P5SS Slide Tables

- Combination of dual bore cylinder and linear rail
- Magnetic piston standard
- Rubber bumper standard
- Available with stroke adjusters
- Available with shock absorbers

Operating information

Operating pressure:	1.5 to 7 bar (21.8 to 102 PSIG)
Temperature range:	-5° to 60° C (23° to 140° F)
Filtration requirements:	
Air filtration	40 micron or better
Air lubrication	Not necessary*
Air humidity	Low moisture content (dry)

*Addition of lubrication will greatly increase service life

Ordering Information: P5SS Slide Tables

P5	S	S	–	***	D	S	G	***	B	N	A	N	N	N

Family

S	Slide

Series

S	Slide table

Spare

–	

Function

D	Double acting magnetic

Temperature / Finish

S	Standard

Ports

G	BSPP

Stroke

010	10mm
020	20mm
030	30mm
040	40mm
050	50mm
075	75mm
100	100mm
125	125mm
150	150mm

Options

B	No options
W	With specified options pos 16-20

Fitting

N	None

Spare

N	None

Spare

N	None

Spare

N	None

Bore size

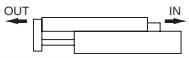
006	6mm bore: 10, 20, 30, 40, 50mm stroke
008	8mm bore: 10, 20, 30, 40, 50, 75mm stroke
012	12mm bore: 10, 20, 30, 40, 50, 75, 100mm stroke
016	16mm bore: 10, 20, 30, 40, 50, 75, 100, 125mm stroke
020	20mm bore: 10, 20, 30, 40, 50, 75, 100, 125, 150mm stroke
025	25mm bore: 10, 20, 30, 40, 50, 75, 100, 125, 150mm stroke

Options

A	5mm adjuster extension
B	5mm adjuster retraction
C	5mm adjuster both ends
D	15mm adjuster extension
E	15mm adjuster retraction
F	15mm adjuster both ends
G†	25mm adjuster extension
H†	25mm adjuster retraction
J	25mm adjuster both ends
K*	Shock absorber extension
L*	Shock absorber retraction
M*	Shock absorber both ends
N	None

* Option K, L & M shock absorber is not available on 6mm bore
† Option G & H 25mm adjuster is not available on 6mm bore

Theoretical force



(Unit: N)

Tube I.D. (mm)	Piston rod (mm)	Operating direction	Piston area (mm^2)	Operating pressure MPa 0.2	0.3	0.4	0.5	0.6	0.7
6	3	OUT	57	11	17	23	29	34	40
		IN	42	8	13	17	21	25	29
8	4	OUT	101	20	30	40	51	61	71
		IN	75	15	23	30	38	45	53
12	6	OUT	226	45	68	90	113	136	158
		IN	170	34	51	68	85	102	119
16	8	OUT	402	80	121	161	201	241	281
		IN	302	60	91	121	151	181	211
20	10	OUT	628	126	188	251	314	377	400
		IN	471	94	141	188	236	283	330
25	12	OUT	982	196	295	393	491	589	687
		IN	756	151	227	302	378	454	529

Sensor part numbers: Page 330.

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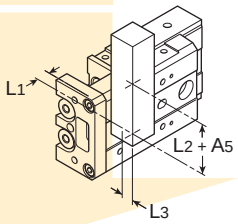
Selection Flow Chart

Operating conditions	Formula and charts	Selection example
List out the operating conditions according to mounting position and shape of the workpiece	Model used	Cylinder: P5SS-6-10
	Cushion style	Cushion: Cushion pad
	Workpiece install position	Workpiece table mounting
	Mounting position	Mounting: Lateral mounting
	Average speed Va (mm/s)	Average speed: Va = 150mm/s
	Allowable load W (kg) *(Figure 1)*	Load: W = 0.3kg
	Overhang Ln (mm) *(Figure 2)*	L_1 = 4mm
		L_2 = 4mm
		L_3 = 4mm



Kinetic energy

Calculate kinetic energy E(J) of work	$E = 1/2 \bullet W (V/1000)^2$	$E = 1/2 \bullet 0.3 (210/1000)^2 = 0.0066$
	Collision speed $V = 1.4 \bullet Va$	Collision speed $V = 1.4 \bullet 150 = 210$
Calculate allowable kinetic energy Ea(J)	$Ea = K \bullet Emax$	$Ea = 1 \bullet 0.015 = 0.015$
	Workpiece mounting coefficient K: *Figure 3*	Possible to use by $E = 0.0066 \leq Ea = 0.015$
Make sure that kinetic energy of work is less / lower than allowable kinetic energy.	Max. allowable kinetic energy Emax: *Table 1*	
	Kinetic energy (E) ≤ Allowable kinetic energy (Ea)	

Load rate

Load rate of work

Calculate static work Wa(kg)	$Wa = K \bullet \beta \bullet Wmax$	$Wa = 1 \times 1 \times 0. = 0.66$
	Workpiece mounting coefficient K: *Figure 3*	$K = 1$
	Allowable load coefficient β: *Figure 4*	$\beta = 1$
	Maximum allowable moment Wmax: *Table 2*	$Wmax = 0.6$
Calculate load rate α_1 of static work	$\alpha_1 = W/Wa$	$\alpha_1 = 03/0.6 = 0.5$

Load rate of static moment		**Yawing**	**Rolling**
Calculate static moment M(Nm).	$M = W \times 9.8 (Ln + An)/1000$	Calculate My	Calculate Mr
	Correction value for moment center distance An: *Table 3*	$My = W \times 9.8 (L_1 + A_3)/1000 = 0.3 \times 9.8 (4 +13)/1000 = 0.05$	$Mr = W \times 9.8 (L_3 + A_2)/1000 = 0.3 \times 9.8 (5 + 6)/1000 = 0.033$
Calculate allowable static moment Ma(Nm).	$Ma = K \bullet \gamma \bullet Mmax$	$A_3 = 13$	$A_2 = 6$
	Workpiece mounting coefficient K: *Figure 3*	$May = 1 \times 1 \times 0.7 = 0.7$	$Mar = 0.7$ (Same value as Ma)
	Allowable moment coefficient γ : *Figure 5*	$Mymax = 0.7$	
	Max. allowable moment Mmax: *Table 4*	$K = 1$	
Calculate load rate α_2 of static moment	$\alpha_2 = M/Ma$	$\gamma = 1$	
		$\alpha_2 = 0.05/0.7 = 0.072$	$\alpha'_2 = 0.033/0.7 = 0.047$

Load rate of kinetic moment		**Pitching**	**Yawing**
Calculate kinetic moment Me(Nm).	$Me = 1/3 \bullet We \bullet 9.8 (Ln + An)/1000$	Calculate Mep	Calculate Mey
	Collision equivalence load $We = \delta \bullet W \bullet V$	$Mep = 1/3 \times 2.52 \times 9.8 \times (5 + 6)/1000 = 0.09$	$Mey = 1/3 \times 2.52 \times 9.8 \times (4 + 16)/1000 = 0.165$
	δ: Cushion coefficient with cushion pad (Standard) = 4/100 with shock absorber = 1/100	$We = 4/100 \times 0.3 \times 210 = 2.52$	$We = 2.52$
Calculate allowable kinetic moment Mea(Nm).	Correction value for moment center distance An: *Table 3*	A2 = 6	A4 = 16
	$Mea = K \gamma Mmax$	$Meap = 1 \times 0.97 \times 0.7 = 0.679$	Meay = 0.679 (Same value as Meap)
	Workpiece mounting coefficient t K: *Figure 3*	$K = 1$	
	Allowable moment coefficient γ: *Figure 5*	$\gamma = 0.97$	
	Max. allowable moment Mmax: *Table 4*	Mpmax = 0.	
Calculate load rate α_3 of kinetic moment.	$\alpha_3 = Me/Mea$	$\alpha_3 = 0.09/0.679 = 0.13$	$\alpha'_3 = 0.165/0.679 = 0.243$

Sum of load rate		
When sum of load rate does not exceed 1, it is possible to use.	$\sum\alpha_n = \alpha_1 + \alpha_2 + \alpha_3 \leq 1$	$\sum\alpha_n = \alpha_1 + \alpha_2 + \alpha'_2 + \alpha_3 + \alpha'_3 \leq 1$ $= 0.5 + 0.072 + 0.047 + 0.133 + 0.243 = 0.995 \leq 1$ And it is possible to use.

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Table 1: Maximum allowable kinetic energy: Emax (J)

Allowable kinetic energy		
Cushion pad	Shock absorber	Model
0.015	—	**P5SS-006**
0.023	0.041	**P5SS-008**
0.05	0.105	**P5SS-012**
0.104	0.214	**P5SS-016**
0.153	0.313	**P5SS-020**
0.232	0.472	**P5SS-025**

Table 2: Maximum allowable static load: Wmax (kg)

Max. allowable kinetic energy	Model
0.6	**P5SS-006**
0.8	**P5SS-008**
2	**P5SS-012**
3.7	**P5SS-016**
6	**P5SS-020**
8.5	**P5SS-025**

Table 3: Correction value for moment center distance: An (mm) (Refer to Figure 2)

A_1	A_2	A_3	A_4	A_5	Model
11	6	13	16	16	**P5SS-006**
11	8	13	20	20	**P5SS-008**
24	9.5	26	25	25	**P5SS-012**
27	10.5	30	31	31	**P5SS-016**
34	15.5	36	38	38	**P5SS-020**
42	20.5	44	46	46	**P5SS-025**

Figure 3: Workpiece mounting coefficient: K

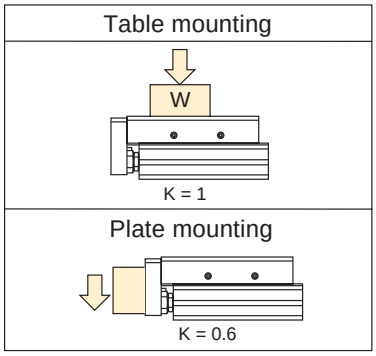


Figure 1: Allowable load: W (kg)

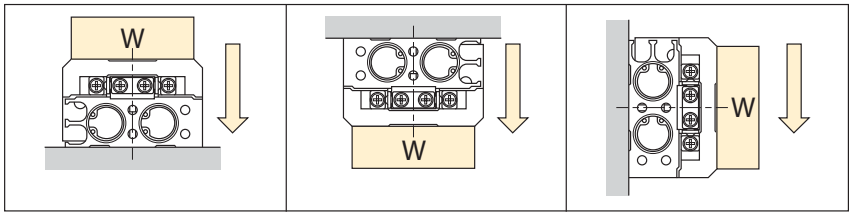
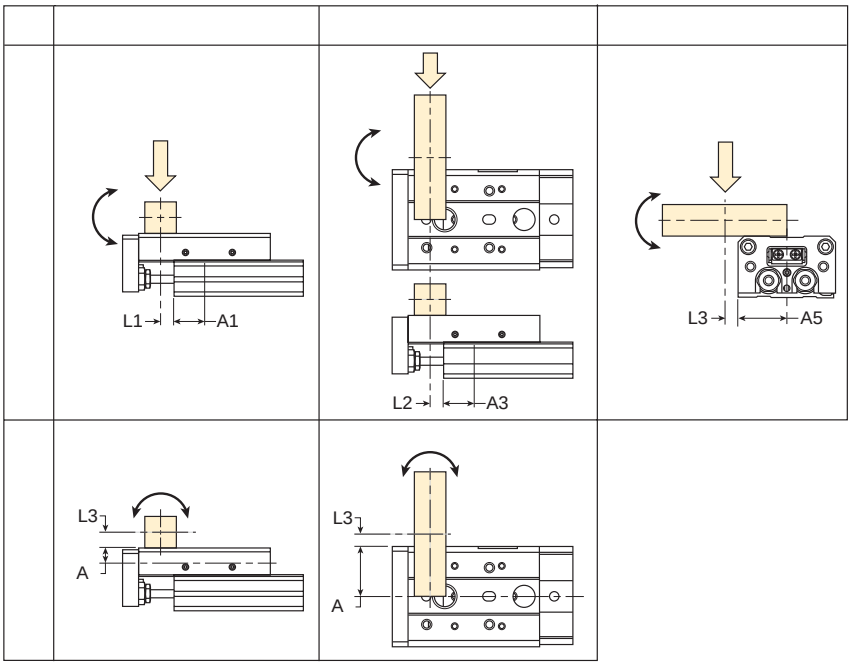


Figure 2: Overhang: Ln (mm) Correction value for moment center distance: An (mm)



Note: Static moment: Moment by gravity.
Kinetic moment: Moment by stopper collision.

Figure 4: Allowable static load coefficient: β

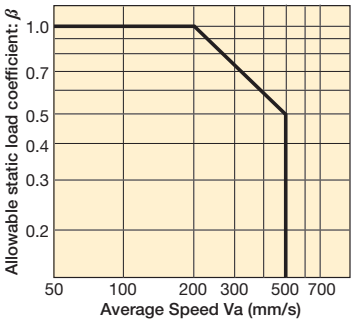
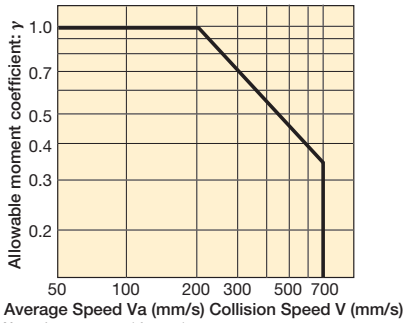


Figure 5: Allowable moment coefficient: γ



Note: Average speed for static moment.
Collision speed for kinetic moment.

Table 4: Maximum allowable moment: Mmax (Nm)

Stroke (mm)									
10	20	30	40	50	75	100	125	150	Model
0.7	1.0	1.1	1.1	1.1	—	—	—	—	**P5SS-006**
2.0	2.0	2.6	3.5	3.9	3.9	—	—	—	**P5SS-008**
3.9	3.9	3.9	5.5	6.8	9.6	9.6	—	—	**P5SS-012**
9.8	9.8	9.8	9.8	12.0	21.0	30.0	30.0	—	**P5SS-016**
16.4	16.4	16.4	16.4	24.2	31.4	45.5	45.5	45.5	**P5SS-020**
26.5	26.5	26.5	26.5	37.8	49.8	62.2	62.2	62.2	**P5SS-025**

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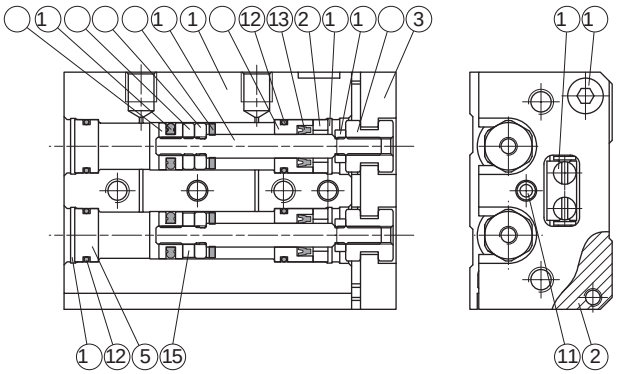
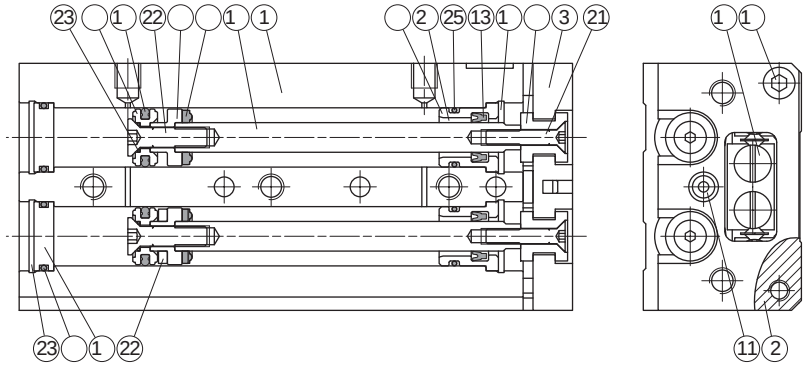
Material

Ø 6, Ø 8



Ø 12 thru Ø 25



No.	Part name	6	8	12 to 25
1	Body	Aluminum alloy		
2	Table	Aluminum alloy		
3	Plate	Aluminum alloy		
4	Rod cover	Aluminum alloy		
5	Head cover	Aluminum alloy		
6	Floating connector	Stainless steel		
7	Piston	Stainless steel		Aluminum alloy
8	Cushion pad	NBR		
9	Spacer ring	Aluminum alloy	Stainless steel	Aluminum alloy
10	Piston rod	Stainless steel		
11	End cushion	PU		
12	Cover ring	NBR		
13	Rod packing	NBR		

No.	Part name	6	8	12 to 25
14	Piston packing	NBR		
15	Magnet ring	Magnet material		
16	Snap ring	Spring steel	Stainless steel	
17	Bolt	Stainless steel		
18	Slide way	Bearing steel		
19	Nut	Copper	—	
20	Rod cover washer	Stainless steel	—	
21	Floating connector bolt	Stainless steel	—	
22	Piston screw	—		Stainless steel
23	Piston gasket	—		NBR
24	Rod bush	Copper		
25	Cover ring	NBR		

Weight (g)

Stroke (mm)	Tube I.D.					
	Ø6	Ø8	Ø12	Ø16	Ø20	Ø25
10	78	137	335	536	1001	1573
20	98	148	339	546	1012	1587
30	111	171	343	552	1020	1605
40	147	216	393	630	1098	1735
50	172	255	482	723	1254	1930
75	—	367	684	1030	1690	2553
100	—	—	910	1341	2214	3180
125	—	—	—	1646	2729	4082
150	—	—	—	—	3310	4420

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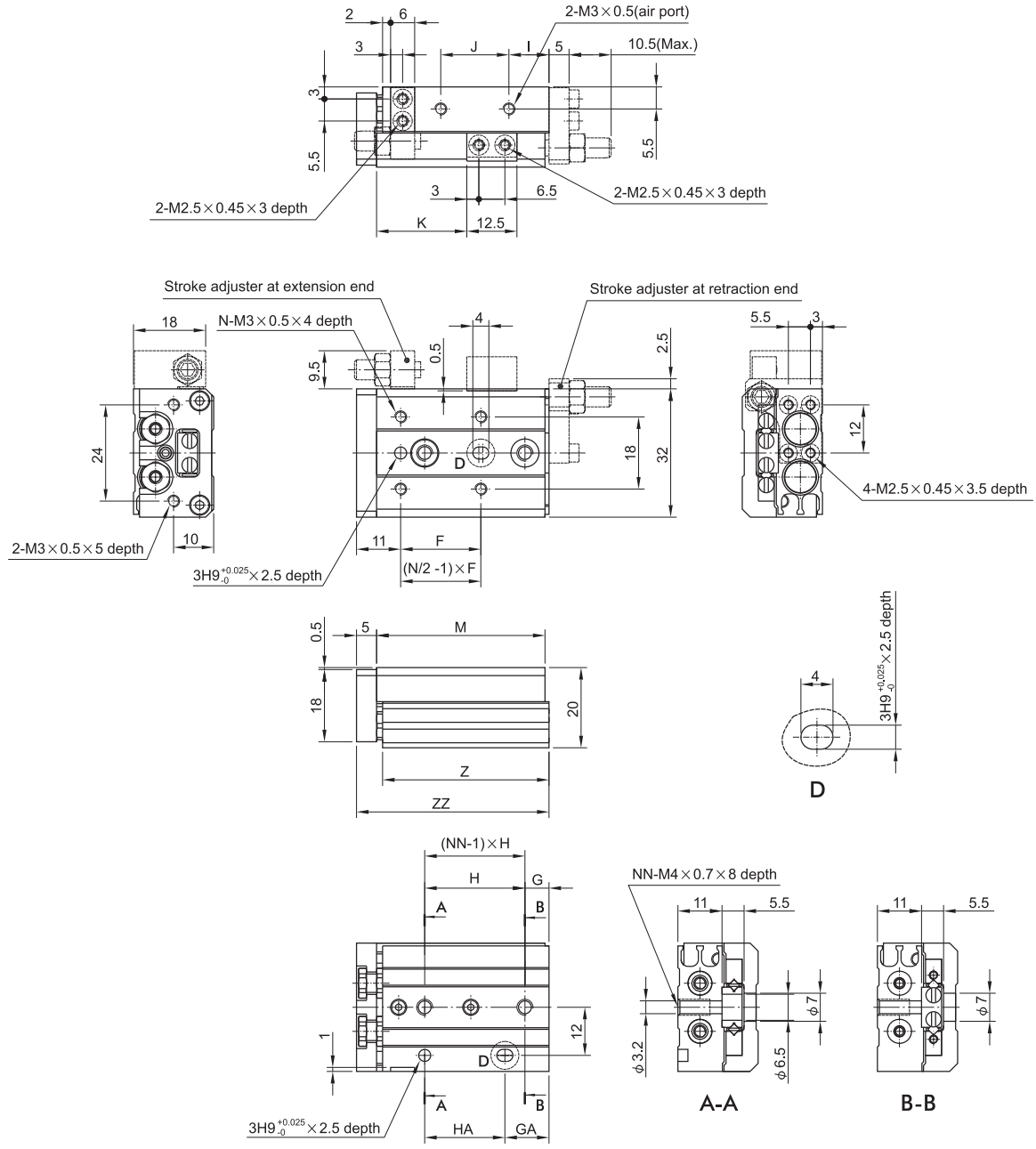
Dimensions: P5SS Slide Table - Ø 6



Stroke (mm)	F	G	GA	H	HA	I	J	K	M	N	NN	Z	ZZ
10	20	6	11	25	20	10	17	22.5	42	4	2	41.5	48
20	30	6	21	35	20	10	27	32.5	52	4	2	51.5	58
30	20	11	31	20	20	7	40	42.5	62	6	3	61.5	68
40	28	13	43	30	30	19	50	52.5	84	6	3	83.5	90
50	38	17	41	24	48	25	60	62.5	100	6	4	99.5	106

Dimensions in millimeters

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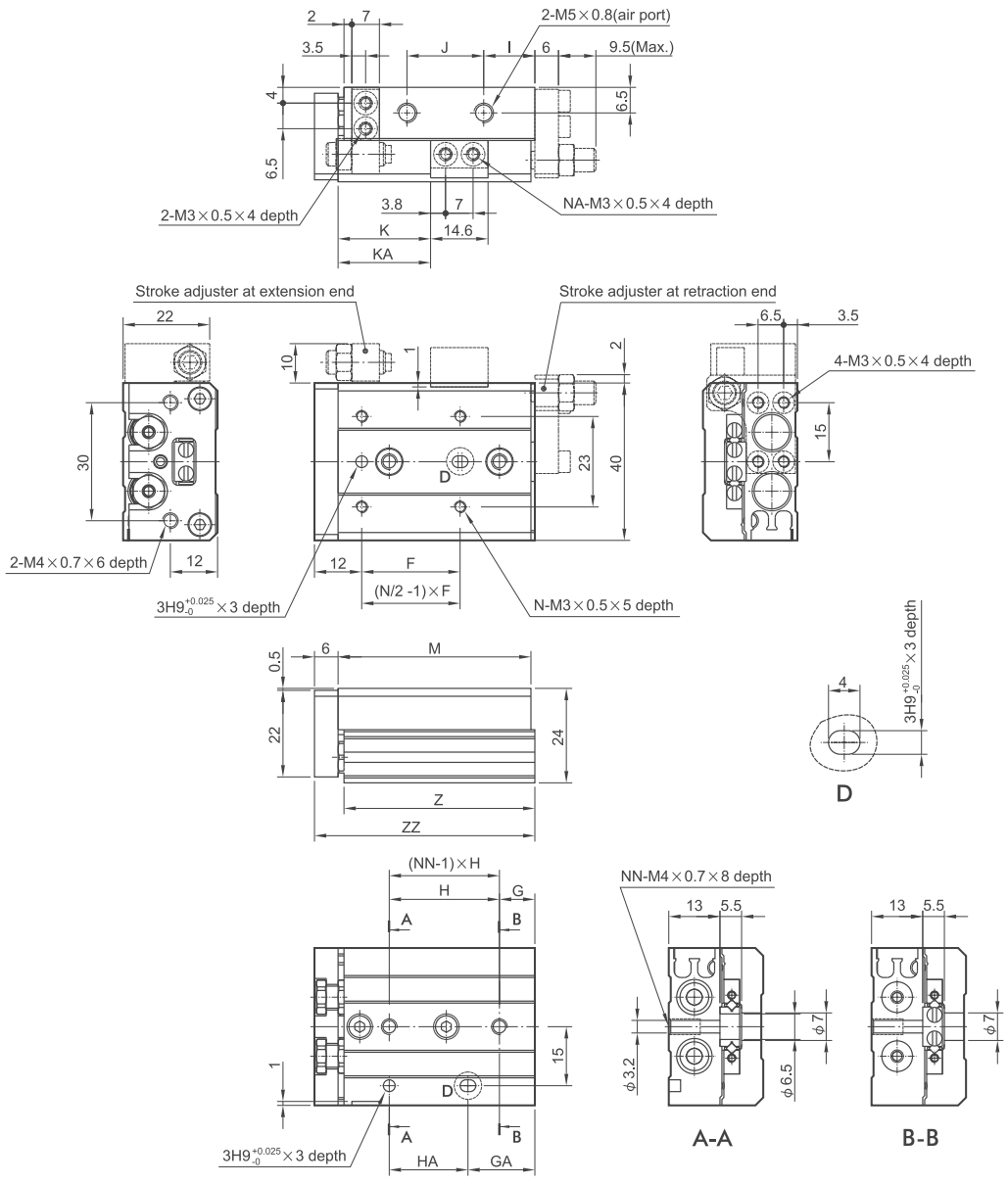
Dimensions: P5SS Slide Table - Ø 8



Stroke (mm)	F	G	GA	H	HA	I	J	K	KA	M	N	NA	NN	Z	ZZ
10	25	9	17	28	20	13	19.5	23.5	—	49	4	2	2	48.5	56
20	25	12	12	30	30	8.5	29	33.5	—	54	4	2	2	53.5	61
30	40	13	33	20	20	9.5	39	43.5	—	65	4	2	3	64.5	72
40	50	15	43	28	28	10.5	56	53.5	—	83	4	2	3	82.5	90
50	38	20	43	23	46	24.5	60	63.5	82.5	101	6	4	4	100.5	108
75	50	27	83	28	56	38.5	96	88.5	132.5	151	6	4	5	150.5	158

Dimensions in millimeters

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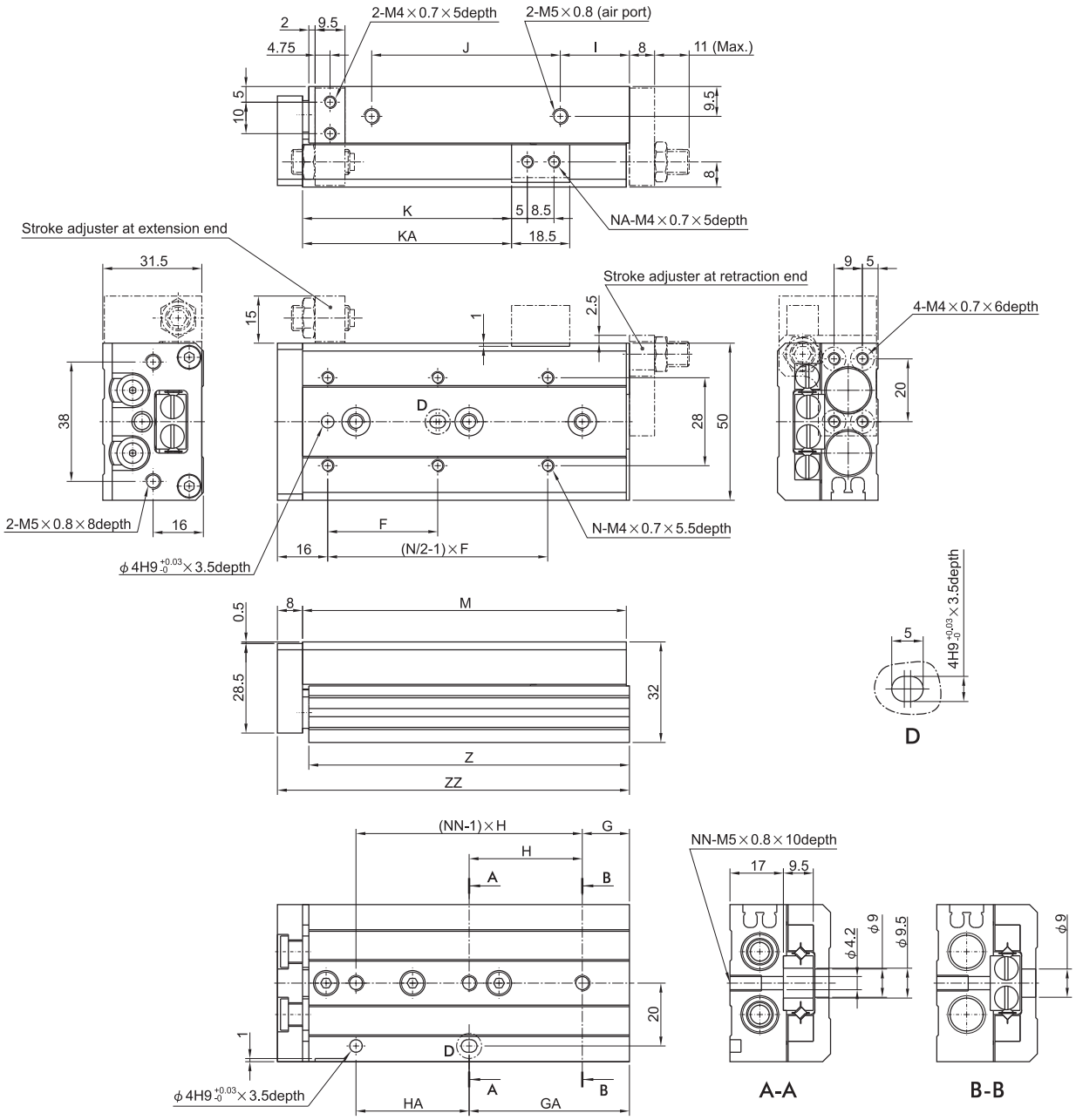
Dimensions: P5SS Slide Table - Ø 12



Stroke (mm)	F	G	GA	H	HA	I	J	K	KA	M	N	NA	NN	Z	ZZ
10	35	15	15	40	40	10	40	26.5	—	71	4	2	2	70	80
20	35	15	15	40	40	10	40	36.5	—	71	4	2	2	70	80
30	35	15	15	40	40	10	40	46.5	—	71	4	2	2	70	80
40	50	17	42	25	25	10	52	56.5	—	83	4	2	3	82	92
50	35	15	51	36	36	22	60	66.5	—	103	6	2	3	102	108
75	55	25	61	36	72	43	85	91.5	125.5	149	6	4	4	148	158
100	65	35	111	38	76	52	130	116.5	179.5	203	6	4	5	202	212

Dimensions in millimeters

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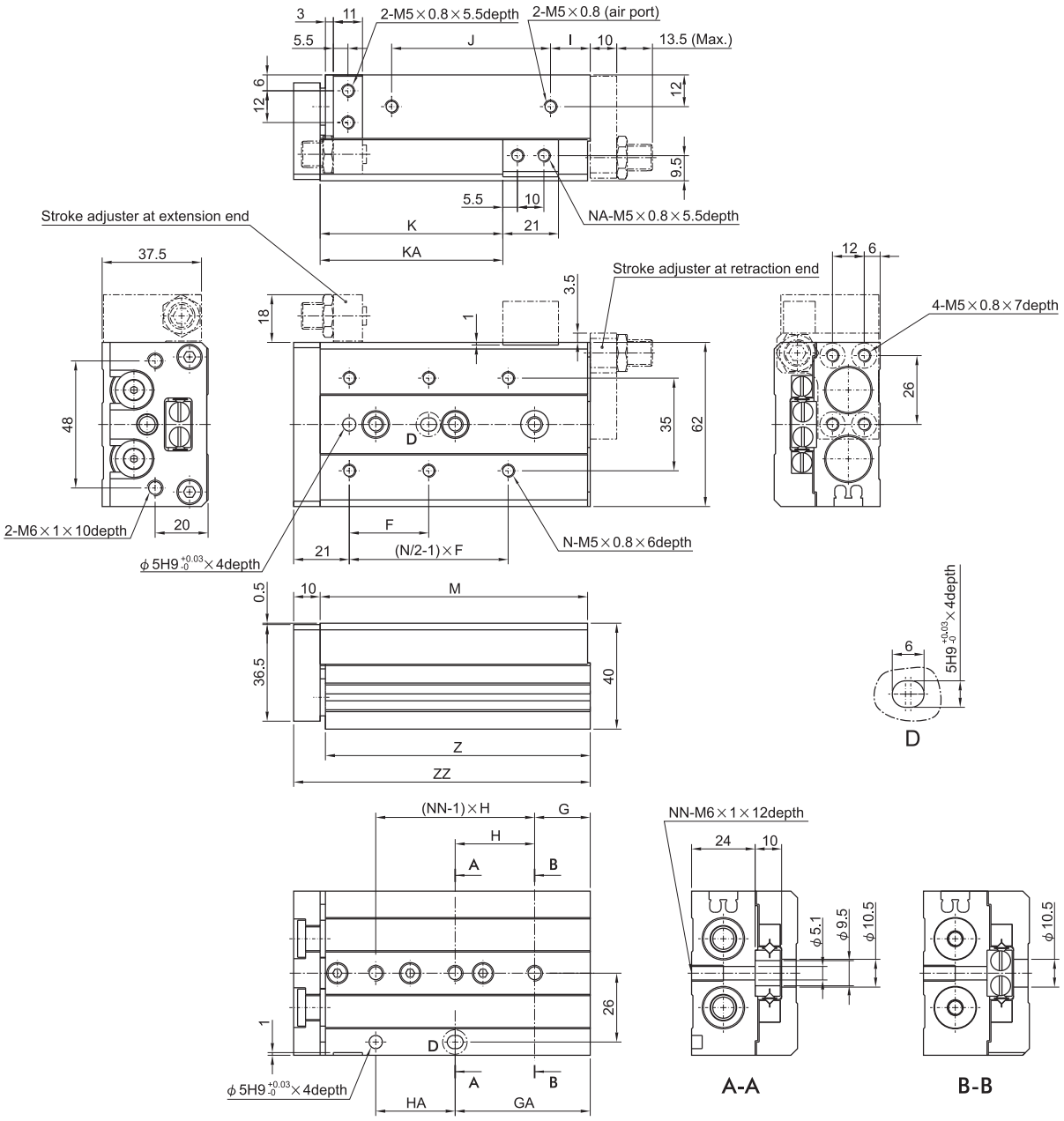
Dimensions: P5SS Slide Table - Ø 16



Stroke (mm)	F	G	GA	H	HA	I	J	K	KA	M	N	NA	NN	Z	ZZ
10	35	16	16	40	40	10	40	29	—	76	4	2	2	75	87
20	35	16	16	40	40	10	40	39	—	76	4	2	2	75	87
30	35	16	16	40	40	10	40	49	—	76	4	2	2	75	87
40	40	16	16	50	50	10	50	59	—	86	4	2	2	85	97
50	30	21	51	30	30	15	60	69	—	101	6	2	3	100	112
75	55	26	61	35	70	40	85	94	125	151	6	4	4	150	162
100	65	39	109	35	70	55	118	119	173	199	6	4	5	198	210
125	70	19	159	35	70	68	155	144	223	249	8	4	7	248	260

Dimensions in millimeters

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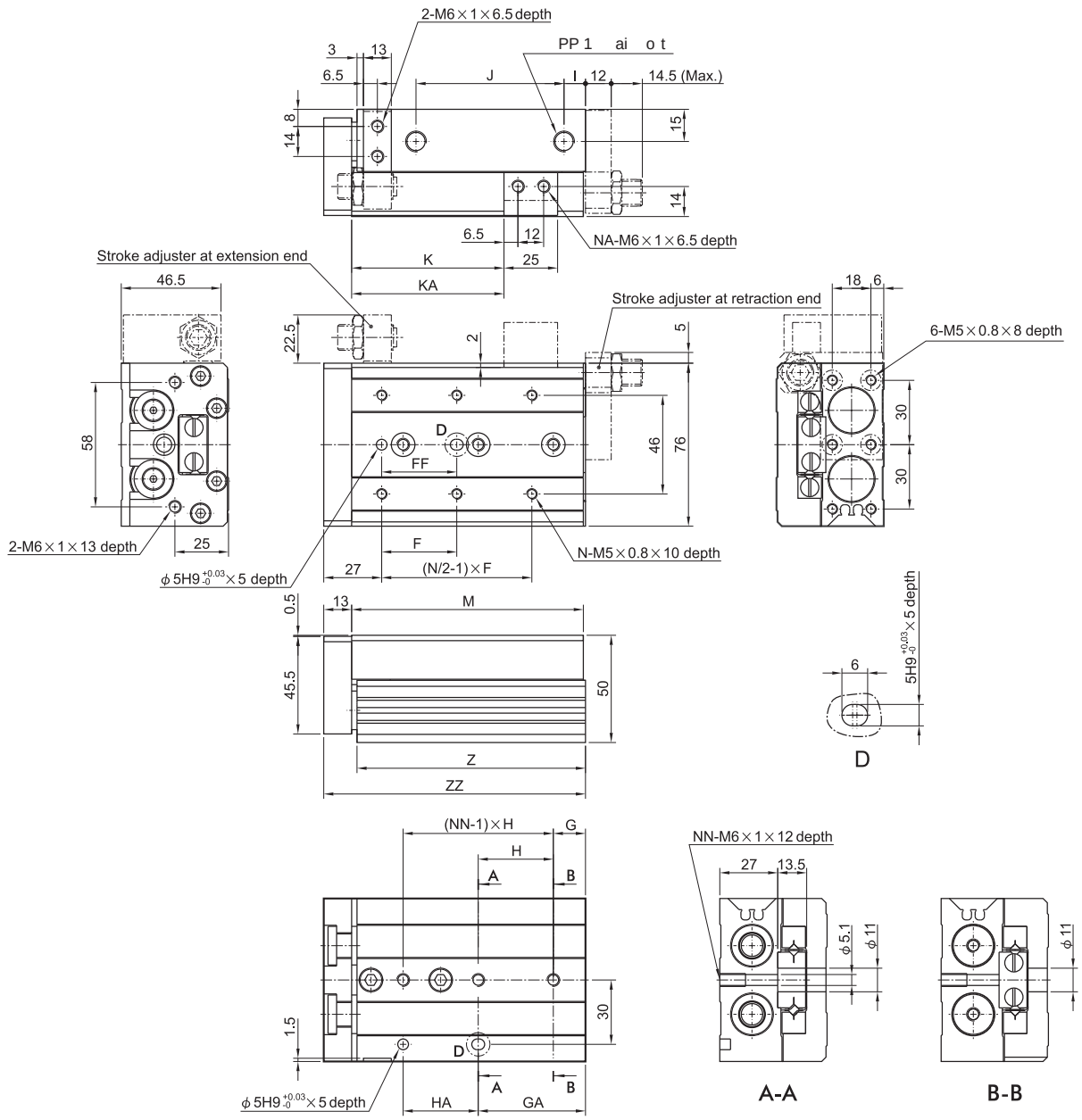
Dimensions: P5SS Slide Table - Ø 20



Stroke (mm)	F	FF	G	GA	H	HA	I	J	K	KA	M	N	NA	NN	Z	ZZ
10	50	40	15	25	45	35	10	44	31	—	83	4	2	2	81.5	97
20	50	40	15	25	45	35	10	44	41	—	83	4	2	2	81.5	97
30	50	40	15	25	45	35	10	44	51	—	83	4	2	2	81.5	97
40	60	50	15	35	55	35	10	54	61	—	93	4	2	2	91.5	107
50	35	35	15	50	35	36	10	69	71	—	108	6	2	3	106.5	122
75	60	60	19	54	35	70	10	108	96	—	147	6	2	4	145.5	161
100	70	70	37	107	35	70	58	113	121	169	200	6	4	5	198.5	214
125	70	70	41	155	38	76	70	155	146	223	254	8	4	6	252.5	268
150	80	80	19	195	44	88	87	190	171	275	306	8	4	7	304.5	320

Dimensions in millimeters

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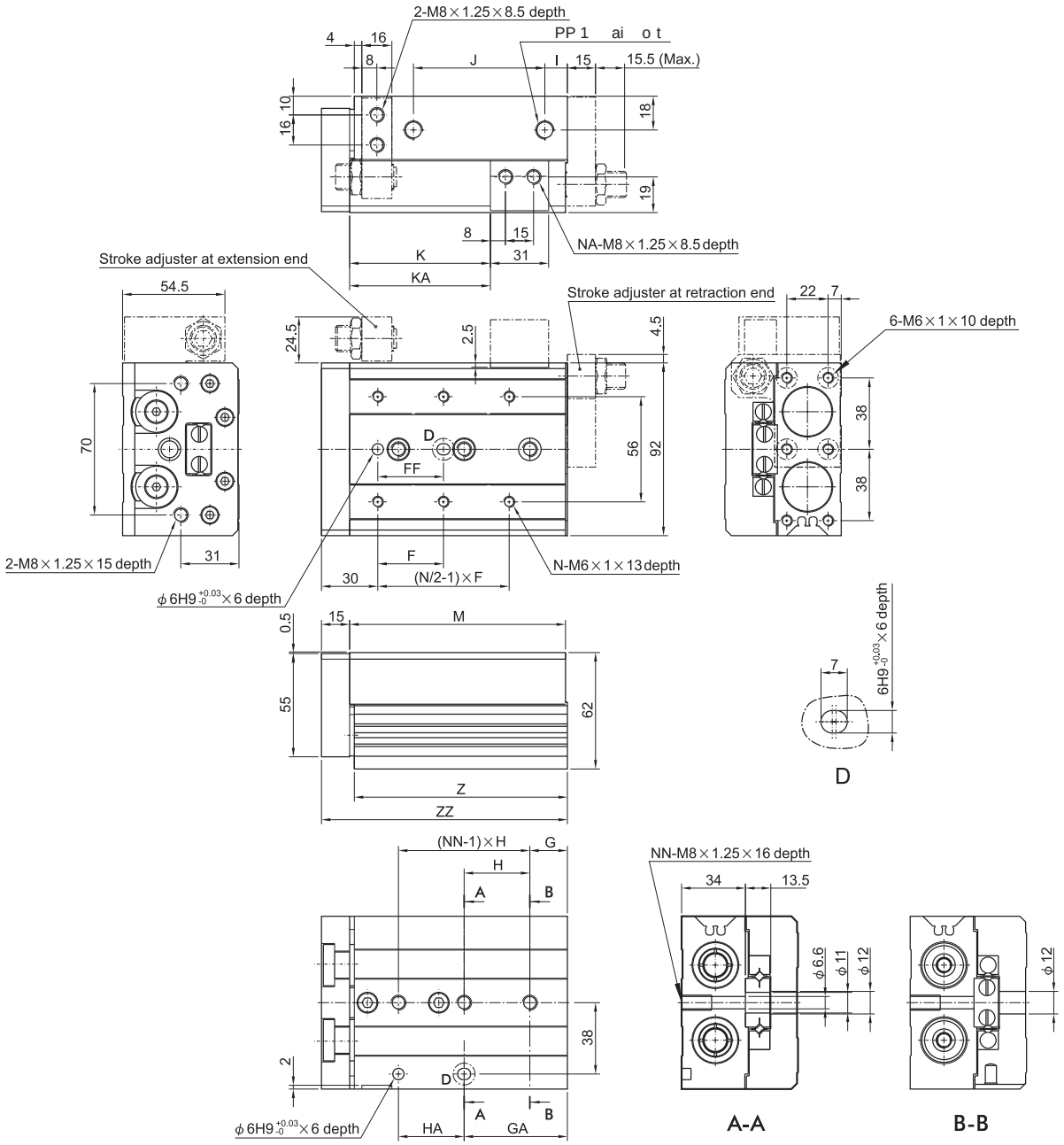
Dimensions: P5SS Slide Table - Ø 25



Stroke (mm)	F	FF	G	GA	H	HA	I	J	K	KA	M	N	NA	NN	Z	ZZ
10	50	40	22	22	45	45	12	47	35	—	92	4	2	2	90.5	108
20	50	40	22	22	45	45	12	47	45	—	92	4	2	2	90.5	108
30	50	40	22	22	45	45	12	47	55	—	92	4	2	2	90.5	108
40	60	50	22	22	55	55	12	57	65	—	102	4	2	2	100.5	118
50	35	35	20	55	35	35	12	70	75	—	115	6	2	3	113.5	131
75	60	60	26	61	35	70	33	90	100	—	156	6	2	4	154.5	172
100	70	70	32	102	35	70	50	114	125	162	197	6	4	5	195.5	213
125	75	75	40	154	38	76	67	155	150	218	255	8	4	6	253.5	271
150	80	80	30	190	40	80	82	180	175	258	295	8	4	7	293.5	311

Dimensions in millimeters

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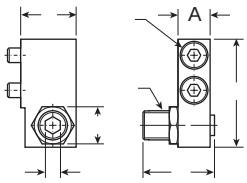
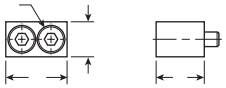
Stroke Adjusters

Stroke Adjuster at Extension End

Mounted to Body



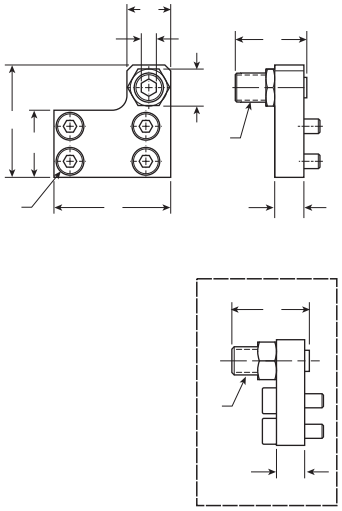
Mounted to Table



Tube I.D.	Part number	Adjustable stroke range (mm)	Mounted to body								Mounted to table			
			A	B	C	D	E	F	M	P*	H	I	J	Q*
6	P5SS-006-EA-05	5	6	17.8	10.5	16.5	7	2.5	M5 x .08	M2.5 x10	12.5	6	8.5	M2.5 x .08
	P5SS-006-EA-15	15				26.5								
8	P5SS-008-EA-05	5	7	21.5	11	16.5	8	3	M6 x 1	M3 x 10	14.6	7	10	M3 x 10
	P5SS-008-EA-15	15				26.5								
	P5SS-008-EA-25	25				36.5								
12	P5SS-012-EA-05	5	9.5	31	16	20	11	4	M8 x 1	M4 x 16	18.5	10	13	M4 x 12
	P5SS-012-EA-15	15				30								
	P5SS-012-EA-25	25				40								
16	P5SS-016-EA-05	5	11	37	19	24.5	14	5	M10 x 1	M5 x 16	21	12	16.5	M5 x 16
	P5SS-016-EA-10	15				34.5								
	P5SS-016-EA-25	25				44.5								
20	P5SS-020-EA-05	5	13	45.5	24	27.5	17	6	M12 x 1.25	M6 x 20	25	13	21	M6 x 20
	P5SS-020-EA-15	15				37.5								
	P5SS-020-EA-25	25				47.5								
25	P5SS-025-EA-05	5	16	53.5	26.5	32.5	19	6	M14 x 1.5	M8 x 25	31	17	25.5	M8 x 25
	P5SS-025-EA-15	15				42.5								
	P5SS-025-EA-25	25				52.5								

*Size of hexagon socket head cap screws

Stroke Adjuster at Retraction End



Tube I.D.	Part number	Adjustable stroke range (mm)	A	B	C	D	E	F	G	H	J*	K
6	P5SS-006-RA-05	5	21	19	10.5	8	16.5	5	7	2.5	M2.5 x8	M5 x .08
	P5SS-006-RA-15	15					26.5					
8	P5SS-008-RA-05	5	25	22.5	12.5	9	16.5	6	8	3	M3 x 10	M6 x 1
	P5SS-008-RA-15	15					26.5					
	P5SS-008-RA-25	25					36.5					
12	P5SS-012-RA-05	5	32	31	18.5	13	20	8	12	4	M4 x 8	M8 x 1
	P5SS-012-RA-15	15					30					
	P5SS-012-RA-25	25					40					
16	P5SS-016-RA-05	5	40	38.5	12	15	24.5	10	14	5	M5 x 10	M10 x 1
	P5SS-016-RA-15	15					34.5					
	P5SS-016-RA-25	25					44.5					
20	P5SS-020-RA-05	5	50	48	29	21	27.5	12	17	6	M5 x 12	M12 x 1.25
	P5SS-020-RA-15	15					37.5					
	P5SS-020-RA-25	25					47.5					
25	P5SS-025-RA-05	5	60	58	35	23	32.5	15	19	6	M6 x 16	M14 x 1.5
	P5SS-025-RA-15	15					42.5					
	P5SS-025-RA-25	25					52.5					

*Size of hexagon socket head cap screws

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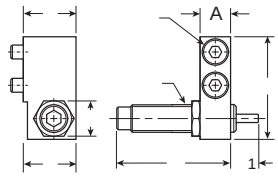
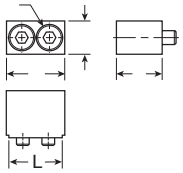
Shock Absorbers

Shock Absorber at Extension End

Mounted to Body



Mounted to Table

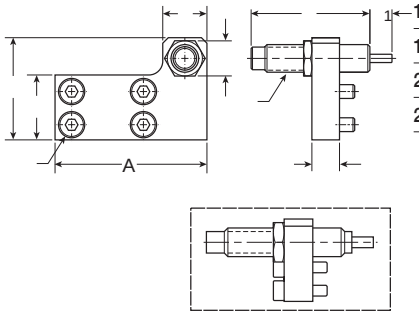


Tube I.D.	Part number	Mounted to body A	B	C	D	E	E1	F	M	P*	Mounted to table H	J	K	L	Q*
8	**P5SS-008-ESK**	7	23	14	15.5	40.8	8	11	M8 x 1	M3 x 16	16.6	7	15.5	14.6	M3 x 16
12	**P5SS-012-ESK**	9.5	31	14.5	16	40.8	8	11	M8 x 1	M4 x 16	20.5	10	15	18.5	M4 x 12
16	**P5SS-016-ESK**	11	37	17.5	19	43.2	6.6	12.7	M10 x 1	M5 x 16	23	12	18.5	21	M5 x 16
20	**P5SS-020-ESK**	13	45.5	23.5	26	86.6	12.7	19	M14 x 1.5	M6 x 25	25.5	13	25.5	25	M6 x 25
25	**P5SS-025-ESK**	16	53.5	23.5	26.5	86.6	12.7	19	M14 x 1.5	M8 x 25	25.5	17	25.5	31	M8 x 25

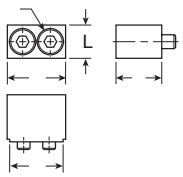
*Size of hexagon socket head cap screws

Shock Absorber at Retraction End

Mounted to Body



Mounted to Table



Tube I.D.	Part number	Mounted to body A	B	C	D	E	E1	F	G	M	P*	Mounted to table K	L	M	N	Q*
8	**P5SS-008-RSK**	38	23	12.5	14	40.8	8	8	12	M8 x 1	M3 x 12	16.6	7	15.5	14.6	M3 x 16
12	**P5SS-012-RSK**	45	31	18	14	40.8	8	8	11	M8 x 1	M4 x 8	20.5	10	15	18.5	M4 x 12
16	**P5SS-016-RSK**	55	37	23.5	16	43.2	6.6	10	12.7	M10 x 1	M5 x 10	23	12	18.5	21	M5 x 16
20	**P5SS-020-RSK**	70	47	29	23	86.6	12.7	12	19	M14 x 1.5	M5 x 12	25.5	13	25.5	25	M6 x 25
25	**P5SS-025-RSK**	80	54	35	23	86.6	12.7	15	19	M14 x 1.5	M6 x 16	25.5	17	25.5	31	M8 x 25

*Size of hexagon socket head cap screws

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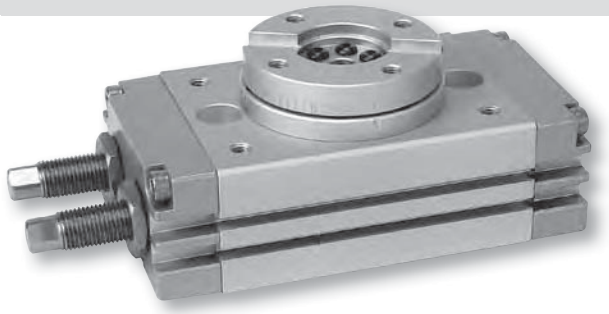
P5RS Rotary Tables

- Twin rack and pinion
- Adjustable between 0° and 190°
- Magnetic piston standard
- Stroke adjusters standard
- Available with shock absorbers



Operating information

Operating pressure:	1 to 9 bar (14.5 to 130.5 PSIG)
Temperature range:	-5° to 60° C (23° to 140° F)
Filtration requirements:	
Air filtration	40 micron or better
Air lubrication	Not necessary*
Air humidity	Low moisture content (dry)

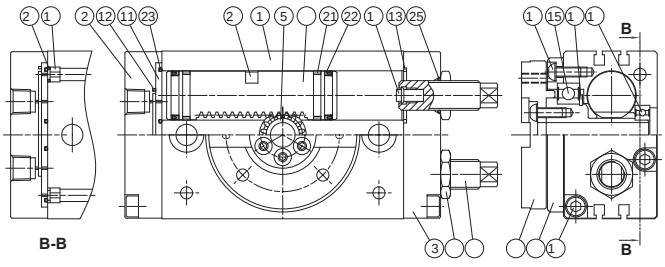
*Addition of lubrication will greatly increase service life

Ordering Information: P5RS Rotary Tables

Description	Ports (BSPP)	Rotation	Torque (N-m at 7 bar)	Weight (kg)	Part number
Rotary table, stroke adjusters	1/8	190 degrees	1.69	0.7	**P5RS-016DSG190B**
Rotary table, stroke adjusters	1/8	190 degrees	3.52	1.16	**P5RS-020DSG190B**
Rotary table, stroke adjusters	1/8	190 degrees	6.87	1.57	**P5RS-025DSG190B**
Rotary table, stroke adjusters	1/8	190 degrees	13.52	3.07	**P5RS-032DSG190B**
Rotary table, shock absorber	1/8	190 degrees	1.69	0.7	N/A
Rotary table, shock absorber	1/8	190 degrees	3.52	1.16	N/A
Rotary table, shock absorber	1/8	190 degrees	6.87	1.57	**P5RS-025DSG190WNSNNN**
Rotary table, shock absorber	1/8	190 degrees	13.52	3.07	**P5RS-032DSG190WNSNNN**

Sensor part numbers: Page 330.

Material



No.	Part name	Material	No.	Part name	Material
1	Body	Aluminum alloy	14	Fixed	Copper
2	Cover	Aluminum alloy	15	Ball bearing	Bearing steel
3	End cover	Aluminum alloy	16	Ball bearing	Bearing steel
4	Piston	Stainless steel	17	Snap ring	Spring steel
5	Pinion	SCM	18	Screw	SCM
6	Bearing retainer	Aluminum alloy	19	Screw	SCM
7	Table	Aluminum alloy	20	Magnet	Magnet material
8	Seal nut	Stainless steel	21	Wearing	PTFE
9	Shock absorber	Stainless steel	22	Piston packing	NBR
10	Cushion pad	NBR	23	O-ring	NBR
11	Plate	Aluminum alloy	24	O-ring	NBR
12	Packing	NBR	25	O-ring	NBR
13	Gasket	NBR			

Most popular.

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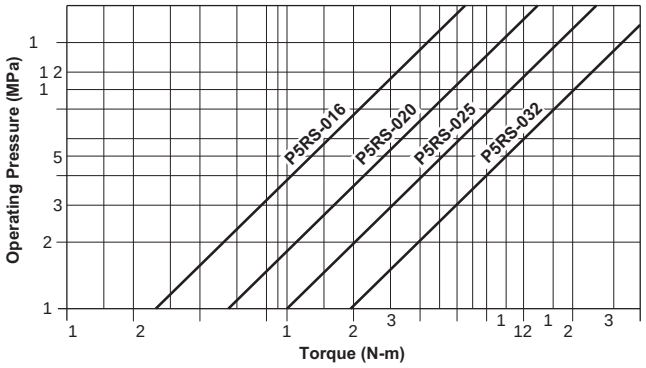
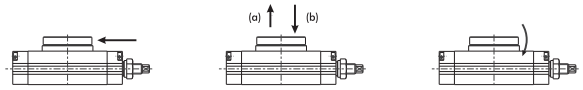
Load capacity - P5RS Rotary Table



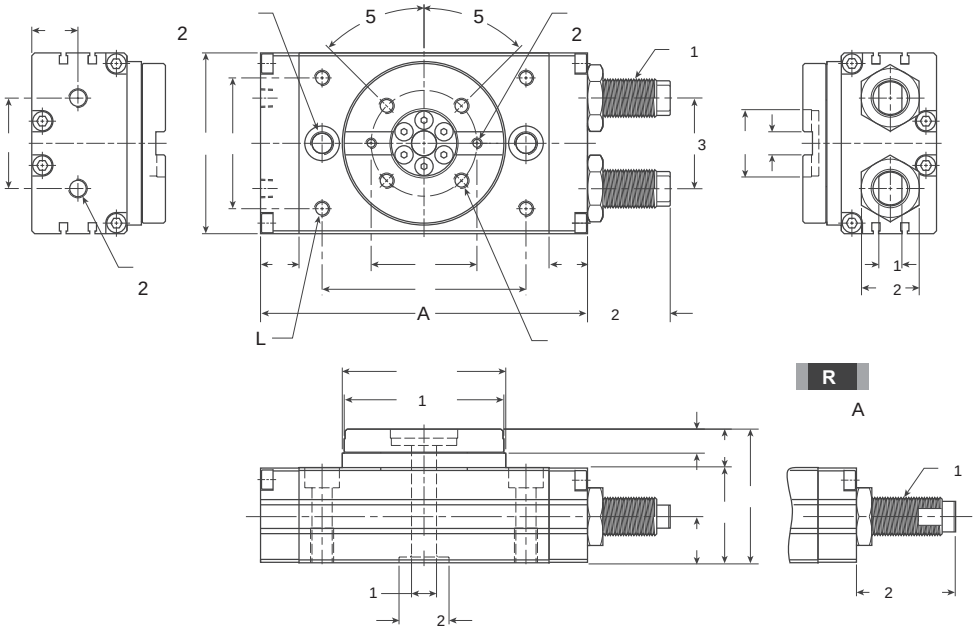
Allowable load

Set the load and moment to be applied to the table within the allowable values shown in the table below.
(Values outside of limitations will cause excessive play, deterioate accuracy, and shorten service life)



Bore	Allowable radial load (N)	Allowable thrust load (N) (a)	Allowable thrust load (N) (b)	Allowable moment (Nm)
16	78	74	78	2.4
20	147	137	137	4.0
25	196	197	363	5.3
32	314	296	451	9.7

Dimensions: P5RS Rotary Tables



Tube I.D.	A	B	C	D	E	F	G	H	H1	I	J	K	L	M	N	O	P	Q
16	108	58	47	62	38	15	38	50	48	M5 x 7 Dp, P.C.D38	33	8	M5 x 8 Dp	14	26	15.5	BSPP 1/8	$8^{+0.03}_{-0}$ (wide) x 3.3 Dp
20	128	68	55	78	47	15	46	62.5	60	M6 x 7 Dp, P.C.D46	38	10	M6 x 8 Dp	17	27	18.5	BSPP 1/8	$10^{+0.03}_{-0}$ (wide) x 3.5 Dp
25	135.5	77	58.5	84	55	15.5	48	67	65	M6 x 9 Dp, P.C.D48	41.5	10	M6 x 8 Dp	17	37	20	BSPP 1/8	$12^{+0.03}_{-0}$ (wide) x 4 Dp
32	170	94	69.5	106	68	20	55	85	83	M8 x 10 Dp, P.C.D55	49.5	12.5	M8 x 8.5 Dp	20	47	24	BSPP 1/8	$12^{+0.03}_{-0}$ (wide) x 5 Dp

Tube I.D.	S1	S2	T	U	V	W1	W2	W3	X1	X2	Y1	Y2
16	6	17 (H7) x 2.5 Dp	24 (H7) x 3 Dp	2-Ø 6.8 thru, Ø 11 x 6.5 Dp, M8 x 12 Dp (Sink)	M3 x 4 Dp	M10 x 1.0	27	26	7	17	N/A	31
20	10	22 (H7) x 2.5 Dp	32 (H7) x 3 Dp	2-Ø 8.6 thru, Ø 14 x 8.5 Dp, M10 x 15 Dp (Sink)	M4 x 6 Dp	M12 x 1.0	23	32	8	19	N/A	36
25	13	22 (H7) x 3 Dp	32 (H7) x 3.7 Dp	2-Ø 8.6 thru, Ø 14 x 8.5 Dp, M10 x 15 Dp (Sink)	M4 x 8 Dp	M14 x 1.5	36	37	8	22	MC150M-NB	52
32	13	26 (H7) x 3 Dp	35 (H7) x 4.7 Dp	2-Ø 10.5 thru, Ø 18 x 10.5 Dp, M12 x 18 Dp (Sink)	M5 x 8.5 Dp	M20 x 1.5	43	47	12	30	MC225M-NB	62

Dimensions in millimeters

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P5MD Feed Escapements

- Most effective mechanism for separating parts fed from a track or conveyor
- 7075-T6 aircraft quality aluminum body hard-coat anodized 60 RC with PTFE impregnation
- Adjustable retract stops
- Built-in sensor mounting slots
- Built-in sensor magnet for use with Hall Effect sensors
- Sealed design repels contaminants
- Slip fit dowel holes in body for precision applications
- Dynamic components are precision ground and hardened for wear resistance and long life
- Locking key ensures part separation and eliminates jams

Operating information

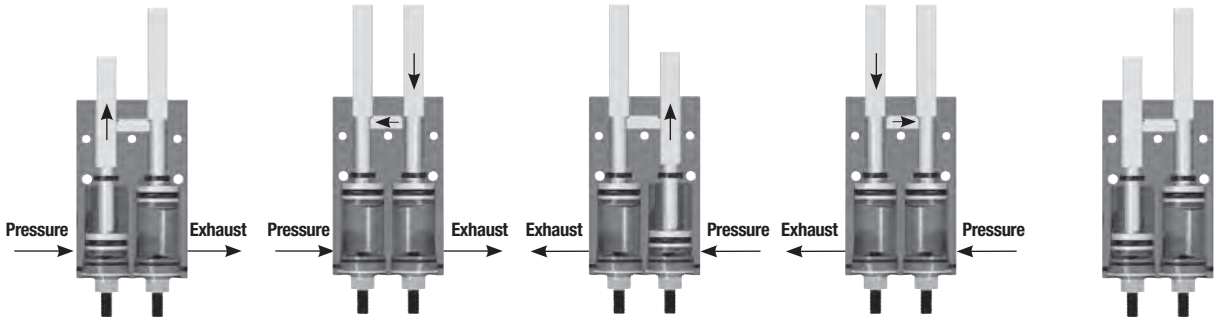
Operating pressure:	3 to 7 bar (44 to 102 PSIG)
Temperature range:	
Nitrile seals (Standard)	-35° to 80° C (-30° to 180° F)
Filtration requirements:	
Air filtration	40 micron or better
Air lubrication	Not necessary*
Air humidity	Low moisture content (dry)

*Addition of lubrication will greatly increase service life

Ordering Information: P5MD Feed Escapements

Stroke (mm)	Thrust force @ 7 Bar (N)	Parts escaped per minute	Weight (kg)	Side finger mount	Top finger mount
15.9	111	150	0.15	**P5MD-014SSG016B**	**P5MD-014TSG016B**
25.4	222	100	0.39	**P5MD-020SSG025B**	**P5MD-020TSG025B**
31.8	400	85	0.83	**P5MD-027SSG032B**	**P5MD-027TSG032B**

Sensor part numbers: Page 330.



- Dual double acting pistons slide in opposite directions within the body through the use of internal porting.
- When pressure is applied, one piston extends and passes a port in its cylinder wall which is linked to the retract side of the other piston's cylinder.
- The second piston then begins to retract and pushes the locking key aside into the cavity on the side of the first finger.
- Locking Key ensures only 1 finger can be retracted at a time.
- Finger must be allowed to fully extend for proper operation.

☐ Most popular.

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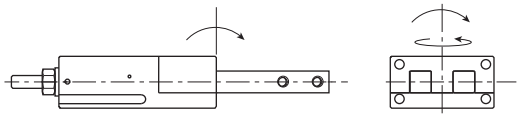
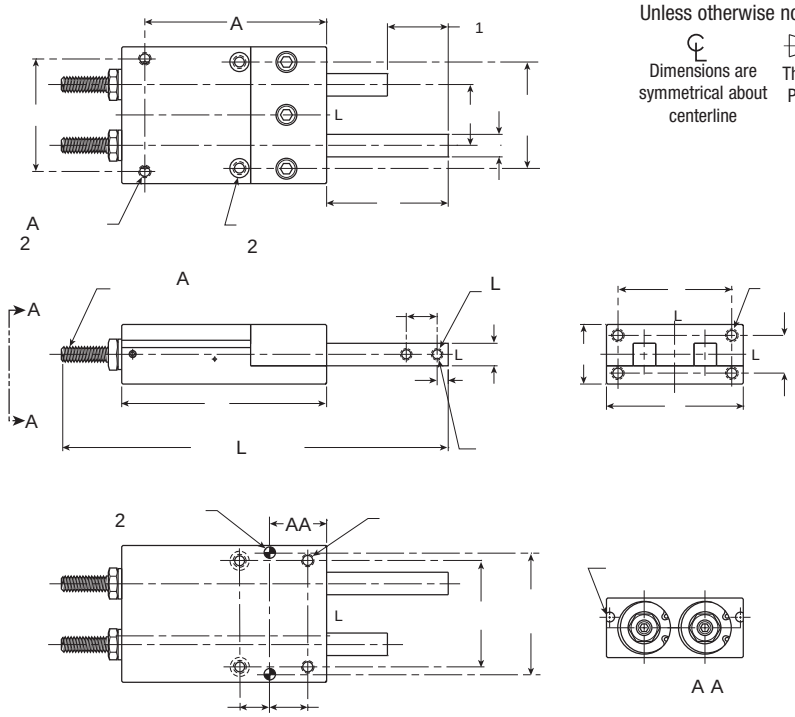
Loading capacity - P5MD Feed Escapements

	P5MD-014		P5MD-020		P5MD-027	
	Static (metric)	Dynamic (metric)	Static (metric)	Dynamic (metric)	Static (metric)	Dynamic (metric)
Maximum moment Mx	6 Nm	0.57 Nm	17 Nm	1.70 Nm	28 Nm	2.83 Nm
Maximum moment My	6 Nm	0.57 Nm	17 Nm	1.70 Nm	28 Nm	2.83 Nm
Maximum moment Mz	6 Nm	0.57 Nm	17 Nm	1.70 Nm	28 Nm	2.83 Nm



Dimensions: P5MD Feed Escapements



Unless otherwise noted all tolerances are as shown below

Dimensions are symmetrical about centerline

Third Angle Projection

Metric (mm)
(0.) = (±.25)
(0.0) = (±.13)
(0.00) = (±.013)

Part number	A	B	C	D	E	F	G	H	J	J1	K	L	M	N	P	Q	R	S	T
P5MD-014	51	30	M5	Ø 5.64 x 3.2 Dp	41.3	38.1	7.9	15.9	15.9	4.8	12.7	M4	57.9	117	4.8	7.9	38.1	19.1	31.8
P5MD-020	76	47	M5	Ø 7.95 x 1.6 Dp	50.8	44.5	9.5	25.4	25.4	6.4	12.7	M5	85.5	162	4.8	9.5	47.6	24.9	57.2
P5MD-027	100	57.1	M5	Ø 8.9 x 5 Dp	57.2	57.1	12.7	31.8	31.8	12.7	12.7	M6	112.3	197	6.4	12.7	60.3	34.5	69.9

Part number	U	V	W	X	Y	Z	AA	BB	CC
P5MD-014	12.7	M4 x 5.5 Dp	Ø 3 H7 x 3.8 Dp	M4 x 5 Dp	31.8	31.75	15.1	9.5	9.5
P5MD-020	15.9	M5 x 10 Dp	Ø 5 H7 x 5 Dp	M5 x 7 Dp	44.5	50.80	23.8	12.7	15.9
P5MD-027	25.4	M6 x 10 Dp	Ø 5 H7 x 6 Dp	M6 x 11 Dp	57.1	57.15	31.0	19.0	19.0

Dimensions in millimeters

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Sensors

Magnetic

Series	PNP with quick disconnect M8	NPN with quick disconnect M8	PNP with quick disconnect (90 degrees) M8	NPN with quick Disconnect (90 Degrees) M8	Page
P5GM	**P8S-HHSP-017**	**P8S-HHSN-017**	**P8S-HHSP-011**	**P8S-HISN-011**	B332
P5GN	**P8S-HHSP-017**	**P8S-HHSN-017**	**P8S-HHSP-011**	**P8S-HISN-011**	B332
P5GP	**P8S-HHSP-017**	**P8S-HHSN-017**	NA	NA	B332
P5GQ	**P8S-HHSP-017**	**P8S-HHSN-017**	NA	NA	B332
P5GR	**P8S-HHSP-017**	**P8S-HHSN-017**	**P8S-HHSP-011**	**P8S-HISN-011**	B332
P5GS	**P8S-HHSP-017**	**P8S-HHSN-017**	**P8S-HHSP-011**	**P8S-HISN-011**	B332
P5GT	NA	NA	NA	NA	
P5GU	**P8S-HHSP-017**	**P8S-HHSN-017**	NA	NA	B332
P5GV	NA	NA	NA	NA	B332
P5GW	**P8S-HHSP-017**	**P8S-HHSN-017**	**P8S-HHSP-011**	**P8S-HISN-011**	B332
P5MD	**P8S-HHSP-017**	**P8S-HHSN-017**	NA	NA	B332

Inductive

Series	PNP M8 disconnent	NPN M8 disconnect	PNP M12 disconnent	NPN M12 disconnect	Inductive sensor mounting kit	Page
P5GR-010	**P8S-HISP-014**	**P8S-HISN-014**	NA	NA	**P8S-HSMK-119**	B333
P5GR-014					**P8S-HSMK-119**	
P5GR-021					**P8S-HSMK-120**	
P5GS-016	**P8S-HISP-019**	**P8S-HISN-019**	NA	NA	**P8S-HSMK-116**	
P5GS-024					**P8S-HSMK-117**	
P5GS-032					**P8S-HSMK-118**	
P5GT-025	**P8S-HISP-019**	**P8S-HISN-019**	NA	NA	**P8S-HSMK-003**	
P5GT-025					**P8S-HSMK-003**	
P5GT-032					**P8S-HSMK-003**	
P5GT-046	**P8S-HISP-011**	**P8S-HISN-011**	NA	NA	**P8S-HSMK-072**	B332
P5GT-064					**P8S-HSMK-072**	
P5GT-089					**P8S-HSMK-073**	
P5GW-072	**P8S-HISP-011**	**P8S-HISN-011**	NA	NA	NA	B332
P5GW-95					NA	
P5GW-120					NA	
P5GW-156	NA	NA	**P8S-HISN-017**	**P8S-HISP-017**	NA	B333
P5GW-220					NA	

Sensors for Economy Grippers, Slide Tables, Rotary Tables

Series	Reed switch 5-120 V AC/DC	Reed switch 5-120 V AC/DC M8	NPN 5-30 VDC	NPN 5-30 VDC M8	PNP 5-30 VDC	PNP 5-30 VDC M8	Page
P5SS	**P8S-ERFXS**	**P8S-ERSUS**	**P8S-ENFXS**	**P8S-ENSUS**	**P8S-EPFXS**	**P8S-EPSUS**	B331
P5GA	**P8S-ERFXS**	**P8S-ERSUS**	**P8S-ENFXS**	**P8S-ENSUS**	**P8S-EPFXS**	**P8S-EPSUS**	B331
P5GB	**P8S-ERFXS**	**P8S-ERSUS**	**P8S-ENFXS**	**P8S-ENSUS**	**P8S-EPFXS**	**P8S-EPSUS**	B331
P5RS	**P8S-FRFXS**	**P8S-FRSUS**	**P8S-FNFXS**	**P8S-FNSUS**	**P8S-FPFXS**	**P8S-FPSUS**	B331

Cables

2 meter cable M8	5 meter cable M8	2 meter cable M12	5 meter cable M12
P8S-CABL-010	**P8S-CABL-013**	**P8S-CABL-014**	**P8S-CABL-018**

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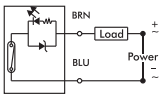
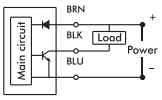
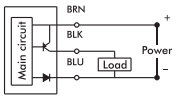
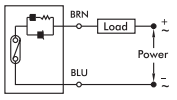
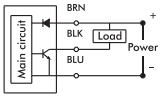
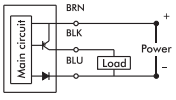
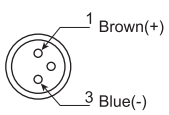
Model	P8S-FRFXS P8S-FRSUS (M8)	P8S-FNFXS	P8S-FPFXS
Wiring method	2 wire	3 wire	
Switching logic	SPST normally open	Solid state output, normally open	
Switch type	Reed switch	NPN current sinking	PNP current sourcing
Operating voltage	5 to 120 V DC/AC	5 to 30 VDC	
Switching voltage	100 mA max.	200 mA max.	
Contact rating	10 W max.	6 W max.	
Current consumption	—	8 mA @ 24 V max. (Switch active)	
Voltage drop	3.5 V max.	1 V @ 200 mA max.	
Leakage current	—	0.01 mA max.	
Indicator	Red LED	Red LED	Green LED
Cable	2.8 Ø, 2C	2.8 Ø, 3C	
Magnet frequency (1)	60 Gauss	40 Gauss	
Temperature range	-10°C to 70°C (14°F to 158°F)		
Shock (2)	30 G	50 G	
Vibration (3)	9 G		
Enclosure classification	IEC 529, IP67		
Protection circuit	None	Power source reverse polarity; surge suppression	
Connect diagram			

(1) Measuring standard target: Ø 15.5 x Ø 8 x 5t (Anisotropy rubber magnet).
(2) Sine wave / X.Y.Z 3 directions / 3 times each direction / 11ms each time.
(3) Double amplitude 1.5 mm / 10 Hz -55 Hz-10 Hz (Sweep 1min / X.Y.Z. 3 directions / 1 hour each time.

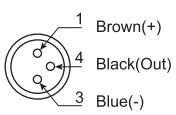
Model	P8S-ERFXS P8S-ERSUS (M8)	P8S-ENFXS P8S-ENSUS (M8)	P8S-EPFXS P8S-EPSUS (M8)
Switch type	Reed switch	NPN current sinking	PNP current sourcing
Contacts	Normal open		
Voltage range	5 to 120 V DC/AC	5 to 30 VDC	
Current range	100 mA max.	50 mA max.	
Contact rating	6 W max.	1.5 W max.	
Shock resistance	30 G	50 G	
Voltage drop	0.5 V max.		1.5V max.
Response time	Max. 1 ms		
Temperature range	-10°C to 70°C (14°F to 158°F)		
Lead wire	2.8 Ø, 3C		3.0 Ø, 3C, PU
Lead wire length	2 m		
Indicator lamp	LED lights up when ON		
Enclosure classification	IP67 (NEMA 6)		IEC 529, IP67
Indicator	Red LED		Green LED
Connect diagram			

Wiring of the QD

2 wire QD wiring



3 wire QD wiring



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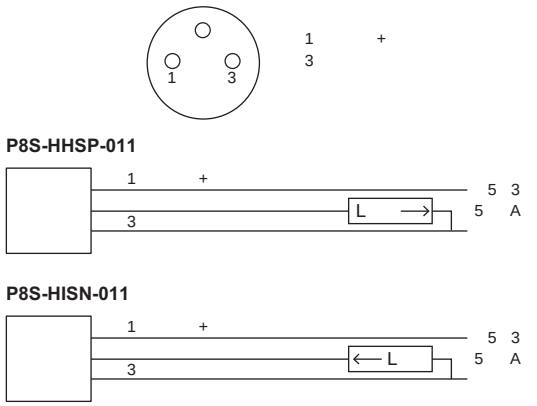
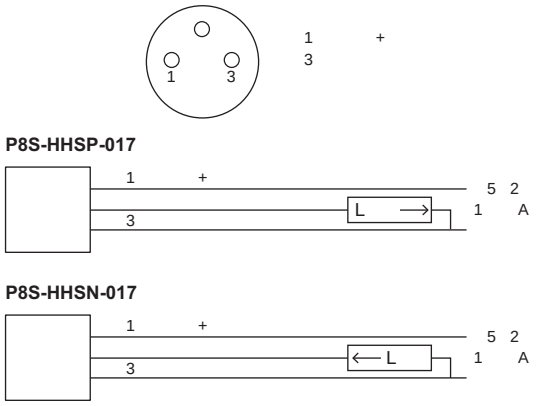
P8S-HHSP-011 and P8S-HISN-011 Sensors

P8S-HHSP-011 ◄——► P8S-HISN-011
Description: ..... Solid state magnetoresistive (MR) sensor
Function: .....PNP (N.O.) or NPN (N.O.)
Voltage supply range:.....4.5 - 30 VDC
Current consumption: ..... Max. 9 mA @ 24 V
Voltage drop: ..... Max. 1.2 V
Max. switching current:.....50 mA
Reverse polarity protection:.....Yes
Short circuit (transient) protection:.....Yes
Temperature range: ..... -10°C to 70°C (14°F to 158°F)
Protection class:.....IP67
Response frequency: ..... 1 kHz



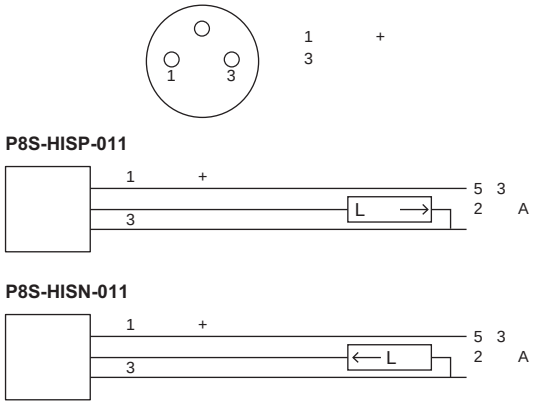
P8S-HHSP-017 and P8S-HHSN-017 Sensors

P8S-HHSP-017 ◄——► P8S-HHSN-017
Description: .....Magnetoresistive 4mm Dovetail
Function: .....PNP (N.O.) or NPN (N.O.)
Voltage supply range:.....4.5 - 28 VDC
Current consumption: ..... Max. 10 mA @ 24 V
Voltage drop: ..... Max. 0.5 V
Max. switching current:.....100 mA
Reverse polarity protection:.....Yes
Short circuit (transient) protection:.....Yes
Temperature range: ..... -10°C to 70°C (14°F to 158°F)
Protection class:.....IP67
Response frequency: ..... 1 kHz
Hysteresis: .....<0.2 mm
Repeatability:.....<0.1 mm)
Insulation resistance: ..... Min 100 M OHM (Lead to case @ 500 VDC)
Withstand voltage: ..... (Lead to case) 1000 VAC RMS for 1 min or 1500 VAC RMS for 2 sec



P8S-HISP-011 and P8S-HISN-011 Sensors

P8S-HISP-011 ◄——► P8S-HISN-011
Description: .....Inductive 8mm proximity sensor
Connection: .....3-pole quick disconnect
Function: .....PNP (N.O.) or NPN (N.O.)
Indicator:.....LED
Load current: ..... 200 mA max.
Internal voltage drop: .....< 1 V
Current consumption: ..... 15 mA max.
Operating voltage:.....5 - 30 VDC
Reverse polarity protection:.....Yes
Response frequency: .....800 - 1000 Hz
Relative humidity:.....35 - 95%
Shielded design:.....Yes
Sensing range:..... 1.5 mm
Temperature range: .....-25°C to 7°C (-13°F to 45°F)
NEMA rating:..... 6
IEC rating: IP67
Ratings:.....CE, ISO 9001



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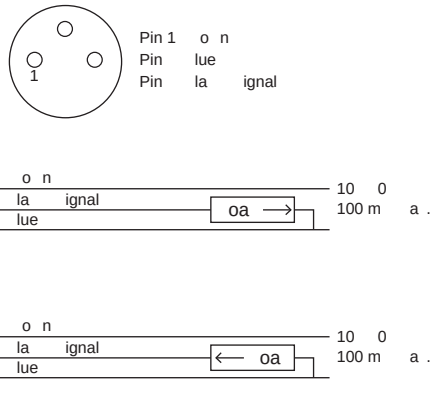
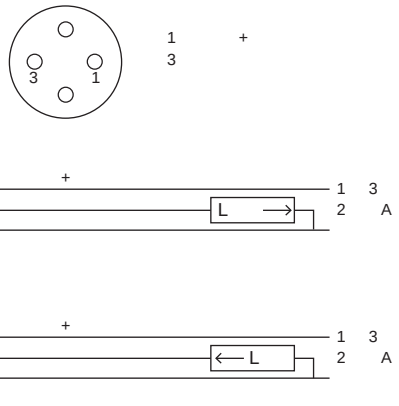
P8S-HISP-014 and P8S-HISN-014 Sensors

P8S-HISP-014 ◄——► P8S-HISN-014
Description: .....Inductive 4mm proximity sensor
Connection: .....3-pole quick disconnect
Function: .....PNP (N.O.) or NPN (N.O.)
Indicator: .....LED
Load current: ..... 100 mA max.
Internal voltage drop: .....< 2.5 V
Current consumption: .....18 mA
Operating voltage: .....10 - 30 VDC
Reverse polarity protection: .....Yes
Response frequency: .....5 kHz
Relative humidity: .....35 - 95%
Shielded design: .....Yes
Sensing range: .....1.0 mm
Temperature range: .....-25°C to 75°C (-13°F to 167°F)
NEMA rating: 6
IEC rating: IP67
Ratings: .....CE, ISO 9001



P8S-HISP-017 and P8S-HISN-017 Sensors

P8S-HISP-017 ◄——► P8S-HISN-017
Description: .....Inductive 12mm proximity sensor
Connection: .....4-pole quick disconnect
Function: .....PNP (N.O.) or NPN (N.O.)
Indicator: .....360° LED
Load current: ..... 200 mA max.
Internal voltage drop: .....< 2.0 V
Current consumption: ..... 10 mA max.
Operating voltage: .....10 - 30 VDC
Reverse polarity protection: .....Yes
Response frequency: .....2 kHz
Shielded design: .....Yes
Sensing range: .....4 mm
Temperature range: .....-25°C to 75°C (-13°F to 167°F)
NEMA rating: 6
IEC rating: IP67
Ratings: .....UL, CSA, CE



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