



Parts Manual
Bulldog 20" Brush Drive
Walk Behind Scrubber

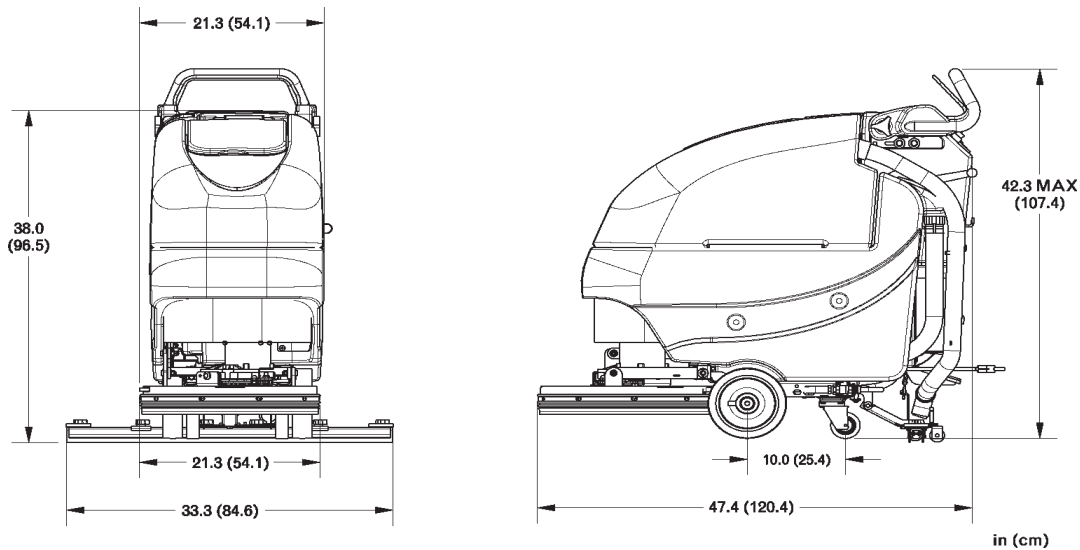
Technical Specifications



Model **Bulldog 20" Brush Drive Walk Behind Scrubber**

Model No. E20BDQP-FC / E20BDQPG-FC

Current (Max)	32 amps
Battery Capacity (Lead Acid)	115Ah @20 hr
Battery Capacity (Gel)	100Ah @20 hr
Sound Level	69 dBA
Cleaning path width	20 in (51 cm)
Squeegee width	34 in (86 cm)
Theoretical productivity	15,000 ft ² /hr (1,394 m ²)
Working speed	1.7 mph (2.7 km per hr)
Rated voltage	24 volts
Vacuum flow	65 cfm (110 m3/hr)
Vacuum waterlift	45 inches (112mbar)
Vacuum power	.60 HP (450 W)
Brush type	Disc
Brush motor(s) power	3/4 HP (560W)
Number of brushes	1
Brush RPM	180 RPM
Aqua-Stop equipped	Coming Soon
Solution capacity	12 Gal (45 liters)
Recovery capacity	13 Gal (49 liters)
Working Grade	2%
Weight with batteries	313 lbs (142 kg)
Weight without batteries	203lbs (92 kg)
Dimensions (LxWxH)	47.4 x 21.3 x 42.3 (120.4 x 54.1 107.4 cm)



For Safety When Servicing or Maintaining Machine

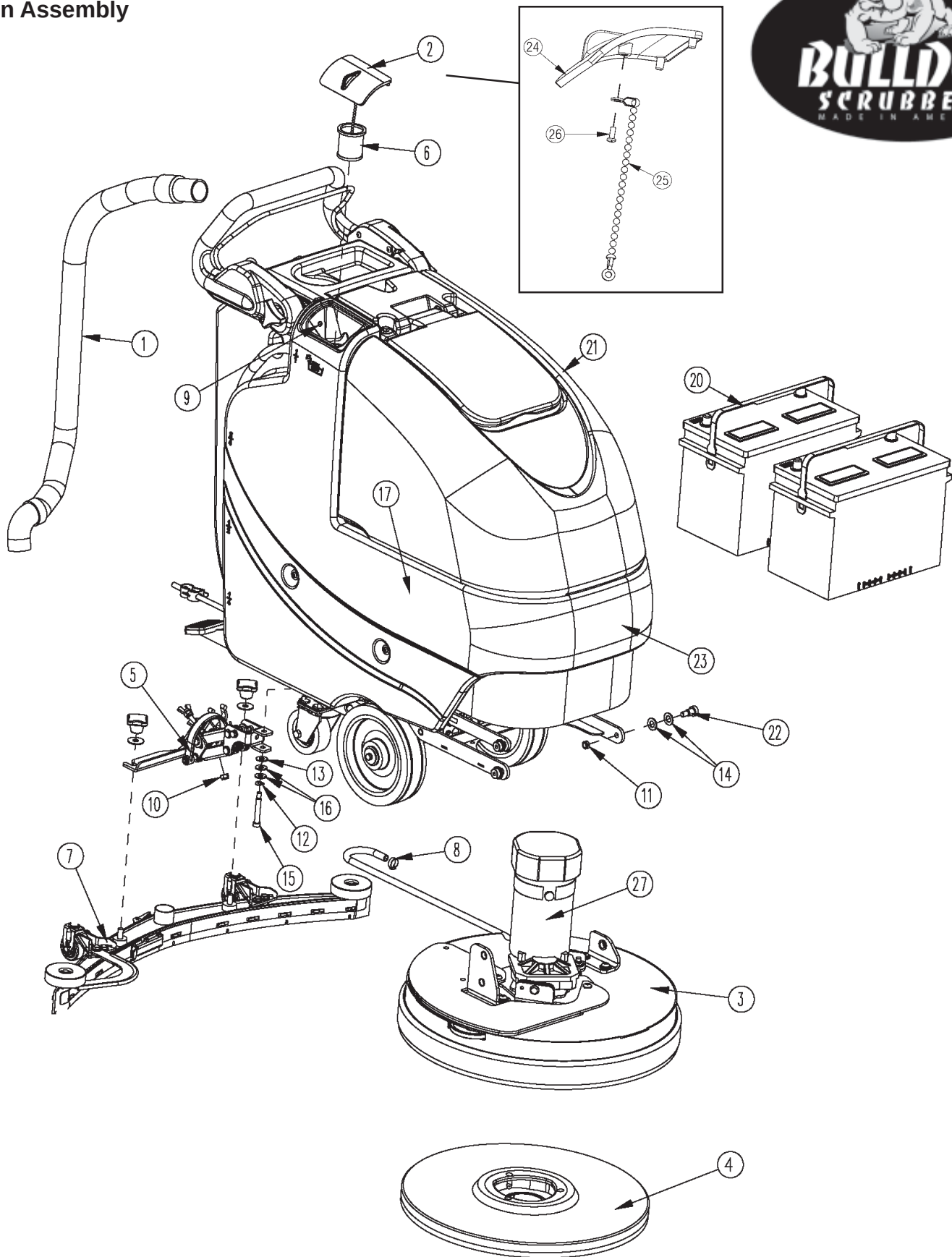
- Stop on level surface.
- Disconnect the power to the machine by pulling the red Battery Connector located under the recovery tank near the batteries.
- Avoid moving parts. Do not wear loose jackets, shirts, or sleeves when working on machine.
- Avoid contact with battery acid. Battery acid can cause 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 Manufacturer supplied replacement parts.



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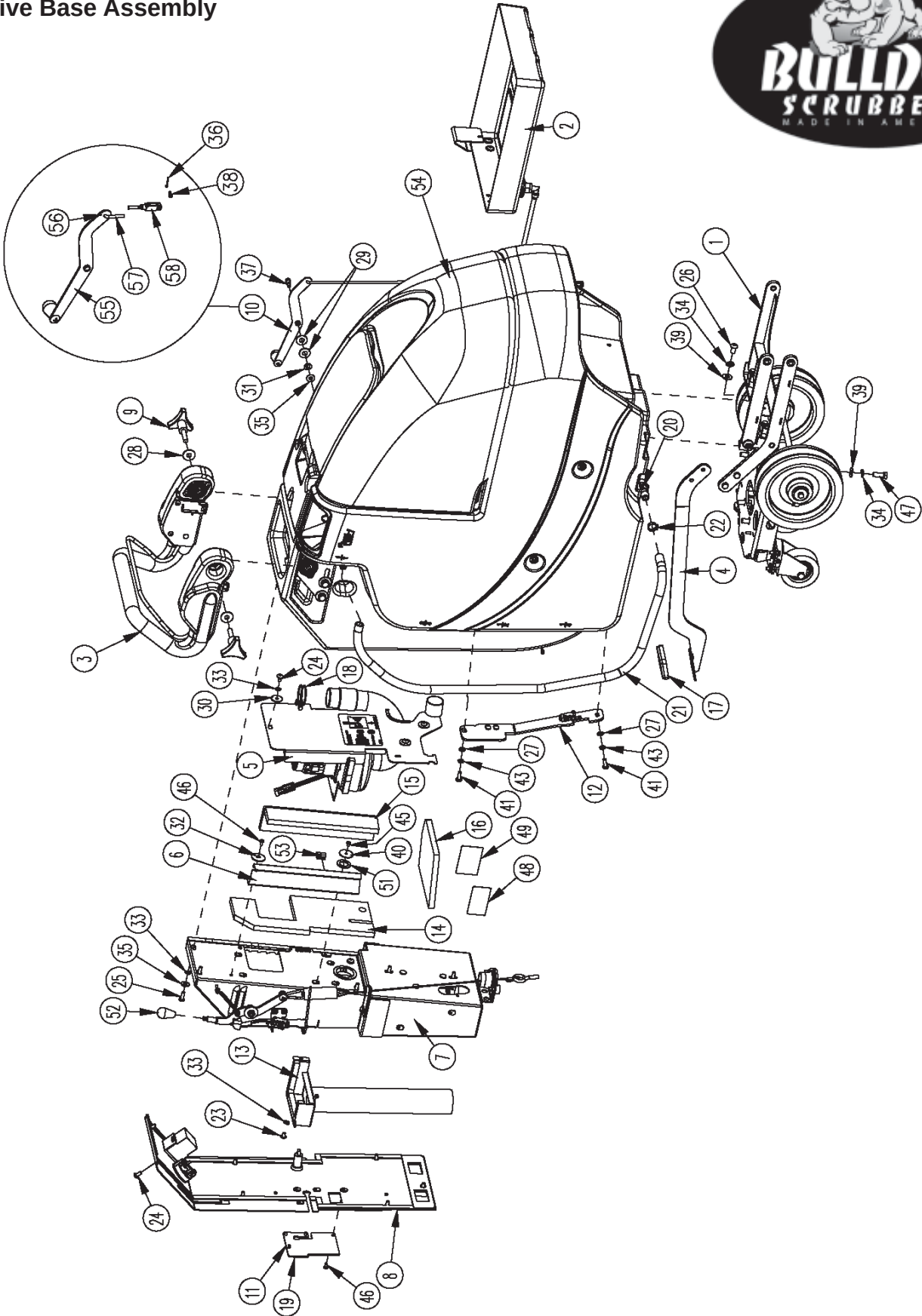
Main Assembly





BILL OF MATERIAL - E20BDQP-FC / E20BDQPG-FC			
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	172520-1	1	BRUSH, 20" NYLON
5	172150	1	SQUEEGEE LIFT MECH ASSY
6	172159	1	FILTER, FILL PORT
7	172230	1	SQUEEGEE ASSY, 34" (860MM) CURVED
8	450076	1	CLAMP-CRIMP 185R SS
9	711118	1	SCR-ST-A10 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	715920FC1	2	DECAL (NOT SHOWN)
18	740164-1	1	JUMPER CABLE ASSY, RED 4G 12"
19	747649	1	CABLE ASSY, BATTERY
20	956712	2	BATTERY, 12V 115AH
20G	956100	2	GEL BATTERY 12V 100AH
21	172001BDFC	1	BRUSH DRIVE BASE ASSY
22	712099PLT	3	BLT - SHLDR 1/2 X 1/2 ZINC PLT
23	715914FC	1	DECAL (NOT SHOWN)
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
27	715938	1	DECAL, FCE CONTACT INFO

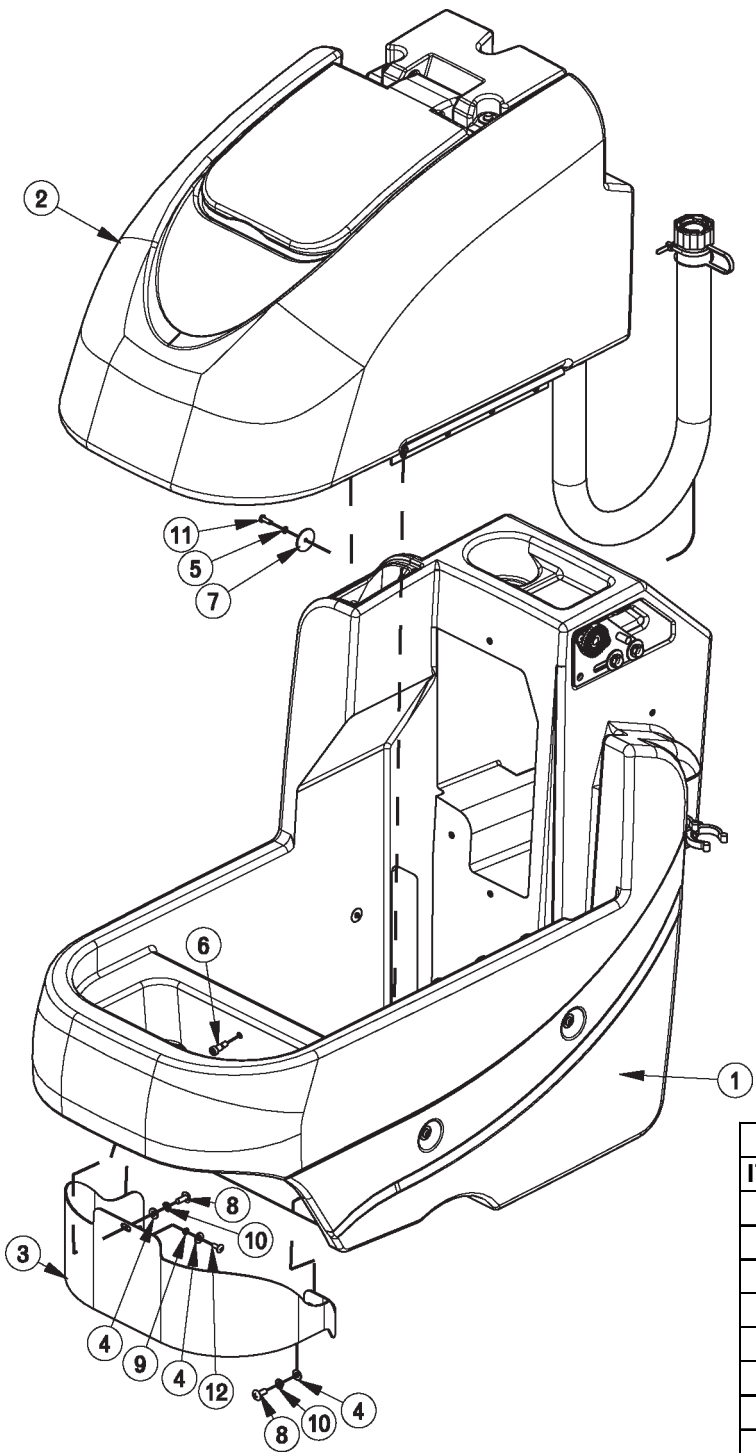
OPTIONAL BRUSHES		
ITEM	PART NO.	DESCRIPTION
4.1	172520-2	20" PAD DRIVER
4.2	172520-3	BRUSH, 20" POLY GRIT
4.3	172520-6	DISC BRUSH 20", SCRUB GRIT 2, 120GR RED



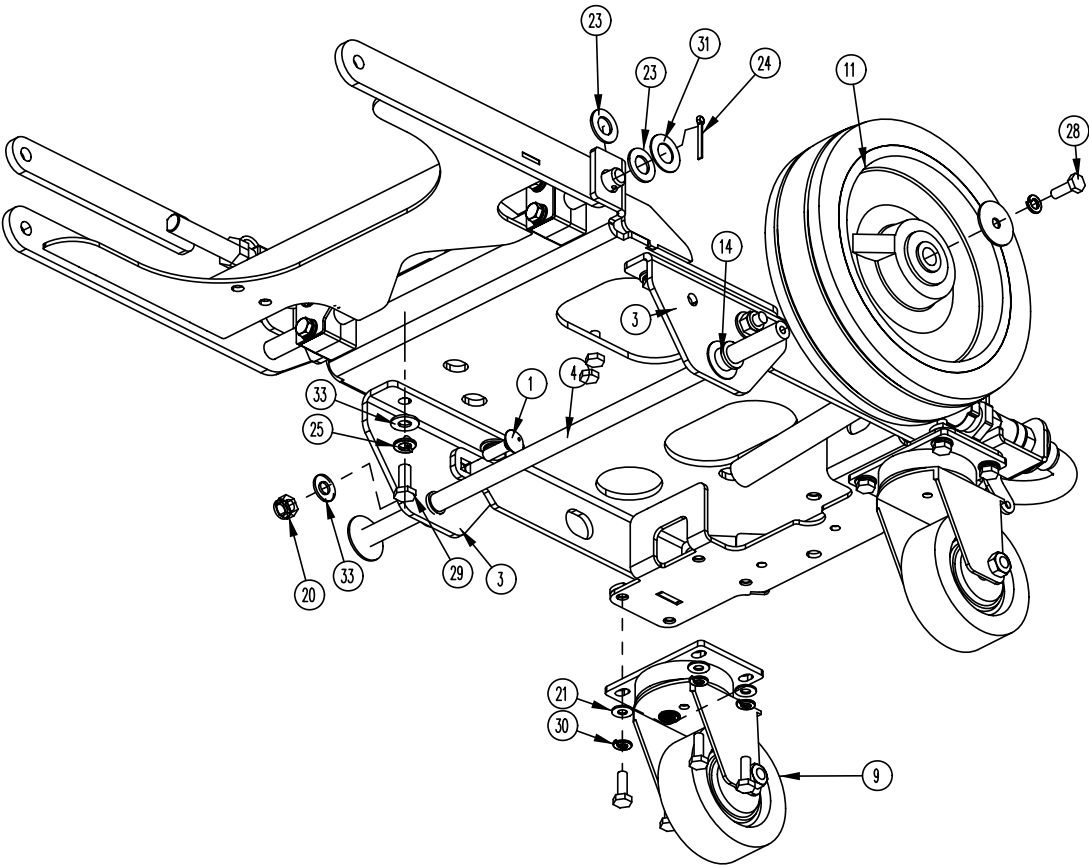
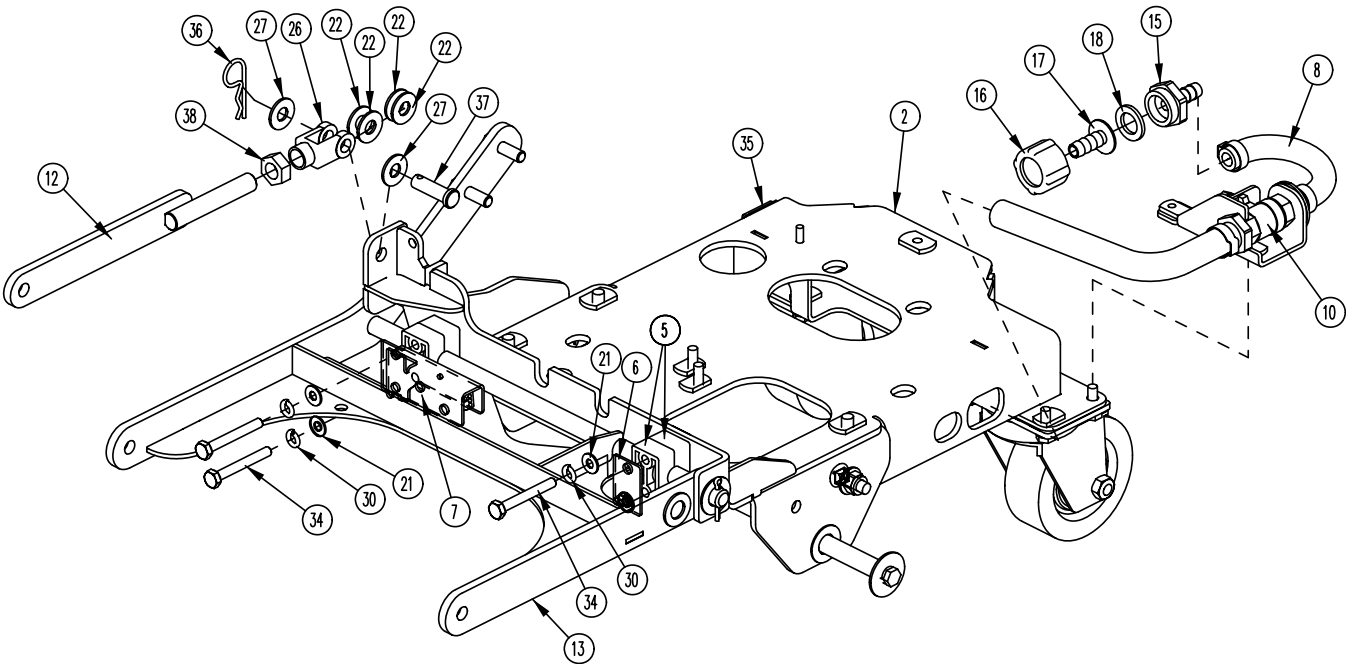
Brush Drive Base Assembly BOM



BILL OF MATERIAL - 172001BDFC							
ITEM	PART NO.	REQ'D	DESCRIPTION	ITEM	PART NO.	REQ'D	DESCRIPTION
1	172002-1	1	BD CHASSIS ASSY	30	711519	3	WSR- FLAT .25 X1.01 X.06
2	172012	1	BATTERY TRAY ASSY	31	711523	1	WSR-WAVE .37X.68 X.08
3	172016	1	BD HANDLE ASSY	32	711543	1	WSR-HELICAL #10
4	172032	1	LIFT PEDAL WMT	33	711544	9	WSR-HELICAL 1/4
5	172050	1	VAC MOTOR ASSY	34	711546	6	WSR-HELICAL 3/8
6	172055	1	BKT, VAC AREA INSIDE COVER	35	711575	6	WSR-FLT .31x.75x.06ST
7	172070-120	1	ELEC BOX BD ASSY 120V	36	711803	1	COTTER PIN
8	172073FC	1	BD ELEC BOX COVER ASSY	37	712041	1	BLT- SHLDR .31 X.375 X1/4-20
9	172085	2	KNOB, 3/8-16 STUD, 3 LOBE	38	712117	1	CLEVIS PIN 3/16
10	172112	1	SOL CONTROL ASSY	39	712301	6	WSR-FLAT .37 X.87 X.06
11	172129	1	BKT, PWR CORD MOUNT	40	712312	2	WSR-FLAT .187 X1.25
12	172157	1	LIFT PEDAL STOP ASSY	41	712562	2	BOLT-HH 1/4-20X3/4 SS
13	172179	1	CHARGER INLET ASSEMBLY	42	712683	2	NUT, HEX 5/16-18 NYLOC SS
14	172184	1	FOAM COVER, REAR 1	43	712758	2	WSR-HELICAL 1/4 SS
15	172185	1	FOAM COVER, REAR 2	44	712772	2	WSR-FLAT .344 x .75 x .06 SS
16	172187	1	FOAM COVER, FRONT 2	45	712800	1	SCR-MC 10-24 X.25 ST PL
17	210142	1	PEDAL PAD	46	712810	5	SCR-MC 10-24 X.37 ST PL
18	260203	1	WIRE GRIP HOSE CLAMP	47	713042	4	BLT-HH 3/8-16 X1 #5
19	293080	1	STRAIN RELIEF-HEYCO 1207	48	715029	1	DECAL-NAME PLATE SERIAL
20	342440	1	FITTING, TEE 3/4MPT 1/2BARB	49	715047	1	DECAL-CLEAR LAMINATE 2X3
21	430156	1	HOSE, 1/2 X42 CLEAR	50	715950	1	LABEL, PATENT NUMBERS
22	450093	2	CRIMP CLAMP 3/4" STEPLESS	51	717025	1	WSR-FLAT 13/16ID X1.25 X.08
23	710177	1	SCR-MC 1/4-20 X.37 ST PL	52	760592	1	KNOB, OVAL TAPERED
24	710178	10	SCR-MC 1/4-20 X.50 TRUSS STPL	53	809443	1	CLIP-WIRE & CORD
25	710380	5	SCR-MC RD HD 1/4-20 X.75 STL PL	54	172001FC	1	BASE ASSY
26	710985	2	SCR-SC 3/8-16 X.62 ST PL	55	172115	1	SOL CNTRL LEVER ASSY
27	711504	2	WSR-FLAT 1/4 ID SS	56	172122	1	NUT, PUSH-ON WSR CAP, 3/16
28	711507	2	WSR-FLAT .37 X1.12 X.06	57	172069	1	ROD, SOL CTRL, ES1720
29	711508	2	WSR-FLAT .44X1.0X08	58	172062	1	YOKE, 3/16 CLEVIS, 10-32, LONG



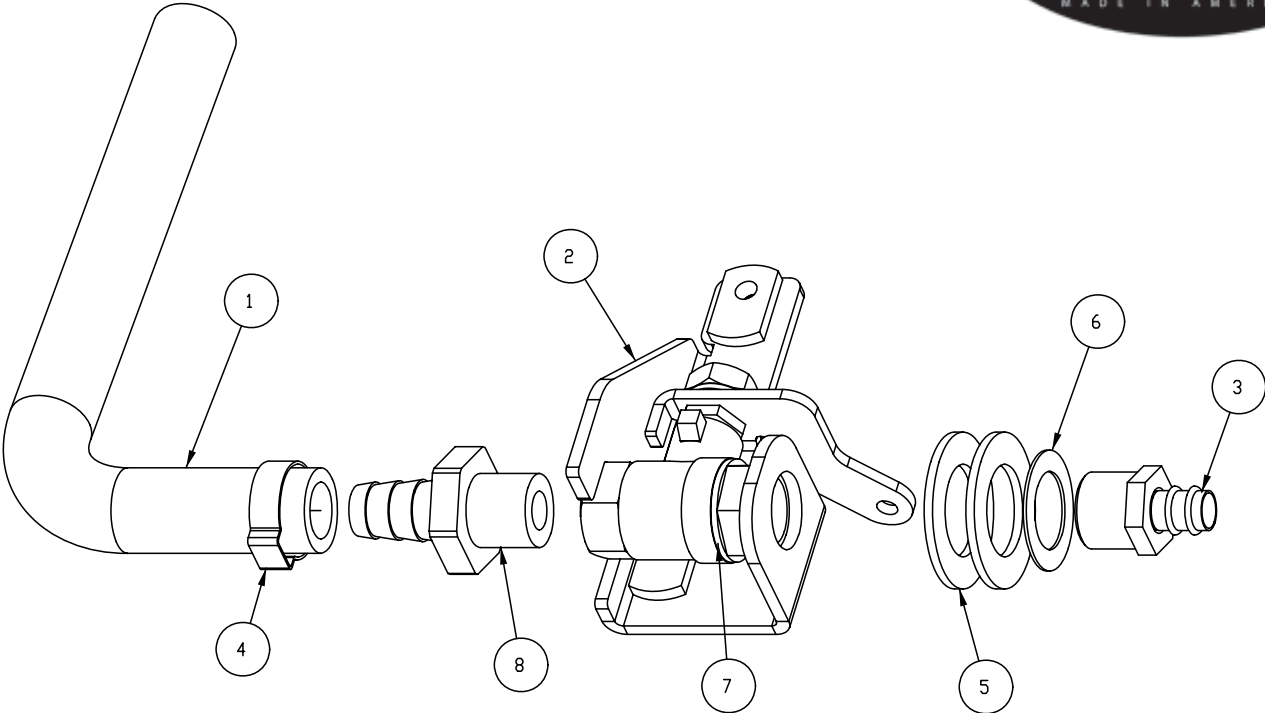
BILL OF MATERIAL - 172001FC			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172013FC	1	SOL TANK ASSY
2	172014FC	1	REC TANK ASSY
3	172144FC	1	PANEL, FRONT
4	711504	3	WSR-FLAT 1/4 ID SS
5	711543	4	WSR-HELICAL #10
6	712041	1	BLT- SHLDR 1/4-20 X .44 X .37
7	712312	4	WSR-FLAT .187 X 1.25
8	712565	2	SCR-MC 1/4-20X.63 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
13	172407	1	PLUG, FRONT PANEL (NOT SHOWN)
14	172408	1	PLUG, FRONT PANEL (NOT SHOWN)



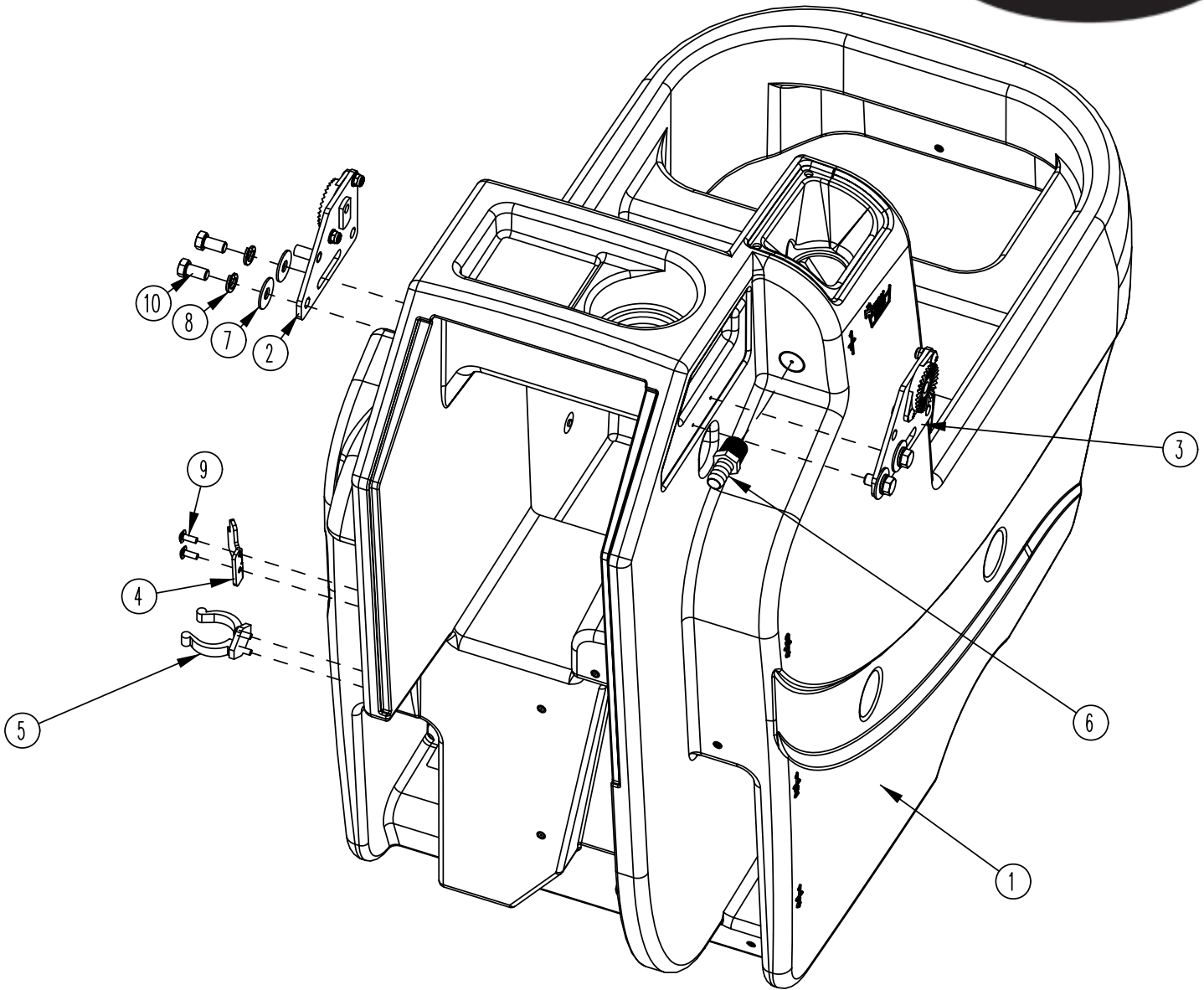
Chassis Assembly BOM



BILL OF MATERIAL - 172002-1			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	70-516-16	2	BLT-CAR 5/16-18 X 1.00 ZP
2	172020	1	MAIN FRAME WMT
3	172024	2	WHEEL BRACKET
4	172035	1	WHEEL ROD
5	172038	4	BEARING BLOCK
6	172039	1	BEARING BLOCK PLATE
7	172110	1	DECK SWITCH ASSY
8	172164	1	HOSE-WIRE REINF 3/8 X 5.5"
9	172167	2	CASTER, 3-1/2 POLYURETHANE
10	172264	1	SOLUTION VALVE ASSY
11	172265	2	WHEEL, 8 X 2 X .5, 75A
12	172368	1	UPPER LIFT ARM
13	172370	1	DISC DECK LIFT WMT
14	260041	2	OILITE FLANGE BUSHING
15	342441	1	FITTING, MGHT X 3/8HB PP
16	342442	1	FITTING, FGHT NUT PP
17	342443	1	FITTING 3/8HB INSERT PP
18	342444	1	WSR-FILTER, GARDEN HOSE SIZE
19	450076	2	CLAMP-CRIMP 185R SS
20	711374	2	NUT-NYLOC 5/16-18
21	711504	12	WSR-FLAT 1/4 ID SS
22	711569	4	WSR-FLT .390 X .880 X .062 NYL
23	711592	2	WSR-FLAT .506 X .9 X .064 NYL
24	711809	1	COTTER PIN, 1/8 X 1.0
25	712140	4	WSR-HELICAL 5/16 SS
26	712265	1	CLEVIS-YOKE, 1/2-20 W/ .375 PIN
27	712301	2	WSR-FLAT .37 X .87 X .06
28	712562	12	BOLT-HH 1/4-20X3/4 SS
29	712575	4	BLT-HH 5/16-18 X .75 SS
30	712758	14	WSR-HELICAL 1/4 SS
31	712760	3	WSR-FLAT .56X1.06X.04 SS
32	712761	2	WSR-FLAT .28 X 1.25 X .059SS
33	712772	6	WSR-FLAT .344 x .75 x .06 SS
34	713007	4	BLT-HH 1/4-20 X 2 #5
35	809444	1	CLIP-CORD
36	833374	1	PIN, HAIRPIN COTTER 3/8
37	833833	1	PIN-CLEVIS 3/8 X 1.25
38	3400449	1	NUT-HEX JAM 1/2-20 ZP

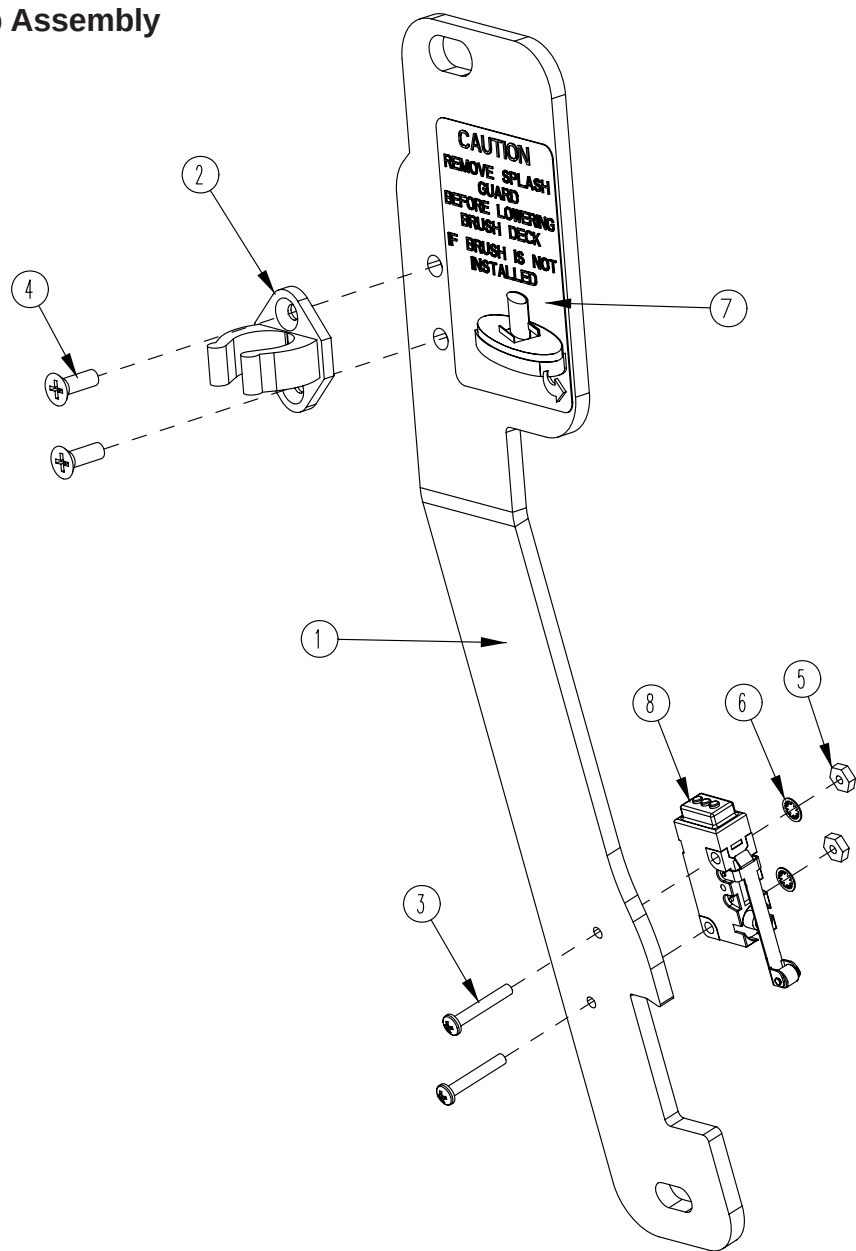


BILL OF MATERIAL - 172264			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172158	1	HOSE, 1/2"ID X 7.5" NYLOBRAID
2	172263	1	BKT , SOL VALVE MOUNT
3	320265	1	FITTING DUBL 3/8HBx3/8MPT
4	383347	1	CRIMP CLAMP 1/2 HOSE SS 185R
5	711512	2	WSR-FLAT .75X1.37X.08
6	711513	1	WSR-FLAT .69 X 1.06 X .03 SS
7	809415	1	VALVE, 3/8 FPT , 45 OPEN/CLOSE
8	827008	1	FITTING, 3/8 MPT 1/2 HOSE

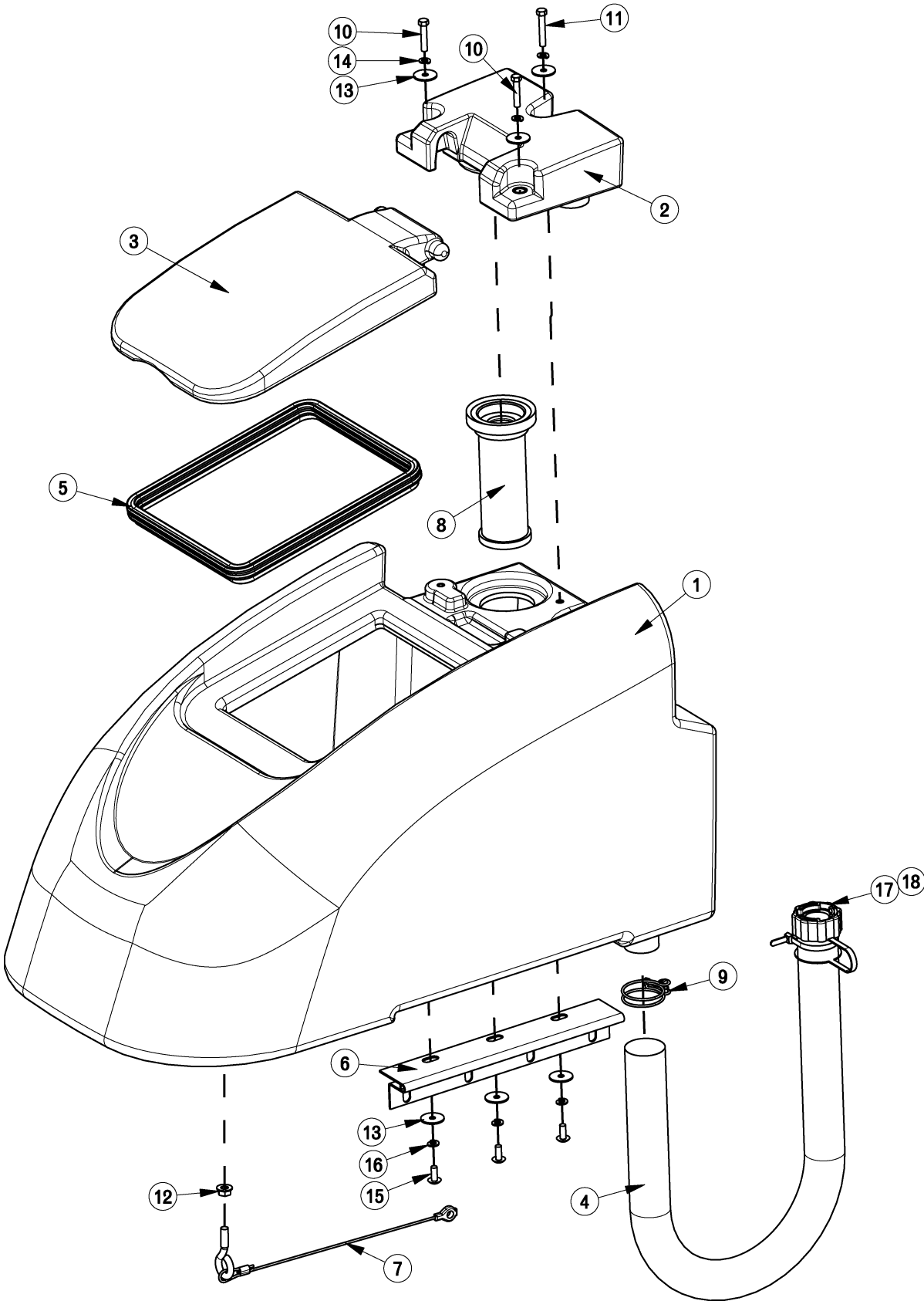


BILL OF MATERIAL - 172013FC			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172003FC	1	SOLUTION TANK
2	172080	1	HANDLE MOUNT ASSY, LEFT
3	172082	1	HANDLE MOUNT ASSY, RIGHT
4	172341	1	HOOK, DRAIN HOSE WITH TWIST VALVE
5	260579	1	TOOL CLIP, 1.5" HOSE
6	342438	1	FITTING, 1/2 MPT 1/2 HB BRASS
7	711507	4	WSR-FLAT .37 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

Lift Pedal Stop Assembly



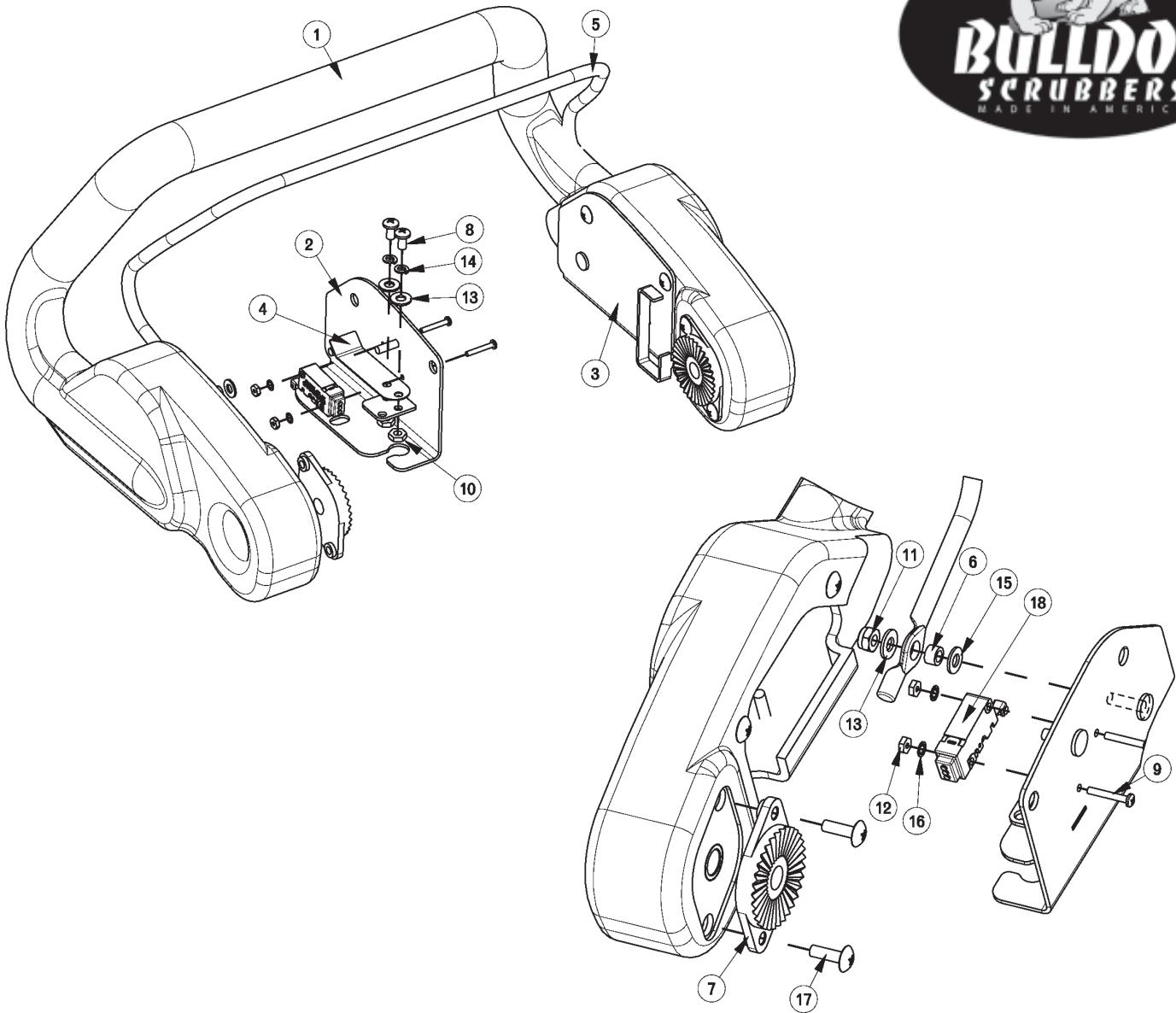
BILL OF MATERIAL - 172157			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172036	1	BKT, PEDAL STOP
2	172065	1	CLIP, FOR 1/2" ID HOSE
3	710493	2	SCR-MC 4-40 X .75 PAN HD
4	710530	2	SCR-MC FL HD 8-32 X .50 BRS
5	711428	2	NUT-HEX 4-40
6	712326	2	WSR-INT LOCK #4
7	715685	1	DECAL, REMOVE SPLASH GUARD
8	747603-2	1	SWITCH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



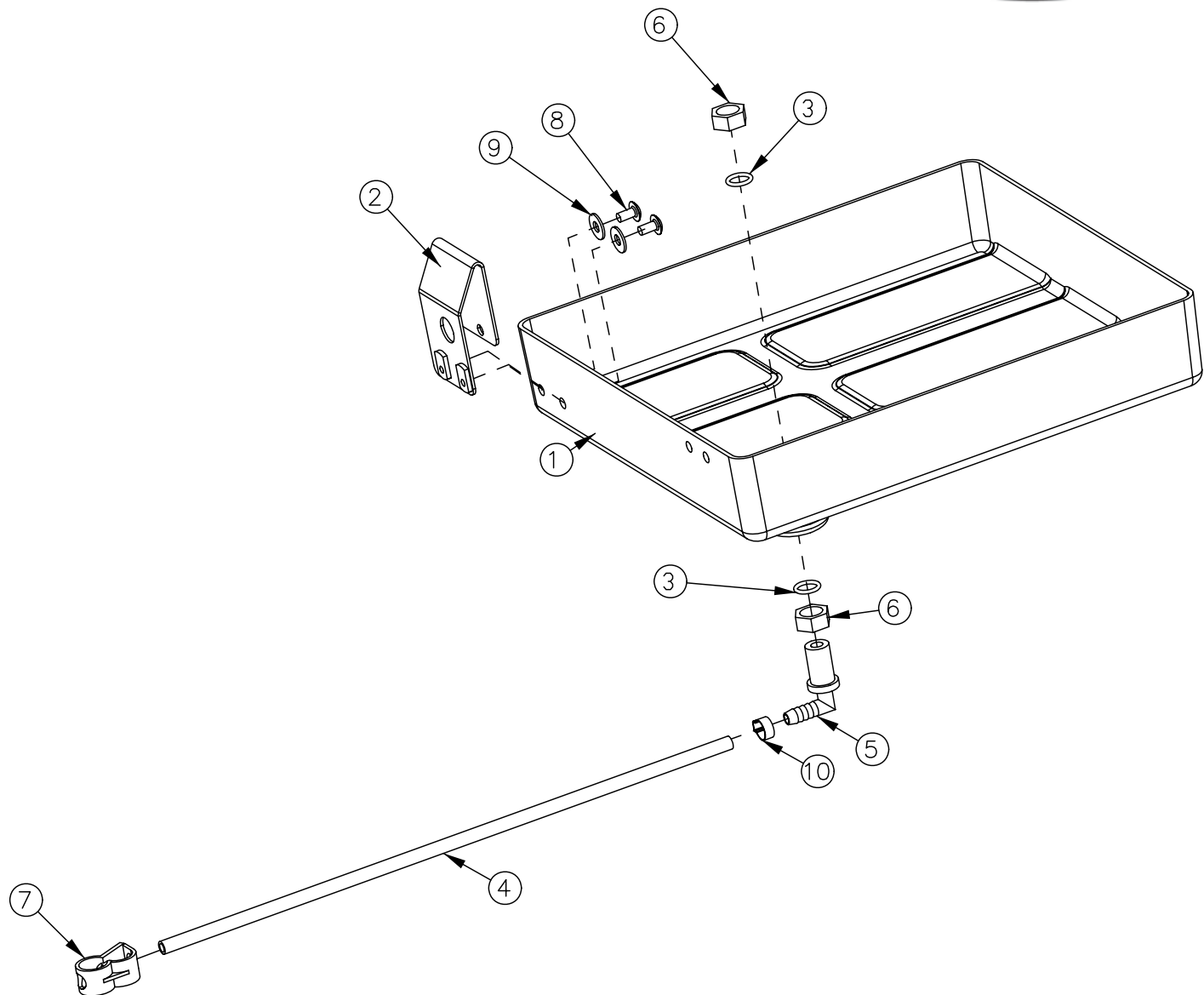


BILL OF MATERIAL - 172014FC			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172004FC	1	RECOVERY TANK
2	172005FC	1	VACUUM MANIFOLD
3	172007FC	1	LID
4	97090096	1	DRAIN HOSE ASSY, RECOVERY TANK
5	172017	1	GASKET, LID
6	172049	1	HINGE, RECOVERY TANK
7	172067	1	REC TANK CABLE ASSY 11.625
8	172132	1	SCREENED FLOAT
9	172329	1	CLAMP-HOSE 1.56" 102122 MURRAY
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
17	15282072	1	REPLACEMENT O-RING (NOT SHOWN)
18	90304528	1	REPLACEMENT CAP

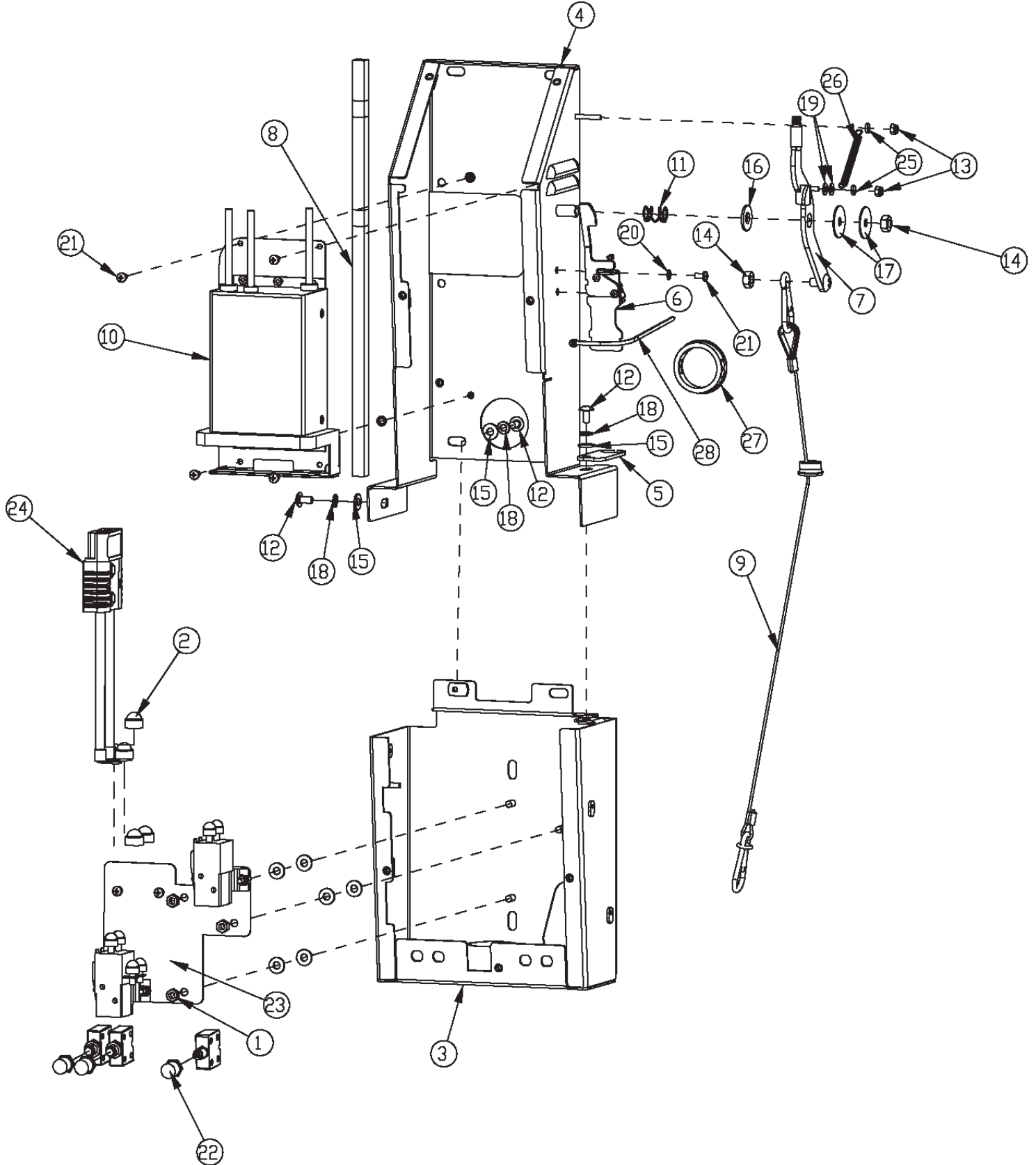
Handle Assembly



BILL OF MATERIAL - 172016			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172006	1	HANDLE
2	172053	1	BAIL PLATE WMT RH
3	172054	1	BAIL PLATE WMT LH
4	172057	2	LEAF SPRING
5	172059	1	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

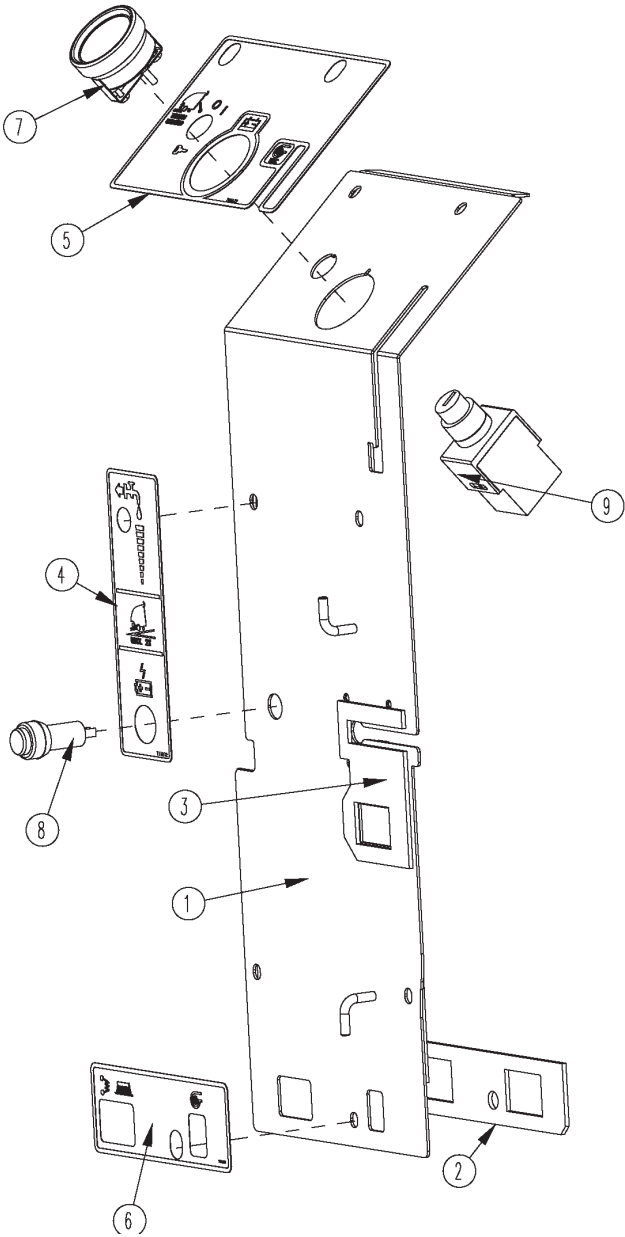


BILL OF MATERIAL - 172012			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172116	1	BATTERY BOX
2	172213	1	BKT, SPACER FOR BATTERIES
3	210414	2	O RING 2-113
4	260224	1	18" HOSE
5	320271	1	NOZZLE BODY-ELBOW
6	320272	2	NOZZLE BODY LOCKNUT
7	320273	1	HOSE SHUT-OFF CLAMP
8	710178	2	SCR-MC 1/4-20 X .50 TRUSS STPL
9	711575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



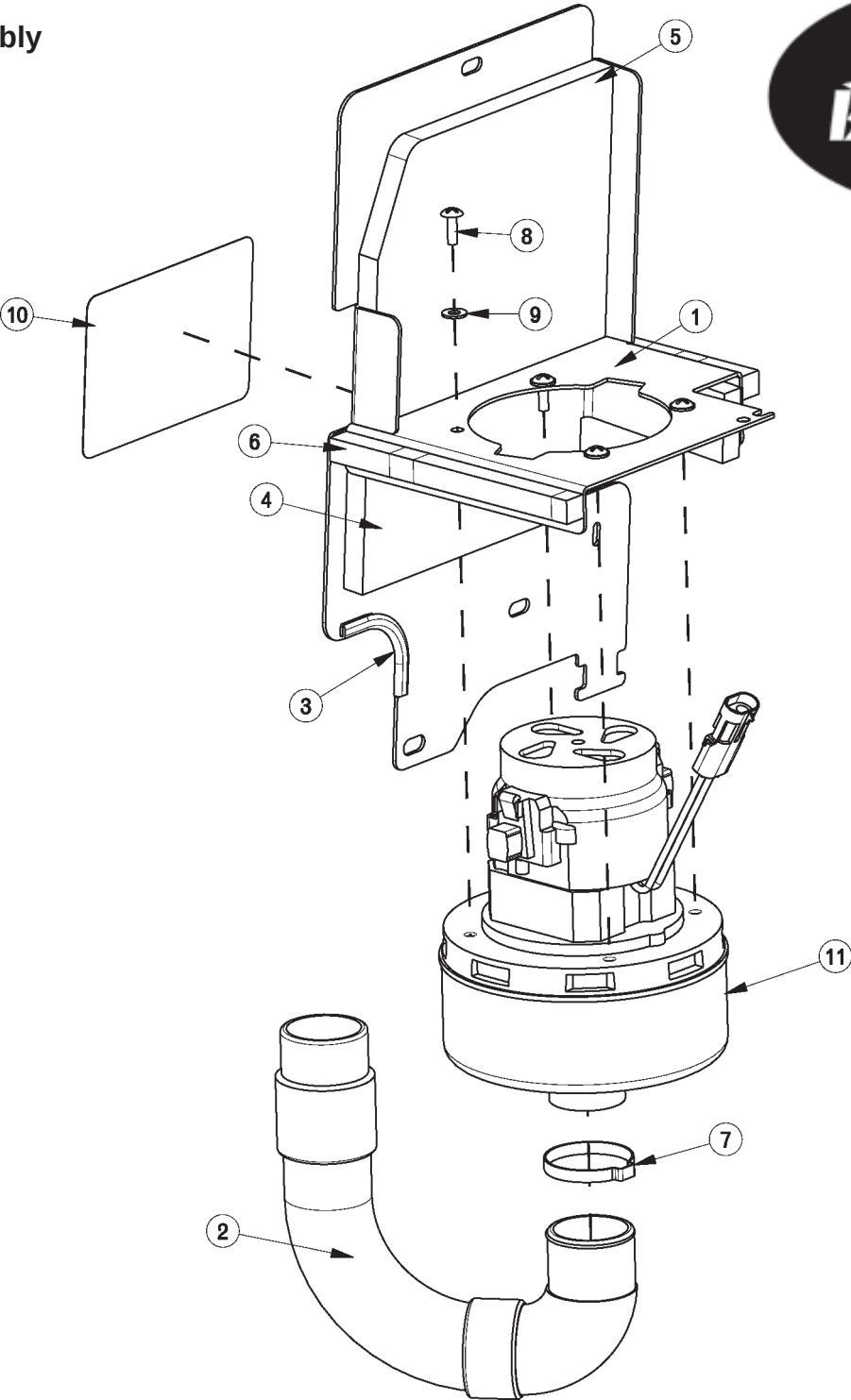


BILL OF MATERIAL - 172070-120			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	369-416	3	NUT-HEX 1/4-20 NYLOC SERATED
2	15592033_CAP	2	CAP, SAFETY NUT COVER M8
3	172077	1	ELEC BOX-BOT HALF WMT
4	172088	1	ELEC BOX-TOP HALF WMT
5	172107	1	BKT, UPPER BUSHING MOUNT
6	172141	1	VAC SWITCH ASSY
7	172152	1	VAC LEVER WMT
8	172188_	1	FOAM TAPE, 1/2" SQ X 16.5"
9	172381	1	CABLE ASSY, SQUEEGEE LIFT
10	172385	1	120V CHARGER ASSEMBLY
11	670093	1	SPRING, COMPRESSION
12	710178	3	SCR-MC 1/4-20 X .50 TRUSS ST PL
13	711372	2	NUT-NYLOC 8-32 STL ZINC
14	711383	2	NUT-HEX CLR LOC 5/16-18
15	711505	9	1/4 FLAT WASHER, STEEL
16	711508	1	WSR-FLAT .44X 1.0X.08
17	711516	2	WSR- FLAT .31 X 1.25 X .05
18	711544	3	WSR-HELICAL 1/4
19	712320	2	WSR-NYLON .22 X .45 X .04
20	712770	6	WSR INT LOCK #10A SS
21	712810	6	SCR-MC 10-24 X .37 ST PL
22	742748	3	CIRCUIT BREAKER BOOT
23	747630	1	ELEC PANEL ASSY, E1720BD
24	747637	1	WIRE ASY, MACHINE-BATTERY E1720
25	760134	2	MOUNT RING
26	762084	1	SPRING-EXT .25OD X 2" F.L. MUSIC
27	762400	1	HEYCO BUSHING 2.00"
28	828062	1	CABLE TIE LARGE



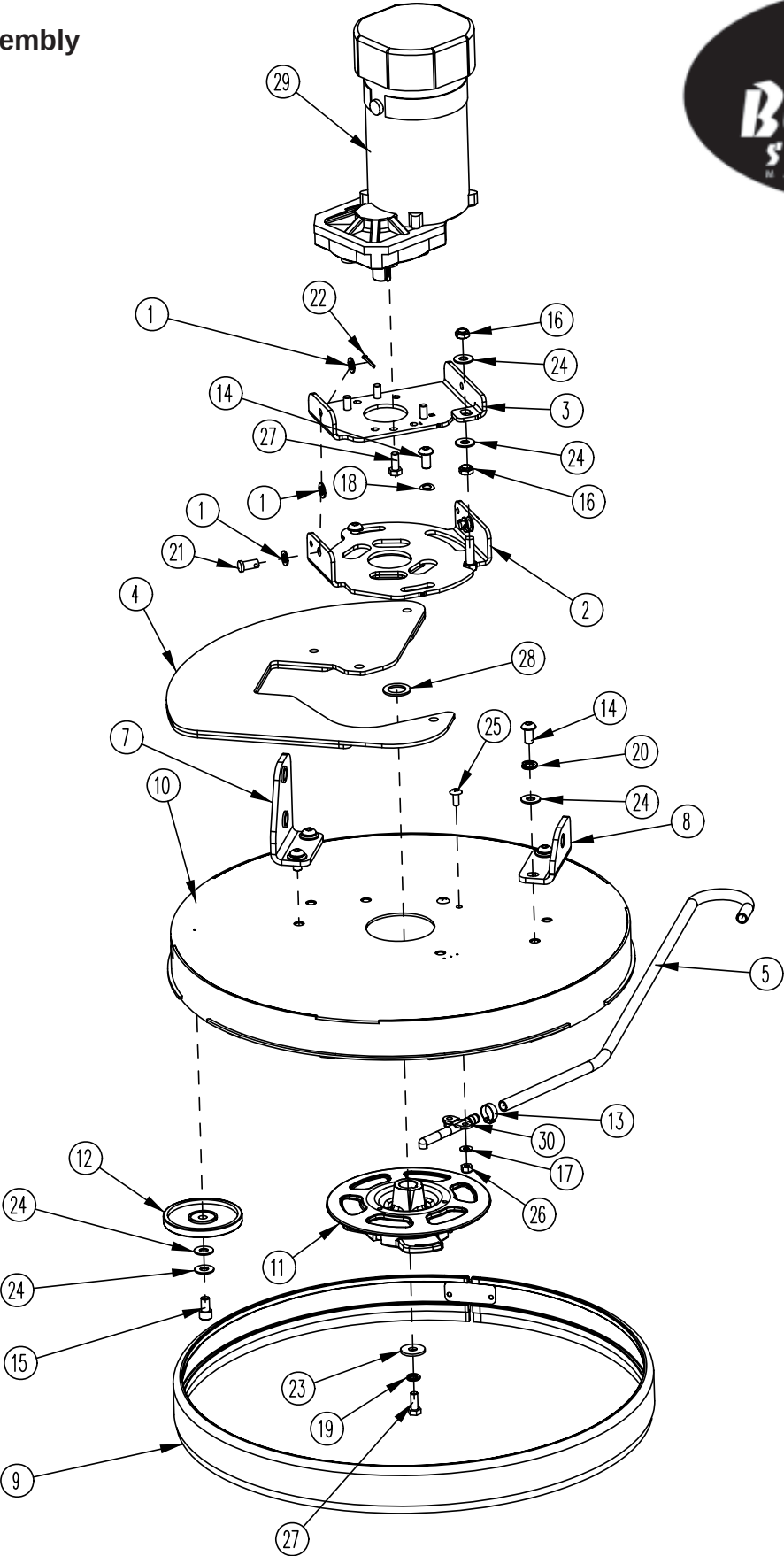
BILL OF MATERIAL - 172073FC			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172181	1	ELEC BOX, COVER, WMT
2	172193	1	GASKET, CB OUTLINE
3	172194	1	GASKET, CHARGER CORD PLATE
4	715672	1	DECAL BD ELEC BOX
5	715673FC	1	DECAL BD DASHBOARD
6	715675	1	DECAL, BD CIRC BKRS
7	740216	1	VOLT METER
8	747614	1	CHARGE STATUS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

Vac Motor Assembly



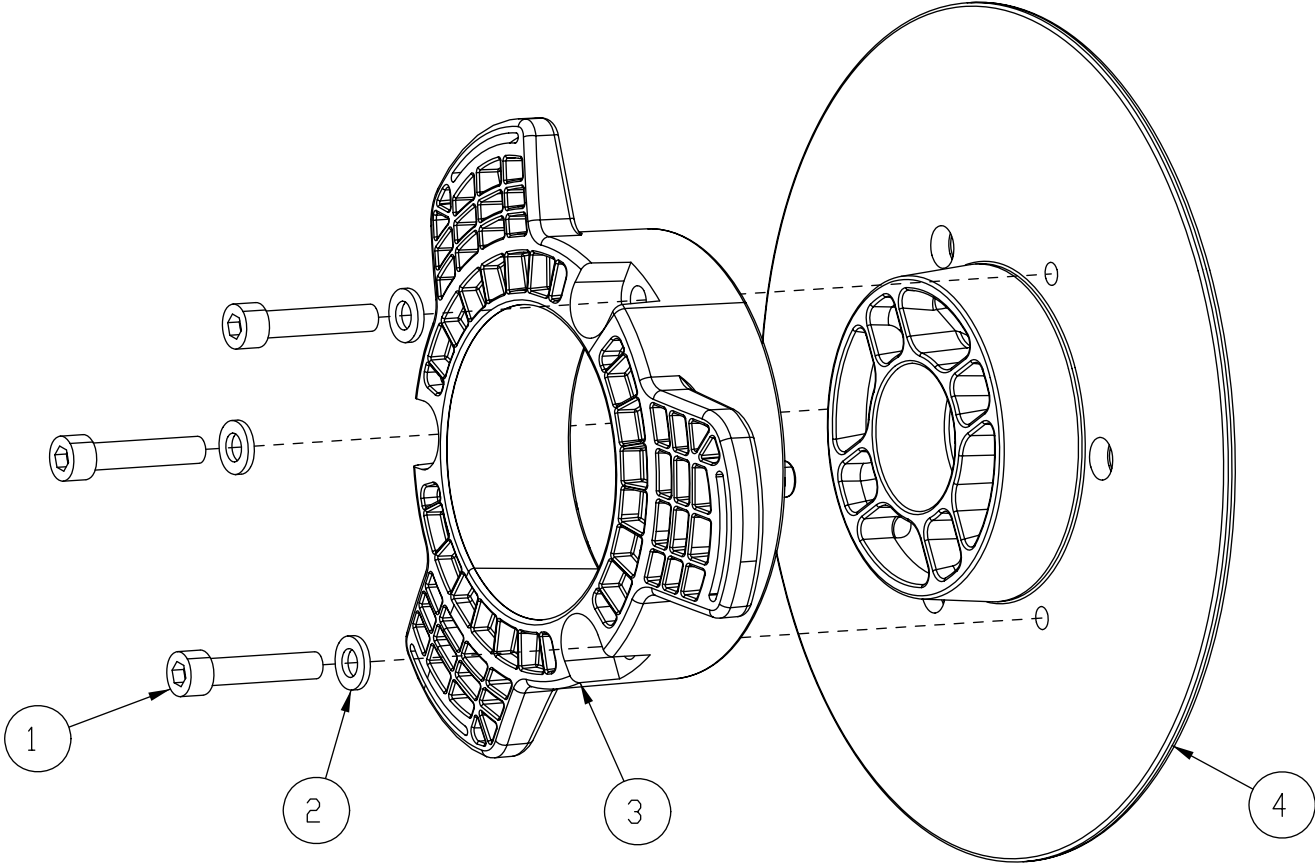
BILL OF MATERIAL - 172050							
ITEM	PART NO.	REQ'D	DESCRIPTION	ITEM	PART NO.	REQ'D	DESCRIPTION
1	172045	1	VAC MOUNT WMT, ES1720	7	450095	1	CRIMP CLAMP, 1.75"
2	172048	1	HOSE, STRETCH 13"	8	711160	4	#10 X 5/8 HI-LO
3	172124	1	EDGE TRIM, .063 X 3.0, BLACK	9	711503	4	WSR, FLAT#10
4	172186	1	FOAM COVER, 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"				

20" Brush Deck Assembly



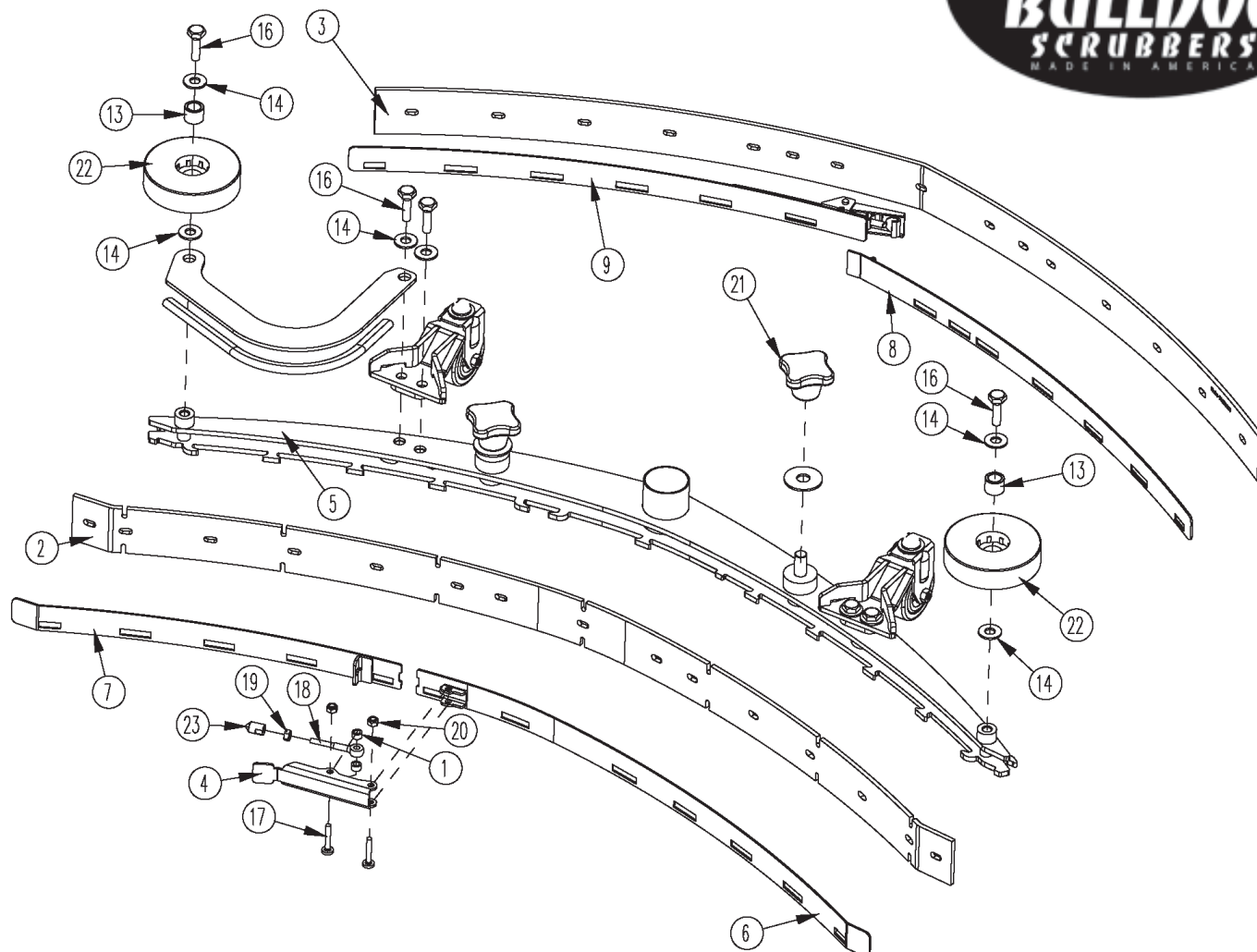


BILL OF MATERIAL - 172100			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	81-166-A	6	SPECIAL WASHER
2	172040	1	DECK ANGLE ADJUST WMT
3	172044	1	PLATE, MOTOR MOUNT
4	172208	1	E20 BRUSH DECK PLATE
5	172216	1	HOSE-WIRE REINF 3/8 X 29"
6	172296	1	BKT, DECK MOUNT RH
7	172297	1	BKT, DECK MOUNT LH
8	172375	1	DECK COVER WMT 20"
9	172384	1	E20 FLOATING BRUSH DECK SKIRT
10	172510	1	HUB ASSEMBLY, DISC DECK
11	210153	1	ROLLER WHEEL
12	450076	1	CLAMP-CRIMP 185R SS
13	710990	6	SCR-SC 3/8-24 X .75 BHEAD ST PL
14	710991	1	SCR-SC 3/8-24 X 5/8 ST PL
15	711375	2	NUT-NYLOC 3/8-16 X 1/2 NUT
16	711504	2	WSR-FLAT 1/4 ID SS
17	711523	4	WSR-WAVE .37X .68 X .08
18	711545	1	WSR-HELICAL 5/16
19	711546	4	WSR-HELICAL 3/8
20	711679	2	CLEVIS PIN 3/8 X 3/4
21	711855	1	WSR-FLT .37X1.12X.10 STL Z HARD
22	712301	8	WSR-FLAT .37 X .87 X .06
23	712565	2	SCR-MC 1/4-20X.63 SS TR HD
24	712667	2	NUT, HEX 1/4-20 NYLOC 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	3400125	2	PIN-COTTER 3/8 RUE RING
29	90311663	1	HAKO SOL FEED NOZZLE



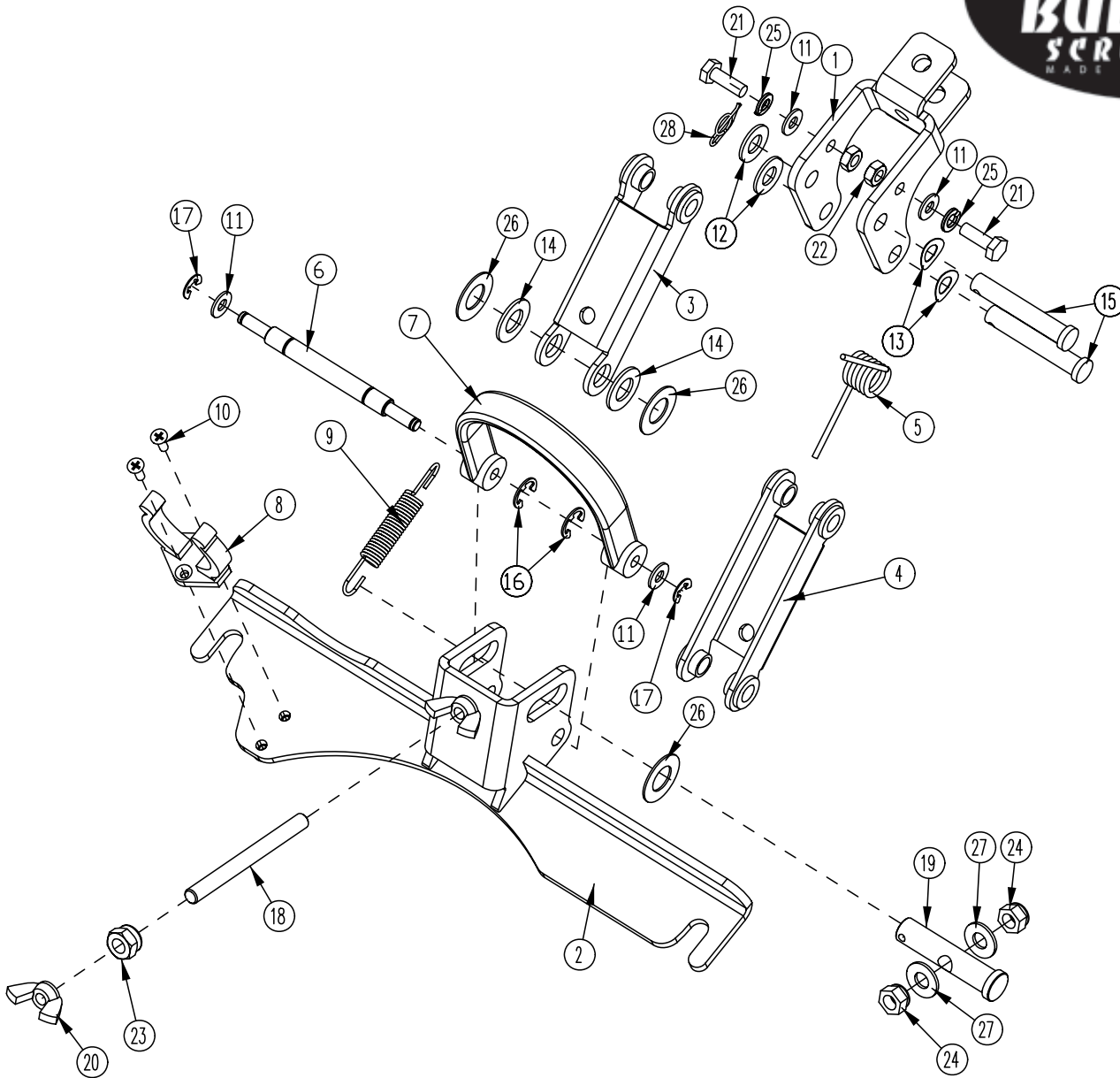
BILL OF MATERIAL - 172510			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	11127000	3	SCR-SHCS M6X30 SS, ISO4762
2	12310256	3	WSR-FLT 6.4X12X1.6, SS DIN125
3	90541814	1	DRIVE HUB, PLASTIC 3 LOBE
4	172096MCH	1	BASE, DRIVE HUB WITH KEYWAY

Rear Squeegee Assembly (Curved)



BILL OF MATERIAL - 172230			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172074	2	SPACER, 5/16OD X 17GA, ALUM
2	172162	1	BLADE, FRONT 34" SQUEEGEE
3	172163	1	BLADE, REAR 34" SQUEEGEE
4	172234	1	LEVER, 90535758
5	172235	1	SQUEEGEE WMT, 34" (860)
6	172240	1	STRAP WMT, FRONT LEFT
7	172241	1	STRAP WMT, FRONT
8	172245	1	STRAP WMT, REAR
9	172246	1	STRAP WMT, REAR
10	172250	2	SQUEEGEE CASTER ASSY
11	172271	1	BUMPER, 34" SQG
12	172274	1	EDGE TRIM 5/16 X 10" BLACK
13	430322	2	BUSHING .435 X .625 X .50
14	712772	8	WSR-FLAT .344 x .75 x .06 SS
15	712773	2	WSR FLAT .438 X 1.25 X .07 SS
16	11039567	6	BLT-HH M8 X 25 SS DIN933
17	11175494	2	SCR-MC M5 X 25 SS DIN7985
18	11518313	1	BLT-EYE M5 X 40 SS
19	12022430	1	NUT-HEX M5 SS DIN934
20	12040283	2	NUT-HEX M5 NYLOC SS DIN985
21	17133026	2	KNOB, M10 STAR HANDLE
22	90336637	2	WHEEL, 3.15OD
23	90513631	1	PIN, THD 90513631

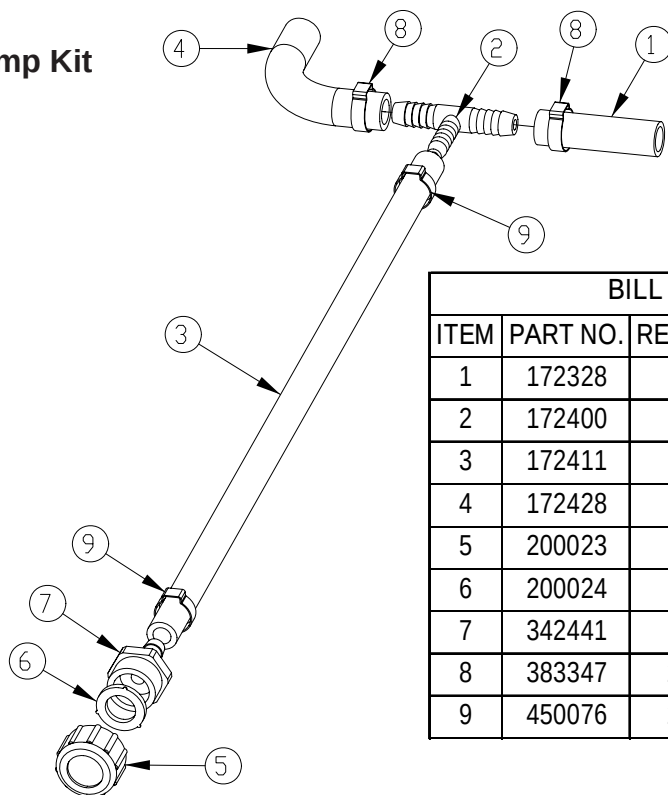
Squeegee Mechanism Assembly



BILL OF MATERIAL - 172150

ITEM	PART NO.	REQ'D	DESCRIPTION	ITEM	PART NO.	REQ'D	DESCRIPTION
1	172134	1	BKT, MAIN SQUEEGEE HINGE	15	711678	2	CLEVIS PIN 3/8 X 2-1/4
2	172155	1	SQUEEGEE MOUNT WMT	16	711717	2	RETAINING RING - E TYPE .37
3	172196	1	SQ TOP LINK W/BUSHING	17	711720	2	.250 DIA RETAINING RING - E TYPE
4	172197	1	SQ BOT LINK W/BUSH	18	712147	1	ROD-THD 5/16-18 X 3.5 SS
5	172261	1	TORSION SPRING	19	712148	1	CLEVIS PIN, 1/2 x 2.25 W/HOLE
6	172352	1	PIN, 3/8 X 3.0, SQG STRAP	20	712157	2	NUT - WING 5/16-18 SS
7	172357	1	STRAP, 9" PU, BLACK	21	712562	2	BOLT-HH 1/4-20X3/4 SS
8	260579	1	TOOL CLIP, 1.5" HOSE	22	712665	2	NUT-HEX 1/4-20 SS
9	430051	1	RETURN SPRING-3.00"	23	712680	1	NUT-HEX 5/16-18 SS
10	710530	2	SCR-MC FL HD 8-32 X .50 BRS	24	712683	2	NUT, HEX 5/16-18 NYLOC SS
11	711504	4	WSR-FLAT 1/4 ID SS	25	712758	2	WSR-HELICAL 1/4 SS
12	711515	2	WSR-FLAT .406 X .812 X .0625	26	712760	3	WSR-FLAT .56X1.06X.04 SS
13	711523	2	WSR-WAVE .37X .68 X .08	27	712772	2	WSR-FLAT .344 x .75 x .06 SS
14	711592	2	WSR-FLAT .506 X .9 X .064 NYL	28	3400125	1	PIN-COTTER 3/8 RUE RING

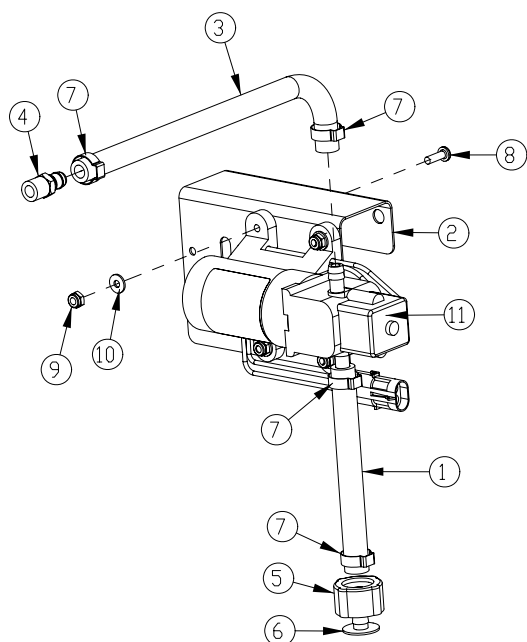
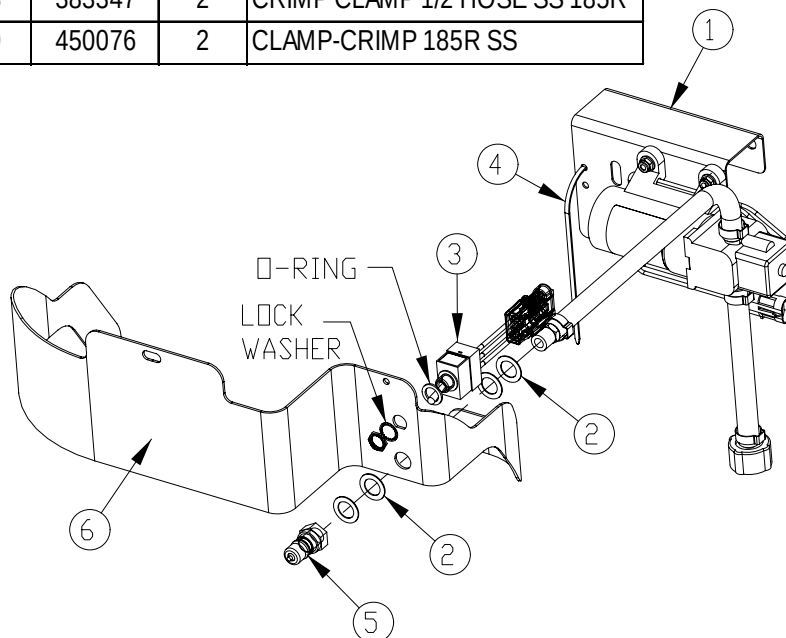
Optional Pump Kit



BILL OF MATERIAL - 172405

ITEM	PART NO.	REQ'D	DESCRIPTION
1	172328	1	HOSE-NYLO REINF 1/2ID X 2.5"
2	172400	1	FITTING-TTEE 1/2X1/2X3/8HB PP
3	172411	1	HOSE-WIRE REINF 3/8 X 18"
4	172428	1	HOSE-WIRE REINF 1/2 X 5.5."
5	200023	1	GARDEN HOSE CAP
6	200024	1	BLACK VINYL WASHER
7	342441	1	FITTING, MGHT X 3/8HB PP
8	383347	2	CRIMP CLAMP 1/2 HOSE SS 185R
9	450076	2	CLAMP-CRIMP 185R SS

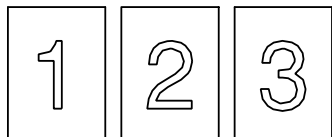
BILL OF MATERIAL - K-E1720P			
ITEM	PART NO.	REQ'D	DESCRIPTION
1	172402	1	OAW PUMP ASSY
2	711594	4	WSR-FLAT .56 X .88 X .03
3	747693-1	1	SWITCH ASY, TOGGLE ON-ON SPDT W/ 3P
4	828062-B	4	CABLE TIE LARGE-BLACK
5	828368	1	MALE COUPLER
6	172144FC	1	FRONT PANEL, FOR OAW, E1720
7	342444	1	WSR-FILTER (NOT SHOWN)
8	712070	1	BLT (NOT SHOWN)



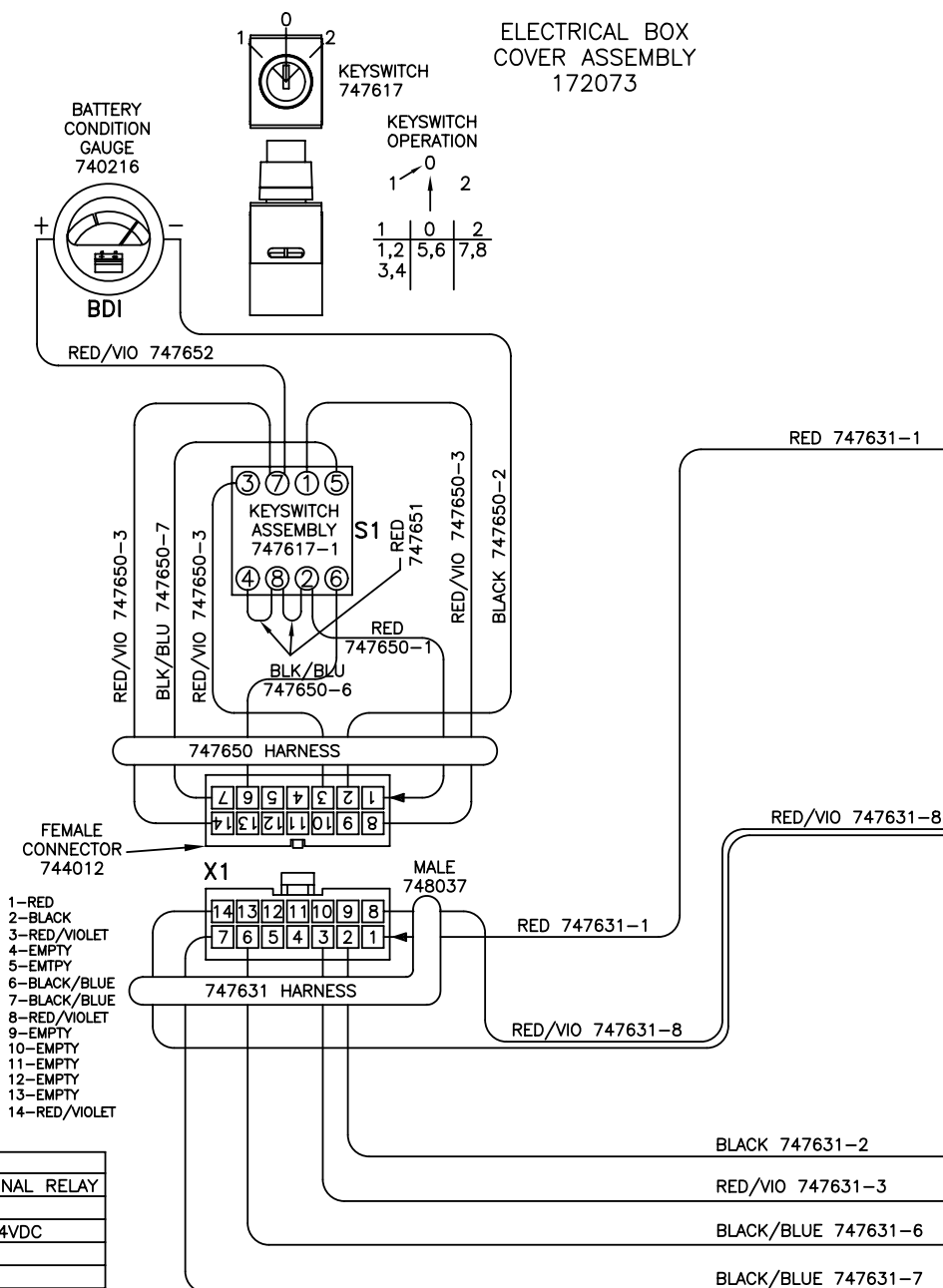
BILL OF MATERIAL - 172402

ITEM	PART NO.	REQ'D	DESCRIPTION
1	172164	1	HOSE-WIRE REINF 3/8 X 5.5"
2	172401-1	1	PUMP BKT ASM
3	320253	1	HOSE-WIRE REINF 3/8 X 14"
4	320264	1	FITTING BRASS - 3/8 DBL BARB X 1/4MPT
5	342442	1	FITTING, FGHT NUT PP
6	342443	1	FITTING 3/8HB INSERT PP
7	450076	4	CLAMP-CRIMP 185R SS
8	710356	4	SCR-MC 10-32X.62 STPL
9	711350	4	NUT-NYLOC 10-32
10	712764	4	WSR #10 SS
11	747691	1	PUMP, 24VDC 35PSI 3/8HOSE w/CONNECTOR

PAGE LAYOUT



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



X1:MAIN KEYSWITCH ASSEMBLY: 747617-1

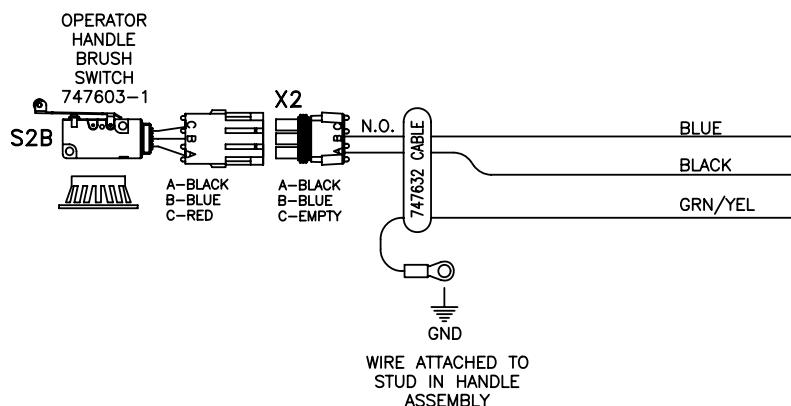
PIN #	COLOR	WHERE TO/FROM
1	RED	X13: BATTERY CHARGER INTERNAL RELAY
2	BLACK	RELAY COILS: 0V
3	RED/VIOLET	BRUSH MOTOR RELAY COIL: 24VDC
4	-	-
5	-	-
6	BLACK/BLUE	BRUSH RELAY NORMALLY CLOSED
7	BLACK/BLUE	BRUSH UNLOAD SWITCH P:B
8	RED/VIOLET	X12: MAIN RELAY COIL: 24VDC
9	-	-
10	-	-
11	-	-
12	-	-
13	-	-
14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

BATTERY CHARGER: 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

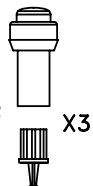
-	RED	BATTERY 24VDC: +
-	BLACK	BATTERY 0VDC: -
-	GREEN/YELLOW	GROUND
-	BLACK/BLUE	BRUSH UNLOAD CIRCUIT
-	RED/BLACK	BRUSH UNLOAD CIRCUIT:MICRO SWITCH
-	RED/VIOLET	24VDC AFTER MAIN KEYSWITCH
X15	GREY/RED	OPTIONAL POWER 24VDC: 3A MAX
X16	GREY/BLACK	OPTIONAL POWER 0VDC: 3A MAX



2

ELECTRICAL BOX ASSEMBLY 172070-120 172070-230

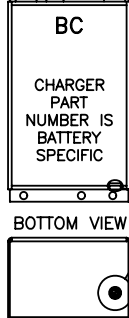
CHARGER
STATUS
INDICATOR
747614
CSI



CABLE- PART OF CHARGER

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

RED 747631-1

X13

WHITE

X14

BLACK

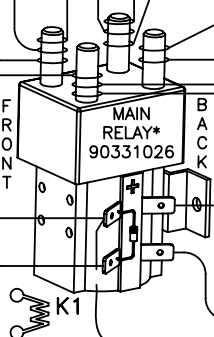
INTERNAL
INHIBIT RELAY

RED 747642

RED/VIO 747631-8

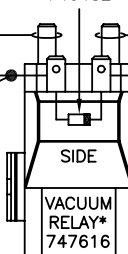
X12

BLACK



BLACK 747647

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

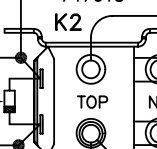
BLACK 747631-2

RED/VIO 747631-3

BLK/BLU 747631-6

D2 DIODE
740482

BRUSH MOTOR
RELAY*
747615



RED/VIO 747631-3

BLK/BLU 747631-7

GRY/RED 747631-3

GRY/BLK 747657

GRY/RED 747656

BLUE

X10

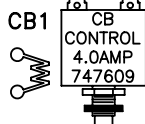
BLACK

X11

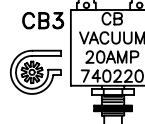
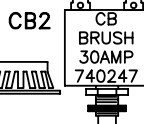
GRN/YEL

WIRES ATTACHED TO
STUD IN ELECTRICAL
BOX

GND



ACCESSORY CONNECTION
BLACK TAPED



X18

X17

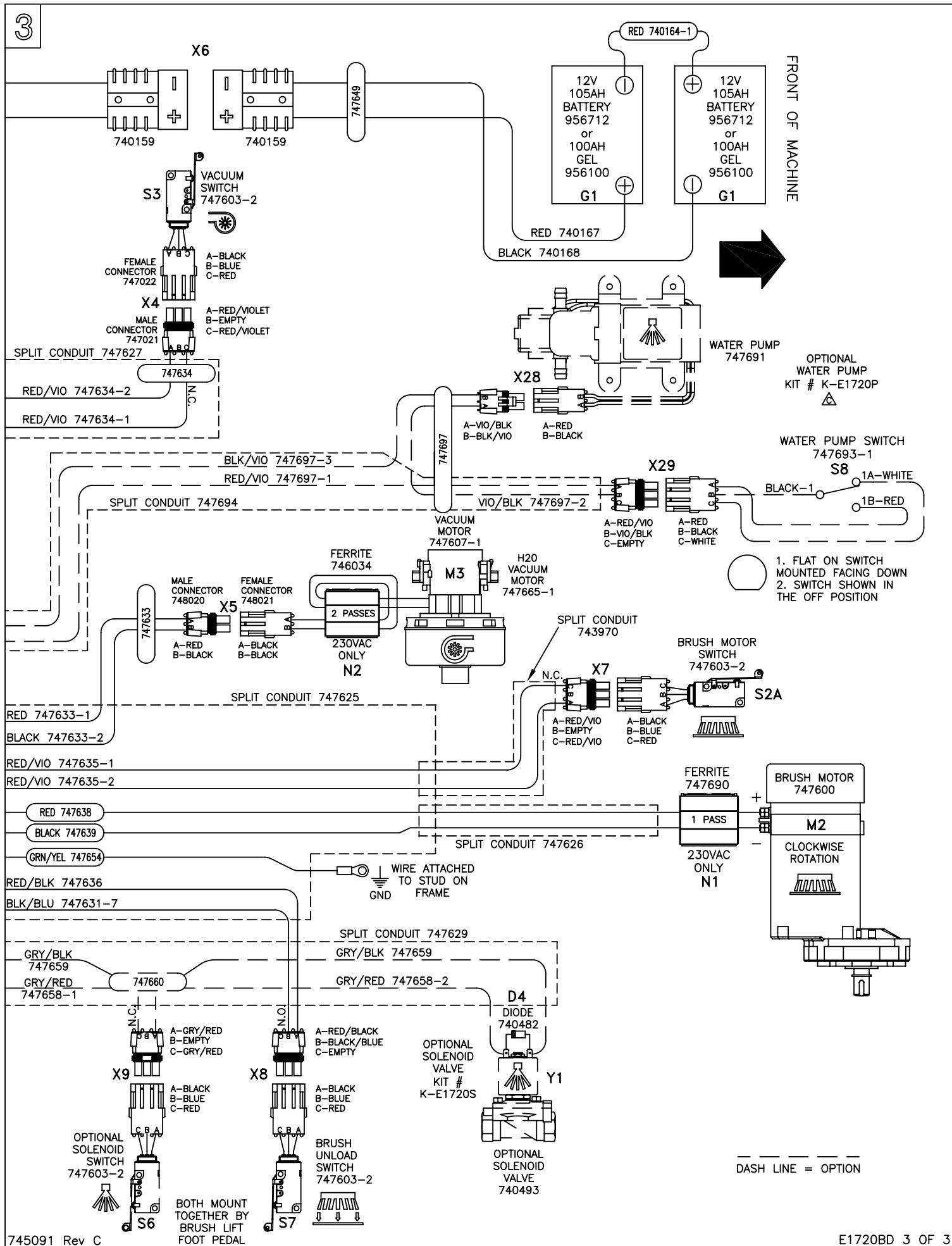
OPTIONAL
HOUR METER
747624
K-E1720HM

HM

GRY/BLK 747657

GRY/BLK 747656

3



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 (H2O 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