GRIPPER WITH TWO PARALLEL JAWS, SERIES P3

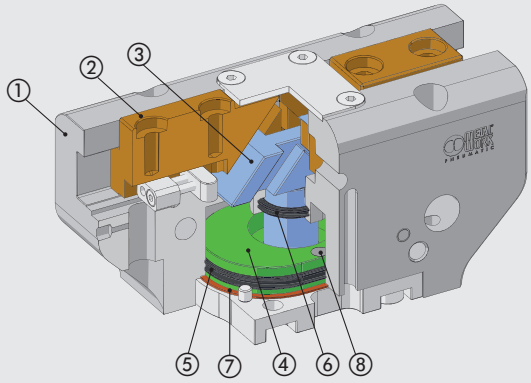
Parallel double-acting two-jaw gripper, with either internal or external clamping.
Also available in the double-acting with spring version, normally open (NO) for internal grip and normally closed (NC) for external grip.
Aluminum alloy body coated with surface hardening treatment; jaws made of wear-resistant coated steel.
The jaw-guiding system and precision in coupling with the body make the gripper extremely stable.
The ceramic-coated body reduces friction and wear, and enhances the movement of the jaws on the body.
All sizes are available in the version with standard stroke and clamping force, while only some in the version with reduced stroke but with higher clamping torque.
The gripper is equipped with a magnet and grooves for sensors.
A version designed to house inductive sensors is also available (**the inductive sensors are not supplied by Metal Work**).
Pneumatic supply is available on both sides.

TECHNICAL DATA			P3-40			P3-64			P3-80						P3-100					
									Standard			Increased force			Standard			Increased force		
			DA	NO	NC	DA	NO	NC	DA	NO	NC	DA	NO	NC	DA	NO	NC	DA	NO	NC
Minimum operating pressure		bar	2	3		2			2						2					
		MPa	0.2	0.3		0.2			0.2						0.2					
		psi	29	43.5		29			29						29					
Maximum operating pressure		bar	8			8			8						8					
		MPa	0.8			0.8			0.8						0.8					
		psi	116			116			116						116					
Temperature range		°C	-10 to 80			-10 to 80			-10 to 80						-10 to 80					
Fluid			20 µm filtered, lubricated or unlubricated air; lubrification if used, it must be continuous																	
Gripping force at 6.3 bar *	opening	N	75	93	-	125	157	-	265	322	-	445	560	-	360	444	-	790	958	-
	closing	N	70	-	88	113	-	145	239	-	296	401	-	516	324	-	408	711	-	879
Minimum gripping force produced by the spring *		N	-	18	18	-	32	32	-	57	57	-	115	115	-	84	84	-	168	168
Recommended workpiece weight		kg	0.65			1.3			2.5			5			3.5			7		
Stroke of each jaw		mm	2.5			6			8			4			10			5		
Minimum time	opening	s	0.05	0.05	0.1	0.05	0.05	0.1	0.05	0.05	0.1	0.05	0.05	0.1	0.05	0.05	0.1	0.05	0.05	0.1
	closing	s	0.05	0.1	0.05	0.05	0.1	0.05	0.05	0.1	0.05	0.05	0.1	0.05	0.05	0.1	0.05	0.05	0.1	0.05
Repeatability		mm	0.01			0.01			0.01						0.01					
Moment of inertia as regards the piston axis		kg cm²	0.21	0.24	0.24	0.85	1.74	1.74	4.5	4.96	4.96	4.5	4.96	4.96	12	13.8	13.8	12	13.8	13.8
Weight		kg	0.08	0.1	0.1	0.17	0.35	0.35	0.5	0.61	0.61	0.5	0.61	0.61	0.9	1.1	1.1	0.9	1.1	1.1

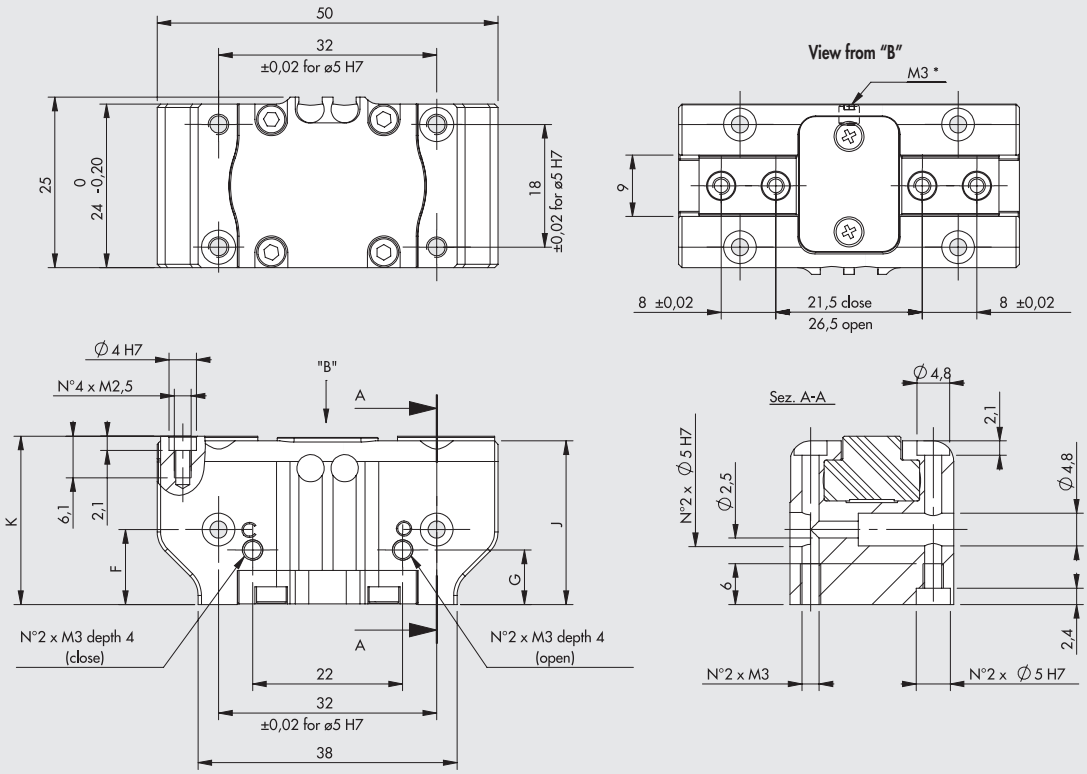
DA: Double-acting; NO: Double acting with spring, normally open; NC: Double acting with spring, normally closed.
* Referred to a single jaw 20 mm from the upper surface. The total force is obtained by multiplying the reported value by 2.

COMPONENTS

① BODY: hard-anodized aluminium
② JAWS: nitrided steel
③ PISTON ROD + GUIDE: nitrided steel
④ PISTON: hard-anodized aluminium
⑤ PISTON GASKET: NBR
⑥ PISTON ROD GASKET: NBR / polyurethane
⑦ BASE GASKET: reinforced SBR / NBR
⑧ MAGNET: neodymium

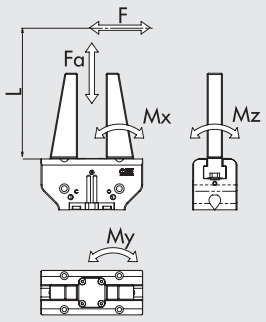


GRIPPER P3-40



* Discharge pressurization connection

	K	J	F ±0.02	G
DA	24.7	24	11	8
NO /NC	33.7	33	20	17



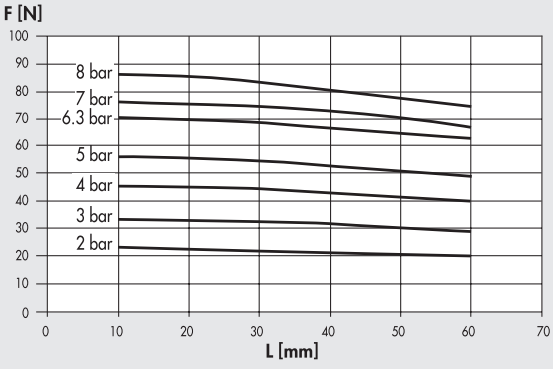
Fa	250 N
Mx	12 Nm
My	5 Nm
Mz	10 Nm

F	gripping force for each jaw
Fa	maximum admissible static axial force
Mx, My, Mz	maximum admissible static moments

P3-40 GRAPHS OF GRIPPING FORCE AS A FUNCTION OF DISTANCE "L"

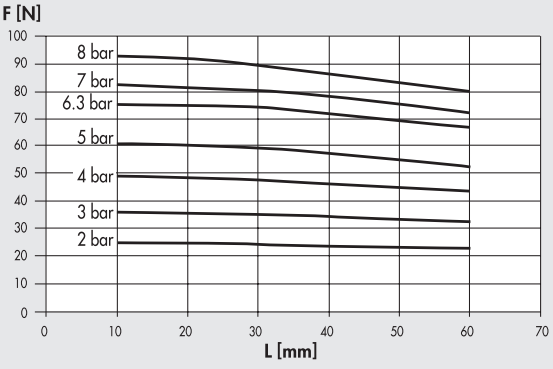
External grip*** (closing jaws)

Version DA



Internal grip*** (opening jaws)

Version DA

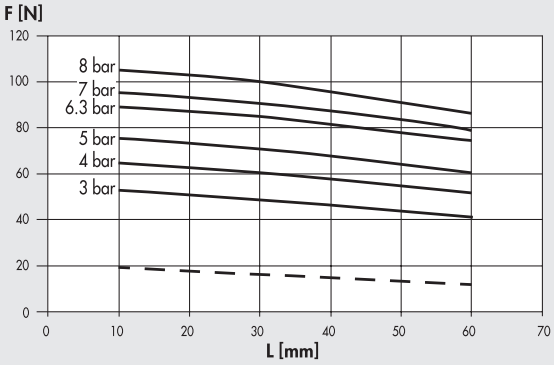


*** Referred to a single jaw. The total force is obtained by multiplying the value by 2.

P3-40 GRAPHS OF GRIPPING FORCE AS A FUNCTION OF DISTANCE "L"

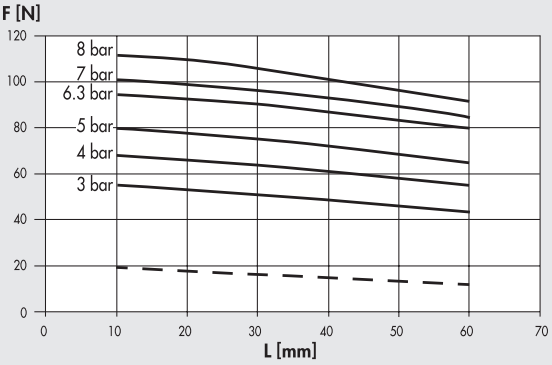
External grip*** (closing jaws)

Version NC



Internal grip*** (opening jaws)

Version NO

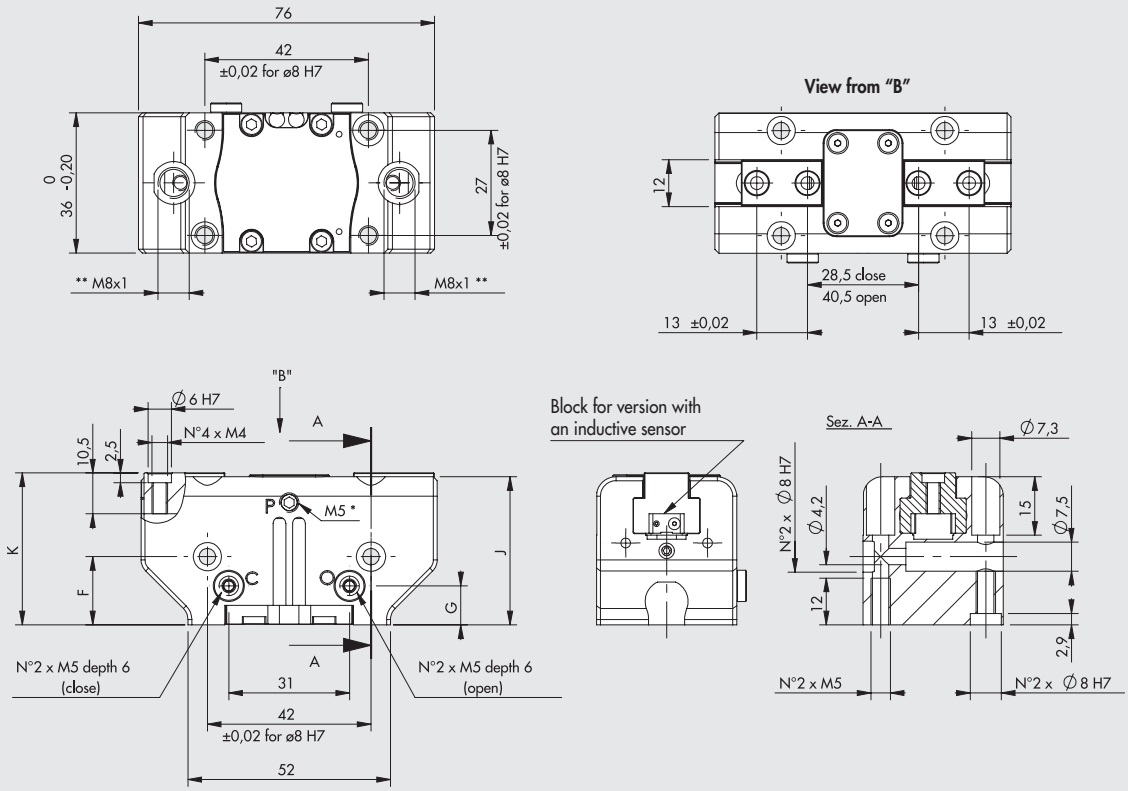


*** Referred to a single jaw. The total force is obtained by multiplying the value by 2.

– – – Minimum gripping force generated by the spring alone (NO and NC versions only). Actual force varies with stroke.

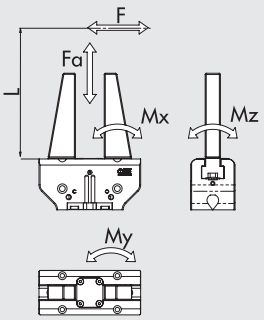
Code	Description
W1560400200	Gripper with 2 parallel jaws P3-40
W1560402200	Gripper with 2 parallel jaws P3-40 NO
W1560403200	Gripper with 2 parallel jaws P3-40 NC

GRIPPER P3-64



* Discharge pressurization connection, present on both sides
** Inductive sensor slot

	K	J	F ±0.02	G
DA	39	38	17.5	10
NO /NC	57	56	35.5	29



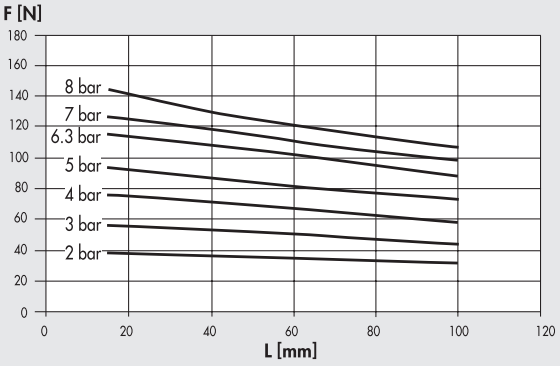
Fa	1100 N
Mx	60 Nm
My	40 Nm
Mz	40 Nm

F	gripping force for each jaw
Fa	maximum admissible static axial force
Mx, My, Mz	maximum admissible static moments

P3-64 GRAPHS OF GRIPPING FORCE AS A FUNCTION OF DISTANCE "L"

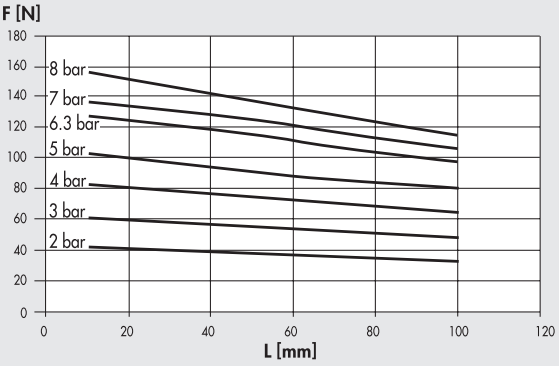
External grip*** (closing jaws)

Version DA



Internal grip*** (opening jaws)

Version DA

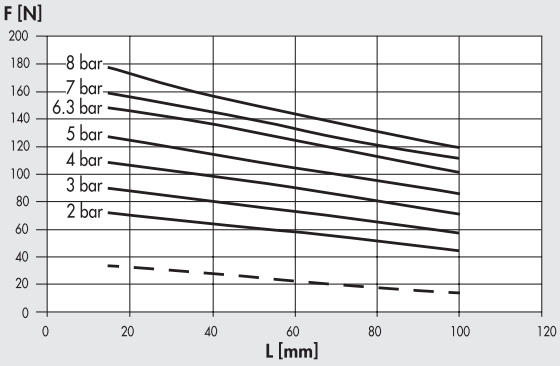


*** Referred to a single jaw. The total force is obtained by multiplying the value by 2.

P3-64 GRAPHS OF GRIPPING FORCE AS A FUNCTION OF DISTANCE "L"

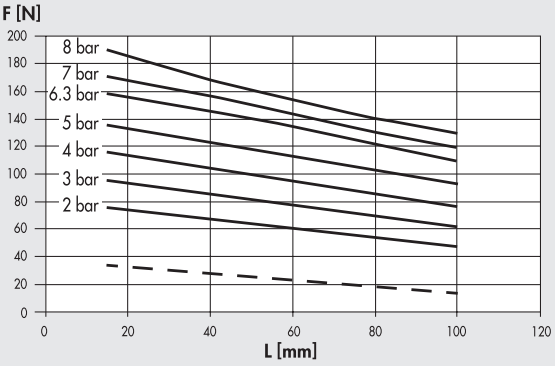
External grip*** (closing jaws)

Version NC



Internal grip*** (opening jaws)

Version NO

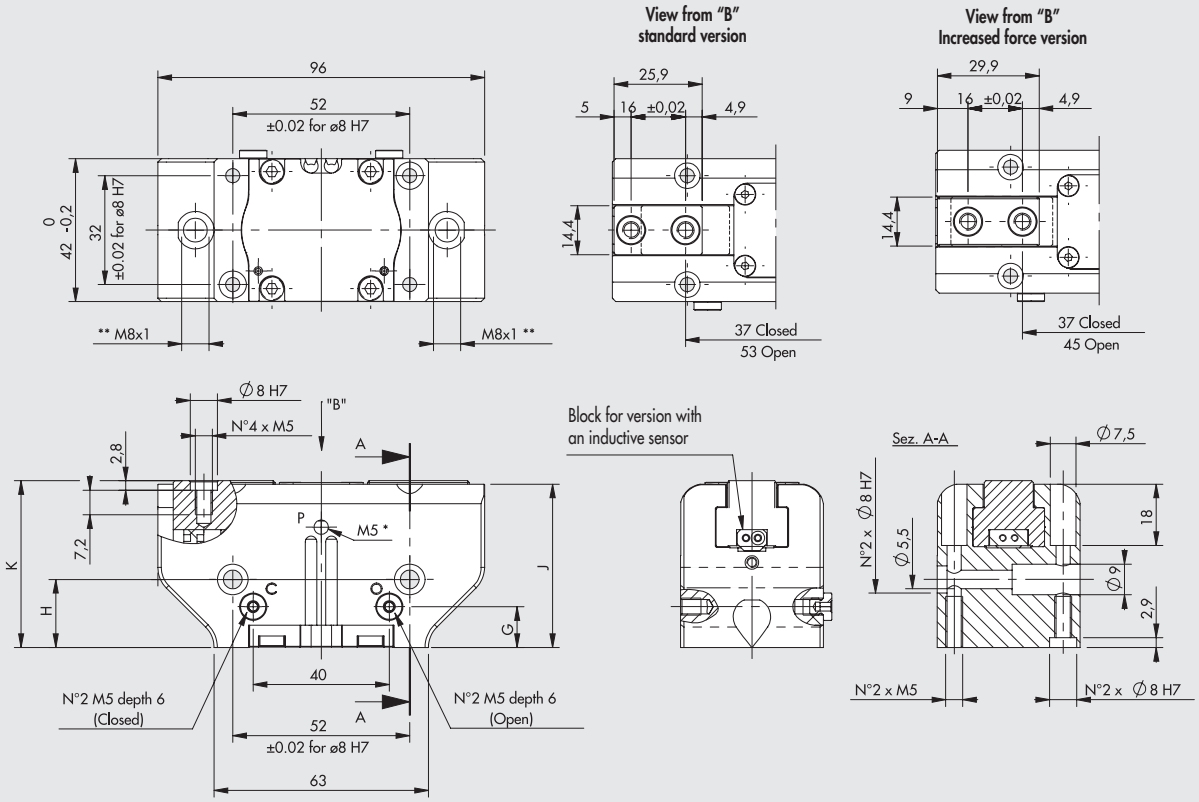


*** Referred to a single jaw. The total force is obtained by multiplying the value by 2.

– – – Minimum gripping force generated by the spring alone (NO and NC versions only). Actual force varies with stroke.

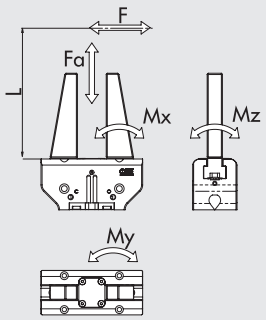
Code	Description
W1560640200	Gripper with 2 parallel jaws P3-64
W1560640201	Gripper with 2 parallel jaws P3-64 for inductive sensors
W1560642200	Gripper with 2 parallel jaws P3-64 NO
W1560642201	Gripper with 2 parallel jaws P3-64 NO for inductive sensors
W1560643200	Gripper with 2 parallel jaws P3-64 NC
W1560643201	Gripper with 2 parallel jaws P3-64 NC for inductive sensors

GRIPPER P3-80



* Discharge pressurization connection, present on both sides
** Inductive sensor slot

	K	J	H ±0.02	G
DA	49	48	20	12
NO /NC	67	66	38	30



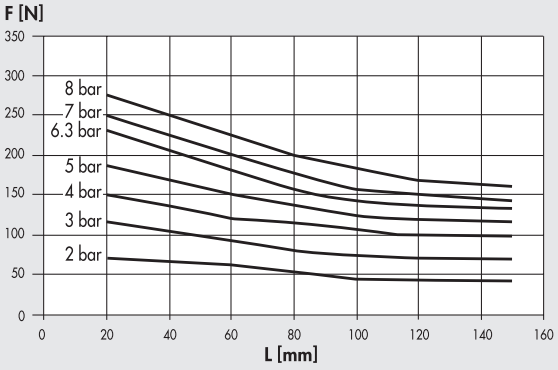
Fa 1500 N
Mx 90 Nm
My 55 Nm
Mz 55 Nm

F gripping force for each jaw
Fa maximum admissible static axial force
Mx, My, Mz maximum admissible static moments

P3-80 GRAPHS OF GRIPPING FORCE AS A FUNCTION OF DISTANCE "L"

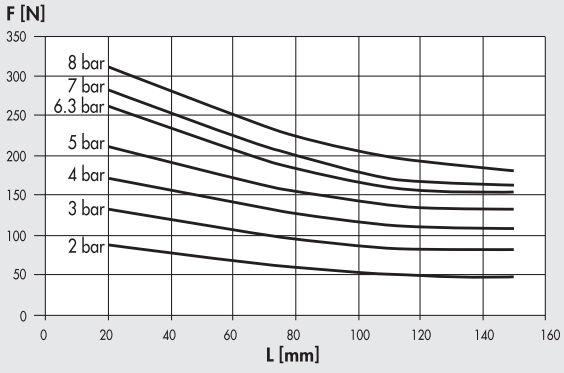
External grip*** (closing jaws)

Version DA



Internal grip*** (opening jaws)

Version DA

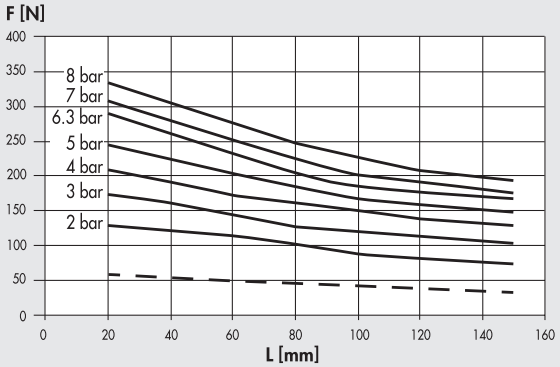


*** Referred to a single jaw. The total force is obtained by multiplying the value by 2.

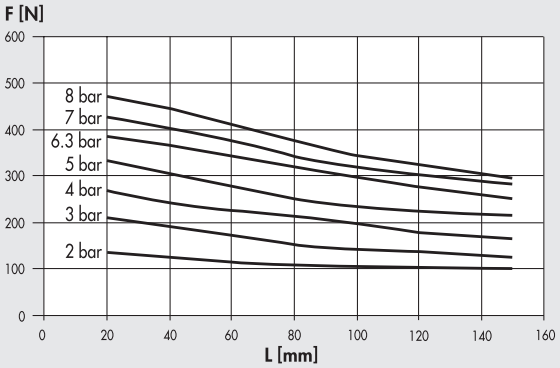
P3-80 GRAPHS OF GRIPPING FORCE AS A FUNCTION OF DISTANCE "L"

External grip*** (closing jaws)

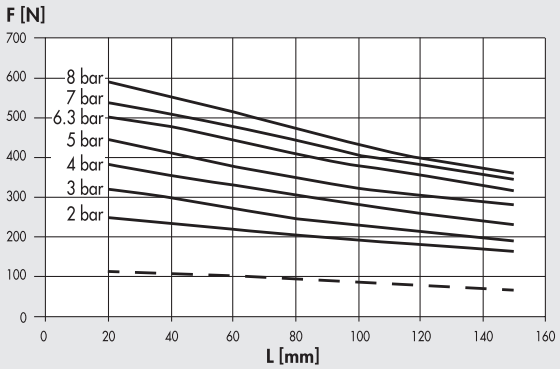
Version NC



DA version increased force

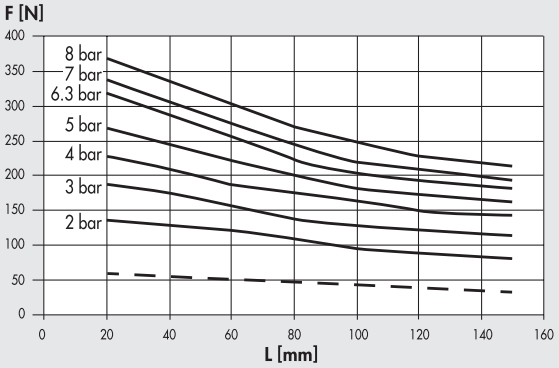


NC version increased force

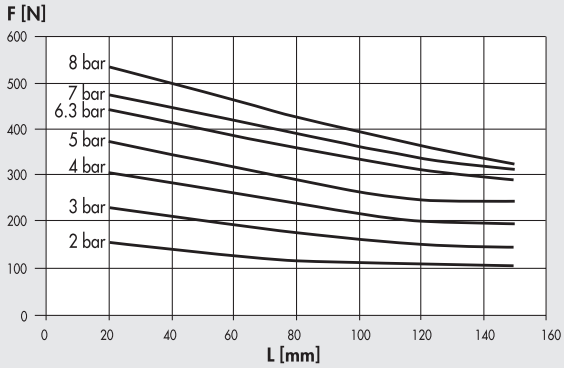


Internal grip*** (opening jaws)

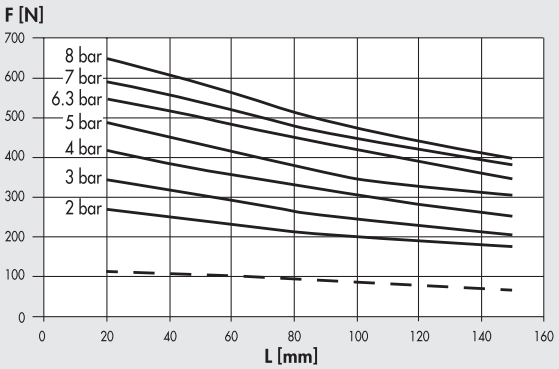
Version NO



DA version increased force



NO version increased force

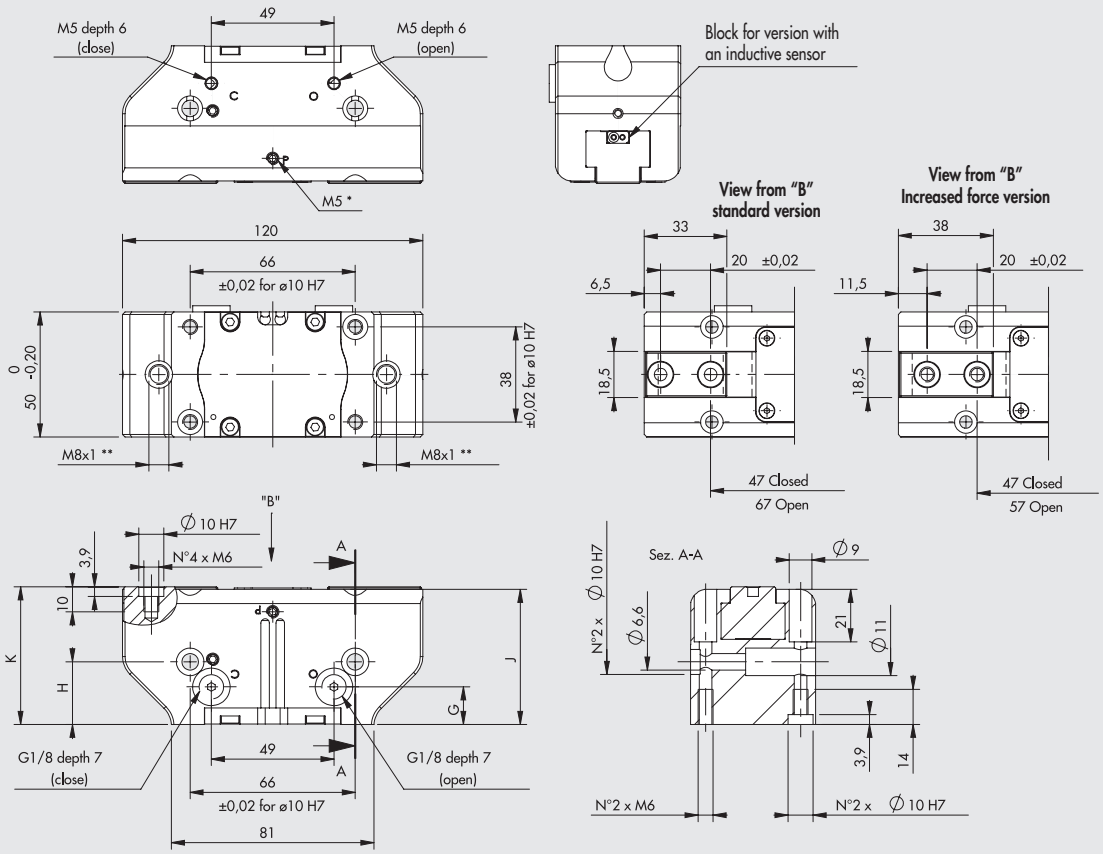


*** Referred to a single jaw. The total force is obtained by multiplying the value by 2.

— — — Minimum gripping force generated by the spring alone (NO and NC versions only). Actual force varies with stroke.

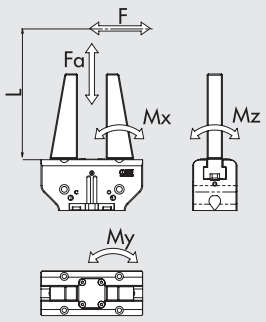
Code	Description
W1560800200	Gripper with 2 parallel jaw P3-80
W1560800201	Gripper with 2 parallel jaw P3-80 for inductive sensors
W1560800220	Gripper with 2 parallel jaw P3-80 increased force
W1560800221	Gripper with 2 parallel jaw P3-80 increased force for inductive sensors
W1560802200	Gripper with 2 parallel jaw P3-80 NO
W1560802201	Gripper with 2 parallel jaw P3-80 NO for inductive sensors
W1560802220	Gripper with 2 parallel jaw P3-80 NO increased force
W1560802221	Gripper with 2 parallel jaw P3-80 NO increased force for inductive sensors
W1560803200	Gripper with 2 parallel jaw P3-80 NC
W1560803201	Gripper with 2 parallel jaw P3-80 NC for inductive sensors
W1560803220	Gripper with 2 parallel jaw P3-80 NC increased force
W1560803221	Gripper with 2 parallel jaw P3-80 NC increased force for inductive sensors

GRIPPER P3-100



* Discharge pressurization connection, present on both sides
** Inductive sensor slot

	K	J	H ±0.02	G
DA	55	54	25	15
NO /NC	81	80	51	41



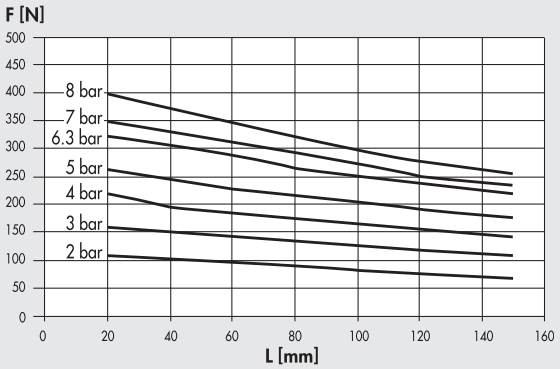
Fa	2000 N
Mx	115 Nm
My	70 Nm
Mz	80 Nm

F	gripping force for each jaw
Fa	maximum admissible static axial force
Mx, My, Mz	maximum admissible static moments

P3-100 GRAPHS OF GRIPPING FORCE AS A FUNCTION OF DISTANCE "L"

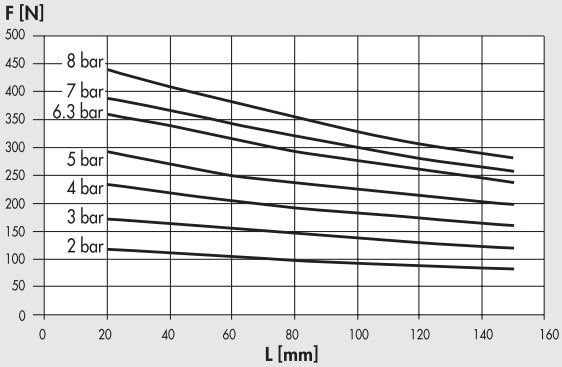
External grip*** (closing jaws)

Version DA



Internal grip*** (opening jaws)

Version DA

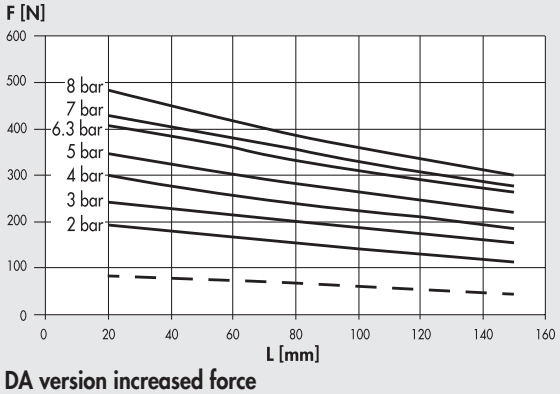


*** Referred to a single jaw. The total force is obtained by multiplying the value by 2.

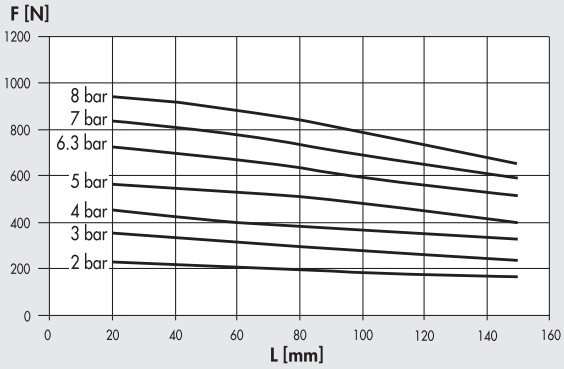
P3-100 GRAPHS OF GRIPPING FORCE AS A FUNCTION OF DISTANCE "L"

External grip*** (closing jaws)

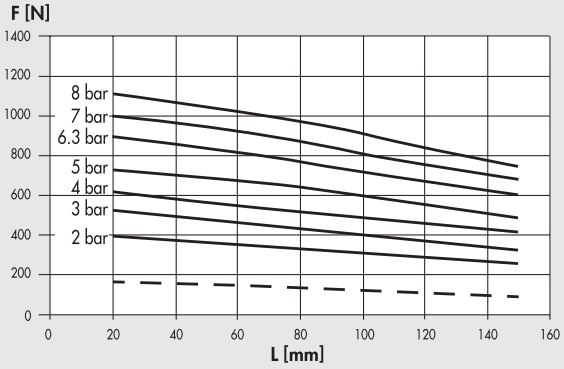
Version NC



DA version increased force

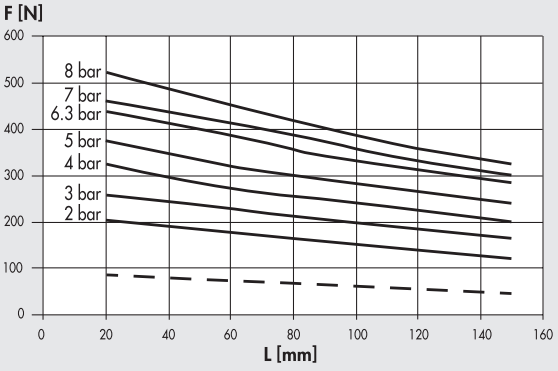


NC version increased force

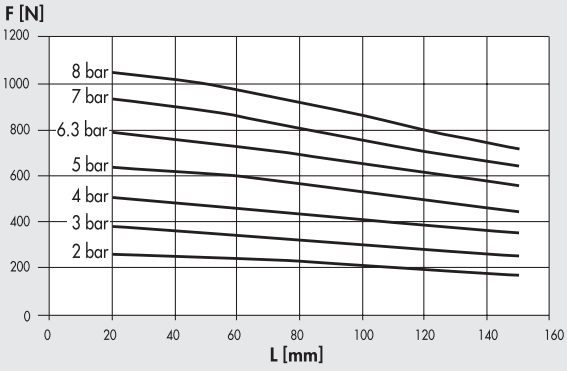


Internal grip*** (opening jaws)

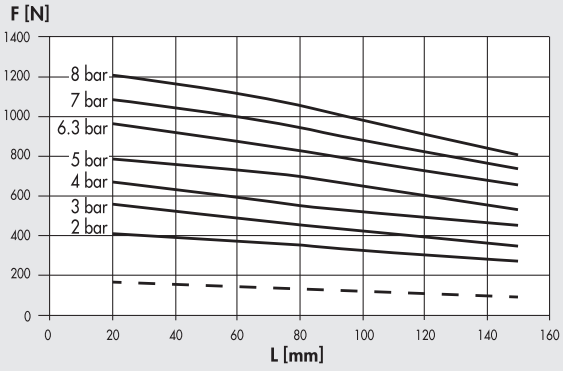
Version NO



DA version increased force



NO version increased force



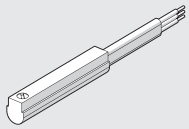
*** Referred to a single jaw. The total force is obtained by multiplying the value by 2.

— — — Minimum gripping force generated by the spring alone (NO and NC versions only). Actual force varies with stroke.

Code	Description
W1561000200	Gripper with 2 parallel jaws P3-100
W1561000201	Gripper with 2 parallel jaws P3-100 for inductive sensors
W1561000220	Gripper with 2 parallel jaws P3-100 increased force
W1561000221	Gripper with 2 parallel jaws P3-100 increased force for inductive sensors
W1561002200	Gripper with 2 parallel jaws P3-100 NO
W1561002201	Gripper with 2 parallel jaws P3-100 NO for inductive sensors
W1561002220	Gripper with 2 parallel jaws P3-100 NO increased force
W1561002221	Gripper with 2 parallel jaws P3-100 NO increased force for inductive sensors
W1561003200	Gripper with 2 parallel jaws P3-100 NC
W1561003201	Gripper with 2 parallel jaws P3-100 NC for inductive sensors
W1561003220	Gripper with 2 parallel jaws P3-100 NC increased force
W1561003221	Gripper with 2 parallel jaws P3-100 NC increased force for inductive sensors

ACCESSORIES

SENSOR Ø 4



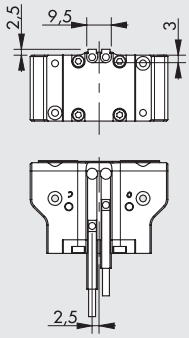
For codes and technical data, see **chapter A6**.

Note: For the NO and NC versions, use only the Hall effect sensor.

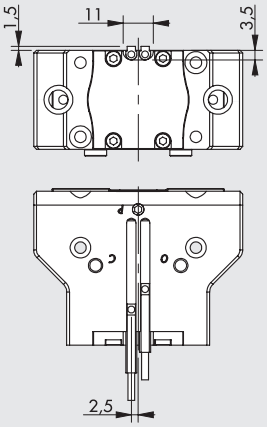
SENSOR MOUNTING IN THE NO AND NC GRIPPERS SLOTS

To accommodate the sensor, a recess must be made in the base on which the gripper will be fixed.

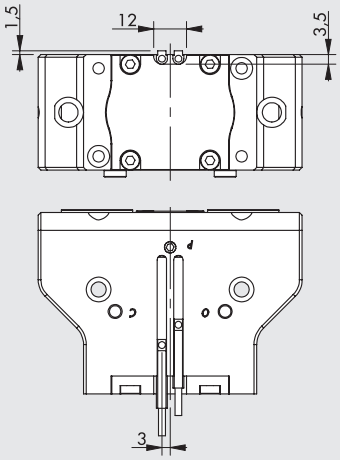
P3-40



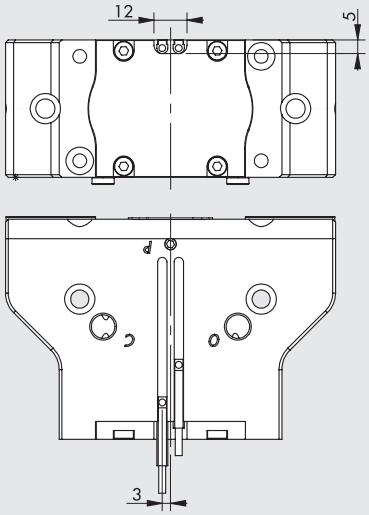
P3-64



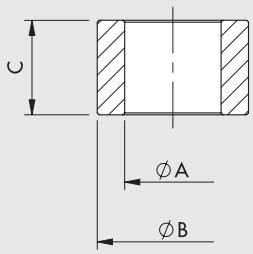
P3-80



P3-100

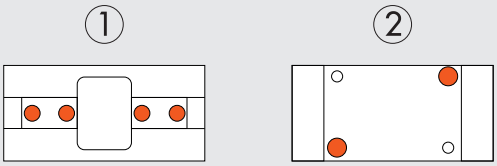


CENTRING RING



Code	ØA	ØB f7	C
W1560409201	$3^{0}_{-0.1}$	4	$4^{0}_{-0.1}$
W1560649201	$4.5^{0}_{-0.1}$	6	$5^{0}_{-0.1}$
W1560809201	$5.1^{0}_{-0.1}$	8	$5^{0}_{-0.05}$
W1561009201	$6.2^{\pm 0.1}$	10	$6.9^{0}_{-0.1}$

Note: 2-pieces pack



QUANTITY OF KITS NEEDED		
Sizer gripper	① - USE WITH JAWS	② - BODY USE
40	**2** code W1560409201	-
64	**2** code W1560649201	**2** code W1560809201
80	**2** code W1560809201	**2** code W1560809201
100	**2** code W1561009201	**2** code W1561009201

NOTES