To make the best use of the TIRFOR machine, choose from the range of specially developed accessories.

Sheave blocks
To increase the capacity of TIRFOR machines to comple-
tely satisfy as described on the previous page. The follo-
wing standard blocks are available:
- single side opening snatch block (Fig. 19)
- single snatch block, non-opening
- double blocks (Fig. 19)
- lightweight opening blocks

CONI-KLAM, wire rope gripper
To quickly lengthen a wire rope or sling. The wire rope is
held by a pair of serrated jaws, operated by a self gripping
wedge.

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. load (kg)</th>
<th>Suitable for wire rope (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC 10</td>
<td>1000</td>
<td>5 - 10</td>
</tr>
<tr>
<td>EC 14</td>
<td>2000</td>
<td>10.5 - 14</td>
</tr>
<tr>
<td>EC 21</td>
<td>3000</td>
<td>15 - 21</td>
</tr>
</tbody>
</table>

Slings
For anchoring the TIRFOR or the load. The diagram shows the
standard types, which are available in the length required.
Any other type on request.

Ground anchor with spikes
To provide a fixed anchor point in the ground or even in sand.

Ground anchor with disc
In galvanised steel, to provide strong and effective anchor
points.

Anchor hooks
For TIRFOR model TU-32 and all the models of the T-500 range.

Powered TIRFOR... a winning hand!

The powered models of the TIRFOR machines complement the manual units for heavy loads, such as operating large work platforms, lifting shuttering, moving machinery, etc...

Depending on the application, the working conditions and the power available, powered operation can be electro-hydra-
llic or pneumatic.

- saves time and labour
- no operator fatigue
- continuous operation
- increased safety

TIRAK the fast powered winch
As with the TIRFOR machine, the TIRAK also operates on a wire
rope which passes through the mechanism. The originality and
dependability of its wire rope drive mechanism make it a pow-
ered mobile winch which can replace conventional winches in a
large number of applications.

Mounted in a frame with its wire rope reeler, the TIRAK assem-
bly is very compact and easily moved from site to site. The
TIRAK has been approved as a man-riding hoist by safety
organisations in the majority of industrialised countries.

For additional information, please ask for the descriptive documentation on TIRAK.

Hydraulic TIRFOR
The TIRFOR hydraulic system includes a hydraulic power pack
which allows remote operation (individually or simultaneously) of
two, three or four machines: TIRFOR TU-16H (1600kg) or TU-32H
(3200kg), each fitted with a self reciprocating hydraulic ram.

Pneumatic TIRFOR
This machine (model TU-32P) is particularly suitable for opera-
ting on construction sites and in industries where there is a dan-
ger of explosions or in industries already provided with compres-
sed air facilities.

For additional information, please ask for descriptive documentation on motorised TIRAK.
The TIRFOR lifting and pulling machines are safe, reliable and efficient. Suitable for many applications, TIRFOR machines are lever operated hoists using a separate wire rope. One-man operated, using a telescopic operating handle, they can work in any position and over any height of lift. They can replace conventional winches and other hoists for many applications.

**The TIRFOR Principle**

The principle may be described as “hand-to-hand”, like a sai- lor pulling on a rope. While one hand pulls the other changes position to pull in turn. The two hands represent the 2 jaws of the TIRFOR. They grip the wire rope without damaging it and alternately pull it during forward operation and hold it during reverse operation. The effort is transferred to the jaws by both levels - one for forward operation and the other for reverse operation. The load is held securely at all times.

**TIRFOR Wire Rope**

The wire rope for the TIRFOR machines is not a standard production rope. It has been developed specially to suit the TIRFOR machines. TIRFOR wire ropes are supplied on a reel for ease of transport and storage.

**Applications**

- Construction, public works, civil engineering:
  - moving and positioning framework horizontally or vertically
  - positioning jacks of concrete beams
  - lifting work platforms or suspended working platforms
  - dragging, general lifting, gripping, tensioning, etc.
- Pulling and lifting:
  - positioning of platform for lifting and jacking
  - lift can be increased by using a block with four sheaves
- Bridge:
  - positioning framework
  - gripping
  - pulling heavy cast concrete beams
- Special applications:
  - suspended hoisting and maintenance platforms
- Steel structures:
  - positioning and igniting steel structure
  - excising steel sites
- Industry:
  - installation and renewal of machine tools and presses
  - lifting and handling of heavy equipment
- Lifting and pulling during maintenance operations:
- Rail and road transport:
  - lifting and removal of pylons and signals
  - maintenance and tensioning of catenaries
  - boil lifting heavy and difficult loads
  - loading and unloading
- Shipbuilding and marine engineering:
  - tensioning conveyors
  - handling and positioning equipment and underground machinery
  - handling, lifting and positioning equipment and underground machinery
- Oil and chemical industries:
  - controlled positioning and assembly of pipes and ducting
  - guiding pipes and tanks during construction
  - valve and bearing, and ensure proper alignment
- Mines and quarries:
  - inspection and maintenance work
- Pipelaying and jointing:
  - laying concrete pipes and pulling them together
  - positioning of pipes for welding and jointing
- Rail and road transport:
  - lifting and pulling during maintenance operations
- Rail and road transport:
  - anchoring barges and pushers
- Shipbuilding and marine engineering:
  - tensioning conveyors
  - handling and positioning equipment and underground machinery
- Electricity and telecommunications:
  - de-bogging equipment
  - loading and unloading
  - load binding heavy and difficult loads
  - maintenance and tensioning of catenaries
  - lifting and pulling during maintenance operations
  - handling, lifting and positioning equipment and underground machinery
  - tensioning equipment

**Advantages**

- Multiple operation:
  - works in any position horizontally, vertically or angled
  - variable length of wire rope
  - increase the nominal capacity with multiple sheave blocks
  - simple
  - fast and easy installation
  - simple to load or remove the wire rope
  - continuous operation without shifting
  - reduced maintenance by simple cleaning and regular lubrication
  - changeover from forward to reverse operation by transferring the operating handle from one hand to another

- High mechanical advantage
  - both ranges will operate in the most difficult conditions
  - reliability
  - whether lifting or lifting, the load is permanently controlled with the utmost precision; when operation stops, the load is spread between the two jaw blocks
  - safety device to prevent overloading
  - TIRFOR is approved for man-riding applications

**Technical Specifications**

<table>
<thead>
<tr>
<th>Application</th>
<th>Single-load capacity (kg)</th>
<th>Breaking-strain capacity (kg)</th>
<th>Dimensions (mm)</th>
<th>Machine-handle weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light-duty range</td>
<td>TU-8</td>
<td>38</td>
<td>660</td>
<td>527x265x108</td>
</tr>
<tr>
<td></td>
<td>TU-16</td>
<td>58</td>
<td>840</td>
<td>676x330x156</td>
</tr>
<tr>
<td></td>
<td>TU-32</td>
<td>84</td>
<td>1120</td>
<td>930x440x249</td>
</tr>
<tr>
<td></td>
<td>TU-64</td>
<td>156</td>
<td>1710</td>
<td>1190x500x327</td>
</tr>
<tr>
<td>Standard range</td>
<td>TU-8</td>
<td>38</td>
<td>660</td>
<td>527x265x108</td>
</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**Increase the capacity of the TIRFOR**

The lifting and pulling power of TIRFOR machines can be greatly increased by the use of multiple sheave blocks. This can increase the nominal capacity of the TIRFOR machines by 2, 3, 4 or even more (see dia-
gram opposite).

For most applications, all allowances must be made for friction in the sheaves. Ensure that the capacity of the blocks and lifting and anchor points are suitable for the load. When using the TIRFOR to pull big loads, it is advisable that the necessary pulling effort is not equal to the load to be moved.