

**General.**

Thanks to its compact design this new series of pneumatic actuators is ideal for all those applications where space is an issue. The main feature of the new 1370 series is the oval profile of the barrel bore, which has been designed to provide forces equivalent to normal actuators with bores 25 – 32 – 40 – 50 – 63mm.

The new series is available in double acting function, with single or through rod, male or female rod threads and optional magnetic piston. Reed switches can be mounted in the two grooves included in the barrel profile that are aligned with the cylinder inlet ports. In order to ensure maximum functional flexibility the end caps have been designed with multiple inlet ports; for the same reason there are several mounting options included on either end cap.

**Construction characteristics**

End plates	Aluminium anodised
Rod	C43 chromed steel or stainless steel
Barrel	aluminium alloy anodised
Piston	Acetylic resin
Piston-seal	Self lubricating polyurethane 90 Shore
Rod-seal	Self lubricating polyurethane 90 Shore (Viton® upon request)
Adjusting screw	Zinc plated steel
Shock absorber	NBR

**Technical characteristics**

Fluid	filtered and preferably lubricated air or non (If lubricated the lubrication must be continuous)
Max. pressure	10 bar
Operating temperature	-5° C ÷ +70°C

"Attention: Dry air must be used for application below 0°C"

**Maximum standard strokes**

Stroke 25	200 mm
Stroke 32 ÷ 63	300 mm

**Sections (cm<sup>2</sup>)**

Size	25	32	40	50	63
Out stroke (cm <sup>2</sup> )	5,28	8,09	13,09	20,28	32,68
In stroke (cm <sup>2</sup> )	4,49	6,96	11,08	17,14	29,54

In order to calculate the theoretical force generated by the unit, both outstroke and instroke, it is necessary to use the following equation

**FORCE(Kg) = Surface (cm<sup>2</sup>) x Pressure(bar)**

It is also necessary to remember that the theoretical force must be reduced by 10-15% in order to account for the unit internal friction.

**Maximum rod radial movement (°)**

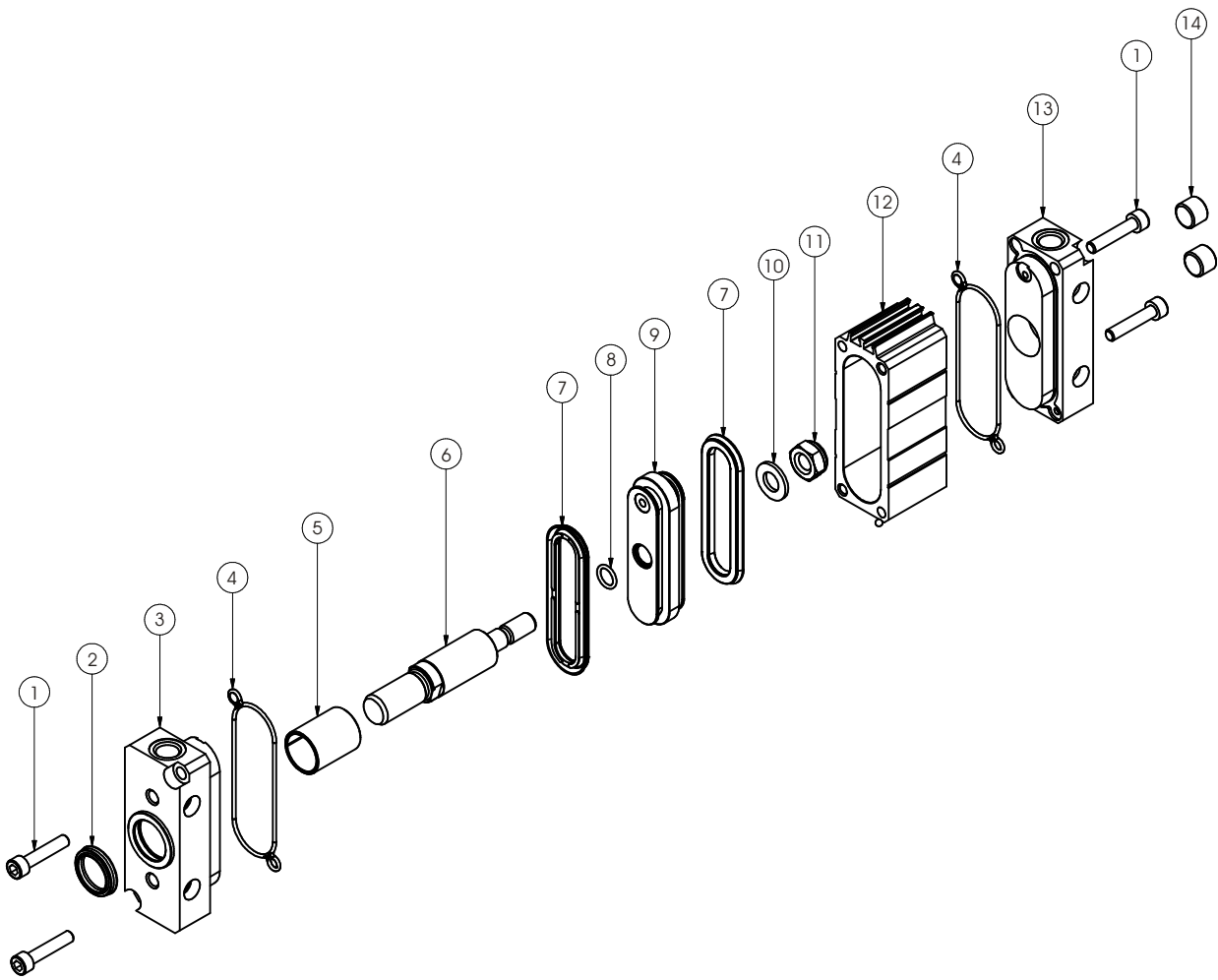
Size	25	32	40	50	63
rod radial movement	±0.8	±0.7	±0.6	±0.5	±0.4

**Maximum torque applicable on the piston rod:**

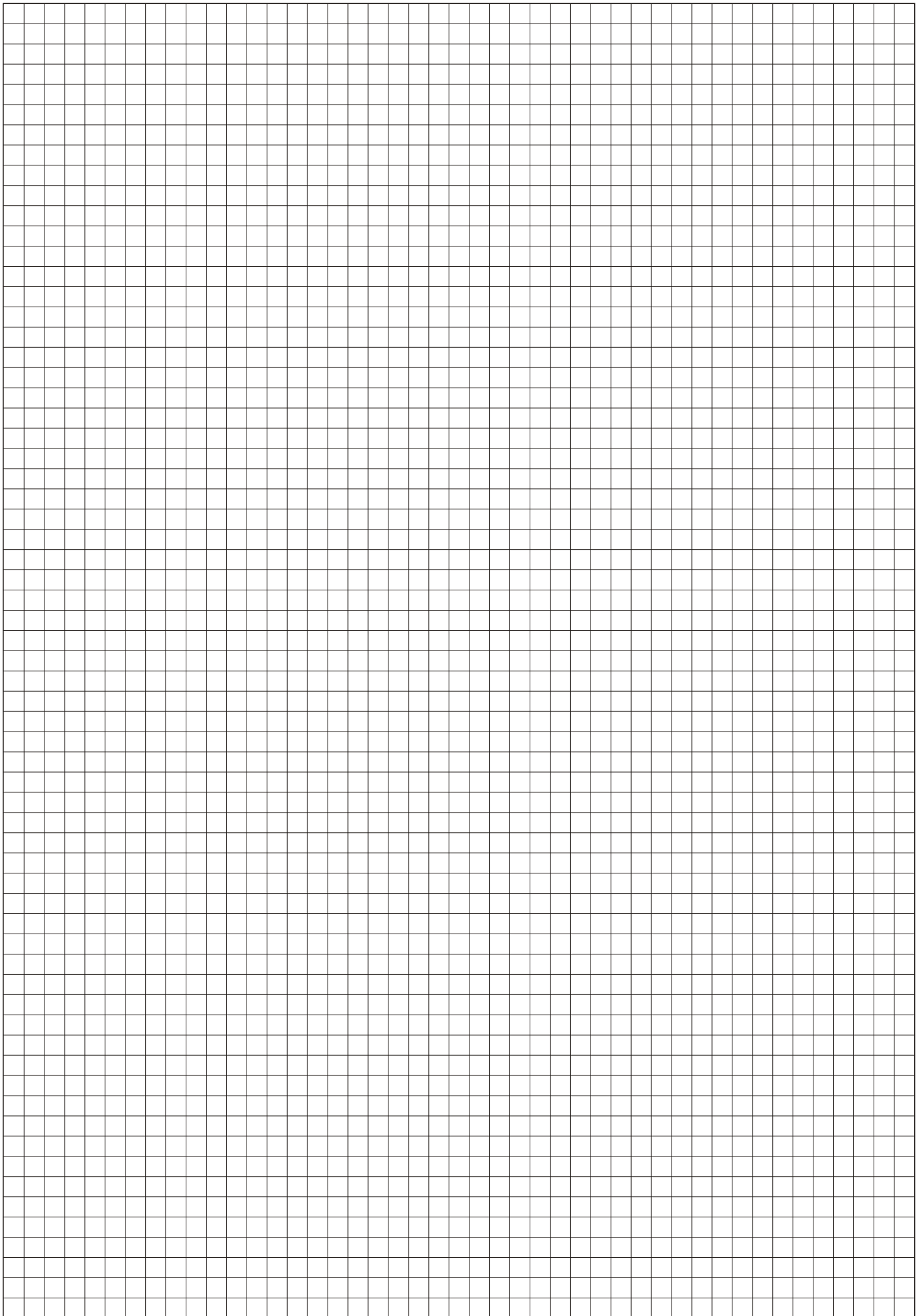
Size	25	32	40	50	63
Maximum torque	0.8	1	1,3	1,8	2,1

The maximum torque values must be accounted for also while mounting accessories on the piston rod.

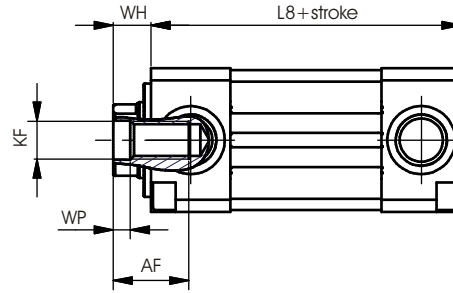
**Drawing**



Pos.	Description	N. Pieces
1	Screws	4
2	Rod seal	1
3	Front end cap	1
4	End cap seal	2
5	Bush	1
6	Rod	1
7	Piston seal	2
8	Piston "o" ring	1
9	Piston	1
10	Washer	1
11	Nut	1
12	Barrel	1
13	Rear end cap	1
14	Supply plug	2



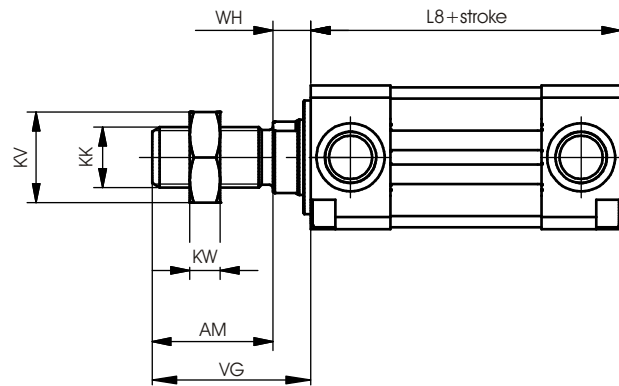
**Basic version "1" female rod**



Ordering code

- 1370.size.stroke.1** Magnetic chrome plated rod
- 1371.size.stroke.1** Magnetic stainless steel rod
- 1372.size.stroke.1** non magnetic chrome plated rod
- 1373.size.stroke.1** non magnetic stainless steel rod

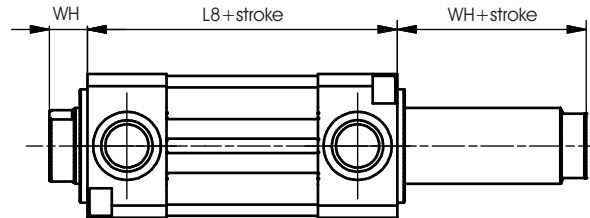
**Basic version "2" male rod**



Ordering code

- 1370.size.stroke.2** Magnetic chrome plated rod
- 1371.size.stroke.2** Magnetic stainless steel rod
- 1372.size.stroke.2** non magnetic chrome plated rod
- 1373.size.stroke.2** non magnetic stainless steel rod

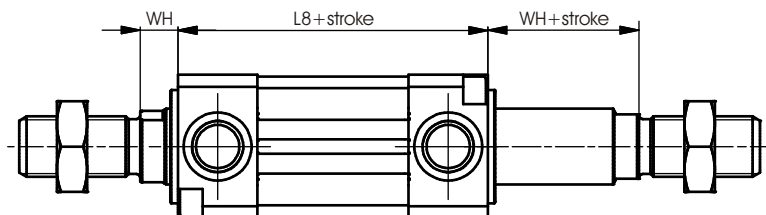
**Female Push/Pull version "3"**



Ordering code

- 1370.size.stroke.3** Magnetic chrome plated rod
- 1371.size.stroke.3** Magnetic stainless steel rod
- 1372.size.stroke.3** non magnetic chrome plated rod
- 1373.size.stroke.3** non magnetic stainless steel rod

**Male Push/Pull version "4"**



Ordering code

- 1370.size.stroke.4** Magnetic chrome plated rod
- 1371.size.stroke.4** Magnetic stainless steel rod
- 1372.size.stroke.4** non magnetic chrome plated rod
- 1373.size.stroke.4** non magnetic stainless steel rod

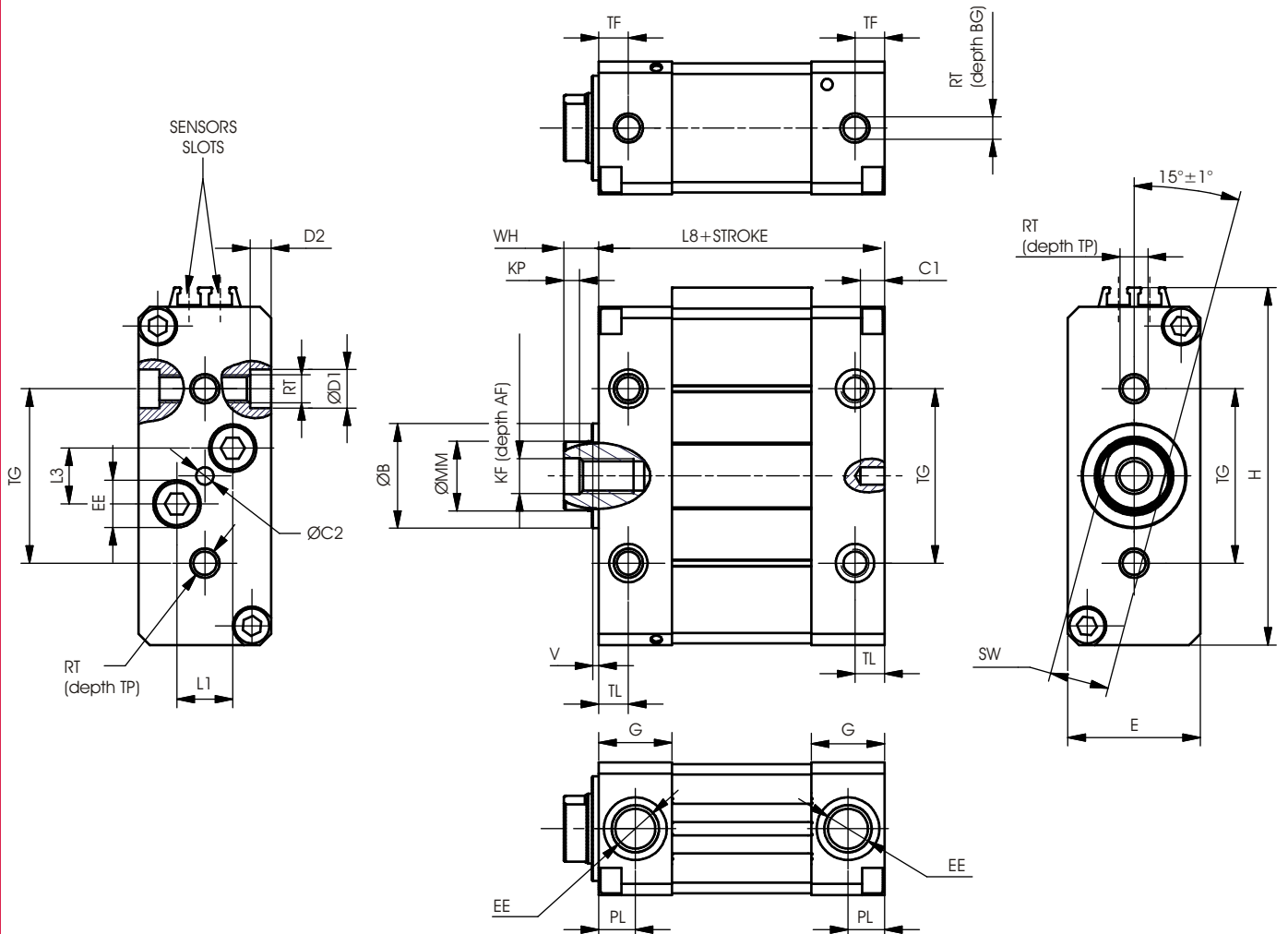


Table of dimensions

Size	25	32	40	50	63
AM	22	22	24	32	32
AF	12	14	16	20	20
Ø B (h9)	16	20	25	30	30
BG	8	9	9	12	14
C1	7	7	7	7	7
C2 (H9)	4	4	4	5	5
Ø D1	8	10	10	11	15
D2	4	4	5	6	6
E	20	24	30	38	50
EE	M5	G1/8"	G1/8"	G1/4"	G1/4"
G	12	17	17	21	21
H	56,5	65,5	82,5	102,5	127
KF	M5	M6	M8	M10	M10
KK	M10x1,25	M10x1,25	M12x1,25	M16x1,5	M16x1,5
KP	2	2,5	3	4,5	4,5
KV	17	17	19	24	24
KW	6	6	7	8	8
L1	6	7,5	7,5	16	19
L3	10	14,5	14,5	16	21
L8	62	72	76	82	82
Ø MM	10	12	16	20	20
PL	6	8,5	8,5	10,5	10,5
RT	M5	M6	M6	M8	M10
SW (H13)	8	10	13	17	17
TF	5	8,5	8,5	8,5	8,5
TG	25	32	40	50	60
TL	5	8,5	8,5	8,5	8,5
TP	8	9	9	12	14
V	2	2	2	2	2
VG	30	30	33	42	42
WH	8	8	9	10	10

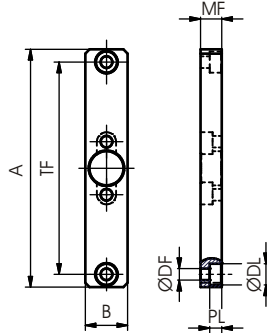
**Front and rear flange**

Ordering code

**1370.size.03**



Size 25-32-40



Size 50-63

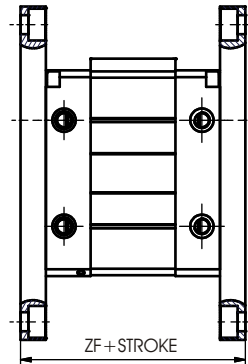
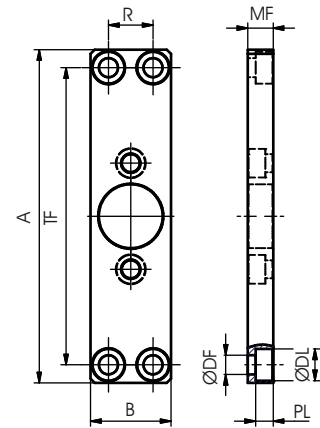


Plate which allows anchorage of the cylinder at a right angle to the plane. Mounted to the cylinder by screws.

Size	25	32	40	50	63
A	112	130	146	157	157
B	20	24	30	38	50
ØDF	5.5	6.6	6.6	9	9
ØDL	10	11	11	15	15
PL	5.7	6.5	6.3	8.3	8.3
MF	10	10	10	12	15
R	/	/	/	21	33
TF	100	115	132	140	140
ZF	82	92	96	106	112

**Foot bracket**

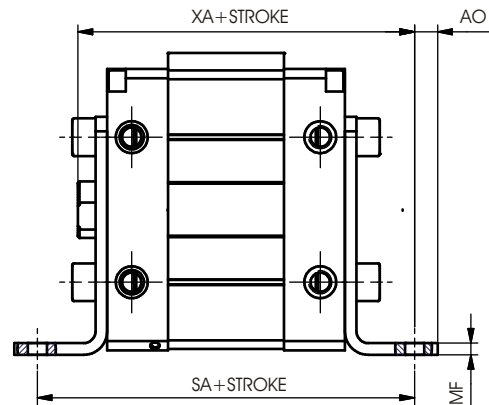
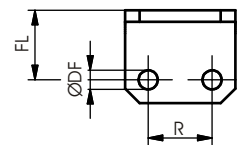
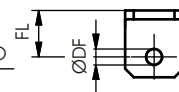
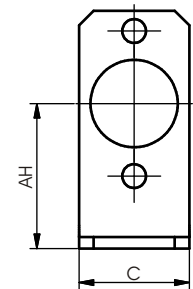
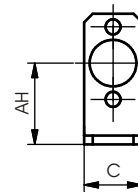
Ordering code

**1370.size.05/1F**  
(n° 1 piece)



Size 25

Size 25-40-50-63



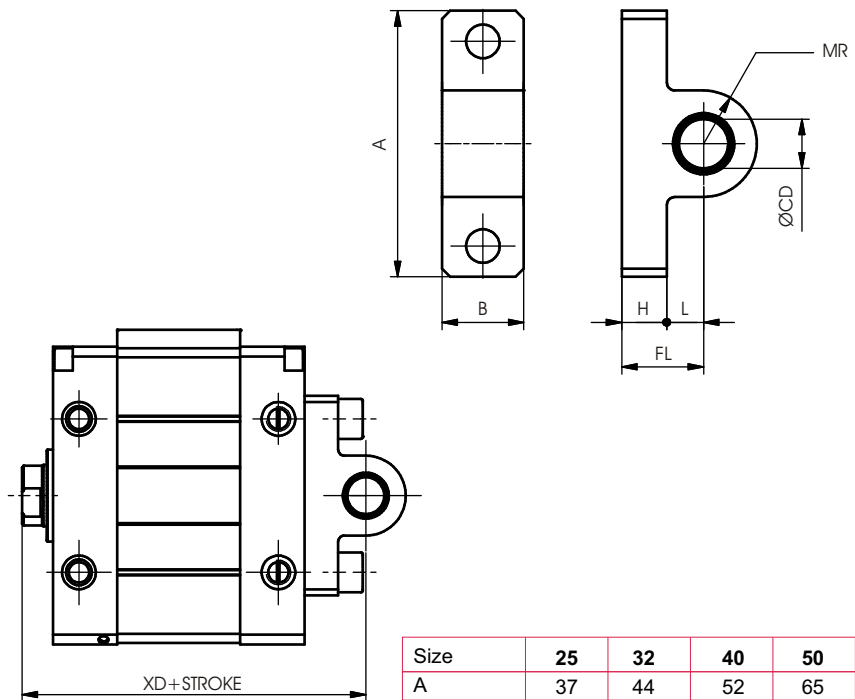
Brackets used to anchor the cylinder parallel to the mounting plane. Manufactured from steel with a rust proof protective treatment. Mounted to the cylinder end caps with bolts.

Size	25	32	40	50	63
AH	28	32	40	50	63
AO	7	5.5	7	8	10
C	20	24	30	38	50
ØDF	5.5	5.5	5.5	6.6	9
FL	16	18	20	24	27
MF	3	3	4	4	4
R	/	13	16	22	30
SA	94	108	116	130	136
XA	86	98	105	116	119

**Rear male clevis**

Ordering code

**1370.size.09/1**



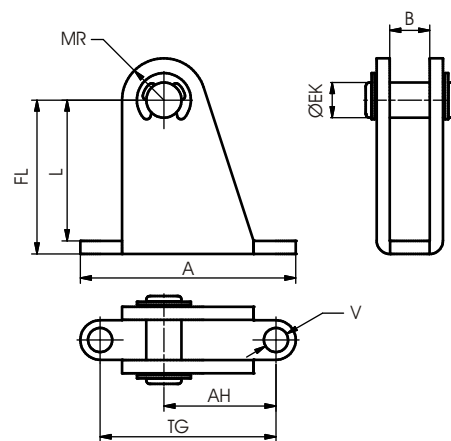
Size	25	32	40	50	63
A	37	44	52	65	78
B	9	10.5	10.5	20	25
ØCD (H7)	8	10	12	12	16
FL	14	15	18	20	24
H	6	9	9	11	11
L	8	6	9	9	13
MR	7.5	10	13	13	17
XD	84	95	103	112	116

This type of mounting allows anchorage of the cylinder either parallel or right angle to plane; the cylinder rod can oscillate and self-align as necessary when under load

**Rear clevis**

Ordering code

**1370.size.09F**



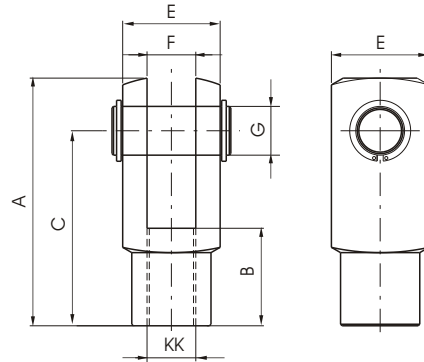
Size	25	32	40	50	63
A	49	60	60	46	60
AH	25.5	33	29.5	24	32
B	9.1	10.6	10.6	20.1	25.1
ØEK	8	10	12	12	16
FL	35	42	51	55	68
L	32	38	47	50	63
MR	9.5	11	14	14	18
TG	40	50	50	30	40
ØV	5.5	6.6	6.6	9	11

To be used in conjunction with 09/1 clevis. Similar to type 08 but includes a hinge pin. This type of mounting allows anchorage of the cylinder either parallel or right angle to plane; the cylinder rod can oscillate and self-align as necessary when under load. Manufactured from sheet metal with rust proof protective treatment

**Rod forks and nuts**

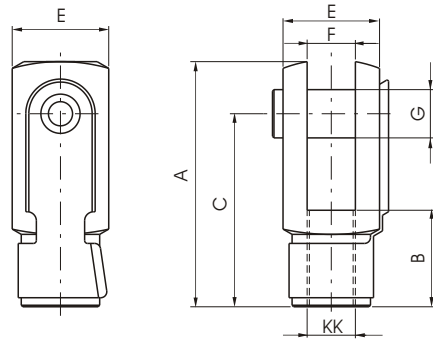
Ordering code

**1320.size.13F**



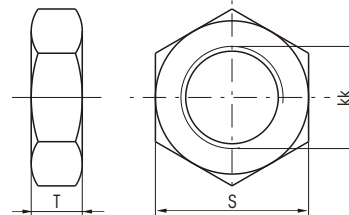
Ordering code

**1320.size.13/F**



Ordering code

**1320.size.18F**



**Fork:**  
Mounting that screws onto the rod and allows regular operation even when there are significant lateral forces at the connection point. Made from zinc plated steel

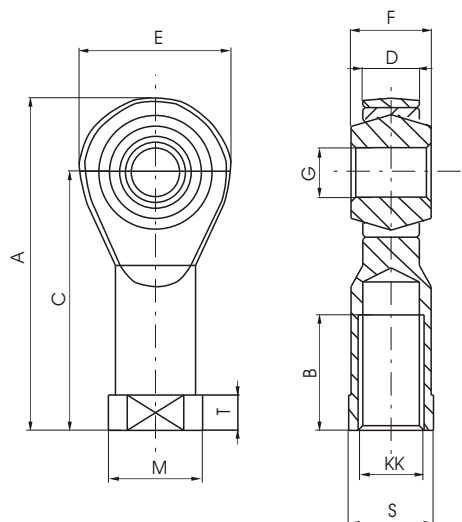
**Nut:**  
Used to lock the fork in position.

Size	25	32	40	50	63
A	52	52	62	83	83
B	20	20	24	32	32
C	40	40	48	64	64
E	20	20	24	32	32
F(B12)	10	10	12	16	16
G	10	10	12	16	16
S	17	17	19	24	24
T	6	6	7	8	8
KK	M10X1,25	M10X1,25	M12X1,25	M16X1,5	M16X1,5

**Ball joint**

Ordering code

**1320.size.32F**

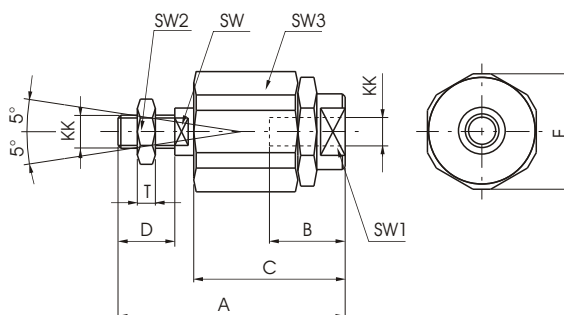


Size	25	32	40	50	63
A	57	57	66	85	85
B	20	20	22	28	28
C	43	43	50	64	64
D (-0,1)	10,5	10,5	12	15	15
E	28	28	32	42	42
F	14	14	16	21	21
G (H 7)	10	10	12	16	16
KK	M10x1,25	M10x1,25	M12x1,25	M16x1,5	M16x1,5
M	19	19	22	27	27
S	17	17	19	22	22
T	6,5	6,5	6,5	8	8

**Self-aligned joint**

Ordering code

**1320.size.33F**

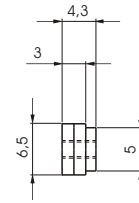
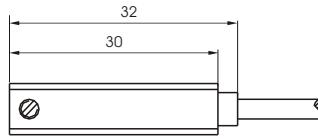


Size	25	32	40	50	63
A	71	71	75	103	103
B	20	20	20	32	32
C	46	46	46	63	63
D	20	20	24	32	32
E	32	32	32	45	45
KK	M10x1,25	M10x1,25	M12x1,25	M16x1,5	M16x1,5
SW	12	12	12	20	20
SW1	19	19	19	27	27
SW2	17	17	19	24	24
SW3	30	30	30	41	41
T	6	6	7	8	8

**Sensor c/w 2,5 m. cable**



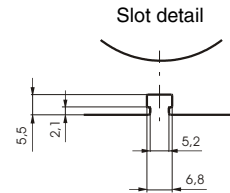
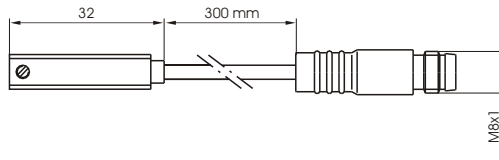
Weight gr. 27



**Sensor c/w M8 connector (300 mm cable)**



Weight gr. 15

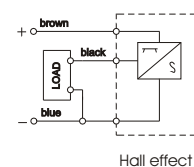
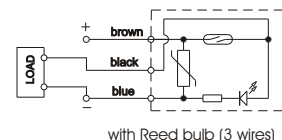
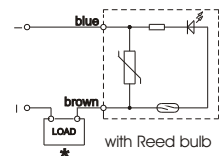


**Ordering code**

Sensors	Code	Description
	<b>1580.U</b>	Reed bulb sensor with led and 2.5 m cable
	<b>1580.UAP</b>	Reed bulb sensor with led and 2.5 m cable (3 wires)
	<b>1580.HAP</b>	PNP sensor Hall effect with led and 2.5 m cable
	<b>MRS.U</b>	Reed bulb sensor with led and connector
	<b>MRS.UAP</b>	Reed bulb sensor with led and connector (3 wires)
	<b>MHS.P</b>	PNP sensor Hall effect with led and connector

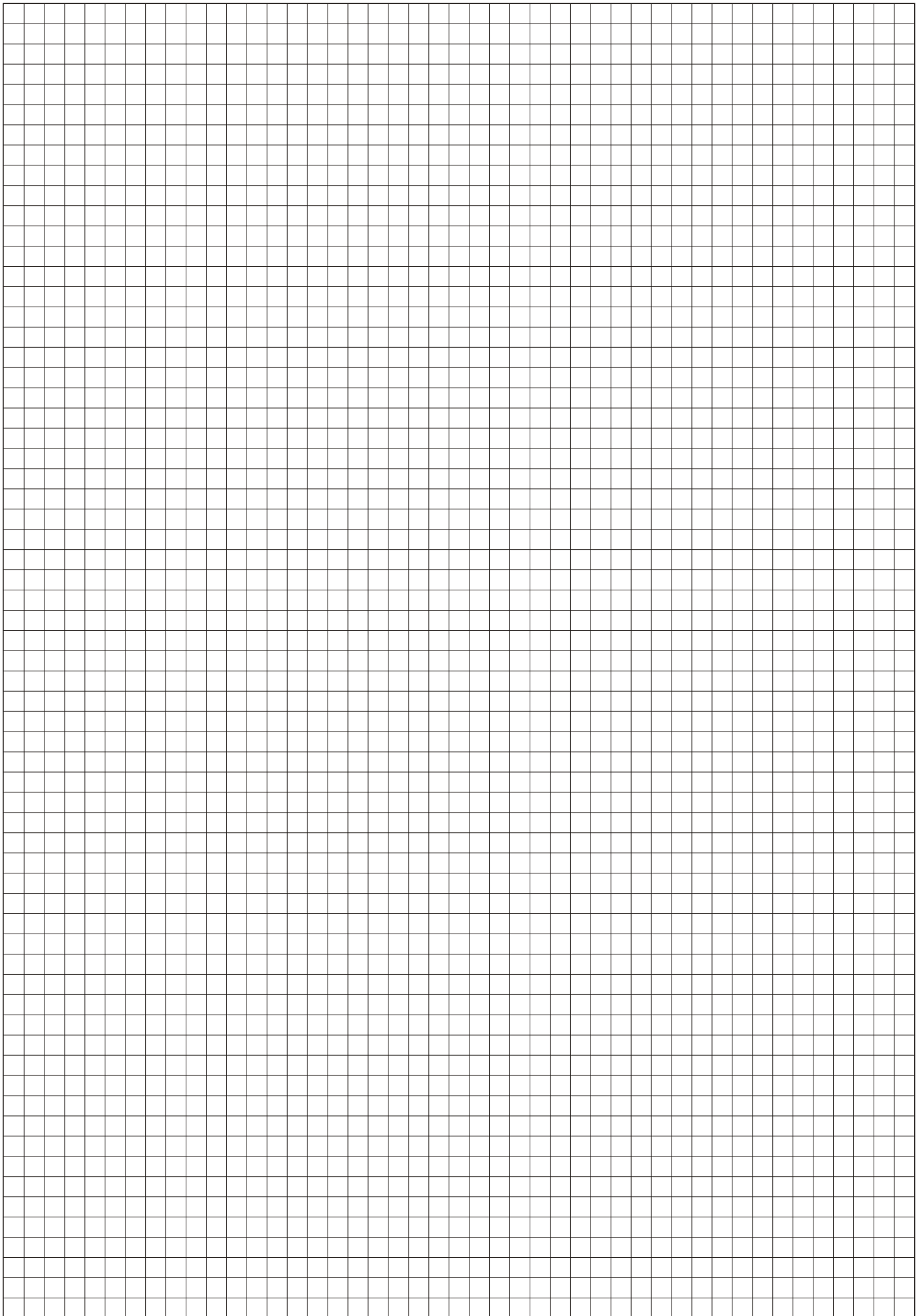
Cable	Code	Description
	<b>MC1</b>	M8 in line connector with 2.5 m cable (2 wires)
	<b>MC2</b>	M8 in line connector with 5 m cable (2 wires)
	<b>MCH1</b>	M8 in line connector with 2.5 m cable (3 wires)
	<b>MCH2</b>	M8 in line connector with 5 m cable (3 wires)

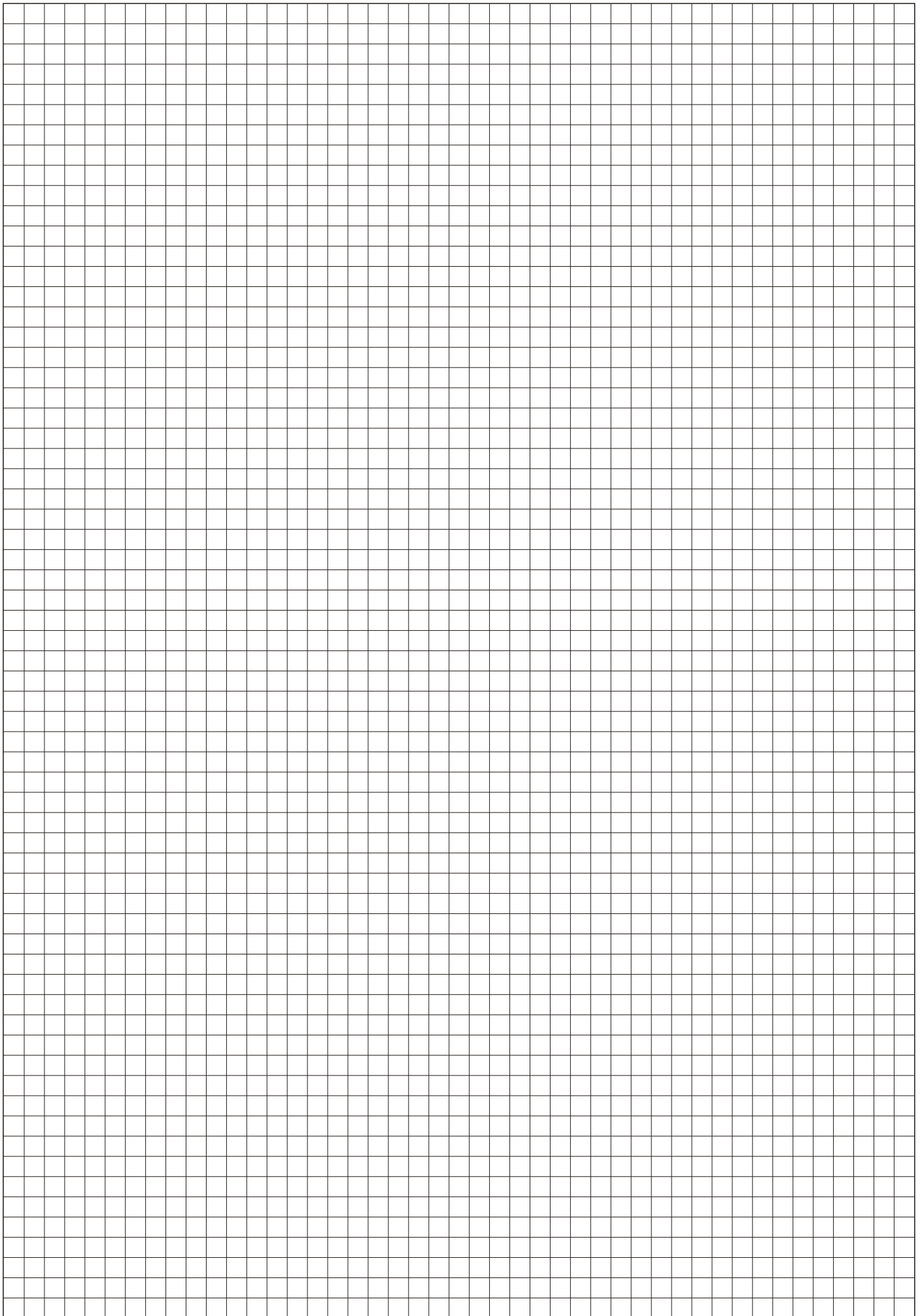
**Diagrams and connections**



Technical characteristics	1580.U	1580.UAP	MRS.U	MRS.UAP	1580.HAP	MHS.P
Type of contact	N.A.					
Maximum current (pulses of 0,5 sec.)	0,2A					0,2A
Maximum permanent current	0,2A					0,2A
Maximum permanent power	6VA					4W
Voltage range A. C.	3 ÷ 30V	24V	3 ÷ 30V		/	
Voltage range D. C.	3 ÷ 30V	24V	3 ÷ 30V		12÷30V	
Working temperature	-20° C ÷ 70°C					
Maximum voltage drop	<3V	0V	<3V	0V	<3V	
Cable section	2x0,14	3x0,14	2x0,14		3x0,14	
Degree of protection	IP 65					
Connecting time	0,5 ms					0,8 µs
Disconnecting time	0,1 ms					0,3 µs
Average working period	10 <sup>7</sup>					10 <sup>9</sup>
Repetition of intervention point	± 0,1					

**NOTE : pay attention to the connected loads which should not exceed the recommendation**  
 \* Connection can be done either to negative or positive pole.







D. NW. 54/GB - 06/2009  
PRINTED IN ITALY - 06/2009

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