



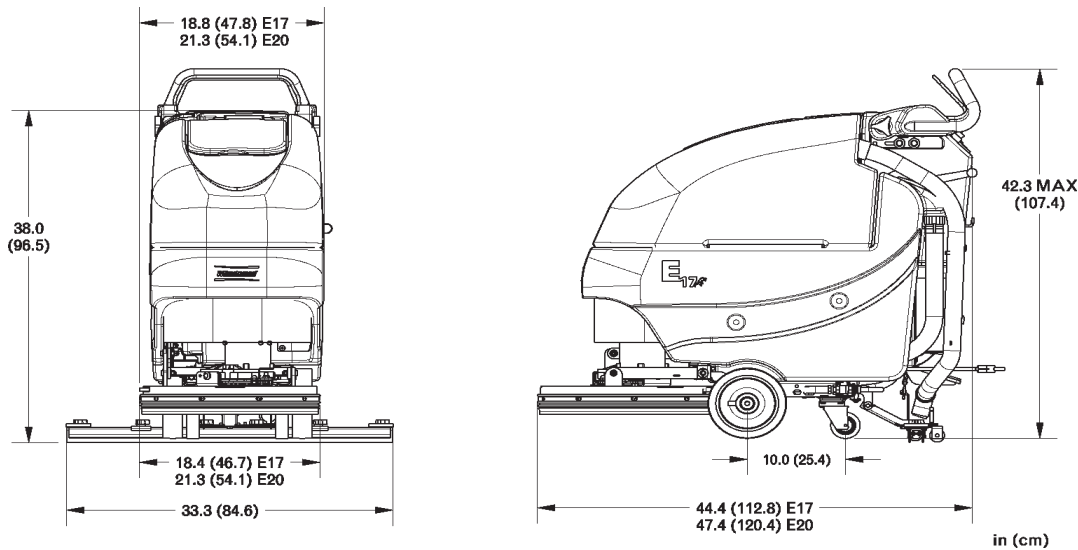
**Parts Manual  
E17/E20 Floor Scrubber**

# Technical Specifications

**Model** E17/E20

**Model No.** E17BD / E17BDCE / E17BDQP / E17BDQPCE  
 E17BDQPG / E17BDQPGCE  
 E20BD / E20BDCE / E20BDQP / E20BDQPCE  
 E20BDQPG / E20BDQPG

	<b>E17</b>	<b>E20</b>
<b>Current (Max)</b>	32 amps	32 amps
<b>Battery Capacity (Lead Acid)</b>	105Ah @20 hr	105Ah @20 hr
<b>Battery Capacity (Gel)</b>	100Ah @20 hr	100Ah @20 hr
<b>Sound Level</b>	69 dBA	69 dBA
<b>Cleaning path width</b>	17 in (43 cm)	20 in (51 cm)
<b>Squeegee width</b>	33 in (84 cm)	33 in (84 cm)
<b>Theoretical productivity (Brush Drive)</b>	12,750 ft <sup>2</sup> /hr ( 1,185 m <sup>2</sup> )	15,000 ft <sup>2</sup> /hr ( 1,394 m <sup>2</sup> )
<b>Working speed (Brush Drive)</b>	1.7 mph (2.7 km per hr)	1.7 mph (2.7 km per hr)
<b>Transport speed</b>	3 mph (4.8 km per hr)	3 mph (4.8 km per hr)
<b>Rated voltage</b>	24 volts	24 volts
<b>Vacuum flow</b>	65 cfm (110 m <sup>3</sup> /hr)	65 cfm (110 m <sup>3</sup> /hr)
<b>Vacuum waterlift</b>	45 inches ( 112mbar)	45 inches ( 112mbar)
<b>Vacuum power</b>	.60 HP (450 W)	.60 HP (450 W)
<b>Brush type</b>	Disc	Disc
<b>Brush motor(s) power</b>	3/4 HP	3/4 HP
<b>Number of brushes</b>	1	1
<b>Brush RPM</b>	180 RPM	180 RPM
<b>Aqua-Stop equipped</b>	Coming Soon	Coming Soon
<b>Solution capacity</b>	12Gal (45 liters)	12 Gal (45 liters)
<b>Recovery capacity</b>	13 Gal (49 liters)	13 Gal (49 liters)
<b>Working Grade</b>	2%	2%
<b>Weight with batteries</b>	306 lbs (139 kg)	313 lbs (142 kg)
<b>Weight without batteries</b>	196 lbs (89 kg)	203lbs (92 kg)
<b>Dimensions (LxWxH)</b>	44.4 x 18.8 x 42.3 (112.8 x 47.8 x 170.4 cm)	47.4 x 21.3 x 42.3 (120.4 x 54.1 107.4 cm)



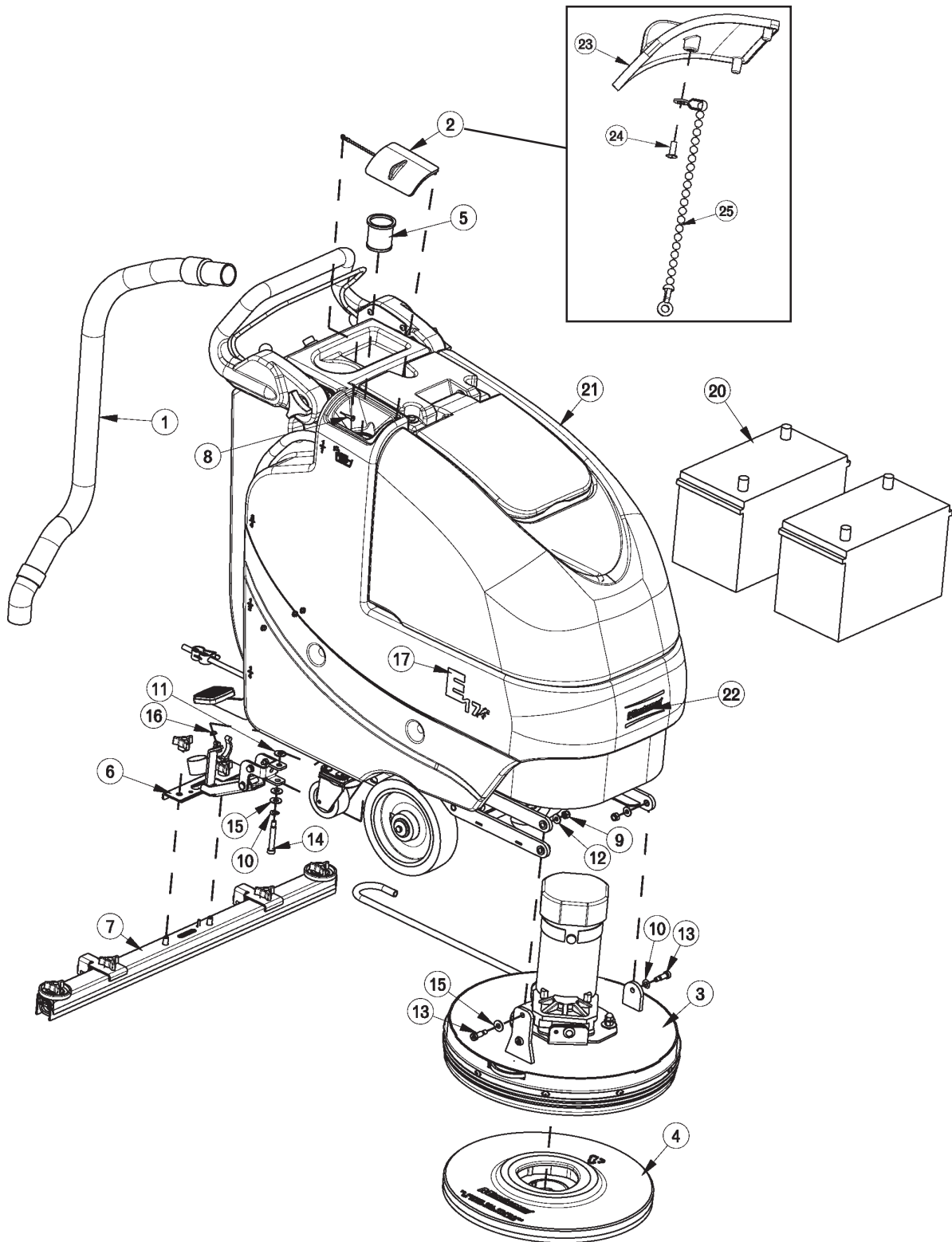
## For Safety When Servicing or Maintaining Machine

- 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 Minuteman supplied replacement parts.

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Main Assembly

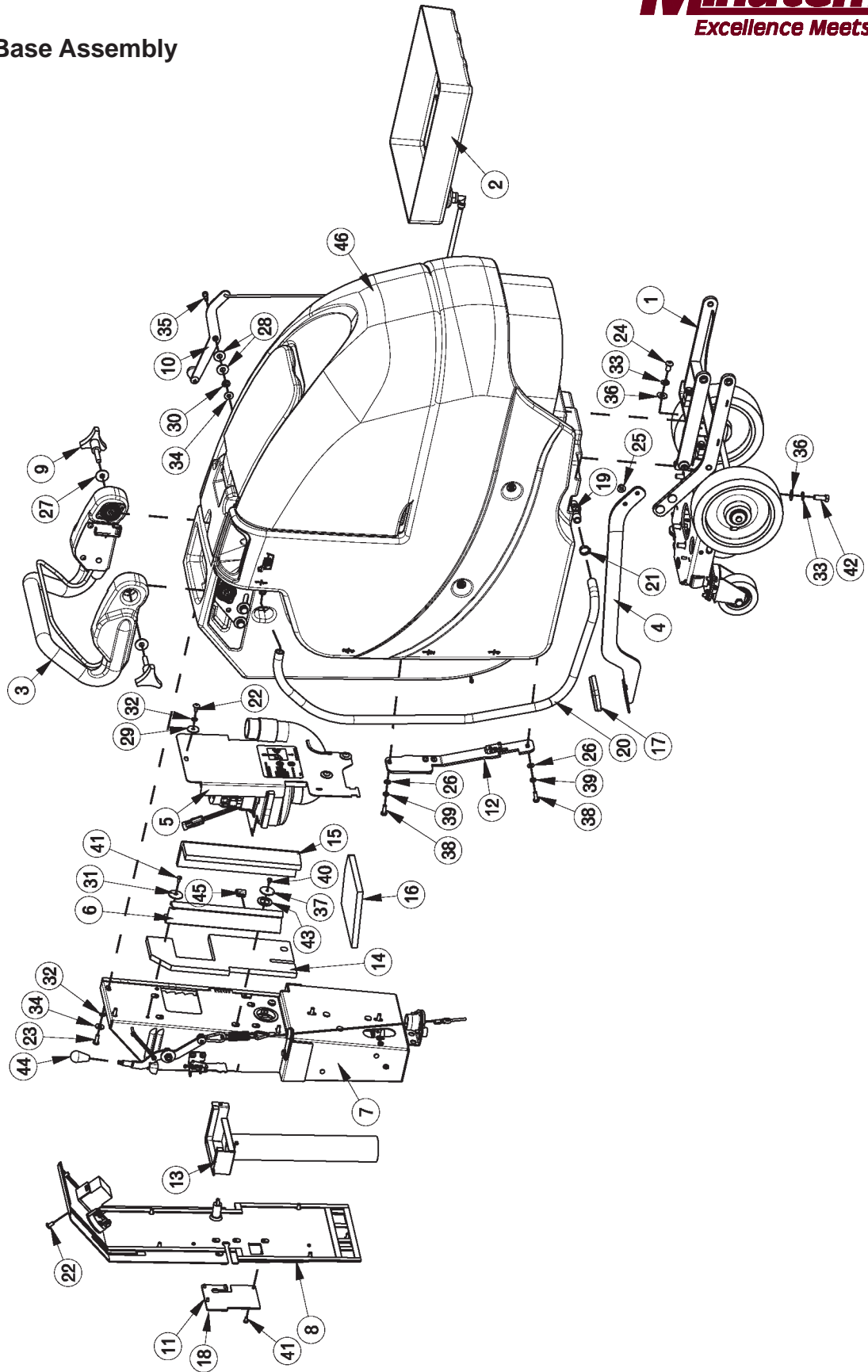


## Main Assembly BOM

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	172090	1	BRUSH DECK ASSY 17"
3A	172100	1	BRUSH DECK ASSY 20"
4	172117-2	1	17" PAD DRIVER
4A	172120-2	1	20" PAD DRIVER
5	172159	1	FILTER, FILL PORT, ES1720
6	172170	1	BD SQUEEGEE LIFT MECH ASSY
7	210080	1	SQUEEGE ASY COMP 20" STR
8	711118	1	SCR-ST-A 10 X .75 SS
9	711374	3	NUT-NYLOC 5/16-18
10	711523	3	WSR-WAVE .37X .68 X .08
11	711569	1	WSR-FLT .390 X .880 X .062 NYL
12	711575	3	WSR-FLT .31x.75x.06ST
13	712081	3	SHOULDER BLT 5/16-18 X 3/8 X .75
14	712143	1	BLT-SHLD 3/8 X 2.0, 5/16-18
15	712301	3	WSR-FLAT .37 X .87 X .06
16	712908	2	NUT-FLANGED WIZZ 10-24
17	715917	2	DECAL, E17
17A	715920	2	DECAL, E20
18	740164-1	1	JUMPER CABLE ASSY, RED 4G 12"
19	747649	1	CABLE ASSY, BATTERY E17
20	956712	2	BATTERY, 12V 105 AH
20G	956100	2	GEL BATTERY 12V 100AH
21	172001BD-120	1	BRUSH DRV BASE ASSY-120V CHARGER
21CE	172001BD-230	1	BRUSH DRV BASE ASSY-230V CHARGER
22	715914W	1	DECAL, MINUTEMAN W/SWOOSHES, WHITE
23	172008	1	SOLUTION TANK LID
24	712145	1	SCR-MC 6-32 X .37 PPH SS
25	172123	1	CHAIN, BEADED SS W/ EYELETS

OPTIONAL BRUSHES		
ITEM	PART NO.	DESCRIPTION
4.1	172117-1	BRUSH, 17" NYLON
4.2	172117-3	BRUSH, 17" NYLO GRIT
4.3	172117-4	BRUSH, 17" STRATA GRIT
4A.1	172120-1	BRUSH, 20" NYLON
4A.2	172120-3	BRUSH, 20" POLY GRIT
4A.3	172120-4	BRUSH, 20" STRATA GRIT

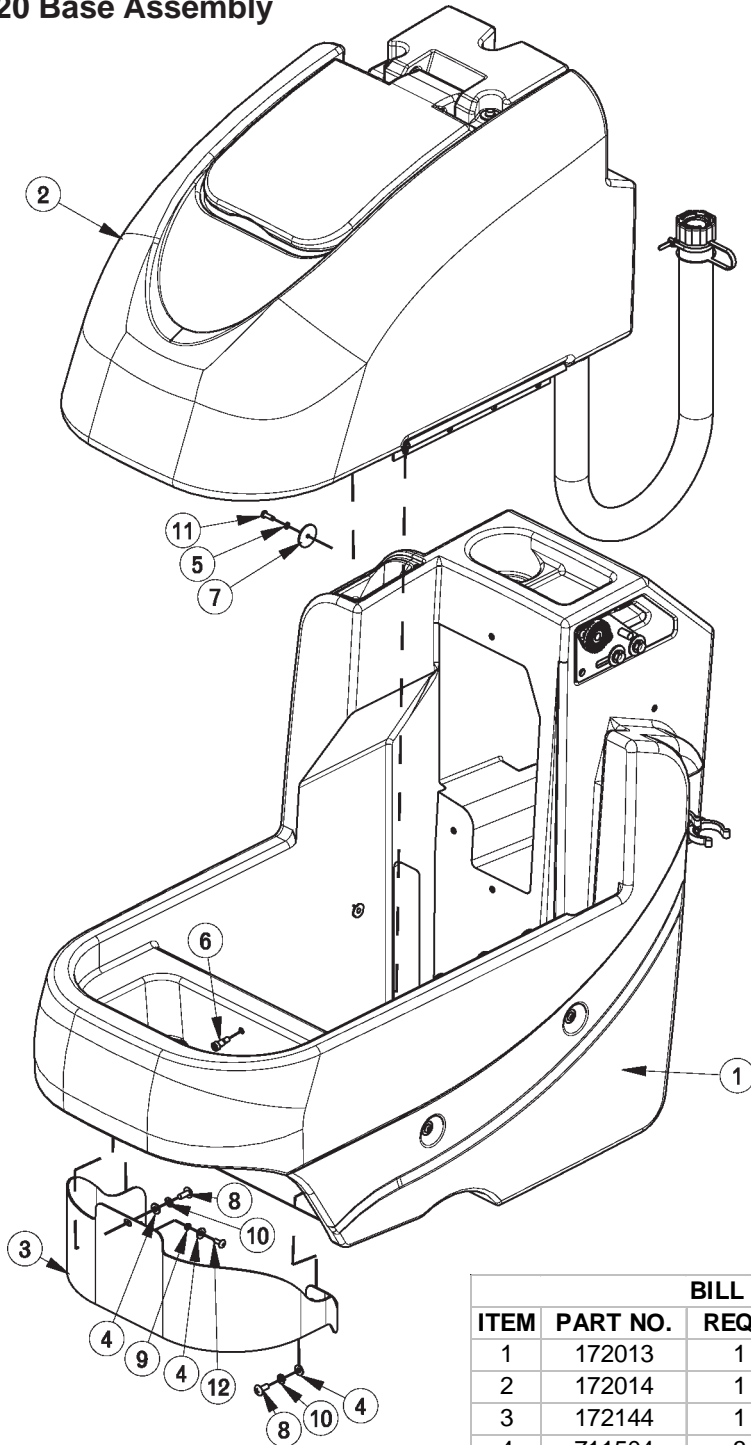
# Brush Drive Base Assembly



## Brush Drive Base Assembly BOM

BILL OF MATERIAL - 172001BD-120/230			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172002	1	BD CHASSIS ASSY, ES1720
2	172012	1	BATTERY TRAY ASSY
3	172016	1	E1720 BD HANDLE ASSY
4	172032	1	LIFT PEDAL WMT
5	172050	1	VAC MOTOR ASSY
6	172055	1	BKT, VAC AREA INSIDE COVER
7	172070-120	1	ELEC BOX BD ASSY 120V
7A	172070-230	1	ELEC BOX BD ASSY 230V
8	172073	1	BD ELEC BOX COVER ASSY
9	172085	2	KNOB, 3/8-16 STUD, 3 LOBE
10	172112	1	SOL CONTROL ASSY
11	172129	1	BKT, PWR CORD MOUNT
12	172157	1	LIFT PEDAL STOP ASSY
13	172179	1	CHARGER INLET ASSEMBLY
14	172184	1	FOAM COVER, REAR 1
15	172185	1	FOAM COVER, REAR 2
16	172187	1	FOAM COVER, FRONT 2
17	210142	1	PEDAL PAD
18	293080	1	STRAIN RELIEF-HEYCO 1207
19	342440	1	FITTING, TEE 3/4MPT 1/2BARB PP
20	430156	1	HOSE, 1/2 X 42 CLEAR
21	450093	2	CRIMP CLAMP 3/4" STEPLESS
22	710178	10	SCR-MC 1/4-20 X .50 TRUSS STPL
23	710380	5	SCR-MC RD HD 1/4-20 X .75 STL PL
24	710985	2	SCR-SC 3/8-16 X .62 ST PL
25	711379	2	NUT, FLANGED WIZZ 5/16-18
26	711504	2	WSR-FLAT 1/4 ID SS
27	711507	2	WSR-FLAT .37 X 1.12 X .06
28	711508	2	WSR-FLAT .44X 1.0X.08
29	711519	3	WSR- FLAT .25 X 1.01 X .06
30	711523	1	WSR-WAVE .37X.68 X.08
31	711543	1	WSR-HELICAL #10
32	711544	9	WSR-HELICAL 1/4
33	711546	6	WSR-HELICAL 3/8
34	711575	6	WSR-FLT .31x.75x..06ST
35	712041	1	BLT- SHLDR 1/4-20 X .44 X .37
36	712301	6	WSR-FLAT .37 X .87 X .06
37	712312	2	WSR-FLAT .187 X 1.25
38	712562	2	BOLT-HH 1/4-20X3/4 SS
39	712758	2	WSR-HELICAL 1/4 SS
40	712800	1	SCR-MC 10-24 X .25 ST PL
41	712810	5	SCR-MC 10-24 X .37 ST PL
42	713042	4	BLT-HH 3/8-16 X 1 #5
43	717025	1	WSR-FLAT 13/16ID X 1.25 X .08
44	760592	1	KNOB, OVAL TAPERED
45	809443	1	CLIP-WIRE & CORD
46	172001BASE	1	ES1720 BASE ASSY

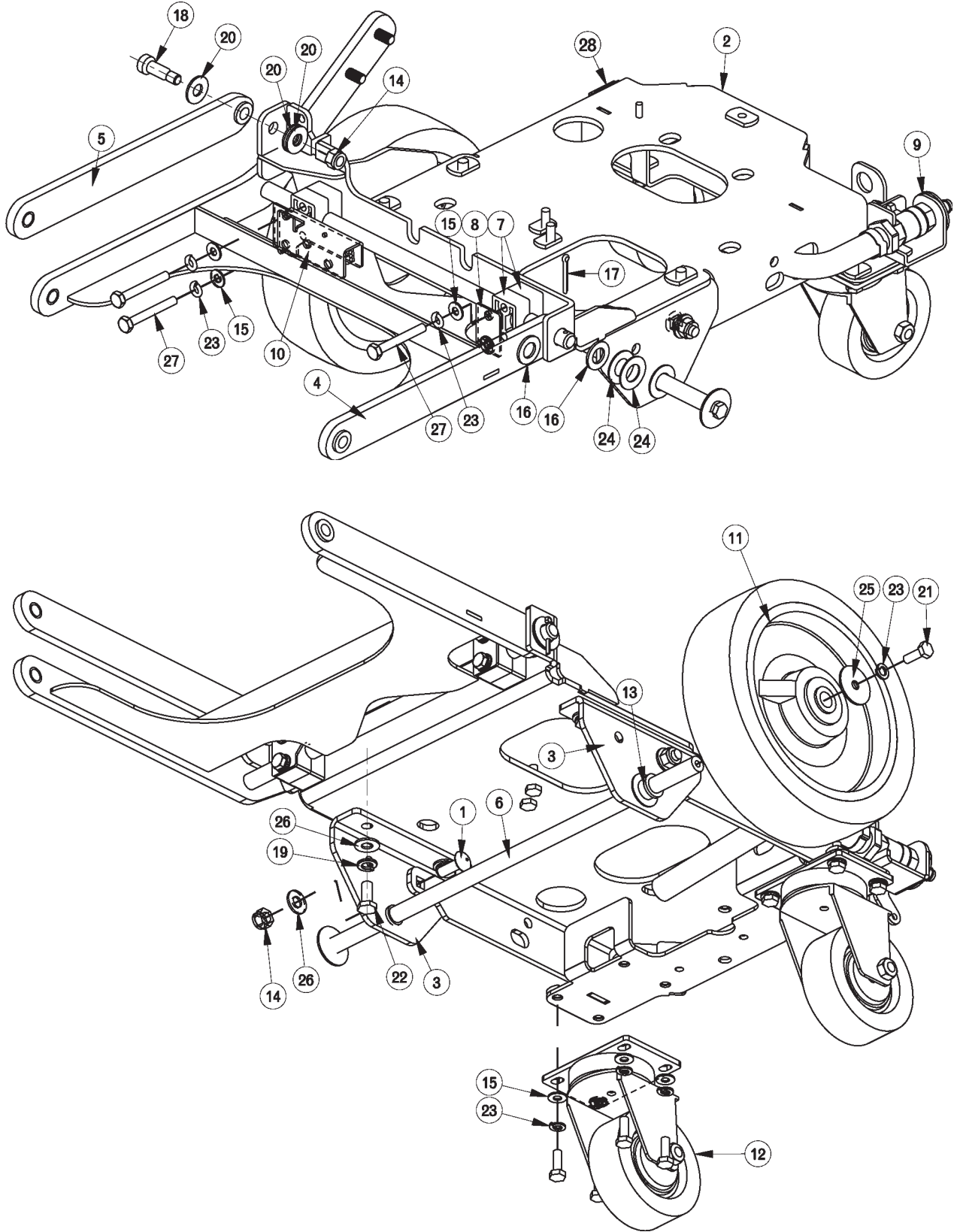
**E17/20 Base Assembly**



**BILL OF MATERIAL - 172001BASE**

ITEM	PART NO.	REQ'D	DESCRIPTION
1	172013	1	SOL TANK ASSY, ES1720
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

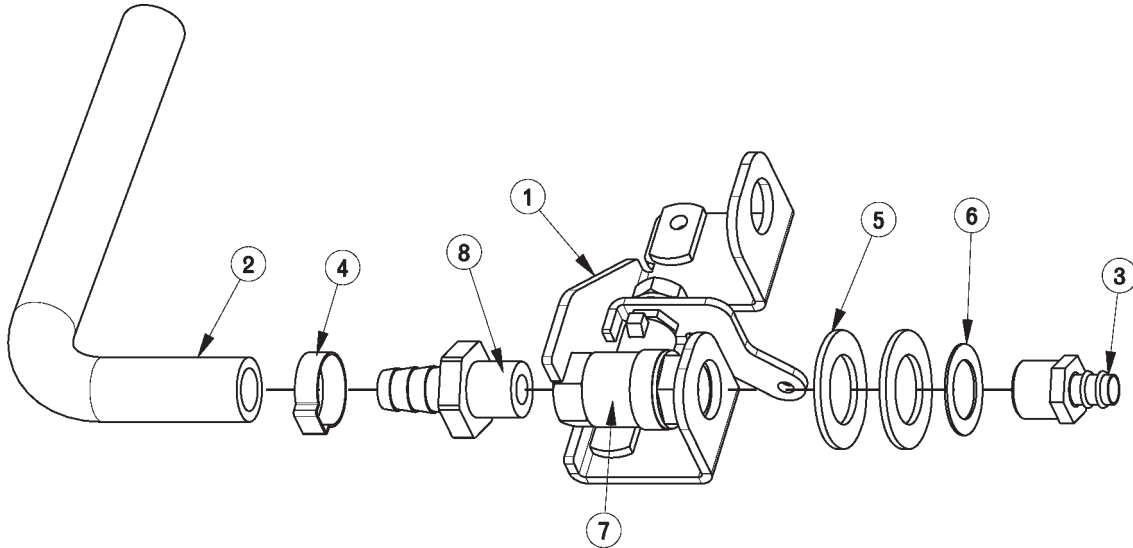




## Chassis Assembly BOM

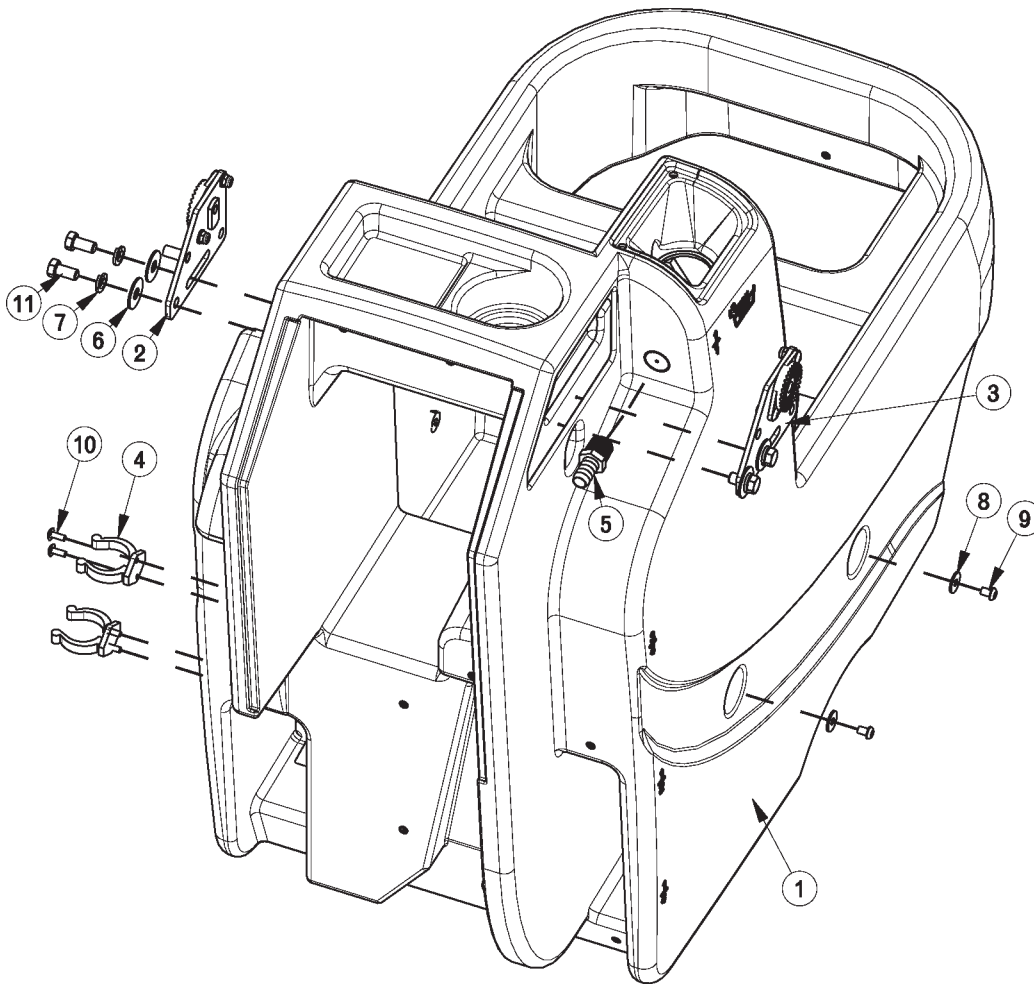
BILL OF MATERIAL - 172002			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	70-516-16	2	BLT-CAR 5/16-18 X 1.00
2	172020	1	MAIN FRAME WMNT, ES1720
3	172024	2	WHEEL BRACKET, ES1720
4	172025	1	DECK LIFT ASSY
5	172030	1	BAR, UPPER DECK LIFT W/ BUSH
6	172035	1	WHEEL ROD, ES1720
7	172038	4	BEARING BLOCK
8	172039	1	BEARING BLOCK PLATE
9	172064	1	SOLUTION VALVE ASSY
10	172110	1	DECK SWITCH ASSY
11	172130	2	WHEEL 8 X 2.0 X .5 BORE
12	172167	2	CASTER, 3-1/2 POLYURETHANE
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

**Solution Valve Assembly**



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

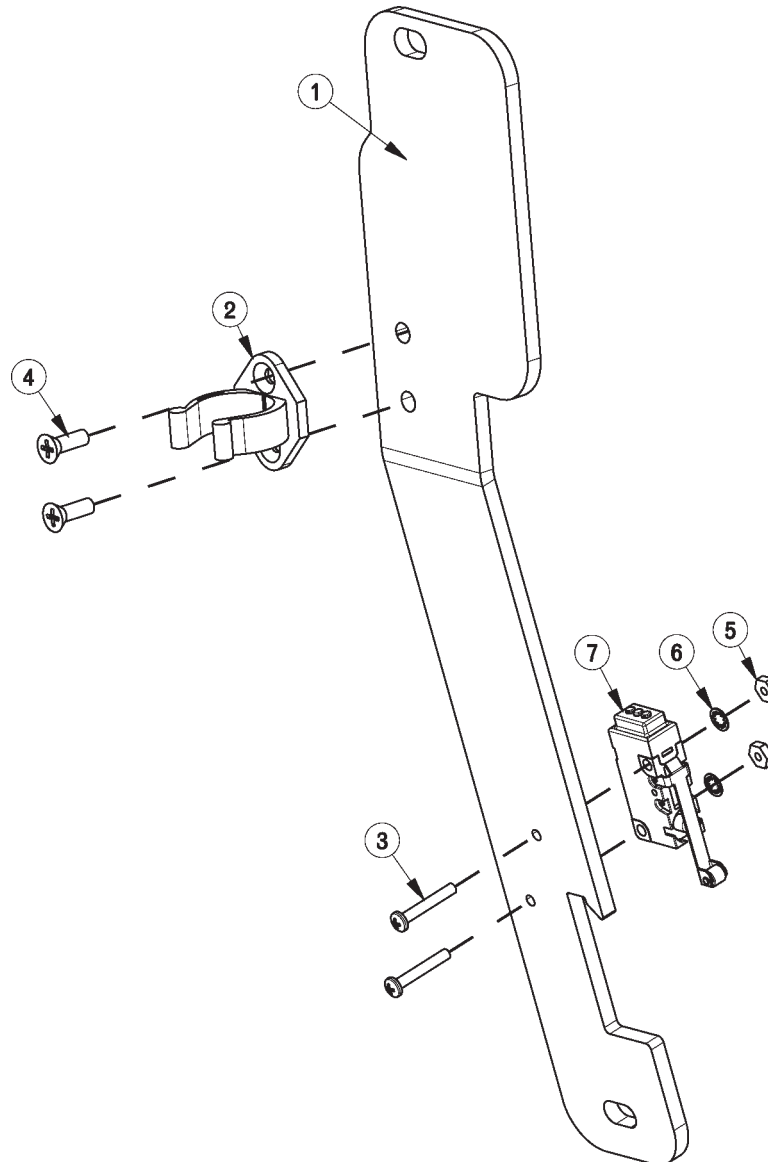
**Solution Tank Assembly**



**BILL OF MATERIAL - 172013**

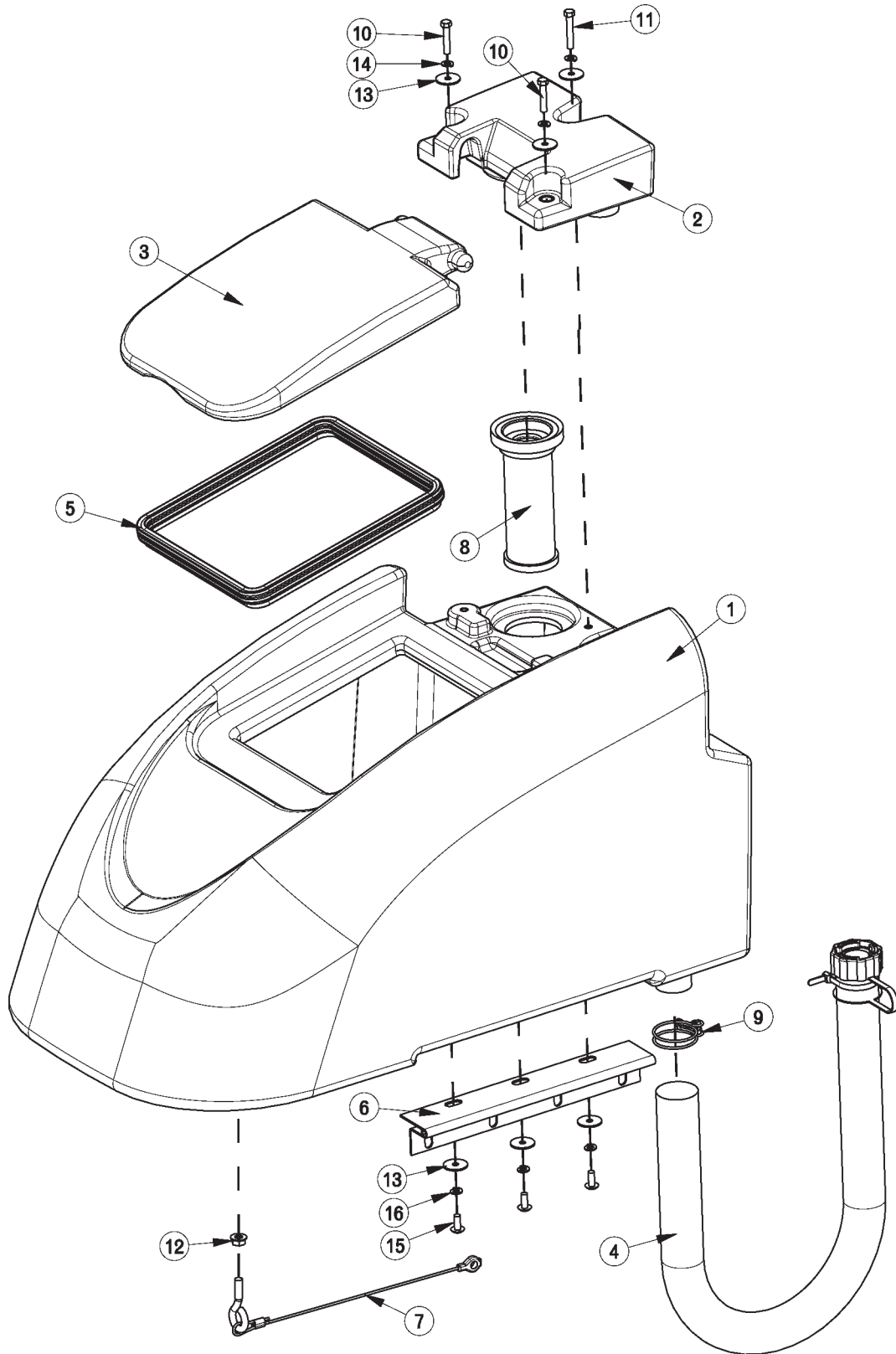
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172003	1	SOLUTION TANK, ES1720
2	172080	1	HANDLE MOUNT ASSY, LEFT
3	172082	1	HANDLE MOUNT ASSY, RIGHT
4	260579	2	TOOL CLIP, 1.5" HOSE
5	342438	1	FITTING, 1/2 MPT 1/2 HB BRASS
6	711507	4	WSR-FLAT .37 X 1.12 X .06
7	711546	4	WSR-HELICAL 3/8
8	711550	4	WSR NYLON .25 ID 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

## Lift Pedal Stop Assembly



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

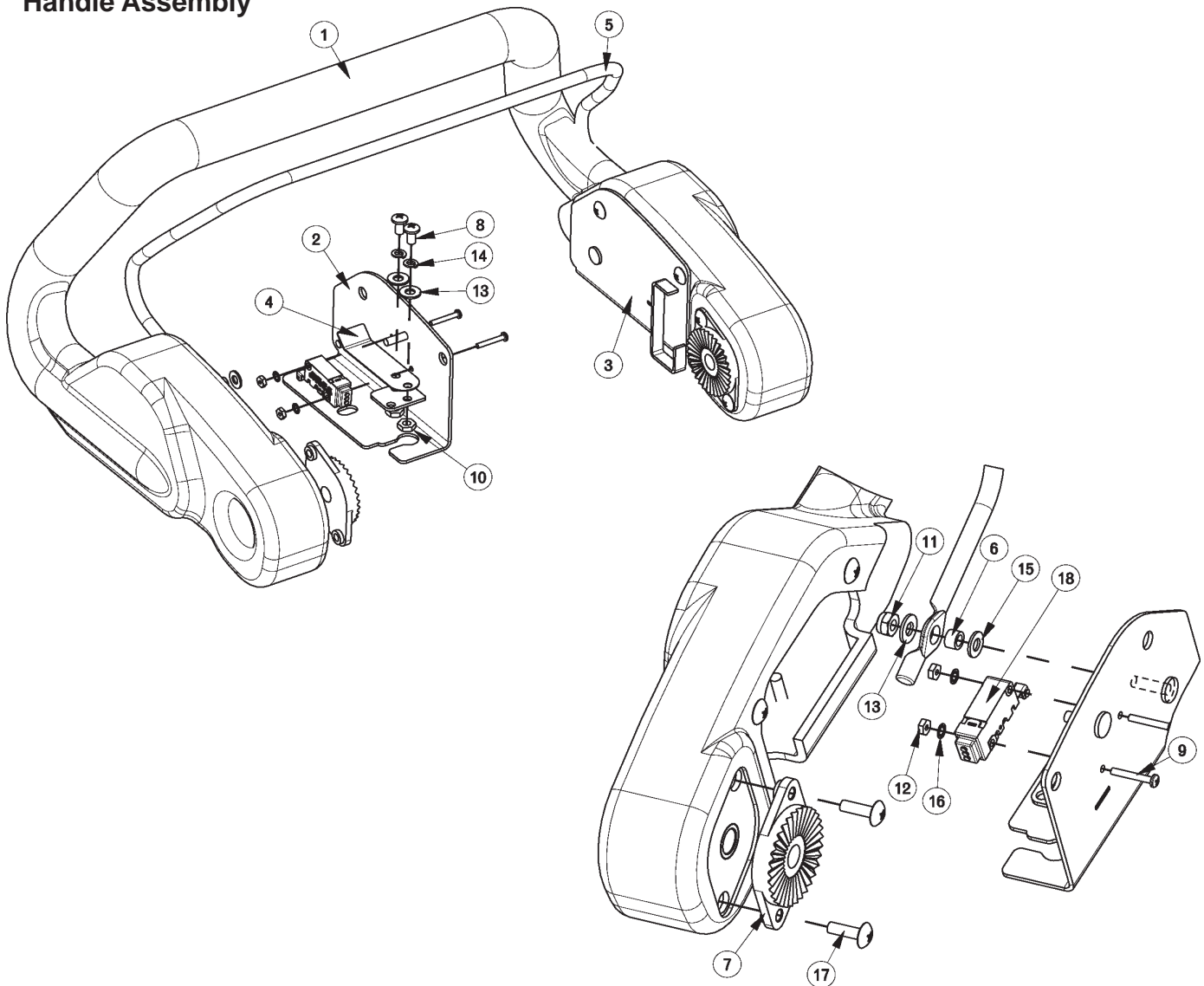
## Recovery Tank Assembly



## Recovery Tank Assembly BOM

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

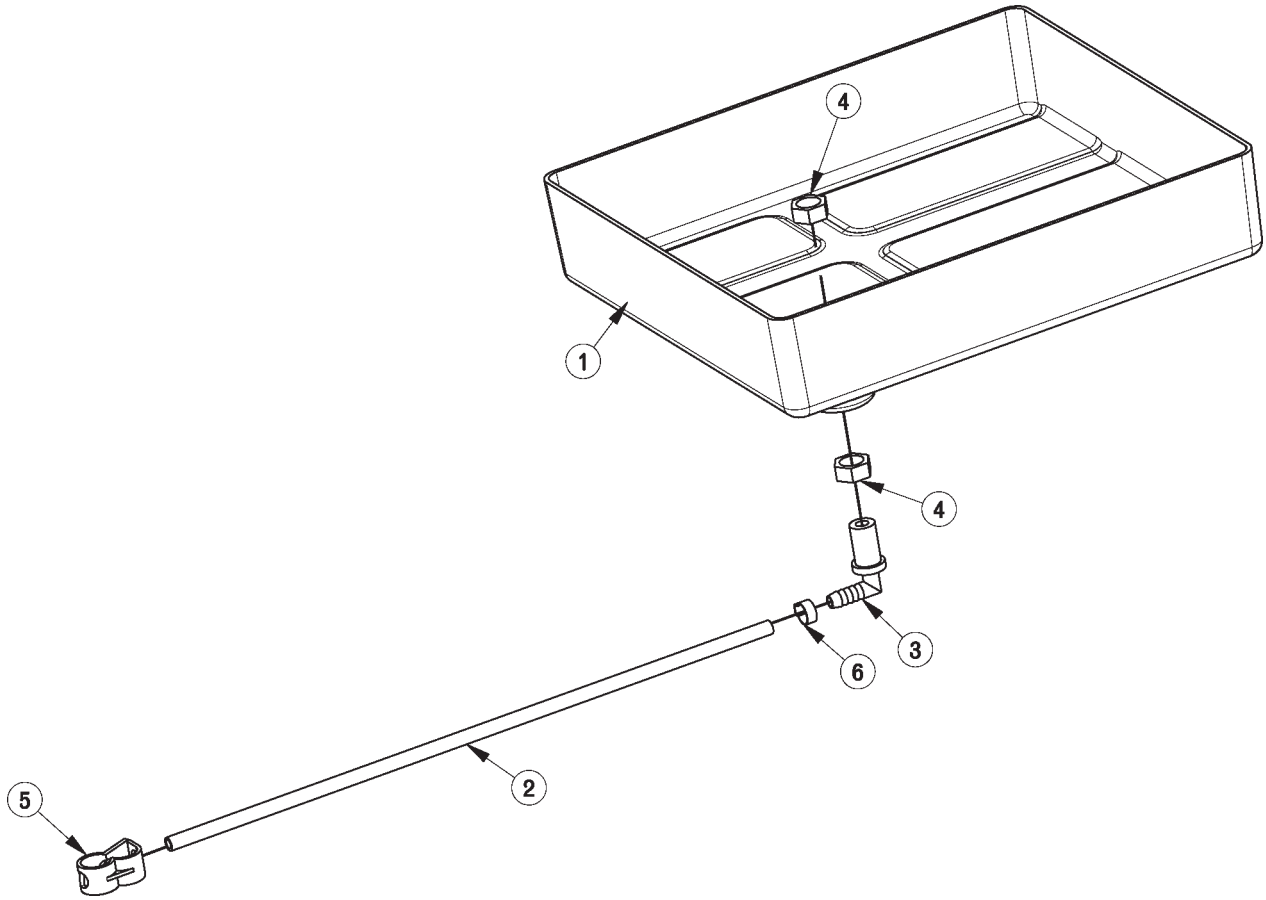
**Handle Assembly**



**BILL OF MATERIAL - 172016**

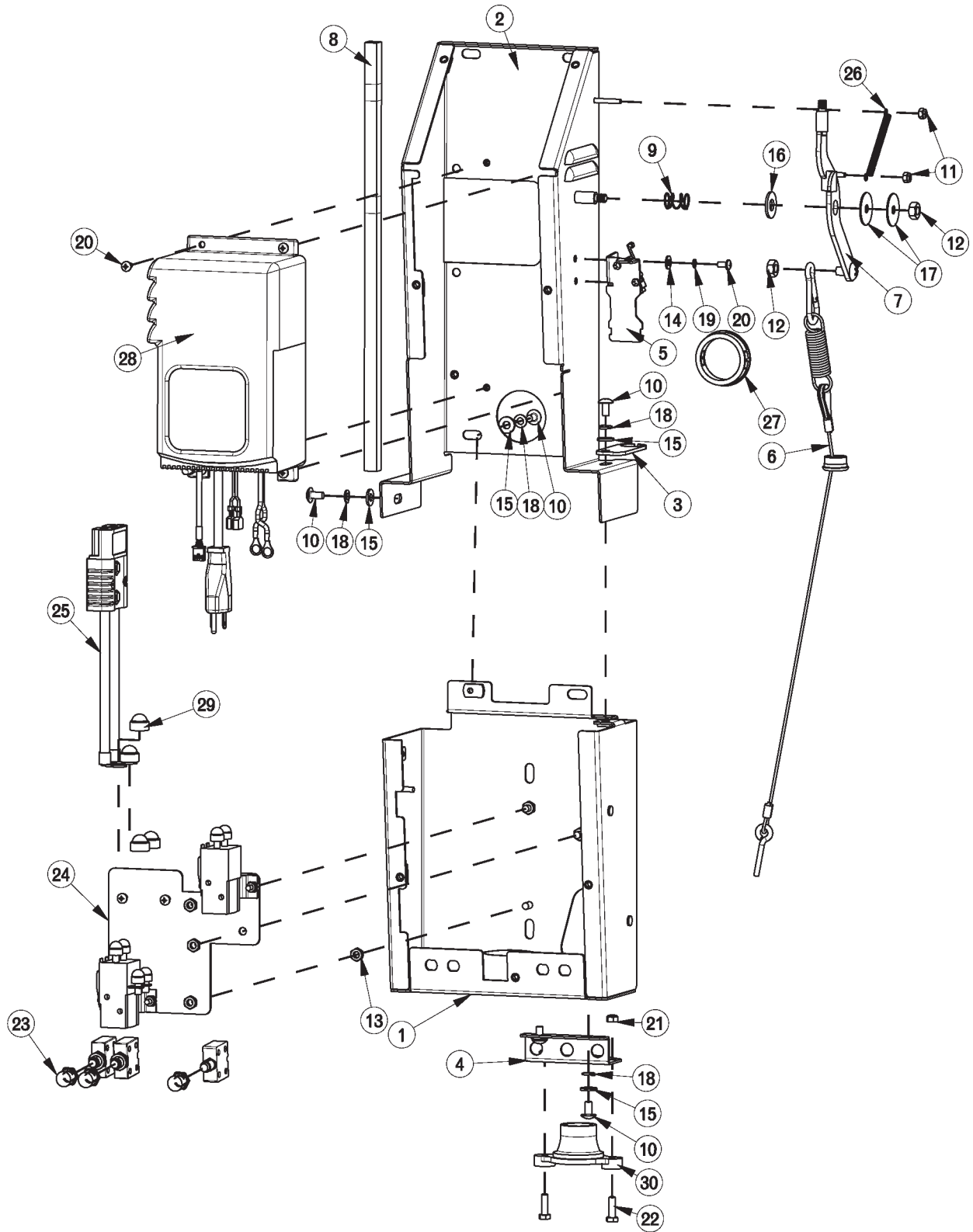
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172006	1	ES1720 HANDLE
2	172053	1	BAIL PLATE WMT RH
3	172054	1	BAIL PLATE WMT LH
4	172057	2	ES1720 LEAF SPRING
5	172059	1	ES1720 BAIL, HANDLE
6	172074	2	SPACER, 5/16OD X 17GA, ALUM
7	270143	2	HANDLE PIVOT JAW
8	710353	4	SCR-MC 10-32 X .37 ST PL
9	710493	2	SCR-MC 4-40 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	747603-2	1	SWITCH ASY, MICRO ROLLER W/PACK/CONDUIT
19	747632	1	CABLE ASY, 5 COND 18G CONSOLE





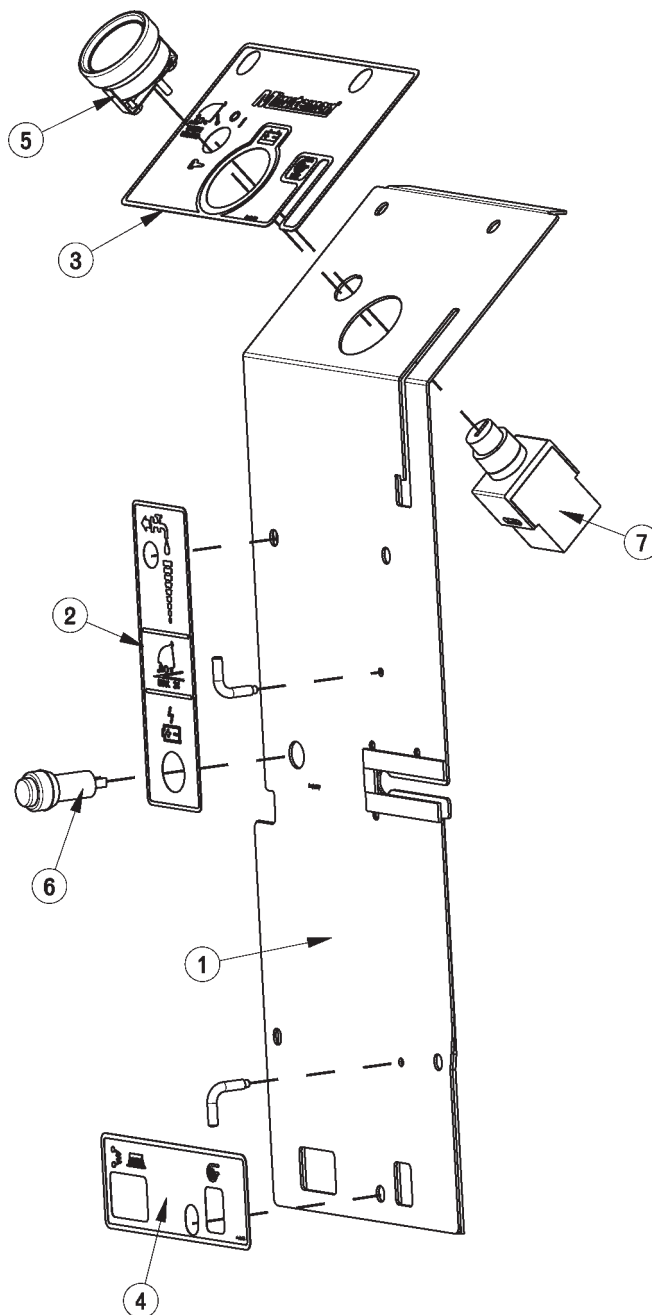
BILL OF MATERIAL - 172012			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172116	1	ES1720 BATTERY BOX
2	260224	1	18" HOSE
3	320271	1	NOZZLE BODY-ELBOW
4	320272	2	NOZZLE BODY LOCKNUT
5	320273	1	HOSE SHUT-OFF CLAMP
6	828490	1	CRIMP CLAMP 140R

# Electrical Box Assembly



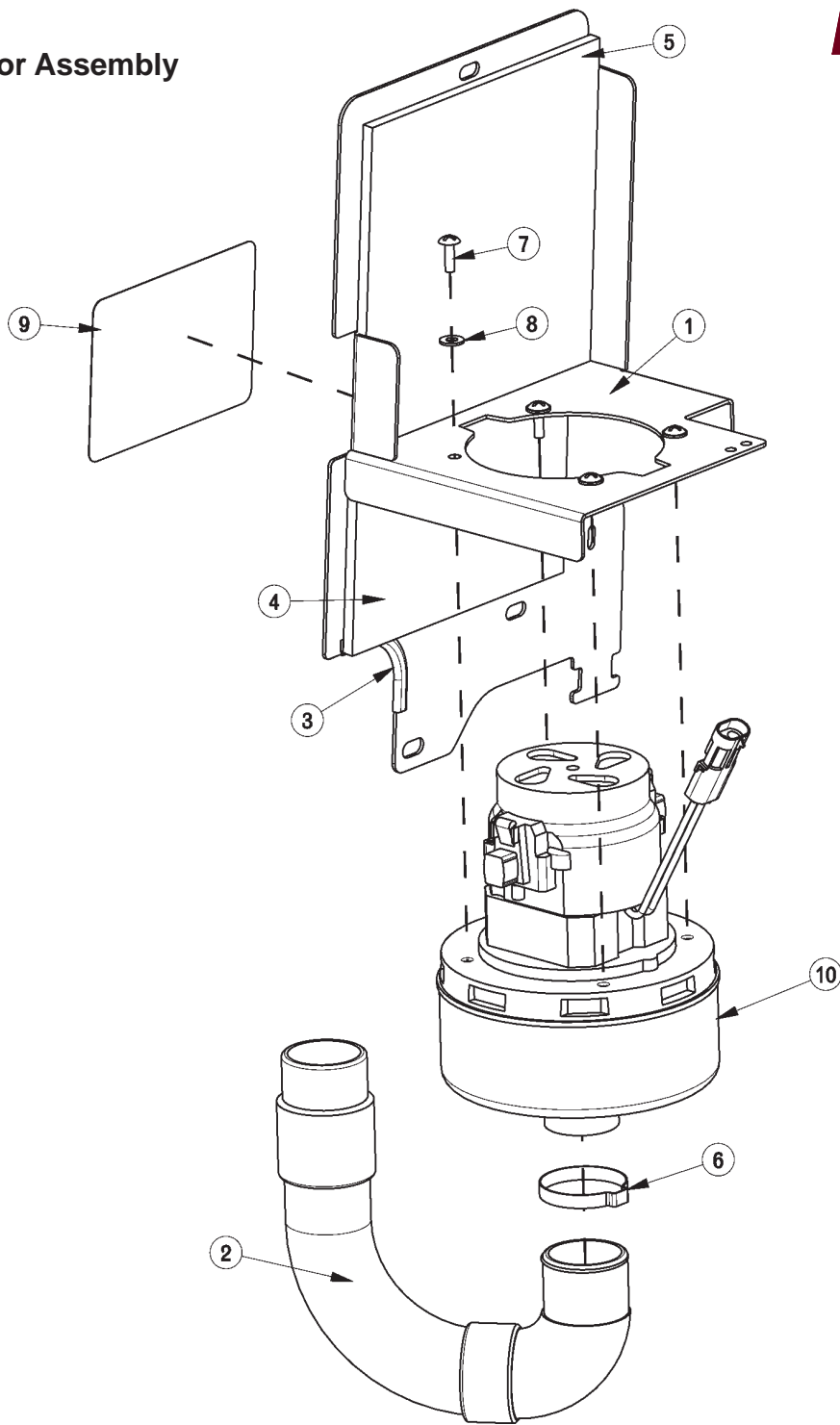
## Electrical Box Assembly BOM

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



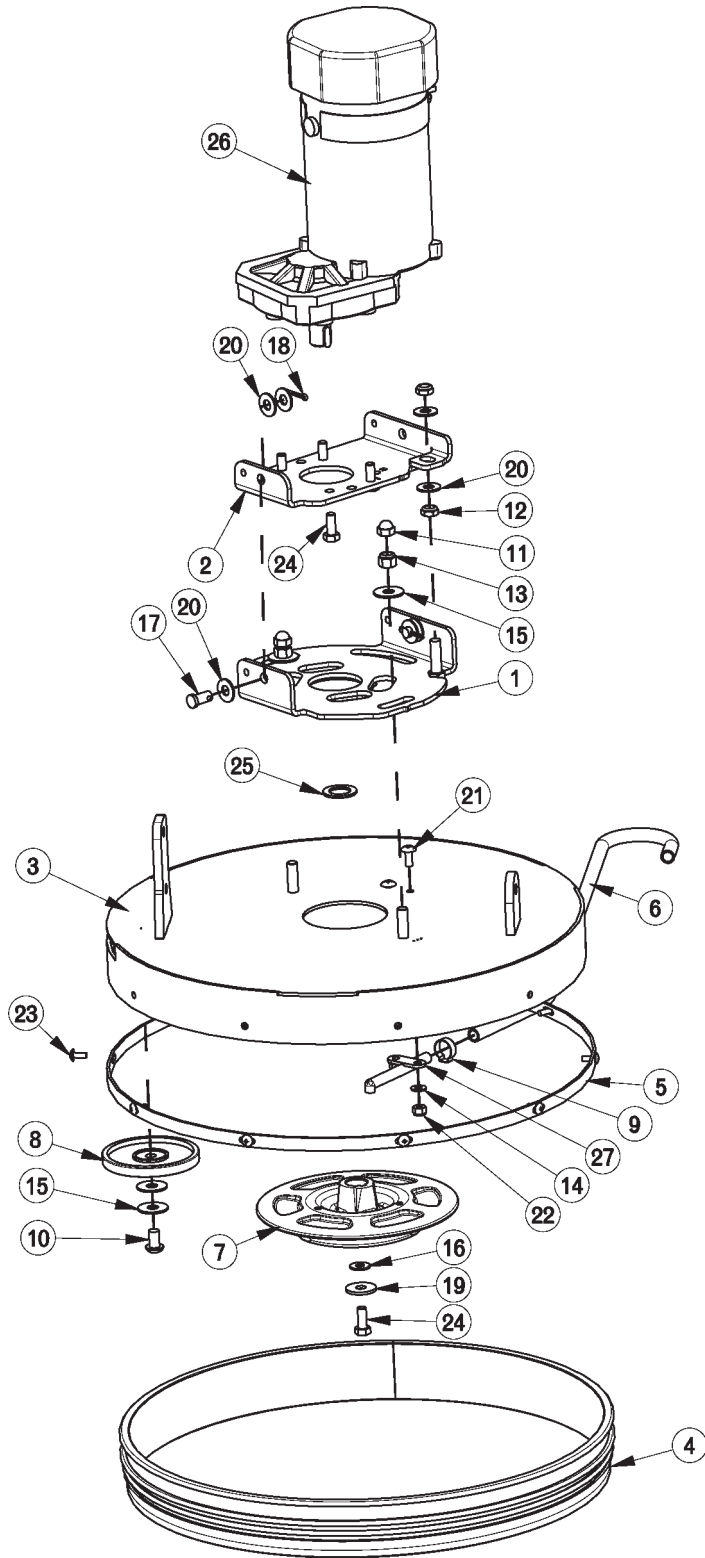
BILL OF MATERIAL - 172073			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172181	1	ELEC BOX, COVER, WMT
2	715672	1	DECAL, 1720 BD ELEC BOX
3	715673	1	DECAL, 1720 BD DASHBOARD
4	715675	1	DECAL, BD CIRC BKRS
5	740216	1	VOLT METER
6	747614	1	CHARGE STATUS INDICATOR
7	747617-1	1	KEYSWITCH ASY, KEYSWITCH + WIR

# Vac Motor Assembly



BILL OF MATERIAL - 172050			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172045	1	VAC MOUNT W MT, ES1720
2	172048	1	HOSE, STRETCH 13"
3	172124	1	EDGE TRIM, .063 X 3.0, BLACK
4	172186	1	FOAM COVER, FRONT 1
5	172187	1	FOAM COVER, FRONT 2
6	450095	1	CRIMP CLAMP, 1.75"
7	711160	4	#10 X 5/8 HI-LO
8	711503	4	WSR, FLAT#10
9	715676	1	DECAL, BATT CABLE ROUTE, E1720
10	747607-1	1	VAC MOTOR ASY, E1720

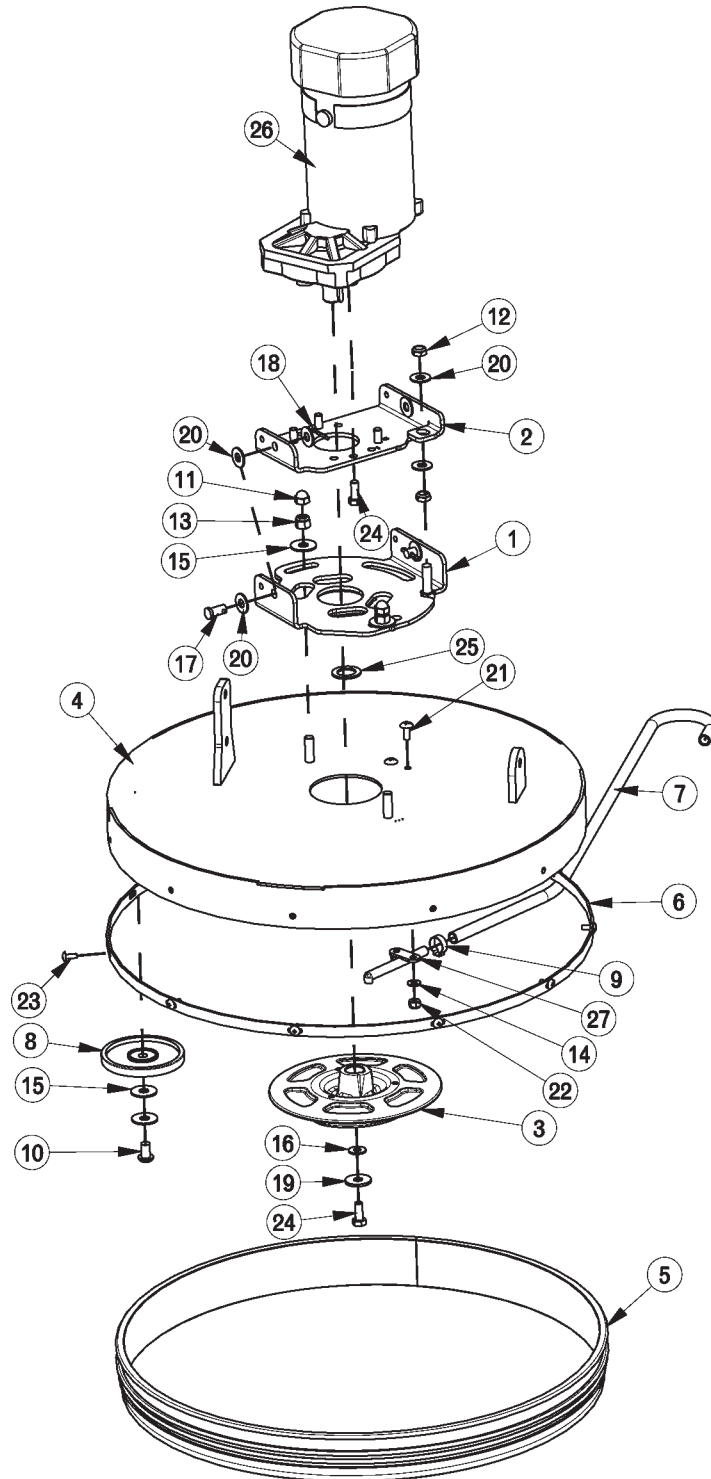
17" Brush Deck Assembly



# 17" Brush Deck Assembly BOM

BILL OF MATERIAL - 172090			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172040	1	DECK ANGLE ADJUST WMT
2	172044	1	PLATE, MOTOR MOUNT
3	172091	1	DECK COVER WMT 17"
4	172118	1	17" DECK SKIRT
5	172119	1	RETAINER, 17" DECK SKIRT
6	172154	1	HOSE-NYLO REINF 3/8 X 27"
7	172165	1	E17 BRUSH HUB ASSY
8	210153	1	ROLLER WHEEL
9	450076	1	CRIMP CLAMP SS 185R
10	710985	1	SCR-SC 3/8-16 X .62 ST PL
11	711354	2	NUT-ACORN 3/8-16 ST NI
12	711375	2	NUT-NYLOC 3/8-16 X 1/2 NUT
13	711380	2	NUT-NYLOC 3/8-16 NUT
14	711504	2	WSR-FLAT 1/4 ID SS
15	711507	4	WSR-FLAT .37 X 1.12 X .06
16	711575	1	WSR-FLT .31x.75x.06ST
17	711679	2	CLEVIS PIN 3/8 X 3/4
18	711809	2	COTTER PIN, 1/8 X 1.0
19	711855	1	WSR-FLT .37X1.12X10 STL Z HARD
20	712301	8	WSR-FLAT .37 X .87 X .06
21	712565	2	SCR-MC 1/4-20X.63 SS TR HD
22	712667	2	NUT, HEX 1/4-20 NYLOC SS
23	712822	10	SCR-MC TR HD 10-24 X .50 SS
24	717024	5	BOLT-HH M8X1.25 X 20
25	717025	1	WSR-FLAT 13/16ID X 1.25 X .08
26	747600	1	MOTOR, OFFSET PM GEAR, 550W
27	90311663	1	HAKO SOL FEED NOZZLE

20" Brush Deck Assembly

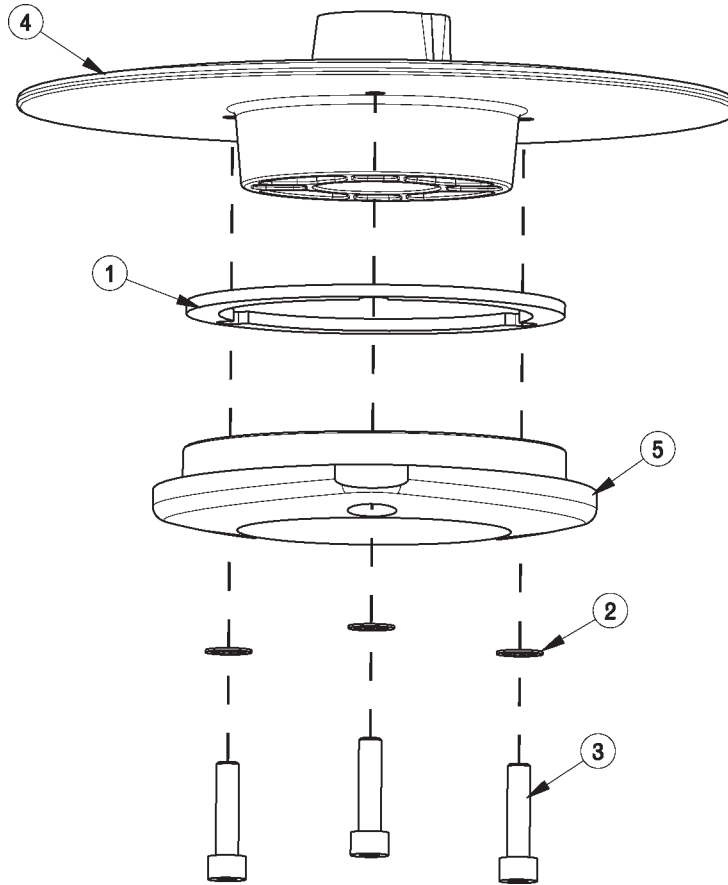




## 20" Brush Deck Assembly BOM

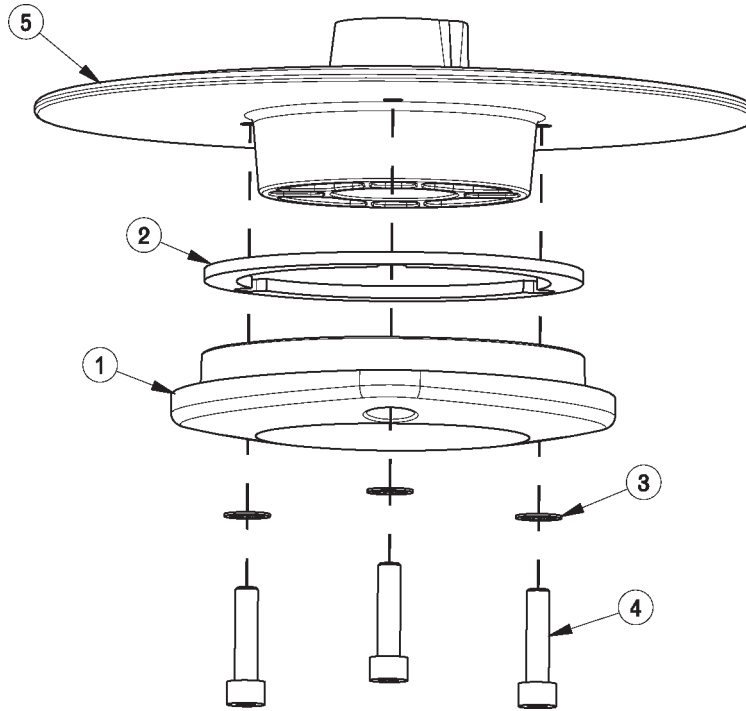
BILL OF MATERIAL - 172100			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172040	1	DECK ANGLE ADJUST WMT
2	172044	1	PLATE, MOTOR MOUNT
3	172095	1	E20 BRUSH HUB ASSY
4	172101	1	DECK COVER WMT 20"
5	172121	1	20" DECK SKIRT
6	172125	1	RETAINER, 20" DECK SKIRT
7	172153	1	HOSE-NYLO REINF 3/8 X 29"
8	210153	1	ROLLER WHEEL
9	450076	1	CRIMP CLAMP SS 185R
10	710985	1	SCR-SC 3/8-16 X .62 ST PL
11	711354	2	NUT-ACORN 3/8-16 ST NI
12	711375	2	NUT-NYLOC 3/8-16 X 1/2 NUT
13	711380	2	NUT-NYLOC 3/8-16 NUT
14	711504	2	WSR-FLAT 1/4 ID SS
15	711507	4	WSR-FLAT .37 X 1.12 X .06
16	711575	1	WSR-FLT .31x.75x.06ST
17	711679	2	CLEVIS PIN 3/8 X 3/4
18	711809	2	COTTER PIN, 1/8 X 1.0
19	711855	1	WSR-FLT .37X1.12X10 STL Z HARD
20	712301	8	WSR-FLAT .37 X .87 X .06
21	712565	2	SCR-MC 1/4-20X.63 SS TR HD
22	712667	2	NUT, HEX 1/4-20 NYLOC SS
23	712822	11	SCR-MC TR HD 10-24 X .50 SS
24	717024	5	BOLT-HH M8X1.25 X 20
25	717025	1	WSR-FLAT 13/16ID X 1.25 X .08
26	747600	1	MOTOR, OFFSET PM GEAR, 550W
27	90311663	1	HAKO SOL FEED NOZZLE

E17 Brush Hub Assembly



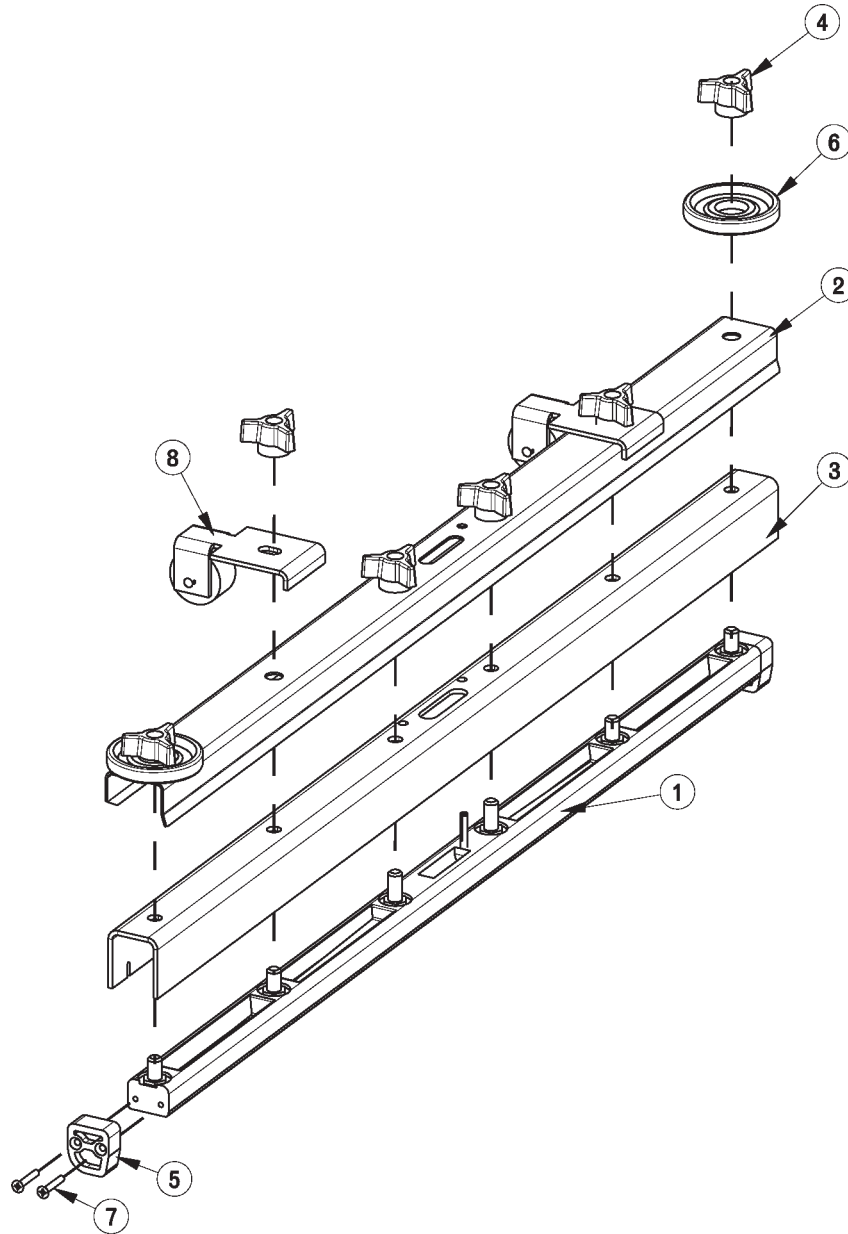
BILL OF MATERIAL - 172165			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172133	1	BRUSH HUB SPACER
2	711554	3	WSR-INTERNAL LOCK 1/4 ID
3	717026	3	SCR-SC SHCS M6X1.0 X 25 STL Z
4	172096MCH	1	BASE, DRIVE HUB WITH KEYWAY
5	172097MCH	1	HUB, MACHINED FOR E17

**E20 Brush Hub Assembly**



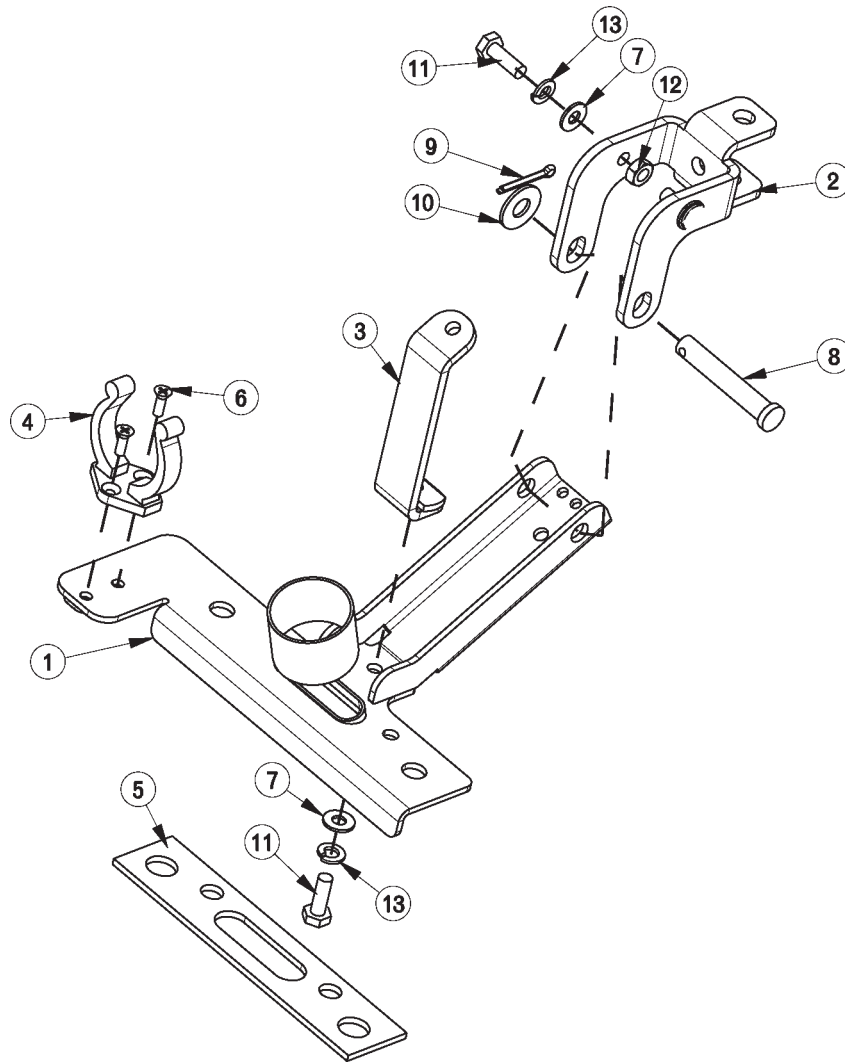
BILL OF MATERIAL - 172095			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172097	1	ES1720 BRUSH HUB BASE
2	172133	1	BRUSH HUB SPACER
3	711554	3	WSR-INTERNAL LOCK 1/4 ID
4	717026	3	SCR-SC SHCS M6X1.0 X 25 STL Z
5	172096MCH	1	BASE, DRIVE HUB WITH KEYWAY

Rear Squeegee Assembly



BILL OF MATERIAL			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	210023	1	SQUEEGEE CASTING ASY
2	210024	1	SQUEEGEE MOUNT BKT
3	210065	1	SQUEEGEE BLADE 200 GUM
4	430074	6	ADJUSTING NUT 17B/E
5	430076	2	NYLON SQUEEGEE INSERT
6	430085	2	SQUEEGEE BUMPER WHEEL
7	712517	4	SCR-MC 8-32 X 1" ST PL - PH
8	831400	2	WHEEL ASSY

## Squeegee Mechanism Assembly

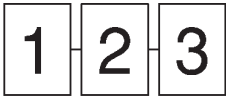


### BILL OF MATERIAL - 172170

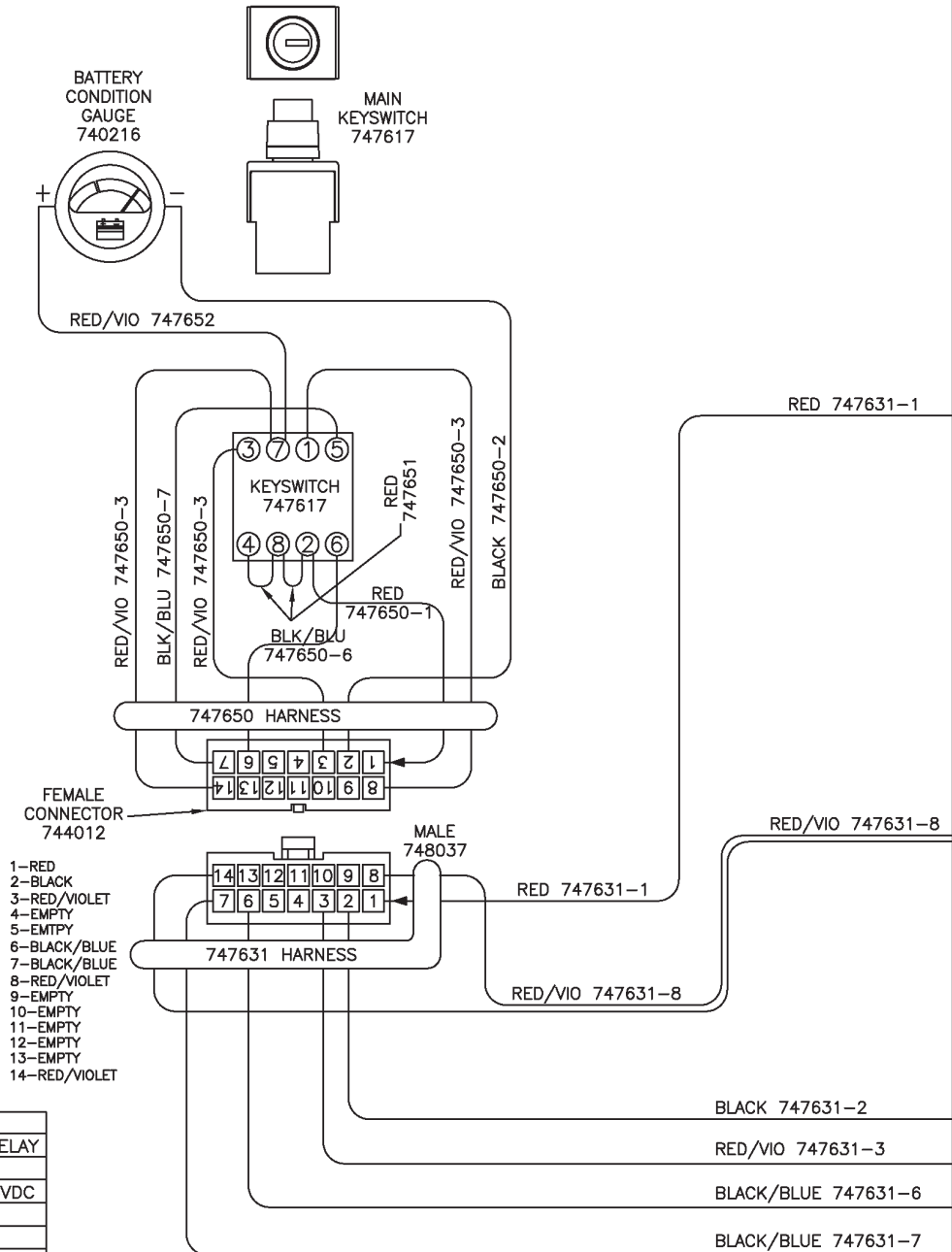
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172171	1	SQUEEGEE MECH WMT
2	172173	1	BKT, MAIN SQUEEGEE HINGE
3	172175	1	BKT, STANDOFF
4	260579	1	TOOL CLIP, 1.5" HOSE
5	430073	1	GASKET DIE CUT PS BACK
6	710530	2	SCR-MC FL HD 8-32 X .50 BRS
7	711504	3	WSR-FLAT 1/4 ID SS
8	711678	1	CLEVIS PIN 3/8 X 2-1/4
9	711809	1	COTTER PIN, 1/8 X 1.0
10	712301	1	WSR-FLAT .37 X .87 X .06
11	712562	3	BOLT-HH 1/4-20X3/4 SS
12	712665	2	NUT-HEX 1/4-20 SS
13	712758	3	WSR-HELICAL 1/4 SS

# 1 Wiring Diagrams

PAGE LAYOUT



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



- 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

**MAIN KEYSWITCH ASSEMBLY: 747617-1**

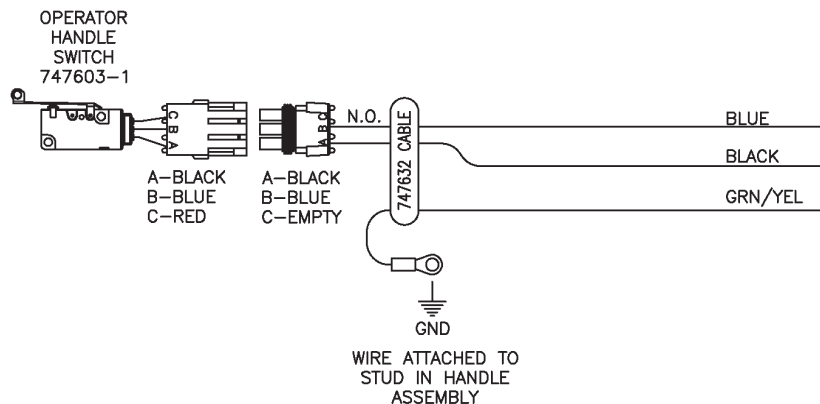
PIN #	COLOR	WHERE TO/FROM
1	RED	BATTERY CHARGER INTERNAL RELAY
2	BLACK	RELAY COILS: 0V
3	RED/VIOLET	BRUSH MOTOR RELAY COIL: 24VDC
4	EMPTY	-
5	EMPTY	-
6	BLACK/BLUE	BRUSH RELAY NORMALLY CLOSED
7	BLACK/BLUE	BRUSH UNLOAD SWITCH P:B
8	RED/VIOLET	MAIN RELAY COIL: 24VDC
9	EMPTY	-
10	EMPTY	-
11	EMPTY	-
12	EMPTY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

**BATTERY CHARGER: 957745 or 957753**

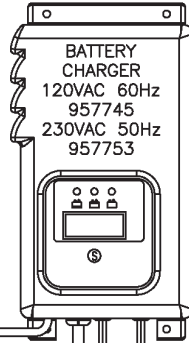
	COLOR	WHERE TO/FROM
1	RED	KEYSWITCH P:1
2	BLACK	CONTROL CB 4.0A
3	RED	MAIN RELAY + (REAR LEFT POST)
4	BLACK	MAIN RELAY - (FRONT LEFT POST)

**OTHER WIRE COLORS**

1	RED	BATTERY 24VDC: +
2	BLACK	BATTERY 0VDC: -
3	GREEN/YELLOW	GROUND
4	BLACK/BLUE	BRUSH UNLOAD CIRCUIT
5	RED/BLACK	BRUSH UNLOAD CIRCUIT: MICRO SWITCH
6	RED/VIOLET	24VDC AFTER MAIN KEYSWITCH
7	GREY/RED	OPTIONAL POWER 24VDC: 3A MAX
8	GREY/BLACK	OPTIONAL POWER 0VDC: 3A MAX



CHARGER STATUS INDICATOR  
747614

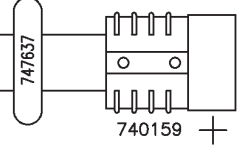


CABLE + BOARD  
747614-1

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

RED 747631-1

RED

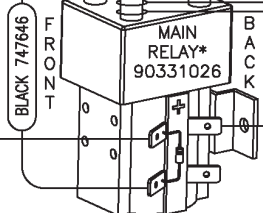
BLACK

INTERNAL INHIBIT RELAY

BLACK  
RED

RED 747642

RED/VIO 747631-8



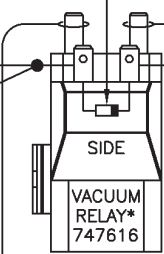
BLACK 747646  
FRONT

BLACK  
BACK

BLACK 747647

DIODE 740482

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



SPLIT CONDUIT 747625

RED 747633-1  
BLACK 747633-2  
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

TOP

NC

GRY/BLK 747655

RED 747638  
BLACK 747639  
GRN/YEL 747654  
RED/BLK 747636  
BLK/BLU 747631-7

RED/VIO 747631-3

BLK/BLU 747631-7

BLUE

BLACK

GRN/YEL

GRY/RED 747631-3

GRY/BLK 747657

GRY/RED 747656

WIRES ATTACHED TO STUD IN ELECTRICAL BOX  
GND

RED 747643

RED 747642

RED 747641

RED 747640

RED 747645

RED 747644

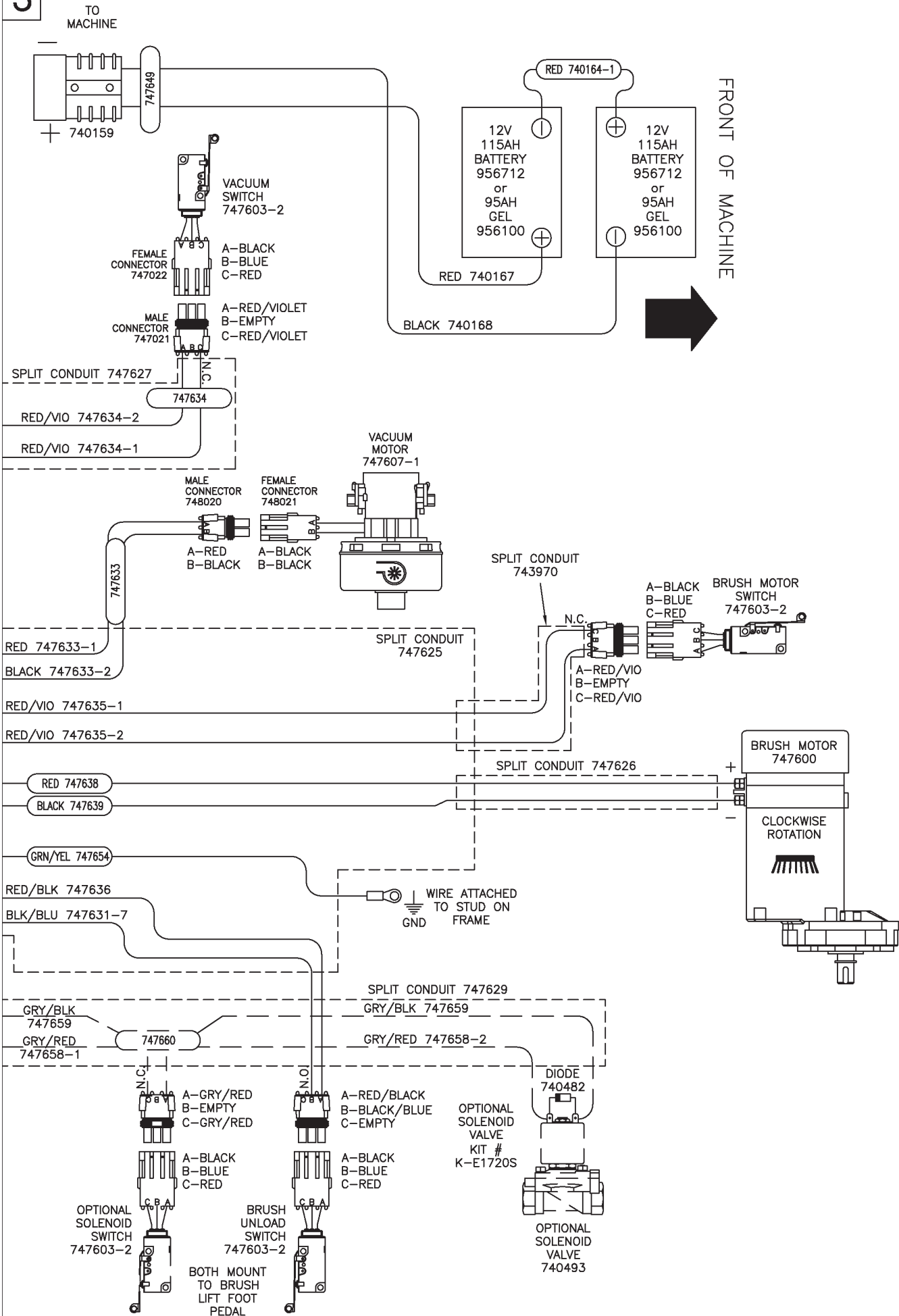
GRY/BLK 747657

OPTIONAL HOUR METER 747624 KIT K-E1720HM

GRY/BLK 747656



3





## Minuteman International Made Simple Commercial Limited Warranty

Minuteman International, Inc. warrants to the original purchaser/user that the product is free from defects in workmanship and materials under normal use. Minuteman 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, such as belts, cords, switches, hoses, rubber parts, electrical motor components or adjustments. Parts not manufactured by Minuteman are covered by and subject to the warranties and/or guarantees of their manufacturers. Please contact Minuteman for procedures in warranty claims against these manufacturers.

**Special warning to purchaser** -- Use of replacement filters and/or prefilters not manufactured by Minuteman 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 or its original manufacturer, whichever the case may be.

Minuteman disclaims any implied warranty, including the warranty of merchantability and the warranty of fitness for a particular purpose. Minuteman 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. Minuteman is not responsible for costs or repairs performed by persons other than those specifically authorized by Minuteman. 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.

**Cord Electric Group**..... Three years parts, two years labor, ninety days travel (Not to exceed two hours)  
**Exceptions**..... Port-A-Scrub, one year parts, six months labor  
MPV 13, one year parts  
MPV 14 and 18, two years parts, one year labor  
RapidAir blower, one year parts, one year labor  
Explosion-Proof Vacuum, one year parts, one year labor  
Pneumatic Vacuums, three years parts, one year labor  
EX 12 and EX12H, one year parts, one year labor

**Battery Operated Group**..... Three years parts, two years labor, ninety days travel  
(Not to exceed two hours)  
**Exceptions**..... Sweepers, one year parts, one year labor, ninety days travel  
(Not to exceed two hours)

**Internal Combustion Group**....One year parts, one year labor, ninety day travel  
(Not to exceed two hours)

**Replacement Parts**.....Ninety days  
**Batteries**.....0-3 months replacement, 4-12 months pro-rate  
**Polypropylene Plastic Tanks**...Ten years, no additional labor