

# UpRight

## POWERED ACCESS



# X27-33RT

## WORK PLATFORM

SERVICE & PARTS MANUAL



**Please note:**

The Upright X-27-33-RT/BE is also sold as the Snorkel SR Series in some regions.

Therefore any reference to the Snorkel SR Series also applies to the Upright X-27-33-RT/BE .

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## LIMITED WARRANTY

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 or for one year after the machine has been placed in first service in a Dealer rental fleet, whichever comes first. Any part or parts which, upon examination by the Snorkel Service Department, are found to be defective, will be replaced or repaired, at the sole discretion of Snorkel, through its local Authorized Dealer at no charge.

Snorkel further warrants the structural components; specifically, the mainframe chassis, turntable, booms and 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 Service Department, are found to be defective will be replaced or repaired by Snorkel through its local Authorized Dealer at no charge; however, any labor charges incurred as a result of such replacement or repair will be the responsibility of the Customer or Dealer.

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

Customer and Dealer shall not be entitled to the benefits of this warranty and Snorkel shall have no obligations hereunder unless the "Pre-Delivery and Inspection Report" has been properly completed and returned to the Snorkel Service Department within ten (10) days after delivery of the Snorkel product to Customer or Dealer's 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.

At the direction of the Snorkel Service Department, any component part(s) of Snorkel products to be replaced or repaired under this warranty program must be returned freight prepaid to the Snorkel Service Department for inspection. All warranty replacement parts will be shipped freight prepaid (standard ground) from the Snorkel Service Department or from Snorkel's Vendor to Dealer or Customer.

## REPLACEMENT PARTS WARRANTY

Any replacement or service part made or sold by Snorkel is not subject to the preceding **Limited Warranty** beyond the normal warranty period of the machine upon which the part was installed.

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

1. Engines, motors, tires and batteries which 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 Customer or Dealer.
2. Any Snorkel product which has been modified or altered outside Snorkel's factory without Snorkel's written approval, if such modification or alteration, in the sole judgment of Snorkel's Engineering and/or Service Departments, adversely affects the stability, reliability or service life of the Snorkel product or any component thereof.
3. Any Snorkel product which has been subject to misuse, 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 Operation, Maintenance, Repair Parts Manuals. Snorkel is not responsible for normal maintenance, service adjustments and replacements, including but not limited to hydraulic fluid, filters and lubrication.
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. Any Snorkel product that has come in direct contact with any chemical or abrasive material.
6. 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 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's President, Vice President-Engineering, Vice President-Sales or Vice President-Marketing.

**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 its local Authorized Dealer and should contact the Dealer from whom the Snorkel product was purchased for warranty service. Or, if unable to contact the Dealer, contact the Snorkel Service Department for further assistance.

Effective July 1995

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## ■ General Specifications SR3370

SPECIFICATIONS	SR3370	
Nominal working height	12.12m	39' 2"
Roll out deck size	1200mm	48"
Drive speed (below 2.4m)	0 to 4.5kph	0 to 2.8mph
Drive speed (above 2.4m)	0 to 0.35kph	0 to 0.22mph
Safe working load - Main deck (Roll out deck not extended)	450kg	990lbs
Safe working load - Main deck Roll out deck extended - Roll out deck	330kg 120kg	726lbs 264lbs
Platform size	2.73 x 1.65m	8' 11" x 5' 5"
Stowed height	2.7m	8' 10"
Stowed height (hand rails folded down)	2.0m	6' 6"
Overall length	3.36m	11' 0"
Overall width	1.77m	5' 9"
Gradeability	35%	
Lift time	50 seconds	
Turning radius (inner)	2.38m	7' 8"
Turning radius (outer)	4.75m	15' 6"
Maximum wind speed (12.5m/s)	45km/h	28mph
Insulation rating	Nil	
Tyres - Poly filled loader lug	27" x 10.5" x 15"	
Overall weight	3620kg	7964lbs
Ground clearance	350mm	13.8"
Maximum sound level at platform	86db	

# General Specifications

## ■ General Specifications SR2770

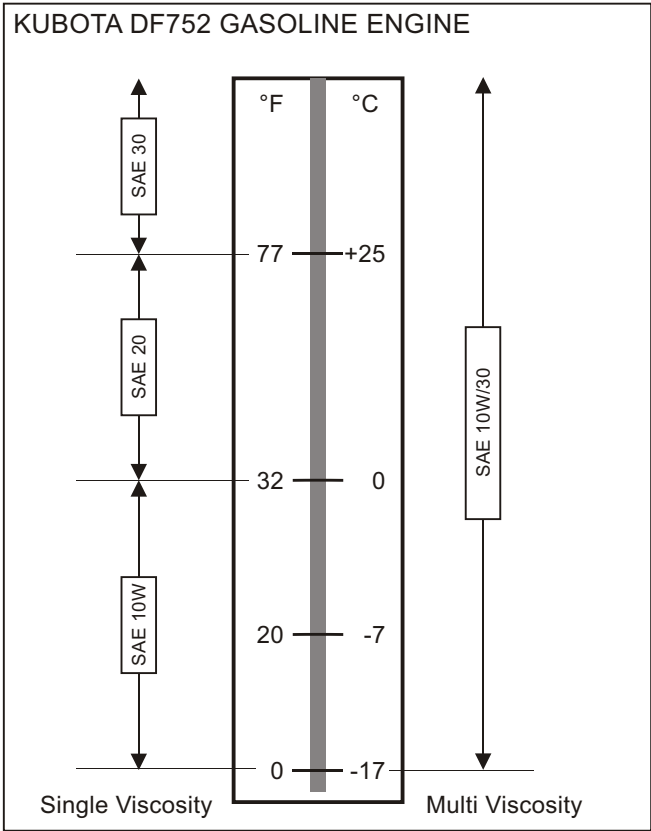
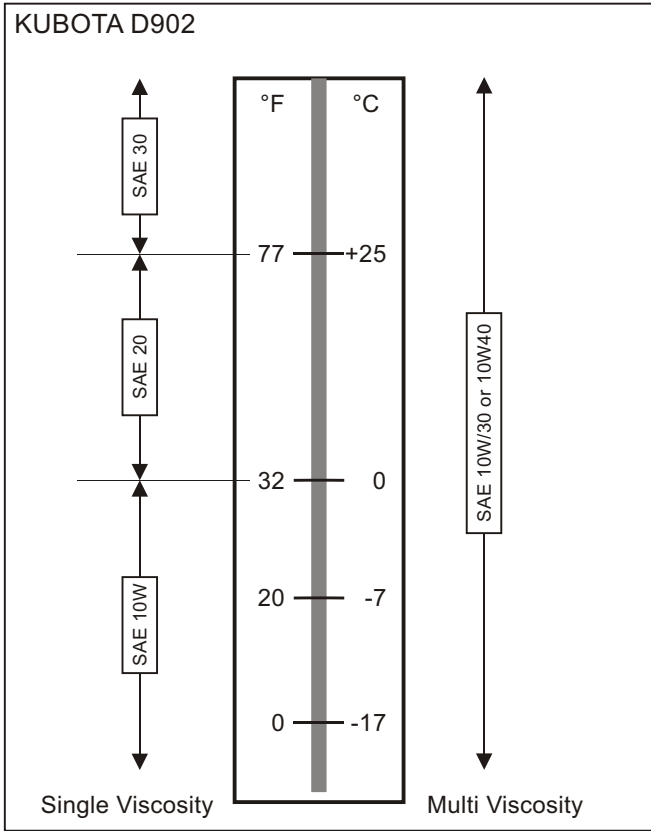
SPECIFICATIONS	SR2770	
Nominal working height	10.28m	33' 9"
Roll out deck size	1200mm	48"
Drive speed (below 2.4m)	0 to 4.5kph	0 to 2.8mph
Drive speed (above 2.4m)	0 to 0.9kph	0 to 0.6mph
Safe working load - Main deck (Roll out deck not extended)	580kg	1280lbs
Safe working load - Main deck Roll out deck extended - Roll out deck	460kg 120kg	1015lbs 265lbs
Platform size	2.73 x 1.65m	8' 11" x 5' 5"
Stowed height	2.5m	8' 2"
Stowed height (hand rails folded down)	1.7m	5' 8"
Overall length	3.36m	11' 0"
Overall width	1.7m	5' 8"
Gradeability	35%	
Lift time	26 seconds	
Turning radius (inner)	2.38m	7' 8"
Turning radius (outer)	4.75m	15' 6"
Maximum wind speed (12.5m/s)	45km/h	28mph
Insulation rating	Nil	
Tyres - Poly filled loader lug	27" x 10.5" x 15"	
Overall weight	2800kg	6272lbs
Ground clearance	350mm	13.8"
Maximum sound level at platform	86db	



■ Engine Data

ENGINE MAKE	KUBOTA(gasoline)	KUBOTA (LPG)	KUBOTA (diesel)
Model	DF752		D902
Fuel	gasoline	LPG	diesel
Fuel Grade	Unleaded 85 octane (motor method)  <b>Do not use gasoline blended with methyl alcohol.</b>	HD5 Gas Processors Association Standard 2140  Category: special dual propane	ASTM Grade 2-D S5000 Tier 4 Compliance: Low Sulpher ASTM Grade 2-D S500 centane no. > 44  (For operating temp. below 32°F (0°C) use "winterized" no. 2-D.)
Coolant	50% water + 50% ethylene glycol		
Maximum Temperature	110°C		
Oil Capacity	3.7 L		
Oil Grade	API: Quality better than CD		
Oil Weight	see chart below		

■ Engine Oil Charts





## ■ About this Manual:

This Maintenance and Repair Parts manual covers current production machines only.

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.

### **NOTE:**

*It is recommended that you record the serial and model number of your machine (see page 22 of this chapter). This information is found on the serial number placard.*

## ■ Manual Organization

The Repair Parts Manual consists of six sections with an individual table of contents preceding sections 1 through 4.

Subassemblies and detailed parts are identified by index numbers on the drawings that correspond to the item numbers on the parts listing. When requesting any part, always specify complete part number, description, model and serial number of your unit.

The following is a general description of each section and its contents.

### □ General Specifications

The section immediately preceding, contains information relating to the general specifications of the SR3370 & SR2770.

### □ Maintenance

The pages immediately following, contain information as to the maintenance schedules - lubricants and procedures for proper lubrication of the unit.

### □ Auto level system

The last section in the Maintenance chapter gives guidelines for trouble shooting and calibration of the auto level system

### □ Repair parts and drawings

Repair Parts (Section 1), contains parts listings and drawings for general mechanical repair parts of all major installations and subassemblies of the unit.

### □ Hydraulics

(Section 2), contains parts listings and drawings of hydraulic components installations including

hydraulic schematics and individual components such as cylinders, controls valves and solenoid operated valves.

### □ Electrical

Electrical (Section 3), contains listings and drawings of electrical components installations including wiring schematics.

### □ Options

Options (Section 4), contains parts listings and drawings of optional installations.

### □ Parts index - Page locator

The parts index - page locator, identifies the component by name and directs you to the section and page number where you may find information for that part such as its part order number, etc.

## ■ Maintenance and Schematics

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

## ▲ CAUTION

**Do not attempt to disconnect or remove any hydraulic line before reading and understanding all text concerning the system hydraulics. In most cases, disassembly of the machine will be obvious from the drawing.**

## ▲ CAUTION

**DO NOT modify this ariel platform without prior written consent of Snorkel Engineering Department.**

**Modification may void the warranty, adversely affect stability, or affect the operational characteristics of the ariel platform.**

When disassembling or reassembling components, complete the procedural steps in sequence. Always check your work to assure that nothing has been overlooked.

## Maintenance Information

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The following list is a gentle reminder 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 work platform is in stowed position - blocked or the weight removed by a suitable lifting device before disconnecting the hydraulic hose from the motor/pump unit to the lift cylinder.
- ✓ When raising a portion of the machine, be sure that adequate blocking is properly positioned - Do not depend on 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.

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 manifold installations. Replace any part having imperfect threads. In general, units that have been disassembled can be reassembled by reversing the order of disassembly.

Remember that the service life of a machine can be increased by keeping dirt and foreign materials out of the vital components. Precautions have been taken to safeguard against this; shields, covers, seals and filters are provided to keep air and oil supplies clean; however, these items must be maintained on a scheduled basis in order to function properly.

At any time air or oil lines are disconnected, clean surrounding areas as well as the opening and fittings themselves. 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 unit. This will assure that they are correctly reinstalled.

Proper assembly is critical to the successful rebuilding of any unit. 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.

### ■ Maintenance schedules

Snorkel has established a Preventive Maintenance Schedule that includes:

- ✓ Daily Maintenance (Operator's Inspection)
- ✓ 90 Day or 150 Hour (frequent) Maintenance
- ✓ Yearly or 500 Hour (annual) Maintenance,

These schedules should ensure the detection of any defective, damaged or improperly secured parts and provide information regarding lubrication and other minor maintenance items.

The Maintenance Schedule following, outlines the requirements of these maintenance checks for each time interval. The Operator's Pre-operational inspection must be performed by a trained operator. All other maintenance and inspections must be performed by a trained service technician only.

Note that the 90 Day or 150 hour (frequent) and yearly or 500 hour (annual) Maintenance, require use of the Preventive Inspection Maintenance Checklist to pinpoint all inspection items. Retain a copy of these forms for your records.

They also require that all placards and decals on the unit are to be inspected.

All placards and decals must be in place and legible. Use the placards installation drawing and parts listing in the repair parts section 1 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

## **▲ DANGER**

**Failure to perform the Preventive Maintenance at the intervals outlined in the Maintenance Schedule may result in a unit being operated with a defect that could result in INJURY or DEATH of the unit operator. DO NOT allow a unit to be operated that has been found to be defective.**

Repair all defects before returning the unit to service

## ■ Daily Maintenance

### Pre-operational inspection

(Set the KEY SWITCH to off before starting this inspection).

COMPONENTS	SERVICE REQUIRED
Fuel level	Visually inspect
Fuel filter (diesel engines only)	Visually inspect (condition)
Fuel leaks	Visually inspect (hoses, connections, etc)
Engine Oil	Check oil level (between dipstick lines)
Engine coolant	Check fluid level and radiator hoses
Radiator cap	Visually inspect (installation)
Platform entrance gate	Visually inspect (installation, operation)
Wiring harness and connectors	Visually inspect (installation, condition)
Battery terminals	Visually inspect (installation)
Battery fluid level	Visually inspect (covers plates)
Hydraulic oil reservoir cap	Visually inspect (installation)
Hydraulic oil level	Check fluid level (at line on side of tank)
Hydraulic oil leaks	Visually inspect (hoses, tubes)
Tires and wheels	Visually inspect (condition)
Bolts and fasteners	Visually inspect (looseness)
Structural damage & welds	Visually inspect (weld cracks, dents)
Platform guardrails	Visually inspect (condition)
Lanyard anchor points (option)	Visually inspect (condition)
Bubble level indicator	Visually inspect (condition)
Guides, rollers and slides	Visually inspect (condition)
Non slip tread grip	Visually inspect (condition)
Wrist support	Visually inspect (condition)
Operator manual	Visually inspect (that the manual is in the holder)
Placards, decals and operators manual	Visually inspect (installation and condition)
<b>START THE ENGINE FROM THE BASE CONTROL PANEL TO CHECK THE FOLLOWING</b>	
Charging system	Check condition (gauge)
Ground controls	Actuate and visually inspect for proper operation
Emergency lowering (from the ground)	Check operation (causes correct motion)
Platform controls	Actuate and visually inspect for proper operation
Flashing light	Check operation
Emergency lowering (from the platform)	Check operation (causes correct motion)
Air Filter	Check condition (gauge)
Safety prop	Check operation
Parking brakes	Check operation
Optional items	Check operation

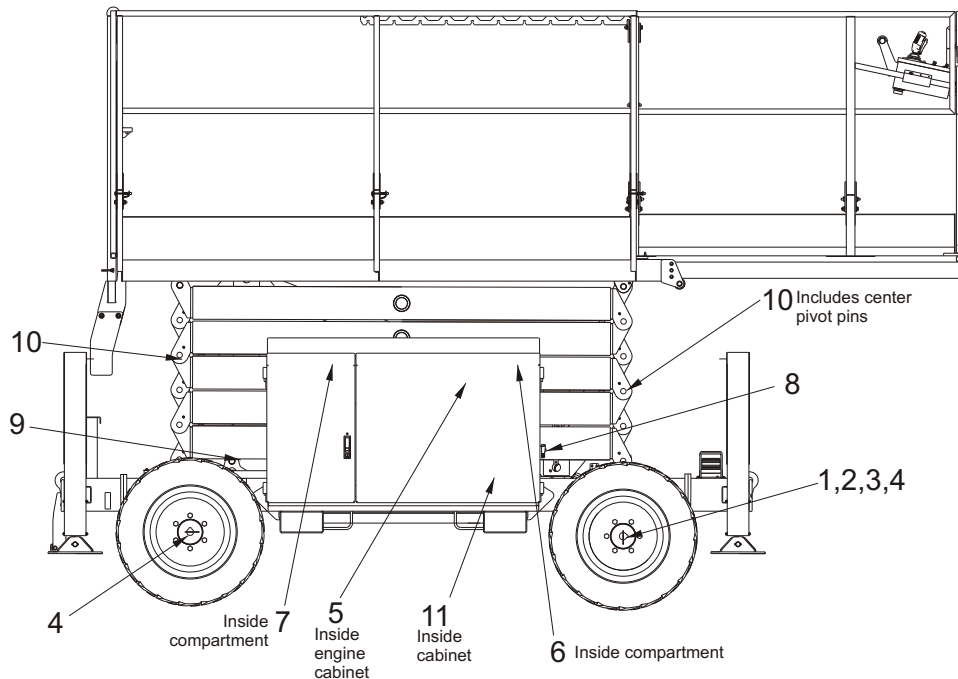
## Maintenance Information

### ■ 90 Day or 150 Hour Maintenance (Trained Service Technician)

COMPONENTS	SERVICE REQUIRED	RECOMMENDED LUBRICANT OR FURTHER INSTRUCTIONS
Daily maintenance	Perform maintenance as per schedule	
Preventive inspection maintenance checklist	Perform inspection, complete form	Retain copy of checklist
Placards & decals inspection	Inspect using drawing and parts listing in section 1 (repair parts)	Replace any missing or unreadable decals/placards
Door hinges and latches	Lubricate	SAE 10W oil or spray lube
Tie rods	Check pin keeper and condition	<b>DO NOT</b> lubricate
Steer cylinder ends	Check pin keeper and condition	<b>DO NOT</b> lubricate
Batteries	Check specific gravity	1.260/1.275 at 80° F.
Platform lift capacity	Check if platform can lift maximum load	
Platform lift/lower speeds	Check smooth operation and speeds	
Hydraulic return filter	Check condition	Replace if dirty
Engine RPM	Check for proper RPM	Low = 1750rpm High = 3000rpm
Engine oil and oil filter	Replace per engine manufacturer's interval	See engine manufacturer's owners manual
Engine fuel filter	Check condition	Replace every 6 months or if dirty
Slide pads	Check condition	DO NOT lubricate
Scissor arm bearings	Check condition	DO NOT lubricate

### ■ Yearly or 500 Hour Maintenance (Trained Service Technician)

COMPONENTS	SERVICE REQUIRED	RECOMMENDED LUBRICANT OR FURTHER INSTRUCTIONS
90 day or 150 hour maintenance	Perform maintenance per schedule	
Hydraulic oil reservoir	Clean and replace fluid	Shell Tellus 32 or similar
Hydraulic return filter	Replace	After 1st. 50 hours, thereafter at recommended interval
Hydraulic pressures	Check pressures	
Platform controller	Check operation	
Base controls	Check operation	
Wheel bearings	Clean and repack	Conoco Super Sta #2 Above 32° Mobilgrease CM-P Below 32° Mobilgrease CM-L



The drawing locates the lubrication points of the SR

## ■ Lubricants

Specific lubricants as recommended by Snorkel, should be used in maintaining your unit. If in doubt regarding the use of lubricants other than those listed, contact Snorkel.

## □ Pressure gun application

Service all fittings as indicated in the Maintenance Schedule and lubrication drawing. 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.

## **NOTE**

*Any time the work platform is elevated to perform maintenance work, properly position the safety bar as outlined on the safety prop decal.*

## **▲ DANGER**

**DO NOT reach through scissors mechanism unless the safety prop is properly positioned.**

**INJURY or DEATH could occur if the platform is not supported by the safety prop and should suddenly drop onto personnel performing maintenance work under the raised platform.**

## □ Lubrication

Refer to the above lubrication drawing for location of the following item numbers.

### □ King pins (Item 1)

King pin bearings are self lubricating. Check for signs of damage and excessive wear as outlined in the maintenance schedule.

**DO NOT lubricate**

### □ Tie rods (Item 2)

Tie rod bearings are self lubricating. Check for damage and excessive wear as outlined in the maintenance schedule.

**DO NOT lubricate**

### □ Steer cylinder end (Item 3)

Steer cylinder ends are self lubricating. Check for damage and excessive wear as outlined in the maintenance schedule.

**DO NOT lubricate**

### □ Wheel bearings

#### Drive wheels (Item 4)

Wheel bearings used on drive wheels are sealed bearings and do not require lubrication.

## Maintenance Information

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### Engines (Item 5)

Other than daily Operator's maintenance outlined in the Daily Inspection and Maintenance schedule, all other engine maintenance information is found in the manufacturer's instruction manual.

Refer to the engine manufacturer's instruction manual or consult your local engine service representative if engine adjustments or repairs are needed.

### **▲ CAUTION**

**The engine MUST be operated in accordance with manufacturer's instructions and serviced at recommended intervals.**

**Failure to do so could result in the loss of your engine warranty and repair of any failure resulting from improper maintenance could be at your own expense.**

### Hydraulic oil reservoir (Item 6)

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 and the platform in the stowed position.

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.

It is absolutely necessary that only new, clean hydraulic oil is added.

### **▲ CAUTION**

**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 for further information.

### Return filter (Item 7)

On SR scissorlift models, the hydraulic oil return filter is mounted in the right hand tray assembly close to the hydraulic oil reservoir.

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

The filter condition should be checked at the 90 day or 150 hour Preventive Inspection Maintenance

interval 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.

### Door hinges and latches (Item 8)

Door hinges and latches may be lubricated as required with spray lubrication or SAE 10W oil.

After lubricating, remove any excess oil or over-spray so it will not collect dirt and debris.

### Slide pads (Item 9)

Check slide pads for excessive wear and replace as required.

Slide pads **DO NOT** require lubrication.

### Scissor arm bearings (Item 10)

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 (Item 11)

The battery will have longer life if the water level is maintained and it is kept charged. The unit will have better starting characteristics with a fully charged battery.

In cold weather the battery should be maintained at full charge to keep from freezing. An extremely low or dead battery can freeze in cold weather. Make sure connections are clean and tight.

Check specific gravity of the battery per maintenance schedule.

Make sure charging equipment is operating properly.

### **▲ DANGER**

**Lead-acid batteries contain sulfuric acid which will damage eyes or skin on contact. When working around batteries, ALWAYS wear a face shield to avoid acid in eyes.**

**If acid contacts eyes, flush immediately with clear water and get medical attention.**

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



**▲ DANGER**

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



# Maintenance Information

CHECK	OK	✓	X
<b>ENGINE</b>			
Air filter (5)			
Belts and hoses (5)			
Hydraulic pump (4)			
Engine oil (5)			
Engine START - STOP (4)			
Electric throttle (4)			
Engine coolant level (5)			
Fuel system (3)			
Fuel tank (3,5)			
<b>ELECTRICAL</b>			
Batteries (2,4)			
Battery terminals (5,6,7)			
Battery electrolyte level (5)			
Battery specific gravity reading (5)			
Wires and cables (2,5,6)			
Battery disconnect switch (4)			
Level sensor (2,4,5)			
Motion warning alarm (2,4)			

CHECK	OK	✓	X
<b>HYDRAULIC RESERVOIR &amp; RETURN FILTER</b>			
Translucent hydraulic oil reservoir (3,5)			
Filler/breather cap (6)			
Hydraulic fluid level (2,5)			
Return filter (2,5,6)			
Return filter element (5)			
<b>OPTIONAL EQUIPMENT</b>			
AC 110/220 volt outlet on platform (2,4)			
Propane tank(s) - dual fuel units only (2,5)			
Flashing light (2,4)			

## Corrective Action Required

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Note: If correction action is required on any item, attach sheet indicating problem and action taken.




All items have been properly checked and tested and found to be operating satisfactory or necessary corrective action has been completed.

Inspected By: \_\_\_\_\_ Date \_\_\_\_\_

# Maintenance Information

## ■ Torque chart

NOM SIZE X PITCH	TENSILE STRESS AREA A <sub>s</sub> (mm <sup>2</sup> )	PROPERTY CLASS 8.8			PROPERTY CLASS 10.9		
		CLAMP LOAD W (N)	TORQUE (N.m)		CLAMP LOAD W (N)	TORQUE (N.m)	
			DRY k=0.20	LUBED k=0.15		DRY k=0.20	LUBED k=0.15
M3 x 0.5	5.03	2 200	1.32	0.99	2 990	1.79	1.34
M3.5 x 0.6	6.78	2 960	2.07	1.55	4 030	2.82	2.11
M4 x 0.7	8.78	3 830	3.07	2.30	5 220	4.17	3.13
M5 x 0.8	14.2	6 200	6.20	4.65	8 430	8.43	6.33
M6 x 1	20.1	8 770	10.5	7.90	11 950	14.3	10.8
M8 x 1.25	36.6	15 975	25.6	19.2	21 750	34.8	26.1
M8 x 1	39.2	17 100	27.4	20.5	23 275	37.3	27.9
M10 x 1.5	58.0	25 325	51	38.0	34 450	69	52
M10 x 1.25	61.2	26 725	53	40.1	36 350	73	55
M12 x 1.75	84.3	36 800	88	66	50 075	120	90
M12 x 1.25	92.1	40 200	96	72	54 700	130	98
M14 x 2	115	50 200	140	105	68 300	190	145
M14 x 1.5	125	54 550	155	115	74 250	210	155
M16 x 2	157	68 525	220	165	93 250	300	225
M16 x 1.5	167	72 900	235	175	99 200	320	240
M20 x 2.5	245	106 950	430	320	145 550	580	435
M20 x 1.5	272	118 750	475	355	161 550	650	485
M24 x 3	353	154 100	740	555	209 700	1 010	755
M24 x 2	384	167 600	805	605	228 100	1 100	820
M27 x 3	459	200 350	1 080	810	272 650	1 470	1 100
M27 x 2	496	216 500	1 170	875	294 600	1 590	1 150
M30 x 3.5	561	244 900	1 470	1 100	333 250	2 000	1 500
M30 x 3	580	253 150	1 520	1 140	344 500	2 070	1 550
M30 x 2	621	271 050	1 630	1 220	368 850	2 210	1 660
M33 x 3.5	694	302 950	2 000	1 500	412 250	2 720	2 040
M33 x 2	761	332 200	2 200	1 640	452 050	2 980	2 240
M36 x 4	817	356 600	2 570	1 930	485 300	3 490	2 620
M36 x 3	865	377 600	2 720	2 040	513 800	3 700	2 780
M39 x 4	976	426 000	3 320	2 490	579 750	4 520	3 390
M39 x 3	1 028	448 700	3 500	2 630	610 650	4 760	3 570
M42 x 4.5	1 121	489 300	4 110	3 080	665 850	5 590	4 200
M42 x 3	1 206	526 400	4 420	3 320	716 350	6 020	4 510
M45 x 4.5	1 306	570 050	5 130	3 850	775 750	6 980	5 240
M45 x 3	1 398	610 250	5 490	4 120	830 400	7 470	5 610
M48 x 5	1 473	642 950	6 170	4 630	874 950	8 400	6 300
M48 x 3	1 604	700 150	6 720	5 040	952 800	9 150	6 860

Grade marking   

## ■ Servicing STC Fittings

### ▲ IMPORTANT

These units use Aeroquip STC hydraulic fittings. Please read the following service information before undertaking any disassembly or service work on these fittings.

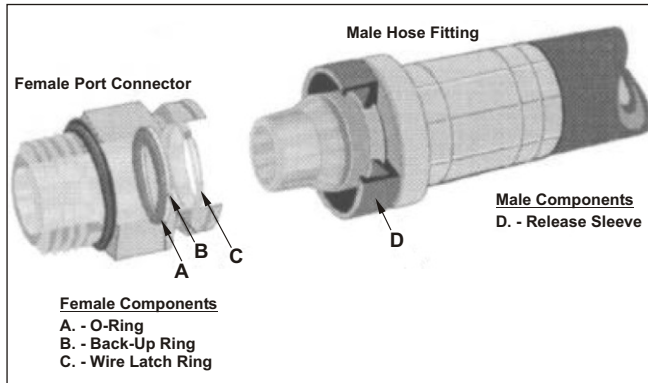


Figure 1. - STC Components

#### NOTE:

An STC release tool kit is available from Snorkel, Part Number 12791K

#### □ Disconnection

### ▲ DANGER

Remove pressure from the system before attempting to disconnect these fittings in order to avoid forceful ejection of the fitting, which could result in personal injury.

1. Some fluid may still be in the system. Minimise fluid loss by draining the fluid from the system components prior to disconnection.
2. Prior to disconnection, clean the area around the fitting with a clean cloth, or, using an airgun blow dirt and debris from the release sleeve area.
3. To help avoid release sleeve tearing create a release tool insertion gap by moving the sleeve in the release direction. (see Figure 2). This can be done either by hand or by using a single prong of the release tool.
4. Insert the release tool behind the release sleeve **D** (see Figure 1) and pull the hose assembly out from the mating STC connector (leaving the release tool inserted will aid disassembly). **Do not pry on the fitting with the release tool.** (See Figure 2).

5. If a release tool is not available, a thin blade screwdriver may be used (larger fitting sizes may require two screwdrivers). Follow step 4 above.  
Use with care - a screwdriver could damage the release sleeve.

#### □ Inspection

1. STC Fittings are designed to be connected and disconnected repeatedly without replacing the O-Ring and Back-Up-Ring, unless leakage or damage is observed.
2. Inspect mating STC fittings to ensure they are in good condition, clean and free of contaminants, nicks, scratches, flatspots etc.
3. Check the Wire Latch Ring **C** (see Figures 1 and 3) to ensure that it is in the proper position in the female STC connector prior to installation or reconnection.
4. Check the O-Ring **A** to ensure it is not cut or otherwise damaged prior to installation or reconnection.
5. Check the Back-Up-Ring **B** to ensure it is not damaged. Verify that it is at the front of the O-Ring groove prior to reconnecting the fitting.

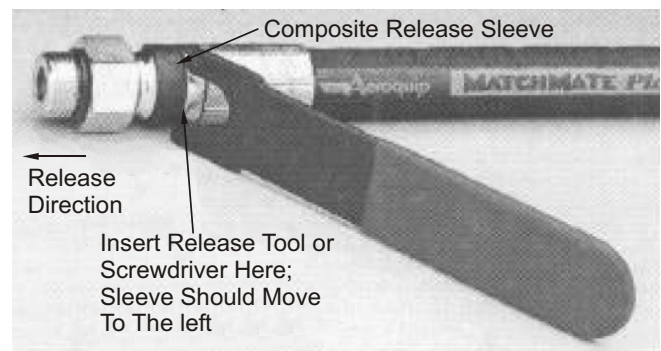


Figure 2. - STC Assembly

### ▲ CAUTION

**If leakage is observed, and the fittings are in otherwise good condition, a seal replacement kit must be installed or the fitting must be replaced!**

**If seals are not replaced, a decrease in system performance or damage to the system components may result.**

#### □ Installation and connection

1. Install the STC port connector into the mating port carefully. Follow recommended installation procedures for the applicable port fittings.

## Maintenance Information

- Align the STC fitting on the hose assembly with the STC connector, and push the hose fitting into the mating STC connector until you feel a definite snap and a solid stop.

### ▲ CAUTION

**Pull back on the hose assembly to verify that a proper connection has been made. An improper connection may result in a sudden assembly failure with a potential for personal injury.**

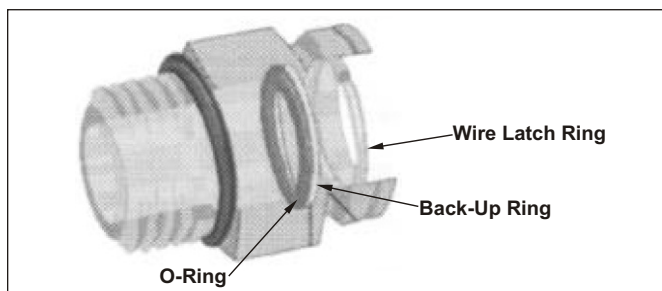
#### □ Seal replacement instructions

- Inspect the O-Ring **A** in Female STC connectors.
- Carefully remove the O-Ring **A** and Back-Up Ring **B** with an O-Ring pick without damaging the interior surfaces of the fitting.
- Inspect the interior surfaces and groves of the fitting and ensure they are free of foreign material, nicks, scratches, or dents.

### ▲ IMPORTANT

**Any damaged O-Ring must be replaced with a new O-Ring and Back-Up Ring using only genuine Aeroquip parts.**

**Any damaged fitting must be replaced with a new part to avoid leakage.**



**Figure 3. - Female Port Connector**

- If undamaged, clean the fitting and install Back-Up Ring **B** at the front of the O-Ring groove.
- Install the new O-Ring **A** in the groove behind the Back-Up Ring **B** and inspect to ensure O-Ring and Back-Up Ring are secure in the groove.  
Lubricate the O-Ring with a lubricant which is compatible with the system fluid.

### ▲ IMPORTANT

**Inspect to verify proper location of O-Ring in the connector (See Figure 3). Leakage could occur if installed incorrectly.**

- If the Wire Latch Ring **C** is damaged, carefully remove the Latch Ring without damaging the interior surfaces of the connector.
- Carefully insert the new Wire latch Ring in the Latch Ring groove. The Latch Ring should be able to rotate in the groove.
- Inspect and reinstall the connector. Follow the installation / connection steps for reinstallation.

■ Auto Level System Troubleshooting

*If the auto level system fails to level the machine there could be electrical or hydraulic problems.  
If the lift enable light comes on but the machine is not level or the auto level board has been removed or replaced the unit will need to be re-calibrated.  
An EZcal is required to do this.*

□ Test procedures

1. Remove the stabiliser cylinder covers.
2. Verify that the micro switches are working by operating them by hand. An EZcal can be plugged into the auto level board to verify the signals are reaching the board.
3. Verify that electrical signals are being sent from the auto level board to the stabiliser valves when auto level is selected. There should be approximately 12 volts across each leg coil and the stabiliser divert valve when auto level is selected.
4. Verify the hydraulic system by manually powering the stabiliser divert valve at each leg coil individually with the engine running. Each leg should move both up and down.

□ Using the EZcal

1. Plug EZcal into the P1 port of the auto level board (see Figure 1.), and turn on the ignition of the SR.



Figure 1.

**NOTE:**

The EZcal is a menu driven measuring and calibration device. Use the **four arrow keys** to scroll through menus and levels within menus, the **enter key** to enter/confirm data, and the **escape key** to cancel an operation or return to a previous menu level.

**▲ WARNING**

Incorrect use of the EZcal could lead to safety issues and result in damage to the machine.

Ensure that you carefully follow the procedures set out below.

2. The display screen will show the following information (See Figure 2.).

**GP122 MENU:  
HELP:PRESS ENTER**

Figure 2.

3. Use the [RIGHT ARROW] to scroll through to [DIAGNOSTICS] then press [ENTER].
4. Use the [RIGHT ARROW] to scroll to [SWITCHES] and press [ENTER].

**NOTE:**

The designations LR, RR, RF, and LF used subsequently refer to leg positions **with respect to the auto level board** not the position on the machine (see Figure 3.).

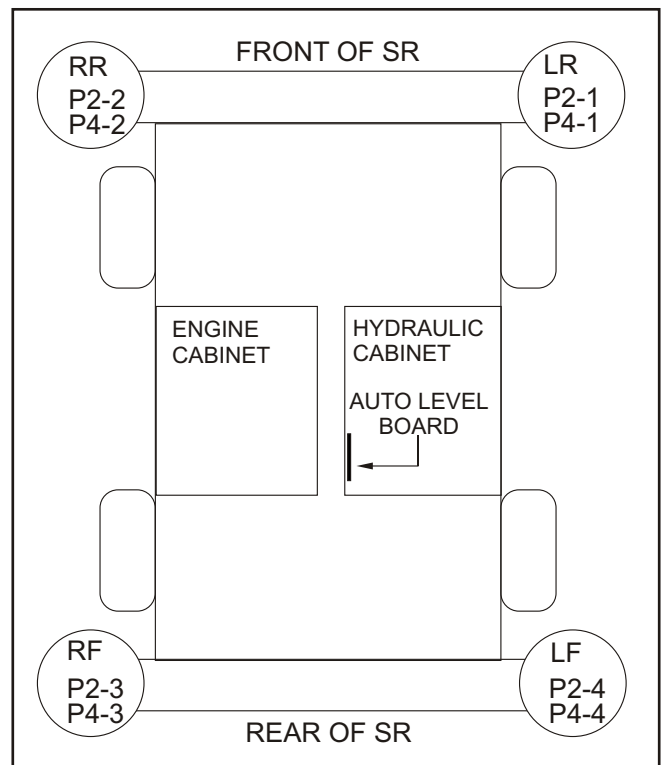


Figure 3.

## Maintenance Information

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5. **LR / P2-1** will appear in the display:  
**High** will be displayed when the *left rear* outrigger is in contact with the ground and **Low** will be displayed when it is not.  
Verify this by operating the micro switch.  
*The value should change from Low to High*
6. Use the [RIGHT ARROW] to select **RR / P2-2**:  
**High** will be displayed when the *right rear* outrigger is in contact with the ground and **Low** will be displayed when it is not.  
Verify this by operating the micro switch.  
*The value should change from Low to High*
7. Use the [RIGHT ARROW] to select **RF / P2-3**:  
**High** will be displayed when the *right front* outrigger is in contact with the ground and **Low** will be displayed when it is not.  
Verify this by operating the micro switch.  
*The value should change from Low to High*
8. Use the [RIGHT ARROW] to select **LF / P2-4**:  
**High** will be displayed when the *left front* outrigger is in contact with the ground and **Low** will be displayed when it is not.  
Verify this by operating the micro switch.  
*The value should change from Low to High*
9. Use the [RIGHT ARROW] to select **Extend / P2-5**:  
**High** will be displayed when the *auto level switch* is activated and **Low** will be displayed when it is not.
10. Use the [RIGHT ARROW] to select **Retract / P2-6**:  
**High** will be displayed when the *auto stow switch* is activated and **Low** will be displayed when it is not.

### **NOTE:**

*If none of the above indicates a problem contact Snorkel or your local service agent.*

### EZcal auto level calibration procedure

## **▲ DANGER**

**Under no circumstances change any other parameter of the auto level board (other than those specified here) without permission from Snorkel International.**

**Death or personal injury and serious damage to the machine can result from altering parameters beyond those specified.**

1. Manually level the machine on its stabilisers.
2. Plug the EZcal into the auto level board (see Figure 1)
3. Turn on the SR ignition.  
The display screen will show:



GP122 MENU:  
HELP:PRESS ENTER

4. Press the [RIGHT ARROW] twice to scroll to the Access Level 3 screen.  
The display will show:



GP122 MENU:  
ACCESS LEVEL 3

5. Press [ENTER]  
The display screen will show:



ACCESS LEVEL:  
CODE 0000

6. Use the [UP & DOWN ARROWS] to change the numbers and the [LEFT & RIGHT ARROWS] to change the cursor position.  
Change the code '0000' to the correct code to reach access level 1.  
Press [ENTER]  
The display screen will show:



GP122 MENU:  
ACCESS LEVEL 1

7. Press [RIGHT ARROW] twice to select machine setup  
The display screen will show:



GP122 MENU:  
MACHINE SETUP

8. Press [ENTER]  
The display screen will show:



**MACHINE SETUP:  
CHANGE DEFAULTS**

9. Press [ENTER]  
The display screen will show:

**DEFAULTS:  
1=SR2770**

10. Only one machine type at a time will show on the screen.  
Use the [UP & DOWN ARROWS] to select the correct machine type (the full list is shown below).

0=MHP  
1=SR2770  
2=SR3370  
3=SR3370eu  
4=SR2255  
5=SR2755

### **▲ DANGER**

**Death or personal injury and serious damage to the machine can result from selecting the incorrect machine type.**

**ENSURE that the machine type you selected at the above step is the one you are carrying out the auto level calibration on.**

11. Press [ESC]  
The display screen will show:

**MACHINE SETUP:  
CHANGE DEFAULTS**

12. Press the [RIGHT ARROW] to select the calibrate level function.  
The display screen will show:

**MACHINE SETUP:  
CALIBRATE LEVEL**

13. Press [ENTER].  
The display screen will show:

**CALIBRATE LEVEL:  
YES:ENTER.NO:ESC**

14. Press [ESC] to abort the calibration or [ENTER] to proceed with the calibration process.  
If [ENTER] is selected the display screen should show:

**CALIBRATE LEVEL:  
TILT 0.0'.0.0'**

15. Values should now read approximately 0.0, 0.0. If they do not repeat from step 9.  
16. Switch the ignition off and on again.  
17. Check that the machine now levels correctly.

# Maintenance Information

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## ■ To order service or repair parts

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

- ✓ Machine model number
- ✓ Machine serial number
- ✓ Snorkel part number
- ✓ Description of part
- ✓ Quantity of parts required
- ✓ Your purchase order number
- ✓ Address for order to "Ship To"
- ✓ Your desired shipment method

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

Snorkel  
36 Bruce Road  
P.O. Box 1041  
Levin 5500  
New Zealand

Phone: +64 06 368-9168

Fax: +64 06 368-9164

Attention: Parts Department

## □ Manuals

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

The specific manuals for SR3370 - SR2770 are as follows:

- ✓ Operator's Manual  
Snorkel part number - 13184A
- ✓ Repair Parts Manual  
Snorkel part number - 13184B

## □ 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 A92.5-1992 Boom-Supported Elevating Work Platforms" is available from Snorkel dealers or from the factory upon request.

Copies are also available from:

Scaffold Industry Association  
20335 Ventura Blvd. Suite 310  
Woodland Hills, CA 91364-2471 USA

## Record machine information here:

Model number\*

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Serial number\*

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Date of purchase

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Purchased from

---

Snorkel dealer or distributor

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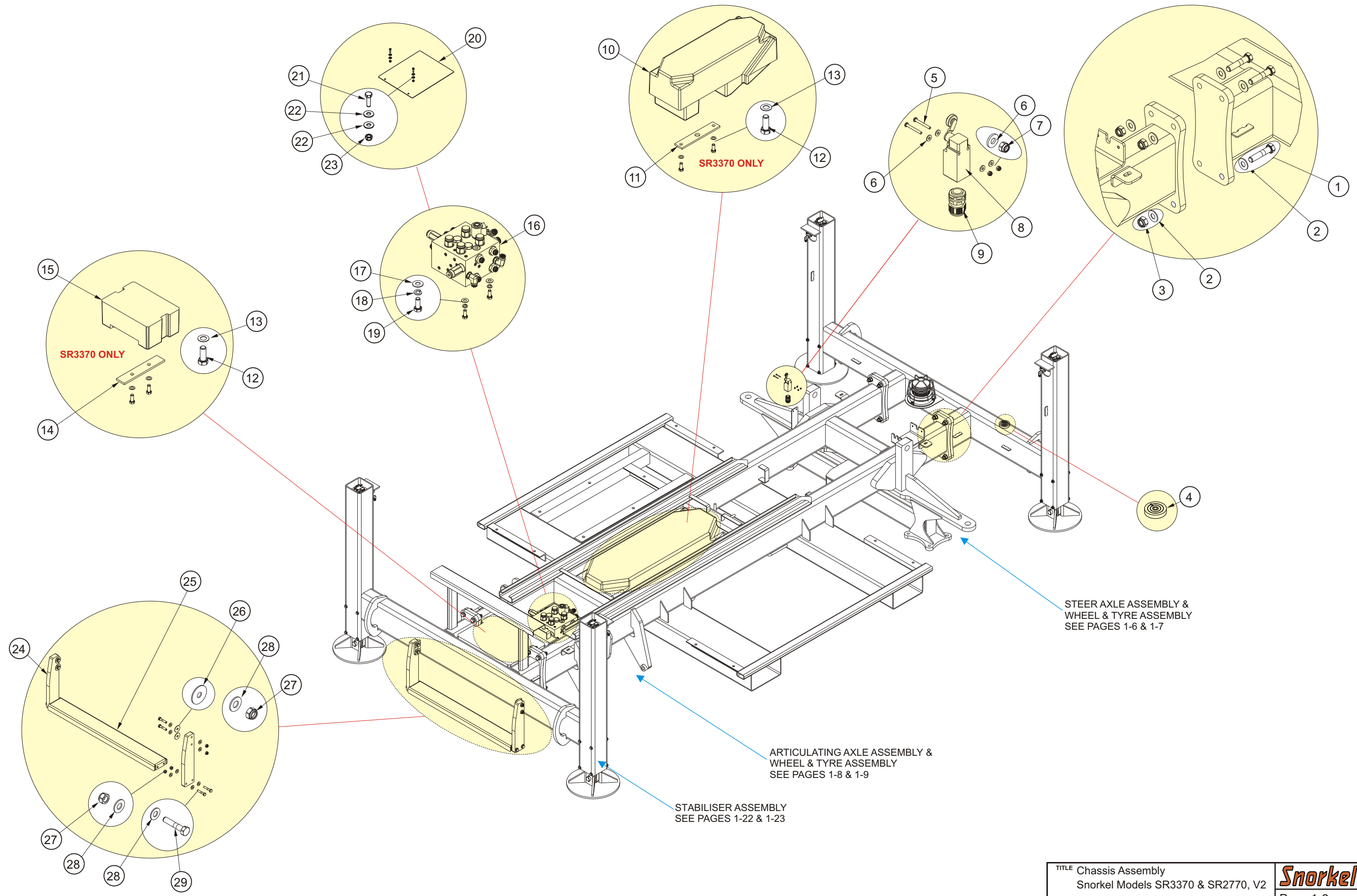
\* This information is found on the serial number placard attached to your machine.

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## Chassis assembly

Item	Part No	Qty	Description
1.	361012055	16	Bolt, metric, M12 x 24, C8.8
2.	3603-12	32	Washer, plain, M12 x 24
3.	3611-2	16	Nut, nyloc, M12
4.	1273-1	1	Bubble level
5.	3604-04035	2	Screw, pan head, M4 x 35, ZP
6.	3603-04	4	Washer, plain, M4 x 11, ZP
7.	3611-04	2	Nut, nyloc, M4
8.	12445	1	Microswitch
9.	1814	1	Cable gland, nylon, M20
10.	13117-1	1	Counterweight, front
11.	13117-3	1	Strap, front counterweight
12.	3610-16040	4	Bolt, M16 x 40, C8.8
13.	3603-16	4	Washer, plain, M16 x 30
14.	13117-4	1	Strap, rear counterweight
15.	13117-2	1	Counterweight, rear
16.	13162A	1	Manifold assembly, 4WD
17.	3603-10	2	Washer, plain, M10 x 24
18.	3605-10	2	Washer, spring, M10
19.	3610-10025	2	Bolt, metric, M10 x 25, C8.8
20.	11683	1	Cover, 4WD block
21.	3610-06016	2	Bolt, M6 x 16, C8.8
22.	3603-06	4	Washer, plain, M6
23.	3611-06	2	Nut, nyloc, M6
24.	12554-6	2	Rubber step hanger
25.	12554-5	1	Step foldment
26.	60030-197	4	Washer, fender, 5/16", plated
27.	3611-08	8	Nut, nyloc, M8
28.	3603-08	16	Washer, plain, M8 x 19
29.	3610-08040	8	Bolt, metric, M8 x 40, C8.8

F  
E  
D  
C  
B  
A



SR3370 ONLY

SR3370 ONLY

STEER AXLE ASSEMBLY &  
WHEEL & TYRE ASSEMBLY  
SEE PAGES 1-6 & 1-7

ARTICULATING AXLE ASSEMBLY &  
WHEEL & TYRE ASSEMBLY  
SEE PAGES 1-8 & 1-9

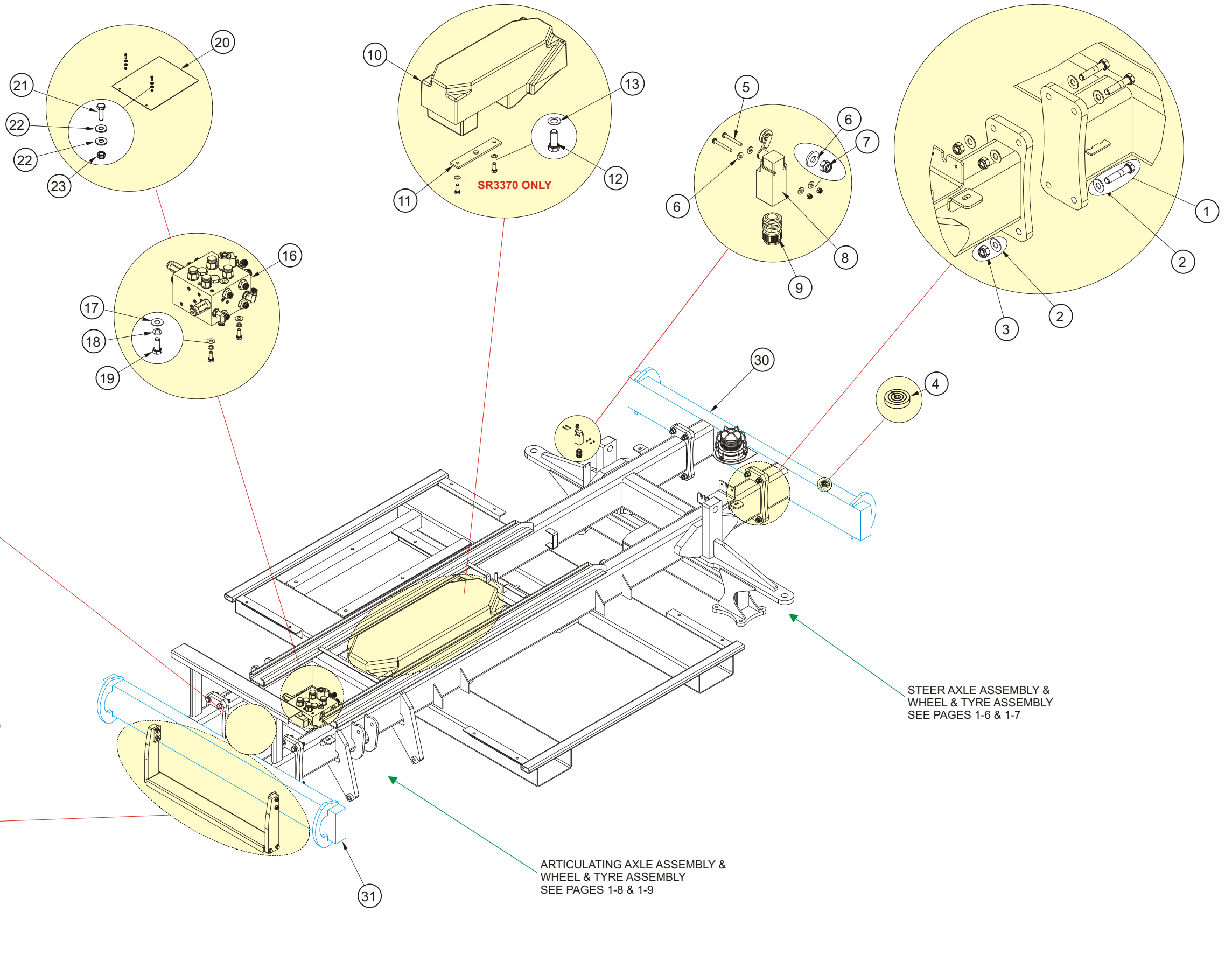
STABILISER ASSEMBLY  
SEE PAGES 1-22 & 1-23

TITLE Chassis Assembly  
Snorkel Models SR3370 & SR2770, V2

**Snorkel**  
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SR3370 ONLY

SR3370 ONLY

STEER AXLE ASSEMBLY &  
WHEEL & TYRE ASSEMBLY  
SEE PAGES 1-6 & 1-7

ARTICULATING AXLE ASSEMBLY &  
WHEEL & TYRE ASSEMBLY  
SEE PAGES 1-8 & 1-9

## Chassis assembly no stabilisers

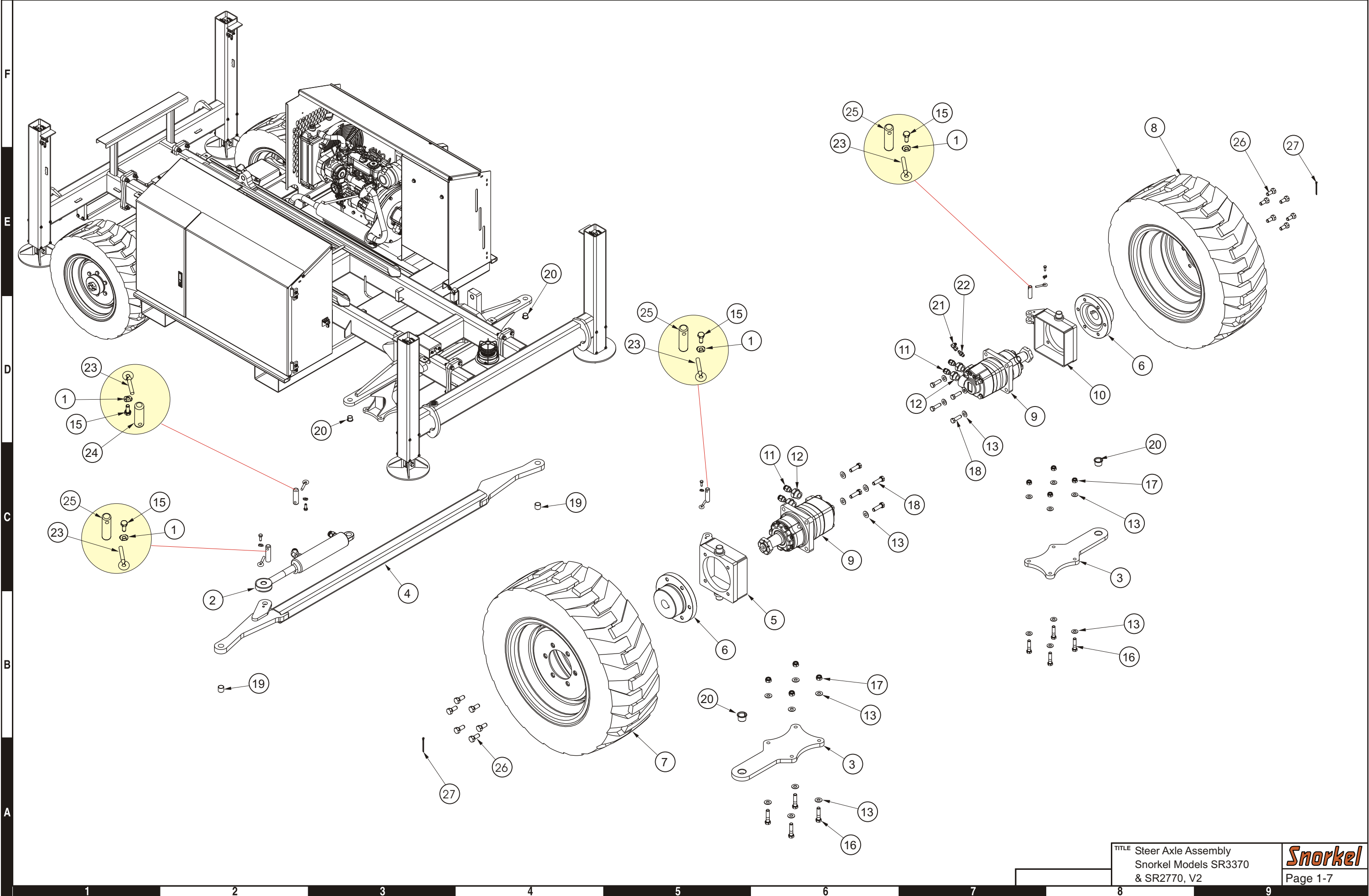
Item	Part No	Qty	Description
1.	361012055	16	Bolt, metric, M12 x 24, C8.8
2.	3603-12	32	Washer, plain, M12 x 24
3.	3611-2	16	Nut, nyloc, M12
4.	1273-1	1	Bubble level
5.	3604-04035	2	Screw, pan head, M4 x 35, ZP
6.	3603-04	4	Washer, plain, M4 x 11, ZP
7.	3611-04	2	Nut, nyloc, M4
8.	12445	1	Microswitch
9.	1814	1	Cable gland, nylon, M20
10.	13117-1	1	Counterweight, front
11.	13117-3	1	Strap, front counterweight
12.	3610-16040	4	Bolt, M16 x 40, C8.8
13.	3603-16	4	Washer, plain, M16 x 30
14.	13117-4	1	Strap, rear counterweight
15.	13117-2	1	Counterweight, rear
16.	13162A	1	Manifold assembly, 4WD
17.	3603-10	2	Washer, plain, M10 x 24
18.	3605-10	2	Washer, spring, M10
19.	3610-10025	2	Bolt, metric, M10 x 25, C8.8
20.	11683	1	Cover, 4WD block
21.	3610-06016	2	Bolt, M6 x 16, C8.8
22.	3603-06	4	Washer, plain, M6
23.	3611-06	2	Nut, nyloc, M6
24.	12554-6	2	Rubber step hanger
25.	12554-5	1	Step foldment
26.	60030-197	4	Washer, fender, 5/16", plated
27.	3611-08	8	Nut, nyloc, M8
28.	3603-08	16	Washer, plain, M8 x 19
29.	3610-08040	8	Bolt, metric, M8 x 40, C8.8
30.	13159	1	Chassis front, SRXX70, V2, no stabilisers
31.	13158	1	Chassis rear, SRXX70, V2, no stabilisers

## Steer axle assembly

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Item	Part No.	Qty	Description
1.	11492-1	4	Lock tab
2.	11699A	1	Steer cylinder assembly
3.	12555-9	2	Steer axle, lower plate
4.	12556	1	Tie rod weld
5.	12558	1	Steer hub weld, right
6.	12562	2	Wheel hub front
7.	12563	1	Wheel tyre assembly, right hand, foam filled
8.	12564	1	Wheel tyre assembly, left hand, foam filled
9.	12570	2	Motor, hydraulic, unbraked
10.	12704	1	Steer hub weld, left
11.	12769-1	4	Adaptor, male UNO to female UNO
12.	12770-330606	4	Adaptor, male UNO to female STC straight
13.	3603-12	24	Washer, plain, M12 x 24
15.	3610-06016	4	Bolt, M6 x 16, C8.8, ZP
16.	3610-12050	8	Bolt, M12 x 50, C8.8, ZP
17.	3611-12	8	Nut, nyloc, M12
18.	3616-12040	8	Bolt, M12 x 40, C10.9, ZP
19.	3624-27	2	Bush
20.	3626-1	4	Flanged bush
21.	6999-005	2	Adaptor, JICM - JICF elbow
22.	7025-015	2	Adaptor, JICM - UNO straight
23.	8628	4	Pin keeper, 6mm, plated
24.	9311	1	Pin, steer cylinder
25.	9319	3	Pin, tie rod arm
26.	98300-9	12	Wheel bolt
27.	3636-1	2	Split pin



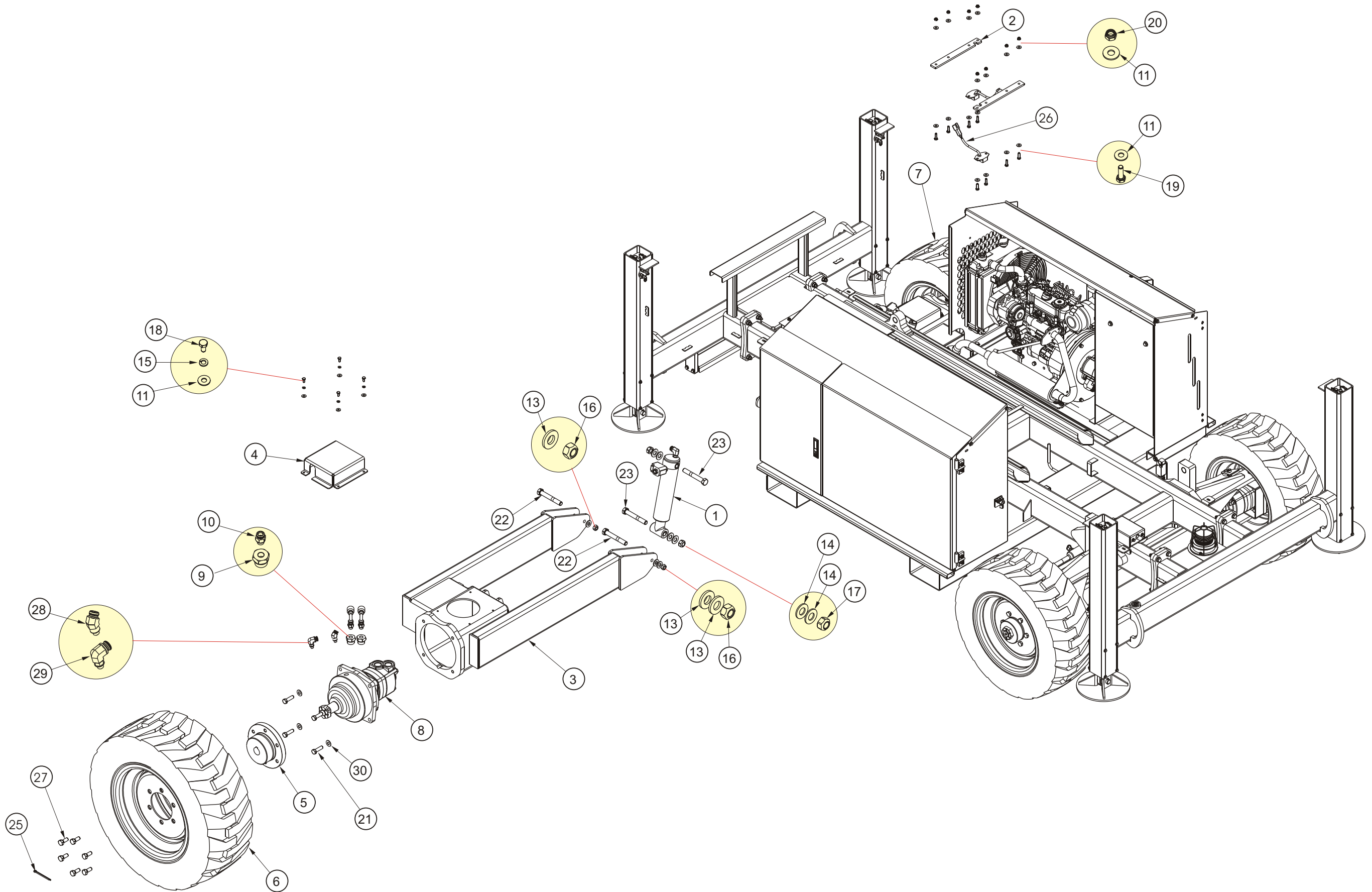


TITLE Steer Axle Assembly  
 Snorkel Models SR3370  
 & SR2770, V2

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**Snorkel**

TITLE Articulating Axle Assembly  
Snorkel Models SR3370 & SR2770, V2

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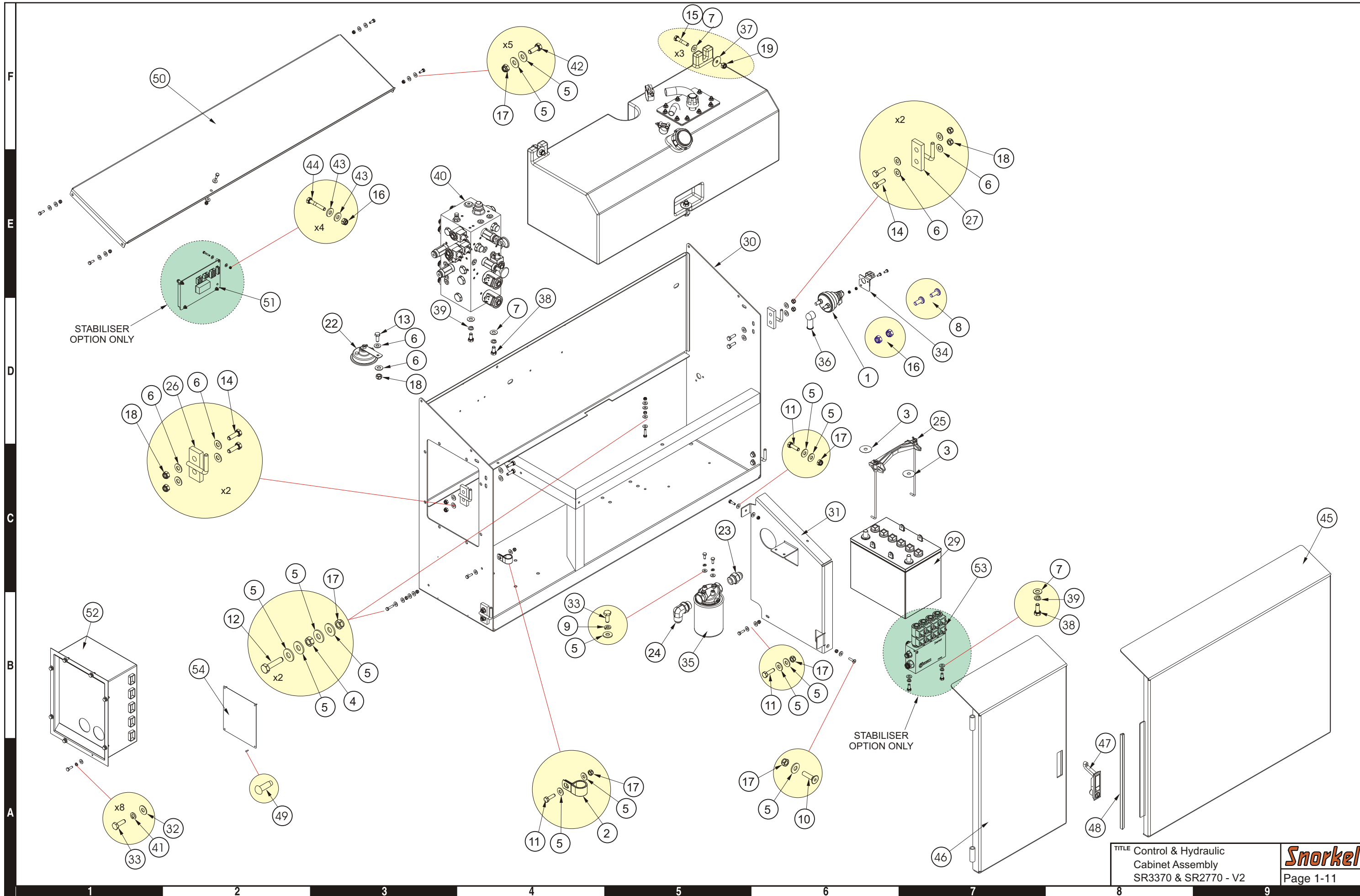
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## Articulating axle assembly

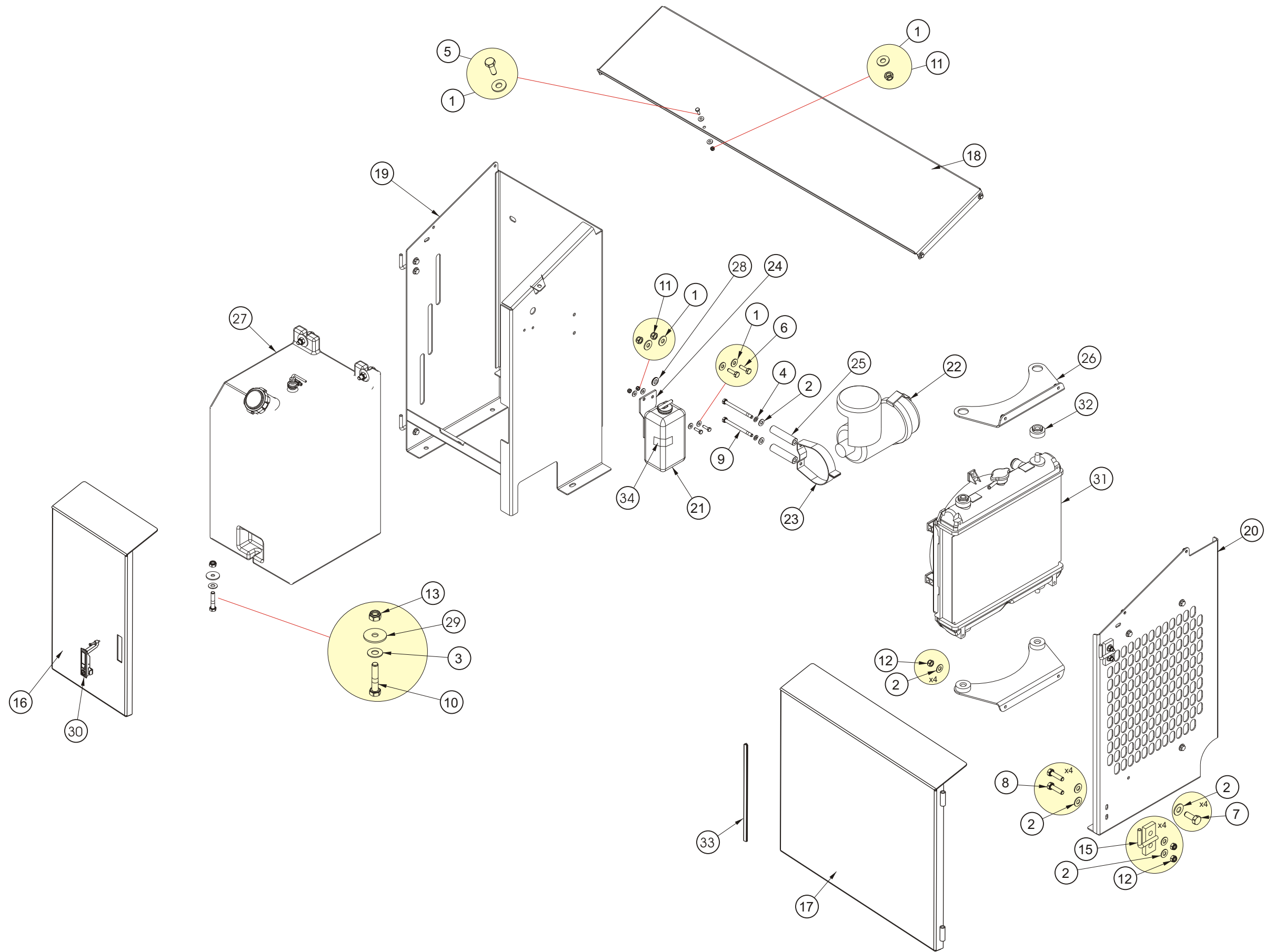
Item	Part No.	Qty	Description
1.	11642A	2	Axle cylinder assembly
2.	11794	2	Mounting bracket, magnetic switch
3.	12557	2	Swing arm
4.	12557-10	2	Motor cover
5.	12561	2	Wheel hub, rear
6.	12563	1	Wheel tyre assembly, right hand, foam filled
7.	12564	1	Wheel tyre assembly, left hand, foam filled
8.	12571	2	Motor, hydraulic braked
9.	12769-1	4	Adaptor, male UNO to female UNO
10.	12770-330606	4	Adaptor, male UNO to female STC straight
11.	3603-06	24	Washer, plain, M6 x 16, ZP
12.	3603-12	8	Washer, plain, M12 x 24, ZP
13.	3603-12HD	8	Washer, plain, M12HD, galvanised
14.	3603-16HD	8	Washer, plain, M16HD, galvanised
15.	3605-06	8	Washer, spring, M6
16.	3608-12C	4	Nut, cone-lock, M12
17.	3608-16C	4	Nut, cone-lock, M16
18.	3610-06012	8	Bolt, M6 x 12, C8.8, ZP
19.	3610-06020	8	Bolt, M6 x 20, C8.8, ZP
20.	3611-06	8	Nut, nyloc, M6
21.	3616-12040	8	Bolt, M6 x 12, C8.8, ZP
22.	3616-12100	4	Bolt, M6, x 20, C8.8, ZP
23.	3616-16140	4	Bolt, modified, M16 x 140, C10.9
24.	3626-2	8	Flanged bush
25.	3636-1	2	Split pin
26.	560278	2	Switch, proximity
27.	98300-9	12	Wheel stud
28.	12770-340406	2	Male to female STC adapter, 90°
29.	12770-35046	2	Male to female STC adapter, 90°
30.	3603-12H	8	Washer, flat M12, hardened

## Control & hydraulic cabinet assembly

Item	Part No	Qty	Description
1.	302-0049	1	Switch, battery disconnect
2.	2022-005	1	Clamp, cushion, 50mm
3.	2069	1	Anti-corrosive pads
4.	3602-06	2	Hex nut, metric, M6, plated
5.	3603-06	27	Washer, plain, M6 x 16
6.	3603-08	20	Washer, plain, M8 x 19
7.	3603-10	7	Washer, plain, M10 x 24
8.	3604-05012	2	Screw, pan head, M5 x 12
9.	3605-06	2	Washer, spring, M6
10.	3606-06025	1	Screw, socket head, countersunk, M6 x 25
11.	3610-06020	3	Bolt, metric, M6 x 20, C8.8
12.	3610-06025	2	Bolt, metric, M6 x 25, C8.8
13.	3610-08020	1	Bolt, metric, M8 x 20, C8.8
14.	3610-08025	8	Bolt, metric, M8 x 25, C8.8
15.	3610-10050	3	Bolt, metric, M10 x 50, C8.8
16.	3611-05	6	Nut, nyloc, metric, M5
17.	3611-06	11	Nut, nyloc, metric, M6
18.	3611-08	9	Nut, nyloc, metric, M8
19.	3611-10	3	Nut, nyloc, metric, M10
20.	3618-26	1	Clamp, hose, 26 - 28mm, zinc plated
21.	3618-32	1	Clamp, hose, 34 - 37mm, zinc plated
22.	4381	1	Horn
23.	7025-008	1	Adapter, straight, 11/16" JICM -> 11/16" UNO
24.	7031-009	1	Adapter, elbow 90°, 11/16" JICM -> 11/16" UNO
25.	10268-1	1	Bracket, battery, HA 8023
26.	11470	2	Left hand hinge, upper
27.	11470-1	2	Right hand hinge, upper
28.	11558	1	Hydraulic oil tank assembly
29.	11596	1	Battery, 12V
30.	12716	1	Cabinet, control/hydraulic
31.	12716-14	1	Cabinet support
32.	60030-006	8	Washer, plain, 1/4" x 5/8"
33.	60015-012	10	Bolt, 1/4" UNC x 3/4" ZP
34.	300840	1	Lock out lever assembly
35.	301440	1	Oil filter
36.	304269	1	Boot, cable entry, black
37.	5560179	3	Washer, flat, special
38.	3610-10020	6	Bolt, M10 x 20, C8.8
39.	3605-10	6	Washer, spring, M8
40.	13161A	1	Manifold assembly SRxxxx V2
41.	60005-007	8	Washer, spring, 1/4", HD, plated
42.	3610-06016	5	Bolt, M6 x 16, C8.8
43.	3603-05	8	Washer, plain, M5 x 12.5
44.	3610-05025	4	Bolt, M5 x 25, C4.6
45.	11680	1	Cabinet door weld, right hand
46.	11679	1	Cabinet door weld, left hand
47.	8342416	1	Latch, adjustable trigger
48.	PCA015	1	Rubber channel section
49.	8974	4	Screw, hammer drive, 4mm x 3/8"
50.	12716-13	1	Cabinet top plate
51.	12546	1	Auto level system, Trionics
52.	560222	1	Control box, ground
53.	12568	1	Manifold, stabiliser, SRxxxx
54.	12833-4	1	Serial plate



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Item	Part No	Qty	Description
1.	3603-06	4	Washer, plain, M6 x 16, ZP
2.	3603-08	26	Washer, plain, M8 x 19, ZP
3.	3603-10	3	Washer, plain, M10 x 24, ZP
4.	3605-08	2	Washer, spring, M8
5.	3610-06016	5	Bolt, M6 x 16, C8.8, ZP
6.	3610-06020	2	Bolt, M6 x 20, C8.8, ZP
7.	3610-08020	4	Bolt, M8 x 20, C8.8, ZP
8.	3610-08025	8	Bolt, M8 x 25, C8.8, ZP
9.	3610-08100	2	Bolt, M8 x 100, C8.8, ZP
10.	3610-10050	3	Bolt, M10 x 50, C8.8, ZP
11.	3611-06	2	Nut, nyloc, M6
12.	3611-08	12	Nut, nyloc, M8
13.	3611-10	3	Nut, nyloc, M10
14.	11470	2	Left hand hinge, upper
15.	11470-1	2	Right hand hinge, upper
16.	11679	1	Left hand door weld, small
17.	11680	1	Right hand door weld, large
18.	12716-13	1	Top plate engine control cabinet
19.	12938	1	Engine cabinet, tank side
20.	12938-1	1	Cabinet end, radiator vent
21.	*****	1	Radiator overflow bottle
22.	*****	1	Air filter
23.	*****	1	Air filter, bracket
24.	*****	1	Overflow bottle, bracket
25.	13098	2	Air filter, support
26.	13099-1	2	Radiator mount
27.	13106-2A	1	Fuel tank assembly
28.	65004-008	1	Rubber grommet
29.	5560179	3	Washer, flat, special
30.	8342416	1	Latch, adjustable trigger
31.	*****	1	Radiator
32.	*****	4	Radiator isolator
33.	PCA015	1	Rubber channel isolator
34.	9208	1	Decal, water
	*****	=	Parts supplied with engine (no part numbers)

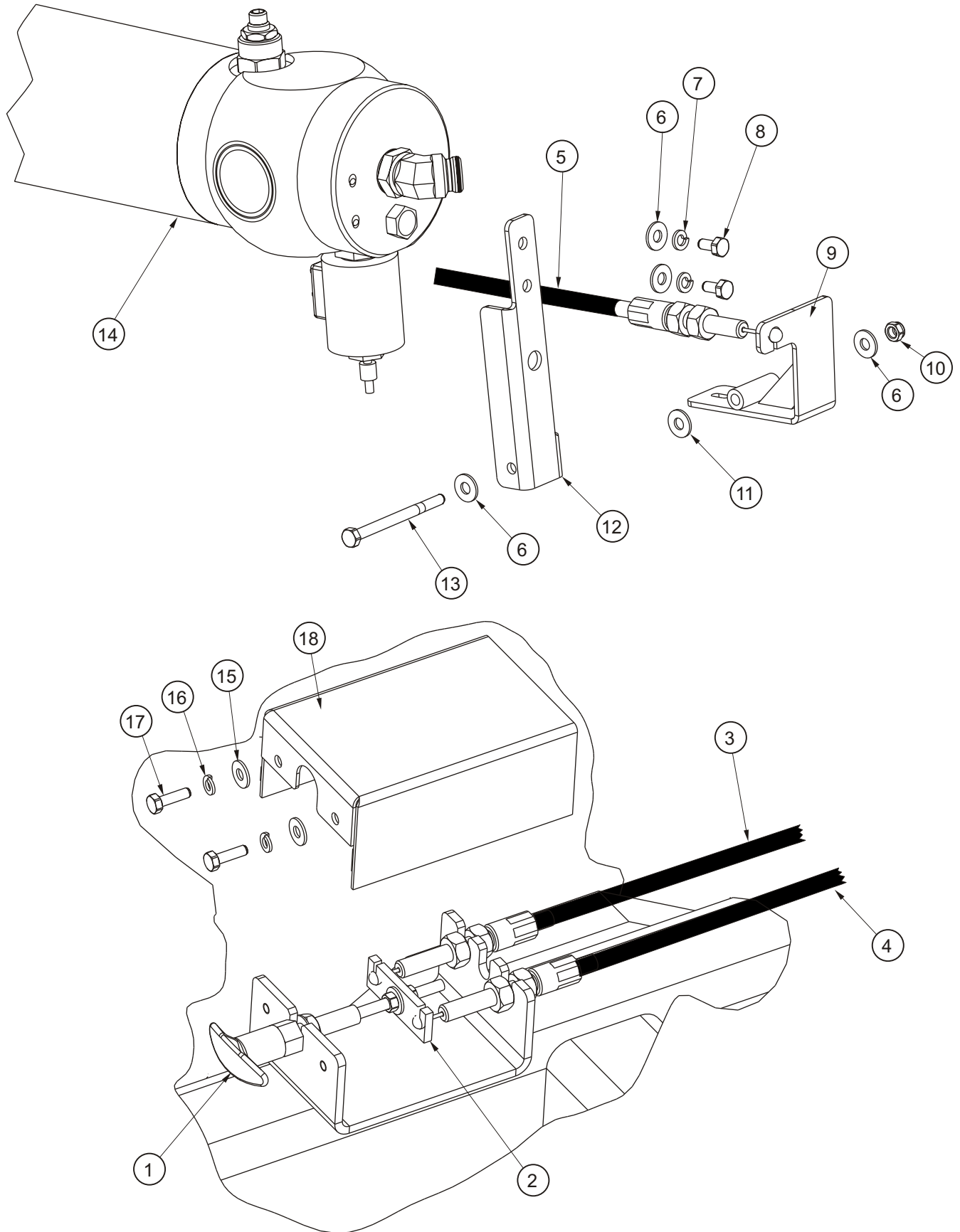
## Cable operated emergency bleed down SR3370

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Item	Part No	Qty	Description
1.	12726	1	Bleed down handle
2.	12724	1	Bridge plate
3.	12722	1	Bleed down cable (short) to lower lift cylinder
4.	12723	1	Bleed down cable (long) to upper lift cylinder
5.	12722	1	Bleed down cable (short) lower lift cylinder
	12723	1	Bleed down cable (long) upper lift cylinder
6.	3603-06	8	Washer, plain, M6 x 16
7.	3605-06	4	Washer, spring, M6
8.	3610-06012	4	Bolt, M6 x 12, C8.8, ZP
9.	12648	2	Valve lever
10.	3611-06	2	Nut, nyloc, M6
11.	3641-06	2	Washer, nylon, M6
12.	12647-1	2	Cylinder lever pivot
13.	3610-06075	2	Bolt, M6 x 75, C8.8, ZP
14.	12746A	2	SR lift cylinder
15.	3603-06	2	Washer, plain, M6 x 16, ZP
16.	3605-06	2	Washer, spring, M6
17.	3610-06020	2	Bolt, M6 x 20, C8.8, ZP
18.	12818	1	Bleed down cover



# Cable operated bleed down drawing, SR3370

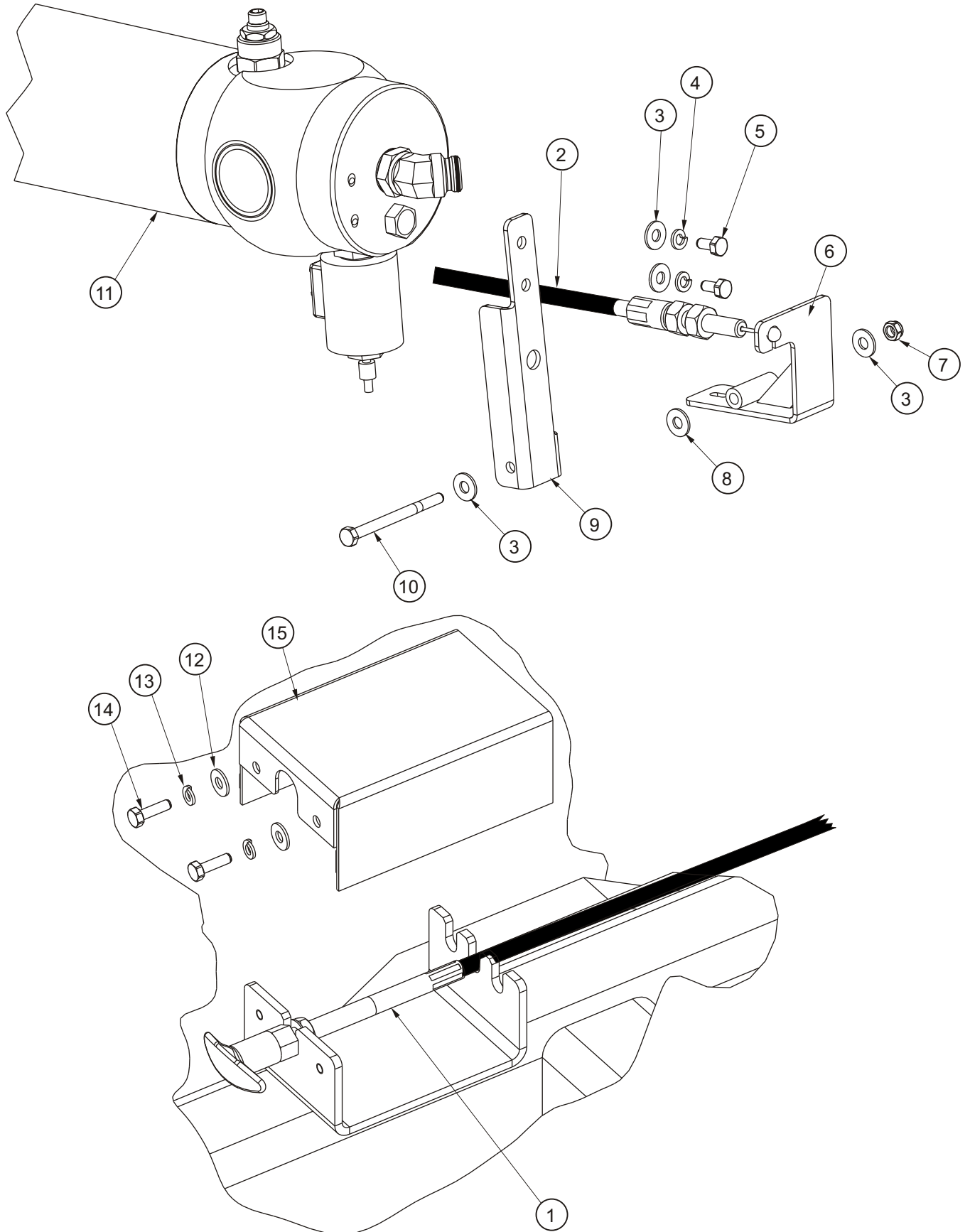


## Cable operated emergency bleed down SR2770

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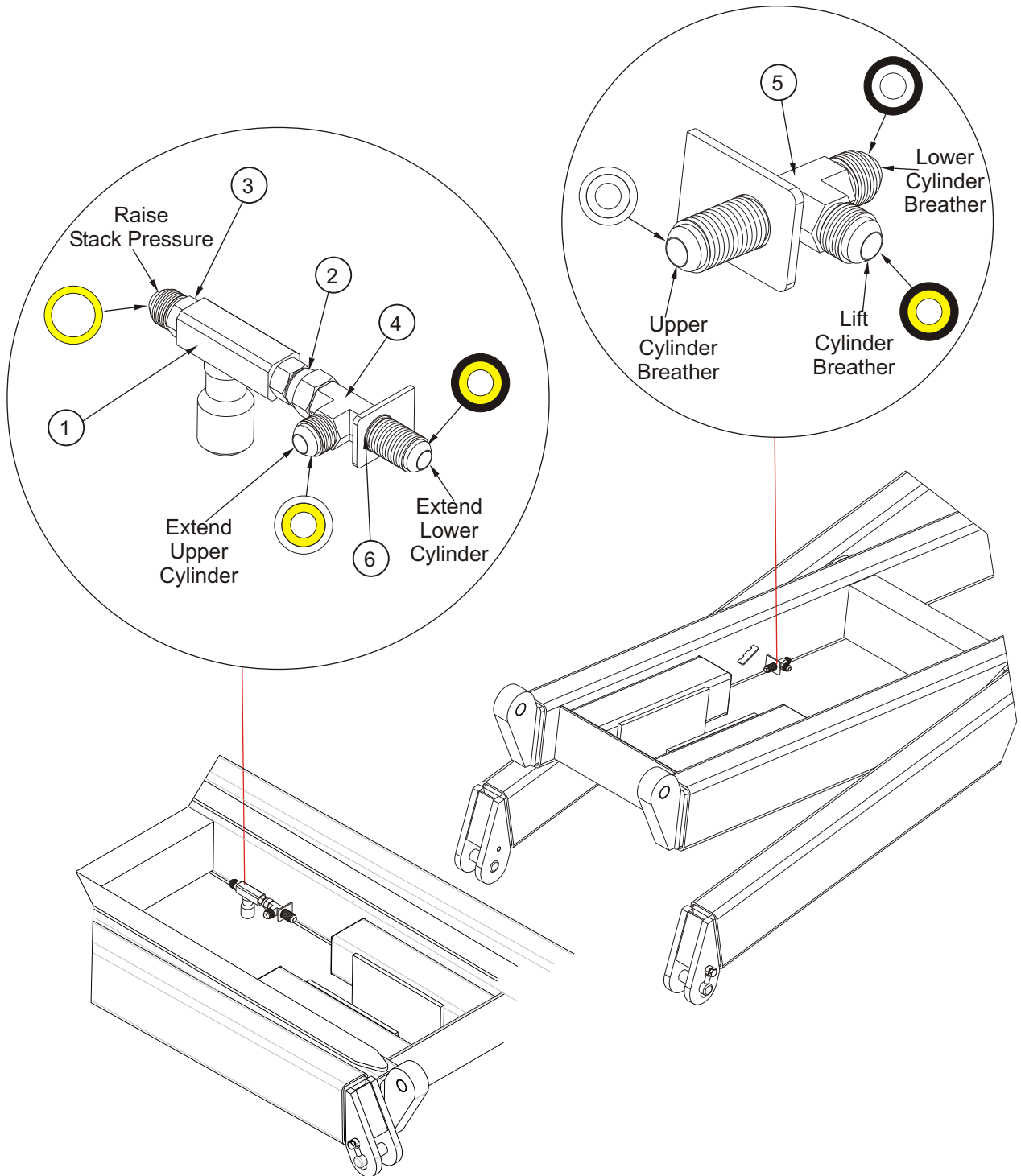
Item	Part No	Qty	Description
1.	12748	1	Bleed down handle and cable to lift cylinder
2.	12748	1	Bleed down cable
3.	3603-06	4	Washer, plain, M6 x 16
4.	3605-06	2	Washer, spring, M6
5.	3610-06012	2	Bolt, M6 x 12, C8.8, ZP
6.	12648	1	Valve lever
7.	3611-06	1	Nut, nyloc, M6
8.	3641-06	1	Washer, nylon, M6
9.	12647-1	1	Cylinder lever pivot
10.	3610-06075	1	Bolt, M6 x 75, C8.8, ZP
11.	12746A	1	SR lift cylinder
12.	3603-06	2	Washer, plain, M6 x 16, ZP
13.	3605-06	2	Washer, spring, M6
14.	3610-06020	2	Bolt, M6 x 20, C8.8, ZP
15.	12818	1	Bleed down cover

# Cable operated bleed down drawing, SR2770





Item	Part No.	Qty	Description
1.	13037	1	Adjustable flow control valve
2.	6991-004	1	Adapter, 3/8" BSTM -> 3/4" JICF
3.	7019-004	1	Adapter, 3/8" BSPTM -> 3/4" JICM
4.	6988-001	1	Tee, bulkhead run, 3/4" JICM
5.	6988-002	1	Tee, bulkhead run, 9/16" JICM
6.	3603-20	1	Washer, plain, M20 x 37, ZP

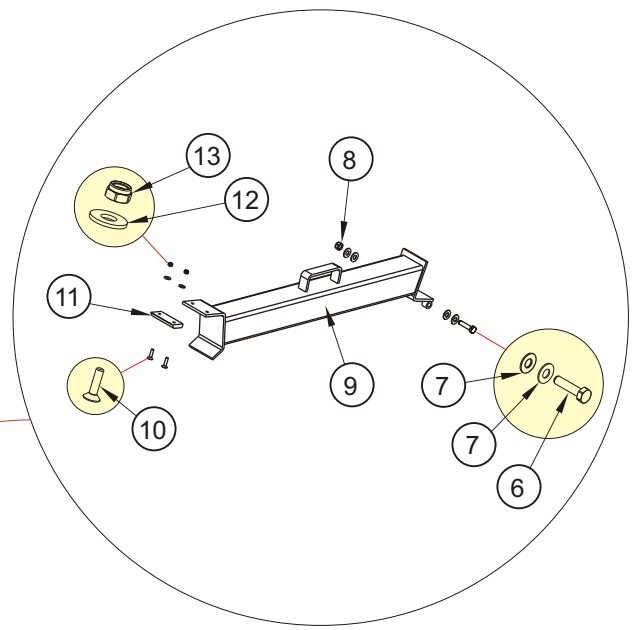
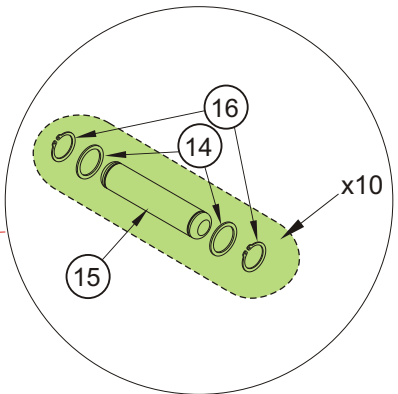
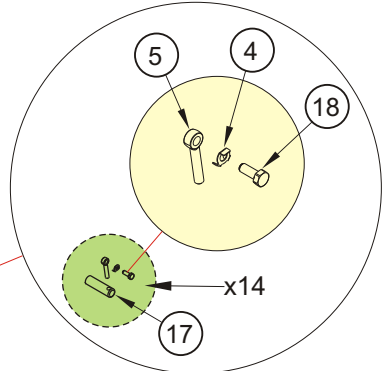
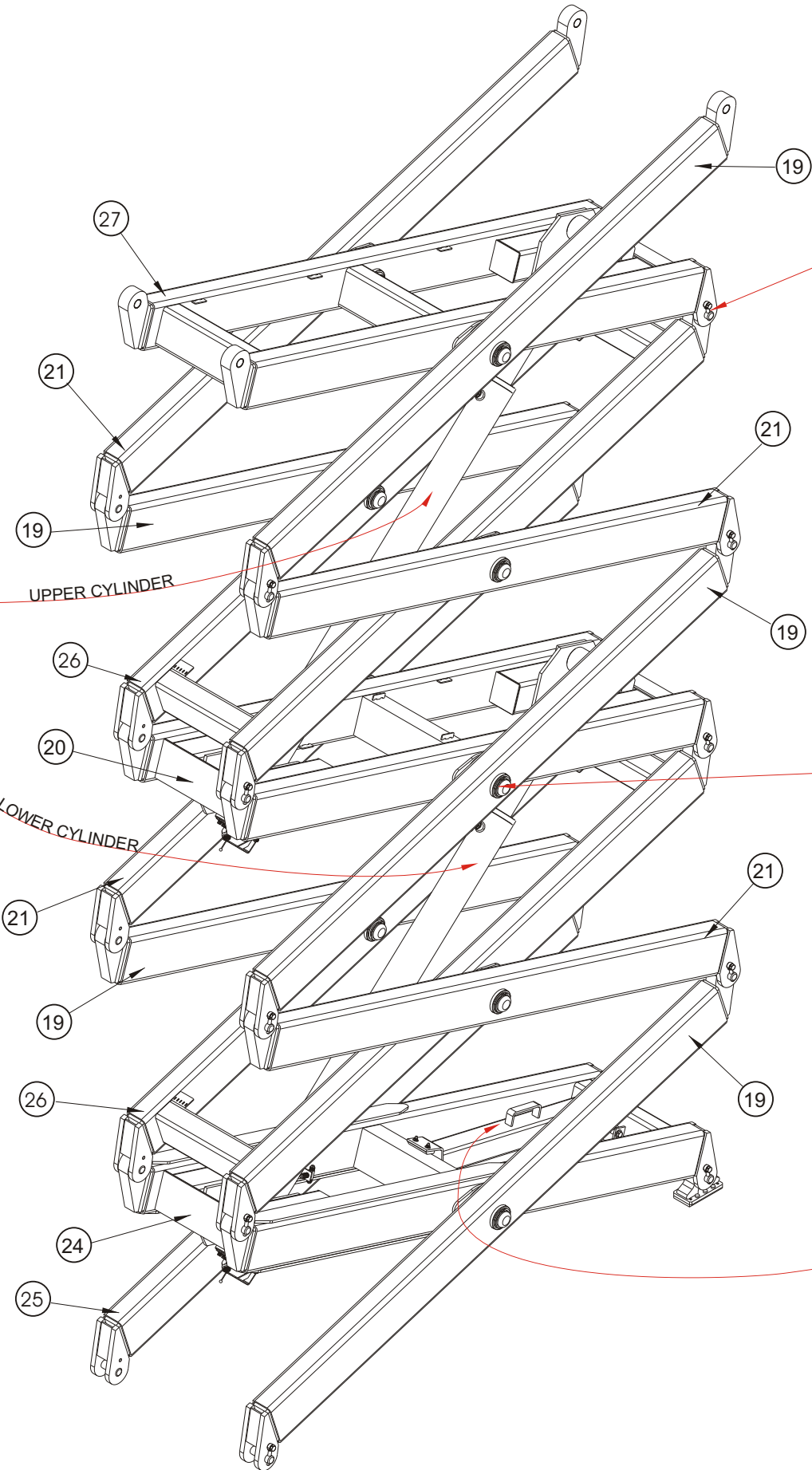
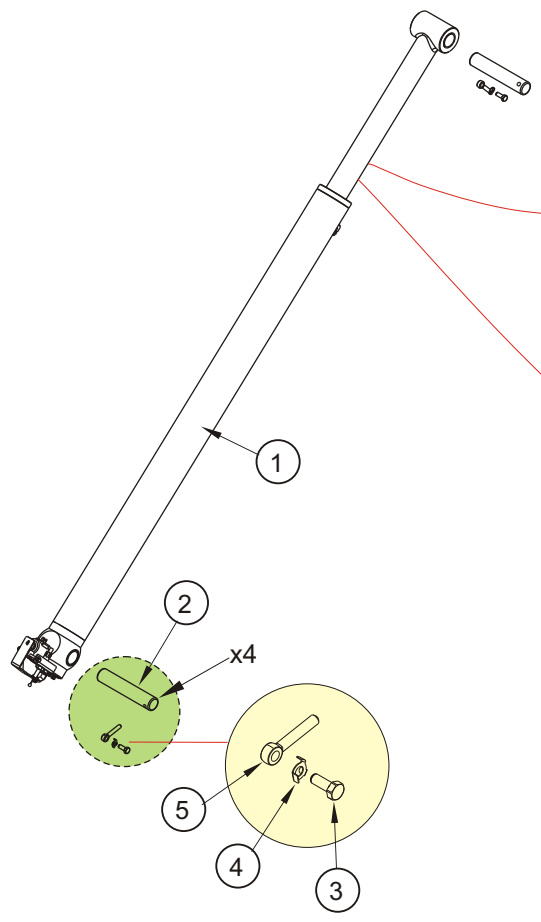
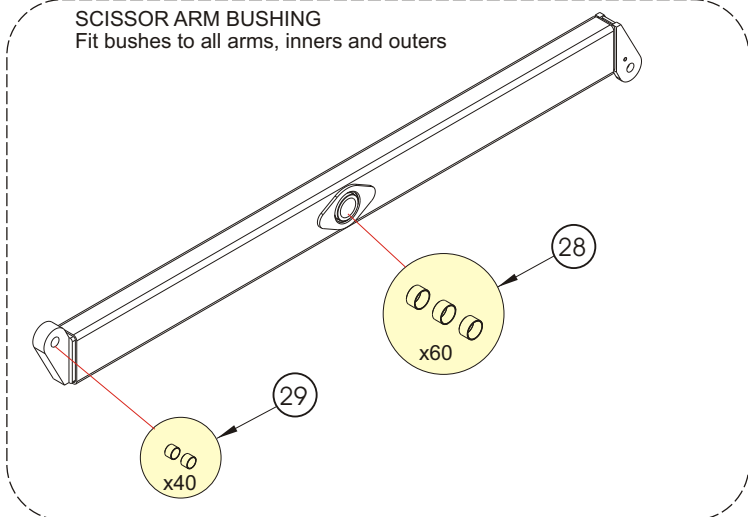


## Scissor stack assembly SR3370

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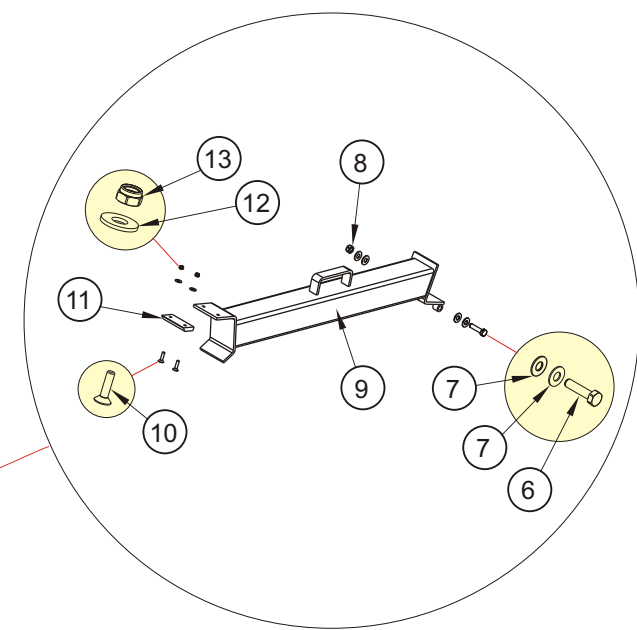
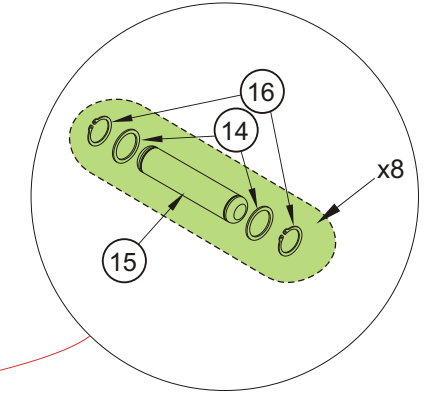
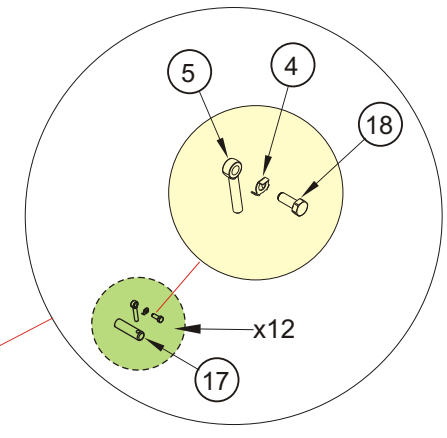
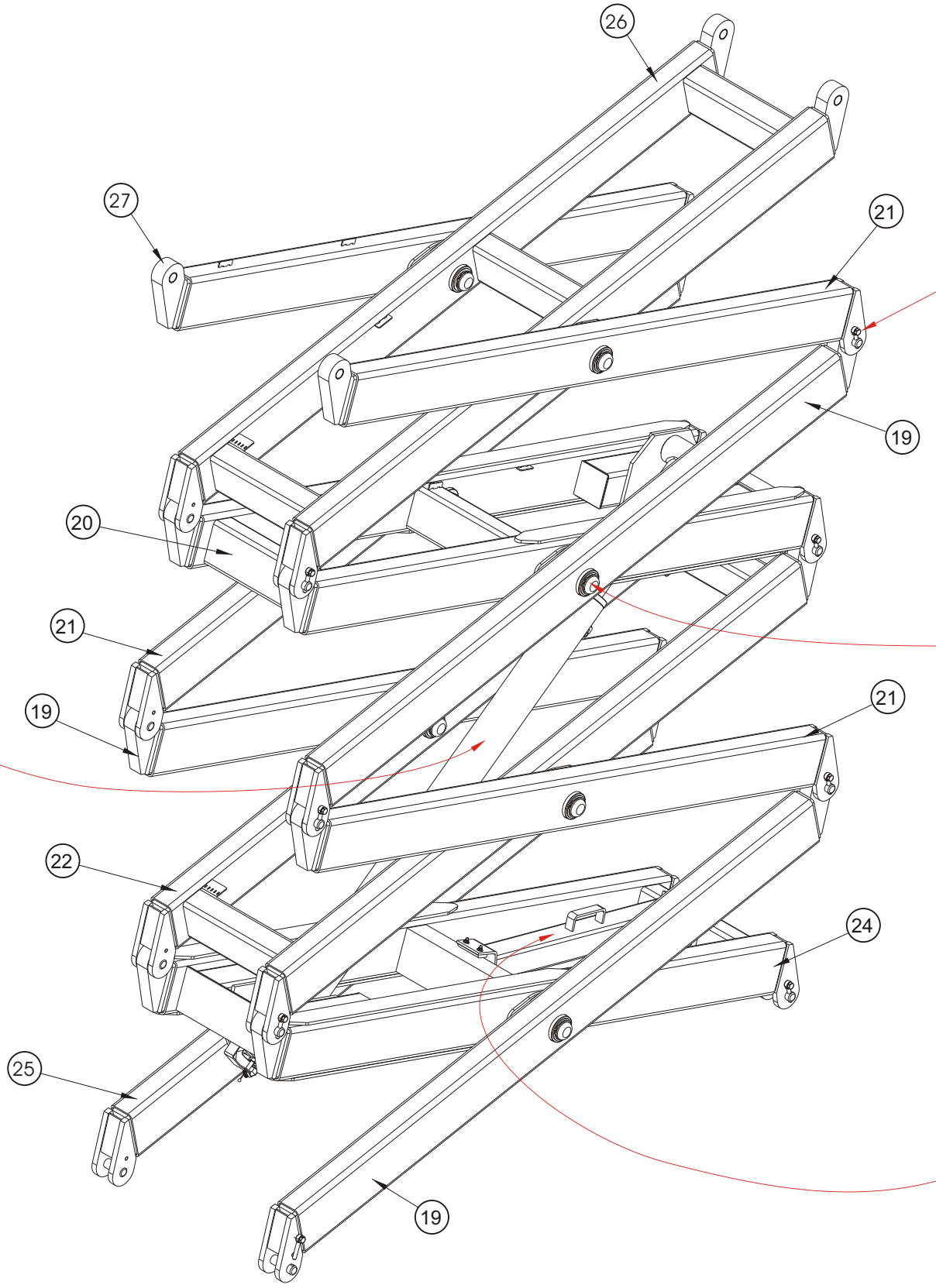
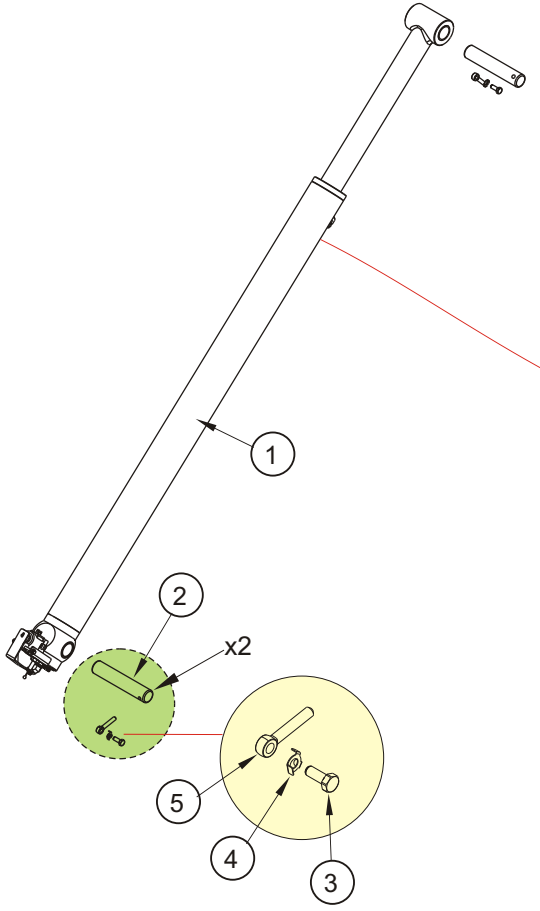
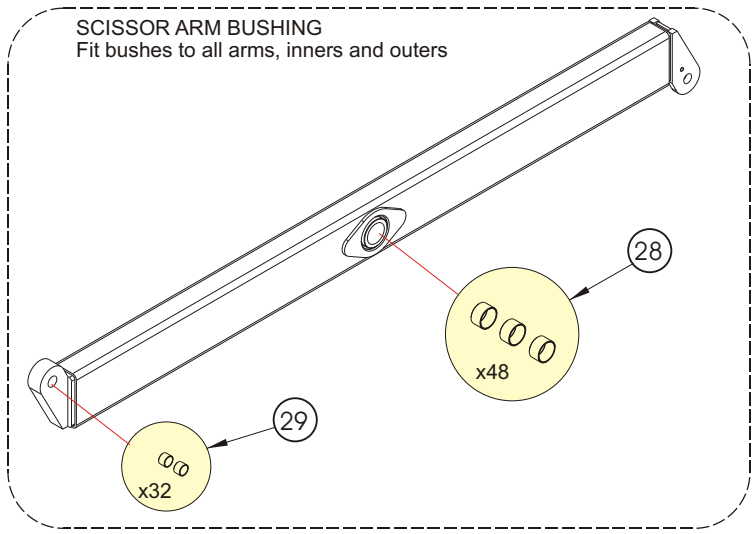
Item	Part No	Qty	Description
1.	12746A	2	Cylinder assembly, SR, lift
2.	9292	4	Pin, 38.1 x 200mm, 10mm keeper
3.	3610-10020	4	Bolt, M6 x 20, C8.8 ZP
4.	11492-3	20	Locktab M10
5.	8626	20	Pin keeper, 10mm, plated
6.	3610-10120	1	Bolt, M10 x 120, C8.8 ZP
7.	3603-10	4	Washer, flat, M10 x 24 ZP
8.	3611-10	1	Nylock nut, M10
9.	11380	1	Safety prop weld
10.	3606-06025	2	Capscrew, countersunk socket, M6 x 25 stainless steel
11.	11143-2	1	Wear pad
12.	3603-06	2	Washer, flat, M6 x 16 ZP
13.	3611-06	2	Nylock nut, M6
14.	3629-5062L	20	Washer, scissor pivot, 51 ID x 65 OD)
15.	11804	10	Scissor pivot pin
16.	3619-5	20	Circlip, external, 50mm nominal diameter
17.	8699	16	Pin, arm/arm
18.	3610-10025	16	Bolt, M10 x 25, G8.8 ZP
19.	12529	5	Arm, outer, mid right hand weld
20.	12588	1	Arm, inner, 2 cylinder weld
21.	12530	4	Arm, outer, mid left hand weld
24.	12934	1	Arm, inner, lower weld
25.	12713	1	Arm, outer, lower right weld
26.	12906	2	Arm, inner weld
27.	12621	1	Arm, inner, top weld
28.	3624-2	60	Bush
29.	3624-3	40	Bush

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Item	Part No	Qty	Description
1.	12746A	1	Cylinder assembly, SR lift
2.	9292	2	Pin, 38.1 x 200mm, 10mm keeper
3.	3610-10020	2	Bolt, M10 x 20, C8.8 ZP
4.	11492-3	14	Locktab, M10
5.	8626	14	Pin keeper, 10mm, plated
6.	3610-10120	1	Bolt, M10 x 120, C8.8 ZP
7.	3603-10	4	Washer, flat, M10 x 24 ZP
8.	3611-10	1	Nylock nut, M10
9.	11380	1	Safety prop weld
10.	3606-06025	2	Cap screw, countersunk socket, M6 x 25, stainless steel
11.	11143-2	1	Wear pad
12.	3603-06	2	Washer, flat, M6 x 16 ZP
13.	3611-06	2	Nylock nut, M6
14.	3629-5062L	16	Washer, scissor pivot (Washer 51 ID x 65 OD)
15.	11804	8	Scissor pivot pin
16.	3619-5	16	Circlip, external, 50mm nominal diameter
17.	8699	12	Pin, arm/arm
18.	3610-10025	12	Bolt, M10 x 25, C8.8
19.	12529	3	Arm, outer, mid right hand weld
20.	9332	1	Arm, inner upper weld
21.	12530	3	Arm, outer, mid left hand weld
22.	12906	1	Arm, inner, mid weld
24.	12933	1	Arm, inner, lower weld
25.	12713	1	Arm, outer, lower right weld
26.	9331	1	Arm, inner, upper fourth stage
27.	9502	1	Arm, outer, upper weldment
28.	3624-2	48	Bush
29.	3624-3	32	Bush

## Stabiliser assembly

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Item	Part No	Qty	Description
Note: All parts are "Per Stabiliser Housing", (4 housings per machine)			
1.	3610-10030	2	Bolt, M10 x 30, C8.8
2.	9911	1	Plug, RHS, 100 x 100
3.	3603-06	8	Washer, flat
4.	12036-5	2	Sliding spacer
5.	3604-03016	4	Screw, pan head M3 x 16
6.	11492-4	1	Locktab, dual, 10mm
7.	3610-06110	5	Bolt, M6 x 110, C4.6
8.	12036-7	2	Microswitch
9.	12036-8	1	Microswitch mount plate, dual
10.	3611-03	4	Nut, nylock, M3
11.	3611-06	5	Nut, nylock, M6
12.	7025-015	2	Adpater, JICM straight, 7/16" -> UNO straight, 7/16"
13.	3633-3	2	Roll pin, 1 & 1/4" x 1/4", plated
14.	12036	1	Cylinder
15.	11305	1	Stabiliser foot weldment
16.	11366-1	2	Stabiliser bush
17.	11366-2	1	Plastic tube, 82mm long
18.	11369	1	Pin, 7/8" x 76mm
19.	3602-06	1	Nut, M6, plated
20.	60030-198	1	Washer, fender, 1/4"
21.	11367-2	1	Pilot check valve
22.	12036-6	1	Spring
23.	3626-8	2	Bush
24.	3605-06	1	Washer, spring, M6
25.	7804-002	2	Restrictor, 0.8 x M5

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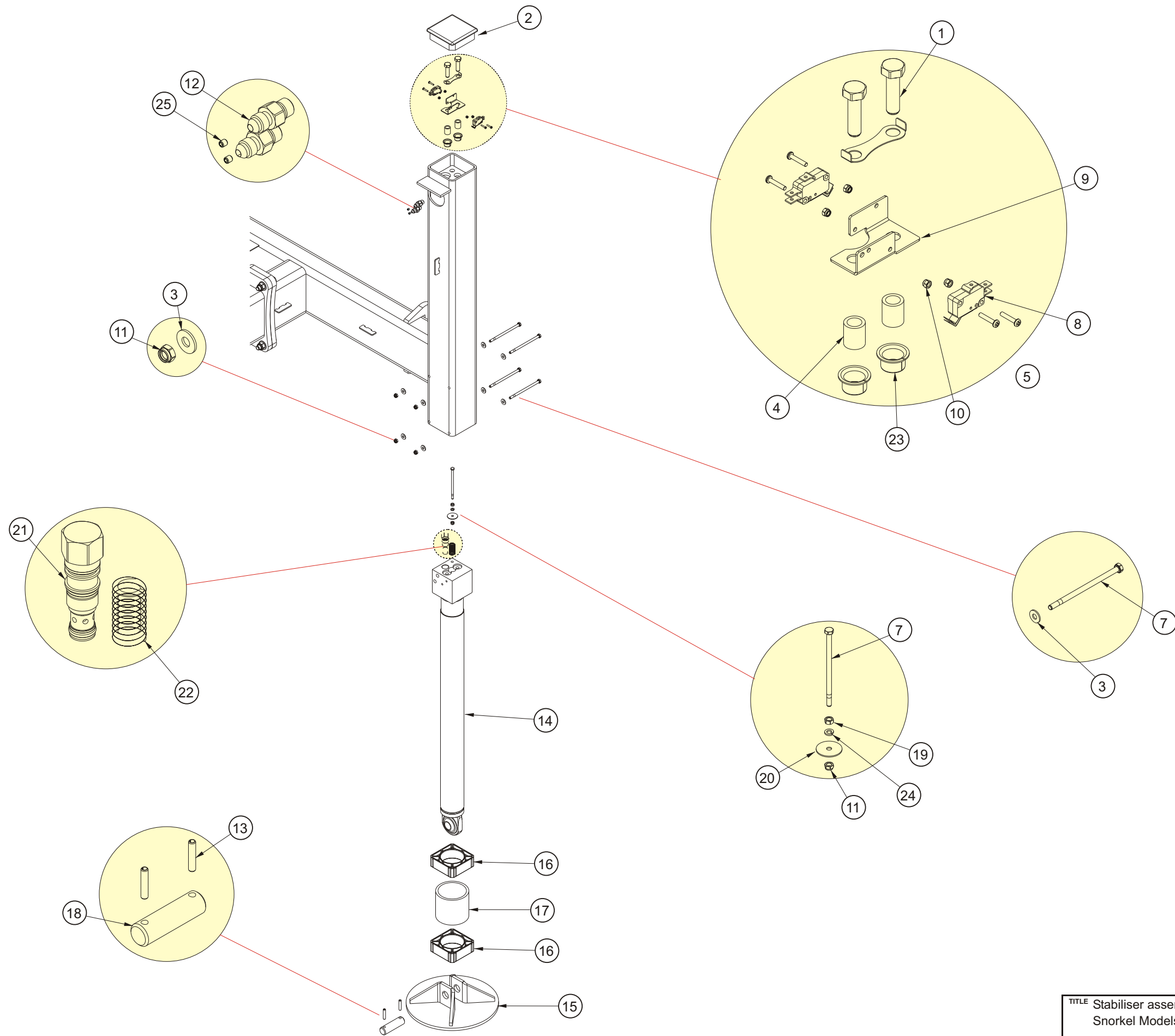
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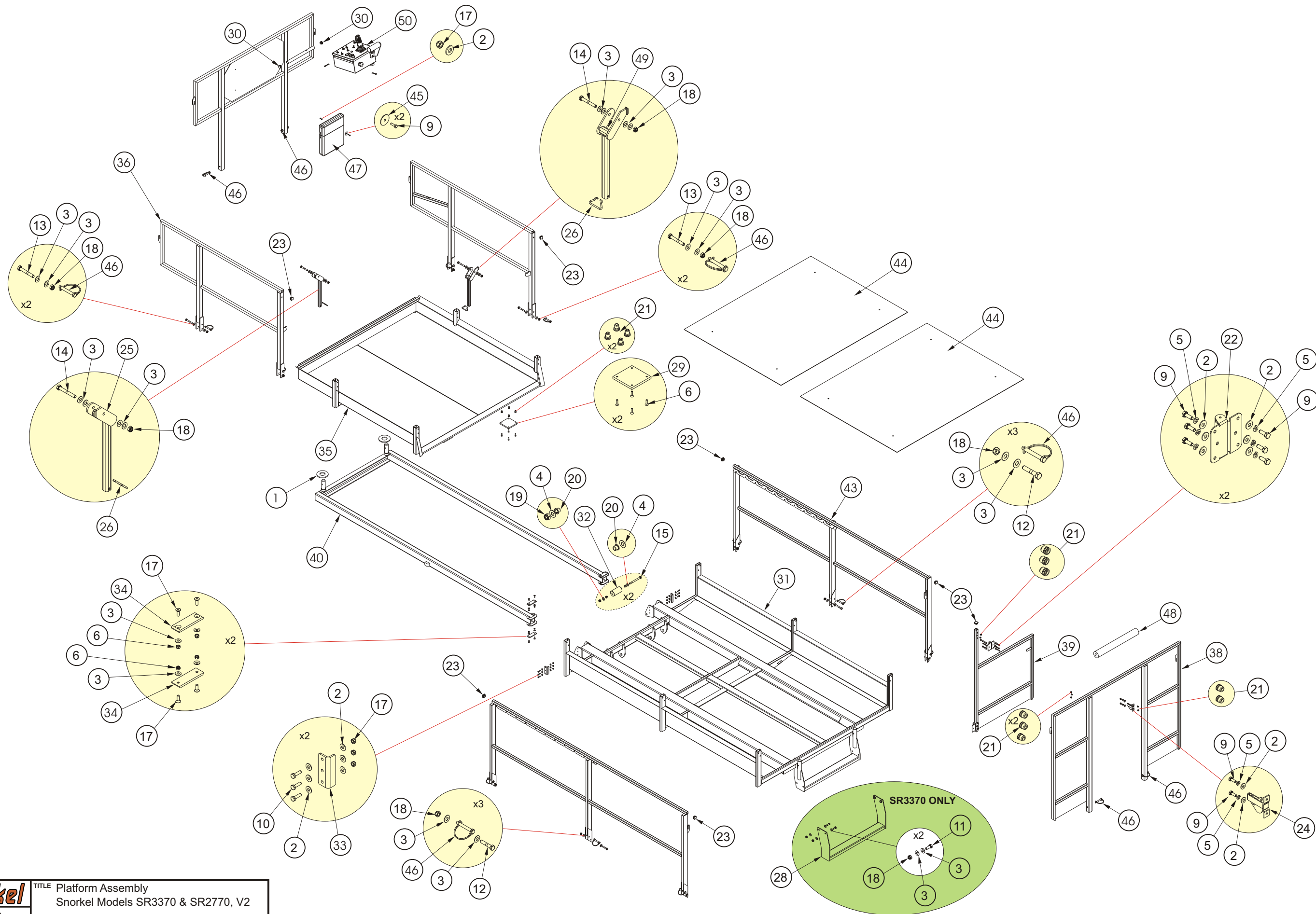


TITLE Stabiliser assembly  
 Snorkel Models SR3370 & SR2770, V2

**Snorkel**  
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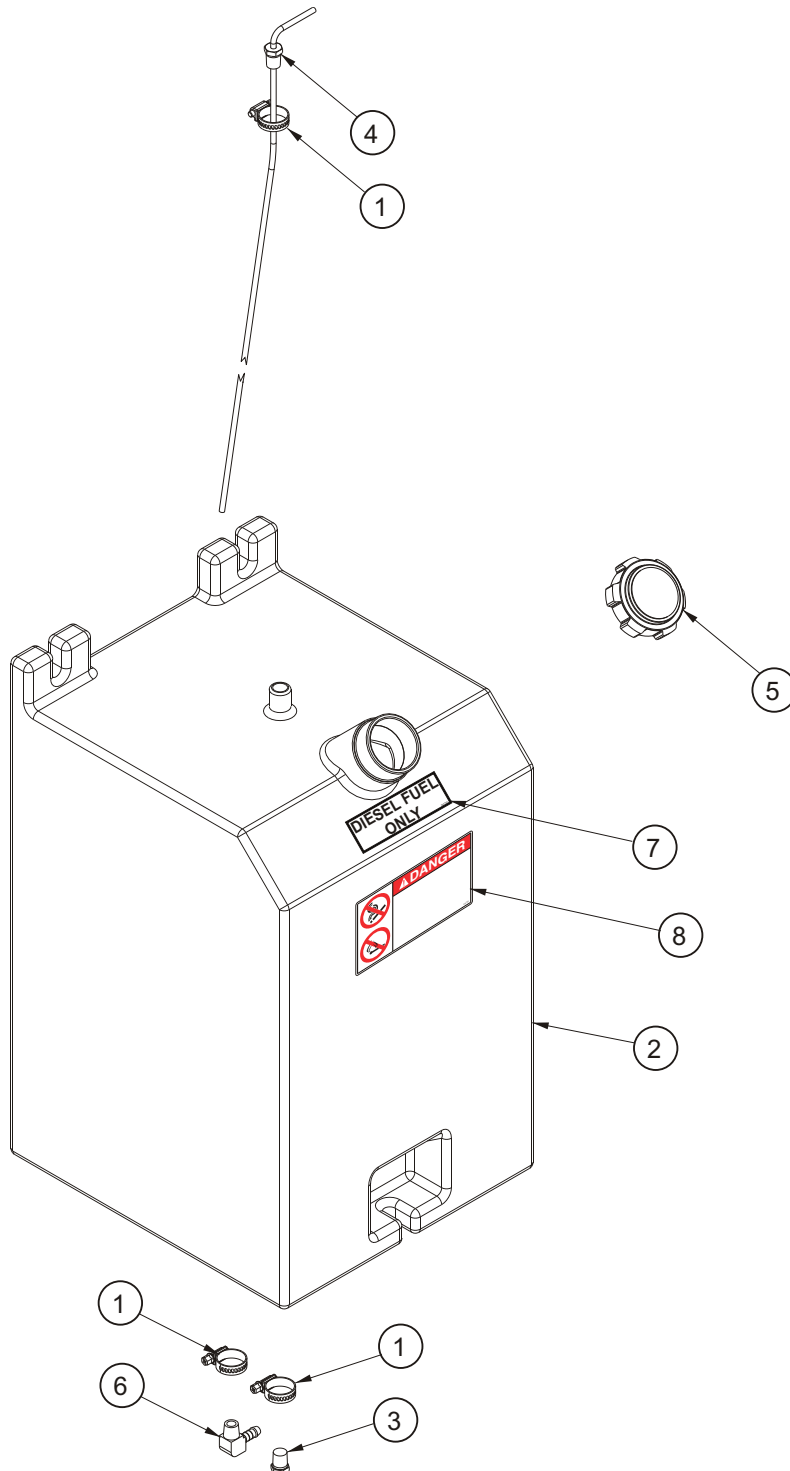
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Item	Part No	Qty	Description
1.	60630-019	2	Washer, plain, 1 & 1/4"
2.	3603-06	36	Washer, plain, M6 x 16, ZP
3.	3603-10	36	Washer, plain, M10 x 24, ZP
4.	3603-12	4	Washer, plain, M12x 24, ZP
5.	3605-06	14	Washer, spring, M6
6.	3606-06020	16	Screw, countersunk socket head, M6 x 20, stainless steel
8.	3610-05016	2	Bolt, M5 x 16, C4.6, ZP
9.	3610-06016	14	Bolt, M6 x 16, C8.8, ZP
10.	3610-06020	6	Bolt, M6 x 20, C8.8, ZP
11.	3610-10025	8	Bolt, M10 x 25, C8.8, ZP
12.	3610-10050	6	Bolt, M10 x 50, C8.8, ZP
14.	3610-10075	6	Bolt, M10 x 75, C8.8, ZP
15.	3610-12130	2	Bolt, M12 x 130, C8.8, ZP
17.	3611-06	18	Nut, nyloc, M6
18.	3611-10	10	Nut, nyloc, M10
19.	3608-12C	2	Nut, conelok, M12
20.	3626-2	4	Flanged permaglides bush
21.	3628-06	14	Nutsert, M6
22.	7495	2	Spring hinge
23.	8926-1	7	Plug, RHS 25mm
24.	11691-10	1	Gate latch striker set
25.	11695	1	Handrail latch, left
26.	11695-3	2	Latch holding ring
28.	12680	1	Extension step weld, (SR3370 only)
29.	12709-10	2	Rollout deck slide pad
30.	12750	2	Plug, round, 25mm
31.	13122	1	Platform weld
32.	13122-11	2	External roller
33.	13122-12	2	Stop, rollout deck
34.	13122-14	4	Wear pad, internal
35.	13123	1	Rollout deck weld
36.	13124	1	Handrail, left front
37.	13125	1	Handrail, right
38.	13126	1	Handrail weld, entry
39.	13127	1	Handrail, gate
40.	13128	1	Rollout deck, frame weld
41.	13129	1	Handrail, front
42.	13130	1	Left hand rail
43.	13131	1	Right hand rail
44.	13132	2	Platform floor pressing
45.	60030-198	2	1/4" fender washer
46.	302544	14	Pin and lock
47.	562386	1	Literature compartment
48.	9980003	0.5LM	Foam pipe wrap
49.	11695R	1	Handrail latch, right
50.	12700A	1	Upper control box assembly

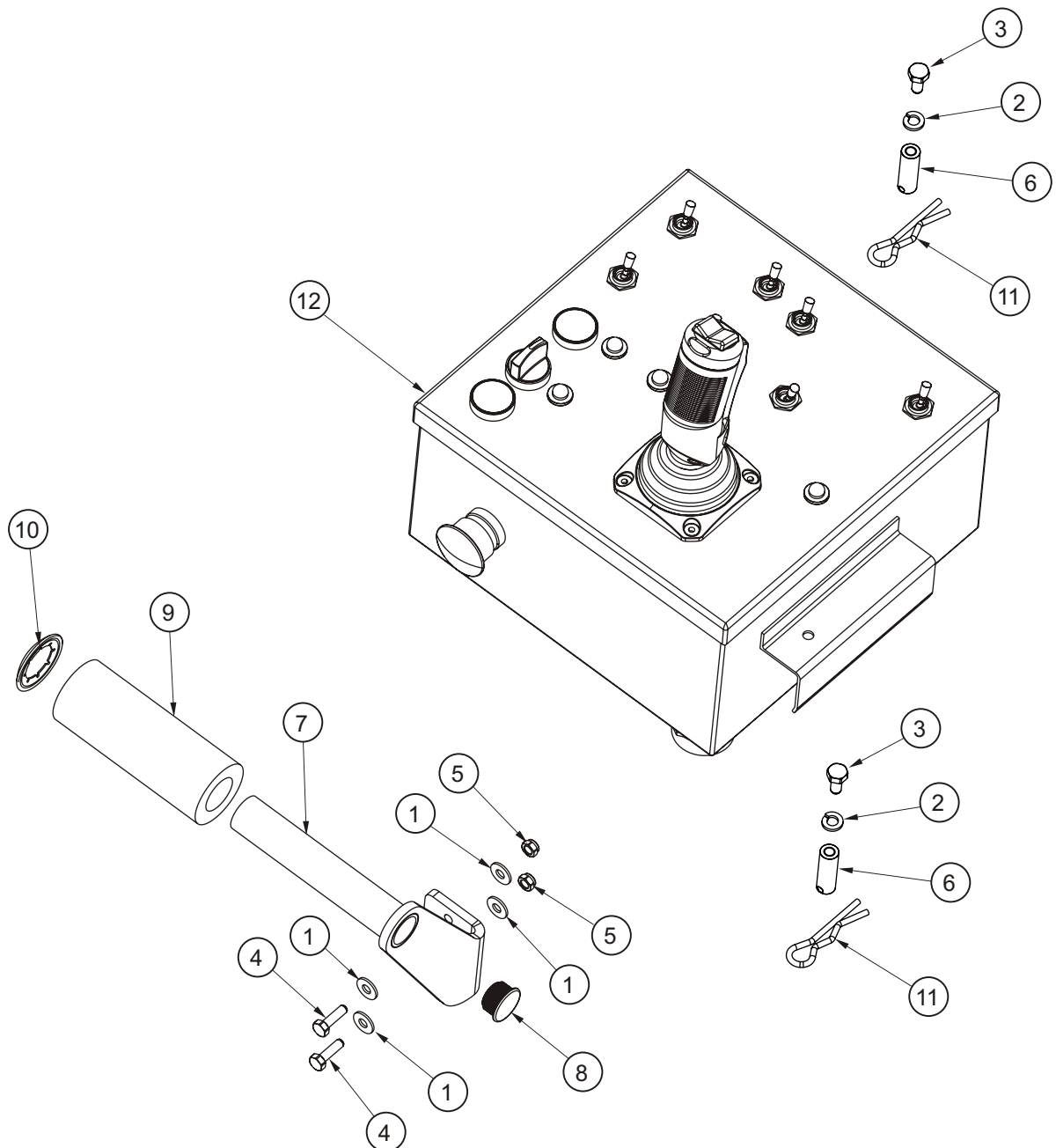
# Fuel tank assembly, diesel fuel

Item	Part No	Qty	Description
1.	3618-11	3	Hose clamp, 11-12mm, ZP
2.	13106-1	1	Fuel tank
3.	13108-04	1	Plug, 1/4" NPTM
4.	13109	1	Fuel return weld
5.	605256	1	Cap, vented
6.	967309	1	Male elbow, 5/16" x 1/4", BSPT
7.	605726	1	Decal, Diesel fuel only
8.	476706	1	Decal, Danger explosive fumes



# Upper control box mounting assembly

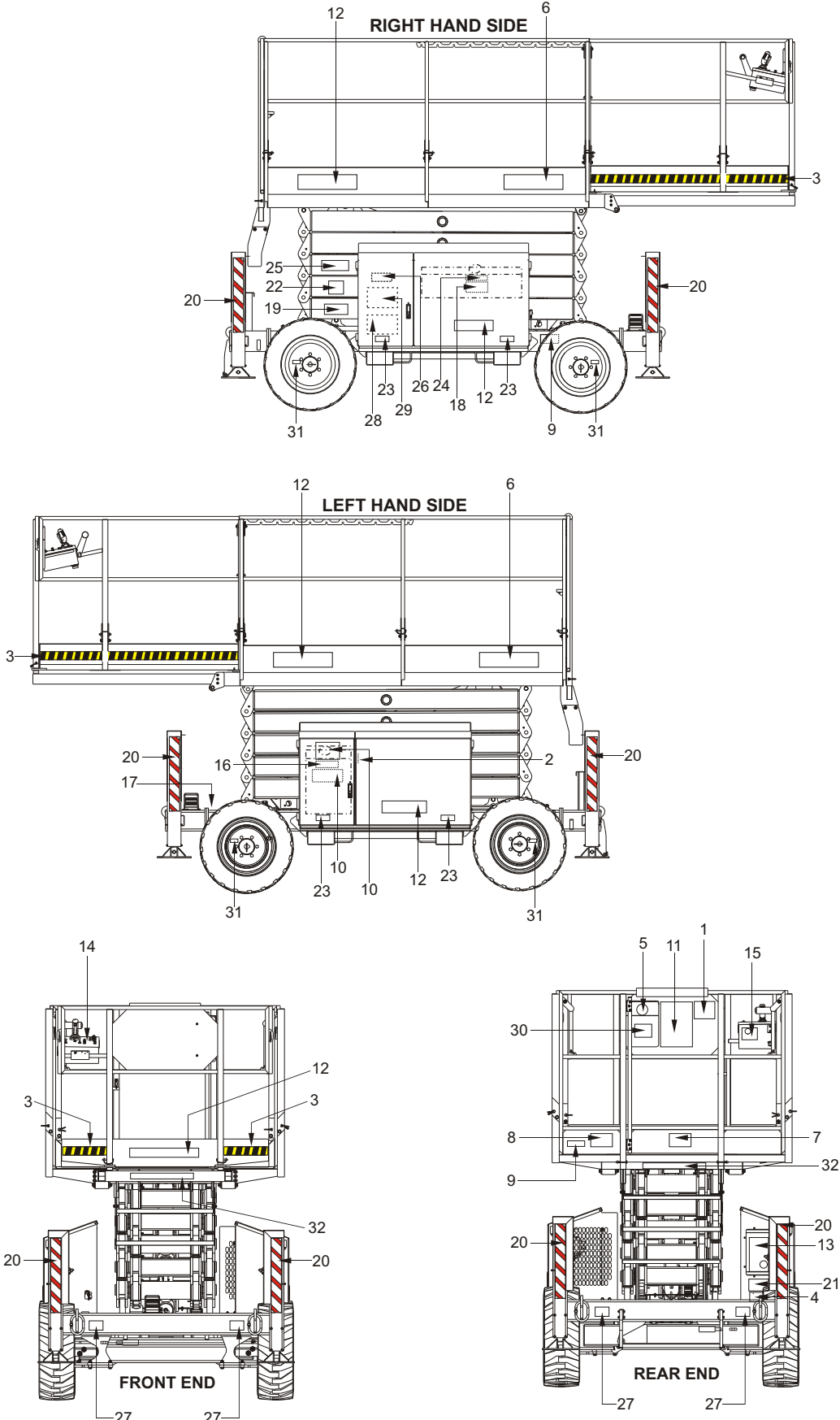
Item	Part No.	Qty	Description
1.	3603-06	4	Washer, plain, M6 x 16, ZP
2.	3605-06	2	Washer, spring, M6
3.	3610-06012	2	Bolt, metric, M6 x 12, C8.8, ZP
4.	3610-06020	2	Bolt, metric, M6 x 20, C8.8, ZP
5.	3611-06	2	Nut, nyloc, M6
6.	11690-16	2	Security pin
7.	12749	1	Wrist support
8.	12750-25	1	Plug, round
9.	12751	1	Hand grip, foam
10.	12756	1	Star washer with end cap
11.	72404	2	Grip clip
12.	12700	1	Control box



## Placards and decals installation

Item	Part No	Qty	Description
1.	1843	1	Decal, warning New Zealand only
	9428	1	Decal, electrical hazard Australia only
2.	9208	1	Decal, water
3.	96924-9	4m	Decal, warning stripes yellow/black
4.	0070901E	1	Decal, serial number
5.	9751	1	Decal, New Zealand made
6.	12671	2	Decal, SR3370
	11345-1	2	Decal, SR2770
7.	12699	1	Decal, rated load SR3370
	11346-1	1	Decal, rated load SR2770
8.	0073298	1	Decal, foam tyres
9.	451986	2	Decal, interlocks
10.	476706	2	Decal, explosive fumes, (outside cabinet door & fuel tank)
11.	12574	1	Decal, danger with alarm
12.	569295	5	Decal, Snorkel logo
13.	560240	1	Decal, lower control box
14.	12689	1	Decal, upper control box
15.	560272	1	Decal, emergency stop upper box
16.	605726	1	Decal, diesel fuel, (on fuel tank)
17.	12753	1	Decal, emergency bleed down
18.	12814	1	Decal, hydraulic fluid, (on hydraulic oil tank)
19.	58365-6	1	Decal, safety prop
20.	9223-3	4	Decal, chevron
21.	300699	1	Decal, operators check list
22.	0323897	1	Decal, must not operate
23.	621486	4	Decal, forklift
24.	302950	1	Decal, hydraulic oil level
25.	300700	1	Decal, shearing hazard
26.	12816	1	Decal, emergency operation, lowering and pushing, (inside of door)
27.	0083427	4	Decal, lifting/tie down
28.	12815-4	1	Decal, hydraulic circuit SR, (inside cabinet door)
29.	12815-2	1	Decal, electrical circuit SR, (inside cabinet door)
30.	562426	1	Decal, operators manual enclosed
31.	0372061	4	Decal, torque wheel nuts
32.	13182	2	Decal, <a href="http://www.snorkellift.com">www.snorkellift.com</a>

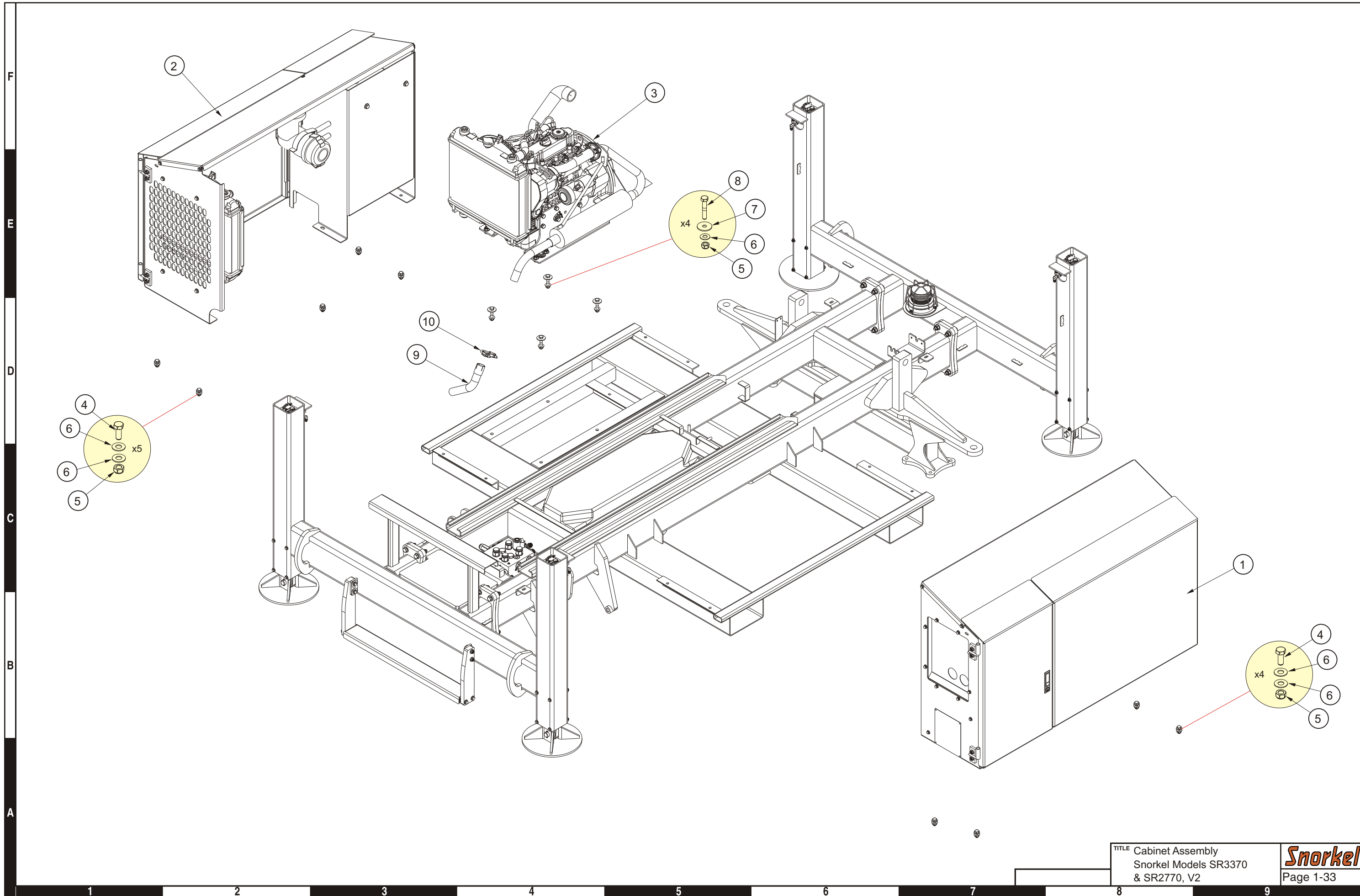




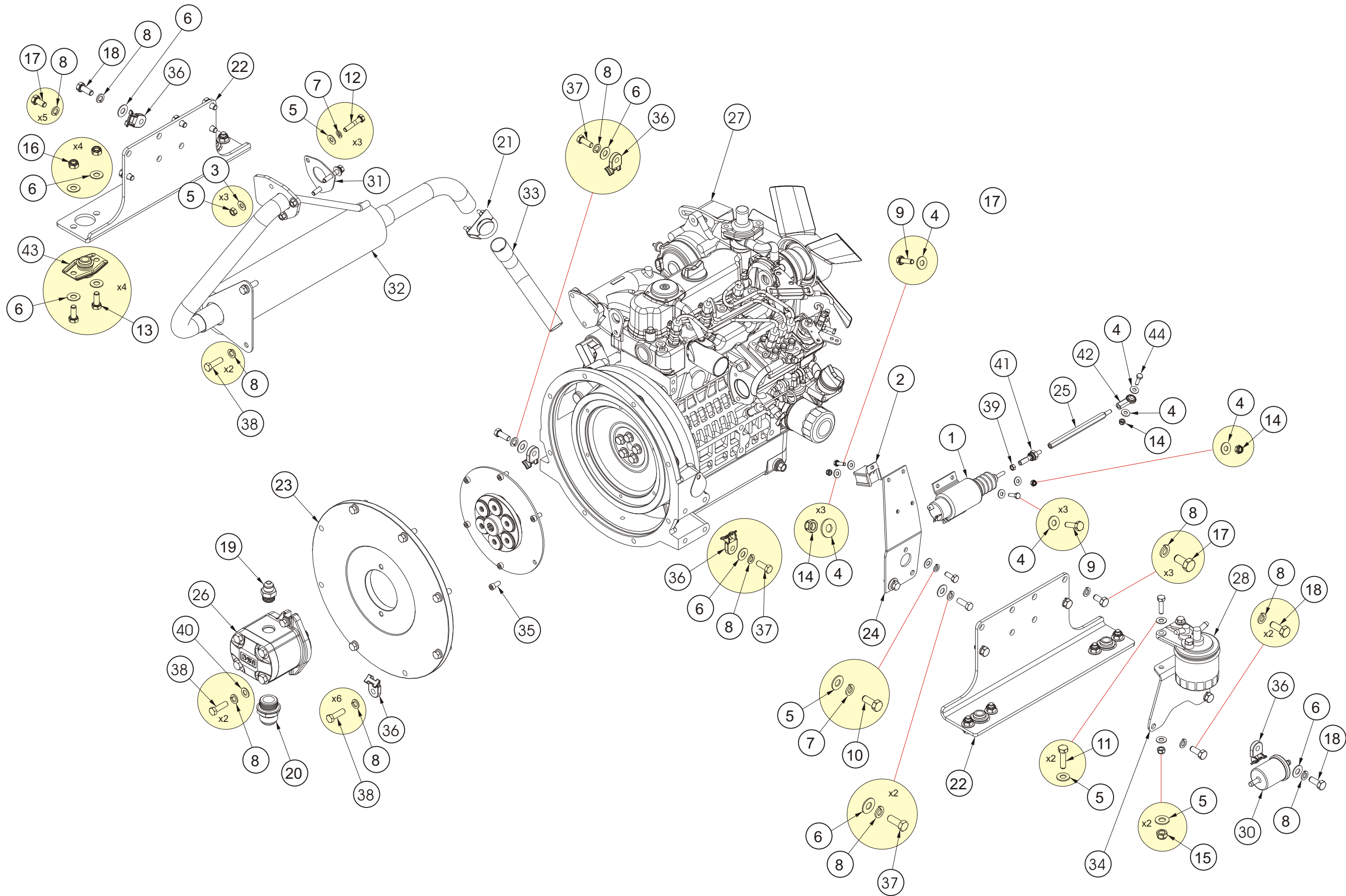
## Cabinet assembly

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Item	Part No	Qty	Description
1.	13165A	1	Cabinet assembly, control, SRxx70 V2
2.	12938A	1	Cabinet assembly, engine, SRxx70 V2
3.	12937	1	Engine assembly, D902, SRxx70
4.	3610-10025	9	Bolt, M10 x 25, C8.8
5.	3611-10	13	Nut, nyloc, M10
6.	3603-10	22	Washer, flat, M10 x 24, ZP
7.	5560179	4	Washer, special
8.	3610-10025	4	Bolt, M10 x 55, C8.8, ZP
9.	13093-10	1	Tail pipe, bolt-on
10.	12409	1	Exhaust clamp, 38mm



TITLE Cabinet Assembly  
 Snorkel Models SR3370  
 & SR2770, V2



Item	Part No.	Qty	Description
1.	3040174	1	Solenoid, 24V
2.			Plug in relay base on engine loom
3.	3602-08	3	Nut, metric, M8, plated
4.	3603-06	10	Washer, flat, M6 x 16
5.	3603-08	11	Washer, flat, M8 x 19
6.	3603-10	22	Washer, flat, M10 x 24
7.	3605-08	4	Washer, spring, M8
8.	3605-10	26	Washer, spring, M10
9.	3610-06020	4	Bolt, metric, M6 x 20, C8.8
10.	3610-08020	1	Bolt, metric, M8 x 20, C8.8
11.	3610-08030	2	Bolt, metric, M8 x 30, C8.8
12.	3610-08040	3	Bolt, metric, M8 x 40, C8.8
13.	3610-10025	8	Bolt, metric, M10 x 25, C8.8
14.	3611-06	5	Nut, metric, nyloc, M6
15.	3611-08	2	Nut, metric, nyloc, M8
16.	3611-10	8	Nut, metric, nyloc, M10
17.	3617-10020	8	Bolt, metric, M10 x 20, fine thread
18.	3617-10025	4	Bolt, metric, M10 x 25, fine thread
19.	7025-006	1	Adaptor, 1 & 5/16" UNO -> 1 & 5/16" JICM, straight
20.	7025-022	1	Adaptor, 7/8" UNO -> 3/4" JICM, straight
21.	12409	1	Exhaust clamp
22.	12944	2	Engine mount feet, SRxx70, D902
23.	12956	1	Coupling, SAE 'A' pump -> #5 Bellhousing
24.	13022	1	Throttle solenoid bracket
25.	13023	1	Throttle lever
26.	13049	1	Pump, SAE 'A', 9 spline, 10.3cc
27.	13086	1	Engine, Kubota D902
28.	*****	1	Fuel filter
29.	*****	1	Air filter hose
30.	*****	1	Fuel, pre-filter
31.	*****	1	Manifold flange, 3 bolt
32.	13093	1	Exhaust, SRxx70, D902
33.	13093-10	1	Tail pipe, detachable
34.	13095	1	Fuel filter bracket
35.	13104-0510	6	Capscrew, 5/16" UNC x5/8"
36.	13164	5	Cable tie mount
37.	60017-007	4	Bolt, 3/8" UNC x 1
38.	60017-010	10	Bolt, 3/8" UNC x 1&1/4"
39.	60021-008	1	Nut, 1/4" UNF
40.	3603-10H	2	Washer, flat, M10, hardened
41.	2650001	1	Swivel, inline
42.	2690004	1	Rod end
43.	7630208	4	Engine mount
44.	3610-06025	1	Bolt, M6 x 25 C8.8
	*****	=	Parts supplied with engine (no part numbers)



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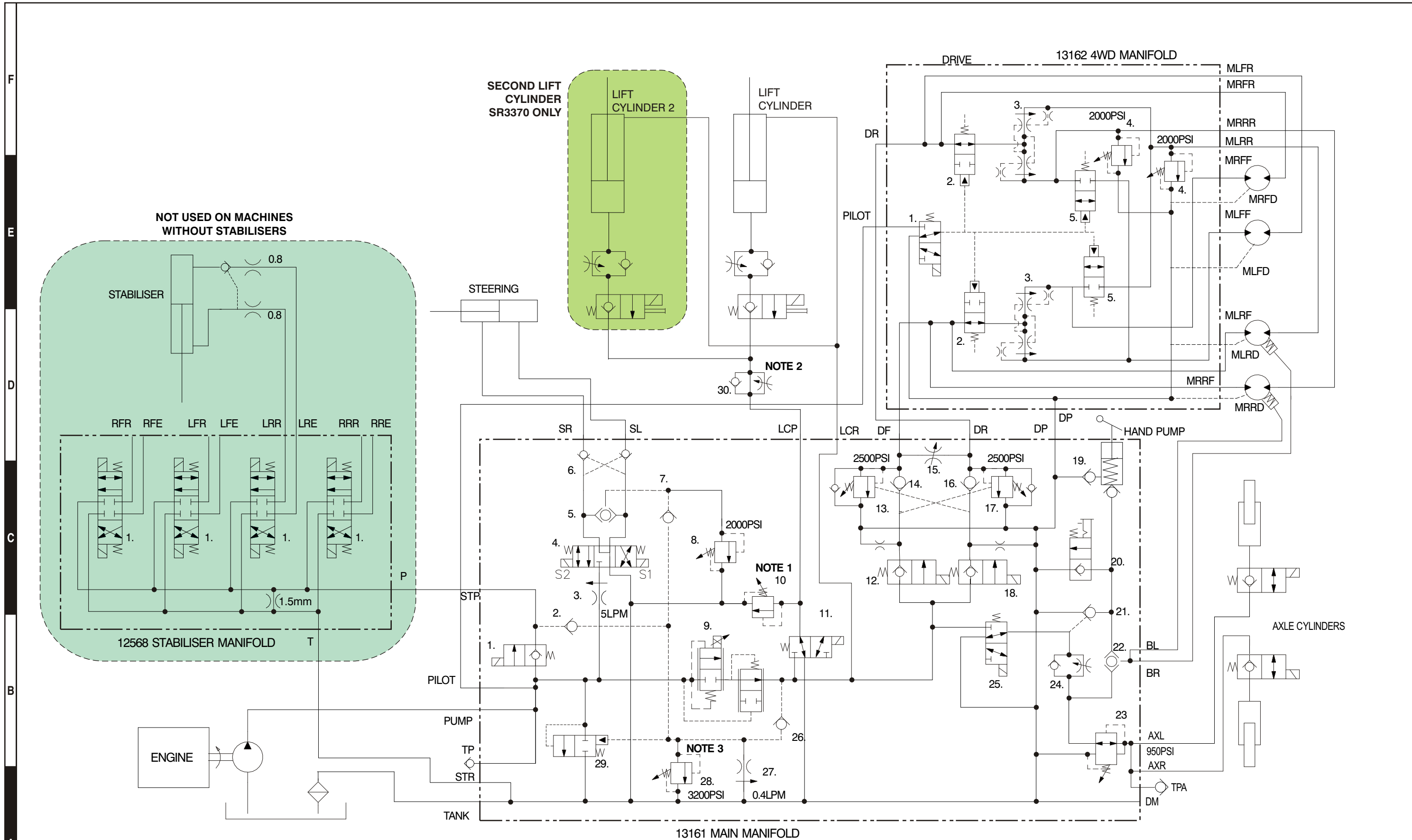
## Hydraulic assembly

Item	Part No	Qty	Description
0.	12568A	1	Stabiliser valve block assembly
1.	12568-1	4	Stabiliser directional valve

Item	Part No	Qty	Description
0.	13161A	1	Main manifold valve block assembly, V2
1.	12567-1	1	Stabiliser enable valve
2.	12567-2	1	Stabiliser check valve
3.	12567-3	1	Steering flow control
4.	12567-4	1	Steering directional valve
5.	12567-5	1	Steering relief shuttle
6.	12567-6	1	Steering pilot check
7.	12567-2	1	Steering relief check
8.	12567-8	1	Steering relief valve
9.	12567-9	1	Proportional valve
10.	12567-8	1	Lift relief
11.	12567-11	1	Lift valve
12.	12567-12	1	Drive valve, forward
13.	12567-13	1	Drive counterbalance valve, reverse
14.	12567-14	1	Drive check valve, forward
15.	12567-15	1	Free wheel valve
16.	12567-14	1	Drive check valve, reverse
17.	12567-13	1	Drive counterbalance valve, forward
18.	12567-12	1	Drive valve, reverse
19.	12567-19	1	Hand pump
20.	12567-20	1	Brake reset valve
21.	12567-21	1	Brake pilot check
22.	12567-22	1	Brake shuttle
23.	12567-23	1	Axle pressure reducing valve
24.	12567-24	1	Brake flow control valve
25.	12567-11	1	Brake selector valve
26.	12567-2	1	Compensator check
27.	12567-27	1	Compensator bleed, flow regulator
28.	12567-8	1	Main relief
29.	12567-29	1	Compensator
30.	13037	1	Adjustable flow control valve (SR3370 only)

Item	Part No	Qty	Description
0.	13162A	1	4 wheel drive manifold block assembly, V2
1.	12569-1	1	Selector valve series parallel
2.	12569-2	2	Pilot operated selector valves, N.O.
3.	12569-3	2	Flow divider combiner
4.	12569-4	2	Drive motor relief valves
5.	12569-5	2	Pilot operated selector valve, N.C.





NOT USED ON MACHINES WITHOUT STABILISERS

SECOND LIFT CYLINDER SR3370 ONLY

- NOTE 1: SR3370 = 2200PSI, SR2770 = 2800PSI
- NOTE 2: Adjustable Flow Control SR3370 CE Units Only
- NOTE 3: Main Relief SR3370 = 3200PSI, SR2770 = 3100PSI

TITLE Hydraulic schematic  
Snorkel Models SR3370  
& SR2770 - V2

**Snorkel**

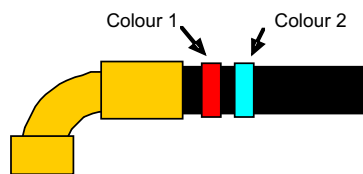


# Hose Part Numbers and Colour Codes

## READING HOSE TAGS

Hose tags are read from the fitting side of the hose in towards the hose.

As such colour 1 is the closest to the fitting, colour 2 the next colour then 3, 4 etc...



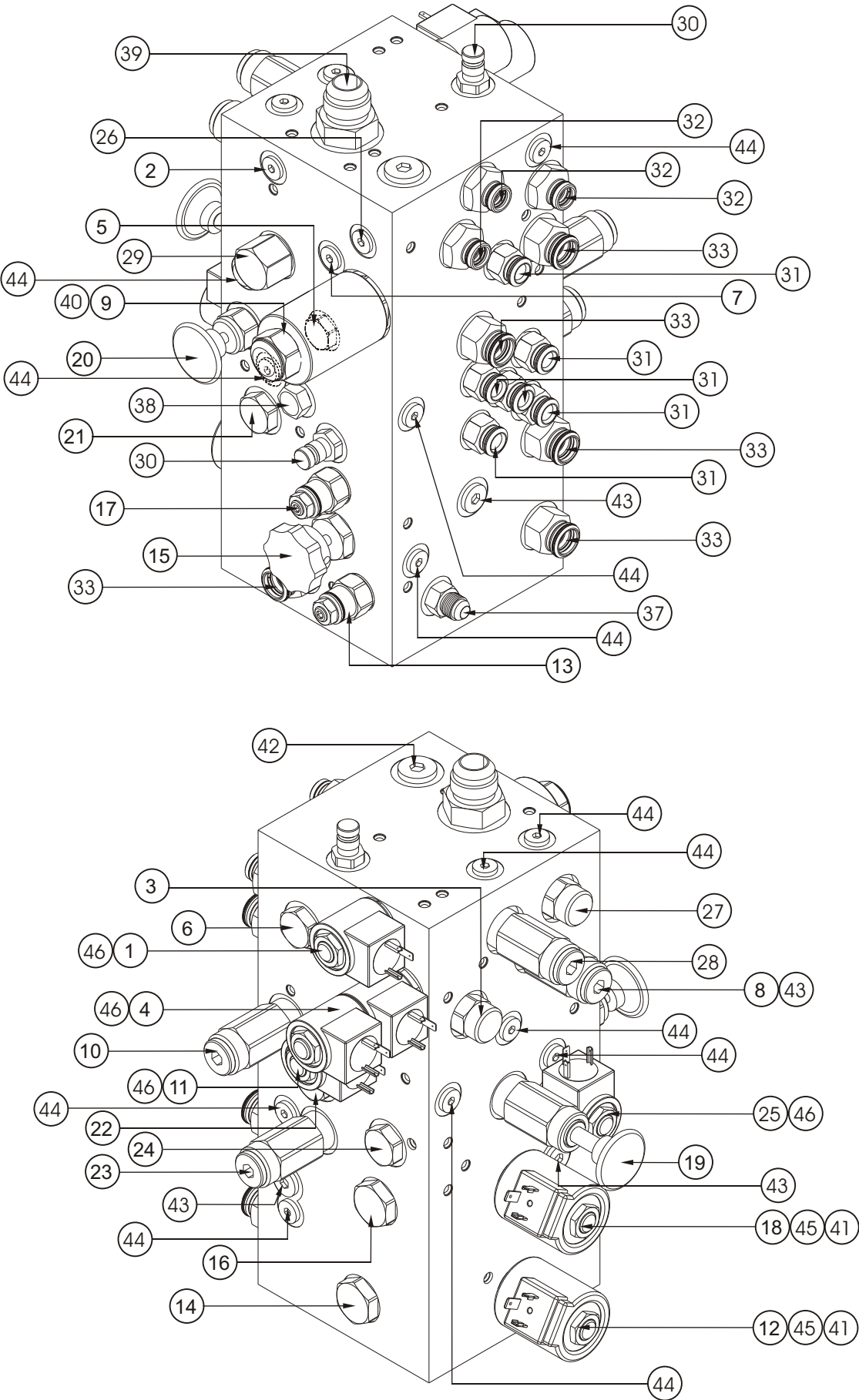
Snorkel Part Number	Colour ID		Hose Use
	Colour 1	Colour 2	
12812-74	Red	Yellow	Stab RR Extend: Stab Manifold RRE → Stab Cyl RR Extend
12812-75	Red	Green	Stab RR Retract: Stab Manifold RRR → Stab Cyl RR Retract
12812-76	Orange	Yellow	Stab LR Extend: Stab Manifold LRE → Stab Cyl LR Extend
12812-77	Orange	Green	Stab LR Retract: Stab Manifold LRR → Stab Cyl LR Retract
12812-78	Yellow	Yellow	Stab LF Extend: Stab Manifold LFE → Stab Cyl LF Extend
12812-79	Yellow	Green	Stab LF Retract: Stab Manifold LFR → Stab Cyl LF Retract
12812-80	Green	Yellow	Stab RF Extend: Stab Manifold RFE → Stab Cyl RF Extend
12812-81	Green	Green	Stab RF Retract: Stab Manifold RFR → Stab Cyl RF Retract
12812-84	Blue	Yellow	Steer Right: Main Manifold SR → Steer Cyl Extend
12812-85	Blue	Green	Steer Left: Main Manifold SL → Steer Cyl Retract
12812-86	Red	---	Drive Forward: Main Manifold DF → 4WD Manifold DF
12812-87	Blue	---	Drive Reverse: Main Manifold DR → 4WD Manifold DR
12812-88	Red	White	Motor RR Drain: 4WD Manifold MRRD → Motor RR Case Drain
12812-89	Red	Red	Motor RR CW (Fwd): 4WD Manifold MRRF → Motor RR Port A
12812-90	Red	Blue	Motor RR CCW (Rev): 4WD Manifold MRRR → Motor RR Port B
12812-91	Red	---	Motor RR Brake: Main Manifold BR → RR Motor Brake
12812-92	Orange	White	Motor LR Drain: 4WD Manifold MLRD → Motor LR Case Drain
12812-93	Orange	Red	Motor LR CW (Rev): 4WD Manifold MLRR → Motor LR Port A
12812-94	Orange	Blue	Motor LR CCW (Fwd): 4WD Manifold MLRF → Motor LR Port B
12812-95	Orange	---	Motor LR Brake: Main Manifold BL → LR Motor Brake
12812-96	Yellow	White	Motor LF Drain: 4WD Manifold MLFD → Motor LF Case Drain
12812-97	Yellow	Red	Motor LF CW (Rev): 4WD Manifold MR2 → Motor LF Port A
12812-98	Yellow	Blue	Motor LF CCW (Fwd): 4WD Manifold MLFF → Motor LF Port B
12812-99	Green	White	Motor RF Drain: 4WD Manifold MRFD → Motor RF Case Drain
12812-100	Green	Red	Motor RF CW (Fwd): 4WD Manifold MRFF → Motor RF Port A
12812-101	Green	Blue	Motor RF CCW (Rev): 4WD Manifold MRFR → Motor RF Port B
12812-102	Green	---	Lock Left Axle: Main Manifold AXL → LH Axle Cyl
12812-103	Black	---	Lock Right Axle: Main Manifold AXR → RH Axle Cyl
12812-104	Red	Orange	4WD Manifold Pilot: Main Manifold Pilot → 4WD Manifold Pilot
12812-105	Red	Black	4WD Manifold Return: Main Manifold DP → 4WD Manifold DP
12812-106	---	---	Main Manifold Return: Main Manifold Tank → Oil Filter Tee
12812-107	---	---	Filter Return: Oil Filter → Hydraulic Oil Tank
12812-108	Orange	---	Pump Pressure: Main Manifold Pump → Pump Pressure Port
12812-109	---	---	Suction Line: Pump Suction Port → Hydraulic Oil Tank
<b>SR2770 ONLY</b>			
*12812-116/120	Black	Yellow	Raise Stack: Main Manifold LCP → Lift Cyl Extend
*12812-117/117	Black	White	Lift Cyl Drain: Main Manifold LCR → Lift Cyl Drain
<b>SR3370 ONLY</b>			
*12812-110/110	Yellow	---	Raise Stack: Main Manifold LCP → Raise Stack Tee
*12812-111/111	White	---	Lower Stack: Main Manifold LCR → Drain Stack Tee
*12812-112/118	White	Yellow	Upper Lift Cyl Extend: Raise Stack Tee → Upper Lift Cyl Extend
*12812-113/113	White	White	Upper Lift Cyl Drain: Drain Stack Tee → Upper Lift Cyl Drain
*12812-114/119	Black	Yellow	Lower Lift Cyl Extend: Raise Stack Tee → Lower Lift Cyl Extend
*12812-115/115	Black	White	Lower Lift Cyl Drain: Drain Stack Tee → Lower Lift Cyl Drain

**Note:** Part Numbers marked with an \* are shown with the number for STC fittings in black and the number for JIC fittings in magenta

## Manifold assembly, main

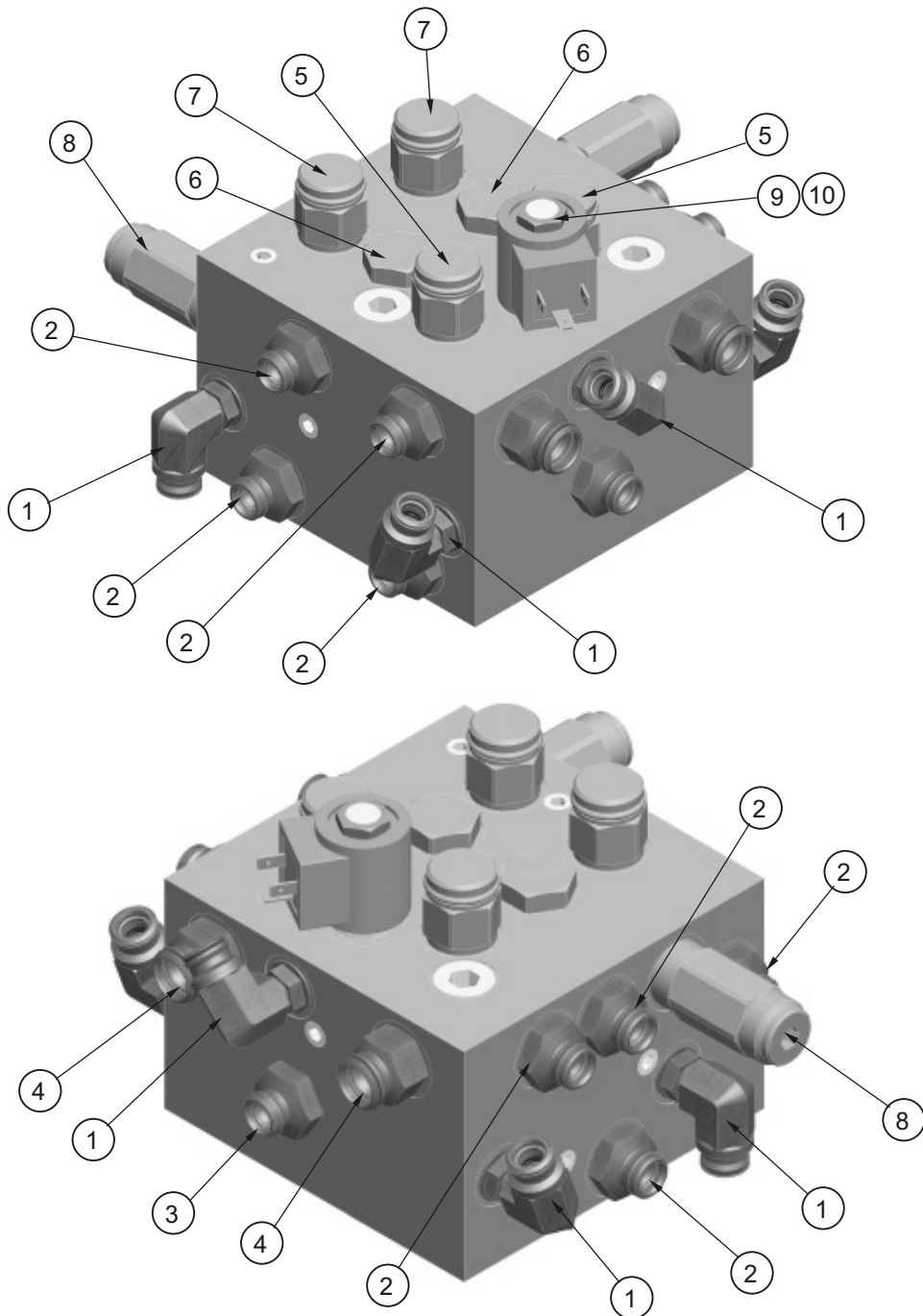
Item	Part No	Qty	Description
0.	13161A	1	Main manifold valve block assembly, V2
1.	12567-1	1	Stabiliser enable valve
2.	12567-2	1	Stabiliser check valve
3.	12567-3	1	Steering flow control
4.	12567-4	1	Steering directional valve
5.	12567-5	1	Steering relief shuttle
6.	12567-6	1	Steering pilot check
7.	12567-2	1	Steering relief check
8.	12567-8	1	Steering relief valve
9.	12567-9	1	Proportional valve
10.	12567-8	1	Lift relief
11.	12567-11	1	Lift valve
12.	12567-12	1	Drive valve, forward
13.	12567-13	1	Drive counterbalance valve, reverse
14.	12567-14	1	Drive check valve, forward
15.	12567-15	1	Free wheel valve
16.	12567-14	1	Drive check valve, reverse
17.	12567-13	1	Drive counterbalance valve, forward
18.	12567-12	1	Drive valve, reverse
19.	12567-19	1	Hand pump
20.	12567-20	1	Brake reset valve
21.	12567-21	1	Brake pilot check
22.	12567-22	1	Brake shuttle
23.	12567-23	1	Axle pressure reducing valve
24.	12567-24	1	Brake flow control valve
25.	12567-11	1	Brake selector valve
26.	12567-2	1	Compensator check
27.	12567-27	1	Compensator bleed, flow regulator
28.	12567-8	1	Main relief
29.	12567-29	1	Compensator
30.	10992-2	2	Test point, 9/16" UNO
31.	12770-330606	5	Adapter, straight, 9/16" UNO -> 3/8" STCF
32.	12770-330806	3	Adapter, straight, 3/4" UNO -> 3/8" STCF
33.	12770-330808	4	Adapter, straight, 3/4" UNO -> 1/2" STCF
37.	7025-001	1	Adapter, straight, 9/16" UNO -> 9/16" JICM
38.	7035-001	1	Plug, 9/16" UNO
39.	7025-008	1	Adapter, straight, 11/16" JICM -> 11/16" UNO
40.	12567-30	1	Coil, 12V
41.	12567-31	2	Plug
42.	12567-32	2	Plug
43.	12567-33	6	Plug, (2 not shown)
44.	12567-34	13	Plug, (1 not shown)
45.	12677	2	Coil, 12V
46.	12835-2	5	Coil, 12V

# Manifold assembly, main drawing

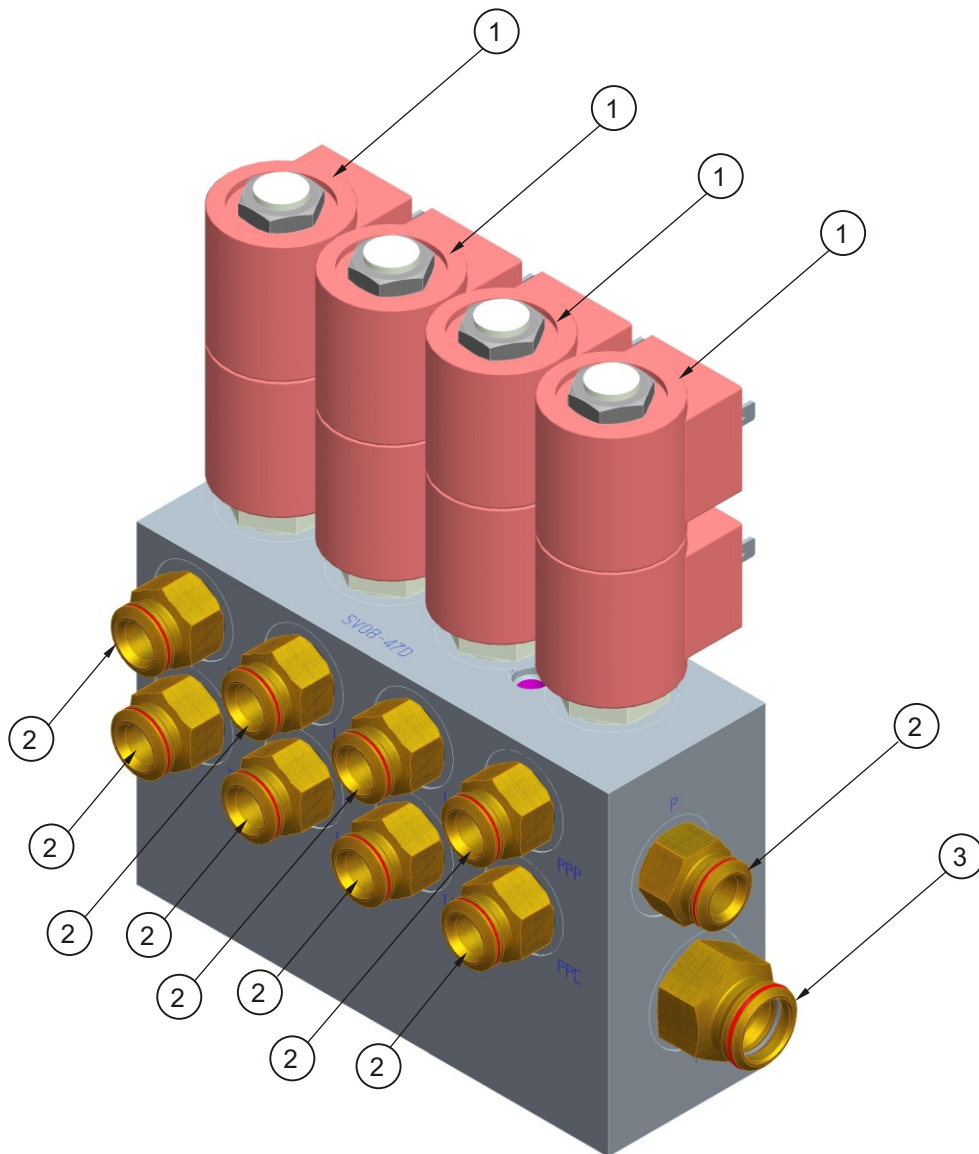


# Manifold assembly, 4 wheel drive

Item	Part No	Qty	Description
0.	13162A	1	4 wheel drive manifold block assembly, V2
1.	12770-350606	5	Adapter, 90° elbow, 9/16" UNO -> 3/8" STCF
2.	12770-330806	8	Adapter, straight, 3/4" UNO -> 3/8" STCF
3.	12770-330606	1	Adapter, straight, 9/16" UNO -> 3/8" STCF
4.	12770-330808	2	Adapter, straight, 3/4" UNO -> 1/2" STCF
5.	12569-2	2	Pilot cartridge, NO
6.	12569-3	2	Flow divider, combiner
7.	12569-5	2	Pilot valve, NC
8.	12569-6	2	Drive motor relief valve
9.	12567-11	1	Selector valve series, parallel
10.	12835-2	1	Coil, 12V



Item	Part No	Qty	Description
0.	12568A	1	Stabiliser valve block assembly
1.	12568-1	4	Stabiliser directional valve
2.	12770-330606	9	Adapter, straight, 9/16" UNO -> 3/8" STCF
3.	12770-330808	1	Adapter, straight, 3/4" UNO -> 1/2" STCF



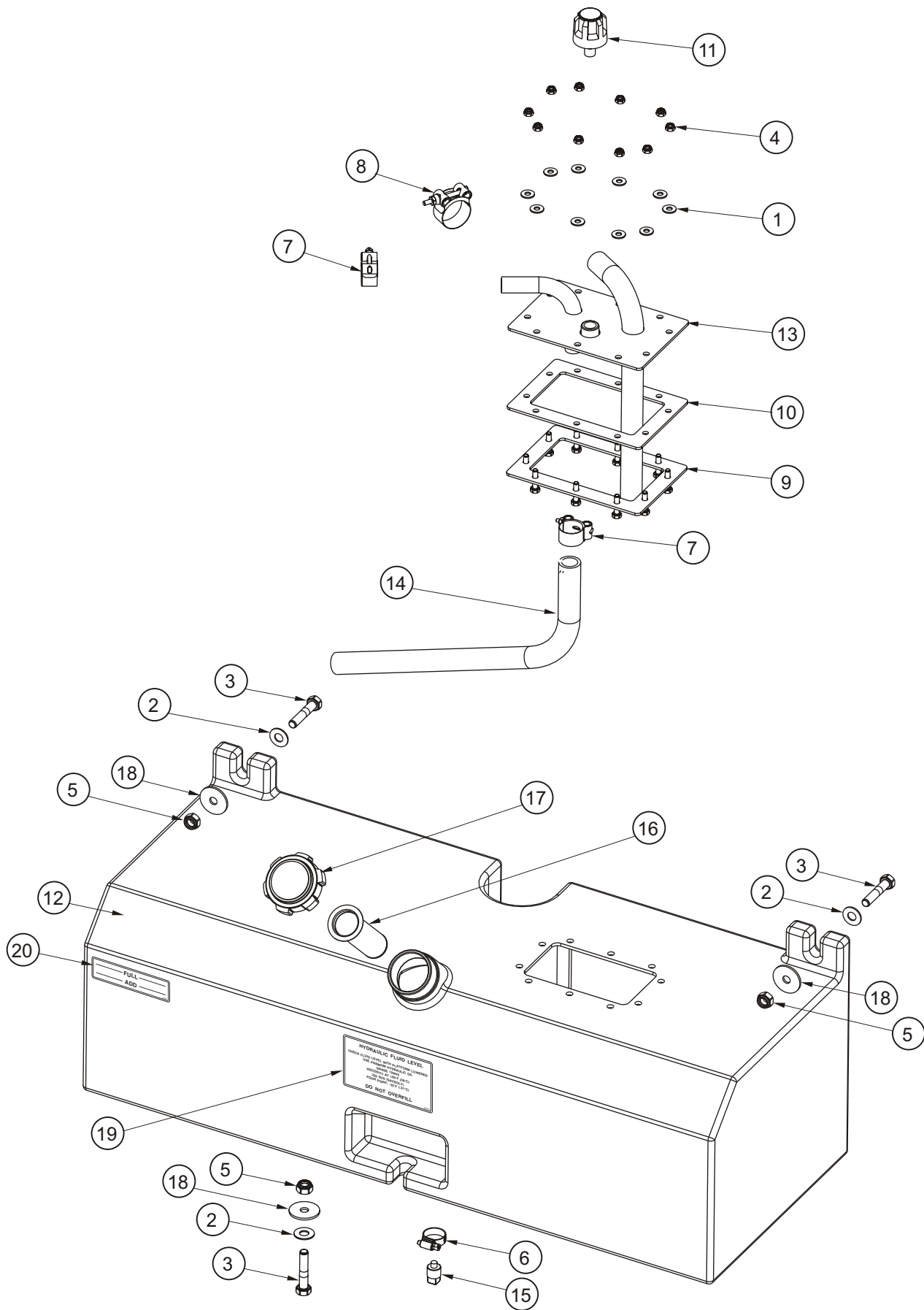
## Hydraulic oil tank assembly

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Item	Part No	Qty	Description
1.	3603-06	10	Washer, plain, M6 x 16, ZP
2.	3603-10	3	Washer, plain, M10 x 24, ZP
3.	3610-10050	3	Bolt, M10 x 50, C8.8, ZP
4.	3611-06	10	Nut, nyloc, M6
5.	3611-10	3	Nut, nyloc, M10
6.	3618-11	1	Hose clamp, 11 - 25mm, ZP
7.	3618-26	2	Hose clamp, 26 - 28mm, ZP
8.	3618-32	1	Hose clamp, 34 - 37mm, ZP
9.	11430-1	1	Base plate weld
10.	11430-5	1	Gasket
11.	11487	1	Filter breather
12.	11558-1	1	Tank, 13 gallon
13.	11558-2	1	Top plate weld, plated
14.	11558-8	1	Tank inner hose
15.	452756	1	Plug, magnetic
16.	605246	1	Strainer, hydraulic tank filler
17.	605256	1	Cap, vented, standard
	11955	1	Cap, lockable, option
18.	5560179	3	Flat washer, special
19.	451776	1	Decal, hydraulic fluid
20.	302950	1	Decal, hydraulic fluid, max/min level

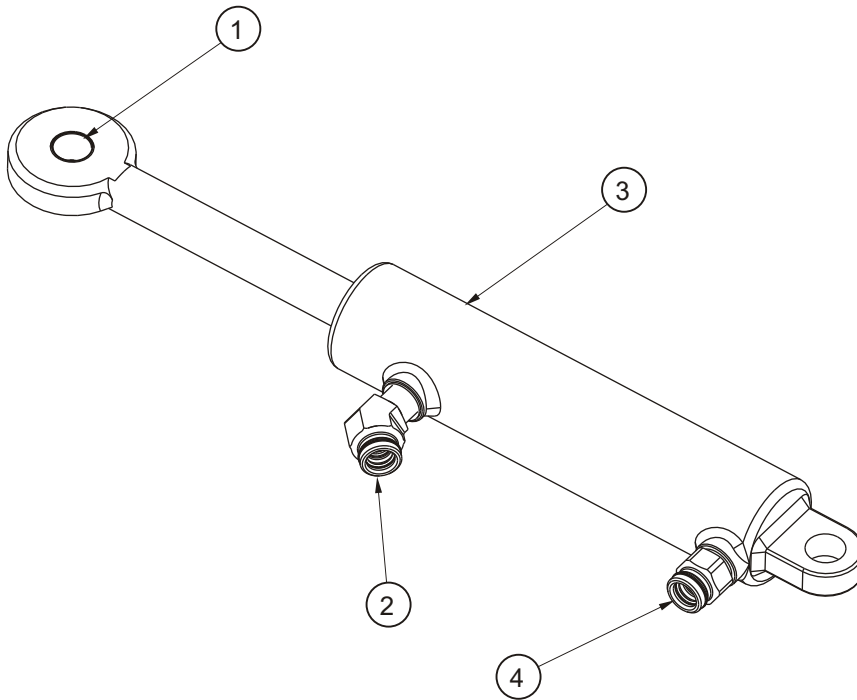


# Hydraulic oil tank assembly drawing

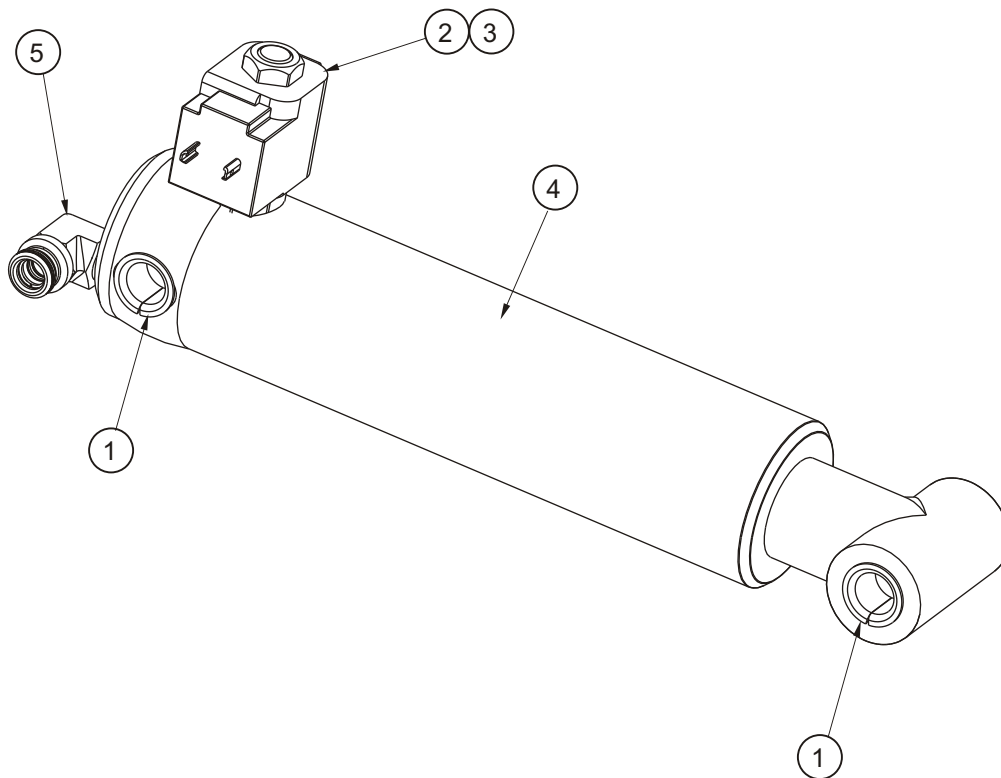


# Steer axle cylinder

Item	Part No.	Qty	Description
1.	3624-27	1	Permaglide bush
2.	12770-340406	1	Adapter, male SAE to female STC
3.	11699	1	Steer cylinder
4.	12770-330406	1	Adapter, male SAE to female STC, straight
	11699K	1	Seal kit

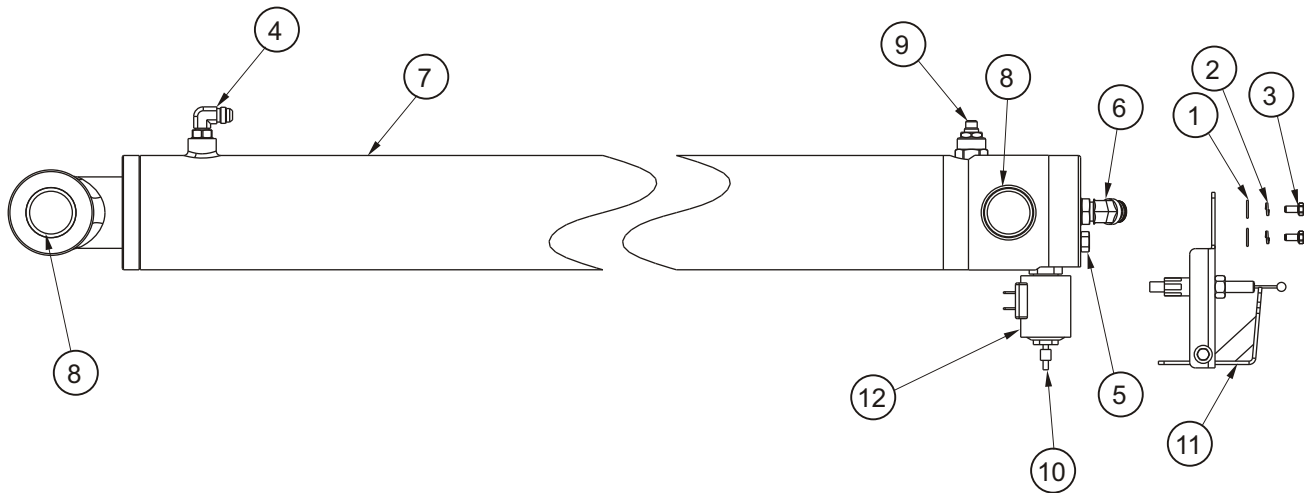


Item	Part No.	Qty	Description
1.	3626-3	4	Flanged permaglride bush
2.	11368-2	1	Solenoid valve and coil (Prior to Serial Number NZ070116)
	12835-1	1	Cartridge (from Serial Number NZ070116)
3.	12835-2	1	Coil (from Serial Number NZ070116)
4.	11642	1	Axle cylinder
5.	12770-350606	1	Adapter, Male SAE to female STC, 90° adjustable
	11642K	1	Seal kit



# Main lift cylinder assembly

Item	Part No	Qty	Description
1.	3603-06	2	Washer, plain, M6 x 16, ZP
2.	3605-06	2	Washer, spring, M6
3.	3610-06012	2	Bolt, M16 x 12, C8.8, ZP
4.	7031-001	1	Adaptor, elbow 90° 9/16 JICM -> 9/16 UNO
5.	7035-001	1	Plug
6.	12770-340808	1	Adaptor, elbow 45° 1/12 UNO -> 1/2 STC F
7.	11687	1	SR lift cylinder
8.	56112-6	6	Bushing
9.	6010833	1	Valve, cartridge, adjustable
10.	6018024	1	Solenoid valve, 2 way, normally closed
11.	12752A	1	Cylinder bleed down bracket assembly
12.	12677	1	Coil
	11687K	1	Seal kit



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Ground box drawing - sheet 2 ..... 3-12  
Platform control box assembly ..... 3-14  
Platform Control Box Assembly drawing  
Sheet 1 ..... 3-15  
Platform Control Box Assembly drawing  
Sheet 2 ..... 3-16

## Looms

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Item	Part No.	Qty	Description
1.	12731-11	1	Loom, base, SR2770 & SR3370, V2, machines with stabilisers only
2.	12768-11	1	Loom, control cable, 17.8m, SR2770, V2
3.	12768-10	1	Loom, control cable, 20m, SR3370, V2
4.	12731-6	1	Loom, engine Kubota D902, SR2770 & SR3370, V2
5.	12731-10	1	Loom, horn supply / earth, non CE machines
6.	12789-1	1	Loom, lower stack SR2770
7.	12789-2	1	Loom, lower stack SR3370
8.	12731-8	1	Loom, main manifold earth, SR2770 & SR3370, V2
9.	12731-2	1	Loom, main manifold earth, SR2770 & SR3370, V2, machines with stabilisers only.
10.	12731-9	1	Loom, stabiliser manifold control, SR2770 & SR3370, V2, machines with stabilisers only
11.	12731-12	1	Loom, base, SR2770 & SR3370, V2, machines without stabilisers only
12.	12893	1	Loom, stack sensors, SR2770 & SR3370, V2, CE machines only
13.	12894	1	Loom, overload control, SR2770 & SR3370, V2, CE machines only

F

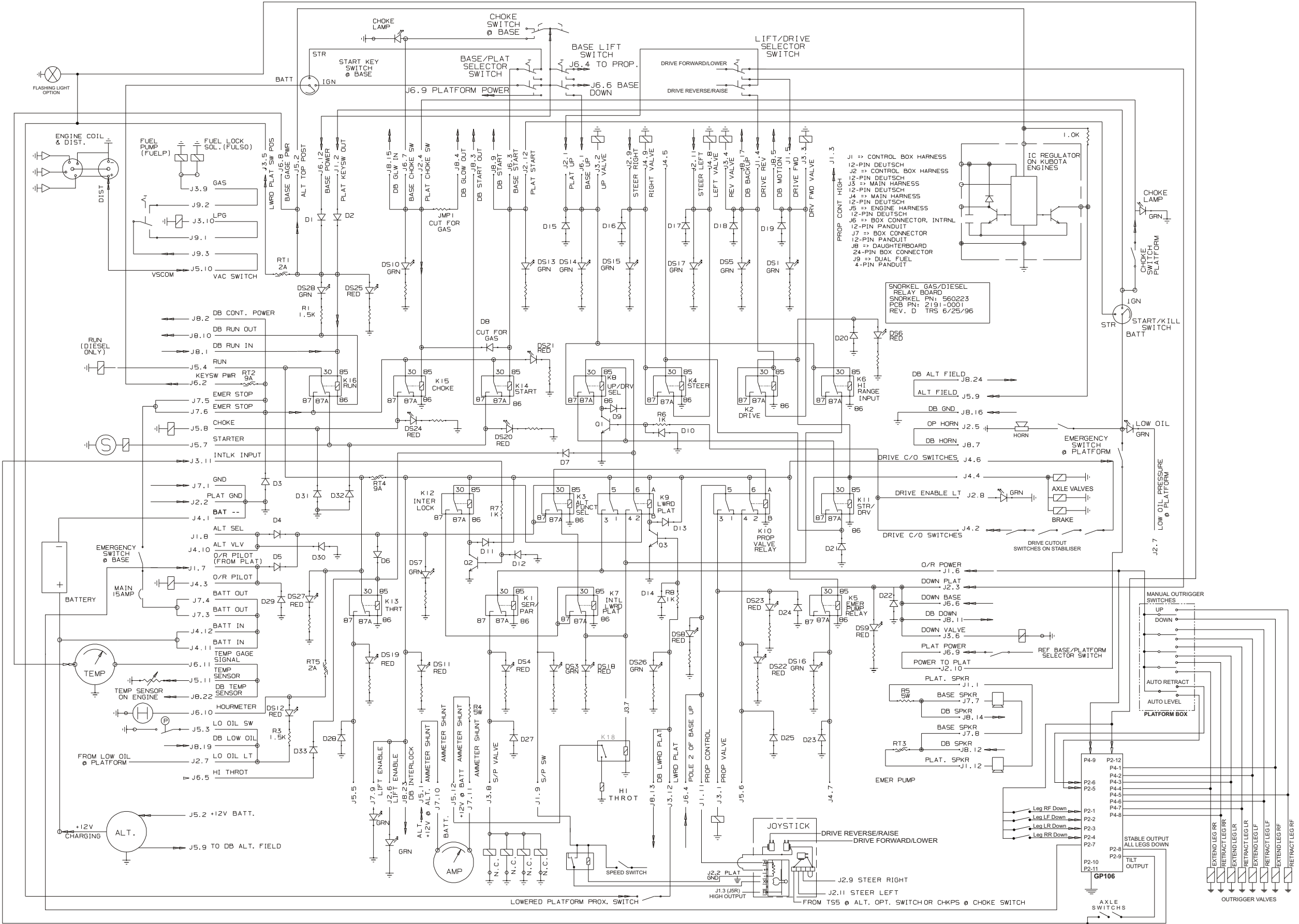
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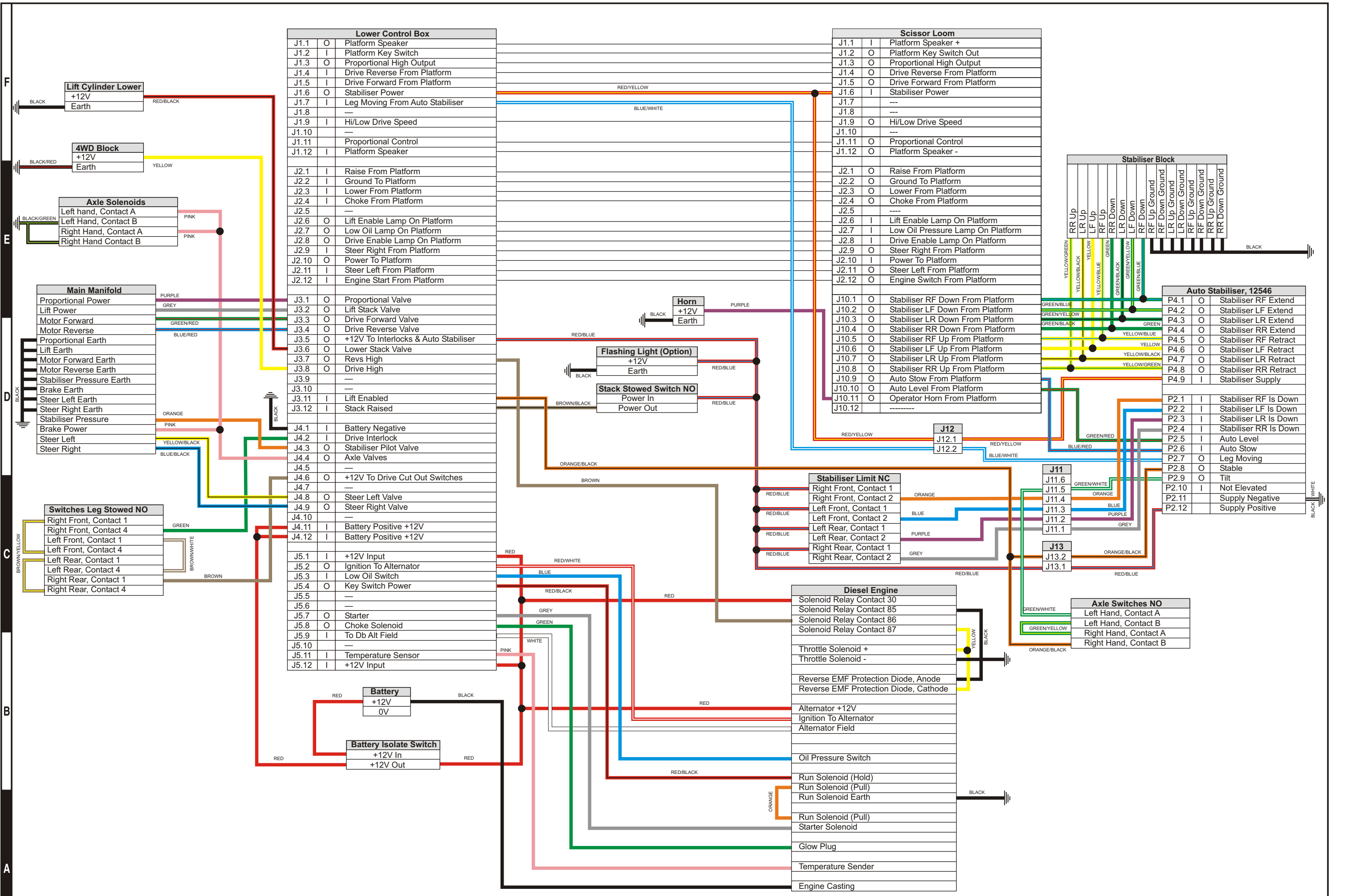
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A



TITLE Electrical Schematic, Standard, Auto Level, Snorkel Models SR3370 & SR2770, V2



Lower Control Box		
J1.1	O	Platform Speaker
J1.2	I	Platform Key Switch
J1.3	O	Proportional High Output
J1.4	I	Drive Reverse From Platform
J1.5	I	Drive Forward From Platform
J1.6	O	Stabiliser Power
J1.7	I	Leg Moving From Auto Stabiliser
J1.8	---	---
J1.9	I	Hi/Low Drive Speed
J1.10	---	---
J1.11	O	Proportional Control
J1.12	I	Platform Speaker
J2.1	I	Raise From Platform
J2.2	I	Ground To Platform
J2.3	I	Lower From Platform
J2.4	I	Choke From Platform
J2.5	---	---
J2.6	O	Lift Enable Lamp On Platform
J2.7	O	Low Oil Lamp On Platform
J2.8	O	Drive Enable Lamp On Platform
J2.9	I	Steer Right From Platform
J2.10	O	Power To Platform
J2.11	I	Steer Left From Platform
J2.12	I	Engine Start From Platform
J3.1	O	Proportional Valve
J3.2	O	Lift Stack Valve
J3.3	O	Drive Forward Valve
J3.4	O	Drive Reverse Valve
J3.5	O	+12V To Interlocks & Auto Stabiliser
J3.6	O	Lower Stack Valve
J3.7	O	Revs High
J3.8	O	Drive High
J3.9	---	---
J3.10	---	---
J3.11	I	Lift Enabled
J3.12	I	Stack Raised
J4.1	I	Battery Negative
J4.2	I	Drive Interlock
J4.3	O	Stabiliser Pilot Valve
J4.4	O	Axle Valves
J4.5	---	---
J4.6	O	+12V To Drive Cut Out Switches
J4.7	---	---
J4.8	O	Steer Left Valve
J4.9	O	Steer Right Valve
J4.10	---	---
J4.11	I	Battery Positive +12V
J4.12	I	Battery Positive +12V
J5.1	I	+12V Input
J5.2	O	Ignition To Alternator
J5.3	I	Low Oil Switch
J5.4	O	Key Switch Power
J5.5	---	---
J5.6	---	---
J5.7	O	Starter
J5.8	O	Choke Solenoid
J5.9	I	To Db Alt Field
J5.10	---	---
J5.11	I	Temperature Sensor
J5.12	I	+12V Input

Scissor Loom		
J1.1	I	Platform Speaker +
J1.2	O	Platform Key Switch Out
J1.3	O	Proportional High Output
J1.4	O	Drive Reverse From Platform
J1.5	O	Drive Forward From Platform
J1.6	I	Stabiliser Power
J1.7	---	---
J1.8	---	---
J1.9	O	Hi/Low Drive Speed
J1.10	---	---
J1.11	O	Proportional Control
J1.12	O	Platform Speaker -
J2.1	O	Raise From Platform
J2.2	O	Ground To Platform
J2.3	O	Lower From Platform
J2.4	O	Choke From Platform
J2.5	---	---
J2.6	I	Lift Enable Lamp On Platform
J2.7	I	Low Oil Pressure Lamp On Platform
J2.8	I	Drive Enable Lamp On Platform
J2.9	O	Steer Right From Platform
J2.10	I	Power To Platform
J2.11	O	Steer Left From Platform
J2.12	O	Engine Switch From Platform
J10.1	O	Stabiliser RF Down From Platform
J10.2	O	Stabiliser LF Down From Platform
J10.3	O	Stabiliser LR Down From Platform
J10.4	O	Stabiliser RR Down From Platform
J10.5	O	Stabiliser RF Up From Platform
J10.6	O	Stabiliser LF Up From Platform
J10.7	O	Stabiliser LR Up From Platform
J10.8	O	Stabiliser RR Up From Platform
J10.9	O	Auto Stow From Platform
J10.10	O	Auto Level From Platform
J10.11	O	Operator Horn From Platform
J10.12	---	---

Auto Stabiliser, 12546		
P4.1	O	Stabiliser RF Extend
P4.2	O	Stabiliser LF Extend
P4.3	O	Stabiliser LR Extend
P4.4	O	Stabiliser RR Extend
P4.5	O	Stabiliser RF Retract
P4.6	O	Stabiliser LF Retract
P4.7	O	Stabiliser LR Retract
P4.8	O	Stabiliser RR Retract
P4.9	I	Stabiliser Supply
P2.1	I	Stabiliser RF Is Down
P2.2	I	Stabiliser LF Is Down
P2.3	I	Stabiliser LR Is Down
P2.4	I	Stabiliser RR Is Down
P2.5	I	Auto Level
P2.6	I	Auto Stow
P2.7	O	Leg Moving
P2.8	O	Stable
P2.9	O	Tilt
P2.10	I	Not Elevated
P2.11	O	Supply Negative
P2.12	O	Supply Positive

Diesel Engine		
Solenoid Relay Contact 30		
Solenoid Relay Contact 85		
Solenoid Relay Contact 86		
Solenoid Relay Contact 87		
Throttle Solenoid +		
Throttle Solenoid -		
Reverse EMF Protection Diode, Anode		
Reverse EMF Protection Diode, Cathode		
Alternator +12V		
Ignition To Alternator		
Alternator Field		
Oil Pressure Switch		
Run Solenoid (Hold)		
Run Solenoid (Pull)		
Run Solenoid Earth		
Run Solenoid (Pull)		
Starter Solenoid		
Glow Plug		
Temperature Sender		
Engine Casting		







F

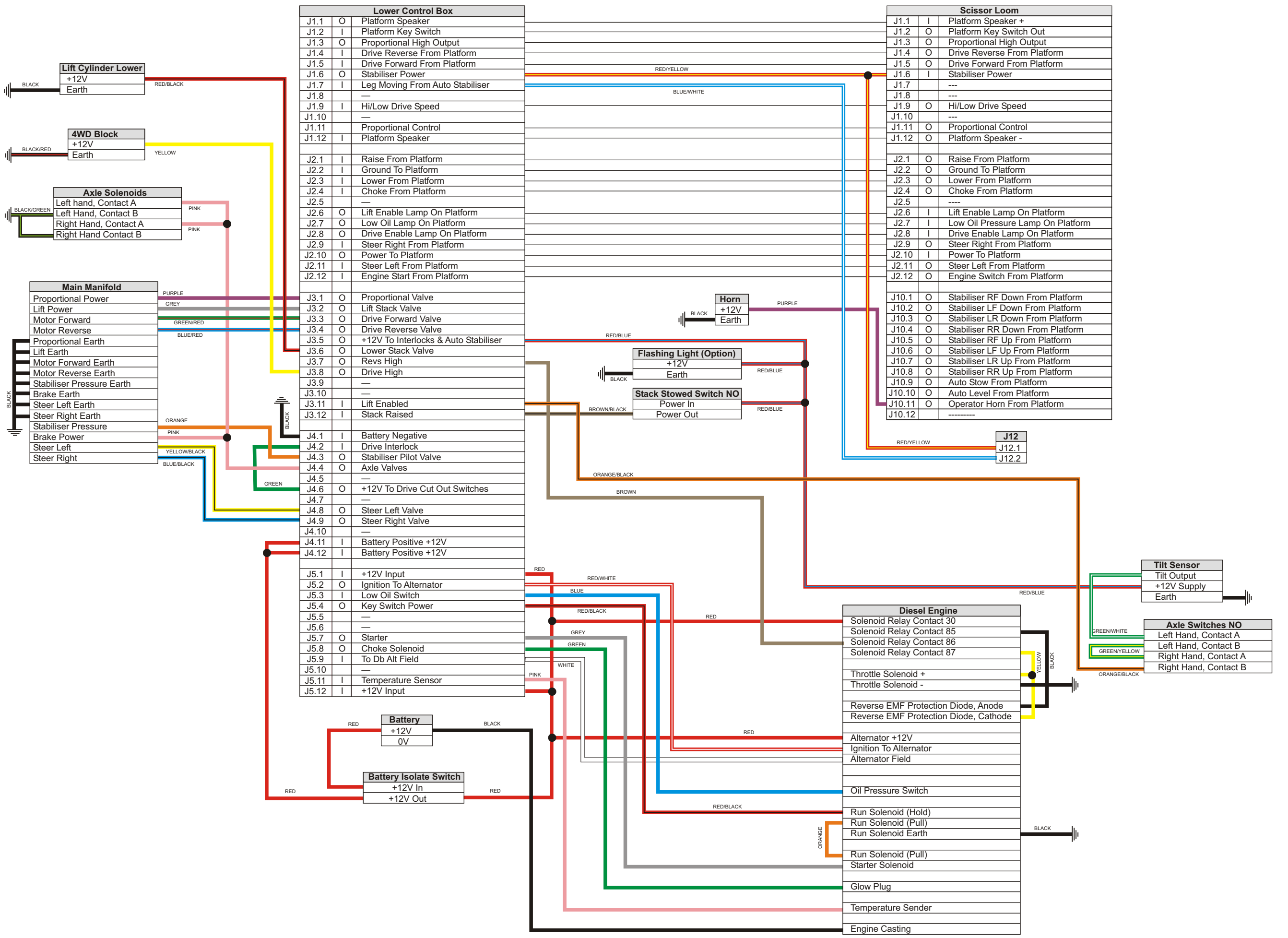
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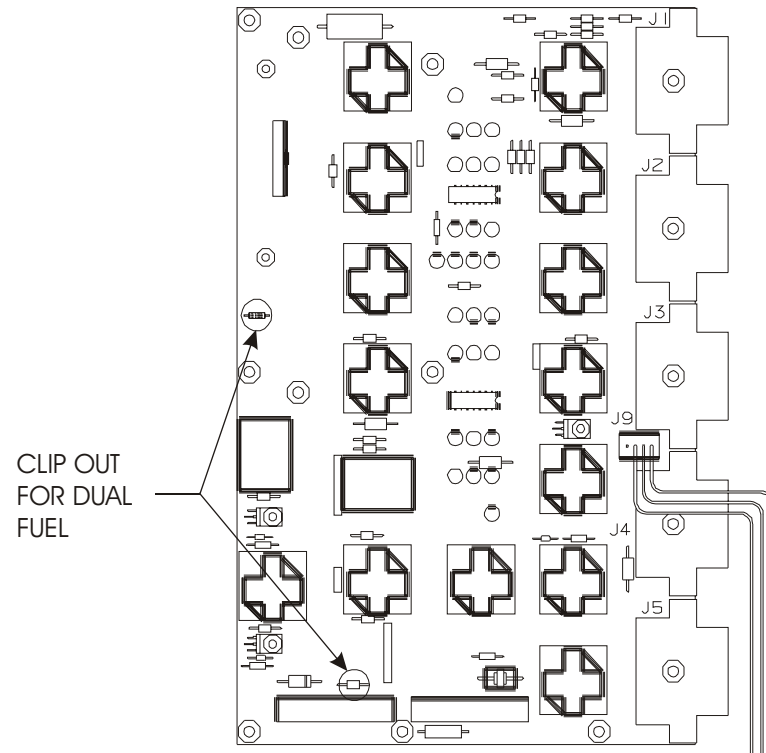
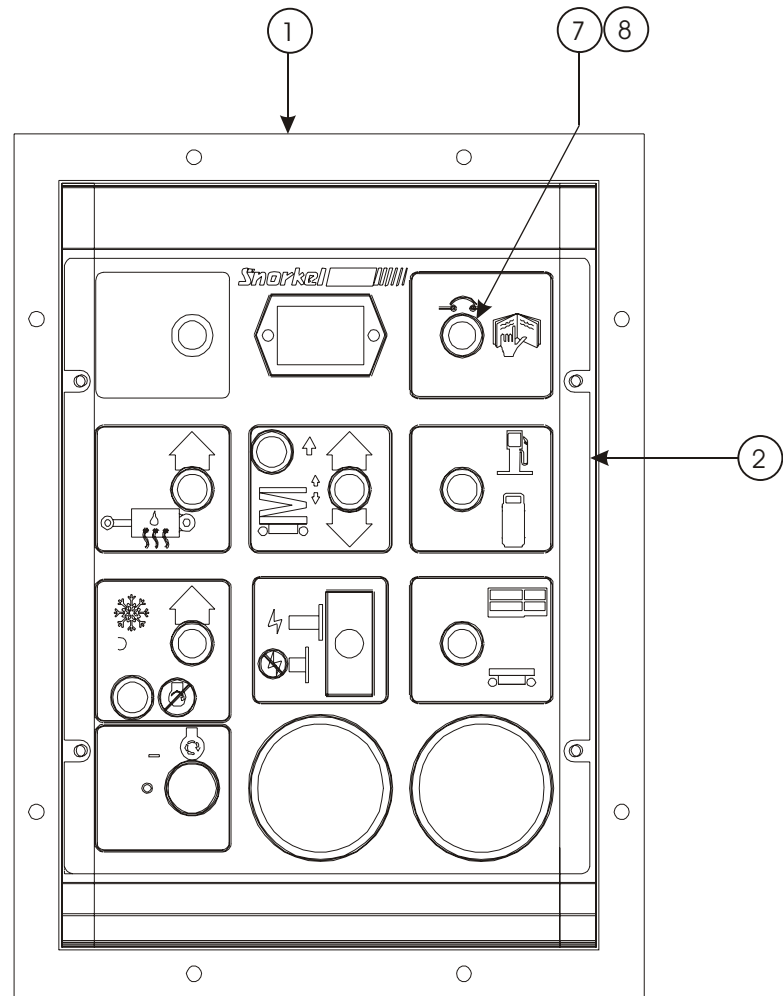


Lower Control Box		
J1.1	O	Platform Speaker
J1.2	I	Platform Key Switch
J1.3	O	Proportional High Output
J1.4	I	Drive Reverse From Platform
J1.5	I	Drive Forward From Platform
J1.6	O	Stabiliser Power
J1.7	I	Leg Moving From Auto Stabiliser
J1.8	---	---
J1.9	I	Hi/Low Drive Speed
J1.10	---	---
J1.11	O	Proportional Control
J1.12	I	Platform Speaker
J2.1	I	Raise From Platform
J2.2	I	Ground To Platform
J2.3	I	Lower From Platform
J2.4	I	Choke From Platform
J2.5	---	---
J2.6	O	Lift Enable Lamp On Platform
J2.7	O	Low Oil Lamp On Platform
J2.8	O	Drive Enable Lamp On Platform
J2.9	I	Steer Right From Platform
J2.10	O	Power To Platform
J2.11	I	Steer Left From Platform
J2.12	I	Engine Start From Platform
J3.1	O	Proportional Valve
J3.2	O	Lift Stack Valve
J3.3	O	Drive Forward Valve
J3.4	O	Drive Reverse Valve
J3.5	O	+12V To Interlocks & Auto Stabiliser
J3.6	O	Lower Slack Valve
J3.7	O	Revs High
J3.8	O	Drive High
J3.9	---	---
J3.10	---	---
J3.11	I	Lift Enabled
J3.12	I	Stack Raised
J4.1	I	Battery Negative
J4.2	I	Drive Interlock
J4.3	O	Stabiliser Pilot Valve
J4.4	O	Axle Valves
J4.5	---	---
J4.6	O	+12V To Drive Cut Out Switches
J4.7	---	---
J4.8	O	Steer Left Valve
J4.9	O	Steer Right Valve
J4.10	---	---
J4.11	I	Battery Positive +12V
J4.12	I	Battery Positive +12V
J5.1	I	+12V Input
J5.2	O	Ignition To Alternator
J5.3	I	Low Oil Switch
J5.4	O	Key Switch Power
J5.5	---	---
J5.6	---	---
J5.7	O	Starter
J5.8	O	Choke Solenoid
J5.9	I	To Db Alt Field
J5.10	---	---
J5.11	I	Temperature Sensor
J5.12	I	+12V Input

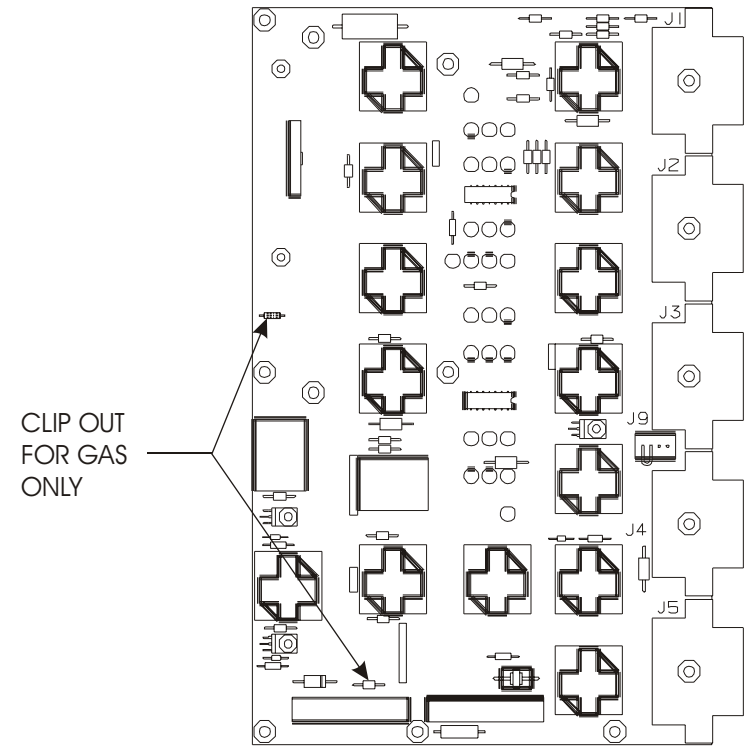
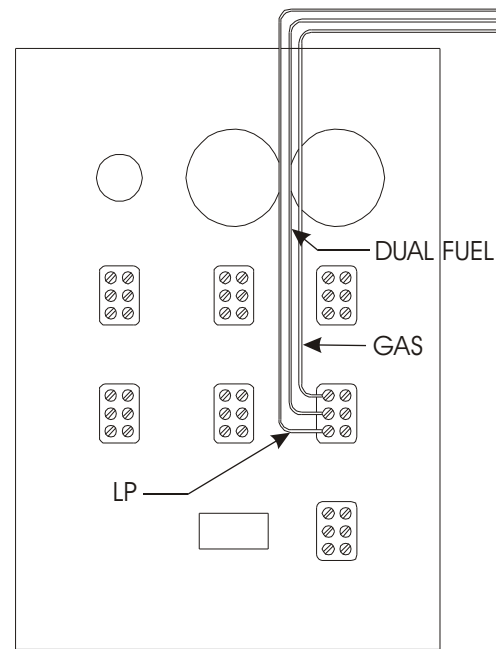
Scissor Loom		
J1.1	I	Platform Speaker +
J1.2	O	Platform Key Switch Out
J1.3	O	Proportional High Output
J1.4	O	Drive Reverse From Platform
J1.5	O	Drive Forward From Platform
J1.6	I	Stabiliser Power
J1.7	---	---
J1.8	---	---
J1.9	O	Hi/Low Drive Speed
J1.10	---	---
J1.11	O	Proportional Control
J1.12	O	Platform Speaker -
J2.1	O	Raise From Platform
J2.2	O	Ground To Platform
J2.3	O	Lower From Platform
J2.4	O	Choke From Platform
J2.5	---	---
J2.6	I	Lift Enable Lamp On Platform
J2.7	I	Low Oil Pressure Lamp On Platform
J2.8	I	Drive Enable Lamp On Platform
J2.9	O	Steer Right From Platform
J2.10	I	Power To Platform
J2.11	O	Steer Left From Platform
J2.12	O	Engine Switch From Platform
J10.1	O	Stabiliser RF Down From Platform
J10.2	O	Stabiliser LF Down From Platform
J10.3	O	Stabiliser LR Down From Platform
J10.4	O	Stabiliser RR Down From Platform
J10.5	O	Stabiliser RF Up From Platform
J10.6	O	Stabiliser LF Up From Platform
J10.7	O	Stabiliser LR Up From Platform
J10.8	O	Stabiliser RR Up From Platform
J10.9	O	Auto Slow From Platform
J10.10	O	Auto Level From Platform
J10.11	O	Operator Horn From Platform
J10.12	-----	-----



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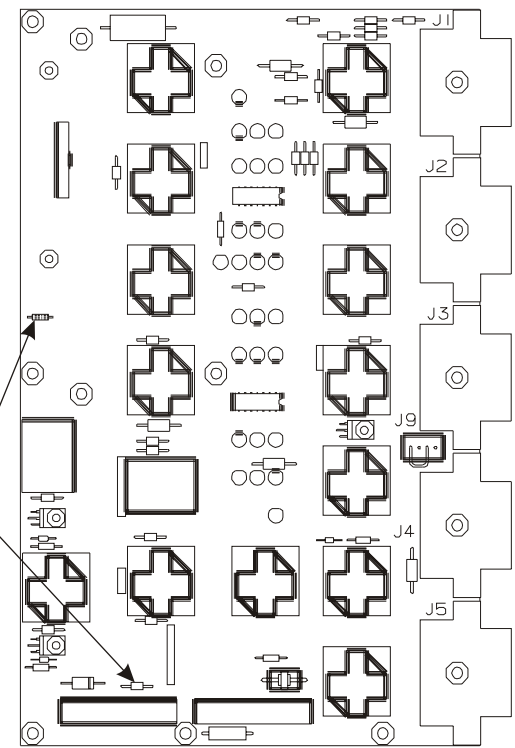


DUAL FUEL



GAS

CLIP OUT FOR LP ONLY



LP ONLY

## Ground control box assembly

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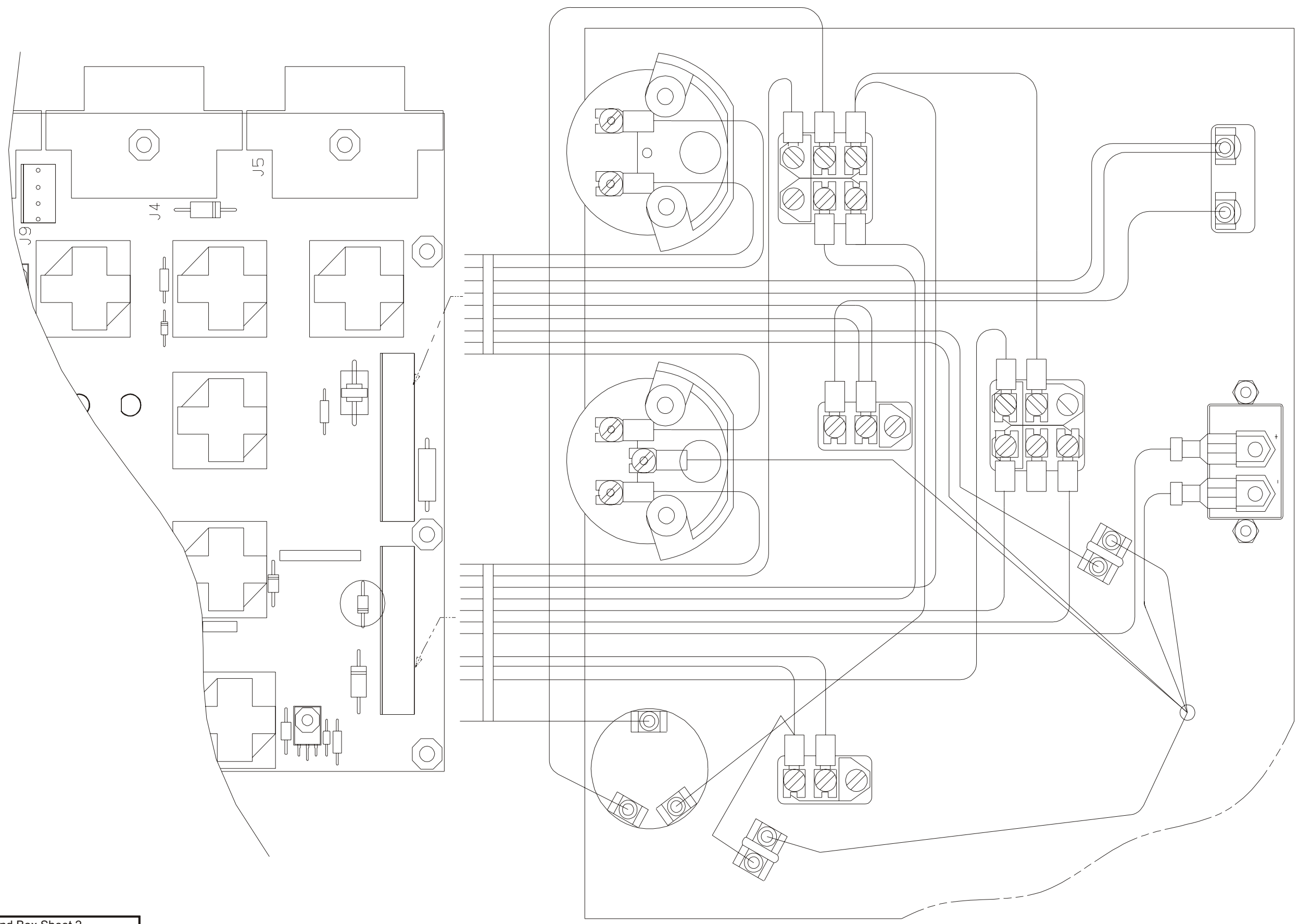
Item	Part No	Qty	Description
1.	560222	1	Ground control box assembly, Kubota diesel units
2.	560240	1	Ground box (see page 3 - 10)
7.	3040068	1	Decal, ground control
8.	3044167	1	Circuit breaker 20 amp
			Terminal #10 spade 16/14 wire

## Ground box

Item	Part No	Qty	Description
0.	560222	1	Ground box, complete
1.	560229	1	Ground electrical box
2.	560224	1	Alarm board/daughter board
3.	560223	1	Relay board/mother board
4.	3020013	1	Switch, toggle
	446836	1	Switch, push/pull emergency stop, CE only
	446826	1	Contact block, CE only
5.	302-0015	1	Switch, toggle, SPST, (MON/OFF)
6.	302-0016	Ref	Switch, toggle, SPDT, (M/OFF/M)
7.	302-0018	1	Switch, toggle, DPDT, (M/OFF/M)
8.	302-0097	1	Switch, toggle, DPDT, (ON/ON)
	3020167	1	Key switch, CE only
	3049906	1	Mounting base, CE only
9.	562236	1	Switch guard, not required for CE
10.	455186	1	Hour meter
11.	562326	14	Relay, 12 volt DC - 20/30 amp
12.	560390	2	Relay, 12 volt DC - 10 amp
13.	563686	1	Circuit breaker, 15 amp capacity thermal
14.	3020087	1	Key switch
	10113	1	Start switch, CE only
	9776	1	Mounting base, CE only
	10114	1	Contact, CE only
15.	560394	1	Temperature gauge
16.	560396	1	Ammeter
17.	560397	1	Internal wire harness
18.	302832	1	Speaker
19.	302882	1	Drain plug
20.	560377	1	Lamp, green bezel 12 volt
21.	3040068	Ref	Circuit breaker, 20 amp capacity thermal
22.	560240	Ref	Decal, ground control
23.	560398	1	Gasket
24.	560389	1	Door restraint cable
25.	0070967	1	Corrosion inhibitor
26.	560395	1	Temperature sensor
27.	302856	2	Bracket for daughter board
28.	302855	2	Stand-off for daughter board



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1 2 3 4 5 6 7 8 9





## Platform control box assembly

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Item	Part No	Qty	Description
0.	560221	1	Platform control box assembly
1.	560228	1	Platform control box
2.	560332	1	Switch, push button
3.	560225	1	Joystick controller
4.	560376	1	Internal wire harness
5.	446836	1	Switch, push/pull emergency stop
6.	0070967	1	Corrosion inhibitor
7.	3020097	1	Switch, toggle
8.	560377	4	Led lamp, green 12 volt
9.	560375	1	Gasket
10.	3049847	1	Electrical connector
11.	3020016	1	Switch, auto level (not installed on machines without stabilisers)
12.	560332	1	Switch, operator horn
13.	560379	1	Switch, start/kill
14.	560241	1	Placard, platform control box
15.	3040099	1	Electrical connector lock washer
16.	3040098	1	Electrical connector lock nut
17.	560272	1	Placard, emergency stop
18.	3020016	4	Switch, outriggers (not installed on machines without stabilisers)
19.	446826	1	Contact block, emergency stop
20.	560378	1	Diode wire assembly
21.	563736	1	Switch, toggle

F

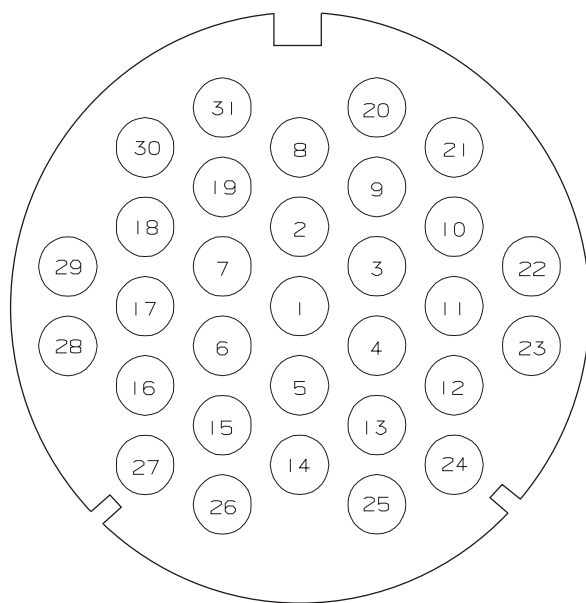
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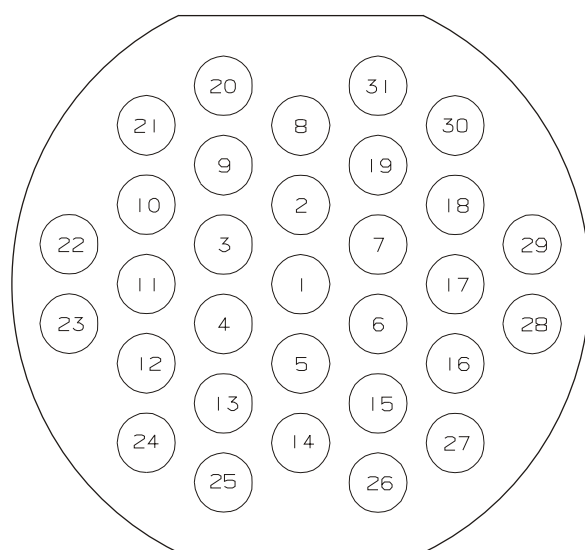
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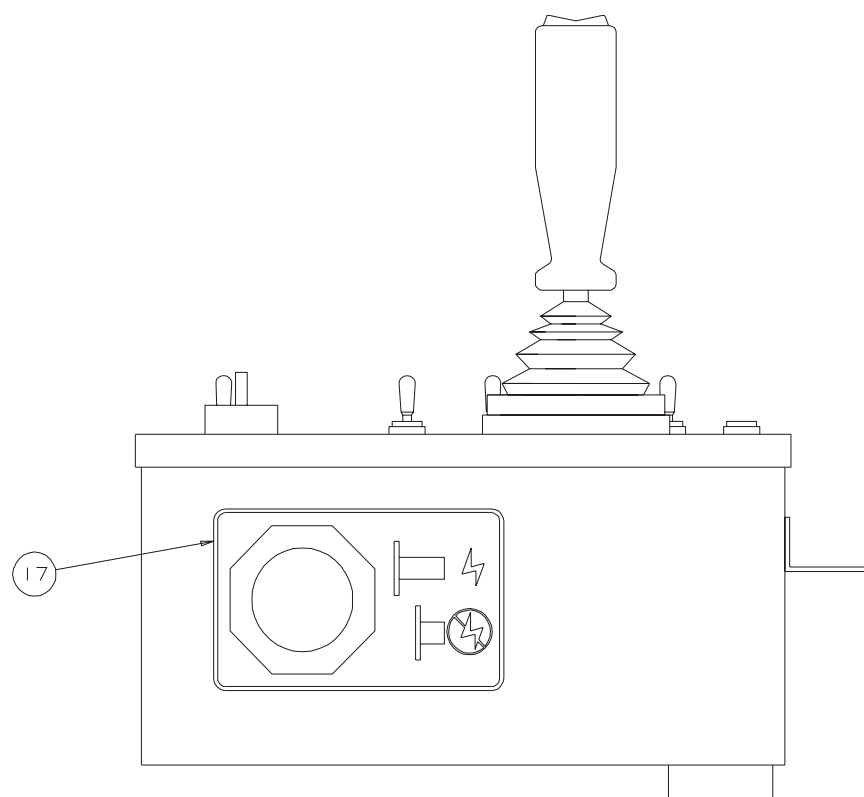
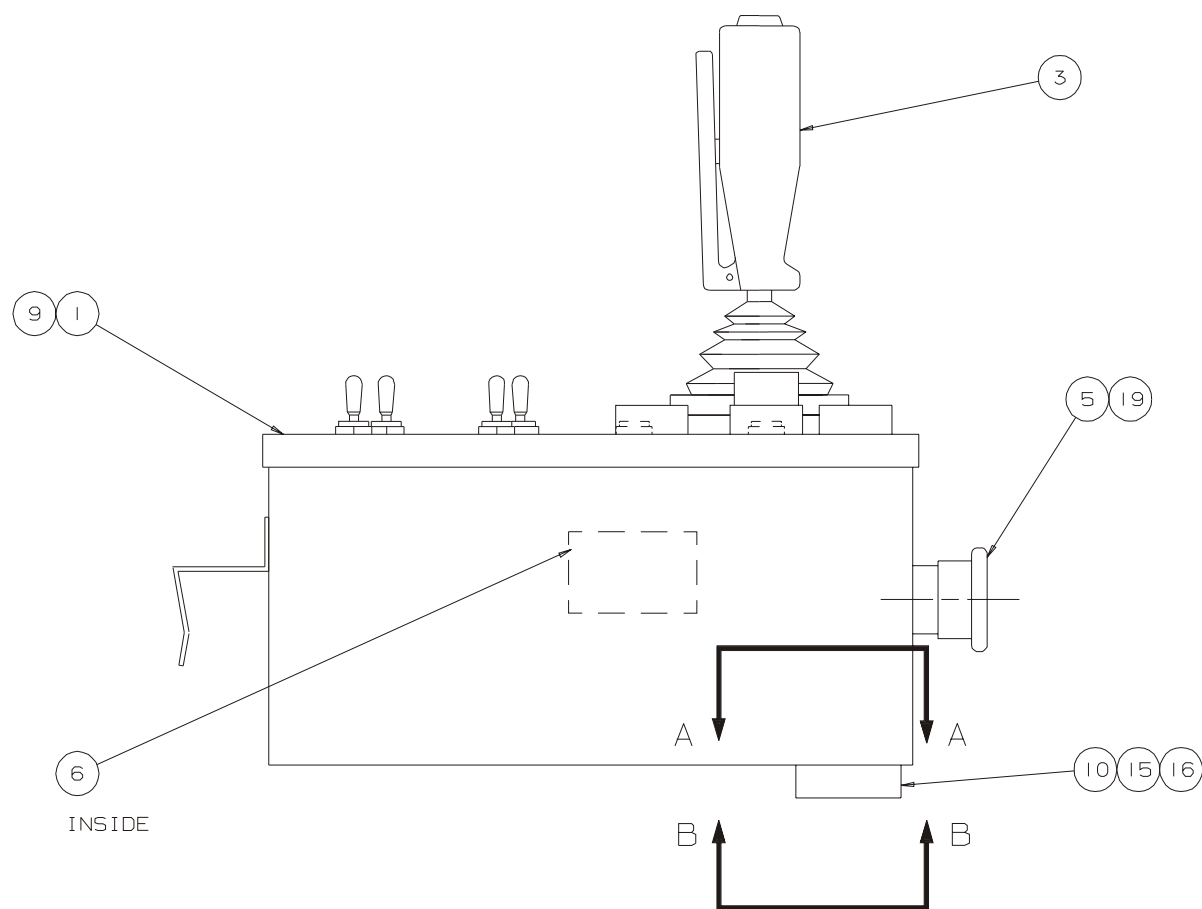
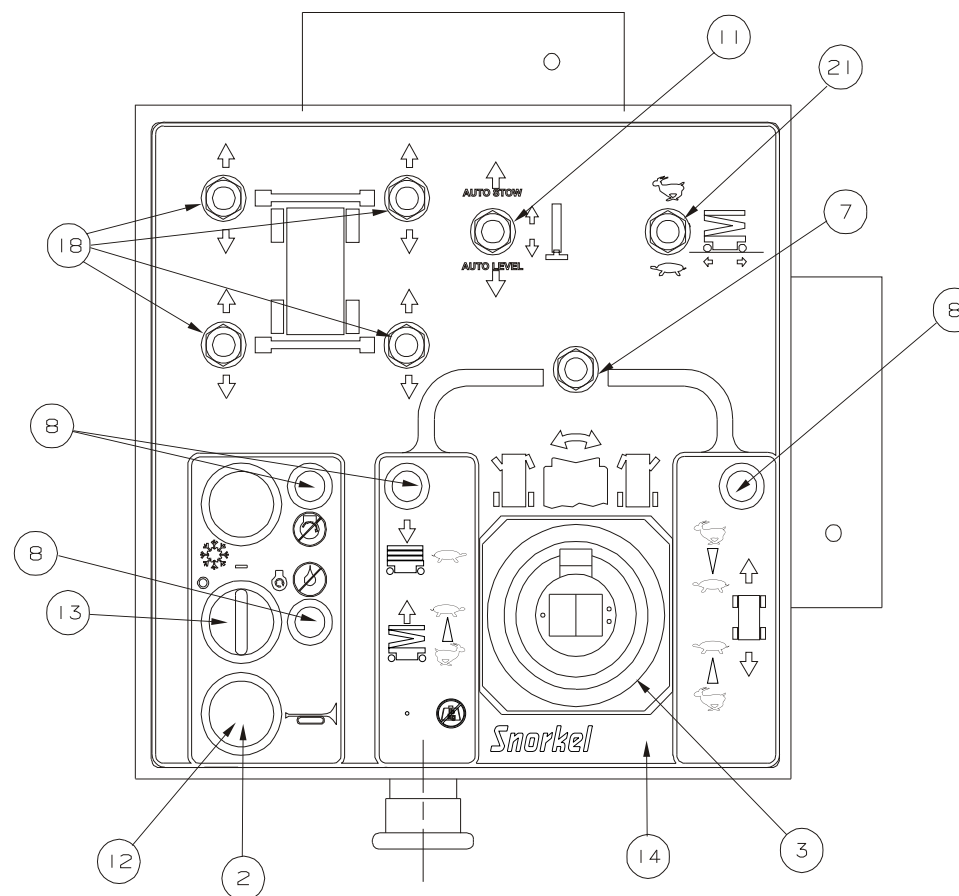
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SECTION B-B



SECTION A-A

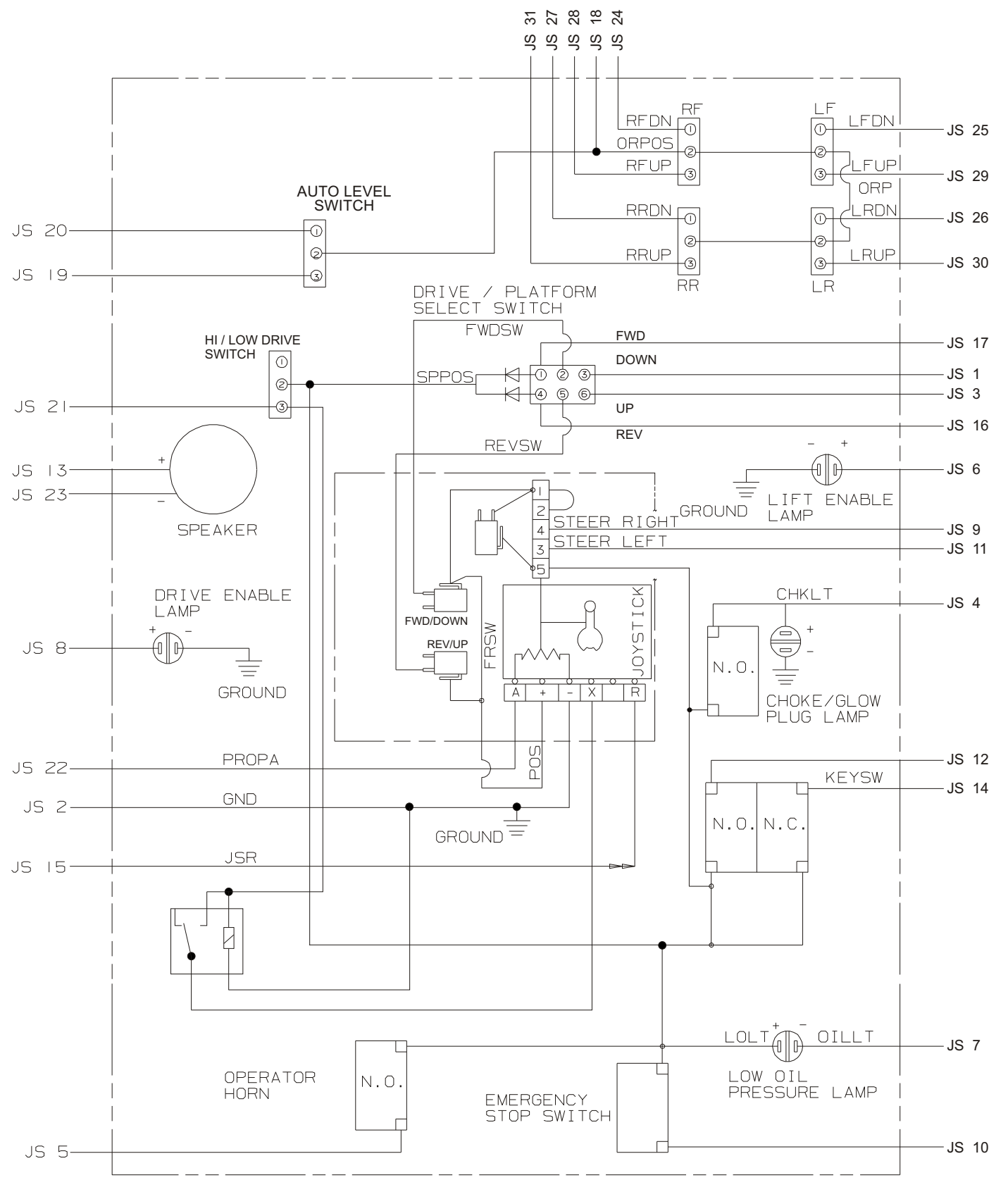


PIN #		LOWER BASE END OF CONTROL CABLE
JS 1	J2.3	LOWER FROM PLATFORM
JS 2	J2.2	PLATFORM GROUND WIRE
JS 3	J2.1	RAISE FROM PLATFORM
JS 4	J2.4	CHOKE/GLOW PLUG SWITCH AT PLATFORM
JS 5	J10.11	OPERATOR HORN
JS 6	J2.6	LIFT ENABLE LAMP
JS 7	J2.7	PLATFORM LOW OIL PRESSURE LAMP
JS 8	J2.8	PLATFORM DRIVE ENABLE LAMP
JS 9	J2.9	STEER RIGHT
JS 10	J2.10	POWER TO PLATFORM (14 GA)
JS 11	J2.11	STEER LEFT
JS 12	J2.12	START SWITCH FROM PLATFORM
JS 13	J1.1	PLATFORM SPEAKER
JS 14	J1.2	PLATFORM KEY SWITCH OUT
* JS 15	J1.3	PROPORTIONAL HIGH OUTPUT
JS 16	J1.4	DRIVE REVERSE
JS 17	J1.5	DRIVE FORWARD
‡ JS 18	J1.6	OUTRIGGER SUPPLY
JS 18	J12.1	OUTRIGGER SUPPLY
» JS 19	J10.9	AUTO STOW
» JS 20	J10.10	AUTO LEVEL
JS 21	J1.9	HI/LOW DRIVE SWITCH
JS 22	J1.11	PROPORTIONAL CONTROL
JS 23	J1.12	PLATFORM SPEAKER
» JS 24	J10.1	OUTRIGGER RF DOWN
» JS 25	J10.2	OUTRIGGER LF DOWN
» JS 26	J10.3	OUTRIGGER LR DOWN
» JS 27	J10.4	OUTRIGGER RR DOWN
» JS 28	J10.5	OUTRIGGER RF UP
» JS 29	J10.6	OUTRIGGER LF UP
» JS 30	J10.7	OUTRIGGER LR UP
» JS 31	J10.8	OUTRIGGER RR UP

\* NOTE: INPUT FROM JSR (JS 15) ONLY  
IF LOWER PLATFORM SWITCH IS MADE!

‡ NOTE: JS 18 T'S IN CONTROL CABLE TO J1.6 AND J12.1

» NOTE: NOT USED ON MACHINES WITHOUT STABILISERS



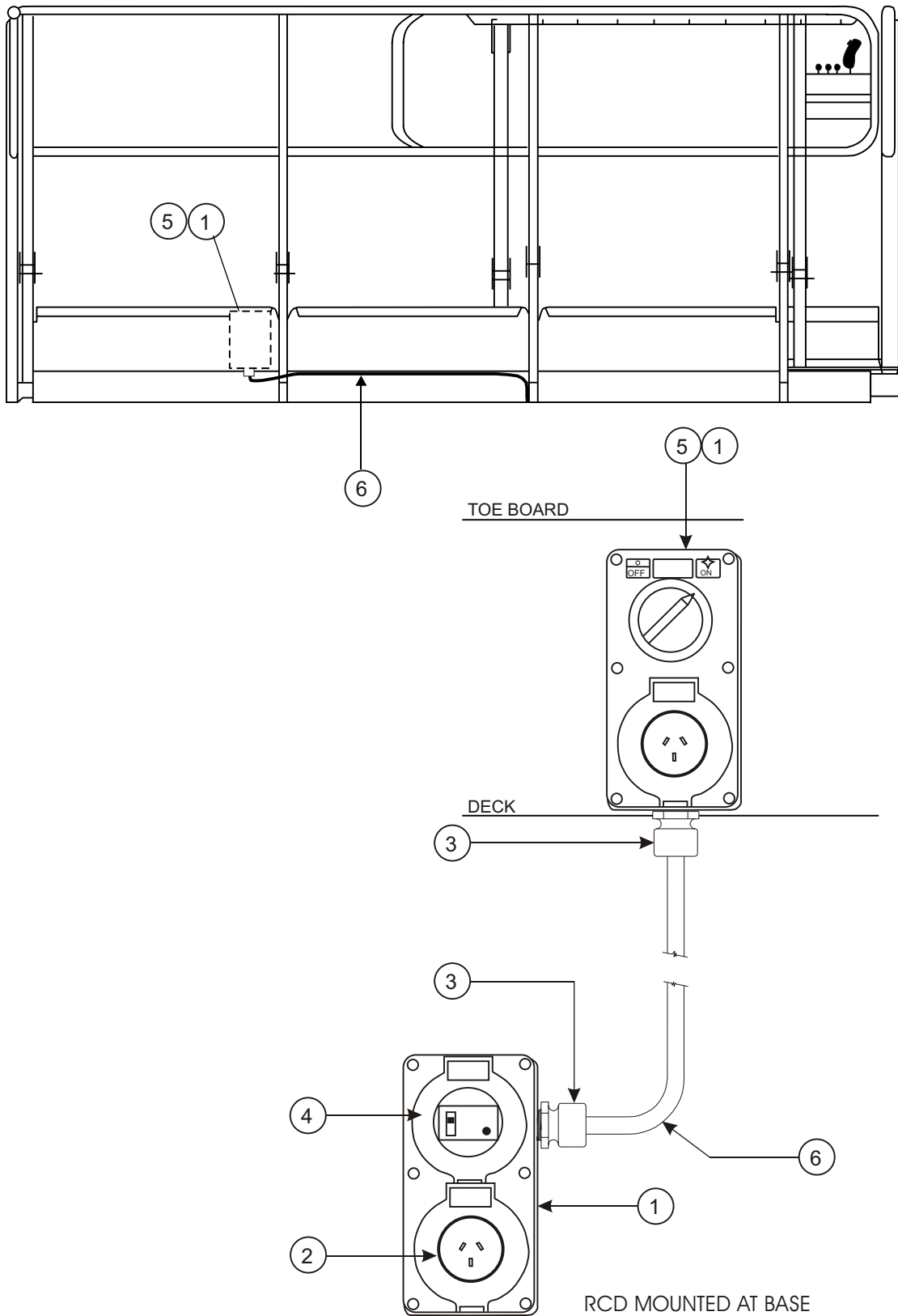
AC outlet at platform, 230 volt . . . . .	4-2
AC outlet at platform 230V drawing. . . . .	4-3
Flashing light installation . . . . .	4-4
Fuel gauge option . . . . .	4-5
. . . . .	4-6
24Volt DC Option. . . . .	4-7
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Relay box assembly, 24VDC option . . . . .	4-16
Relay box assembly drawing, 24VDC option . . . .	4-17
Unloader valve 24VDC option . . . . .	4-18

## AC outlet at platform, 230 volt

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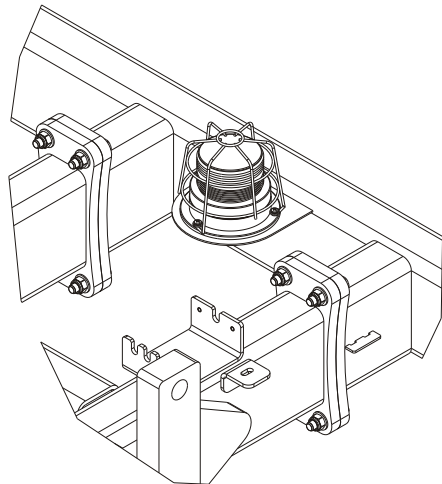
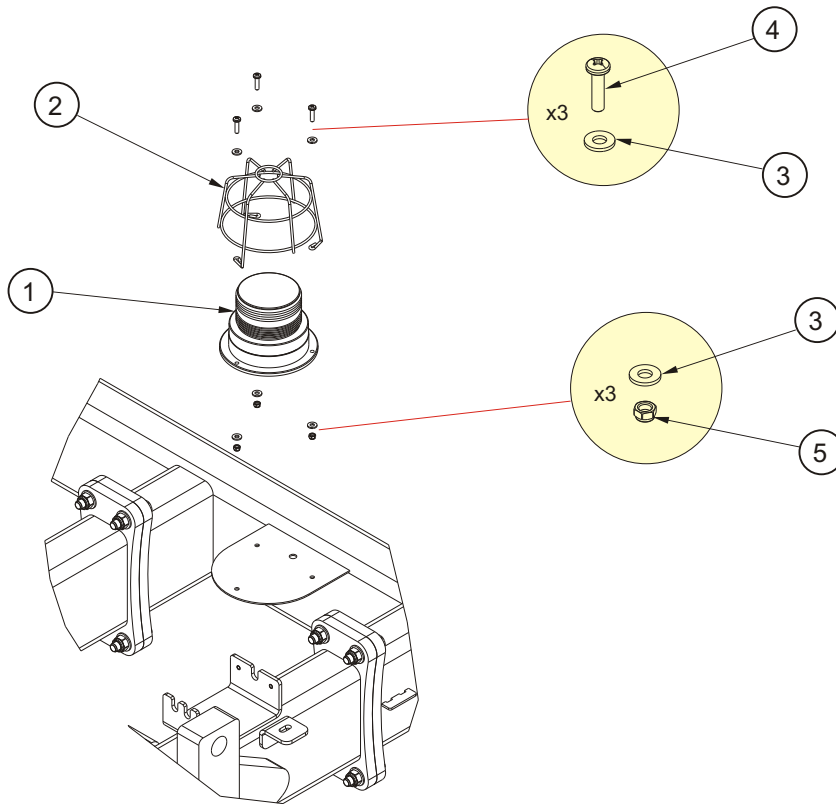
Item	Part No	Qty	Description
1.	10967-3	2	PDL enclosure
2.	10967-1	1	Residual current device (with appliance inlet pins)
3.	1814	2	M20 nylon cable gland
4.	10967-2	1	Appliance inlet
5.	2500-014	1	Switch outlet
6.	1812	1	3 core x 1.5 tpe flex cable

RIGHT-HAND SIDE



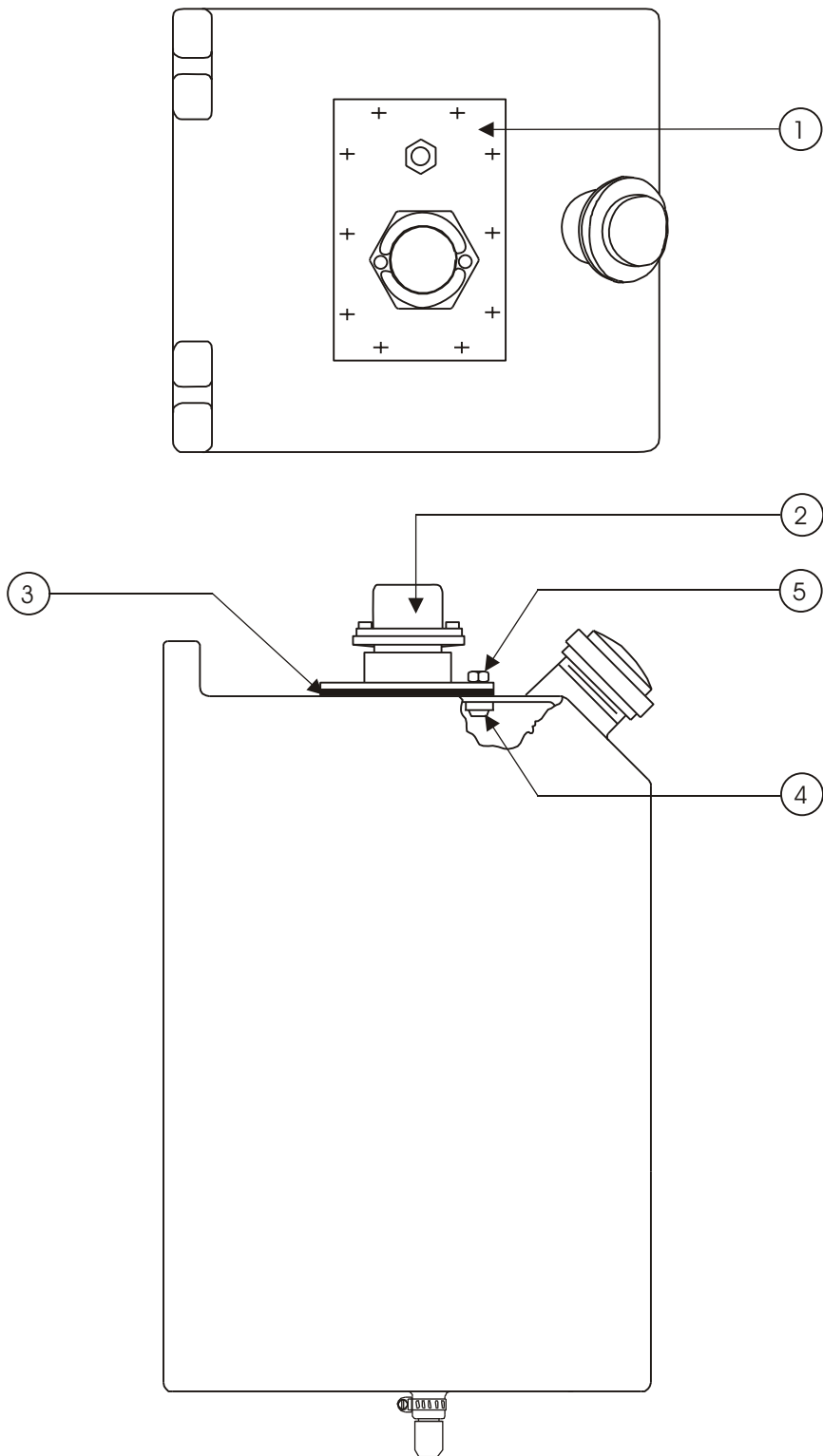
# Flashing light installation

Item	Part No	Qty	Description
1.	1866-003	1	Flashing light
2.	1866-004	1	Guard, flashing light
3.	3603-05	6	Washer, plain, M5 x 12.5, ZP
4.	3604-05020	3	Screw, pan head, M5 x 20, ZP
5.	3611-05	3	Nut, nyloc, M5
6.	304-0341	2	Terminal pin, male (not shown)





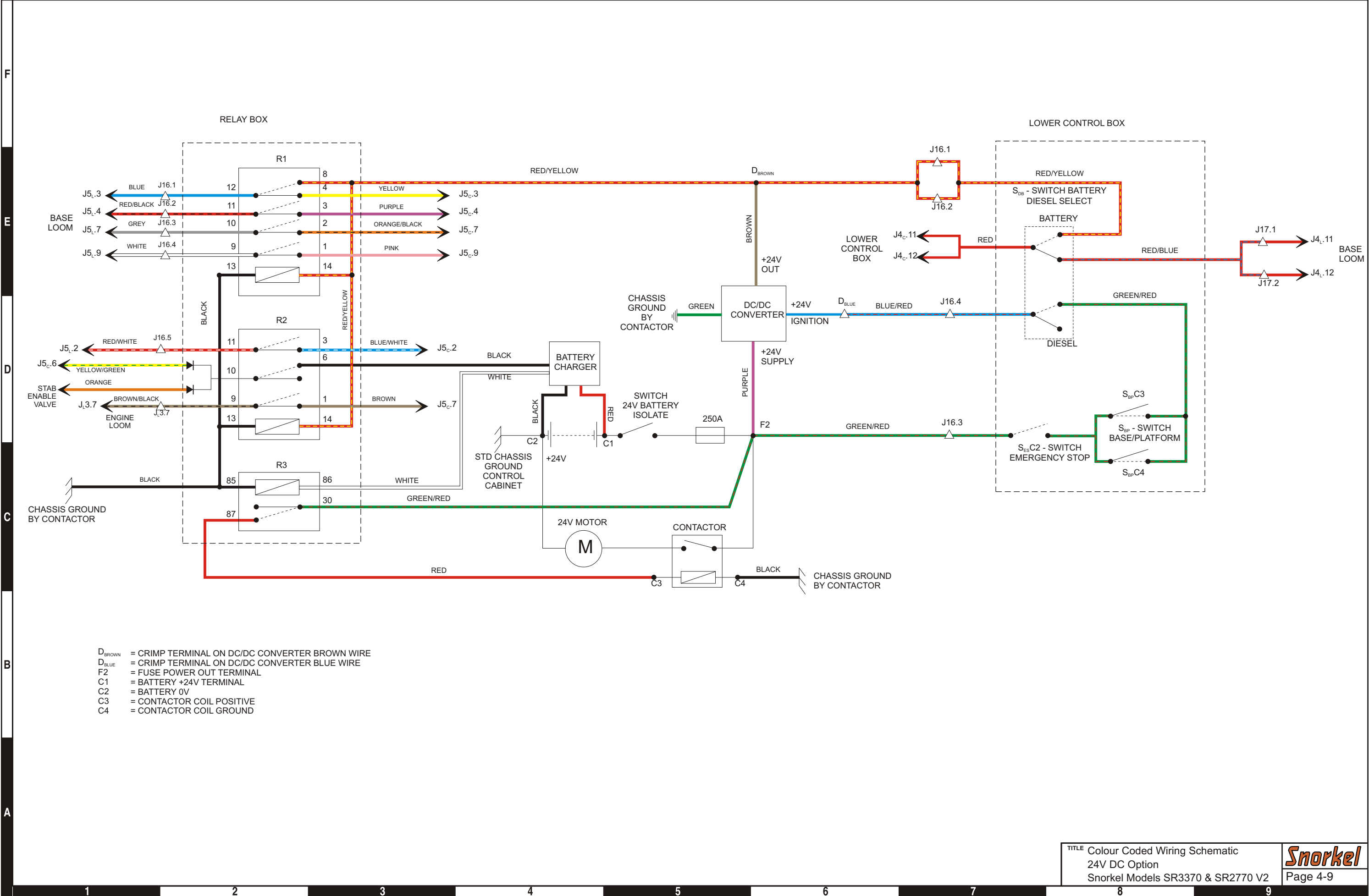
Item	Part No	Qty	Description
0.	11507	1	Fuel gauge option
1.	11430-9	1	Top plate fuel tank
2.	0070483	1	Fuel gauge
3.	11430-5	1	Gasket
4.	11430-1	1	Base plate weld
5.	3611-06	10	Nylock nut







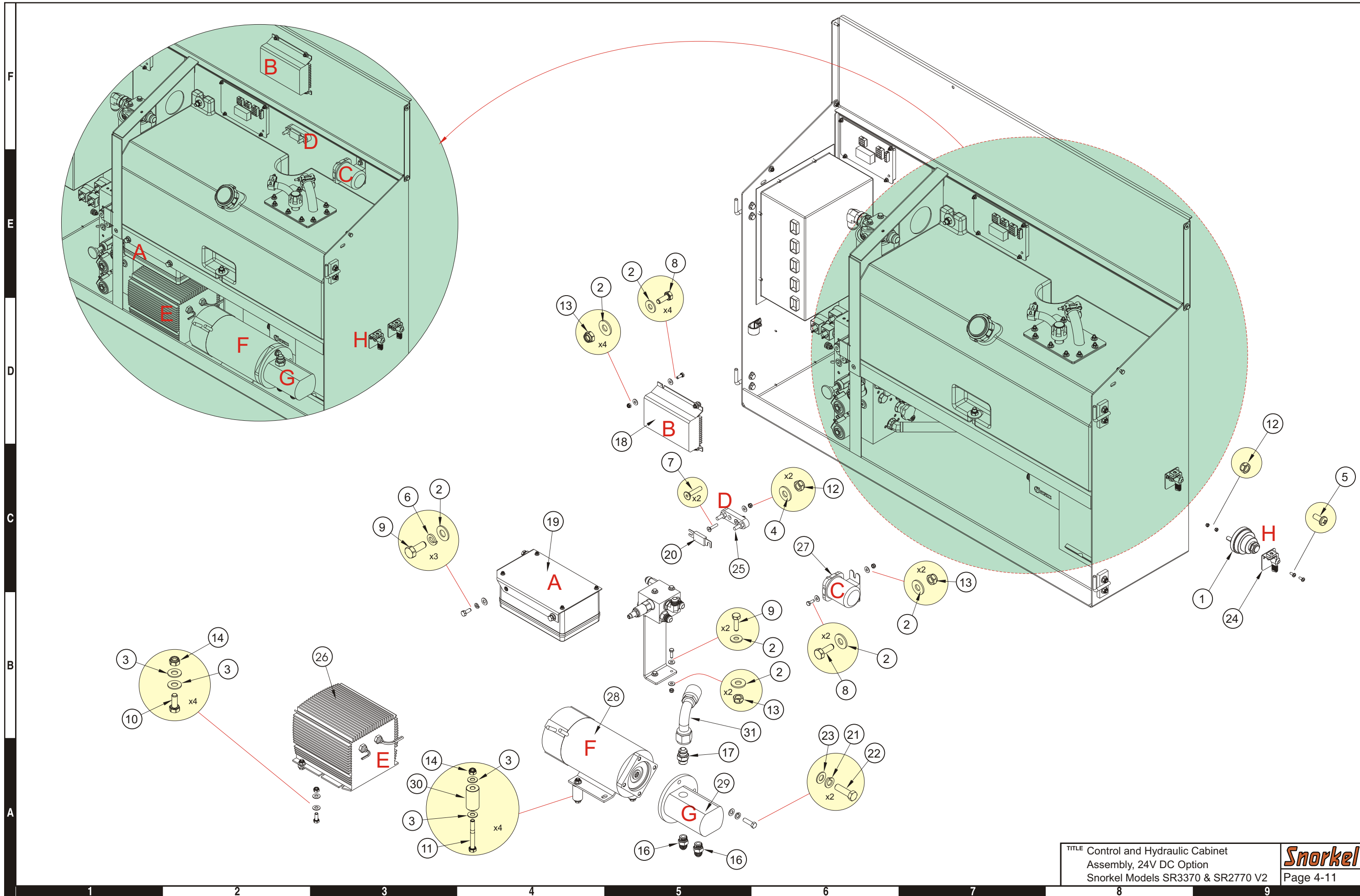


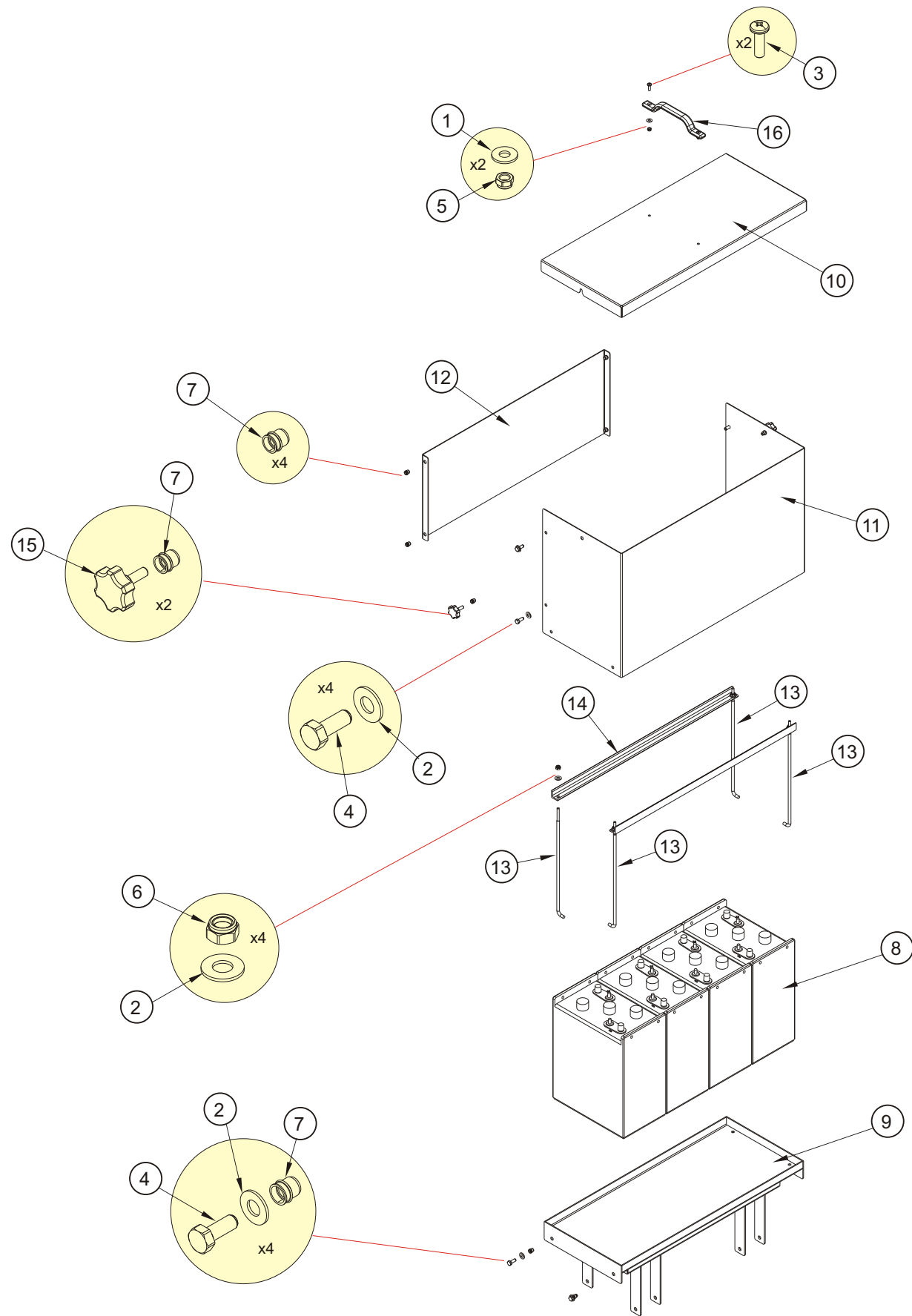
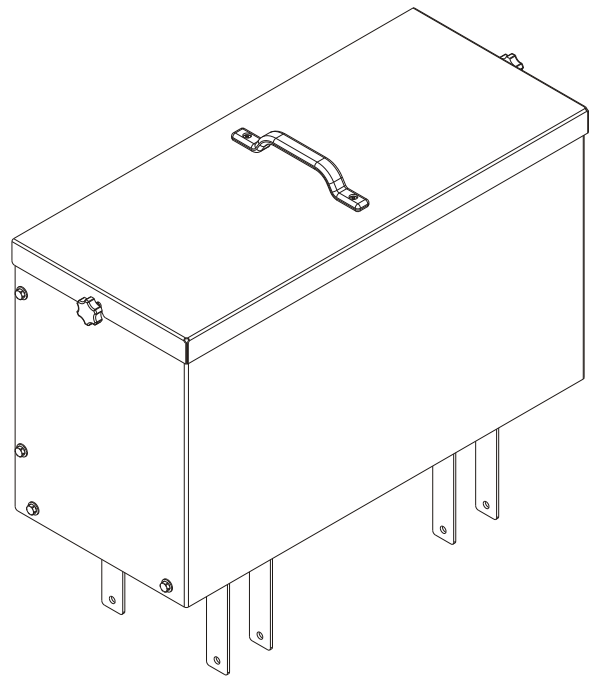


- D<sub>BROWN</sub> = CRIMP TERMINAL ON DC/DC CONVERTER BROWN WIRE
- D<sub>BLUE</sub> = CRIMP TERMINAL ON DC/DC CONVERTER BLUE WIRE
- F2 = FUSE POWER OUT TERMINAL
- C1 = BATTERY +24V TERMINAL
- C2 = BATTERY 0V
- C3 = CONTACTOR COIL POSITIVE
- C4 = CONTACTOR COIL GROUND

## Control & hydraulic cabinet assembly - 24VDC

Item	Part No	Qty	Description
1.	302-0049	1	Switch, battery disconnect
2.	3603-06	19	Washer, plain, M6 x 16
3.	3603-08	16	Washer, plain, M8 x 19
4.	3603-05	2	Washer, plain, M5
5.	3604-05012	2	Screw, panhead, M5 x 12
6.	3605-06	3	Washer, spring, M6
7.	3606-05025	2	Screw, sockethead, countersunk, M5 x 25
8.	3610-06016	6	Bolt, M6 x 16, C8.8 ZP
9.	3610-06020	5	Bolt, M6 x 20, C8.8 ZP
10.	3610-08020	4	Bolt, M8 x 20, C8.8 ZP
11.	3610-08065	4	Bolt, M8 x 65
12.	3611-05	4	Nut, nylock, M5
13.	3611-08	2	Nut, nylock, M6
14.	3611-08	8	Nut, nylock, M8
16.	7025-003	2	Adapter, straight, 3/4" JICM -> UNO, 3/4"
17.	7025-019	1	Adapter, straight, 1 and 1/16" JICM -> UNO, 7/8"
18.	12707	1	Converter, 24VDC -> 12VDC
19.	13229	1	Relay box assembly
20.	44607-6	1	Fuse, 250A
21.	60005-009	2	Washer, spring, 3/8", HD, plated
22.	60017-028	2	Bolt, UNC, 1" x 3/8"
23.	60030-049	2	Washer, plain, 3/8"
24.	300840	1	Lock out lever assembly
25.	446086	1	Fuse block
26.	305009	1	Battery charger
27.	3087787	1	Contact, 24V, sealed
28.	3087790	1	Motor, 24V, DC
29.	6029637	1	Pump
30	12932-2	4	Spacer
31	7065-011	1	Hose tail, 1 -> 1 & 1/16" JICF, 90° elbow





F  
E  
D  
C  
B  
A



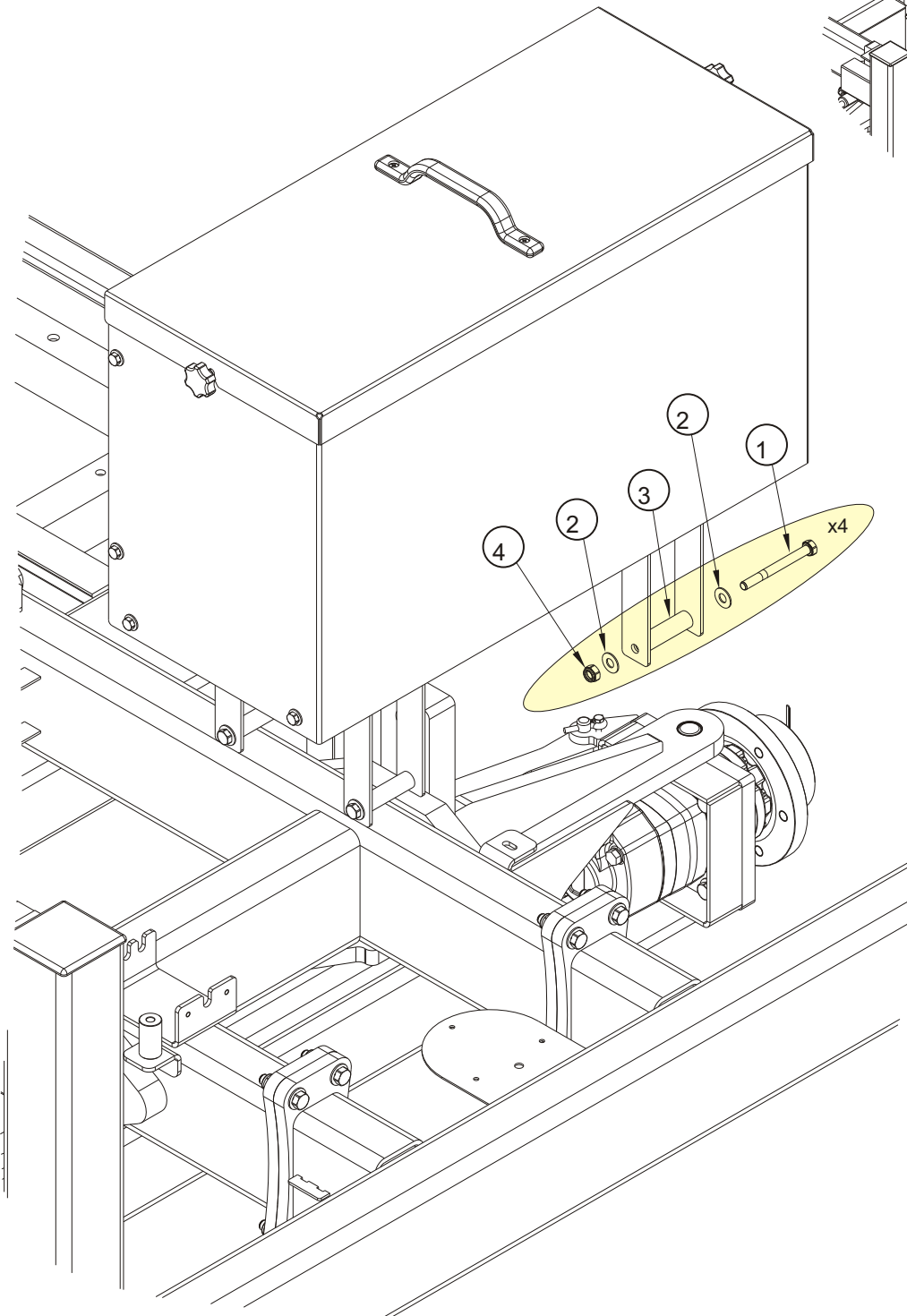
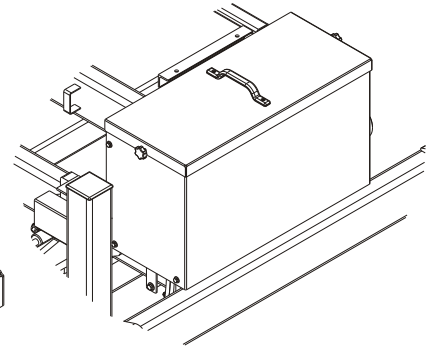
## Battery box assembly - 24VDC option

---

Item	Part No	Qty	Description
1.	3603-06	2	Washer, plain, M6 x 16
2.	3603-08	12	Washer, plain, M8 x 19
3.	3604-06020	2	Screw, M6 x 20
4.	3610-08020	8	Bolt, M8 x 20, C8.8 ZP
5.	3611-06	2	Nut, nylock, M6
6.	3611-08	4	Nut, nylock, M8
7.	3628-08	10	Nutsert, M8
8.	13100	4	Battery, Trojan J305P
9.	13230-10	1	Battery tray, SRxx70
10.	13230-20	1	Battery box lid
11.	13230-30	1	Wrap panel, battery box
12.	13230-40	1	Panel, battery box rear
13.	13230-50	4	Battery J bolt
14.	13230-51	2	Battery hold down angle
15.	057727-000	2	Knob, M8
16.	500052-000	1	Handle

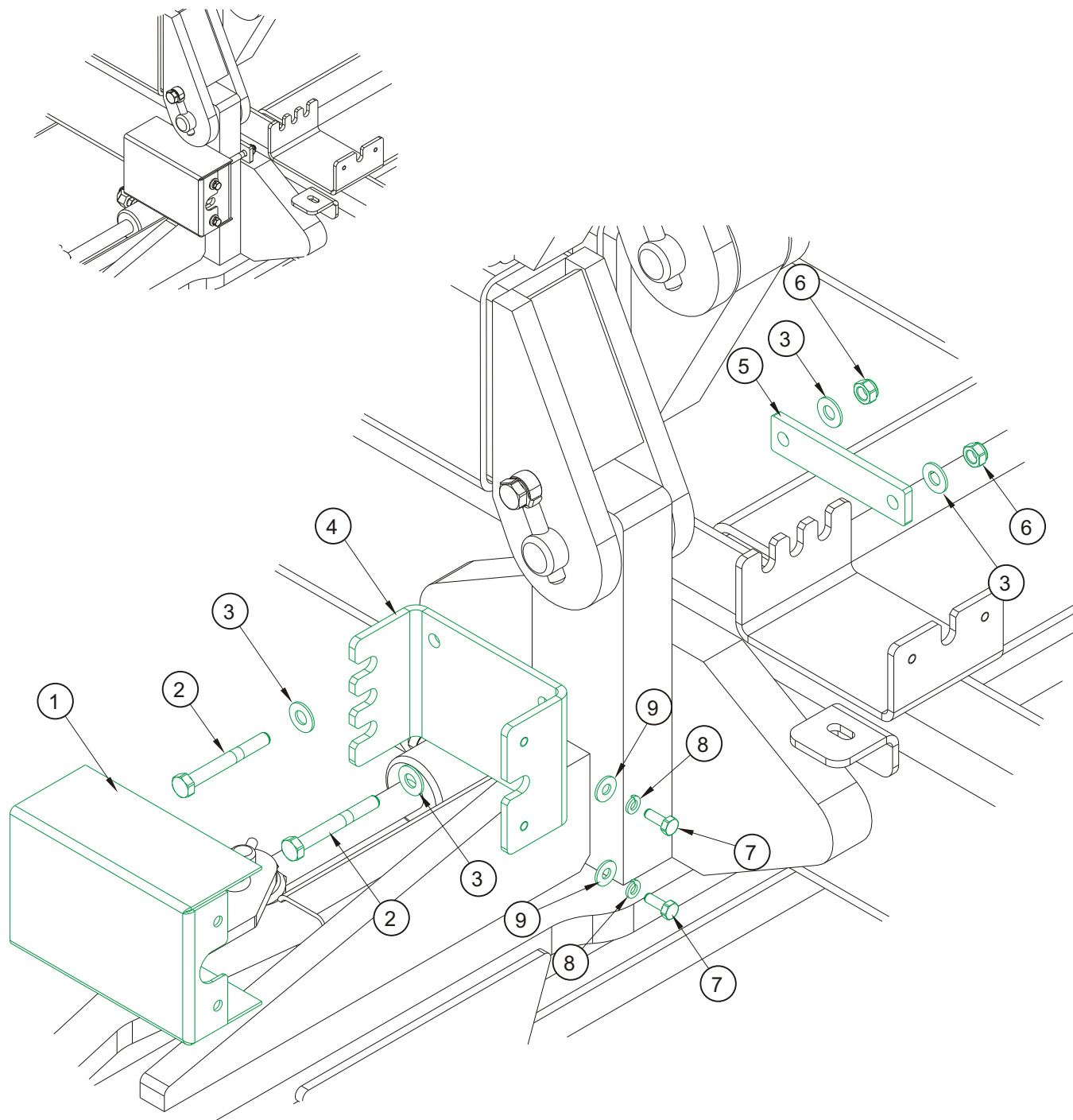
## Battery box mounting - 24VDC option

Item	Part No	Qty	Description
1.	3610-10100	4	Bolt, M10 x 100, C8.8
2.	3603-10	8	Washer, plain, M10
3.	13233-60	4	Crush spacer
4.	3611-10	4	Nut, nylock, M10



# Emergency bleed down mounting, 24VDC

Item	Part No	Qty	Description
1.	12818	1	Bleed down cover *
2.	3610-08065	2	Bolt, M16 x 65, C8.8
3.	3603-08	4	Washer, plain, M8
4.	13233	1	Bleed down bracket, bolt on
5.	13233-1	1	Bleed down bracket clamp
6.	3611-08	2	Nut, nylock, M8
7.	3610-06016	2	Bolt, M6 x 16, C8.8 *
8.	3603-06	2	Washer, plain, M6 *
9.	3605-06	2	Washer, spring, M *6
10.	12753	1	Decal, bleed down *

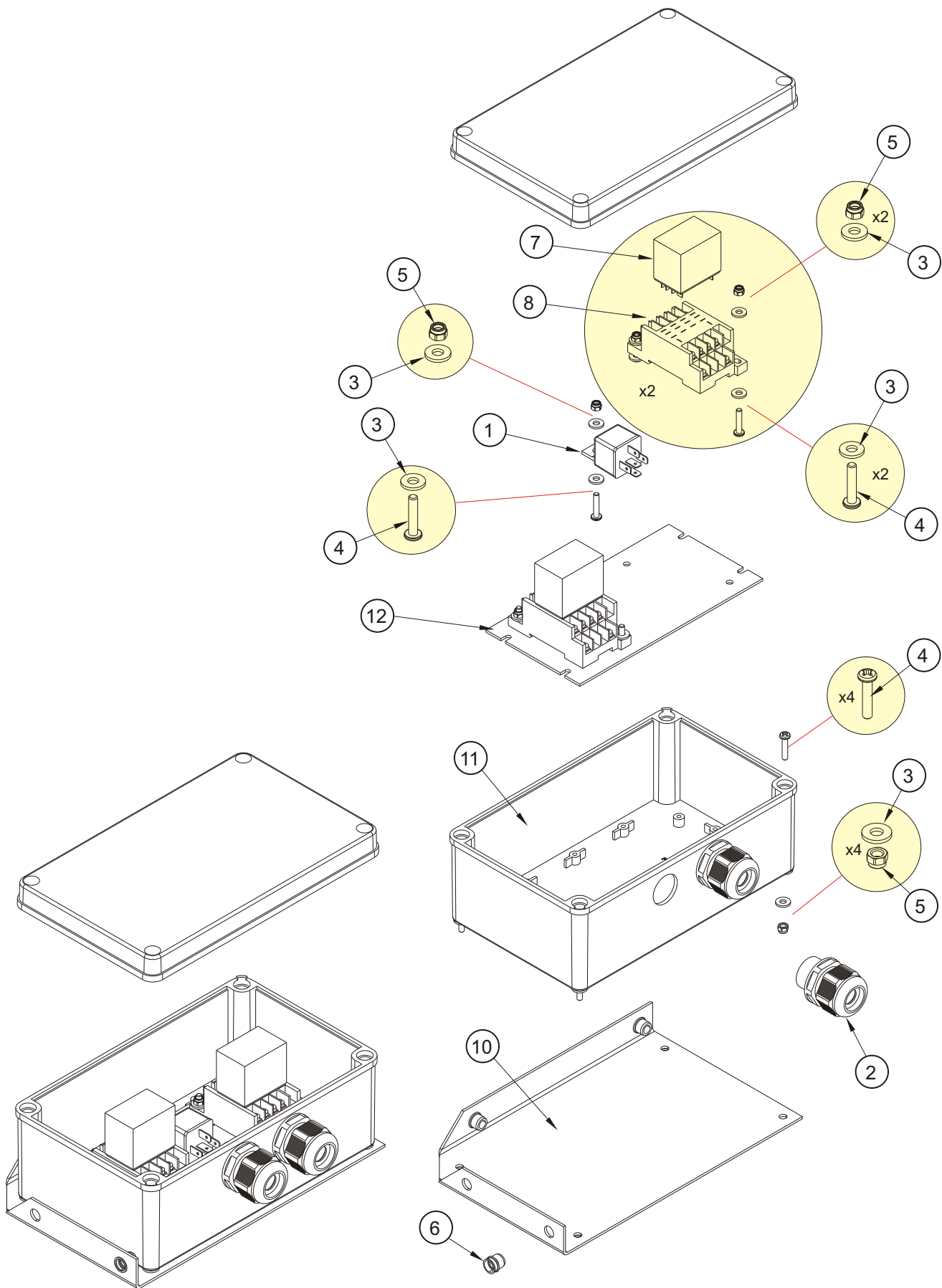


## Relay box assembly, 24VDC option

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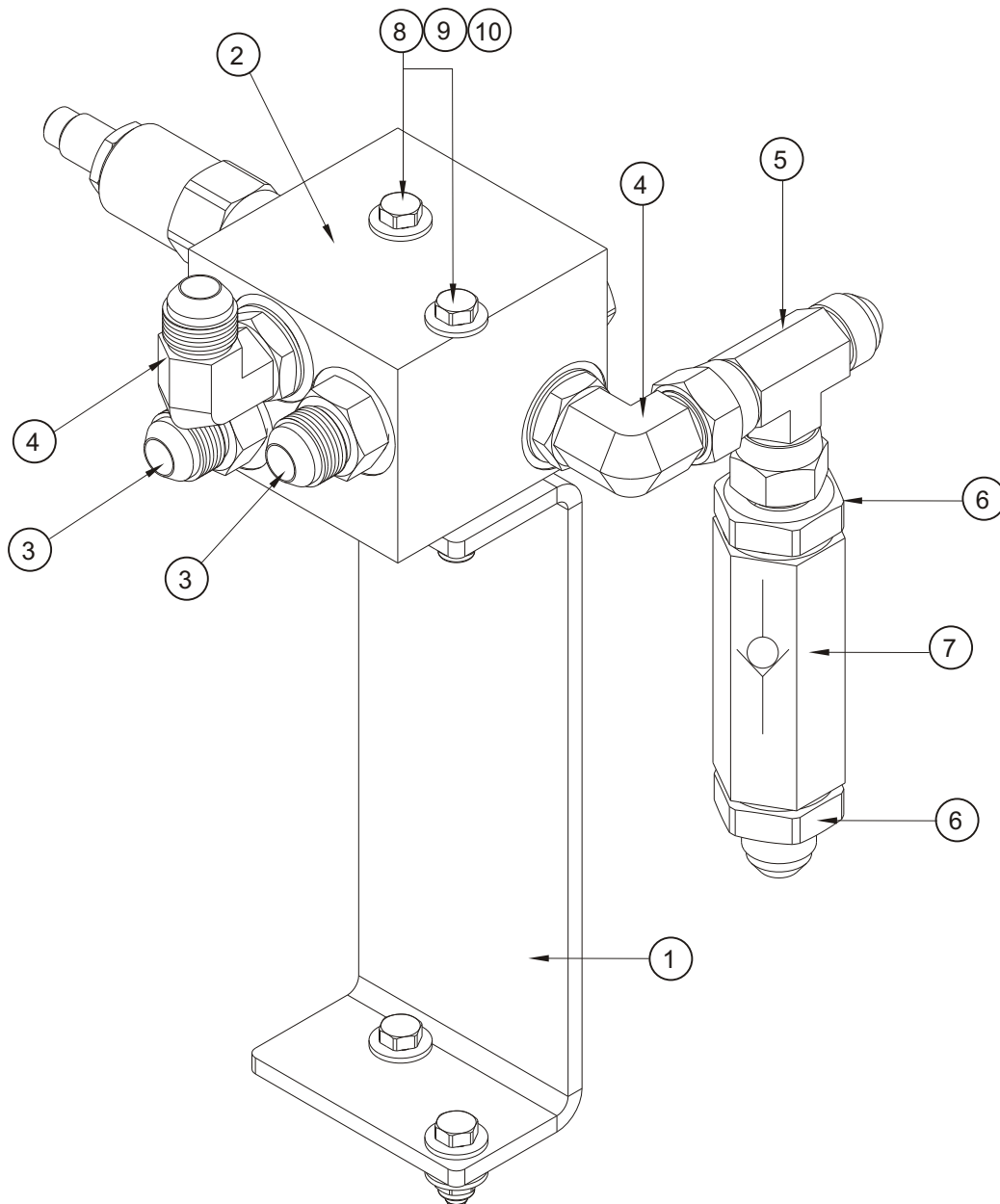
Item	Part No	Qty	Description
1.	1650-010	1	Relay, 12V
2.	1815	2	Compression gland, 25mm
3.	3603-04	14	Washer, plain, M4 x 11, ZP
4.	3604-04020	9	Screw, panhead, M4 x 20, ZP
5.	3611-04	9	Nut, nylock, M4
6.	3628-06	3	Nutsert, M6
7.	11054	2	Relay
8.	11055	2	Relay base
10.	12031-4	1	Mounting bracket
11.	13229-1	1	Enclosure, drilled for 13229
12.	13229-2	1	Gear plate, drilled for 13229

# Relay box assembly drawing, 24VDC option



# Unloader valve 24VDC option

Item	Part No	Qty	Description
1.	13231	1	Unloader valve bracket
2.	12910	1	Unloader valve
3.	7025-003	2	Adapter, 3/4" UNO -> 3/4" JICM
4.	7031-005	2	Adapter, 90° 3/4" UNO -> 3/4" JICM
5.	9501-1	1	Tee, 2 x 3/4" JICF, 1x 3/4" JICM run
6.	7013-002	2	Adapter, 1/2" BSPPM -> 3/4" JICM
7.	3028	1	Check valve, 1/2" BSPPF
8.	3610-06075	2	Bolt, M6 x 75, C8.8
9.	3603-06	4	Washer, plain, M6
10.	3611-06	2	Nut, nylock, M6



**I**

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Manual organisation

See Maintenance information - page 3

Manual Organization, 0-7

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Turning radius (outer), 2-3, 2-4

**W**

Warranty - Limited

See inside front cover

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# UpRight

POWERED ACCESS



# X27-33BE

ASSEMBLY ADDENDUM  
DIESEL / 24V DC OPTION

## WORK PLATFORM

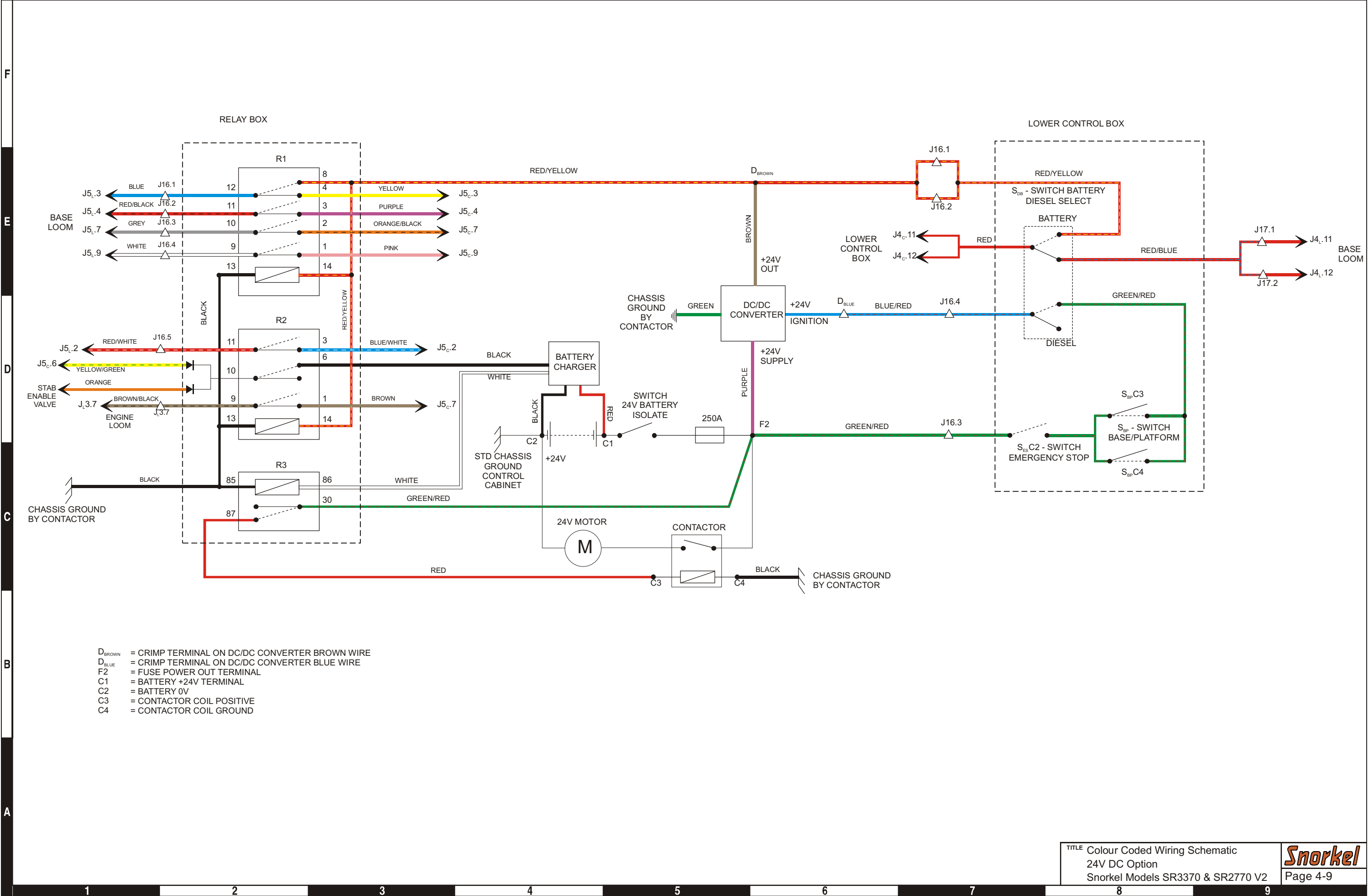
29-01-09

SERVICE & PARTS MANUAL

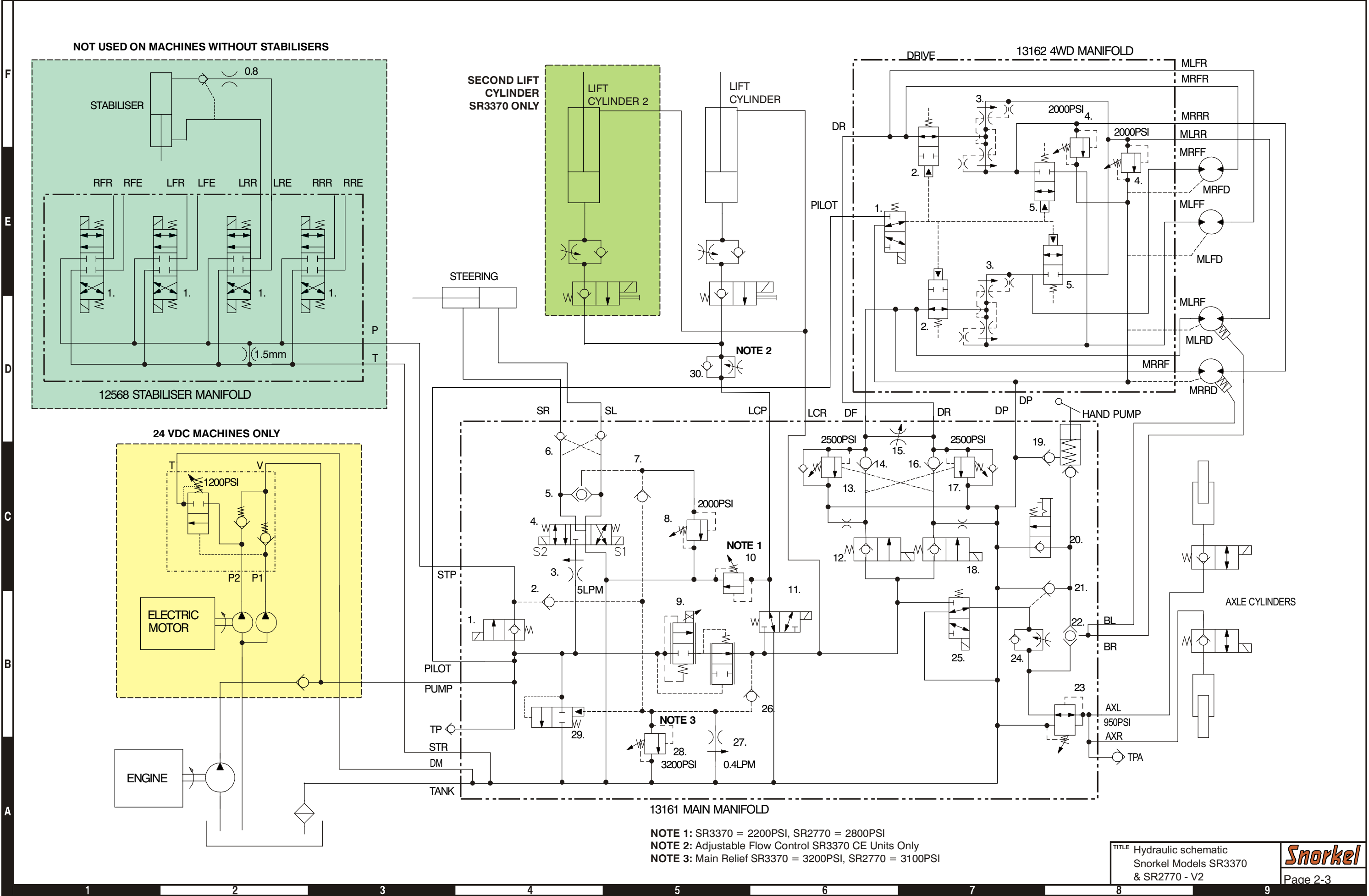


## **Table of Contents**

- Wiring diagram
- Hydraulic circuit
- Hosing additions
- Hydraulic cabinet modifications
- Lower control box modification
- DC to DC converter terminals
- Main manifold modification
- Unloader valve assembly
- Relay box assembly
- Hydraulic cabinet assembly
- Bleed down mounting
- Battery box assembly
- Battery box mounting

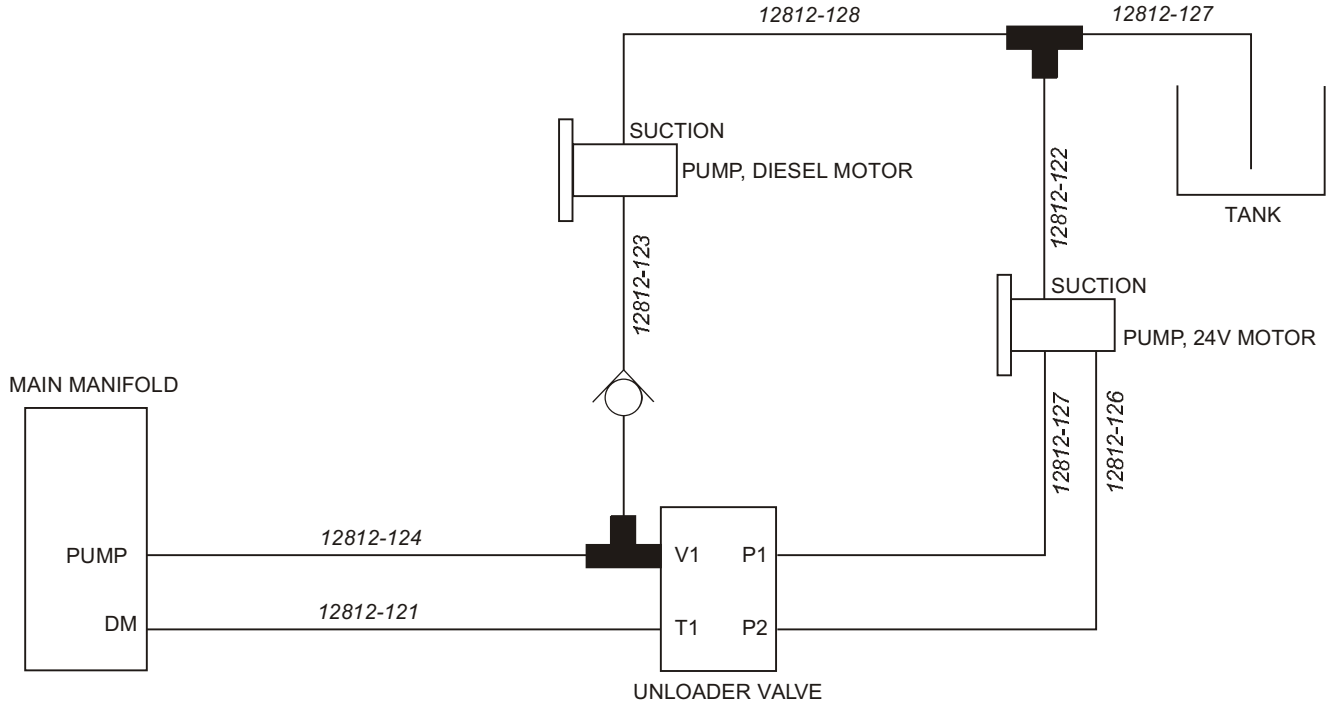


- D<sub>BROWN</sub> = CRIMP TERMINAL ON DC/DC CONVERTER BROWN WIRE
- D<sub>BLUE</sub> = CRIMP TERMINAL ON DC/DC CONVERTER BLUE WIRE
- F2 = FUSE POWER OUT TERMINAL
- C1 = BATTERY +24V TERMINAL
- C2 = BATTERY 0V
- C3 = CONTACTOR COIL POSITIVE
- C4 = CONTACTOR COIL GROUND



TITLE Hydraulic schematic  
 Snorkel Models SR3370  
 & SR2770 - V2

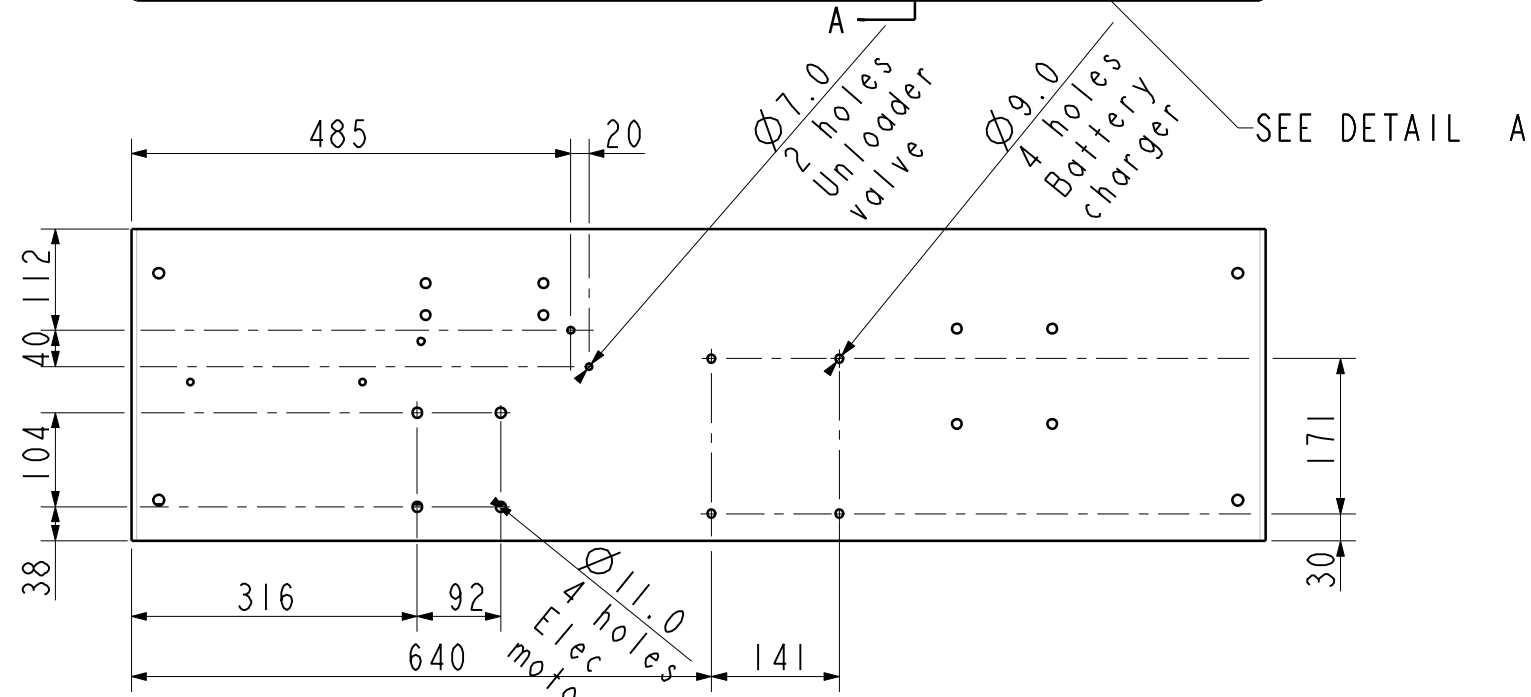
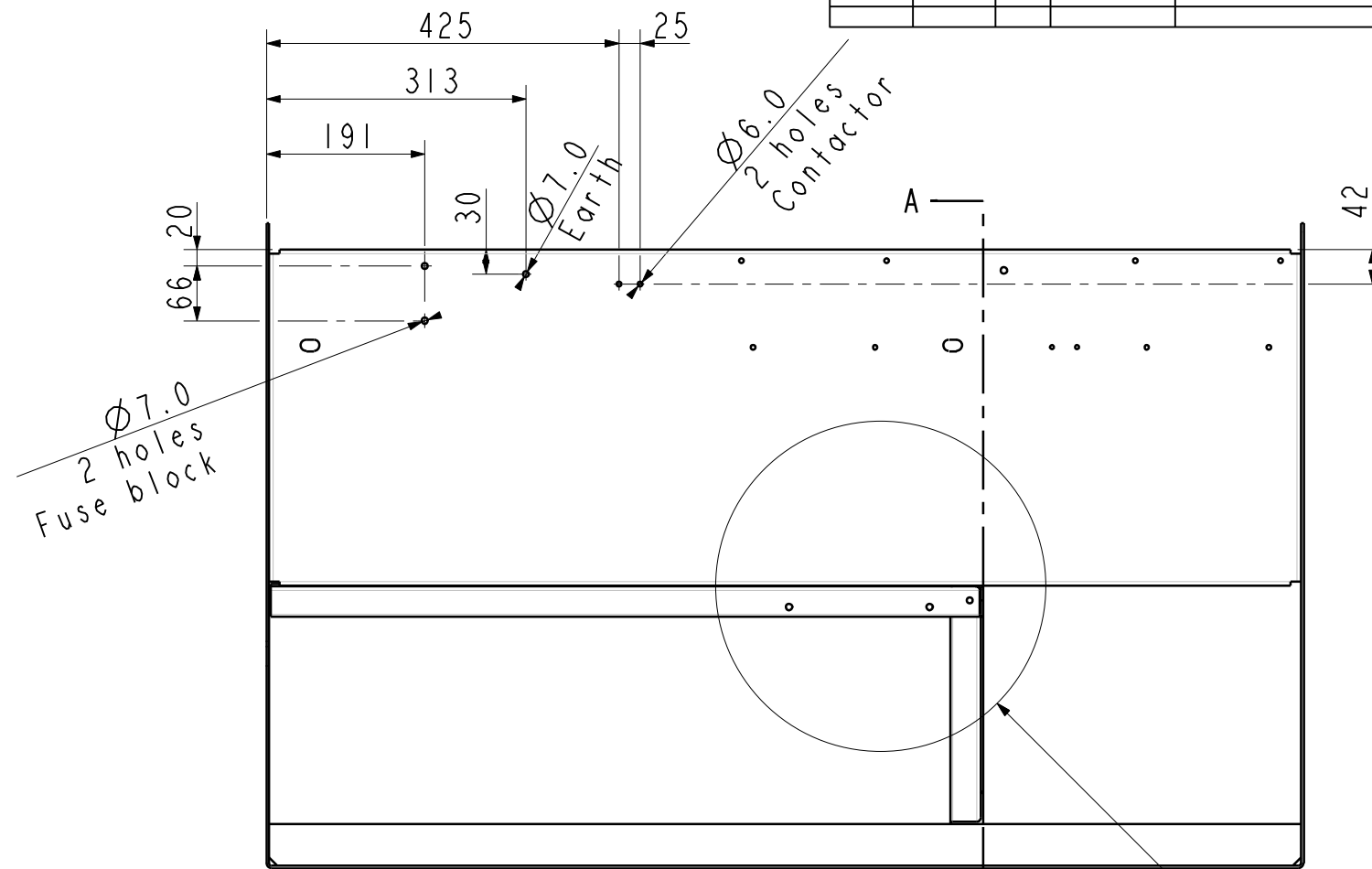
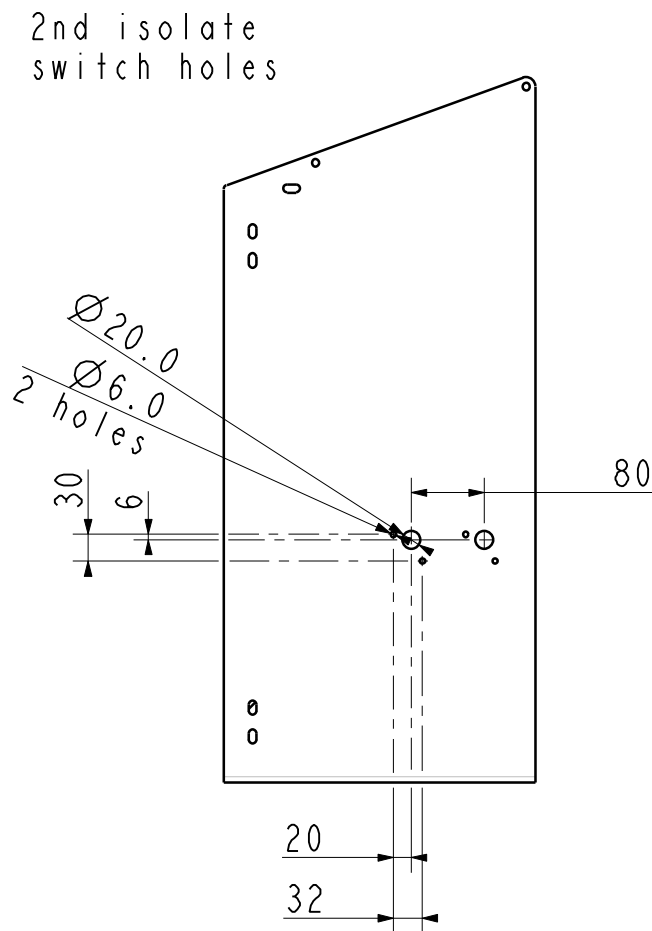
# BI-ENERGY - ADDITIONAL HOISING



**NOTE:** All numbers in italics represent hose part numbers

Person	CH No	Rev	Date	Change
CvS	08-59	A	22-01-08	New release

Drawing showing additional holes required on 12716 to suit mounting the 24V DC option

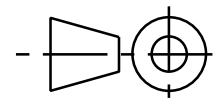


Drilling option.  
 If drilling holes then can use 1:1 print outs of these dxf templates to locate holes:  
 12716\_24v\_opt\_holes\_lid  
 12716\_24v\_opt\_holes\_rear  
 12716\_24v\_opt\_holes\_base

CONTROLLED DRAWING	PROJECT SR 24V	QUANTITY	MASS (kg)	MATERIAL SPECIFICATION - SECTION			
LOCATION				FINISH Paint/Powder coat			
DATE				DRAWN BY CvS	DATE 22-Jan-09	RELEASE LEVEL	REVISION A
PART NAME 12716 Mod - SRxx70 V2 24V opt				DRAWING NO. 12716	SHEET 1 of 6		

Unless Otherwise indicated:  
 Dimension Units: millimeters  
 Angular Units: Degrees  
 Surface Finish: um Ra

Std Tolerances :  
 Whole No. ± 1.0mm  
 One Decimal ± 0.2mm  
 Two Decimals ± 0.05mm

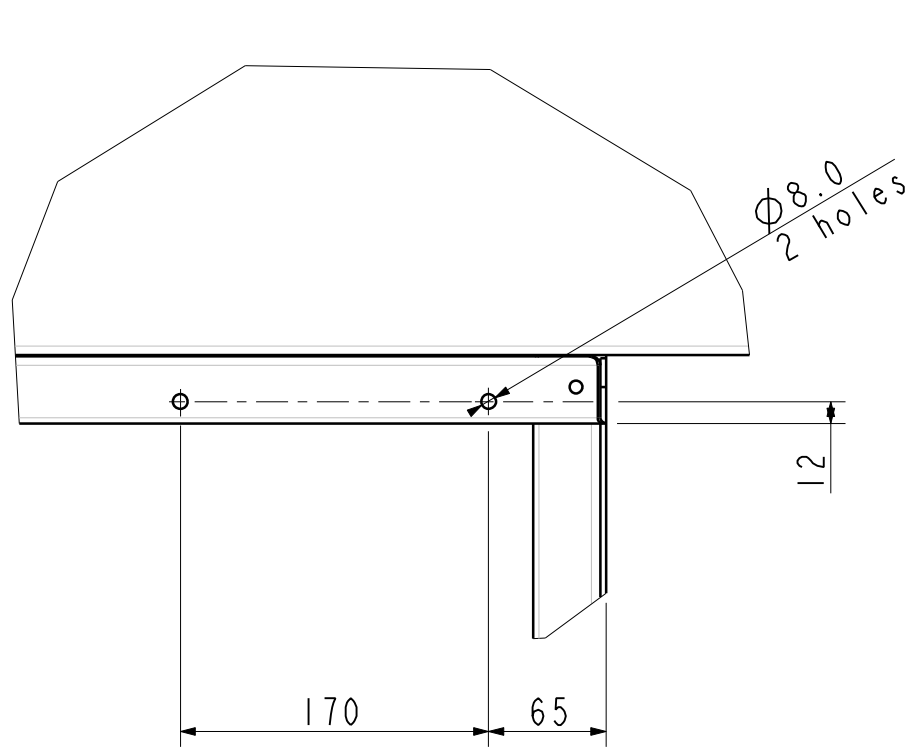


A Pro/Engineer Wildfire CAD Drawing (Proportional Accuracy may be altered by reproduction / transmission processes) REPORT apparent OMMISIONS, ERRORS or READABILITY problems to SNORKEL EWP LTD Drafting Practice & Symbolism will generally accord with AS 1100/101/201 and ISO equiv. standards.

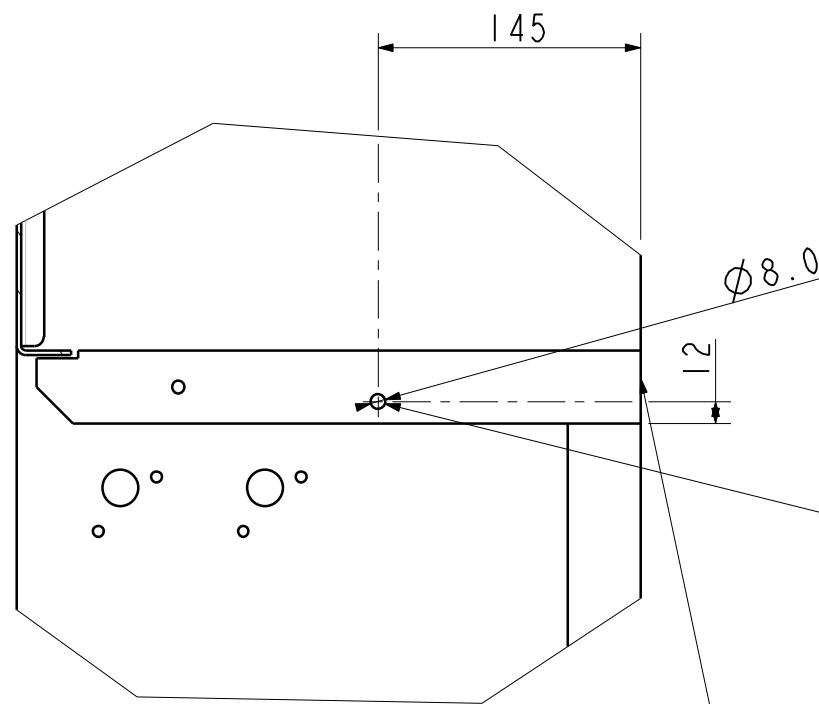
Person	CH No	Rev	Date	Change
				See sheet 1

Relay Box Mounting  
 These holes line up with I2031-4 bracket.  
 Recommend that if drilling holes in assembly  
 12716, 12716-14 and I2031-4 are matched drilled

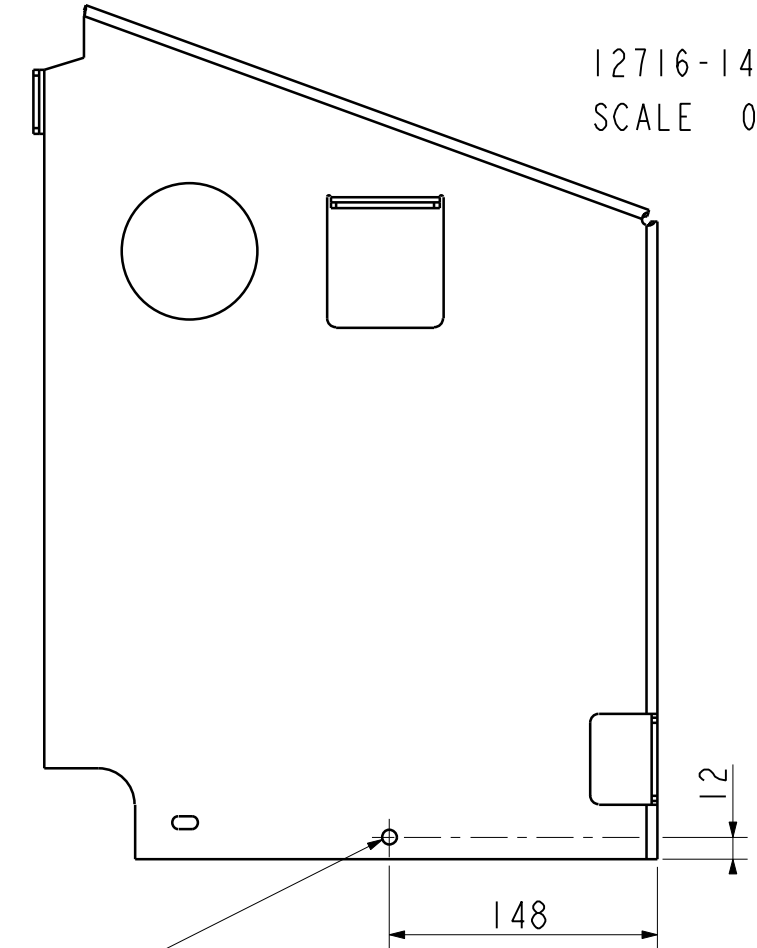
12716-14  
 SCALE 0.240



DETAIL A  
 SCALE 0.240



SECTION A-A



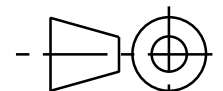
These holes need to align

45° cutout on I2031-4 locates in this corner, folds down.

CONTROLLED DRAWING		PROJECT SR 24V	QUANTITY	MASS (kg)	MATERIAL SPECIFICATION - SECTION				
LOCATION					FINISH Paint/Powder coat				
DATE					DRAWN BY CvS	DATE 22-Jan-09	RELEASE LEVEL	REVISION A	SCALE 0.120 at A3 size
PART NAME <b>12716 Mod - SRxx70 V2 24V opt</b>					DRAWING NO. 12716	SHEET 2 of 6			

Unless Otherwise indicated:  
 Dimension Units: millimeters  
 Angular Units: Degrees  
 Surface Finish: um Ra

Std Tolerances :  
 Whole No. ± 1.0mm  
 One Decimal ± 0.2mm  
 Two Decimals ± 0.05mm



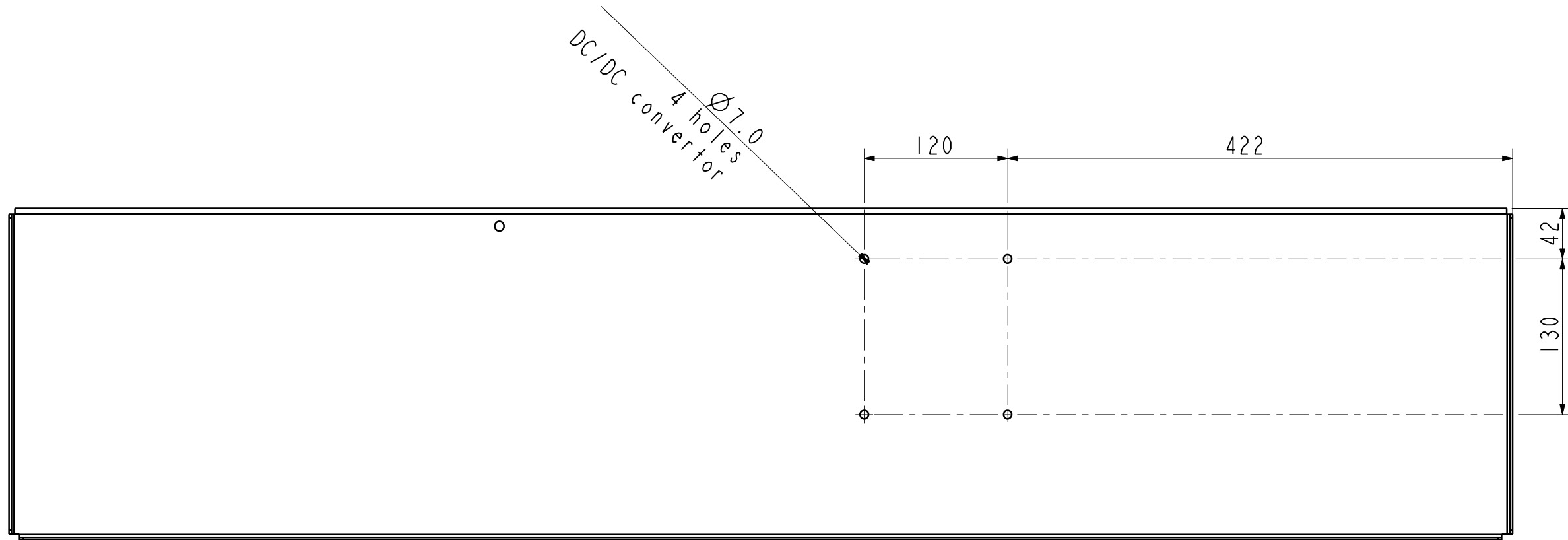
A Pro/Engineer Wildfire CAD Drawing (Proportional Accuracy may be altered by reproduction / transmission processes) REPORT apparent OMMISSIONS, ERRORS or READABILITY problems to SNORKEL EWP LTD Drafting Practice & Symbolism will generally accord with AS 1100/101/201 and ISO equiv. standards.

12716-14 REV C

Cabinet Support

Person	CH No	Rev	Date	Change
				See sheet 1

Cabinet lid, 12716-13

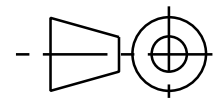


SCALE 0.240

CONTROLLED DRAWING		PROJECT SR 24V	QUANTITY	MASS (kg)	MATERIAL SPECIFICATION - SECTION						
LOCATION				FINISH Paint/Powder coat		DRAWN BY CvS		DATE 22-Jan-09	RELEASE LEVEL	REVISION A	SCALE 0.143 at A3 size
DATE				PART NAME <b>Cabinet Support</b>			DRAWING NO. 12716-14	SHEET 3 of 6			

Unless Otherwise indicated:  
 Dimension Units: millimeters  
 Angular Units: Degrees  
 Surface Finish: um Ra

Std Tolerances :  
 Whole No. ± 1.0mm  
 One Decimal ± 0.2mm  
 Two Decimals ± 0.05mm

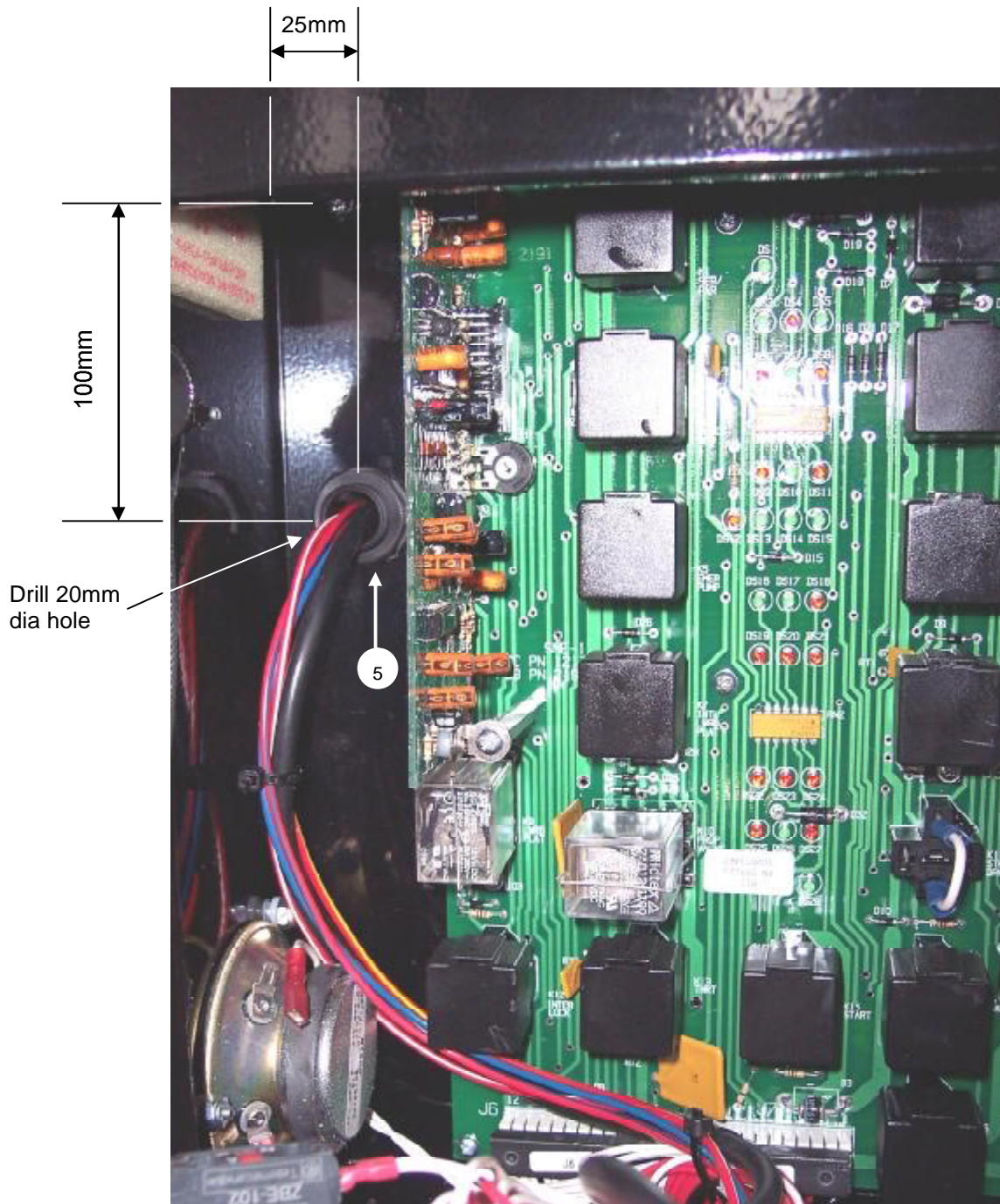


A Pro/Engineer Wildfire CAD Drawing (Proportional Accuracy may be altered by reproduction / transmission processes) REPORT apparent OMMISSIONS, ERRORS or READABILITY problems to SNORKEL EWP LTD Drafting Practice & Symbolism will generally accord with AS 1100/101/201 and ISO equiv. standards.

## Lower Control Box Mod- SRxx70 V2 CE with 24VDC option

Item	Snorkel Part	Description	Vendor #	Qty
1	13240-03	Loom- Inner Control Box Mod 24V		1
2	13240-04	Loom- Link Wire		4
3	10114	Contact - NO	Telemecanique ZBE-101	2
4	10118	Contact - NC	Telemecanique ZBE-102	1
5	1814	Cable Gland – M20 Nylon		1
6	61003-005N	Cable Tie – 3.2 X 200, Black		6
7	12515	Washer – M12 Rubber		1
8	302-0097	Switch – Toggle, DPDT On-On	Honeywell 2NT1-3	1
9	13110	Decal – Battery/Diesel Select		1

1. Drill and fit the cable gland to the lower control box as below.



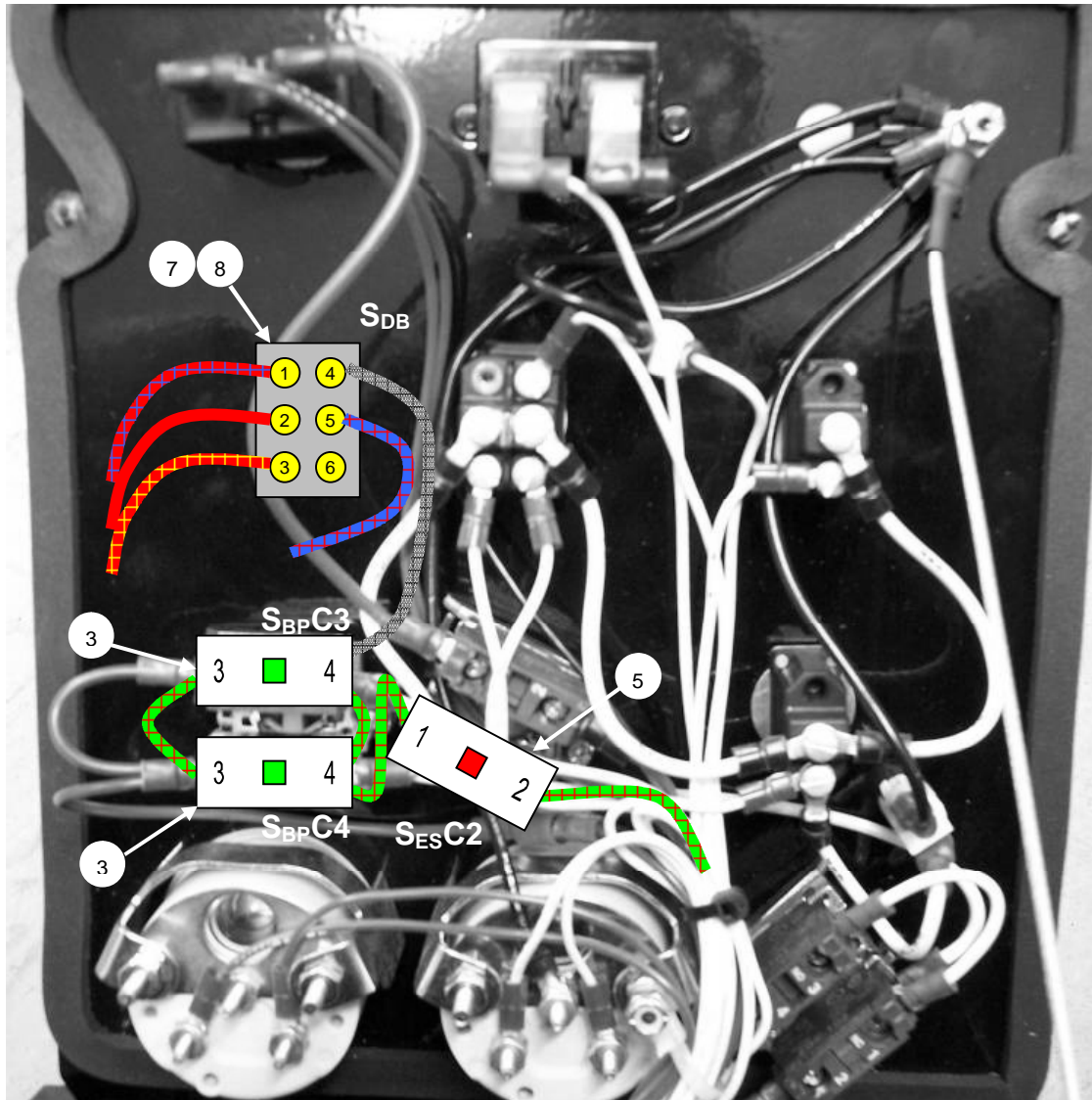


2. Feed 13240-03 through the cable gland and wire up the box as below.

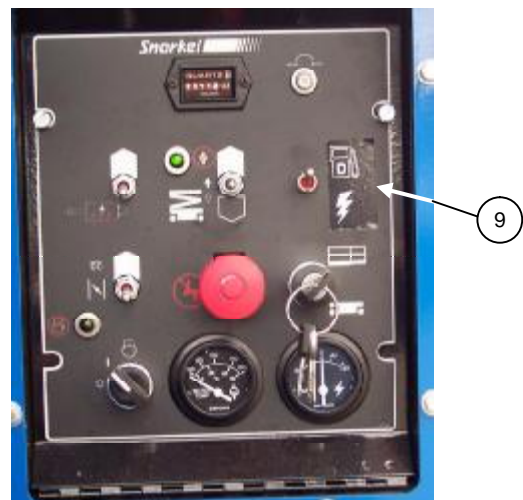
Loom 13240-03 connects to  $S_{DB1}$ ,  $S_{DB2}$ ,  $S_{DB3}$ ,  $S_{DB5}$  and  $S_{ES}C2-2$

Link wires 13240-04 connects:  $S_{ES}C2-1$  to  $S_{BP}C4-4$   
 $S_{BP}C3-4$  to  $S_{BP}C4-4$   
 $S_{BP}C3-3$  to  $S_{BP}C4-3$   
 $S_{BP}C3-4$  to  $S_{DB4}$

3. Route the looms up to the gland following the existing wiring and cable tie to suit.

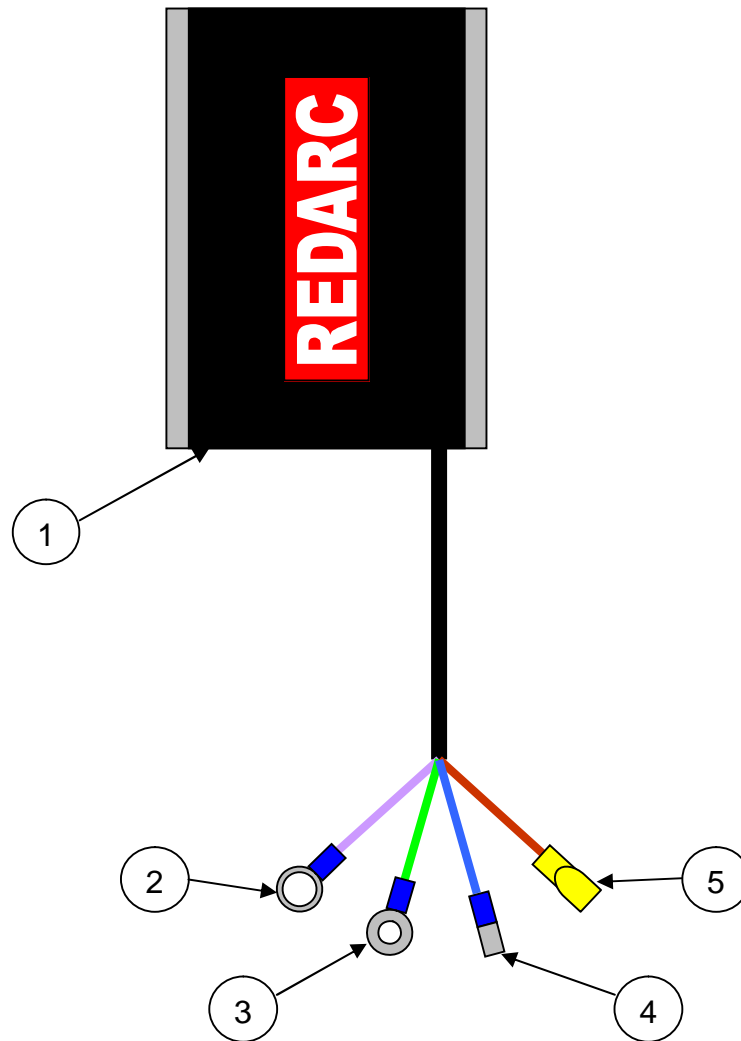


4. Fit the battery/diesel select decal to the control box.



## DC->DC converter terminations

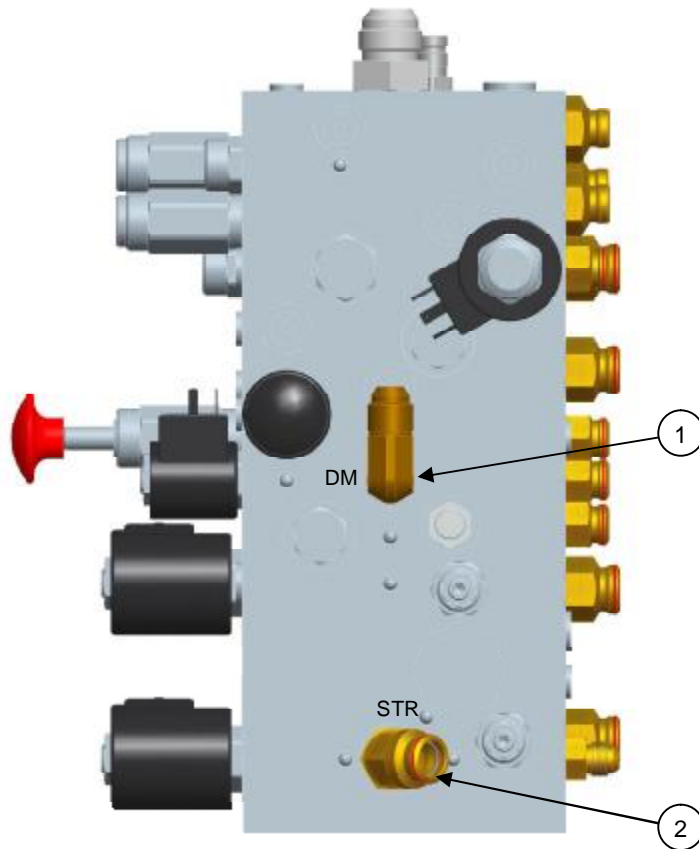
Item	Snorkel #	Description	Vendor #	Qty
1	12707	24Vdc to 12Vdc Converter	Redarc SMF-20	1
2	1853-011	Ring Terminal, M8	Utilux H4128	1
3	1853-010	Ring Terminal, M6	Utilux H4127	1
4	1853-005	QC tab, 6.3mm	Utilux H2845	1
5	1853-111	Bullet Terminal, Female 5mm dia	Narva 56048	1



## 13161A Main Manifold Modifications – SRxx70 V2 24V Option

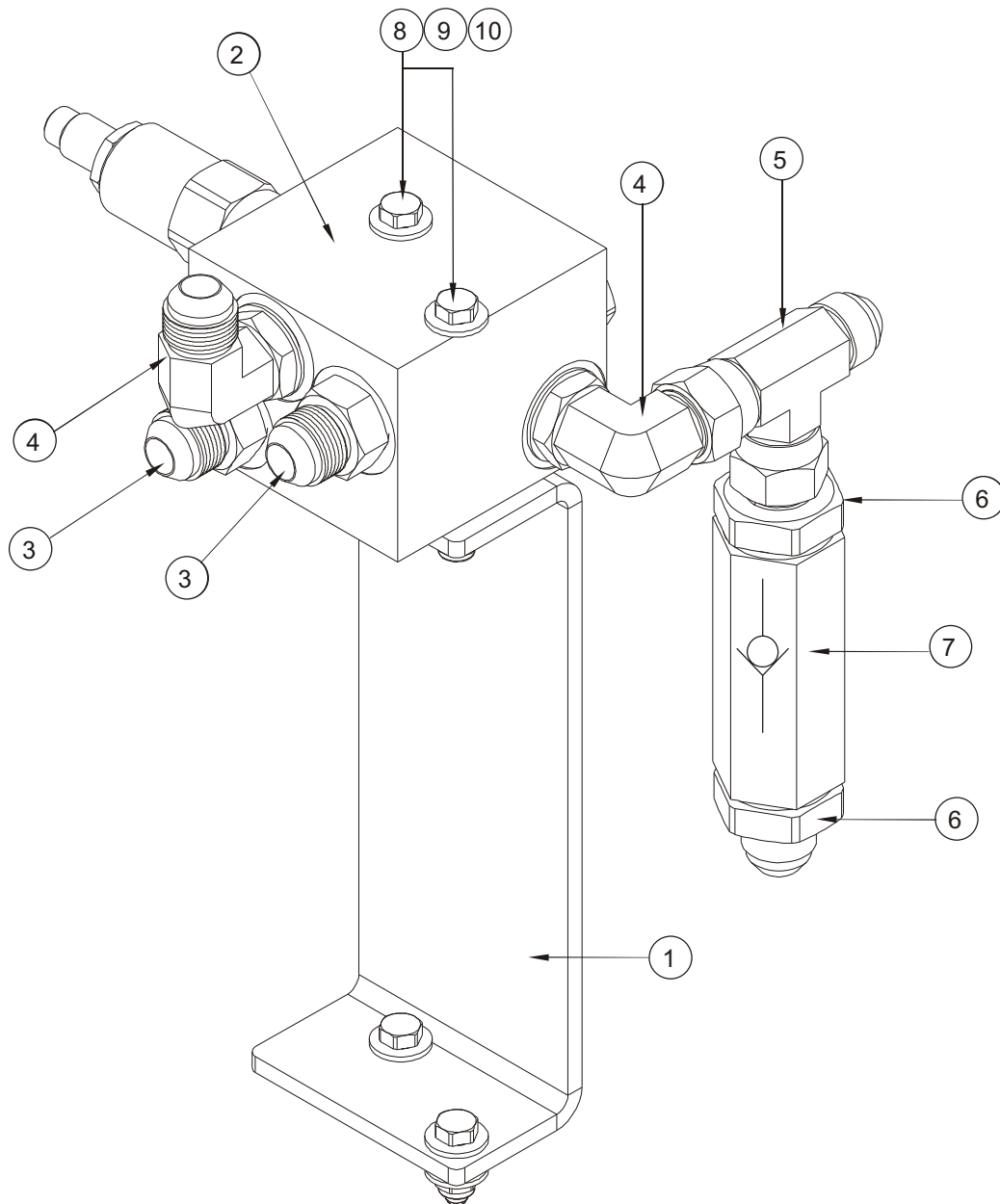
Item	Snorkel Part #	Description	Vendor Id	Qty
1	12770-340808	Adapter, 45 deg, ¼ UNO to ½"STC	Eaton FF3038-0808S	1
2	7031-007	Adapter, 90 deg, 9/16 UNO to ¼ JICM		1

1. Replace the existing fitting with the ones shown below.



# Unloader valve 24VDC option

Item	Part No	Qty	Description
1.	13231	1	Unloader valve bracket
2.	12910	1	Unloader valve
3.	7025-003	2	Adapter, 3/4" UNO -> 3/4" JICM
4.	7031-005	2	Adapter, 90° 3/4" UNO -> 3/4" JICM
5.	9501-1	1	Tee, 2 x 3/4" JICF, 1x 3/4" JICM run
6.	7013-002	2	Adapter, 1/2" BSPPM -> 3/4" JICM
7.	3028	1	Check valve, 1/2" BSPPF
8.	3610-06075	2	Bolt, M6 x 75, C8.8
9.	3603-06	4	Washer, plain, M6
10.	3611-06	2	Nut, nylock, M6

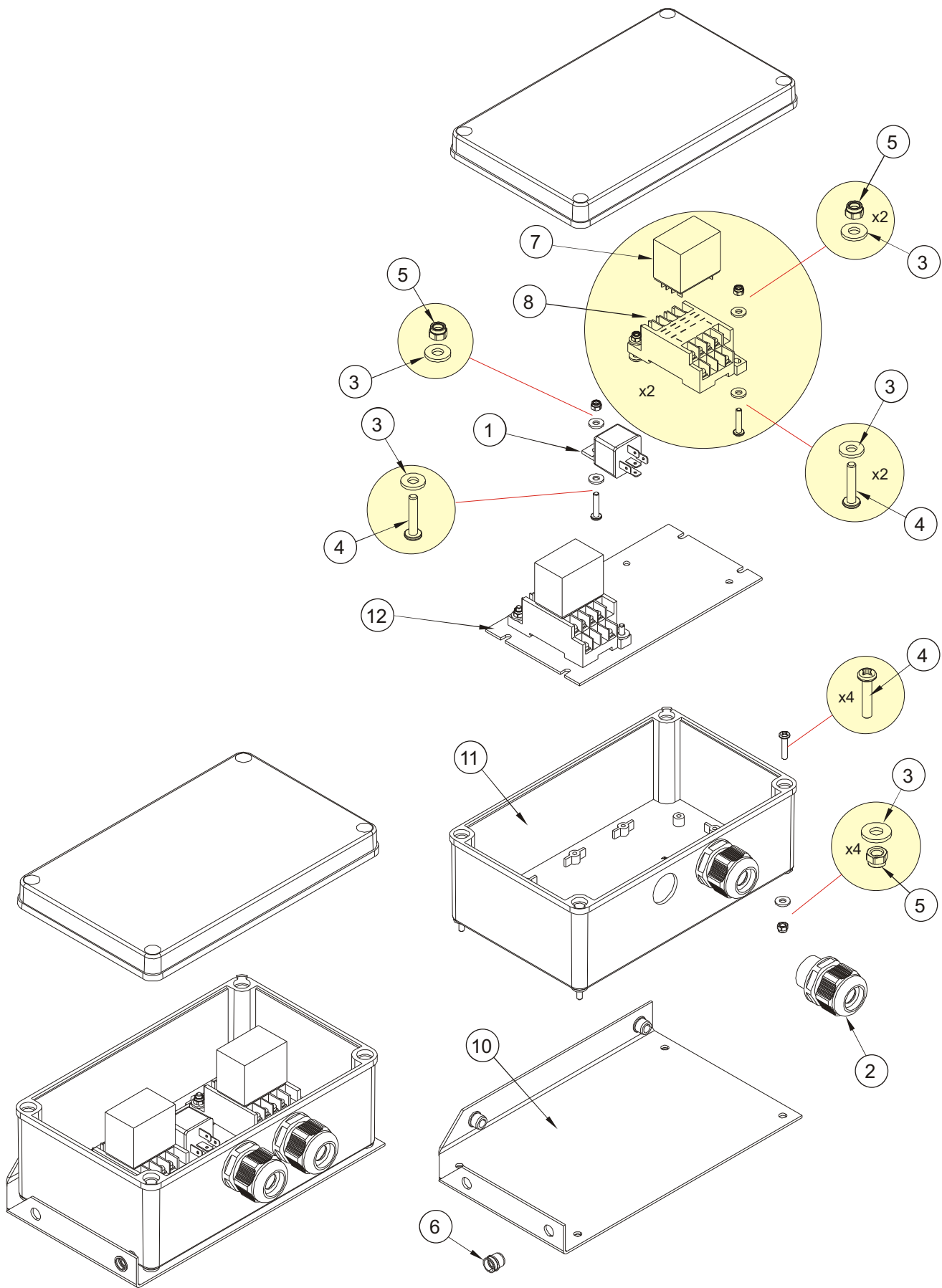


## Relay box assembly, 24VDC option

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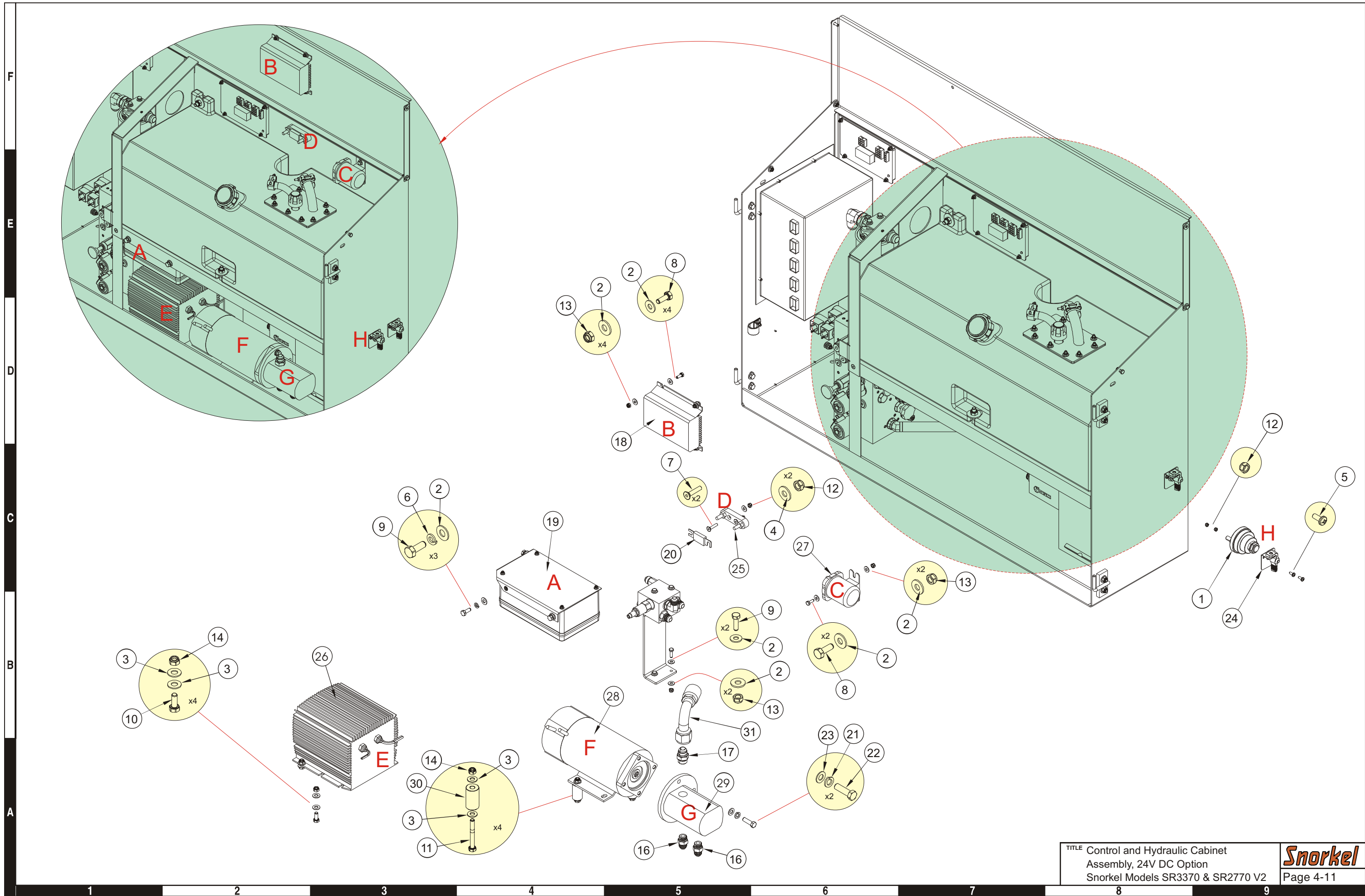
Item	Part No	Qty	Description
1.	1650-010	1	Relay, 12V
2.	1815	2	Compression gland, 25mm
3.	3603-04	14	Washer, plain, M4 x 11, ZP
4.	3604-04020	9	Screw, panhead, M4 x 20, ZP
5.	3611-04	9	Nut, nylock, M4
6.	3628-06	3	Nutsert, M6
7.	11054	2	Relay
8.	11055	2	Relay base
10.	12031-4	1	Mounting bracket
11.	13229-1	1	Enclosure, drilled for 13229
12.	13229-2	1	Gear plate, drilled for 13229

# Relay box assembly drawing, 24VDC option



## Control & hydraulic cabinet assembly - 24VDC

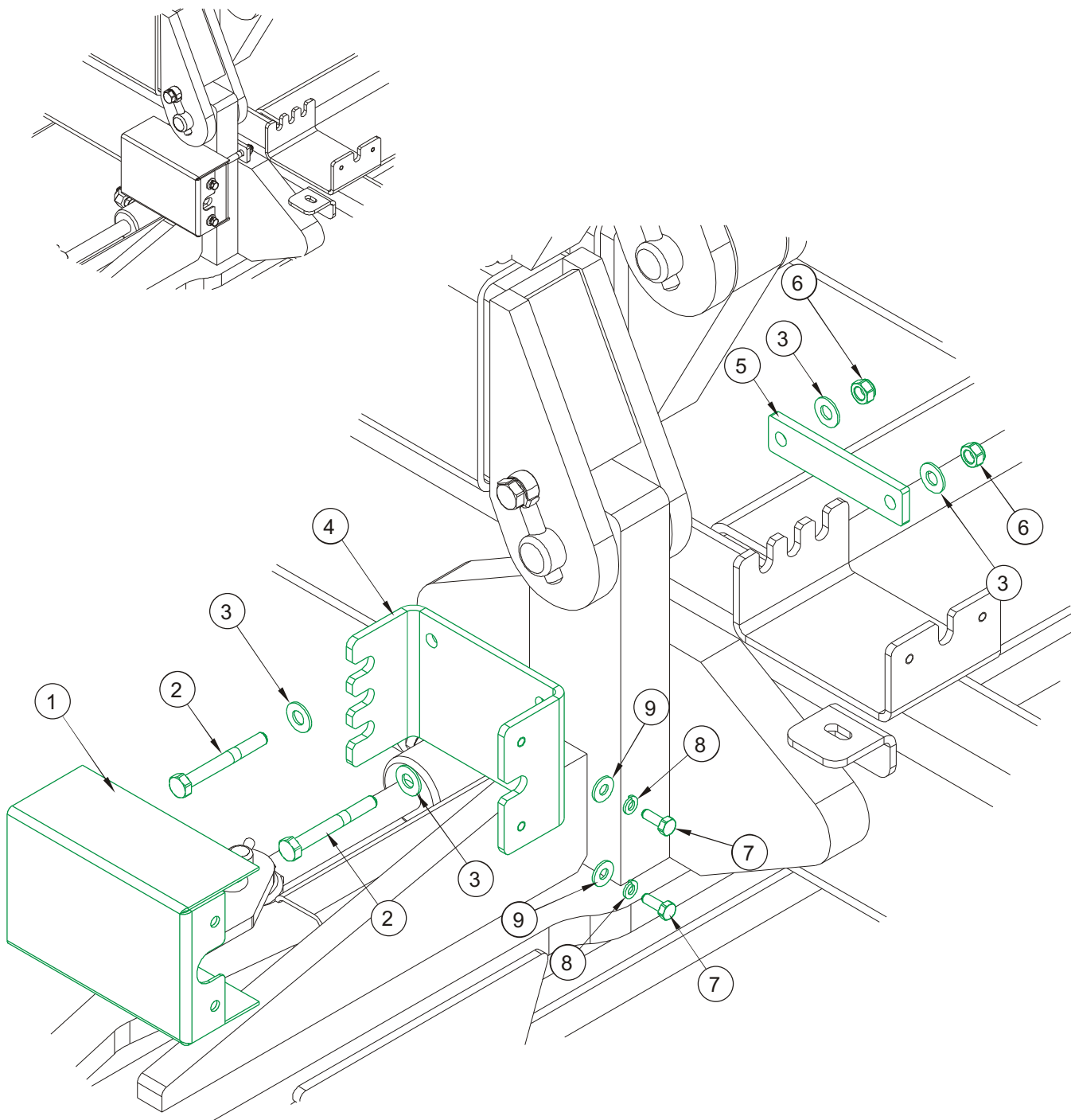
Item	Part No	Qty	Description
1.	302-0049	1	Switch, battery disconnect
2.	3603-06	19	Washer, plain, M6 x 16
3.	3603-08	16	Washer, plain, M8 x 19
4.	3603-05	2	Washer, plain, M5
5.	3604-05012	2	Screw, panhead, M5 x 12
6.	3605-06	3	Washer, spring, M6
7.	3606-05025	2	Screw, sockethead, countersunk, M5 x 25
8.	3610-06016	6	Bolt, M6 x 16, C8.8 ZP
9.	3610-06020	5	Bolt, M6 x 20, C8.8 ZP
10.	3610-08020	4	Bolt, M8 x 20, C8.8 ZP
11.	3610-08065	4	Bolt, M8 x 65
12.	3611-05	4	Nut, nylock, M5
13.	3611-08	2	Nut, nylock, M6
14.	3611-08	8	Nut, nylock, M8
16.	7025-003	2	Adapter, straight, 3/4" JICM -> UNO, 3/4"
17.	7025-019	1	Adapter, straight, 1 and 1/16" JICM -> UNO, 7/8"
18.	12707	1	Converter, 24VDC -> 12VDC
19.	13229	1	Relay box assembly
20.	44607-6	1	Fuse, 250A
21.	60005-009	2	Washer, spring, 3/8", HD, plated
22.	60017-028	2	Bolt, UNC, 1" x 3/8"
23.	60030-049	2	Washer, plain, 3/8"
24.	300840	1	Lock out lever assembly
25.	446086	1	Fuse block
26.	305009	1	Battery charger
27.	3087787	1	Contactactor, 24V, sealed
28.	3087790	1	Motor, 24V, DC
29.	6029637	1	Pump
30.	12932-2	4	Spacer
31.	7065-011	1	Hose tail, 1 -> 1 & 1/16" JICF, 90° elbow

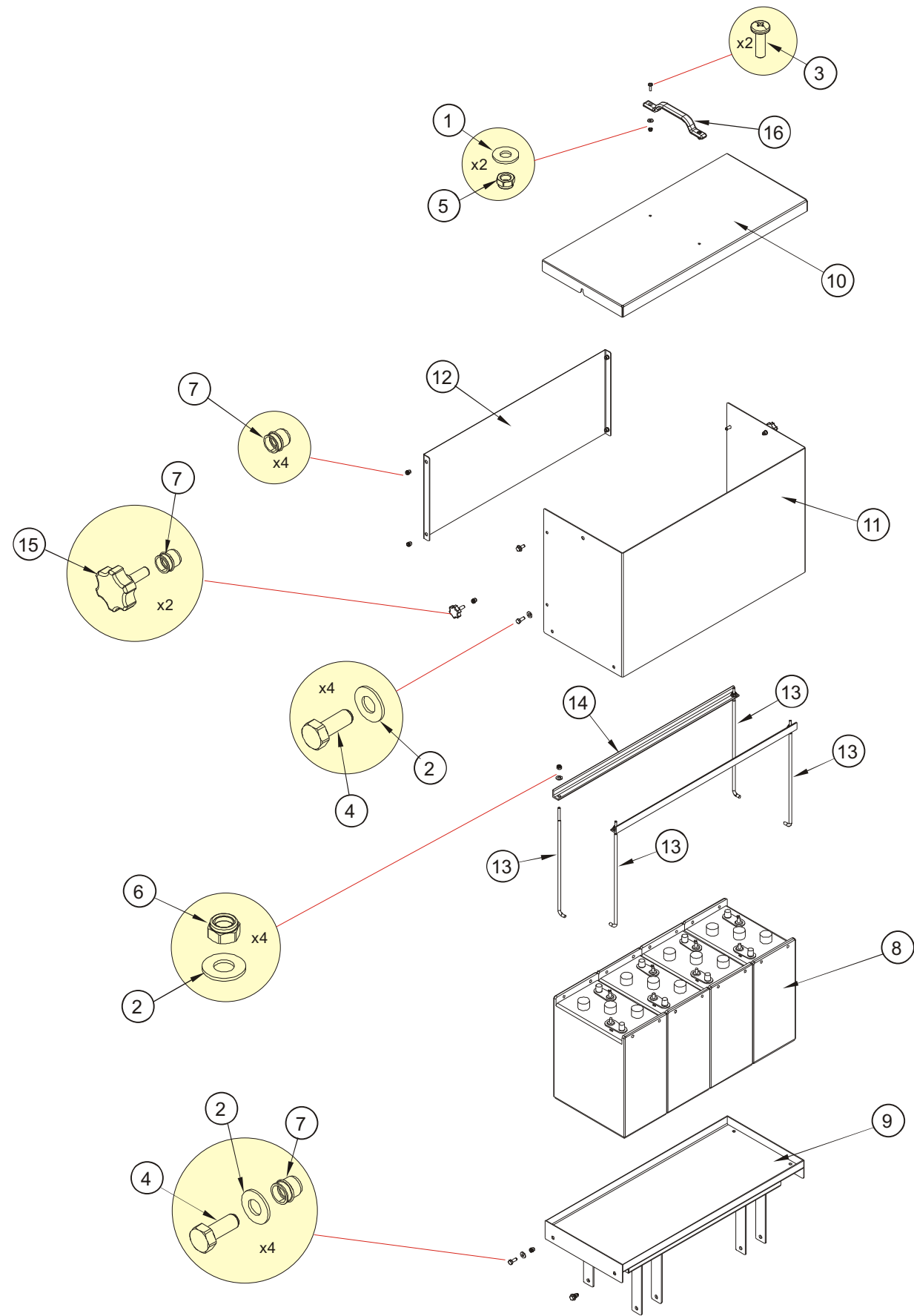
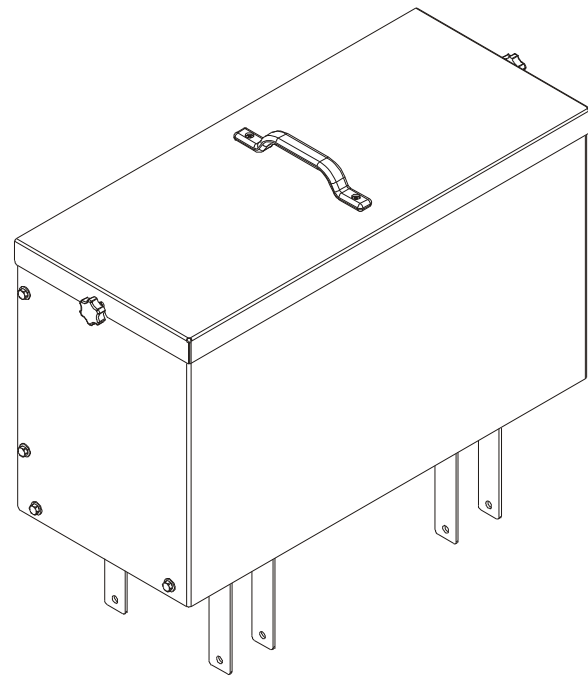




# Emergency bleed down mounting, 24VDC

Item	Part No	Qty	Description
1.	12818	1	Bleed down cover *
2.	3610-08065	2	Bolt, M16 x 65, C8.8
3.	3603-08	4	Washer, plain, M8
4.	13233	1	Bleed down bracket, bolt on
5.	13233-1	1	Bleed down bracket clamp
6.	3611-08	2	Nut, nylock, M8
7.	3610-06016	2	Bolt, M6 x 16, C8.8 *
8.	3603-06	2	Washer, plain, M6 *
9.	3605-06	2	Washer, spring, M *6
10.	12753	1	Decal, bleed down *





F  
E  
D  
C  
B  
A

## Battery box assembly - 24VDC option

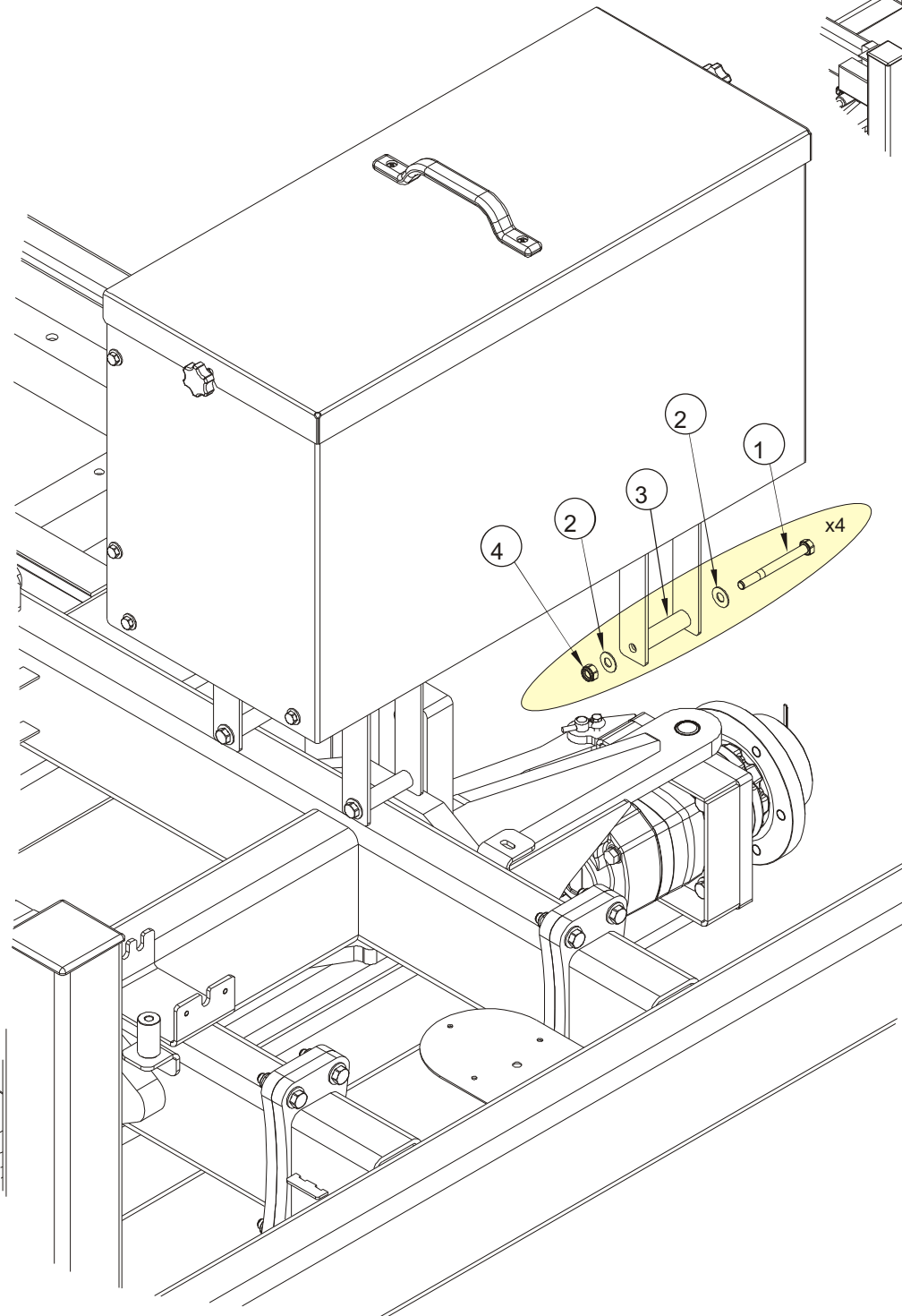
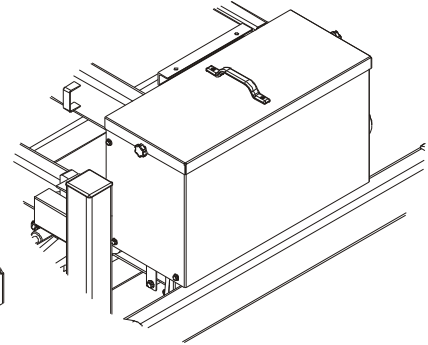
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Item	Part No	Qty	Description
1.	3603-06	2	Washer, plain, M6 x 16
2.	3603-08	12	Washer, plain, M8 x 19
3.	3604-06020	2	Screw, M6 x 20
4.	3610-08020	8	Bolt, M8 x 20, C8.8 ZP
5.	3611-06	2	Nut, nylock, M6
6.	3611-08	4	Nut, nylock, M8
7.	3628-08	10	Nutsert, M8
8.	13100	4	Battery, Trojan J305P
9.	13230-10	1	Battery tray, SRxx70
10.	13230-20	1	Battery box lid
11.	13230-30	1	Wrap panel, battery box
12.	13230-40	1	Panel, battery box rear
13.	13230-50	4	Battery J bolt
14.	13230-51	2	Battery hold down angle
15.	057727-000	2	Knob, M8
16.	500052-000	1	Handle

## Battery box mounting - 24VDC option

Item	Part No	Qty	Description
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- |    |            |   |                       |
|----|------------|---|-----------------------|
| 1. | 3610-10100 | 4 | Bolt, M10 x 100, C8.8 |
| 2. | 3603-10    | 8 | Washer, plain, M10    |
| 3. | 13233-60   | 4 | Crush spacer          |
| 4. | 3611-10    | 4 | Nut, nylock, M10      |





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