

# INTEGRATED HYDRAULIC BRAKE

The integrated hydraulic brake is comprised of a pneumatic cylinder that acts as an actuator and an electronic circuit that acts as a brake.

The dimensions of the pneumatic cylinder (bore 63) comply with ISO 6431.

The hydraulic circuit is comprised of a brake fluid tank and one or two flow regulation pins. It can mount one or more (slow-fast) SKIP or STOP valves that are normally open (NO) or normally closed (NC), for the piston rod extension and retraction.

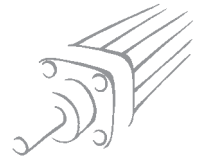
The basic feature of this device is that the driving force and the braking force are coaxial, so they do not generate undesired bending moments on the piston rod and the external structures connected to it. Due to its conception, this brake is particularly compact and has reduced dimensions compared to BRK external hydraulic brakes. After a certain operating time, the brake fluid tank must be topped up with oil. This needs doing when the oil level reaches the minimum mark on the rod. With the piston rod right out, the minimum level mark must not project less than 8-10 mm from the cap.

Always use Comlube DEXRON ATF hydraulic oil or another compatible product. During the first operating cycles, excess oil is expelled through a hole in the tank.



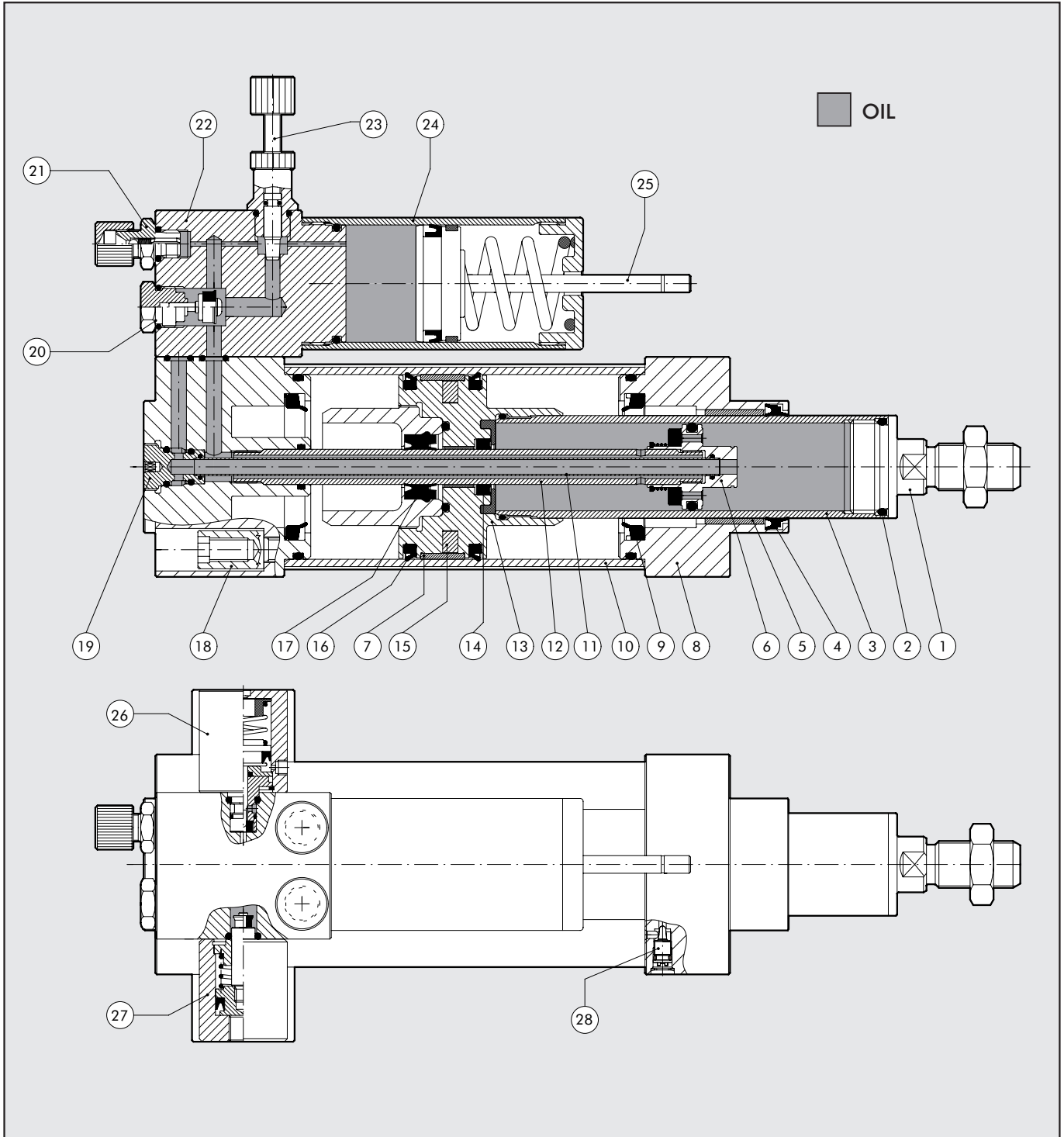
## TECHNICAL DATA

Gaskets		NBR-POLYURETHANE	
Operating pressure	bar	1 ÷ 8	
	MPa	0.1 ÷ 0.8	
	psi	14.5 ÷ 116	
NC valve actuation pressure	bar	3 ÷ 8	
	MPa	0.3 ÷ 0.8	
	psi	43.5 ÷ 116	
Operating temperature range	°C	-10 ÷ +70	
	°F	14 ÷ 156	
Pneumatic circuit fluid		Lubricated or unlubricated filtered air	
Hydraulic circuit fluid		DEXRON ATF (Comlube) – the list of compatible oils is available on the web site <a href="http://www.metalwork.it">www.metalwork.it</a>	
Pneumatic circuit bore	mm	63	
Thrust force generated at 6 bar	N	1.725	
Pull force generated at 6 bar	N	1.150	
Speeds at 6 bar and 20°C:	with regulation pin	mm/min	30 ÷ 7.000
	with pin and one NO STOP valve	mm/min	30 ÷ 6.000
	with pin and one NC STOP valve	mm/min	30 ÷ 4.500
	with pin and one NO SKIP valve	mm/min	30 ÷ 6.000
	with pin and one NC SKIP valve	mm/min	30 ÷ 5.000
	with pin and two NO STOP+SKIP valves	mm/min	30 ÷ 5.000
	with pin and two NC STOP+SKIP valves	mm/min	30 ÷ 4.000
	Fast retraction	mm/min	30.000
Standard strokes	mm	(Speeds measured on the brake with 500 mm stroke and using 10 mm ø pipes)	
		50, 100, 150, 200, 250, 300, 350, 400, 450, 500 Other special strokes up to 500 available on request.	
Valve Combinations		Piston-out, piston-in and dual regulation	
		The following combinations of valves can be mounted on each regulated section: NO STOP, NC STOP, NO SKIP, NC SKIP, DUAL NO STOP, DUAL NC STOP, DUAL NO SKIP, DUAL NC SKIP, NO STOP+NC STOP, NO SKIP+NC SKIP, NO STOP+NO SKIP, NC STOP+NC SKIP, NO STOP+NC SKIP, NC STOP+NO SKIP All versions are provided with a magnet	
Sensor magnet			



## COMPONENTS

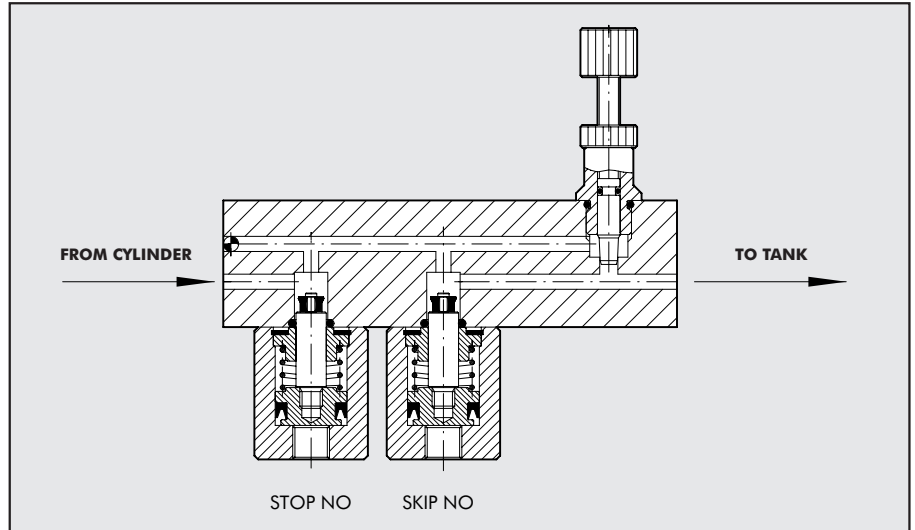
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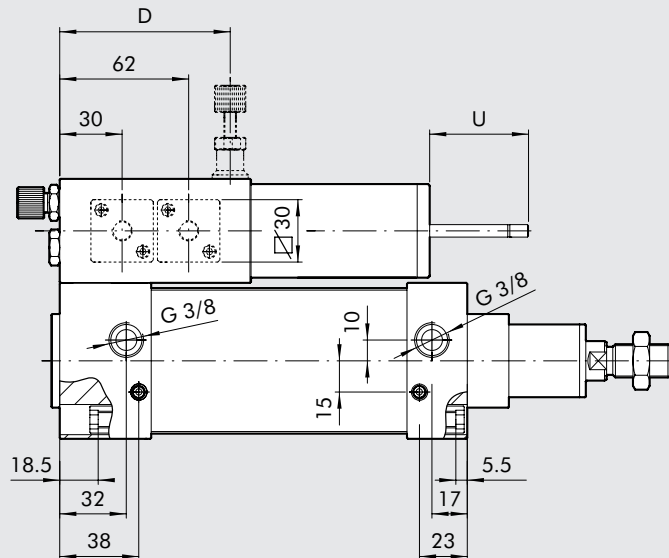
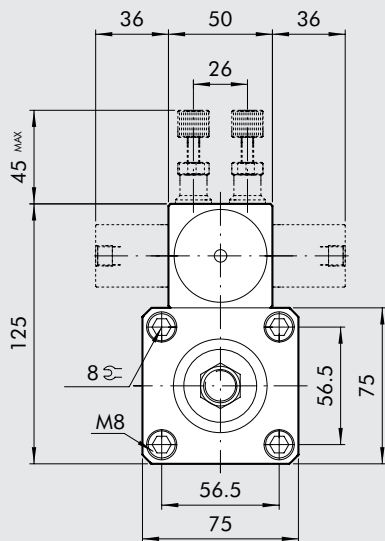
- |  |   |                                       |
|--|---|---------------------------------------|
| ① GUIDE HOLD: galvanised steel                           | ⑩ JACKET: anodised and calibrated aluminium section | ⑲ BUSH: nickel-plated brass           |
| ② O-RING: NBR  | ⑪ INTERNAL PIPE: brass                              | ⑳ CHECK VALVE                         |
| ③ PISTON ROD: thickly chromed steel                      | ⑫ INTERMEDIATE PIPE: steel                          | ㉑ OIL FILLING VALVE                   |
| ④ PISTON ROD GASKET: polyurethane                        | ⑬ PISTON: aluminium                                 | ㉒ REGULATION UNIT: anodised aluminium |
| ⑤ GUIDE BUSHING: steel strip with bronze and PTFE insert | ⑭ PISTON ROD GASKET: polyurethane                   | ㉓ REGULATION PIN                      |
| ⑥ INSIDE PISTON: brass                                   | ⑮ MAGNET: plastoferrite                             | ㉔ OIL RECOVERY TANK                   |
| ⑦ GUIDE RING: PTFE                                       | ⑯ PISTON GASKET: NBR                                | ㉕ OIL LEVEL ROD: galvanised steel     |
| ⑧ HEAD: anodized aluminium                               | ⑰ PISTON ROD GASKET: polyurethane                   | ㉖ NC VALVE                            |
| ⑨ CUSHIONING GASKET: NBR                                 | ⑱ SECURING/ASSEMBLY SCREW: self-tapping             | ㉗ NO VALVE                            |
|  |   | ㉘ CUSHIONING PIN                      |

### SKIP AND STOP VALVES

When the NO STOP valve is actuated, it halts cylinder movement. The NC STOP valve locks the cylinder when not actuated. The NO SKIP valve, when actuated, allows regulation of the cylinder speed via the pin provided. The NC SKIP valve allows regulation of the cylinder speed when not actuated.

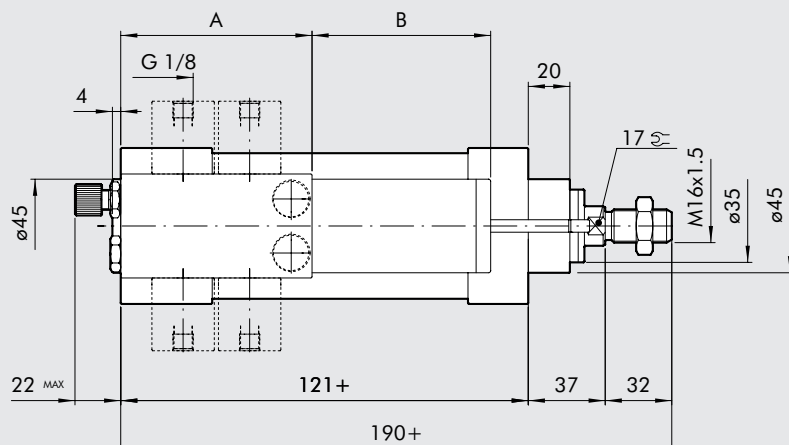


### OVERALL DIMENSIONS OF THE VARIOUS VERSIONS



Stroke	B	U max
50	96	25
100	96	29
150	121	34
200	121	38
250	161	43
300	161	47
350	161	52
400	206	56
450	206	61
500	291	65

Type	A	D
Regulation only	50	40
1 valve per side	50	40
2 valves per side	82	72





**KEY TO CODES**

W 1 7 3	2	3	1	0	0 5 0 0
INTEGRATED BRAKE	REGULATION	PISTON ROD EXTENSION CONTROL VALVES	PISTON ROD RETRACTION CONTROL VALVES	BORE	STROKE
W173 Integrated brake	0 Out 1 In 2 Dual	0 Without valves 1 NO Stop 2 NC Stop 3 NO Skip 4 NC Skip 5 NO Stop NO Skip 6 NO Stop NC Skip 7 NC Stop NO Skip 8 NC Stop NC Skip	0 Without valves 1 NO Stop 2 NC Stop 3 NO Skip 4 NC Skip 5 NO Stop NO Skip 6 NO Stop NC Skip 7 NC Stop NO Skip 8 NC Stop NC Skip	0 D63	Specify the desired stroke in 4 digits (e.g. 0500 for stroke 500)

N.B. With at least one extension control valve and one retraction control valve, type W1732\_\_ is required.

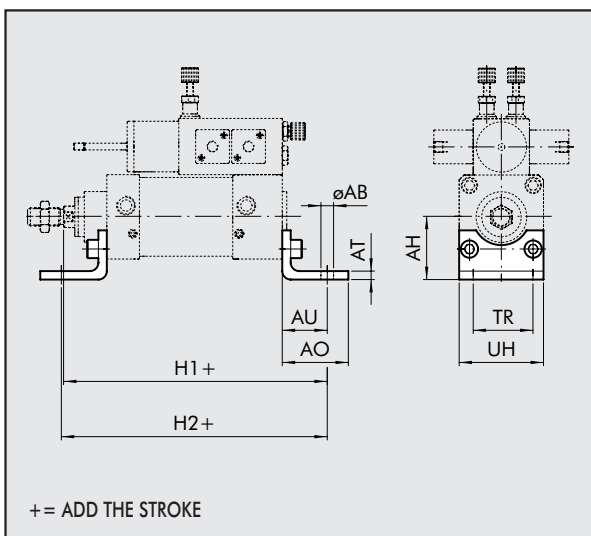
**ACCESSORIES**

**FOOT - MODEL A**

Code      Ø    Ø AB    AH    AO    AT    AU    TR    UH    H<sub>1</sub>    H<sub>2</sub>    Weight [g]

W0950632001    63    9      50    47    6    32    50    75    190    185    266

Note: Individually packed with 2 screws.  
N.B.: M8x40 UNI 5931M screws are required for fixing the rear head (see kit 0950636092)

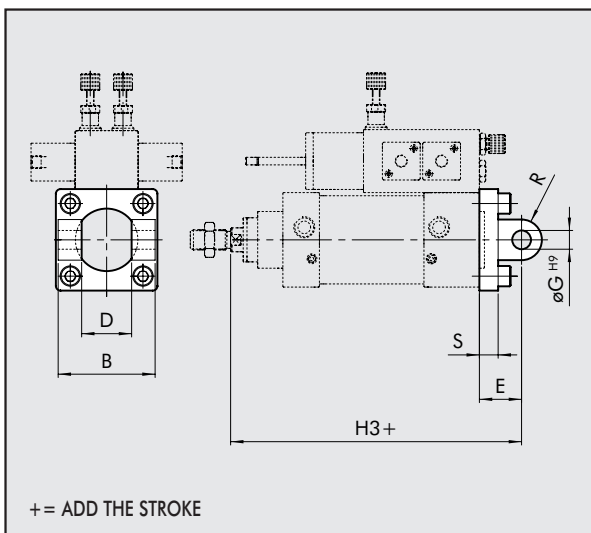


**FEMALE HINGE - MODEL B**

Code      Ø    B    D    E    Ø G    H<sub>3</sub>    R    S    Weight [g]

W0950632003    63    70    40    32    16    190    17    12    394

Note: Supplied with 4 screws, 4 washers, 2 snap rings and 1 pin.  
N.B.: M8x40 UNI 5931M screws are required for fixing the rear head (see kit 0950636092)

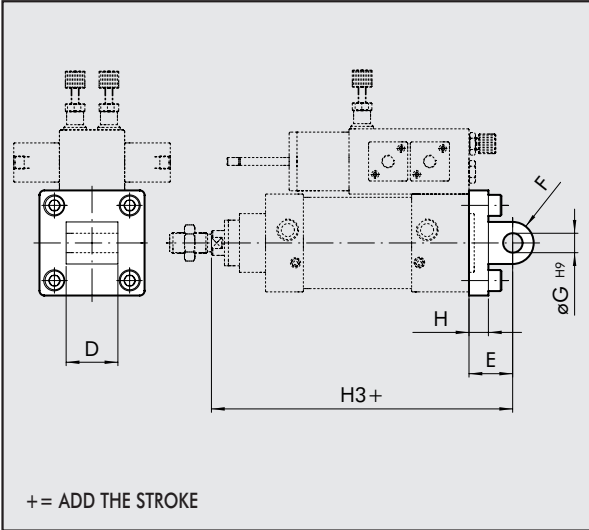


**MALE HINGE - MODEL BA**

Code      Ø    D    E    F    Ø G    H    H<sub>3</sub>    Weight [g]

W0950632004    63    40    32    17    16    12    190    316

Note: Supplied with 4 screws, 4 washers.  
N.B.: M8x40 UNI 5931M screws are required for fixing the rear head (see kit 0950636092)

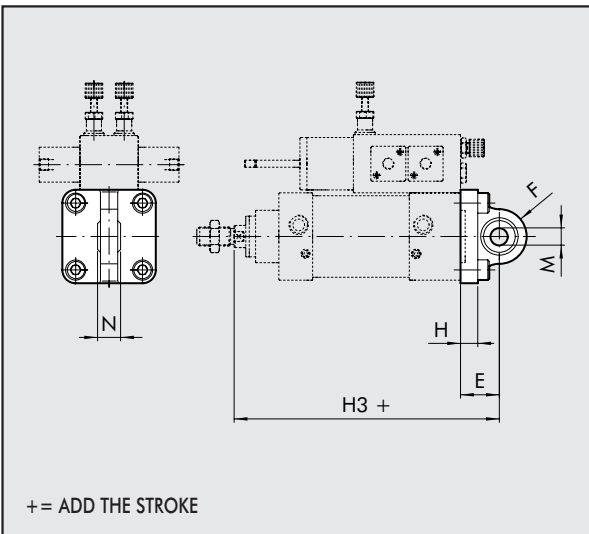


**ARTICULATED MALE HINGE - MODEL BAS**

Code      Ø cil.    E    F    H    H<sub>3</sub>    M    N    Weight [g]

W0950632006    63    32    24    12    190    16    21    336

Note: Supplied with 4 screws, 4 washers.  
N.B.: M8x40 UNI 5931M screws are required for fixing the rear head (see kit 0950636092)

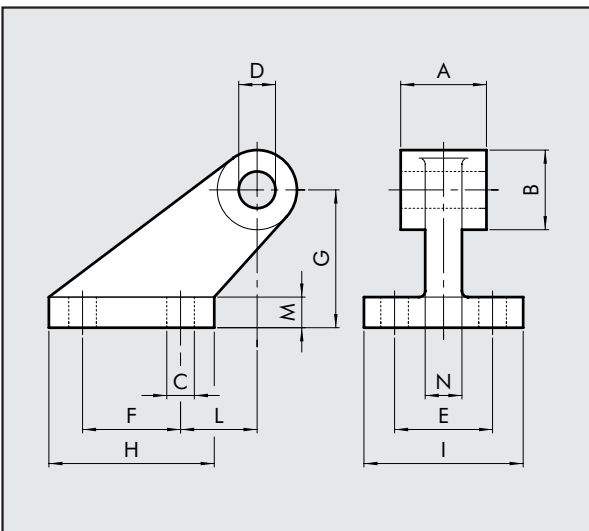


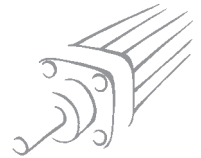
**CETOP HINGE FOR MODEL B - MODEL GL**

Code      Ø    A    B    C    D    E    F    G    H    I    L    M    N    Weight [g]

W0950632008    63    40    33    11    16    40    50    63    75    63    32    12    15    440

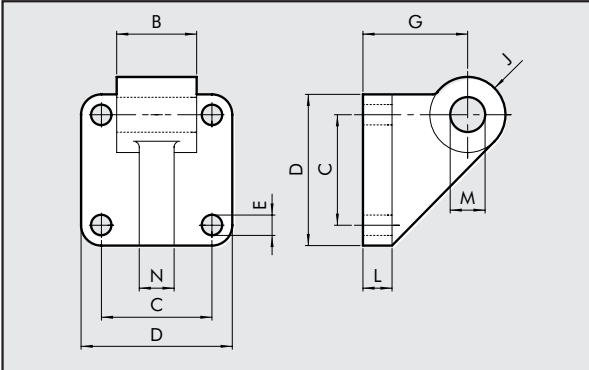
Note: Supplied with 4 screws, 4 washers.  
N.B.: M8x40 UNI 5931M screws are required for fixing the rear head (see kit 0950636092)





**ISO HINGE FOR MODEL B - MODEL GS**

Code	Ø	B	C	D	E	G	J	L	M	N	Weight [g]
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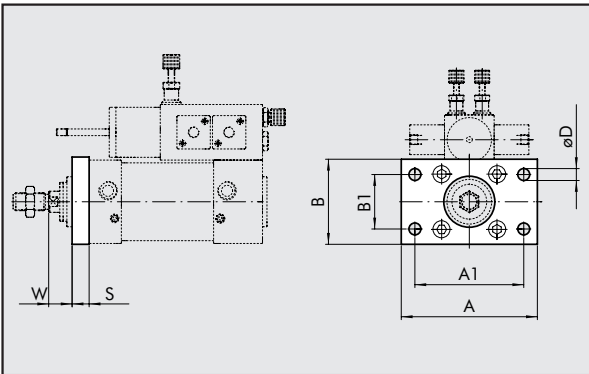


W0950632108	63	39.5	56.5	75	9	50	17	16	16	15	350
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Note: Supplied with 4 screws, 4 washers.  
 N.B.: M8x40 UNI 5931M screws are required for fixing the rear head (see kit 0950636092)

**FRONT FLANGE - MODEL C**

Code	Ø	A <sub>1</sub>	A	B	S	B <sub>1</sub>	ØD <sub>4</sub>	W	Weight [g]
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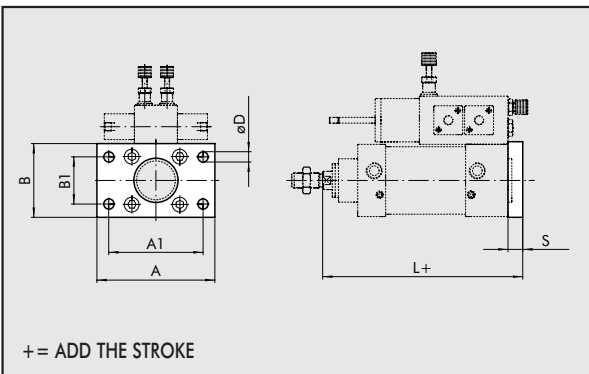


W0950632002	63	100	120	75	12	50	9	25	670
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Note: Supplied with 4 screws.

**REAR FLANGE - MODEL C**

Code	Ø	A <sub>1</sub>	A	B	S	B <sub>1</sub>	ØD <sub>4</sub>	L+corsa	Weight [g]
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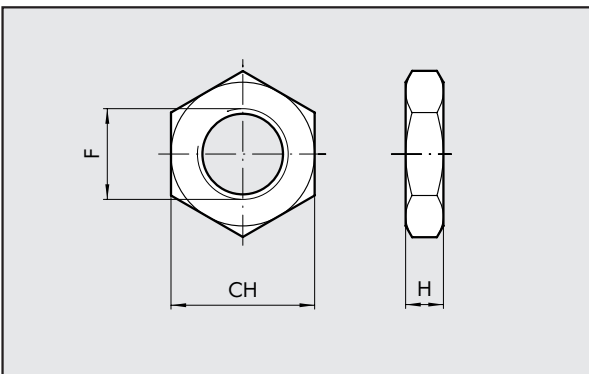
+ = ADD THE STROKE

W0950632002	63	100	120	75	12	50	9	170	670
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Note: Supplied with 4 screws.  
 N.B.: M8x40 UNI 5931M screws are required for fixing the rear head (see kit 0950636092)

**ROD NUT - MODEL S**

Code	Ø	F	H	CH	Weight [g]
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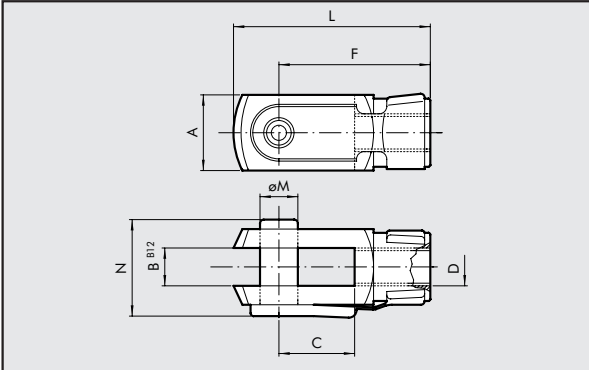


0950502010	50/63	M16x1.5	8	24	20
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Note: Individually packed.

### FORK MODEL GK-M

Code	Ø	ØM	C	B	A	L	F	D	N	Weight [g]
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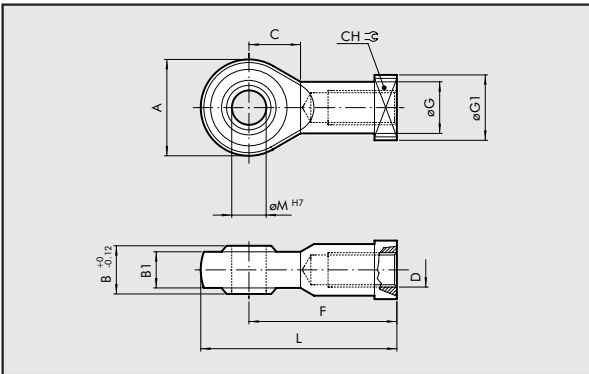


W0950502020	63	16	32	16	32	83	64	M16x1.5	40	340
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Note: Individually packed.

### ROD EYE - MODEL GA-M

Code	Ø	ØM	C	B1	B	A	L	F	D	ØG	CH	ØG1	Weight [g]
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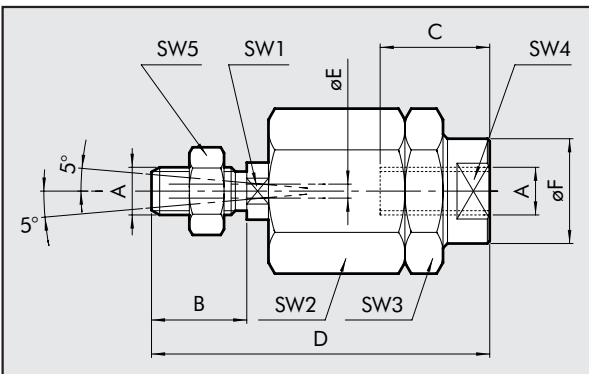


W0950502025	63	16	22	15	21	42	85	64	M16x1.5	22	22	22	226
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Note: Individually packed.

### SELF ALIGNING ROD COUPLER - MODEL GA-K

Code	Ø	A	B	C	D	ØF	ØE	SW <sub>1</sub>	SW <sub>2</sub>	SW <sub>3</sub>	SW <sub>4</sub>	SW <sub>5</sub>	Weight [g]
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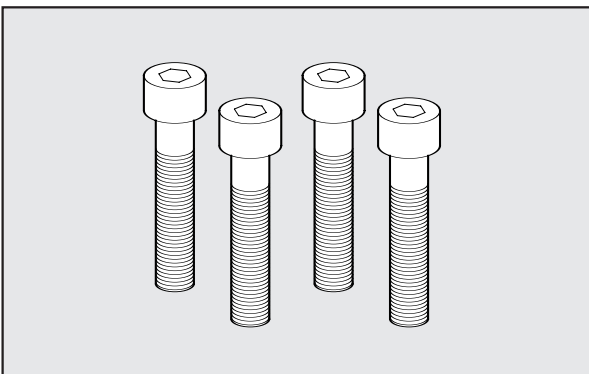


W0950502030	63	M16x1.5	32	32	103	32	4	20	41	41	30	24	620
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Note: Individually packed.

### KIT OF REAR HEAD SCREWS

Code	Description
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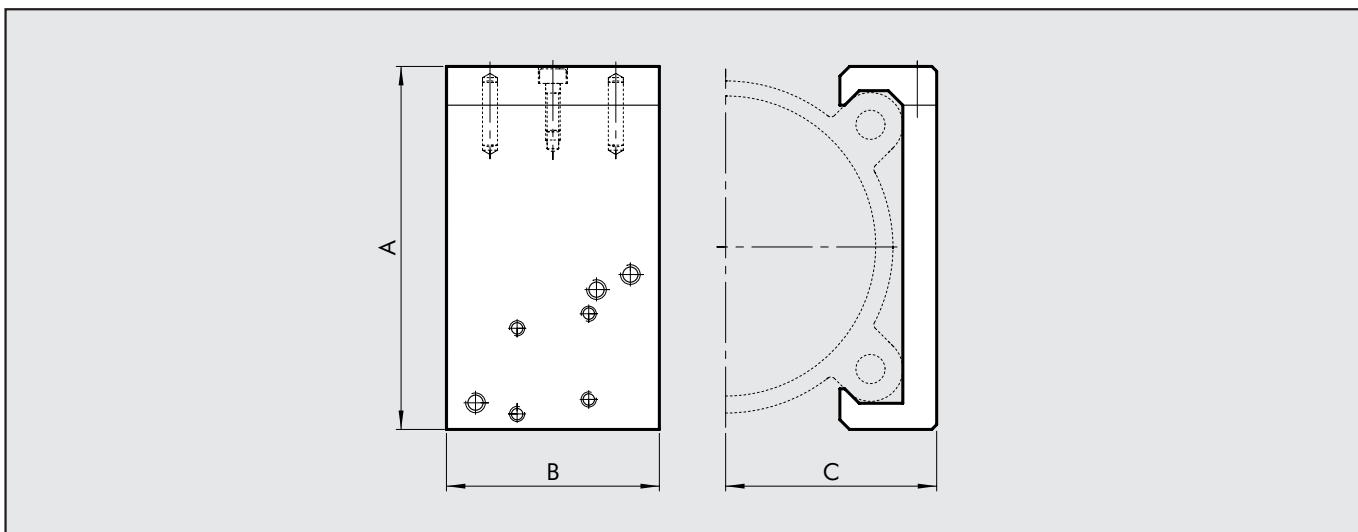
W0950502030	Kit of M8x40 UNI 5931 rear head fixing screws
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Note: 4 items per pack.



## CYLINDER BRACKET - VALVE SERIES KCV

1



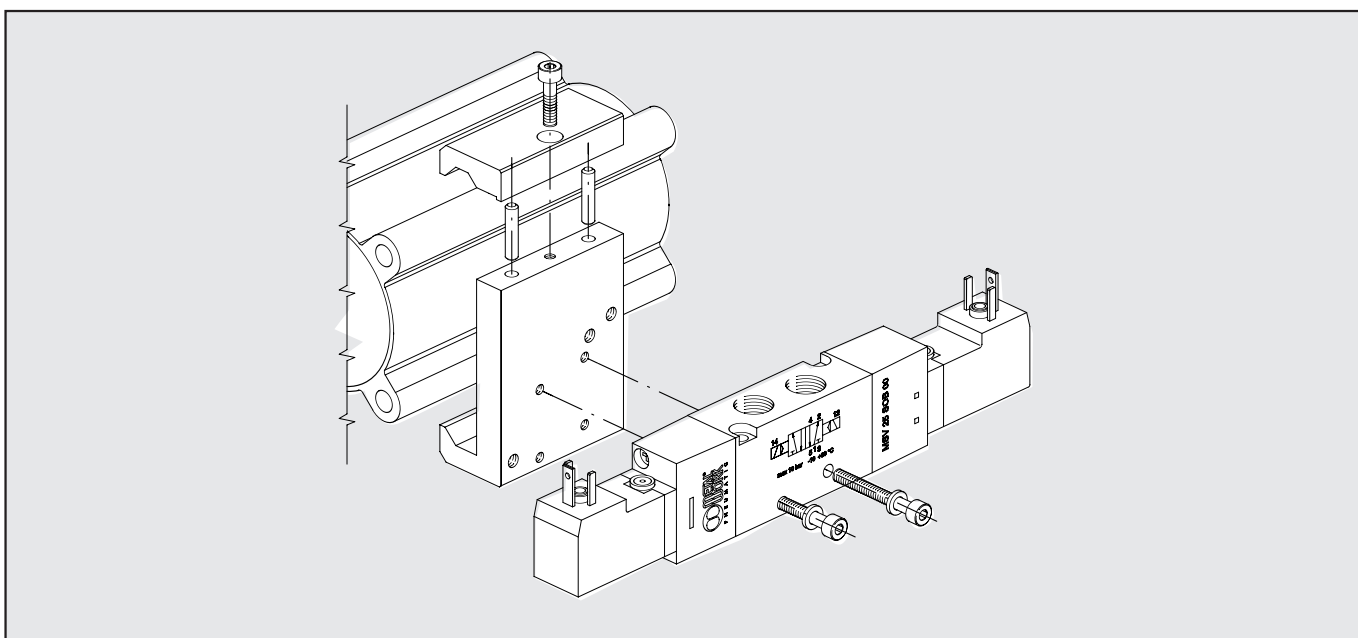
## VALVE FIXING BRACKET - CYLINDER

Code	Ø	A	B	C	ISO 1		ISO 2		Applicable valves	Weight [g]
					D	E	D	E		
0950632090	Ø 63	81.5	40	42	110	77	1124	83	MACH 16 Series 70 1/8-1/4 ISO 1 - ISO 2	101

## KIT FOR FIXING VALVES TO BRACKETS

Code	Valve KIT	Composition	Weight [g]
0950002003	MACH 16	2 HEX. SCREWS M3x25 with WASHER	4
0950002004	Series 70 1/8-1/4	2 HEX. SCREWS M4x50 with WASHER	8
0950002001	ISO 1	ADAPTOR + ISO 1 BASE SIDE + SCREWS + WASHERS	230
0950002002	ISO 2	ADAPTOR + ISO 2 BASE SIDE + SCREWS + WASHERS	350

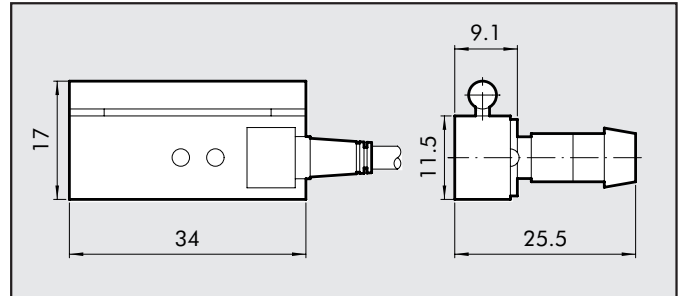
## VALVE ASSEMBLY ON CYLINDER



## ACCESSORIES: MAGNETIC SENSORS

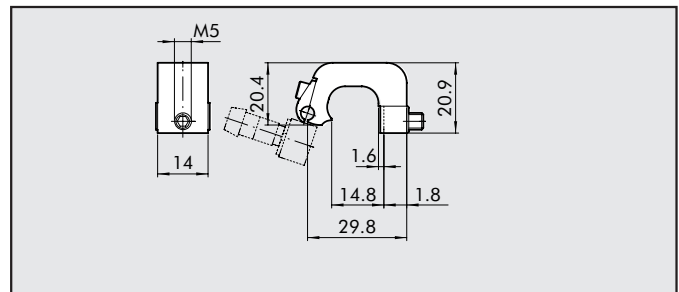
### SENSOR

Code	Description
W0950000201	SENSOR REED DSM2-C525
W0950000222	SENSOR HALL PNP DSM3-N225
W0950000232	SENSOR HALL NPN DSM3-M225

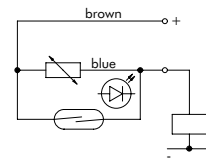
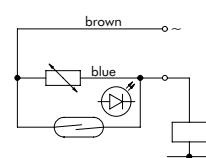
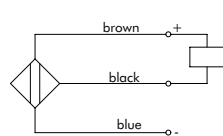
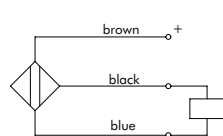


### SENSOR BRACKETS

Code	Description
W0950000712	BRACKET ACC. D.50 DST 81



### TECHNICAL DATA

Type		REED + VARISTORE + LED 2 wires	HALL VERSION PNP/NPN 3 wires
Contact		REED + VARISTOR + LED NO	HALL EFFECT NO PNP/NPN
Max AC/DC voltage	V	3÷48 V(DC); 3÷220 (AC)	6-24 V DC
Max current at 25°C	mA	500	250
Power with inductive load	VA	10	-
Power with resistive load	Watt	50	6
Switch-on time	m sec	1.2	0.8
Switch-off time	m sec	0.1	3
Switch-on point	Gauss	110	15
Switch-off point	Gauss	95	8
Operating life	-	10 <sup>7</sup> impulses	10 <sup>9</sup> impulses
Contact resistance		0.1	-
Cable length	m	2.5	2.5
Cable cross section	mm <sup>2</sup>	0.35	0.35
Cable material		Soft PVC	Soft PVC
Circuit		<p><b>DC</b></p>  <p><b>AC</b></p> 	<p><b>Version NPN</b></p>  <p><b>Version PNP</b></p> 

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The dimensions shown in this catalogue are subject to variations at any time without prior notice