

Tirfir coilomatic essay



SERVICE TECHNICAL BULLETIN : 18 ROAD TRAFFIC ACCIDENT/RESCUE
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The Tirfor is a light duty winch, able to be used for many lifting and pulling jobs.

This Service Technical Bulletin outlines the basic capacities and safe working procedures for the Tirfor T516 as used within this Service. 18. 3.

2DESCRIPTION/SPECIFICATION - T516 COILAMATIC T516 COILAMATIC WINCH

T516 Safe working load for lifting 1600kg Pulling capacity 2500kg Weight of machine 13. 5kg Wire cable length 20mtrs Wire cable diameter 11. 5mm Wire cable breaking strain 8145kg 18.

3. 3OPERATIONAL USE HEALTH AND SAFETY Always use full protective clothing i. e. Safety Glasses and Gloves.

PREPARING FOR USE 1. Place the anchor point against a support. 2.

Releasing Turn the cable release safety catch (1) and push the cable release lever (2) towards the anchor pin until it locks into position when raised slightly at its limit. Release the safety catch.

3. Pull through required amount of cable (Do not overrun cable drum by deploying too quickly). 4. Anchor machine and cable shackle with the correct sling. 5. Engaging 5.

1 Turn the cable release safety catch. 5. 2 Press the cable release lever vertically downwards, allowing the lever to travel back to its original position under the effects of its spring. Release the safety catch. 6.

Take up excess cable. ANCHORING OF TIRFOR MACHINES Horizontal or Angle Pulling The unit can be anchored by its hook, using a sling or a chain, to any fixed point; a ring in the ground or a support column, a rail track, a lorry, a tree, a beam across a door opening or window etc. The Tirfor Ground Anchor is designed to aid rapid anchoring; Height of Anchorage For horizontal pulling, or for angles of up to 45E, secure the anchor hook about 150mm above the ground. For angles between 45E and 90E, the recommended height above the ground is 600mm.

Lifting There are several ways of lifting:- (a) The most popular is to anchor the Tirfor by its hook to a fixed point as near the ground as possible, and take the cable over a pulley fixed directly above the load. This system is convenient for the operator and keeps him away from the danger of the load. (b) The Tirfor can be anchored by its hook to a fixed point above the load, and the load lifted toward the machine. c) The Tirfor can be anchored directly to the load, and the cable hook anchored directly above it. In this case the cable remains static and the machine and load climb the cable. Height of Anchorage For horizontal pulling, or for angles of up to 45o, secure the anchor hook about six inches above the ground.

For angles between 45o and 90o, the recommended height above ground is two feet. LIFTING AND PULLING (See also APPENDIX A) Tirfor machines can be used for any lifting and pulling job within the rated capacities for the

machines. The sketches below show the various ways in which Tirfors are used. With the operating handle on L1, a to and fro lever action is employed to move the cable through 45mm machine.

As the machines do not have ratchets, the operating handle need not be used through its full stroke; if space is confined, short strokes can be made. The handle can be left in any position of its stroke. When using the Tirfor machine, if the operation is too hard for one person, the work should be stopped and the hauling cable reeved through a snatch block enabling a pull to be made on two parts of the cable. If still too difficult, increase the number of blocks.

Never use any other object to replace the telescopic operating handle. Should the shear pin break, see section on 'Overloads'. (See over for diagram) **SLACKENING THE CABLE OR LOWERING** Place the operating handle on the reverse operating lever (L2). Lock into position by twisting. To slacken the wire cable or lower the load, move the operating handle to and fro. Move the operating handle to and fro.

The cable moves through the machine on both forward and backward strokes of the lever. **OVERLOADS** The indicated safe working load can be lifted by one person with normal effort. If more than normal effort is required the shear pin in the forward operating handle stub may shear and prevent further forward or upward movement. Reverse action is still possible using L2 to enable the load to be slackened or lowered. Remove damaged shear pin from the operating handle and fit new pin from operating handle and fit new pin.

Spare pins will be found in the cable release lever. Do not use non-standard shear pins as machine damage will occur. Remember to order replacement pins and place them in the cable release lever. 8.

3. 4CLEANING/TESTING Lubrication should be carried out as Standard Test Records 15(ii) to ensure that all the cable gripping mechanisms are working freely. Place the reversing lever L2 mid-way in the slot, and pour a quantity of oil in front and behind the lever. This helps ensure that both jaws receive lubrication.

A lack of lubricant in a Tirfor sometimes brings about a condition known as 'pumping'. This occurs when the jaw which is gripping the cable becomes locked onto it preventing the other jaw from taking over the load. As the operating handle is pulled down the machine climbs up the cable about 25mm,, but when the operating handle is moved up again the machine moves down the same 25mm in sympathy with the jaw which is locked onto the cable. Another symptom of lack of lubrication is jerkiness when lowering a load.

This situation, though inconvenient, is not dangerous, the load will not slip. Slacken using lever L2 and lubricate in situ. CARE OF TIRFOR MAXIFLEX WIRE CABLE (a)The wire cable should be reeled and unreeled in a straight line to prevent loops or kinks. After use coil up the cable for storage.

b)Kinked cable will not work in the Tirfor machine. For this reason never use the cable as a sling (i. e. passing the cable round an object and then hooking onto itself. (c)The wire cable outlet of the machine should not be obstructed.

The cable must be able to pass freely to prevent it being forced back into the unit. (d)Never subject the wire cable to abrasion by rubbing over sharp edges. Be sure that the wire cable is wiped clean before inserting it into the machine. (e)For longer life and better performance the wire cable should be lubricated from time to time. f)To avoid unlaying the strands, never allow a loaded cable to rotate. 18.

3. 5HEALTH AND SAFETY (a)TIRFOR machines must not be used beyond their maximum working load. (b)TIRFOR machines must not be used for applications other than those for which they are intended. (c)Never attempt to operate the cable release mechanism whilst the machine is under load. (d)Never obstruct the operating levers or the cable release lever. (e)Never operate the forward and reverse operating levers at the same time.

(f)Never use a handle, other than the telescopic operating handle supplied, to operate the TIRFOR machine. g)It is forbidden to replace sheared pins by anything other than genuine TIRFOR shear pins of the same model. (h)Never anchor the machine other than by its appropriate anchor point. (i)Never obstruct the machine, which could prevent the machine, the wire cable and the anchor points from operating in a straight line. (j)Never use the TIRFOR MAXIFLEX wire cable as a sling.

(k)Personnel should be aware of varying weights before lifting. (l)Selecting ground anchor points - this is usually trial and error as rigidity is never certain. (m)Limit the number of personnel to an absolute minimum in a risk area. n)One person only on jack handle. (o)Do not apply any excessive pressure to handle during operation. (p)When releasing the breaking

mechanism do not use palm of hand as a hammer, place Tirfor on a firm surface and use heel of boot.

(q)Cables under load should not be straddled and personnel should not position themselves in the line of recoil in case of a cable failure. (r)Cable Stop Indicators Indicators must be visible on Tirfor Maxiflex cable denoting the last 2 metres of available cable (i)25mm Yellow Band - 2 metres of cable remaining (ii)25mm Red Band - 1 metre of cable remaining. (s)Tirfor not to be used for lifting people.