1. GENERAL

The BLOCSTOP is a fall-arrest secondary safety device which, when fitted to an appropriate TIRFOR/TIRAK wire rope, can be used in conjunction with almost any lifting equipment

The BLOCSTOP is particularly well suited as a safety device on suspended cradles and platforms. It may also be used to hold or restrain any other loads during lifting and pulling applications.

The BLOCSTOP may be used:

a) Mounted on a **separate safety wire rope** (Fig. 1) if required by safety regulations for suspended scaffolding and platforms in particular countries (e.g. Denmark, France, Sweden, Switzerland). The BLOCSTOP holds the load safely should there be any defect in the suspension wire rope or malfunction of the lifting machine.

b) Mounted on the **suspension or tensioned wire rope,** the BLOCSTOP protects the load against malfunction of the lifting/tensioning device.

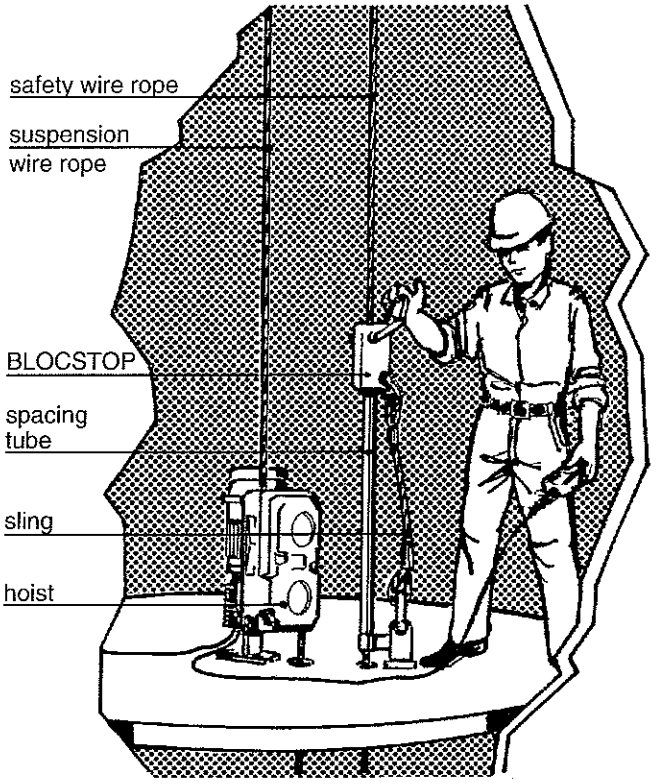


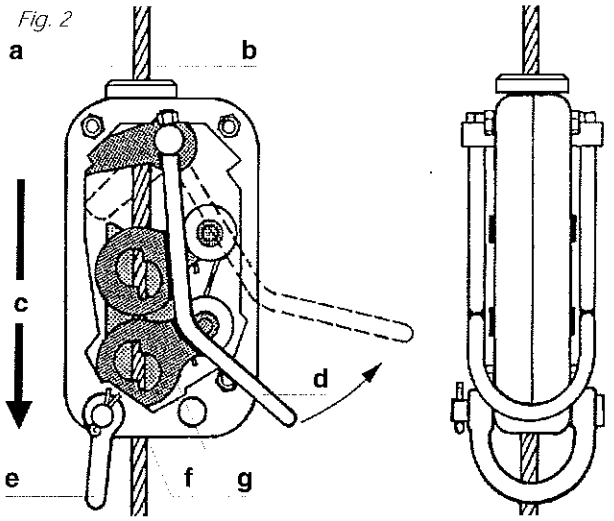
Fig. 1 - Safety suspension assembly of a platform in chimney construction

2. THE BLOCSTOP PRINCIPLE

A set of jaws (Fig. 2), used successfully in all TIRFOR machines over many years, serves as the gripping device. The system is the self-locking type, i.e. if the wire rope is pulled against the direction of pull, the jaws automatically clamp onto the wire rope. The greater the pull, the more the jaws grip the wire rope.

The self gripping jaw system of the BLOCSTOP is designed not to damage the wire rope, even when used in EMERGENCY situations.

Fig. 2



a. Wire rope guide (entry)
b. Suspension or safety wire rope
c. Direction of pull
d. Release lever
e. Shackle (optional)
f. Wire rope exit
g. Clamping system

3.1.2. BLOCSTOP BS
weight dependent automatic slack wire rope device

When used on a permanent application (e.g. on our ALTA platforms) a **fixed mounting** is recommended. The automatic operation of the BLOCSTOP is as follows:
The hoist is not rigidly fixed to the cradle. It initially slides upwards a short distance in a guiding device before lifting the load. The affect of this movement (1) is to raise the release lever (2) of the rigidly fixed BLOCSTOP (Fig. 7).
In case of failure of the suspension wire rope the hoist drops (this movement is accentuated by an incorporated pressure spring), and the BLOCSTOP locks onto the wire rope and immediately holds the cradle.

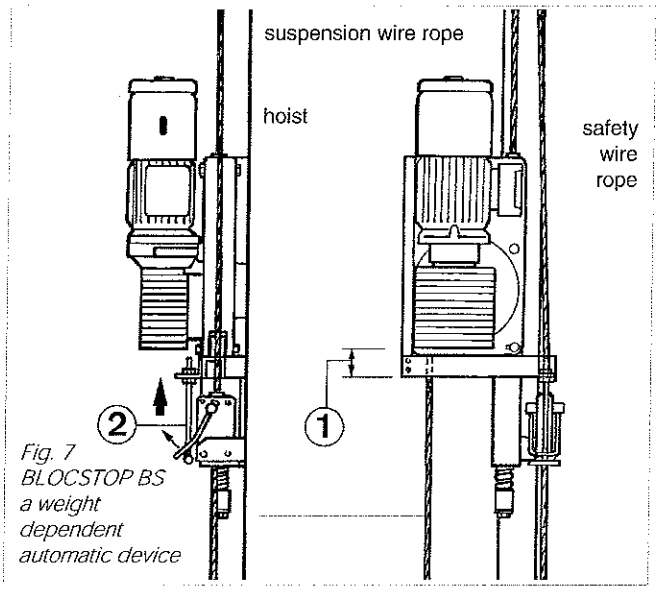


Fig. 7 BLOCSTOP BS a weight dependent automatic device

3.2. BLOCSTOP BSA
automatic slack wire rope device

This type can only be used on a secondary safety wire rope in parallel with a main suspension wire rope. The BLOCSTOP is rigidly mounted and operated by the tensioned suspension wire rope (Fig. 8). This system not only protects against suspension wire rope failure or hoist malfunction but also against excessive slope of the cradle.
If the cradle gets into a sloped position, (e.g. caused by the non-operation of one hoist) and reaches a point where the suspension wire rope is too far away from the BLOCSTOP to hold the release lever in the open position (Fig. 9.1), the BLOCSTOP at the lower end of the cradle locks onto the safety wire rope to prevent further lowering.
When the cradle has been brought back into the horizontal position, and the loading on the BLOCSTOP has been removed by lifting the cradle for a short distance, descent may then be continued.
CAUTION – To guarantee a suitable operation of this automatic safety system, the distance between the upper suspension points has to be 100 mm.

model	code	nom. cap. kg	weight kg	for TIRFOR/TIRAK wire rope diam. mm	type
BSA 15.301	3279	800	4.0	8.3	A8 / C8
BSA 15.303	6019	800	4.0	9.5	A9 / C9
BSA 20.300	15939	800	6.0	8.3	A8 / C8
BSA 20.303	15949	1000	6.0	9.5	A9
BSA 20.330	6039	1000	6.0	10.2	A10
BSA 20.301	15049	1600	6.0	11.5	C12
BSA 35.30	17999	3200	9.7	16.3	C16

Fig. 8 BLOCSTOP BSA, an automatic slack wire rope device

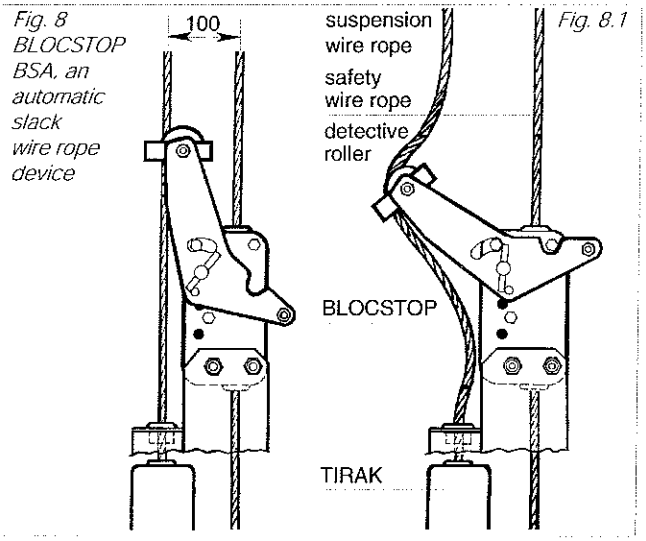


Fig. 8.1

Fig. 9

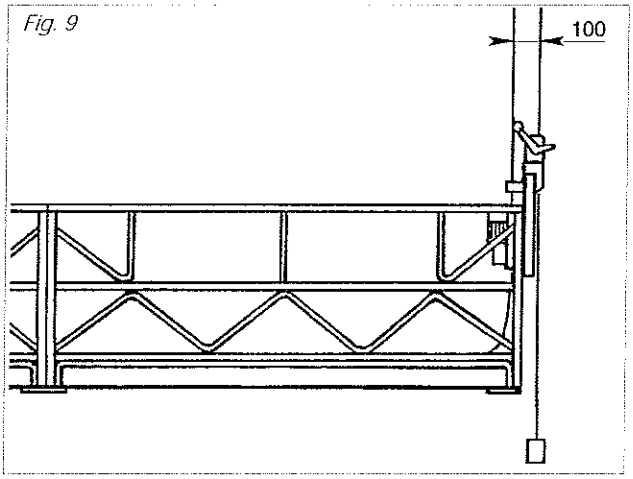
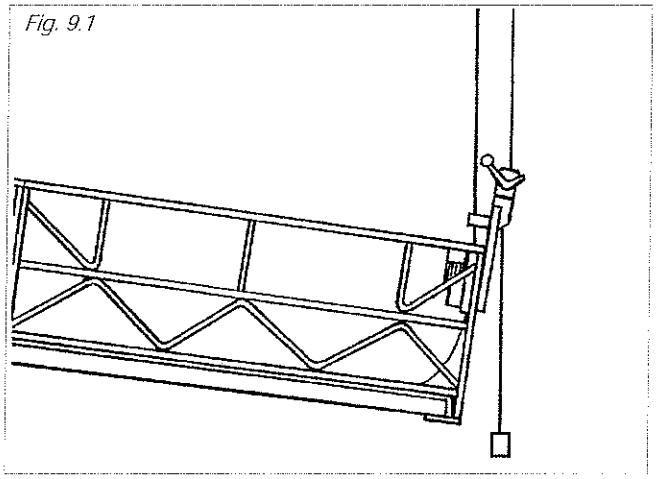


Fig. 9.1



3. THE BLOCSTOP MODELS

3.1. BLOCSTOP BS models

3.1.1. Hand operated BLOCSTOP

While **lifting a load or tensioning a wire rope** the rope passes through the BLOCSTOP. There is no need to operate the BLOCSTOP.

For **lowering the load or releasing the wire rope** the BLOCSTOP is opened by lifting the operating lever upwards (Fig. 6).

In case of a malfunction of the **hoist or a defect in the suspension wire rope** (if the BLOCSTOP is mounted on a separate safety wire rope) releasing the operating lever, or pulling the lever downwards, caused by panic reaction, ensures that the load is instantly and safely held.

Once the BLOCSTOP has taken the load (e.g. when the operating lever is released) it cannot be opened again, so strong is its grip on the wire rope. First lift the load a little to take the load off the BLOCSTOP, then you can release it again to continue lowering.

Mounting the BLOCSTOP is very easy. If the lifting machine is operating with TIRFOR or TIRAK wire rope, the BLOCSTOP is mounted on the wire rope above the hoist (Fig. 4).

If using other wire rope, or if safety regulations require a secondary safety wire rope, fit the BLOCSTOP to this secondary wire rope (Fig. 5).

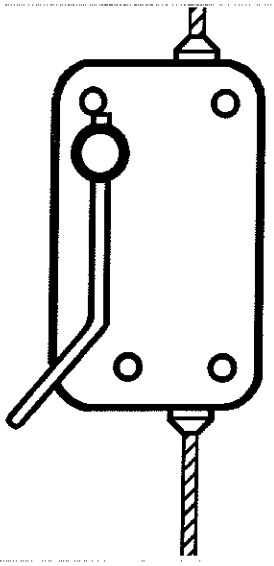
In both cases the BLOCSTOP is connected either to the load or to an anchor point with a sling or other suitable attachment.

Ensure that the BLOCSTOP is able to align itself in the pulling direction.

To avoid dynamic shocks the BLOCSTOP should not be allowed to move more than 5 cm (when attached to a sling).

Use a spacing device in order to keep the sling in tension when lifting.

Fig. 3
Hand operated BLOCSTOP BS model



BLOCSTOP modèles BS

model	code	nom. cap. kg	weight kg	for TIRFOR/TIRAK wire rope diam. mm	type
BS 15.311	3259	500	2.0	6.5	A6
BS 15.301	3219	800	2.0	8.3	C8
BS 20.300	15929	800	3.7	8.3	C8
BS 20.303	3239	1000	3.7	9.5	A9
BS 20.330	6029	1000	3.7	10.2	A10
BS 20.301	3129	1600	3.7	11.5	C12
BS 35.30	3149	3200	8.7	16.3	C16

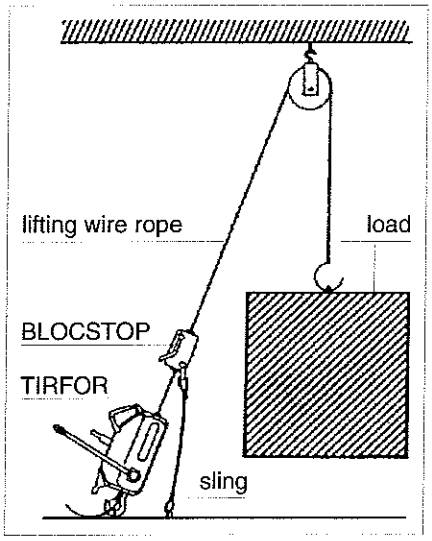


Fig. 4 - BLOCSTOP on lifting wire rope

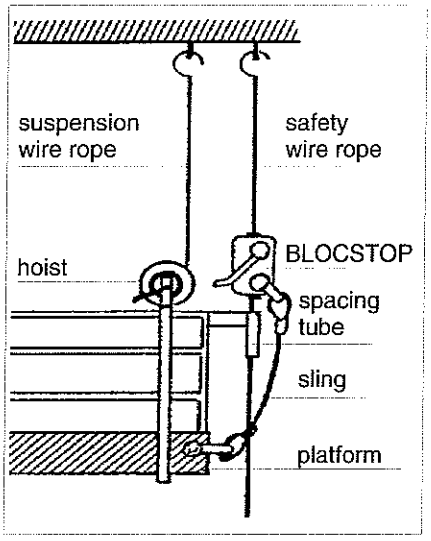


Fig. 5 - BLOCSTOP on safety wire rope

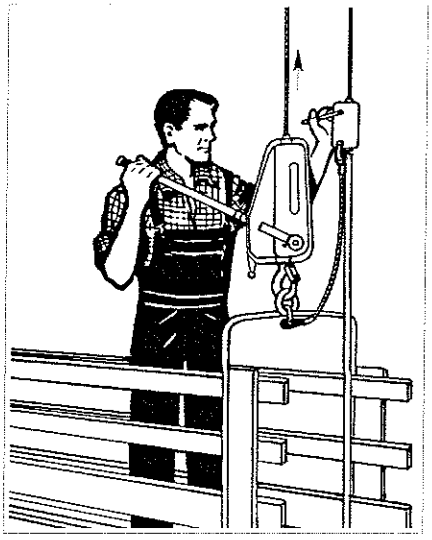


Fig. 6 - Releasing the BLOCSTOP whilst lowering the platform

3.1. Dimensions – BLOCSTOP BSA series

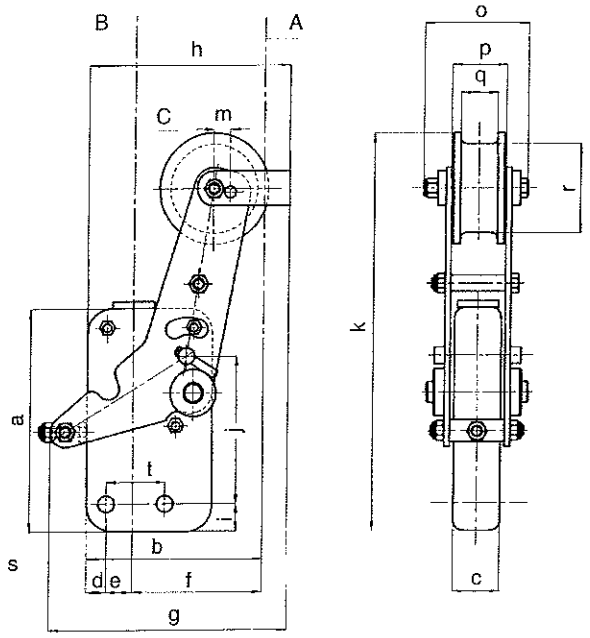


Fig. 10 - BSA 15 serie

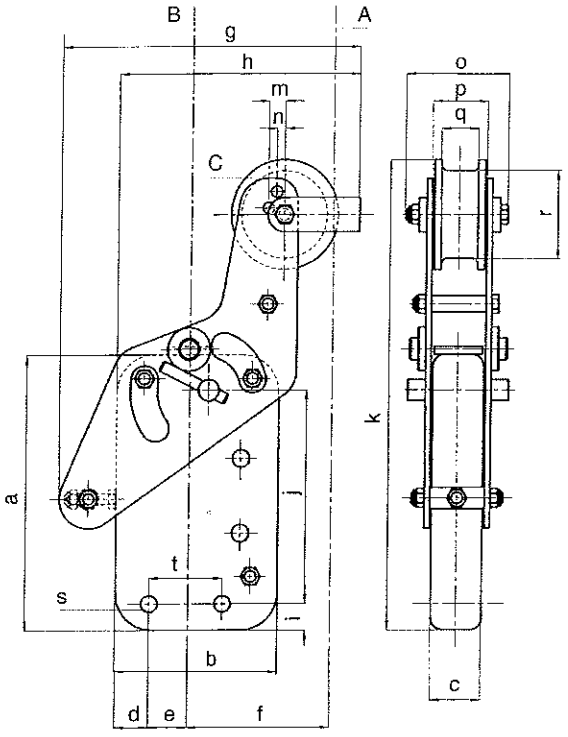


Fig. 11 - BSA 20 serie

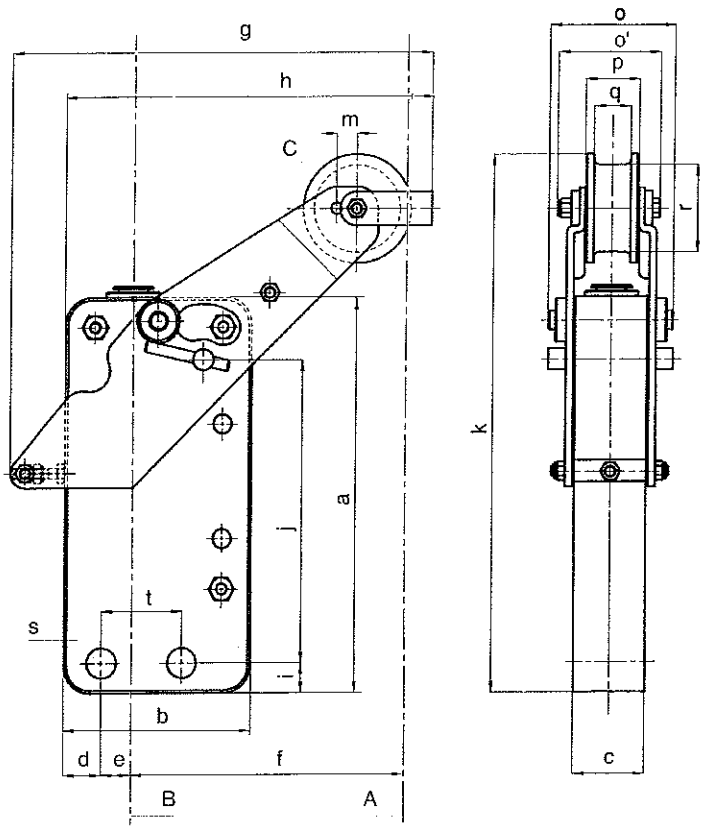


Fig. 12 - BSA 35 serie

	dimensions (mm) – serie		
	BSA 15	BSA 20	BSA 35
a	161	203	290
b	91	121	140
c	34	37	53
d	14	25	28
e	19	29	22
f*	95/107	95/101/107	189/204
g	173	222	313
h	146	179	270
i	20	19.5	22
j	106.5	157.5	222
k	287	345	395
m	12	12	15
n	–	6	–
o	75	75	90
o'	–	–	75
p	40	40	40
q	27	27	27
Ø r	64	64	64
Ø s	12.1	12.1	22
t	42.5	55	60

** according to the position of the detective roller (C)*

A. Lifting wire rope
B. Safety wire rope
C. Detective roller

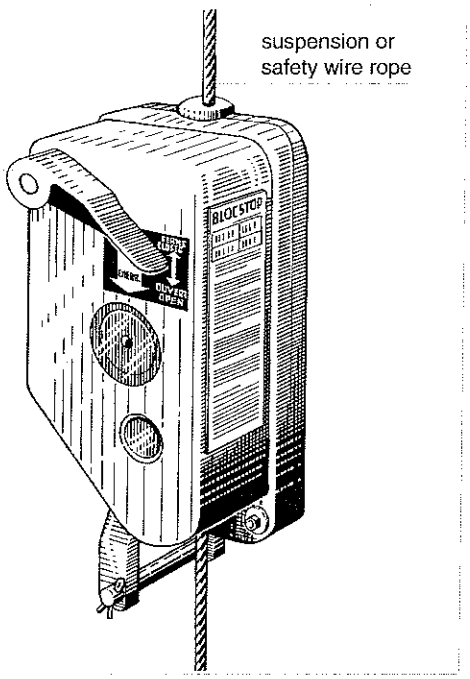
3.3. Overspeed BLOCSTOP – BSO models

This version (Fig. 10) protects against hoist failure and, if mounted on a separate safety wire rope, against suspension wire rope failure.

This BLOCSTOP operates at a certain "speed limit" which is directly related to the speed of the wire rope passing through the BLOCSTOP. In the event of overspeed the clamping mechanism, which had been previously set under tension, is released - the clamping jaws grip the wire rope and hold the load safely and instantly.

The BLOCSTOP is also fitted with an EMERGENCY STOP button, which allows manual release of the clamping mechanism so that this BLOCSTOP may also be used as an automatic wire rope clamp.

Fig. 13
Overspeed BLOCSTOP BSO model



BLOCSTOP BSO models

model*	code*	nom. cap. kg	weight kg	for TIRAK models	wire rope Ø mm	wire rope type
BSO 510	15869	300	4.7	X-310/311/312	6.5	A6
BSO 500	19489	500	4.7	X-300/301/302	8.3	A8
BSO 500	19479	500	4.7	X-500/501/502	8.3	A8
BSO 500	15389	500	4.7	T-500/501/502	8.3	A8
BSO 520	19509	500	4.7	X-520/521/522	9.5	A9
BSO 1000	15889	800	6.0	T-1000/1002	8.3	A8
BSO 1020	15399	1000	6.0	T-1020/1022	9.5	A9
BSO 1030	19499	1000	6.0	T-1030	10.2	A10

**complete with links and anchor pins*

4. The BLOCSTOP as an automatic wire rope clamp

The self-locking principle is the guarantee for safety and simple handling. When using the correct TIRFOR/TIRAK wire rope, the following applications are possible:

a) Holding a load

- when exchanging a defective hoist
- for protection when tensioning masts, scaffolding, shuttering. . . (Fig. 14).
  Advantages: Unauthorised releasing of the mechanism is impossible (where the tensioning device has been removed), as the BLOCSTOP cannot be opened whilst under load.

b) For wire rope length adjustment

- for tensioning applications which are adjusted only from time to time.

In both cases a) and b) the tensioning device (e.g. TIRFOR or TIRAK) can be used for other purposes.

c) As connecting device between the wire rope and the load

Instead of a hook/rope eye rigidly fixed to the wire rope, this saves much time when using "endless winches" like TIRFOR/TIRAK: after finishing long lifting/pulling jobs the wire rope need not be run back the whole way - only the short end of the wire rope must pass through the hoist to have both (wire rope and hoist) separated for easier transport (Fig. 15).

Fig. 14

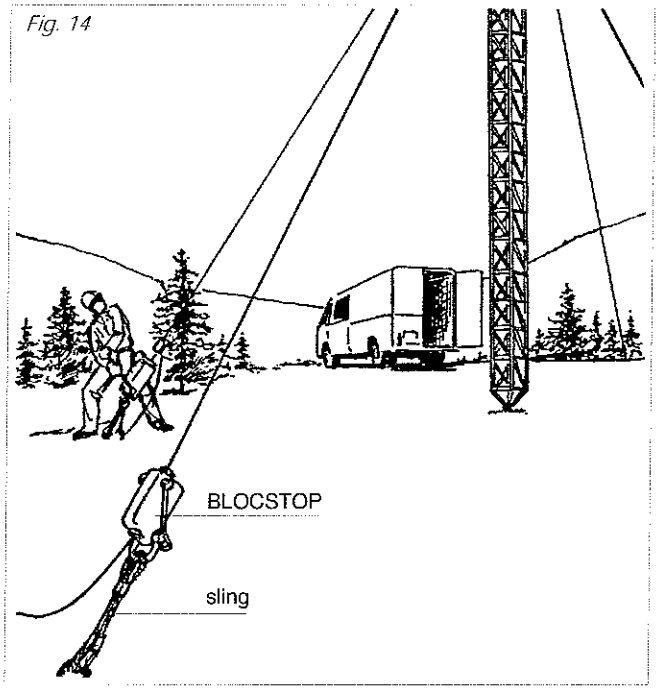
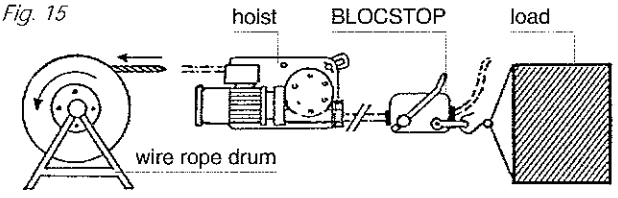
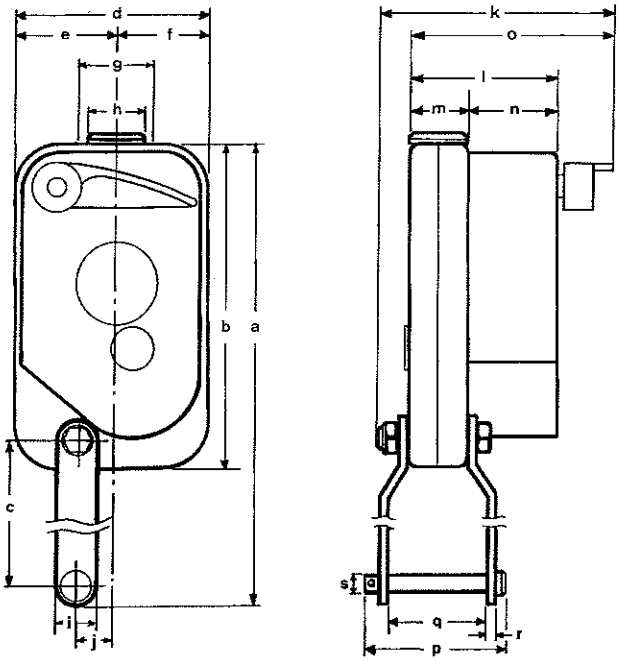


Fig. 15



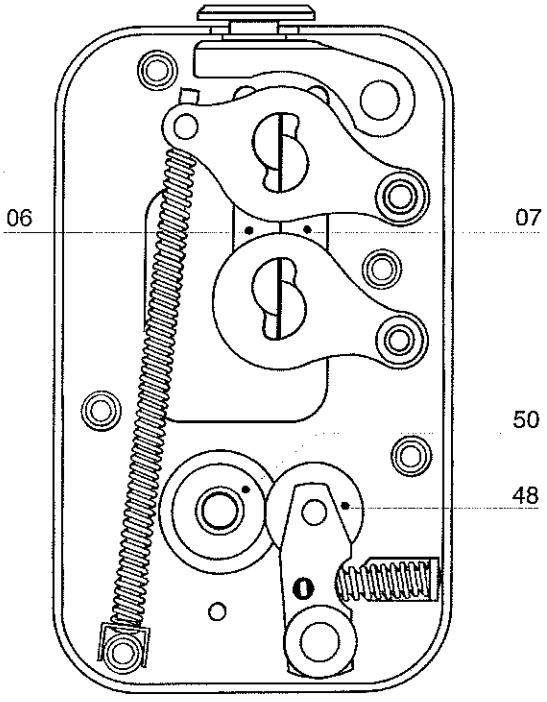


3. TECHNICAL DATA

BLOCSTOP BSO model*	code*	wire rope Ø mm	type	for TIRAK hoist model	capacity kg
BSO 510	15869	6.5	A6	X-310 / 311 / 312	300
BSO 500	19489	8.3	A8	X-300 / 301 / 302	300
BSO 500	19479	8.3	A8	X-500 / 501 / 502	500
BSO 500	15389	8.3	A8	T-500 / 501 / 502	500
BSO 520	19509	9.5	A9	X-520 / 521 / 522	500
BSO 1000	15889	8.3	A8	T-1000 / 1002	800
BSO 1020	15399	9.5	A9	T-1020 / 1022	1000
BSO 1030	19499	10.2	A10	T-1030	1000

**complete with links and anchor pins*

Dimensions (mm)	a	b	c	d	e	f	g	Ø h	i	j	k	l	m	n	o	p	q	r	Ø s
BSO 500 series	252	203	53	121	58	63	48	35	25	18	150	92	37	55	122	79	56	6	12
BSO 1000 series	288	240	53	140	76	64	48	35	25	20	150	92	37	55	122	79	56	6	12



4. PARTS SUBJECT TO WEAR

For complete spare parts, please ask for:

- product information T-279 for BSO 500 series
- product information T-280 for BSO 1000 series

Set out below are the parts which are subject to wear and which must be checked regularly.
For checking and replacing see page 3/3.

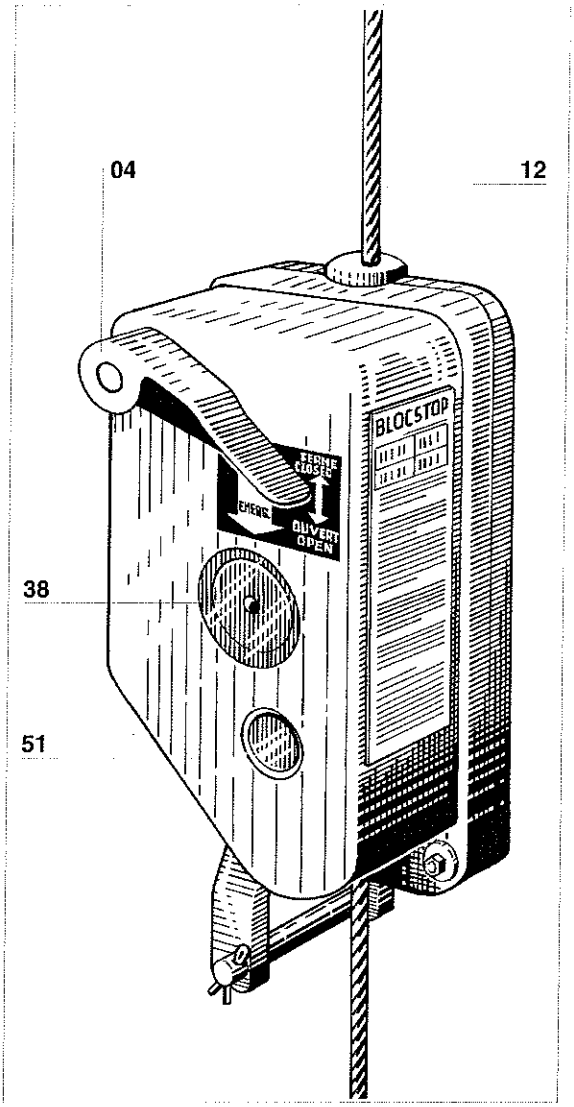
Pos.	Designation	Qty	BSO 500	BSO 510	BSO 520	BSO 1000	BSO 1020	BSO 1030
06	upper clamping jaw	1	37295	37355	56935	37165	36245	45375
07	lower clamping jaw	1	37285	37365	56925	37175	36255	45385
50	driving roller complete	1	18237	18237	18237	18237	18237	18237
48	pressure roller complete with bracket	1	18287	18287	18287	18287	18287	18287

1. GENERAL

The OVERSPEED BLOCSTOP, type BSO is a safety device, used as a **secondary brake,** which is required for man-riding operations by the safety organizations of various countries (Denmark, France, Sweden, Switzerland, USA etc.).
In accordance with these safety regulations the BSO is mounted either on the main suspension wire rope or on a separate safety wire rope.
The OVERSPEED BLOCSTOP has been designed for use with TIRAK hoists (T-500 and T-1000 series), 9 or 18 m/mn., and the appropriate wire ropes.
Working temperature from -40° to +80° C (-40° to + 176° F).

2. OPERATING PRINCIPLE

The OVERSPEED BLOCSTOP operates automatically.
It consists essentially of a clamping jaw mechanism of the TIRFOR-type and a centrifugal governor, which permanently checks the speed of the wire rope passing through the BLOCSTOP. The jaw mechanism automatically clamps onto the wire rope when there is a sudden increase in speed.
The OVERSPEED BLOCSTOP can be manually operated by pressing the EMERGENCY-STOP-button (38). The jaws should close automatically and the control lever (04) should return to its CLOSED position. To guarantee the correct operation we recommend that the EMERGENCY STOP (38) be carried out manually at least once a day.
The BSO is reset by means of the control lever (04). The wire rope must always be introduced through the upper wire rope entry (12) = control lever side.
During the operation the centrifugal weights must rotate, which should be regularlychecked through the window (51).



2.1. Operating instructions

To feed in the wire rope:
- Ensure that the lever (04) is in the "OPEN" position.
- Feed in the wire rope from the top, into the rope guide (12) and pass it through the machine.

To remove the wire rope:
- Maintain the lever (04) in the "OPEN" position.
- **Push in the EMERGENCY STOP button (38) and maintain completely depressed.**
- Remove the wire rope.

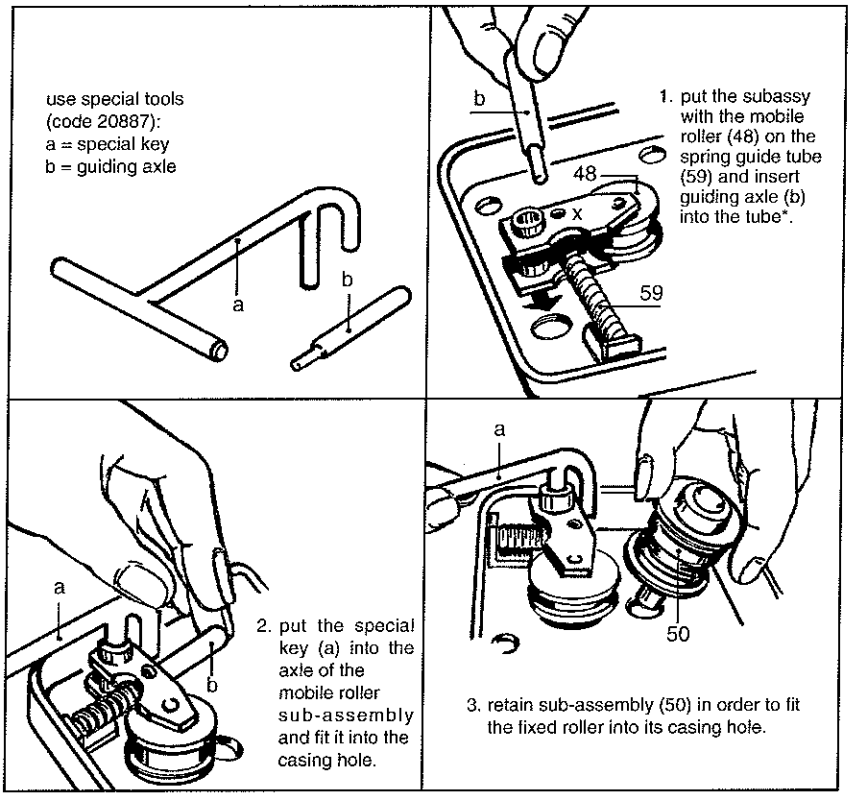
5. CHECKING AND MAINTENANCE

5.1. Checking the BLOCSTOP overspeed function

If the BLOCSTOP is released, its operation can be checked as follows:
- Insert the wire rope from the top (control lever) and push until it comes out of the unit.
- Hold the wire rope above the BLOCSTOP. Allow it to free fall. The jaws should operate and lock onto the wire rope with a travel of less than 10 cm (four inches).
- Repeat this check a minimum of three times.

5.2. Periodic inspection and Maintenance

- Regularly (at least once a year or after 200 hours of operation) the OVERSPEED BLOCSTOP must be cleaned and generally checked by an authorized repairer.
- **Every year** change the roller (items 48 and 50) proceeding as follows:



***Caution:** For BSO 500 series the marking(x) must be on the spring side (as shown in the drawing); for BSO 1000 series the marking (x) must be on the other side towards the fixed roller (50).

5.3. Control of the jaws

Although the wear of the clamping jaws of the OVERSPEED BLOCSTOP is minimal, they must be regularly checked by means of a rod with specified diameter:

for	BSO 500/1000	6 mm
	BSO 510	4 mm
	BSO 520/1020	7 mm

If the rod is not held by the clamping jaws, they must be replaced by an authorized repairer.

Use only special clamping jaws, marked with "BSO'.

5.4. Control of the wire rope

If the **wire rope diameter** has reduced by 10% of the rated diameter, the wire rope must be replaced.

Ø 5.8 for wire rope 6.5 mm
Ø 7.5 for wire rope 8.3 mm
Ø 8.5 for wire rope 9.5 mm
Ø 9 for wire rope 10.2 mm

Never use damaged wire ropes.