT .50 X .9 X .075 NYL |
| 17 | 711809 | 1 | COTTER PIN, 1/8 X 1.0 |
| 18 | 712081 | 1 | SHOULDER BLT 5/16-18 X 3/8 X .75 |
| 19 | 712140 | 4 | WSR-HELICAL 5/16 SS |
| 20 | 712301 | 3 | WSR-FLAT .37 X .87 X .06 |
| 21 | 712562 | 12 | BOLT-HH 1/4-20X3/4 SS |
| 22 | 712575 | 4 | BLT-HH 5/16-18 X .75 SS |
| 23 | 712758 | 14 | WSR-HELICAL 1/4 SS |
| 24 | 712760 | 4 | WSR-FLAT .56X1.06X.04 SS |
| 25 | 712761 | 2 | WSR-FLAT .28 X 1.25 X .059SS |
| 26 | 712772 | 6 | WSR-FLAT .344 x .75 x .06 SS |
| 27 | 713007 | 4 | BLT-HH 1/4-20 X 2 #5 |
| 28 | 809444 | 1 | CLIP-CORD |

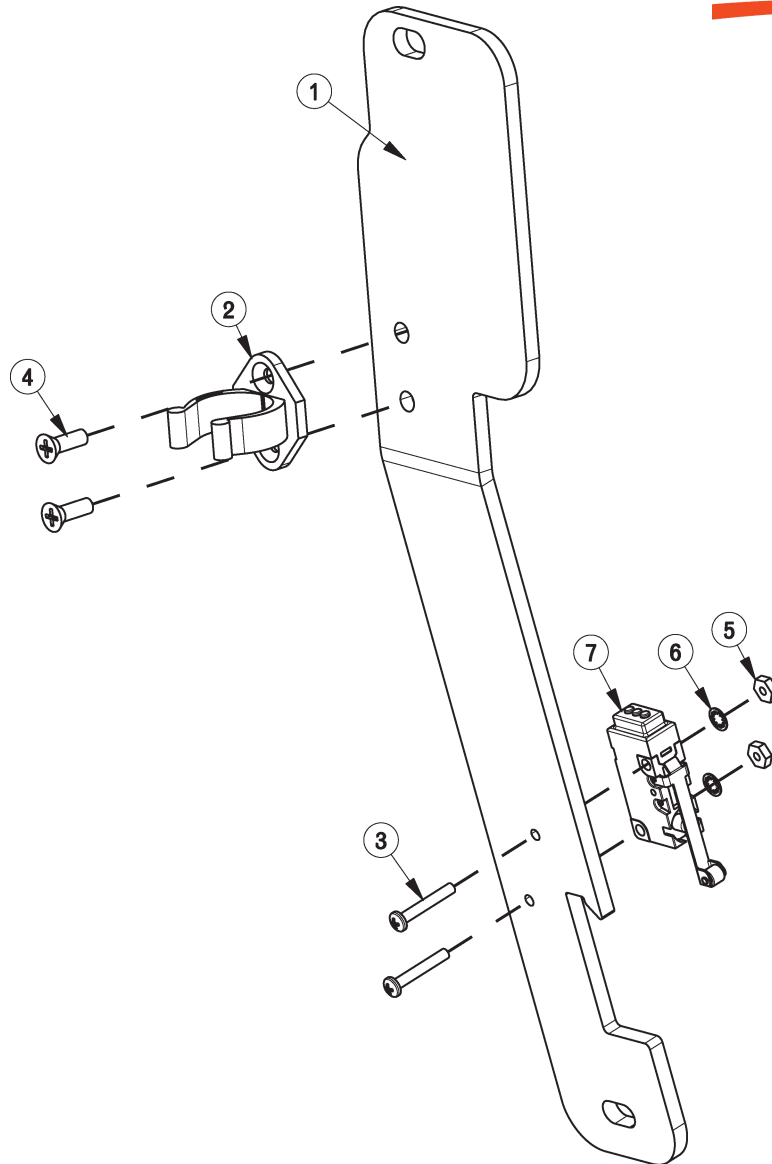


| BILL OF MATERIAL - 172064 | | | |
|---------------------------|----------|-------|-------------------------------|
| ITEM | PART NO. | REQ'D | DESCRIPTION |
| 1 | 172063 | 1 | BKT, SOL VALVE MOUNT |
| 2 | 172158 | 1 | HOSE, 1/2"ID X 7.5" NYLOBRAID |
| 3 | 320265 | 1 | FITTING DUBL 3/8HBx3/8MPT |
| 4 | 383347 | 1 | CRIMP CLAMP 1/2 HOSE SS 185R |
| 5 | 711512 | 2 | WSR-FLAT .75X1.37X.08 |
| 6 | 711513 | 1 | WSR-FLAT .69 X 1.06 X .03 SS |
| 7 | 809415 | 1 | VALVE, 3/8 FPT, 45 OPEN/CLOSE |
| 8 | 827008 | 1 | FITTING, 3/8 MPT 1/2 HOSE |

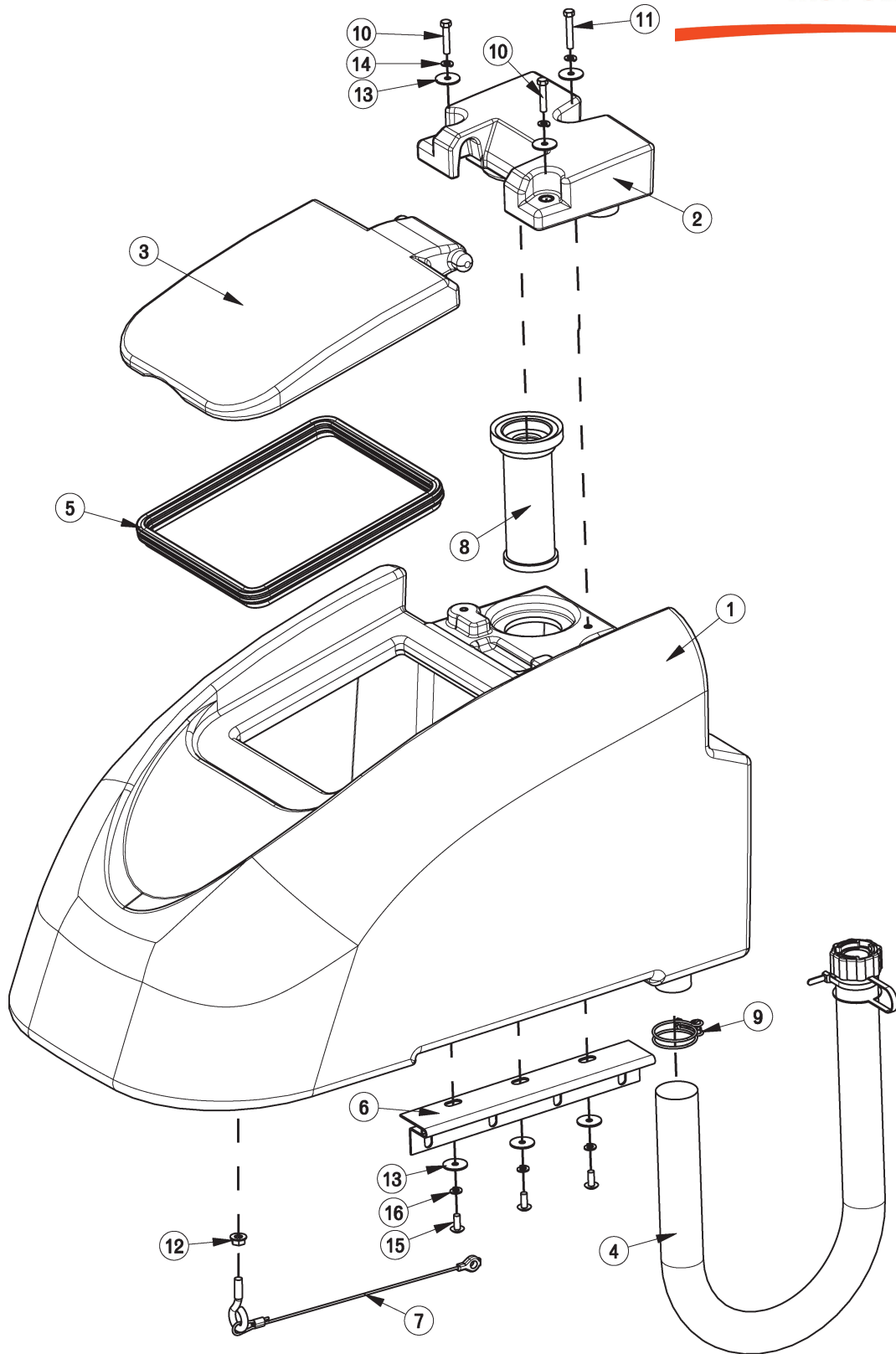


BILL OF MATERIAL - 172013

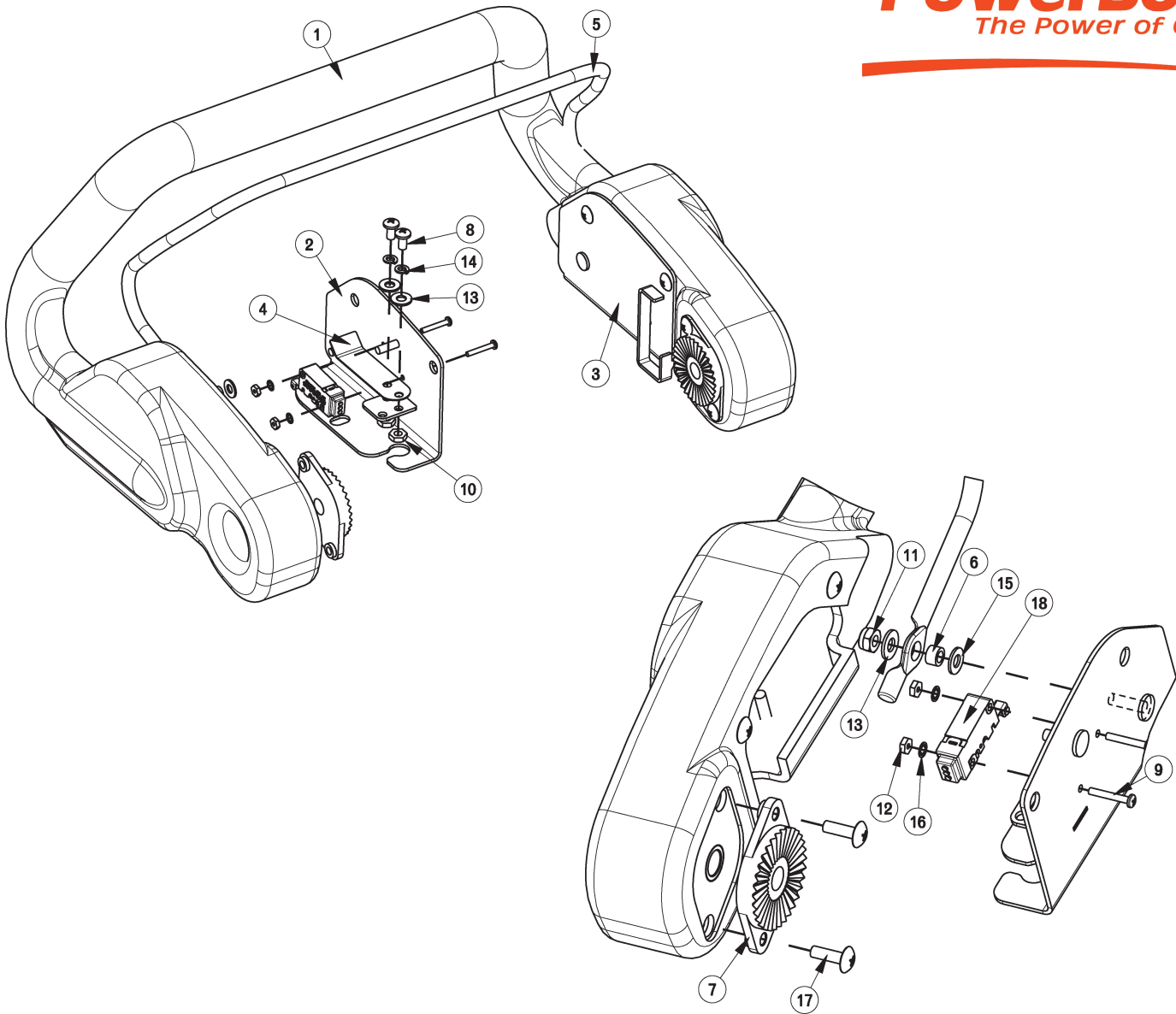
| ITEM | PART NO. | REQ'D | DESCRIPTION |
|------|----------|-------|-------------------------------|
| 1 | 172003 | 1 | SOLUTION TANK, ES1720 |
| 2 | 172080 | 1 | HANDLE MOUNT ASSY, LEFT |
| 3 | 172082 | 1 | HANDLE MOUNT ASSY, RIGHT |
| 4 | 260579 | 2 | TOOL CLIP, 1.5" HOSE |
| 5 | 342438 | 1 | FITTING, 1/2 MPT 1/2 HB BRASS |
| 6 | 711507 | 4 | WSR-FLAT .37 X 1.12 X .06 |
| 7 | 711546 | 4 | WSR-HELICAL 3/8 |
| 8 | 711550 | 4 | WSR NYLON .25 ID X .75 OD |
| 9 | 712146 | 4 | SCR-SC BHCS 1/4-20 X .37 SS |
| 10 | 712822 | 4 | SCR-MC TR HD 10-24 X .50 SS |
| 11 | 713041 | 4 | BLT-HH 3/8-16 X 3/4 #5 |



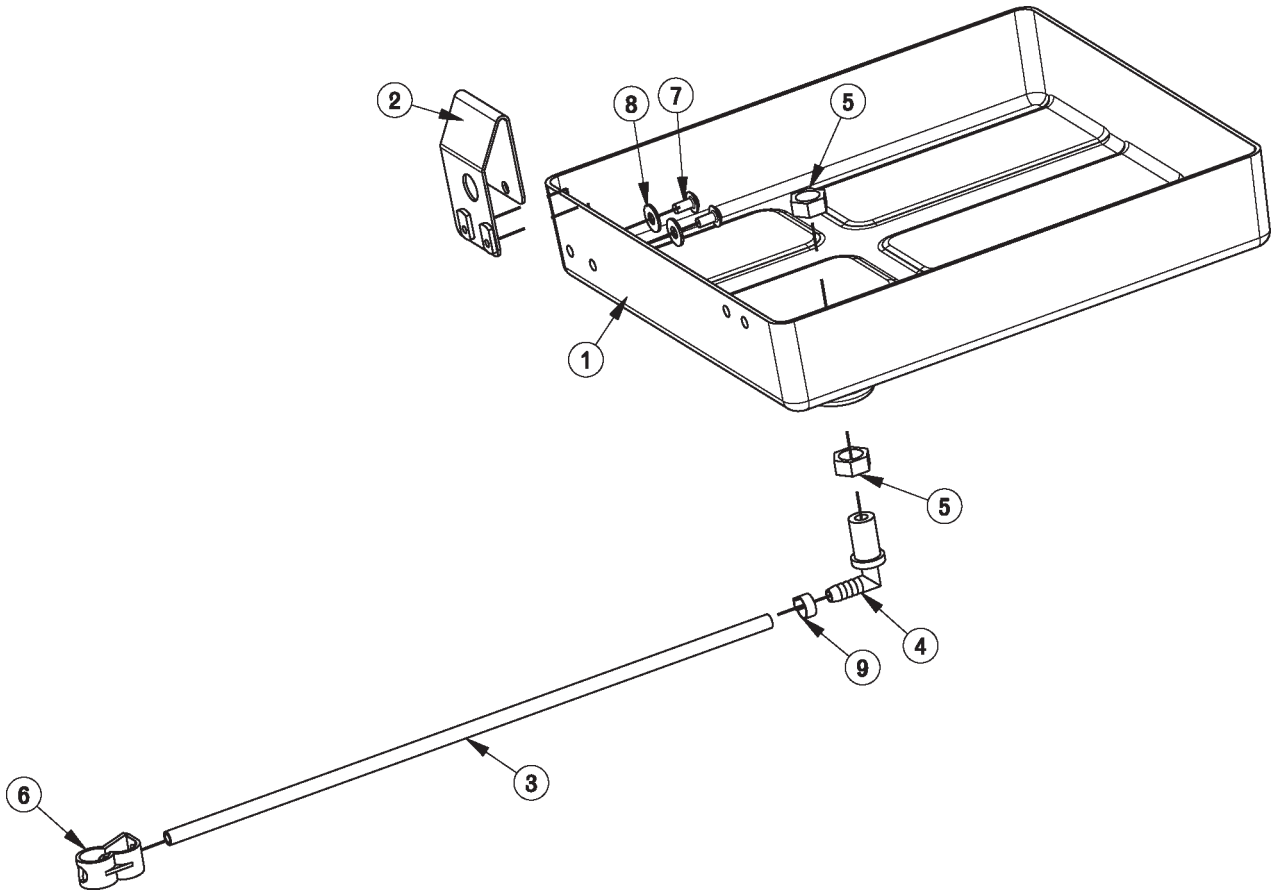
| BILL OF MATERIAL - 172157 | | | |
|---------------------------|----------|-------|---|
| ITEM | PART NO. | REQ'D | DESCRIPTION |
| 1 | 172036 | 1 | BKT, PEDAL STOP |
| 2 | 172065 | 1 | CLIP, FOR 1/2" ID HOSE |
| 3 | 710493 | 2 | SCR-MC 4-40 X .75 PAN HD |
| 4 | 710530 | 2 | SCR-MC FL HD 8-32 X .50 BRS |
| 5 | 711428 | 2 | NUT-HEX 4-40 |
| 6 | 712326 | 2 | WSR-INT LOCK #4 |
| 7 | 747603-2 | 1 | SWITCH ASY, MICRO ROLLER W/PACK/CONDUIT |



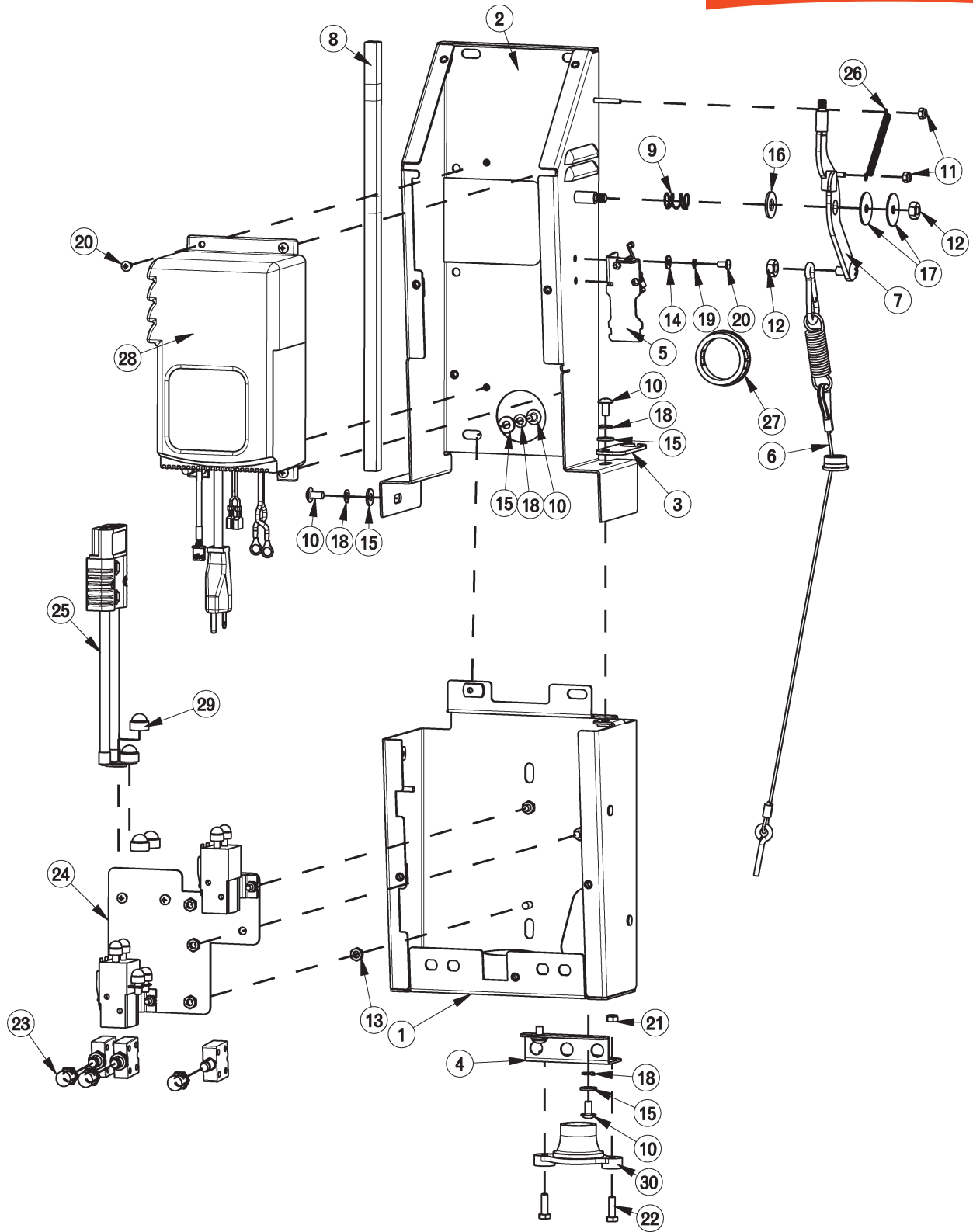
| BILL OF MATERIAL - 172014 | | | |
|---------------------------|----------|-------|-----------------------------|
| ITEM | PART NO. | REQ'D | DESCRIPTION |
| 1 | 172004 | 1 | ES1720 RECOVERY TANK |
| 2 | 172005 | 1 | ES1720 VACUUM MANIFOLD |
| 3 | 172007 | 1 | ES1720 LID |
| 4 | 172011 | 1 | HOSE, PINCH-OFF W/ CAP, 36" |
| 5 | 172017 | 1 | GASKET, LID |
| 6 | 172049 | 1 | HINGE, RECOVERY TANK |
| 7 | 172067 | 1 | REC TANK CABLE ASSY 11.625 |
| 8 | 172132 | 1 | SCREENED FLOAT |
| 9 | 260203 | 1 | WIRE GRIP HOSE CLAMP |
| 10 | 711210 | 2 | BLT-HH 1/4-20 X 1.25 STPL |
| 11 | 711212 | 1 | BLT-HH 1/4-20 X 1.50 STPL |
| 12 | 711379 | 1 | NUT, FLANGED WIZZ 5/16-18 |
| 13 | 711519 | 6 | WSR- FLAT .25 X 1.01 X .06 |
| 14 | 711544 | 3 | WSR-HELICAL 1/4 |
| 15 | 712565 | 3 | SCR-MC 1/4-20X.63 SS TR HD |
| 16 | 712758 | 3 | WSR-HELICAL 1/4 SS |



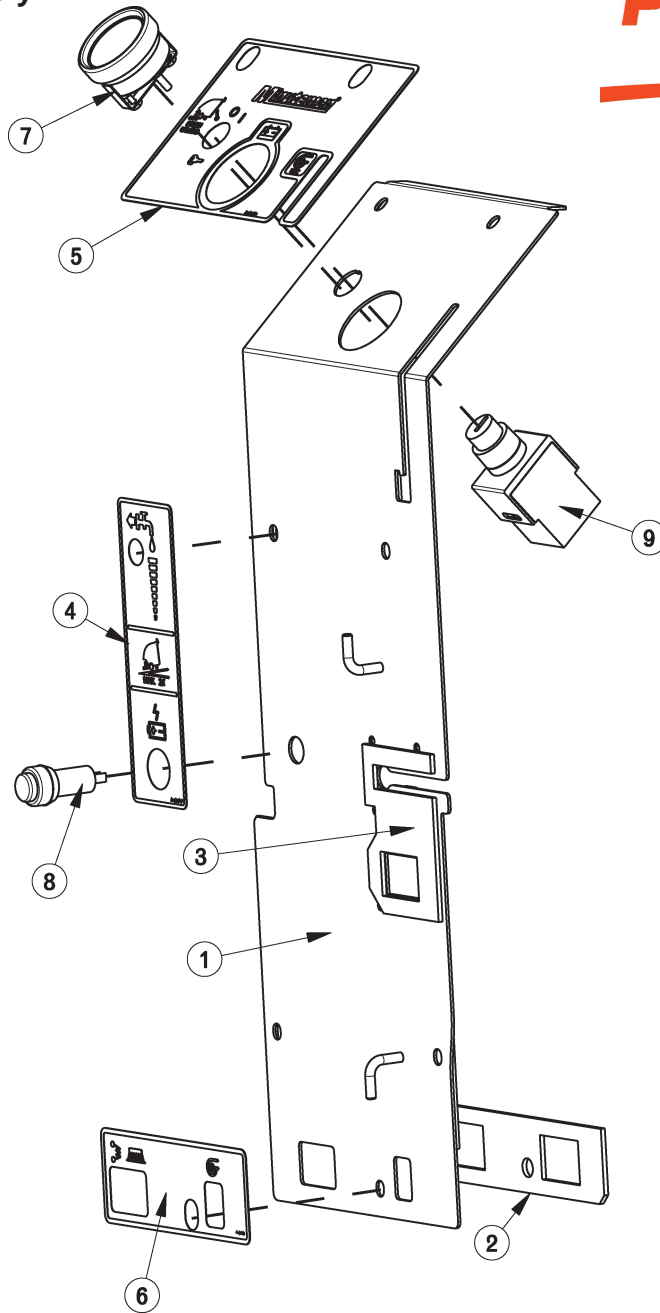
| BILL OF MATERIAL - 172016 | | | |
|---------------------------|----------|-------|---|
| ITEM | PART NO. | REQ'D | DESCRIPTION |
| 1 | 172006 | 1 | ES1720 HANDLE |
| 2 | 172053 | 1 | BAIL PLATE WMT RH |
| 3 | 172054 | 1 | BAIL PLATE WMT LH |
| 4 | 172057 | 2 | ES1720 LEAF SPRING |
| 5 | 172059 | 1 | ES1720 BAIL, HANDLE |
| 6 | 172074 | 2 | SPACER, 5/16OD X 17GA, ALUM |
| 7 | 270143 | 2 | HANDLE PIVOT JAW |
| 8 | 710353 | 4 | SCR-MC RD HD 10-32 X .37 STL |
| 9 | 710493 | 2 | SCR-MC 4-40 X .75 PAN HD |
| 10 | 711310 | 4 | NUT, HEX 10-32 ST PL |
| 11 | 711350 | 2 | NUT-NYLOC 10-32 |
| 12 | 711428 | 2 | NUT-HEX 4-40 |
| 13 | 711503 | 6 | WSR, FLAT#10 |
| 14 | 711543 | 4 | WSR-HELICAL #10 |
| 15 | 712320 | 2 | WSR-NYLON .22 X .45 X .04 |
| 16 | 712326 | 2 | WSR-INT LOCK #4 |
| 17 | 712830 | 10 | SCR-MC 10-24 X .62 STLZ TR HD |
| 18 | 747603-1 | 1 | SWITCH ASY, MICRO ROLLER W/PACK/CONDUIT |
| 19 | 747632 | 1 | CABLE ASY, 5 COND 18G CONSOLE |



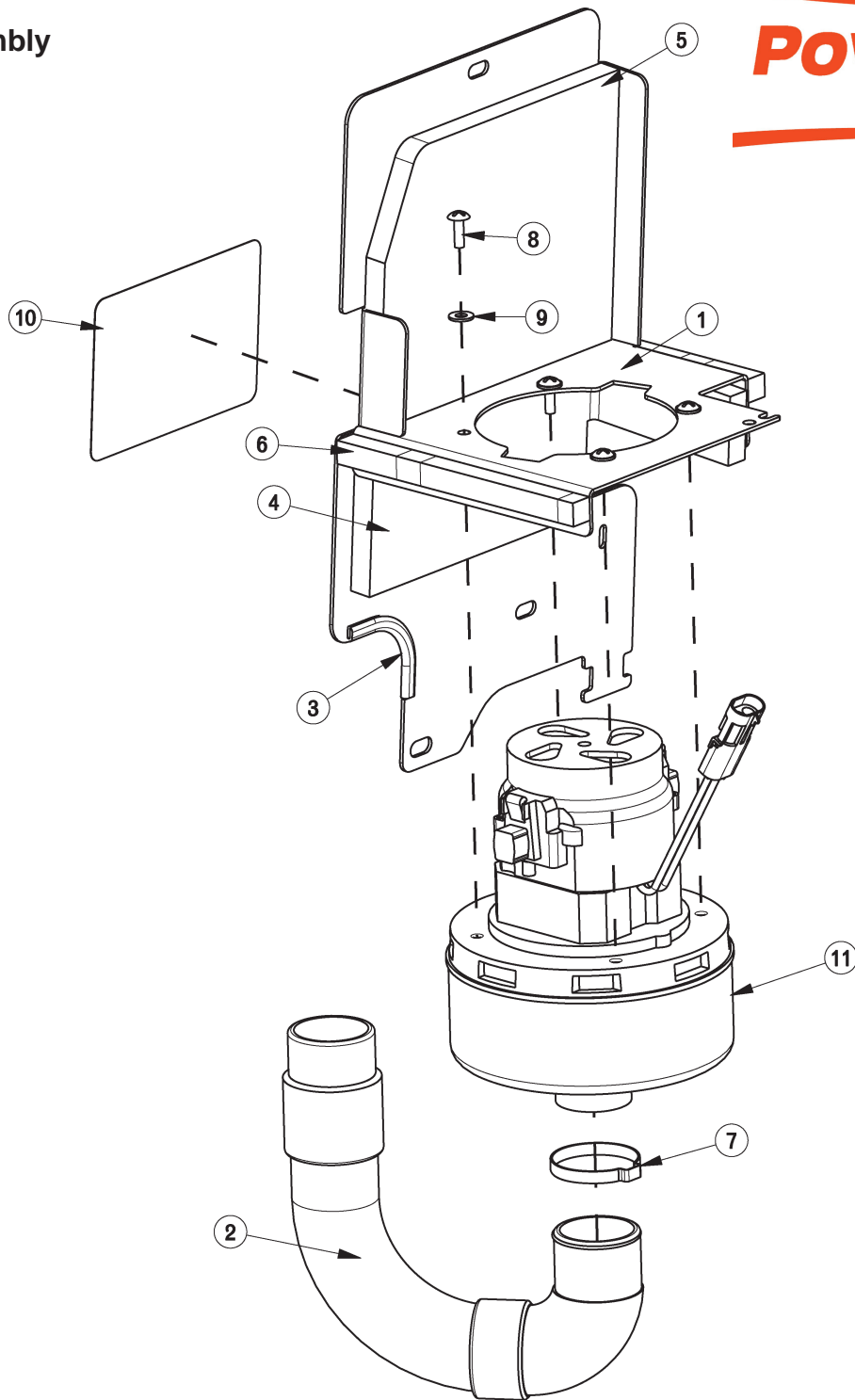
| BILL OF MATERIAL - 172012 | | | |
|---------------------------|----------|-------|--------------------------------|
| ITEM | PART NO. | REQ'D | DESCRIPTION |
| 1 | 172116 | 1 | ES1720 BATTERY BOX |
| 2 | 172213 | 1 | BKT, SPACER FOR BATTERIES |
| 3 | 260224 | 1 | 18" HOSE |
| 4 | 320271 | 1 | NOZZLE BODY-ELBOW |
| 5 | 320272 | 2 | NOZZLE BODY LOCKNUT |
| 6 | 320273 | 1 | HOSE SHUT-OFF CLAMP |
| 7 | 710178 | 2 | SCR-MC 1/4-20 X .50 TRUSS STPL |
| 8 | 711575 | 2 | WSR-FLT .31x.75x.06ST |
| 9 | 828490 | 1 | CRIMP CLAMP 140R |



| BILL OF MATERIAL - 172070-120/230 | | | |
|-----------------------------------|----------|-------|-----------------------------------|
| ITEM | PART NO. | REQ'D | DESCRIPTION |
| 1 | 172077 | 1 | ELEC BOX-BOT HALF WMT |
| 2 | 172088 | 1 | ELEC BOX-TOP HALF WMT |
| 3 | 172107 | 1 | BKT, UPPER BUSHING MOUNT |
| 4 | 172128 | 1 | BKT, LOWER BUSHING MOUNT |
| 5 | 172141 | 1 | VAC SWITCH ASSY |
| 6 | 172149 | 1 | CABLE ASSY, SQUEEGEE LIFT |
| 7 | 172152 | 1 | VAC LEVER WMT |
| 8 | 172188 | 1 | FOAM TAPE, 1/2" SQ X 16.5" |
| 9 | 670093 | 1 | SPRING, COMPRESSION |
| 10 | 710178 | 5 | SCR-MC 1/4-20 X .50 TRUSS STPL |
| 11 | 711372 | 2 | NUT-NYLOC 8-32 STL ZINC |
| 12 | 711383 | 2 | NUT-HEX CLR LOC 5/16-18 |
| 13 | 711429 | 6 | NUT-HEX 1/4-28 JAM STL Z |
| 14 | 711503 | 2 | WSR, FLAT#10 |
| 15 | 711505 | 5 | WSR-FLAT 1/4 |
| 16 | 711508 | 1 | WSR-FLAT .44X 1.0X.08 |
| 17 | 711516 | 2 | WSR- FLAT .31 X 1.25 X .05 |
| 18 | 711544 | 5 | WSR-HELICAL 1/4 |
| 19 | 712757 | 2 | WSR - HELICAL #10 SS |
| 20 | 712810 | 6 | SCR-MC 10-24 X .37 ST PL |
| 21 | 717018 | 2 | NUT-NYLOC M6 X 1.0 |
| 22 | 717022 | 2 | BOLT-HH M6X1.0 X 20 |
| 23 | 742748 | 3 | CIRCUIT BREAKER BOOT |
| 24 | 747630 | 1 | ELEC PANEL ASSY, E1720BD |
| 25 | 747637 | 1 | WIRE ASY, MACHINE-BATTERY E1720 |
| 26 | 762084 | 1 | SPRING-EXT |
| 27 | 762400 | 1 | HEYCO BUSHING 2.00" |
| 28 | 957745 | 1 | CHARGER,24VDC 12A ON-BOARD 120VAC |
| 28A | 957753 | 1 | CHARGER,24VDC 12A ON-BOARD 230VAC |
| 29 | 15592033 | 2 | CAP, SAFETY NUT COVER M8 |
| 30 | 90508391 | 1 | BUSHING, CABLE GUIDE, HAKO |

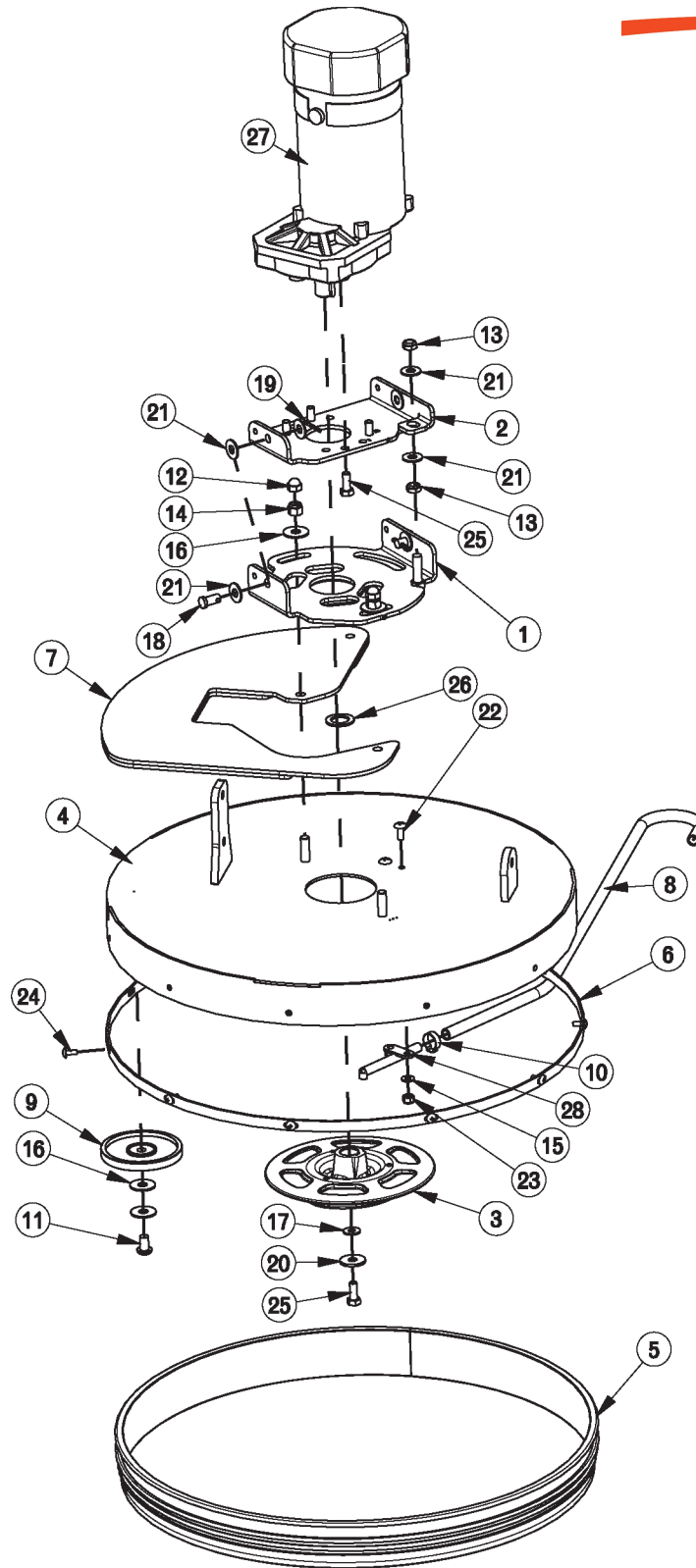


| BILL OF MATERIAL - 172073 | | | |
|---------------------------|----------|-------|--------------------------------|
| ITEM | PART NO. | REQ'D | DESCRIPTION |
| 1 | 172181 | 1 | ELEC BOX, COVER, WMT |
| 2 | 172193 | 1 | GASKET, CB OUTLINE |
| 3 | 172194 | 1 | GASKET, CHARGER CORD PLATE |
| 4 | 715672 | 1 | DECAL, 1720 BD ELEC BOX |
| 5 | 715673 | 1 | DECAL, 1720 BD DASHBOARD |
| 6 | 715675 | 1 | DECAL, BD CIRC BKRS |
| 7 | 740216 | 1 | VOLT METER |
| 8 | 747614 | 1 | CHARGE STATUS INDICATOR |
| 9 | 747617-1 | 1 | KEYSWITCH ASY, KEYSWITCH + WIR |

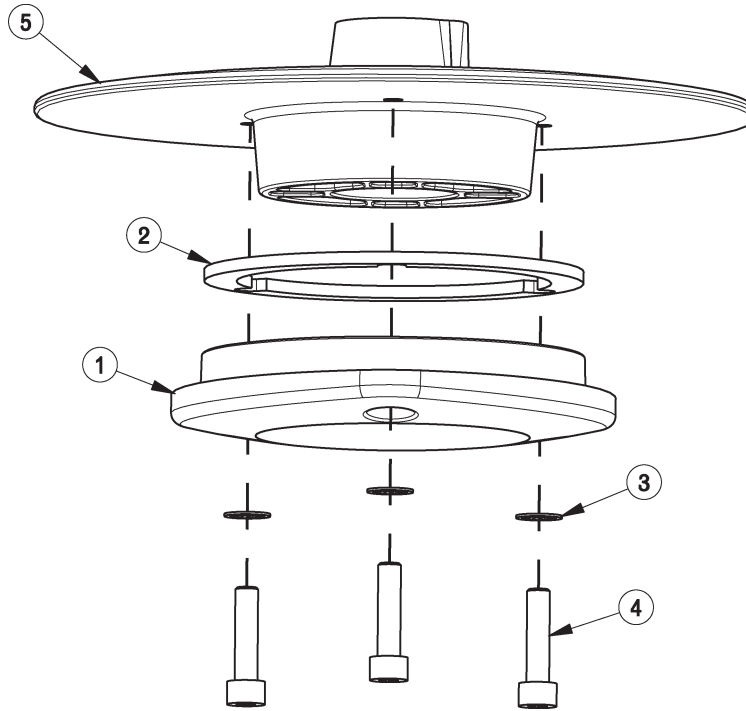


BILL OF MATERIAL - 172050

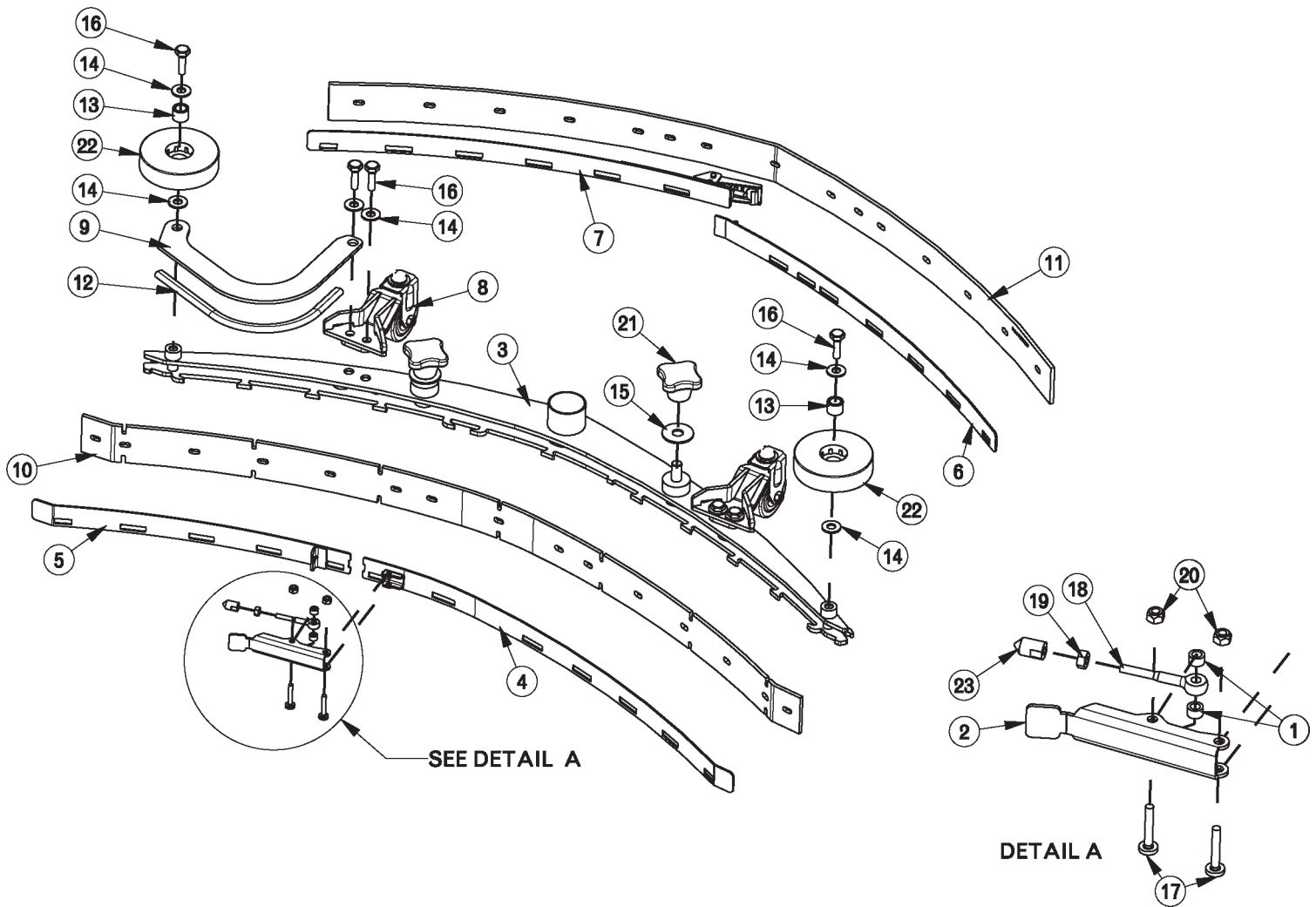
| ITEM | PART NO. | REQ'D | DESCRIPTION | ITEM | PART NO. | REQ'D | DESCRIPTION |
|------|----------|-------|------------------------------|------|----------|-------|--------------------------------|
| 1 | 172045 | 1 | VAC MOUNT WMT, ES1720 | 7 | 450095 | 1 | CRIMP CLAMP, 1.75" |
| 2 | 172048 | 1 | HOSE, STRETCH 13" | 8 | 711160 | 4 | #10 X 5/8 HI-LO |
| 3 | 172124 | 1 | EDGE TRIM, .063 X 3.0, BLACK | 9 | 711503 | 4 | WSR, FLAT#10 |
| 4 | 172186 | 1 | FOAM COVER, FRONT 1 | 10 | 715676 | 1 | DECAL, BATT CABLE ROUTE, E1720 |
| 5 | 172187 | 1 | FOAM COVER, FRONT 2 | 11 | 747607-1 | 1 | VAC MOTOR ASY, E1720 |
| 6 | 172188 | 2 | FOAM TAPE, 1/2" SQ X 16.5" | | | | |



| BILL OF MATERIAL - 172100 | | | |
|---------------------------|----------|-------|---------------------------------|
| ITEM | PART NO. | REQ'D | DESCRIPTION |
| 1 | 172040 | 1 | DECK ANGLE ADJUST WMT |
| 2 | 172044 | 1 | PLATE, MOTOR MOUNT |
| 3 | 172095 | 1 | E20 BRUSH HUB ASSY |
| 4 | 172101 | 1 | DECK COVER WMT 20" |
| 5 | 172121 | 1 | 20" DECK SKIRT |
| 6 | 172125 | 1 | RETAINER, 20" DECK SKIRT |
| 7 | 172208 | 1 | E20 BRUSH DECK PLATE |
| 8 | 172216 | 1 | HOSE-WIRE REINF 3/8 X 29" |
| 9 | 210153 | 1 | ROLLER WHEEL |
| 10 | 450076 | 1 | CLAMP-CRIMP 185R SS |
| 11 | 710985 | 1 | SCR-SC 3/8-16 X .62 ST PL |
| 12 | 711354 | 2 | NUT-ACORN 3/8-16 ST NI |
| 13 | 711375 | 2 | NUT-NYLOC 3/8-16 X 1/2 NUT |
| 14 | 711380 | 2 | NUT-NYLOC 3/8-16 NUT |
| 15 | 711504 | 2 | WSR-FLAT 1/4 ID SS |
| 16 | 711507 | 4 | WSR-FLAT .37 X 1.12 X .06 |
| 17 | 711575 | 1 | WSR-FLT .31x.75x.06ST |
| 18 | 711679 | 2 | CLEVIS PIN 3/8 X 3/4 |
| 19 | 711809 | 2 | COTTER PIN, 1/8 X 1.0 |
| 20 | 711855 | 1 | WSR-FLT .37X1.12X.10 STL Z HARD |
| 21 | 712301 | 8 | WSR-FLAT .37 X .87 X .06 |
| 22 | 712565 | 2 | SCR-MC 1/4-20X.63 SS TR HD |
| 23 | 712667 | 2 | NUT, HEX 1/4-20 NYLOC SS |
| 24 | 712822 | 11 | SCR-MC TR HD 10-24 X .50 SS |
| 25 | 717024 | 5 | BOLT-HH M8X1.25 X 20 |
| 26 | 717025 | 1 | WSR-FLAT 13/16ID X 1.25 X .08 |
| 27 | 747600 | 1 | MOTOR, OFFSET PM GEAR, 550W |
| 28 | 90311663 | 1 | HAKO SOL FEED NOZZLE |

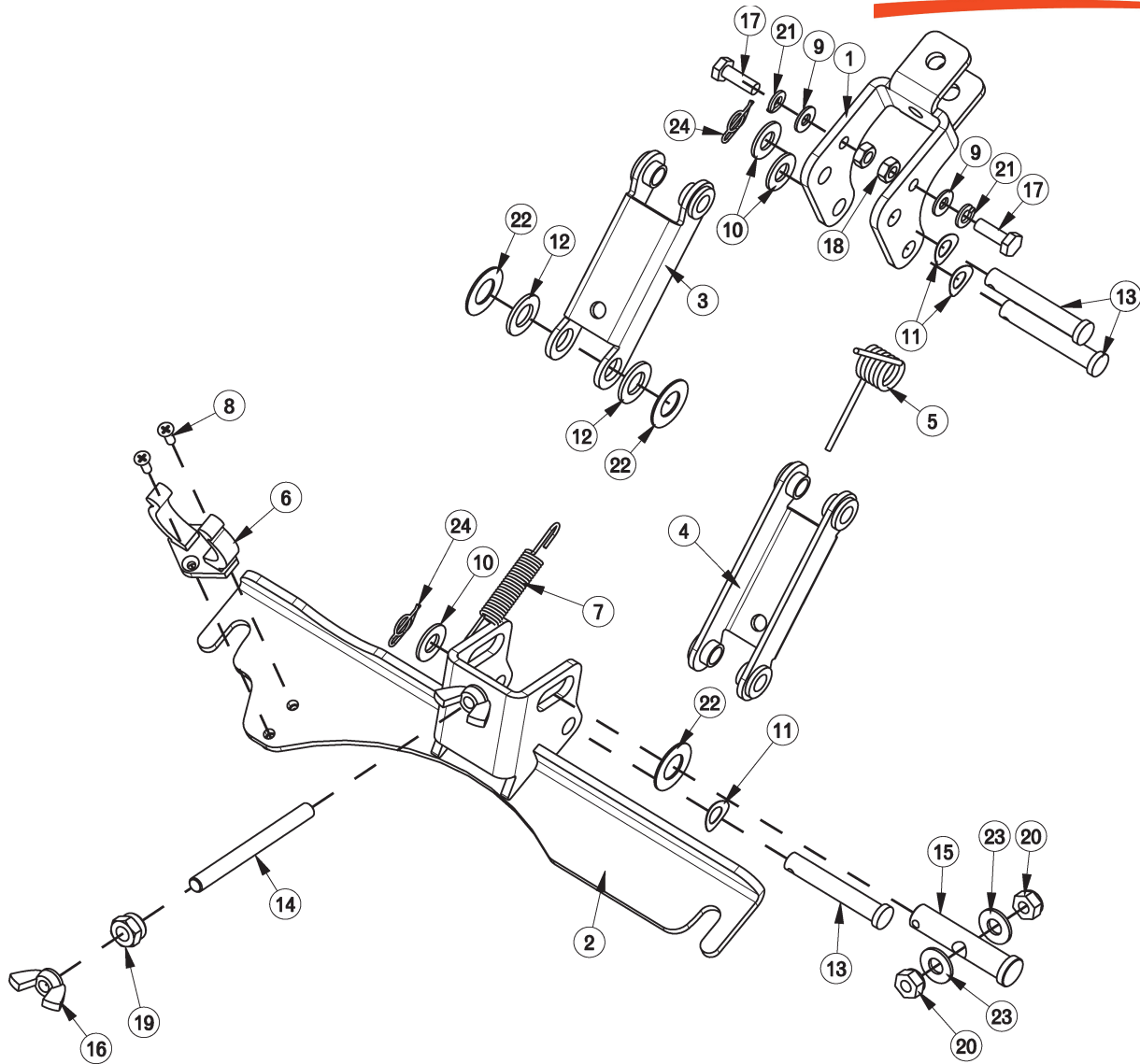


| BILL OF MATERIAL - 172095 | | | |
|---------------------------|-----------|-------|-------------------------------|
| ITEM | PART NO. | REQ'D | DESCRIPTION |
| 1 | 172097 | 1 | ES1720 BRUSH HUB BASE |
| 2 | 172133 | 1 | BRUSH HUB SPACER |
| 3 | 711554 | 3 | WSR-INTERNAL LOCK 1/4 ID |
| 4 | 717026 | 3 | SCR-SC SHCS M6X1.0 X 25 STL Z |
| 5 | 172096MCH | 1 | BASE, DRIVE HUB WITH KEYWAY |



BILL OF MATERIAL - 172270

| ITEM | PART NO. | REQ'D | DESCRIPTION | ITEM | PART NO. | REQ'D | DESCRIPTION |
|------|----------|-------|--|------|----------|-------|-------------------------------|
| 1 | 172074 | 2 | SPACER, 5/16OD X 17GA, ALUM | 12 | 172274 | 1 | EDGE TRIM 5/16 X 10" BLACK |
| 2 | 172234 | 1 | LEVER, 90535758 | 13 | 430322 | 2 | BUSHING .435 X .625 X .50 |
| 3 | 172235 | 1 | SQUEEGEE WMT, 34" (860) | 14 | 712772 | 8 | WSR-FLAT .344 x .75 x .06 SS |
| 4 | 172240 | 1 | STRAP WMT, FRONT LEFT | 15 | 712773 | 2 | WSR FLAT .438 X 1.25 X .07 SS |
| 5 | 172241 | 1 | STRAP WMT, FRONT | 16 | 11039567 | 6 | BLT-HH M8 X 25 SS DIN933 |
| 6 | 172245 | 1 | STRAP WMT, REAR | 17 | 11175494 | 2 | SCR-MC M5 X 25 SS DIN7985 |
| 7 | 172246 | 1 | STRAP WMT, REAR | 18 | 11518313 | 1 | BLT-EYE M5 X 40 SS |
| 8 | 172250 | 2 | SQUEEGEE CASTER ASSY | 19 | 12022430 | 1 | NUT-HEX M5 SS DIN934 |
| 9 | 172271 | 1 | BUMPER, 34" SQG | 20 | 12040283 | 2 | NUT-HEX M5 NYLOC SS DIN985 |
| 10 | 172272 | 1 | FRNT SQG BLADE 34", 1/8 PU | 21 | 17133026 | 2 | KNOB, M10 STAR HANDLE |
| 10A | 172282 | 1 | SQUEEGEE, FRONT BLADE 34", 1/8 LINATEX | 22 | 90336637 | 2 | WHEEL, 3.15OD |
| 11 | 172273 | 1 | REAR SQG BLADE 34", 1/8 PU | 23 | 90513631 | 1 | PIN, THD 90513631 |
| 11A | 172283 | 1 | SQUEEGEE, REAR BLADE 34", 1/8 LINATEX | | | | |

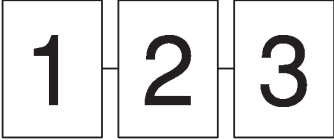


BILL OF MATERIAL - 172150

| ITEM | PART NO. | REQ'D | DESCRIPTION | ITEM | PART NO. | REQ'D | DESCRIPTION |
|------|----------|-------|------------------------------|------|----------|-------|--------------------------------|
| 1 | 172134 | 1 | BKT, MAIN SQUEEGEE HINGE | 13 | 711678 | 3 | CLEVIS PIN 3/8 X 2-1/4 |
| 2 | 172155 | 1 | SQUEEGEE MOUNT WMT | 14 | 712147 | 1 | ROD-THD 5/16-18 X 3.5 SS |
| 3 | 172196 | 1 | SQ TOP LINK W/ BUSHING | 15 | 712148 | 1 | CLEVIS PIN, 1/2 x 2.25 W/ HOLE |
| 4 | 172197 | 1 | SQ BOT LINK W/ BUSH | 16 | 712157 | 2 | NUT- WING 5/16-18 SS |
| 5 | 172261 | 1 | TORSION SPRING | 17 | 712562 | 2 | BOLT-HH 1/4-20X3/4 SS |
| 6 | 260579 | 1 | TOOL CLIP, 1.5" HOSE | 18 | 712665 | 2 | NUT-HEX 1/4-20 SS |
| 7 | 430051 | 1 | RETURN SPRING-3.00" | 19 | 712680 | 1 | NUT-HEX 5/16-18 SS |
| 8 | 710530 | 2 | SCR-MC FL HD 8-32 X .50 BRS | 20 | 712683 | 2 | NUT, HEX 5/16-18 NYLOC SS |
| 9 | 711504 | 2 | WSR-FLAT 1/4 ID SS | 21 | 712758 | 2 | WSR-HELICAL 1/4 SS |
| 10 | 711515 | 3 | WSR-FLAT .406 X .812 X .0625 | 22 | 712760 | 3 | WSR-FLAT .56X1.06X.04 SS |
| 11 | 711523 | 3 | WSR-WAVE .37X .68 X .08 | 23 | 712772 | 2 | WSR-FLAT .344 x .75 x .06 SS |
| 12 | 711592 | 2 | WSR-FLAT .50 X .9 X .075 NYL | 24 | 3400125 | 2 | PIN-COTTER 3/8 RUE RING |

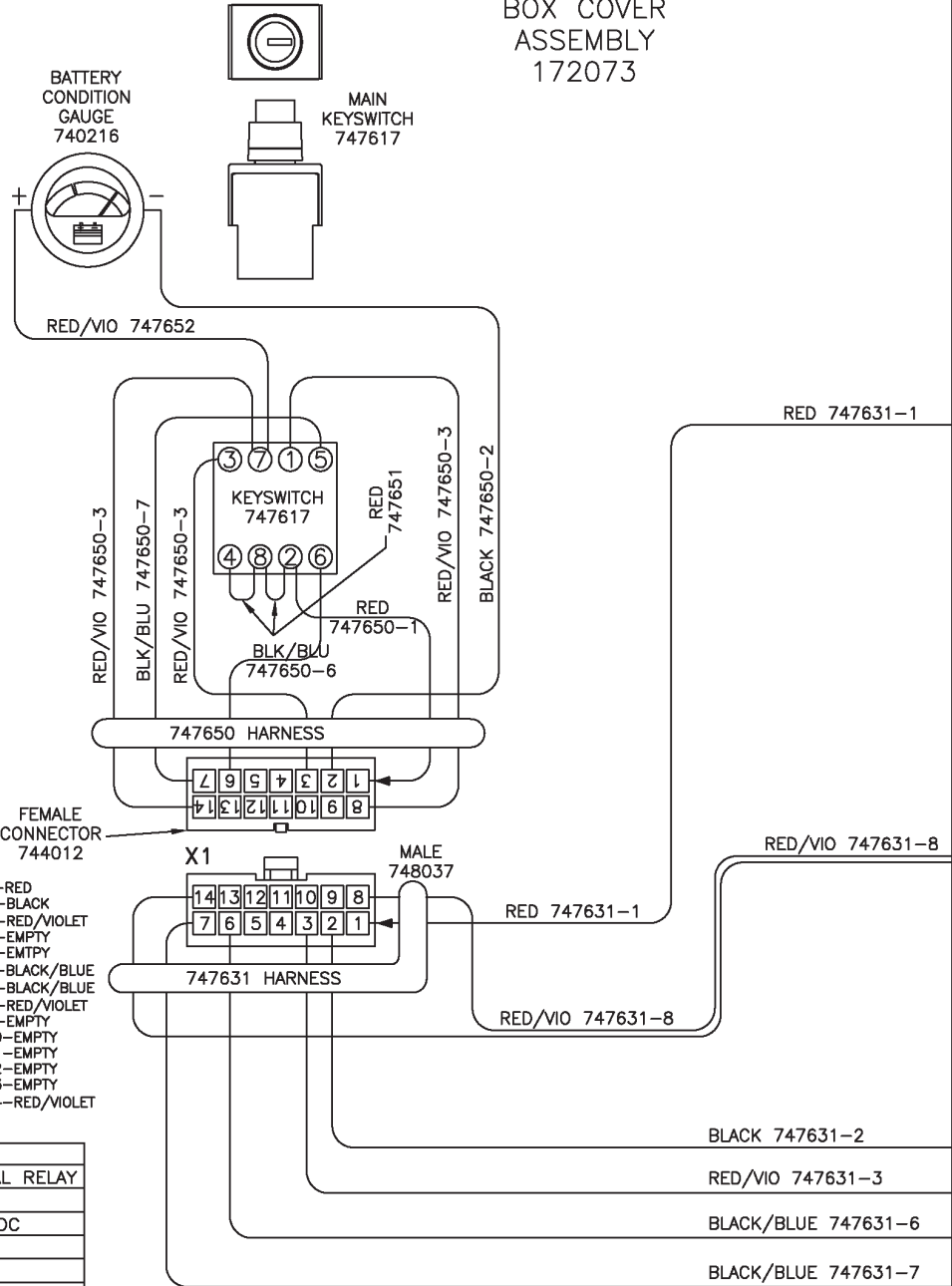
1 Wiring Diagrams

PAGE LAYOUT



PAGES GO TOGETHER AS SHOWN TO SEE THE ENTIRE SCHEMATIC AS ONE.

ELECTRICAL BOX COVER ASSEMBLY 172073



CONNECTOR NUMBERS AND NAMES

| CONNECTOR # | DESCRIPTION |
|-------------|------------------------------|
| X1 | KEYSWITCH |
| X2 | OPERATOR HANDLE SWITCH |
| X3 | CHARGER STATUS INDICATOR |
| X4 | VACUUM SWITCH |
| X5 | BATTERY CONNECTOR |
| X6 | VACUUM MOTOR |
| X7 | BRUSH MOTOR SWITCH |
| X8 | BRUSH UNLOAD SWITCH |
| X9 | OPTIONAL: SOLENOID SWITCH |
| X10 | OPERATOR HANDLE CABLE |
| X11 | OPERATOR HANDLE CABLE |
| X12 | - |
| X13 | - |
| X14 | - |
| X15 | ACCESSORY CONNECTION |
| X16 | ACCESSORY CONNECTION |
| X17 | OPTIONAL (747656 GREY/RED) |
| X18 | OPTIONAL (747657 GREY/BLACK) |

- 1-RED
- 2-BLACK
- 3-RED/VIOLET
- 4-EMPTY
- 5-EMPTY
- 6-BLACK/BLUE
- 7-BLACK/BLUE
- 8-RED/VIOLET
- 9-EMPTY
- 10-EMPTY
- 11-EMPTY
- 12-EMPTY
- 13-EMPTY
- 14-RED/VIOLET

X1:MAIN KEYSWITCH ASSEMBLY: 747617-1

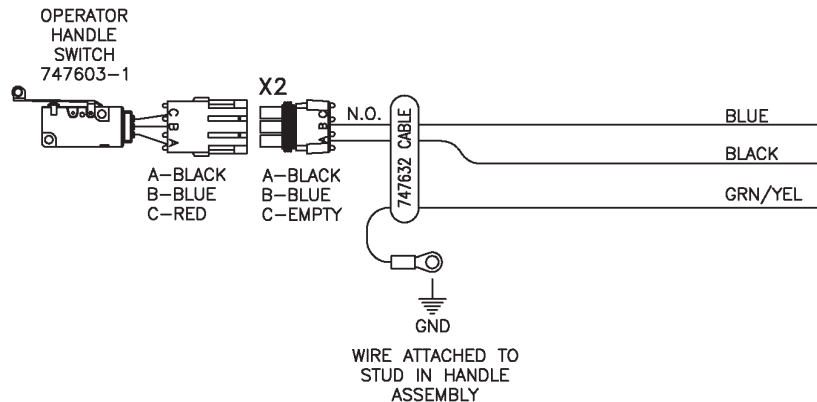
| PIN # | COLOR | WHERE TO/FROM |
|-------|------------|-------------------------------------|
| 1 | RED | X13: BATTERY CHARGER INTERNAL RELAY |
| 2 | BLACK | RELAY COILS: 0V |
| 3 | RED/VIOLET | BRUSH MOTOR RELAY COIL: 24VDC |
| 4 | EMPTY | - |
| 5 | EMPTY | - |
| 6 | BLACK/BLUE | BRUSH RELAY NORMALLY CLOSED |
| 7 | BLACK/BLUE | BRUSH UNLOAD SWITCH P:B |
| 8 | RED/VIOLET | X12: MAIN RELAY COIL: 24VDC |
| 9 | EMPTY | - |
| 10 | EMPTY | - |
| 11 | EMPTY | - |
| 12 | EMPTY | - |
| 13 | EMPTY | - |
| 14 | RED/VIOLET | X12: MAIN RELAY COIL: 24VDC |

BATTERY CHARGER: 957745 or 957753

| | COLOR | WHERE TO/FROM |
|------|-------|--------------------------------|
| X13 | RED | X13: KEYSWITCH P:1 |
| X14 | BLACK | X14: CONTROL CB 4.0A |
| 14GA | RED | MAIN RELAY + (REAR LEFT POST) |
| 14GA | BLACK | MAIN RELAY - (FRONT LEFT POST) |

OTHER WIRE COLORS

| | | |
|-----|--------------|-----------------------------------|
| - | RED | BATTERY 24VDC: + |
| - | BLACK | BATTERY 0VDC: - |
| - | GREEN/YELLOW | GROUND |
| - | BLACK/BLUE | BRUSH UNLOAD CIRCUIT |
| - | RED/BLACK | BRUSH UNLOAD CIRCUIT:MICRO SWITCH |
| - | RED/VIOLET | 24VDC AFTER MAIN KEYSWITCH |
| X15 | GREY/RED | OPTIONAL POWER 24VDC: 3A MAX |
| X16 | GREY/BLACK | OPTIONAL POWER 0VDC: 3A MAX |

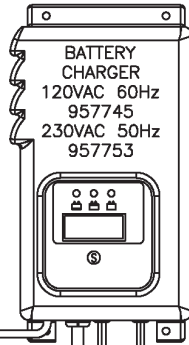


2

ELECTRICAL BOX ASSEMBLY
172070-120
172070-230

CHARGER STATUS INDICATOR
747614

X3

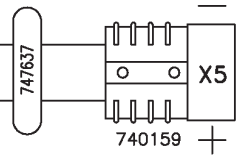


CABLE + BOARD
747614-1

TO BATTERY PACK

BLACK 747637-2

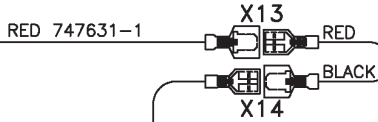
RED 747637-1



TO 120VAC 60Hz or 230VAC 50Hz

RELAY NUT COVER
MAIN RELAY M8 15592033 (4)
VACUUM RELAY M6 15592025 (2)
BRUSH MOTOR RELAY M6 155925025 (4)

*RELAY TERMINALS ARE METRIC
MAIN RELAY:M8 TORQUE TO 8-9.5Nm
VACUUM & BRUSH RELAY:M6 TORQUE TO 3.6-3.9Nm

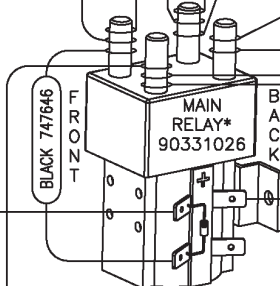


INTERNAL INHIBIT RELAY

BLACK
RED

RED 747642

RED/VIO 747631-8



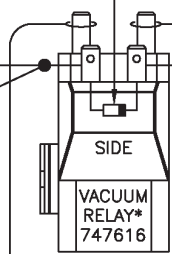
BLACK 747646

BLACK 747647

DIODE 740482

RED/VIO 747634-2
RED/VIO 747634-1
SPLIT CONDUIT 747627

BLACK 747631-2



SPLIT CONDUIT 747625

RED 747633-1
BLACK 747633-2

747633

RED/VIO 747635-1
RED/VIO 747635-2

BLACK 747631-2

RED/VIO 747631-3

BLK/BLU 747631-6

BRUSH MOTOR RELAY* 747615

DIODE 740482

GRY/BLK 747655

RED 747638
BLACK 747639

RED/VIO 747636
BLK/BLU 747631-7

RED/VIO 747631-3

BLK/BLU 747631-7

BLUE

X10

GRY/RED 747631-3

BLACK

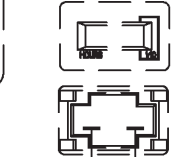
X11

GRY/BLK 747657

GRY/RED 747656

RED 747638
BLACK 747639

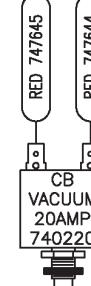
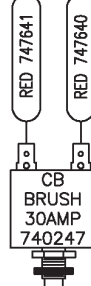
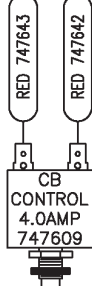
OPTIONAL HOUR METER 747624
K-E1720HM



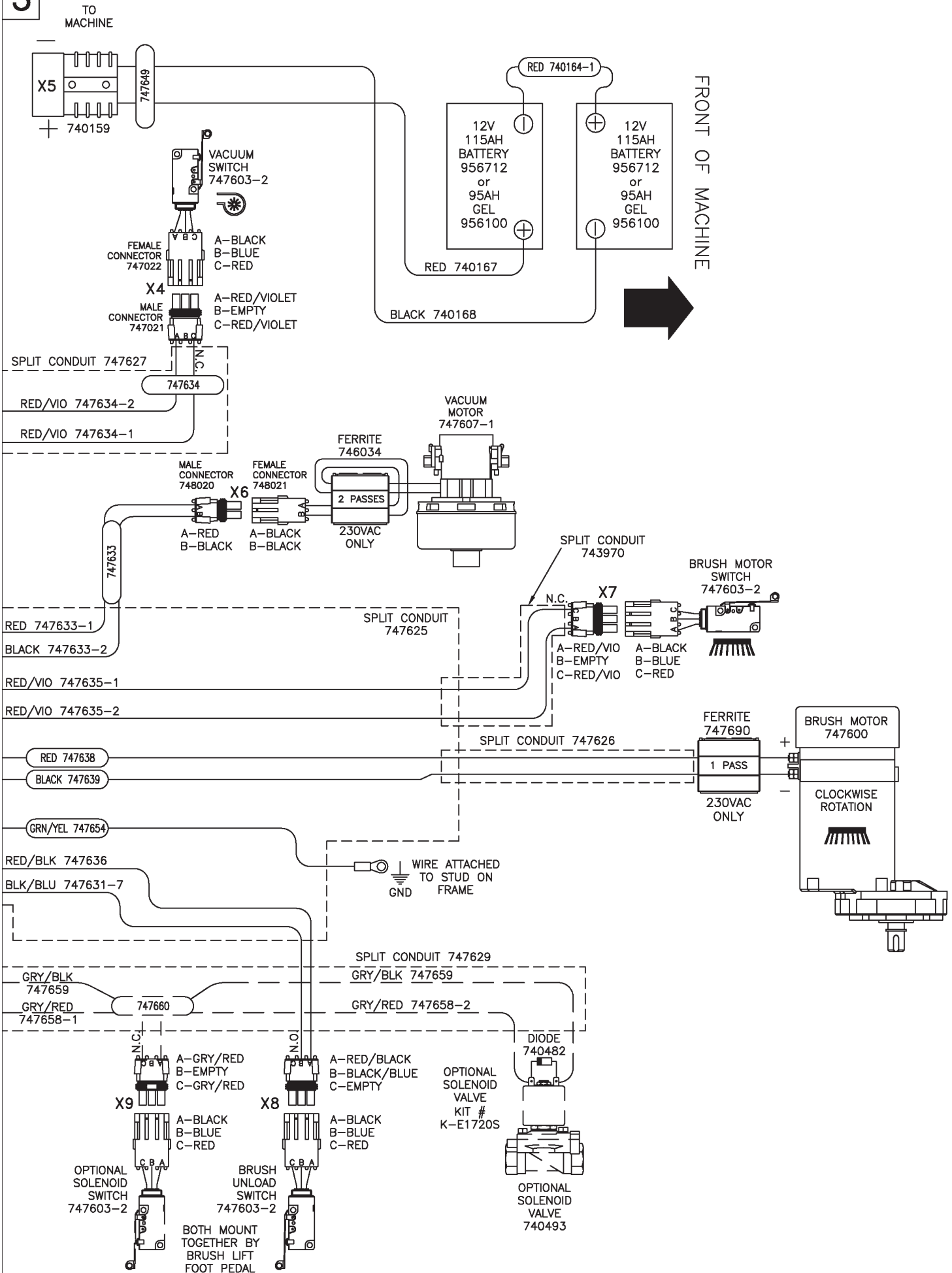
GRY/BLK 747656

WIRES ATTACHED TO STUD IN ELECTRICAL BOX
GND

ACCESSORY CONNECTION BLACK TAPED



3



Revision F
Effective November 1, 2008
PowerBoss Made Simple Industrial Limited Warranty

Minuteman International owner of PowerBoss warrants to the original purchaser/user that the product is free from defects in workmanship and materials under normal use. PowerBoss will, at its option, repair or replace without charge, parts that fail under normal use and service when operated and maintained in accordance with the applicable operation and instruction manuals. All warranty claims must be submitted through and approved by factory authorized repair stations.

This warranty does not apply to normal wear, or to items whose life is dependent on their use and care. Parts not manufactured by PowerBoss are covered by and subject to the warranties and/or guarantees of their manufacturers. Please contact Minuteman International for procedures in warranty claims against these manufacture.

Special warning to purchaser – Use of replacement parts not manufactured by PowerBoss or its designated licensees, will void all warranties expressed or implied. A potential health hazard exists without original equipment replacement.

All warranted items become the sole property of Minuteman International or PowerBoss or its original manufacturer, whichever the case may be.

PowerBoss disclaims any implied warranty, including the warranty of merchantability and the warranty of fitness for a particular purpose. PowerBoss assumes no responsibility for any special, incidental or consequential damages.

This limited warranty is applicable only in the U.S.A. and Canada, and is extended only to the original user/purchaser of this product. Customers outside the U.S.A. and Canada should contact their local distributor for export warranty policies. PowerBoss is not responsible for costs or repairs performed by persons other than those specifically authorized by PowerBoss. This warranty does not apply to damage from transportation, alterations by unauthorized persons, misuse or abuse of the equipment, use of non-compatible chemicals, or damage to property, or loss of income due to malfunctions of the product. If a difficulty develops with this machine, you should contact the dealer from whom it was purchased.

This warranty gives you specific legal rights, and you may have other rights, which vary from state to state. Some states do not allow the exclusion or limitation of special, incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you.

| | Travel* | Labor | Parts | Engine | Extended Warranty | Costs |
|----------------------|-------------|------------|----------------------|------------------------|---|-------|
| Walk behinds | | | | | | |
| Battery sweepers | Ninety days | One year | One year | N/A | 2 years Parts + Labor (or 2000 Hours) | 2% |
| IC sweepers | Ninety days | One year | One year | Through manufacturer | 2 years Parts + Labor (or 2000 Hours) | 2% |
| Battery scrubbers | Ninety days | Two years | Three years | N/A | 3 Years Parts + Labor (or 3000 Hours) | 2% |
| Riders | | | | | | |
| Battery scrubbers | Ninety days | Two years | Three years/2000 hrs | N/A | 3 Years Parts + Labor (or 3000 Hours) | 2% |
| IC sweeper/scrubbers | Ninety days | Six months | Two years/2000 hrs | Two years/3000 hrs** | 2 years Parts + Labor (or 2000 Hours) | 3% |
| IC sweepers | Ninety days | Six months | Four years/3000 hrs | Five years/3000 hrs** | 4 Years Parts + 2 Years Labor (or 4000 Hours) | 3% |
| Exceptions | | | | | | |
| Apex series sweeper | Ninety days | One year | One year/1000 hrs | One year/1000 hrs** | 2 years Parts + Labor (or 2000 Hours) | 3% |
| 6X sweeper | Ninety days | Six months | Two years/2000 hrs | Two years/2000 hours** | 2 years Parts + Labor (or 2000 Hours) | 3% |

Tank Bladders Eight years/ no additional labor
Polypropylene plastic tanks Ten years/ no additional labor
Batteries 0-3 months full replacement, 4-12 prorated credit
Charges One-year replacement
Replacement parts Ninety days

*Two-hour cap

**Through engine manufacture. See section 3 of warranty manual for engine warranty exceptions

***Base upon dealer's certification status

Extended Warranty MUST be signed up within 30 days of delivery to End User (Dealer has 1 Year from Receiving Machine to Sign up extended Warranty)

Extended Warranty Cost is based on Invoice Price multiplied by the Percentage listed in the Extended Warranty Column

All above labor and travel reimbursed at 65 or 75% of the published shop rate.