Power-operated TIRFOR machines
... for moving heavy loads

7. Operation of self climbing shuttering (the Biemont system).
8. Lifting and installation of pre-assembled roofing structure at ground level.
9. 72 m suspended platforms fitted with 16 TIRFOR TU-16H machines.
10. Pre-stressed platform (Freyssinet system), fitted with TU-32H machines.
11. Demolition work. The pulling effort is checked by means of DYNAFOR load indicating devices.
12. Moving heavy machinery.
13. Moving grandstand seating in an indoor arena.
14. Fitting and removal of a sluice gate.
15. Pulling prefabricated sections of a bridge into position.
16. Assembling drainage pipes. Air operated TIRFOR machine TU-32P.
17. TU-32H machines as an emergency pulling unit on a fire truck.
18. Lifting an inflatable cover over the Nîmes amphitheatre with 32 TU-32H machines.

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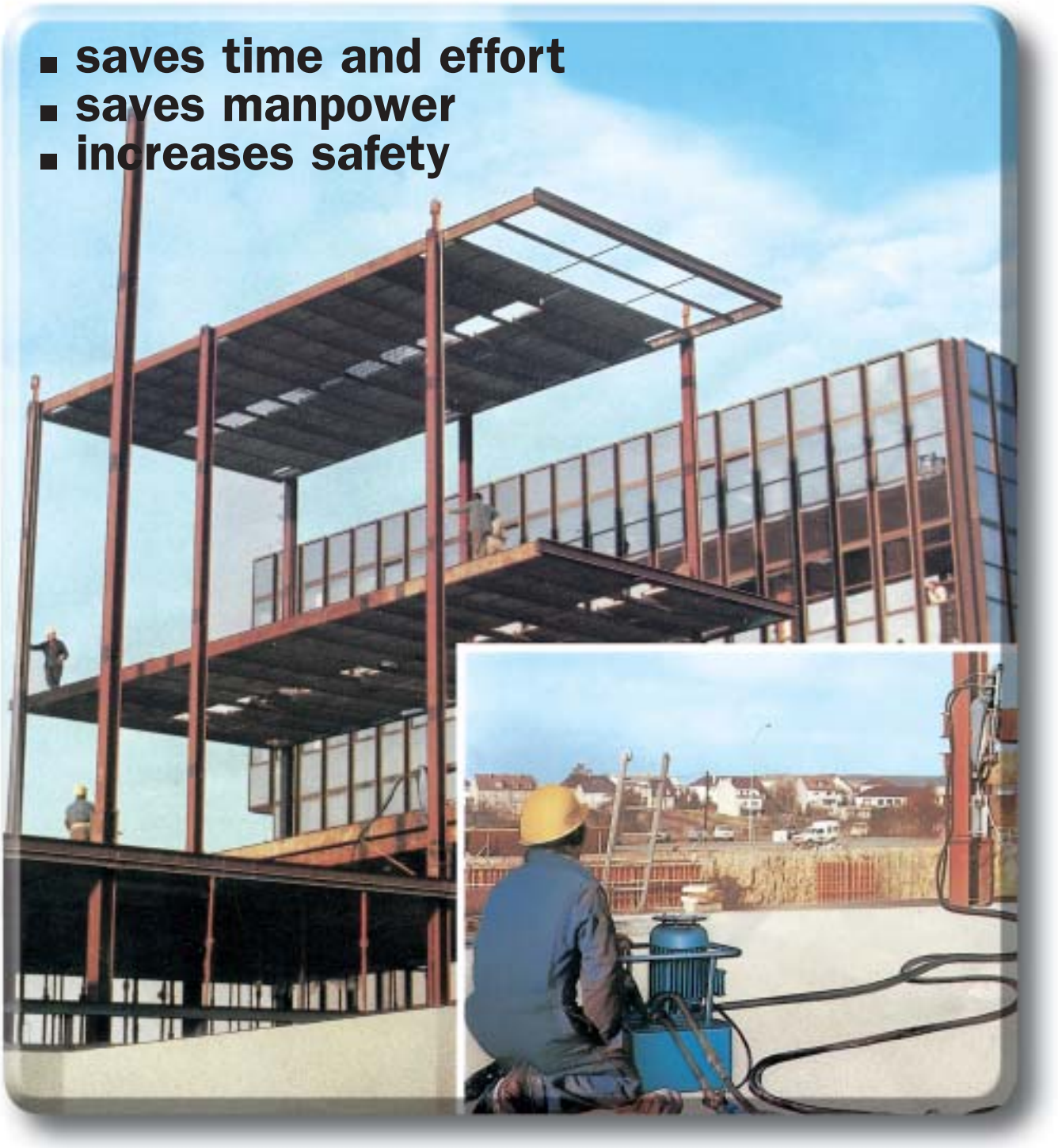
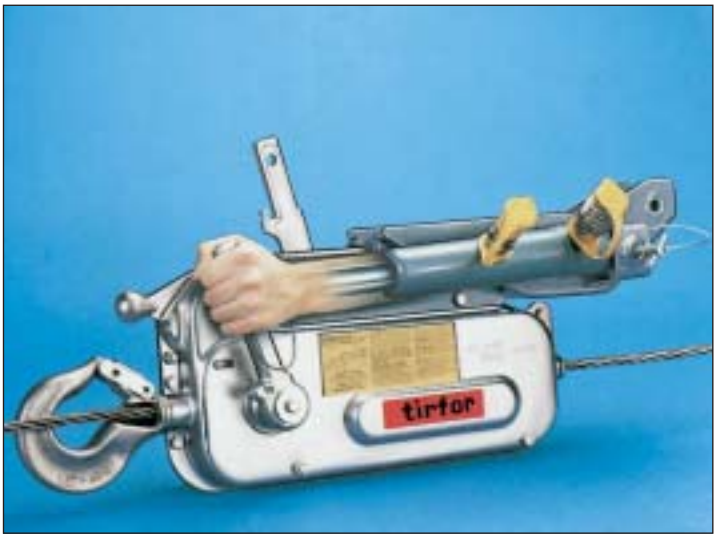
motorised tirfor®

Power-operated machines for lifting and pulling



Tractel Group



Power-operated TIRFOR machines are based on the manual TIRFOR but with specificially strengthened levers, crancks, spindles and jaw blocks, as well as a special power-operated self-reciprocating ram, which works the TIRFOR machine (pulling, lifting, lowering etc) without any effort by the operator.

Depending on the application, the working conditions and the power available, power operation can be hydraulic or pneumatic.

As a result of its increased specification, the power-operated TIRFOR machine is recognised by many companies as an essential tool for certain modern construction techniques (climbing shuttering, work platforms) and for installation work (lits and goods hoists, mechanical escalators, etc).

Fig. 2 – Operation of self climbing shuttering, PERI system (TU-32H).

2. Fig. 3 – Installation of a mechanical escalator (TU-16H).
The nominal capacity is increased by using multiple sheave blocks

As with hand operated TIRFOR machines, the power-operated models have all the same benefits :

- unlimited length wire rope
- operate in any position
- fast and easy installation
- high level of safety and reliable operation

.. to these can be added the specific advantages of power operation :

- no operator fatigue
- fewer operators required since one man can control several machines
- save time, because work is continuous
- increased safety since operation can be controlled at a distance, and shear pins prevent over loading
- increased precision of opearation through the control system

Motorised TIRFOR machines are approved for lifting personnel in the main industrialised countries.

Fig. 4 - Operation of suspensed platforms for the inspection and maintenance of bridges (TU-32H).

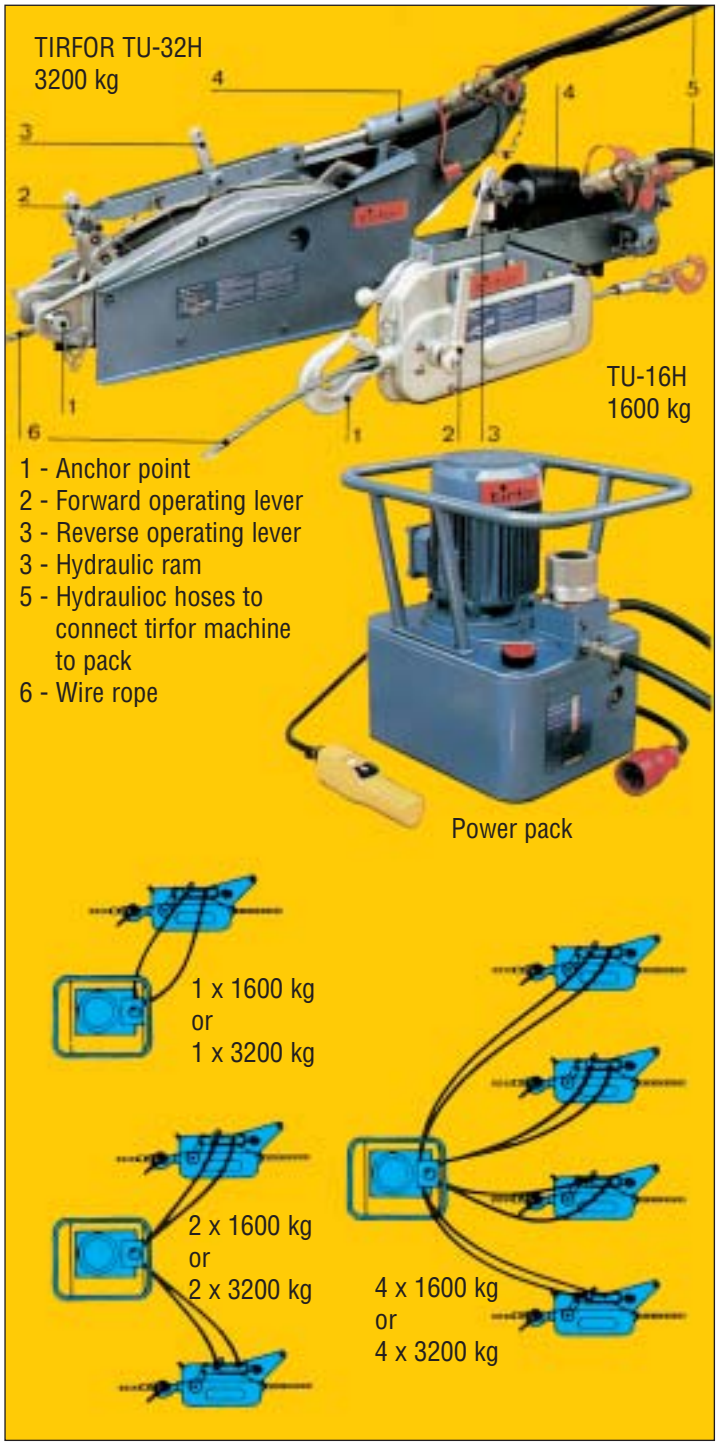
Fig. 5 -– Operation of heavy work platforms

Hydraulic TIRFOR

The TIRFOR hydraulic system includes a hydraulic power pack which allows remote operation (individually or simultaneously) of one, two or four machines :

TIRFOR TU-16H (1600 kg) or TU-32H (3200 kg), each fitted with a self reciprocating hydraulic ram. The hydraulic power pack is fitted with an electric motor or petrol engine. It is also possible to use the hydraulic power take-off from a lorry, tractor or other existing power source. The speed of operation is controlled using a variable flow control valve. Of course, it is always possible to operate the TIRFOR machine by hand using the telescopic operating lever, eg, in case of a power failure.

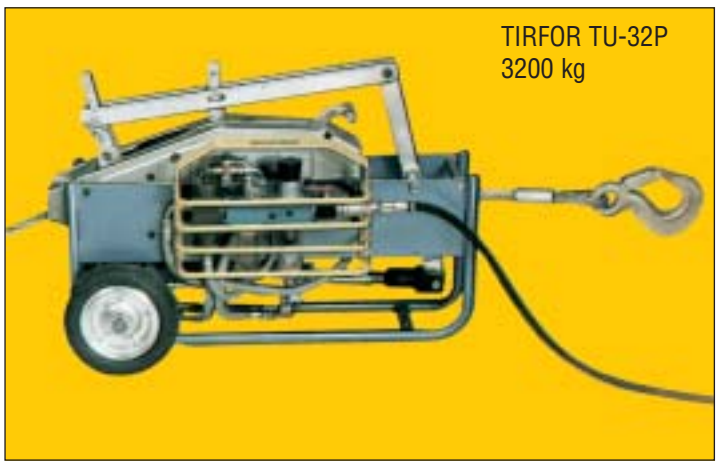
		TU-16H	TU-32H
Nominal capacity increase of power by multiple sheave blocks	kg	1 600	3 200
Max. speed forward operation (lifting)	m/mn	2	0,7
Max. speed rev. Operation (lowering)	m/mn	2,65	1,60
Weight : TIRFOR machine with ram	kg	29	52
hydr. Power pack (with oil), elect. Mot.	kg	53	
as above, but with petrol engine	kg	51	
TIRFOR wire rope, diameter	mm	11,5	16,3
standard length	m	20	20
(other lengths available on request)			



Pneumatic TIRFOR

The pneumatic TIRFOR machine (model TU-32P) is operated by a self reciprocating pneumatic ram, supplied by compressed air, the TU-32P is particularly suitable for operating on construction sites and industries where there is a danger of explosions eg, oil refineries, chemical industries etc. or in industries which are already provided with compressed air facilities (power stations, shipyards, etc.)

		TU-32P
Nominal capacity (increase of power by multiple sheave blocks)	kg	3 200
Speed in forward operation (lifting)	m/mn	0,60 - 0,94
Speed in reverse operation (lowering)	m/mn	1,80
Operating pressure	bar	4 - 7,5
Flow	l/mn	500 - 700
Weight (overall)	kg	88
TIRFOR wire rope,		
diameter	mm	16,3
Standard length	m	20
(other lengths available on request)		



For additional technical information please see product information T-366 and T-337