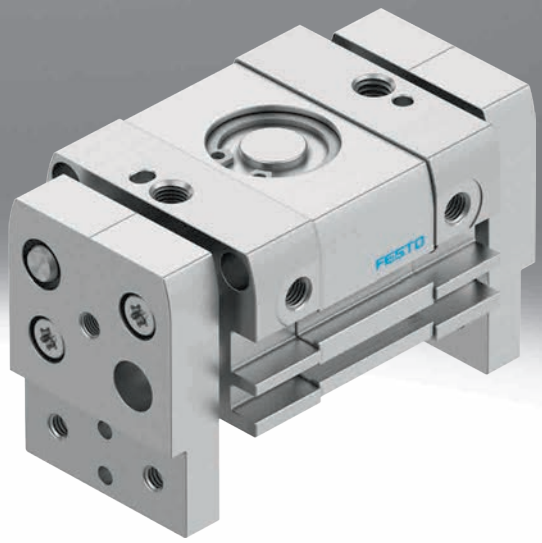
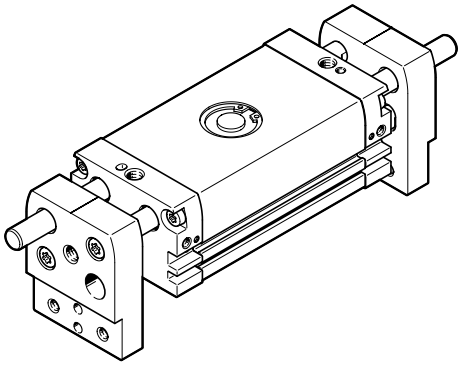
Parallel gripper DHPL



NEW

Key features

At a glance



- Compact and sturdy design
- Ideal for gripping larger parts
- The grippers can absorb a high torque due to the guided gripper jaws.
- Double-acting piston drive
- Variable gripping direction: internal or external gripping
- Proximity switches can be mounted via T-slot or C-slot

Cushioning

The drive is fitted with pneumatic end-position cushioning, which can be adapted by the operator for maximum performance according to the moving mass and speed.

Position sensing

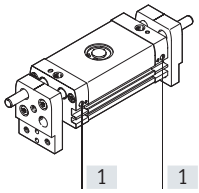
The position sensing function uses proximity switches to sense any required positions.

Note

Engineering software
Gripper selection
→ www.festo.com

Key features

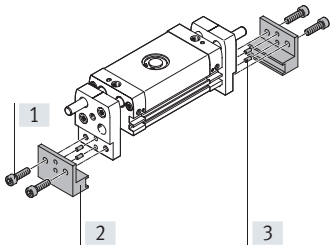
Supply ports



[1] Compressed air supply ports

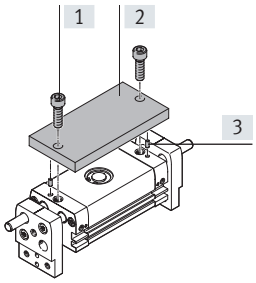
Mounting options

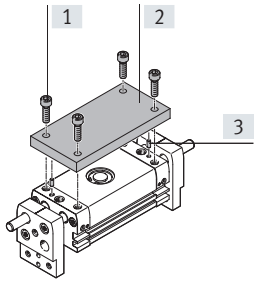
External gripper fingers



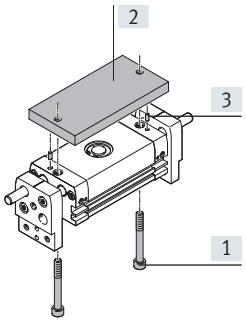
[1] Screws
[2] Gripper finger (produced in-house by the customer)
[3] Centring pin

From above



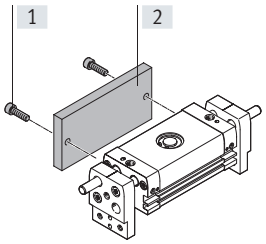


From underneath



[1] Screws
[2] Mounting plate (produced in-house by the customer)
[3] Centring pin

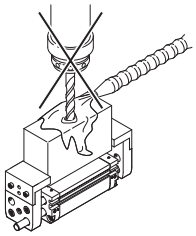
From the rear



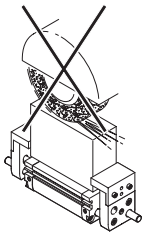
[1] Screws
[2] Mounting plate (produced in-house by the customer)

Note

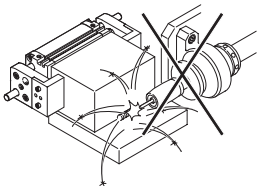
These grippers are not suitable for the following or similar applications:



- Machining
- Aggressive media

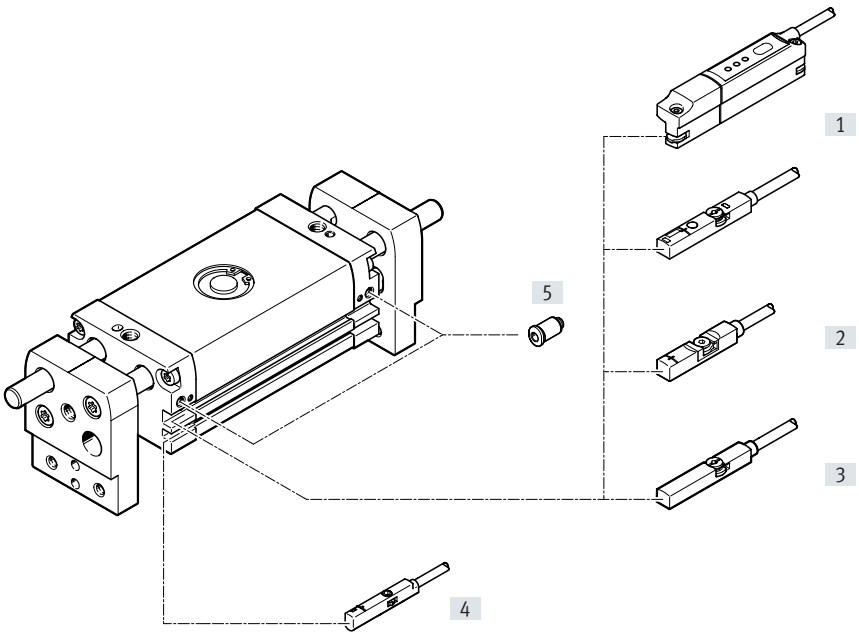


- Grinding dust



- Welding spatter

Peripherals overview



Accessories

	Type/order code	Description	→ Page/Internet
[1]	Position transmitters SDAT/SDAS	For detecting the current position	19
[2]	Proximity switch SDBT	For position sensing	18
[3]	Proximity switch CRSMT-8	For position sensing	18
[4]	Proximity switch SME/SMT-10	For position sensing	18
[5]	Push-in fitting QS	For connecting tubing with standard O.D.	qs

Type codes

001	Series	
DHPL	Parallel gripper	

002	Size	
10	10	
16	16	
20	20	
25	25	
32	32	
40	40	

003	Complete stroke [mm]	
20	20	
30	30	
40	40	
50	50	
60	60	
70	70	
80	80	
100	100	
120	120	
160	160	
200	200	

004	Cushioning	
P	Elastic cushioning rings/plates on both sides	

005	Position sensing	
A	For proximity sensor	

Data sheet

Function
Double-acting

Size
10 ... 40 mm

Total stroke
20 ... 200 mm

www.festo.com

General technical data

Size	10		16		20		25		32		40	
Total stroke	20 mm	60 mm	30 mm	80 mm	40 mm	100 mm	50 mm	120 mm	70 mm	160 mm	100 mm	200 mm
Stroke per gripper jaw	10 mm	30 mm	15 mm	40 mm	20 mm	50 mm	25 mm	60 mm	35 mm	80 mm	50 mm	100 mm
Design	Gear rack/pinion											
Mode of operation	Double-acting											
Guide	Plain-bearing guide											
Gripper function	Parallel											
Cushioning	Elastic cushioning rings/pads at both ends											
Number of gripper jaws	2											
Max. load per external gripper finger [1]	54 g		93 g		170 g		305 g		498 g		801 g	
Pneumatic connection	M5								G1/8			
Gripper repetition accuracy [2]	0.03 mm											
Rotational symmetry	0.2 mm											
Max. interchangeability	0.2 mm											
Max. operating frequency of gripper	2 Hz	1.5 Hz	2 Hz	1.5 Hz	2 Hz	1.5 Hz	2 Hz	1.5 Hz	1 Hz	0.6 Hz	1 Hz	0.6 Hz
Position sensing	Via proximity switch											
Type of mounting	Optionally with through-hole	Optionally: direct fastening via thread, with through-hole										
Mounting position	Any											

1) Applies to unthrottled operation
2) Under constant exposure to operating conditions, end-position drift occurs in the direction of movement of the gripper jaws, at 100 consecutive strokes

Operating and environmental conditions

Size	10	16	20	25	32	40
Operating pressure [1]	0.25 ... 0.8 MPa	0.15 ... 0.8 MPa				
Operating pressure [2]	36 ... 116 psi	21.75 ... 116 psi				
Operating pressure [3]	2.5 ... 8 bar	1.5 ... 8 bar				
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)					
Ambient temperature [4]	-10 ... 60°C					
Maintenance interval	Lifetime lubrication					
Corrosion resistance class CRC [5]	1 - Low corrosion stress					

1) DHPL-10: After a longer period of downtime, the min. operating pressure of 0.25 MPa (2.5 bar, 36 psi) may increase to 0.4 MPa (4 bar, 58 psi).
2) DHPL-10: After a longer period of downtime, the min. operating pressure of 0.25 MPa (2.5 bar, 36 psi) may increase to 0.4 MPa (4 bar, 58 psi).
3) DHPL-10: After a longer period of downtime, the min. operating pressure of 0.25 MPa (2.5 bar, 36 psi) may increase to 0.4 MPa (4 bar, 58 psi).
4) Note operating range of proximity switches
5) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive trunnions).

Data sheet

Weight

Size	10		16		20		25		32		40	
Total stroke	20 mm	60 mm	30 mm	80 mm	40 mm	100 mm	50 mm	120 mm	70 mm	160 mm	100 mm	200 mm
Product weight	251 g	377 g	499 g	802 g	883 g	1407 g	1447 g	2297 g	2634 g	4154 g	4480 g	6480 g

Materials

Size	10	16	20	25	32	40
O-ring material	NBR					
Housing material	Anodised wrought aluminium alloy					
Cover material	Anodised wrought aluminium alloy					
Cover cap material	Anodised wrought aluminium alloy					
End plate material	Anodised wrought aluminium alloy					
Gripper jaw material	Anodised wrought aluminium alloy					
Piston rod material	High-alloy stainless steel					
Piston seal material	TPE-U(PU)					
Gear rack material	High-alloy stainless steel					
Material of screws	Galvanised steel					
Note on materials	RoHS-compliant					

Measured gripping force with a lever arm of 20 mm

Size	10		16		20		25		32		40	
Total stroke	20 mm	60 mm	30 mm	80 mm	40 mm	100 mm	50 mm	120 mm	70 mm	160 mm	100 mm	200 mm
Total gripping force at 0.6 MPa (6 bar, 87 psi), closing	38 N	44 N	130 N	142 N	230 N	238 N	360 N	380 N	570 N	600 N	924 N	992 N
Total gripping force at 0.6 MPa (6 bar, 87 psi), opening	60 N	68 N	180 N	190 N	310 N	316 N	470 N	490 N	760 N	800 N	1100 N	1180 N
Gripping force per gripper jaw at 0.6 MPa (6 bar, 87 psi) closing	19 N	22 N	65 N	71 N	115 N	119 N	180 N	190 N	285 N	300 N	462 N	496 N
Gripping force per gripper jaw at 0.6 MPa (6 bar, 87 psi) opening	30 N	34 N	90 N	95 N	155 N	158 N	235 N	245 N	380 N	400 N	550 N	590 N

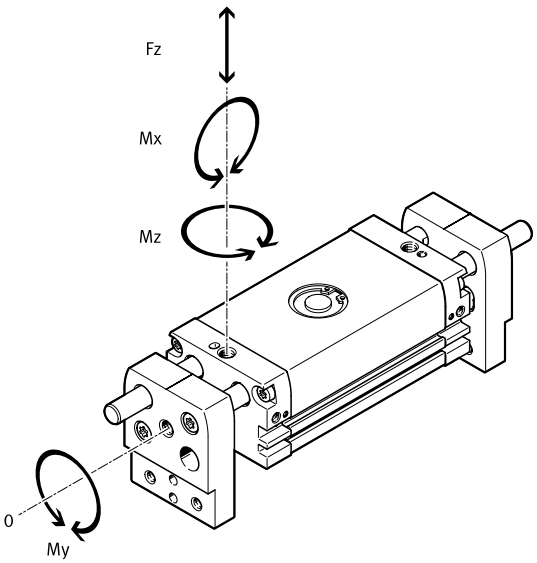
Opening and closing times

Size	10		16		20		25		32		40	
Total stroke	20 mm	60 mm	30 mm	80 mm	40 mm	100 mm	50 mm	120 mm	70 mm	160 mm	100 mm	200 mm
Min. opening time at 0.6 MPa (6 bar, 87 psi) [1]	41 ms	110 ms	53 ms	157 ms	71 ms	189 ms	81 ms	201 ms	112 ms	272 ms	220 ms	427 ms
Min. closing time at 0.6 MPa (6 bar, 87 psi) [2]	70 ms	174 ms	75 ms	221 ms	108 ms	274 ms	116 ms	274 ms	209 ms	473 ms	281 ms	524 ms

1) The indicated opening and closing times [ms] were measured at room temperature at an operating pressure of 6 bar with a horizontally mounted gripper without additional gripper fingers.
The grippers must be throttled for larger loads [g]. Opening and closing times must then be adjusted accordingly.
2) The indicated opening and closing times [ms] were measured at room temperature at an operating pressure of 6 bar with a horizontally mounted gripper without additional gripper fingers.
The grippers must be throttled for larger loads [g]. Opening and closing times must then be adjusted accordingly.

Data sheet

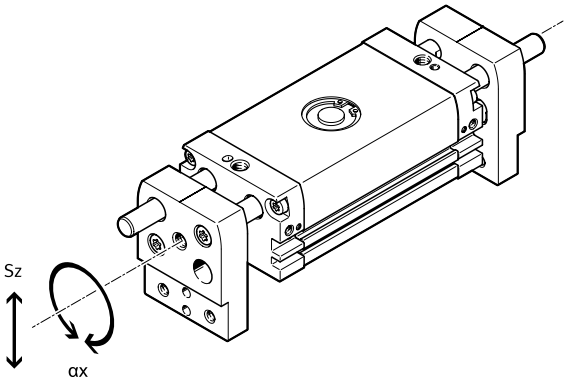
Characteristic load values at the gripper jaws



The indicated permissible forces and torques apply to a single gripper jaw. The indicated values include the lever arm, additional weight forces caused by the workpiece or external gripper fingers, as well as forces which occur during movement. The zero coordinate line (gripper jaw guide) must be taken into consideration when calculating torques.

Size	10	16	20	25	32	40
Maximum force on gripper jaw Fz, static	40 N	240 N	280 N	320 N	750 N	
Maximum torque on gripper jaw Mx, static	0.5 Nm	3.5 Nm	5 Nm	6.5 Nm	18 Nm	22 Nm
Maximum torque on gripper jaw My, static	0.5 Nm	3.5 Nm	5 Nm	6.5 Nm	18 Nm	22 Nm
Maximum torque on gripper jaw Mz, static	0.5 Nm	3.5 Nm	5 Nm	6.5 Nm	18 Nm	22 Nm

Gripper jaw backlash



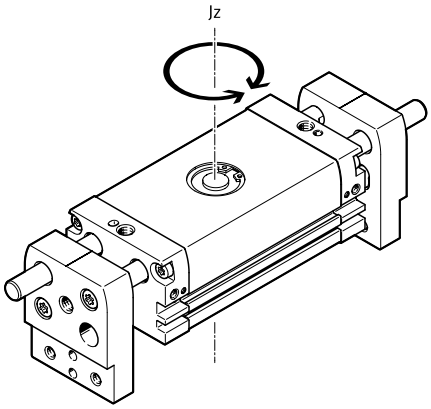
The plain-bearing guide used in the grippers means that there is backlash between the gripper jaws and the housing.
The values listed in the table apply when new.

Size	10	16	20	25	32	40
Max. gripper jaw backlash Sz [1]	0.064 mm	0.072 mm	0.068 mm	0.064 mm	0.066 mm	0.065 mm
Max. gripper jaw angular backlash ax, ay [2]	0.22 deg	0.15 deg	0.14 deg	0.13 deg	0.12 deg	0.1 deg

1) The values apply only when the gripper is open.
2) The values apply only when the gripper is open.

Data sheet

Mass moments of inertia



Mass moment of inertia of the parallel grippers in relation to the central axis, without external gripper fingers, without load.

Gripper closed; gripper open

Size	10		16		20	
Total stroke	20 mm	60 mm	30 mm	80 mm	40 mm	100 mm
Mass moment of inertia	1.6 kgcm^2; 2.2 kgcm^2	4.8 kgcm^2; 9.6 kgcm^2	4.3 kgcm^2; 6.6 kgcm^2	9.7 kgcm^2; 12.6 kgcm^2	15.4 kgcm^2; 23.5 kgcm^2	49.3 kgcm^2; 104.5 kgcm^2

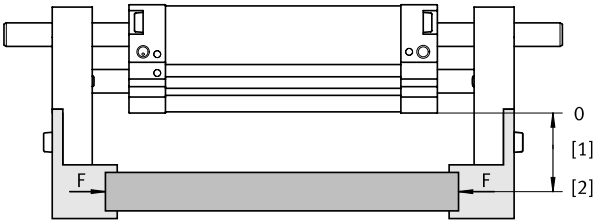
Size	25		32		40	
Total stroke	50 mm	120 mm	70 mm	160 mm	100 mm	200 mm
Mass moment of inertia	50.4 kgcm^2; 76.4 kgcm^2	118.1 kgcm^2; 258.9 kgcm^2	101.8 kgcm^2; 176.1 kgcm^2	315.8 kgcm^2; 727 kgcm^2	249.5 kgcm^2; 487.2 kgcm^2	786.9 kgcm^2; 1625 kgcm^2

Data sheet

Gripping force F_h per gripper jaw as a function of the operating pressure and lever arm x

The gripping forces as a function of the operating pressure and lever arm can be determined from the following graphs.

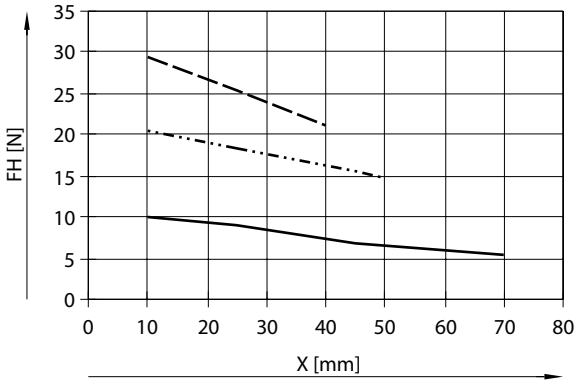
3 bar
6 bar
8 bar



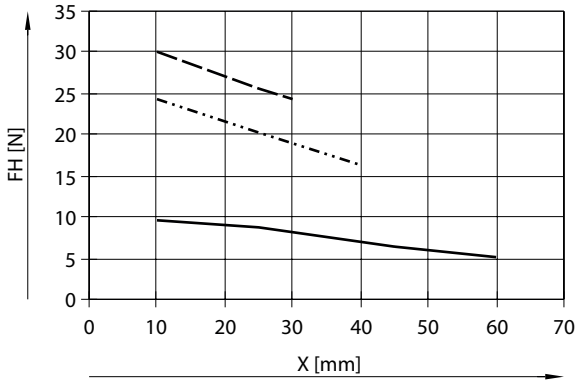
[1] Lever arm x
[2] Load point

External gripping (closing)

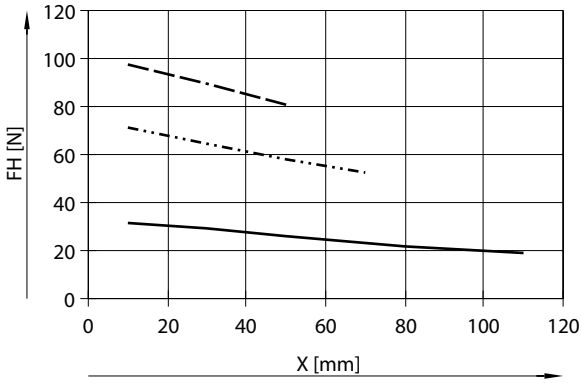
DHPL-10-20-...-A



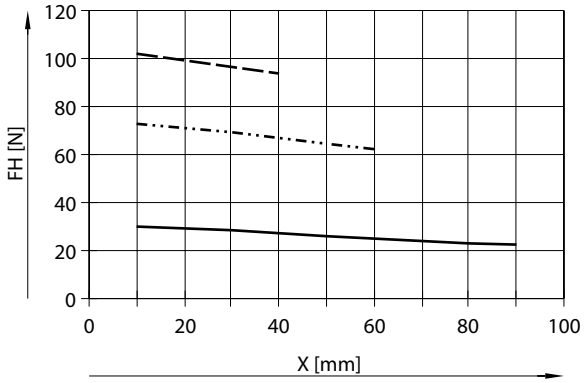
DHPL-10-60-...-A



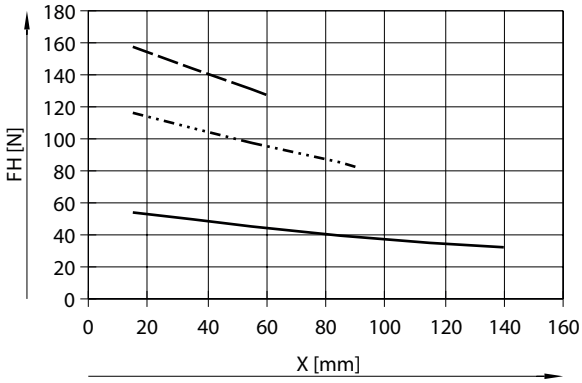
DHPL-16-30-...-A



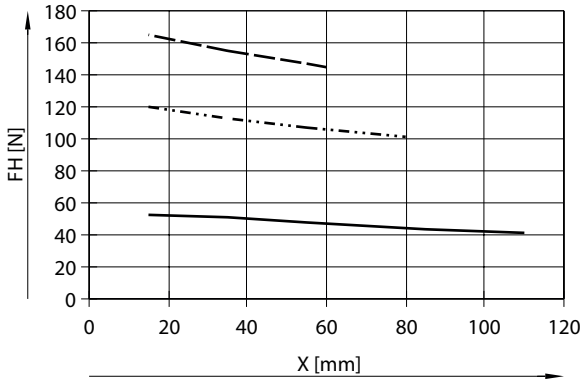
DHPL-16-80-...-A



DHPL-20-40-...-A



DHPL-20-100-...-A

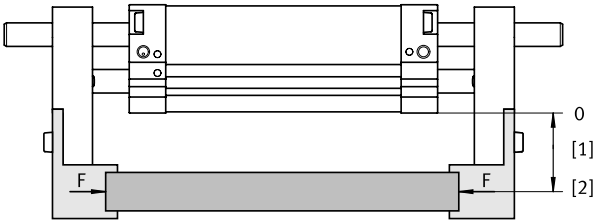


Data sheet

Gripping force F_h per gripper jaw as a function of the operating pressure and lever arm x

The gripping forces as a function of the operating pressure and lever arm can be determined from the following graphs.

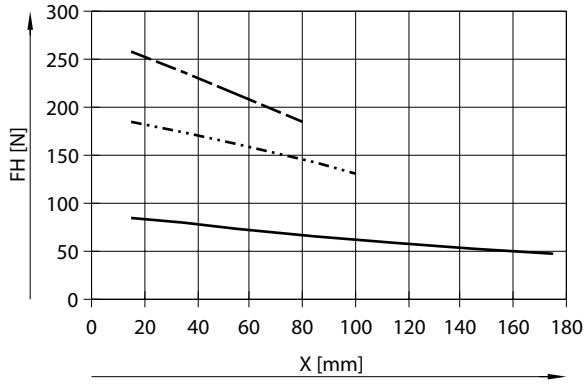
3 bar
6 bar
8 bar



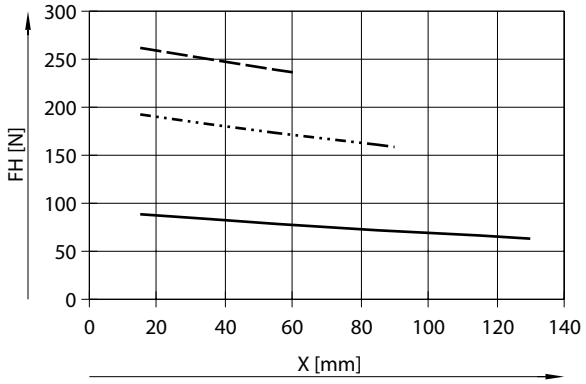
[1] Lever arm x
[2] Load point

External gripping (closing)

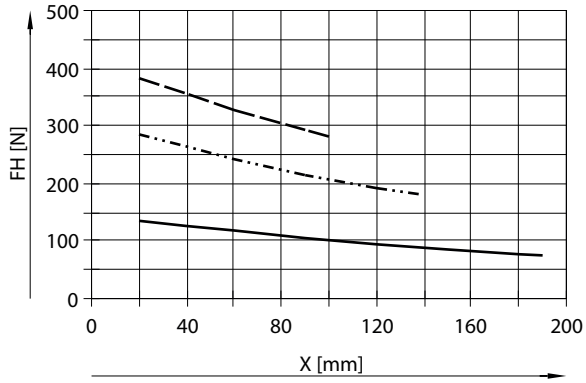
DHPL-25-50-...-A



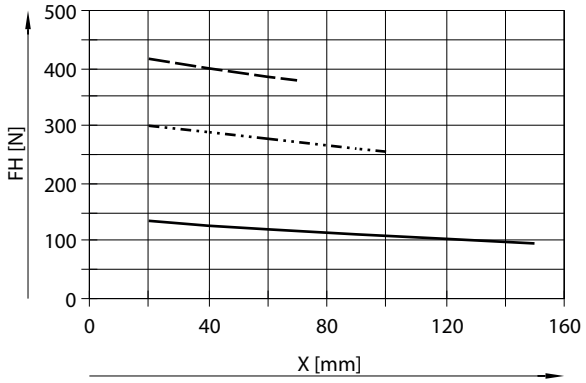
DHPL-25-120-...-A



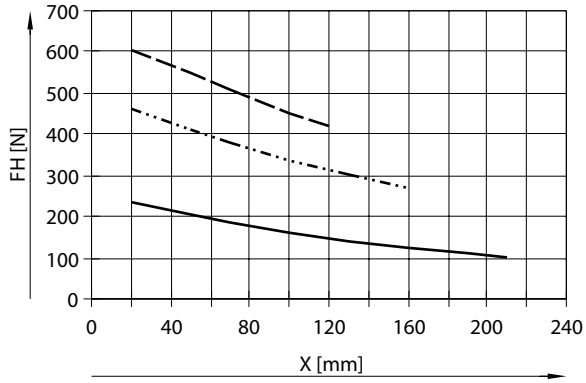
DHPL-32-70-...-A



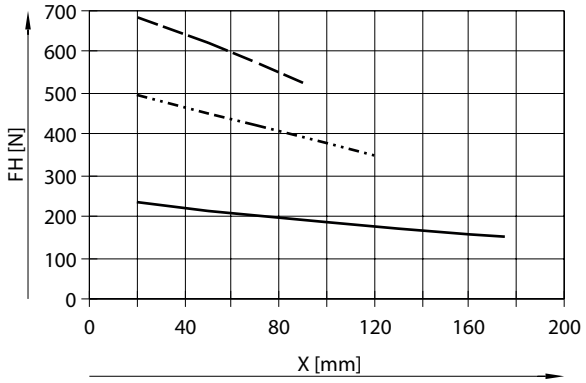
DHPL-32-160-...-A



DHPL-40-100-...-A



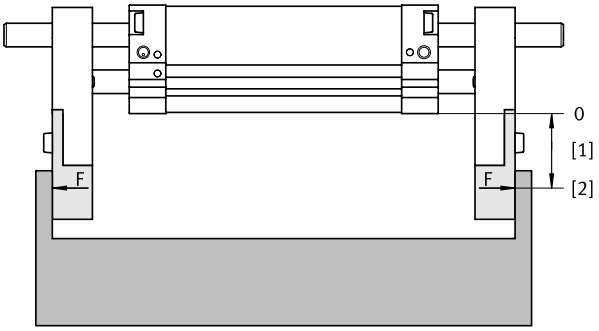
DHPL-40-200-...-A



Data sheet

Gripping force F_h per gripper jaw as a function of the operating pressure and lever arm x

The gripping forces as a function of the operating pressure and lever arm can be determined from the following graphs.

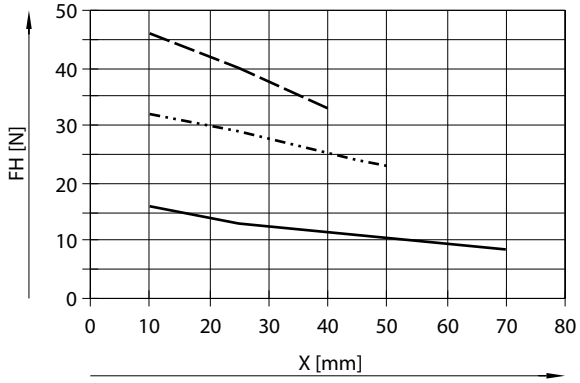


3 bar
6 bar
8 bar

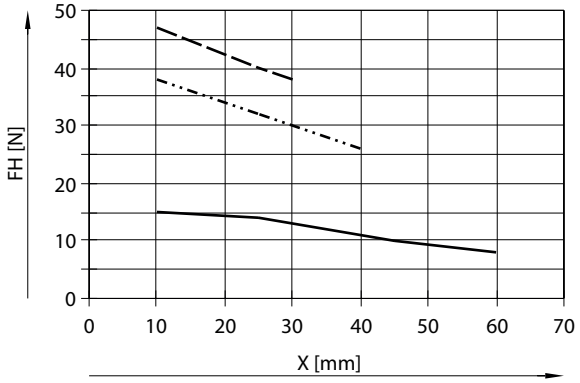
[1] Lever arm x
[2] Load point

Internal gripping (opening)

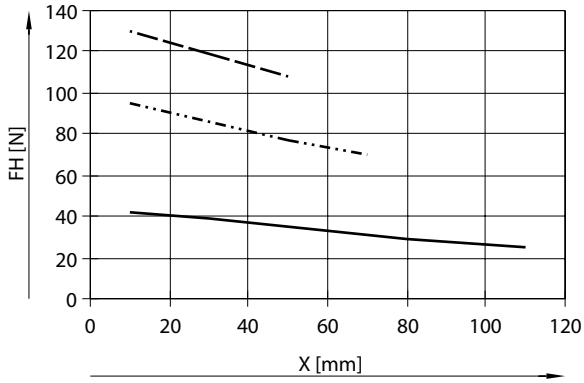
DHPL-10-20-...-A



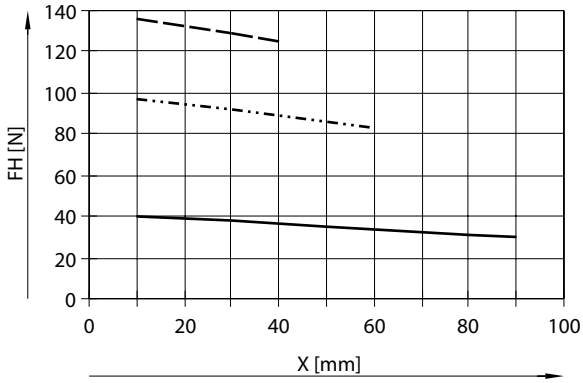
DHPL-10-60-...-A



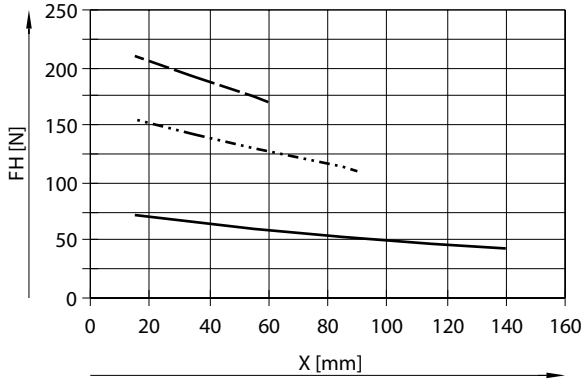
DHPL-16-30-...-A



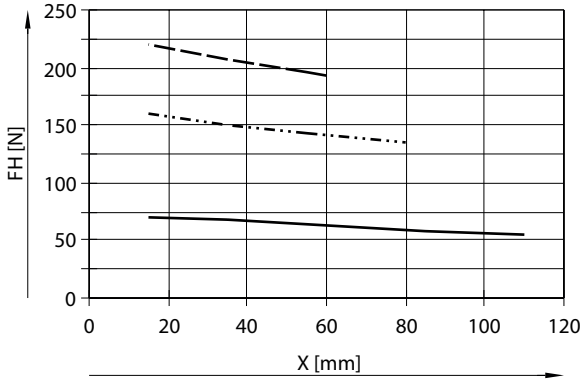
DHPL-16-80-...-A



DHPL-20-40-...-A



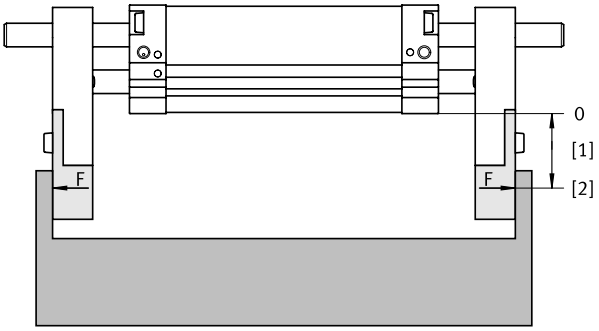
DHPL-20-100-...-A



Data sheet

Gripping force F_h per gripper jaw as a function of the operating pressure and lever arm x

The gripping forces as a function of the operating pressure and lever arm can be determined from the following graphs.

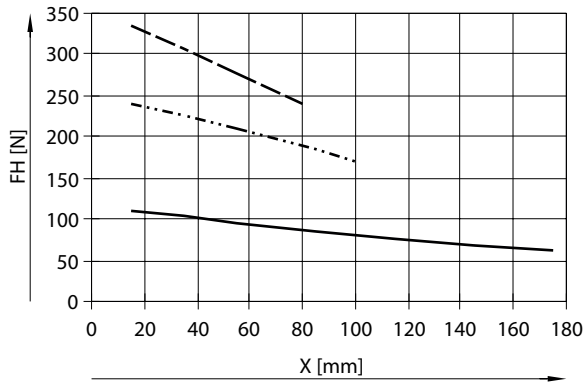


3 bar
6 bar
8 bar

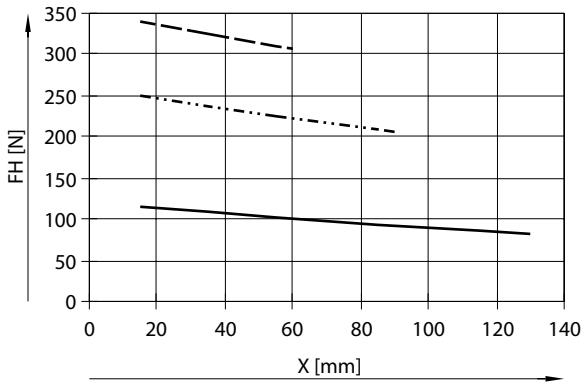
[1] Lever arm x
[2] Load point

Internal gripping (opening)

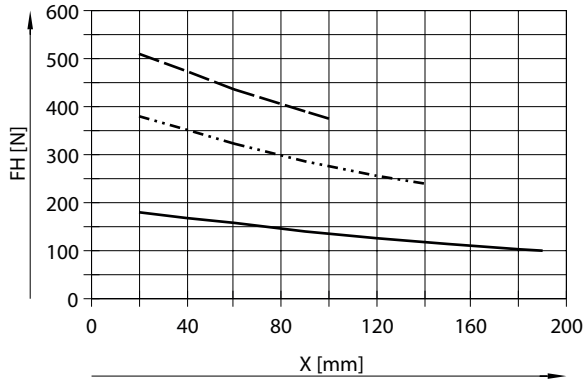
DHPL-25-50-...-A



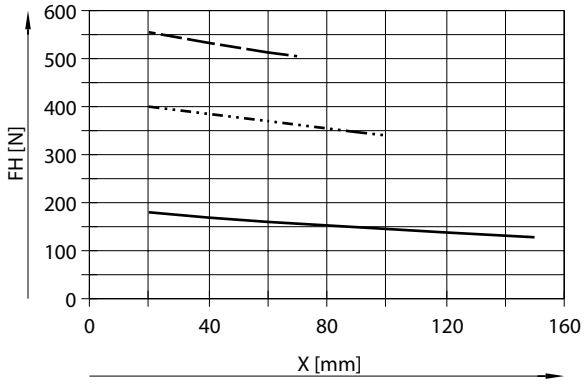
DHPL-25-120-...-A



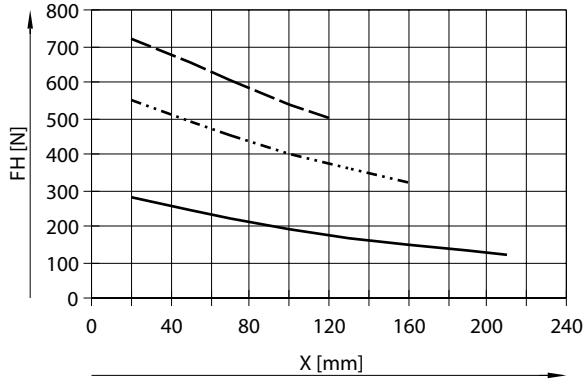
DHPL-32-70-...-A



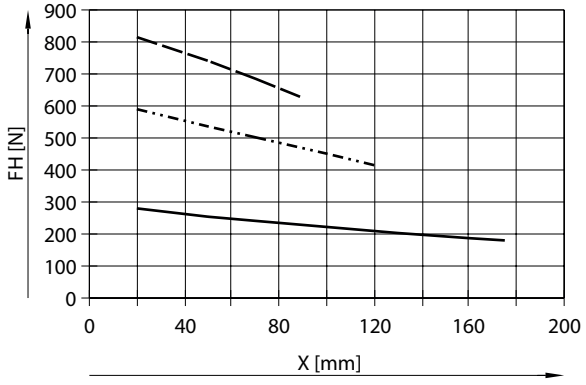
DHPL-32-160-...-A



DHPL-40-100-...-A



DHPL-40-200-...-A



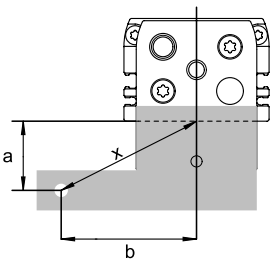
Data sheet

Gripping force F_h per gripper jaw at 6 bar as a function of lever arm x and eccentricity a and b

The following formula must be used to calculate the lever arm x with eccentric gripping:

$$X = \sqrt{a^2 + b^2}$$

The gripping force F_h can be read from the graphs (➔ page 10) using the calculated value x.



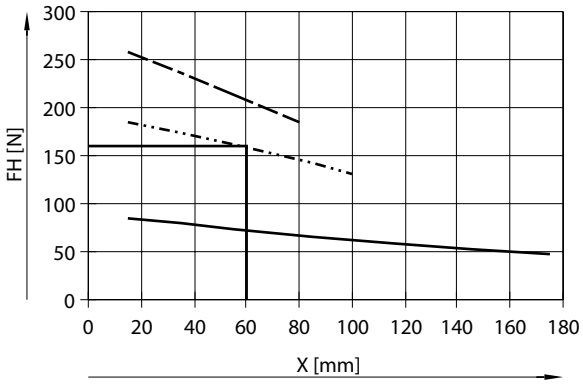
Calculation example

Assuming:
Distance a = 40 mm
Distance b = 45 mm
Required:
The gripping force at 6 bar with a DHPL-25-50-P-A, used as an external gripper

Procedure:
Calculating the lever arm x

$$x = \sqrt{40^2 + 45^2}$$

x = 60 mm

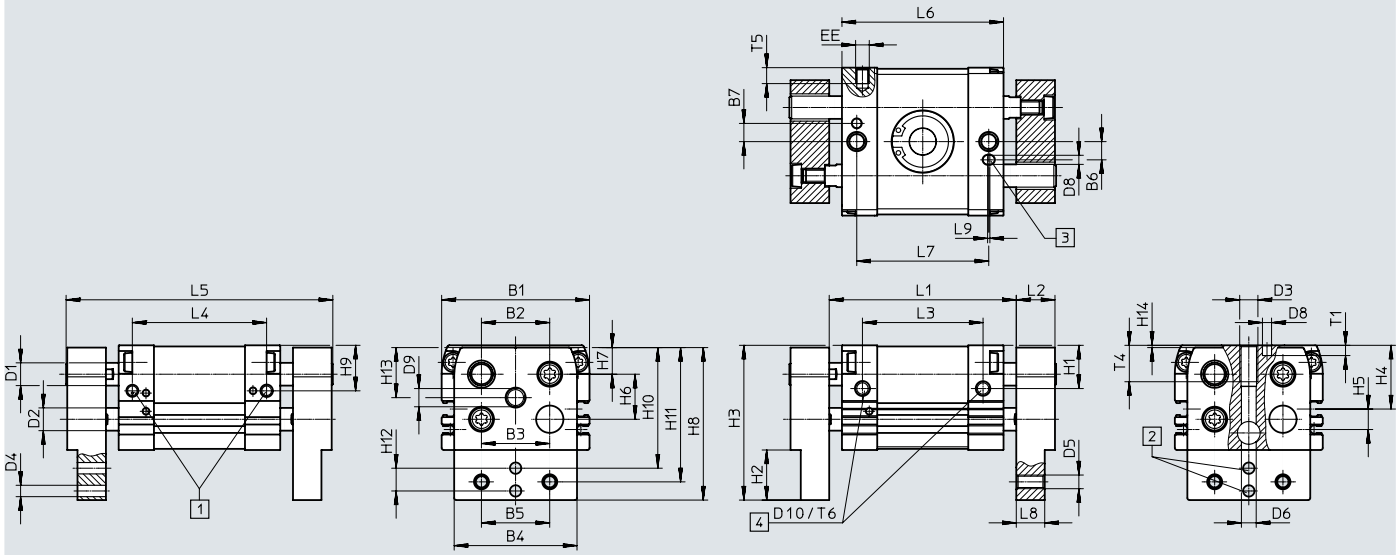


The graph (➔ page 10) gives a value of F_h = 160 N for the gripping force.

Data sheet

Dimensions Download CAD data ➔ www.festo.com

DHPL-10 ... 20



[1] Compressed air supply port, opening
[2] Compressed air supply port, closing
[3] Centring holes
[4] Centring hole, slot
[5] Thread for mounting the gripper from the rear

Size [mm]	Stroke [mm]	B1 ±0.2	B2	B3	B4 ±0.25	B5 ±0.15	B6	B7 ±0.1	D1 ø	D2 ø	D3	D4 ø H9	D5	D6 ø H13	D8 H9	D9
10	20	44	20	18	34	20	6	6	6	6	M6	3	M4	4.5	3	M4x0.5
	60															
16	30	55	22	23	43	25	9	9	8	8	M8	4	M5	5.5		M6x0.5
	80															
20	40	65	30	30	54	30	8	8	10	10		5	M6	6.5	4	M8x1
	100															

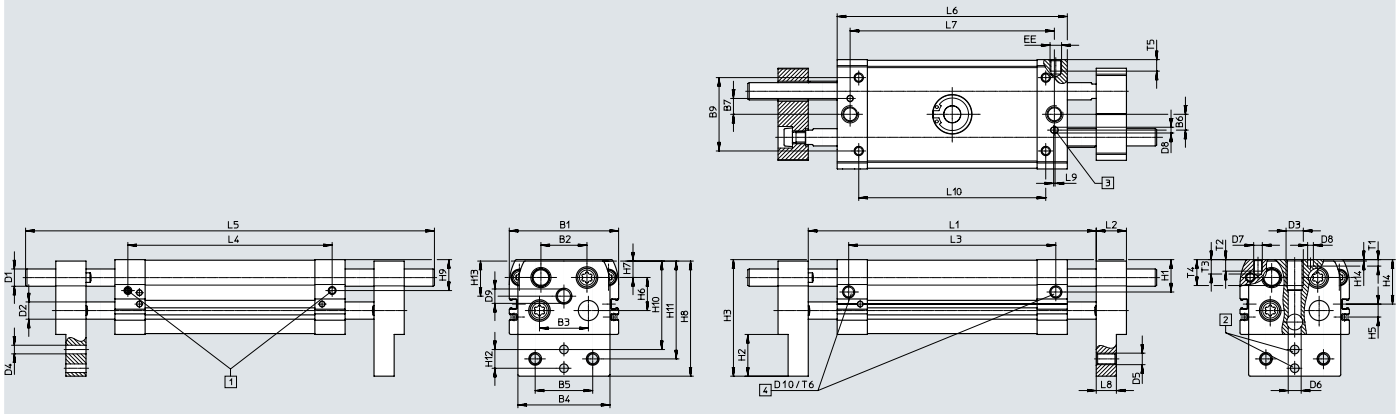
Size [mm]	Stroke [mm]	D10	EE	H1 ±0.35	H2 ±0.25	H3 ±0.7	H4	H5	H6	H7	H8	H9 ±0.35	H10 ±0.15	H11 ±0.15	H12 ±0.05	H13 ±0.15
10	20	M4	M5	11.5	15.5	46.5	18	8	12.5	9	46	10	34.5	38.5	8	15
	60															
16	30	M5		16	19.5	58.5	24		17.5	10	58	16.5	44.5	49.5	10	20
	80															
20	40	M6		19	22	68	28	9	19.8	11.7	67	20	53	59		22
	100															

Size [mm]	Stroke [mm]	H14	L1 Gripper closed ±0.7	L1 Gripper open ±0.7	L2 ±0.1	L3 ±0.25	L4 ±0.25	L5 ±1	L6 ±0.25	L7 ±0.25	L8 ±0.05	L9	T1 ±0.2	T4	T5	T6
10	20	0.5	56	76	10	42.2	33	77	51	42	7	1	4	12	3.5	5
	60		96	156		76.2	67	151	85	76						
16	30		68	98	13	47	45	96	60	48	9		3	16	6	7
	80		130	210		97	95	196	110	98						
20	40	1	82	122	17	53	59	117	71	58	12.5		4.5		7	
	100		162	262		113	119	237	131	118						

Data sheet

Dimensions Download CAD data ➔ www.festo.com

DHPL-25 ... 40



[1] Compressed air supply port, opening
[2] Compressed air supply port, closing
[3] Centring holes
[4] Centring hole, slot
[5] Thread for mounting the gripper from the rear

Size [mm]	Stroke [mm]	B1 ±0.2	B2	B3	B4 ±0.25	B5 ±0.15	B6	B7 ±0.1	B9 ±0.1	D1 Ø	D2 Ø	D3	D4 Ø H9	D5	D6 Ø H13	D7	D8	D9
25	50	76	32	34	64	40	11	11	51	12	12	M12	6	M8	9	M6	4	M10x1
	120																	
32	70	82		37	70	50	12	12	60	16	16		9	M10	10	M8	6	M12x1
	160																	
40	100	98	44	45	86	60			76			–	10	M12	11	M10		M14x1
	200																	

Size [mm]	Stroke [mm]	D10	EE	H1 ±0.35	H2 ±0.25	H3 ±0.7	H4	H5	H6	H7	H8	H9 ±0.35	H10 ±0.15	H11 ±0.15	H12 ±0.05	H13 ±0.15	H14	L2 ±0.1
25	50	M8	M5	22.5	29	81	30.9	9	22.9	11.5	80	21.5	61.5	68	13	24.4	1	21
	120																	
32	70		G1/8	25	32	100	34.5	24	31	14.5	99	24.5	76.5	84	15	30		24
	160																	
40	100	M10		30.5	38	117	41.5	26	37	16.5	116	30.5	87	98	20	34		28
	200																	

Size [mm]	Stroke [mm]	L1 Gripper closed ±0.7	L1 Gripper open ±0.7	L3 ±0.25	L4 ±0.25	L5 ±1	L6 ±0.25	L7 ±0.25	L8 ±0.05	L9	L10 ±0.15	T1 ±0.2	T2	T3	T4	T5	T6
25	50	100	150	72	70	142	88	70	14	1	58	4.5	8	10	18	6	8
	120	200	320	144	142	284	160	142			130						
32	70	150	220	88	86	186	110	86	15		86	6	16	18	24	10	11
	160	242	402	178	176	366	200	176			176						
40	100	188	288	118	118	254	148	116	18		116	8	20	23	79		15
	200	286	486	216	216	454	246	214			214						

Data sheet

Ordering data

Size [mm]	Stroke [mm]	Parallel gripper Part no.	Type
10	20	**8112216**	**DHPL-10-20-P-A**
	60	**8112215**	**DHPL-10-60-P-A**
16	30	**8112217**	**DHPL-16-30-P-A**
	80	**8112218**	**DHPL-16-80-P-A**
20	40	**8112220**	**DHPL-20-40-P-A**
	100	**8112219**	**DHPL-20-100-P-A**
25	50	**8112222**	**DHPL-25-50-P-A**
	120	**8112221**	**DHPL-25-120-P-A**
32	70	**8112223**	**DHPL-32-70-P-A**
	160	**8112224**	**DHPL-32-160-P-A**
40	100	**8112225**	**DHPL-40-100-P-A**
	200	**8112226**	**DHPL-40-200-P-A**

Accessories

Proximity switch

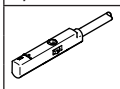
Ordering data – Proximity switch for C-slot, magnetic reed

Data sheets → Internet: sme

	Type of mounting	Electrical connection, outlet direction of connection	Switching output	Cable length [m]	Part no.	Type
N/O						
	Inserted in the slot from above	Cable, 3-wire, in-line	Contacting	2.5	**551365**	**SME-10M-DS-24V-E-2.5-L-OE**
		Cable, 2-wire, in-line		2.5	**551369**	**SME-10M-ZS-24V-E-2.5-L-OE**
		Plug M8x1, 3-pin, in-line		0.3	**551367**	**SME-10M-DS-24V-E-0.3-L-M8D**
		Cable, 3-wire, lateral		2.5	**551366**	**SME-10M-DS-24V-E-2.5-Q-OE**
		Cable, 2-wire, lateral		2.5	**551370**	**SME-10M-ZS-24V-E-2.5-Q-OE**
		Plug M8x1, 3-pin, lateral		0.3	**551368**	**SME-10M-DS-24V-E-0.3-Q-M8D**

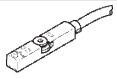
Ordering data – Proximity switch for C-slot, magneto-resistive

Data sheets → Internet: smt

	Type of mounting	Switching output	Electrical connection, outlet direction of connection	Cable length [m]	Part no.	Type
N/O						
	Inserted in the slot from above	PNP	Cable, 3-wire, in-line	2.5	**551373**	**SMT-10M-PS-24V-E-2.5-L-OE**
			Cable, 3-wire, lateral	2.5	**551374**	**SMT-10M-PS-24V-E-2.5-Q-OE**
			Plug M8x1, 3-pin, in-line	0.3	**551375**	**SMT-10M-PS-24V-E-0.3-L-M8D**
			Plug M8x1, 3-pin, lateral	0.3	**551376**	**SMT-10M-PS-24V-E-0.3-Q-M8D**
		NPN	Cable, 3-wire, in-line	2.5	**551377**	**SMT-10M-NS-24V-E-2.5-L-OE**
			Cable, 3-wire, lateral	2.5	**551378**	**SMT-10M-NS-24V-E-2.5-Q-OE**
			Plug M8x1, 3-pin, in-line	0.3	**551379**	**SMT-10M-NS-24V-E-0.3-L-M8D**
			Plug M8x1, 3-pin, lateral	0.3	**551380**	**SMT-10M-NS-24V-E-0.3-Q-M8D**
		Non-con-tacting, 2-wire	Cable, 2-wire, in-line	2.5	**551382**	**SMT-10M-ZS-24V-E-2.5-L-OE**
			Cable, 2-wire, lateral	2.5	**551383**	**SMT-10M-ZS-24V-E-2.5-Q-OE**

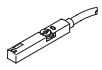
Ordering data – Proximity switch for T-slot, magneto-resistive

Data sheets → Internet: crsmt

	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part no.	Type
N/O						
	Inserted in the slot from above	PNP	Cable, 3-wire	5.0	**574380**	**CRSMT-8M-PS-24V-K-5.0-OE**
			Cable, 3-wire	10.0	**574381**	**CRSMT-8M-PS-24V-K-10.0-OE**
			Plug M8x1, 3-pin	0.3	**574383**	**CRSMT-8M-PS-24V-K-0.3-M8D**
			Plug M12x1, 3-pin	0.3	**574382**	**CRSMT-8M-PS-24V-K-0.3-M12**

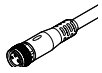
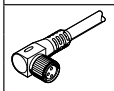
Ordering data – Proximity switch for T-slot, NAMUR

Data sheets → Internet: sdbt

	Switching output	Electrical connection	Cable length [m]	Part no.	Type
N/O					
	NAMUR	Cable, 2-wire	5	**579071**	**SDBT-MS-20NL-ZN-E-5-LE-EX6**
			10	**579072**	**SDBT-MS-20NL-ZN-E-10-LE-EX6**

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**
	Straight 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**
	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	**541367**	**NEBU-M12W5-K-2.5-LE3**
			5	**541370**	**NEBU-M12W5-K-5-LE3**

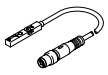
Accessories

Position transmitters

The position transmitter continuously senses the position of the piston. It has an analogue output with an output signal relative to the piston position.

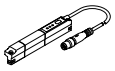
Ordering data – Position transmitters for T-slot

Data sheets → Internet: sdas

	Description	Type of mounting	Electrical connection	Cable length [m]	Part no.	Type
	Choice of two operating modes: • Two adjustable switching outputs • IO-Link	Inserted in the slot from above	Plug M8x1, 4-pin, in-line	0.3	**8063974**	**SDAS-MHS-M40-1L-PNLK-PN-E-0.3-M8**
			Cable, open end	2.5	**8063975**	**SDAS-MHS-M40-1L-PNLK-PN-E-2.5-LE**

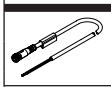
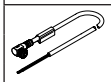
Ordering data – Position transmitters for T-slot

Data sheets → Internet: sdat

	Analogue output [V]	Analogue output [mA]	Type of mounting	Electrical connection	Cable length [m]	Part no.	Type
	–	4 ... 20	Inserted in the slot from above	Plug M8x1, 4-pin, in-line	0.3	**1531265**	**SDAT-MHS-M50-1L-SA-E-0.3-M8**
						1531266	**SDAT-MHS-M80-1L-SA-E-0.3-M8**
						1531267	**SDAT-MHS-M100-1L-SA-E-0.3-M8**
						1531268	**SDAT-MHS-M125-1L-SA-E-0.3-M8**
						1531269	**SDAT-MHS-M160-1L-SA-E-0.3-M8**

Ordering data – Connecting cables

Data sheets → Internet: nebu

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type
	Straight socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	**541342**	**NEBU-M8G4-K-2.5-LE4**
			5	**541343**	**NEBU-M8G4-K-5-LE4**
	Angled socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	**541344**	**NEBU-M8W4-K-2.5-LE4**
			5	**541345**	**NEBU-M8W4-K-5-LE4**

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