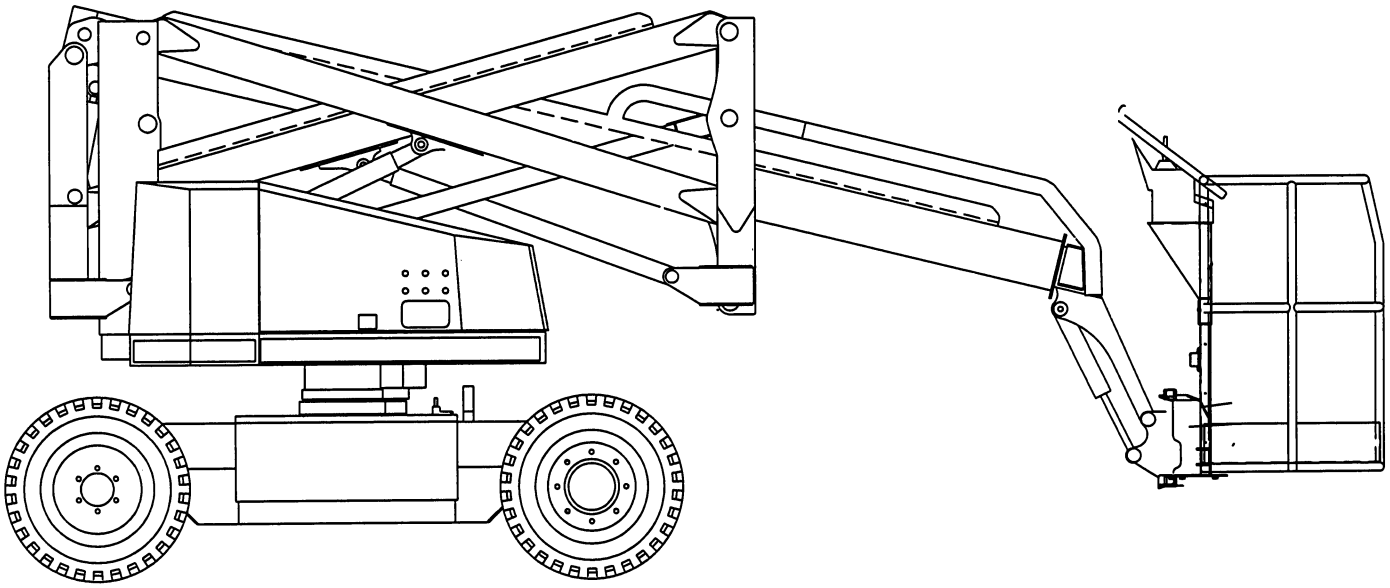
TEREX AERIALS

TECHNICAL MANUAL

SELF-PROPELLED KNUCKLE BOOM LIFT
MODEL TA50RT



FOR PARTS OR SERVICE
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OPERATION, SERVICE and PARTS MANUAL

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TA50RT
OPERATOR'S MANUAL

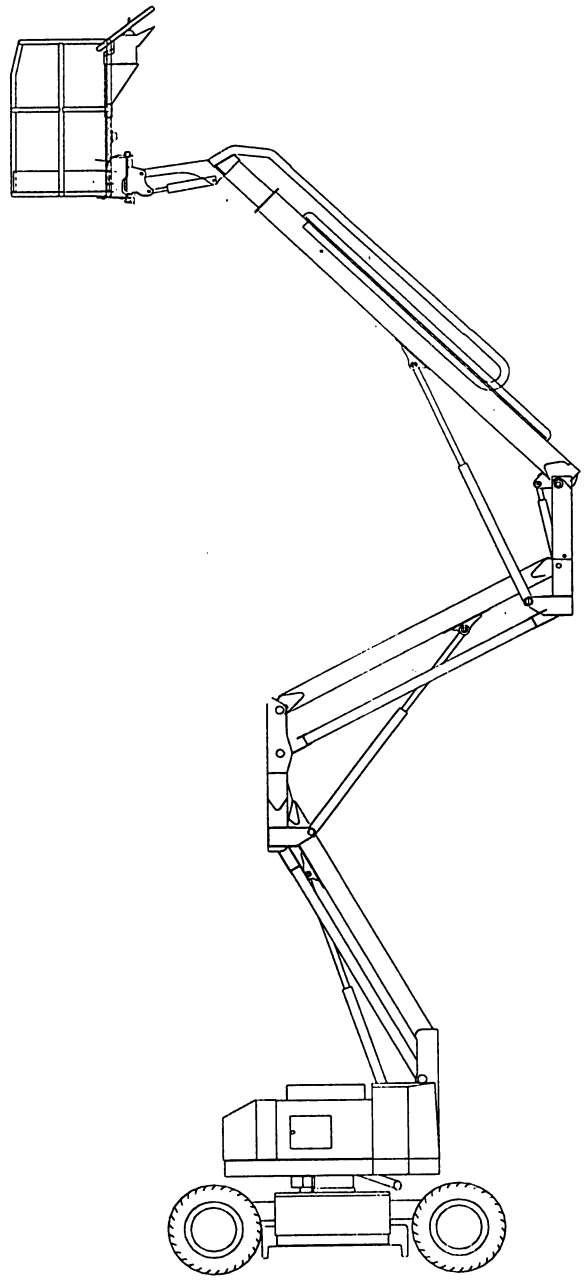

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TABLE OF CONTENTS

INTRODUCTION (i)
AND DECLARATIONS OF CONFORMITY (ii)

INTRODUCTION

This Operator's Manual has been designed to provide you with a full set of instructions that will be needed to safely and properly operate your Terex access platform.

⚠ DANGER

THIS OPERATOR'S MANUAL MUST BE READ AND UNDERSTOOD PRIOR TO OPERATING YOUR TEREX TA50RT

OPERATORS MUST BE AWARE OF AND COMPLY WITH ALL MANUFACTURER'S INSTRUCTIONS AND APPLICABLE OSHA/ASHI (OR APPROPRIATE GOVERNMENT) SAFETY GUIDELINES

FAILURE TO COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND OSHA/ASHI (OR APPROPRIATE GOVERNMENT) SAFETY GUIDELINES WILL RESULT IN SERIOUS INJURY OR DEATH

Your Terex access platform has been designed, built, and tested to provide many years of safe, dependable service, To obtain the full benefit of your machine, always follow the proper operating and maintenance procedures as outlined in this manual. Only trained, authorised personnel should be allowed to operate or service this machine. Service personnel should read and study this manual in order to gain a thorough understanding of the functions of the unit prior to making any repairs,

⚠ DANGER

MODIFICATIONS OF THIS MACHINE FROM THE ORIGINAL DESIGN AND SPECIFICATION WITHOUT WRITTEN PERMISSION FROM TEREX ARE STRICTLY FORBIDDEN. A MODIFICATION MAY COMPROMISE THE SAFETY OF THE MACHINE, SUBJECTING USERS TO SERIOUS INJURY OR DEATH. ANY SUCH MODIFICATION WILL VOID ANY REMAINING WARRANTY

Terex reserves the right to change. improve. modify or expand features of its equipment at any time. Specifications, models or equipment are subject to change without notice, and without incurring any obligations to change, improve, modify or expand features of previously delivered equipment, All Terex manuals are periodically updated to reflect changes that occur in the equipment. Please contact the factory with any questions you may have regarding your machine, and the availability of more recent manuals.

SECTION 1

TA50RT SPECIFICATION

1.1 DESIGN SPECIFICATION

1.1.1 CLOSED DIMENSIONS AND WEIGHTS

Length .....5.65 m

Width .....2.20 m

Height .....2.40 m

Unladen Weight (Hatz).....6500 kg

1.1.2 OPERATING DIMENSIONS

Maximum Cage Floor Height .....14.80 m

Maximum Working Height .....16.80 m

Maximum Working Outreach .....9.1 m

Standard Platform Dimensions .....1.50 m x 0.60 m

Outside Turning Radius .....5.50 m

Gradability .....50% (45°)

Maximum Speed, Booms Stowed .....5 km/hr (3mph)

Maximum Speed, Booms Elevated .....0.75 km/hr (0.5mph)

Ground Clearance .....0.28 m

Maximum Wheel Loading.....2950 kg

1.1.3 DESIGN SPECIFICATION

Safe Working Load (2 persons) ..... 225 kg (496 lbs)

Maximum Horizontal Platform Pull ..... 400 N

Maximum Wind Speed ..... 12.5 m/sec (28 mph - 45 km/hr)

Maximum Slope for Safe Operation .....5°

Full Range Time Up Min.....100 secs

Full Range Time Down .....70 secs

Swing Left/Right .....85 secs

Maximum Noise Emmission.....72 dbl @ 3m

Temperature Operating Range.....-5°C to +40°C

1.1.4 WORKING ENVELOPE

The TA50RT has a working height ability of 16.90 m. The following diagram shows the working envelope for the TA50RT. All dimensions are in metres.

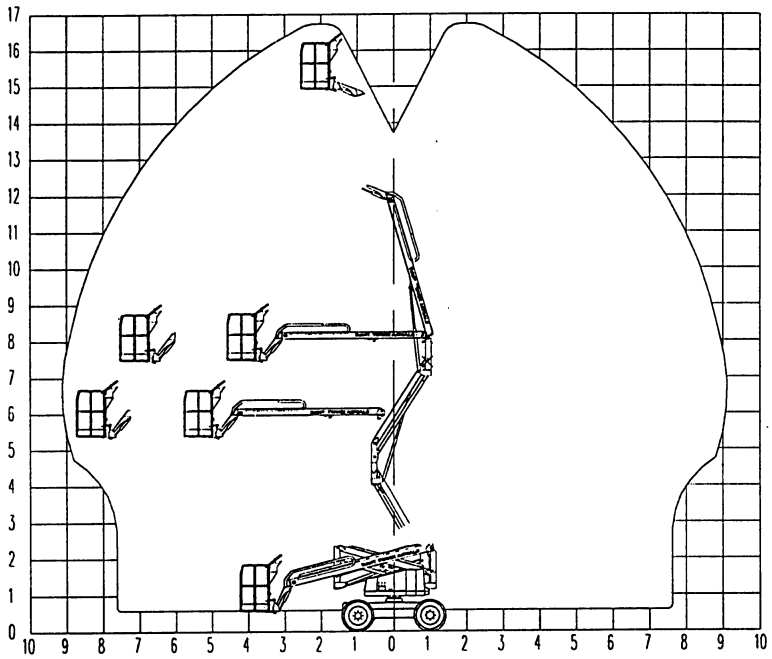


Figure 1.1 - TA50RT Working Envelope

1.1.5 GENERAL ARRANGEMENT

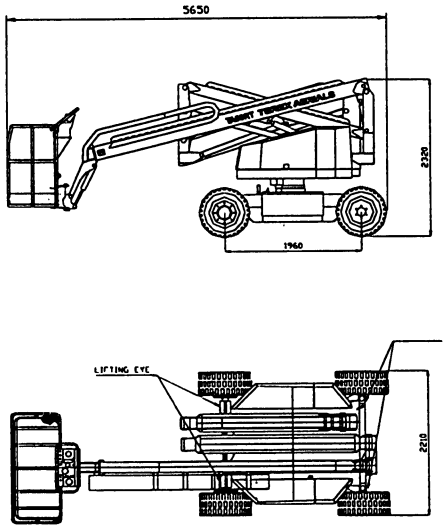


Figure 1.2 - TA50RT General Arrangement.

1.2 COMPONENT SPECIFICATIONS

1.2.1. MECHANICAL COMPONENTS

Tyre Type .....Solideal SKS 12-16.5 10 ply rating
332 mm wide x 848 mm dia.

Tyre Size 12-16.5R

Axle ..... 14.058 : 1 ratio

Gearbox .....6.73 : 1 ratio

Wheel Diameter .....42.4 cms

Brakes ..... Oil immersed discs integral inside front and rear axle housings and fail-safe operation serve as both parking and service brakes. The brakes are released when the footswitch is fully depressed and the joystick is moved to either forward or reverse motion.

1.2.2 HYDRAULIC COMPONENTS

Lift Cylinders ..... Double-acting with overcentre valves

Hoses ..... Thermoplastic & Steel braided rubber

Filtration .....Suction and pressure

1.2.3 OIL

Type .....Texaco Rando HDZ-32

Oil Reservoir Capacity .....62 Litres

1.2.4 EQUIVALENT OILS

SHELL	TELLUS T32
CASTROL	HYSPIN AWH 32
ESSO	UNIVERSE N32
CASTROL	HYSPIN AWS 22

1.2.5 ELECTRICAL COMPONENTS

Hand Controller Type .....Joystick

Battery .....One 12 Volt H.D

1.2.6. ENGINE DETAILS

Engine Type 1.....Hatz 2L4C Silentpack, 4 stroke, air cooled

Displacement .....1,716 cc

Number of Cylinders 2

Engine Type 2 .....Deutz F3L10114 stroke, air and oil cooled

Displacement .....2,049 cc

Number of Cylinders 2

SECTION 2

SAFETY PRECAUTIONS

2.1 SAFETY SYMBOLS

This manual contains important information on the safe use of your TEREX Self-Propelled Aerial Work Platform. Your failure to read, understand and follow all safety rules, warnings and instructions will unnecessarily expose you and others to dangerous situations. for your safety and the safety of those around you, you must operate your aerial work platform as instructed in this manual.

You, the operator, are the single most important factor for safety when using any piece of equipment. Learn to operate your work platform in a safe manner.

To help you recognise important safety information, we have identified warnings and instructions that directly impact on safety with following signals:

"DANGER" INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY. THIS SIGNAL WORD IS LIMITED TO THE MOST EXTREME SITUATIONS.

"WARNING" INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.

"Caution" indicates a potentially dangerous situation, which if not avoided , may result in minor or moderate injury. It is also used to alert against unsafe practices, and for property-damage-only situations.

One final note: The best method to protect yourself and others from injury or death is to use common sense. If you are unsure of any operation, don't start until you are satisfied that it is safe to proceed.

2.2 SAFETY RULES AND PRECAUTIONS

⚠ DANGER

- ELECTROCUTION HAZARD! THIS MACHINE IS NOT INSULATED!! Maintain safe clearance from electrical lines and apparatus. You must allow for

  machine sway (side to side movement) when elevated, and electrical line movement. This machine does not provide protection from contact with or proximity to an electrically charged conductor.

  You must AVOID CONTACT between any part of the machine, or its load, and any electrical line or apparatus carrying up to 300 volts.

  You must maintain a CLEARANCE OF AT LEAST 10 FEET (3.05 M) between any part of the machine, or its load, and any electrical line or apparatus carrying over 300 volts up to 50,000 volts. One foot (30.5 cm) additional clearance is required for every additional 30,000 volts.

  DEATH OR SERIOUS INJURY will result from contact with, or inadequate clearance from, any charged conductor.

- Read and understand all safety and control information found on the machine and in this manual before operating the unit.

- Only trained, competent personnel should operate the aerial work platform.

- Be aware of all Government and Local rules which may apply to this machine and its safe operation.

- Approved safety belts must be worn at all times when operating the unit from the platform. In addition approved headgear and other protective equipment must be worn as required. (The appropriate equivalent government body should be consulted).

- NEVER fasten safety belt to an adjacent structure while on the work platform.

- Make sure that entry gate to platform is secured before operating unit from the platform.

- DO NOT block the foot pedal or any function control in the operating position.

- DO NOT exceed the platform capacity of the unit in any configuration. Review the section titled "MACHINE SPECIFICATIONS", earlier in this manual, regarding this model's capacities and dimensions.

⚠ DANGER

- SECURE all tools and other loose items to prevent injury to persons working on or below the work platform.
- DO NOT use scaffolding, ladders or similar items to extend your reach while on the work platform.
- DO NOT attempt to climb down the boom assembly, if the unit fails while the operator's platform is raised or extended.
- Since the machine may be operated from its ground controls, precautions should be taken to prevent unauthorised personnel from operating the work platform with the ground controls while the platform is in use.
- The "UNPOWERED EMERGENCY MOVEMENT" procedure (described later in this manual) required releasing the brakes and disconnecting the rear wheels, which results in there being no means to stop the unit's travel. Terex recommends using this procedure only in cases of emergency, and only for a short distance. Be on guard against unit runaway on sloping surfaces. Movement speed shall not exceed 3 MPH (5 KPH).
- DO NOT attempt to open any hydraulic line or component without first relieving system pressures and shutting off fluid flow from the tank.
- DO NOT allow anyone to tamper with, service or operate the machine from the ground control station while personnel are on the platform, except in an emergency.
- DO NOT alter, modify or disable any safety devices or interlocks.
- DO NOT use the aerial work platform outdoors in electrical storms or in high wind situations. Maximum rated wind speed is 12.5 m/s.
- DO NOT increase wind area of cage by addition of sheltering material
- DO NOT raise the aerial work platform unless the unit is on a firm surface, and slope is within rated slope of the machine.
- When working underneath elevated booms, ensure they are propped using chock provided for this purpose.

⚠ DANGER

- Use caution to prevent ropes, cords, hoses, etc. from becoming entangled in the unit's boom sections when being raised, lowered or repositioned.
- Ensure that the area surrounding the mobile platform is clear of personnel and equipment before: driving the unit; raising, lowering or extending the boom, or swinging the superstructure; or tilting the platform.
- Maintain a safe distance from overhead and ground obstacles, debris, drop-offs, holes, depressions, electrical wires and other hazards to travel.
- Limit travel speed according to conditions of the ground surface, congestion, slope, location of personnel or any other factors that could cause hazard of collision of injury to personnel.
- DO NOT sit, stand or climb on platform rails.
- DO NOT operate this machine while under the influence of any drugs or alcohol.
- DO NOT operate this machine if you are bothered by heights, seizures, or dizzy spells.
- DO NOT indulge in stunt driving or horseplay while operating this machine.

⚠ WARNING

- Complete the "Operational Checklists" found in this manual (see Table of Contents) at designated intervals.
- Always attach the unit to a winch when loading or unloading from a truck or trailer. Terex does not recommend unassisted loading or unloading of any aerial work platform.
- With the platform swung away from the stowed position, use caution when selecting travel or steering direction. Travel and steer direction will be opposite switch or lever movement. Refer to the directional arrow decals on the undercarriage of the unit for travel orientation.

⚠ WARNING

- Actuation of the red "EMERGENCY STOP" button will apply brakes immediately, causing unexpected platform movement as the machine comes to a sudden stop. Brace yourself.
- Whenever releasing the brakes, ensure that the unit cannot roll.
- Immediately report any erratic noises, vibrations or malfunctions of the unit to a supervisor. Machine shall be removed from service until diagnosis and any necessary repairs have been completed.
- Operating this equipment without all safety and control decals in place can be hazardous.

⚠ CAUTION

- For transporting the machine, the platform or boom must not be tied to the trailer bed in any way.
- DO NOT exceed the maximum platform horizontal pull of 400 N.
- DO NOT use the boom or platform as a crane to lift oversized of hanging loads.
- DO NOT raise, extend, retract, tilt, or lower the platform into stationary objects, as this will cause damage to mechanical and hydraulic components.
- DO NOT use the platform or boom functions to push or tow the unit or another vehicle.
- DO NOT use the boom as a crane or hoist.
- Avoid sudden braking or steering, go slowly and leave more manoeuvring room during cold weather operation until the machine is warm.
- Noise emission levels on this machine are less than 70 dbs. @ 3m.

2.3 SAFETY FEATURES

2.3.1 EMERGENCY STOP PUSHBUTTONS

Two EMERGENCY STOP pushbuttons, one at the ground station and one in the cage, act as power on/off switches. Both switches must be ON to operate the machine. When either of the buttons is depressed, all functions stop immediately and the parking brake is automatically applied.

2.3.2 FOOTSWITCH CONTROL

The footswitch must be fully depressed before any machine operation can be carried out from the cage.

When the footswitch control is released, the electric supply to the hydraulic pump and the drive function is terminated and all machine functions stop.

2.3.3 TILT ALARM

The tilt alarm gives an audible warning when the machine is out of level by more than which the sensor has been rated.

2.3.4. MOVEMENT ALARM

The movement alarm is activated as soon as the machine is in drive mode.

2.3.5 TORQUE CHART

ITEM	BOLT SPECIFICATION	REQUIRED TORQUE (Nm)
Wheel Nut	M18 Grade 10.9	200
SlewRing Bolt TA33	M12 Grade10.9	120
Slewring Bolt TA50E	M12 Grade12.9	130
Slewring Bolt TA50RT	M14 Grade 10.9	190
Gearbox Bolt	M12 Grade 12.9	160
Axle Clamping Bolt	M20 Grade 10.9	200
General Bolts	Grade 8.8 M8	27.5
General Bolts	Grade 8.8 M10	55
General Bolts	Grade 8.8 M12	95
General Bolts	Grade 8.8 M16	236
General Bolts	Grade 10.9 M8	39
General Bolts	Grade 10.9 M10	70
General Bolts	Grade 10.9 M12	134
General Bolts	Grade 10.9 M16	333
General Bolts	Grade 12.9 M10	85
General Bolts	Grade 12.9 M12	160

SECTION 3

OPERATING PROCEDURES

WARNING

3.1. PRE-USE CHECK

Before the TA50RT is used at the start of a day, or after an extended period without use, the following checks should be carried out to ensure that the machine is in good condition and safe to use:

(a) Check that all labels are readable and secure.

(b) Check the hydraulic oil level.

(c) Check tyres for damage.

(d) Check wheel bolts for security.

(e) Check the tilt alarm.

(f) Check that all pivot pins are secure.

(g) Check the diesel engine oil level.

(h) Check the diesel engine fuel level.

3.2. GROUND CONTROL CHECKS

WARNING

DO NOT OPERATE THE MACHINE IF THE GROUND CONTROL CHECKS REVEAL A FAULT.

Ensure that the following checks are carried out with the cage empty:

(a) Test all operations (lift, rotate, etc.).

(b) Check for the following:

(i) Uneven or jerky operation

(ii) Hydraulic oil leaks

3.3. CAGE CONTROL CHECKS

WARNING

DO NOT OPERATE THE MACHINE IF THE CAGE CONTROL CHECKS REVEAL A FAULT.

Ensure that the following checks are carried out on a level surface:

(a) Carry out the checks described in paragraph 3.2.

(b) Check the drive, and emergency braking.

(c) Check the slow drive speed with the lower boom slightly elevated.

(d) Check the fast drive speed with all the booms fully down.

3.4. UNLOADING PROCEDURES

TO AVOID SERIOUS PERSONAL INJURY OR DEATH, ENSURE THAT THE MACHINE IS IN "CREEP " DRIVE SPEED WHILE UNLOADING FROM A TRUCK OR TRAILER

Inspect the outside of the unit for damage (including the underside). Inspect tall hoses, boom sections and cables for chafing or road damage. Confirm that all swing bearing bolts are tight (refer to specifications).

Unlock and open hydraulic compartment. Inspect all electrical and hydraulic connections for damage and security.

Check fluid level on the hydraulic tank, and add fluid as required (see lubrication chart).

Close hydraulic cover.

Attach the unit to a winch for the unloading procedure.

ALWAYS ATTACH THE UNIT TO A WINCH WHEN LOADING OR UNLOADING FROM A TRUCK OR TRAILER. CONNECT WINCH TO THE TIE DOWN LUGS ON THE UNDERCARRIAGE. UNASSISTED LOADING OR UNLOADING OF ANY MOBILE PLATFORM IS NOT RECOMMENDED.

READ AND UNDERSTAND ALL SAFETY, CONTROL AND OPERATING INFORMATION FOUND ON THE MACHINE AND IN THIS MANUAL BEFORE OPERATING THE UNIT.

Remove all machines tie downs. Remove wheel chocks, if used. Turn the engine on using keyswitch and set the Ground\Cage (platform) selector switch to "CAGE".

Enter the platform. Test all platform functions.

Raise the boom so that the platform will clear any obstacles as the machine is driven down the loading ramp.

Carefully drive the unit off the truck or trailer with the assistance of a winch

> **Note:** The brakes are automatically released for driving, and will automatically apply when the unit stops.

Before placing the unit into service, all operators must read and understand the contents of the Operator's Manual.

Upon initial unloading of the machine the PDI (Pre-Delivery Inspection Form) must be completed and returned in order to activate the Terex Limited Warranty.

3.5. DRIVING

⚠ CAUTION

It should be noted that the machine is not equipped for highway use and should only be driven on the public highway in compliance with any statutory regulation.

The drive controls are located in the cage and the machine can be driven with the cage positioned at either end of the machine. If driving is attempted from the 'steering' end of the machine, all directions given to the controls will be reversed so the operator may find driving easier with the cage positioned at the 'drive' end. Arrows on the chassis show the true control direction. Before driving the machine, check the following;

3.5.1 DRIVE CONTROLS

The drive controls are located in the cage and consist of a joystick controller and a footswitch. These controls can be seen in figure 3.1 (on the following page)

3.5.1.1 Forward and Reverse

(a) Start Engine.

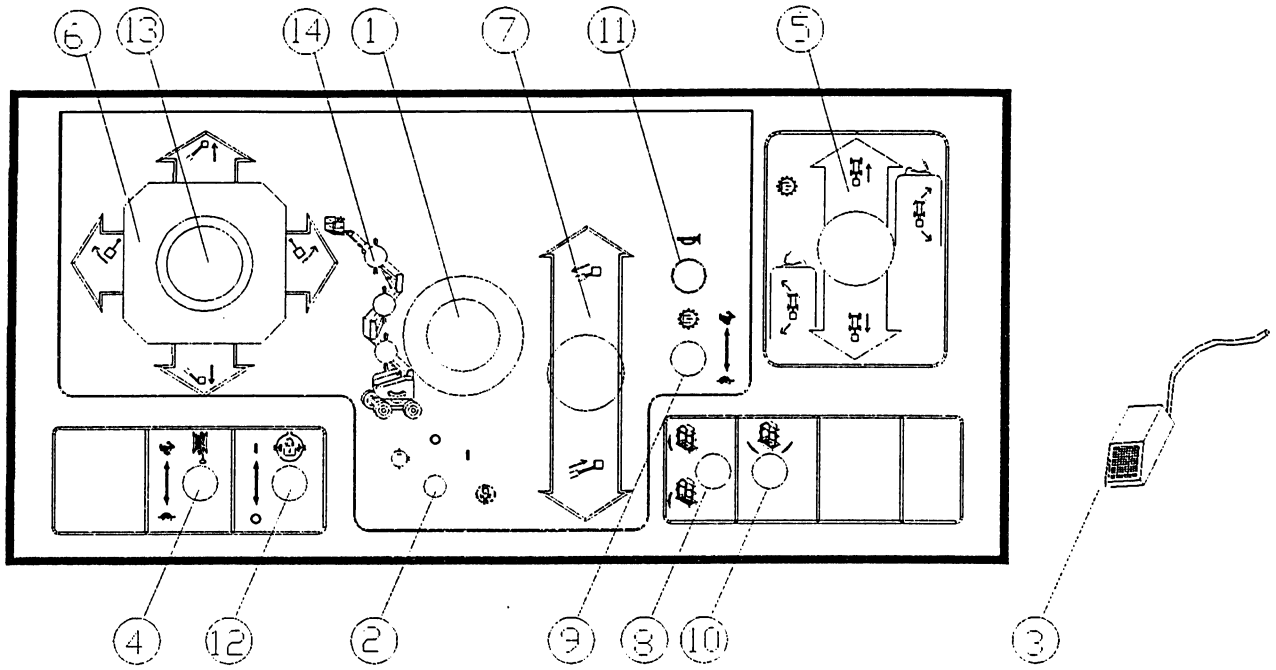
(b) At the ground controls, set the CAGE/GROUND selector switch to CAGE.

(c) At the cage controls, set the LIFT/DRIVE selector switch to DRIVE.

(d) Fully depress the footswitch.

(e) With the footswitch depressed, push the joystick forward to drive the machine forward, or pull the joystick back to drive the machine in reverse.

Note:- To de-activate the brakes, the footswitch must be depressed and the joystick displaced simultaneously.



1)	Emergency Stop Switch	8)	Cage Levelling Switch
2)	Engine on/off switch	9)	Engine Speed Switch
3)	Footswitch	10)	Cage Rotation Switch
4)	Drive Speed Select Switch	11)	Horn Button
5)	Drive/Steer Joystick	12)	Differential Lock Switch
6)	Boom/Rotate Joystick	13)	Boom Selector Button
7)	Teleboom Joystick	14)	Boom Selection Indicator LED

Figure 3.1 - Cage Controls

3.5.1.2 Drive Speed Control

The drive speed of the machine is proportionally controlled by the amount of movement made to the joystick.

Note:- When elevated, the drive speed of the machine is automatically reduced.

3.5.1.3 Steering Control

WARNING

THE WHEELS ARE NOT SELF-CENTRING AND MUST BE ALIGNED BY USING THE JOYSTICK ROCKER SWITCH

Steering is achieved by depressing the rocker switch on top of the joystick controller to the left or right, as required.

3.5.1.4 Travel Speed Control

The travel speed control sets the two speed drive to a low ratio for on-road use or a high ratio to improve gradeability when traversing a construction site. When set to the high ratio the climb ability of the machine is increased from 20% to 50%.

Caution:- To avoid mechanical damage, ensure that the machine is stationary before attempting to change the setting of the travel speed control.

3.6. DIFFERENTIAL LOCK

Caution 1:- To avoid mechanical damage, ensure that the machine is stationary before attempting to engage or disengage the differential lock.

Caution 2:- Prolonged use of the differential impairs steering and causes excessive Tyre wear. The differential lock must only be engaged momentarily.

The differential lock switch is located at the cage controls. The differential lock improves traction in slippery conditions and should only be engaged momentarily to reduce wheel spin.

3.6.1 Engage Differential Lock.

While driving on certain ground surfaces it may be necessary to engage the differential lock to improve traction.

The procedure for the use of the differential lock is as follows.

(a) Ensure that the machine is stationary.

(b) Select the differential "Lock On" position at the upper control station.

(c) Drive the machine to a position where greater wheel to ground traction is available and the lock is no longer required.

(d) Stop the machine and release the differential lock switch to "Lock Off" position.

Note:- It is usual that the differential lock will not disengage immediately, to reduce this delay it may be necessary to momentarily operate the drive control lever back and forth.

3.7. BRAKING SYSTEM

The TA50RT has a single braking system which serves as a parking brake when the machine is static, and as service brakes when the machine is in drive mode. The brakes are spring applied and hydraulically released.

3.7.1 Brakes in Static Mode

For normal parking, the brakes are automatically applied when the joystick controller in the central (neutral) position. During lift operations, the brakes are automatically applied to the machine.

3.7.2 Brakes in Drive Mode

The brakes are spring applied when the joystick is in the central (neutral) position and remain applied during lifting operations. Deceleration is achieved by moving the joystick controller to the central (neutral) position.

3.7.3 Emergency Braking

Emergency braking is achieved by operating the EMERGENCY STOP button, or by releasing the footswitch, or by returning the joystick controller to the central (neutral) position.

3.8. ACCESS OPERATIONS (CAGE CONTROL)

Note : To facilitate entry to the cage, extend the telescopic boom using lower controls. It is recommended that the engine be started from ground controls when cold. Otherwise, the machine can be started as below

(a) At the ground controls, set the CAGE/GROUND switch to CAGE
(b) At the upper controls, turn the ignition momentary switch (2) to the START position and hold in position until the engine starts.
(c) Release the momentary switch, which will automatically return to the ON position.
(d) Check that both high and low engine speeds are attainable using the ENGINE SPEED switch (9).

Available Control Functions:

-	Lift 1 Boom:	Up	Down	(Item 6, Fig 3.1)
-	Lift 2 Boom:	Up	Down	(Item 6, Fig 3.1)
-	Lift 3 Boom:	Up	Down	(Item 6, Fig 3.1)
-	Zoom:	Extend	Retract	(Item 7, Fig 3.1)
-	Rotate:	Left	Right	(Item 6, Fig 3.1)
-	Cage Level:	Front	Back	(Item 8, Fig 3.1)
-	Cage Rotate	Left	Right	(Item 10, Fig 3.1)

Note:-The 3 lift booms are operated using the Boom joystick (Item 6, Fig 3.1). This joystick is used to control speed of each boom. Boom selection is achieved by pressing the button (Item 13, Fig 3.1) on the Boom Joystick. The selected boom is indicated by an LED (Item14, Fig 3.1). The footswitch must be activated at all times while operating from cage.

3.9. ACCESS OPERATIONS (GROUND CONTROL)

Control from the ground is effected as follows:

a) Ensure that both ground and cage control emergency stop buttons are in the out (released) "power-on" position.
b) Insert the key into the ignition keyswitch (Item 2, Fig 3.2) and turn clockwise one stage.(ON position)
c) Check that the Battery LED is lit.(Items 12 , Fig 3.2) If the lamp is not lit, check that both EMERGENCY STOP push-buttons are out. Engine temp LED may be lit also in this position.
d) Turn the ignition key to the PRE-HEAT position for 60 to 90 seconds.
e) Turn the key to the START position and wait for the engine to start.
f) Release the key which automatically returns to the ON position.
g) To operate control functions, the cage/drive keyswitch must be fully rotated.(clockwise)

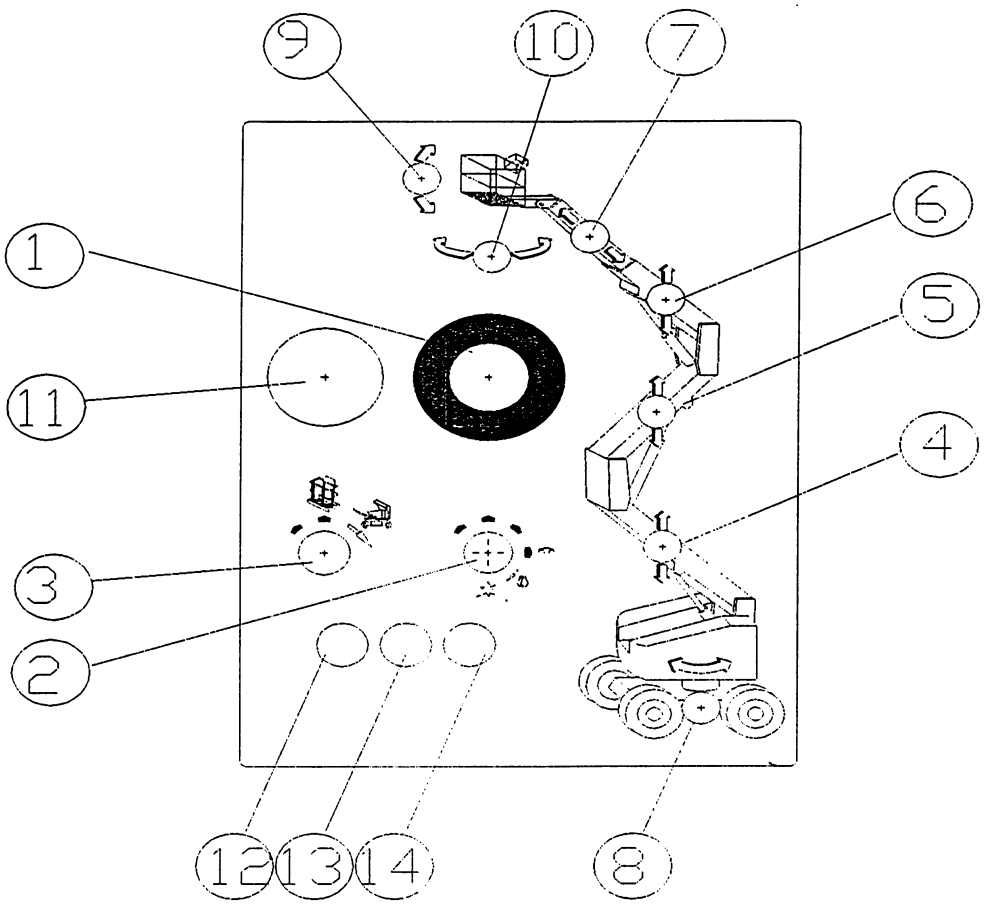


Figure 3.2 - Ground Controls

1)	**Emergency Stop Button**	**8)**	**Rotate Switch**
2)	**Engine Ignition Switch**	**9)**	**Cage Level Switch**
3)	**Cage/Ground Select Switch**	**10)**	**Cage Rotate Switch**
4)	**Lift1 Boom Switch**	**11)**	**Hourmeter**
5)	**Lift2 Boom Switch**	**12)**	**Battery Indicator**
6)	**Lift3 Boom Switch**	**13)**	**Engine Temp Indicator**
7)	**Tele Boom Switch**	**14)**	**Air Filter Indicator**

3.10. AFTER USE AND STORAGE INSTRUCTIONS

When the machine is no longer required, and is to be stored, the following instructions are recommended (Note: Terex Aerials recommends indoor storage of the unit)

(a) Close cabinet doors.
(b) Bring all booms to stowed position.

(c) Ensure all Emergency Stop Push-buttons are fully depressed.
(d) Remove all keys from switches.

Prior to re-using the unit after storage, all daily servicing checks (section 5.3.1) should be fully adhered to. After prolonged storage, weekly (section 5.3.2) and monthly (section 5.3.3) servicing checks should also be carried out.

3.11. SPECIAL PRECAUTIONS (COLD WEATHER)

WARNING

BRAKING IN ICY CONDITIONS: WHEN THE GROUND SURFACE IS ICY, CARE MUST BE TAKEN TO AVOID SUDDEN BRAKING. IT IS RECOMMENDED THAT ALL DRIVING OPERATIONS ARE CARRIED OUT SLOWLY AND A SAFE MARGIN OF ERROR IS ALLOWED FOR MANOEUVRING AROUND OBSTACLES.

In very cold weather conditions, the hydraulic oil must be allowed to warm before full operation of the machine is attempted. Regular oil maintenance must be carried out to ensure that the hydraulic oil is kept free from water contamination. Emulsified water can freeze out of the oil as ice crystals, completely blocking the suction strainer and causing hydraulic pump damage. To prevent damage to the machine, the following steps should be taken,

(a) Ensure that the rotation drive teeth are not blocked by ice.
(b) Ensure that the steering linkages are free from ice and that the steering operates smoothly.
(c) Ensure that the cage floor is free from ice to allow a firm foot-hold without danger of slipping.

3.12. SPECIAL PRECAUTIONS

3.12.1. TOWING

3.12.1.1 Towing without towing package

Machine can be towed by slinging chains around suitable support points.
Do not exceed 5km/hr while towing the machine, as wheels may not camber correctly. (See section 4.2.3)

3.12.2. WIND CONDITIONS

The unit must not be operated in wind speeds which are in excess of 12.5m/sec (28 mph- 45 km/hr). During normal machine operations, consideration should be given to nearby objects, especially when working in the close vicinity of buildings and electrical cables. Sudden gusts of wind could cause the machine to sway and trap the operator's arms/hands between the cage railing and any obstruction. It is recommended that a reasonable safe distance is kept between close obstructions and the cage assembly during all machine operations.

3.12.3. CRANE OPERATIONS

The TA50RT is fitted with four lifting points in the form of eyes at each corner of the chassis. During lifting operations, take all instructions from the crane operator. Check

identification plate.

3.12.4. TESTING THE TILT ALARM

WARNING

IF THE TILT ALARM SOUNDS WHILST ELEVATED, RETRACT AND LOWER BOOMS AND DRIVE TO A LEVEL LOCATION.

If a wire in the tilt alarm circuit becomes disconnected whilst the machine is in use, the alarm will sound continuously. If this occurs when the machine is elevated, zoom in immediately and lower the cage to the stowed position. **DO NOT USE THE MACHINE UNTIL THE FAULT HAS BEEN RECTIFIED.**

With key switched on and before you operate machine open electrical module cover and press down one side of sensor. This will sound horn if functioning properly.

If there is no horn sound, the sensor must be repaired immediately before machine can be operated.

3.12.5 BATTERY CHARGE, ENGINE TEMP & AIR FILTER WARNING LAMPS

The red battery charge lamp, the red engine temp lamp and the red air filter warning lamp for the diesel engine are located on the ground control unit.

The battery charge lamp is lit on engine start up but should extinguish when the engine is running. If the lamp remains lit when the engine has reached operating speed, the alternator charging circuit should be checked for faults.

The engine temp lamp is lit if the temperature of the engine exceeds a certain point
The air filter lamp is lit when the filter is blocked to the extent that the engine doesn't operate efficiently.

Note: Should any of these warning devices engage while operating the machine, the engine stops automatically. If elevated, the booms need to be manually stowed as outlined in emergency procedures, section 4.

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4.1.2 SITUATION: Unit elevated, with operator incapacitated at platform controls.

TRY TO DETERMINE THE CAUSE OF THE PROBLEM BEFORE YOU TOUCH THE MACHINE.

CORRECTIVE ACTION:

- Have someone summon first aid or rescue squad.
- Attempt to talk to the operator before taking any rescue measures.
- *Before attempting emergency lowering procedure, check to see if the operator is:*
  - a) in a pinned situation, or
  - b) would be endangered if platform is moved.
- After establishing that the machine is not in contact with live power lines, lower the platform or move the unit as necessary, using emergency procedures (see "Emergency Pump", section 4.2.1).
- Render first aid to the operator.
- **Report the incident to your supervisor immediately.**

IMPORTANT: Any incident involving personal injury must be immediately reported to the local Terex Aerials Distributorship as well as to Terex Aerials Inc.

4.1.3 SITUATION: Platform in contact with live power lines and operator incapacitated.

CORRECTIVE ACTION:

- Have someone summon first aid or rescue squad.
- Contact authorised personnel to disconnect power supply touching unit.
- ***Before attempting emergency lowering, check to see if the operator is:***
  - **a) in a pinned situation**
  - **b) would be endangered if platform is moved.**

- AFTER POWER IS CUT, lower the platform or move the unit as necessary, using emergency procedures (see "Emergency Pump", section 4.2.1).

- Render first aid to the operator.

- **Report the incident to your supervisor immediately.**

IMPORTANT: Any incident involving personal injury must be immediately reported to the local Terex Aerials Distributorship as well as to Terex Aerials Inc.

4.2 EMERGENCY SYSTEMS AND PROCEDURES

4.2.1 EMERGENCY PUMP

This machine is fitted with a handpump which can be operated from the ground control station when the unit has lost power. In an emergency situation the pump can be used to lower the cage to provide a safe exit for personnel.

The pump is located at top of hydraulic tank in the main control module.

The lever is stowed nearby on the side of the tank.

Ground Operation: (refer to Figure 4.1)

- Move black handpump lever (item 1) to the left to operate all boom functions and to the right to disengage the brake and drive axle. (see point 4.2.3.1).

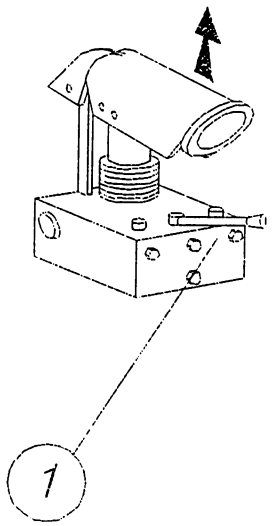
- To operate main boom functions (black handpump lever moved to left) the Hydraulic bypass valve (BP) should be fully engaged by screwing in the top knob (turn clockwise by hand) and the dump valve overide button (DP) should be rotated anti clockwise and allowed to pop out.

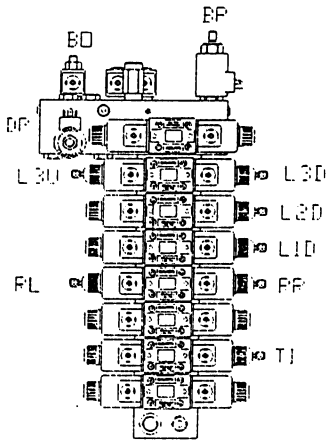
- Select desired function by screwing in (clockwise) the appropriate knob by hand only.

- Generate hydraulic pressure by pumping hand pump, to move boom to required position.

- The function may be deselected by screwing out (anticlockwise) the knob to its fullest extent (by hand only).

- Ensure that for reversing the operation of a valve, i.e. rotation control from left to right, the knob used for the first function should be screwed out fully before the opposite knob is screwed in.





KEY

DP	**Dump Valve**
BO	**Brake Override**
BY	**Hydraulic ByPass**
L1D	**Lift 1 Down**
L2D	**Lift 2 Down**
L3D	**Lift 3 Down**
L3U	**Lift 3 Up**
RR	**Rotate Right**
RL	**Rotate Left**
TI	**Tele-boom In**

Figure 4.1 - Emergency Handpump - Hydraulic valve block.

- **ON COMPLETION OF THE REQUIRED OPERATIONS, ENSURE ALL VALVE KNOBS ARE SCREWED OUT FULLY.**

4.2.2 EMERGENCY ROTATION

The emergency rotation of the superstructure is performed by a mechanical override or the emergency pump.

For the mechanical override procedure, use 1/2" square socket, extension and ratchet handle attached to the square extension shaft of the rotate drive gearbox.

For the emergency pump procedure, activate the emergency pump move black handpump lever to the left and screw in the appropriate valve override knobs (as described in section 4.2.1 above).

4.2.3 EMERGENCY TOWING

Every attempt should be made to restore primary power to the machine before using this procedure.

THIS PROCEDURE REQUIRES RELEASING THE MACHINE BRAKES, WHICH RENDERS THEM IN-OPERATIVE. TEREX

RECOMMENDS USING THIS PROCEDURE ONLY IN CASES OF EMERGENCY, AND ONLY FOR A SHORT DISTANCE.

BE AWARE OF MACHINE RUNAWAY ON SLOPING SURFACES. MOVEMENT SPEED SHALL NOT EXCEED 3 M.P.H. (5 K.P.H.)

This machine is equipped with tie down lugs (front and rear) that can be used for towing the unit. The chains or ropes must be of sufficient capacity to move the machine.

- Secure the machine to the tow vehicle with chains or ropes.

ALWAYS BLOCK THE WHEELS BEFORE YOU RELEASE THE BRAKES TO PREVENT UNEXPECTED UNIT MOVEMENT ON SLOPES.

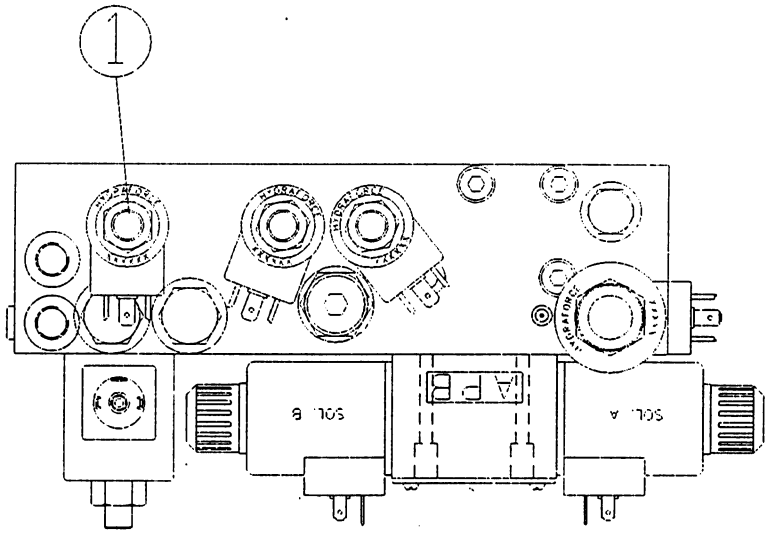


Figure 4.2 - Top view of hydraulic manifold block.

4.2.3.1 Towing.

A. Disengage brakes

(a) Push red overide button and twist clockwise. (item 1 Fig 4.2) to open the brake lines, so that hydraulic pressure can be applied to the brakes.

(b) Switch handpump to brake line by moving the black handpump (item 4, fig 4.3) located on top of the hydraulic tank, to the right.

(c) Operate handpump (item 1 Fig 4.3) until sufficient pressure has built up to release the brakes (note: P.R.V. is set at 40 bar).

(d) Press in the two red studs (item 7 Fig 4.3), situated on the pump, to allow circulation of oil through pump. Studs re-engage automatically when power is restored.

(E) Attempt to straighten steering.

(f) Tow machine carefully and slowly (max. 5km/hr) backwards using chains.

B. Re-engage Brakes.

(a) Twist red overide button (item 1 Fig 4.2) counter clockwise, to release pressure so that the brakes re-engage.

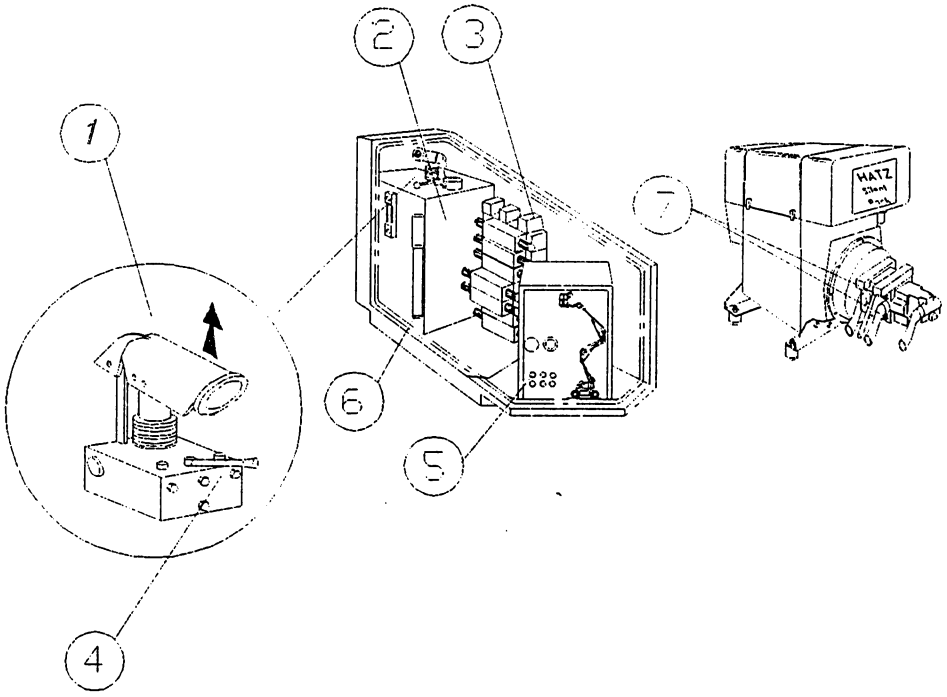


Figure 4.3 : Hydraulic and Electrical Modules

HYDRAULIC MODULE

1) Emergency handpump.
2) Oil tank
3) Hydraulic valve block.
4) Handpump selector. (Lift/Brake)
5) Lower control box.
6) Handpump handle

ENGINE COMPARTMENT

7) 2 Red studs to allow oil to circulate through pump.

SECTION 5

MAINTENANCE SCHEDULES

5.1. GENERAL INFORMATION

5.1.1. INTRODUCTION

The TA50RT has been specially designed to reduce maintenance to a minimum. It is essential that the specified servicing instructions are followed to ensure safety and reliability.

The hydraulic pump, motor, cylinders and pressure valves are self-lubrication internally. The turntable slewing ring is grease packed and the corrosion-resistant pivot pins and bearings are pre-lubricated and require attention only at six monthly intervals.

Note:- During the guarantee period, minor oil leaks may occur until the various hydraulic components and pipe fittings are "bedded-in". During the first three months of operational use, all hydraulic components, hoses and pipe fittings must be inspected weekly for oil leaks etc. Corrective action should be taken as required.

5.1.2. HYDRAULIC OILS

The following table lists the recommended equivalent hydraulic oils for a TA50RT machine

SHELL	SHELL TELLUS T32
MOBILE	DTE 13M
TEXACO	RANDO HDZ 32
CASTROL	HYSPIN AWH 32
ESSO	UNIVISE N32

If a lubricant not listed in the table is to be used, the oil must comply with the following requirements:-

(a) Highly refined mineral oil incorporating anti-oxidant, anti-dust, anti-foam, and anti-wear additives.

(b) The oil must have good demulsibility, so that water is not circulated in the system.

(c) The optimum viscosity range at operating temperature is 16/40 centi Stokes.

(d) The viscosity index should preferably be 100, and not less than 90.

(e) the viscosity range will usually be:

Temperate	0°C	-	300cSt
Temperate	40°C	-	30cSt
Tropical	0°C	-	700cSt
Tropical	40°C	-	50cSt
Tropical	100°C	-	8cSt

(f) Mineral hydraulic oils produced by different companies will usually mix with each other satisfactorily. However, the oil producers should be consulted in case of doubt.

(g) For sub-zero temperatures, the use of Shell Tellus T15 or equivalent hydraulic fluid with viscosity index of 151E and pour point MINUS 50°C is recommended.

(h) For tropical temperatures, the use of BP Energol HLP 100 or equivalent is recommended.

HEALTH WARNING WHEN HANDLING HYDRAULIC OILS

WARNING

REGULAR CONTACT WITH MINERAL OILS POSES A POTENTIAL HAZARD TO HEALTH. ALL PERSONS MUST BE AWARE OF THE CORRECT METHODS OF HANDLING THE OIL AND THE NEED FOR THOROUGH HYGIENE.

Mineral oil act as solvents on the natural oil in the skin. Frequent and prolonged skin contact can cause dermatitis or severe irritation. Normally, mineral hydraulic oils present no health hazard when used intelligently and it is recommended that protective clothing and proper washing facilities should be provided or be accessible.

If oil is splashed into the eyes, it must be washed out thoroughly using copious quantities of water. If irritation persists, medical advice must be sought.

5.1.3 DIESEL ENGINE OIL

Engine oil changes and general servicing differ, depending on the type of engine fitted.

It is recommended that the manufacturers diesel engine handbook is consulted for the particular make and type of engine fitted to your machine.

However, a recommended service schedule would be as follows:

- Change oil and filter after first 20 hours of operation.
- Change oil and filter every 200 hours thereafter.

5.2. SERVICING CHECK LIST (BASIC MACHINE ONLY)

All checks must be completed by operator before operating unit.

5.2.1. Daily

(a) Check hydraulic oil level.

(b) Check tyre condition.

(c) Check cage door lock.

(d) Check for hydraulic leaks.

(e) Check hoses for chaffing.

(f) Check that safety harness points are in tack.

(g) Check tilt alarm.

(h) Check that all switches are not damaged.

(i) Check cage controls for proper operation.

(j) Check wheel nuts for tightness.

(k) Check wheels for damage.

(l) Check axle securing bolts.

(m) Check diesel engine oil level.

(n) Check diesel engine fuel level.

5.2.2 Weekly

In addition to the daily checks, the following checks should be carried out by an experienced technician :-

(a) Check control valves for self-centre.

(b) Inspect hydraulic system for leakage.

(c) Check steering system for oil leakage and wear.

(d) Check battery electrolyte levels.

(e) Check pivot pin security.

(f) Grease zoom pads.

(g) Lubricate slew ring gear teeth.

(h) Check rotation box securing bolts for tightness.

(i) Grease cylinder pivot pins, steering pivot pins and slew ring (figure 5.2)(see also section 5.4).

(j) Check axle oil level.

(k) Ensure all labels are legible and in place.

(l) Check all hoses and cables through slew ring for wear.

(m) Check the battery and mountings as follows:

(i) Check the start battery and mounting frame for signs of damage.
(ii) Check battery terminals for corrosion. Clean and apply Vaseline to terminals.
(iii) Check the battery electrolyte level and, if necessary, top-up with distilled or de-mineralised water.

(n) Check the manifold assembly. Operate the motor and carry out the following checks:-

(i) Check the security of blocks and solenoids.
(ii) Check the security and condition of hoses and cables.

(o) Check the hydraulic oil tank as follows:-

(i) Check the tank for security
(ii) Check the tank for leakage.
(iii) Check that the handpump is operational by depressing one of the function levers and pumping the handle.

(p) Check the minor equipment as follows:-

(i) Check all minor equipment for security
(ii) Check for oil leakage
(iii) Check all cables for security and damage.

(q) Check the nylon zoom pads for wear as follows:-

(i) Fully zoom in and check the gap at the top of the zoom boom telescope, between the inner and the outer, at the rear of the zoom boom.
(ii) Fully zoom out and check the same gap at the top of the telescope, at the front of the zoom outer.
(iii) Renew the pads if the gap between the pad and the zoom outer is 5mm or more.

5.2.3 Monthly

In addition to the weekly checks, carry out the following:-

(a) Check for hydraulic oil contamination.

(b) Check chassis mounting bolts.

(c) Grease slewing ring teeth.

(d) Check rotation gearbox oil level.

(e) Lubricate all small pivots throughout the machine.

(f) Ensure all boom/cylinder pins are positively secured in position.

(g) Check drive gearbox and axle oil levels.

(h) Torque wheel nuts to that specified in the torque chart (ref. figure 2.1)

(i) Check that boom lock valves are functioning. Switch off unit and operate spool.

(j) Check structure for any obvious defects.

(k) Check emergency pump operation.

(l) Check condition of the slave cylinder.

(m) Check all bushes for wear. Elevate the booms and check each pin in turn for rotation or movement. If wear is detected, the bush may need to be replaced. The pins and bushes have been specially treated and should only require lubrication at 4 yearly intervals. Under certain conditions, lubrication may be required more frequently.

(n) Check the slew bearing for any obvious defects. Generally, no user maintenance to the slew bearing is possible. The replacement of the slew bearing is a major operation and advice should be sought from Terex Aerials Ltd. Checks must be made to ensure that all securing bolts are tight. Any bolts found loose or sheared must be replaced. Slew ring play is measured at the perimeter of the ring and the maximum rock allowed is 1.7mm (refer to fig 5.1)

(o) Check and maintain the superstructure as follows:-

(i) Steam clean the superstructure and inspect all welds and brackets.

(ii) Check for pins turning in their mountings. This will indicate sheared pin lock bolt. Refer to pin replacement procedures.

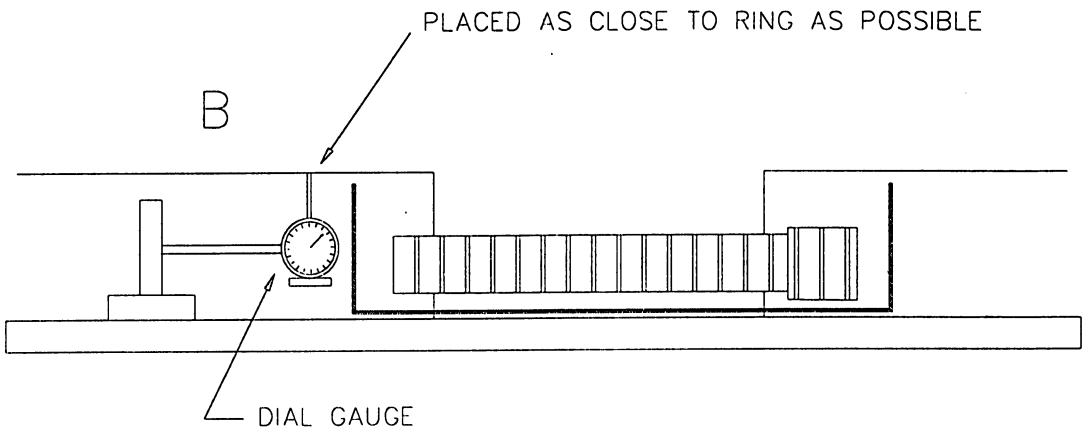


FIG. 6

Figure 5.1 : Slew Ring Bearing Play Measurement.

5.2.4 Six Monthly

In addition to the monthly check, carry out the following:-

(a) Check cage levelling.

(b) Check cage pivots.

(c) Check boom cylinders. The lift cylinder seals can be replaced with the cylinder mounted on the machine, or by removing the cylinder before removing the seals.

(d) Check axle.

(e) Replace suction filter element.

(f) Test all machine systems.

5.2.5 Yearly

In addition to the 6 monthly check, carry out the following:-

(a) Change oil in rotation gearbox.

(b) Grease slewing ring bearing.

(c) Examine the hydraulic oil. Change if necessary.

(d) Check hydraulic oil tank.

(e) Examine machine structure for defects.

(f) Examine cage mountings and structure.

(g) Check zoom cylinders. The zoom cylinder is a double-acting type and must be removed from the machine before any thorough check can be carried out.

5.2.6. Four Yearly

In addition to the yearly checks, carry out the following.

(a) Detailed examination of flexible hoses.

(b) Detailed examination of all pivot pins and bearings.

5.3. SERVICING

Servicing to be carried out by a trained technician.

5.3.1 DAILY ROUTINE SERVICING

5.3.1.1. Hydraulic Oil Level

Before checking the oil level, ensure that the machine booms are stowed in the travelling position and the machine is standing on level ground. The oil level must be 1" (2.54 cm) below the top of the oil level gauge. Refer to the lubrication chart for the correct grade of oil if the reservoir requires topping up.

After checking the oil level, ensure the oil filler cap is fully secure to prevent water contamination or contamination by other impurities .

5.3.1.2 Tyre Condition

Check the condition of all four tyres.

5.3.1.3 Cage Door Lock

Check the security of the cage door.

5.3.2. WEEKLY ROUTINE SERVICING

5.3.2.1 Control Valves

Cage control valves must be checked for correct operation. Check that the cage control valve handles automatically return to the central (neutral) position.

5.3.2.2 Hydraulic System

Inspect the hydraulic system as follows:-

(a) Pressurise the hydraulic circuit and inspect the system for any signs of oil leakage, particularly at flexible hoses, connections and hydraulic components.

(b) Examine all pivot pins on booms, cylinders and the levelling system to ensure that they are positively secured in position.

5.3.2.3 Steering

Check the steering cylinder for oil leakage and the linkage for signs of water.

5.3.2.4 Start Battery

Check the battery electrolyte levels. Replenish the electrolyte with distilled water if necessary.

5.3.2.5 Pivot Pins

Check all pivot pins for security. Grease those pivot pins as shown in the following Fig 5.2.

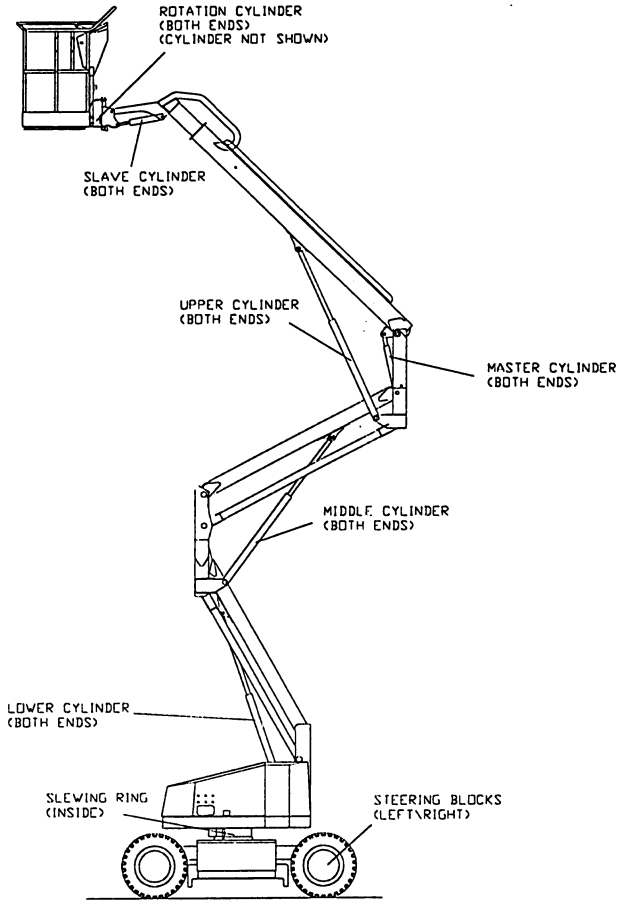


Figure 5.2 : Location of Grease Nipples

5.3.3. MONTHLY ROUTINE SERVICING

5.3.3.1 Hydraulic Oil

Allow the machine to stand for at least 8 hours without operating the pump. This will allow water and other impurities to separate out of the oil and settle to the bottom of the tank.

Disconnect the 3/4" pipe at the bottom of the pump side of the ball valve and block off to prevent oil leakage from the system.

Open the ball valve at the bottom of the tank just enough to allow a gradual trickle of oil and drain fluid from the tank into a transparent container, until clean oil flows. Under normal operating conditions, a maximum of 0.25 litres (1/2 pint) is usually sufficient to remove all impurities.

If the oil does not flow clear but has a cloudy appearance, it is usually an indication that water is present. If this condition occurs, a complete coil change will be necessary.

5.3.3.2 Chassis Bolts

Check all bolts for tightness.

5.3.3.3 Slewing Ring Gear Teeth

Remove any dirt from between the gear teeth and lubricate.

Note:- If solvents or a high-pressure washer are used for cleaning, re-grease the slewing ring bearings.

5.3.3.4 Lubrication

Lubricate all small pivots throughout the machine with any good quality medium grade oil. Special attention should be given to the cage control lever pivots.
DO NOT lubricate the main pivot pins .

5.3.3.5 Pivot Pin Security

Examine all pivot pins on booms, cylinders and levelling system and ensure that they are all positively secured in position.

5.3.3.6 Drive Gearbox Oil Level

Check the gearbox oil level with the machine on level ground and, if necessary, top-up with E 90

5.3.4 SIX MONTHLY ROUTINE SERVICING

5.3.4.1 Cage Levelling

Check the cage levelling system as follows:-

(a) Examine both levelling cylinders, particularly at the pivot points, for any sign of wear or damage. Ensure that the end fittings are secure.
(b) Check cylinders and hose fittings for leaks.

5.3.4.2 Boom pivots

The main pivots on the booms, cylinders and levelling system are fitted with corrosion-resistant pins and per-lubricated bearings. Check the bushing for any signs of wear

The bushings are steel-backed, acetal co-polymer lined. If the bearings show any defect, they should be replaced with the correct type. Consult Terex Aerials Ltd.

5.3.4.3 Boom Cylinders

Check the boom cylinders as follows:-

(a) Hydraulically test the cylinders at fully retracted and extended positions,

Check that there is no movement between rod and bearing housing, or between cap and tube

(b) Check all cylinders for oil leakage.

5.3.4.4 Axle

Check the oil level in the axle with the machine on level ground and, if necessary, top us with EP 90 oil.

5.3.4.5 Suction Filter

Change the suction filter element.

5.3.4.6 Machine Systems Test.

Test the following systems:-

(a) Drive assembly, including drive shaft, axle, couplings, drive motor and gearbox.

(b) Slewing ring.

(c) Cage rotation worm drive.

(d) All machine functions.

5.3.5 YEARLY ROUTINE SERVICING

5.3.5.1 Hydraulic Oil

Providing the hydraulic oil has been regularly maintained, it should only require changing at approximately two-yearly intervals. This is dependent on maintenance, amount of use, application, temperature, atmospheric conditions and other factors.

A cloudy appearance in the hydraulic oil indicates that water is present. A change from clear amber to dark brown, accompanied by a strong "burnt" smell, indicates overheating of the oil. The cause should be investigated and rectified. The presence of either requires a complete drain and refill of the entire hydraulic system.

5.3.5.2 Hydraulic Oil Tank

Carefully check the condition of the oil inside the tank to ensure that it flows easily and is a clear amber colour. In cases of gross contamination, it will be necessary to completely drain and refill the entire hydraulic system.

5.3.5.3 Hydraulic Tank Refill Procedure.

Refilling the hydraulic oil tank requires approximately 62 litres of TEXACO RANDO HDZ 32 hydraulic oil (or equivalent).

To refill the hydraulic tank, proceed as follows:-

(a) Ensure that the oil temperature is sufficiently high to allow the oil to flow freely.
(b) Place a suitable container under the drain tap or attached to a suitable hose to lead from the drain tap to the waste oil container.
(c) Open the drain tap and drain off all the oil from the tank.
(d) Remove the tank top plate for internal inspection and cleaning.
(e) Renew or clean the suction hose and close the drain tap.
(f) Renew the cover plate, renew the gasket if necessary and refill the reservoir to the correct level, filling through the suction filter.

5.3.5.4 Structural Examination

A thorough examination of the complete machine should be carried out for any signs of damage, corrosion, misalignment, material fractures, etc. Particular attention must be given to the condition of all welded joints.

5.3.5.5 Cage Mounting

Check the cage mounting as follows:-

(a) Check that all mounting bolts are secure.

(b) Check cage frame members are in good condition.

5.3.5.6 Levelling Cylinders

Check seals at rod and if in need of replacement change as follows

5.3.6 FOUR YEARLY ROUTINE SERVICING

Note:- The following recommendations are based on the advice of suppliers and the requirements of various national safety regulations. They should be applied with discretion, depending on such factors as the amount and type of use,

environmental conditions, local safety regulations etc.

5.3.6.1 Flexible Hoses

Inspect all flexible hoses over their complete length. Renew any hoses showing looseness or corrosion at the end fittings, cracking, blistering or excessive wear of outer protective covering.

5.3.6.2 Pivot Pins and Bearings

All pivot pins have been treated with Tuffrite and only require lubrication checks at 4-yearly intervals.

All pivot pin bearings are steel-backed, acetal co-polmer lined and only require lubrication checks at 4-yearly intervals.

Note:- In tropical climates, pins and bearings may require more frequent lubrication.

The recommended lubricant for pivot pin bearings is MALACHITE LONGTERN 2 PLUS extreme pressure grease or equivalent.

Note:- There are no grease nipples for Boom pin bearing lubrication. The pins must be removed and lubricated by hand.

Cylinder pins are lubricated by greased nipples. These should be greased weekly or every 100 hrs.

5.3.6.3 Pin Replacement

To replace a pin, the following procedures should be adhered to,

5.3.6.3.1 Boom Pin Replacement

To replace a boom pin, proceed as follows;-

(a) Support the boom and upper structure securely on a fork lift, or similar rigid platform.

(b) Remove the pin locking bolts.

(c) Drive out the boom pin. Take care to ensure that the inside bore is not damaged during this procedure.

(d) Fit new pin and locking bolts. Lubricate the bolts before fitting.

Note:- It is very important to maintain the correct mating position between the boom and side plates during this operation. Any movement between the two parts will make pin fitting more difficult.

(e) Apply grease to pins.

5.3.6.3.2 Tie-Rail Pin Replacement

To replace a tie-rail, proceed as follows;

(a) Support the Boom
(b) Remove the pin locking bolts and pivot pin,

Note:- On removal of the pin, the tie-rail will fall from position if not held. Since the tie-rail is a relatively light components, it can be held in position manually while the new pin is fitted.

(c) Fit new pin and locking bolts. Lubricate bolts before fitting.
(d) Apply grease to the pin.

5.3.6.3.3 Lift Cylinder Pin Replacement

To replace lift cylinder pin, proceed as follows:-

(a) Support the Boom. Release the oil pressure to ensure there is no load on the cylinder.
(b) Remove the pin locking bolts, support the cylinder and remove the pin.
(c) Fit new pin and pin locking bolts. Lubricate the bolts before fitting.
(d) Apply grease to the pin.

5.3.6.3.4 Self Levelling Cylinder Pin Replacement

To replace a self levelling cylinder pin, proceed as follows:-

(a) Support the cage to ensure that there is no load on the self levelling cylinders. This also applies when changing pins on the rear levelling cylinder.
(b) Remove the pin locking bolts and remove the pin.
(c) Fit new pin and new pin locking bolts. Lubricate the bolts before fitting.
(d) Apply grease to the pin.

5.3.6.3.5 Zoom Boom Cylinder Pin Replacement

To replace a zoom boom cylinder pin, proceed as follows:-

Note:- If the zoom has been greased, the location recess may be filled and not visible.

(a) Remove the pin locking bolts.
(b) Support the cylinder and remove the pin. When changing the rod pin, it may be necessary to zoom out to reveal the pin location.
(c) Fit new pin and new pin locking bolts. Lubricate the bolts before fitting.

(d) Apply grease to the pin.

5.3.6.4 Zoom Cylinder

Check condition of cylinder as follows:

a) Remove the pins and hoses.

b) Withdraw the cylinder backwards out of the zoom boom.

c) Elevate the zoom boom to the horizontal position.

Note:- The zoom boom must be secured fully in to prevent the zoom inner from sliding out without the constraint of the zoom cylinder.

5.3.6.5 Zoom Pads

Zoom pads should be replaced as follows, depending on the type of pad:

5.3.6.5.1 Front Zoom Pad Replacement

To replace the front zoom pads, proceed as follows:-

a) Support the inner zoom boom. Unbolt the front pad, keep pads and remove pads as necessary.

b) Replace the pads by hammering gently into place.

c) Replace and secure the keep plates.

d) Repeat this procedure for the side and top pads if replacement is required.

5.3.6.5.2 Rear Zoom Boom Replacement

To replace the rear zoom pads, proceed as follows:-

a) Remove the rear zoom cylinder pins, cage and cage levelling brackets that are bolted to the front of the zoom boom inner.

b) Pull the inner boom backwards, until the pads are accessible at the rear of the zoom boom.

c) Replace the pads and re-assemble the zoom boom.

5.3.6.6 Lift Cylinder Seals

Should the lift cylinder seals be damaged, they can be replaced as follows

5.3.6.6.1 Seal Replacement - Cylinder In-place.

To replace the lift cylinder seals without removing the cylinder from the machine, proceed as follows:-

(a) Support the boom and release the cylinder pressure.

(b) Clean the cylinder end and loosen the cylinder end cap. Undo the end cap several turns.

(c) Remove the rod end pin and support the cylinder barrel. Undo the end cap end and withdraw it carefully over the piston rod. Take care to ensure that no dirt enters the system.

Note:- It is recommended that the bearing ring at the base of the piston rod is replaced when seals are replaced. Examine the rod of score marks and damage. This is most easily achieved by extending the cylinder and examining the protruding rod.

(d) Replace the seals in the end cap and replace the end cap. Care should be taken during this procedure to ensure that no damage occurs to the rod surface.

(e) Bleed the cylinder by allowing air to escape around the end cap threads.

(f) Fully tighten the end cap.

(g) Clean the over-centre valves and examine for signs of leakage.

(h) Check for efficiency, by extending the cylinder and selecting descent, via the spool valves at either cage of ground.

5.3.6.6.2 Seal Replacement - Cylinder Removed

The cylinder can be removed from the machine before replacing the seals. The replacement procedure is the same as that detailed in paragraph 19.1.1..

5.4 LUBRICATION

5.4.1 General Lubrication

The following table lists the recommended lubricants for the TA50RT

COMPONENT	LUBRICANT	FREQUENCY	REMARKS
Drive and Steer Axle	EP 90	Check 6 monthly Change yearly	-
Drive Gearbox	EP 90	Check monthly Change yearly	
Starter Battery Terminals	Vaseline	Grease 6 monthly	Smear Electrical connections
Hydraulic Oil	TEXACO RANDO HDZ 32(or equivalent- refer to para 1)	Check weekly Change yearly	Fill to 1 inch (2.54cms) below the top of oil level gauge
Pins/Bearings	Molykote 2	Grease 4 yearly	Grease more freq. in tropical climates.
Wheel Bearings	LS 2	Grease Yearly	-
Zoom Boom (Inner)	Molykote 2	Grease monthly	-
Zoom Boom (Outer)	WD 40	Monthly	-
Slew Ring	EP2	Refer to section 5.4.2.1	-
Diesel Engine	Refer to manufacturers handbook.	Refer to manufacturers handbook	-

5.4.2 Slew Bearing/Gear Lubricants

5.4.2.1 Slew Bearing lubrication

Terex Aerials recommends lubrication of the slew bearing with an EP2 grease.

The slewing rings are equipped with greasing holes tapped to the European standard and suitable for:

- Centralised greasing.
- Standard greasing; straight or angled spherical head grease nipples

  (AFNOR norms NFR 165-21 - DIN 3410)

Lubrication Frequency - Slew Bearing

- Regular Operation ..... every 100 hours
- Intensive Operation ..... every 50 hours

Note:- The slewing ring should be rotated through 360° after the lubrication operation and the lubricants should then be topped up.

5.4.2.2 Slew Gear Lubrication

The teeth must be thoroughly cleaned, particularly within the gaps between the teeth, before lubrication. For this operation we recommend a proprietary solvent.

Use a suitable caulking gun to apply a 6 mm diameter bead of grease around the full circumference of the gear. Brush the grease into the gear surfaces.

Lubrication Frequency- Slew Gear

- Approximately 50 hours.

Grease Characteristics - Slew Gear.

The grease used on the slew gears must comply with the following characteristics:

- Extreme pressure grease.
- Water and temperature resistant.
- Temperature range .....25° F to 400° F (-4°C to 200° C)

Terex Aerials Limited recommend the following grease for the slew gear.

- KEYSTONE MOLY 25 OPEN GEAR COMPOUND (S.A.Part No. 10126400)

It is possible to use other brands of grease provided that they offer greasing characteristics similar to the type listed above.

SECTION 6

ILLUSTRATED SPARE PARTS

When ordering Spare Parts, please quote the Machine Model, the Machine Serial Number and Part Number reference in this section.

TA50RT

UPPER CHASSIS ASSEMBLY

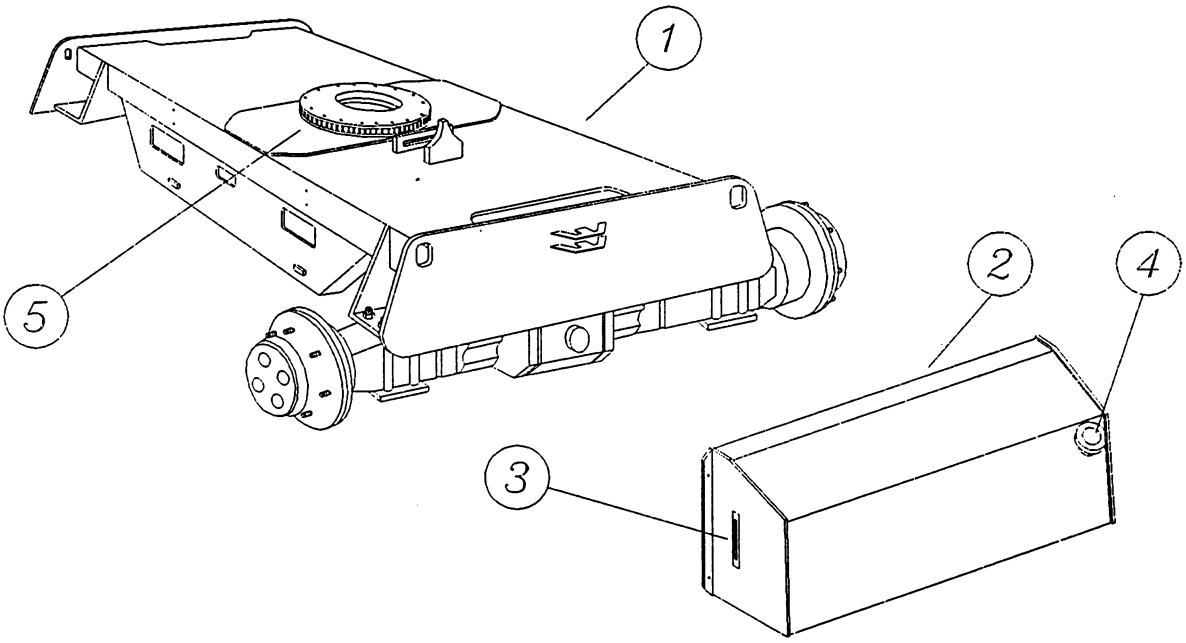


Figure 6.1 - Upper Chassis Assembly

ITEM	PART NO	DESCRIPTION	QTY.
1	GS594	CHASSIS ASSEMBLY	1
2	13019-0001	DIESEL FUEL TANK	1
3	10124	LEVEL GAUGE	1
4	11667	FILLER BREATHER CAP	1
5	13121	SLEW RING	1
	15924	M14 X 80 BOLTS	18
	12092	M14 X 90 BOLTS	18

TA50RT

LOWER CHASSIS ASSEMBLY

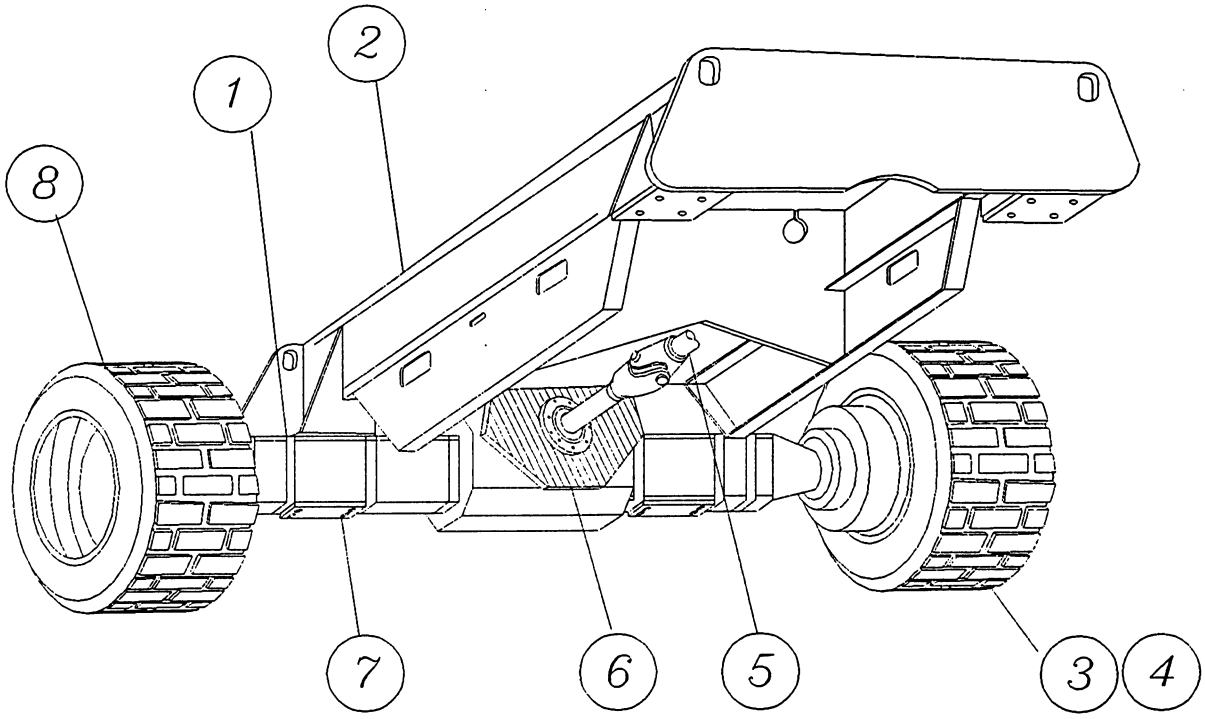


Figure 6.2 - Lower Chassis Assembly

ITEM NO	PART NO	DESCRIPTION	QTY.
1	18276	RIGID AXLE	1
	18322	DRIVE AXLE	1
2	GS594	CHASSIS ASSEMBLY	1
3	44022-0361	WHEEL ASS'Y (RIGHT HAND)	2
4	13169	M18 X 1.5p HEX. NUT	24
	15169	M18 SPHERICAL WASHER	24
5	17596	PROP SHAFT	1
6	17201	TRANSFER GEARBOX	1
	41018-0022	TWO SPEED MOTOR	1
7	DS905	AXLE MOUNTING ASSEMBLY	4
	MS478	AXLE MOUNTING PLATE	4
	17543	M20 X 200 LG. HEX. HEAD BOLT	16
	15138	M20 HEAVY DUTY FLAT WASHER	16
	15291	M20 NYLOC NUT	16
8	44022-0360	WHEEL ASSEMBLY (LEFT HAND)	2

TA50RT

TRANSFER GEARBOX

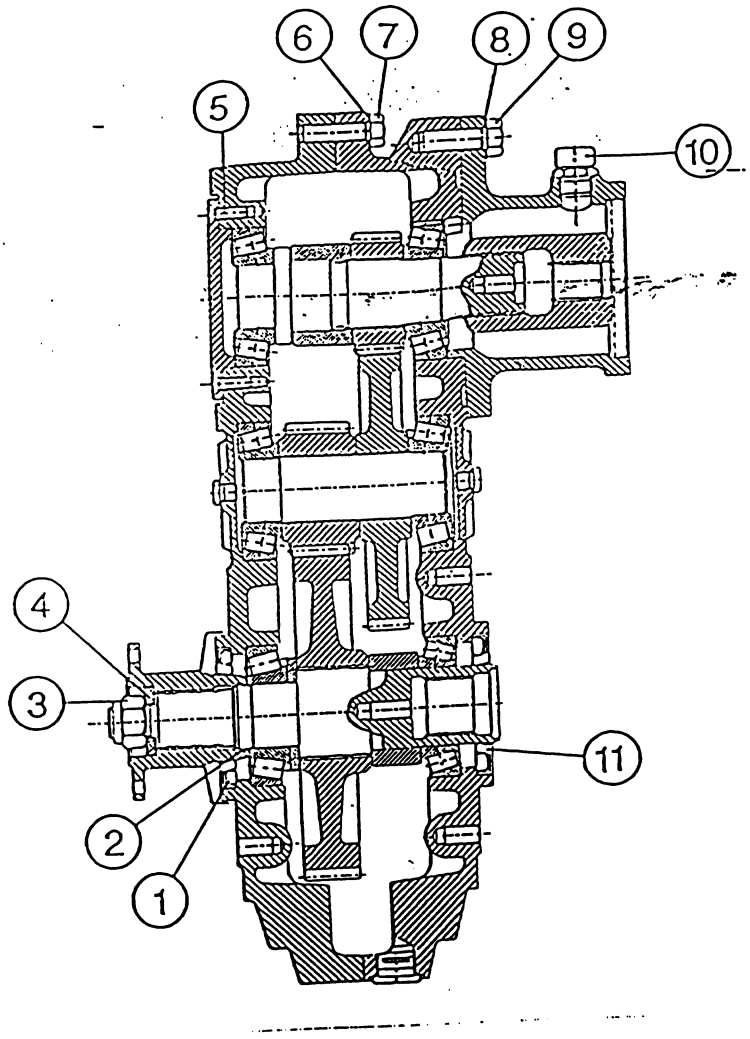


Figure 6.3 - Transfer Gearbox

ITEM	PART NO.	DESCRIPTION	QTY.
1	18215	SEAL	1
2	18206	"O" RING	1
3	18207	NUT	1
4	18208	SEAL	4
5	18209	SCREW	4
6	18211	WASHER	4
7	18210	SCREW	4
8	18212	WASHER	4
9	18213	SCREW	1
10	18214	BREATHER	1
11	18216	SEAL	1

TA50RT

REAR AXLE ASSEMBLY

(Refer to Figure 6.4)

ITEM	PART NO.	DESCRIPTION	QTY.
		AXLE AND BRAKES	
1	17893	BELL SPRINGS, FAIL-SAFE SPRINGS BRAKE	36
	17894	PISTON, FAIL-SAFE SPRINGS BRAKE	2
2	17861	SEAL SPRING FOR BRAKE	2
	17862	SNAP RING FOR SEAL SPRING	2
	17859	BACK SPRING BRAKE PISTON	2
	17860	BALL	4
	17866	CLAMP FOR BRAKE RUBBER PIECE	2
	17867	BRAKE COVER	1
	17874	SNAP RING FOR BELL SPRINGS	2
	17886	O-RING FOR BUSH, FAIL-SAFE SPRINGS BRAKE	2
	17887	O-RING FOR BUSH, FAIL-SAFE SPRINGS BRAKE	2
	17888	CAP SCREW, FAIL-SAFE SPRINGS BRAKE	8
3	17889	LEVER, INSIDE FAIL-SAFE SPRINGS BRAKE	2
	17890	FLANGE, FAIL-SAFE SPRINGS BRAKE	2
	17891	PIN, FAIL-SAFE SPRINGS BRAKE	2
	17892	BUSH, FAIL-SAFE SPRINGS BRAKE	2
	17851	CENTRAL BOX	1
	17852	FLANGE FOR HUB (RH)	1
	17853	FLANGE FOR HUB (LH)	1
	17854	CAP SCREW	1
	17855	BRAKE HOLES PLUG	1
	17856	OIL PLUG WASHER	5
	17857	OIL PLUG	3
	17858	OIL PLUG	2
	17863	ACTUATOR	2
	17864	BRAKE DISK	10
	17865	COUNTER BRAKE	6
	17868	SNAP RING FOR PULL PIN	2
	17869	BRAKE PULL PIN	2
	17870	BRAKE FORK (COMPLETE)	2
4	17871	CAP SCREW FOR BRAKE COVER	4
	17872	SPHERICAL WASHER	2
5	17873	NUT SET-UP BRAKE	2
6	17875	BRAKE INSPECTION PLUG	2
	17876	WASHER	2
7	17877	CAP SCREW FOR BRAKE COVER	4
	17878	COUNTER PLATES PIN LOCK	6
	17879	AXLE HOUSING (RH)	1
	17880	AXLE HOUSING (LH)	1
	17881	STUD BOLT, AXLE HOUSING	24
	17882	STUD BOLT NUT	24
	17883	SPRING WASHER	24
	17884	CAP SCREW, BRAKE	4
	17885	CAP SCREW, CROWN DELOCK BRAKE	2

TA50RT - REAR AXLE ASSEMBLY (continued)

(Refer to Figure 6.4)

ITEM	PART NO.	DESCRIPTION	QTY
		DIFFERENTIAL AND HALF SHAFT	
8	17924	BEVEL DRIVE	1
	17925	WASHER, DIFF. CASE SCREW	12
	17926	CAP SCREW, CROWN WHEEL	12
	17927	BEARING, DIFF. CASE	2
	17928	SHIM, DIFF. BEARING	4
	17929	SHIM, DIFF. BEARING	4
	17930	HALF SHAFT	2
	17931	HALF SHAFT SLEEVE	2
	17932	ROLL PIN SHAFT CONNECTION	2
	17933	DIFFERENTIAL (COMPLETE)	1
	17934	DIFF. CASE	1
	17935	DIFF. GEAR (COMPLETE)	1
	17936	DIFF. GEAR (COMPLETE)	1
	17937	DIFF. GEAR	1
	17938	THRUST WASHER	2
	17939	THRUST WASHER	4
	27940	DIFF. PINION GEAR	2
	17941	DIFF. CASE	1
	17942	DIFF. GEARS	1
	17943	THRUST WASHER	2
	17944	THRUST WASHER	4
	17945	DIFF. PINION GEAR PIN	2
	17946	PINION BEARING	1
	17947	SHIM. PINION BEARING	3
	17948	SHIM. PINION BEARING	3
	17949	OIL SEAL, PINION	1
9	17950	CAP SCREW, PLANETARY BOX	10
	27952	PLANETARY BOX	1
	17953	O-RING, PLANETARY BOX	1
	17954	CIRCLIP	1
	17955	PINION SPACER	1
	17956	PINION RINGNUT	1
	17957	PINION BEARING	1
	17958	SHIM, PINION BEARING 0.15	2
	17959	SHIM, PINION BEARING 0.20	2
	17960	SHIM, PINION BEARING 0.50	2
	17961	DIFF. PIN	1
		DIFFERENTIAL LOCK	
	17962	SNAP RING	1
	17963	DIFF. LOCK SPRING	1
	17964	FORK PIN	1
	17965	SPRING WASHER, DIFF. LOCK	1
	17966	SNAP RING	2
	17967	DIFF. LOCK FORK	1
	17968	DIFF. LOCK SPRING	1
	17969	DIFF. LOCK PISTON	1
	17970	O-RING, DIFF. LOCK PISTON	1
	17971	DIFF. LOCK SLEEVE	1

TA50RT - REAR AXLE ASSEMBLY (continued)

(Refer to Figure 6.4)

ITEM	PART NO.	DESCRIPTION	QTY.
		WHEEL HUB	
	17895	OIL SEAL, HUB	2
	17896	BEARING, WHEEL HUB	4
10	17897	WHEEL HUB (COMPLETE)	2
	17898	WHEEL HUB	1
11	17899	WHEEL BOLT	8
	17900	WHEEL BOLT	16
	17901	O-RING, WHEEL HUB	2
	17902	RING	2
	17903	RING GEAR CARRIER FLANGE	2
12	17904	CAP SCREW, CROWN DELOCK BRAKE	24
	17905	PLANETARY RING GEAR	2
	17906	SNAP RING	6
	17907	PLANET SET	2
	17908	PLANET PIN	6
	17909	ROLLER BEARING (COMPLETE)	6
	17910	PLANETARY REDUCTION GEAR	2
	17911	SHIM, BUTTON SHAFT STOP	2
	17912	BUTTON SHAFT STOP	2
	17913	PLANETARY CARRIER	2
	17914	WHEEL HUB SUPPORT (COMPLETE)	2
	17915	WHEEL HUB SUPPORT	1
13	17922	CAP SCREW, WHEEL HUB	4
	17916	HUB WEAR RING	1
	17917	DUST COVER, WHEEL HUB	1
	17918	HUB WEAR RING	2
	17919	DUST COVER, WHEEL HUB	2
14	17920	CAP SCREW, PLANETARY	24
	17921	SPRING WASHER	24
	17923	WASHER, PLANETARY GEAR	12

(continued)

TA50RT - REAR AXLE ASSEMBLY (continued)

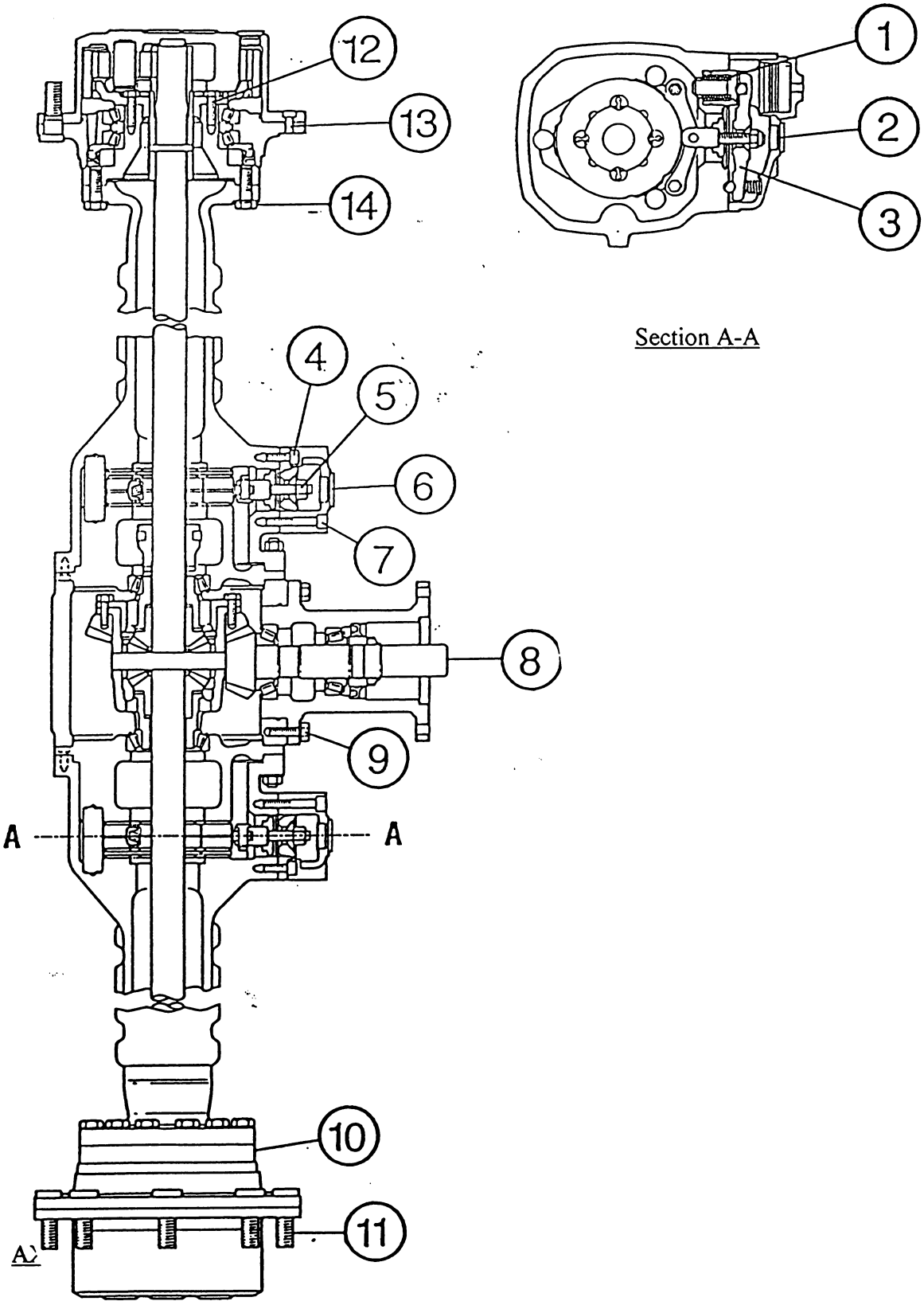


Figure 6.4 - Rear Axle Assembly

TA50RT

STEER AXLE ASSEMBLY

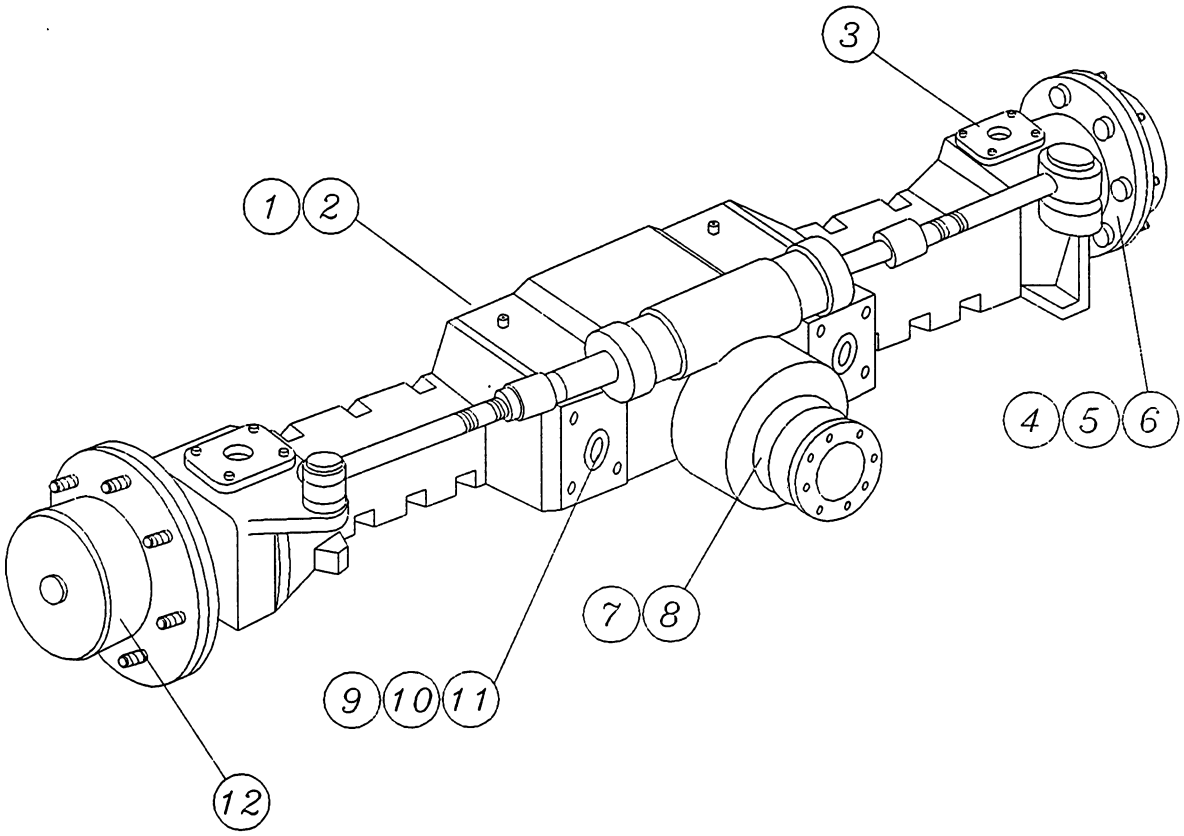


Figure 6.5 - Steer Axle Assembly

(Annotation numbers indicate area where parts are located)

ITEM	PART NO.	DESCRIPTION	QTY
1	17864	DISC	6
2	17865	DISC	2
3	18204	BEARING	4
4	18202	SEAL	2
5	18203	BEARING	2
6	18205	BEARING	2
7	17949	SEAL	1
8	17956	NUT	1
9	17873	NUT	2
10	17886	"O" RING	2
11	17887	"O" RING	2
12	17901	"O" RING	2

TA50RT

PLINTH ASSEMBLY

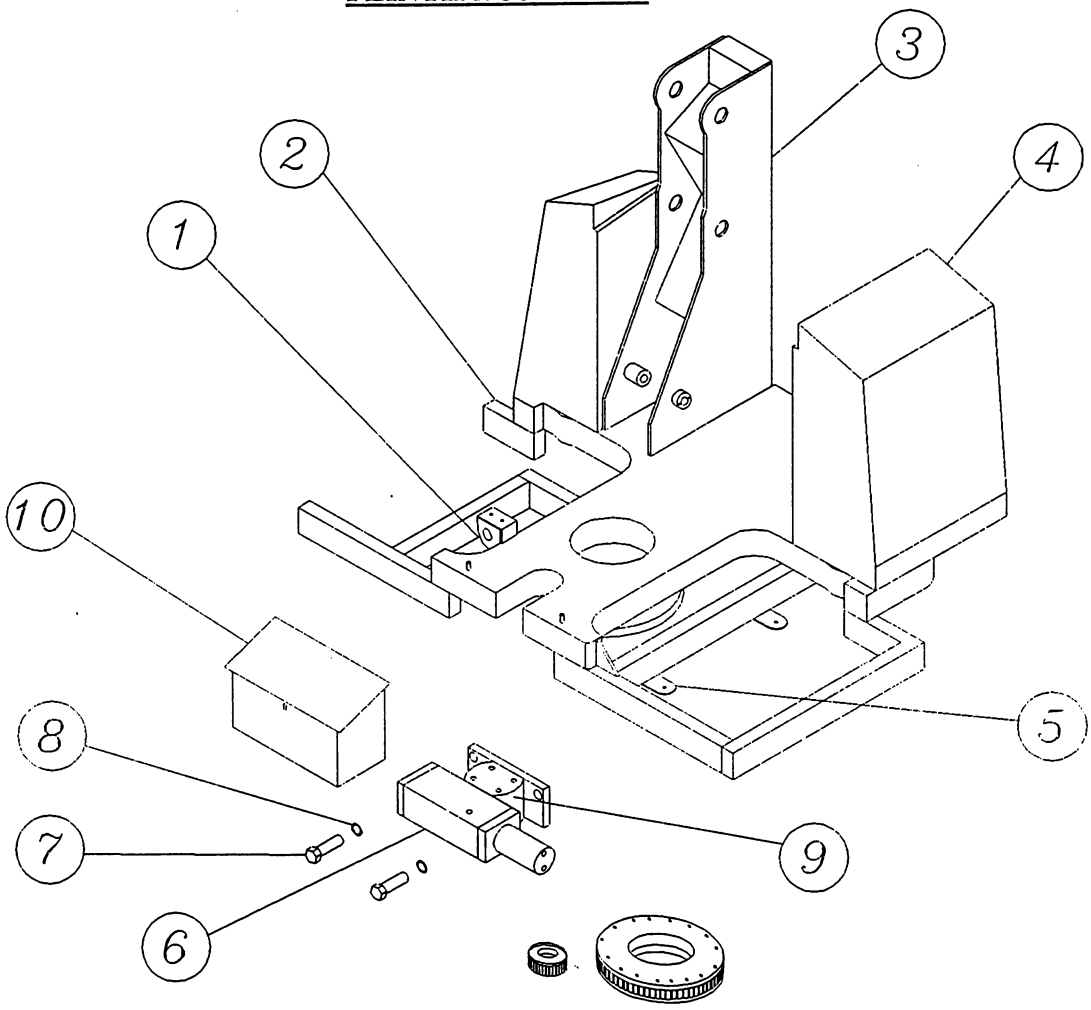


Figure 6.6 - Plinth Assembly

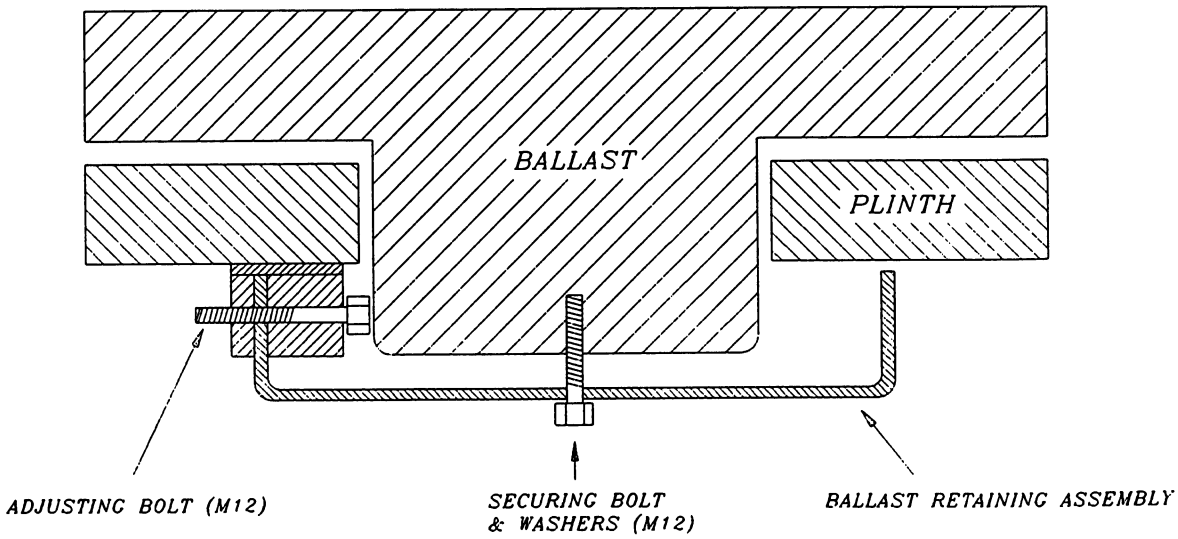


Figure 6.7 Ballast Security

PLINTH COMPONENTS LISTING

ITEM	PART NO.	DESCRIPTION	QTY
1	SS185	SUCTION FILTER BRACKET	1
2	13011-0092	PLINTH ASSEMBLY	1
3	23010-0037	FIRST POST	1
4	14029-0003	BALLAST (LEFT HAND)	1
	14029-0004	BALLAST (RIGHT HAND)	1
	GS149	BALLAST RETAINING ASSEMBLY	2
	10932	M12 X 60 LG. HEX. HEAD SCREW	6
	11410	M12 HEX. HEAD LOCK NUT	6
5	MS320	MOUNTING FOOT (HATZ ENGINE)	4
6	14315	SLEW GEARBOX	1
7	44006-0005	M12 X 35 LG. HEX. HEAD 12.9	4
8	44013-0075	HARDENED WASHER	4
9	10854	ROTATION MOTOR	1
10	GS406	STARTER BATTERY BOX	1

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1ST LIFT

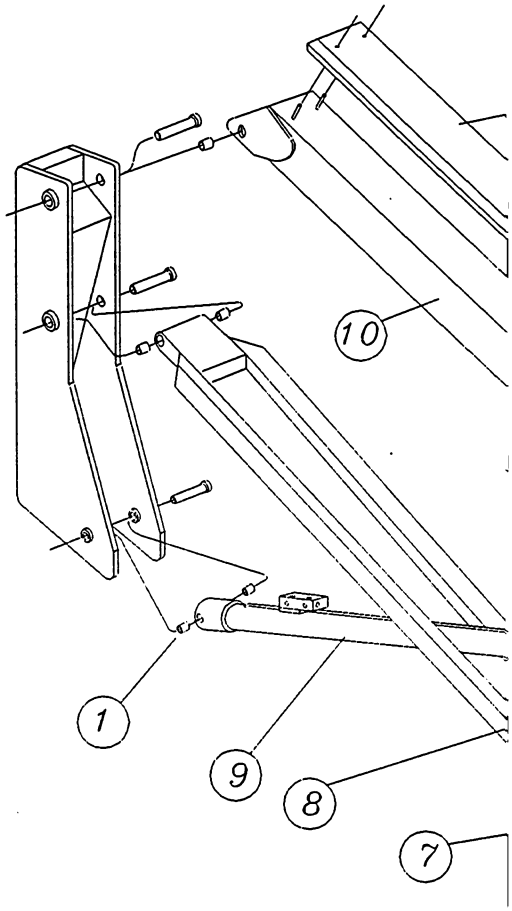


Figure 6.8 - 1

ITEM	PART NO.	DESCRIPTION
1	11844	GLACIER PM 2 (PART OF LIFT
2	SS102	CABLE COVEF
	MS128	CABLE COVEF
3	GS541	OFFSET POST
4	GS527	ZOOM BOOM I
	MS143	NYLON PAD
5	11085	M8 X 25 GRAD
6	14541	M8 DISC LOCK
7	10288	PERMAGLIDE
8	GS179	FIRST TIE RAI
9	21002-0115	LIFT CYLINDE
10	23015-0135	FIRST BOOM

TA50RT

SECOND LIFT STAGE

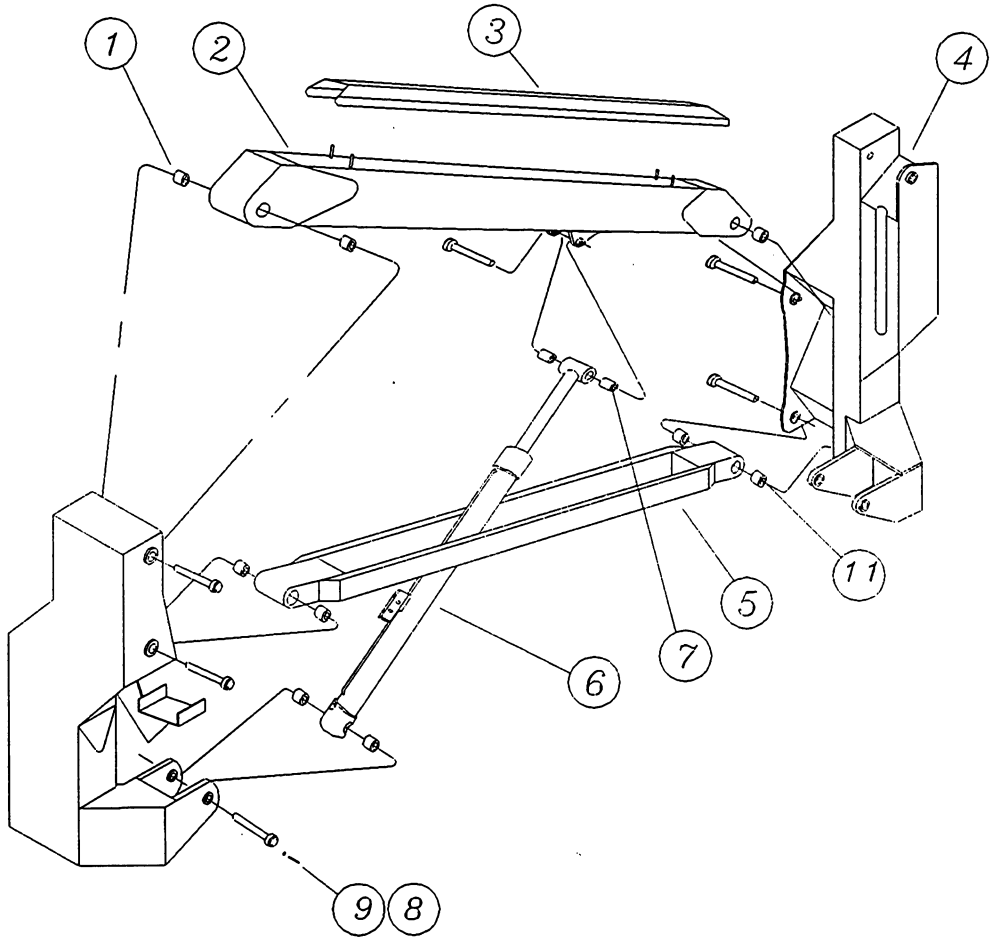


Figure 6.9 - 2nd Lift Stage

ITEM	PART NO.	DESCRIPTION	QTY.
1	10288	PERMAGILDE PAP 40X40 BUSHING	8
2	23015-0136	SECOND BOOM	1
3	SS102	CABLE COVER	1
	MS128	CABLE COVER STUD	4
4	GS602	SECOND OFFSET POST	1
5	GS308	SECOND TIE RAIL	1
6	21002-0115	LIFT CYLINDER	1
7	11844	GLACIER PM 25 X 25 DX BUSH (PART OF LIFT CYLINDER)	4
8	11085	M8 X 25 GRADE 8.8 HEX HEAD SCREW	12
9	14541	M8 DISC LOCK WASHER	24

TA50RT

ZOOM BOOM ASSEMBLY

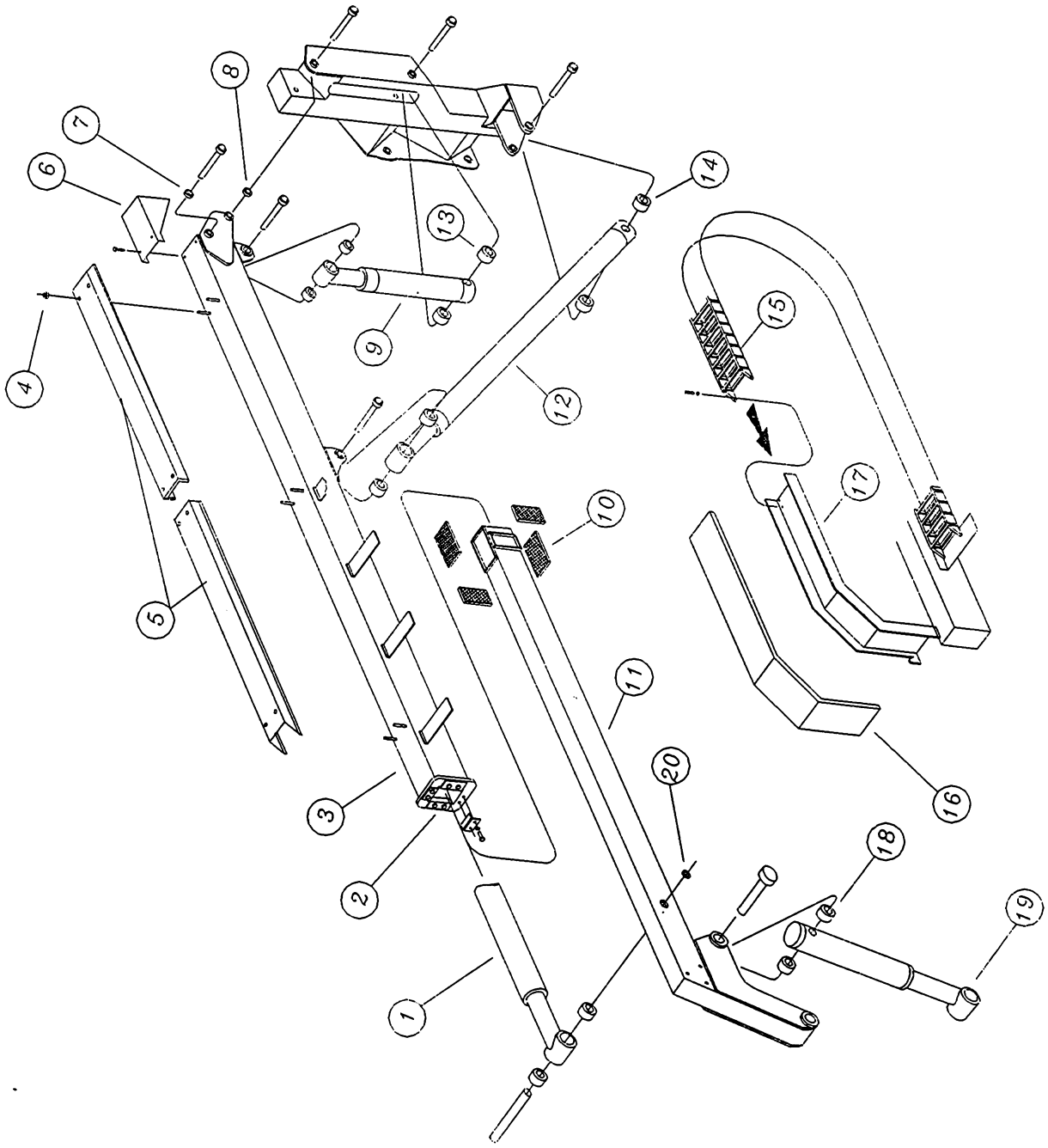


Figure 6.10 - Zoom Boom Assembly

TA50RT - ZOOM BOOM ASSEMBLY

ITEM	PART NO.	DESCRIPTION	QTY.
1	21002-0097	ZOOM CYLINDER (REF SECTION 11.3.1)	1
2	MS179	WEAR PAD (SIDE)	4
3	23015-0140	ZOOM BOOM (OUTER)	1
4	MS128	CABLE COVER STUD	6
5	SS329	CABLE COVER	2
6	SS271	END COVER	1
7	14265	PERMAGLIDE PAP 20X20 BUSHING	2
8	10288	PERMAGLIDE PAP 40X40 BUSHING	2
9	21002-0086	LEVEL CYLINDER (MASTER) (REF SECTION 11.5.7)	1
10	MS178	WEAR PAD (TOP/BOTTOM)	4
11	23015-0141	ZOOM BOOM (INNER)	1
12	21002-0114	LIFT CYLINDER (REF SECTION 11.1.3)	1
13	14265	GLACIER PM 20 X 20 DX BUSH (PART OF MASTER LEVEL CYLINDER)	4
14	11844	GLACIER PM 25 X 25 DX BEARING (PART OF LIFT CYLINDER)	4
15	44029-0182	CAT TRACK	1
16	33020-0090	CABLE TRAY COVER	1
17	33020-0089	CABLE TRAY	1
18	14265	GLACIER PM 20 X 20 DX BUSH (PART OF SLAVE LEVEL CYLINDER)	4
19	21002-0089	LEVEL CYLINDER (SLAVE) (REF SECTION 11.5.8)	1
20	11758	CIRCLIP	2

TA50RT

CAGE\CRADLE ASSEMBLY

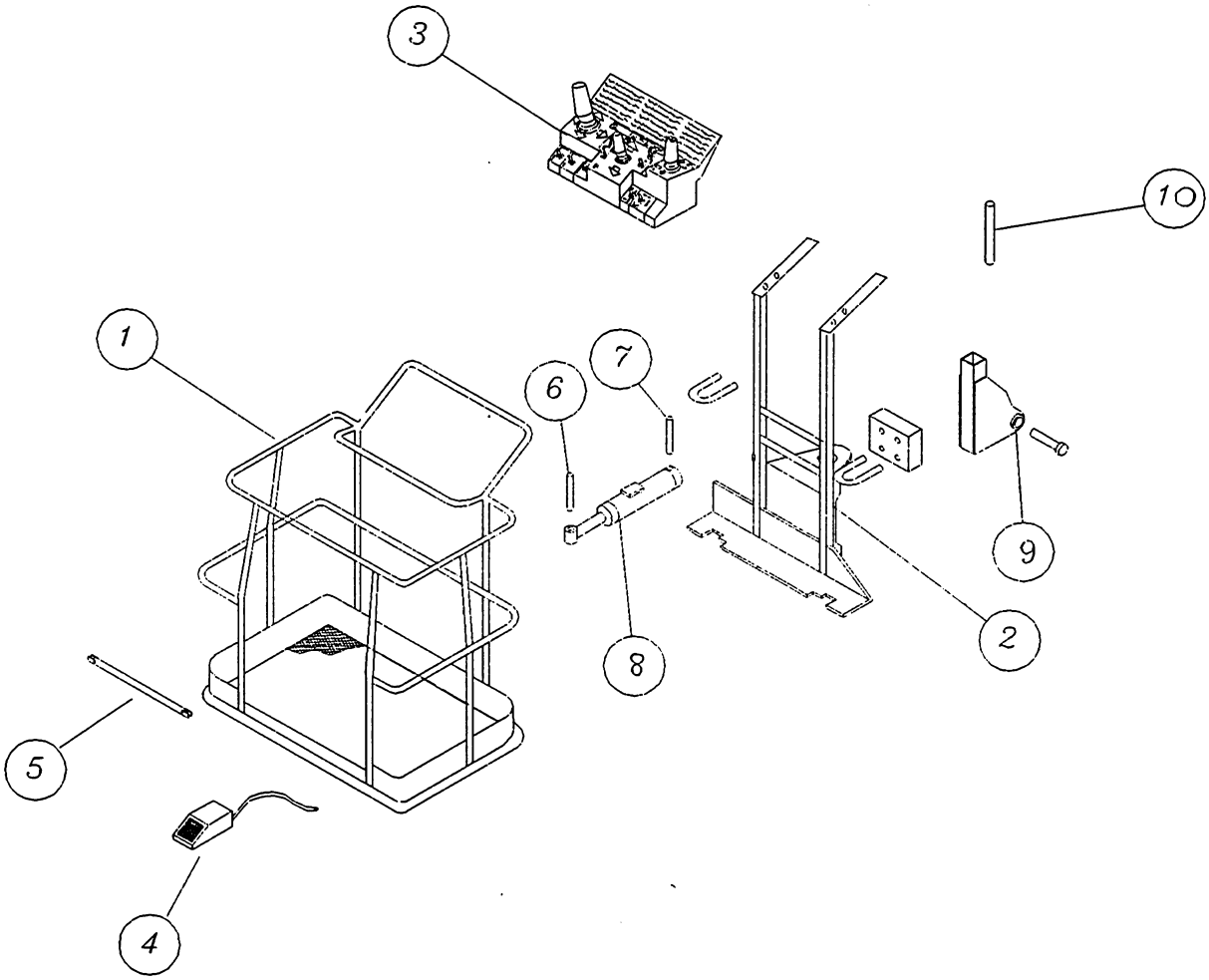


Figure 6.11 - Cage\Cradle Assembly

ITEM	PART NO.	DESCRIPTION	QTY.
1	13016-0082	CAGE 5ft	1
2	13017-0070	CRADLE	1
3	42020-0022	UPPER CONTROL BOX	1
4	42002-0322	FOOTSWITCH	1
	42002-0335	FOOTSWITCH CONTACT	
5	33014-0075	DROP BAR	1
6	44004-0135	CYL. PIVOT BOLT (M10 x 75mm Grade 12.9)	1
7	44004-0129	CYL. PIVOT BOLT (M10 x 100mm Grade 12.9)	1
8	21002-0116	CAGE ROTATION CYL	1
9	GS628	STUB POST	1
10	44021-0666	MAIN PIVOT PIN	1
11	44019-0093	M6 ROLL PIN(not illustrated)	1

TA50RT

HATZ DIESEL ENGINE MODULE

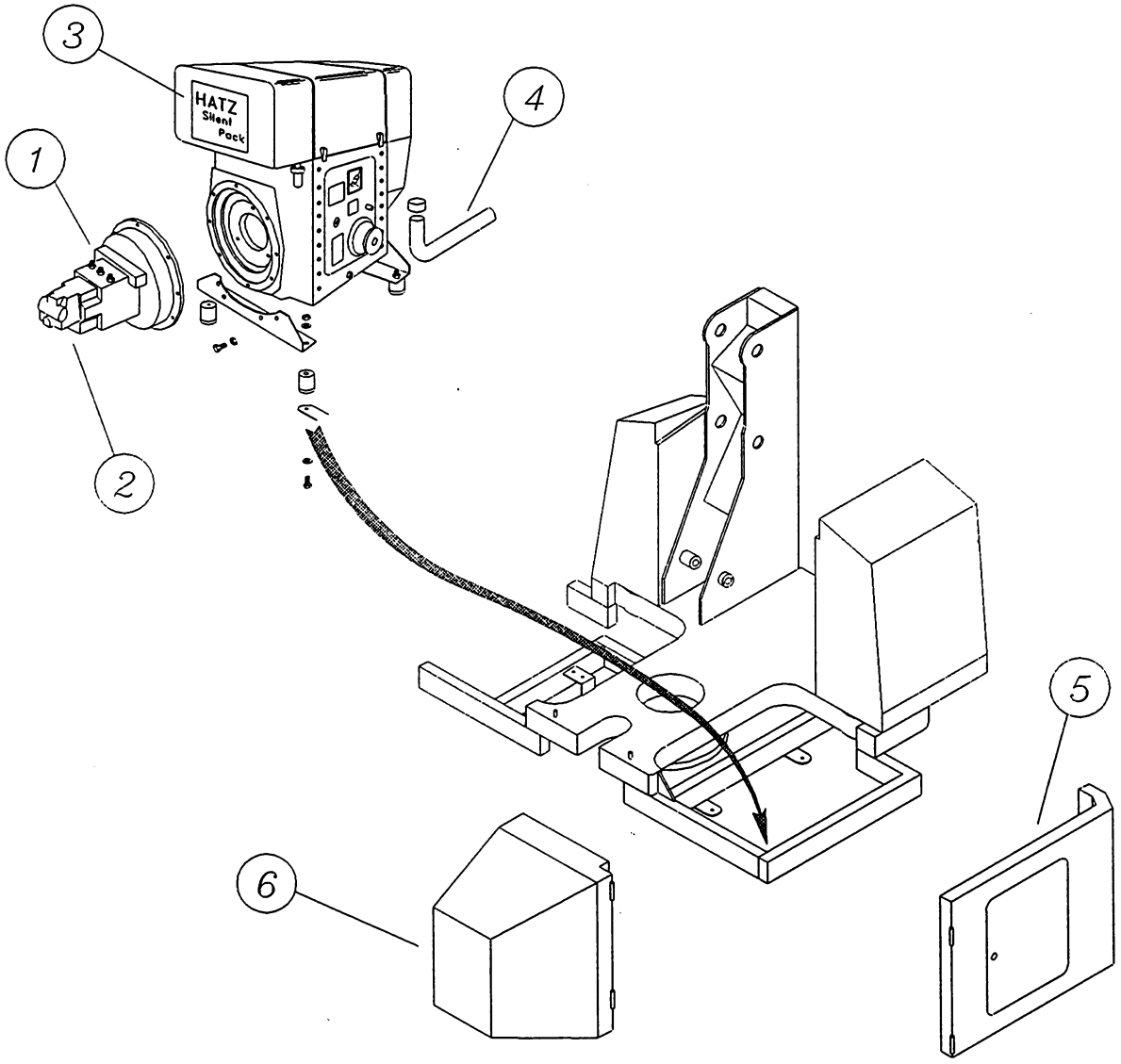


Figure 6.12 - Hatz Diesel Engine Module

ITEM	PART NO.	DESCRIPTION	QTY.
1	41017-0045	DRIVE PUMP	1
2	41017-0046	GEAR PUMP	1
3	14113	HATZ 'SILENT PACK' DIESEL ENGINE	1
	17066	CENTRAL COUPLING	1
4	SS182	EXHAUST TAILPIPE	1
	16152	EXHAUST CLAMP	1
5	33030-0074	SIDE COVER	1
6	23032-0005	COVER - HYDRAULIC PUMPS	1

TA50RT

HYDRAULIC MODULE

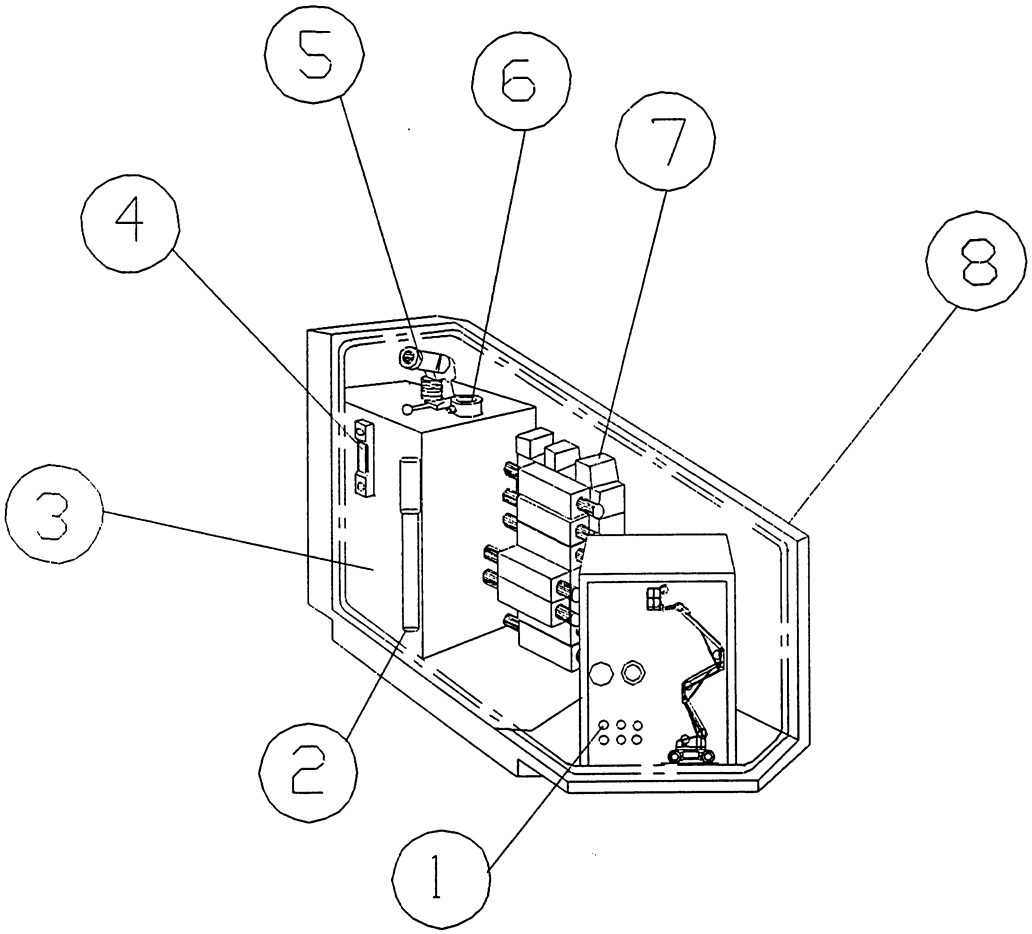


Figure 6.14 - Hydraulic Module

ITEM	PART NO.	DESCRIPTION	QTY.
1	42020-0023	LOWER CONTROL BOX	1
2	41017-0048	HAND PUMP HANDLE	1
3	23032-0002	HYDRAULIC TANK	1
4	12398	LEVEL GAUGE	1
5	41017-0042	HANDPUMP	1
6	41030-0039	RETURN FILTER	1
7	41028-0031	VALVE BLOCK	1
8	23032-0006	HYDRAULIC MODULE ASSY	1
9	23032-0008	DOOR ASSY (not shown)	1
10	49041-0068	DOOR STAY (not shown)	1

TA50RT

GROUND CONTROLS

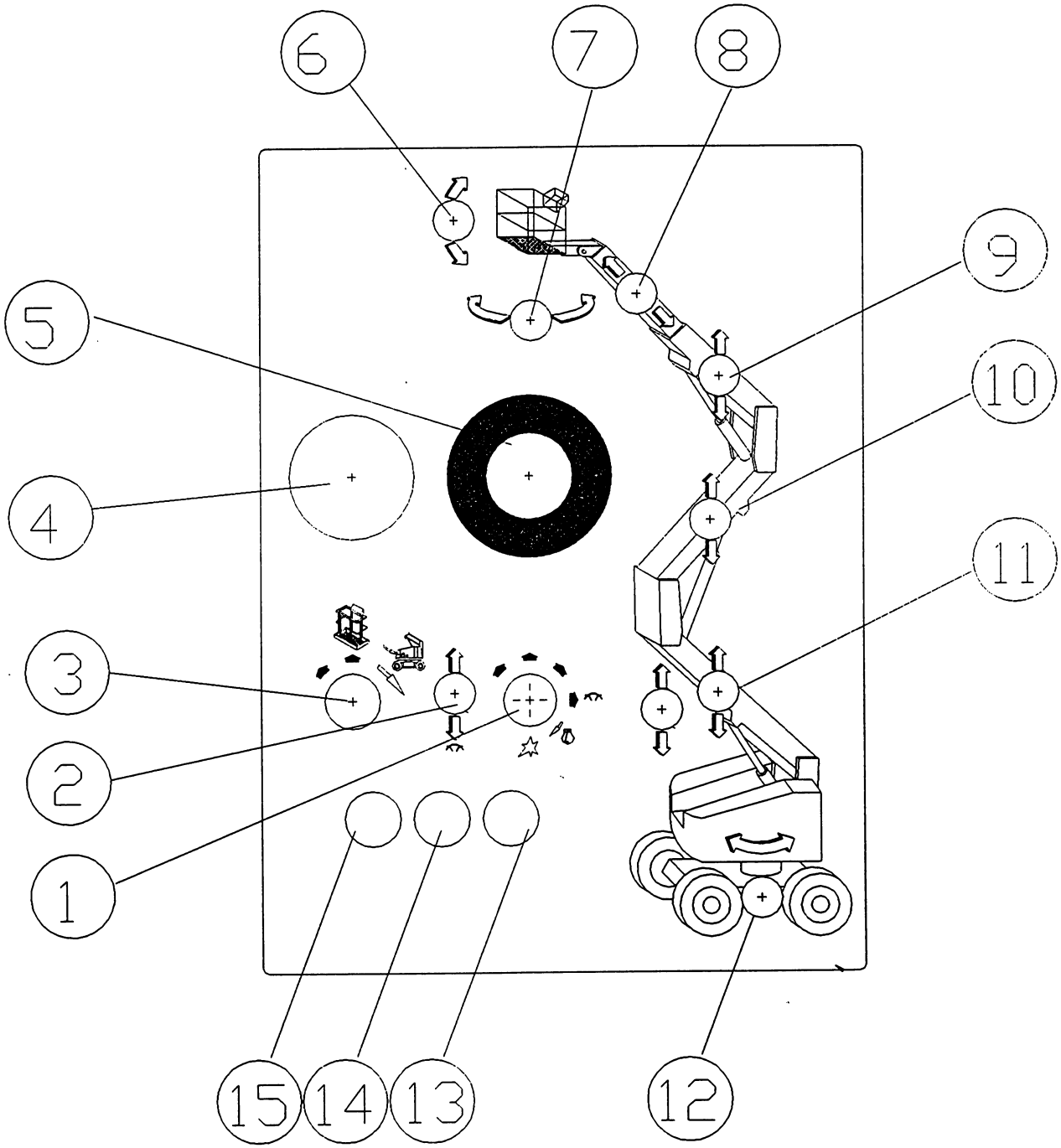


FIG 6.3 - LOWER CONTROL BOX (EXTERNAL VIEW)
(42020-0023)

TA 50RT

LOWER CONTROLS - COMPONENTS LISTING

ITEM	PART NO.	DESCRIPTION	QTY.
1	42002-0349	ENGINE KEYSWITCH	1
2	42002-0348	FUEL HEATER SWITCH (OPTIONAL)	1
3	42002-0350	CAGE/GROUND SELECT SWITCH	1
4	42019-0049	HOURMETER	1
5	42002-0342	EMERGENCY STOP BUTTON	1
	42002-0343	CONTACT (NORMALLY CLOSED)	1
6	42002-0346	CAGE LEVEL SWITCH	1
7	42002-0346	CAGE ROTATE SWITCH	1
8	42002-0346	TELEBOOM SWITCH	1
9	42002-0346	LIFT 3 BOOM SWITCH	1
10	42002-0346	LIFT 2 BOOM SWITCH	1
11	42002-0346	LIFT 1 BOOM SWITCH	1
12	42002-0346	ROTATE SWITCH	1
13	42010-0296	AIR FILTER INDICATOR	1
14	42010-0294	ENGINE TEMP INDICATOR	1
15	42010-0293	BATTERY INDICATOR	1
16	42011-0053	10AMP FUSE *	1

***NOT SHOWN IN ILLUSTRATION**

TA 50RT

LOWER CONTROL BOX

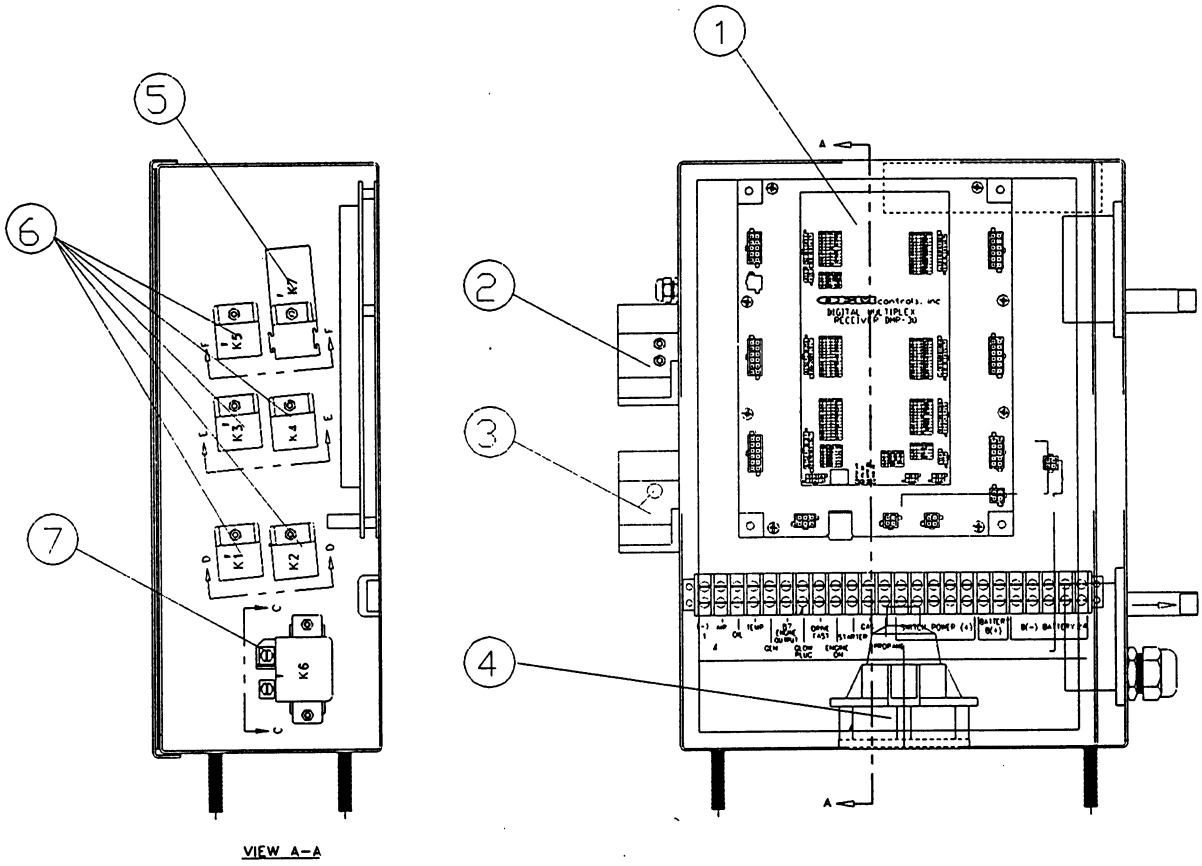


FIG 6.4 - LOWER CONTROL BOX - INTERNAL VIEW

ITEM	PART NO.	DESCRIPTION	QTY.
1	42014-0140	PCB - DMR-30	1
2	42013-0345	TILT SENSOR(5 degree)	1
3	42015-0133	RELAY	7
4	42013-0391	HARNESS FROM BOX TO VALVE BLOCK*	1

*** NOT SHOWN IN ILLUSTRATION**

TA50RT

CAGE CONTROLS

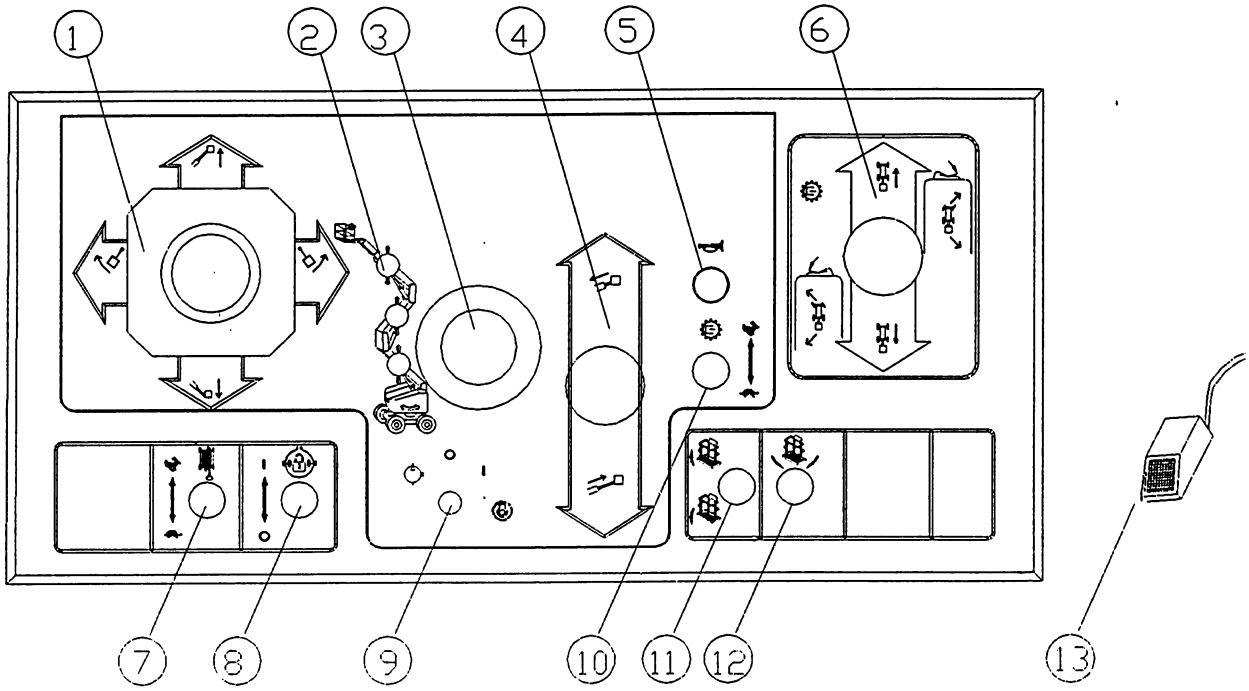


Figure 6.1 - Cage Controls

ITEM	PART NO.	DESCRIPTION	QTY.
1	32019-0012	BOOM/ROTATE JOYSTICK	1
2	42010-0292	BOOM INDICATOR LED	3
3	42002-0342	EMERGENCY STOP BUTTON	1
	42002-0343	CONTACT (NORMALLY CLOSED) *	1
4	32019-0013	TELEBOOM JOYSTICK	1
5	42002-0347	HORN BUTTON	1
6	32019-0011	DRIVE/STEER JOYSTICK	1
7	42002-0345	DRIVE SPEED SELECT SWITCH	1
8	42002-0348	DIFFERENTIAL LOCK SWITCH	1
9	42002-0344	ENGINE ON/OFF SWITCH	1
10	42002-0345	ENGINE SPEED SWITCH	1
11	42002-0346	CAGE LEVELLING SWITCH	1
12	42002-0346	CAGE ROTATION SWITCH	1
13	42002-0322	FOOTSWITCH	1

* Not shown on fig. 6.1

TA50RT

UPPER CONTROL BOX (42020-0022)

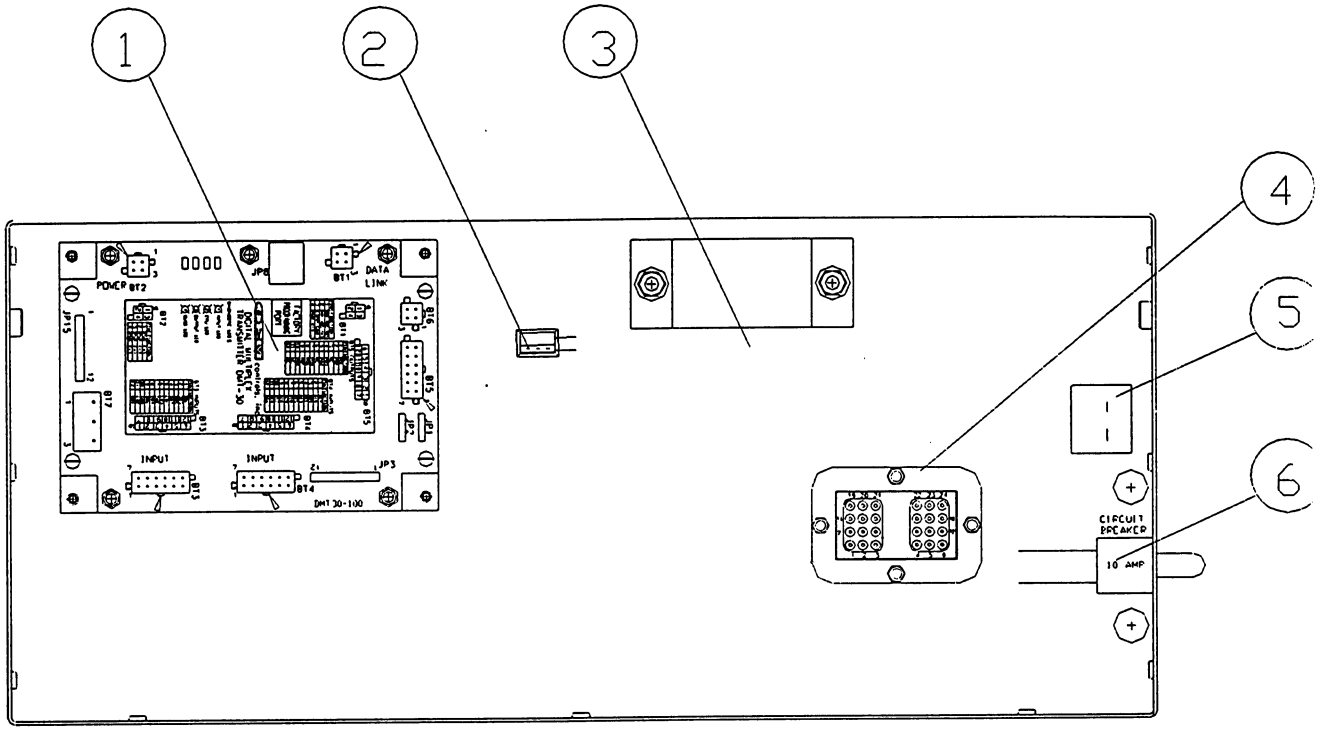
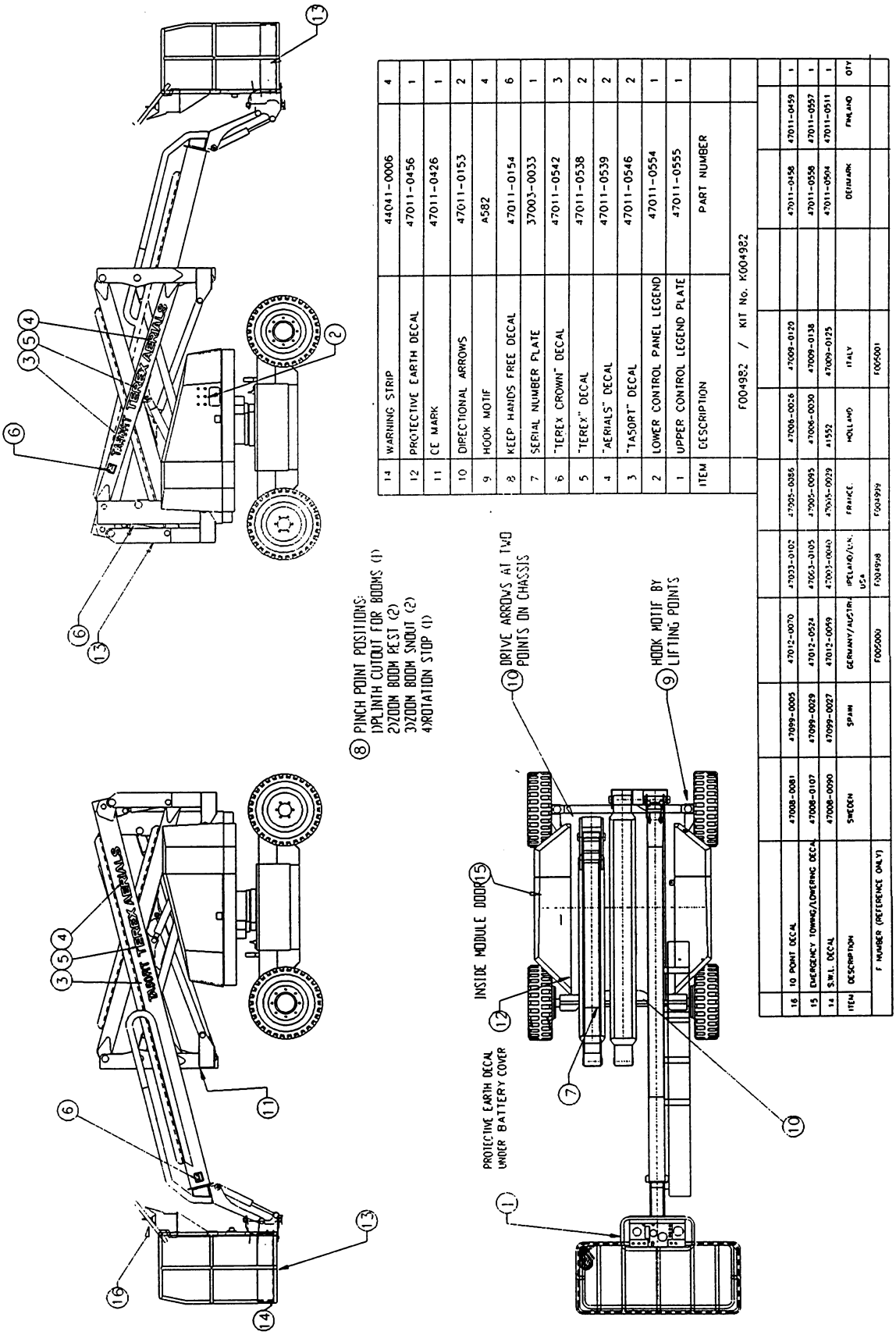


FIG 6.2 - UPPER CONTROL BOX (INTERNAL VIEW)

ITEM	PART NO.	DESCRIPTION	QTY.
1	42014-0139	PCB - DMT-30	1
2	42013-0386	CAPACITOR	1
3	42013-0387	ALARM	1
4	42004-0005	CONNECTION BLOCK	1
5	42015-0130	RELAY	1
6	42015-0131	CIRCUIT BREAKER	1
7	42013-0390	WIRING LOOM TO LOWER CONTROLS*	1

*** NOT SHOWN IN ILLUSTRATION**

LABELS

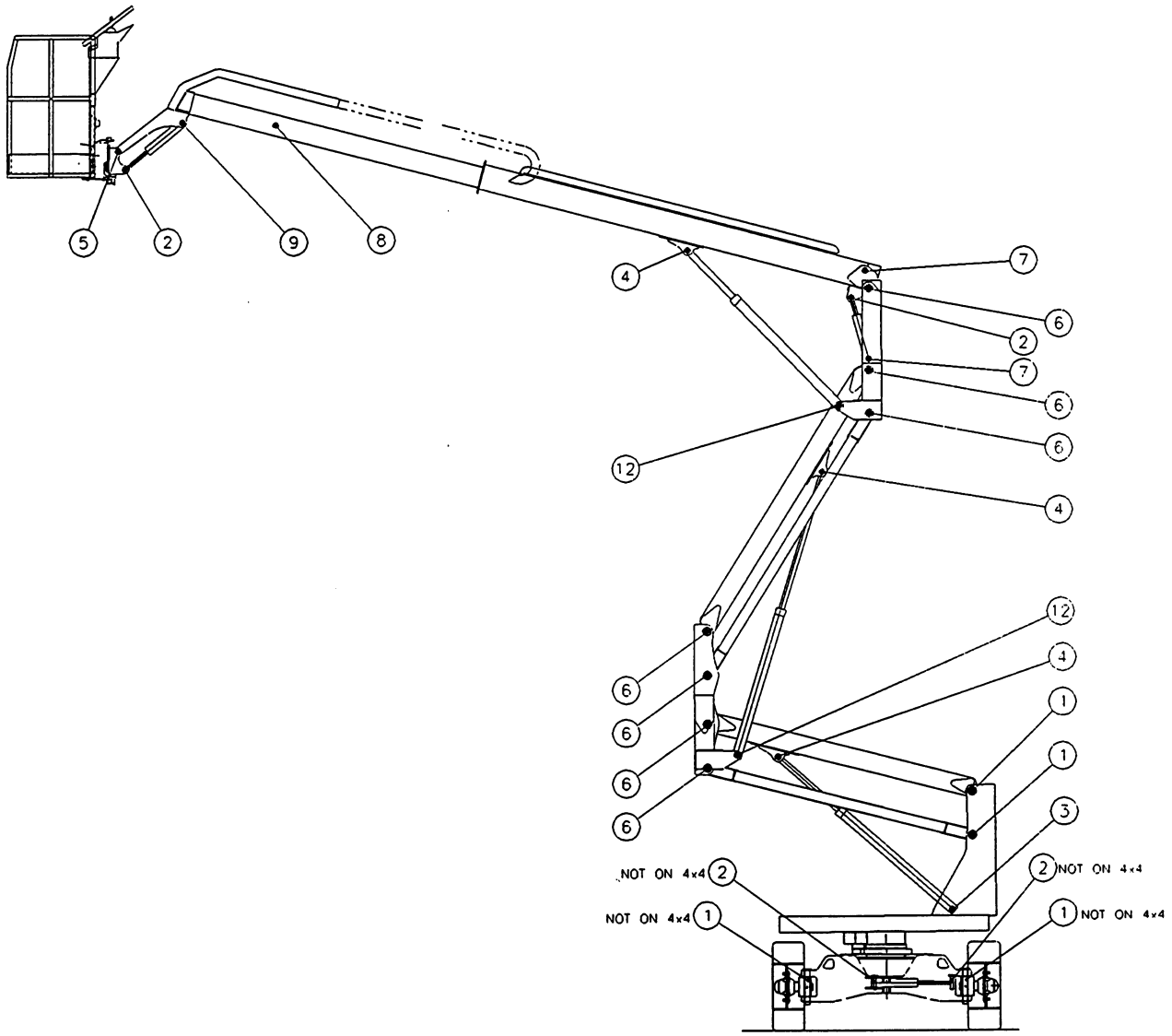


14	WARNING STRIP	44041-0006	4											
12	PROTECTIVE EARTH DECAL	47011-0456	1											
11	CE MARK	47011-0426	1											
10	DIRECTIONAL ARROWS	47011-0153	2											
9	HOOK MOTIF	A582	4											
8	KEEP HANDS FREE DECAL	47011-0154	6											
7	SERIAL NUMBER PLATE	37003-0033	1											
6	"TEREX CROWN" DECAL	47011-0542	3											
5	"TEREX" DECAL	47011-0538	2											
4	"AERIALS" DECAL	47011-0539	2											
3	"TA50RT" DECAL	47011-0546	2											
2	LOWER CONTROL PANEL LEGEND	47011-0554	1											
1	UPPER CONTROL LEGEND PLATE	47011-0555	1											
ITEM	DESCRIPTION	PART NUMBER												
	F004982 / KIT No. K004982													
16	10 POINT DECAL	47008-0081		47099-0005	47012-0070	47033-0102	47005-0385	47006-0026	47009-0129		47011-0458	47011-0459	1	
15	EMERGENCY TOWING/LOWERING DECAL	47008-0107		47099-0029	47012-0524	47063-0105	47005-0095	47006-0030	47009-0138		47011-0558	47011-0557	1	
14	S.W.L. DECAL	47008-0090		47099-0027	47012-0099	47033-0040	47005-0929	41552	47009-0125		47011-0504	47011-0511	1	
ITEM	DESCRIPTION	SWEDEN		SPAIN	GERMANY/AUSTRIA	IRELAND/U.K. USA	FRANCE	HOLLAND	ITALY		DENMARK	FINLAND	QTY	
	F NUMBER (REFERENCE ONLY)				F005000	F004998	F004999		F005001					

Figure 6.19 - Label Positions

TA50RT

PIVOT PINS



ITEM	DESC. SHANK ø x O/A LENGTH	PART No.	QTY.
12	PIN ø25 x 158	44021-0645	2
11	PIN ø20 x 116	GS501	0
10	PIN ø25 x 160	GS498	0
9	PIN ø20 x 153	GS500	1
8	PIN ø20 x 98	LS118	1
7	PIN ø20 x 191	GS476	2
6	PIN ø40 x 285	GS472	7
5	PIN ø25 x 144	GS475	1
4	PIN ø25 x 90	44021-0646	3
3	PIN ø25 x 225	GS473	1
2	PIN ø20 x 106	GS505	4
1	PIN ø40 x 270	GS315	2

Figure 6.17 - Pin position

TA50RT

LIFT CYLINDER

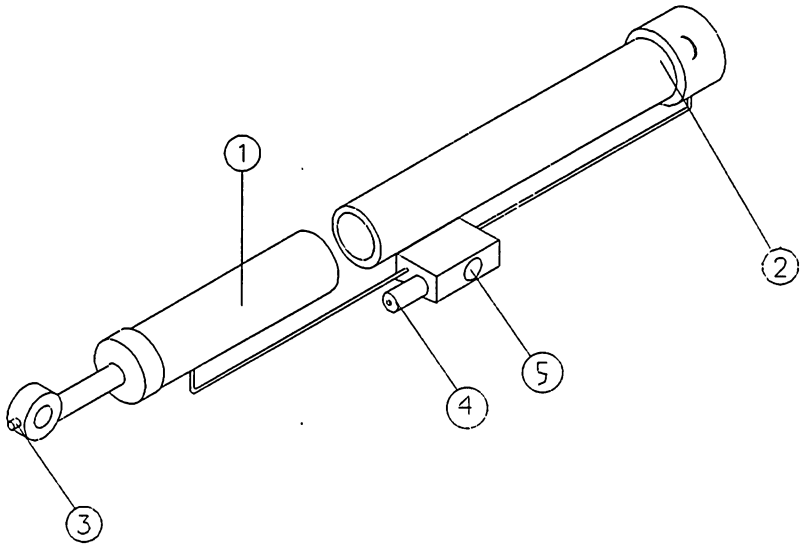


Figure 6.18 : First and Second Lift Cylinders for TA50RT

ITEM	PART NO.	DESCRIPTION	QTY
1	21002-0115	Lift Cylinder	1
2	41034-0126	Seal Kit	1
3	44029-0022	Grease Nipple	2
5	41031-0009	Overcentre Cartridge	1
6	41007-0020	Restrictor Cartridge	1

TA50RT

LIFT CYLINDER

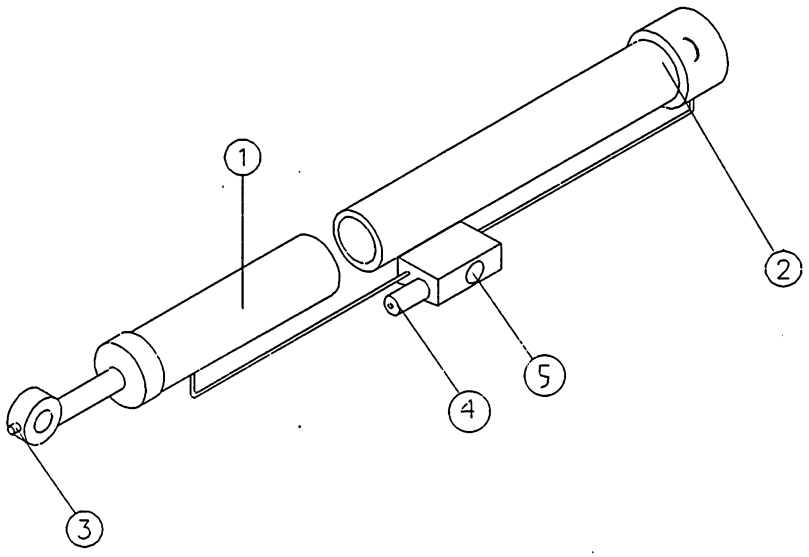


Figure 6.19 : Third Lift Cylinder for TA50RT

ITEM	PART NO.	DESCRIPTION	QTY
1	21002-0114	Lift Cylinder	1
2	41034-0125	Seal Kit	1
3	44029-0022	Grease Nipple	2
4	41031-0009	Overcentre Cartridge	1
5	41007-0020	Restrictor Cartridge	1

TA50RT

TELESCOPIC CYLINDER

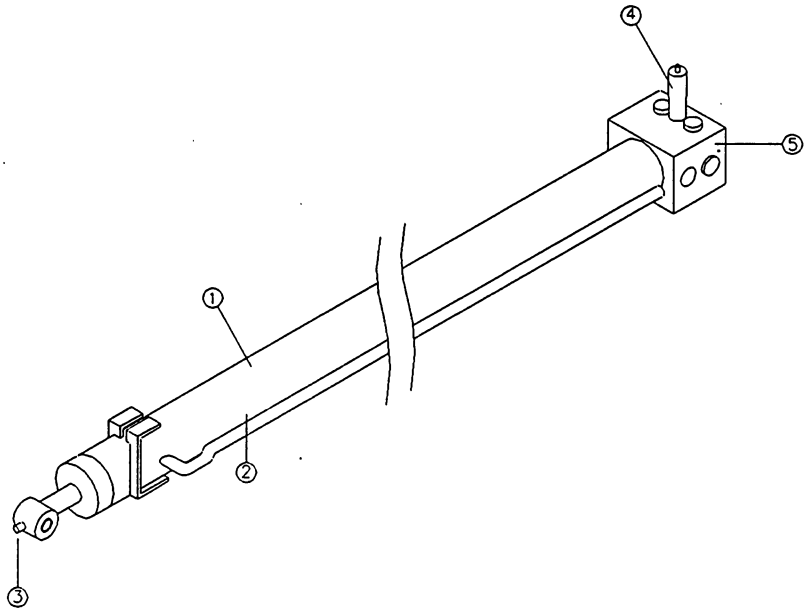


Figure 6.20 : Telescopic Cylinder for TA50RT

ITEM	PART NO.	DESCRIPTION	QTY
1	21002-0097	Telescopic Cylinder	1
2	41034-0124	Seal Kit	1
3	44029-0022	Grease Nipple	2
4	41028-0028	PO Check Valve	1
5	41006-0041	Relief Valve	1

TA50RT

MASTER CYLINDER

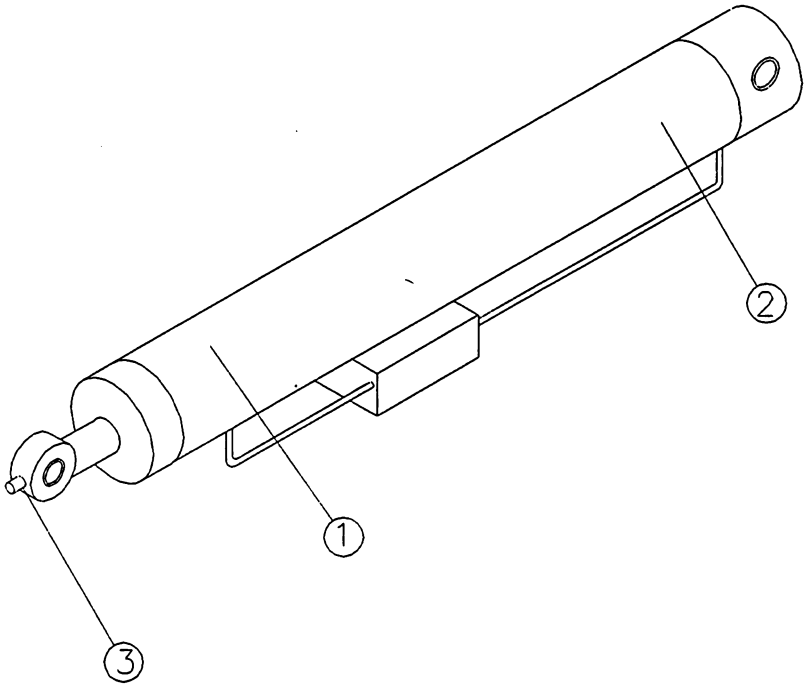


Figure 6.21 : Master Cylinder for TA50RT

ITEM	PART NO.	DESCRIPTION	QTY
1	21002-0086	Master Cylinder	1
2	41034-0090	Seal Kit	1
3	44029-0022	Grease Nipple	2

TA50RT

SLAVE CYLINDER

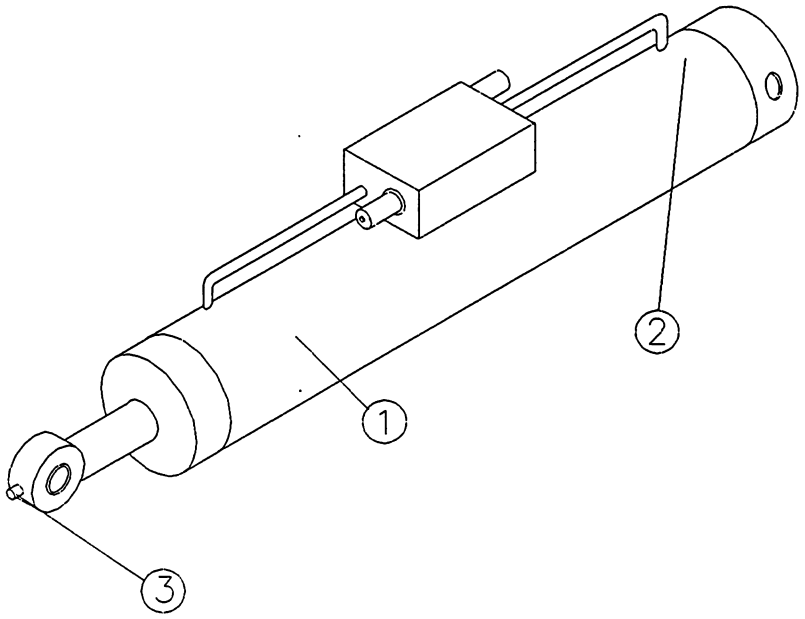


Figure 6.22 : Slave Cylinder for TA50RT

ITEM	PART NO.	DESCRIPTION	QTY
1	21002-0089	Slave Cylinder	1
2	41034-0090	Seal Kit	1
3	44029-0022	Grease Nipple	2

TA50RT

CAGE ROTATION CYLINDER

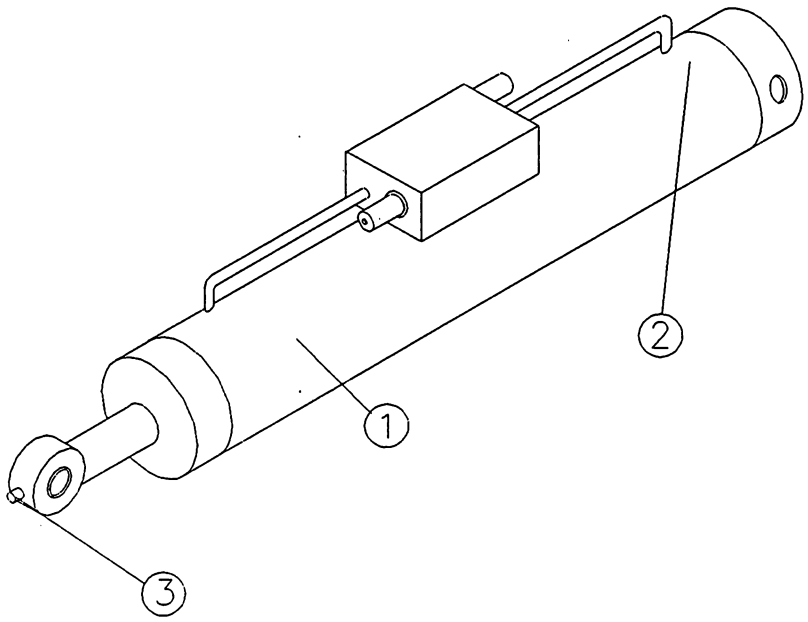
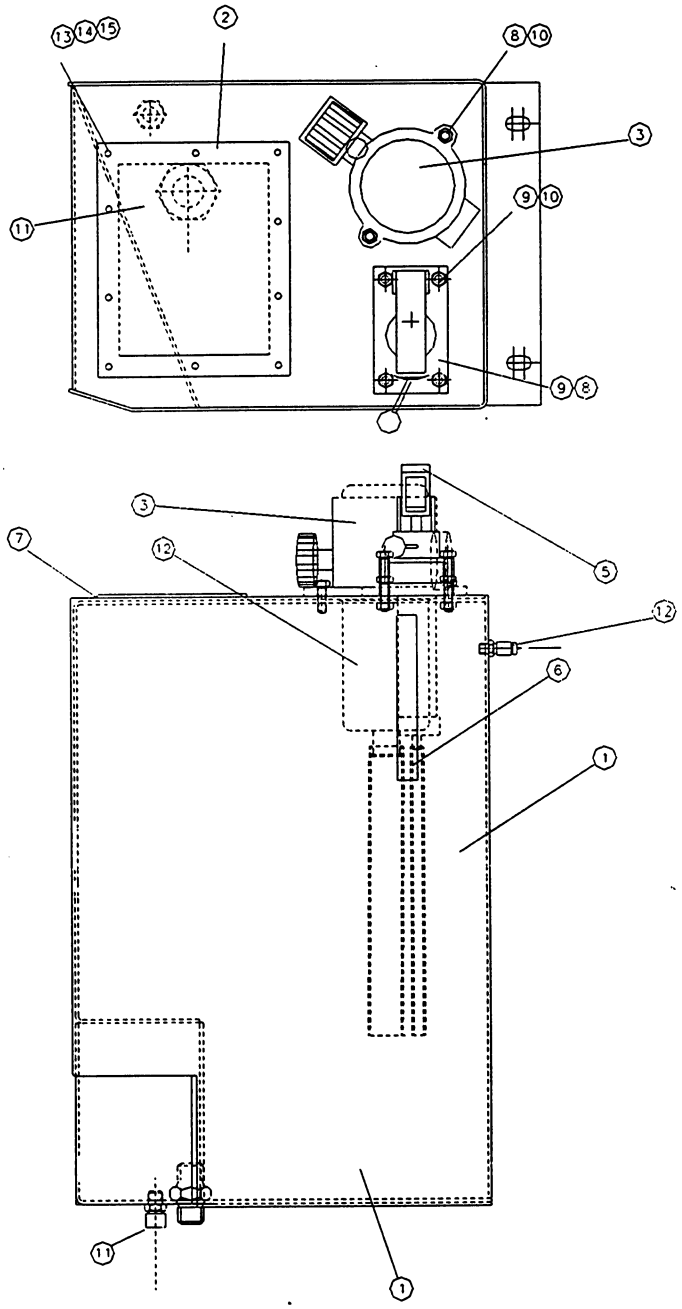


Figure 6.23 : Cage Rotation Cylinder for TA50RT

ITEM	PART NO.	DESCRIPTION	QTY
1	21002-0116	Cage Rotation Cylinder	1
2	41034-0099	Seal Kit	1
3	44029-0022	Grease Nipple	2

TA50RT

HYDRAULIC TANK



15	M6x 20 CAP SCREW	44002-0354	10
14	M6 SPRING WASHER	44013-0025	10
13	M6 STEEL WASHER	44013-0006	10
12	3/8"MBSP QUICK REL COUPLING	41032-0011	1
11	1/2"BSB F BLANK	31013-0139	1
10	M8 SPRING WASHER	44013-0022	6
9	M8x50 CAP. SCREW	44004-0087	2
8	M8x20 CAP. SCREW	44004-0082	4
7	GASKET		
6	LEVEL GAUGE	12398	1
5	HAND PUMP	41017-0042	1
3	RETURN FILTER	41030-0039	1
2	INSPECTION COVER	SS190	1
1	TANK FABRICATION	21024-0034	1

Figure 6.24 : Hydraulic Tank for TA50RT

TA50RT

MANIFOLD BLOCK

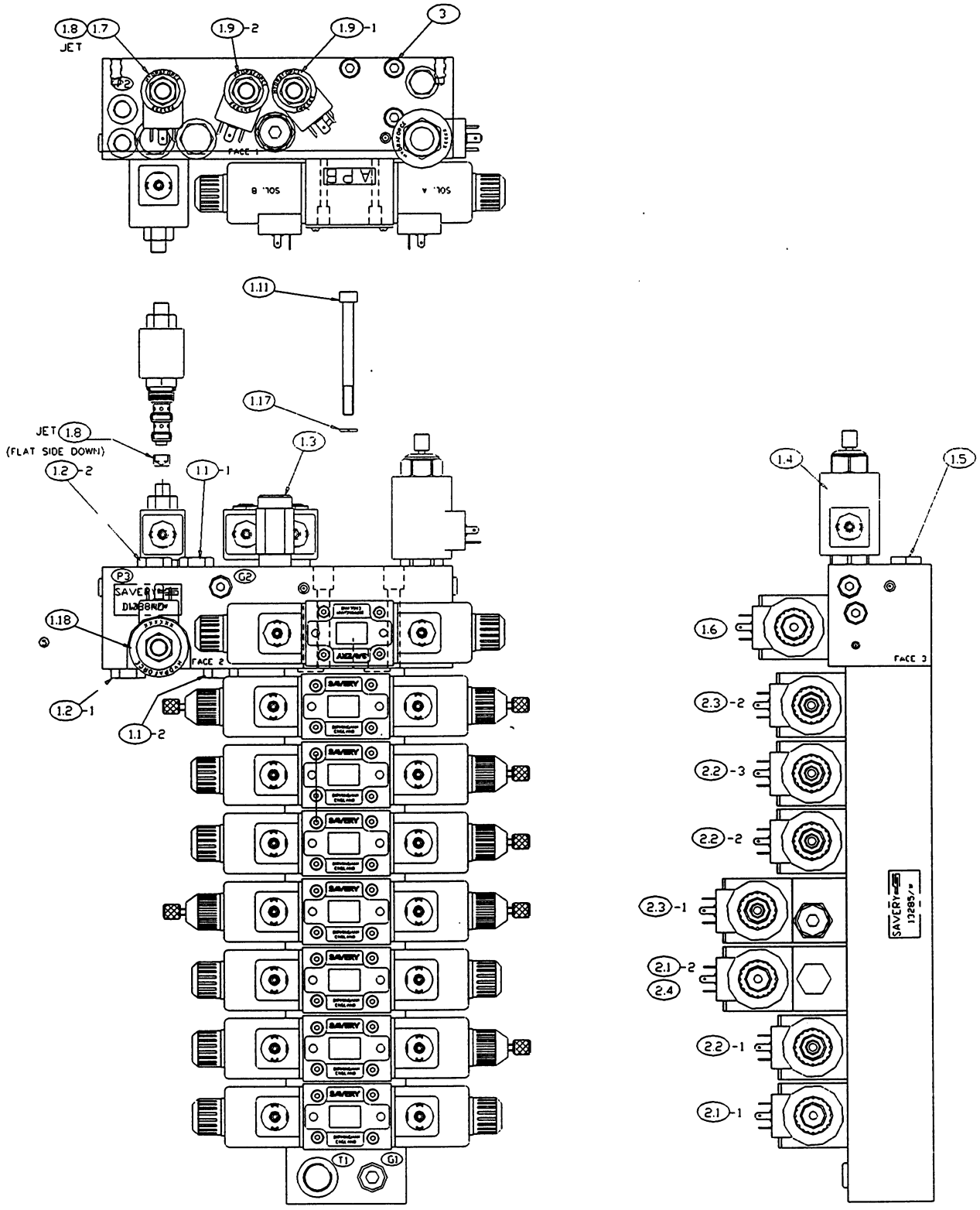


Figure 6.25 : Manifold Block for TA50RT

TA50RT

Manifold Block Components Listing

Item	Part No	Description	Qty
1	41029-0032	Manifold Block	1
1.1	41009-0037	Check Valve	2
1.2	41009-0038	Check Valve	2
1.3	41006-0047	Pressure Relief Valve	1
1.4	41003-0091	Flow Control valve	1
1.5	41020-0350	Cavity Plug	1
1.6	41003-0092	Solenoid Valve	1
1.7	41003-0094	Solenoid Valve	1
1.8	41020-0351	Flow Control Insert	1
1.9	41003-0095	Solenoid Valve	2
1.10	41015-0087	0-ring	2
1.11	41020-0352	Cap Screw	4
1.12	41015-0088	AV Seal*	7
1.13	41015-0089	AV Seal*	5
1.14	41020-0353	Flush Plug*	3
1.15	41020-0354	Blank Plug*	4
1.16	41020-0355	Blank Plug*	1
1.17	41014-0003	Spring Washer	4
1.18	41003-0096	Manual Override Solenoid Valve	1
2	41029-0033	Manifold Block	1
2.1	41003-0097	Solenoid Valve	2
2.2	41003-0098	Manual Override Solenoid Valve	3
2.3	41003-0099	Manual Override Solenoid Valve	2
2.4	41003-0100	Pilot Operated Check Valve comprising	1
2.4.1	41023-0133	Sandwich Boot	1
2.4.2	41009-0039	Check Valve	2
2.4.3	41023-0134	Pilot Piston	1
2.5	41015-0090	AV Seal	14
2.6	41020-0356	Blank Plugs	3
3	41020-0357	Protection Plug	20