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Illustrated Parts Manual
For Commercial Use Only



LR 30 Floorkeeper Automatic Scrubber

Catalog No.

99440

For parts list see L9440BA

Effective 9/19/2005

NOTES

This illustrated parts book covers:

MODEL	99440
SERIES	A
SIZE	30"
VOLTS (CHARGER)	36V
AMPS (CHARGER)	20
CAPACITY	30 GAL. (114L)

All specifications are subject to change without notice.

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Long-term buyer protection warranties

Tornado® Standard Warranty Program *	
<p>Warranties do not cover components subject to normal wear or abuse and misuse, and have other limitations not specified here. For full details, contact your Authorized Tornado Distributor, Service Center, or the Tornado Technical Service Department.</p> <p>Tornado sales and service representatives are not authorized to waive or alter the terms of this warranty, or to increase the obligations of Tornado under the warranty.</p>	<p>10 Years: <i>All plastic tanks and rotationally-molded bodies ¹⁾ ²⁾</i></p>
	<p>2 Year: <i>Parts on all Tornado and Tornado/Karcher cleaning equipment ¹⁾ ²⁾ ³⁾</i></p>
	<p>1 Year: <i>Labor on all Tornado and Tornado/Karcher cleaning equipment ²⁾</i></p>
	<p>1 Year: <i>Warranty on batteries and chargers, one year pro-rated.</i> ** 6 Month Warranty on Gel Batteries <i>All battery warranties are handled by the battery manufacturer, please call customer service for more information.</i></p>

Thank you for choosing Tornado products. We are proud to offer the most complete line of commercial and industrial cleaning equipment in the industry. Our reputation for quality, innovation and durability is unsurpassed.

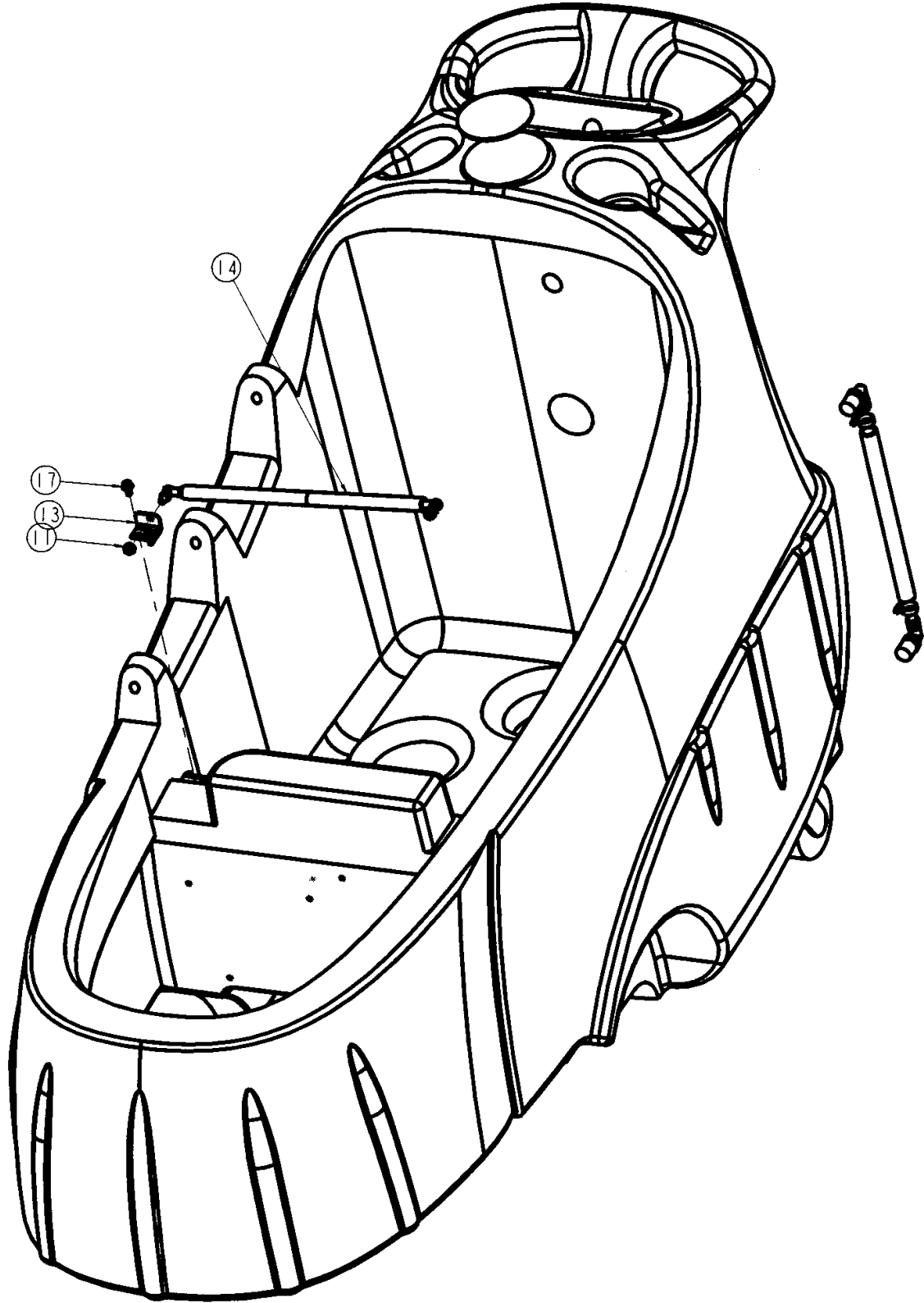
* Effective January 1st, 2005. Terms subject to change without notice.

- 1) Windshear™ Blower-Dryer, Insulation Blowers, T191, T201, T12/1, CV 30, CV 38, CW 50, CW 100, Pro PAC Vacs, Duo-Upright Carpetkeepers™, Gas & Electric Pressure Washers, and all chargers are warranted for 1 (one) year for both parts and labor.
- 2) Warranties on all riding sweepers including the ICC1, KM 100/100 R, KMR 1250, and KMR 1700 are 24 months parts/6 months labor OR 1000 hours of operation, whichever comes first. Warranties on the 75/140 & 90/140 are 24 months parts/12 months' labor OR 1,000 hours of operation whichever comes first.
- 3) All non-wear item parts purchased after warranty expiration are warranted for 90 days.
- 4) Warranty starts from the date of sale to the consumer or, at Tornado's discretion, 6 months after dealer purchased the unit from Tornado, whichever comes first.

Note: Tornado, The Latest Dirt, Floorkeeper, Carpetkeeper, Carpetrinser, Carpetrinser/Dryer, Headmaster, Taskforce, PAC-VAC, T-Lite, Glazer, Windshear, Max-Vac, CV 30, CV 38, and Trot-Mop are trademarks of Tornado Industries.

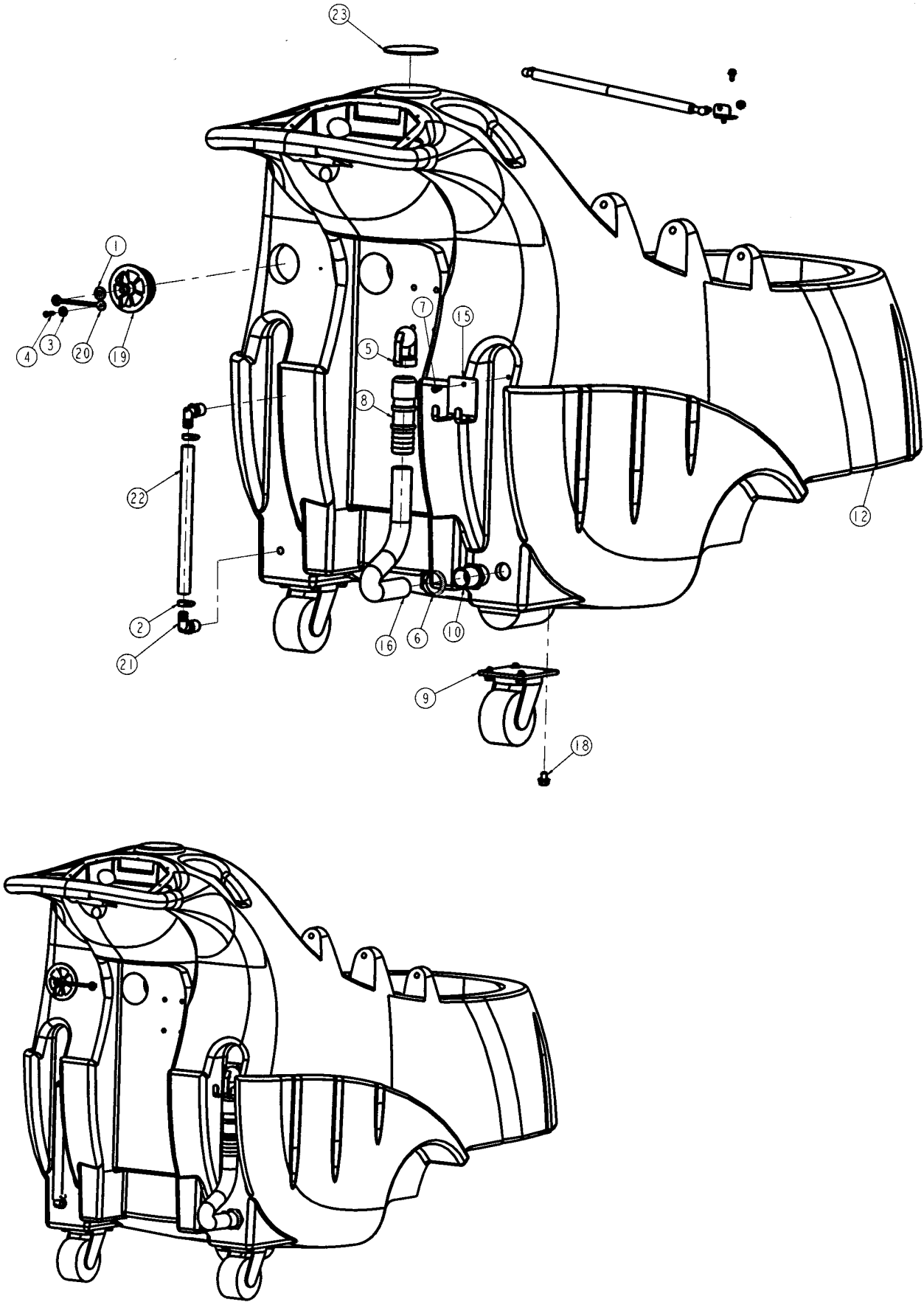
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SOLUTION TANK – EXPLODED VIEW “A”
(Ref. Drawing #31504)



SOLUTION TANK – EXPLODED VIEW “B”

(Ref. Drawing #31504)



SOLUTION TANK – PARTS LIST

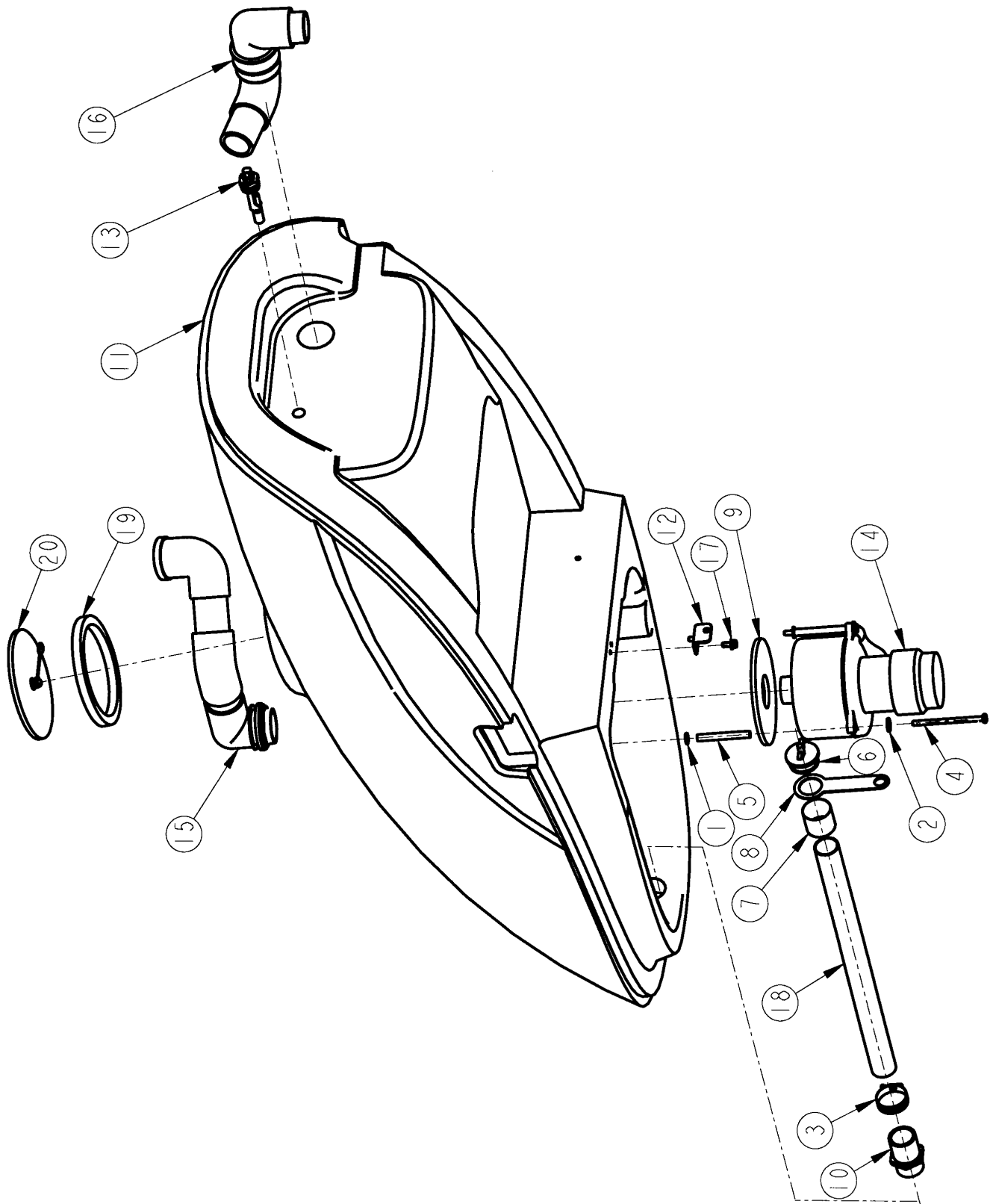
(Ref. Drawing #31504)

ITEM	QTY	PART #	DESCRIPTION
1	1	02568	WASHER, PLAIN 5/16
2	2	07626	HOSE CLAMP SCREW-TYPE 5/16"-7/8"
3	1	11219	WASHER, PLAIN #10
4	1	15073	SCREW, TFT PAN HEAD #10-16 X 1"
5	1	16089	STOPPER, RETAINED PLUG
6	1	16091	HOSE CLAMP
7	1	16136	SET SCREW, SOCKET HEAD #10-24 X 1/2"
8	1	18563	NOZZLE, DRAIN HOSE
9	2	18773	SWIVEL CASTER
10	1	19270	FITTING ,RECOVERY HOSE
11	2	19513	NUT, HEX LOCK (NYLON INSERT) 5/16-18
12	1	19544	SOLUTION TANK
13	1	19596	BRACKET, GAS SPRING MOUNTING
14	1	19724	GAS SPRING
15	1	19948	HANGER, DRAIN HOSE
16	1	30533	HOSE W/BELLOWS
17	2	30623	SCREW, FLANGED HEX HEAD 1/4-20 X 1/2
18	8	30647	SCREW, FLANGED HEX HEAD 3/8-16 X 1/2
19	1	31357	STOPPER PLUG, 3.0"
20	1	31358	ATTACHMENT PIECE (RETAINER STRAP)
21	2	31393	ELBOW FITTING, 90DEG, 1/2"
22	1	31394	SIGHT TUBE
23	1	31551	COVER, SOLUTION TANK CAVITY
24*	2	30818	DECAL, TORNADO W/LOGO 3.5 X 15.5

* = NOT SHOWN

RECOVERY TANK – EXPLODED VIEW

(Ref. Drawing #31503)



RECOVERY TANK – PARTS LIST

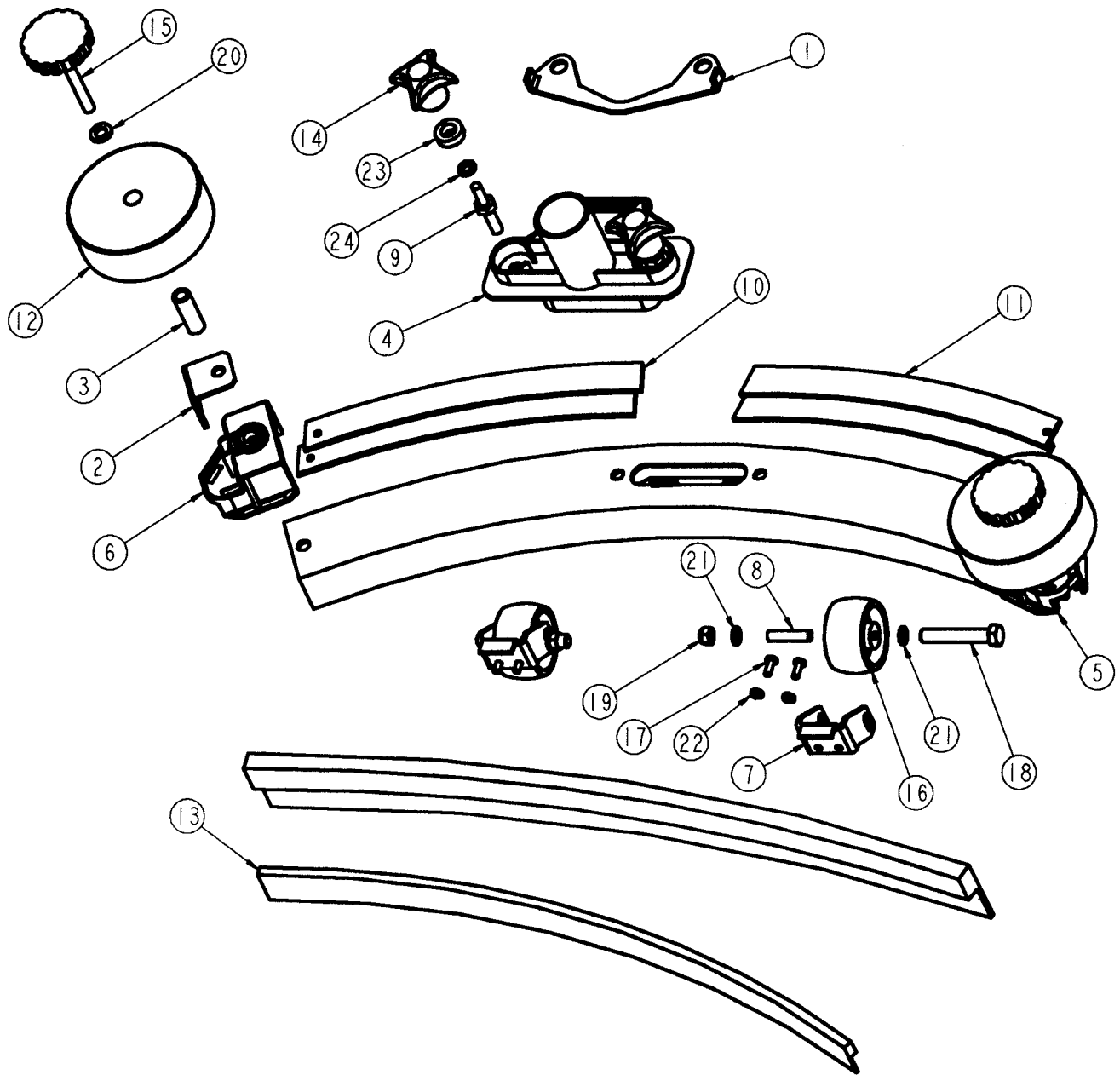
(Ref. Drawing #31503)

ITEM	QTY	PART #	DESCRIPTION
1	3	03218	WASHER, PLAIN 1/4
2	2	14142	WASHER, PLAIN .265
3	1	16091	HOSE CLAMP
4	3	17644	SCREW, HEX HEADCAP 1/4-20 X 4.0
5	3	17889	SPACER, MOTOR ENCLOSURE
6	1	18226	PLUG
7	1	18357	SLEEVE, ALUMINUM
8	1	18358	RUBBER ATTACHMENT
9	1	19119	GASKET, VACUUM MOTOR
10	1	19270	FITTING ,RECOVERY HOSE
11	1	19543	RECOVERY TANK
12	1	19596	BRACKET, GAS SPRING MOUNTING
13	1	19708	FLOAT SWITCH
14	1	19930	VACUUM MOTOR
15	1	19973	ASSEMBLY, VAC INTAKE
16	1	30503	ASSEMBLY, RECOVERY INLET
17	2	30623	SCREW, FLANGED HEX HEAD 1/4-20 X 1/2
18	1	31237	HOSE, RECOVERY DRAIN
19	1	31354	COVER GASKET
20	1	31355	ASSEMBLY, TOP COVER
21*	1	31337	DECAL, TORNADO SWIRL LOGO, 5.0" DIA.*

* = NOT SHOWN

SQUEEGEE ASSEMBLY – EXPLODED VIEW

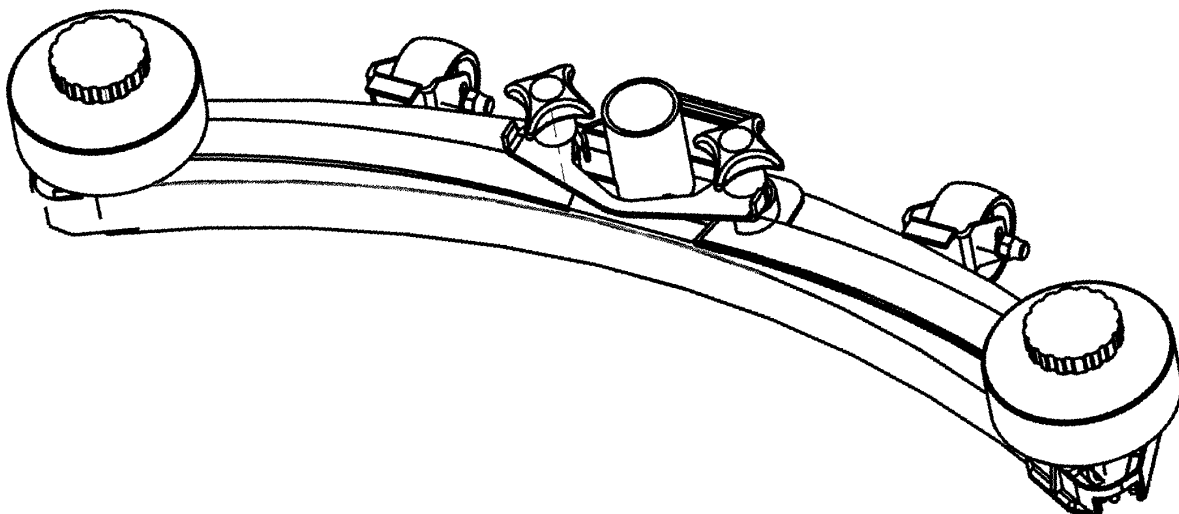
(Ref drawing #K47770560)



SQUEEGEE ASSEMBLY – PARTS LIST

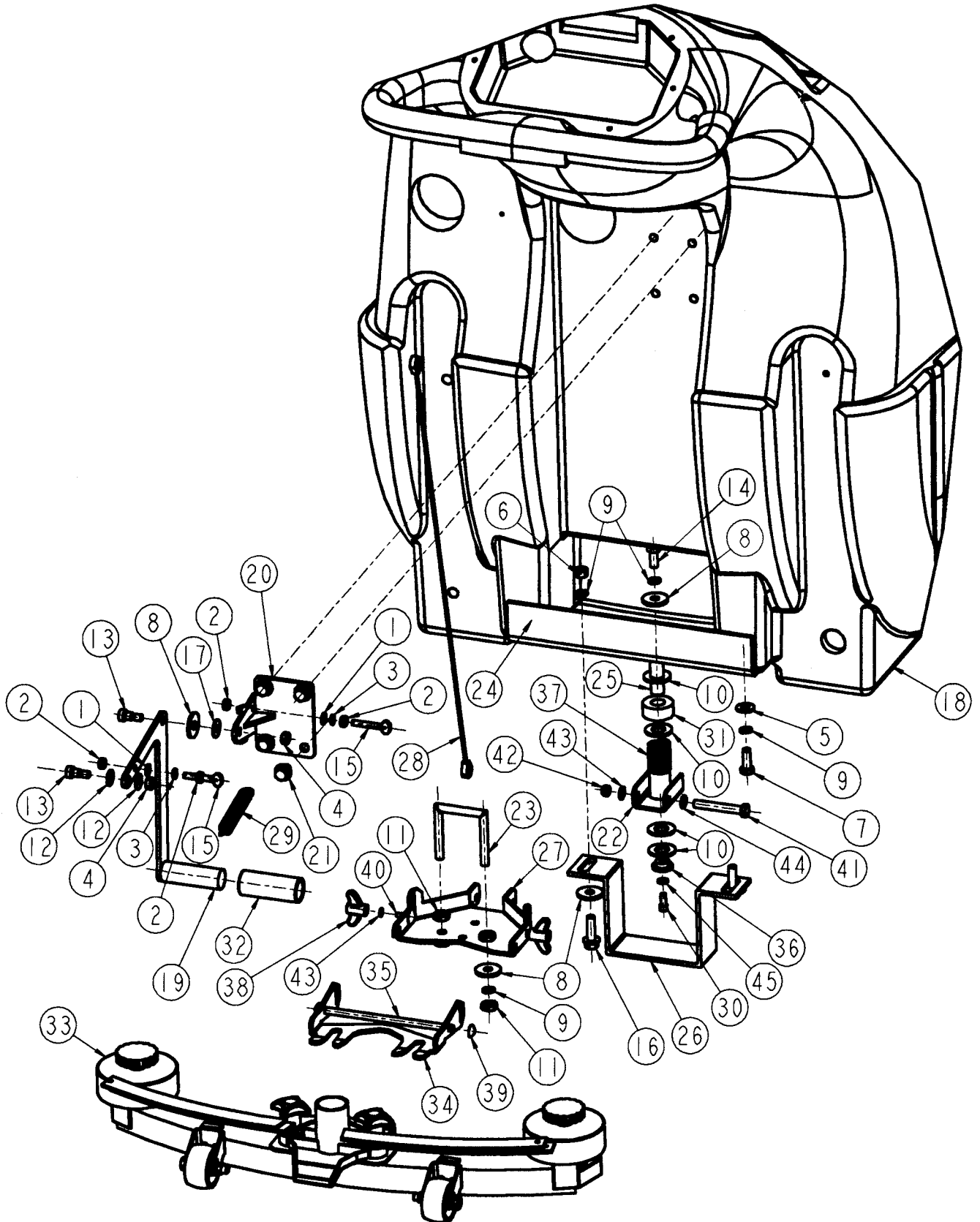
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	K50072170	PLATE
2	2	K50171360	BRACKET, SQUEEGEE TAILPIECE
3	2	K50294690	SPACER, STEEL 1.44" LONG
4	1	K50314640	CHANNEL
5	1	K50314650	TAILPIECE
6	1	K50314820	TAILPIECE
7	2	K50443040	CASTER WHEEL FRAME
8	2	K51053200	SPACER
9	2	K53080570	HEX STUD, DOUBLE-SIDED THREAD
10	2	K54012440	INSERT (PLATE)
11	2	K54012500	INSERT (PLATE)
12	2	K55150960	WHEEL, 4" DIA. BLACK
13	1	K62732150	SQUEEGEE BLADE SET
14	2	K63211330	STAR HANDLE
15	2	K63211470	CONTROL KNOB
16	2	K64354010	WHEEL
17	4	K73030370	SCREW
18	2	K73061990	SCREW
19	2	K73114220	NUT
20	2	K73120040	WASHER .33" DIA.
21	4	K73120260	WASHER
22	4	K73120580	WASHER
23	2	K73120800	SPACER
24	2	K73122770	WASHER

(Ref. Drawing #K47770560)



SQUEEGEE MOUNT ASSEMBLY – EXPLODED VIEW

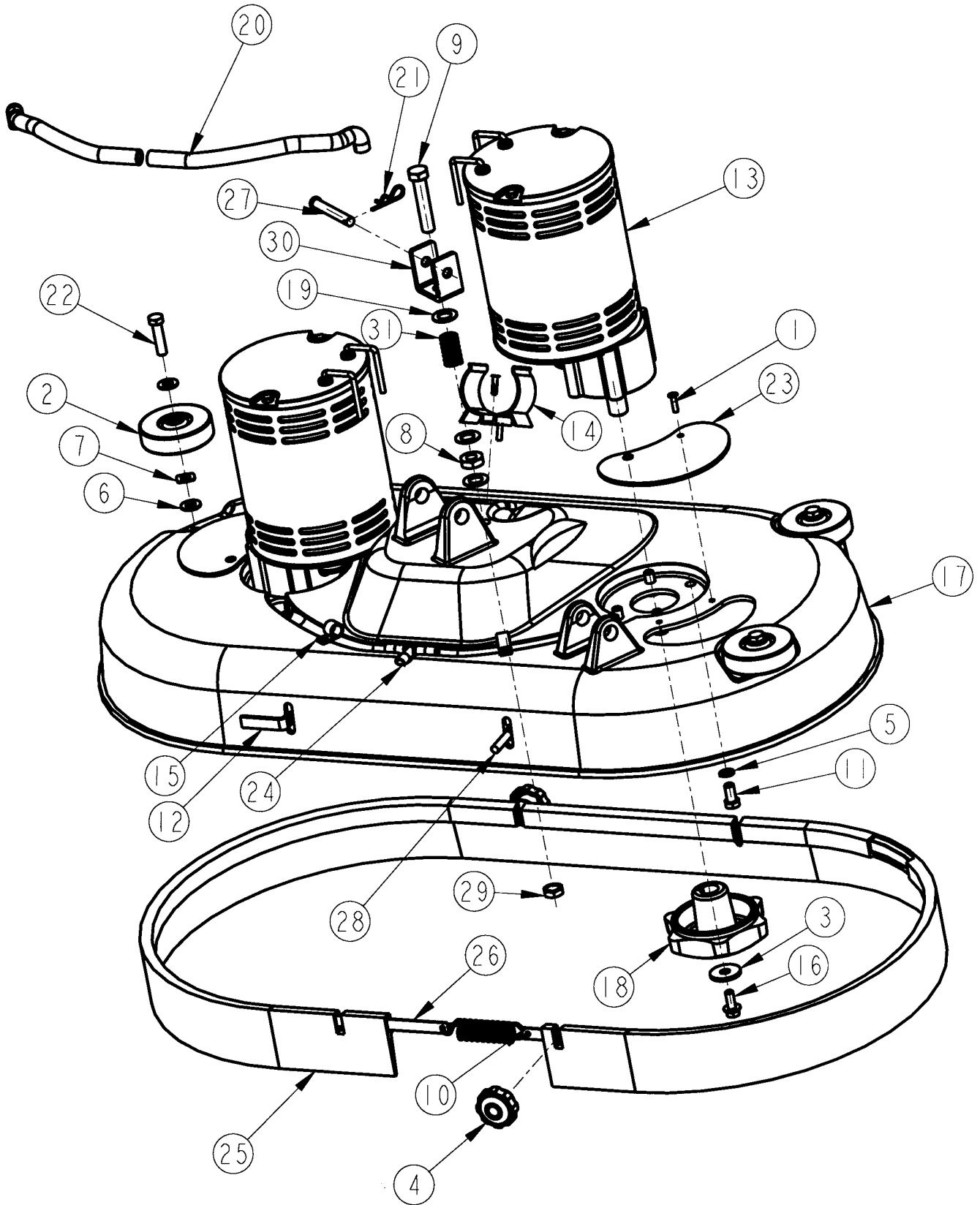
(Ref. Drawing #32031)



SQUEEGEE MOUNT ASSEMBLY PARTS LIST
(Ref. Drawing #32031)

ITEM	QTY	PART #	DESCRIPTION
1	4	00851	WASHER, PLAIN ¼"
2	4	01497	HEX NUT, FINISHED, ¼-20
3	2	01574	LOCK WASHER ¼"
4	2	01589	HEX NUT, FINISHED, 5/16-18
5	2	02568	WASHER, PLAIN 5/16
6	2	02581	HEX NUT, FINISHED, 3/8-16
7	2	03320	SCREW, HEX HEAD CAP, 3/8-16 X 1.0
8	8	03321	WASHER, PLAIN .391
9	7	03536	WASHER, LOCK 3/8
10	4	03931	WASHER, PLAIN 5/8
11	4	05025	HEX NUT, JAM
12	2	14142	WASHER, PLAIN .265
13	2	15677	SCREW, SOCKET HEAD, SHOULDER 3/8D X 3/8
14	1	16907	SCREW, HEX HEAD CAP 3/8-16 X 7/8
15	2	18695	BOLT, SQUEEGEE LIFT CABLE
16	2	18873	SCREW, HEX HEAD FLANGED, 3/8-16 X 1-1/4
17	1	19191	WASHER, PLAIN .328
18	1	19544	SOLUTION TANK
19	1	19599	HANDLE, SQUEEGEE LIFT
20	1	19600	MOUNTING BRACKET, LIFT HANDLE
21	4	30647	SCREW, HEX HEAD FLANGED, 3/8-16 X 1/2
22	1	31938	PIVOT LIFT
23	1	31947	U-BOLT, 3/8-16
24	1	32016	MAIN SUPPORT BRACKET
25	1	32017	PIVOT ROD
26	1	32018	SQUEEGEE STOP
27	1	32019	BRACKET
28	1	32024	LIFTING CABLE
29	1	32025	SPRING, 9/16" O.D.
30	1	32026	SCREW, SOCKET HEAD CAP, ¼-20 X 5/8
31	1	32027	SPACER, SQUEEGEE PIVOT
32	1	10721-7	GRIP, HANDLE
33	1	K47770560	SQUEEGEE ASSEMBLY
34	1	K50482340	ROCKER
35	1	K51072020	BAR
36	1	K51108680	BUSHING, SQUEEGEE MOUNTING BRACKET
37	1	K53322060	HELICAL SPRING
38	2	K63101290	KNOB, TWO-EARED
39	2	K63431320	LOCK WASHER
40	2	K73031390	SCREW
41	1	K73061510	SCREW
42	1	K73114270	NUT
43	2	K73120030	WASHER
44	2	K73120040	WASHER .33 DIA.
45	1	K73120260	WASHER

BRUSH DRIVE ASSEMBLY – EXPLODED VIEW



(Ref. Drawing #31501)

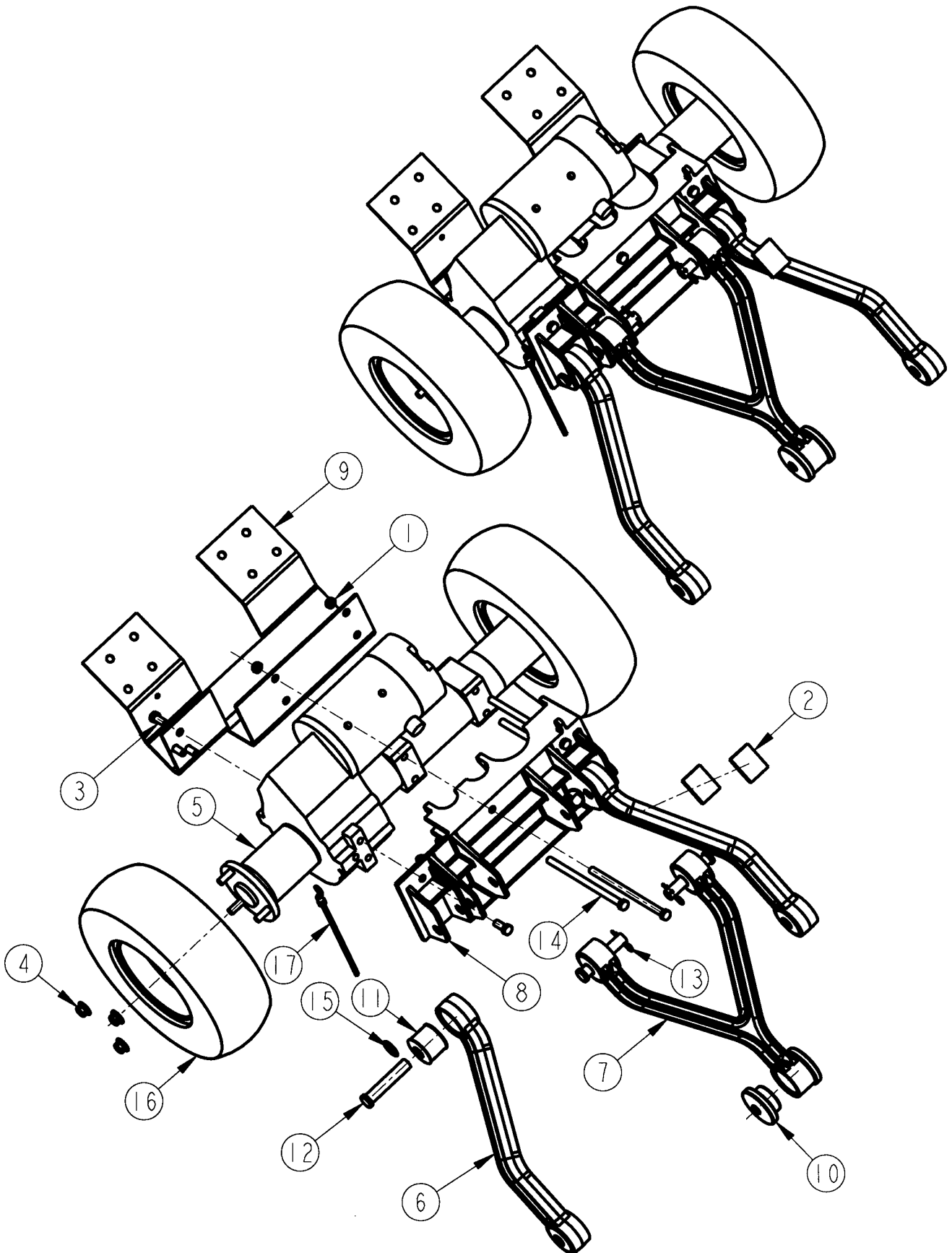
BRUSH DRIVE ASSEMBLY – PARTS LIST

(Ref. Drawing #31501)

BILL OF MATERIALS			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	8	03124	RIVET-BLIND 3/16 DIA X .656 LONG
2	3	03264	WHEEL-3 DIA (3/8 BORE)
3	2	03321	WASHER-PLAIN .391
4	2	03493	NUT, THUMB 5/16-18
5	8	03536	WASHER-LOCK 3/8
6	6	03736	WASHER-PLAIN 3/8
7	3	07132	WASHER-SPRING 3/8
8	1	10513	NUT-HEX JAM
9	1	14500	SCREW-HEX HEAD CAP 1/2-13 X 2-1/2
10	1	16472	SPRING-EXTENSION
11	8	17575	SCREW-HEX HEAD CAP 3/8-16 X 3/4
12	2	17733	KEEPER
13	2	18564	MOTOR-3/4 HP, 36 VDC, 200 RPM
14	1	18671	CLIP-RETAINING (DRAIN HOSE)
15	2	18717	CLIP-RETAINING (DRAIN HOSE)
16	2	19196	SCREW-HEX FLANGE HEAD 5/16-18 X 3/4
17	1	19574	BRUSH CASTING 30
18	2	19579	COUPLER, BRUSH
19	3	19616	WASHER-PLAIN .563
20	1	19661	HOSE-3/8ID
21	1	19666	PIN, BRIDGE 1/2IN
22	3	19795	SCREW-HEX HEAD CAP 3/8-16 X 1-1/2
23	2	19918	FLAP-BRUSHCOVER
24	1	19935	FITTING-3/8 BARB TEE
25	1	19946	BUMPER
26	1	19947	STRAP-BUMBER
27	1	30315	PIN-CLEVIS 5/16"D. X 2.6 LG. (ZP)
28	2	30598	BOLT-CARRIAGE 5/16-18 X 1-1/2
29	1	30920	NUT- LOCK NUT HEX #1/2-13
30	1	31372	ACTUATOR CONNECTING BRACKET
31	1	31459	SPRING-1.25"

TRANSAXLE ASSEMBLY – EXPLODED VIEW

(Ref. Drawing #19686)



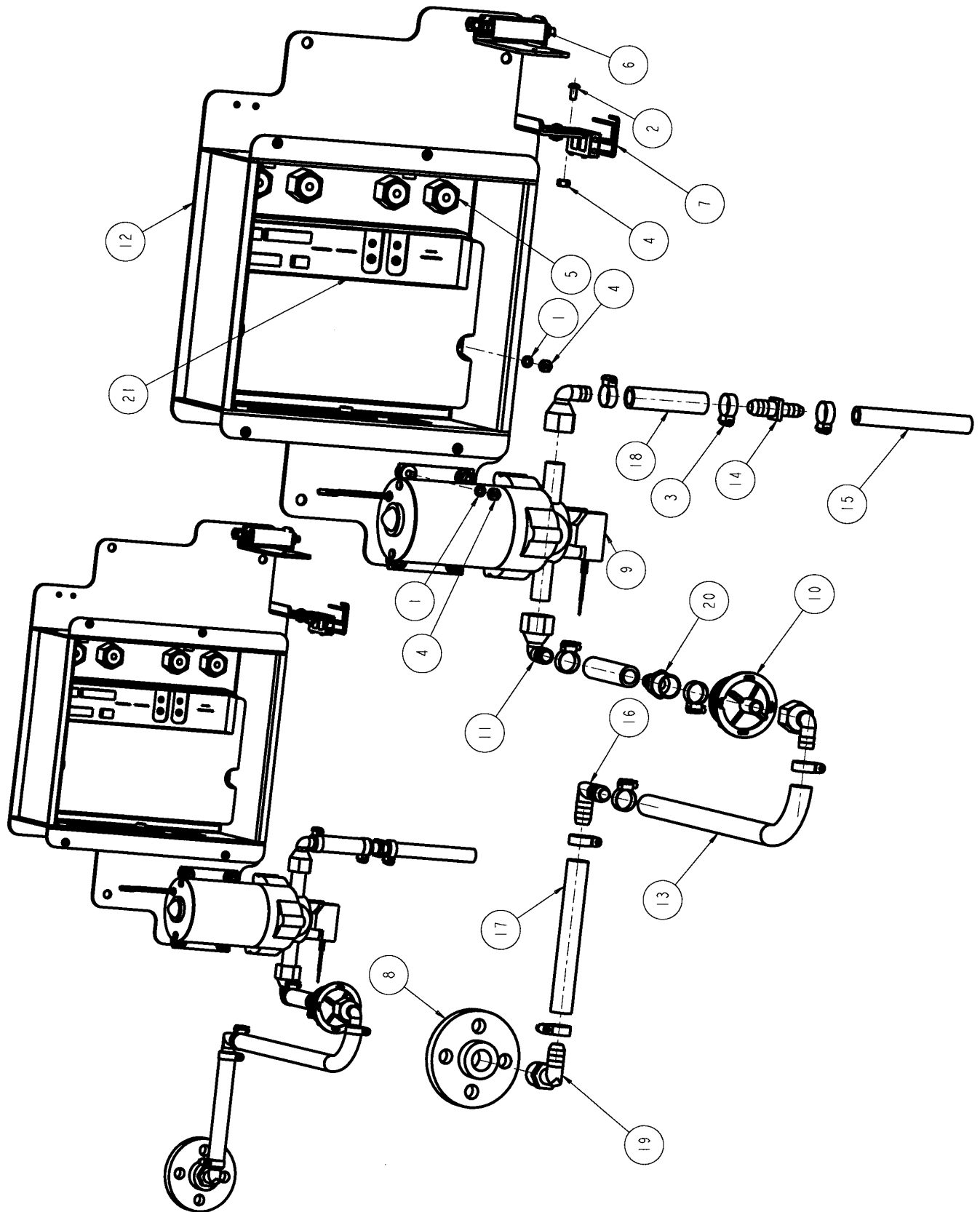
TRANSAXLE ASSEMBLY – PARTS LIST

(Ref. Drawing #19686)

BILL OF MATERIALS			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	03868	NUT-HEX JAM LOCK (NYLON INSERT) 3/8-16
2	2	16470	BUMPER PAD
3	5	16907	SCREW-HEX HEAD CAP 3/8-16 X 7/8
4	6	18874	NUT-HEX FLANGE 3/8-16
5	1	19566	TRANSAXLE-36VDC-3/4HP
6	2	19567	ARM, LIFT HEAD
7	1	19568	A-ARM-ALUMINUM 12.5 LONG
8	1	19570	BLOCK-TRANSAXLE MOUNTING
9	1	19592	BRACKET-TORQUE
10	2	19603	BUSHING-RUBBER (FLANGED)
11	6	19604	BUSHING-RUBBER (SLEEVE)
12	4	19663	PIN, CLEVIS
13	2	19666	PIN, BRIDGE 1/2IN
14	4	19680	SCREW-HEX HEAD CAP 3/8-16 X 6-1/2
15	2	19938	CIRCLE COTTER-STEEL
16	2	19955	WHEEL & TIRE-FOAM FILLED 12
17	1	31492	GROUNDING STRAP ASS'Y

CONTROL BOX & SOLUTION PUMP MODULE – EXPLODED VIEW

(Ref. Drawing #31469)



CONTROL BOX & SOLUTION PUMP MODULE – PARTS LIST

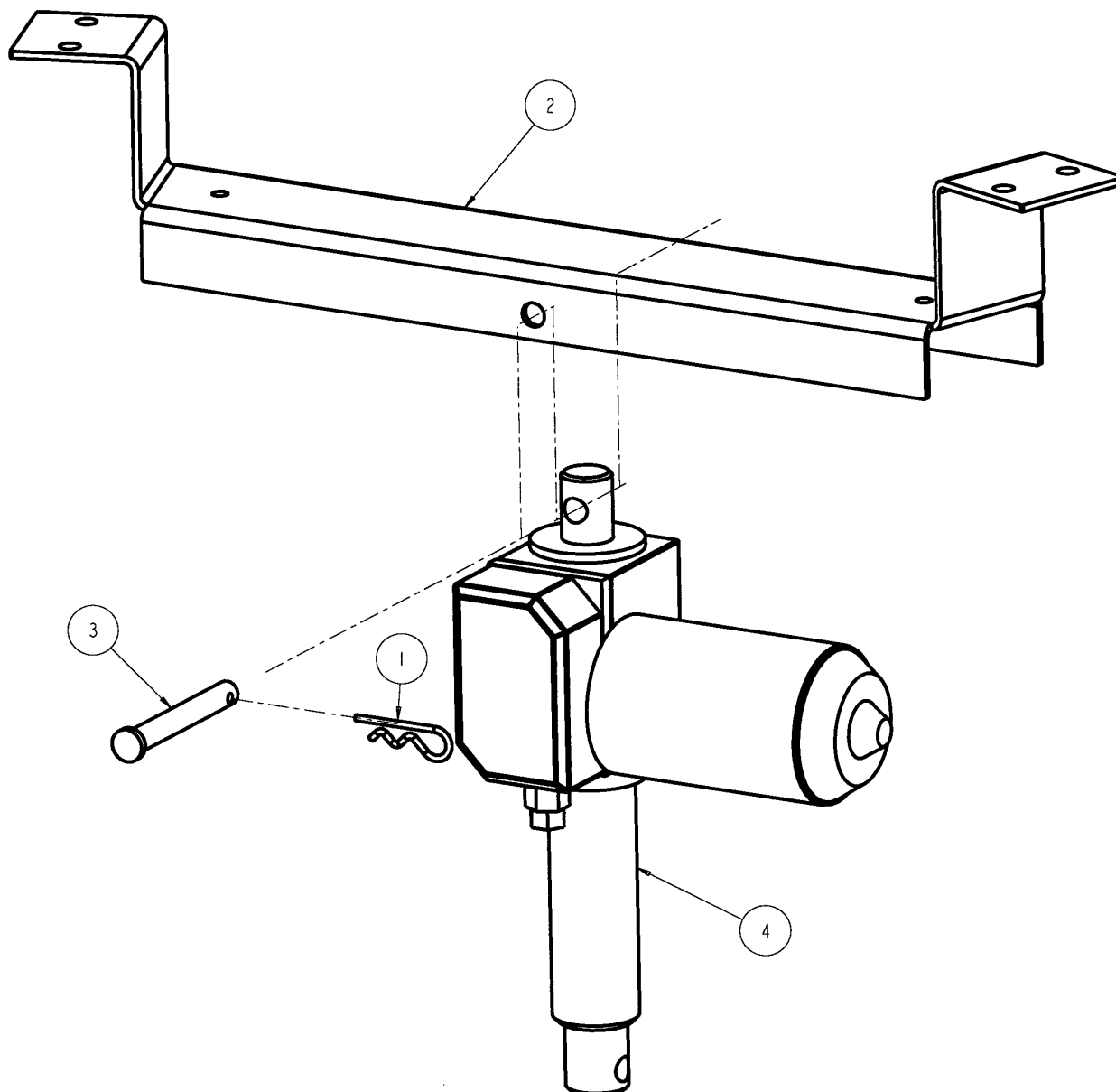
(Ref. Drawing #31469)

BILL OF MATERIALS			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	6	03487	WASHER-PLAIN 3/16
2	2	03660	SCREW-PHILLIPS PAN HEAD MACHINE #10-24 X 7/16
3	9	07626	CLAMP-HOSE 5/16"-7/8" SCREW
4	8	10894	NUT-HEX LOCK (P/T) #10-24
5	4	15345	BUSHING, INSULATOR
6	1	31087	CIRCUIT BREAKER
7	1	31098	SWITCH, ANGLE MTG LEVER
8	1	31370	FLANGE-1/2" PIPE
9	1	31422	SOLUTION PUMP (F/K)
10	1	31426	WATER STRAINER
11	3	31434	SWIVEL 90DEG ELBOW FITTING
12	1	31440	PLATE W/CONTROLLER BOX W-ASS'Y
13	1	31478	TUBE-.50" ID X 35" LONG
14	1	31481	REDUCER FITTING 1/2" X 3/8"
15	1	31484	TUBE-.375"ID X 4.50" LONG
16	1	31485	BARBED 90DEG ELBOW-1/2" X 1/2"
17	1	31487	TUBE-.50"ID X 5.50" LONG
18	2	31488	TUBE-.50"ID X 3" LONG
19	1	31550	ELBOW FITTING-90DEG, 1/2
20	1	31552	FITTING-1/2 BARB X 1/2 NPT
21	1	31421	SPEED CONTROLLER

ACTUATOR ASSEMBLY – EXPLODED VIEW & PARTS LIST

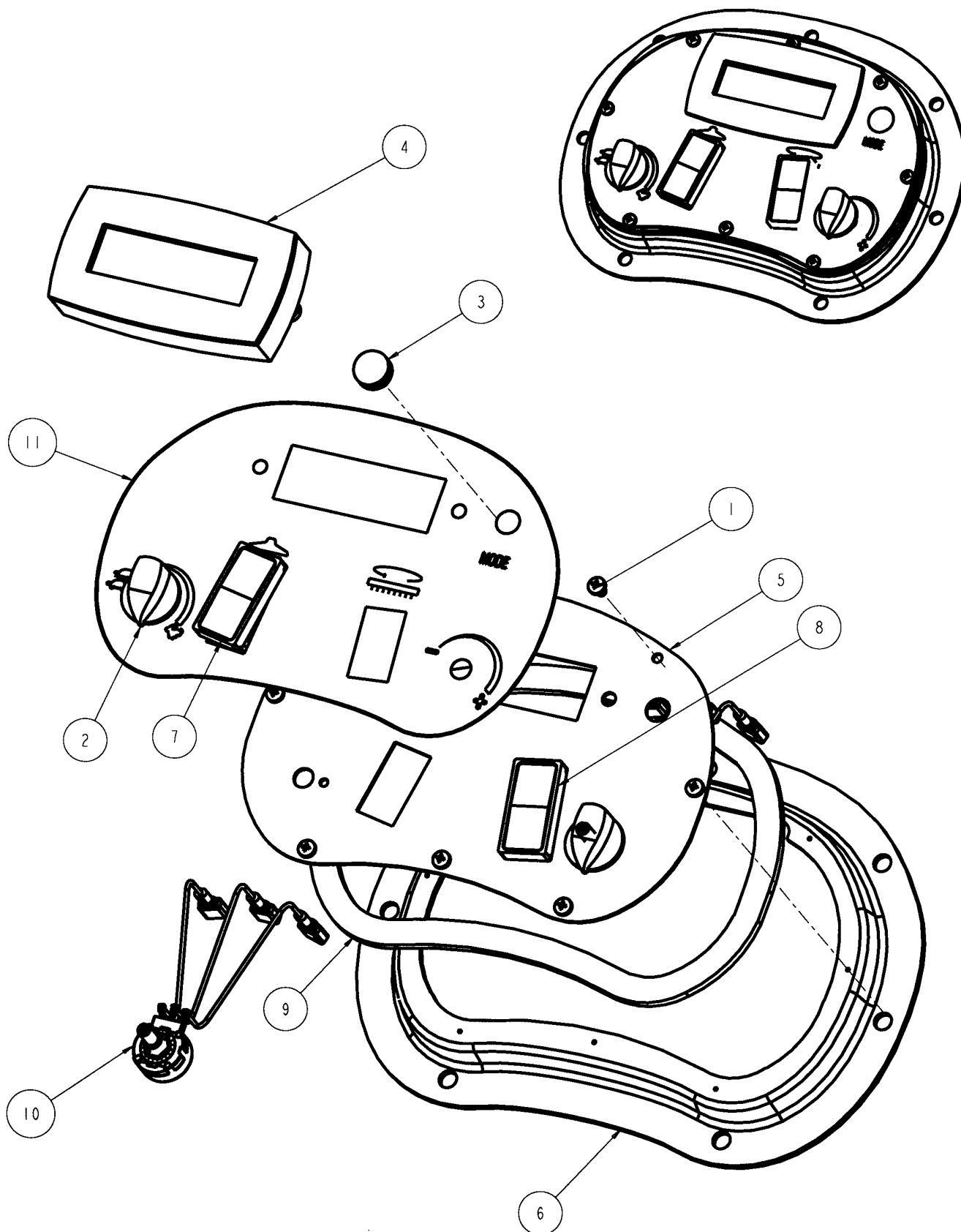
(Ref. Drawing #31386)

BILL OF MATERIALS			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	19666	PIN, BRIDGE 1/2IN
2	1	31356	ACTUATOR MOUNTING BRACKET
3	1	31369	CLEVIS PIN-3.00"
4	1	30762-A	ACTUATOR, AO-1/MC (REPOSITIONED TOP CONNECTOR)



CONTROL PANEL – EXPLODED VIEW

(Ref. Drawing #31474)



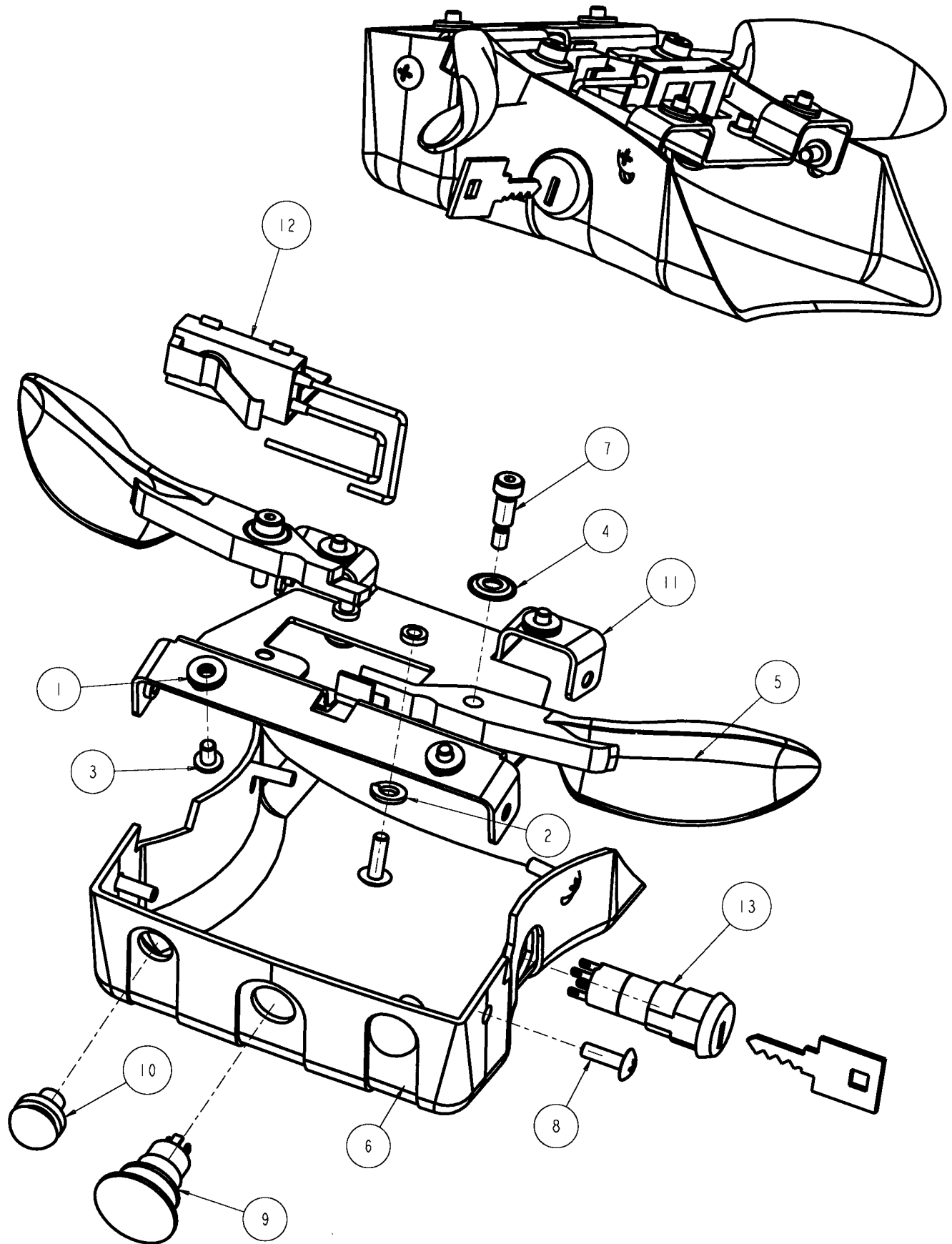
CONTROL PANEL – PARTS LIST

(Ref. Drawing #31474)

ITEM	QTY	PART #	DESCRIPTION
1	8	13330	SCREW-TFT (A) P.H. #10-12 X 3/8 (BLK.OXID)
2	2	32172	CONTROL KNOB 1/4" DIA. W/INDICATOR (BLK)
3	1	30526	BUTTON-REV (MOMENTARY)
4	1	30978	LCD CONTROL PANEL
5	1	31456	PLATE-CONTROL PANEL CVR BLK
6	1	31457	CONTROL PANEL (BLK) MACHINED
7	1	31475	SWITCH-20A, 12V
8	1	31476	SWITCH-20A, 12V MOMENTARY
9	1	31477	GASKET-CONTROL PANEL 26IN LG.
10	2	31502	ASS'Y POTENTIOMETER 5K W/ WIRES & TER.
11	1	31402	LABEL-FRONT(INSTRUMENT) PANEL

TRIGGER ASSEMBLY – EXPLODED VIEW

(Ref. Drawing #31500)



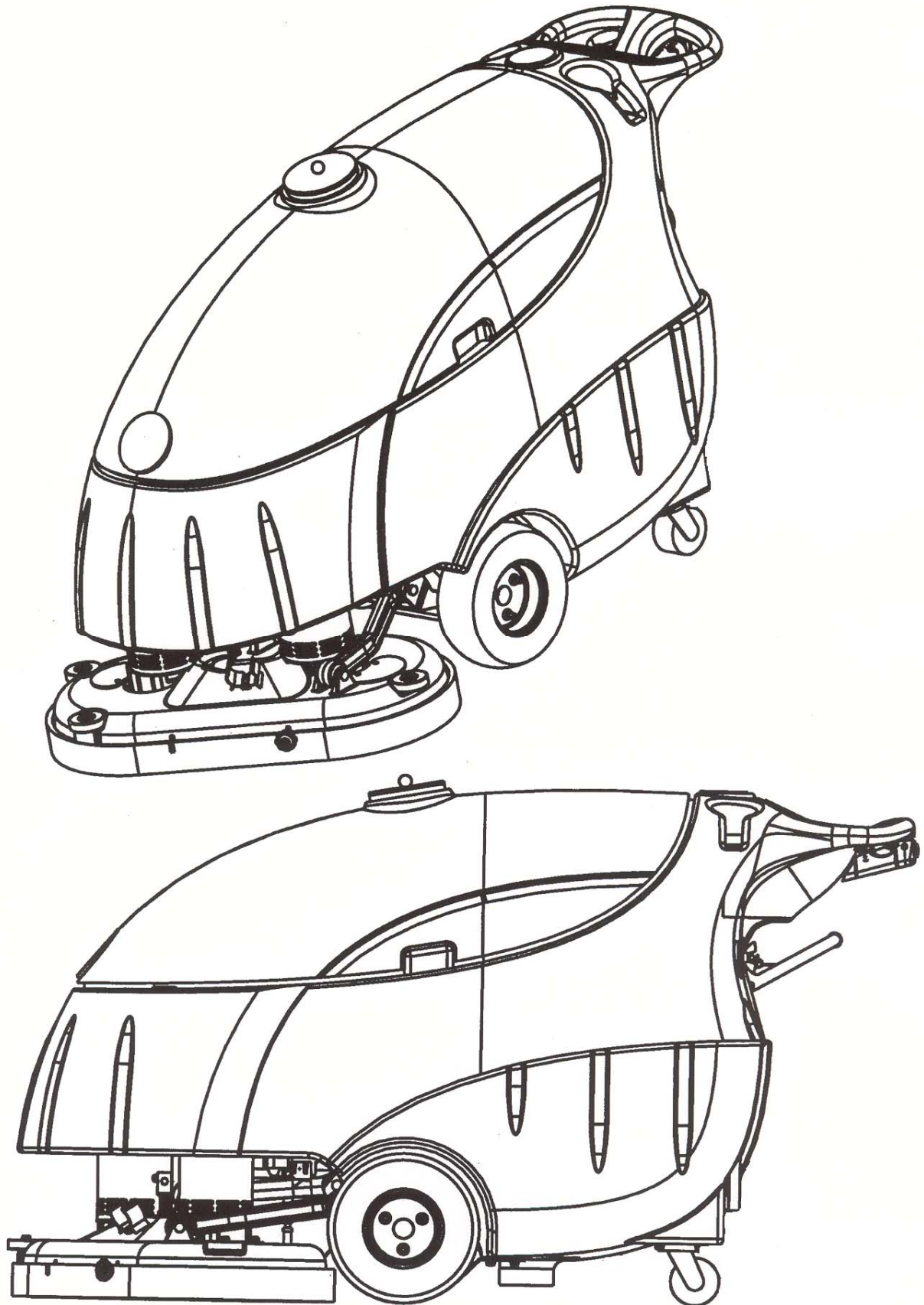
TRIGGER ASSEMBLY - PARTS LIST

(Ref. Drawing #31500)

BILL OF MATERIALS			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	8	00696	WASHER-PLAIN #10
2	2	01574	LOCK WASHER 1/4"
3	4	02007	SCREW-PHILLIPS PAN HEAD MACHINE #10-32 x 5/16
4	2	07741	WASHER-SEALING 1/4
5	2	19358	LEVER-HANDLE SWITCH
6	1	19690	SADDLE COVER
7	2	19692	SCREW-SOCKET HD SHOULDER 1/4D x 1/2
8	6	30436	SCREW-PHILLIPS TRUSS HEAD MACHINE #10-32 X 5/8
9	1	30496	PUSHBUTTON-STOP 1.18" DIA (Optional)
10	2	30526	BUTTON-REV (MOMENTARY)
11	1	31496	BRACKET-POTENTIOMETER W-ASS'Y
12	1	31499	SWITCH, NORMALLY OPEN
13	1	31341_1	KEY SWITCH

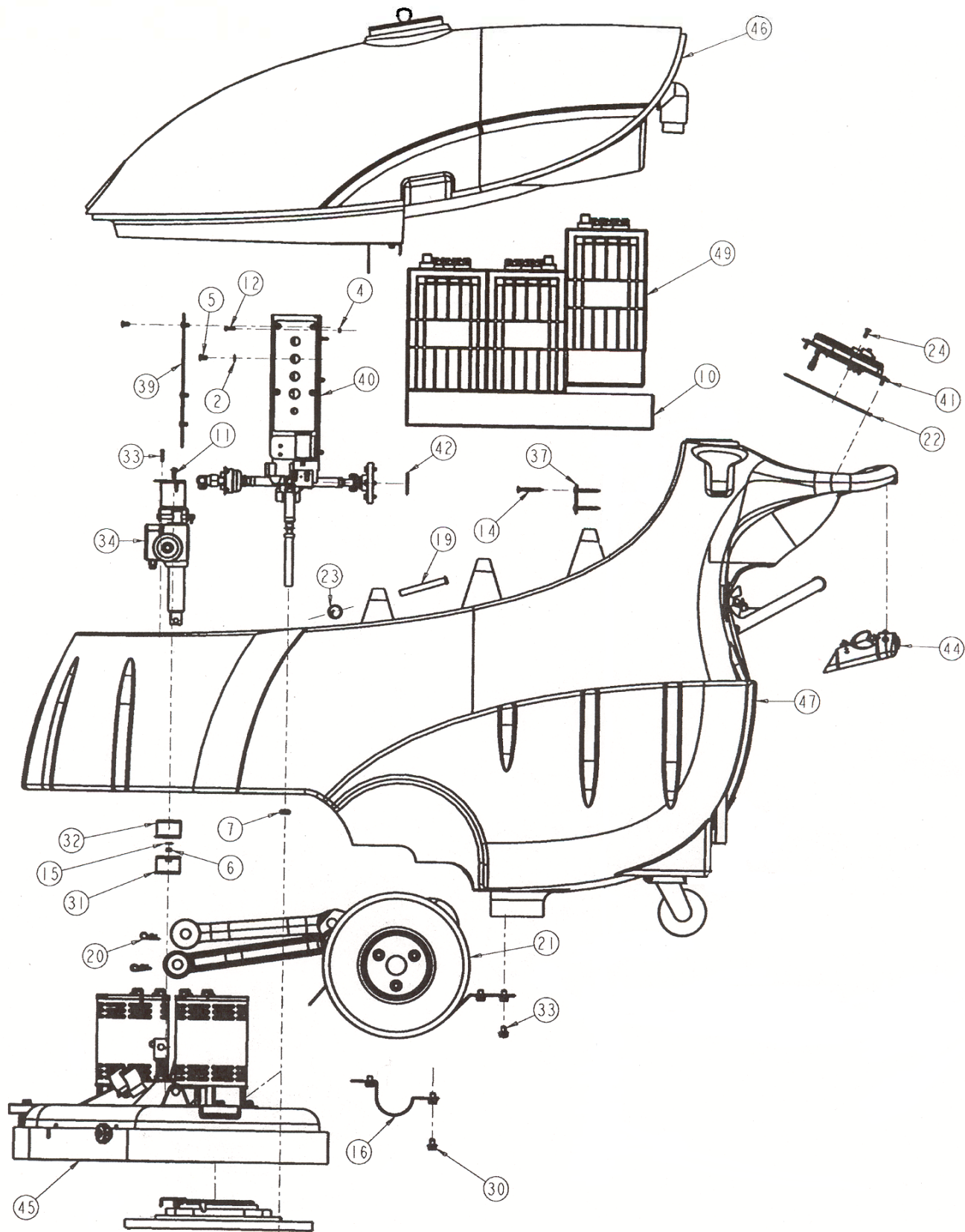
MAIN ASSEMBLY – EXPLODED VIEW “A”

(Ref. Drawing #99430)



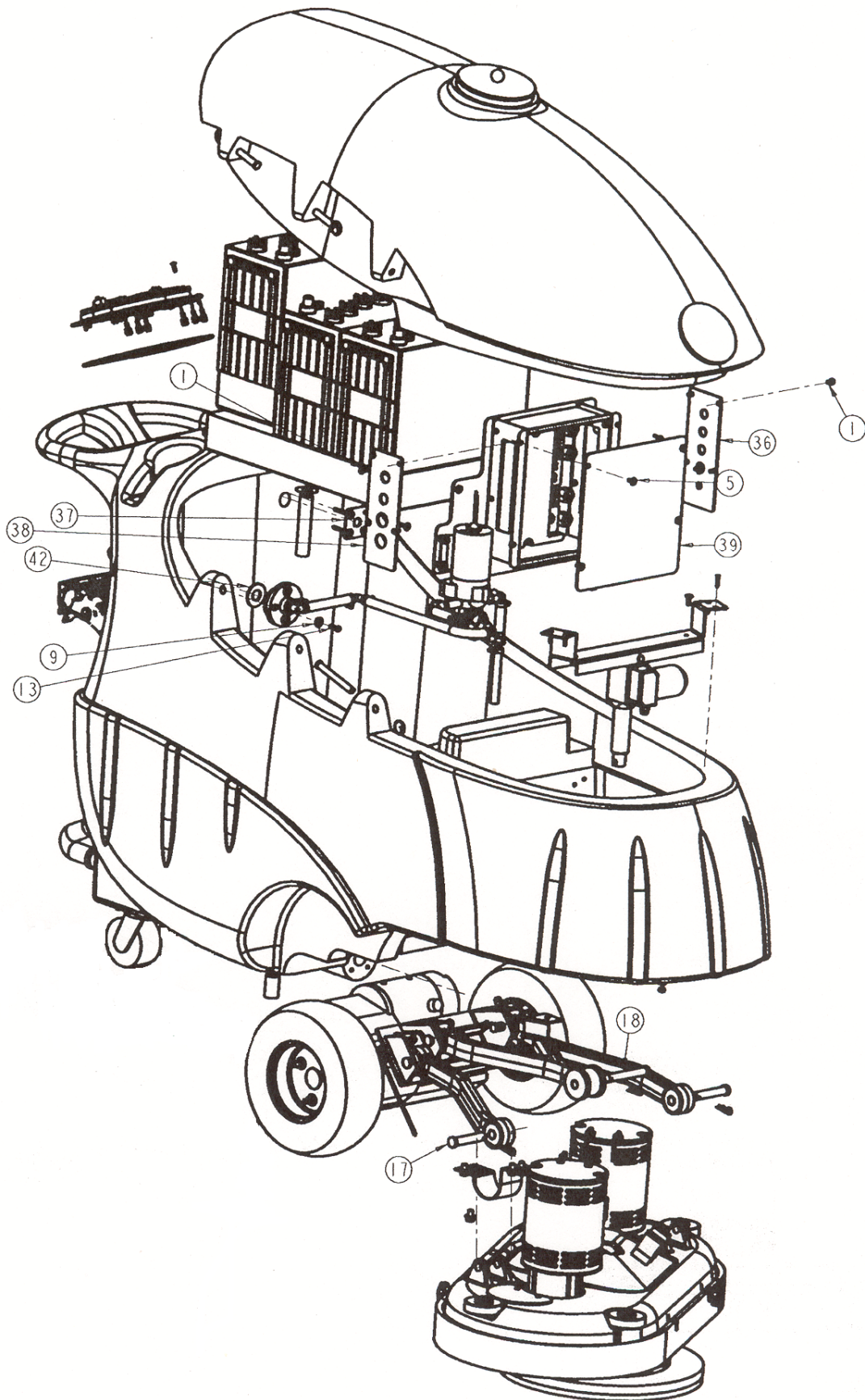
MAIN ASSEMBLY – EXPLODED VIEW “B”

(Ref. Drawing #99430)



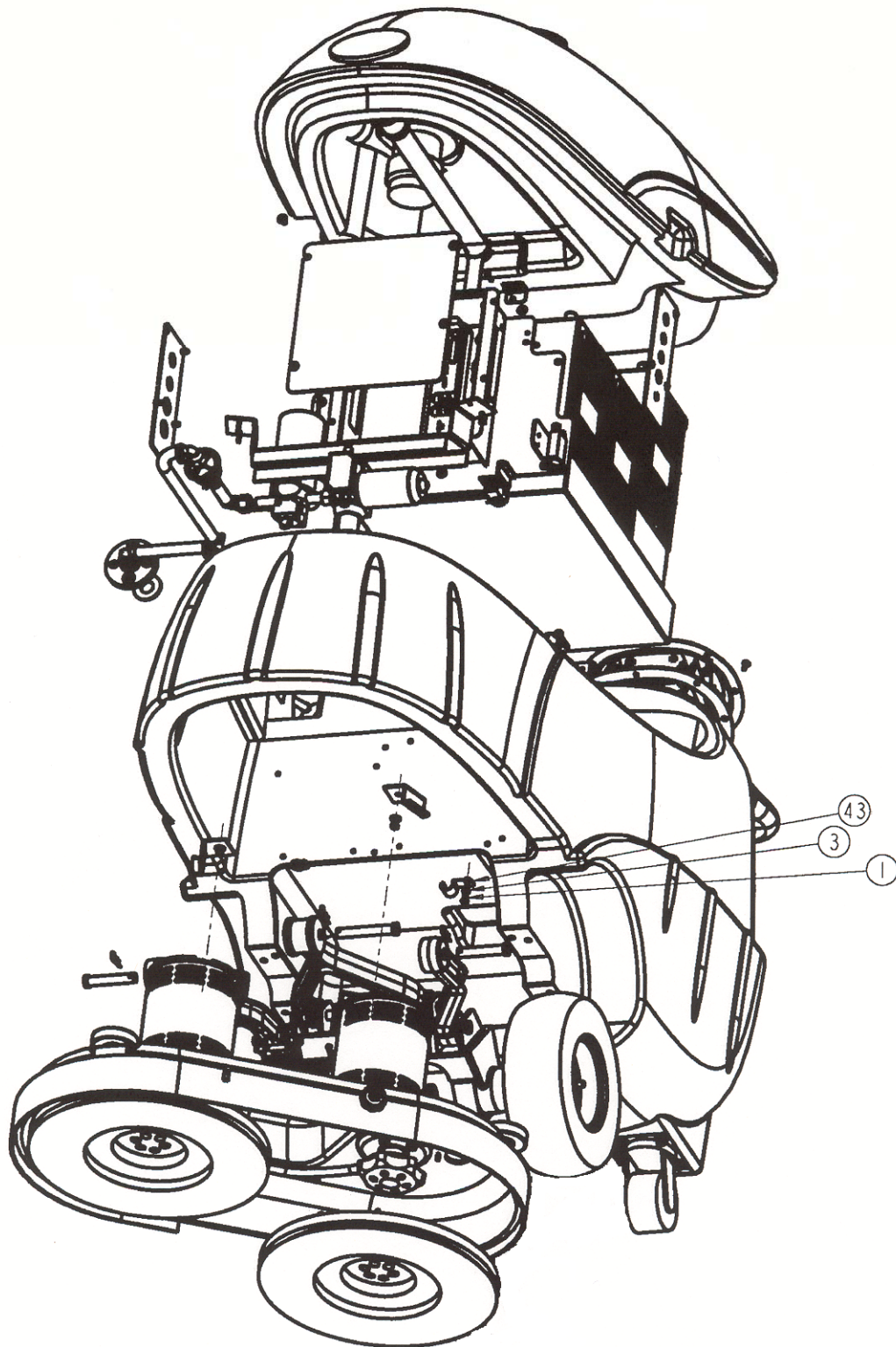
MAIN ASSEMBLY – EXPLODED VIEW “C”

(Ref. Drawing #99430)



MAIN ASSEMBLY – EXPLODED VIEW “D”

(Ref. Drawing #99430)



MAIN ASSEMBLY – PARTS LIST

(Ref. Drawing #99430)

BILL OF MATERIALS			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	9	00086	SCREW-PHILLIPS ROUND HEAD MACHINE 1/4-20 X 1/2
2	4	00851	WASHER-PLAIN 1/4"
3	1	01574	LOCK WASHER 1/4"
4	2	02958	NUT-HEX. LOCK (KEPS) #6-32
5	8	06192	SCREW-PHILLIPS TRUSS HEAD MACHINE 1/4-20 X 1/2
6	2	07533	NUT-HEX LOCK 1/4-20
7	1	07626	CLAMP-HOSE 5/16"-7/8" SCREW
9	4	14142	WASHER-PLAIN .265
10	1	16317	BATTERY TRAY
11	2	16619	SCREW-PHILLIPS TRUSS HEAD MACHINE 1/4-20 X 3/4
12	2	16924	SCREW-PHIL. PAN HD. #6-32 X 3/4"
13	4	17160	SCREW-HEX HEAD CAP 1/4-20 X 3/4
14	4	18253	SCREW-T.F. PAN HEAD #8-16 X 3/4"
15	2	18885	WASHER-PLAIN 1/4
16	2	19591	BRACKET-TRANSAXLE
17	2	19663	PIN,CLEVIS
18	1	19664	PIN,CLEVIS 1/2X3.75
19	3	19665	PIN,CLEVIS 1/2X3.75
20	3	19666	PIN, BRIDGE 1/2IN
21	1	19686	ASSEMBLY-TRANSAXLE
22	1	19693	SEAL, SPONGE RUBBER .125"THK
23	3	19938	CIRCLE COTTER-STEEL
24	7	30436	SCREW-PHILLIPS TRUSS HEAD MACHINE #10-32 X 5/8
30	16	30647	SCREW-HEX FLANGE HEAD 3/8-16 X 1/2
31	1	31373	RIGHT SUPPORT BRACKET
32	1	31374	LEFT SUPPORT BRACKET
33	4	31376	SHEET METAL SCREW #8 X 1.00
34	1	31386	ACTUATOR MOUNTING ASSEMBLY
36	1	31427	THRU PLATE
37	1	31428	ATTACHMENT PLATE
38	1	31430	THRU PLATE
39	1	31447	CONTROL BOX COVER
40	1	31469	CONTROL BOX/PUMP ASSEMBLY
41	1	31474	CONTROL PANEL ASSEMBLY
42	1	31486	RING GASKET-1.875"
43	1	31491	CONDUIT PIPE STRAP-.75"
44	1	31500	ASS'Y-TRIGGER
45	1	31501	ASSEMBLY-BRUSH DRIVE
46	1	31503	ASSEMBLY-RECOVERY TANK
47	1	31504	ASSEMBLY-SOLUTION TANK
48	2	99154	PAD DRIVER 16 INCH
49	3	99512	BATTERY
50	1	31418	CONTROL FUNCTIONS WIRING HARNESS
51	1	31419	POWER FUNCTIONS WIRING HARNESS
52	1	31420	GROUNDING HARNESS
53	2	30725	CABLE-BATTERY JUMPER 6GA
54	1	19698	HOSE-RECOVERY (63.25" L) BLACK W/BLK CUFFS
55	1	31417	LABEL/WIRING DIAGRAM

* = NOT SHOWN

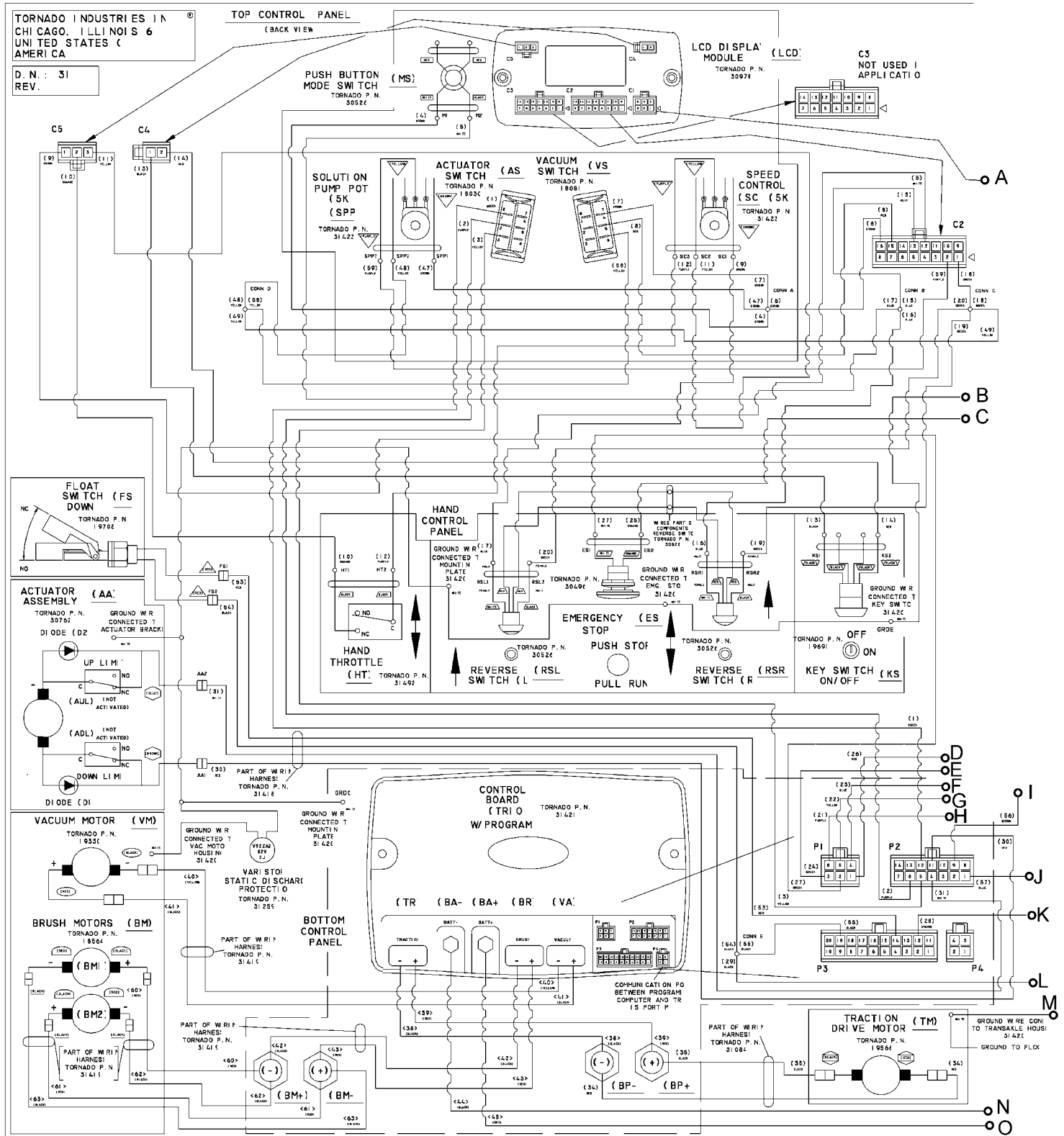
** = CONNECTED TO P/N: 31418

*** = CONNECTED TO P/N: 31419

WIRING DIAGRAM

Sheet 1 of 2

(Ref. Drawing 31417)



WIRING DIAGRAM

Sheet 2 of 2

(Ref. Drawing 31417)

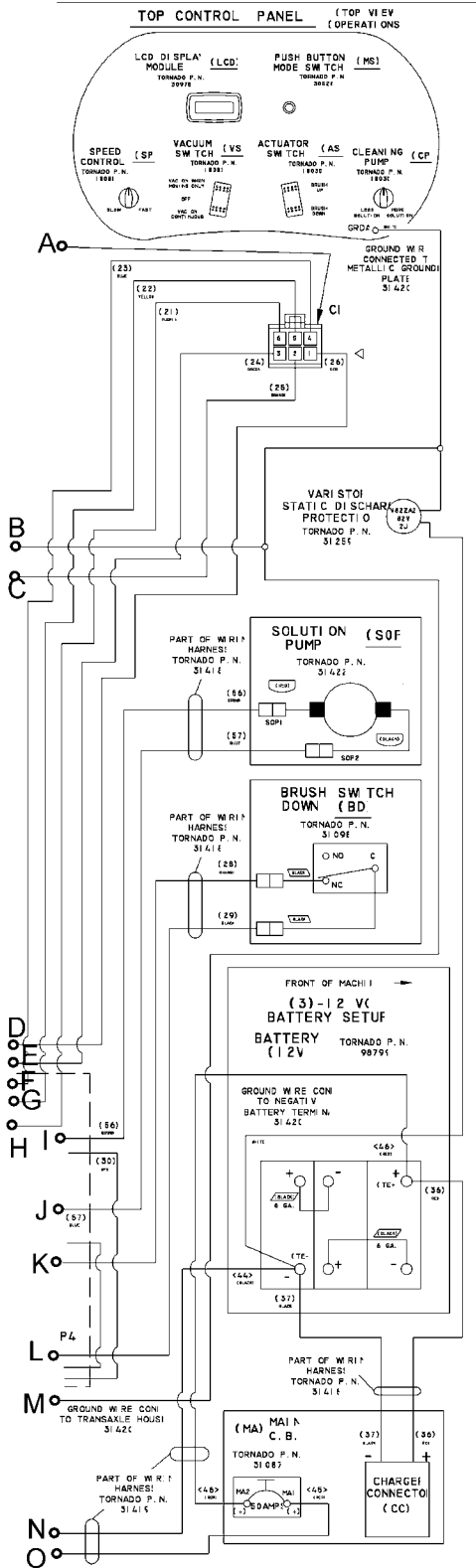


TABLE I

WIRE	AWG	TYPE	COLOR	FROM	TO	WIRE	AWG	TYPE	COLOR	FROM	TO
1	18	ULI 561	GREEN	AS1	P2P12(TRI O	47	18	ULI 561	BROWN	CONN 1	SPP1
2	18	ULI 561	PURPLE	AS2	P2P6(TRI O	48	18	ULI 561	YELLOW	SPP2	CONN 1
3	18	ULI 561	YELLOW	AS3	P2P5(TRI O	49	18	ULI 561	YELLOW	CONN 1	CONN 1
4	18	ULI 561	BROWN	MS1	CONN 1	50					
5	18	ULI 561	WHITE	MS2	C2P12(LCD	51					
6	18	ULI 561	BROWN	CONN 1	C2P16(LCD	52					
7	18	ULI 561	BROWN	VS4	VS2	53	18	ULI 561	RED	FS1	P3P14(TRI O
8	18	ULI 561	RED	VS5	C2P15(LCD	54	18	ULI 561	BLACK	FS2	CONN 1
9	18	ULI 561	BROWN	C5P1(LCD	SC1	55	18	ULI 561	BLACK	CONN 1	P3P19(TRI O
10	18	ULI 561	ORANGE	C5P2(LCD	HT1	56	18	ULI 561	BROWN	SOP1	P2P1(TRI O
11	18	ULI 561	YELLOW	C5P3(LCD	SC2	57	18	ULI 561	BLUE	SOP2	P2P1(TRI O
12	18	ULI 561	PURPLE	HT2	SC3	58	18	ULI 561	YELLOW	VS6	CONN 1
13	18	ULI 561	BLACK	C4P1(LCD	KS1	59	18	ULI 561	PURPLE	SPP3	C2P2(LCD
14	18	ULI 561	RED	C4P2(LCD	KS2						
15	18	ULI 561	BLUE	C2P13(TRI O	CONN 1						
16	18	ULI 561	BLUE	RSR1	CONN 1						
17	18	ULI 561	BLUE	CONN 1	RSL1						
18	18	ULI 561	GREEN	C2P1(LCD	CONN 1						
19	18	ULI 561	GREEN	CONN 1	RSR2						
20	18	ULI 561	GREEN	CONN 1	RSL2						
21	18	ULI 561	PURPLE	C1P6(LCD	P1P6(TRI O						
22	18	ULI 561	YELLOW	C1P5(LCD	P1P5(TRI O						
23	18	ULI 561	BLUE	C1P4(LCD	P1P4(TRI O						
24	18	ULI 561	GREEN	C1P3(LCD	P1P3(TRI O						
25	18	ULI 561	BLACK	C1P2(LCD	ES2						
26	18	ULI 561	RED	C1P1(LCD	P1P1(TRI O						
27	18	ULI 561	WHITE	ES1	P1P2(TRI O						
28	18	ULI 561	ORANGE	BDNC	P3P12(TRI O						
29	18	ULI 561	BLACK	BDC	CONN 1						
30	18	ULI 561	RED	P2P11(TRI O	AA1						
31	18	ULI 561	WHITE	P2P4(TRI O	AA2						
32											
33											
34	10	ULI 011	RED	BP+	TM+						
35	10	ULI 011	BLACK	BP-	TM-						
36	10	ULI 011	RED	CC+	TE+						
37	10	ULI 011	BLACK	CC-	TE-						
38	10	ULI 011	BLACK	TR-(TRI O	BP-						
39	10	ULI 011	RED	TR-(TRI O	BP+						
40	14	ULI 561	YELLOW	VA-(TRI O	VM-						
41	14	ULI 561	BLACK	VA+(TRI O	VM+						
42	10	ULI 011	BLACK	BR-(TRI O	BM-						
43	10	ULI 011	RED	BR+(TRI O	BM+						
44	10	ULI 011	BLACK	BA-(TRI O	TE-						
45	10	ULI 011	RED	BA+	MA1						
46	10	ULI 011	RED	MA2	TE+						
47	10	ULI 011	RED	BM+	BM+						
48	10	ULI 011	RED	BM-	BM2+						
49	10	ULI 011	BLACK	BM-	BM2-						
50	10	ULI 011	BLACK	BM-	BM-						

NOM. WIRE NUMBER: (COLOR)

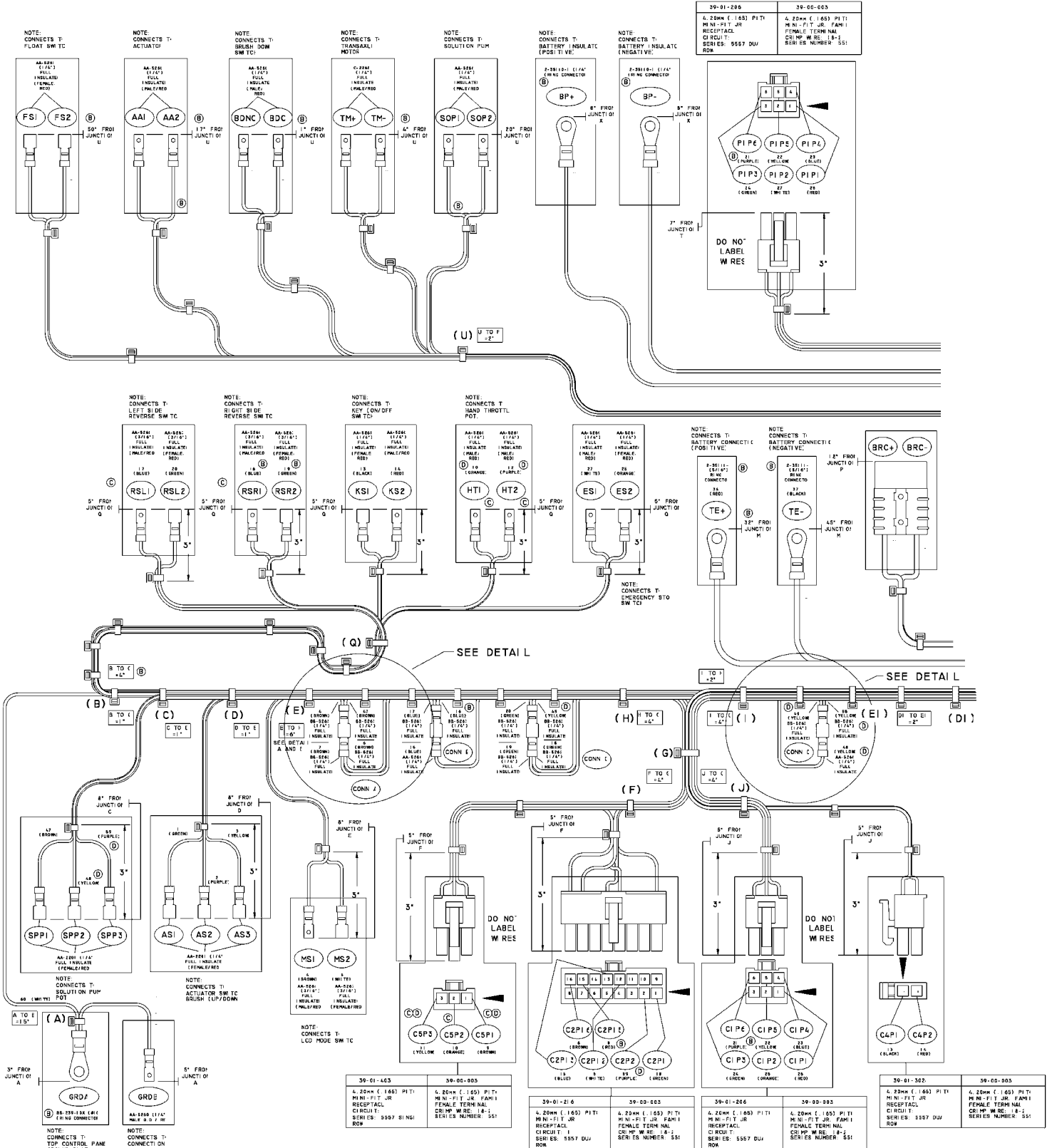
TABLE E

SPEED CONTR. POT. BK. OHM HARNE TORNADO PART #. 194		POT. BK. OHM HARNE TORNADO PART #. 194	
VACUUM MOT. TORNADO PART #. 195		REL/RES SW TC TORNADO PART #. 308	
BRUSH MOTO TORNADO PART #. 188		E-STOP TORNADO PART #. 304	
TRACTI ON DRIVE MOT TORNADO PART #. 195		KEY SW TC TORNADO PART #. 192	
ACTUATOR TORNADO PART #. 307		MODE BUTTO TORNADO PART #. 305	
FLOAT SW TC TORNADO PART #. 197		BRUSH SW TC TORNADO PART #. 310	
BATTERY CONNECTI O			
SOLUTION PUMP P. POT. BK. OHM HARNE TORNADO PART #. 314			
SOLUTION PUM TORNADO PART #. 314			

GROUNDING HARNESS (ESD)
PART NUMBER FOR GROUNDING HARNESS: 3142

WIRING HARNESS CONTROL FUNCTION

Sheet 1 of 2 (Ref. Drawing 31418)

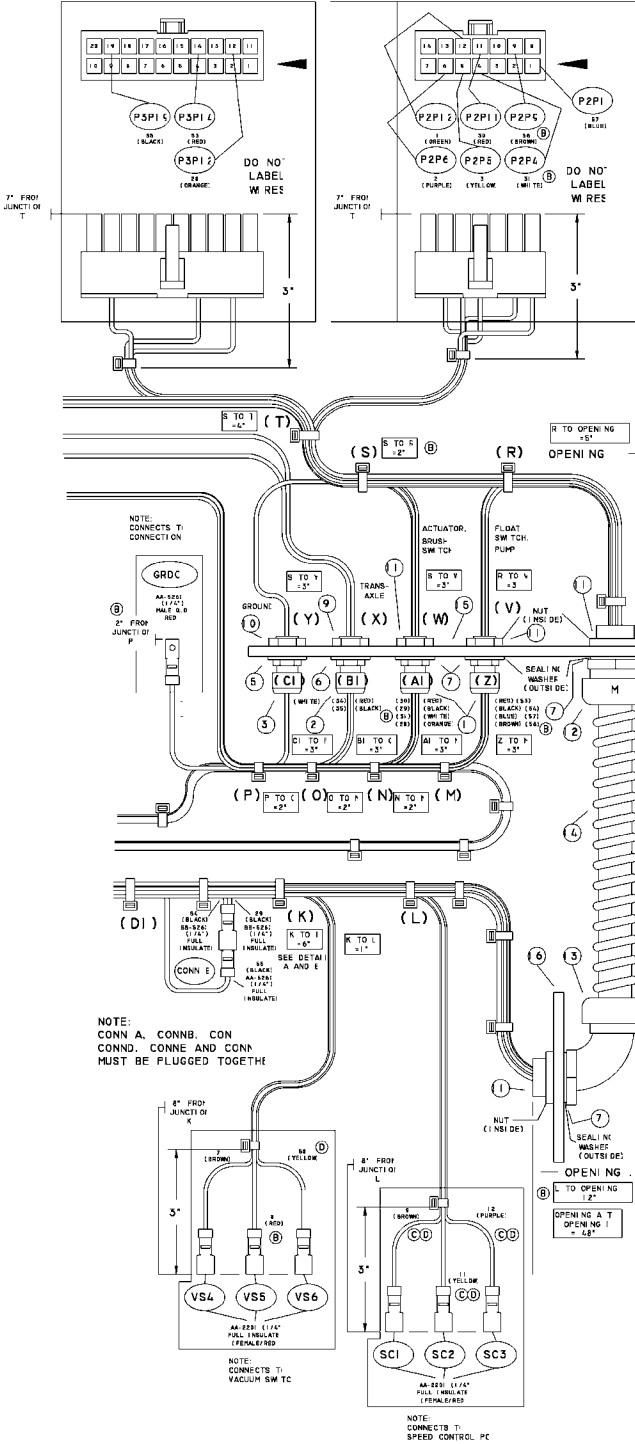


WIRING HARNESS CONTROL FUNCTION

Sheet 2 of 2
(Ref. Drawing 31418)

39-01-220	39-01-003
4.20mm (.165) P1 T1 MINI-FIT JR RECEPTACLE CIRCUIT: 2 SERIAL NO: 5557 DUJ ROW	4.20mm (.165) P1 T1 MINI-FIT JR FEMALE TERMINAL CIRCUIT: 1 SERIAL NO: 5557 DUJ ROW

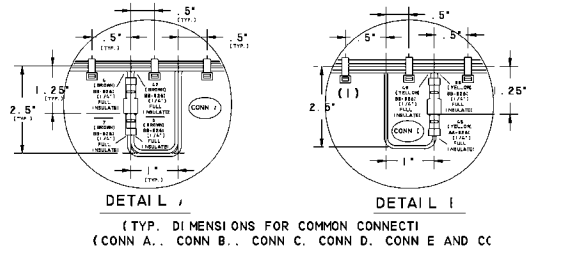
39-01-214	39-01-003
4.20mm (.165) P1 T1 MINI-FIT JR RECEPTACLE CIRCUIT: 1 SERIAL NO: 5557 DUJ ROW	4.20mm (.165) P1 T1 MINI-FIT JR FEMALE TERMINAL CIRCUIT: 1 SERIAL NO: 5557 DUJ ROW



NO	GAGE	TYPE	COLOR	LENGTH	FROM		TO	
					PIN NO.	TERMINATION	PIN NO.	TERMINATION
1	18	ULI 00	GREEN	1.02" (B)	AS1	AA-2201	P2P1 (TRI O)	39-00-003
2	18	ULI 00	PURPLE	1.02" (B)	AS2	AA-2201	P2P6 (TRI O)	39-00-003
3	18	ULI 00	YELLOW	1.02" (B)	AS3	AA-2201	P2P5 (TRI O)	39-00-003
4	18	ULI 00	BROWN	9 3/4" (B)	MS1	AA-5261	CONN J	BB-5261
5	18	ULI 00	WHITE	27" (B)	MS2	AA-5261	C2P1 (LCD)	39-00-003
6	18	ULI 00	BROWN	22 1/4" (B)	CONN J	BB-5261	C2P1 (LCD)	39-00-003
7	18	ULI 00	BROWN	25 1/4" (B)	VS4	AA-2201	CONN J	BB-5261
8	18	ULI 00	RED (B)	27" (B)	VS5	AA-2201	C2P1 (LCD)	39-00-003
9	18	ULI 00	BROWN (B)	28" (B)	C5P1 (LCD)	39-00-003	SCI (B)	AA-2201 (B)
10	18	ULI 00	ORANGE	31" (B)	HT1	AA-5261 (B)	C5P2 (LCD)	39-00-003
11	18	ULI 00	YELLOW (B)	28" (B)	C5P3 (LCD)	39-00-003	SC2 (B)	AA-2201 (B)
12	18	ULI 00	PURPLE (B)	35" (B)	HT2	AA-5261 (B)	SC3	AA-2201 (B)
13	18	ULI 00	BLACK	31" (B)	C4P1 (LCD)	39-00-003	KS1	AA-5261
14	18	ULI 00	RED	31" (B)	C4P2 (LCD)	39-00-003	KS2	AA-5261
15	18	ULI 00	BLUE	20 1/4" (B)	C2P1 (LCD)	39-00-003	CONN E	BB-5261
16	18	ULI 00	BLUE	15 3/4" (B)	RSR1	AA-5261 (B)	CONN E	BB-5261
17	18	ULI 00	BLUE	15 3/4" (B)	CONN E	BB-5261	RS1	AA-5261
18	18	ULI 00	GREEN	18 1/4" (B)	C2P1 (LCD)	39-00-003	CONN C	BB-5261
19	18	ULI 00	GREEN	22 1/4" (B)	CONN E	BB-5261	RSR2	AA-5261 (B)
20	18	ULI 00	GREEN	17 3/4" (B)	CONN C	BB-5261	RS L2	AA-5261
21	18	ULI 00	PURPLE (B)	98" (B)	C1 P6 (LCD)	39-00-003	P1 P6 (TRI O)	39-00-003
22	18	ULI 00	YELLOW	98" (B)	C1 P5 (LCD)	39-00-003	P1 P5 (TRI O)	39-00-003
23	18	ULI 00	BLUE	98" (B)	C1 P4 (LCD)	39-00-003	P1 P4 (TRI O)	39-00-003
24	18	ULI 00	GREEN	98" (B)	C1 P3 (LCD)	39-00-003	P1 P3 (TRI O)	39-00-003
25	18	ULI 00	ORANGE	31" (B)	C1 P2 (LCD)	39-00-003	ES2	AA-5261
26	18	ULI 00	RED	98" (B)	C1 P1 (LCD)	39-00-003	P1 P1 (TRI O)	39-00-003
27	18	ULI 00	WHITE	1.05" (B)	ES1	AA-5261	P1 P2 (TRI O)	39-00-003
28	18	ULI 00	ORANGE	24" (B)	BDNC	AA-5261	P5 P1 (TRI O)	39-00-003
29	18	ULI 00	BLACK	82 3/4" (B)	B0C	AA-5261	CONN E	BB-5261
30	18	ULI 00	RED	4.0" (B)	P2 P1 (TRI O)	39-00-003	AA1	AA-5261
31	18	ULI 00	WHITE (B)	4.0" (B)	P2 P4 (TRI O)	39-00-003	AA2	AA-5261
32								
33								
34	10	ULI 01	RED	1.9" (B)	BP+	2-35110-(B)	TH+	C-2261
35	10	ULI 01	BLACK	1.9" (B)	BP-	2-35110-(B)	TH-	C-2261
36	10	ULI 01	RED	50" (B)	BRC+	SY903-1	TE+	2-35111-(B)
37	10	ULI 01	BLACK	63" (B)	BRC-	SY903-1	TE-	2-35111-(B)
47	18	ULI 00	BROWN	12 1/2" (B)	CONN J	BB-5261	SPPI	AA-2201
48	18	ULI 00	YELLOW	23 1/4" (B)	SPP2	AA-2201	CONN E	AA-5261
49	18	ULI 00	YELLOW	9 1/2" (B)	CONN E	BB-5261	CONN C	BB-5261
50								
51								
52								
53	18	ULI 00	RED	69" (B)	FS1	AA-5261	P3 P1 (TRI O)	39-00-003
54	18	ULI 00	BLACK	13 3/4" (B)	FS2	AA-5261	CONN E	BB-5261
55	18	ULI 00	BLACK	85" (B)	CONN E	AA-5261	P5 P1 (TRI O)	39-00-003
56	18	ULI 00	BROWN (B)	47" (B)	SOP1	AA-5261	P5 P4 (TRI O)	39-00-003
57	18	ULI 00	BLUE	47" (B)	SOP2	AA-5261	P2 P1 (TRI O)	39-00-003
58	18	ULI 00	YELLOW	15 3/4" (B)	VS6	AA-2201	CONN E	BB-5261
59	18	ULI 00	PURPLE	28" (B)	SPP3	AA-2201	C2 P2 (LCD)	39-00-003

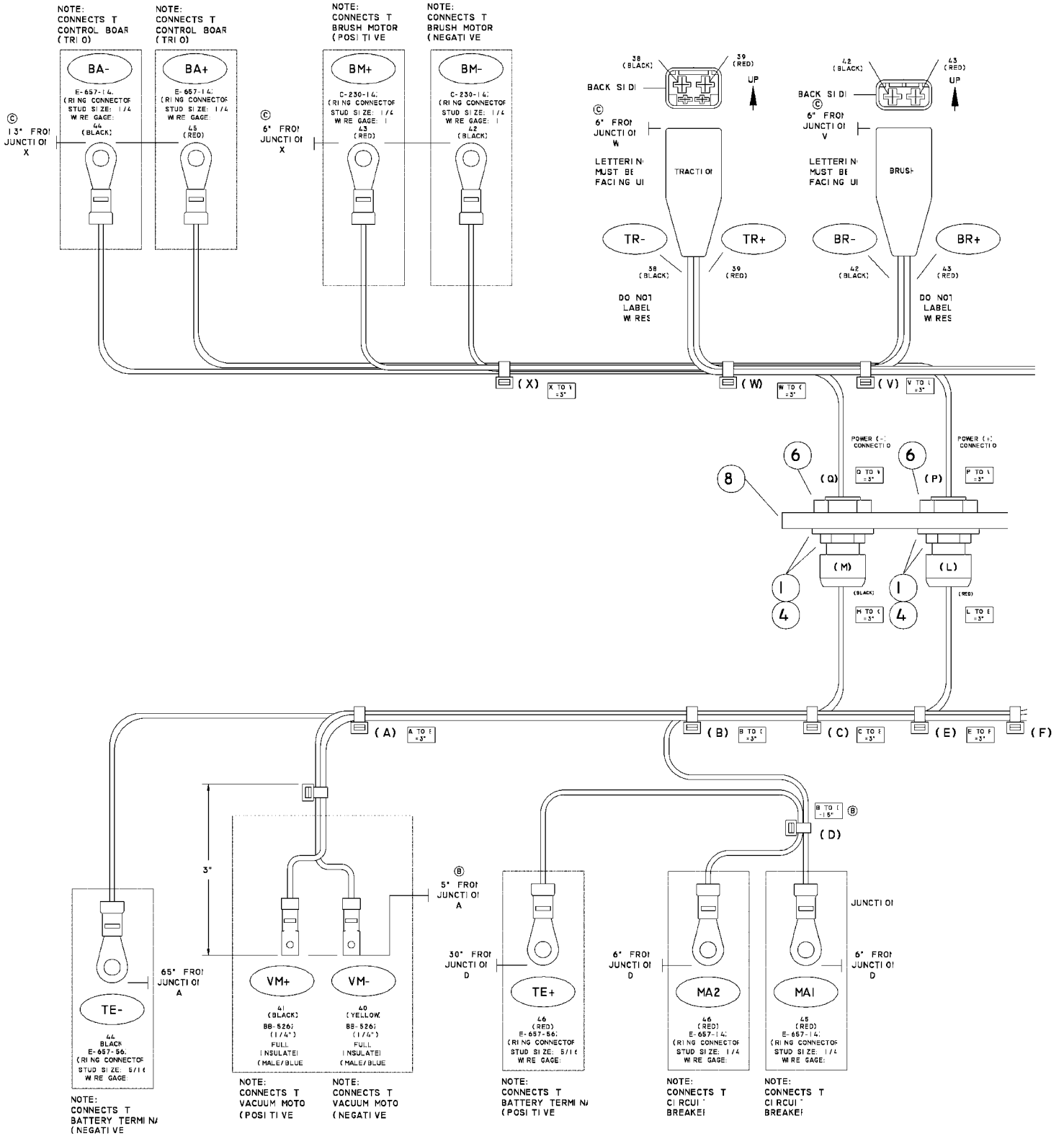
NO	GAGE	TYPE	COLOR	LENGTH	FROM		TO	
					PIN NO.	TERMINATION	PIN NO.	TERMINATION
60	18	ULI 00	WHITE	11.2" (B)	GRD A	BB-239-10 (B)	GRDC	AA-5261
61	18	ULI 00	WHITE	5"	GRD A	BB-239-10 (B)	GRDE	AA-5261

ITEM	QTY	MFG. PART NUMBER	DESCRIPTION
1	2	CD1 AS-BK (4 HOLENEMA 4 STRAIN RELIEF FITTING)	
2	1	CD1 3NB-BK (2 HOLENEMA 4 STRAIN RELIEF FITTING)	
3	1	CD07AR-BK (1 HOLENEMA 4 STRAIN RELIEF FITTING)	
4			
5	1	OR-07-BI	"O" RI NUT
6	1	OR-18-BI	"O" RI NUT
7	4	OR-11-BI	"O" RI NUT
8			
9	2	NN-13-BI	LOCKNUT
10	2	NP-07-BI	LOCKNUT
11	4	NP-11-BI	LOCKNUT
12	1	SM1 AA-B	STRAIGHT CONN. FITTING
13	1	EM1 AA-B	90 CONN. FITTING
14	4	SM-121-L	STANDARD FLEX CONDUIT
15	1	31427	LOWER CONTROL PANEL BULKHEAD
16	1	31428	UPPER CONTROL PANEL BULKHEAD



WIRING HARNESS POWER FUNCTION

Sheet 1 of 2
(Ref. Drawing 31419)



WIRING HARNESS POWER FUNCTION

Sheet 2 of 2
(Ref. Drawing 31419)

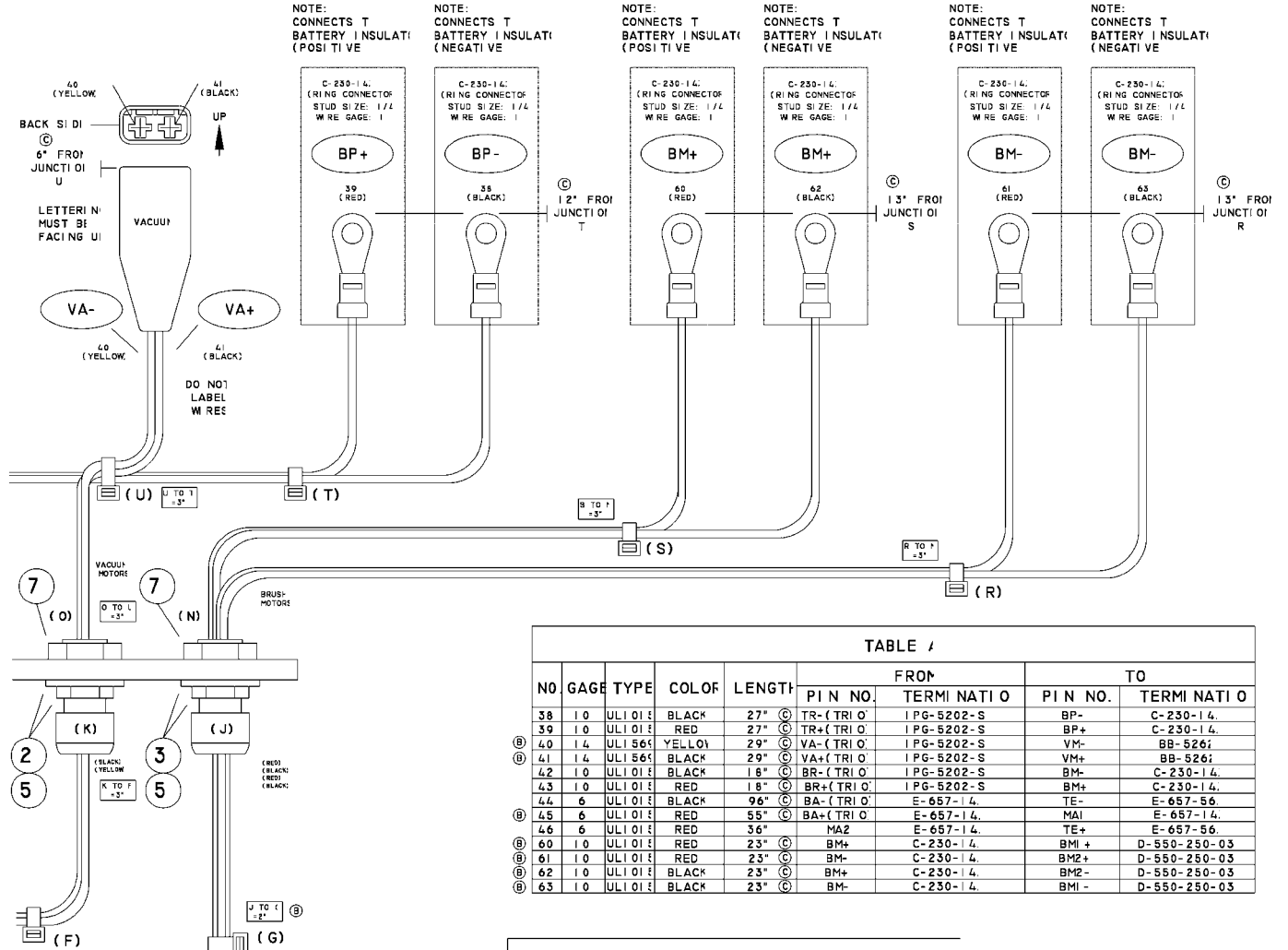
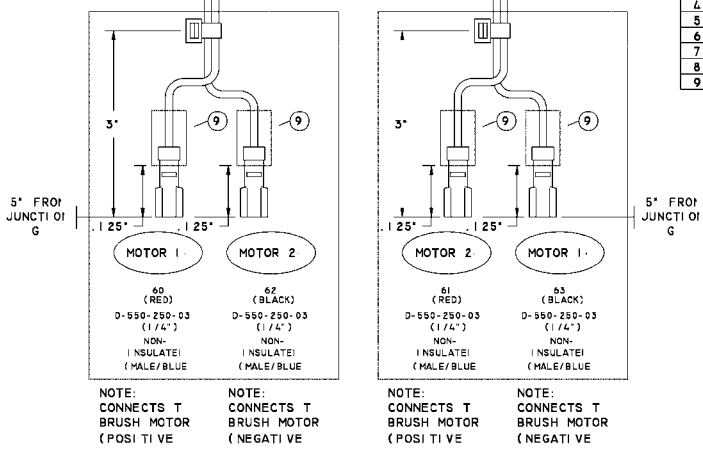


TABLE 1

NO.	GAGE	TYPE	COLOR	LENGTH	FROM		TO	
					PIN NO.	TERMINATION	PIN NO.	TERMINATION
38	10	ULI 01	BLACK	27"	TR- (TRIO)	IPG-5202-S	BP-	C-230-14
39	10	ULI 01	RED	27"	TR+ (TRIO)	IPG-5202-S	BP+	C-230-14
40	14	ULI 56	YELLOW	29"	VA- (TRIO)	IPG-5202-S	VM-	BB-5267
41	14	ULI 56	BLACK	29"	VA+ (TRIO)	IPG-5202-S	VM+	BB-5267
42	10	ULI 01	BLACK	18"	BR- (TRIO)	IPG-5202-S	BM-	C-230-14
43	10	ULI 01	RED	18"	BR+ (TRIO)	IPG-5202-S	BM+	C-230-14
44	6	ULI 01	BLACK	96"	BA- (TRIO)	E-657-14	TE-	E-657-56
45	6	ULI 01	RED	55"	BA+ (TRIO)	E-657-14	TE+	E-657-56
46	6	ULI 01	RED	36"	MA2	E-657-14	MA1	E-657-14
60	10	ULI 01	RED	23"	BM+	C-230-14	BM+	D-550-250-03
61	10	ULI 01	RED	23"	BM+	C-230-14	BM2+	D-550-250-03
62	10	ULI 01	BLACK	23"	BM+	C-230-14	BM2-	D-550-250-03
63	10	ULI 01	BLACK	23"	BM-	C-230-14	BM1-	D-550-250-03

TABLE 2

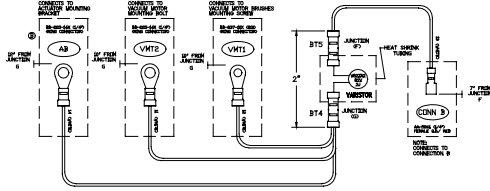
ITEM	QTY.	MFG. PART NUMBER	DESCRIPTION
1	2	CD21NR-BK (1 HOLE)	NEMA 4 STRAIN RELIEF FITTING
2	1	CD13N8-BK (2 HOLE)	NEMA 4 STRAIN RELIEF FITTING
3	1	CD16N3-BK (4 HOLE)	NEMA 4 STRAIN RELIEF FITTING
4	2	OR-25-BI	"O" RING
5	2	OR-18-BI	"O" RING
6	2	NN-21-BI	LOCKNUT
7	2	NN-13-BI	LOCKNUT
8	1	3143C	LEFT CONTROL PANEL BULB MOUNT
9	1	TUB SHRI NK POLY-0 3/4 BLU/4"	HEAT SHRI NK TUBING X1



WIRING HARNESS GROUNDING

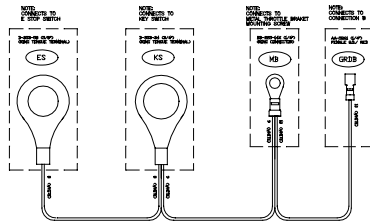
Sheet 1 of 1
(Ref. Drawing 31420)

VACUUM MOTOR
31420 (C)

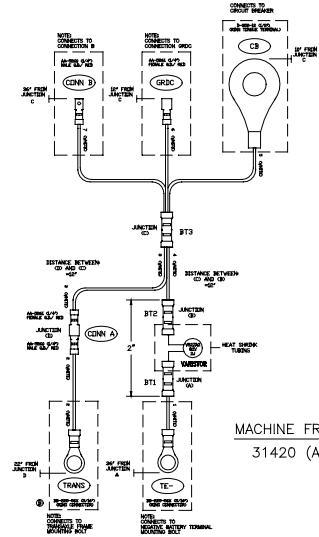


NO.	GAUGE	TYPE	COLOR	LENGTH	FROM		TO	
					PIN NO.	TERMINATION	PIN NO.	TERMINATION
11	18	UL1007	WHITE	10"	WHT	BB-225-14X	BT4	2223
12	18	UL1007	WHITE	10"	WHT	BB-225-14X	BT4	2223
13	18	UL1007	WHITE	12"	WHT	BB-225-14X	BT4	2223
14	18	UL1007	WHITE	12"	WHT	BB-225-14X	BT4	2223

THROTTLE BOX
31420 (B)



NO.	GAUGE	TYPE	COLOR	LENGTH	FROM		TO	
					PIN NO.	TERMINATION	PIN NO.	TERMINATION
8	18	UL1007	WHITE	10"	WHT	BB-225-14X	BT4	2223
9	18	UL1007	WHITE	10"	WHT	BB-225-14X	BT4	2223
10	18	UL1007	WHITE	12"	WHT	BB-225-14X	BT4	2223



MACHINE FRONT
31420 (A)

NO.	GAUGE	TYPE	COLOR	LENGTH	FROM		TO	
					PIN NO.	TERMINATION	PIN NO.	TERMINATION
1	18	UL1007	WHITE	36"	WHT	BB-225-14X	BT1	2220
2	18	UL1007	WHITE	24"	WHT	BB-225-14X	BT1	2220
3	18	UL1007	WHITE	12"	WHT	BB-225-14X	BT1	2220
4	18	UL1007	WHITE	12"	WHT	BB-225-14X	BT1	2220
5	18	UL1007	WHITE	10"	WHT	BB-225-14X	BT1	2220
6	18	UL1007	WHITE	12"	WHT	BB-225-14X	BT1	2220
7	18	UL1007	WHITE	36"	WHT	BB-225-14X	BT1	2220

**REPLACEMENT ITEMS AND ACCESSORIES
LR 30 Floorkeeper Automatic Scrubber**

Catalog #	Description	Shipping Weight
Replacement Items		
99172	16" Black Firm Poly Scrub Brush (2 required)	10#
K62732150	Standard Squeegee Set	2#
Optional Items		
99173	16" Green Grit Brush (2 required)	8#
90676	Wet Pick-Up Attachment Set	9#
99154	16" Pad Holder (2 required)	8#
K62732090	Oil Resistant Squeegee Set	3#