ROTOLINEAR SWING CLAMP CYLINDERS SERIES SWC AND SWH

When retracting, the piston rod of rotolinear swing clamp cylinders first rotates by 90° and then moves straight forward. When exiting, the sequence is reversed.
This facilitates the positioning of the workpiece to be clamped.
You can choose either a clockwise or an anti-clockwise direction.
A version without rotation is also available. The mechanism is very simple. It consists of a spiral groove and a pin that fits into the groove.
The fixing bracket, which can be ordered as an accessory, can be freely orientated through 360° and locked to the piston rod.
Two series are available:

- Series SWC (SWing Compact), which has the same fixings as CMPC series compact cylinders and can use the same flange and feet as the CMPC
- Series SWH (Swing Heavy Duty), which is more sturdy and features an enlarged body and piston rod guide system.

Possibility of choosing between polyurethane or FKM/FPM gaskets (for high temperatures).

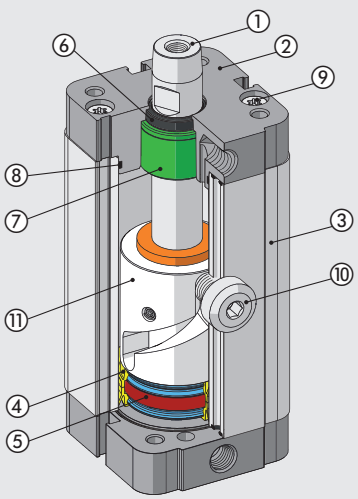
series SWC

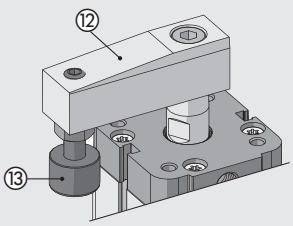
series SWH

TECHNICAL DATA			SWC					SWH		
Bore		mm	16	25	32	40	50	40	50	63
Operating pressure		bar	2 to 10							
		MPa	0.2 to 1							
		psi	29 to 145							
Temperature range	Polyurethane	°C	-20 to +80							
	FKM/FPM		-10 to +150							
Fluid			Unlubricated air; lubrication, if used, must be continuous.							
Design			Linear and rotating movement by means of a cam integral to the piston					Linear and rotating movement by means of a cam in the rod guide bushing		
Clamping stroke (linear)		mm	10	10	10	10	20	10	25	8
Overal Stroke		mm	20	23	28	30	40	24	40	26
Direction of rotation			Right or left or straight							
Rotation angle		gradi	90° ± 4°							
Sensor magnet			Yes							
Theoretical clamping force at 6 bar		N	90	220	360	630	970	630	970	1650
Effective clamping force at 6 bar, in relation to the distance of the clamping point from the cylinder axis										
	Locking force	N	80	180	300	450	810	420	800	1200
	Distance	mm	27	35	50	50	65	70	80	90
Weights		g	190	432	599	962	1577	1497	2895	2960

COMPONENTS SERIES SWC

① PISTON ROD: grinded chromed steel
② HEAD: extruded anodized aluminium alloy
③ BARREL: extruded aluminium, anodized
④ PISTON GASKET: polyurethane or FKM/FPM
⑤ MAGNET: neodymium-plastic
⑥ PISTON ROD GASKET: polyurethane or FKM/FPM
⑦ GUIDE BUSHING: steel strip with bronze and PTFE insert
⑧ STATIC O-RINGS: NBR
⑨ SECURING SCREWS: zinc-plated steel
⑩ PIN: hardened steel
⑪ CAM: Ø 16 steel - Ø 25 to 50 technopolymer
⑫ BRACKET: anodized aluminium
⑬ BRACKET PLUG: zinc-plated steel and technopolymer

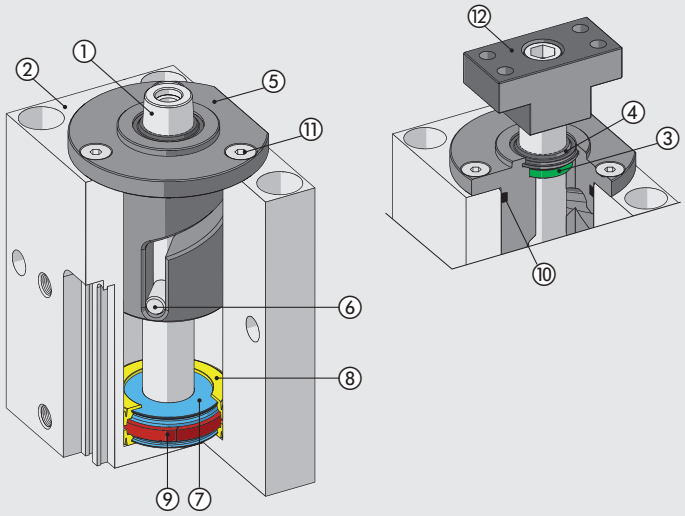




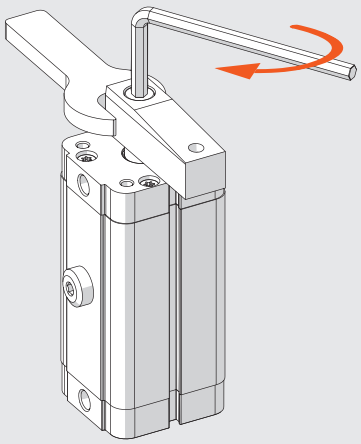
METAL WORK PNEUMATIC

COMPONENTS SERIES SWH

① SPISTON ROD: grinded chromed steel
② BODY: anodized aluminium
③ PISTON ROD GASKET: polyurethane or FKM/FPM
④ SCRAPER GASKET: polyurethane or FKM/FPM
⑤ HEADER FOR GUIDE AND PISTON ROD ROTATION: technopolymer
⑥ PIN: hardened steel
⑦ PISTON: aluminium
⑧ PISTON GASKET: polyurethane or FKM/FPM
⑨ MAGNET: plastoneodymium or plastoferrite
⑩ STATIC O-RINGS: NBR
⑪ SECURING SCREWS: zinc-plated steel
⑫ ADAPTOR: anodized aluminium



BRACKET FIXING

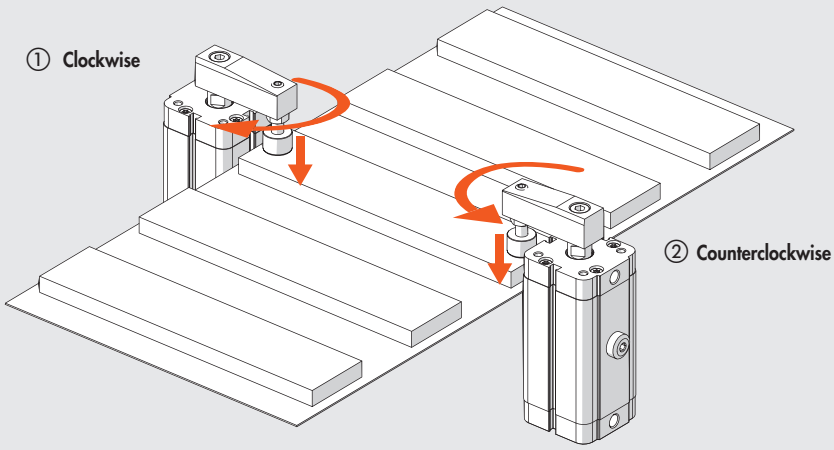


Series SWC	
Ø	**Maximum tightening torque [Nm]**
16	3
25	12
32	24
40	24
50	40

Series SWH	
Ø	**Maximum tightening torque [Nm]**
40	24
50	40
63	40

N.B.: When tightening or loosening the screw, DO NOT hold the cylinder body, only hold the bracket in place using a spanner.

DIRECTION OF ROTATION

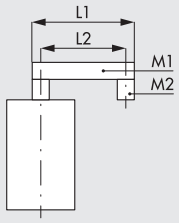


The right or left direction of rotation is determined by looking at the cylinder from the piston rod side, when the rod retracts:
① Right (R) = clockwise
② Left (L) = counterclockwise

MAXIMUM PERMISSIBLE MOMENT OF INERTIA

The permissible moment of inertia depends on the speed of movement. Refer to the formula below to calculate the moment of inertia.

$$J = \frac{M1 \cdot L1^2}{4} + M2 \cdot L2^2$$

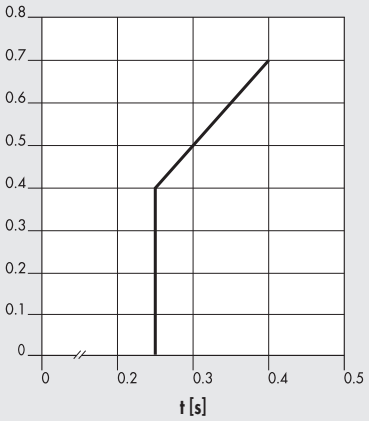


M1 = Mass of the lever arm [kg]
M2 = Mass of the screw and plug [kg]
L1 = Lever arm length [cm]
L2 = Distance from the screw centre to the cylinder axis [cm]

J = Moment of inertia [kg · cm²]
t = Time to run each stroke

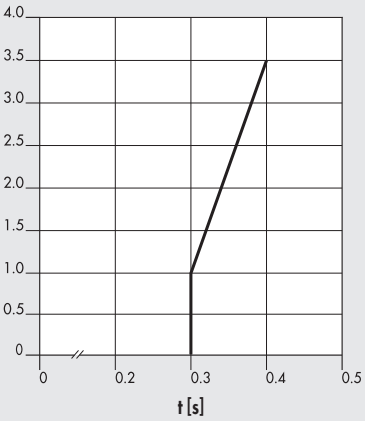
SWC 16

J [kg cm²]



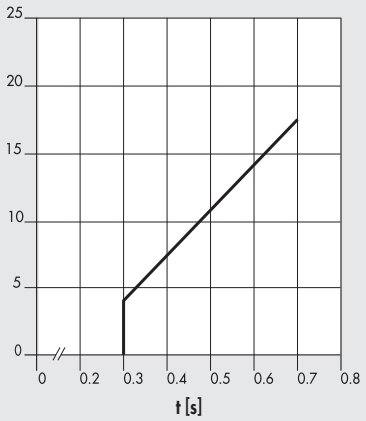
SWC 25

J [kg cm²]



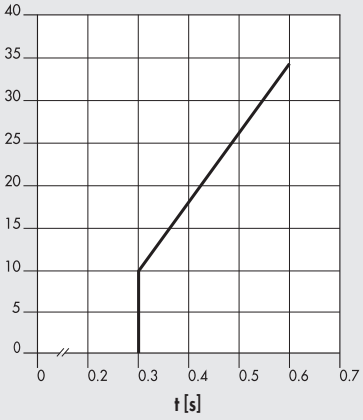
SWC 32

J [kg cm²]



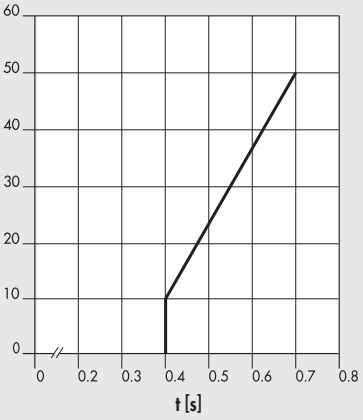
SWC 40

J [kg cm²]



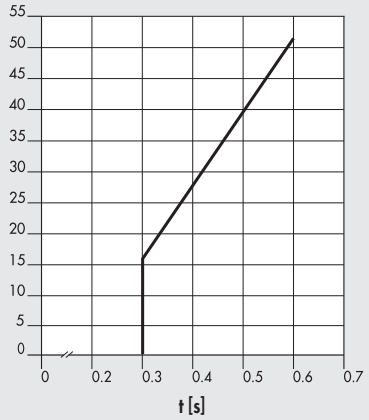
SWC 50

J [kg cm²]



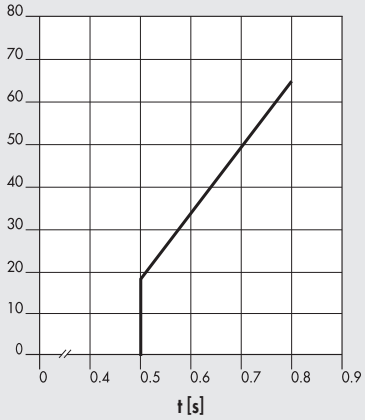
SWH 40

J [kg cm²]



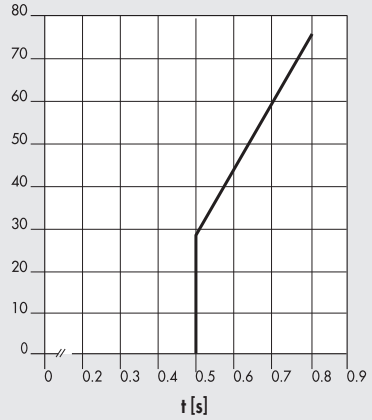
SWH 50

J [kg cm²]



SWH 63

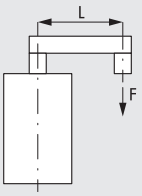
J [kg cm²]



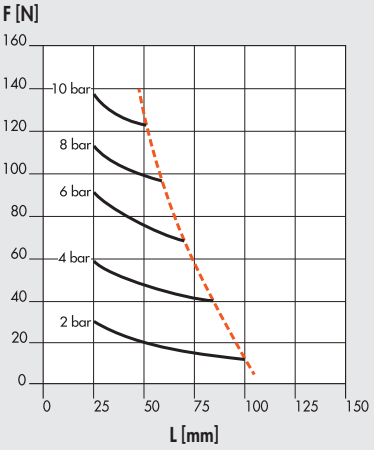
METAL WORK PNEUMATIC

LOCKING FORCE

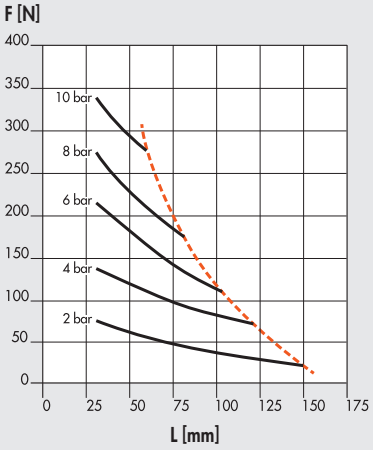
Locking force "F" as a function of the length "L" of the bracket and pressure, measured at 5 mm from the limit switch.



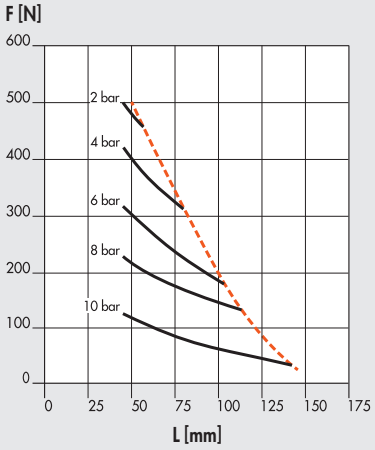
SWC 16



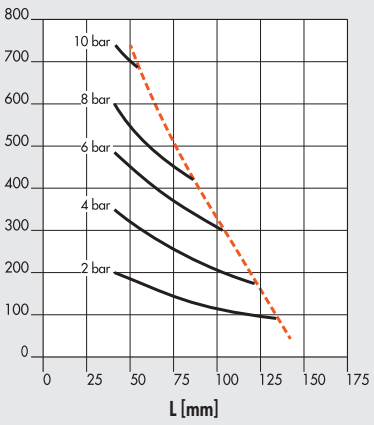
SWC 25



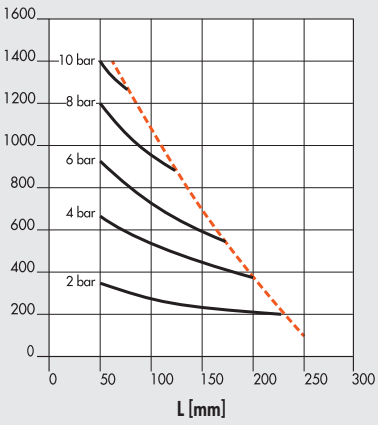
SWC 32



SWC 40

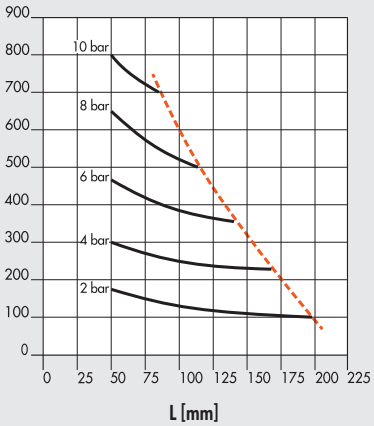


SWC 50

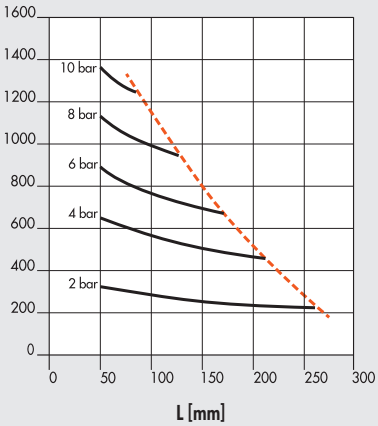


Maximum lever arm length

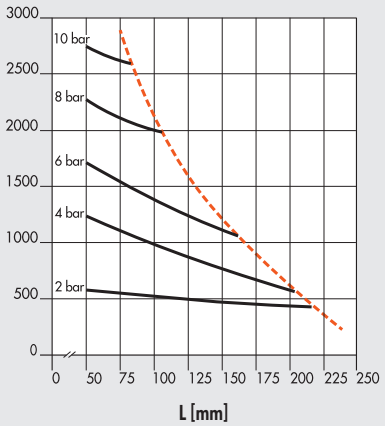
SWH 40



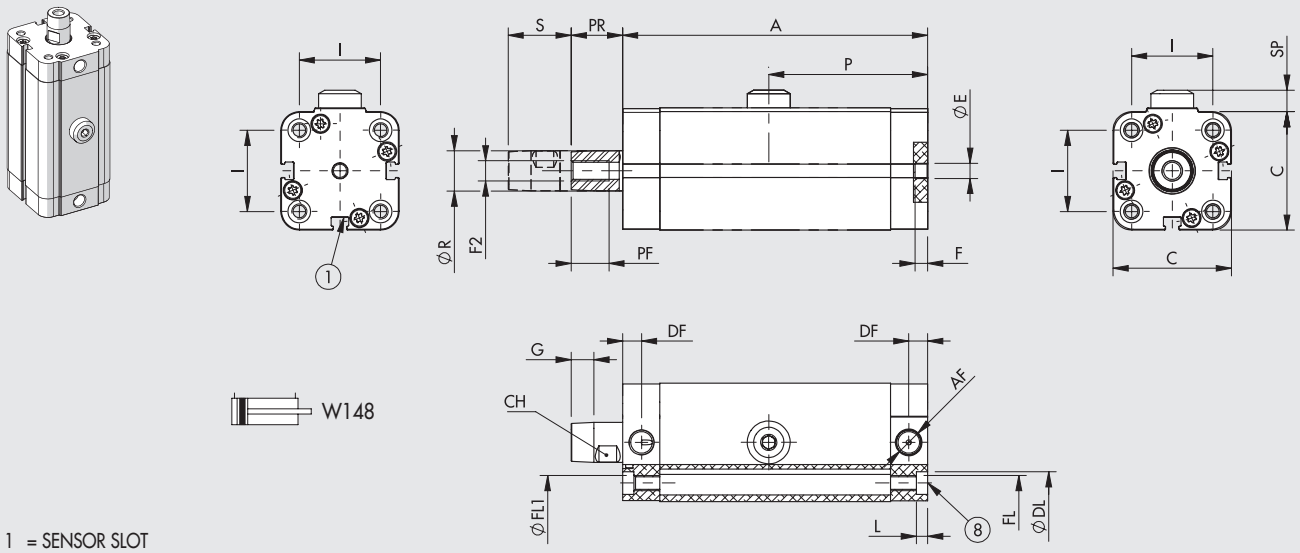
SWH 50



SWH 63



DIMENSIONS - SERIES SWC

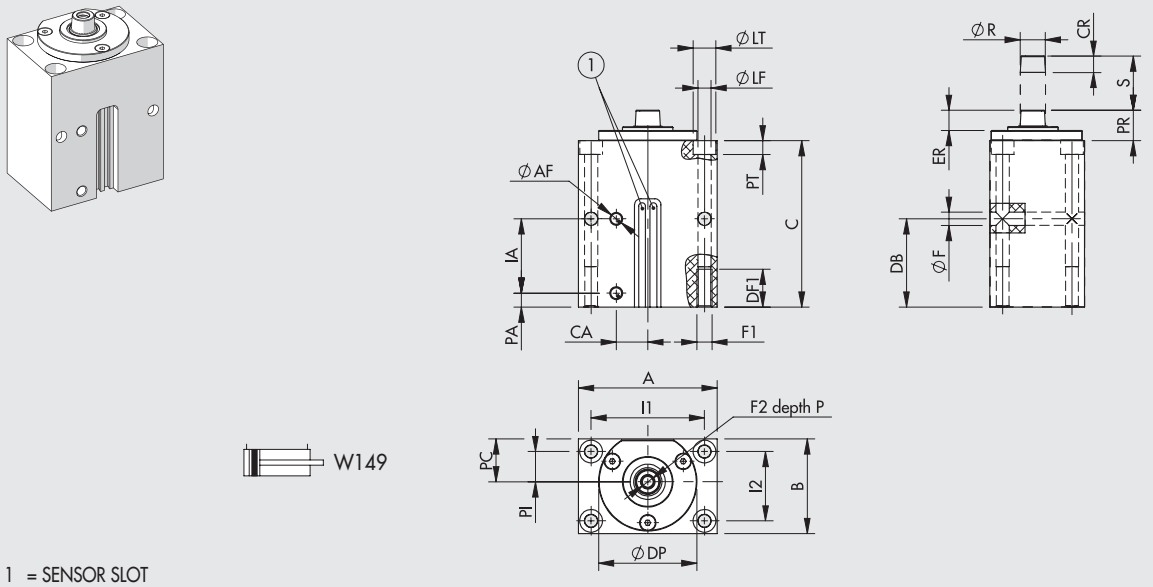


1 = SENSOR SLOT
8 = SEAT FOR DIN 7984 SCREWS (only Ø 32 - 50)

Ø	Overal Stroke S	A	AF	C	CH	DF	ØDL *	ØE H9	F	F2	FL *	ØFL1	G	I *	L	P	PF	PR	ØR	SP	Weight [g]
16	20	85	M5	29	7	4.6	6.4	6	4	M4	M4	3.2	4.9	18	3.2	41.5	13	11	8	4.8	190
25	23	102.5	M5	40.5	10	6	7.5	6	4	M6	M5	4.2	7.4	26	4.2	48	15	16.4	12	4.8	432
32	26	121	1/8"	47	13	7.5	9	6	4	M8	M6	5.2	9	32.5	5.2	63	15	20.4	16	8.5	599
40	27.3	122.5	1/8"	56	13	7.5	9	6	4	M8	M6	5.2	9	38	5.2	65	15	20.4	16	8.5	962
50	40	158	1/8"	67	17	7.5	10.7	6	4	M10	M8	6.2	10.3	46.5	6.2	85	15	20.8	20	9.5	1577

* For Ø 16, 25 according to UNITOP; for Ø 32 - 50 according to ISO

DIMENSIONS - SERIES SWH



1 = SENSOR SLOT

Ø	Overal Stroke S	A	ØAF	B	C	CA	CR	DB	DF1	ØDP	ER	ØF	F1	F2	I1	I2	IA	ØLF	LT	P	PA	PC	PI	PR	ØPT	ØR	Weight [g]
40	25	90	1/8"	65	96	20	10	50	25	64	14	8.5	M10	M8	73	48	42	8.5	15	18	8	27.5	19	19	9	16	1497
50	23	110	1/8"	75	132	25	13	70	30	78	16	10.5	M12	M10	90	55	59	10.5	18	23	11	34	24	24	11	20	2895
63	25	120	1/4"	90	107.5	25	13	55	30	95	16	10.5	M12	M10	100	70	85	10.5	18	23	11	40	30	24	11	20	2960

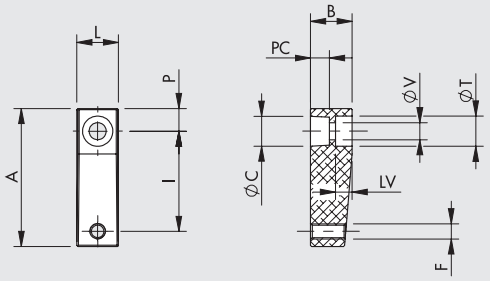
METAL WORK PNEUMATIC

KEY TO CODES

CYL	W149 SERIES		C VERSION		40 BORE	10 CLAMPING STROKE	R DIRECTION OF ROTATION		A EXECUTION		P GASKETS	
	W149	Swing clamp cylinders SW	C	Compact	16	10	R	Clockwise	A	C45 chromed and ground piston rod, aluminium piston rod	P	Polyurethane gaskets
					25	10	L	Counter-clockwise			V	FKM/FPM gaskets
					32	10						
					40	10	S	Straight				
					50	20						
			H	Heavy duty	40	10						
					50	25						
					63	08						

ACCESSORIES FOR CYLINDERS SERIES SWC

BRACKET



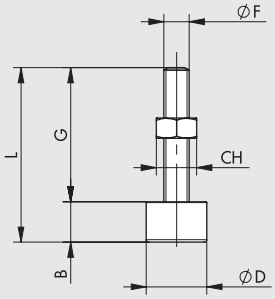
Code	Ø	A	L	I	P	C	PC	LV	V	B	T	F	Weight [g]
W0950166022	16	36.5	11	26.5	6	7.9	5	4.5	4.5	11	8	M4	10
W0950256022	25	50	16	35	9	11.9	7.5	6.5	6.5	16	11	M6	28
W0950326022	32-40	69	20	49	12	15.9	10.1	8.5	9	20	15	M8	65
W0950506022	50	88	25	65	13	19.9	10.5	7	11	25	18	M10	118

MATERIAL

Bracket: anodized aluminium

Screws TCE: zinc-plated steel

BRACKET PLUG



Code	Ø	L	B	G	F	CH	D	Weight [g]
W0950166023	16	32	6.5	25.5	M4	7	11	5
W0950256023	25	43	10	33	M6	10	15	11
W0950326023	32-40	49	13	36	M8	13	19	27
W0950506023	50	69	16	53	M10	16	24	58

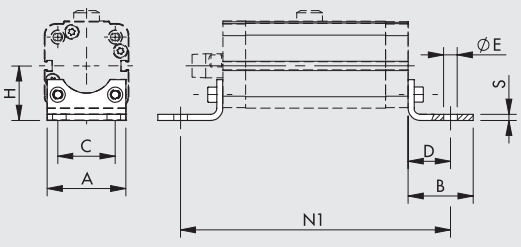
MATERIAL

Plug: technopolymer

Screw and nut: zinc-plated steel

Note: if there is no risk of engraving the part to be clamped, the customer can use an hex an hexagonal-head screw available from the trade, instead of the coded pad.

FOOT - MODEL A



UNITOP

Code	Ø	Clamping stroke	A	B	C	D	ØE	H	N1	S	Weight [g]
W0950126001 ▲	16	10	30	17.5	18	13	5.5	22	111	3	26
W0950256001	25	10	40	22	26	16	6.6	30	134.5	4	52

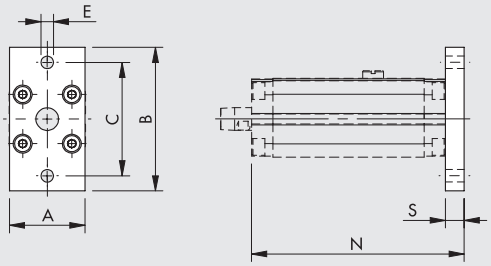
ISO

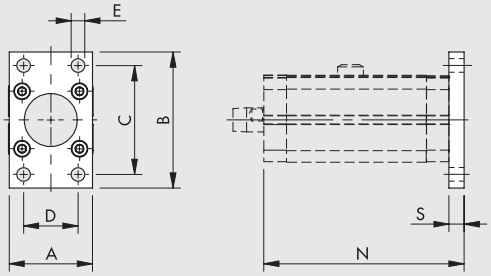
Code	Ø	Clamping stroke	A	B	C	D	ØE	H	N1	S	Weight [g]
W0950322001	32	10	45	35	32	24	7	31.9	169	4	76
W0950402001	40	10	52	43	36	28	9	36	178.5	4	100
W0950502001	50	20	65	47	45	32	9	45	222	4	162

▲ Non UNITOP norm fixing distance

Note: Individually packed with 2 screws.

FLANGE - MODEL C





UNITOP

Code	Ø	Clamping stroke	A	B	C	E	S	N	Weight [g]
W0950126002 ▲	16	10	29	55	43	5.5	10	95	112
W0950256002	25	10	40	76	60	6.6	10	112.5	226

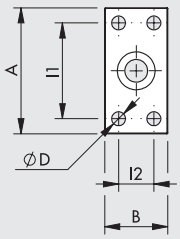
ISO

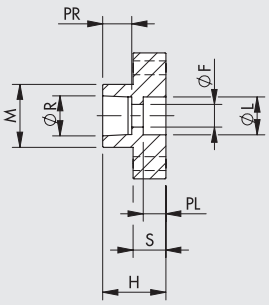
Code	Ø	Clamping stroke	A	B	C	D	E	N	S	Weight [g]
W0950322002	32	10	50	80	64	32	7	131	10	246
W0950402002	40	10	55	90	72	36	9	132.5	10	290
W0950502002	50	20	65	110	90	45	9	170	12	522

▲ Non UNITOP norm fixing distance
Note: Supplied with 4 screws.

ACCESSORIES FOR CYLINDERS SERIES SWH

ADAPTOR





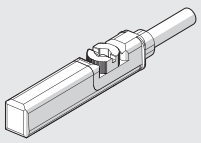
Code	Ø	A	B	L1	L2	D	H	M	S	L	F	PL	R	PR	Weight [g]
W0950406024	40	50	25	38	14	5.5	25	25	13	15	9	9	15.9	11.5	50
W0950506024	50	60	30	45	15	7	30	30	15	18	11	11	17.9	15	85
W0950636024	63	65	35	48	18	9	35	32	17	18	11	11	19.9	17	125

MATERIAL
Adaptor: anodized aluminium
Screws TCE: zinc-plated steel

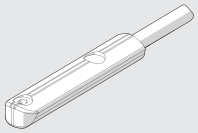
ACCESSORIES FOR CYLINDERS SERIES SWC AND SWH: MAGNETIC SENSORS AND POSITION SENSORS

RETRACTABLE SENSOR

SENSOR, SQUARE TYPE
Latest generation, secure fixing

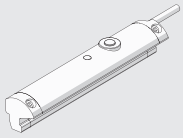


SENSOR, OVAL TYPE
Traditional



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

LTS POSITION SENSORS



For technical data and usage strokes see **chapter A6**.

NOTES