



S3970RT

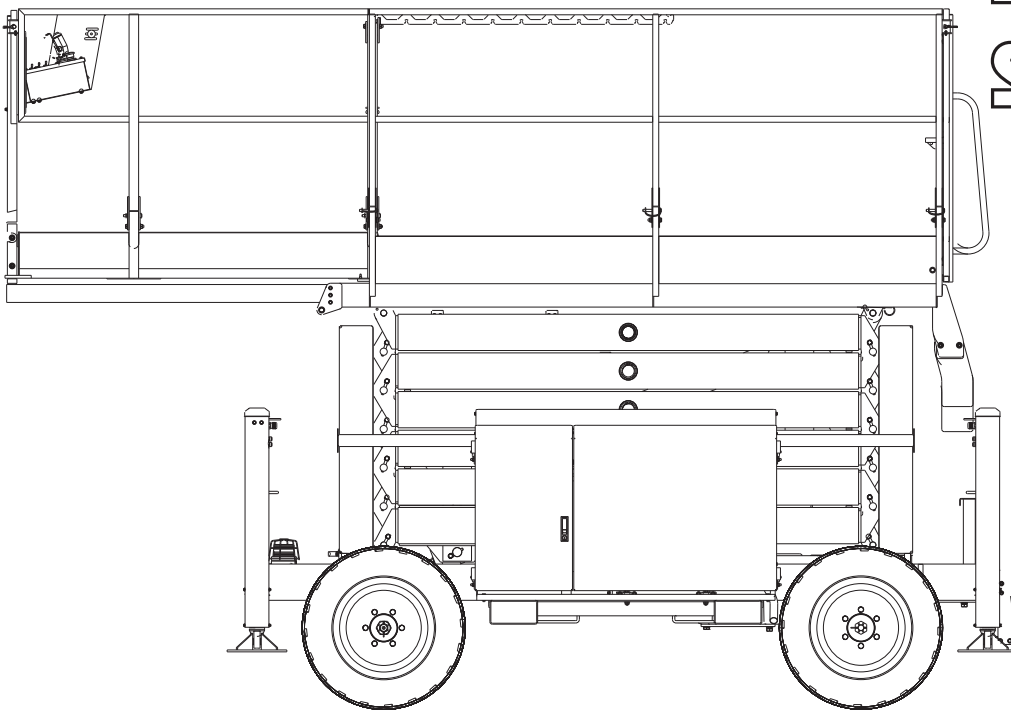
S3370RT

S2770RT

S3970BE

S3370BE

S2770BE



Diesel
Bi-Energy 24V DC

REPAIR PARTS MANUAL

Serial Numbers:
S2770RT-07-161200500,
S3370RT-07-180300500,
S3970RT-07-180300500 and after

Version 7

Part Number 15124-2

March 2018 (Rev A)

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General Specifications

■ General Specifications S3970RT

SPECIFICATIONS	S3970RT		S3970BE	
Nominal working height (wheels)	13.5m	44.2'	13.5m	44.2'
Nominal working height (stabilisers)	13.81	45.3'	13.81	45.3'
Roll out deck size	1.2m	48"	1.2m	48"
Drive speed (below 2.4m)	0 to 04.5km/h	0 to 2.8mph	0 to 04.5km/h	0 to 2.8mph
Drive speed (above 2.4m)	0 to 0.35kp/h	0 to 0.22mph	0 to 0.35kp/h	0 to 0.22mph
Safe working load - Main deck (Roll out deck not extended)	350kg	770lb	350kg	770lb
Safe working load - Main deck Safe working load - Roll out deck extended	230kg 120kg	510lb 260lb	230kg 120kg	510lb 260lb
Platform size	1.73 x 1.65m	8' 11" x 5' 5"	1.73 x 1.65m	8' 11" x 5' 5"
Stowed height	2.93m	9' 7"	2.93m	9' 7"
Stowed height (hand rails folded down)	2.10m	6' 11"	2.10m	6' 11"
Overall length	3.36m	11' 0"	3.36m	11' 0"
Overall width	1.80m	5' 11"	1.80m	5' 11"
Gradeability	30%		30%	
Lift time	50 seconds		50 seconds	
Turning radius (inner)	2.7m	8' 10"	2.7m	8' 10"
Turning radius (outer)	5.0m	16' 3"	5.0m	16' 3"
Maximum wind speed (12.5m/s)	45km/h	28mph	45km/h	28mph
Insulation rating	Nil		Nil	
Tyres - Poly filled loader lug	27" x 10.5" x 15"		27" x 10.5" x 15"	
Overall weight	3790kg	8355lb	4140kg	9127lb
Ground clearance	350mm	13.8"	350mm	13.8"
Maximum sound level at platform	86db		86db	
Stabiliser maximum load	2110kg	4652lb	2285kg	5039lb
Maximum chassis inclination	2.5°/4°		2.5°/4°	
Allowable manual force	400N		400N	
Tyre contact pressure (average)	879kPa	127psi	950kPa	138psi
Tyre contact pressure (worst)	1725kPa	250psi	1868kPa	271psi

General Specifications

■ General Specifications S3370RT

SPECIFICATIONS	S3370RT		S3370BE	
Nominal working height	12.12m	39' 2"	12.12m	39' 2"
Roll out deck size	12.m	48"	12.m	48"
Drive speed (below 2.4m)	0 to 4.5kp/h	0 to 2.8mph	0 to 4.5kp/h	0 to 2.8mph
Drive speed (above 2.4m)	0 to 0.35kp/h	0 to 0.22mph	0 to 0.35kp/h	0 to 0.22mph
Safe working load - Main deck (Roll out deck not extended)	450kg	1000lb	450kg	1000lb
Safe working load - Main deck Safe working load - Roll out deck extended	330kg 120kg	740lb 260lb	330kg 120kg	740lb 260lb
Platform size	2.73 x 1.65m	8' 11" x 5' 5"	2.73 x 1.65m	8' 11" x 5' 5"
Stowed height	2.78m	9.12'	2.78m	9.12'
Stowed height (hand rails folded down)	1.95m	6.40'	1.95m	6.40'
Overall length	3.36m	11' 0"	3.36m	11' 0"
Overall width	1.80m	5' 11"	1.80m	5' 11"
Gradeability	35%		35%	
Lift time	50 seconds		50 seconds	
Turning radius (inner)	2.7m	8' 10"	2.7m	8' 10"
Turning radius (outer)	5.0m	16' 3"	5.0m	16' 3"
Maximum wind speed (12.5m/s)	45km/h	28mph	45km/h	28mph
Insulation rating	Nil		Nil	
Tyres - Poly filled loader lug	27" x 10.5" x 15"		27" x 10.5" x 15"	
Overall weight	3620kg	7981lb	3970kg	8752lb
Ground clearance	350mm	13.8"	350mm	13.8"
Maximum sound level at platform	86db		86db	
Stabiliser maximum load	2075kg	4580lb	2250kg	4962lb
Maximum chassis inclination	2.5°/4°		2.5°/4°	
Allowable manual force	400N		400N	
Tyre contact pressure (average)	865kPa	125psi	936kPa	136psi
Tyre contact pressure (worst)	1696kPa	246psi	1839kPa	267psi

■ General Specifications S2770RT

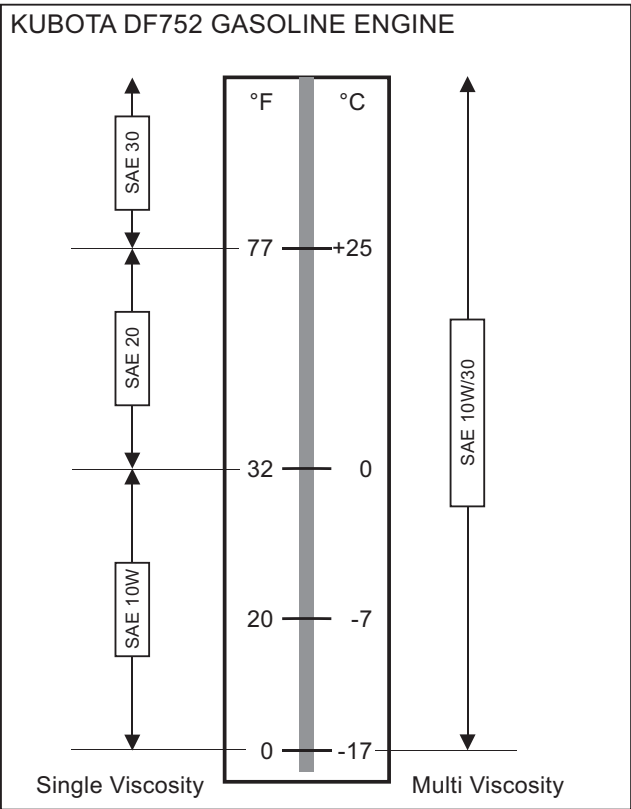
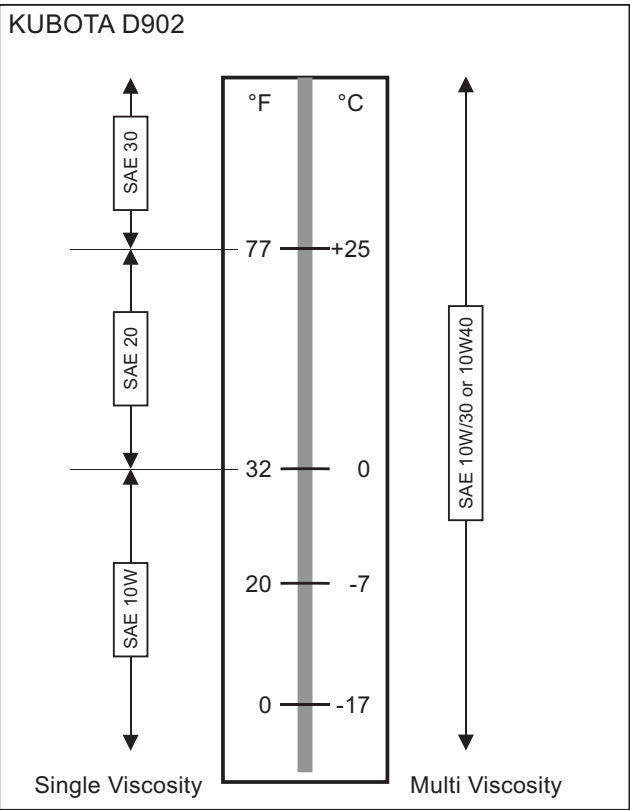
SPECIFICATIONS	S2270RT		S2270BE	
Nominal working height	10.28m	33' 9"	10.28m	33' 9"
Roll out deck size	1.2m	48"	1.2m	48"
Drive speed (below 2.4m)	0 to 4.5km/h	0 to 2.8mph	0 to 4.5km/h	0 to 2.8mph
Drive speed (above 2.4m)	0 to 0.9kp/h	0 to 0.6mph	0 to 0.9kp/h	0 to 0.6mph
Safe working load - Main deck (Roll out deck not extended)	580kg	1275lb	580kg	1275lb
Safe working load - Main deck Safe working load - Roll out deck extended	460kg 120kg	1015lb 260lb	460kg 120kg	1015lb 260lb
Platform size	2.73 x 1.65m	8' 11" x 5' 5"	2.73 x 1.65m	8' 11" x 5' 5"
Stowed height	2.61m	8' 7"	2.61m	8' 7"
Stowed height (hand rails folded down)	1.78m	5' 10"	1.78m	5' 10"
Overall length	3.36m	11' 0"	3.36m	11' 0"
Overall width	1.80m	5' 11"	1.80m	5' 11"
Gradeability	35%		35%	
Lift time	26 seconds		26 seconds	
Turning radius (inner)	2.7m	8' 10"	2.7m	8' 10"
Turning radius (outer)	5.0m	16' 3"	5.0m	16' 3"
Maximum wind speed (12.5m/s)	45km/h	28mph	45km/h	28mph
Insulation rating	Nil		Nil	
Tyres - Poly filled loader lug	27" x 10.5" x 15"		27" x 10.5" x 15"	
Overall weight	2886kg	6363lb	3236kg	7134lb
Ground clearance	350mm	13.8"	350mm	13.8"
Maximum sound level at platform	86db		86db	
Stabiliser maximum load	1773kg	3911lb	1948kg	4292lb
Maximum chassis inclination	3.5°/4°		3.5°/4°	
Allowable manual force	400N		400N	
Tyre contact pressure (average)	741kPa	107psi	813kPa	118psi
Tyre contact pressure (worst)	1449kPa	210psi	1592kPa	231psi

General Specifications

Engine Data

ENGINE MAKE	KUBOTA(gasoline)	KUBOTA (LPG)	KUBOTA (diesel)
Model	DF752		D902
Fuel	gasoline	LPG	diesel
Fuel Grade	Unleaded 85 octane (motor method) Do not use gasoline blended with methyl alcohol.	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



■ Classification

Group A Type 3

■ AS1418.1 Group Classification

C3

■ Commissioning Information

Commissioning of the machine consists of performing the Pre Delivery and Inspection Report (PDIR) satisfactorily.

This PDIR is performed by Snorkel or it's agent before the machine is delivered.

A completed PDIR can be obtained, by request, from the salesagent.

General Specifications

Highlighted Red below on the Serial Plate is the model number. This is used for varying the machine with different versions throughout the manual.

 Snorkel NEW ZEALAND		36 Bruce Road Levin 5510 - New Zealand	
THIS MACHINE WAS MANUFACTURED TO COMPLY WITH THE FOLLOWING DESIGN CODES:			
ANSI A92.6		AS1418-10	
MODEL NUMBER		SERIAL NUMBER	
MONTH / YEAR OF MANUFACTURE		MACHINE COMMISSION DATE	
MAXIMUM MACHINE WEIGHT		lb	
		kg	
ENGINE POWERED MODELS		hp	
		kW	
GRADEABILITY		deg	
SLOPE SENSOR ALARM SETTING (FRONT TO BACK)		deg	
MAXIMUM ALLOWABLE MANUAL FORCE		lb	
		N	
PLATFORM SIZE		in	
		cm	
MAXIMUM PLATFORM HEIGHT		ft	
		m	
RATED NUMBER OF OCCUPANTS		MAXIMUM DRIVE HEIGHT	
		ft	
		m	
MAXIMUM WHEEL LOAD		lbf	
		kgf	
BATTERY POWERED MODELS ONLY	DRIVE MOTORS		V
	BATTERIES		V
			Ah
SLOPE SENSOR ALARM SETTING (SIDE TO SIDE)		deg	
MAXIMUM ALLOWABLE WIND SPEED		mph	
		m/s	
OUTRIGGER LOAD		lbf	
		kgf	
MAXIMUM WORKING HEIGHT		ft	
		m	
UNRESTRICTED PLATFORM CAPACITY		lb	
		kg	
CAUTION DO NOT make any changes to this machine without specific written permission from the Engineering department at Snorkel New Zealand.			

12833-4

■ 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 19 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 S3970RT /S3370RT / S2770RT.

□ Maintenance

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

□ Control system information

Provides a description of the EzCal LCD Display, a diagnostic tool for the control 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.

■ 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.

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.

Maintenance Information

- ✓ 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
Rough terrain scissor interlock tests (see page 16 in this section)	Perform the tests to ensure the system is functioning
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)
Air Filter	Check condition (gauge)
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)
START THE ENGINE FROM THE BASE CONTROL PANEL TO CHECK THE FOLLOWING	
Charging system	No faults on the display
Ground controls	Actuate and visually inspect for proper operation
Emergency lowering (from the ground)	Check operation (causes correct motion)
Flashing light	Check operation
Safety prop	Check operation
Parking brakes	Check operation
Optional items	Check operation
START THE ENGINE FROM THE PLATFORM TO CHECK THE FOLLOWING	
Platform controls	Actuate and visually inspect for proper operation
Emergency lowering (from the platform)	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	
Steer cylinder ends	Check pin keeper and condition	
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
Engine RPM	Check for proper RPM	Low = 1950rpm High = 3400rpm
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	
Scissor arm bearings	Check condition	

■ 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	

■ Preventive Inspection Maintenance 90 Day or 150 Hour Checklist

36 Bruce Road, Levin, 5510
New Zealand
Ph: +64 (0)6 368-9168, Fax: +(0)6 368-9164
Email: sales.nz@snorkellifts.com

Preventative Inspection Maintenance 90 Day or 150 Hour Checklist

- ☐ OK OK No Service Required
☒ X Corrective Action Required
☒ ✓ Corrected, (Record description of corrective action)

Model: _____

Serial Number: _____

Date: _____

Inspection Procedures Codes	
(1) Weld cracks, dents and/or rust	(2) Installation
(3) Leaks	(4) Operation
(5) Condition	(6) Tightness
(7) Residue buildup	(8) See placards and decals inspection chart

CHECK	OK	X	✓
BASEFRAME			
Structural (1)			
Steering cylinders (2,3,4,6)			
Steering cylinder fasteners and linkage (2,4)			
Tyres and wheels (5)			
Articulating axles (2,4,5)			
Tray side covers (2,5,6)			
Torque drive wheel lug nuts 90-100 ft lbs (2,6)			
Torque steer wheel lug nuts 90-100 ft lbs (2,6)			
Right drive motor(s) (3,6)			
Left drive motor(s) (3,6)			
Guides, rollers and slides (2,4,5)			
Parking brake & Free wheeling valve (3,4)			
Emergency lowering valve (3,4)			
Battery disconnect switch (4)			
Lubrication points			
Cords and wire assemblies (2,5,6)			
Hydraulic tubes and hoses (3,5)			
Decals and placards (2,8)			
Flashing light (2,4)			
Right front outrigger (2,3,4)			
Left front outrigger (2,3,4)			
Right rear outrigger (2,3,4)			
Left rear outrigger (2,3,4)			
SCISSOR ARM ASSEMBLY			
Structural (1)			
Scissor arm pivot pins (2,5)			
Lift cylinders and valves (2,3,4)			
Safety bar (2,4,5)			
Hydraulic tubes and hoses (3,5)			
Wires and electrical cables (2,5)			
Decals and placards (2,8)			
BASE CONTROL STATION			
Key switch (4)			
Toggle switch, platform UP - DOWN (4)			
Start switch (4)			
Toggle switch, glow plug (4)			
Fuel select switch (4)			
Emergency stop switch (4)			
Hour meter (4)			
Lowering alarm (4)			
Engine not running alarm (4)			
Low oil pressure alarm (4)			

CHECK	OK	X	✓
High temperature alarm (4)			
Lift enable light (4)			
PLATFORM			
Structural (1)			
Guardrails properly installed and fastened (2,5)			
Platform entrance gate (2,5)			
Wires and electrical cables (2,5)			
Decals and placards (2,8)			
Correct operators manual in document holder			
Roll out platform deck extension (2,4,5,8)			
PLATFORM CONTROLS			
Joystick control - DRIVE/STEER and PROPORTIONAL LIFT (4)			
Toggle type selector switch - HIGH SPEED/HIGH TORQUE (4)			
Toggle type selector switch - LIFT/DRIVE (4)			
Engine warning light (4)			
Drive enable light (4)			
Lift enable light (4)			
Engine start (4)			
Emergency stop button (4)			
Joystick interlock switch (4)			
Horn (4)			
INTERLOCK TESTS			
Load sense system (4)			
Platform elevated (6-8%~2m) OUTRIGGER CONTROLS DO NOT WORK (4)			
Axle switch open PLATFORM DOES NOT RAISE (4)			
Tilted PLATFORM DOES NOT RAISE (4)			
Each outrigger not stowed DRIVE DOES NOT WORK (4)			
Selector switch base/platform controls BASE CONTROLS SELECTED PLATFORM CONTROLS DO NOT WORK (4)			
Selector switch base/platform controls PLATFORM CONTROLS SELECTED BASE CONTROLS DO NOT WORK (4)			
Drive speed - platform elevated (6-8%~2m) SLOW DRIVE SPEED ONLY (4)			
Drive speed - platform lowered DRIVES FAST or SLOW (4)			

CHECK	OK	X	✓
ENGINE			
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)			
ELECTRICAL			
Batteries (2,4)			
Battery terminals (5,6,7)			
Battery electrolyte level (5)			
Battery specific gravity reading (5)			

[illegible]

Corrective Action Required

[illegible]

Additional Work Done, Options Fitted, Destination Specific Items etc.

[illegible]

Note: If corrective 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 satisfactorily or necessary corrective action has been completed

Inspected by: _____ Date: _____

Stabiliser Cylinder Test

This is the procedure of how to test the four outrigger legs in the baseframe section under the 90 Day or 150 Hour Checklist for leaks (3) and the correction operation (4).

Outrigger Cylinder Drift Test

This procedure will help determine if the outrigger cylinders are extending or retracting while under pressure. The test will require that the machine is out of service for at least two hours to perform.

Use the following procedures to properly test the out-ri-gger cylinders for drift:

With Outriggers Fully Retracted

1. Fully retract the outriggers and turn the engine off.
2. On each outrigger, measure and record the distance between top of the outrigger shoe pin and the bottom of the outrigger weldment.
3. Let the machine sit for one hour without operating it.
4. On each outrigger, measure and record the distance between the top of the outrigger shoe pin and the bottom of the outrigger weldment.
5. Compare the two measurements for each outrigger, to determine if the cylinder has extended. If the measurements are the same, the cylinder has not extended, or drifted down.
6. If the measurements are not the same, the cylinder has extended. Subtract the smaller value from the larger to determine the distance the cylinder movement.

The maximum allowable drift is 15/64ths or 6 mm.

7. If any one of the outrigger cylinders has drifted more than 15/64ths or 6 mm, remove the machine from service and do not operate it until the problem is corrected.

With Outriggers Extended

Before operating the outrigger controls, properly set up the aerial platform as described in the Operation Manual.

Danger

The aerial platform can tip over if it becomes unstable. Death or serious injury will result from a tip-over accident. Make certain that the ground surface is capable of supporting the weight of the machine including personnel and work equipment in the platform.

1. Start the engine and let it warm to operating temperature.
2. Lower the outriggers until each of the pads contacts the ground and then raises the tire next to it above ground.
3. Watch the bubble level while setting the outriggers. Lower the outriggers, one at a time, just enough to center the bubble in the circle on top of the gauge.
4. Adjust the position of the outrigger legs until the bubbles are centered between the marks on the levels, indicating that the chassis is level. Turn the engine off.
5. On each outrigger, measure and record the distance between the top of the outrigger shoe pin and the bottom of the outrigger weldment.
6. Let the machine sit for one hour without operating it.
7. On each outrigger, measure and record the distance between top of the outrigger shoe pin and the bottom of the outrigger weldment.
8. Compare the two measurements for each outrigger, to determine if the cylinder has extended. If the measurements are the same, the cylinder has not extended, or drifted down.
9. If the measurements are not the same, the cylinder has extended. Subtract the smaller value from the larger to determine the distance the cylinder movement.

The maximum allowable drift is 15/64ths or 6 mm.

10. If any one of the outrigger cylinders has drifted more than 15/64ths or 6 mm, remove the machine from service and do not operate it until the problem is corrected.

■ Lubrication

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. Wipe away all excess lubricant from exposed surfaces. Over lubrication can collect dirt and foreign matter which acts as an abrasive.

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.

□ King pins

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

□ Tie rods

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

□ Steer cylinder end

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

□ Wheel bearings, drive wheels

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

□ Engines

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

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

On these 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

Maintenance Information

excessive wear in some of the system components.

❑ Door hinges and latches

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

Check slide pads for excessive wear and replace as required.

❑ Scissor arm bearings

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

■ Batteries

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.

■ Rough Terrain Scissor Interlock Tests

The Snorkel S/RT Series are fitted with a very important safety feature, a 'Stabiliser/axle/scissor Interlock' system that prevents the stabilisers being moved while the platform is elevated, and prevents the platform being raised if the rear axle is oscillated and the stabilisers are not set or the machine is tilted.

The correct operation of the Stabiliser/scissor Interlock is critical to ensure that the Scissor is operated safely and with minimum risk.

▲ DANGER

To ensure the interlock system is functioning correctly, before operating the Scissor the following test must be carried out prior to operation each day, in conjunction with all other relevant daily pre-operational checks:

❑ Stabiliser locked out when platform elevated test

1. Position the machine on a firm level surface.
2. From the platform controls, start the engine and allow it to warm up.
3. Raise the platform above the elevation height (approx. 1.5 metres, depending on model).
4. Operate the right front stabiliser extend switch while watching the stabiliser leg for movement
5. If the stabiliser leg moves, release the switch **immediately!**

Lower the platform fully, remove the machine from service and affix a Danger Tag warning others that the machine is not to be used.

In the first instance contact the owner who will then contact the Snorkel branch or authorised agent to inspect, repair and test the machine before allowing it to be placed back into service.

If the stabiliser leg does not move, continue to step 6

6. Lower the platform to the stowed position

❑ Elevation locked out when axles not stowed test

7. Park the machine such that one rear wheel is in a depression (approx. 100mm deep) such that the axle switch opens. A kerb or gutter may be sufficient

8. Raise the platform above the elevation height, (approx. 1.5 metres, depending on model).
9. At this point, an alarm will sound and further lift or drive will be disabled.
10. If there is no alarm and/or the machine continues to allow lift **stop immediately!** Lower the platform fully, remove the machine from service and affix a Danger Tag warning others that the machine is not to be used. In the first instance contact the owner who will then contact the Snorkel branch or authorised agent to inspect, repair and test the machine before allowing it to be placed back into service.
11. Repeat steps 7-10 for the opposite rear wheel.
12. Lower the platform to the stowed position

☐ Elevation locked out when tilted test

13. Park the machine on ground known to exceed the tilt limit specified on the serial plate.
14. Raise the platform above the elevation height, (approx. 1.5 metres, depending on model).
15. At this point, an alarm will sound and further lift or drive will be disabled.
16. If there is no alarm and/or the machine continues to allow lift **stop immediately!** Lower the platform fully, remove the machine from service and affix a Danger Tag warning others that the machine is not to be used. In the first instance contact the owner who will then contact the Snorkel branch or authorised agent to inspect, repair and test the machine before allowing it to be placed back into service.
17. Lower the platform to the stowed position
18. If all steps have been followed and the Stabiliser/scissor interlock is functioning correctly, the machine can now be used in accordance with the operating instructions provided in the Operators Manual.

Maintenance Information

■ Torque chart

NOM SIZE X PITCH	TENSILE STRESS AREA A _s (mm ²)	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   							

■ 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 New Zealand
36 Bruce Road
P.O. Box 1041
Levin 5510
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 S3970RT - S3370RT - S2770RT are as follows:

- ✓ Operator's Manual
Snorkel part number - 13865-1
- ✓ Repair Parts Manual
Snorkel part number - 13865-2

■ Responsibilities

It is the sole responsibility of owners and users of Elevating Work Platforms to ensure that all persons owning or using an MEWP have read, understood, and abide by all local regulations. Ultimately, compliance to those local regulations is the responsibility of the user and their employer.

Local regulations may take the form of (but are not limited to): Codes of Practise, Best Practise Guides, Standards e.g. AS2550.10, ANSI manual of responsibilities for Dealers, Owners, Users, Operators, Lessors and lessees etc.

■ Product Warranty

For full terms of your warranty policy refer to the rear of this manual after the Index section, or check with your Snorkel distributor, or check the Snorkel website.

Record machine information here:

Model number*

Serial number*

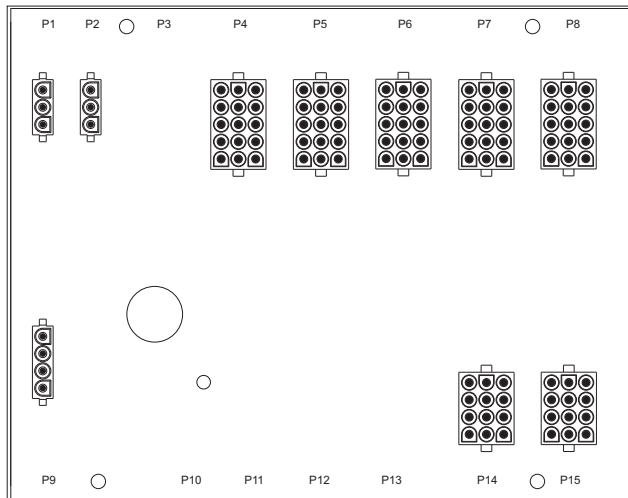
Date of purchase

Purchased from

Snorkel dealer or distributor

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

■ Scissor Lift Control System



GP400C Control Board



EZcal

The EzCal LCD Display is a diagnostic tool for the control system. It is intended to be used primarily by trained technicians. The EzCal LCD display gives some information for the machine operator.

□ Work time

The EzCal default state is to display machine work time. It accumulates time when ever the control system is active. This can be re set by a qualified technician. This value can be used to tell when periodic maintenance is due.

□ Water

If the engine becomes too hot the EzCal LCD display will show **“Shut down - Engine Too Hot”**

□ Alternator

If the alternator is not providing sufficient charge the EzCal LCD display will show **“Shut down - Not Charging”**

□ Oil Pressure

If the engine does not have sufficient oil pressure the EzCal LCD display will show **“Shut down - No Oil Pressure”**

□ Other messages

Other general messages may be displayed at the time a machine state is not allowed e.g. Functions Locked – Outriggers.

This is a guide to the operator to understand why the machine is not doing what is desired. The messages encompass many possible issues.

In the above case it could mean that the outriggers can not be used because the platform is raised, or it could mean that platform can not be raised because the outriggers are not properly set.

■ GP400 Menus Available with EZcal

When the EZcal LCD is in Technician Mode, a two line display shows various menus and settings.

At any time the top line of the display describes the currently selected menu and the bottom line shows the currently selected item in that menu.

Six buttons on EZcal allow easy navigation through the menus:

← and → change the selected item (the bottom line display)

ENTER enters the selected new menu when available (top line display changes)

↑ and ↓ adjusts the selected item when available (at “ACCESS LEVEL” 1)

ESC exits the current menu back to the previous menu

To enter Technician Mode press and hold the **ESC** key for 10 seconds with the ignition on. The display will change from showing work time to:

□ Help Menu:

Press enter for help.

Refer to the menu structure to navigate the menus.

Control System Information

The default access level is 3.

In this level only viewing of data is allowed.

STOP: If you are not a trained technician do not use Technician Mode in Access level 1 or 2. Death or serious injury can result from unauthorized adjustments and setups.

Access level 2 is required to make adjustments to values and to make calibrations.

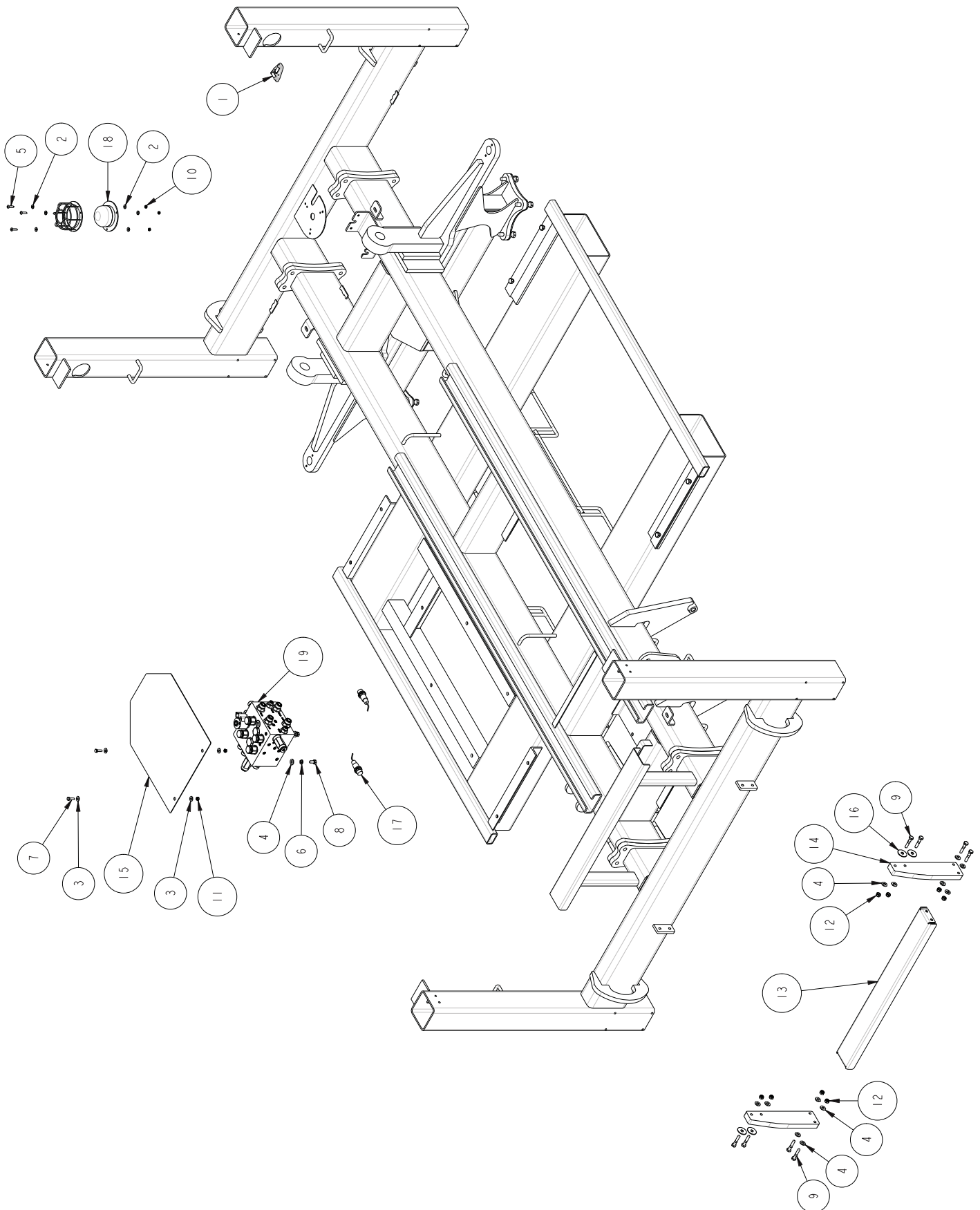
Access level 1 is required to make adjustments to values, calibrations, and change setups.

Access Codes to change between Access Levels prevent inadvertent adjustments.

Chassis Assembly	1-2
Steer Assembly	1-4
Swing Arms Assembly	1-6
Hydraulic Cabinet Assembly	1-8
Engine Cabinet Assembly	1-10
Cabinets Assembly	1-12
Stabiliser Assembly	1-14
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Platform Assembly	1-18
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3970 Scissor Stack	1-26
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Kubota D902 T4 Engine Assembly	1-32
Diesel Fuel Tank Assembly	1-35
Hydraulic Oil Tank Assembly	1-37
Placards and Decals	1-38

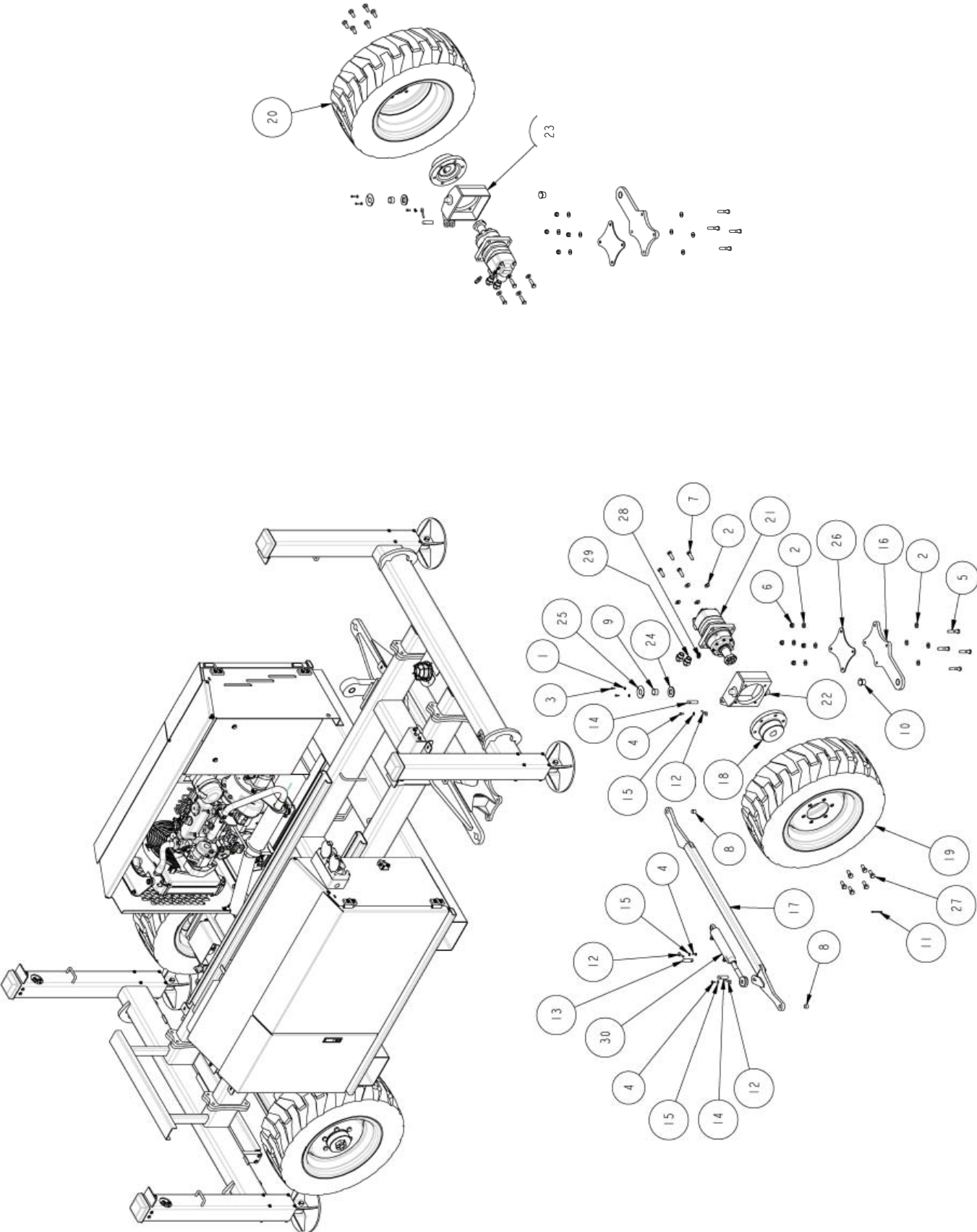
Chassis Assembly

Item	Part No	Qty	Description
0	15118	1	Chassis Assembly
1	1273-2	1	Level Bubble, T Shape
2	3603-05	6	Plain Washer
3	3603-06	4	Plain Washer
4	3603-08	14	Plain Washer
5	3604-05020	3	Pan Head Screw
6	3605-08	2	Spring Washer
7	3610-06020	2	Metric Bolt
8	3610-08016	2	Metric Bolt
9	3610-08040	8	Metric Bolt
10	3611-05	3	Metric Nylock Nut
11	3611-06	2	Metric Nylock Nut
12	3611-08	8	Metric Nylock Nut
13	12554-5	1	Step Foldment
14	12554-6	2	Rubber Step Hanger
15	13870	1	Cover - 4WD Manifold
16	60030-197	4	Fender Washer
17	505072-000	2	Inductive Prox NO
18	514404-000	1	Flashing Light and Light Guard Assembly
19	15122-01	1	4WD Manifold Assembly



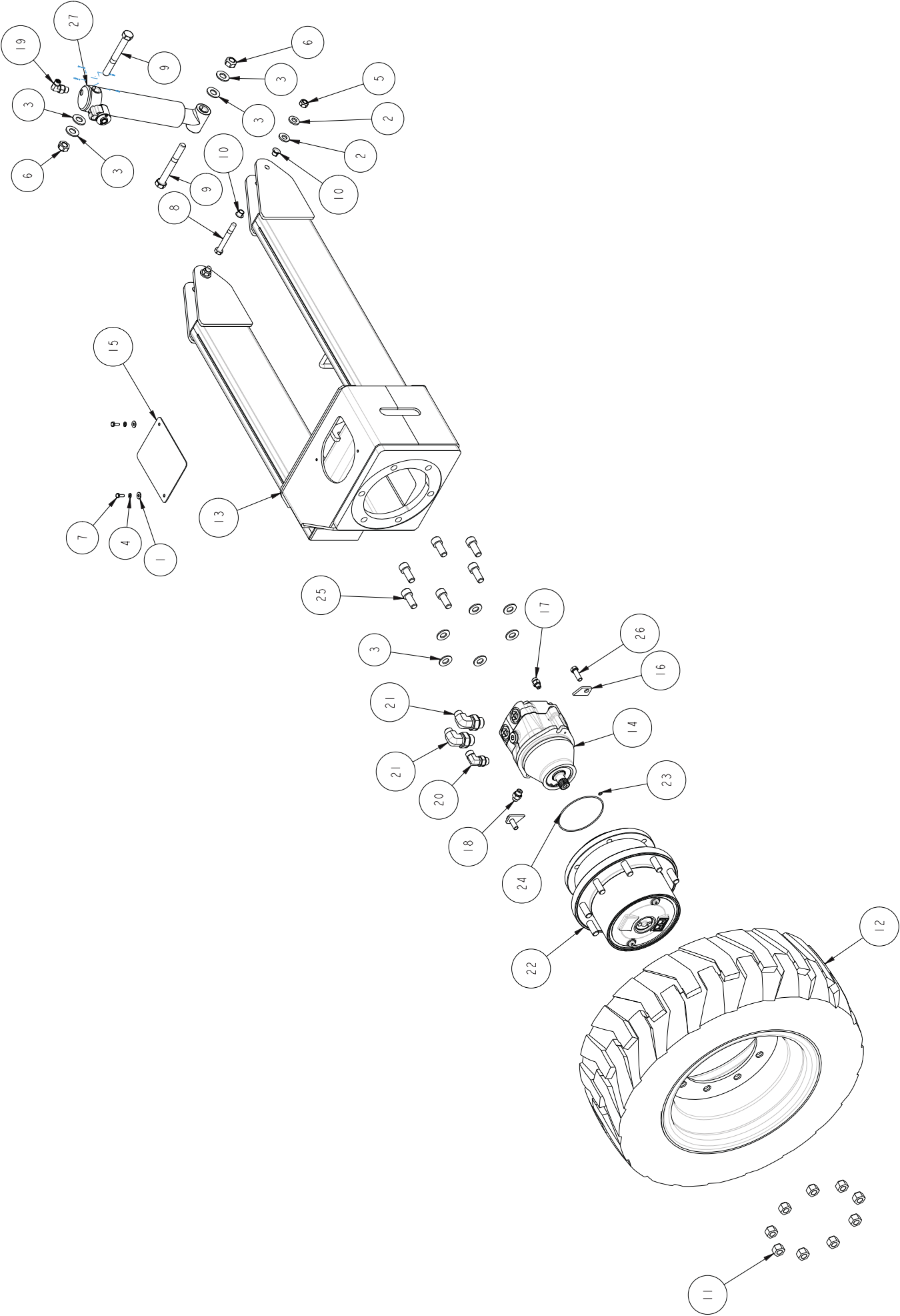
Steer Assembly

Item	Part No.	Qty.	Description
1	3603-05	10	Plain Washer
2	3603-12	33	Plain Washer
3	3610-05016	4	Metric Bolt
4	3610-06016	4	Metric Bolt
5	3610-12055	8	Metric Bolt
6	3611-12	8	Metric Nyloc Nut
7	3616-12040	16	Metric Bolt Grade 10.9
8	3624-27	2	Permaglide Bush
9	3624-3	6	Permaglide Bush
10	3626-1	2	Flanged Permaglide Bush
11	3636-1	4	Split Pin
12	8628	4	Pin Keeper - Rolled Eye 6mm
13	9311	1	PIN 5/8" x 53 lg
14	9319	3	PIN: 15 x 56 lg
15	11492-1	4	Tab Washer
16	12555-9	2	Steer Axle Lower Plate
17	12556	1	Sterling Tie Rod
18	12562	2	Hub Adapter (Front)
19	12563	2	27x10.5-15 Wheel/Tyre Assy RH
20	12564	2	27x10.5-15 Wheel/Tyre Assy LH
21	12570	2	Wheel Motor
22	13854	1	Steer Hub- RH, SR V4
23	13855	1	Steer Hub- LH, SR V4
24	13856	2	Thrust Washer - Steering
25	13857	2	Bearing Retainer
26	14088	2	Flange Bearing Shim
27	98300-9	24	Countersunk Wheel Bolt
28	100432-002	1	Hyd Fitting- Straight ORFS(04)-SAE(04)
29	512975-000	8	Hyd Fitting- Straight ORFS(08)-SAE(12)
30	11699A	1	Cylinder Assy- Steer SR V4



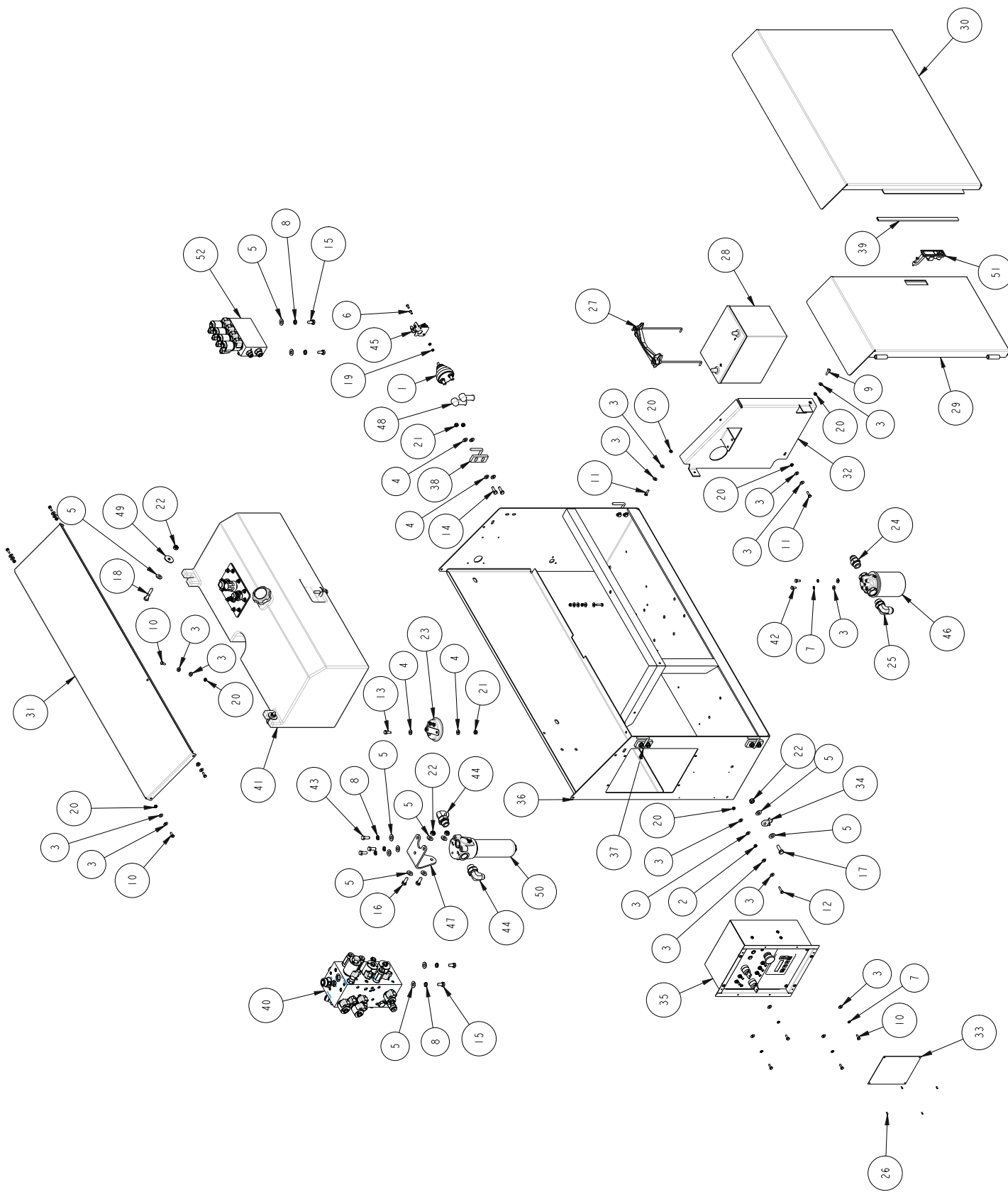
Swing Arms Assembly

Item	Part No.	Qty.	Description
1	3603-06	2	Plain Washer
2	3603-12HD	3	Plain Washer
3	3603-16HD	10	Plain Washer
4	3605-06	2	Spring Washer
5	3608-12C	2	Cone Lock Nut
6	3608-16C	2	Cone Lock Nut
7	3610-06016	2	Metric Bolt
8	3616-12090	2	Metric Bolt Grade 10.9
9	3616-16130	2	Metric Bolt Grade 10.9
10	3626-2	4	Flanged Permaglide Bush
11	011469-006	9	Lug Nut- 5/8-18 RH
12	15092	1	Wheel/Tyre Assy- RH, NM 27x10.5-15
13	15094	1	Swing Arm, SRxx70 Torque Hub
14	15095	1	Wheel Motor
15	15117	1	Cover- Swing Arm, SRxx70
16	15127	2	Washer Plate - Drive Motor
17	100432-002	1	Hyd Fitting- Straight ORFS(04)-SAE(04)
18	100432-004	1	Hyd Fitting- Straight ORFS(04)-SAE(06)
19	100434-004	1	Hyd Fitting- 90 Elbow ORFS(04)-SAE(06)
20	100434-010	1	Hyd Fitting- 90 Elbow ORFS(06)-SAE(08)
21	100434-015	2	Fitting, 90 Deg
22	116324-000	1	Wheel Gearbox
23	0260070	1	O-Ring
24	0260099	1	O-Ring
25	5560245	6	Bolt, HD
26	5563116	2	Bolt, HDD
27	11642A	1	Cylinder Assy- Axle, SR V4



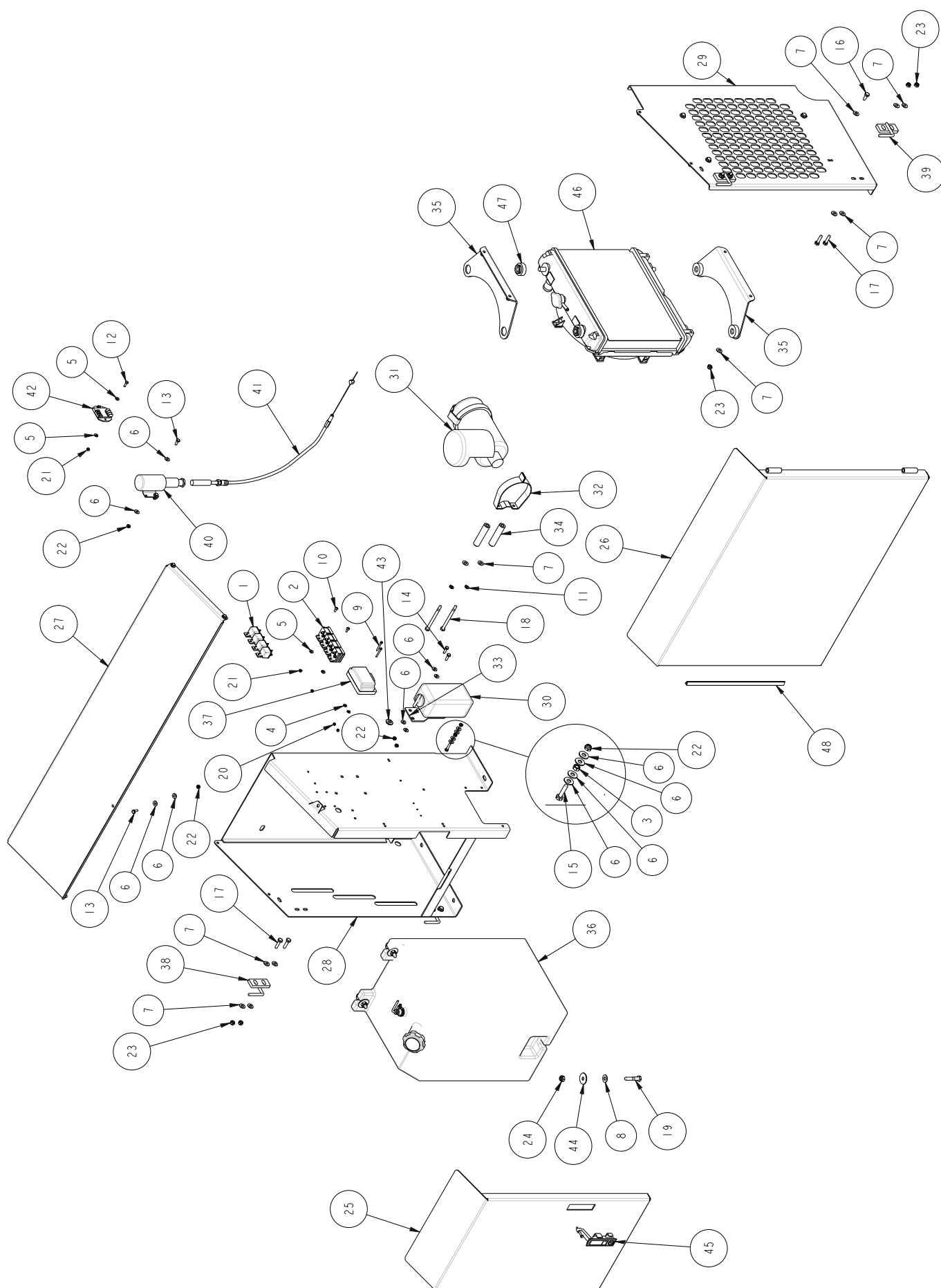
Hydraulic Cabinet

Item	Part No.	Qty.	Description
0	15133-01	1	Hydraulic Cabinet Assembly
1	302-0049	1	Switch Battery Disconnect
2	3602-06	2	Metric Hex Nut
3	3603-06	29	Plain Washer
4	3603-08	18	Plain Washer
5	3603-10	16	Plain Washer
6	3604-05012	2	Screw, Pan Head Pozzi- M5 x 12 ZP
7	3605-06	6	Spring Washer
8	3605-10	7	Spring Washer
9	3606-06025	1	Countersunk Socket Head Screw
10	3610-06016	9	Metric Bolt
11	3610-06020	2	Metric Bolt
12	3610-06025	2	Metric Bolt
13	3610-08020	1	Metric Bolt
14	3610-08025	8	Metric Bolt
15	3610-10020	4	Metric Bolt
16	3610-10025	2	Metric Bolt
17	3610-10030	1	Metric Bolt
18	3610-10050	3	Metric Bolt
19	3611-05	2	Metric Nyloc Nut
20	3611-06	10	Metric Nyloc Nut
21	3611-08	9	Metric Nyloc Nut
22	3611-10	6	Metric Nyloc Nut
23	4381	1	Horn
24	7025-008	1	JICM x UNO Ring Nipple
25	7031-009	1	JICM x UNO Ring M Elbow
26	8974	4	Screw, Hammer Drive
27	10268-1	1	Battery Bracket HA 8023
28	11596	1	Battery 12v BVS 70
29	11679	1	Cabinet Door- Small
30	11680	1	Cabinet Door- Large
31	12716-13	1	Top Plate Engine+Control Cabinets
32	12716-14	1	Cabinet Support
33	12833-8	1	Name Plate
34	13164	1	Cable Tie Mount- M10
35	13811	1	Lower Control Box Assembly
36	13864	1	Cabinet- Control, SRxx70 V4
37	13869-01	2	Cabinet Hinge, LH
38	13869-02	2	Cabinet Hinge, RH
39	13872_AT_380	1	Rubber Channel Section
40	15123-01	1	Main Manifold Assembly
41	15141-01	1	Hydraulic Tank Assembly
42	60015-012	2	3/4" x 1/4" NC Bolt (Plated)
43	60017-007	3	1" X 3/8 UNC Bolt
44	100434-015	2	Fitting, 90 Deg
45	300840	1	Lock Out Lever Asm.
46	301440	1	AE-10 Oil Filter
47	1431833	1	Bracket - Pressure Filter
48	3040269	2	Boot Cable Entry Black I/O GA
49	5560179	3	Flat Washer-Special
50	6019325	1	Pressure Filter
51	8342416	1	Latch - Adjustable Trigger, Key 508CH
52	13781A	1	Manifold Assy- Stabiliser SR V4



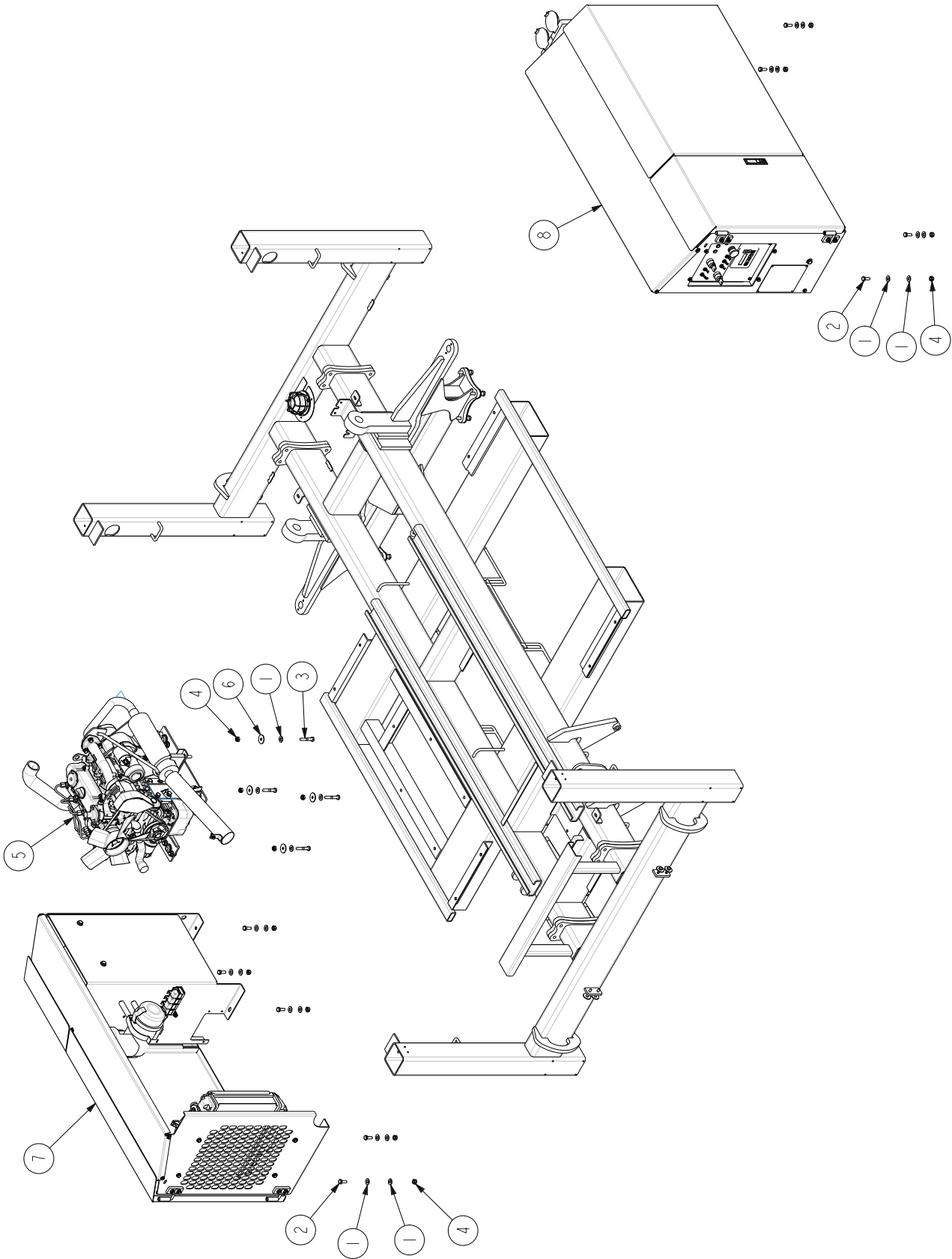
Engine Cabinet

Item	Part No	Qty	Description
0	12938A	1	Engine Cabinet Assembly
1	1650-010	4	Relay 12V
2	2065-002	4	Plug In Relay Base
3	3602-06	1	Metric Hex Nut
4	3603-04	2	Plain Washer
5	3603-05	6	Plain Washer
6	3603-06	26	Plain Washer
7	3603-08	26	Plain Washer
8	3603-10	3	Plain Washer
9	3604-04035	2	Pan Head Screw
10	3604-05012	2	Pan Head Screw
11	3605-08	2	Spring Washer
12	3610-05016	2	Metric Bolt
13	3610-06016	9	Metric Bolt
14	3610-06020	2	Metric Bolt
15	3610-06025	1	Metric Bolt
16	3610-08020	4	Metric Bolt
17	3610-08030	8	Metric Bolt
18	3610-08100	2	Metric Bolt
19	3610-10050	3	Metric Bolt
20	3611-04	2	Metric Nylock Nut
21	3611-05	4	Metric Nylock Nut
22	3611-06	12	Metric Nylock Nut
23	3611-08	12	Metric Nylock Nut
24	3611-10	3	Metric Nylock Nut
25	11679	1	Cabinet Door - Small
26	11680	1	Cabinet Door - Large
27	12716-13	1	Top Plate
28	12938	1	Engine Cabinet - Tank Side
29	12938-1	1	Cabinet End - Radiator Vent
30	13086-03	1	Radiator Overflow Bottle
31	13086-04	1	Air Filter Assembly
32	13086-05	1	Air Filter Bracket
33	13086-06	1	Overflow Attachment Bracket
34	13098	2	Air Filter Support
35	13099-1	2	Radiator Mount
36	13106-2A	1	Fuel Tank Assembly
37	13806	1	Fuse Block - Blade x 6
	13553-05	1	Fuse - Run
	13553-10	1	Fuse - High RPM
	13553-15	1	Fuse - B+ Supply
	13553-20	1	Fuse - Start
	13553-25	1	Fuse - Glow
38	13869-01	2	Cabinet Hinge, LH
39	13869-02	2	Cabinet Hinge, RH
40	15106	1	Solenoid - Trombetta
41	15107	1	Cable Assembly - Throttle
42	15108	1	Control Module - Trombetta
43	65004-008	1	Rubber Grommet
44	5560179	3	Flat Washer - Special
45	8342416	1	Latch Adjustable Trigger - Key 508CH
	8342416-1	1	Key 508CH
	8342416-3	1	Latch Adjustable Trigger - Key 501CH
	8342416-2	1	Key 501CH
46	7630976	1	Radiator
47	13086-31	4	Radiator Cushion
48	PCA015	1	Rubber Channel Section



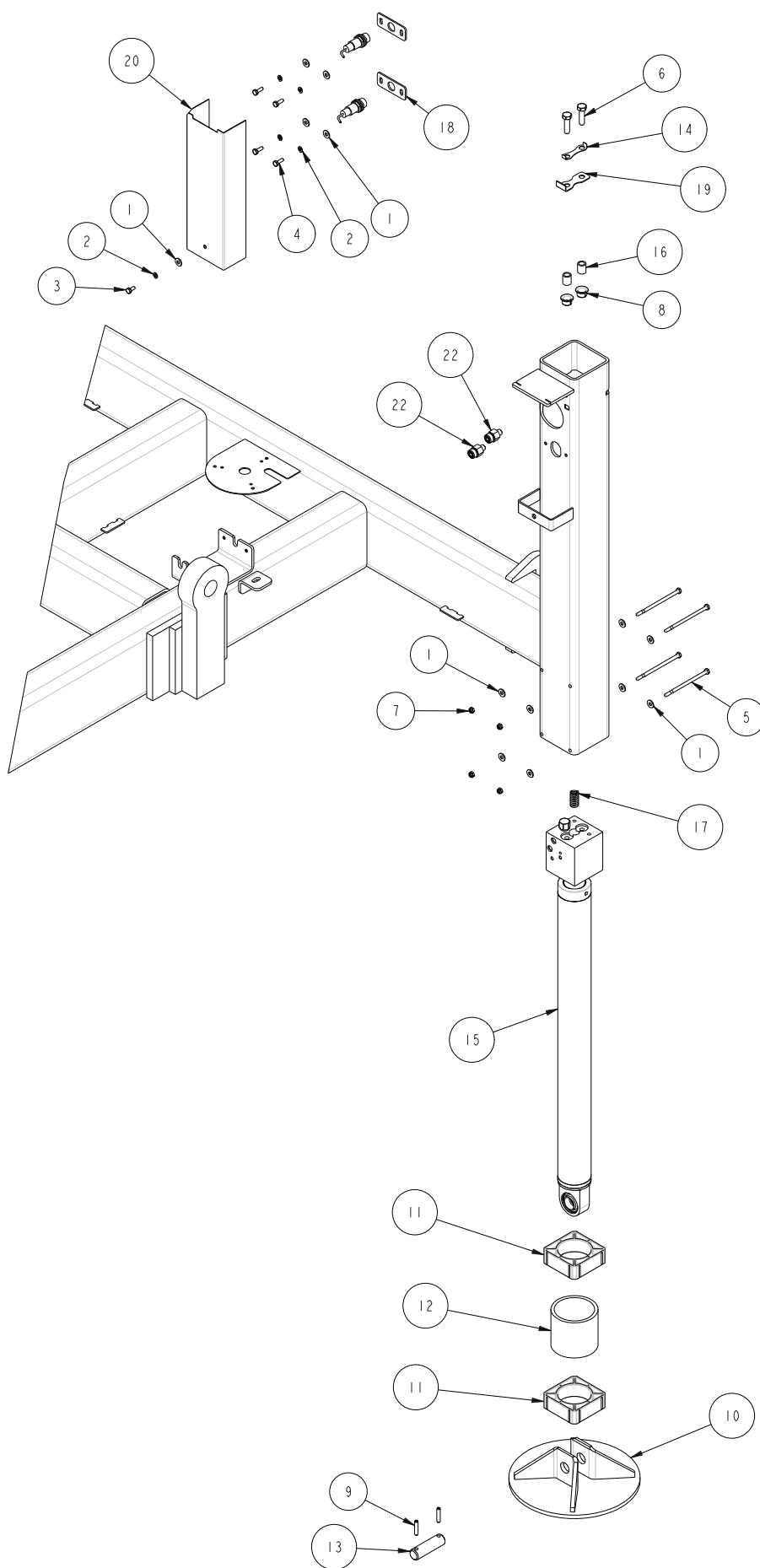
Cabinets Assembly

Item	Part No	Qty	Description
1	3603-10	22	Plain Washer
2	3610-10025	9	Metric Bolt
3	3610-10055	3	Metric Bolt
4	3611-10	13	Metric Nylock Washer
5	15116	1	Kubota D902 Engine Assembly
6	5560179	4	Flat Washer - Special
7	12938A	1	Engine Cabinet Assembly
8	15133-01	1	Hydraulic Cabinet Assembly



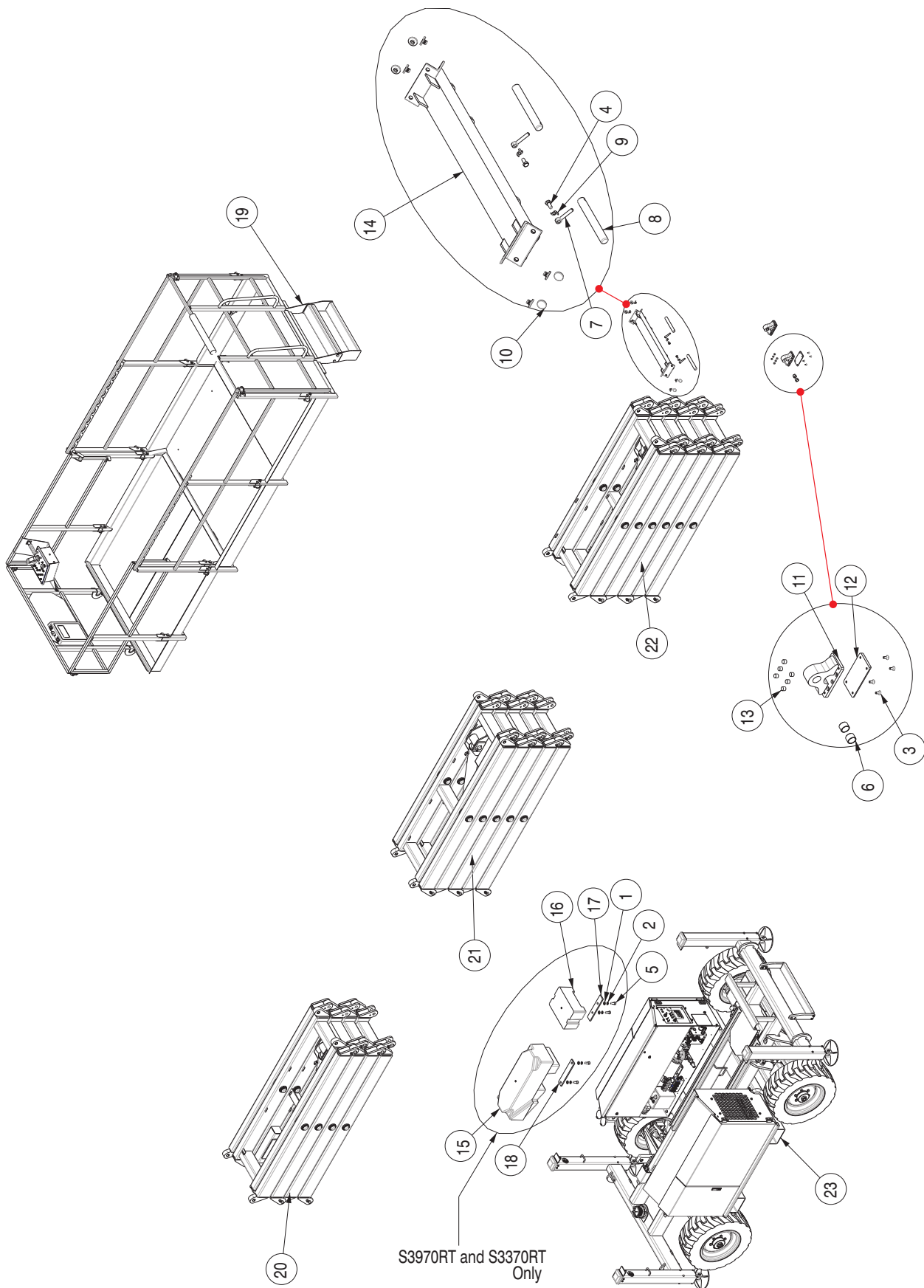
Stabiliser Assembly

Item	Part No.	Qty.	Description
0	12036A	1	Stabiliser Cylinder Assembly
1	3603-06	28	Plain Washer
2	3605-06	20	Spring Washer
3	3610-06012	4	Metric Bolt
4	3610-06016	16	Metric Bolt
5	3610-06110	4	Metric Bolt
6	3610-10035	2	Metric Bolt
7	3611-06	4	Metric Nyloc Nut
8	3626-8	2	Flanged Permaglide Bush
9	3633-3	2	Roll Pin
10	11305	1	Foot Weld Inverted Stabiliser Leg
11	11366-1	2	Stabilizer Bush
12	11366-2	1	Stabiliser Bush Spacer
13	11369	1	Pin
14	11492-4	1	Dual Locktab
15	12036	1	Cylinder- Stabiliser SR
16	12036-5	2	Sliding Spacer
17	12036-6	1	Compression Spring
18	14098-01	8	Prox Mount Bracket
19	14098-02	2	Prox Target, Leg Grounded, SR
20	14098-03	4	Hose cover
21	15048	2	Inductive Prox NO
22	100432-007	2	Hyd Fitting- Straight ORFS(06)-SAE(04)



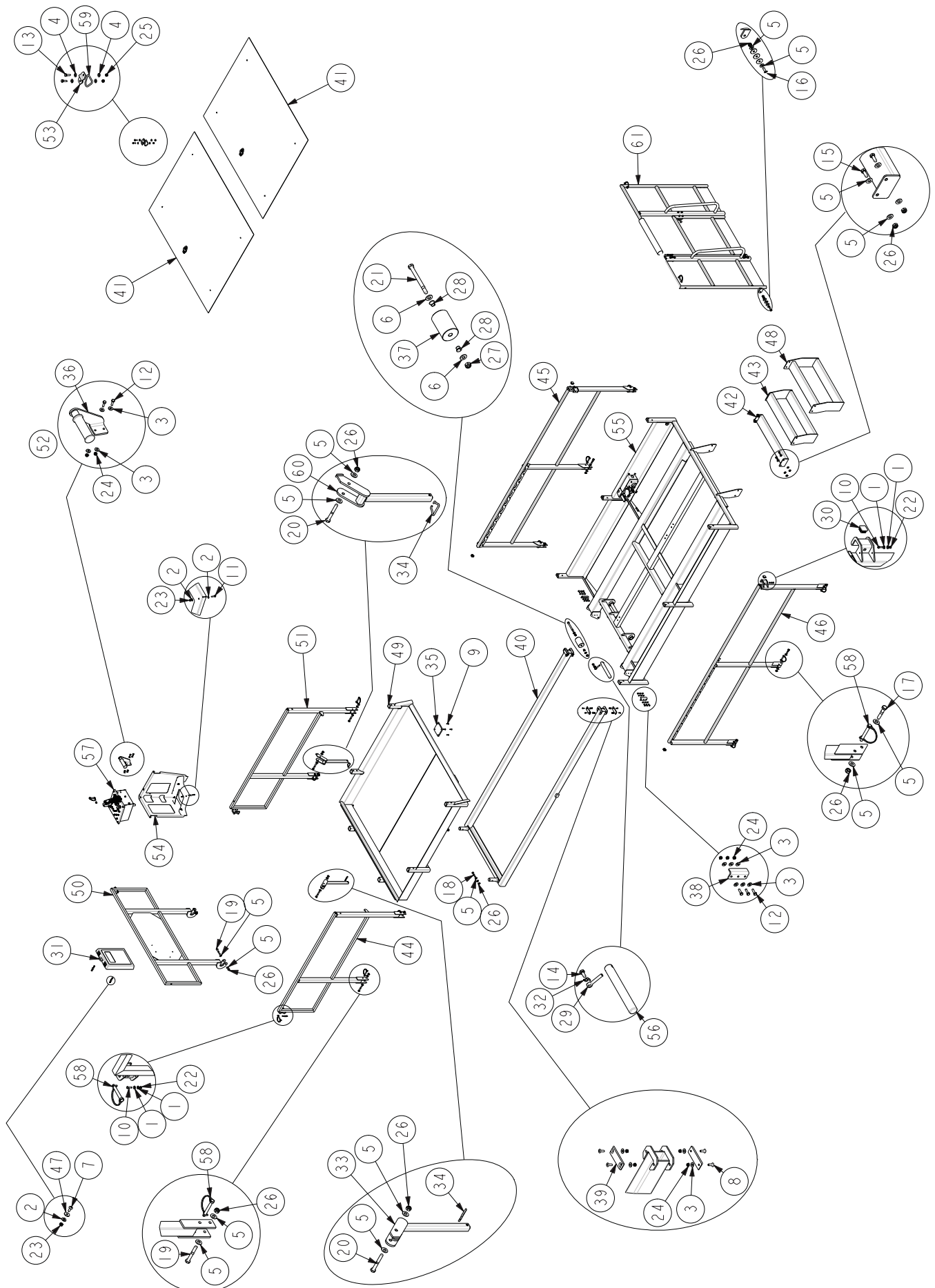
Base, Stack, Platform Assembly

Item	Part No	Qty	Description
1	3603-16	4	Plain Washer
2	3605-16	4	Spring Washer
3	3606-06016	8	Socket Head Screw
4	3610-10020	2	Metric Bolt
5	3610-16040	4	Metric Bolt
6	3624-19	4	Permaglide Bush
7	8626	2	Pin Keeper
8	13941	2	Pin
9	11492-3	2	Tab Washer
10	11658-20	8	Wear Plug
11	13928	2	Slider Block Weld
12	12566-2	2	Wear Pad, Slider Block Bottom
13	12566-3	12	Slider Block Top
14	13931	1	Slider Bar Weld
15	13117-1	1	Counterweight Front
16	13117-2	1	Counterweight Rear
17	13117-4	1	Strap, Rear Counterweight
18	13117-5	1	Strap, Front Counterweight
19		1	Platform Assembly
20		1	2770 Stack
21		1	3370 Stack
22		1	3970 Stack
23		1	Base Assembly



Platform Assembly

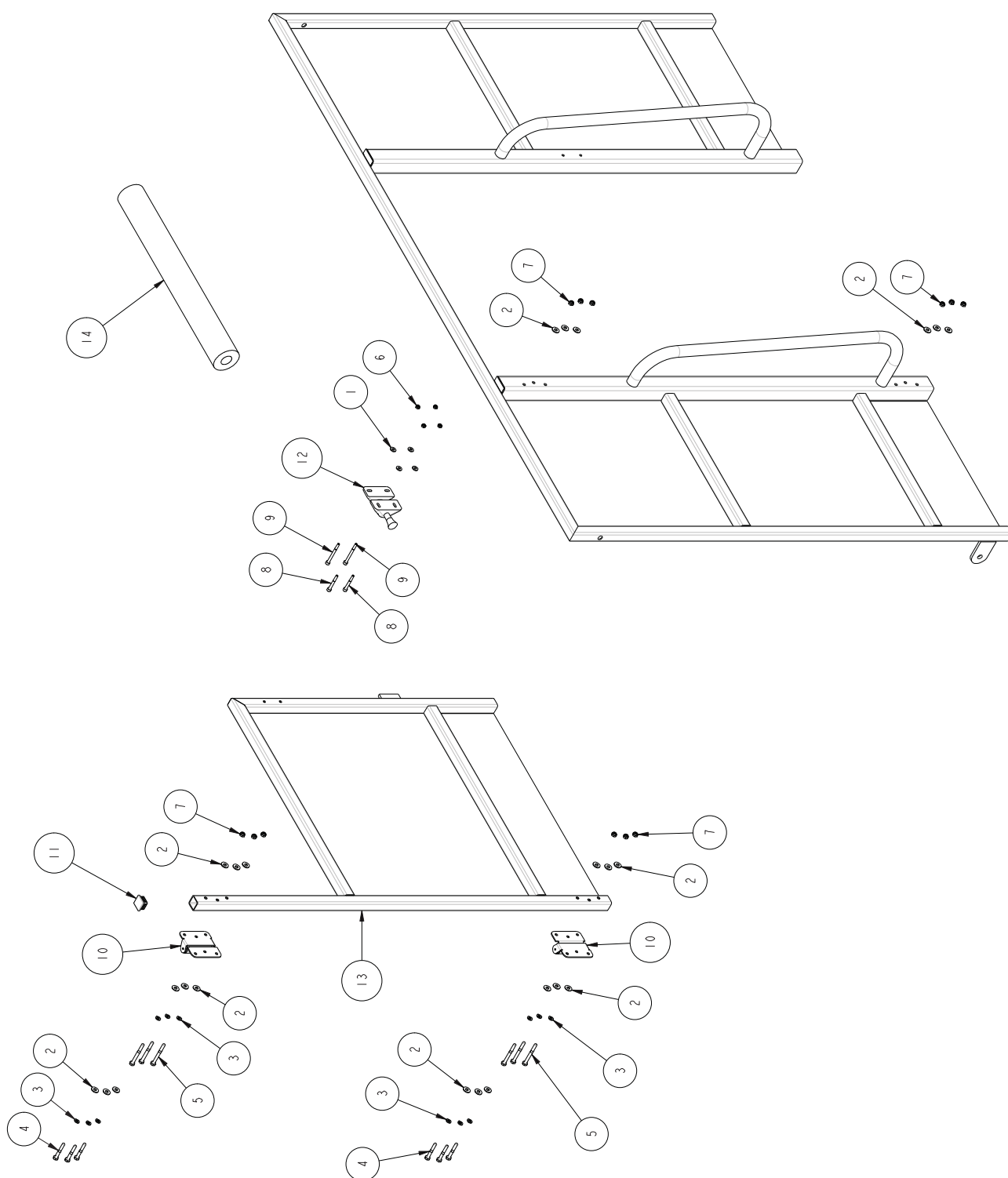
Item	Part No	Qty	Description
0	15143-01	1	Platform Assembly, 30mm Pins
1	3603-04	12	Plain Washer
2	3603-05	16	Plain Washer
3	3603-06	24	Plain Washer
4	3603-08	12	Plain Washer
5	3603-10	44	Plain Washer
6	3603-12	4	Plain Washer
7	3604-05012	6	Pan Head Screw
8	3606-06012	8	Countersunk Sockethead Screw
9	3606-06025	8	Countersunk Sockethead Screw
10	3610-04016	4	Metric Bolt
11	3610-05020	4	Metric Bolt
12	3610-06020	8	Metric Bolt
13	3610-08025	6	Metric Bolt
14	3610-10020	2	Metric Bolt
15	3610-10025	4	Metric Bolt
16	3610-10030	2	Metric Bolt
17	3610-10050	6	Metric Bolt
18	3610-10060	2	Metric Bolt
19	3610-10070	6	Metric Bolt
20	3610-10075	2	Metric Bolt
21	3610-12130	2	Metric Bolt
22	3611-04	4	Metric Nylock Nut
23	3611-05	11	Metric Nylock Nut
24	3611-06	16	Metric Nylock Nut
25	3611-08	6	Metric Nylock Nut
26	3611-10	22	Metric Nylock Nut
27	3611-12	2	Metric Nylock Nut
28	3626-2	4	Flanged Permaglide Bush
29	8626	2	Pin Keeper
30	8926-1	4	Plug RHS 25mm
31	010076-000	1	Manual Enclosure
32	11492-3	2	Tab Washer
33	11695	1	Handrail Latch Left
34	11695-3	2	Latch Holding Ring
35	12709-10	2	Rollout Deck Slide Pad
36	12749	1	Wrist Support
37	13122-11	2	External Roller
38	13122-12	2	Stop - Rollout
39	13122-14	4	Wear Pad - Internal
40	13128	1	Rollout Frame Weld
41	13132	2	Platform Floor Pressing
42	13258	1	Extension Step Weld (2770)
43	13259	1	Extension Step Weld (3370)
44	13262	1	Handrail Left Front
45	13264	1	Right Handrail
46	13268	1	Left Handrail
47	13525-05	2	Washer, M5
48	13649	1	Extension Step Weld (3970)
49	13786	1	Rollout Deck Weld
50	13840	1	Handrail Front
51	13841	1	Handrail Right Front
52	13843-03	1	Handgrip - Black 25mm ID
53	13875-01	3	Harness Bracket
54	13921	1	Control Mount
55	13935	1	Platform Weld
56	13941	2	Pin, 30mm x 225
57	14023-04	1	Upper Control Box
58	302544	15	Pin & Lock
59	0360892	3	D Ring, Fall Restraint
60	11695R	1	Handrail Latch Right
61	13912A	1	Handrail Assembly, Entry End



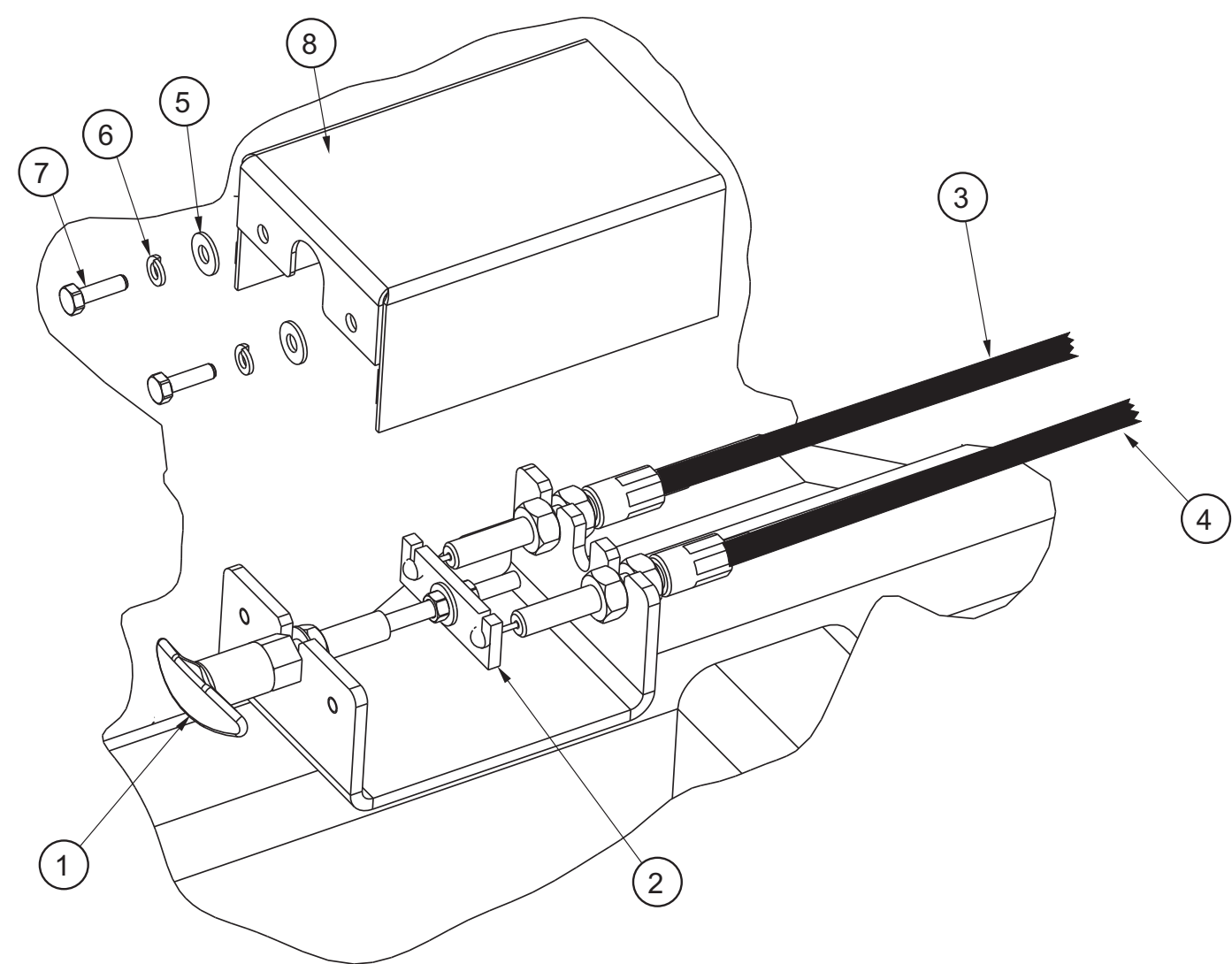
Platform Rear Handrail Assembly

Item	Part No.	Qty.	Description
0	13921A	1	Platform Rear Handrail Assembly
1	3603-05	4	Plain Washer
2	3603-06	24	Plain Washer
3	3605-06	12	Spring Washer
4	3610-06040	6	Metric Bolt
5	3610-06055	6	Metric Bolt
6	3611-05	4	Metric Nyloc Nut
7	3611-06	12	Metric Nyloc Nut
8	3613-05040	2	Socket Head Cap Screw
9	3613-05055	2	Socket Head Cap Screw
10	7495	2	Spring Hinge
11	8926-1	1	Plug RHS 25mm
12	13909	1	Latch, Magnetic Slam
13	13913	1	Handrail- Gate
14	9980003	1	Foam Pipe Rap

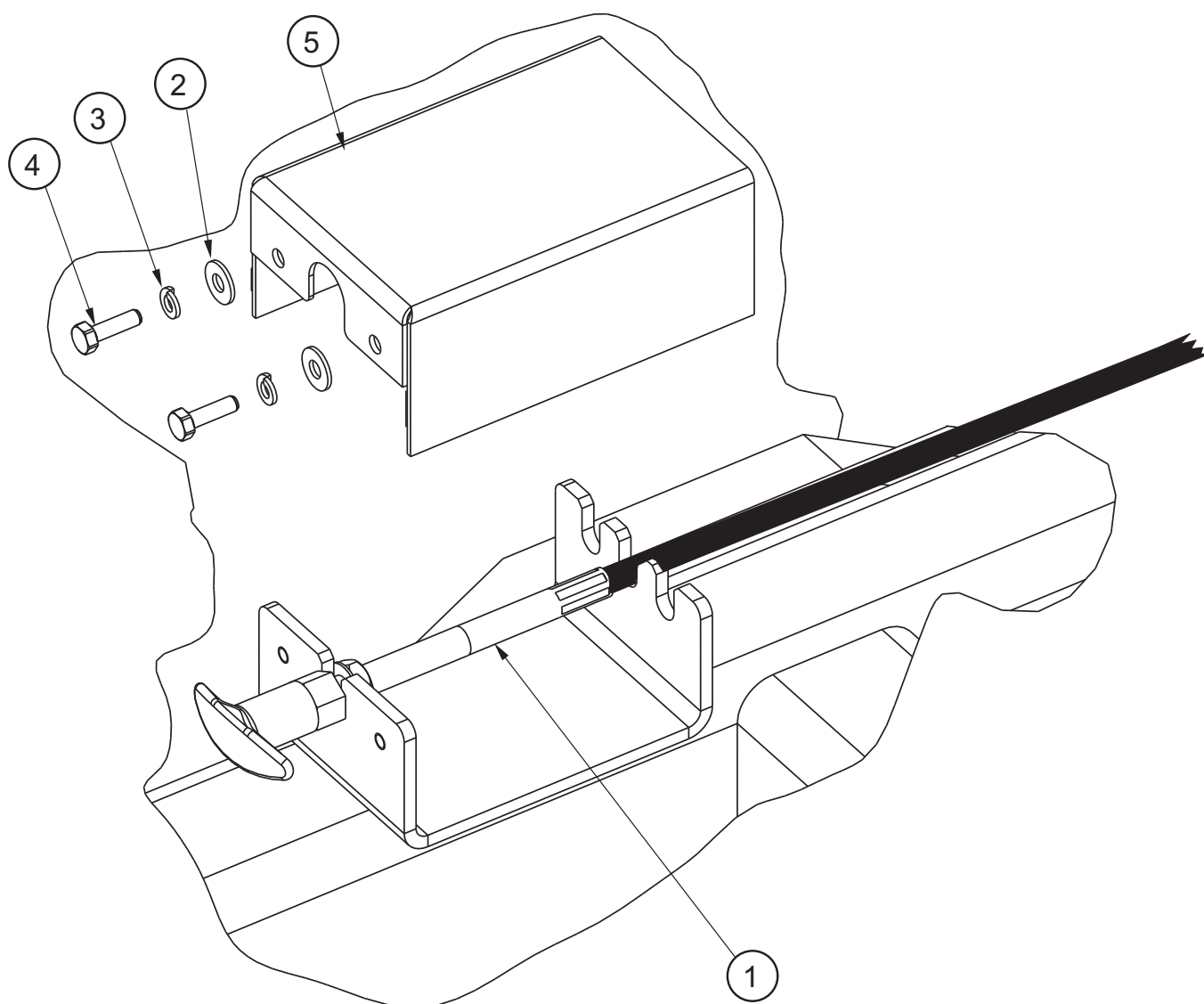
Platform Rear Handrail Assembly



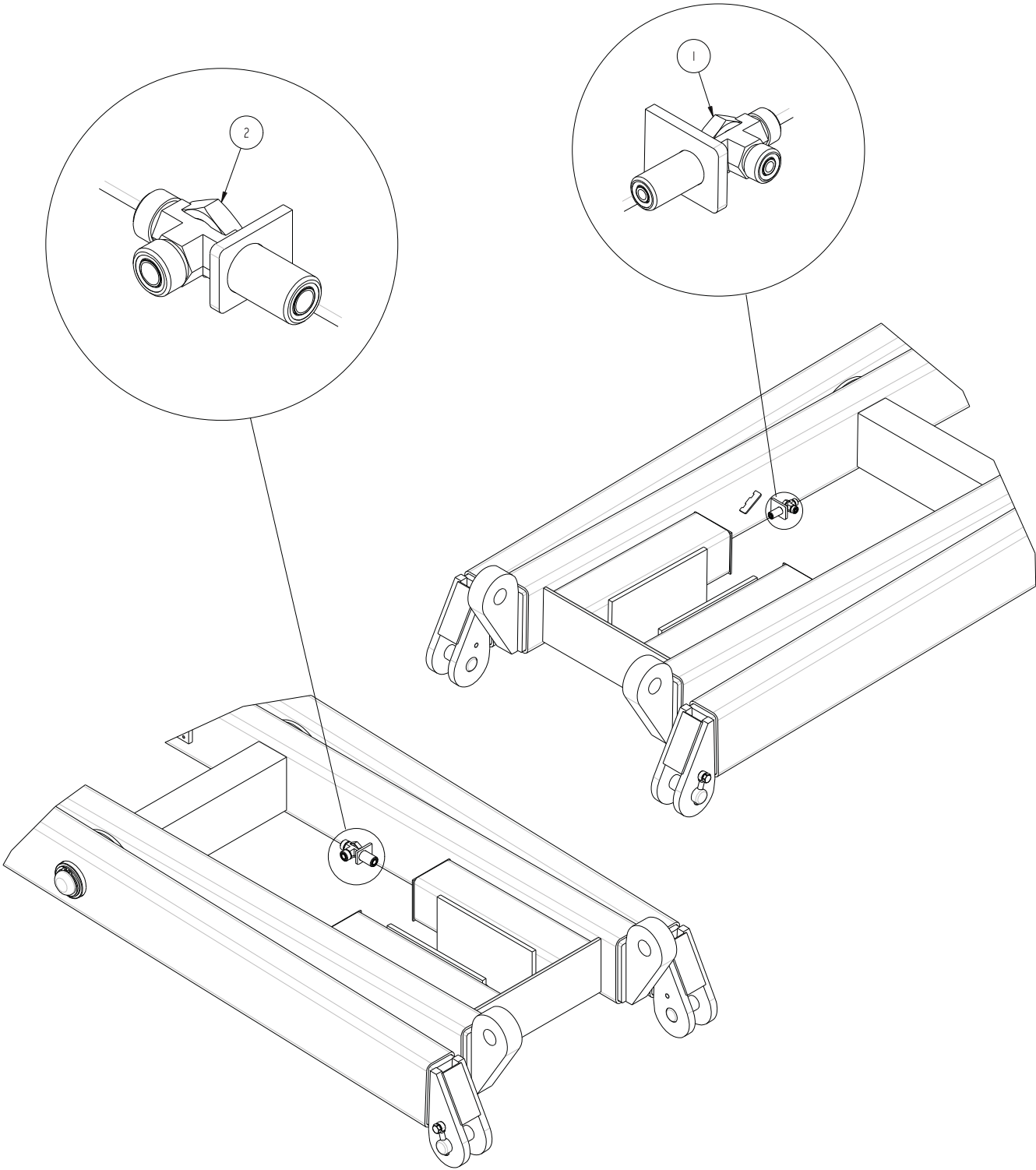
Emergency Bleed Down 3970, 3370



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	3603-06	2	Washer, Plain
6	3605-06	2	Washer, Spring
7	3610-06020	2	Metric Bolt
8	12818	1	Bleed Down Cover



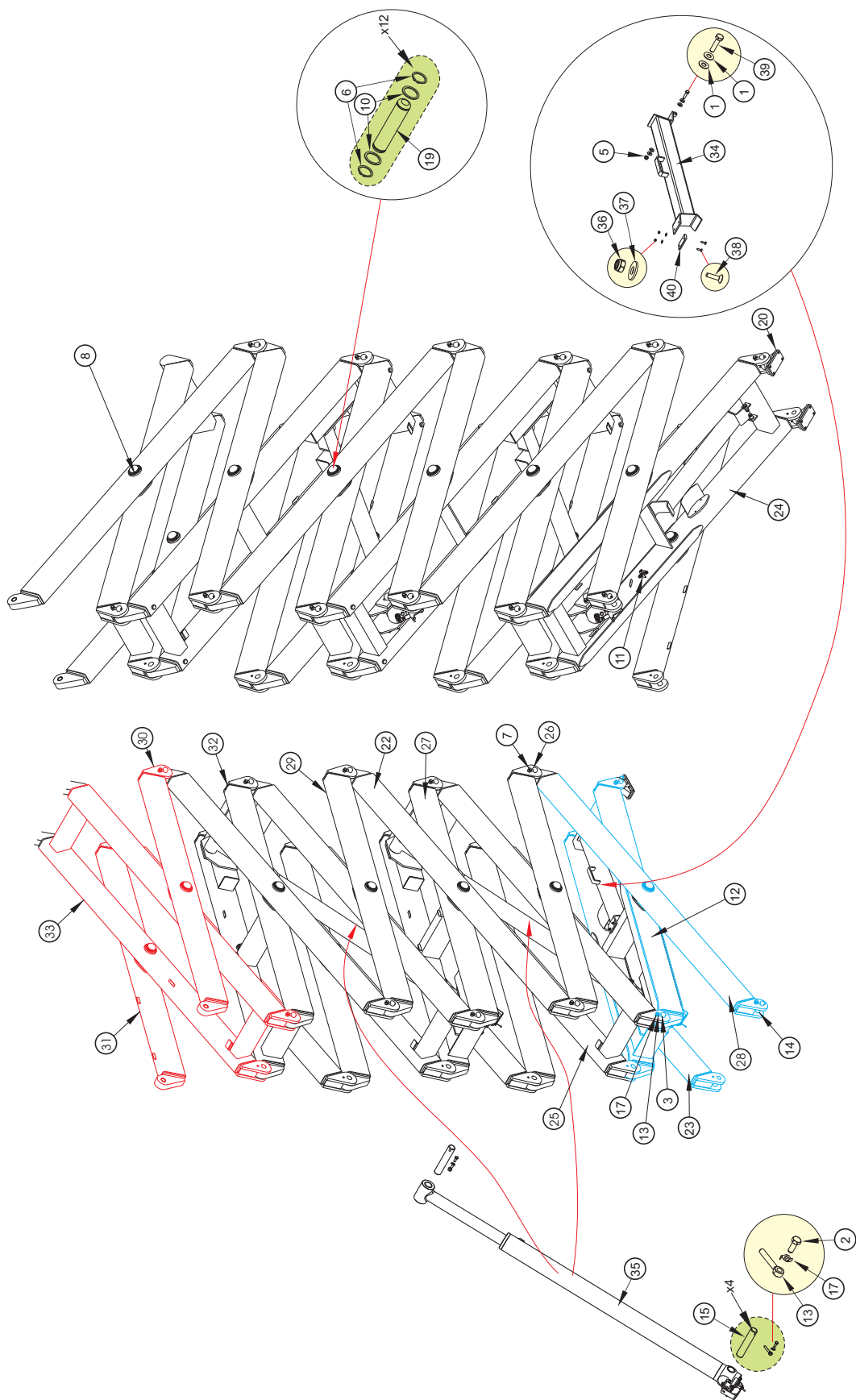
Item	Part No	Qty	Description
1	12748	1	Bleed Down Handle and Cable to Lift Cylinder
2	3603-06	2	Washer, Plain
3	3605-06	2	Washer, Spring
4	3610-06020	2	Metric Bolt
5	12818	1	Bleed Down Cover



Item	Part No.	Qty.	Description
1	13782-04	1	Hyd Tee- Bulkhead Run ORFS(04) x3
2	512986-000	1	Hyd Tee- Bulkhead Run ORFS(08) x3

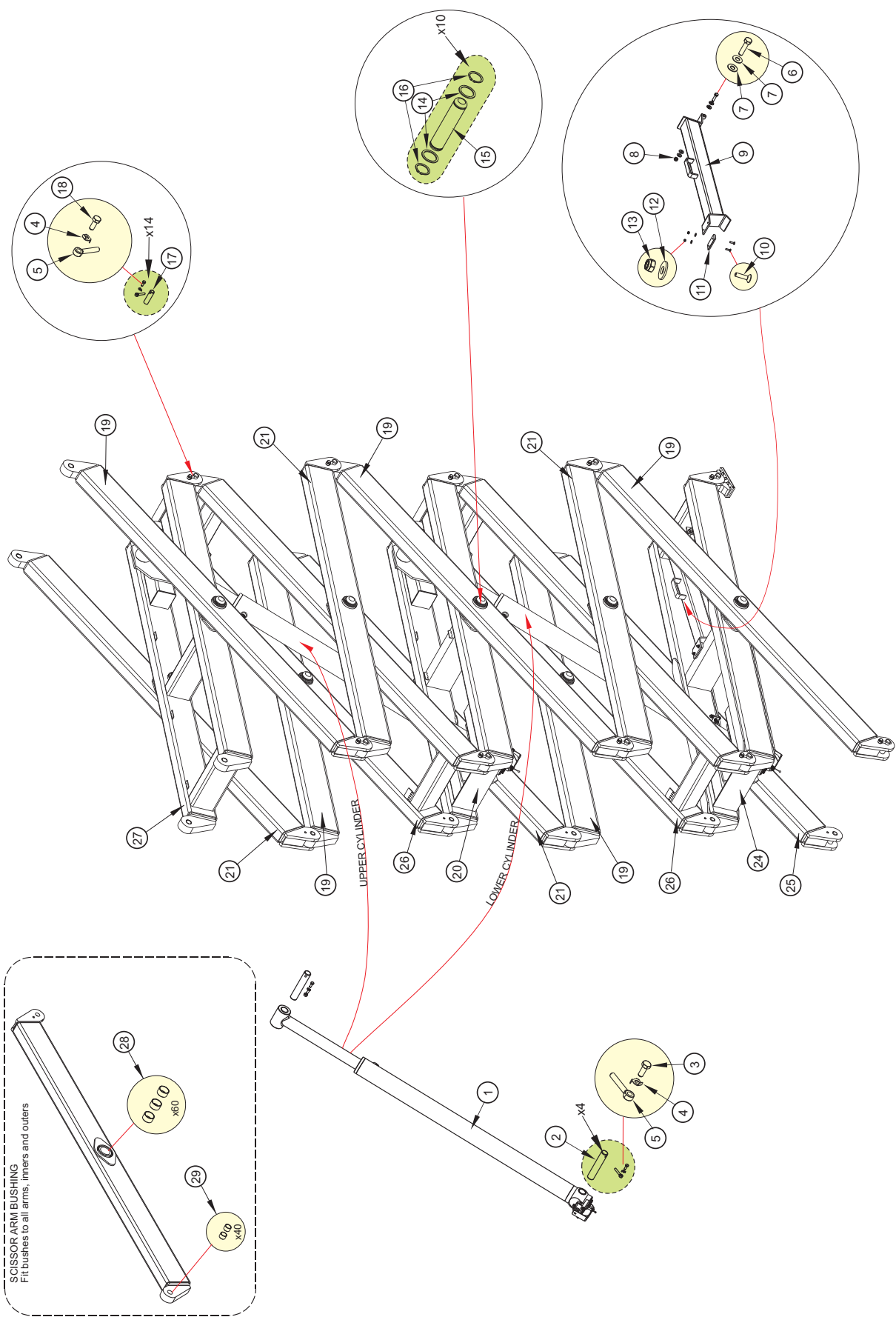
Scissor Stack Assembly 3970

Item	Part No	Qty	Description
1	3603-10	4	Plain Washer
2	3610-10020	2	Metric Bolt
3	3610-10025	27	Metric Bolt
4	3610-10040	2	Metric Bolt
5	3611-10	2	Metric Nylock Nut
6	3619-5	24	External Circlip
7	3624-19	40	Permaglide Bush
8	3624-2	72	Permaglide Bush
9	3624-3	8	Permaglide Bush
10	3629-5062L	24	Washer, Scissor Pivot
13	8626	30	Pin Keeper
14	13667-16	4	Pin
15	9292	4	Pin
17	11492-3	30	Tab Washer
18	11658-20	8	Wear Plug
19	11804	12	Scissor Pivot Pin
20	12566	2	Sliding Block Weld
21	12589	1	Slider Bar Weld
22	13667-1	4	Arm, Outer, Mid Right Hand
23	13667-32	1	Arm, First, Outer, Right Hand
24	13667-33	1	Arm, Lower, Inner Weld
25	13667-15	2	Arm, Inner, Weld
26	13667-16	20	Pin, 30mm
27	13667-37	1	Arm, Inner, Dual Cylinder Weld
28	13667-1	1	Arm, Outer, Odd Ends, 1" Female
29	13667-2	4	Arm, Outer, Mid Left Hand
30	13667-2	1	Arm, Outer, Top Odd Ends, Left Hand
31	13667-35	1	Arm, Outer, Top Odd Ends, Right Hand
32	13667-36	1	Arm, Inner, Upper Cylinder Top
33	13667-15	1	Arm, Inner, Top
34	11380A	1	Safety Prop
35	13906-01	1	Lower Lift Cylinder
36	3611-06	2	Metric Nylock Nut
37	3603-06	2	Plain Washer
38	3606-06025	2	Cap Screw
39	3610-10120	1	Metric Bolt
40	11143-2	1	Wear Pad
41	13906-02	1	Upper Lift Cylinder (not Shown)



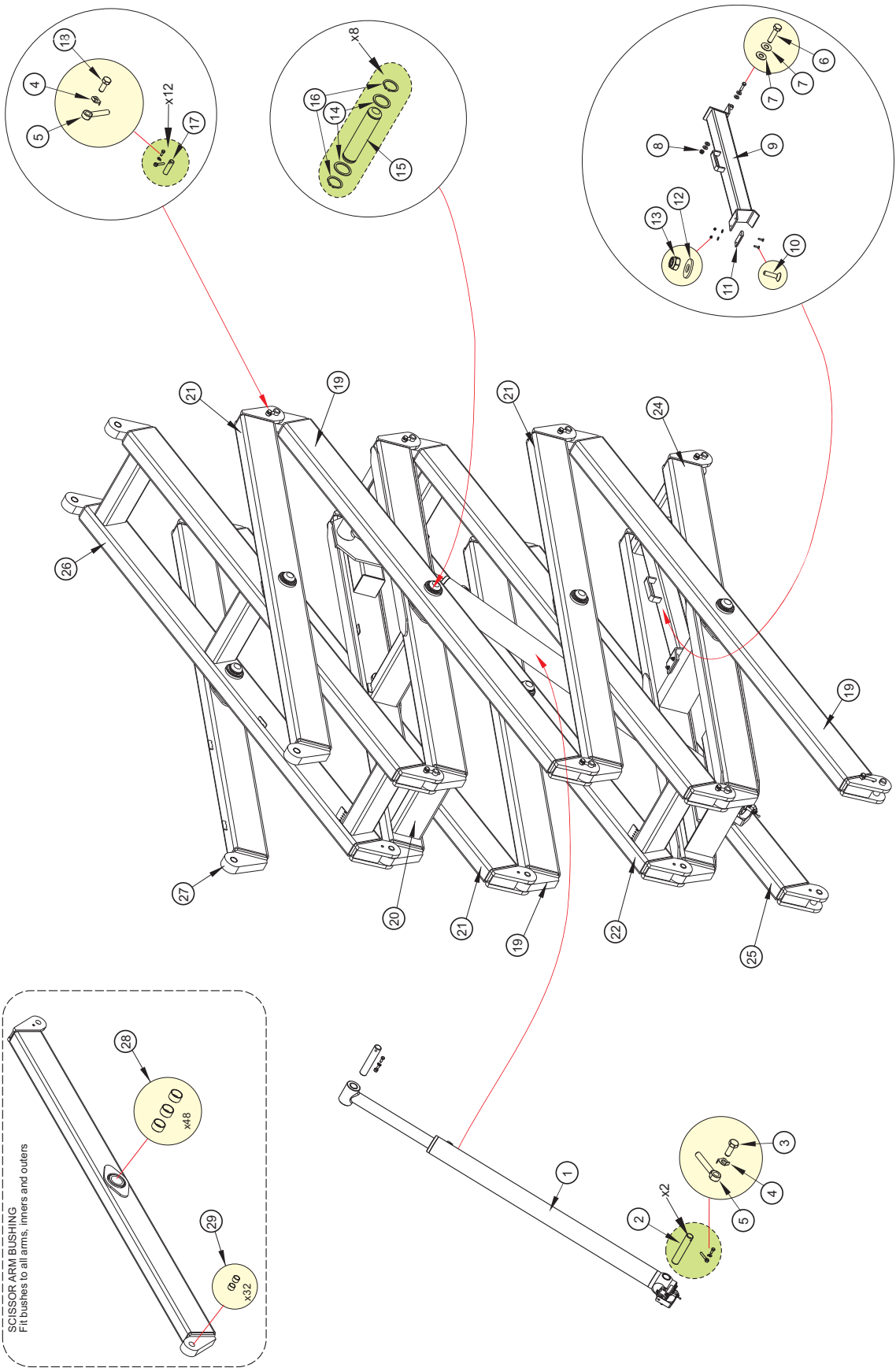
Scissor Stack Assembly 3370

Item	Part No	Qty	Description
1	13906-01	1	Lower Lift Cylinder
2	9292	4	Pin
3	3610-10020	4	Metric Bolt
4	11492-3	20	Locktab
5	8626	20	Pin Keeper
6	3610-10120	1	Metric Bolt
7	3603-10	4	Plain Washer
8	3611-10	1	Metric Nylock Nut
9	11380	1	Safety Prop Weld
10	3606-06025	2	Cap Screw
11	11143-2	1	Wear Pad
12	3603-06	2	Plain Washer
13	3611-06	2	Metric Nylock nut
14	3629-5062L	20	Washer, Scissor Pivot
15	11804	10	Scissor Pivot Pin
16	3619-5	20	Circlip
17	13667-16	16	Pin
18	3610-10025	16	Metric Bolt
19	13667-1	5	Arm, Outer, Mid Right Hand Weld
20	13667-36	1	Arm, Inner, 2 Cylinder Weld
21	13667-2	4	Arm, Outer, Mid Left Hand Weld
24	13667-33	1	Arm, Inner, Lower Weld
25	13667-32	1	Arm, Outer, Lower Right Weld
26	13667-15	2	Arm, Inner Weld
27	13667-36	1	Arm, Inner Top Weld
28	3624-2	60	Bush
29	3624-19	40	Bush
30	13906-02	1	Upper Lift Cylinder (Not Shown)



Scissor Stack Assembly 2770

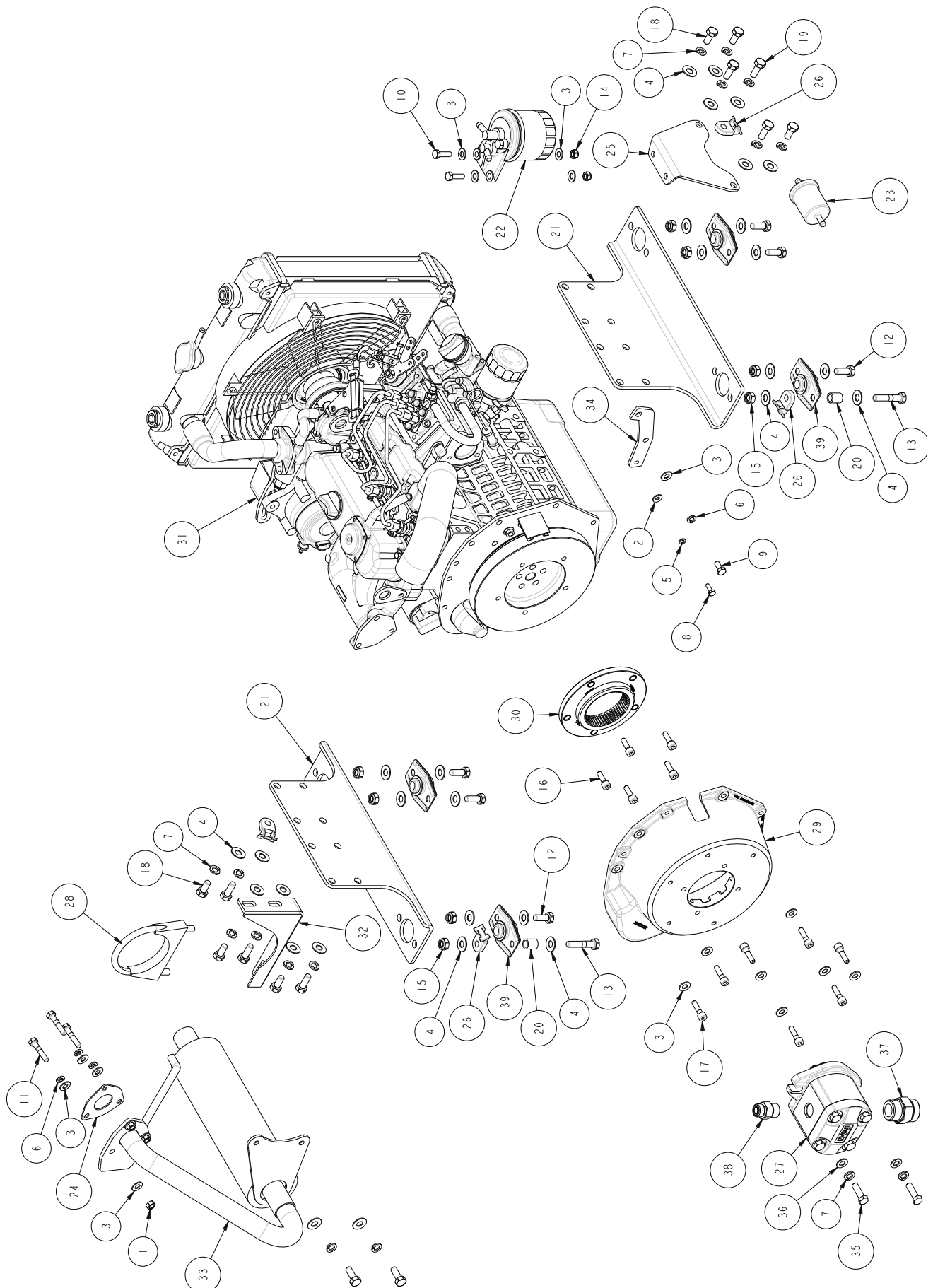
Item	Part No	Qty	Description
1	13906-01	1	Lower Lift Cylinder
2	9292	2	Pin
3	3610-10020	2	Metric Bolt
4	11492-3	14	Locktab
5	8626	14	Pin Keeper
6	3610-10120	1	Metric Bolt
7	3603-10	4	Plain Washer
8	3611-10	1	Metric Nylock Nut
9	11380	1	Safety Prop Weld
10	3606-06025	2	Cap Screw
11	11143-2	1	Wear Pad
12	3603-06	2	Plain Washer
13	3611-06	2	Metric Nylock Nut
14	3629-5062L	16	Washer, Scissor Pivot
15	11804	8	Scissor Pivot Pin
16	3619-5	16	Circlip
17	13667-16	12	Pin, 30mm
18	3610-10025	12	Metric Bolt
19	13667-1	3	Arm, Outer, Mid Right Hand Weld
20	13667-36	1	Arm, Inner, Upper Weld
21	13667-2	3	Arm, Outer, Mid Left Hand Weld
22	13667-15	1	Arm, Inner, Mid Weld
24	13667-33	1	Arm, Inner, Lower Weld
25	13667-32	1	Arm, Outer, Lower Right Weld
26	13667-15	1	Arm, Inner, Upper Fourth Stage
27	13667-35	1	Arm, Outer, Upper Weldment
28	3624-2	48	Bush
29	3624-19	32	Bush



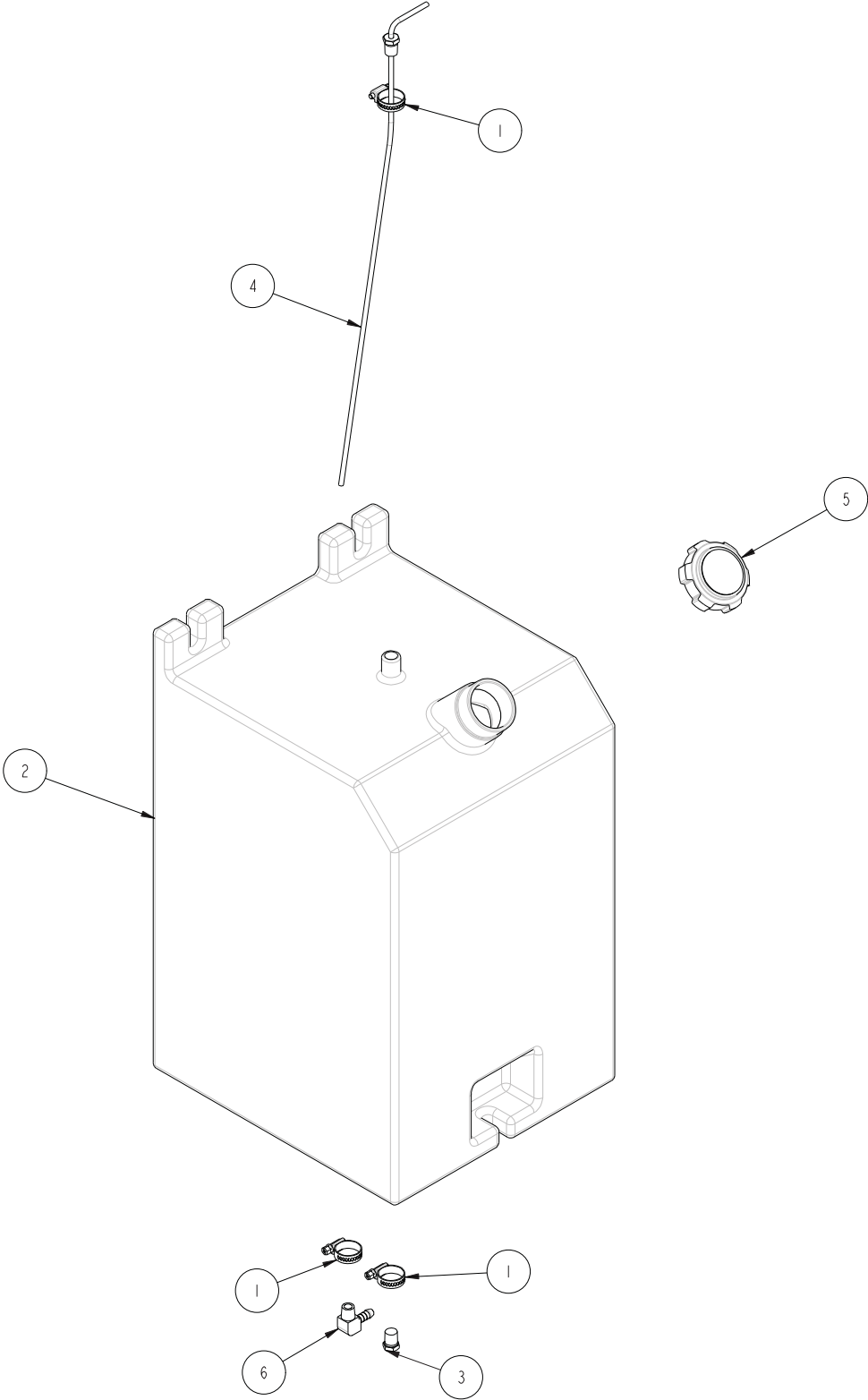
Kubota D902 Engine Assembly

Item	Part No.	Qty.	Description
0	15116	1	Kubota D902 T4 Engine Assembly
1	3602-08	3	Metric Hex Nut
2	3603-06	1	Plain Washer
3	3603-08	18	Plain Washer
4	3603-10	30	Plain Washer
5	3605-06	1	Spring Washer
6	3605-08	4	Spring Washer
7	3605-10	16	Spring Washer
8	3610-06016	1	Metric Bolt
9	3610-08016	1	Metric Bolt
10	3610-08025	2	Metric Bolt
11	3610-08040	3	Metric Bolt
12	3610-10025	6	Metric Bolt
13	3610-10050	2	Metric Bolt
14	3611-08	2	Metric Nyloc Nut
15	3611-10	8	Metric Nyloc Nut
16	3613-08025	5	Socket Head Cap Screw
17	3613-08030	7	Socket Head Cap Screw
18	3617-10020	6	Metric Bolt
19	3617-10025	8	Metric Bolt
20	12036-5	2	Sliding Spacer
21	12944	2	Engine Mount Feet, SRxx70 D902
22	13086-01	1	Fuel Filter, Kubota 15224-43013
23	13086-07	1	Fuel Filter
24	13086-08	1	Manifold Flange - 3 Bolt
25	13095	1	Fuel Filter Bracket- Kubota D902
26	13164	4	Cable Tie Mount- M10
27	13628	1	Pump- SAE-A, 9 Spline 10.3cc
28	13905	1	Saddle Clamp
29	13978-01	1	Bell Housing - KEA Adapter to SAE A Pump
30	13978-02	1	Flywheel Adapter - 6.5in
31	14004	1	Engine - Diesel, Kubota D902 Tier 4
32	14020	1	Muffler Support
33	15042	1	Exhaust - SRxx70 D902
34	15109	1	Cable Fixture - Engine End, Throttle
35	60017-010	2	1" X 3/8 UNC Bolt
36	60030-049	2	3/8" Plain Washer
37	512968-000	1	Hyd Fitting- Straight ORFS(16)-SAE(16)
38	512969-000	1	Hyd Fitting- Straight ORFS(08)-SAE(10)
39	7630208	4	Engine Mount

Kubota D902 Engine Assembly

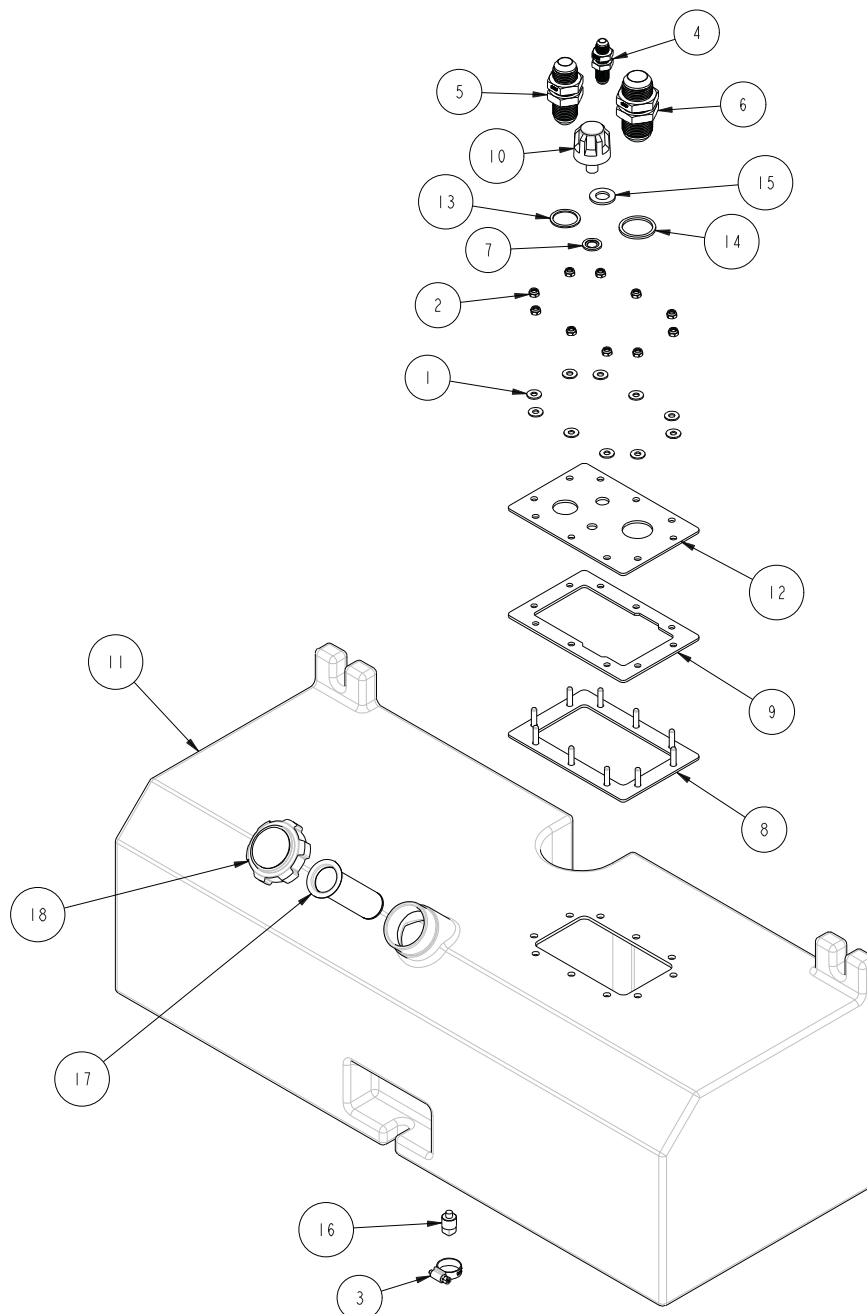


Diesel Fuel Tank Assembly



Item	Part No.	Qty.	Description
0	13106-2A	1	Diesel Fuel Tank Assembly
1	3618-11	3	Hose Clamp 11-25mm ZP
2	13106	1	Tank - Plastic 49L
3	13108-04	2	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

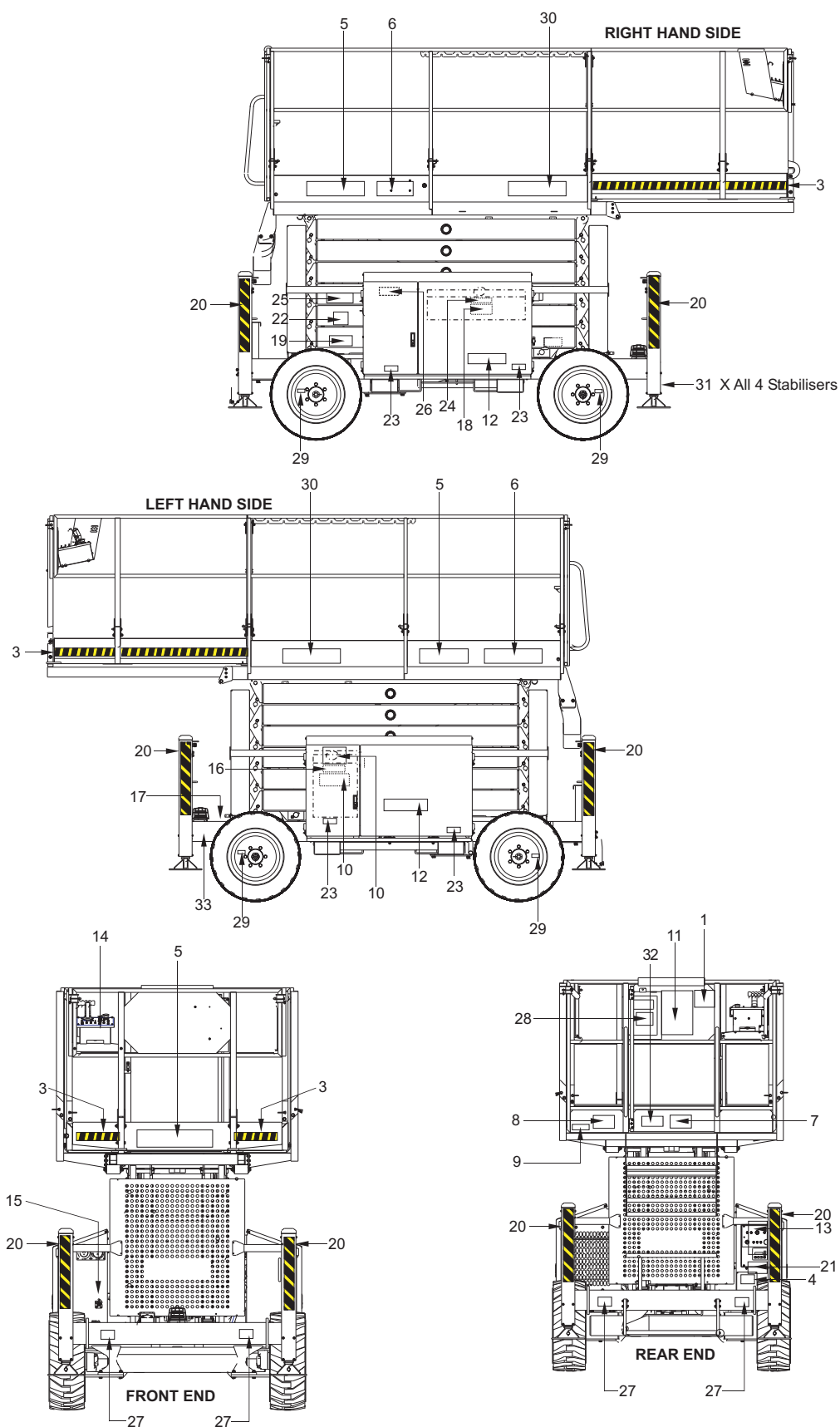
Hydraulic Oil Tank Assembly



Item	Part No.	Qty.	Description
0	15141-01	1	Hydraulic Oil Tank Assembly
1	3603-06	10	Plain Washer
2	3611-06	10	Metric Nyloc Nut
3	3618-11	1	Hose Clamp 11-25mm ZP
4	7024-002	1	Adapter 3/4 x 3/4
5	7024-003	1	Adapter 1/16 x 1/16
6	7024-005	1	Adapter 5/16 x 5/16
7	7084-005	1	Dowty Seal- 1/4" BSP
8	11430-1	1	Base Plate Weld
9	11430-5	1	Gasket
10	11487	1	Filter Breather
11	11558-1	1	Tank 13 Gal
12	15130-01	1	Top Plate Hyd Oil Tank
13	15153-12	1	Washer, Flat 3/4"
14	15153-16	1	Washer, Flat 1"
15	15156-14	1	Washer, Flat M14
16	452756	1	Plug, Magnetic 3/8 NPT
17	605246	1	Strainer Hyd Tank Fill
18	605256	1	Cap, Vented

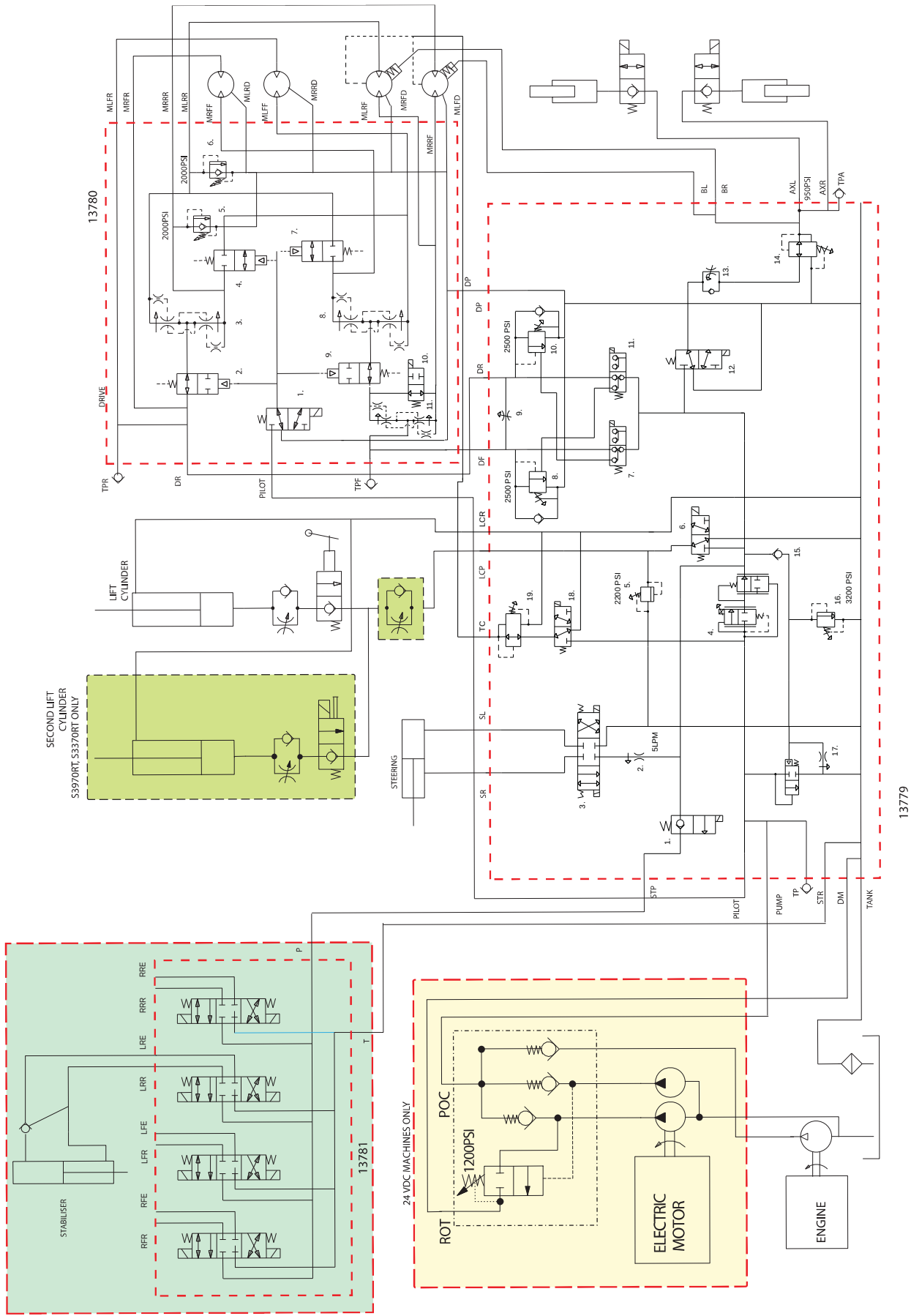
Placards and Decals V7 S3370RT

Item	Part No	Qty	Description
1	1843	1	Decal, Warning NZ Only
3	96924-9	4m	Decal, Warning Stripes Yellow/Black
4	12833-4	1	Decal, Serial Number 2770
	12833-4	1	Decal, Serial Number 3370
	12833-4	1	Decal, Serial Number 3970
5	511099-000	3	Decal, Snorkel
6	13903-14	2	Decal, S2770RT
	13903-15	2	Decal, S3370RT
	13903-10	2	Decal, S3970RT
7	11346-1	1	Decal, Rated Load S2770RT
	12699	1	Decal, Rated Load S3370RT
	12699-4	1	Decal, Rated Load S3970RT
8	0073298	1	Decal, Foam Tyres
9	451986	1	Decal, Interlocks
10	476706	2	Decal, Explosive Fumes (Outside cabinet door & fuel tank)
11	12574	1	Decal, Danger With Alarm
12	511101-000	2	Decal, Snorkel
13	13839-01	1	Decal, Lower Control Box Diesel
	13839-02	1	Decal, Lower Control Box ANSI Petrol/LPG
14	13838-03	1	Decal, Upper Control Box Diesel
	13838-04	1	Decal, Upper Control Box ANSI Petrol/LPG
15	0102006	1	Decal, Battery Disconnect
16	60572-6	1	Decal, Diesel Fuel (On fuel tank)
17	12753	1	Decal, Emergency Bleed Down
18	12814	1	Decal, Hydraulic Oil (On hydraulic oil tank)
19	583656	1	Decal, Safety Prop
20	96924-9	1	Decal, Warning Stripes Yellow/Black
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	15170	1	Decal, Emergency Operation (Inside Of Door)
27	0083427	4	Decal, Lifting/Tie Down
28	56242-6	1	Decal, Operators Manual Enclosed
29	0372061	4	Decal, Torque Wheel Nuts
30	511067-000	2	Decal, www.snorkellifts.com
31	501453-000	4	Decal, Foot Crush Hazard
32	13640-3	1	Fall Restraint Only
33	0081441	1	Decal, Caution Liquid Withdrawl (Dual Fuel Only)



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Hydraulic Schematic



Hose Tags and Colour Codes

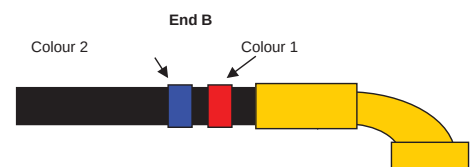
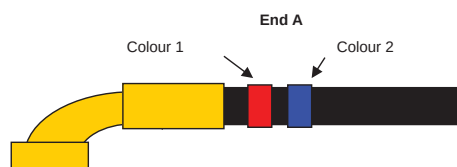
15131 - Hose Kit, Base, SR V7 Rev B				
19/02/2018				
Snorkel Hose		Colour ID		Hose Use: Fitting A → Fitting B
Part Number	Rev	Colour 1	Colour 1	
15131-01	A	Blue	Yellow	Steer Right: Main Manifold SR → Steer Cyl Extend
15131-02	A	Blue	Green	Steer Left: Main Manifold SL → Steer Cyl Retract
15131-03	A	Red	---	Drive Forward: Main Manifold DF → 4WD Manifold DF
15131-04	A	Blue	---	Drive Reverse: Main Manifold DR → 4WD Manifold DR
15131-05	B	Red	White	Motor RR Drain: T → Motor RR Case Drain
15131-06	B	Orange	White	Motor LR Drain: T → Motor LR Case Drain
15131-07	B	Yellow	White	Motor LF Drain: 4WD Manifold MLFD → Motor LF Case Drain
15131-08	B	Green	White	Motor RF Drain: 4WD Manifold MRFD → Motor RF Case Drain
15131-09	A	Blue	White	Motor RR LR common drain T → Tank return
15131-10	A	Red	Red	Motor RR CW (Fwd): 4WD Manifold MRRF → Motor RR Port A
15131-11	A	Red	Blue	Motor RR CCW (Rev): 4WD Manifold MRRR → Motor RR Port B
15131-12	A	Orange	Red	Motor LR CW (Rev): 4WD Manifold MLRR → Motor LR Port A
15131-13	A	Orange	Blue	Motor LR CCW (Fwd): 4WD Manifold MLRF → Motor LR Port B
15131-14	A	Yellow	Red	Motor LF CW (Rev): 4WD Manifold MLFR → Motor LF Port A
15131-15	A	Yellow	Blue	Motor LF CCW (Fwd): 4WD Manifold MLFF → Motor LF Port B
15131-16	A	Green	Red	Motor RF CW (Fwd): 4WD Manifold MRFF → Motor RF Port A
15131-17	A	Green	Blue	Motor RF CCW (Rev): 4WD Manifold MRFR → Motor RF Port B
15131-18	A	Red	Orange	4WD Block Pilot: Main Manifold Pilot → 4WD Block Pilot
15131-19	A	Red	Black	4WD Manifold Return: Main Manifold DP → 4WD Manifold DP
15131-20	A	Red	---	Motor RR Brake: Main Manifold BR → RR Motor Brake
15131-21	A	Orange	---	Motor LR Brake: Main Manifold BL → LR Motor Brake
15131-22	A	Green	---	Lock Left Axle: Main Manifold AXL → LH Axle Cyl
15131-23	A	Black	---	Lock Right Axle: Main Manifold AXR → RH Axle Cyl
15131-24	A	White	Green	Torque Mode: T → Motor RR Torque Port
15131-25	A	White	Orange	Torque Mode: T → Motor LR Torque Port
15131-26	A	White	Black	Torque Mode: Main Manifold TC → T
13764-01	A	Red	Yellow	Stab RR Extend: Stab Manifold RRE → Stab Cyl RR Extend
13764-02	A	Red	Green	Stab RR Retract: Stab Manifold RRR → Stab Cyl RR Retract
13764-03	A	Orange	Yellow	Stab LR Extend: Stab Manifold LRE → Stab Cyl LR Extend
13764-04	A	Orange	Green	Stab LR Retract: Stab Manifold LRR → Stab Cyl LR Retract
13764-05	A	Yellow	Yellow	Stab LF Extend: Stab Manifold LFE → Stab Cyl LF Extend
13764-06	A	Yellow	Green	Stab LF Retract: Stab Manifold LFR → Stab Cyl LF Retract
13764-07	A	Green	Yellow	Stab RF Extend: Stab Manifold RFE → Stab Cyl RF Extend
13764-08	A	Green	Green	Stab RF Retract: Stab Manifold RFR → Stab Cyl RF Retract
13764-09	A	---	---	Stab Manifold Pressure: Main Manifold STP → Stab Manifold P
13764-10	A	---	---	Stab Manifold Return: Main Manifold STR → Stab Manifold R
13765 - Hose Kit, Control Cabinet, SR V4 Rev A				
22/05/2014				
Snorkel Hose		Colour ID		Hose Use: Fitting A → Fitting B
Part Number	Rev	Colour 1	Colour 1	
13765-01	A	---	---	Main Manifold Return: Main Manifold Tank → Oil Filter
13765-02	A	---	---	Filter Return: Oil Filter → Hydraulic Oil Tank
13766 - Hose Kit, Engine, Kubota D902, SR V4 Rev A				
22/05/2014				
Snorkel Hose		Colour ID		Hose Use: Fitting A → Fitting B
Part Number	Rev	Colour 1	Colour 1	
13766-01	A	Orange	---	Pump Pressure: Main Manifold Pump → Pump Pressure Port
13766-02	A	---	---	Suction Line: Pump Suction Port → Hydraulic Oil Tank
13767 - Hose Kit, Stack (33 & 39), SR V4 Rev A				
22/05/2014				
Snorkel Hose		Colour ID		Hose Use: Fitting A → Fitting B
Part Number	Rev	Colour 1	Colour 1	
13767-01	A	Yellow	---	Raise Stack: Main Manifold LCP → Raise Stack Tee
13767-02	A	White	Yellow	Upper Lift Cyl Extend: Raise Stack Tee → Upper Lift Cyl Extend
13767-03	A	Black	Yellow	Lower Lift Cyl Extend: Raise Stack Tee → Lower Lift Cyl Extend
13767-04	A	White	---	Lift Cyl Drain: Main Manifold LCR → Drain Stack Tee
13767-05	A	White	White	Upper Lift Cyl Drain: Drain Stack Tee → Upper Lift Cyl Drain
13767-06	A	Black	White	Lower Lift Cyl Drain: Drain Stack Tee → Lower Lift Cyl Drain
13768 - Hose Kit, Stack (22 & 27), SR V4 Rev A				
22/05/2014				
Snorkel Hose		Colour ID		Hose Use: Fitting A → Fitting B
Part Number	Rev	Colour 1	Colour 1	
13768-02	A	Black	Yellow	Raise Stack: Main Manifold LCP → Lift Cyl Extend
13768-01	A	Black	White	Lift Cyl Drain: Main Manifold LCR → Lift Cyl Drain
13769 - Hose Kit, Electric 24V Bi Energy, SR V4 Rev A				
Snorkel Hose		Colour ID		Hose Use: Fitting A → Fitting B
Part Number	Rev	Colour 1	Colour 1	
13769-01	A	Part# both ends		Unloader Return: Unloader Valve ROT → Main Manifold DM1
13769-02	A	Part# both ends		Unloader Pressure Out: Unloader Valve POC → Main Manifold PUMP
13769-03	A	Part# both ends		Suction Hose: Tank to Suction Tee

READING HOSE TAGS

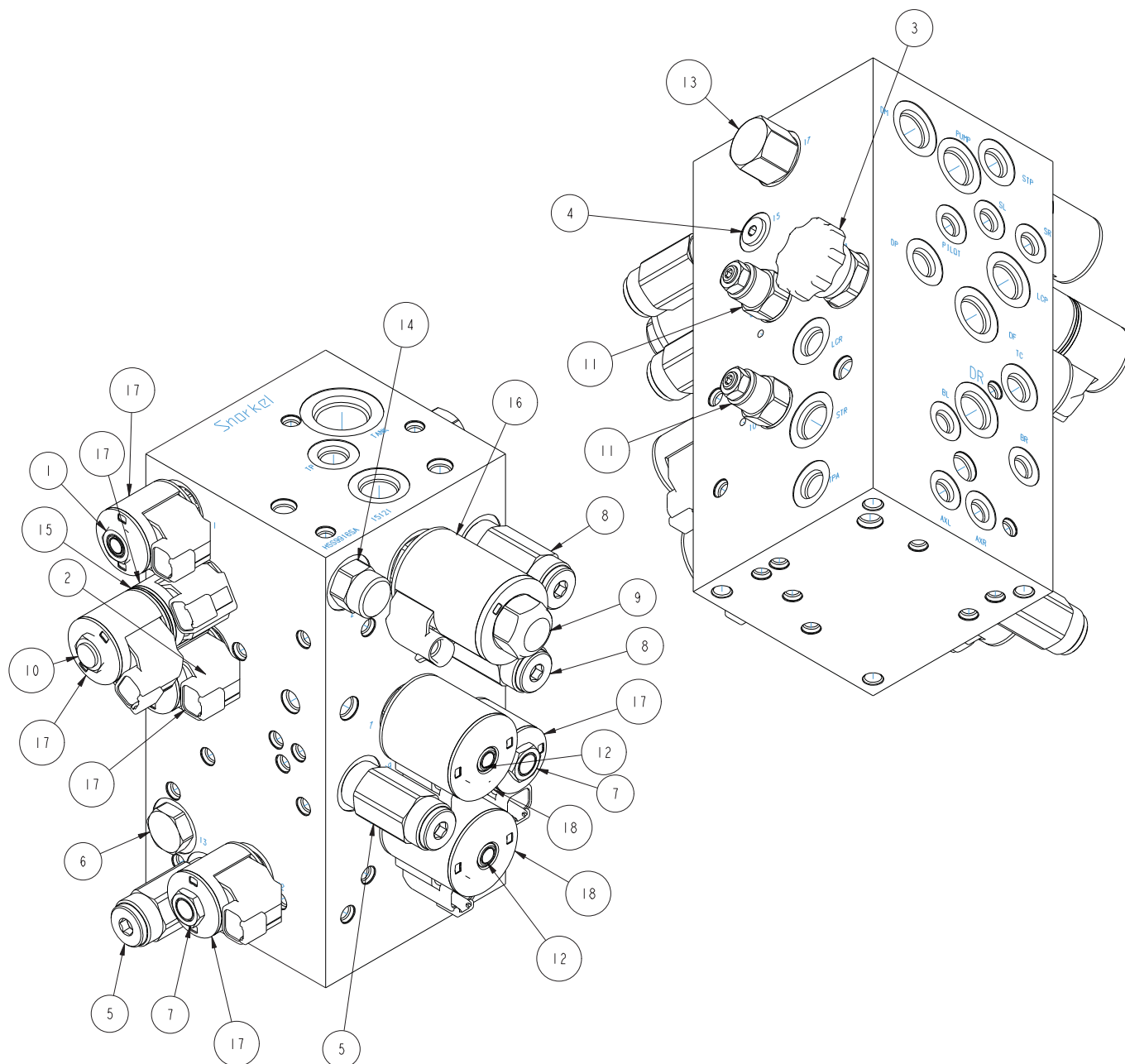
Hose tags are read from the fitting side of the hose intowards the hose.

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

Hose tags need to be on both ends of the hose

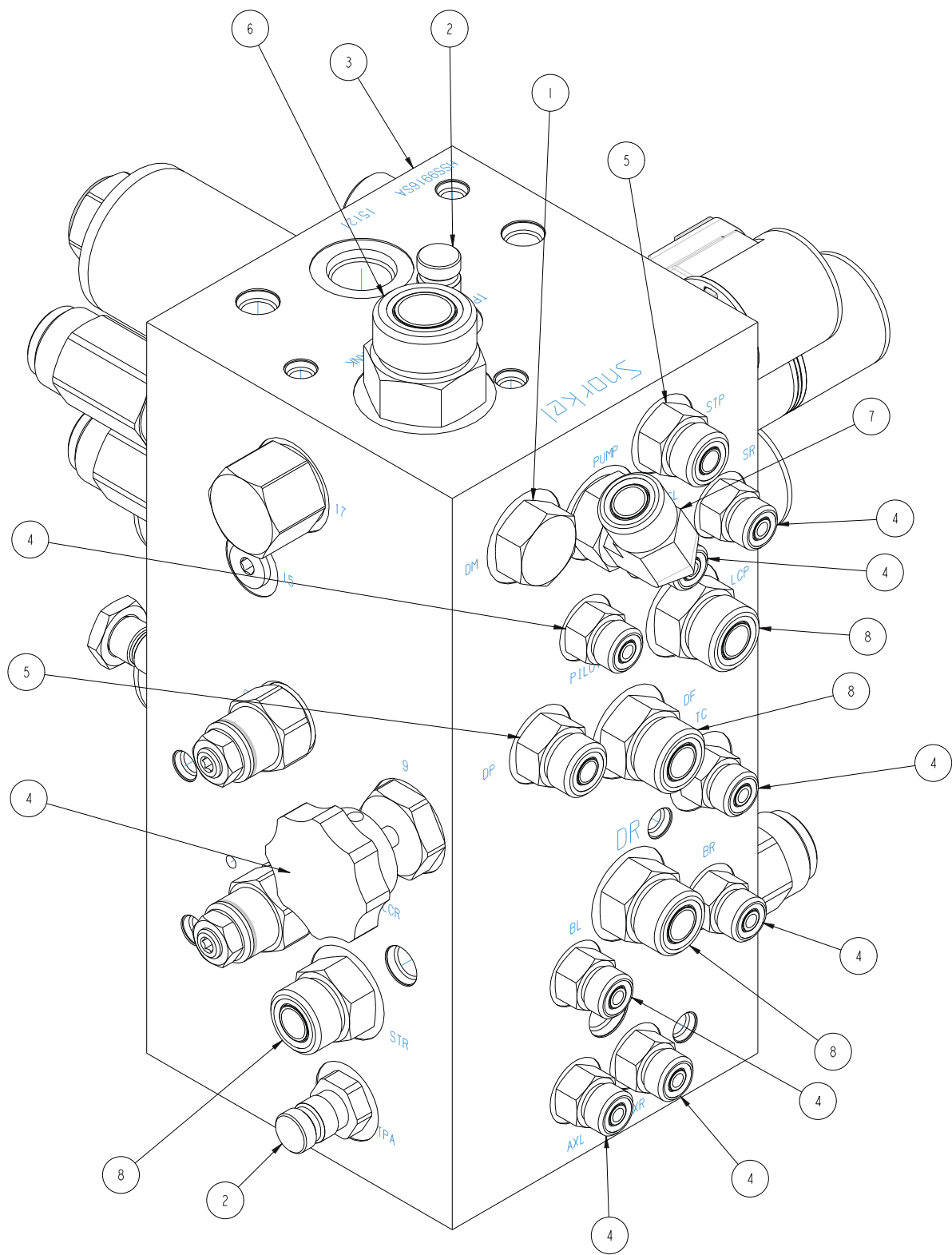


Main Manifold, No Fittings



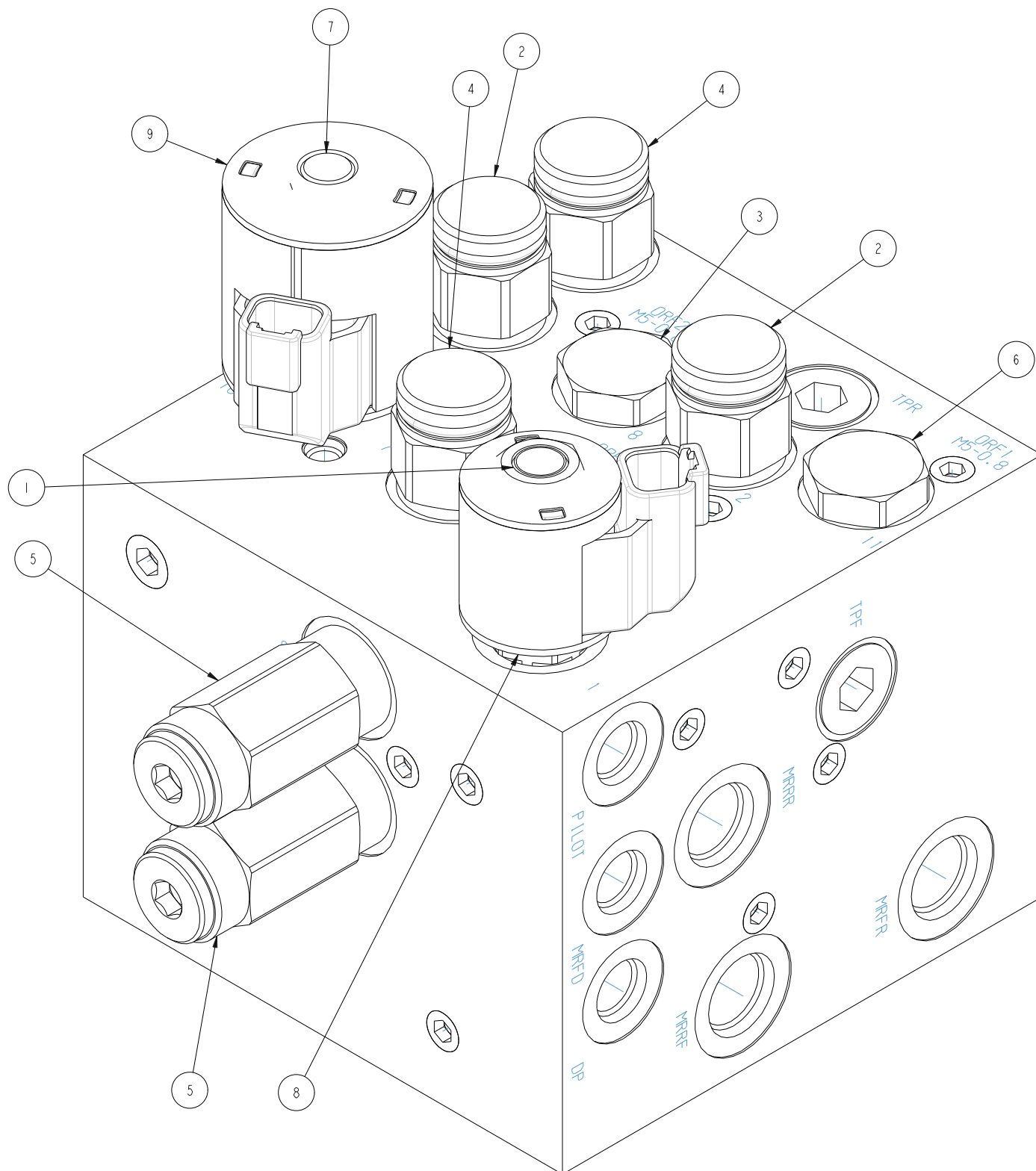
Item	Part No.	Qty.	Description
0	15121	1	Main Manifold Block
1	12567-1	1	Cartridge, Solenoid- Poppet, 2-Way, NC
2	12567-11	1	Cartridge, Solenoid- Spool, 3-Way
3	12567-15	1	Cartridge- Needle Valve
4	12567-2	1	Cartridge- Check Valve
5	12567-23	2	Cartridge- Pressure Reducing
6	12567-24	1	Cartridge- Flow Control, Orifice Check
7	12567-25	2	Cartridge, Solenoid- Spool, 3-Way
8	12567-8	2	Cartridge- Relief, Direct-Acting Poppet
9	12567-9	1	Cartridge- Proportional 2-Port, NC
10	12568-1	1	Cartridge, Solenoid- Spool, 4-Way, 3-Posn, Closed Center
11	13161-17	2	Cartridge- Counter Balance
12	13161-18	2	Cartridge, Solenoid- Poppet, 3-Port, NC
13	13161-28	1	Cartridge- Pressure Compensate & Flow Regulator
14	13779-03	1	Cartridge- Flow Regulator, Pressure Compensated
15	13881-08	1	Coil Spacer- 08
16	13895	1	Coil - 70 Proportional Deutsch DT Connector
17	6019180	6	Coil - 08 12V Deutsch DT Connector
18	6019184	2	Coil - 10 12V Deutsch DT Connector

Main Manifold, Fittings

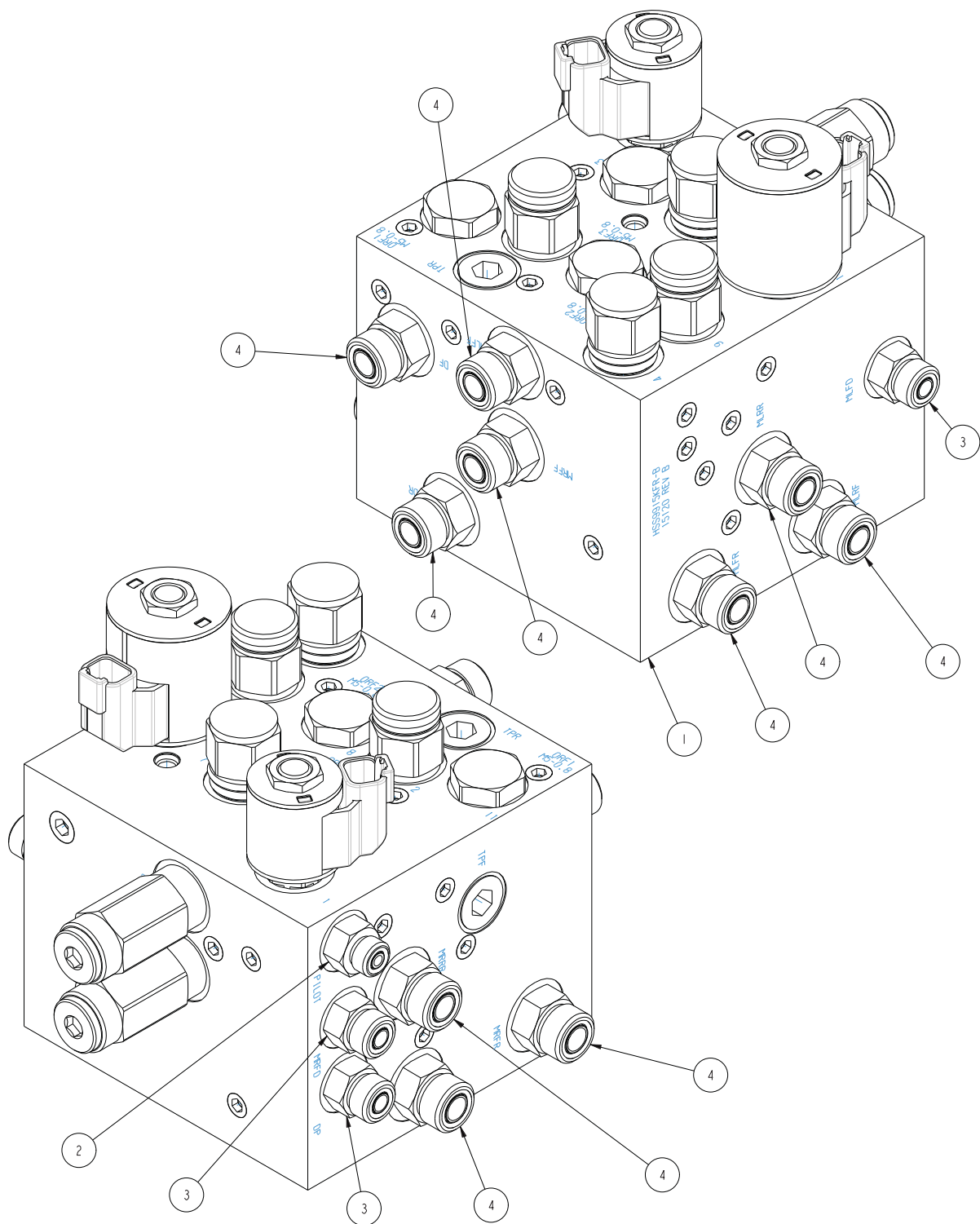


Item	Part No.	Qty.	Description
0	15123-01	1	Main Manifold Assembly
1	7035-002	1	Hyd Plug- SAE 08 (3/4 Thread)
2	10996-2	2	Test Point- UNO, 9/16
3	15121	1	Main Manifold Block
4	100432-002	9	Hyd Fitting- Straight ORFS(04)-SAE(04)
5	100432-009	2	Hyd Fitting- Straight ORFS(06)-SAE(06)
6	100432-027	1	Hyd Fitting- Straight ORFS(12)-SAE(12)
7	100434-013	1	Hyd Fitting- 90 Elbow ORFS(08)-SAE(08)
8	512970-000	4	Hyd Fitting- Straight ORFS(08)-SAE(08)

4WD Manifold, No Fittings

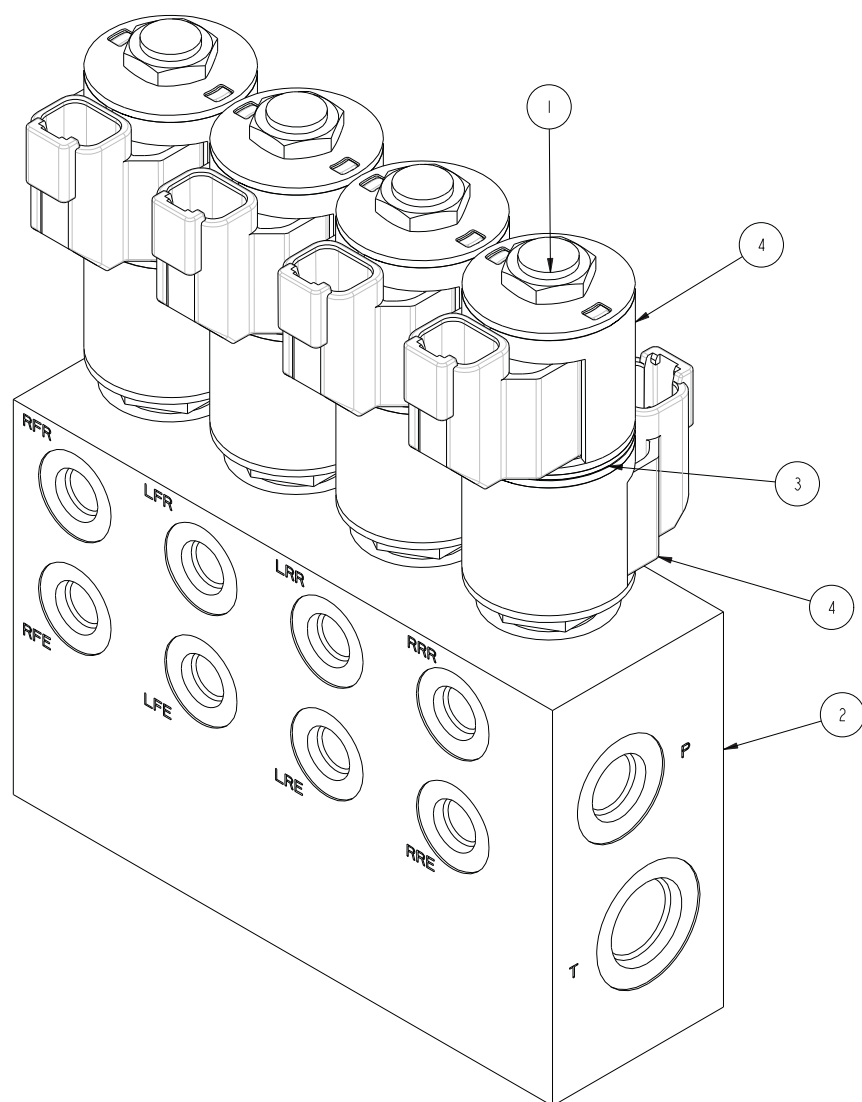


Item	Part No.	Qty.	Description
0	15120	1	4WD Manifold Block
1	12567-11	1	Cartridge, Solenoid- Spool, 3-Way
2	12569-2	2	Cartridge- Piloted, 2-Way, Spool NO
3	12569-3	2	Cartridge- Flow Divider/Combiner
4	12569-5	2	Cartridge- Piloted, 2-Way, Spool NC
5	12569-6	2	Cartridge- Relief, Pilot-Operated
6	15120-02	1	Cartridge- Flow Divider/Combiner
7	15120-03	1	Cartridge, Solenoid- Spool, 2-Way
8	6019180	1	Coil - 08 12V Deutsch DT Connector
9	6019184	1	Coil - 10 12V Deutsch DT Connector



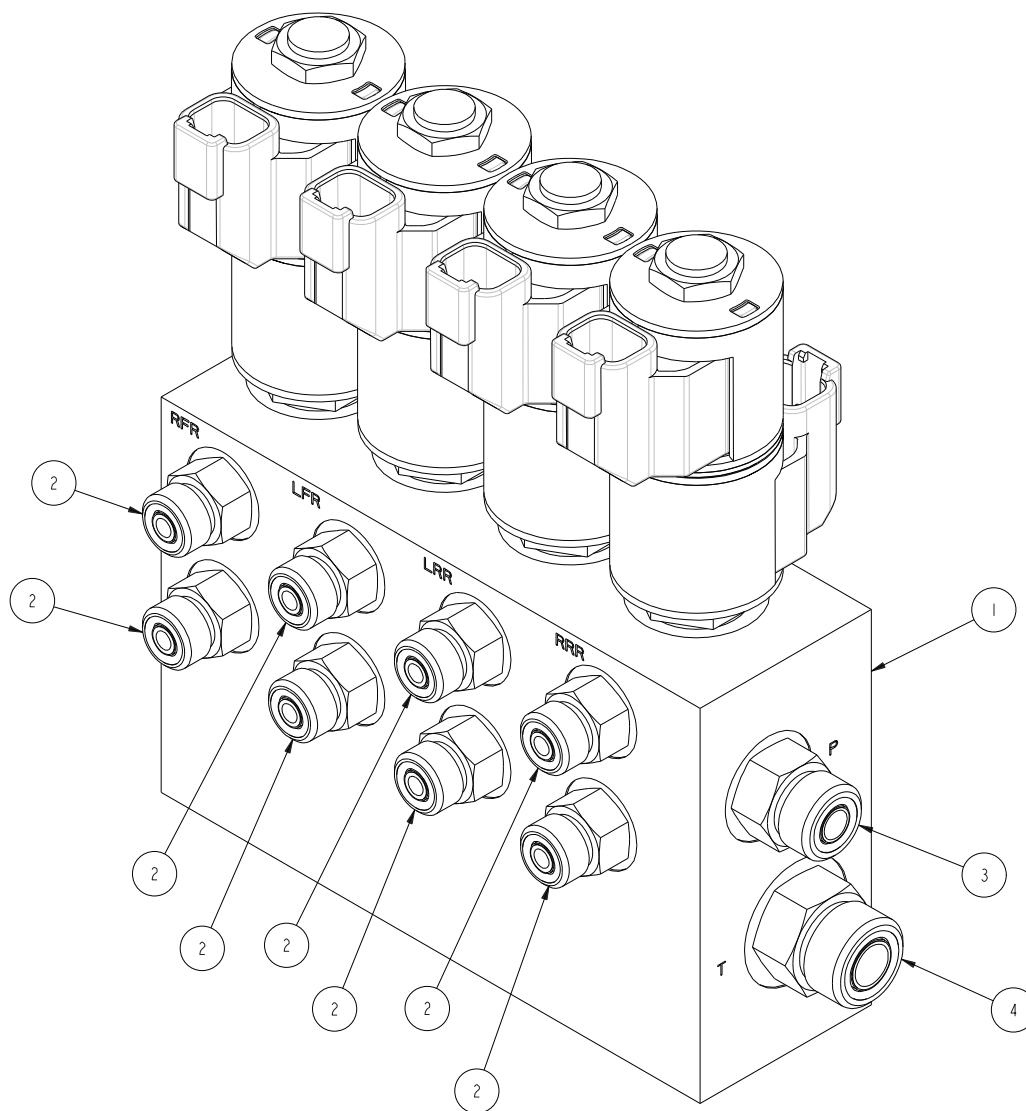
Item	Part No.	Qty.	Description
0	15122-01	1	4WD Manifold Assembly
1	15120	1	4WD Manifold Block
2	100432-004	1	Hyd Fitting- Straight ORFS(04)-SAE(06)
3	100432-009	3	Hyd Fitting- Straight ORFS(06)-SAE(06)
4	512970-000	10	Hyd Fitting- Straight ORFS(08)-SAE(08)

Auto Stabiliser Manifold, No Fittings



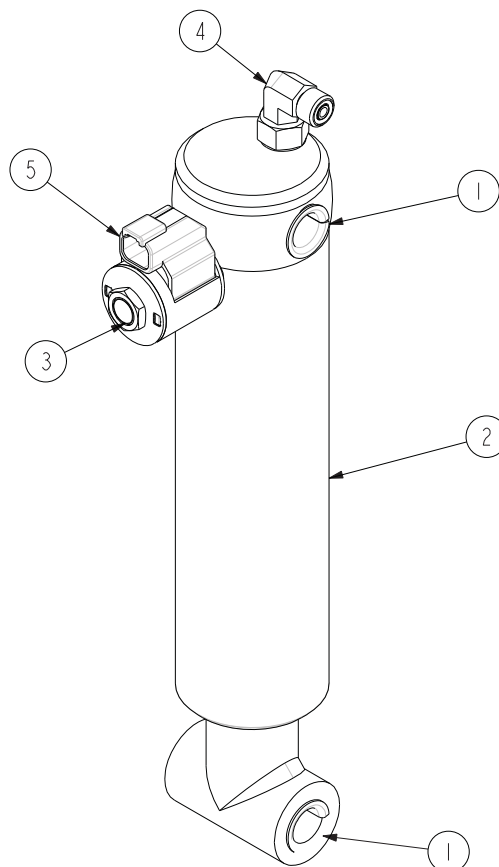
Item	Part No.	Qty.	Description
1	12568-1	4	Cartridge, Solenoid- Spool, 4-Way, 3-Posn, Closed Center
2	13781-01	1	Manifold Block- Stabiliser SR V4
3	13881-08	4	Coil Spacer- 08
4	6019180	8	Coil - 08 12V Deutsch DT Connector

Auto Stabiliser Manifold, Fittings

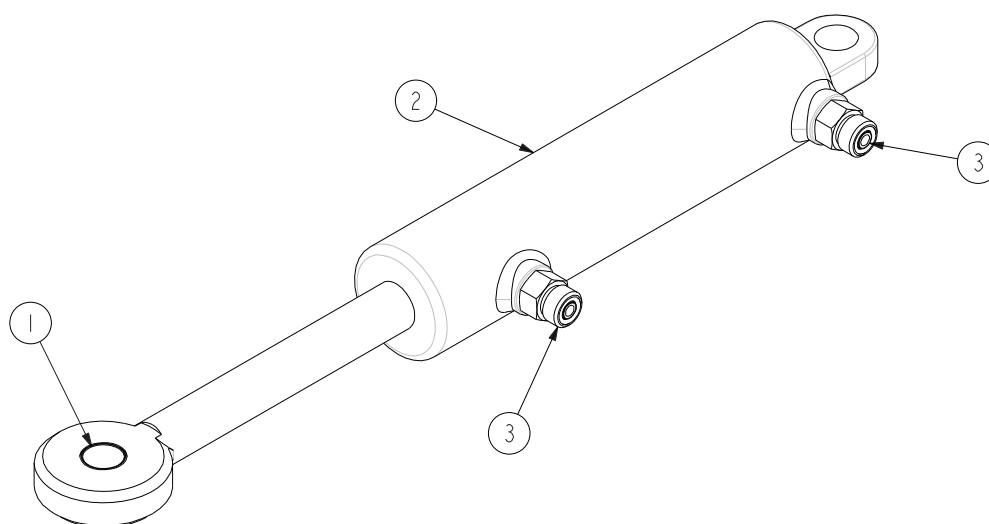


Item	Part No.	Qty.	Description
1	13781	1	Manifold- Stabiliser SR V4
2	100432-002	8	Hyd Fitting- Straight ORFS(04)-SAE(04)
3	100432-009	1	Hyd Fitting- Straight ORFS(06)-SAE(06)
4	512970-000	1	Hyd Fitting- Straight ORFS(08)-SAE(08)

Axle Cylinder Assembly

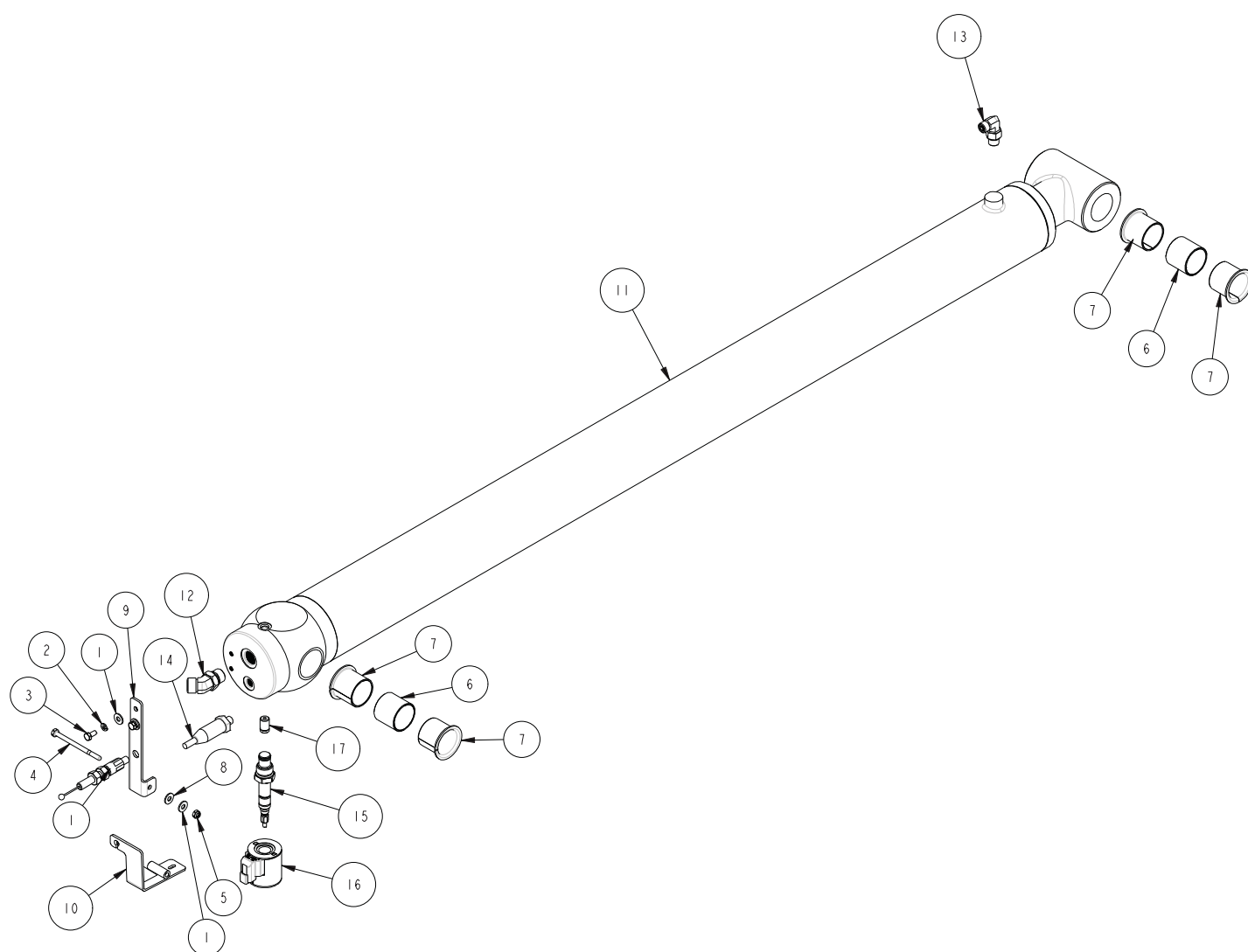


Item	Part No.	Qty.	Description
0	11642A	1	Cylinder Assembly- Axle
1	3626-3	4	Flanged Permaglide Bush
2	11642	1	Axle Cylinder
3	12835-1	1	Cartridge, Solenoid- Poppet, 2-Way, NC
4	100434-004	1	Hyd Fitting- 90 Elbow ORFS(04)-SAE(06)
5	6019180	1	Coil - 08 12V Deutsch DT Connector
	11642K	1	Seal kit- Victor
	11642K-PB	1	Seal kit- PB
	11642K-UH	1	Seal kit- UH



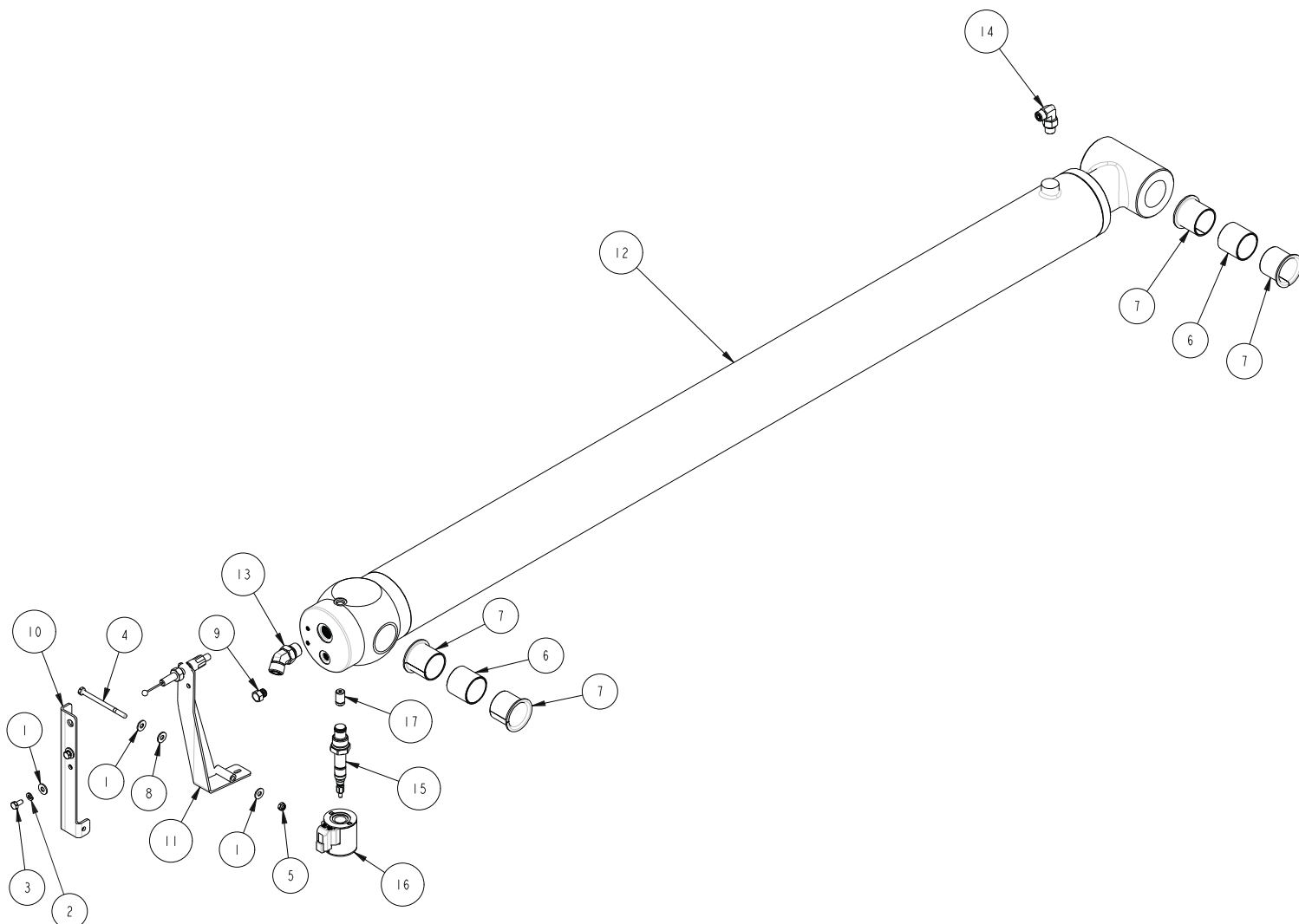
Item	Part No.	Qty.	Description
0	11699A	1	Cylinder Assembly- Steer
1	3624-27	1	Permaglide Bush
2	11699	1	Cylinder- Steer, SR
3	100432-002	2	Hyd Fitting- Straight ORFS(04)-SAE(04)
	11699K	1	Seal kit- Victor
	11699K-PB	1	Seal kit- PB
	11699K-UH	1	Seal kit- UH

Lower Lift Cylinder Assembly



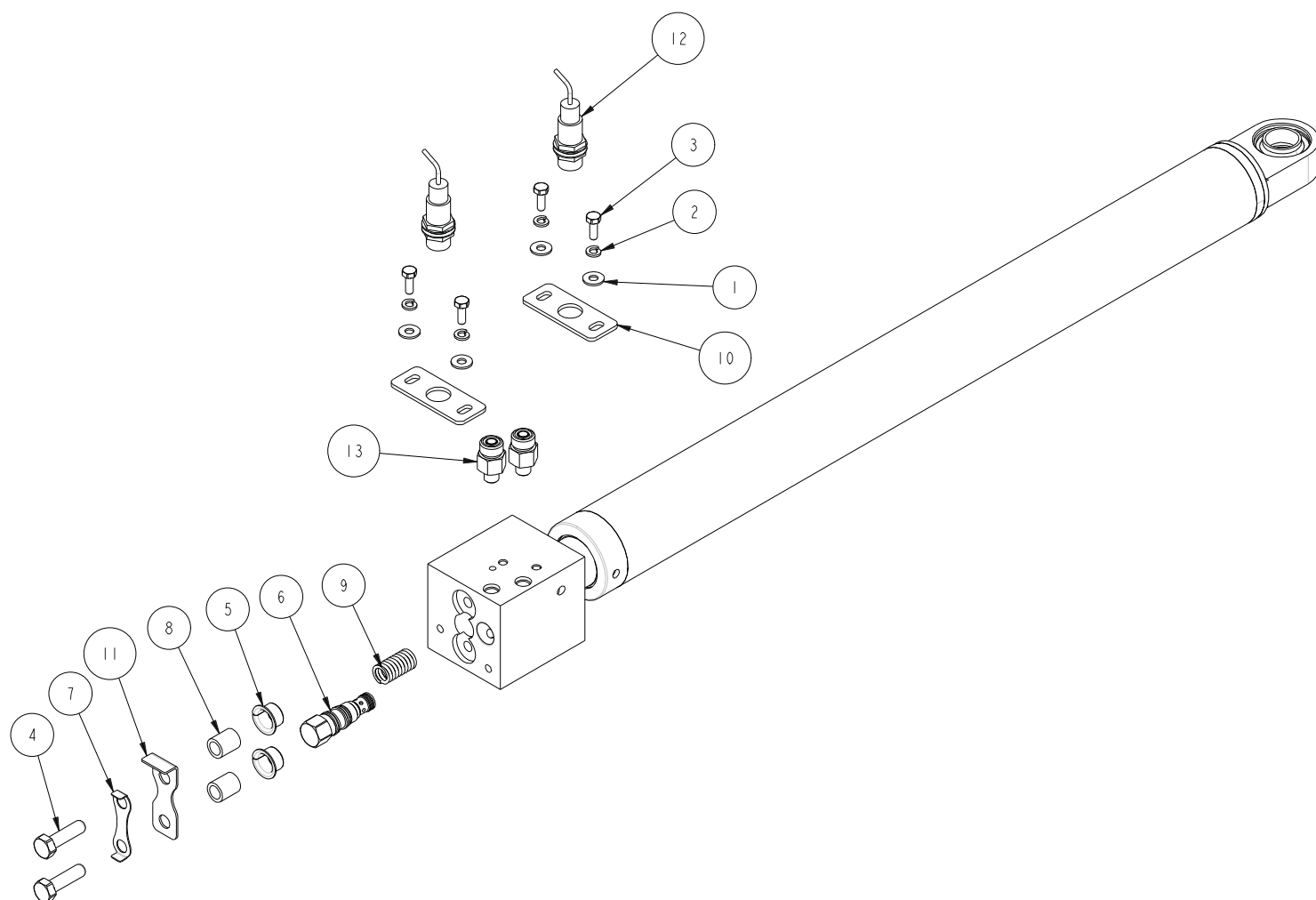
Item	Part No.	Qty.	Description
0	13906-01	1	Lower Lift Cylinder Assembly
1	3603-06	4	Plain Washer
2	3605-06	2	Spring Washer
3	3610-06012	2	Metric Bolt
4	3610-06085	1	Metric Bolt
5	3611-06	1	Metric Nyloc Nut
6	3624-40	2	Permaglide Bush
7	3626-19	4	Flanged Permaglide Bush
8	3641-06	1	Nylon Washer
9	12647-1	1	Cylinder Lever Pivot Plate
10	12648	1	Valve Lever
11	13952	1	SR Lift Cylinder
12	100433-008	1	Hyd Fitting- 45 Elbow ORFS(08)-SAE(08)
13	100434-004	1	Hyd Fitting- 90 Elbow ORFS(04)-SAE(06)
14	3030158	1	Pressure Transducer
15	6018024	1	Solenoid Valve, 2 Way, NC, 20V
16	6019184	1	Coil - 10 12V Deutsch DT Connector
17	6091348	1	Check Valve Poppet Flow

Upper Lift Cylinder Assembly



Item	Part No.	Qty.	Description
0	13906-02	1	Upper Lift Cylinder Assembly
1	3603-06	4	Plain Washer
2	3605-06	2	Spring Washer
3	3610-06012	2	Metric Bolt
4	3610-06085	1	Metric Bolt
5	3611-06	1	Metric Nyloc Nut
6	3624-40	2	Permaglide Bush
7	3626-19	4	Flanged Permaglide Bush
8	3641-06	1	Nylon Washer
9	7035-007	1	Hyd Plug- SAE 04 (7/16 Thread)
10	13221	1	Cylinder Lever Pivot Plate
11	13221-1	1	Valve Lever
12	13952	1	SR Lift Cylinder
13	100433-008	1	Hyd Fitting- 45 Elbow ORFS(08)-SAE(08)
14	100434-004	1	Hyd Fitting- 90 Elbow ORFS(04)-SAE(06)
15	6018024	1	Solenoid Valve, 2 Way, NC, 20V
16	6019184	1	Coil - 10 12V Deutsch DT Connector
17	6091348	1	Check Valve Poppet Flow

Stabiliser Cylinder Assembly



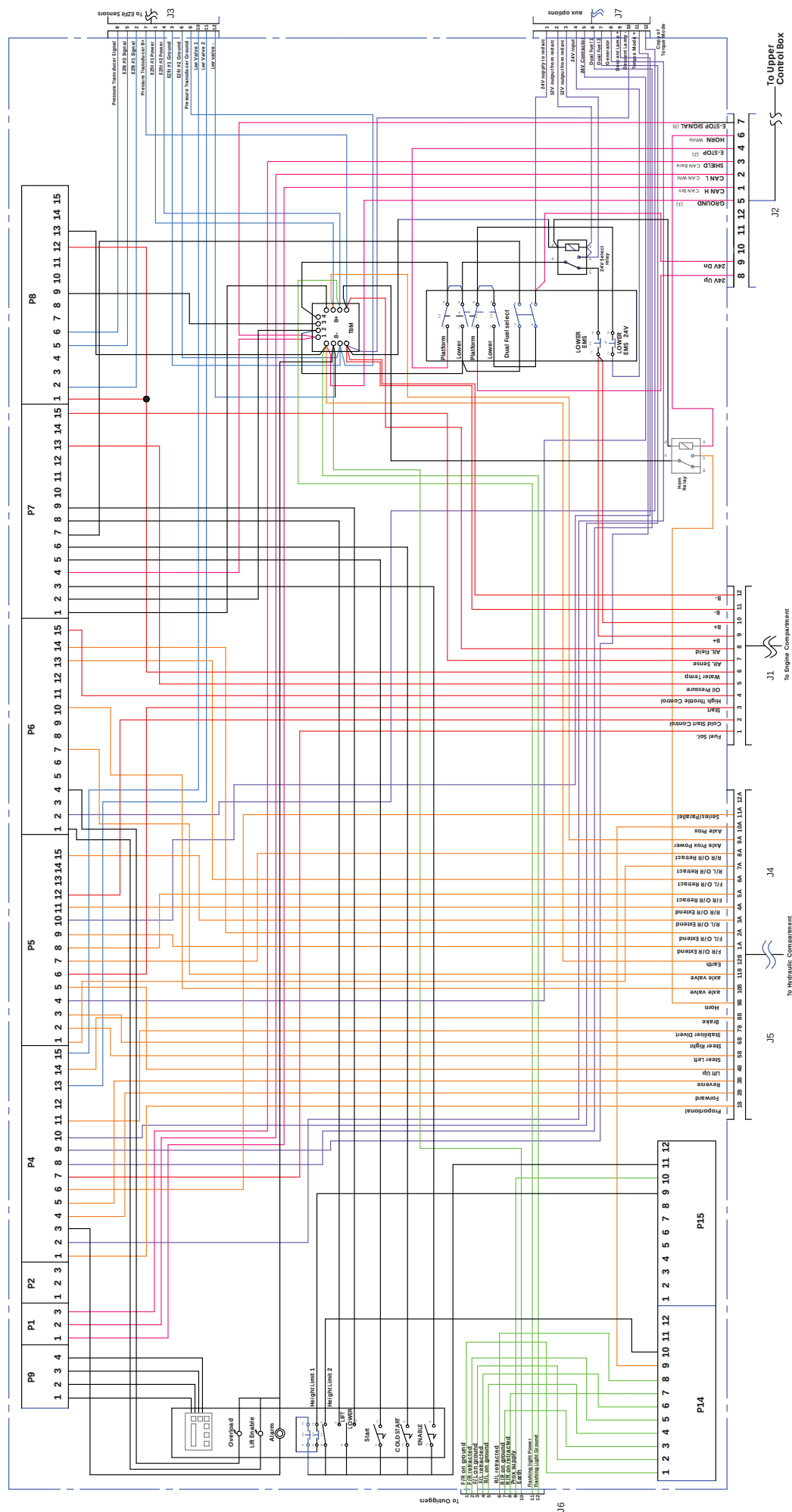
Item	Part No.	Qty.	Description
1	3603-06	4	Plain Washer
2	3605-06	4	Spring Washer
3	3610-06016	4	Metric Bolt
4	3610-10035	2	Metric Bolt
5	3626-8	2	Flanged Permaglide Bush
6	11367-2	1	Pilot-to-open check valve with sealed pilot
7	11492-4	1	Dual Locktab
8	12036-5	2	Sliding Spacer
9	12036-6	1	Compression Spring
10	14098-01	2	Prox Mount Bracket
11	14098-02	1	Prox Target, Leg Grounded, SR
12	15048	2	Inductive Prox NO
13	100432-007	2	Hyd Fitting- Straight ORFS(06)-SAE(04)

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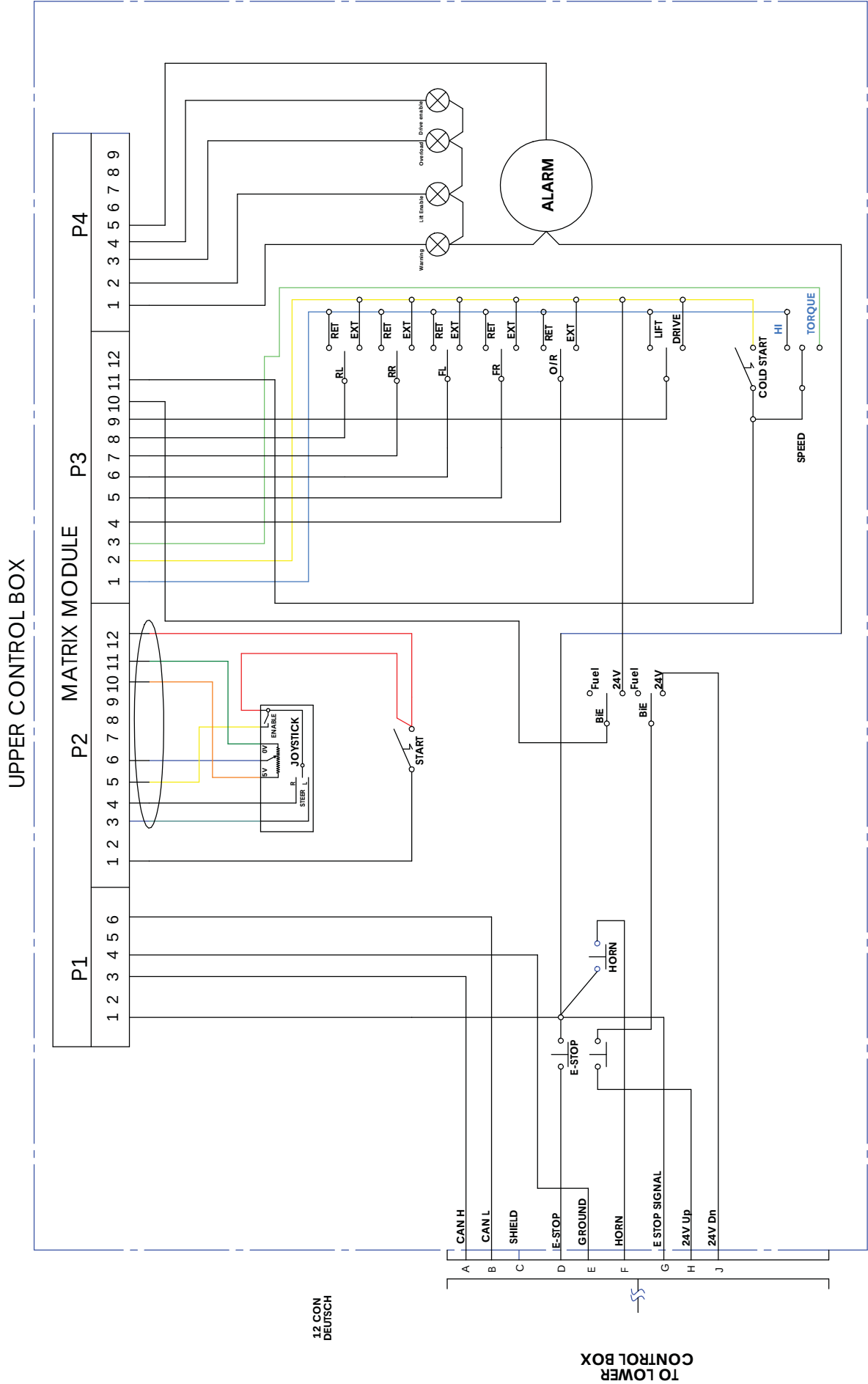
Looms

Item	Part No	Qty	Description
1	13817-02	1	Loom - Control, S2770RT
2	13817-03	1	Loom - Control, S3370RT
3	13844	1	Loom - Bleed Down Extn
4	14032-01	1	Loom - Control Extn
5	15010	1	Loom - Outriggers
6	15012	1	Loom - Stack EZIfit
7	15113	1	Loom - Engine
8	15125	1	Loom - Hydraulic Cabinet
9	15126	1	Loom - Axle

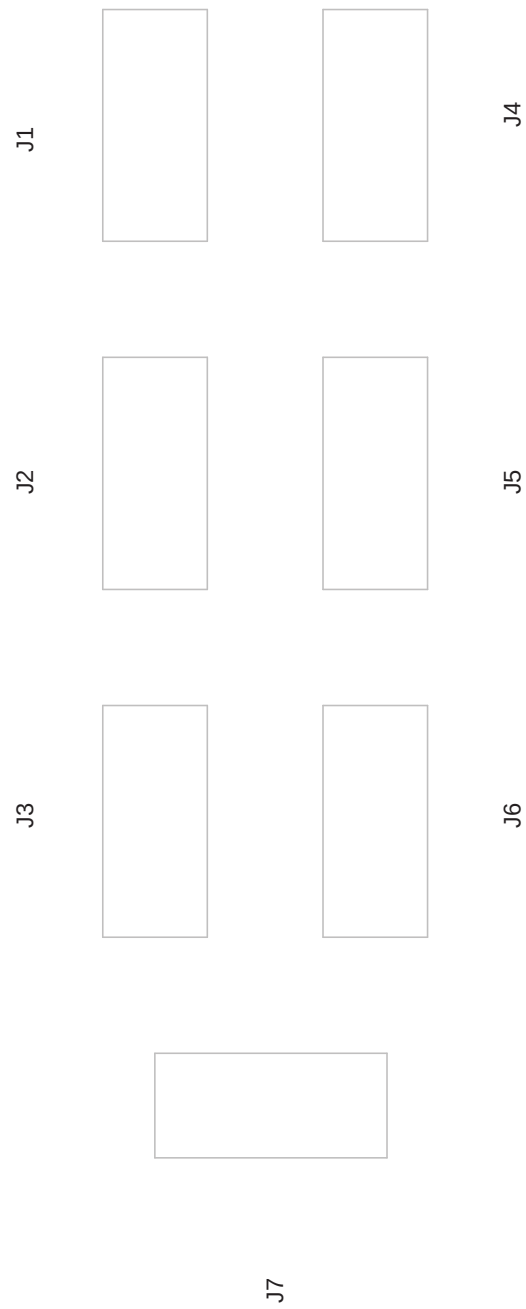
Lower Control Box Wiring



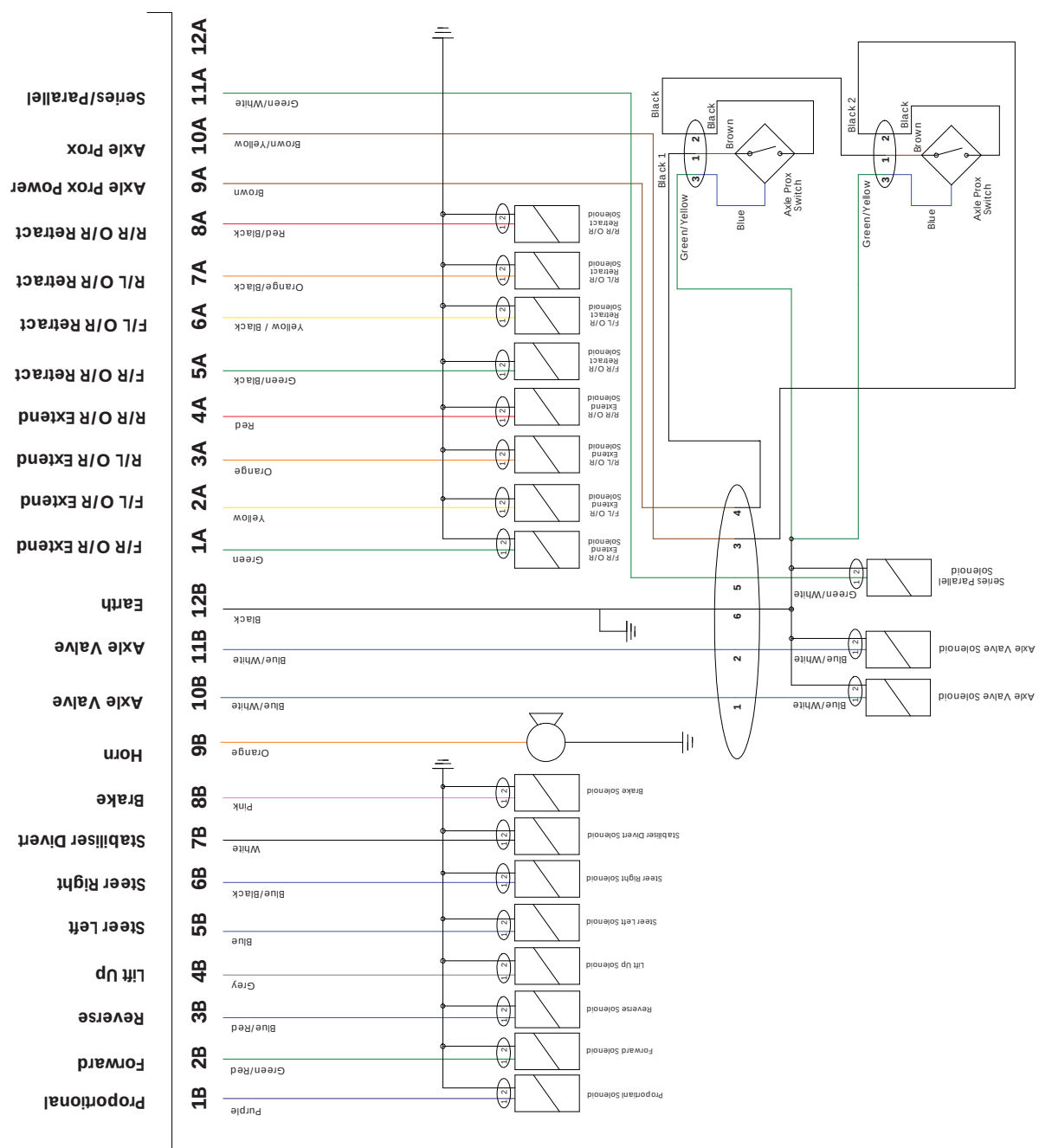
Upper Control Box Wiring

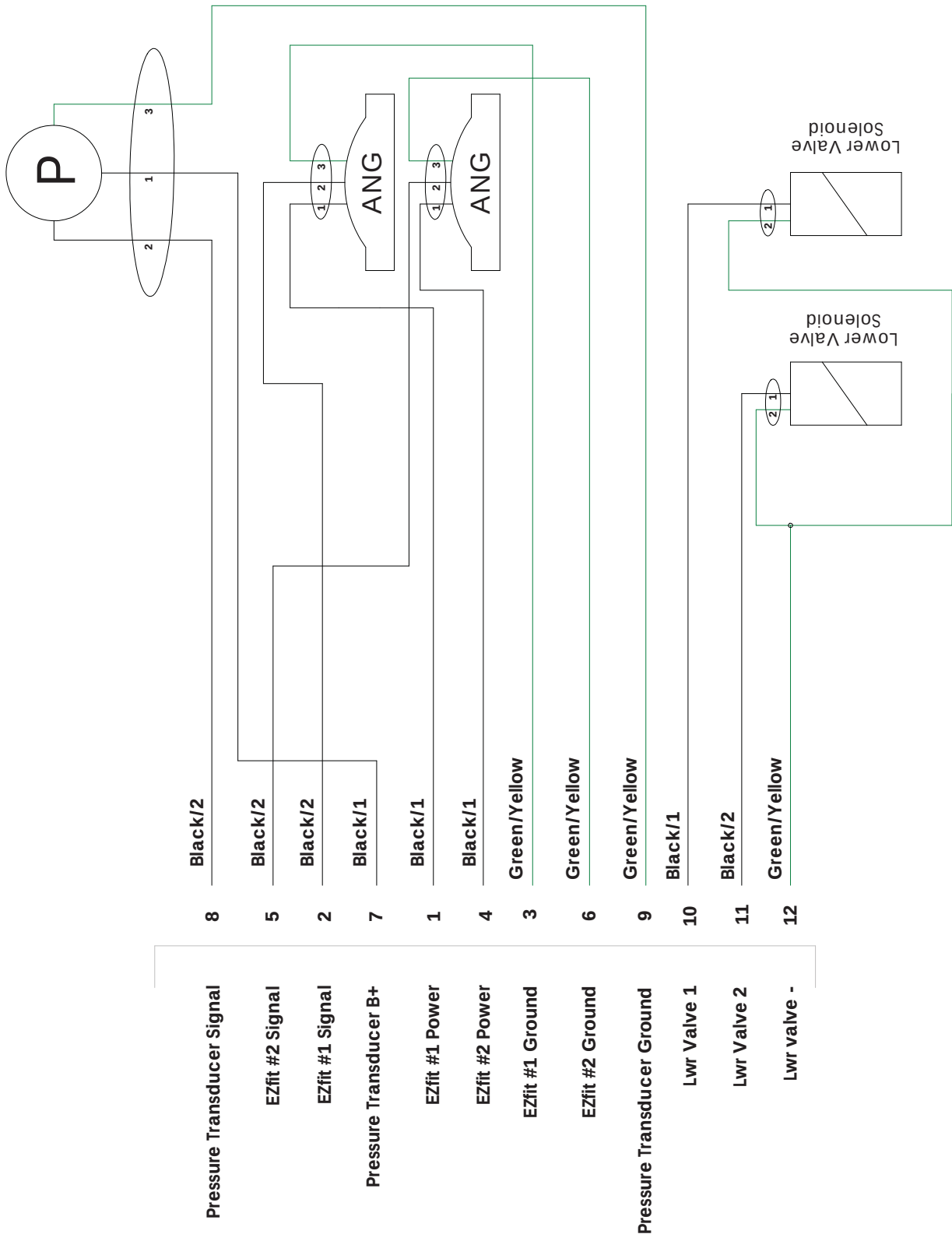


Top View of Lower Control Box

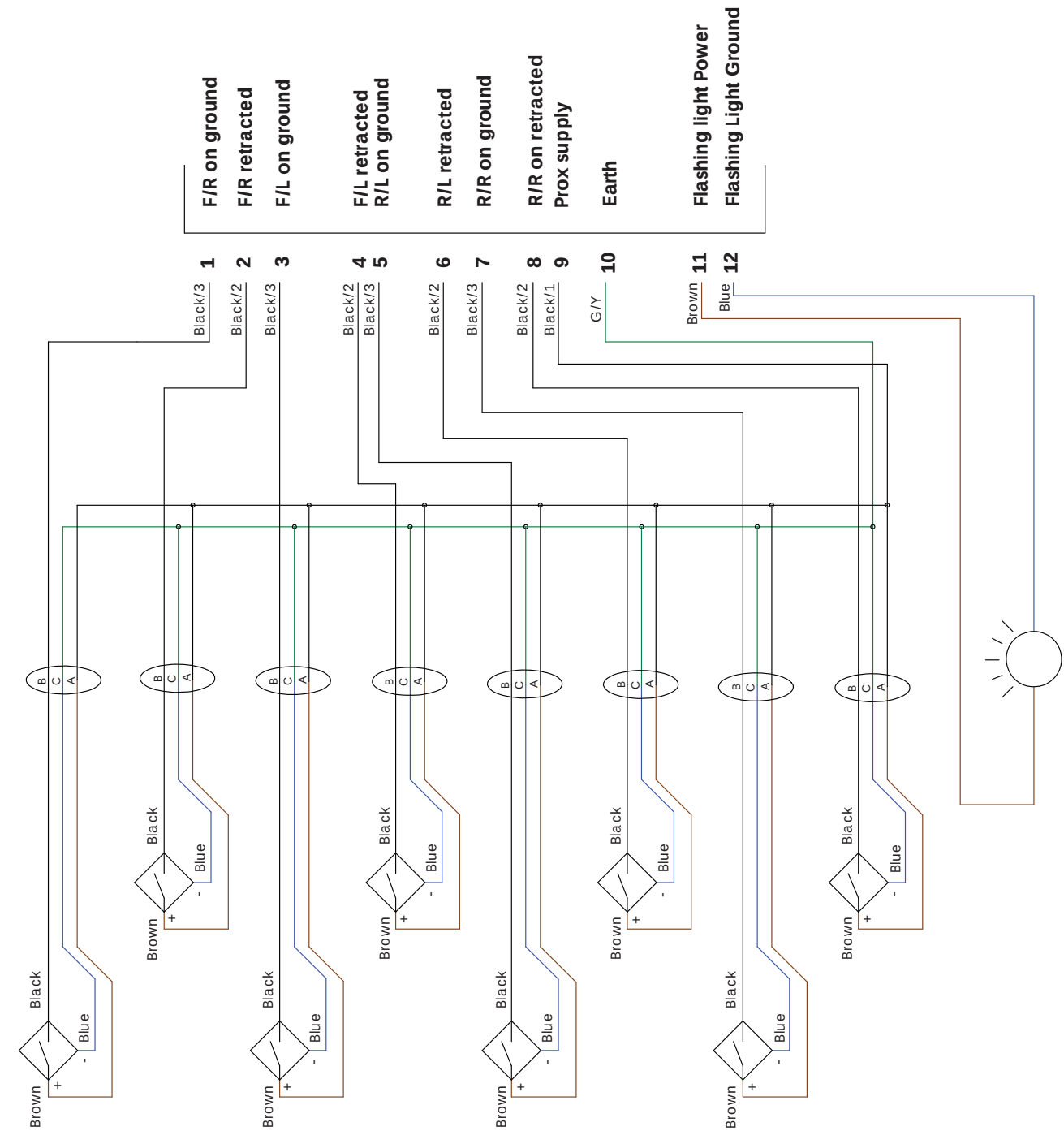


Hydraulic Compartment Wiring

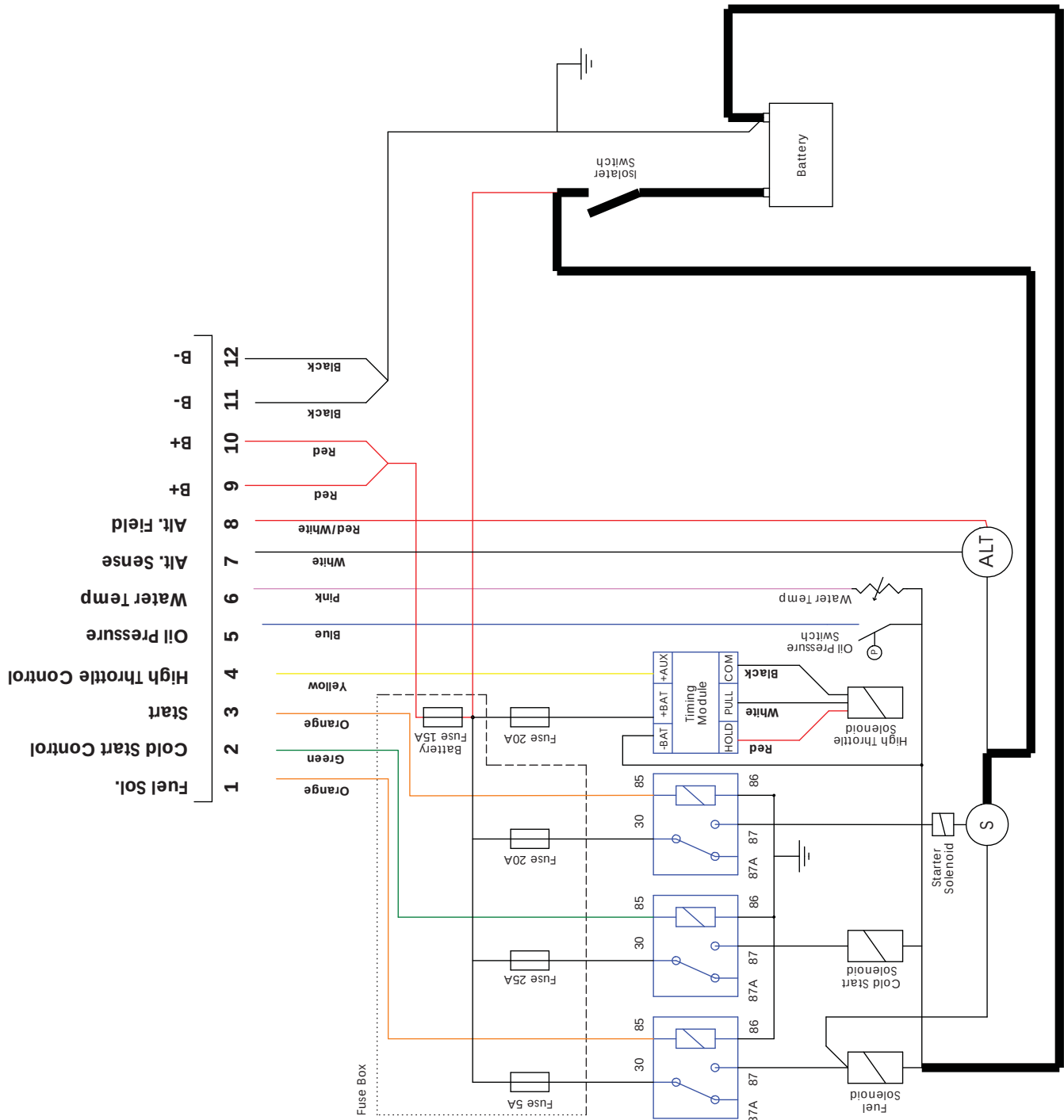




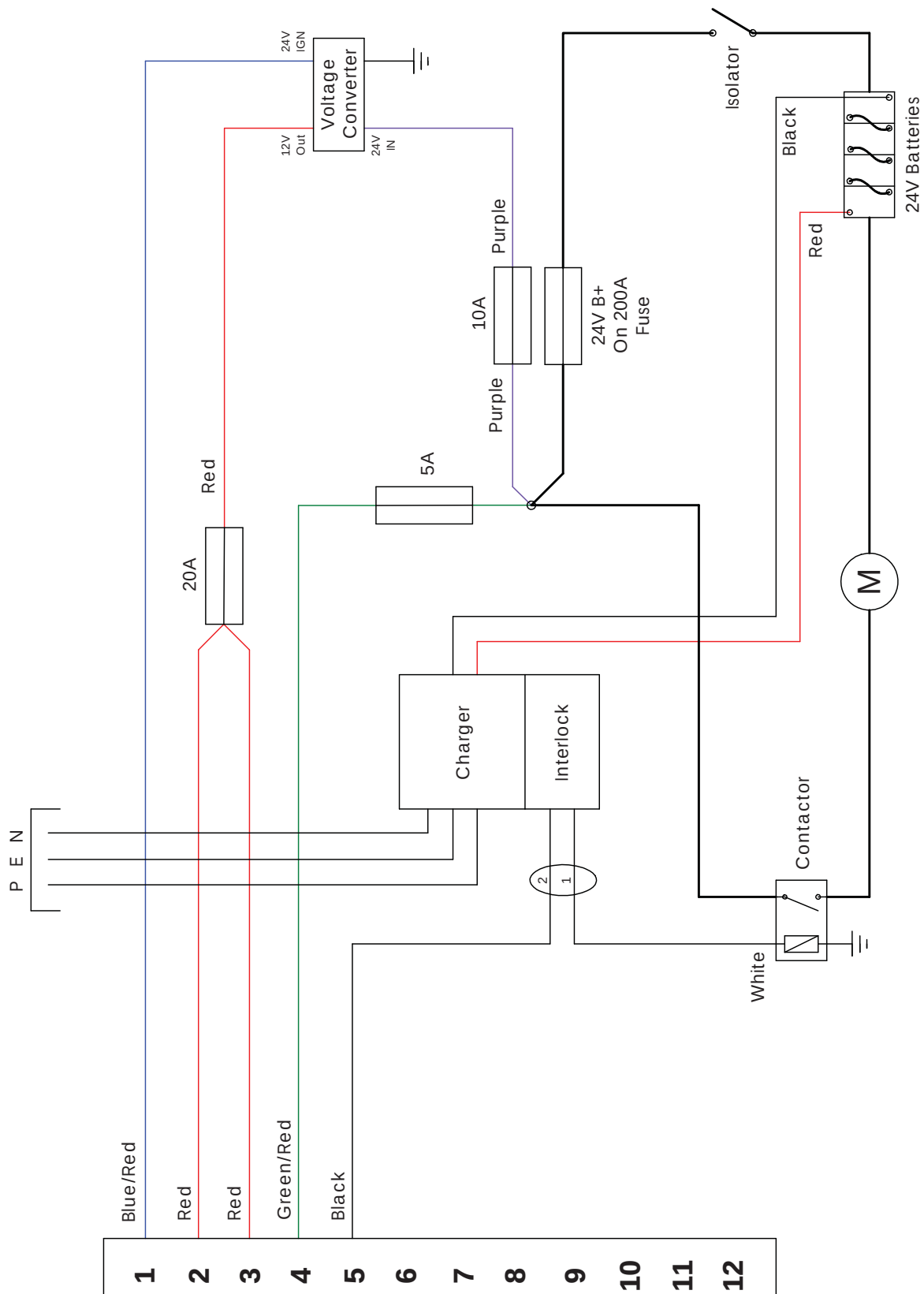
Stabiliser Legs Wiring

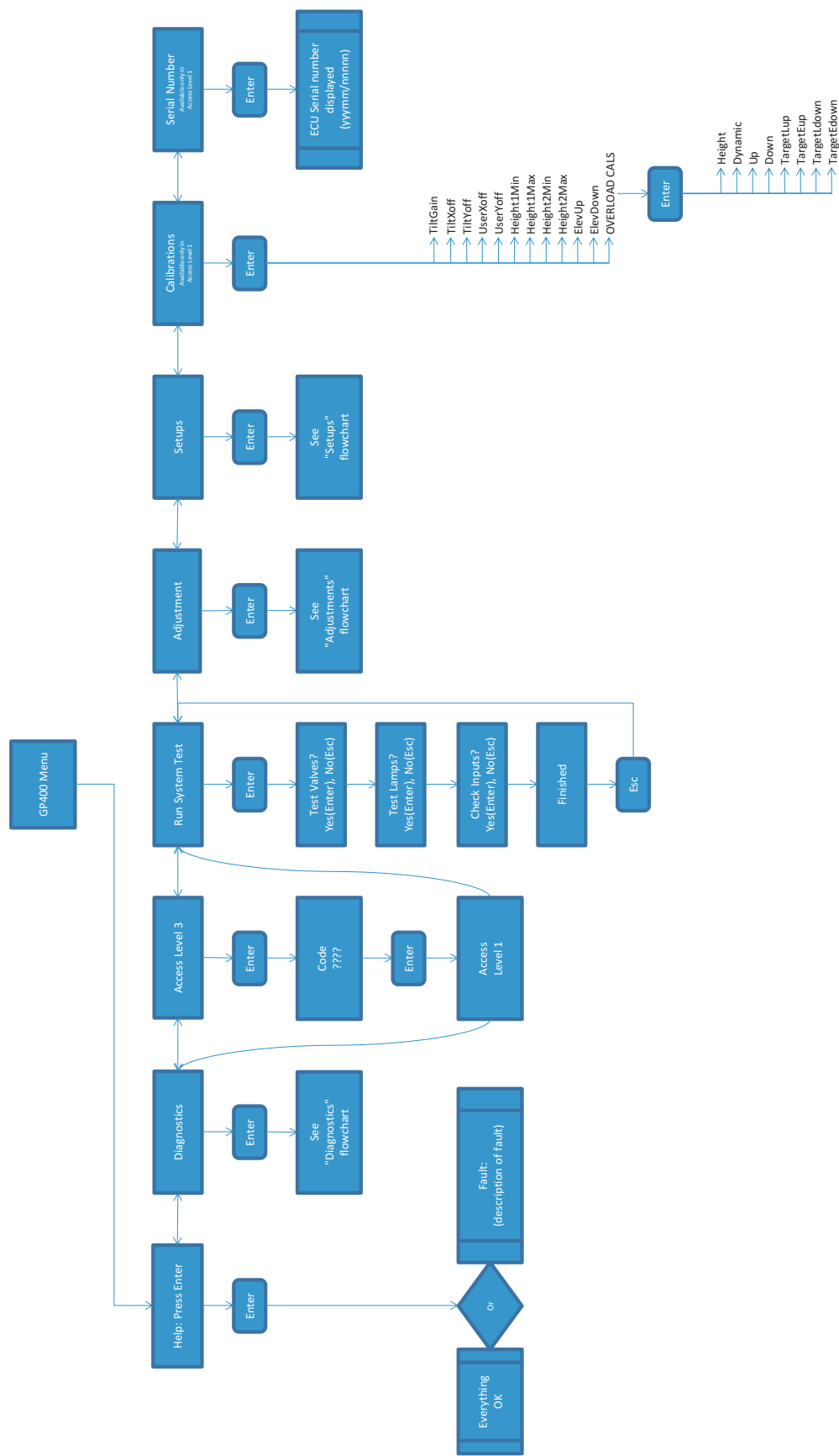


Engine Compartment Wiring

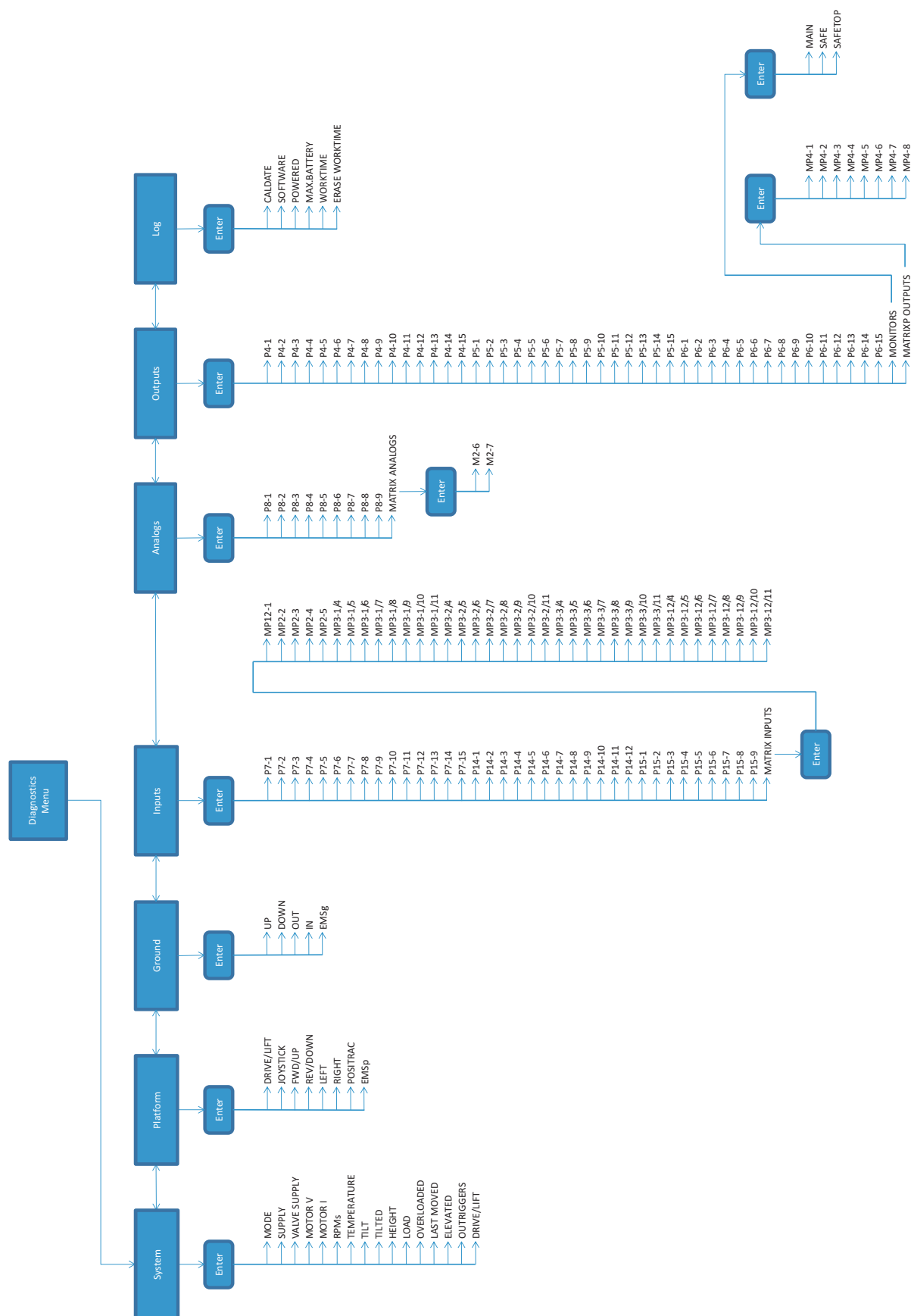


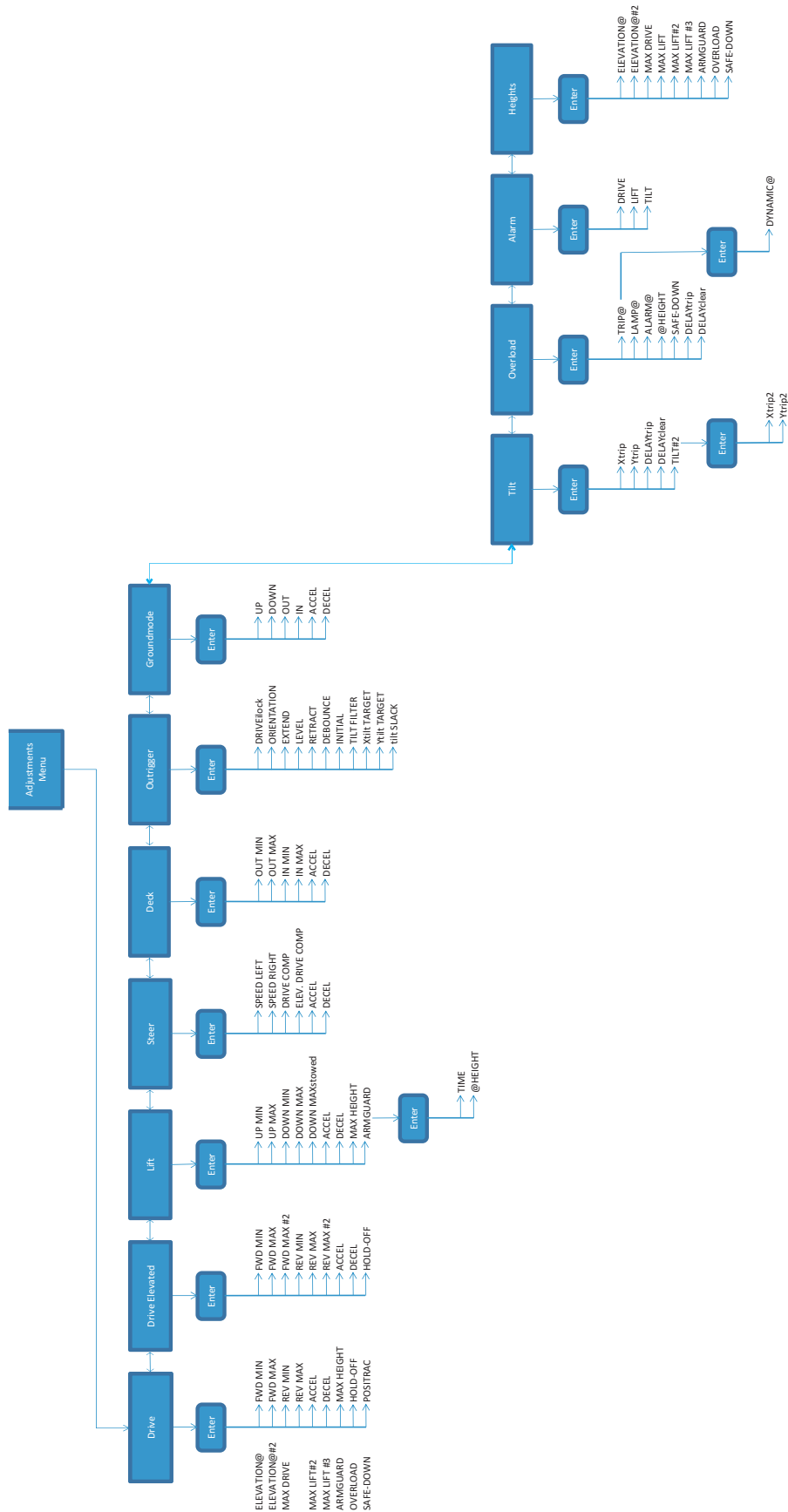
24V DC Option Wiring

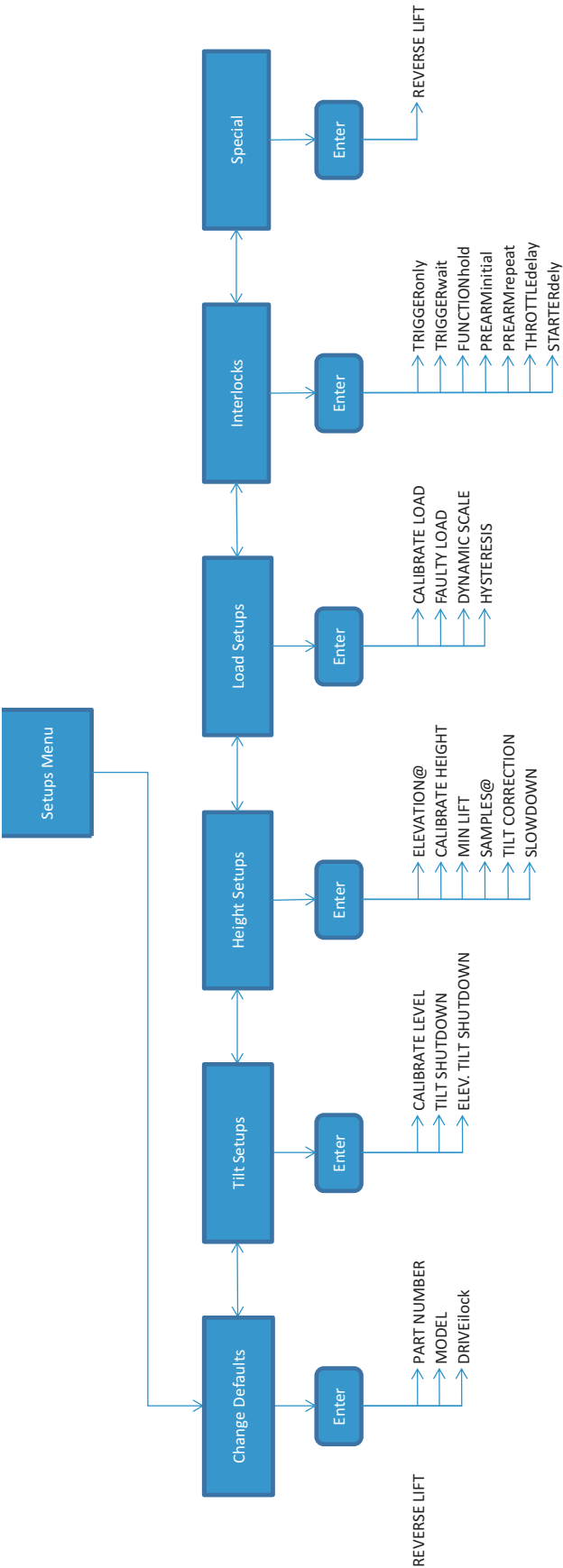




GP400 I/O Menu Diagnostics







GP400 I/O allocations

Pin	Function
P1-1	CAN1H
P1-2	CAN1L
P1-3	GND

P9-1	RS232 B+ supply
P9-2	RS232 Rx
P9-3	RS232 Tx
P9-4	RS232 Gnd

P4-1	Proportional Valve
P4-2	
P4-3	Ground Alarm
P4-4	Fwd
P4-5	Rev
P4-6	High Speed Valve
P4-7	Fuel run solenoid
P4-8	
P4-9	Torque Mode
P4-10	
P4-11	O/R Function enable
P4-12	
P4-13	Lift down (gravity)
P4-14	Brake release
P4-15	Lift down (gravity)

P5-1	RL up
P5-2	Steer Left
P5-3	Steer Right
P5-4	24V contactor
P5-5	Lift up
P5-6	Start relay
P5-7	RR up
P5-8	FR up
P5-9	FR Down
P5-10	
P5-11	RR down
P5-12	Cold start relay
P5-13	
P5-14	
P5-15	RL down

P6-1	Lift allowed lamp
P6-2	Copy of "Torque Mode"
P6-3	
P6-4	Overload lamp
P6-5	
P6-6	
P6-7	Axle release
P6-8	
P6-9	
P6-10	Axle release
P6-11	Brake release
P6-12	
P6-13	FL up
P6-14	FL down
P6-15	"not safe" Throttle

P7-1	From TBM POS (supply)
P7-2	Ground
P7-3	Enable
P7-4	Platform
P7-5	Start
P7-6	Cold Start
P7-7	24VDC Electric operation
P7-8	Lift UP
P7-9	Lift DOWN
P7-10	
P7-11	
P7-12	
P7-13	Oil pressure
P7-14	
P7-15	Alternator sense

P8-1	Engine Temperature
P8-2	Ezfit #1 input
P8-3	
P8-4	
P8-5	Ezfit #2 input
P8-6	Pressure transducer input
P8-7	
P8-8	
P8-9	From TBM # 3
P8-10	
P8-11	
P8-12	connect to P8-1
P8-13	
P8-14	connect to TBM-
P8-15	

P15-1	
P15-2	
P15-3	
P15-4	
P15-5	
P15-6	
P15-7	
P15-8	
P15-9	Height Limit 1
P15-10	
P15-11	
P15-12	

P14-1	F/R outrigger Down
P14-2	F/L outrigger Down
P14-3	R/R outrigger Down
P14-4	R/L outrigger Down
P14-5	F/R outrigger Up
P14-6	F/L outrigger Up
P14-7	R/R outrigger Up
P14-8	R/L outrigger Up
P14-9	Axle switches
P14-10	Height Limit 2
P14-11	
P14-12	

Matrix I/O allocations

Pin	Function
MP1-1	Platform Mode B+ supply
MP1-2	Ground Mode
MP1-3	CANH
MP1-4	GND
MP1-5	GND
MP1-6	CANL

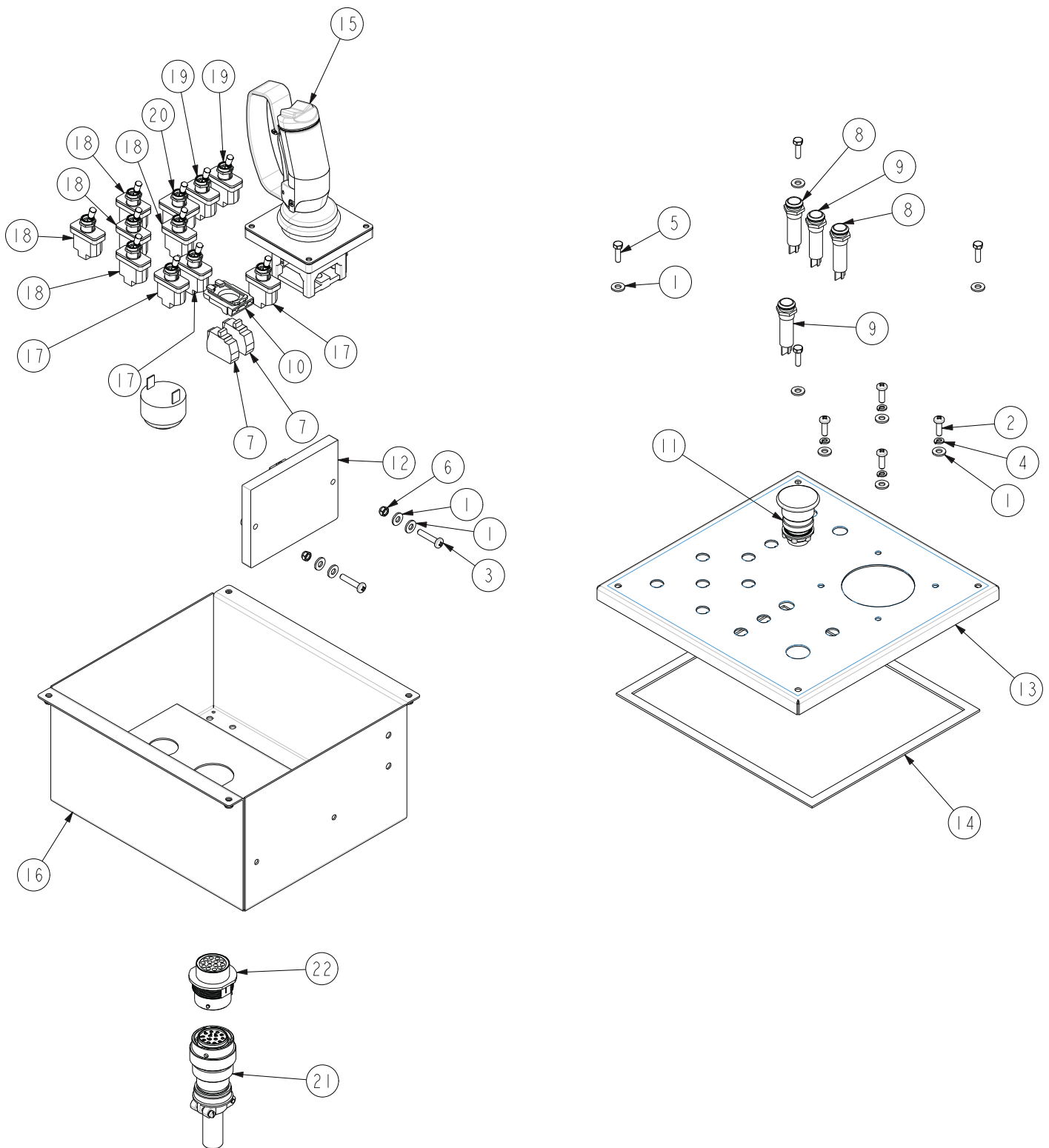
MP2-1	Engine start
MP2-2	
MP2-3	Steer left
MP2-4	Steer right
MP2-5	Trigger (enable)
MP2-6	Joystick (0.5V-2.5V-4.5V)
MP2-7	
MP2-8	
MP2-9	
MP2-10	Joystick supply
MP2-11	Joystick supply
MP2-12	Switch supply

MP3-1	MP3-1	MP3-2	MP3-3
MP3-2			
MP3-3			
MP3-4	O/R AUTO RETRACT	O/R AUTO EXTEND	
MP3-5	O/R F/R RETRACT	O/R F/R EXTEND	
MP3-6	O/R F/L RETRACT	O/R F/L EXTEND	
MP3-7	O/R R/R RETRACT	O/R R/R EXTEND	
MP3-8	O/R R/L RETRACT	O/R R/L EXTEND	
MP3-9	LIFT SELECT	DRIVE SELECT	
MP3-10		24VDC select	
MP3-11	HIGHSPEED SELECT	COLD START	Torque Select
MP3-12			MP3-12

MP4-1	Warning lamp
MP4-2	Lift allowed lamp
MP4-3	Overload lamp
MP4-4	Drive allowed lamp
MP4-5	All alarm
MP4-6	
MP4-7	
MP4-8	
MP4-9	

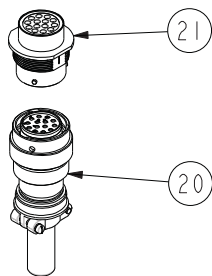
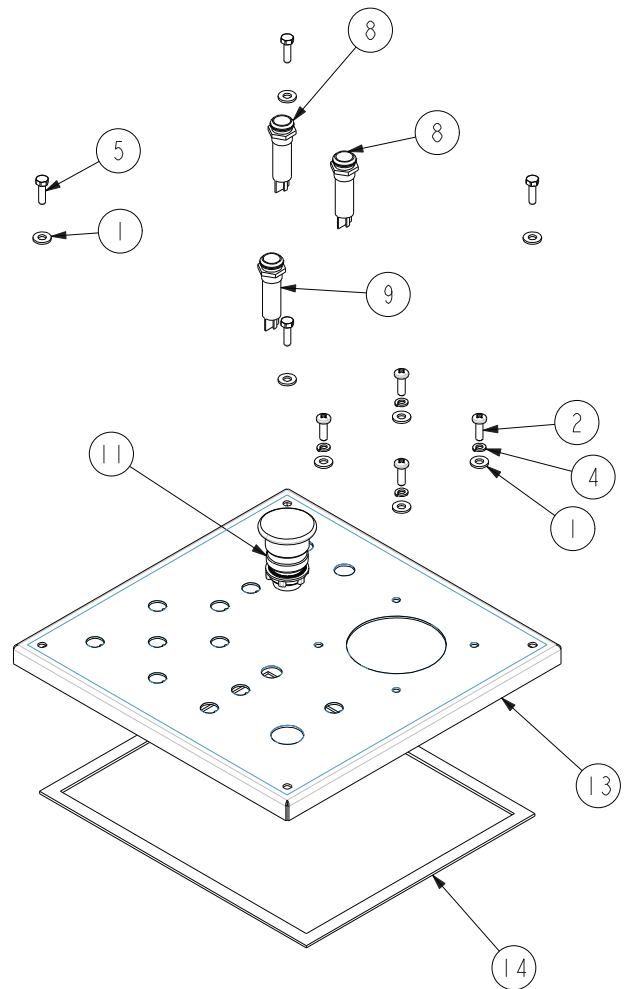
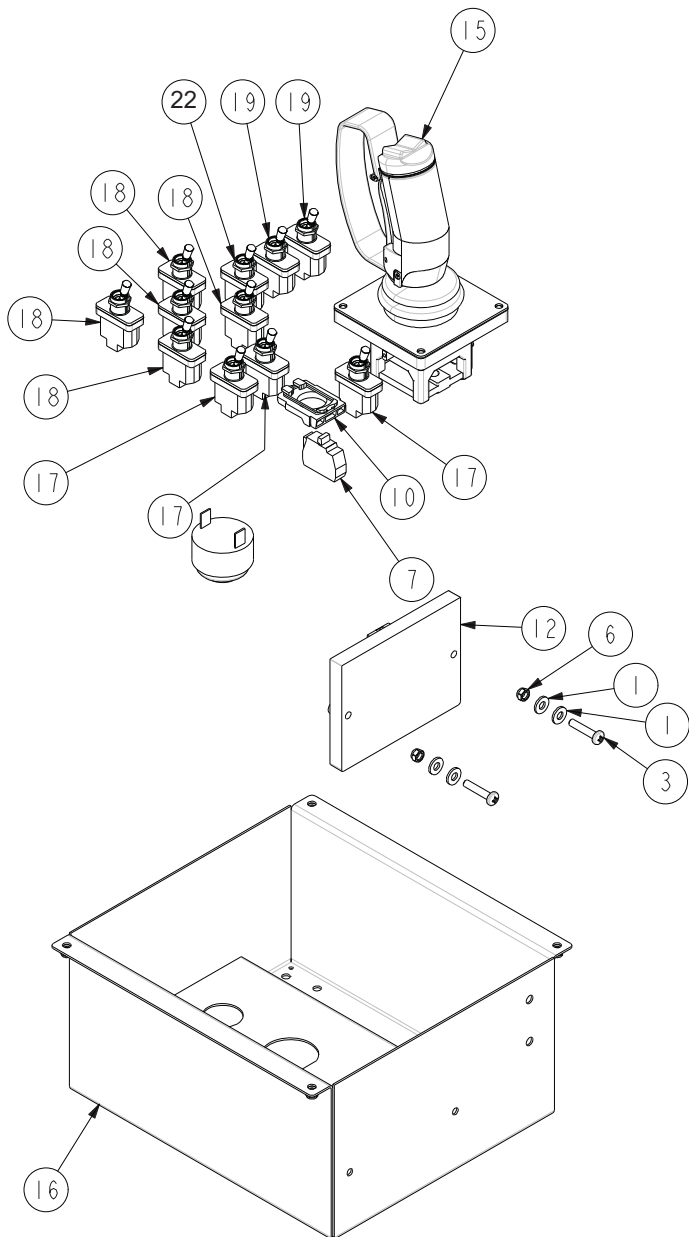
Diesel Upper Control Box

Item	Part No	Qty	Description
0	14023-04	1	Diesel Upper Control Box
1	3603-05	16	Plain Washer
2	3604-05016	4	Pan Head Screw
3	3604-05025	2	Pan Head Screw
4	3605-05	4	Spring Washer
5	3610-05016	4	Metric Bolt
6	3611-05	6	Metric Nylock Nut
7	10118	2	Contact - NC
8	12536-3	2	LED, Green, 12V, M12
9	12536-4	2	LED, Red, 12, M12
10	12914-10	1	Collar
11	12914-11	1	E-Stop, 40mm, Pull Release
12	13485-02	1	Trionics - Matrix
13	13808-01	1	Control Box Lid
14	13862	1	Foam Strip
15	13888	1	Joystick
16	14022	1	Control Box Base
17	3020015	3	Switch, Toggle - Honeywell INTI-6
18	3020016	5	Switch, Toggle - Honeywell INTI-7
19	3020047	2	Switch, Toggle - Honeywell INTI-3
20	329926	1	Switch, Toggle - Honeywell INTI-1
21	3049861	1	Plug, HD30, 14 Way
22	3049862	1	Receptacle, Flgd, 14 Way



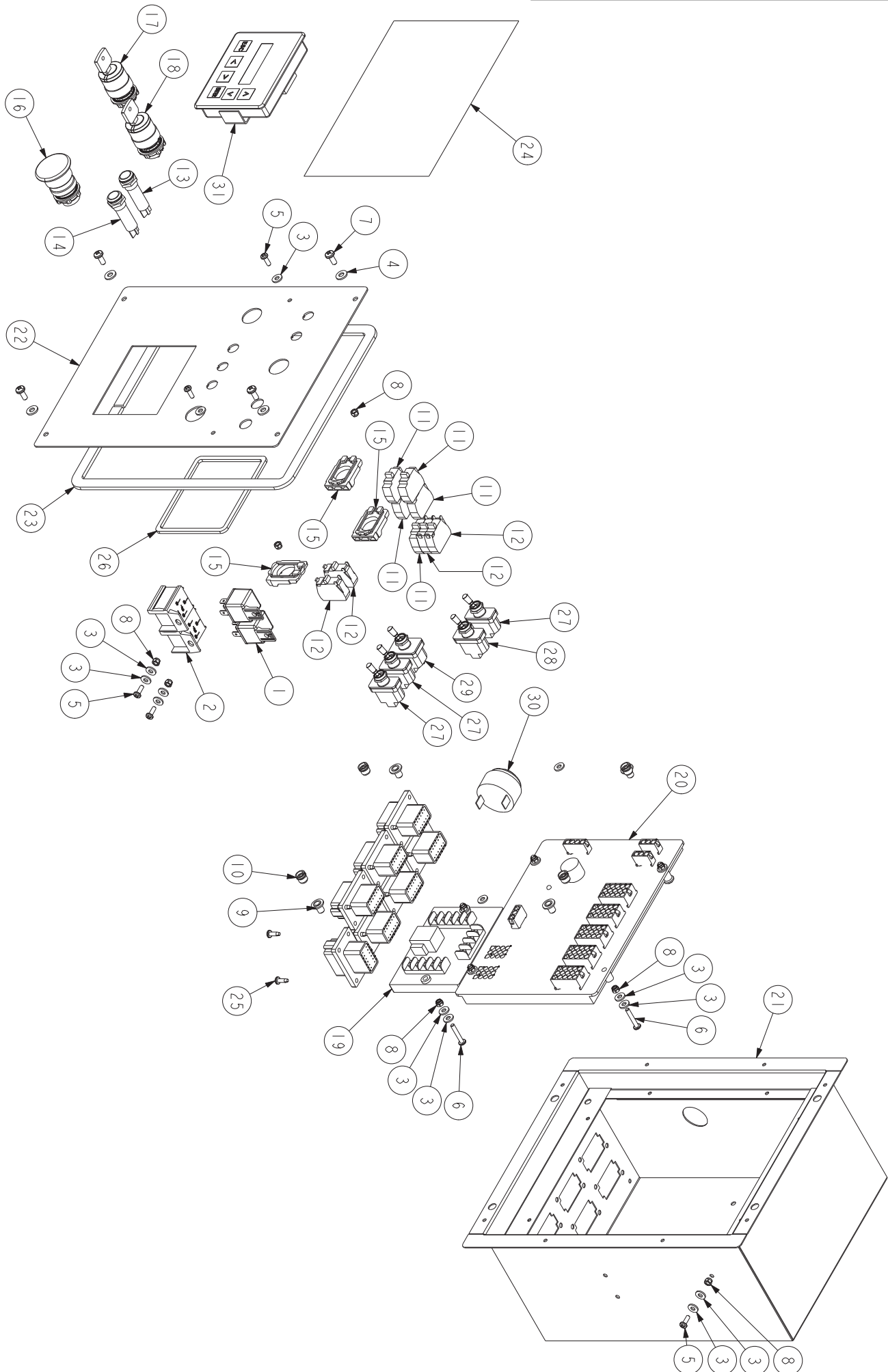
Petrol/LPG Upper Control Box

Item	Part No	Qty	Description
0	14023-05	1	Petrol/LPG Upper Control Box
1	3603-05	16	Plain Washer
2	3604-05016	4	Pan Head Screw
3	3604-05025	2	Pan Head Screw
4	3605-05	4	Spring Washer
5	3610-05016	4	Metric Bolt
6	3611-05	6	Metric Nylock Nut
7	10118	1	Contact NC
8	12536-3	2	LED, Green, 12V, M12
9	12536-4	1	LED, Red, 12V, M12
10	12914-10	1	Collar
11	12914-11	1	E-Stop, 40mm, Pull Release
12	13485-02	1	Trionics - Matrix
13	13808-01	1	Control Box Lid
14	13862	1	Foam Strip
15	13888	1	Joystick
16	14022	1	Control Box Base
17	3020015	3	Switch, Toggle - Honeywell INTI-6
18	3020016	5	Switch, Toggle - Honeywell INTI-7
19	3020047	2	Switch, Toggle - Honeywell INTI-3
20	3049861	1	Plug, HD30, 14 Way
21	3049862	1	Receptacle, Flgd HD30, 14 Way
22	329926	1	Switch, Toggle - Honeywell INTI-1



Diesel Lower Control Box

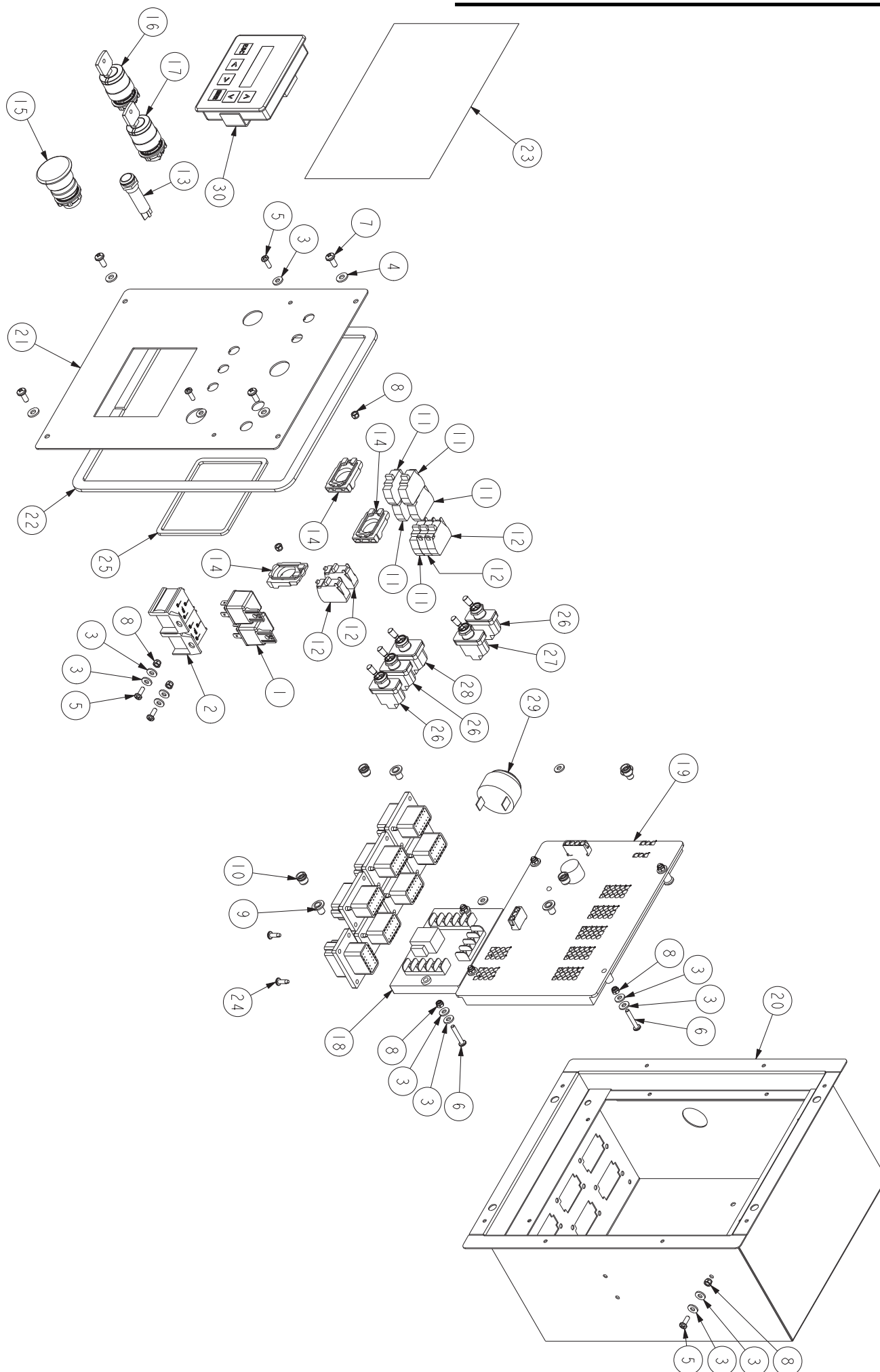
Item	Part No.	Qty.	Description
1	1650-010	2	Relay 12V
2	2065-002	2	Plugin Relay Base
3	3603-04	24	Plain Washer
4	3603-05	4	Plain Washer
5	3604-04012	6	Metric Screw Pan Head
6	3604-04025	6	Screw, Pan Head Pozzi- M4 x 25 ZP
7	3604-05012	4	Screw, Pan Head Pozzi- M5 x 12 ZP
8	3611-04	12	Metric Nyloc Nut
9	3628-05	4	Nutsert- M5, Steel ZP
10	3628-06	4	Nutsert M6
11	10114	5	Contact, NO - Telemec ZBE-101
12	10118	4	Contact, NC - Telemec ZBE-102
13	12536-3	1	LED - Green, 12V M12
14	12536-4	1	LED - Red, 12V M12
15	12914-10	3	Collar
16	12914-12	1	Push Button- 40mm, Red
17	12914-13	1	Key Switch- 1-(2)-3, 455 key
18	12914-17	1	Key Switch- (1)-(2)-(3), 421E key
19	13485-03	1	Trionics - TBM
20	13485-05	1	Trionics - GP400C
21	13810	1	Control Box Weld
22	13810-5	1	Control Box - Face Panel
23	13811-1	1	Foam Seal
24	13839-01	1	Decal - Lower Control Box
25	13926-1008	14	Screw, T25- Pan Pozzi, ZP
26	514345-000	1	Gasket- EzCal Display
27	3020015	3	Switch, Toggle - Honeywell INT1-6
28	3020016	1	Switch, Toggle - Honeywell INT1-7
29	3020097	1	Switch, Toggle - Honeywell 2NT1-3
30	3040411	1	Alarm Buzzer
31	3087803	1	Ezcal Panel - Trionics



Petrol/LPG Lower Control Box

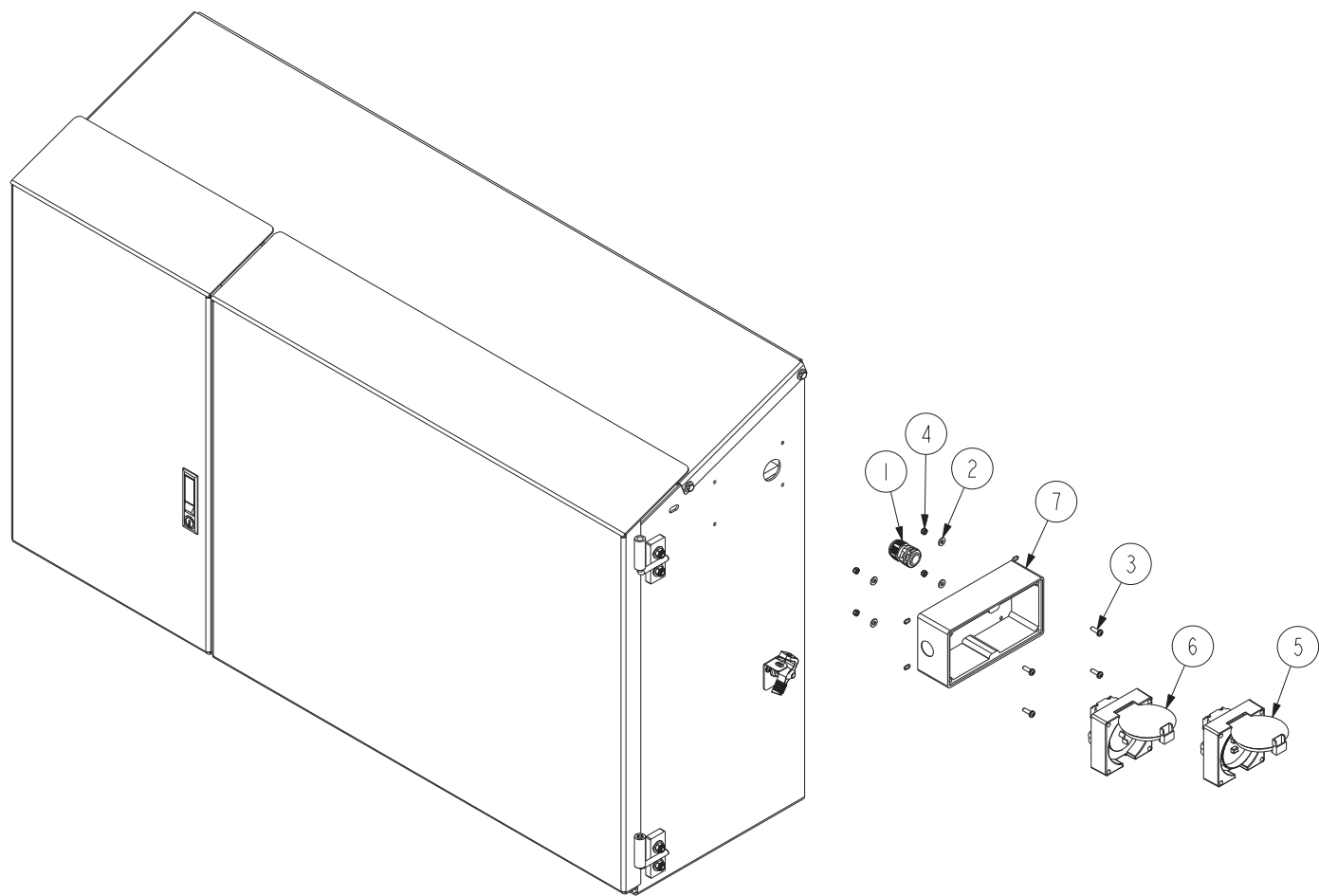
Item	Part No.	Qty.	Description
1	1650-010	2	Relay 12V
2	2065-002	2	Plugin Relay Base
3	3603-04	24	Plain Washer
4	3603-05	4	Plain Washer
5	3604-04012	6	Metric Screw Pan Head
6	3604-04025	6	Screw, Pan Head Pozzi- M4 x 25 ZP
7	3604-05012	4	Screw, Pan Head Pozzi- M5 x 12 ZP
8	3611-04	12	Metric Nyloc Nut
9	3628-05	4	Nutsert- M5, Steel ZP
10	3628-06	4	Nutsert M6
11	10114	5	Contact, NO - Telemec ZBE-101
12	10118	4	Contact, NC - Telemec ZBE-102
13	12536-3	1	LED - Green, 12V M12
14	12914-10	3	Collar
15	12914-12	1	Push Button- 40mm, Red
16	12914-13	1	Key Switch- 1-(2)-3, 455 key
17	12914-17	1	Key Switch- (1)-(2)-(3), 421E key
18	13485-03	1	Trionics - TBM
19	13485-05	1	Trionics - GP400C
20	13810	1	Control Box Weld
21	13810-5	1	Control Box - Face Panel
22	13811-1	1	Foam Seal
23	13839-01	1	Decal - Lower Control Box
24	13926-1008	14	Screw, T25- Pan Pozzi, ZP
25	514345-000	1	Gasket- EzCal Display
26	3020015	3	Switch, Toggle - Honeywell INT1-6
27	3020016	1	Switch, Toggle - Honeywell INT1-7
28	3020097	1	Switch, Toggle - Honeywell 2NT1-3
29	3040411	1	Alarm Buzzer
30	3087803	1	Ezcal Panel - Trionics

Petrol/LPG Lower Control Box

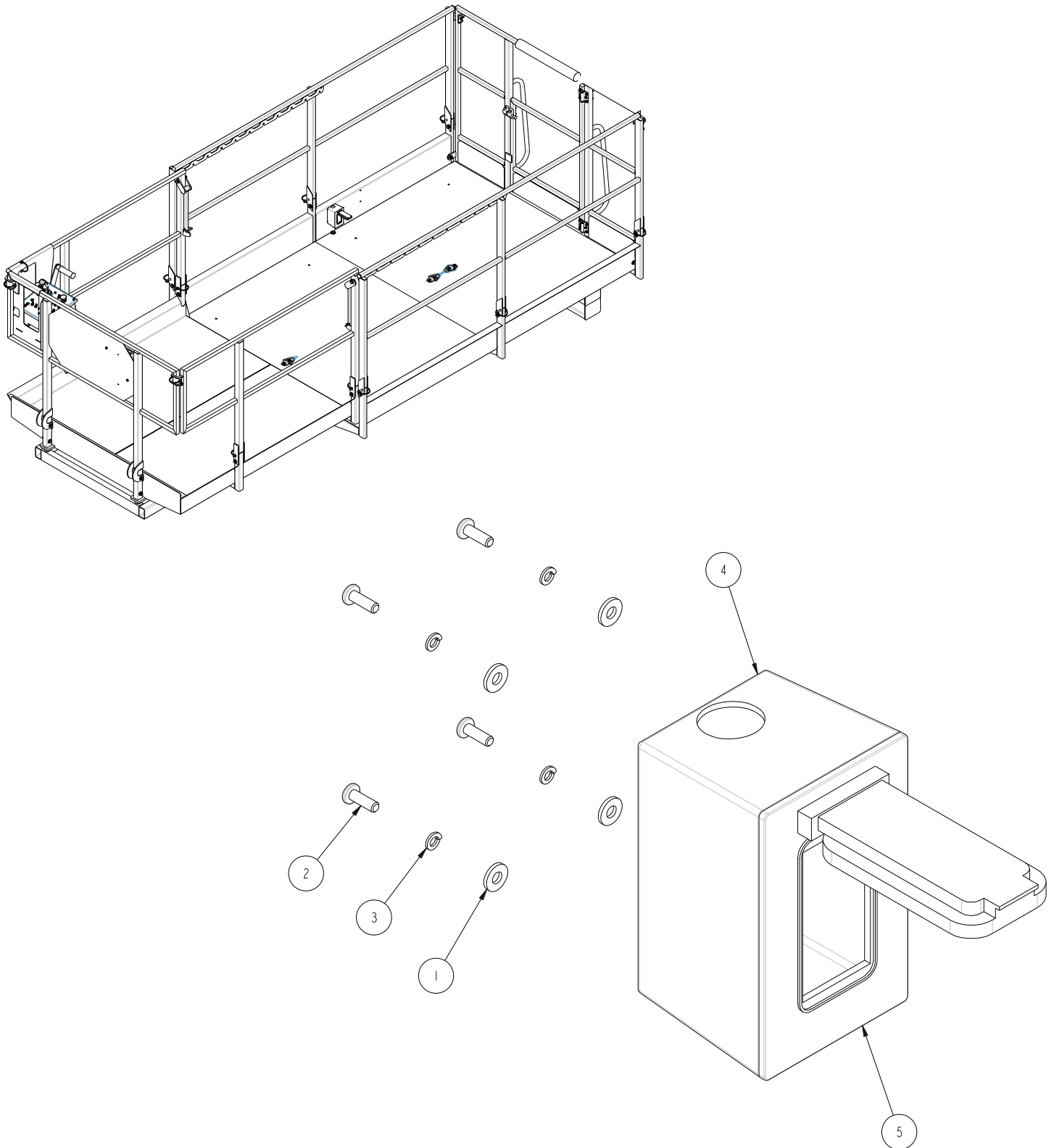


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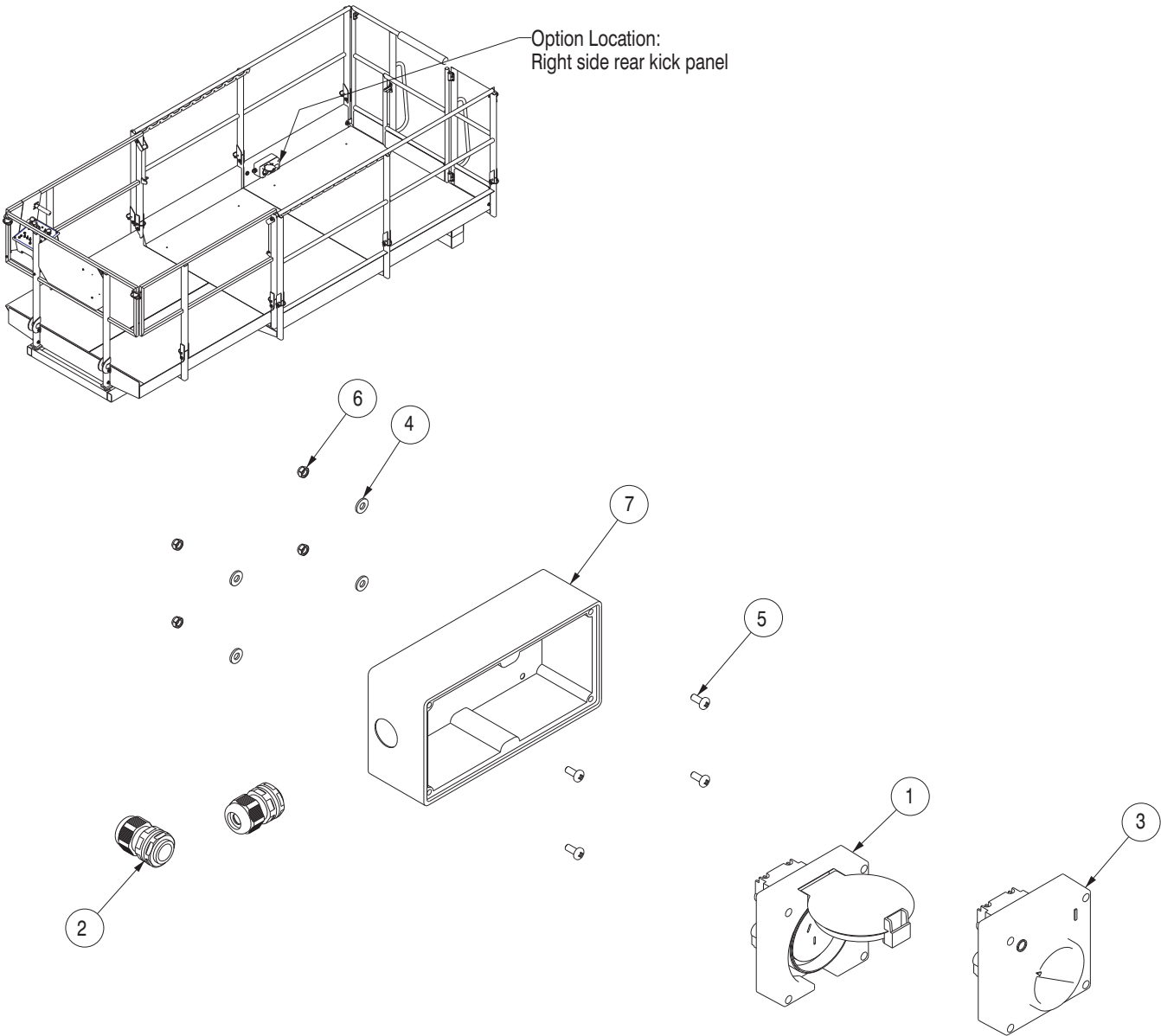
AC240V Assembly



Item	Part No.	Qty.	Description
1	1814	1	Cable Gland
2	3603-05	4	Plain Washer
3	3604-05016	4	Machine Screw
4	3611-05	4	Metric Nyloc Nut
5	10967-1	1	R.C.D
6	10967-2	1	Appliance Inlet
7	10967-3	1	PDL Enclosure



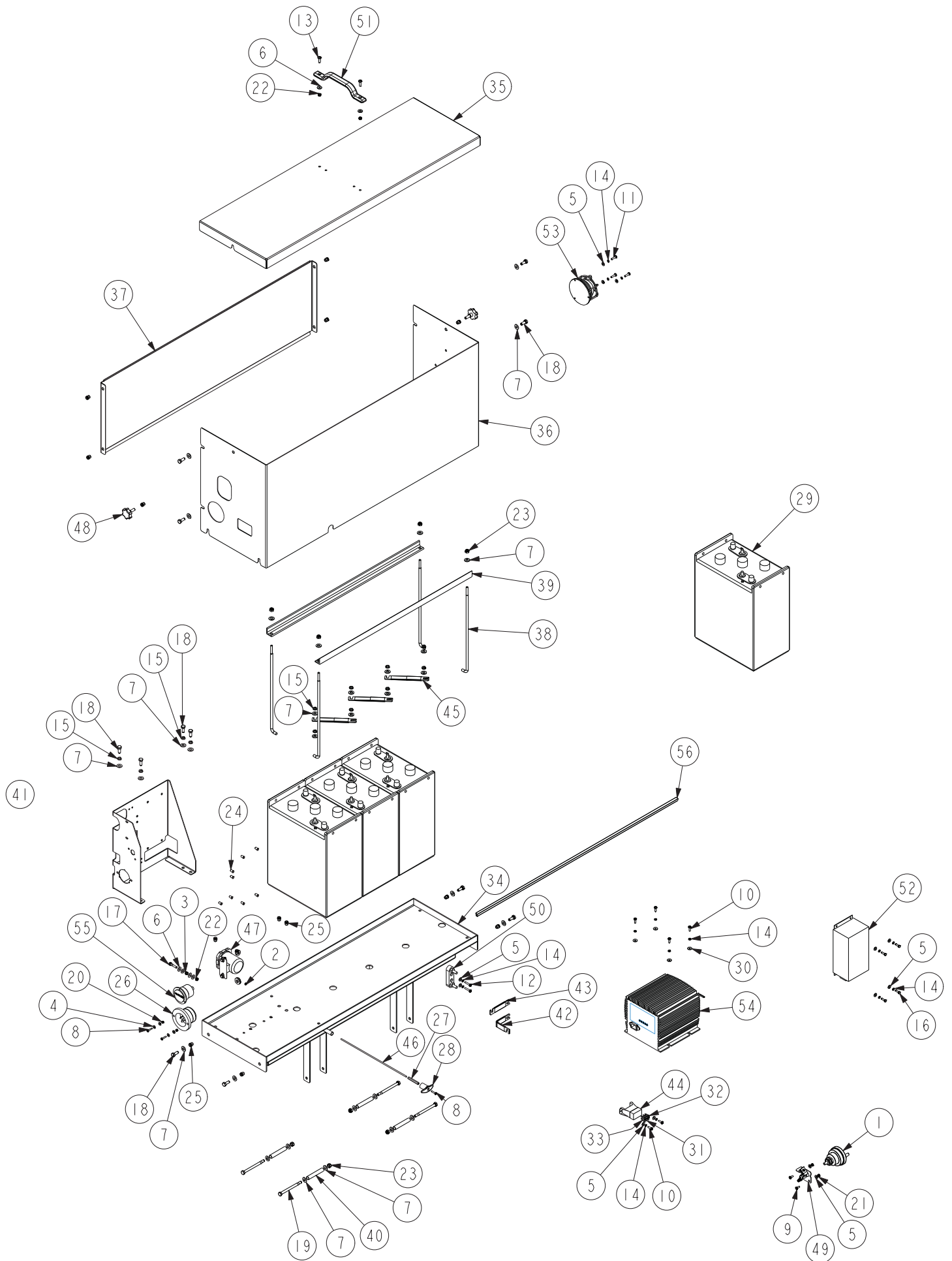
Item	Part No.	Qty.	Description
1	3603-04	12	Plain Washer
2	3604-04012	4	Metric Screw Pan Head
3	3605-04	4	Spring Washer
4	0074979	1	Enclosure
5	3040625	1	Enclosure Face



Item	Part No	Qty	Description
1	1807	1	Appliance Outlet
2	1814	2	Cable Gland
3	1865-001	1	PDL Switch
4	3603-05	4	Plain Washer
5	3604-05012	4	Pan Head Screw
6	3611-05	4	Metric Nylock Nut
7	10967-3	1	PDL Enclosure

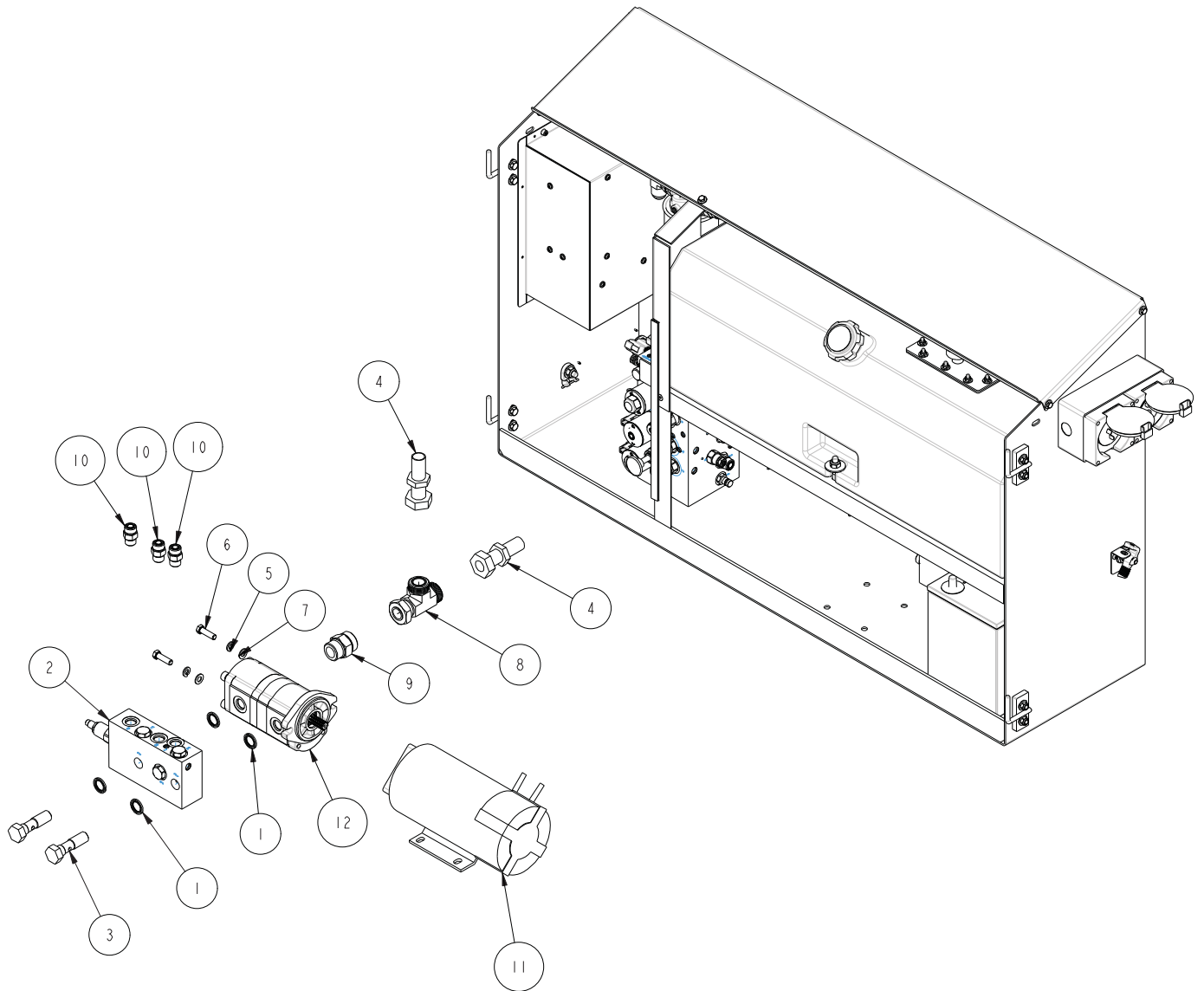
24V DC Option

Item	Part No.	Qty.	Description
1	302-0049	1	Switch Battery Disconnect
2	3602-04	2	Metric Hex Nut
3	3602-06	1	Metric Hex Nut
4	3603-04	4	Plain Washer
5	3603-05	13	Plain Washer
6	3603-06	10	Plain Washer
7	3603-08	38	Plain Washer
8	3604-04020	3	Screw, Pan Head Pozzi- M4 x 20 ZP
9	3604-05012	2	Screw, Pan Head Pozzi- M5 x 12 ZP
10	3604-05016	6	Machine Screw
11	3604-05020	3	Screw, Pan Head Pozzi- M5 x 20 ZP
12	3604-05025	2	Screw, Pan Head Pozzi- M5 x 25 ZP
13	3604-06020	2	Pan Head Screw M6 x 20
14	3605-05	15	Spring Washer
15	3605-08	13	Spring Washer
16	3610-05016	4	Metric Bolt
17	3610-06030	1	Metric Bolt
18	3610-08020	12	Metric Bolt
19	3610-08100	4	Metric Bolt
20	3611-04	2	Metric Nyloc Nut
21	3611-05	2	Metric Nyloc Nut
22	3611-06	5	Metric Nyloc Nut
23	3611-08	8	Metric Nyloc Nut
24	3628-05	12	Nutsert- M5, Steel ZP
25	3628-08	14	Nutsert- M8, Steel ZP
26	9595	1	AC inlet- 230V NZ-AU
27	12509-50	1	Spacer - M4 Female x 50mm Hex
28	12726_HANDLE_ONLY	1	Bleed Down Pull Handle
29	13100	4	Battery ("Trojan" J305P)
30	13525-05	4	Washer - Mini Fender M5
31	13553-05	1	Fuse, Blade- 5A Tan
32	13553-20	1	Fuse, Blade- 20A Yellow
33	13553-40	1	Fuse, Blade- 40A Orange
34	13805-10	1	Battery Tray- SR V4
35	13805-20	1	Lid- Battery Box SR V4
36	13805-30	1	Wrap Panel- Battery Box
37	13805-40	1	Panel- Battery Box Rear
38	13805-50	4	Battery "J" Bolt
39	13805-51	2	Battery Hold Down Angle
40	13805-60	4	Crush Spacer
41	13805-70	1	Battery Box Component Panel
42	13807-20	1	Busbar, Switch to Fuse
43	13807-30	1	Busbar, Fuse to Contactor
44	13826	1	Fuse Block- Blade Fuse x 4
45	13827-04	3	Busbar, Battery Positive to Battery Negative
46	13859	1	Extn Rod- Bleed Down SR V4
47	14052	1	Contactor- 24V Sealed
48	057727-000	2	Turn Knob - M8
49	300840	1	Lock Out Lever Asm.
50	446086	1	Fuse Block
51	500052-000	1	Handle
52	510234-000	1	Converter- 24Vdc to 12Vdc
53	514404-000	1	Flashing Light and Light Guard Assembly
54	1450029	1	Battery Charger- 24V Multi Input Voltage
55	3069521	1	AC Inlet- 110V US
56	PCA015_1000	1	Rubber Channel Section

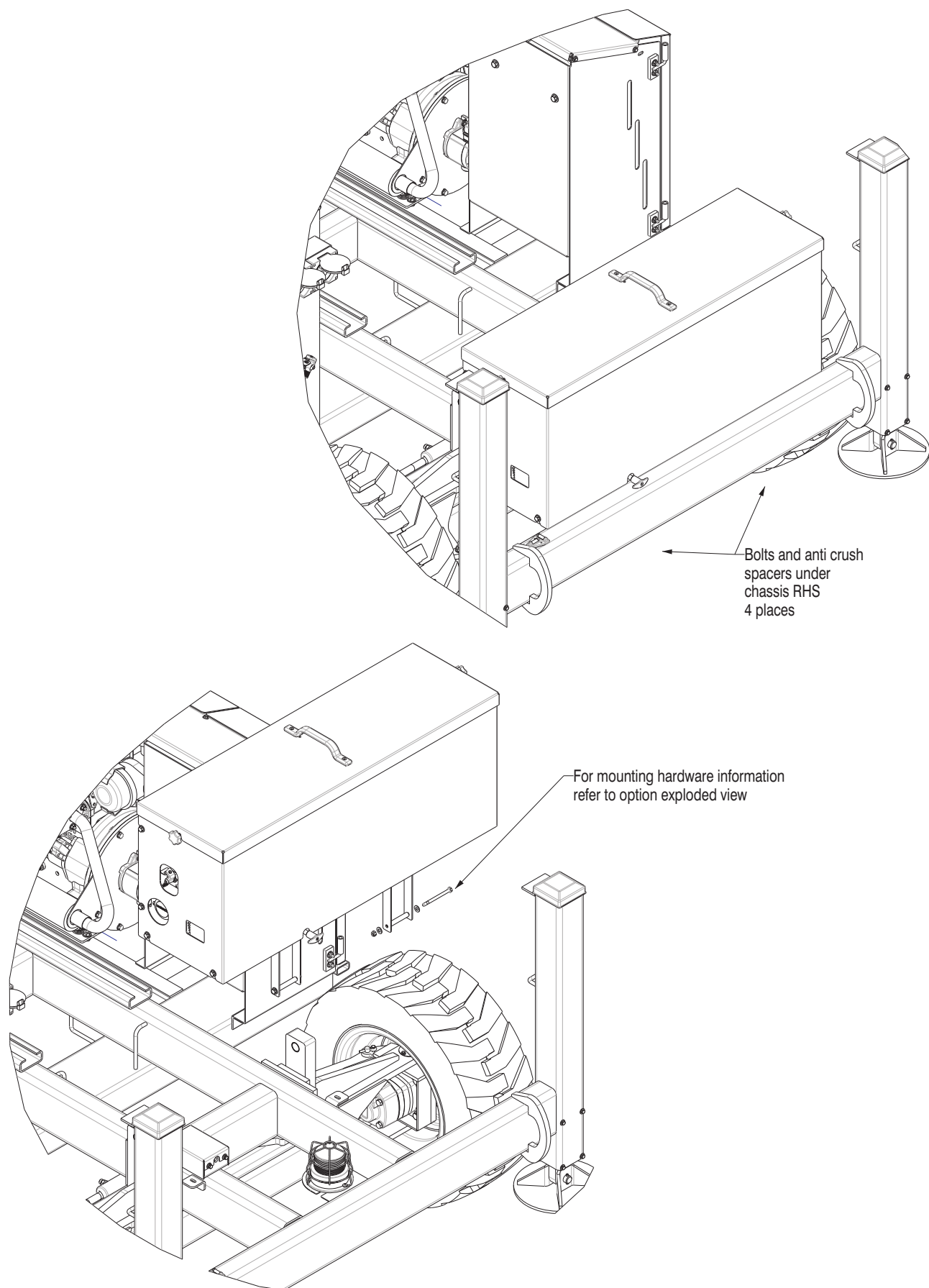


24V DC Cabinet Assembly

Item	Part No.	Qty.	Description
1	7084-004	4	Dowty Seal- 1/2" BSP
2	13866	1	Manifold- Unloader Valve, SR V4
3	13867	2	Banjo Bolt- Unloader Valve SR V4
4	13899-1616	2	Hosetail - 16 Hose -> 16 ORFSF
5	60005-009	2	Spring Washer
6	60017-028	2	Bolt - UNC 3/8 X 1"
7	60030-049	2	3/8" Plain Washer
8	512757-000	1	Tee, Run- 16 ORFSM x 2, 16 ORFSF x 1
9	512968-000	1	Hyd Fitting- Straight ORFS(16)-SAE(16)
10	512970-000	3	Hyd Fitting- Straight ORFS(08)-SAE(08)
11	3087790	1	24VDC motor
12	6029667	1	Pump- SAE A, 4cc/4cc, CCW, 16-32 9T Spline

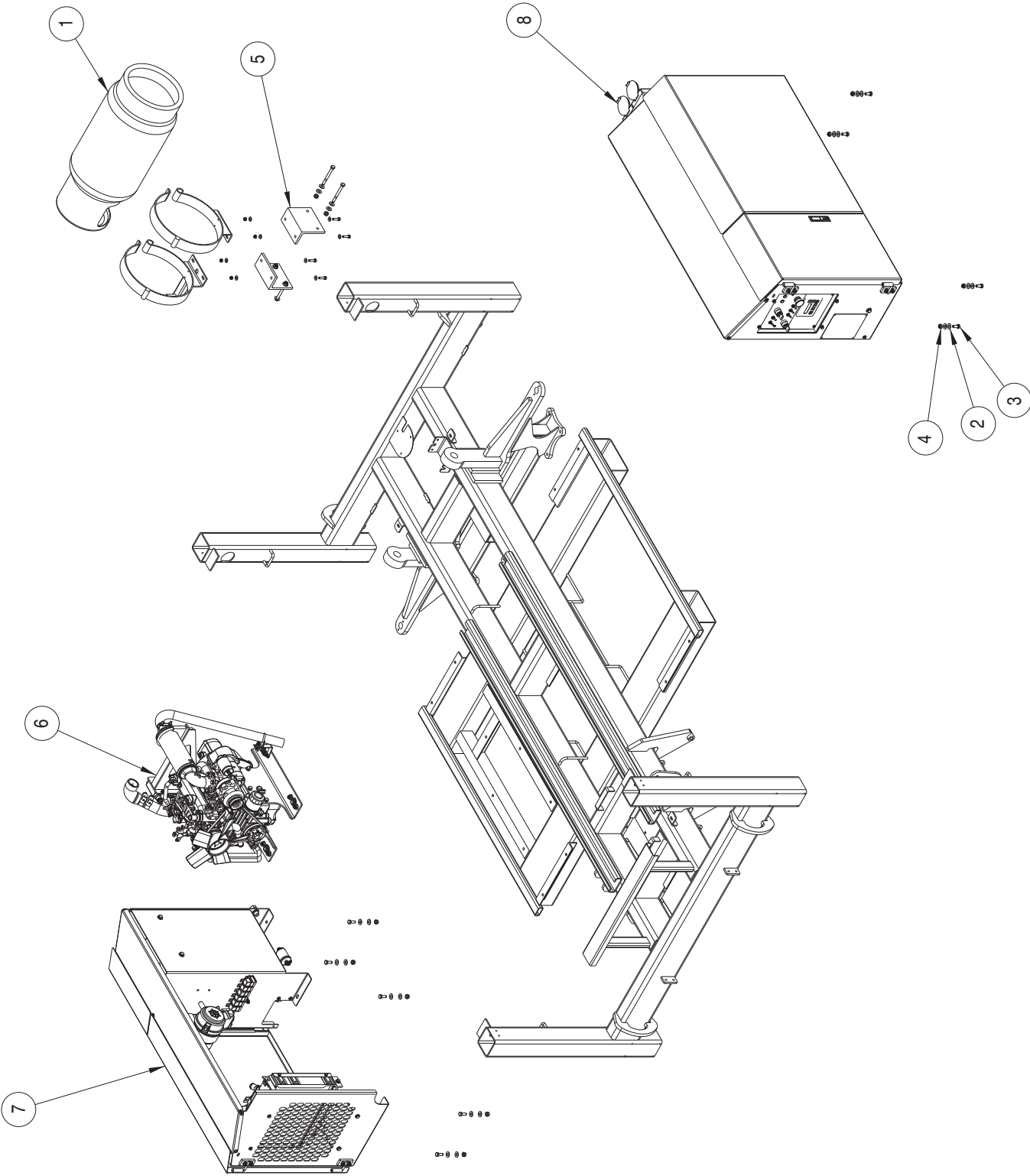


24V DC Battery Box Mounting



LPG Cabinets Assembly

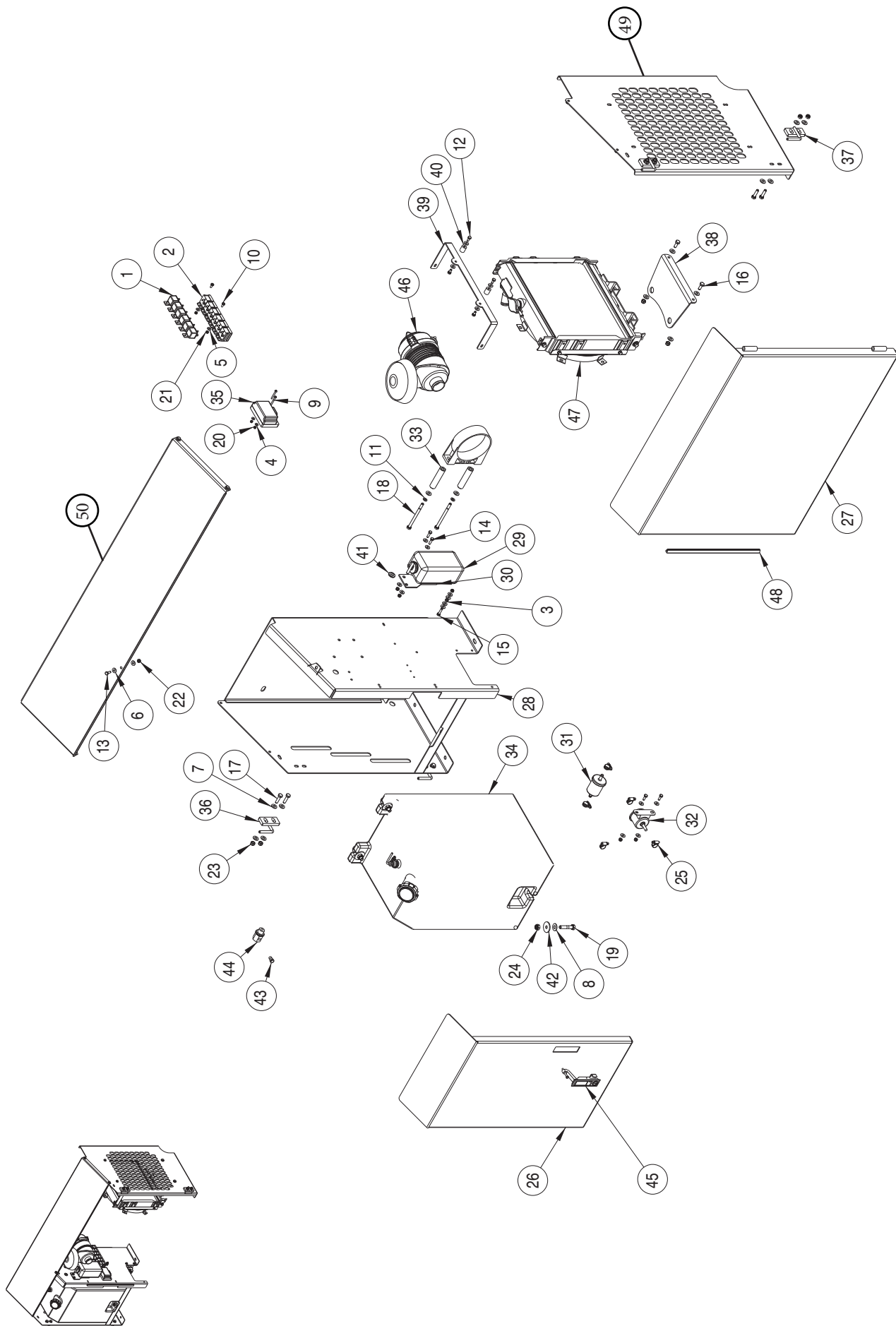
Item	Part No	Qty	Description
1	LPG Bottle	1	15.8kg LPG Bottle
2	3603-10	18	Plain Washer
3	3610-10025	9	Metric Bolt
4	3611-10	9	Metric Nylock Nut
5	13976	1	LPG Bottle Clamp
6	14001	1	Engine Assembly, WG752 LPG
7	14003	1	Engine Cabinet Assembly
8	13864A	1	Control Cabinet Assembly



LPG Engine Cabinet Assembly

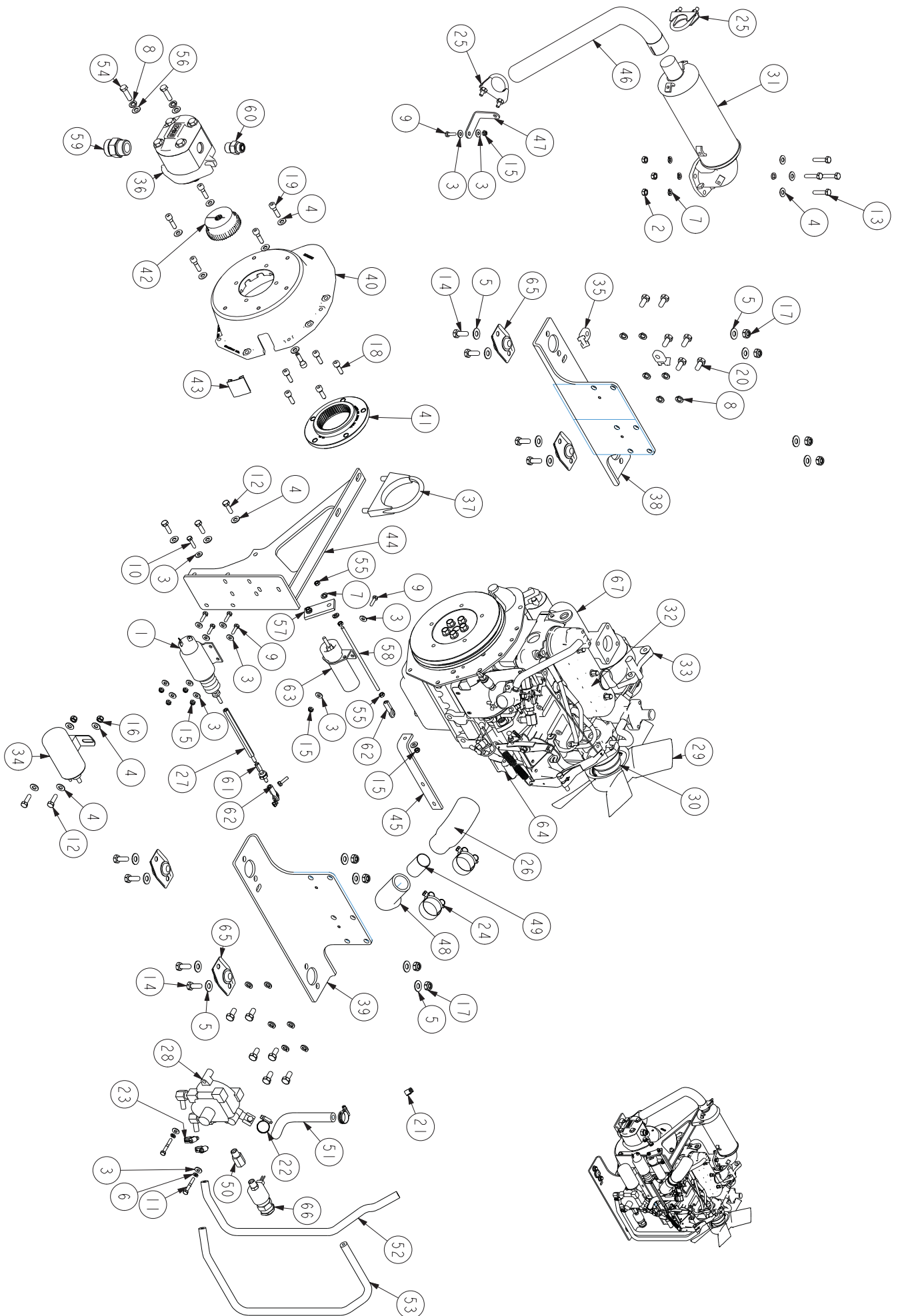
Item	Part No	Qty	Description
1	1650-010	6	Relay 12V
2	2065-002	6	Plug In Relay Base
3	3602-06	1	Metric Hex Nut
4	3603-04	2	Plain Washer
5	3603-05	2	Plain Washer
6	3603-06	26	Plain Washer
7	3603-08	22	Plain Washer
8	3603-10	3	Plain Washer
9	3604-04035	2	Pan Head Screw
10	3604-05012	2	Pan Head Screw
11	3605-08	2	Spring Washer
12	3610-06012	4	Metric Bolt
13	3610-06016	7	Metric Bolt
14	3610-06020	2	Metric Bolt
15	3610-06025	1	Metric Bolt
16	3610-08020	2	Metric Bolt
17	3610-08030	8	Metric Bolt
18	3610-08110	2	Metric Bolt
19	3610-10050	3	Metric Bolt
20	3611-04	2	Nylock Nut
21	3611-05	2	Nylock Nut
22	3611-06	10	Nylock Nut
23	3611-08	10	Nylock Nut
24	3611-10	3	Nylock Nut
25	3611-14	5	Nylock Nut
26	11679	1	Hose Clamp
27	11680	1	Cabinet Door, Small
28	12938	1	Cabinet Door, Large
29	13086-03	1	Engine Cabinet, Tank Side
30	13086-06	1	Radiator Overflow Bottle
31	13086-07	1	Overflow Attachment Bracket
32	13086-12	1	Fuel Filter
33	13098	2	Fuel Pump
34	13106-4A	1	Air Filter Support
35	13806	1	Fuse Block Blade x 6
	13553-05	1	Fuse - Run
	13553-10	1	Fuse - Fuel Select
	13553-10	1	Fuse - High RPM
	13553-15	1	Fuse - Choke
	13553-15	1	Fuse - B+ Select
	13883-20	1	Fuse - Start
36	13869-01	2	Cabinet Hinge, Left Hand
37	13869-02	2	Cabinet Hinge, Right Hand
38	13984-1	1	Radiator Bottom Mount
39	13984-2	1	Radiator Top Mount
40	13984-3	2	Isolator
41	65004-008	1	Rubber Grommet
42	5560179	3	Flat Washer, Special
43	7630703	1	Relief Valve
44	7630704	1	Bulkhead Tee
45	8342416	1	Latch, Adjustable Trigger
46	13086-04	1	Air Cleaner
47	7630976	1	Radiator
48	PCA015	1	Rubber Channel Section
49	12938-1	1	Cabinet End - Radiator Vent
50	12716-13	1	Top Plate Engine + Controls Cabinet

LPG Engine Cabinet Assembly



LPG Engine Assembly Kubota WG752

Item	Part No.	Qty.	Description
1	304-0174	1	Solenoid 24V
2	3602-08	3	Metric Hex Nut
3	3603-06	20	Plain Washer
4	3603-08	16	Plain Washer
5	3603-10	16	Plain Washer
6	3605-06	2	Spring Washer
7	3605-08	8	Spring Washer
8	3605-10	14	Spring Washer
9	3610-06020	8	Metric Bolt
10	3610-06025	1	Metric Bolt
11	3610-06040	2	Metric Bolt
12	3610-08025	5	Metric Bolt
13	3610-08035	4	Metric Bolt
14	3610-10025	8	Metric Bolt
15	3611-06	9	Metric Nyloc Nut
16	3611-08	2	Metric Nyloc Nut
17	3611-10	8	Metric Nyloc Nut
18	3613-08025	5	Socket Head Cap Screw
19	3613-08030	6	Socket Head Cap Screw
20	3617-10020	12	Metric Bolt
21	3618-10	1	Hose Clamp 8-10 mm ZP
22	3618-11	2	Hose Clamp 11-25mm ZP
23	3618-14	2	Hose Clamp 8-16mm ZP
24	3618-44	2	Hose Clamp 40-43mm ZP (Pass.)
25	12409	2	Exhaust Clamp -38mm
26	12581-11621-01	1	Air Filter Elbow - Cut
27	13023	1	Throttle Lever - D902
28	13086-10	1	Vaporisor
29	13086-11	1	Pusher Fan
30	13086-13	1	Fan Spacer 14mm
31	13086-14	1	Catalytic Muffler
32	13086-15	1	Alternator Spacer
33	13086-16	1	Alternator
34	13086-9	1	Ignition Coil
35	13164	2	Cable Tie Mount- M10
36	13628	1	Pump- SAE-A, 9 Spline 10.3cc
37	13905	1	Saddle Clamp
38	13973-1	1	Engine Mount Exhaust Side, SRxx70 WG752
39	13973-2	1	Engine Mount, SRxx70 WG752
40	13978-01	1	Bell Housing - KEA Adapter to SAE A Pump
41	13978-02	1	Flywheel Adapter - 6.5in
42	13978-03	1	Spline Adapter - 9 Spline Pump
43	13978-04	1	
44	13982	1	Throttle Mount
45	13982-3	1	Throttle Web Support
46	13985-1	1	Tail Pipe
47	13985-2	1	Tail Pipe Support
48	13989-01	1	Elbow Pipe
49	13990	1	Joiner- Air filter pipes, 320D
50	13998-0404	1	BSP-NPT Adapter
51	13999-01	1	LPG hose Vaporisor to Carb
52	13999-02	1	Water Hose Out
53	13999-03	1	Water Hose In
54	60017-010	2	1" X 3/8 UNC Bolt
55	60021-008	5	1/4" NF Hex Nut
56	60030-049	2	3/8" Plain Washer
57	0080440	1	Bar, Solenoid
58	0111485	1	Choke Rod
59	512968-000	1	Hyd Fitting- Straight ORFS(16)-SAE(16)
60	512969-000	1	Hyd Fitting- Straight ORFS(08)-SAE(10)
61	2650001	1	Swivel Inline
62	2690004	2	Rod End
63	3040063	1	Choke Solenoid
64	7624798	1	WG752-GL-E3BBH-1
65	7630208	4	Engine Mount
66	7630705	1	Filter Lock
67	7631004	1	Exhaust Manifold





Snorkel Product Warranty Policy

1. Snorkel warrants, its authorized sales and service centers (herein referred to as "SSC"), each new machine manufactured and sold by it to be free from defects in material and workmanship for a period of two (2) years from date of delivery to any customer. The warranty will apply subject to the machine being operated in accordance with the rules, precautions, instructions and maintenance requirements outlined in the relevant Snorkel Operator and Parts/Service manuals. Snorkel further warrants the structural components, specifically the mainframe chassis, turntable, booms and/or scissor arms of each new machine manufactured by it to be free from defects in material and workmanship for an additional period of three (3) years. Any such part or parts which, upon examination by the Snorkel Warranty Department or appointed representative, are found to be defective will be replaced or repaired by Snorkel through local authorized Dealers. The structural warranty specifically excludes adverse effects on the machine structure arising from damage, abuse or misuse of the equipment.
2. Machines may be held in an authorized Distributor/ SSC's stock for a maximum period of six (6) months from the date of shipment from Snorkel, before the warranty period is automatically initiated on each machine.
3. It is the responsibility of the Distributor/SSC to complete and return to Snorkel a Pre-delivery Inspection Record, Warranty Registration Form, before the act of rental / loan / demonstration of the machine or delivery to an end user. In the case of direct sale to end customers the same responsibility lies with the end customer.
4. Any end customer, SSC, distributor or dealer shall not be entitled to the benefits of this warranty and Snorkel shall have no obligations here under unless the "Pre-Delivery and Inspection Record" has been properly completed and returned to the Snorkel Warranty department within fifteen (15) days after delivery of the Snorkel product to the Customer or Dealer's demonstration / rental fleet. Snorkel must be notified, in writing, within ten (10) days, of any machine sold to a Customer from a Dealer/SSC's rental fleet during the warranty period.
5. Any part or parts which upon examination by the Snorkel Product Support Department are found to be defective within the specified warranty period, will be replaced or repaired at the sole discretion of Snorkel through its local Authorized Distributor/SSC, at no charge. Any parts replaced under warranty must be original Snorkel parts obtained through an authorized Snorkel Distributor/SSC unless expressly agreed otherwise in writing and in advance by Snorkel's warranty department.
6. All parts claimed under warranty must be held available for return and inspection upon request for a period of 90 days from date of claim submission, it is necessary that all parts are individually tagged or marked with their part number and the warranty claim number. All parts returning should be still in a factory state, free of any alteration to the original design. If the parts are subject to repair it will need to be pre authorized by the Snorkel Product Support Group and or Warranty Department prior to the repair being completed. After 90 days all parts replaced under warranty which have not been returned, to Snorkel should be destroyed. Failure to produce parts requested by the Warranty Administrator for inspection within a period of 14 days will result in the claim being automatically rejected in full. Materials returned for warranty inspection must have the following procedure:
 - Carefully packaged to prevent additional damage during shipping
 - Drained of all contents and all open ports capped or plugged
 - Shipped in a container tagged or marked with the RMA number
 - Shipped PREPAID (ground service only). Any item(s) returned for warranty by any other means
 - may be refused and returned, unless prior approval is agreed with Snorkel.



Snorkel Product Warranty Policy

7. At the direction of the Snorkel Warranty department, any component part(s) of Snorkel products to be replaced or repaired under this warranty program must be returned freight prepaid for inspection. An RMA (Returns material authorization) must be requested from Snorkel Warranty department, a copy to be placed with the returning component part(s).
8. All warranty replacement parts will be shipped freight prepaid (standard charges, ground shipping only) from the Snorkel Parts department, Service Department or from the Vendor to Dealer/SSC or Customer. Any other shipping method is the customer responsibility.
9. All warranty claims are subject to approval by Snorkel Service department. Snorkel reserves the right to limit or adjust claims with regard to defective parts, labor or travel time based on usual and customary guidelines.
10. Reimbursement policy, labor will be paid at 75% of posted hourly shop rate. Travel time will be paid at \$50 per hour up to a maximum of 3 hours. Snorkel will pay 1 hour of troubleshooting time per warranty claim, unless expressly agreed otherwise in writing and in advance by Snorkel's Warranty Department. An annual rate declaration must be supplied to the Snorkel Warranty administrator by January 31st and will be used as the reimbursable rate for that calendar year.

REPLACEMENT PARTS WARRANTY

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

CLAIM PROCEDURE

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

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

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

FREIGHT DAMAGE

- If a machine is received in a damaged condition, then the damage must be noted on the bill of lading and/or delivery documents and photographs must be taken at the point of delivery, prior to signing acceptance of the consignment.
- The freight company and Snorkel must be contacted by the Distributor and a damage claim registered by either party immediately.
- The above requirements apply only to freight damage associated with equipment supplied by Snorkel transport. Customer freight issues are excluded from this warranty policy.



Snorkel Product Warranty Policy

THIS PRODUCT WARRANTY POLICY SPECIFICALLY EXCLUDES:

1. Engines, motors, tires and batteries are manufactured by specialist suppliers to Snorkel, who furnish their own warranty policies. Snorkel will, however, to the extent permitted pass through any such warranty protection to the Distributor/SSC/Customer.
2. Any Snorkel product which has been modified or altered outside Snorkel factories without written approval, if such modification or alteration, in the sole judgment of Snorkel Engineering and/or Service Departments, adversely affects the stability, reliability or service life of the Snorkel product or any component thereof.
3. Any Snorkel product which has been subject to misuse and abuse, improper maintenance or accident. "Misuse" includes but is not limited to operation beyond the factory-rated load capacity and speeds. "Improper maintenance" includes but is not limited to failure to follow the recommendations contained in the Snorkel Operation, Maintenance, and repair Parts Manuals.
4. Normal wear of any Snorkel component part(s). Normal wear of component parts may vary with the type, application or type of environment in which the machine may be used; such as, but not limited to sandblasting applications.
5. Routine maintenance, routine maintenance items and minor adjustments are not covered by this warranty, including but not limited to hydraulic fluid, filters and lubrication, paint and decals, engine tune-up, brake adjustments etc. Snorkel will not cover leaks from fittings, hoses and any other connection points after the unit has been in service for 90 days or 150 hours of operation which ever comes first.
6. Any Snorkel product that has come into direct contact with any chemical or abrasive material.
7. Incidental or consequential expenses, losses, or damages related to any part or equipment failure, including but not limited to freight cost to transport the machine to a repair facility, downtime of the machine, lost time for workers, lost orders, lost rental revenue, lost profits, expenses or increased cost. This warranty is expressly in lieu of all other warranties, representations or liabilities of Snorkel, either expressed or implied, unless otherwise amended in writing by Snorkel.
8. Snorkel warranty policy does not cover any duties, taxes, environmental fees including without limitation, disposal or handling of tires, batteries and petrochemical items.
9. Items specifically excluded are: fuel injectors, motor brushes, glow plugs, contactor tips and springs, filters, lamp bulbs, lamp lenses, coolants, lubricants, brake pads and cleaning materials.
10. Failure of replacement parts due to fault misdiagnosis or incorrect fitting by the Distributor/SSC/Customer.

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



Snorkel Product Warranty Policy

Wherever possible the end customer shall obtain all warranty support and make all warranty claims through the local Snorkel authorized Distributor/SSC/Dealer. Warranty support should be from the Distributor/SSC/Dealer from whom the Snorkel product was purchased. Where Snorkel equipment is supplied directly from the factory the end customer, or if unable to contact the Distributor/SSC/Dealer, may contact the Snorkel Warranty Department for further assistance.

APPEAL

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

SNORKEL WARRANTY SCHEDULE

Limited Warranty Periods

Item	Warranty Period
New machine materials and workmanship	2 year parts replacement
Structural components (Chassis, Turntable, Booms, Scissors)	5 years parts replacement or repair
Parts held in a Distributor's stock	12 months from date of invoice, subject to adequate storage/protection
Parts sold (non warranty)	6 months from date of invoice
Batteries supplied on new machines	6 months from warranty registration date
Other specifically excluded parts: Fuel injectors Motor brushes Glow plugs Contactor tips and springs Oils Filters Lamp bulbs Lamp lenses Coolants Lubricants Cleaning materials All consumable/wear parts	Not covered by Warranty

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

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