

INTEGRATED HYDRAULIC BRAKE

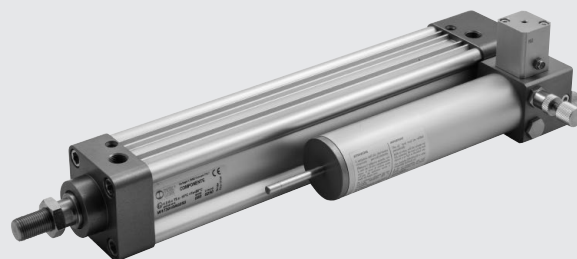
The integrated hydraulic brake is comprised of a pneumatic cylinder that acts as an actuator and an oleo-dynamic circuit that acts as a brake. The dimensions of the pneumatic cylinder comply with ISO 15552. The hydraulic circuit is comprised of a brake fluid tank and one or two flow regulation pins. 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.

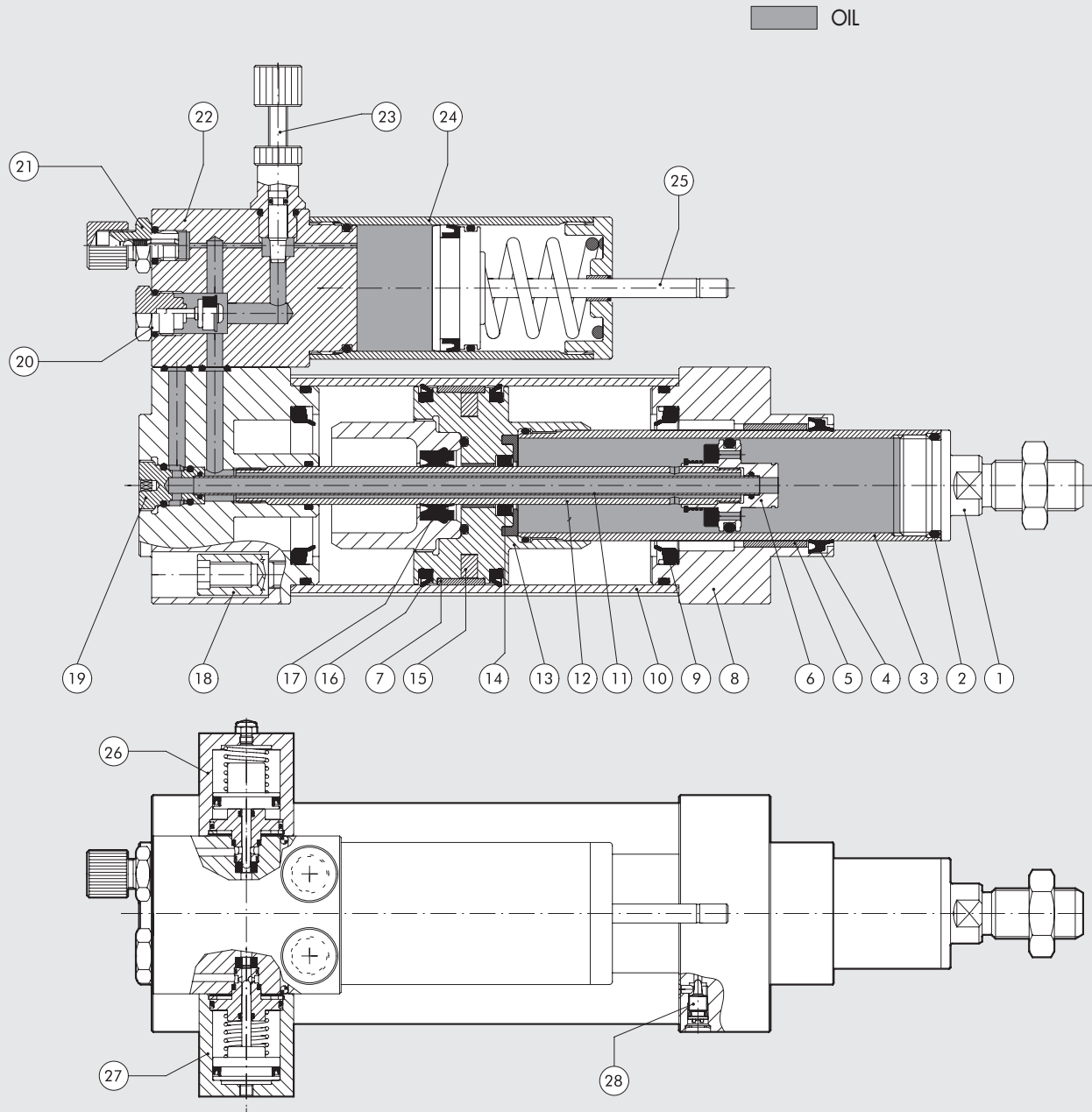
Always use DEXRON ATF hydraulic oil or another compatible product.

During the first operating cycles, excess oil is expelled through a hole in the tank.



TECHNICAL DATA		Ø50	Ø63	Ø80	Ø100
Operating pressure	bar	2 to 8			
	MPa	0.2 to 0.8			
	psi	29 to 116			
NC valve actuation pressure	bar	3 to 8			
	MPa	0.3 to 0.8			
	psi	43.5 to 116			
Operating temperature range	°C	-10 to +70			
	°F	14 to 156			
Pneumatic circuit fluid		Lubricated or unlubricated filtered air.			
Hydraulic circuit fluid		DEXRON ATF - the list of compatible oils is available on the web site www.metalwork.it			
Thrust force generated at 6 bar	N	1109	1801	2946	4521
Pull force generated at 6 bar	N	883	1292	2437	3756
Maximum load which can be applied from outside while the rod is lock	N				
• Version without valves and with closed pins:					
Thrust Load on the rod		6000		7000	
Traction Load on the rod		5000		6000	
• Version with STOP NC valves not operated:					
Thrust Load on the rod		6000		7000	
Traction Load on the rod		5000		6000	
• Version with STOP NO valves operated at 6 bar:					
Thrust Load on the rod		6000		7000	
Traction Load on the rod		5000		6000	
• Version with STOP NO valves operated at 8 bar:					
Thrust Load on the rod		6000		7000	
Traction Load on the rod		5000		6000	
Speeds at 6 bar and 20°C		See charts on the following pages			
Standard strokes		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:			
		STOP NO, STOP NC, SKIP NO, SKIP NC, DOUBLE STOP NO, DOUBLE STOP NC,			
		DOUBLE SKIP NO, DOUBLE SKIP NC, STOP NO+STOP NC, SKIP NO+SKIP NC,			
		STOP NO+SKIP NO, STOP NC+SKIP NC, STOP NO+SKIP NC, STOP NC+SKIP NO			
Sensor magnet		All versions are provided with a magnet			

COMPONENTS



- ① GUIDE HOLD: AISI 303 stainless steel
- ② O-RING: NBR
- ③ PISTON ROD: thickly chromed steel
- ④ PISTON ROD GASKET: polyurethane
- ⑤ GUIDE BUSHING: steel strip with bronze and PTFE insert
- ⑥ INSIDE PISTON: brass
- ⑦ GUIDE RING: PTFE
- ⑧ HEAD: anodized aluminium
- ⑨ CUSHIONING GASKET: NBR

- ⑩ JACKET: anodized and calibrated aluminium section
- ⑪ INTERNAL PIPE: brass
- ⑫ INTERMEDIATE PIPE: steel
- ⑬ PISTON: aluminium
- ⑭ PISTON ROD GASKET: polyurethane
- ⑮ MAGNET: plastoferrite
- ⑯ PISTON GASKET: NBR
- ⑰ PISTON ROD GASKET: polyurethane
- ⑱ SECURING/ASSEMBLY SCREW: self-tapping

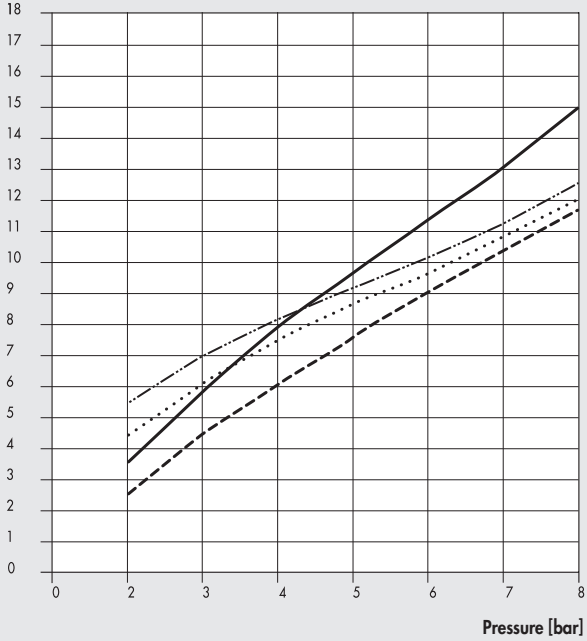
- ⑲ BUSH: nickel-plated brass
- ⑳ CHECK VALVE
- ㉑ OIL FILLING VALVE
- ㉒ REGULATION UNIT: anodized aluminium
- ㉓ REGULATION PIN
- ㉔ OIL RECOVERY TANK
- ㉕ OIL LEVEL ROD: galvanised steel
- ㉖ NC VALVE
- ㉗ NO VALVE
- ㉘ CUSHIONING PIN

SPEED

Maximum speed reached. The diagrams show the indicative speed, which depends on the bore and feed pressure. Average values for temperature of 20°C. The maximum speed increases with oil temperature, and vice versa.

INTEGRATED HYDRAULIC BRAKE WITH REGULATION IN EXTENSION, IN RETRACTION OR DUAL

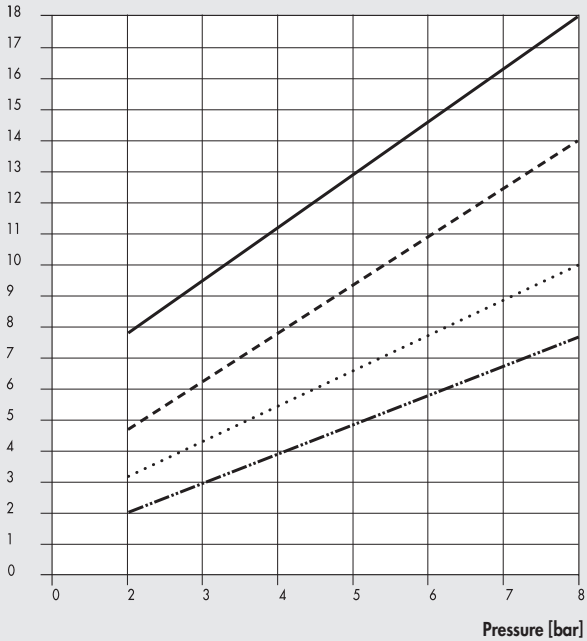
Speed [m/min]



— Ø50 ······ Ø80
 - - - Ø63 - · - · - Ø100

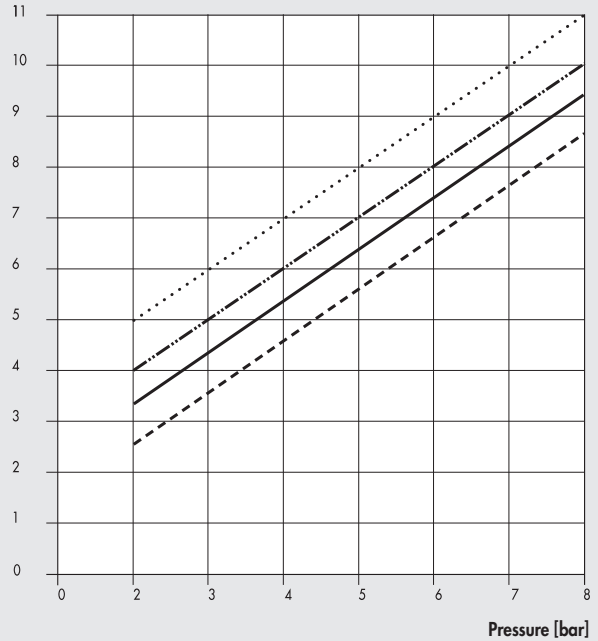
INTEGRATED HYDRAULIC BRAKE WITH VALVES STOP

Speed [m/min]



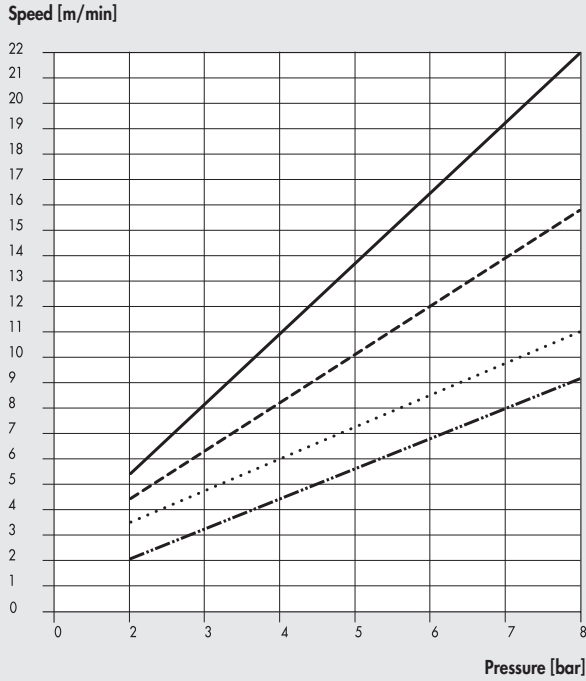
— Ø50 in extension ······ Ø63 in extension
 - - - Ø50 in retraction - · - · - Ø63 in retraction

Speed [m/min]

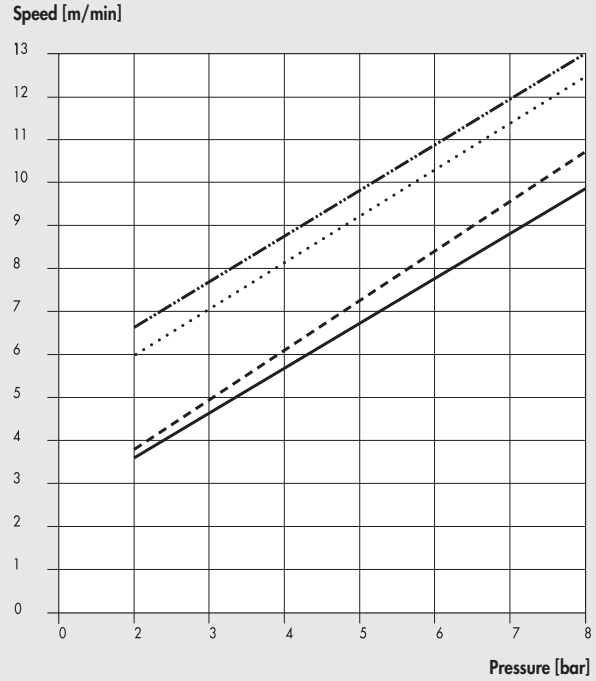


— Ø80 in extension ······ Ø100 in extension
 - - - Ø80 in retraction - · - · - Ø100 in retraction

INTEGRATED HYDRAULIC BRAKE WITH VALVES SKIP AND WITH VALVES SKIP AND STOP



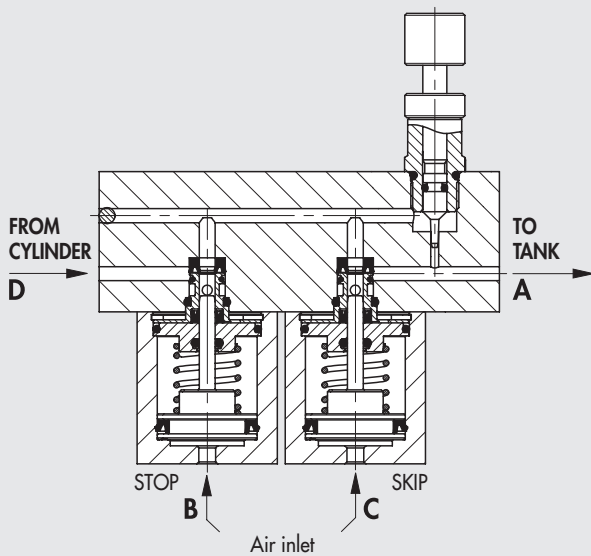
_____ Ø50 in extension Ø63 in extension
 - - - - - Ø50 in retraction - · - · - · - Ø63 in retraction



_____ Ø80 in extension Ø100 in extension
 - - - - - Ø80 in retraction - · - · - · - Ø100 in retraction

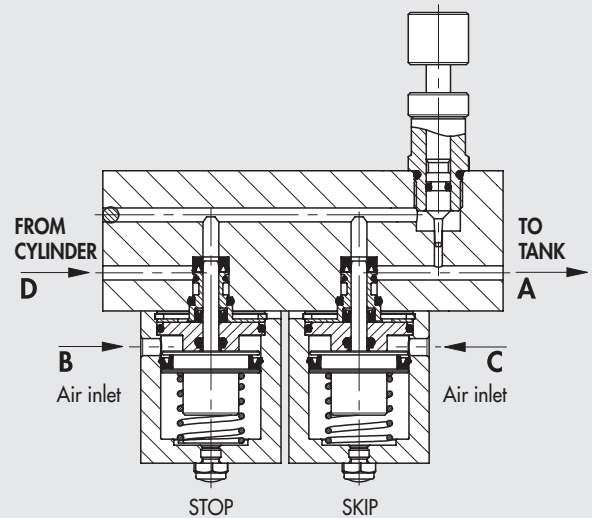
SKIP-STOP APPLICATION WITH VALVES

NO



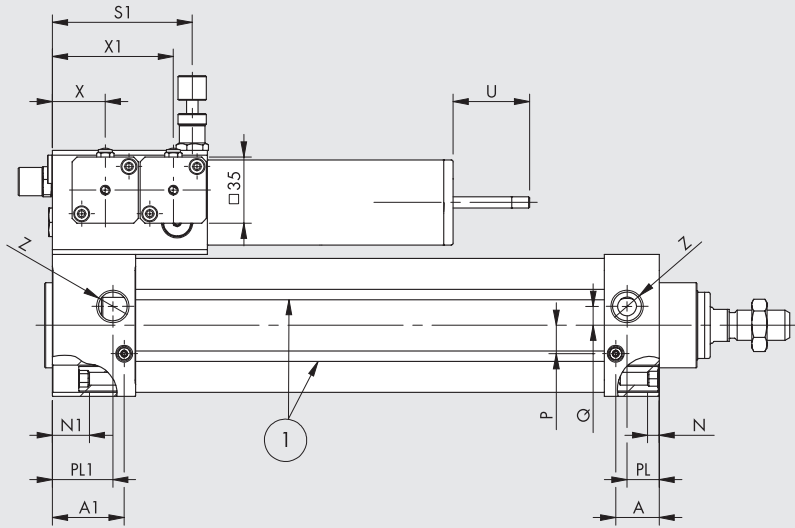
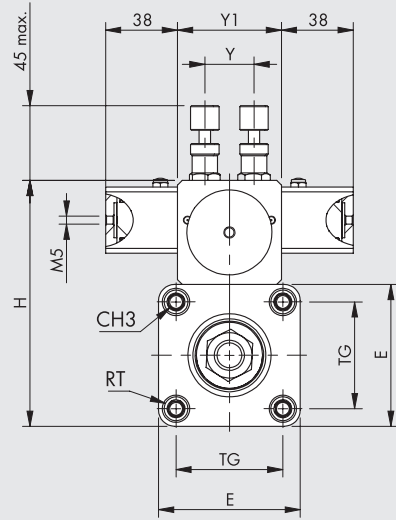
In normally-open (NO) valves, flow moves freely from A to D. When port C is supplied, this operates the SKIP valve and the fluid is forced through the bottleneck generated by the adjusting pin. When port B is supplied, this operates the STOP valve and interrupts the flow of fluid.

NC



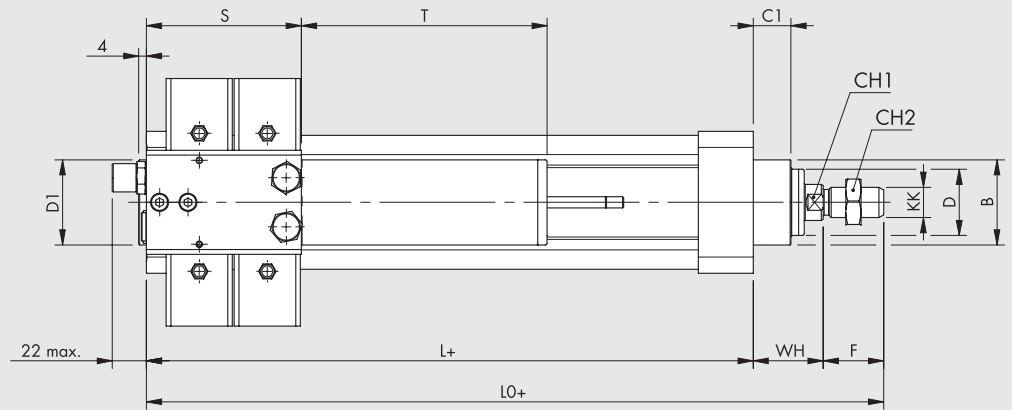
In normally-closed NC valves, flow is normally inhibited. When port B is supplied, the fluid flows through but it is forced through the bottleneck generated by the adjusting pin. When port C is supplied, flow moves freely from A to D.

DIMENSIONS OF THE VARIOUS VERSIONS



+ = ADD THE STROKE

① SLOTS FOR SLIM SENSOR (ONLY ON THE UTILITY PORTS SIDE)



Stroke	Ø 50-63-80		Ø 100	
	T	U max	T	U max
50	106	25	150	30
100	131	30	150	38
150	131	35	180	46
200	171	40	180	54
250	171	45	220	62
300	171	50	220	70
350	216	55	245	78
400	216	60	245	86
450	301	65	345	94
500	301	70	345	102

Type	Ø 50-63-80		Ø 100	
	S	S1	S	S1
Regulation only	50	41	65	50
1 valve for side	50	41	65	50
2 valve for side	82	74	105	90

Ø	A	A1	B	C1	CH1	CH2	CH3	KK	D	D1	E	F	H	L	L0	N	N1	P	PL	PL1	Q	RT	TG	WH	X	X1	Y	Y1	Z
50	28	38	40	15	17	24	8	M16x1.5	25	45	65	32	120	128	192	5.5	19	11	22	32	8	M8	46.5	32	28	64	26	55	G1/4
63	23	38	45	20	17	24	8	M16x1.5	35	45	75	32	130	121	190	5.5	19	15	17	32	10	M8	56.5	37	28	64	26	55	G3/8
80	25	36	45	16	17	24	10	M16x1.5	35	45	95	32	150	125	190	6	15	15	21	32	10	M10	72	33	28	64	26	55	G3/8
100	38	50	60	30	22	30	10	M20x1.5	45	55	110	40	175	172	261	20.5	32.5	15	35	47	10	M10	89	49	40	80	30	65	G1/2

KEY TO CODES

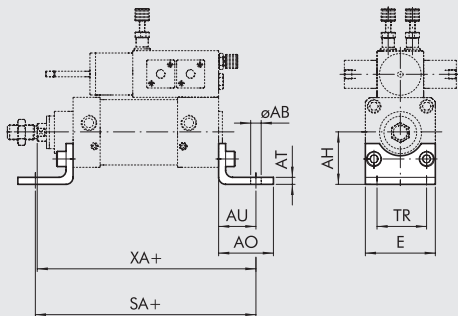
W 1 7 3	2	3	1	0	0 5 0 0
INTEGRATED BRAKE	REGULATION	PISTON ROD EXTENSION CONTROL VALVES	PISTON ROD RETRACTION CONTROL VALVES	BORE	STROKE
W173 Integrated brake	0 Out 1 In 2 Dual	0 Without valves 1 Stop NO 2 Stop NC 3 Skip NO 4 Skip NC 5 Stop NO Skip NO 6 Stop NO Skip NC 7 Stop NC Skip NO 8 Stop NC Skip NC	0 Without valves 1 Stop NO 2 Stop NC 3 Skip NO 4 Skip NC 5 Stop NO Skip NO 6 Stop NO Skip NC 7 Stop NC Skip NO 8 Stop NC Skip NC	A Ø 50 0 Ø 63 1 Ø 80 2 Ø 100	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: FIXINGS

FOOT - MODEL A

+ = ADD THE STROKE



Code	Ø	Ø AB	AH	AO	AT	AU	TR	E	XA	SA	Weight [g]
W0950502001	50	9	45	15	4	32	45	65	192	192	162
W0950632001	63	9	50	15	6	32	50	75	190	185	266
W0950802001	80	12	63	20	6	41	63	95	199	207	456

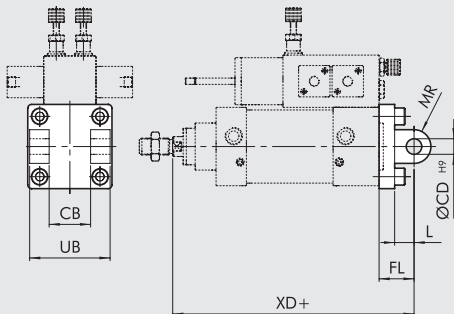
Note: Individually packed with 2 screws.

N.B.: for fixing the rear head is necessary to use:

- Ø50-63 n. 4 screws M8x40 UNI 5931 (see kit 0950636092)
- Ø80 n. 4 screws M10x40 UNI 5931

FEMALE HINGE - MODEL B

+ = ADD THE STROKE



Code	Ø	UB	CB	FL	øCD	XD	MR	L	Weight [g]
W0950502003	50	60	32	27	12	187	12	15	252
W0950632003	63	70	40	32	16	190	16	20	394
W0950802003	80	90	50	36	16	194	16	20	670
W0951002003	100	110	60	41	20	262	20	25	1085

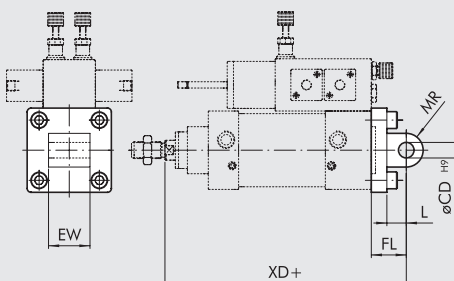
Note: Supplied with 4 screws, 4 washers, 2 snap rings and 1 pin.

N.B.: for fixing the rear head is necessary to use:

- Ø50-63 n. 4 screws M8x40 UNI 5931 (see kit 0950636092)
- Ø80 n. 4 screws M10x40 UNI 5931
- Ø100 n. 4 screws M10x60 UNI 5931 (see kit 0951006092)

MALE HINGE - MODEL BA

+ = ADD THE STROKE



Code	Ø	EW	FL	MR	øCD	L	XD	Weight [g]
W0950502004	50	32	27	13	12	15	187	220
W0950632004	63	40	32	17	16	20	190	316
W0950802004	80	50	36	17	16	20	194	578
W0951002004	100	60	41	21	20	25	262	850

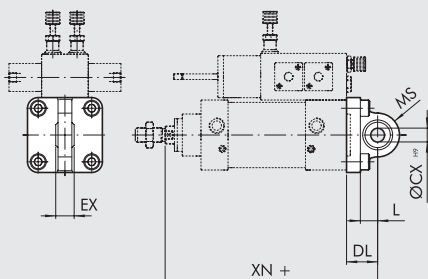
Note: Supplied with 4 screws.

N.B.: for fixing the rear head is necessary to use:

- Ø50-63 n. 4 screws M8x40 UNI 5931 (see kit 0950636092)
- Ø80 n. 4 screws M10x40 UNI 5931
- Ø100 n. 4 screws M10x60 UNI 5931 (see kit 0951006092)

ARTICULATED MALE HINGE - MODEL BAS

+ = ADD THE STROKE



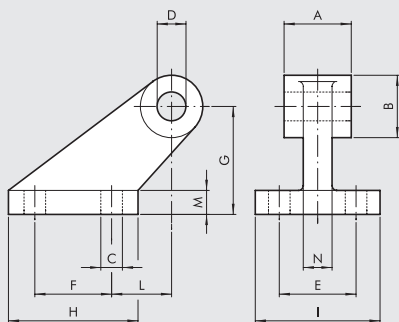
Code	Ø	DL	MS	L	XN	ØCX	EX	Weight [g]
W0950502006	50	27	21	15	187	12	16	236
W0950632006	63	32	23	20	190	16	21	336
W0950802006	80	36	28	20	194	16	21	572
W0951002006	100	41	30	25	262	20	25	840

Note: Supplied with 4 screws, 4 washers.

N.B.: for fixing the rear head is necessary to use:

- Ø50-63 n. 4 screws M8x40 UNI 5931 (see kit 0950636092)
- Ø80 n. 4 screws M10x40 UNI 5931
- Ø100 n. 4 screws M10x60 UNI 5931 (see kit 0951006092)

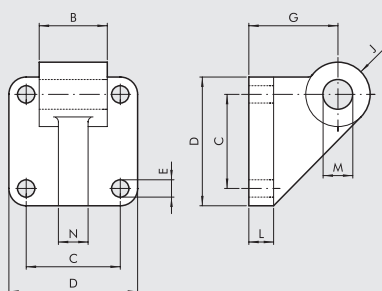
CETOP HINGE FOR MODEL B - MODEL GL



Code	Ø	A	B	C	D	E	F	G	H	I	L	M	N	Weight [g]
W0950502008	50	32	26	9	12	32	32	45	54	52	25	10	12	212
W0950632008	63	40	33	11	16	40	50	63	75	63	32	12	15	440
W0950802008	80	50	33	11	16	40	50	63	75	63	32	12	15	464
W0951002008	100	60	44	14	20	50	70	90	103	80	40	16	22	985

Note: Supplied with 4 screws, 4 washers.

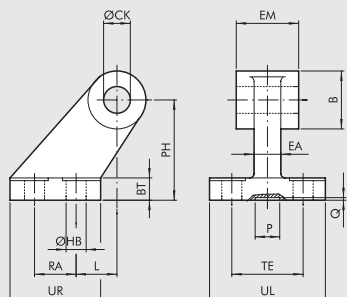
ISO HINGE FOR MODEL B - MODEL GS



Code	Ø	B	C	D	E	G	J	L	M	N	Weight [g]
W0950502108	50	31.5	46.5	65	9	45	13	12	12	12	252
W0950632108	63	39.5	56.5	75	9	50	17	12	16	15	350
W0950802108	80	49.5	72	95	11	63	17	16	16	15	655
W0951002108	100	59.5	89	115	11	73	21	16	20	22	980

Note: Supplied with 4 screws, 4 washers.

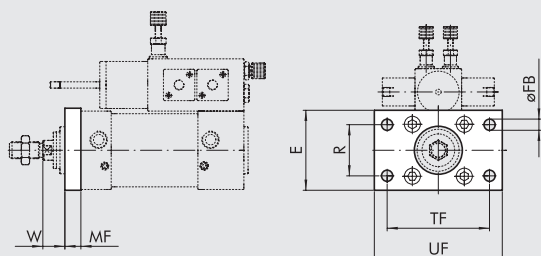
ISO 15552 HINGE FOR MODEL B - MODEL AB7



Code	Ø	EM	B	ØHB	ØCK	TE	RA	PH	UR	UL	L	BT	EA	P	Q	Weight [g]
W0950502017	50	32	26	9	12	50	30	45	45	65	3	12	16	21	3	162
W0950632017	63	40	30	9	16	52	35	50	50	67	2	14*	16	21	3	191
W0950802017	80	50	30	11	16	66	40	63	60	86	7	14	20	21	3	332
W0951002017	100	60	38	11	20	76	50	71	70	96	5	17*	20	11	3	522

* Dimensions not to ISO 15552

FRONT FLANGE - MODEL C

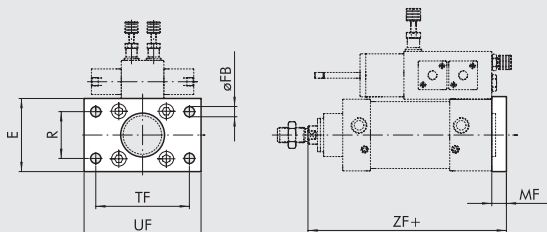


Code	Ø	TF	UF	E	MF	R	øFB	W	Weight [g]
W0950502002	50	90	110	65	12	45	9	20	522
W0950632002	63	100	120	75	12	50	9	25	670
W0950802002	80	126	153	95	16	63	12	17	1420

Note: Supplied with 4 screws.

REAR FLANGE - MODEL C

+ = ADD THE STROKE



Code	Ø	TF	UF	E	MF	R	øFB	ZF	Weight [g]
W0950502002	50	90	110	65	12	45	9	170	522
W0950632002	63	100	120	75	12	50	9	170	670
W0950802002	80	126	153	95	16	63	12	176	1420
W0951002002	100	150	178	115	16	75	14	205	2040

Note: Supplied with 4 screws.

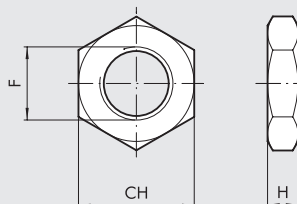
N.B.: for fixing the rear head is necessary to use:

- Ø50-63 n. 4 screws M8x40 UNI 5931 (see kit 0950636092)

- Ø80 n. 4 screws M10x40 UNI 5931

- Ø100 n. 4 screws M10x60 UNI 5931 (see kit 0951006092)

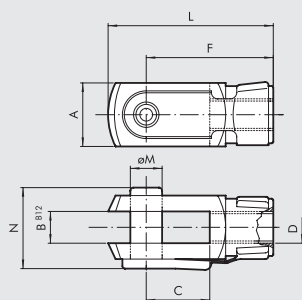
ROD NUT - MODEL S



Code	Ø	F	H	CH	Weight [g]
0950502010	50-80	M16x1.5	8	24	20
0950802010	100	M20x1.5	9	30	32

Note: Individually packed.

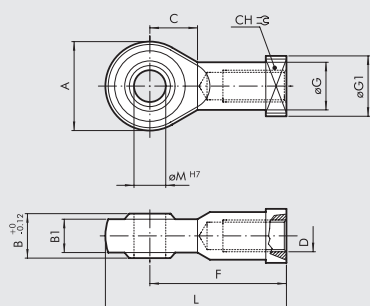
FORK MODEL GK-M



Code	Ø	Ø M	C	B	A	L	F	D	N	Weight [g]
W0950502020	50-80	16	32	16	32	83	64	M16x1.5	40	340
W0950802020	100	20	40	20	40	105	80	M20x1.5	40	690

Note: Individually packed.

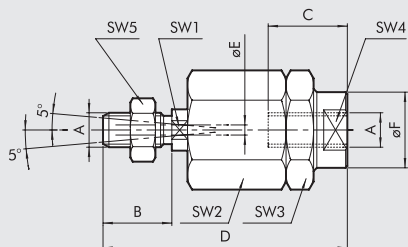
ROD EYE - MODEL GA-M



Code	Ø	Ø M	C	B1	B	A	L	F	D	Ø G	CH	Ø G1	Weight [g]
W0950502025	50-80	16	22	15	21	42	85	64	M16x1.5	22	22	22	226
W0950802025	100	20	26	18	25	50	102	77	M20x1.5	27.5	30	27	404

Note: Individually packed.

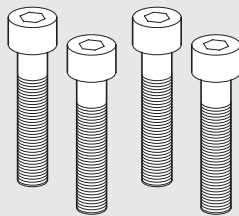
SELF ALIGNING ROD COUPLER - MODEL GA-K



Code	Ø	A	B	C	D	ØF	ØE	SW ₁	SW ₂	SW ₃	SW ₄	SW ₅	Weight [g]
W0950502030	50-80	M16x1.5	32	32	103	32	4	20	41	41	30	24	620
W0950802030	100	M20x1.5	40	40	119	32	4	20	41	41	30	30	680

Note: Individually packed.

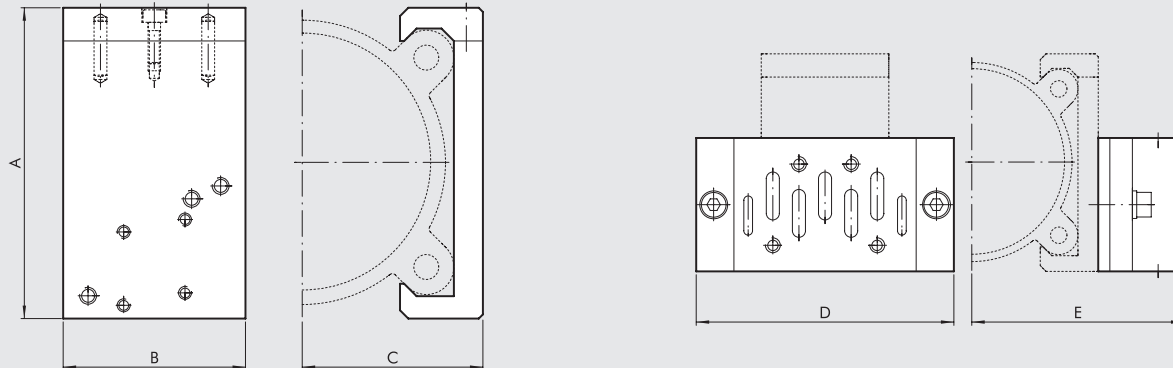
KIT OF REAR HEAD SCREWS Ø50-63-100



Code	Ø	Description
0950636092	50-63	Kit of M8x40 UNI 5931 rear head fixing screws
0951006092	100	Kit of M10x60 UNI 5931 rear head fixing screws

Note: 4 items per pack.

CYLINDER BRACKET - VALVE SERIES KCV



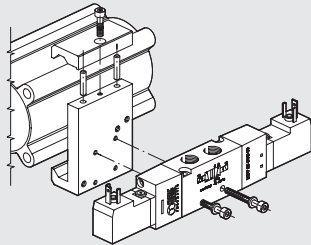
Code	Ø	A	B	C	ISO 1		ISO 2		Applicable valves	Weight [g]
					D	E	D	E		
0950002090	50	71.5	40	37	110	72	124	78	MACH 16 Series 70 1/8-1/4 ISO 1 - ISO 2	93
0950632090	63	81.5	40	42	110	77	124	83	MACH 16 Series 70 1/8-1/4 ISO 1 - ISO 2	101
0950802090	80	99	60	53.5	110	88.5	124	94.5	Series 70 1/8-1/4-1/2 ISO 1 - ISO 2	222
0951002090	100	119.5	60	63.5	110	98.5	124	104.5	Series 70 1/8-1/4-1/2 ISO 1 - ISO 2	258

KIT FOR FIXING VALVES TO BRACKETS

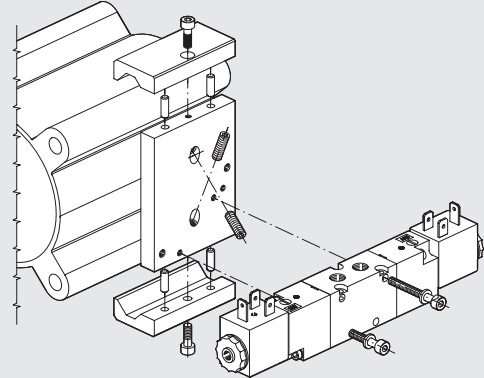
Code	Valve KIT	Composition	Weight [g]
0950002003	MACH 16	2 hex. screws M3x25 with washer	4
0950002004	Series 70 1/8-1/4	2 hex. screws M4x30 with washer	8
0950002001	ISO 1	Adaptor + ISO 1 BASE SIDE + screws + washers (Fig.B)	230
0950002002	ISO 2	Adaptor + ISO 2 BASE SIDE + screws + washers (Fig.B)	350

VALVE ASSEMBLY ON HYDRAULIC BRAKE

FOR Ø 50-63



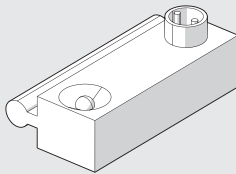
FOR Ø 80-100



ACCESSORIES: MAGNETIC SENSORS

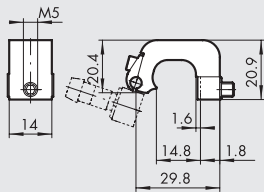
SENSOR SERIES DSM

For codes and technical data, see **chapter A6**.



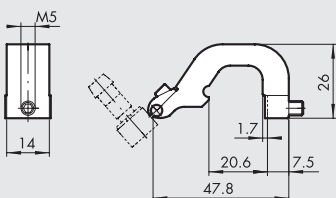
SENSOR SUPPORT BRACKETS FOR SENSORS DSM

Ø 50-63



Code	Description
W0950000712	Bracket D.50-63 DST 81

Ø 80-100



Code	Description
W0950000713	Bracket D.80-100-125 DST 82

RETRACTABLE SENSOR

SENSOR, SQUARE TYPE
Latest generation,
secure fixing

SENSOR, OVAL TYPE
Traditional

For codes and technical data, see **chapter A6**.

