NORGREN

OBSOLETE DOCUMENT Technical Reference Only

M/160380/M/12

Parallel grippers - three jaw

Double acting

Magnetic piston

Ø 16 to 20 mm

Ideal for gripping spheres or components with circular faces

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:
Double acting, three jaw parallel, magnetic piston

Operating pressure:
2 to 7 bar
1,5 to 7 bar M/160386/M/12

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 base

Gripping repeatability:
+/- 0,01 mm

Mechanical life:
~ 5 million cycles before maintenance may be necessary

Operating frequency:
200 cycles per minute maximum

Materials

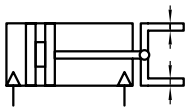
Body: aluminium alloy
Top plate: carbon steel
Fingers: carbon steel
External screws: carbon steel
Elastomers: nitrile

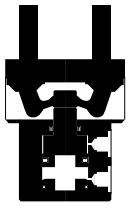
Ordering information

To order a gripper with an effective closing grip force of up to 20N at 5 bar quote:
M/160385/M/12

Order magnetically operated switches separately

Accessories	See page
Switch M/344	2





For your local Norgren Technical Sales Centre phone 0345 662266. For your local Norgren Distributor phone 0345 227777.
IMI Norgren Limited, PO Box 22, Eastern Avenue, Lichfield, Staffordshire WS13 6SB

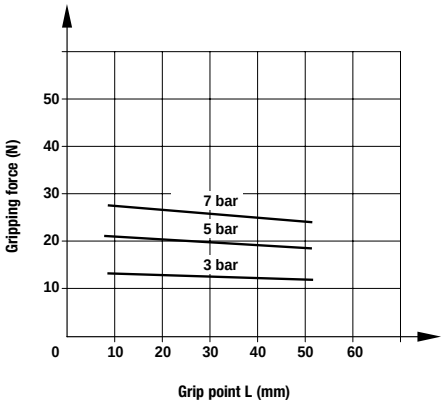
Standard models • Effective gripping force • Air consumption

Model	Effective gripping force (N) at 5 bar* Opening	Closing	Air consumption (cm^3) at 5 bar**
M/160385/M/12	27	20	1,4
M/160386/M/12	36	27	3,3

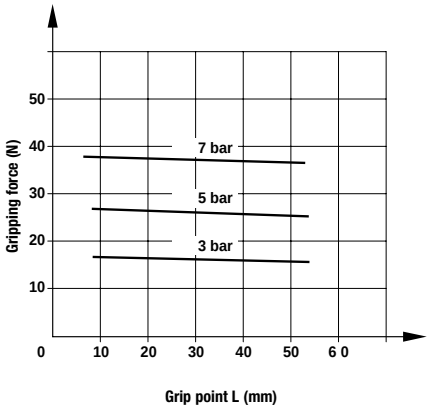
* Grip point L = 30 mm
** per cycle

Theoretical closing gripping forces

M/160385/M/12

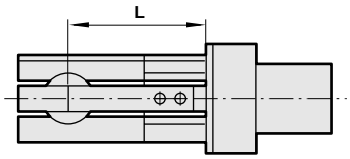


M/160386/M/12



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

Workpiece grip point



Criteria of workpiece weight

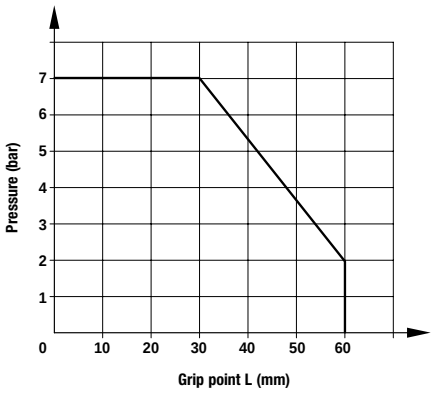
When chucking a workpiece, weight should be within the range between 1/10 and 1/20 of the above gripping force.

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)

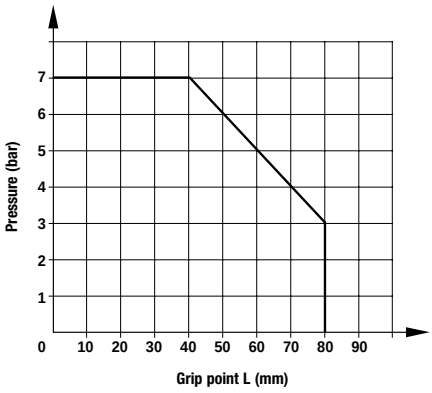
Weight depends on the operational condition, such as material and shape of workpiece or claw, speed and direction of moving workpiece (straight advance, rotation or swing, etc.)

Grip point limitation range

M/160385/M/12



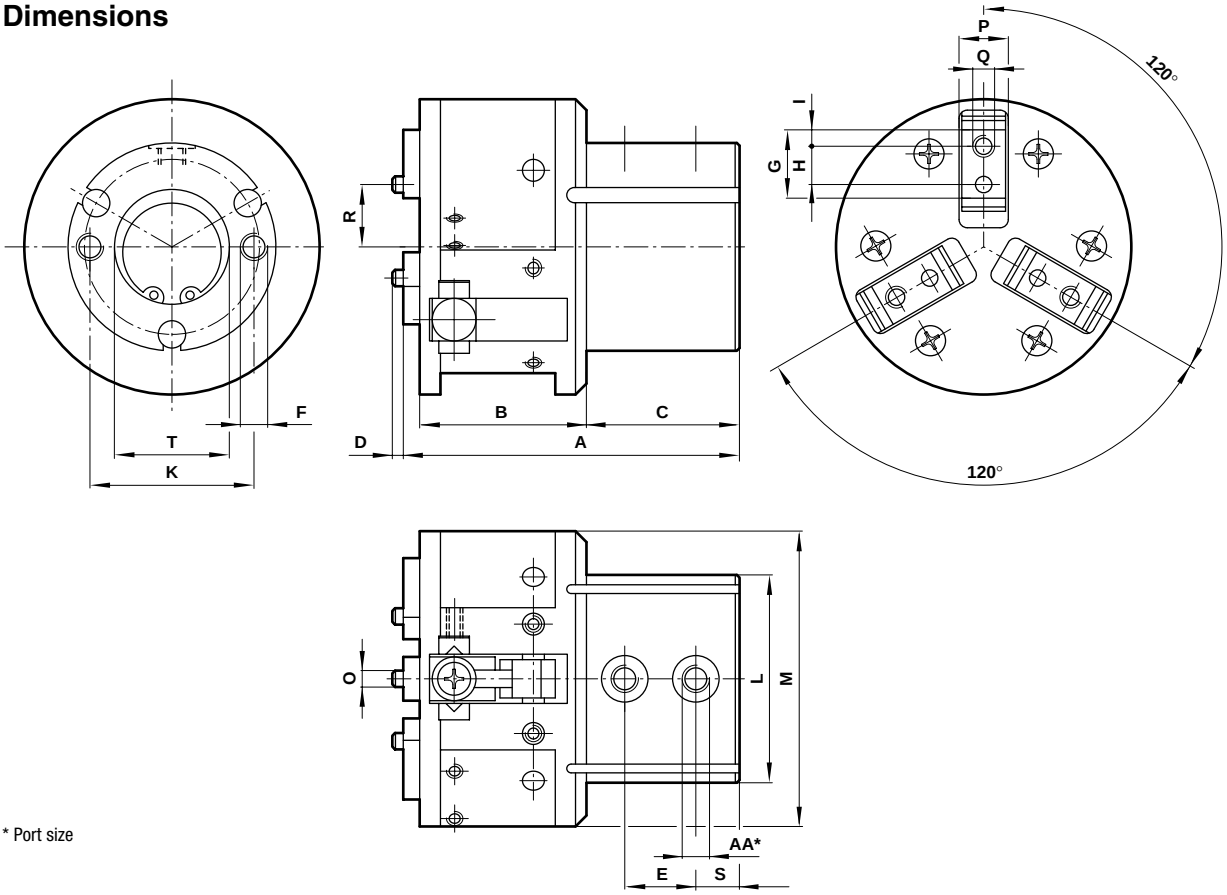
M/160386/M/12



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	●	–
	M/344/EAP/1APV	4,5 ... 28	50 mA	0° ... +60°	●	PNP	1 m	PVC	–	●
	M/344/EAP/1PV	4,5 ... 28	50 mA	0° ... +60°	●	PNP	1 m	PVC	●	–
	M/344/EAP/3APV	4,5 ... 28	50 mA	0° ... +60°	●	PNP	3 m	PVC	–	●
	M/344/EAP/3PV	4,5 ... 28	50 mA	0° ... +60°	●	PNP	3 m	PVC	●	–

Dimensions



* Port size

	Ø	A	B	C	D	E	F	G	H	I	K
M/160385/M/12	16	53	23	27	2	12,5	M4 x 0,7 deep 7	10	5	2,5	24
M/160386/M/12	20	61,5	30,5	28	2	13	M5 x 0,8 deep 8	12,5	7	3,0	30

	Ø	L	M	O	P	Q	R	S	T	AA	kg
M/160385/M/12	16	Ø 32	Ø 42	Ø 3 - 0,005	7 - 0,03	M3 x 0,5	9,5 + 0,9/-0,4 (open) 5,5 + 0,9/-0,4 (closed)	7,5	Ø 17 + 0,05 deep 1,5	M5 x 0,8	0,16
M/160386/M/12	20	Ø 38	Ø 54	Ø 3 - 0,005	8 - 0,04	M4 x 0,7	13 + 1,6/-0,4 (open) 7 + 1,2/-0,4 (closed)	8	Ø 21 + 0,05 deep 1,5	M5 x 0,8	0,28

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.