

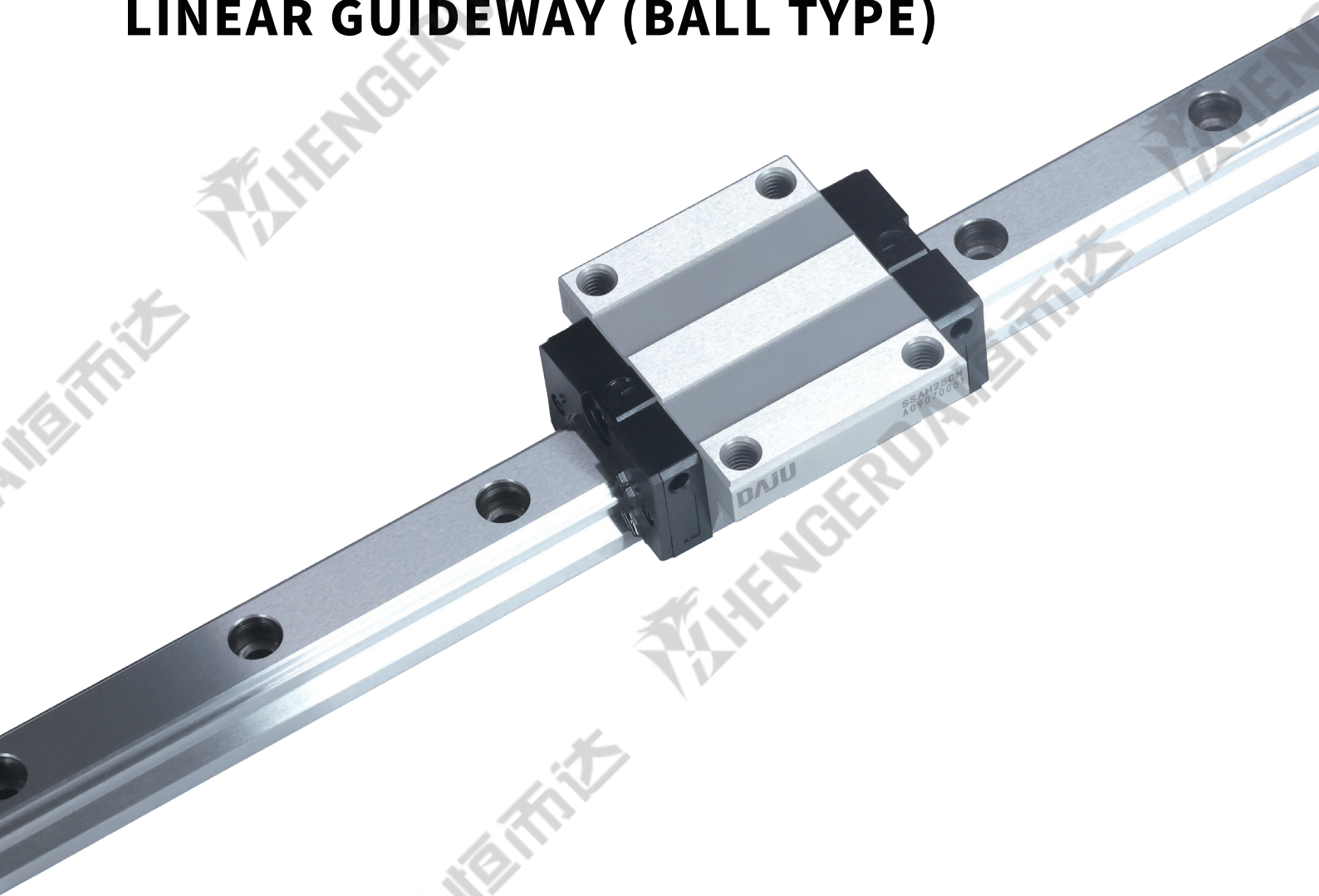


恒而达  
HENDERDA

STOCK CODE: 300946

# SSA SERIES

LINEAR GUIDEWAY (BALL TYPE)



HENDERDA NEW MATERIALS (FUJIAN) CO., LTD.



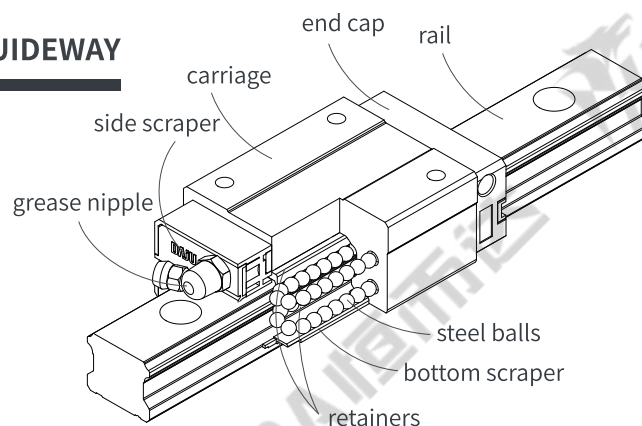
## 01

### CHARACTERISTICS OF SSA LINEAR GUIDEWAY SERIES

SSA linear guideways are designed to have steel balls contacting at 45 degrees with the rail and sliders, which enables the SSA linear guideways to be capable of having self-alignment even when installation error occurs and capable of bearing equal load from all four directions. At the same time of increasing preload level to strengthen the rigidity of the linear guideways, smoothness of movement and precision of the linear guideways can still be ensured, which makes SSA linear guideways suitable for applications where precision, high load and smooth movements are needed. The above capabilities and the interchangeableness of SSA linear guideways are made for satisfying modern industrial automation needs of high speed, abrasiveness, high load, high precision, easy assembly, and convenient maintenance.

## 02

### BASIC STRUCTURE OF SSA LINEAR GUIDEWAY



## 03

### APPLICATION EXAMPLES

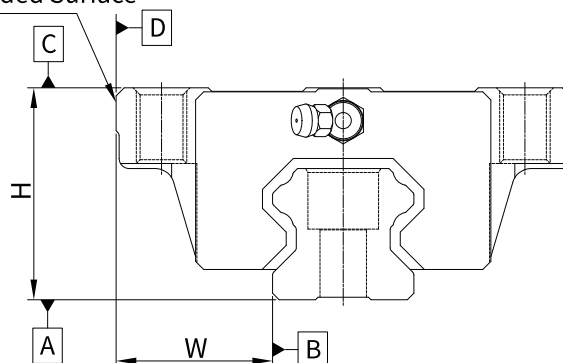
SSA series are widely used in machine including CNC machining center, CNC grinding machine, NC lathe, drilling machine, laser-cutting machine, cartesian coordinate robot, photovoltaic equipment, and automated production applications in the industries of electronics, woodworking, stone machining, automobiles, transportation, semiconductor and so on.

## 04

### PRECISION LEVEL

SSA linear guideways have five precision levels of Normal (N), High (H), Precision (P), Super Precision (SP) and Ultra Precision (UP). Users can choose the needed precision level based on application needs.

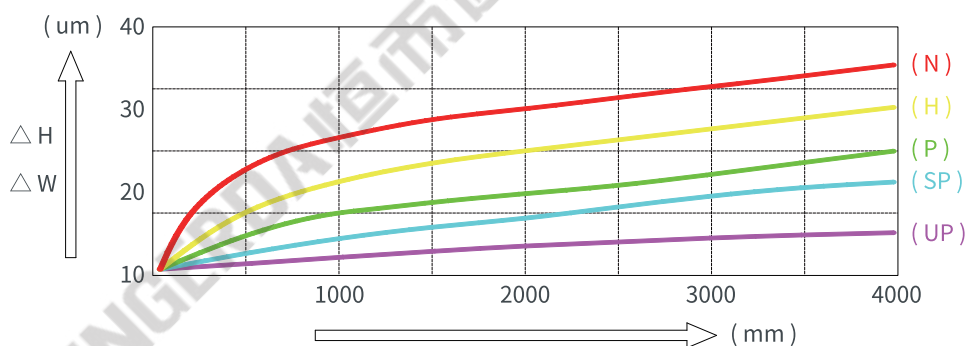
Grinded Surface



Unit : mm

Item	Precision Level	Normal( N )	High( H )	Precision( P )	Super precision( SP )	Ultra precision( UP )
Height Tolerance ( H )		$\pm 0.1$	$\pm 0.04$	$\begin{matrix} 0 \\ -0.04 \end{matrix}$	$\begin{matrix} 0 \\ -0.02 \end{matrix}$	$\begin{matrix} 0 \\ -0.01 \end{matrix}$
Width Tolerance( W )		$\pm 0.1$	$\pm 0.04$	$\begin{matrix} 0 \\ -0.04 \end{matrix}$	$\begin{matrix} 0 \\ -0.02 \end{matrix}$	$\begin{matrix} 0 \\ -0.01 \end{matrix}$
Paired Single Axis Combined Height Tolerance ( $\Delta H$ )		0.03	0.02	0.01	0.005	0.003
Paired Single Axis Combined Width Tolerance ( $\Delta W$ )		0.03	0.02	0.01	0.005	0.003
Running Parallelism of Plane C Relative to Plane A	$\Delta H$ See the figure below					
Running Parallelism of Plane D Relative to Plane B	$\Delta W$ See the figure below					

## GUIDEWAY LENGTH AND RUNNING PRECISION FIGURE



## GUIDEWAY LENGTH AND RUNNING PRECISION CHART

Unit : mm

Rail Length mm	Precision Level				
	N	H	P	SP	UP
	running parallelism values for $\Delta H$ and $\Delta W$ values ( $\mu m$ )				
$\leq 500$	17	11	7	4	2
$> 500 \sim 1000$	22	15	10	6	3
$> 1000 \sim 1500$	25	18	11	8	4
$> 1500 \sim 2000$	27	20	13	9	5
$> 2000 \sim 2500$	29	22	14	11	6
$> 2500 \sim 3000$	30	24	16	12	7
$> 3000 \sim 3500$	32	25	18	13	8
$> 3500 \sim 4000$	34	27	20	15	9

## 05 PRELOAD

## SSAH PRELOAD

C : Basic Dynamic Load

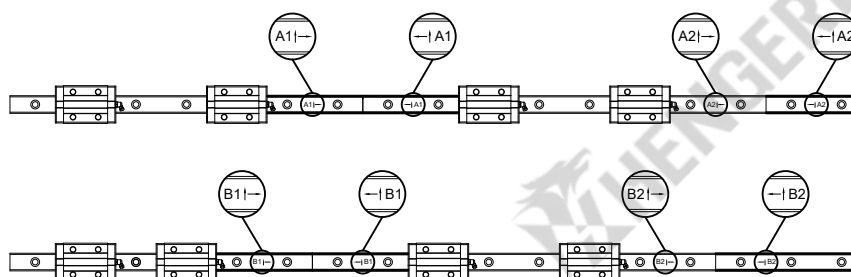
Level	Item Preload	Symbol	Preload
Zero Clearance		Z0	$0 \sim 0.02C$
Medium Preload		ZA	$0.05C \sim 0.07C$
Heavy Preload		ZB	$0.10C \sim 0.12C$

## SSAC PRELOAD

C : Basic Dynamic Load

Level	Item Preload	Symbol	Preload
Zero Clearance		Z0	$0 \sim 0.02C$
Medium Preload		ZA	$0.03C \sim 0.05C$
Heavy Preload		ZB	$0.06C \sim 0.08C$

## 06 BUTT-JOINTS OF RAILS



When the length of linear guideway needs to be higher than its standard length, two or more linear guideways could be connected to meet the length requirement. Please follow the aligning instruction as illustrated (note: The clearance between linear guideway should be near 0.05 mm). The coding patterns are shown in the table below:

	Align the first linear guideway	Align the second linear guideway	Align the third linear guideway	...	Align the Nth linear guideway
Axis 01 in parallel	No markings,A1	A1 , A2	A2 , A3	A3 , ...	AN,No markings
Axis 02 in parallel	No markings,B1	B1 , B2	B2 , B3	B3 , ...	BN,No markings
...	...				...
Axis 26 in parallel	No markings,Z1	Z1 , Z2	Z2 , Z3	Z3 , ...	ZN,No markings

## 07 PRODUCT MODELS

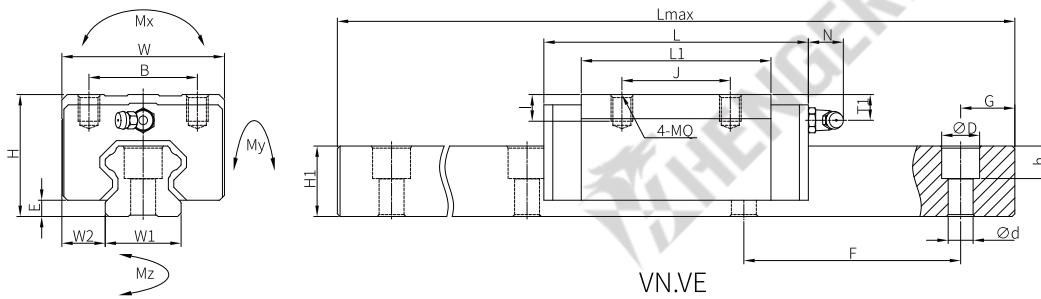
### A CODING PRINCIPLES

1 SSA 2 H 3 30 4 CN 5 Z0 6 P 7 UU 8 2 9 R2000: Mounting from Above + Rail Length 2000MM 10 G1G2 11 II,III

- 1 CODING PRINCIPLE**
  - SSA: Ball Type Linear Guideways (High assembly and Low Assembly on Separate Rails)
- 2 ASSEMBLY TYPE**
  - H: High assembly
  - C: low assembly
- 3 SIZE**
  - 15, 20, 25, 30, 35, 45
- 4 SHAPE AND LOAD FORM**
  - VS: Rectangular/medium load
  - CS: Flange/medium load
  - VN: Rectangular/heavy load
  - VE: Rectangular/super-heavy load
  - CN: Flange/heavy load
  - CE: Flange/super-heavy load
- 5 PRELOAD FORM**
  - Z0: Zero clearance
  - ZA: Medium preload
  - ZB: Heavy preload
- 6 PRECISION LEVEL**
  - N: Normal
  - H: High
  - P: Precision
  - SP: Super Precision
  - UP: Ultra Precision
- 7 DUST SCRAPER TYPE**
  - UU: Side scraper
  - DD: Side scraper + bottom scraper
  - SD: Side scraper + bottom scraper + metal scraper
  - KK: Double side scrapers + bottom scraper
  - Unmarked: Side scraper(UU)
- 8 THE NUMBER OF SLIDERS FOR A SINGLE RAIL**
- 9 BOLTING OF THE RAIL AND ITS LENGTH**
  - R2000: Mounting from Above + 2000MM Rail Length
  - T2000: Mounting from Below + 2000MM Rail Length
- 10 THE SIDE DISTANCE OF LINEAR GUIDEWAY**
  - Left side distance G1: the first hole center distance to the left edge of the rail
  - Right side distance G2: the first hole center distance to the right edge of the rail
- 11 THE NUMBER OF RAILS ON A SINGLE AXIS**
  - 2 rails marked as: II
  - 3 rails marked as: III, and so on in a similar manner

## B DIMENSION TABLE

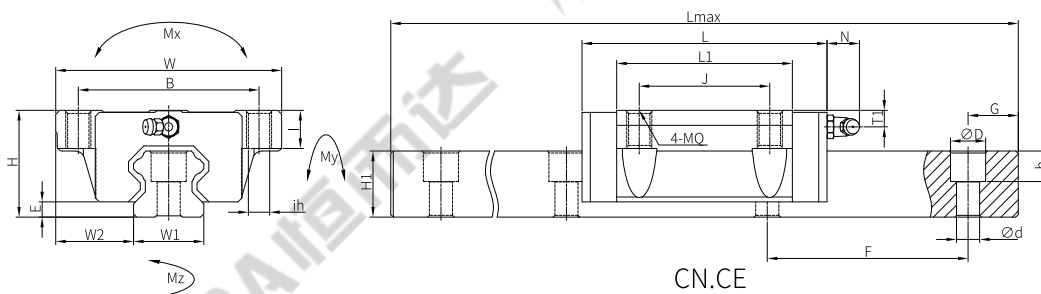
### SSAH\_V: HIGH ASSEMBLY SQUARE SLIDER



Mode	Assembly specification-mm				Slider-mm								
	H	W	W2	E	L	B	J	MQ	I	L1	Oil H	T1	N
H15VN	28.0	34.0	9.5	4.3	60.4	26.0	26.0	M4	6.0	39.4	M4×0.75	8.0	7.5
H20VN	30.0	44.0	12.0	4.6	75.5	32.0	36.0	M5	6.0	50.5	M6×1	6.0	13.5
H20VE					90.2		50.0			65.2			
H25VN	40.0	48.0	12.5	5.5	83.0	35.0	35.0	M6	8.0	58.0	M6×1	10.0	13.5
H25VE					103.6		50.0			78.6			
H30VN	45.0	60.0	16.0	6.0	96.0	40.0	40.0	M8	10.0	70.0	M6×1	9.5	13.5
H30VE					119.0		60.0			93.0			
H35VN	55.0	70.0	18.0	7.5	111.0	50.0	50.0	M8	12.0	80.0	M6×1	16.0	13.5
H35VE					136.8		72.0			105.8			
H45VN	70.0	86.0	20.5	9.5	134.0	60.0	60.0	M10	17.0	97.0	M10×1	18.5	16.0
H45VE					165.8		80.0			128.8			

Mode	Guideway (Rail)-mm						Load Rating-KN		Static torque-KN*M			Weight of Slider	Weight of Rail
	W1	H1	F	d	D	h	Dynamic load C	Static load C0	Mx	My	Mz	Kgf	Kgf/M
H15VN	15.0	15.0	60.0	4.8	7.5	6.0	11.15	24.80	0.16	0.14	0.14	0.17	1.43
H20VN	20.0	17.5	60.0	6.0	9.5	8.5	17.40	37.08	0.36	0.26	0.26	0.29	2.19
H20VE							20.76	47.86	0.46	0.45	0.45	0.37	
H25VN	23.0	22.0	60.0	7.0	11.0	9.0	25.95	55.07	0.61	0.48	0.48	0.48	3.24
H25VE							32.10	74.48	0.83	0.84	0.84	0.66	
H30VN	28.0	26.0	80.0	9.0	14.0	12.0	37.97	81.40	1.01	0.81	0.81	0.84	4.50
H30VE							46.32	107.93	1.33	1.40	1.40	1.10	
H35VN	34.0	29.0	80.0	9.0	14.0	12.0	48.53	100.81	1.64	1.14	1.14	1.38	6.39
H35VE							59.01	133.58	2.18	1.98	1.98	1.82	
H45VN	45.0	38.0	105.0	14.0	20.0	17.0	76.02	152.81	2.86	2.23	2.23	2.59	10.55
H45VE							92.65	202.98	3.80	3.87	3.87	3.43	

### SSAH\_C: HIGH ASSEMBLY FLANGE SLIDER

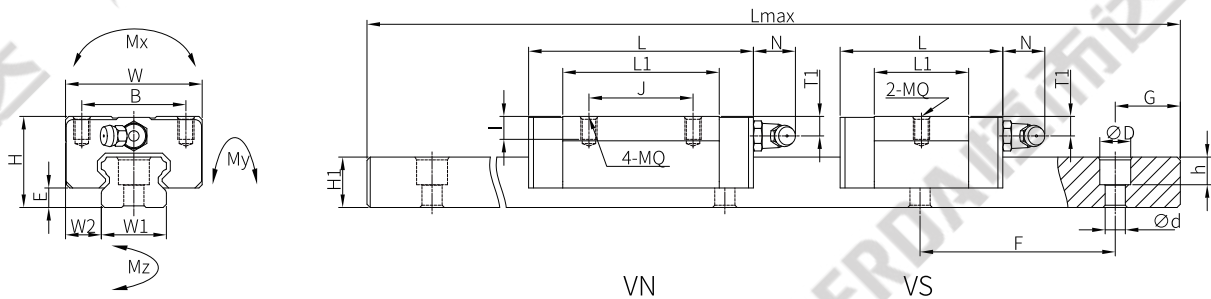




Mode	Assembly specification-mm				Slider-mm									
	H	W	W2	E	L	B	J	MQ	I	ih	L1	Oil H	T1	N
H15CN	24.0	47.0	16.0	4.3	60.4	38.0	30.0	M5	7.5	4.35	39.4	M4X0.75	4.0	7.5
H20CN	30.0	63.0	21.5	4.6	75.5	53.0	40.0	M6	9.5	5.35	50.5	M6X1	6.0	13.5
H20CE					90.2						65.2			
H25CN	36.0	70.0	23.5	5.5	83.0	57.0	45.0	M8	12.0	6.75	58.0	M6X1	6.0	13.5
H25CE					103.6						78.6			
H30CN	42.0	90.0	31.0	6.0	96.0	72.0	52.0	M10	15.0	8.50	70.0	M6X1	6.5	13.5
H30CE					119.0						93.0			
H35CN	48.0	100.0	33.0	7.5	111.0	82.0	62.0	M10	15.0	8.50	80.0	M6X1	9.0	13.5
H35CE					136.8						105.8			
H45CN	60.0	120.0	37.5	9.5	134.0	100.0	80.0	M12	18.0	10.50	97.0	M10×1	8.5	16.0
H45CE					165.8						128.8			

Mode	Guideway (Rail)-mm						Load Rating-KN		Static torque-KN*M			Weight of Slider	Weight of Rail
	W1	H1	F	d	D	h	Dynamic load C	Static load C0	Mx	My	Mz	Kgf	Kgf/M
H15CN	15.0	15.0	60.0	4.8	7.5	6.0	11.15	24.80	0.16	0.14	0.14	0.17	1.43
H20CN	20.0	17.5	60.0	6.0	9.5	8.5	17.40	37.08	0.36	0.26	0.26	0.39	2.19
H20CE							20.76	47.86	0.46	0.45	0.45	0.51	
H25CN	23.0	22.0	60.0	7.0	11.0	9.0	25.95	55.07	0.61	0.48	0.48	0.58	3.24
H25CE							32.10	74.48	0.83	0.84	0.84	0.78	
H30CN	28.0	26.0	80.0	9.0	14.0	12.0	37.97	81.40	1.01	0.81	0.81	1.07	4.50
H30CE							46.32	107.93	1.33	1.40	1.40	1.41	
H35CN	34.0	29.0	80.0	9.0	14.0	12.0	48.53	100.81	1.64	1.14	1.14	1.53	6.39
H35CE							59.01	133.58	2.18	1.98	1.98	2.02	
H45CN	45.0	38.0	105.0	14.0	20.0	17.0	76.02	152.81	2.86	2.23	2.23	2.73	10.55
H45CE							92.65	202.98	3.80	3.87	3.87	3.62	

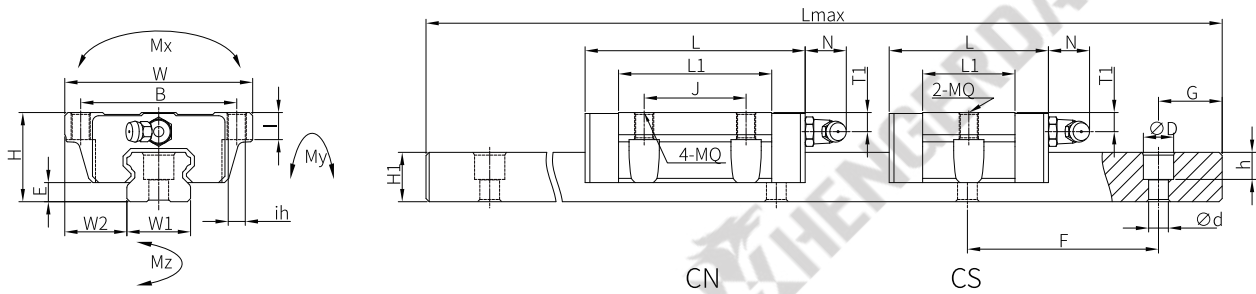
## SSAC\_V: LOW ASSEMBLY SQUARE SLIDER



Mode	Assembly specification-mm				Slider-mm								
	H	W	W2	E	L	B	J	MQ	I	L1	Oil H	T1	N
C15VS	24.0	34.0	9.5	4.5	40.1	26.0	-	M4	6.0	23.1	M4X0.75	5.5	7.5
C15VN					56.8		26.0			39.8			
C20VS	28.0	42.0	11.0	6.0	50.0	32.0	-	M5	7.0	29.0	M6X1	6.0	13.5
C20VN					69.1		32.0			48.1			
C25VS	33.0	48.0	12.5	7.0	57.9	35.0	-	M6	9.0	35.5	M6X1	8.0	13.5
C25VN					83.8		35.0			59.0			

Mode	Guideway (Rail)-mm						Load Rating-KN		Static torque-KN*M			Weight of Slider	Weight of Rail
	W1	H1	F	d	D	h	Dynamic load C	Static load C0	Mx	My	Mz	Kgf	Kgf/M
C15VS	15.0	12.5	60.0	4.5	7.5	6.0	5.24	9.21	0.08	0.04	0.04	0.09	1.24
C15VN							7.67	15.87	0.12	0.10	0.10	0.15	
C20VS	20.0	15.5	60.0	6.0	9.5	8.5	7.09	12.49	0.12	0.06	0.06	0.15	2.09
C20VN							10.10	20.71	0.21	0.15	0.15	0.24	
C25VS	23.0	18.0	60.0	7.0	11.0	9.0	11.07	18.85	0.24	0.13	0.13	0.24	2.73
C25VN							15.94	31.75	0.37	0.31	0.31	0.40	

## SSAC\_C: LOW ASSEMBLY FLANGE SLIDER

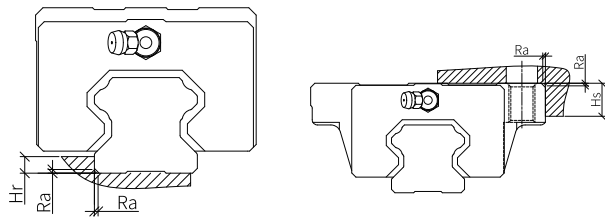


Mode	Assembly specification-mm				Slider-mm									
	H	W	W2	E	L	B	J	MQ	I	ih	L1	Oil H	T1	N
C15CS	24.0	52.0	18.5	4.5	40.1	41.0	-	M5	6.5	4.35	23.1	M4X0.75	5.5	7.5
C15CN					56.8		26.0				39.8			
C20CS	28.0	59.0	19.5	6.0	50.0	49.0	-	M6	8.5	5.35	29.0	M6X1	6.0	13.5
C20CN					69.1		32.0				48.1			

Mode	Guideway (Rail)-mm						Load Rating-KN		Static torque-KN*M			Weight of Slider	Weight of Rail
	W1	H1	F	d	D	h	Dynamic load C	Static load C0	Mx	My	Mz	Kgf	Kgf/M
C15CS	15.0	12.5	60.0	4.8	7.5	6.0	5.24	9.21	0.08	0.04	0.04	0.12	1.24
C15CN							7.67	15.87	0.12	0.10	0.10	0.21	
C20CS	20.0	15.5	60.0	6.0	9.5	8.5	7.09	12.49	0.12	0.06	0.06	0.19	2.09
C20CN							10.10	20.71	0.21	0.15	0.15	0.31	

## 08 PRECAUTIONS ON INSTALLING SSA LINEAR GUIDEWAY



Unit : mm

Size	Ra : Maximum Shoulder Chamfer (mm)	Hr : Maximum Shoulder Height of Rail(mm)	Hs : Maximum Shoulder Height of Slider (mm)
SSAH15	0.5	3.0	4.0
SSAH20	0.5	3.5	5.0
SSAH25	1.0	5.0	5.0
SSAH30	1.0	5.0	5.0
SSAH35	1.0	6.0	6.0
SSAH45	1.0	8.0	8.0
SSAC15	0.5	2.7	5.0
SSAC20	0.5	5.0	7.0
SSAC25	1.0	5.0	7.5

## 09 PRECAUTIONS ON USING SSA LINEAR GUIDEWAY

- 1 Please clean rust-preventive oil before applying lubrication.
- 2 When removing the slider from the rail, please use the dummy rail to remove slider from the rail. Try not to remove slider from the rail unless it is must be done.
- 3 After applying lubrication, move the slider for distance about three times the length of the sliders, and repeat the action for more than twice, and ensure the rail surfaces are coated with oil film.
- 4 When storing the linear guideways, please apply rust-preventive oil into the packaging, and lie the product flat, and avoid extreme temperatures plus humid environments.



Official Website



Catalogs

## HENGERDA NEW MATERIALS (FUJIAN) CO., LTD.

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