

Installation
Operation
Maintenance

Part Numbers	
151111	Standard 3ph
151112	Standard 1ph
151996	(9" wider) 3ph
151999	(9" wider) 1ph

High Speed Lifts

DESCRIPTION.

These lifts have a 3 tonne lifting capacity and conform to BS AU161 part 1a 1983. The electric motor, hydraulic pump and oil reservoir form a power pack which is mounted on the control column. Raising the operating handle will start the electric motor and cause the pump to deliver oil via a non-return valve to the ram beneath the power track. The hydraulic pressure in the ram will retract the piston, at the same time pulling on the rope system and raising the platform. Releasing the operating handle will stop the motor/pump and oil will cease to be fed to the ram. The platform is prevented from descending by the non-return valve in the hydraulic system. If the platform is raised to the extent of its travel, it meets a mechanical stop. This causes an increase in the hydraulic system pressure which forces the control handle to the neutral position and stops the motor. Pressing the operating handle down will by-pass the non-return valve and allow the oil to return to the reservoir as the lift descends. Up to a predetermined maximum, the rate of descent is dependent upon the vehicle weight.

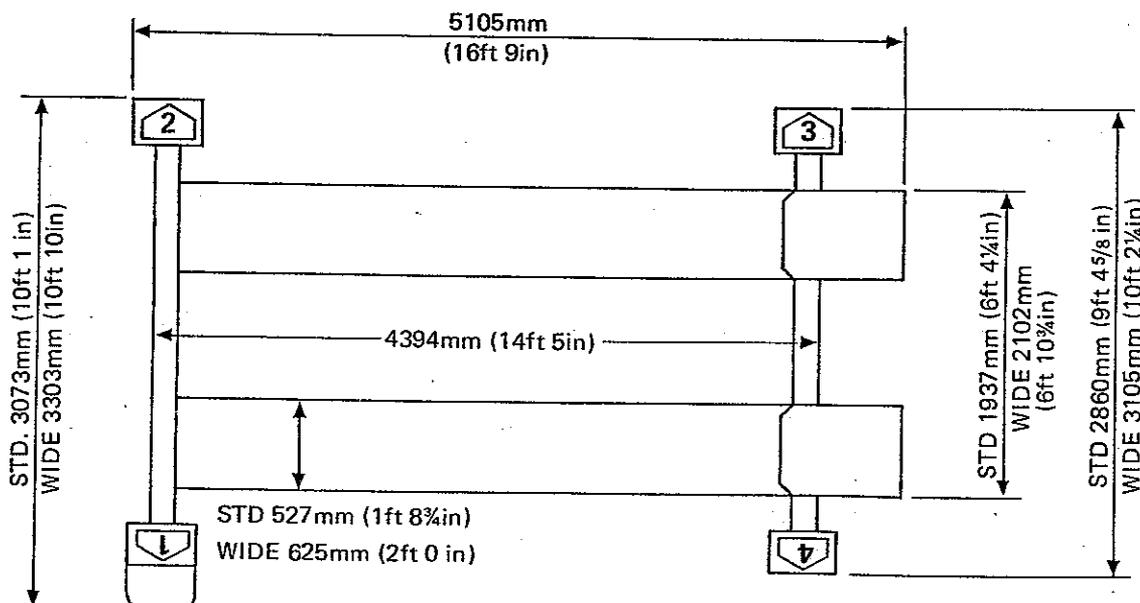
SAFETY DEVICES.

The following safety devices are incorporated.

- (1) The Raise/Lower control is of the "deadman" type and will stop the lift if released.
- (2) A pressure relief valve in the hydraulic system limits the maximum hydraulic pressure obtainable. Should the lift be overloaded, the relief valve will open allowing the pump output to be returned to the oil reservoir, while the lift remains stationary.
- (3) A variable restrictor is fitted in the hydraulic cylinder inlet/outlet connection. In the unlikely event of a failure of the hydraulic line or connections, the resultant rush of oil forces the restrictor on to its seat, thus reducing lift descent to a safe speed.
- (4) A clutch rod is suspended from the top of each column. A spring loaded ring clutch rises and descends with the lift. Should a cable fail or slacken then the clutch ring tilts and grips the rod. This provides an emergency support for the lift at that column.

Dimensions

Fig 1



PLAN OF STANDARD AND WIDE VERSIONS

SITE PREPARATION & DIMENSIONS.

A good quality level floor is essential. If the quality of the floor is suspect and relaying is impractical, 610mm squares must be cut through the existing floor and new concrete bases (of minimum thickness 150mm) laid to provide sound foundations for the columns.

In deciding upon the position of the lift 610mm minimum clearance should be provided between any fixed structure and any moving part of the lift. Fig.1. gives the floor plan for wide and standard surface mounted lift.

For details of recess dimension the appropriate detail drawing should be obtained before any building work is commenced.

Recessed Lift	Inst. Drawing No.
Standard (Drive on - Back off).	152332.
Wide (Drive on - Back off).	152333.
Standard (Drive through)	152330.
Wide (Drive through)	152331.

PREPARATION OF SITE.

Customer's Responsibility.
Please note that all site preparations must be com-

pleted before a Tecalemit Installation Engineer is requested.

The customer is required to provide the following:

- 1) Labour on site to assist the installation engineer.
- 2) A suitable fused switch, capable of isolating the lift completely from the main supply, and handling the current rating specified:

415V 50Hz 3ph.

Full load current 4.6 amps.

Starting current 31 amps.

240V 50Hz 1ph.

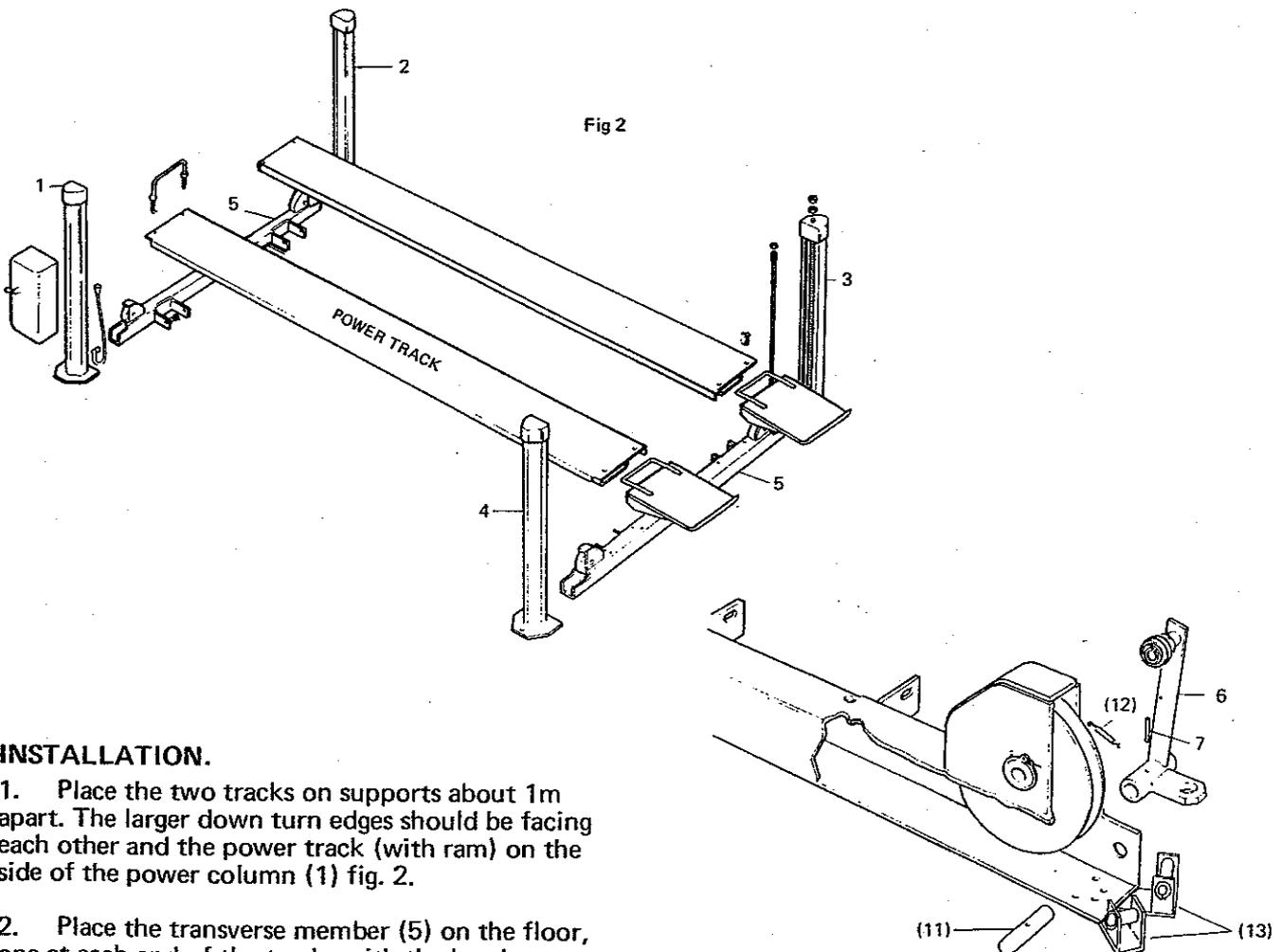
Full load current 13 amps.

Starting current 70 amps.

- 3) A competent electrician and all materials necessary to effect the connection of the mains supply to the starter on the lift.
Provided the distance from the mains supply source to the lift does not exceed 15 metres 1.0mm² wire will be suitable for 3ph lifts and 2.5mm² wire will be suitable for 1ph lifts.

N.B.

Refer to pages 8 and 9 for the correct circuit diagram after identifying the starter on the lift.

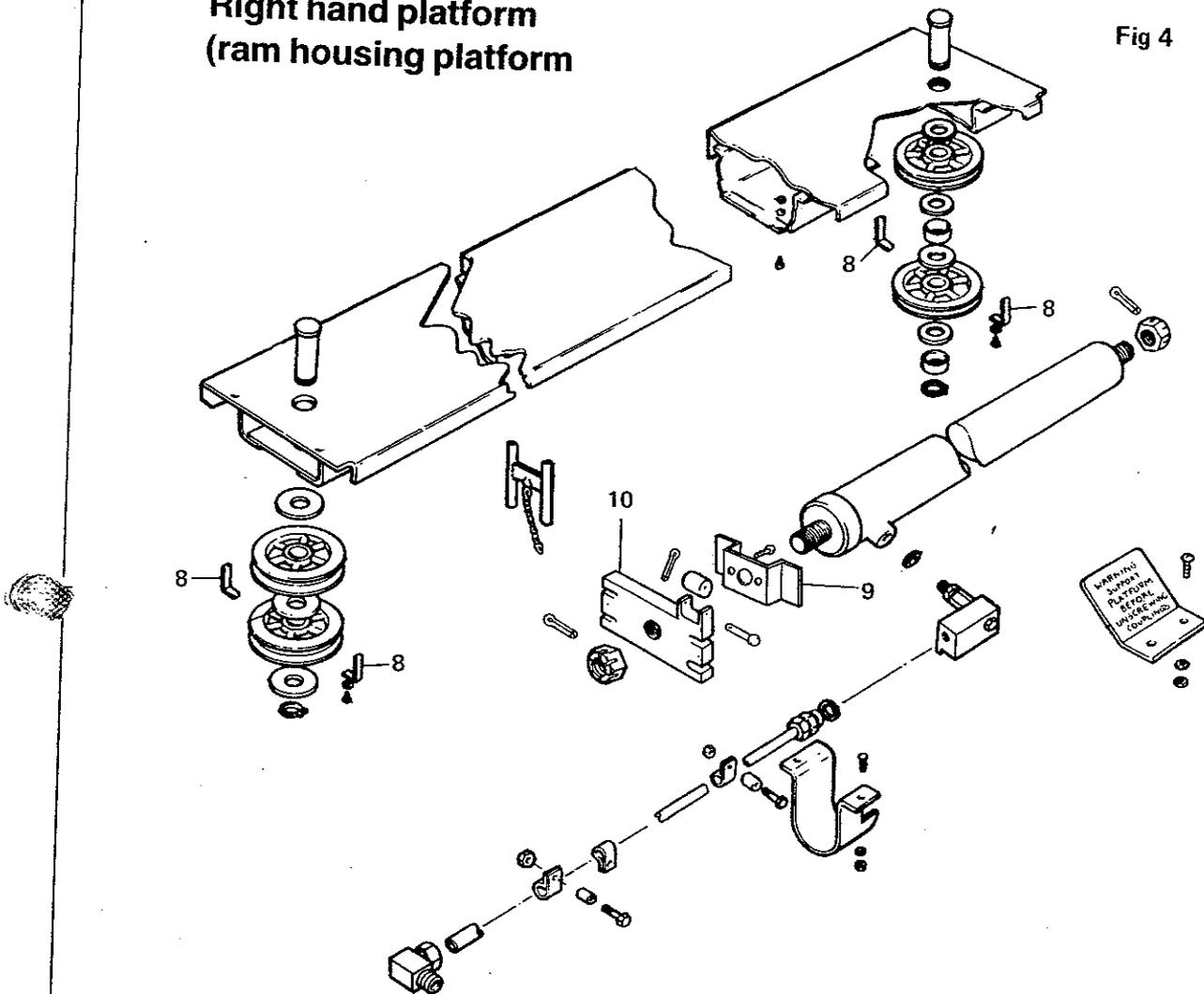


INSTALLATION.

1. Place the two tracks on supports about 1m apart. The larger down turn edges should be facing each other and the power track (with ram) on the side of the power column (1) fig. 2.
2. Place the transverse member (5) on the floor, one at each end of the tracks with the brackets facing inward.

Right hand platform (ram housing platform)

Fig 4



3. Remove the safety levers (6) fig. 3. from the ends of the transverse members by tapping out the spring dowels (7). Remove the four rope guides (8) from the ends of the power track fig 4 and release the brackets (9) on the ram end plate (10). Pull out the piston rod, collecting any oil discharged from the ram in a clean container.

4. Identify No. 3 rope from the number stamped on a flat of the screwed end pieces. Starting from No. 3. column position, feed the smaller end termination down through the transverse member, round the appropriate pulleys and onto the ram end plate. Repeat for corners 4;2 and 1 in that order referring to fig 5 for correct rope/pulley position.

5. Re-attach the retaining bracket (9) on the ram end plate and the rope/pulley retaining brackets (8) at each end of the power track, ensuring that the latter do not touch the pulleys. Refit the safety arms (6) spindles (11) and spring dowels (7). Fit the tension springs (12) between the safety arms and the pulley support plates. This is most important and care must be taken not to overstrain the strings.

6. The transverse members may now be fitted to the platforms and bolted up (8 short dome head screws on top of the platform and 8 long dome head screws with plain washers and self locking nuts through the sides).

7. Push the end of the ram feed pipe through the transverse member and connect up to the safety valve on the ram. See fig 6 for correct coupling assembly.

8. Fasten the control box to number 1 column with the bolt heads inside the pillar.
NOTE: When the control box cover has been removed, take care not to damage or alter the leaf springs on the micro switches. Take the flexible hose and fasten the elbow of it to the coupling of the power pack. Connect the other end to the coupling on the ram feed pipe.

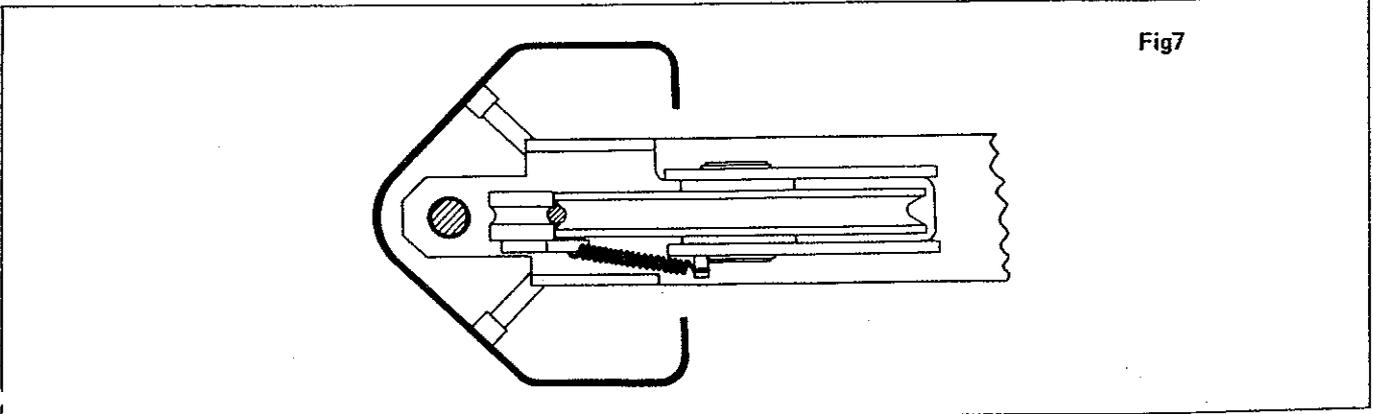
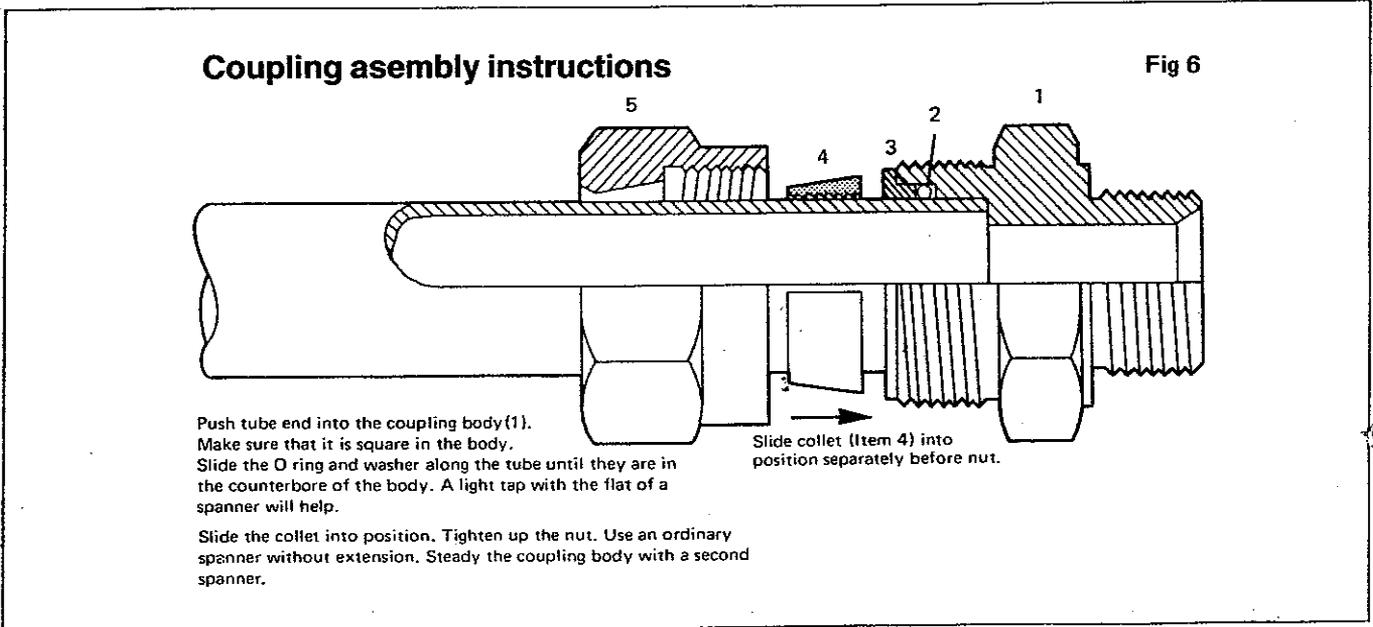
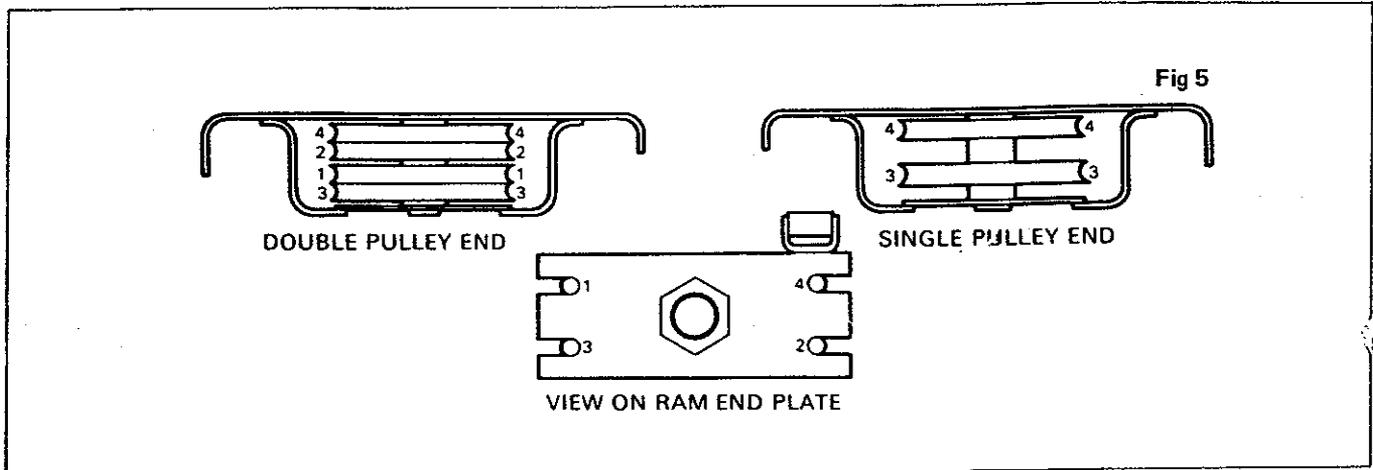
9. Fit the stabilizers (13) and position to the columns transverse members so that the rollers mate with the faces of the columns. See fig. 7. Fit the screwed ends of the wire ropes through the tops of the columns and screw the nuts right down. Fit the safety rods, screwing the nuts right down and adding the lock nuts so that the rods are clear of the baseplate.

10. Fill the oil tank with the oil provided. Min level is to the bottom of the dipstick. Connect the electric supply between the isolator and the starter and replace main fuses. Flick the operating handle to the raise position to establish correct motor rotation.

DO NOT allow the motor to run in the wrong direction.

DO NOT run the motor without oil in the tank. Failure to observe the above will damage the pump. If the motor direction is wrong the connections should be changed as follows (ensure that the supply is isolated before commencing):

- i) Three phases: interchange any two of the three supply lines.
- ii) Single phases: see instruction in the motor terminal box.



11. Operate the control valve in the raise direction until the rope slack is nearly taken up.

Check all the ropes are properly engaged with their correct pulleys and not crossed or fouling. If all is clear continue to raise the platform until it is supported by the four ropes. Remove the supports from beneath the tracks and lower the platform to the floor.

Adjust the position of the columns if necessary and check for vertical alignment, using steel shims as required.

Drill the floor and secure the columns using the Rawlbolts supplied.

Raise the platform to the top and recheck the position of the stabilizer rollers, adjusting the vertical alignment of the columns if necessary.

12. Raise the lift control handle again until the relief valve blows off in the tank.

Check all couplings for leaks. Lower the lift to the floor.

There is no need to bleed the main ram, but allow the air to settle out of the oil in the tank.

13. Raise the lift to a convenient height and level the platforms by unscrewing the nuts on the screwed rope ends. Hold the screwed portion with a suitable spanner.

14. Lower the lift to the floor. Top up the oil tank. Replace the control box cover.

Raise and lower the lift two or three times to check the operation.

Attach the run-on ramps and end stops.

Fit the anti-toe trap kit to the transverse members.

Fit the corner pillar caps.

15. **IMPORTANT.** Check that the safety springs are fitted correctly and that the roller on the safety arm is behind the wire rope. See fig. 7.

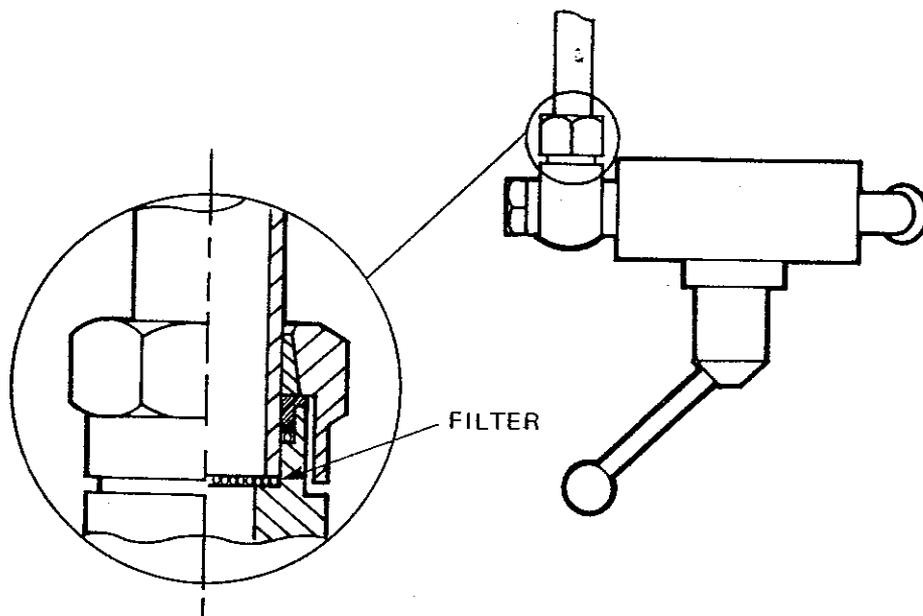
16. Oil the stabilizer roller bushes, the roller spindles on the safety arms and the safety arm pivots. Wipe the wire ropes with a clean rag soaked in fresh oil.

17. Place a suitable vehicle on the lift (not exceeding 3 tonne) then raise and lower the lift 5 times throughout its full travel.

With the lift fully lowered, remove the filter fig. 8. clean and replace or renew if damaged. Raise lift and check for leaks.

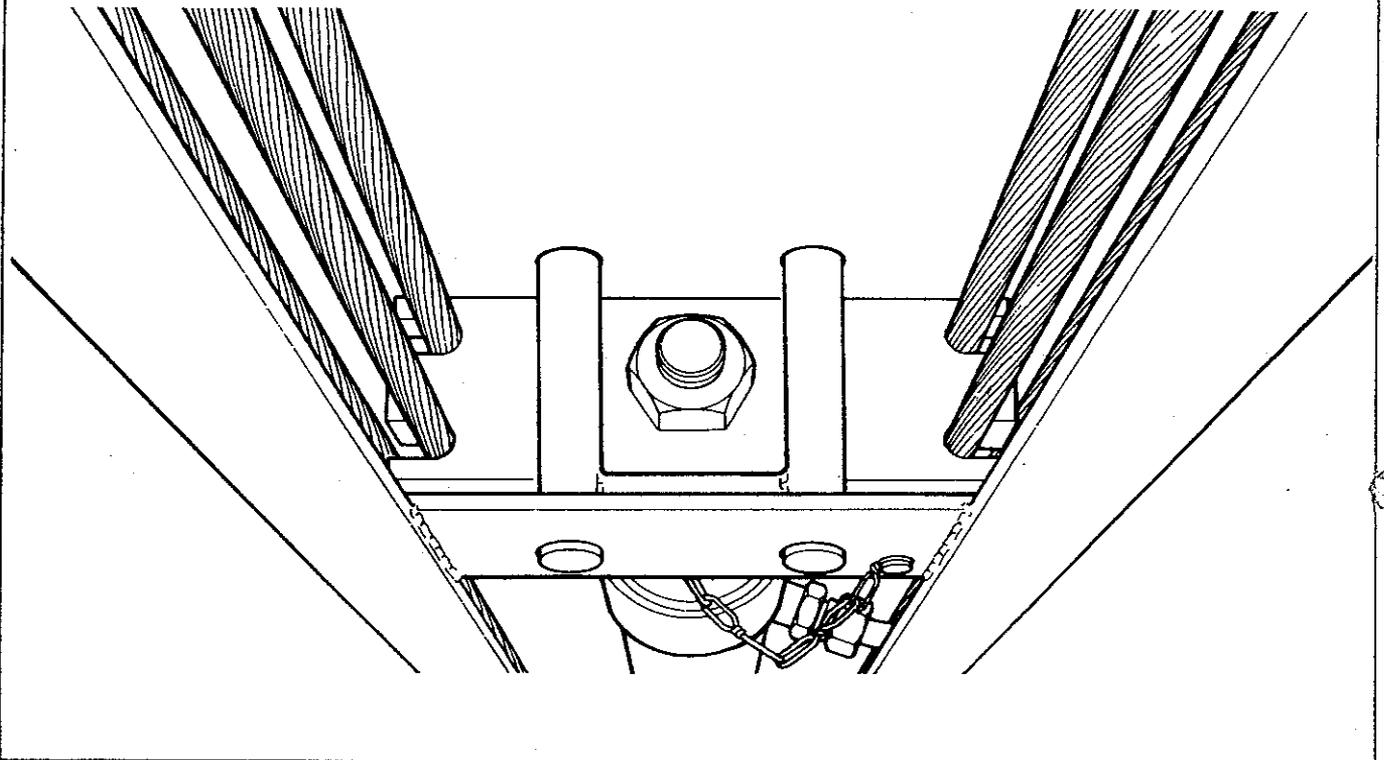
18. If the customer wishes for the lift to be load tested to its rated capacity, he must arrange for a suitable certified load to be available at the time of installation. On completion of a satisfactory test the engineer will issue a Test Certificate. If the load available is less than the lift capacity then this will be reflected in the Test Certificate and marking of the lift.

Full details of Customer Responsibilities and Testing Service are given on the Installation Request form 8428 supplied with the equipment.



Overnight Parking Device – Correct use.

Fig 9



OPERATION AND USE.

1. Before placing any vehicle on the lift, check that it does not exceed the certified load capacity of the lift, and that the wheelbase is not less than 2.44 metres.
2. If the lift is fitted with a jacking beam ensure this is fully retracted and positioned at the end of the track furthest from the vehicle approach.
3. Position the vehicle centrally on the tracks and apply the hand brake or chock at least one wheel front and rear if intended work requires the hand brake to remain off.
4. Raise the control lever and bring the lift to the required working height.
5. If it is intended to use the space beneath the lift for additional parking or temporary storage, always raise the platform to its maximum height and engage the mechanical lock - see fig. 9.
6. Before lowering the lift ensure that the jacking beam is lowered and parked, and that the floor beneath the lift is clear of any obstruction.
7. Press the control lever down and allow the lift to descend fully.
Do not leave the platform hanging on its cables when driving on or off.

SAFETY WORKING.

The following points relate to safe working practice and should be observed at all times.
Working from an elevated lift that is not fitted with proper working platforms complete with guard rails is not recommended.
The engine of a vehicle should not be started or be allowed to continue running once the lift has been raised from the ground unless it is essential for a vehicle testing operation. This applies particularly to vehicles with automatic transmissions as these may have a fault that could cause the vehicles to move, and special precautions should be taken. Care should be taken to ensure that vehicles do not become unstable when one or more of their wheels are raised from the platform.
Floor mounted axle stands should not be used in order to achieve a partial wheel-free state of a vehicle.

MAINTENANCE.

The following maintenance should be carried out at monthly intervals for normal use.

- 1) Wipe the wire ropes with a clean rag soaked in oil. Check for damage.
- 2) Check flexible hoses for damage.
- 3) Oil the stabilizer roller bushes, the roller spindles on the safety arms, the safety arm pivots and the wire rope pulleys with an oil can.
- 4) Check the oil level. The minimum level is to the bottom of the dipstick.

NOTE: Check and fill up only when the lift is lowered.

- 5) **IMPORTANT.** Check safety arm springs are in position and arms are free to move. Ensure springs are close coiled when not under tension - If not, they must be changed.

6 Monthly:

The lift and cables must be thoroughly examined and tested by a competent person at least once in every 6 months in accordance with BS. AU. 161.

The purpose of this examination is to determine inter alia, the physical condition of the cables and to assess the condition on relation to further use.

The competent person may require the cable(s) to be replaced or considered to be unsafe for further use. Clean banjo filter and replace or renew. see fig. 8. Contact Tecalemit Garage Equipment Co. Ltd., for details of Maintenance Contract.

- 7) Every 12 months the oil tank should be drained cleaned and re-filled with fresh oil. This service should be carried out with the lift in the lowered position.

RECOMMENDED OIL.

Sufficient oil is provided for the initial filling of the tank.

The oil required is **TECALEMIT Hydraulic oil** with additives for temperate climates.

It is important that oil of this specification is used to ensure correct functioning of the lift.

Additional quantities of oil may be obtained from Tecalemit G.E. Ltd. For hot climates applications, refer to manufacturer.

CHANGING WIRE ROPES.

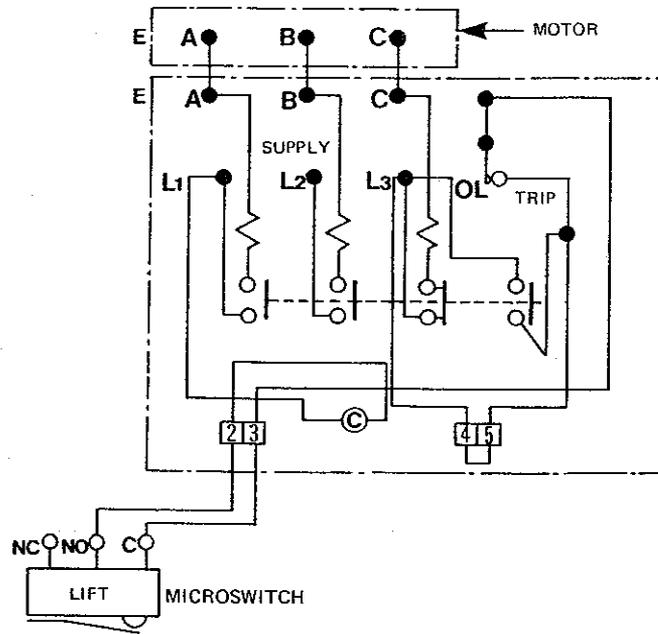
Wire ropes should be changed if they have broken wires or have been damaged e.g. by trapping or kinking.

NOTE: Wire ropes should be changed in sets of 4 only.

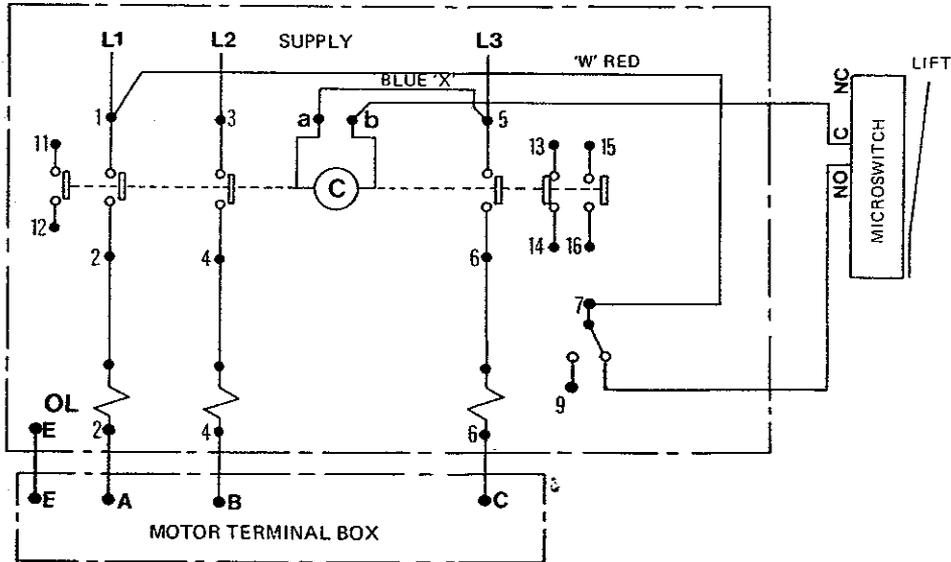
- 1) Lower the lift onto supports.
- 2) Remove the rope guides in the power track and on the ram end plate.
- 3) Take off the circlip at the recessed side of the pulley pin on the transverse member.
- 4) Push out the pin with thin bar. Leave the bar between the pulley support plates to keep the pulley and thrust washers in position.
- 5) The damaged rope may now be removed and replaced by a new one.
- 6) Refit the pulley pin and circlip.
- 7) Re-attach the rope guides.
- 8) Raise the lift clear of the supports and check that the ropes are in their correct positions.
- 9) Level the platforms.

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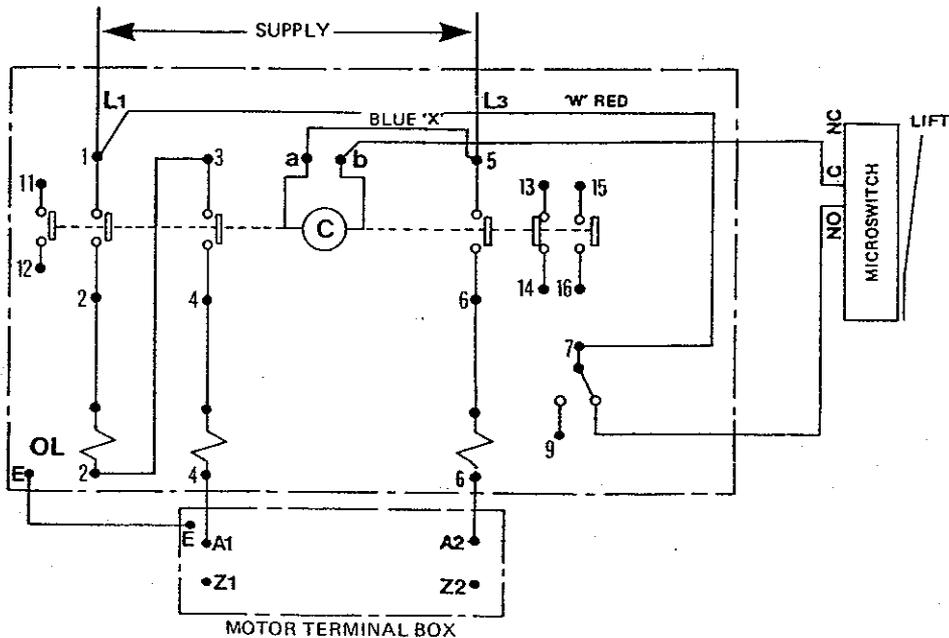
BROOK AT5 STARTER – 3 PHASE (Except 220 Volts).



2 BROOK AT5 STARTER – 3 PHASE

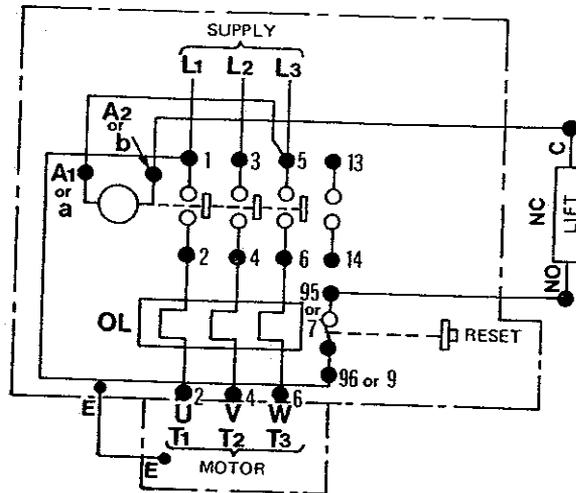


3 RT3 STARTER - SINGLE PHASE



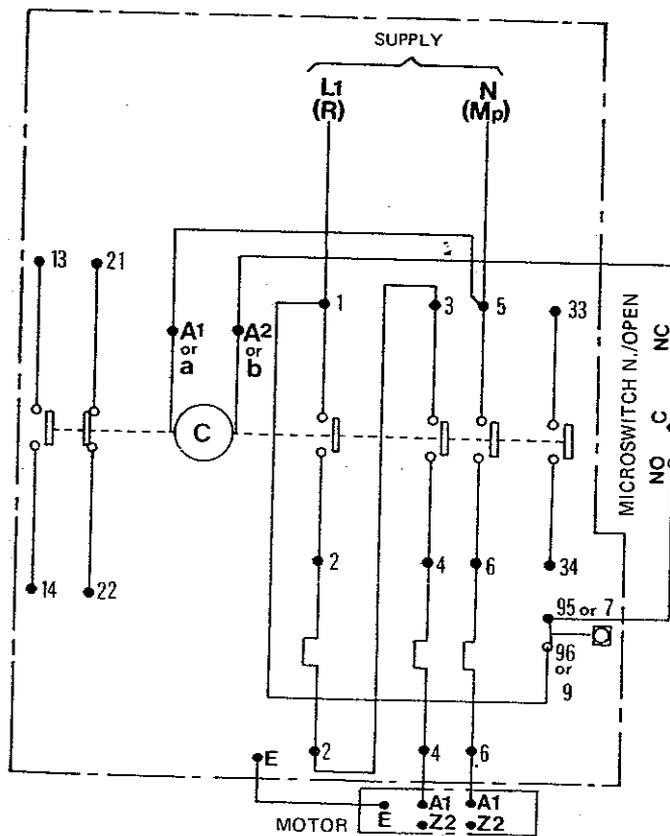
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BROOK S12 STARTER - 3 PHASE



5

S12 AND S16 STARTER - SINGLE PHASE



SERVICE DIAGNOSIS.

DEFECT	CAUSE	REMEDY
Motor will not operate	<ul style="list-style-type: none"> a. Faulty connections or no mains supply. b. Faulty micro switch c. Electrical fault in starter. d. Electrical fault in motor 	<ul style="list-style-type: none"> a. Check and reconnect b. Remove and replace c. Check starter wiring using an Avometer. d. Remove and replace
Lift will not rise or will only rise slowly with motor running	<ul style="list-style-type: none"> a. Insufficient oil b. Lift overloaded. c. Faulty relief valve. d. Faulty pump. e. Loose couplings. f. Blocked filter. 	<ul style="list-style-type: none"> a. Top up with recommended oil b. Reduce load c. Remove and replace d. Remove and replace e. Re-tighten. Refer to coupling assy instructions. f. Remove clean and replace.
Motor stalls when lift is in top position.	<ul style="list-style-type: none"> a. Faulty relief valve. 	<ul style="list-style-type: none"> a. Remove and replace
Lift creeps down with operating handle in neutral.	<ul style="list-style-type: none"> a. Faulty couplings b. Dirt in control valve. c. Leak from ram. 	<ul style="list-style-type: none"> a. Replace 'O' rings where necessary and re-tighten. Refer to coupling assy instructions. b. Replace with new control valve. c. Dismantle and replace faulty seals.
Lift stops abruptly during descent.	<ul style="list-style-type: none"> a. Faulty hydraulic safety valve. b. Incorrect grade of oil used. 	<ul style="list-style-type: none"> a. Remove and replace by trained engineer only. b. Drain and refill with recommended type.
Lift slow in descent	<ul style="list-style-type: none"> a. Blocked banjo filter. 	<ul style="list-style-type: none"> a. Clean and replace. Renew if damaged.

WARNING:

Always isolate the lift from the electrical supply and remove fuses before commencing any work.
 Always lower platform to ground level or onto suitable supports before disconnecting any hydraulic pipe or coupling. This also applies to removal of lifting ropes.