

# NHS

## New Handling System

Special



### CONTENTS

Product Introduction	1072
Series System Chart	1074
● NSR (X-axis Module)	1076
● NHS=H (Z-axis Module HRL)	1088
● NHS-S (Z-axis Module STL-B)	1100
External Dimensions Diagram with Switch	1107
Accessory External Dimensions Diagram	1108
Q&A	1110
Technical Data	1112
⚠ Precautions for Use	1114

Special

MVC

STK

MCP

GLC

BBS

NHS

HR

LN

Cylinder Switch

Ending

Special

MVC

STK

MCP

GLC

BBS

NHS

HR

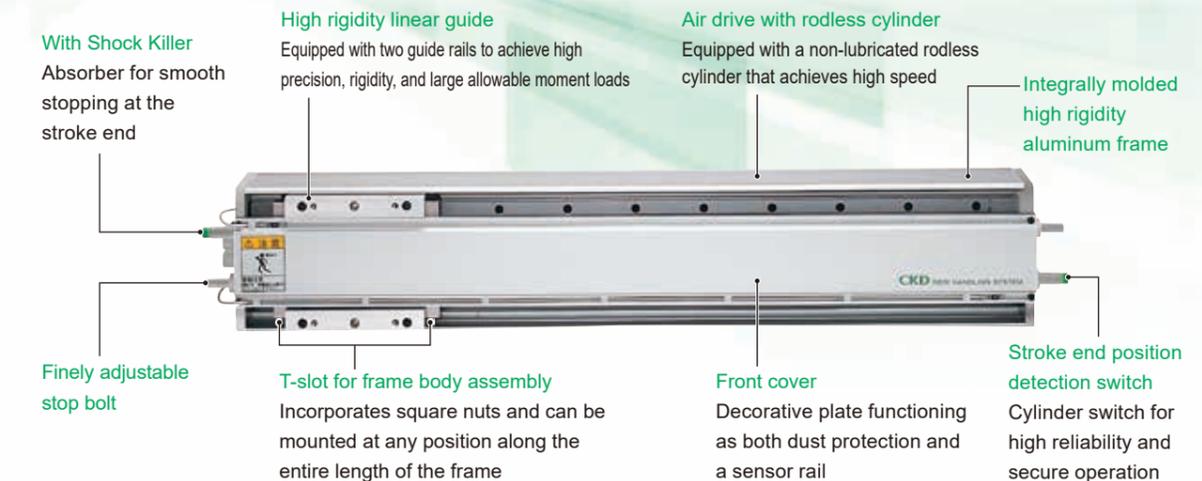
LN

Cylinder Switch

Ending

# Small parts handling system that realizes design savings with flexible combinations

## NSR X-axis Module

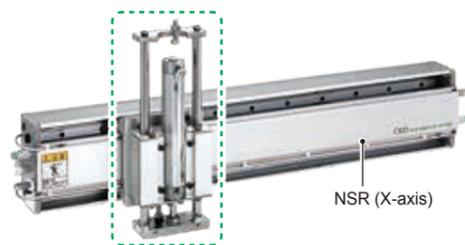


NSR X-axis module system

Model Variation	Payload (kg)				Max. Stroke (mm)	Maximum slider speed (mm/s)
	10	15	30	50		
X Axis Module <b>NSR</b>	●	●	●	●	2000	1000

## NHS: XZ-axis system

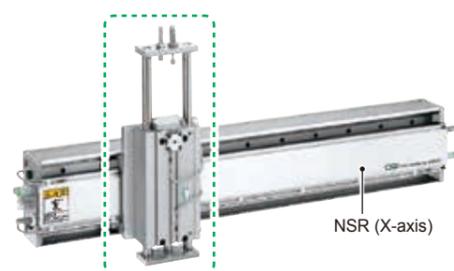
NHS-H NSR (X-axis) + HRL (Z-axis)



HRL (Z-axis)

HRL, which integrates a high-rigidity guide rod with a round general-type cylinder SCM, is installed. Supports high load and long stroke

NHS-S NSR (X-axis) + STL (Z-axis)



STL (Z-axis)

Low-cost type equipped with guided cylinder STL-B

NHS XZ-axis system products

Model Variation	Payload (kg)											Max. stroke (mm)			
	X-axis				Z-axis							X-axis	Z-axis		
	10	15	30	50	3	4	5	6	7	10	12	20	33		
XZ system Z-axis cylinder: HRL <b>NHS-H</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	2000	600
XZ system Z-axis cylinder: STL <b>NHS-S</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	2000	200

## Abundant option lineup corresponding to various needs

### Stroke adjustment block

Block that enables adjustment of the entire stroke. Shock absorber and stop bolt also included.



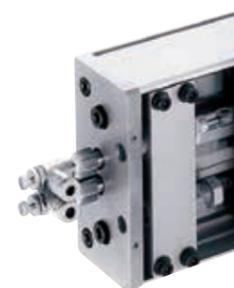
### 2 heads

Double head prepared for 2-stage feed and high moment.



### Speed Controller

Selectable with speed controller.



### Cable Carrier

Two types available: horizontal mounting and vertical mounting. Two types available: standard capacity and large capacity. (NSR-10, 15, NHS-10, 15)



### Fall prevention

Drop prevention mechanism provided for Z-axis. (Excluding STL-BP-16)

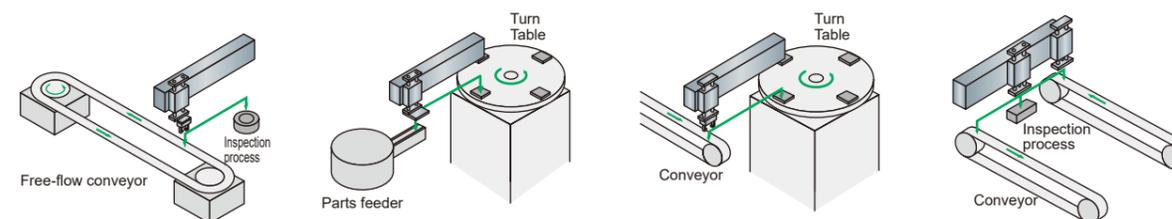


### LB bracket

LB type bracket with high merit for bottom mounting is prepared, improving ease of mounting. (Suspension or upside-down suspension with LB bracket is not possible)



## Application Example



Small valves are taken out from the free flow conveyor, inspected, and returned to the conveyor.

Two electrical parts aligned from the parts feeder are vacuum-sucked simultaneously and transferred to a jig on a turntable for assembly.

Automobile parts flowing from the conveyor are transferred to a jig on a turntable.

Since there is an inspection process between conveyors, 2 automobile parts are transferred simultaneously with 2 heads.

●: Standard, ■: Not available

Variation	Payload (kg)													Stroke (mm)													X-axis Max Stroke (mm)	Z-axis cylinder	Page			
	X-axis				Z-axis									X-axis		Z-axis																
	10	15	30	50	3	4	5	6	7	10	12	20	33	10	15	30	50	30	40	50	75	100	125	150	175	200				250	300	301 to 600
NSR (X-axis module)	●	●	●	●	■	■	■	■	■	■	■	■	■	50 to 2000	50 to 2000															2,000	—	1076
NHS-H (H: Z-axis module HRL)	●	●	●	●	■	■	●	■	●	●	●	●	●	50 to 2000	50 to 2000					●	●	●	●	●	■	●	●	●	●	2,000	HRL	1088
NHS-S (S: Z-axis module STL-B)	●	●	●	●	●	■	■	■	●	■	●	■	●	50 to 2000	50 to 2000					●	●	●	●	●	●	●	■	■	■	2,000	STL-B	1100

Special

Special

MVC

MVC

STK

STK

MCP

MCP

GLC

GLC

BBS

BBS

NHS

NHS

HR

HR

LN

LN

Cylinder Switch

Cylinder Switch

Ending

Ending



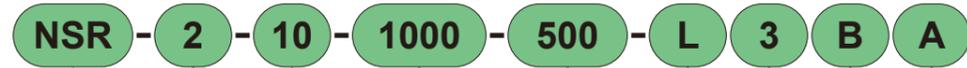
New Handling System X-axis Module

# NSR Series

- Stroke: 50 to 2000 mm
- Payload: 10, 15, 30, 50 kg



## Model No. Notation



- 1 Number of heads
- 2 Payload
- 3 X-axis stroke
- 4 Pitch Between Heads
- 5 Stroke adjustment block
- 6 Port position, Speed controller, Mounting bracket
- 7 Cable Carrier
- 8 Switch

### 1 Number of heads

Code	Content
1	1 pc.
2	2 pcs.

### 2 Payload (kg)

Code	Content
10	10
15	15
30	30
50	50

### 3 X-axis stroke (1 mm pitch)

Code	Content
50 to 2000	50 to 2000

- \*1: For X-axis stroke 1001 mm or more, the front cover becomes tension type.
- \*2: When the number of heads is 2, select so that the sum of pitch between heads and X-axis stroke is 2000 mm or less.

### 4 Pitch between heads (1 mm pitch)

Payload (kg)	Code
10	200 to 999
15	
30	260 to 999
50	310 to 999

- \*1: Selectable only when the number of heads is 2.
- \*2: Select so that the sum of pitch between heads and X-axis stroke is 2000 mm or less.

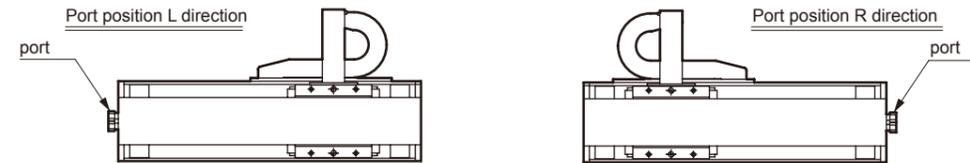
### 5 Stroke adjustment block

Code	Content
Blank	None
L	Left side
R	Right side
D	Both Sides

### 6 Port position/Speed controller/Mounting bracket

Code	Content
Blank	Port position L
*2 2	Port position R
*2 3	Port position L, with speed controller
*2 4	Port position R, with speed controller
*1 5	Port position L, with mounting bracket LB
*1, *2 6	Port position R, with mounting bracket LB
*1 7	Port position L, with speed controller, with mounting bracket LB
*1, *2 8	Port position R, with speed controller, with mounting bracket LB

- \*1: Combination with cable bear B, W is not possible.
- \*2: If port position R is selected, mounting direction of the cableveyor is reversed. (Outlet is port side)



### 7 Cable Carrier

Code	Content
Blank	None
B	Vertical mounting
F	Horizontal mounting
W	Vertical mounting (10, 15 kg)
X	Horizontal mounting (10, 15 kg)

Note: For details on the cableveyor, refer to P. 1078.

### 8 Switch

Code	Content
Blank	2-wire solid state T2H3 (with 2 pcs.)
A	3-wire solid state T3H3 (with 2 pcs.)

Note: For details, please refer to the table below.

Switches are pre-assembled on the product before shipment.

Contact Solid State	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire
			AC	DC	AC	DC	
1-Color		2-wire	—	10 to 30	—	5 to 20 *1	T2H3
		3-wire (NPN)	—	30 or less	—	100 or less	T3H3

\*1: The maximum load current value above, 20 mA, is at 25°C. If the switch operating Ambient Temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

Special

Special

MVC

MVC

STK

STK

MCP

MCP

GLC

GLC

BBS

BBS

NHS

NHS

HR

HR

LN

LN

Cylinder  
Switch

Cylinder  
Switch

Ending

Ending

Specifications

Item	NSR-10	NSR-15	NSR-30	NSR-50
Bore Size mm	ø20		ø32	ø40
Slider speed mm/s	100 to 1000			
Shock Absorber	NCK-00-1.2-C	NCK-00-2.6-C	FCK-M-3-C	FCK-M-5-C
Stroke mm	50 to 2000 (1 mm pitch)			
Max Stroke (mm)	2,000			
Allowable moment *2 N·m	M1=36.4, M2=30.6, M3=34.2		M1, M3=85.9 M2=82.9	M1, M3=156.2 M2=150.7
Slider inclination	±0.1° or less			
Piping connection port size	Rc1/8		Rc1/4	Rc1/2
Position detection sensor	T-type solid state switch lead wire 3 m			
Max horizontal payload kg	10	15	30	50
Speed controller (Option)	SC3W-6-6		SC3W-8-8	SC3W-15-10
Operating Fluid	Clean compressed air			
Operating Pressure MPa	0.2 to 0.7			
Proof Pressure MPa	1.05			
Ambient Temperature °C	5 to 60			
Lubrication	See P. 1114, About lubrication			
Repeat stopping accuracy mm	±0.02			
Weight *1 kg	(st×0.0109)+5.5	(st×0.0109)+5.6	(st×0.0176)+10.7	(st×0.0311)+17.9

\*1: st represents stroke.

\*2: M1 represents bending moment, M2 represents lateral bending moment, and M3 represents torsional moment. For details, please refer to P. 1112.

Stroke adjustment part specifications

Item	Blank	R	L	D
Adjustable stroke right mm	-15 to 0	Full stroke	-15 to 0	Full stroke
Adjustable stroke left mm	-15 to 0	-15 to 0	Full stroke	Full stroke

Shock absorber specifications

Item	NCK-00-1.2-C	NCK-00-2.6-C	FCK-M-3-C	FCK-M-5-C
Max Absorption Capacity J	12	26	30	50
Absorption Stroke mm	10	15	16	25
Max impact speed mm/s	2,000			
Max Operating Frequency cycle/min	30	25	20	12

Cable bear specifications

Item	Cable bear model no.	Inner diameter dimension (mm)	Loading capacity (kg/m)
For NSR-10, 15-B, F	TKP35H22-30W25R37	22×25	MAX 1.6
For NSR-10, 15-W	TKP45H25-30W38R50	25×38	MAX 3.0
For NSR-10, 15-X	TKP35H22-30W50R37	22×50	MAX 1.6
For NSR-30-B, F	TKP45H25-30W58R50	25×58	MAX 3.0
For NSR-50-B, F	TKP45H25-30W78R50	25×78	MAX 3.0

Stroke Adjustment Block Added Weight List

Model No.	Added weight (kg)
NSR-1-10-R	0.685
NSR-1-10-L	0.685
NSR-1-10-D	1.370
NSR-1-15-R	0.810
NSR-1-15-L	0.810
NSR-1-15-D	1.620
NSR-1-30-R	1.140
NSR-1-30-L	1.140
NSR-1-30-D	2.280
NSR-1-50-R	1.750
NSR-1-50-L	1.750
NSR-1-50-D	3.499

Cable Bear Added Weight List

Model No.	Added weight (kg)
NSR-1-10,15-B	(Stroke ÷ 2×0.0011)+0.482
NSR-1-10,15-W	(Stroke ÷ 2×0.0018)+0.55
NSR-1-10,15-F	(Stroke+178)×0.0024+0.125
NSR-1-10,15-X	(Stroke+178)×0.003+0.13
NSR-1-30-B	(Stroke ÷ 2×0.0028)+1.148
NSR-1-30-F	(Stroke+234)×0.0042+0.2
NSR-1-50-B	(Stroke ÷ 2×0.0034)+1.234
NSR-1-50-F	(Stroke+178)×0.0049+0.22

2-Head Specification

Item	NSR-2-10	NSR-2-15	NSR-2-30	NSR-2-50
Max Horizontal Conveying Weight kg/1 Head	5	7.5	15	25
Stroke mm	50 to 1000			
Maximum Stroke mm	1800		1740	1690
Pitch between heads mm	200 to 999		260 to 999	310 to 999
Max Pitch Between Heads mm	999			
Product Additional Mass kg	(Pitch Between Heads×0.0109)+1.7		(Pitch Between Heads×0.0176)+2.79	(Pitch Between Heads×0.0311)+4.66

Note: Select so that the sum of the pitch between heads and the X-axis stroke is 2000 mm or less.

Mounting Bracket LB Added Weight List

Model No.	Added weight (kg)
NSR-10	0.8
NSR-15	0.8
NSR-30	2.9
NSR-50	4.8

Special

Special

MVC

MVC

STK

STK

MCP

MCP

GLC

GLC

BBS

BBS

NHS

NHS

HR

HR

LN

LN

Cylinder Switch

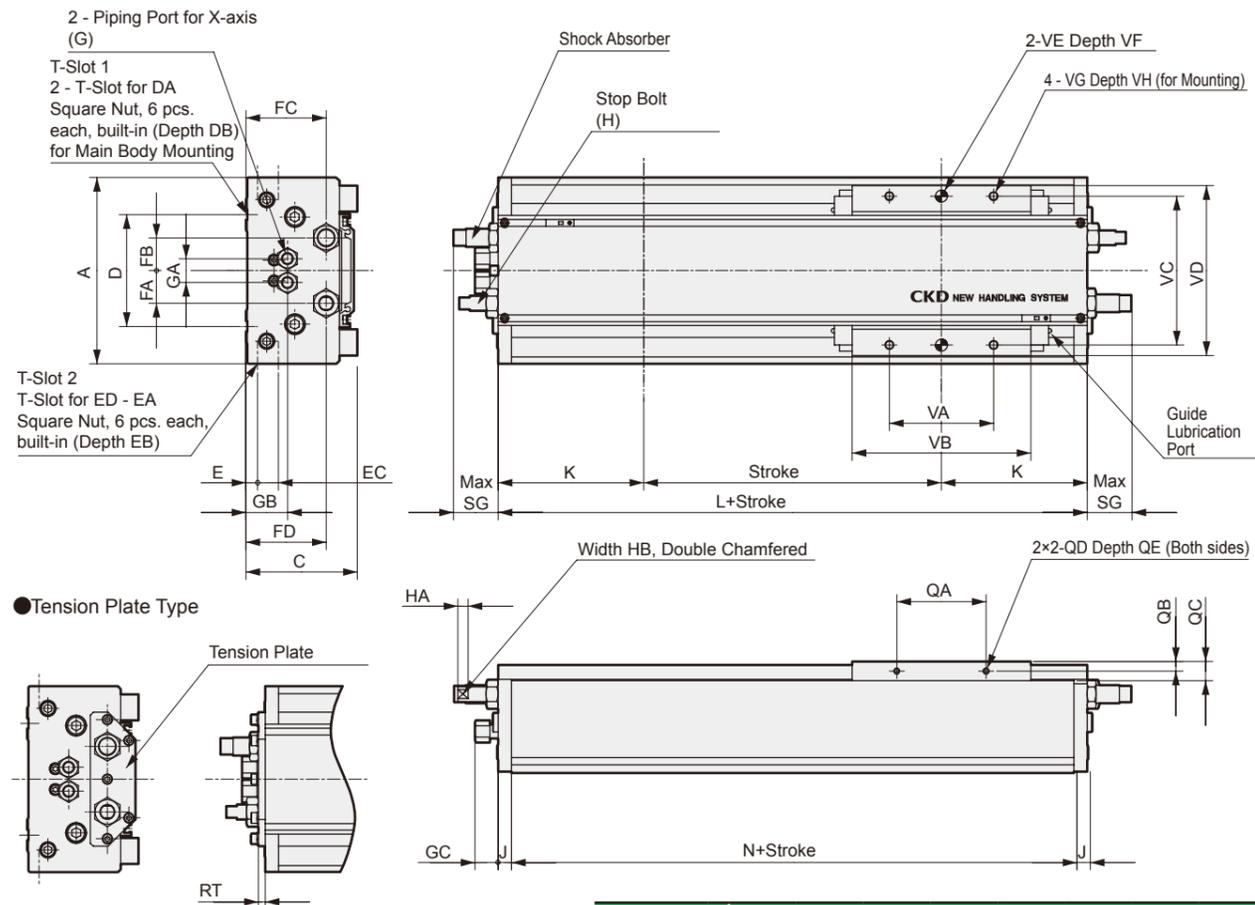
Cylinder Switch

Ending

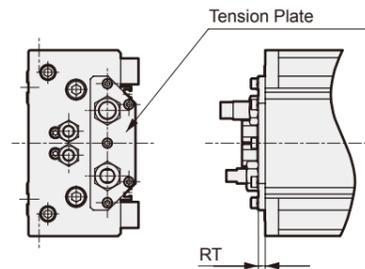
Ending

Dimensional Drawings

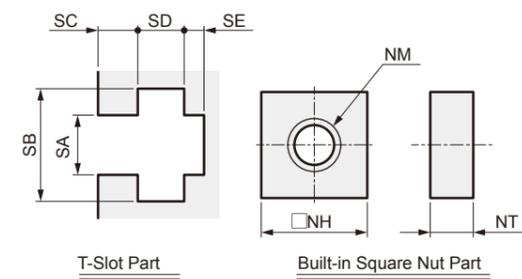
● Basic type



● Tension Plate Type



● T-Slot Part Detail Dimensions



Code	T-Slot 1							
Model No.	SA	SB	SC	SD	SE	NH	NM	NT
NSR-10	7	11	5	6	1	10	M6	5
NSR-15	7	11	5	6	1	10	M6	5
NSR-30	10.5	17.6	8	9	2	17	M10	8
NSR-50	12.5	19.6	9	10.4	1.6	19	M12	10

Code	T-Slot 2							
Model No.	SA	SB	SC	SD	SE	NH	NM	NT
NSR-10	5	8.5	4	4	1	8	M4	3.2
NSR-15	5	8.5	4	4	1	8	M4	3.2
NSR-30	5.5	9.5	4	4.5	2.5	9	M5	4
NSR-50	6.5	10.6	4.5	6	3	10	M6	5

Code	A	C	D	DA	DB	E	EA	EB	EC	ED	FA	FB	FC	FD	G	GA	GB	GC	H	HA	HB	J	K	L	N	QA	QB	QC	QD	QE	RT	SG	VA	VB
NSR-10	125	75	75	M6	11	8	M4	8	-	2	22	22	54	54	Rc1/8	16	28	16	M10×1.25	7	8	9	98	196	178	60	6.5	13	M4	10	4.5	30	70	120
NSR-15	125	75	75	M6	11	8	M4	8	-	2	22	22	54	54	Rc1/8	16	28	16	M10×1.25	7	8	9	98	196	178	60	6.5	13	M4	10	4.5	56	70	120
NSR-30	165	105	110	M10	18	11.5	M5	10.5	14	4	25	24	78	82	Rc1/4	27	37.5	8.5	M12×1.25	9	10	16	133	266	234	70	8	17	M5	12	4.5	66	110	150
NSR-50	200	120	130	M12	21	11.5	M6	13	16	4	30	30	88.5	88.5	Rc 1/2	35	46.5	5.5	M12×1.25	9	10	16	143	286	254	70	9.5	20	M6	14	4.5	101.5	135	177

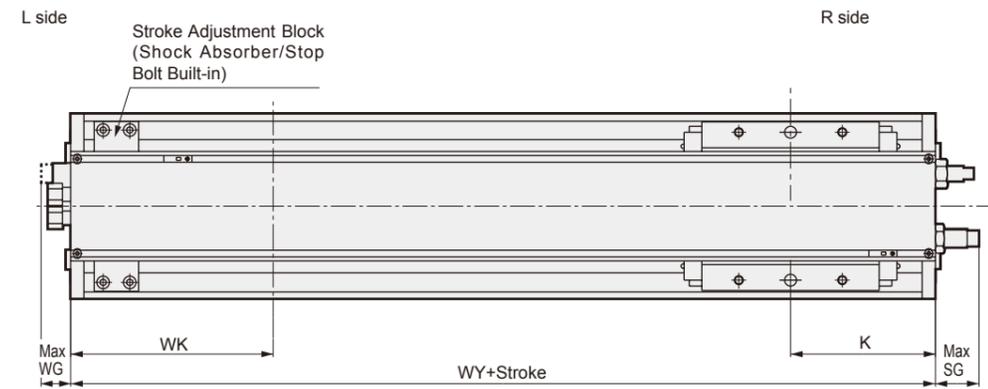
Code	VC	VD	VE	VF	VG	VH	WG	WK	WL	WY
NSR-10	100	114	ø8H7	12	M6	12	-	137	274	235
NSR-15	100	114	ø8H7	12	M6	12	20	137	274	235
NSR-30	130	154	ø10H7	15	M10	24	25	174	348	307
NSR-50	165	190	ø10H7	15	M12	25	48.5	196	392	339

Note: For outline dimension drawings with each switch, refer to P. 1107.

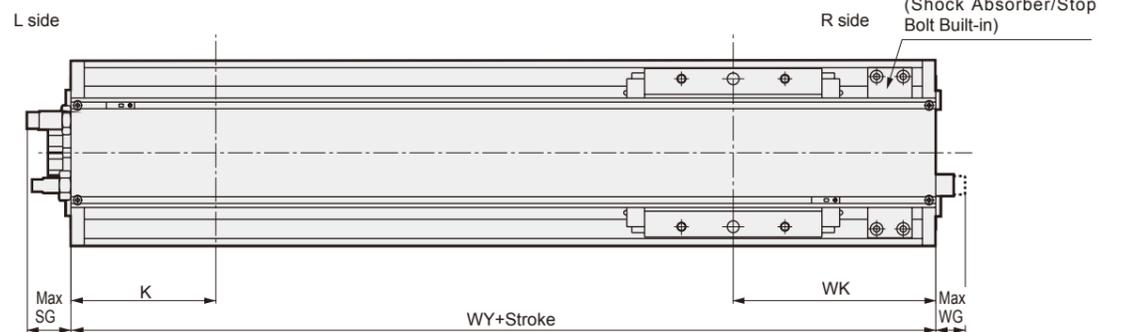
Dimensional Drawings

● Type with Stroke Adjustment Block

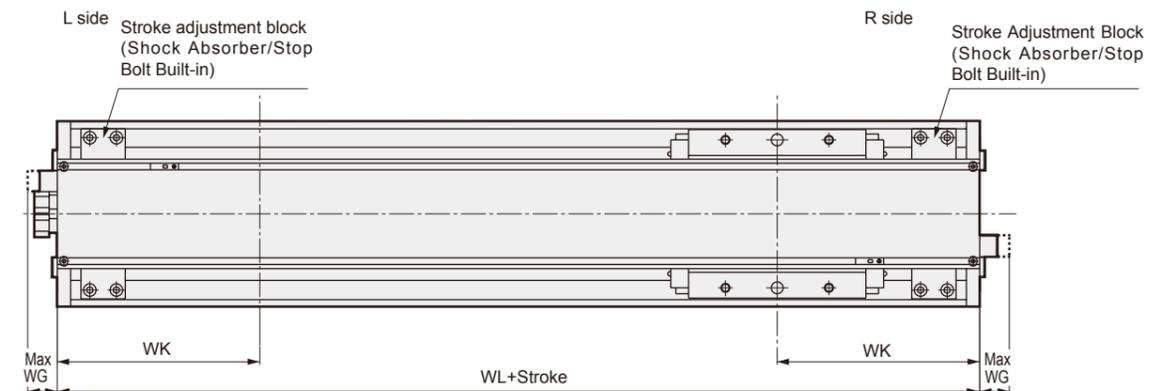
• L (Stroke Adjustment Block Left Side Mount Type)



• R (Stroke Adjustment Block Right Side Mount Type)



• D (Stroke Adjustment Block Both Sides Mount Type)



Cylinder Switch

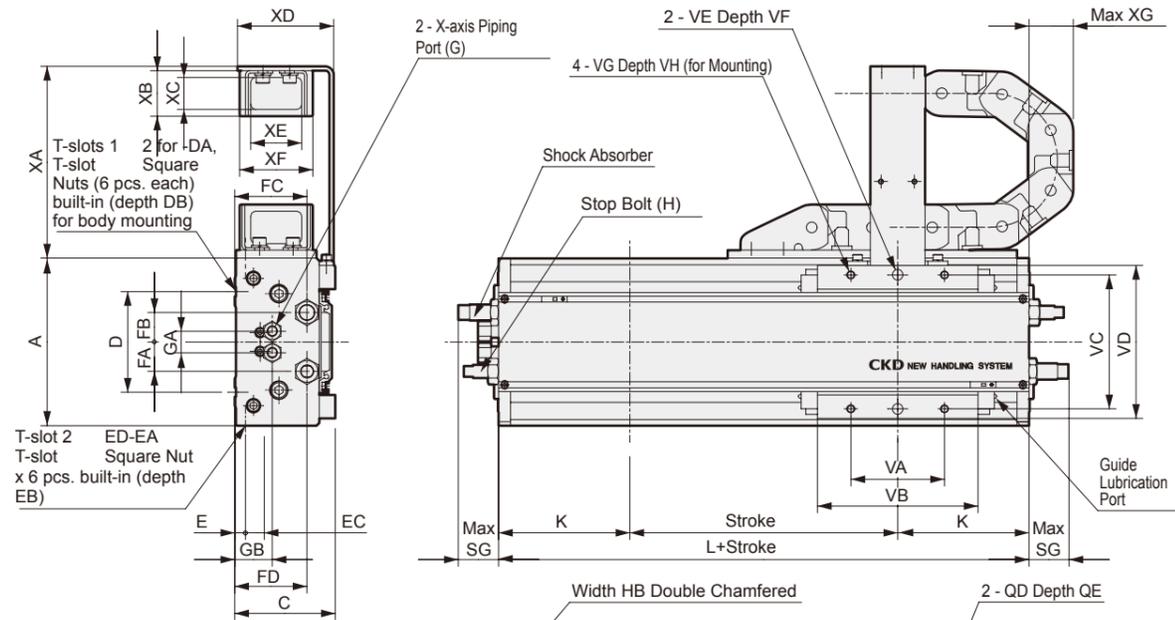
Ending

Cylinder Switch

Ending

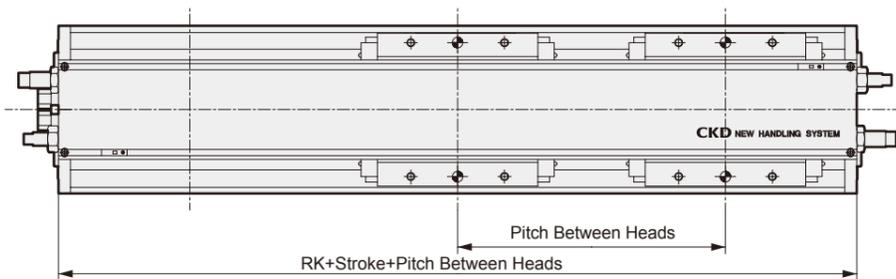
Dimensional Drawings

●Type with Cableveyor (Vertical Mount)

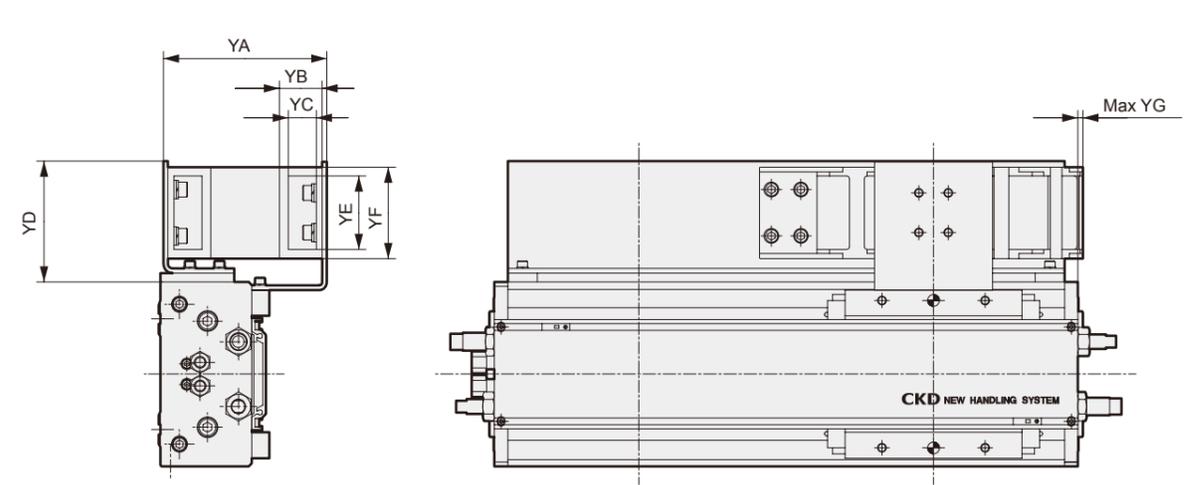


Note: For detailed dimensions of the T-slot part, refer to P. 1080.

●2-Head Type

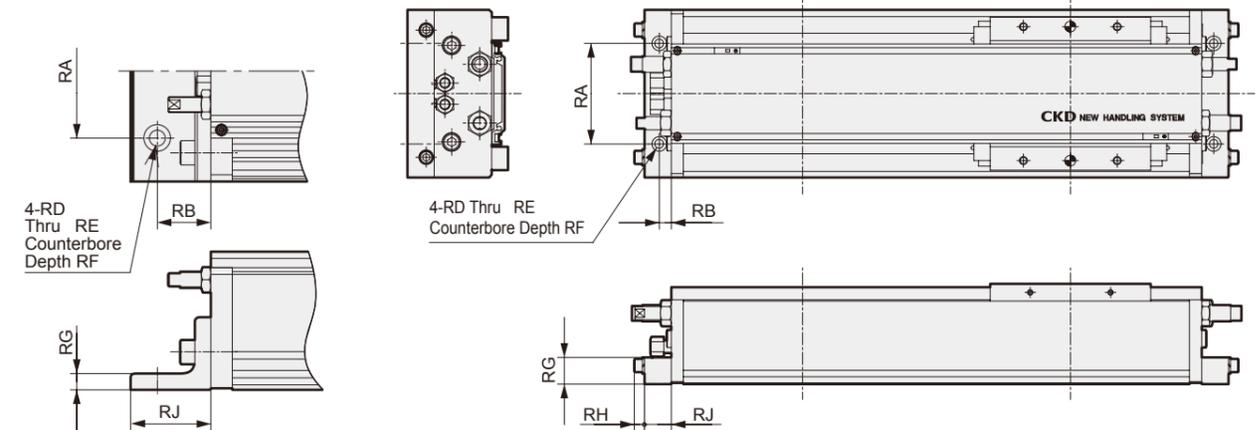


●Type with Cableveyor (Horizontal Mount)



●Type with LB Bracket

[NSR-30/50]

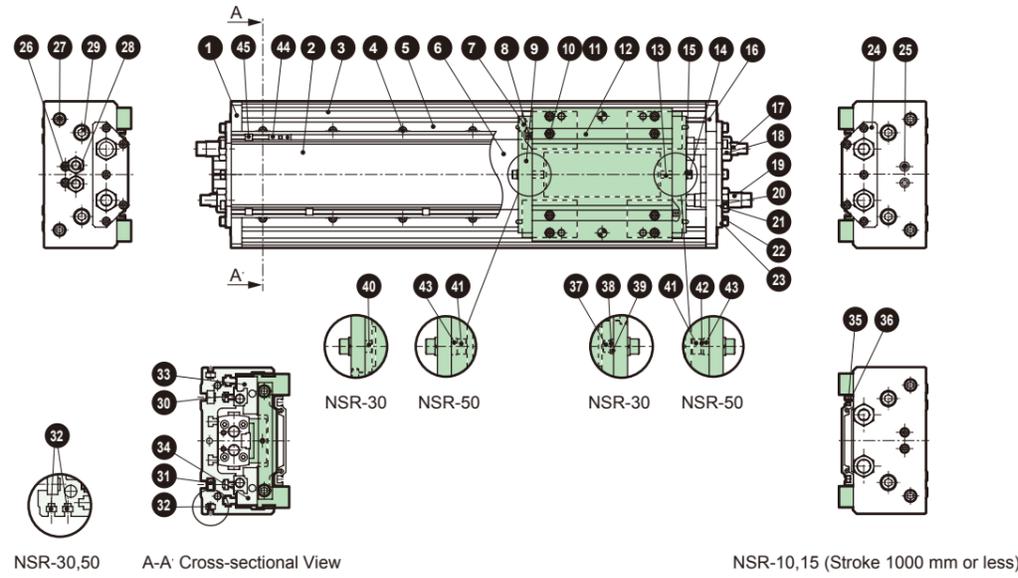


Code Model No.	A	C	D	DA	DB	E	EA	EB	EC	ED	FA	FB	FC	FD	G	GA	GB			GC	H	HA	HB	J	K	L	N	QA	QB	QC	QD	QE	RA	RB	RD	RE	RF
NSR-10	125	75	75	M6	11	8	M4	8	-	2	22	22	54	54	Rc1/8	16	28			16	M10×1.25	7	8	9	98	196	178	60	6.5	13	M4	10	75	9	ø7	ø12	6.5
NSR-15	125	75	75	M6	11	8	M4	8	-	2	22	22	54	54	Rc1/8	16	28			16	M10×1.25	7	8	9	98	196	178	60	6.5	13	M4	10	75	9	ø7	ø12	6.5
NSR-30	165	105	110	M10	18	11.5	M5	10.5	14	4	25	24	78	82	Rc1/4	27	37.5			8.5	M12×1.25	9	10	16	133	266	234	70	8	17	M5	12	100	40	ø12	ø20	1
NSR-50	200	120	130	M12	21	11.5	M6	13	16	4	30	30	88.5	88.5	Rc 1/2	35	46.5			5.5	M12×1.25	9	10	16	143	286	254	70	9.5	20	M6	14	100	40	ø14.5	ø26	1
Code Model No.	RG	RH	RJ	RK	SG	VA	VB	VC	VD	VE	VF	VG	VH	Cable Carrier	XA	XB	XC			XD	XE	XF	XG	Cable Carrier	YA	YB	YC	YD	YE	YF	YG						
NSR-10	20	7.5	20	196	30	70	120	100	114	ø8H7	12	M6	12	B	112.2	30	22			65	25	37	33	F	111	30	22	56	25	37	34						
														W	145.2	36	25			72.5	38	58	75	X	111	30	22	82	50	62	34						
NSR-15	20	7.5	20	196	56	70	120	100	114	ø8H7	12	M6	12	B	112.2	30	22			65	25	37	33	F	111	30	22	56	25	37	34						
														W	145.2	36	25			72.5	38	58	75	X	111	30	22	82	50	62	34						
NSR-30	12	-	60	266	66	110	150	130	154	ø10H7	15	M10	24	-	160.5	36	25			100.5	58	78	46	-	155	34	25	95	58	74	45						
NSR-50	15	-	60	286	101.5	135	177	165	190	ø10H7	15	M12	25	-	162.5	36	25			117.5	78	98	36	-	155	34	25	115	78	94	35						

Note: For outline dimension drawings with each switch, refer to P. 1107.

Internal Structure Diagram/Material

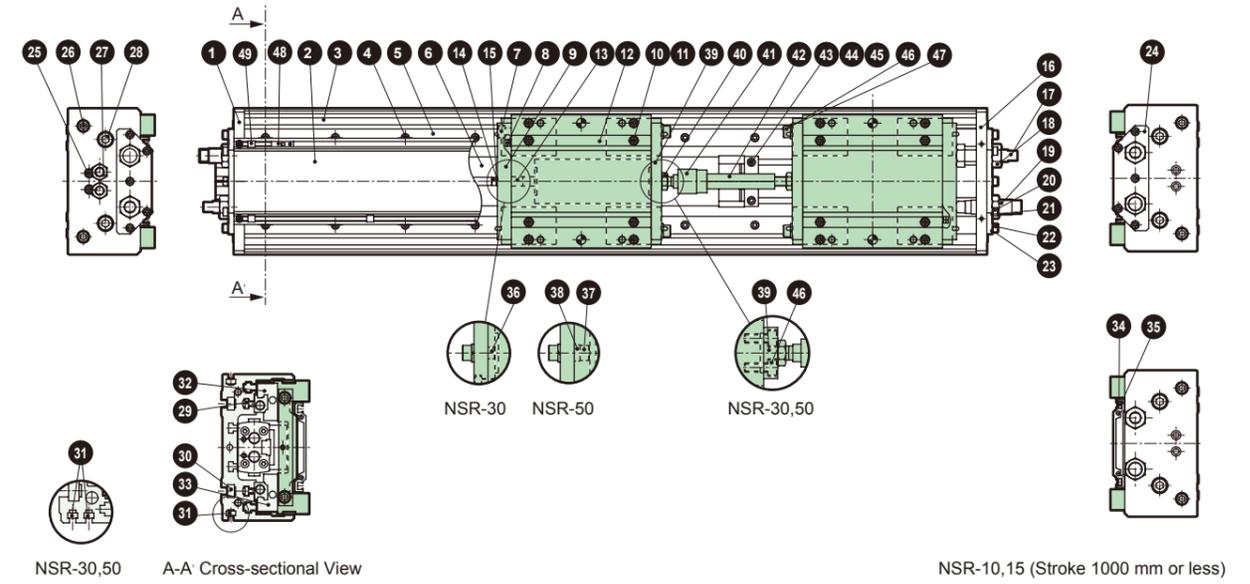
- X-axis Module
- 1 Head



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Side Plate (L)	Steel	Zinc Chromate	24	Tension Plate	Steel	Zinc Chromate
2	Cover	Aluminum Alloy	Alumite	25	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
3	Frame	Aluminum Alloy	Alumite	26	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
4	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	27	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
5	LM Rail			28	Hexagon Nut	Steel	Zinc Chromate
6	Super Rodless Cylinder		SRL (CKD)	29	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
7	Hexagon Socket Head Bolt (10, 15 kg)	Stainless Steel		30	Nut Rail	Steel	Zinc Chromate
	Hexagon Socket Head Bolt (30, 50 kg)	Steel	Black Oxide	31	Square Nut	Steel	Nickel Plating
8	Magnet			32	Square Nut	Steel	Nickel Plating
9	Side Bar	Stainless Steel		33	LM Block		
10	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	34	LM Block		
11	Spring washer	Steel	Black Oxide Finish (10, 15 kg only)	35	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
12	Slider	Aluminum Alloy	Alumite	36	Spring washer	Steel	Black Oxide
13	Spacer	Steel	Zinc Chromate	37	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
14	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	38	Spring washer	Steel	Black Oxide
15	Spring washer	Steel	Black Oxide	39	Plain Washer	Steel	Black Oxide
16	Side Plate (R)	Steel	Zinc Chromate	40	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
17	Stopper bolt	Steel	Black Oxide	41	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
18	Hexagon Nut	Steel	Zinc Chromate	42	Washer	Alloy Steel	
19	Shock Absorber		CKD	43	Washer/Spacer	Alloy Steel	
20	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	With Switch			
21	Spring washer	Steel	Black Oxide	44	Switch		
22	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	45	Sensor Wire Retainer	Polyacetal	
23	Spring washer	Steel	Black Oxide				

Internal Structure Diagram/Material

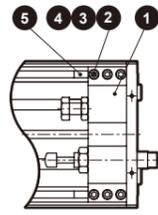
- X-axis Module
- 2 Heads



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Side Plate (L)	Steel	Zinc Chromate	26	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
2	Cover	Aluminum Alloy	Alumite	27	Hexagon Nut	Steel	Zinc Chromate
3	Frame	Aluminum Alloy	Alumite	28	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
4	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	29	Nut Rail	Steel	Zinc Chromate
5	LM Rail			30	Square Nut	Steel	Nickel Plating
6	Super Rodless Cylinder		SRL (CKD)	31	Square Nut	Steel	Nickel Plating
7	Hexagon Socket Head Bolt (10, 15 kg)	Stainless Steel		32	LM Block		
	Hexagon Socket Head Bolt (30, 50 kg)	Steel	Black Oxide	33	LM Block		
8	Magnet			34	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
9	Side Bar	Stainless Steel		35	Spring washer	Steel	Black Oxide
10	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	36	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
11	Spring washer	Steel	Black Oxide Finish (10, 15 kg only)	37	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
12	Slider	Aluminum Alloy	Alumite	38	Washer/Spacer	Alloy Steel	
13	Spacer	Steel	Zinc Chromate	39	Head Connection Plate	Steel	Zinc Chromate
14	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	40	Hexagon Nut	Steel	Zinc Chromate
15	Spring washer	Steel	Black Oxide	41	Free Joint		CKD
16	Side Plate (R)	Steel	Zinc Chromate	42	Head Connection Rod	Steel	Zinc Chromate
17	Stopper bolt	Steel	Black Oxide	43	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
18	Hexagon Nut	Steel	Zinc Chromate	44	Spring washer	Steel	Black Oxide
19	Shock Absorber		CKD	45	Plain Washer	Steel	Black Oxide
20	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	46	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
21	Spring washer	Steel	Black Oxide	47	Spring washer	Steel	Black Oxide
22	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	With Switch			
23	Spring washer	Steel	Black Oxide	48	Switch		
24	Tension Plate	Steel	Zinc Chromate	49	Sensor Wire Retainer	Polyacetal	
25	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide				

Internal structure diagram/materials (Option)

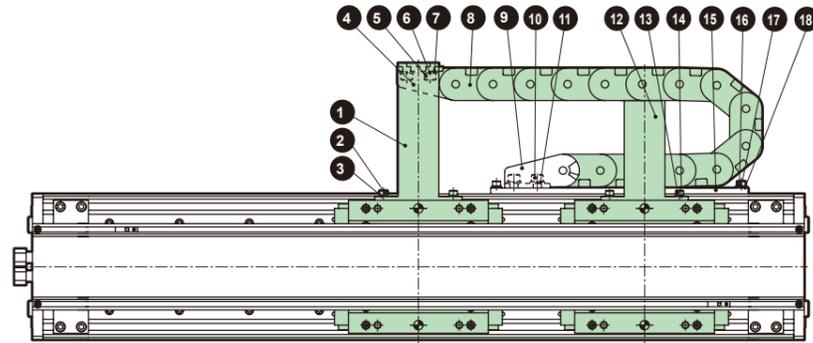
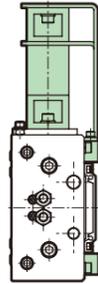
●Stroke Adjustment Block (L, R, D)



Part No.	Part Name	Material	Remarks
1	Stroke adjustment block	Steel	Zinc Chromate
2	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
3	Spring washer	Steel	Black Oxide Finish (30, 50 kg only)
4	Plain Washer	Steel	Black Oxide Finish (30, 50 kg only)
5	Nut Rail	Steel	Zinc Chromate

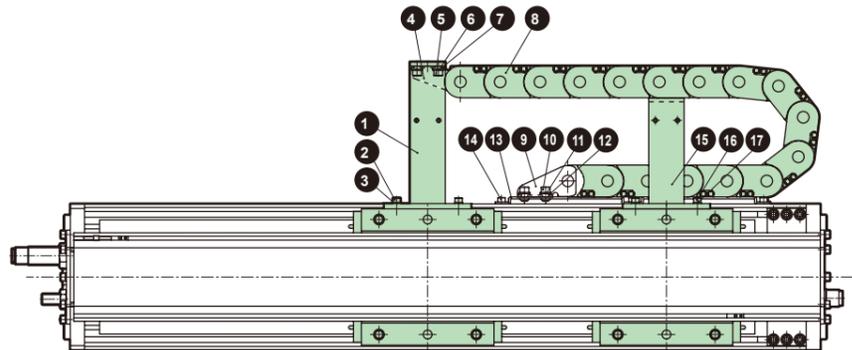
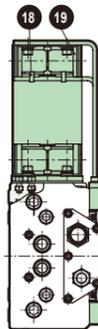
●Type with Cableveyor

• Vertical Mount B  
10 to 15 kg



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Cableveyor Holder	Steel	Zinc Chromate	10	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
2	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	11	Spring washer	Steel	Black Oxide
3	Spring washer	Steel	Black Oxide	12	Cableveyor Support	Steel	Zinc Chromate
4	Moving End Bracket	Resin		13	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
5	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	14	Spring washer	Steel	Black Oxide
6	Spring washer	Steel	Black Oxide	15	Cableveyor Mounting Plate	Aluminum Alloy	Alumite
7	Plain Washer	Steel	Black Oxide	16	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
8	Cableveyor Main Body	Resin		17	Spring washer	Steel	Black Oxide
9	Fixed End Bracket	Resin		18	Plain Washer	Steel	Black Oxide

30, 50 kg

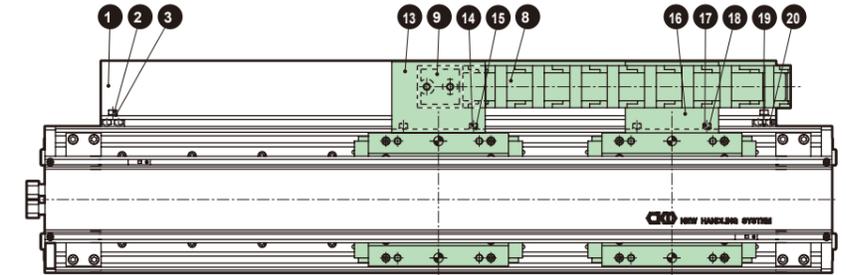
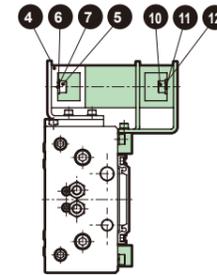


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Cableveyor Holder	Steel	Zinc Chromate	11	Spring washer	Steel	Black Oxide
2	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	12	Plain Washer	Steel	Black Oxide
3	Spring washer	Steel	Black Oxide	13	Cableveyor Mounting Plate	Steel	Zinc Chromate
4	Moving End Bracket	Steel	Zinc Chromate	14	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
5	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	15	Cableveyor Support	Steel	Zinc Chromate
6	Spring washer	Steel	Black Oxide	16	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
7	Plain Washer	Steel	Black Oxide	17	Spring washer	Steel	Black Oxide
8	Cableveyor Main Body	Resin		18	Cable Tie	Resin	
9	Fixed End Bracket	Steel	Zinc Chromate	19	Partition Plate	Resin	
10	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide				

Internal structure diagram/materials (Option)

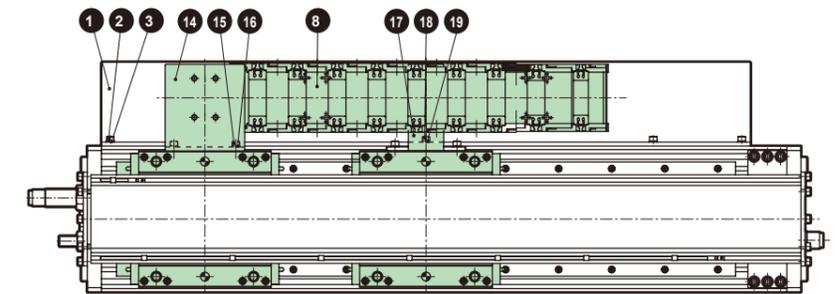
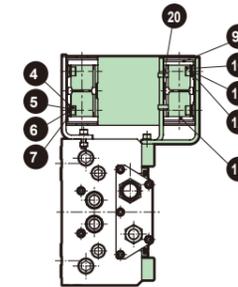
●Type with Cableveyor

• Horizontal Mount F  
10 to 15 kg



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Cableveyor Mounting Plate	Steel	Zinc Chromate	11	Spring washer	Steel	Black Oxide
2	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	12	Plain Washer	Steel	Black Oxide
3	Spring washer	Steel	Black Oxide	13	Cableveyor Holder	Steel	Zinc Chromate
4	Cableveyor Fixing Bracket	Resin		14	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
5	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	15	Spring washer	Steel	Black Oxide
6	Spring washer	Steel	Black Oxide	16	Cableveyor Support	Steel	Zinc Chromate
7	Plain Washer	Steel	Black Oxide	17	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
8	Cable Carrier	Resin		18	Spring washer	Steel	Black Oxide
9	Cableveyor Moving Bracket	Resin		19	Cableveyor Mount	Steel	Zinc Chromate
10	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	20	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide

30, 50 kg



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Cableveyor Mounting Plate	Steel	Zinc Chromate	11	Spring washer	Steel	Black Oxide
2	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	12	Plain Washer	Steel	Black Oxide
3	Spring washer	Steel	Black Oxide	13	Partition Plate	Resin	
4	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	14	Cableveyor Holder	Steel	Zinc Chromate
5	Spring washer	Steel	Black Oxide	15	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
6	Plain Washer	Steel	Black Oxide	16	Spring washer	Steel	Black Oxide
7	Fixed End Bracket	Steel	Zinc Chromate	17	Cableveyor Support	Steel	Zinc Chromate
8	Cableveyor Main Body	Resin		18	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
9	Moving End Bracket	Steel	Zinc Chromate	19	Spring washer	Steel	Black Oxide
10	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	20	Cable Tie	Resin	

Special

MVC

STK

MCP

GLC

BBS

NHS

HR

LN

Special

MVC

STK

MCP

GLC

BBS

NHS

HR

LN

Cylinder Switch

Ending

Cylinder Switch

Ending



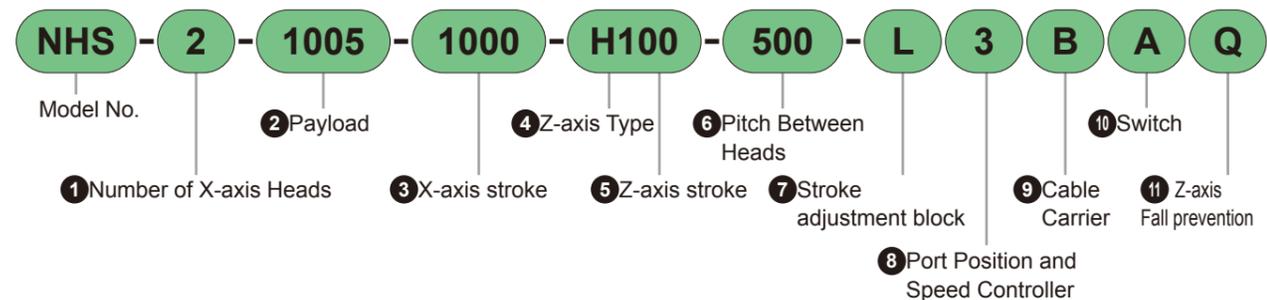
New Handling System Z-axis Module (HRL)

# NHS-H Series

● X-axis stroke 50 to 2000 mm Z-axis stroke: 50 to 600 mm  
Payload: 5, 7, 10, 12, 20, 33 kg



## Model No. Notation



### 1 Number of X-axis Heads

Code	Content
1	1 pc.
2	2 pcs.

### 2 Payload (kg)

Code	Content	
	X-axis	Z-axis
1005	10	5
1007		7
1505		5
1507	15	7
1510		10
1512		12
3010	30	10
3012		12
3020		20
5010	50	10
5012		12
5020		20
5033		33

### 3 X-axis stroke (1 mm pitch)

Code	Content
50 to 2000	50 to 2000

\*1: For X-axis stroke 1001 mm or more, the front cover becomes tension type.

\*2: When the number of heads is 2, select so that the sum of pitch between heads and X-axis stroke is 2000 mm or less.

### 4 Z-axis Type

Code	Content
H	HRL-05
	HRL-10
	HRL-15
	HRL-15H
	HRL-25
	HRL-50

### 5 Z-axis Stroke (1 mm Pitch)

Code	Z-axis stroke	Content	
50	50		Standard Body
75	75		
100	100		
125	125		
150	150		
200	200		
250	250		
300	300		
301 to 600	301 to 600	Long body	

### 6 Pitch between heads (1 mm pitch)

Payload (kg)	Code
10	200 to 999
15	
30	260 to 999
50	310 to 999

\*1: Selectable only when the number of heads is 2.

\*2: Select so that the sum of pitch between heads and X-axis stroke is 2000 mm or less.

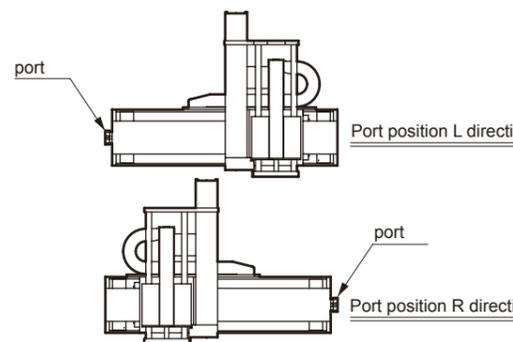
### 7 Stroke adjustment block

Code	Content
Blank	None
L	Left side
R	Right side
D	Both Sides

### 8 Port Position and Speed Controller

Code	Content
Blank	X-axis Port Position L
2	X-axis Port Position R
3	X-axis Port Position L, with XZ-axis Speed Controller
4	X-axis Port Position R, with XZ-axis Speed Controller

\*1: If port position R is selected, mounting direction of the cableveyor is reversed. (Outlet is port side)



### 9 Cable Carrier

Code	Content
Blank	None
B	X-axis Vertical Mount
T	X-axis Vertical Mount, Z-axis Mount
W	X-axis vertical mounting (10, 15 kg)
Y	X-axis vertical mounting, Z-axis mounting (10, 15 kg)

Note: For details on the X/Z-axis cableveyor, refer to P. 1091.

### 10 Switch

Code	Content
Blank	2-wire Solid State Switch X-axis: T2H3, Z-axis: T2H3
A	3-wire Solid State Switch X-axis: T3H3, Z-axis: T3H3

1: Two switches are mounted on each of the X-axis and Z-axis.

2: Refer to the table below for details.

Switches are pre-assembled on the product before shipment.

Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire
		AC	DC	AC	DC	
1-Color	2-wire	—	10 to 30	—	5 to 20	*1 T2H3
	3-wire (NPN)	—	30 or less	—	100 or less	T3H3

\*1: The maximum load current value above, 20 mA, is at 25°C. If the switch operating Ambient Temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

Special

Special

MVC

MVC

STK

STK

MCP

MCP

GLC

GLC

BBS

BBS

NHS

NHS

HR

HR

LN

LN

Cylinder Switch

Cylinder Switch

Ending

Ending

Specifications

Combination Model No.	NHS-□-10□□□	NHS-□-15□□	NHS-□-30□□	NHS-□-50□□
Item	NSR-10	NSR-15	NSR-30	NSR-50
Bore Size mm	ø20		ø32	ø40
Slider speed mm/s	100 to 1000			
Shock Absorber	NCK-00-1.2-C	NCK-00-2.6-C	FCK-M-3-C	FCK-M-5-C
Stroke mm	50 to 2000 (1 mm pitch)			
Max Stroke (mm)	2,000			
Allowable moment *2 N·m	M1=36.4, M2=30.6, M3=34.2		M1, M3=85.9 M2=82.9	M1, M3=156.2 M2=150.7
Slider inclination	±0.1° or less			
Piping connection port size	Rc1/8		Rc1/4	Rc1/2
Position detection sensor	T-type solid state switch lead wire 3 m			
Max horizontal payload kg	10	15	30	50
Speed controller (Option)	SC3W-6-6		SC3W-8-8	SC3W-15-10
Repeat stopping accuracy mm	±0.02			
Weight *1 kg	(st×0.0109)+5.5	(st×0.0109)+5.6	(st×0.0176)+10.7	(st×0.0311)+17.9

\*1: st represents stroke.  
 \*2: M1 represents bending moment, M2 represents lateral bending moment, and M3 represents torsional moment. For details, please refer to P. 1112.

Z-axis Combination Specifications

Combination Model No.	NHS-□-1005	NHS-□-1007	NHS-□-1510	NHS-□-1512	NHS-□-3020	NHS-□-5033
	NHS-□-1505	NHS-□-1507	NHS-□-3010	NHS-□-3012	NHS-□-5010	NHS-□-5012
Z-axis Model No.	HRL-1□-05	HRL-1□-10	HRL-1□-15	HRL-1□-15H	HRL-1□-25	HRL-1□-50
Bore Size mm	ø20	ø25	ø32	ø32	ø40	ø50
Speed mm/s	50 to 300					
Shock Absorber *1	NCK-00-0.7		NCK-00-1.2		NCK-00-12	
Stroke mm	50 to 300 (Standard Body) 301 to 600 (Long Body)					
Allowable Moment N·m	Refer to Technical Data (P. 1112, 1113)					
Piping connection port size	Rc1/8				Rc1/4	
Position detection sensor	T-type solid state switch lead wire 3 m					
Max payload *2 kg	5	7	10	12	20	33
Stroke adjustment amount mm	0 to -10 (Lowering End Side)					
Speed controller (Option)	SC3W-6-6		SC3W-6-8		SC3W-8-8	
Operating Fluid	Clean compressed air					
Operating Pressure MPa	0.3 to 0.7					
Guaranteed Proof Pressure MPa	1.05					
Ambient Temperature °C	5 to 60					
Lubrication	See P. 1114, regarding lubrication					
Repeat stopping accuracy mm	±0.1					
Product weight (standard body) kg	2+(0.003×st)	2.1+(0.0037×st)	2.8+(0.0051×st)	2.9+(0.0069×st)	10.8+(0.0081×st)	11.9+(0.0122×st)
Product weight (long body) kg	2.3+(0.003×st)	2.4+(0.0037×st)	3.1+(0.0051×st)	3.2+(0.0069×st)	12.5+(0.0081×st)	13.6+(0.0122×st)
Movable part weight (standard body)kg	0.9+(0.0025×st)	0.9+(0.0027×st)	1.3+(0.0041×st)	1.6+(0.0059×st)	4.1+(0.0066×st)	5.2+(0.0102×st)
Movable part weight (long body) kg	1.0+(0.0025×st)	1.0+(0.0027×st)	1.5+(0.0041×st)	1.8+(0.0059×st)	4.4+(0.0066×st)	5.7+(0.0102×st)

\*1: Use at 74% or less of the allowable value of the shock absorber at the operating speed and air pressure.  
 \*2: Payload varies depending on air pressure, speed, absorbed energy, load center of gravity, number of X-axis heads, and Z-axis stroke.  
 \*3: st represents stroke.

X-axis Stroke Adjustment Part Specifications

Item	Blank	R	L	D
Adjustable stroke right mm	-15 to 0	Full stroke	-15 to 0	Full stroke
Adjustable stroke left mm	-15 to 0	-15 to 0	Full stroke	Full stroke

Z-axis Shock Absorber Specifications

Item	HRL-1□-05,10	HRL-1□-15,15H	HRL-1□-25,50
Shock Absorber	NCK-00-0.7	NCK-00-1.2	NCK-00-12
Max absorbing capacity J	7	12	120
Absorbing stroke mm	8	10	25
Max colliding speed mm/s	1500	2,000	3,000
Max operating frequency cycle/Min	30	30	12

Note: Use at 74% or less of the allowable value of the shock absorber at the speed and air pressure used.

Attachment Weight

X-axis Model No.	For NSR-10	For NSR-15	For NSR-30	For NSR-50
Attachment weight kg	0.4	0.4	1	1.4

X-axis Shock Absorber Specifications

Item	NCK-00-1.2-C	NCK-00-2.6-C	FCK-M-3-C	FCK-M-5-C
Max absorbing capacity J	12	26	30	50
Absorbing stroke mm	10	15	16	25
Max colliding speed mm/s	2,000			
Max operating frequency cycle/Min	30	25	20	12

Cable bear specifications

Item	Cable bear model no.	Inner diameter dimension (mm)	Loading capacity (kg/m)
For Z-axis	For HRL-05, 10, 15, 15H	TKP18H14-30W40R28TC	14×40 MAX 1.0
	For HRL-25, 50	TKP35H22-30W50R37	19×50 MAX 1.6
For X-axis	For NHS-10, 15-B, T	TKP35H22-30W25R37	19×24 MAX 1.6
	For NHS-10, 15-W, Y	TKP45H25-30W38R50	25×38 MAX 3.0
	For NHS-30-B, T	TKP45H25-30W58R50	25×58 MAX 3.0
	For NHS-50-B, T	TKP45H25-30W78R50	25×78 MAX 3.0

Stroke Adjustment Block Added Weight List

Model No.	Added weight (kg)
NSR-1-10-R	0.685 kg
NSR-1-10-L	0.685 kg
NSR-1-10-D	1.370 kg
NSR-1-15-R	0.810 kg
NSR-1-15-L	0.810 kg
NSR-1-15-D	1.620 kg
NSR-1-30-R	1.140 kg
NSR-1-30-L	1.140 kg
NSR-1-30-D	2.280 kg
NSR-1-50-R	1.750 kg
NSR-1-50-L	1.750 kg
NSR-1-50-D	3.499 kg

Cable Bear Added Weight List

Model No.	Added weight (kg)
NHS-1-10,15□□-B	(X Stroke ÷ 2×0.0011)+0.482
NHS-1-10,15□□-W	(X Stroke ÷ 2×0.0018)+0.55
NHS-1-10,15□□-T	(X stroke/2×0.0011)+(Z stroke×0.0006)+0.682
NHS-1-10,15□□-Y	(X stroke/2×0.0018)+(Z stroke×0.0006)+0.75
NHS-1-30□□-B	(X Stroke ÷ 2×0.0028)+1.148
NHS-1-30□□-T	(X stroke/2×0.0028)+(Z stroke×0.0006)+1.348
NHS-1-50□□-B	(X Stroke ÷ 2×0.0034)+1.234
NHS-1-50□□-T	(X stroke/2×0.0034)+(Z stroke×0.0006)+1.434

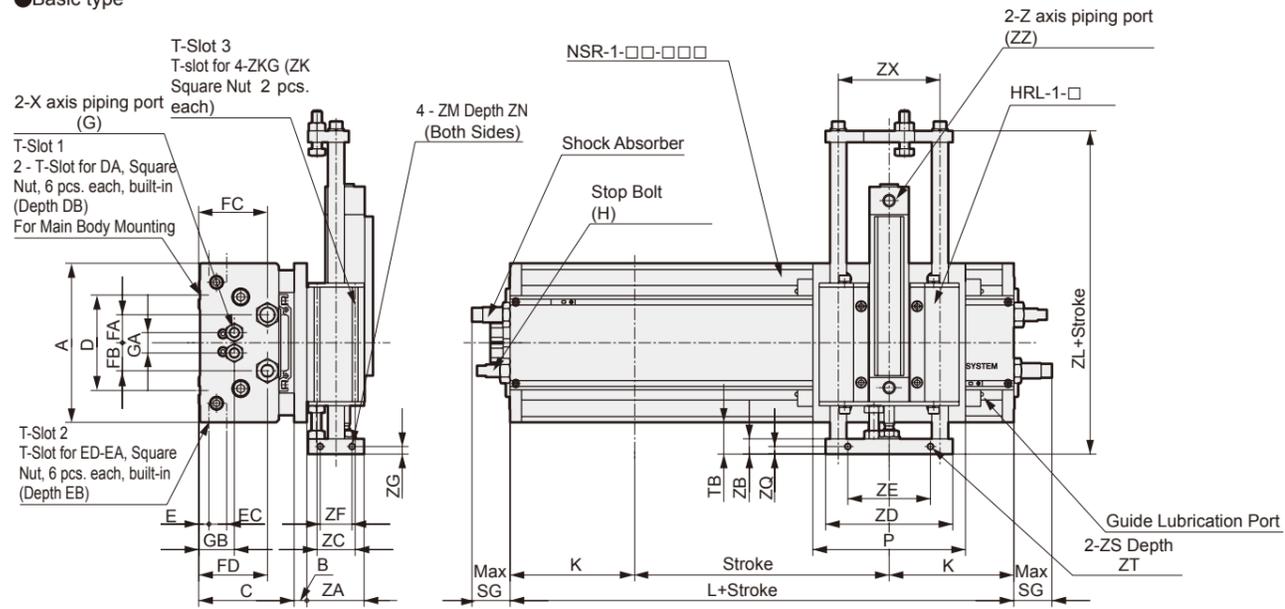
2-Head Specification

Item	NHS-2-10	NHS-2-15	NHS-2-30	NHS-2-50
Max Horizontal Conveying Weight kg/1 Head	5	7.5	15	25
Stroke mm	50 to 1000			
Max Stroke mm	1800		1731	1690
Pitch between heads mm	200 to 999		269 to 999 (*1)	310 to 999
Max pitch between heads mm	999			
Product additional weight kg	(Pitch Between Heads×0.0109)+1.7		(Pitch Between Heads×0.0176)+2.79	(Pitch Between Heads×0.0311)+4.66

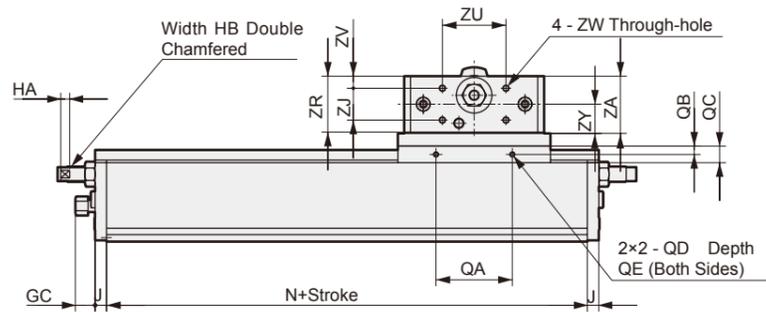
\*1: For NHS-H type with NHS-2-30 combination, please note that the pitch between heads is different from the X-axis single unit.

Dimensional Drawings

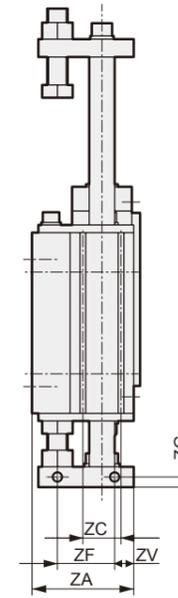
● Basic type



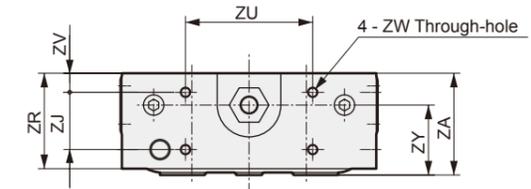
Note: For detailed dimensions of T-Slot 1 and 2 parts, refer to P. 1080. For detailed dimensions of the T-slot 3 part, refer to P. 1124 to 1127.



● For HRL-1-25 or more



When HRL-1-25 or larger



Note: When installing X-axis options, refer to P. 1080 to 1083 NSR Outline Dimension Drawings for external dimensions (stroke adjustment block, with cableveyor, etc.).

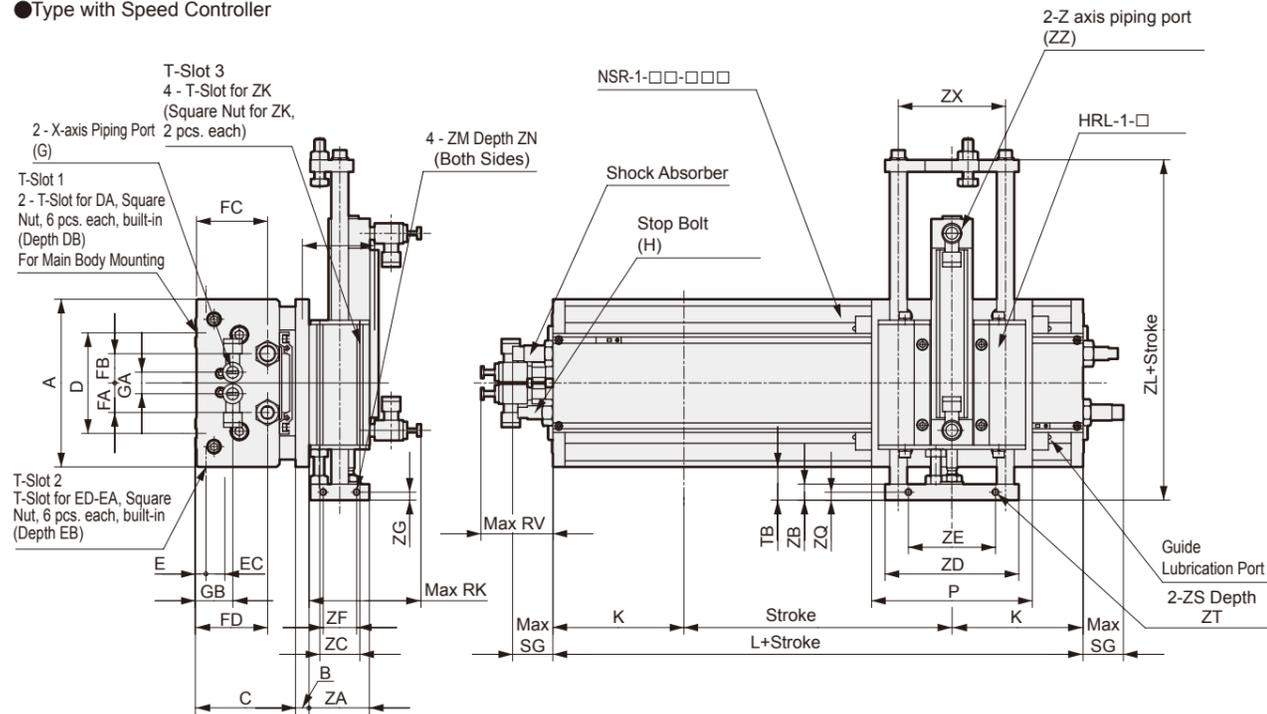
Code	A	B	C	D	DA	DB	E	EA	EB	EC	ED	FA	FB	FC	FD	G	GA	GB	GC	H	HA	HB	J	K	L	N	P	QA	QB	QC	QD	QE	SG
NHS-□-10□□-H	125	10	75	75	M6	11	8	M4	8	-	2	22	22	54	54	Rc1/8	16	28	16	M10×1.25	7	8	9	98	196	178	120	60	6.5	13	M4	10	30
NHS-□-15□□-H	125	10	75	75	M6	11	8	M4	8	-	2	22	22	54	54	Rc1/8	16	28	16	M10×1.25	7	8	9	98	196	178	120	60	6.5	13	M4	10	56
NHS-□-30□□-H	165	15	105	110	M10	18	11.5	M5	10.5	14	4	25	24	78	82	Rc1/4	27	37.5	8.5	M12×1.25	9	10	16	133	266	234	150	70	8	17	M5	12	66
NHS-□-50□□-H	200	15	120	130	M12	21	11.5	M6	13	16	4	30	30	88.5	88.5	Rc 1/2	35	46.5	5.5	M12×1.25	9	10	16	143	286	254	177	70	9.5	20	M6	14	101.5

Code	TB		ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZJ	ZK	ZL		ZM	ZN	ZQ	ZR	ZS	ZT	ZU	ZV	ZW	ZX	ZY	ZZ
Model No.	Standard Body	Long body										Standard Body	Long body												
HRL-1-05	25	47.5	45	12	30	100	65	25	6	25	M4	154	199	M5	10	6	44	M5	10	50	9.5	M5	80	23	Rc1/8
HRL-1-10	25	47.5	45	12	30	100	65	25	6	25	M4	154	199	M5	10	6	44	M5	10	50	9.5	M5	80	23	Rc1/8
HRL-1-15	25	52.5	45	12	30	120	75	25	6	25	M4	154	209	M5	10	6	44	M5	10	60	9.5	M5	94	23	Rc1/8
HRL-1-15H	25	52.5	45	12	30	120	75	25	6	25	M4	154	209	M5	10	6	44	M5	10	60	9.5	M5	94	23	Rc1/8
HRL-1-25	45	74	80	16	30	200	-	45	8	45	M4	252	310	M8	10	-	75	-	-	100	15	M8	150	55	Rc1/8
HRL-1-50	25	54	80	19	30	200	-	45	9.5	45	M4	255	313	M8	10	-	75	-	-	100	15	M8	150	55	Rc1/4

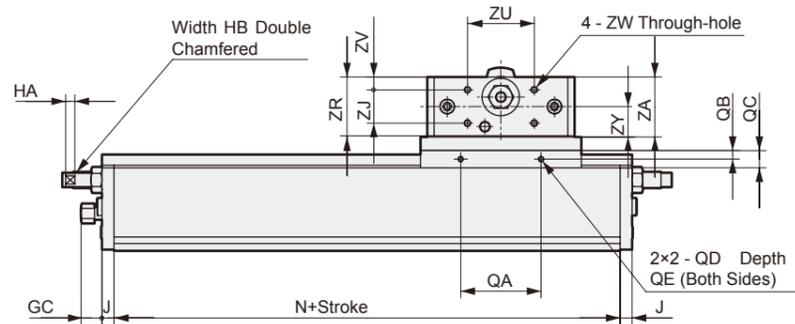
Note: For outline dimension drawings with each switch, refer to P. 1107.

Dimensional Drawings

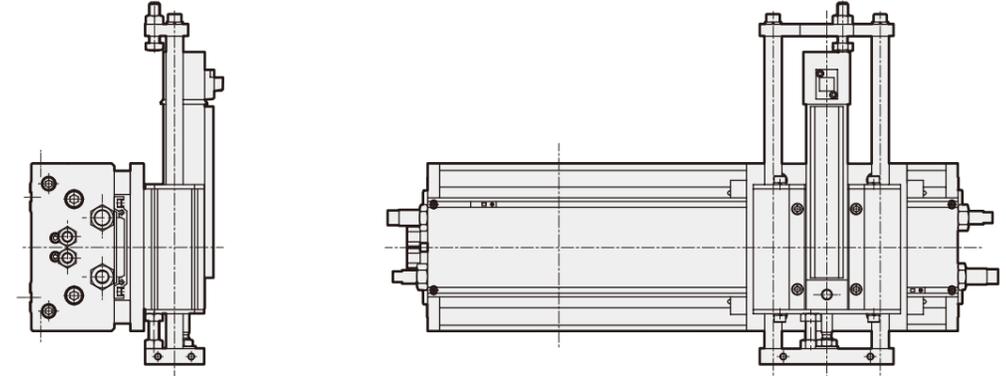
●Type with Speed Controller



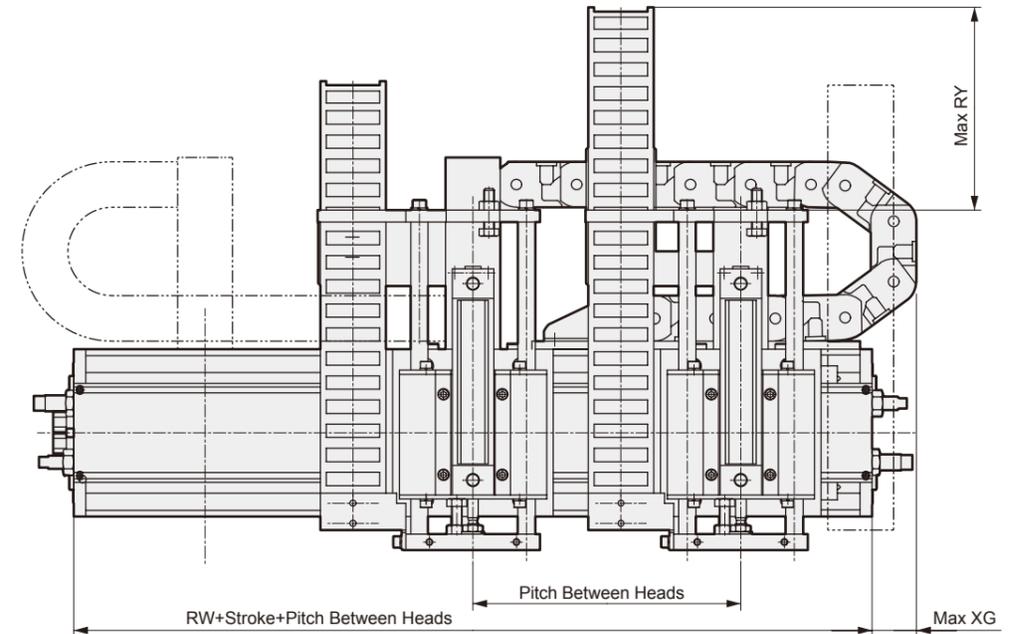
Note: For detailed dimensions of T-Slot 1 and 2 parts, refer to P. 1080. For detailed dimensions of the T-slot 3 part, refer to P. 1124 to 1127.



●Type with Z-axis Fall Prevention



●2-Head Type



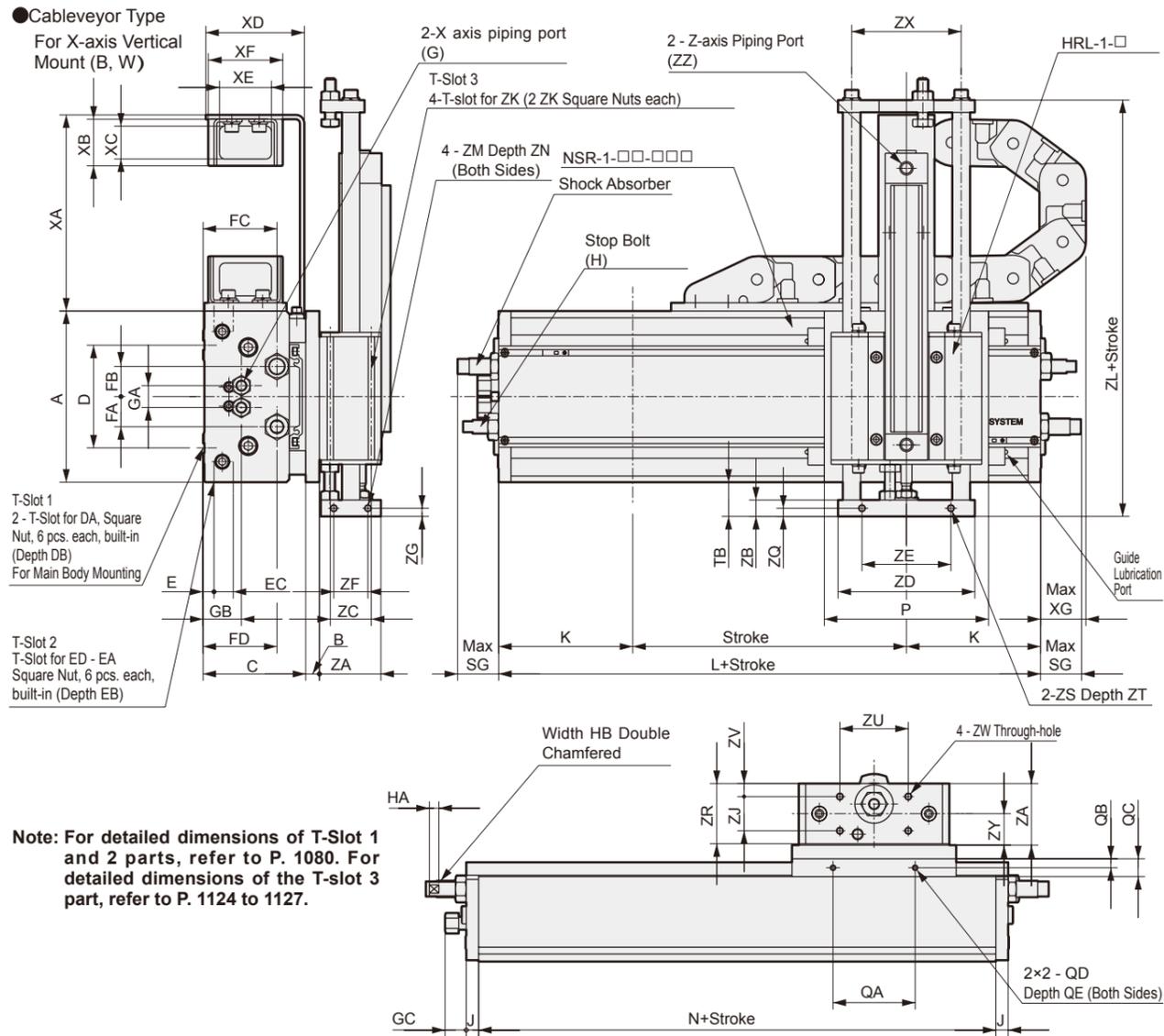
Note: When installing X-axis options, refer to P. 1080 to 1083 NSR Outline Dimension Drawings for external dimensions (stroke adjustment block, with cableveyor, etc.).

Code	A	B	C	D	DA	DB	E	EA	EB	EC	ED	FA	FB	FC	FD	G	GA	GB			GC	H	HA	HB	J	K	L	N	P	QA	QB	QC	QD	QE	RV	RW	SG	XG	
Model No.																				B.T		W.Y																	
NHS-□-10□□-H	125	10	75	75	M6	11	8	M4	8	-	2	22	22	54	54	Rc1/8	16	28			16	M10×1.25	7	8	9	98	196	178	120	60	6.5	13	M4	10	54.2	196	30	33	75
NHS-□-15□□-H	125	10	75	75	M6	11	8	M4	8	-	2	22	22	54	54	Rc1/8	16	28			16	M10×1.25	7	8	9	98	196	178	120	60	6.5	13	M4	10	54.2	196	56	33	75
NHS-□-30□□-H	165	15	105	110	M10	18	11.5	M5	10.5	14	4	25	24	78	82	Rc1/4	27	37.5			8.5	M12×1.25	9	10	16	133	266	234	150	70	8	17	M5	12	53.2	266	66	46	-
NHS-□-50□□-H	200	15	120	130	M12	21	11.5	M6	13	16	4	30	30	88.5	88.5	Rc 1/2	35	46.5			5.5	M12×1.25	9	10	16	143	286	254	177	70	9.5	20	M6	14	65.2	286	101.5	36	-

Code	RK	RY	TB		ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZJ	ZK	ZL		ZM	ZN	ZQ	ZR		ZS	ZT	ZU	ZV	ZW	ZX	ZY	ZZ
Model No.			Standard Body	Long body																								
HRL-1-05	79.7	215	25	47.5	45	12	30	100	65	25	6	25	M4	154	199	M5	10	6	44		M5	10	50	9.5	M5	80	23	Rc1/8
HRL-1-10	82.2	215	25	47.5	45	12	30	100	65	25	6	25	M4	154	199	M5	10	6	44		M5	10	50	9.5	M5	80	23	Rc1/8
HRL-1-15	85.7	215	25	52.5	45	12	30	120	75	25	6	25	M4	154	209	M5	10	6	44		M5	10	60	9.5	M5	94	23	Rc1/8
HRL-1-15H	85.7	215	25	52.5	45	12	30	120	75	25	6	25	M4	154	209	M5	10	6	44		M5	10	60	9.5	M5	94	23	Rc1/8
HRL-1-25	115.2	335	45	74	80	16	30	200	-	45	8	45	M4	252	310	M8	10	-	75		-	-	100	15	M8	150	55	Rc1/8
HRL-1-50	126.2	335	25	54	80	19	30	200	-	45	9.5	45	M4	255	313	M8	10	-	75		-	-	100	15	M8	150	55	Rc1/4

Note: For outline dimension drawings with each switch, refer to P. 1107.

Dimensional Drawings



Code	A	B	C	D	DA	DB	E	EA	EB	EC	ED	FA	FB	FC	FD	G
NHS-1-10□□-H	125	10	75	75	M6	11	8	M4	8	-	2	22	22	54	54	Rc1/8
NHS-1-15□□-H	125	10	75	75	M6	11	8	M4	8	-	2	22	22	54	54	Rc1/8
NHS-1-30□□-H	165	15	105	110	M10	18	11.5	M5	10.5	14	4	25	24	78	82	Rc1/4
NHS-1-50□□-H	200	15	120	130	M12	21	11.5	M6	13	16	4	30	30	88.5	88.5	Rc 1/2

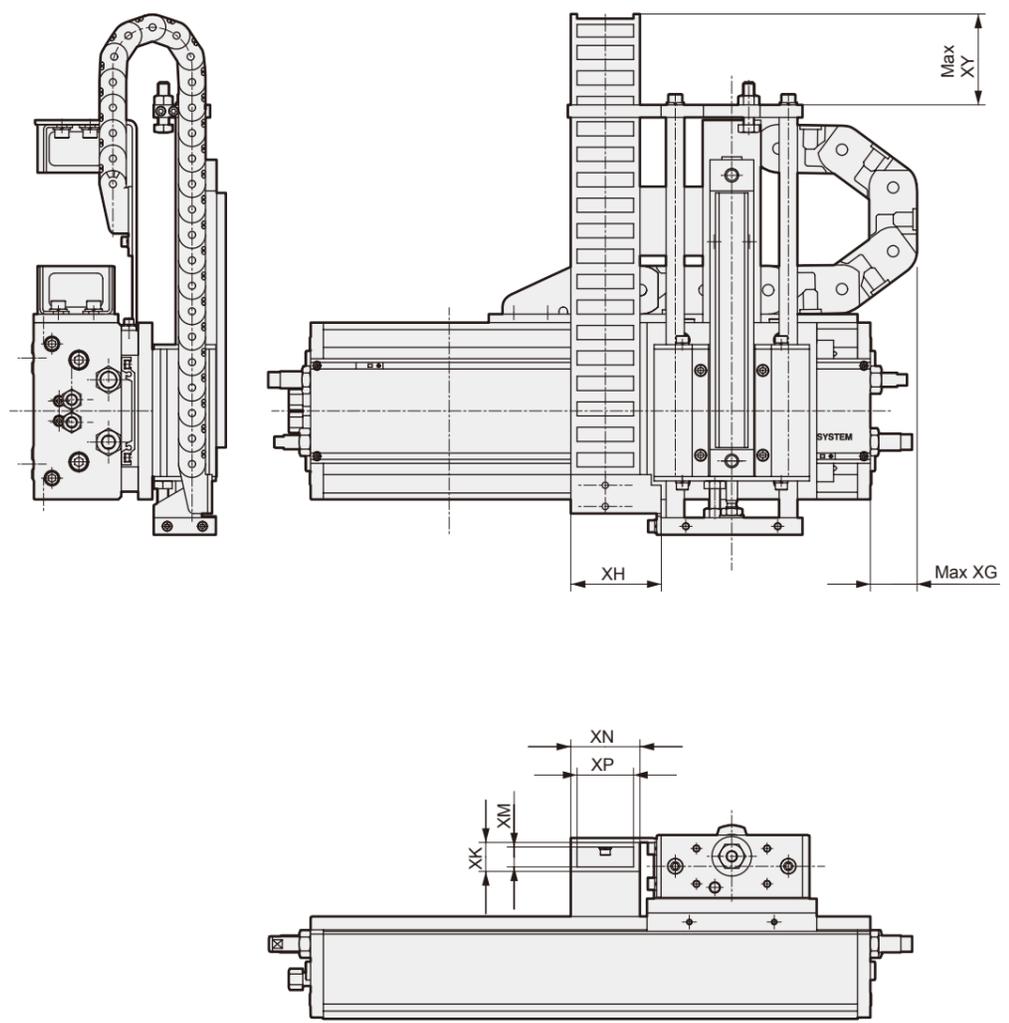
  

Code	GA	GB	GC	H	HA	HB	J	K	L	N	P	QA	QB	QC	QD	QE	SG
NHS-1-10□□-H	16	28	16	M10×1.25	7	8	9	98	196	178	120	60	6.5	13	M4	10	30
NHS-1-15□□-H	16	28	16	M10×1.25	7	8	9	98	196	178	120	60	6.5	13	M4	10	56
NHS-1-30□□-H	27	37.5	8.5	M12×1.25	9	10	16	133	266	234	150	70	8	17	M5	12	66
NHS-1-50□□-H	35	46.5	5.5	M12×1.25	9	10	16	143	286	254	177	70	9.5	20	M6	14	101.5

Note: For outline dimension drawings with each switch, refer to P. 1107.

Code	Cable Carrier	XA	XB	XC	XD	XE	XF	XG
NHS-1-10□□-H	B	112.2	30	22	65	25	37	33
NHS-1-15□□-H	W	145.2	36	25	72	38	58	75
NHS-1-30□□-H	B, W	160.5	36	25	100.5	58	78	46
NHS-1-50□□-H	B, W	162.5	36	25	117.5	78	98	36

●Cableveyor Type  
For X-axis Vertical Mount/2-axis Mount (T, Y)



Note: When installing X-axis options, refer to P. 1080 to 1083 NSR Outline Dimension Drawings for external dimensions (stroke adjustment block, with cableveyor, etc.).

Code	TB		XH	XK	XM	XN	XP	XY	ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZJ	ZK
HRL-1-05	Standard Body	Long body	64	19	14	49	40	150	45	12	30	100	65	25	6	25	M4
HRL-1-10	Standard Body	Long body	64	19	14	49	40	150	45	12	30	100	65	25	6	25	M4
HRL-1-15	Standard Body	Long body	64	19	14	49	40	150	45	12	30	120	75	25	6	25	M4
HRL-1-15H	Standard Body	Long body	64	19	14	49	40	150	45	12	30	120	75	25	6	25	M4
HRL-1-25	Standard Body	Long body	75	30	22	62	50	300	80	16	30	200	-	45	8	45	M4
HRL-1-50	Standard Body	Long body	75	30	22	62	50	300	80	19	30	200	-	45	9.5	45	M4

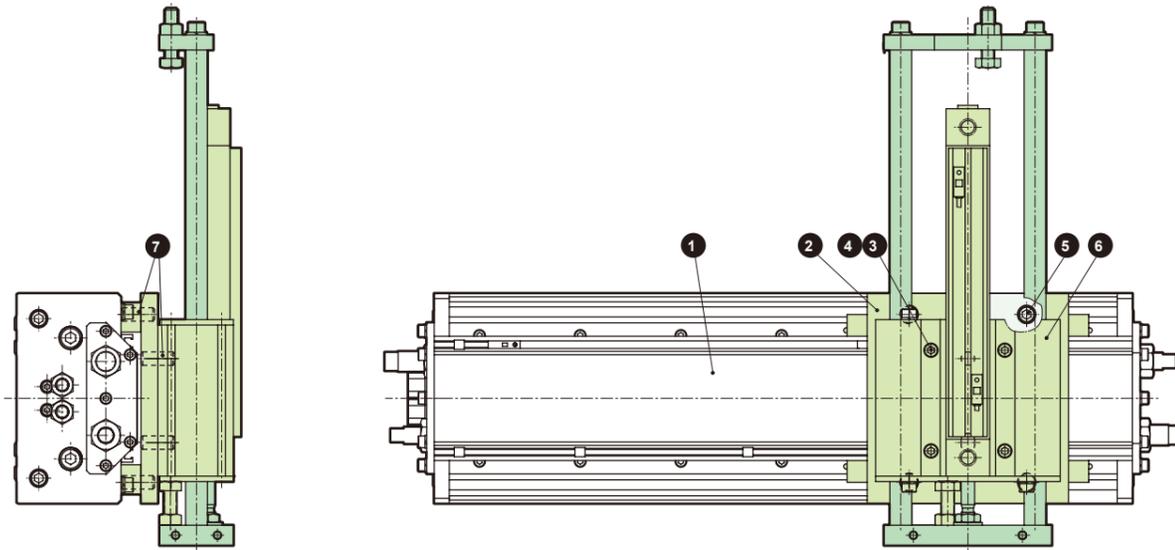
Code	ZL		ZM	ZN	ZR	ZS	ZT	ZU	ZV	ZW	ZX	ZY	ZZ
HRL-1-05	Standard Body	Long body	M5	10	44	M5	10	50	9.5	M5	80	23	Rc1/8
HRL-1-10	Standard Body	Long body	M5	10	44	M5	10	50	9.5	M5	80	23	Rc1/8
HRL-1-15	Standard Body	Long body	M5	10	44	M5	10	60	9.5	M5	94	23	Rc1/8
HRL-1-15H	Standard Body	Long body	M5	10	44	M5	10	60	9.5	M5	94	23	Rc1/8
HRL-1-25	Standard Body	Long body	M8	10	75	-	-	100	15	M8	150	55	Rc1/8
HRL-1-50	Standard Body	Long body	M8	10	75	-	-	100	15	M8	150	55	Rc1/4

Note: For outline dimension drawings with each switch, refer to P. 1107.

## Internal Structure Diagram/Material

●Z-axis Module HRL

MEMO



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	New Handling System X-axis Module		NSR (CKD)	4	Spring washer	Steel	Black Oxide
2	Z-axis Bracket	Aluminum Alloy	Alumite	5	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
3	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	6	Hybrid Robot		HRL (CKD)
				7	Parallel Pin with Female Thread	Alloy Steel	

Special

MVC

STK

MCP

GLC

BBS

NHS

HR

LN

Cylinder Switch

Ending

Special

MVC

STK

MCP

GLC

BBS

NHS

HR

LN

Cylinder Switch

Ending



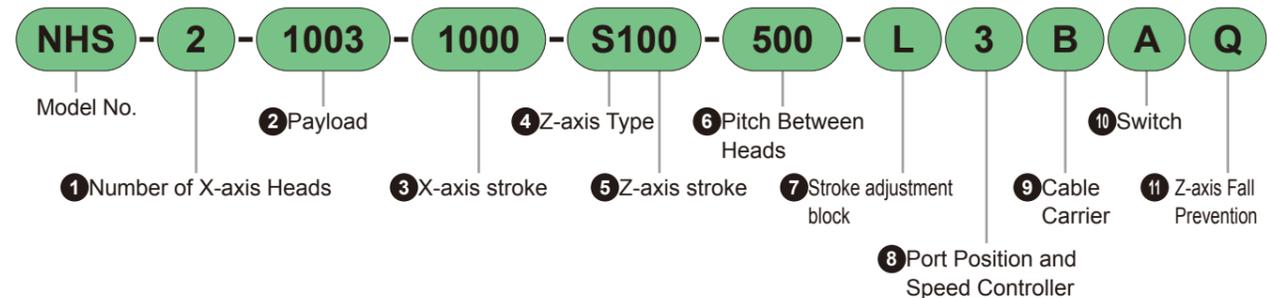
New Handling System Z-axis Module (STL-B)

# NHS-S Series

● X-axis stroke 50 to 2000 mm Z-axis stroke: 50 to 200 mm  
Payload: 3, 7, 12, 33 kg



## Model No. Notation



### 1 Number of X-axis Heads

Code	Content
1	1 pc.
2	2 pcs.

### 2 Payload (kg)

Code	Content	
	X-axis	Z-axis
1003	10	3
1503	15	3
1507	15	7
1512	15	12
3007	30	7
3012	30	12
5007	50	7
5012	50	12
5033	50	33

### 3 X-axis stroke (1 mm pitch)

Code	Content
50 to 2000	50 to 2000

\*1: For X-axis stroke 1001 mm or more, the front cover becomes tension type.  
\*2: When the number of heads is 2, select so that the sum of pitch between heads and X-axis stroke is 2000 mm or less.

### 4 Z-axis Type

Code	Content
S	STL-BP-16
	STL-BP-25
	STL-BP-32
	STL-BP-50

### 5 Z-axis Stroke (mm)

Code	Z-axis stroke
50	50
75	75
100	100
125	125
150	150
175	175
200	200

### 6 Pitch between heads (1 mm pitch)

Code	Payload (kg)			
	10	15	30	50
200	200	200	260	310
to	to	to	to	to
999	999	999	999	999

\*1: Can be selected only for 2-head type.  
\*2: Select so that the sum of pitch between heads and X-axis stroke is 2000 mm or less.

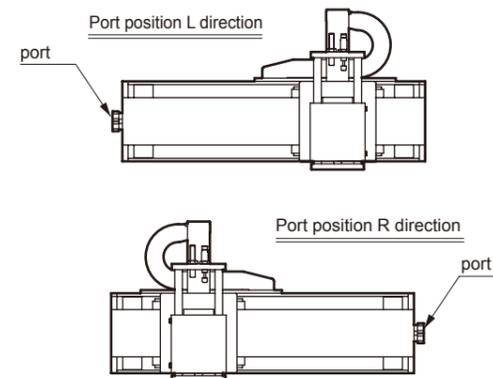
### 7 Stroke adjustment block

Code	Content
Blank	None
L	Left side
R	Right side
D	Both Sides

### 8 Port Position and Speed Controller

Code	Content
Blank	X-axis Port Position L
2	X-axis Port Position R
3	X-axis Port Position L, with XZ-axis Speed Controller
4	X-axis Port Position R, with XZ-axis Speed Controller

\*1: If port position R is selected, mounting direction of the cableveyor is reversed. (Outlet is port side)



### 9 Cable Carrier

Code	Content
Blank	None
B	X-axis Vertical Mount
W	X-axis Vertical Mount

Note: For details on the cableveyor, refer to P. 1103.

### 10 Switch

Code	Content
Blank	2-wire Solid State Switch X-axis: T2H3, Z-axis: T2H3
A	3-wire Solid State Switch X-axis: T3H3, Z-axis: T3H3

\*1: Two switches are mounted on each of the X-axis and Z-axis.  
\*2: Refer to the table below for details.

Switches are pre-assembled on the product before shipment.

Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire
		AC	DC	AC	DC	
1-Color	2-wire	—	10 to 30	—	5 to 20 *1	T2H3
	3-wire (NPN)	—	30 or less	—	100 or less	T3H3

\*1: The maximum load current value above, 20 mA, is at 25°C. If the switch operating Ambient Temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

### 11 Z-axis Fall Prevention

Code	Content
Blank	None
Q	Yes

\*1: Cannot be selected when Z-axis type is STL-BP-16.

Special

Special

MVC

MVC

STK

STK

MCP

MCP

GLC

GLC

BBS

BBS

NHS

NHS

HR

HR

LN

LN

Cylinder Switch

Cylinder Switch

Ending

Ending

X-axis Specifications

Combination Model No.	NHS-□-10□□	NHS-□-15□□	NHS-□-30□□	NHS-□-50□□
Item	NSR-10	NSR-15	NSR-30	NSR-50
Bore Size mm	ø20			
Slider speed mm/s	100 to 1000			
Shock Absorber	NCK-00-1.2-C	NCK-00-2.6-C	FCK-M-3-C	FCK-M-5-C
Stroke mm	50 to 2000 (1 mm pitch)			
Max Stroke mm	2,000			
Allowable moment *2 N·m	M1=36.4, M2=30.6, M3=34.2		M1, M3=85.9 M2=82.9	M1, M3=156.2 M2=150.7
Slider Inclination	±0.1° or less			
Piping connection port size	Rc1/8		Rc1/4	Rc1/2
Position detection sensor	T-type solid state switch lead wire 3 m			
Max horizontal payload kg	10	15	30	50
Speed controller (Option)	SC3W-6-6		SC3W-8-8	SC3W-15-10
Repeat stopping accuracy mm	±0.02			
Weight *1 kg	(st×0.0109)+5.5	(st×0.0109)+5.6	(st×0.00176)+10.7	(st×0.00311)+17.9

\*1: st represents stroke.

\*2: M1 represents bending moment, M2 represents lateral bending moment, and M3 represents torsional moment. For details, please refer to P. 1112.

Z-axis Combination Specifications

Combination Model No.	NHS-□-1003	NHS-□-1503	NHS-□-1507	NHS-□-1512	NHS-□-3007	NHS-□-3012	NHS-□-5007	NHS-□-5012	NHS-□-5033
	Z-axis Model No.	STL-B-16	STL-B-25	STL-B-32	STL-B-50				
Bore Size mm	ø16								
Speed mm/s	50 to 300								
Cushion	Lowering End Side Shock Absorber, Ascending End Side Rubber Cushion								
Stroke mm	50, 75, 100, 125, 150, 175, 200								
Allowable Moment N·m	Refer to Technical Data (P. 1112, 1113)								
Piping connection port size	M5			Rc1/8		Rc1/4			
Position detection sensor	T-type solid state switch lead wire 3 m								
Max payload *2 kg	3	7	12	33					
Stroke adjustment amount mm	0 to -25 (Lowering End Side)								
Speed controller (Option)	SC3W-M5-6			SC3W-6-6		SC3W-8-8			
Operating Fluid	Clean compressed air								
Operating Pressure MPa	0.3 to 0.7								
Guaranteed Proof Pressure MPa	1.05								
Ambient Temperature °C	5 to 60								
Lubrication	See P. 1114, regarding lubrication								
Repeat stopping accuracy mm	±0.5								
Product weight *2 kg	st×0.015+0.53	st×0.0229+1.16	st×0.0335+2.5	st×0.062+4.46					

\*1: Payload varies depending on air pressure, speed, absorbed energy, load center of gravity, number of X-axis heads, and Z-axis stroke.

\*2: st represents stroke.

X-axis Stroke Adjustment Part Specifications

Item	Blank	R	L	D
Adjustable stroke right mm	0 to -15	Full stroke	0 to -15	Full stroke
Adjustable stroke left mm	0 to -15	0 to -15	Full stroke	Full stroke

Z-axis Shock Absorber Specifications

Item	STL-B-16	STL-B-25	STL-B-32	STL-B-50
Shock Absorber	NCK-00-0.3	NCK-00-0.7	NCK-00-1.2	NCK-00-2.6
Max absorbing capacity J	3	7	12	50
Absorbing stroke mm	7	8	10	15
Max colliding speed mm/s	1500	1500	2,000	2,000
Max operating frequency cycle/Min	35	30	30	25

X-axis Shock Absorber Specifications

Item	NCK-00-1.2-C	NCK-00-2.6-C	FCK-M-3-C	FCK-M-5-C
Max absorbing capacity J	12	26	30	26
Absorbing stroke mm	10	15	16	25
Max colliding speed mm/s	2,000			
Max operating frequency cycle/Min	30	25	20	12

Attachment Weight

Item	For NSR-10	For NSR-15	For NSR-30	For NSR-50
Attachment weight kg	0.5	0.5	1	1.4

Cable bear specifications

Item	Cable bear model no.	Inner diameter dimension (mm)	Loading capacity (kg/m)
For NHS-10, 15-B	TKP35H22-30W25R37	22×25	MAX 1.6
For NHS-10, 15-W	TKP45H25-30W38R50	25×38	MAX 3.0
For NHS-30-B	TKP45H25-30W58R50	25×58	MAX 3.0
For NHS-50-B	TKP45H25-30W78R50	25×78	MAX 3.0

Stroke Adjustment Block Added Weight List

Model No.	Added weight (kg)
NSR-1-10-R	0.685 kg
NSR-1-10-L	0.685 kg
NSR-1-10-D	1.370 kg
NSR-1-15-R	0.810 kg
NSR-1-15-L	0.810 kg
NSR-1-15-D	1.620 kg
NSR-1-30-R	1.140 kg
NSR-1-30-L	1.140 kg
NSR-1-30-D	2.280 kg
NSR-1-50-R	1.750 kg
NSR-1-50-L	1.750 kg
NSR-1-50-D	3.499 kg

Cable Bear Added Weight List

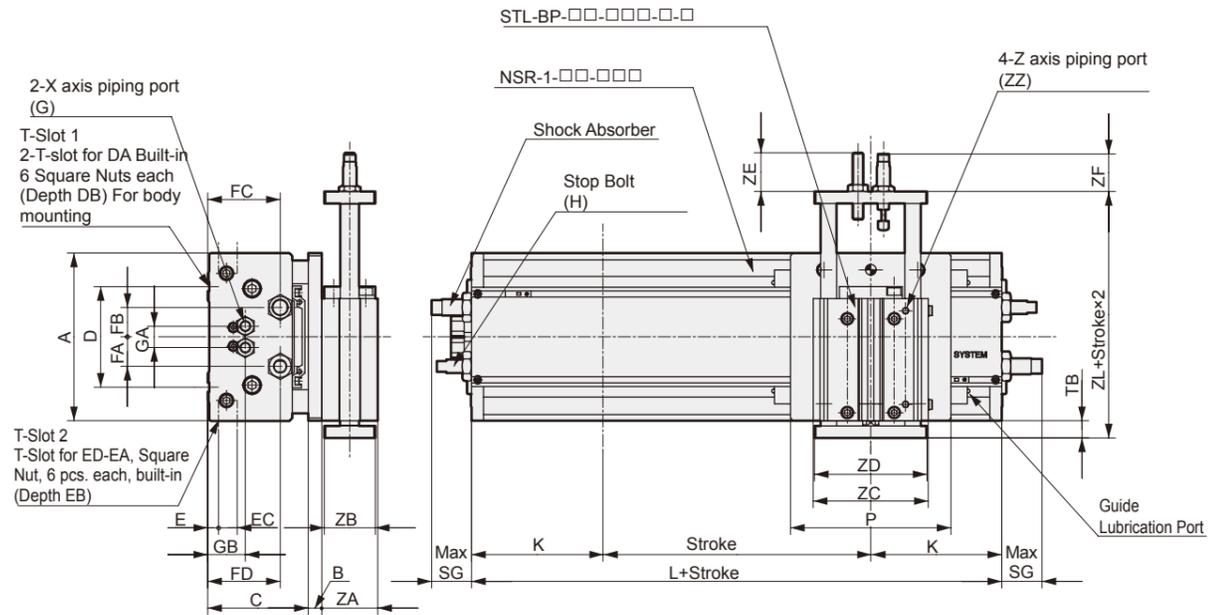
Model No.	Added weight (kg)
NHS-1-10,15□□-B	(X Stroke + 2×0.0011)+0.482
NHS-1-10,15□□-W	(X Stroke + 2×0.0018)+0.55
NHS-1-30□□-B	(X Stroke + 2×0.0028)+1.148
NHS-1-50□□-B	(X Stroke + 2×0.0034)+1.234

2-Head Specification

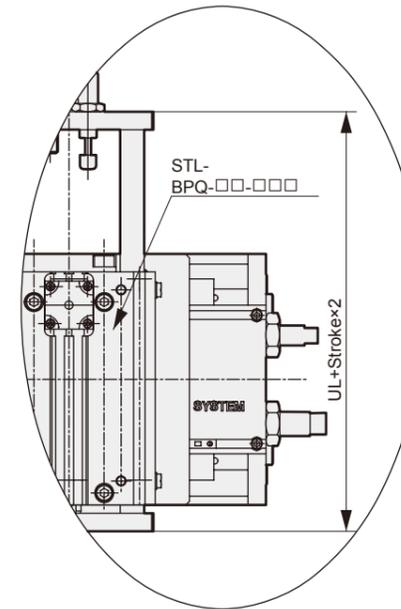
Item	NHS-2-10	NHS-2-15	NHS-2-30	NHS-2-50
Max Horizontal Conveying Weight kg/1 Head	5	7.5	15	25
Stroke mm	50 to 1000			
Maximum Stroke mm	1800		1740	1690
Pitch between heads mm	200 to 999		260 to 999	310 to 999
Max Pitch Between Heads mm	999			
Product Additional Mass kg	(Pitch Between Heads×0.0109)+1.7		(Pitch Between Heads×0.0176)+2.79	(Pitch Between Heads×0.0311)+4.66

Dimensional Drawings

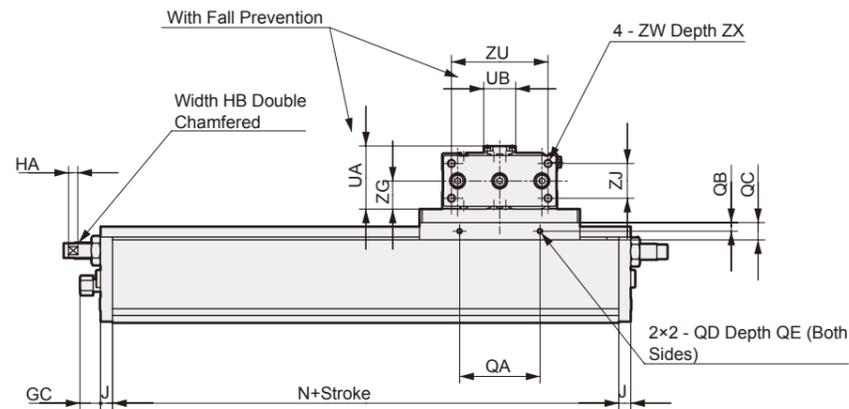
● Basic type



● Type with Fall Prevention



Note: For detailed dimensions of the T-slot part, refer to P. 1080.



Note: When installing X-axis options, refer to P. 1080 to 1083 NSR Outline Dimension Drawings for external dimensions (stroke adjustment block, with cableveyor, etc.).

Code	A	B	C	D	DA	DB	E	EA	EB	EC	ED	FA	FB	FC	FD	G	GA	GB	GC	H	HA	HB	J	K	L	N	P	QA	QB	QC	QD	QE
NHS-□-10□□-S	125	10	75	75	M6	11	8	M4	8	-	2	22	22	54	54	Rc1/8	16	28	16	M10×1.25	7	8	9	98	196	178	120	60	6.5	13	M4	10
NHS-□-15□□-S	125	10	75	75	M6	11	8	M4	8	-	2	22	22	54	54	Rc1/8	16	28	16	M10×1.25	7	8	9	98	196	178	120	60	6.5	13	M4	10
NHS-□-30□□-S	165	15	105	110	M10	18	11.5	M5	10.5	14	4	25	24	78	82	Rc1/4	27	37.5	8.5	M12×1.25	9	10	16	133	266	234	150	70	8	17	M5	12
NHS-□-50□□-S	200	15	120	130	M12	21	11.5	M6	13	16	4	30	30	88.5	88.5	Rc1/2	35	46.5	5.5	M12×1.25	9	10	16	143	286	254	177	70	9.5	20	M6	14

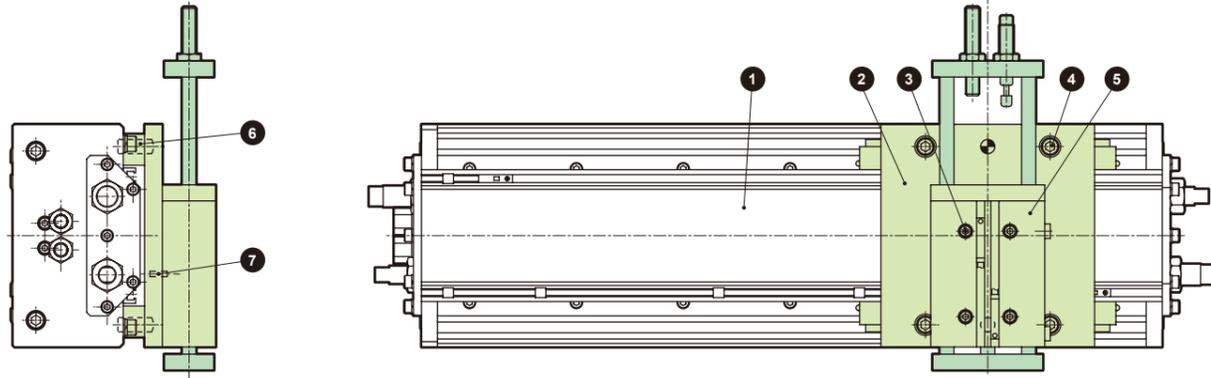
Code	SG	TB
NHS-□-10□□-S	30	13
NHS-□-15□□-S	56	13
NHS-□-30□□-S	66	13
NHS-□-50□□-S	101.5	13

Model No.	UA	UB	UL	ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZJ	ZL	ZU	ZV	ZX	ZZ
STL-BP-16	-	-	-	30	28	64	62	30.5	25.5	15	18	73.5	52	M5	Through	M5
STL-BP-25	47	24	109	42	38	86	84	29	28	21	26	84	72	M6	Through	M5
STL-BP-32	54	32	129.5	47	45	111	109	45.5	30.5	23.5	29	104.5	93	M8	Through	Rc1/8
STL-BP-50	73.5	43	174	66	64	147	145	49	50	33	44	124	125	M10	Through	Rc1/4

Note: For outline dimension drawings with each switch, refer to P. 1107.

Internal Structure Diagram/Material

●Z-axis Module STL-B



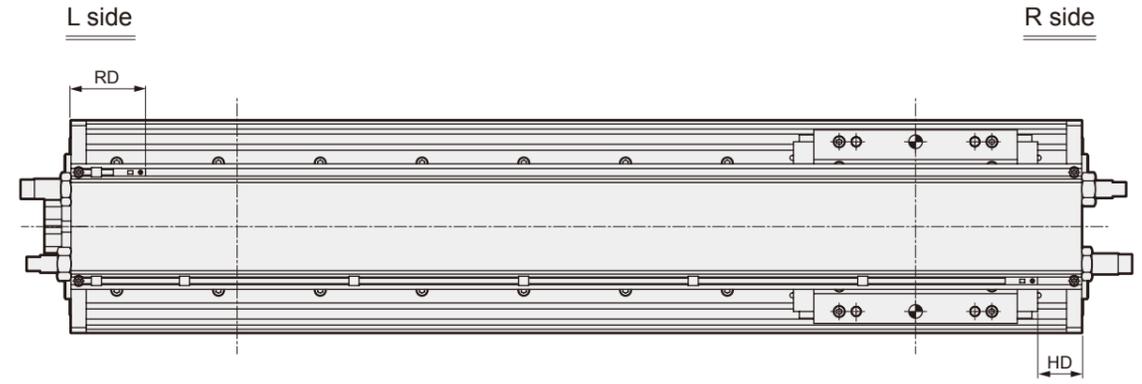
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	New Handling System X-axis Module		NSR (CKD)	4	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
				5	Guided Cylinder		STL-BP (CKD)
2	Z-axis Bracket	Aluminum Alloy	Alumite	6	Parallel Pin with Female Thread	Alloy Steel	
3	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	7	Parallel pin	Alloy Steel	

External Dimensions Diagram with Switch

NSR/NHS Series Outline Dimension Drawing with Switch

●T2H3, T3H3

- NSR, NHS-H (X-axis), NHS-S (X-axis)



Code	RD	HD
Model No.	T2/T3	T2/T3
NSR-□-10, 15	44.0	26.0
NSR-□-10,15-L	83.0	26.0
NSR-□-10,15-R	44.0	65.0
NSR-□-10,15-D	83.0	65.0
NSR-□-30	64.0	46.0
NSR-□-30-L	105.0	46.0
NSR-□-30-R	64.0	87.0
NSR-□-30-D	105.0	87.0
NSR-□-50	60.5	42.5
NSR-□-50-L	113.5	42.5
NSR-□-50-R	60.5	95.5
NSR-□-50-D	113.5	95.5

\*1: NHS-H Dimensions diagram with switch for the Z-axis (HRL-1), refer to P. 1130 (HRL-1), and when selecting Z-axis position locking (Q), refer to P. 1130 (HRL-1-□Q).

\*2: For dimensions of NHS-S Z-axis (STL) with switch, refer to STL in "Pneumatic Cylinder 3" (No. RJ-004AA), and when Z-axis drop prevention (Q) is selected, refer to STL-Q-H in "Pneumatic Cylinder 3" (No. RJ-004AA).

Special

MVC

STK

MCP

GLC

BBS

NHS

HR

LN

Special

MVC

STK

MCP

GLC

BBS

NHS

HR

LN

Cylinder Switch

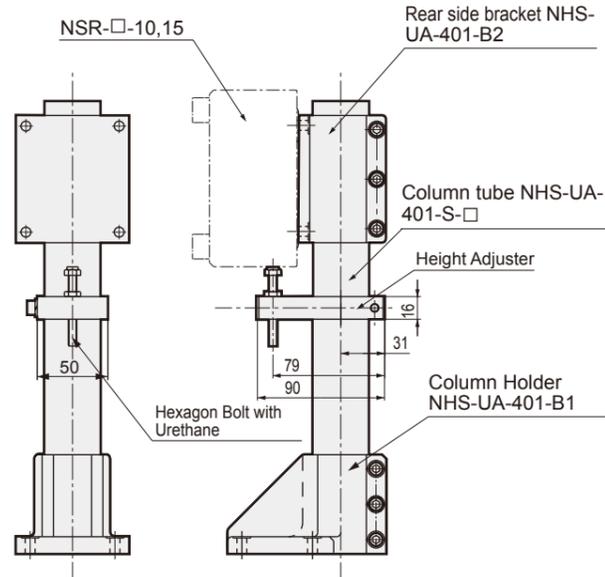
Ending

Cylinder Switch

Ending

## Accessory Frame Combination Outline Dimension Drawing Dedicated for NSR/NHS-□-10□□, 15□□

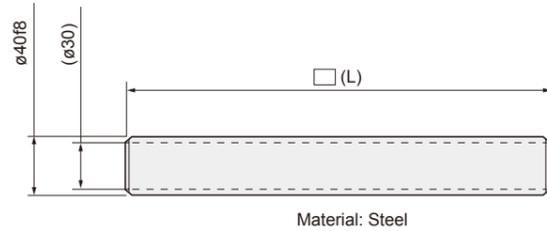
●NHS-UA-401 - Length  
300, 400, 500, 600



- With Height Adjuster
- Accessories
  - NHS Mounting Bolt Set
    - Hexagon Socket Head Bolt M6×20...4 pcs.
    - Spring Washer Nominal 6.....4 pcs.
    - Plain Washer Nominal 6.....4 pcs.
- For combination Model No.s, it will be 1 pc./1 set.

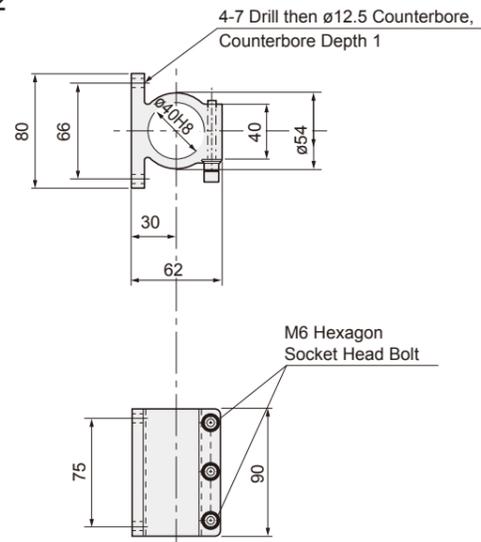
### Column Tube

●NHS-UA-401-S - Length  
300, 400, 500, 600



### Rear Bracket

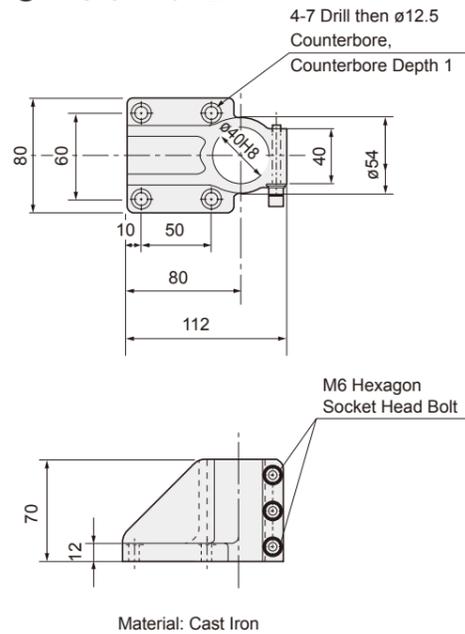
●NHS-UA-401-B2



- Accessories
  - NHS Mounting Bolt Set
    - Hexagon Socket Head Bolt M6×20...4 pcs.
    - Spring Washer Nominal 6.....4 pcs.
    - Plain Washer Nominal 6.....4 pcs.

### Column Holder

●NHS-UA-401-B1



Special

MVC

STK

MCP

GLC

BBS

NHS

HR

LN

Cylinder Switch

Ending

Special

MVC

STK

MCP

GLC

BBS

NHS

HR

LN

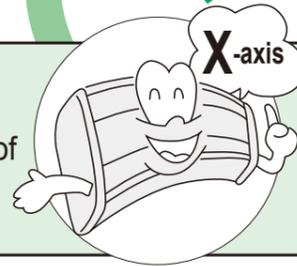
Cylinder Switch

Ending



Special

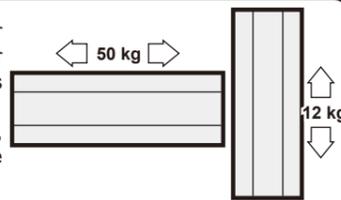
**Q1**  
What are the features of the X-axis module?



The first feature is its large moment payload. Since two THK LM Guides are used on rails, it can withstand high moment loads. The second feature is the abundance of options. Full stroke adjustment type (both sides or one side). Various options can be selected according to the purpose of use, such as type with cableveyor (horizontal mount or vertical mount), piping port position, etc.

**Q2**  
Is the payload of the X-axis module also Max 50 kg in the vertical direction?

Payload Max 50 kg is for horizontal conveyance. For vertical conveyance, it is Approx. 12 kg.  
\* For vertical conveyance, select based on the internal cylinder thrust.



**Q3**  
Can a reed type sensor be used for the X-axis module?

The sensor for the X-axis module is included with the T-slot on the front cover. Therefore, there are restrictions on the distance to the magnet included with the slider, and reed switches cannot be used. T2 or T3 type cylinder switches can be mounted. If using a sequencer where leakage current is a concern, use the T3 type (leakage current 10 μA or less).

**Q4**  
How much stroke adjustment is possible for the X-axis module?



With the standard type, the stroke can be shortened by up to 15 mm from both the left and right sides. If a larger stroke adjustment is required, select the full stroke adjustment type available as an option. However, no type can increase the stroke beyond the Standard Stroke.

**Q5**  
What is different when the X-axis module has a Standard Stroke (1000 mm) or more?

NSR-10 and 15 have a tension mechanism on the front cover. The Max stroke is 2000 mm. NSR-30 and 50 have no changes.

MVC

STK

MCP

GLC

BBS

NHS

HR

LN

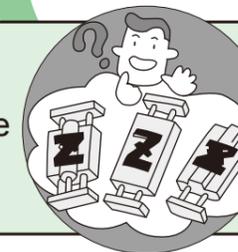
Cylinder Switch

Ending



Special

**Q6**  
How should I select the Z-axis module?



Select based on payload and required accuracy. For medium accuracy and high load, use HRL (NHS-H). For low accuracy and low cost, use STL (NHS-S).

**Q7**  
Does the Z-axis module have a fall prevention mechanism?

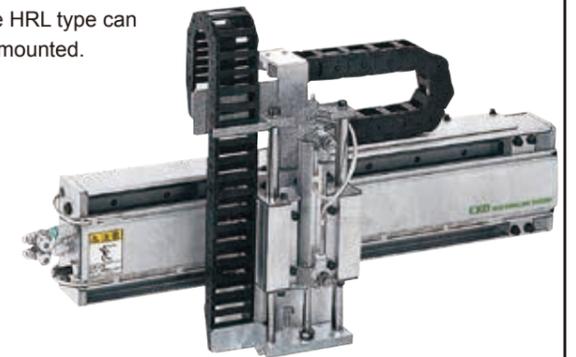
Except for STL-BP-16, it is available as an option on all models.

**Q8**  
Are valves included with the X-axis and Z-axis modules?

Valves are not included with each module. Please install them yourself.

**Q9**  
Does the Z-axis module come with a cableveyor?

The HRL type can be mounted.



MVC

STK

MCP

GLC

BBS

NHS

HR

LN

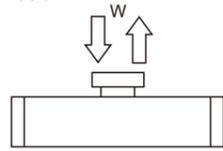
Cylinder Switch

Ending

About the Cylinder Used for the X-axis (NSR)

About Payload and Moment Load

● Vertical load: W



● Use so that the payload and moment load do not exceed the graphs below. If the specifications exceed the graph, it will be damaged. Also, use the moment within a range where the total value calculated using the formula below is 1.0 or less.

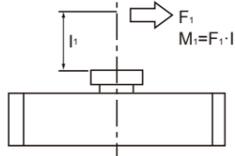
● Calculation formula

$$\frac{M1}{M1 \text{ max}} + \frac{M2}{M2 \text{ max}} + \frac{M3}{M3 \text{ max}} \leq 1.0$$

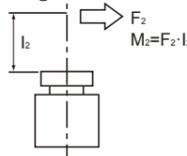
Allowable Load Value

Model No.	Bending moment M1 max	Lateral bending moment M2 max	Torsional moment M3 max
NSR-10	36.4 N·m	30.6 N·m	34.2 N·m
NSR-15	36.4 N·m	30.6 N·m	34.2 N·m
NSR-30	85.9 N·m	82.9 N·m	85.9 N·m
NSR-50	156.2 N·m	150.7 N·m	156.2 N·m

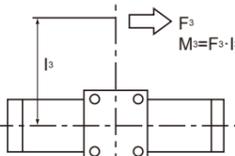
● Bending moment: M<sub>1</sub>



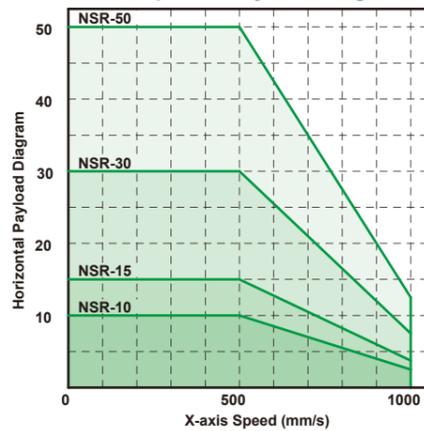
● Lateral bending moment: M<sub>2</sub>



● Torsional Moment: M<sub>3</sub>

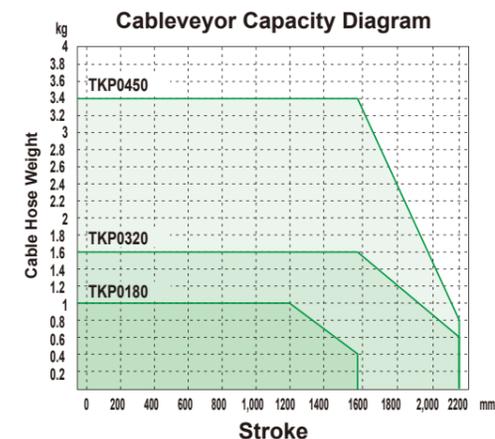


X-axis Speed - Payload Diagram



About Cableveyor Hose Weight

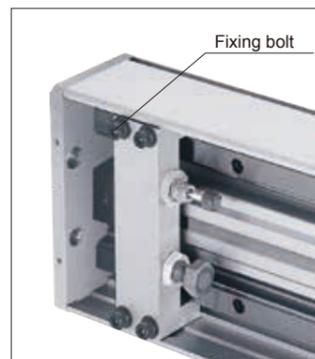
● Ensure the cableveyor hose weight is below the weight shown in the graph below. Also, use with a volume ratio of 50% or less. If the capacity is insufficient, please consult us separately.



About Stroke Adjustment Block

● The stroke adjustment block can be moved by loosening the fixing bolt.  
● After moving the stroke adjustment block to the desired position, tighten it with the torque shown in the table below. If tightened with other than the above, the stroke adjustment block may shift.

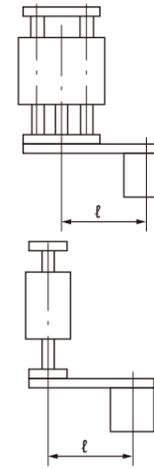
Model No.	Tightening torque
NSR-10,15	520 to 560 N·cm
NSR-30	980 to 1200 N·cm
NSR-50	2800 to 2950 N·cm



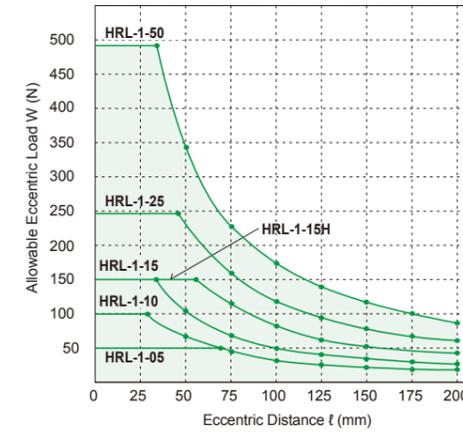
About the Cylinder Used for the Z-axis

A About HRL Type Allowable Load

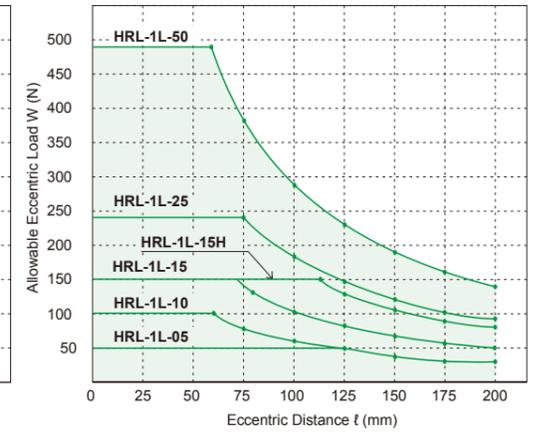
● Use HRL below the allowable eccentric load shown below.  
HRL-1□-05/10/15/15H/25/50



● HRL-1 (Basic Type)

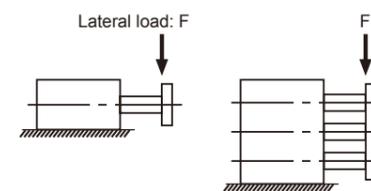


● HRL-1L (Long Body Type)



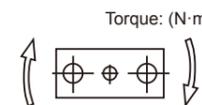
B STL Type Allowable Lateral Load/Allowable Rotational Torque/Non-rotating Accuracy

● Allowable Lateral Load



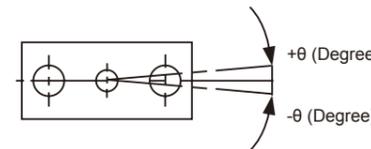
Bore Size	mm	Model No.	Stroke (mm)						
			50	75	100	125	150	175	200
ø16		STL-B-16	34	25	19	16	13	11	10
ø25		STL-B-25	68	50	39	32	27	23	20
ø32		STL-B-32	100	76	62	51	44	38	34
ø50		STL-B-50	161	126	103	87	75	66	58

● Allowable rotational torque



Bore Size	mm	Model No.	Stroke (mm)						
			50	75	100	125	150	175	200
ø16		STL-B-16	0.39	0.29	0.22	0.18	0.15	0.13	0.12
ø25		STL-B-25	1.07	0.79	0.61	0.50	0.43	0.36	0.32
ø32		STL-B-32	2.03	1.54	1.26	1.03	0.89	0.77	0.69
ø50		STL-B-50	4.43	3.47	2.83	2.39	2.06	1.82	1.60

● Non-rotation accuracy

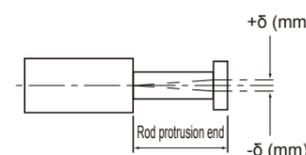


Bore Size	mm	Non-rotation accuracy θ (degrees)
ø16		±0.06
ø25		±0.08
ø32		±0.04
ø50		±0.03

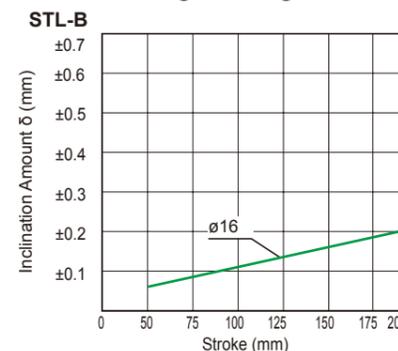
(PULL time initial value) Note: Excluding guide rod deflection amount

● Runout accuracy

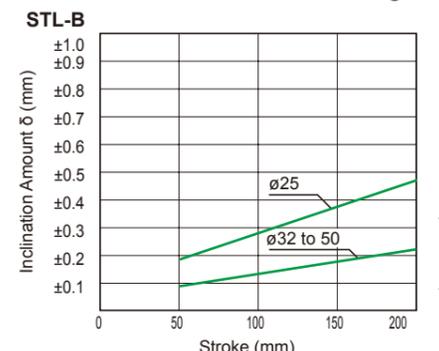
(Excluding the amount of deflection of the guide rod)



● ø16 Rolling Bearing



● ø25, ø32 to ø50 ball bearing





# To Use This Product Safely

Be sure to read this before use. For general cylinder information, see Intro 41, and for Cylinder Switches, see P. 1512.

## Individual Precautions: New Handling System

### Design / Selection

#### 1. About lubrication

##### CAUTION

###### ■ Cylinder

Can be used without lubrication, but if lubricating, please use turbine oil type 1 ISO VG32. Using other lubricating oils will cause abnormalities in the packing, resulting in malfunction. If lubricating, be careful not to run out of oil. If oil runs out, operation will become unstable.

###### ■ LM guide

Lubricate from the grease nipple every 100 km of travel distance. Use either lithium-based grease (JIS No. 2) or urea-based grease (JIS No. 2) for lubrication.



#### 2. Service life

##### CAUTION

###### ■ The life of the unit is greatly affected by the life of pneumatic components.

Since general pneumatic equipment is used, the operating life is Approx. 3 to 5 million cycles, or a travel distance of Approx. 1,000 km. (Since usage conditions, operating environment, etc. greatly affect the service life, the above values are not guaranteed values)

### During Use

#### 1. Mounting Posture

##### Warning

■ Units other than HRL-1(L) are all horizontally mounted only. Do not use in an inverted mounting position as it will cause damage.

Also, for vertical mounting (Z-axis direction), select the payload based on the internal cylinder thrust.



For precautions during mounting, installation, adjustment, use, and maintenance, refer to "During Use" in this catalog and the CKD Components Product website (<https://www.ckd.co.jp/kiki/en/>) -> "Model No." -> [Instruction Manual](#).