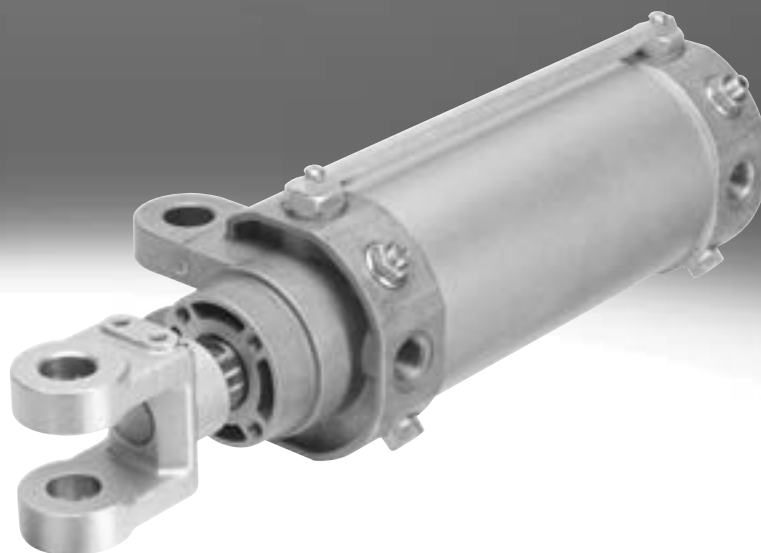


## Hinge cylinders DW

**FESTO**

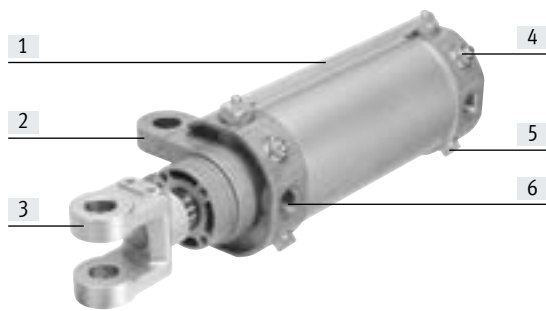


## Key features

### At a glance

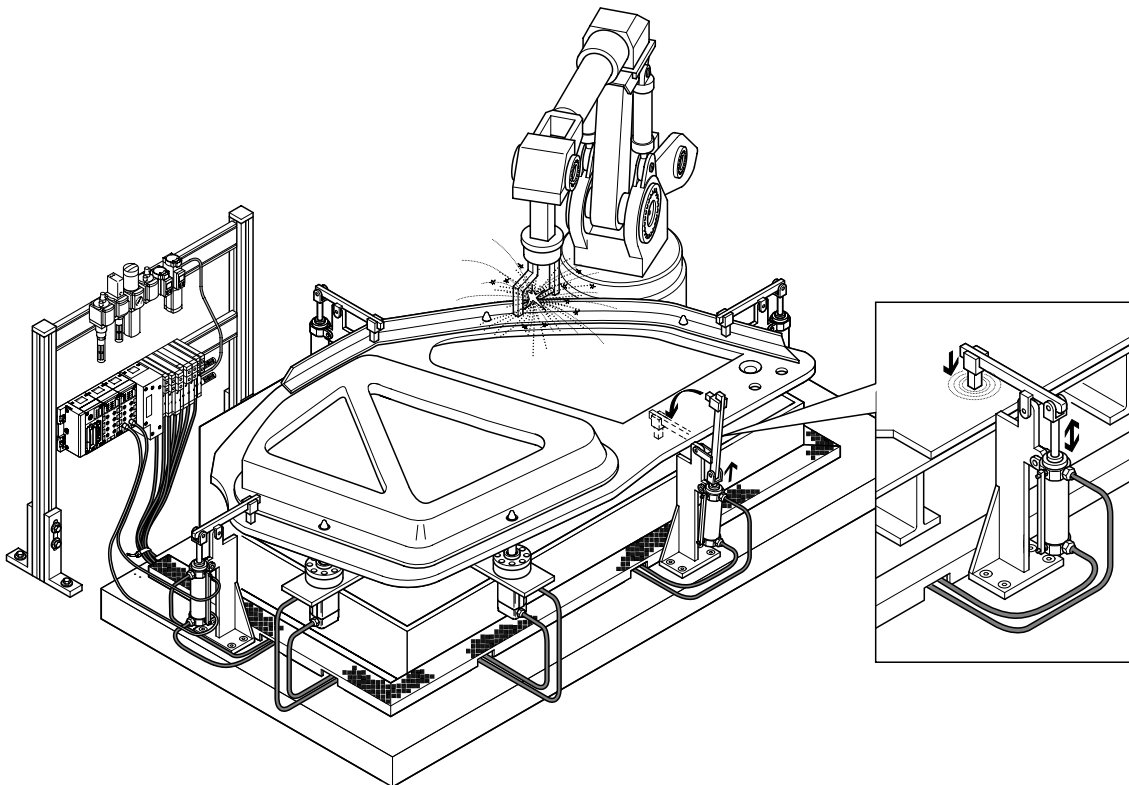
- Hinge cylinder for clamping components during the welding process
- Easy to mount thanks to swivel bearing on the bearing cap
- Integrated flow control
- Integrated end-position cushioning
- Rod wiper seal to protect against welding spatter
- Asian automotive standard for car body production

### The technology in detail

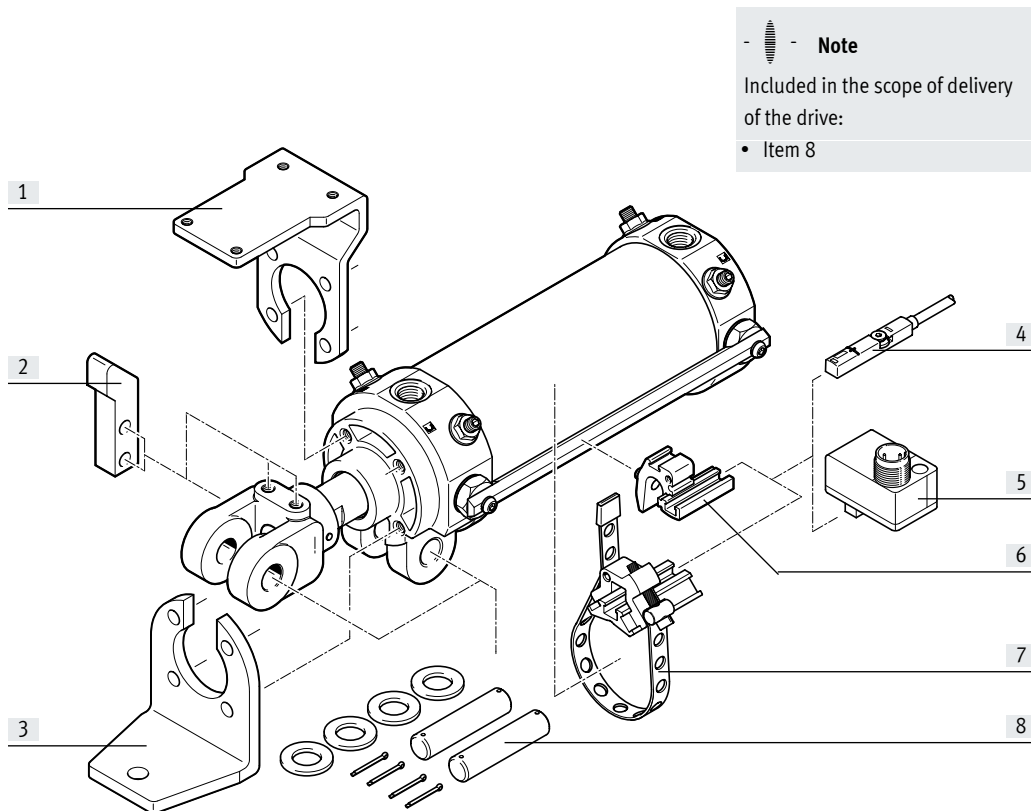


- [1] Different options for sensing the piston rod position:
- Via sensor rail (→ Figure)
  - Via mounting kit SMBR with proximity switch SME-/SMT-8M or SMTS08E
  - Via external proximity switch using a switch lever
- [2] Swivel bearing on the cylinder. The fork gaps of the rod clevis and swivel bearing are identical
- [3] Different rod clevis gaps can be selected
- [4] Integrated flow control
- [5] Integrated end-position cushioning
- [6] Pneumatic connection, either:
- Via Rc or G thread
  - Connection options on three sides (e.g. by modifying the sensor rail)

### Use as a clamping cylinder



## Peripherals overview



Accessories			
Type	Brief description		→ Page/Internet
[1] Mounting bracket TBH	For mounting external proximity switches		12
[2] Switch lever KTH	For sensing the piston rod position via external proximity switches		12
[3] Foot mounting HNH	For mounting the cylinder		12
[4] Proximity switch SME-/SMT-8	Proximity switch with flat design for sensing the piston rod position		13
[5] Proximity switch SMTSO-8E	Welding field immune proximity switch for sensing the piston rod position		13
[6] Mounting SMBZ	For mounting the proximity switches SME-/SMT-8 or SMTSO-8E on the sensor rail		14
[7] Mounting kit SMBR	For mounting the proximity switches SME-/SMT-8 or SMTSO-8E on the cylinder		14
[8] Mounting kit DAMD	<ul style="list-style-type: none"> <li>For mounting the drive and attachments on the rod clevis</li> <li>The scope of delivery of the drive includes 2 bolts, 2 retaining pins and 4 washers</li> </ul>		13

Type codes

001	Series
DW	Hinge cylinder

002	Rod clevis gap [mm]
	28
A	16
B	19.5
C	16.5

003	Piston diameter
50	50
63	63
80	80

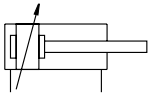
004	Stroke
50	50
75	75
100	100
125	125
150	150

005	Piston rod end
Y	With rod clevis

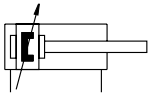
006	Position sensing
	Without magnet
A	With magnet and sensor rail
AB	With magnet

007	Pneumatic connection
	Rc thread
G	G thread

## Data sheet



-  $\varnothing$  - Diameter  
50 ... 80 mm



-  $l$  - Stroke length  
10 ... 200 mm

**General technical data**

Piston $\varnothing$	50	63	80
Pneumatic connection	G1/4, Rc1/4	G1/4, Rc1/4	G3/8, Rc3/8
Piston rod thread	M16x1.5		M20x1.5
Piston rod end	Male thread with rod clevis		
Stroke	Standard	[mm] 50, 75, 100, 125, 150	
	Variable	[mm] 10 ... 200	
Rod clevis gap	[mm]	16; 16.5; 19.5	28
Design	Piston rod with rod clevis		
	Swivel mounting on bearing cap		
	Cylinder barrel		
	Piston		
Mode of operation	Double-acting		
	Pushing and pulling		
Type of mounting	Via swivel mounting on bearing cap		
	Via accessories		
Speed control	Integrated flow control at both ends		
Mounting position	Any		
Position sensing	Via proximity switch		
Cushioning	Pneumatic cushioning, adjustable at both ends		
Cushioning length	[mm]	20	30

**Operating and environmental conditions**

Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]		
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)		
Operating pressure	[bar]	1 ... 10	
Ambient temperature	[°C]	-10 ... +60	

**Weight [g]**

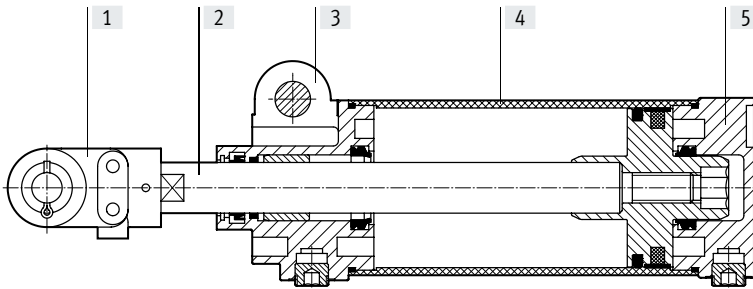
Piston $\varnothing$	50	63	80
Basic weight at 0 mm stroke	1338	1600	4185
Additional weight per 10 mm stroke	37	42	65
Moving mass with 0 mm stroke	664	741	1651
Additional weight per 10 mm stroke	25	25	39

Data sheet

Forces [N] and impact energy [J]			
Piston $\varnothing$	50	63	80
Theoretical force at 6 bar, advancing	1178	1870	3016
Theoretical force at 6 bar, retracting	990	1682	2721
Impact energy in the end positions	0.7	1.3	1.8

Materials

Sectional view

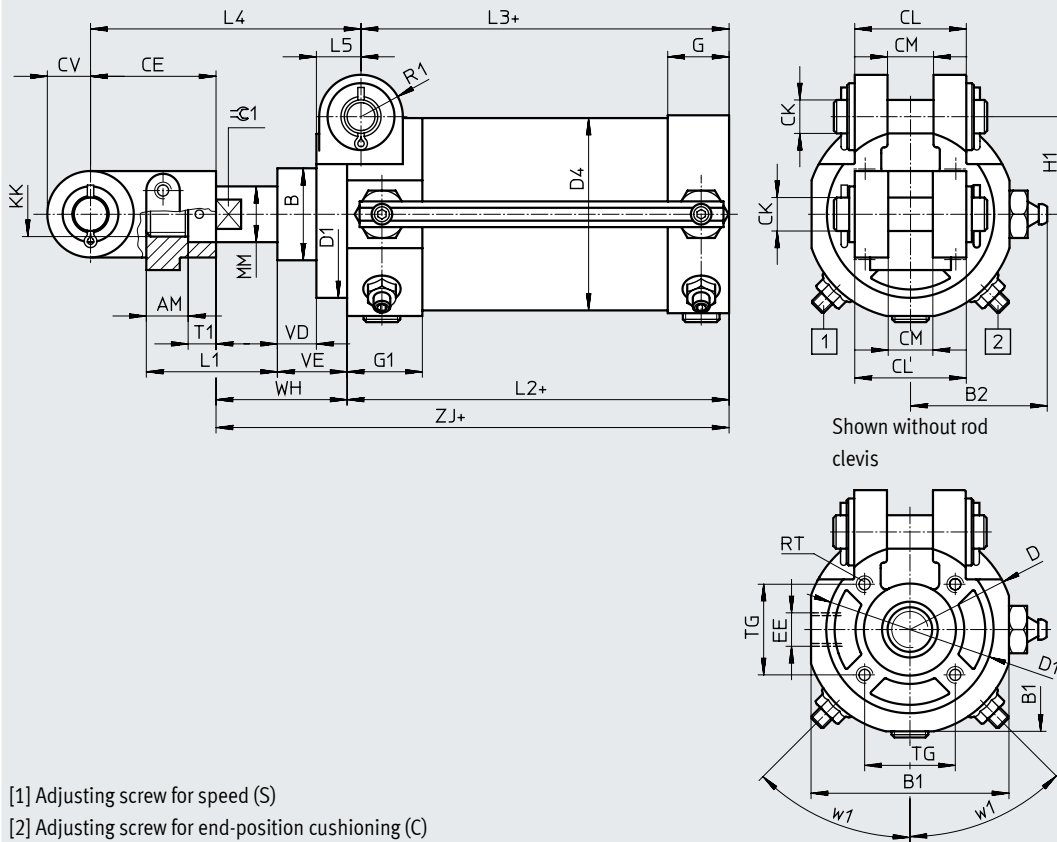


Hinge cylinder	
[1] Rod clevis	Cast steel
[2] Piston rod	Hard-chromium plated tempered steel
[3] Bearing cap with mounting	Die-cast aluminium
[4] Cylinder barrel	Anodised wrought aluminium alloy
[5] Cover	Anodised die-cast aluminium
- Seals	Nitrile rubber
Note on materials	RoHS-compliant

Data sheet

Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



- [1] Adjusting screw for speed (S)
- [2] Adjusting screw for end-position cushioning (C)

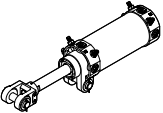
∅ [mm]	AM	B ∅	B1	B2	CE	CK ∅	CL	CM		
								DWA +0.4/+0.1	DWB +0.4/+0.1	DWC +0.4/+0.1
50	15	33	58	42.5	45	12	40	16	19.5	16.5
63			71	49						
80	23	56	89	58.5	58	18	60	28	28	28

∅ [mm]	CV	D ∅	D1 ∅	D4 ∅	EE		G	G1	H1 ±0.1
					Rc	G			
50	15.5	61	55	55	Rc1/4	G1/4	22	27	35
63		75	60	69					
80	19	93	70	87	Rc3/8	G3/8	34	34	50

∅ [mm]	KK	L1	L2	L3 +0.7/-0.4	L4 +1.5/-2	L5	MM ∅	R1	RT
63									
80	M20x1	47	150	128	110	22	25	20	M6

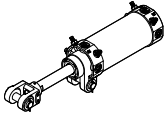
∅ [mm]	T1	TG	VD	VE	W1	WH	ZJ	≈C 1
63								
80	11	32.5	17	33	45°	46	180	19

Data sheet

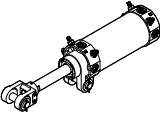
Ordering data – With Rc thread										
Piston Ø [mm]	Stroke [mm]	Rod clevis gap 16 mm		Rod clevis gap 19.5 mm		Rod clevis gap 16.5 mm				
		Part no.	Type	Part no.	Type	Part no.	Type			
	50	<b>Without magnet</b>								
		50	549543	DWA-50-50-Y	549553	DWB-50-50-Y	558087	DWC-50-50-Y		
		75	549544	DWA-50-75-Y	549554	DWB-50-75-Y	558088	DWC-50-75-Y		
		100	549545	DWA-50-100-Y	549555	DWB-50-100-Y	558089	DWC-50-100-Y		
		125	549546	DWA-50-125-Y	549556	DWB-50-125-Y	558090	DWC-50-125-Y		
		150	549547	DWA-50-150-Y	549557	DWB-50-150-Y	558091	DWC-50-150-Y		
		10 ... 200	555710	DWA-50-...-Y	555713	DWB-50-...-Y	558137	DWC-50-...-Y		
		<b>With magnet and sensor rail</b>								
		50	549548	DWA-50-50-Y-A	549558	DWB-50-50-Y-A	558092	DWC-50-50-Y-A		
		75	549549	DWA-50-75-Y-A	549559	DWB-50-75-Y-A	558093	DWC-50-75-Y-A		
		100	549550	DWA-50-100-Y-A	549560	DWB-50-100-Y-A	558094	DWC-50-100-Y-A		
		125	549551	DWA-50-125-Y-A	549561	DWB-50-125-Y-A	558095	DWC-50-125-Y-A		
		150	549552	DWA-50-150-Y-A	549562	DWB-50-150-Y-A	558096	DWC-50-150-Y-A		
		10 ... 200	555711	DWA-50-...-Y-A	555714	DWB-50-...-Y-A	558138	DWC-50-...-Y-A		
		<b>With magnet</b>								
		50	549743	DWA-50-50-Y-AB	549707	DWB-50-50-Y-AB	558097	DWC-50-50-Y-AB		
		75	549744	DWA-50-75-Y-AB	549708	DWB-50-75-Y-AB	558098	DWC-50-75-Y-AB		
		100	549745	DWA-50-100-Y-AB	549709	DWB-50-100-Y-AB	558099	DWC-50-100-Y-AB		
		125	549746	DWA-50-125-Y-AB	549710	DWB-50-125-Y-AB	558100	DWC-50-125-Y-AB		
		150	549706	DWA-50-150-Y-AB	549711	DWB-50-150-Y-AB	558101	DWC-50-150-Y-AB		
		10 ... 200	555712	DWA-50-...-Y-AB	555715	DWB-50-...-Y-AB	558139	DWC-50-...-Y-AB		
		63		<b>Without magnet</b>						
				50	549563	DWA-63-50-Y	549573	DWB-63-50-Y	558102	DWC-63-50-Y
				75	549564	DWA-63-75-Y	549574	DWB-63-75-Y	558103	DWC-63-75-Y
				100	549565	DWA-63-100-Y	549575	DWB-63-100-Y	558104	DWC-63-100-Y
				125	549566	DWA-63-125-Y	549576	DWB-63-125-Y	558105	DWC-63-125-Y
				150	549567	DWA-63-150-Y	549577	DWB-63-150-Y	558106	DWC-63-150-Y
				10 ... 200	555716	DWA-63-...-Y	555719	DWB-63-...-Y	558140	DWC-63-...-Y
				<b>With magnet and sensor rail</b>						
				50	549568	DWA-63-50-Y-A	549578	DWB-63-50-Y-A	558107	DWC-63-50-Y-A
75	549569			DWA-63-75-Y-A	549579	DWB-63-75-Y-A	558108	DWC-63-75-Y-A		
100	549570			DWA-63-100-Y-A	549580	DWB-63-100-Y-A	558109	DWC-63-100-Y-A		
125	549571			DWA-63-125-Y-A	549581	DWB-63-125-Y-A	558110	DWC-63-125-Y-A		
150	549572			DWA-63-150-Y-A	549582	DWB-63-150-Y-A	558111	DWC-63-150-Y-A		
10 ... 200	555717			DWA-63-...-Y-A	555720	DWB-63-...-Y-A	558141	DWC-63-...-Y-A		
<b>With magnet</b>										
50	549712			DWA-63-50-Y-AB	549730	DWB-63-50-Y-AB	558112	DWC-63-50-Y-AB		
75	549713			DWA-63-75-Y-AB	549732	DWB-63-75-Y-AB	558113	DWC-63-75-Y-AB		
100	549714			DWA-63-100-Y-AB	549733	DWB-63-100-Y-AB	558114	DWC-63-100-Y-AB		
125	549715			DWA-63-125-Y-AB	549734	DWB-63-125-Y-AB	558115	DWC-63-125-Y-AB		
150	549716			DWA-63-150-Y-AB	549735	DWB-63-150-Y-AB	558116	DWC-63-150-Y-AB		
10 ... 200	555718			DWA-63-...-Y-AB	555721	DWB-63-...-Y-AB	558142	DWC-63-...-Y-AB		



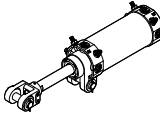
## Data sheet

Ordering data – With Rc thread				
	Piston $\varnothing$ [mm]	Stroke [mm]	Rod clevis gap 28 mm	
			Part no.	Type
	80	<b>Without magnet</b>		
		50	557904	DW-80-50-Y
		75	557905	DW-80-75-Y
		100	557906	DW-80-100-Y
		125	557907	DW-80-125-Y
		150	557908	DW-80-150-Y
		10 ... 200	557929	DW-80-...-Y
		<b>With magnet and sensor rail</b>		
		50	557909	DW-80-50-Y-A
		75	557910	DW-80-75-Y-A
		100	557911	DW-80-100-Y-A
		125	557912	DW-80-125-Y-A
		150	557913	DW-80-150-Y-A
		10 ... 200	557930	DW-80-...-Y-A
		<b>With magnet</b>		
		50	557914	DW-80-50-Y-AB
		75	557915	DW-80-75-Y-AB
		100	557916	DW-80-100-Y-AB
		125	557917	DW-80-125-Y-AB
		150	557918	DW-80-150-Y-AB
		10 ... 200	557931	DW-80-...-Y-AB

Data sheet

Ordering data – With G thread									
	Piston ø [mm]	Stroke [mm]	Rod clevis gap 16 mm		Rod clevis gap 19.5 mm		Rod clevis gap 16.5 mm		
			Part no.	Type	Part no.	Type	Part no.	Type	
	50	<b>Without magnet</b>							
		50	565721	DWA-50-50-Y-G	565731	DWB-50-50-Y-G	572341	DWC-50-50-Y-G	
		75	565722	DWA-50-75-Y-G	565732	DWB-50-75-Y-G	572342	DWC-50-75-Y-G	
		100	565723	DWA-50-100-Y-G	565733	DWB-50-100-Y-G	572343	DWC-50-100-Y-G	
		125	565724	DWA-50-125-Y-G	565734	DWB-50-125-Y-G	572344	DWC-50-125-Y-G	
		150	565725	DWA-50-150-Y-G	565735	DWB-50-150-Y-G	572345	DWC-50-150-Y-G	
		10 ... 200	565781	DWA-50-...-Y-G	565784	DWB-50-...-Y-G	572371	DWC-50-...-Y-G	
		<b>With magnet and sensor rail</b>							
		50	565726	DWA-50-50-Y-A-G	565736	DWB-50-50-Y-A-G	572346	DWC-50-50-Y-A-G	
		75	565727	DWA-50-75-Y-A-G	565737	DWB-50-75-Y-A-G	572347	DWC-50-75-Y-A-G	
		100	565728	DWA-50-100-Y-A-G	565738	DWB-50-100-Y-A-G	572348	DWC-50-100-Y-A-G	
		125	565729	DWA-50-125-Y-A-G	565739	DWB-50-125-Y-A-G	572349	DWC-50-125-Y-A-G	
		150	565730	DWA-50-150-Y-A-G	565740	DWB-50-150-Y-A-G	572350	DWC-50-150-Y-A-G	
		10 ... 200	565782	DWA-50-...-Y-A-G	565785	DWB-50-...-Y-A-G	572372	DWC-50-...-Y-A-G	
		<b>With magnet</b>							
	50	565777	DWA-50-50-Y-AB-G	565762	DWB-50-50-Y-AB-G	572351	DWC-50-50-Y-AB-G		
	75	565778	DWA-50-75-Y-AB-G	565763	DWB-50-75-Y-AB-G	572352	DWC-50-75-Y-AB-G		
	100	565779	DWA-50-100-Y-AB-G	565764	DWB-50-100-Y-AB-G	572353	DWC-50-100-Y-AB-G		
	125	565780	DWA-50-125-Y-AB-G	565765	DWB-50-125-Y-AB-G	572354	DWC-50-125-Y-AB-G		
	150	565761	DWA-50-150-Y-AB-G	565766	DWB-50-150-Y-AB-G	572355	DWC-50-150-Y-AB-G		
	10 ... 200	565783	DWA-50-...-Y-AB-G	565786	DWB-50-...-Y-AB-G	572373	DWC-50-...-Y-AB-G		
	63		<b>Without magnet</b>						
			50	565741	DWA-63-50-Y-G	565751	DWB-63-50-Y-G	572356	DWC-63-50-Y-G
			75	565742	DWA-63-75-Y-G	565752	DWB-63-75-Y-G	572357	DWC-63-75-Y-G
			100	565743	DWA-63-100-Y-G	565753	DWB-63-100-Y-G	572358	DWC-63-100-Y-G
			125	565744	DWA-63-125-Y-G	565754	DWB-63-125-Y-G	572359	DWC-63-125-Y-G
			150	565745	DWA-63-150-Y-G	565755	DWB-63-150-Y-G	572360	DWC-63-150-Y-G
			10 ... 200	565787	DWA-63-...-Y-G	565790	DWB-63-...-Y-G	572374	DWC-63-...-Y-G
			<b>With magnet and sensor rail</b>						
			50	565746	DWA-63-50-Y-A-G	565756	DWB-63-50-Y-A-G	572361	DWC-63-50-Y-A-G
			75	565747	DWA-63-75-Y-A-G	565757	DWB-63-75-Y-A-G	572362	DWC-63-75-Y-A-G
			100	565748	DWA-63-100-Y-A-G	565758	DWB-63-100-Y-A-G	572363	DWC-63-100-Y-A-G
			125	565749	DWA-63-125-Y-A-G	565759	DWB-63-125-Y-A-G	572364	DWC-63-125-Y-A-G
150			565750	DWA-63-150-Y-A-G	565760	DWB-63-150-Y-A-G	572365	DWC-63-150-Y-A-G	
10 ... 200			565788	DWA-63-...-Y-A-G	565791	DWB-63-...-Y-A-G	572375	DWC-63-...-Y-A-G	
<b>With magnet</b>									
50		565767	DWA-63-50-Y-AB-G	565772	DWB-63-50-Y-AB-G	572366	DWC-63-50-Y-AB-G		
75		565768	DWA-63-75-Y-AB-G	565773	DWB-63-75-Y-AB-G	572367	DWC-63-75-Y-AB-G		
100		565769	DWA-63-100-Y-AB-G	565774	DWB-63-100-Y-AB-G	572368	DWC-63-100-Y-AB-G		
125		565770	DWA-63-125-Y-AB-G	565775	DWB-63-125-Y-AB-G	572369	DWC-63-125-Y-AB-G		
150		565771	DWA-63-150-Y-AB-G	565776	DWB-63-150-Y-AB-G	572370	DWC-63-150-Y-AB-G		
10 ... 200		565789	DWA-63-...-Y-AB-G	565792	DWB-63-...-Y-AB-G	572376	DWC-63-...-Y-AB-G		

## Data sheet

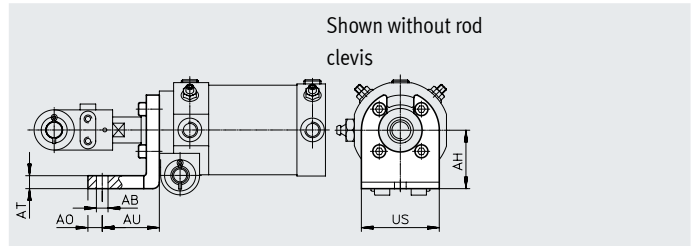
Ordering data – With G thread				
	Piston $\varnothing$ [mm]	Stroke [mm]	Rod clevis gap 28 mm	
			Part no.	Type
	80	<b>Without magnet</b>		
		50	565793	DW-80-50-Y-G
		75	565794	DW-80-75-Y-G
		100	565795	DW-80-100-Y-G
		125	565796	DW-80-125-Y-G
		150	565797	DW-80-150-Y-G
		10 ... 200	565808	DW-80-...-Y-G
		<b>With magnet and sensor rail</b>		
		50	565798	DW-80-50-Y-A-G
		75	565799	DW-80-75-Y-A-G
		100	565800	DW-80-100-Y-A-G
		125	565801	DW-80-125-Y-A-G
		150	565802	DW-80-150-Y-A-G
		10 ... 200	565809	DW-80-...-Y-A-G
		<b>With magnet</b>		
		50	565803	DW-80-50-Y-AB-G
		75	565804	DW-80-75-Y-AB-G
		100	565805	DW-80-100-Y-AB-G
		125	565806	DW-80-125-Y-AB-G
		150	565807	DW-80-150-Y-AB-G
		10 ... 200	565810	DW-80-...-Y-AB-G

Accessories

Foot mounting HNH

Materials:  
Steel

Scope of delivery:  
4 screws

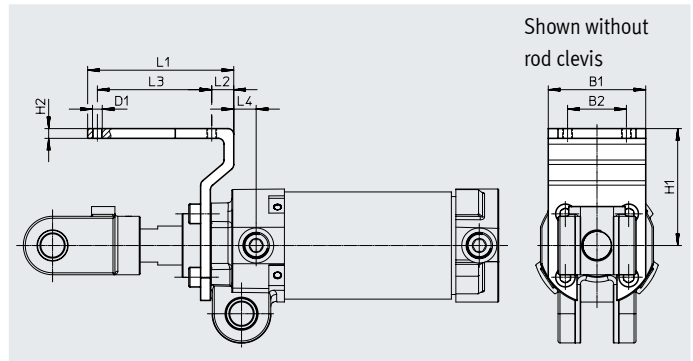


Dimensions and ordering data												
For $\varnothing$	AB $\varnothing$	AH	AO	AT	AU	US	Weight [g]	Part no.	Type			
50, 63, 80	9	45	11	10	44	60	241	549603	HNH-50/63/80			

Mounting bracket TBH

Materials:  
Steel

Scope of delivery:  
4 screws, short  
4 screws, long

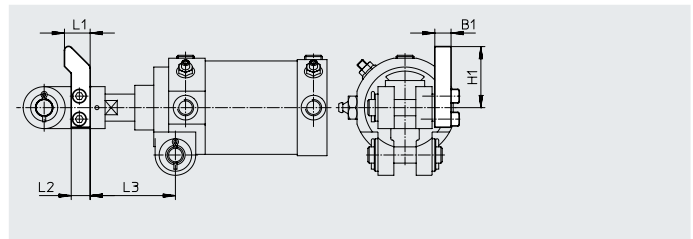


Dimensions and ordering data												
For $\varnothing$	B1	B2	D1	H1	H2	L1	L2	L3	L4	Weight [g]	Part no.	Type
50, 63, 80	50	30.2	M5	60	5	75	11.3	58.7	17	282	549605	TBH-50/63/80

Switch lever KTH


Materials:  
Steel

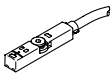
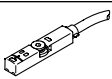
Scope of delivery:  
2 screws

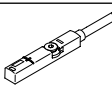
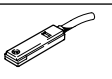
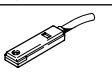


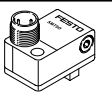
Dimensions and ordering data												
For $\varnothing$	B1	H1	L1	L2	L3	Weight [g]	Part no.	Type				
50, 63	12	45.2	19	14	63	83	549607	KTH-50/63/80				
80	12	45.2	19	14	68.5							

## Accessories




Ordering data – Mounting kit					
	Scope of delivery	For $\varnothing$	Weight [g]	Part no.	Type
	2 bolts, 2 retaining pins and 4 washers	50, 63	117	573323	DAMD-F5-S-50
		80	362	573172	DAMD-F5-S-80


Ordering data – Proximity switch for T-slot, magneto-resistive						Data sheets → Internet: smt
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part no.	Type
<b>N/O contact</b>						
	Inserted in the slot from above, flush with the cylinder profile, short design	PNP	Cable, 3-wire	2.5	574335	SMT-8M-A-PS-24V-E-2.5-OE
			Plug M8x1, 3-pin	0.3	574334	SMT-8M-A-PS-24V-E-0.3-M8D
			Plug M12x1, 3-pin	0.3	574337	SMT-8M-A-PS-24V-E-0.3-M12
		NPN	Cable, 3-wire	2.5	574338	SMT-8M-A-NS-24V-E-2.5-OE
Plug M8x1, 3-pin	0.3		574339	SMT-8M-A-NS-24V-E-0.3-M8D		
<b>N/C contact</b>						
	Inserted in the slot from above, flush with the cylinder profile, short design	PNP	Cable, 3-wire	7.5	574340	SMT-8M-A-PO-24V-E-7.5-OE


Ordering data – Proximity switch for T-slot, magnetic reed						Data sheets → Internet: sme
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part no.	Type
<b>N/O contact</b>						
	Inserted in the slot from above, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	543862	SME-8M-DS-24V-K-2.5-OE
				5.0	543863	SME-8M-DS-24V-K-5.0-OE
			Cable, 2-wire	2.5	543872	SME-8M-ZS-24V-K-2.5-OE
				Plug M8x1, 3-pin	0.3	543861
	Inserted in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	150855	SME-8-K-LED-24
			Plug M8x1, 3-pin	0.3	150857	SME-8-S-LED-24
<b>N/C contact</b>						
	Inserted in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	160251	SME-8-O-K-LED-24

Ordering data – Proximity switch for T-slot, welding field immune					Data sheets → Internet: smtso
	Switching output	Electrical connection, right	Cable length [m]	Part no.	Type
	PNP	Plug M12x1, 3-pin	2.5	191986	SMTSO-8E-PS-M12-LED-24
	NPN	Plug M12x1, 3-pin	2.5	175825	SMTSO-8E-NS-M12-LED-24

Accessories

Ordering data – Connecting cables				Data sheets → Internet: nebu	
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541333	NEBU-M8G3-K-2.5-LE3
			5	541334	NEBU-M8G3-K-5-LE3
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541338	NEBU-M8W3-K-2.5-LE3
			5	541341	NEBU-M8W3-K-5-LE3
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541363	NEBU-M12G5-K-2.5-LE3
			5	541364	NEBU-M12G5-K-5-LE3

Ordering data – Mounting kit			Data sheets → Internet: smbr	
			Part no.	Type
	For mounting the proximity switch SME-/SMT-8M or SMTSO-8E on the cylinder		538937	SMBR-8-8/100-S6

Ordering data – Mounting kit			Data sheets → Internet: smbz	
			Part no.	Type
	For mounting the proximity switches SME-/SMT-8 or SMTSO-8E on the sensor rail		537806	SMBZ-8-32/100