

Parallel grippers
Single acting
Magnetic piston
Ø 10 to 25 mm
Ideal for general purpose gripping applications
Smooth, accurate movement
Long, uninterrupted service life
Low weight
Compact size
Integral magnets for positional feedback


Technical data

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

Single acting, parallel, magnetic piston

Operating pressure:

2,5 to 7 bar

(Ø 10 mm 3,5 to 7 bar)

Operating temperature:

0°C to +60°C

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Mounting:

Mounting holes on three faces

Gripping repeatability:

+/- 0,01 mm

Mechanical life:

~ 5 million cycles before maintenance may be necessary

Operating frequency:

200 cycles per minute maximum

Materials

Body: aluminium alloy

Top plate: carbon steel

Fingers: carbon steel

External screws: carbon steel

Elastomers: nitrile

Ordering information

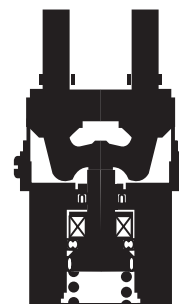
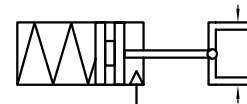
To order a gripper with an effective closing grip force of up to 21 N at 5 bar quote:

M/160344/M/11

Order magnetically operated switches separately

Accessories

Switch M/344

See page
2




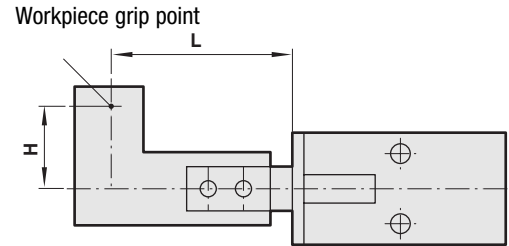
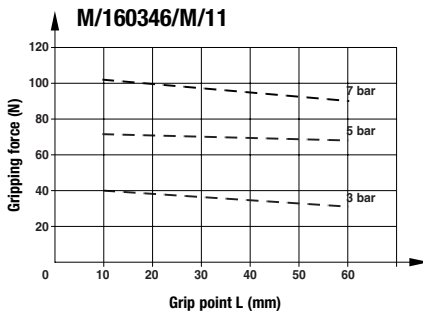
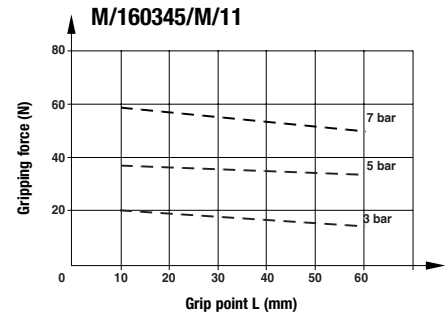
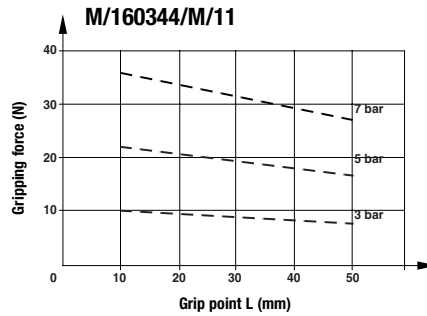
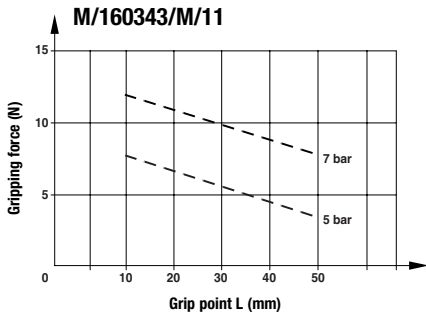
Standard models • Effective gripping force • Air consumption

Model	Effective gripping force (N) at 5 bar*		Air consumption (cm ³) at 5 bar**
	Opening	Closing	
M/160343/M/11	2	4,9	0,1
M/160344/M/11	3,9	21	0,65
M/160345/M/11	6,9	36,4	1,4
M/160346/M/11	13,7	54	2,8

* Grip point L = 30 mm

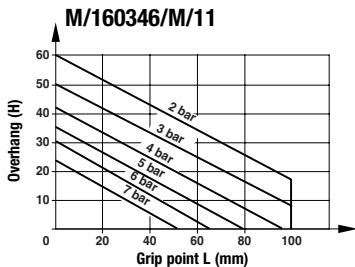
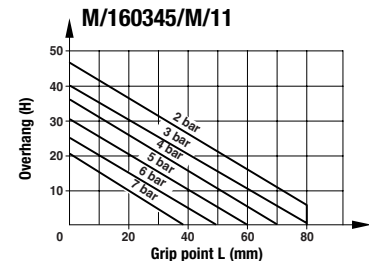
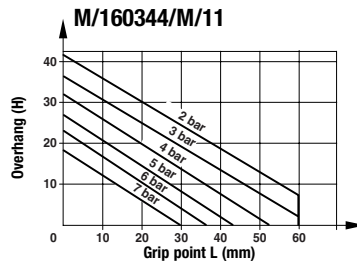
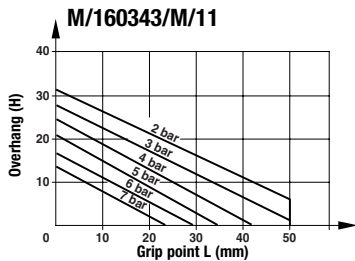
** per cycle

Theoretical closing gripping forces



Effective closing gripping forces = Theoretical closing gripping force x 0,85

Grip point limitation range



Criteria of workpiece weight

When chucking a workpiece, weight should be within the range between 1/10 and 1/20 of the above gripping force.

When chucking and then moving a workpiece, the workpiece may protrude or drop. Therefore, workpiece weight should be less than the above mentioned value. (Reference value is 1/30-1/50)

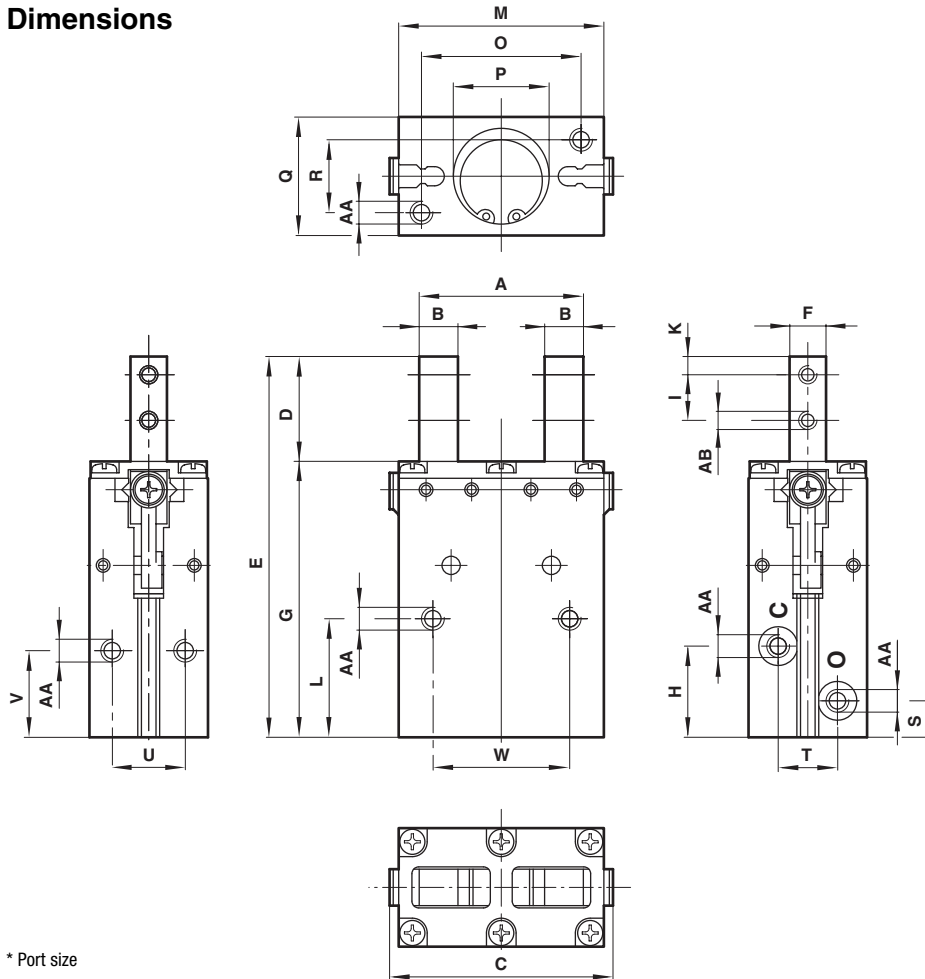
Weight depends on the operational condition, such as material and shape of workpiece or claw, speed and direction of moving workpiece (straight advance, rotation or swing, etc.)

Switches with LED indication

Model	2-wire solid state	3-wire solid state	Voltage V d.c.	Current max.	Temperature °C	LED	Features	Cable length	Cable type	Straight cable connection	90° elbow cable connection
M/344/EAU/1APV			10 ... 28	20 mA	0° ... +60°	●	-	1 m	PVC	-	●
M/344/EAU/1PV			10 ... 28	20 mA	0° ... +60°	●	-	1 m	PVC	●	-
M/344/EAU/3APV			10 ... 28	20 mA	0° ... +60°	●	-	3 m	PVC	-	●
M/344/EAU/3PV			10 ... 28	20 mA	0° ... +60°	●	-	3 m	PVC	●	-
		M/344/EAN/1APV	4,5 ... 28	50 mA	0° ... +60°	●	NPN	1 m	PVC	-	●
		M/344/EAN/1PV	4,5 ... 28	50 mA	0° ... +60°	●	NPN	1 m	PVC	●	-
		M/344/EAN/3APV	4,5 ... 28	50 mA	0° ... +60°	●	NPN	3 m	PVC	-	●
		M/344/EAN/3PV	4,5 ... 28	50 mA	0° ... +60°	●	NPN	3 m	PVC	●	-



Dimensions



	Ø	A	B	C	D	E	F	G	H	I	K
M/160343/M/11	10	17 + 1,6/-0,2 (open) 13 ± 0,4 (closed)	4,5	25 max.	16,5	59,5	5,5 - 0,03	43	15	6	3
M/160344/M/11	16	26 + 2,3 (open) 18 + 0,6/-0,2 (closed)	6,5	37,5 max	19	71	7 - 0,03	52	17,5	8	3
M/160345/M/11	20	36 + 1,5/-0,9 (open) 24 + 0,1/-0,9 (closed)	8,5	49 max	23	83,5	8 - 0,04	60,5	20	10	4
M/160346/M/11	25	42 + 1,0/-0,7 (open) 28 ± 0,4 (closed)	10	57,5 max	27	95	10 - 0,03	68	23	12	5

	Ø	L	M	O	P	Q	R	S	T	U	V	W	AA	AB	AC	kg
M/160343/M/11	10	20	23	17	Ø 11 + 0,05 deep 1,5	16	10	7,5	10	10	16	18	M3 x 0,5	M3 x 0,5 deep 5	M3 x 0,5	0,05
M/160344/M/11	16	23	34	26	Ø 17 + 0,05 deep 1,5	22	14	7,5	12	14	18	24	M5 x 0,8	M4 x 0,7 deep 7	M3 x 0,5	0,12
M/160345/M/11	20	26	45	35	Ø 21 + 0,05 deep 1,5	26	16	8	13	16	19	30	M5 x 0,8	M5 x 0,8 deep 8	M4 x 0,7	0,22
M/160346/M/11	25	30	52	40	Ø 26 + 0,05 deep 1,5	32	20	9	18	20	22	36	M5 x 0,8	M6 x 1,0 deep 10	M5 x 0,8	0,37

Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under 'Technical Data'.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult **NORGREN**.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

Parallel grippers - precision**Single acting****Magnetic piston****Ø 8 to 20 mm****Ideal for applications demanding accuracy and precise repeatability****Smooth, accurate movement****Long, uninterrupted service life****Low weight****Compact size****Integral magnets for positional feedback****Technical data**

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

Single acting, parallel, magnetic piston

Operating pressure:

7 bar maximum - see page 2 for minimum operating pressures

Operating temperature:

+0°C to +60°C

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Mounting:

Mounting holes on three faces

Gripping repeatability:

+/- 0,01 mm

Accuracy to centre:

+/- 0,07 mm

Mechanical life:

~ 5 million cycles before maintenance may be necessary

Operating frequency:

120 cycles per minute maximum

Materials

Body: aluminium alloy

Fingers: stainless steel

Guide rail: stainless steel

Elastomers: nitrile

Ordering information

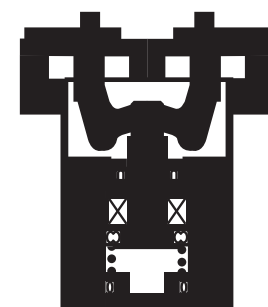
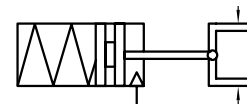
To order a gripper with an effective closing grip force of up to 20N at 5 bar quote:

M/160356/M/11

Order magnetically operated switches separately

Accessories

Switch M/344

See page**2**



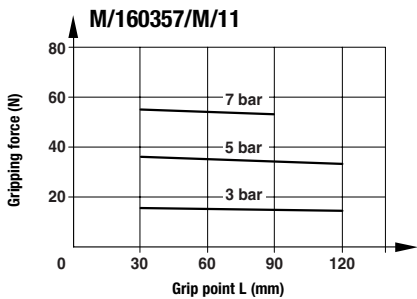
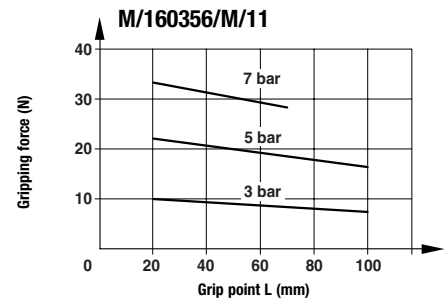
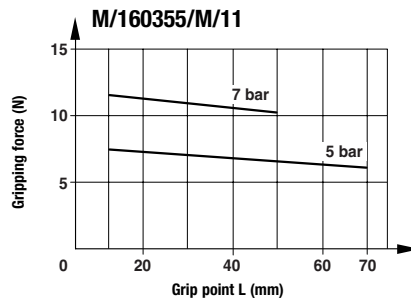
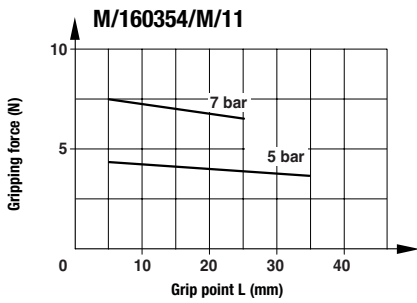
Standard models • Effective gripping force • Minimum operating pressure • Air consumption

Model	Effective gripping force (N) at 5 bar*		Minimum operating pressure in bar	Air consumption (cm ³) at 5 bar**
	Opening	Closing		
M/160354/M/11	2,7	4,1	4,0	0,06
M/160355/M/11	2,4	6,8	3,5	0,16
M/160356/M/11	5,4	20,0	2,5	0,7
M/160357/M/11	7,3	34,0	2,5	1,6

* Grip point L = 30 mm

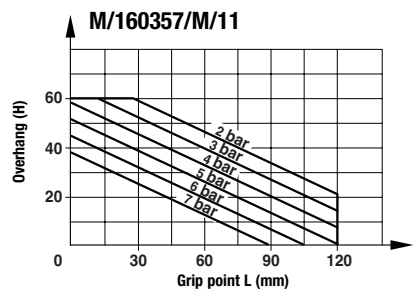
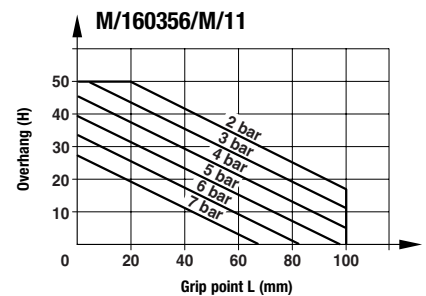
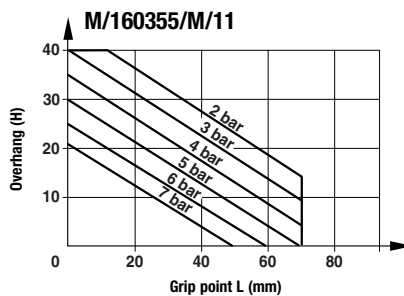
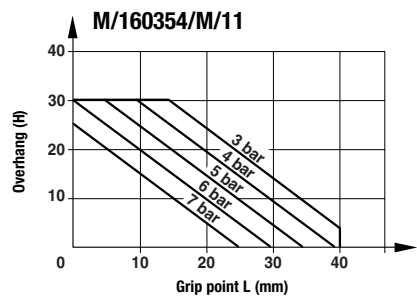
** per cycle

Theoretical closing gripping forces



Effective closing gripping forces = Theoretical closing gripping force x 0,85

Grip point limitation range

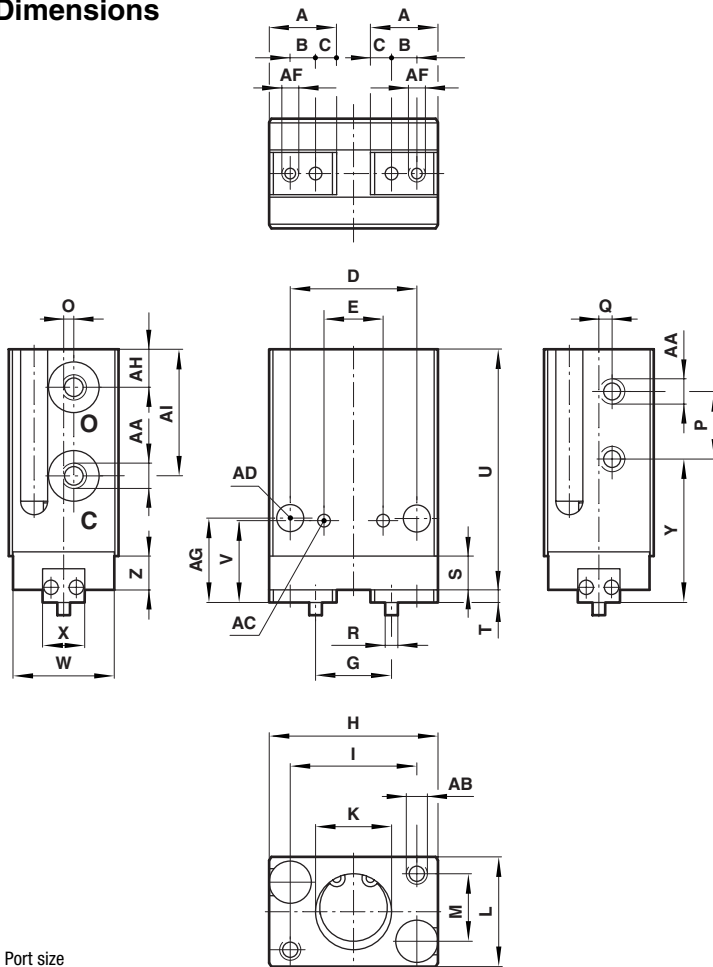


Switches with LED indication

Model	2-wire solid state	3-wire solid state	Voltage V d.c.	Current max.	Temperature °C	LED	Features	Cable length	Cable type	Straight cable connection	90° elbow cable connection
M/344/EAU/1APV			10 ... 28	20 mA	0° ... +60°	●	-	1 m	PVC	-	●
M/344/EAU/1PV			10 ... 28	20 mA	0° ... +60°	●	-	1 m	PVC	●	-
M/344/EAU/3APV			10 ... 28	20 mA	0° ... +60°	●	-	3 m	PVC	-	●
M/344/EAU/3PV			10 ... 28	20 mA	0° ... +60°	●	-	3 m	PVC	●	-
		M/344/EAN/1APV	4,5 ... 28	50 mA	0° ... +60°	●	NPN	1 m	PVC	-	●
		M/344/EAN/1PV	4,5 ... 28	50 mA	0° ... +60°	●	NPN	1 m	PVC	●	-
		M/344/EAN/3APV	4,5 ... 28	50 mA	0° ... +60°	●	NPN	3 m	PVC	-	●
		M/344/EAN/3PV	4,5 ... 28	50 mA	0° ... +60°	●	NPN	3 m	PVC	●	-



Dimensions

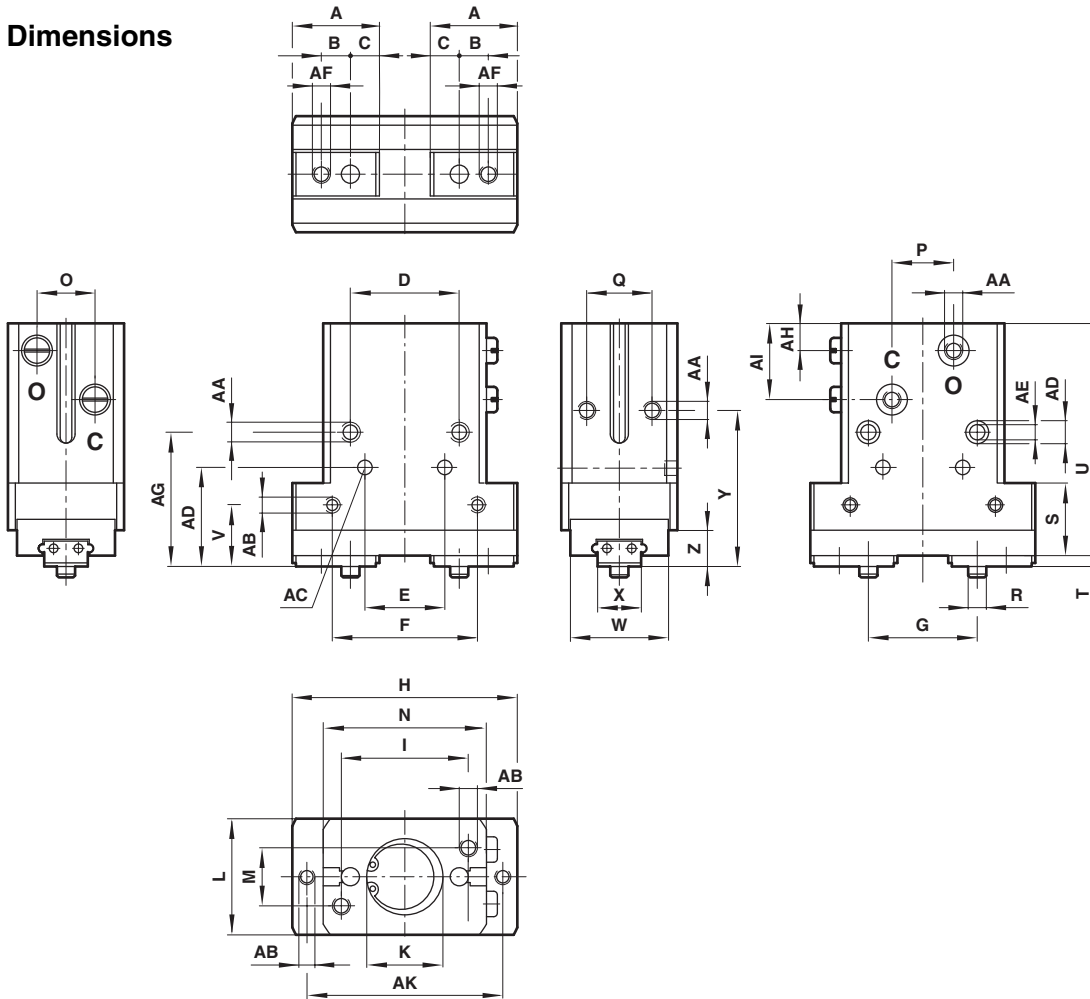


* Port size

	Ø	A	B	C	D	E	G	H	I	K
M/160354/M/11	8	8	3	2,5	15	$7 \pm 0,03$	9 + 1,5 (open) 5 + 0,5 (closed)	20	15	Ø 9 + 0,05 deep 1
	Ø	L	M	O	P	Q	R	S	T	U
M/160354/M/11	8	$13 \pm 0,05$	9	1,2	8	1,5	Ø 1,5 -0,03	4	1,5	28,5
	Ø	V	W	X	Y	Z	AA	AB	AC	AD
M/160354/M/11	8	9,7	12	$5 \pm 0,025$	17	4	M3 x 0,5	M2,5 x 0,45 deep 4	Ø 1,5 + 0,02 deep 1	Ø 3,2
	Ø	AF	AG	AH	AI	AL	kg			
M/160354/M/11	8	M2 x 0,4 deep 3,5	10	4,5	15	M3 x 0,5 deep 3	0,02			



Dimensions



* Port size

	Ø	A	B	C	D	E	F	G	H	I	K	
M/160355/M/11	10	14,7	5	4,5	17	12 ± 0,03	20	15,5 + 1,5 (open)	9 + 0,5 (closed)	36	17	Ø 11 + 0,05 deep 1,5
M/160356/M/11	16	20	8	6	24	16 ± 0,03	30	22 + 1,8 (open)	12 + 1,3 (closed)	50	26	Ø 17 + 0,05 deep 1,5
M/160357/M/11	20	24	8	8	30	22 ± 0,03	40	30 + 2,4/-0,5 (open)	16 + 1,4 (closed)	62	35	Ø 21 + 0,05 deep 1,5
	Ø	L	M	N	O	P	Q	R	S	T	U	
M/160355/M/11	10	20 ± 0,05	10	23	9	7	12	Ø 3 - 0,03	12,5	1,5	47,5	
M/160356/M/11	16	25 ± 0,05	14	34	12	15	15	Ø 4 - 0,03	15	2	54	
M/160357/M/11	20	32 ± 0,05	16	45	16	17	18	Ø 5 - 0,03	20	3	64	
	Ø	V	W	X	Y	Z	AA	AB	AC	AD	AE	
M/160355/M/11	10	11	17	7 ± 0,025	29	6	M3 x 0,5	M3 x 0,5 deep 4,5	Ø2,5 + 0,02 deep 2,5	M4 x 0,7 deep 6	Ø 3,4	
M/160356/M/11	16	14	20	9 ± 0,025	36	8	M5 x 0,8	M4 x 0,7 deep 5	Ø3 + 0,02 deep 3	M4 x 0,7 deep 6	Ø 3,4	
M/160357/M/11	20	17	27	12 ± 0,025	43	8	M5 x 0,8	M4 x 0,7 deep 7	Ø4 + 0,02 deep 3,5	M5 x 0,8 deep 8	Ø 4,2	
	Ø	AF	AG	AH	AI	AK	AL	AM	AN	AO	kg	
M/160355/M/11	10	M3 x 0,5 deep 4	24	7,5	17	30	M3 x 0,5 deep 5	M3 x 0,5 deep 6	16	M3 x 0,5 deep 5	0,08	
M/160356/M/11	16	M4 x 0,7 deep 5	31	7,5	19	42	M4 x 0,7 deep 6	M4 x 0,7 deep 7	21	M3 x 0,5 deep 5	0,16	
M/160357/M/11	20	M5 x 0,8 deep 7	37	7,5	21	54	M5 x 0,8 deep 8	M5 x 0,8 deep 9	27,3	M4 x 0,7 deep 6	0,33	

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