

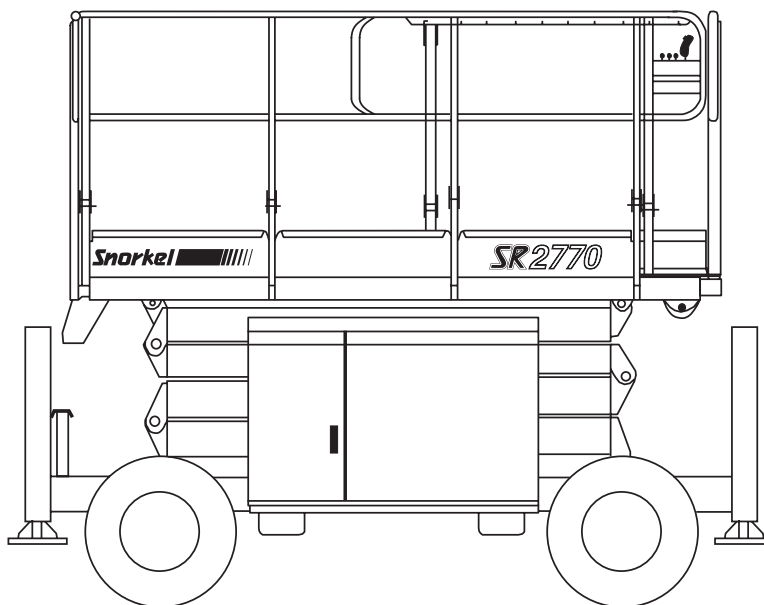
Snorkel

INTERNATIONAL

Maintenance and Repair Parts Manual

SR2770

**Engine Powered
Diesel - Gasoline
LPG Fuel**



LIMITED WARRANTY

Snorkel warrants each new machine manufactured and sold by it to be free from defects in material and workmanship for a period of one (1) year from date of delivery to a Customer or for one year after the machine has been placed in first service in a Dealer rental fleet, whichever comes first. Any part or parts which, upon examination by the Snorkel Service Department, are found to be defective, will be replaced or repaired, at the sole discretion of Snorkel, through its local Authorized Dealer at no charge.

Snorkel further warrants the structural components; specifically, the mainframe chassis, turntable, booms and scissor arms, of each new machine manufactured by it to be free from defects in material and workmanship for an additional period of four (4) years. Any such part or parts which, upon examination by the Snorkel Service Department, are found to be defective will be replaced or repaired by Snorkel through its local Authorized Dealer at no charge; however, any labor charges incurred as a result of such replacement or repair will be the responsibility of the Customer or Dealer.

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

Customer and Dealer shall not be entitled to the benefits of this warranty and Snorkel shall have no obligations hereunder unless the "Pre-Delivery and Inspection Report" has been properly completed and returned to the Snorkel Service Department within ten (10) days after delivery of the Snorkel product to Customer or Dealer's rental fleet. Snorkel must be notified, in writing, within ten (10) days, of any machine sold to a Customer from a Dealer's rental fleet during the warranty period.

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

REPLACEMENT PARTS WARRANTY

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

THIS WARRANTY EXCLUDES AND SNORKEL DOES NOT WARRANT:

1. Engines, motors, tires and batteries which are manufactured by suppliers to Snorkel, who furnish their own warranty. Snorkel will, however, to the extent permitted, pass through any such warranty protection to the Customer or Dealer.
2. Any Snorkel product which has been modified or altered outside Snorkel's factory without Snorkel's written approval, if such modification or alteration, in the sole judgment of Snorkel's Engineering and/or Service Departments, adversely affects the stability, reliability or service life of the Snorkel product or any component thereof.
3. Any Snorkel product which has been subject to misuse, improper maintenance or accident. "Misuse" includes but is not limited to operation beyond the factory-rated load capacity and speeds. "Improper maintenance" includes but is not limited to failure to follow the recommendations contained in the Snorkel Operation, Maintenance, Repair Parts Manuals. Snorkel is not responsible for normal maintenance, service adjustments and replacements, including but not limited to hydraulic fluid, filters and lubrication.
4. Normal wear of any Snorkel component part(s). Normal wear of component parts may vary with the type application or type of environment in which the machine may be used; such as, but not limited to sandblasting applications.
5. Any Snorkel product that has come in direct contact with any chemical or abrasive material.
6. Incidental or consequential expenses, losses, or damages related to any part or equipment failure, including but not limited to freight cost to transport the machine to a repair facility, downtime of the machine, lost time for workers, lost orders, lost rental revenue, lost profits or increased cost.

This warranty is expressly in lieu of all other warranties, representations or liabilities of Snorkel, either expressed or implied, unless otherwise amended in writing by Snorkel's President, Vice President-Engineering, Vice President-Sales or Vice President-Marketing.

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

The Customer shall make all warranty claims through its local Authorized Dealer and should contact the Dealer from whom the Snorkel product was purchased for warranty service. Or, if unable to contact the Dealer, contact the Snorkel Service Department for further assistance.

Effective July 1995

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■ General Specifications

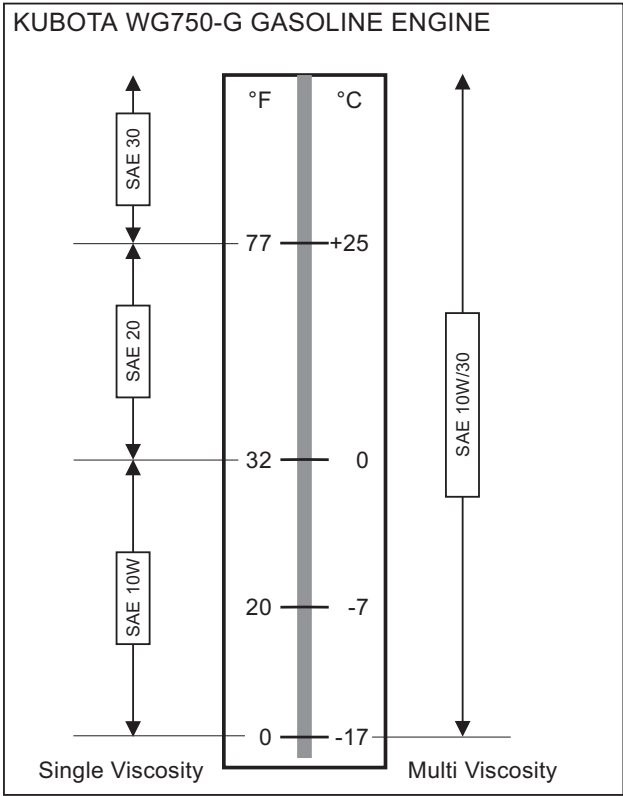
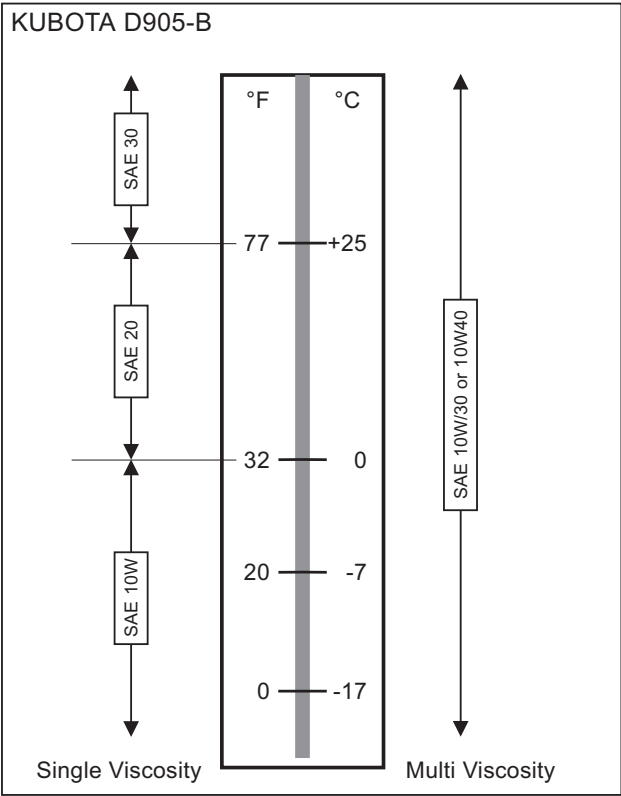
SPECIFICATIONS	SR2770	
Nominal working height	10.28m	33' 9"
Maximum height to basket floor	8.28m	27' 2"
Maximum outreach	1200mm with roll out deck	
Speed (when raised)	0 to 1kph	0 to 0.64mph
Speed (maximum drive)	0 to 4.5kph	0 to 2.8mph
Maximum width of base	1.77m	5' 9"
Safe working load - Main deck (Roll out deck not extended)	580kg	1280lbs
Safe working load - Main deck Roll out deck extended - R/O deck	460kg 120kg	1015lbs 265lbs
Standard colour	White platform. Orange scissors and base	
Platform size*	2.73 x 1.65m	8' 11" x 5' 5"
Collapsed height	1.7m	5' 8"
Overall length (with stabilizers)	3.36m	11' 0"
Gradeability	35%	
Lift time	26 seconds	
Lower time	35 seconds	
Turning radius (inner)	2.83m	9' 3"
Turning radius (outer)	4.6m	15' 1"
Insulation rating	Nil	
Overall weight	2800kg	6272lbs
Ground clearance	370mm	14.6"

■ Engine Data

ENGINE MAKE	KUBOTA(gasoline)	KUBOTA (LPG)	KUBOTA (diesel)
Model	WG750-G		D905-B
Fuel	gasoline	LPG	diesel no. 2-D
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 no. 2-D ASTM D975 centane no. > 44 (For operating temp. below 32°F (0°C) use "winterized" no. 2-D.)
Coolant	50% water + 50% ethylene glycol		
Operating Temperature	180°F - 205°F(82°C - 96°C)		
Oil Capacity	3.5 qt USA (3.25 liters)		5.2 qt USA (5.1 liters)
Oil Grade	API: SF, SF/CD		API: C/CD/CE
Oil Weight	see chart below		
Running Time (one tank of fuel)	A full tank of gasoline or diesel, will last an entire eight hour shift, under normal working conditions. It normally takes two tanks of LPG per eight hour shift.		

General Specifications

■ Engine Oil Charts



■ About this Manual:

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

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

NOTE:

It is recommended that you record the serial and model number of your machine (see page 15 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 illustrations 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 SR2770.

□ Maintenance

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

□ Repair parts and illustrations

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

□ Hydraulics

(Section 2), contains parts listings and illustrations 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 illustrations of electrical components installations including wiring schematics.

□ Options

Options (Section 4), contains parts listings and illustrations of optional installations that may be installed on your unit.

□ Parts index - Page locator

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

■ Maintenance and Schematics

□ Maintenance information

The parts drawings located in the repair parts sections, are designed for use as a guide for proper disassembly of the machine and components as well as for parts replacement. Always refer to the hydraulic system installation drawings and the electrical wiring diagram before removing or disassembling associated parts.

⚠CAUTION

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

⚠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. Do not partially disassemble or assemble one part, then start on another. Always check your work to assure that nothing has been overlooked.

The following list is a gentle reminder when disassembling or assembling the machine.

Maintenance Information

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

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

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

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

At any time air or oil lines are disconnected, clean surrounding areas as well as the opening and fittings themselves. As soon as a line or component is disconnected, cap or cover all openings to prevent the entry of dirt or foreign materials.

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

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

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

“**SAFETY FIRST**” is a good slogan.

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

■ Maintenance schedules

Snorkel has established a Preventive Maintenance Schedule that includes:

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

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

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

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

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

All placards and decals must be in place and legible. Use the placards installation drawing and parts listing in the repair parts section 1 of this manual to check these placards and decals.

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

▲ DANGER

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

Repair all defects before returning the unit to service

■ Daily Maintenance

☐ Pre-operational inspection

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

COMPONENTS	SERVICE REQUIRED
Fuel level	Visually inspect
Water separator (diesel engines only)	Visually inspect (condition)
Fuel leaks	Visually inspect (hoses, connections, etc)
Engine Oil	Check oil level (between dipstick lines)
Engine coolant	Check fluid level and radiator hoses
Radiator cap	Visually inspect (installation)
Platform entrance gate	Visually inspect (installation, operation)
Wiring harness and connectors	Visually inspect (installation, condition)
Battery terminals	Visually inspect (installation)
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	Visually inspect (condition)
Bubble level indicator	Visually inspect (condition)
Guides, rollers and slides	Visually inspect (condition)
START THE ENGINE FROM THE BASE CONTROL PANEL TO CHECK THE FOLLOWING	
Charging system	Check condition (gauge)
Level sensor	Check operation
Control switches and alarms	Actuate and inspect (operation)
Emergency lowering	Check operation (causes correct motion)
Air Filter	Check condition (gauge)
Safety prop	Check operation
Parking brakes	Check operation
Placards, decals and Operator's Manual	Visually inspect (installation, condition)
Optional items	Check operation

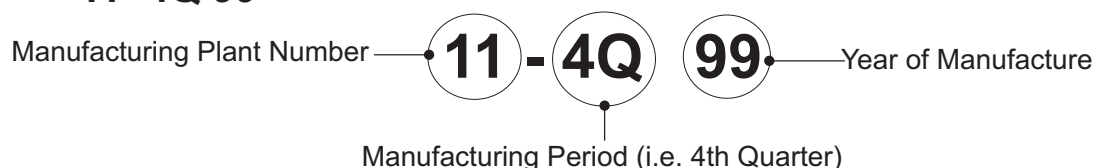
■ Hydraulic Hose Age

EN982 Clause 7.3.1 requires the manufacturing date of each hydraulic hose to be clearly visible on the hose.

Hoses used in production of this unit are manufactured by Parker and the manufacturing date is present in a coded format.

The key to decode the date is as follows:

Sample Hose Code **11- 4Q 99**



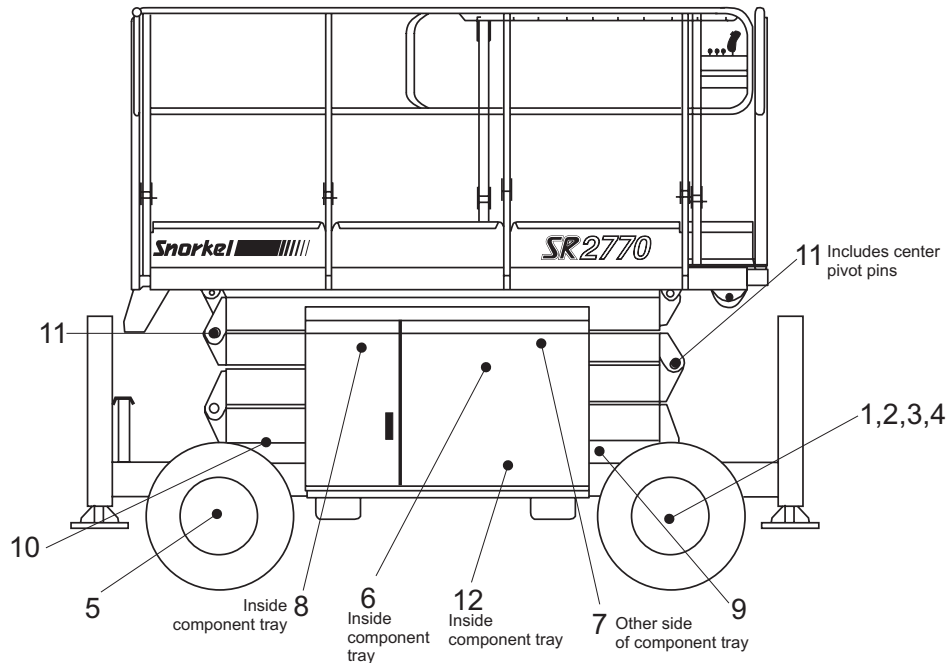
Maintenance Information

■ 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	DO NOT lubricate
Steer cylinder ends	Check pin keeper and condition	DO NOT lubricate
Gear hubs	Check fluid level, fill if low	Mobil Mobilube HD 80W-90
Batteries	Check specific gravity	1.260/1.275 at 80° F.
Platform lift capacity	Check if platform can lift maximum load	
Platform lift/lower speeds	Check smooth operation and speeds	
Hydraulic return filter	Check condition	Replace if dirty
Engine RPM	Check for proper RPM	Low = 1557rpm High = 3184rpm
Engine oil and oil filter	Replace per engine manufacturer's interval	See engine manufacturer's owners manual
Engine fuel filter	Check condition	Replace every 6 months or if dirty
Slide pads	Check condition	DO NOT lubricate
Scissor arm bearings	Check condition	DO NOT lubricate

■ Yearly or 500 Hour Maintenance (Trained Service Technician)

COMPONENTS	SERVICE REQUIRED	RECOMMENDED LUBRICANT OR FURTHER INSTRUCTIONS
90 day or 150 hour maintenance	Perform maintenance per schedule	
Hydraulic oil reservoir	Clean and replace fluid	Above 32° Mobil DTE-13M Below 32° Mobil DTE-11M
Hydraulic return filter	Replace	After 1st. 50 hours, thereafter at recommended interval
Hydraulic pressures	Check pressures	
Platform controller	Check operation	
Base controls	Check operation	
Wheel bearings	Clean and repack	Conoco Super Sta #2 Above 32° Mobilgrease CM-P Below 32° Mobilgrease CM-L



The illustration locates the lubrication points of the SR2770.

■ Lubricants

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

□ Pressure gun application

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

NOTE

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

▲ DANGER

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

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

□ Lubrication

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

□ King pins (Item 1)

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

DO NOT lubricate

□ Tie rods (Item 2)

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

DO NOT lubricate

□ Steer cylinder end (Item 3)

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

DO NOT lubricate

□ Wheel bearings

Non drive wheels (Item 4)

Wheel bearings on non drive wheels, should be cleaned and repacked yearly, (or every 500 hours of operation), using specific lubricants as specified in the maintenance schedule.

Maintenance Information

Clean and repack wheel bearings following normal automotive procedures.

☐ Wheel bearings

Drive wheels (Item 5)

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

☐ Engines (Item 6)

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

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

▲CAUTION

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

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

☐ Hydraulic oil reservoir (Item 7)

The fluid level should be kept level with the indicator line on the side of the reservoir and should be checked with all cylinders fully retracted and the platform in the stowed position.

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

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

▲CAUTION

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

If questions still remain, contact Snorkel for further information.

☐ Return filter (Item 8)

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

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

The filter condition should be checked at the 90 day or 150 hour Preventive Inspection Maintenance interval or more frequently under extreme working conditions.

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

☐ Door hinges and latches (Item 9)

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

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

☐ Slide pads (Item 10)

Check slide pads for excessive wear and replace as required.

Slide pads **DO NOT** require lubrication.

☐ Scissor arm bearings (Item 11)

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

DO NOT lubricate scissor arm bearings.

■ Batteries (Item 12)

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.

■ Preventive inspection maintenance 90 day or 150 hour checklist

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

Serial Number _____

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)			
Tires and wheels (5)			
Articulating axles, if so equipped (2,4,5)			
Tray side covers (2,5,6)			
Torque drive wheel lug nuts 65 ft. lbs. (2,6)			
Torque steer wheel lug nuts 65 ft. lbs. (2,6)			
Right drive motor(s) (3,6)			
Left drive motor(s) (3,6)			
Drive cut-out			
Back-up horn (4)			
Guides, rollers and slides (2,4,5)			
Parking brake(s) (3,4)			
Free wheeling valve (3,4)			
Emergency lowering valve (3,4)			
Lowering alarm (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)			
OUTRIGGERS AND CONTROLS			
Right front outrigger (2,3,4)			
Left front outrigger (2,3,4)			
Right rear outrigger (2,3,4)			
Left rear outrigger (2,3,4)			
Platform elevated, outrigger controls DO NOT WORK (4)			
Outriggers lowered, platform elevated DRIVE WILL NOT WORK (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)			

[illegible]




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

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

Phone: +64 06 368-9168

Fax: +64 06 368-9164

Attention: Parts Department

□ Manuals

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

The specific manuals for MHP12/34J are as follows:

- ✓ Operator's Manual
Snorkel part number - 11669A
- ✓ Repair Parts Manual
Snorkel part number - 11669B

□ ANSI and OSHA compliance

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

ANSI publications clearly identify the responsibilities of all personnel who may be involved with the aerial platform. A reprint of the "Manual of Responsibilities for Dealers, Owners, Users, Operators, Lessors and Lessees of ANSI/SIA A92.5-1992 Boom-Supported Elevating Work Platforms" is available from Snorkel dealers or from the factory upon request.

Copies are also available from:

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

Record machine information here:

Model number*

Serial number*

Date of purchase

Purchased from

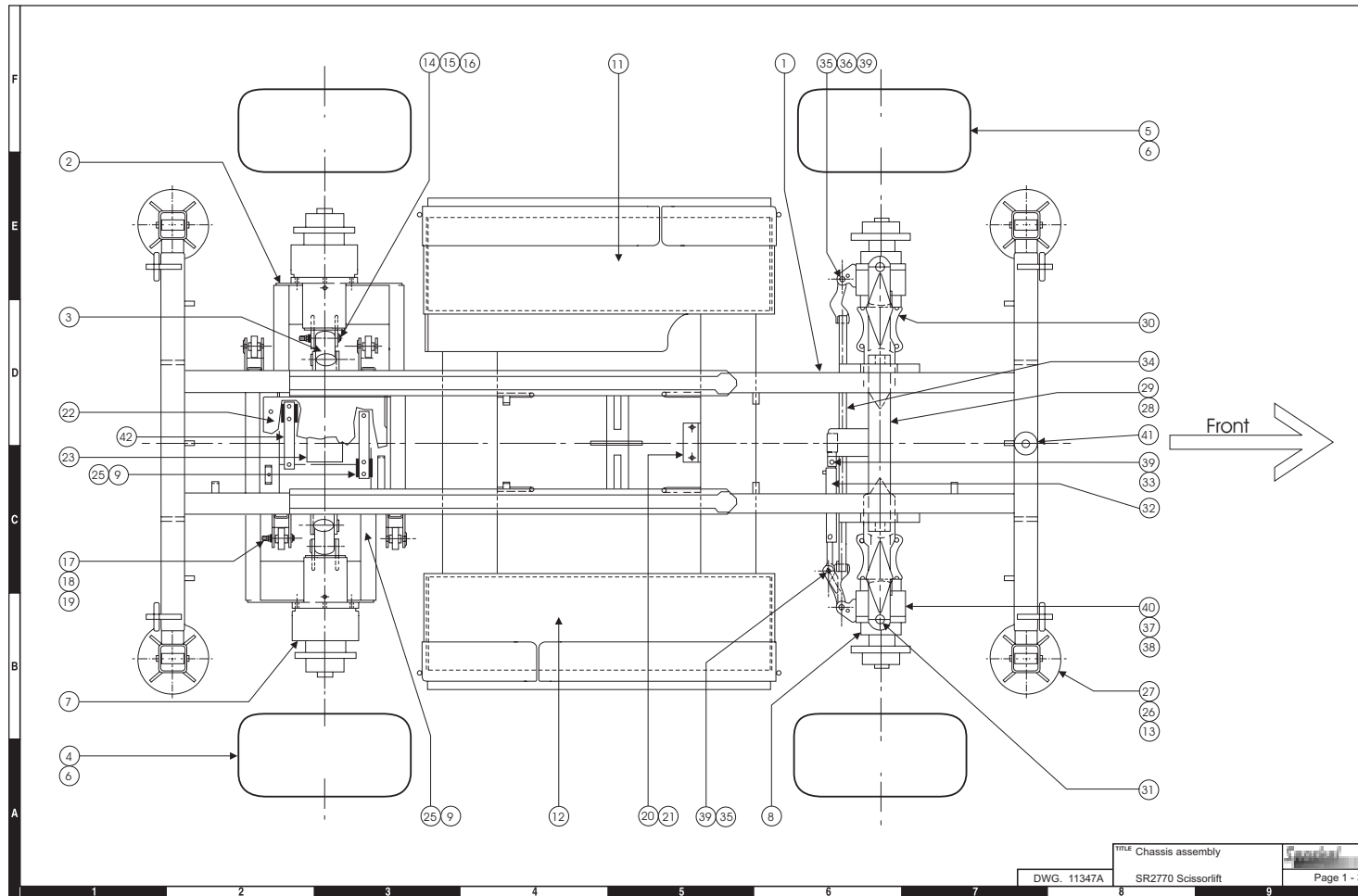
Snorkel dealer or distributor

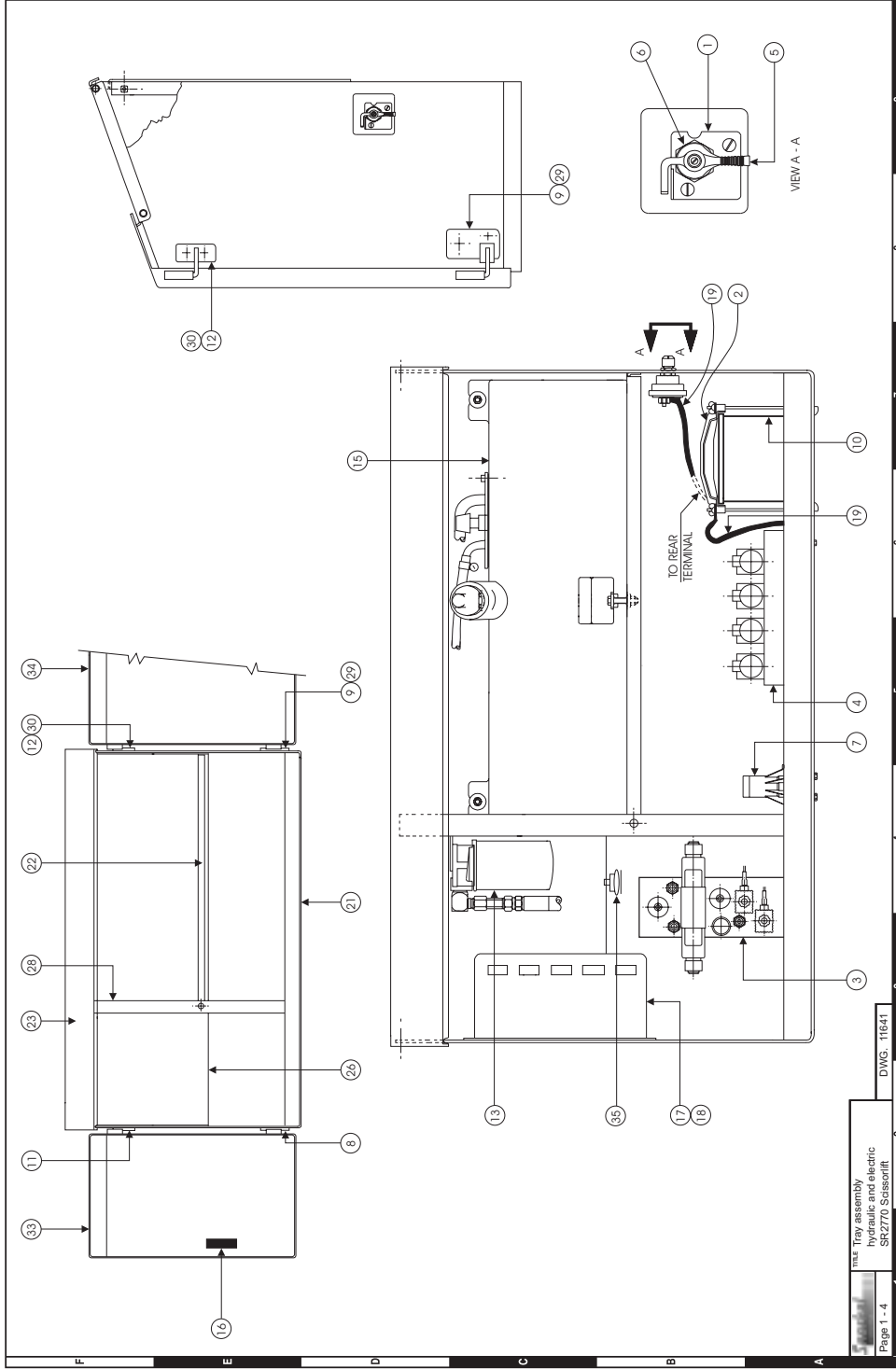
* This information is found on the serial number placard attached to your machine.

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Chassis assembly

Item	Part No	Qty	Description
0.	11628	Ref	Chassis assembly
1.	11663	1	Base weld
2.	11639	2	Swing arm weld, floating axle
3.	11642A	2	Axle cylinder assembly
4.	608934	2	Wheel and tyre assembly, right hand
5.	608914	2	Wheel and tyre assembly, left hand
6.	98300-9	24	Wheel stud
7.	11600A	2	Wheel motor, braked
8.	11601A	2	Wheel motor assembly, steer
9.	560248A	2	Proximity switch
11.	11647A	1	Engine tray assembly
12.	11641	1	Hydraulic control tray assembly
13.	560278	4	Switch, proximity
14.	3616-16140	4	Bolt, M16 x 140 class 10.9 zp
15.	3608-16c	4	Conelok nut, M16
16.	3603-16HD	12	M16 flat washer HD galvanised
17.	3616-12100	4	Bolt, M12 x 100 class 10.9 zp
18.	3608-12c	4	Conelok nut, M12
19.	3603-12HD	8	M12 flat washer HD galvanised
20.	11662-1	1	Clamp bar
21.	11662-2	2	Rubber packing
22.	11683	1	Cover, drive valve
23.	11618A	1	4WD valve assembly
	11617A	1	2WD valve assembly
25.	11359	1	Loom, axle cylinder
26.	56024-6	1	Loom, base interlocks
27.		1	Stabiliser assembly (refer page 1 - 16)
28.	11595A	Ref	4WD steer axle assembly
29.	11595-1	1	Axle member subweld
30.	11595-2	2	Bearing support, lower
31.	3626-1	4	Permaglide
32.	11699	1	Steer cylinder
33.	9311	1	Pin, steer cylinder
34.	11591	1	Steering tie rod weld
35.	9319	3	Pin, tie rod arm
36.	3624-27	3	Bearing, permaglide
37.	3616-12060	8	Bolt, M12 x 60 class 10.9 black
38.	3603-12H	8	M12 hardened washer
39.	8628	4	Pin keeper, 6mm
40.	11590	2	Swivel housing, kingpin
41.	11796	1	Level bubble
42.	11794	2	Mounting bracket



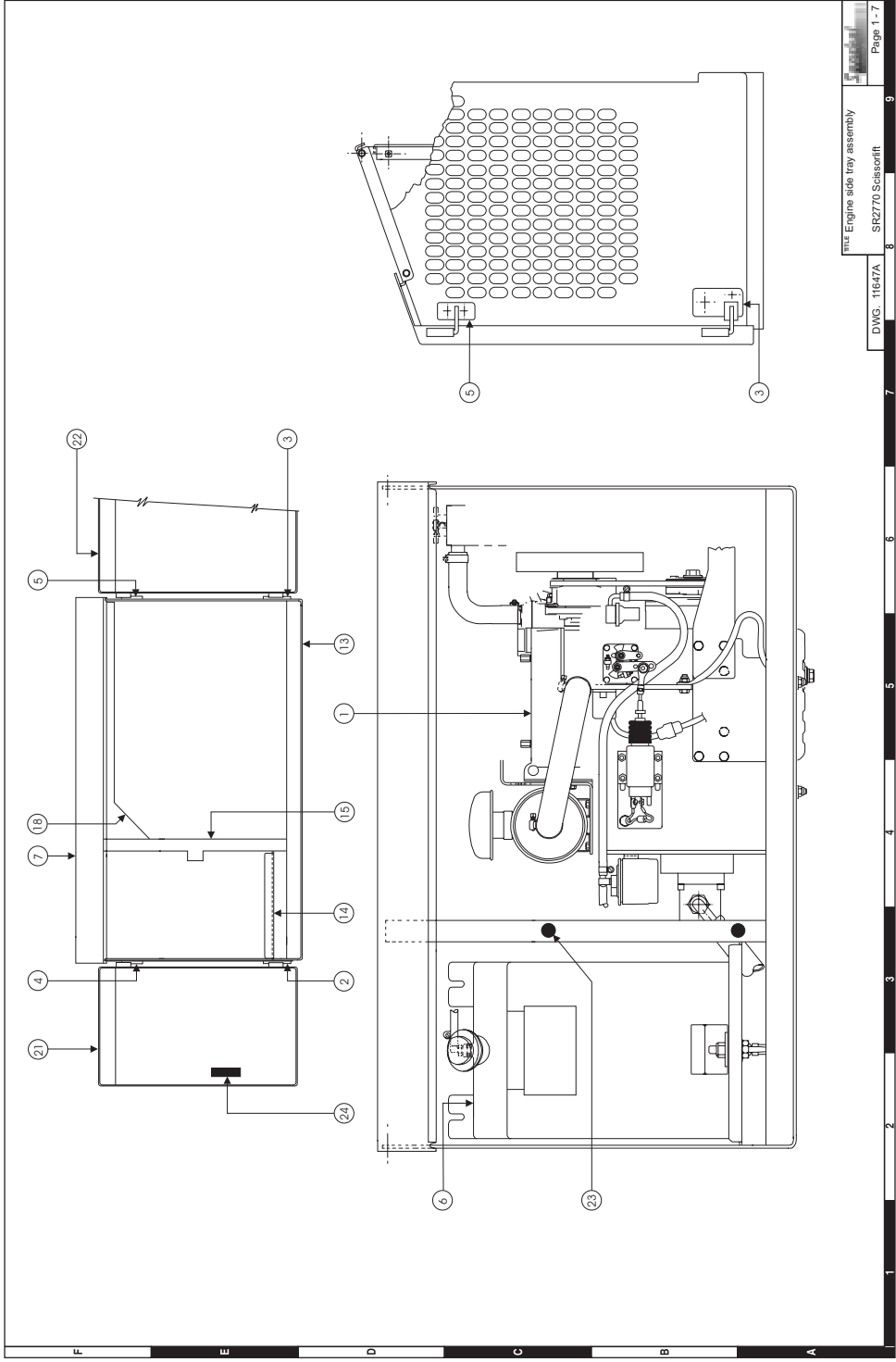


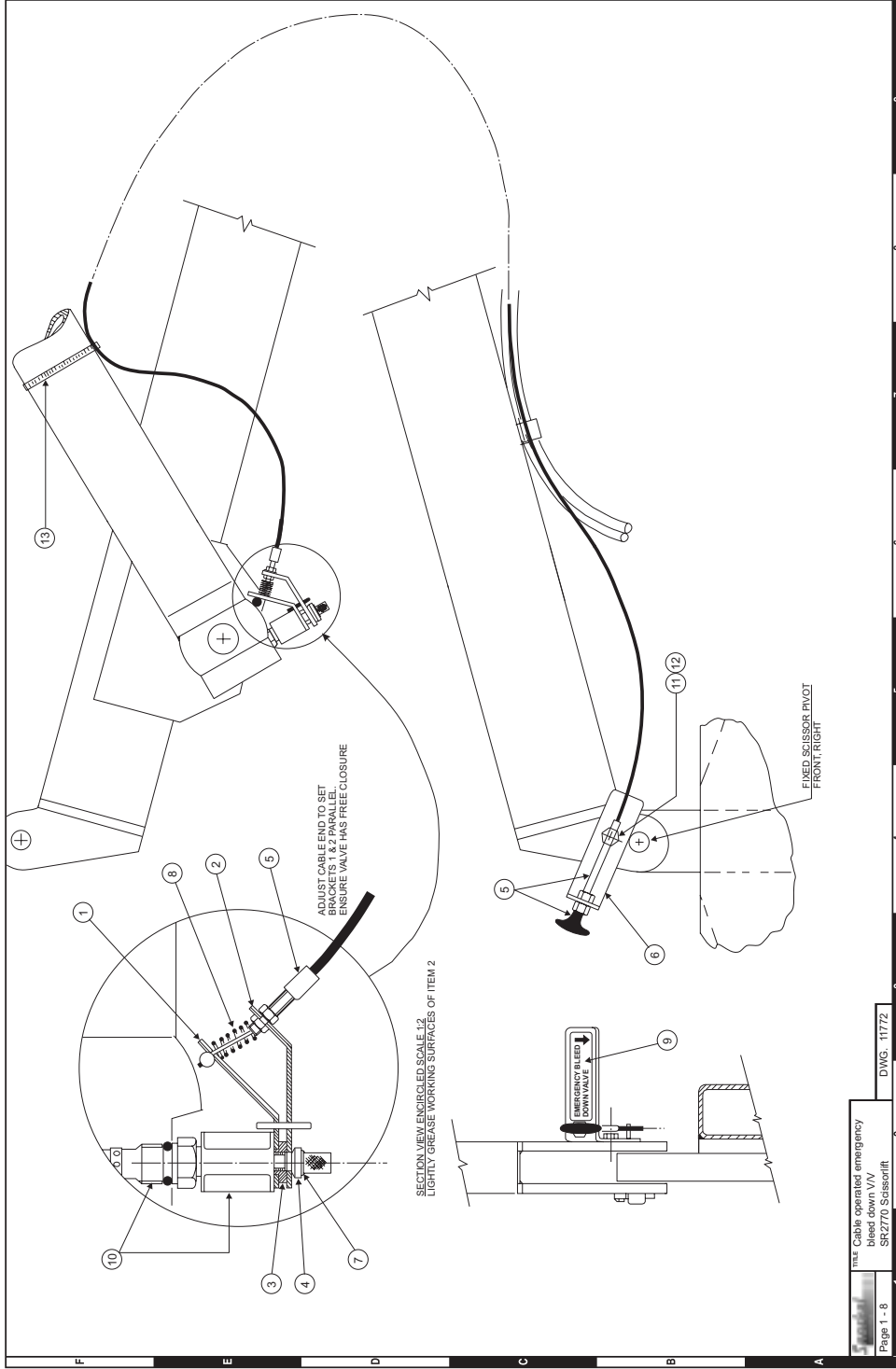
Tray assembly, hydraulic and electrical

Item	Part No	Qty	Description
0.	11641	1	Tray assembly, hydraulic and electrical
1.	0102006	1	Decal, battery disconnect switch
2.	010268-1	1	Hold down bracket, battery
3.	11615A	1	Main manifold assembly
4.	11616A	1	Stabiliser valve assembly
5.	300840	1	Lock out lever assembly
6.	302-0049	1	Battery disconnect switch
7.	3020139	1	Level sensor
8.	11469	1	Left hand hinge weldment, lower
9.	11469-1	1	Right hand hinge weldment, lower
10.	11596	1	Battery 12 volt DC1
11.	11470	1	Left hand hinge weldment, upper
12.	11470-1	1	Right hand hinge weldment, upper
13.	11649	1	Hydraulic oil return filter assembly (see page 2 - 12)
15.	11558	1	Hydraulic oil tank assembly
16.	8342416	1	Latch, adjustable trigger
17.	560222	1	Ground control box assembly (see page 3 - 6, 3 - 6)
18.	560240	1	Decal, ground control box
19.	3649-4	2	Battery cable assembly
21.		1	Base panel subweld
22.	11646-3	1	Hydraulic oil tank shelf
23.	11646-4	1	Top plate, cabinets
26.	11646-7	1	Back plate
28.	11646-9	1	Reinforcement angle weld
29.	11646-16	1	Spacer, right hand door, lower
30.	11646-17	1	Spacer, right hand door, upper
33.	11679	1	Left hand door weldment (small)
34.	11680	1	Right hand door weldment (large)
35.	4381	1	Horn, 12 volt DC

Engine side tray assembly

Item	Part No	Qty	Description
0.	11647A	1	Engine side tray assembly
1.	11362	1	Engine assembly SR D 905 Diesel
2.	11469	1	Left hand hinge weldment, lower
3.	11469-1	1	Right hand hinge weldment, lower
4.	11470	1	Left hand hinge weldment, upper
5.	11470-1	1	Right hand hinge weldment, upper
6.	11480	1	Fuel tank assembly
7.	11646-4	1	Top plate
13.		1	Base panel subweld
14.	11647-3	1	Fuel tank shelf
15.	11647-4	1	Firewall weldment
18.	11647-7	1	Back panel
21.	11679	1	Left hand door weldment (small)
22.	11680	1	Right hand door weldment (large)
23.	7895	1	Anti-rattle button (3mm pad)
24.	8342416	1	Latch, adjustable trigger





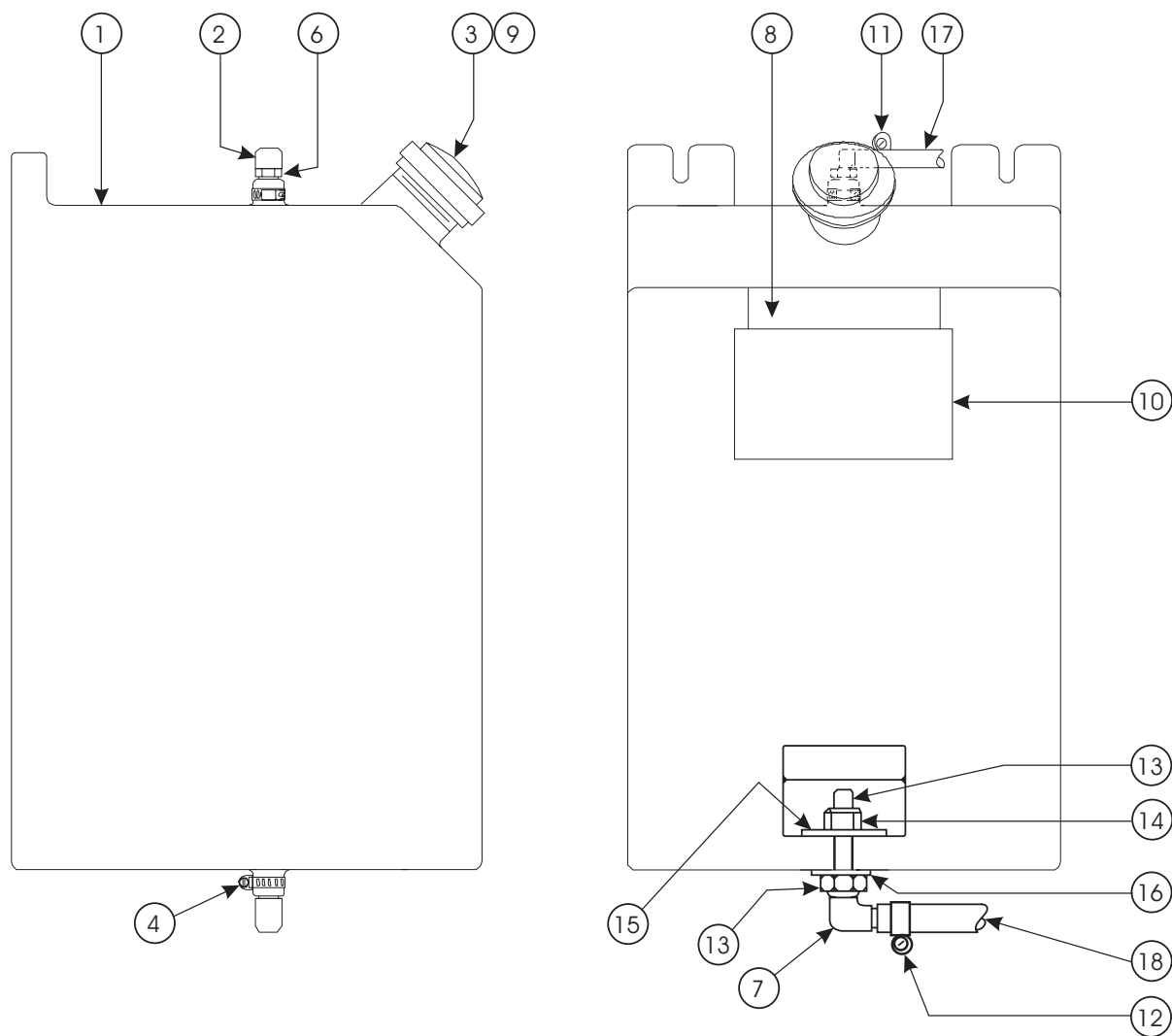
Cable operated emergency bleed down

Item	Part No	Qty	Description
1.	11772-1	1	Fixed cable bracket
2.	11772-2	1	Rocking cable bracket
3.	11772-3	1	Solenoid nut
4.	11772-4	1	Thrust ring
5.	11772-5	1	Bowden cable assembly
6.	11772-6	1	Bracket, bleed down cable
7.	3619-4	1	Circlip, external
8.	11772-8	1	Spring, compression
9.	007-0420	1	Decal, adhesive backed
10.	11687-10	1	Cartridge V/V and solenoid
11.	3610-10016	1	Bolt M10
12.	3605-10	1	Spring washer, M10
13.	25484-6	1	Cable tie, nylon

Fuel tank assembly, diesel fuel

Item	Part No	Qty	Description
0.	11480	1	Fuel tank assembly, diesel fuel
1.	561706	1	Fuel tank, 13 gallon capacity
2.	563726	1	Male elbow, 3/16" x 1/8" BSPT
3.	605256	1	Fuel tank cap, vented
4.	3618-11	2	Hose clamp, 11 - 25mm ZP
6.	7720201	2	Reducer bushing 1/4 NPT - 1/8 NPT
7.	967309	1	Male elbow, 5/16" x 1/4" BSPT
8.	605726	1	Decal, diesel fuel only
9.	563406	1	Gasket
10.	476706	1	Decal, danger - explosive fumes
11.	3618-10	2	Hose clamp, 8-10mm ZP
12.	3618-14	2	Hose clamp, 12-14mm ZP
13.	3610-10050	3	Bolt, M10 x 50 G8.8
14.	3611-10	3	Nyloc nut, M10
15.	5560179	3	Washer, special
16.	3603-10	3	Washer, M10 plated
17.	11232-1	0.8 L.M.	Fuel hose, 3/16" rubber
18.	11232-3	As Req	Fuel hose, 5/16"

Fuel tank assembly, diesel fuel illustration



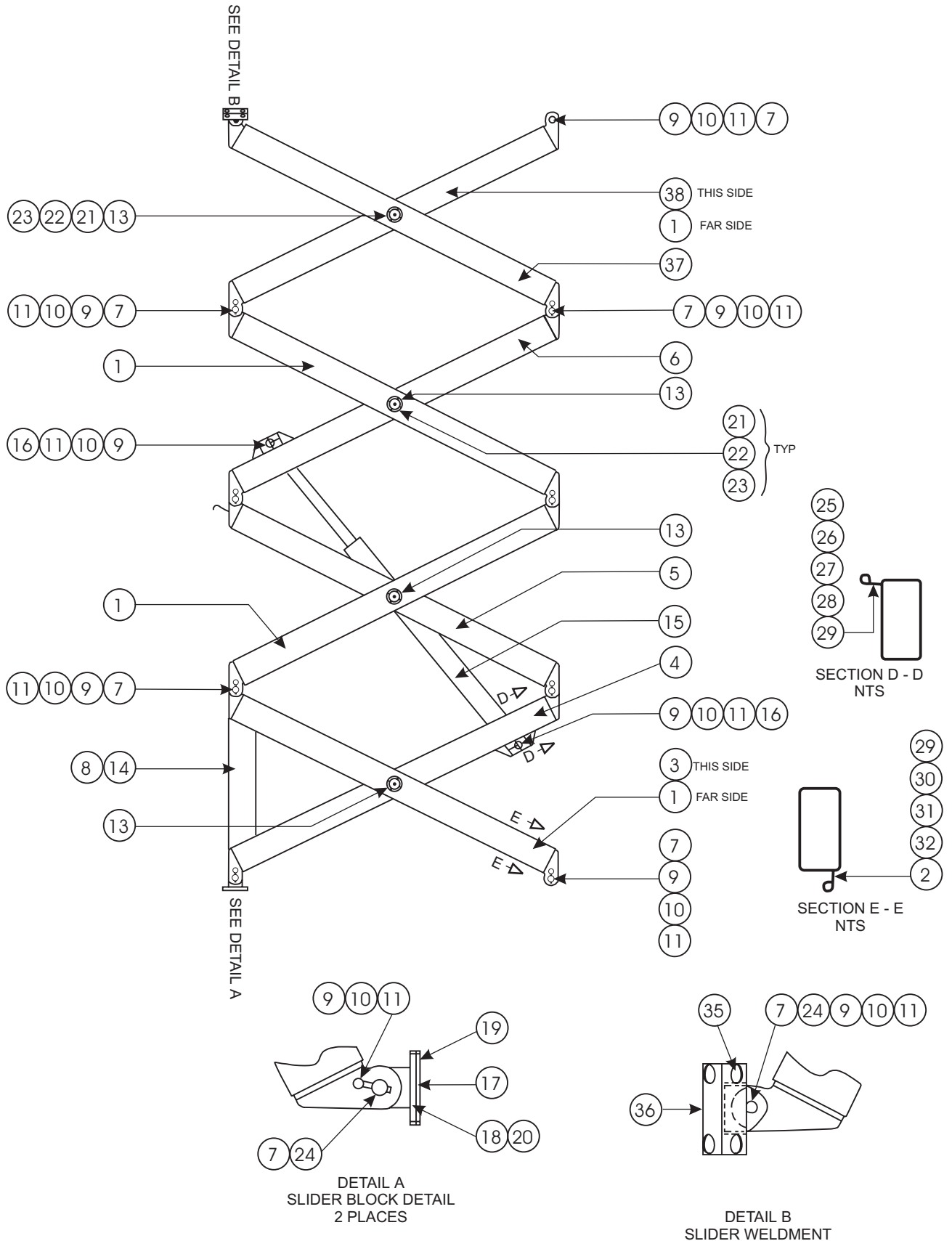
Note:

1. All pipe thread must be sealed with diesel fuel resistant pipe compound.

Scissors arm assembly

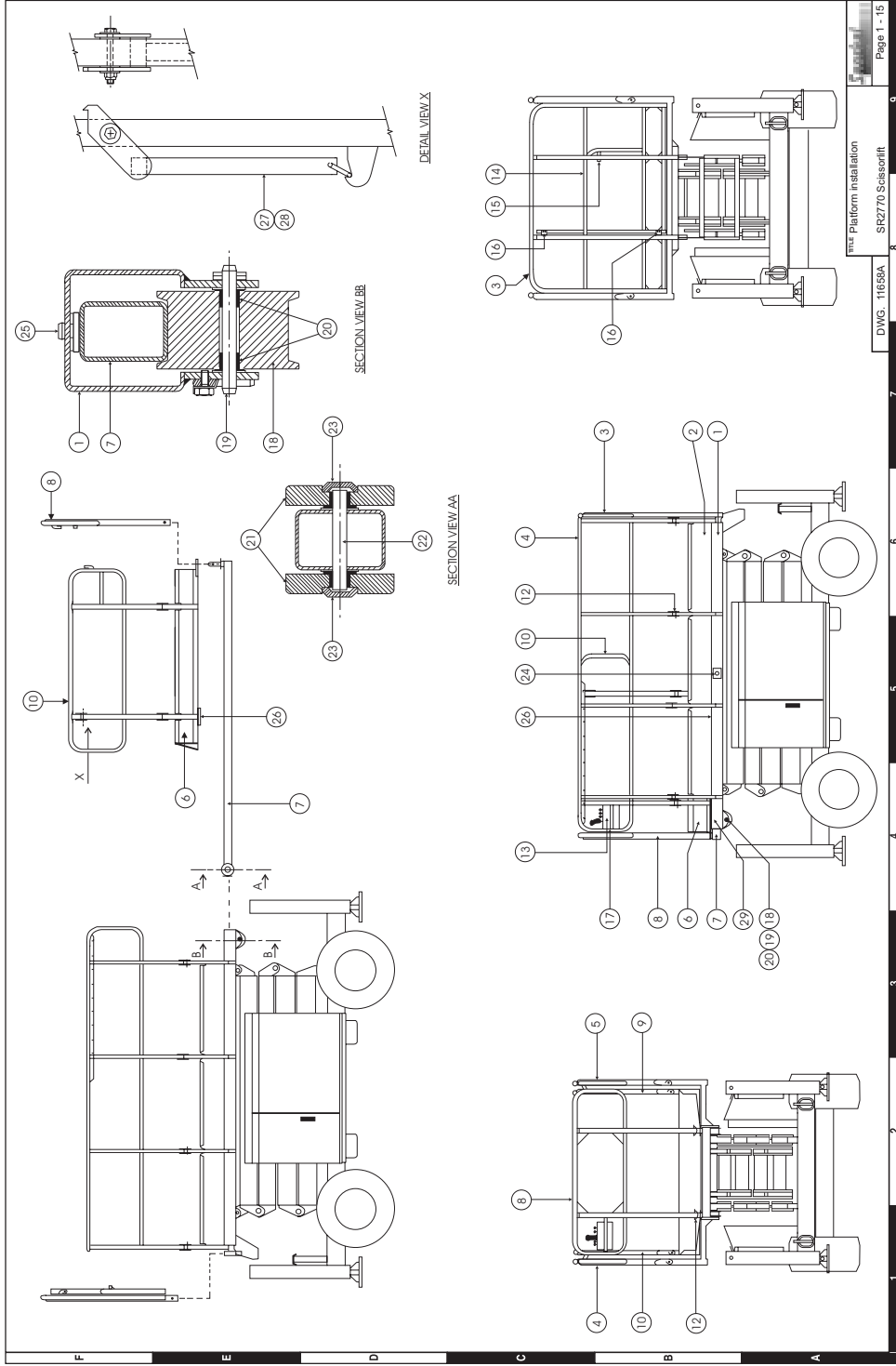
Item	Part No	Qty	Description
0.	11340	1	Scissor arm assembly
1.	9333	6	Arm outer
2.	3605-08	2	Washer spring
3.	9484	1	Arm lower outer right
4.	9330	1	Arm lower inner
5.	9465	1	Arm mid inner
6.	9332	1	Arm inner upper
7.	8699	20	Pin arm / arm
8.	11143-2	1	Wear pad, safety prop
9.	11492-3	22	Lock tab M10
10.	8626	22	Pin keeper
11.	3610-10025	20	Bolt hex hd M10 x 1.5 x 25 lg
13.	8711	8	Pin mid pivot
14.	11380	1	Weldment safety bar
15.	11687A	1	Lift cylinder assembly
16.	9292	2	Pin lift cylinder
17.	8601	2	Weldment slider block
18.	8677	12	Wearpad sliding block
19.	8678	8	Wearpad sliding block
20.	3603-04	14	Washer flat M4
21.	3629-5062L	16	Washer, scissor pivot
22.	3633-1	16	Pin roll
23.	3624-2	32	Bush 50
24.	3624-3	4	Bush 25.4
25.	45248-6	14	Clamp cushion $\frac{3}{4}$ "
26.	3604-04016	14	Pan head screw M4 x 16 plated
27.	3602-04	14	Nut hex hd M4
28.	3605-04	14	Washer spring M4
29.	61003-005N	75	Cable tie
30.	2022-005	3	Saddle clip 1" plastic coated
31.	3610-06020	2	Bolt hex hd M6 x 20 G8.8
32.	3611-06	2	Nyloc nut M6
34.	3611-10	6	Locknut M10 x 1.5
35.	11658-20	8	Wearpad
36.	11654	1	Platform slider weldment
37.	9331	1	Arm inner 4 stage
38.	9502	1	Arm upper outer

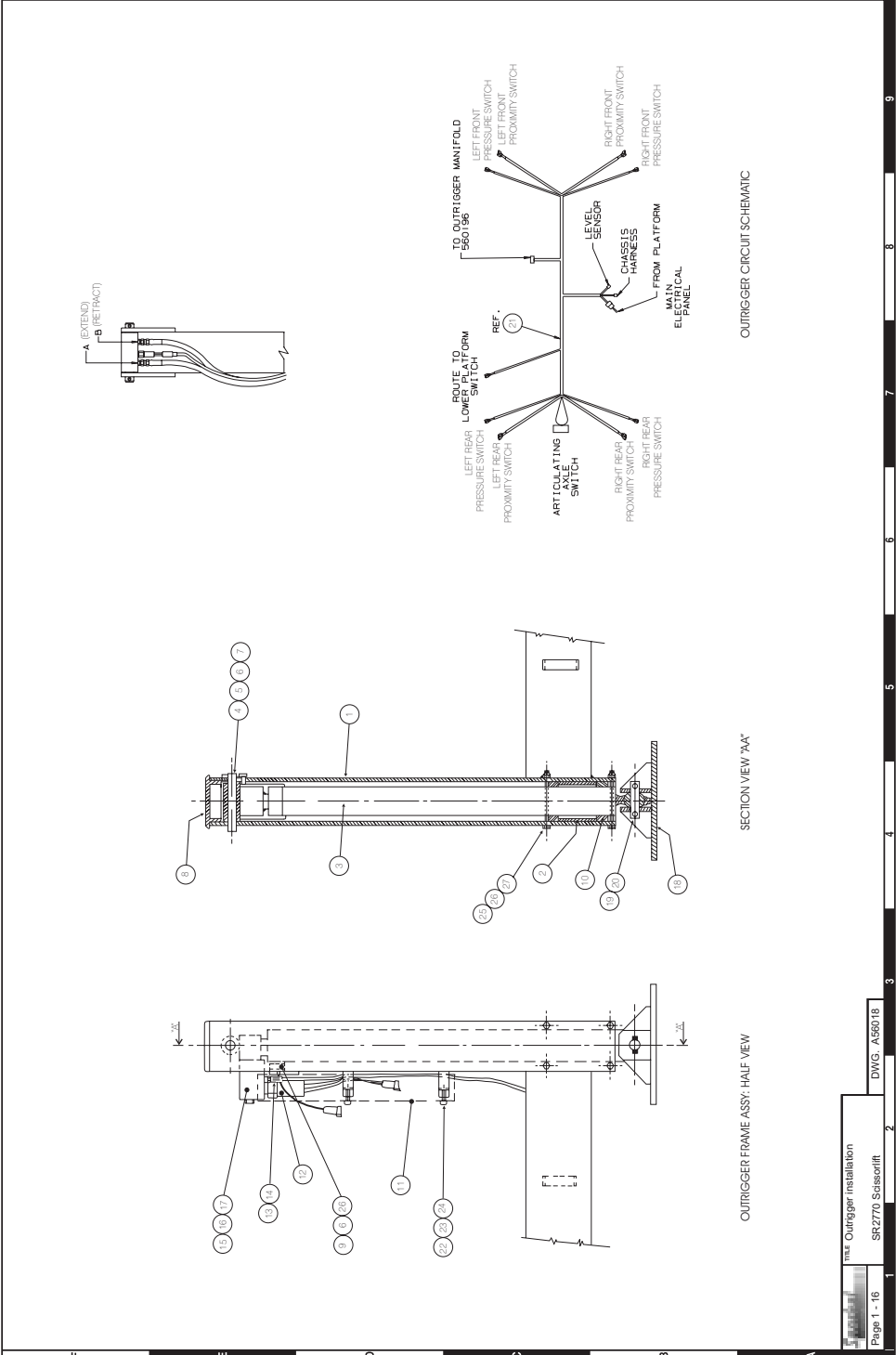
Scissors arm assembly illustration



Platform installation

Item	Part No	Qty	Description
1.	11658	1	Platform weldment
2.	11658-28	2	Platform floor, pressing
3.	11691	1	Handrail entry end (Gate is separate)
4.	11686-10	1	Handrail weldment, right hand side
5.	11686-1	1	Handrail weldment, left hand side
6.	11655	1	Roll out deck weldment
7.	11688	1	Roll out deck frame weld
8.	11690-17	1	Front hand rail weldment
9.	11690-1	1	Roll out deck, left hand hand rail
10.	11690-10	1	Roll out deck, right hand hand rail
12.	302544	16	Pin and lock
13.	560221	1	Platform control box assembly (see sheet 3-10)
14.	11691-12A	1	Platform gate assembly
15.	11691-10	1	Gate latch / striker set
16.	7495	2	Spring hinge
17.	1273	1	Level bubble
18.	11658-1	2	External roller
19.	11658-7	2	Axle pin external roller
20.	3626-2	4	Flanged bearing
21.	11658-3	4	Internal roller
22.	11658-4	2	Axle pin internal roller
23.	11658-6	4	Thrust button
24.	11658-11	2	Roll out deck stop
25.	11658-20	2	Wear button
26.	11655-18	2	Wear pad, roll out deck
27.	11695R	1	Slider latch, right hand
28.	11695L	1	Slider latch left hand
29.	11658-32	2	Platform floor run off plate



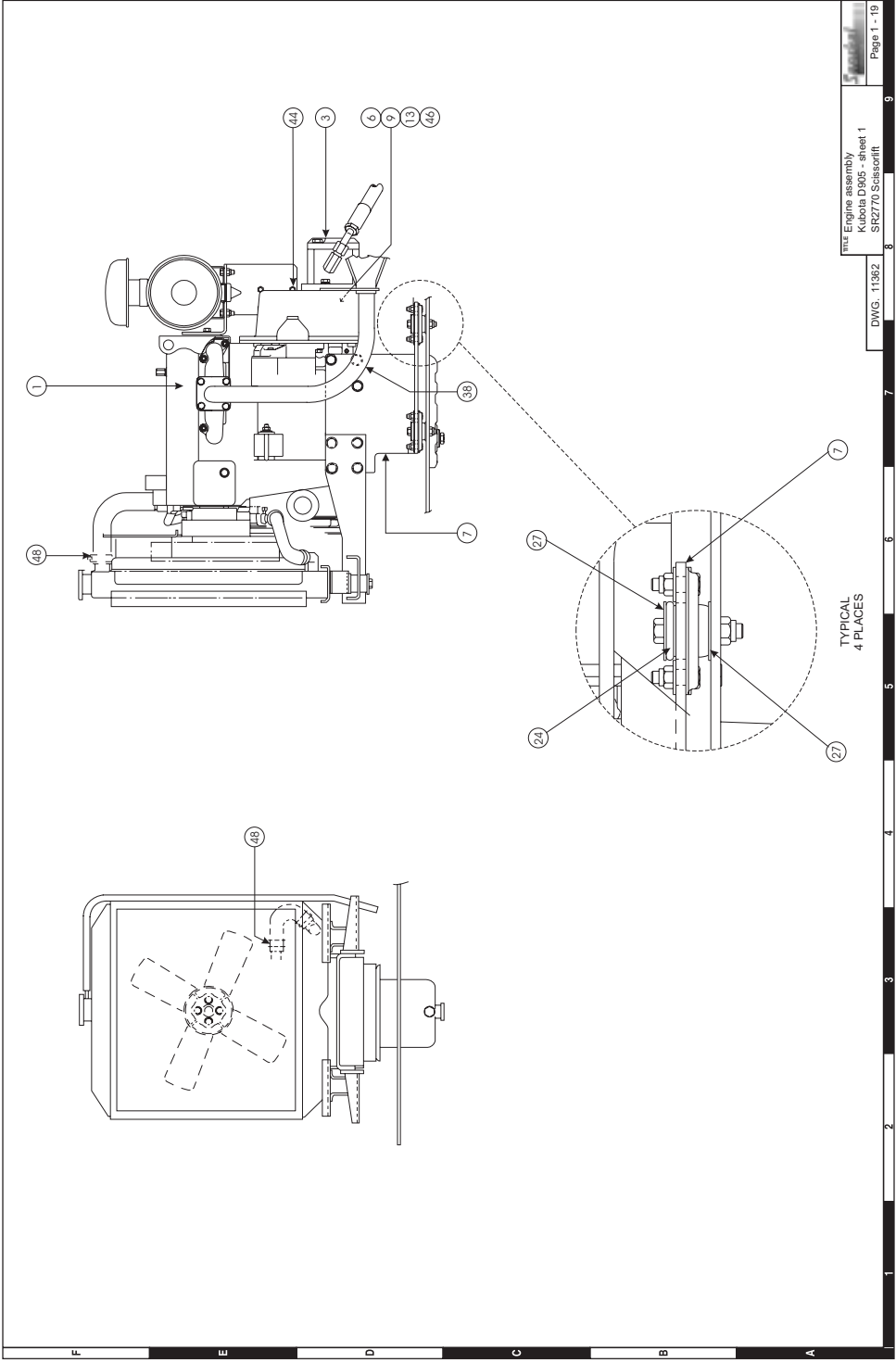


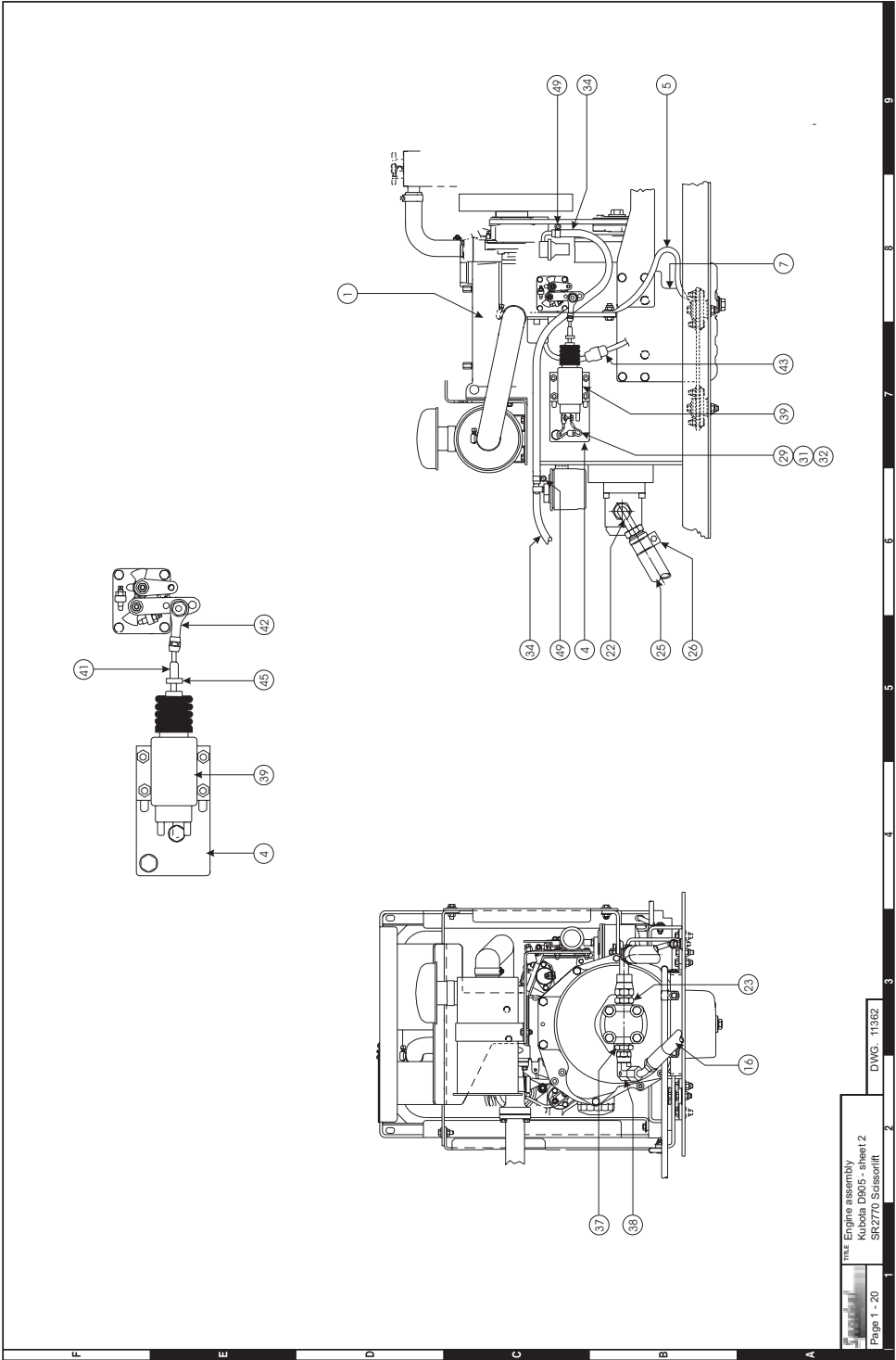
Outrigger installation

Item	Part No	Qty	Description
1.	11643-1	2	Stabiliser frame subweld
2.	11366-2	4	Spacer, stabiliser bush
3.	11308	4	Cylinder assembly
4.	11334	4	Pin (cylinder retaining)
5.	8628	4	Pin keeper
6.	3610-06016	12	Setscrew M6 x 16 lg cl8.8 zp
7.	11492-1	4	Lock tab M6
8.	9911	4	End cap 100 x 100 (Plastic, black)
9.	560278	4	Switch magnetic proximity
10.	11366-1	8	Stabiliser bush
11.	11383	4	Cover, stabiliser hose
12.	3020129	4	Switch, Pressure 300psi (Barksdale)
13.	7025-015	8	Adaptor nipple
14.	11287-137	2	R/R stabiliser
	11287-138	2	L/R stabiliser
	11287-139	4	L/F & R/F stabiliser
15.	11367	4	Valve block assembly
16.	13-110	8	"O" ring
17.	3613-08045	8	Socket head capscrew M8 x 45 lg
18.	11305	4	Foot weld assembly
19.	11369	4	Pin, foot swivel
20.	3633-3	8	Tension pin 1/4" x 1 1/4" lg
21.	56024-6	1	Loom
22.	3605-08	8	Spring washer, M8 zp
23.	3603-08	8	Flat washer, M8 zp
24.	3610-08016	8	Bolt M8 X 16LG c18.8 zp
25.	3603-06	28	Washer, M6 flat zp
26.	3611-06	28	Nyloc nut, M6
27.	3610-06110	16	Bolt, M6 x 110

Engine assembly, Kubota D905

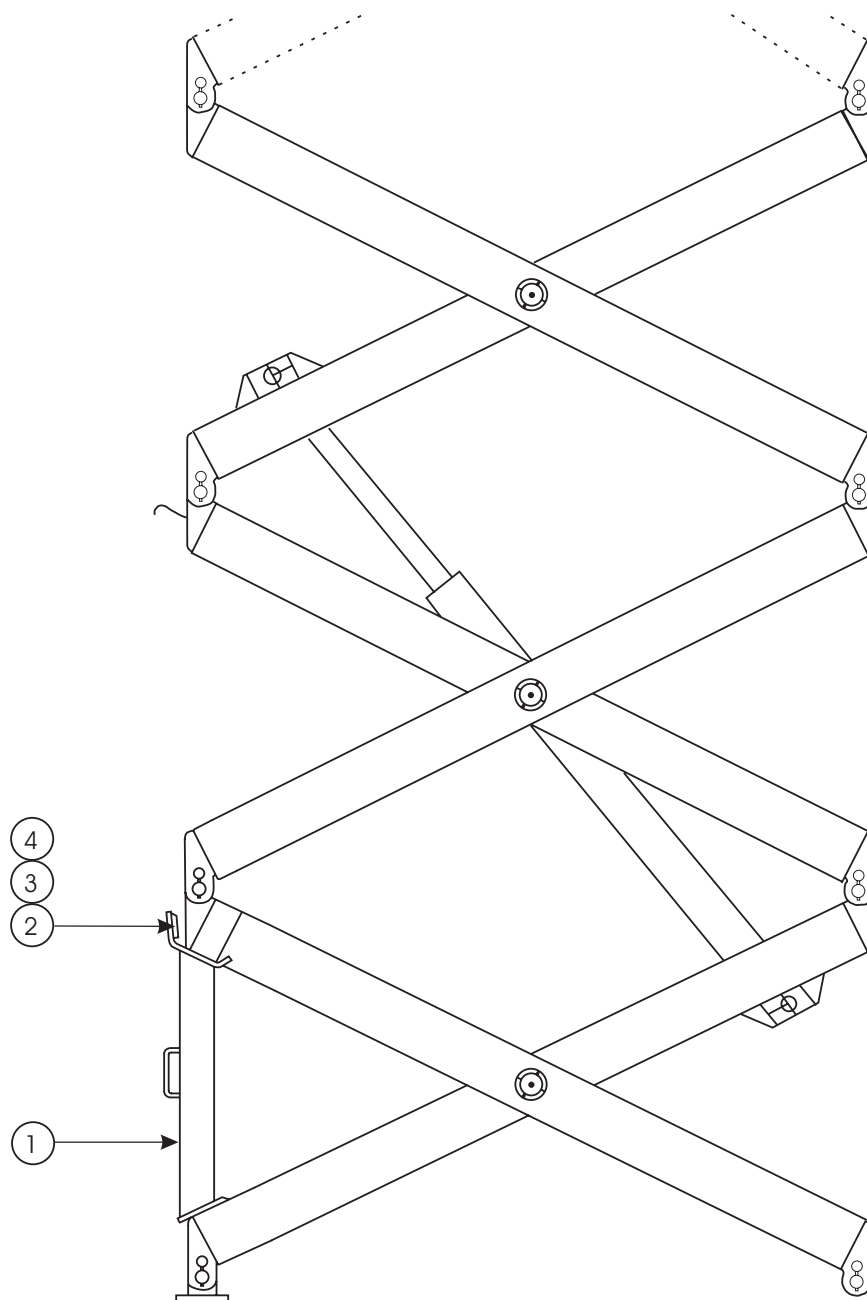
Item	Part No	Qty	Description
0.	11362	1	Engine assembly, Kubota D905 diesel
1.	11471	1	Engine, Kubota D905 diesel
3.	11490	1	Gear pump
4.	11475	1	Solenoid mount
5.	3649-10	1	Earth cable
6.	11478	1	Adaptor plate
7.	11472-10	1	Bracket, engine mount, right hand
8.	11472-11	1	Bracket, engine mount, left hand
9.	11479	1	Drive plate
13.	11489	1	Alloy coupling
16.	11287-125	1	Hose assembly, pressure
20.	560219	1	Engine wire harness
22.	7065-011	1	Swage coupl/90 JICF swept bend
23.	7013-007	1	BSPP (Dowty) x JICM nipple
24.	7630208	4	Engine mount
25.	11558-6	Ref	Suction hose (see page 1-14)
26.	3618-26	Ref	Hose clamp (see page 1-14)
27.	5560179	8	Washer, special, flat
29.	1242-005	1	Diode, 1KV 6A N06A10
31.	1853-043	2	Utilux H4412
32.	1853-090	0.040 L.M.	Heat shrink, 3mm white
34.	11232-3	As Req	5/16" ID fuel hose
37.	7013-002	1	BSPP (Dowty) x JICM nipple
38.	11331	1	Engine exhaust
39.	3040174	1	Solenoid, throttle
41.	2650001	1	In-line swivel
42.	2690004	1	Rod end
43.	1853-102	1	Plug, male (Hamel number 53542)
44.	60017-007	8	1" x 3/8" UNC bolt (plated)
45.	60021-008	1	1/4" NF nut
46.	6 KEY	0.035 L.M.	6mm key steel
49.	3618-14	1	Hose clamp, 12 - 14mm ZP
51.	96057-6	1	Boot, 2 GA Van Tielon 4701





Safety prop installation

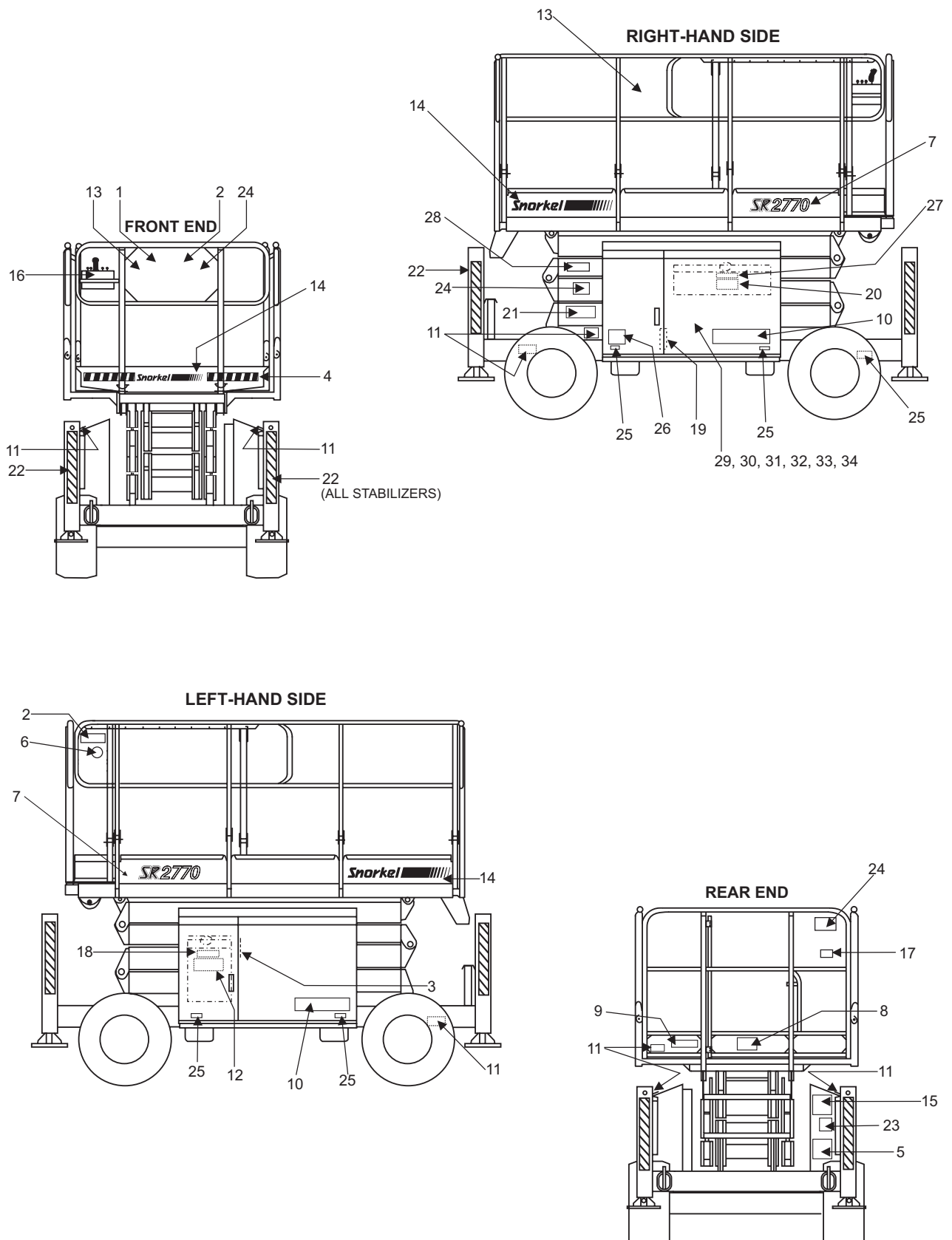
Item	Part No	Qty	Description
1.	11380	1	Safety prop
2.	111432	1	Wear pad
3.	3606-06025	2	cap screw M6 x 25
4.	3611-06	2	Nyloc nut, M6



Placards and decals installation

Item	Part No	Qty	Description
1.	1843	1	Decal, warning New Zealand only
2.	9428	1	Decal, electrical hazard Australia only
3.	9208	1	Decal, water
4.	96924-9	4m	Decal, warning stripes yellow/black
5.	0070901E	1	Decal, serial number
6.	9751	1	Decal, New Zealand made
7.	11345-1	2	Decal, SR2770
8.	11346-1	1	Decal, rated load
9.	0073298	1	Decal, foam tyres
10.	459616	2	Decal, Wild Cat
11.	451986	7	Decal, interlocks
12.	476706	1	Decal, explosive fumes
13.	480658	2	Placard, danger with alarm
14.	560239	3	Decal, Snorkel logo
15.	560240	1	Decal, lower control box
16.	560241	1	Decal, upper control box
17.	560272	1	Decal, emergency stop upper box
18.	605726	1	Decal, diesel fuel
19.	007-0420	1	Placard, emergency bleed down
20.	451776	1	Decal, hydraulic fluid
21.	58365-6	1	Decal, safety bar
22.	9223-3	4	Decal, chevron
23.	300699	1	Decal, operators check list
24.	0323897	2	Decal, must not operate
25.	621486	4	Decal, forklift
26.			
27.	302950	1	Decal, hydraulic oil level
28.	300700	1	Decal, shearing hazard
29.	11615	1	Decal, main manifold block
30.	11616	1	Decal, stabiliser block
31.	11618	1	Decal, 4WD block SR2770
32.	11672	1	Decal, hydraulic schematic 4WD
33.	11673	1	Decal, electrical schematic 4WD and 2WD
34.	11684	1	Decal, emergency operation, emergency lowering

Placards and decals illustration



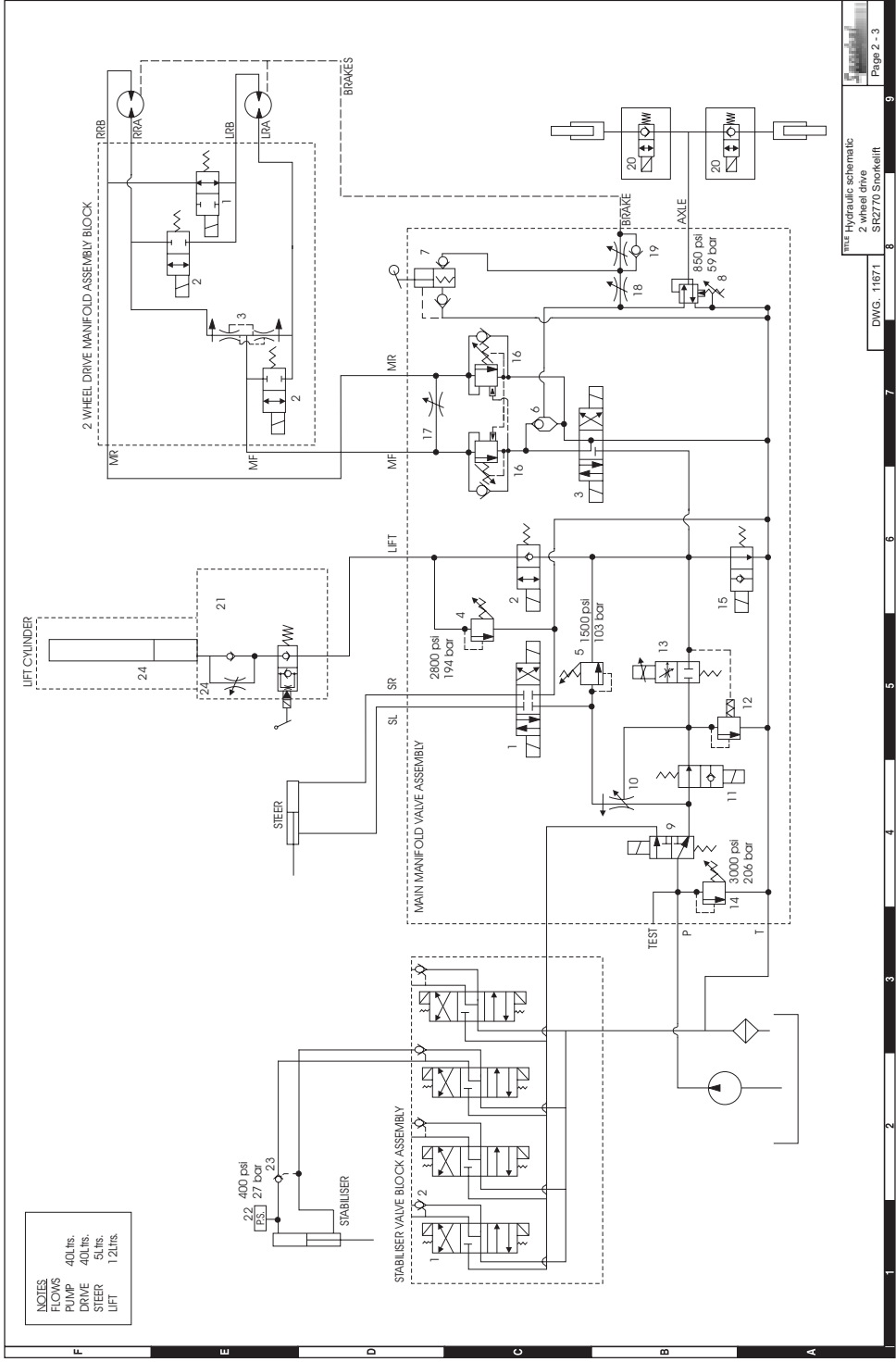
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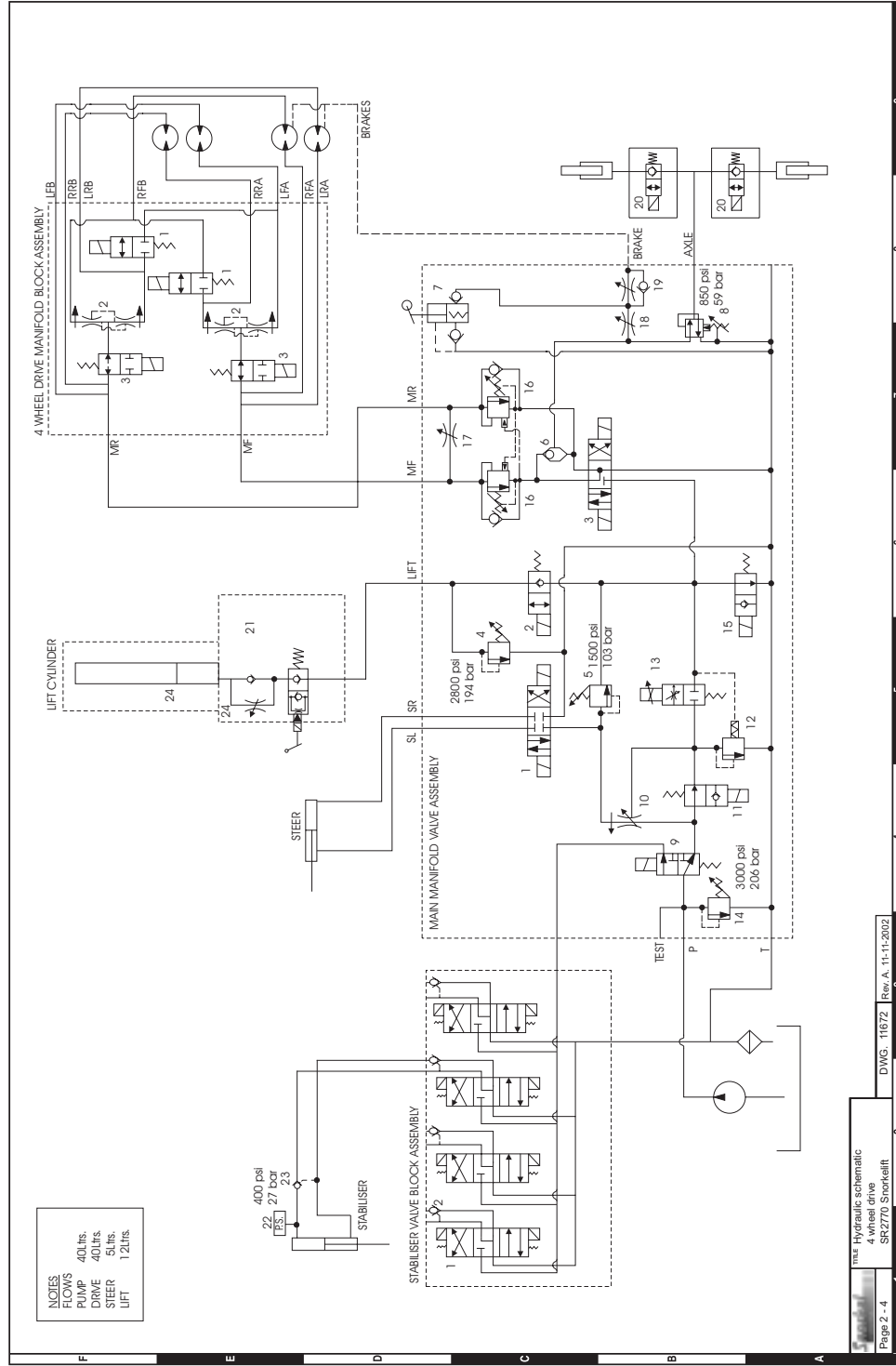
Hydraulic assembly 2 wheel drive

Item	Part No	Qty	Description
0.	11616	1	Stabiliser valve block assembly
1.	11616-1	1	Cetop 3 valve
2.	11616-2	1	Pilot check valve

Item	Part No	Qty	Description
0.	11615	1	Main manifold valve assembly
1.	11615-1	1	Cartridge valve, steering
2.	11615-2	1	Cartridge valve, lift
3.	11615-3	1	Cetop 3 valve, drive
4.	11615-4	1	Lift relief, 2800 psi
5.	11615-5	1	Steer relief 1400 psi
6.	11615-6	1	Brake shuttle valve
7.	11615-7	1	Brake hand pump
8.	11615-8	1	Articulating axle pressure reducing / relieving
9.	11615-9	1	Selector valve
10.	11615-10	1	Steering flow control
11.	11615-11	1	Steering priority valve
12.	11615-12	1	NC pressure compensator
13.	11615-13	1	Prop flow control cartridge
14.	11615-14	1	Main relief valve 3300 psi
15.	11615-15	1	Dead man solenoid valve
16.	11615-16	2	Counter balance valves
17.	11615-17	1	Free wheel valve
18.	11615-18	1	Brake tow valve
19.	11615-19	1	Brake speed control
20.	11368-2	2	Cartridge and coil, 12v
21.	11687-10	1	Lift cylinder cartridge valve
22.	9981	4	Pressure switch
23.	11367-2	4	Pilot check valve
24.	6010833	1	Flow control valve

Item	Part No	Qty	Description
0.	11617	1	2 wheel drive manifold block assembly
1.	11617-1	1	NO S/P selector valve
2.	11617-2	2	NC S/P selector valve
3.	11617-3	1	Flow divider / combiner valve





Hydraulic assembly 4 wheel drive

Item	Part No	Qty	Description
0.	11616	1	Stabiliser valve block assembly
1.	11616-1	4	Cetop 3 valve
2.	11616-2	4	Pilot check valve

Item	Part No	Qty	Description
0.	11615	1	Main manifold valve assembly
1.	11615-1	1	Cartridge valve, steering
2.	11615-2	1	Cartridge valve, lift
3.	11615-3	1	Cetop 3 valve, drive
4.	11615-4	1	Lift relief 2800 psi #
5.	11615-5	1	Steer relief 1400 psi #
6.	11615-6	1	Brake shuttle valve
7.	11615-7	1	Brake hand pump
8.	11615-8	1	Articulating axle pressure reducing / relieving #
9.	11615-9	1	Selector valve
10.	11615-10	1	Steering flow control #
11.	11615-11	1	Steering priority valve
12.	11615-12	1	NC pressure compensator
13.	11615-13	1	Prop flow control cartridge
14.	11615-14	1	Main relief valve 3300 psi
15.	11615-15	1	Dead man solenoid valve
16.	11615-16	2	Counter balance valves
17.	11615-17	1	Free wheel valve
18.	11615-18	1	Brake tow valve
19.	11615-19	1	Brake speed control
20.	11368-2	2	Cartridge and coil, 12v
21.	11687-10	1	Lift cylinder cartridge valve
22.	9981	4	Pressure switch
23.	11367-2	4	Pilot check valve
24.	6010833	1	Flow control valve

Item	Part No	Qty	Description
0.	11618	1	4 wheel drive manifold block assembly
1.	11618-1	2	NC S/P selector valve
2.	11618-2	2	Flow divider / combiner valve
3.	11618-3	2	NO S/P selector valve

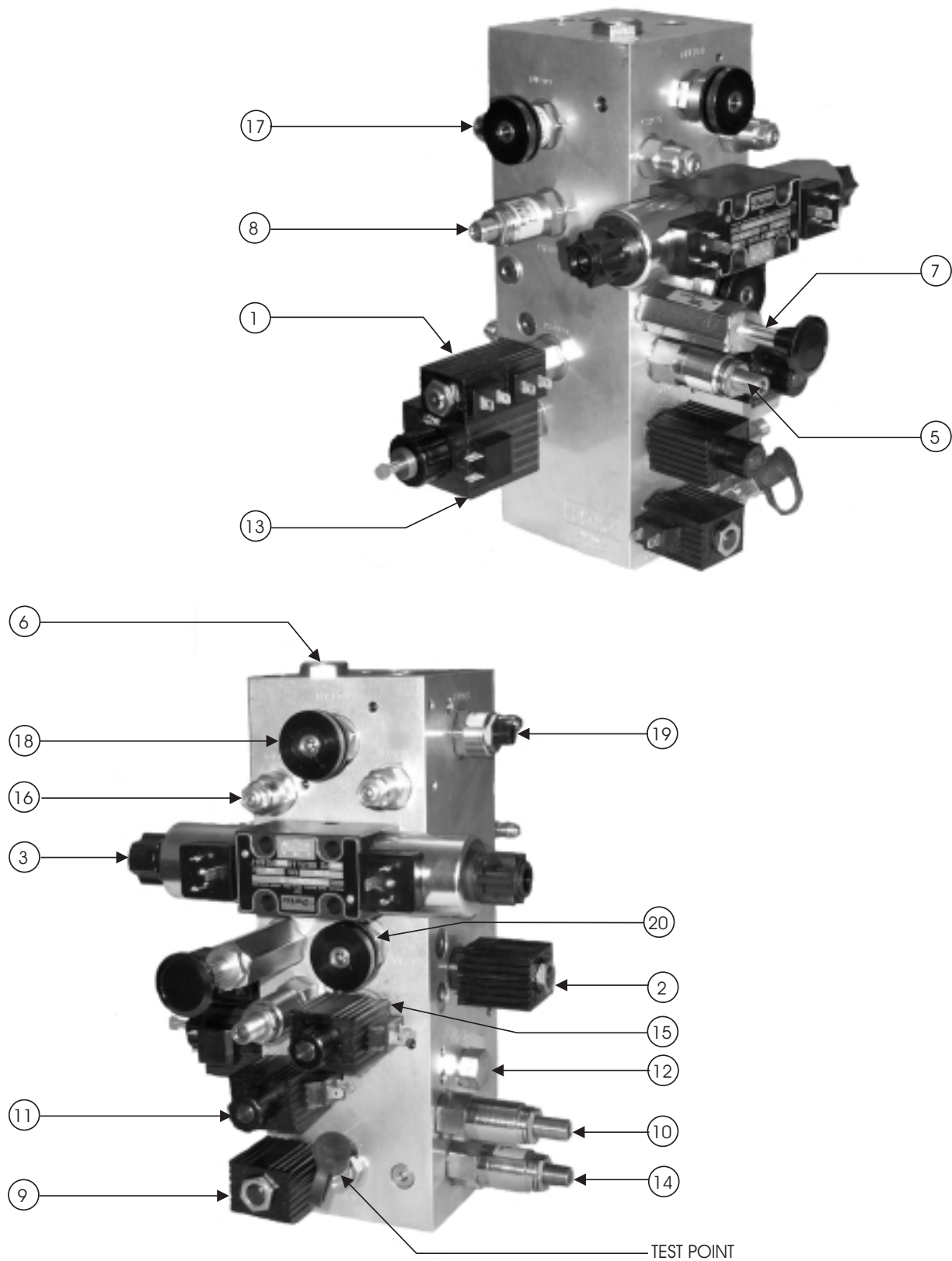
Not Shown:

Item	Part-No	Qty	Description
#	11615-20	3	Tamper proof Cap, CE units
#	11615-21	1	Tamper proof Cap, lift relief valve, CE units

Manifold assembly, main

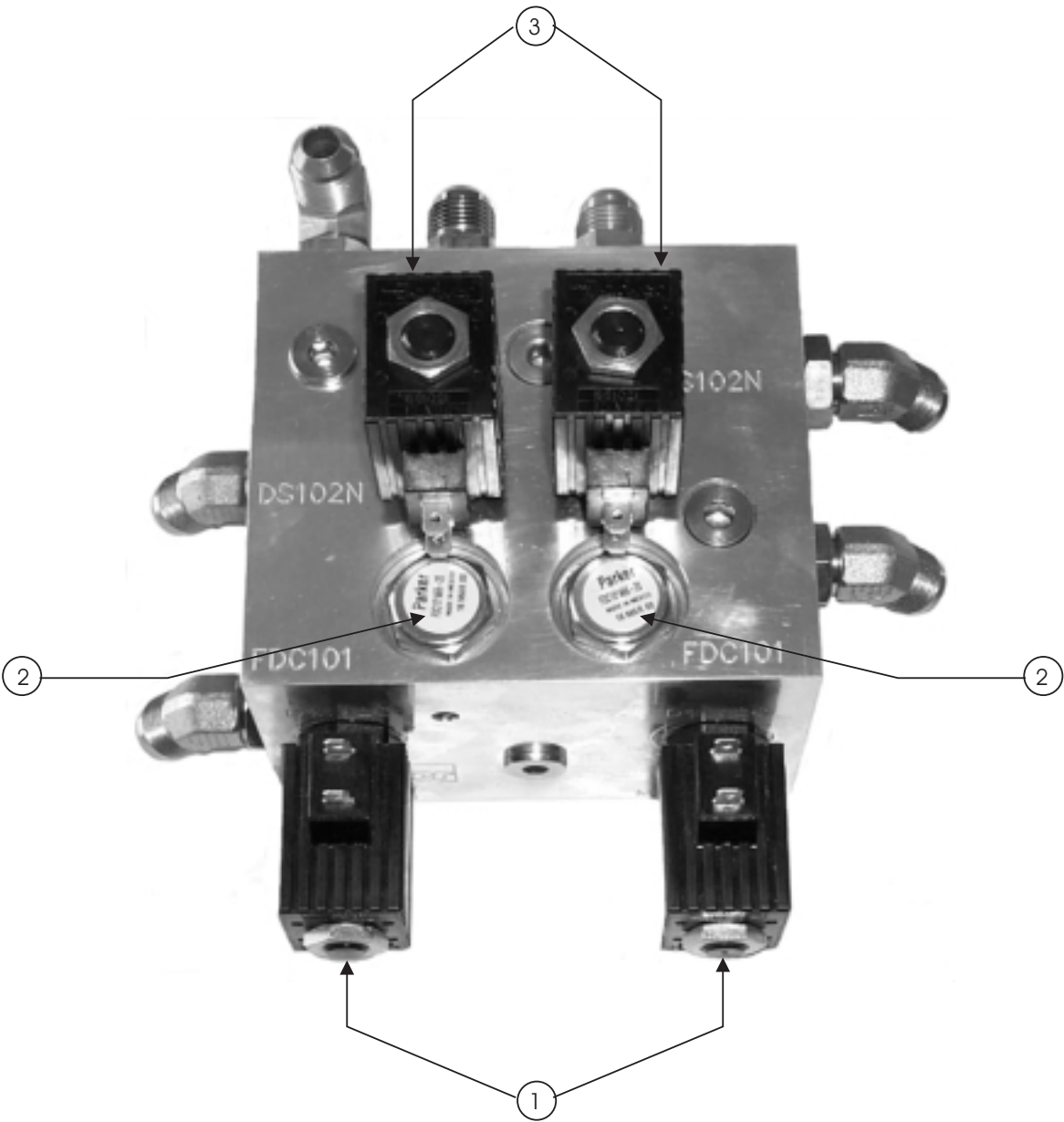
Item	Part No	Qty	Description
0.	11615A	1	Main manifold valve assembly
1.	11615-1	1	Cartridge valve, steering
2.	11615-2	1	Cartridge valve, lift
3.	11615-3	1	Cetop 3 valve, drive
5.	11615-5	1	Steer relief valve 1400psi
6.	11615-6	1	Brake shuttle valve
7.	11615-7	1	Brake hand pump
8.	11615-8	1	Articulating axle pressure reducing / relieving
9.	11615-9	1	Stabiliser selector valve
10.	11615-10	1	Steering flow control
11.	11615-11	1	Steering priority valve
12.	11615-12	1	NC pressure compensator
13.	11615-13	1	Proportional flow control cartridge
14.	11615-14	1	Main relief valve 3300 psi
15.	11615-15	1	Dead man control solenoid valve
16.	11615-16	2	Counter balance valves
17.	11615-17	1	Free wheel valve
18.	11615-18	1	Brake tow valve
19.	11615-19	1	Brake speed control
20.	11615-4	1	Lift relief valve 2800psi

Manifold assembly, main illustration



Manifold assembly, 4 wheel drive

Item	Part No	Qty	Description
0.	11618A	1	4 wheel drive manifold block assembly
1.	11618-1	2	NC series / parallel selector valve
2.	11618-2	2	Flow divider / combiner valve
3.	11618-3	2	NO series / parallel selector valve



Manifold assembly, stabilisers

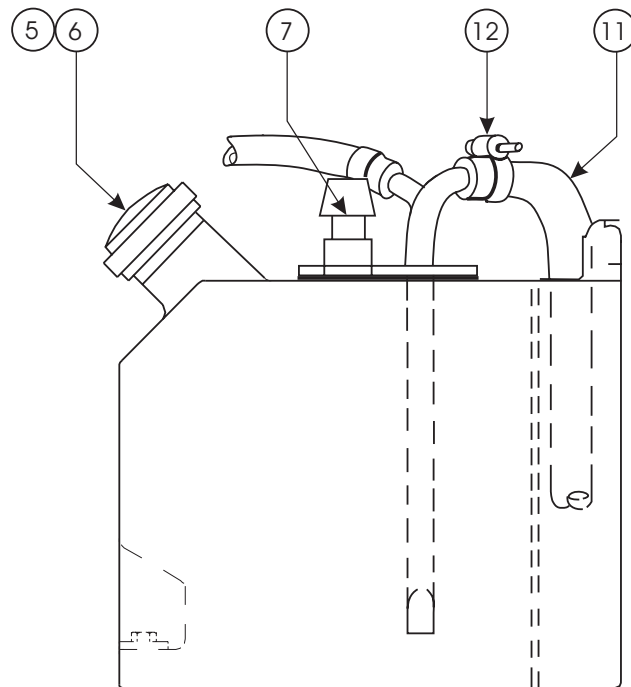
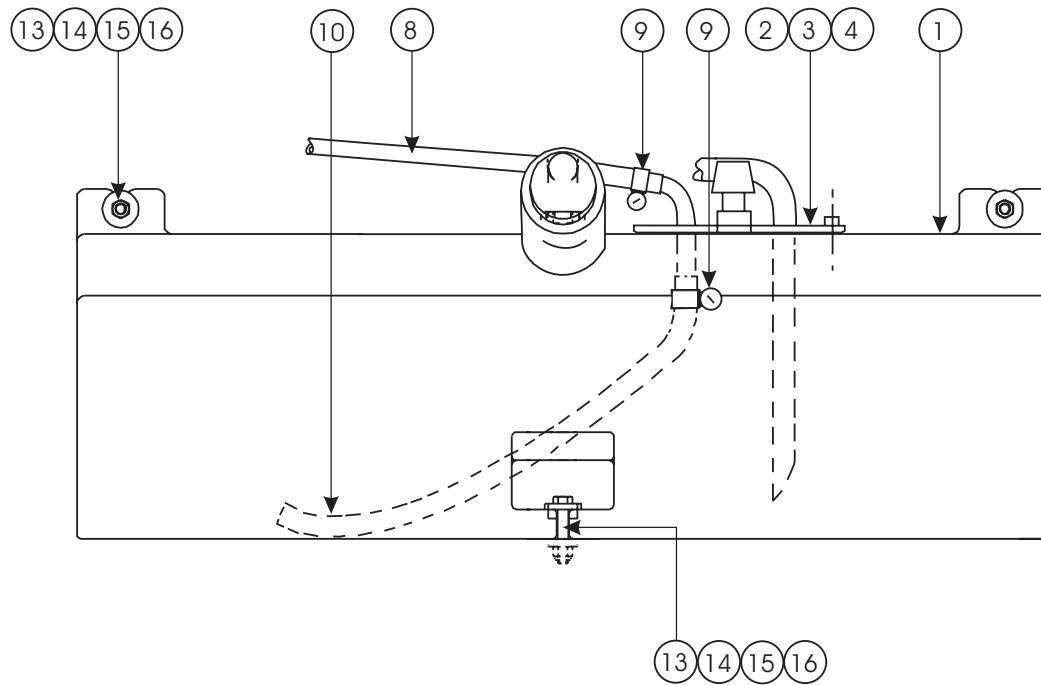
Item	Part No	Qty	Description
0.	11616	1	Stabiliser valve block
1.	11616-1	4	Cetop 3 valve, 12volt
2.	11616-2	4	Pilot check valve



Hydraulic oil tank assembly

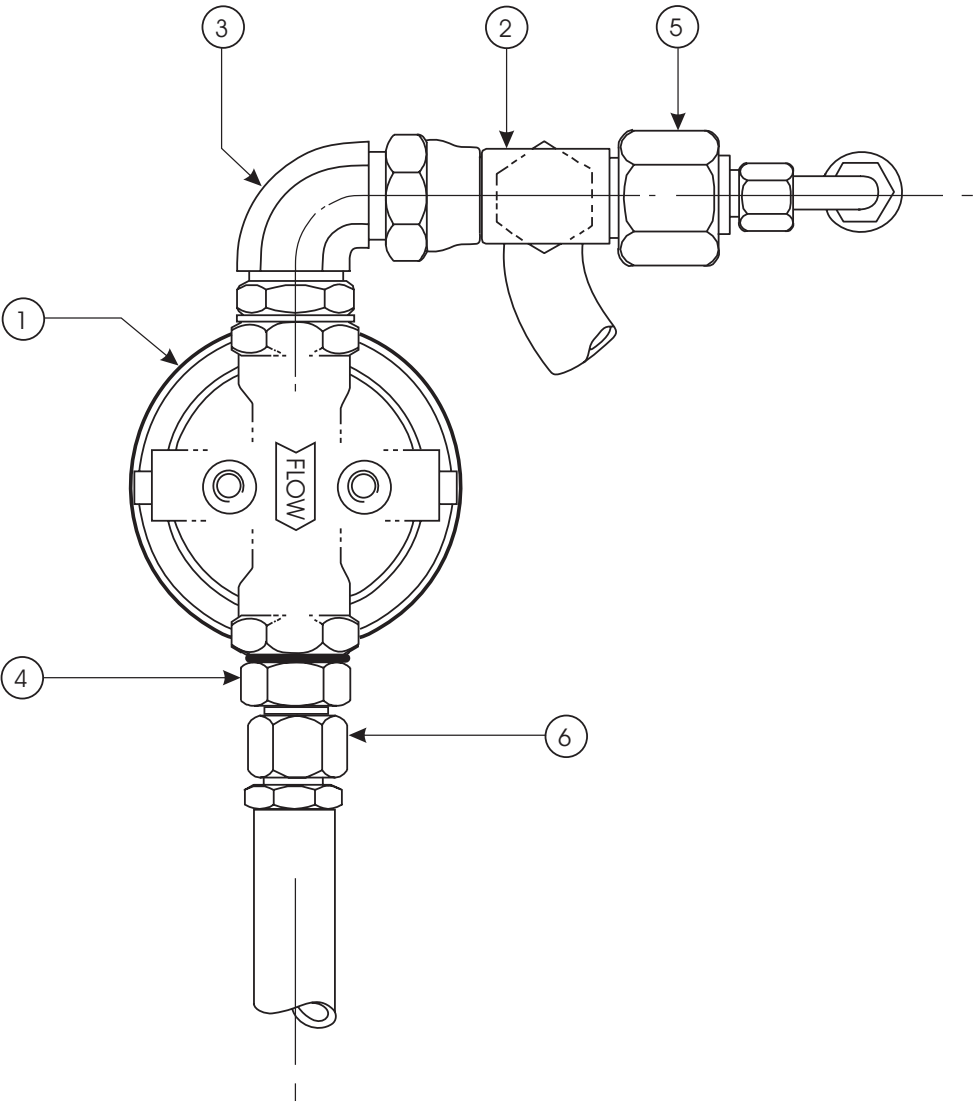
Item	Part No	Qty	Description
0.	11558	1	Hydraulic oil tank assembly
1.	11558-1	1	Hydraulic oil tank
2.	11558-2	1	Top plate weld
3.	11430-1	1	Base plate weldment
4.	11430-5	1	Gasket, including 11430-5R
5.	605256	1	Vented cap
6.	563406	1	Gasket
7.	11487	1	Filter breather
8.	11558-7	1	Return hose, hydraulic oil tank
9.	3618-11	2	Hose clamp
10.	11558-8	1	Tank inner hose, hydraulic oil tank
11.	11558-6	1	Suction hose
12.	3618-26	1	Hose clamp
13.	3610-10050	3	Bolt, M10 x 50 G8.8
14.	3611-10	3	Nyloc nut, M10
15.	5560179	3	Washer, special
16.	3603-10	3	Washer, M10 plated

Hydraulic oil tank assembly illustration



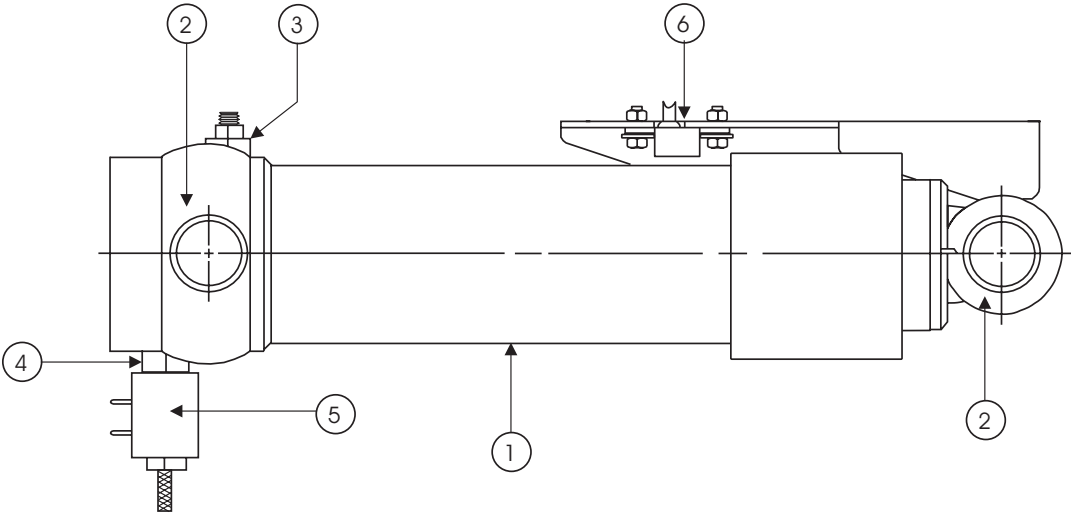
Hydraulic oil return filter assembly

Item	Part No	Qty	Description
0.	11649	1	Hydraulic oil return filter assembly
1.	301440	1	Return filter
	77145		Replacement filter element
2.	9052-4	1	'T' fitting
3.	7031-009	1	JICM x UN 'O' ring elbow
4.	7025-008	1	JICM x UN 'O' ring M nipple
5.	10508-3	1	Fitting, A50531217
6.	6989-004	1	Fitting, 3/4" O.D. x 1 1/16" JIC (Fem)



Cylinder assembly, lift

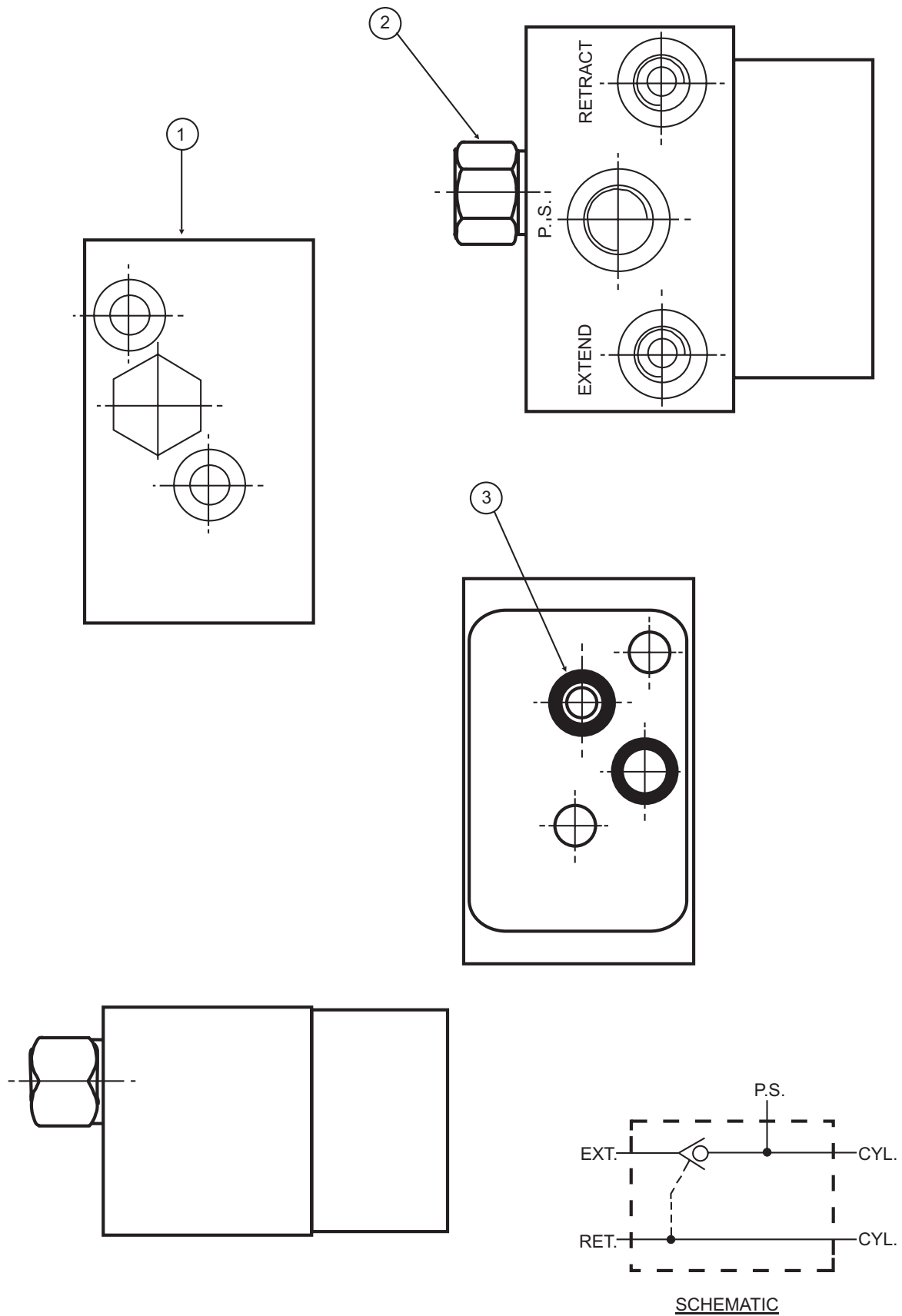
Item	Part No	Qty	Description
0.	11687A	1	Cylinder assembly, lift
	11687K		Seal repair kit, lift cylinder
1.		1	Cylinder, lift
2.	561126	1	Bearing, 1½ ID x 1¾ OD x 1½ inch long
3.	6010833	1	Cartridge, flow control
4.	11687-10	1	Cartridge, holding valve
5.	11687-2	1	Coil, 12VDC
6.	560248A	1	Lift limit switch



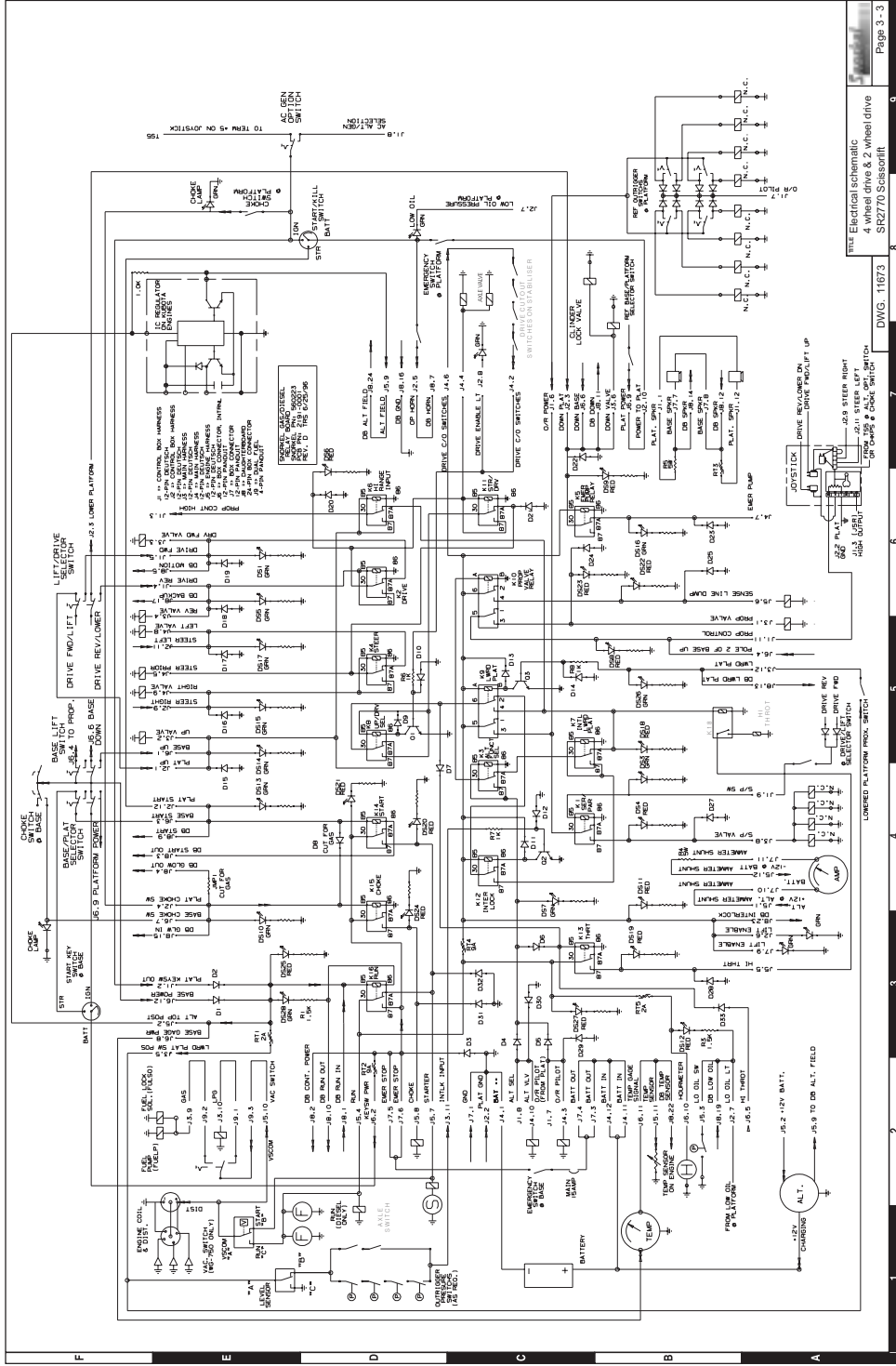
Valve assembly, stabilizer leg cylinder

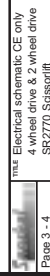
Item	Part No	Qty	Description
0.	11367	1	Valve assembly, stabiliser cylinder
1.	11367-1	1	Valve body
2.	11367-2	1	Check valve CKBD XCN
3.	13-110	2	'O' ring

Valve assembly, stabilizer leg cylinder illustration



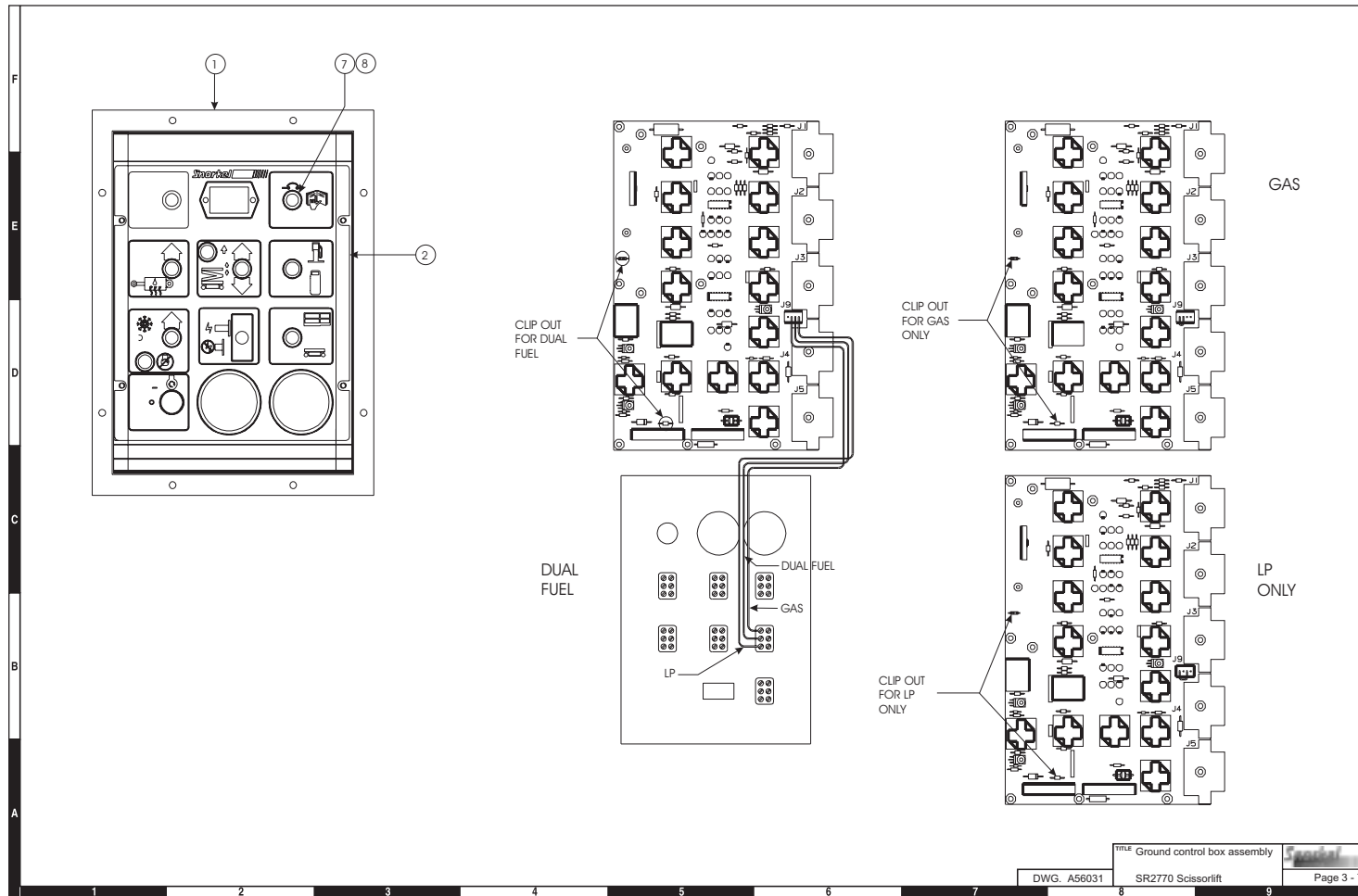
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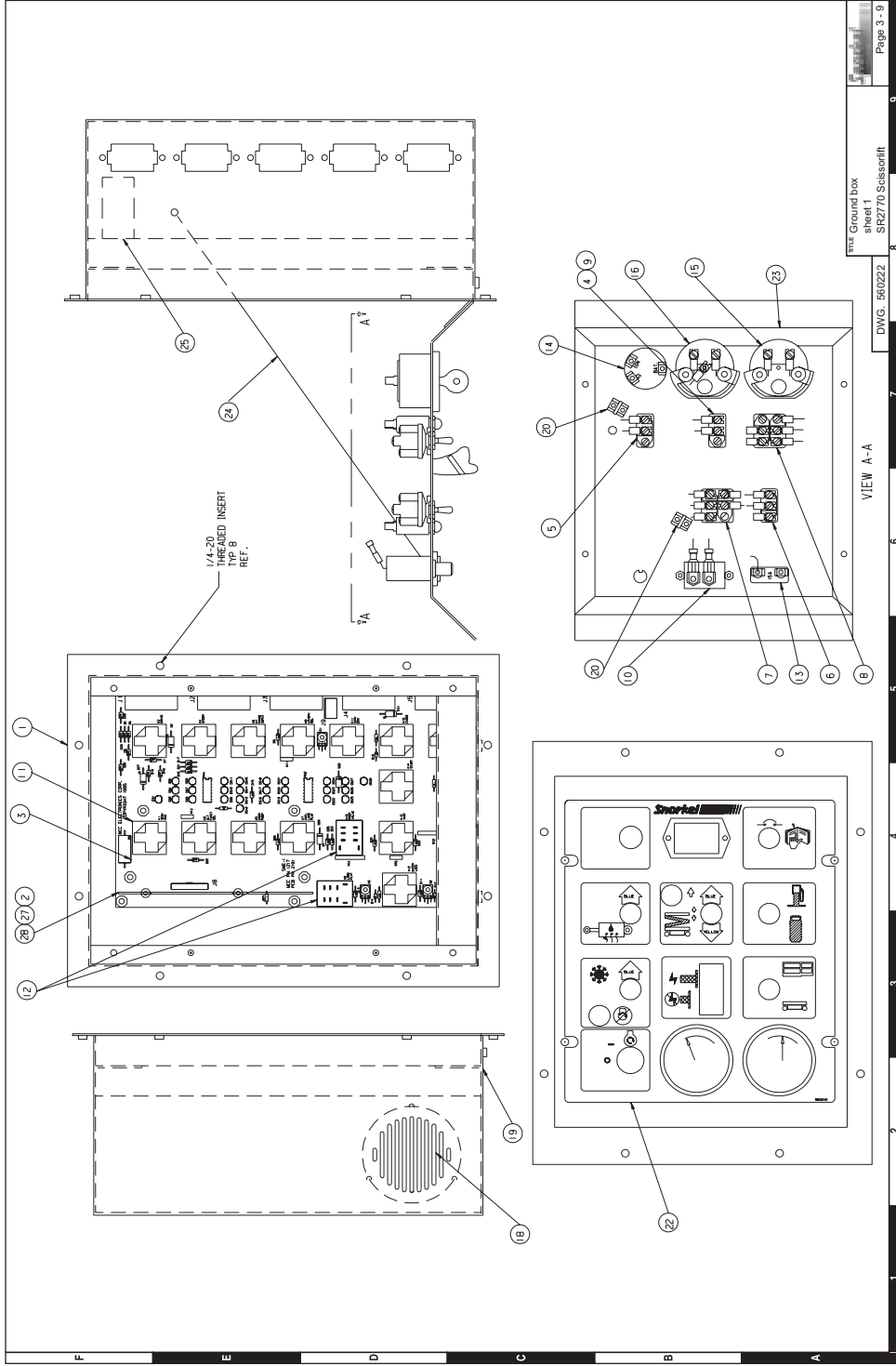
Ground control box assembly

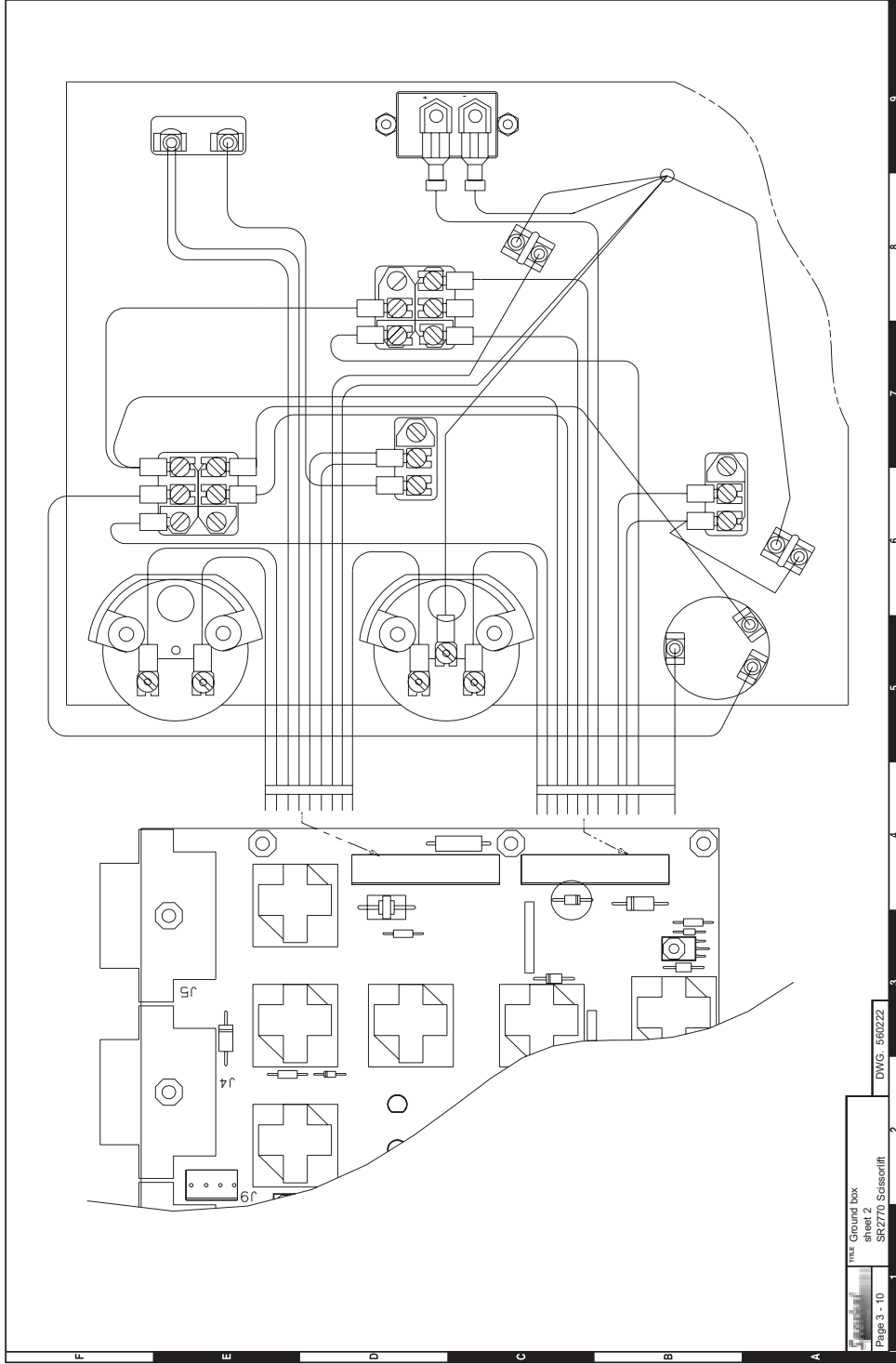
Item	Part No	Qty	Description
	560351		Ground control box assembly, Kubota D905 diesel units
1.	560222	1	Ground box (see page 3 - 8)
2.	560240	1	Decal, ground control
7.	3040068	1	Circuit breaker 20 amp
8.	3044167	1	Terminal #10 spade 16/14 wire



Ground box

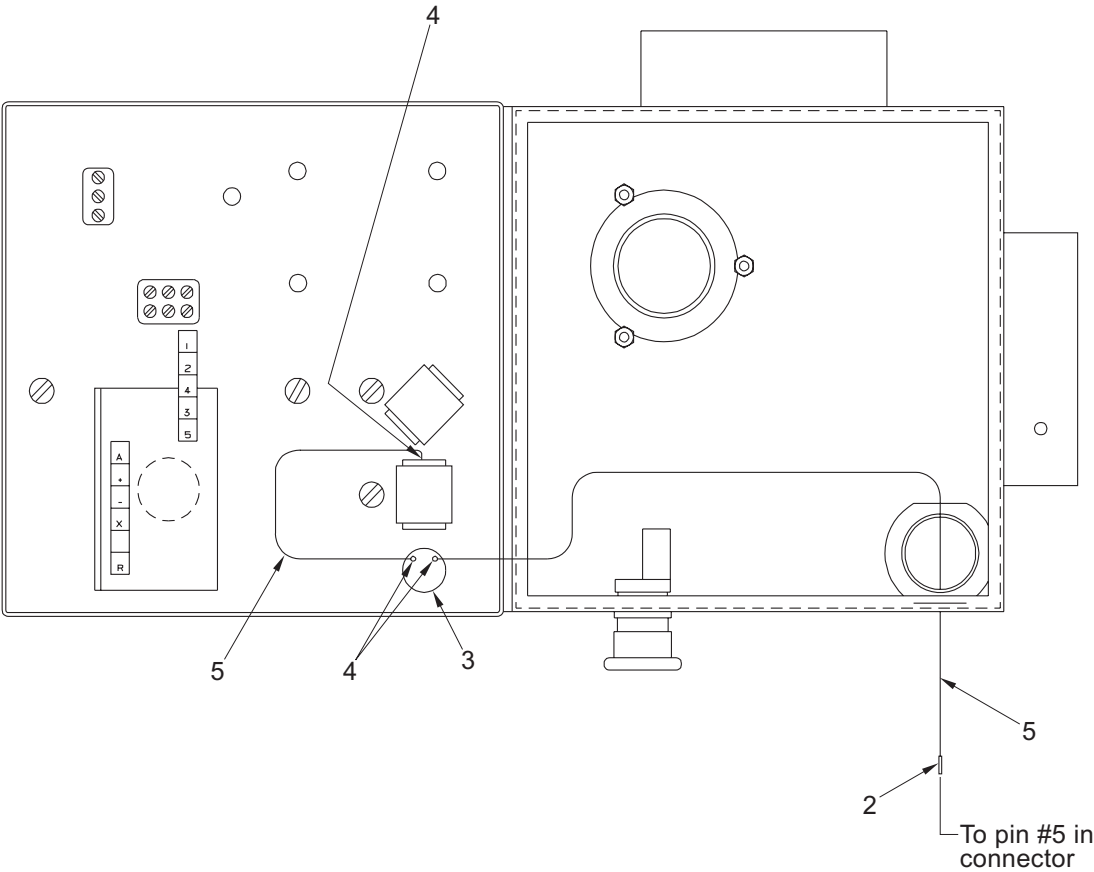
Item	Part No	Qty	Description
0.	560222	1	Ground box, complete
1.	560229	1	Ground electrical box
2.	560224	1	Alarm board/daughter board
3.	560223	1	Relay board/mother board
4.	3020013	1	Switch, toggle
	446836	1	Switch, push/pull emergency stop, CE only
	446826	1	Contact block, CE only
5.	3020015	1	Switch, toggle
6.	3020016	Ref	Switch, toggle
7.	3010018	1	Switch, toggle
8.	3020097	1	Switch, toggle
	3020167	1	Key switch, CE only
	3049906	1	Mounting base, CE only
9.	562236	1	Switch guard, not required for CE
10.	455186	1	Hour meter
11.	562326	14	Relay, 12 volt DC - 20/30 amp
12.	560390	2	Relay, 12 volt DC - 10 amp
13.	563686	1	Circuit breaker, 15 amp capacity thermal
14.	3020087	1	Key switch
	10113	1	Start switch, CE only
	9776	1	Mounting base, CE only
	10114	1	Contact, CE only
15.	560394	1	Temperature gauge
16.	560396	1	Ammeter
17.	560397	1	Internal wire harness
18.	302832	1	Speaker
19.	302882	1	Drain plug
20.	560377	1	Lamp, green bezel 12 volt
21.	3040068	Ref	Circuit breaker, 20 amp capacity thermal
22.	560240	Ref	Decal, ground control
23.	560398	1	Gasket
24.	560389	1	Door restraint cable
25.	0070967	1	Corrosion inhibitor
26.	560395	1	Temperature sensor
27.	302856	2	Bracket for daughter board
28.	302855	2	Stand-off for daughter board





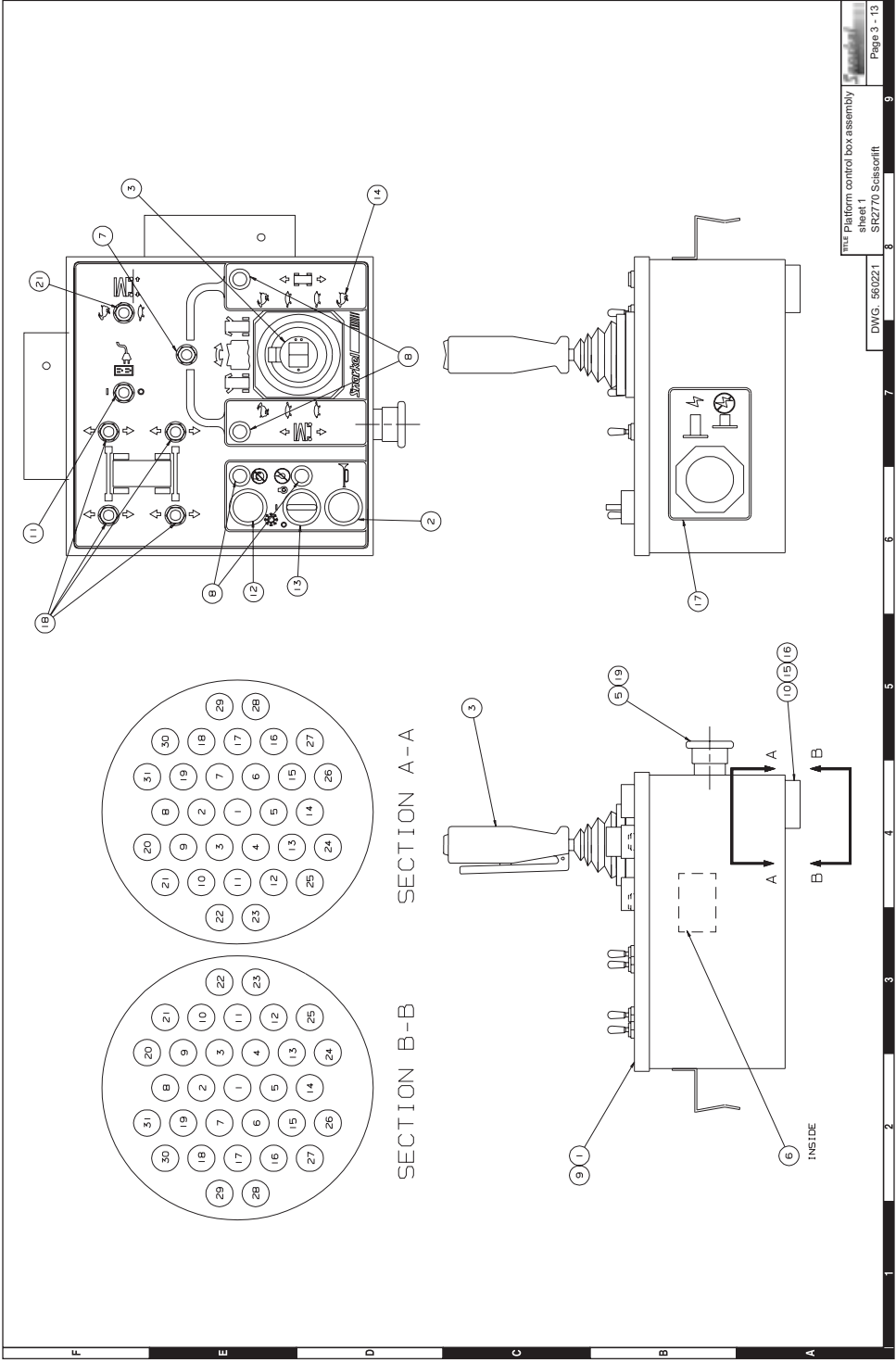
Operator horn installation

Item	Part No	Qty	Description
1.	560331	1	Operator horn kit (horn kit includes items 2 through 5)
2.	3040341	1	Contact pin
3.	560332	1	Switch, push button
4.	960359	1	Terminal #6 spade 18/14 gauge wire
5.	964749	1	Wire 16 gauge single conductor red x 18 inches



Platform control box assembly

Item	Part No	Qty	Description
0.	560221	1	Platform control box assembly
1.	560228	1	Platform control box
2.	560332	1	Switch, push button
3.	560225	1	Joystick controller
4.	560376	1	Internal wire harness
5.	446836	1	Switch, push/pull emergency stop
6.	0070967	1	Corrosion inhibitor
7.	3020097	1	Switch, toggle
8.	560377	4	Led lamp, green 12 volt
9.	560375	1	Gasket
10.	3049847	1	Electrical connector
11.	563736	1	Switch, AC generator option (if installed)
12.	560332	1	Switch, operator horn option
13.	560379	1	Switch, start/kill
14.	560241	1	Placard, platform control box
15.	3040099	1	Electrical connector lock washer
16.	3040098	1	Electrical connector lock nut
17.	560272	1	Placard, emergency stop
18.	3020016	4	Switch, outriggers (if installed)
19.	446826	1	Contact block, emergency stop
20.	560378	1	Diode wire assembly
21.	563736	1	Switch, toggle

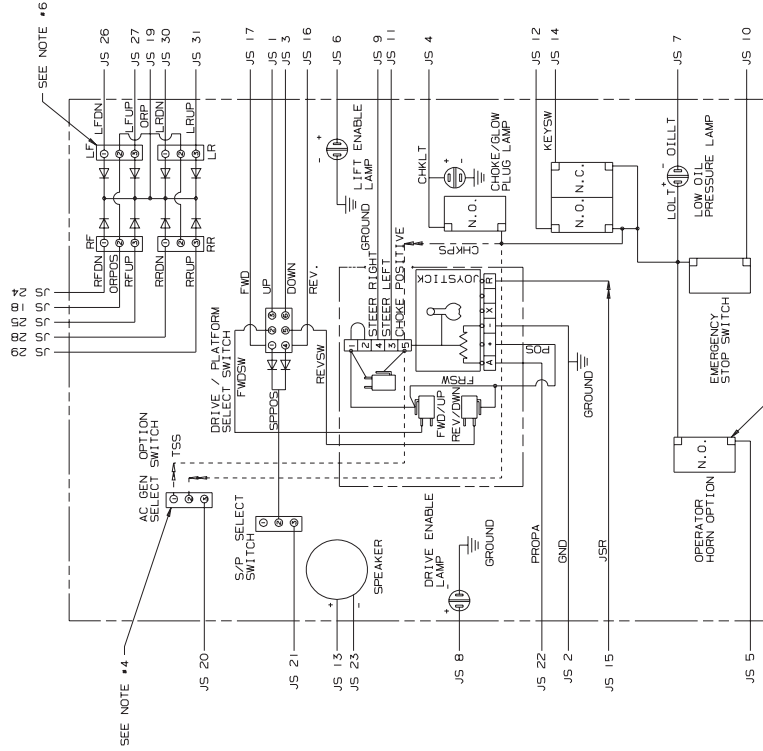


NOTES:

1. STAMP EACH ASSEMBLY WITH MANUFACTURING DATE CODE, SNORKEL PART NUMBER (560221) AND REVISION LEVEL.
2. EACH ASSEMBLY TO BE FUNCTIONALLY TESTED FOR ALL INPUTS AND OUTPUTS.
3. IF THE AC GENERATOR OPTION IS INSTALLED, REMOVE WIRE LABELLED TERMINAL #5 AND REWIRE TO CENTER POST OF AC GENERATOR SWITCH, RUN NEW WIRE FROM TOP POST OF SWITCH TO TERMINAL #5 ON JOYSTICK CONTROLLER.
4. USED ONLY IF HORN OPTION IS INSTALLED.
5. USED ONLY IF OUTRIGGERS ARE INSTALLED.

PIN #	12	PIN PLATFORM CONTROL CABLE CONN.
JS 1	J2-1	PLATFORM GROUND WIRE
JS 2	J2-2	PLATFORM GROUND WIRE
JS 3	J2-3	LOWER FROM PLATFORM
JS 4	J2-4	OPERATOR WORK OPTION
JS 5	J2-5	OPERATOR WORK OPTION
JS 6	J2-6	LIFT ENABLE LAMP
JS 7	J2-7	PLATFORM LOW OIL PRESSURE LAMP
JS 8	J2-8	STEER LEFT
JS 9	J2-9	STEER RIGHT
JS 10	J2-10	POWER TO PLATFORM (14 GA)
JS 11	J2-11	STEER LEFT
JS 12	J2-12	START SWITCH FROM PLATFORM
PIN #	12	PIN PLATFORM CONTROL CABLE CONN.
JS 13	J1-1	PLATFORM KEY SWITCH OUT
JS 14	J1-2	PLATFORM KEY SWITCH OUT
JS 15	J1-3	PROPORTIONAL HIGH OUTPUT
JS 16	J1-4	DRIVE REVERSE
JS 17	J1-5	DRIVE FORWARD
OPT JS 18	J1-6	OUTRIGGER POWER
OPT JS 19	J1-7	OUTRIGGER PILOT FROM PLATFORM
OPT JS 20	J1-8	OUTRIGGER PILOT FROM PLATFORM
JS 21	J1-9	START SWITCH
JS 22	J1-10	START SWITCH
JS 23	J1-11	PROPORTIONAL CONTROL
JS 24	J1-12	PLATFORM SPEAKER
OPT JS 25	J5-1	OUTRIGGER RF DOWN
OPT JS 26	J5-2	OUTRIGGER RF UP
OPT JS 27	J5-3	OUTRIGGER LF DOWN
OPT JS 28	J5-4	OUTRIGGER LF UP
OPT JS 29	J5-5	OUTRIGGER RR DOWN
OPT JS 30	J5-6	OUTRIGGER RR UP
OPT JS 31	J5-7	OUTRIGGER LR DOWN
OPT JS 32	J5-8	OUTRIGGER LR UP

.. IN-PUT FROM JSR (JS 15) ONLY
IF LOWER PLATFORM SWITCH IS MADE!



AC outlet at platform, 125 volt 4-2

AC outlet at platform 125 volt
 illustration 4-3

AC outlet at platform 230V illustration 4-4

AC outlet at platform, 230 volt 4-5

Flashing light installation 4-6

Lanyard attachment installation 4-7

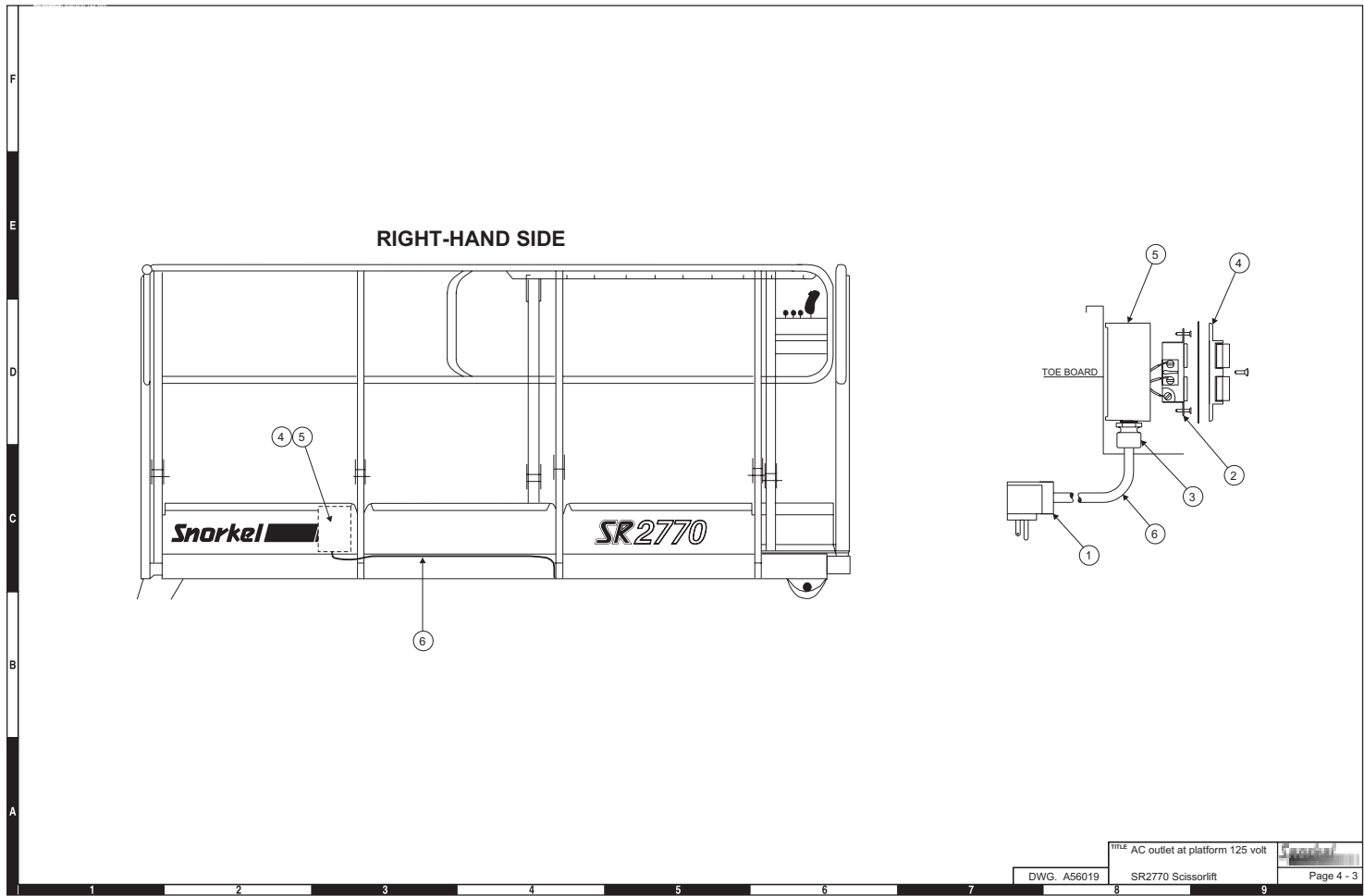
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NIVBox pressure switch wiring illustration 4-9

NIVBox pressure switch loom illustration 4-10

AC outlet at platform, 125 volt

Item	Part No	Qty	Description
1.	3040219	1	Plug connector, 90° male - 125 volt
2.	960779	1	Duplex outlet, standard
	3040624	1	Duplex outlet, GCFI rated
3.	3040115	1	Connector
4.	3045211	1	Weatherproof outlet cover, standard
	3040625	1	Weatherproof outlet cover, GCFI rated
5.	3040297	1	Weatherproof AC outlet box
6.	1812	23 L.M.	125 volt power cable - 14 gauge 3 conductor x length required



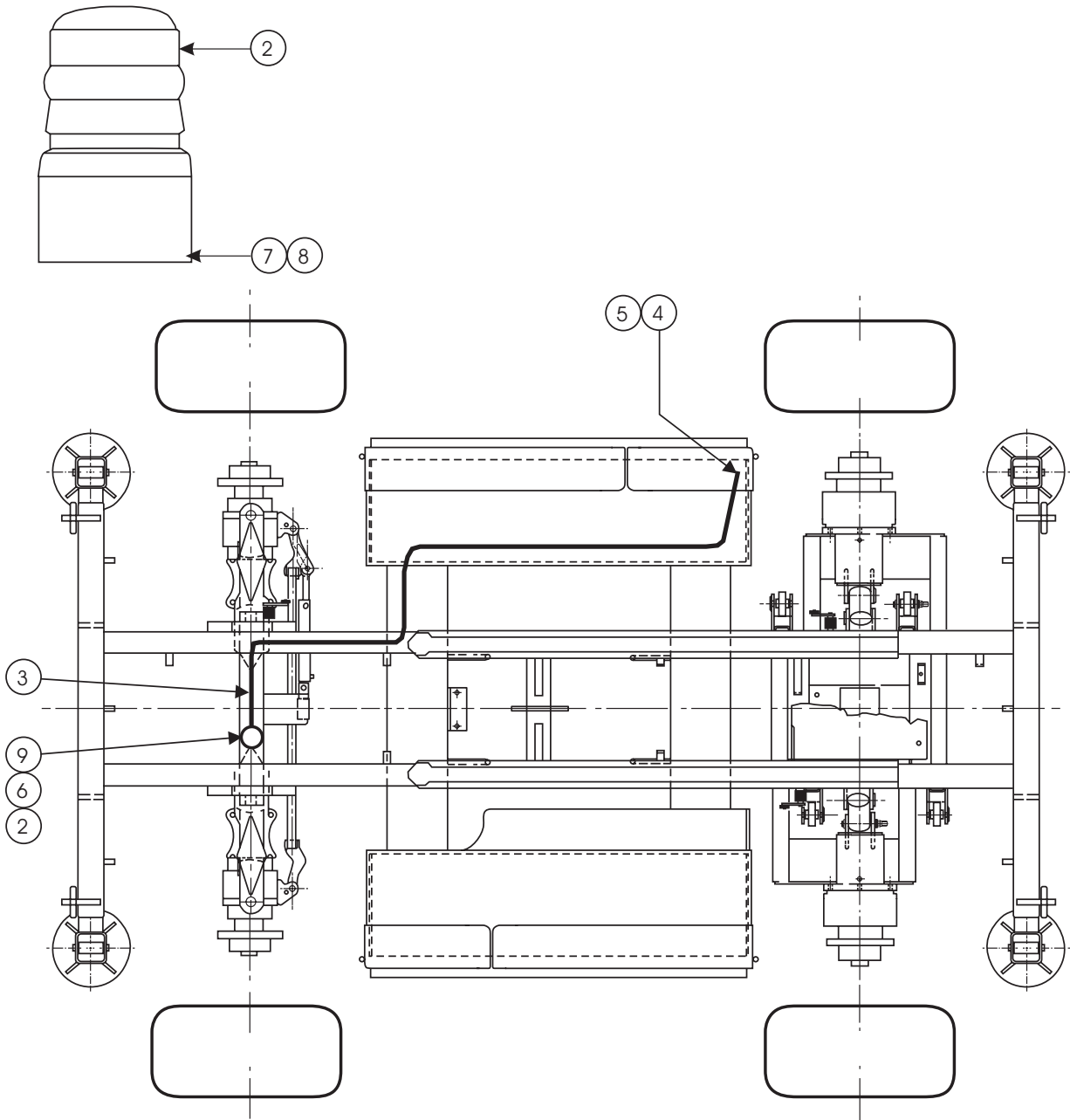
A

AC outlet at platform, 230 volt

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

Flashing light installation

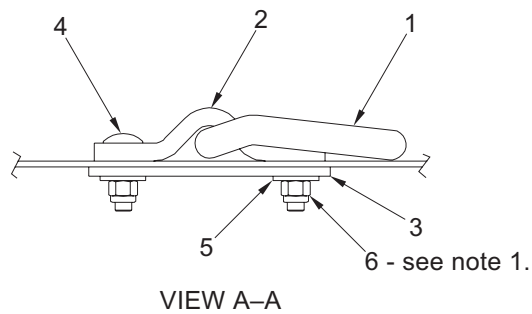
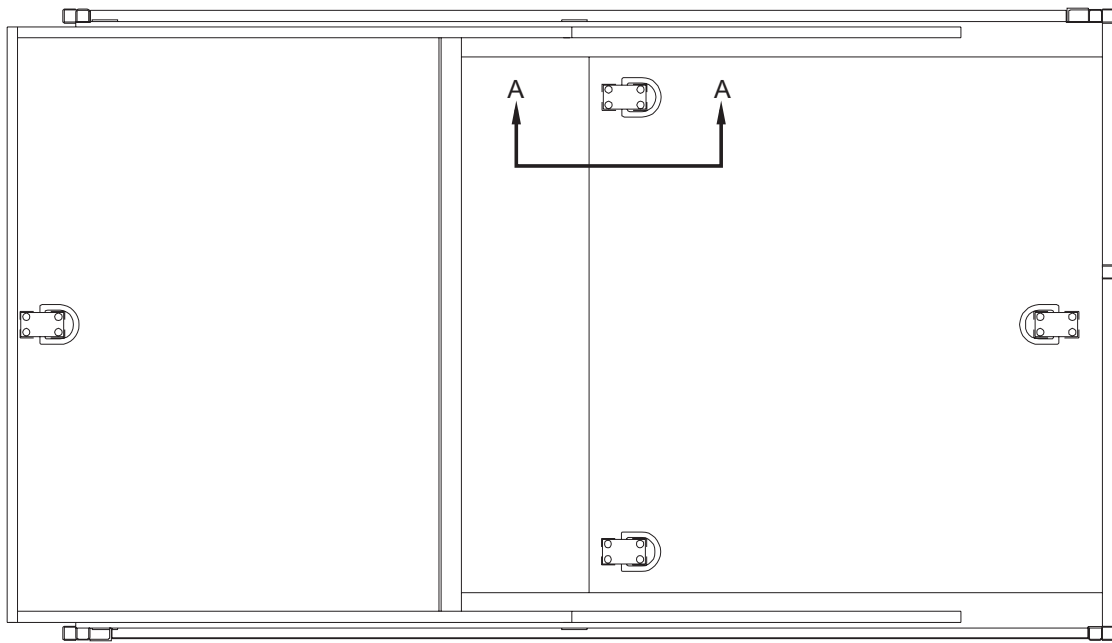
Item	Part No	Qty	Description
1.	10746	Ref	Option flashing light
2.	10745	1	Flashing light
3.	1802	1	Flashing light harness 2 core
4.	1853-010	1	Terminal 1/4 inch ring tongue fully insulated 16/14 wire
5.	304-0082	1	Terminal, male slip on ins
6.	1853-002	1	Ring terminal utilux H 4115
7.	3603-04	3	Washer flat M4
8.	3604-04020	3	Screw M4 x 20
9.	1853-004	1	H3561 connector



TOP VIEW OF BASEFRAME
PLATFORM AND ARMS REMOVED

Lanyard attachment installation

Item	Part No	Qty	Description
1.	424626	4	D-ring tie down
2.	302609	4	Lanyard attachment bracket
3.	302610	4	Lanyard attachment plate
4.		16	Carriage bolt 3/8-16 x 1 1/4 inch long grade 5
5.		16	Washer 3/8 medium flat
6.	5560033	16	Nut 3/8-16 self locking

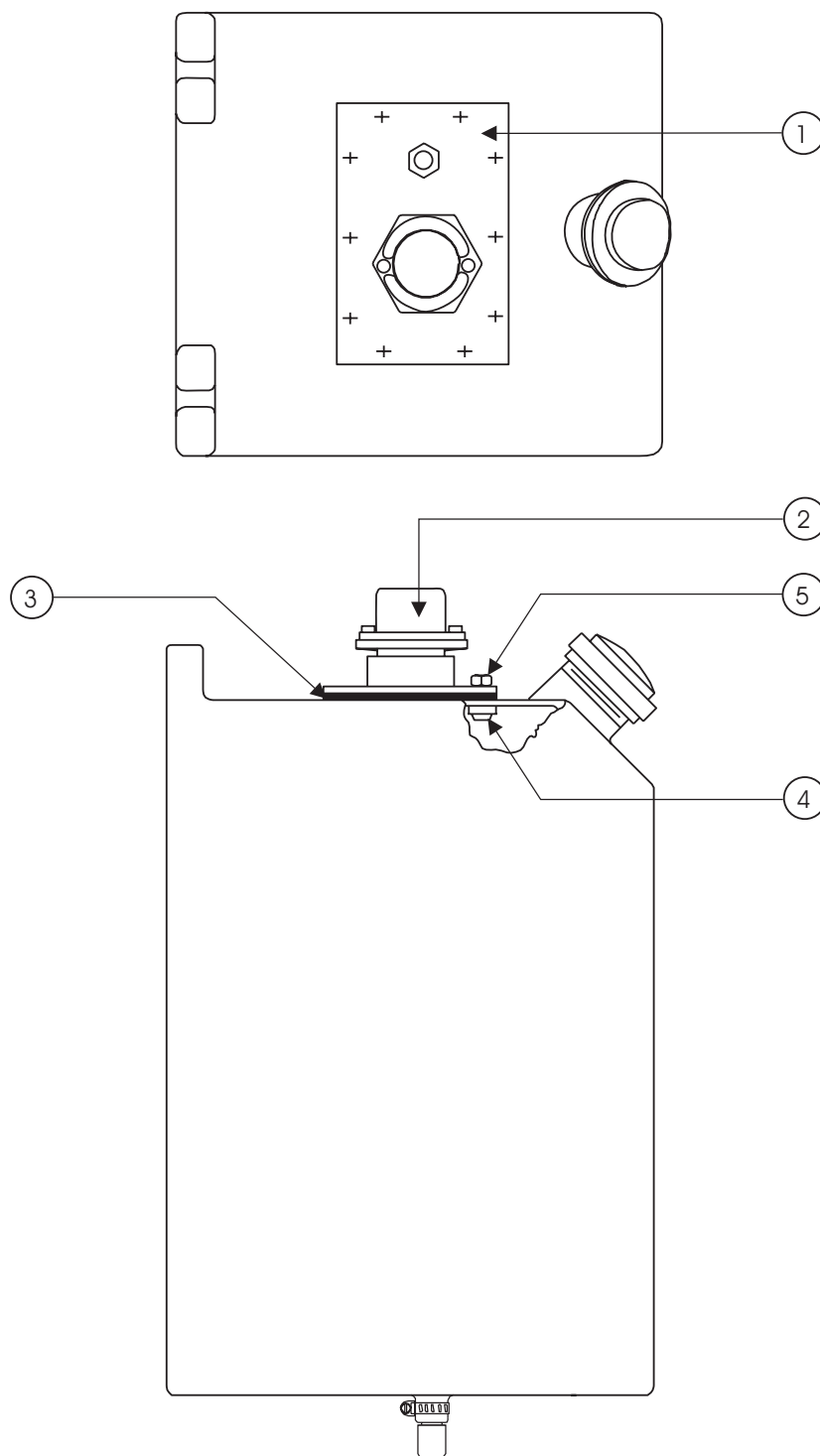


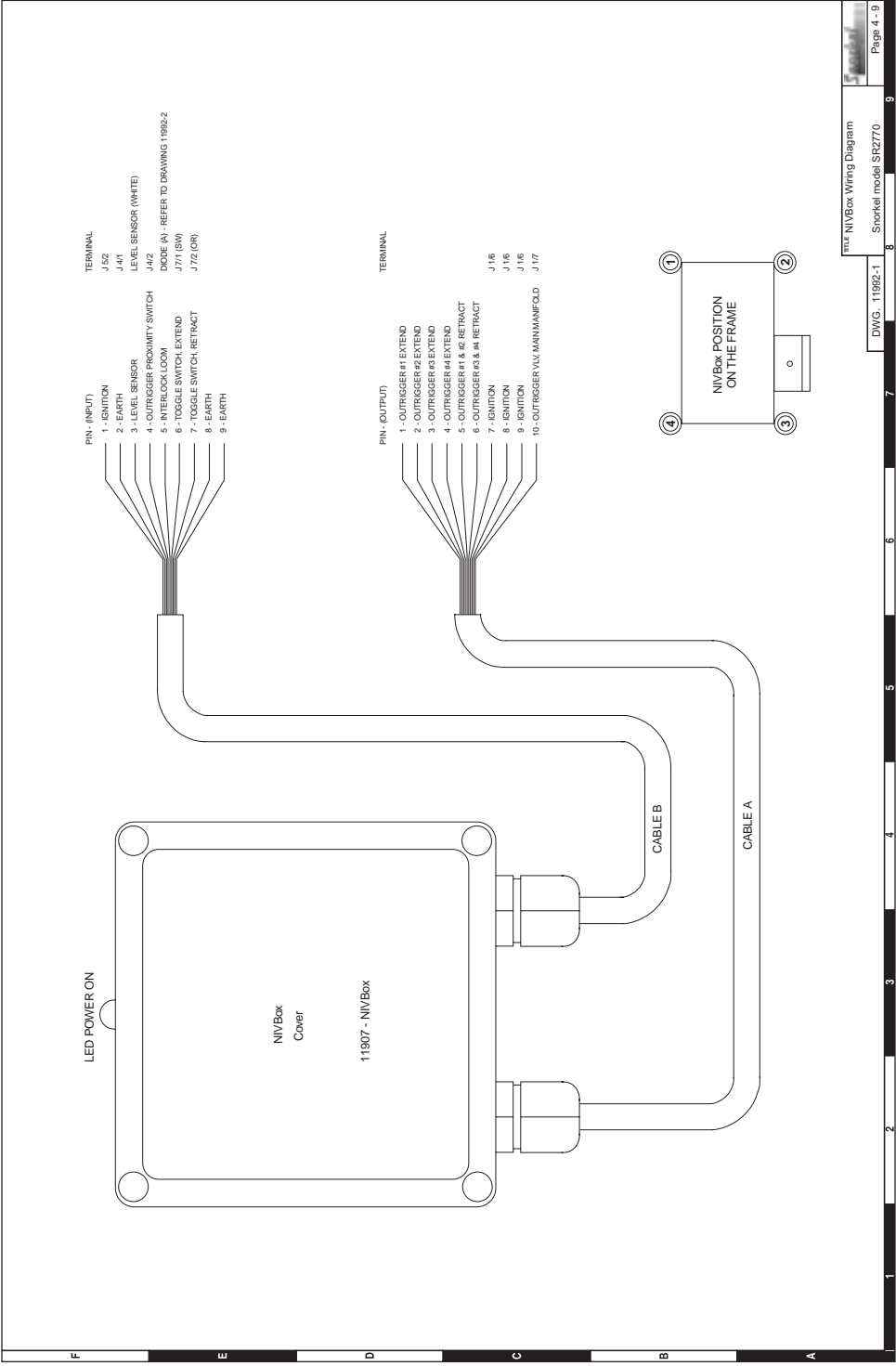
Notes:

1. Torque all self locking nuts (item 6) - 25 foot pounds.

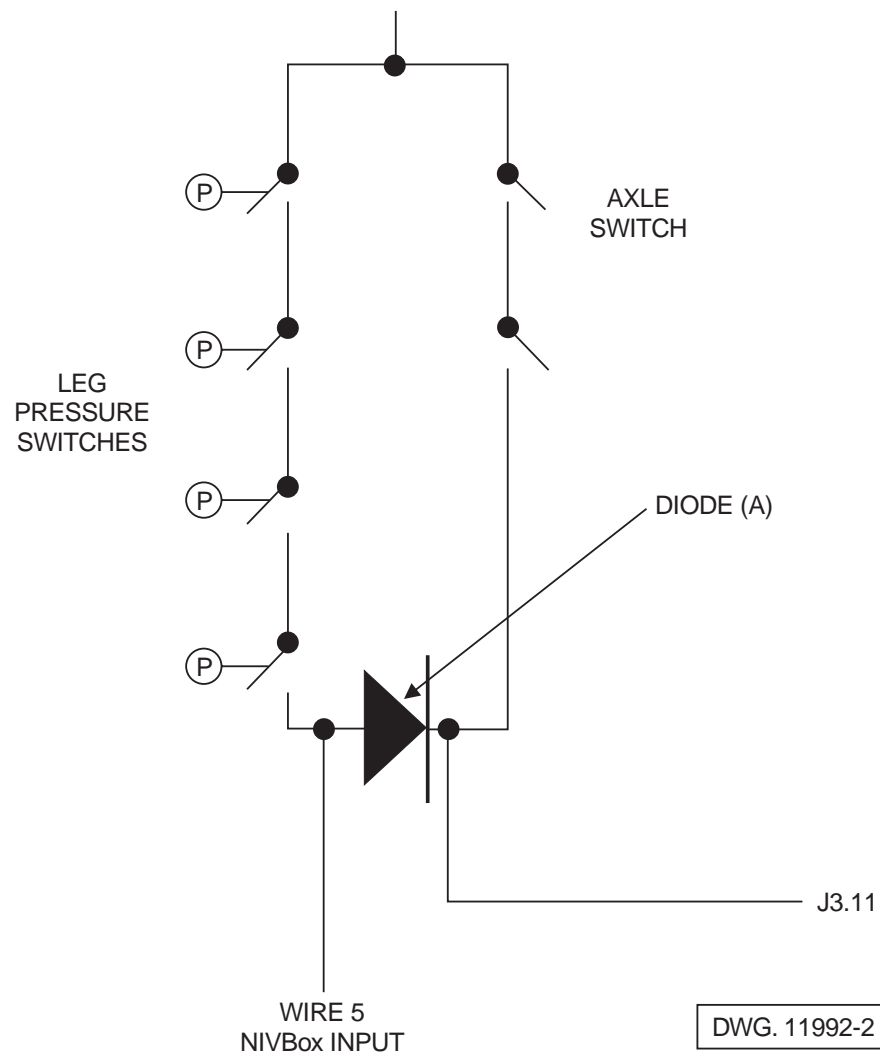
Fuel gauge option

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





NIVBox pressure switch loom illustration



!

125 Volt AC outlet at platform, 4-2
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AC outlet at platform, 125 volt AC, 4-2
AC outlet at platform, 230 volt AC, 4-5

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