

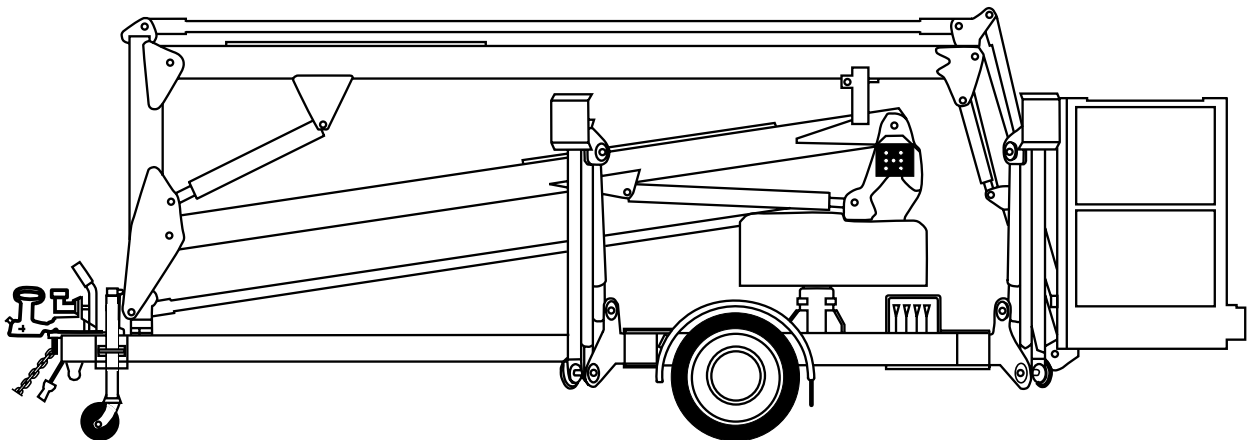
Snorkel

INTERNATIONAL

Maintenance and Repair Parts Manual

MHP 12/34J

**Engine Powered
Gasoline
Battery Electric**



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

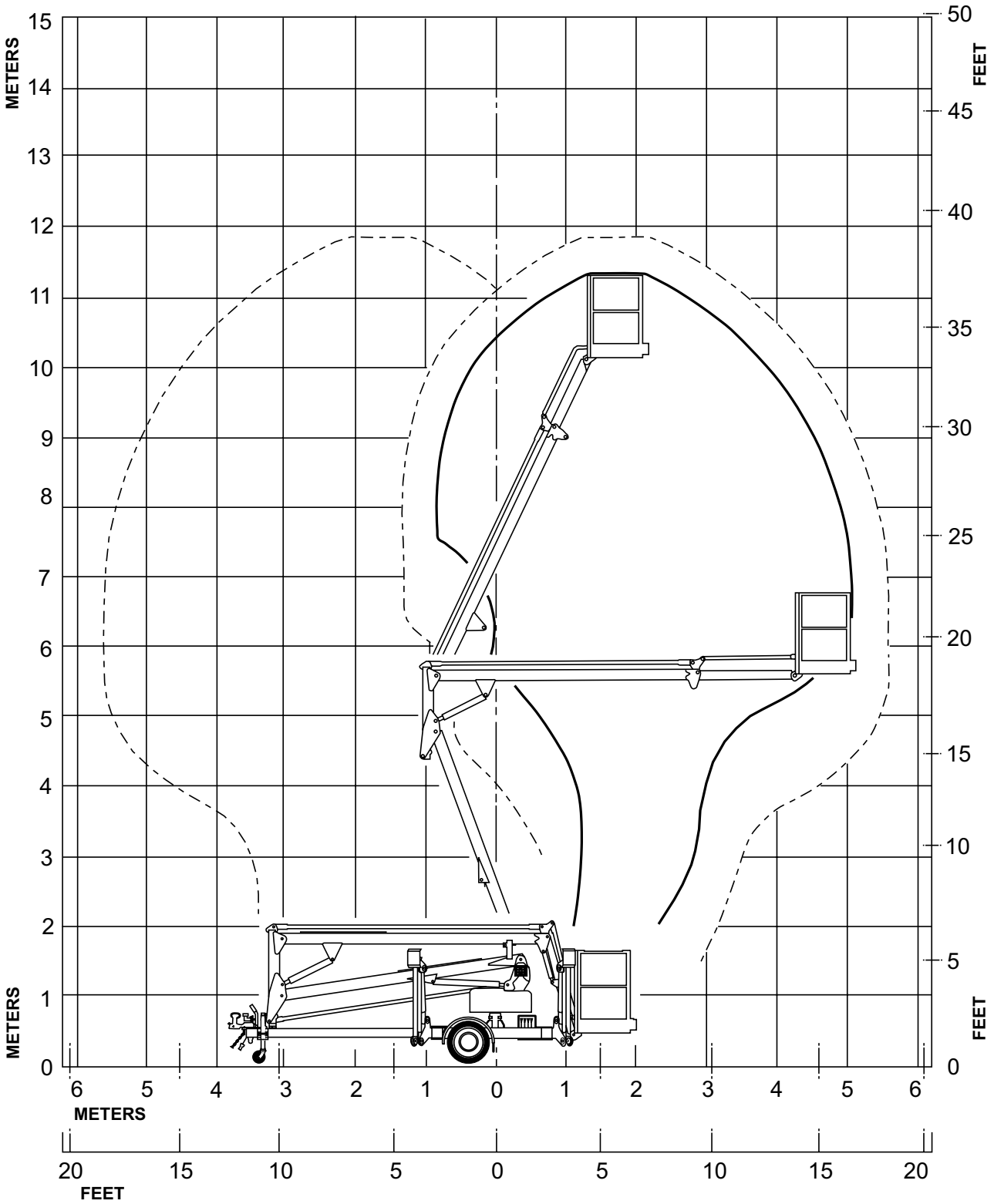
SPECIFICATIONS	MHP12/34J	
Nominal working height	12.4m	40' 8"
Maximum height to basket floor	10.4m	34' 1"
Maximum outreach	5.4m	17' 9"
Maximum outreach height	5.65m	18' 6"
Maximum width of base		
Outriggers retracted	1.55m	5' 1"
Outriggers extended	3.50m	11' 5"
Safe working load (unrestricted)	200kg	440lbs
Standard colour	Orange base/boom grey platform	
Platform size	1200 x 760 x 1100mm Aluminum	4' x 2' 6" x 3' 7" Aluminum
Travelling height	2.04m	6' 8"
Overall length	5.71m	18' 8"
Maximum towing speed	80km/h	50m/h
Turntable rotation	550 degrees non-continuous	
Trailer tongue weight	75kg	165lbs
Maximum rated axle capacity	1200kg	2645lbs
Insulation rating	Nil	
Weight	1160kg	2609lbs

■ Engine Specifications

Engine Make	Honda (gasoline)
Model	GX 160
Engine type	4-stroke, over head valve, 1 cylinder
Displacement	163 cm ³ (9.9 cu-in)
Bore x Stroke	68 x 45 mm (2.7 x 1.8 in)
Max. output	4 kW/4,000 rpm
Max. torque	1.1 kg-m (8.0 ft-lb)/ 2500 rpm
Fuel	gasoline
Fuel Grade	automotive gasoline (unleaded or lowleaded preferred)
Fuel consumption	230 g/PSh
Cooling system	Forced air
Ignition system	Transistor magneto
PTO shaft rotation	Counterclockwise
Oil Capacity	0.60 litres (0.60 US qt, 0.53 Imp qt)
Oil Grade	SAE 10W-30

General Specifications

■ Working Envelope



■ 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 14 of this chapter). This information is found on the serial number placard.

■ Manual Organization

The Repair Parts Manual consists of five 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 MHP12/34J.

□ 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

Components	Service Required
Engine fuel level	Check fuel tank level (full)
Fuel tank cap	Visually inspect (installation, tightness)
Engine oil level	Check oil level (between dipstick lines)
Fuel leaks	Visually inspect (hoses, connections, etc.)
Wiring harnesses	Visually inspect (installation, condition)
Battery terminals	Visually inspect (no corrosion)
Battery fluid level	Check fluid level (1/4" or 6 mm below filler neck)
Hydraulic oil	Check fluid level (between lines on tank)
Hydraulic oil leaks	Visually inspect (hoses, tubes)
Tires and wheels	Visually inspect (condition)
Bolts and fasteners	Visually inspect (looseness)
Structural damage and welds	Visually inspect (weld cracks, dents)
Lanyard anchor points	Visually inspect (condition)
Platform gate	Visually inspect (operation)
Platform guardrails	Visually inspect (condition)
Air filter	Check condition
Control switches	Actuate and inspect (operation)
Emergency lower	Check operation (causes correct motion)
Placards and decals	Visually inspect (installation, condition)
Optional items	Check operation
Pins and pin keepers	Visually inspect (installation, condition)

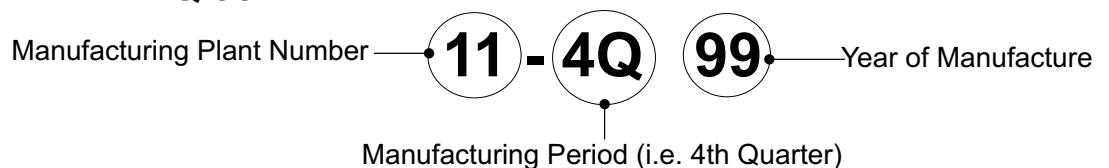
■ Hydraulic Hose Age

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**



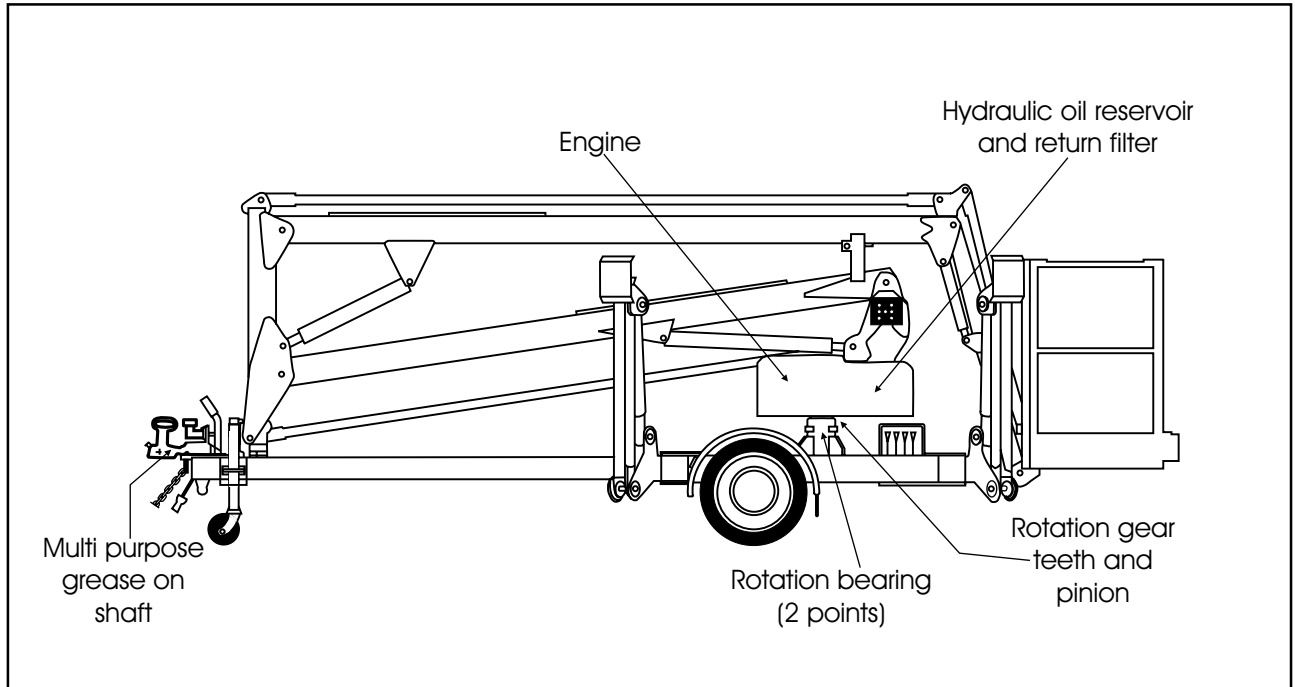
Maintenance Information

■ 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 and decals inspection	Inspect using drawing and parts listing in section 1 (repair parts)	Replace any missing or unreadable decals/placards
Rotation bearing	Lubricate	Conoco Super Sta #2 Above 32° Mobilgrease CM-P Below 32° Mobilgrease CM-L
Rotation bearing teeth & pinion	Lubricate	Conoco Super Sta #2 Above 32° Mobilgrease CM-P Below 32° Mobilgrease CM-L
Platform rotator	Check smooth operation	Repair or replace if not working properly
Platform controller	Check smooth operation & speeds	
Battery	Check specific gravity	1.260/1.275 at 27° C.
Hydraulic return filter	Check condition	Replace if dirty
Engine RPM	Check for proper engine RPM (2500)	See engine manufactures owner's manual
Engine oil	Replace per engine owners manual	

■ 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	Castrol AWS 32
Hydraulic return filter	Replace	After 1st. 50 hours, thereafter at recommended interval
Hydraulic pressures	Check pressures	



The illustration locates the lubrication points of the MHP12/34J.

■ 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.

Rotation bearing

Rotation bearing. Pressure gun lubricate bearing at recommended interval using lubricant as outlined in the maintenance schedule. Rotate while lubricating. Lubrication fitting is located on the front plate of the turntable.

Rotation gear teeth and pinion

Rotation gear teeth and pinion. Gear teeth and gear box pinion should be lubricated with a multi purpose grease.

Engines

Engine. Refer to the engine manufacturer's instruction manual or consult your local engine service representative if engine adjustments or repairs are needed. The engine **MUST** be operated in accordance with manufacturer's instructions and serviced at recommended intervals.

Hydraulic oil reservoir

Hydraulic oil reservoir. The fluid level should be kept between the low and full marks on the sight gauge indicator and should be checked with all cylinders fully retracted and the platform in stowed position.

The interior of the reservoir should be wiped out and cleaned each time the hydraulic oil is changed.

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.

Maintenance Information

If questions still remain, contact Snorkel for further information.

□ Return filter

Return filter. On MHP12/34J models, the hydraulic oil return filter is mounted in 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 is equipped with an (optional) hydraulic pressure gauge to indicate the filter element condition. A by-pass relief within the filter base is provided and is set to by-pass at 25 PSI. If pressure readings are above 25 PSI, the filter should be changed.

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

The filter condition indicator is accurate only when the engine is running at maximum RPM and pump is discharging maximum flow, which occurs only during full speed. This requires that the indicator be observed while the unit is in motion. Oil temperature should be at least 70 degrees.

▲ CAUTION

Use extreme caution while observing the condition indicator because of the motion of the boom. The condition indicator is best observed from outside of the tract of the vehicle wheels to avoid a possible unsafe condition.

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

■ Battery

Battery. 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.

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.

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

■ 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



Maintenance Information

■ 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 - 11447A
- ✓ Repair Parts Manual
Snorkel part number - 11447B

□ 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

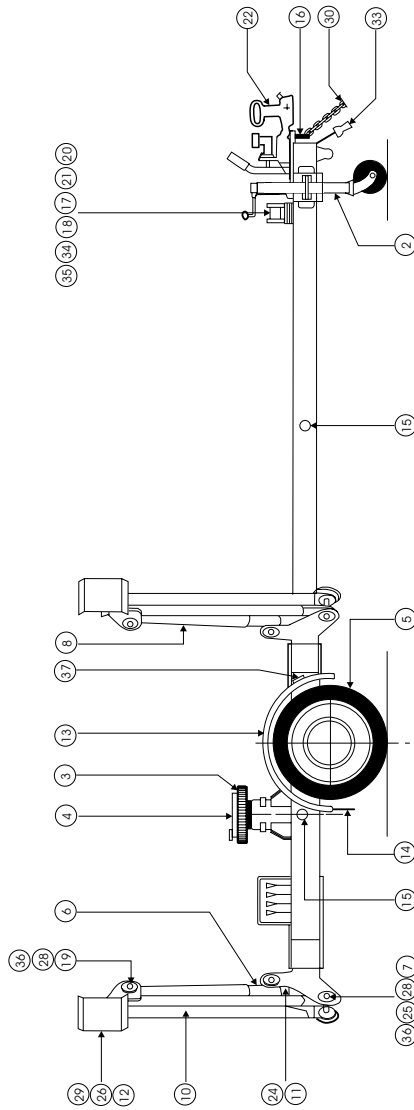
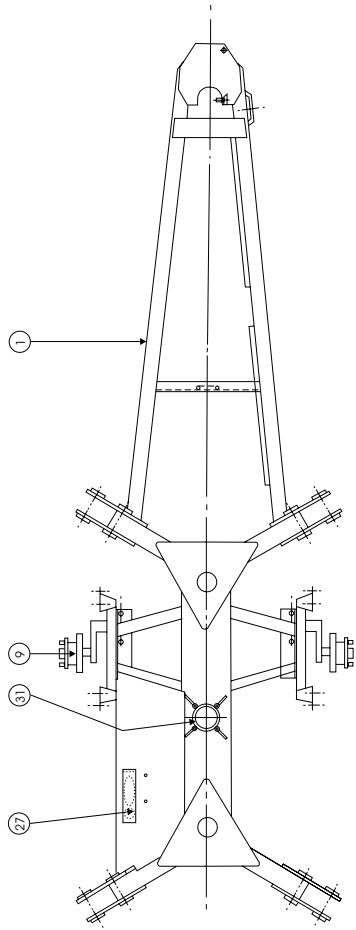
Snorkel dealer or distributor

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

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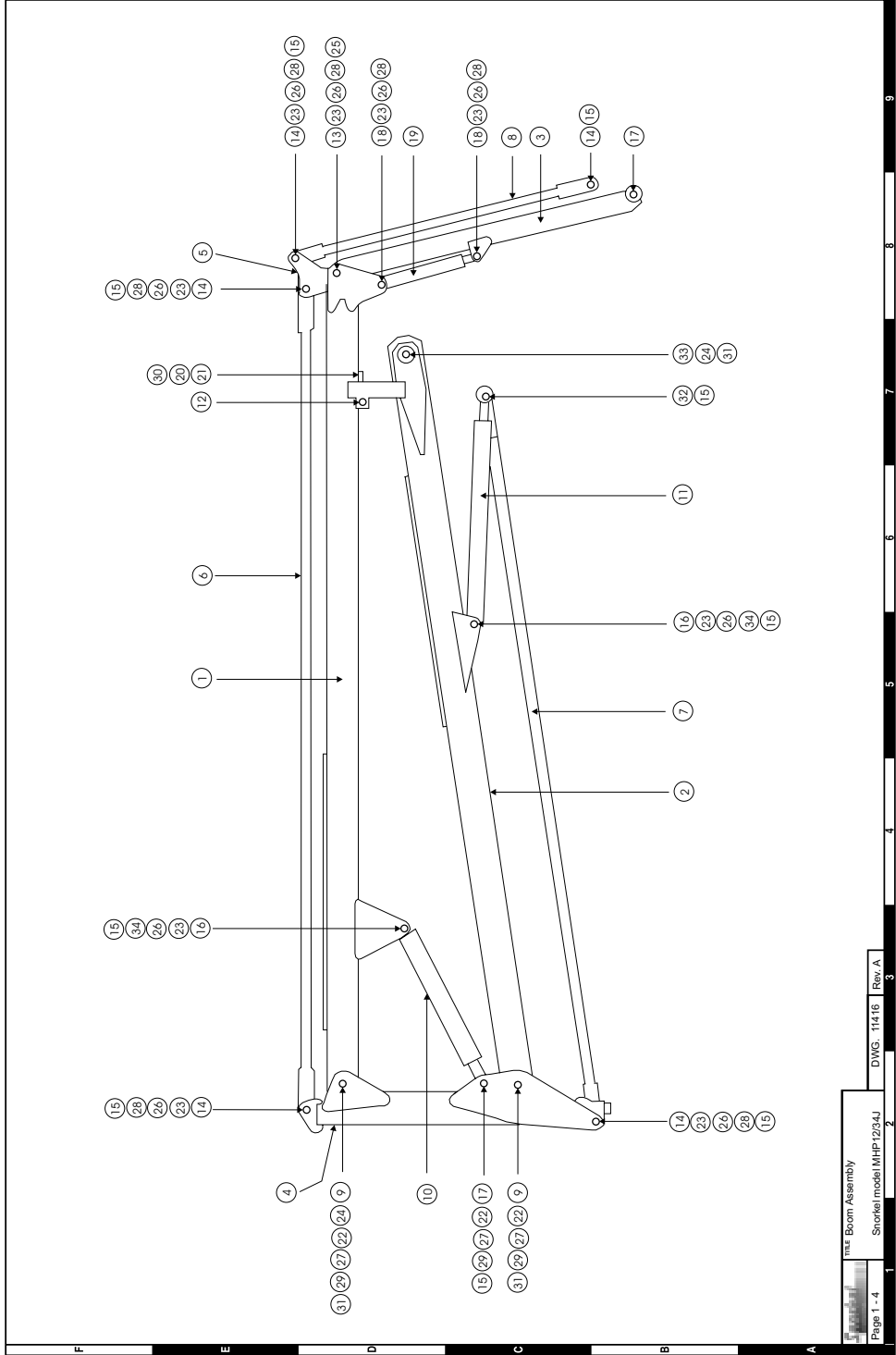
Trailer assembly

Item	Part No	Qty	Description
1.	11428	1	Chassis weld, MHP12/34J
2.	11402-2	1	8" Jockey wheel
3.	9939-1	1	Worm gear weld
4.	11459	1	Slew stop weld
5.	11491A	2	Wheel and tyre assembly
6.	11103A	4	Leg cylinder assembly
7.	11110	8	Pin-leg
8.	11450-1	4	Cylinder guard
9.	11570	1	Axle,hydraulic disc braked
10.	11432	4	Leg weld - Up to August 2001
	11431	4	Leg weld - After August 2001
11.	10990	4	Cover, pressure switch
12.	9846	4	Foot plate weldment
13.	11585	2	Roundform mudguard weldment
14.	11585-3	2	Mudflap, roundform mudguard
15.	9875-1	4	Reflector amber
16.	10993-1	1	Hammerlock
17.	11112-3	1	Pin, boom lock
18.	11143-2	2	Wear pad
19.	11188	4	Pin - Up to August 2001
	11837	4	Pin - After August 2001
20.	11428-22	1	Boom rest weld
21.	11428-26	2	Profile shim
22.	11572	1	Tow coupling, hydraulic 50mm
24.	11457	1	Valve assy, stabiliser
25.	11492-1	12	Lock tab M62
26.	60000-036	8	Pin, 1½ x ¼ roll pin pc
27.	1273	1	25465-6 level bubble
28.	8628	12	Pin keeper 6mm
29.	9948	4	Pin
30.	9973	0.700 LM	Chain safety 10mm transport
31.	1549-086	2	Bush
33.	1286-002	1	Aust trailer plug 7pin h40907 (Australia only)
34.	1771-1	2	Linch pin
35.	10054	1	Chain 3mm zinc hardware
36.	3610-06016	24	Bolt M6 x 16 G8.8
37.	9875-2	2	Reflector clear



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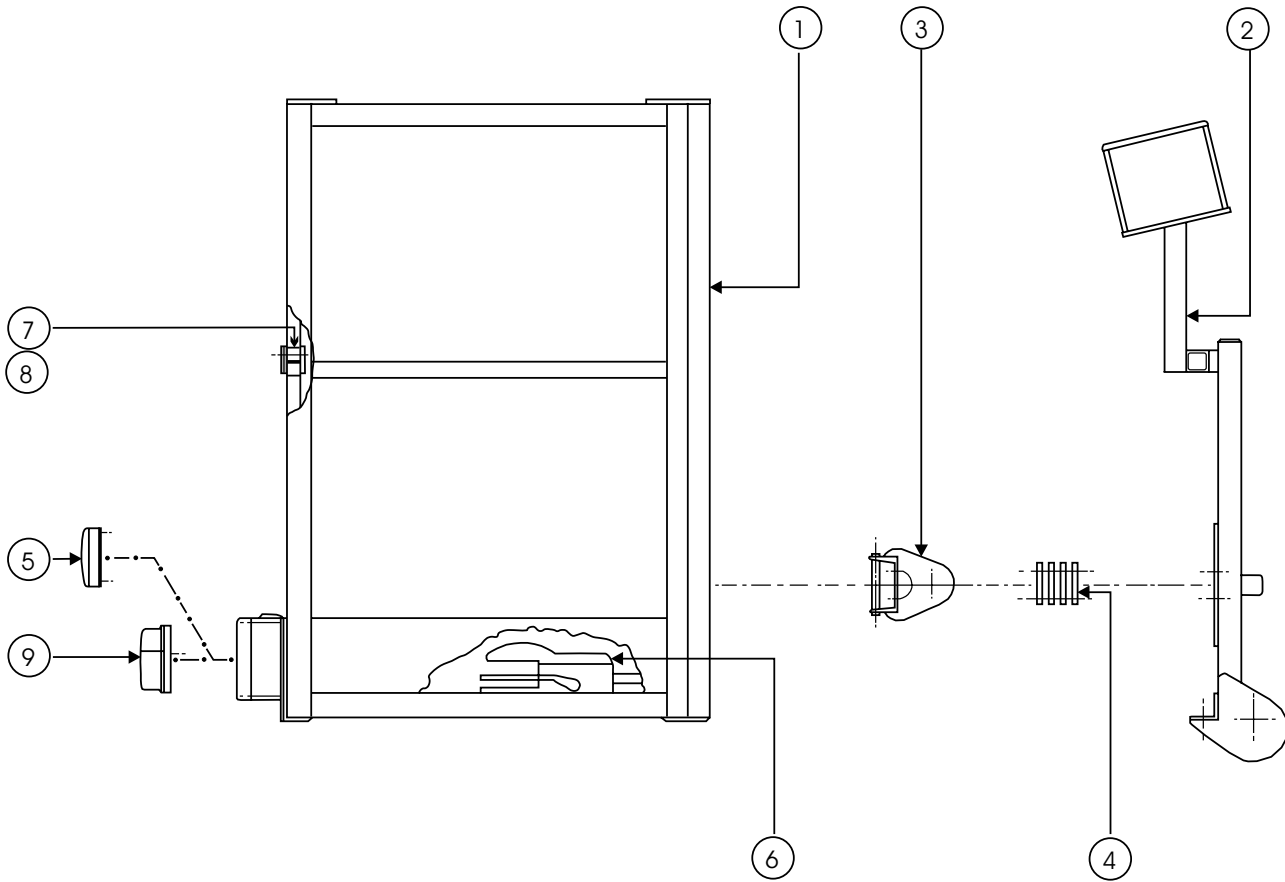


Boom assembly

Item	Part No	Qty	Description
1.	11423	1	Boom weldment, upper
2.	11424	1	Lower boom weldment
3.	11409	1	Flyboom weld
4.	11404	1	Level turret weld
5.	11405	1	Level quadrant, flyboom
6.	11425	1	Level rod weld, upper
7.	11426	2	Level rod weld, lower
8.	11410	1	Level rod weld, flyboom
9.	11449	2	Pin
10.	11458A	1	Cylinder assembly
11.	11504A	1	Lift cylinder assembly
12.	11112	1	Pin, boom lock
13.	11110	1	Pin
14.	9985	5	Pin, level rod
15.	9990	22	Thrust washer, white
16.	9987	2	Pin, ram
17.	9792	2	Pin
18.	9793	2	Pin
19.	11623A	1	Flyboom cylinder assembly
20.	11253	1	MTG pad, magnetic switch
21.	11294	1	Boom switch kit, magnetic
22.	8626	3	Pinkeeper 10mm
23.	8628	12	Pinkeeper 6mm
24.	3624-4	12	Bush
25.	3624-3	12	Bush
26.	11492-1	12	Lock tab M6
27.	11492-3	3	Locktab M10
28.	3610-06016	10	Bolt M6 x 16 G8.8
29.	3610-10020	3	Bolt M10 x 20 G8.8
30.	11143-2	2	Wear pad
31.	9990-1	8	Nylon washer
32.	11448	1	Pin
33.	9989	1	Pin boom to column
34.	3610-06012	2	Bolt M6 x 12 G8.8

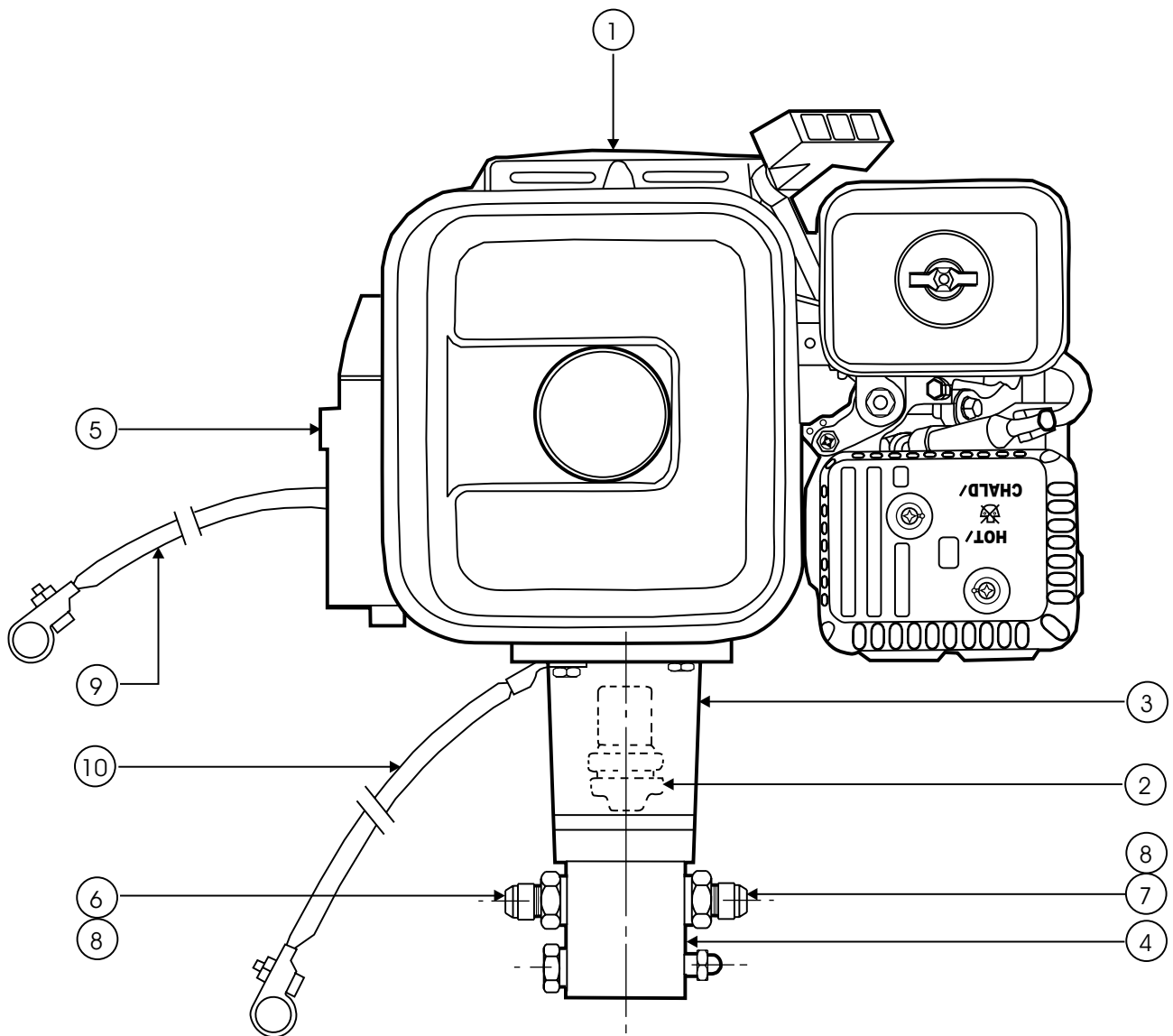
Platform assembly

Item	Part No	Qty	Description
1.	11429	1	Platform weld
2.	11455	1	Basket frame weld
3.	11456	1	Bracket weld, frame mount
4.	11456-4	As Req	Level spacer
5.	11461	1	Light, number plate
6.	302-0021	1	Foot switch
7.	11429-20	1	Gravity gate
8.	11429-25	2	Bush, gravity gate
9.	9876-4	2	Tail light



Motor assembly

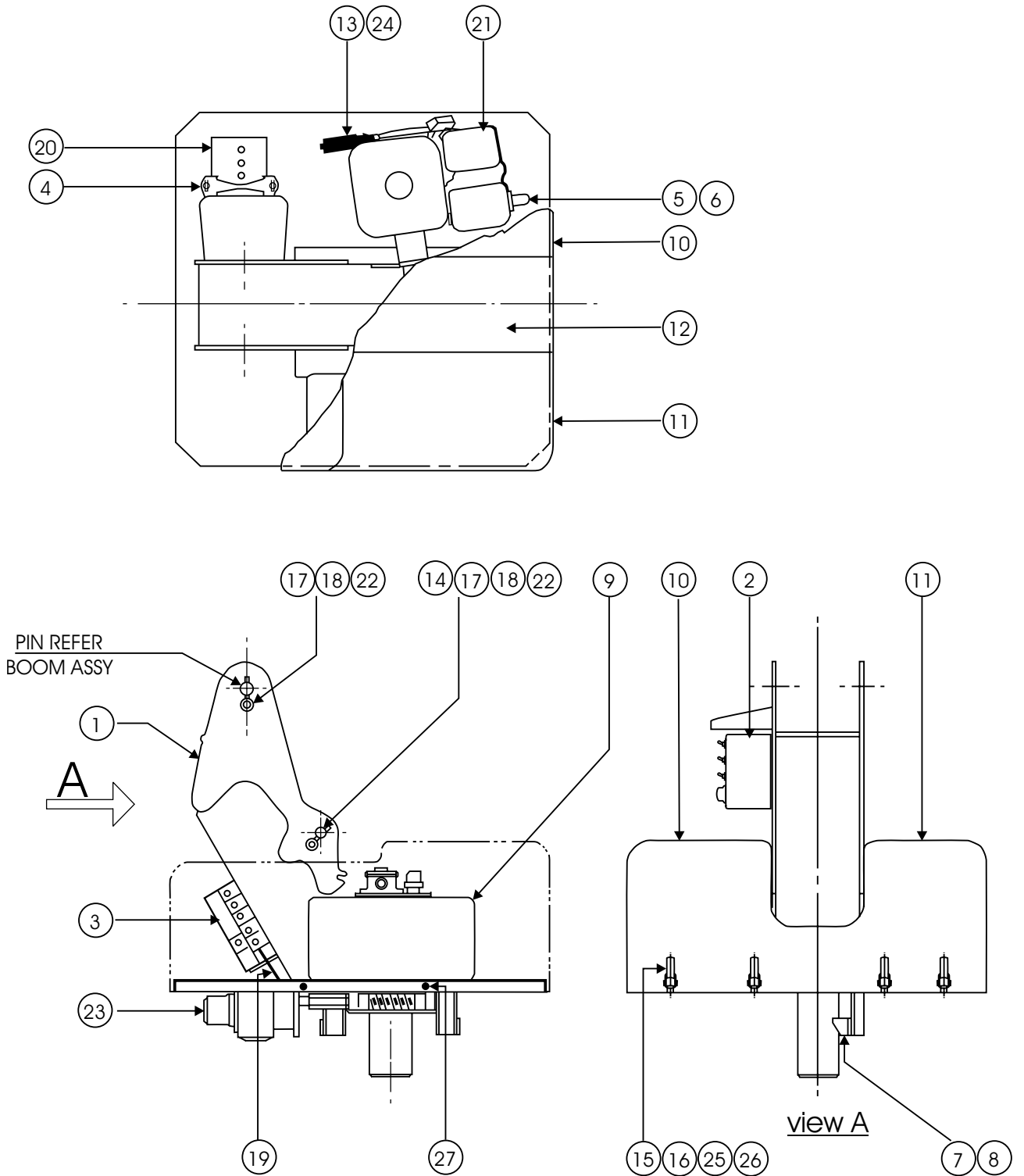
Item	Part No	Qty	Description
1.	1171-4	1	Honda engine GX 160
2.	1880-001	1	Coupling assy
3.	10417	1	Bell housing (Metric shaft)
4.	1659	1	Pump
5.	1171-4-6	1	Starter motor
6.	7013-003	1	Fitting
7.	7013-004	1	Fitting
8.	7084-001	2	Dowty seal
9.	1650-030	1	Battery lead
10.	1650-021	1	Earth lead



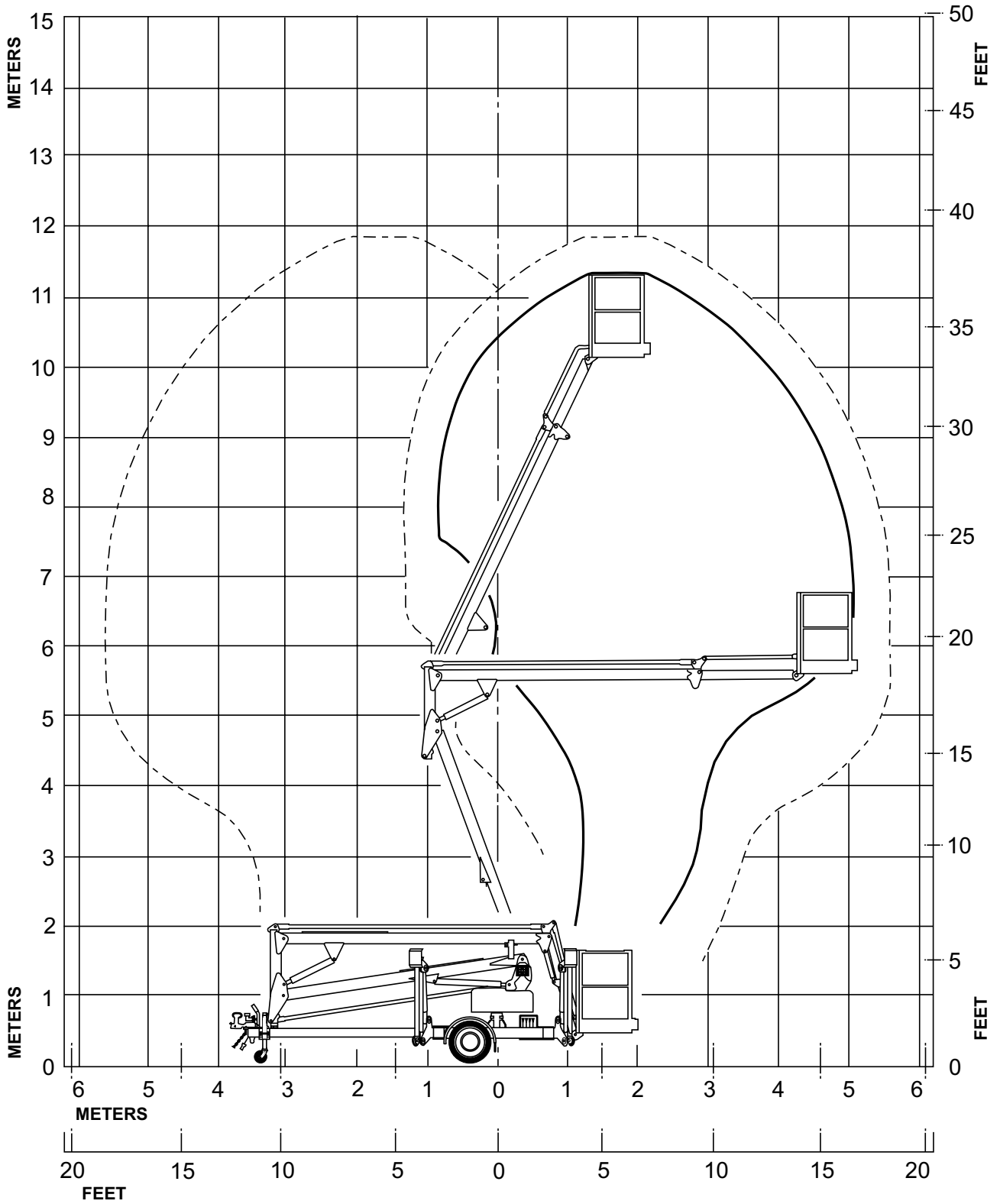
Column assembly

Item	Part No	Qty	Description
1.	11427	1	Column weld, MHP12/34J
2.	11406	1	Lower control box assembly
3.	11415A	1	Valve assembly
4.	10268-2	1	Battery bracket, short
5.	10350	1	Exhaust deflector
6.	10350-4	1	Exhaust bracket
7.	11427-13	1	Column retainer, C/W
8.	11427-14	1	Column retainer, AC/W
9.	11430A	1	Oil tank assembly
10.	11433	1	Cover L/H vented
11.	11434	1	Cover R/H
12.	11435	1	Cover, centre
13.	11445	1	Choke assembly
14.	11448	1	Pin
15.	11462	8	Latch
16.	11463	8	Strike plate
17.	3610-10020	2	Bolt M10 x 20 G8.8
18.	11492-3	2	Locktab M10
19.	11505	1	Harness, control valve
20.	1288	1	Battery type 126
21.	1622-GX160 12G	1	Engine assy MHP12G, GX160
22.	8626	2	Pinkeeper 10mm
23.	9940A	1	Slew motor and worm assy, Aust
24.	11455-1	1	Choke rod
25.	11433-1	8	Bracket, fibreglass cover MTG
26.	11433-2	8	Rubber pad, fibreglass cover MTG
27.	7895	4	Anti-rattle button

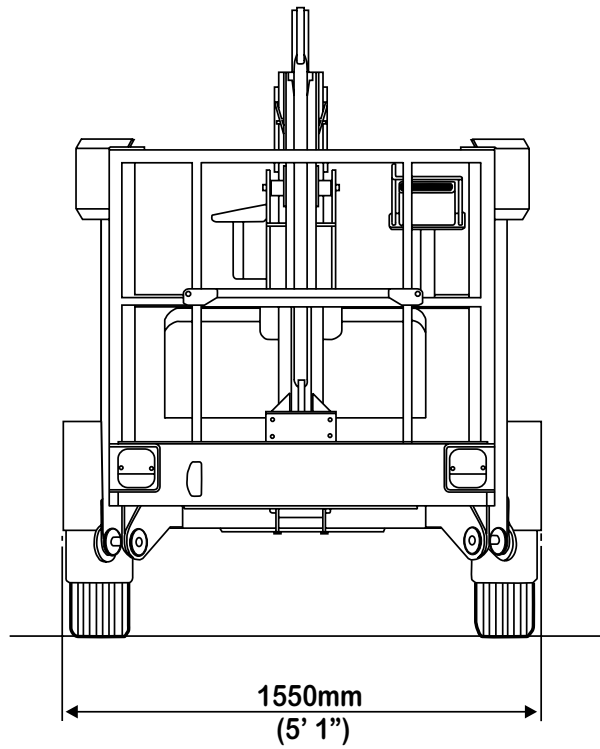
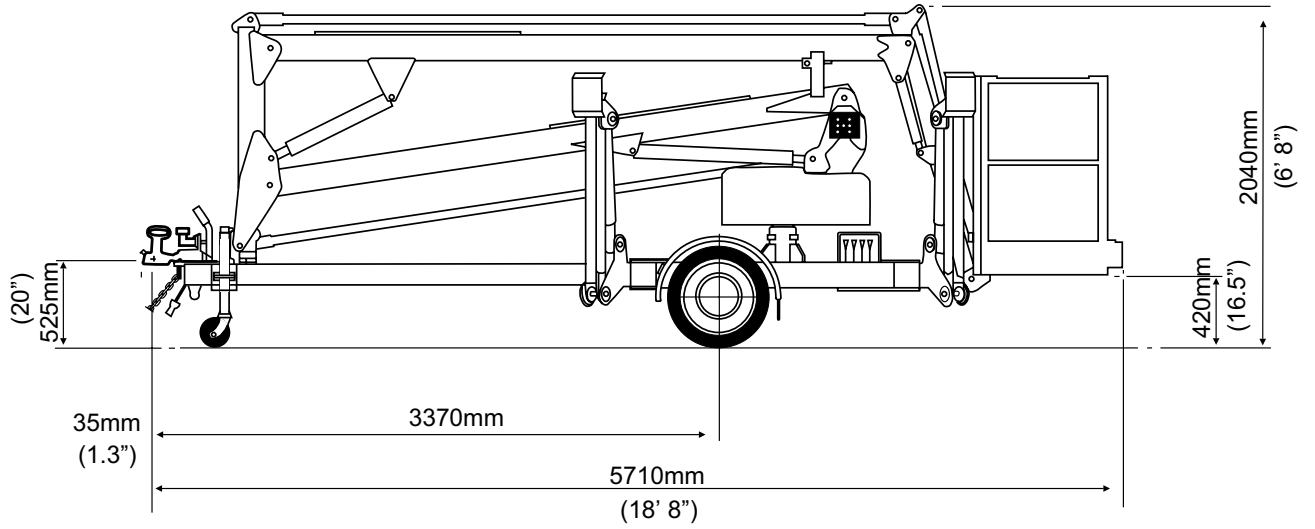
Column assembly illustration



Working area illustration



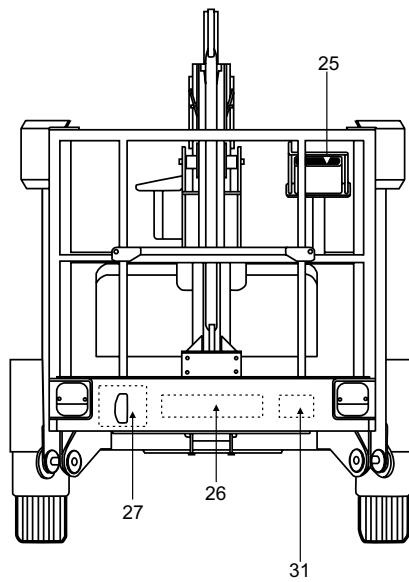
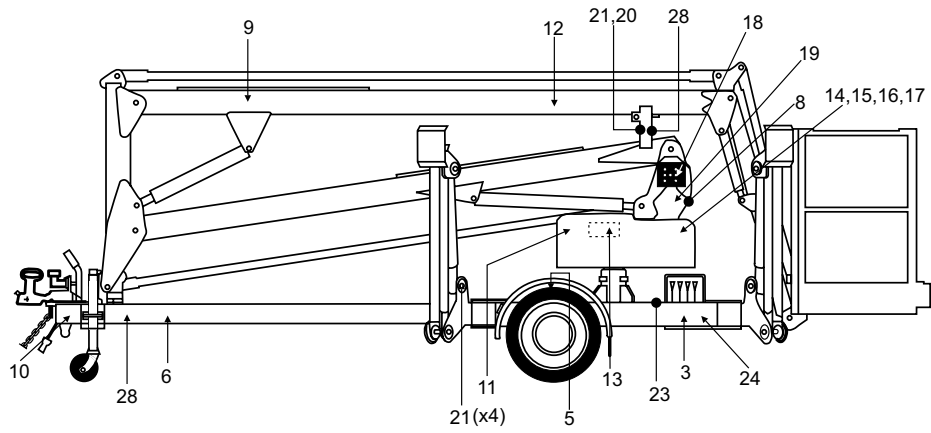
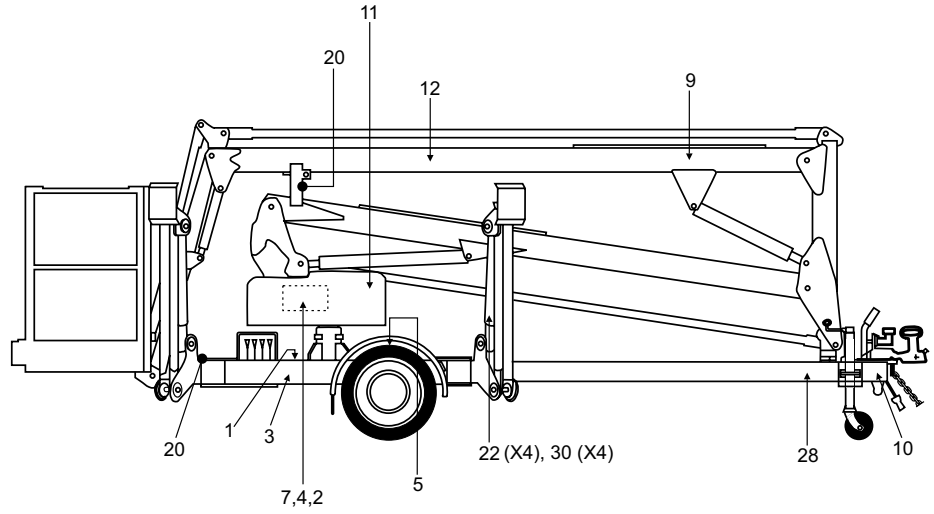
Stowed unit dimension illustration



Placards and decals installation

Item	Part No	Qty	Description
1.	9999	1	Serial number plate
2.	451776	1	Decal, hydraulic fluid level
3.	10817-2	2	Decal, Snorkel (White)
4.	302950	1	Decal, hydraulic oil level
5.	7856-45	2	Decal, tyre pressure
6.	7855	1	Decal, towing speed
7.	9207	1	Decal, hydraulic oil
8.	0070420	1	Decal, emergency lower
9.	560239	2	Decal, Snorkel
10.	302559	2	Decal, pinch point
11.	10817-4	2	Decal, Snorkel (Orange/black)
12.	11227-34	2	Decal, MHP12/34J
13.	007-1925	1	Decal, gasoline
14.	300699	1	Decal, operator checklist
15.	0130025	1	Decal, warning
16.	0323897	1	Decal, danger
17.	476706	1	Decal, danger explosive gas
18.	11420	1	Decal, lower control box
19.	0323899	1	Decal, electrocution hazard
20.	0150602	4	Decal, descending boom
21.	451986	5	Decal, limit switches
22.	9223-3	8	Decal, chevron
23.	10968-1	1	Decal, outrigger control
24.	8945	1	Decal, vin plate
25.	11420-1	1	Decal, upper controls
26.	2025-200	1	Decal, safe working load
27.	99228	1	Decal, caution
28.	1772-002K	2	Decal, boom lock pin

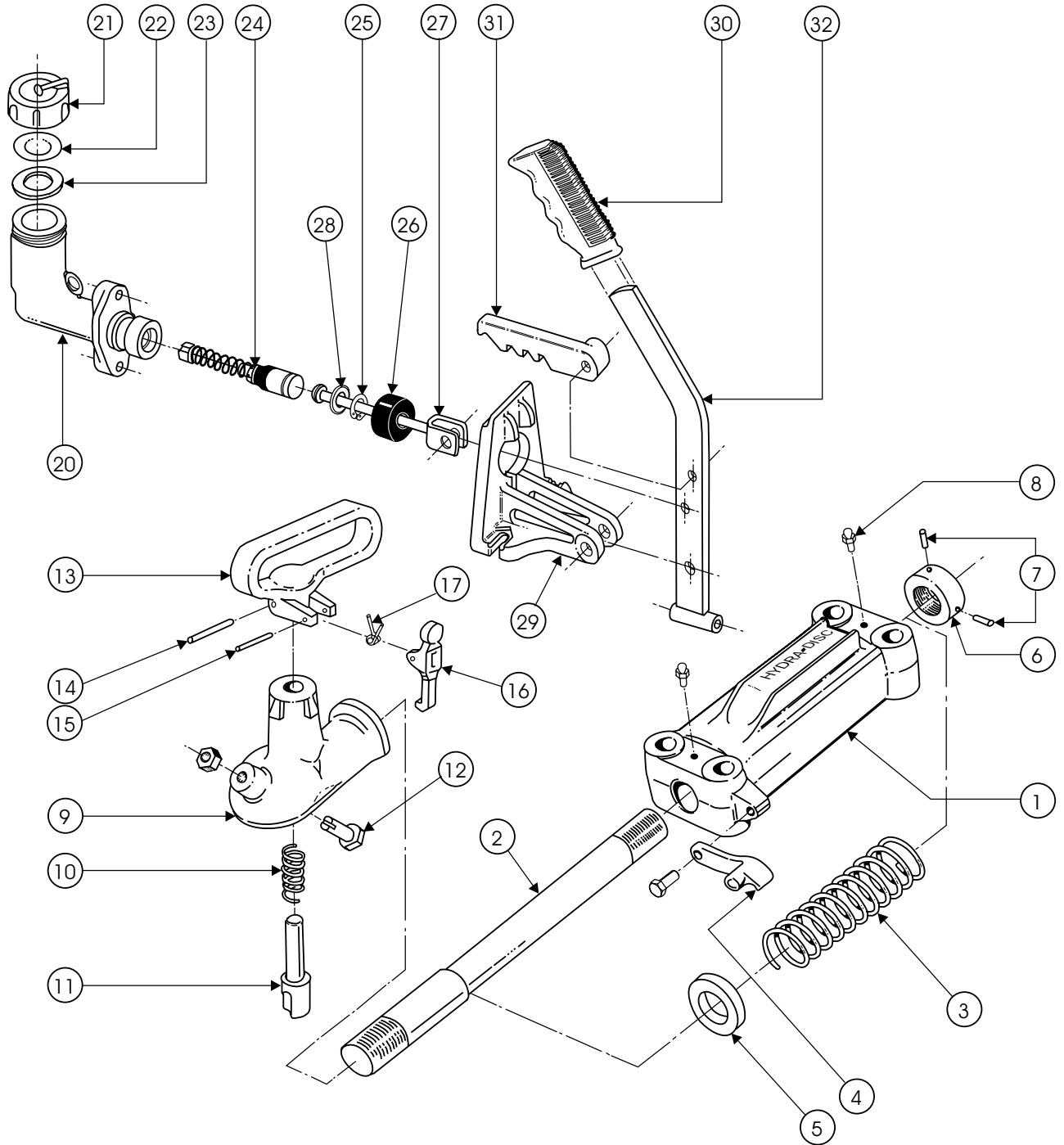
Placards and decals installation



Tow coupling hydraulic

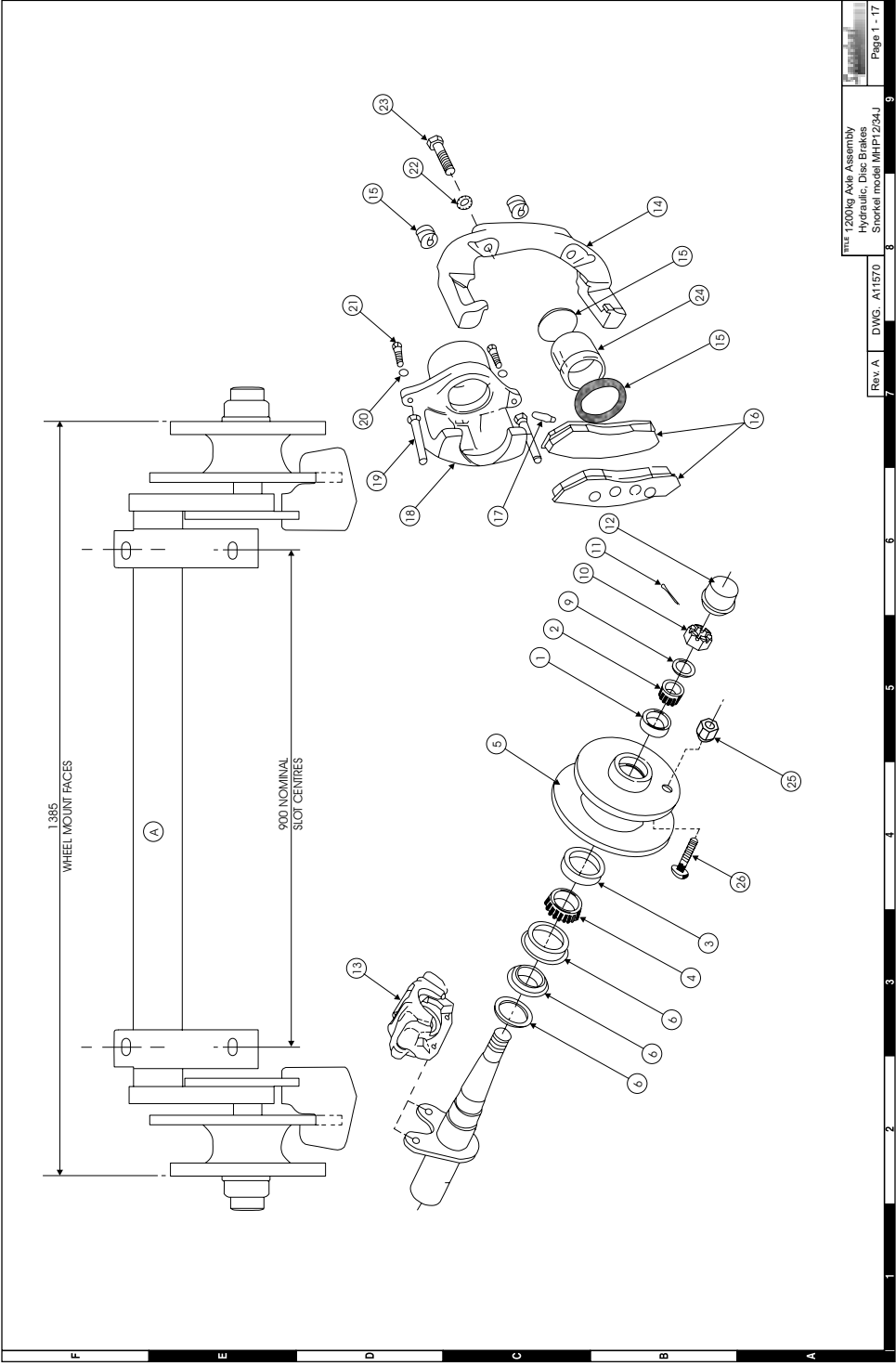
Item	Part No	Qty	Description
	11572	1	Coupling assembly, TC40HM/50mm
1.	11572-1	1	Body
2.	11572-2	1	Main shaft and head assembly
3.	9946-15	1	Main shaft spring
4.	9946-13	1	Reverse lock
5.	11572-3	1	Thrust ring
6.	9946-17	1	Collar
7.	60015-017	2	Grub screw 1 ¼" x ¼" BSW
8.	2030-001	2	Grease nipple
9.		Ref	Refer item 2
10.	9946-11	1	Lock pin spring (Includes 11)
11.		1	Lock pin 1 7/8"
12.	9946-10	1	Adjusting screw M16
13.	9946-8	1	Handle assembly (Including 14, 15, 16, 17)
14.		1	Tension pin
15.		1	Tension pin
16.	9946-9	1	Trigger assembly (Including 15, 16, 17)
17.		1	Trigger spring
20.	10053-4	1	Master cylinder
21.	10053-1	1	Plastic cap (Includes 22, 23)
22.		1	Deflector
23.		1	Gasket
24.	10053-8	Ref	(Refer) Repair kit (Includes 25)
25.		1	Circlip
26.	10053-7	1	Rubber boot (Includes 27, 28)
27.		1	Shaft, master cylinder
28.		1	Washer
29.	11572-4	1	Bracket, handle mounting
30.	1038-6	1	Handgrip
31.	11572-5	1	Latch, handle
32.	11572-6	1	Handle

Tow coupling hydraulic, illustration



1200kg axle

Item	Part No	Qty	Description
A.	11570	Ref	Axle assembly
1.	9922-1	2	Bearing cup
2.	9922-4	2	Bearing cone
3.	9922-2	2	Bearing cup
4.	11027-2	2	Bearing cone
5.	11570-1	2	Hub assembly (Includes 1, 5, 3, 25, 26)
6.	11570-2	Ref	Seal kit, hub
9.	60030-075	2	Flat washer ¾" I.D.
10.	60021-092N	2	Castle nut ¾" U.N.F.
11.	60038-043N	2	Split pin
12.	9922-7	2	Grease cap
13.	2045-001	Ref	Caliper assembly, plated, no pads
14.	9945-9	2	Anchor plate
15.	2045K	Ref	Seal kit, caliper
16.	11570-3	4	Brake pads
17.	2045-003	2	Bleed screw
18.	2045-13	2	Housing
19.	11027-6	4	Guide pin
20.	3605-08	4	Spring washer M8
21.	3610-08030	4	Set screw M8 x 30 HT
22.	60005-013	2	Lockwasher
23.	3610-12035	2	Set screw M12 x 35 HT
24.	11027-11	2	Piston
25.	11027-12	10	Wheel nut, .437" UNF 7/16"
26.	11027-13	10	Wheel stud, .437" UNF 7/16"



7200kg Axle Assembly
 Hydraulic Disc Brakes
 Stocked model MHP1234J

Rev. A DWG. A11570

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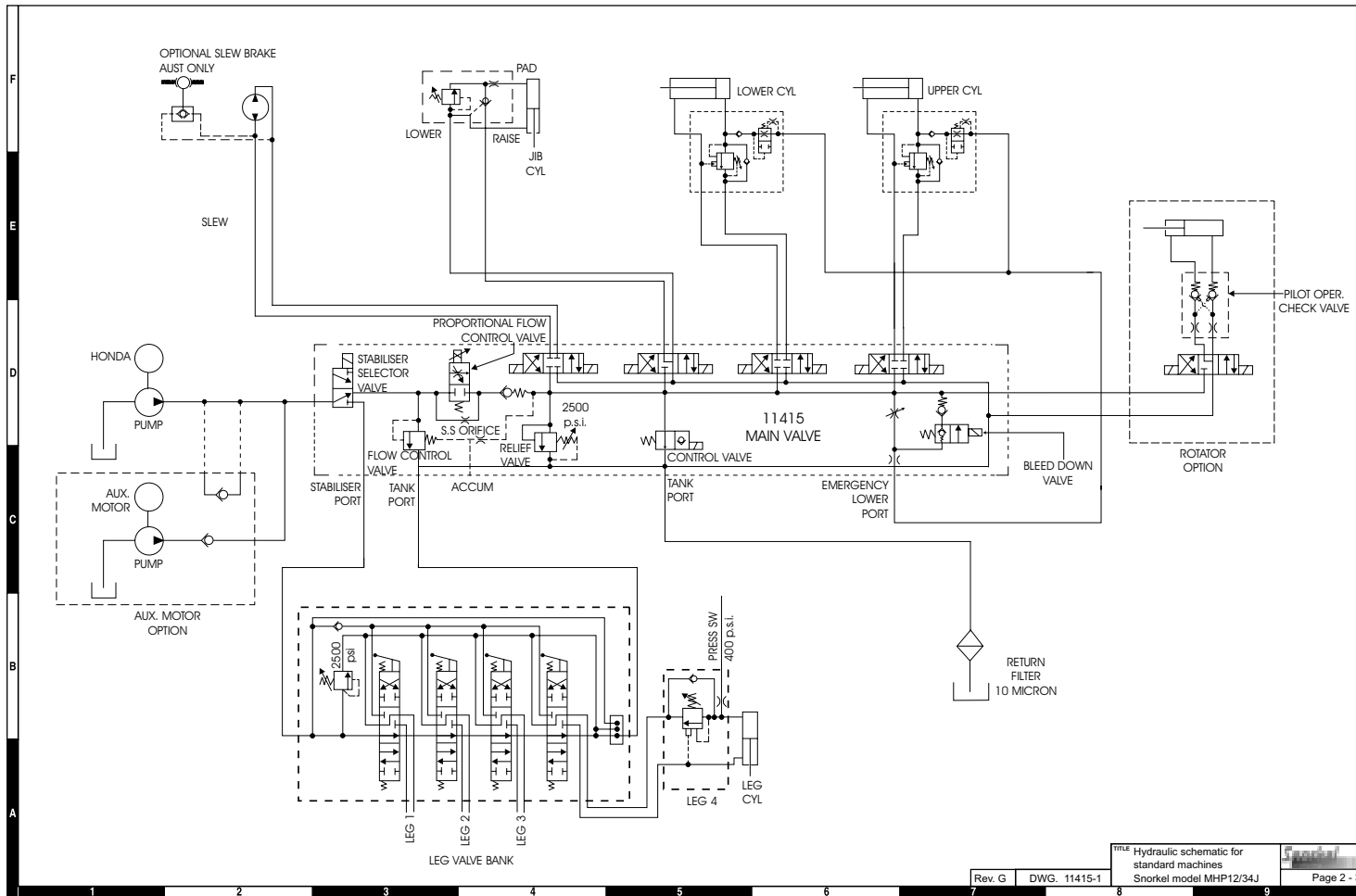
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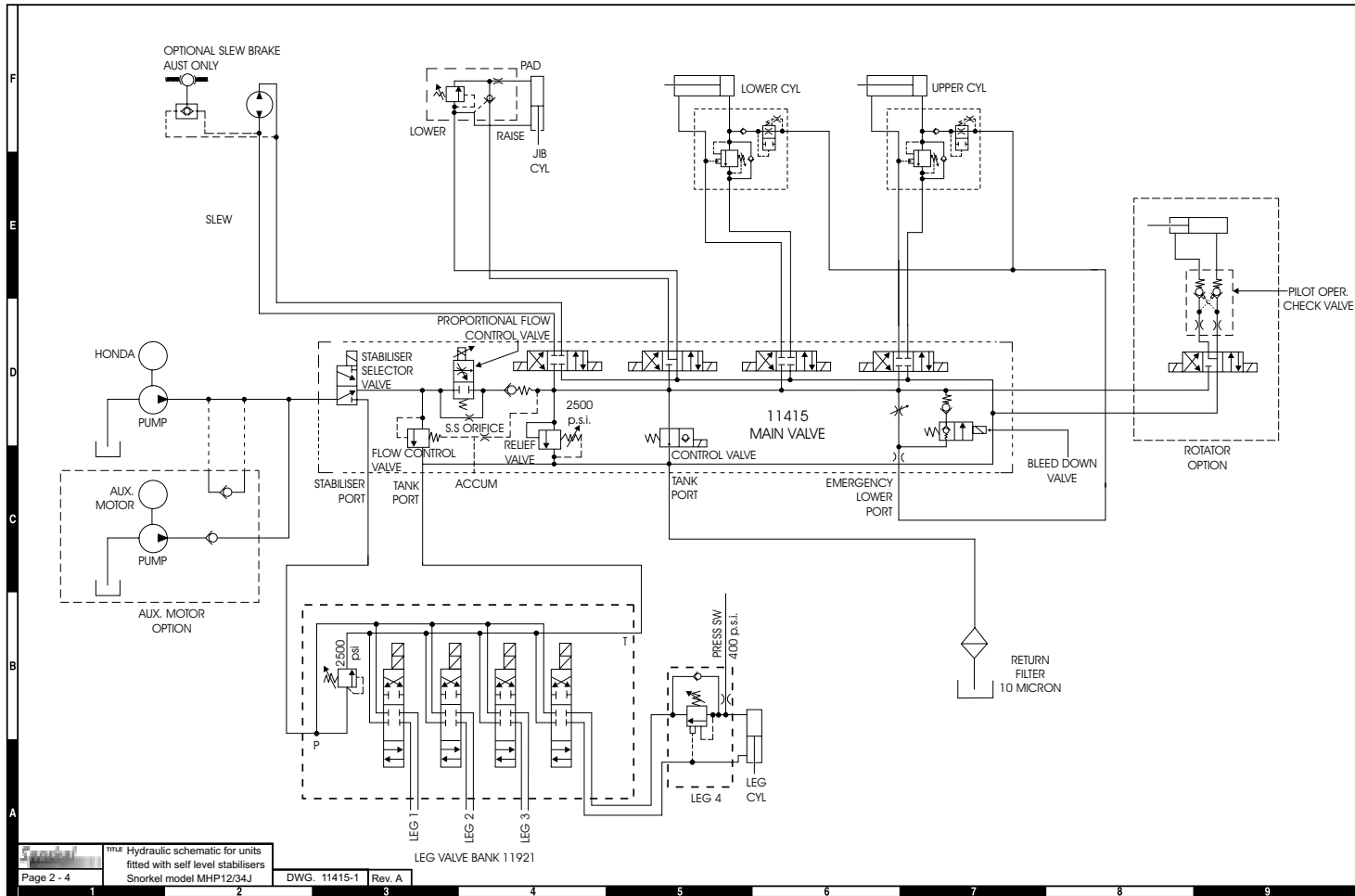
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Main control valve - sheet 2	2-5
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Stabiliser leg cylinder assembly	2-9
Hydraulic oil tank assembly	2-10
Hydraulic oil tank assembly (2)	2-11



Rev. G DWG. 11415-1

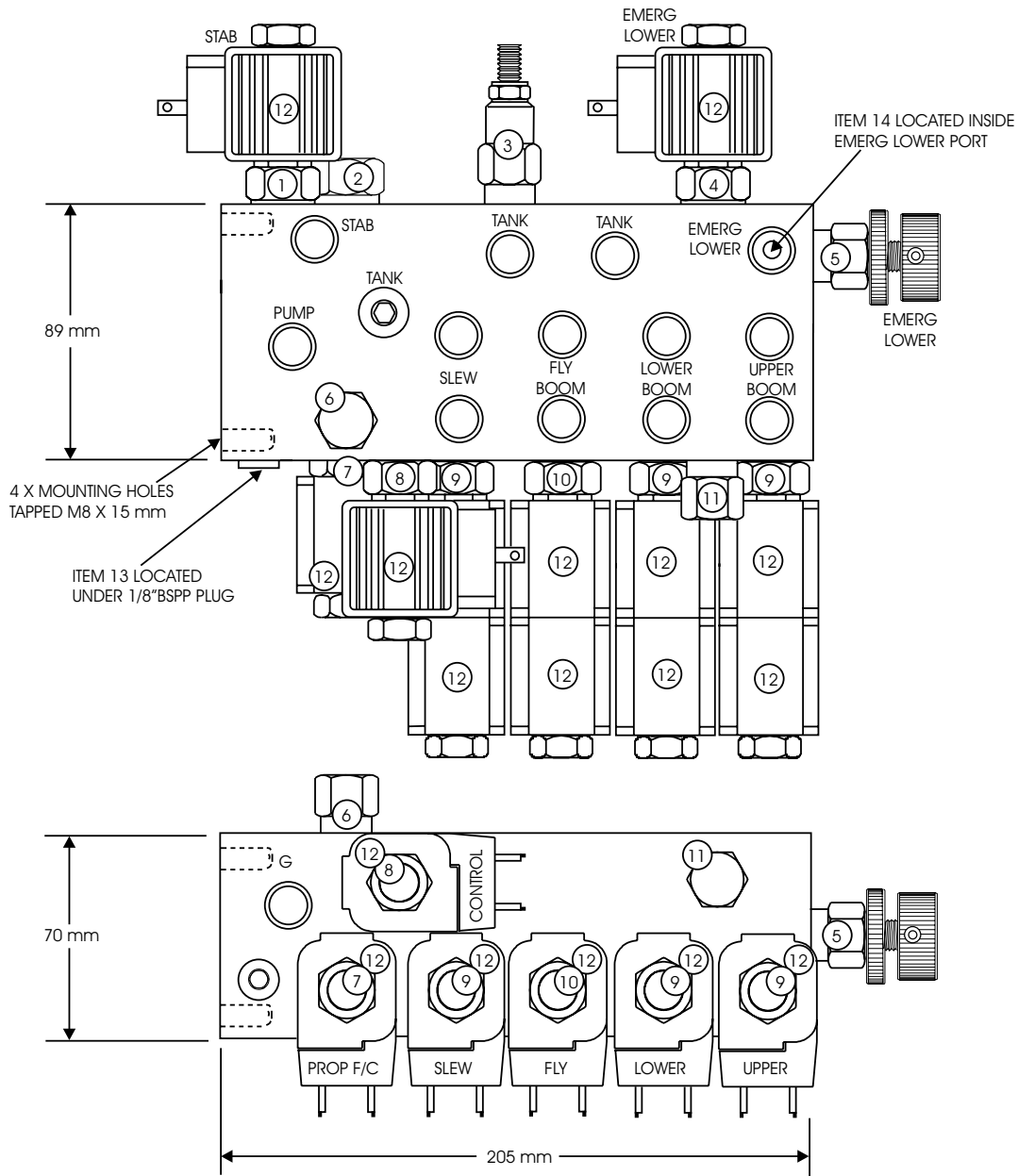
Hydraulic schematic for standard machines
Snorkel model MHP12/34J

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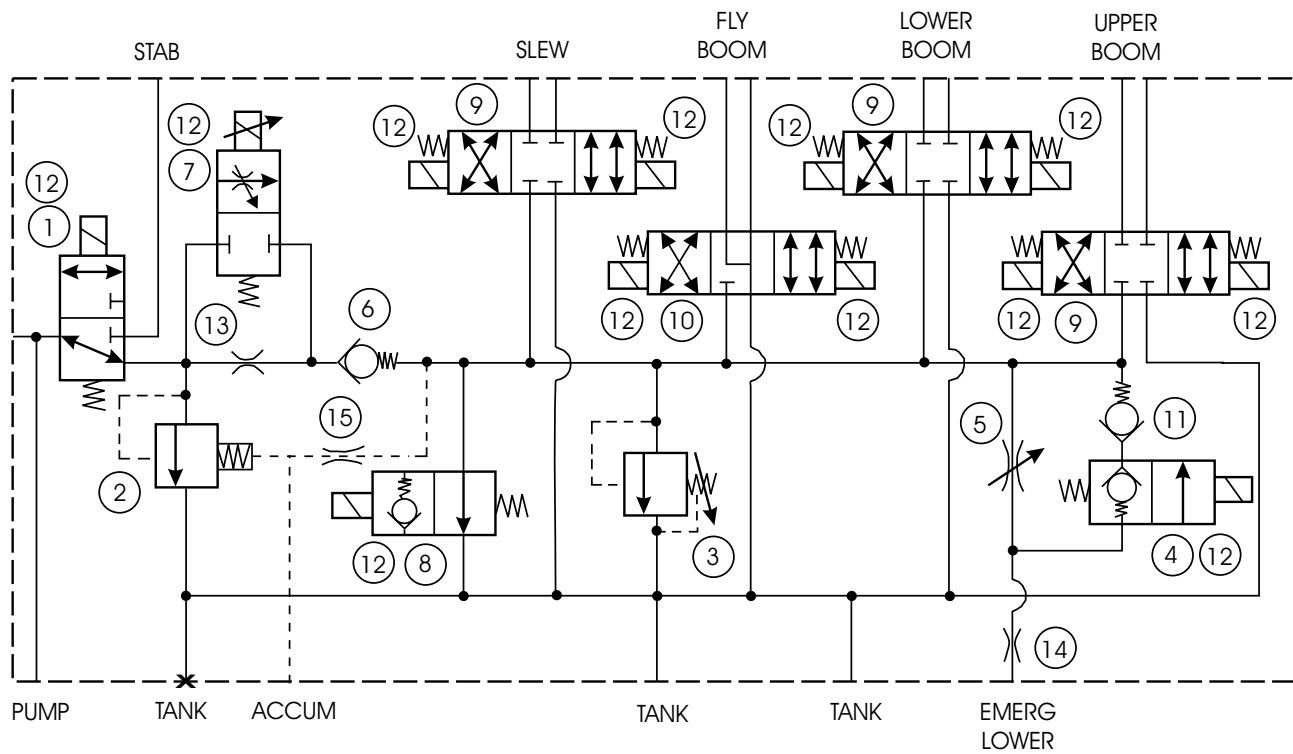
Main control valve - sheet 1

Item	Part No	Qty	Description
1.	11415-1	1	Stabiliser solenoid
2.	11415-2	1	Flow compensator
3.	11415-3	1	Main relief valve 2500 psi
4.	11415-4	1	Solenoid emergency lower
5.	11415-5	1	Manual emergency lower
6.	11415-6	1	Check valve 4 psi
7.	11415-7	1	Proportional flow control
8.	11415-8	1	Control solenoid (Normally open)
9.	11415-9	3	Solenoid valve, closed centre
10.	11415-10	1	Solenoid valve, floating centre
11.	11415-6	1	Check valve 4 psi
12.	11415-11	12	Solenoid coil, 12 volt
13.	11415-12	1	Minimum flow setting orifice
14.	11415-12	1	Emergency lowering orifice



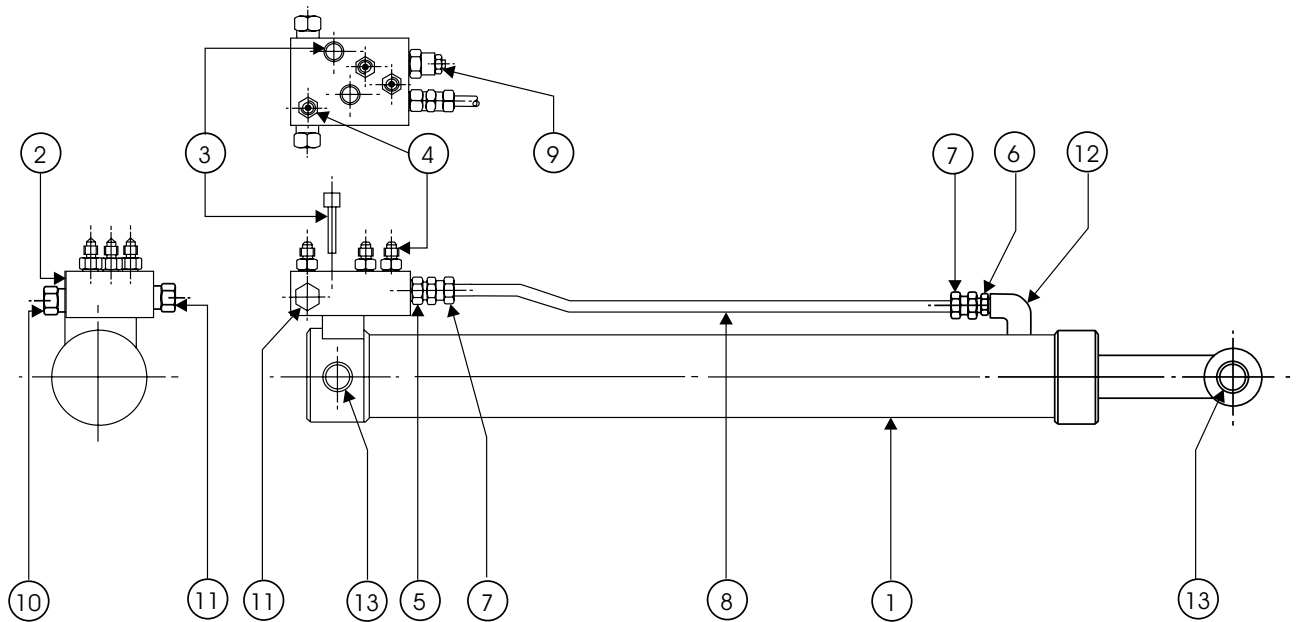
Main control valve - sheet 2

Item	Part No	Qty	Description
1.	11415-1	1	Stabiliser solenoid
2.	11415-2	1	Flow compensator
3.	11415-3	1	Main relief valve 2500 psi
4.	11415-4	1	Solenoid emergency lower
5.	11415-5	1	Manual emergency lower
6.	11415-6	1	Check valve 4 psi
7.	11415-7	1	Proportional flow control
8.	11415-8	1	Control solenoid (Normally open)
9.	11415-9	3	Solenoid valve, closed centre
10.	11415-10	1	Solenoid valve, floating centre
11.	11415-6	1	Check valve 4 psi
12.	11415-11	12	Solenoid coil, 12 volt
13.	11415-12	1	Minimum flow setting orifice
14.	11415-12	1	Emergency lowering orifice
15.	11415-13	1	Soft start orifice



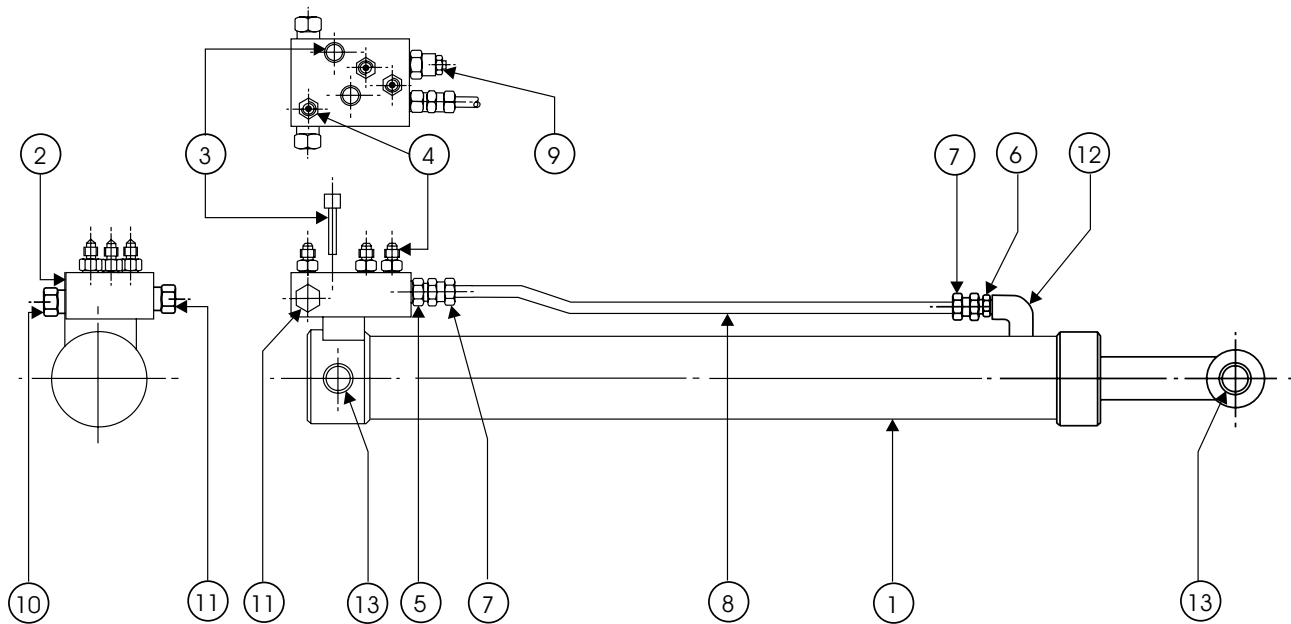
Upper boom lift cylinder assembly

Item	Part No	Qty	Description
1.	11508	1	Lift cylinder, upper
2.	10856	1	Valve, H&L D/A
3.	3613-08040	2	Cap screw M8 x 40
4.	506-5705	3	Fitting, hydraulic 7/16" x 9/16"
5.	506-5707	1	Fitting, hydraulic 9/16" x 9/16"
6.	7019-001	1	BSPTM x JIC M nipple
7.	7062-001	2	JIC tube nut and olive
8.	7288-1	0.500 LM	3/8 hydraulic tube
9.	10856-1	1	Counterbalance cartridge
10.	10856-2	1	Check cartridge
11.	10856-3	1	Velocity fuse
12.	1403-06	1	1/4" black elbow
13.	3624-3	4	Bush, permaglidle
	9909KA	1	Seal kit



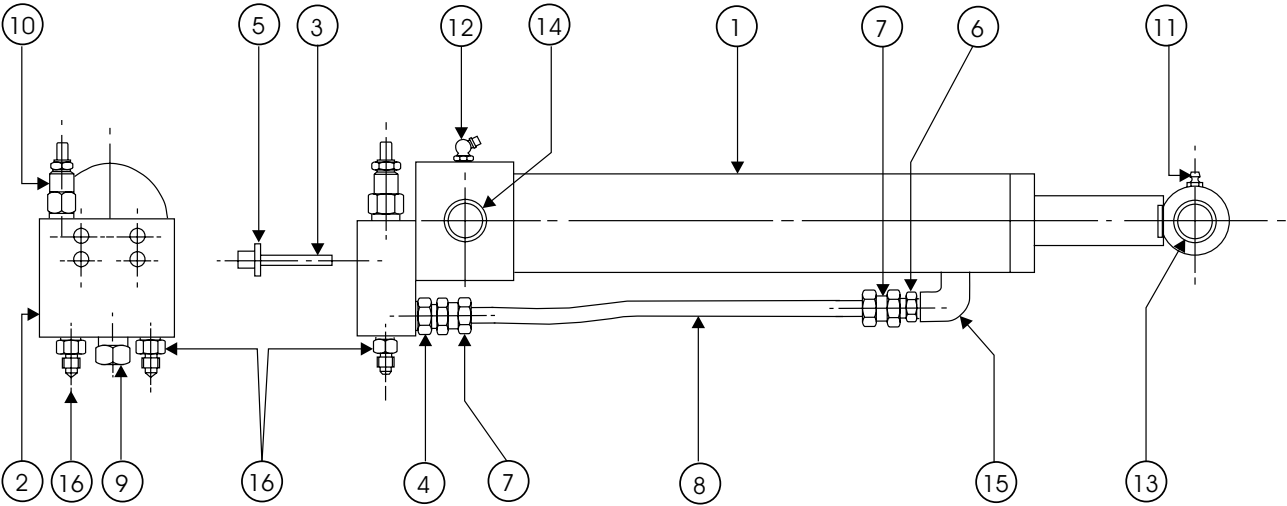
Lower boom lift cylinder assembly

Item	Part No	Qty	Description
1.	11504	1	Lift cylinder, lower
2.	10856	1	Valve, H&L D/A
3.	3613-08040	2	Cap screw M8 x 40
4.	506-5705	3	Fitting, hydraulic 7/16" x 9/16"
5.	506-5707	1	Fitting, hydraulic 9/16" x 9/16"
6.	7019-001	1	BSPTM x JIC M nipple
7.	7062-001	2	JIC tube nut and olive
8.	7288-1	0.500 LM	3/8 hydraulic tube
9.	10856-1	1	Counterbalance cartridge
10.	10856-2	1	Check cartridge
11.	10856-3	1	Velocity fuse
12.	1403-06	1	1/4" black elbow
13.	3624-3	4	Bush, permaglides
	9909KA	1	Seal kit



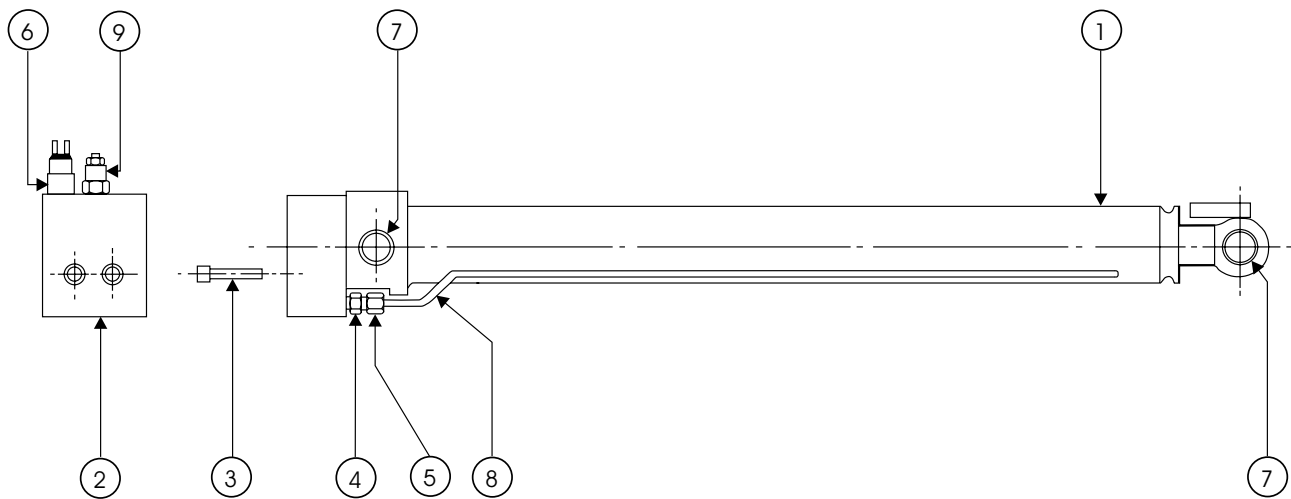
Flyboom cylinder assembly

Item	Part No	Qty	Description
0.	11623A	1	Flyboom cylinder assembly
1.	11555	1	Cylinder, flyboom
2.	11412	1	Valve, hold and lower
3.	3613-06050	4	Cap screw M6 x 50
4.	506-5707	1	Fitting hydraulic 9/16" x 9/16"
5.	60030-006	4	1/4" x 5/8" x 1/64 flat sash plated
6.	7019-001	1	BSPTM x JIC M nipple
7.	7062-001	2	JIC tube nut and olive
8.	7288-1	0.400 LM	3/8 hydraulic tube
9.	11367-2	1	Pilot operated checkvalve
10.	11412-1	1	Relief valve
11.	2030-1	1	Grease nipple, straight
12.	2030-002	1	Grease nipple, right angle
13.	1549-7	1	Bush
14.	1549-30	1	Bush
15.	1403-06	1	1/4" black elbow
16.	506-5705	2	Fitting hydraulic 7/16" x 9/16"
	7177K	1	Seal kit



Stabiliser leg cylinder assembly

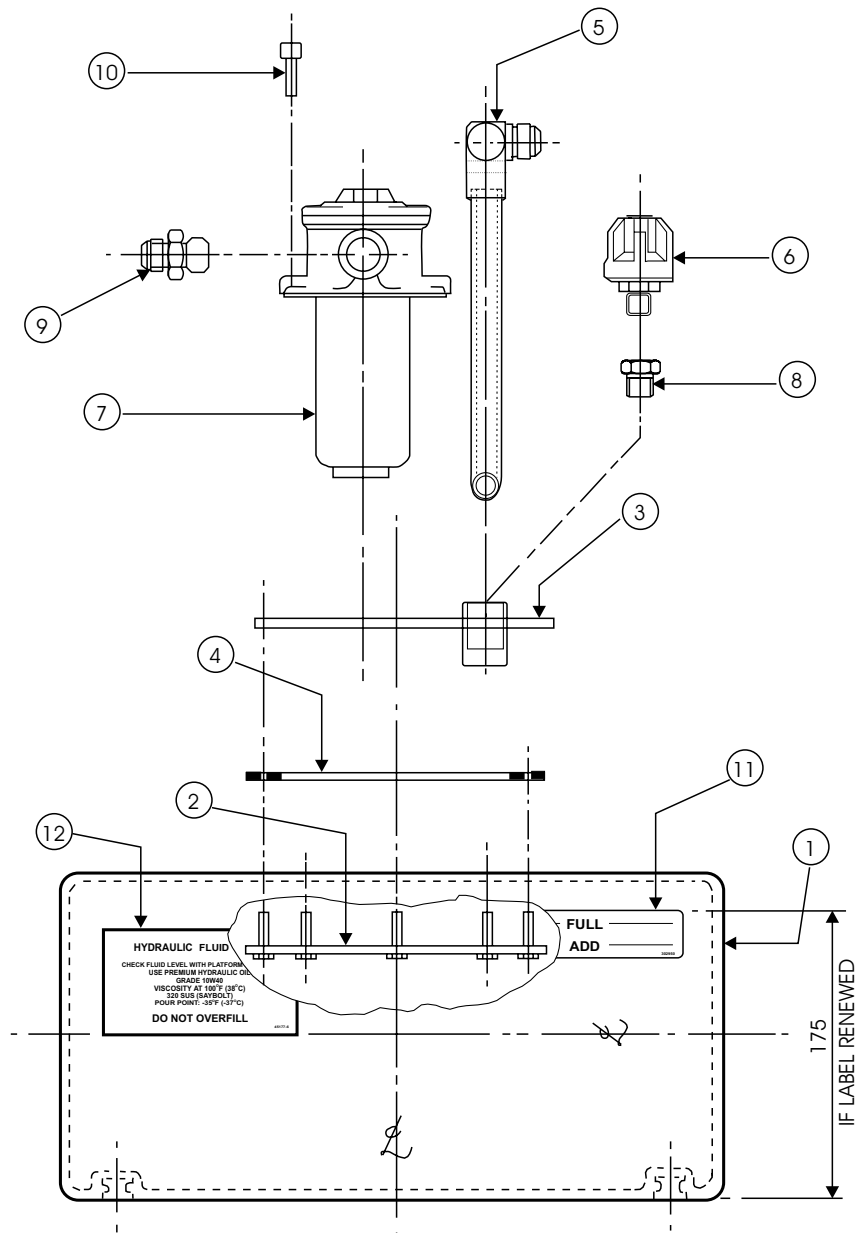
Item	Part No	Qty	Description
1.	11103	1	Cylinder, stabiliser
2.	10976	1	H and L valve, MHP12/34J Leg
3.	3613-08050	2	Cap screw M8 x 50
4.	7025-015	3	Hydraulic fitting
5.	7066-006	1	JIC nut and sleeve
6.	9981	1	Pressure switch, set 400 psi
7.	3624-3	2	Bush, permaglidle
8.	11103-7	1	Tube
9.	10286-4	1	P.O. Check valve
10.	10286-3	1	Counterbalance valve
	11103K	1	Seal kit



Hydraulic oil tank assembly

Item	Part No	Qty	Description
1.	11430	1	Oil tank, moulded
2.	11430-1	1	Base plate weldment
3.	11430-3	1	Top tank plate weldment
4.	11430-5	1	Gasket
5.	11430-7	1	Suction pipe weldment
6.	11487	1	Filler breather
7.	11488	1	Tank top filter
8.	7060-001	1	BSPTM x BSPTF reducer bush
9.	7013-002	1	BSPP (DOWTY) x JICM nipple
10.	3613-05030	4	Cap screw M5 x 30
11.	302950	1	Decal, hydraulic oil level
12.	451776	1	Decal, hydraulic fluid level

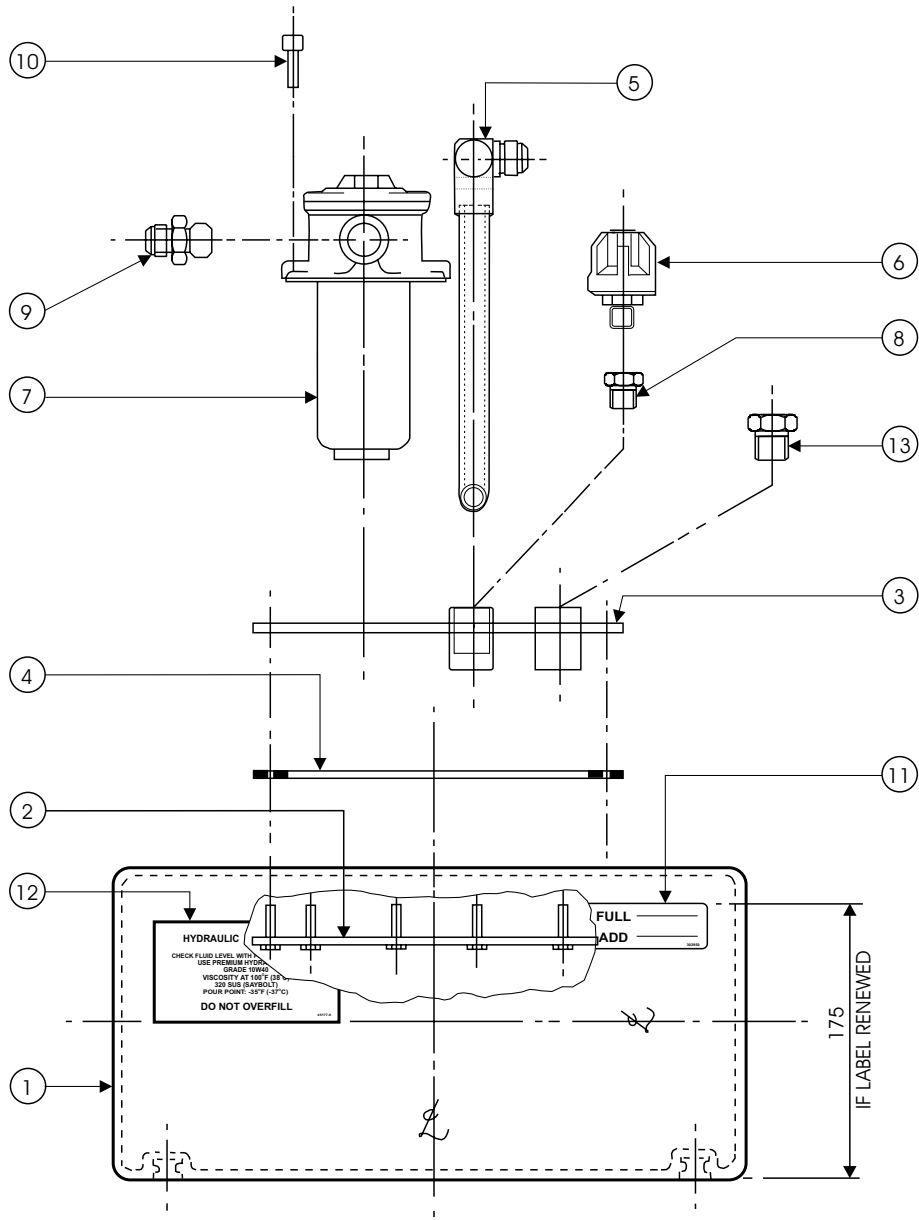
NOTE: This drawing applies to oil tank assemblies fitted to MHP12/34J machines, Serial Number 990907 and before.



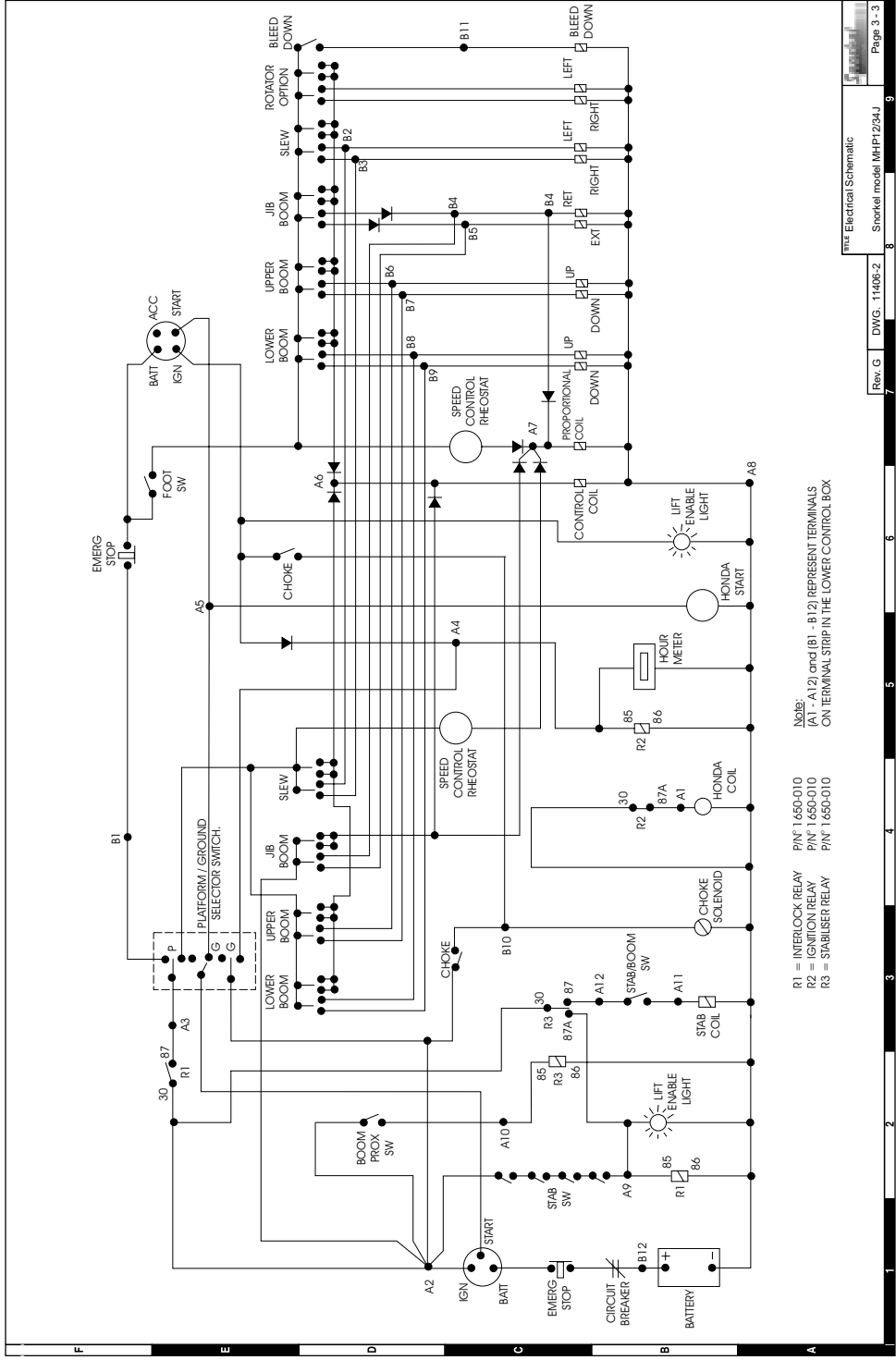
Hydraulic oil tank assembly (2)

Item	Part No	Qty	Description
1.	11430-10	1	Oil tank, moulded
2.	11430-11	1	Base plate weldment
3.	11430-13	1	Top tank plate weldment
4.	11430-15	1	gasket
5.	11430-7	1	Suction pipe weldment
6.	11487	1	Filter breather
7.	11488	1	Tank top filter
8.	7060-001	1	BSPTM x BSPTF reducer bush
9.	7013-002	1	BSP (DOWTY) x JICM nipple
10.	3613-05030	4	Cap screw M5 x 30
11.	302950	1	Decal, hydraulic oil level
12.	451776	1	Decal, hydraulic fluid level
13.	7034-004	1	BSPTM plug

NOTE: This drawing applies to oil tank assemblies fitted to MHP12/34J machines, Serial Number. 991001 and after.

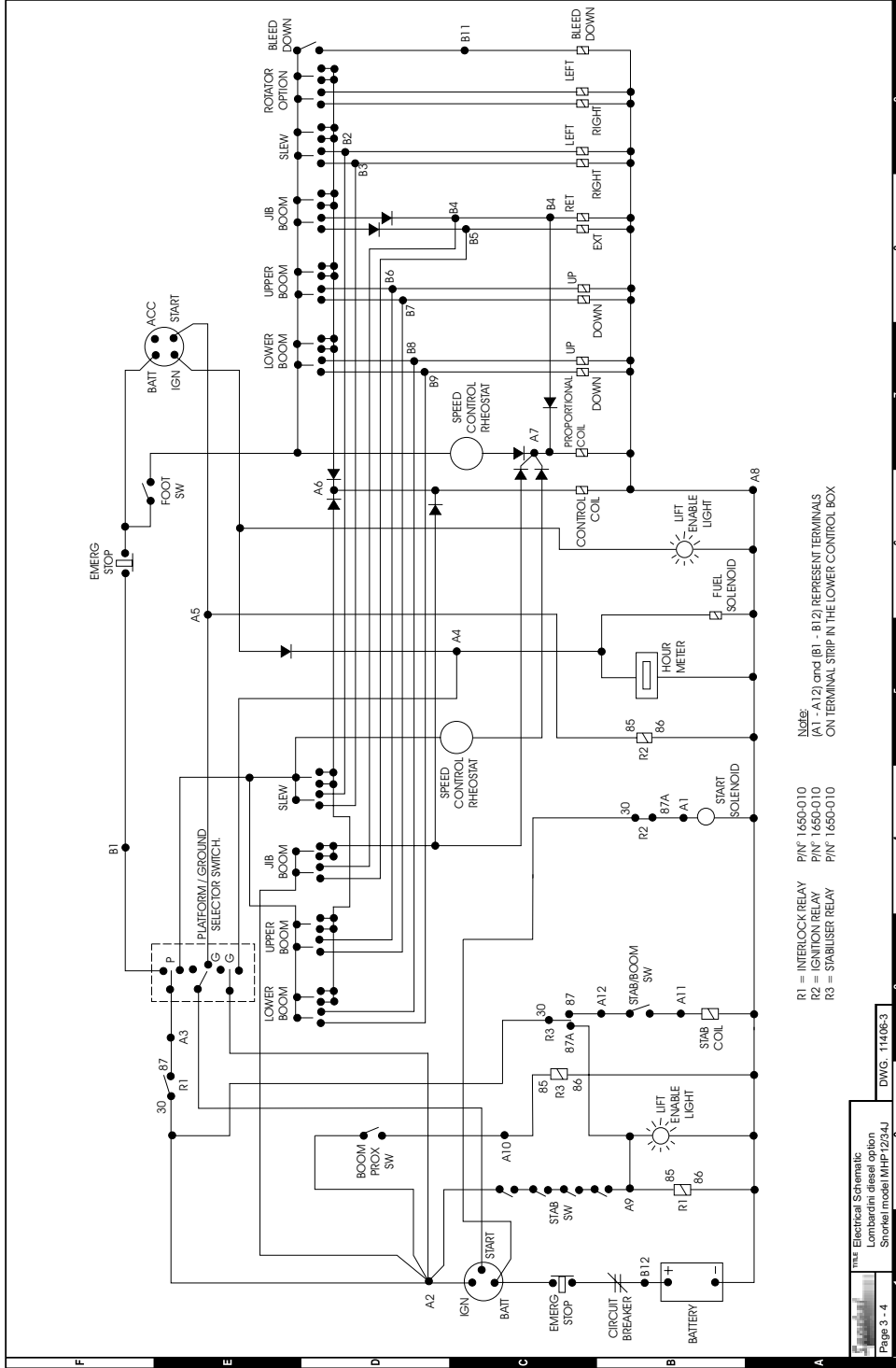


Electrical schematic illustration 3-3
Electrical schematic illustration
(diesel option). 3-4
Electrical Schematic Illustration
(Automatic Level Option) 3-5
Auto Level Control Box Wiring Diagram 3-6
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AC motor option wiring schematic illustration 3-4
Road transport electric illustration. 3-5
Upper control box assembly 3-6
Lower control box assembly 3-7



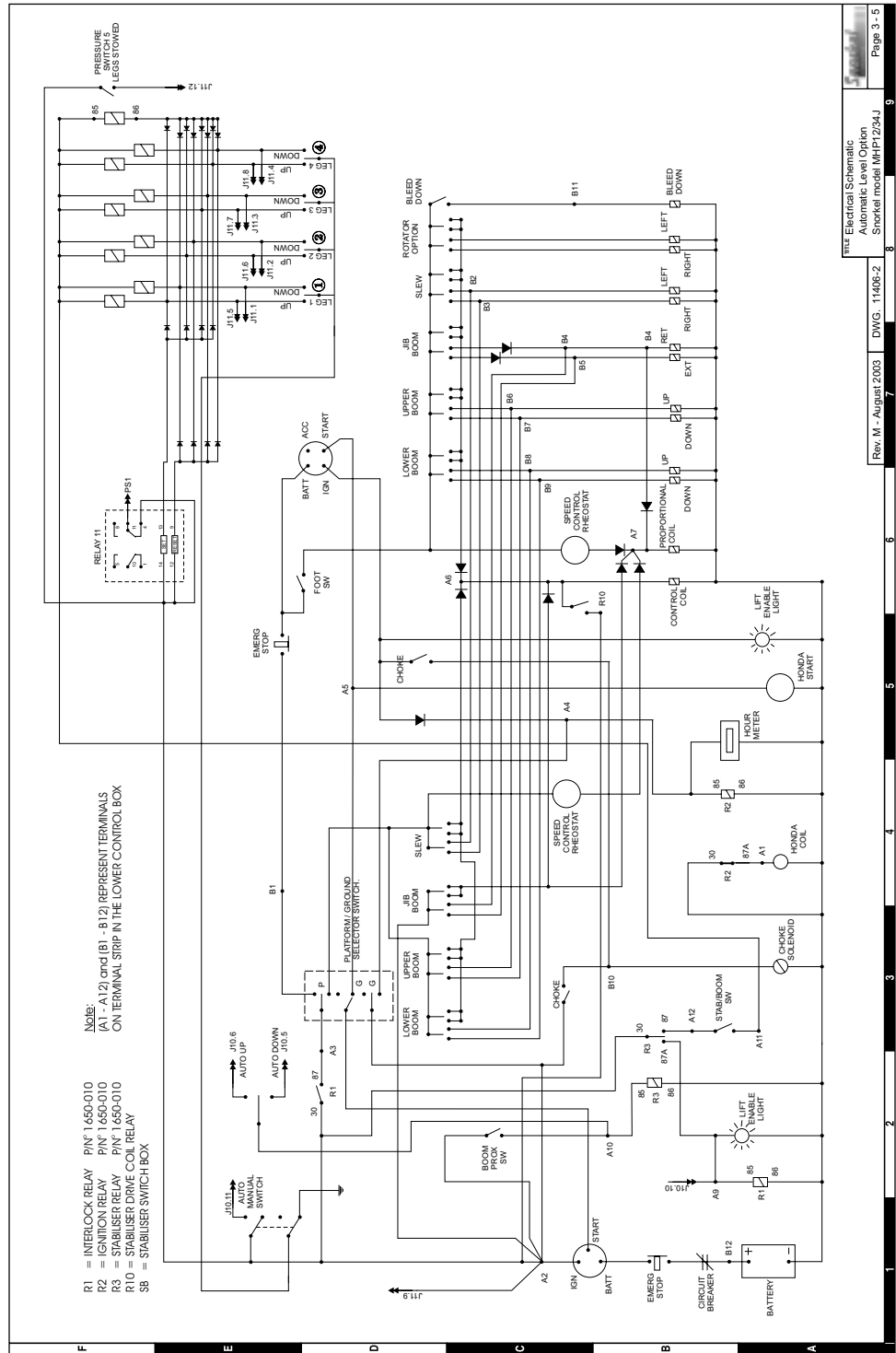
R1 = INTERLOCK RELAY P/N# 1 650-010
 R2 = IGNITION RELAY P/N# 1 650-010
 R3 = STABILISER RELAY P/N# 1 650-010

Note:
 (A1 - A12) and (B1 - B12) REPRESENT TERMINALS
 ON TERMINAL STRIP IN THE LOWER CONTROL BOX



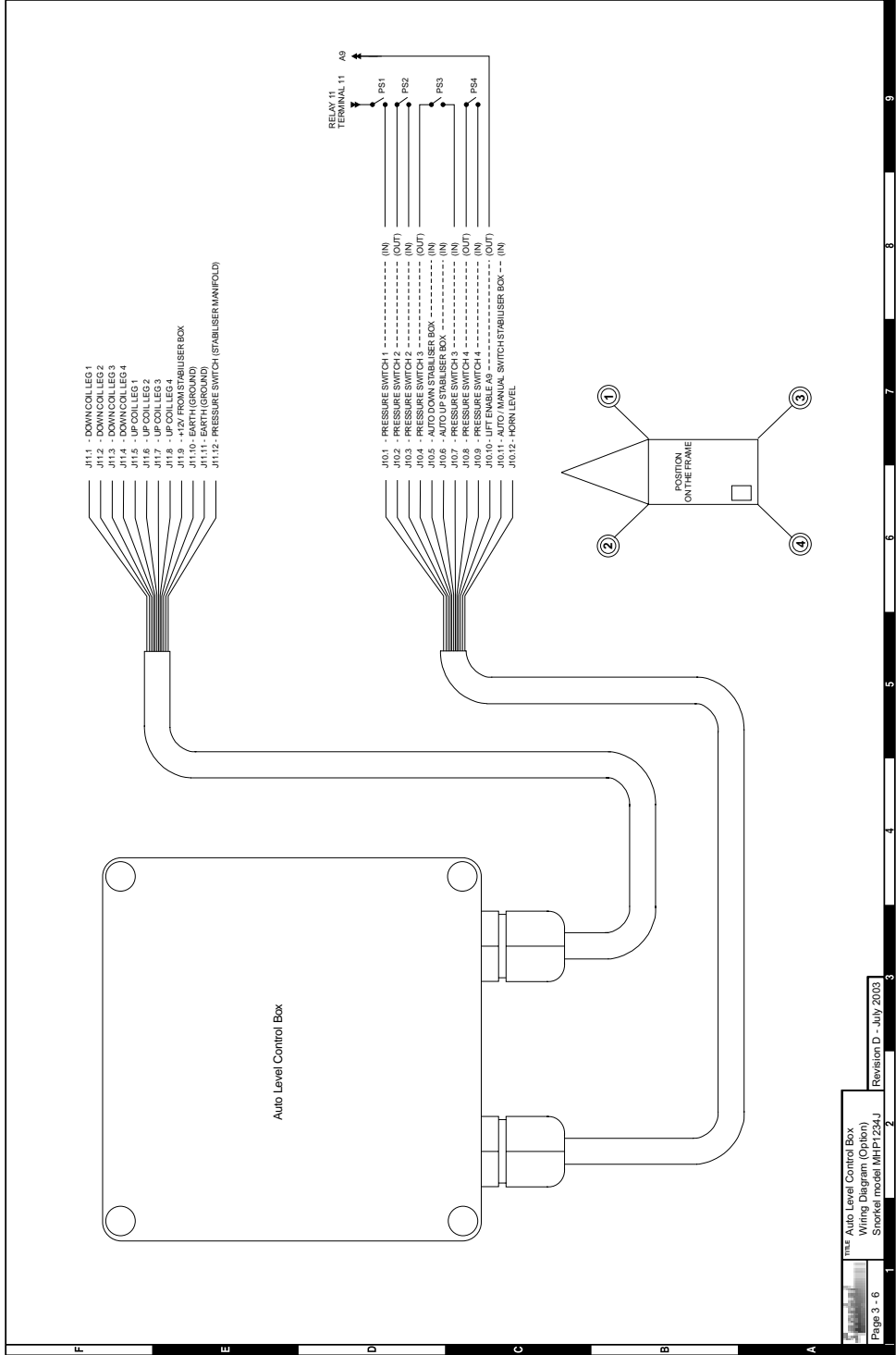
R1 = INTERLOCK RELAY PIN 1 1650-010
 R2 = IGNITION RELAY PIN 1 1650-010
 R3 = STABILISER RELAY PIN 1 1650-010

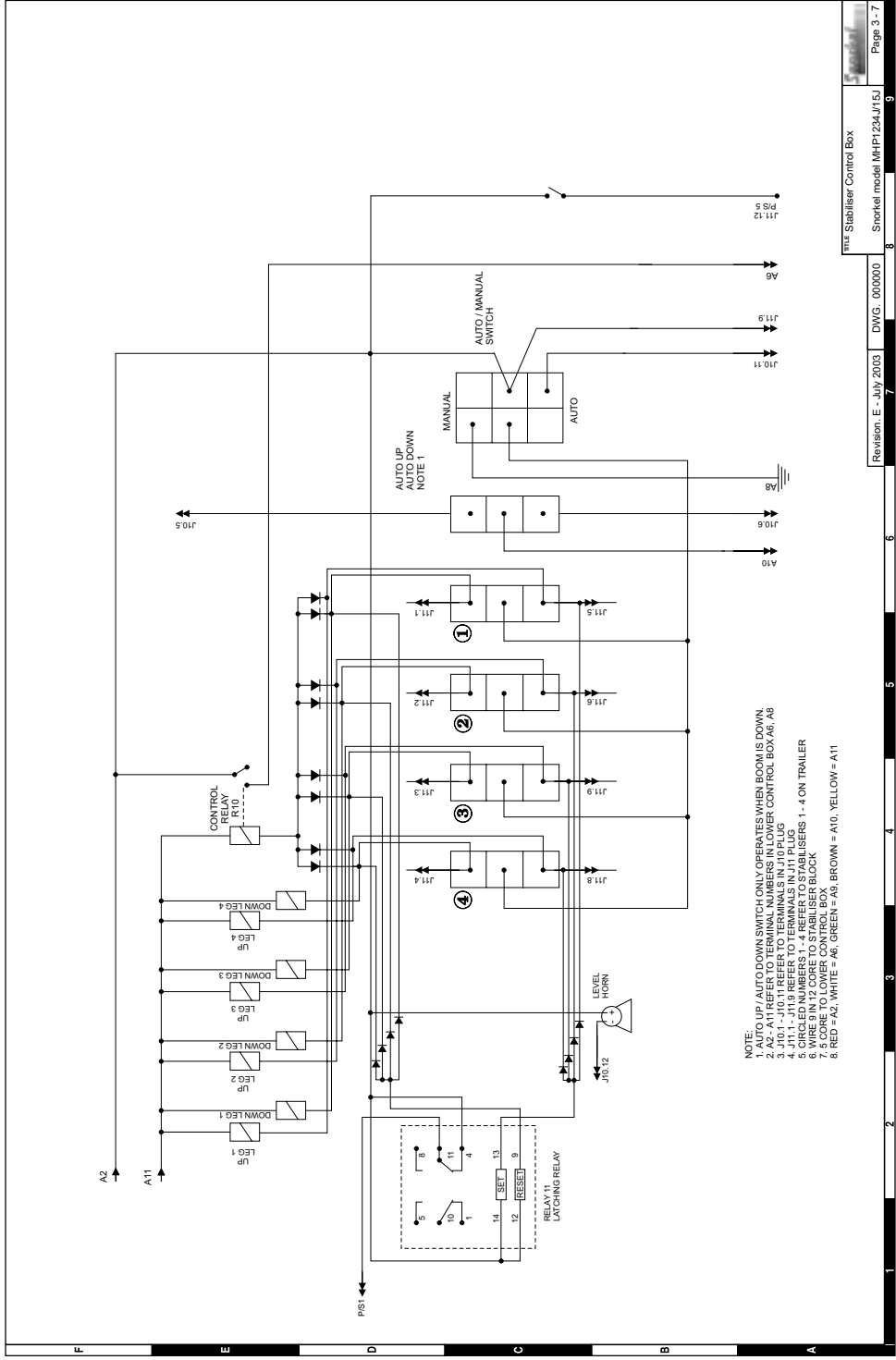
Notes:
 [A1 - A12] and [B1 - B12] REPRESENT TERMINALS
 ON TERMINAL STRIP IN THE LOWER CONTROL BOX



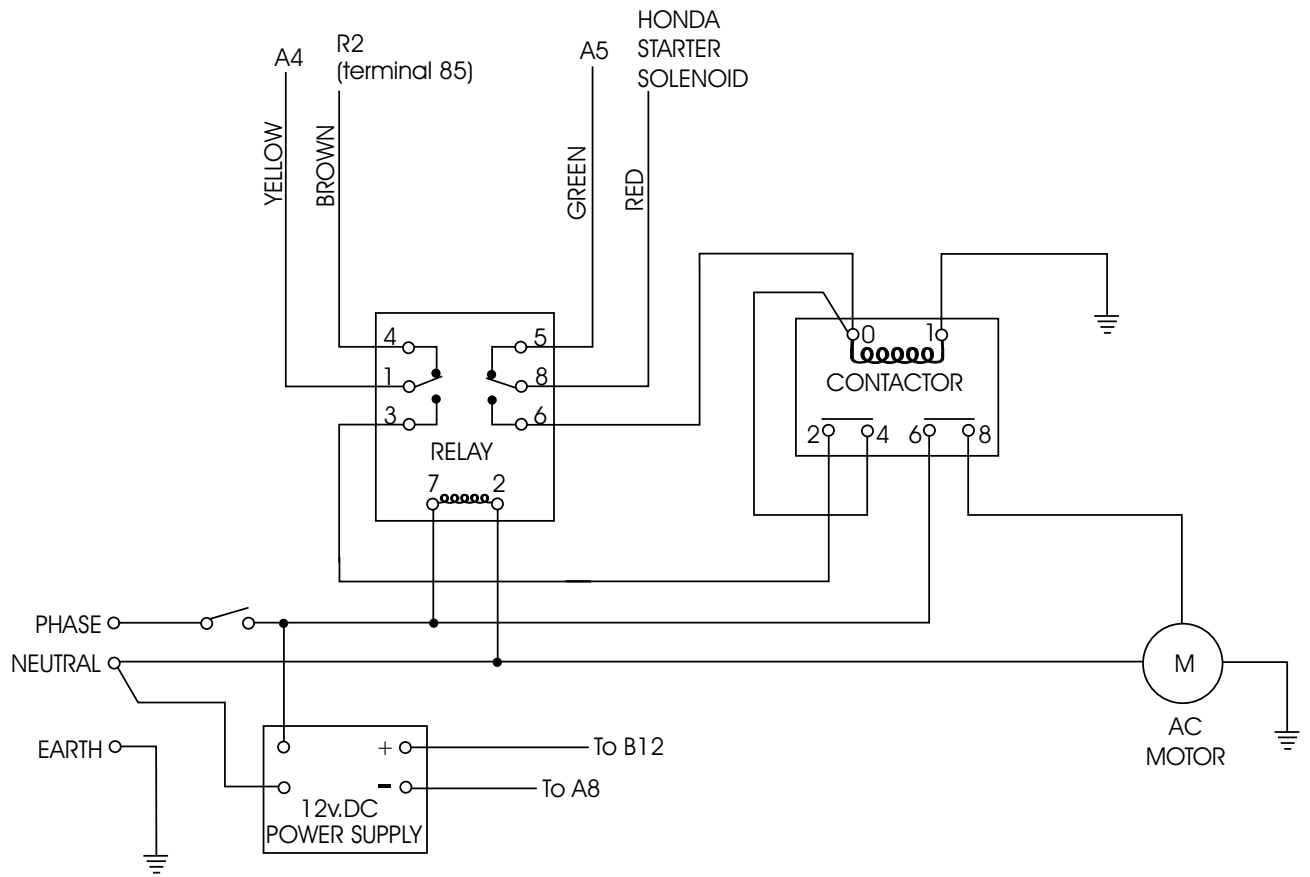
NOTE:
 (A1 - A12) and (B1 - B12) REPRESENT TERMINALS
 ON TERMINAL STRIP IN THE LOWER CONTROL BOX

R1 = INTERLOCK RELAY PIN 1, 650-010
 R2 = IGNITION RELAY PIN 1, 650-010
 R3 = STABILIZER RELAY PIN 1, 650-010
 R10 = STABILIZER DRIVE COIL RELAY
 SB = STABILIZER SWITCH BOX

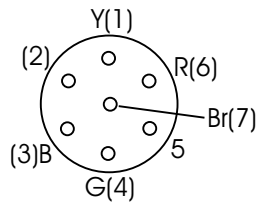




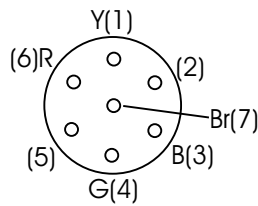
AC motor option wiring schematic illustration



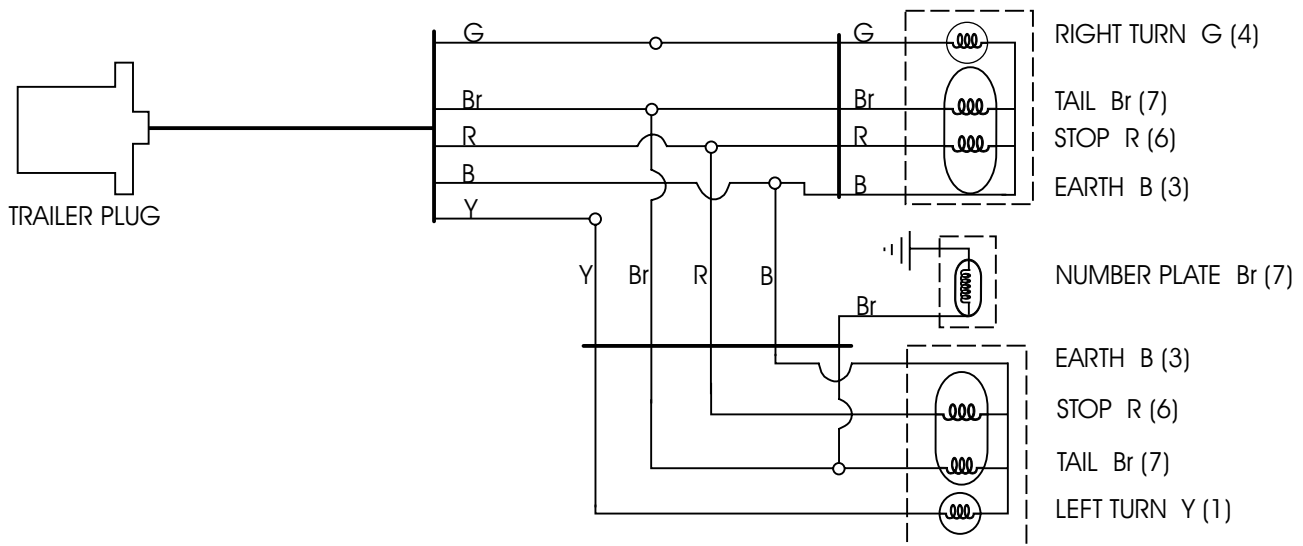
Road transport electric illustration



PLUG AUSTRALIA
REAR VIEW
Part Number 1286-001

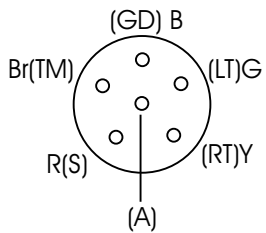


PLUG NEW ZEALAND
REAR VIEW
Part Number 1286-001

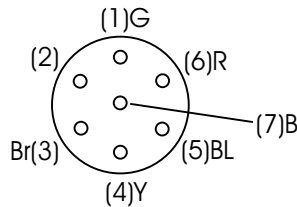


WIRE CODE

- 3 B : BLACK
- BI : BLUE
- 6 R : RED
- 1 Y : YELLOW
- W : WHITE
- 4 G : GREEN
- P : PINK
- 7 Br : BROWN



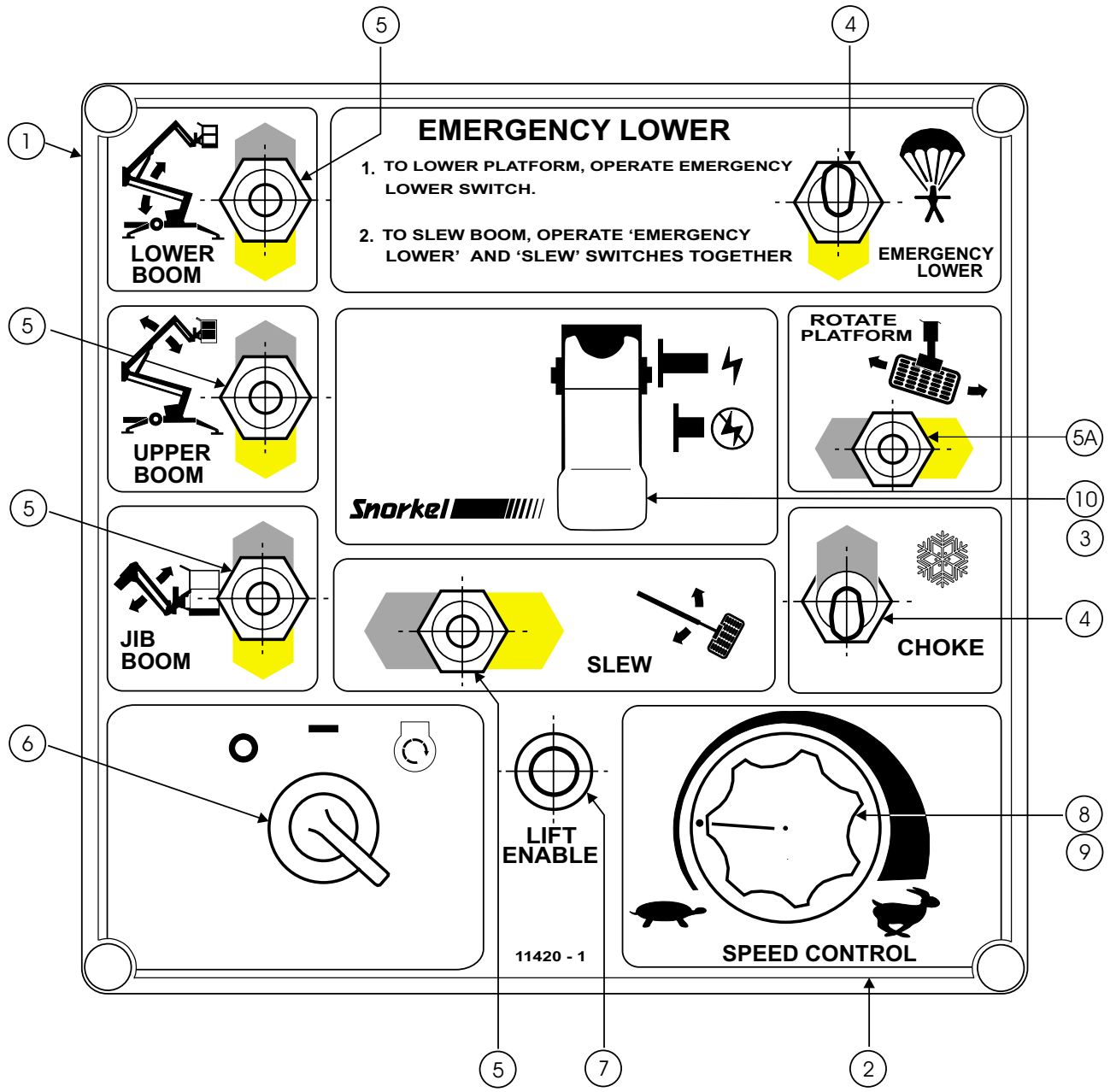
PLUG USA
REAR VIEW
Part Number 1286-005



PLUG EUROPE
REAR VIEW

Upper control box assembly

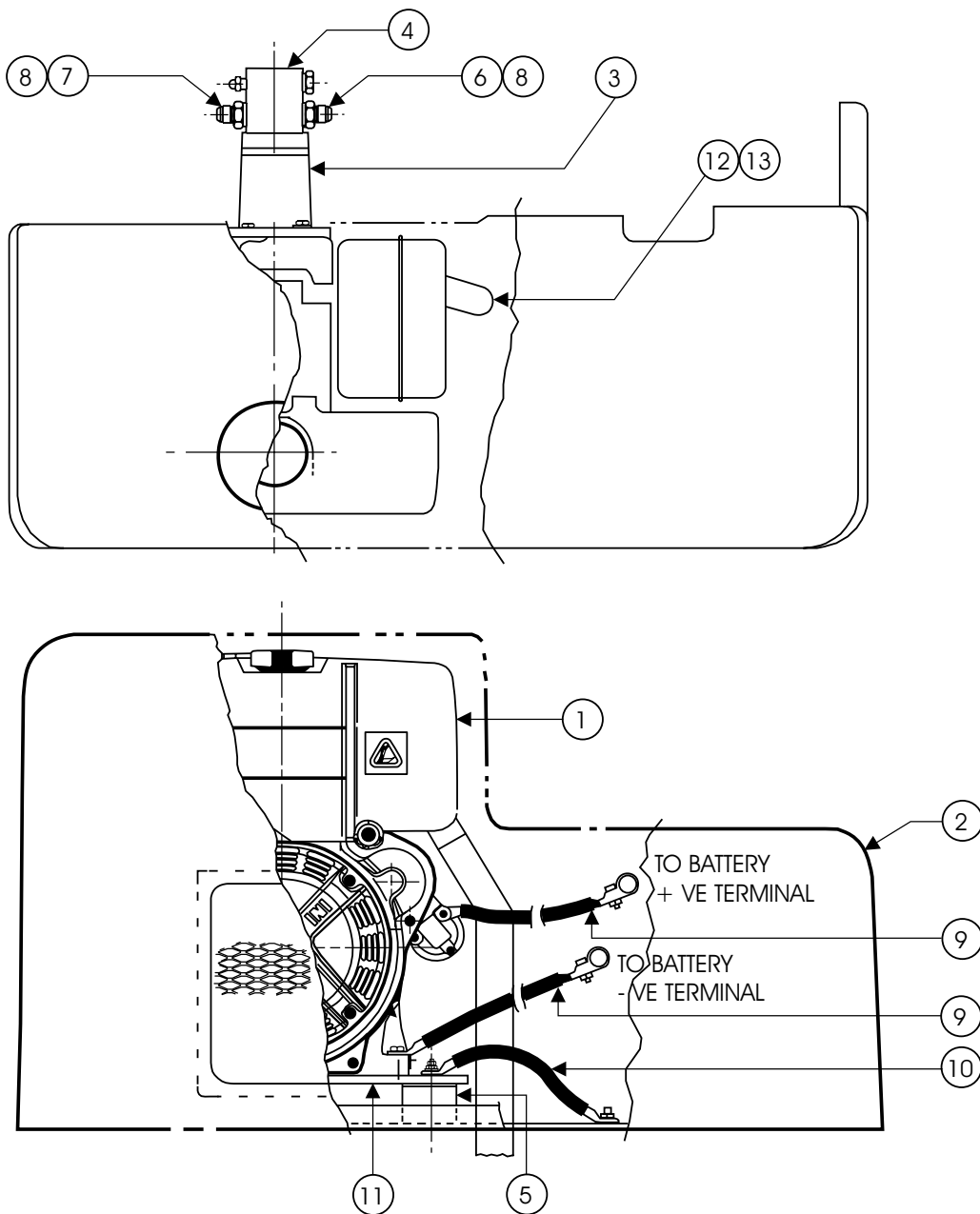
Item	Part No	Qty	Description
1.	11407-1	1	Control box, upper drilled
2.	11420-1	1	Decal, control box, upper
3.	302-0013	1	Switch, toggle SPST (On/Off)
4.	302-0015	2	Switch, toggle SPST (Mom/Off)
5.	302-0018	4	Switch, toggle DPDT (M/Off/M)
5A.	302-0018	1	Switch, toggle DPDT (M/Off/M) - Rotator option
6.	302-0090	1	Keyswitch, anti restart
7.	560377	1	Lamp, 12V green
8.	304-0348	1	Knob, speed control switch
9.	304-0412	1	Rheostat 25 ohm
10.	56223-6	1	Switch guard



Lombardini diesel motor option	4-2
Electric motor option 230V &110V	4-3
Rotator option	4-4
Rotator option illustration	4-5
5KV. option illustration	4-6
5KV. Option	4-7
Rotator + 5KV. option	4-8
Rotator + 5KV. option illustration	4-9

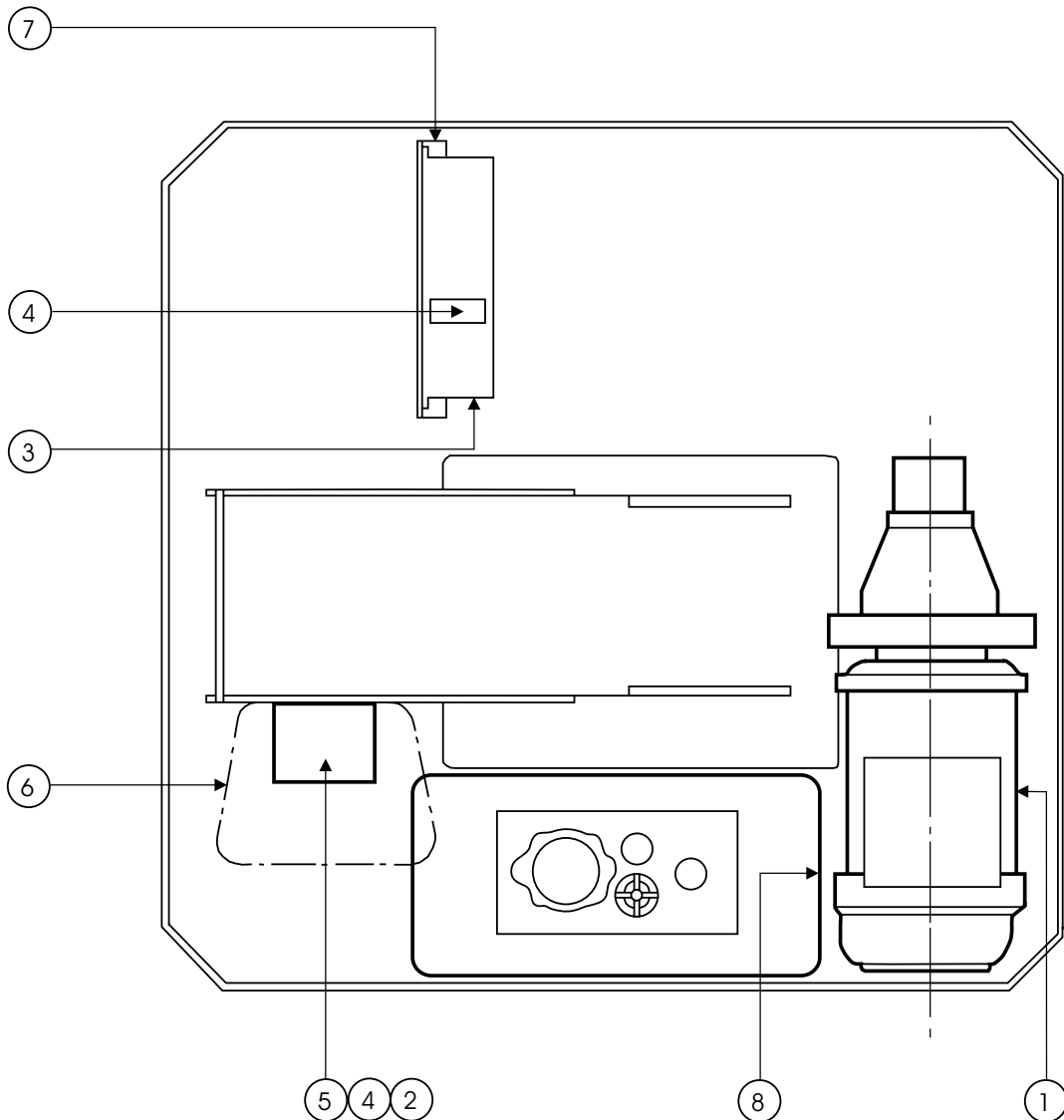
Lombardini diesel motor option

Item	Part No	Qty	Description
1.	1171-8	1	Lombardini diesel engine
2.	11433D	1	Cover, left hand side, diesel option
3.	10417	1	Bell housing (metric shaft)
4.	1659	1	Pump
5.	8693	4	Engine mount
6.	7013-003	1	Fitting
7.	7013-004	1	Fitting
8.	7084-001	2	Dowty seal
9.	3649-2	2	Battery lead
10.	3649-8	1	Earth lead
11.	11664	1	Engine mount plate
12.	1171-8-001	1	Exhaust extension
13.	1171-8-002	1	Exhaust mounting bracket



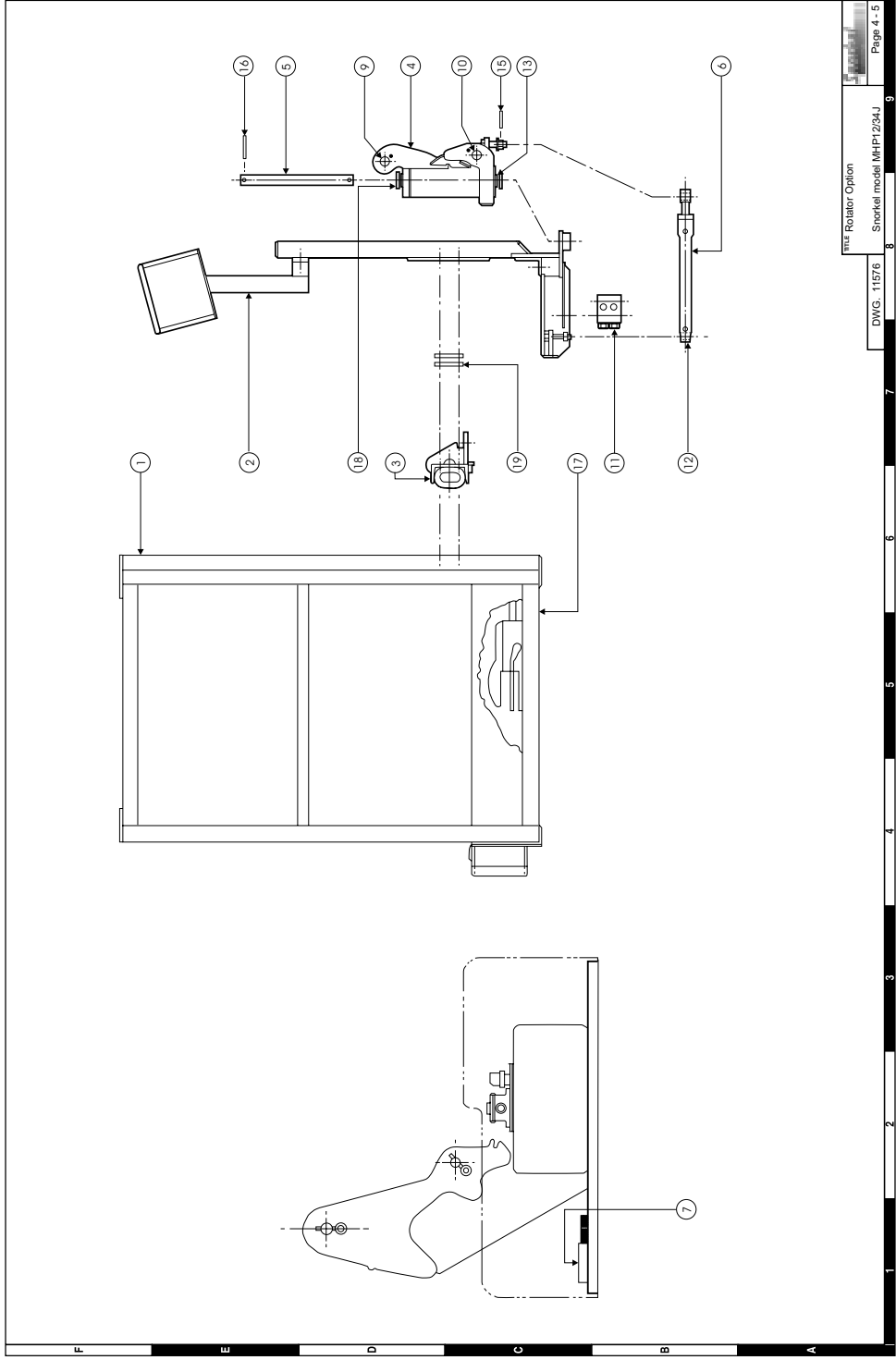
Electric motor option 230V &110V

Item	Part No	Qty	Description
1.	9018-5	1	Pump and motor assembly 230V
	9018-4	1	Pump and motor assembly 110V
2.	9017-4	1	Control box assembly 230V
	9017-3	1	Control box assembly 110V
3.	11115	1	Power supply 230V
	11115-110	1	Power supply 110V
4.	10412	2	Decal, danger 240V
	10412-1	2	Decal, danger 110V
5.	10412-2	1	Decal, gas - electric
6.	11427-22	1	Guard, control box
7.	11587	1	Plate, power supply mount
8.	11430A	Ref	Oil tank assembly

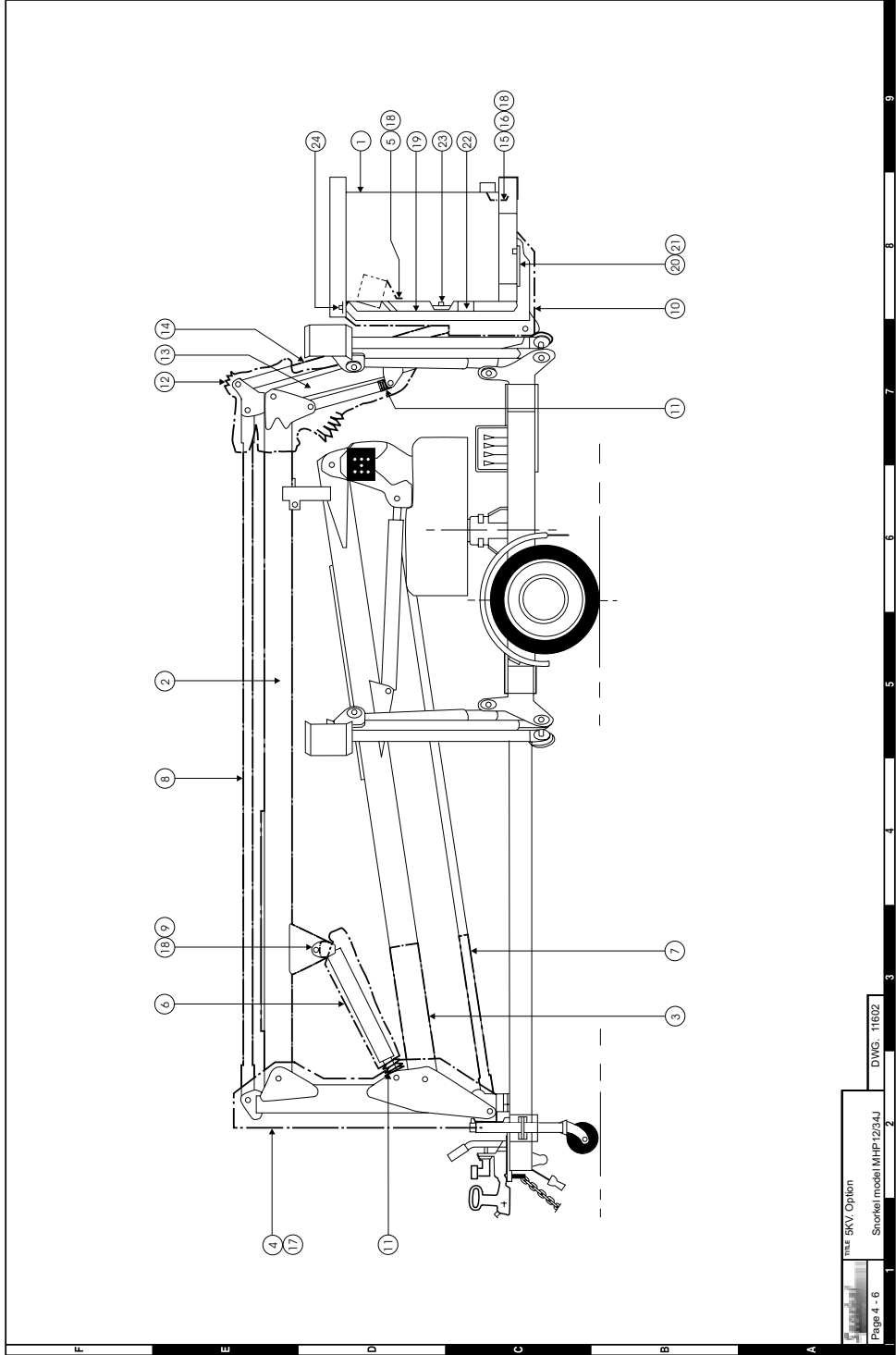


Rotator option

Item	Part No	Qty	Description
1.	11429	1	Platform weld
2.	11564	1	Basket frame weld, rotator
3.	11565	1	Bracket weld, rotator
4.	11563	1	Swivel carrier weld
5.	11563-11	1	Swivel pin, rotator
6.	11568	1	Cylinder, platform rotator
7.	11569	1	Valve, Cetop dir. Control
8.	11569-1	1	Mounting bracket, Cetop valve
9.	9985	1	Pin, level rod
10.	9792	1	Pin, fly boom
11.	11586	1	Double pilot check valve
12.	3624-26	4	Bush
13.	3626-1	2	Flanged bearing
14.	3628-6	1	Nut insert 6mm
15.	60000-004	2	Roll pin, 1 1/4" x 1/8"
16.	60000-036	2	Roll pin, 1 1/2" x 1/4"
17.	302559	3	Decal - warning pinch point
18.	60030-077	2	Washer, flat dia25 x 1.6 st.st.
19.	11456-4	As Req	Level spacer



DWG - 11576
 Reclator Option
 Snoekel model MHP12/34J



1:16 SKV, Option
 Socket model MHP12/34J
 DWG - 11602
 Page 4 - 6

Item	Part No	Qty	Description
1.	11603-12J	1	Fibreglass basket
2.	11423-100	1	Upper boom, 5KV. Insulated
3.	11424-100	1	Lower boom, 5KV. Insulated
4.	11404-100	1	Fibreglass cover, turret
5.	11604-10	1	Isolating shield, basket control
6.	11508-100	1	Lift ram cover, 5KV. Insulated
7.	11426-100	2	Lower level rod, 5KV. Insulated
8.	11425-100	1	Level rod, upper boom, 5KV.insulated
9.	1804-002	2	Fibreglass cap
10.	11620-20	1	Basket frame cover, P.V.C.
11.	7177COVER	2	Ram cover, flyboom cylinder
12.	11405-100	1	5KV. cover, upper quadrant
13.	11409-100	1	Flyboom, 5KV. Insulated
14.	11410-100	1	Level rod, flyboom, 5KV. Insulated
15.	11604-21	2	Wiring cover, tail lamps
16.	11604-22	1	Wiring cover, number plate
17.	11619-1	6	Spacer block, fibreglass cover mounting
18.	1804-003	28	M6 nylon screw
19.	11620	1	Basket carrier frame, 5KV.
20.	11604-12	2	Strap connector
21.	11604-13	2	Encasement stud
22.	11607-1	1	Bracket weld, basket frame
23.	1722-104	2	Basket mount plate, bottom
24.	1722-103	1	Basket mount plate, top

Rotator + 5KV. option

Item	Part No	Qty	Description
1.	11603-12J	1	Fibreglass basket
2.	11423-100	1	Upper boom, 5KV. Insulated
3.	11424-100	1	Lower boom, 5KV. Insulated
4.	11404-100	1	Fibreglass cover, turret
5.	11604-10	1	Isolating shield, basket control
6.	11508-100	1	Lift ram cover, 5KV. Insulated
7.	11426-100	2	Lower level rod, 5KV. Insulated
8.	11425-100	1	Level rod, upper boom, 5KV. Insulated
9.	1804-002	2	Fibreglass cap
10.	11604-20	1	Basket frame cover, P.V.C.
11.	7177COVER	2	Ram cover, flyboom cylinder
12.	11405-100	1	5KV. cover, upper quadrant
13.	11409-100	1	Flyboom, 5KV. Insulated
14.	11410-100	1	Level rod, flyboom, 5KV. Insulated
15.	11604-21	2	Wiring cover, tail lamps
16.	11604-22	1	Wiring cover, number plate
17.	11619-1	6	Spacer block, fibreglass cover mounting
18.	1804-003	28	M6 nylon screw
19.	11604	1	Basket carrier frame, 5KV. / Rotator
20.	11604-12	2	Strap connector
21.	11604-13	2	Encasement stud
22.	11607	1	Bracket weld, basket frame
23.	1722-104	2	Basket mount plate, bottom
24.	1722-103	1	Basket mount plate, top
25.	11563	1	Rotator swivel weldment
26.	11604-23	1	P.V.C. cover, hinged, rotator right hand
27.	11604-24	1	P.V.C. cover, hinged, rotator left hand
28.	8398	2	Spring
29.	7656-1	2	Hinge, stainless steel

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