



対応文書 No. MH* - 0MG 0128

PNEUMATIC GRIPPER "AIR CHUCK"
MHQG 2 SERIES
INSTRUCTION MANUAL

MH Q G 2 S E R I E S

M O D E L

M H Q G 2 - 3 2

M H Q G 2 - 4 0

SMC CORPORATION

- I N D E X -

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S M C C O R P O R A T I O N

1.How to order

MHQG2 — 32 — D — 2 — Y59A — L — S

Number of finger ●

2	2 fingers
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Bore size ●

32	32mm
40	40mm

Action ●

D	Double acting
S	Single acting (Normally open)
C	Single acting (Normally closed)

● Number of auto switches

Nil	2pcs.
S	1pc.

● Lead wire length

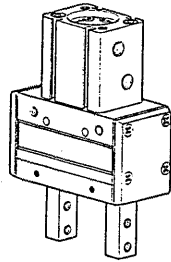
Nil	0.5m
L	3m

● Type of auto switch

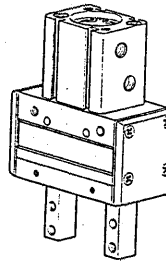
Nil	With auto switch	
Y59A	D-Y59A (3 wire system)	Solid state Lead wire : Axial direction take-off
Y59B	D-Y59B (2 wire system)	Solid state Lead wire : Axial direction take-off
Y69A	D-Y69A (3 wire system)	Solid state Lead wire : Right angle take-off
Y69B	D-Y69B (2 wire system)	Solid state Lead wire : Right angle take-off

Finger option ●

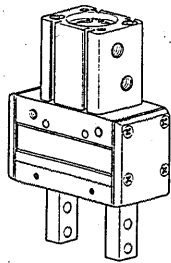
Nil: Standard tap mounting method



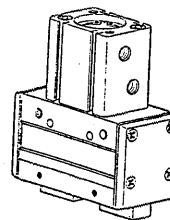
1: Side tap mounting method



2: Through hole method (Opening direction)



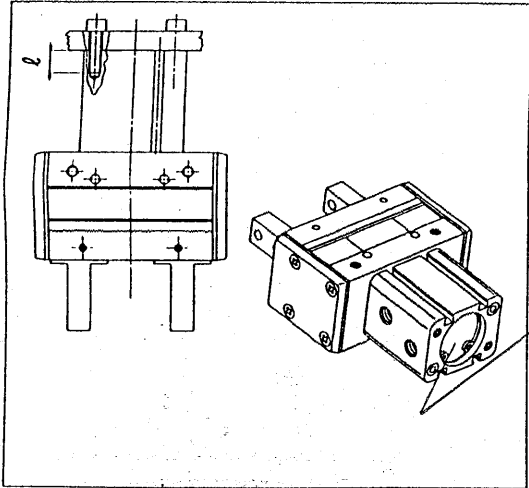
3: Flat type finger method



2. Mounting style of Air Chuck.

MHQQ2-32, 40 series Air Chuck can be mounted from 2 directions.
Appropriate direction can be selected to suit intended machinery or workpiece.

① To mount direct axis type (body tap)

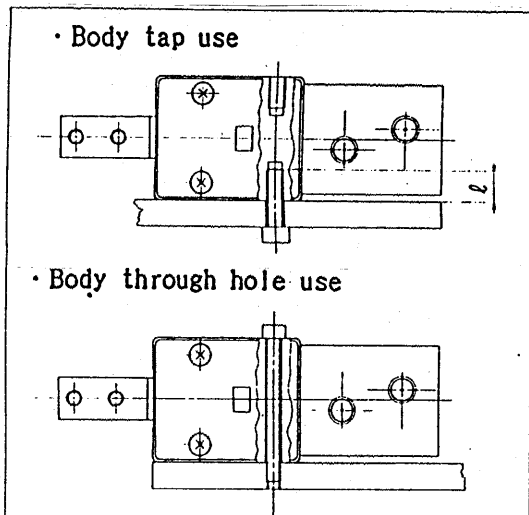


Model	using bolt	MAX. tightening torque N·m	MAX. length of engagement; l mm
MHQQ2-32	M6×1	0.74	12
MHQQ2-40	M8×1.25	1.7	14

Holes at end of body can be used for positioning.

Model	Hold dia.	Hold depth
MHQQ2-32	$\phi 34H9^{+0}_{-0} 0.62$	0.44
MHQQ2-40	$\phi 17H9^{+0}_{-0} 0.62$	0.75

② Side mounting type (body tap, body through hole)



· In case, body tap is used.

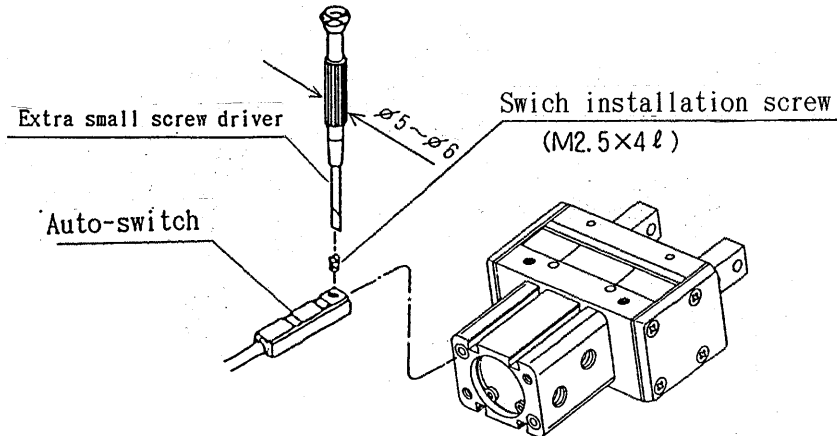
Model	using bolt	MAX. tightening torque N·m	MAX. length of engagement; l mm
MHQQ2-32	M6×1	0.74	12
MHQQ2-40	M8×1.25	1.7	12

· In case, body through hole is used.

Model	using bolt	MAX. tightening torque N·m
MHQQ2-32	M5×0.8	0.43
MHQQ2-40	M6×1	0.74

3. Mounting procedure of auto-switch.

To mount auto-switch, insert auto-switch into mounting groove of Air Chuck as shown in lower illustration. After mounting position is determined, secure by tightening fitting screw provided.



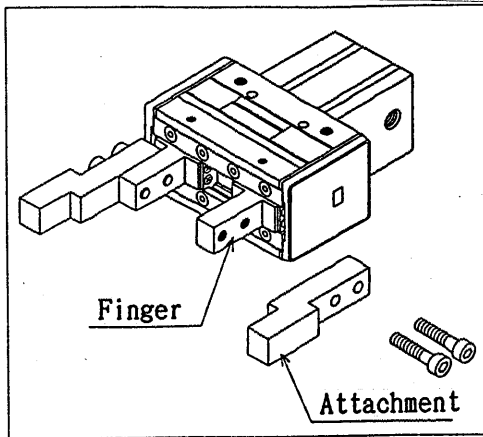
Note) To tighten auto-switch fitting screw, use extra small screw driver of grip dia. approx. 5-6mm. Advised tightening torque is approx. 0.05-0.1N·m, when touch feeling is obtained, rotate 90° to reach the required torque.

4. Piping.

- Selection best fittings from one-touch fittings (Series KJ, KQ), insert fittings (Series KF) and various series of flareless fittings.
- Thoroughly flush the fittings to remove dust or chips from the inside of the air chuck.

5. Installation adjustment of Air

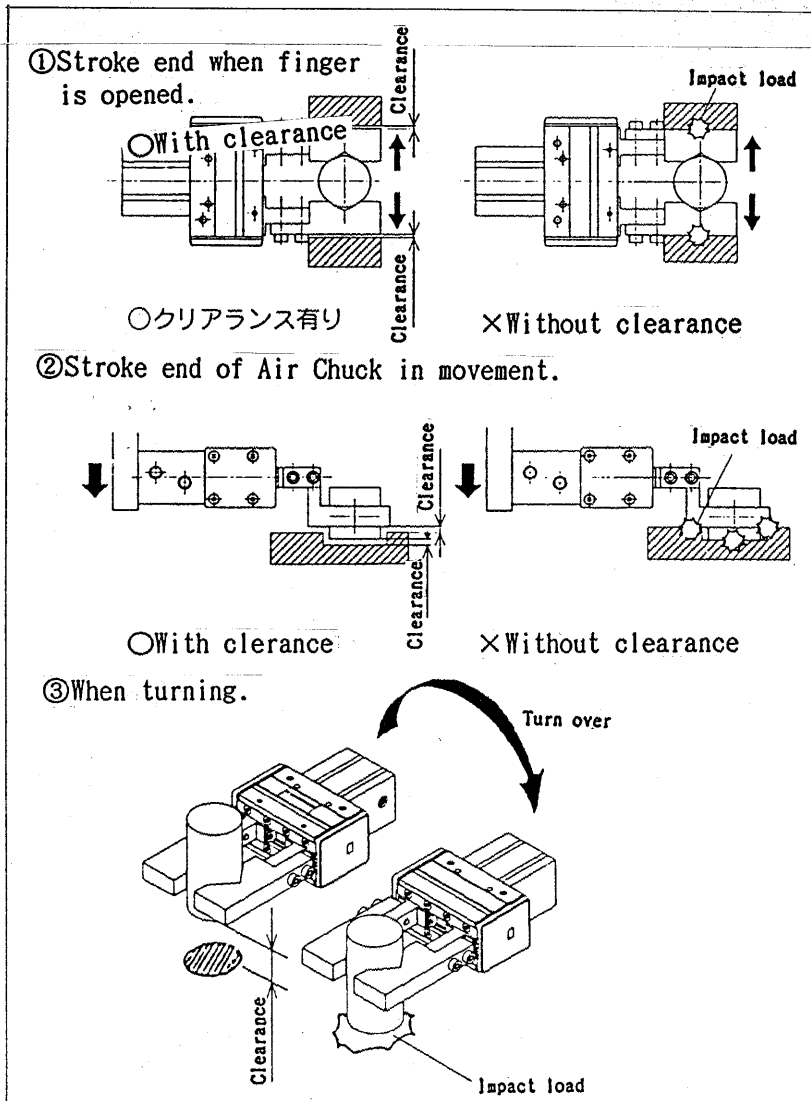
1) Precautions to fit attachment.



When mounting attachment to finger, it should be carried out holding finger by spanner or other means so that the tightening force is not transmitted to the finger guide mechanism. For tightening torque of bolts, refer to the following table.

Model	Fixing bolt	Max. tightening torque N·m
MHQG2-32	M6 × 1	4.9
MHQG2-40	M8 × 1.25	11.8

2) Adjust the device not to receive external force on it. It should be kept at stroke end of the finger between



Appropriate clearance should be kept at finger not to receive force except gripping workpiece, particularly when workpiece is gripped, not to crash to other object at stroke end of Air Chuck movement. Lateral load comes on to finger repeatedly or impact load comes on may cause finger to loosening or damage.

It is often happens when Air Chuck is turned little variation of length of workpiece may cause to crash at downward stroke end of turning movement. It should be cared.

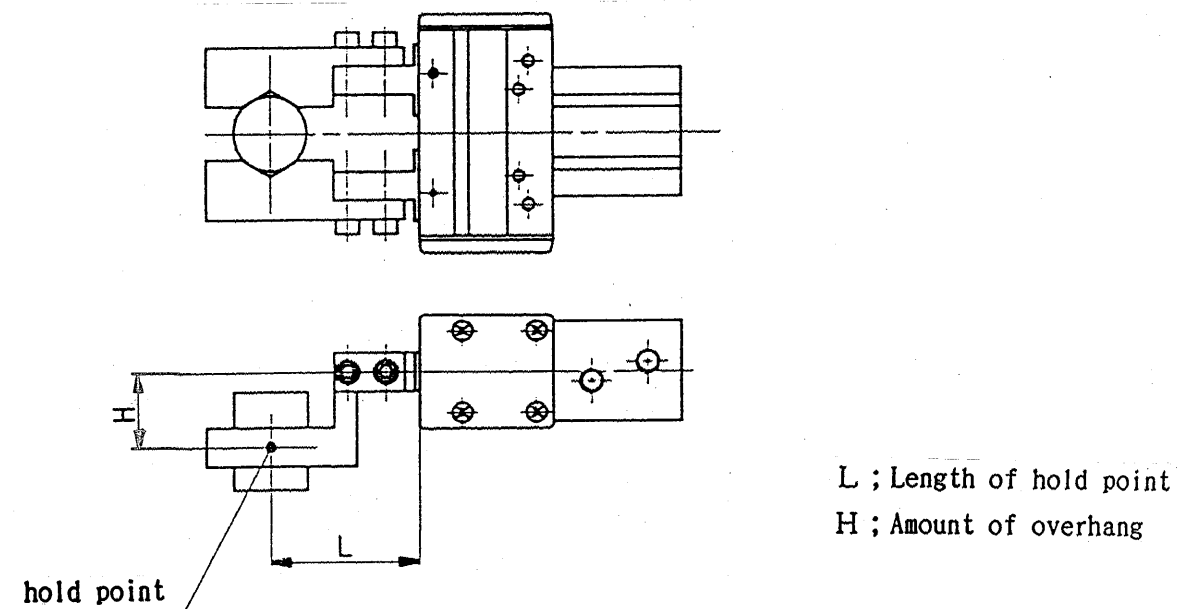
6. Instructions before operating.

The design of attachments

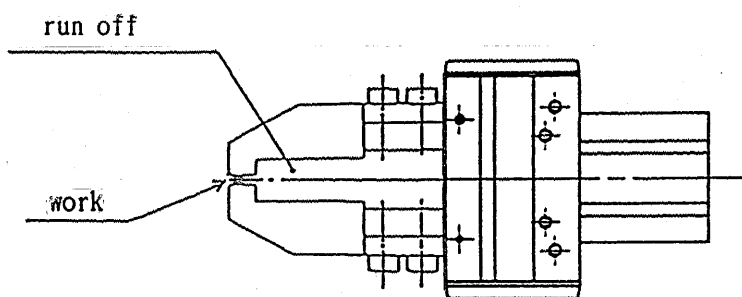
- 1) When overhang become bigger, excessive moment load acts to attachments installing to fingers and fingers are worn out, the life is affected.

Therefore please set like figure 1, (Within the limit of P hold point) as for the length of hold point L and the amount of overhang.

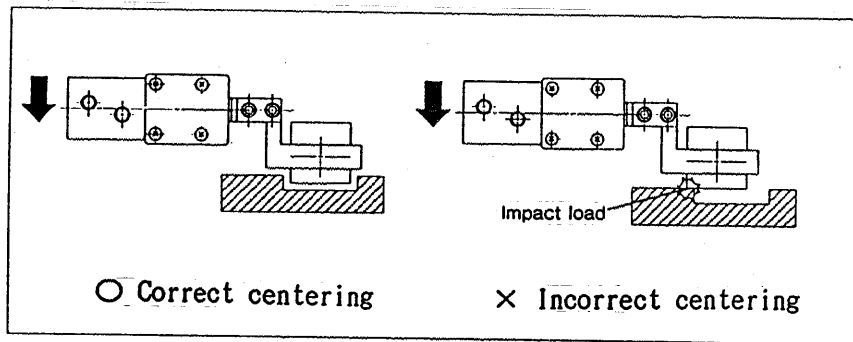
Even if it is within the limit please make as light as possible.



- 2) In case the shape of works is like a needle or a thin board, install run off at the attachment in order to stabilize hold.



Before inserting Workpiece, centering should be carried out thoroughly not to add unnecessary force to finger. particularly In test run, keep manual force or air cylinder pressure low to operate and make sure no existence of shock and safety.



3) Adjustment of open-close speed of the finger.

Adjust open-close finger speed not to unnecessarily fast.

• How to adjust open-close finger speed.

Double acting type	Two speed controllers should be connected to MHQG2-32,40. Make adjustment by means of meter-out throttling.
Single acting type	Connect speed controller to close side port of the finger and use it as meter-in style.

Applicable speed controller

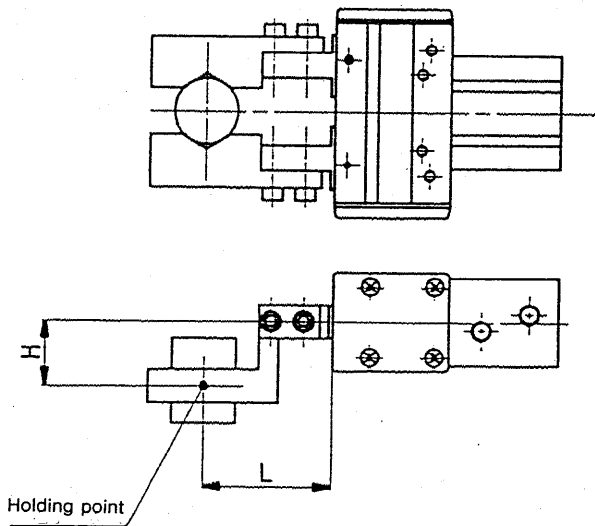
Air Chuck direct coupling type— AS2200-01, etc

Ported type— AS2050F, etc

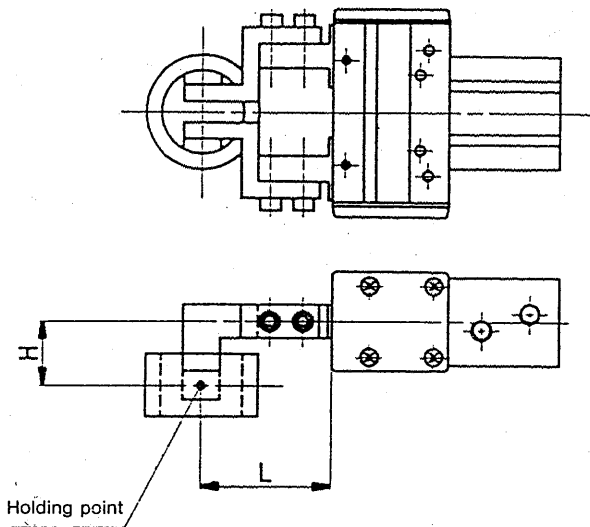
• If open-close speed is unnecessarily fast, impact force on finger becomes too great and will shorten its life.

7. Holding point

Holding from outside



Holding from inside

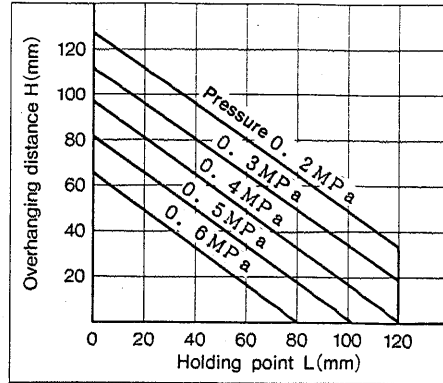


L: Distance to the holding point
H: Overhanging distance

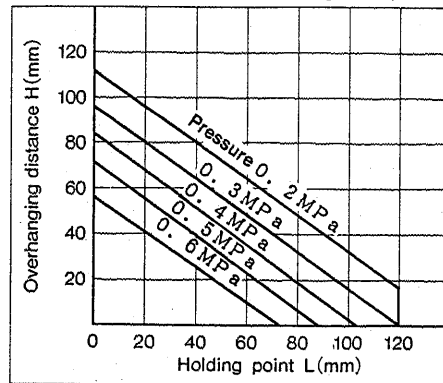
- Holding point of workpiece is recommended to follow conditions stated in graphs right hand side for L; holding distance subject to working pressure, and H; over-hang quantity.
- Used Chuck outside of recommended area stated in graphs for holding point of workpiece, load coming on finger and guide part becomes excessively great and so may cause to malfunction of the finger or shorten its life.

Limiting range of holding point

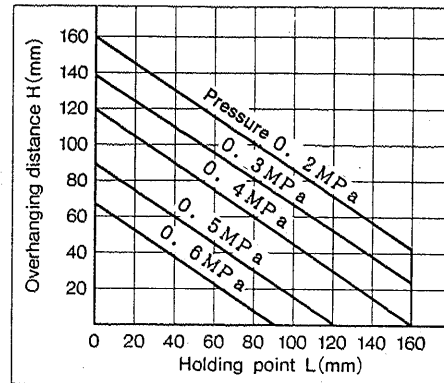
MHQG2-32D, -32S (Outside holding force)



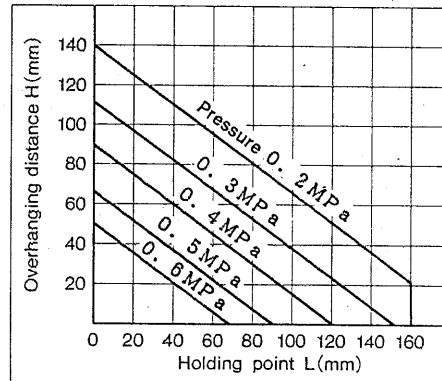
MHQG2-32D, -32C (Inside holding force)



MHQG2-40D, -40S (Outside holding force)

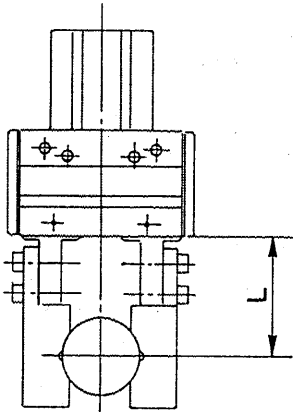


MHQG2-40D, -40C (Inside holding force)

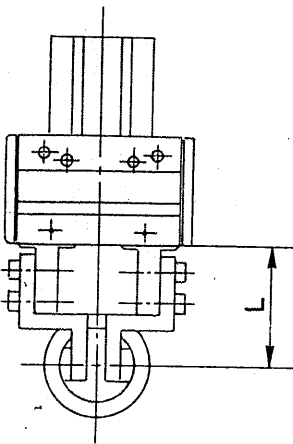


8. Effective gripping force for parallel type gripper.

Holding from outside



Holding from inside



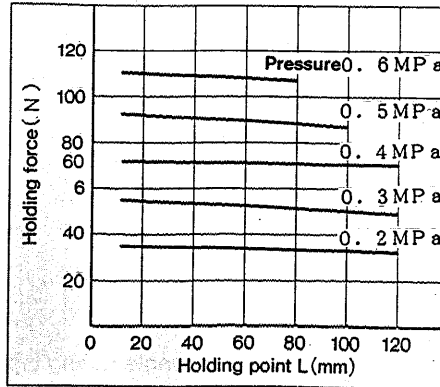
L: Holding point length(mm)

Guidelines for the Selection of Air Chuck model with respect to component weight

- Selection of the correct model depends upon the component weight, the coefficient of friction between the Chuck attachment and the component, and their respective configurations. A model should be selected with a gripping force of 10 to 20 times of the component weight.
- If high acceleration, high deceleration or impact are encountered during component transportation then a further margin of safety should be considered.

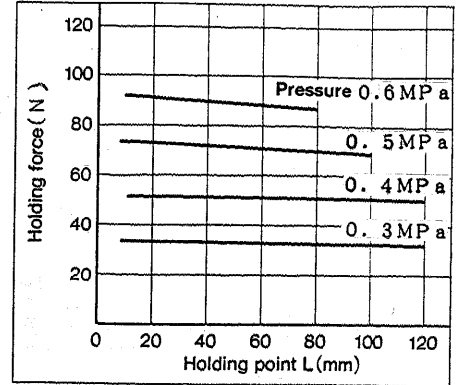
Double acting type

MHQG2-32D(Outside holding force)

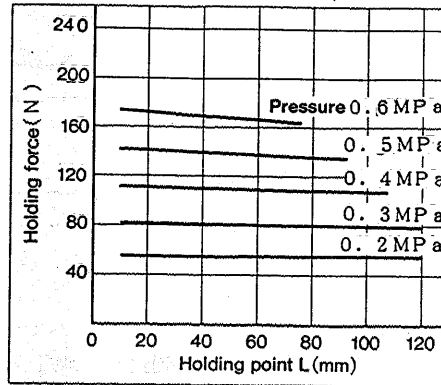


Single acting type

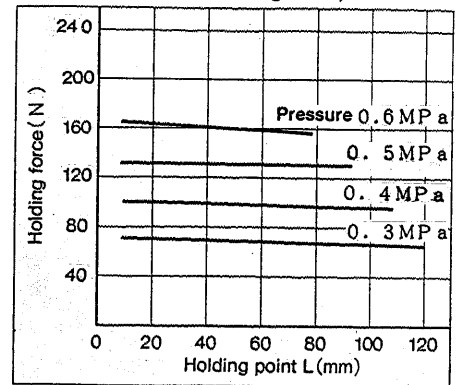
MHQG2-32S(Outside holding force)



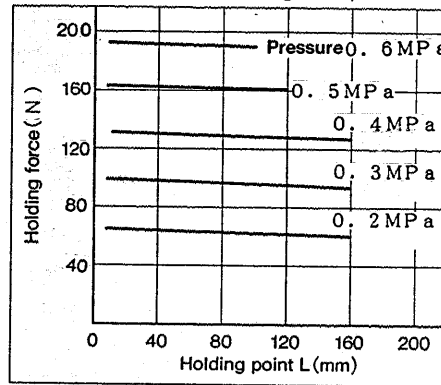
MHQG2-32D(Inside holding force)



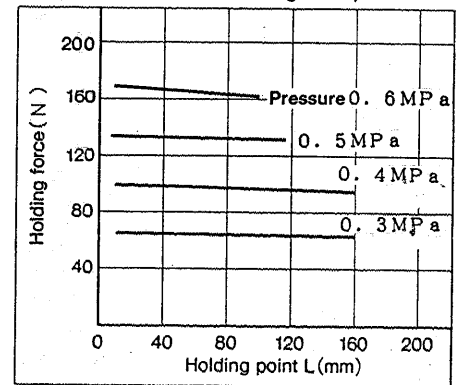
MHQG2-32C(Inside holding force)



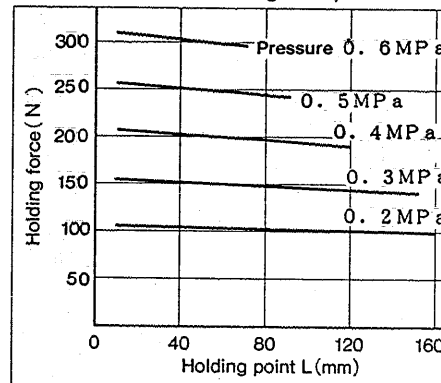
MHQG2-40D(Outside holding force)



MHQG2-40S(Outside holding force)



MHQG2-40D(Inside holding force)



MHQG2-40C(Inside holding force)

