Radial gripper HGRT

Characteristics

At a glance

Link hgrt

- Sturdy and precise kinematics for maximum torque resistance and long service life.
- The plain-bearing guide is virtually backlash-free thanks to the ground-in gripper jaws.
- Systematic use of lightweight and high-performance materials
- The force generated by the linear motion is transferred to the gripper jaw movement via a slotted guide on the piston rod. This also ensures the gripper jaws move synchronously.
- The opening angle of the gripper jaws can be freely adjusted up to a maximum of 90° per gripper finger. This saves cycle time and prevents the gripper jaws from colliding if they are opened too far
- Can be used either as double-acting or single-acting gripper
- Compression spring for supporting or retaining the gripping forces
- Suitable for external and internal gripping
- Wide range of adaptation options on the drives

Flexible stroke limitation:
- On delivery, the gripper has a fixed stop that allows an opening angle of 180°. The opening angle can be limited via an adjusting screw using the HGRT-HR stroke reduction, which can be ordered as an accessory. This makes it easy to convert the radial gripper into an angle gripper.

Other connections:
- For sealing air: when sealing air (max. 0.5 bar) is connected, compressed air flows past the gripper jaws. This prevents dust, for example, from entering the gripper jaw guide.
- For lubrication nipples: the connections can also be used to relubricate the guide.

These grippers are not designed for the following or similar application examples:
- Machining
- Aggressive media
- Grinding dust
- Welding spatter

Engineering tools

Link engineering tools

Save time with engineering tools: Smart engineering for the optimal solution. Our goal is to increase your productivity. Our engineering tools play an integral part in achieving this goal. They help you size your system correctly, tap into unimagined productivity reserves and generate additional productivity along the entire value chain. In every phase of your project, from the initial contact to the modernisation of your machine, you will come across a number of different tools that will be of use to you.

Gripper selection:
- This tool helps you to select the right grippers by simply entering the exact parameters for your application

Diagrams

Link hgrt

The diagrams shown in this document are also available online. These can be used to display precise values.

Position sensing

[A]	For proximity sensor

By using proximity switches, any position can be detected.

Characteristics

Gripping force backup

[G2]	Closing

Closed by spring force in depressurised state

Type code

001	Series	
HGRT	Radial gripper	

002	Size [mm]	
16	16	
20	20	
25	25	
32	32	
40	40	
50	50	

003	Position sensing	
A	For proximity sensor	

004	Gripping force backup	
	None	
G2	Closing	

Datasheet

General technical data						
Size	16	20	25	32	40	50
Design	Force pilot operated motion sequence					
Mode of operation	Double-acting					
Gripping force backup	None Closing					
Gripper function	Radial					
Number of gripper jaws	2					
Max. opening angle	180 deg					
Pneumatic connection	M3	M5			G1/8	
Repetition accuracy, gripper [1]	≤0.02 mm					
Rotationally symmetrical	≤0.2 mm					
Max. replacement accuracy	≤0.2 mm					
Max. angular gripper jaw backlash ax, ay [2]	≤0.1 deg					
Max. operating frequency of gripper	≤3 Hz				≤2 Hz	
Position detection	Via proximity switch Via inductive sensors					
Type of mounting	Via female thread and centring sleeve					
Mounting position	optional					

1) Under constant exposure to operating conditions, end-position drift occurs in the direction of movement of the gripper jaws, at 100 consecutive strokes
2) Preloaded, backlash-free ball guide

Operating and environmental conditions						
Size	16	20	25	32	40	50
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]					
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)					
Ambient temperature [1]	5 ... 60°C					
Corrosion resistance class CRC [2]	1 - Low corrosion stress					
Lubrication interval for guide components	10 MioCyc					

1) Note the operating range of the proximity switches
2) More information: www.festo.com/x/topic/kbk

Operating pressure – HGRT-16 ... 25						
Size	16		20		25	
Gripping force backup	None	Closing	None	Closing	None	Closing
Operating pressure	3 ... 8 bar	4 ... 8 bar	3 ... 8 bar	4 ... 8 bar	3 ... 8 bar	4 ... 8 bar

Operating pressure – HGRT-32 ... 50						
Size	32		40		50	
Gripping force backup	None	Closing	None	Closing	None	Closing
Operating pressure	3 ... 8 bar	4 ... 8 bar	3 ... 8 bar	4 ... 8 bar	3 ... 8 bar	4 ... 8 bar

Weight – HGRT-16 ... 25						
Size	16		20		25	
Gripping force backup	None	Closing	None	Closing	None	Closing
Product weight	130 g	150 g	290 g	320 g	540 g	610 g

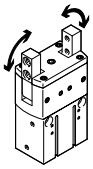
Weight – HGRT-32 ... 50						
Size	32		40		50	
Gripping force backup	None	Closing	None	Closing	None	Closing
Product weight	840 g	940 g	1,580 g	1,770 g	3,100 g	3,500 g

Datasheet

Materials

Size	16	20	25	32	40	50
Material housing	Smooth-anodised wrought aluminium alloy					
Material gripper jaws	Hardened steel					
Note on materials	RoHS-compliant					
LABS (PWIS) conformity	VDMA24364-B1/B2-L					

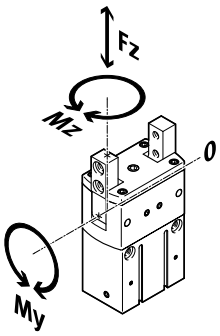
Gripping torque



The gripping torque is not constant across the opening angle.

Size	16	20	25	32	40	50
Total gripper torque, closing, 0.6 MPa (6 bar, 87 psi)	158 Ncm	516 Ncm	1,208 Ncm	1,856 Ncm	3,526 Ncm	7,754 Ncm
Total gripping torque at 0.6 MPa (6 bar, 87 psi), opening	188 Ncm	588 Ncm	1,348 Ncm	2,024 Ncm	3,892 Ncm	8,424 Ncm

Characteristic load values for the gripper jaws

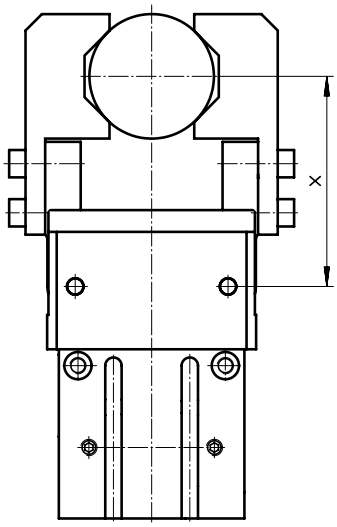


The indicated permissible forces and torques apply to a single gripper jaw. They include the lever arm, additional applied loads created by the workpiece or external gripper fingers and acceleration forces occurring during movement. The zero coordinate line (gripper jaw guide) must be taken into account when calculating torques.

Size	16	20	25	32	40	50
Max. force on gripper jaw Fz static	50 N	100 N	180 N	280 N	400 N	1,200 N
Max. torque at gripper My static	3.9 Nm	6.2 Nm	10 Nm	13.5 Nm	17.5 Nm	35 Nm
Max. torque at gripper Mz static	0.3 Nm	0.5 Nm	1 Nm	1.3 Nm	1.6 Nm	10 Nm

Datasheet

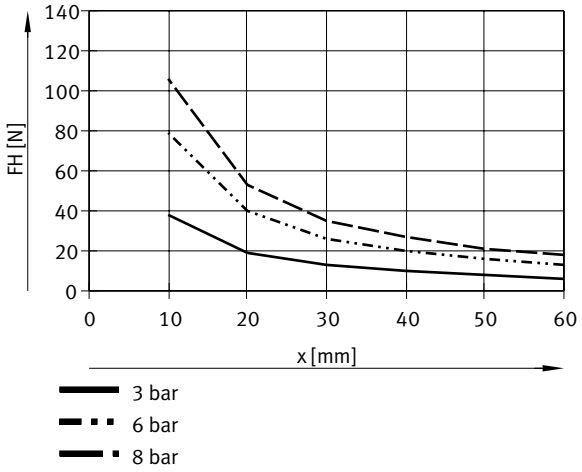
Gripping force FH per gripper jaw as a function of operating pressure and lever arm x



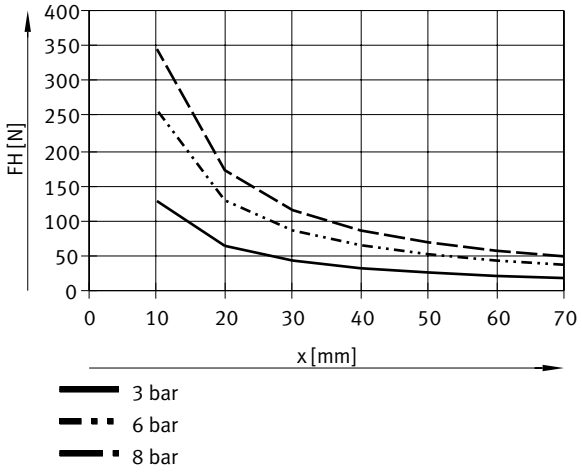
The gripping forces as a function of operating pressure and lever arm can be determined from the following graphs.
The gripping torque is not constant across the opening angle.

Sizing software for gripper selection → https://www.festo.com/x/topic/eng

Gripping force FH per gripper jaw as a function of operating pressure and lever arm x – external gripping (closing), double-acting – HGRT-16

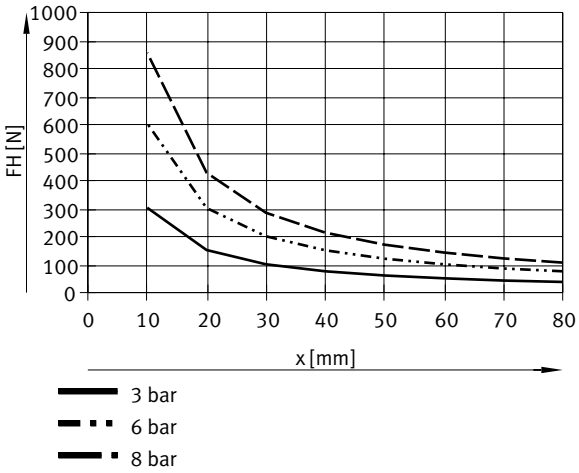


Gripping force FH per gripper jaw as a function of operating pressure and lever arm x – external gripping (closing), double-acting – HGRT-20

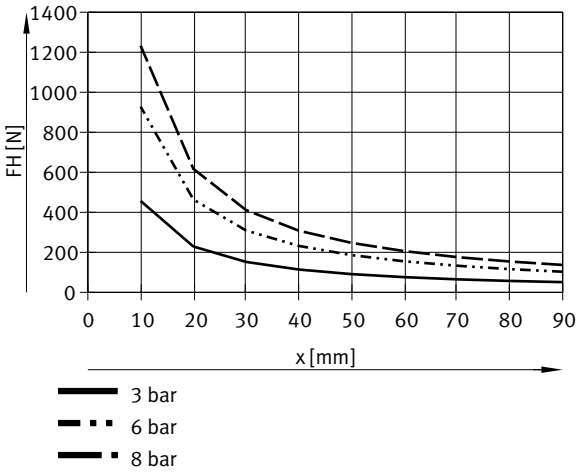


Datasheet

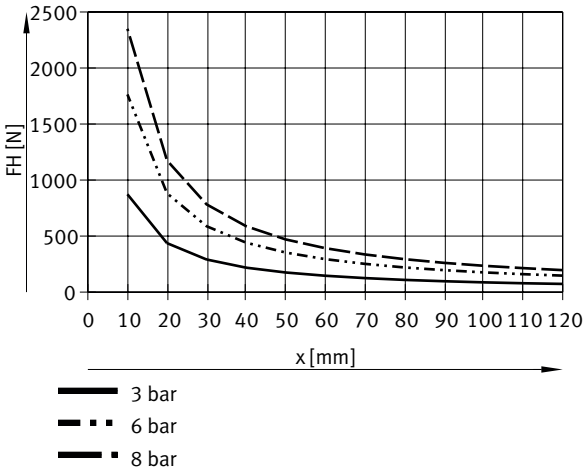
Gripping force FH per gripper jaw as a function of operating pressure and lever arm x – external gripping (closing), double-acting – HGRT-25



Gripping force FH per gripper jaw as a function of operating pressure and lever arm x – external gripping (closing), double-acting – HGRT-32

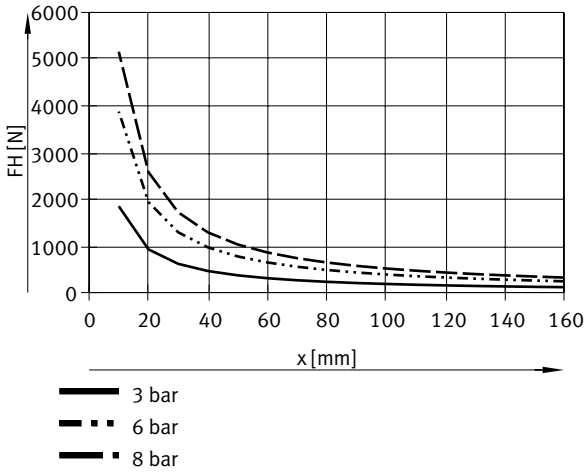


Gripping force FH per gripper jaw as a function of operating pressure and lever arm x – external gripping (closing), double-acting – HGRT-40

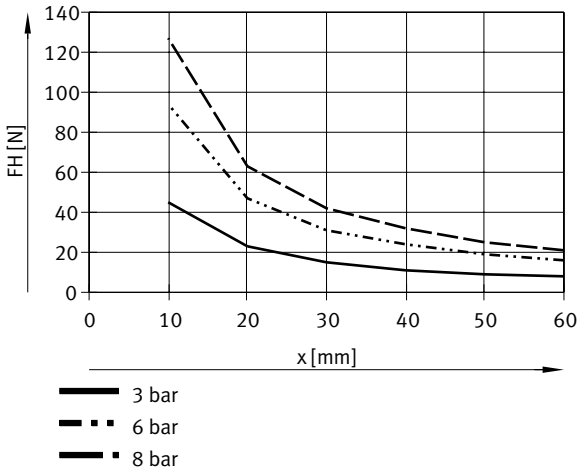


Datasheet

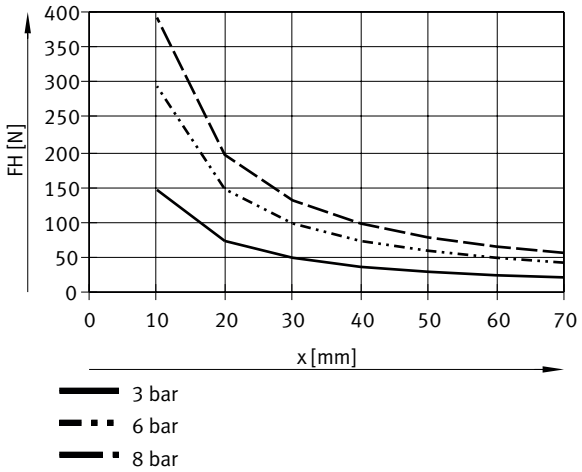
Gripping force FH per gripper jaw as a function of operating pressure and lever arm x – external gripping (closing), double-acting – HGRT-50



Gripping force FH per gripper jaw as a function of operating pressure and lever arm x – internal gripping (opening), double-acting – HGRT-16

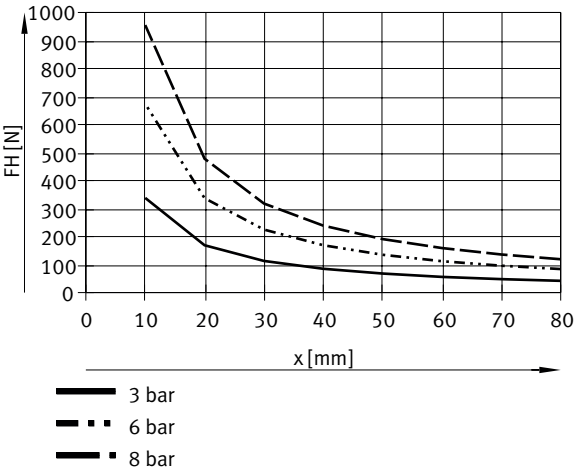


Gripping force FH per gripper jaw as a function of operating pressure and lever arm x – internal gripping (opening), double-acting – HGRT-20

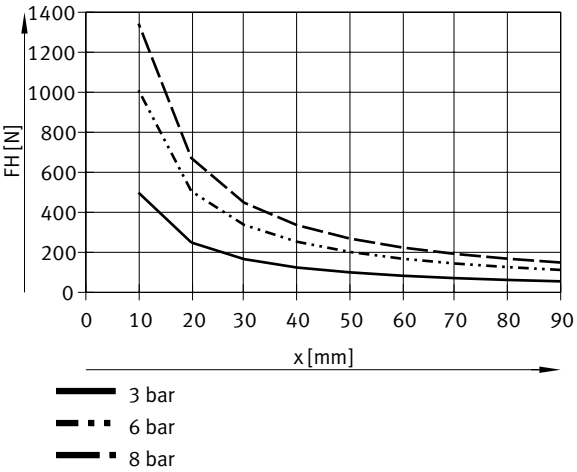


Datasheet

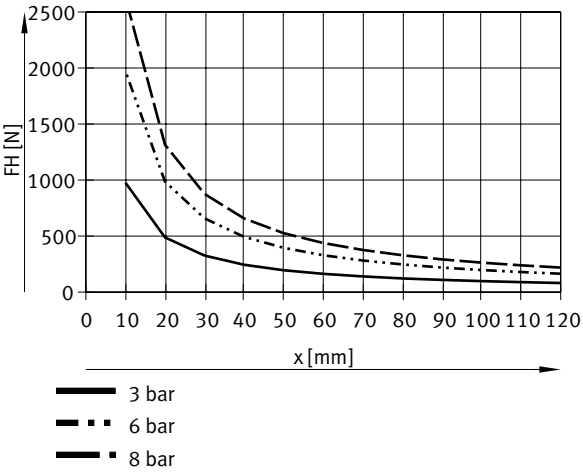
Gripping force FH per gripper jaw as a function of operating pressure and lever arm x – internal gripping (opening), double-acting – HGRT-25



Gripping force FH per gripper jaw as a function of operating pressure and lever arm x – internal gripping (opening), double-acting – HGRT-32

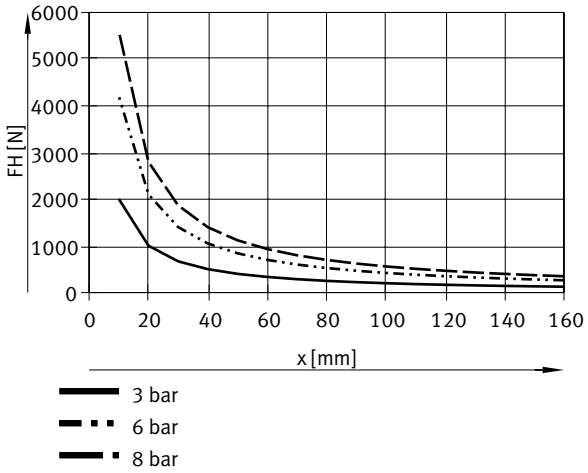


Gripping force FH per gripper jaw as a function of operating pressure and lever arm x – internal gripping (opening), double-acting – HGRT-40

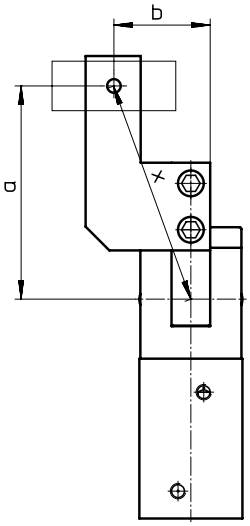


Datasheet

Gripping force FH per gripper jaw as a function of operating pressure and lever arm x – internal gripping (opening), double-acting – HGRT-50



Gripping force FH per gripper jaw at 0.6 MPa (6 bar, 87 psi) as a function of lever arm x and eccentricity a and b



Gripping force FH per gripper jaw at 0.6 MPa (6 bar, 87 psi) as a function of lever arm x and eccentricity a and b

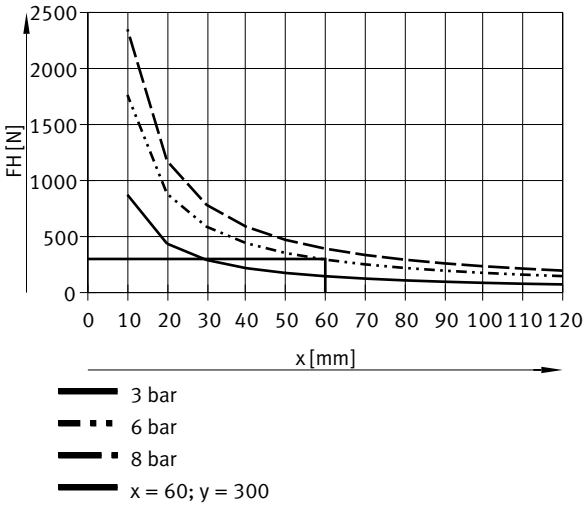
$x = \sqrt{a^2 + b^2} = \sqrt{45^2 + 40^2} = 60$ mm

The formula (on the left) must be used to calculate the lever arm x with eccentric gripping.
The gripping force FH can then be read from the graphs using the calculated value x.

Calculation example:
Where:
Distance a = 45 mm
Distance b = 40 mm
To be determined:
The gripping force at 6 bar with an HGRT-40, used as an external gripper.

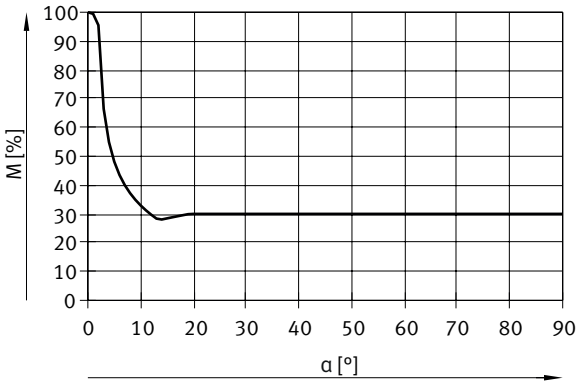
Datasheet

Gripping force FH per gripper jaw at 0.6 MPa (6 bar, 87 psi) as a function of lever arm x and eccentricity a and b



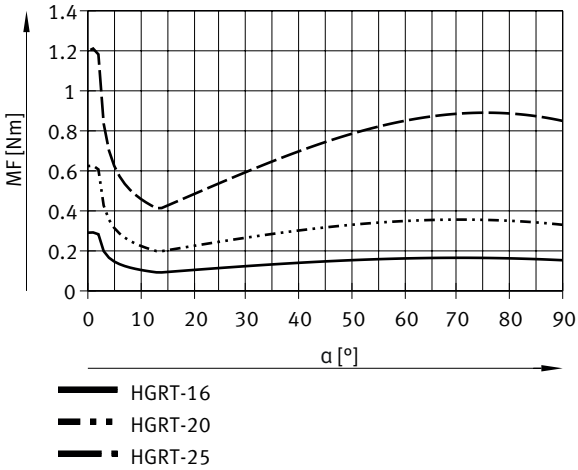
The graph gives a value of FH = 300 N for the gripping force.

Torque curve M as a function of opening angle



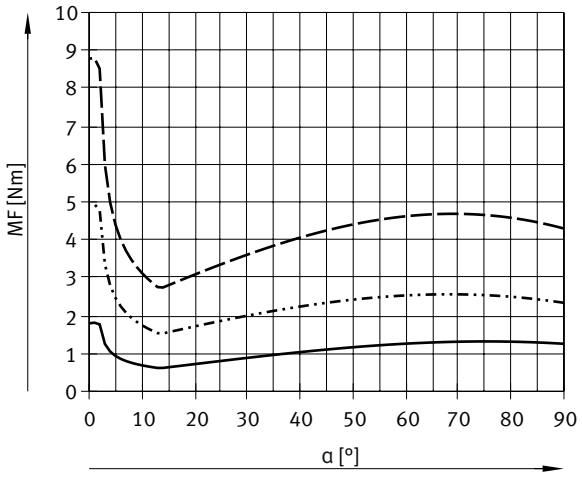
The drive principle of the gripper jaws means that the torque is not constant across the opening angle. The percentage available in each case can be calculated in the graph.
Opening angle of 0° means: parallel gripper jaw position.

Spring torque MF as a function of the opening angle – HGRT-16 ... 25



Datasheet

Spring torque MF as a function of the opening angle – HGRT-32 ... 50



Determining the actual gripping torques MGrtot for HGRT-...-G2 as a function of the application

The gripper with integrated spring HGRT-...-G2 (closing gripping force retention) can be used as follows:

- Single-acting gripper
- Gripper with gripping force support
- Gripper with gripping force retention

To calculate the available gripping torque MGrtot (per gripper jaw), the data from the graphs for the gripping force FH, the torque curve M and the spring torque MF must be combined accordingly.

MGr = FH * x * M [%]

MGr = gripping torque
FH = gripping force
x = lever arm
M = torque curve

Application:

Single-acting:

- Gripping with spring force: MGrtot = MF
- Gripping with pressure force: MGrtot = MGr – MF

Gripping force support:

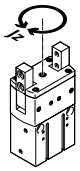
- Gripping with pressure and spring force: MGrtot = MGr + MF

Gripping force retention:

- Gripping with spring force: MGrtot = MF

Datasheet

Mass moments of inertia – HGRT-16 ... 25



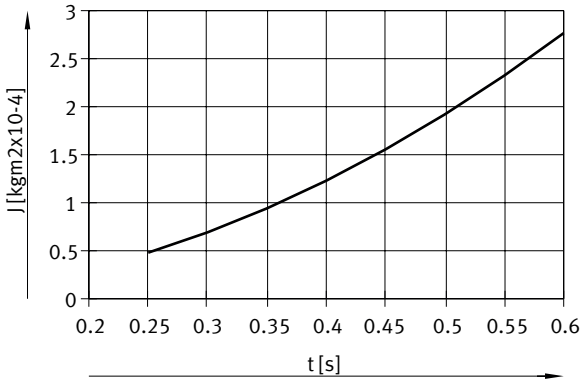
Mass moment of inertia of the parallel gripper in relation to the central axis, without external gripper fingers, without load.

Size	16		20		25	
Gripping force backup	None	Closing	None	Closing	None	Closing
Mass moment of inertia	0.191 kgcm²	0.21 kgcm²	0.74 kgcm²	0.81 kgcm²	2.1 kgcm²	2.33 kgcm²

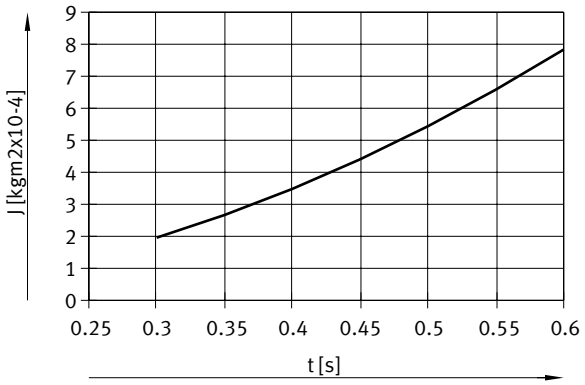
Mass moments of inertia – HGRT-32 ... 50

Size	32		40		50	
Gripping force backup	None	Closing	None	Closing	None	Closing
Mass moment of inertia	4.62 kgcm²	5.03 kgcm²	13.87 kgcm²	15.26 kgcm²	43.39 kgcm²	47.7 kgcm²

Permissible mass moment of inertia J with external gripper finger as a function of opening and closing times t at 0.6 MPa (6 bar, 87 psi) – HGRT-16

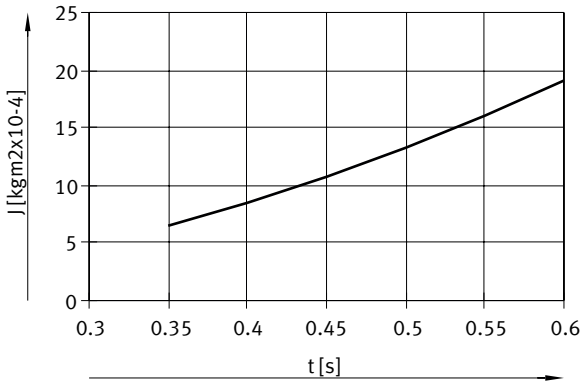


Permissible mass moment of inertia J with external gripper finger as a function of opening and closing times t at 0.6 MPa (6 bar, 87 psi) – HGRT-20

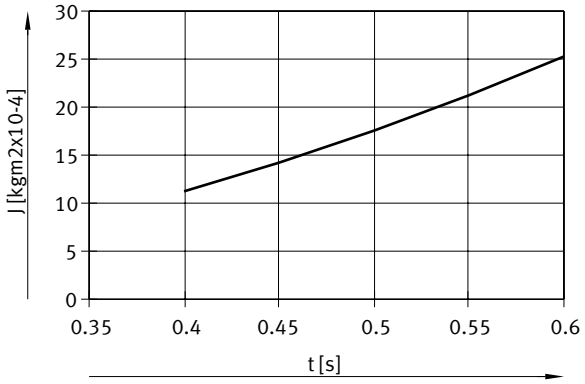


Datasheet

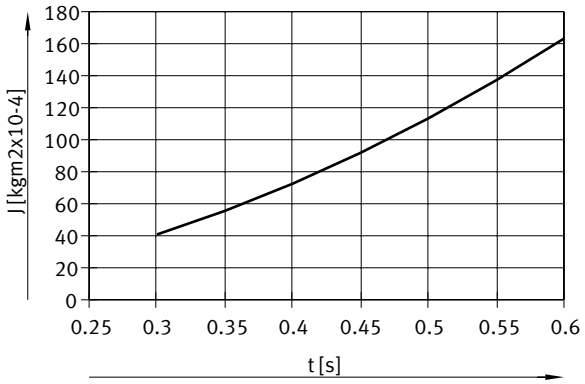
Permissible mass moment of inertia J with external gripper finger as a function of opening and closing times t at 0.6 MPa (6 bar, 87 psi) – HGRT-25



Permissible mass moment of inertia J with external gripper finger as a function of opening and closing times t at 0.6 MPa (6 bar, 87 psi) – HGRT-32

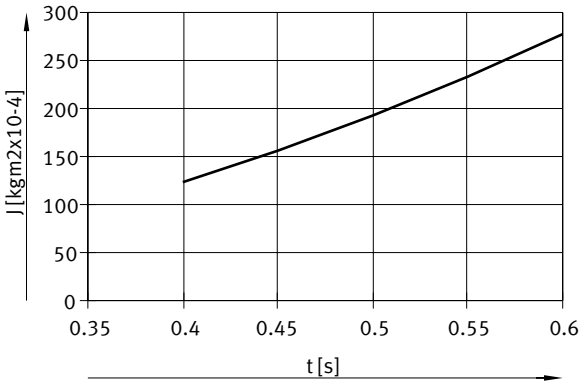


Permissible mass moment of inertia J with external gripper finger as a function of opening and closing times t at 0.6 MPa (6 bar, 87 psi) – HGRT-40

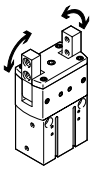


Datasheet

Permissible mass moment of inertia J with external gripper finger as a function of opening and closing times T at 0.6 MPa (6 bar, 87 psi) – HGRT-50



Opening and closing times – HGRT-16 ... 25



The indicated opening and closing times were measured at room temperature at an operating pressure of 0.6 MPa (6 bar, 87 psi) with a horizontally mounted gripper without additional gripper fingers.
The grippers must be throttled for masses that are higher than the specified unthrottled maximum mass per external gripper finger. Opening and closing times must then be adjusted accordingly.

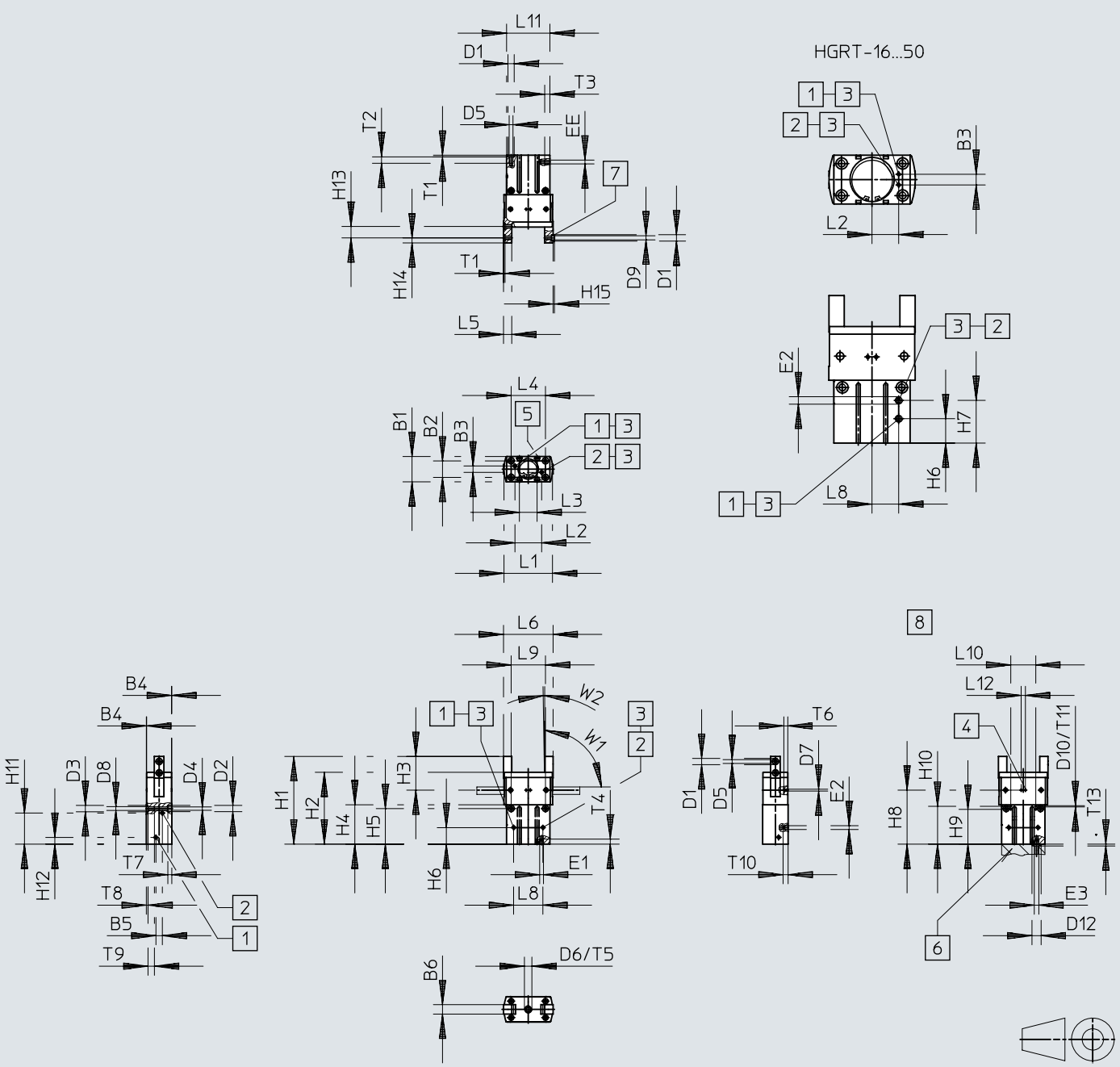
Size	16		20		25	
Gripping force backup	None	Closing	None	Closing	None	Closing
Min. closing time at 0.6 MPa (6 bar, 87 psi)	293 ms	185 ms	308 ms	295 ms	343 ms	301 ms
Min. opening time at 0.6 MPa (6 bar, 87 psi)	246 ms	233 ms	280 ms	372 ms	309 ms	443 ms

Opening and closing times – HGRT-32 ... 50

Size	32		40		50	
Gripping force backup	None	Closing	None	Closing	None	Closing
Min. closing time at 0.6 MPa (6 bar, 87 psi)	403 ms	337 ms	320 ms	270 ms	403 ms	355 ms
Min. opening time at 0.6 MPa (6 bar, 87 psi)	359 ms	503 ms	283 ms	370 ms	350 ms	490 ms

Dimensions

Dimensions – Radial gripper HGRT Download CAD data www.festo.com



[1] Open compressed air supply port
[2] Close compressed air supply port
[3] Alternative compressed air connection, sealed on delivery
[4] Sealing air, sealed on delivery
[5] Sensor slot for proximity switch
[6] O-ring for radial gripper HGRT-16 ... 25: Ø3x1.5; HGRT-32 ... 50: Ø5x1.5
[7] Centring sleeves ZBH (4 included in the scope of delivery)

Dimensions

	B1 ±0,05	B2[1]	B3 ±0,1	B4 +0,05	B5 ±0,1	B6 ±0,05	D1 ø H8	D2 ø +0,1	D3 ø H8	D4 ø	D5	D6	D7	D8	D9 ø
HGRT-16	20	13	5	0,2	5	7,5	5	4,9	5	2,6	M3	M6	–	M3	3,2
HGRT-20	28	18	6	0,2	6	10	7	7,4	7	4,2	M5	M6	M3	M5	5,3
HGRT-25	35	23	7	0,2	7	12,5	9	9,4	9	5,1	M6	M8	M5	M6	6,4
HGRT-32	40	27	10	0,2	10	14,5	9	9,4	9	5,1	M6	M8	M5	M6	6,4
HGRT-40	50	33	11	0,2	11	18	12	10,4	12	6,8	M8	M8	M5	M8	10,3
HGRT-50	64	42	14	0,2	14	22,5	15	13,5	15	8,5	M10	M12	M5	M10	12,4

	D10	D12 +0,2	EE	E1	E2	E3	H1		H2		H3	H4		H5	
							±0,05	-G ±0,05	±0,05	-G ±0,05	±0,1	±0,1	-G ±0,1	±0,1	-G ±0,1
HGRT-16	–	6	M3	M3	M3	M3	69	77,5	56,5	65	26,5	31	39,5	28	36,5
HGRT-20	–	6	M5	M3	M3	M3	88,5	97,5	71	80	35,1	39	48	34,5	43,5
HGRT-25	M3	6	M5	M3	M3	M3	109	120	88	99	42,5	48,3	59,3	42,5	53,5
HGRT-32	M3	8	M5	M5	M5	M5	125	137	102	114	49	54,7	66,7	49	61
HGRT-40	M3	8	G1/8	M5	G1/8	M5	154,6	172,6	122	140	63,6	65,5	83,5	58	76
HGRT-50	M3	8	G1/8	M5	G1/8	M5	193,5	215,5	153	175	79,5	82,4	104,4	73	95

	H6		H7		H8		H9		H10		H11		H12	H13[1]
	±0,1	-G ±0,1	±0,1	-G ±0,1		-G	±0,1	-G ±0,1	±0,1	-G ±0,1	±0,1	-G ±0,1	±0,1	
HGRT-16	13	13	–	–	–	–	–	–	–	–	24,5	33	5,3	9
HGRT-20	16	16	–	–	52,5	61,5	–	–	–	–	29	38	6	12
HGRT-25	19,5	19,5	–	–	65,5	76,5	28	39	36	47	36	47	7,6	14
HGRT-32	20	20	35,5	46,5	75,5	87,5	34,5	46,5	42,5	54,5	42,4	54,2	8,1	16
HGRT-40	26	29	45	56,5	90	108	47	65	55	73	48	64,5	9,7	20
HGRT-50	32	32	56	70	113	135	72	94	80	102	62	80	13,5	25

	H14[1]	H15 –0,3	L1 ±0,05	L2	L3 +0,1	L4[1]	L5 ±0,05	L6 ±0,5	L8 ±0,1	L9[1]	L10 ±0,1	L11 ±0,1	L12	T1 +0,1
HGRT-16	4	1,2	38,3	21±0,1	14	27	6,5	39	23	27	–	34	–	1,3
HGRT-20	5	1,4	49,9	30±0,1	17	34	9	50,4	30	34	–	44	11	1,6
HGRT-25	6	1,9	61,1	39±0,1	22	42	11	61,2	39	41	33	54	11	2,1
HGRT-32	7	1,9	72,2	$22{,}5^{+0{,}1}$	24	51	12	72,2	22,5	48	41	64	11	2,1
HGRT-40	9	2,4	90,3	$28^{+0{,}1}$	32	63	16,5	90,8	28	62	47	80	11	2,6
HGRT-50	11	2,9	113,2	$35^{+0{,}1}$	36	80	20	113	35	78	59	100	11	3,1

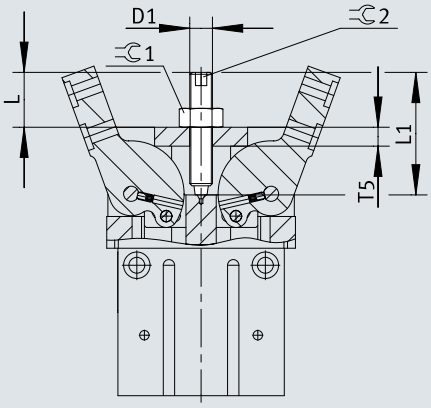
	T2		T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	W1	W2
	min.	-G min.	min.	min.			+0,1	+0,1	min.	min.	min.	min.	+0,1	±2°	+3°
HGRT-16	5	5	4	4	4	–	3,1	1,3	5	4	–	–	1,2	90	1
HGRT-20	8,5	8	5	4	5	4,3	4,1	1,6	8	4	–	4	1,2	90	1
HGRT-25	10	10	5	4,5	6	5,8	5,1	2,1	10	4,5	5,5	–	1,2	90	1
HGRT-32	9,5	9,5	5	5	7	6,3	5,2	2,1	9,5	5	5,5	–	1,2	90	1
HGRT-40	14,5	14,5	8,5	5	8	7,8	6,2	2,6	12,5	8,5	5,5	–	1,2	90	1
HGRT-50	15	15	8,5	5	10	10,55	8,1	3,1	15	8,5	5,5	–	1,2	90	1

1) Tolerance for centring hole ±0.02 mm Tolerance for thread ±0.1 mm

Dimensions

Dimensions – Stroke reduction HGRT-HR

Download CAD data www.festo.com



	D1	L1 ±1	T5 ±1	1	2
HGRT-HR-16	M6	26	4	10	3
HGRT-HR-20	M6	31	5	10	3
HGRT-HR-25	M8	36	6	13	4
HGRT-HR-32	M8	41	7	13	4
HGRT-HR-40	M8	51	8	13	4
HGRT-HR-50	M12	61	10	19	6

	L					
	30° 1) ±1	45° 1) ±1	60° 1) ±1	90° 1) ±1	120° 1) ±1	150° 1) ±1
HGRT-HR-16	11,3	12,2	13,2	15,3	17,6	19,7
HGRT-HR-20	12,3	13,5	14,8	17,6	20,5	23,3
HGRT-HR-25	13,1	14,6	16,2	19,6	23,1	26,5
HGRT-HR-32	14	15,8	17,6	21,7	25,8	29,9
HGRT-HR-40	17,6	19,7	22,1	27,1	32,4	37,4
HGRT-HR-50	17,7	20,5	23,6	30,2	36,9	43,5

1) Opening angle
2) Note: The relationship between the opening angle and the projection of the stroke reduction (dimension L) is not linear.
3) Note: The values given in this table are guide values and may deviate due to tolerances and cushioning.

Dimensions

Dimensions – Sensor bracket DASI-...-S8 – material polyamide

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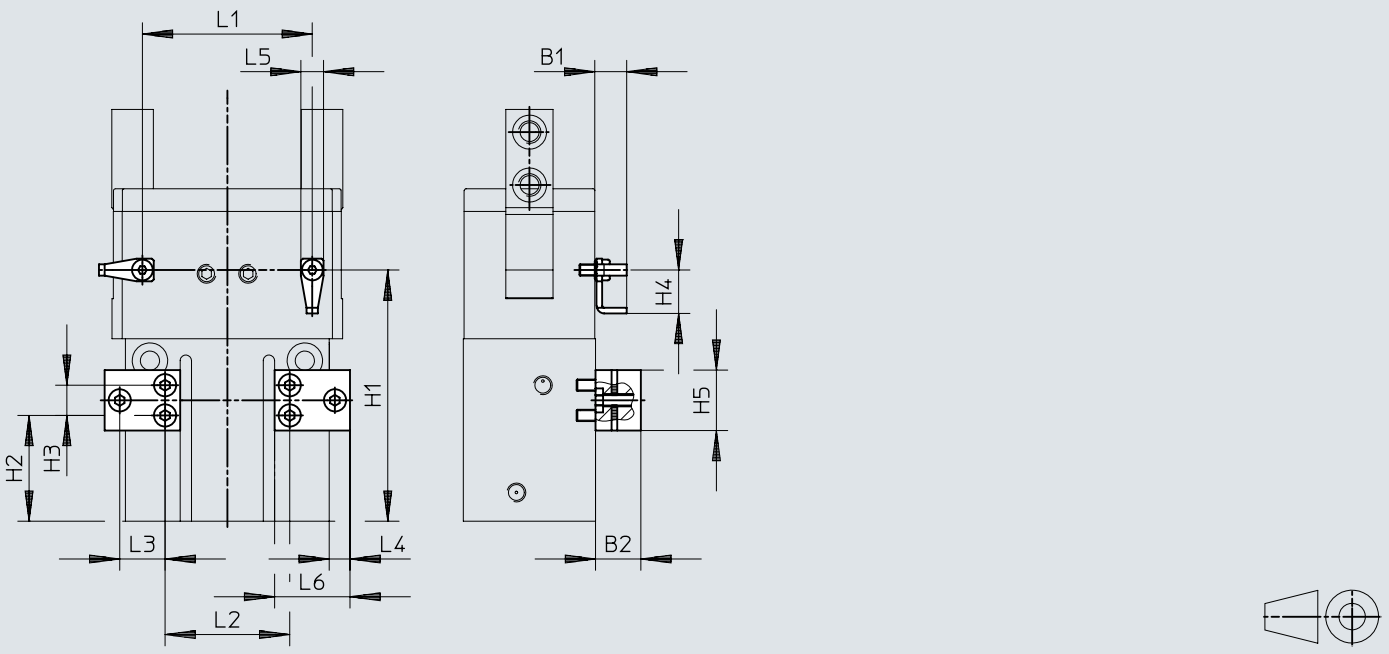
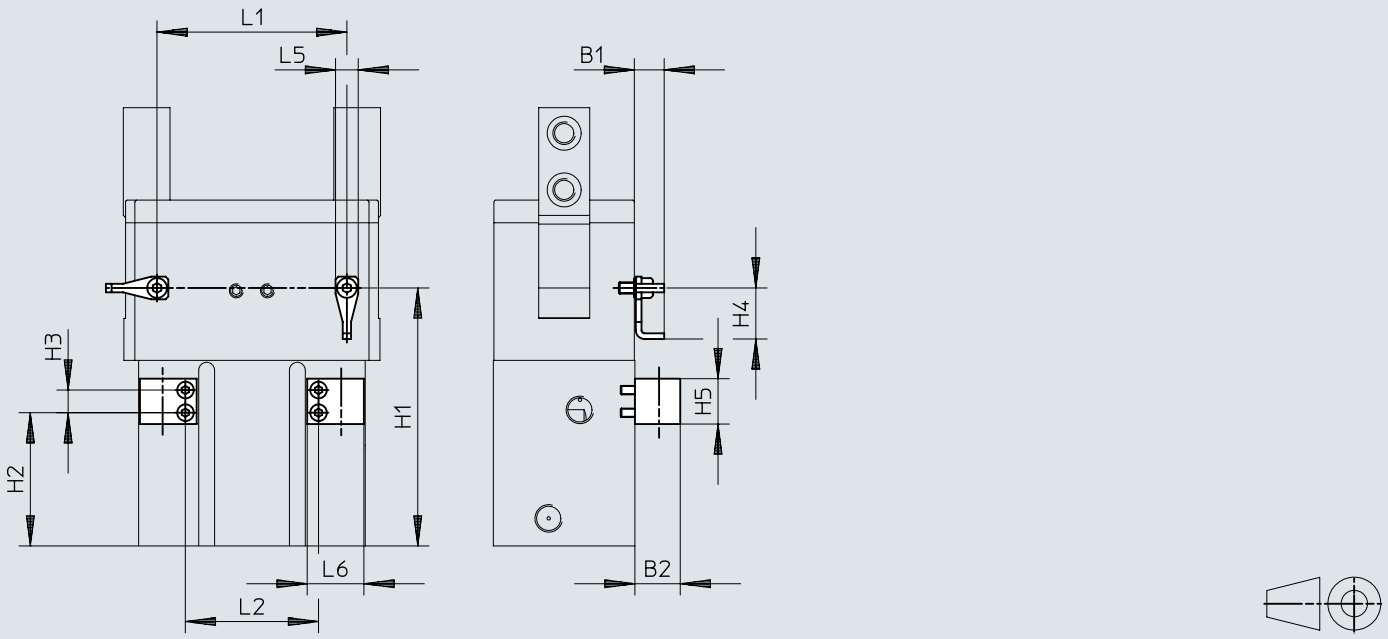


		H1 ±0,02	H2 ±0,1	L1 ±0,01	L2	B1	B2	H3 ±0,1	H4	H5	L3 ±0,1	L4	L5	L6 ±0,2
HGRT-25-A	DASI-B10-25-S8	66,5	28	45	33	8,45	12	8	11,5	16	12	5,5	6	20
HGRT-25-A-G2		77,5	39	45	33									
HGRT-32-A		76	34,5	53	64									
HGRT-32-A-G2		88	46,5	53	64									

Dimensions

Dimensions – Sensor bracket DASI-...-S12 – material aluminium

Download CAD data www.festo.com



		H1 ±0,02	H2 ±0,1	L1 ±0,01	L2	B1	B2	H3 ±0,1	H4	H5	L5	L6 ±0,2
HGRT-40-A	DASI-B10-40-S12	91	47	67	47	10,5	16	8	18	16	8	20
HGRT-40-A-G2		109	65	67	47							
HGRT-50-A		114	72	84	59							
HGRT-50-A-G2		136	94	84	59							

Ordering data

Double-acting, without compression spring

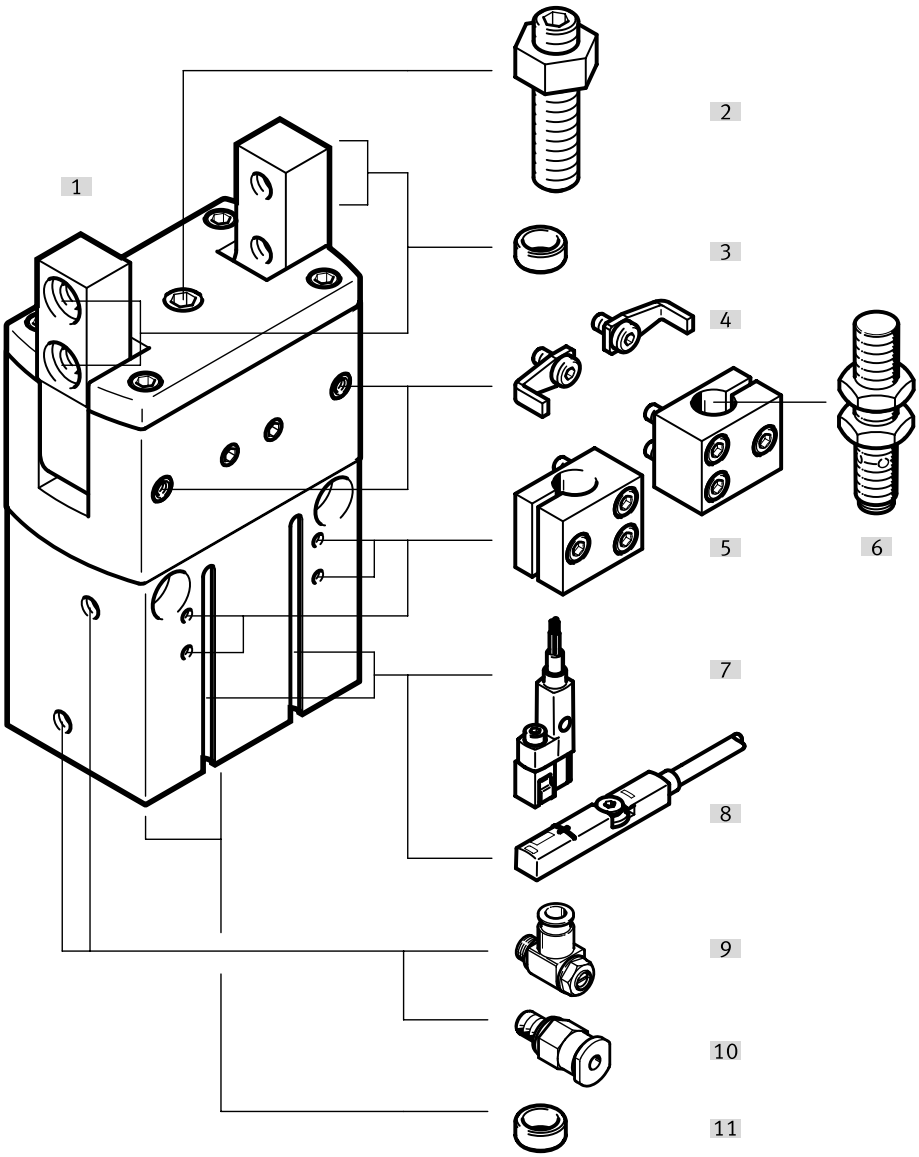
	Size	Max. opening angle	Product weight	Part no.	Type
	16	180 deg	130 g	**563904**	**HGRT-16-A**
	20		290 g	**563906**	**HGRT-20-A**
	25		540 g	**563908**	**HGRT-25-A**
	32		840 g	**563910**	**HGRT-32-A**
	40		1,580 g	**563912**	**HGRT-40-A**
	50		3,100 g	**563914**	**HGRT-50-A**

Single-acting or with gripping force retention, closing

	Size	Max. opening angle	Product weight	Part no.	Type
	16	180 deg	150 g	**563905**	**HGRT-16-A-G2**
	20		320 g	**563907**	**HGRT-20-A-G2**
	25		610 g	**563909**	**HGRT-25-A-G2**
	32		940 g	**563911**	**HGRT-32-A-G2**
	40		1,770 g	**563913**	**HGRT-40-A-G2**
	50		3,500 g	**563915**	**HGRT-50-A-G2**

Peripherals

Peripherals overview



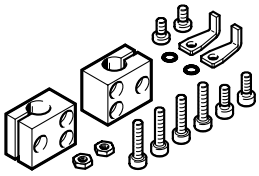
Accessories			→ Link
	Type/order code	Description	
[1]	Radial gripper HGRT	Double-acting	hgrt
[2]	Stroke reduction HGRT-HR	For setting the opening angle	24
[3]	Centring sleeve ZBH	• For centring when attaching gripper fingers • 4 pieces included in the scope of delivery of the gripper	24
[4]	Sensor bracket DASI (switch lugs)	Switch lugs are included in the scope of delivery of the sensor bracket	24
[5]	Sensor bracket DASI (terminal blocks)	For mounting the proximity switches SIEN on the gripper	24
[6]	Proximity switch SIEN	For sensing the piston position	26
[7]	Proximity switch SMT-8G/-10G	• For sensing the piston position • Proximity switch does not project underneath the housing	25
[8]	Position transmitter SMAT-8M	Continuously detects the position of the piston. It has an analogue output with an output signal that is proportional to the piston position.	25
[8]	Position transmitter SDAT	Continuously detects the position of the piston. It has an analogue output with an output signal that is proportional to the piston position.	26
[9]	One-way flow control valve GRLA	For regulating speed	grla
[10]	Push-in fitting QS	For connecting the compressed air tubing with standard O.D.	qs
[11]	Centring sleeve ZBH	For centring when mounting on a drive or on a plate	24
[12]	Adapter kit DHAA, HAPG	Connecting plate between drive and gripper	dhaa
[13]	Proportional-pressure regulator VPPM	For infinitely variable adjustment of the gripping force	vppm

Accessories

Stroke reduction HGRT-HR

	Description	Product weight	Part no.	Type
	For size 16	7 g	**564296**	**HGRT-HR-16**
	For size 20	9 g	**564297**	**HGRT-HR-20**
	For size 25	18 g	**564298**	**HGRT-HR-25**
	For size 32	20 g	**564299**	**HGRT-HR-32**
	For size 40	24 g	**564300**	**HGRT-HR-40**
	For size 50	66 g	**564301**	**HGRT-HR-50**

Sensor bracket DASI

	Description	Part no.	Type
	For size 25, 32	**564311**	**DASI-B10-25-S8**
	For size 40, 50	**564312**	**DASI-B10-40-S12**

Centring sleeve ZBH-5

	Description	Material sleeve	Size of pack	Product weight	Part no.	Type
	For size 16	Steel	10	1 g	**8146543**	**ZBH-5-B**

Centring sleeve ZBH-7

	Description	Material sleeve	Size of pack	Product weight	Part no.	Type
	For size 20	Steel	10	1 g	**8146544**	**ZBH-7-B**

Centring sleeve ZBH-9

	Description	Material sleeve	Size of pack	Product weight	Part no.	Type
	For sizes 25, 32	Steel	10	2 g	**8137184**	**ZBH-9-B**

Centring sleeve ZBH-12

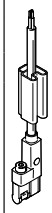
	Description	Material sleeve	Size of pack	Product weight	Part no.	Type
	For size 40	Steel	10	1 g	**8137185**	**ZBH-12-B**

Centring sleeves ZBH-15

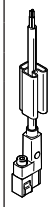
	Description	Material sleeve	Size of pack	Product weight	Part no.	Type
	For size 50	High-alloy stain-less steel	10	3 g	**191409**	**ZBH-15**

Accessories

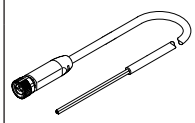
Proximity switch SMT-10G for round slot, magneto-resistive – for sizes 16 ... 32 Link smt

	Type of mounting	Switching output	Electrical connection	Cable length	Part no.	Type
	Clamped in C-slot, Insertable in the slot lengthwise	3-wire NPN N/O contact	Open end	2.5 m	**8065030**	**SMT-10G-NS-24V-E-2,5Q-OE**
			Plug M8, A-coded	0.3 m	**8065029**	**SMT-10G-NS-24V-E-0,3Q-M8D**
		3-wire PNP N/O contact	Open end	2.5 m	**547862**	**SMT-10G-PS-24V-E-2,5Q-OE**
			Plug M8, A-coded	0.3 m	**547863**	**SMT-10G-PS-24V-E-0,3Q-M8D**

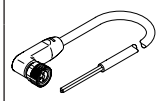
Proximity switch SMT-8G for round slot, magneto-resistive – for sizes 40 ... 50 Link smt

	Type of mounting	Switching output	Electrical connection	Cable length	Part no.	Type
	Clamped in T-slot, Insertable in the slot lengthwise	3-wire NPN N/O contact	Open end	2.5 m	**8065028**	**SMT-8G-NS-24V-E-2,5Q-OE**
			Plug M8, A-coded	0.3 m	**8065027**	**SMT-8G-NS-24V-E-0,3Q-M8D**
		3-wire PNP N/O contact	Open end	2.5 m	**547859**	**SMT-8G-PS-24V-E-2,5Q-OE**
			Plug M8, A-coded	0.3 m	**547860**	**SMT-8G-PS-24V-E-0,3Q-M8D**

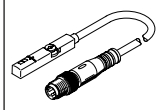
Connecting cables NEBA, straight

	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/cores	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	Open end	3	2.5 m	**8078223**	**NEBA-M8G3-U-2.5-N-LE3**
				5 m	**8078224**	**NEBA-M8G3-U-5-N-LE3**

Connecting cables NEBA, angled

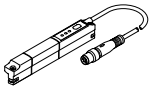
	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/cores	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	Open end	3	2.5 m	**8078230**	**NEBA-M8W3-U-2.5-N-LE3**
				5 m	**8078231**	**NEBA-M8W3-U-5-N-LE3**

Position transmitter SMAT-8M for T-slot, M8 plug, A-coded – for size 40 Link smat

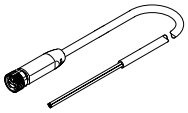
	Sensing range	Analogue output	Electrical connection 1, number of connections/cores	Cable length	Part no.	Type
	52 mm	0 - 10 V	4	0.3 m	**553744**	**SMAT-8M-U-E-0,3-M8D**

Accessories

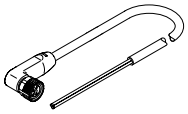
Position transmitter SDAT for T-slot, M8 plug, A-coded – for size 40 ... 50 Link sdat

	Sensing range	Analogue output	Electrical connection 1, number of connections/cores	Cable length	Part no.	Type
	0 ... 50.000 mm	4 - 20 mA	4	0.3 m	**1531265**	**SDAT-MHS-M50-1L-SA-E-0.3-M8**

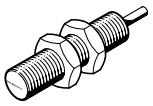
Connecting cables NEBA, straight

	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/cores	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	Open end	4	2.5 m	**8078227**	**NEBA-M8G4-U-2.5-N-LE4**
				5 m	**8078228**	**NEBA-M8G4-U-5-N-LE4**

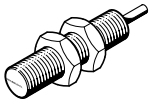
Connecting cables NEBA, angled

	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/cores	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	Open end	4	2.5 m	**8078233**	**NEBA-M8W4-U-2.5-N-LE4**
				5 m	**8078234**	**NEBA-M8W4-U-5-N-LE4**

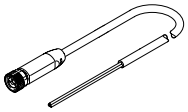
Proximity switch SIEN, inductive – for sensor bracket DASI-...-S8

	Size	Switching element function	Electrical connection	Cable length	Part no.	Type
	M8x1	N/O contact			**150387**	**SIEN-M8B-PS-S-L**
				2.5 m	**150386**	**SIEN-M8B-PS-K-L**

Proximity switch SIEN, inductive – for sensor bracket DASI-...-S12

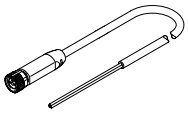
	Size	Switching element function	Electrical connection	Cable length	Part no.	Type
	M12x1	N/O contact			**150403**	**SIEN-M12B-PS-S-L**
				2.5 m	**150402**	**SIEN-M12B-PS-K-L**

Connecting cables NEBA, straight

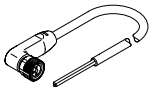
	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/cores	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	Open end	3	2.5 m	**8078223**	**NEBA-M8G3-U-2.5-N-LE3**

Accessories

Connecting cables NEBA, straight

	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/ cores	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	Open end	3	5 m	**8078224**	**NEBA-M8G3-U-5-N-LE3**

Connecting cables NEBA, angled

	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/ cores	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	Open end	3	2.5 m	**8078230**	**NEBA-M8W3-U-2.5-N-LE3**
				5 m	**8078231**	**NEBA-M8W3-U-5-N-LE3**