1. Optional with adjustable stroke device (0-5mm).
2. Double cylinder design, 2 times output force, thin volume.
3. Cylinder is combined with the worktable, reduce the overall size.
4. Cross roller guide design, small friction, no gap between cylinder and table, suitable for precise assembly.
5. It can be installed from three sides.
6. Built in magnetic ring type, magnetic switch can be installed.

Specifications

Model	NMXS6	NMXS8	NMXS12	NMXS16	NMXS20	NMXS25
Bore size	Φ6×2 (Equate to Φ8)	Φ8×2 (Equate to Φ11)	Φ12×2 (Equate to Φ17)	Φ16×2 (Equate to Φ22)	Φ20×2 (Equate to Φ28)	Φ25×2 (Equate to Φ35)
Use fluid	Air (to be filtered by 40μm filter element)					
Action mode	Double action					
Minimum operating pressure	0.15MPa					
Maximum operating pressure	0.7MPa					
Ambient and fluid temperature	-10 to 60℃ (No freezing)					
Piston speed (mm/s)	50~500					
Lubrication	Rubber cushion (standard)					
Cushion	Non-lube					
Pipe size	M3×0.5	M5×0.8			M3×0.5	

Note: If lubrication is required, please use turbine No.1 oil ISO VG32.

Selection table

	Bore size (mm)	Standard stroke (mm)									Function options				Magnetic switch model
		10	20	30	40	50	75	100	125	150	Stroke adjuster device (0~5mm)	Spring buffer	With end lock	Axial piping type	Direct installation
NMXS Series	Φ6×2	●	●	●	●	●					●	●		●	M9N(V) M9B(V) M9P(V)
	Φ8×2	●	●	●	●	●	●				●	●	●	●	
	Φ12×2	●	●	●	●	●	●	●			●	●	●	●	
	Φ16×2	●	●	●	●	●	●	●	●		●	●	●	●	
	Φ20×2	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Φ25×2	●	●	●	●	●	●	●	●	●	●	●	●	●	

Note: The specifications and characteristics of magnetic switches can be referred to the series of magnetic switches.
Wire length representation mark: no mark -0.5m, L-3m, Z-5m, Example: M9N, M9NL

Ordering code

NMXS 12 — 50 ☐ ☐ — M9N ☐

Bore size **Stroke**

Adjusting device

Blank	Without adjuster
AS	Adjuster on extension end
AT	Adjuster on retraction end
A	Adjuster on both ends
*BS	Absorber on extension end
*BT	Absorber on retraction end
*B	Absorber on both ends

* NMXS6 without hydraulic buffer

Functional option

Blank	Standard
F	With buffer
*R	With end lock
P	Axial piping type
*FR	With buffer and end lock
FP	With buffer, Axial piping type

* NMXS6 without end lock

Magnetic switch

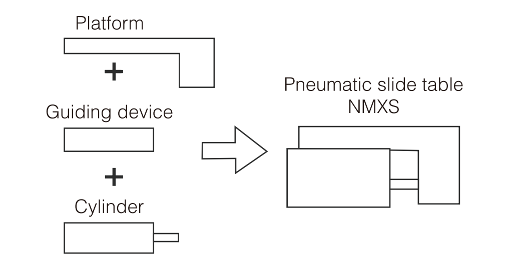
Blank	without magnetic switch

* Refer to the above table for the model of magnetic switch

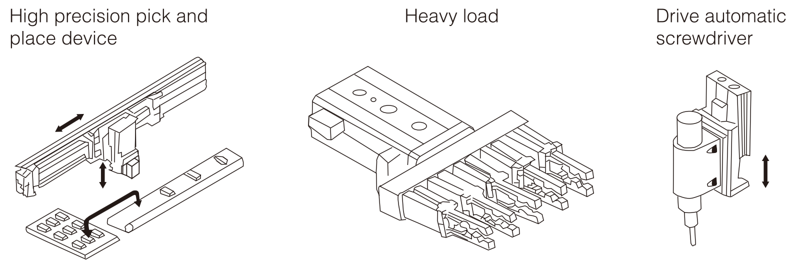
Number of magnetic switches

Blank	2 pcs.
S	1 pc.
n	n pcs.

Cylinder and table combination



High precision, robust applications



Cylinder
SC
SC(Big)
SCT
SCF
SU
SUF
SI
SIF
DNC
QGB
QGBZ
NCQ2
NCQ2(Big)
NCQ2(Long)
NCQS
NCQM
NRQ
SDA
ADVU
ACE(AND)
MAL
MA
MI
NCM2
NCJ2
NCG1
NCJP
TD
TN(TDA)
NCXS
NCXSW
NMGP
NMGG
NCU
NCUJ
NCY3B
NCY3R
NCY1S
NCY1L
STM
NMXH
NMXS
NMXQ
NMHZ2
NMHC2
NMHL2
NMHY2
NMHT2
NMHW2
NMHF2
NMHS2
NMHS3
NMHS4
NMRHQ
NMSQ
NCRA1
NCRQ2
NCRB2
ACK
SRC
QCK
NCK1

Selection method of pneumatic slide table

Model Selection Steps	Formula/Data	Selection Examples

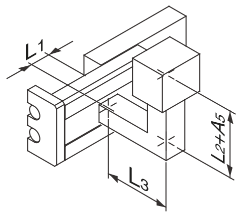
1 Operating Conditions

Model Selection Steps: Consider the installation posture and workpiece shape, and list the use conditions.

Formula/Data:

- Model to be used
- Type of cushion
- Workpiece mounting position
- Mounting orientation
- Average operating speed Va (mm/s)
- Load mass W (kg): Fig. (1)
- Overhang Ln (mm): Fig. (2)

Selection Examples:



Cylinder: NMXS16-50
Cushion: Rubber bumper
Workpiece table mounting
Mounting: Horizontal wall mounting
Average operating speed:
Va=300[mm/s]
Load mass: W=1[kg]
L1=10mm
L2=30mm
L3=30mm

2 Kinetic Energy

Model Selection Steps: Find the kinetic energy E (J) of the load.

Find the allowable kinetic energy Ea (J).

Confirm that the kinetic energy of the load does not exceed the allowable kinetic energy.

Formula/Data:

$E=\frac{1}{2}\cdot W(\frac{V}{1000})^2$

Collision speed V=1.4※・Va

※) Correction factor (Reference values)

Ea = K・Emax

Workpiece mounting coefficient K: Fig.(3)

Max. allowable kinetic energy Emax: Table (1)

Kinetic energy (E) ≤ Allowable kinetic energy (Ea)

Selection Examples:

$E=\frac{1}{2}\cdot 1(\frac{420}{1000})^2=0.088$

V=1.4×300=420

Ea=1・0.11=0.11

Can be used based on E=0.088 ≤ Ea=0.11

3 Load Factor

3-1 Load Factor of Load Mass

Model Selection Steps: Find the allowable load mass Wa (kg).

Find the load factor of the load mass α1.

Formula/Data:

Wa = K・β・Wmax

Workpiece mounting coefficient K: Fig. (3)

Allowable load mass coefficient β: Graph (1)

Max. allowable load mass Wmax: Table (2)

α1 = W/Wa

Selection Examples:

Wa=1×1×4=4
K=1
β=1
Wmax=4
α1=1/4=0.25

3-2 Load Factor of Static Moment

Model Selection Steps: Find the static moment M (N・m).

Find the allowable static moment Ma (N・m).

Find the load factor α2 of the static moment.

Formula/Data:

M=W×9.8(Ln+An)/1000

Correction value of moment center position distance An: Table (3)

Ma=K・γ・Mmax

Workpiece mounting coefficient K: Fig. (3)

Allowable moment coefficient γ: Graph (2)

Maximum allowable moment Mmax: Table (4)

α2=M/Ma

Selection Examples:

Yawing

Examine My.
My=1×9.8(10+30)/1000=0.39
A_3=30
May=1×1×15.9=15.9
Mymax=15.9
K=1
γ=1
α2=0.39/15.9=0.025

Rolling

Examine Mr.
Mr=1×9.8(30+10)/1000=0.39
A_6=10
Mar=15.9(Same value as May)
α'2=0.39/15.9=0.025

3-3 Load Factor of Dynamic Moment

Model Selection Steps: Find the dynamic moment Me (N・m).

Find the allowable dynamic moment Mea (N・m).

Find the load factor α3 of the dynamic moment.

Formula/Data:

$Me=1/3\cdot We\times 9.8\frac{(Ln+An)}{1000}$

Collision equivalent to impact We = δ·W·V

δ: Bumper coefficient

With urethane bumper (Standard) = 4/100

With shock absorber = 1/100

Correction value of moment center position distance An: Table (3)

Mea = K・γ・Mmax

Workpiece mounting coefficient K: Fig. (3)

Allowable moment coefficient γ: Graph (2)

Max. allowable moment Mmax: Table (4)

α3=Me/Mea

Selection Examples:

Pitching

Examine Mep.
$Mep=1/3\times 16.8\times 9.8\times\frac{(30+10)}{1000}=2.2$
We=4/100 ×1×420=16.8
A_2=10
Meap=1×0.7×15.9=11.1
K=1
γ=0.7
Mpmax=15.9
α3=2.2/11.1=0.20

Yawing

Examine Mey.
$Mey=1/3\times 6.8\times 9.8\times\frac{(30+31)}{1000}=3.3$
We=16.8
A_4=31
Meay=11.1(Same value as Meap)
α'3=3.3/11.1=0.30

3-4 Sum of Load Factors

Model Selection Steps: Possible to use if the sum of the load factors does not exceed 1.

Formula/Data:

Σαn=α1+α2+α3≤1

Selection Examples:

Σαn=α1+α2+α'2+α3+α'3
=0.25+0.025+0.025+0.20+0.30=0.80≤1
And it is possible to use.

Fig. (1) Load Mass: W (kg)

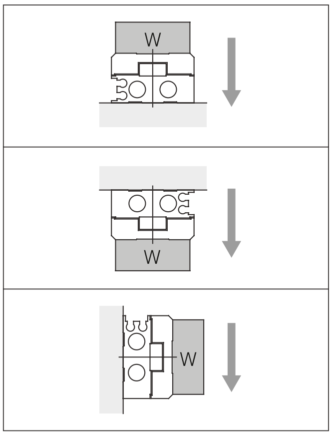
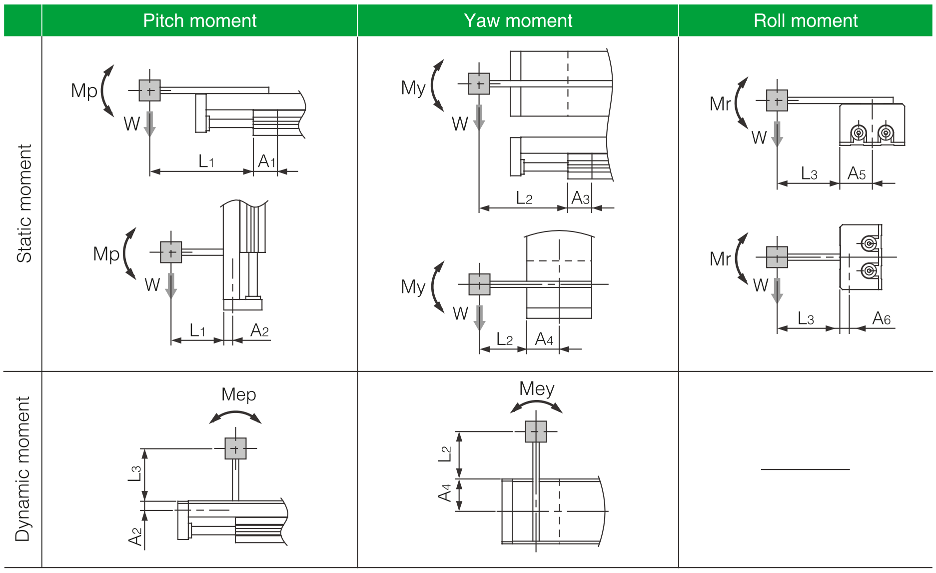


Fig. (2) Overhang: Ln (mm), Correction Value of Moment Center Position Distance: An (mm)



Note: Static moment: Moment generated by gravity
Dynamic moment: Moment generated by impact when colliding with stopper

Fig. (3) Workpiece Mounting Coefficient: K

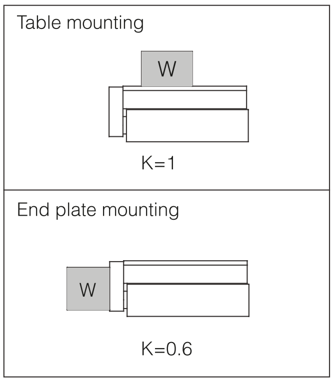


Table (1) Maximum Allowable Kinetic Energy: Emax (J)

Model	Allowable kinetic energy	
	Rubber bumper	Shock absorber
NMXS6	0.018	-
NMXS8	0.027	0.054
NMXS12	0.055	0.11
NMXS16	0.11	0.22
NMXS20	0.16	0.32
NMXS25	0.24	0.48

Graph (1) Allowable Load Mass Coefficient: β

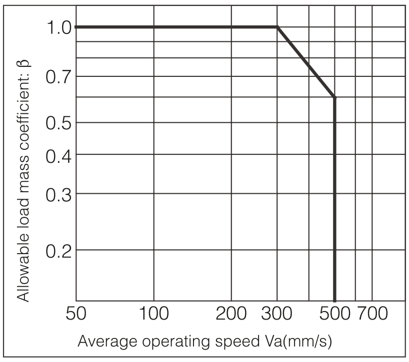


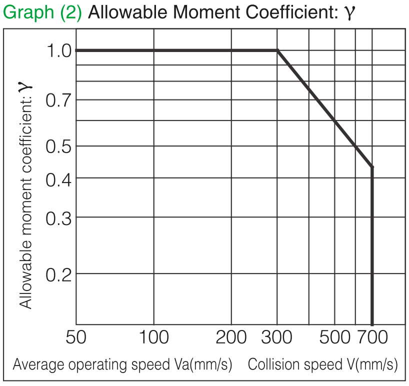
Table (2) Maximum Allowable Load Mass: Wmax (kg)

Model	Maximum allowable load mass
NMXS6	0.6
NMXS8	1
NMXS12	2
NMXS16	4
NMXS20	6
NMXS25	9

Table (3) Correction Value of Moment Center Position Distance: An (mm)

Model	Correction value of moment center position distance (Refer to Figure 2)					
	A1	A2	A3	A4	A5	A6
NMXS6	11	6	13	16	16	6
NMXS8	11	7.5	13	20	20	7.5
NMXS12	24	8.5	26	25	25	8.5
NMXS16	27	10	30	31	31	10
NMXS20	34	14.5	36	38	38	14.5
NMXS25	42	19	44	46	46	19

Graph (2) Allowable Moment Coefficient: γ



Note: Use the average operating speed when calculating static moment.
Use the collision speed when calculating dynamic moment.

Table (4) Maximum Allowable Moment: Mmax (N·m)

Model	Stroke (mm)								
	10	20	30	40	50	75	100	125	150
NMXS6	0.7	1.0	1.2	1.2	1.2	-	-	-	-
NMXS8	2.0	2.0	2.8	3.6	4.2	4.2	-	-	-
NMXS12	4.2	4.2	4.2	5.8	7.0	10.0	10.0	-	-
NMXS16	11.3	11.3	11.3	11.3	15.9	25.0	34.1	34.1	-
NMXS20	19.4	19.4	19.4	19.4	27.2	35.0	50.5	50.5	50.5
NMXS25	30.6	30.6	30.6	30.6	42.8	55.1	67.3	67.3	67.3

Symbol

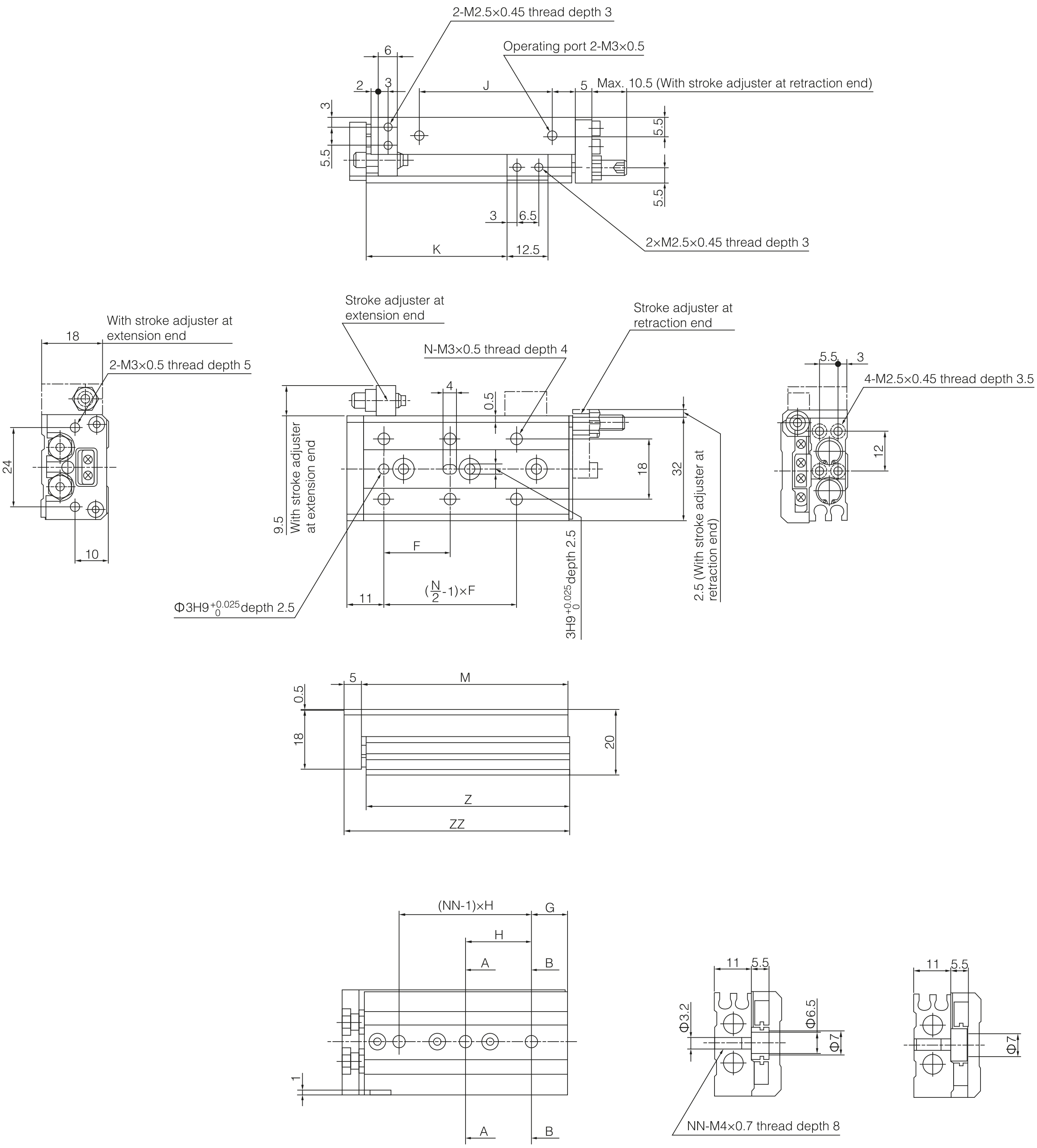
Symbol	Definition	Unit
An (n=1 to 6)	Correction value of moment center position distance	mm
E	Kinetic energy	J
Ea	Allowable kinetic energy	J
Emax	Max. allowable kinetic energy	J
Ln (n=1 to 3)	Overhang	mm
M (Mp, My, Mr)	Static moment (Pitch, Yaw, Roll)	N·m
Ma (Map, May, Mar)	Allowable static moment (Pitch, Yaw, Roll)	N·m
Me (Mep, Mey)	Dynamic moment (Pitch, Yaw)	N·m
Mea (Meap, Meay)	Allowable dynamic moment (Pitch, Yaw)	N·m
Mmax (Mpmax, Mymax, Mrmax)	Max. allowable moment (Pitch, Yaw, Roll)	N·m
V	Collision speed	mm/s

Symbol	Definition	Unit
Va	Average operating speed	mm/s
W	Load mass	kg
Wa	Allowable load mass	kg
We	Mass equivalent to impact	kg
Wmax	Max. allowable load mass	kg
α	Load factor	-
β	Allowable load mass coefficient	-
γ	Allowable moment coefficient	-
δ	Damper coefficient	-
K	Workpiece mounting coefficient	-

Cylinder
SC
SC(Big)
SCT
SCF
SU
SUF
SI
SIF
DNC
QGB
QGBZ
NCQ2
NCQ2(Big)
NCQ2(Long)
NCQS
NCQM
NRQ
SDA
ADVU
ACE(AND)
MAL
MA
MI
NCM2
NCJ2
NCG1
NCJP
TD
TN(TDA)
NCXS
NCXSW
NMGP
NMGG
NCU
NCUJ
NCY3B
NCY3R
NCY1S
NCY1L
STM
NMXH
NMXS
NMXQ
NMHZ2
NMHC2
NMHL2
NMHY2
NMHT2
NMHW2
NMHF2
NMHS2
NMHS3
NMHS4
NMRHQ
NMSQ
NCRA1
NCRQ2
NCRB2
ACK
SRC
QCK
NCK1

Dimensions

NMXS 6

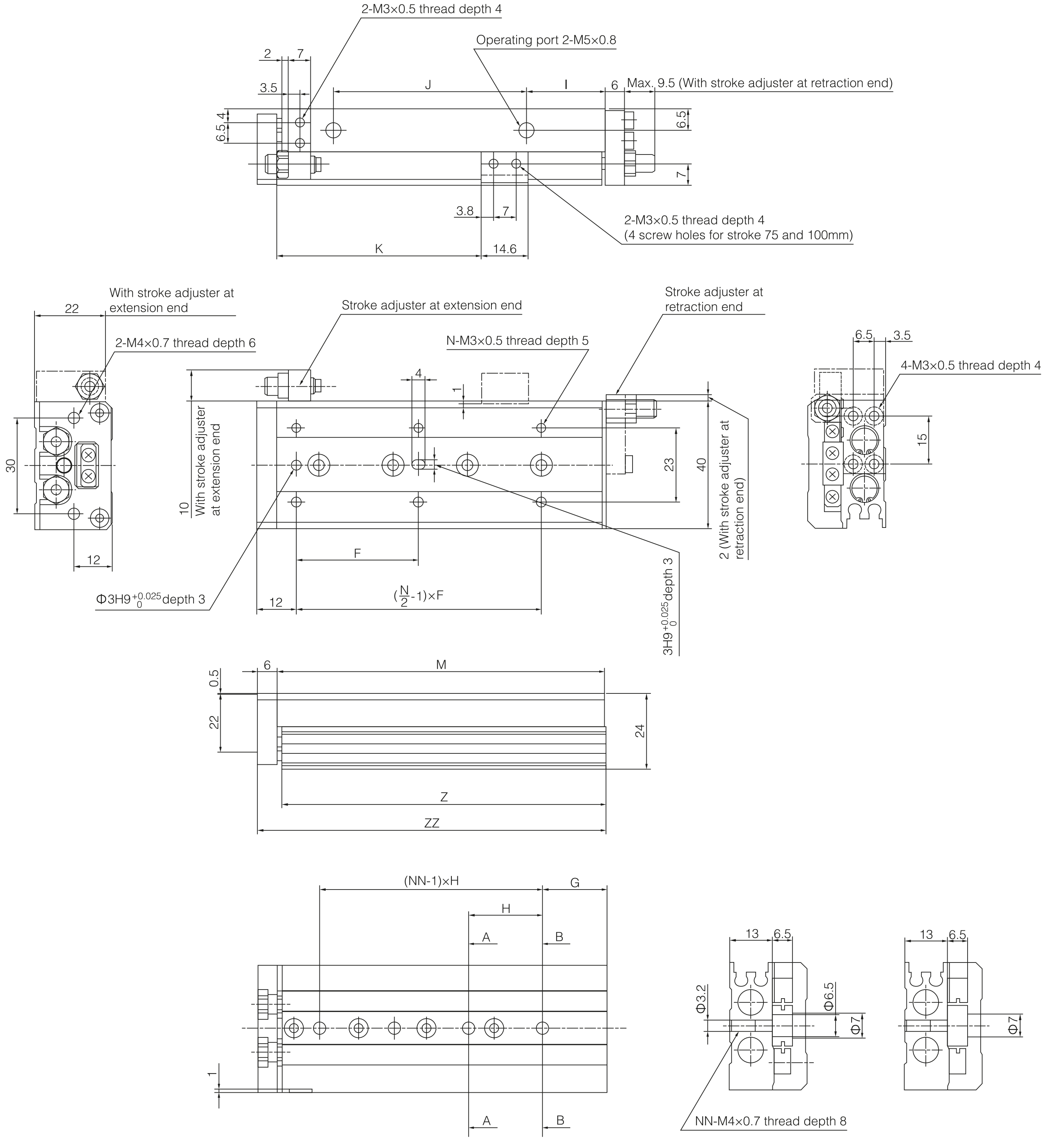


Section AA

Section BB

Model	F	N	G	H	NN	I	J	K	M	Z	ZZ
NMXS6-10	20	4	6	25	2	10	17	22.5	42	41.5	48
NMXS6-20	30	4	6	35	2	10	27	32.5	52	51.5	58
NMXS6-30	20	6	11	20	3	7	40	42.5	62	61.5	68
NMXS6-40	28	6	13	30	3	19	50	52.5	84	83.5	90
NMXS6-50	38	6	17	24	4	25	60	62.5	100	99.5	106

NMXS 8

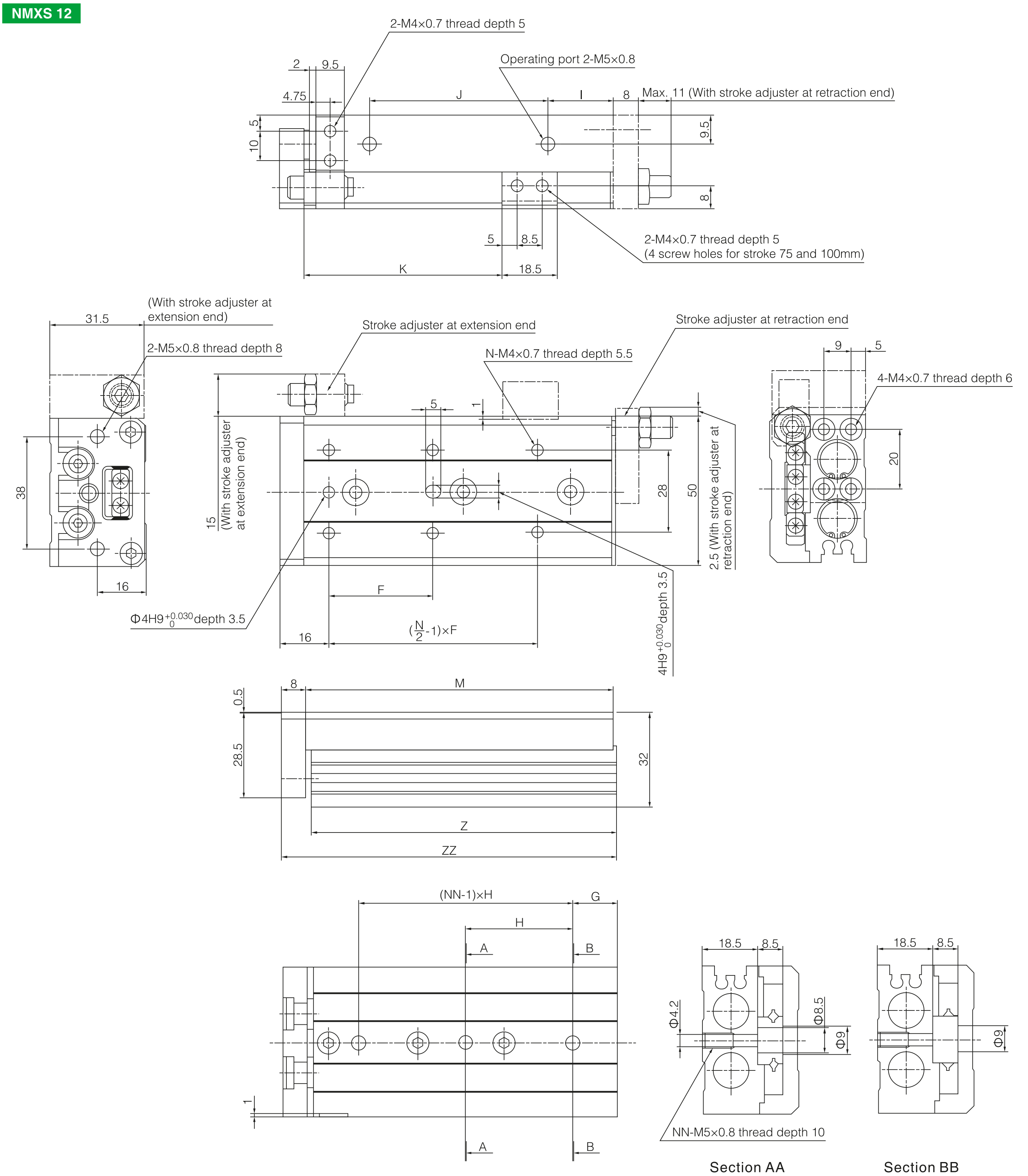


Section AA

Section BB

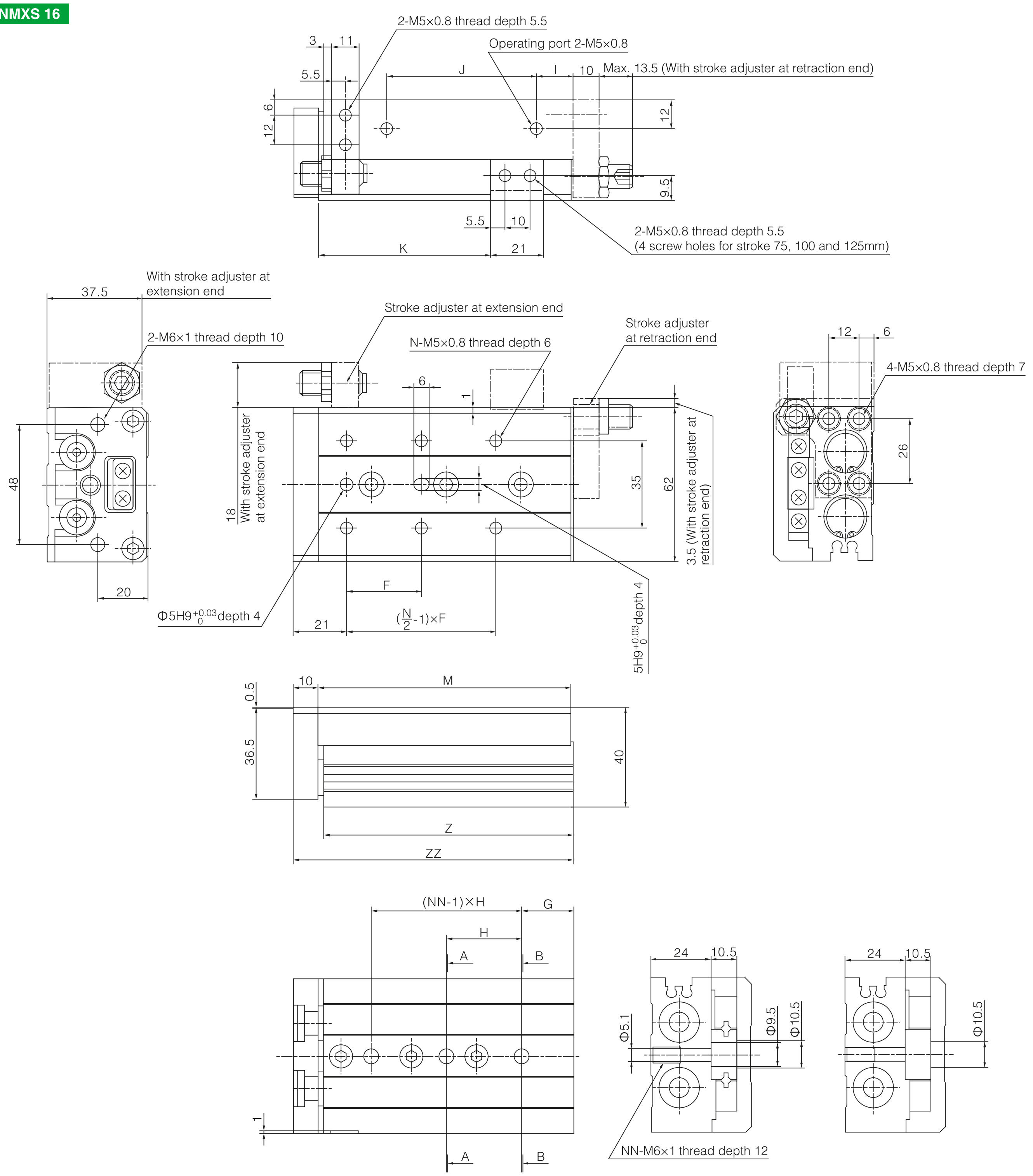
Model	F	N	G	H	NN	I	J	K	M	Z	ZZ
NMXS8-10	25	4	9	28	2	13	19.5	23.5	49	48.5	56
NMXS8-20	25	4	12	30	2	8.5	29	33.5	54	53.5	61
NMXS8-30	40	4	13	20	3	9.5	39	43.5	65	64.5	72
NMXS8-40	50	4	15	28	3	10.5	56	53.5	83	82.5	90
NMXS8-50	38	6	20	23	4	24.5	60	63.5	101	100.5	108
NMXS8-75	50	6	27	28	5	38.5	96	88.5	151	150.5	158

NMXS 12



Model	F	N	G	H	NN	I	J	K	M	Z	ZZ
NMXS12-10	35	4	15	40	2	10	40	26.5	71	70	80
NMXS12-20	35	4	15	40	2	10	40	36.5	71	70	80
NMXS12-30	35	4	15	40	2	10	40	46.5	71	70	80
NMXS12-40	50	4	17	25	3	10	52	56.5	83	82	92
NMXS12-50	35	6	15	36	3	22	60	66.5	103	102	112
NMXS12-75	55	6	25	36	4	43	85	91.5	149	148	158
NMXS12-100	65	6	35	38	5	52	130	116.5	203	202	212

NMXS 16



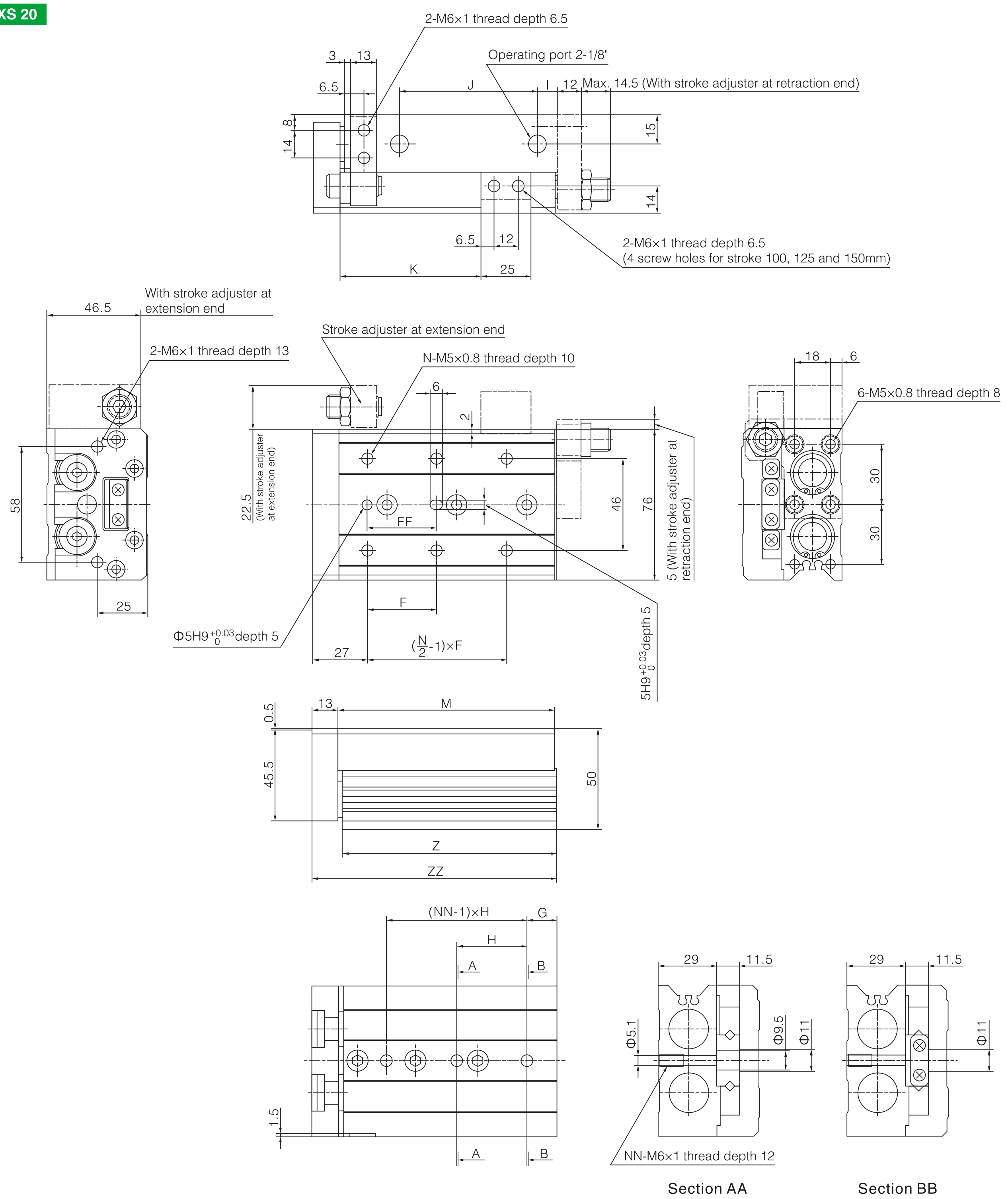
Section AA

Section BB

Model	F	N	G	H	NN	I	J	K	M	Z	ZZ
NMXS16-10	35	4	16	40	2	10	40	29	76	75	87
NMXS16-20	35	4	16	40	2	10	40	39	76	75	87
NMXS16-30	35	4	16	40	2	10	40	49	76	75	87
NMXS16-40	40	4	16	50	2	10	50	59	86	85	97
NMXS16-50	30	6	21	30	3	15	60	69	101	100	112
NMXS16-75	55	6	26	35	4	40	85	94	151	150	162
NMXS16-100	65	6	39	35	5	55	118	119	199	198	210
NMXS16-125	70	8	19	35	7	68	155	144	249	248	260

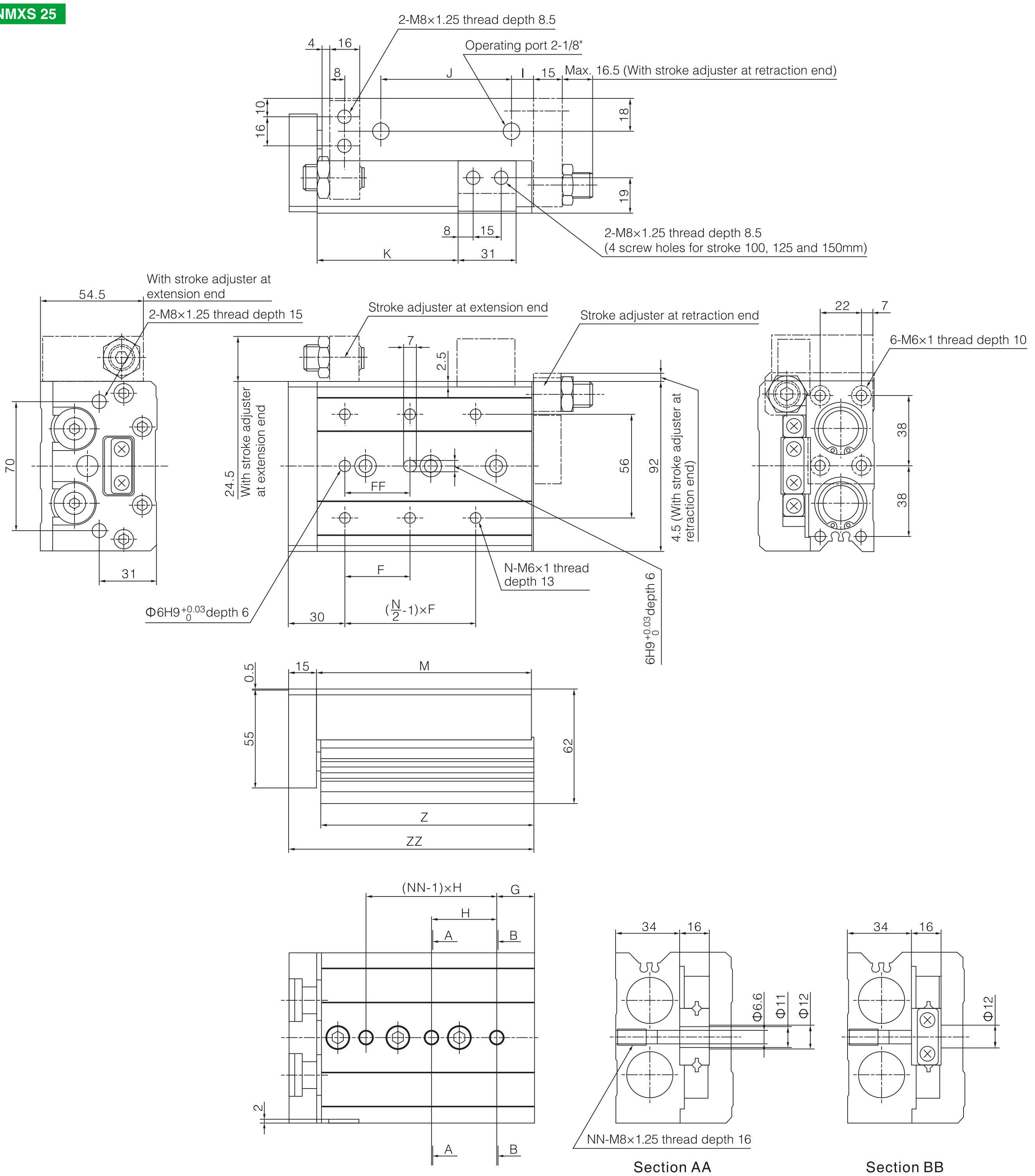
Cylinder
SC
SC(Big)
SCT
SCF
SU
SUF
SI
SIF
DNC
QGB
QGBZ
NCQ2
NCQ2(Big)
NCQ2(Long)
NCQS
NCQM
NRQ
SDA
ADVU
ACE(AND)
MAL
MA
MI
NCM2
NCJ2
NCG1
NCJP
TD
TN(TDA)
NCXS
NCXSW
NMGP
NMGG
NCU
NCUJ
NCY3B
NCY3R
NCY1S
NCY1L
STM
NMXH
NMXS
NMXQ
NMHZ2
NMHC2
NMHL2
NMHY2
NMHT2
NMHW2
NMHF2
NMHS2
NMHS3
NMHS4
NMRHQ
NMSQ
NCRA1
NCRQ2
NCRB2
ACK
SRC
QCK
NCK1

NMXS 20



Model	F	FF	N	G	H	NN	I	J	K	M	Z	ZZ
NMXS20-10	50	40	4	15	45	2	10	44	31	83	81.5	97
NMXS20-20	50	40	4	15	45	2	10	44	41	83	81.5	97
NMXS20-30	50	40	4	15	45	2	10	44	51	83	81.5	97
NMXS20-40	60	50	4	15	55	2	10	54	61	93	91.5	107
NMXS20-50	35	35	6	15	35	3	10	69	71	108	106.5	122
NMXS20-75	60	60	6	19	35	4	10	108	96	147	145.5	161
NMXS20-100	70	70	6	37	35	5	58	113	121	200	198.5	214
NMXS20-125	70	70	8	41	38	6	70	155	146	254	252.5	268
NMXS20-150	80	80	8	19	44	7	87	190	171	306	304.5	320

NMXS 25



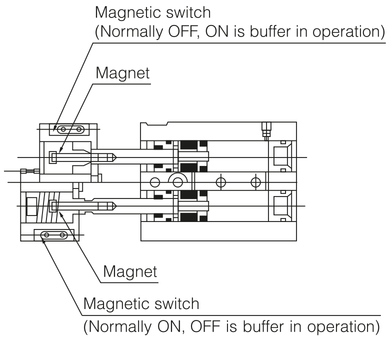
Section AA

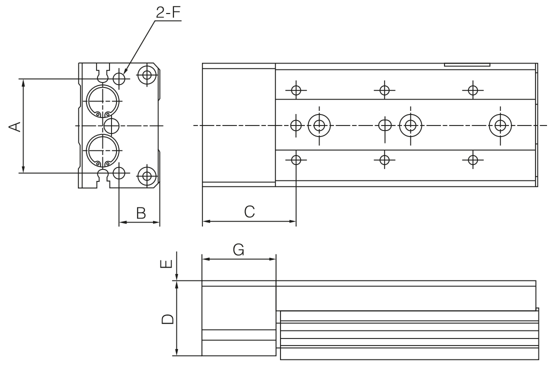
Section BB

Model	F	FF	N	G	H	NN	I	J	K	M	Z	ZZ
NMXS25-10	50	40	4	22	45	2	12	47	35	92	90.5	108
NMXS25-20	50	40	4	22	45	2	12	47	45	92	90.5	108
NMXS25-30	50	40	4	22	45	2	12	47	55	92	90.5	108
NMXS25-40	60	50	4	22	55	2	12	57	65	102	100.5	118
NMXS25-50	35	35	6	20	35	3	12	70	75	115	113.5	131
NMXS25-75	60	60	6	26	35	4	33	90	100	156	154.5	172
NMXS25-100	70	70	6	32	35	5	50	114	125	197	195.5	213
NMXS25-125	75	75	8	40	38	6	67	155	150	255	253.5	271
NMXS25-150	80	80	8	30	40	7	82	180	175	295	293.5	311

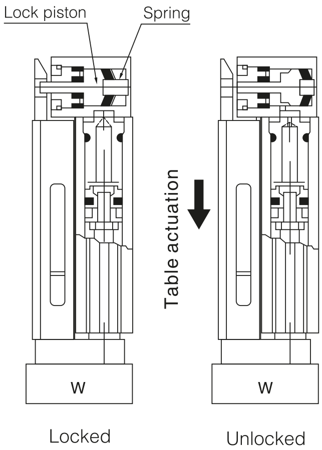
Function options

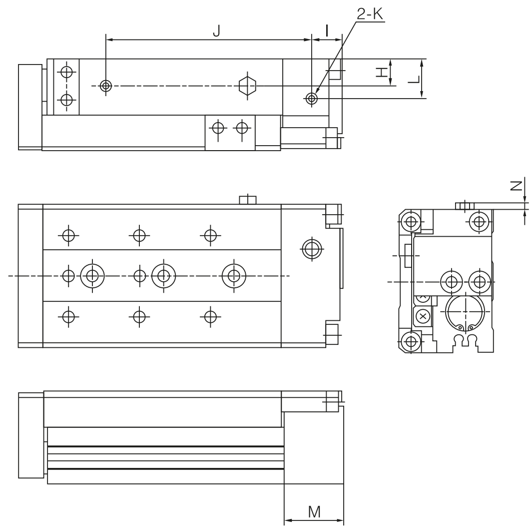
F-with spring buffer



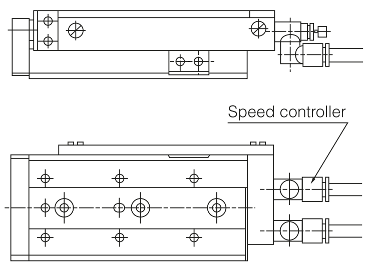


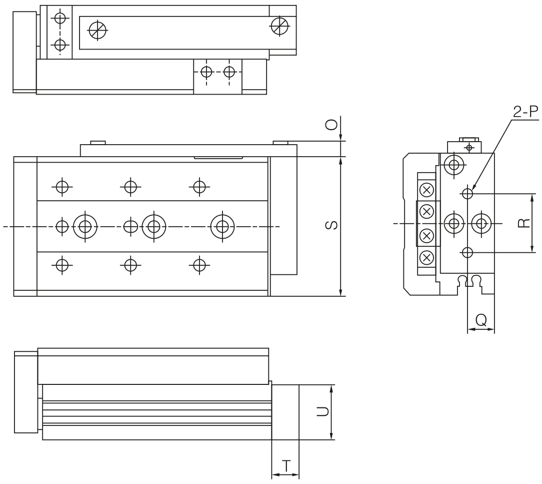
R-With end lock





P-Axial piping type





Model	A	B	C	D	E	F	G	H	I	J									K	L	M	N	O	P	Q	R	S	T	U
										10	20	30	40	50	75	100	125	150											
NMXS6	24	10	28	19	0.5	M3×0.5	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	M3×0.5	5.5	12	32	8	11.5
NMXS8	30	12	28.5	22.5	0.5	M3×0.7	22.5	6.5	9	39	44	55	73	91	141	-	-	-	M3×0.5	10	15.5	3	6.5	M5×0.8	6.5	15	40	12	13.5
NMXS12	38	16	37	30	0.5	M5×0.8	29	9.5	10.5	59.5	59.5	59.5	71.5	91.5	137.5	191.5	-	-	M5×0.8	14.5	20	3	6.5	M5×0.8	9.5	20	50	12	18.7
NMXS16	48	20	41	37.5	0.5	M6×1	30	12	13	62	62	62	72	87	137	185	235	-	M5×0.8	18	25	3	6.5	M5×0.8	12	26	62	12	23.5
NMXS20	58	25	44.5	45.5	0.5	M6×1	30.5	15	15.5	68.5	68.5	68.5	78.5	93.5	132.5	185.5	239.5	291.5	1/8"	20	30	-	11.5	1/8"	15	32	76	20	29.5
NMXS25	70	31	50	55	0.5	M8×1.25	35	18	18	76	76	76	86	99	140	181	239	279	1/8"	25.5	35	-	11.5	1/8"	18	40	92	20	35.5