



CE

S2646E

S3246E

**S**2646

**S**3246

**REPAIR PARTS**  
**MANUAL**

Part Number 0372045  
August 2014

Replaces August 2011

# **DANGER**

**The aerial platform is not electrically insulated. Death or serious injury will result from contact with, or inadequate clearance from, an energized conductor.**

**Do not go closer than the Minimum Safe Approach Distance as defined by ANSI standards or by regional specific applicable national safety standards.**

Regard all conductors as energized.

Allow for electrical wire sag and aerial platform sway.

If the platform, scissors structure, or any part of the aerial platform contacts a high-voltage electrical conductor, the entire machine can become electrically charged.

If that happens, remain on the machine and do not contact any other structure or object. This includes the ground, adjacent buildings, poles, and any other objects that are not part of the aerial platform.

Such contact could make your body a conductor to the other object, creating an electrical shock hazard resulting in death or serious injury.

If an aerial platform is in contact with an energized conductor the platform operator must warn ground personnel in the vicinity to stay away. Their bodies can conduct electricity creating an electrical shock hazard resulting in death or serious injury.

Do not approach or leave the aerial platform until the electricity has been turned off.

Do not attempt to operate the lower controls when the platform, scissors structure, or any part of the aerial platform is in contact with a high-voltage electrical conductor or if there is an immediate danger of such contact.

Personnel on or near an aerial platform must be continuously aware of electrical hazards, recognizing that death or serious injury can result from contact with an energized conductor.

## **California**

### **Proposition 65 Warning**

Battery posts, terminals, and related accessories contain lead and lead components, chemical known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

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# General Information

## About This Manual

This manual covers S2646E/S3246E and S2646/S3246 aerial platforms. Page titles may indicate specific models or date ranges.

- Some pages are applicable to all models and are neither model or date specific.
- Some pages are machine specific by model name.

If a page title has only the older conventional model name, without the E, it is applicable to both conventional and the newer E model machines.

If a page title has only the newer E model name, it is applicable only to the newer E model machines.

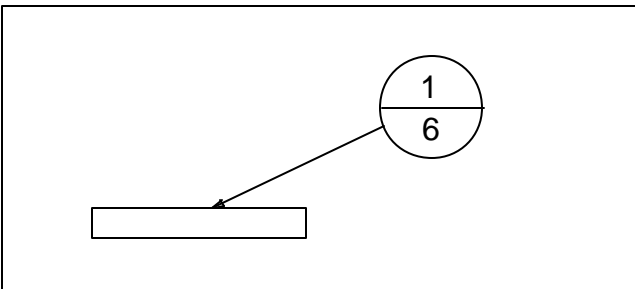
- Some pages are machine specific by date and are applicable to all models.

Information is included for machines that have been manufactured to conform to all applicable requirements of the following organizations.

- American National Standards Institute (ANSI)
- Canadian Standards Association (CSA)
- European Committee for Standardization (CE)

Parts pages include a drawing and a bill of material. The bill of material lists the item number that is on the drawing, the Snorkel part number, quantity used, and a description of the item.

Some pages have callouts in the drawings that have a balloon with two numbers. The top number is the item number and the bottom number is the quantity of that item at that location.



While Snorkel has attempted in every way to confirm that all information in this manual is correct, improvements are being constantly made to the machine that may not be reflected in this manual.

If you find information in this manual that is not correct, or is confusing, you are urged to report your findings to Snorkel for our evaluation. Your input is important to us and will be used in future printings of this manual.

This machine is covered by a limited warranty that specifically identifies items warrantied by Snorkel and those items covered by original manufacturers warranty. A copy of the Snorkel Limited Warranty is located on the inside of the back cover of this manual.

## Repairs and Maintenance

Every person who maintains, inspects, tests, or repairs the machine must be qualified and authorized to do so.

## ACaution

**Do not modify this aerial platform without prior written consent of Snorkel Engineering Department. Modification may void the warranty, adversely affect stability, or affect the operational characteristics of the aerial platform.**

## Abbreviations

The following abbreviations may be used in this manual.

AC	alternating current
ANSI	American National Standards Institute
CCA	cold cranking amps
cm	centimeter
DC	direct current
GFCI	ground fault circuit interrupt
mm	millimeters
ft	feet
in	inch
lbs	pounds
no	number
NPT	national pipe thread
psi	pounds per square inch
qty	quantity
UL	Underwriters Laboratories Inc.

## Additional Information

All correspondence relative to this machine, such as field reports, discrepancy reports, requests for information, etc., should be directed to:

Snorkel International, Inc.  
P.O. Box 1160  
St. Joseph, MO 64502-1160 USA  
Phone: 1-800-255-0317

<http://www.snorkellifts.com>

Refer to the back cover of this manual for the nearest Snorkel location outside of North and South America.

# Service and Parts Information

## Ordering Parts

When placing an order for service or repair parts, please have the following machine information readily available.

- Model number
- Serial number
- Snorkel part number
- Description of part
- Quantity of parts required
- Your purchase order number
- Address for order to ship to
- The desired shipment method

The parts order form on the following page may be mailed or faxed to the attention of the Parts Department at the following location:

Snorkel International, Inc.  
P.O. Box 1160  
St. Joseph, MO 64502-1160 USA

Phone: 1-800-255-0317  
Parts Fax: 1-785-989-3077

Attention: Parts Department

Refer to the back cover of this manual for the nearest Snorkel location outside of North and South America.

For your convenience, our electronic on-line ordering system is available at the following Internet location:

<http://www.snorkellifts.com>

## ANSI and OSHA Compliance

All owners and users of the aerial platform must read, understand, and comply with all applicable regulations. Ultimate compliance to OSHA regulations is the responsibility of the user and their employer.

ANSI publications clearly identify the responsibilities of all personnel who may be involved with the aerial platform. A reprint of the "Manual of Responsibilities for Dealers, Owners, Users, Operators, Lessors and Lessees of ANSI/SIA A92.6-1992 Self Propelled Elevating Work Platforms" is available from Snorkel dealers or from the factory upon request.

Copies are also available from:

Scaffold Industry Association  
P. O. Box 20574  
Phoenix, AZ 85036-0574 USA

## Manuals

Manuals are available from Snorkel to support any of the machines that we produce.

The specific manuals for S2646E/S3246E and S2646/S3246 aerial platforms are as follows:

### Operator's Manual – S2646E/S3246E

Snorkel part number - 0410051  
Snorkel part number - 1370385 CE Only

### Operator's Manual – S2646/S3246

Snorkel part number - 0410051  
Snorkel part number - 0410063EE CE Only

### Repair Parts Manual – All models

Snorkel part number - 0372045

### ANSI Manual of Responsibilities

ANSI/SIA A92.6-1992  
Snorkel part number - 0361367

## Machine Information

Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

Purchased From: \_\_\_\_\_

Snorkel Dealer or Distributor: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_









# *Repair Parts*

S2646E

S3246E

**S**2646

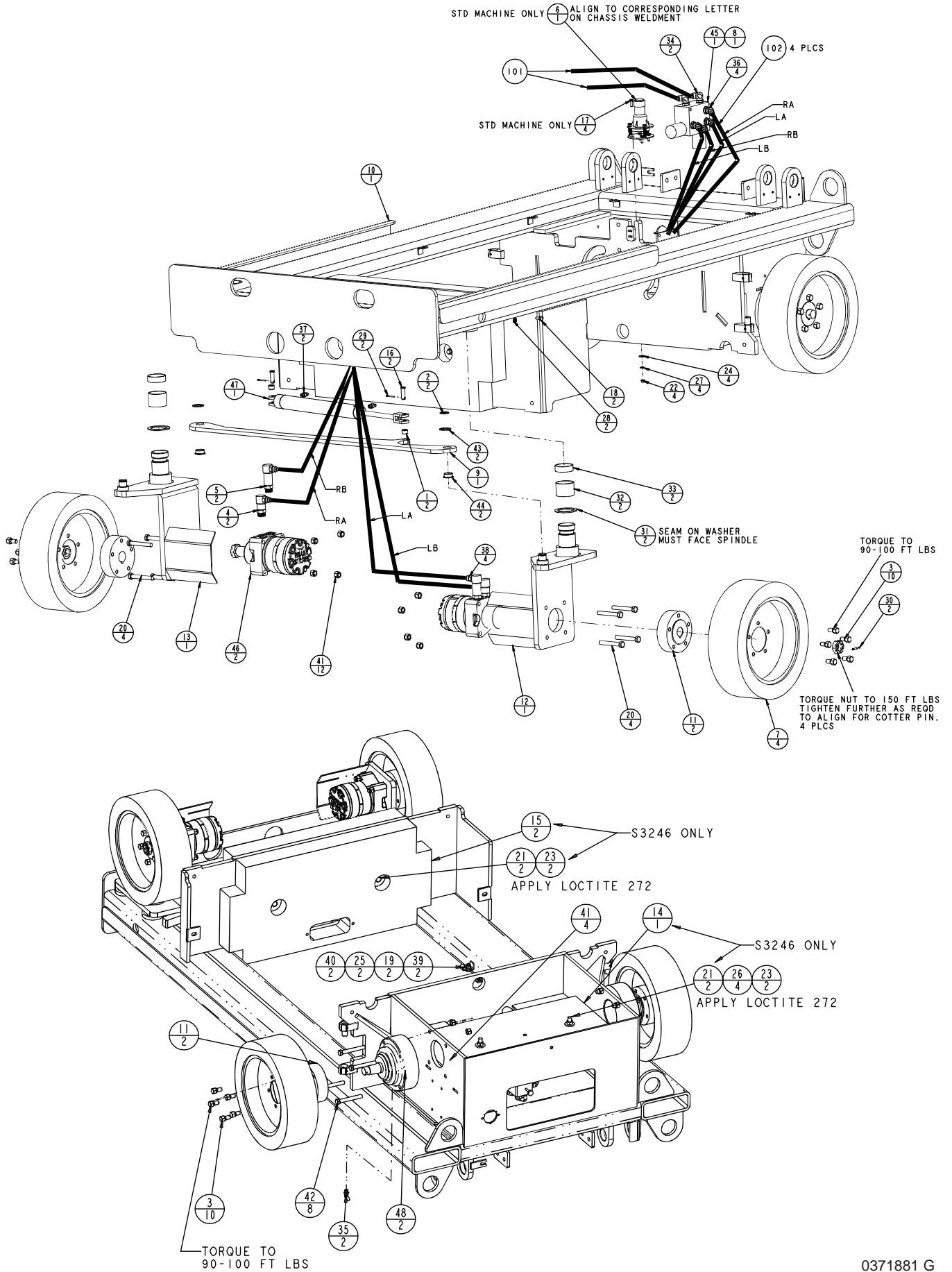
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**snorkel**



# Chassis, Steering and Brakes

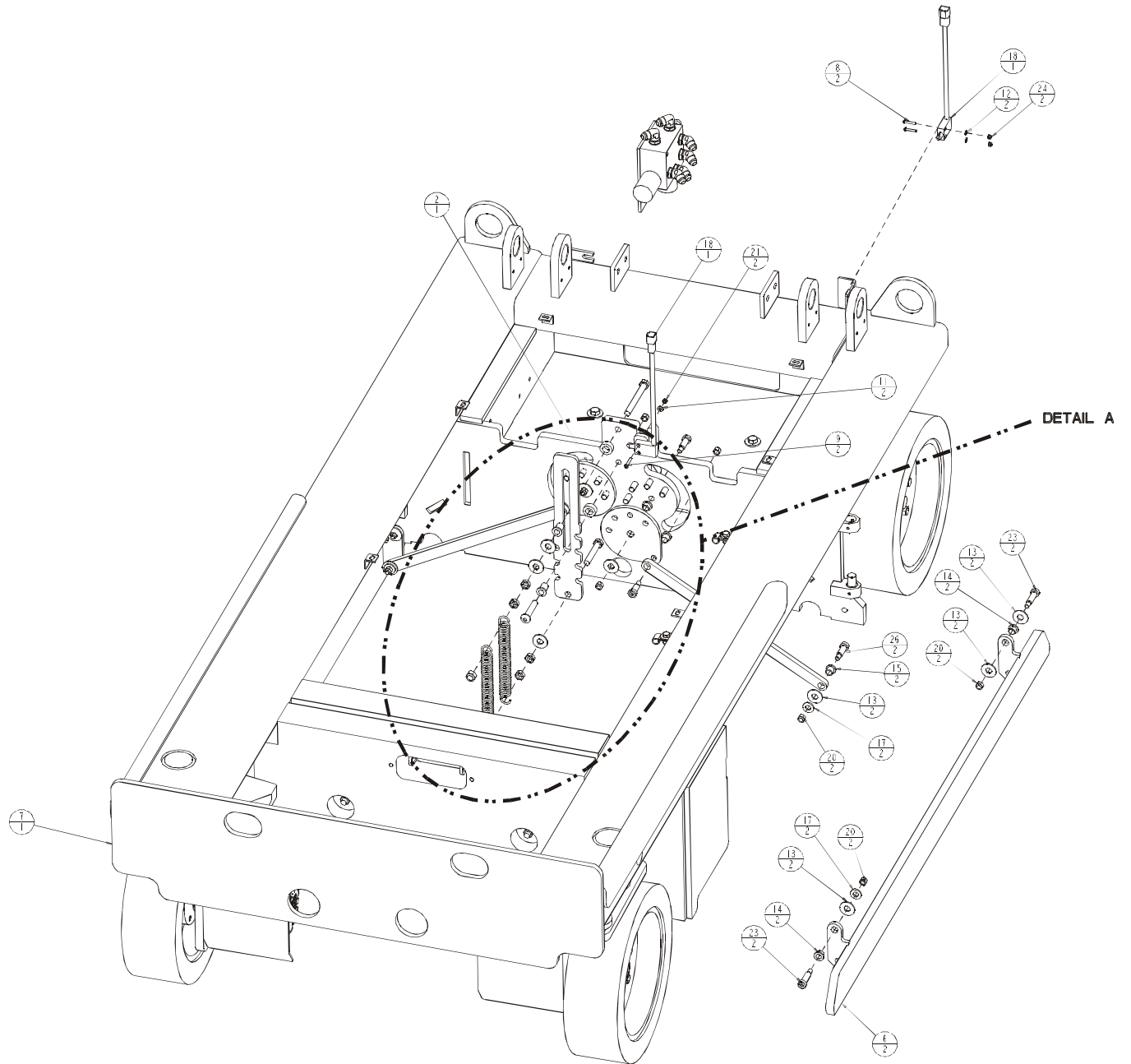


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## Chassis, Steering and Brakes

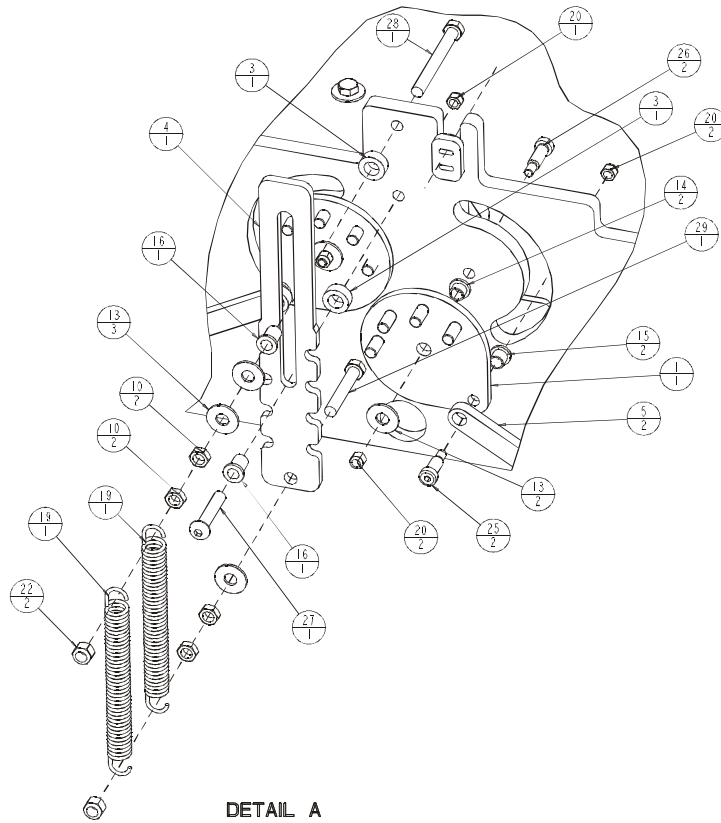
Item	Part No.	Qty.	Description
1	300351	2	BRG THR .500ID .750OD .500
2	300542	2	SNAP RING 1.00 EXT HD
3	300729	20	BLT LUG .500-20 X .72" 60 DEG UNF
4	301442	2	SWIVEL SHORT 90 DEG (-10-6)
5	301443	2	SWIVEL LONG 90 DEG (-10-6)
6	302800	1	LEVEL SENSOR 2 AXIS 2&4
7	330001-1	4	WHEEL-TIRE 16X5 NON-MARKING
8	0361550	1	DIODE WIRE ASSY
9	0371857	1	LINK TIEROD STEERING
10	0371859-0	1	WLMT BASE FRAME
11	0371872	4	HUB 1.50 TAPERED SHAFT
12	0371873-3	1	WLDMT, SPINDLE, STEERING, LF
13	0371874-3	1	WLDMT, SPINDLE, STEERING, RT
14	0371909	1	PLATE, BALLAST
15	0371914	2	PLATE, BALLAST
16	465276	2	PIN CLV .500DIA 1.281 GRIP
17	970029	4	BLT HEXHD .250-20 .75 GR5-Z/P
18	970229	2	BLT HEXHD .313-18 .625 GR5 ZINC PLATED
19	970459	2	BLT HEXHD .375-16 .875- GR4
20	970989	8	BLT HEXHD .500-13 3.50 GR5
21	978549	4	BLT HEXHD .500-13 4.50
22	984069	4	NUT HEX .250-20
23	984149	4	NUT HEX .500-13
24	986019	4	WSHR FLAT .250
25	986299	2	WSHR FLAT .38
26	986359	4	WSHR FLAT .500
27	987099	4	WSHR LOCK .250
28	987109	2	WSHR LOCK .313
29	988179	2	PIN COT .125DIA 1.00-1/8 X 1
30	989509	2	PIN RILL .188 DIA 1.00
31	2580407	2	BRG THR 2.25ID 3.00OD .125
32	2594905	2	BRG 2.25ID 2.44OD 1.75
33	2594907	2	BRG 2.25ID 2.44OD .75
34	5035306	2	FTG ELB90STRTHD-8B-8S STL
35	5037003	2	FTG ELB90SWVL-4S-4S STL
36	5035706	4	FTG ELB45STRTHD-8B-8S STL
37	5065703	2	FTGADPTR STRTHD-4B-4S STL
38	5065728	4	FTGADPTR STRTHD-6B-8S STL-PH
39	5093001	2	CLP CUSH .500 VINYL COATED
40	5560033	2	NUT HEX LKG .375-16 ESNA
41	5560039	16	NUT HEX LKG .500-13
42	5560668	8	BLT HEXHD .500-13 3.75 GR5
43	5560689	2	BSHG MCHRY 1.00ID 1.50OD 14GA
44	5569964	2	BRG FLG 1.00ID 1.13OD .500
45	6019062	1	MANIFOLD DRIVE SPEED
46	6031615	2	MOTOR WHL 28.3 CU 1.5 TAPER
47	6047108-3	1	CYL STEER 1.50 X 11.92 X.63
48	6091501	2	HYD BRAKE/HUB BK10
101	0021059	2	HOSE-8-8S-8S 40 100R2
102	0110198	4	HOSE-8-8S-8S 96 100R2

# Pothole Protector



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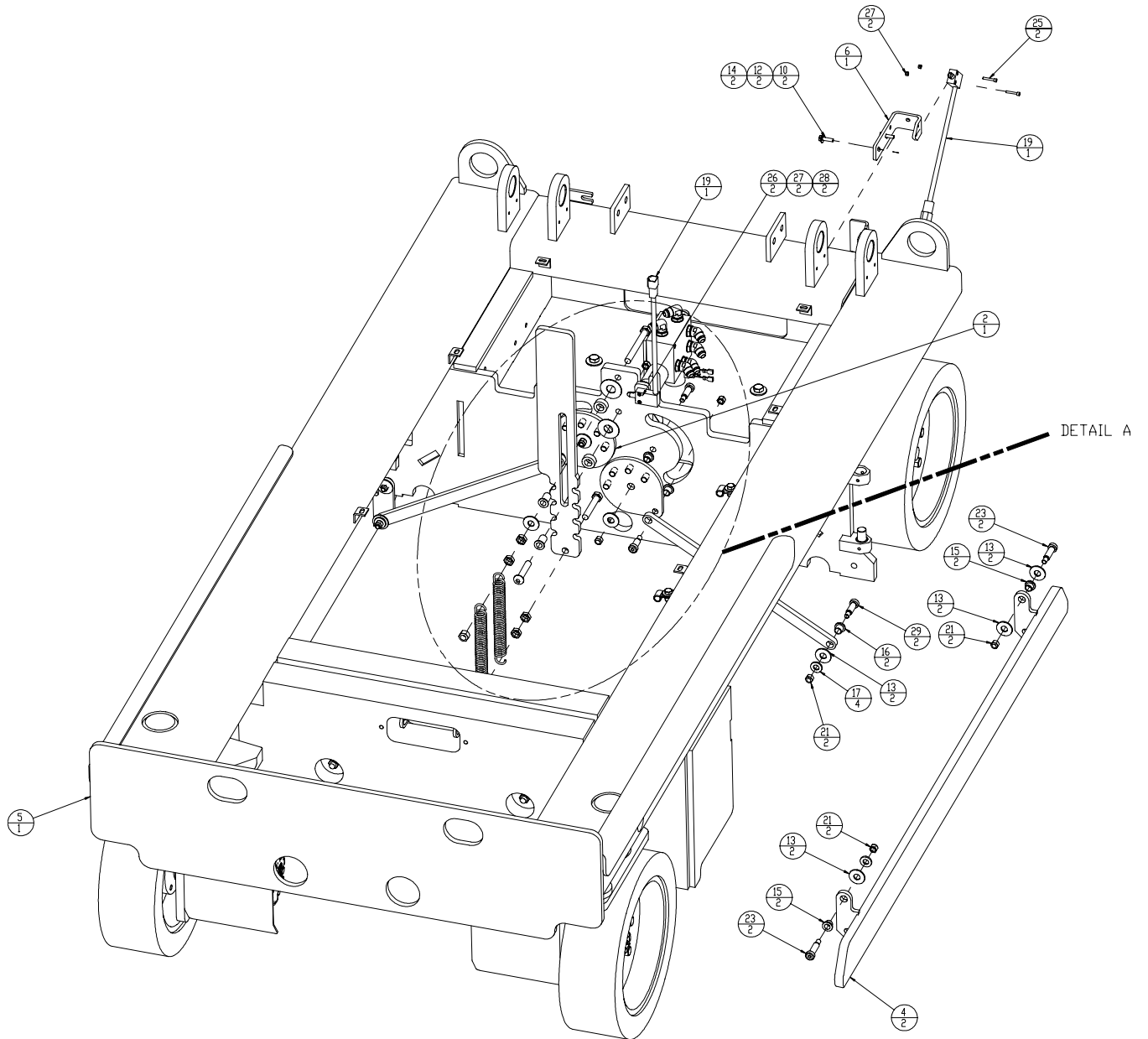
# Pothole Protector



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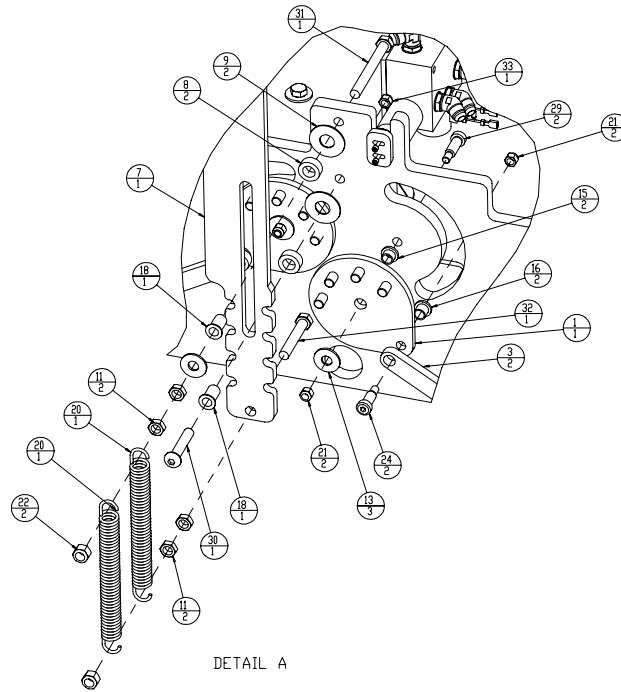
Item	Part No.	Qty.	Description
1	0361076	1	TRIGGER PLATE ASSEMBLY, RH
2	0361077	1	TRIGGER PLATE ASSEMBLY, LH
3	0361132	2	SPACER POTHOLE VERTICAL LINK
4	0361276	1	PLT VERTICAL LINK
5	0371711	2	BAR POTHOLE LINK
6	0371713	2	WLDMT POTHOLE SKID
7		1	CHASSIS W/ STEERING & BRAKE (see Repair Parts pages 3 and 4)
8	974479	2	SCREW RDH 8-32 1.00
9	974729	2	SCR RHD MACH 10-24 1.25
10	984409	4	NUT JAM .500-13
11	986009	2	WASHER FLAT 10
12	986169	2	WASHER FLAT 8
13	986359	13	WASHER FLAT .500
14	2570008	6	BRG FLNG .50 ID .63OD .50 LG
15	2570012	4	BRG FLNG .50 ID .63 OD .63 LG
16	2580017	2	BRG .50ID .63OD 1.0 LG
17	2580403	4	BRG THRUST .50ID 1.0 OD .125TK
18	3028795	2	SWITCHASSY
19	5530027	2	SPRING POTHOLE EXTENSION
20	5560033	11	NUT LKG .375-16
21	5560034	2	NUT LKG 10-24
22	5560039	2	NUT LKG .500-13
23	5560157	4	BLT SHLDR .500 1.00
24	5560198	2	NUT LKG 8-32
25	5560382	2	BLT SHLDR 1/2 X 1.00 LG
26	5569970	2	BLT SHLDR.375-16 .50 X 1.25
27	5569971	1	BLT BTNHD .50-13 2.50
28	5569995	1	BLT HEXHD .500-13 4.5 GR5 FULL THREAD
29	5569996	1	BLT HEXHD .500-13 3 GR5 FULL THREAD

# Pothole Protector – After February 2011



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## Pothole Protector – After February 2011



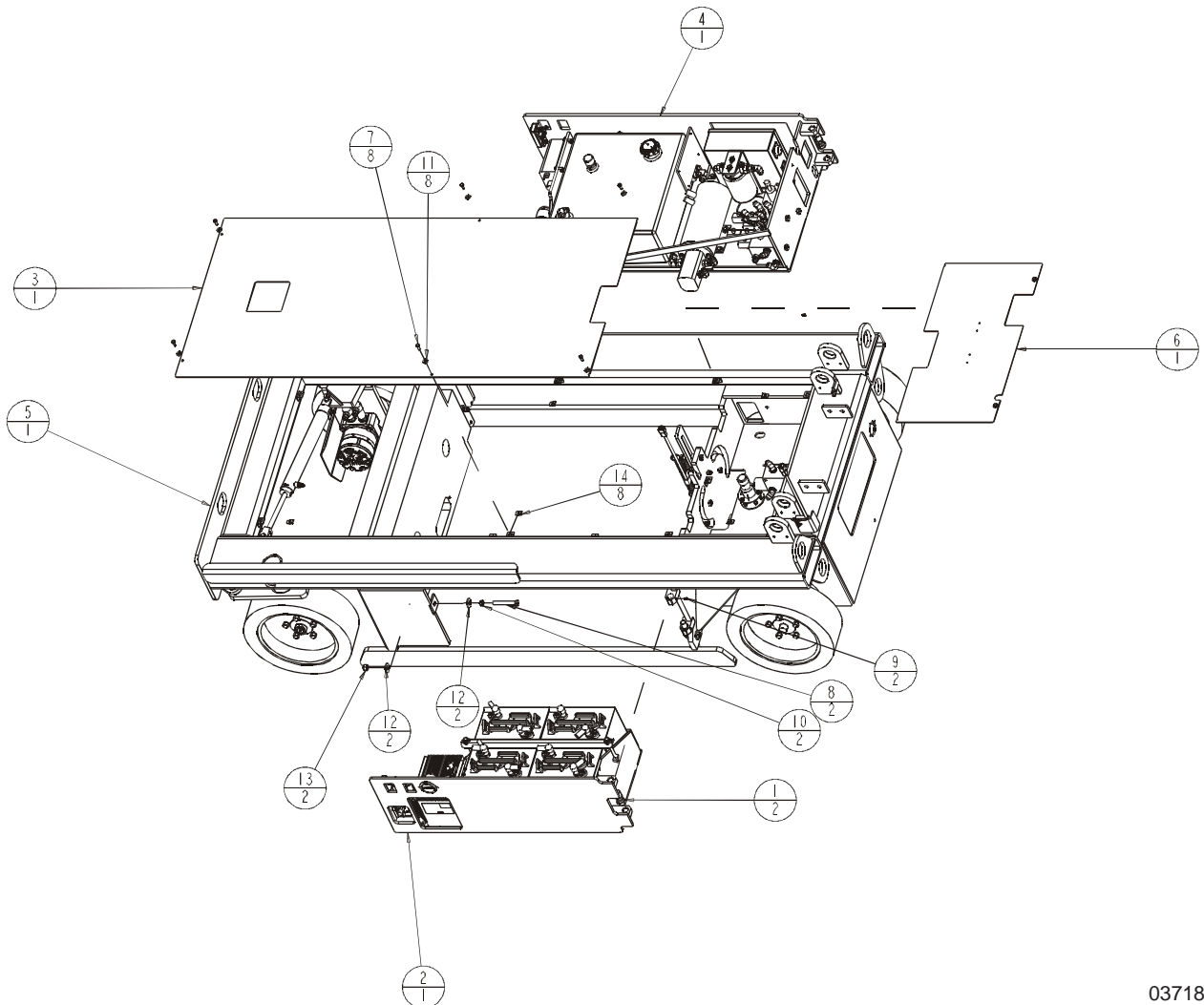
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Item	Part No.	Qty.	Description
1	0361076	1	ASSY TRIGGER PLATE RIGHT HAND
2	0361077	1	TRIGGER PLATE ASSEMBLY LH
3	0371711-3	2	BAR POTHOLE LINK
4	0371713-3	2	WLDMT POTHOLE SKID
5	0371881	1	INSTL STEERING & BRAKE
6	0372074	1	BRKT, STACK SWITCH
7	0372087	1	PLT VERTICAL LINK
8	0372092	2	SPCR .656ID 1.13OD .469NYL
9	592144	2	WSHR .782ID 1.87OD 14GA
10	970049	2	BLT HEXHD .250-20 1.00 GR5
11	984409	4	NUT HEX JAM .500-13
12	986019	2	WSHR FLAT .250
13	986359	11	WSHR FLAT .500
14	987099	2	WSHR LOCK .250
15	986009	2	WSHR FLAT 10
16	2570012	4	BRG FLG .500ID .630OD .630
17	2580403	4	BRG THR .500ID 1.00OD .125
18	2580409	2	BRG THR .500ID .630OD 1.13
19	3028795	2	SWITCH ASSY MUST BREAK
20	5530027	2	SPRING POTHOLE EXTENSION SL19E
21	5560033	10	NUT HEX LKG .375-16 ESNA
22	5560039	2	NUT HEX LKG .500-13
23	5560157	4	BLT SKTHD SHLDR .500 X 1.50 HEX
24	5560382	2	BLT SHLDR .500 1.00
25	5563009	2	BLT SKTHD M4-.7X25MM
26	5563010	2	BLT SKTHD M4-.7 X 30MM
27	5563011	4	NUT LKG M4-0.70
28	5569887	2	WSHR FLAT M4
29	5569970	4	BLT SKTHD SHLDR .500 1.25 HEX
30	5569971	1	BLT BTNHD .50-13 2.50
31	5569995	1	BLT HEXHD .500-13 4.50 FULLTHD
32	5569996	1	BLT HEXHD .500-13 3.00 FULLTHD
33	300778	1	NUT HEX CENTER LKG .500-13



## Trays, Mounting

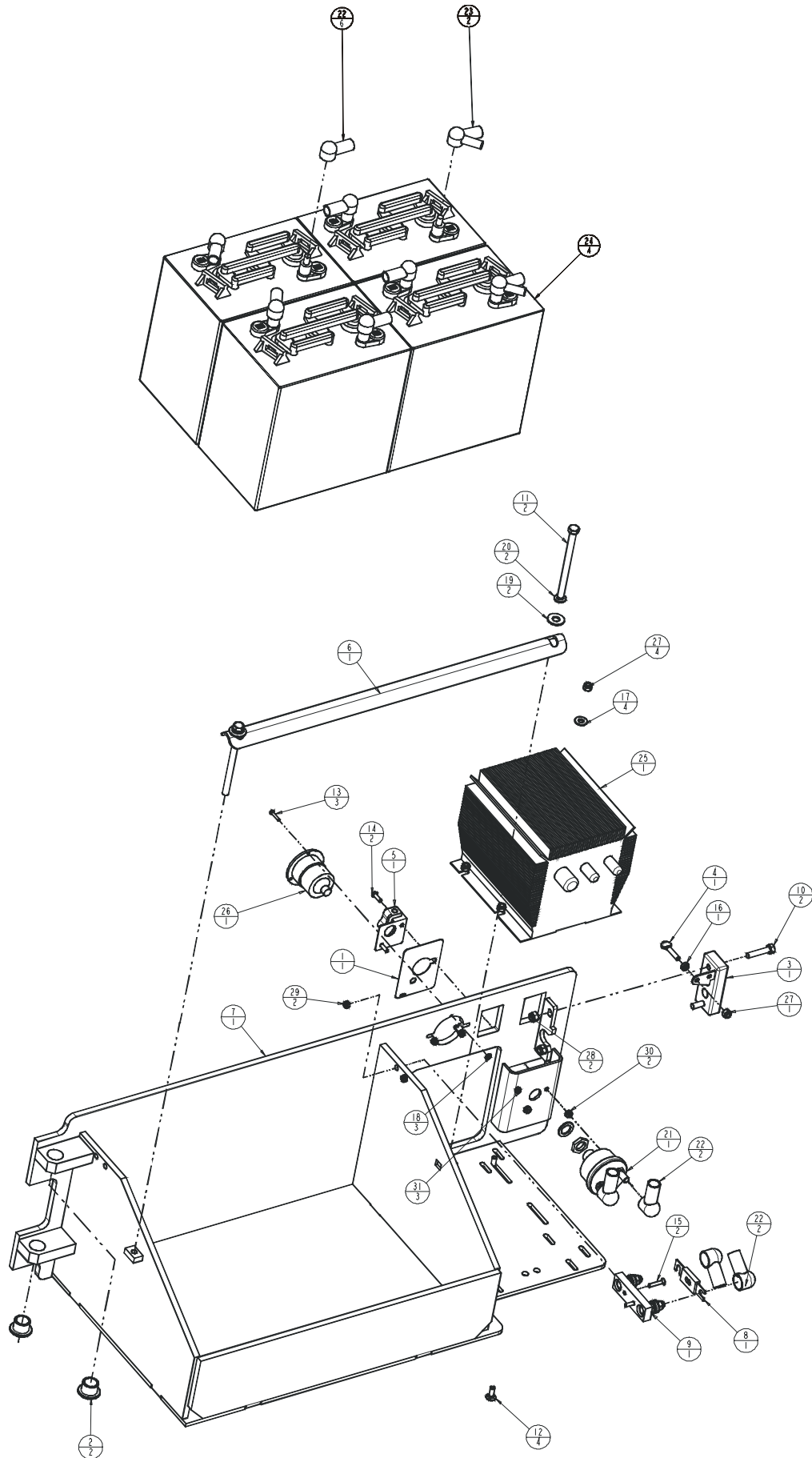
Item	Part No.	Qty.	Description
1	0361070	2	CAM PIN SMALL
2	0371557	1	ASSY BTRY TRAY S2646/3246 – All units After Aug. 2005
	0371557	1	ASSY BTRY TRAY S2646/3246 – United States only Before Aug. 2005
	0371959	1	ASSY BTRY TRAY S2646/3246 – Australia/New Zealand only Before Dec. 2005
	0372014	1	ASSY BTRY TRAY S2646/3246 – CE only Before Dec. 2005
3	0371802	1	PLATE, COVER CHASSIS
4	0371861	1	ASSY HYD TRAY S2646/3246
	0372024	1	ASSY HYD TRAY S2646/3246 (CE only)
5		1	CHASSIS, COMPLETE (see Repair Parts pages 5 and 6)
6	0371968	1	COVER PLATE CHASSIS REAR
7	970029	8	BLT HEXHD .250-20 .75 GR5
8	970989	2	BLT .500-13 3.50 GR5
9	975579	2	SCREW HEXSKT SET .25-20 .375
10	984409	2	NUT JAM .500-13
11	986019	8	WASHER FLAT .250
12	986359	4	WSHR FLAT .500
13	5560039	2	NUT LKG .500-13
14	5569945	8	NUT SPEED .250-20 J-STYLE CAGE



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# Battery Tray

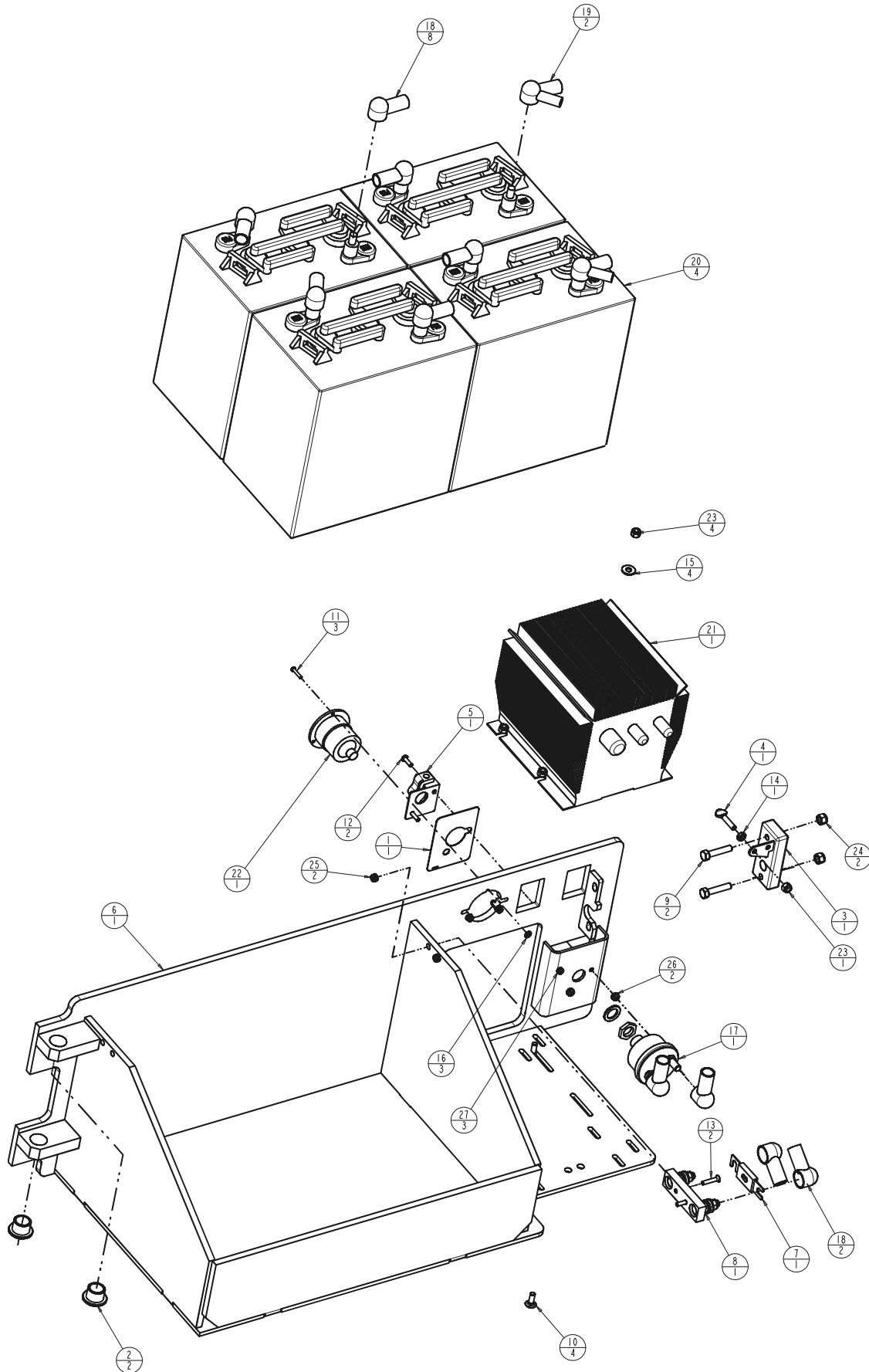


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## Battery Tray

Item	Part No.	Qty.	Description
1	0161014	1	PLAC BATTERY OFF/ON
2	300437	2	BEARING FLANGED OILITE
3	300491	1	LATCH RH TRAY ROTARY LOCK
4	300765	1	SCREW THUMB .25-20 X 1.00 TYPE B
5	300840	1	LOCK OUT LEVER ASSEMBLY
6	0361105	1	HOLDDOWN BATTERY
7	0371775	1	WLDMT BATTERY TRAY
8	446076	1	FUSE,250 AMP
9	446086	1	FUSE BLOCK P/N 4164
10	970279	2	BLT .313-18 1.50 GR5
11	970629	2	BLT .375-16 5.00 GR5
12	972569	4	BLT CRG .250-20 .750
13	974279	3	SCR RDH MACH 6-32 .75
14	974549	2	SCREW RDH 10-32 .625
15	976709	2	SCREW FLH 10-24 1.00
16	984329	1	NUT JAM .250-20
17	986019	4	WSHR FLAT .250
18	986159	3	WSHR FLAT 6
19	986299	2	WASHER FLAT .375
20	987119	2	WASHER LOCK .375
21	3020049	1	SW BATTERY DISCONNECT
22	3040269	10	BOOT BTRY CABLE END BLK 1/0 GA
23	3040270	2	BOOT BTRY CABLE END Y-TYPE
24	3050027	4	BTRY 6VOLT
25	3050097	1	CHARGER, 24V GLOBAL INPUT
	300909	1	CHARGER 24V/25A 60HZ – United States only Before October 2005
	3050091	1	CHARGER BATTERY 24V – Australia/New Zealand only Before December 2005
	3050090	1	CHARGER BATTERY 24V UNIVERSAL – CE only Before December 2005
26	3069521	1	FLANGE, INLET 15A, 125V – After October 2005
27	5560004	5	NUT LKG .250-20-ESNA
28	5560031	2	NUT LKG .313-18 ESNA
29	5560034	2	NUT LKG 10-24 ESNA
30	5560038	2	NUT LKG 10-32 ESNA
31	5569997	3	NUT LKG 6-32

# Battery Tray – After February 2011

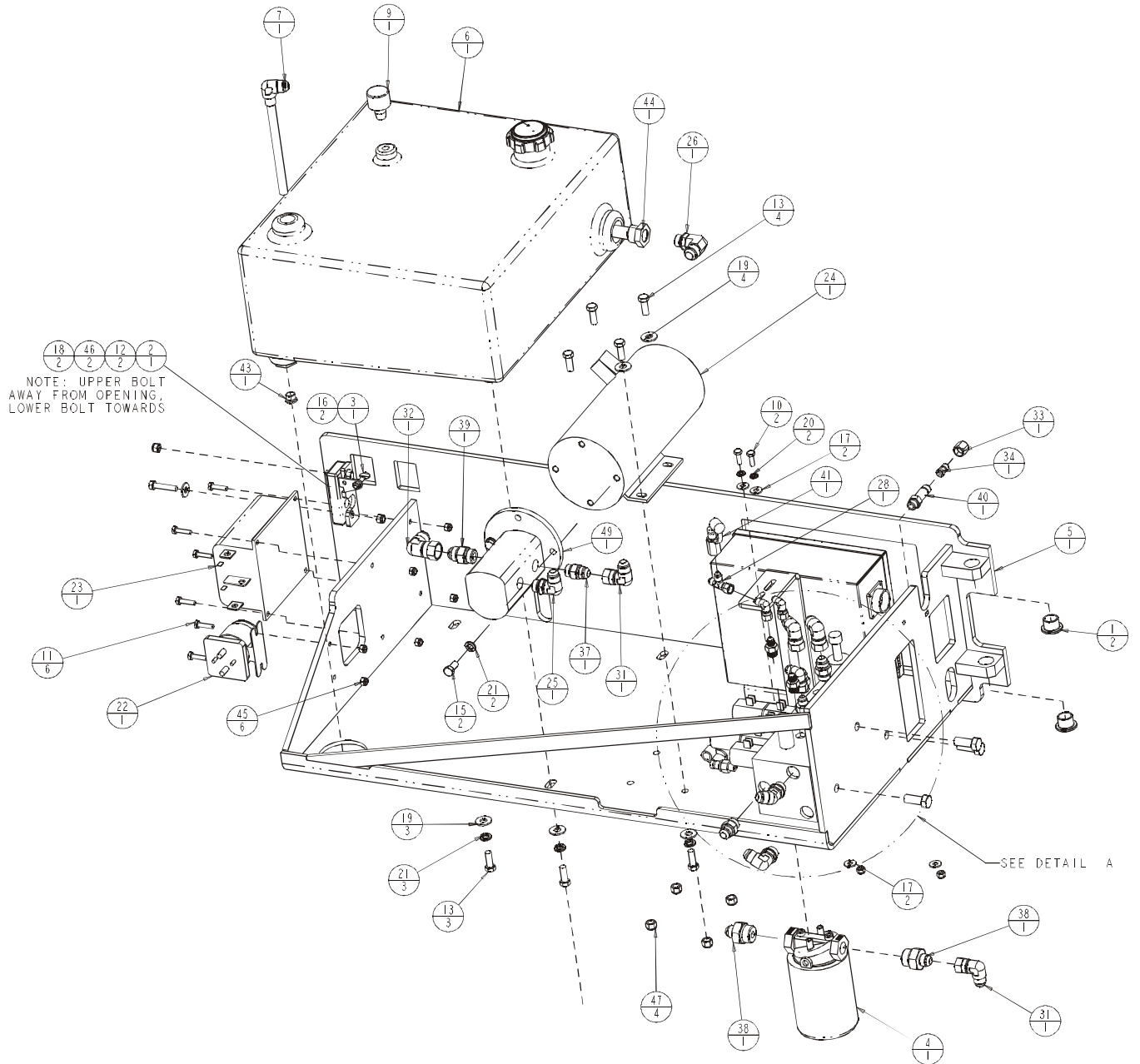


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## Battery Tray – After February 2011

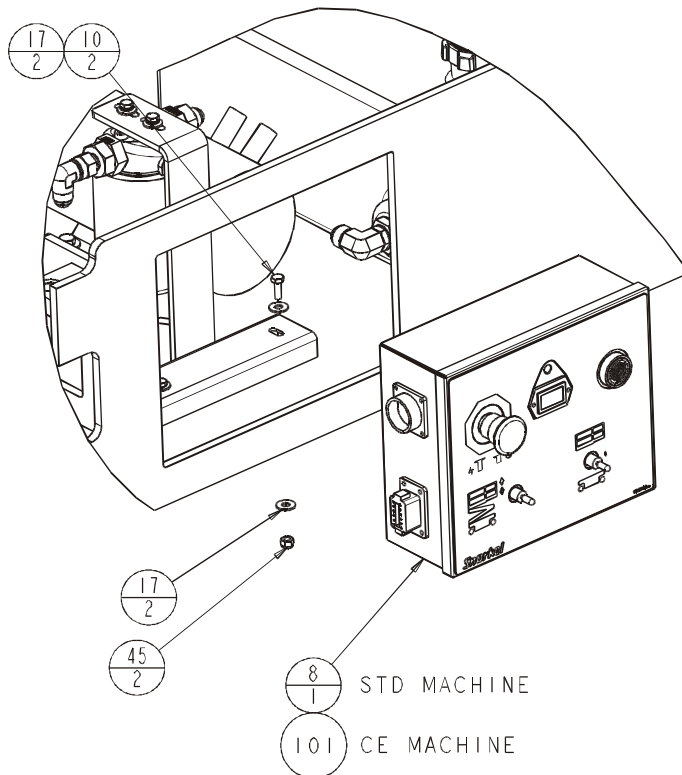
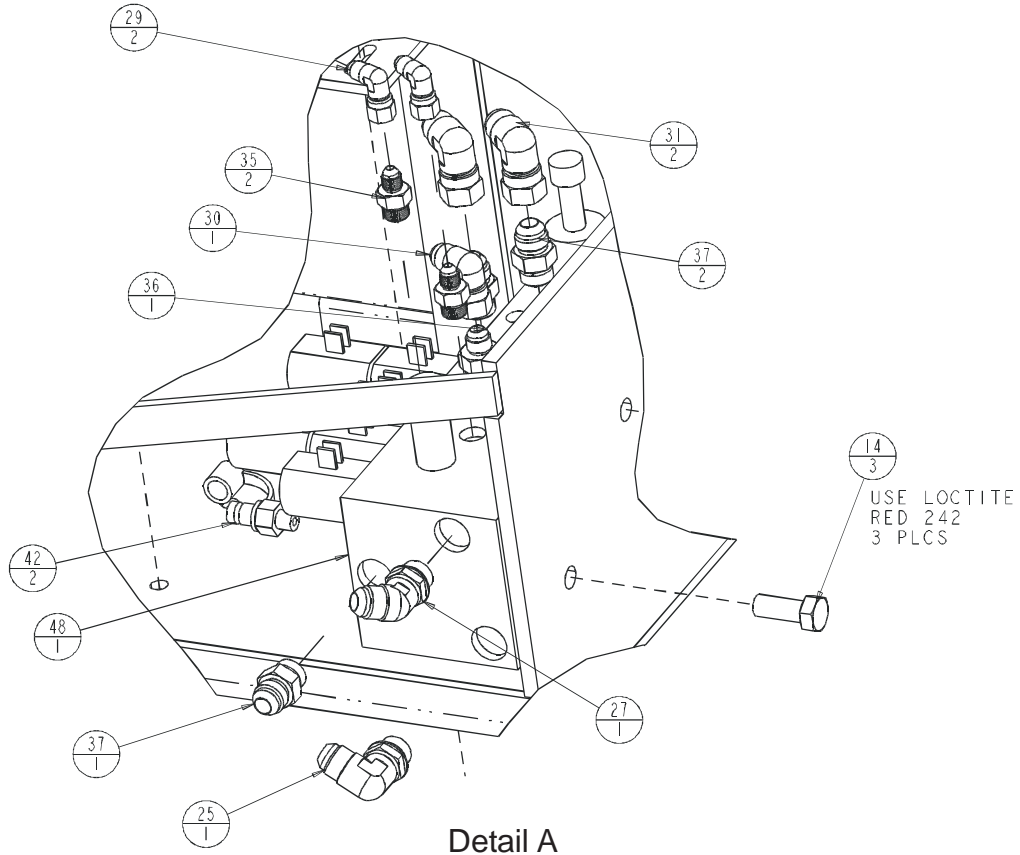
Item	Part No.	Qty.	Description
1	0161014	1	PLAC BATTERY OFF/ON
2	300437	2	BEARING FLANGED OILITE
3	300491	1	LATCH RH TRAY ROTARY LOCK
4	300765	1	SCREW THUMB .25-20 X 1.00 TYPE B
5	300840	1	LOCK OUT LEVER ASSEMBLY
6	0371775	1	WLDMT BATTERY TRAY
7	446076	1	FUSE,250 AMP
8	446086	1	FUSE BLOCK
9	970279	2	BLT HEXHED .313-18 1.50
10	972569	4	BLT CRG .250-20 .750
11	974279	3	SCR RDH MACH 6-32 .75
12	974549	2	SCREW RDH 10-32 .625
13	976709	2	SCREW FLH 10-24 1.00
14	984329	1	NUT JAM .250-20
15	986019	4	WSHR FLAT .250
16	986159	3	WSHR FLAT 6
17	3020049	1	SW BATTERY DISCONNECT
18	3040269	10	BOOT BTRY CABLE END BLK 1/0 GA
19	3040270	2	BOOT BTRY CABLE END Y-TYPE
20	3050027	4	BTRY 6 VOLT 220 A/H
21	3050097	1	CHARGER, 24V GLOBAL INPUT
	300909	1	CHARGER 24V/25A 60HZ – United States only Before October 2005
	3050091	1	CHARGER BATTERY 24V – Australia/New Zealand only Before December 2005
	3050090	1	CHARGER BATTERY 24V UNIVERSAL – CE only Before December 2005
22	3069521	1	FLANGE, INLET 15A, 125V – After October 2005
23	5560004	5	NUT LKG .250-20-ESNA
24	5560031	2	NUT LKG .313-18 ESNA
25	5560034	2	NUT LKG 10-24 ESNA
26	5560038	2	NUT LKG 10-32 ESNA
27	5569997	3	NUT LKG 6-32

# Hydraulic Tray



0371861 C

# Hydraulic Tray



0371861 C

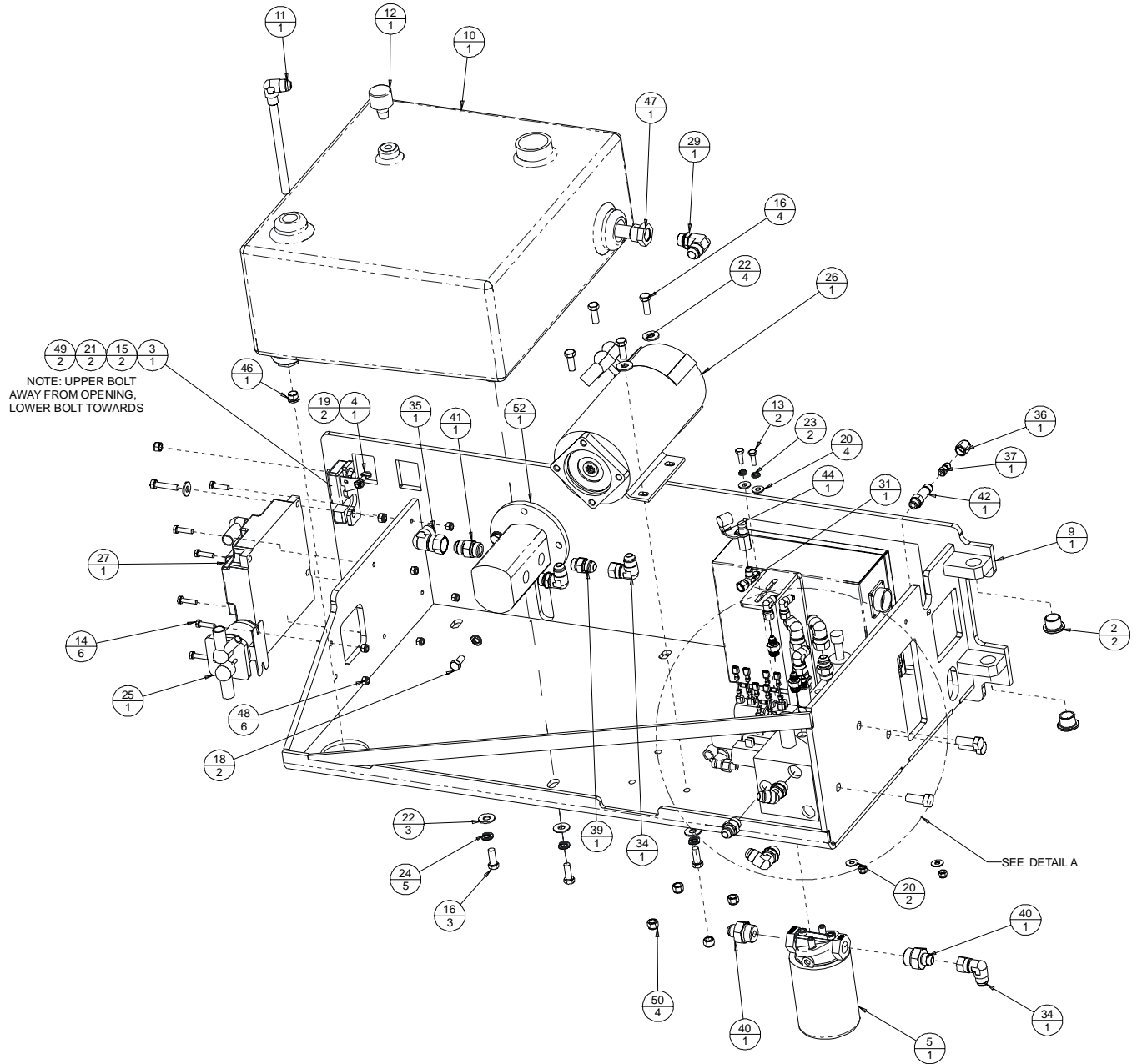


## Hydraulic Tray

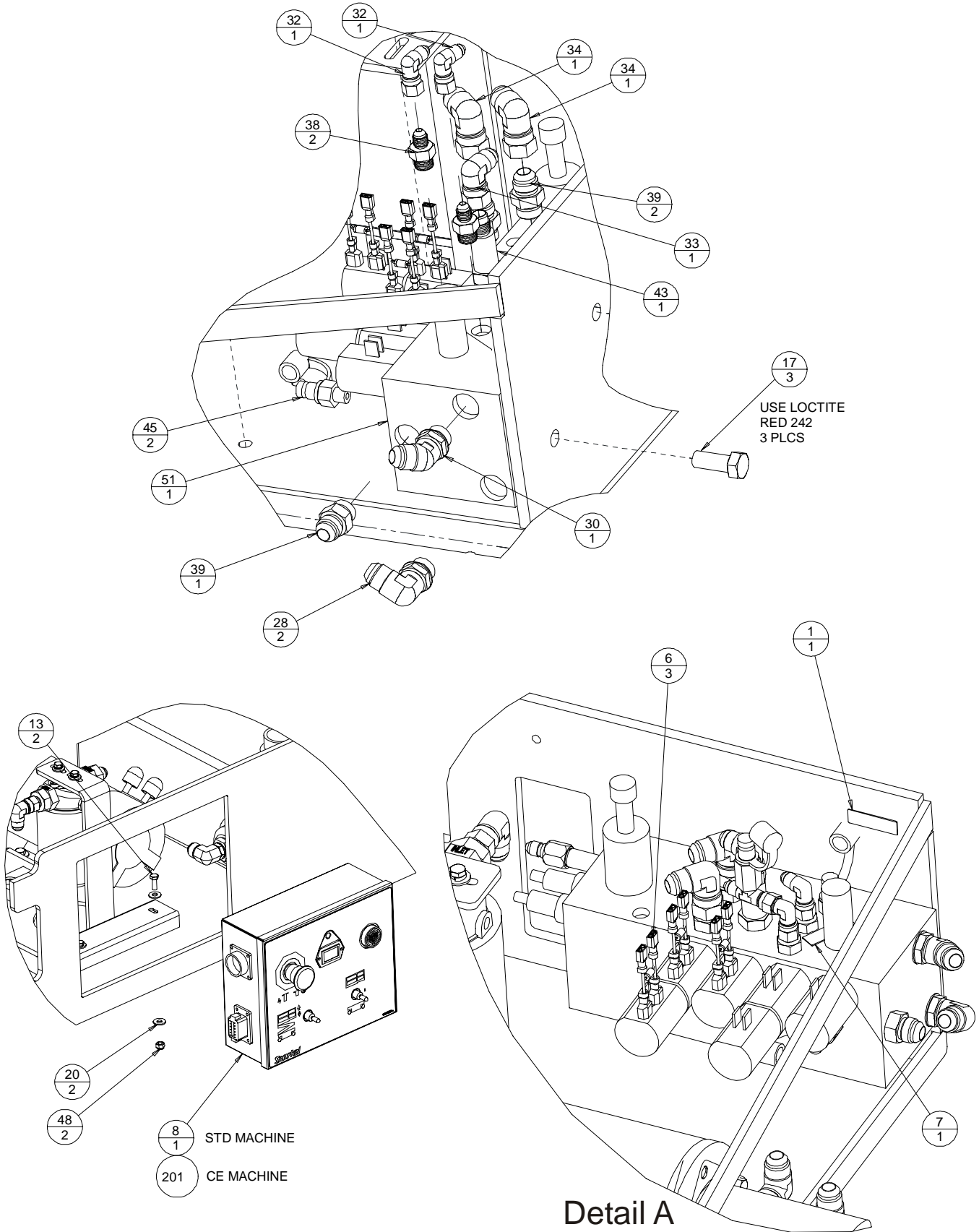
Item	Part No.	Qty.	Description
1	300437	2	BEARING FLANGED
2	300492	1	LATCH LH TRAY ROTARY LOCK
3	300765	1	SCREW THUMB .25-20 X 1.00 TYPE B
4	301440	1	RETURN OIL FILTER
5	0371862	1	WLDMT HYDRAULIC TRAY
6	0371866	1	HYDRAULIC TANK
	9940021	1	TANK FILLER CAP (included with item 6)
7	0371868	1	TUBE ASSY TANK RETURN
8	0410064	1	LOWER CONT BOX
9	554316	1	BREATHER 40 MICRON 1/4" NPT
10	970029	4	BLT HEXHD .250-20 .75 GR5
11	970049	7	BLT HEXHD .250-20 1.00 GR5
12	970279	2	BLT .313-18 1.50 GR5
13	970469	7	BLT HEXHD .375-16 1.00 GR5 PLATED
14	970849	3	BLT. 500-13 1.25 GR5
15	978239	2	BLT. .375-24 .75
16	984329	2	NUT JAM .250-20
17	986019	9	WASHER FLAT .250
18	986269	4	WASHER FLAT .313
19	986299	3	WASHER FLAT .375
20	987099	2	WASHER LOCK .250
21	987119	3	WASHER LOCK .375
22	3087787	1	CONTACTOR, 24V SEALED
23	3087789	1	CONTROLLER, MOTOR 24V 360A
24	3087790	1	MOTOR 24V PUMP MOUNT
25	5035306	2	FTG ELB90STRTHD-8B-8S STL
26	5035322	1	FTG ELB90STRTHD-8B-10S STL
27	5035706	1	FTG ELB45STRTHD-8B-8S STL
28	5036703	1	FTG TEE SWVL RUN-4S-4S STL
29	5037003	3	FTG ELB90SWVL-4S-4S STL
30	5037005	1	FTG ELB90SWVL-6S-6S STL
31	5037006	4	FTG ELB90SWVL-8S-8S STL
32	5037007	1	FTG ELB90SWVL-10S-10S STL
33	5063905	1	FTG NUT-6S STL PARKER 6BTX-S
34	5064001	1	FTG RDCR TUBE END-6S-4S
35	5065705	3	FTG ADPTR STRTHD-6B-4S
36	5065708	1	FTG ADPTR STRTHD-8B-6S STL
37	5065709	4	FTG ADPTR STRTHD-8B-8S STL
38	5065711	2	FTG ADPTR STRTHD-12B-8S STL
39	5065712	1	FTG ADPTR STRTHD-10B-10S STL
40	5065805	1	FTG ADPTR STRTHD-LG -6B-6S STL
41	5070005	1	NIPPLE DIAGNOSTIC -4JIC FEM
42	5070006	2	NIPPLE DIAGNOSTIC -4 O-RING
43	5075305	1	FTG PL HOL HEX-6B STL
44	5080042	1	STRAINER SUCTION
45	5560004	9	NUT LKG .250-20-ESNA
46	5560031	3	NUT LKG .313-18 ESNA
47	5560033	4	NUT LKG .375-16-ESNA
48	6019056	1	VALVE, MAIN MANIFOLD
49	6029637	1	PUMP 2 SEC 6CC/4CC
101	0410065	1	LOWER CONT BOX (CE only)



# Hydraulic Tray – After February 2011



# Hydraulic Tray – After February 2011



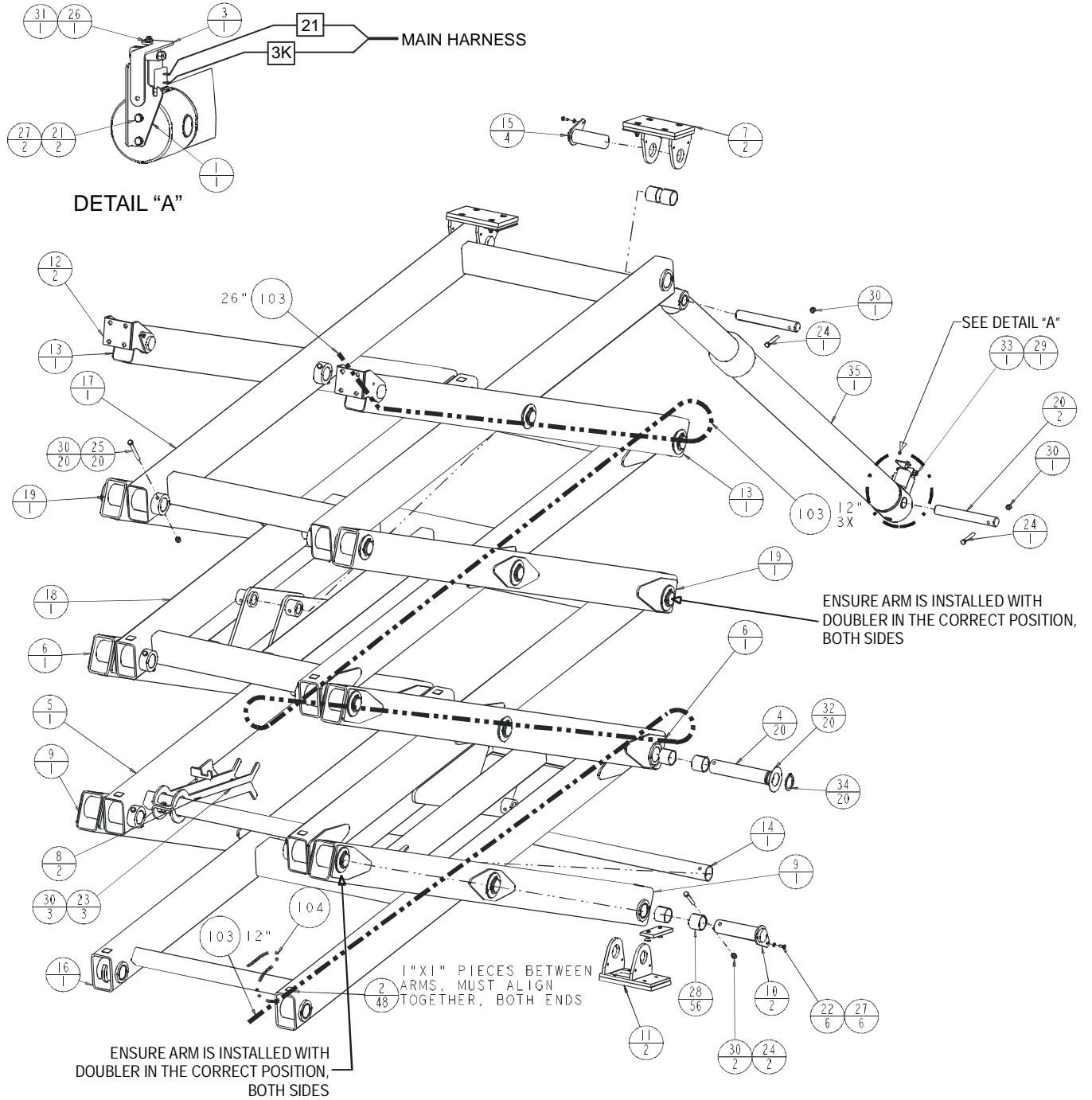
0371861 L

## Hydraulic Tray – After February 2011

Item	Part No.	Qty.	Description
1	0075378	1	DECAL SYSTEM PRESSURE
2	300437	2	BRG FLG
3	300492	1	LATCH LH TRAY ROTARY LOCK
4	300765	1	SCR THUMB .250-20 1.00
5	301440	1	RETURN OIL FILTER
6	0361550	3	DIODE WIRE ASSY
7	361558	1	DECAL STEER PRESSURE
8	1370350	1	LOWER CONTROL BOX ASSY
9	0371862	1	WLDMT HYDRAULIC TRAY
10	0371866	1	HYDRAULIC TANK
	9940021	1	TANK FILLER CAP (included with item 10)
11	0371868	1	TUBE ASSY TANK RETURN
12	554316	1	BREATHER 40 MICRON 1/4" NPT
13	970029	4	BLT HEXHD .250-20 .75 GR5-Z/P
14	970049	6	BLT HEXHD .250-20 1.00 GR5-GRADE 5 PLT
15	970279	2	BLT HEXHD .313-18 1.50 GR5
16	970469	7	BLT HEXHD .375-16 1.00 GR5
17	970849	3	BLT HEXHD .500-13 1.250 GR5
18	978239	2	BLT HEXHD .375-24 .750
19	984329	2	NUT HEX JAM .250-20
20	986019	8	WSHR FLAT .250
21	986269	2	WSHR FLAT .313
22	986299	7	WSHR FLAT .375
23	987099	2	WSHR LOCK .250
24	987119	5	WSHR LOCK .375
25	3087787	1	CONTACTOR 24V SEALED
26	3087790	1	MOTOR 24V PUMP MOUNT
27	3087800	1	PG TROINIC EZ230
28	5035306	2	FTG ELB90STRTHD-8B-8S STL
29	5035322	1	FTG ELB90STRTHD-8B-10S STL
30	5035706	1	FTG ELB45STRTHD-8B-8S STL
31	5036703	1	FTG TEE SWVL RUN-4S-4S STL
32	5037003	2	FTG ELB90SWVL-4S-4S STL
33	5037005	1	FTG ELB90SWVL-6S-6S STL
34	5037006	4	FTG ELB90SWVL-8S-8S STL
35	5037007	1	FTG ELB90SWVL-10S-10S STL
36	5063905	1	FTG NUT-6S STL
37	5064001	1	FTG RDCR-6S-4S W/O NUT
38	5065705	2	FTG ADPTR STRTHD-6B-4S STL
39	5065709	4	FTG ADPTR STRTHD-8B-8S STL-PH
40	5065711	2	FTG ADPTR STRTHD-12B-8S STL
41	5065712	1	FTG ADPTR STRTHD-10B-10S STL-P
42	5065805	1	FTG ADPTR STRTHD-LG -6B-6S STL
43	5065815	1	FTG ADPTR STRTHD-LG -8B-6S STL
44	5070005	1	FTG NIP DIGN-4S FEM
45	5070006	2	FTG NIP DIGN-4B
46	5075305	1	FTG PL HOL HEX-6B STL
47	5080042	1	STRAINER SUCTION
48	5560004	8	NUT HEX LKG .250-20
49	5560031	2	NUT HEX LKG .313-18
50	5560033	4	NUT HEX LKG .375-16 ESNA
51	6019056	1	VALVE MAIN MANIFOLD
52	6029637	1	PUMP 2 SEC 6CC/4CC
201	1420237	1	LOWER CONT BOX – CE only



# Scissor Stack – S2646



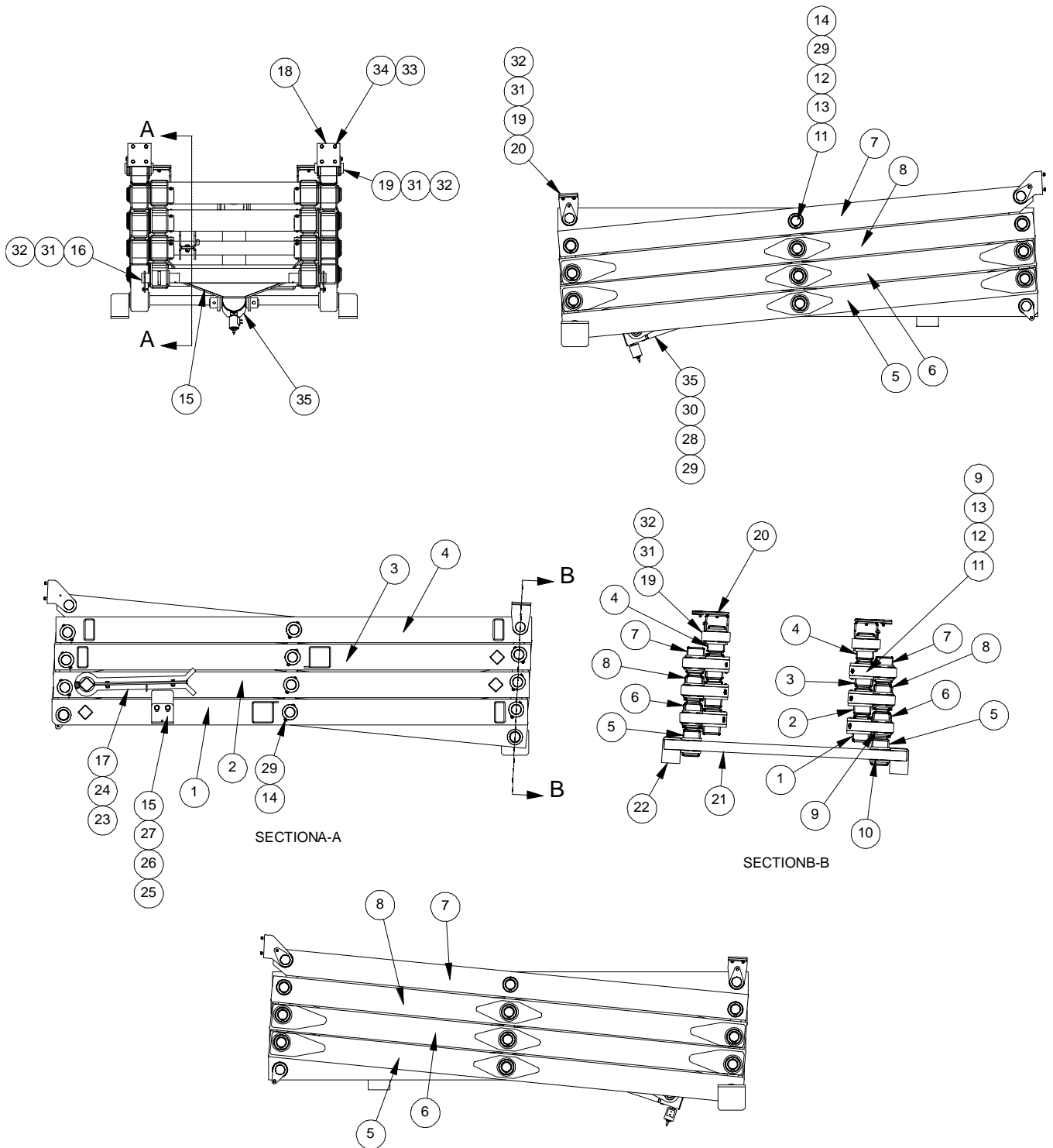
0410004 A

## Scissor Stack – S2646

Item	Part No.	Qty.	Description
	0410004	1	ASSY, SCISSOR STACK S2646
1	0361130	1	WLDMT PIVOT ARM
2	0361477	2	SCISSOR ARM WEAR PAD
3	0371836	1	WLDMT EMER BLEED DOWN
4	0371845	20	PIN 1.750OD 8.63 LONG
5	0371849	1	ARM INNER 2ND .188 WALL
6	0371854	2	WLDMT OUTER ARM .250WALL W/DBL
7	0371897	2	ASSY, SLIDE PAD
8	0371904	2	SAFETY PROP
9	0410007	2	WLDMT OUTER ARM 0.188 TUBE
10	0410016	2	ASSY PIN BOTTOM SLIDE
11	0410019	2	WLDMT SLIDE BRKT
12	0410021	2	WLDMT PLATF BRKT MT
13	0410027	2	WLDMT OUTER ARM .125WALL
14	0410029	1	PIPE CONNECTOR SCISSOR ARM
15	0410032	4	ASSY PIN TOP SLIDE
16	0410035	1	WLDMT INNER ARM .250WALL
17	0410036	1	WLDMT INNER ARM .125WALL
18	0410039	1	WLMT INNER ARM THIRD
19	0410043	2	WLDMT OUTER ARM .250TUBE
20	0410045	2	PIN CYL MT S2646
21	970009	2	BLT HEXHD .250-20 .500 GR5
22	970019	6	BLT HEXHD .250-20 .625 GR5
23	970469	3	BLT HEXHD .375-16 1.00 GR5
24	970529	4	BLT HEXHD .375-16 2.50 GR5
25	970569	20	BLT .375-16 3.50 GR5
26	986009	1	WASHER FLAT 10
27	987099	8	WASHER LOCK .250
28	2509671	56	BEARING 1.75ID 1.94OD 1.50LG
29	5560031	1	NUT LKG .313-18 ESNA
30	5560033	27	NUT LKG .375-16-ESNA
31	5560038	1	NUT LKG 10-32 ESNA
32	5569853	20	BSHG MCHRY 1.75ID 2.50OD 14GA
33	5569994	1	BLT SHLDR .375X2.0 .3125-18X.5
34	5590175	20	SNAP RING 1.75 ID HEAVY DUTY
35	6047107	1	CYL, LIFT
103	5090048	6.5 ft	HOSE GUARD-16
104	0410047	1	CABLE, EMER BLEED DOWN S2646



# Scissor Stack – S2646E



## Scissor Stack – S2646E

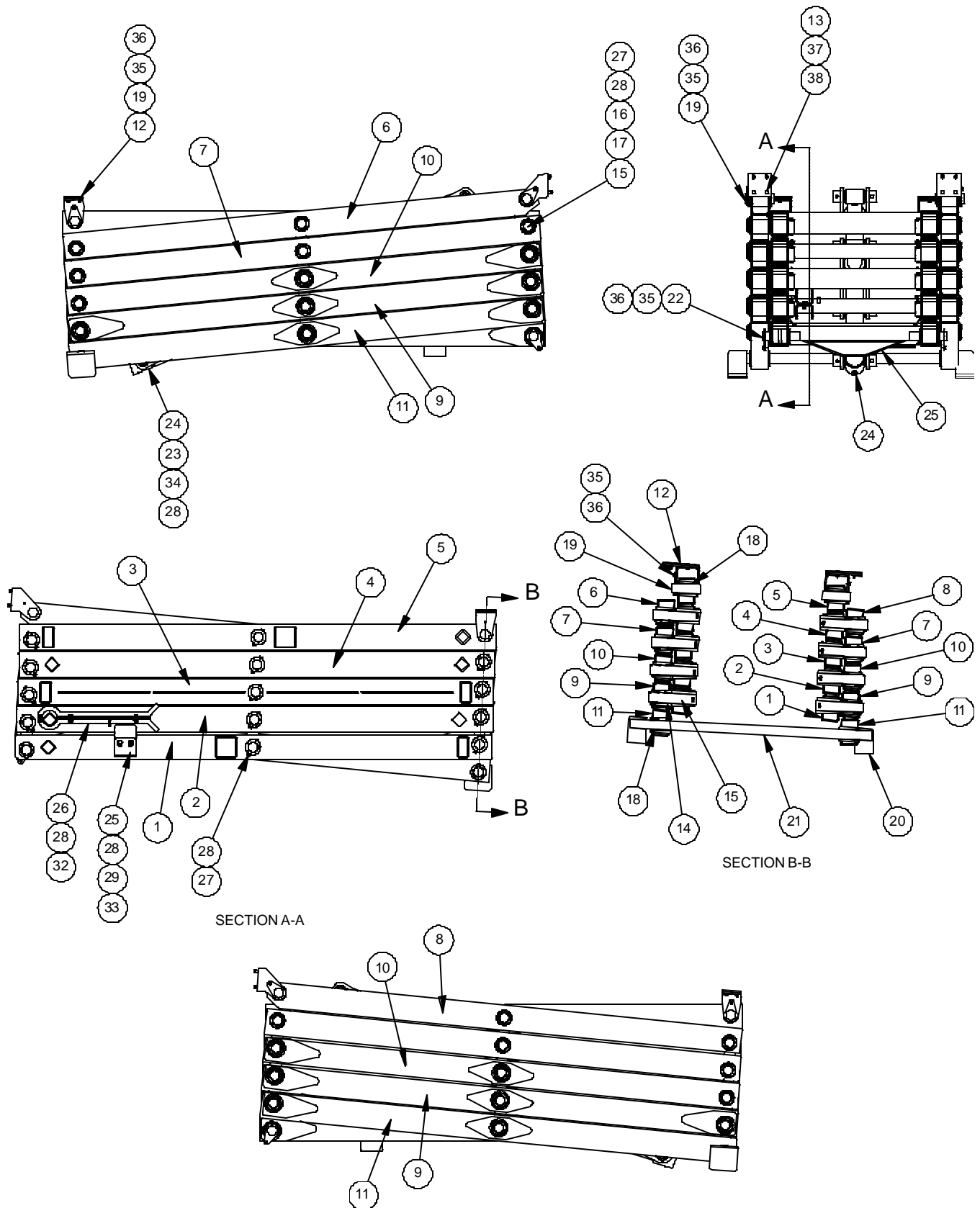
Item	Part No.	Qty.	Description
	0372252	1	ASSY, SCISSOR STACK S2646E
1	0372233	1	WLDMT 1ST INNER ARM 2646
2	0372234	1	WLDMT 2ND INNER ARM 2635-3246
3	0372235	1	WLDMT 3RD INNER ARM 2646
4	0372236	1	WLDMT 4TH INNER ARM 2646
5	0372241	2	WLDMT OUTER ARM 5mm WALL
6	0372242	2	WLDMT OUTER ARM 6mmWALL
7	0372250	2	WLDMT OUTER ARM 4mm WALL
8	0372244	2	WLDMT OUTER ARM 6mm WALL
9	2509726	40	BEARING, CSB, CRG-4553-30
10	2509671	16	BRG 1.75ID 1.94OD 1.50
11	0372248	20	PIN 45mm OD X 8.625[219.1mm] LG
12	5563371	20	WSHR CUSTOM 65mmOD X 45.75mm ID X 12GA
13	5592003	20	SNAP RING 45MM EXT
14	056058-080	20	HHCS M8 x 1.25 x 80 G8.8 ISO 4014_DIN 931
15	0372016	1	POTHOLE ACTUATOR WLDT 3246
16	0410016	2	ASSY PIN BOTTOM SLIDE
17	0371904	2	SAFETY PROP
18	1370417	2	SCISSOR ARM MOUNT
19	0410032	4	ASSY PIN TOP SLIDE
20	1370412	2	PLATFORM SLIDE ASSY
21	1370418	1	PIN LOWER
22	1370411	2	LOWER SLIDE BLOCK
23	058493-025	3	M10 X 25MM HEX HEAD
24	056066-010	3	NUT, LOCK, NYLON, M10, DIN985, GR8
25	056064-012	4	NUT, NYLOCKNUT DIN985 M12 10.0
26	510561-012	4	WASHER M12 FLAT DIN 125 SS
27	510581-030	4	BLT HEXHD M12-1.75 30MM
28	0410045	2	PIN, 1.25 X 7.931 GRIP, PLATED
29	056066-008	22	NUT, NYLOCKNUT DIN985 M8 8.0 Z
30	065059-065	2	HHCS M8 x 1.25 x 65 G8.8 ISO 4014_DIN 931
31	056021-006	6	M6 SPRING WASHER
32	058491-016	6	BOLT, HEXSETSCREW DIN933 M6 X
33	056021-008	8	Washer SpringWasher DIN127B M8 ZincPlated
34	056059-020	8	M8 X 20MM HEX HEAD B
35	6047107-3	1	CYL 3.50 41.63 LIFT
			Not Shown
	06018023	1	SOLENOID VALVE W/ MANUAL SV10-22J-O-N-24DS
	06091348	1	CHECK VALVE POPPET FLOW WITH 0.045" ORIFICE
	5090048	8 ft	HOSE GUARD-16
	0410048	1	CABLE, EMER BLEED DOWN S3246



## Scissor Stack – S3246

Item	Part No.	Qty.	Description
	0371500	1	ASSY, SCISSOR STACK S3246
1	0361130	2	WLDMT PIVOT ARM
2	0361477	3	SCISSOR ARM WEAR PAD
3	0371510	4	PIN CYLINDER MNT SL32E
4	0371836	2	WLDMT EMER BLEED DOWN
5	0371845	26	PIN 1.750OD 8.63 LONG
6	0371846	1	WLDMT THIRD INNER ARM
7	0371849	1	ARM INNER 2ND .188 WALL
8	0371850	1	WLDMT FIFTH INNER ARM .188WALL
9	0371897	2	ASSY, SLIDE PAD
10	0371904	2	SAFETY PROP
11	0371943	2	WLDT OUTER ARM .25 TUBE
12	0410005	1	WLDMT FIRST INNER ARM
13	0410006	1	ARM INNER 2ND .188 WALL
14	0410007	4	WLDMT OUTER ARM 0.188 TUBE
15	0410016	2	ASSY PIN BOTTOM SLIDE
16	0410019	2	WLDMT SLIDE BRKT
17	0410021	2	WLDMT PLATF BRKT MT
18	0410027	3	WLDMT OUTER ARM .125WALL
19	0410029	1	PIPE CONNECTOR SCISSOR ARM
20	0410032	4	ASSY PIN TOP SLIDE
21	0410049	1	WLDMT, OUTER ARM W/BAR
22	970009	4	BLT HEXHD .250-20 .500 GR5
23	970019	6	BLT HEXHD .250-20 .625 GR5
24	970469	3	BLT HEXHD .375-16 1.00 GR5
25	970529	6	BLT HEXHD .375-16 2.50 GR5
26	970569	26	BLT HEXHD .375-16 3.50 GR5
27	986009	2	WASHER FLAT 10
28	987099	10	WASHER LOCK .250
29	2509671	68	BEARING 1.75ID 1.94OD 1.50LG
30	5560031	2	NUT LKG .313-18 ESNA
31	5560033	35	NUT LKG .375-16 ESNA
32	5560038	2	NUT LKG 10-32 ESNA
33	5569853	26	BSHG MCHRY 1.75ID 2.50OD 14GA
34	5569994	2	BLT SHLDR .375X2.0 .3125-18X.5
35	5590175	26	SNAP RING 1.75 ID HEAVY DUTY
36	6047075	2	CYLINDER, LIFT
103	5090048	8 ft	HOSE GUARD-16
104	0410048	1	CABLE, EMER BLEED DOWN S3246

# Scissor Stack – S3246E



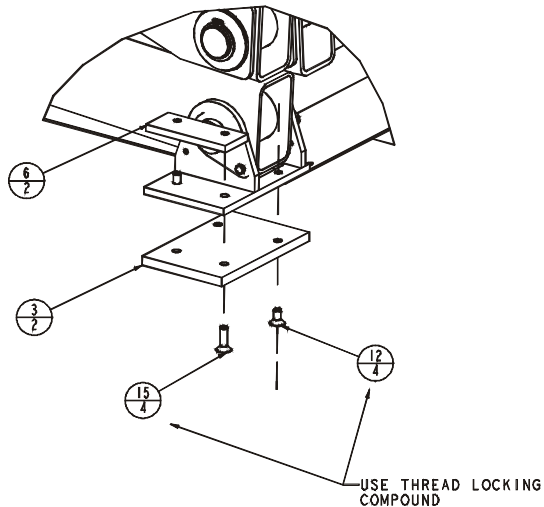
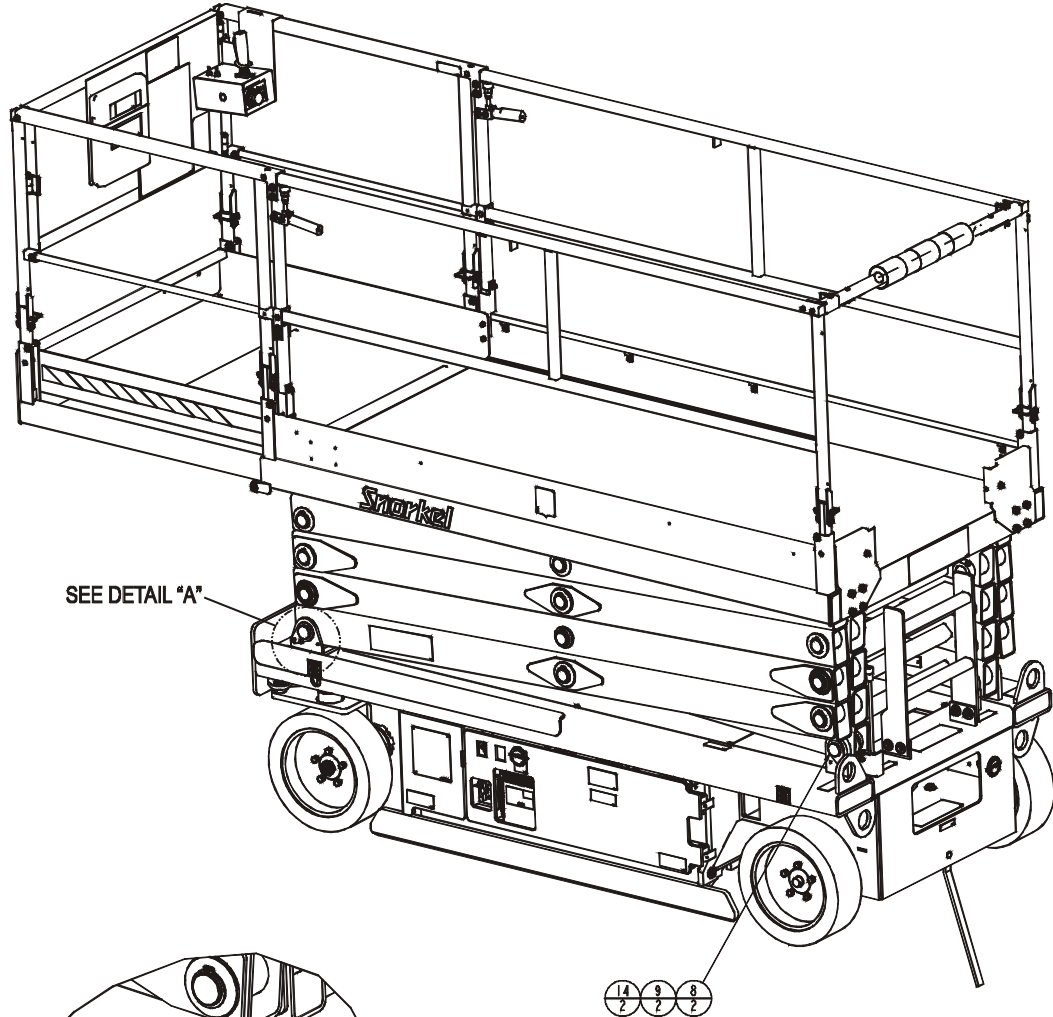
0372251 A

## Scissor Stack – S3246E

Item	Part No.	Qty.	Description
	0372251	1	ASSY, SCISSOR STACK S3246E
1	0372237	1	WLDMT 1ST INNER ARM 3246
2	0372234	1	WLDMT 2ND INNER ARM 2635-3246
3	0372238	1	WLDMT 3RD INNER ARM 3246
4	0372239	1	WLDMT 4TH INNER ARM 3246
5	0372240	1	WLDMT 5TH INNER ARM 3246
6	0372250	1	WLDMT OUTER ARM 4mm WALL
7	0372245	2	WLDMT OUTER ARM 4mm WALL
8	0372246	1	WLDMT OUTER ARM 4mmWALL
9	0372242	2	WLDMT OUTER ARM 6mmWALL
10	0372247	2	WLDMT OUTER ARM 5mm WALL
11	0372241	2	WLDMT OUTER ARM 5mm WALL
12	1370412	2	PLATFORM SLIDE ASSY
13	1370417	2	SCISSOR ARM MOUNT
14	2509726	52	BEARING, CSB, CRG-4553-30
15	0372248	26	PIN 45mm OD X 8.625[219.1mm] LG
16	5563371	26	WSHR CUSTOM 65mmOD X 45.75mm ID X 12GA
17	5592003	26	SNAP RING 45MM EXT
18	2509671	16	BRG 1.75ID 1.94OD 1.50
19	0410032	4	ASSY PIN TOP SLIDE
20	1370411	2	LOWER SLIDE BLOCK
21	1370418	1	PIN LOWER
22	0410016	2	ASSY PIN BOTTOM SLIDE
23	0371510	4	PIN, 1.25 X 7.057 GRIP
24	6047075	2	CYLINDER, LIFT SL3246
25	0372016	1	POTHOLE ACTUATOR WLDT 3246
26	0371904	2	SAFETY PROP
27	056058-080	26	HHCS M8 x 1.25 x 80 G8.8 ISO 4014_DIN 931
28	056066-008	30	NUT, NYLOCKNUT DIN985 M8 8.0 Z
29	510561-012	4	WASHER M12 FLAT DIN 125 SS
30	056064-012	4	NUT, NYLOCKNUT DIN985 M12 10.0
31	056066-010	3	NUT, LOCK, NYLON, M10, DIN985, GR8
32	058493-025	3	M10 X 25MM HEX HEAD
33	510581-030	4	BLT HEXHD M12-1.75 30MM
34	065059-065	4	HHCS M8 x 1.25 x 65 G8.8 ISO 4014_DIN 931
35	056021-006	6	M6 SPRING WASHER
36	058491-016	6	BOLT, HEXSETSCREW DIN933 M6 X
37	056021-008	8	Washer SpringWasher DIN127B M8 ZincPlated
38	056059-020	8	M8 X 20MM HEX HEAD B
			Not Shown
	6047075	2	CYLINDER, LIFT
	5090048	8 ft	HOSE GUARD-16
	0410048	1	CABLE, EMER BLEED DOWN S3246

## Scissor Stack Installation

Item	Part No.	Qty.	Description
3	0371770	2	SLIDE PAD TOP
6	0372019	2	BAR SLD PAD BRKT BOTTOM UPPER
8	0410016	2	ASSY, PIN BOTTOM SLIDE
9	970049	2	BLT .25-20 1.00 GR5
12	972449	4	BLT FLSKTHD .375-16 .750
13	986359	12	WSHR FLAT .500
14	987099	2	WSHR LOCK .250
15	5560675	4	BLT FLSKTHD .375-16 1.25



**DETAIL "A"**  
TYPICAL BOTH SIDES

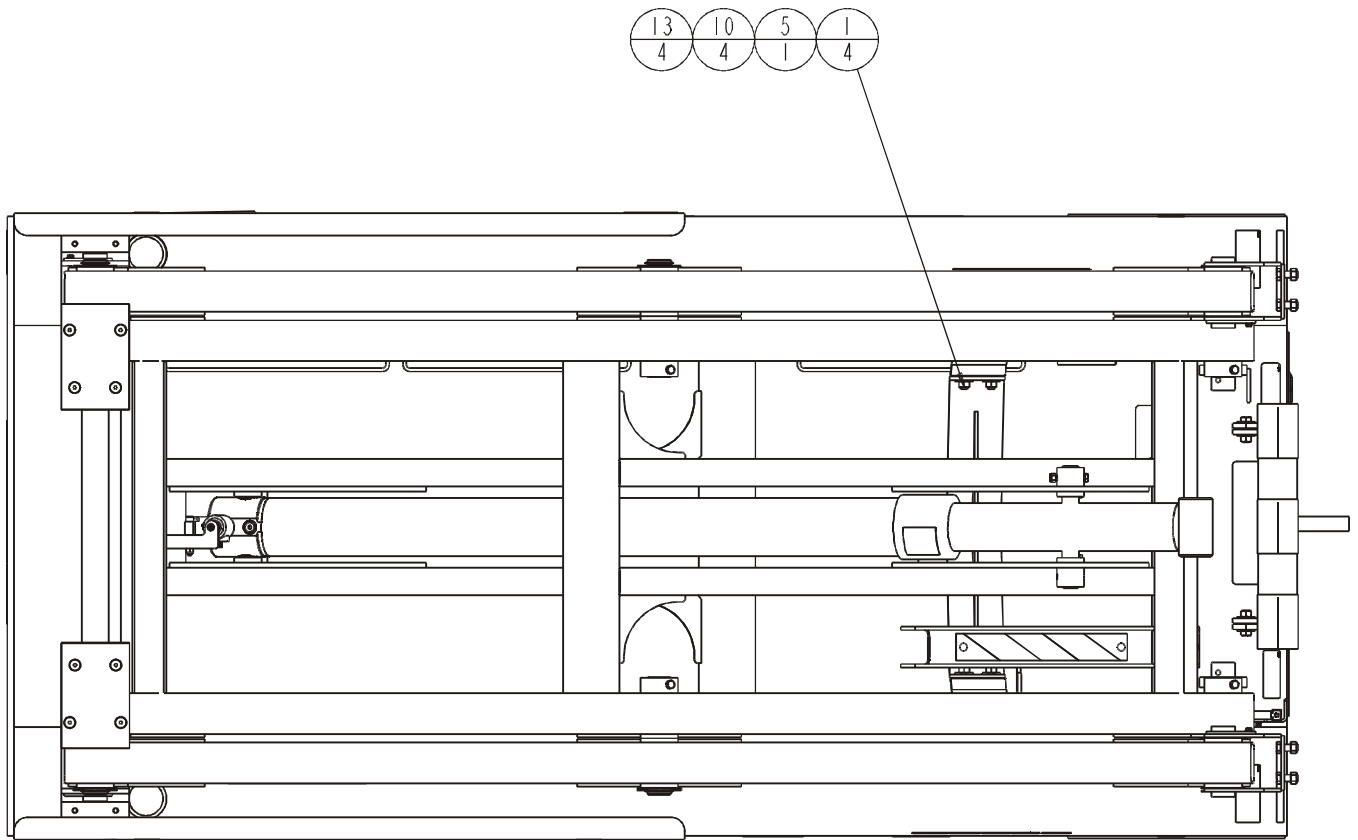
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## Pothole Actuator Installation

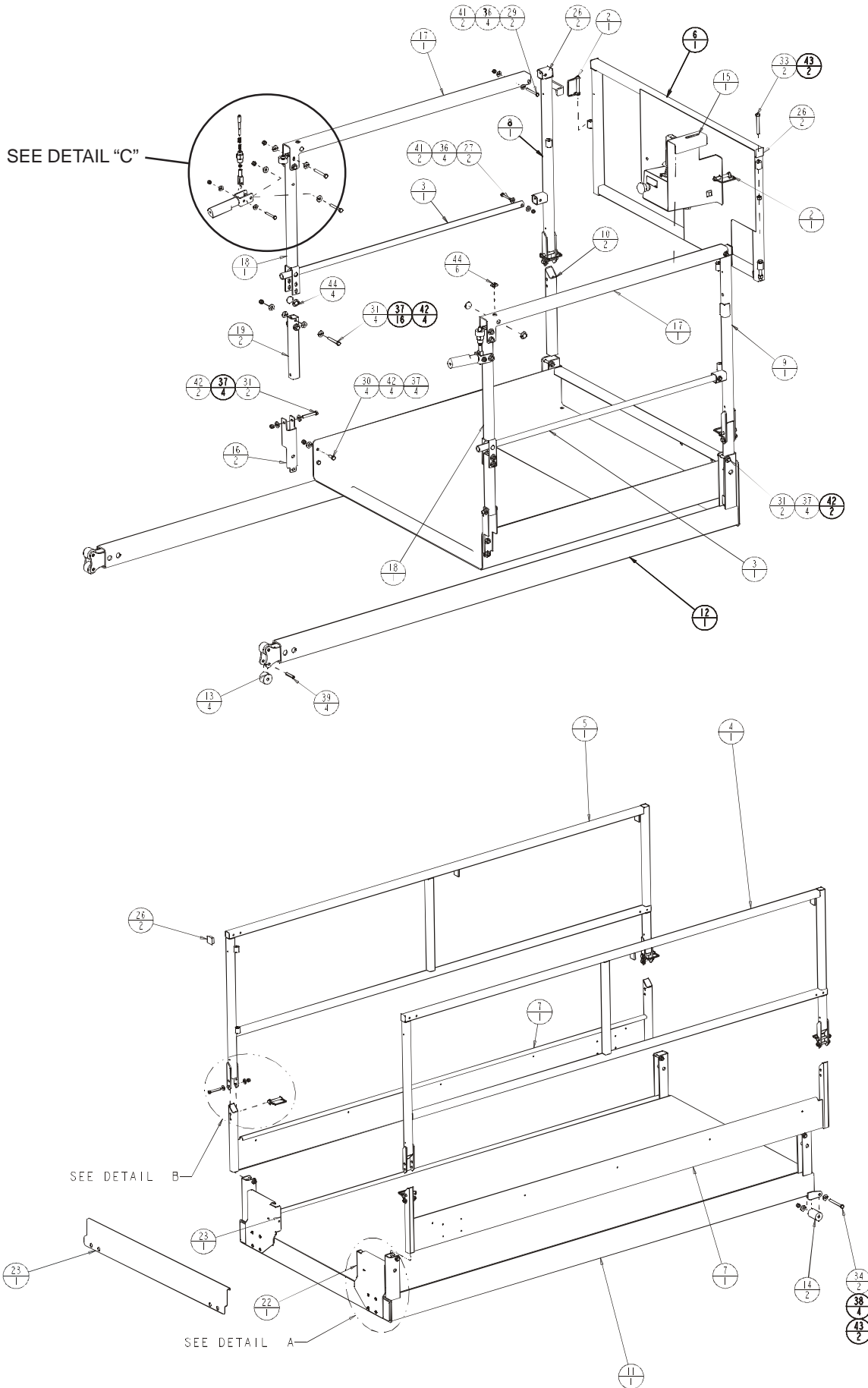
Item	Part No.	Qty.	Description
1	300778	4	NUT HEX .500-13
5	0372016	1	POTHOLE ACTUATOR WLDT 3246
10	970849	4	BLT .500-13 1.25 GR5
13	986359	4	WSHR FLAT .500



VIEW LOOKING DOWN  
PLATFORM REMOVED

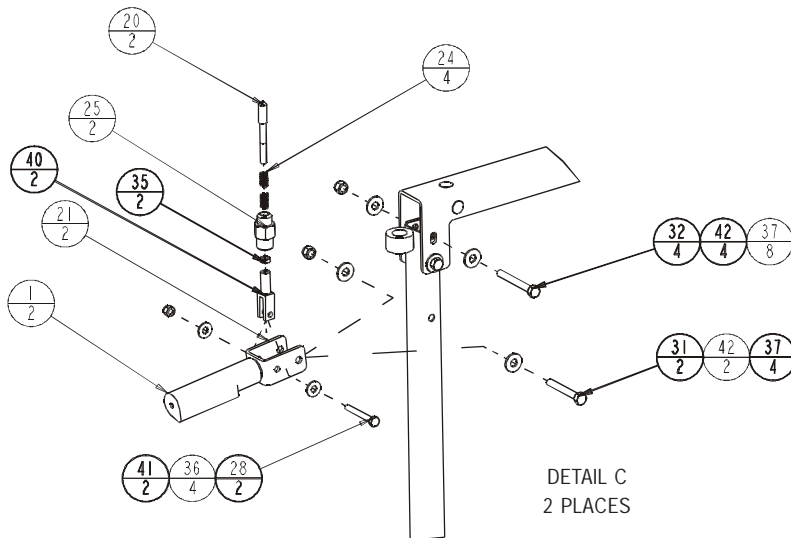
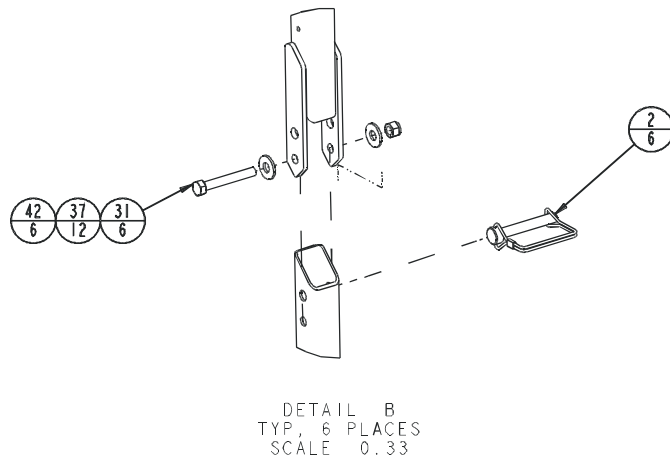
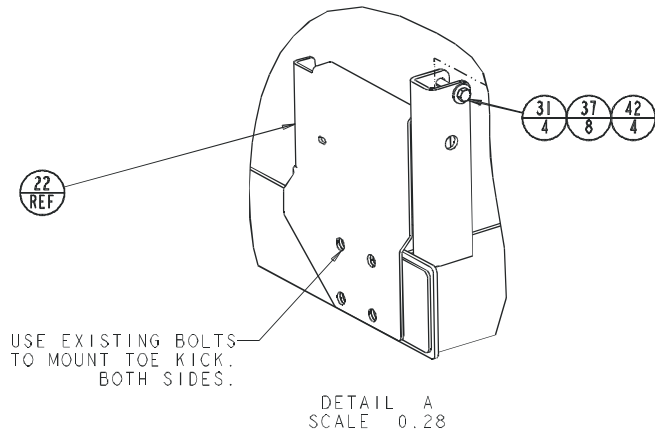


# Platform



0371714 B

# Platform



0371714 B

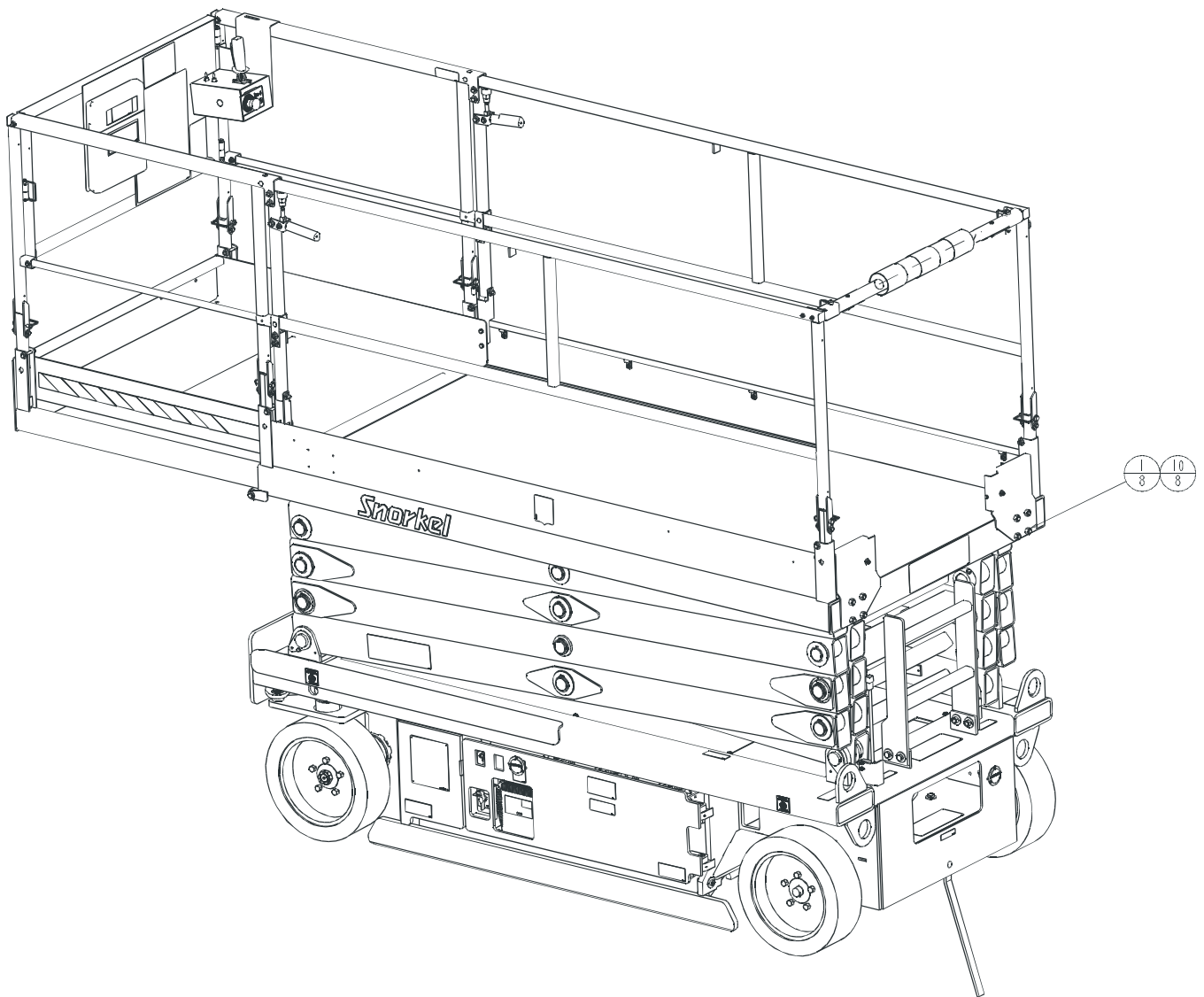
## Platform

Item	Part No.	Qty.	Description
1	127076	2	GRIP PLASTIC HANDLE GRIP BLACK
2	302544	8	PIN SNAPPER W/ LNYD .375X2.25
3	0360992	2	TUBE TELESCOPING EXT DECK HND
4	0371605	1	WLDMT HAND RAIL RH SIDE
5	0371606	1	WLDMT HANDRL LH SIDE
6	0371608	1	WLDMT HANDRAIL ROLLOUT
7	0371626	2	WLDMT HANDRL TOE BOARD (omitted on CE)
	0372003	2	WLDMT HANDRL TOE BOARD (CE only)
8	0371637	1	WLDMT HANDRL ROLLOUT HINGE CORNER
9	0371639	1	WLDMT HANDRL ROLLOUT CORNER
10	0371776	2	TUBE HANDRL MOUNT LG E-DECK (omitted on CE)
	0372005	2	TUBE HANDRL MOUNT LG E-DECK (CE only)
11	0371814	1	WLDMT PLATF DECK
12	0371815	1	WLDMT PLATF ROLLOUT
13	0371823	4	ROLLER ROLLOUT DECK
14	0371824	2	ROLLER PLATF OUTER
15		1	UPPER CONTROL BOX ASSY S26/3246 (see Repair Parts and Electrical sections)
16	0371927	2	PL EXT DECK BRACKET (omitted on CE)
	0372002	2	PL EXT DECK BRACKET (CE only)
17	0371931	2	TOP SLIDE RAIL
18	0371934	2	SLIDE RAIL WELDMENT
19	0371935	2	TUBE HAND RAIL
20	0371937	2	PIN DETENT
21	0371940	2	HANDLE WELDMENT
22	0371981	1	TOE KICK, RH ENTRY (omitted on CE)
23	0371984	1	TOE KICK, LH ENTRY (omitted on CE)
	0372017	1	TOE KICK, ENTRY (CE only)
24	454996	4	SPRING
25	466414	2	HOUSING, DETENT PIN
26	468886	6	END CAP 1.25 SQ PLASTIC BLACK
27	969989	2	BLT HEXHD .250-20 1.75 GR5
28	970169	2	BLT HEXHD .250-20 2.00 GR5
29	970179	2	BLT .250-20 2.50 GR5
30	970239	4	BLT HEXHD .313-18 .750 GR5
31	970309	20	BLT .313-18 2.25-GR. 5
32	970319	4	BLT HEXHD .313-18 2.50 GR5
33	970539	2	BLT .375-16 2.75-GR 5
34	970569	2	BLT HEXHD .375-16 3.50 GR5
35	984339	2	NUT JAM .250-28
36	986019	12	WASHER FLAT .250
37	986269	44	WASHER FLAT .313
38	986299	4	WASHER FLAT .375
39	989569	4	SPIRAL PIN .375 DIA X 1.75
40	2610001	2	YOKE 1/4-28 FEM SAE J493
41	5560004	6	NUT LKG .250-20
42	5560031	28	NUT LKG .313-18
43	5560033	4	NUT LKG .375-16
44	5569973	10	WEAR PAD



## Platform Installation

Item	Part No.	Qty.	Description
1	300778	8	NUT HEX .500-13
10	970849	8	BLT .500-13 1.25 GR5



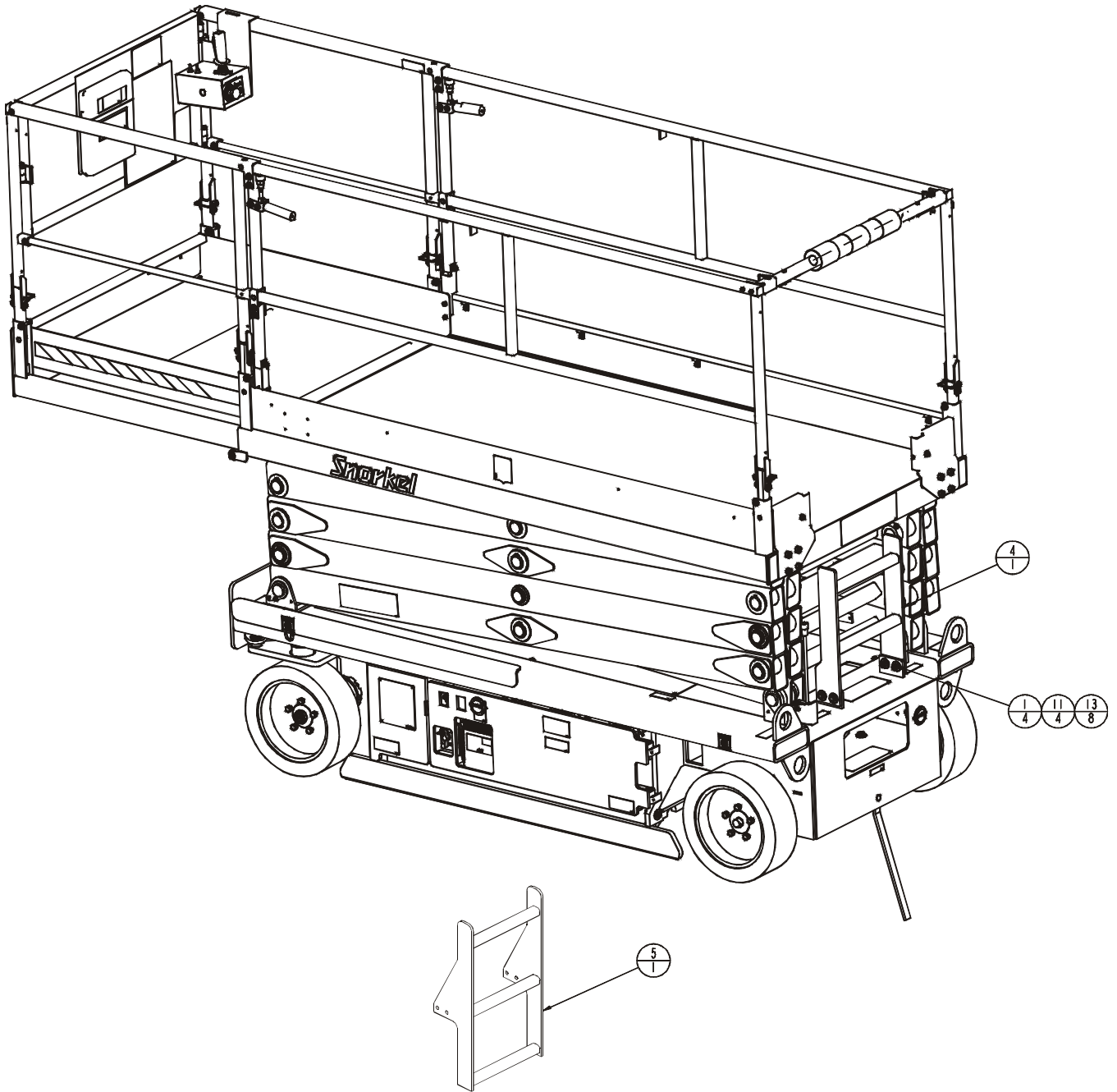
AW0410052





## Step Installation

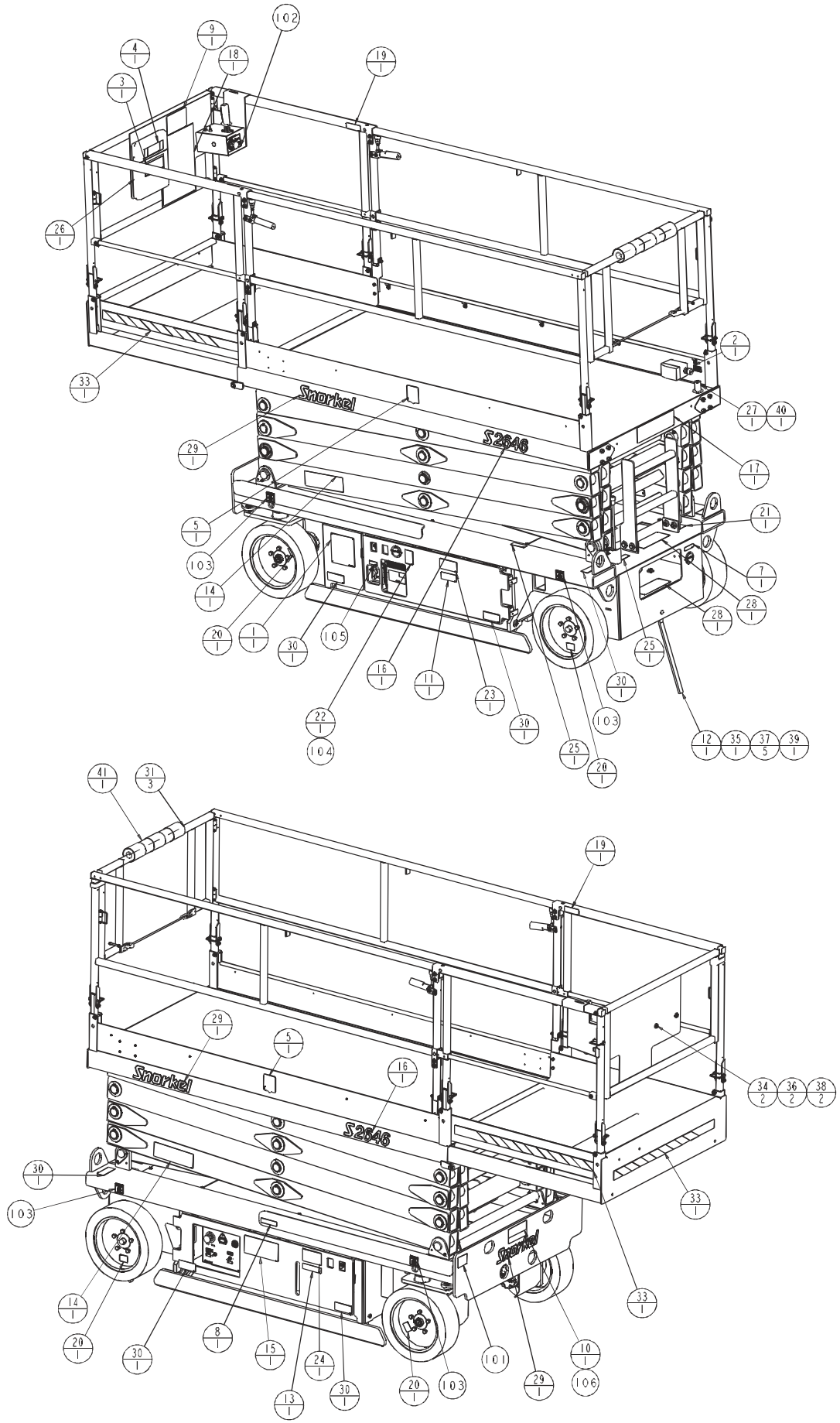
Item	Part No.	Qty.	Description
1	300778	4	NUT HEX .500-13
4	0371884	1	WELDMNT STEP 2646
	0371780	1	WELDMNT STEP 3246
5	0410056	1	WLDMT, LADDER 2646 – CE (optional for all other units)
	0372013	1	WLDMT, LADDER 3246 – CE (optional for all other units)
11	970909	4	BLT .500-13 1.50 GR5
13	986359	8	WSHR FLAT .500



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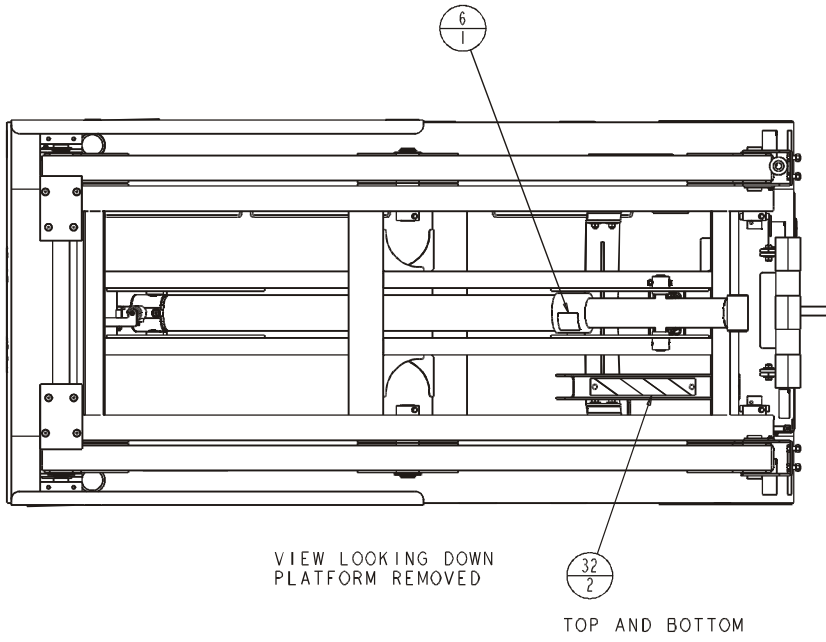
# Placards and Decals – S2646



0371942 D

# Placards and Decals – S2646

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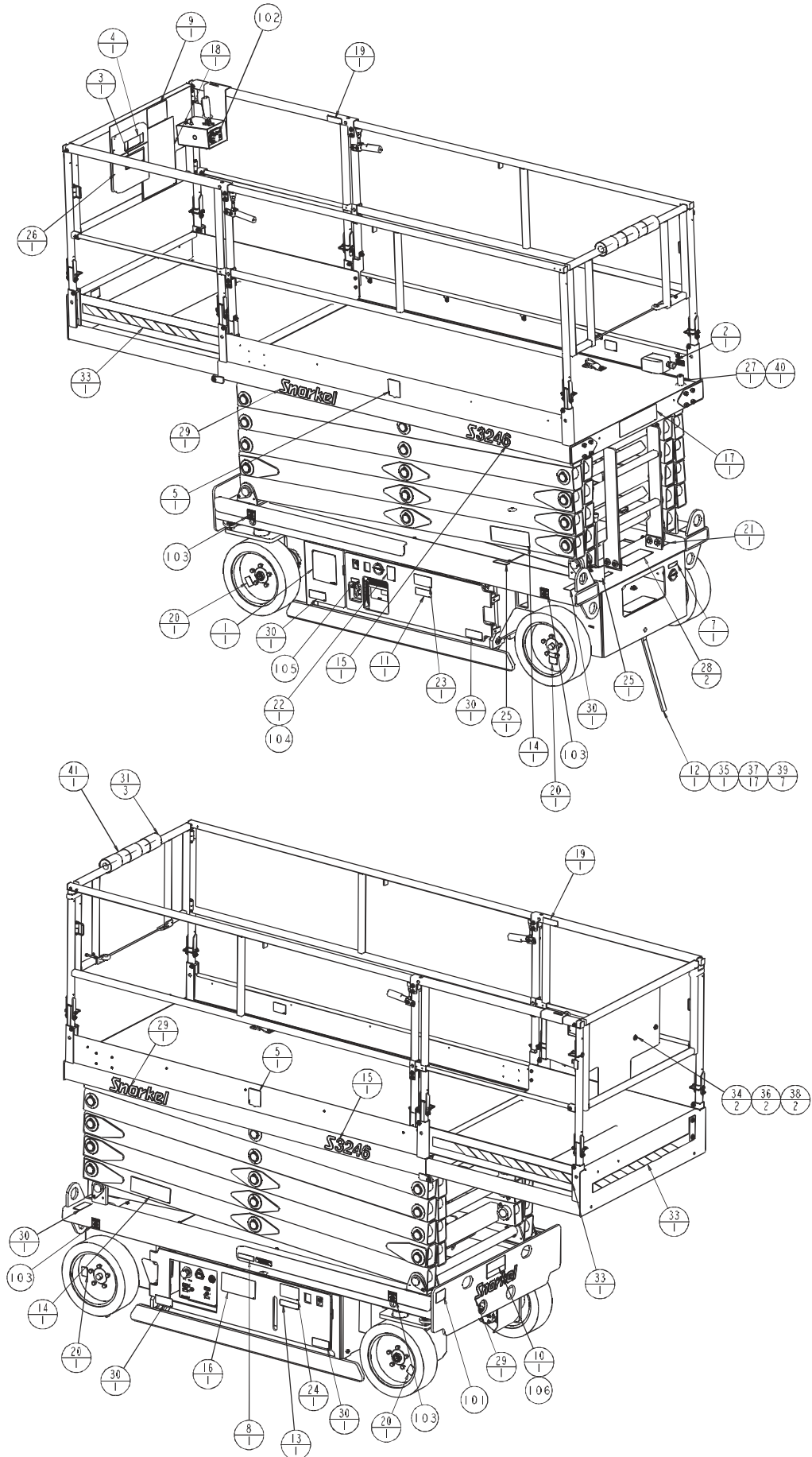


## Placards and Decals – S2646

Item	Part No.	Qty.	Description
1	0070901	1	PLAC CAUTN SERIAL NUMBER
2	0070921	1	DECAL 125 VOLTS 15 AMPS (omitted on CE)
3	0073043	1	DECAL MANUAL HOLDER
4	0073224	1	DECAL NOTICE MANUAL RE-ORDER
5	0073585	2	DECAL MADE IN USA
6	0074311	1	DECAL DNGR CYLINDER FAILURE
7	0150606	1	DECAL 125V 15AMP PWR TO PLATF (omitted on CE)
8	0181562	1	DECAL MACH COMPLIES WITH ANSI
9	300699	1	PLAC OPERATORS CHECKLIST
10	300700	1	DECAL DNGR SHEARING/CRUSHING (omitted on CE)
11	300760	1	DECAL DNGR TIPOVER HAZARD
12	301667	1	GRD STRAP 17.75
13	302950	1	DECAL HYDR OIL LEVEL
14	0361259	2	DECAL DNGR SAFETY PROP
15	0371923	1	DECAL TOWING INSTRUCTIONS
16	0371925	2	DECAL S2646 LOGO
17	0371999	1	DECAL, PLAT CAP 1000# W/WIND
18	0372000	1	DECAL, DNG TIPOVER/ELEC HAZARD
19	0372010	2	DECAL, CAUTION ROLLOUT PIN
20	0372061	4	PLACARD, TORQUE LUG BOLTS 90-100 FT. LBS.
21	0372064	1	DECAL, EMER BLEED DOWN 32/26 PICTORIAL
22	416836	1	DECAL BTRY CHARGE 115V ONLY (omitted on CE)
23	451726	1	DECAL CHK BTRY BEFORE CHARGING
24	451776	1	DECAL HYDR FLUID LEVEL
25	451986	2	DECAL DNGR DO NOT ALTER SW
26	562386	1	COMPARTMENT LITERATURE 8.5X11
27	563536	6	HOSE GUARD, SPIRAL 3/4"ID
28	569254	2	SAFETY TREAD 3.50 X 9.00
29	569295	3	DECAL SNORKEL BRAND LOGO 3.00
30	621486	6	DECAL FORKLIFT
31	969249	3	DECAL WARNING STRIPES ROLL 8 IN (sold in full roll) – (omitted on CE)
32	969249	2	DECAL WARNING STRIPES ROLL 13 IN (sold in full roll)
33	969249	3	DECAL WARNING STRIPES ROLL 36 IN (sold in full roll)
34	970469	2	BLT .375-16 1.00 GR5
35	972439	1	BLT CRG .375-16 1.25
36	984109	2	NUT HEX .375-16
37	986299	5	WSHR FLAT .375
38	987119	2	WSHR LOCK .375
39	5560033	1	NUT, LKG .375-16
40	5569998	1	GROMMET 1.25 ID X 2.13 OD
41	9980003	18 in	PIPE INSUL CLOSED CELL FOAM (omitted on CE)
101	0162311	1	DECAL CE 3.25 X 2.00 (CE only)
102	560272	1	DECAL EMERGENCY PLATF SLH (CE only)
103	0372049	4	DECAL, WEIGHT BEARING, S2646 (CE only)
104	0372063	1	DECAL, BATTERY CHARGER PLUG (CE only)
105	0373089	1	PLAC BATTERY DISCONNECT SWITCH (CE only)
106	0190989	1	DECAL DNGR DO NOT REACH (CE only)



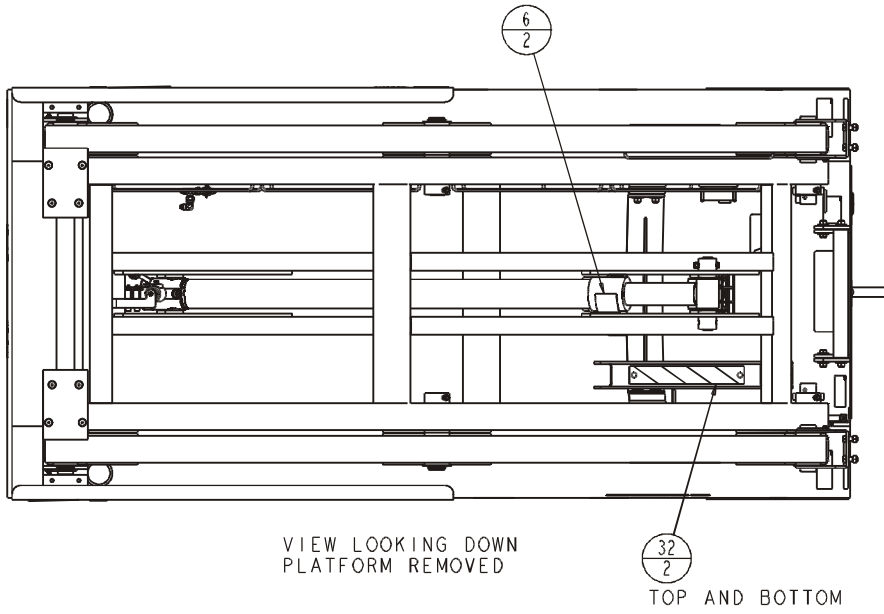
# Placards and Decals – S3246



0371924 D

# Placards and Decals – S3246

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## Placards and Decals – S3246

Item	Part No.	Qty.	Description
1	0070901	1	PLAC CAUTN SERIAL NUMBER
2	0070921	1	DECAL 125 VOLTS 15 AMPS (omitted on CE)
3	0073043	1	DECAL MANUAL HOLDER
4	0073224	1	DECAL NOTICE MANUAL RE-ORDER
5	0073585	2	DECAL MADE IN USA
6	0074311	2	DECAL DNGR CYLINDER FAILURE
7	0150606	1	DECAL 125V 15AMP PWR TO PLATF (omitted on CE)
8	0181562	1	DECAL MACH COMPLIES WITH ANSI
9	300699	1	PLAC OPERATORS CHECKLIST
10	300700	1	DECAL DNGR SHEARING/CRUSHING (omitted on CE)
11	300760	1	DECAL DNGR TIPOVER HAZARD
12	301667	1	GRD STRAP 17.75
13	302950	1	DECAL HYDR OIL LEVEL
14	0361259	2	DECAL DNGR SAFETY PROP
15	0371921	2	DECAL S3246 LOGO
16	0371923	1	DECAL TOWING INSTRUCTIONS
17	0371998	1	DECAL, PLAT CAP 700# W/WIND SP
18	0372000	1	DECAL, DNG TIPOVER/ELEC HAZARD
19	0372010	2	DECAL, CAUTION ROLLOUT PIN
20	0372061	4	PLACARD, TORQUE LUG BOLTS 90-100 FT. LBS.
21	0372064	1	DECAL, EMER BLEED DOWN 32/26 PICTORIAL
22	416836	1	DECAL BTRY CHARGE 115V ONLY (omitted on CE)
23	451726	1	DECAL CHK BTRY BEFORE CHARGING
24	451776	1	DECAL HYDR FLUID LEVEL
25	451986	2	DECAL DNGR DO NOT ALTER SW
26	562386	1	COMPARTMENT LITERATURE 8.5X11
27	563536	6	HOSE GUARD, SPIRAL 3/4"ID
28	569254	2	SAFETY TREAD 3.50 X 9.00
29	569295	3	DECAL SNORKEL BRAND LOGO 3.00
30	621486	6	DECAL FORKLIFT
31	969249	3	DECAL WARNING STRIPES 8 IN (sold in full roll) – (omitted on CE)
32	969249	2	DECAL WARNING STRIPES 13 IN (sold in full roll)
33	969249	3	DECAL WARNING STRIPES 36 IN (sold in full roll)
34	970469	2	BLT .375-16 1.00 GR5
35	972439	1	BLT CRG .375-16 1.25
36	984109	2	NUT HEX .375-16
37	986299	5	WSHR FLAT .375
38	987119	2	WSHR LOCK .375
39	5560033	1	NUT, LKG .375-16
40	5569998	1	GROMMET 1.25 ID X 2.13 OD
41	9980003	18 IN	PIPE INSUL CLOSED CELL FOAM (omitted on CE)
101	0162311	1	DECAL CE 3.25 X 2.00 (CE only)
102	560272	1	DECAL EMERGENCY PLATF SLH (CE only)
103	0372048	4	DECAL, WEIGHT BEARING, S3246 (CE only)
104	0372063	1	DECAL, BATTERY CHARGER PLUG (CE only)
105	0373089	1	PLAC BATTERY DISCONNECT SWITCH (CE only)
106	0190989	1	DECAL DNGR DO NOT REACH (CE only)



# Hydraulics

S2646E

S3246E

**S**2646

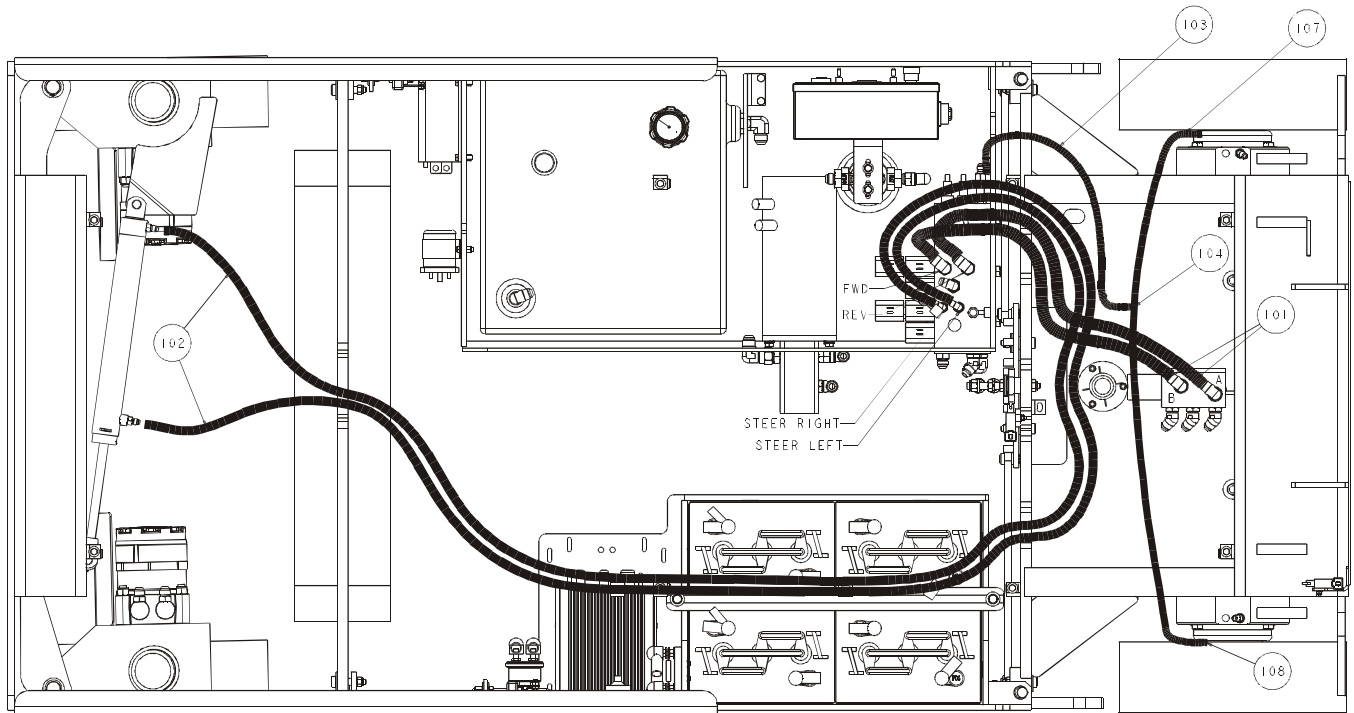
**S**3246





## Steering, Drive and Brake Hoses

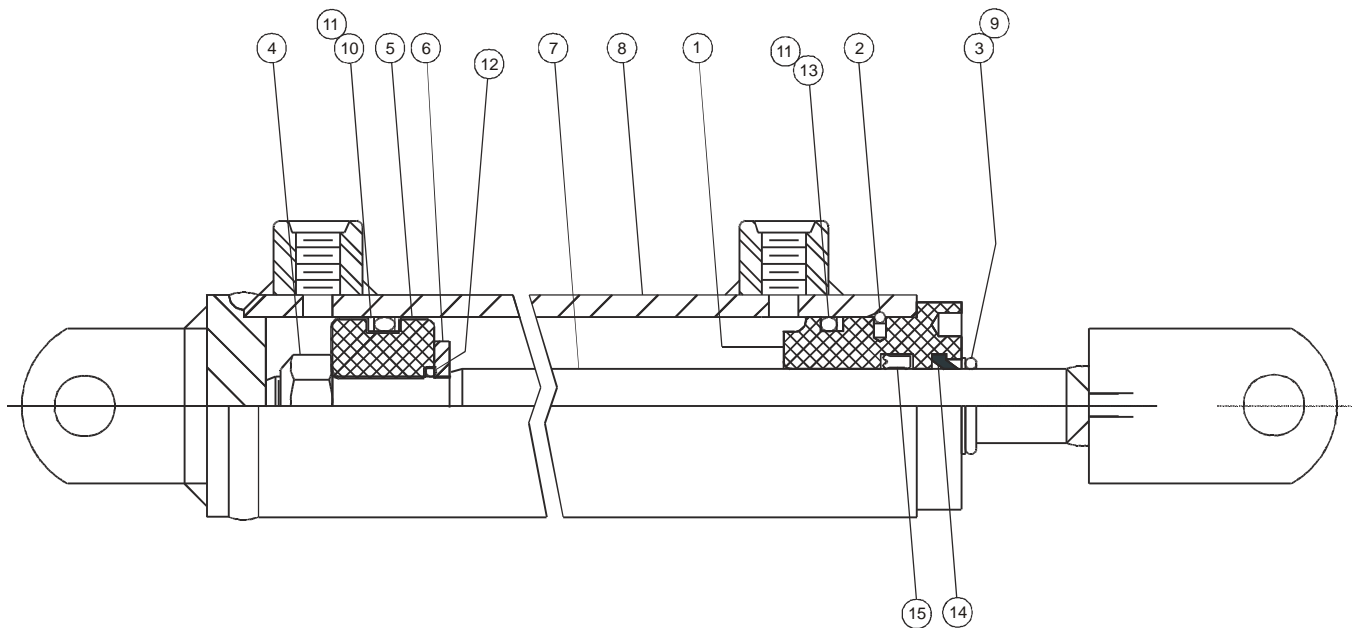
Item	Part No.	Qty.	Description
101	0021059	2	HOSE-8-8S-8S 40 100R2
102	0101896	2	HOSE-4-4S-4S 120 100R2
103	0050137	1	HOSE-4-4S-4S 36 100R1
104	5034102	1	FTG TEE UN-4S-4S STL
107	0020280	1	HOSE-4-4S-4S 23.5 100R2
108	0020281	1	HOSE-4-4S-4S 27.63 100R2





## Cylinder, Steering

Item	Part No.	Qty.	Description
	6047108	1	CYLINDER, STEER – GREEN
	8071008	1	SEAL KIT, CYLINDER – GREEN (includes items 10 through 15)
1	6091511	1	HEAD, CYL
2	8070306	1	LOCK WIRE
3	8070871	1	O-RING
4	8071014	1	LOCKNUT
5	8071015	1	PISTON
6	8071016	1	WASHER
7	8071017	1	ROD ASSY
8	8071018	1	BARREL ASSY
9	8071019	1	BACKUP
10	Kit item	2	BACKUP 28-806P-1
11	Kit item	2	O-RING 27-806-0
12	Kit item	1	O-RING 27-819-0
13	Kit item	1	BACKUP 28-806-1
14	Kit item	1	ROD WIPER 30-963
15	Kit item	1	ROD SEAL 29-1035-UR

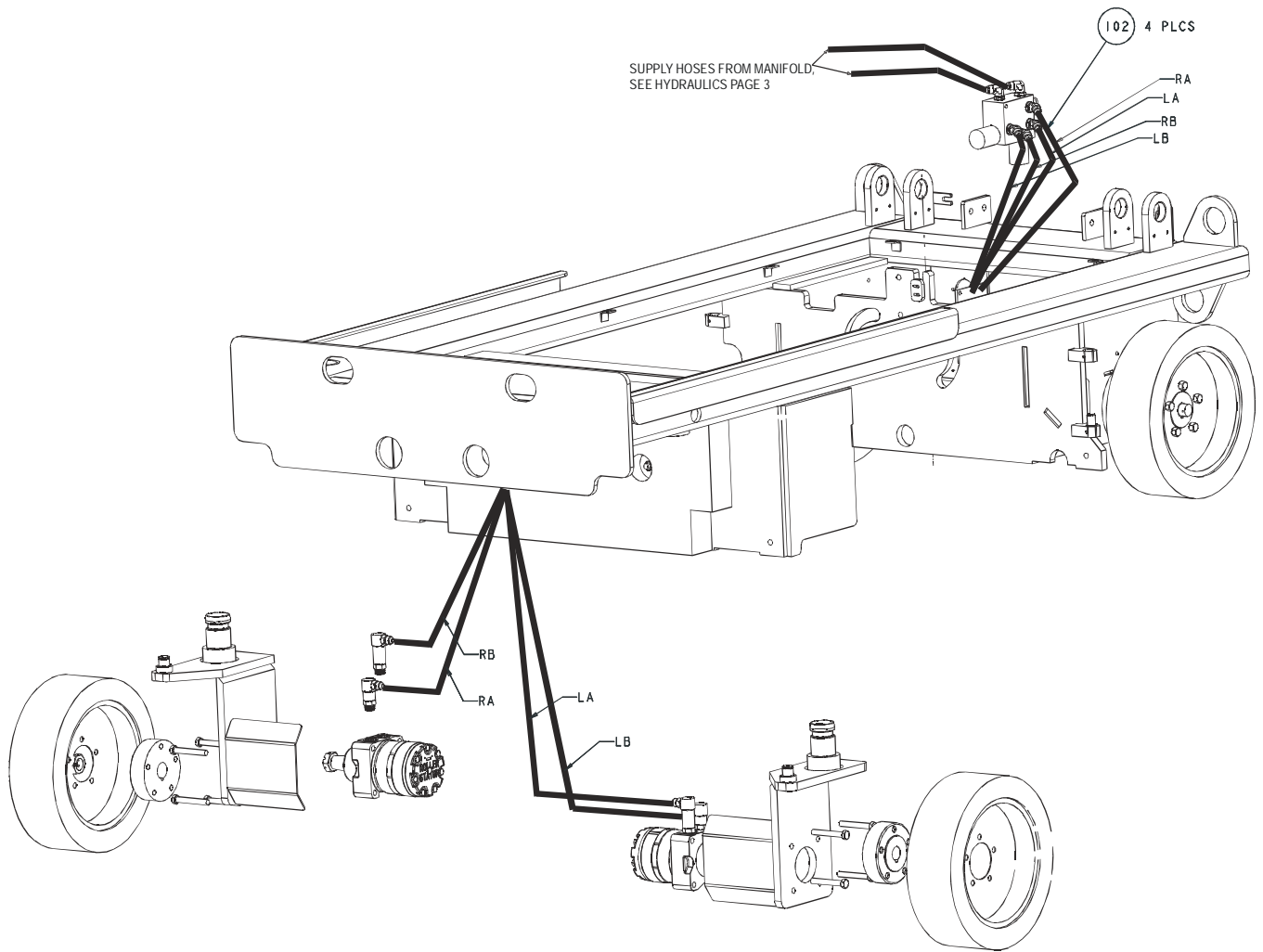






## Drive Motor Hoses

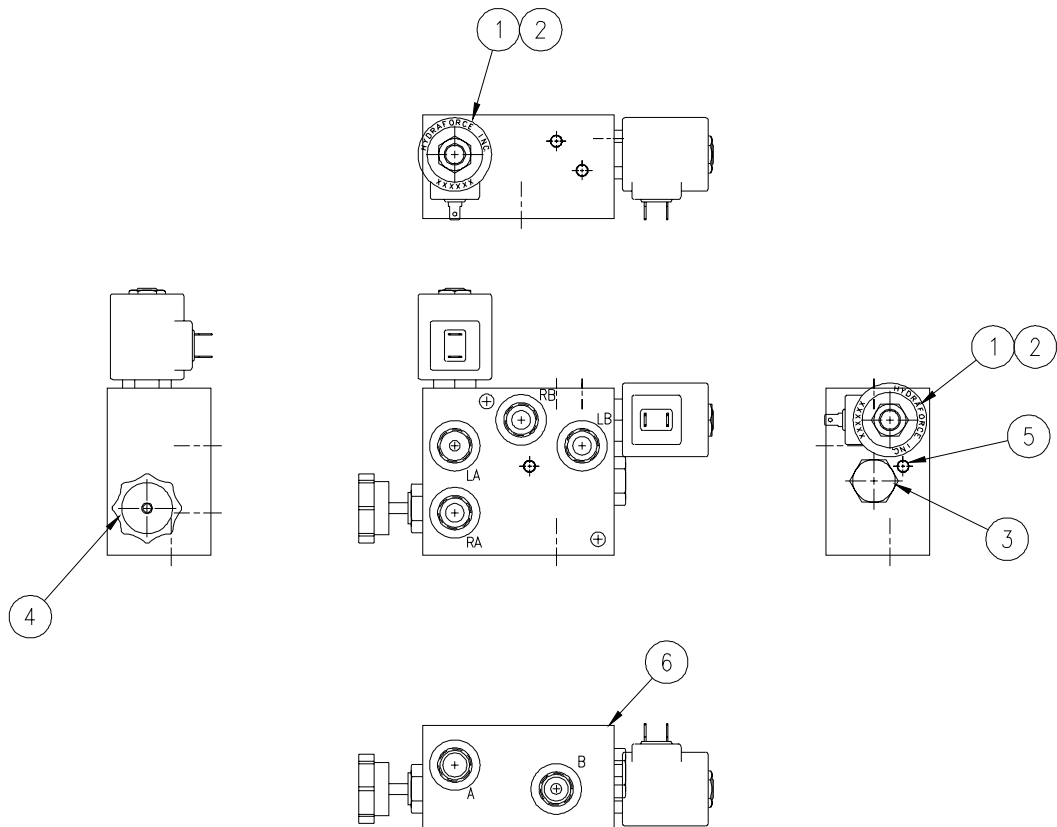
Item	Part No.	Qty.	Description
102	0110198	4	HOSE-8-8S-8S 96 100R2





## Drive Speed Manifold

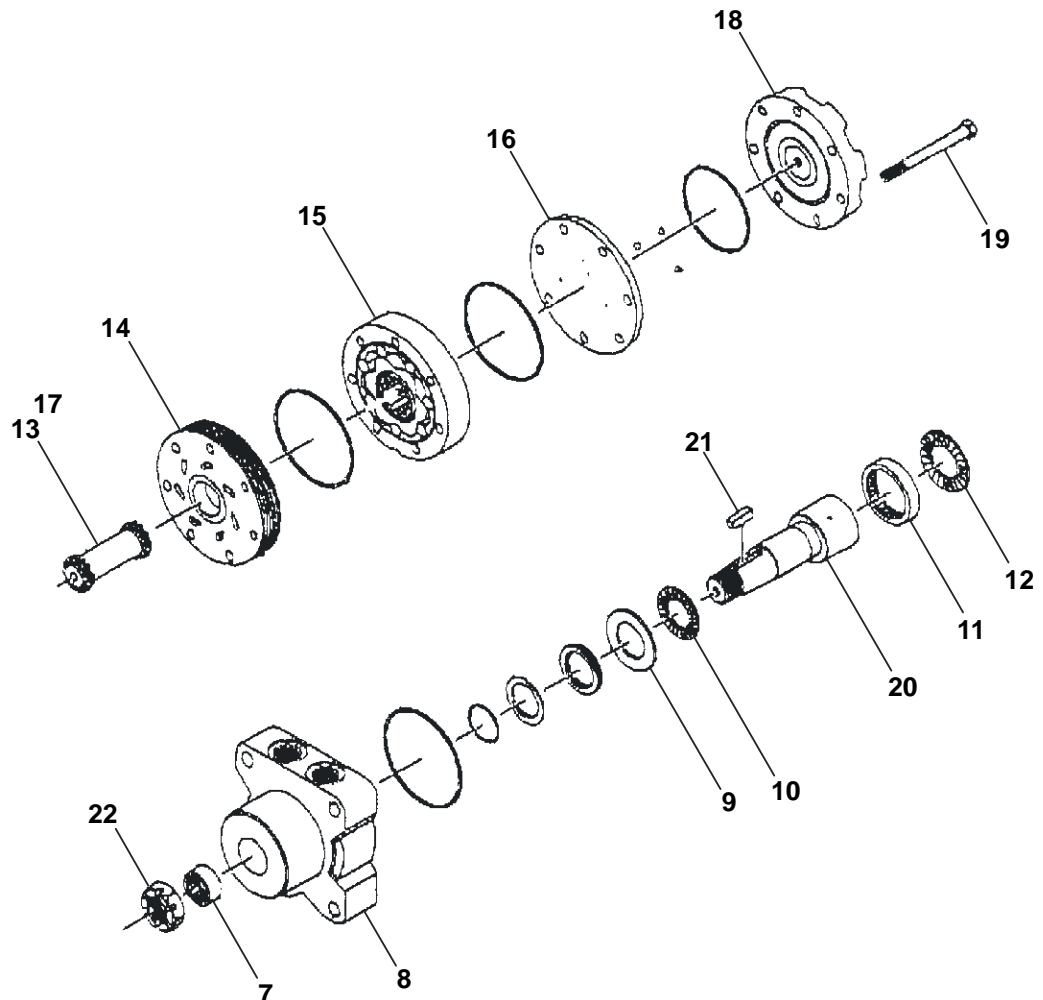
Item	Part No.	Qty.	Description
	6019062	1	MANIFOLD DRIVE SPEED
1	6019076	2	SOLENOID VALVE
2	6019078	2	DUAL SPADE COIL 20 VDC
3	6019086	1	FLOW DIVIDER
4	6018944	1	NEEDLE VALVE
5		4	7MM PERMANENT PLUG – Non-serviceable part
6	6019087	1	VALVE BODY, DRIVE SPEED





## Hydraulic Drive Motor

Item	Part No.	Qty.	Description
	6031615	1	HYDRAULIC DIVE MOTOR
	0372050	1	SEAL KIT
7	8230176	1	FRONT HSG BRG
8	0372051	1	HOUSING
9	8230177	1	FRONT THRUST WSHR
10	8230178	1	FRONT THRUST BRG
11	8230179	1	THRUST WSHR
12	8230180	1	REAR THRUST BRG
13	0372052	1	DRIVE LINK
14	0372054	1	MANIFOLD
15	0372055	1	ROTOR ASSY
16	0372056	1	BALANCE PLT W/3 BALL
17	0372053	1	DRIVE LINK SPACER
18	0372057	1	ENDCOVER
19	8230181	7	ASSY BOLTS
20	0372058	1	SHAFT
21	8230182	1	SHAFT KEY
22	8230183	1	SHAFT NUT

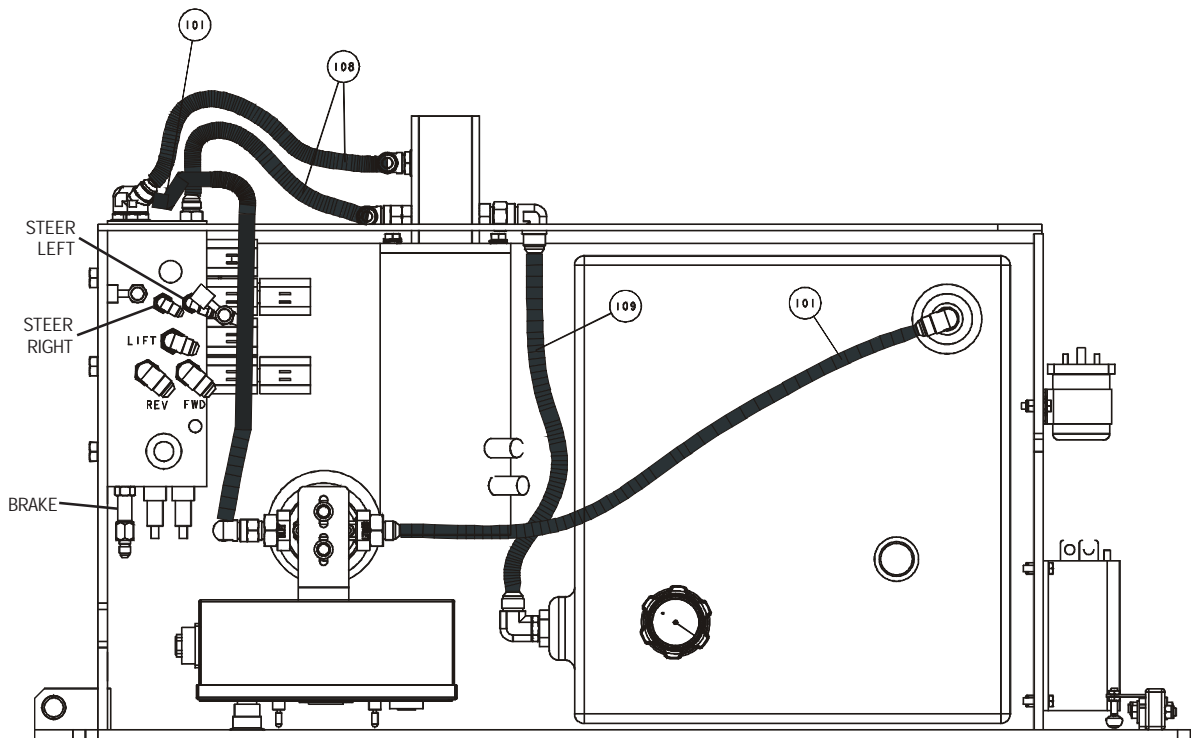


AW6031615



## Hydraulic Tray Hoses

Item	Part No.	Qty.	Description
101	0070927	2	HOSE-8-8S-8S 23.5 100R2
108	0151213	2	HOSE-8-8S-8S 16 100R2
109	0082963	1	HOSE-10-10S-10S 14.50 100R2

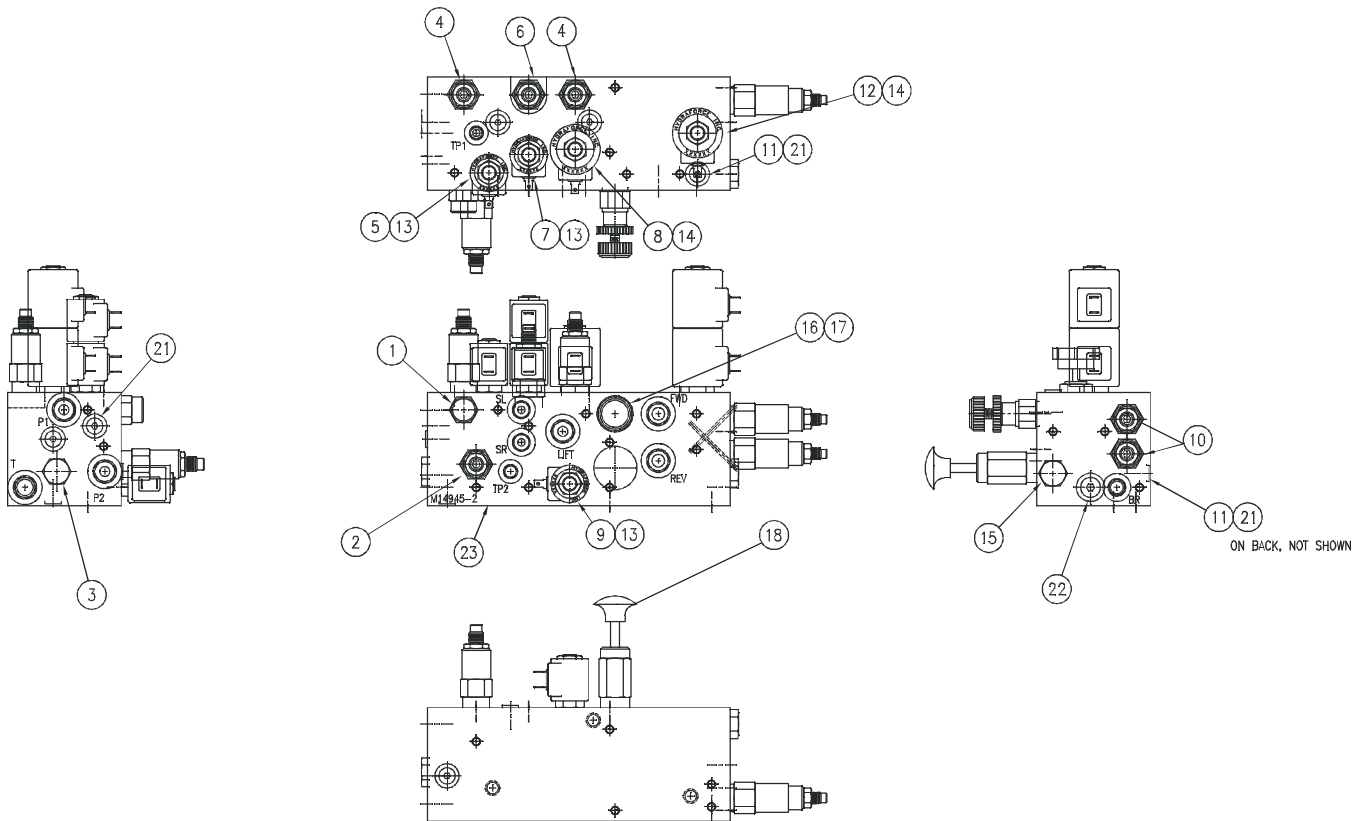






## Main Manifold Valve

Item	Part No.	Qty.	Description
	6019056	1	MAIN MANIFOLD VALVE
1	6019070	1	FLOW DIVIDER
2	6019071	1	SEQUENCE VALVE
3	561176	1	CHECK VALVE
4	6019072	2	RELIEF VALVE
5	6019073	1	SOLENOID VALVE
6	6019074	1	RELIEF VALVE
7	6019075	1	SOLENOID VALVE
8	6019076	1	SOLENOID VALVE
9	6018943	1	SOLENOID VALVE
10	6019069	2	VALVE COUNTER BALANCE
11	6019041	2	SHUTTLE VALVE
12	6019077	1	SOLENOID VALVE
13	583956	4	COIL,20VDC
14	6019078	3	DUAL SPADE COIL 20 VDC
15	6019043	1	ORIFICE CHECK VALVE
16	6019079	1	PILOT CHECK (MAN O/R)
17	6010808	1	KNOB & LOCK RING KIT
18	6029632	1	HAND PUMP PUSH RELEASE
21	5076505	7	-4 SAE O-RING PLUG FLUSH HEAD
22	5076506	1	-6 O-RING PLUG FLUSH HEAD
23	6019080	1	VALVE BODY

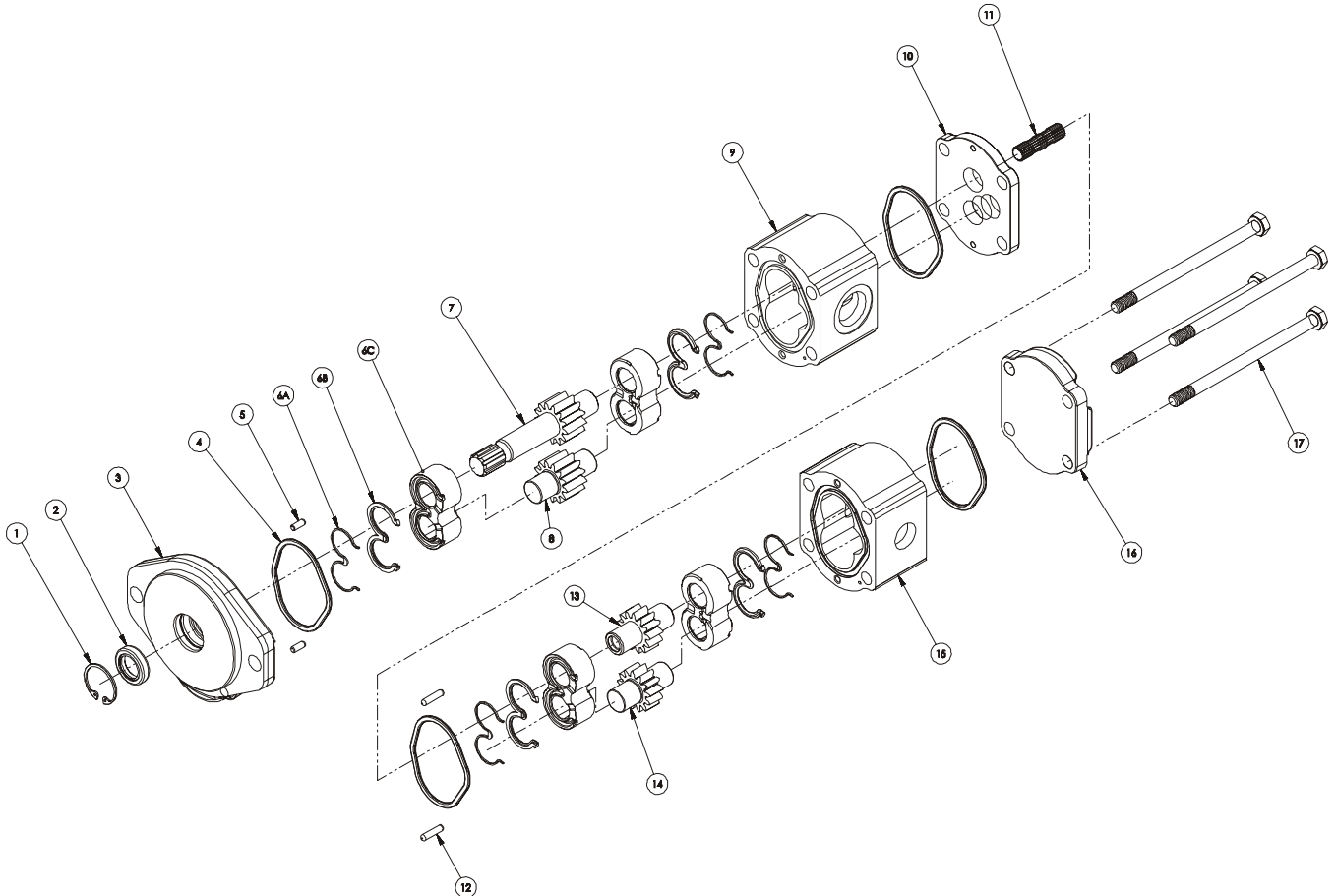


6019056



# Hydraulic Pump

Item	Part No.	Qty.	Description																				
	6029637	1	HYDRAULIC PUMP																				
	8080131	1	SEAL KIT																				
1	8080132	1	SNAPRING																				
2	8080133	1	SHAFT SEAL																				
3	8080134	1	FLANGE																				
4	8080135	4	O-RING																				
5	8080136	2	DOWEL PIN																				
6	8080137	4	BEARING BLOCK KIT (Includes items 6A, 6B, and 6C)																				
6A	5450008	4	BACKUP RING																				
6B	5460009	4	E-SEAL																				
6C	5460010	4	BEARING BLOCK																				
7	8080138	1	DRIVE GEAR																				
8	8080139	1	IDLER GEAR																				
9	8080140	1	GEAR HOUSING																				
10	8080141	1	DISTANCE PLATE																				
11	8080142	1	COUPLING																				
12	8080143	2	DOWEL PIN	13	8080144	1	IDLER GEAR	14	8080145	1	IDLER GEAR	15	8080146	1	GEAR HOUSING	16	8080147	1	ENDCOVER	17	8080148	4	SCREWS
13	8080144	1	IDLER GEAR																				
14	8080145	1	IDLER GEAR																				
15	8080146	1	GEAR HOUSING																				
16	8080147	1	ENDCOVER																				
17	8080148	4	SCREWS																				

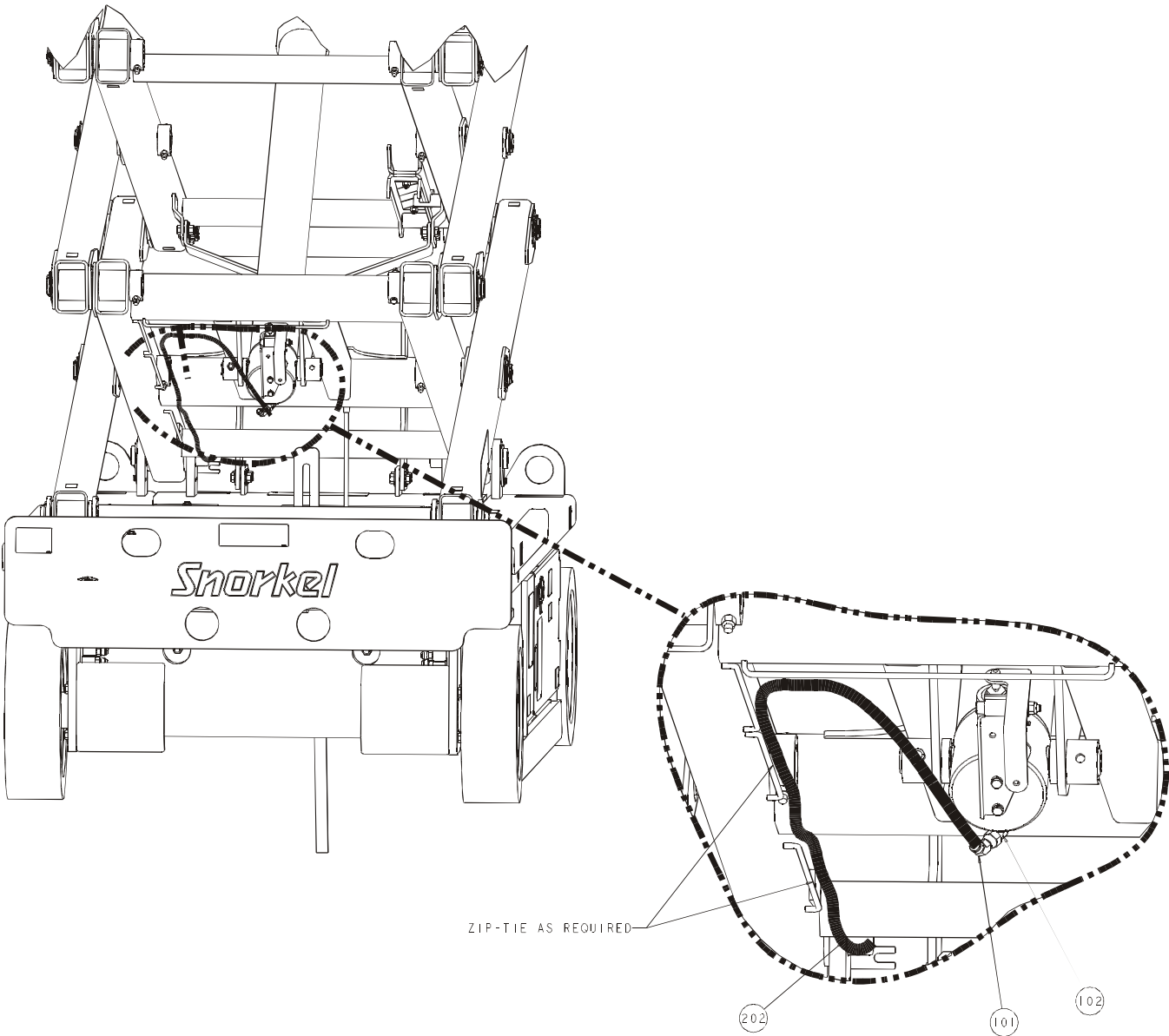


AW6029637



# Hydraulic Hoses, Scissor Stack – S2646

Item	Part No.	Qty.	Description
101	5036905	1	FTG ELB45SWVL-6S-6S STL
102	5035305	1	FTG ELB90STRTHD-6B-6S STL
202	0240770	1	HOSE-6-6S-6S 168

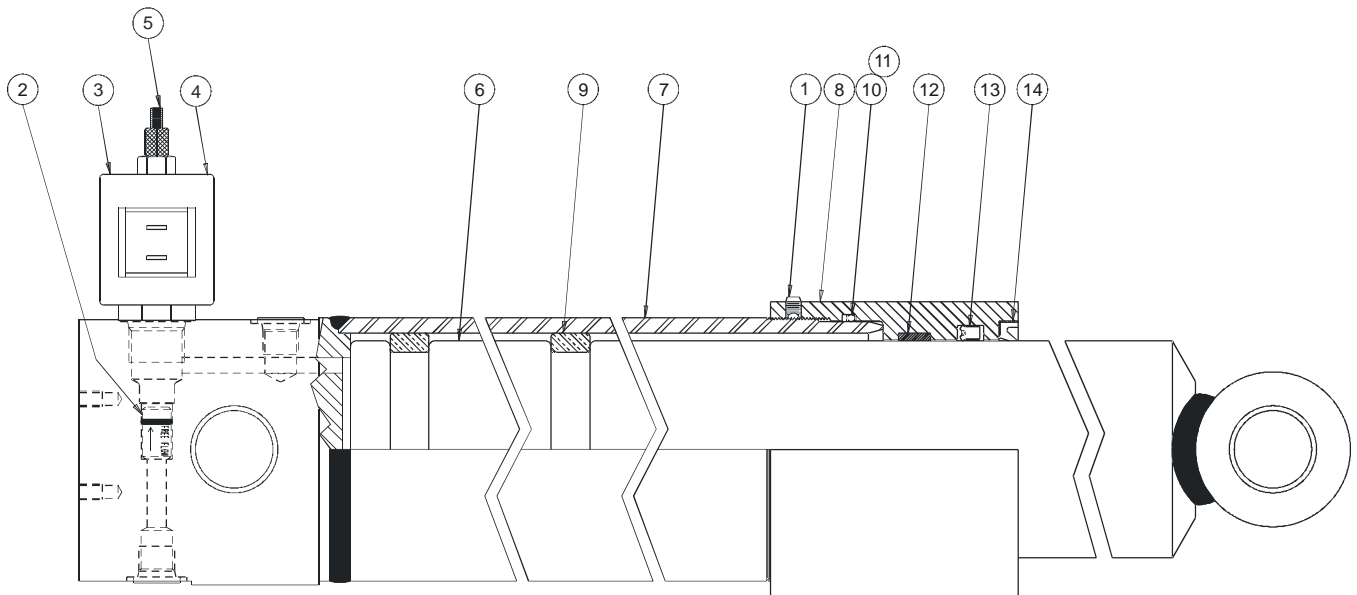


0410052 B



## Cylinder, Lift – S2646

Item	Part No.	Qty.	Description
	6047107	1	CYLINDER, LIFT S2646 – GREEN
	6091437	1	SEAL KIT, CYL – GREEN (includes items 9 through 14)
1	5560339	1	SET SCREW .250
2	6091348	1	CHECK VALVE, LIFT CYL .045
3	6019084	1	SOLENOID VALVE ASSY 20V DC (Includes items 4 and 5)
4	6019034	1	SOLENOID 20V DC
5	6018024	1	CARTRIDGE VALVE
6	8180048	1	ROD ASSEMBLY
7	8180050	1	BARREL ASSEMBLY
8	8180051	1	GLAND
9	Kit item	2	SPILT BRONZE RING
10	Kit item	1	O-RING 27-939-0
11	Kit item	1	BACK-UP 28-939-1
12	Kit item	1	WEAR RING 31-6296
13	Kit item	1	ROD SEAL 29-926-UR
14	Kit item	1	ROD WIPER 30-12084

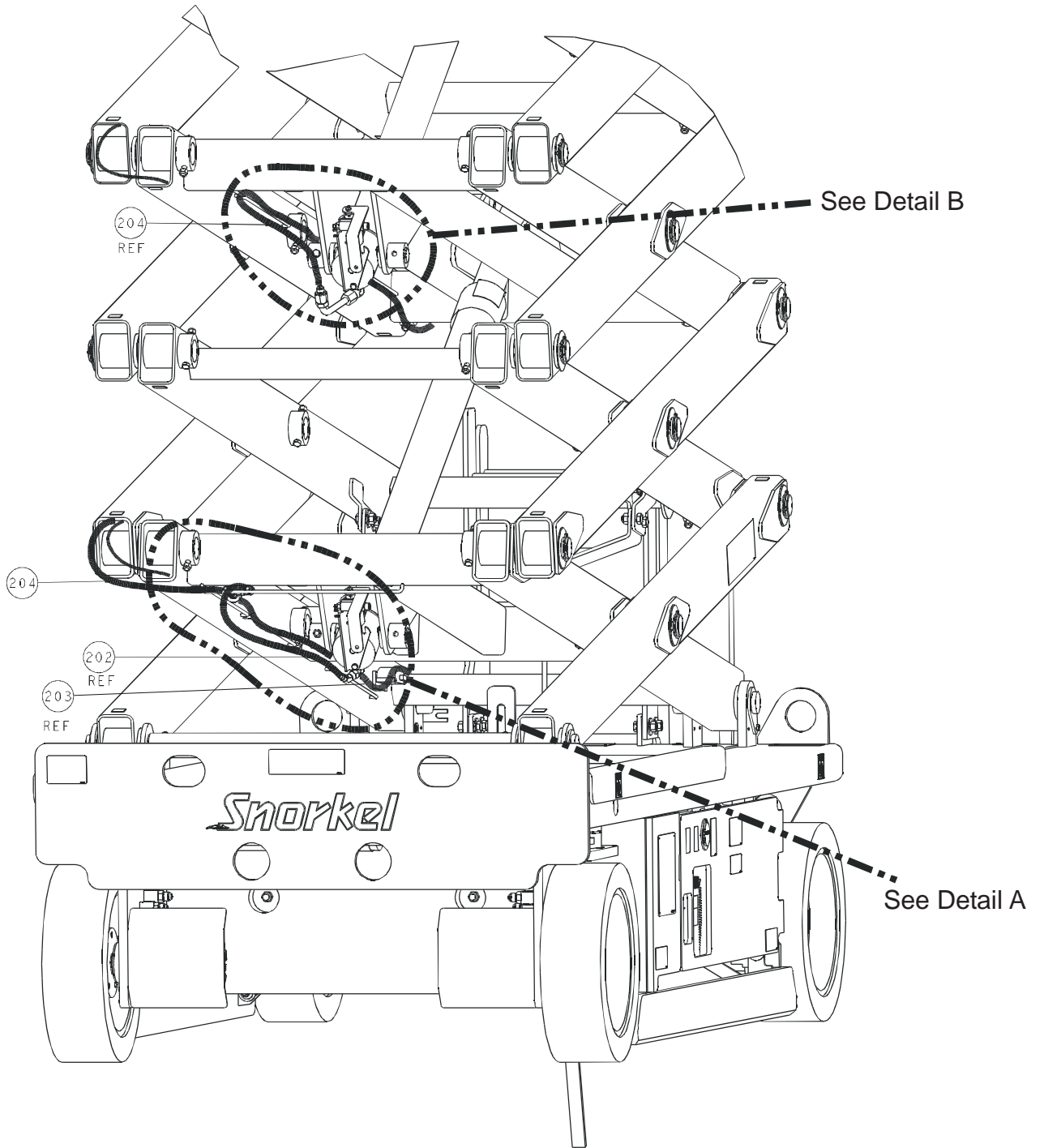


VEND 6047107



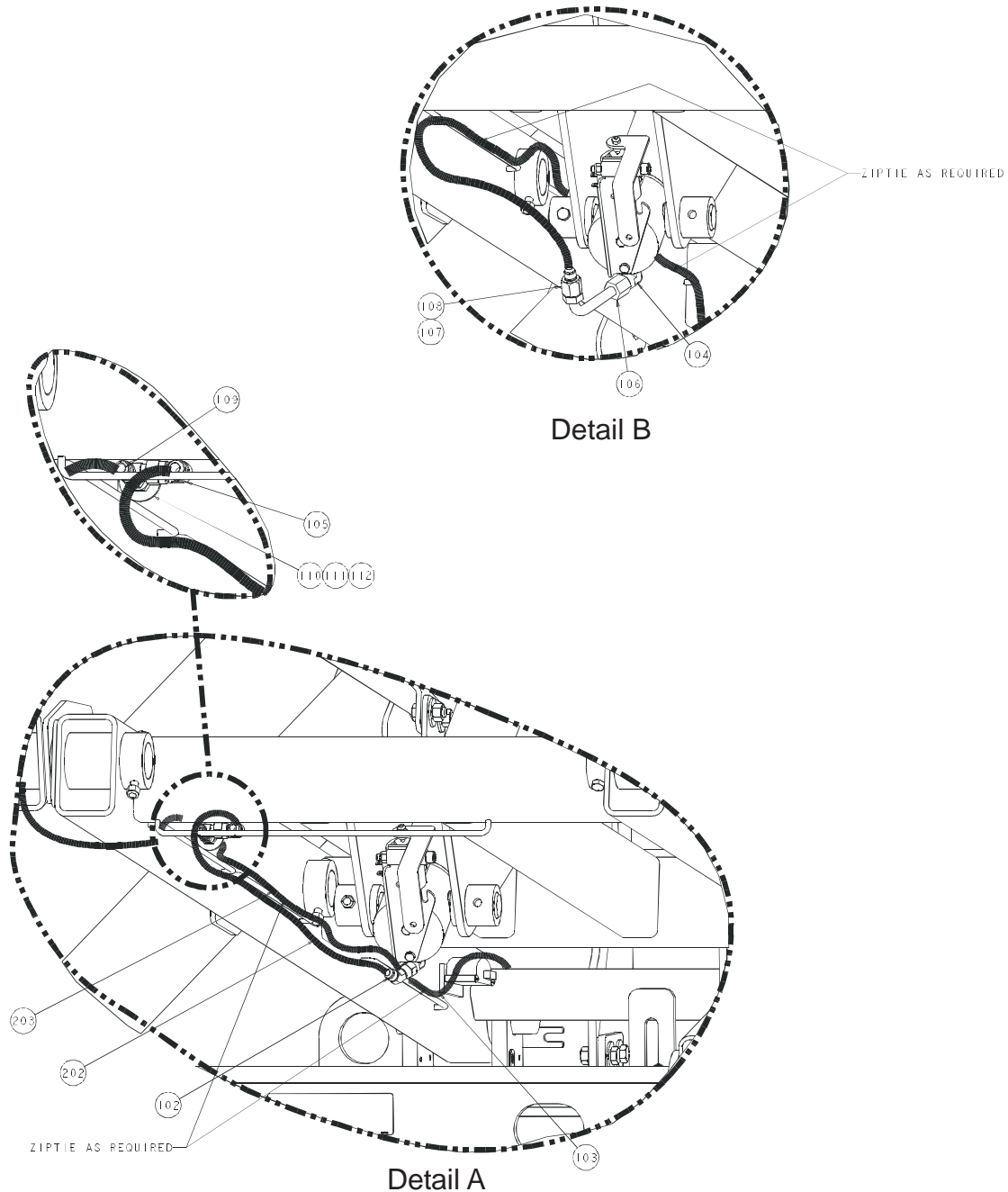


# Hydraulic Hoses, Scissor Stack – S3246



## Hydraulic Hoses, Scissor Stack – S3246

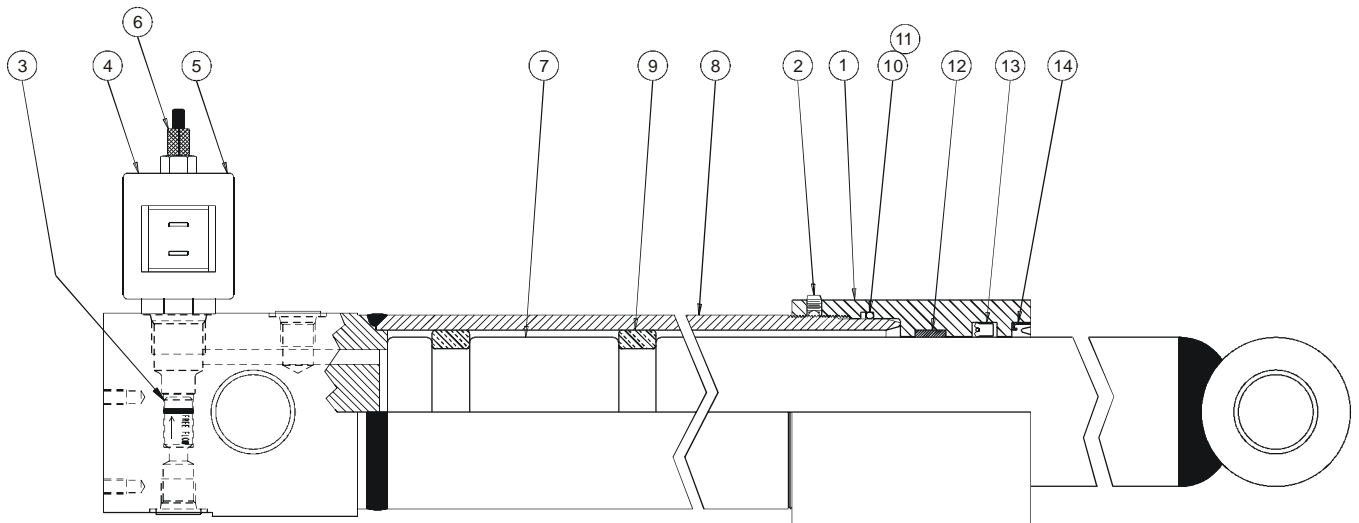
Item	Part No.	Qty.	Description
102	5036905	1	FTG ELB45SWVL-6S-6S STL
103	5035305	1	FTG ELB90STRTHD-6B-6S STL
104	5035315	1	FTG ELB90STRTHD-6B-8S STL
105	5037005	1	FTG ELB90SWVL-6S-6S STL
106	5036606	1	FTG ELB90SWVLTUBE-8S-8S STL
108	5064003	1	FTG RDCR TUBE END-8S-6S STL
109	5036705	1	FTG TEE SWVL RUN-6S-6S STL
110	5034403	1	FTG UN BHD STR-6S-6S STL
111	5074403	1	FTG LKNT BHD-6 STL
112	986359	1	WASHER FLAT .500
202	0020266	1	HOSE-6-6S-6S 24 100R2
203	0240770	1	HOSE -6-6S-6S 168
204	0350735	1	HOSE -6-6S-6S 221 100R2



0371838 C

## Cylinder, Lift – S3246

Item	Part No.	Qty.	Description
	6047075	1	CYLINDER, LIFT S3246 – GREEN
	8071009	1	SEAL KIT, CYLINDER – GREEN (includes items 9 through 14)
1	6091509	1	GLAND, CYL
2	5560339	1	SET SCREW .250
3	6091516	1	CHECK VALVE, LIFT CYL .032
4	6019084	1	SOLENOID VALVE ASSY 20V DC (Includes items 5 and 6)
5	6019034	1	SOLENOID 20V DC
6	6018024	1	CARTRIDGE VALVE
7	8180040	1	ROD ASSEMBLY
8	8180042	1	BARREL ASSEMBLY
9	Kit item	2	SPLIT BRONZE RING
10	Kit item	1	O-RING 27-1003-0
11	Kit item	1	BACK-UP 28-1003-1
12	Kit item	1	WEAR RING 31-6294
13	Kit item	1	ROD SEAL 29-905-UR
14	Kit item	1	ROD WIPER 30-12075



VEND 6047075



# *Electrical*

S2646E

S3246E

**S**2646

**S**3246

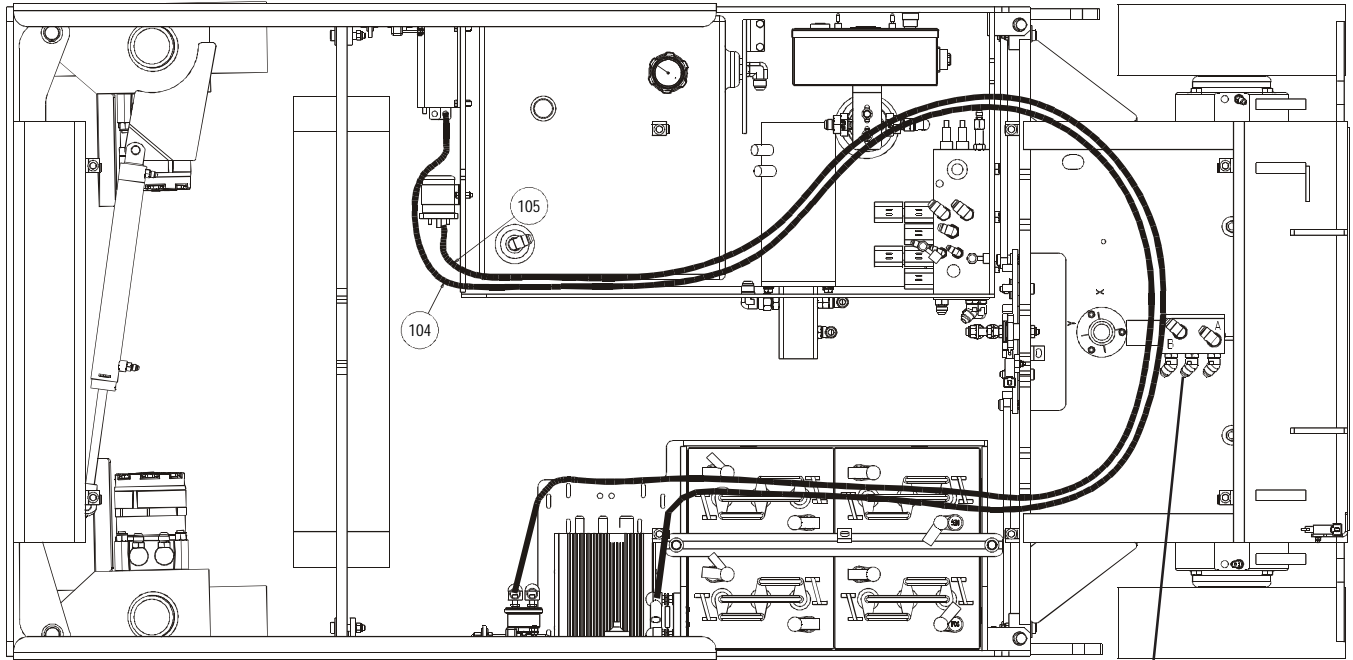


**snorkel**

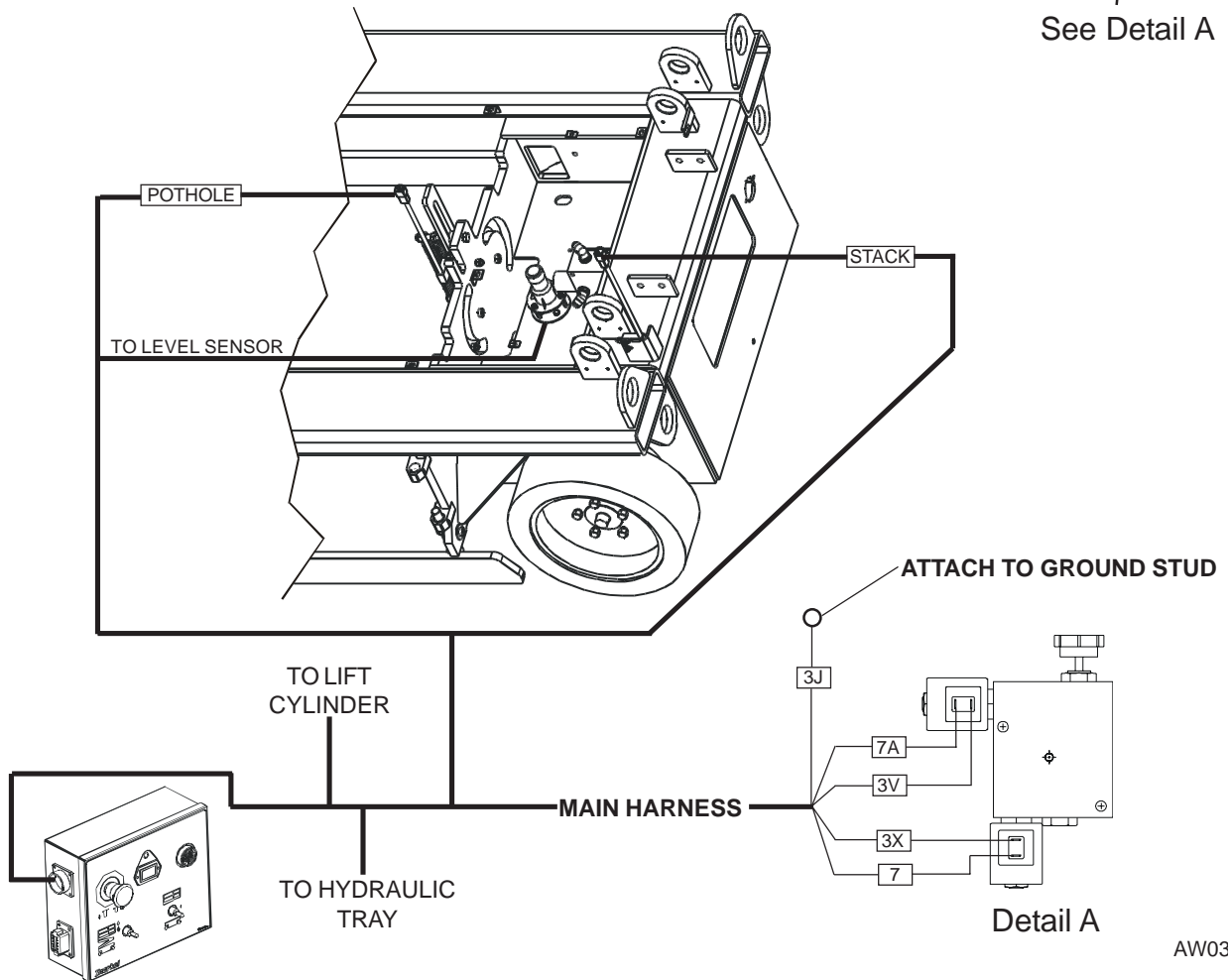


# Chassis Wiring

Item	Part No.	Qty.	Description
104	0371896	1	WIRE 2 R375 R313 149 BLK
105	0151157	1	WIRE 2 R375 R313 142 RED



See Detail A



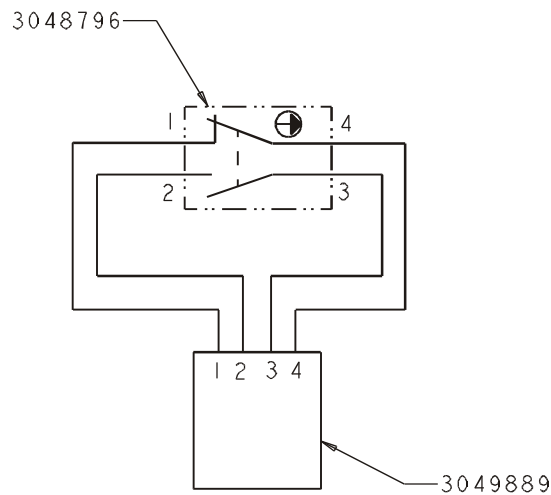
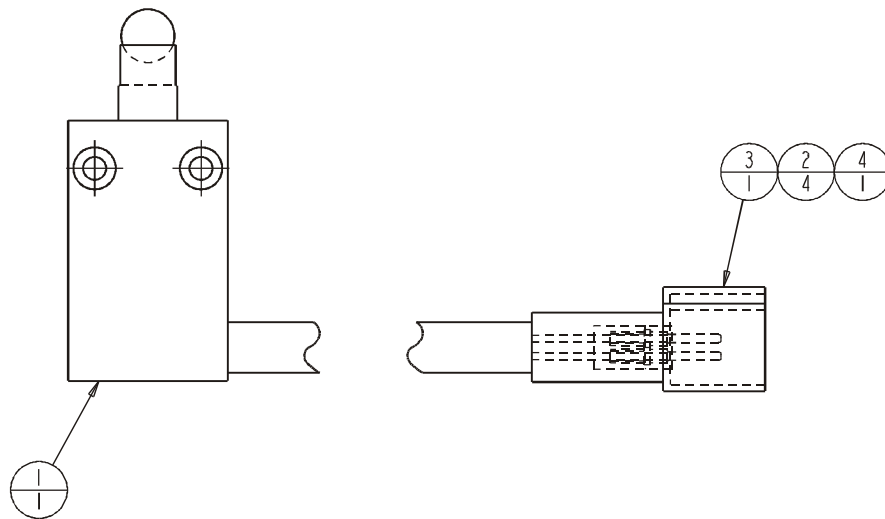
AW0371887 B





# Limit Switch

Item	Part No.	Qty.	Description
	3028795	1	SWITCH ASSEMBLY
1	3028796	1	SWITCH, LIMIT
2	3040341	4	PIN CONTACT SIZE 16 16/18 GA
3	3049889	1	CONNECTOR 4-PIN
4	3049891	1	LOCK WEDGE 4-PIN

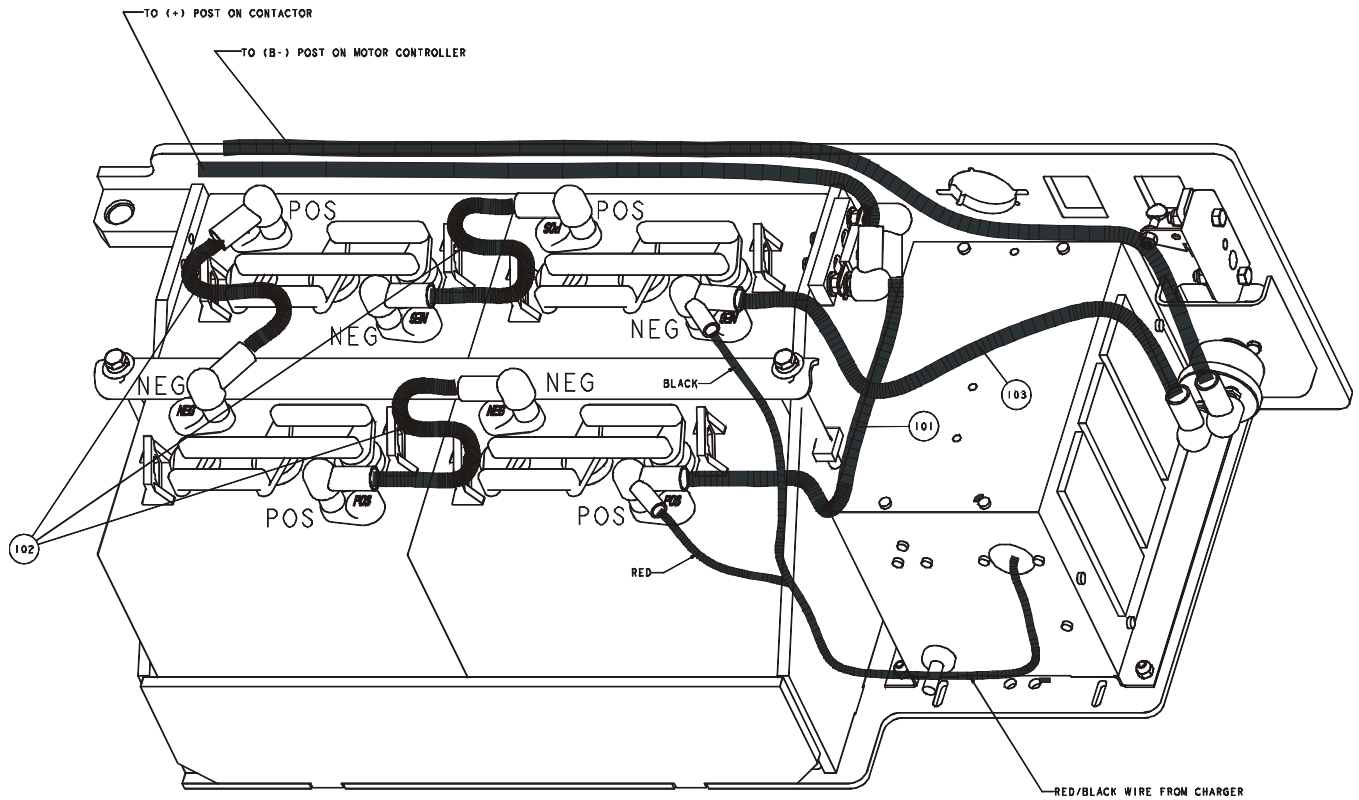


SCHEMATIC



## Battery Tray Wiring

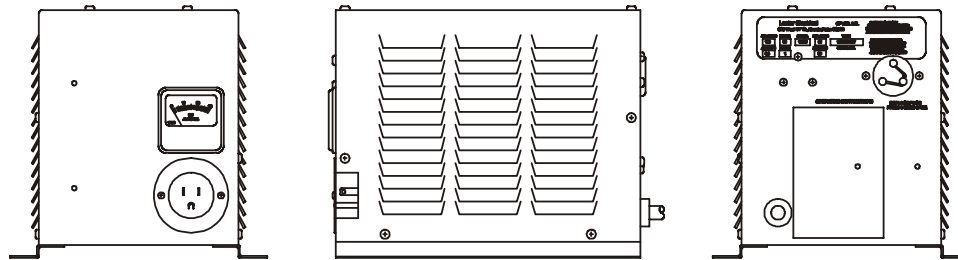
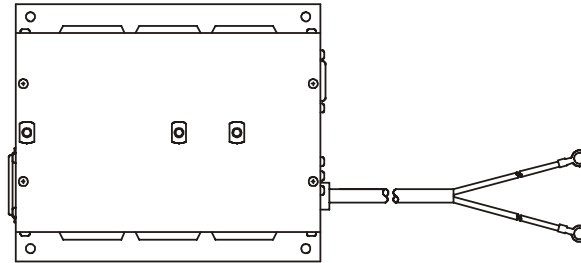
Item	Part No.	Qty.	Description
101	0162244	1	WIRE 2 R313 R375 20 RED
102	584926	3	WIRE 2 R375 R375 9 BLK
103	0161404	1	WIRE 2 R313 R375 20 BLK





## Battery Charger – United States

Item	Part No.	Qty.	Description
	300909	1	Battery charger
	8120046	1	Case
	8120015	1	Transformer
	8120031	1	Heatsink
	8120023	1	Capacitor
	28120013	1	Ammeter
	8120030	1	Electronic timer
	3040384	1	Fuse assembly
	8120035	1	Strain relief bushing, AC cord
	8120047	1	Cordset, DC
	8120038	1	Motor base receptacle

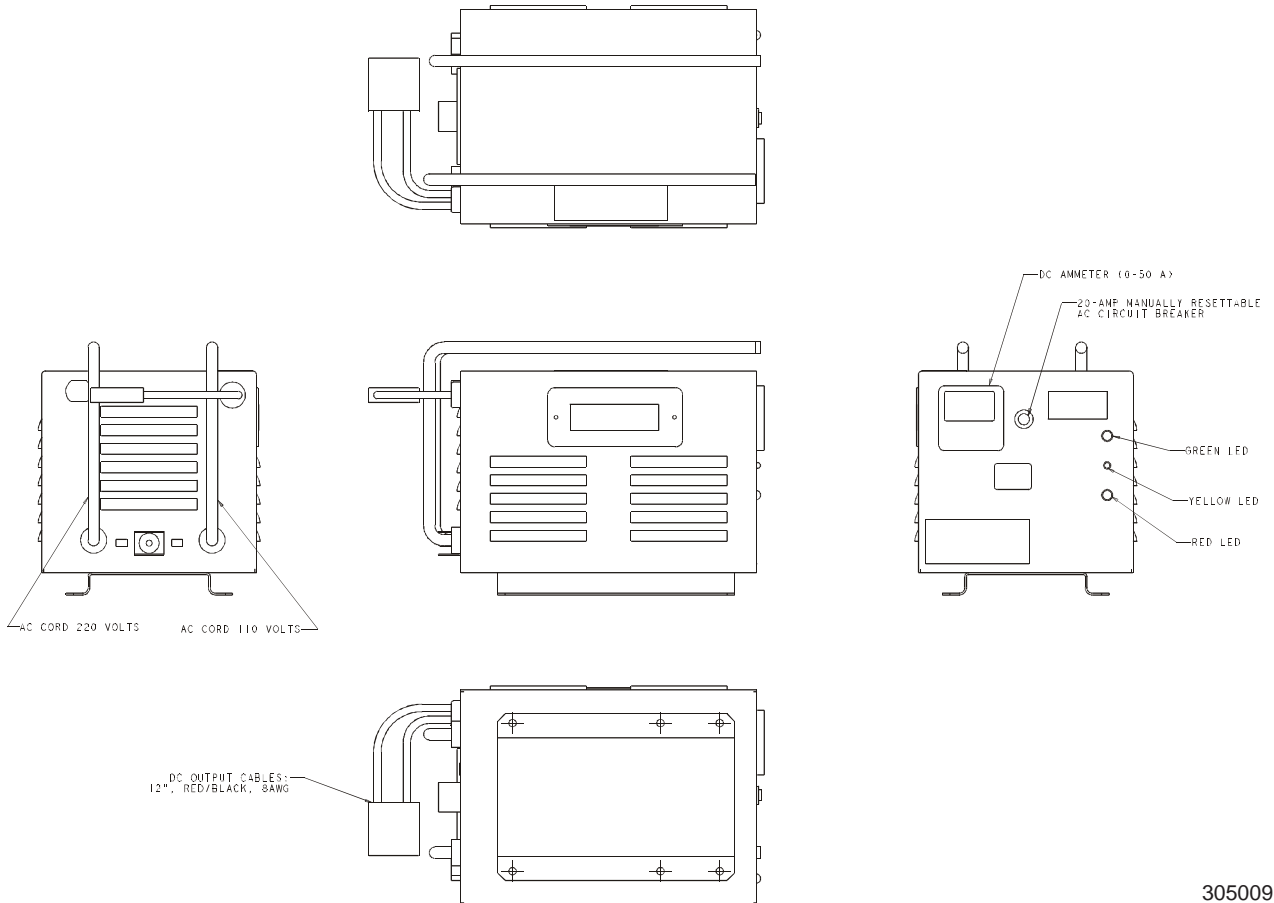


AW300909



## Battery Charger – Australia/New Zealand

Item	Part No.	Qty.	Description
	3050091	1	BATTERY CHARGER 24V
	8020038	1	METER 50A
	8020039	1	CAPACITOR
	8020040	1	RELAY 230VAC
	8020041	1	RELAY 24VDC
	8020042	1	HEAT SINK
	8020043	1	TERMINAL BLOCK
	8020044	1	RECTIFIER
	8020045	1	GROMMET
	8020046	1	RUBBER BUMPER
	8020047	1	SHLDR WSHR
	8020048	1	FUSE WIRE
	8020049	1	GRAY SB-50 CONN
	8020050	1	#8 CONTACTS
	8020051	1	SB-50 CLAMP
	8020052	1	1.5 SHRINK TUBE
	8020053	1	HEYCO STRAIN RELIEF
	8020054	1	HOUSING: BASE,COVER,DOOR
	8020055	1	PCBASSY
	8020056	1	PCB STANDOFFS
	8020057	1	AC RECEPTACLE
	8020058	1	CIRCUIT BRKR
	8020059	1	CAPACITOR CLP
	8020060	1	FAN 115 VAC
	8020061	1	WHT AMP CONN
	8020062	1	VARISTOR
	8020063	1	WIRE HARNESS
	8020064	1	TRANSFORMER



3050091 B



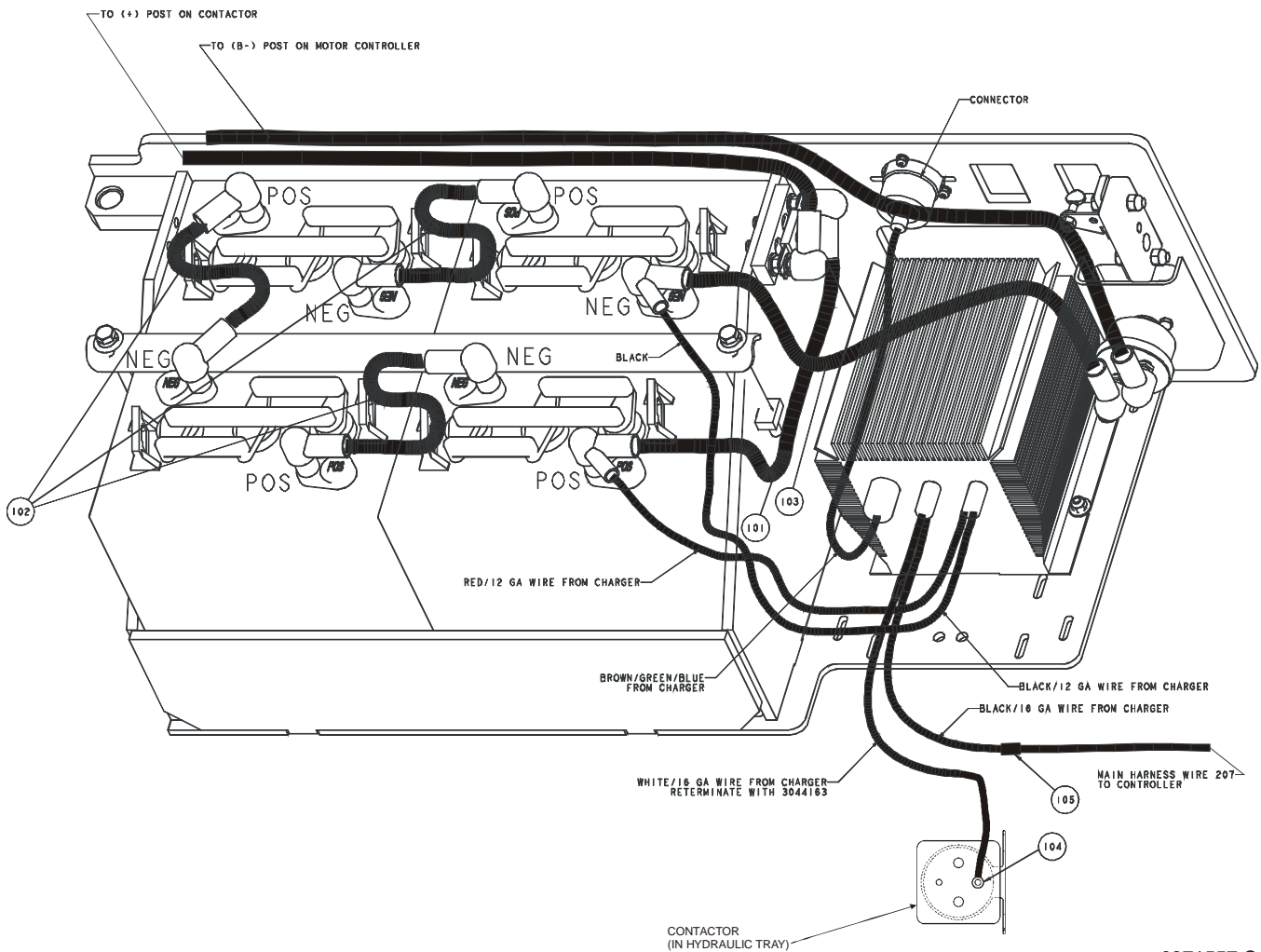


## Battery Tray Wiring – after September 2005

Item	Part No.	Qty.	Description
101	0162244	1	WIRE 2 R313 R375 20 RED
102	584926	3	WIRE 2 R375 R375 9 BLK
103	0161404	1	WIRE 2 R313 R375 20 BLK
104	3044163	1	TERM R313I 16/14
105	3044071	1	TERM BUTT CONN INSUL 16/14

### CONNECTIONS

CHARGER	CONNECTOR	CONTACTOR	BATTERIES	MAIN HARNESS
BROWN	BLACK	---	---	---
GREEN/YELLOW	GREEN	---	---	---
LIGHT BLUE	CLEAR	---	---	---
RED/12AWG	---	---	POSITIVE	---
BLACK/12AWG	---	---	NEGATIVE	---
WHITE/16AWG	---	INNER POST	---	---
BLACK/16AWG	---	---	---	WIRE 207



0371557 C

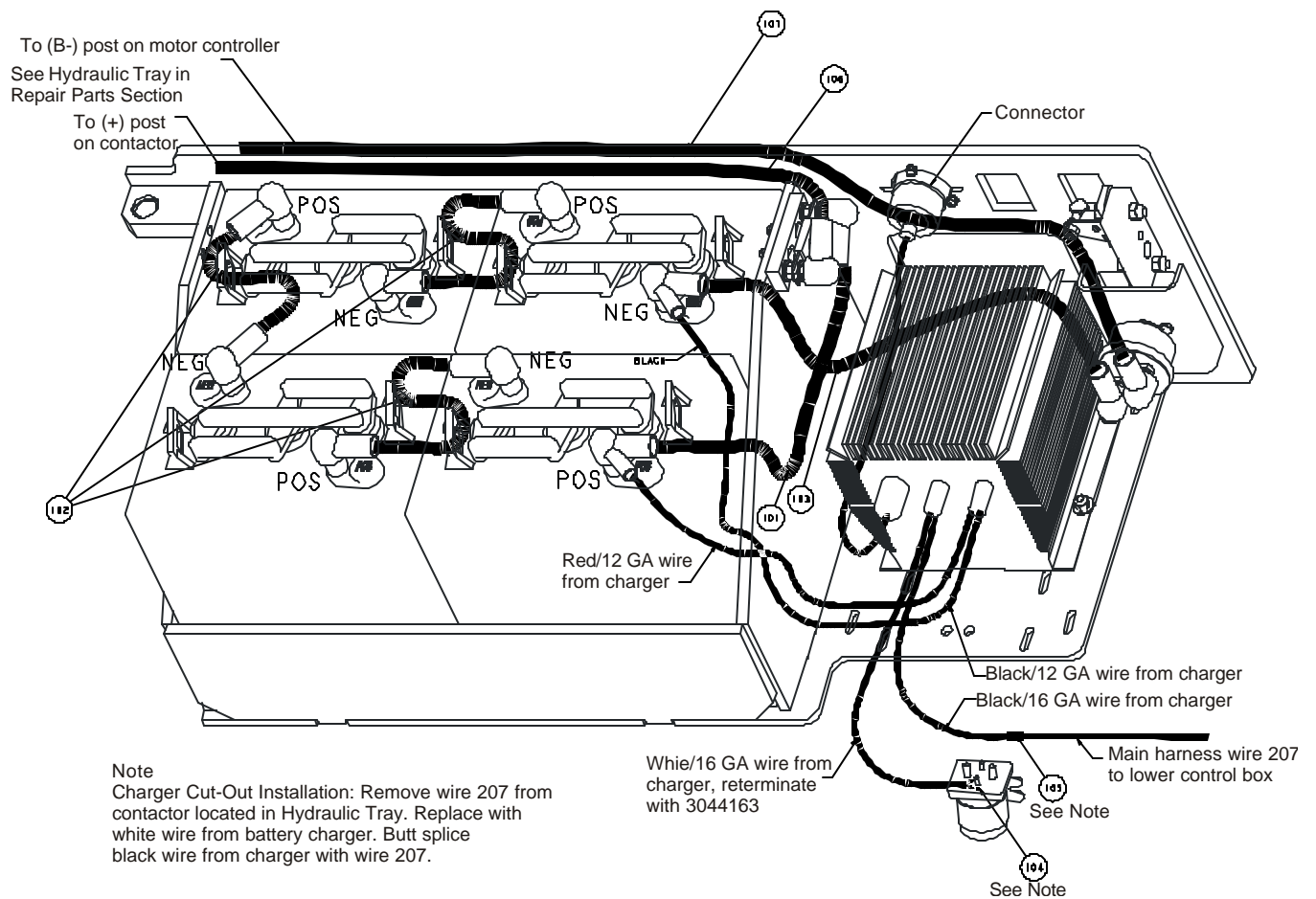


## Battery Tray Wiring – After February 2011

Item	Part No.	Qty.	Description
101	0162244	1	WIRE 2 R313 R375 20 RED
102	584926	3	WIRE 2 R375 R375 9 BLK
103	0161404	1	WIRE 2 R313 R375 20 BLK
104	3044163	1	TERM R313I 16/14
105	3044071	1	TERM BUTT CONN INSUL 16/14
106	0151157	REF	WIRE 2 R375 R313 142 RED
107	0371896	REF	WIRE 2 R375 R313 149 BLK

### CONNECTIONS

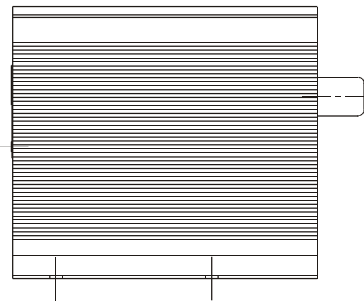
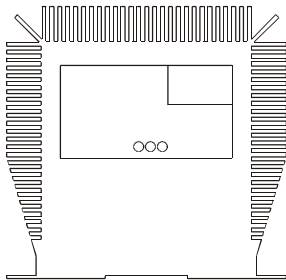
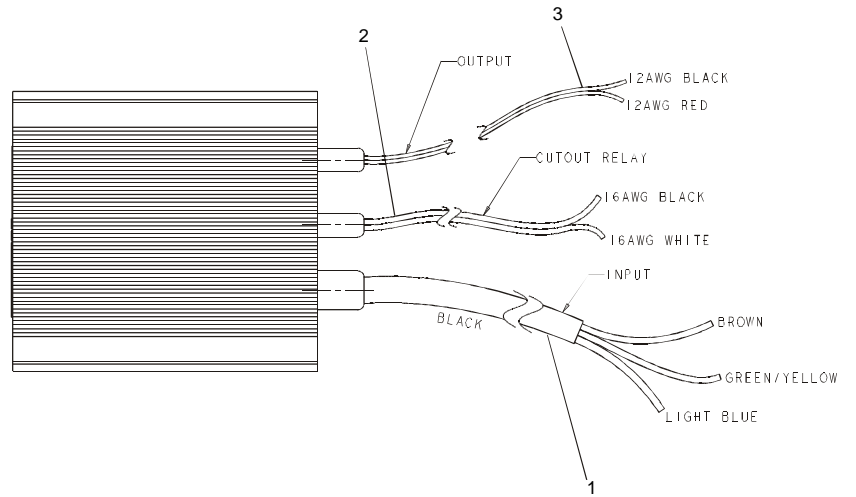
CHARGER	CONNECTOR	CONTACTOR	BATTERIES
BROWN	BLACK	---	---
GREEN/YELLOW	GREEN	---	---
LIGHT BLUE	CLEAR	---	---
RED/12AWG	---	---	POSITIVE
BLACK/12AWG	---	---	NEGATIVE





## Battery Charger – after September 2005

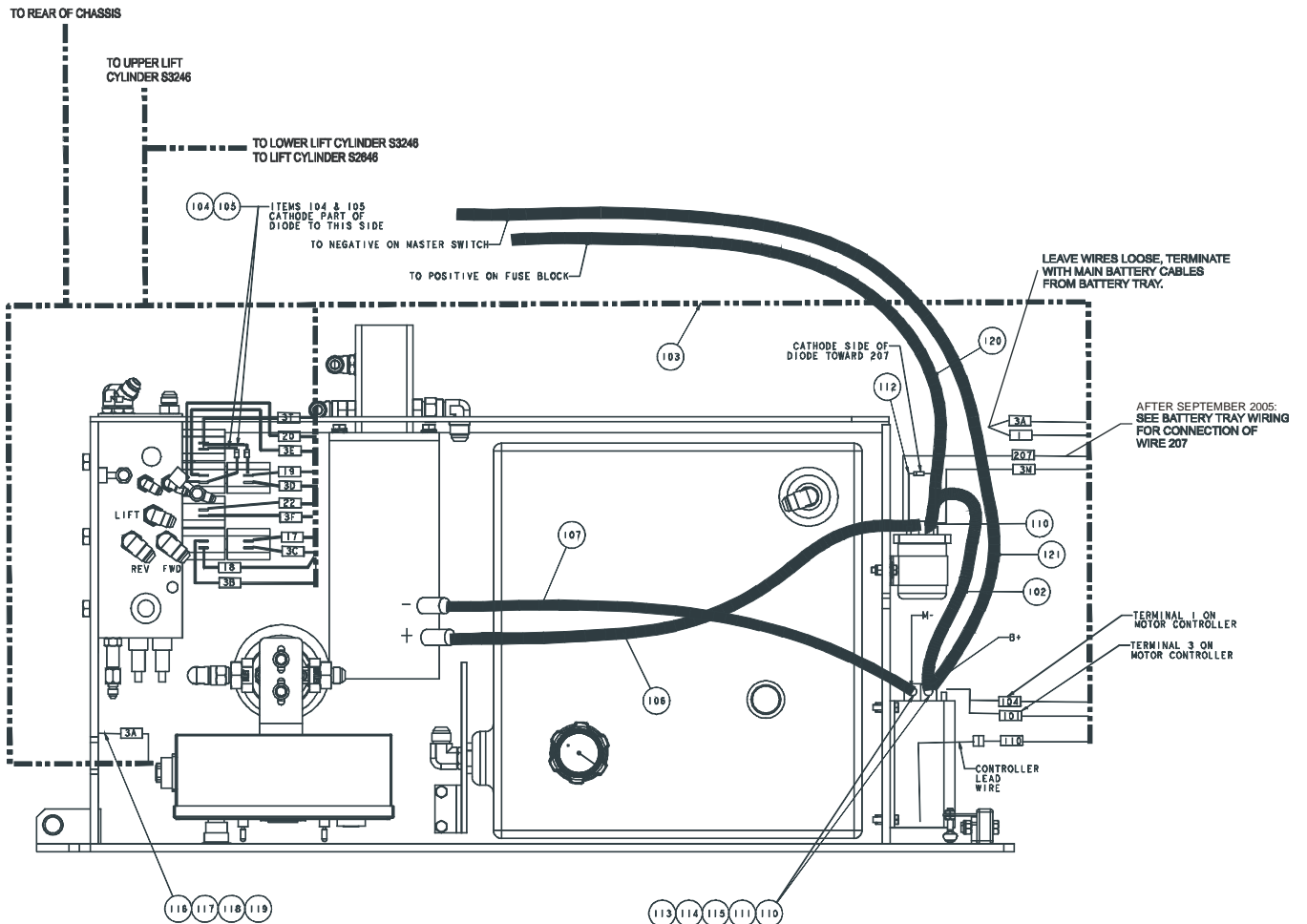
Item	Part No.	Qty.	Description
	3050097	1	CHARGER, 24V GLOBAL INPUT
	8190308	1	INPUT CABLE, GLOBAL CHRGR
	8190309	1	INTERLOCK CABLE, GLOBAL CHRGR
	8190310	1	OUTPUT CABLE, GLOBAL CHRGR
	8190311	1	FRONT PLATE, GLOBAL CHRGR
	8190312	1	REAR PLATE, GLOBAL CHRGR
	8190313	1	FRONT PLATE LABEL, GLOBAL CHRGR
	8190314	1	GASKET,FRONT/REAR PLATE,GLOBAL CHRGR
	8190315	1	INTERLOCK RELAY, GLOBAL CHRGR
	8190316	1	POWER ON RELAY, GLOBAL CHRGR
	8190317	1	INTERNAL FUSE, GLOBAL CHRGR





# Hydraulic Tray Wiring

Item	Part No.	Qty.	Description
102	0150459	1	WIRE 2 R313I R313I 12
103	0371890	1	HARNESS MAIN WIRE 2646/3246
104	0371888	1	DIODE WIRE ASSY
105	0371889	1	DIODE WIRE ASSY
106	0371891	1	WIRE 2 R375I R313I 39 RED
107	0371892	1	WIRE 2 R375I R313I 43 BLK
110	3040269	4	BOOT BTRY CABLE END BLK 1/0 GA
111	3043802	1	RUBBER BOOT WIDE END (2X2/0GA)
112	0073253	1	WIRE 18 R10I R10I 11 DIO
113	970239	2	BLT HEXHD .313-18 .750 GR5
114	5560031	2	5/16 NUT SELF LOCKING
115	986269	4	WASHER FLAT .313
116	5560341	1	WASHER STAR .250 EXTERNAL TOOTH
117	970049	1	BLT. 250-20 1.00 GR5
118	986019	1	WASHER FLAT .250
119	5560004	1	NUT LOCKING .250-20
120	0151157	REF	WIRE 2 R375 R313 142 RED
121	0371896	REF	WIRE 2 R375 R313 149 BLK

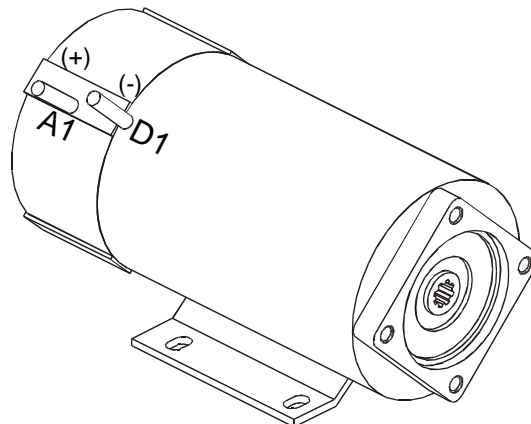
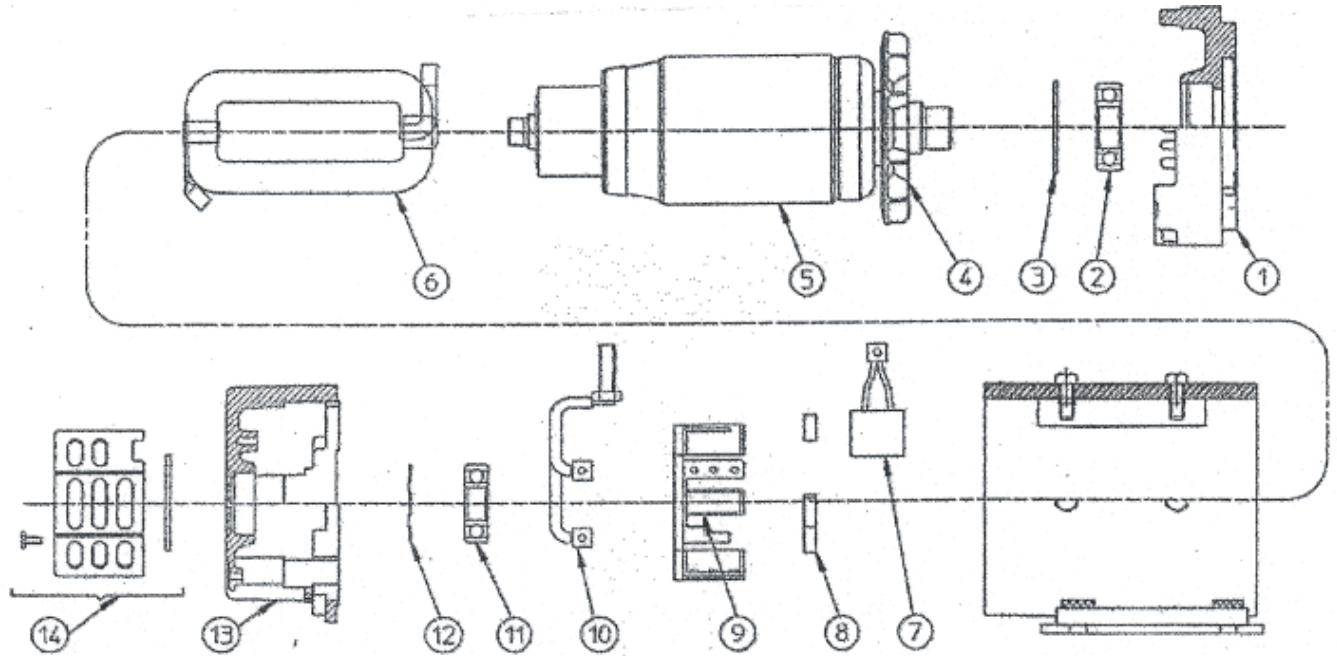






## Electric Motor, hydraulic pump

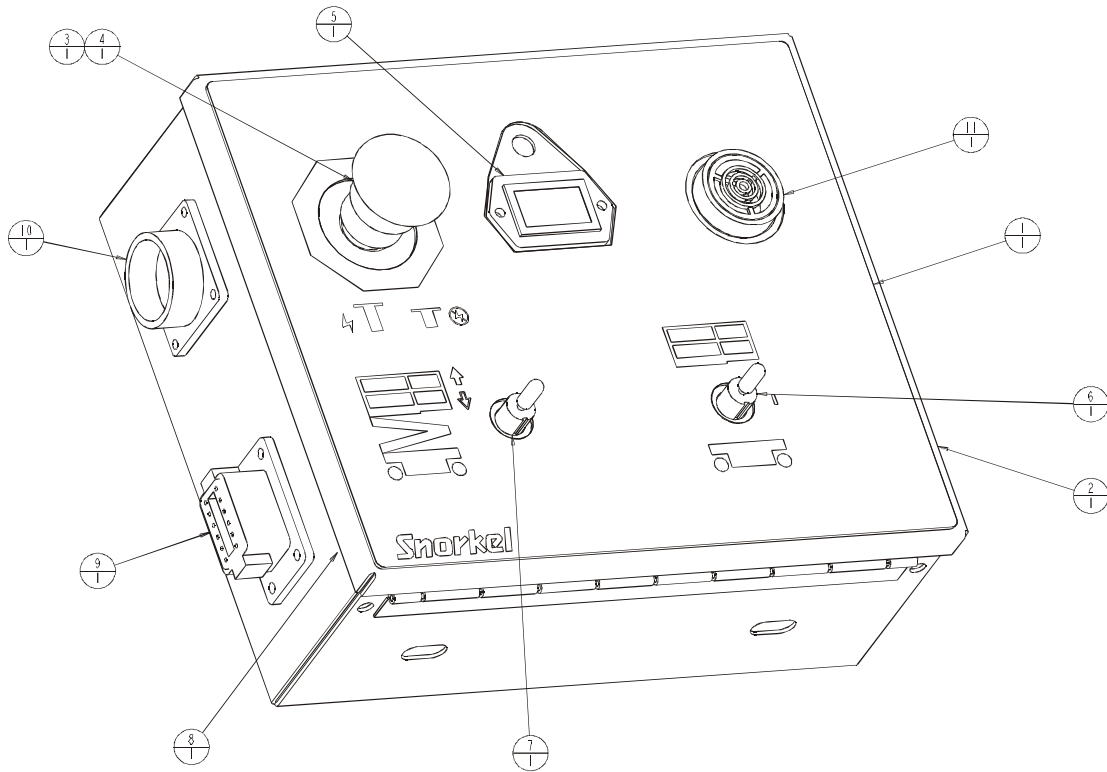
Item	Part No.	Qty.	Description
	3087790	1	ELECTRIC MOTOR, 24V
1	8010323	1	DRIVE ENDHEAD
2	8010324	1	BEARING
3	8010325	1	RETAING RING
4	8010326	1	FAN
5	8010327	1	ARMATURE AND FAN ASSY
6	8010328	1	FIELD COIL KIT
7	8010329	1	BRUSH </td
8	8010330	1	BRUSH SPRING
9	8010331	1	BRUSH BOX ASSY
10	8010332	1	BRUSH LEAD ASSY KIT
11	8010333	1	BEARING
12	8010334	1	WAVY WASHER
13	8010335	1	COMMUTATOR ENDHEAD
14	8010336	1	BRUSH COVER PLATE KIT



AW3087790



# Lower Control Box



12	103	DOWN-PLATFORM
11	114	RETURN POWER (TO LOWER CONTROL BOX)
10	101	OUTPUT FROM JOYSTICK
9	19A	STEER LEFT
8	18A	DRIVE REVERSE
7	17A	DRIVE FORWARD
6	20A	STEER RIGHT
5	222	LIFT-PLATFORM
4	2	POWER
3	122	CENTER TAP
2	3P	GROUND
1	121	POT RESISTORS
POSITION	WIRE	DESCRIPTION

DEUTSCH RECEPT CONNECTOR (J1)

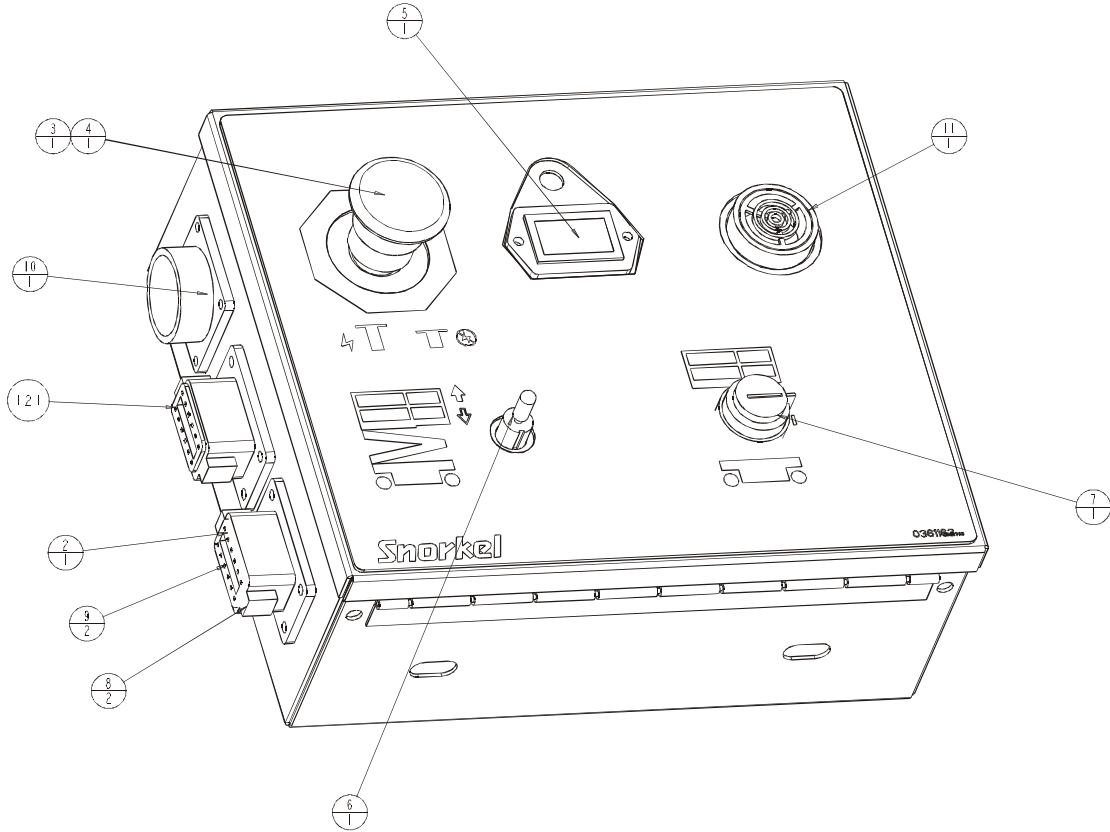
24	PLUG	SPARE
23	3	GROUND
22	100	PWR PRESSURE SWITCH
21	PLUG	SPARE
20	PLUG	SPARE
19	101A	CONTROLLER SIGNAL
18	21	DOWN VALVE
17	102	PWR POTHOLE/6' STACK SWITCH
16	PLUG	SPARE
15	1	BATTERY POS
14	103A	PWR LOWERING INTERRUPT SWITCH
13	104	CONTROLLER PWR
12	PLUG	SPARE
11	106	FROM STACK SWITCH
10	207	CONTACTOR PWR
9	17	DRIVE FORWARD VALVE
8	108	FROM LOWERING INTERRUPT SWITCH
7	104A	FROM PRESSURE SWITCH
6	110	CONTROLLER OUTPUT VOLTAGE
5	111	FROM TILT SENSOR
4	22	LIFT VALVE
3	20	STEER RIGHT VALVE
2	19	STEER LEFT VALVE
1	18	DRIVE REVERSE VALVE
POSITION	WIRE	DESCRIPTION

AMP RECEPT CONNECTOR (J2)

## Lower Control Box

Item	Part No.	Qty.	Description
	0410064	1	Lower control box
1	0361163	1	Placard, lower control box
2	0361207	1	Housing, lower control box
3	446826	1	Contact block, emergency stop switch
4	446836	1	Emergency power switch
5	455186	1	Hour meter
6	3020016	1	Switch, toggle
7	3020047	1	Switch, toggle
8	3049837	1	Connector, 12 pin
9	3049849	1	Lock wedge 12 pin plug
10	3049974	1	Connector, 24 pin square flange receptacle
11	3049978	1	Alarm, mini siren
			<b>Following items not shown, inside of control box</b>
	0361260	1	Wire harness, amp connector
	0361261	1	Wire harness, tilt relay
	0361262	1	Wire harness, lift relay
	0361263	1	Wire harness, high speed relay
	0361264	1	Wire harness, DSR relay
	0361268	1	Lower control box internal harness kit
	0361232	1	Lower internal harness connector
	0361233	13	Diode wire
	0361274	1	Resister wire
	0361275	1	Resister wire
	0361399	1	Resister wire
	3043809	3	Terminal strip tab
	3043808	6	Terminal strip jumpers
	3043807	2	Terminal strip
	3043810	1	Terminal strip
	3043806	1	Potentiometer 10k
	562326	4	Relay, 12 volt DC
	0361272	1	Potentiometer bracket
	3040156	1	Fuse, 15 amp capacity
	0361235	1	Lower control box internal label

# Lower Control Box – CE



POSITION	WIRE	DESCRIPTION
12	PLUG	-
11	22A	LIFT SOLENOID
10	18B	REVERSE SOLENOID
9	17B	FOWARD SOLENOID
8	103B	GROUND REQUEST
7	113	GROUND CONTROL MODE SIGNAL
6	118	ALARM OUTPUT FROM OVERLOAD CONT MOD
5	114	PLATFORM MODE SIGNAL
4	102C	POWER OVERLOAD CONTROL MODULE
3	135	24V OUTPUT FROM OVERLOAD CONT MOD
2	106	STACK SWITCH
1	3M	GROUND

DEUTSCH RECEPT CONNECTOR (J4)

POSITION	WIRE	DESCRIPTION
12	103	DOWN-PLATFORM
11	114	RETURN POWER (TO LOWER CONTROL BOX)
10	101	OUTPUT FROM JOYSTICK
9	19A	STEER LEFT
8	18A	DRIVE REVERSE
7	17A	DRIVE FORWARD
6	20A	STEER RIGHT
5	222	LIFT-PLATFORM
4	2	POWER
3	122	CENTER TAP
2	3P	GROUND
1	121	POT RESISTORS

DEUTSCH RECEPT CONNECTOR (J1)

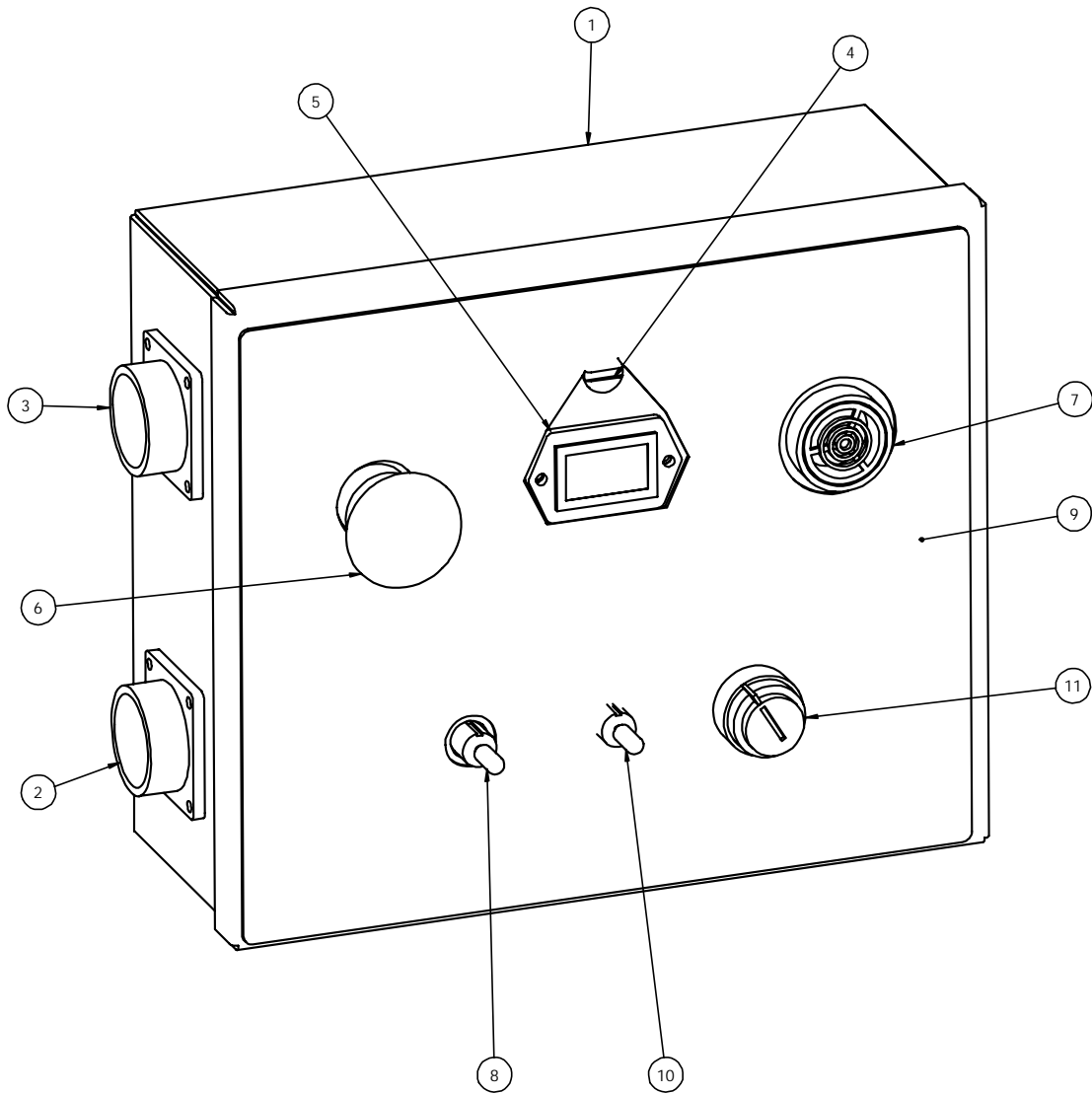
POSITION	WIRE	DESCRIPTION
24	PLUG	SPARE
23	3	GROUND
22	100	PWR PRESSURE SWITCH
21	PLUG	SPARE
20	PLUG	SPARE
19	101A	CONTROLLER SIGNAL
18	21	DOWN VALVE
17	102	PWR POTHOLE/6 STACK SWITCH
16	PLUG	SPARE
15	1	BATTERY POS
14	103A	PWR LOWERING INTERRUPT SWITCH
13	104	CONTROLLER PWR
12	PLUG	SPARE
11	106	FROM STACK SWITCH
10	207	CONTACTOR PWR
9	17	DRIVE FORWARD VALVE
8	108	FROM LOWERING INTERRUPT SWITCH
7	104A	FROM PRESSURE SWITCH
6	110	CONTROLLER OUTPUT VOLTAGE
5	111	FROM TILT SENSOR
4	22	LIFT VALVE
3	20	STEER RIGHT VALVE
2	19	STEER LEFT VALVE
1	18	DRIVE REVERSE VALVE

AMP RECEPT CONNECTOR (J2)

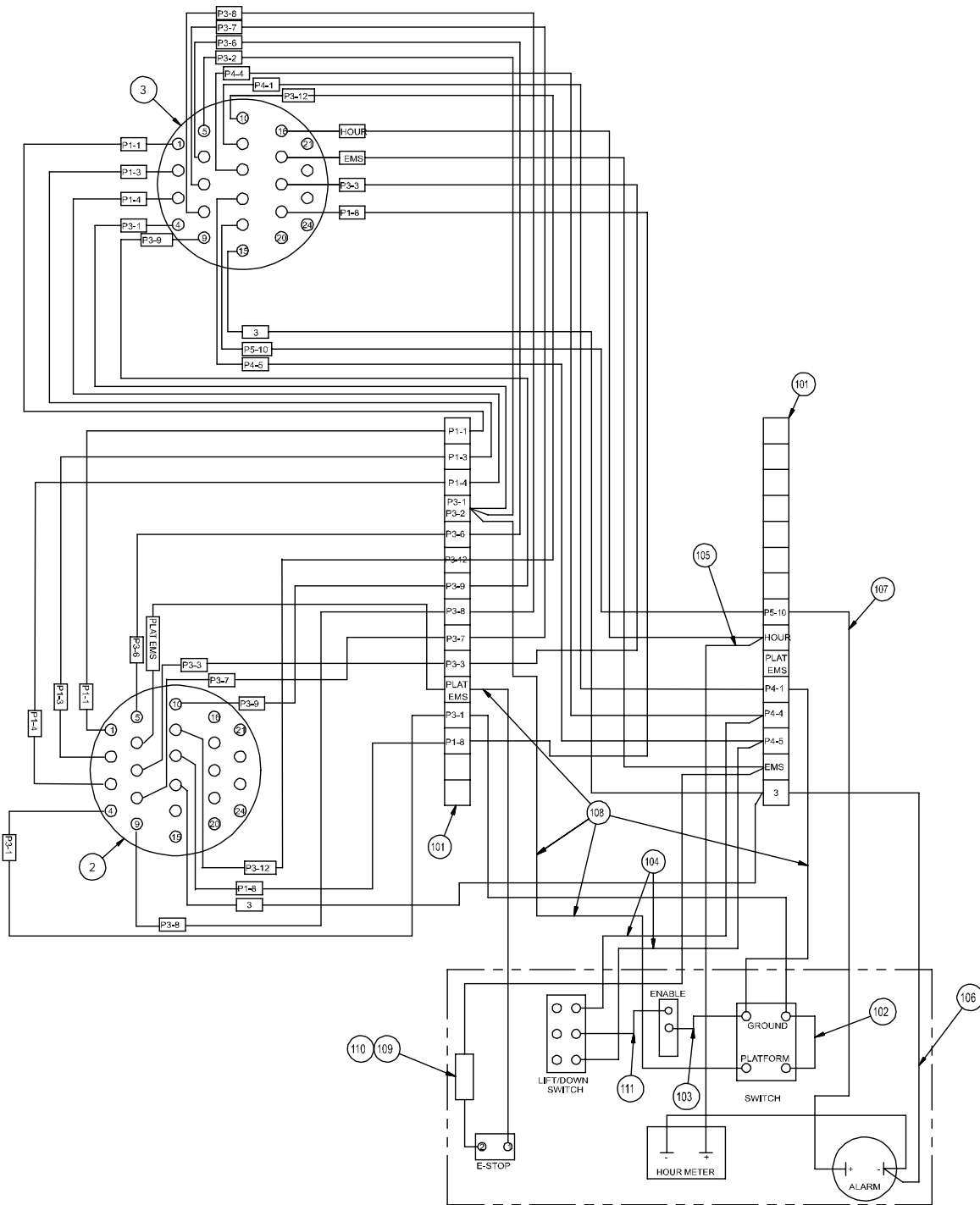
## Lower Control Box – CE

Item	Part No.	Qty.	Description
	0410065	1	LOWER CONTROL BOX CE
1	0361163	1	PLAC GROUND CONT BOX
2	0361479	1	WELDMENT LOWER CONT BOX CE
3	446826	1	SW CONTACT BLOCK N.C
4	446836	1	OPERATOR PUSH/PULL 2-POSITION
5	455186	1	HOURMETER, 12 TO 60 VDC
6	3020047	1	SW TGL SPDT (ON/ON)
7	3020167	1	SWITCH KEY 3POS ON-N-ON
8	3049837	1	CONNECTOR 12-PIN BHD
9	3049849	1	LOCK WEDGE 12-PIN
10	3049974	1	CONN AMP 24-PIN SQ FLANGE RCPT
11	3049978	1	ALARM MINI SIREN
			<b>Following items not shown, inside of control box</b>
	0361260	1	LOWER INT HARNESS
	0361261	1	LOWER INT HARN TILT RELAY (K2)
	0361262	1	LOWER INT HARN LIFT RELAY (K3)
	0361263	1	LOWER INT HARN HI SPD RELAY K1
	0361264	1	LOWER INT HARN DSR RELAY (K4)
	0361268	1	LOWER INT HARNESS KIT
	0361232	1	LOWER INT HARN
	0361233	7	DIODE ASSEMBLY
	0361274	1	680 OHM RESISTOR ASSEMBLY
	0361275	1	3.3K OHM RESISTOR ASSEMBLY
	0361319	1	10K OHM RESISTOR ASSY
	3043809	3	TERM STRIP TABS 90 DEG .188
	3043808	6	TERMINAL STRIP JUMPERS
	3043807	2	TERM STRIP (14) 45/90 DEG .188
	3043810	1	TERM STRIP (14) 45 DEG .188-MA
	3043806	1	POTENTIOMETER 10K
	562846	5	RELAY 24V 40/30 AMP SPDT
	0361272	1	POTENTIOMETER BRACKET
	3040156	1	FUSE 15 AMP
	0361492	1	INT HARNESS DOWN CUTOUT RLY
	0361491	1	INT HARN DEUTSCH OVERLOAD
	0361331	1	CE KEY SWITCH HARN

# Lower Control Box – CE After February 2011



# Lower Control Box – CE After February 2011





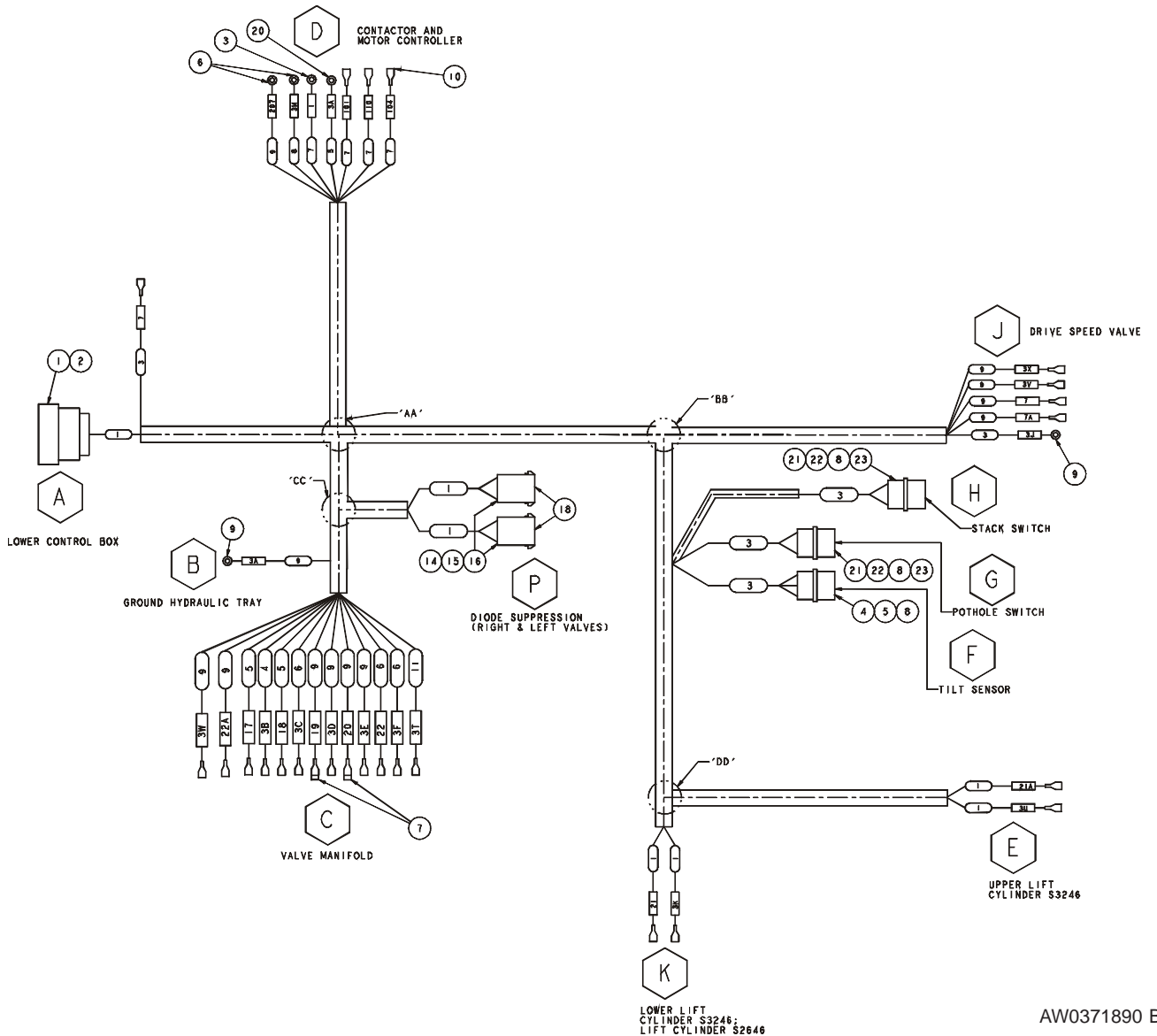
## Lower Control Box – CE After February 2011

Item	Part No.	Qty.	Description
	1420237	1	LOWER CONTROL BOX CE
1	1420241	1	WELDMENT LOWER CONT BOX CE
2	1420243	1	LOWER HARNESS CONNECTOR
3	1370372	1	LOWER HARNESS CONNECTOR
4	5516330	1	LATCH
5	455186	1	HOURMETER, 12 TO 60 VDC
6	510524-000	1	PUSH/PULL SWITCH ASSEMBLY NC
7	3049978	1	ALARM MINI SIREN
8	3020047	1	SW TGL SPDT (ON/NONE/ON)
9	1360522	1	PLAC GROUND CONT BOX
10	3020015	1	SW TGL SPDT (ON/OFF)
11	3028813	1	SELECTOR SWITCH
101	3043807	2	TERM STRIP (14) 45/90 DEG .188
102	1360524	1	WIRE SPADE8I SPADE8I 3
103	1360525	1	WIRE SPADE8I R6I 5
104	0071517	2	WIRE R6I FEM188I 13
105	1370363	1	WIRE FEM188I FEM250FI
106	1370365	1	WIRE SPECIAL
107	0071518	1	WIRE 18 R6I FEM188I 15
108	1370364	4	WIRE FEM 188I SPADE8I
109	1360527	1	WIRE FUSE HOLDER
110	3040156	1	FUSE 15 AMP
111	0071515	1	WIRE 18 R6I R6I 5
			<b>Following items not shown, inside of control box</b>
	0361260	1	LOWER INT HARNESS
	0361261	1	LOWER INT HARN TILT RELAY (K2)
	0361262	1	LOWER INT HARN LIFT RELAY (K3)
	0361263	1	LOWER INT HARN HI SPD RELAY K1
	0361264	1	LOWER INT HARN DSR RELAY (K4)
	0361268	1	LOWER INT HARNESS KIT
	0361232	1	LOWER INT HARN
	0361233	7	DIODE ASSEMBLY
	0361274	1	680 OHM RESISTOR ASSEMBLY
	0361275	1	3.3K OHM RESISTOR ASSEMBLY
	0361319	1	10K OHM RESISTOR ASSY
	3043809	3	TERM STRIP TABS 90 DEG .188
	3043808	6	TERMINAL STRIP JUMPERS
	3043810	1	TERM STRIP (14) 45 DEG .188-MA
	3043806	1	POTENTIOMETER 10K
	562846	5	RELAY 24V 40/30 AMP SPDT
	0361272	1	POTENTIOMETER BRACKET
	0361492	1	INT HARNESS DOWN CUTOUT RLY
	0361491	1	INT HARN DEUTSCH OVERLOAD
	0361331	1	CE KEY SWITCH HARN



# Main Harness

Item	Part No.	Qty.	Description
	0371890	1	MAIN HARNESS
1	3049973	1	CONN AMP 24-PIN PLUG
2	3049976	17	AMP SOCKET CONTACTS -16
3	3044163	1	TERM R312I 16/14
4	3049822	2	LOCK WEDGE 3-PIN PLUG
5	3049820	2	CONNECTOR 3-PIN DEUTSCH PLUG
6	3044161	2	TERM R10I 16/14
7	3049899	2	TERM PIGGYBK MALE/FEM250 16/14
8	3040342	10	SOCKET CONTACT SIZE 16 16/18GA
9	3044855	2	TERM R250I 12/10
10	3040083	23	TERM FEM250FI 16/14
14	3049985	4	AMP PIN CONTACT 20/14 GA
15	3049988	2	AMP 2-PIN RECEPT
16	3049989	2	AMP 2-PIN WIRE SEAL
18	0361240	2	DIODE SUPPRESSION ASSEMBLY
20	3044856	1	TERM R312I 12/10GA
21	3049888	2	CONNECTOR 4-PIN
22	3049890	2	LOCK WEDGE 4-PIN
23	3040097	4	SEALING PLUG -16 DEUTSCH



AW0371890 B

# Main Harness

WIRE	DESCRIPTION	WIRE GA	TERM	LOC	TERM	LOC	COLOR
1	BATTERY POS	16	ITEM 3	D	ITEM 2	A	RED
3	GROUND-CONTROL BOX	16	SPL-3A	AA	ITEM 2	A	BLACK
3A	GROUND- BATT - MOTOR CONT	12	ITEM 20	D	ITEM 9	B	BLACK
3B	GROUND-FORWARD VALVE	16	SPL-3A	CC	ITEM 10	C	BLACK
3C	GROUND-REVERSE VALVE	16	SPL-3A	CC	ITEM 10	C	BLACK
3D	GROUND-STEER LEFT VALVE	16	SPL-3A	CC	ITEM 10	C	BLACK
3E	GROUND-STEER RIGHT VALVE	16	SPL-3A	CC	ITEM 10	C	BLACK
3F	GROUND-LIFT VALVE	16	SPL-3A	CC	ITEM 10	C	BLACK
3H	GROUND-TILT SENSOR	16	SPL-3J	BB	ITEM 8	F	BLACK
3J	GROUND-CHASSIS	12	SPL-3A	BB	ITEM 9	J	BLACK
3K	GROUND-DOWN VALVE	16	SPL-3J	BB	ITEM 10	K	BLACK
3M	GROUND-CONTACTOR	16	SPL-3A	BB	ITEM 6	D	BLACK
3N	GROUND-PRESSURE SWITCH	16	SPL-3A	CC	ITEM 8	P	BLACK
3R	GROUND-SUPPRESSION LEFT VALVE	16	SPL-3D	CC	ITEM 14	P	BLACK
3S	GROUND-SUPPRESSION RIGHT VALVE	16	SPL-3E	CC	ITEM 14	P	BLACK
3T	GROUND - STEERING PRIORITY VALVE	16	SPL-3A	CC	ITEM 10	C	BLACK
3U	GROUND - DOWN VALVE	16	SPL-3K	DD	ITEM 10	E	BLACK
3V	GROUND DRIVE SPEED VALVE	16	SPL-3J	BB	ITEM 10	J	BLACK
3X	GROUND DRIVE SPEED VALVE	16	SPL-3J	BB	ITEM 10	J	BLACK
3W	GROUND - DUMP VALVE	16	SPL-3A	CC	ITEM 10	C	BLACK
7	DRIVE SPEED VALVE	16	ITEM 10	A	ITEM 10	J	WHITE
7A	DRIVE SPEED VALVE	16	SPL-7	BB	ITEM 10	J	WHITE
17	DRIVE FORWARD VALVE	16	ITEM 2	A	ITEM 10	C	WHITE
18	DRIVE REVERSE VALVE	16	ITEM 2	A	ITEM 10	C	WHITE
19	STEER LEFT VALVE	16	ITEM 2	A	ITEM 7	C	WHITE
20	STEER RIGHT VALVE	16	ITEM 2	A	ITEM 7	C	WHITE
21	DOWN VALVE	16	ITEM 2	A	ITEM 10	K	WHITE
21A	DOWN VALVE	16	SPL-21	DD	ITEM 10	E	WHITE
22	LIFT VALVE	16	ITEM 2	A	ITEM 10	C	WHITE
22A	DUMP VALVE	16	SPL-22	CC	ITEM 10	C	WHITE
100	PWR PRESSURE SWITCH	16	ITEM 2	A	ITEM 8	P	WHITE
101	CONTROLLER SIGNAL	16	ITEM 2	A	ITEM 10	D	WHITE
102	PWR POTHOLE	16	ITEM 2	A	ITEM 8	G	WHITE
102A	PWR 6" STACK	16	SPL-102	BB	ITEM 8	H	WHITE
104	CONTROLLER PWR	16	ITEM 2	A	ITEM 10	D	WHITE
104A	FROM PRESSURE SWITCH	16	ITEM 8	F	ITEM 2	A	WHITE
106	FROM STACK SWITCH	16	ITEM 8	H	ITEM 2	A	WHITE
110	CONTROLLER OUTPUT VOLTAGE	16	ITEM 10	D	ITEM 2	A	WHITE
111	FROM TILT SENSOR	16	ITEM 8	F	ITEM 2	A	WHITE
112	POTHOLE TO TILT SENSOR	16	ITEM 8	G	ITEM 8	F	WHITE
207	CONTACTOR PWR	16	ITEM 2	A	ITEM 6	D	WHITE
219	SUPPRESSION LEFT VALVE	16	SPL-19	CC	ITEM 14	P	WHITE
220	SUPPRESSION RIGHT VALVE	16	SPL-20	CC	ITEM 14	P	WHITE

NOTE: LOCATION COLUMN  
'SPL-XXX' = SPLICE  
INTO WIRE 'XXX'

24	PLUG	SPARE
23	3	GROUND
22	100	PWR PRESSURE SWITCH
21	PLUG	SPARE
20	PLUG	SPARE
19	101	CONTROLLER SIGNAL
18	21	DOWN VALVE
17	102	PWR POTHOLE/6" STACK SWITCH
16	PLUG	SPARE
15	1	BATTERY POS
14	PLUG	SPARE
13	104	CONTROLLER PWR
12	PLUG	SPARE
11	106	FROM STACK SWITCH
10	207	CONTACTOR PWR
9	17	DRIVE FORWARD VALVE
8	PLUG	SPARE
7	104A	FROM PRESSURE SWITCH
6	110	CONTROLLER OUTPUT VOLTAGE
5	111	FROM TILT SENSOR
4	22	LIFT VALVE
3	20	STEER RIGHT VALVE
2	19	STEER LEFT VALVE
1	18	DRIVE REVERSE VALVE
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049973

PIN-OUT FOR  
LOWER CONTROL BOX @ LOCATION 'A'

PIN-OUT FOR  
'TILT SENSOR' CONNECTOR @ LOC 'F'

POS	WIRE	DESCRIPTION
A	112	POTHOLE TO TILT SENSOR
B	111	FROM TILT SENSOR
C	3H	GROUND

PIN-OUT FOR  
'SUPPRESSION RIGHT' CONNECTOR @ LOC 'P'

POS	WIRE	DESCRIPTION
1	3S	GROUND SUPP RIGHT VALVE
2	220	SUPP RIGHT VALVE

PIN-OUT FOR  
'POTHOLE SWITCH' CONNECTOR @ LOC 'G'

POS	WIRE	DESCRIPTION
1	PLUG	SPARE
2	102	PWR POTHOLE
3	112	POTHOLE TO TILT SENSOR
4	PLUG	SPARE

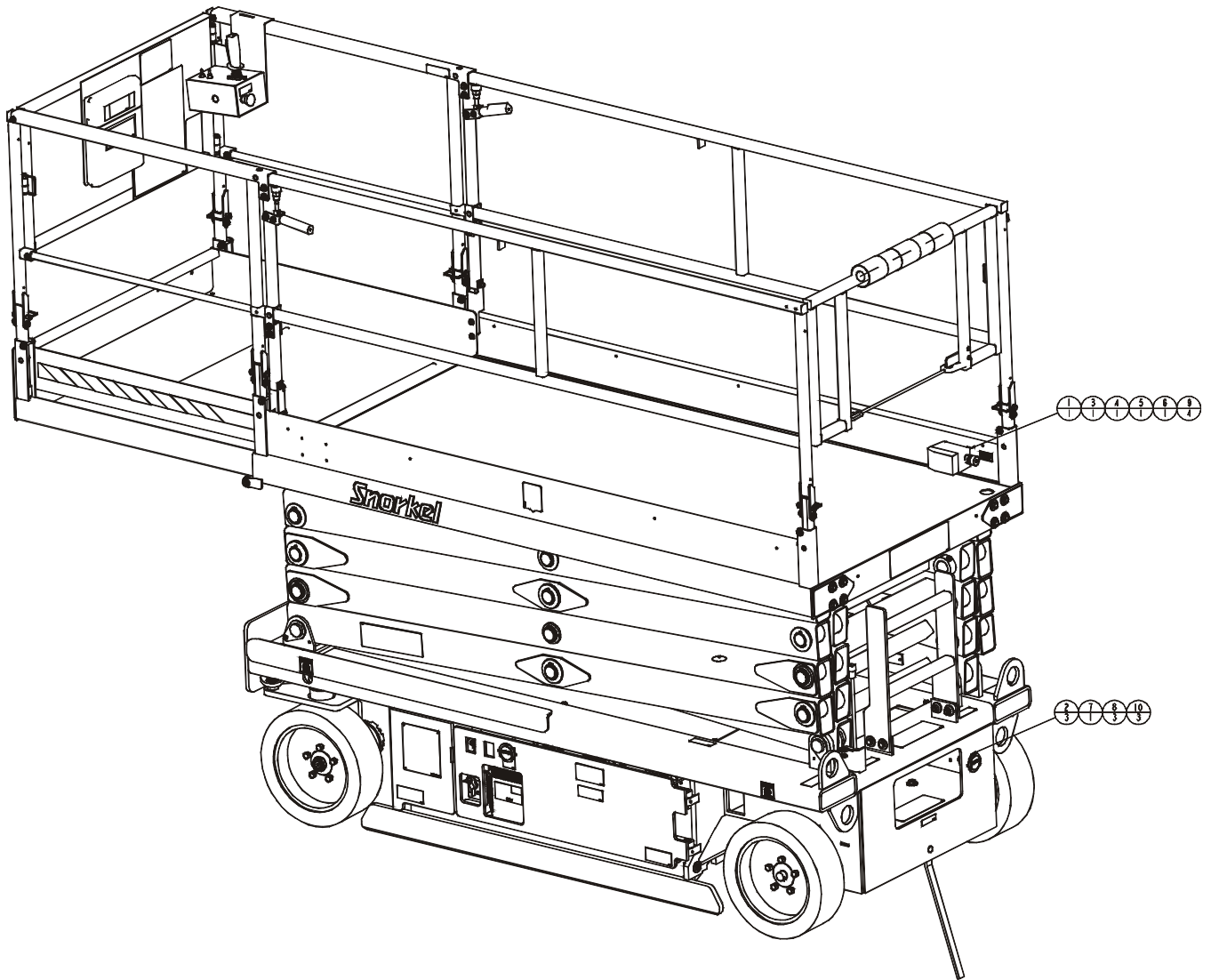
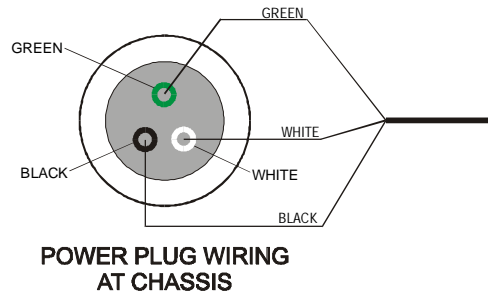
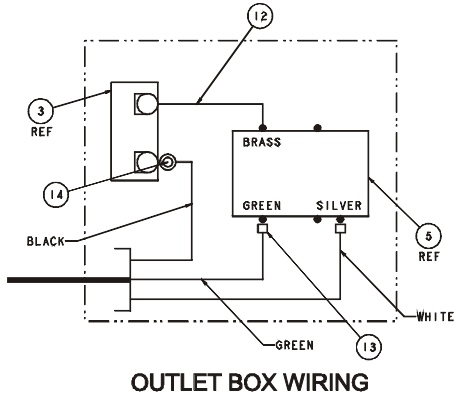
PIN-OUT FOR  
'SUPPRESSION LEFT' CONNECTOR @ LOC 'P'

POS	WIRE	DESCRIPTION
1	3R	GROUND SUPP LEFT VALVE
2	219	SUPP LEFT VALVE

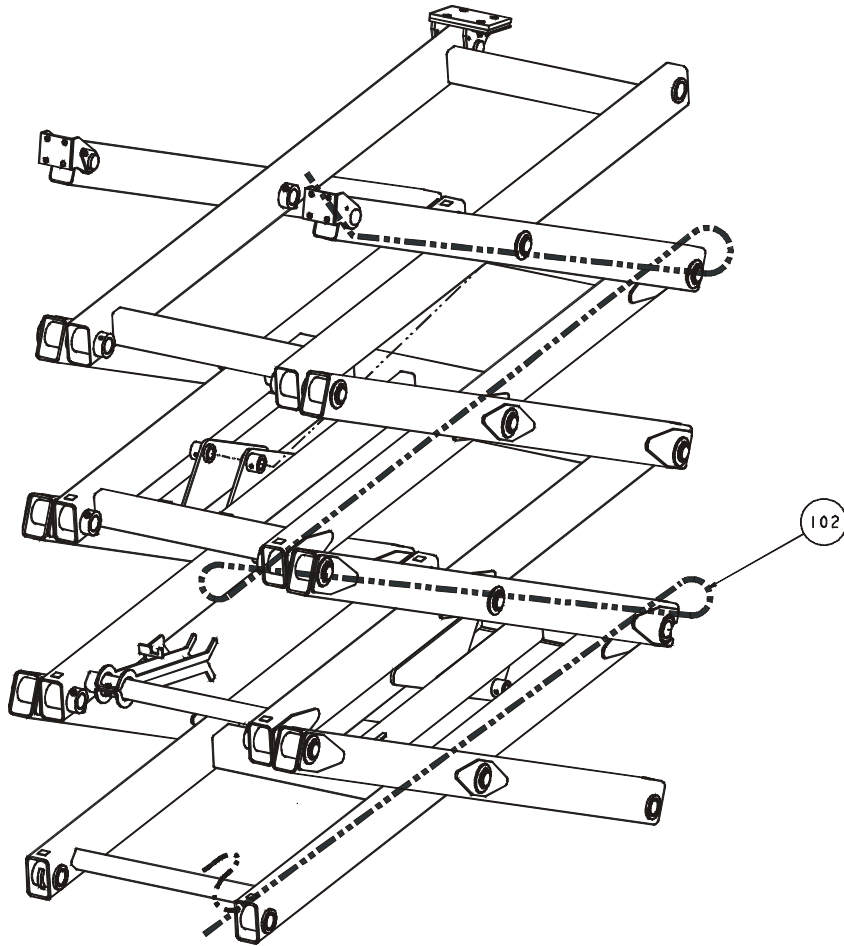
PIN-OUT FOR  
'STACK SWITCH' CONNECTOR @ LOC 'H'

POS	WIRE	DESCRIPTION
1	102A	PWR 6" STACK
2	PLUG	SPARE
3	PLUG	SPARE
4	106	FROM STACK SWITCH

# GFCI Electrical Outlet



## GFCI Electrical Outlet

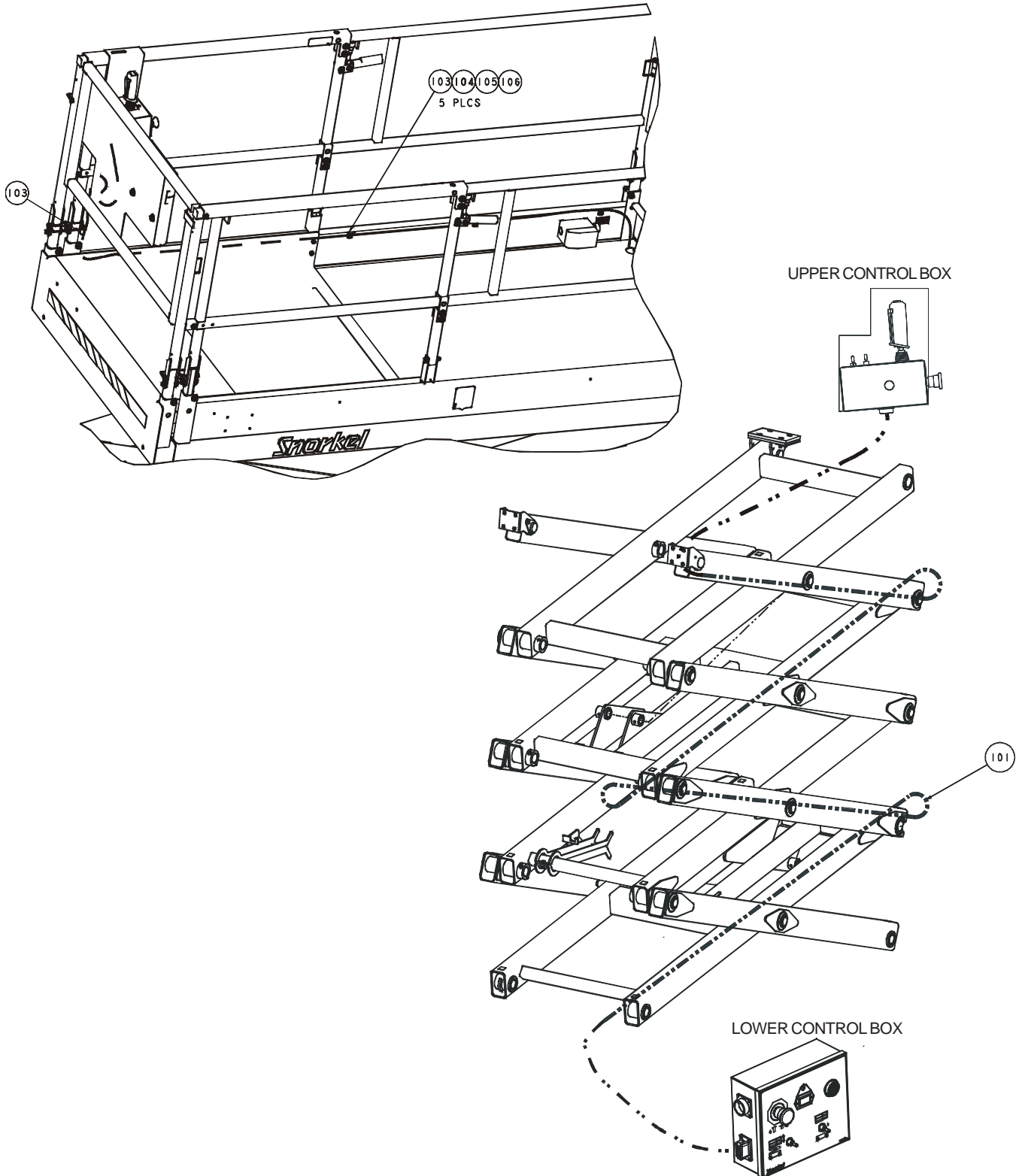


AW0410004

Item	Part No.	Qty.	Description
1	0074979	1	ELECTRICAL BOX DRILLED
2	986159	3	WSHR FLAT 6
3	3040252	1	CIRCUIT BREAKER 15 AMP
4	3040541	1	CONN .75 .25-.375
5	3040624	1	RECEPTICAL GFCI OUTLET 20AMP
6	3040625	1	COVER GFCI OUTLET WEATHERPROOF
7	3069521	1	FLANGE INLET 15A 125V
8	5560700	3	SCR TRHD 6-32 1.00
9	5569978	4	SCR HEXHD 8-32 .500 THREAD CUTTING
10	5569997	3	NUT LKG 6-32
12	0071582	1	WIRE 12 R10I FKD8I 4.5
13	3040397	1	TERM SPADE 8I 12/10
14	3044853	1	TERM R8I 12/10
102	3011403	38 ft	CABLE 14GA/3 CONDUCTOR - S2646
	3011403	48 ft	CABLE 14GA/3 CONDUCTOR - S3246

## Stack Harness Connection

Item	Part No.	Qty.	Description
101	0410046	1	STACK HARNESS S2546
	0371821	1	STACK HARNESS S3246
103	5093000	6	CUSHION CLAMP #7 (7/16)
104	974659	5	SCREW RDH MACH 10-24 .50
105	986009	5	WASHER FLAT 10
106	5560034	5	NUT LKG 10-24



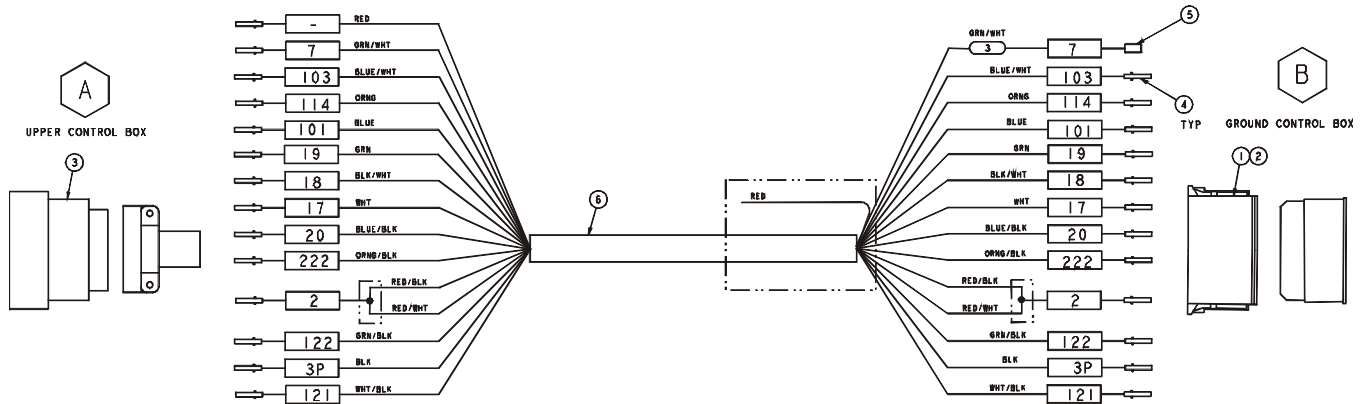




# Stack Harness – S2646 / S3246

Item	Part No.	Qty.	Description
	0410046	1	STACK HARNESS S2646
	0371821	1	STACK HARNESS S3246
1	3049814	1	LOCK WEDGE 12-PIN
2	3049813	1	CONNECTOR 12-PIN
3	3049861	1	PLUG 14-PIN
4	3040342	26	SOCKET CONTACT SIZE 16 16/18GA
5	3040046	1	TERM MALE250FI 22/18
6		AR	CABLE 18GA/15 CONDUCTOR

WIRE	DESCRIPTION	COLOR
2	POWER	RED/BLK-RED/WHT
3P	GROUND	BLK
17	DRIVE FORWARD	WHITE
18	DRIVE REVERSE	BLK/WHT
19	STEER LEFT	GRN
20	STEER RIGHT	BLUE/BLK
222	LIFT-PLATFORM	ORNG/BLK
101	OUTPUT FROM JOYSTICK	BLUE
103	DOWN-PLATFORM	BLU/WHT
114	RETURN POWER (TO LOWER CONTROL BOX)	ORNG
121	POT RESISTORS	WHT/BLK
7	DRIVE SPEED SWITCH	GRN/WHT
122	CENTER TAP	GRN/BLK
-	SPARE	RED



P	-	SPARE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTORS
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049861

UPPER CONTROL BOX @ LOCATION 'A'

12	103	DOWN-PLATFORM
11	114	RETURN POWER (TO LOWER CONTROL BOX)
10	101	OUTPUT FROM JOYSTICK
9	19	STEER LEFT
8	18	DRIVE REVERSE
7	17	DRIVE FORWARD
6	20	STEER RIGHT
5	222	LIFT-PLATFORM
4	2	POWER
3	122	CENTER TAP
2	3P	GROUND
1	121	POT RESISTORS
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049813

LOWER CONTROL BOX @ LOCATION 'B'

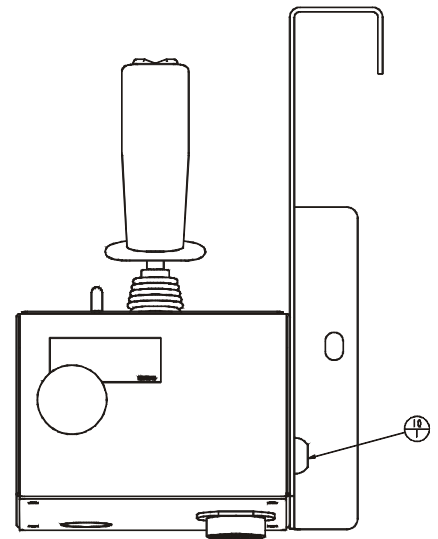
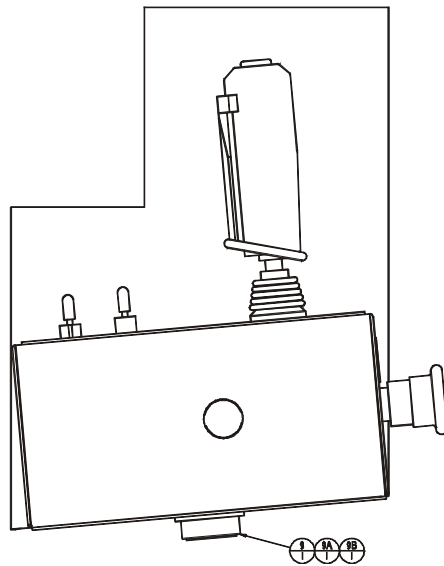
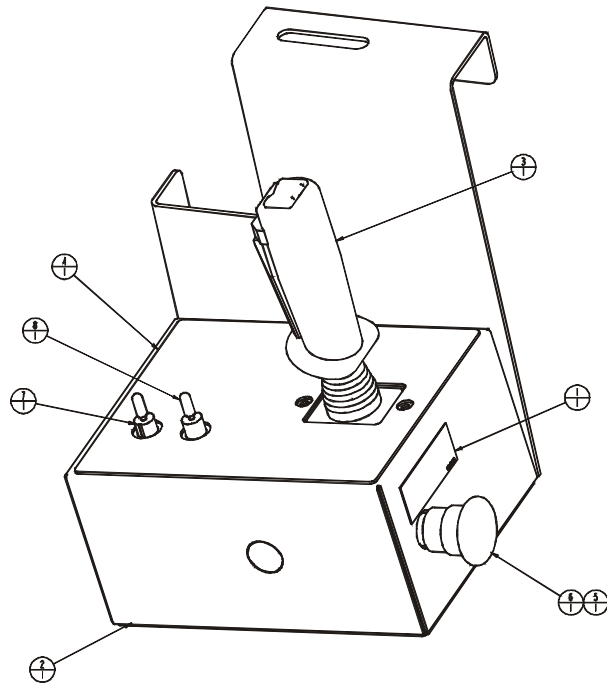


# Upper Control Box

Item	Part No.	Qty.	Description
	0371913	1	UPPER CONTROL BOX
1	0072545	1	DECAL EMERGENCY STOP
2	0361213	1	ASSY UPPER CONTROL BOX
3	0361449	1	JOYSTICK
4	0371912	1	PLAC UPPER CONTROL BOX 3246
5	446826	1	SW CONTACT BLOCK N.C.
6	446836	1	OPERATOR PUSH/PULL 2-POSITION
7	3020013	1	SW TGL SPST (ON/OFF) SEALED
8	3020097	1	SW TGL DPDT(ON/ON) SEALED
9	3049862	1	RECEPTACLE
9A	3040208	1	PANEL NUT
9B	3040209	1	WASHER LOCK
10	5560080	1	BUMPER ADHESIVE BACK
101	0361227	1	UPPER CONTROL BOX INTERNAL HARNESS

P	175	OVERLOAD LIGHT CE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

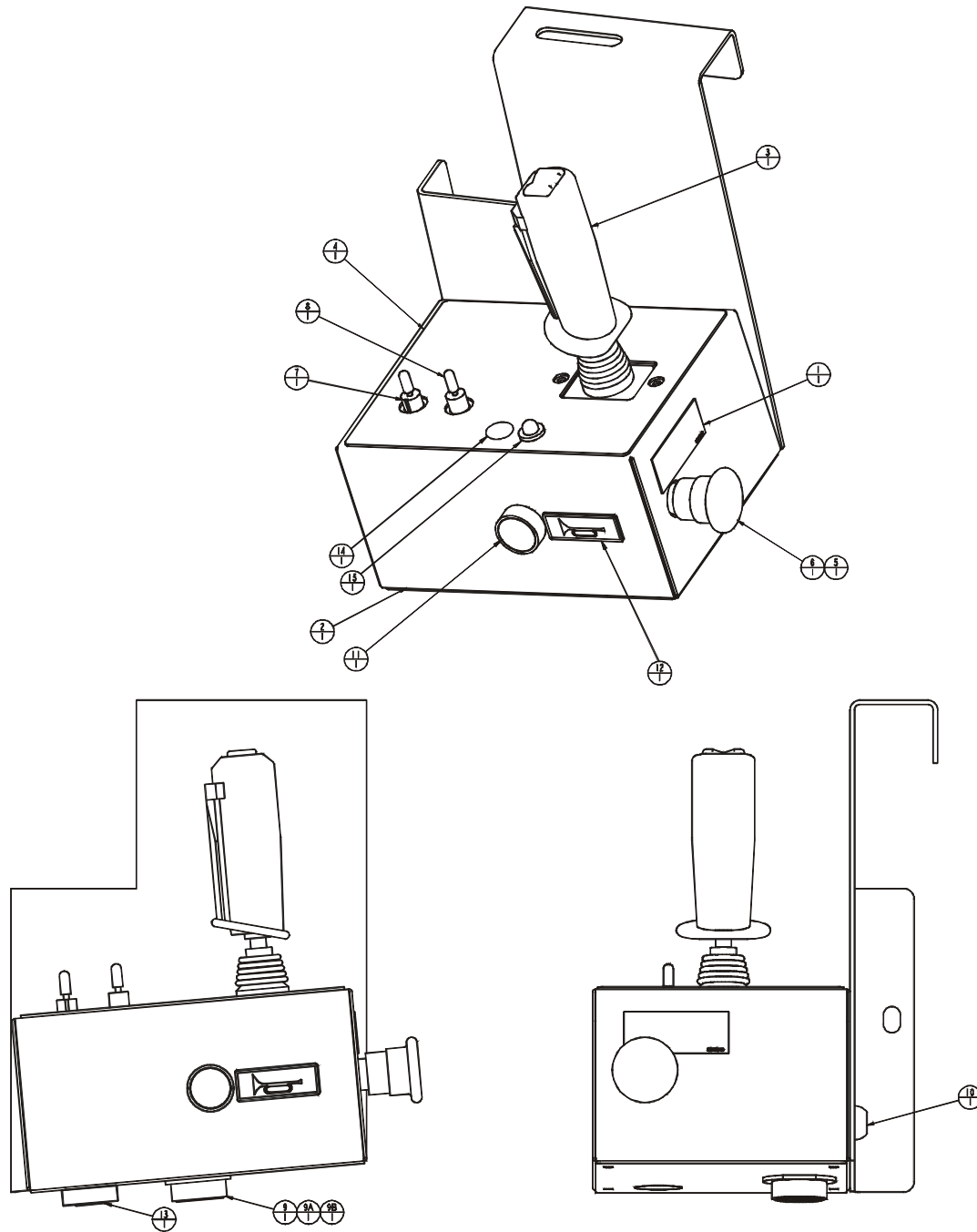
DEUTSCH RECEPT CONNECTOR



0371913 C



# Upper Control Box – CE



P	175	OVERLOAD LIGHT CE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

DEUTSCH RECEPT CONNECTOR

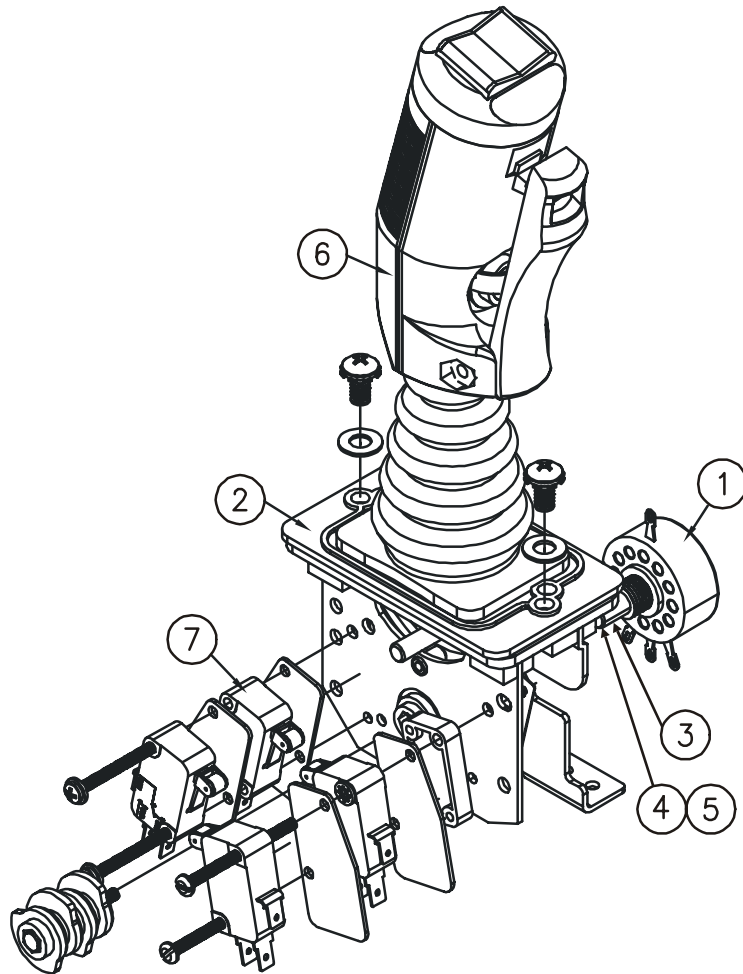
AW0372025

## Upper Control Box – CE

Item	Part No.	Qty.	Description
	0372025	1	UPPER CONTROL BOX - CE
1	0072545	1	DECAL EMERGENCY STOP
2	0361213	1	ASSY UPPER CONTROL BOX
3	0361449	1	JOYSTICK
4	0371912	1	PLAC UPPER CONTROL BOX 3246
5	446826	1	SW CONTACT BLOCK N.C.
6	446836	1	OPERATOR PUSH/PULL 2-POSITION
7	3020013	1	SW TGL SPST ON OFF SEALED
8	3020097	1	SW TGL DPDT(ON/ON) SEALED
9	3049862	1	RECEPTACLE
9A	3040208	1	PANEL NUT
9B	3040209	1	WASHER LOCK
10	5560080	1	BUMPER ADHESIVE BACK
11	3026027	1	SW PUSH BUTTON
12	0071269	1	DECAL HORN
13	3040411	1	ALARM MINI SIREN
14	0361497	1	DECAL OVERLOAD
15	302829	1	LIGHT RED
			<b>Following items not shown, inside of control box</b>
	0361227	1	UPPER CONTROL BOX INTERNAL HARNESS
	0361299	1	ADAPTER HARNESS
	0361314	1	HORN JUMPER WIRE
	3043813	1	CONN AMP PLUG
	0081558	1	WIRE 16 R6 FEM250FI 4
	3014720	1	WIRE, DIODE SPECIAL

## Controller, Upper Control Box

Item	Part No.	Qty.	Description
	0361449	1	JOYSTICK
1	0361510	1	POTENTMTR
2	8150244	1	BOOT AND GASKET
3	8150245	1	GEAR AND COUPLING ASSY (includes items 4 and 5)
4	8150246	1	GEAR-SLAVE
5	8150247	1	COUPLING-POT
6	8150248	1	ROCKER GRIP HANDLE
7	8150249	1	MICROSWITCH







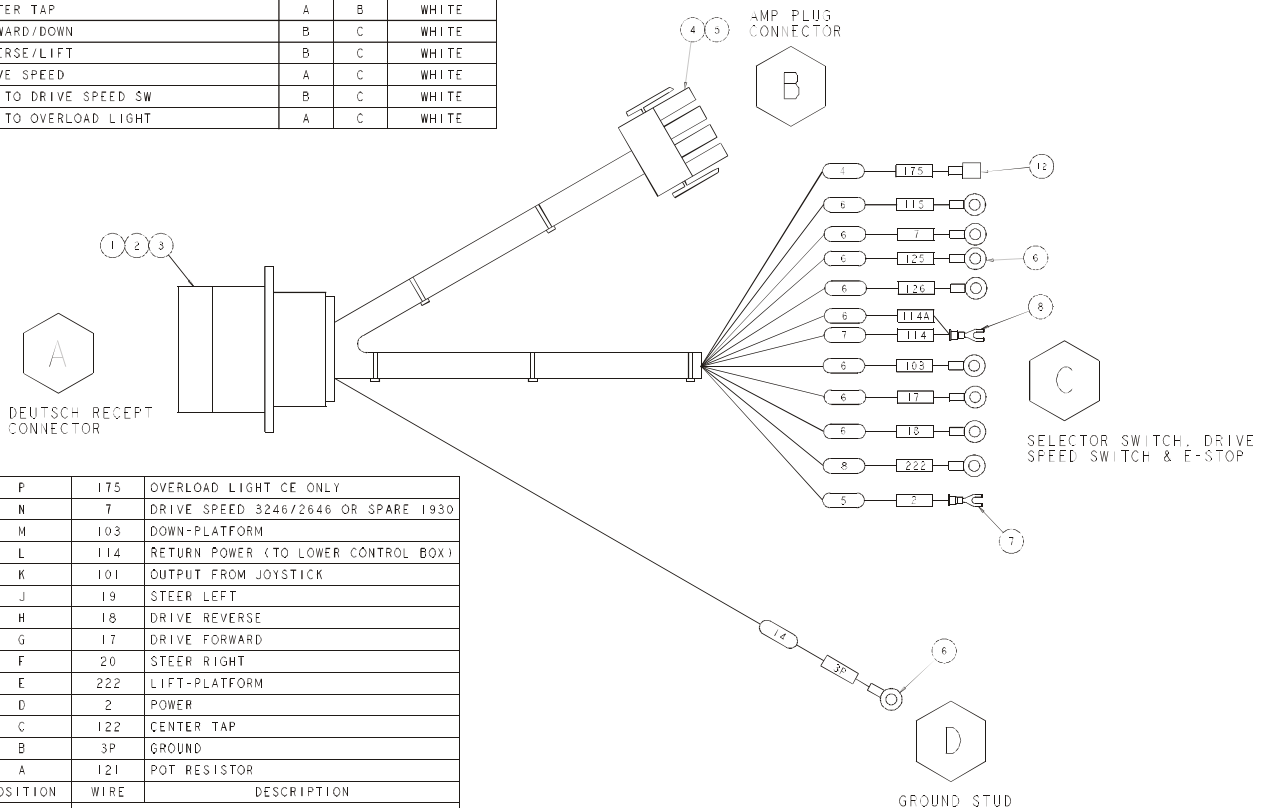
## Wire Harness, Internal – Upper Control Box

Item	Part No.	Qty.	Description
1	0361227	1	WIRE HARNESS
1	3049862	1	RECEPT
2	3040341	12	PIN CONTACT SIZE 16 16/18 GA
3	3040097	2	SEALING PLUG -16 DEUTSCH
4	3049993	1	CONN AMP 12-PIN PLUG
5	3049985	8	AMP PIN CONTACT 20/14 GA
6	3044142	7	TERM R6I 22/18
7	3049994	2	TERM SPADE6I 22/16 GA
8	960359	1	TERM SPADE6I 18-14GA
12	3040046	1	TERM MALE250FI 18/22

WIRE	DESCRIPTION	LOC	LOC	COLOR
2	POWER	A	C	RED
3P	GROUND	A	D	BLACK
17	DRIVE FORWARD	C	A	WHITE
18	DRIVE REVERSE	C	A	WHITE
19	STEER LEFT	B	A	WHITE
20	STEER RIGHT	B	A	WHITE
222	LIFT-PLATFORM	C	A	WHITE
101	OUTPUT FROM JOYSTICK	B	A	WHITE
103	DOWN-PLATFORM	C	A	WHITE
114	RETURN POWER (TO LOWER CONTROL BOX)	C	A	RED
114A	POWER TO JOYSTICK	C	B	RED
121	POT RESISTOR	A	B	WHITE
122	CENTER TAP	A	B	WHITE
125	FORWARD/DOWN	B	C	WHITE
126	REVERSE/LIFT	B	C	WHITE
7	DRIVE SPEED	A	C	WHITE
115	PWR TO DRIVE SPEED SW	B	C	WHITE
175	PWR TO OVERLOAD LIGHT	A	C	WHITE

12		SPARE
11		SPARE
10	122	CENTER TAP
9	101	OUTPUT FROM JOYSTICK
8	115	PWR DRIVE SPEED SW
7	126	REVERSE/LIFT
6	121	POT RESISTOR
5		SPARE
4	125	FORWARD/DOWN
3	20	STEER RIGHT
2	114A	POWER TO JOYSTICK
1	19	STEER LEFT
	POSITION WIRE	DESCRIPTION
CONNECTOR		3049993

AMP PLUG CONNECTOR @ LOCATION 'B'



P	175	OVERLOAD LIGHT CE ONLY
N	7	DRIVE SPEED 3246/2646 OR SPARE 1930
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

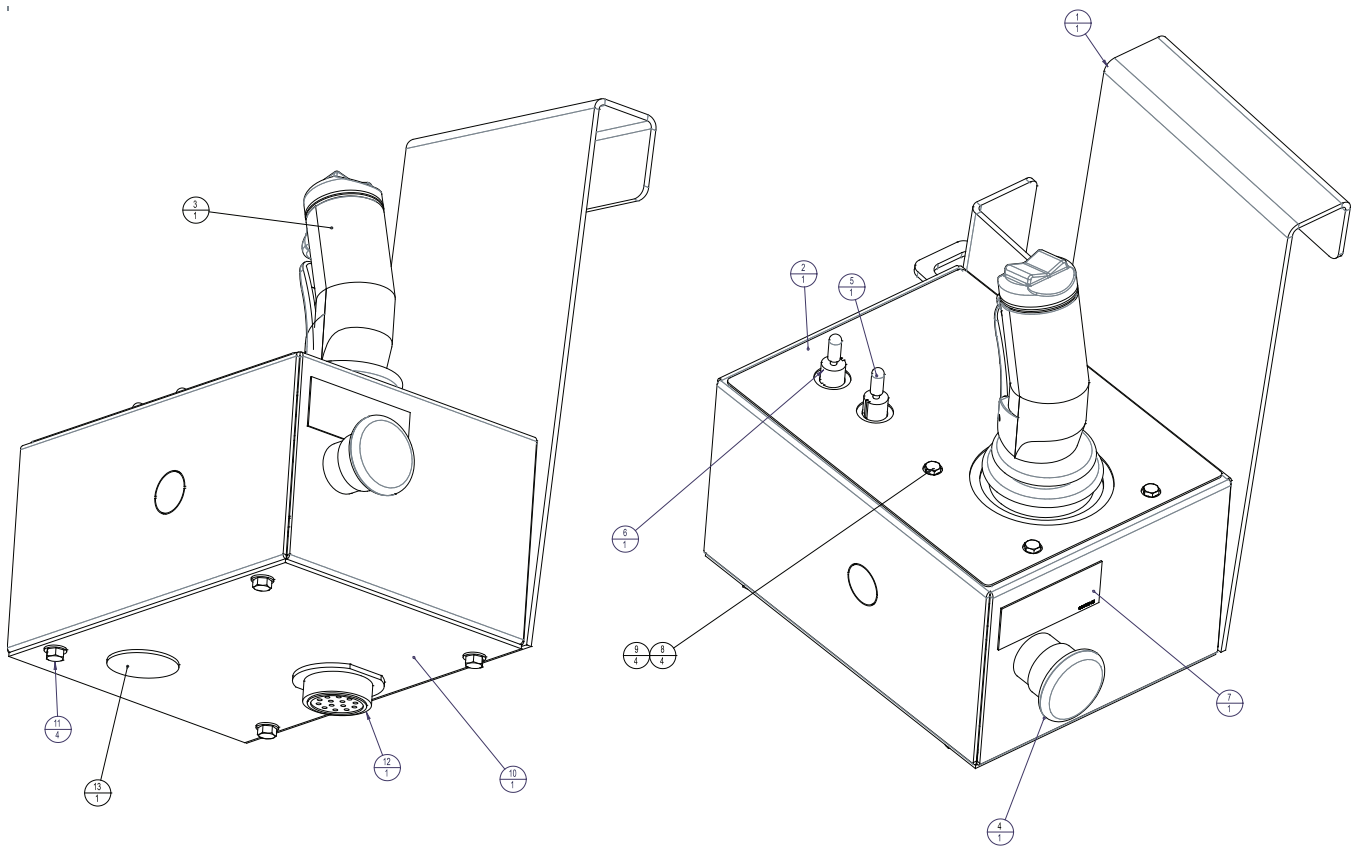
DEUTSCH RECEPT CONNECTOR @ LOCATION 'A'

0361227 C



## Upper Control Box ANSI – S2646E/S3246E

Item	Part No.	Qty.	Description
1	1370352	1	WLDMT, PLATFORM
2	1370375	1	PLAC, PLATFORM CONTROL BOX
3	3087801	1	JOYSTICK (REFER TO ELECTRICAL – 40.5)
4	510524-000	1	PUSH/PULL SW ASSY W/NC CONTACT
5	3020047	1	SW TGL SPDT (ON/NONE/ON)
6	3020013	1	SW TGL SPST ON OFF
7	0072545	1	DECAL, EMERGENCY STOP
8	512459-025	4	HHCS M4 X 0.7 X 25 G8.8 ISO 4017 DIN 933
9	056066-004	4	NUT HEX M4 X 0.70 GR 8.8 SELF LOCKING DIN 985
10	1370353	1	PLT, PLAT CONT
11	5563175	4	SCR SLFTPG M6 X 1 5LG
12	1420308	1	UPPER HARNESS PLATF CONTROL
13	3040410	1	HOLE PLUG 1.125

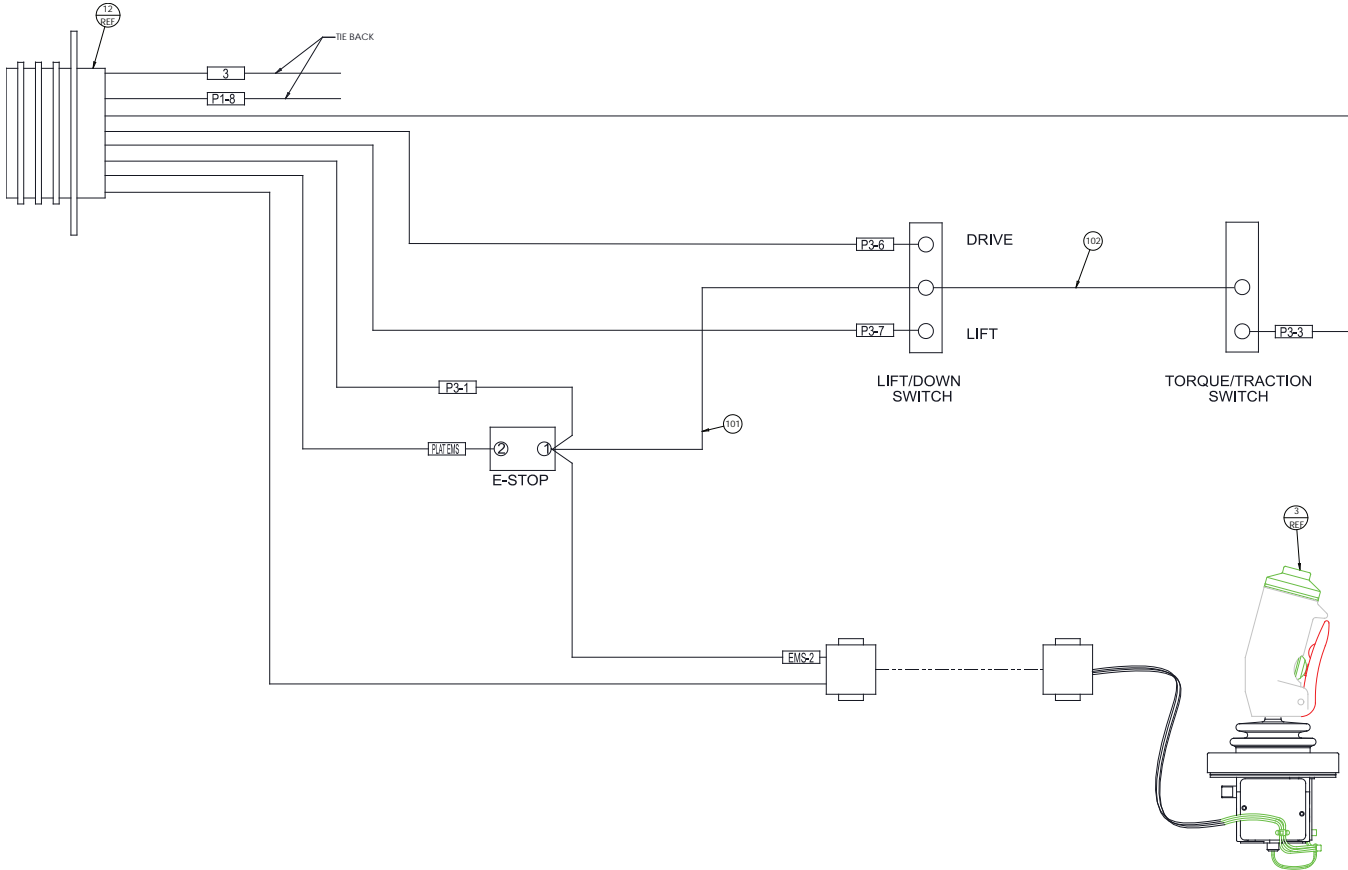


## Upper Control Box ANSI – S2646E/S3246E

1370351 C

## Controller Upper Control Box ANSI – S2646E/S3246E

Item	Part No.	Qty.	Description
101	1370366	1	WIRE 18 R6I SPADE8I 8
102	0071515	1	WIRE 18 R6I R6I5

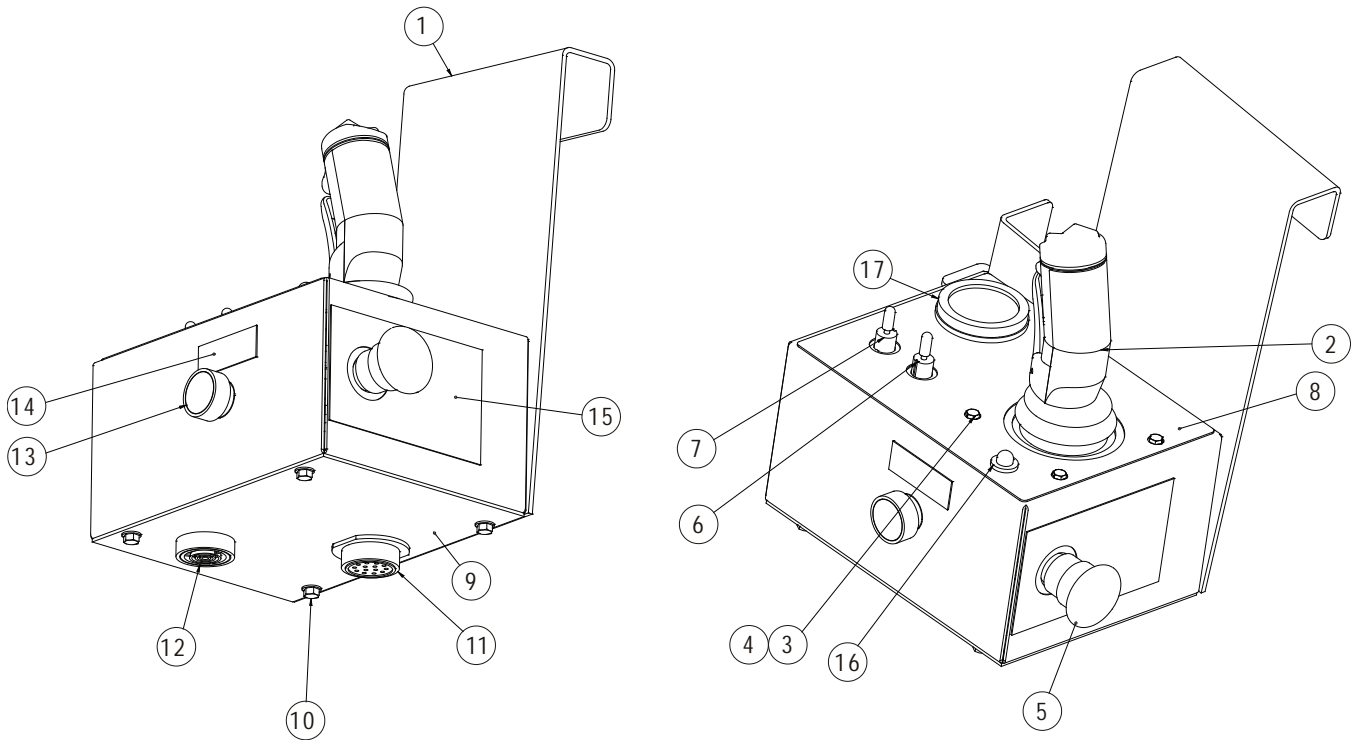


## Controller Upper Control Box ANSI – S2646E/S3246E

1370351 C

## Upper Control Box CE/AU – S2646E/S3246E

Item	Part No.	Qty.	Description
1	1370352	1	WLDMT, UPPER CONTROL BOX
2	3087801	1	JOYSTICK (REFER TO ELECTRICAL – 40.5)
3	512459-025	4	HHCS M4 X 0.7 x 25 G8.8 ISO 4017 DIN 933
4	056066-004	4	NUT LKG M4-0.70
5	510524-000	1	PUSH/PULL SW ASSY W/NC CONTACT
6	3020047	1	SW TGL SPDT (ON/NONE/ON)
7	3020013	1	SW TGL SPST ON OFF
8	1420254	1	PLAC, UPPER CONTROL
9	1370353	1	PLT, PLAT CONT
10	5563175	4	SCR SLFTPG M6 X 1 5LG
11	1420308	1	HARNESS PLATF CONT
12	3040411	1	ALARM MINI SIREN
13	510542-000	1	SW PUSH BUTTON
14	0071269	1	DECAL, HORN
15	560272	1	DECAL, EMERGENCY STOP
16	510528-000	1	LIGHT RED 24 VDC
17	487696	1	BATTERY GAUGE

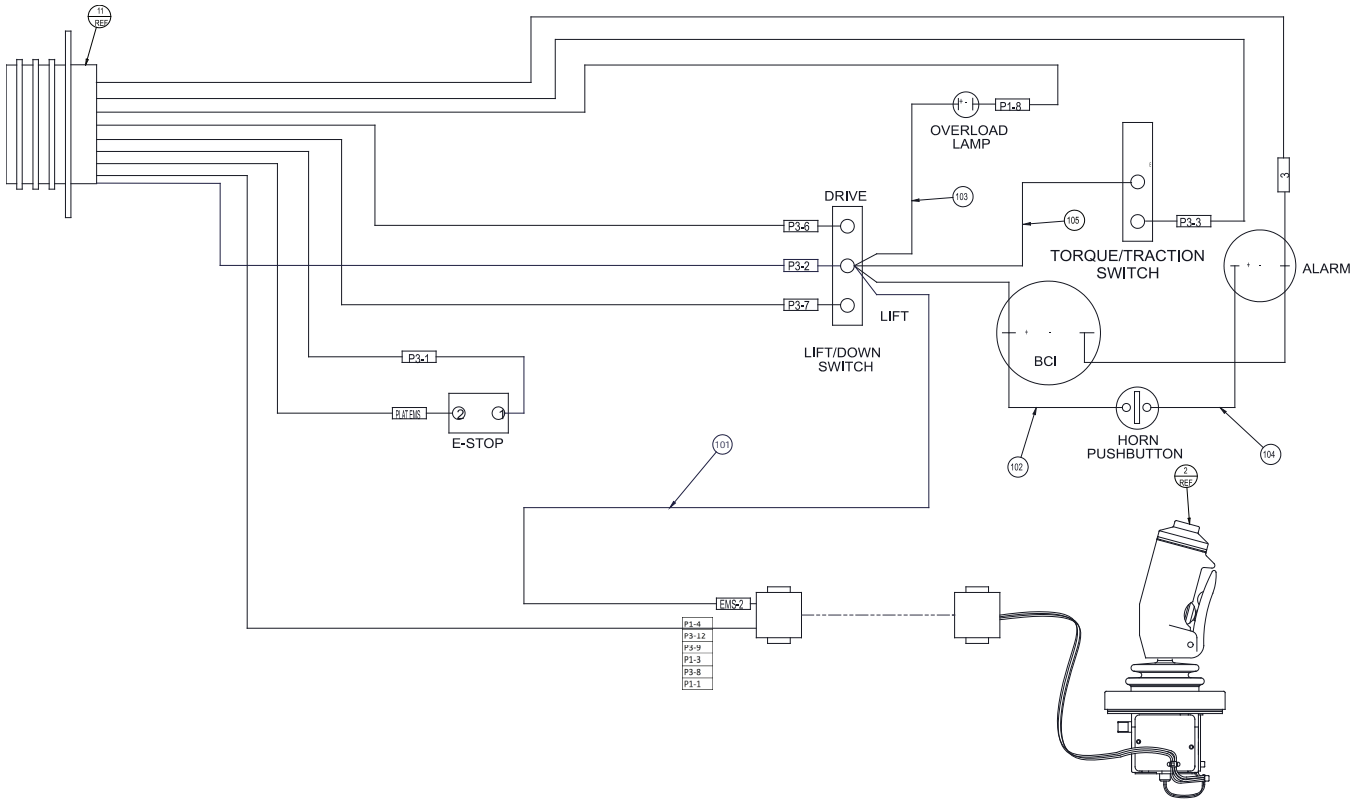


## Upper Control Box CE/AU – S2646E/S3246E

1420305 C

## Controller Upper Control Box CE/AU – S2646E/S3246E

Item	Part No.	Qty.	Description
101	1370366	1	WIRE 18 R6I SPADE8I 8
102	1360521	1	WIRE SPECIAL
103	0071546	1	WIRE R6I FEM188I 8
104	300804	1	WIRE 18 FEM250FI R8 6
105	0071515	1	WIRE 18 R6I R6I5

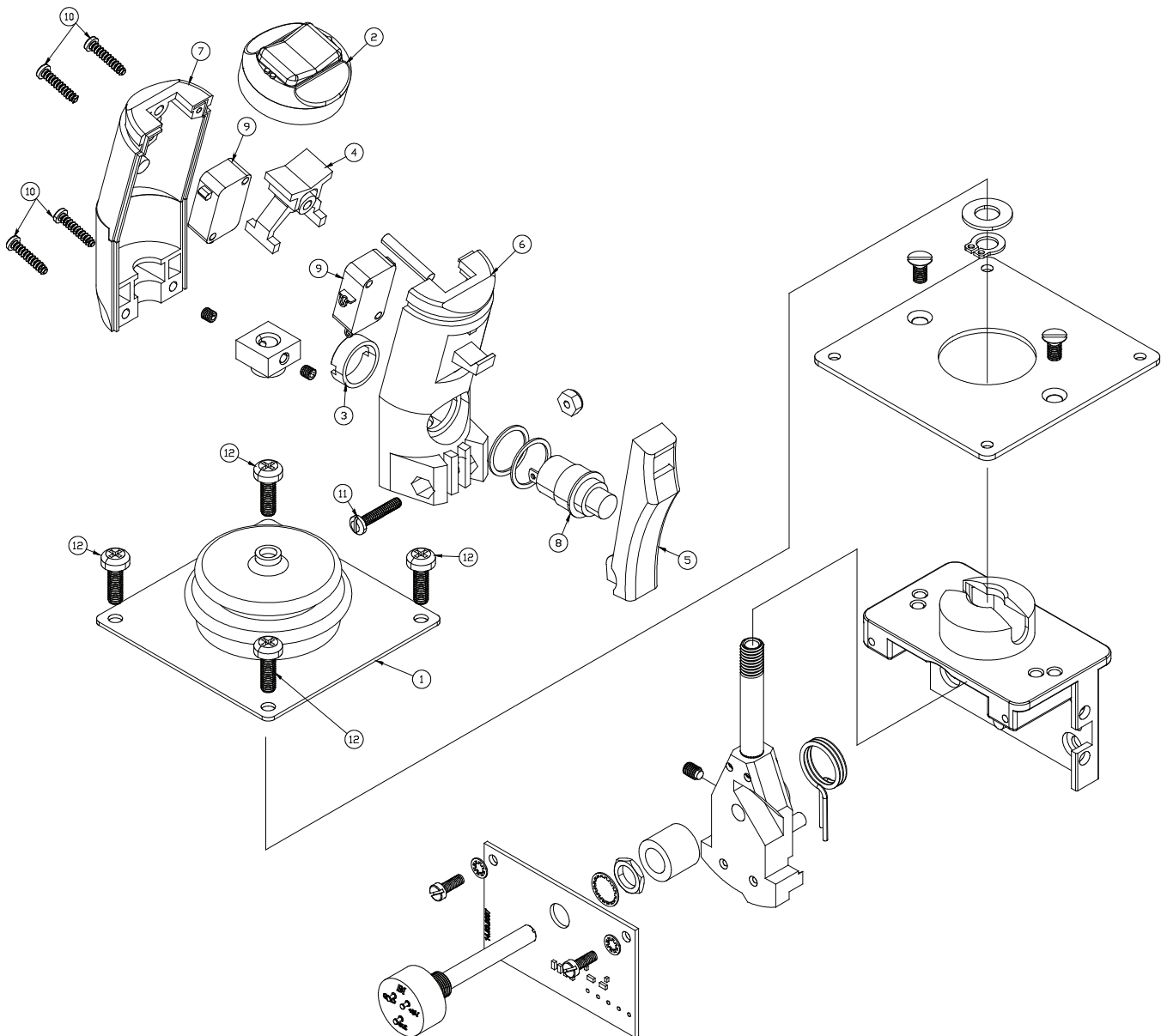


## Controller Upper Control Box CE/AU – S2646E/S3246E

1420305 C

## Joystick – S2646E/S3246E

Item	Part No.	Qty.	Description
	3087801	1	JOYSTICK – INCLUDES ITEMS 1 THROUGH 12
1	3087816	1	RING, RETAINING, BOOT
2	3087807	1	BOOT, BH HANDLE
3	3087814	1	SPACER, PLASTIC
4	3087808	1	ACTUATOR, BH HANDLE
5	3087811	1	LEVER, ENABLER, BH HANDLE
6	3087819	1	GASKET, BH HANDLE
7	3087820	1	GASKET, BH HANDLE
8	3087810	1	PUSHBUTTON, MOMENTARY (BLACK)
9	3087806	2	MICROSWITCH, BH HANDLE
10	3087815	4	SCREW, BH HANDLE
11	3087813	1	SCREW, BH HANDLE
12	5563176	4	MACHINE SCREW M5 X 16 PAN H



## Joystick – S2646E/S3246E

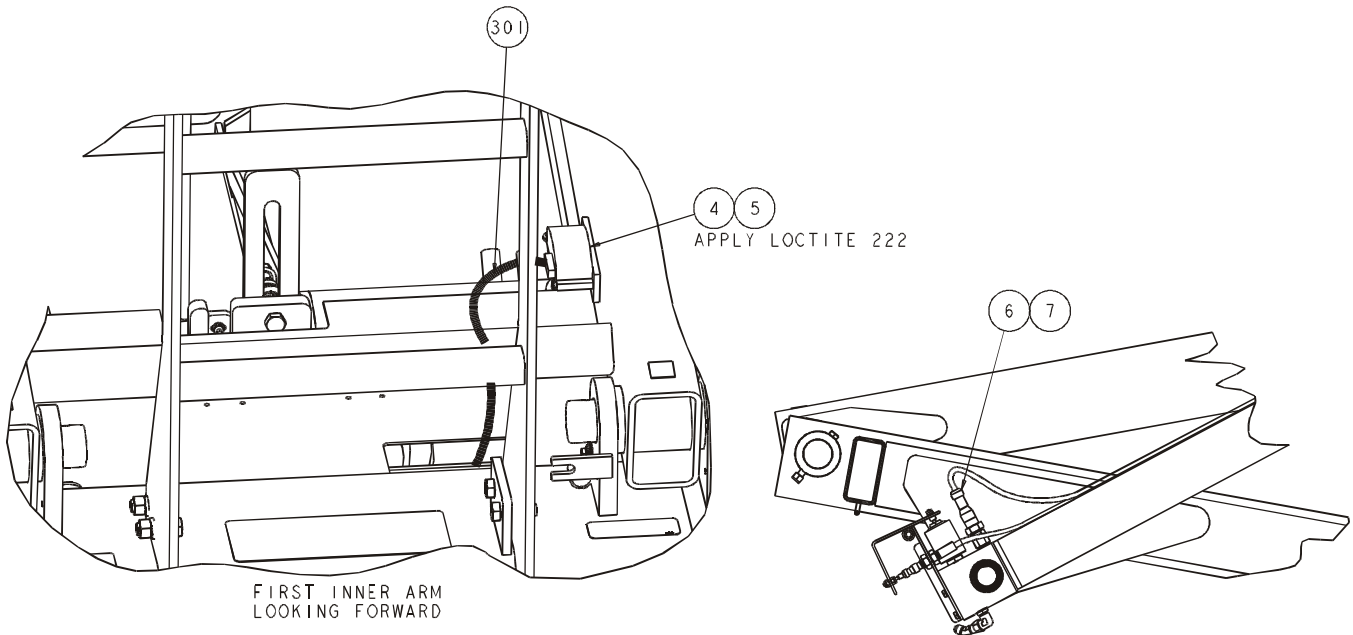
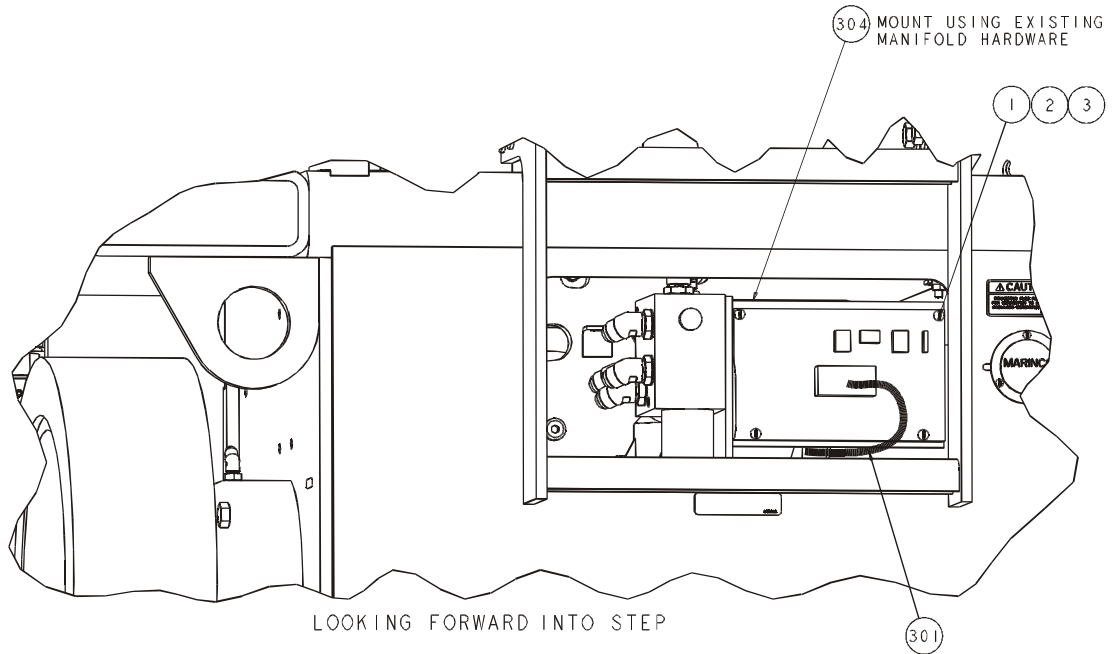
3087801 B





## Overload System – CE

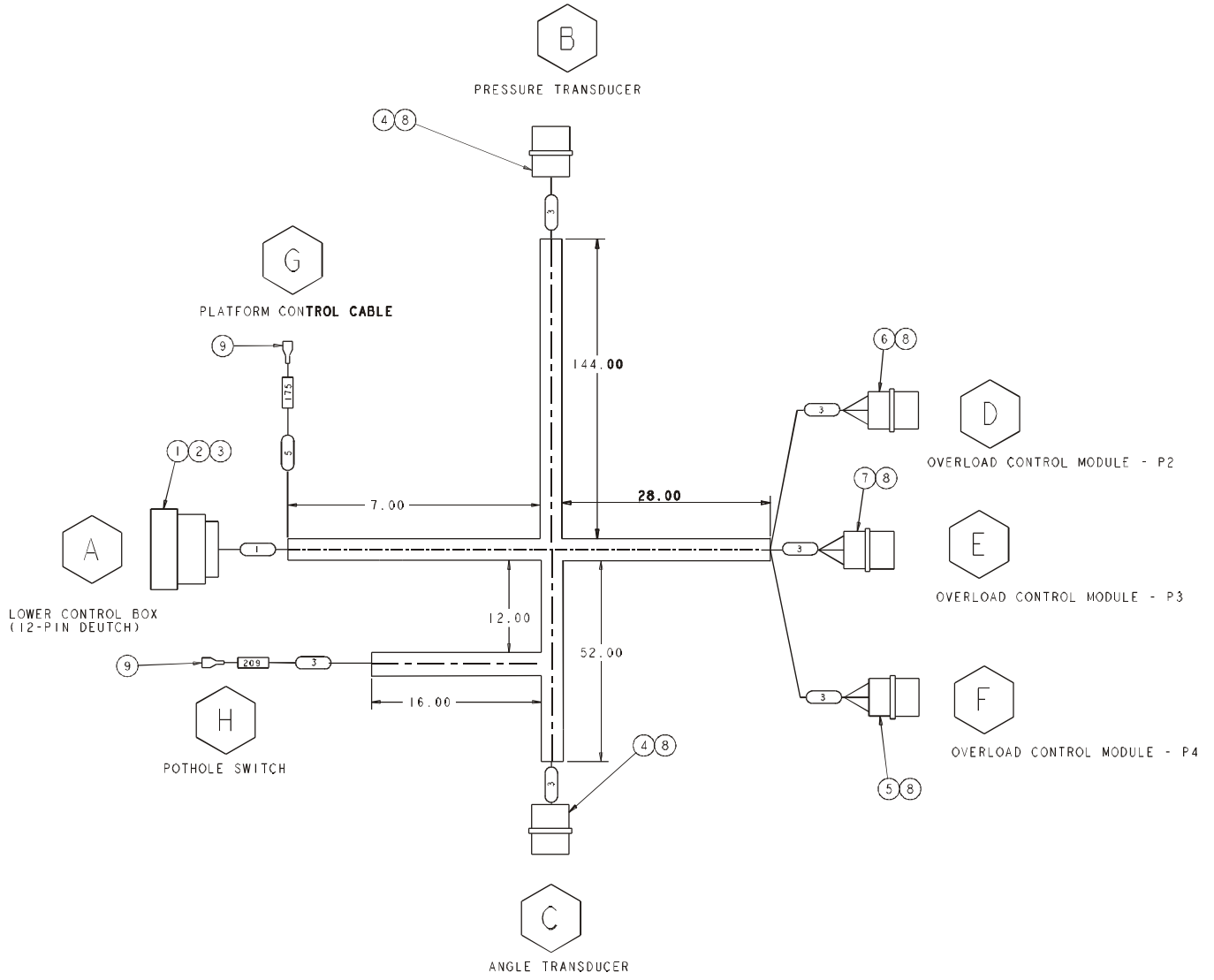
Item	Part No.	Qty.	Description
1	303015628	1	OVERLOAD CONTROLLER GP102
	3072123	1	CALIBRATION / DIAGNOSTIC TOOL (must be used to program Overload Controller when replaced)
2	974579	4	SCREW RHD MACH 10-32 X 1.25
3	5560038	4	NUT LKG 10-32
4	3030157	1	ANGLE TRANSDUCER
5	974749	2	SCREW RHD MACH 10-24 X 1.75
6	3030158	1	PRESSURE TRANSDUCER
7	614986	1	FTG RDCR/EXP-6S-4S STL
8	3040082	2	TERM MALE 250FI 16/14
301	0361489	1	HARNESS, OVERLOAD
304	0372046	1	BRKT, OVERLOAD MODULE MNT



0361496C



# Wire Harness, Overload System – CE



12	PLUG	SPARE
11	22	LIFT
10	18	DRIVE REVERSE
9	17	DRIVE FORWARD
8	103	DOWN SWITCH
7	113	GROUND CONTROL POWER
6	118	OUTPUT TO ALARM
5	114	PLATFORM POWER
4	102	OVERLOAD MODULE MAIN POWER
3	135	OVERLOAD MODULE OUTPUT 24V
2	106	STACK SWITCH
1	3	GROUND
POSITION	WIRE	DESCRIPTION
CONNECTOR	3049973	

PIN-OUT FOR 12 PIN DEUTCH CONN  
LOWER CONTROL BOX @ LOCATION 'A'

POS	WIRE	DESCRIPTION
1	301	24V SUPPLY
2	302	OUTPUT
3	303	0V SUPPLY

PIN-OUT FOR 3 PIN AMP CONN  
PRESSURE TRANSDUCER @ LOC 'B'

POS	WIRE	DESCRIPTION
1	304	24V SUPPLY
2	305	OUTPUT
3	306	0V NEG REF

PIN-OUT FOR 3 PIN AMP CONN  
ANGLE TRANSDUCER @ LOC 'C'

12	102	MAIN POWER
11	3	GROUND
10	106	STACK SWITCH
9	209	POTHOLE SWITCH
8	18	DRIVE REVERSE
7	17	DRIVE FORWARD
6	-	SPARE NOT USED
5	-	SPARE NOT USED
4	103	DOWN SWITCH
3	22	LIFT
2	113	GROUND CONTROL POWER
1	114	PLATFORM POWER
POSITION	WIRE	DESCRIPTION
CONNECTOR	3049973	

PIN-OUT FOR 12 PIN AMP CONN  
OVERLOAD CONTROL - P2 @ LOCATION 'D'

POS	WIRE	DESCRIPTION
1	-	SPARE NOT USED
2	118	OUTPUT TO ALARM
3	175	OUTPUT TO LIGHT
4	135	24V CONTROL OUTPUT
5	-	SPARE NOT USED
6	-	SPARE NOT USED

PIN-OUT FOR 6 PIN AMP CONN  
OVERLOAD CONTROL - P3 @ LOC 'E'

POS	WIRE	DESCRIPTION
1	-	SPARE NOT USED
2	302	PRESSURE TRANS OUTPUT
3	305	ANGLE TRANS OUTPUT
4	-	SPARE NOT USED
5	-	SPARE NOT USED
6	304	24V SUPPLY TO ANGLE TRANS
7	303	0V PRESSURE SWITCH
8	306	0V ANGLE TRANS
9	301	24V SUPPLY TO PRESSURE SW

PIN-OUT FOR 9 PIN AMP CONN  
OVERLOAD CONTROL - P4 @ LOC 'F'

0361489B

## Wire Harness, Overload System – CE

Item	Part No.	Qty.	Description
	0361489	1	HARNESS, OVERLOAD SYSTEM
1	3049813	1	CONNECTOR 12-PIN PLUG
2	3049814	1	LOCK WEDGE 12-PIN
3	3040342	14	SOCKET CONTACT SIZE 16 16/18GA
4	3220022	2	CONN 3-PIN AMP
5	3220023	1	CONN 9-PIN AMP
6	3220024	1	CONN 12-PIN AMP
7	3220025	1	CONN 6-PIN AMP
8	3220026	25	SOCKET 16/18 GA AMP
9	3040083	2	TERM FEM250FI 16/14
10		AR	WIRE 16GA SINGLE CONDUCTOR BLK
11		AR	WIRE 16GA SINGLE CONDUCTOR WHT

WIRE	DESCRIPTION	WIRE GA	TERM	LOC	TERM	LOC	COLOR
3	GROUND-OVERLOAD CONTROL MODULE	16	ITEM 3	A	ITEM 8	D	BLACK
17	FORWARD SOLENOID	16	ITEM 3	A	ITEM 8	D	WHITE
18	REVERSE SOLENOID	16	ITEM 3	A	ITEM 8	D	WHITE
22	LIFT SOLENOID	16	ITEM 3	A	ITEM 8	D	WHITE
102	PWR OVERLOAD CONTROL MODULE	16	ITEM 3	A	ITEM 8	D	WHITE
103	DOWN SWITCH	16	ITEM 3	A	ITEM 8	D	WHITE
106	STACK SWITCH	16	ITEM 3	A	ITEM 8	D	WHITE
113	GROUND CONTROL MODE SIGNAL	16	ITEM 3	A	ITEM 8	D	WHITE
114	PLATFORM MODE SIGNAL	16	ITEM 3	A	ITEM 8	D	WHITE
118	ALARM OUTPUT FROM OVERLOAD C.M.	16	ITEM 3	A	ITEM 8	E	WHITE
135	24V OUTPUT FROM OVERLOAD C.M.	16	ITEM 3	A	ITEM 8	E	WHITE
175	OVERLOAD LIGHT OUTPUT	16	ITEM 8	E	ITEM 9	G	WHITE
209	POT HOLE SWITCH	16	ITEM 8	D	ITEM 9	H	WHITE
301	PRESSURE TRANS 24V SUPPLY	16	ITEM 8	F	ITEM 3	B	WHITE
302	PRESSURE TRANS OUTPUT (.5-4.5V)	16	ITEM 8	F	ITEM 3	B	WHITE
303	PRESSURE TRANS 0V	16	ITEM 8	F	ITEM 3	B	WHITE
304	ANGLE TRANS 24V SUPPLY	16	ITEM 8	F	ITEM 8	C	WHITE
305	ANGLE TRANS OUTPUT	16	ITEM 8	F	ITEM 8	C	WHITE
306	ANGLE TRANS 0V	16	ITEM 8	F	ITEM 8	C	WHITE

# *Options*

S2646E

S3246E

**S**2646

**S**3246



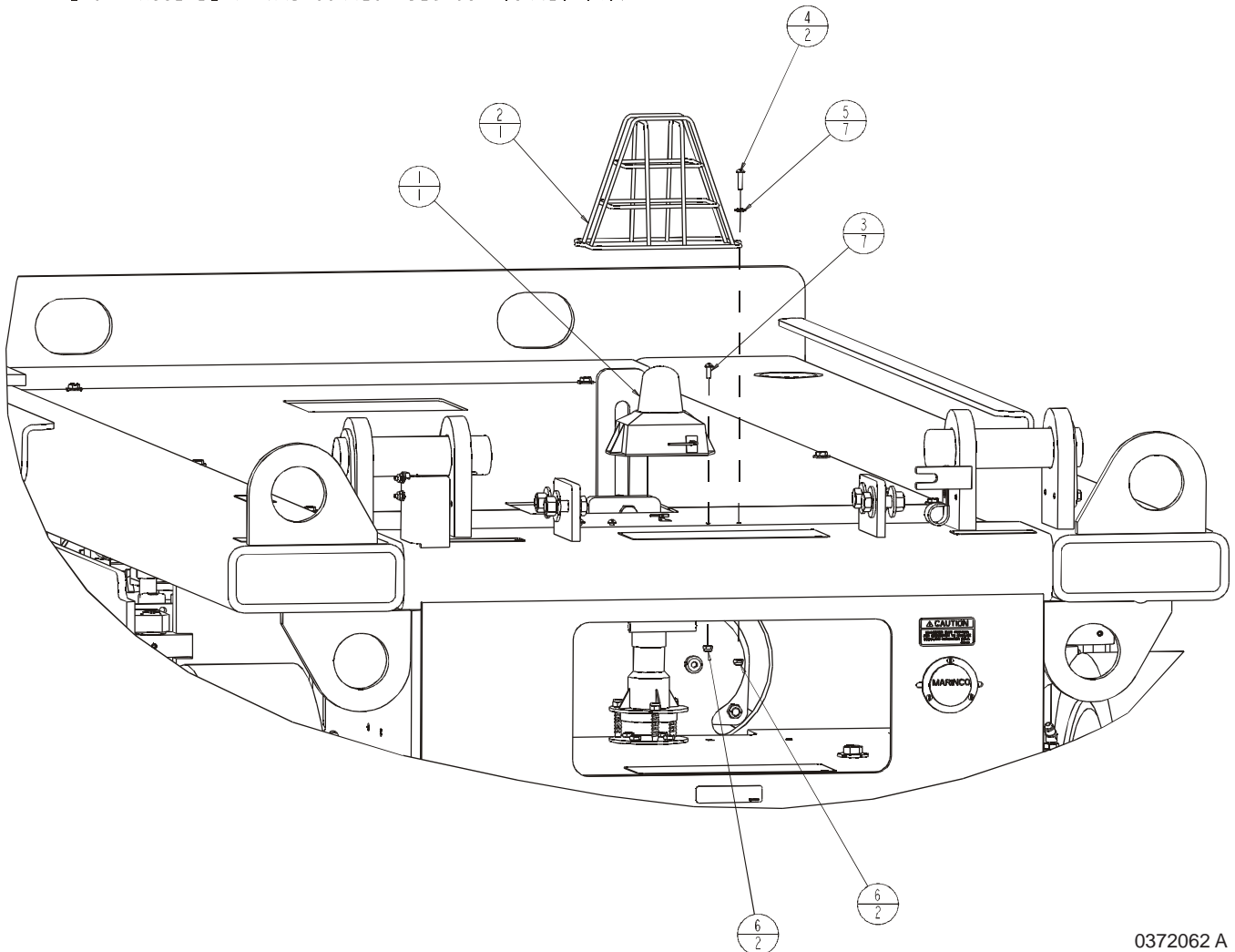
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## Flashing Light

Item	Part No.	Qty.	Description
1	0361297	1	FLASHING LIGHT ASSEMBLY
2	487686	1	GUARD FLASHG LIGHT
3	974659	2	SCREW RDH MACH 10-24 .500
4	974689	2	SCREW RDH MACH 10-24 .75
5	986009	2	WASHER FLAT 10
6	5560034	4	NUT LKG 10-24
101	0361295	1	FLASHING LIGHT CABLE
102	0361296	1	FLSH LIGHT ADAPTER HARN
103	3049803	1	CONNECTOR 2-PIN DEUTSCH PLUG
104	3049807	1	LOCK WEDGE 2-PIN DEUTSCH PLUG

**NOTES:**

1. REMOVE WIRE 114 (POSITION 11) AND WIRE 3P (POSITION 2) FROM STACK HARNESS CONNECTOR.
2. INSERT THESE WIRES INTO ITEM 103 (3049803-2-PIN DEUTSCH PLUG), WIRE 114 INTO POSITION 11 AND WIRE 3P INTO POSITION 2 AND SEAT ITEM 104 (3049807-LOCK WEDGE).
3. CONNECT ITEM 102 (0361296-ADAPTER HARNESS) TO THIS NEW PLUG.
4. INSERT WIRE 114B FROM ADAPTER HARNESS INTO POSITION 11 ON STACK HARNESS CONNECTOR.
5. INSERT WIRE 3B (BLACK) FROM ADAPTER HARNESS INTO POSITION 2 ON STACK HARNESS CONNECTOR.
6. CONNECT ITEM 101 (0361295-FLASHING LIGHT CABLE) TO THE ADAPTER HARNESS QUICK DISCONNECT TERMINALS.
7. RUN ITEM 101 (FLASHING LIGHT CABLE) TO ITEM 102 (FLASHING LIGHT ASSEMBLY) AND CONNECT DEUTSCH CONNECTORS.



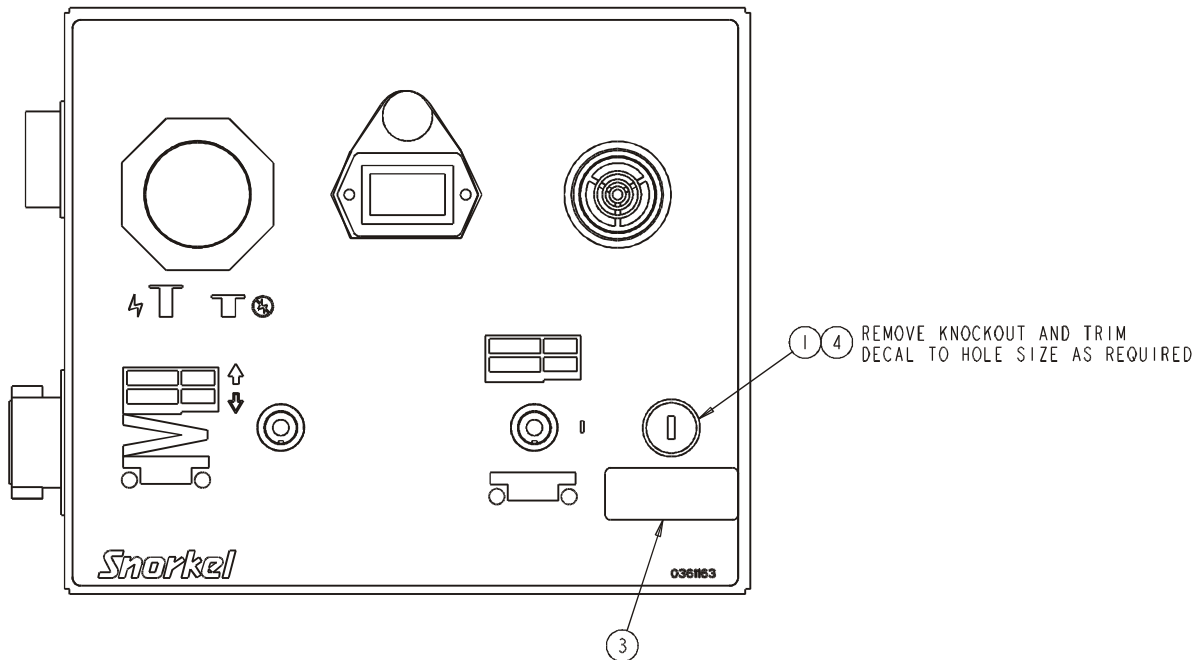
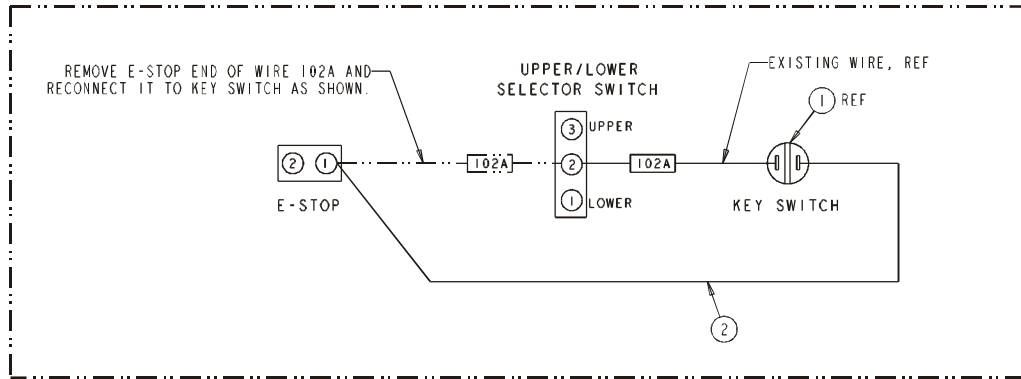
0372062 A

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## Key Switch, Lower Control Box

Item	Part No.	Qty.	Description
1	486756	1	SW,KEYED ALCO
2	302859	1	WIRE 18 R6I R6I 10 BLK
3	583146	1	DECAL KEY SWITCH ON/OFF
4	480006	1	O RING

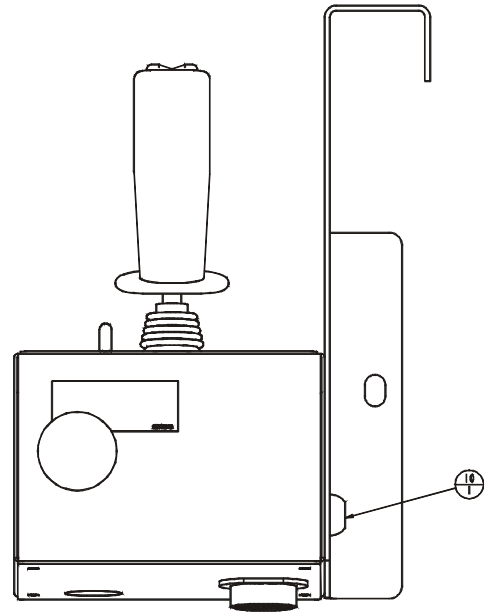
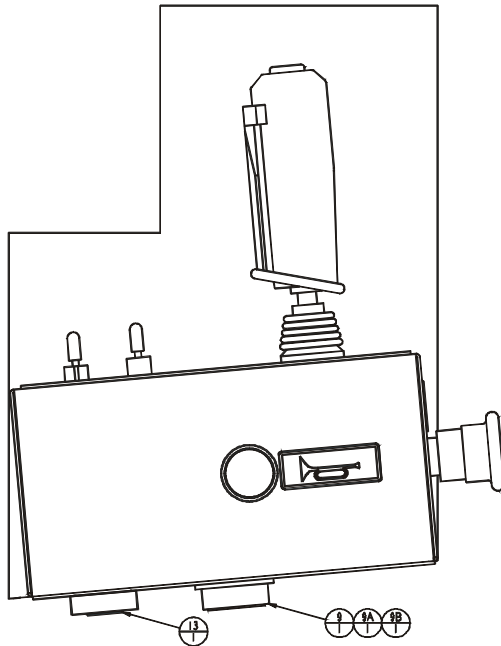
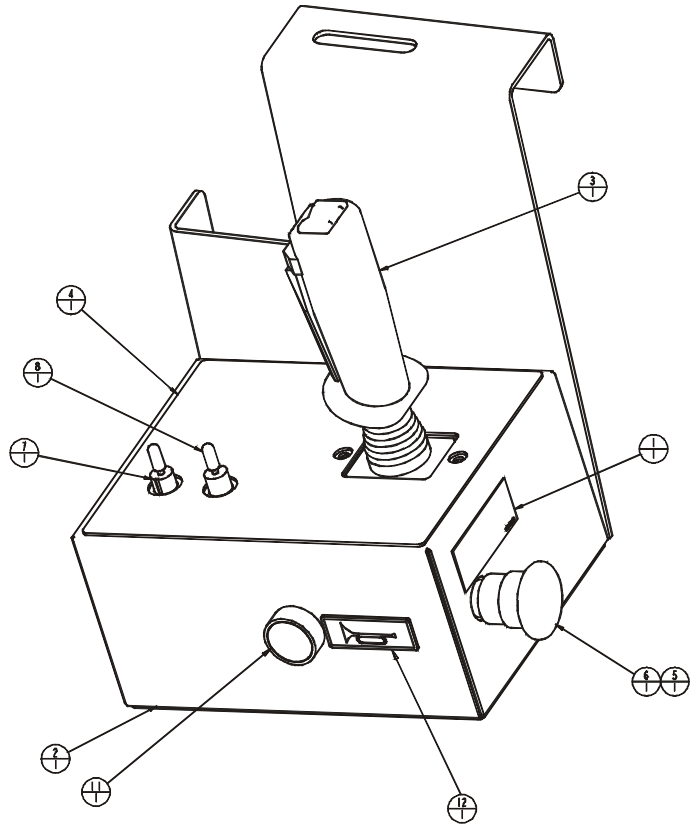


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# Upper Control Box with Horn

P	175	OVERLOAD LIGHT CE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

DEUTSCH RECEPT CONNECTOR



AW0371952

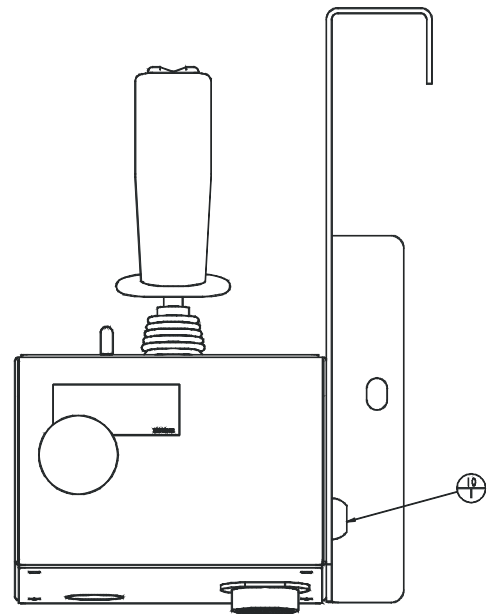
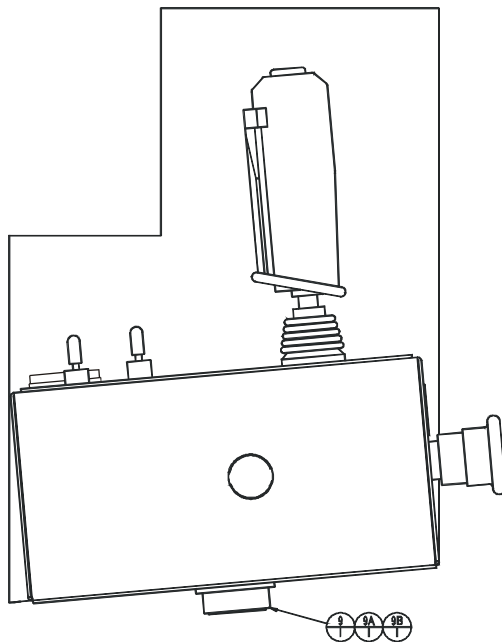
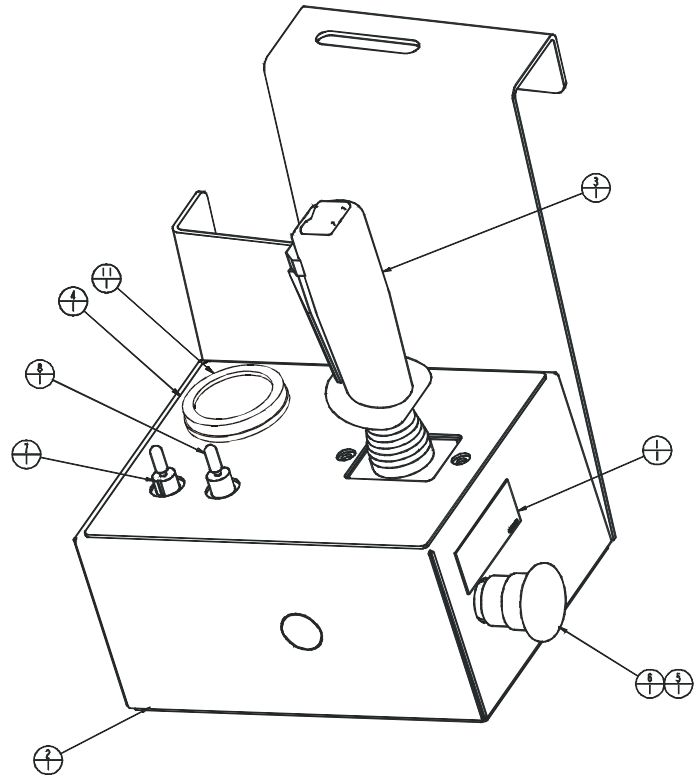
## Upper Control Box with Horn

Item	Part No.	Qty.	Description
	0371952	1	UPPER CONTROL BOX WITH HORN
1	0072545	1	DECAL EMERGENCY STOP
2	0361213	1	ASSY UPPER CONTROL BOX
3	0361449	1	JOYSTICK
4	0371912	1	PLAC UPPER CONTROL BOX 3246
5	446826	1	SW CONTACT BLOCK N.C.
6	446836	1	OPERATOR PUSH/PULL 2-POSITION
7	3020013	1	SW TGL SPST (ON/OFF) SEALED
8	3020097	1	SW TGL DPDT(ON/ON) SEALED
9	3049862	1	RECEPTACLE
9A	3040208	1	PANEL NUT
9B	3040209	1	WASHER LOCK
10	5560080	1	BUMPER ADHESIVE BACK
11	3026027	1	SW PUSH BUTTON
12	0071269	1	DECAL HORN
13	3040411	1	ALARM MINI SIREN
			<b>Following items not shown, inside of control box</b>
	0361227	1	UPPER CONTROL BOX INTERNAL HARNESS
	0361299	1	ADAPTER HARNESS
	0361314	1	HORN JUMPER WIRE
	3043813	1	CONN AMP PLUG

# Upper Control Box with Battery Condition Indicator

P	175	OVERLOAD LIGHT CE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

DEUTSCH RECEPT CONNECTOR



AW0371954

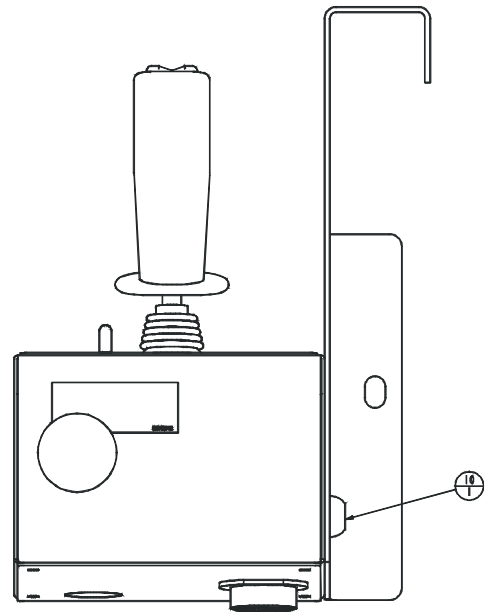
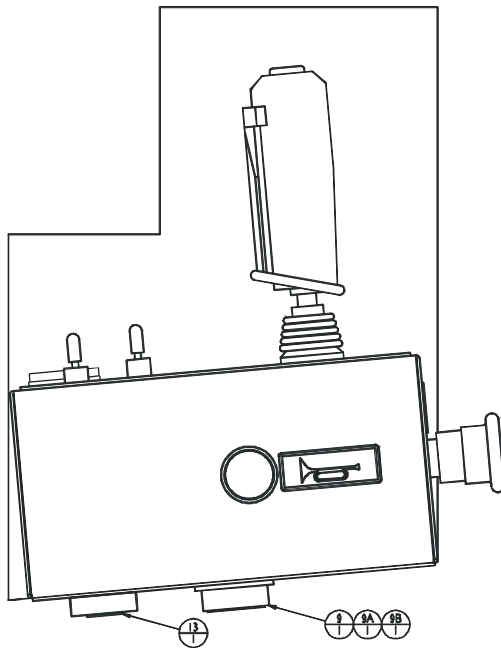
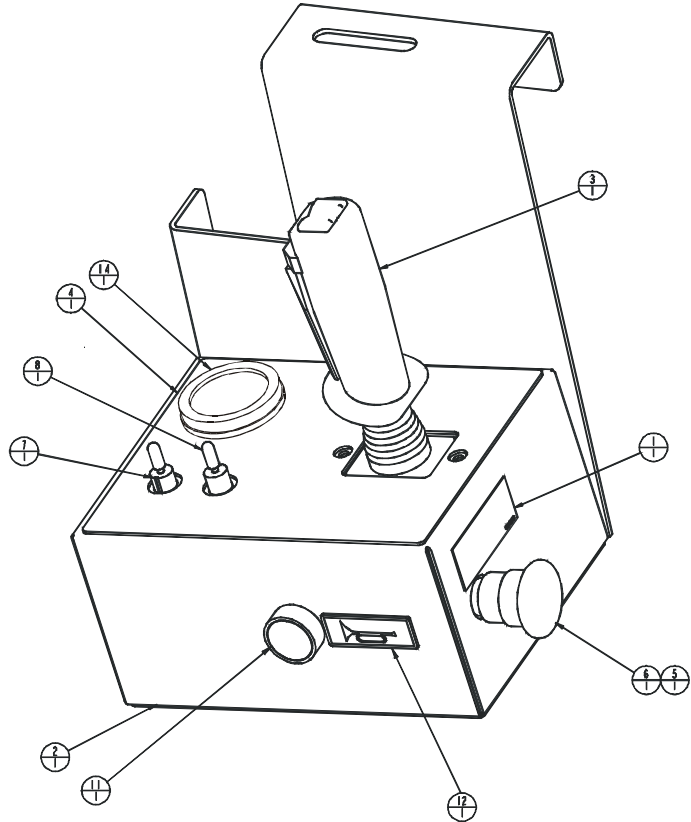
## Upper Control Box with Battery Condition Indicator

Item	Part No.	Qty.	Description
	0371954	1	UPPER CONTROL BOX WITH BATTERY CONDITION INDICATOR
1	0072545	1	DECAL EMERGENCY STOP
2	0361213	1	ASSY UPPER CONTROL BOX
3	0361449	1	JOYSTICK
4	0371912	1	PLAC UPPER CONTROL BOX 3246
5	446826	1	SW CONTACT BLOCK N.C.
6	446836	1	OPERATOR PUSH/PULL 2-POSITION
7	3020013	1	SW TGL SPST (ON/OFF) SEALED
8	3020097	1	SW TGL DPDT(ON/ON) SEALED
9	3049862	1	RECEPTACLE
9A	3040208	1	PANEL NUT
9B	3040209	1	WASHER LOCK
10	5560080	1	BUMPER ADHESIVE BACK
11	487696	1	BATTERY GAUGE
			<b>Following items not shown, inside of control box</b>
	0361227	1	UPPER CONTROL BOX INTERNAL HARNESS
	0361299	1	ADAPTER HARNESS
	0361315	1	BATT COND JUMPER WIRE
	3043813	1	CONN AMP PLUG

# Upper Control Box with Horn and Battery Condition Indicator

P	175	OVERLOAD LIGHT CE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

DEUTSCH RECEPT CONNECTOR



AW0371956

## Upper Control Box with Horn and Battery Condition Indicator

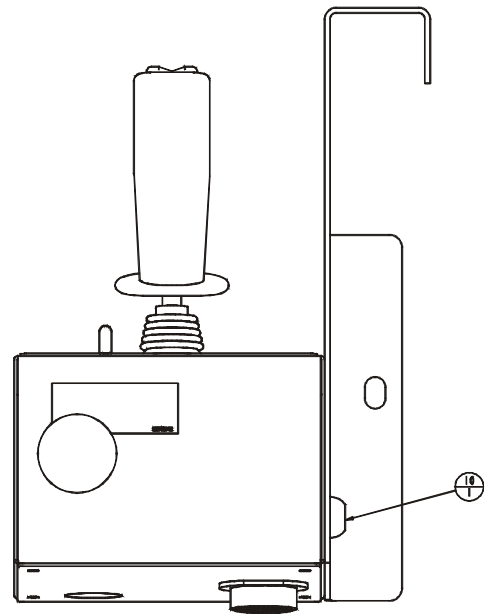
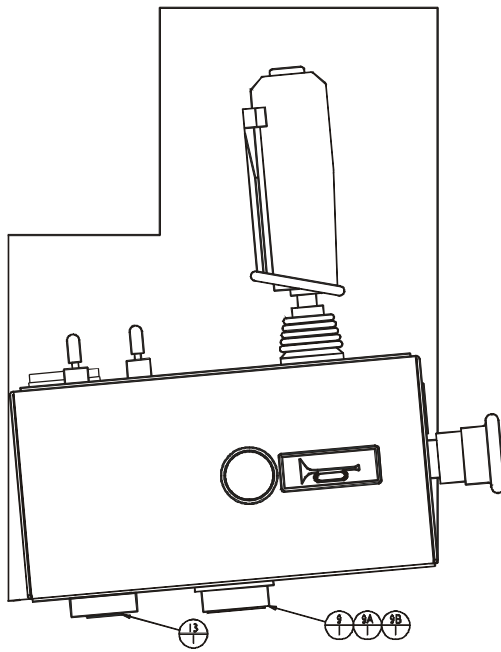
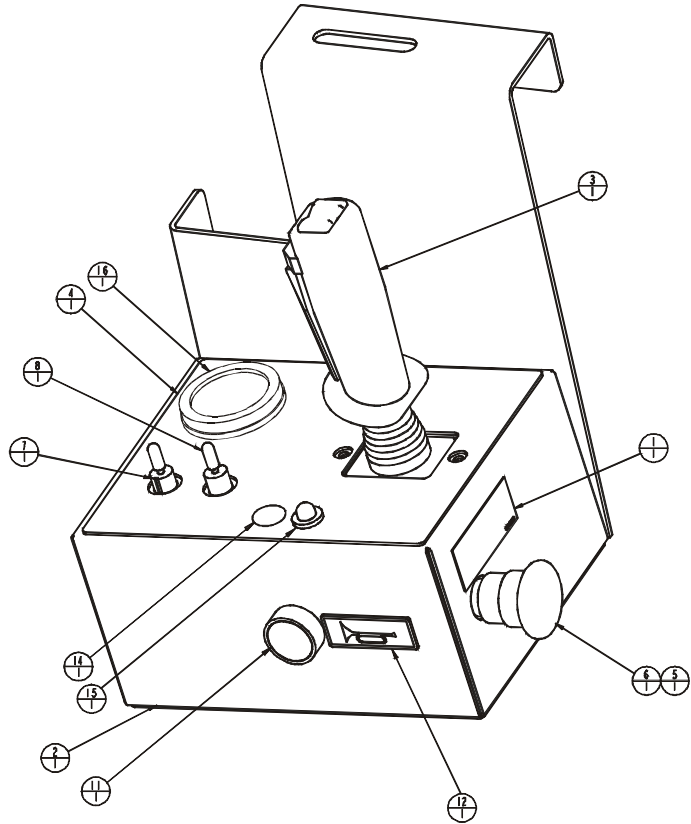
Item	Part No.	Qty.	Description
	0371952	1	UPPER CONTROL BOX WITH HORN
1	0072545	1	DECAL EMERGENCY STOP
2	0361213	1	ASSY UPPER CONTROL BOX
3	0361449	1	JOYSTICK
4	0371912	1	PLAC UPPER CONTROL BOX 3246
5	446826	1	SW CONTACT BLOCK N.C.
6	446836	1	OPERATOR PUSH/PULL 2-POSITION
7	3020013	1	SW TGL SPST (ON/OFF) SEALED
8	3020097	1	SW TGL DPDT(ON/ON) SEALED
9	3049862	1	RECEPTACLE
9A	3040208	1	PANEL NUT
9B	3040209	1	WASHER LOCK
10	5560080	1	BUMPER ADHESIVE BACK
11	3026027	1	SW PUSH BUTTON
12	0071269	1	DECAL HORN
13	3040411	1	ALARM MINI SIREN
14	487696	1	BATTERY GAUGE
			<b>Following items not shown, inside of control box</b>
	0361227	1	UPPER CONTROL BOX INTERNAL HARNESS
	0361299	2	ADAPTER HARNESS
	0361314	1	HORN JUMPER WIRE
	3043813	2	CONN AMP PLUG
	0361315	1	BATT COND JUMPER WIRE



# Upper Control Box – CE with Battery Condition Indicator

P	175	OVERLOAD LIGHT CE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

DEUTSCH RECEPT CONNECTOR

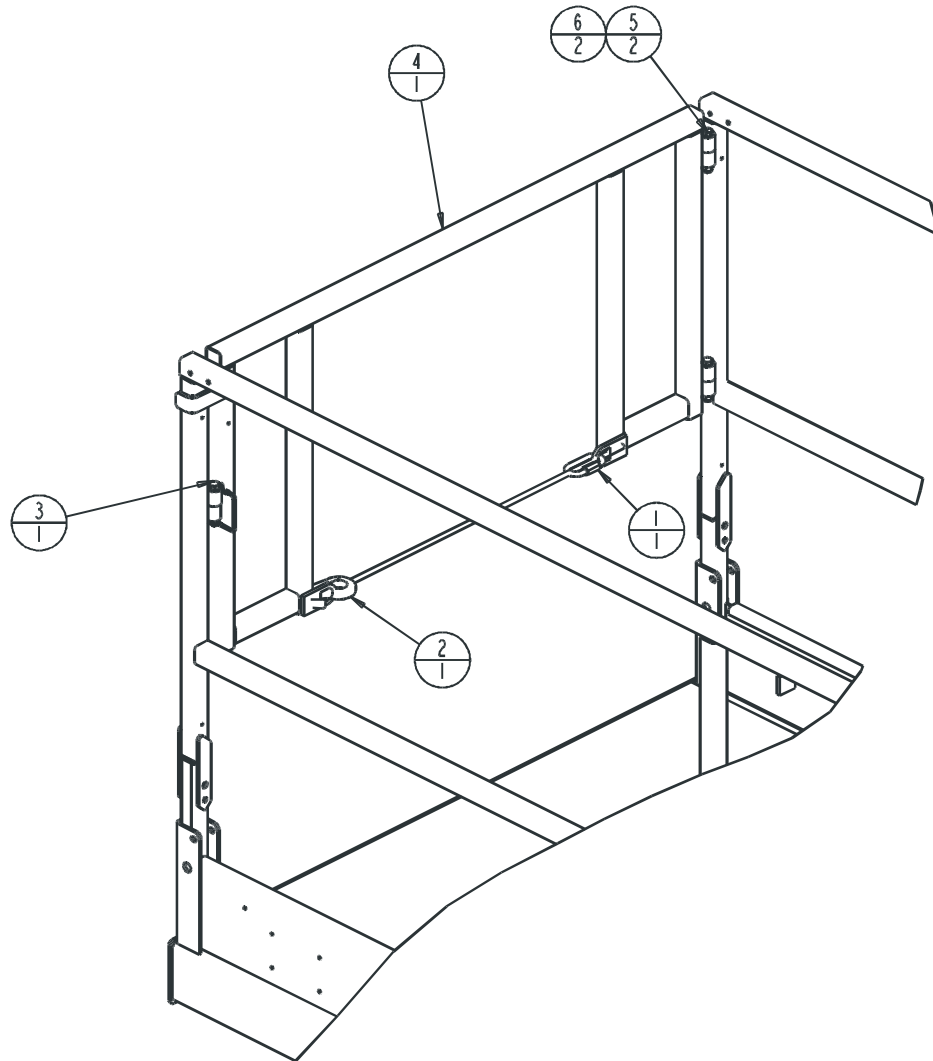


## Upper Control Box - CE with Battery Condition Indicator

Item	Part No.	Qty.	Description
	0372026	1	UPPER CONTROL BOX - CE WITH BATTERY CONDITION INDICATOR
1	0072545	1	DECAL EMERGENCY STOP
2	0361213	1	ASSY UPPER CONTROL BOX
3	0361449	1	JOYSTICK
4	0371912	1	PLAC UPPER CONTROL BOX 3246
5	446826	1	SW CONTACT BLOCK N.C.
6	446836	1	OPERATOR PUSH/PULL 2-POSITION
7	3020013	1	SW TGL SPST (ON/OFF) SEALED
8	3020097	1	SW TGL DPDT(ON/ON) SEALED
9	3049862	1	RECEPTACLE
9A	3040208	1	PANEL NUT
9B	3040209	1	WASHER LOCK
10	5560080	1	BUMPER ADHESIVE BACK
11	3026027	1	SW PUSH BUTTON
12	0071269	1	DECAL HORN
13	3040411	1	ALARM MINI SIREN
14	0361497	1	DECAL OVERLOAD
15	302829	1	LIGHT RED
16	487696	1	BATTERY GAUGE
			<b>Following items not shown, inside of control box</b>
	0361227	1	UPPER CONTROL BOX INTERNAL HARNESS
	0361299	2	ADAPTER HARNESS
	0361314	1	HORN JUMPER WIRE
	3043813	2	CONN AMP PLUG
	0081558	1	WIRE 16 R6 FEM250FI 4
	3014720	1	WIRE, DIODE SPECIAL
	0361315	1	BATT COND JUMPER WIRE

## Platform Entry – Chain

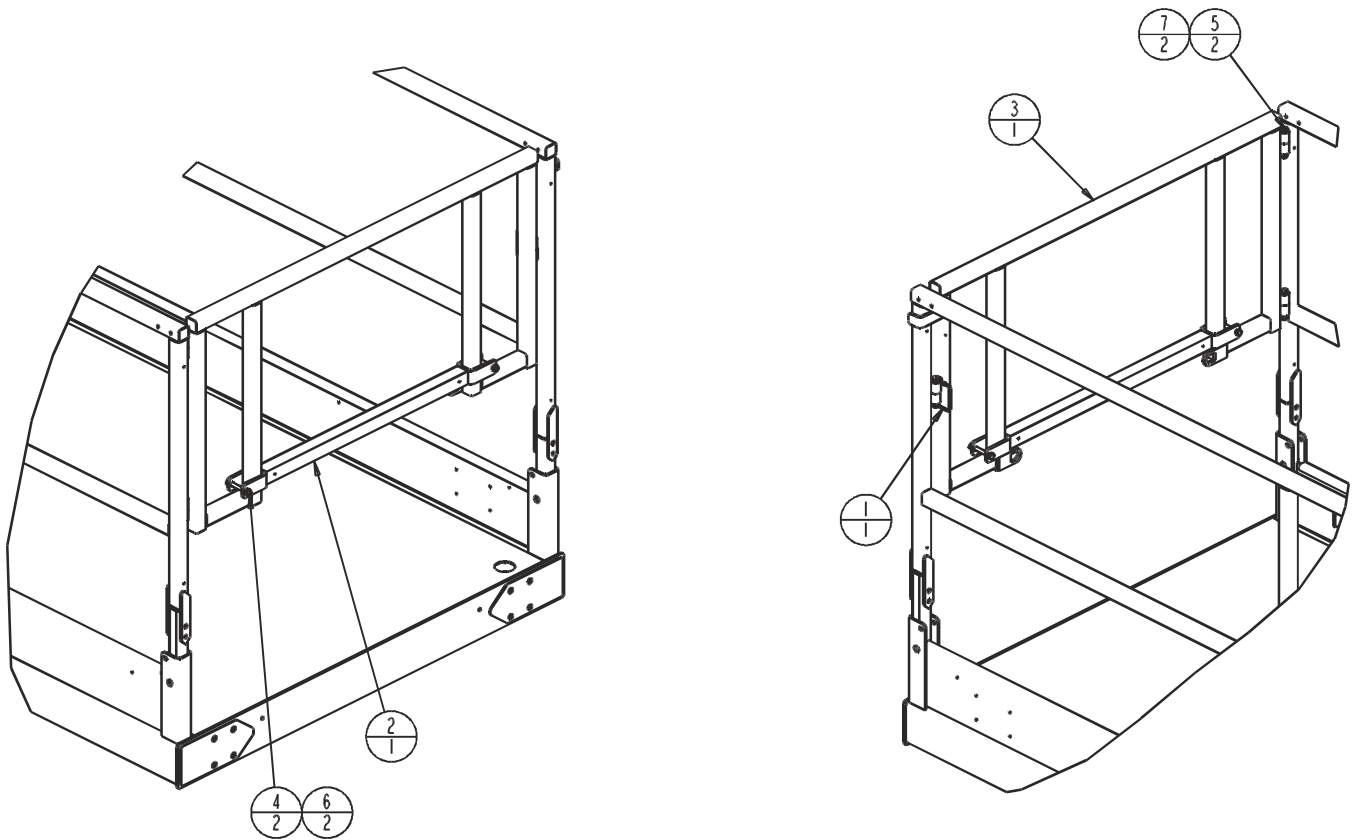
Item	Part No.	Qty.	Description
1	301497	1	THREADED CHAIN CONNECTOR
2	301682	1	CHAIN ASSY 15 LINKS AND SNAP
3	302544	1	PIN SNAPPER W/ LNYD .375X2.25
4	0371607	1	WLDMT HANDRL BACK
5	970529	2	BLT .375-16 X 2.50
6	5560033	2	NUT LKG .375-16



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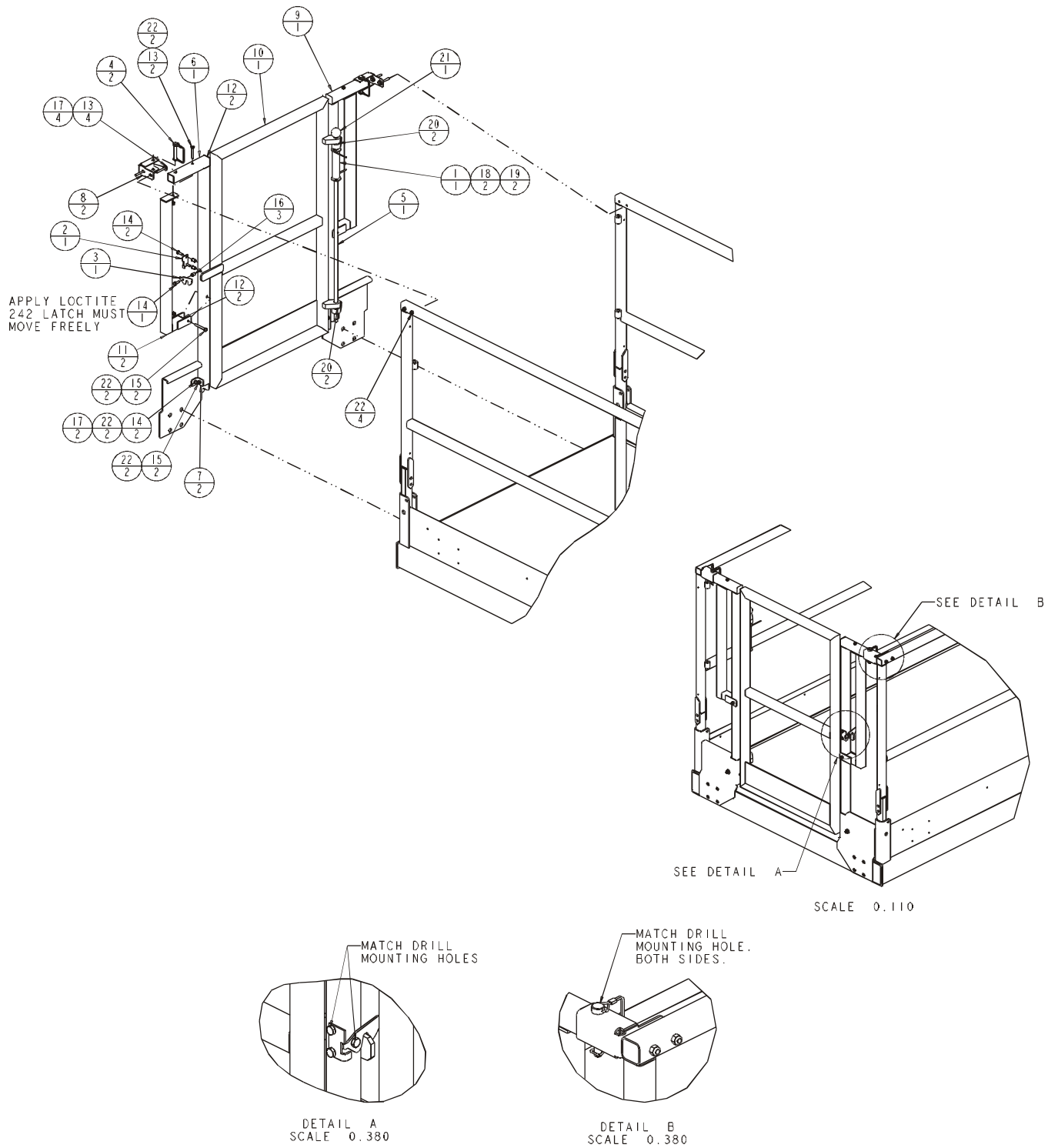
## Platform Entry – Gravity Bar

Item	Part No.	Qty.	Description
1	302544	1	PIN SNAPPER W/ LNYD .375X2.25
2	0361302	1	WLDMT GRAVITY GATE
3	0371607	1	WLDMT HANDRL BACK
4	970309	2	BLT .313-18 2.25
5	970529	2	BLT .375-16 2.50
6	5560031	2	NUT LKG .313-18
7	5560033	2	NUT LKG .375-16



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# Platform Entry – Swing Gate



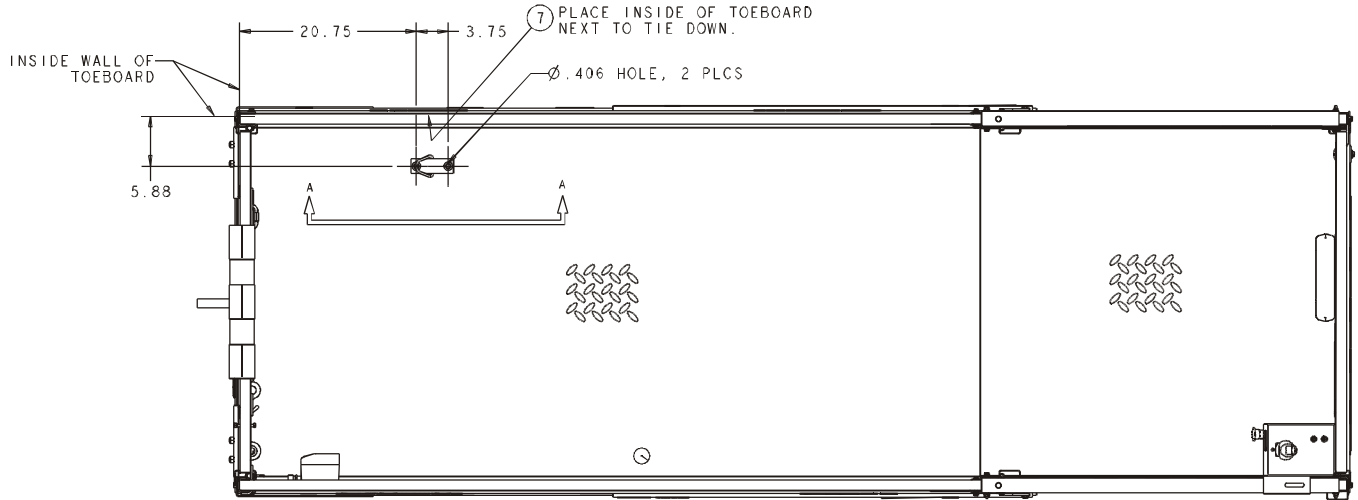
## Platform Entry – Swing Gate

Item	Part No.	Qty.	Description
1	0071837	1	TORSION - SPRING
2	0162179	1	LATCH STOP GATE ENTRY LOCK
3	300891	1	DOOR LATCH GATE ENTRY LOCK
4	302544	2	PIN SNAPPER W/ LNYD .375X2.25
5	0322724	1	PIN GATE HNG ALUM PLATF
6	0371980	1	WLDMT, SWING GATE HANDRAIL RH
7	0371982	2	PLT, TOE KICK HINGE
8	0371983	2	TOP SUPPORT, HANDRAIL
9	0371985	1	WLDMT, SWING GATE HANDRAIL LH
10	0371987	1	WLDMT, SWING GATE
11	0372009	2	WLDMT, CLIMBING HANDRAIL
12	468886	4	END CAP 1.25 SQ PLASTIC BLACK
13	969989	6	BLT .25-20 1.75
14	970029	5	BLT .25-20 .750 GR5
15	970169	4	BLT .25-20 2.00 GR5
16	984529	3	NUT SERT .25-20 GRIP .027-.165
17	986019	6	WSHR FLAT .250
18	986359	2	WSHR FLAT .500
19	988179	2	PIN COT .125DIA 1.00
20	2572007	4	BSHG .500ID .625OD .625LG
21	2667500	1	#95 BALL KNOB-1-3/8 X 1/2-13
22	5560004	12	NUT LKG .250-20

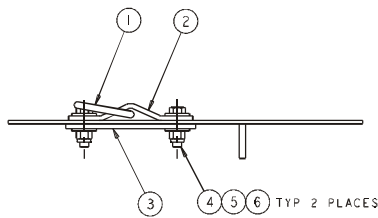


# Lanyard Attachment

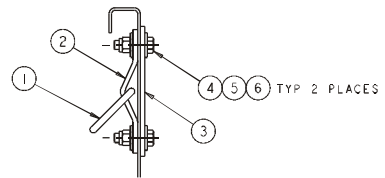
Item	Part No.	Qty.	Description
1	0360892	2	TIE DOWN "D" RING
2	0360891	2	BRACKET, LANYARD ATTACHMENT
3	0360893	2	PLATE, LANYARD ATTACHMENT
4	5560704	4	BLT HEXHD .375-16 1.25 GR8
5	986299	8	WSHR FLAT .38
6	5560033	4	NUT LKG .375-16
7	0150448	2	DECAL ATTACH FALL RESTRAINT



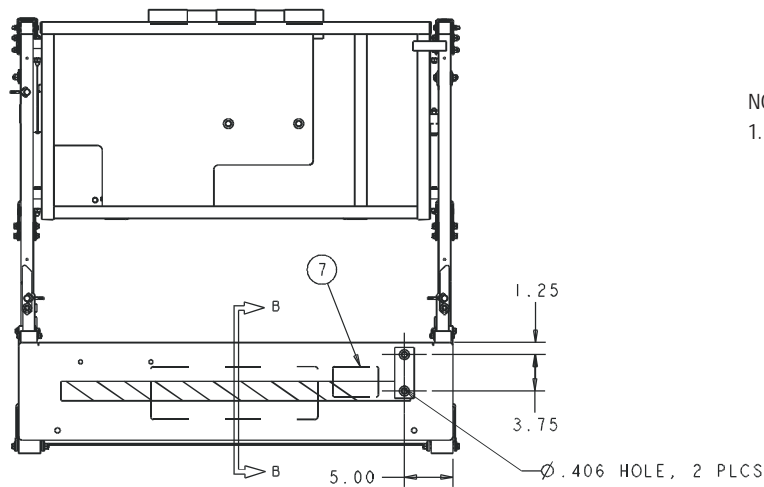
VIEW LOOKING DOWN  
MACHINE FACING RIGHT



SECTION A-A



SECTION B-B



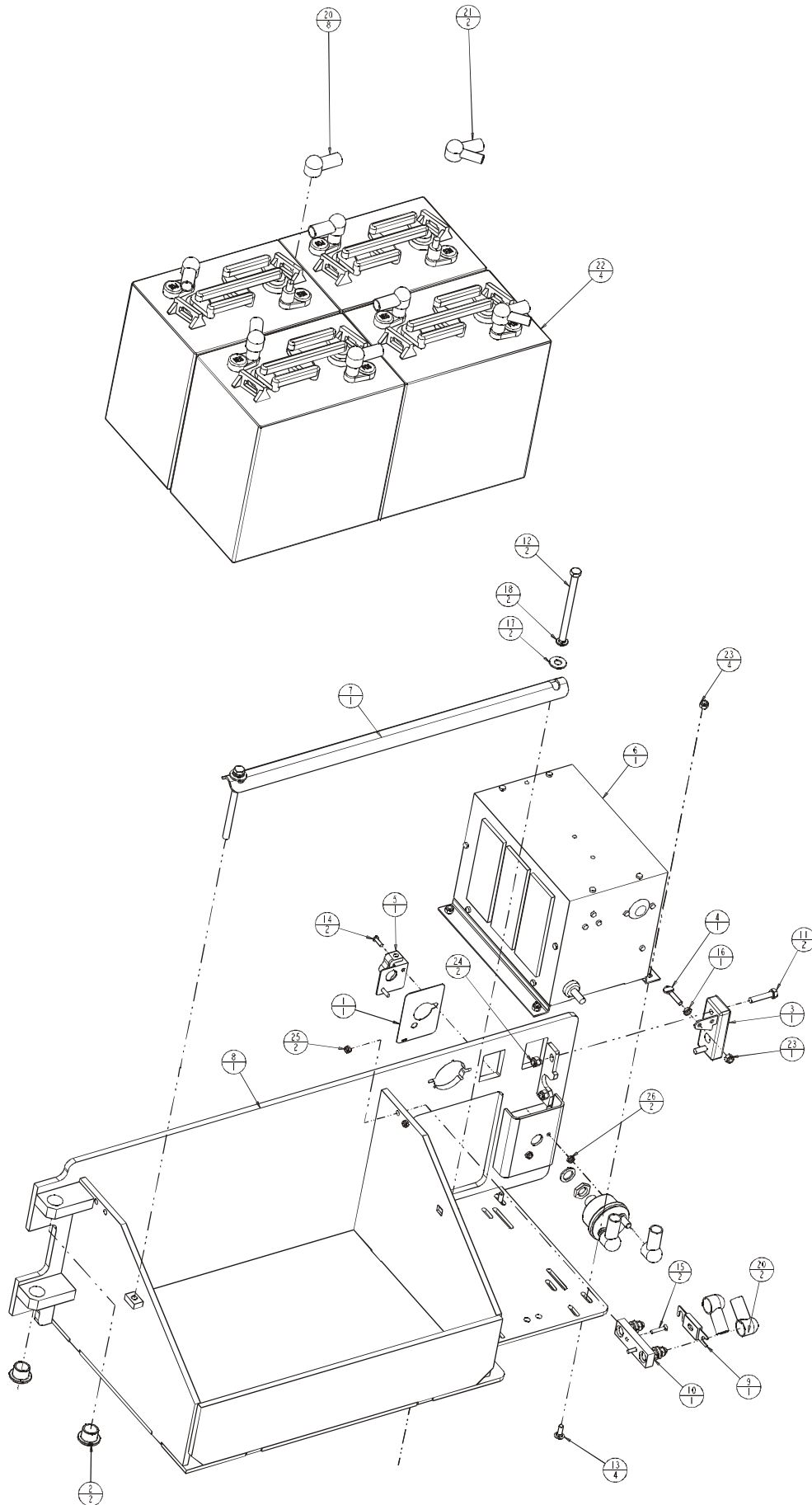
VIEW LOOKING AFT

NOTES:  
1. TORQUE ALL BOLTS TO 25 FT-LB.

A36030C

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# Battery Tray – Maintenance Free Batteries



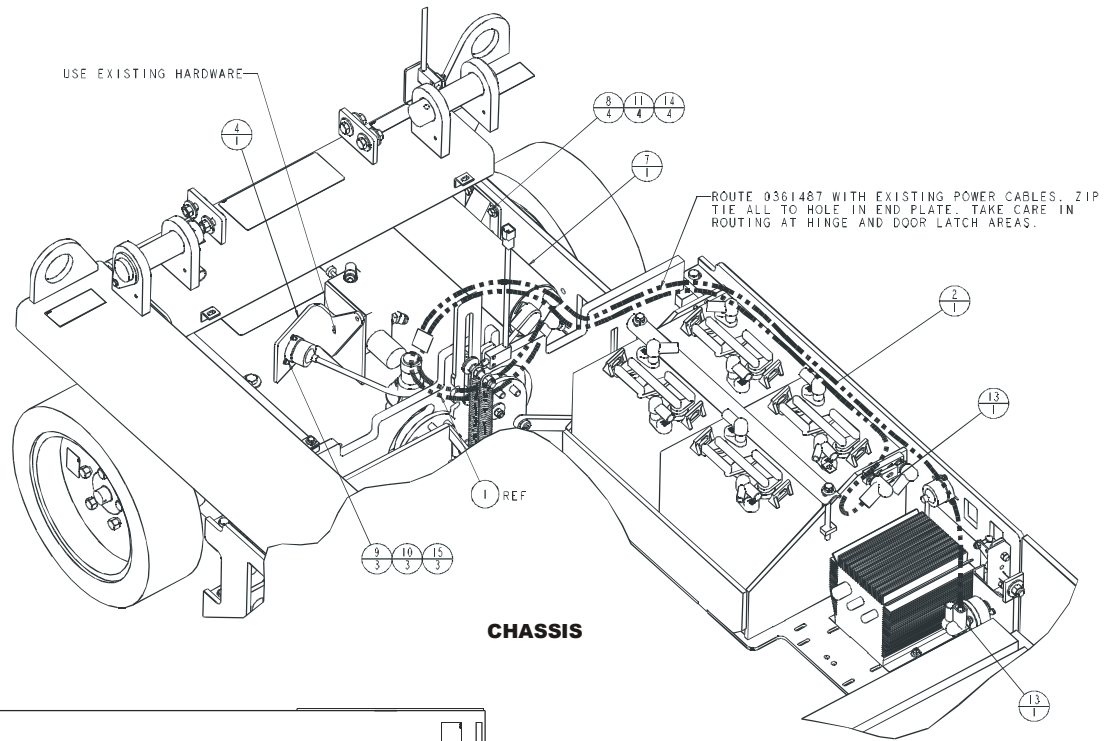
AW0371557

## Battery Tray – Maintenance Free Batteries

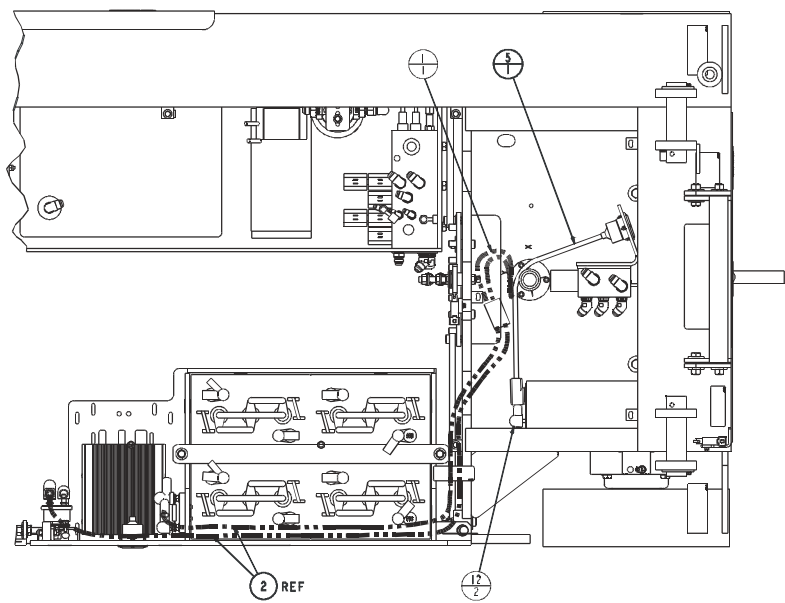
Item	Part No.	Qty.	Description
1	0161014	1	PLAC BATTERY OFF/ON
2	300437	2	BEARING FLANGED OILITE
3	300491	1	LATCH RH TRAY ROTARY LOCK
4	300765	1	SCREW THUMB .25-20 X 1.00 TYPE B
5	300840	1	LOCK OUT LEVER ASSEMBLY
6	300909	1	CHARGER 24V/25A 60HZ - United States Before October 2005
7	0372033	1	HOLDDOWN BATTERY, MAINTENANCE FREE BATTERIES
8	0372029	1	WLDMT BATTERY TRAY, MAINTENANCE FREE BATTERIES
9	446076	1	FUSE,250 AMP
10	446086	1	FUSE BLOCK P/N 4164
11	970279	2	BLT .313-18 1.50 GR5
12	970629	2	BLT .375-16 5.00 GR5
13	972569	4	BLT CRG .250-20 .750
14	974549	2	SCREW RDH 10-32 .625
15	976709	2	SCREW FLH 10-24 1.00
16	984329	1	NUT JAM .250-20
17	986299	2	WASHER FLAT .375
18	987119	2	WASHER LOCK .375
19	3020049	1	SW BATTERY DISCONNECT
20	3040269	10	BOOT BTRY CABLE END BLK 1/0 GA
21	3040270	2	BOOT BTRY CABLE END Y-TYPE
22	3050027	4	BATTERY 6V 220AH MAINTENANCE FREE
23	5560004	5	NUT LKG .250-20-ESNA
24	5560031	2	NUT LKG .313-18 ESNA
25	5560034	2	NUT LKG 10-24 ESNA
26	5560038	2	NUT LKG 10-32 ESNA
27	5569997	2	NUT LKG 6-32

See Electrical section page 7 for wiring.

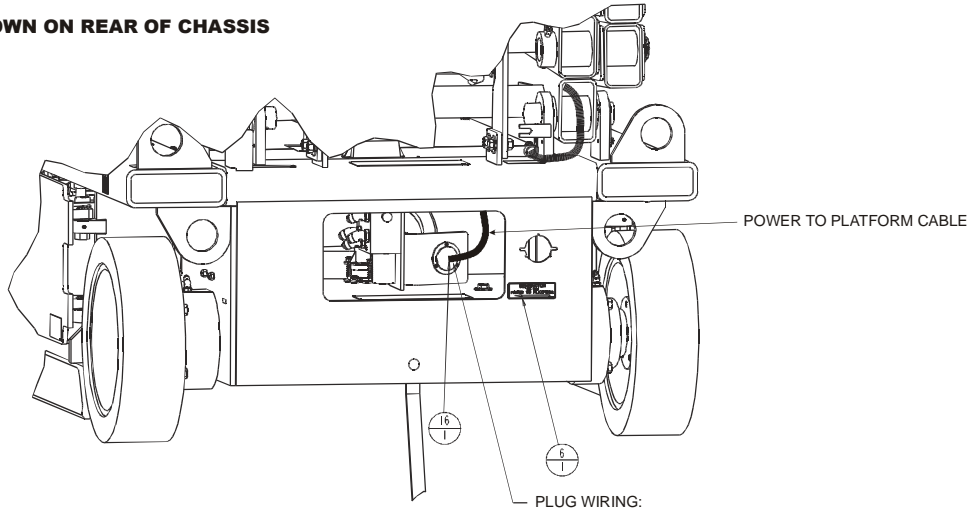
# AC Generator



**CHASSIS**



**VIEW LOOKING DOWN ON REAR OF CHASSIS**



**REAR OF CHASSIS**

PLUG WIRING:

WIRE	PLUG
BLACK	BRASS
GREEN	GREEN
WHITE	SILVER

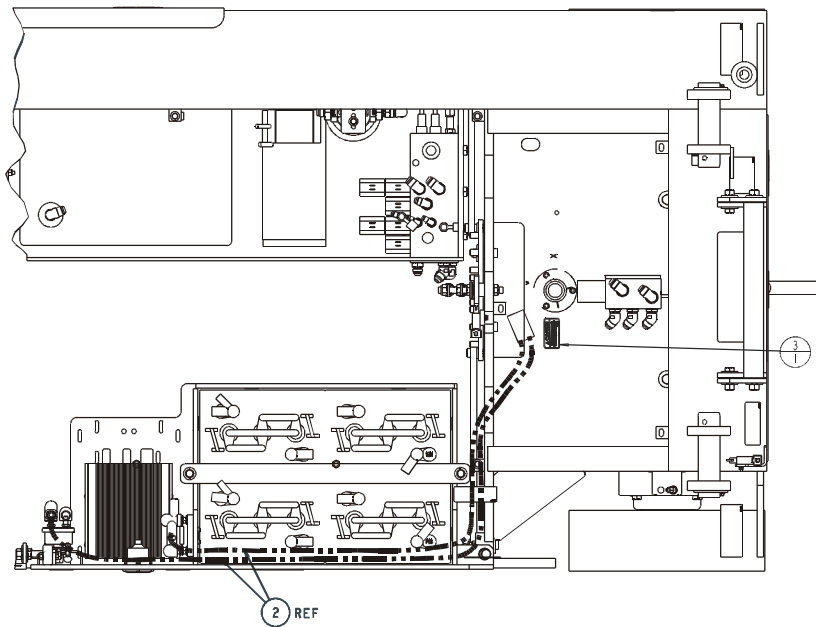
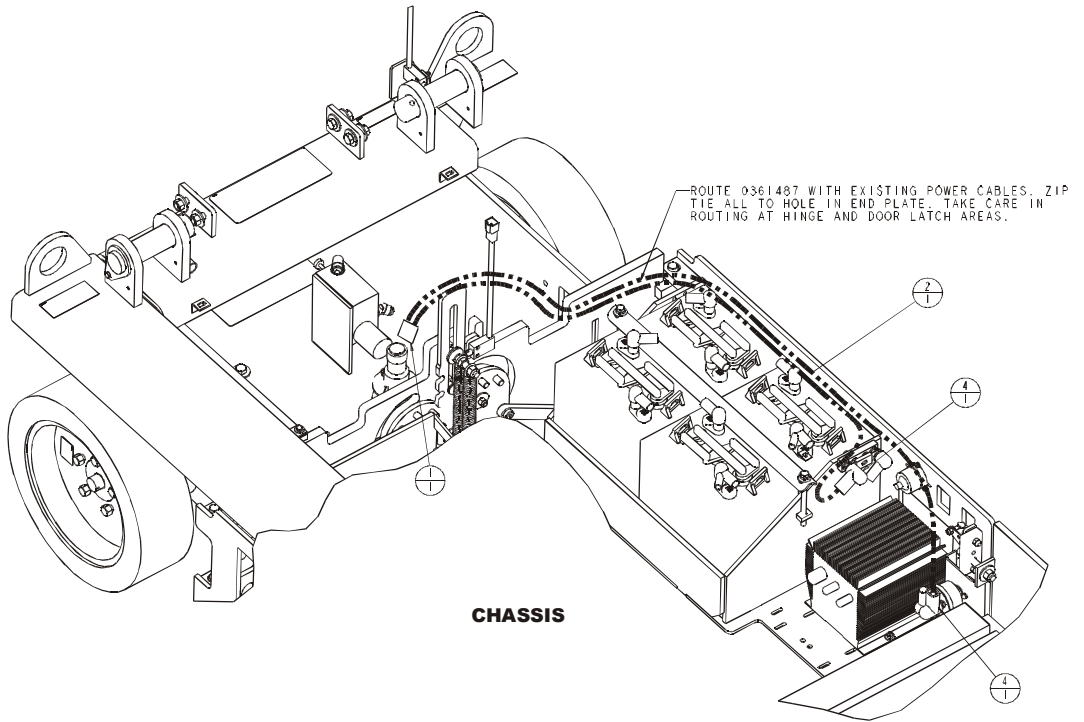
0372040B

## AC Generator

Item	Part No.	Qty.	Description
1	0361486	1	WIRE ASSY, AC GEN-SHORT
2	0361487	1	WIRE ASSY, AC GEN-LONG
4	0372038	1	PL RECEPT MOUNT AC GENERATOR OPTION
5	0372039	1	CABLE ASSY EXT 24" LONG
6	0372041	1	DECAL, GENERATOR POWER-PLATFORM
7	455536	1	MTR/GENERATOR
8	970269	4	BLT HEXHD .313-18 1.25 GR5
9	974279	3	SCREW RDH 6-32 .750
10	986159	3	WASHER FLAT 6
11	986269	4	WASHER FLAT .313
12	3040269	2	BOOT BTRY CABLE END BLK 1/0 GA
13	3043802	2	RUBBER BOOT WIDE END (2X2/0GA)
14	5560031	4	NUT LKG .313-18
15	5569997	3	NUT LKG 6-32-ESNA
16	238396	1	PLUG, MALE STR 15AMP 125V NYLON

## AC Generator – Wiring Only

Item	Part No.	Qty.	Description
1	0361486	1	WIRE ASSY, AC GEN-SHORT
2	0361487	1	WIRE ASSY, AC GEN-LONG
3	0361488	1	DECAL, CAUTION PLUG PROVIDED
4	3043802	2	RUBBER BOOT WIDE END (2X2/0GA)

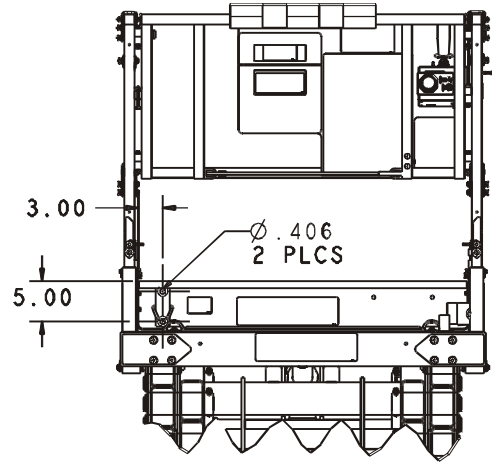
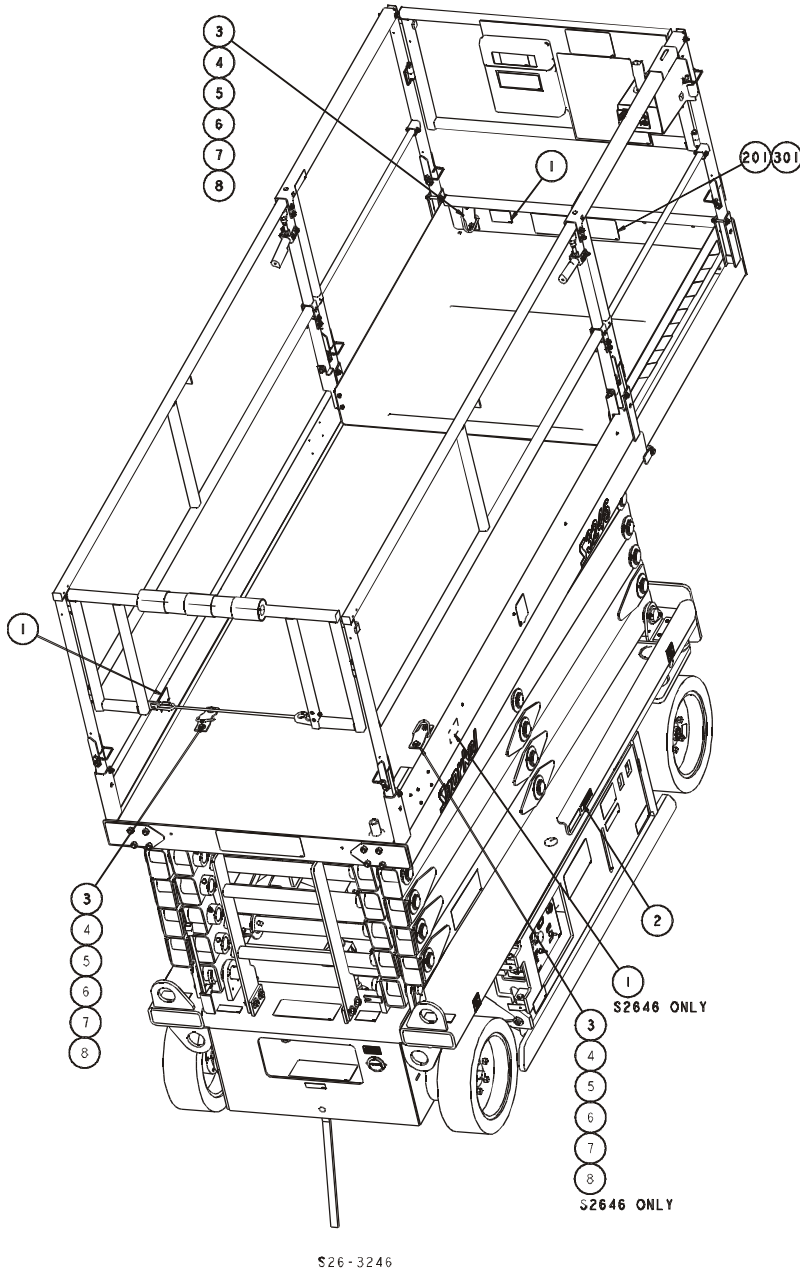


**VIEW LOOKING DOWN ON REAR OF CHASSIS**

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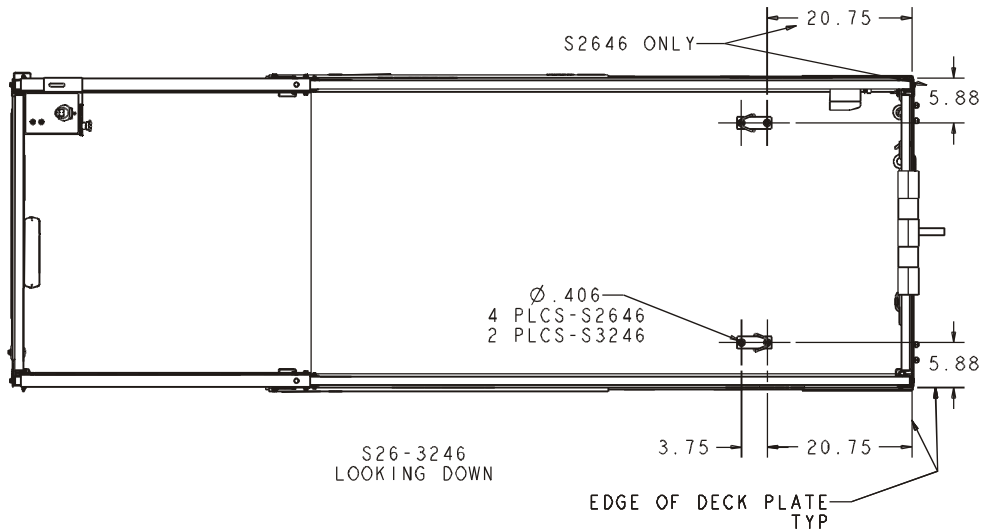


# Canadian Standards Association Compliance



S26-3246  
LOOKING FOWARD

NOTES:  
1. TORQUE BOLTS TO 25 FT-LB



A37025A

## Canadian Standards Association Compliance

Item	Part No.	Qty.	Description
<b>S2646</b>			
1	0150448	3	DECAL ATTACH FALL RESTRAINT
2	0361528	1	DECAL, CSA COMPLIANT
3	0360891	3	BRACKET, LANYARD ATTACHMENT
4	0360892	3	TIE DOWN "D" RING-RUSSEL CHAIN
5	0360893	3	PLATE, LANYARD ATTACHMENT
6	986299	12	WASHER FLAT .375
7	5560033	6	NUT LKG .375-16
8	5560704	6	BLT HEXHD .375-16 1.25 GR8
201	0371999	1	DECAL, PLAT CAP 1000# W/WIND
<b>S3246</b>			
1	0150448	2	DECAL ATTACH FALL RESTRAINT
2	0361528	1	DECAL, CSA COMPLIANT
3	0360891	2	BRACKET, LANYARD ATTACHMENT
4	0360892	2	TIE DOWN "D" RING-RUSSEL CHAIN
5	0360893	2	PLATE, LANYARD ATTACHMENT
6	986299	8	WASHER FLAT .375
7	5560033	4	NUT LKG .375-16
8	5560704	4	BLT HEXHD .375-16 1.25 GR8
301	0361998	1	DECAL, PLAT CAP 700# W/WIND

# *Maintenance*

S2646E

S3246E

**S**2646

**S**3246





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## Maintenance

Every person who maintains, inspects, tests, or repairs the aerial platform must be qualified to do so. Maintenance functions must be performed by maintenance personnel who are qualified to work on the aerial platform.

### Caution

**Welding current can be very intense. Damage to electronic components can result. Connect the ground clamp as close as possible to the area being welded. Disconnect battery cables and any microprocessors and engine control modules before welding on the machine.**

If it becomes necessary to weld aerial platform components as a method of repair, take all precautions to prevent damage to electronic circuitry and devices on the machine. This includes, but may not be limited to, disconnecting battery cables and electronic devices.

Do not modify this aerial platform without prior written consent of the Snorkel Engineering Department. Modification may void the warranty, adversely affect stability, or affect the operational characteristics of the aerial platform.

### Maintenance Schedules

Snorkel has established a preventive maintenance schedule to detect any defective, damaged or improperly secured parts and provide information regarding lubrication and other minor maintenance items.

This schedule includes the following:

- Daily Prestart Inspection
- Frequent Inspection and Maintenance  
Every 90 Days or 150 Hours
- Annual Maintenance – Every 500 Hours

The Daily Prestart Inspection must be performed by a trained operator. All other maintenance and inspections must be performed by a trained service technician only. Retain a copy of these forms for your records.

All placards and decals on the machine must be in place and legible. Use the Placards and Decals parts page in the Repair Parts section of this manual to check these placards and decals.

Snorkel recommends that you make additional copies of the Preventive Inspection Maintenance Checklist forms for your use in performing these inspections.

### Warning

**The potential for an accident increases when operating an aerial platform that is damaged or malfunctioning. Death or serious injury can result from such accidents. Do not operate the aerial platform if it is damaged or malfunctioning.**

Repair all defects before returning the machine to service.

### General Information

The parts drawings located in the repair parts sections, are designed for use as a guide for proper disassembly of the machine and components as well as for parts replacement.

### Danger

**Hydraulic fluid escaping under pressure can have enough force to inject fluid into the flesh. Serious infection or reaction will result if medical treatment is not given immediately. In case of injury by escaping hydraulic fluid, seek medical attention at once.**

Always refer to the hydraulic system installation drawings and the electrical wiring diagram before removing or disassembling associated parts.

When disassembling or reassembling components, complete the procedural steps in sequence. Do not partially disassemble or assemble one part, then start on another. Always check your work to assure that nothing has been overlooked.

Keep the following in mind when disassembling or assembling the machine.

- Always be conscious of weight.
- Never attempt to lift heavy objects without the aid of a mechanical device.
- Do not allow heavy objects to rest in an unstable condition.
- Always make sure the work platform is in the stowed position, blocked or the weight removed by a suitable lifting device before removing any components from the scissor stack.
- When raising a portion of the machine, be sure that adequate blocking is properly positioned. Do not depend solely on the lifting device to hold and secure weight.
- If a part resists removal, check to see if all fasteners, electrical wiring, hydraulic lines, etc., have been removed or that other parts are not interfering.

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Parts should be thoroughly inspected before restoring to service at the time of reassembly. Burrs, nicks or scratches may be removed from machined surfaces by honing or polishing with #600 crocus cloth, followed by a thorough cleaning in an approved cleaning solvent, and blown dry with compressed air. Do not alter the contour of any part. If this operation does not restore the part to a serviceable condition, replace the part.

Replace all o-rings, seals, and gaskets at reassembly. Use new roll pins or cotter pins. Dip all packing rings and seals in hydraulic oil before reassembling in cylinder and manifolds. Replace any part having imperfect threads. In general, machines that have been disassembled can be reassembled by reversing the order of disassembly.

The service life of a machine can be increased by keeping dirt and foreign materials out of the vital components. Shields, covers, seals, and filters help to keep air and oil supplies clean. However, these items must be maintained on a scheduled basis in order to function properly.

Clean surrounding areas as well as the opening and fittings before disconnecting air or oil lines. As soon as a line or component is disconnected, cap or cover all openings to prevent the entry of dirt or foreign materials.

New parts should remain in their container until they are ready to be used.

Clearly mark or tag hydraulic lines and electrical wiring connections when disconnecting or removing them from the machine. This will assure that they are correctly reinstalled.

Proper assembly is critical to the successful rebuilding of any machine. Carefully inspect any parts which are to be reused. If in doubt, replace.

“Safety First” is a good slogan.

Replace any guards and protective devices that have been removed to carry out maintenance and repair work.

## Daily Prestart Inspection

Item	Inspect For	Ok
<b>Operator's Manual</b>	Proper manual in holder	
<b>Electrical System</b>		
Battery fluid level	Proper level	
Battery terminals	Clean, connectors tight	
Battery charger	Proper operation	
Cables and wiring harness	No wear or physical damage	
<b>Hydraulic System</b>		
Fluid level	Between full and add marks with platform stowed	
Hoses, tubes, and fittings	No leaks, all fittings tight	
Free-wheeling valve	Fully closed	
<b>Tires</b>	Good condition	
<b>Wheels</b>	All wheel lug nuts present and tight	
<b>Ground Strap</b>	In place and securely fastened	
<b>Lower Control Station</b>		
Operating controls	Proper operation	
Emergency stop	Shuts off lower controls	
Lowering alarm	Sounds when platform lowers	
<b>Pothole Protector Interlock</b>	Proper operation	
<b>Emergency Lowering System</b>	Proper operation	
<b>Safety Prop</b>	No damage or deformation	
<b>Flashing Light</b>	Proper operation, no damage or deformation	
<b>Structures</b>		
Weldments – Scissors, chassis, steps, platform, etc.	Welds intact, no damage or deformation	
Slide pads	In place, no damage or deformation	
Fasteners	In place and tight	
<b>Upper Control Station</b>		
Guardrail system	Welds intact, no damage or deformation All fasteners in place, no loose or missing parts	
Platform floor	No damage or deformation Clean to prevent slip and fall hazards	
Platform extension	Proper operation, no damage or deformation	
Swing-down rails	Fasteners in place, proper operation	
Lanyard anchors	In place, no damage or deformation	
Entry chain/gate	In place, no damage or deformation, proper operation	
Brakes	Proper operation	
Operating controls	Proper operation	
Emergency stop	Shuts off upper controls	
Lowering alarm	Sounds when platform lowers	
Drive motion alarm	Sounds when aerial platform moves	
Electrical power outlet	Proper operation	
Battery condition indicator	Proper operation	
Horn	Sounds when activated	
<b>Placards and Decals</b>	In place and readable	

Performed by: \_\_\_\_\_ Date: \_\_\_\_\_





## Frequent Inspection and Maintenance – Every 90 Days or 150 Hours

Item	Procedure	Information	Ok
<b>Electrical System</b>			
Batteries	Clean terminals, check electrolyte levels and cable connections	Add distilled water if necessary	
Cables and wiring harness	Check for wear and damage		
Battery charger	Check for proper operation	Ensure batteries are fully charged	
<b>Hydraulic System</b>			
Hydraulic fluid condition	Visually inspect a sample taken from the center of the reservoir. Do a lab test if necessary. Flush the system and replace the fluid as necessary.	Above 10°F (-13°C) Mobil DTE-13M, ISO VG32 Below 10°F (-13°C) Mobil DTE-11M, ISO VG15	
Fluid reservoir	Check for leaks		
Return filter	Replace after the first 50 hours, every 90 days or 150 hours thereafter		
	Inspect filter for foreign matter that could indicate component wear		
Hoses, tubes, and fitting	Check for leaks, blistering, cracks, etc.		
Fluid level	Fill with proper fluid, between Full and Add marks	See above	
Filler cap	Check for wear and securely fasten		
Free-wheeling valve	Fully close		
Motor and pump assembly	Check for damage and leaks		
	Check for proper operation		
<b>Structures</b>			
Weldments	Check for damage and cracked welds		
Slide pads	Check for wear and proper operation	Do not lubricate	
Fasteners	Verify that all fasteners are in place and are tight		
<b>Tie Rod Ends</b>	Lubricate with spray lubricant	Petroleum based such as WD-40	
<b>Wheels and Tires</b>			
	Check for wear and damage		
	Retorque lug bolts/nuts to 90 to 100 ft lb		
<b>Steering Cylinder – Fasteners and Linkage</b>			
	Check for cylinder damage and leaks		
	Check for proper operation		
	Lubricate with spray lubricant	Petroleum based such as WD-40	
<b>Scissor Structure</b>			
Pivot pins, snap rings, bolts and nuts	Check for wear and damage, or missing components		
Lift cylinder and valves	Check for wear/damage/leakage and proper operation		
Emergency lowering system	Check cables for wear and damage		
	Verify that all fasteners are in place and are tight		
Hoses, tubes, and fitting	Check for leaks, blistering, cracks, etc.		
Cables and wiring harness	Check for wear and damage		
Safety prop	Check for damage and deformation		
<b>Parking Brakes</b>	Check for leaks and proper operation		

## Frequent Inspection and Maintenance – Every 90 Days or 150 Hours

Item	Procedure	Information	Ok
<b>Ground Strap</b>	Verify it is in place and securely fastened		
<b>Pothole Protectors</b>			
Interlock and alarm	Check for damage and proper operation		
Linkage and skid pivot points	Lubricate with spray lubricant	Petroleum based such as WD-40	
<b>Swing-out Trays</b>			
Hinges and latches	Check for damage and proper operation		
	Lubricate	Powdered graphite	
<b>Placards and Decals</b>			
	Check for damage and readability Order replacements as necessary	Refer to Parts Manual for part numbers	
<b>Operator's Manual</b>	Proper manual in document holder		
<b>Platform</b>			
Guardrail system	Welds intact, no damage or deformation		
	All fasteners in place, no loose or missing parts		
Platform floor	Check for damage and deformation		
	Clean to prevent slip and fall hazards		
Platform extension	Check for damage and deformation		
	Smooth operation		
	Check for proper operation of locking pins		
Swing-down rails	Verify that all fasteners are in place and that the rails fold down properly.		
Entry chain/gate	Check for damage and deformation		
	Check for proper operation		
<b>Emergency Lowering System</b>	Check for proper operation		
<b>Lower Controls</b>			
Operating controls	Check for smooth operation and proper speed	Refer to Operator's Manual for function speeds	
Emergency stop	Shuts off power to lower controls		
Lowering alarm	Verify that alarm sounds while the platform is lowering		
Lowering interrupt – CE only	Verify that the platform stops lowering when it reaches about 1.5 m (5')		
Control selector switch	Check for proper operation	In the lower controls position, the upper controls should not be functional and in the upper controls position, the lower controls should not be functional	
Lift capacity	Check lift function at maximum load capacity	Maximum Load S2632 1000 lb (454 kg) S3246 700 lb (318 kg)	
	While the platform is loaded, raise the platform and with a pen, mark the chassis next to the slide pad. Mark on the side of the pad toward the front of the chassis. Wait for 15 minutes to determine if the lift cylinder is drifting. If the slide pad covers the mark, the cylinder or holding valve is leaking.	If the cylinder or holding valve leaks, remove the machine from service and correct the cause of the hydraulic leak before further operation.	

## Frequent Inspection and Maintenance – Every 90 Days or 150 Hours

Item	Procedure	Information	Ok
<b>Lower Controls</b>			
Overload system test CE machines only	Check the lift function at 120% maximum load capacity. Start the test with the platform fully lowered. Verify that the lift function cuts out automatically, the alarm sounds and the red light on the control panel flashes before the platform reaches an elevation of approximately 1.8m (6 feet).	120% Maximum Load S2632 1200 lb (544 kg) S3246 840 lb (381 kg)	
Battery disconnect switch	Shuts off all controls		
<b>Upper Controls</b>			
Operating controls	Check for smooth operation and proper speed		
Emergency stop	Shuts off power to upper controls		
Lowering alarm	Verify that alarm sounds while the platform is lowering		
Drive motion alarm	Verify that alarm sounds while chassis is in motion		
Electrical power outlet	Check for proper operation of outlet and GFCI		
Travel speed	Verify proper travel speed Low: 0.5 mph High: 2.0 mph	0.5 mph = 50 ft in 65-85 secs 2.0 mph = 50 ft in 16-20 secs	
<b>Options</b>			
Horn	Check for proper operation		
Flashing light	Check for proper operation		
Battery condition indicator	Check for proper operation		
Lanyard anchors	Check for wear and damage Verify that all fasteners are in place and are tight		
<b>Level Sensor Interlock Test</b>			
	<p>A. Park the machine on a level surface. Place a smart level on the chassis in the front-to-back direction. Zero the level.</p> <p>B. Elevate the front tires approximately 4 3/4 inches</p> <p>Verify the chassis inclination is no more than 3.7 degrees. Verify the platform will raise and lower through its full range of motion.</p> <p>C. Elevate the front tires approximately 6 inches</p> <p style="text-align: center;"><i>Continued on next page...</i></p>		

## Frequent Inspection and Maintenance – Every 90 Days or 150 Hours

Item	Procedure	Information	Ok
<p><b>Level Sensor Interlock Test</b></p>	<p>Verify the chassis inclination is between 4.2 and 4.4 degrees. Verify that the lift function cuts out automatically and the alarm sounds before the platform reaches an elevation of 6 feet. All drive functions must also cut out.</p> <p>D. Repeat steps B and C elevating the rear tires.</p> <p>E. Place the smart level on the chassis in the side-to-side direction. Zero the level.</p> <p>Elevate the tires on the right side of the machine approximately 1 1/8 inch</p> <p>Verify the chassis inclination is no more than 1.7 degrees. Verify the platform will raise and lower through its full range of motion.</p> <p>F. Elevate the tires on the right side of the machine approximately 1 3/4 inch</p> <p>Verify the chassis inclination is between 2.2 and 2.4 degrees. Verify that the lift function cuts out automatically and the alarm sounds before the platform reaches an elevation of 6 feet. All drive functions must also cut out.</p> <p>G. Repeat steps E and F for the left side of machine.</p> <p>H. Adjust or replace the level sensor as required.</p>		

Performed by: \_\_\_\_\_

Date: \_\_\_\_\_

## Annual Maintenance – Every 500 Hours

Item	Procedure	Information	Ok
<b>Frequent Maintenance Checklist</b>	Complete Frequent Maintenance		
<b>Hydraulic System</b>			
Hydraulic fluid condition	Drain, flush, and clean hydraulic system Refill with new fluid	Above 10°F (-13°C) Mobil DTE-13M, ISO VG32 Below 10°F (-13°C) Mobil DTE-11M, ISO VG15	
Return filter	Replace	Refer to Parts Manual for part numbers	
System pressures	Check steer pressure	Steer Pressure S2646 1,700 to 1,800 psi S3246 1,700 to 1,800 psi	
	Check system relief pressure	System Relief Pressure S2646 2,900 to 3,100 psi S3246 2,900 to 3,100 psi	

Performed by: \_\_\_\_\_ Date: \_\_\_\_\_



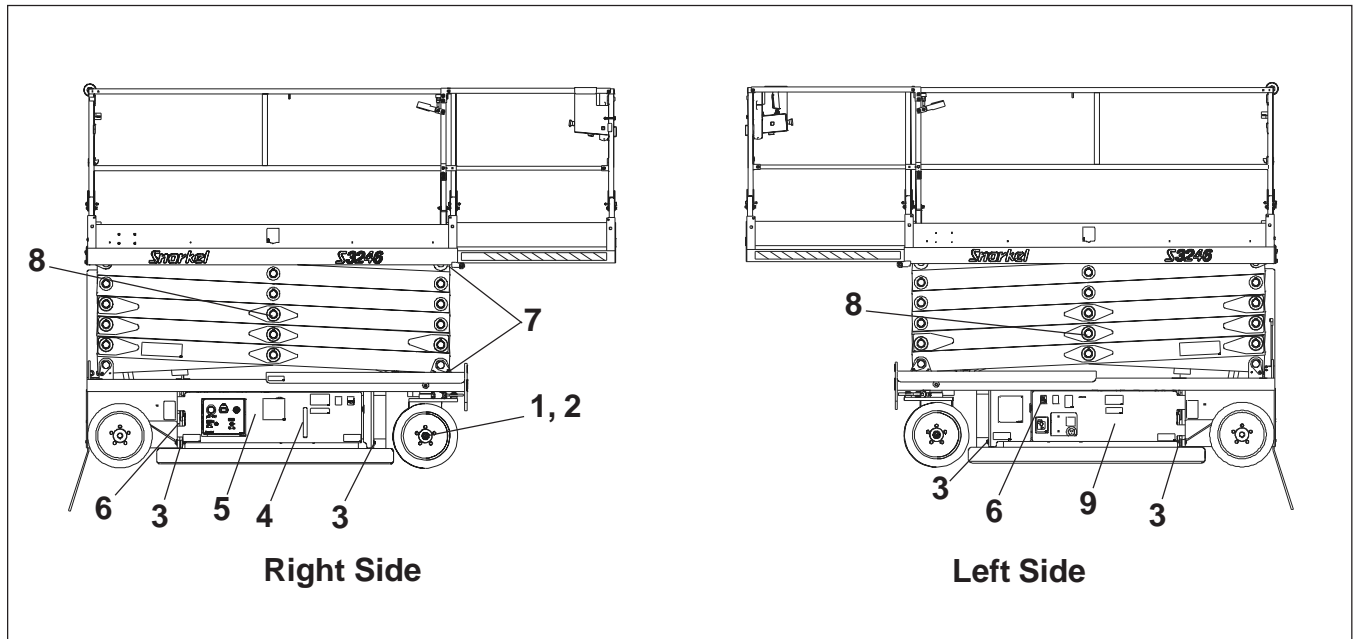
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## Major Repairs

Date	Part Number	Part Description	Repair Performed







## Lubrication Points

### Lubrication

Specific lubricants as recommended by Snorkel, should be used in maintaining the unit. If in doubt regarding the use of lubricants other than those listed, contact Snorkel Customer Service Department for evaluation and recommendation.

Anytime the aerial platform is elevated to perform maintenance work, properly position the safety prop as outlined on the safety prop decal.

### **⚠ Danger**

**Pinch points exist on the scissors structure. Death or serious injury will result if the scissors structure drops onto personnel working within the scissors arms or under the raised platform. Properly position the safety prop before reaching through the scissors structure.**

Refer to the above lubrication illustration for location of item numbers.

Service all fittings as indicated in the Maintenance Schedule and lubrication illustration. Wipe away all excess lubricant from exposed surfaces. Over lubrication can collect dirt and foreign matter which acts as an abrasive. Lubrication of accessory equipment should be in accordance with the manufacturer's recommendations.

### Tie Rods

Tie rods – Item 1. Lubricate using a petroleum based spray lubricant following the Frequent Inspection and Maintenance schedule.

### Steer Cylinder Ends

Steer cylinder ends – Item 2. Lubricate using a petroleum based spray lubricant following the Frequent Inspection and Maintenance schedule.

### Pothole Protectors

Pothole protectors – Item 3. Lubricate using a petroleum based spray lubricant following the Frequent Inspection and Maintenance schedule.

After lubricating, remove any excess so it will not collect dirt and debris.

### Hydraulic Oil Reservoir

Hydraulic oil reservoir – Item 4. The fluid level should be kept level with the indicator line on the side of the reservoir and should be checked with all cylinders fully retracted.

The interior of the reservoir should be wiped out and cleaned each time the hydraulic oil is changed. The reservoir filler/breather cap should be removed and the cap breather cleaned yearly with kerosene, fuel oil, or other solvent.

Any time the hydraulic oil is changed or added, it is absolutely necessary that only clean hydraulic oil is used.

### Note

*If it becomes necessary to add or use an oil other than the recommended fluid, it is important that it be compatible and equivalent to the factory fill. Local oil suppliers can generally furnish this information.*

If questions still remain, contact Snorkel Customer Service Department for further information.

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### Return Filter

Return filter – Item 5. The hydraulic oil return filter is mounted in the right hand tray close to the hydraulic oil reservoir.

The filter element is a throwaway type filter and should be changed after the initial break-in period (approximately 50 hours operation time).

Check the filter condition during the Frequent Inspection and Maintenance or more frequently under extreme working conditions.

When changing the filter element, the oil inside of the filter element, should be examined for deposits of metal cuttings, which if present, could indicate excessive wear in some of the system components.

### Tray Hinges and Latches

Tray hinges and latches – Item 6. Lubricate using powdered graphite following the Frequent Inspection and Maintenance schedule.

After lubricating, remove any excess so it will not collect dirt and debris.

### Slide Pads

Slide pads – Item 7. Check slide pads for excessive wear and replace as required. Slide pads do not require lubrication.

### Scissor Arm Bearings

Scissor arm bearings – Item 8. Scissor arm bearings are self lubricating. Check bearings for signs of damage and excessive wear as outlined in the maintenance schedule. Do not lubricate scissor arm bearings.

### Batteries

Batteries – Item 9. The batteries and battery cables should be checked to assure that the connections are tight and free of corrosion. Fluid level should be maintained to assure that the batteries will maintain proper charge.

Check the batteries specific gravity per the maintenance schedule.

The batteries are enclosed within a tray located on the side of the machine. For access to the batteries when the machine is lowered, position the machine on a hard level surface, unlatch and open tray.

## Warning

**Battery acid can damage the skin and eyes. Serious infection or reaction can result if medical treatment is not given immediately. Wear face and eye protection when working near the batteries.**

Wear rubber gloves and protective clothing to keep acid off skin, if acid contacts skin, wash off immediately with clear water.

Lead-acid batteries produce flammable and explosive gases. Never allow smoking, flames or sparks around batteries.

### Battery Care and Maintenance

The following information about battery care and maintenance was supplied by Interstate Batteries and is reprinted here with their permission.

1. New batteries need to be cycled several times before reaching full capacity (20-50 cycles, depending on type). Usage should be limited during this period.
2. Always recharge batteries fully, immediately after use. Batteries perform best when they are fully charged. More capacity and longer life will result from this practice.
3. The deeper the discharge, the fewer number of cycles a lead-acid battery will deliver. Deep discharges deteriorate the battery quicker than lighter shallow cycles.
4. Battery cables should be intact, and connectors kept tight at all times. Systematic inspection is recommended.
5. Vent caps should be kept in place and tight during vehicle operation and battery charging.
6. Batteries should be kept clean – free of dirt and corrosion – at all times. Always keep the top of batteries clean. A film on top of the battery can cause the current to migrate between the posts, accelerating self discharge.
7. Never let the electrolyte level of a lead-acid battery fall below the plates. Lack of maintaining the electrolyte in a lead-acid battery causes damage to the exposed portion of the plate which reduces capacity.
8. Always check electrolyte level before charging. Do not add water to individual cells unless plates are exposed. Batteries should be watered after charging unless the plates are exposed before charging. If exposed before charging, the plates should be covered by approximately 1/8" of water. Check water level after charging. Water should be kept 1/4" below the bottom of the fill tube in the cell cover.
9. Water used to replenish batteries should be distilled or treated to not exceed 200 T.D.S. (total dissolved solids... parts per million). Particular care should be taken to avoid metallic solids (iron).
10. A full charged battery will give you the best and longest service. Be sure the batteries are fully charged before testing or using. A fully charged battery, without a drain or load, after the surface charge has dissipated, is 6.35 volts for a 6 volt battery.

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11. Batteries should not be discharged below 20% of capacity (approximately 1.8 volts per cell under normal operating load; 1.98 volts open circuit; 1.145 specific gravity). Proper battery sizing will help avoid excessive discharge.
  12. Battery chargers should be sized to fully charge batteries in an eight hour period. Chargers should be kept in proper operating condition.
  13. Do not use a mismatched charger of any type; i.e., a 12 volt charger on a 24 volt pack or a 24 volt charger on a 12 volt pack. An undersized charger will never get the job done, no matter how long it tries. An oversized charger will cause excess gassing and heat that could possibly result in a battery meltdown and/or explosion.
  14. Never charge a lead-acid battery with a sealed (gel cell) battery charger. The lead-acid battery needs higher voltage to finish its charge. Without it the battery will never come back to 100% and sulfation can occur.
  15. Always allow batteries to cool off after charging. The cooling time is very important because heat is generated during the recharge and discharge cycles. Without the cooling time the heat grows, accelerating grid corrosion which is one of the major causes of battery failure. Charging practice should enable batteries to cool before use.
  16. Deep cycle batteries need to be equalized periodically. Equalizing is an extended, low current charge performed after the normal charge cycle. It helps keep cells in balance. Actively used batteries should be equalized once per week. Manually timed chargers should have the charge time extended approximately 3 hours. Automatically controlled chargers should be unplugged and reconnected after completing a charge cycle.
  17. In situations where multiple batteries are connected in series, parallel, or series-parallel, a replacement battery's should be of the same size, age, and usage level as the companion batteries. Do not put a new battery in a pack that has 50 or more cycles. Either replace all the batteries with new batteries or install a good used battery's in place of the bad. New batteries should be given a full charge before use.
  18. Periodic battery testing is an important preventative maintenance procedure. Hydrometer readings of each cell (fully charged) give an indication of balance and true charge level. Imbalance could mean the need for equalizing and is often a sign of improper charging or a bad cell. Voltage checks (open circuit, charged and discharged) can locate a bad cell or weak battery. Load testing will pick out a bad cell when other methods fail. The point is to look for the abnormal. A weak cell or battery will cause premature failure of companion cells or batteries respectively.
  19. As batteries age, their maintenance requirements change. Generally their specific gravity is higher and gassing voltage goes up. This means longer charging time and/or higher finish rate (higher amperage at the end of charge). Usually, older batteries need to be watered more often and their capacity decreases.
  20. "Opportunity charging", a short partial charge during an extended duty cycle, is a controversial subject. Generally, the practice is a "crutch" to make up for undersized batteries. The correct approach is to install adequate battery capacity. If this is impossible because of lack of space in the battery compartment or extreme operating conditions (24 hour intermittent use, as an example), "opportunity charging" is better than excessive battery discharging. However, the practice can cause batteries to over heat, require more watering, and usually will shorten battery life. "Opportunity charging" is a trade off; something to avoid if possible. One charging cycle per day is preferable.
  21. Extreme temperatures can substantially affect battery performance and charging. Cold reduces battery capacity and retards charging. Heat increases water usage and can result in overcharging. Very high temperature can cause "thermal run away" which may lead to an explosion or fire. If extreme temperature is an unavoidable part of an application, consult a battery/charger specialist about ways to deal with the problem.
  22. An overly discharged battery might need to be cycled a few times before it can recover fully. If a battery begins to heat before coming up to a full charge, it might be necessary to discharge the battery and recharge it a few times. The charge and discharge cycle might help the current acceptance of the battery and facilitate its recovery to a usable condition.
  23. Inactivity can be harmful to deep cycle batteries. If they sit for several months, a "boost" charge should be given – more frequently in warm climate (about once a month) than in cold (every 2-3 months).
  24. Never store a battery in a discharged state. The sulfate that forms during discharge can make the battery impossible to recharge fully.

## Battery Charger

The aerial platform is equipped with an onboard automatic battery charger. This charger has an electronic circuit that will completely recharge the batteries and automatically turn off after the charge cycle is completed.

The charging cycle may last 1 1/2 to 18 hours depending on the state of charge of the batteries. If the charging cycle should exceed 18 hours without the batteries be-

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ing fully recharged, the charger should be shut off and the batteries should be checked.

Refer to the troubleshooting section in the battery charger Owner's Manual for more information.

### **General Charging Cautions**

1. Do not recharge batteries unless Electrolyte level has been checked. Operate charger in accordance with the battery charging instructions outline in this manual. Place the battery disconnect switch in the off position before charging batteries.





2. Do not smoke or introduce a flame or spark in the charging area.

### **Warning**

**Batteries give off hydrogen and oxygen that can combine explosively. Death or serious injury can result from a chemical explosion. Charge the batteries only in a well ventilated area away from sparks or flame.**

3. Use protective face and eye equipment when checking the condition of charging batteries.

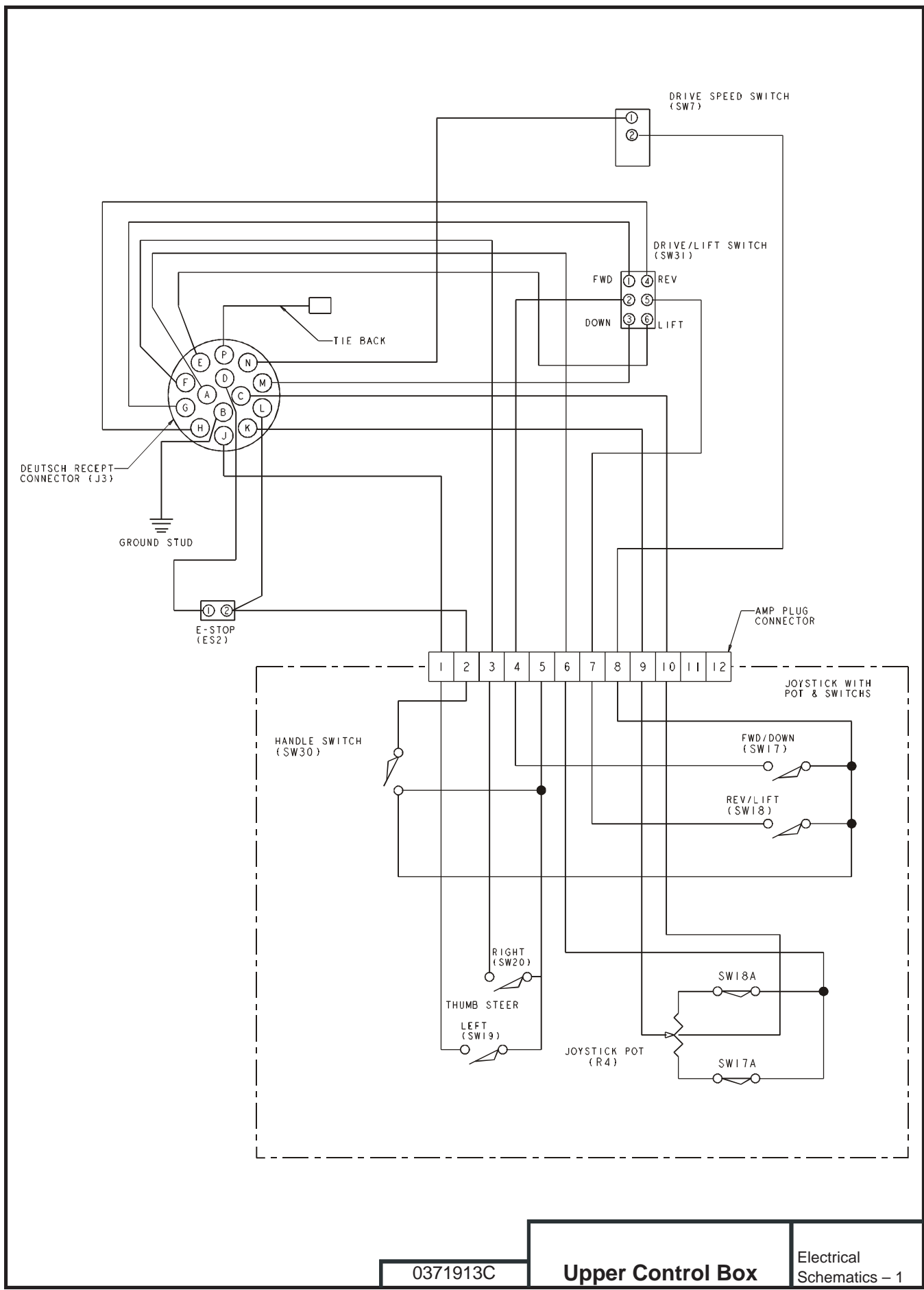
## Fastener Torque Chart

Bolt Grade	SAE Grade 1 or 2	SAE Grade 5	SAE Grade 6	SAE Grade 8
Marking				
Definition	Indeterminate Quality	Minimum Commercial Quality	Medium Commercial Quality	Best Commercial Quality
Material	Low Carbon Steel	Medium Carbon Steel Tempered	Medium Carbon Steel Quenched and Tempered	Medium Carbon Alloy Steel Quenched and Tempered
Minimum Tensile Strength	64,000 psi.	105,000 psi	133,000 psi.	150,000 psi
Bolt Size	Recommended Torque Value (ft lbs)			
1/4	5	7	10	10.5
5/16	9	14	19	22
3/8	15	25	34	37
7/16	24	40	55	60
1/2	37	60	85	92
9/16	53	88	120	132
5/8	74	120	167	180
3/4	120	200	280	296
7/8	190	302	440	473
1	282	466	660	714

### Torque chart information:

- Consult manufacturers' specific recommendations when available
- The chart may be used with both course and fine thread fasteners lightly lubricated
- Increase torque by 20% when multiple tapered tooth (shake proof) lock washers are used
- The torque values are given in foot-pounds
- Inch pound equivalent may be obtained by multiplying by 12





0371913C

**Upper Control Box**

Electrical Schematics - 1

6	222	LIFT-PLATFORM
5	126	REVERSE/LIFT
4	18	DRIVE REVERSE
3	103	DOWN-PLATFORM
2	125	FORWARD/DOWN
1	17	DRIVE FORWARD
POSITION	WIRE	DESCRIPTION
SWITCH		3020047

DRIVE/LIFT SWITCH

P	175	OVERLOAD LIGHT CE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

DEUTSCH RECEPT CONNECTOR

2	114A	POWER TO JOYSTICK
2	114	RETURN POWER (TO LOWER CONTROL BOX)
1	2	POWER
POSITION	WIRE	DESCRIPTION
E-STOP		446826 & 446836

E-STOP

WIRE	DESCRIPTION	COLOR	FROM	TO
19	STEER LEFT	WHT/RED	SW19-NO	AMP-1
20	STEER RIGHT	WHITE	SW20-NO	AMP-3
101	OUTPUT FROM JOYSTICK	GREEN	POT-W	AMP-9
114A	POWER TO JOYSTICK	WHT/BLK	AMP-2	SW30-C
115	POWER TO FWD/REV SWITCHES	WHT/BLU	SW30-NO	SW17-C, SW18-C, & AMP-8
115A	POWER TO THUMB STEER	WHT/GRN	SW30-NO	SW19-C, SW20-C, & AMP-5
121	POT RESISTOR	BLUE	AMP-6	SW18A-C & SW17A-C
122	CENTER TAP	GRAY	AMP-10	POT-T
125	FORWARD/DOWN	YELLOW	SW17-NO	AMP-4
126	REVERSE/LIFT	BROWN	SW18-NO	AMP-7
209	POT TO SWITCH	VIOLET	POT-CCW	SW18A-NC
210	POT TO SWITCH	ORANGE	POT-CW	SW17A-NC

WIRING WITHIN JOYSTICK

NOTES:  
1. 'XXXX'-NO: NORMALLY OPEN POSITION OF SWITCH  
2. 'XXXX'-NC: NORMALLY CLOSED POSITION OF SWITCH  
3. 'XXXX'-C: COMMON POSITION OF SWITCH

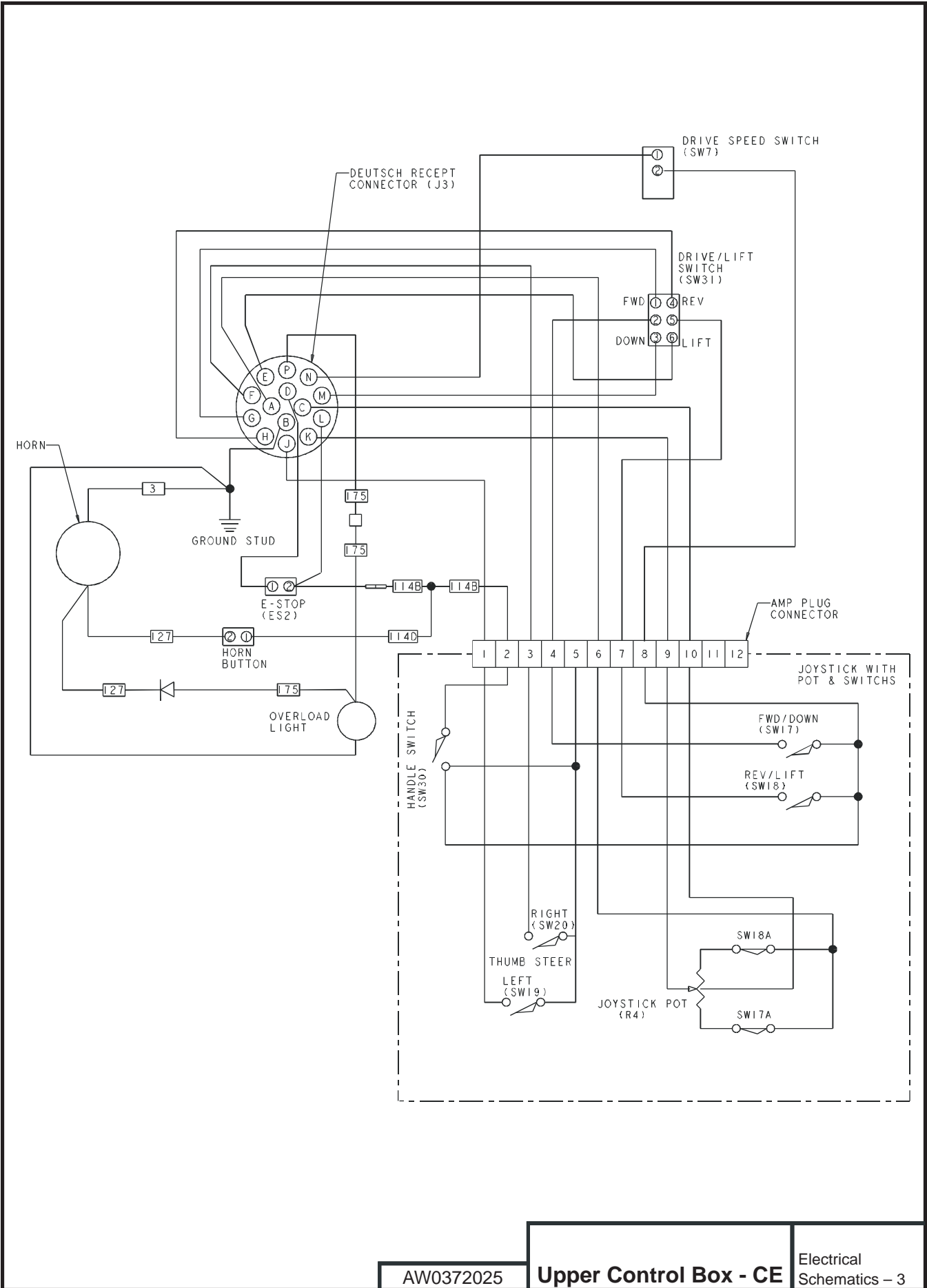
12		SPARE
11		SPARE
10	122	CENTER TAP
9	101	OUTPUT FROM JOYSTICK
8	115	PWR DRIVE SPEED SWITCH
7	126	REVERSE/LIFT
6	121	POT RESISTOR
5		SPARE
4	125	FORWARD/DOWN
3	20	STEER RIGHT
2	114A	POWER TO JOYSTICK
1	19	STEER LEFT
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049993

AMP PLUG CONNECTOR (NON-JOYSTICK SIDE)

2	115	POWER TO DRIVE SPEED SWITCH
1	7	DRIVE SPEED
POSITION	WIRE	DESCRIPTION
DRIVE SPEED		3020013

DRIVE SPEED SWITCH





6	222	LIFT-PLATFORM
5	126	REVERSE/LIFT
4	18	DRIVE REVERSE
3	103	DOWN-PLATFORM
2	125	FORWARD/DOWN
1	17	DRIVE FORWARD
POSITION	WIRE	DESCRIPTION
SWITCH		3020047

DRIVE/LIFT SWITCH

P	175	OVERLOAD LIGHT CE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

DEUTSCH RECEPT CONNECTOR

2	114A	POWER TO JOYSTICK
2	114	RETURN POWER (TO LOWER CONTROL BOX)
1	2	POWER
POSITION	WIRE	DESCRIPTION
E-STOP		446826 & 446836

E-STOP

12		SPARE
11		SPARE
10	122	CENTER TAP
9	101	OUTPUT FROM JOYSTICK
8	115	PWR DRIVE SPEED SWITCH
7	126	REVERSE/LIFT
6	121	POT RESISTOR
5		SPARE
4	125	FORWARD/DOWN
3	20	STEER RIGHT
2	114A	POWER TO JOYSTICK
1	19	STEER LEFT
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049993

AMP PLUG CONNECTOR (NON-JOYSTICK SIDE)

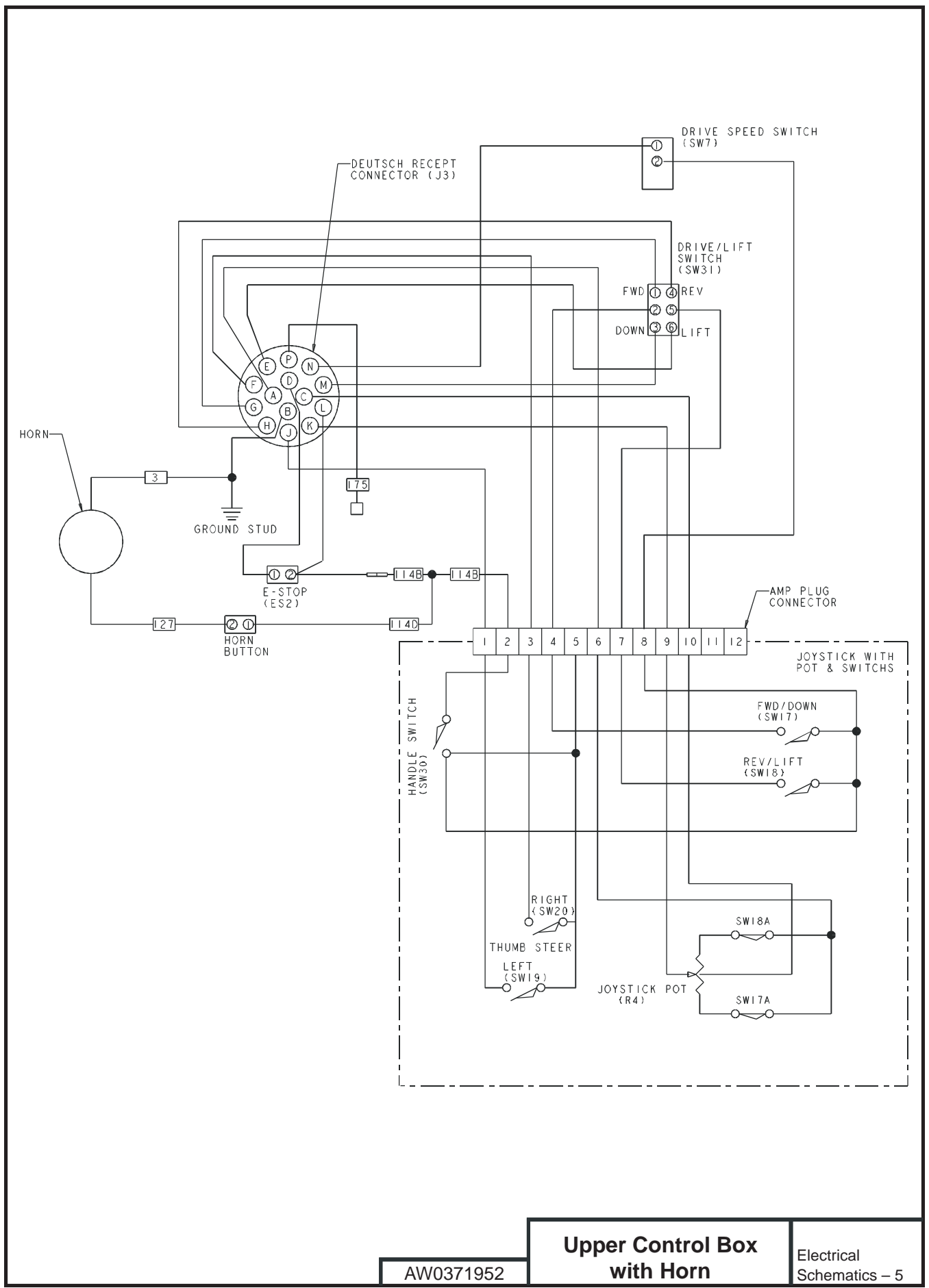
2	115	POWER TO DRIVE SPEED SWITCH
1	7	DRIVE SPEED
POSITION	WIRE	DESCRIPTION
DRIVE SPEED		3020013

DRIVE SPEED SWITCH

WIRE	DESCRIPTION	COLOR	FROM	TO
19	STEER LEFT	WHT/RED	SW19-NO	AMP-1
20	STEER RIGHT	WHITE	SW20-NO	AMP-3
101	OUTPUT FROM JOYSTICK	GREEN	POT-W	AMP-9
114A	POWER TO JOYSTICK	WHT/BLK	AMP-2	SW30-C
115	POWER TO FWD/REV SWITCHES	WHT/BLU	SW30-NO	SW17-C, SW18-C, & AMP-8
115A	POWER TO THUMB STEER	WHT/GRN	SW30-NO	SW19-C, SW20-C, & AMP-5
121	POT RESISTOR	BLUE	AMP-6	SW18A-C & SW17A-C
122	CENTER TAP	GRAY	AMP-10	POT-T
125	FORWARD/DOWN	YELLOW	SW17-NO	AMP-4
126	REVERSE/LIFT	BROWN	SW18-NO	AMP-7
209	POT TO SWITCH	VIOLET	POT-CCW	SW18A-NC
210	POT TO SWITCH	ORANGE	POT-CW	SW17A-NC

WIRING WITHIN JOYSTICK

NOTES:  
1. 'XXXX'-NO: NORMALLY OPEN POSITION OF SWITCH  
2. 'XXXX'-NC: NORMALLY CLOSED POSITION OF SWITCH  
3. 'XXXX'-C: COMMON POSITION OF SWITCH



AW0371952

**Upper Control Box  
with Horn**

Electrical  
Schematics - 5

6	222	LIFT-PLATFORM
5	126	REVERSE/LIFT
4	18	DRIVE REVERSE
3	103	DOWN-PLATFORM
2	125	FORWARD/DOWN
1	17	DRIVE FORWARD
POSITION	WIRE	DESCRIPTION
SWITCH		3020047

DRIVE/LIFT SWITCH

P	175	OVERLOAD LIGHT CE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

DEUTSCH RECEIPT CONNECTOR

2	114A	POWER TO JOYSTICK
2	114	RETURN POWER (TO LOWER CONTROL BOX)
1	2	POWER
POSITION	WIRE	DESCRIPTION
E-STOP		446826 & 446836

E-STOP

12		SPARE
11		SPARE
10	122	CENTER TAP
9	101	OUTPUT FROM JOYSTICK
8	115	PWR DRIVE SPEED SWITCH
7	126	REVERSE/LIFT
6	121	POT RESISTOR
5		SPARE
4	125	FORWARD/DOWN
3	20	STEER RIGHT
2	114A	POWER TO JOYSTICK
1	19	STEER LEFT
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049993

AMP PLUG CONNECTOR (NON-JOYSTICK SIDE)

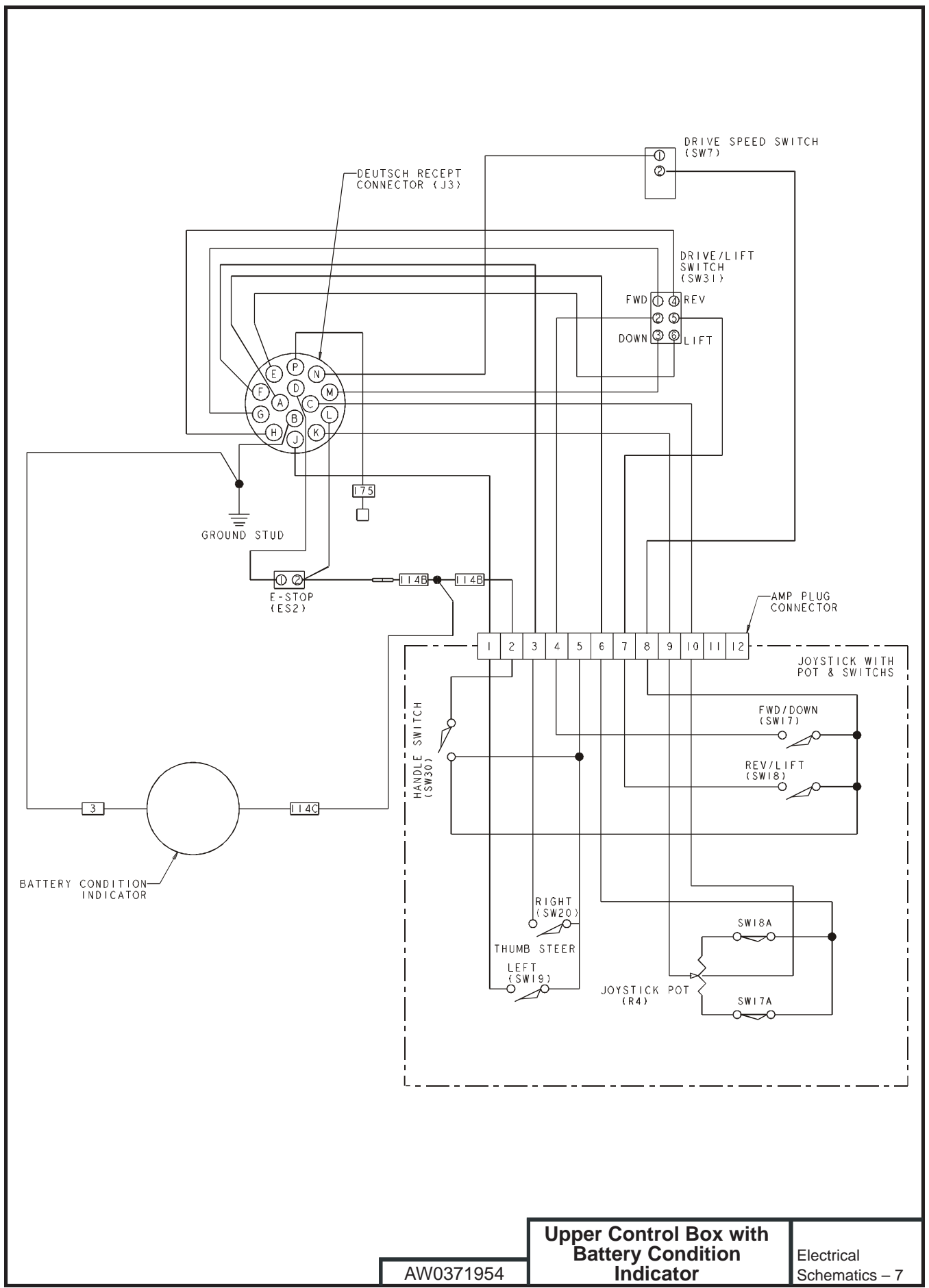
2	115	POWER TO DRIVE SPEED SWITCH
1	7	DRIVE SPEED
POSITION	WIRE	DESCRIPTION
DRIVE SPEED		3020013

DRIVE SPEED SWITCH

WIRE	DESCRIPTION	COLOR	FROM	TO
19	STEER LEFT	WHT/RED	SW19-NO	AMP-1
20	STEER RIGHT	WHITE	SW20-NO	AMP-3
101	OUTPUT FROM JOYSTICK	GREEN	POT-W	AMP-9
114A	POWER TO JOYSTICK	WHT/BLK	AMP-2	SW30-C
115	POWER TO FWD/REV SWITCHES	WHT/BLU	SW30-NO	SW17-C, SW18-C, & AMP-8
115A	POWER TO THUMB STEER	WHT/GRN	SW30-NO	SW19-C, SW20-C, & AMP-5
121	POT RESISTOR	BLUE	AMP-6	SW18A-C & SW17A-C
122	CENTER TAP	GRAY	AMP-10	POT-T
125	FORWARD/DOWN	YELLOW	SW17-NO	AMP-4
126	REVERSE/LIFT	BROWN	SW18-NO	AMP-7
209	POT TO SWITCH	VIOLET	POT-CCW	SW18A-NC
210	POT TO SWITCH	ORANGE	POT-CW	SW17A-NC

WIRING WITHIN JOYSTICK

NOTES:  
1. 'XXXX'-NO: NORMALLY OPEN POSITION OF SWITCH  
2. 'XXXX'-NC: NORMALLY CLOSED POSITION OF SWITCH  
3. 'XXXX'-C: COMMON POSITION OF SWITCH



**Upper Control Box with  
Battery Condition  
Indicator**

AW0371954

Electrical  
Schematics - 7

6	222	LIFT-PLATFORM
5	126	REVERSE/LIFT
4	18	DRIVE REVERSE
3	103	DOWN-PLATFORM
2	125	FORWARD/DOWN
1	17	DRIVE FORWARD
POSITION	WIRE	DESCRIPTION
SWITCH		3020047

DRIVE/LIFT SWITCH

P	175	OVERLOAD LIGHT CE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

DEUTSCH RECEPT CONNECTOR

2	114A	POWER TO JOYSTICK
2	114	RETURN POWER (TO LOWER CONTROL BOX)
1	2	POWER
POSITION	WIRE	DESCRIPTION
E-STOP		446826 & 446836

E-STOP

WIRE	DESCRIPTION	COLOR	FROM	TO
19	STEER LEFT	WHT/RED	SW19-NO	AMP-1
20	STEER RIGHT	WHITE	SW20-NO	AMP-3
101	OUTPUT FROM JOYSTICK	GREEN	POT-W	AMP-9
114A	POWER TO JOYSTICK	WHT/BLK	AMP-2	SW30-C
115	POWER TO FWD/REV SWITCHES	WHT/BLU	SW30-NO	SW17-C, SW18-C, & AMP-8
115A	POWER TO THUMB STEER	WHT/GRN	SW30-NO	SW19-C, SW20-C, & AMP-5
121	POT RESISTOR	BLUE	AMP-6	SW18A-C & SW17A-C
122	CENTER TAP	GRAY	AMP-10	POT-T
125	FORWARD/DOWN	YELLOW	SW17-NO	AMP-4
126	REVERSE/LIFT	BROWN	SW18-NO	AMP-7
209	POT TO SWITCH	VIOLET	POT-CCW	SW18A-NC
210	POT TO SWITCH	ORANGE	POT-CW	SW17A-NC

WIRING WITHIN JOYSTICK

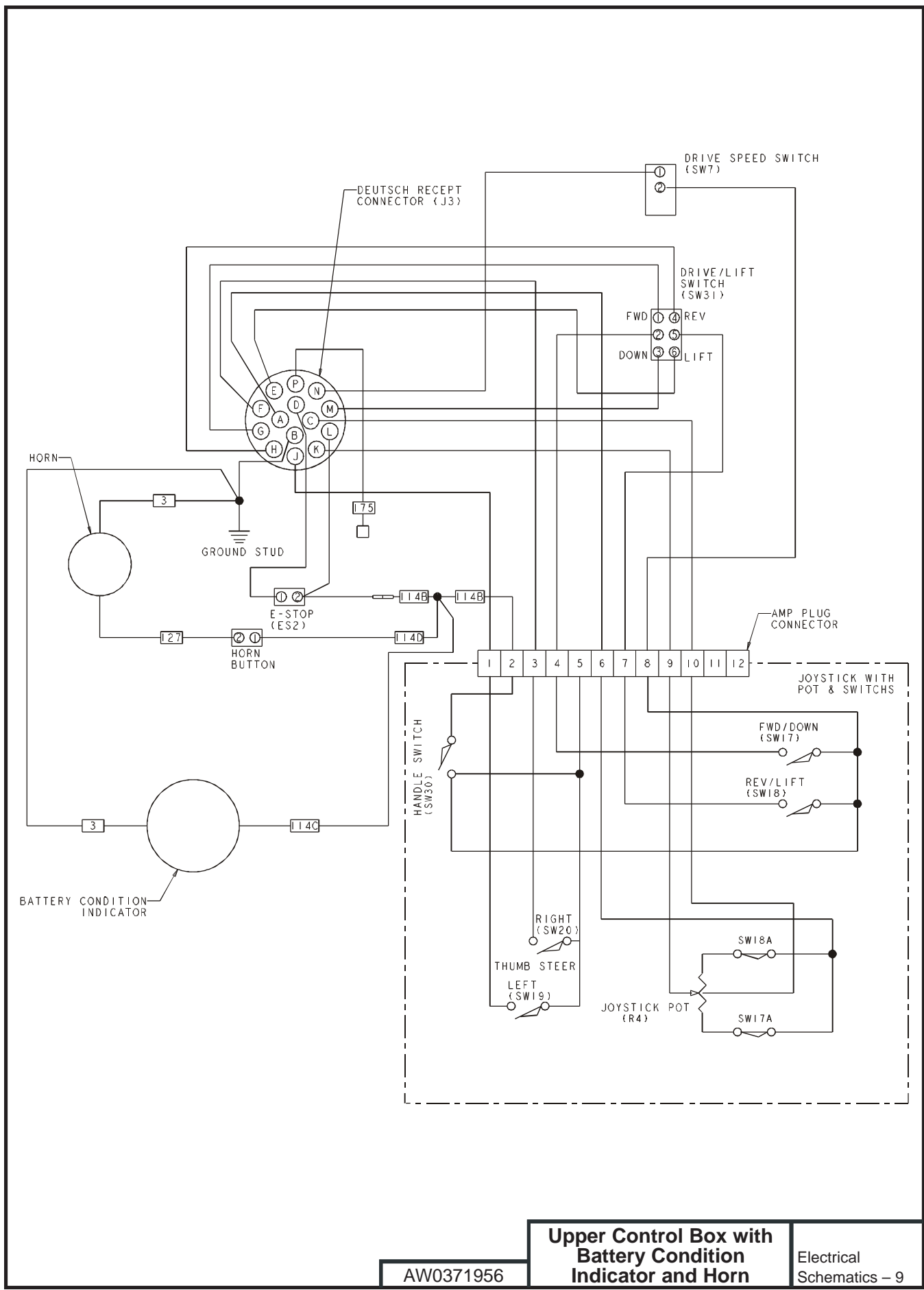
NOTES:  
1. 'XXXX'-NO: NORMALLY OPEN POSITION OF SWITCH  
2. 'XXXX'-NC: NORMALLY CLOSED POSITION OF SWITCH  
3. 'XXXX'-C: COMMON POSITION OF SWITCH

12		SPARE
11		SPARE
10	122	CENTER TAP
9	101	OUTPUT FROM JOYSTICK
8	115	PWR DRIVE SPEED SWITCH
7	126	REVERSE/LIFT
6	121	POT RESISTOR
5		SPARE
4	125	FORWARD/DOWN
3	20	STEER RIGHT
2	114A	POWER TO JOYSTICK
1	19	STEER LEFT
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049993

AMP PLUG CONNECTOR (NON-JOYSTICK SIDE)

2	115	POWER TO DRIVE SPEED SWITCH
1	7	DRIVE SPEED
POSITION	WIRE	DESCRIPTION
DRIVE SPEED		3020013

DRIVE SPEED SWITCH



AW0371956	<b>Upper Control Box with Battery Condition Indicator and Horn</b>	Electrical Schematics – 9
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6	222	LIFT-PLATFORM
5	126	REVERSE/LIFT
4	18	DRIVE REVERSE
3	103	DOWN-PLATFORM
2	125	FORWARD/DOWN
1	17	DRIVE FORWARD
POSITION	WIRE	DESCRIPTION
SWITCH		3020047

DRIVE/LIFT SWITCH

P	175	OVERLOAD LIGHT CE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

DEUTSCH RECEIPT CONNECTOR

2	114A	POWER TO JOYSTICK
2	114	RETURN POWER (TO LOWER CONTROL BOX)
1	2	POWER
POSITION	WIRE	DESCRIPTION
E-STOP		446826 & 446836

E-STOP

WIRE	DESCRIPTION	COLOR	FROM	TO
19	STEER LEFT	WHT/RED	SW19-NO	AMP-1
20	STEER RIGHT	WHITE	SW20-NO	AMP-3
101	OUTPUT FROM JOYSTICK	GREEN	POT-W	AMP-9
114A	POWER TO JOYSTICK	WHT/BLK	AMP-2	SW30-C
115	POWER TO FWD/REV SWITCHES	WHT/BLU	SW30-NO	SW17-C, SW18-C, & AMP-8
115A	POWER TO THUMB STEER	WHT/GRN	SW30-NO	SW19-C, SW20-C, & AMP-5
121	POT RESISTOR	BLUE	AMP-6	SW18A-C & SW17A-C
122	CENTER TAP	GRAY	AMP-10	POT-T
125	FORWARD/DOWN	YELLOW	SW17-NO	AMP-4
126	REVERSE/LIFT	BROWN	SW18-NO	AMP-7
209	POT TO SWITCH	VIOLET	POT-CCW	SW18A-NC
210	POT TO SWITCH	ORANGE	POT-CW	SW17A-NC

WIRING WITHIN JOYSTICK

NOTES:  
1. 'XXXX'-NO: NORMALLY OPEN POSITION OF SWITCH  
2. 'XXXX'-NC: NORMALLY CLOSED POSITION OF SWITCH  
3. 'XXXX'-C: COMMON POSITION OF SWITCH

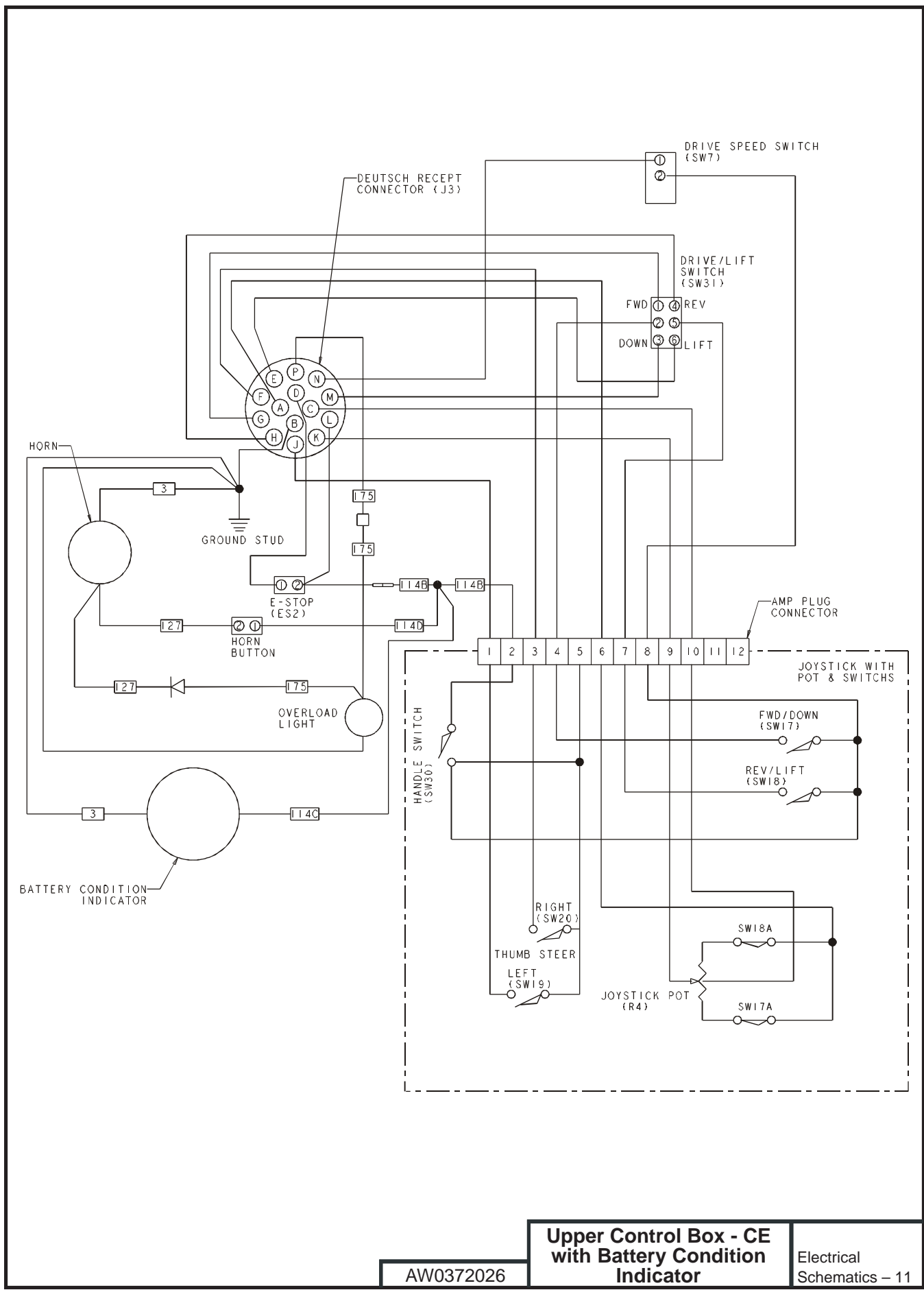
12		SPARE
11		SPARE
10	122	CENTER TAP
9	101	OUTPUT FROM JOYSTICK
8	115	PWR DRIVE SPEED SWITCH
7	126	REVERSE/LIFT
6	121	POT RESISTOR
5		SPARE
4	125	FORWARD/DOWN
3	20	STEER RIGHT
2	114A	POWER TO JOYSTICK
1	19	STEER LEFT
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049993

AMP PLUG CONNECTOR (NON-JOYSTICK SIDE)

2	115	POWER TO DRIVE SPEED SWITCH
1	7	DRIVE SPEED
POSITION	WIRE	DESCRIPTION
DRIVE SPEED		3020013

DRIVE SPEED SWITCH





**Upper Control Box - CE  
with Battery Condition  
Indicator**

AW0372026

Electrical  
Schematics - 11

6	222	LIFT-PLATFORM
5	126	REVERSE/LIFT
4	18	DRIVE REVERSE
3	103	DOWN-PLATFORM
2	125	FORWARD/DOWN
1	17	DRIVE FORWARD
POSITION	WIRE	DESCRIPTION
SWITCH		3020047

DRIVE/LIFT SWITCH

P	175	OVERLOAD LIGHT CE
N	7	DRIVE SPEED SWITCH
M	103	DOWN-PLATFORM
L	114	RETURN POWER (TO LOWER CONTROL BOX)
K	101	OUTPUT FROM JOYSTICK
J	19	STEER LEFT
H	18	DRIVE REVERSE
G	17	DRIVE FORWARD
F	20	STEER RIGHT
E	222	LIFT-PLATFORM
D	2	POWER
C	122	CENTER TAP
B	3P	GROUND
A	121	POT RESISTOR
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049862

DEUTSCH RECEIPT CONNECTOR

2	114A	POWER TO JOYSTICK
2	114	RETURN POWER (TO LOWER CONTROL BOX)
1	2	POWER
POSITION	WIRE	DESCRIPTION
E-STOP		446826 & 446836

E-STOP

WIRE	DESCRIPTION	COLOR	FROM	TO
19	STEER LEFT	WHT/RED	SW19-NO	AMP-1
20	STEER RIGHT	WHITE	SW20-NO	AMP-3
101	OUTPUT FROM JOYSTICK	GREEN	POT-W	AMP-9
114A	POWER TO JOYSTICK	WHT/BLK	AMP-2	SW30-C
115	POWER TO FWD/REV SWITCHES	WHT/BLU	SW30-NO	SW17-C, SW18-C, & AMP-8
115A	POWER TO THUMB STEER	WHT/GRN	SW30-NO	SW19-C, SW20-C, & AMP-5
121	POT RESISTOR	BLUE	AMP-6	SW18A-C & SW17A-C
122	CENTER TAP	GRAY	AMP-10	POT-T
125	FORWARD/DOWN	YELLOW	SW17-NO	AMP-4
126	REVERSE/LIFT	BROWN	SW18-NO	AMP-7
209	POT TO SWITCH	VIOLET	POT-CCW	SW18A-NC
210	POT TO SWITCH	ORANGE	POT-CW	SW17A-NC

WIRING WITHIN JOYSTICK

NOTES:  
1. 'XXXX'-NO: NORMALLY OPEN POSITION OF SWITCH  
2. 'XXXX'-NC: NORMALLY CLOSED POSITION OF SWITCH  
3. 'XXXX'-C: COMMON POSITION OF SWITCH

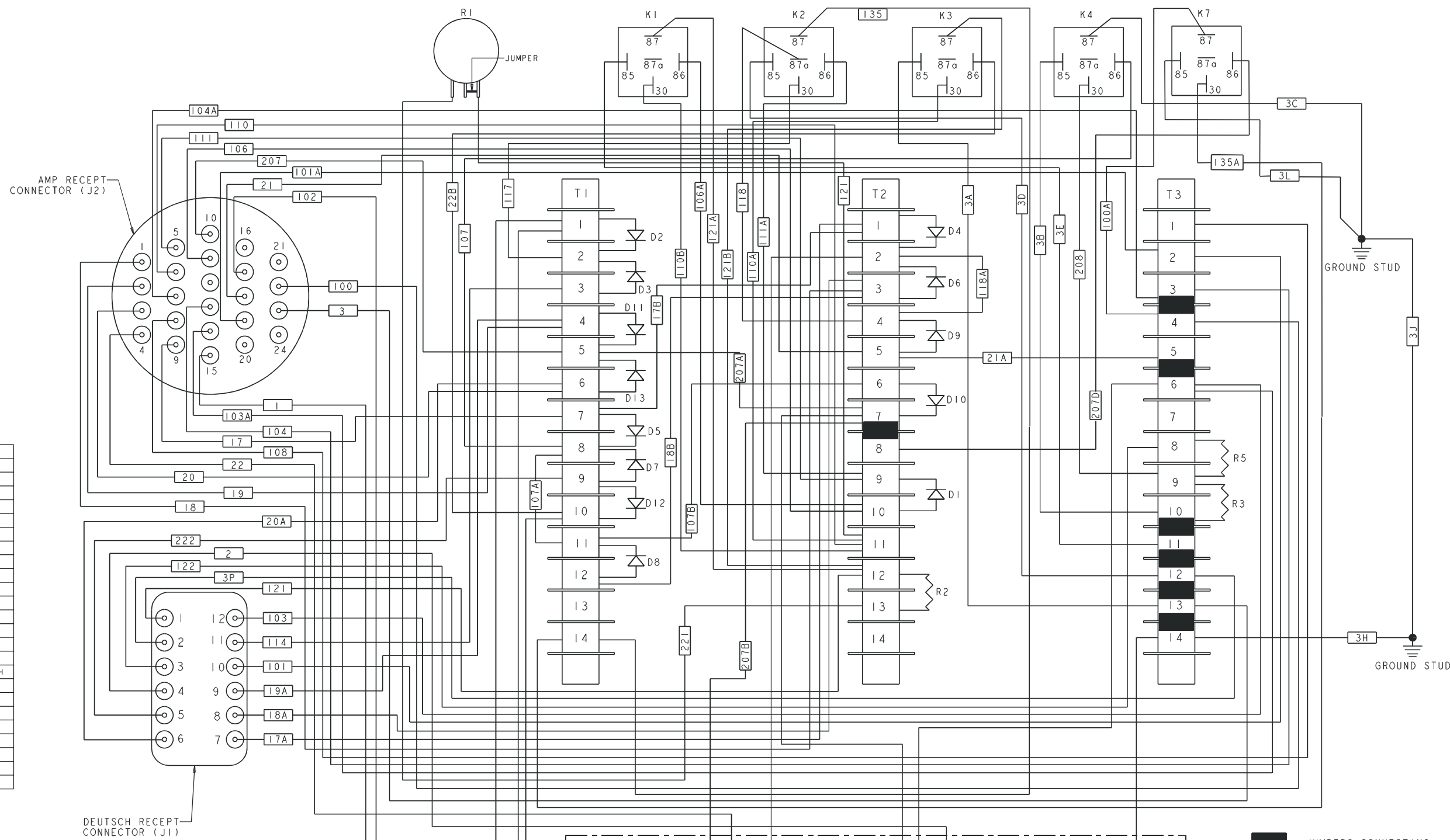
12		SPARE
11		SPARE
10	122	CENTER TAP
9	101	OUTPUT FROM JOYSTICK
8	115	PWR DRIVE SPEED SWITCH
7	126	REVERSE/LIFT
6	121	POT RESISTOR
5		SPARE
4	125	FORWARD/DOWN
3	20	STEER RIGHT
2	114A	POWER TO JOYSTICK
1	19	STEER LEFT
POSITION	WIRE	DESCRIPTION
CONNECTOR		3049993

AMP PLUG CONNECTOR (NON-JOYSTICK SIDE)

2	115	POWER TO DRIVE SPEED SWITCH
1	7	DRIVE SPEED
POSITION	WIRE	DESCRIPTION
DRIVE SPEED		3020013

DRIVE SPEED SWITCH

F  
E  
D  
C  
B  
A



POSITION	WIRE	DESCRIPTION
24	PLUG	SPARE
23	3	GROUND
22	100	PWR PRESSURE SWITCH
21	PLUG	SPARE
20	PLUG	SPARE
19	101A	CONTROLLER SIGNAL
18	21	DOWN VALVE
17	102	PWR POTHOLE/6' STACK SWITCH
16	PLUG	SPARE
15	1	BATTERY POS
14	103A	PWR LOWERING INTERRUPT SWITCH
13	104	CONTROLLER PWR
12	PLUG	SPARE
11	106	FROM STACK SWITCH
10	207	CONTACTOR PWR
9	17	DRIVE FORWARD VALVE
8	108	FROM LOWERING INTERRUPT SWITCH
7	104A	FROM PRESSURE SWITCH
6	110	CONTROLLER OUTPUT VOLTAGE
5	111	FROM TILT SENSOR
4	22	LIFT VALVE
3	20	STEER RIGHT VALVE
2	19	STEER LEFT VALVE
1	18	DRIVE REVERSE VALVE

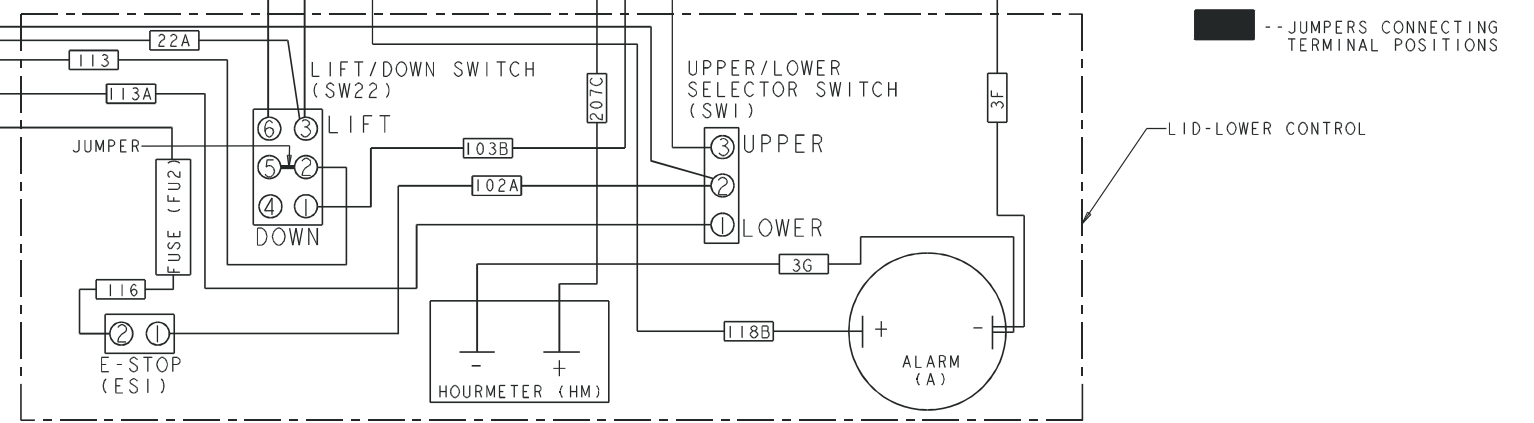
AMP RECEPT CONNECTOR (J2)

DEUTSCH RECEPT CONNECTOR (J1)

COMPONENT NAME	COMPONENT DESCRIPTION
A	ALARM-MOTION
ES1	LOWER CONTROL E-STOP
FU2	FUSE-CONTROLS
HM	HOURMETER
J1	JUMPER-OVERLOAD
J2	JUMPER-CE LOWERING CIRCUIT
K1	RELAY-HI SPEED
K2	RELAY-TILT
K3	RELAY-LIFT
R1	VARIABLE RESISTOR-LOW SPEED
R2	RESISTOR-TURNING
R3	RESISTOR-LOW SPEED
R5	RESISTOR-JOYSTICK THRESHOLD
SW1	LOWER/UPPER CONTROL SELECTOR SWITCH
SW22	LOWER CONTROL-LIFT/DOWN SWITCH

POSITION	WIRE	DESCRIPTION
12	103	DOWN-PLATFORM
11	114	RETURN POWER (TO LOWER CONTROL BOX)
10	101	OUTPUT FROM JOYSTICK
9	19A	STEER LEFT
8	18A	DRIVE REVERSE
7	17A	DRIVE FORWARD
6	20A	STEER RIGHT
5	222	LIFT-PLATFORM
4	2	POWER
3	122	CENTER TAP
2	3P	GROUND
1	121	POT RESISTORS

DEUTSCH RECEPT CONNECTOR (J1)



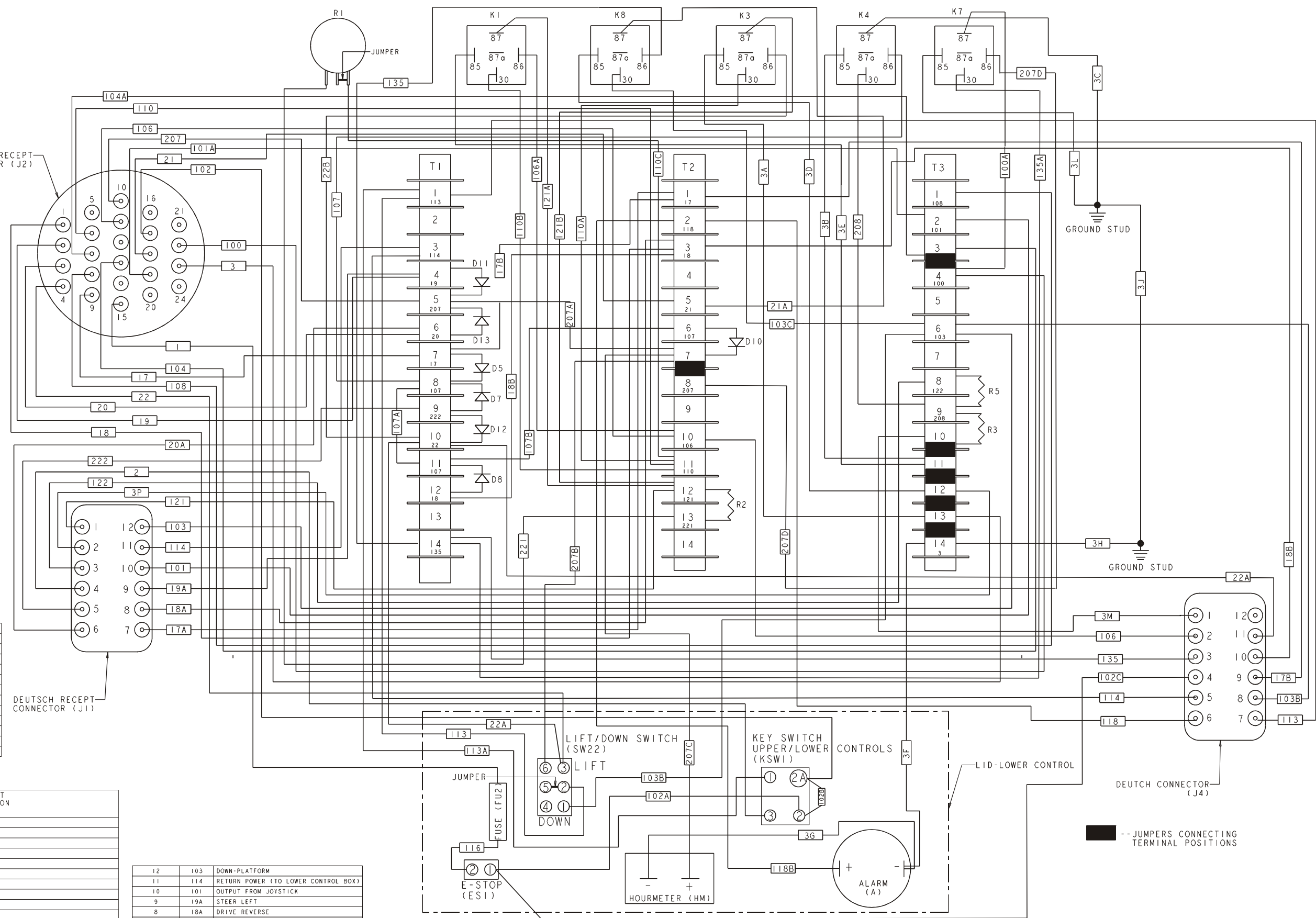
--- JUMPERS CONNECTING TERMINAL POSITIONS

LID-LOWER CONTROL

1 2 3 4 5 6 7 8 9



F  
E  
D  
C  
B  
A



POSITION	WIRE	DESCRIPTION
24	PLUG	SPARE
23	3	GROUND
22	100	PWR PRESSURE SWITCH
21	PLUG	SPARE
20	PLUG	SPARE
19	101A	CONTROLLER SIGNAL
18	21	DOWN VALVE
17	102	PWR POTHOLE/6"STACK SWITCH
16	PLUG	SPARE
15	1	BATTERY POS
14	103A	PWR LOWERING INTERRUPT SWITCH
13	104	CONTROLLER PWR
12	PLUG	SPARE
11	106	FROM STACK SWITCH
10	207	CONTACTOR PWR
9	17	DRIVE FORWARD VALVE
8	108	FROM LOWERING INTERRUPT SWITCH
7	104A	FROM PRESSURE SWITCH
6	110	CONTROLLER OUTPUT VOLTAGE
5	111	FROM TILT SENSOR
4	22	LIFT VALVE
3	20	STEER RIGHT VALVE
2	19	STEER LEFT VALVE
1	18	DRIVE REVERSE VALVE

POSITION	WIRE	DESCRIPTION
12	PLUG	-
11	22A	LIFT SOLENOID
10	18B	REVERSE SOLENOID
9	17B	FORWARD SOLENOID
8	103B	GROUND REQUEST
7	113	GROUND CONTROL MODE SIGNAL
6	118	ALARM OUTPUT FROM OVERLOAD CONT MOD
5	114	PLATFORM MODE SIGNAL
4	102C	POWER OVERLOAD CONTROL MODULE
3	135	24V OUTPUT FROM OVERLOAD CONT MOD
2	106	STACK SWITCH
1	3M	GROUND

DEUTSCH RECEPT CONNECTOR (J4)

COMPONENT NAME	COMPONENT DESCRIPTION
A	ALARM-MOTION
-	-
ES1	LOWER CONTROL E-STOP
FU2	FUSE-CONTROLS
HM	HOURLMETER
J1	JUMPER-OVERLOAD
J2	JUMPER-CE LOWERING CIRCUIT
K1	RELAY-HI SPEED
-	-
K2	RELAY-TILT
K3	RELAY-LIFT
K4	RELAY-DRIVE SPEED RELAY
K7	RELAY - CONTROLLER POWER
KSW1	KEY SWITCH-LOWER CONTROLS/OFF/UPPER CONTROLS
R1	VARIABLE RESISTOR-LOW SPEED
R2	RESISTOR-TURNING
R3	RESISTOR-LOW SPEED
R5	RESISTOR-JOYSTICK THRESHOLD
SW22	LOWER CONTROL-LIFT/DOWN SWITCH

POSITION	WIRE	DESCRIPTION
12	103	DOWN-PLATFORM
11	114	RETURN POWER (TO LOWER CONTROL BOX)
10	101	OUTPUT FROM JOYSTICK
9	19A	STEER LEFT
8	18A	DRIVE REVERSE
7	17A	DRIVE FORWARD
6	20A	STEER RIGHT
5	222	LIFT-PLATFORM
4	2	POWER
3	122	CENTER TAP
2	3P	GROUND
1	121	POT RESISTORS

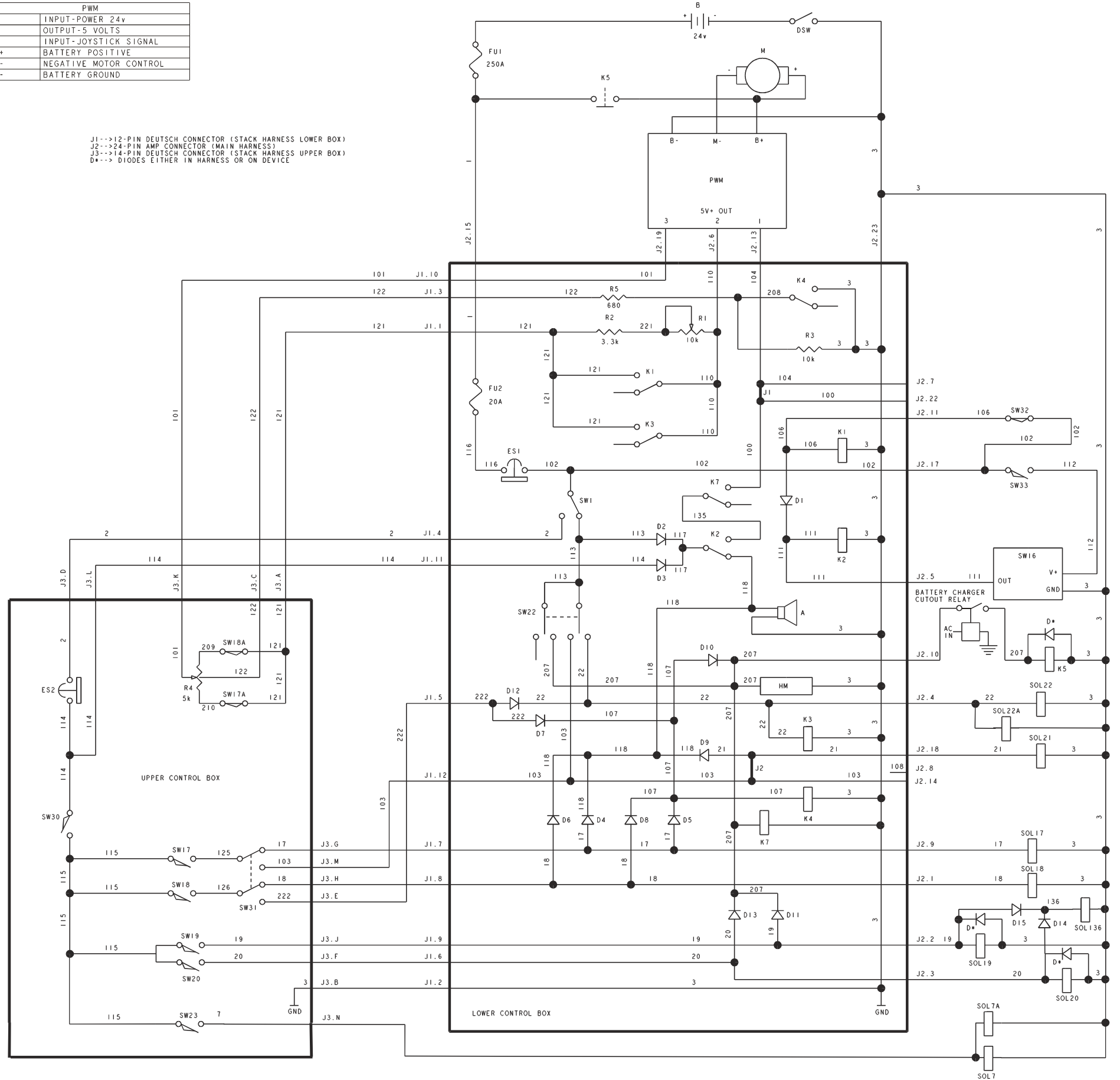
DEUTSCH RECEPT CONNECTOR (J1)



COMPONENT NAME	COMPONENT DESCRIPTION	SCHEMATIC LOCATION
A	ALARM-MOTION	C4
B	BATTERY	E4
BATT COND	BATTERY CONDITION INDICATOR	B7
D1	DIODE	C4
D2	DIODE	C4
D3	DIODE	C4
D4	DIODE	B5
D5	DIODE	B4
D6	DIODE	B5
D7	DIODE	B5
D8	DIODE	B5
D9	DIODE	B4
D10	DIODE	C4
D11	DIODE	A4
D12	DIODE	B5
D13	DIODE	A4
D14	DIODE IN JUMPER WIRE AT COIL ON MANIFOLD	A3
D15	DIODE IN JUMPER WIRE AT COIL ON MANIFOLD	A3
D*	DIODE IN HARNESS OR ON DEVICE	A2, A3, C3
D*	DIODE IN HARNESS OR ON DEVICE	A2, A3, C3
D*	DIODE IN HARNESS OR ON DEVICE	A2, A3, C3
DSW	DISCONNECT SWITCH	E4
ES1	LOWER CONTROL E-STOP	C5
ES2	UPPER CONTROL E-STOP	B7
FL	FLASHING LIGHT	C6
FU1	FUSE-MAIN SYSTEM	E5
FU2	FUSE-CONTROLS	D5
H	HORN	B6
HM	HOURLMETER	B4
J1	JUMPER	D4
K1	RELAY-HI SPEED	D4
K2	RELAY-TILT	C4
K3	RELAY-LIFT	B4, D4
K4	RELAY-DRIVE SPEED RELAY	B4, D4
K5	RELAY-CONTACTOR	C3, E5
K6	RELAY-POTHOLE PROTECTION	C3
K7	RELAY - CONTROLLER POWER	B4, C4
K8	RELAY DOWN CUTOFF CE	B5
KSW1	KEY SWITCH-LOWER CONTROLS/OFF/UPPER CONTROLS	C5
M	MOTOR	E4
PWM	PUMP CONTROLLER	E4
R1	VARIABLE RESISTOR-LOW SPEED	D4
R2	RESISTOR-LOW SPEED	D4
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SOL21	VALVE-DOWN	B3
SOL22	VALVE-LIFT	B3
SOL22A	VALVE - PUMP #2 DUMP	B3
SOL136	VALVE-PRIORITY STEER	A3
SW1	LOWER/UPPER CONTROL SELECTOR SWITCH	C5
SW11	HORN-PUSH BUTTON SWITCH	B7
SW16	TILT SENSOR	C3
SW17	JOYSTICK SWITCH-FORWARD/DOWN	B7
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SW33	POTHOLE SWITCH	C3

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Electrical Schematic  
 US - Standard

Electrical  
 Schematics - 15

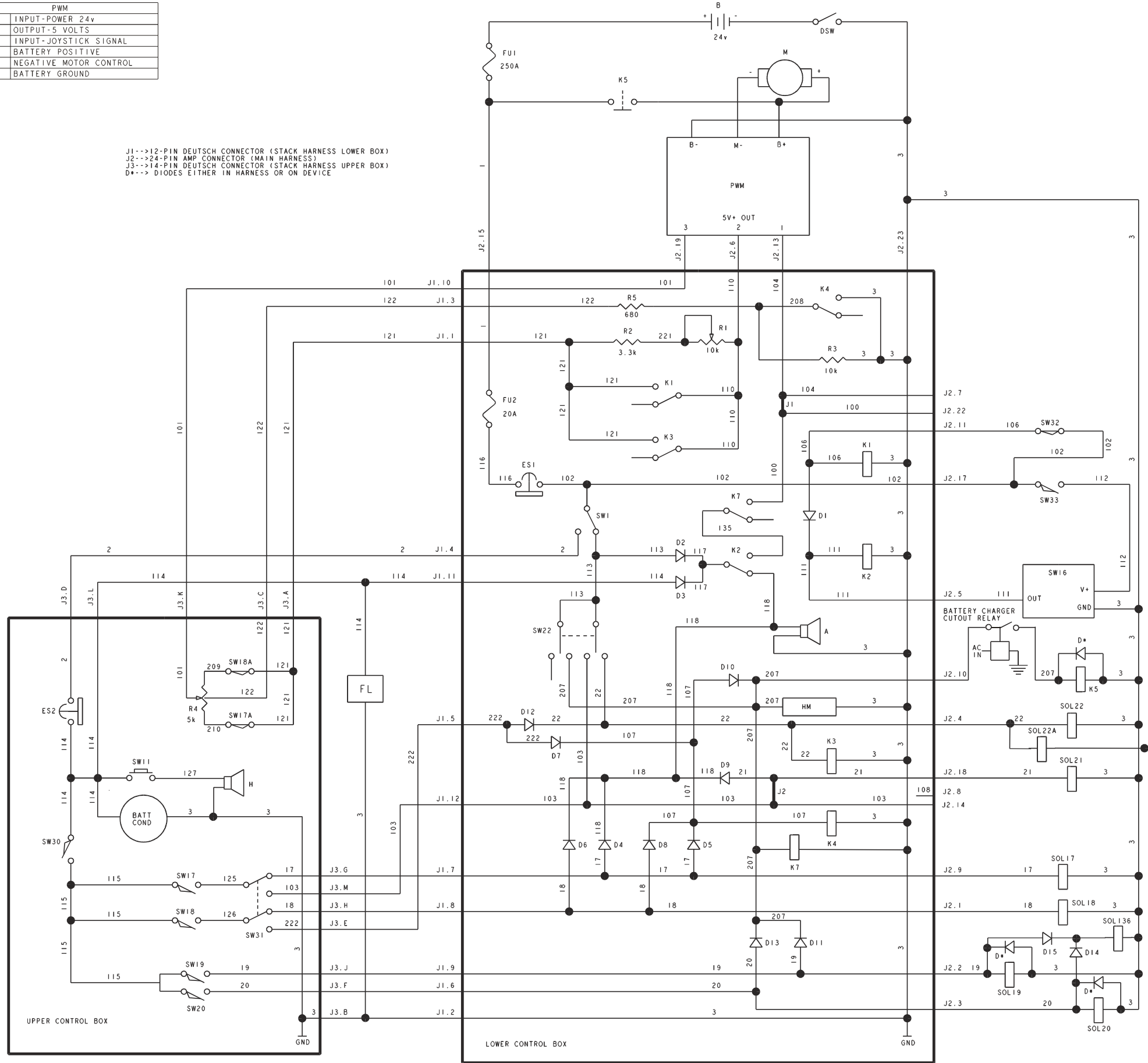




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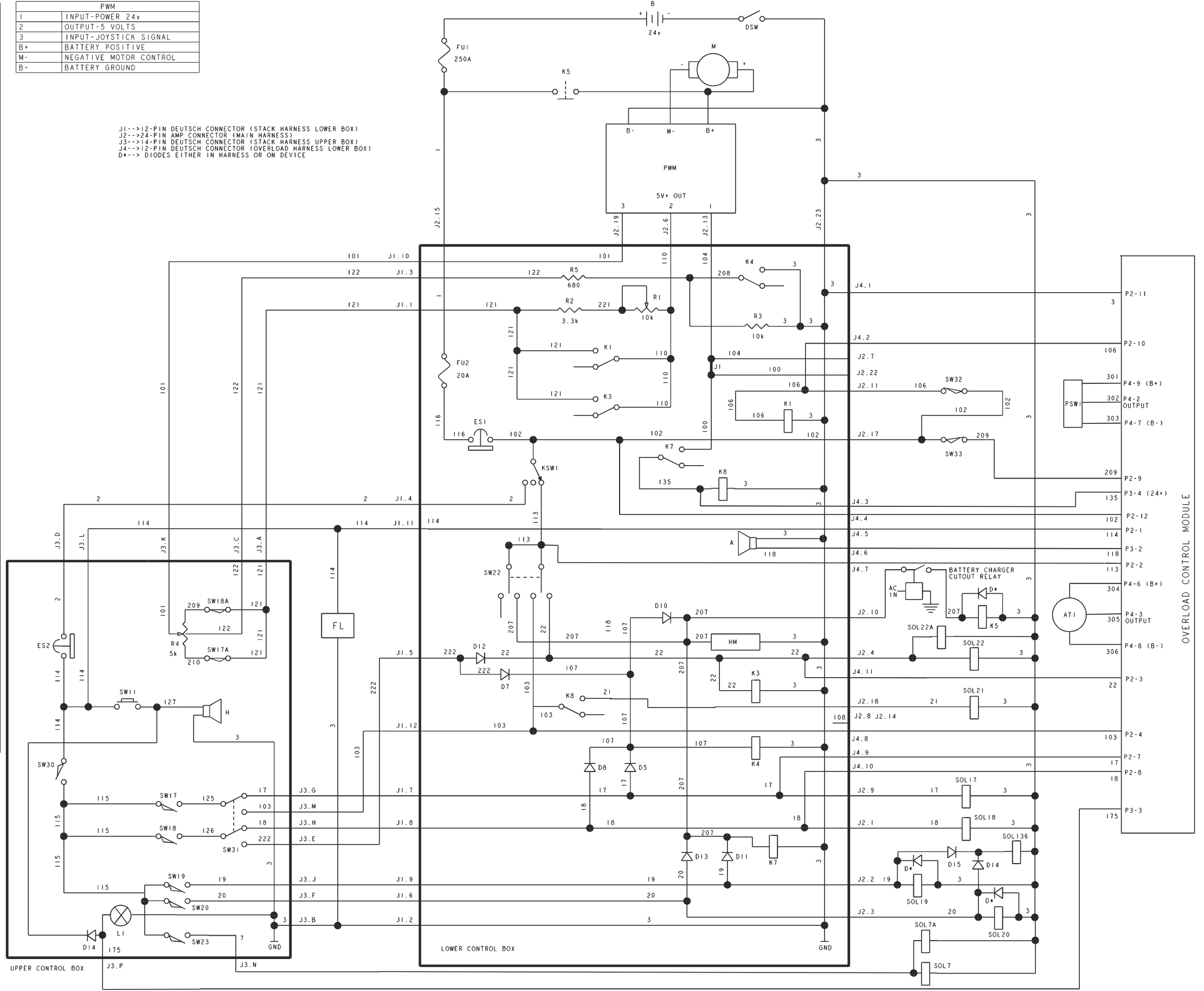




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 J4-->12-PIN DEUTSCH CONNECTOR (OVERLOAD HARNESS LOWER BOX)  
 D\*--> DIODES EITHER IN HARNESS OR ON DEVICE



**Electrical Schematic  
CE - Standard**

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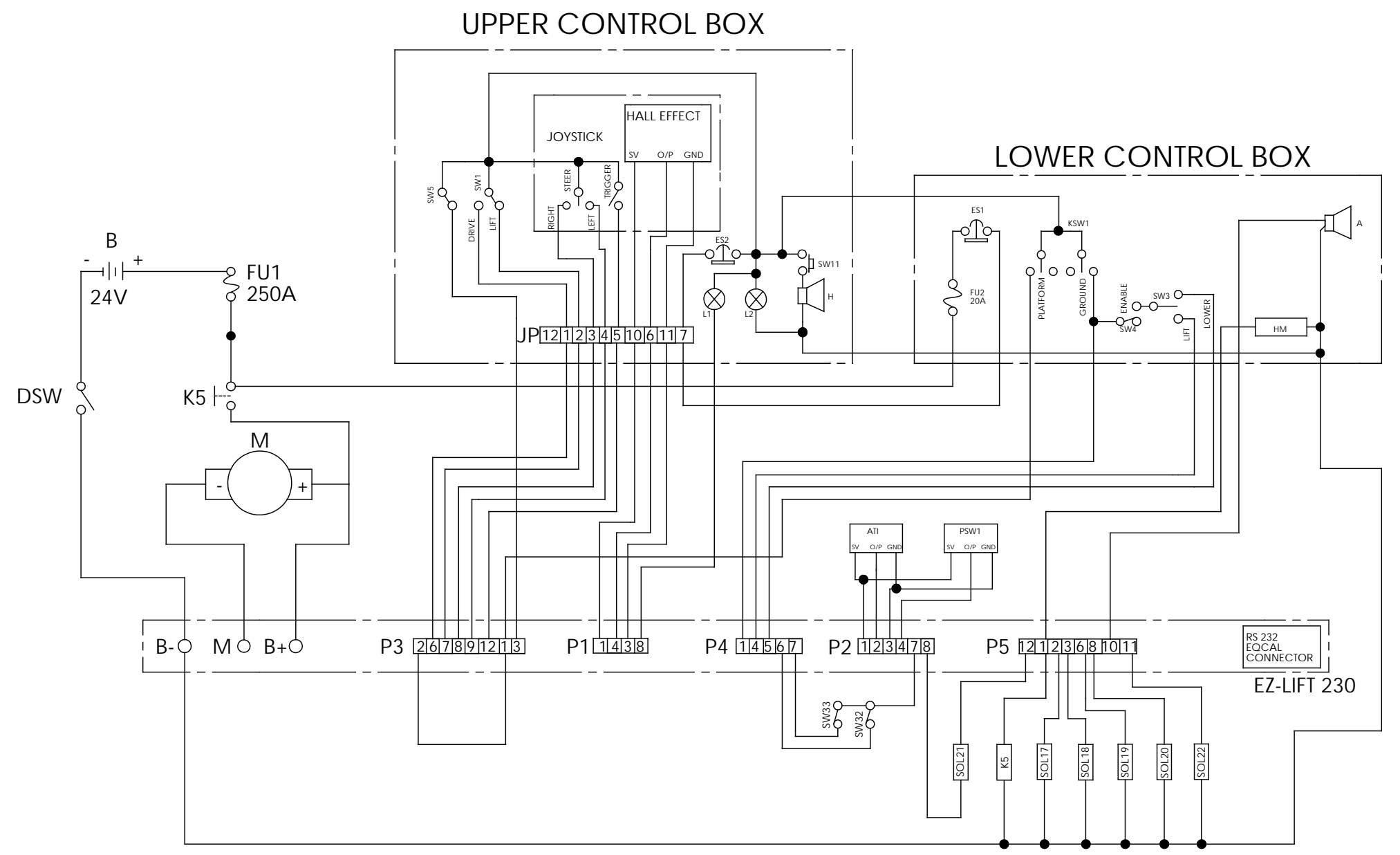
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C

B

A

COMPONENT NAME	COMPONENT DESCRIPTION
A	ALARM-MOTION
ATI	ANGLE TRANSDUCER
B	BATTERY
DSW	DISCONNECT SWITCH
ES1	LOWER CONTROL E-STOP
ES2	UPPER CONTROL E-STOP
FU1	FUSE-MAIN SYSTEM
FU2	FUSE-CONTROLS
H	HORN
HM	HOURMETER
KSW1	KEY SWITCH-LOWER CONTROLS/OFF/UPPER CONTROLS
K5	CONTACTOR
L1	LIGHT - LOW BATTERY INDICATOR
L2	LIGHT - PLATFORM OVERLOADED
M	MOTOR
PSW1	PRESSURE TRANSDUCER - LIFT CYLINDER
SOL17	VALVE - DRIVE FORWARD
SOL 18	VALVE - DRIVE REVERSED
SOL 19	VALVE - STEER LEFT
SOL 20	VALVE - STEER RIGHT
SOL 21	VALVE - DOWN
SOL 22	VALVE - LIFT
SW1	UPPER CONTROL - DRIVE/LIFT SELECTOR SWITCH
SW3	LOWER CONTROL-LIFT/DOWN SWITCH
SW4	LOWER CONTROL BOX ENABLE SWITCH
SW5	DRIVE SPEED SWITCH
SW11	HORN-PUSH BUTTON SWITCH
SW32	STACK SWITCH
SW33	POTHOLE SWITCH





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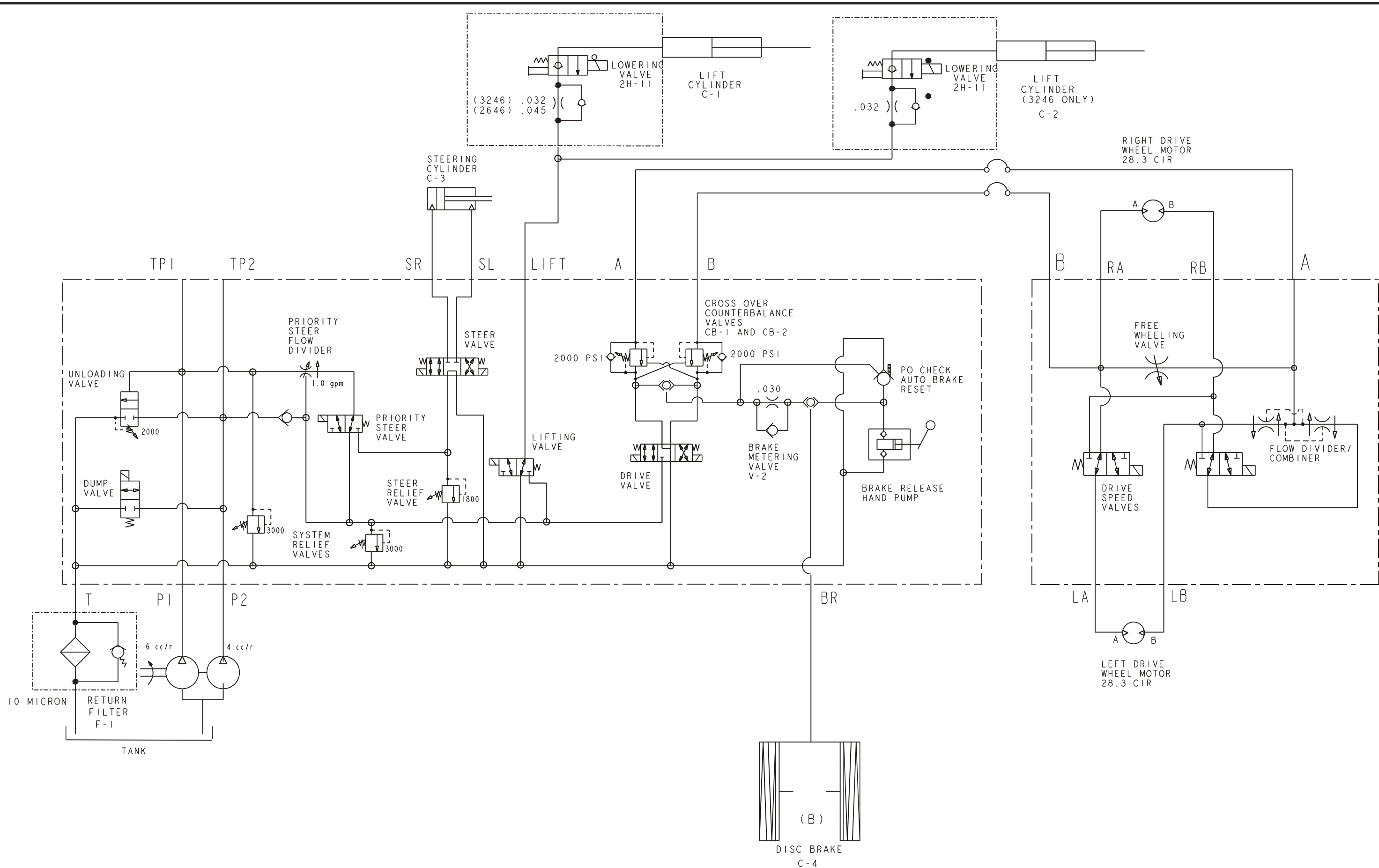
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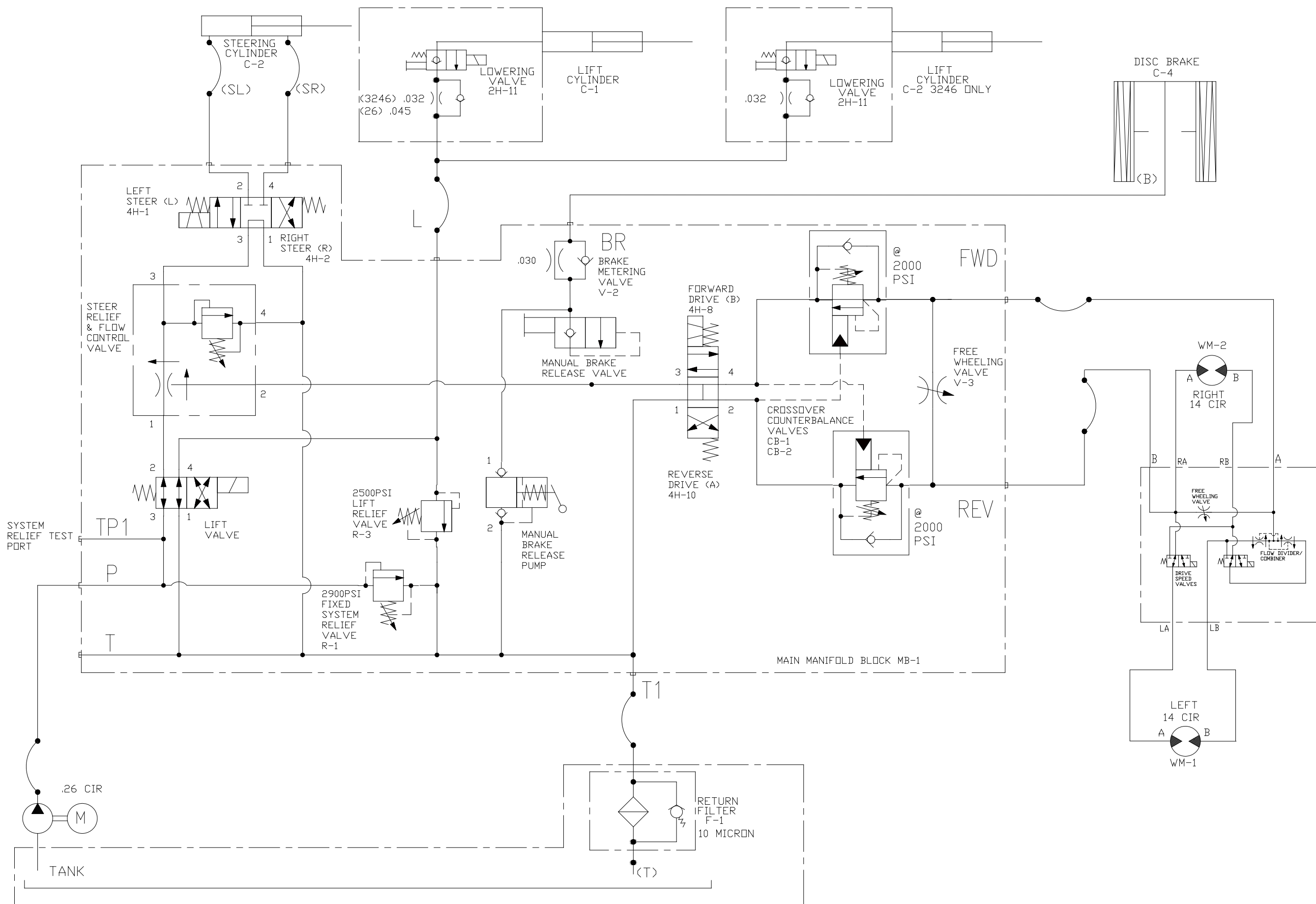
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A



Hydraulic Schematic  
 All Machines  
 - After February 2011 -

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# User's Manual

Supplement to Snorkel International Inc. Parts Manual

## Automatic Switch-Mode Battery Charger

Part Number 3050097

### IMPORTANT

Read, understand, and follow these safety rules and operating instructions before using this battery charger. Only authorized and trained service personnel shall be permitted to operate or perform any maintenance or service. If you have any questions please call the Snorkel service department at 785-989-3091.

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Troubleshooting-----	8
Replacing the Charger-----	10
Specifications-----	11


## Safety


### **Danger**

Failure to obey the safety rules and instructions in this manual will result in death or serious injury.

## Label and Safety Rules Legend

 **DANGER** Indicates the presence of a hazard that **will** cause death or

 **WARNING** Indicates the presence of a hazard that **may** cause death or serious injury.

 **CAUTION** Indicates the presence of a hazard that **will** or **may** cause serious injury or property damage.

## **Safety: General**

- Do not operate a charger that is not working correctly. An electric shock hazard or battery explosion hazard from overcharging may exist.
- Do not attempt to service the charger yourself unless you are a trained service technician. The warranty is void if the charger case has been opened. Always follow installation instructions closely. The high voltages inside the charger are a shock hazard and can cause serious injury or death.
- Though the charger is resistant to water and spray washing do not fully immerse or spray wash for an extended (more the 5 seconds in one position) time. Liquid can get inside charger and may cause serious injury or death.
- The charger is designed for use in industrial areas. It is not designed to be used in medical (hospital) environments where interference with life critical equipment could cause death or serious injury.
- There could be a spark during charging. Be careful when using fuels, solvents or other flammables near the charger or batteries. An explosion could result causing death or serious injury.
- This charger is intended only for use on Snorkel equipment and batteries installed on that equipment. Use on other batteries may result in overcharging and battery explosion causing serious injury or death.
- The charger contains chemicals known to the State of California to cause birth defects or other reproductive harm. Wash hands thoroughly after handling.

## **Safety: Power**

- To reduce the risk of an electric shock, connect only to a properly grounded single phase (3 wire) outlet.

- Ensure that the AC voltage supplied to the charger is within the ranges in the specification table. Voltages outside this range, particularly high voltages, can result in an electric shock and fire hazard.
- If you use an extension power cable with your charger, ensure the total current draw of the items plugged into the extension power cable do not exceed the current rating of the extension cable and meet all national and local electrical code requirements. See Specifications page for current draw of charger. Overloaded extension cords can catch fire and cause property damage, serious injury or death.
- Do not operate charger if wiring is damaged including cut insulation or pinched wires. An electric shock could cause serious injury, or death.

## **Safety: Batteries**

- See battery suppliers guide for proper care of batteries and follow directions carefully. Failure to follow battery care instructions can result in battery explosion and property damage, severe injury, or death during charging.
- When attaching charger leads to battery terminals be careful that tools do not short between battery terminals. Shorting between battery terminals may cause extreme arcing resulting in explosion or extreme heat that can cause burns.
- Do not disconnect charger terminals while batteries are charging. Sparking can occur which could ignite flammable battery gases and cause an explosion. Always turn the charger off first (unplug from AC).
- Do not touch battery terminals or any exposed electrical parts. Contact with battery terminals or other exposed electrical parts may cause an electric shock. Remove all watches, rings, and jewelry to avoid arcing and electric shock.

# Operation



**WARNING:** There could be a spark during charging. Be careful when using fuels, solvents or other flammables near the charger or batteries. An explosion may result causing serious injury or death.






**WARNING:** To reduce the risk of an electric shock, connect only to a properly grounded single phase (3wire) outlet. Electric shock hazard may cause serious injury or death.



**CAUTION:** To reduce the risk of fire, use this charger only on AC circuits and extension cords capable of handling the AC Input currents (Max. Amps) defined in the electrical specifications. Use must be in accordance with all National and Local Electrical Codes for the location of use. Overloaded cords or circuits present a fire and shock hazard and may result in property damage, serious injury, or death.

- 1) Plug the charger into a single phase AC socket with a nominal voltage rating of 100V, 110V, 115V, 120V, 220V, 230V, or 240V and a frequency rating of 50 or 60Hz. The charger automatically senses and adjusts to the AC voltage and frequency.
- 2) The three green LED's indicate the charging progress. When the battery is 0 to 50% charged the 50% LED flashes. When the battery is between 50 to 75% charged the 50% LED is on while the 75% LED flashes. When the battery is between 75 to 100% charged the 75% LED is on and the 100% LED flashes. When the battery is fully charged the 50%, 75% and 100% LEDs are on. Charging time is dependent on depth of battery discharge, battery condition, and temperature.
- 3) If the charger is left plugged in after charging is complete (all LEDs on) the charger goes into maintenance mode to keep batteries charged while in storage. The charger continuously measures battery voltage and restarts the charging cycle if the battery voltage drops below about 25V. This keeps batteries charged while in storage but does not boil-out the electrolyte over time.
- 4) Turn-off charger by unplugging (disconnect from AC voltage).

### Charging State & LED Display

LED	50%	75%	100%
<b>Charging State</b>			
0 to 50% charged	Blinking	Off	Off
50% to 75% charged	On	Blinking	Off
75% to 100% charged	On	On	Blinking
100% charged	On	On	On
See Troubleshooting	Off	Off	Blinking

Technical Operation Summary – The charger is an advanced, microprocessor controlled, high frequency switching type charger. From 0% to 75% a constant current is provided to the battery (bulk charging) until a pre-set battery voltage is reached. From 75% to 100% a constant voltage is maintained and the charging current decreases (absorption charging). When the charging current falls below 2 to 3A charging is complete. The charging curve is temperature compensated using the starting temperature of the charger as the battery temperature. The charger will work even with batteries in a severe discharge state with terminal voltages as low as 2V and there is no need to ‘boost charge” weak batteries before charging. The charger has an 18 hour timer in case charging can not be completed due to battery problems – see troubleshooting section. The charger senses and flashes error codes for problems – see troubleshooting section.



# Maintenance



**WARNING:** Disconnect from AC voltage before doing any service. When plugged-in the AC wiring is an electric shock hazard. Disconnecting the DC output wires near the batteries when the charger is ON may cause the batteries to explode resulting in serious injury or death.



**WARNING:** Risk of an electric shock causing serious injury or death. Do not touch un-insulated parts of the charger wires, battery connector or battery terminals. Be careful with tools as shock or arcing from shorting of electrical parts may cause serious injury or death. Remove rings, watches, and jewelry to avoid arcing and electric shock.

- 1) All electrical connections must be kept clean and tight. Sometimes connections can look good outside but be corroded inside causing an output connection error (one flash failure, see troubleshooting).
- 2) The charger cools through the case fins. If the fins become covered with debris the charger's over-temperature protection system may reduce charging power. Clean-off fins to improve cooling.
- 3) Replace the charger if case damage breaks the water-tight seal.
- 4) Inspect wiring weekly, including AC plug, AC cord, DC wires to battery, and interlock wires for cut insulation, pinching, or other damage. Repair to avoid electric shock.
  - AC Ground – green with yellow stripe
  - AC Neutral – light blue
  - AC Line (Hot) – brown
  - DC Battery Negative (-) - black
  - DC Battery Positive (+) - red
- 5) Follow battery supplier recommendations for battery care and maintenance. **Note – most battery charging problems relate to battery care and not charger problems.**

# Troubleshooting



**WARNING:** Do not operate the charger if it is malfunctioning. Personal injury or property damage could result. Electric shock hazard may cause serious injury or death.



**WARNING:** Do not disassemble the charger. High voltages inside the charger are an electric shock hazard and may result in serious injury or death.

Identify the problem from the following list and refer to the appropriate section for detailed instructions.

1. **CHARGER DOES NOT TURN ON**
2. **3 LED's BLINK SIMULTANEOUSLY**
3. **100% LED BLINKS WHILE 50% AND 75% LED'S ARE "OFF"**
4. **BATTERIES DO NOT FULLY CHARGE**
5. **THE AC SUPPLY CIRCUIT BREAKER OR FUSE IS BLOWN**

## 1. CHARGER DOES NOT TURN ON

Double check the outlet to ensure it is working by trying out another known good piece of equipment on the outlet. Check the AC plug and wire to ensure both are in good condition. Replace charger if everything else is correct.



**CAUTION:** If the AC plug or receptacle is broken, twisted, bent or loose, it cannot make a good electrical connection and an electric shock hazard may exist. Have it repaired or replaced by a qualified person immediately. **DO NOT USE THE CHARGER UNDER THIS CONDITION.** Fire, injury, or death may result if not corrected.

## 2. 3 LED'S BLINK SIMULTANEOUSLY

The faults identified below cause the 3 LED's to blink simultaneously and a buzzer to sound. If the cause of the fault is removed the charger restarts automatically, the LEDs go into normal operational mode, and the buzzer stops.

### **3 LED'S BLINK ONCE SIMULTANEOUSLY : OUTPUT CONNECTION ERROR**

-> CHECK THE BATTERY AND CHARGER CONNECTION AND CORRECT

(The output may not be connected to the batteries or the connections to the batteries may have corroded or loosened. The output may be shorted due to improper connection to the batteries or pinched wires. The output may be connected in reverse polarity to the batteries. The charger is not damaged by any of these problems.)

### **3 LEDS BLINK TWICE SIMULTANEOUSLY : AC VOLTAGE PROBLEM.**

-> CHECK THE AC INPUT VOLTAGE. THE CHARGER IS INDICATING THE AC VOLTAGE IS TOO LOW OR TOO HIGH. CORRECT.

(See the electrical specification table for the allowable AC voltage input ranges. This is an unusual problem and would most likely occur with a very poorly regulated engine-generator set providing the AC voltage to the charger.)

### **3 LEDS BLINK THREE TIMES SIMULTANEOUSLY : CHARGER IS OVERHEATED**

-> NO ACTION REQUIRED. WHEN THE CHARGER COOLS, CHARGING WILL RE-START AUTOMATICALLY. CHECK AND CORRECT FOR DIRT OR OTHER DEBRIS ON CHARGER THAT MAY BE REDUCING COOLING.

### **3 LEDS BLINK FOUR TIMES SIMULTANEOUSLY : INPUT OR OUTPUT OVER CURRENT.**

-> NO ACTION REQUIRED, CHARGER WILL CORRECT AND RE-START AUTOMATICALLY.

### **3. 100% LED BLINKS WHILE 50% AND 75% LED'S ARE "OFF"**

The 18 hour timer has elapsed or a bad cell in the battery has been detected. Causes:

-> BATTERIES ARE EXTREMELY DISCHARGED. UNPLUG AND THEN PLUG-IN CHARGER TO RE-START CHARGE CYCLE TO COMPLETE CHARGING.

-> BATTERIES ARE WEAK, OLD, OR HAVE ONE OR MORE BAD CELLS. BATTERIES WILL STILL CHARGE BUT CAPACITY WILL BE REDUCED. REPLACE BATTERIES.

### **4. BATTERIES DO NOT FULLY CHARGE**

If the batteries are charged overnight, make sure the AC supply is not being switched-off at night with other building circuits. Check battery condition following the battery supplier's instructions. Check for dead cells or reduced capacity. Replace charger only if other problems are not found.

### **5. THE AC LINE CIRCUIT BREAKER OR FUSE IS BLOWN**

An overloaded AC circuit, defective circuit breaker, defective fuse, or a charger problem can cause this condition. First check to see what the total load is on the AC circuit to avoid overload. If total AC load is OK connect the charger to a different AC outlet (on a different circuit) in the building. If the charger operates properly on other AC outlets, a qualified person should correct the AC circuit problem. If the AC supply checks good, the charger should be replaced.

**Note: Over 1/2 of all battery chargers returned as "failed" are good. Please follow the troubleshooting procedures carefully and check all other items before returning the charger as failed.**

## Replacing the Charger



**WARNING:** Disconnect from AC voltage before doing any service. When plugged-in the AC wiring is an electric shock hazard. Disconnecting the DC output wires near the batteries when the charger is ON may cause arcing and the batteries to explode resulting in serious injury or death.



**WARNING:** Risk of an electric shock causing serious injury or death. Do not touch un-insulated parts of the charger wires, battery connector or battery terminals. Be careful with tools as shock or arcing from shorting of electrical parts can cause serious injury or death. Remove rings, watches, and jewelry to avoid arcing and electric shock.



**WARNING:** Do not disassemble the charger. Take it to a factory-authorized service agent when service or repair is required. High voltages inside the charger are an electric shock hazard and can result in serious injury or death.

Replace only with Snorkel parts department charger to ensure compatibility with all machine systems. Make sure the charger is unplugged before replacing and be careful tools do not short battery connections which can cause electric sparks. Ensure connections are the same as the original charger with wires connected by a qualified person (see tag on AC cord):

AC Ground – green with yellow stripe

AC Neutral – light blue

AC Line (Hot) – brown

DC Battery Negative (-) - black

DC Battery Positive (+) - red

Make sure all connections are clean and tight to provide a good electrical connection. Check all machine operating systems after replacement to ensure proper operation (see manual).

## Specifications

Electrical Specifications		
Item	AC Input	DC Output
Voltage	115V (85-132V) 230V (170-264V) (Automatically Selects)	Max. 31.7 VDC (31V@26°C)
Max. Current	9A at 85V 4.5A at 170V	Max. 19.0 ADC
Frequency	60 / 50 Hz	-
Phase	SINGLE	-
Output Power		600 Watts





## Product Warranty

1. Snorkel warrants each new machine manufactured and sold by it to be free from defects in material and workmanship for a period of one (1) year from date of delivery to a Customer. The warranty will apply subject to the machine being operated in accordance with the rules, precautions, instructions and maintenance requirements outlined in the Snorkel Operator's and Repair Parts Manuals.
2. Snorkel further warrants the structural components, specifically the mainframe chassis, turntable, booms and/or scissor arms of each new machine manufactured by it to be free from defects in material and workmanship for an additional period of four (4) years. Any such part or parts which, upon examination by the Snorkel Warranty Department, are found to be defective will be replaced or repaired by Snorkel through its local Authorised Dealer. The structural warranty specifically excludes adverse affects on the machine structure arising from damage, abuse or misuse of the equipment.
3. Machines may be held in an authorised Distributor stock for a maximum of six (6) months from the date of shipment from Snorkel, before the warranty period is automatically initiated.
4. It is the responsibility of the Distributor to complete and return a Predelivery/Warranty registration, before the act of rental/loan/demonstration of the machine or delivery to an end user.
5. The Customer and Dealer shall not be entitled to the benefits of this warranty and Snorkel shall have no obligations here under unless the "Predelivery and Inspection Record" has been properly completed and returned to the Snorkel Warranty department within fifteen (15) days after delivery of the Snorkel product to the Customer or Dealer's demonstration/rental fleet. Snorkel must be notified, in writing, within ten (10) days, of any machine sold to a Customer from a Dealer's rental fleet during the warranty period.
6. Any part or parts which upon examination by the Snorkel Product Support Department are found to be defective within the specified warranty period, will be replaced or repaired at the sole discretion of Snorkel, through Snorkel directly or an authorised Distributor, at no charge. Any parts replaced under warranty must be original Snorkel parts obtained through Snorkel directly or an authorised Distributor, unless expressly agreed otherwise in writing and in advance by Snorkel's Warranty Department.
7. All parts being claimed under warranty must be held available for return and inspection upon request for a period of 90 days from date of claim submission, it is necessary that all parts are individually tagged or marked with their part number and the warranty claim number. After 90 days all parts replaced under warranty which have not been returned to Snorkel should be destroyed. Failure to produce parts requested by the Warranty Administrator for inspection within a period of 14 days will result in the claim being automatically rejected in full. Materials returned for warranty inspection must have the following procedure:
  - Carefully packaged to prevent additional damage during shipping
  - Drained of all contents and all open ports capped or plugged
  - Shipped in a container tagged or marked with the RMA number
  - Shipped PREPAID. Any item(s) returned for warranty by any other means maybe refused and returned, unless prior approval is agreed with Snorkel.



## Product Warranty

8. At the direction of the Snorkel Warranty Department, any component part(s) of Snorkel products to be replaced or repaired under this warranty program must be returned freight prepaid for inspection. An RMA (Returns Material Authorisation) must be requested from Snorkel Warranty Department, a copy to be placed with the returning component part(s).
9. All warranty replacement parts will be shipped freight prepaid (standard charge) from the Snorkel Parts/Service Department or from the Vendor to Dealer or Customer.
10. All warranty claims are subject to approval by Snorkel Service Department. Snorkel reserves the right to limit or adjust claims with regard to defective parts, labor or travel time based on usual and customary guidelines.

### REPLACEMENT PARTS WARRANTY

- Any part replaced under this limited warranty is not subject to further warranty cover beyond the normal warranty period of the machine upon which the part was installed.
- Any replacement parts sold (not delivered under a warranty claim) will be subject to a warranty period of (6) six months from the date of invoice.
- Parts held by a Distributor are covered under warranty for a period of (12) twelve months from the date of invoice, provided that those parts have been subject to appropriate storage to prevent damage and deterioration.

### CLAIM PROCEDURE

The Snorkel Warranty Department must be notified within (48) forty-eight hours of any possible warranty situation during the applicable warranty period. Personnel performing major warranty repair or parts replacement must obtain specific approval by the Snorkel Warranty Department prior to performing the warranty repair or replacement.

When a Distributor/Customer perceive a warranty issue to exist the following steps must be adhered to:

- All warranty claims must be submitted within 30 days of the date of the machine repair
- All correspondence in respect of the claim to be on an official Snorkel warranty claim form as supplied by Snorkel's Warranty Department
- Allocate a warranty claim number to the repair
- Place a purchase order for genuine Snorkel replacement parts
- Snorkel to dispatch parts via the requested method (in line with the required response time)
- Confirmation that a qualified technician is available to replace the part and that this person has been accepted by Snorkel to carry out such work under the warranty of the machine. Failure to do this may nullify the warranty.

### FREIGHT DAMAGE

If a machine is received in a damaged condition, then the damage must be noted on the bill of lading and/or delivery documents and if possible photographs taken, prior to signing acceptance of the consignment. The freight company must be contacted by the Distributor and a damage claim registered immediately.

### THIS WARRANTY EXCLUDES AND SNORKEL DOES NOT WARRANT:

1. Engines, motors, tires and batteries are manufactured by suppliers to Snorkel, who furnish their own warranty. Snorkel will, however, to the extent permitted; pass through any such warranty protection to the Distributor/Customer.
2. Any Snorkel product which has been modified or altered outside Snorkel factory without Snorkel written approval, if such modification or alteration, in the sole judgment of Snorkel Engineering and/or Service Departments, adversely affects the stability, reliability or service life of the Snorkel product or any component thereof.





## Product Warranty

3. Any Snorkel product which has been subject to misuse and abuse, improper maintenance or accident. "Misuse" includes but is not limited to operation beyond the factory-rated load capacity and speeds. "Improper maintenance" includes but is not limited to failure to follow the recommendations contained in the Snorkel Operator's and Repair Parts Manuals.
4. Normal wear of any Snorkel component part(s). Normal wear of component parts may vary with the type, application or type of environment in which the machine may be used; such as, but not limited to sandblasting applications.
5. Routine maintenance, routine maintenance items and minor adjustments are not covered by this warranty, including but not limited to hydraulic fluid, filters and lubrication, paint and decals.
6. Any Snorkel product that has come into direct contact with any chemical or abrasive material.
7. Incidental or consequential expenses, losses, or damages related to any part or equipment failure, including but not limited to freight cost to transport the machine to a repair facility, downtime of the machine, lost time for workers, lost orders, lost rental revenue, lost profits, expenses or increased cost. This warranty is expressly in lieu of all other warranties, representations or liabilities of Snorkel, either expressed or implied, unless otherwise amended in writing by Snorkel.
8. Snorkel Warranty policy does not cover any duties, taxes, environmental fees including without limitation, disposal or handling of tires, batteries and petrochemical items.
9. Item specifically excluded are, fuel injectors, motor brushes, glow plugs, contactor tips and springs, oil filters, lamp bulbs, lamp lenses, O-rings, coolants, lubricants and cleaning material.
10. Failure of replacement parts due to fault misdiagnosis or incorrect fitting by the Distributor/Customer.

SNORKEL MAKES NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THIS LIMITED WARRANTY

SNORKEL MAKES NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND DISCLAIMS ALL LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO INJURY TO PERSONS OR PROPERTY.

The Customer shall make all warranty claims through Snorkel directly or an Authorised Distributor. If unable to contact the Distributor, contact the Snorkel Service Department for further assistance.



# Product Warranty

## APPEAL

The buyer may appeal in writing against a rejected or adjusted claim to Snorkel Warranty Department within a period of 21 days of receiving the rejection or adjustment notice. The appeal should be grounded on express reasons and supported by relevant evidence. Appeals received outside of this time limit will not be considered.

## WARRANTY SCHEDULE

### Limited Warranty Periods

Item	Warranty Period
New machine materials and workmanship	1 year parts replacement
Structural components (Chassis, Turntable, Booms, Scissors)	5 years parts replacement or repair
Parts held in a Distributor's stock	12 months from date of invoice
Parts sold (non warranty)	6 months from date of invoice
Batteries	6 months from date of invoice
Other specifically excluded parts: Fuel injectors Motor brushes Glow plugs Contactor tips and springs Oils Filters Lamp bulbs Lamp lenses O-rings Coolants Lubricants Cleaning materials	Not covered by Warranty



**Local Distributor / Lokaler Vertiebshändler / Distributeur local  
El Distribuidor local / Il Distributore locale**

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[www.snorkellifts.com](http://www.snorkellifts.com)