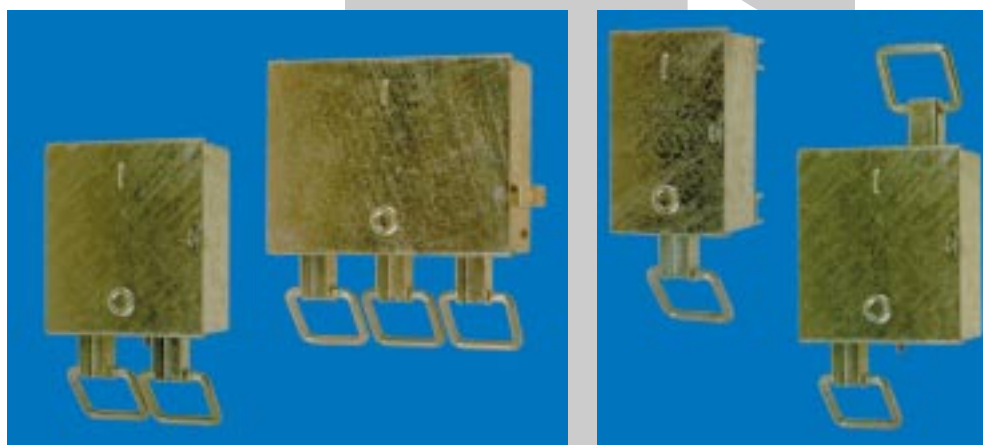


DRIESCHER
Outdoor Hand-Operated
Actuators and Accessories



775

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DRIESCHER outdoor hand-operated actuators

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General

DRIESCHER outdoor hand-operated actuators for operating outdoor switchgear mounted on wooden, concrete or steel poles are dependable in operation and largely maintenance-free over many years.

• The L-actuator

The L-actuator for mounting on wooden poles is fixed to the pole with a strap, while the version for installation on a concrete or steel pole is secured to the pole with 2 M16 screws.

The linkage rod which is approx. 500 mm long and inserted in the actuating lever is electrically connected to the actuator support by a flexible copper earthing strip. The actuators can be safeguarded against unauthorized operation with a padlock (this is not supplied). The mechanical link from the actuator to the switchgear is shown in Figs. 1 - 4 on pages 3 and 4.

• The box-type actuators

The box-type actuators for mounting on wooden poles are screwed onto 2 sheet metal U-sections which are secured to the pole with 2 attachment straps (Fig. 5, page 5).

For mounting on concrete or steel poles, the actuators are screwed onto two U-sections which can be removed if necessary. Fixture to the pole is by means of 4 M16 screws (Figs. 6-8, pages 5 and 6).

The mechanical linkage between actuator and switchgear is shown in Figs. 5 - 8 on pages 5 and 6.

2 holes drilled in the actuating lever allow a total stroke of 140 mm or if necessary 110 mm when the lower linkage rod is inserted.

Flexible copper earthing strips are fixed inside the

boxes. These must be electrically connected to the M8 screw located in the linkage rod during assembly. Operating instructions for the box-type actuators can be found on page 7.

To safeguard against unauthorized operation, the actuator can normally be locked with a padlock (not supplied).

• Additional equipment

The following types of lock are available optionally at extra cost:

- a) A box lock for inserting a semicylindrical section - locking from the side - or
- b) a semicylindrical section installed directly in the cover - locking from the front.

In both cases the semicylinders are covered by a rain protection flap. A housing with an electro-mechanical magnetic lock (110 or 220 V DC) - also with heating resistor - for blocking the actuating lever can also be mounted.

• Installation

Installation of all actuators and connecting elements to the switchgear is straightforward and problem-free. All steel parts are hot-galvanized.

Practical arrangements of actuators for use with a particular switchgear type are shown in our outdoor switchgear lists 751, 761, 762 and 763.

Motorized actuators UM and compressed-air actuators for outdoor and indoor switchgear in accordance with our List 776.

DRIESCHER Outdoor Hand-Operated Actuators

Arrangement of L-actuators for wooden poles

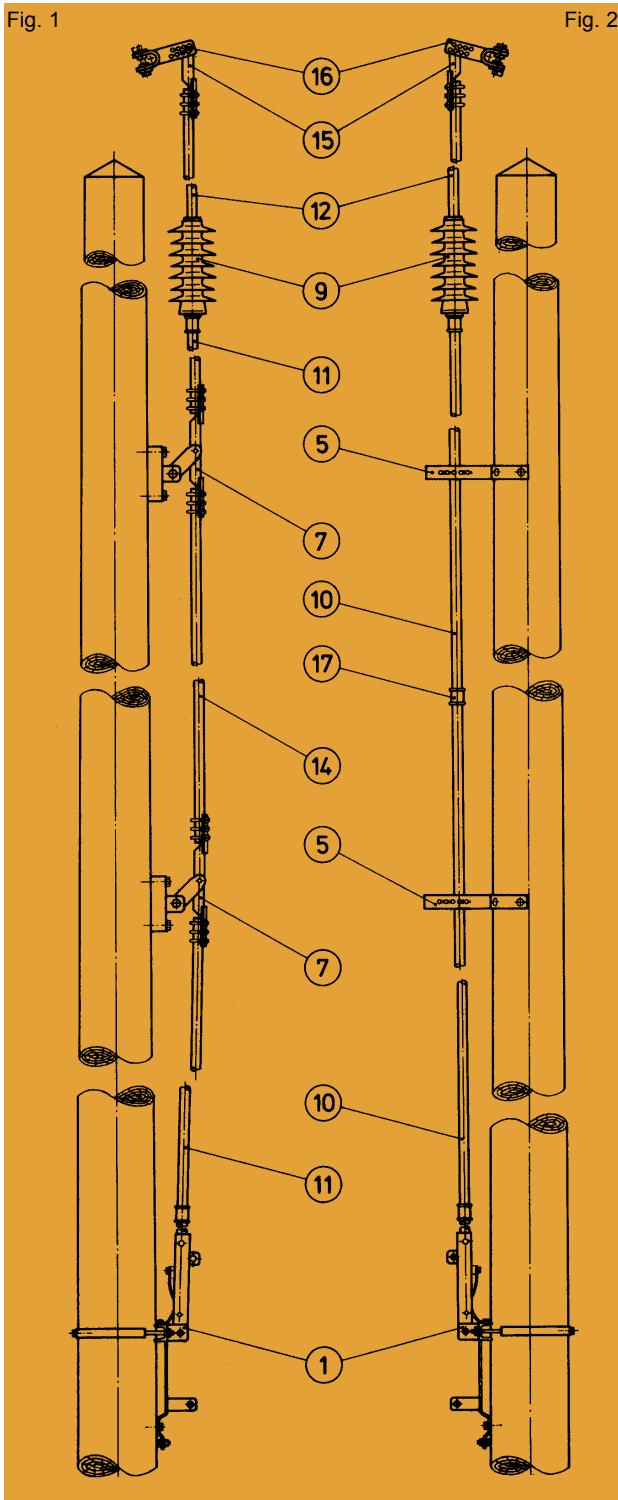


Fig. 1 with intermediate bearings

- Pos. 1 L-actuator with attachment strap
- Pos. 7 Single intermediate bearing ¹⁾
- Pos. 9 Intermediate insulator with screw socket 1"
- Pos. 11 Linkage rod 1" with one threaded end
- Pos. 12 Linkage rod 1" with threaded flange
- Pos. 14 Linkage rod 1"
- Pos. 15 Flat clamping rod head with link bush
- Pos. 16 Clamping crank

¹⁾ The flat clamping rod head of the upper intermediate bearing is provided with a link bush to allow lateral movement of the rod. This intermediate bearing is marked with a red tag.

For use with:

Horn-gap switches and load-break switches as per List nos. 761 and 762 and at portal-type pole stations (H-poles), equipped with disconnect switches or load-break switches as per List nos. 751 and 763.

If the linkage is longer than 7 metres it is advisable to choose the actuator version with intermediate bearings since this ensures that the actuator linkage is supported securely

Fig. 2 with guide brackets

- Pos. 1 L-actuator with attachment strap
- Pos. 5 Guide bracket
- Pos. 9 Intermediate insulator with screw socket
- Pos. 10 Linkage rod with 2 threaded ends
- Pos. 12 Linkage rod with threaded flange
- Pos. 15 Flat clamping rod head with link bush
- Pos. 16 Clamping crank
- Pos. 17 Threaded sleeve 1"

Use as in **Fig. 1**

The individual rod lengths are connected by means of the threaded sleeves which are supplied.

All steel parts are hot-galvanized.

Linkage length

Recommended number of guide brackets or intern. bearings

Drawing No.

up to 7 m

2

AZ 3-15933

up to 9 m

3

AZ 3-15933

DRIESCHER Outdoor Hand-Operated Actuators

Arrangement of L-actuators of concrete or steel poles

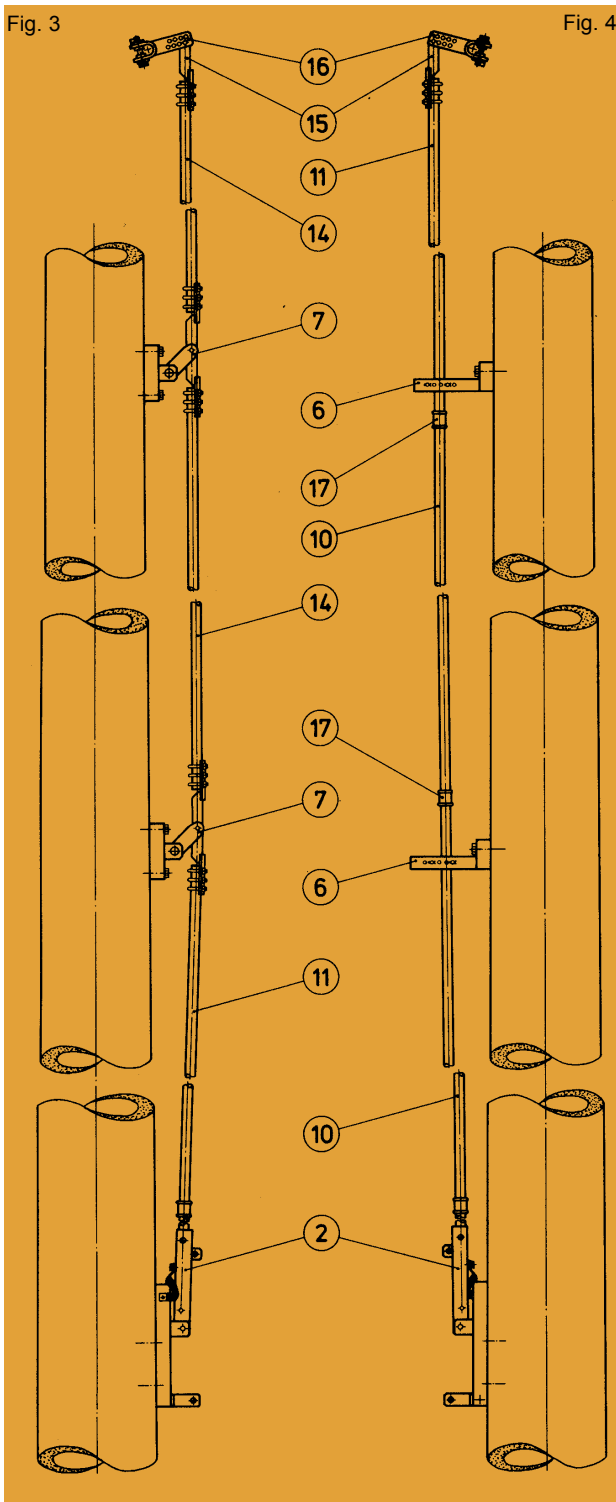


Fig. 3 with intermediate bearings

- Pos. 2 L-actuator
- Pos. 7 Single intermediate bearing ¹⁾
- Pos. 11 Linkage rod 1" with one threaded end
- Pos. 14 Linkage rod 1"
- Pos. 15 Flat clamping rod head with link bush
- Pos. 16 Clamping crank

¹⁾ The flat clamping rod head of the upper intermediate bearing is provided with a link bush to allow lateral movement of the rod. This intermediate bearing is marked with a red tag.

For use with:

Horn-gap switches and load-break switches as per List nos. 761 and 762 and at portal-Type pole stations (H-poles), equipped with disconnect switches or load-break switches as per List nos. 751 and 763.

If the linkage is longer than 7 metres it is advisable to choose the actuator version with intermediate bearings since this ensures that the actuator linkage is supported securely.

Fig. 4 with guide brackets

- Pos. 2 L-actuator
- Pos. 6 Guide bracket
- Pos. 10 Linkage rod 1" with 2 threaded ends
- Pos. 11 Linkage rod 1" with one threaded end
- Pos. 15 Flat clamping rod head with link bush
- Pos. 16 Clamping crank
- Pos. 17 Threaded sleeve 1"

Use as in **Fig. 3:**

The individual rod lengths are connected by means of the threaded sleeves which are supplied.

All steel parts are hot-galvanized.

Linkage length	Recommended number of guide brackets or interm. bearings	Drawing No.
up to 9 m	2	AZ 3-16263
up to 13 m	3	AZ 3-16263
up to 15 m	4	AZ 3-16263

DRIESCHER Outdoor Hand-Operated Actuators

Arrangement of box-type actuators for wooden poles and concrete or steel poles

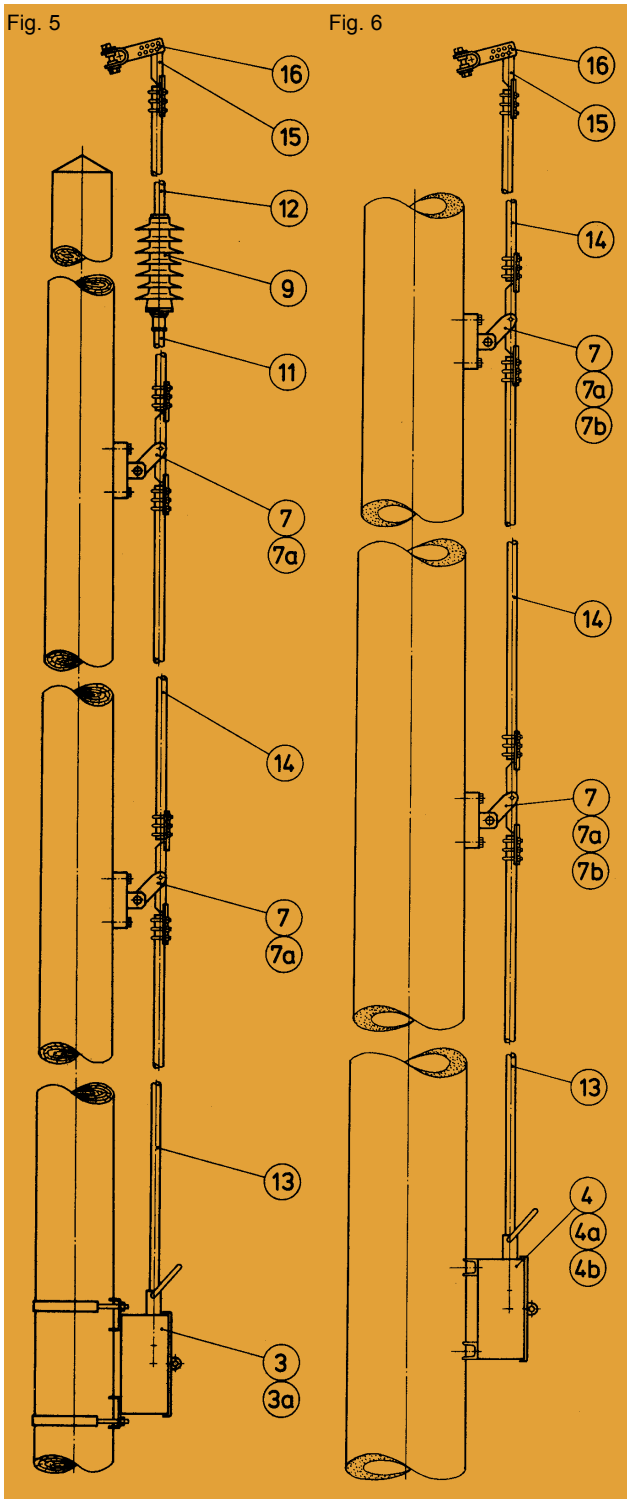


Fig. 5 for wooden poles

- Pos. 3 Single box-type actuator with attachment straps
- Pos. 3a Dual box-type actuator with attachment straps
- Pos. 7 Single intermediate bearing ¹⁾
- Pos. 7a Dual intermediate bearing ¹⁾
- Pos. 9 Intermediate insulator with screw socket 1"
- Pos. 11 Linkage rod 1" with one threaded end
- Pos. 12 Linkage rod 1" with threaded end
- Pos. 14 Linkage rod 1"
- Pos. 15 Flat clamping rod head with link bush
- Pos. 16 Clamping crank

¹⁾ The flat clamping rod head of the upper intermediate bearing is provided with a link bush to allow lateral movement of the rod. This intermediate bearing is marked with a red tag.

Fig. 6 for concrete or steel poles

- Pos. 4 Single box-type actuator
- Pos. 4a Dual box-type actuator
- Pos. 4b Triple box-type actuator
- Pos. 7 Single intermediate bearing ¹⁾
- Pos. 7a Dual intermediate bearing ¹⁾
- Pos. 7b Triple intermediate bearing ¹⁾
- Pos. 13 Linkage rod 1" with bearing bush
- Pos. 14 Linkage rod 1"
- Pos. 15 Flat clamping rod head with link bush
- Pos. 16 Clamping crank

For use with:

Horn-gap switches and load-break switches as per List nos. 761 and 762 and with portal-type pole stations (H-poles) equipped with disconnecting switches or load-break switches as per List nos. 751 and 763.

The housing of box-type actuators is enclosed as far as possible and the operating mechanism is protected. Single version for switches with 1 earthing switch. Triple version for switches with 2 earthing switches.

Dual and triple actuators are held apart mechanically so that faulty switching operations are ruled out.

All steel parts are hot-galvanized

Linkage length

Recommended number of intermediate bearings

up to 9 m	2
up to 13 m	3
up to 15 m	4

DRIESCHER Outdoor Hand-Operated Actuators

Arrangement of box-type actuators for concrete or steel poles

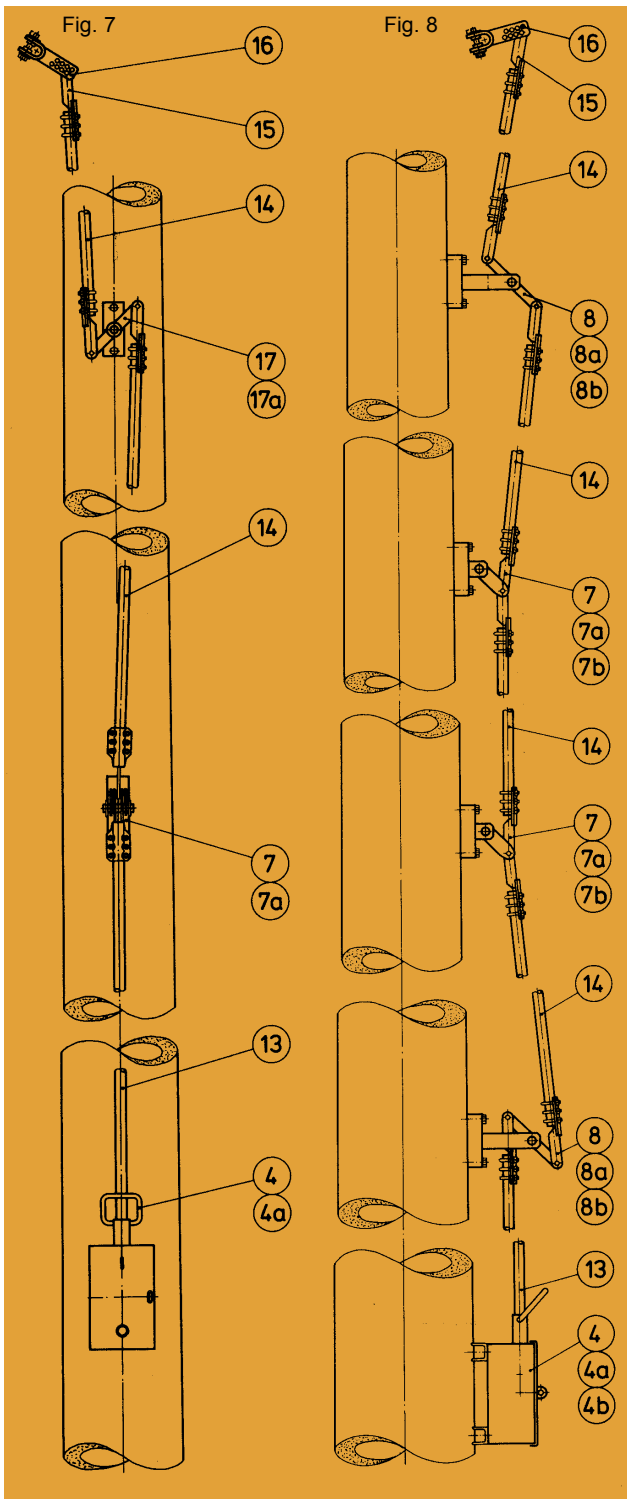


Fig. 7 with intermediate and reversible bearings

- Pos. 4 Single box-type actuator
- Pos. 4a Dual box-type actuator
- Pos. 7 Single intermediate bearing ¹⁾
- Pos. 7a Dual intermediate bearing ¹⁾
- Pos. 13 Linkage rod 1" with bearing bush
- Pos. 14 Linkage rod 1"
- Pos. 15 Flat clamping rod head with link bush
- Pos. 16 Clamping crank
- Pos. 17 Single reversible bearing
- Pos. 17a Dual reversible bearing

¹⁾ The flat clamping rod head of the upper intermediate bearing is provided with a link bush to allow lateral movement of the rod. This intermediate bearing is marked with a red tag.

For use with:

Disconnect switches or load-break switches as per List nos. 751 and 763 for mounting on single poles. The same combination, i.e. intermediate bearings and reversible bearings can of course also be supplied with our Type L-actuators as shown in Fig. 3. The function of the reversible bearing is to produce the required tension effect for the upper linkage section leading to the switchgear.

Fig. 8 with reversible and intermediate bearings

- Pos. 4 Single box-type actuator
- Pos. 4a Dual box-type actuator
- Pos. 4b Triple box-type actuator
- Pos. 7 Single intermediate bearing ¹⁾
- Pos. 7a Dual intermediate bearing ¹⁾
- Pos. 7b Triple intermediate bearing ¹⁾
- Pos. 8 Single reversible bearing
- Pos. 8a Dual reversible bearing
- Pos. 8b Triple reversible bearing
- Pos. 13 Linkage rod 1" with bearing bush
- Pos. 14 Linkage rod 1"
- Pos. 15 Flat clamping rod head with link bush
- Pos. 16 Clamping crank

For use with:

Horn-gap switches or load-break switches as per List nos. 761 and 762 on poles with **over 16 m** clear length. The weight of the linkage is largely offset by the use of the two reversible bearings and the force required is thereby reduced. **All steel parts are hot-galvanized.**

Linkage length

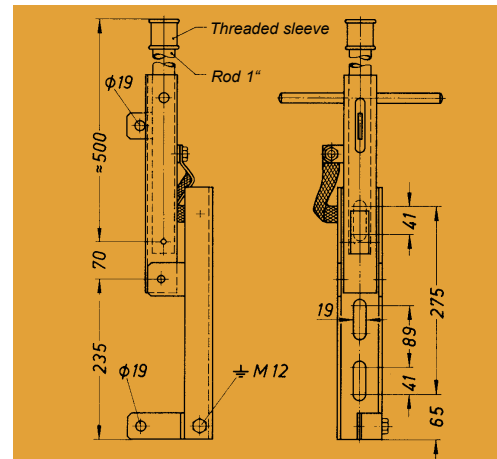
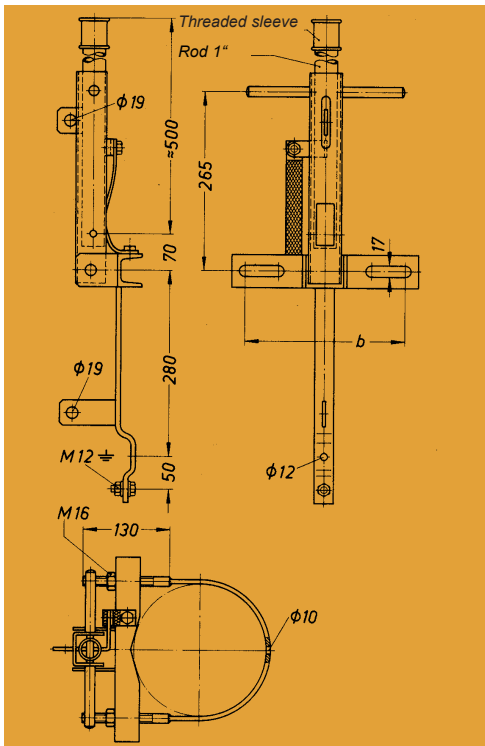
Number recommended for Fig. 7 intermediate bearings

Number recommended for Fig. 7 reversible bearings

up to 9 m	1	1
up to 13 m	2	1
up to 15 m	3	1

DRIESCHER Outdoor Hand-Operated Actuators

L-actuators



Part No. Weight kg Drawing No.

775 15000 6,5 AZ 4-10700

b for pole dia. Part No. Weight kg Drawing No.

180-240 mm 775 11010 7.0 AZ 4-2511

240-300 mm 775 11020 8.0 AZ 4-2511

300-360 mm 775 11030 8.5 AZ 4-2511

Description of operation of box-type actuators

With the single box-type actuator the operating lever is locked in the ON position by pawl (1) via the linkage rod attachment pin (2).

For disconnecting, the pawl (1) must be lifted by hand from the attachment pin (1). During the switch-on procedure the pawl (1) drops over the attachment bolt (2). The operating lever must be pushed right up to the end position

for this. Faulty switching operations with dual and triple actuators are prevented by one or two sliding link which must be operated manually.

With the dual actuator the disconnector is usually switched with the right hand operating lever and the earthing switch with the left-hand lever.

With the triple actuator the central operating lever is used for the disconnector. The two outer operating levers are provided for the earthing switches.

2 shaft butts (5) with one or 2 pins (3) projecting on one side are located on each operating lever.

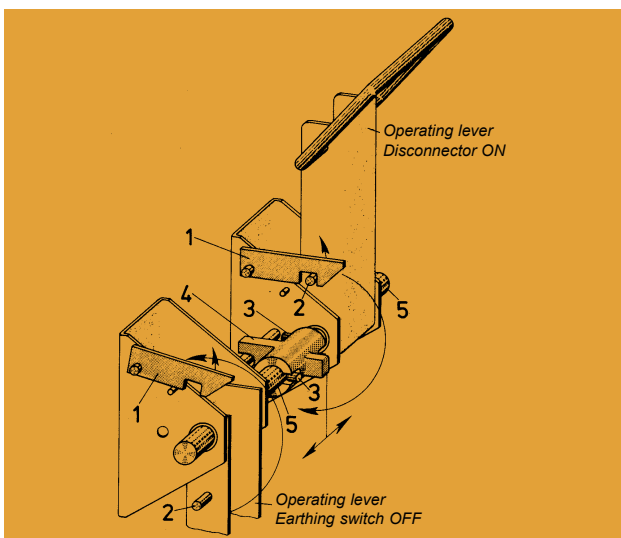
In the OFF position the projecting ends of the pins (3) are all on the operating side.

The sliding link (4) can now be pushed to the side required, thus releasing the pin (3) of one or the other operating lever. If an operating lever is set to the ON position the pin (3) projecting on one side is also rotated through 180° and the link (4) can no longer be shifted.

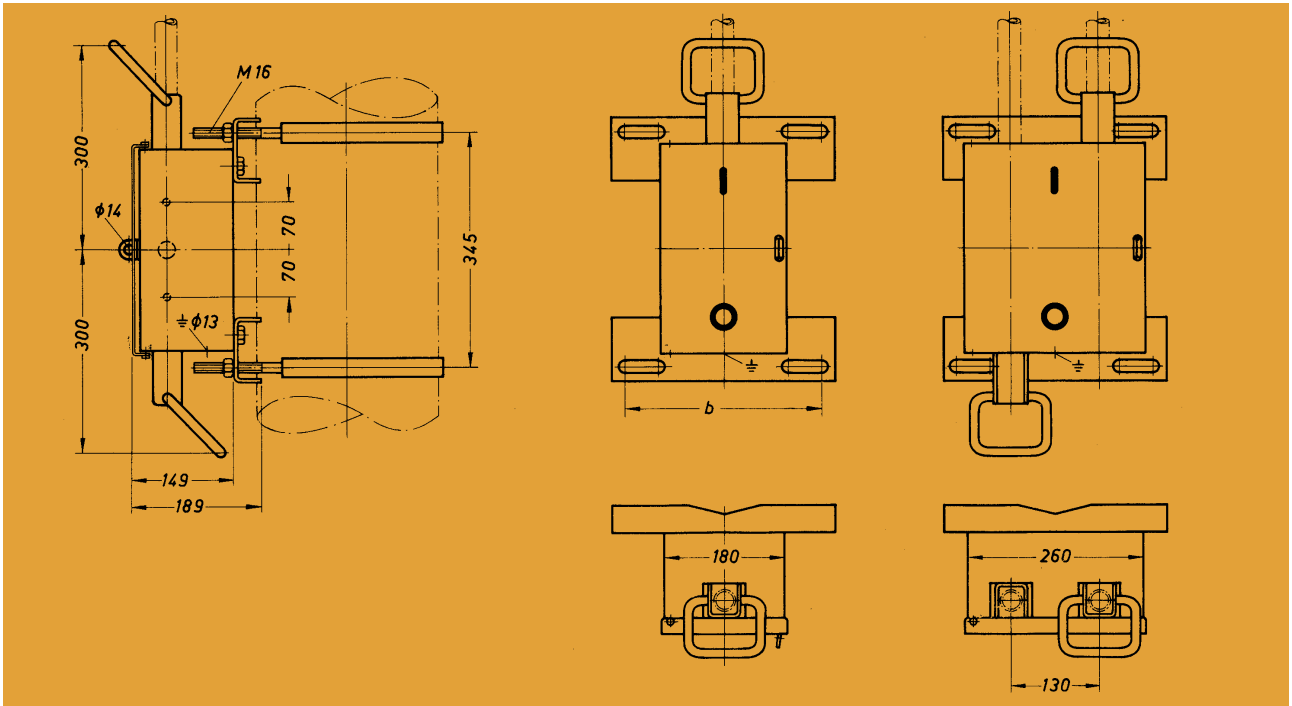
The pin (3) is blocked by the slot in the sliding link (4) when the switching lever is in the OFF position, thus preventing it from being operated.

The pawls (1) on the dual and triple actuators are operated in the same way as on the single actuator.

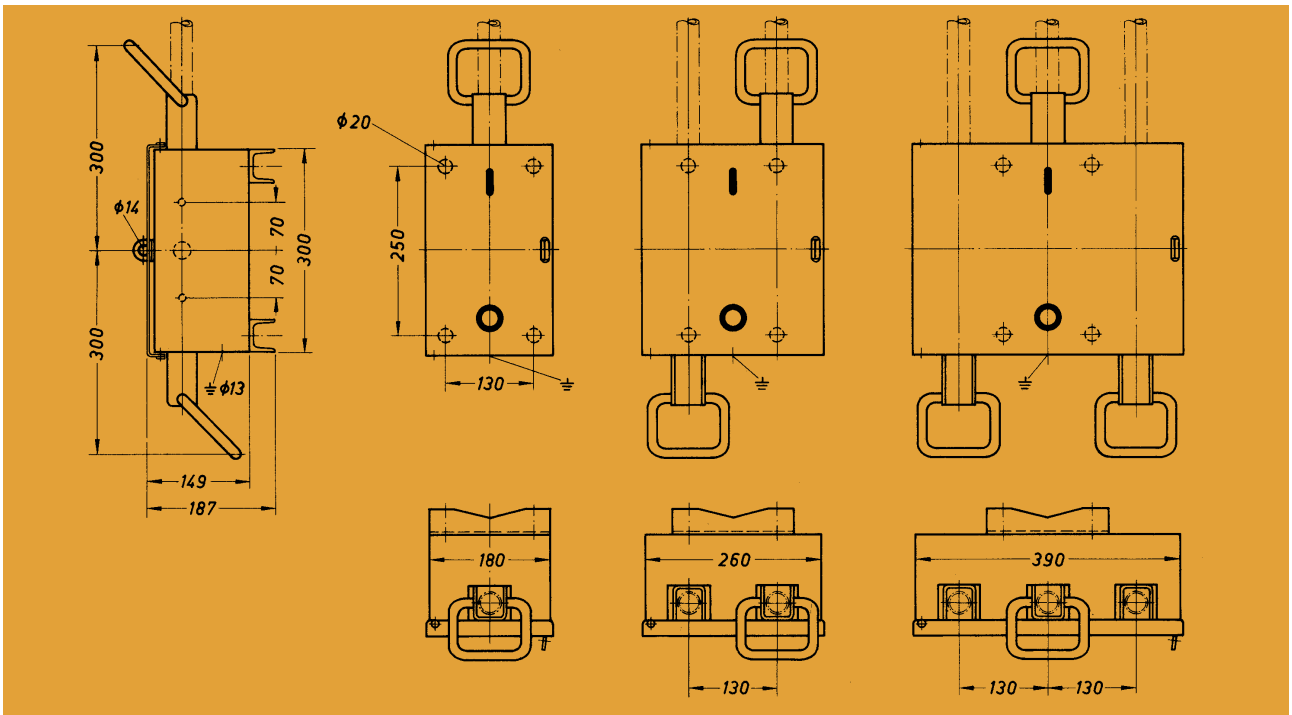
See page 2 for types of lock.



Box-type actuators

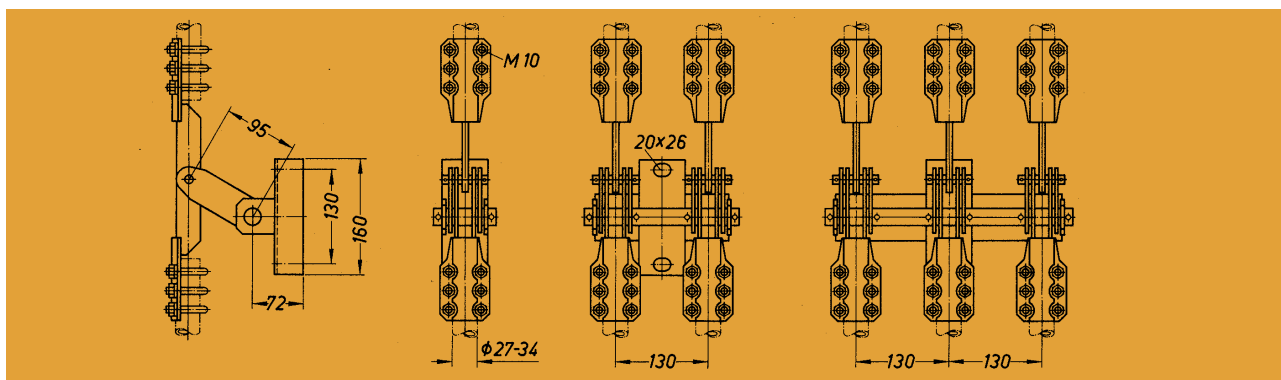


b for pole dia.	Part. No. single box-type actuator	Weight kg	Part. No. dual box-type actuator	Weight kg	Drawing No.
180 - 240 mm	775 21010	16.2	775 22010	23.1	AZ 3-16032
240 - 300 mm	775 21020	17.5	775 22020	24.4	AZ 3-16032
300 - 360 mm	775 21030	18.8	775 22030	25.7	AZ 3-16032

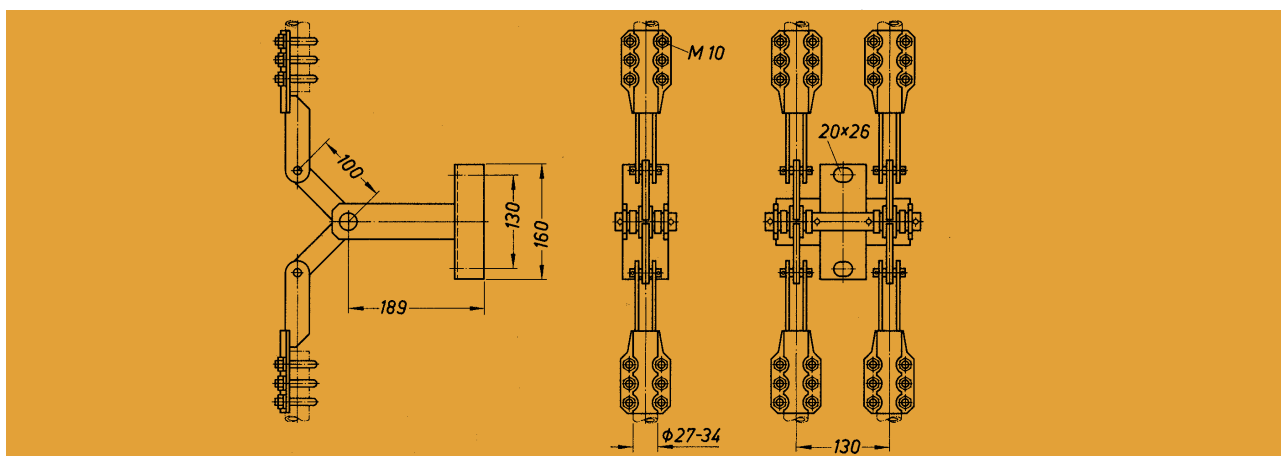


Single box-type actuator Part. No.	Weight kg	Dual box-type actuator Part. No.	Weight kg	Triple box-type actuator Part. No.	Weight kg	Drawing No.
775 25000	12.0	775 26000	18.9	775 27000	25.4	AZ 4-7530

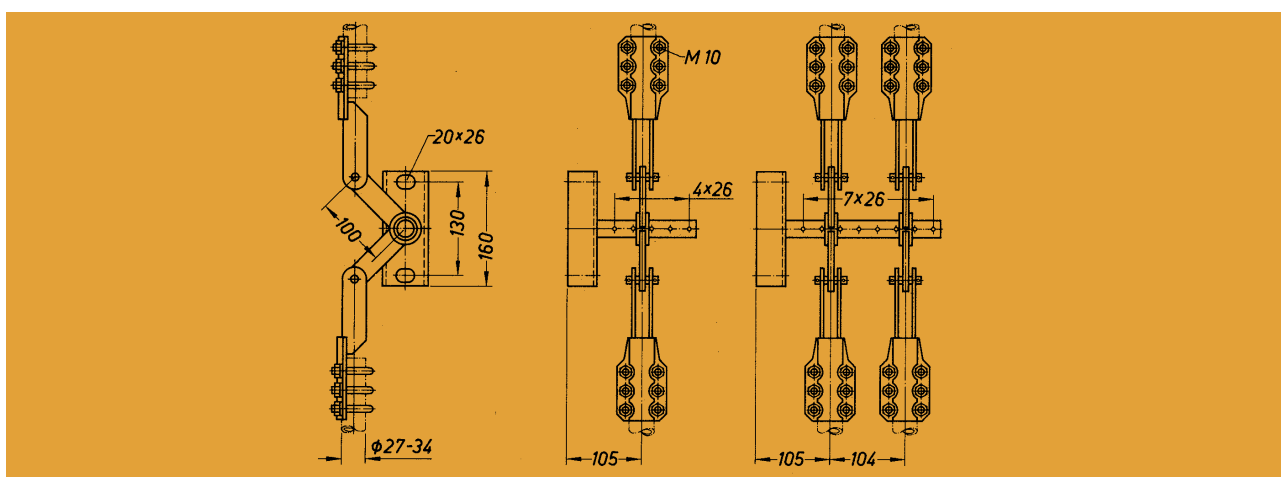
Intermediate bearings



Intermediate bearing with rocker arm	Part No. without link bush	Part No. with link bush	Weight kg	Drawing No.
Single intermediate bearing	775 61100	775 61500	4.7	AZ 3-15936
Dual intermediate bearing	775 61200	775 61600	8.5	AZ 3-15936
Triple intermediate bearing	775 61300	775 61700	12.7	AZ 3-15936

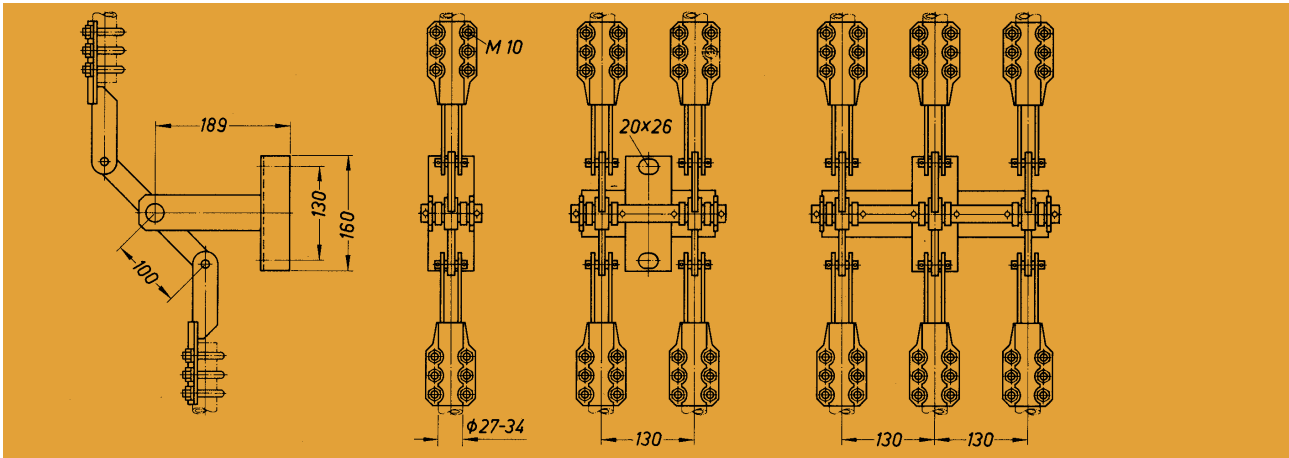


Intermediate bearing with angle crank	Part No.	Weight kg	Drawing No.
Single intermediate bearing	775 62100	5.4	AZ 3-20508
Dual intermediate bearing	775 62200	9.8	AZ 3-20508

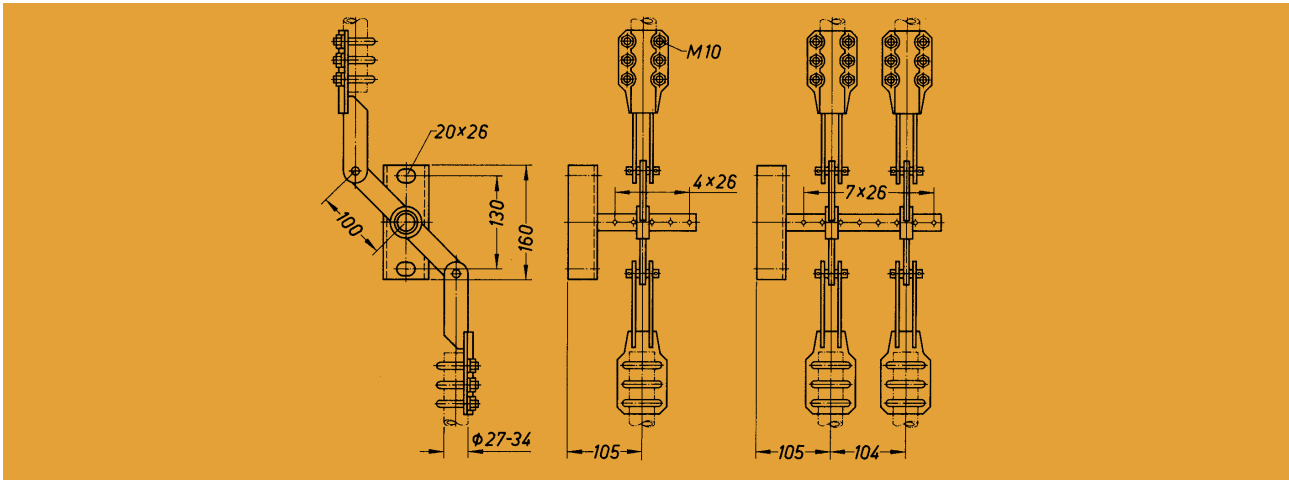


Intermediate bearing with angle crank	Part No.	Weight kg	Drawing No.
Single intermediate bearing	775 63100	4.7	AZ 3-14799
Dual intermediate bearing	775 63200	7.8	AZ 3-14799

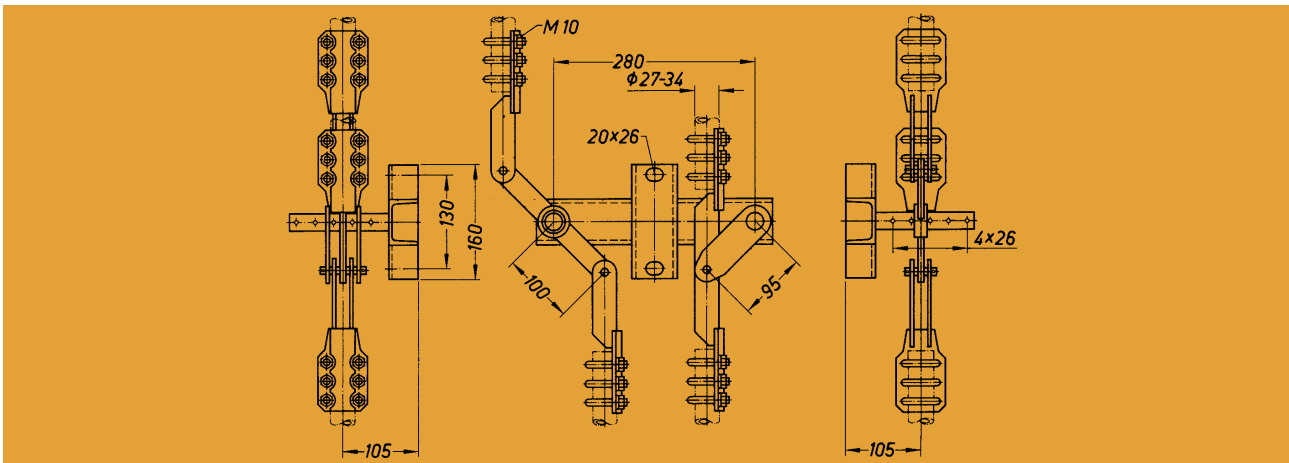
Reversible bearings



Reversible bearing	Part No.	Weight kg	Drawing No.
Single reversible bearing	775 66100	5.4	AZ 3-17130
Dual reversible bearing	775 66200	9.8	AZ 3-17130
Triple reversible bearing	775 66300	13.7	AZ 3-17130

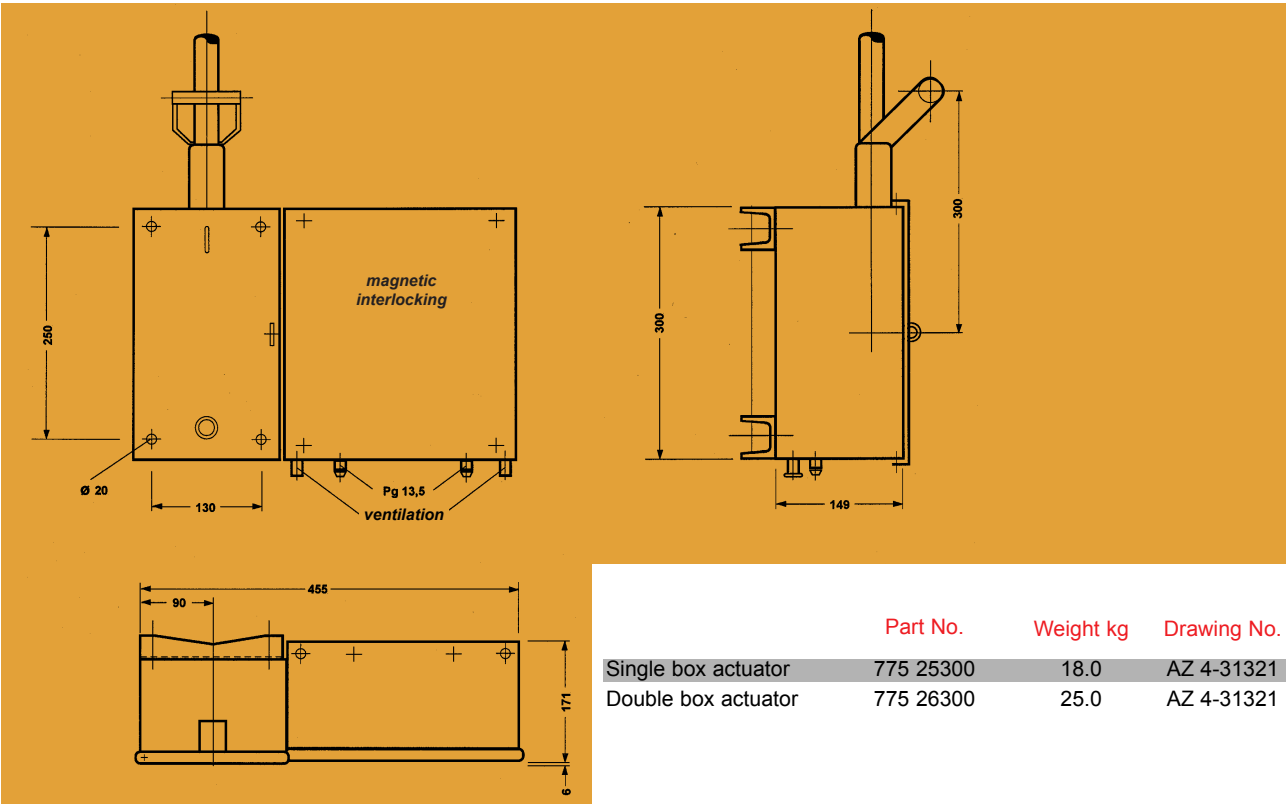


Reversible bearing	Part No.	Weight kg	Drawing No.
Single reversible bearing	775 67100	4.7	AZ 3-17131
Dual reversible bearing	775 67200	7.8	AZ 3-17131



Combination of intermediate and reversible bearing	Part No.	Weight kg	Drawing No.
Single reversible bearing / Single intermediate bearing	775 68100	10.0	AZ 3-22246

Box-type actuator 7530 with magnetic interlocking (lock-out coil)

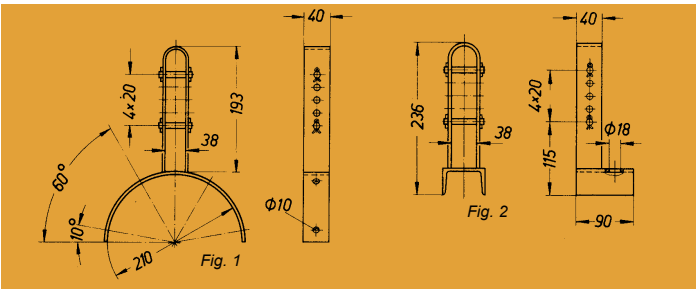


	Part No.	Weight kg	Drawing No.
Single box actuator	775 25300	18.0	AZ 4-31321
Double box actuator	775 26300	25.0	AZ 4-31321

There is an electromagnetic interlocking mechanism available for our single and double box actuators (refer to Page 8) which uses a lock-out coil. In the attached housing there is an electromagnet with a duration factor of 100% for blocking the actuator lever. A switching operation (ON or OFF) is only possible when the coil of the magnet is energized, i.e. the actuator is also securely locked upon failure of the auxiliary voltage. In this way, incorrect operation e.g. connecting the earthing switch

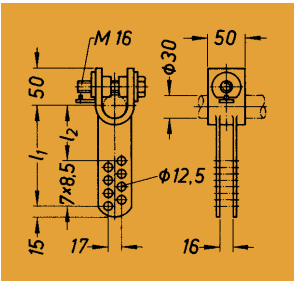
when the load interrupter switch is still closed or the On and Off switching of a disconnecting switch when the upstream arranged circuit breaker is still switched on, are prevented reliably. The standard equipment comprises a heating resistor with thermostat as well as a terminal strip. 60 V DC, 110 V DC or 220 V DC and 110 V AC or 230 V AC are possible as auxiliary voltage for the lock-out coil. An additional feature with alarm switches (max. 6 contacts) is also available.

Accessories



Guide bracket

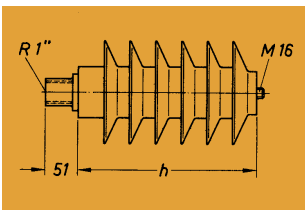
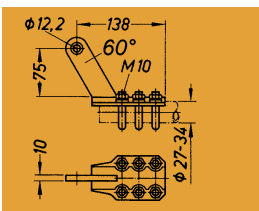
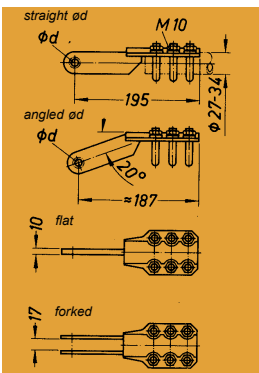
Fig.	Part No.	Weight kg	Drawing No.
1	775 81000	1.3	AZ 4-10969
2	775 83000	1.5	AZ 4-10750



Clamping cranks

Part No.	l ₁	l ₂	Weight kg	Drawing No.
775 78132	132.5	73	1.4	AZ 3-9610
775 78184	184.5	125	1.6	AZ 3-9610

Accessories



Clamping stub heads

Construction	Part No.	ød	Weight kg	Drawing No.
straight, flat	775 71000	12.5	1.0	AZ 3-9609
straight, flat with link bush	775 71100	12.2	1.0	AZ 3-9609
straight, forked	775 71200	12.5	1.1	AZ 3-9609
angled, flat	775 72000	12.5	1.0	AZ 3-14001
angled, flat with link bush	775 72100	12.2	1.0	AZ 3-14001
angled, forked	775 72200	12.5	1.1	AZ 3-14001

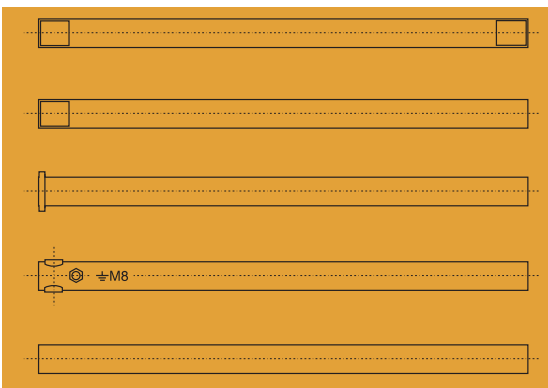
angled Clamping stub head

Part No.	Weight kg	Drawing No.
775 73000	1.0	AZ 3-16045

Intermediate insulators GSA

Part No.	kV _{eff}	h	Weight kg	Drawing No.
775 51000	12	210	2.6	AZ 4-42236
775 52000	24	280	3.7	AZ 4-42236
775 53000	36	360	6.9	AZ 4-42236

Linkage rods 1''



Construction	Standard lengths in m • Weight per m = 2.5 kg				
with two threaded ends ¹⁾	2.0	2.5	3.0	3.5	4.0
1) When guide brackets are used, one threaded sleeve R1'' is supplied for every rod					
with one threaded end ¹⁾	2.0	2.5	3.0	3.5	4.0
1) When guide brackets are used, one threaded sleeve R1'' is supplied for every rod					
with threaded flange (M16)	1.65	-	-	-	-
with attachment bush and earthing screw M8	2.0	2.5	3.0	3.5	4.0
smooth	2.0	2.5	3.0	3.5	4.0

Dimensions, weights, diagrams and descriptions in the list are non-binding. Subject to change without notice.

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