

**Parts Manual**  
**E17/E20/H20 Floor Scrubber**  
**Disc Brush Drive**

## PREFACE

Thank you for your purchase of the new industry standard for scrubbers. Minuteman International takes great pride in offering the most dependable, reliable and best value in industrial power sweepers and sweeper / scrubbers. We set the standard.

Our Customer Service Department would like to hear from you. If you see any errors, omissions or something that needs clarification in this Parts Catalog please let us know. We are working hard towards continually improving our processes to bring you the best you deserve. Please copy the form below, fill out and comment on how you found our catalog.

Thank you!

*The Minuteman International Team*

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

Country: \_\_\_\_\_

Type of equipment or model number: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Please return to:

Customer Service Manager  
Minuteman International, Inc.  
14N845 U.S. Route 20  
Pingree Grove, Illinois 60140 USA

Phone: (800) 323-9420

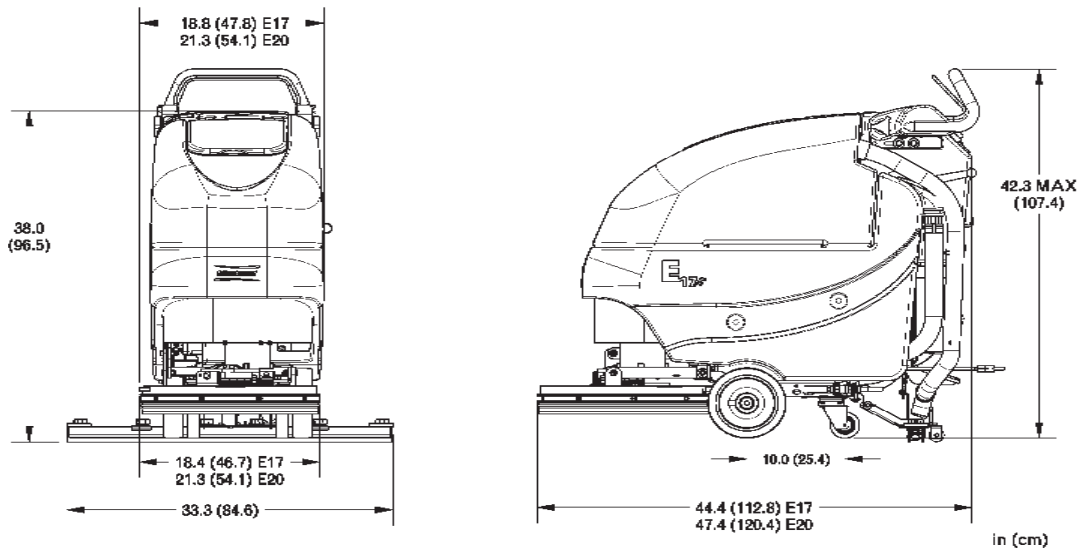
Email: [tech@minutemanintl.com](mailto:tech@minutemanintl.com)

# Technical Specifications

Model **E17 / E20 / H20**

All Models Beginning with: **E17BD / E20BD / H20BD**

	<b>E17BD</b>	<b>E20BD / H20BD</b>
Current (Max)	32 amps	32 amps
Sound Level	69 dBA	69 dBA / 65.5 dBA
Cleaning path width	17 in (43 cm)	20 in (51 cm)
Squeegee width	30 in (76 cm)	34 in (86 cm)
Theoretical productivity	17,000 ft <sup>2</sup> /hr ( 1,579 m <sup>2</sup> )	20,000 ft <sup>2</sup> /hr ( 1,858 m <sup>2</sup> )
Working speed	2.3 mph (3.7 km per hr)	2.3 mph (3.7 km per hr)
Rated voltage	24 volts	24 volts
Vacuum flow	65 cfm (110 m <sup>3</sup> /hr)	65 cfm (110 m <sup>3</sup> /hr)
Vacuum waterlift	45 inches ( 112mbar)	45 inches (112mbar) / 46 INCHES (115mbar)
Vacuum power	.60 HP (450 W)	.60 HP (450 W)
Brush type	Disc	Disc
Brush motor(s) power	3/4 HP (560W)	3/4 HP (560W)
Number of brushes	1	1
Brush RPM	180 RPM	180 RPM
Aqua-Stop equipped	Available	Available
Solution capacity	12Gal (45 liters)	12 Gal (45 liters)
Recovery capacity	13 Gal (49 liters)	13 Gal (49 liters)
Working Grade	2%	2%
Weight with batteries	306 lbs (139 kg)	313 lbs (142 kg)
Weight without batteries	196 lbs (89 kg)	203lbs (92 kg)
Dimensions (LxWxH)	44.4 x 18.8 x 42.3 (112.8 x 47.8 x 107.4 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.



DECLARATION OF CONFORMITY

**MANUFACTURER'S NAME:** Minuteman International Inc.

**MANUFACTURER'S ADDRESS:** 111 South Rohlwing Road  
Addison, IL. 60101

**EQUIPMENT DESCRIPTION:** E17/ E20 Walk-Behind Scrubber

**EQUIPMENT MODEL DESIGNATION:** E17BDQPCE, E17BDQPGCE,  
E17BDCE, E20BDCE, E20BDQPCE,  
E20BDQPGCE

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

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

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

**SIGNATURE:**

**DATE:**

9.11.2007

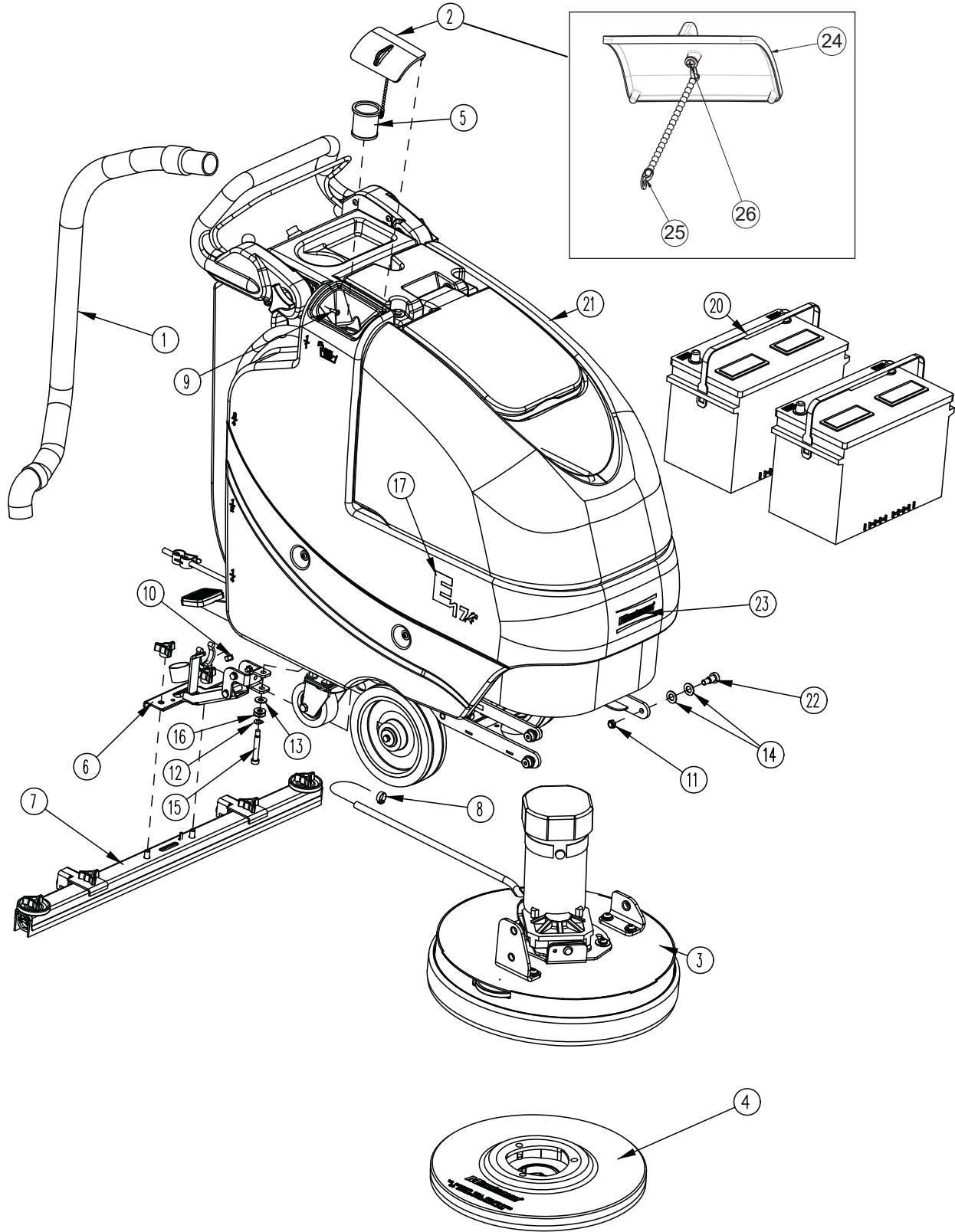
**PRINTED NAME:  
TITLE:**

**Ruediger Schroeder  
Exec. VP and COO**

Form: ECO 200 \*

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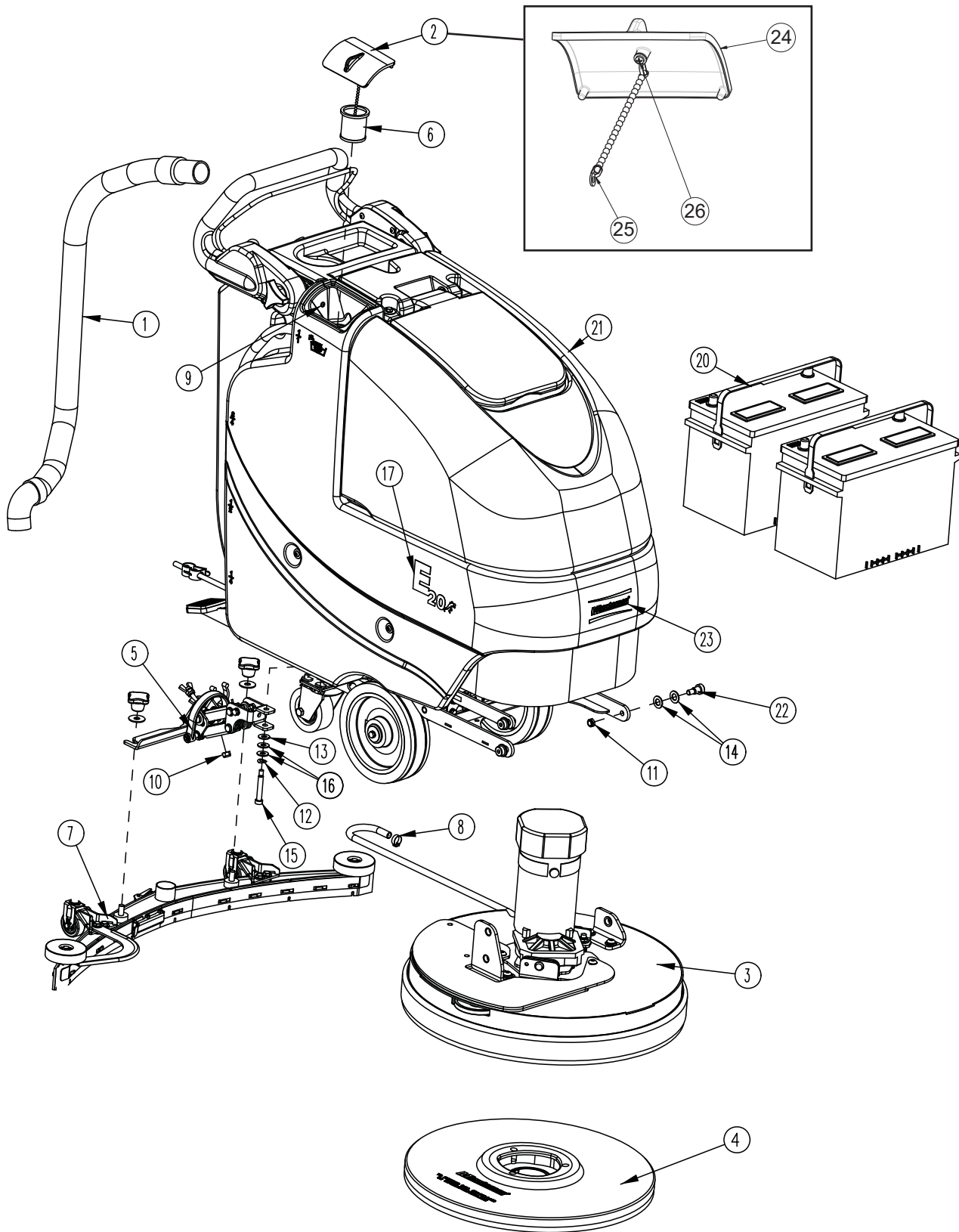
# E17 Main Assembly BOM

ITEM	PART NO.	QTY	DESCRIPTION
1	172010	1	HOSE, CLEAR VAC W/ 45 CUFF
2	172018	1	SOLUTION TANK LID ASSY
3	172090	1	BRUSH DECK ASSY 17"
4	172517-2	1	17" PAD DRIVER - <b>SEE BELOW FOR RETAINER</b>
5	172159	1	FILTER, FILL PORT, ES1720
6	172170	1	BD SQUEEGEE LIFT MECH ASSY
6KT	172150	1	SQUEEGEE LIFT MECH ASSY
7	210080	1	SQUEEGEE ASY COMP 20" STR
7KT	172530-1	1	SQUEEGEE ASSY BD 30" (760)
8	450076	1	CLAMP-CRIMP 185R SS
9	711118	1	SCR-ST-A 10 X .75 SS
10	711374	1	NUT-NYLOC 5/16-18
11	711375	3	NUT-NYLOC 3/8-16 X 1/2 NUT
12	711523	1	WSR-WAVE .37X .68 X .08
13	711569	1	WSR-FLT .390 X .880 X .062 NYL
14	711592	6	WSR-FLAT .506 X .9 X .064 NYL
15	712143	1	BLT-SHLD 3/8 X 2.0, 5/16-18
16	712301	2	WSR-FLAT .37 X .87 X .06
17	715917	2	DECAL, E17
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
20T	956754	2	BATTERY 12V 105AH WET TROJAN
21	172001BD-120	1	BRUSH DRVMAN ASSY-120V CHARGER
21CE	172001BD-230	1	BRUSH DRVMAN ASSY-230V CHARGER
22	712099PLT	3	BLT- SHLDR 1/2 X 1/2 ZINC PLT
23	715914W	1	DECAL, MINUTEMAN W/SWOOSHES, WHITE
24	172008	1	SOLUTION TANK LID
25	172123	1	CHAIN, BEADED SS W/EYELET S
26	712145	1	SCR-MC 6-32 X .37 PPH SS

### BRUSH OPTIONS

		AQUA STOP BRUSHES	
762394	PAD RETAINER, FIXED - NOT SHOWN	7943-01	BRUSH, 17" LIGHT-MEDIUM PP.5 A/S, (WHITE)
762370	PAD RETAINER, REMOVEABLE - NOT SHOWN	7943-02	BRUSH, 17" LIGHT-MEDIUM A/S K901 (BLACK)
172517-1	BRUSH-DISC, 17" NYLON, BLACK	7943-03	BRUSH, 17" MEDIUM NYLON 600GR. A/S, (GREY)
172517-3	BRUSH-DISC, 17" NYLO-GRIT 80GR GREEN	7943-04	BRUSH, 17" MEDIUM-HEAVY PP.8 A/S (WHITE)
172517-6	BRUSH-DISC 17"SCRUB GRIT II 120GR	7943-05	BRUSH, 17" HEAVY NYLON 180GR. A/S (GRAY)
		7943-06	BRUSH, 17" HEAVY-2 NYL 120GR. A/S, GREEN

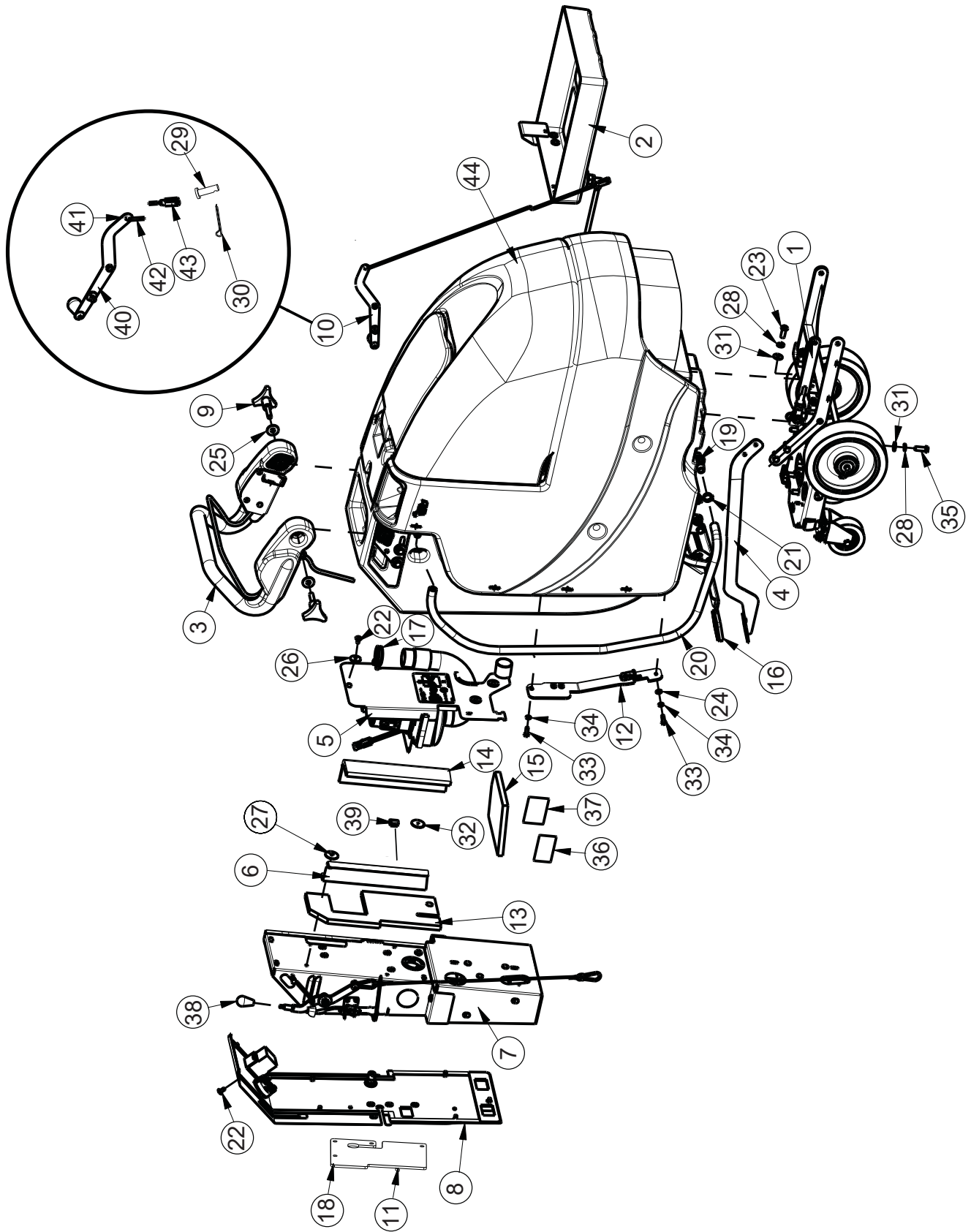
Note: Models with the black tri-lobe brush hub will require the conversion kit part number K-E1720HUB before using the brushes listed above





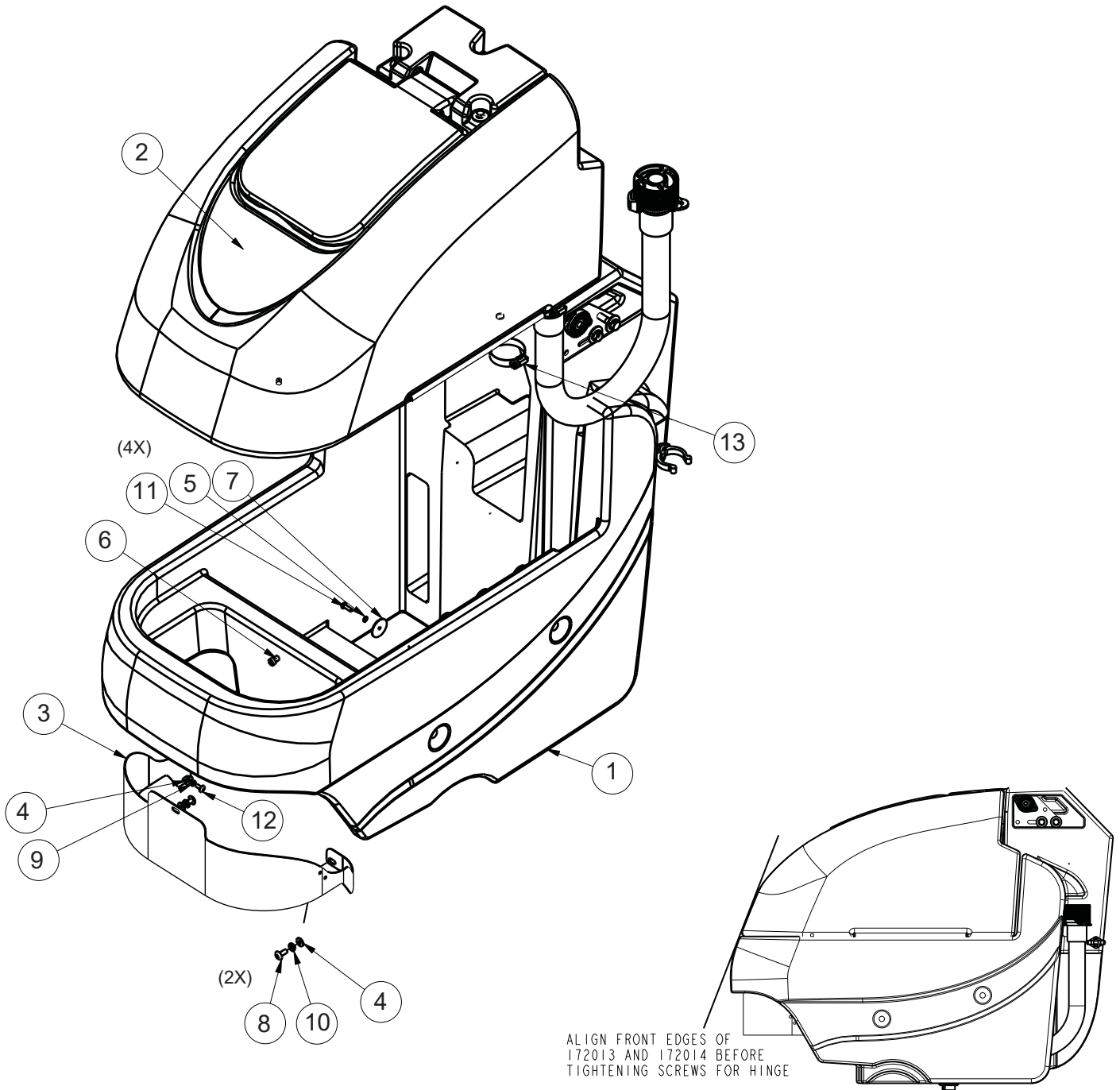
ITEM	PART NO.	QTY	DESCRIPTION
1	172010	1	HOSE, CLEAR VAC W/ 45 CUFF, E20
	172340		HOSE, PU RECOVERY, CLEAR, H20
2	172018	1	SOLUTION TANK LID ASSY
3	172100	1	BRUSH DECK ASSY 20"
4	172520-2	1	20" PAD DRIVER - 230V-SEE BELOW FOR RETAINER
5	172150	1	SQUEEGEE LIFT MECH ASSY
6	172159	1	FILTER, FILL PORT, ES1720
7	172534-1	1	SQUEEGEE, 34" (860)
8	450076	1	CLAMP-CRIMP 185R SS
9	711118	1	SCR-ST-A 10 X .75 SS
10	711374	1	NUT-NYLOC 5/16-18
11	711375	3	NUT-NYLOC 3/8-16 X 1/2 NUT
12	711523	1	WSR-WAVE .37X .68 X .08
13	711569	1	WSR-FLT .390 X .880 X .062 NYL
14	711592	6	WSR-FLAT .506 X .9 X .064 NYL
15	712143	1	BLT-SHLD 3/8 X 2.0, 5/16-18
16	712301	2	WSR-FLAT .37 X .87 X .06
17	715920	2	DECAL, E20
	715684		DECAL, H20
18	740164-1	1	JUMPER CABLE ASSY, RED 4G 12"
19	747649	1	CABLE ASSY, BATTERY E17
20	956712	2	BATT ERY, 12V 115AH
20G	956100	2	GEL BATTERY 12V 100AH
21	172001BD-120	1	BRUSH DRV MAIN ASSY-120VCHARGER
21CE	172001BD-230	1	BRUSH DRV MAIN ASSY-230VCHARGER
22	712099PLT	3	BLT- SHLDR 1/2 X 1/2 ZINC PLT
23	715914W	1	DECAL, MINUTEMAN W/SWOOSHES, WHITE
24	172008	1	SOLUTION TANK LID
25	172123	1	CHAIN, BEADED SS W/EYELETS
26	712145	1	SCR-MC 6-32 X .37 PPH SS

BRUSH OPTIONS			
		AQUA STOP BRUSHES	
762394	PAD RETAINER, FIXED - NOT SHOWN	7951-01	BRUSH, 20" LIGHT-MED PP.5 A/S, WHITE
762370	PAD RETAINER, REMOVEABLE - NOT SHOWN	7951-02	BRUSH, 20" LIGHT-MEDIUM A/S, K901, BLACK
172520-1	BRUSH, 20" NYLON	7951-03	BRUSH, 20" MEDIUM NYLON 600GR. A/S, GREY
172520-3	BRUSH-DISC, 20" NYLO-GRIT 80GR, GREEN	7951-04	BRUSH, 20" MEDIUM-HEAVY PP.8 A/S, WHITE
172520-6	DISC BRUSH 20", SCRUB GRIT 2, 120GR RED	7951-05	BRUSH, 20" HEAVY NYLON 180GR. A/S, GREY
		7951-06	BRUSH, 20" HEAVY-2 NYL 120GR. A/S, GREEN

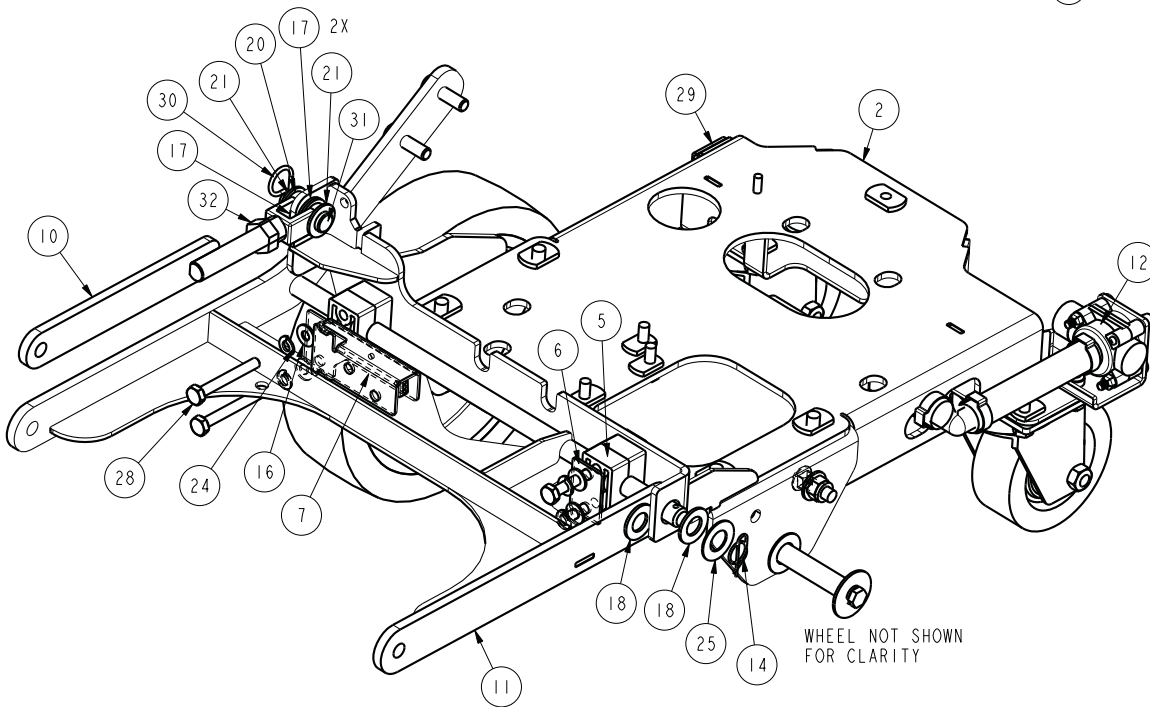
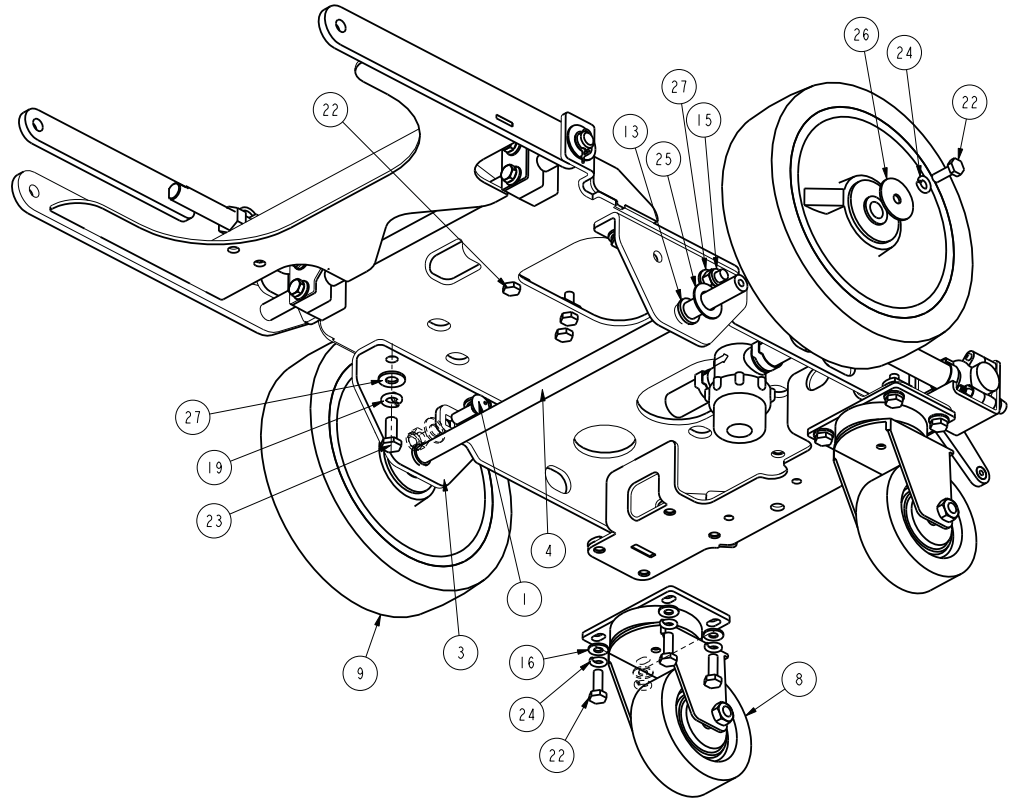
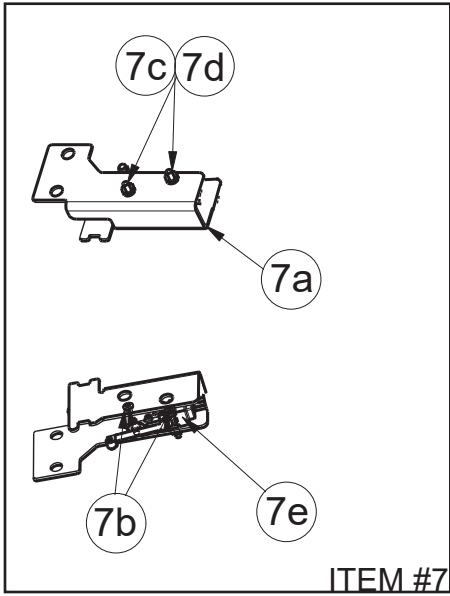


# Brush Drive Base Assembly BOM

BILL OF MATERIAL - 172001BD - 120/230							
ITEM	PART NO	QTY	DESCRIPTION	ITEM	PART NO	QTY	DESCRIPTION
1	172002	1	E1720 BD CHASSIS ASSY	23	710985	2	SCR-BHSCS 3/8-16 X .625 ZP
2	172012	1	BATTERY TRAY ASSY, ES1720	24	711504	1	WASHER-FLAT 1/4 SS
3	172016	1	BD HANDLE ASSY, E1720	25	711507	2	WASHER-FLAT 3/8 X 1.12 X .06
4	172032	1	LIFT PEDAL WMT	26	711519	3	WASHER-FLAT 1/4 X 1.00 X .06 ZP
5	172050	1	VAC MOTOR ASSY	27	711543	2	WASHER-LOCK #10 SPLIT ZP
6	172055	1	BKT, VAC AREA INSIDE COVER	28	711546	6	WASHER-LOCK 3/8 SPLIT ZP
7	172070-120	1	ELEC BOXBD ASSY 120V	29	711803	1	PIN-COTTER .06 X .75
7CE	172070-230		ELEC BOXBD ASSY 230V	30	712117	1	PIN-CLEVIS 3/16 X .593
8	172073	1	BD ELEC BOXCOVER ASSY	31	712301	8	WASHER-FLAT 3/8 X .87 X .06 ZP
9	172085	2	KNOB, 3/8-16 STUD, 3LOBE	32	712312	2	WASHER-BALANCING .187 X 1.25
10	172112	1	SOL CONTROL ASSY	33	712562	2	SCR-HH 1/4-20 X .75, 18-8 SS
11	172129	1	BKT, PWR CORD MOUNT, 5/8 HOLE	34	712758	2	WASHER-LOCK 1/4 SPLIT SS
12	172157	1	LIFT PEDAL STOP ASSY	35	713042	4	SCR-HH 3/8-16 X 1.00 ZP GR 5
13	172184	1	FOAM COVER W/ ADHESIVE	36	715029	1	DECAL-NAME PLATE MODEL ID
14	172185	1	FOAM COVER REAR 2, 1/2" THICK	37	715047	1	DECAL-CLEAR LAMINATE 2X3
15	172187	1	FOAM COVER FRONT 2, 1/2" THICK	38	760592	1	KNOB-OVAL TAPERED
16	210142	1	PEDAL PAD	39	809443	1	CLIP-WIRE & CORD
17	3303255	1	CLAMP-HOSE 1.75 DIA NOMINAL	40	172115	1	SOLUTION CTRL LEVER ASSY
18	293080	1	STRAIN RELIEF	41	172122	1	NUT, PUSH-ON WSR CAP, 3/16
19	342440	1	FTG-TEE 3/4 MPT X 1/2 HB NYLON	42	172069	1	SOLUTION CONTROL ROD
20	430156	1	HOSE, CLEAR 1/2 ID X 39.75"	43	172062	1	YOKE, 3/16 CLEVIS X 10-32 THD
21	450093	1	CLAMP-CRIMP 3/4" OD STEP-LESS	44	172001BASE	1	E1720 BASE ASSY
22	710178	10	SCR-THMS 1/4-20 X .50 ZP				

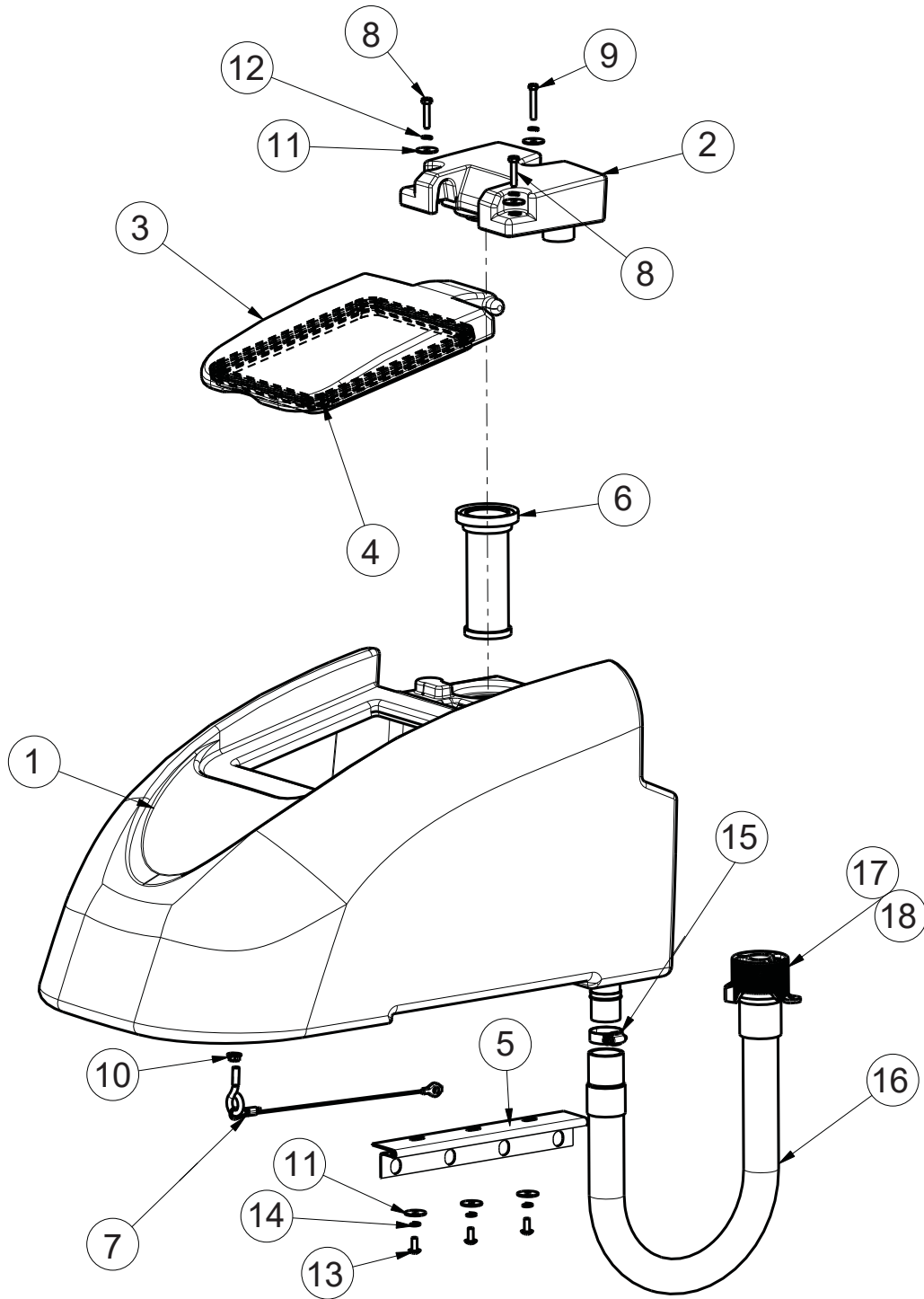


BILL OF MATERIAL - 172001BASE			
ITEM	PART NO.	QTY	DESCRIPTION
1	172013	1	SOLUTION TANK ASSY
2	172014	1	RECOVERY TANK ASSEMBLY
3	172144	1	COVER, FRONT PANEL E1720
4	711504	3	WASHER-FLAT 1/4 SS
5	711543	4	WASHER-LOCK #10 SPLIT ZP
6	712041	1	BLT-SHOULDER 5/16 X .375 LG X 1/4-20 BLK
7	712312	4	WASHER-BALANCING .187 X 1.25
8	712565	2	SCR-THMS 1/4-20 X .62 SS
9	712757	1	WASHER-LOCK #10 SPLIT SS
10	712758	2	WASHER-LOCK 1/4 SPLIT SS
11	712812	4	SCR-PHMS 10-24 X .62 ZP
12	712822	1	SCR-THMS 10-24 X .50 SS
13	3303255	1	CLAMP-HOSE 1.75 DIA NOMINAL



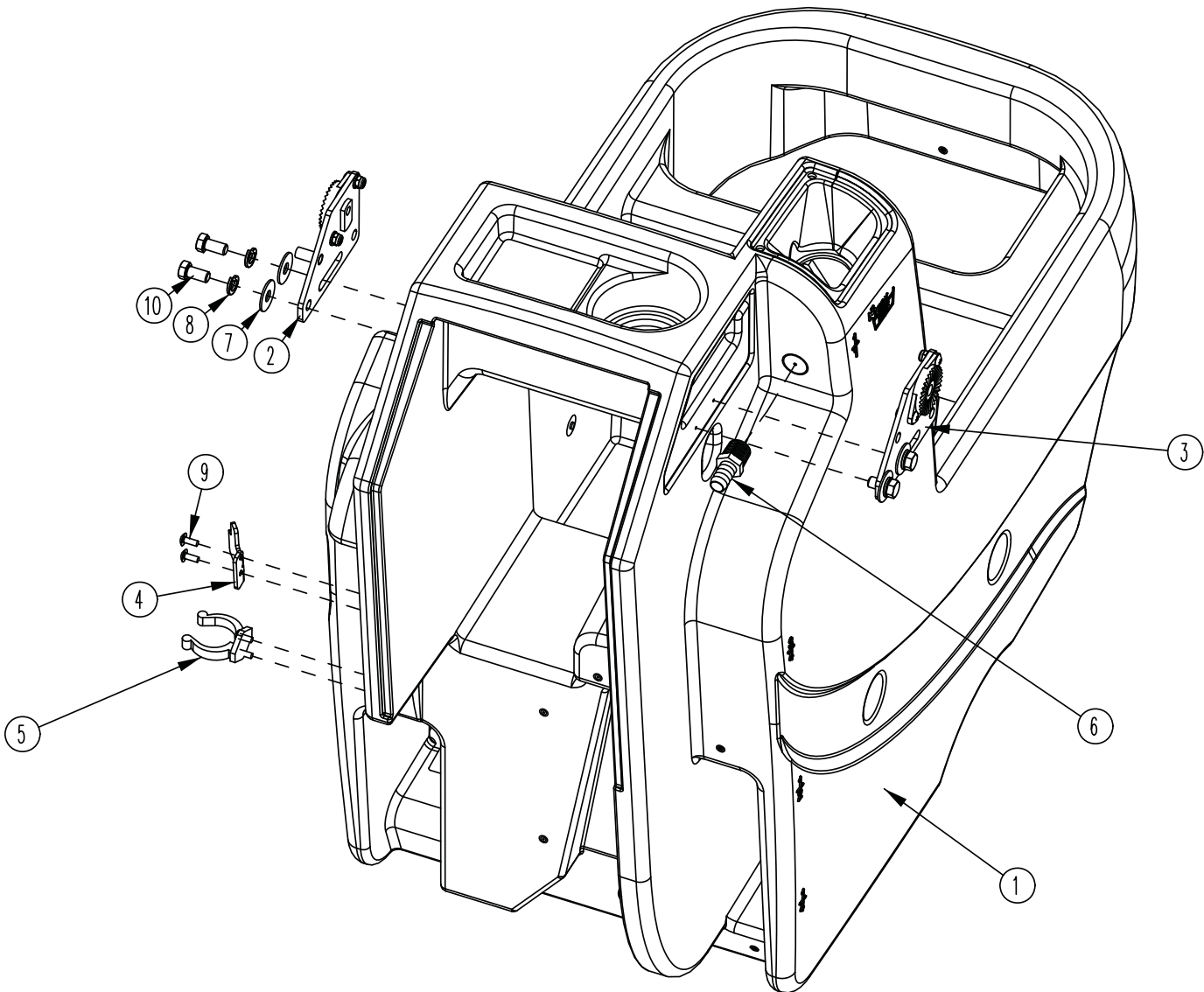


BILL OF MATERIAL - 172002			
ITEM	PART NO.	QTY	DESCRIPTION
1	70-516-16	2	BLT-CARR 5/16-18 X 1 ZP
2	172020	1	E1720 MAIN FRAME WMT
3	172024	2	BKT, WHEEL, E1720BD
4	172035	1	ROD, .5" E1720 AXLE
5	172038	4	BEARING BLOCK
6	172039	1	BEARING BLOCK PLATE
7	172110	1	DECK SWITCH ASSY
7a	172111	1	BEARING BLOCK/SWITCH PLATE
7b	710493	2	SCR-RHMS 4-40 X .75 ZP
7c	711428	2	NUT-HEX 4-40 ZP
7d	712326	2	WASHER-INT LOCK #4 SS
7e	747603-2	1	SWITCH ASY, MICRO ROLLER W/PACK/CONDUIT
8	172167	2	CASTER, 3 1/2" PU WHEEL
9	172265	2	WHEEL, 8X2X.5ID, 75A W/ GROOVES
10	172368	1	UPPER LIFT ARM
11	172370	1	DISC DECK LIFT WMT, E1720
12	172571	1	ASSY-SOLUTION VALVE E1720
13	260041	2	BUSHING-FLG .502 X .627 X .375 OILITE
14	600578	1	RING-RUE .50 ZP
15	711374	2	NUT-NYLOC 5/16-18 ZP
16	711504	12	WASHER-FLAT 1/4 SS
17	711569	3	WASHER-FLAT .390 X .880 X .062 NYL
18	711592	2	WASHER-FLAT 1/2 X .90 X .064 NYLON
19	712140	4	WASHER-LOCK 5/16 SPLIT SS
20	712265	1	CLEVIS-YOKE, 1/2-20 WITH .375 PIN
21	712301	2	WASHER-FLAT 3/8 X .87 X .06 ZP
22	712562	13	SCR-HH 1/4-20 X .75, 18-8 SS
23	712575	4	SCR-HH 5/16-18 X .75 18-8 SS
24	712758	14	WASHER-LOCK 1/4 SPLIT SS
25	712760	3	WASHER-FLAT .56 X 1.06 X .04 SS
26	712761	2	WASHER-FENDER 1/4 X 1.25 X .059 SS
27	712772	6	WASHER-FLAT .344 X .75 X .06 SS
28	713007	4	SCR-HH 1/4-20 X 2.00 ZP GR 5
29	809444	1	CLIP-CORD
30	833374	1	PIN-HAIRPIN COTTER 3/8
31	833833	1	PIN-CLEVIS 3/8 X 1.25
32	3400449	1	NUT-JAM 1/2-20 ZP

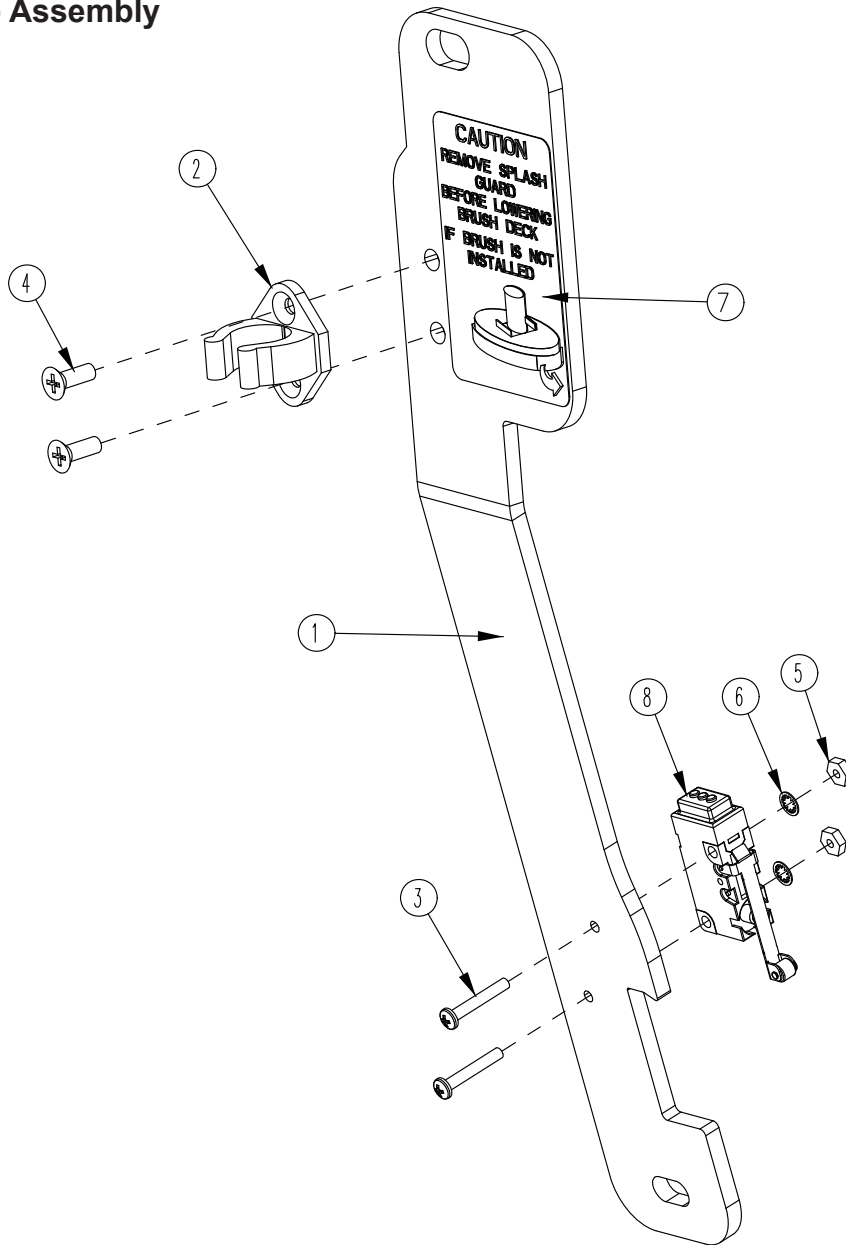


**BILL OF MATERIAL - 172014**

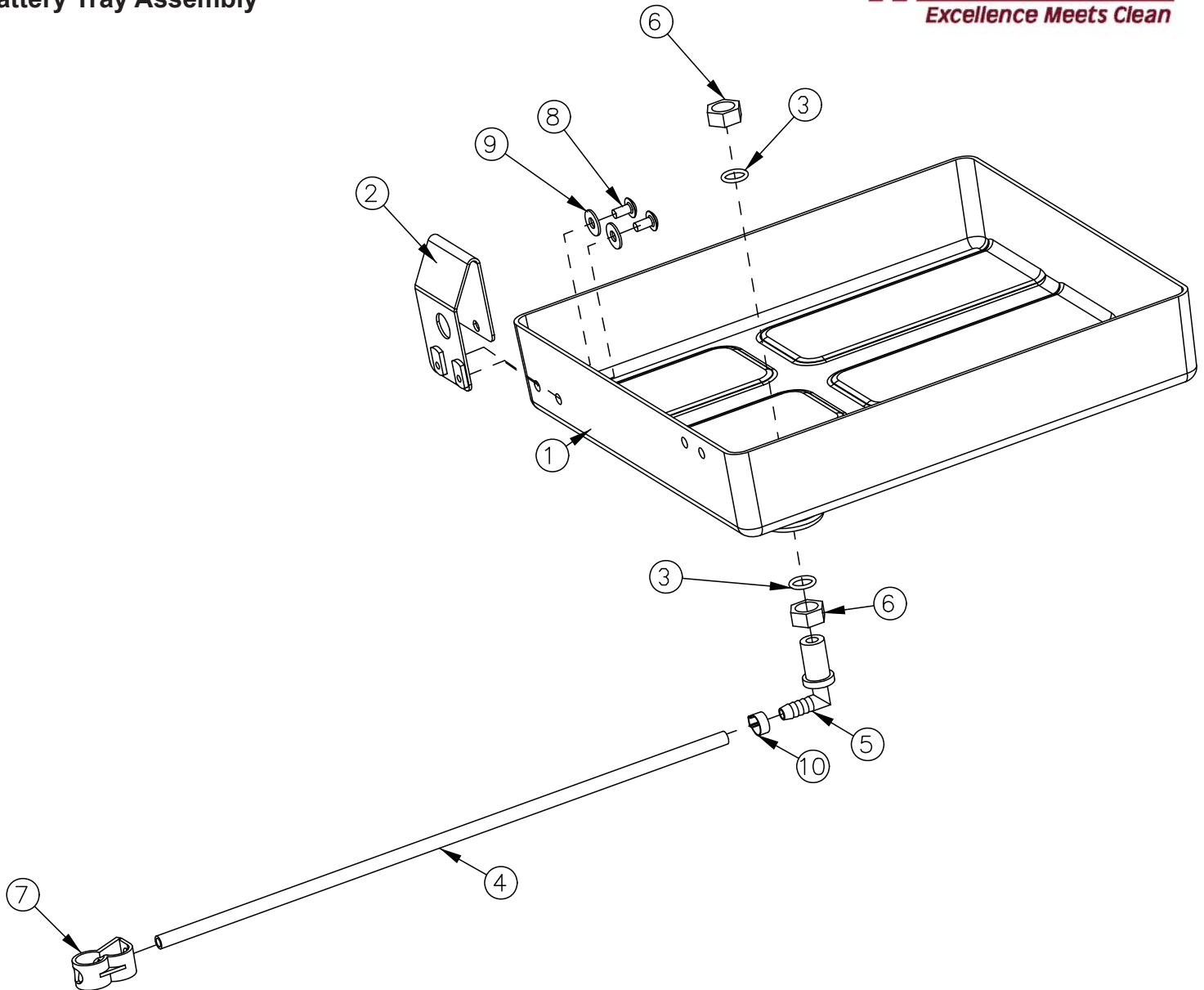
ITEM	PART NO.	QTY	DESCRIPTION
1	172004	1	ES1720 RECOVERY TANK
	172004HSP		E17/E20 REC TANK HOSPITAL VERSION
2	172005	1	ES1720 VACUUM MANIFOLD
	172005HSP		MANIFOLD, VAC - GREEN, HOSPITAL VERSION
3	172007	1	LID, ES1720
4	172017	1	GASKET, ES1720 LID
5	172049	1	HINGE, RECOVERY TANK
6	172132	1	FLOAT, SCREENED
7	172394	1	CABLE, REC TANK 12.0
8	711210	2	SCR-HH 1/4-20 X 1.25 ZP GR 5 FULL THRD
9	711212	1	SCR-HH 1/4-20 X 1.50 ZP GR 5
10	711379	1	NUT-FLANGED WIZZ 5/16-18 ZP
11	711519	6	WASHER-FLAT 1/4 X 1.00 X .06 ZP
12	711544	3	WASHER-LOCK 1/4 SPLIT ZP
13	712565	3	SCR-THMS 1/4-20 X .62 SS
14	712758	3	WASHER-LOCK 1/4 SPLIT SS
15	3303255	1	CLAMP-HOSE 1.75 DIA NOMINAL
16	97090096	1	DRAIN HOSE ASSY, RECOVERY TANK
17	15282072	1	REPLACEMENT O-RING
18	90304528	1	CAP



BILL OF MATERIAL - 172013			
ITEM	PART NO.	QTY	DESCRIPTION
1	172003	1	SOLUTION TANK
2	172080	1	HANDLE MOUNT ASSY, LEFT
3	172082	1	HANDLE MOUNT ASSY, RIGHT
4	172341	1	HOOK, DRAIN HOSE WITH TWIST VALVE
5	260579	1	TOOL CLIP, 1.5" HOSE
6	342438	1	FITTING, 1/2 MPT 1/2 HB BRASS
7	711507	4	WSR-FLAT .37 X 1.12 X .06
8	711546	4	WSR-HELICAL 3/8
9	712822	4	SCR-MC TR HD 10-24 X .50 SS
10	713041	4	BLT-HH 3/8-16 X 3/4 #5



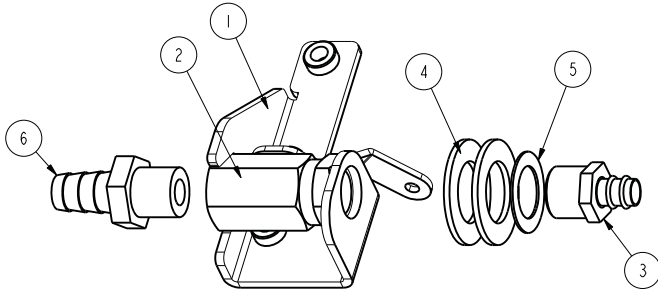
BILL OF MATERIAL - 172157			
ITEM	PART NO.	QTY	DESCRIPTION
1	172036	1	BKT, PEDAL STOP
2	172065	1	CLIP, FOR 1/2" ID HOSE
3	710493	2	SCR-MC 4-40 X .75 PAN HD
4	710530	2	SCR-MC FL HD 8-32 X .50 BRS
5	711428	2	NUT-HEX 4-40
6	712326	2	WSR-INT LOCK #4
7	715685	1	DECAL, REMOVE SPLASH GUARD
8	747603-2	1	SWITCH ASY, MICRO ROLLER W/PACK/CONDUIT



BILL OF MATERIAL - 172012			
ITEM	PART NO.	QTY	DESCRIPTION
1	172116	1	BATTERY BOX
2	172213	1	BKT, SPACER FOR BATTERIES
3	210414	2	O RING 2-113
4	260224	1	18" HOSE
5	320271	1	NOZZLE BODY-ELBOW
6	320272	2	NOZZLE BODY LOCKNUT
7	320273	1	HOSE SHUT-OFF CLAMP
8	710178	2	SCR-MC 1/4-20 X .50 TRUSS STPL
9	711575	2	WSR-FLT .31x.75x.06ST
10	828490	1	CRIMP CLAMP 140R



## Old Style - Solution Valve Assembly



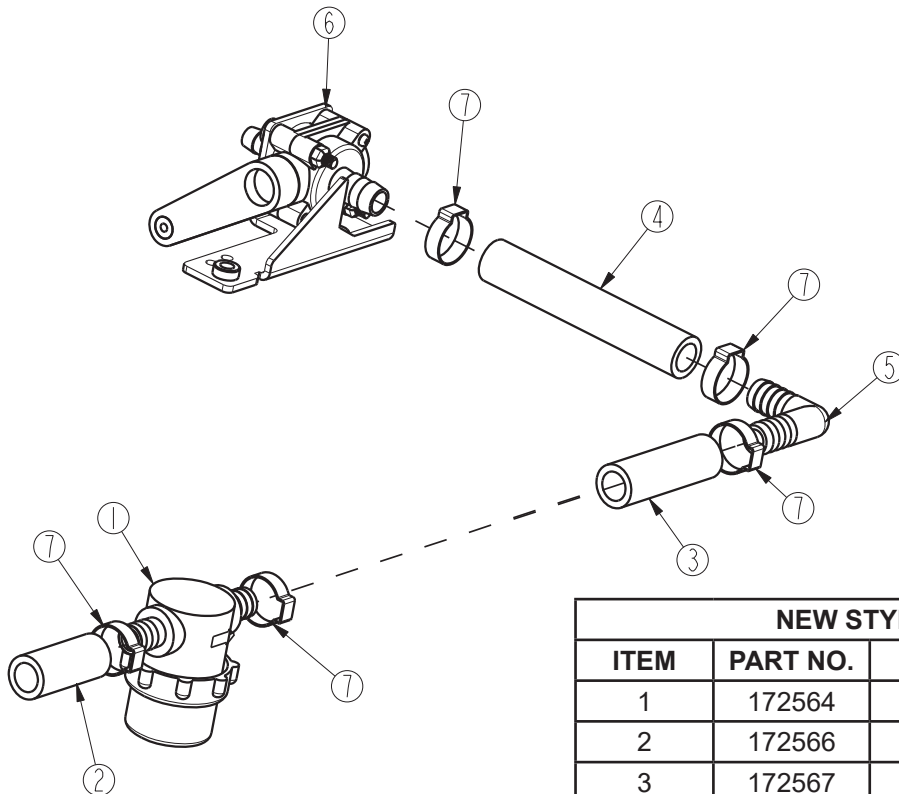
**\*\*\*REPLACING OLD STYLE BRASS SOLUTION VALVE ASSEMBLY 172514 WITH 172571 PLASTIC SOLUTION VALVE ASSEMBLY**

**WILL REQUIRE THE PURCHASE OF KIT K-172571**

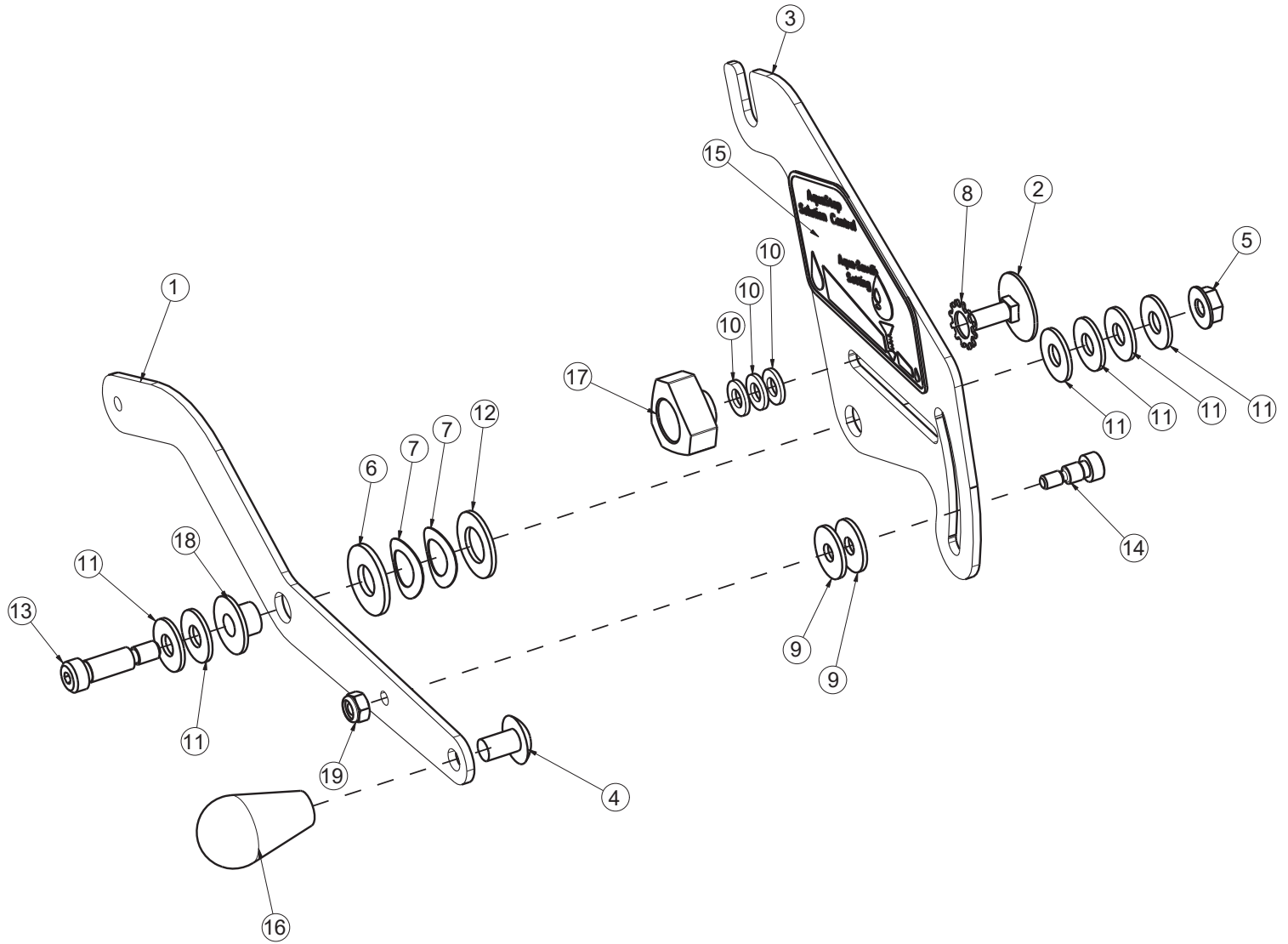
**NO LONGER AVAILABLE**

OLD STYLE - BILL OF MATERIAL - 172514			
ITEM	PART NO.	QTY	DESCRIPTION
1	172513	1	BRKT, SOL VALVE MOUNT
2	172515	1	BALL VALVE, BRASS, 3/8FNPT, CUST HANDLE
3	320265	1	FTG-ADAPTER 3/8 MPT X 3/8 HB BRASS
4	711512	2	WASHER-FLAT 3/4 X 1.37 X .08 ZP
5	711513	1	WASHER-FLAT .689 X 1.06 X .029 SS
6	827008	1	FTG-ADAPTER 3/8 MPT 1/2 HB BRASS

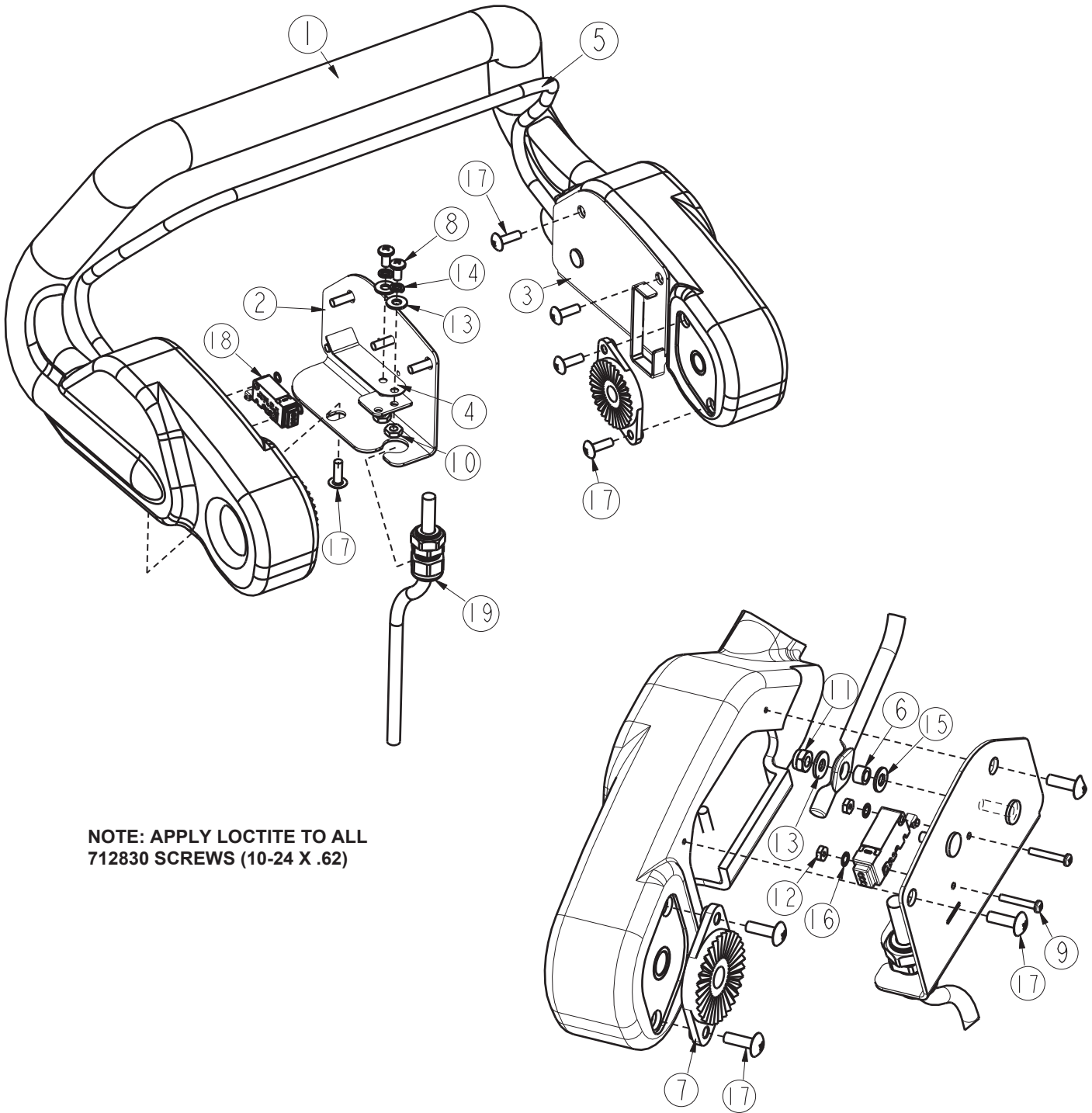
## New Style - Solution Valve Assembly



NEW STYLE - BILL OF MATERIAL - 172571			
ITEM	PART NO.	QTY	DESCRIPTION
1	172564	1	FILTER-SOLUTION E1720
2	172566	1	HOSE- 1/2ID X 1.75" NYLOBRAID
3	172567	1	HOSE-1/2"ID X 2.375" NYLOBRAID
4	172568	1	HOSE-WIRE REINF 1/2"ID X 4.25"
5	172569	1	FTG-ELBOW 90 1/2 HB X 1/2 HB NYLON
6	172579	1	SOLUTION CNTRL VALVE, WITH BRKT
7	383347	5	CLAMP-CRIMP 1/2 HOSE



BILL OF MATERIAL - 172577			
ITEM	PART NO.	QTY	DESCRIPTION
1	172061	1	LEVER, SOLUTION CONTROL BRK'T
2	172424	1	BLT-ELEVATOR 1/4-20 x .75 ZINC
3	172575	1	BRKT, AQUASTOP SOL CNTRL
4	710195	1	SCR-PHMS 5/16-18 X .50 ZP
5	711425	1	NUT-FLANGED WIZZ 1/4-20 ZP
6	711508	1	WASHER-FLAT 3/8 X 1.00 X .08 ZP
7	711524	2	WASHER-FLAT 3/8 X 1.00 X .08 ZP
8	711539	1	WASHER-EXT LOCK 3/8 ZP
9	711550	2	WASHER-FLAT 1/4 X .75 NYLON
10	711566	3	WASHER-FLAT #12 X .50 X .065 ZP
11	711575	6	WASHER-FLAT 1/4 X .75 X .06 ZP
12	711592	1	WASHER-FLAT 1/2 X .90 X .064 NYLON
13	712070	1	BLT-SHOULDER 5/16 X .75 LG X 1/4-20 BLK
14	713598	1	BLT-SHOULDER 1/4 X .313 LG X 10-24 SS
15	715690	1	DECAL, AQUASTOP SOLUTION CONTROL
16	760592	1	KNOB-OVAL TAPERED
17	833214	1	KNOB-3 SIDED 1/4-20 INSERT
18	840202	1	BUSHING-FLG .31 X .435 X .325 NYL
19	3400399	1	NUT-NYLOC 10-24 SS



**NOTE: APPLY LOCTITE TO ALL  
712830 SCREWS (10-24 X .62)**

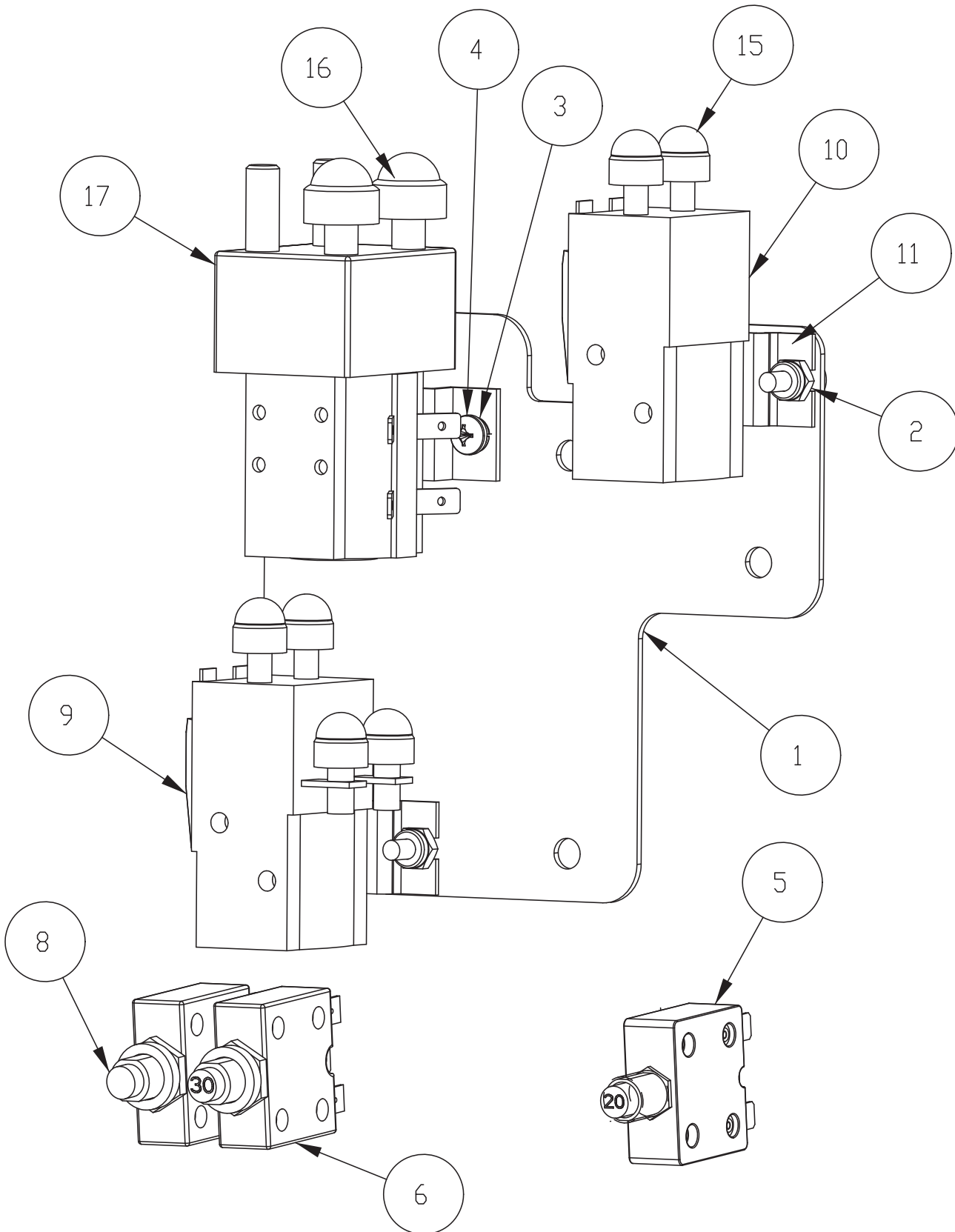
BILL OF MATERIAL - 172016			
ITEM	PART NO.	QTY	DESCRIPTION
1	172006	1	HANDLE, ES1720
2	172053	1	BAIL PLATE WMT RH
3	172054	1	BAIL PLATE WMT LH
4	172057	2	LEAF SPRING, ES1720
5	172059	1	ES1720 BAIL, HANDLE
6	172074	2	SPACER, 5/16OD X 17GA, ALUM
7	270143	2	HANDLE PIVOT JAW
8	710353	4	SCR-PHMS 10-32 X .37 ZP
9	710493	2	SCR-RHMS 4-40 X .75 ZP
10	711310	4	NUT-HEX 10-32 ZP
11	711350	2	NUT-NYLOC 10-32 ZP
12	711428	2	NUT-HEX 4-40 ZP
13	711503	6	WASHER-FLAT #10 X .50 ZP
14	711543	4	WASHER-LOCK #10 SPLIT ZP
15	712320	2	WASHER-FLAT 20 X .45 X .048 NYLON
16	712326	2	WASHER-INT LOCK #4 SS
17	712830	10	SCR-THMS 10-24 X .62 ZP
18	747603-3	1	SWITCH ASY, MICRO ROLLER W/PACK
19	747715	1	ABLE ASY, 5 COND 18G CONSOLE



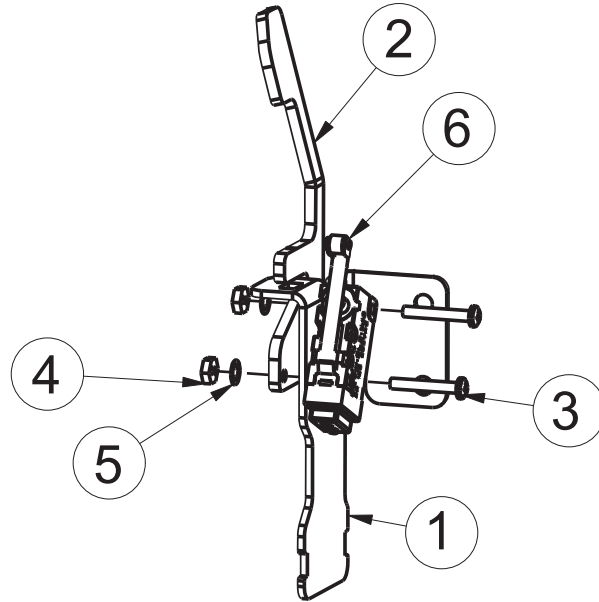


BILL OF MATERIAL							
ITEM	PART #	QTY	DESCRIPTION	ITEM	PART #	QTY	DESCRIPTION
1	369-416	3	NUT-HEX 1/4-20 ZP DOUBLE SERRATED	15	711544	2	WASHER-LOCK 1/4 SPLIT ZP
2	172077	1	ELEC BOX BOTTOM WMT	16	712320	2	WASHER-FLAT 20 X .45 X .048 NYLON
3	172088	1	ELEC BOX TOP WMT	17	712533	1	SCR-PHMS 10-24 X 1.25 SS
4	172141	1	VAC SWITCH ASSY	18	712770	2	WASHER-INT TOOTH LOCK #10 SS
5	172152	1	WELDMENT-VAC LEVER	19	742748	3	CIRCUIT BREAKER-BOOT
6	172188	1	FOAM TAPE, 1/2" SQ X 16.5"	20	747630	1	ELECTRICAL PANEL ASY, E1720BD
7	172381	1	SQUEEGEE CABLE ASSY (curved squeegees)	21	747637	1	WIRE ASY, MACHINE BATTERY E1720
8	670093	1	SPRING-COMP .502 X .6 X 1 ZINC	22	760134	2	MOUNT RING
9	710178	3	SCR-THMS 1/4-20 X .50 ZP	23	762084	1	SPRING-EXT .25OD X 2" F.L. MUSIC
10	711372	1	NUT-NYLOC 8-32 ZP	24	762400	1	BUSH -HEYCO 1-5/8 X 2-1/8 X 29/64 2400 B
11	711383	2	NUT-HEX 5/16-18 ZP REVERSE LOC	25	828062	1	CABLE TIE LARGE
12	711505	9	WASHER-FLAT 1/4 ZP	26	957761	1	CHARGER, SIGNET HBF300-24 (120) <i>see below</i>
13	711508	1	WASHER-FLAT 3/8 X 1.00 X .08 ZP		957760		CHARGER, SIGNET HBF300-24 (230) <i>see below</i>
14	711516	2	WASHER-FLAT 5/16 X 1.25 X .05 ZP	27	15592033	2	CAP, SAFETY NUT COVER M8

Charger Settings	
Setting	Battery Type
1	Wet 115 AH Group 27, Minuteman Part # 956712
1	AGM 100 AH Group 27 OEM Minuteman Part # 956100 Crown AGM Only
2	Wet 140 AH Group 31 Minuteman Part # 956140 Crown and 956753 Trojan 130 AH
2	AGM 135 AH Group 31 Minuteman Part # 956135 Crown AGM Only
3	All Group 31 GEL and Non Minuteman AGM 135 AH
4	All Group 27 GEL, Minuteman 956157 Trojan 102AH Overdrive AGM and Non Minuteman AGM 100 AH
5 to 0	No Additional Functions

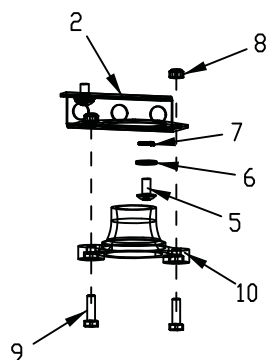
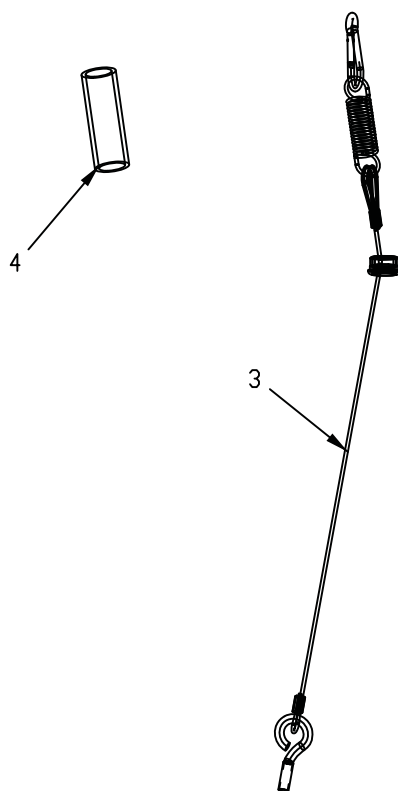


BILL OF MATERIAL - 747630			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172189	1	PANEL, RELAY MOUNT
2	711350	4	NUT -NYLOC 10-32
3	711543	2	WSR-HELICAL #10
4	712800	2	SCR-MC 10-24 X .25 ST PL
5	740220	1	CIRCUIT BREAKER-20AMP 2-T ERMIN
6	740247	1	CIRCUIT BREAKER-30AMP PUSH BUT
7	740482	2	DIODE ASY, 1N4007 W/PIGGY (NOT SHOWN)
8	747609	1	CIRCUIT BREAKER-4.0AMP PUSHBUT
9	747615	1	RELAY, 2 POLE CURT IS (1720)
10	747616	1	RELAY, 1 POLE CURT IS (1720)
11	747619	2	BRACKET , RELAY 747615 & 747616
12	747640	1	WIRE ASY, 10G RED 13" (NOT SHOWN)
13	747641	1	WIRE ASY, 10G RED 7" (NOT SHOWN)
14	747653	1	WIRE HARNESS, E1720BD MAIN (NOT SHOWN)
15	15592025	6	CAP, SAFETY NUT COVER M 6
16	15592033	2	CAP, SAFETY NUT COVER M 8
17	90331026	1	RELAY, 24VDC 2 POLE 100A (HAKO)



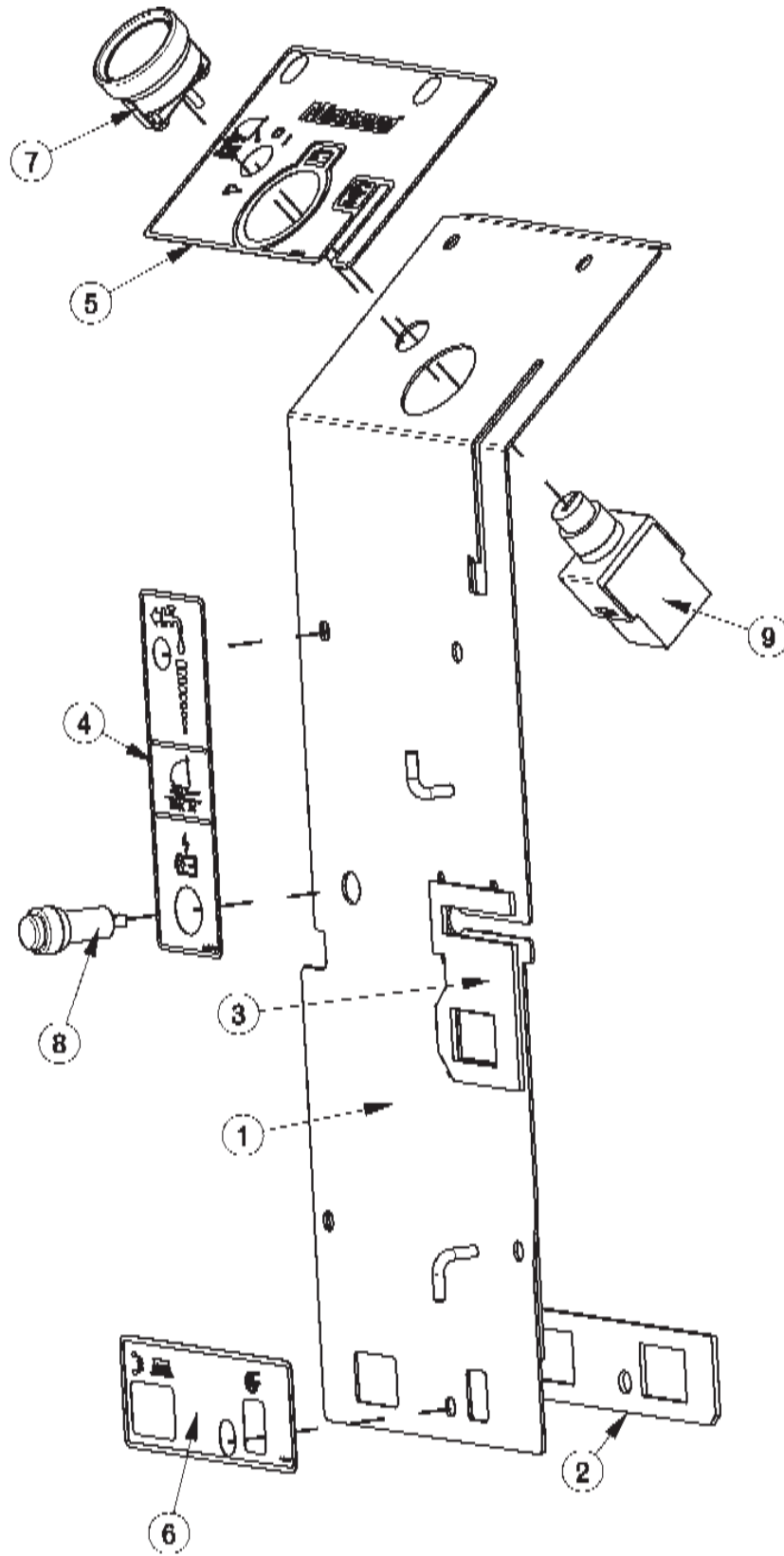
BILL OF MATERIAL - 172141			
ITEM	PART NO.	QTY	DESCRIPTION
1	172140	1	BKT, VAC SWITCH MOUNT
2	172337	1	VAC SWITCH COVER
3	710493	2	SCR-RHMS 4-40 X .75 ZP
4	711428	2	NUT-HEX 4-40 ZP
5	712326	2	WASHER-INT LOCK #4 SS
6	747603-2	1	SWITCH ASY, MICRO ROLLER W/PACK/CONDUIT

For machines with  
Straight Squeegee



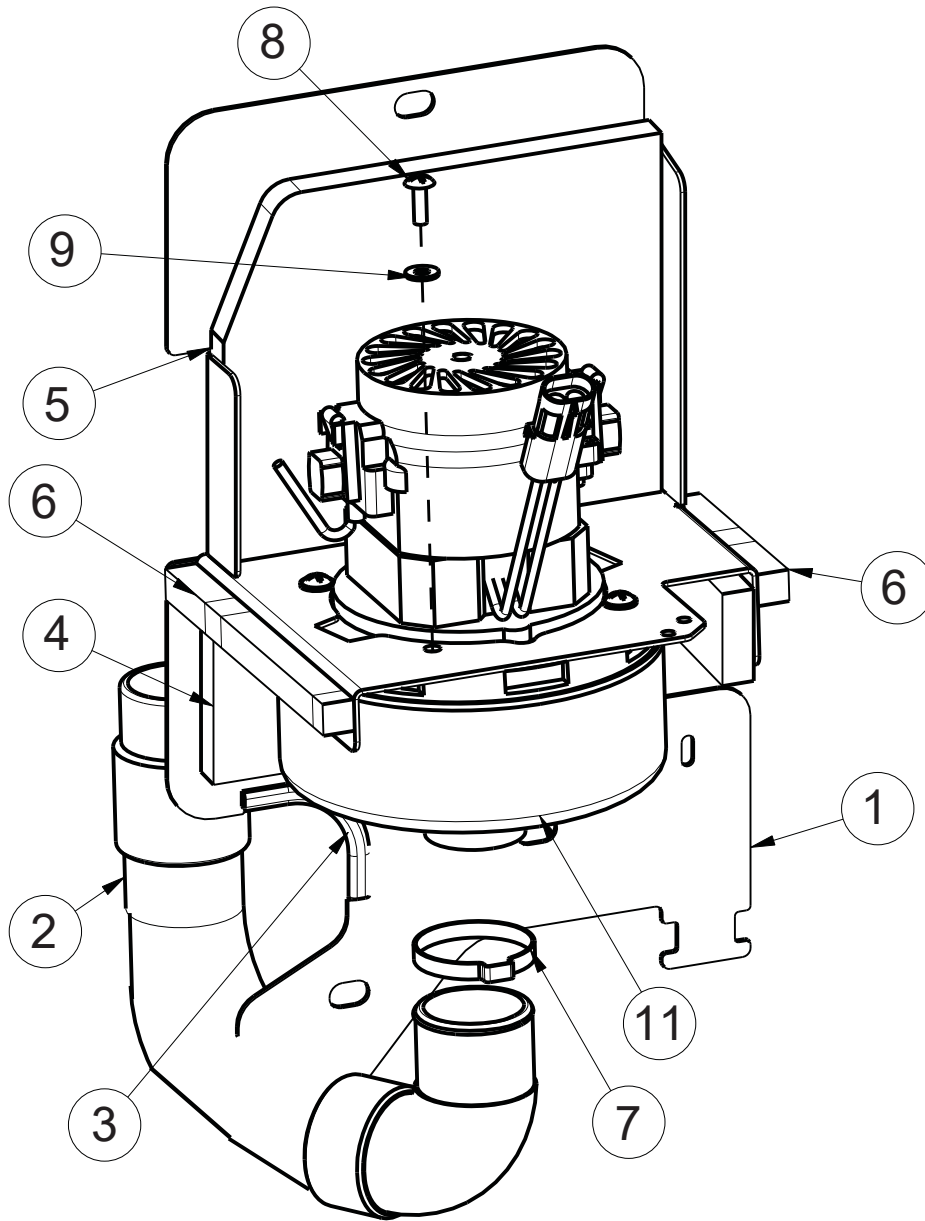
For machines with **Straight Squeegee**  
Replace Cable Assembly and reference these additional parts

ITEM	PART NO.	QTY	DESCRIPTION	ITEM	PART NO.	QTY	DESCRIPTION
1	719	1	LOCTITE	6	711505	2	WASHER-FLAT 1/4 ZP
2	172128	1	BKT, LOWER BUSHING MOUNT	7	711544	2	WASHER-LOCK 1/4 SPLIT ZP
3	172149	1	CABLE, SQUEEGEE LIFT ASSY, E17BD	8	717018	2	NUT-NYLOC M6 X 1.0 ZP
4	172331	1	PIPE, 3/4 X 3.0" SCHD 40 PVC	9	717022	2	SCR-HH M6-1.0 X 20 ZP CLASS 8.8
5	710178	2	SCR-THMS 1/4-20 X .50 ZP	10	90508391	1	BUSHING, CABLE GUIDE, HAKO

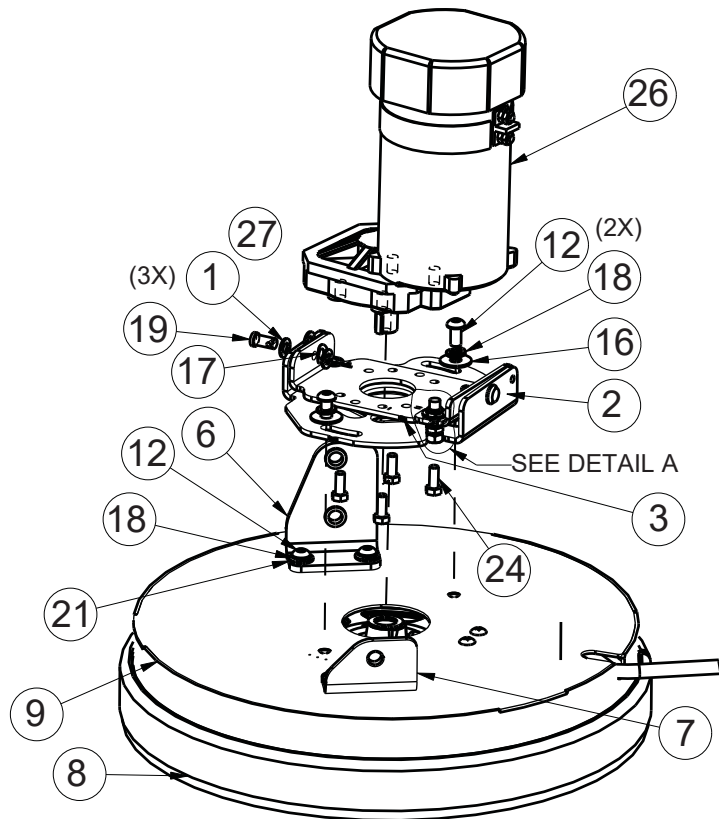
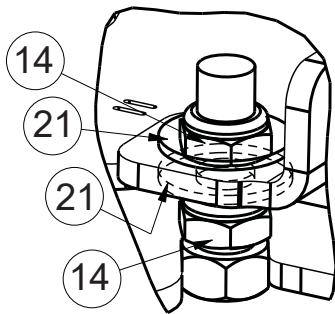
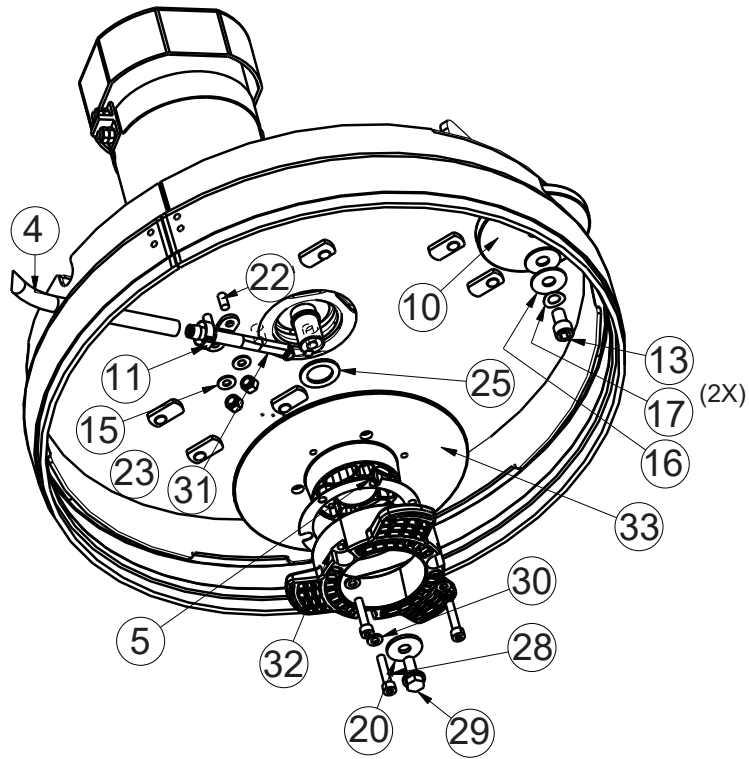




BILL OF MATERIAL - 172073			
ITEM	PART NO.	QTY	DESCRIPTION
1	172181	1	ELEC BOX, COVER, WMT
2	172193	1	GASKET, CB OUTLINE
3	172194	1	GASKET, CHARGER CORD PLATE
4	715672	1	DECAL, 1720 BD ELEC BOX
5	715673	1	DECAL, 1720 BD DASHBOARD
6	715675	1	DECAL, BD CIRC BKRS
7	740216	1	VOLT METER
8	747614	1	CHARGE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

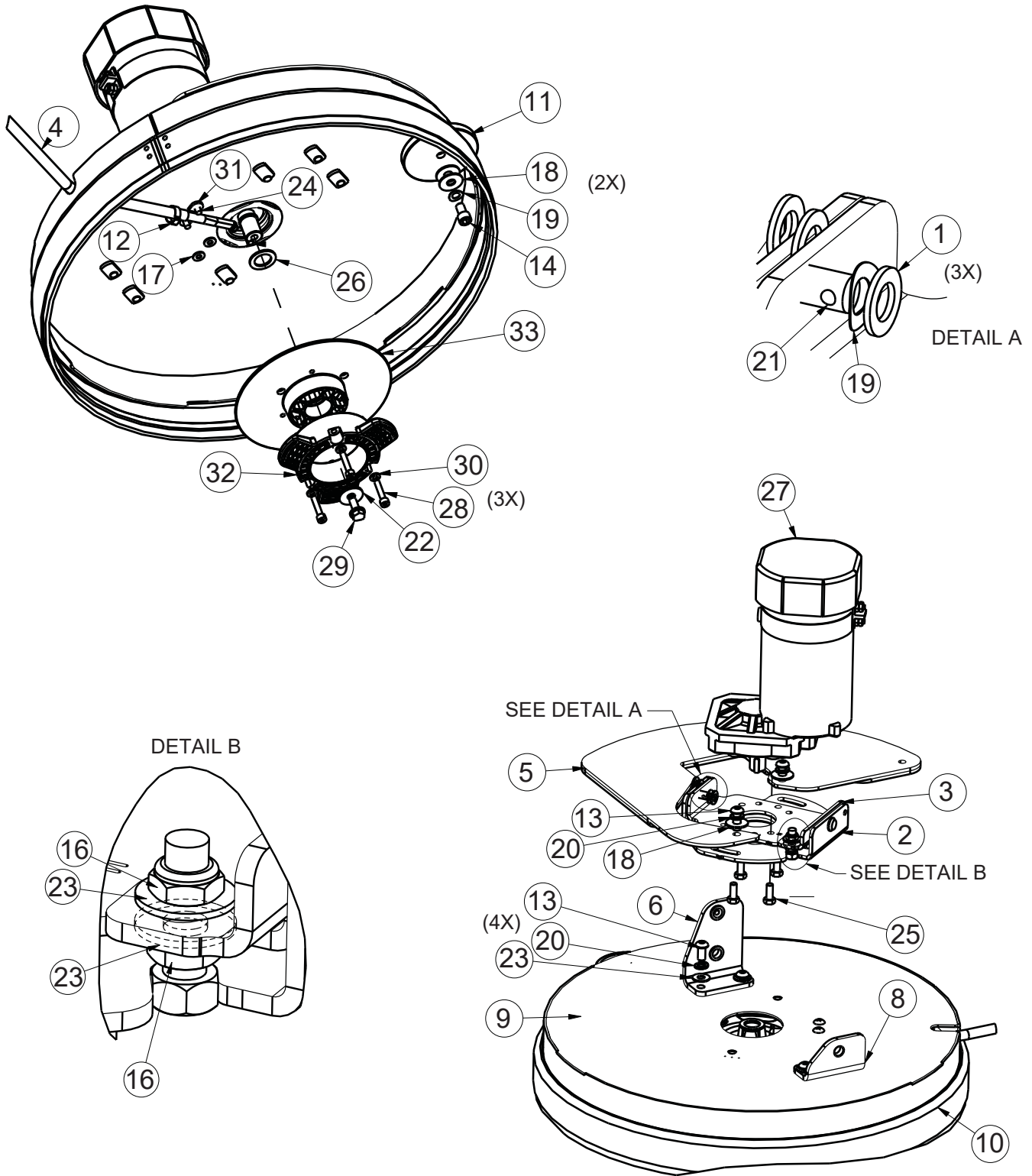


BILL OF MATERIAL - 172050			
ITEM	PART NO.	QTY	DESCRIPTION
1	172045	1	VAC MOUNT WMT
2	172048	1	HOSE, STRETCH 13", 90 CUFF
3	172124	1	EDGE TRIM, .063 X 3.0, BLACK
4	172186	1	FOAM COVER FRONT 1, 1/2 THICK
5	172187	1	FOAM COVER FRONT 2, 1/2" THICK
6	172188	.5	FOAM TAPE, 1/2" SQ X 16.5"
7	450095	1	CLAMP-CRIMP 1.75" OD
8	711160	4	SCR-HI/LO 10 X .625 BLACK ZINC
9	711503	4	WASHER-FLAT #10 X .50 ZP
10	715967	1	DECAL - WARNING, DO NOT PICK UP (NOT SHOWN)
11	747607-1	1	VAC MOTOR ASY, 24V PERIF BYPASS
	747665-1		VAC MOTOR ASSY, HOSP VERSION



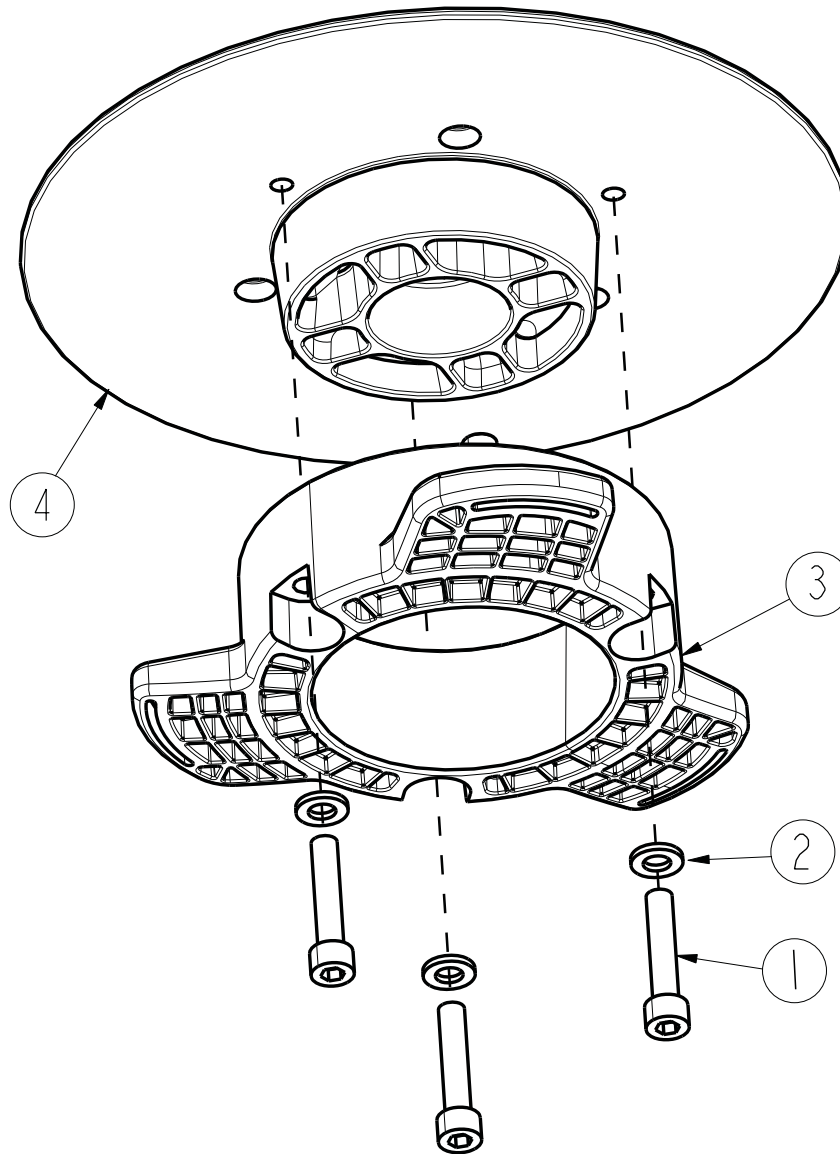
**BILL OF MATERIAL - 172090**

ITEM	PART NO.	QTY	DESCRIPTION
1	81-166-A	6	WASHER-FLAT .390 X .687 ZP
2	172040	1	WELDMENT-DECK ANGLE ADJUST
3	172044	1	PLATE MOTOR MOUNT
4	241097	1	HOSE-WIRE REINF 3/8 X 31"
5	172210	1	SPACER, HUB
6	172296	1	BKT, E1720 DECK MOUNT RT
7	172297	1	BKT, E1720 DECK MOUNT LEFT
8	172363-1	1	E17 DECK SKIRT
9	172365	1	17" BRUSH DECK WMT
10	210153	1	ROLLER WHEEL
11	450076	1	CLAMP-HOSE 5/8 (.590-.791) SS
12	710990	6	SCR-BHSCS 3/8-24 X .75 ZP
13	710991	1	SCR-HH 3/8-24 X .62 ZP GR 5
14	711375	2	NUT-NYLOC 3/8-16 ZP
15	711504	2	WASHER-FLAT 1/4 SS
16	711507	4	WASHER-FLAT 3/8 X 1.12 X .06
17	711523	3	WASHER-WAVE .37 X .68 X .08
18	711546	6	WASHER-LOCK 3/8 SPLIT ZP
19	711679	2	PIN-CLEVIS 3/8 X .750 ZP
20	711855	1	WASHER-FENDER 3/8 X 1.12 X .10 ZP HARD
21	712301	6	WASHER-FLAT 3/8 X .87 X .06 ZP
22	712565	2	SCR-THMS 1/4-20 X .62 SS
23	712667	2	NUT-NYLOC 1/4-20 SS
24	717024	4	SCR-HH M8-1.25 X 20 ZP GRADE 8.8
25	717025	1	WASHER-FLAT 13/16 X 1.25 X .08 ZP
26	747600	1	MOTOR, 24VDC PM 600W
27	3400125	2	RING-RUE 3/8
28	11127000	3	SCR-SHCS M6X30 SS, ISO4762
29	11717203	1	BLT-HH FLG M8X1.25X20 PRECOTE, ZD 10.9
30	12310256	3	WSR-FLT 6.4X12X1.6, SS DIN125
31	90311663	1	FITTING, WATER NOZZLE W/ MOUNT HOLES
32	90541814	1	DRIVE HUB, PLASTIC, 3-LOBE
33	172096MCH	1	HUB BASE MACHINED

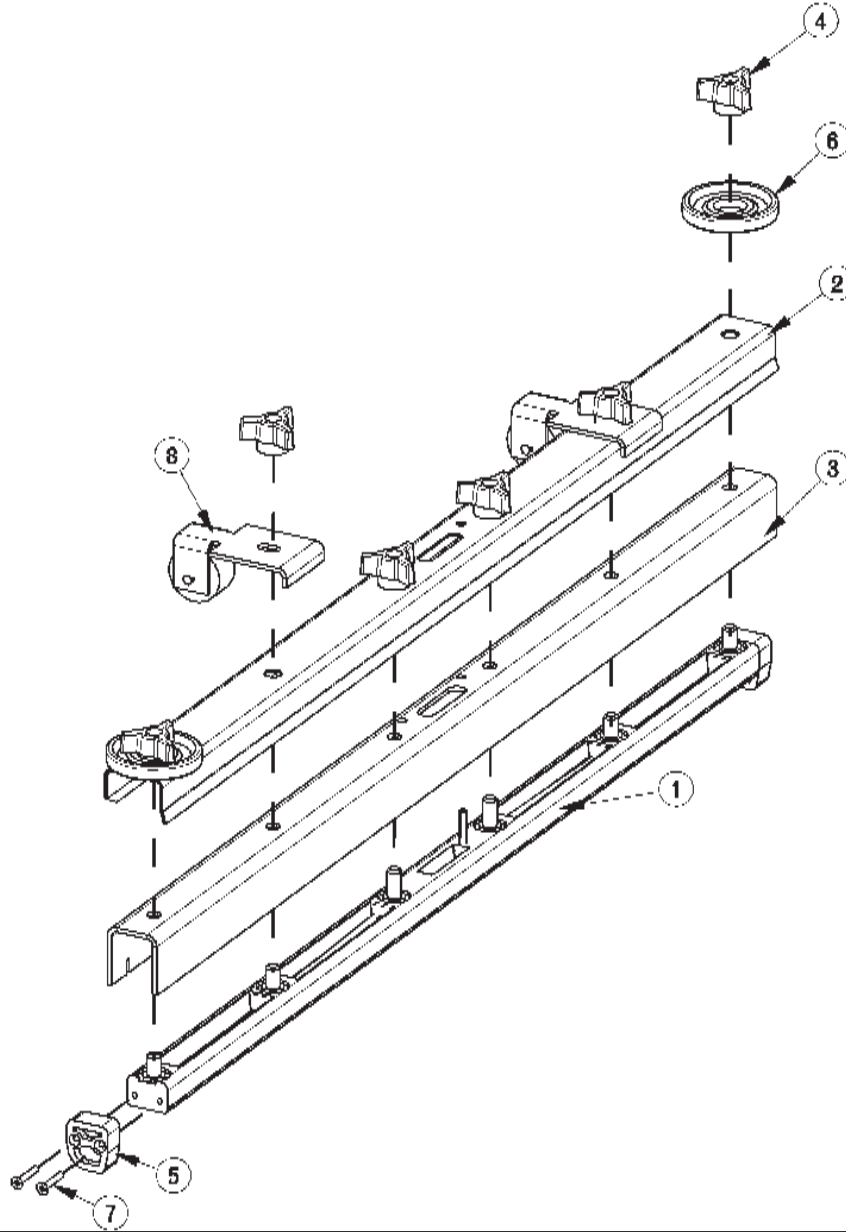


BILL OF MATERIAL - 172100			
ITEM	PART NO.	QTY	DESCRIPTION
1	81-166-A	6	WASHER-FLAT .390 X .687 ZP
2	172040	1	WELDMENT-DECK ANGLE ADJUST
3	172044	1	PLATE MOTOR MOUNT
4	241097	1	HOSE-WIRE REINF 3/8 X 31"
5	172208	1	E20 BRUSH DECK PLATE
6	172296	1	BKT, E1720 DECK MOUNT RT
8	172297	1	BKT, E1720 DECK MOUNT LEFT
9	172375	1	DECK COVER WMT, 20"
10	172384	1	E20 FLOATING BRUSH DECK SKIRT
11	210153	1	ROLLER WHEEL
12	450076	1	CLAMP-HOSE 5/8 (.590-.791) SS
13	710990	6	SCR-BHSCS 3/8-24 X .75 ZP
14	710991	1	SCR-HH 3/8-24 X .62 ZP GR 5
16	711375	2	NUT-NYLOC 3/8-16 ZP
17	711504	2	WASHER-FLAT 1/4 SS
18	711507	4	WASHER-FLAT 3/8 X 1.12 X .06
19	711523	3	WASHER-WAVE .37 X .68 X .08
20	711546	6	WASHER-LOCK 3/8 SPLIT ZP
21	711679	2	PIN-CLEVIS 3/8 X .750 ZP
22	711855	1	WASHER-FENDER 3/8 X 1.12 X .10 ZP HARD
23	712301	6	WASHER-FLAT 3/8 X .87 X .06 ZP
24	712565	2	SCR-THMS 1/4-20 X .62 SS
25	717024	4	SCR-HH M8-1.25 X 20 ZP GRADE 8.8
26	717025	1	WASHER-FLAT 13/16 X 1.25 X .08 ZP
27	747600	1	MOTOR, 24VDC PM 600W
28	11127000	3	SCR-SHCS M6X30 SS, ISO4762
29	11717203	1	BLT-HH FLG M8X1.25X20 PRECOTE, ZD 10.9
30	12310256	3	WSR-FLT 6.4X12X1.6, SS DIN125
31	90311663	1	FITTING, WATER NOZZLE W/ MOUNT HOLES
32	90541814	1	DRIVE HUB, PLASTIC, 3-LOBE
33	172096MCH	1	HUB BASE MACHINED

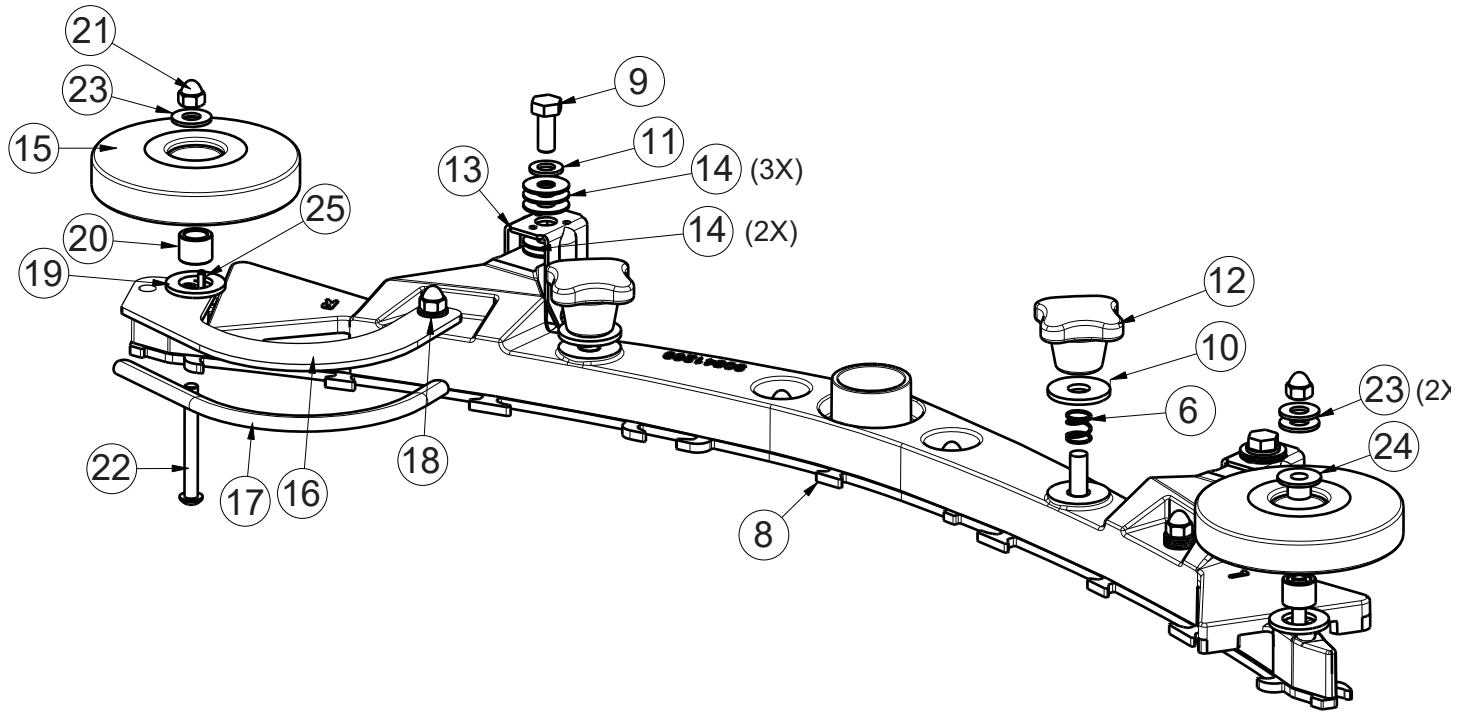
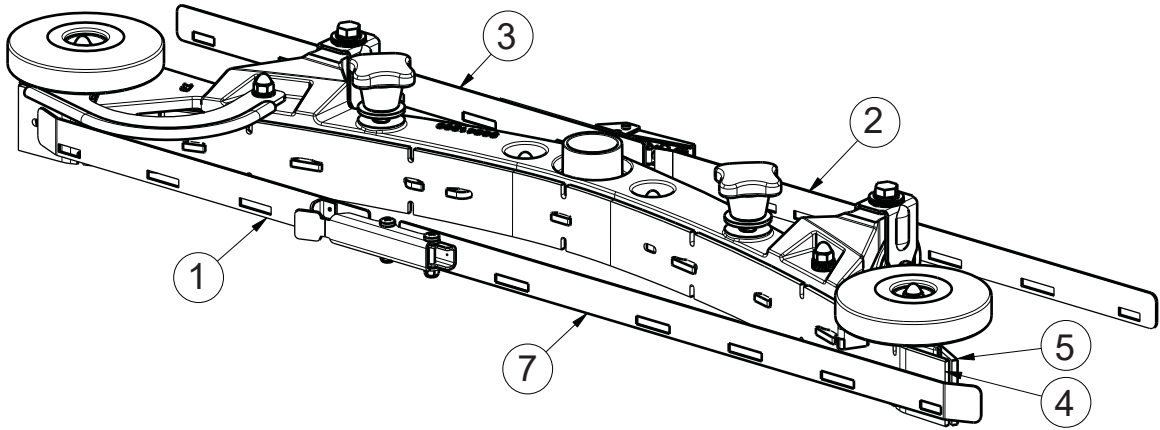




BILL OF MATERIAL - 172510			
ITEM	PART NO.	QTY	DESCRIPTION
1	11127000	3	SCR-SHCS M6X30 SS, ISO4762
2	12310256	3	WSR-FLT 6.4X12X1.6, SS DIN125
3	90541814	1	DRIVE HUB, PLASTIC 3 LOBE
4	172096MCH	1	BASE, DRIVE HUB WITH KEYWAY

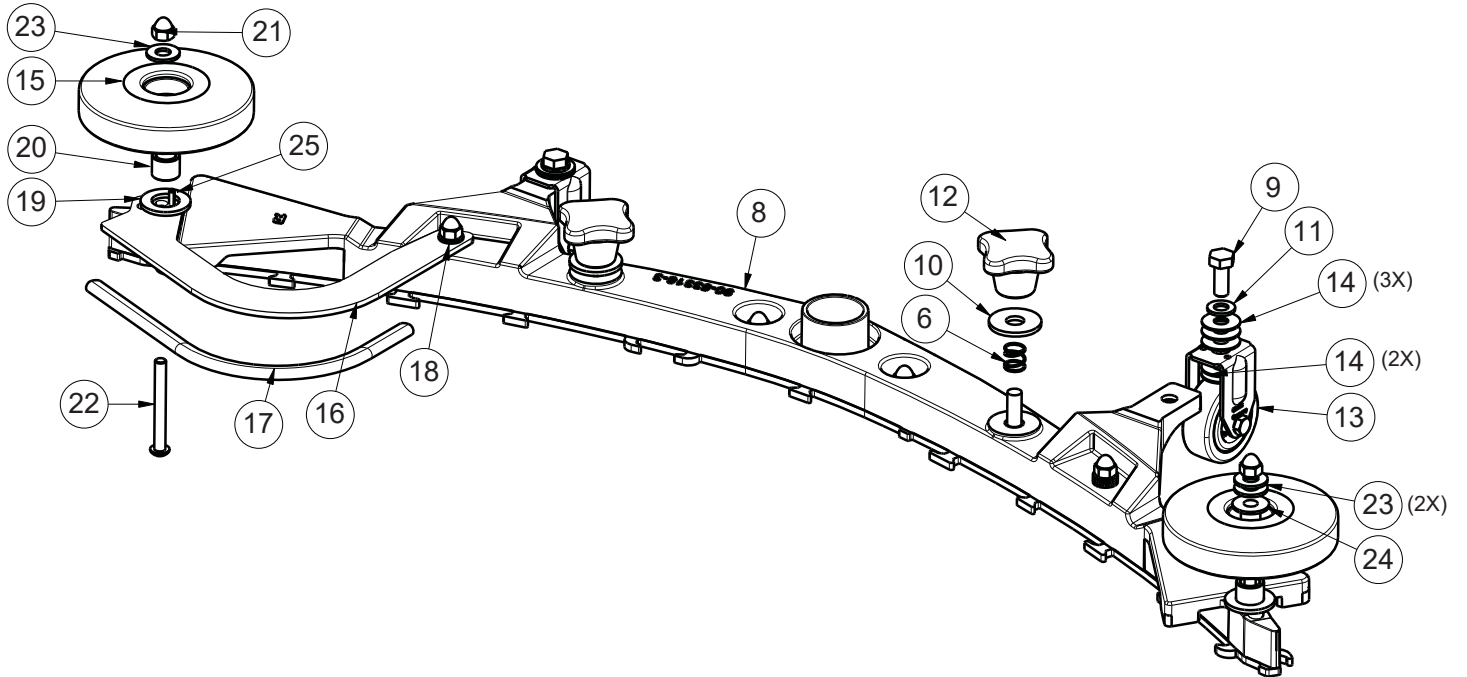
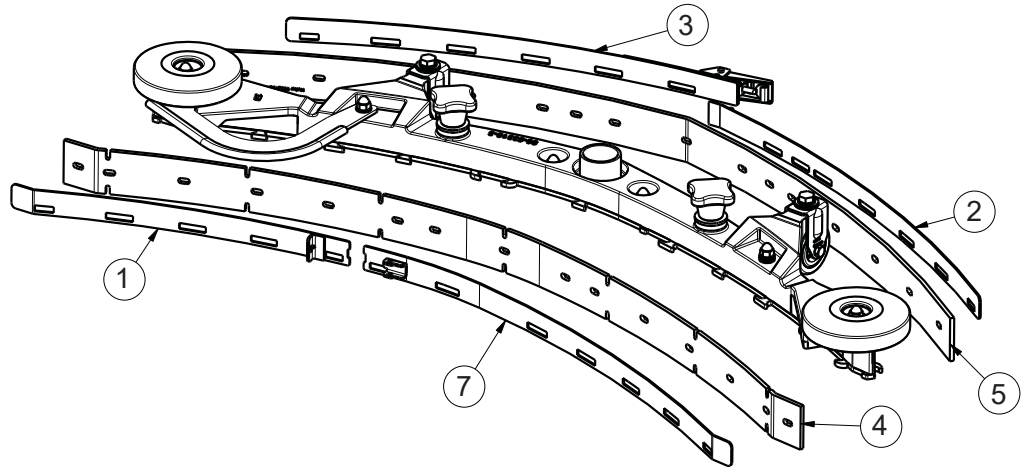


BILL OF MATERIAL - 210080			
ITEM	PART NO.	QTY	DESCRIPTION
1	210023	1	SQUEEGEE CASTING ASY
2	210024	1	SQUEEGEE MOUNT BKT
3	210065	1	SQUEEGEE BLADE 200 GUM
4	430074	6	ADJUSTING NUT 17B/E
5	430076	2	NYLON SQUEEGEE INSERT
6	430085	2	SQUEEGEE BUMPER WHEEL
7	712517	4	SCR-MC 8-32 X 1" ST PL - PH
8	831400	2	WHEEL ASSY

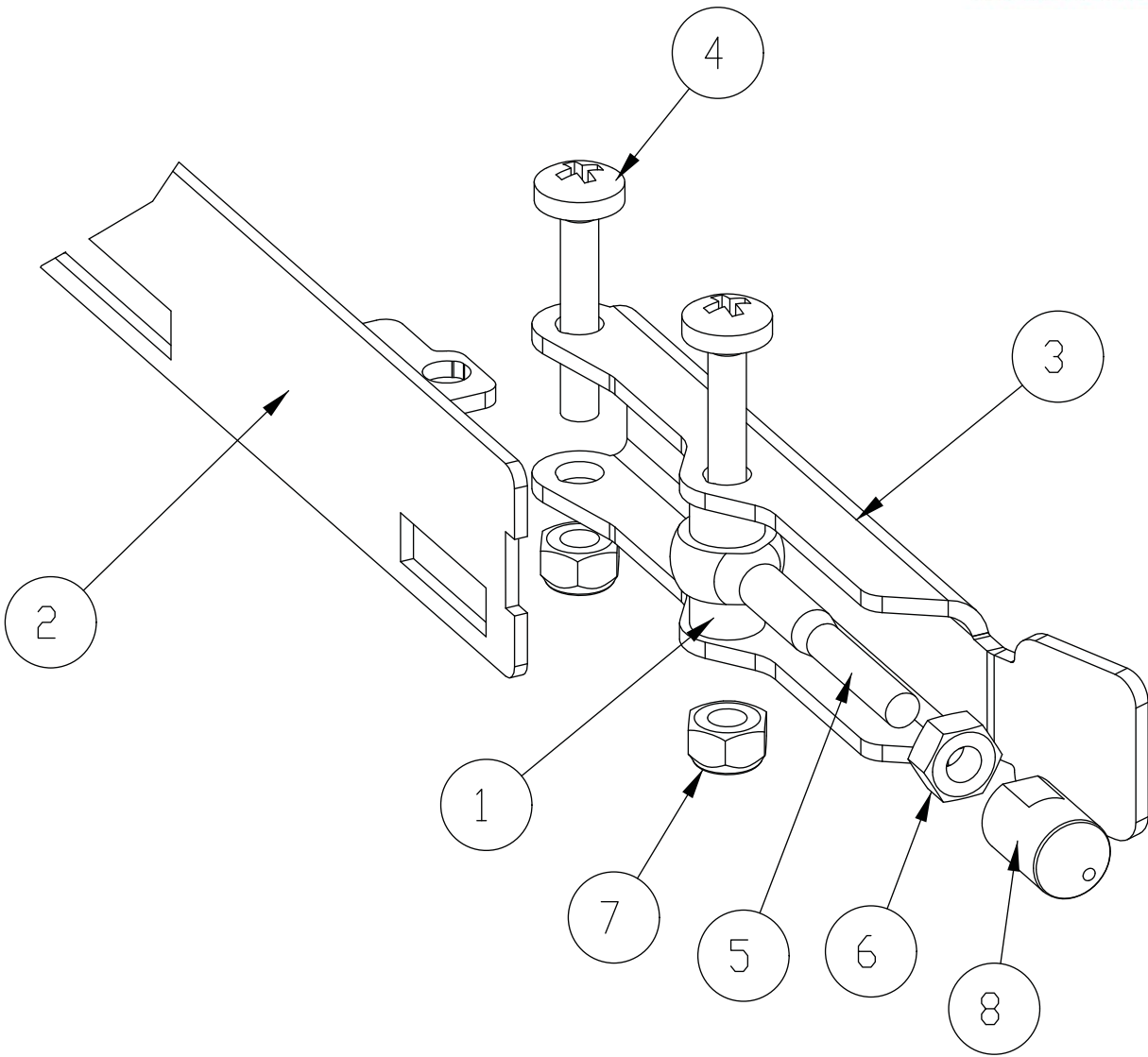


BILL OF MATERIAL - 172530-1			
ITEM	PART NO.	QTY	DESCRIPTION
1	172224	1	STRAP WMT, FRT RT - 30" (760)
2	172226	1	STRAP WMT, REAR LEFT - 30" (760)
3	172227	1	STRAP WMT, REAR RT - 30" (760)
4	172258	1	SQUEEGEE-FRONT BLADE 30", 1/8 PU
5	172259	1	SQUEEGEE-REAR BLADE 30", 1/8 PU
6	172429	2	SPRING, COMP .4 ID X .5FL SS
7	172443	1	STRAP ASM W/ LATCH, FRONT, 30" SQG
8	172531	1	30" SQUEEGEE BASE ASM
9	717030	2	SCR-HH M8-1.25 X 20 SS
10	717040	2	WASHER-FLAT M10.5 X 30 X 2.5 SS
11	12310264	2	WSR-FLT M8.4 X 16 X 1.6 A2 SS 140HV DIN
12	17133026	2	STAR HANDLE, M10, BLACK
13	90513094	2	FIXED CASTER
14	90531112	10	WASHER-FLAT 8.3 x 22 x 1.00mm STAINLESS
15	90548397	2	ROLLER - PLASTIC, 100mm DIA. (4")
16	172257	1	BUMPER, 30" SQG
17	172275	1	EDGE TRIM, 5/16 X 8" BLACK
18	711504	5	WASHER-FLAT 1/4 SS
19	711527	2	WASHER-FLAT .63 X 1.12 X .09
20	430322	2	BUSHING-.435 X .625 X .50 ZINC
21	712591	6	NUT-ACORN 1/4-20 SS
22	712592	2	SCR-BHSCS 1/4-20 X 2.25 SS
23	712772	3	WASHER-FLAT .344 X .75 X .06 SS
24	840202	1	BUSHING-FLG .31 X .435 X .325 NYL
25	3400727	1	PIN-ROLL 1/8 X .50 ZINC

# E20/H20 Rear Squeegee Assembly (Curved)



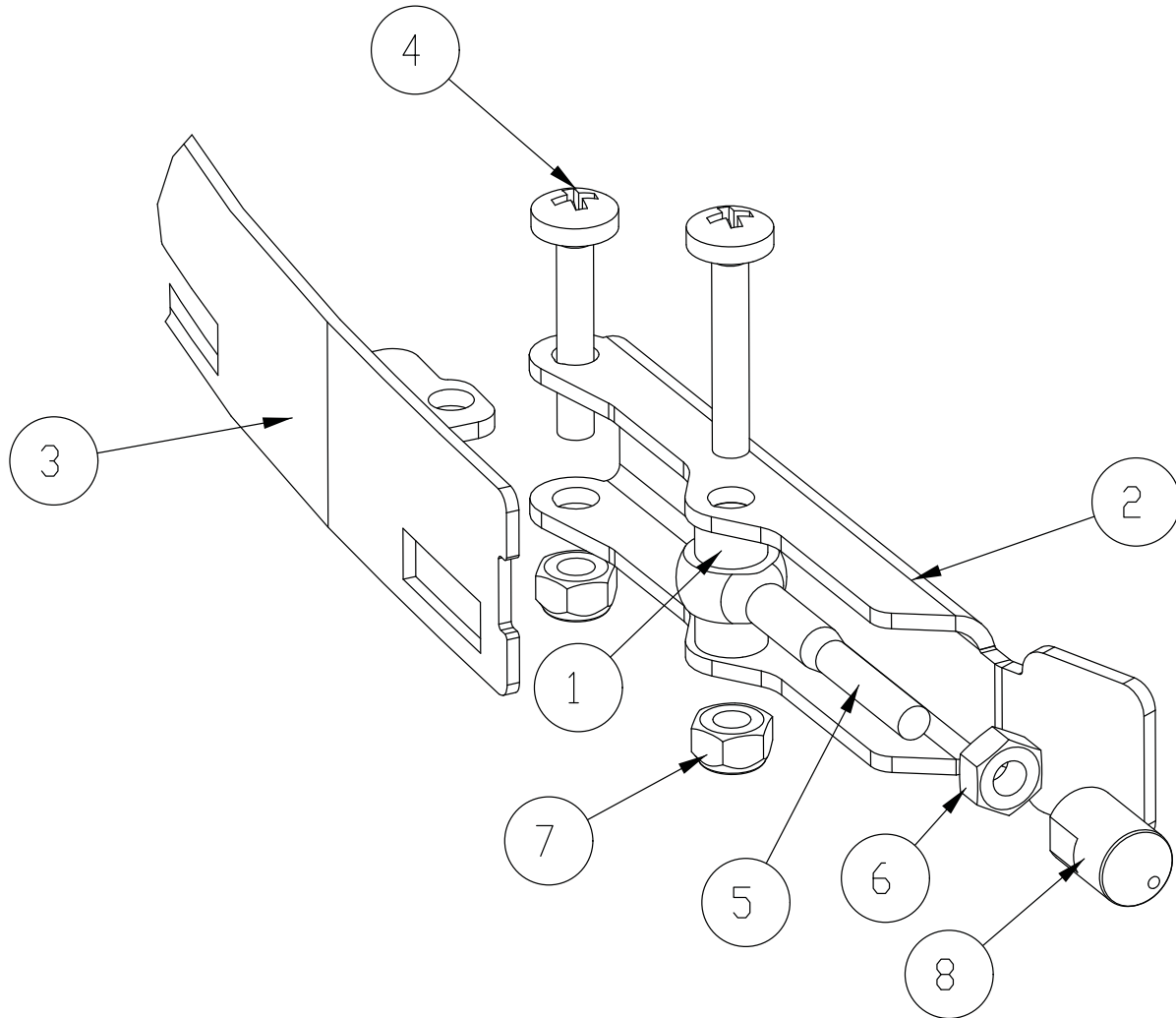
BILL OF MATERIAL - 172534-1			
ITEM	PART NO.	QTY	DESCRIPTION
1	172241	1	STRAP WMT, FRONT RT - 34" (860) SQG
2	172245	1	STRAP WMT, REAR LEFT - 34" (860) SQG
3	172246	1	WELD-STRAP REAR RT - 34" (860) SQG
4	172272	1	SQUEEGEE-FRONT BLADE 34", 1/8 PU
5	172273	1	SQUEEGEE-REAR BLADE 34", 1/8 PU
6	172429	2	SPRING, COMP .4 ID X .5FL SS
7	172440	1	STRAP W/ LATCH, FRONT LEFT, 34" SQG
8	90533183	1	CASTING, SQG BODY 34" (860MM)
9	717030	2	SCR-HH M8-1.25 X 20 SS
10	717040	2	WASHER-FLAT M10.5 X 30 X 2.5 SS
11	12310264	2	WSR-FLT M8.4 X 16 X 1.6 A2 SS 140HV DIN
12	17133026	2	STAR HANDLE, M10, BLACK
13	90513094	2	FIXED CASTER
14	90531112	10	WASHER-FLAT 8.3 x 22 x 1.00mm STAINLESS
15	90548397	2	ROLLER - PLASTIC, 100mm DIA. (4")
16	172271	1	BUMPER, 34" SQG
17	172274	1	EDGE TRIM, 5/16 X 10" BLACK
18	711504	5	WASHER-FLAT 1/4 SS
19	711527	2	WASHER-FLAT .63 X 1.12 X .09
20	430322	2	USHING-.435 X .625 X .50 ZINC
21	712591	6	NUT-ACORN 1/4-20 SS
22	712592	2	SCR-BHSCS 1/4-20 X 2.25 SS
23	712772	3	WASHER-FLAT .344 X .75 X .06 SS
24	840202	1	BUSHING-FLG .31 X .435 X .325 NYL
25	3400727	1	PIN-ROLL 1/8 X .50 ZINC



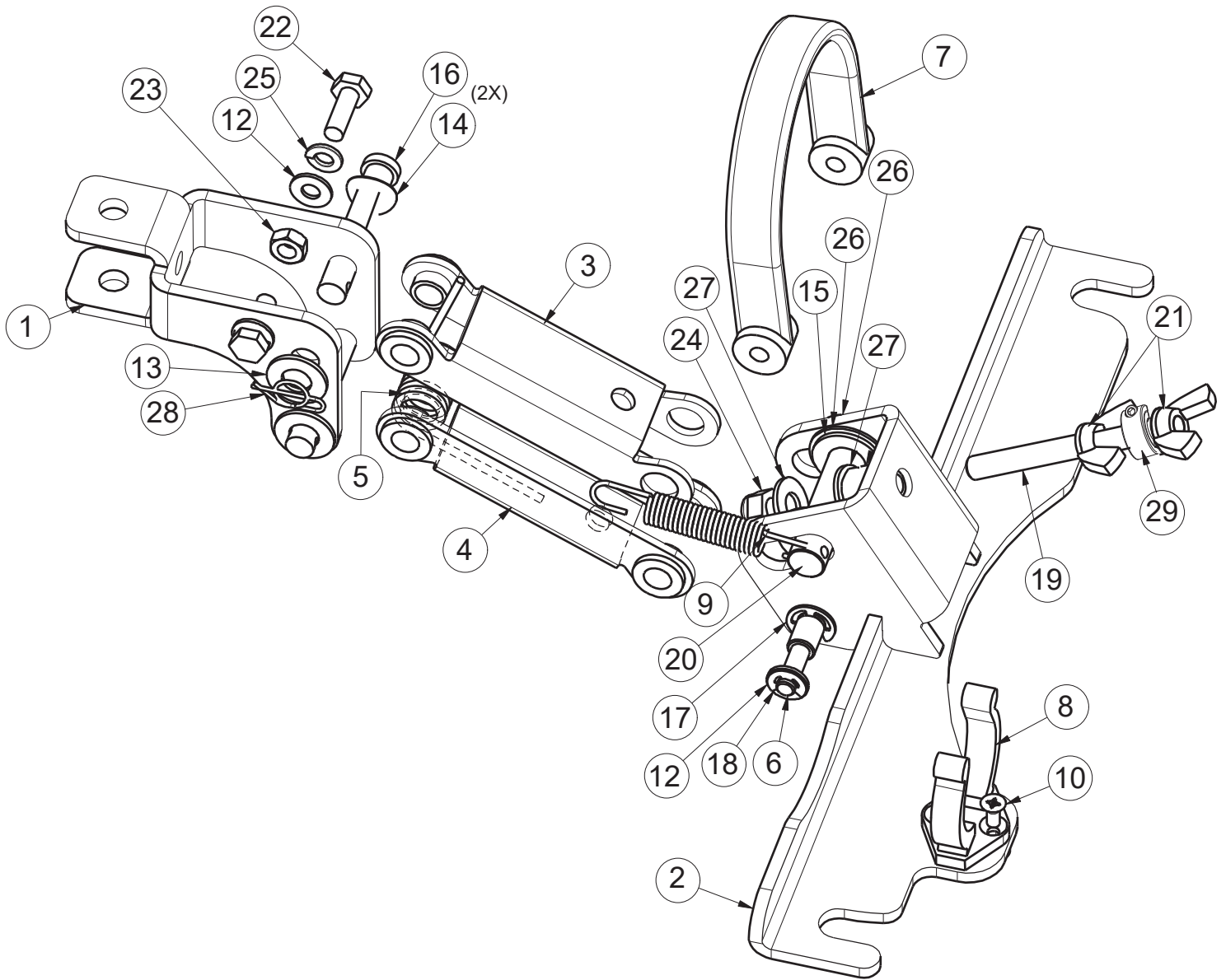
**BILL OF MATERIAL - 172443**

ITEM	PART NO.	QTY	DESCRIPTION
1	172074	2	SPACER, 5/16OD X 17GA, ALUM
2	172223	1	STRAP WMT, FRT LEFT-30" (760)
3	172234	1	LEVER, 90535758
4	11175494	2	SCR-MC M5 X 25 SS DIN7985
5	11518313	1	BLT-EYE M5 X 40 SS
6	12022430	1	NUT- HEX, M5, SS DIN934
7	12040283	2	NUT- HEX, M5 NYLON LOCK, SS DIN985
8	90513631	1	PIN, THD 90513631





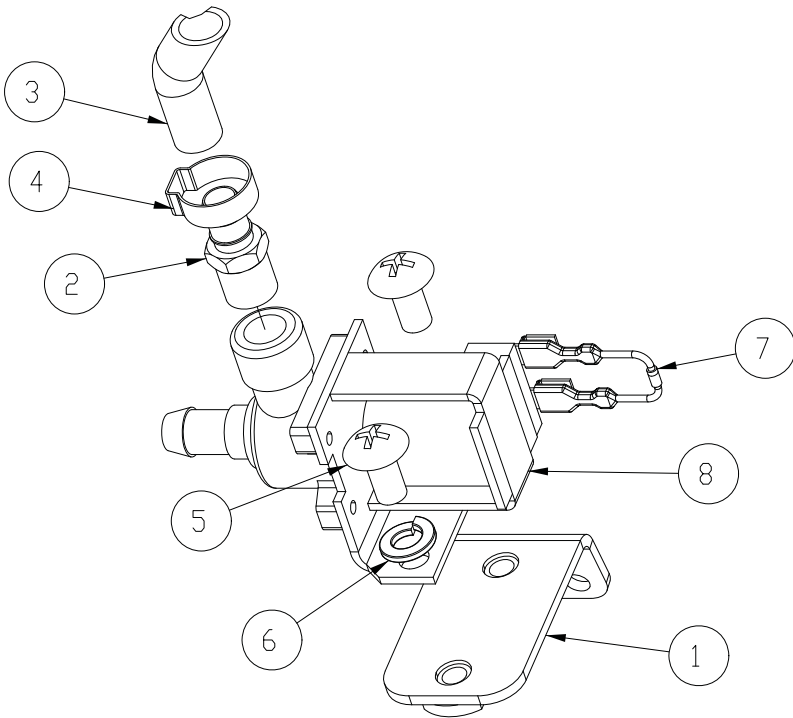
BILL OF MATERIAL - 172440			
ITEM	PART NO.	QTY	DESCRIPTION
1	172074	2	SPACER, 5/16OD X 17GA, ALUM
2	172234	1	LEVER, 90535758
3	172240	1	STRAP WMT, FRONT LEFT
4	11175494	2	SCR-MC M5 X 25 SS DIN7985
5	11518313	1	BLT-EYE M5 X 40 SS
6	12022430	1	NUT- HEX, M5, SS DIN934
7	12040283	2	NUT- HEX, M5 NYLON LOCK, SS DIN985
8	90513631	1	PIN, THD 90513631



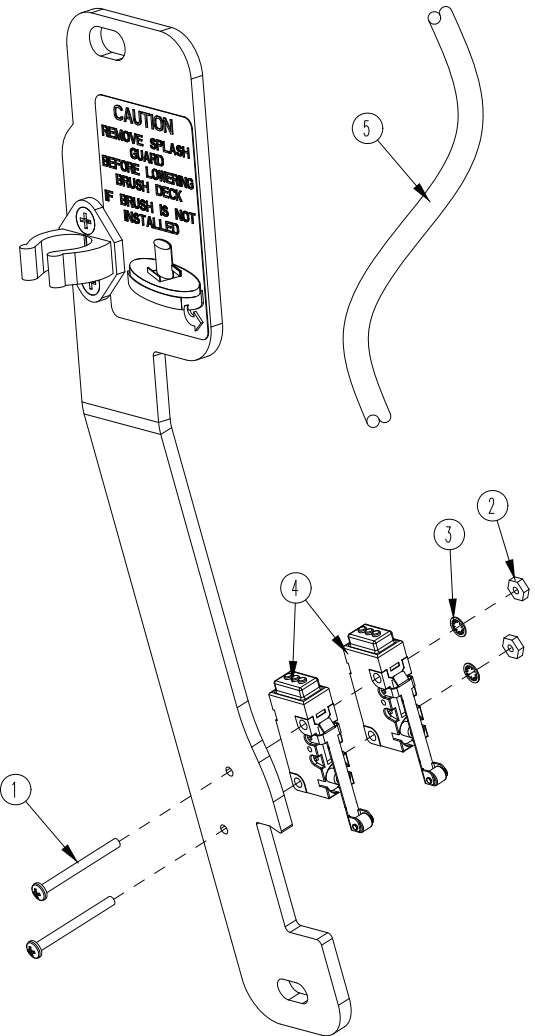
**E17/E20/H20 Squeegee Mechanism Assembly BOM**

**BILL OF MATERIAL - 172150**

ITEM	PART NO.	QTY	DESCRIPTION
1	172134	1	BKT, SQG HINGE
2	172155	1	SQUEEGEE MOUNT WMT
3	172196	1	UPPER SQG LINK
4	172197	1	LOWER SQG LINK
5	172261	1	SPRING, TORSION 1720 SQG
6	172352	1	PIN, 3/8 X 3.0, SQG STRAP
7	172357	1	STRAP, 9" PU, BLACK
8	260579	1	CLIP-TOOL 1.5 INCH HOSE
9	430051	1	SPRING-RETURN .313 X .438 X 2.93 SS
10	710528	2	SCR-FHMS 8-32 X .37 BRASS
11	711420	1	NUT-JAM 5/16-18 ZP
12	711504	4	WASHER-FLAT 1/4 SS
13	712767	2	WASHER-FLAT .406 X .75 X .035 SS
14	711523	2	WASHER-WAVE .37 X .68 X .08
15	711592	2	WASHER-FLAT 1/2 X .90 X .064 NYLON
16	711678	2	PIN-CLEVIS 3/8 X 2 1/4 ZP
17	711717	2	RET RING-E EXT .37
18	711720	2	RET RING-E EXT .25
19	712147	1	ROD-THD 5/16-18 X 3.25 SS
20	712148	1	PIN-CLEVIS 1/2 X 2.25 WITH HOLE
21	712157	2	NUT-WING 5/16-18 SS
22	712562	2	SCR-HH 1/4-20 X .75, 18-8 SS
23	712665	2	NUT-HEX 1/4-20 SS
24	712683	1	NUT-NYLOC 5/16-18 SS
25	712758	2	WASHER-LOCK 1/4 SPLIT SS
26	712760	3	WASHER-FLAT .56 X 1.06 X .04 SS
27	712772	2	WASHER-FLAT .344 X .75 X .06 SS
28	3400125	1	RING-RUE 3/8
29	713528	1	COLLAR-THREADED CLAMP 5/16-18X5/16-BK OX



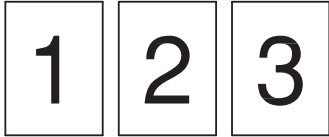
BILL OF MATERIAL - 172169			
ITEM	PART NO.	QTY	DESCRIPTION
1	172168	1	BKT, BD SOLENOID MOUNT
2	320264	1	FITTING BRASS - 3/8 DBL BARB X 1/4MPT
3	450055	1	HOSE-NYLO REINF 3/8 X 9"
4	450076	1	CLAMP-CRIMP 185R SS
5	710196	2	SCR-MC 5/16-18 X .62
6	711545	2	WSR-HELICAL 5/16
7	740482	1	DIODE ASY, 1N4007 W/PIGGY
8	740493	1	WATER VALVE 24VDC



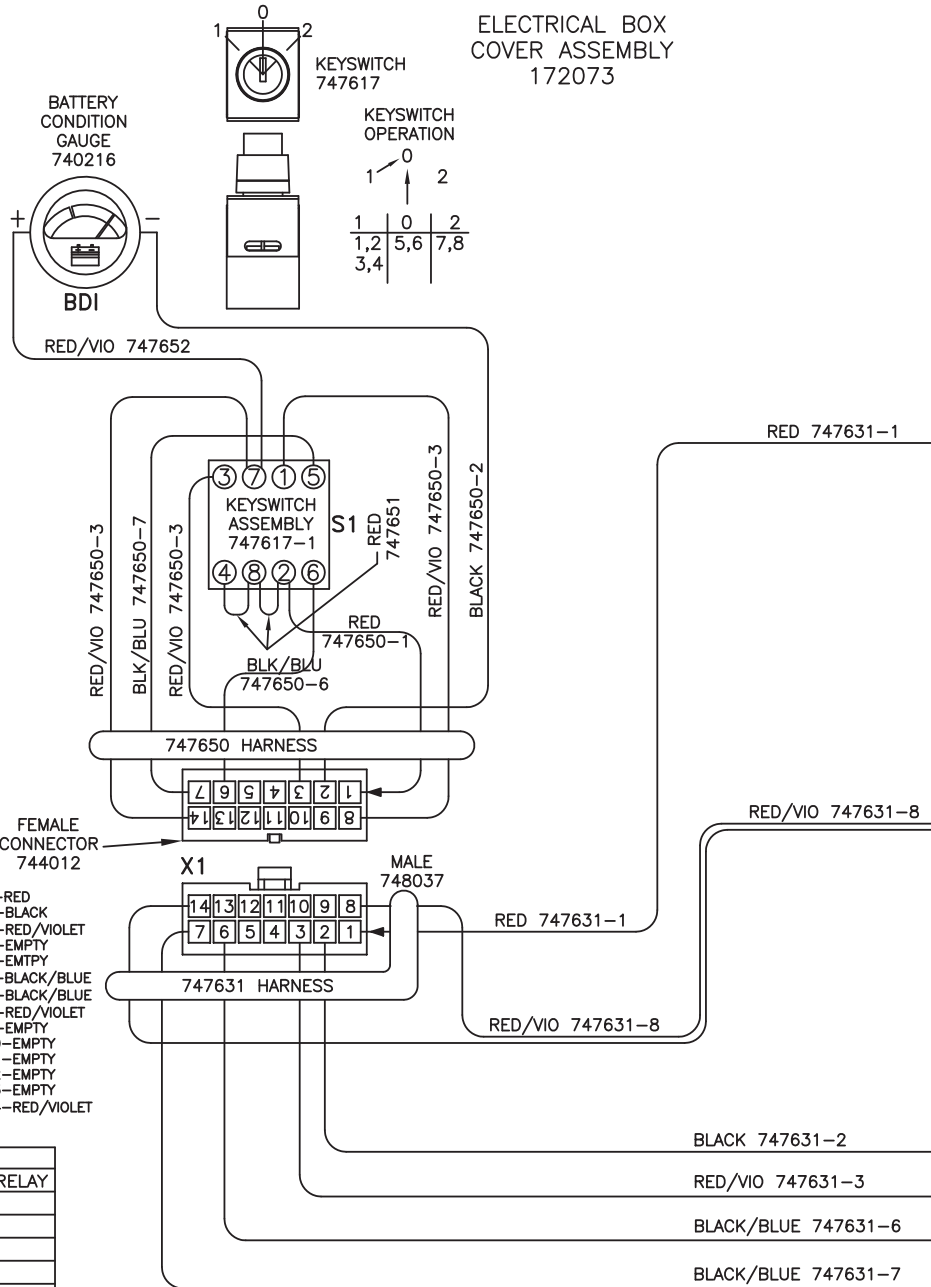
BILL OF MATERIAL -			
ITEM	PART NO.	QTY	DESCRIPTION
1	710495	2	SCR-MC 4-40 X 1.25 STL Z
2	711428	2	NUT-HEX 4-40
3	712326	2	WSR-INT LOCK #4
4	747603-2	2	SWITCH ASY, MICRO ROLLER W/PACK/CONDUIT
5	747660	1	HARNESS, SOLENOID KIT E1720BD

# 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

X1:MAIN KEYSWITCH ASSEMBLY: 747617-1

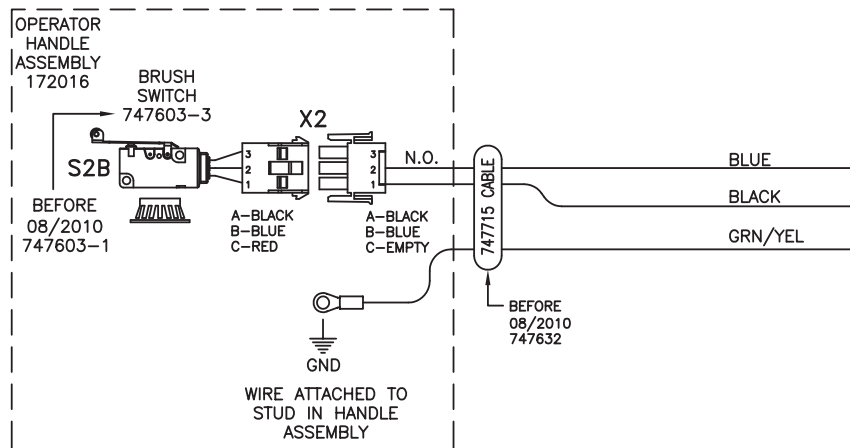
PIN #	COLOR	WHERE TO/FROM
1	RED	X13: BATTERY CHARGER INTERNAL RELAY
2	BLACK	RELAY COILS: 0V
3	RED/VIOLET	BRUSH MOTOR RELAY COIL: 24VDC
4	-	-
5	-	-
6	BLACK/BLUE	BRUSH RELAY NORMALLY CLOSED
7	BLACK/BLUE	BRUSH UNLOAD SWITCH P:B
8	RED/VIOLET	X12: MAIN RELAY COIL: 24VDC
9	-	-
10	-	-
11	-	-
12	-	-
13	-	-
14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

BATTERY CHARGER: 957761 or 957760

	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

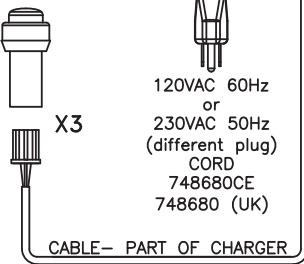
-	RED	BATTERY 24VDC: +
-	BLACK	BATTERY 0VDC: -
-	GREEN/YELLOW	GROUND
-	BLACK/BLUE	BRUSH UNLOAD CIRCUIT
-	RED/BLACK	BRUSH UNLOAD CIRCUIT:MICRO SWITCH
-	RED/VIOLET	24VDC AFTER MAIN KEYSWITCH
X15	GREY/RED	OPTIONAL POWER 24VDC: 3A MAX
X16	GREY/BLACK	OPTIONAL POWER 0VDC: 3A MAX



2

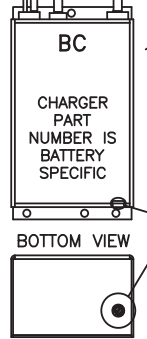
**ELECTRICAL BOX ASSEMBLY**  
172070-120  
172070-230

CHARGER STATUS INDICATOR  
747614  
CSI



120VAC 60Hz  
or  
230VAC 50Hz  
(different plug)  
CORD  
748680CE  
748680 (UK)

CHARGER  
957760  
IEC60320 C14



**BATTERY CHARGER**  
100-240V~ 50/60Hz  
957761 (115VAC)  
NEMA 5/15P  
957760 (230VAC)  
IEC 60320 C14



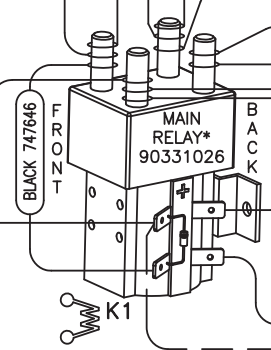
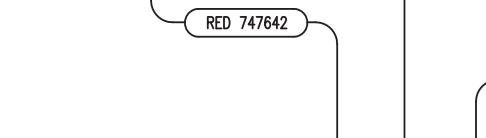
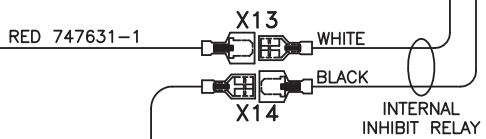
CHARGING PROFILES  
1. 956712 12V 105Ah-FLOODED(-1)  
2. 956140 12V 140Ah-FLOODED(-2)  
3. 956135 12V 135Ah-GEL(G-3)  
4. 956100 12V 100Ah-GEL(G-4)

BLACK 747637-2

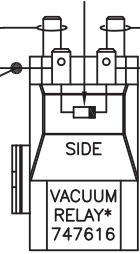
RED 747637-1

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



D3 DIODE  
740482



SPLIT CONDUIT  
747627

RED/VIO 747634-2

RED/VIO 747634-1

BLK/VIO 747697-3  
RED/VIO 747697-1

SPLIT CONDUIT  
747625

RED 747633-1

BLACK 747633-2

RED/VIO 747635-1

RED/VIO 747635-2

RED 747638

BLACK 747639

GRN/YEL 747654

RED/BLK 747636

BLK/BLU 747631-7

BLACK 747631-2

RED/VIO 747631-3

BLK/BLU 747631-6

BLUE

BLACK

GRN/YEL

747632 CABLE

X10

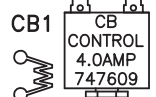
X11

WIRES ATTACHED TO STUD IN ELECTRICAL BOX  
GND

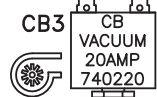
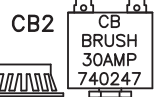
D2 DIODE  
740482

RED/VIO 747631-3

GRY/RED 747631-3



ACCESSORY CONNECTION  
BLACK TAPED



X18

X17

X16

X15

X14

X13

X12

X11

X10

X9

X8

X7

X6

X5

X4

X3

X2

X1

OPTIONAL HOUR METER  
747624  
K-E1720HM

HM

GRY/BLK 747657

GRY/BLK 747656

GRY/BLK 747657

GRY/RED 747656

RED 747641

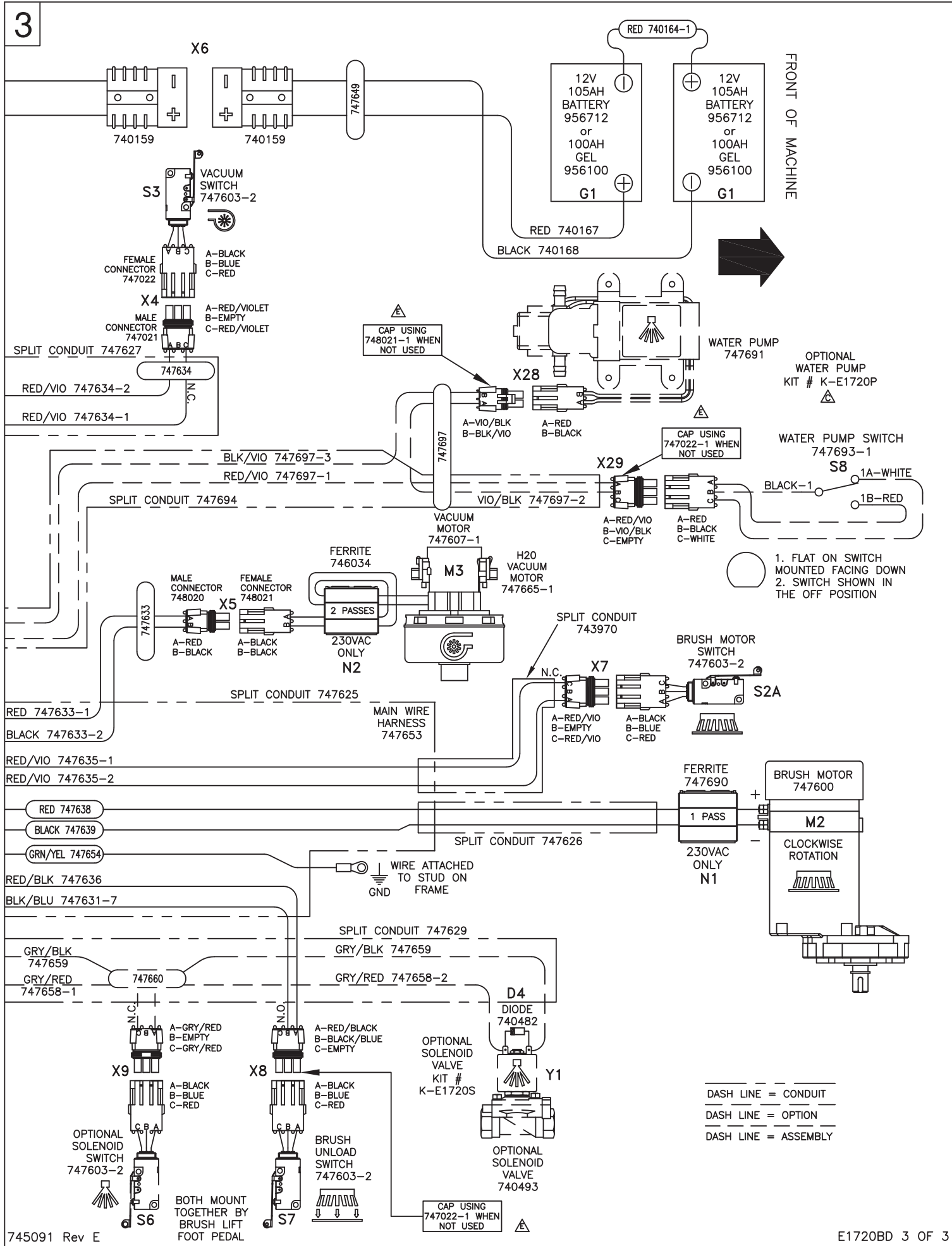
RED 747640

RED 747643

RED 747642

RED 747645

RED 747644





E1720BD PART REFERENCE LIST  
Schematic 745091

REFERENCE #	COMPONENT NAME	PART NUMBER
M1 (optional)	PUMP, WATER (KIT K-E1720P)	748691
M2	MOTOR, BRUSH	748692
M3	MOTOR, VACUUM ASSEMBLY	747607-1
M3 (model specific)	MOTOR, VACUUM ASSEMBLY (H20 only)	747665-1
Y1 (optional)	SOLENOID VALVE, WATER (KIT K-E1720S)	740493
K1	RELAY, MAIN	90331026
K2	RELAY, BRUSH MOTOR	747615
K3	RELAY, VACUUM	747616
CB1	CIRCUIT BREAKER 4.0A, CONTROL	747609
CB2	CIRCUIT BREAKER 30A, BRUSH MOTOR	740247
CB3	CIRCUIT BREAKER 20A, VACUUM MOTOR	740220
S1	KEYSWITCH	747617
S2A	SWITCH, BRUSH MOTOR (at motor)	747603-2
S2B	SWITCH, BRUSH MOTOR (handle)	748603-1
S3	SWITCH, VACUUM MOTOR	748603-2
S6	SWITCH, BRUSH UNLOAD	748603-2
S7 (optional)	SWITCH, SOLENOID (KIT K-1720S)	747603-2
S8 (optional)	SWITCH, PUMP- OFF AISLE WAND (KIT K-1720P)	747693-1
CSI	CHARGER STATUS INDICATOR	747614
HM (optional)	HOUR METER (KIT K-E1720HM)	747624
BC (model specific)	BATTERY CHARGER 115VAC (battery type specific)	957761 (-1 or G-4)
BC (model specific)	BATTERY CHARGER 230VAC (battery type specific)	957760 (-1 or G-4)
G1	BATTERY, 12V 105AH (2 REQUIRED)	956712
G1 (optional)	BATTERY, GEL 12V 100AH (2 REQUIRED)	956100
N1	FERRITE, BRUSH MOTOR	747690
N2	FERRITE, VACUUM MOTOR	746034
D1	DIODE, MAIN RELAY	Part of K1
D2	DIODE ASM, BRUSH MOTOR RELAY	740482
D3	DIODE ASM, VACUUM MOTOR RELAY	740482
D4 (optional)	DIODE ASM, SOLENOID VALVE (KIT K-E1720S)	740482

REFERENCE #	CONNECTOR FUNCTION	PART # -female	PART # -male
X1	KEYSWITCH (S1)	744012	748037
X2	SWITCH, BRUSH MOTOR (S2B)	747022	747021
X3	CHARGER STATUS INDICATOR (CSI)	Part of CSI	Part of BC
X4	SWITCH, VACUUM (S3)	747022	747021
X5	MOTOR, VACUUM (M3)	748021	748020
X6	BATTERY CONNECTOR	740159	740159
X7	SWITCH, BRUSH MOTOR (S2A)	747022	747021
X8	SWITCH, BRUSH UNLOAD (S4)	747022	747021
X9	SOLENOID VALVE, WATER (Y1)	747022	747021
X10	OPERATOR HANDLE CABLE	741093	740697
X11	OPERATOR HANDLE CABLE	740366	740697
X12	KEYSWITCH (S1)- MAIN RELAY COIL (K1)	741093	741165
X13	BATTERY CHARGER (BC)- INTERNAL RELAY	740366	740697
X14	BATTERY CHARGER (BC)-INTERNAL RELAY	740366	740697
X15	SOLENOID (Y1) /HOUR METER CONNECTION (HM)	740366	741165
X16	SOLENOID (Y1) /HOUR METER CONNECTION (HM)	740366	741165
X17	OPTIONAL HOUR METER (HM) WIRE-747656	740366	741165
X18	OPTIONAL HOUR METER (HM) WIRE-747657	740366	741165
X28 (optional)	SWITCH, TOGGLE WATER PUMP (S8)	747022	747021
X29 (optional)	PUMP, OFF AISLE WAND (M1)	748021	748020





## Minuteman International Made Simple Commercial Limited Warranty

### REVISION O EFFECTIVE 4/1/2016

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 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 pre-filters 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.



Model	Parts	Labor	Poly	Travel**
Cord Electric Group	5yrs	3yrs	12yrs	90 days
Battery Operated Group	5yrs	3yrs	12yrs	90 days

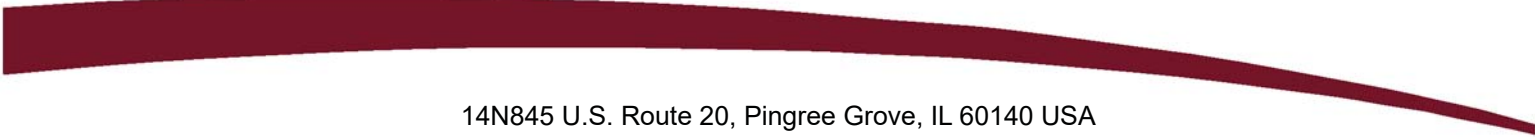
**Exceptions.....**

Model	Parts	Labor	Poly	Travel**
Port A Scrub, all models	1yr	6months	12yrs	90 days
A3S Blower	1yr	1yr	0	0
Phenom Dual Motor Upright Vacuums	2yrs	2yrs	0	0
Explosion Proof Vacuum	1yr	1yr	0	0
Propane Burnisher	1yr	1yr	0	90 days
**Travel, 2 hours max				

<i>Stand-alone Battery Chargers:</i>	One year
<i>Replacement Parts:</i>	Ninety days
<i>Batteries:</i>	0-3 months full replacement, 4-12 months pro-rate
<i>Polypropylene Plastic Tanks:</i>	12yr warranty, no additional labor

# ***“Excellence Meets Clean”***

**Minuteman is a Full Line Manufacturer of Sweepers and Scrubbers,  
for Industrial Facilities.**



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