















Series Variations









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Parallel Type Series Variations


		Series	Features	Action	Option				Bore size	Page	
					Finger option	Body option	Auto switch				
Parallel Type	Linear guide	Standard	 MHZ2 Series General purpose compact grippers with integral linear guide that provides high rigidity and high accuracy.	Double acting	●	●	●	6 10, 16 20, 25 32, 40	398		
		Long stroke	 MHZL2 Series Finger stroke is about double that of MHZ to deal with various types of workpieces.	Double acting	●	●	●	10, 16 20, 25		426	
		With dust cover	 MHZJ2 Series Air grippers with dust-proof and drip-proof construction. Interchangeable in mounting dimensions with the standard models. A selection of dust cover materials is available to suit your application.	Double acting	●	●	●	6 10, 16 20, 25 32, 40	440		
		Low profile	 MHF2 Series Height 1/3 (Compared with MHZ) Short, middle and long strokes are available.	Double acting	●	●	●	8, 12 16, 20		465	
	Wide opening	 MHL2 Series A wide opening with large open/close stroke. Optimally used for holding large-size workpieces that have dimensional variances. The double pistons provide a large gripping force.	Double acting	●	●	●	10, 16 20, 25 32, 40	497			
	Rotary actuated	2 Finger	 MHR2/MDHR2 Series A vertically compact configuration and a high level of precision have been achieved through the use of a rotary actuator as the source of its drive force. Supports class 10 clean room.	Double acting	●	●	●		Nominal size 10, 15 20, 30	517	
		3 Finger	 MHR3/MDHR3 Series A vertically compact configuration and a high level of precision have been achieved through the use of a rotary actuator as the source of its drive force. Optimally used for holding round-shaped workpieces. Supports class 10 clean room.	Double acting	●	●	●	Nominal size 10, 15	530		
	Slide body	Square body	2 Finger	 MHK2 Series A dust-protected, dripproof, external force resistant, and weather-resistant type that can be used for a variety of applications. To suit the environment, a selection of dust cover materials and stainless steel 304 fingers is available.	Double acting	●	●	●		12, 16 20, 25	547
			2 Finger	 MHS2 Series Vertically compact due to its wedge-shape cam construction. Optimally used in operations that require the application of an external force, such as in press fitting operations.	Double acting	●	●	●	16, 20 25, 32 40, 50 63	569	
		Round body	3 Finger	Standard	 MHS3 Series Vertically compact due to its wedge-shape cam construction. Optimally used in loading/unloading cylindrically shaped workpieces onto machine tools and in operations that require the application of an external force, such as in press fitting operations.	Double acting	●	●	●		16, 20 25, 32 40, 50 63, 80 100, 125
				With dust cover	 MHSJ3 Series Dust-protected, dripproof construction with a choice of dust cover material for the specific application.	Double acting	●	●	●	16, 20 25, 32 40, 50 63, 80	594
			Through-hole	 MHS3 Series Combination with dust cover and center pusher is possible.	Double acting	●	●	●	16, 20 25, 32 40, 50 63, 80	602	
				Long stroke	 MHSL3 Series Finger stroke is about twice as long as that of MHS and has an interchangeability in mounting with each other.	Double acting	●	●	●		16, 20 25, 32 40, 50 63, 80 100, 125
		4 Finger	 MHS4 Series Vertically compact due to its wedge-shape cam construction. Optimally holds rectangular workpieces for locating operations.	Double acting	●	●	●	16, 20 25, 32 40, 50 63	628		

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Angular Type Series Variations

Series		Features	Action	Option				Bore size	Page
				Finger option	Body option	Auto switch			
Angular Type	Standard	MHC2 Series 	Auto switches can be mounted.	Double acting		●	6	664	
		MHCA2 Series 	Body with a shorter overall length.	Double acting		●			6
	Compact	MHCM2 Series 	Smallest and most lightweight series.	Single acting		●	7	673	
	Standard	MHC2 Series 	A large holding moment is achieved through a double piston construction. (ø10 to ø25)	Double acting		●			10, 16 20, 25
	Toggle	MHT2 Series 	A large holding moment in the vicinity of the support point is achieved through a toggle construction. The workpiece can be held in place even when there is no supply of compressed air.	Double acting		●	32, 40 50, 63	685	
	Cam	180° Angular MHY2 Series 	Lightweight and compact size through the use of a cam mechanism.	Double acting	●	●			10, 16 20, 25
	Rack/Pinion	180° Angular MHW2 Series 	The use of SMC's unique seal construction resulted in its reduced overall length and dust-protecting performance. Can be used for unloading workpieces from machine tools or for holding workpieces.	Double acting	●	●	20, 25 32, 40 50	711	
	Rotary gripper	MRHQ Series 	The gripper function and the rotating function have been integrated in a compact package.	Double acting		●			10, 16 20, 25
				Single acting		●			

Auto Hand Changing System

AHC system	MA Series 	Automatic exchange of robot hand tools. FMS (flexible manufacturing system) implemented for assembly lines.	MA210	Max. transportable mass	3 kg	773
			MA3□1		5 kg	

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

-X□

MRHQ

MA

D-□

Air Grippers Model Selection

Performance Data for Air Gripper Model Selection

Series description	Series	Bore size (mm)	Gripping force (N) *1				Finger closing stroke (mm)	Finger opening stroke (mm)	Stroke (mm)	Weight (g)	Size H (mm)	Volume (cm ³)			
			Double acting		Single acting N.O.							O port	S port		
			External	Internal	External	Internal									
Parallel Type	Standard	MHZA2	6	3.3	6.1	1.9	3.7	$8_{-0.4}^0$	12 ± 1	4	26	29.8	0.23	0.13	
			MHZA2J	6	3.3	6.1	1.9	3.7	$8_{-0.4}^0$	12 ± 1	4	27	33	0.23	0.13
		MHZ2	6	3.3	6.1	1.9	3.7	$8_{-0.4}^0$	12 ± 1	4	27	38.8	0.23	0.19	
			10	11	17	7.1	13	$11.2_{-0.7}^0$ + ^{0.45} $5.7_{-0.4}^0$ + ^{0.45}	$15.2_{-0.7}^0$ + ^{0.45} $9.7_{-0.4}^0$ + ^{0.45}	4	55	43.8	0.4	0.3	
			16	34	45	27	38	$14.9_{-0.7}^0$ + ^{0.45} $6.6_{-0.4}^0$ + ^{0.45}	$20.9_{-0.7}^0$ + ^{0.45} $12.6_{-0.4}^0$ + ^{0.45}	6	115	50	1.3	1.0	
			20	42	66	33	57	$16.3_{-0.7}^0$ + ^{0.45} $7.2_{-0.4}^0$ + ^{0.45}	$26.3_{-0.7}^0$ + ^{0.45} $17.2_{-0.4}^0$ + ^{0.45}	10	235	62.3	3.0	2.0	
			25	65	104	45	83	$19.3_{-0.8}^0$ + ^{0.45} $8.8_{-0.4}^0$ + ^{0.45}	$33.3_{-0.8}^0$ + ^{0.45} $22.8_{-0.4}^0$ + ^{0.45}	14	430	74.6	6.1	4.1	
			32	158	193	131	161	$26_{-0.5}^0$	$48_{-0.5}^0$	22	715	79^{B} 88^{B}	12.2^{B} 16.5^{B}	9.2^{B} 12.1^{B}	
			40	254	318	217	267	$30_{-0.5}^0$	$60_{-0.5}^0$	30	1275	98^{B} 111^{B}	26.4^{B} 35.7^{B}	19.1^{B} 25.6^{B}	
		Long stroke	MHZL2	10	11	17	7.1	13	$11.2_{-0.4}^0$	$19.2_{-0.4}^0$	8	60	43.8^{B} 53.8^{B}	0.5^{B} 0.6^{B}	0.3^{B} 0.4^{B}
				16	34	45	27	38	$14.9_{-0.4}^0$	$26.9_{-0.4}^0$	12	135	52.7^{B} 57.7^{B}	1.7^{B} 2.0^{B}	1.2^{B} 1.3^{B}
				20	42	66	33	57	$16.3_{-0.4}^0$	$34.3_{-0.4}^0$	18	270	67.5^{B} 73.5^{B}	3.6^{B} 3.9^{B}	2.2^{B} 2.3^{B}
				25	65	104	50	85	$19.3_{-0.4}^0$	$41.3_{-0.4}^0$	22	470	77.9^{B} 87.9^{B}	6.2^{B} 6.6^{B}	3.8^{B} 4.0^{B}
		With dust cover	MHZJ2	6	3.3	6.1	1.9	3.7	$8_{-0.4}^0$	12 ± 1	4	28	42	0.26	0.24
	10			9.8	17	6.3	12	$11.2_{-0.7}^0$	$15.2_{-0.7}^0$	4	60	45	0.4	0.3	
	16			30	40	24	31	$14.9_{-0.7}^0$	$20.9_{-0.7}^0$	6	130	52.3	1.3	1.0	
	20			42	66	28	56	$16.3_{-0.7}^0$	$26.3_{-0.7}^0$	10	250	64.8	3.0	2.0	
	25			65	104	45	83	$19.3_{-0.8}^0$	$33.3_{-0.8}^0$	14	460	77.7	6.1	4.1	
	Compact	MHF2	8	19	19	-	-	$0_{-0.1}^0$	8 ± 1	8	65	14	0.7	0.6	
									16 ± 1	16	85		1.1	1.0	
			12	48	48	-	-	$0_{-0.1}^0$	32 ± 1	32	120	19	2.0	1.9	
									12 ± 1	12	155		1.9	1.6	
									24 ± 1	24	190		3.3	3.0	
									48 ± 1	48	275		6.1	5.8	
			16	90	90	-	-	$0_{-0.1}^0$	16 ± 1	16	350	24	4.9	4.1	
									32 ± 1	32	445		8.2	7.4	
	20	141	141	-	-	$0_{-0.1}^0$	64 ± 1	64	650	30	14.9	14.0			
							20 ± 1	20	645		8.7	7.3			
40 ± 1							40	850	15.1		13.7				
80 ± 1							80	1225	28.0		26.6				
Wide opening	MHL2	10	14	14	-	-	56	76	20	280	31	1	1		
							78	118	40	345		2	2		
							96	156	60	425		3	3		
		16	45	45	-	-	68	98	30	585	39	4.5	4.5		
							110	170	60	795		9.0	9.0		
							130	210	80	935		12.1	12.1		
		20	74	74	-	-	82	122	40	1025	46	9.4	9.4		
							142	222	80	1495		18.9	18.9		
							162	262	100	1690		23.6	23.6		
		25	131	131	-	-	100	150	50	1690	52	18.9	18.9		
							182	282	100	2560		37.8	37.8		
							200	320	120	2775		45.3	45.3		
		32	228	228	-	-	150	220	70	2905	68	42.2	42.2		
							198	318	120	3820		72.4	72.4		
							242	402	160	4655		96.5	96.5		
							188	288	100	5270		94.3	94.3		
40	396	396	-	-	246	406	160	6830	79	150.8	150.8				
					286	486	200	7905		188.5	188.5				

Air Grippers Model Selection

Performance Data for Air Gripper Model Selection

Series description		Series	Bore size (mm)	Gripping force (N) *1				Finger closing stroke (mm)	Finger opening stroke (mm)	Stroke (mm)	Weight (g)	Size (mm)		Volume (cm ³)			
				Double acting		Single acting N.O.						H	H ₁	O port	S port		
				External	Internal	External	Internal										
Rotary actuator	2 Finger	MHR2	10	12	12	-	-	10	16	6	100	30	0.9	0.9			
			15	24	25	-	-	14	22	8	180	39.5	1.8	1.8			
			20	33	34	-	-	16	28	12	390	53.5	4.6	4.6			
		30	58	59	-	-	19	37	18	760	68	11.5	11.5				
		10	12	12	-	-	10	16	6	95	30	0.9	0.9				
		15	24	25	-	-	14	22	8	175	39.5	1.8	1.8				
	20	33	34	-	-	16	28	12	380	53.5	4.6	4.6					
	30	58	59	-	-	19	37	18	740	68	11.5	11.5					
	3 Finger	MHR3	10	7	6.5	-	-	8 ^{±2}	11 ^{±2}	6 ^{±3}	120	31.5	0.9	0.9			
			15	13	12	-	-	9.5 ^{±2}	13.5 ^{±2}	8 ^{±3}	225	41.5	1.8	1.8			
			20	7	6.5	-	-	8 ^{±2}	11 ^{±2}	6 ^{±3}	125	31.5	0.9	0.9			
		15	13	12	-	-	9.5 ^{±2}	13.5 ^{±2}	8 ^{±3}	230	41.5	1.8	1.8				
		Slide guide	Square body	2 Finger	MHK2	12	15	16	9	12	9 ^{±2}	13 ^{±2}	4	75	48	0.5	0.5
						16	31	36	23	25	14.6 ^{±2}	20.6 ^{±2}	6	113	52.3	2.4	2.1
	20					46	56	34	44	16 ^{±2}	26 ^{±2}	10	235	63.8	4.1	3.5	
	25				80	86	58	73	19 ^{±2}	33 ^{±2}	14	440	76.7	10.5	8.9		
	12				14	16	9	11	9 ^{±2}	20 ^{±2}	11	104	57	0.8	0.7		
	16				27	30	17	22	14.6 ^{±2}	28.6 ^{±2}	14	164	63	3.4	2.9		
20	45		53	32	40	16 ^{±2}	34 ^{±2}	18	312	73.5	5.3	4.4					
25	79		90	53	63	19 ^{±2}	41 ^{±2}	22	562	88.5	12.9	10.8					
Round body	3 Finger		2 Finger	MHS2	16	21	23	-	-	10	14	4	58	32	0.9	0.7	
					20	37	42	-	-	12	16	4	96	35	1.4	1.1	
					25	63	71	-	-	14	20	6	134	37	2.8	2.4	
				32	111	123	-	-	16	24	8	265	41	5.5	5.0		
				40	177	195	-	-	20	28	8	345	44	9.0	8.0		
				50	280	306	-	-	22	34	12	515	52	18.3	16.6		
Round body	3 Finger		Standard	MHS3	63	502	537	-	-	30	46	16	952	62	37.1	33.0	
					16	14	16	-	-	5 ^{±2}	7 ^{±2}	4 ^{±3}	60	32	0.8	0.7	
					20	25	28	-	-	6 ^{±2}	8 ^{±2}	4 ^{±3}	100	35	1.4	1.1	
					25	42	47	-	-	7 ^{±2}	10 ^{±2}	6 ^{±3}	140	37	2.8	2.4	
		32			74	82	-	-	8 ^{±2}	12 ^{±2}	8 ^{±3}	237	41	5.5	5.0		
		40			118	130	-	-	10 ^{±2}	14 ^{±2}	8 ^{±3}	351	44	9.0	8.0		
	3 Finger	With dust cover	MHSJ3	50	187	204	-	-	11 ^{±2}	17 ^{±2}	12 ^{±3}	541	52	18.3	16.6		
				63	335	359	-	-	15 ^{±2}	23 ^{±2}	16 ^{±3}	992	62	37.1	33.0		
				80	500	525	-	-	21.5 ^{±2}	31.5 ^{±2}	20 ^{±3}	1850	77	70.7	65.7		
				100	750	780	-	-	28 ^{±2}	40 ^{±2}	24 ^{±3}	3340	90	133.7	121.3		
				125	1270	1320	-	-	30 ^{±2}	46 ^{±2}	32 ^{±3}	6460	114	278.0	247.3		
				16	9	16	-	-	7.5 ^{±2}	9.5 ^{±2}	4 ^{±3}	95	43	0.8	0.4		
	Round body	3 Finger	Through-hole	MHS3	20	21	28	-	-	8 ^{±2}	10 ^{±2}	4 ^{±3}	150	46	1.3	0.9	
					25	36	47	-	-	9.5 ^{±2}	12.5 ^{±2}	6 ^{±3}	230	52	2.5	1.9	
					32	62	82	-	-	11.5 ^{±2}	15.5 ^{±2}	8 ^{±3}	440	60	5.3	3.8	
					40	97	130	-	-	15 ^{±2}	19 ^{±2}	8 ^{±3}	620	63	8.1	5.9	
					50	155	204	-	-	18 ^{±2}	24 ^{±2}	12 ^{±3}	1050	77	17.9	12.7	
					63	280	359	-	-	23 ^{±2}	31 ^{±2}	16 ^{±3}	1800	87	32.4	27.7	
4 Finger		Long stroke	MHS4	80	400	525	-	-	31 ^{±2}	41 ^{±2}	20 ^{±3}	3200	103	68.2	52.1		
				16	9	15	-	-	7.5 ^{±2}	9.5 ^{±2}	4 ^{±3}	90	39	0.8	0.4		
				20	21	26	-	-	8 ^{±2}	10 ^{±2}	4 ^{±3}	140	42	1.2	0.9		
				25	36	45	-	-	9.5 ^{±2}	12.5 ^{±2}	6 ^{±3}	220	47	2.4	1.9		
				32	62	77	-	-	11.5 ^{±2}	15.5 ^{±2}	8 ^{±3}	410	54	5.0	3.8		
				40	97	118	-	-	15 ^{±2}	19 ^{±2}	8 ^{±3}	570	57	7.3	5.9		
Round body		3 Finger	Through-hole	MHS3	50	155	187	-	-	18 ^{±2}	24 ^{±2}	12 ^{±3}	970	70	16.4	12.7	
					63	280	329	-	-	23 ^{±2}	31 ^{±2}	16 ^{±3}	1650	79	32.4	27.7	
					80	400	490	-	-	31 ^{±2}	41 ^{±2}	20 ^{±3}	2920	93	68.2	52.1	
					16	14	16	-	-	8.5 ^{±2}	13.5 ^{±2}	10 ^{±3}	80	40.5	1.4	1.2	
					20	25	28	-	-	9 ^{±2}	14 ^{±2}	10 ^{±3}	135	43	2.3	1.9	
					25	42	47	-	-	10 ^{±2}	16 ^{±2}	12 ^{±3}	180	46	4.1	3.7	
	4 Finger	Long stroke	MHS4	32	74	82	-	-	14 ^{±2}	22 ^{±2}	16 ^{±3}	370	55	9.2	8.0		
				40	118	130	-	-	16.5 ^{±2}	26.5 ^{±2}	20 ^{±3}	550	61	16.7	15.2		
				50	187	204	-	-	22 ^{±2}	36 ^{±2}	28 ^{±3}	930	74.5	36.1	31.6		
				63	335	359	-	-	26 ^{±2}	42 ^{±2}	32 ^{±3}	1550	85	64.5	58.8		
				80	500	525	-	-	28.5 ^{±2}	48.5 ^{±2}	40 ^{±3}	2850	111	129.5	118.9		
				100	750	780	-	-	41 ^{±2}	65 ^{±2}	48 ^{±3}	5500	129	249.2	225.5		
	Round body	3 Finger	Through-hole	MHS3	125	1270	1320	-	-	48 ^{±2}	80 ^{±2}	64 ^{±3}	11300	167	506.2	465.9	
					16	10	12	-	-	13	17	4	66	32	0.8	0.7	
					20	19	21	-	-	15	19	4	110	35	1.4	1.1	
					25	31	35	-	-	20	26	6	154	37	2.8	2.4	
					32	55	61	-	-	20	28	8	300	41	5.5	5.0	
					40	88	97	-	-	24	32	8	390	44	9.0	8.0	
4 Finger		Long stroke	MHS4	50	140	153	-	-	26	38	12	590	52	18.3	16.6		
				63	251	268	-	-	35	51	16	1095	62	37.1	32.9		

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

-X□

MRHQ

MA

D-□

Air Grippers Model Selection

Performance Data for Air Gripper Model Selection

Series description		Series	Bore size (mm)	Holding moment (N·m) *1		Finger closing angle	Finger opening angle	Finger opening/closing angle	Weight (g)	Size H (mm)	Volume (cm ³)	
				Double acting	Single acting N.O.						O port	S port
Angular Type	Standard	MHC2	6	0.038	0.024	-10°	30°	40°	22	36	0.12	0.07
		MHCA2	6	0.038	0.024	-10°	30°	40°	19	29	0.11	0.06
	Compact	MHCM2-7S	7	—	0.017	-7°	20°	27°	9.5	16.5	—	0.06
			10	0.10	0.07	-10°	30°	40°	39	38.6	0.4	0.4
	16	0.39	0.31	91	44.6				1.3	1.4		
	20	0.70	0.54	180	55.2				3.1	2.1		
	25	1.36	1.08	311	60.4				5.2	2.8		
	Standard	MHC2	32	12.4	—	-3°	28°	31°	800	89.6	12.4	9.2
			40	36	—	-3°	27°	30°	1090	96.5	20.8	17.5
	Toggle	MHT2	50	63	—	-2°	23°	25°	1930	113	41.7	35.0
			63	106	—	-2°	23°	25°	2800	119.2	65.5	58.9
			10	0.16	—	-3°	180°	183°	70	58	1.2	0.6
			16	0.54	—	-3°			150	69	3.3	2.1
	20	1.10	—	-3°	320	86			6.9	4.1		
	25	2.28	—	-3°	560	107			13.8	8.5		
	20	0.30	—	-5°	185°	300			60	3.1	4.0	
	25	0.73	—	-6°	186°	510			69	6.6	7.6	
	Gear	180° Angular	MHW2	32	1.61	—	-5°	185°	910	83.5	14.8	15.7
				40	3.70	—	-5°	185°	2140	104.5	32.3	36.7
				50	8.27	—	-4°	184°	5100	136	71.6	82.3

Note 1) Values for gripping force and gripping moment are measured at 0.5 MPa.

Note 2) Opening/Closing strokes of M(D)HR3 and MHS*3 are the values for one finger.

Note 3) Strokes of M(D)HR3 and MHS*3 are described with diameter.

Note 4) Weight of double acting type.

Note 5) Values in the upper row are for standard finger position and in the lower rows for narrow finger position.

Note 6) Values in the upper row are for the size of the MHZ2 with a bore size of 32 or 40 and the MHZL are for double acting type and those in the lower row are for single acting type.