

**DRIESCHER -**

- Outdoor actuators type UM
- Outdoor manual actuators type UH / L / box-type actuator
- Accessories



# UM

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## DRIESCHER - Outdoor motor actuators - Manual actuators - Accessories

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### Universal motor actuators for outdoor switches

<b>UM 90</b>	Universal motor actuator for outdoor switches, aluminium housing or stainless steel housing, from <b>page 3</b> on
<b>UM 100</b>	Universal motor actuator for outdoor switches, stainless steel housing, from <b>page 3</b> on
<b>UM 110</b>	Universal motor actuator for outdoor rotary disconnectors, stainless steel housing, from <b>page 3</b> on

### Manual actuators for outdoor switches

<b>UH 90</b>	Universal manual actuator for outdoor switches, crank handle operation, stainless steel housing, use in case of high actuating torques, from <b>page 9</b> on
<b>UH 100</b>	Universal manual actuator for outdoor switches, crank handle operation, stainless steel housing, use in case of high actuating torques, from <b>page 9</b> on
<b>L- actuator</b>	Manual actuator for outdoor switches, lever operation, hot-dip galvanized, from <b>page 10</b> on
<b>Box-type actuator</b>	Manual actuator in housing for outdoor switches, lever operation, hot-dip galvanized, from <b>page 10</b> on

## DRIESCHER - Outdoor motor actuators

### Universal motor actuators UM for outdoor switches

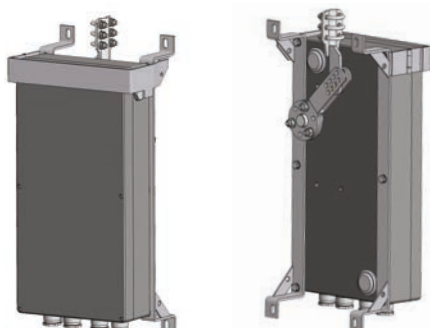


fig. 1: Outdoor motor actuator UM 90 / 350 Nm  
aluminium housing

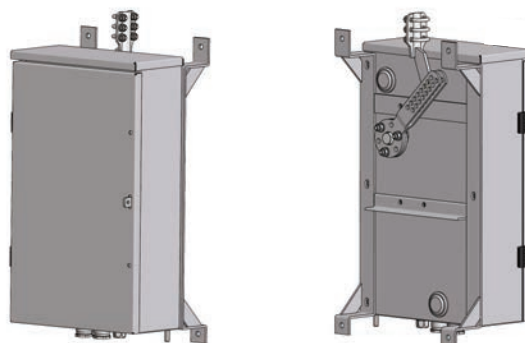


fig. 2: Outdoor motor actuator UM 90 / 350 Nm  
stainless steel housing

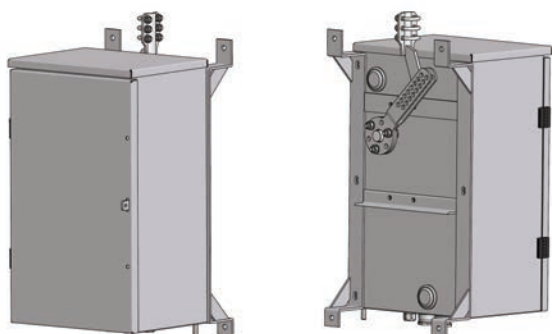


fig. 3: Outdoor motor actuator UM 100 / 700 Nm  
stainless steel housing

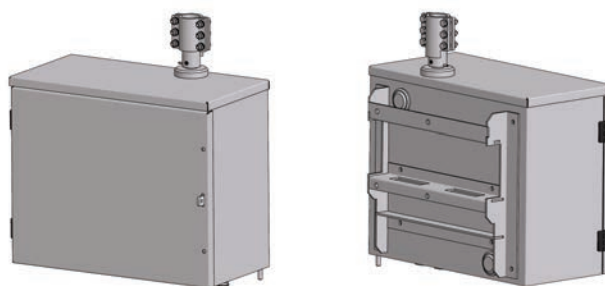


fig. 4: Outdoor motor actuator UM 110 / 350 Nm  
stainless steel housing

The outdoor motor actuators are in a aluminium housing (fig. 1), protection class IP 54 or in a stainless steel housing (fig. 2 – 4), protection class IP 65. The housing cover is screwed with A2 screws.

Both housings are of modular designs, and contain control devices like control contactors, motor protection switches, control and signalling contacts as well as the wiring connected to the terminal strips.

Through the modular design of the motor actuators, customer specific requirements such as mechanical or electric interlocking, actuators with key interlocking system or “on-site/remote operation” can be realized.

For entering the control and record lines you will find two screw connections M20, M25 or M31,5.

The outdoor actuator offers a vermin secure ventilation of the housing as well as a thermostatically controlled heating.

The manual emergency operation works by means of a bevel gearing. A displacement of the bevel gear wheel for the reversal of the sense of rotation is not necessary any more as the rotating direction can be changed easily on the actuating rod which leads to the switch. Therefore, the electric connection is the same.

Of course, the motor circuit is inevitably disconnected right before the crank is fixed to the square counter piece.

A device in which a padlock can be hinged, prevents from unauthorized operation of the hand emergency actuator and opening of the cover.

The fixing of the motor actuator is effected by means of four threaded bolts on the back side of the housing.

## DRIESCHER - Outdoor motor actuators

### Technical data universal motor actuator UM

Universal motor actuators	UM 90	UM 100	UM 110
Operating voltage $U_a$	24 VDC - 230 VAC	24 VDC - 230 VAC	24 VDC - 230 VAC
Motor rated power	250 W	500 W	250 W
Maximum torque	350 Nm	700 Nm	350 Nm
Protection class	up to IP 65	up to IP 65	up to IP 65
Mechanical operating life	10.000 CO	10.000 CO	10.000 CO
Switching motion	linear	linear	rotary
Stroke resp. switching contact gap (adjustable)	120 - 200 mm	120 - 200 mm	45° - 90°
Switching time (load-dependent)	3 - 5 s	3 - 5 s	3 - 5 s
Surrounding temperature	-30° / +55°	-30° / +55°	-30° / +55°
Weight approx.	40 kg	50 kg	45 kg
Drawing-no.	107886-001	110927-001	109592-001

### Equipment features universal motor actuator UM

#### Equipment features:

- for DC, optionally 24 V, 48 V, 60 V, 110 V or 220 V
- for AC, optionally 125 V or 230 V
- control contactor, motor protection switch, signalling switch
- series terminal
- emergency hand crank with friction clutch

#### Special equipment:

- heating 230V AC, 60 W, with temperature regulation and hygrostat
- detachable key switch for "Site/Remote" operation
- On/Off switch for "on Site" operation
- signalling contact for door position
- supervisory relay for the motor voltage
- signalling contact for the interruption of the motor voltage during hand emergency operation
- brass or plastic seal for the cable bushings
- key interlocking
- additional cover in the housing

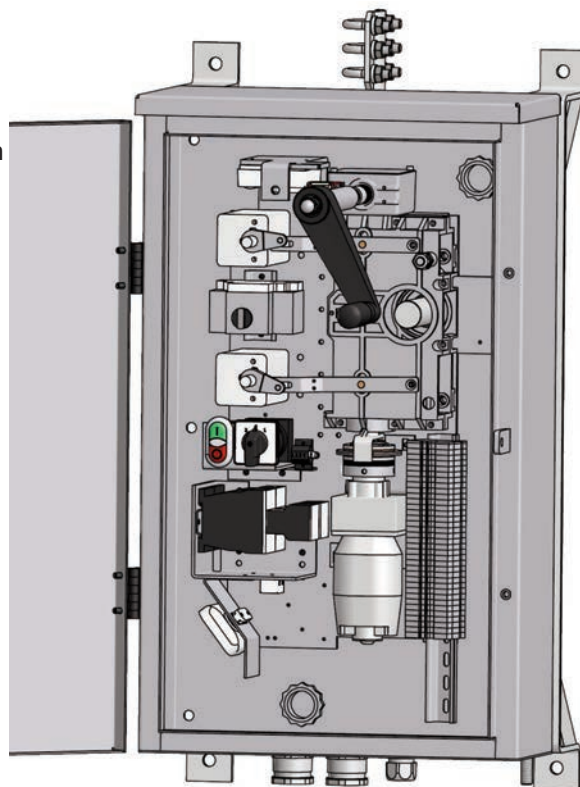
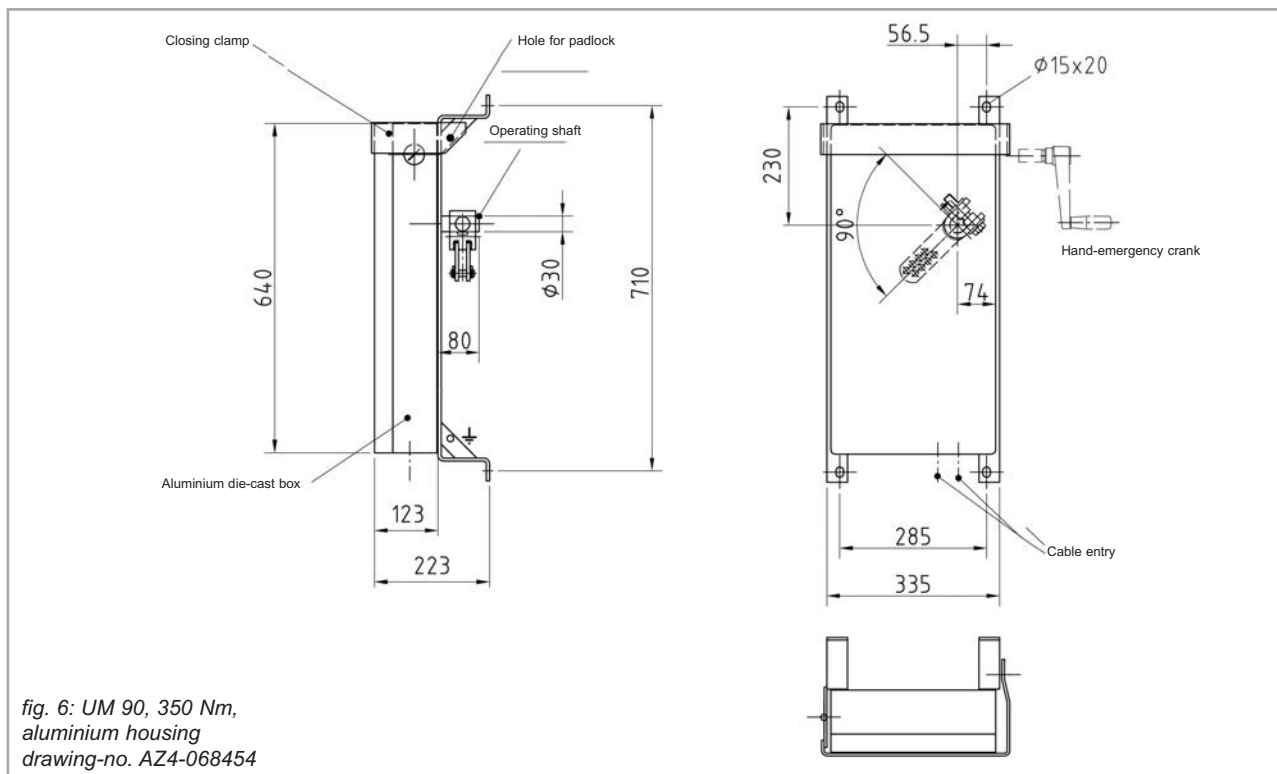


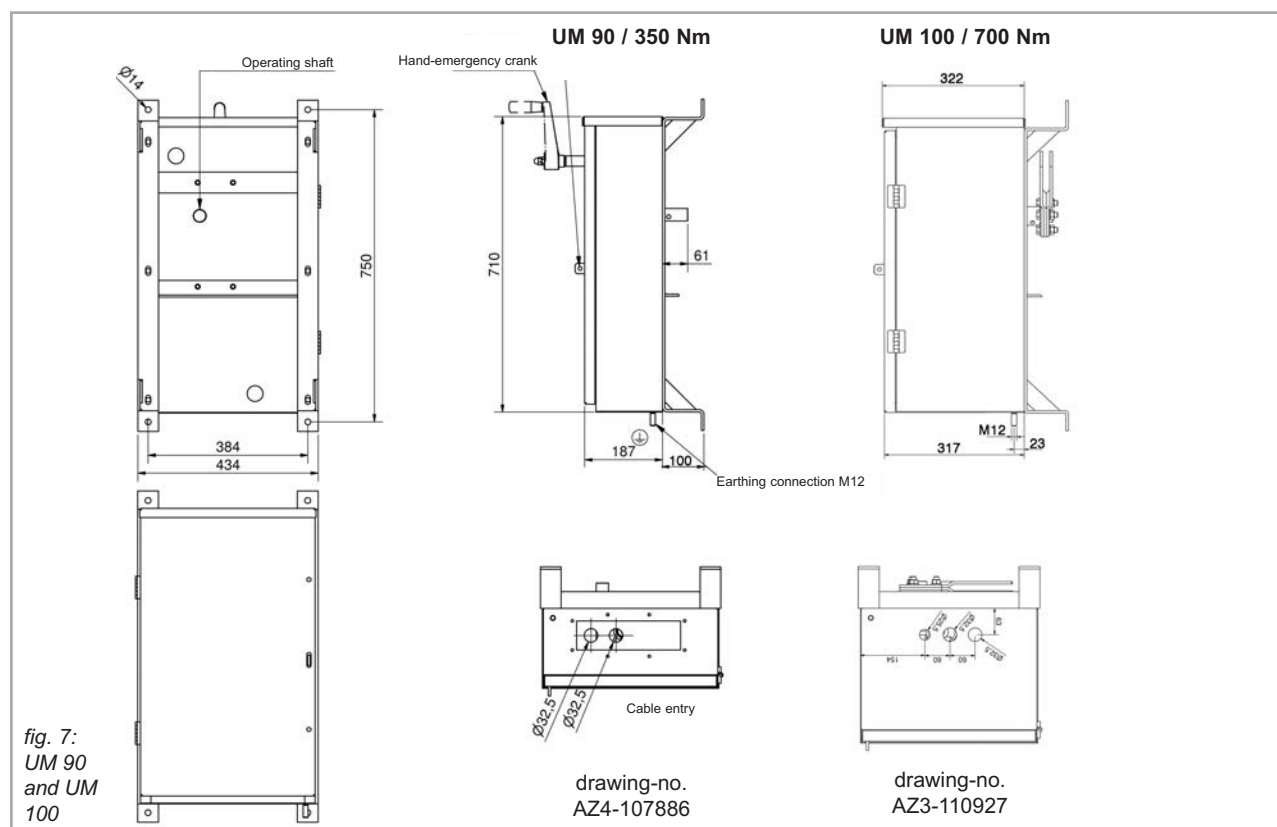
fig. 5: f.e. Outdoor motor actuator UM 90  
stainless steel housing, door open

## DRIESCHER - Outdoor motor actuators

### Outdoor universal motor actuator UM 90 - aluminium housing - drawing



### Outdoor universal motor actuators UM 90 / UM 100 stainless steel housing - drawing



## DRIESCHER - Outdoor motor actuators

## Outdoor universal motor actuator UM 110 stainless steel housing - drawing

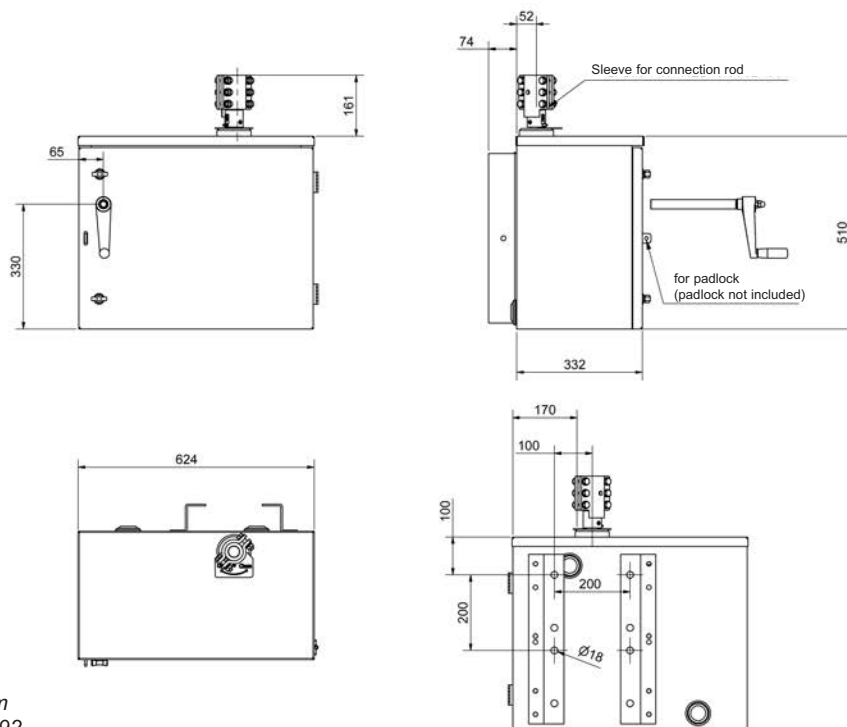


fig. 8: UM 110, 350 Nm  
drawing-no. AZ4-109592

## Schematic circuit diagram for outdoor universal motor actuator UM 90 - sample

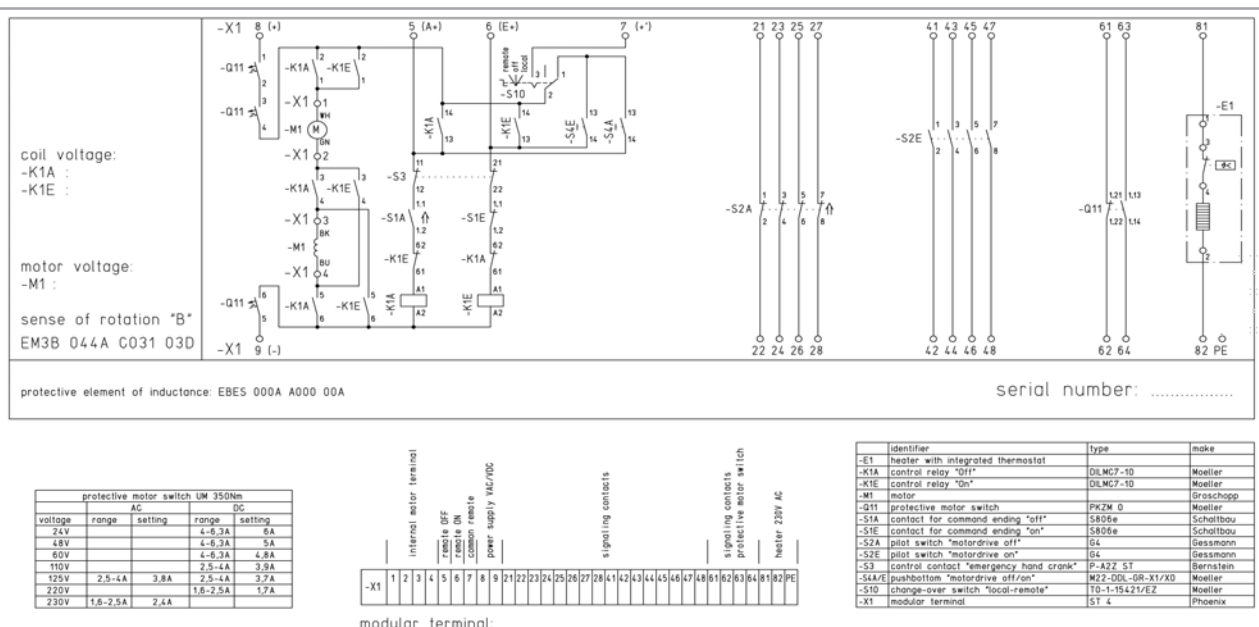


fig. 9: Circuit diagram UM 90 EM3B 044A C031 03D

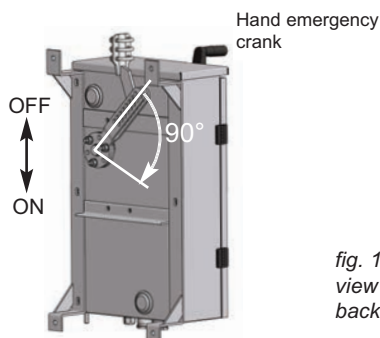
## DRIESCHER - Outdoor motor actuators

### Sense of rotation universal motor actuator UM

Depending on the installation resp. mounting situation different rotating directions of the clamping cranks are possible:

#### Sense of rotation A:

During closing operation the UM 90 pulls the support downwards.



#### Sense of rotation B:

During closing operation the UM 90 pulls the support upwards.

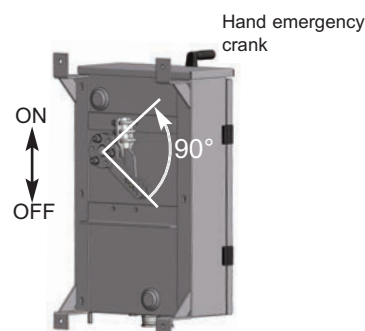


fig. 10: Sense of rotation UM 90, view of the housing from the back side!

### Current consumption and operating time outdoor universal motor actuator UM

The motor actuators can be delivered optionally for alternating voltage or direct voltage.

The motor actuators work on short-time duty (S2).

The motor supply voltage may not differ from the rated supply voltage from -15% to +10%.

Motor supply voltage $U_a$	Average current consumption in dependence to loading cases [A]		Starting current max. [A]	Setting motor protection switch [A] at $M_d$ 350 Nm	Motor operating time at $M_d$ 350 Nm [s]
	150 Nm	350 Nm			
24 V DC	4,9	5,4	26,6	6,3	6,2
48 V DC	3,6	4,8	16,2	2,5	5,5
60 V DC	3,4	4,6	22,4	2,5	4,1
110 V DC	2,5	3,7	13,2	1,6	4,6
220 V DC	0,9	1,5	7,4	0,7	4,3
125 V AC	2,7	3,6	15,8	1,6	3,7
230 V AC	1,2	2,1	6,4	1,0	4,4

### Cable dimensioning for outdoor universal motor actuator UM

In the table below you will find the maximum cable lengths of the motor supply voltages depending on

the rated cross-section. The written values are valid for a maximum motor capacity of 150 Nm.

Cross section	0,75	1,0	1,5	2,5	4,0	6,0	10,0	[mm <sup>2</sup> ]
$U_a$ 24 V DC	16	21	31	52	84	125	209	[m] Cable length
$U_a$ 48 V DC	41	55	82	137	220	330	550	[m] Cable length
$U_a$ 60 V DC	54	72	108	181	290	435	725	[m] Cable length
$U_a$ 110 V DC	132	177	266	443	709	1063	1772	[m] Cable length
$U_a$ 220 V DC	797	1063	1595	2658	4253	6380	10633	[m] Cable length
$U_a$ 125 V AC	145	194	291	485	776	1185	1941	[m] Cable length
$U_a$ 230 V AC	577	770	1154	1924	3078	4618	7696	[m] Cable length

$U_a$  = Motor supply voltage

## DRIESCHER - Outdoor motor actuators

## Check list motor actuators UM

Sender

Company

First name \_\_\_\_\_ Name \_\_\_\_\_

Department \_\_\_\_\_

Street \_\_\_\_\_

Postal code \_\_\_\_\_ City \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

Email \_\_\_\_\_ http \_\_\_\_\_

to Elektrotechnische  
Werke Fritz Driescher &  
Söhne GmbH  
infoservice@driescher.de  
Fax +49 87 61 6 81-1 37

We kindly ask you to fill in the following points. We would be glad to send you an offer according to your desires and wishes!

Housing ☐ stainless steel ☐ aluminiumProtection class ☐ IP 55 ☐ IP 65Motor voltage ☐ 48 V DC ☐ 110 V DC ☐ 110 V AC ☐ 220 V DC ☐ 230 V ACControl voltage ☐ 48 V DC ☐ 110 V DC ☐ 110 V AC ☐ 220 V DC ☐ 230 V ACSignalling switch ☐ 1NO / 1NC ☐ 2NO / 2NC ☐ 4NO / 4NC ☐ 6NO / 6NC ☐ \_\_\_ NO / \_\_\_ NCHeating ☐ 60 WThermostat ☐Hygrostat ☐Terminal strip ☐ 5 for free ☐ 20 for free ☐ 35 for free

Push button ☐ on / off ☐ change over switch ☐ change over switch ☐ change over ☐ LED,  
☐ door switch ☐ site/remote ☐ site/off/remote ☐ switch with ☐ green off  
0/1 1/0/2 key red on

Emergency switch ☐

Hand emergency

crank ☐ inside ☐ suppliedCable bushing ☐ 2 x M25 ☐ 2 x M25 + 1 x M32 ☐ 2 x M32Insulation protective barrier ☐Earthing screw ☐ M12Lightning ☐Elect. socket ☐Short-circuit message ☐ RelayGSM modem ☐

Please tell us the corresponding switch type: \_\_\_\_\_

Annotations: \_\_\_\_\_





## DRIESCHER – Outdoor manual actuators

### Outdoor manual actuators type L and box-type actuators for outdoor switches

Our outdoor manual actuators are suitable for the operation of outdoor switches and can be mounted on wooden, concrete or steel poles. For many years they are fail-safe and almost maintenance-free.

Both actuators, L-actuators (fig. 15) and box-type actuators (fig. 16 – 18) can surely be protected against unauthorized operation.

Concerning box-type actuators type 7530 this is also possible by means of an electromechanic magnetic interlocking (see page 14).

All steel parts are hot galvanized.

The realistic arrangement of the actuators to each switch type can be taken from the lists 762, 763 and 766.

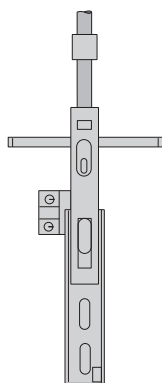


fig. 15: L-actuator for concrete resp. steel poles

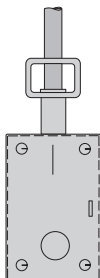


fig. 16: single box-type actuator

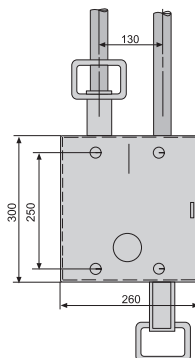


fig. 17: dual box-type actuator

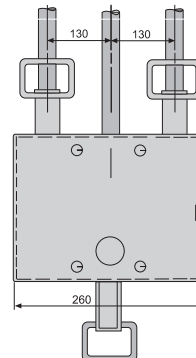


fig. 18: triple box-type actuator

### L-actuator • drawing

The L-actuator for the mounting on wooden poles is fixed to the pole with an attachment strap; the L-actuator for the mounting on concrete or steel poles is fixed with two screws M16. The support pipe, which is about 500 mm long and hinged to the actuating lever, is conductively connected to the operating

gear with a copper earthing strip.

The actuators can be protected against unauthorized operation by means of a padlock, which is not included in the scope of delivery. The mechanic connection from the actuator to the switch you can see on page 11, fig. 21.

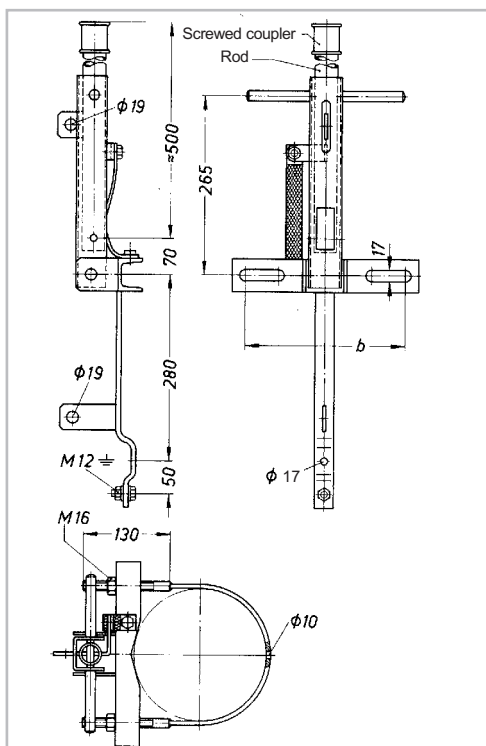


fig. 19: L-actuator for wooden poles

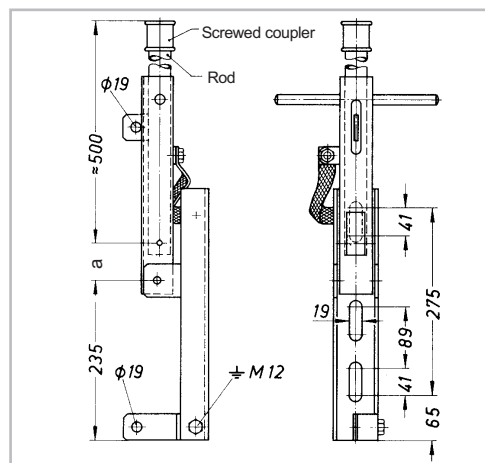
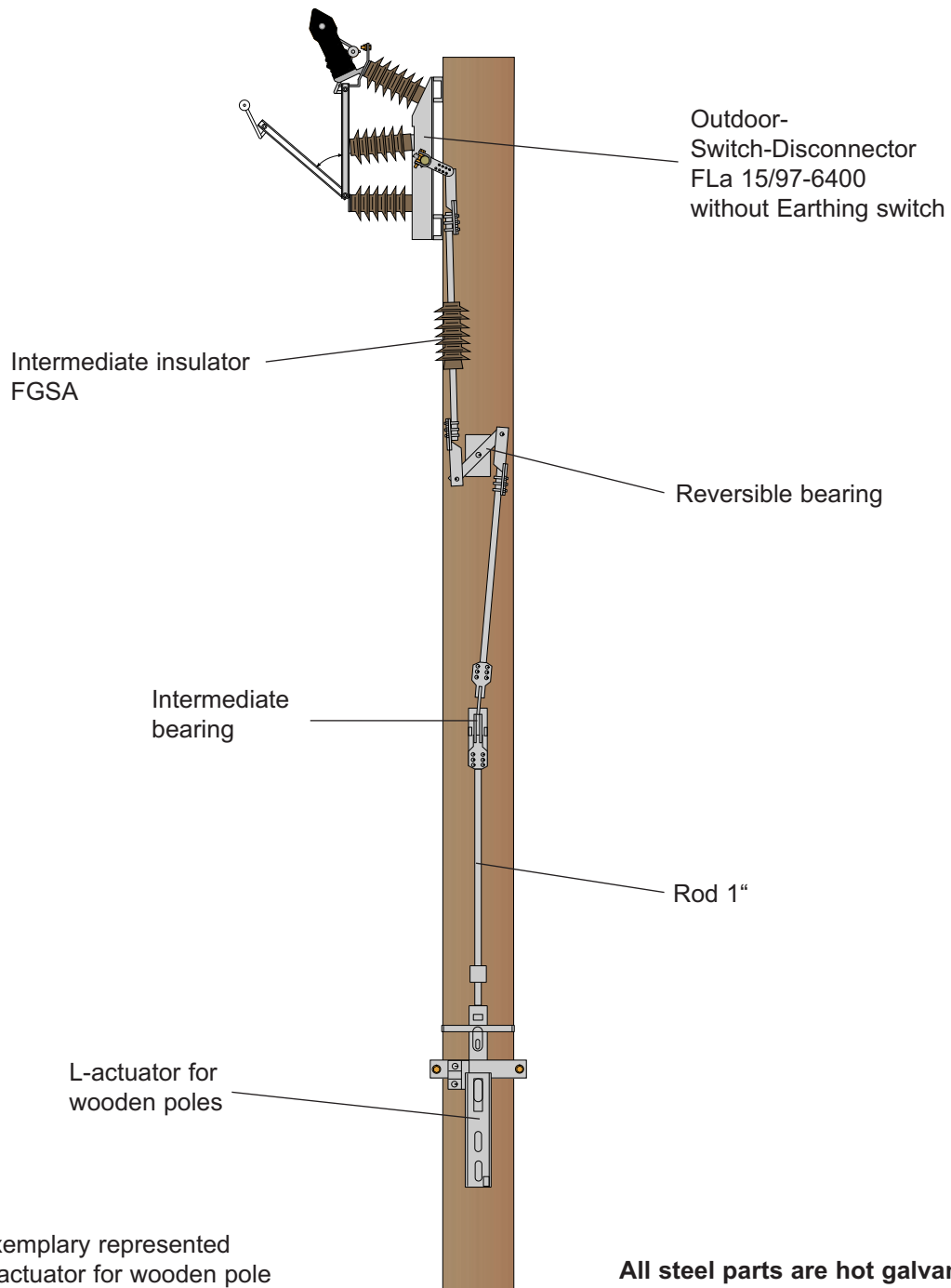


fig. 20: L-actuator for concrete resp. steel poles

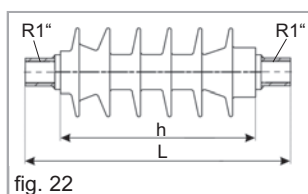
fig.	a	Stroke	b for pole ø	Part-no.	Weight kg	Drawing-no.
19	-	140	180-240 mm	775 11010	7,0	AZ 4-002511
19	-	140	240-300 mm	775 11020	8,0	AZ 4-002511
19	-	140	300-360 mm	775 11030	8,5	AZ 4-002511
20	70	140	-	775 15000	6,5	AZ 4-010700
20	85	170	-	775 15001	6,5	AZ 4-010700

## DRIESCHER – Outdoor manual actuators

### L-actuator for wooden pole



### Intermediate insulator FGSA for wooden pole



Part-no.	kV <sub>eff</sub>	L	h	Weight kg	Drawing-no.
775 52000	12/24	382	280	3,7	042236-002
775 53000	36	462	360	6,9	042236-004

## DRIESCHER – Outdoor manual actuators

### Box-type actuators

The box-type actuators are suitable for the use on wooden, concrete and steel poles. For the mounting on wooden poles the actuators are screwed on two u-profiles which are fixed to the pole with two attachment straps. The mechanical connection between actuator and switch you will find on page 15, fig. 28. There are two bore holes in the actuating lever which enable a stroke of 140 mm – or in case of need 110 mm – when fixing the lower support pipe.

Flexible copper earthing strips are mounted in the box, which have to be connected conductively with the screw M8 in the support pipe. The description of operation of the actuating boxes you will find below. The actuator can be protected against unauthorized operation with a padlock which is not included in the scope of delivery.

#### • Additional equipment

For additional price we offer the following ways of interlocking:

- a) a case lock for the use of a profile half cylinder – with lateral interlocking – or
- b) a profile half cylinder in the cover – interlocking in the front.

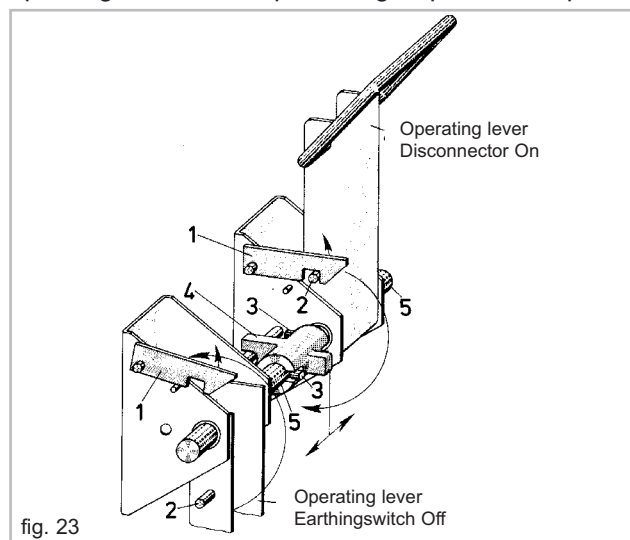
In both cases the profile half cylinders are covered with a rain shield cover.

Also the mounting of a housing with an electromechanic magnetic interlocking (110 or 220 V DC resp. 230 V AC) for the arresting of the actuating lever – also with heating resistor – is possible (see page 14).

### Description of operation for box-type actuators

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

For disconnecting, the pawl (1) must be lifted by hand from the attachment bolt (2). 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.



on for this. Faulty switching operations with dual and triple actuators are prevented by one or two sliding links 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.

Two shaft butts (5) with one or two 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.

## DRIESCHER - Outdoor manual actuators

## Box-type actuators • drawing

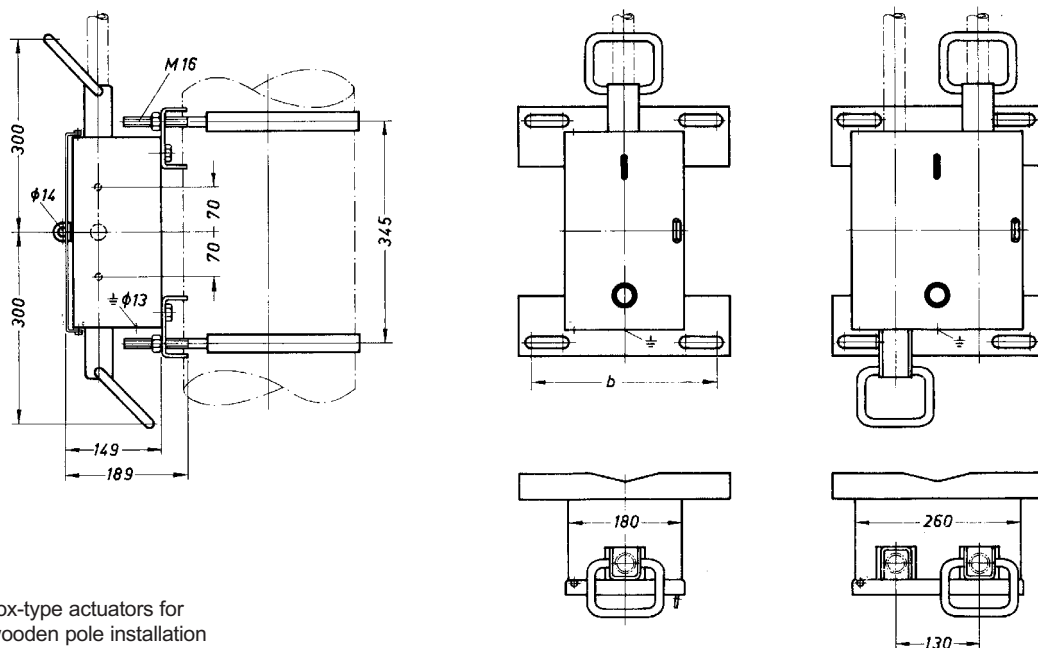


fig. 24: Box-type actuators for wooden pole installation

b for pole ø	Part-no. for single box-type actuator	Weight approx. kg	Part-no. double box-type actuator	Weight approx. 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

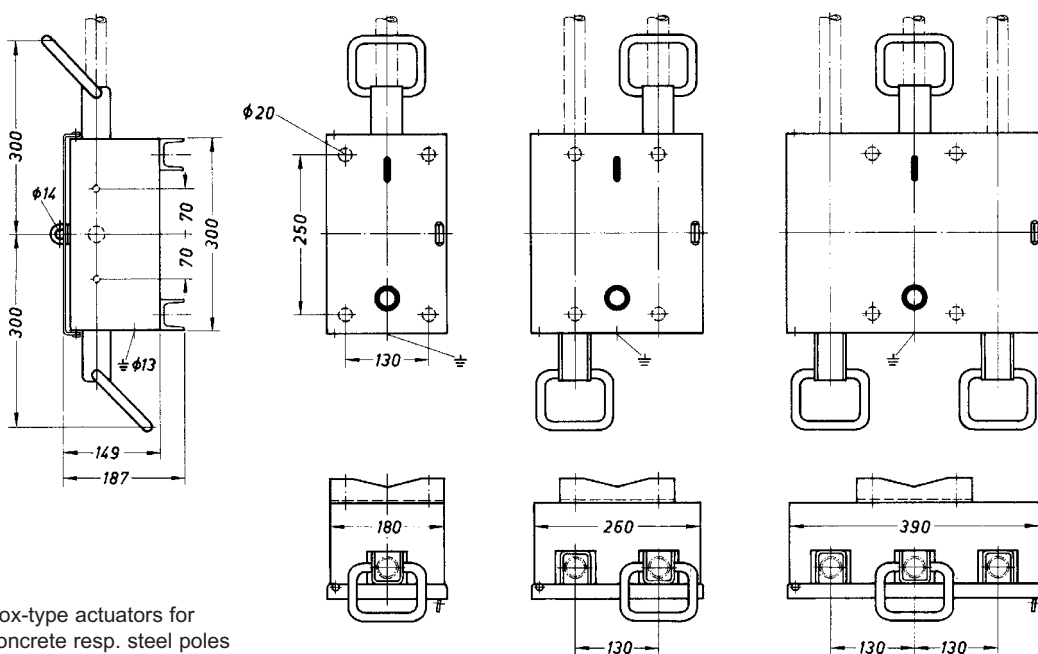


fig. 25: Box-type actuators for concrete resp. steel poles

Single box-type actuator Part-no.	Weight kg	Double 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

## DRIESCHER - Outdoor manual actuators

### Box-type actuator type 7530 with magnetic interlocking

There is an electromagnetic interlocking mechanism available for the single and double box-type actuators (see page 13) which uses a lock-out coil. In the attachment housing there is an electromagnet with a duration factor of 100% for blocking the actuating lever.

A switching operation (ON or OFF) is only possible when the coil of the magnet is energized, i. e. the actuator is also safely locked in case of failure of the auxiliary voltage.

Therewith, incorrect operations can be reliably prevented. The standard equipment comprises a heating resistor with thermostat as well as a terminal strip. For the lock-out coil an auxiliary voltage of 60 V DC, 110 V DC or 220 V DC and 110 V AC or 230 V AC are possible.

In addition, an equipment with auxiliary switches can be delivered.

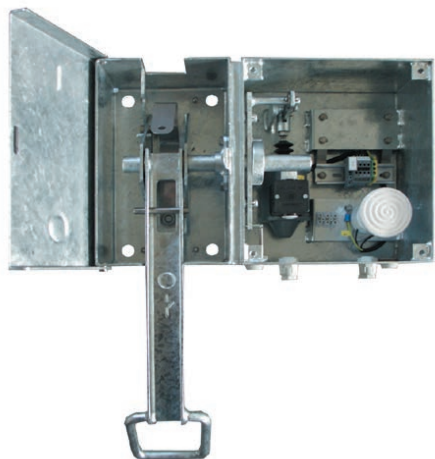
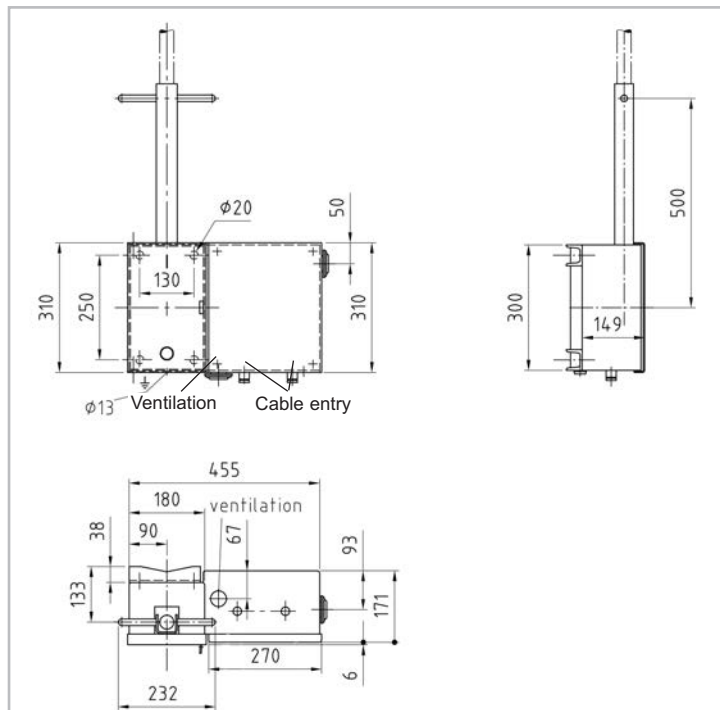


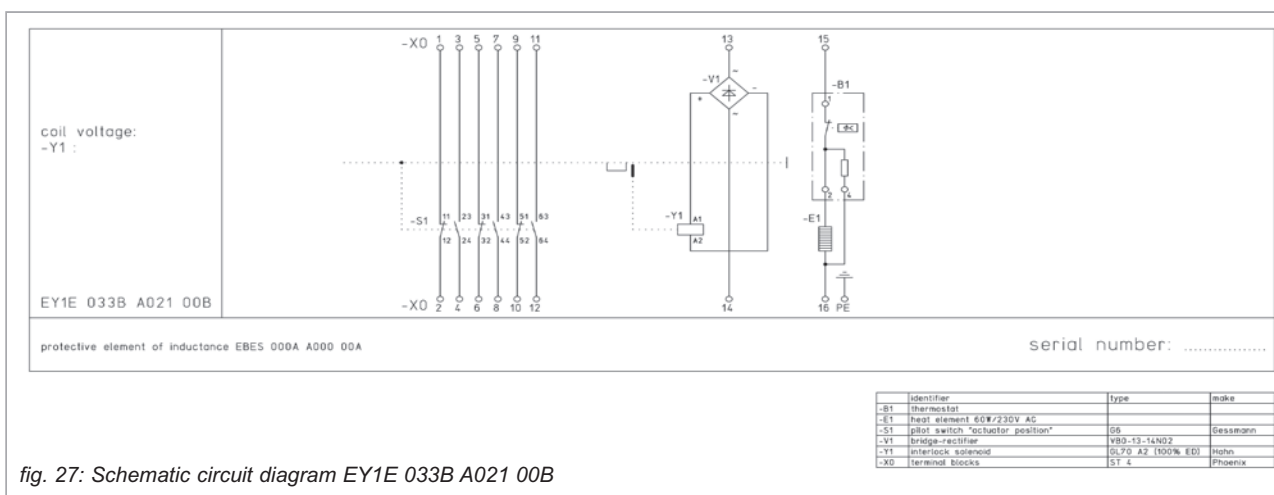
fig. 26: Single box-type actuator type 7530 with magnetic interlocking



Part-no.      Weight approx. kg      Drawing-no.

Single box-type actuator	775 25300	18	AZ 4- 31321
Double box-type actuator	775 26300	25	AZ 4- 31321

### Schematic circuit diagram box-type actuator type 7530 with magnetic interlocking - Sample



## DRIESCHER - Outdoor manual actuators

## Box-type actuator

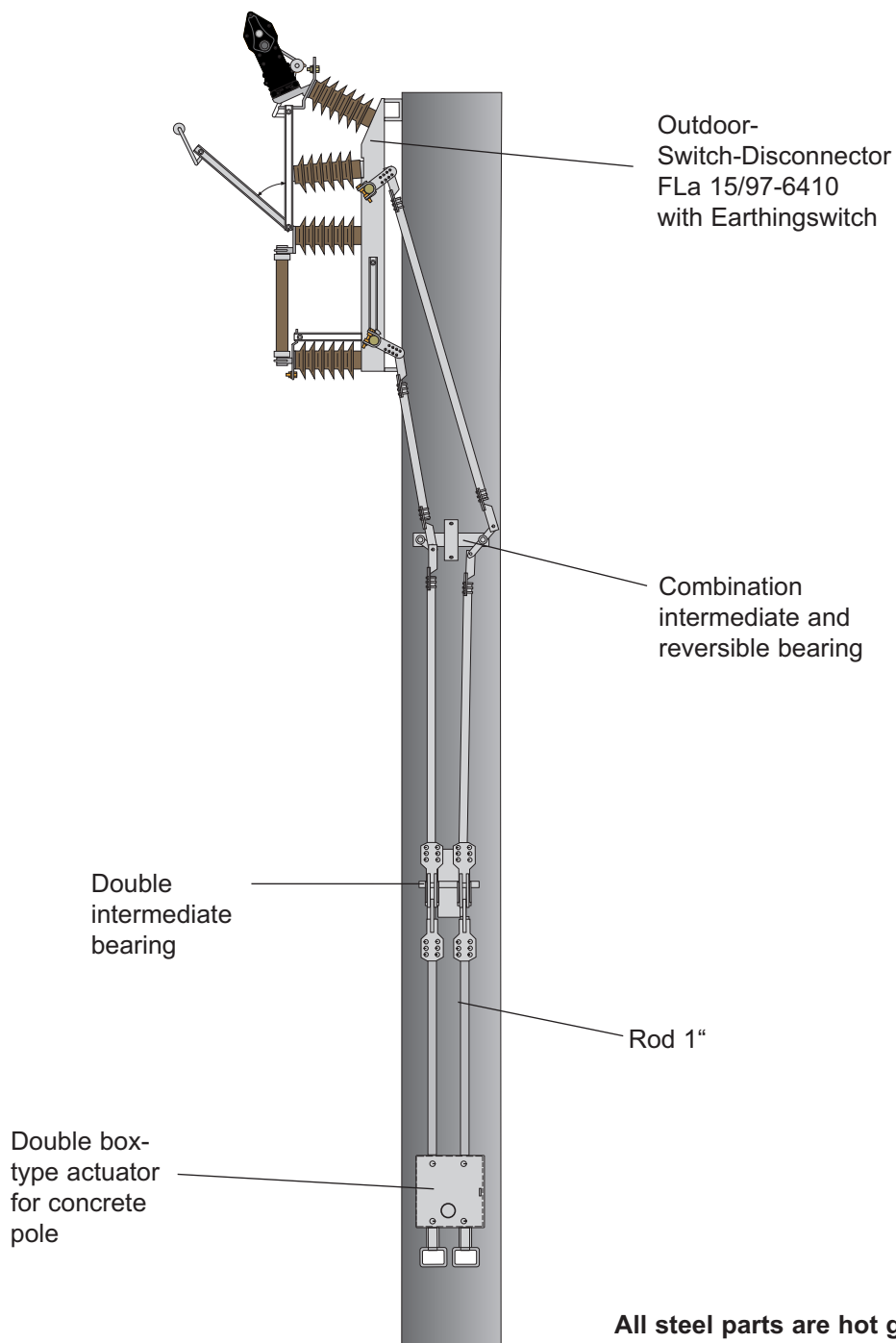


fig. 28: Exemplary represented  
double box-type for concrete pole

**DRIESCHER - Outdoor manual actuators****Check list manual actuators**

Sender

Company \_\_\_\_\_

First Name \_\_\_\_\_ Name \_\_\_\_\_

Department \_\_\_\_\_

Street \_\_\_\_\_

Postal code \_\_\_\_\_ City \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

Email \_\_\_\_\_ http \_\_\_\_\_

To Elektrotechnische  
Werke Fritz Driescher &  
Söhne GmbH  
infoservice@driescher.de  
Fax (0 87 61) 6 81-1 37

We kindly ask you to fill in the following points. We would be glad to send you an offer according to your desires and wishes!

- ☐ Wooden pole
- ☐ ø 180 - 240 mm
  - ☐ ø 240 - 300 mm
  - ☐ ø 300 - 360 mm
  - ☐ Intermediate insulator 12 / 24 kV
  - ☐ Intermediate insulator 36 kV
- ☐ Concrete, steel or girder pole
- ☐ L-actuator
- ☐ Single box-type actuator
- ☐ Double box-type actuator
- ☐ Triple box-type actuator
- ☐ UH 90 / UH 100 (is only used in case of high drive torques)

Length \_\_\_\_\_ meter

Please tell us the corresponding switch type: \_\_\_\_\_

Annotations:

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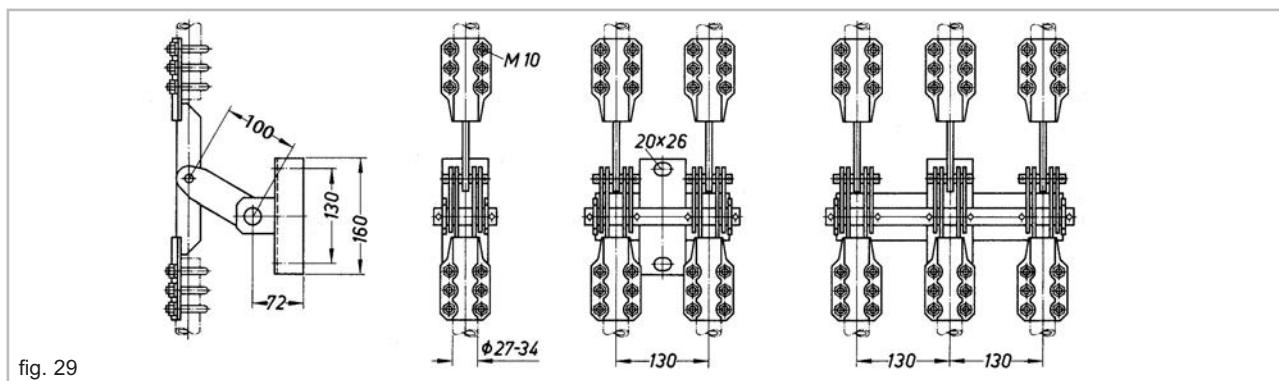


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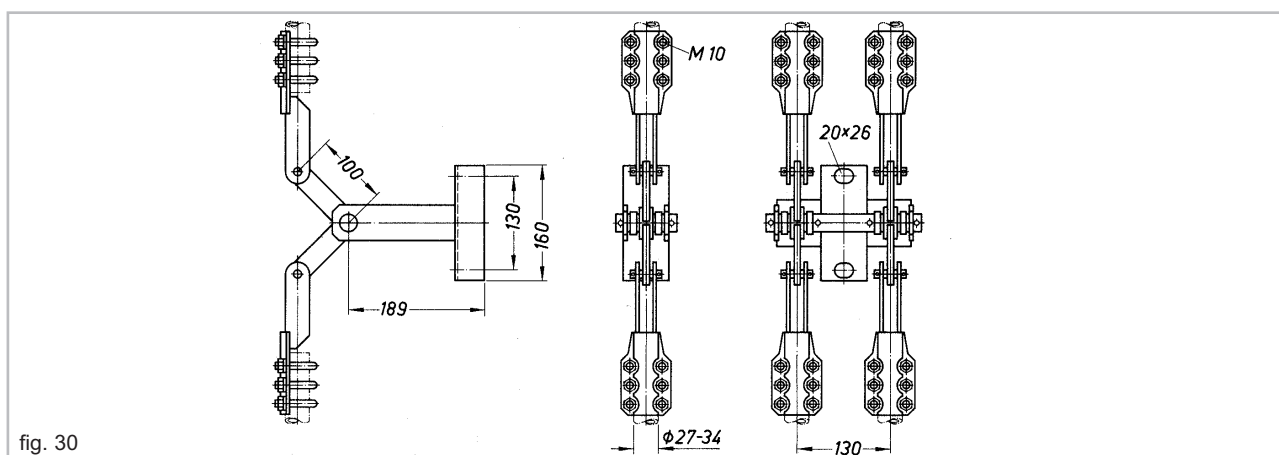
## DRIESCHER - Outdoor accessories

## Intermediate bearings



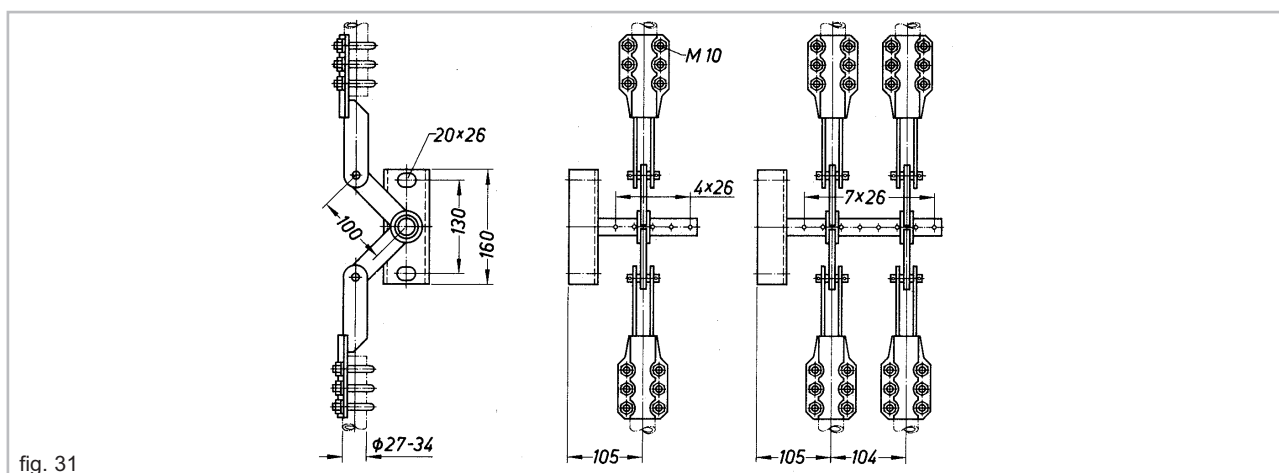
Intermediate bearing with rocker arm    Part-no. without link bush    Part-no. with link bush    Weight approx. kg    Drawing-no.

Single intermediate bearing	775 61100	775 61500	4,7	AZ 3-15936
Double 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 approx. kg    Drawing-no.

Single intermediate bearing	775 62100	5,4	AZ 3-20508
Double intermediate bearing	775 62200	9,8	AZ 3-20508



Intermediate bearing with angle crank    Part-no.    Weight approx. kg    Drawing-no.

Single intermediate bearing	775 63100	4,7	AZ 3-14799
Double intermediate bearing	775 63200	7,8	AZ 3-14799

## DRIESCHER - Outdoor accessories

## Reversible bearings

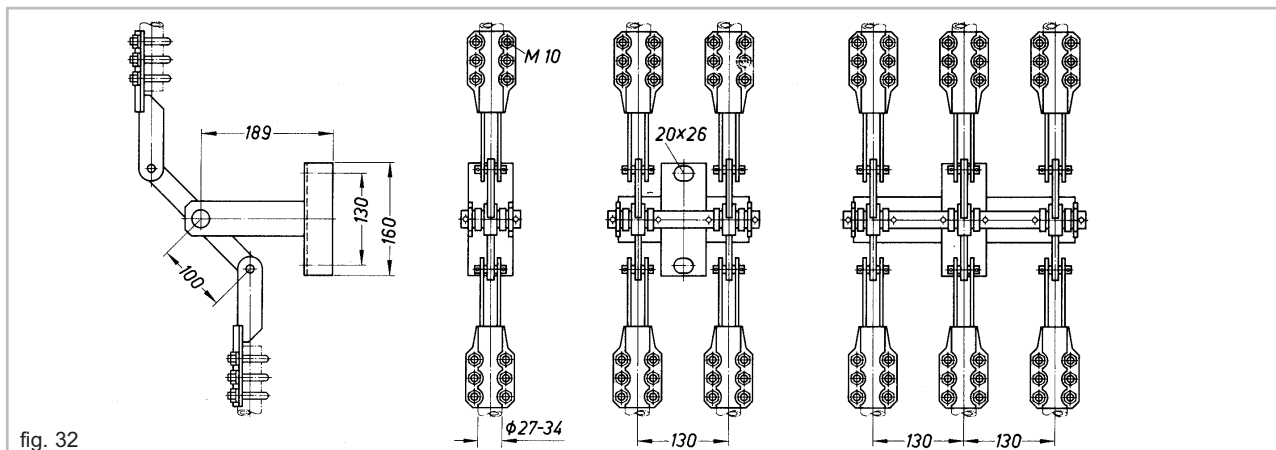


fig. 32

Reversible bearing	Part-no.	Weight approx. kg	Drawing-no.
Single reversible bearing	775 66100	5,4	AZ 3-17130
Double reversible bearing	775 66200	9,8	AZ 3-17130
Triple reversible bearing	775 66300	13,7	AZ 3-17130

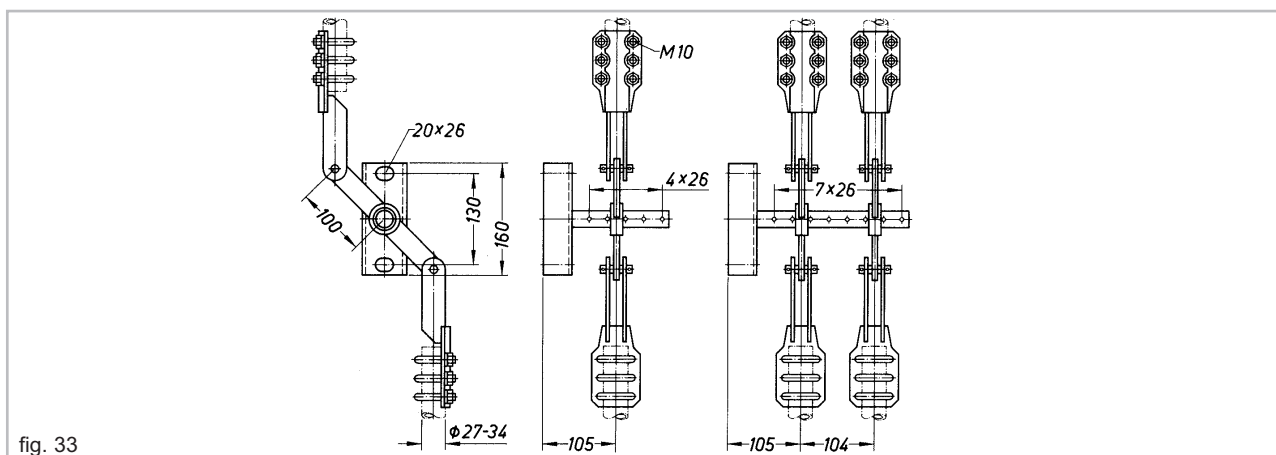


fig. 33

Reversible bearing	Part-no.	Weight approx. kg	Drawing-no.
Single reversible bearing	775 67100	4,7	AZ 3-17131
Double reversible bearing	775 67200	7,8	AZ 3-17131

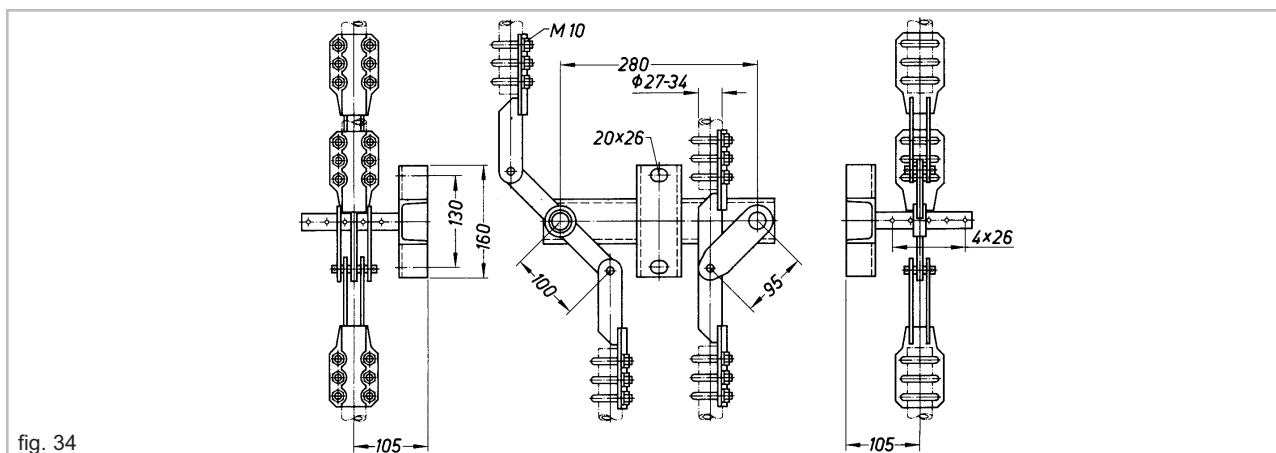


fig. 34

Combination intermediate - reversible bearing	Part-no.	Weight approx. kg	Drawing-no.
Single reversible bearing / Single intermediate bearing	775 68100	10,0	AZ 3-22246

## Guide brackets

for wooden pole mounting (fig. 35) and concrete pole mounting (fig. 36)

All steel parts are hot galvanized.

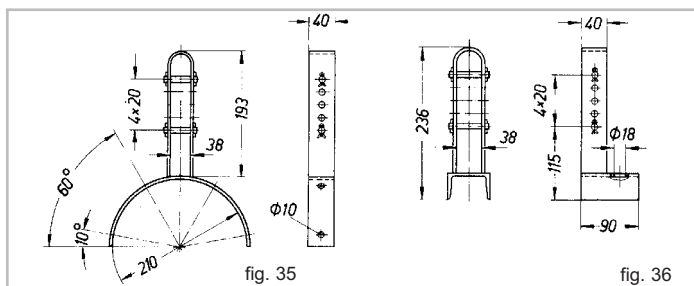


fig.	Part-no.	Weight kg	Drawing-no.
35	775 81000	1,3	AZ 4-10969
36	775 83000	1,5	AZ 4-10750

## Clamping cranks and hook eyes

All steel parts are hot galvanized.

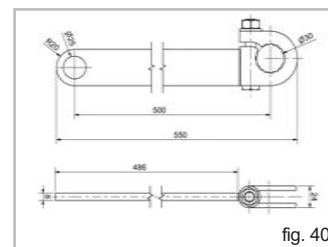
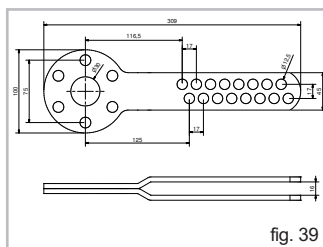
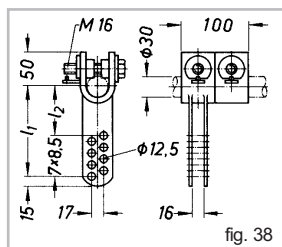
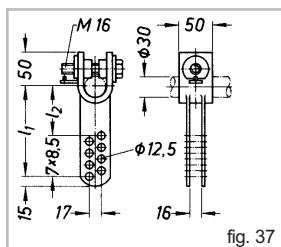


fig.	Type	Part-no.	l <sub>1</sub>	l <sub>2</sub>	Weight kg	Drawing-no.
37	Single clamping crank	775 78132	132,5	73	1,4	AZ 3-009610
37	Single clamping crank	775 78184	184,5	125	1,6	AZ 3-009610
38	Double clamping crank	775 78133	132,5	73	1,8	AZ 3-096873
38	Double clamping crank	775 78185	184,5	125	2,0	AZ 3-096873
39	Clamping crank adjustable / pinned	775 92795	-	-	2,0	AZ 3-101475
40	Hook eye made of steel					
	Internal gears hardened <sup>1)</sup>	774 11500	-	-	1,5	AZ 4-009750

1) Actuating rod Part-no. 772 11090

## Clamping rod heads

All steel parts are hot galvanized.

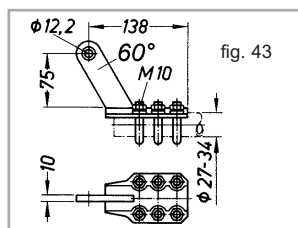
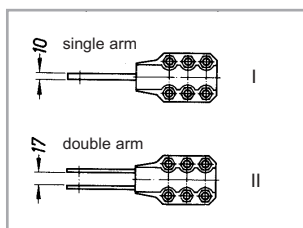
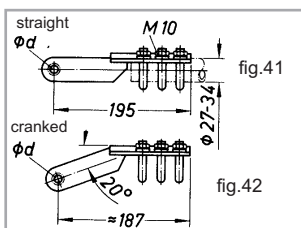
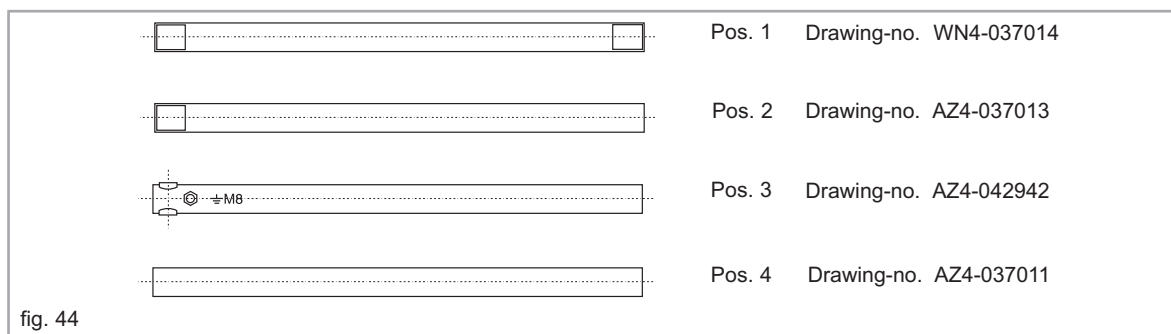


fig.	Type	Part-no.	ød	a	Weight kg	Drawing-no.
41 I	straight, single arm	775 71000	12,5	-	1,0	AZ 3-09609
41 I	straight, single arm with link bush	775 71100	12,2	-	1,0	AZ 3-09609
41 II	straight, double arm	775 71200	12,5	-	1,1	AZ 3-09609
42 I	cranked, single arm	775 72000	12,5	-	1,0	AZ 3-14001
42 I	cranked, single arm with link bush	775 72100	12,2	-	1,0	AZ 3-14001
42 II	cranked, double arm	775 72200	12,5	-	1,1	AZ 3-14001
43	cranked, single arm with link bush	775 72400	12,2	20°	1,1	AZ 4-14001
43	cranked, single arm with link bush	775 73000	12,2	60°	1,1	AZ 3-16045

## DRIESCHER - Outdoor accessories

### Linkage rods 1" DIN 2440



Length (m)	Pos. 1 with two threaded ends <sup>1)</sup>	Pos. 2 with one threaded end <sup>1)</sup>	Pos. 3 with connecting bearing ø16 and earthing screw M8	Pos. 4 plain
	Part-no.	Part-no.	Part-no.	Part-no.
1,5	-	513 17031	-	513 16034
2	513 18032	513 17032	760 10200	513 16036
2,5	513 18034	513 17034	760 10201	513 16038
3	513 18036	513 17036	760 10202	513 16043
3,5	513 18038	513 17038	760 10203	513 16045
4	-	513 17045	760 10204	513 16054
4,5	-	-	760 10208	-

1) By using guide brackets, to every delivered rod a thread coupling R1" is included.

Weight per meter approx. 2,5 kg

Linkage rods above 4m only with intermediate bearings and reversible bearings.

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

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