Series MHS
Model Selection

Model Selection

Selection Procedure

Step 1 Confirmation of gripping force → **Step 2** Confirmation of gripping point

Step 1 Confirmation of Gripping Force

Confirmation of conditions → Calculation of required gripping force → Selection of model from gripping force graph

Example

Workpiece weight: 0.4 kg

Gripping method: External gripping

Number of fingers: 2

Gripping point: 20 mm

Operating pressure: 0.4 MPa

Model selection criteria with respect to workpiece weight

- Although differences will exist depending on the coefficient of friction between attachments and workpieces, select a model which will provide a gripping force as shown in the table below.

Note 1) Refer to the model selection illustration regarding multiples of the workpiece weight.

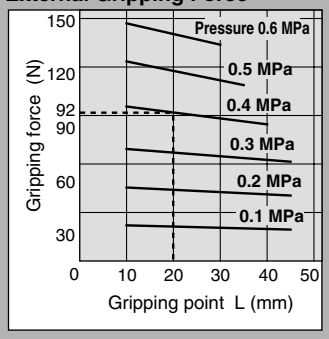
Model	Multiples of gripping force by workpiece weight
MHS2	10 to 20 times or more
MHS3	7 to 13 times or more
MHSJ3	
MHSH3	
MHSL3	
MHS4	5 to 10 times or more

- If high acceleration, deceleration or impact forces are encountered during motion, a further margin of safety should be considered.

Example) When it is desired to set the gripping force at 20 times or more above the workpiece weight.
Required gripping force
= 0.4 kg x 20 x 9.8 m/s^2 ≅ 78.4 N or more

MHS2-32D

External Gripping Force



- Selecting the MHS2-32D.
  A gripping force of 92 N is obtained from the intersection point of the gripping point distance L = 20 mm and a pressure of 0.4 MPa.
- The gripping force is 23 times greater than the workpiece weight, and therefore satisfies a gripping force setting value of 20 times or more.

Note) For **Step 2**, refer to the gripping point for the effective gripping force of each model.

Model/Specifications

Without center pusher

Center pusher/Cylinder type

Center pusher/Spring type

Air Gripper Specifications

Model		MHSH3-16D	MHSH3-20D	MHSH3-25D	MHSH3-32D	MHSH3-40D	MHSH3-50D	MHSH3-63D	MHSH3-80D
Cylinder bore size (mm)		16	20	25	32	40	50	63	80
Fluid		Air							
Operating pressure (MPa)		0.2 to 0.6			0.1 to 0.6				
Ambient and fluid temperature (°C)		–10 to 60							
Repeatability (mm)		±0.01							
Max. operating frequency (c.p.m.)		120			60				30
Lubrication		Not reguired							
Action		Double acting							
Effective gripping force N (1) at 0.5 MPa	External hold	9	21	36	62	97	155	280	400
	Internal hold	15	26	45	77	118	187	329	490
Through hole diameter (mm)		ø3H10 $^{+0.040}_{0}$	ø3H10 $^{+0.040}_{0}$	ø4H10 $^{+0.048}_{0}$	ø6H10 $^{+0.048}_{0}$	ø10H10 $^{+0.058}_{0}$	ø12H10 $^{+0.070}_{0}$	ø16H10 $^{+0.070}_{0}$	ø20H10 $^{+0.084}_{0}$
Opening/Closing stroke (dia.) (mm)		4	4	6	8	8	12	16	20
Weight (g)		90	140	220	410	570	970	1,650	2,920

Note 1) Values for ø16 to ø25 are with gripping point L = 20 mm, for ø32 to ø63 with gripping point L = 30 mm, and for ø80 with gripping point L = 50 mm. Refer to “Effective Gripping Force” data on pages 12-7-34 through 12-7-36 for the gripping force at each gripping position.

Center Pusher (Cylinder type) Specifications

Model		MHSH3-32DA	MHSH3-40DA	MHSH3-50DA	MHSH3-63DA	MHSH3-80DA
Pusher cylinder bore size (mm)		12	20	25	32	40
Fluid		Air				
Operating pressure (MPa)		0.2 to 0.6	0.1 to 0.6			
Ambient and fluid temperature (°C)		–10 to 60				
Pusher maximum operating frequency (c.p.m.)		60				30
Lubrication		Not required				
Action		Double acting				
Pusher stroke (mm)		5	5	10	10	15
Pusher thrust (N) at 0.5 MPa	Extention	45	130	204	335	524
Weight (g)		530	770	1,330	2,300	4,000

Center Pusher (Spring type) Specifications

Model	MHSH3-32DB	MHSH3-40DB	MHSH3-50DB	MHSH3-63DB	MHSH3-80DB
Pusher stroke (mm)	5	5	10	10	15
Pusher spring force (N)	6 to 10	11 to 15	20 to 25	29 to 34	49 to 59
Weight (g)	500	740	1,290	2,250	4,000

Weight

	ø32	ø40	ø50	ø63	ø80
Through-hole with dust cover **MHSHJ3-□D**	430	600	1,020	1,710	3,040
Center pusher (cylinder type) with dust cover **MHSHJ3-□DA**	550	800	1,380	2.360	4,120
Center pusher (spring type) with dust cover **MHSHJ3-□DB**	520	770	1,340	2.310	4.120