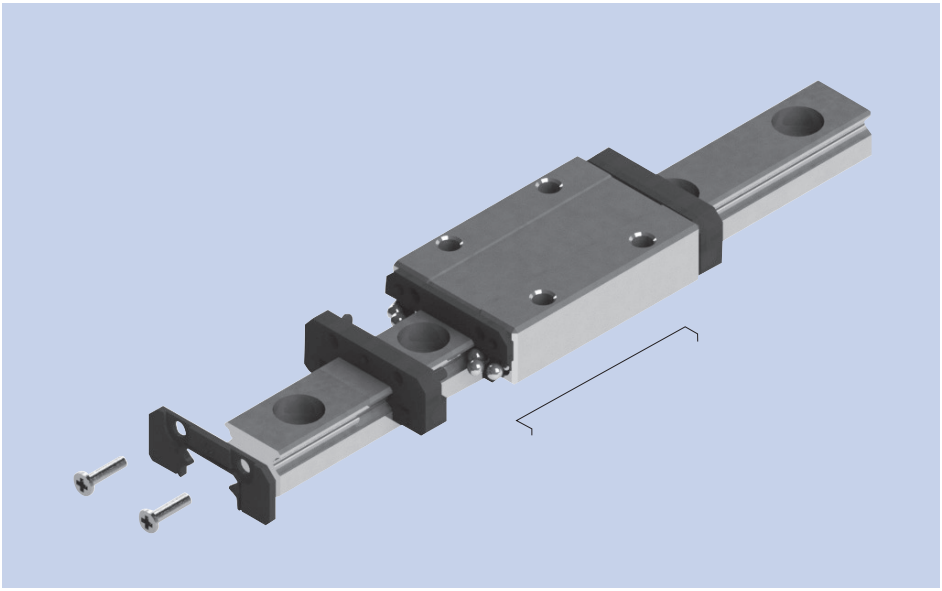
Miniature Linear Guide

〈Fig.1〉 Structure of miniature linear guide model AM



Structure

MENTOR miniature linear guide JNV has a structure in which the balls contacting rails al 4 points are arranged with 2 set, thus, despite of its small size, provides a stabilized accuracy and rigidity even for use under load and combined loads where a direction and size can be twisted. There is a wide selection of forms and sizes for you to choose a suitable one according to use.

Features

■ Ball retianer

Linear ball support block attached to the ball retainer and captive rail and block the smooth replacement.

■ Perfect design ensures low noise and lubrication

See complete design cycle of integrated blocks to guide the engineering of plastic materials used in the linear block noise traveling and lubricant supply.

■ Development of new technologies and smooth motion

Piece returned the ball to infinite loop and block guide design consisting of integrated linear blocks are horizontal and vertical movement is possible under certain conditions to is smooth.

■ Excellent corrosion resistance

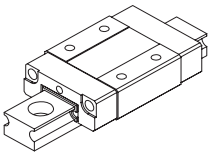
Linear rail and block are corrosion-resistant and acid-resistant stainless steel is used in the semiconductor equipment, medical equipment, measuring, printing, embroidery and other precision devices that are widely used in industry.

■ Safety Design

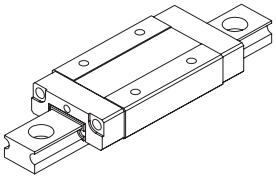
Miniature linear rail and block, using the high corrosion resistance of stainless steel and has a lot of moisture and chemical composition of the environment, it may cause corrosion, high quality black coating and a special coating to increase to the maintenance effect.

Types

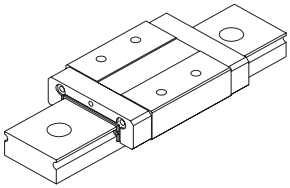
〈Fig.2〉 Types of miniature Linear guide



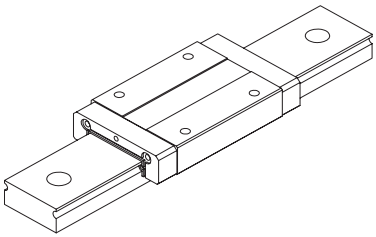
Standard type JNV



Standard long type JNVL



Wide type JNW



Wide long type JNWL

Radial clearance

radial clearance for the blocks onto the rails in the assembled state of the rail fixed to the base block in the vertical direction to exert a light load at a center portion of the movement amount. Miniature linear guides include.a K1, K2 be two radial clearance.

〈Table.1〉 Radial clearance (K_1, K_2) (Unit:㎛)

Preload conditions	Normal	Light preload
Part no.	K_1	K_2
5	−2 ~ +2	−4 ~ 0
7	−2 ~ +2	−4 ~ 0
9	−2 ~ +2	−4 ~ 0
12	−2 ~ +2	−6 ~ 0
15	−2 ~ +2	−10 ~ 0

Seal resistance

One block is assembled with seals, and seal resistance figures is one miniture block as shown in the table below.

〈Table.2〉 Seal resistance figures

Part no.	JNV	JNVL	JNW	JNWL
5	0.1	–	–	–
7	0.2	0.2	0.6	06
9	0.2	0.2	0.8	0.8
12	0.59	0.59	1.1	1.1
15	1.18	1.18	1.3	1.3

Design of the mounting surface

Linear block and table and bed rail installed on the mounting surface at the time of the first part of the required heighten.
Linear block and the edges of the mounting surface of the rail mounting surface to prevernt interference with chamfered portion of the radius R of dimensions must be carefuly processed.

〈Table.3〉 Seal resistance figures (Unit:㎛)

Part no.	Radius R	Linear block height H_1	Linear rail height H_2	E
JNV 5	0.2	3	1.2	JNV 5
JNV(L) 7	0.2	3	1.2	JNV7(L)
JNV(L) 9	0.3	3	1.9	JNV9(L)
JNV(L) 12	0.3	4	2.0	JNV12(L)
JNV(L) 15	0.3	5	2.5	JNV15(L)
JNW(L) 7	0.1	3	3.4	JNW7(L)
JNW(L) 12	0.3	4	3.7	JNW12(L)
JNW(L) 15	0.3	5	3.4	JNW15(L)

A

Accuracy

As shown in the table.4 race degree parallelism, permissible deviation in dimensions of height, width is one of several blocks to the rails on the same plane, or if the number of tails needed by the mounting height, width, and also of rule.

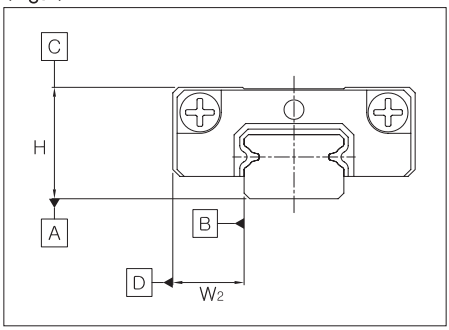
Accuracy grade

Normal grade, high, separated by precision step 3. Combination of block size and the corresponding grade of the rail with a maximum error.

〈Table.4〉 Seal resistance figures (Unit:㎛)

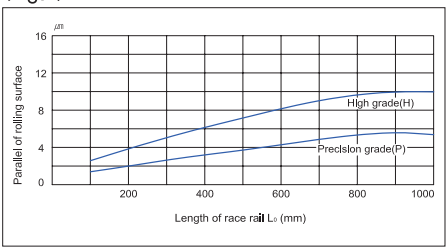
Accuracy grade	Normal graed	High graed	precision grade
Symbol / Item	N	H	P
Permissible deviation in dimensions of height H	±40	±20	±10
Permissible deviation in dimensions of width W2	±40	±25	±15
Pair deviation of height H	30	15	7
Pair deviation of height W2	30	20	10
Ⓐ side face of the Ⓒ race parallelism	Refer to〈Fig.4〉		
Ⓑ side face of the Ⓓ race parallelism			

〈Fig.4〉



Types

〈Fig.5〉



Use a special environment

High quality black special coating or grease according to the conditions applicable to a variety of disciplines and will help durability.

〈Table.5〉

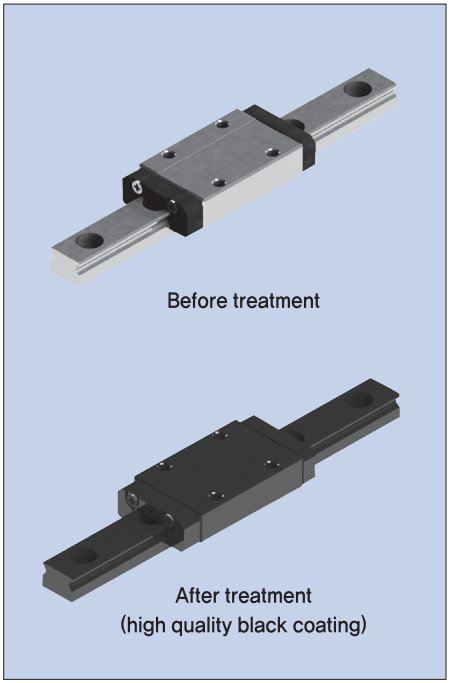
Use environment	Caution when using	Improvement	
(Clean room) Semiconductor, sensor, medical equipment	when used a clean room in a miniature linear guide and the inhibition caused by rash or particles must be	Grease	Use low dust generation grease
(Vacuum) Semiconductor, sensor,medical equipment	Corrosion is not possible using current skills and excellent corrosion environment	Grease	Useing vacuum grease
		Coating	Black special coating

Surface treatment

■ Low tempearture fluorination chrome plating

Black chrome coating on the product and where high corrosion resistance is required, such as low dust and clean rooms and the best surface treatment to improve the appearance quality are used where necessary.

〈Fig.6〉



■ Electrolytic corrosion coating black (black chrome plating)

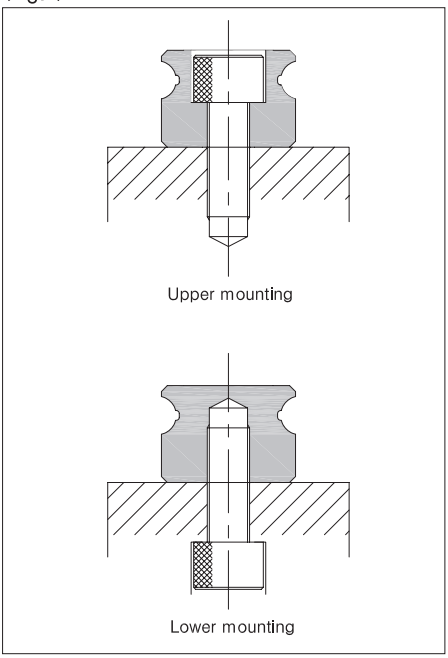
Industrial stainless steel or black chrome corrosion resistance and decorative manner,the light of the purposes of the anti-reflection.

■ Industrial hard chrome plating

Industrial stainless steelor black chrome corrosion resistance and decorative manner, the light of the purposes of the anti-reflection.

Rail mounting method

〈Fig.7〉



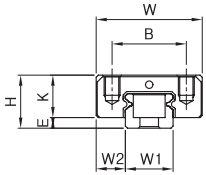
■ Bolt mounting torque

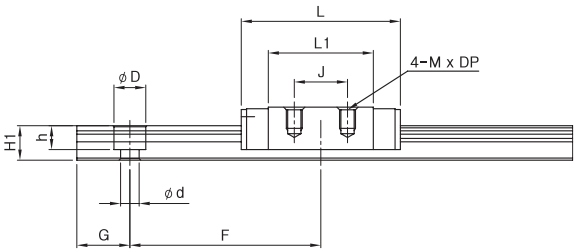
Linear guide installation meets the specifications of the mounting torque of the bolt must be Fastening. Mounting torque listed in the following table is achieved to a great accuracy.

〈Table.5〉

Part no.	Bolt	Mounting torque
JNV 5 (L)	M2×0.4×4L	57 / (5.9)
JNV 7 (L)	M2×0.4×6L	57 / (5.9)
JNV 9 (L)	M3×0.5×8L	186 / (19)
JNV 12 (L)	M3×0.5×8L	186 / (19)
JNV 15 (L)	M3×0.5×10L	186 / (19)
JNW 5 (L)	M3×0.5×6L	186 / (19)
JNW 7 (L)	M3×0.5×8L	186 / (19)
JNW 12 (L)	M4×0.7×8L	392 / (40)
JNW 15 (L)	M4×0.7×10L	392 / (40)

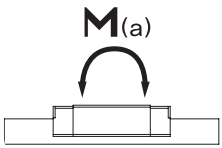
A

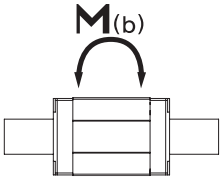




(Unit : mm)

Model Number	Dimensions of Assembly				Dimensions of Block						Dimensions of Rail								
	H	W	L	E	B	J	M	DP	L1	K	W1	W2	H1	F	d	D	h	G	Max L0
JNV5	6	12	16	1.5	8		M2	1.5	9.6	4.5	5	3.5	3.7	15	2.4	3.6	0.8	5	200
JNV7	8	17	22.5	1.5	12	8	M2	2.5	13.5	6.5	7	5	4.8	15	2.4	4.2	2.3	5	600
JNV7L	8	17	30.8	1.5	12	13	M2	2.5	20.8	6.5	7	5	4.8	15	2.4	4.2	2.3	5	600
JNW7	9	25	31.2	2	19	10	M3	3	21	7	14	5.5	5.2	30	3.5	6	3.2	10	1000
JNW7L	9	25	41	2	19	19	M3	3	30.8	7	14	5.5	5.2	30	3.5	6	3.2	10	1000
JNV9	10	20	28.9	2	15	10	M3	3	18.9	8	9	5.5	6.5	20	3.5	6	3.5	7.5	1000
JNV9L	10	20	39.9	2	15	16	M3	3	29.9	8	9	5.5	6.5	20	3.5	6	3.5	7.5	1000
JNW9	12	30	39.3	3	21	12	M3	3	27.5	9	18	6	7.5	30	3.5	6	4.5	10	1000
JNW9L	12	30	50.7	3	23	24	M3	3	38.5	9	18	6	7.5	30	3.5	6	4.5	10	1000
JNV12	13	27	34.7	3	20	15	M3	3.5	21.7	10	12	7	8	25	3.5	6	4.5	10	1000
JNV12L	13	27	45.4	3	20	20	M3	3.5	32.4	10	12	7	8	25	3.5	6	4.5	10	1000
JNW12	14	40	46.1	3.5	28	15	M3	3.6	31.3	10.5	24	8	8.5	40	4.5	8	4.5	15	1000
JNW12L	14	40	60.4	3.5	28	28	M3	3.6	45.6	10.5	24	8	8.5	40	4.5	8	4.5	15	1000
JNV15	16	32	42.1	4	25	20	M3	4	26.7	12	15	8.5	10	40	3.5	6	4.5	15	1000
JNV15L	16	32	58.8	4	25	25	M3	4	43.4	12	15	8.5	10	40	3.5	6	4.5	15	1000
JNW15	16	60	54.8	3.5	45	20	M4	4.2	38	12.5	42	9	9.5	40	4.5	8	4.5	15	1000
JNW15L	16	60	73.8	3.5	45	35	M4	4.2	57	12.5	42	9	9.5	40	4.5	8	4.5	15	1000





(Unit : mm)

Model Number	Basic Load Rating		Static Rated Moment (N · m)			Weight	
	C kN	C0 kN	M(a)	M(b)	M(c)	Block kg	Rail kg
JNV5	0.32	0.58	0.88	0.88	1.5	0.003	0.14
JNV7	0.88	1.37	2.93	2.93	5	0.013	0.23
JNV7L	1.59	2.5	8.68	8.68	9.12	0.018	0.23
JNW7	1.37	2.16	7.02	7.02	15.4	0.021	0.51
JNW7L	1.98	3.52	19.20	19.20	27.32	0.018	0.51
JNV9	1.47	2.25	7.34	7.34	10.4	0.018	0.32
JNV9L	2.6	3.96	18.4	18.4	18.4	0.027	0.32
JNW9	2.44	3.92	16	16	36	0.035	1.08
JNW9L	3.52	5.37	31	31	49.4	0.05	1.08
JNV12	2.65	4.02	11.4	10.1	19.2	0.037	0.58
JNV12L	4.3	6.65	28.9	25.5	31.8	0.055	0.58
JNW12	4.02	6.08	24.5	21.7	59.4	0.074	1.5
JNW12L	5.96	9.21	53.9	47.3	90.1	0.101	1.5
JNV15	4.41	6.57	23.7	21.1	38.8	0.069	0.93
JNV15L	7.16	10.7	63.1	55.6	63	0.093	0.93
JNW15	6.65	9.8	50.3	44.4	167	0.17	3
JNW15L	9.9	14.9	110	97.2	255	0.2	3

JNV 5

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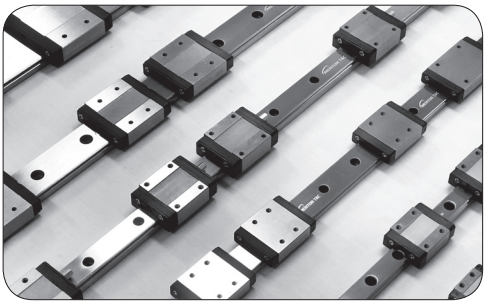
Miniature Guide



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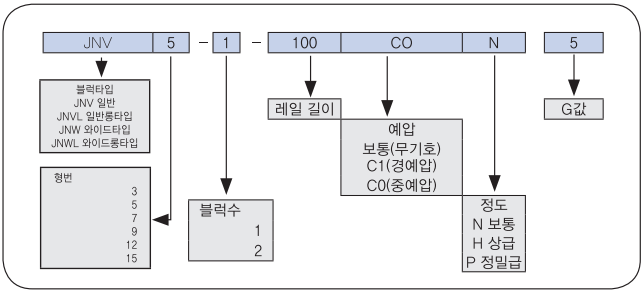
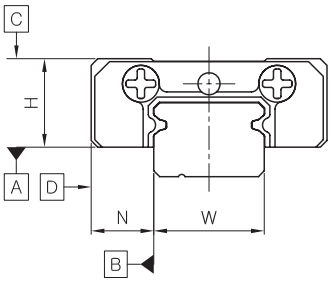
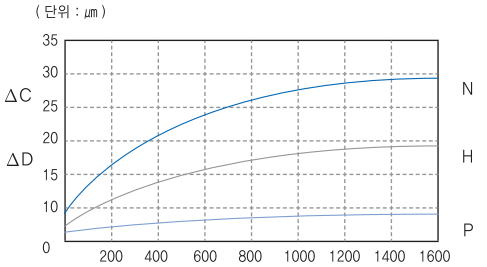


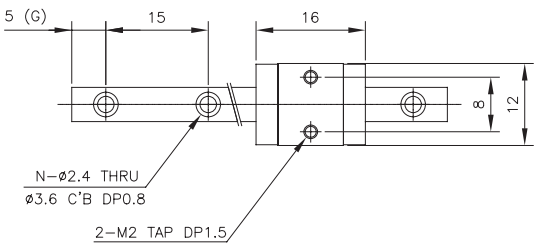
항 목	N (일반급)	H (상 급)	P (정밀급)
높이 H의 치수 허용차	±0.04	±0.02	±0.01
폭 N의 치수 허용차	±0.04	±0.025	±0.015
높이 H의 상호차	0.03	0.015	0.007
폭 N의 상호차	0.03	0.02	0.01
A면에 대한 C면의 주행평행도	ΔC(표1) 참조		
B면에 대한 D면의 주행평행도	ΔD(표1) 참조		

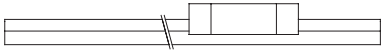


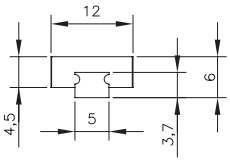


(표 1)

JNV5







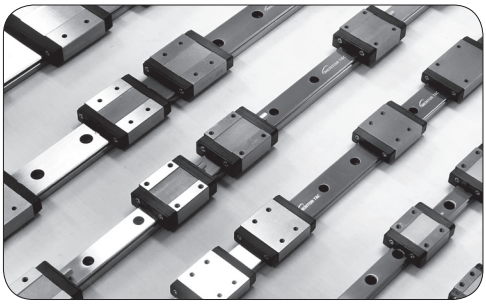
A

표준길이

40	55	70	85	100	115	130	145
160	175	190	205	220	235	250	265
280	295	310	325	340	355	370	385
400	415	430	445	460	475	490	500

JNV 7

미니츄어 가이드
Miniature Guide



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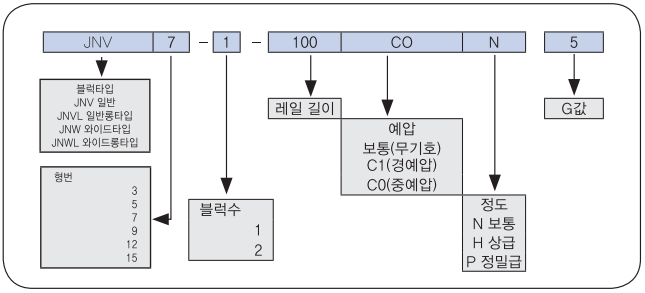

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A면에 대한 C면의 주행평행도	ΔC(표1) 참조		
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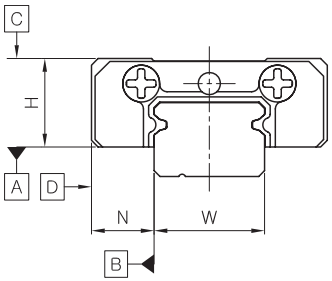
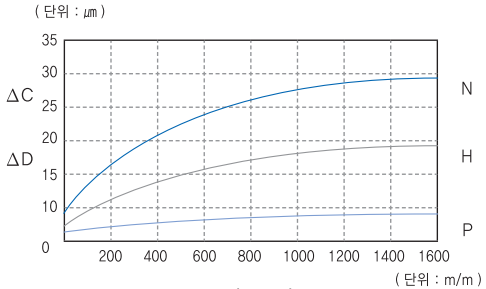
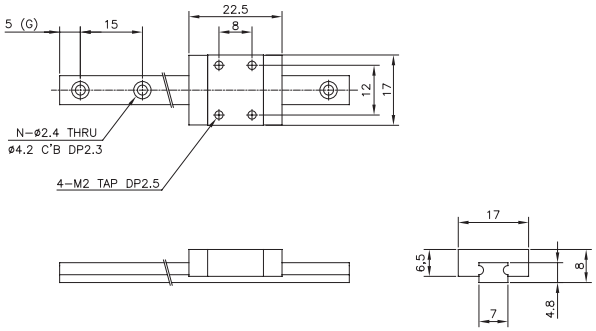


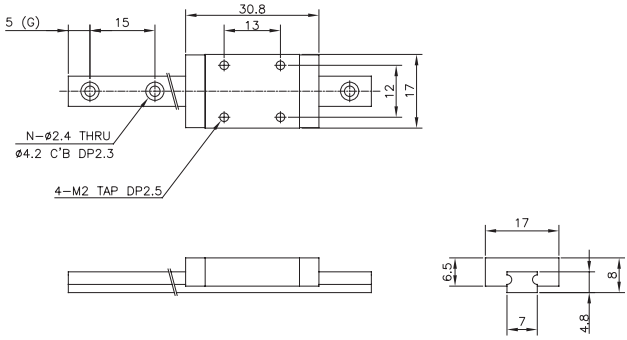


(표 1)

JNV7



JNV7L

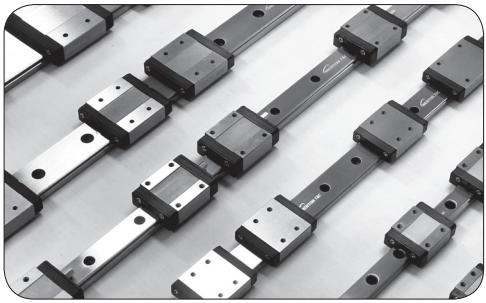


표준길이

40	55	70	85	100	115	130	145
160	175	190	205	220	235	250	265
280	295	310	325	340	355	370	385
400	415	430	445	460	475	490	505
520	535	550	565	580	595	610	625
640	655	670	685	700	715	730	745
760	775	790	805	820	835	850	865
880	895	910	925	940	955	970	985
1000							

JNV 9

미니츄어 가이드
Miniature Guide



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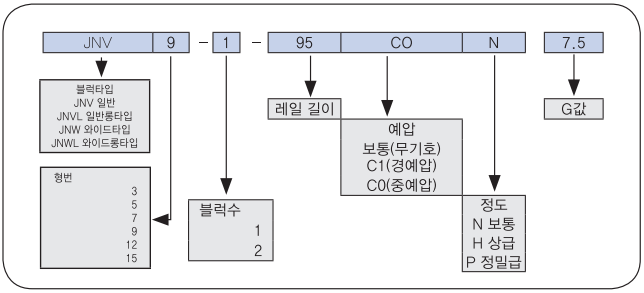

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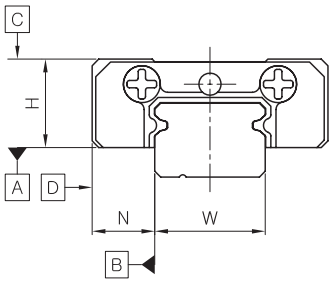
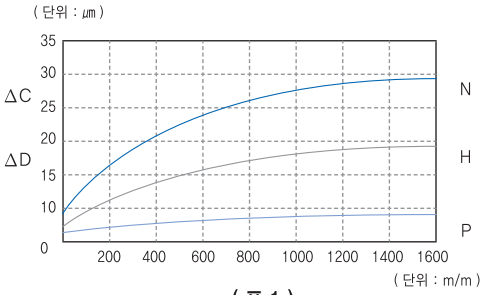
높이 H의 상호차	0.03	0.015	0.007
폭 N의 상호차	0.03	0.02	0.01
A면에 대한 C면의 주행평행도	ΔC(표1) 참조		
B면에 대한 D면의 주행평행도	ΔD(표1) 참조		





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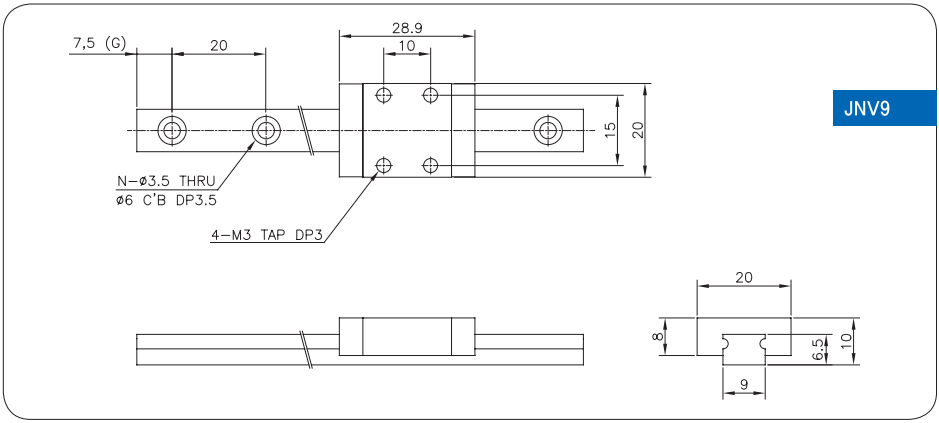
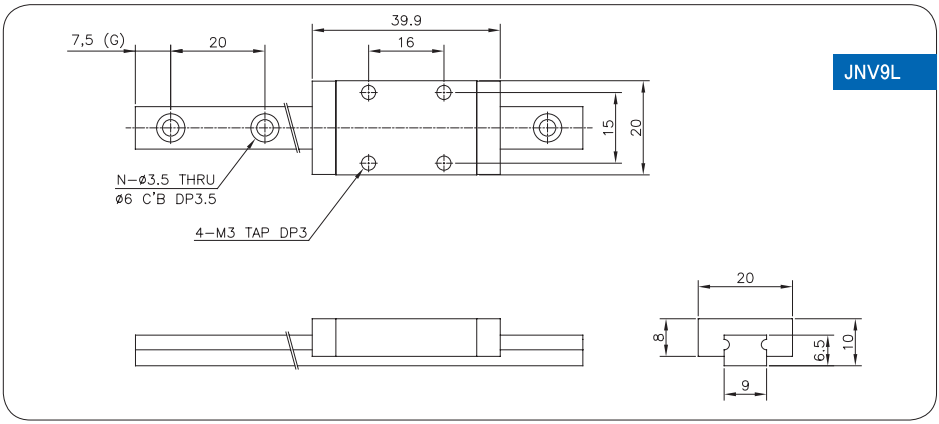


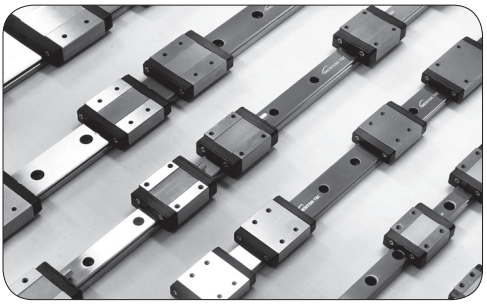


표준길이

55	75	95	115	135	155	175	195
215	235	255	275	295	315	335	355
375	395	415	435	455	475	495	515
535	555	575	595	615	635	655	675
695	715	735	755	775	795	815	835
855	875	895	915	935	955	975	995
1000							

JNV 12

미니츄어 가이드
Miniature Guide



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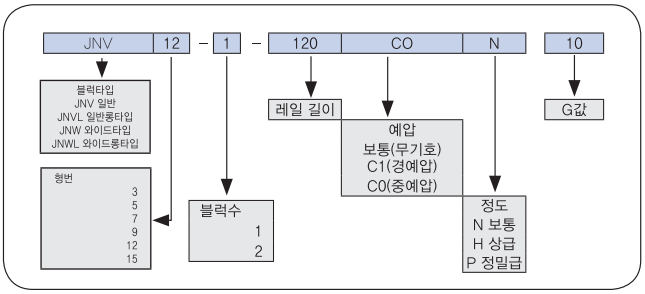
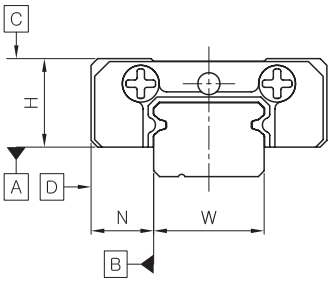
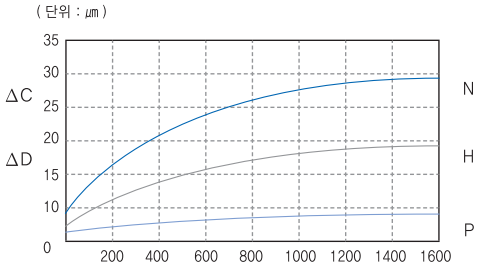
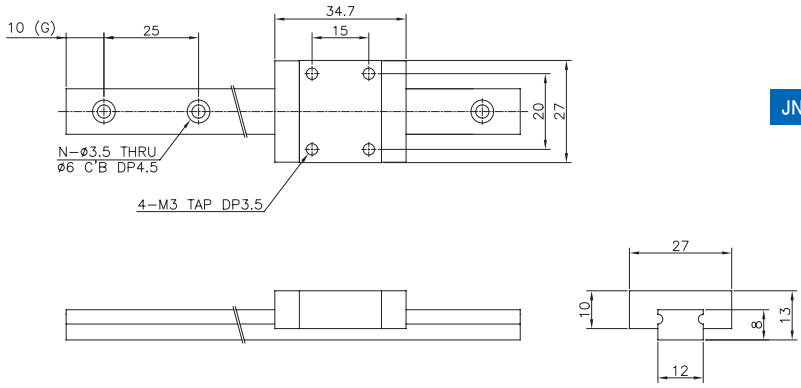


항 목	N (일반급)	H (상 급)	P (정밀급)
높이 H의 치수 허용차	±0.04	±0.02	±0.01
폭 N의 치수 허용차	±0.04	±0.025	±0.015
높이 H의 상호차	0.03	0.015	0.007
폭 N의 상호차	0.03	0.02	0.01
A면에 대한 C면의 주행평행도	ΔC(표1) 참조		
B면에 대한 D면의 주행평행도	ΔD(표1) 참조		

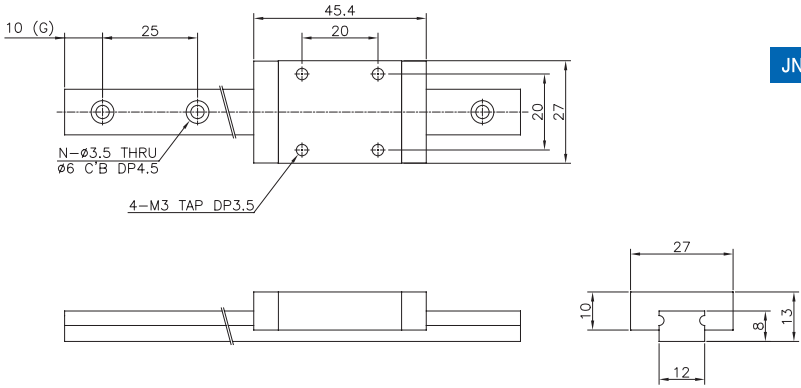




(표 1)



JNV12



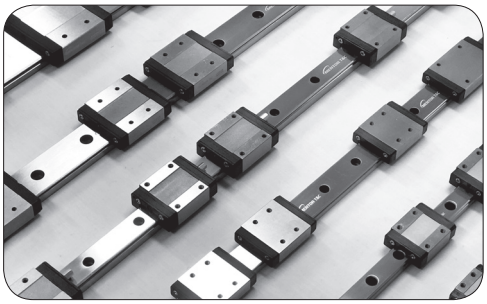
JNV12L

표준길이

70	95	120	145	170	195	220	245
270	295	320	345	370	395	420	445
470	495	520	545	570	595	620	645
670	695	720	745	770	795	820	845
870	895	920	945	970	995	1000	

JNV 15

미니츄어 가이드
Miniature Guide



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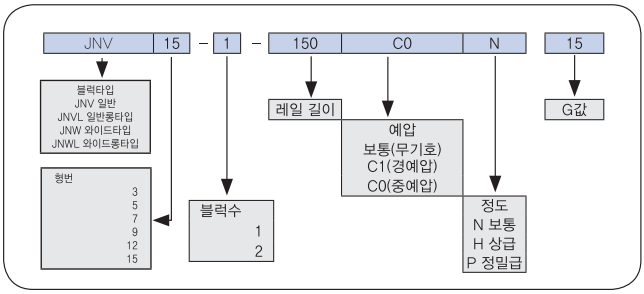
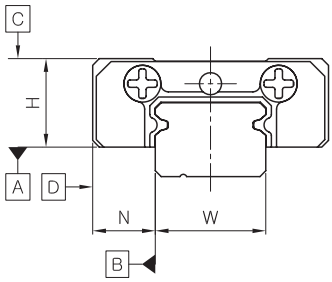
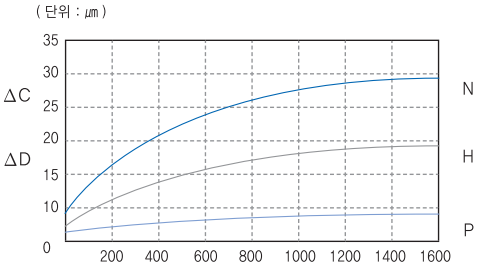
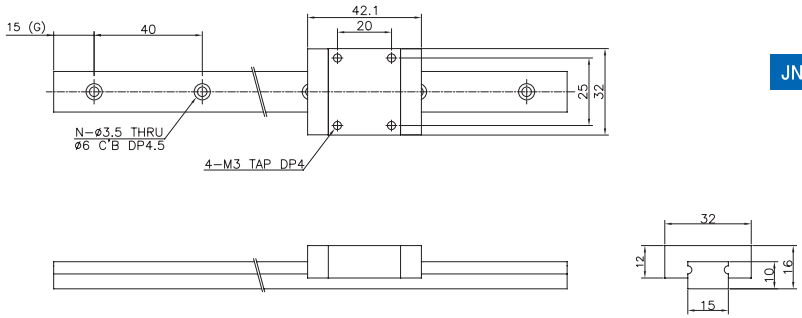


항 목	N (일반급)	H (상 급)	P (정밀급)
높이 H의 치수 허용차	±0.04	±0.02	±0.01
폭 N의 치수 허용차	±0.04	±0.025	±0.015
높이 H의 상호차	0.03	0.015	0.007
폭 N의 상호차	0.03	0.02	0.01
A면에 대한 C면의 주행평행도	ΔC(표1) 참조		
B면에 대한 D면의 주행평행도	ΔD(표1) 참조		

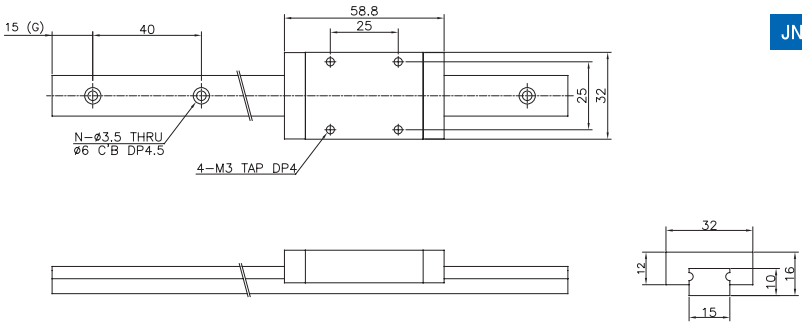




(표 1)



JNV15



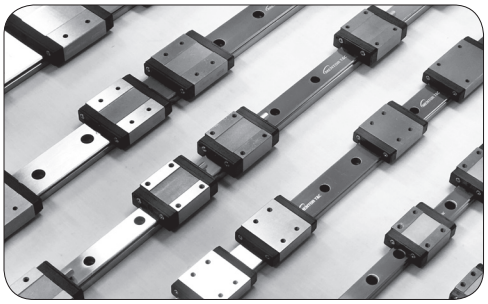
JNV15L

표준길이

70	110	150	190	230	270	310	350
390	430	470	510	550	590	630	670
710	750	790	830	870	910	950	990
1000							

JNW 7

미니츄어 가이드
Miniature Guide



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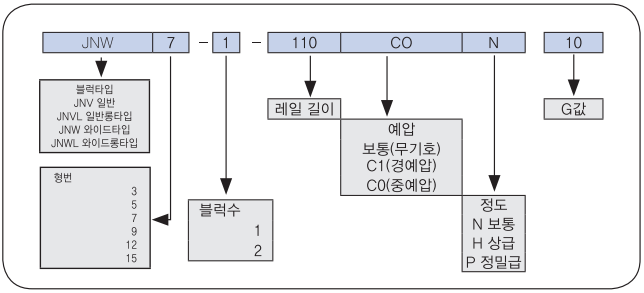
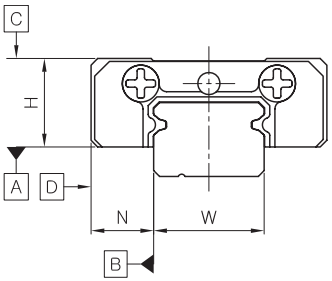
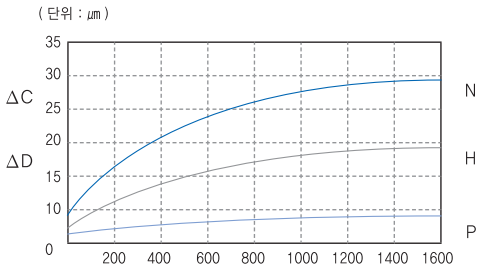


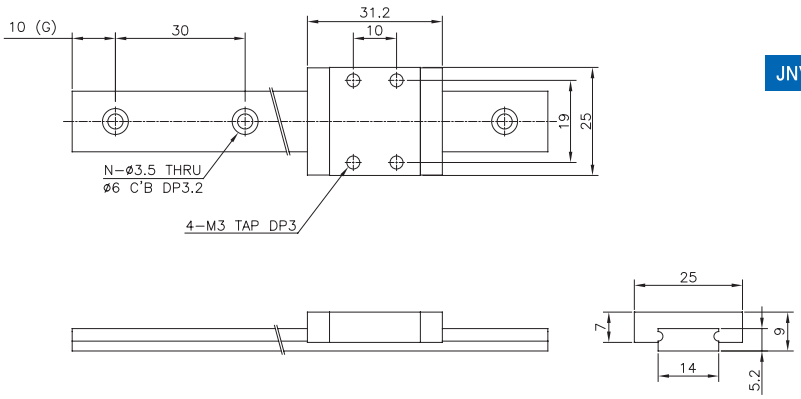
항 목	N (일반급)	H (상 급)	P (정밀급)
높이 H의 치수 허용차	±0.04	±0.02	±0.01
폭 N의 치수 허용차	±0.04	±0.025	±0.015
높이 H의 상호차	0.03	0.015	0.007
폭 N의 상호차	0.03	0.02	0.01
A면에 대한 C면의 주행평행도	ΔC(표1) 참조		
B면에 대한 D면의 주행평행도	ΔD(표1) 참조		



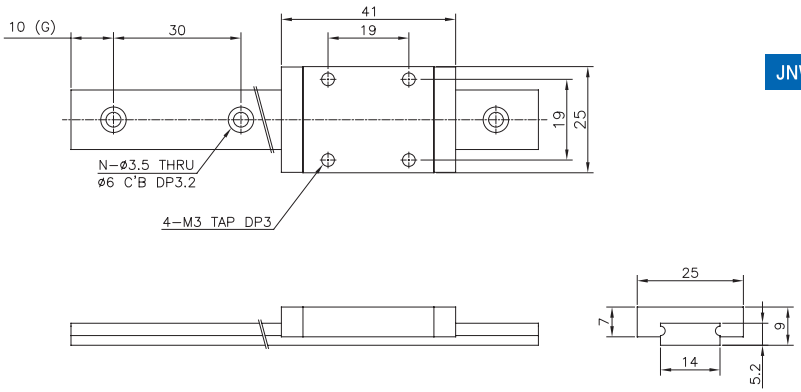


(표 1)

JNVW7



JNW7L

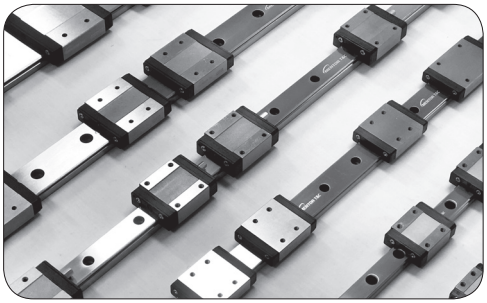


표준길이

50	80	110	140	170	200	230	260
290	320	350	380	410	440	470	500
530	560	590	620	650	680	710	740
770	800	830	860	890	920	950	980
1000							

JNW 9

미니츄어 가이드
Miniature Guide



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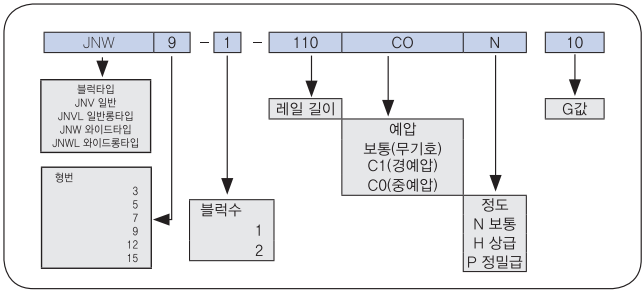
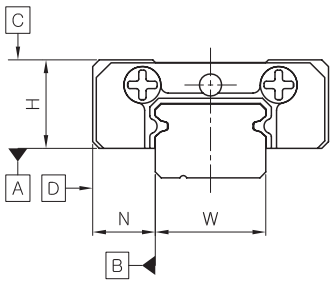
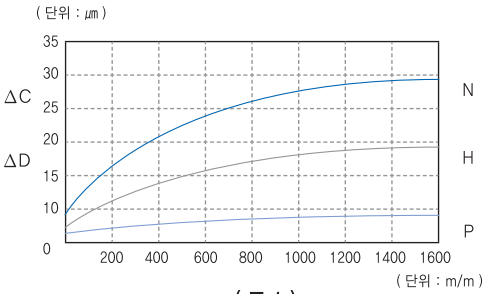
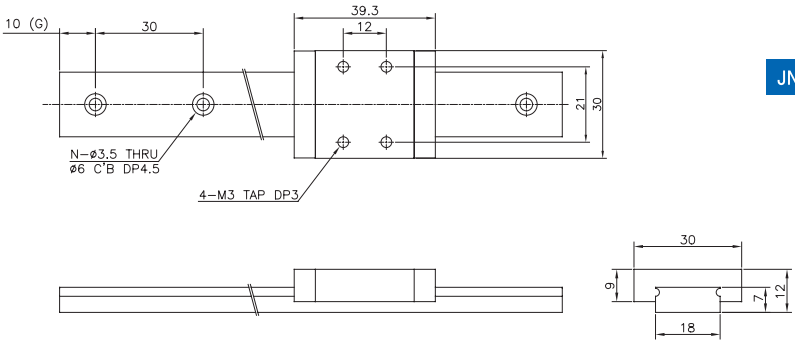


항 목	N (일반급)	H (상 급)	P (정밀급)
높이 H의 치수 허용차	±0.04	±0.02	±0.01
폭 N의 치수 허용차	±0.04	±0.025	±0.015
높이 H의 상호차	0.03	0.015	0.007
폭 N의 상호차	0.03	0.02	0.01
A면에 대한 C면의 주행평행도	ΔC(표1) 참조		
B면에 대한 D면의 주행평행도	ΔD(표1) 참조		

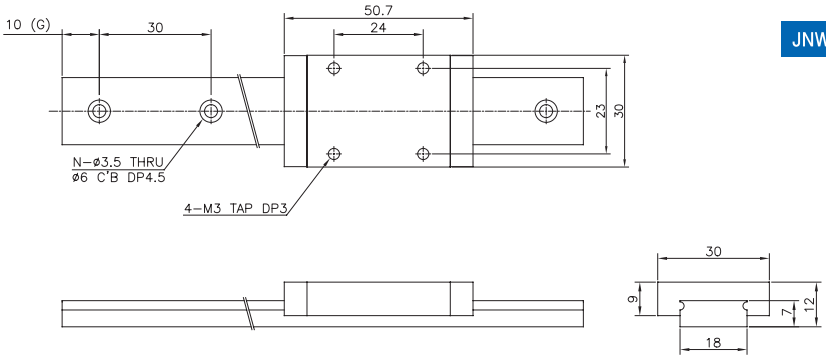




(표 1)



JNW9



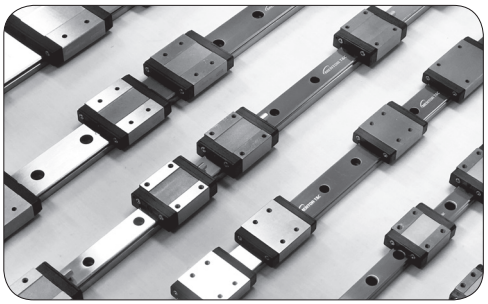
JNW9L

표준길이

50	80	110	140	170	200	230	260
290	320	350	380	410	440	470	500
530	560	590	620	650	680	710	740
770	800	830	860	890	920	950	980
1000							

JNW 12

미니츄어 가이드
Miniature Guide



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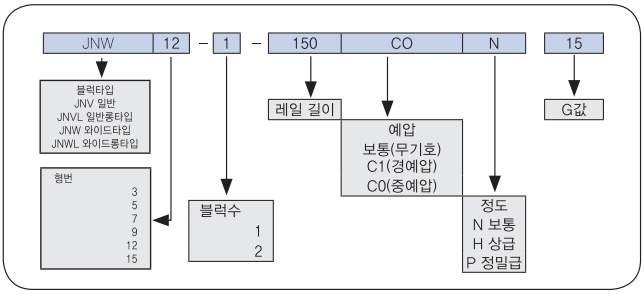
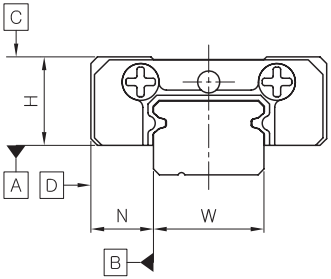
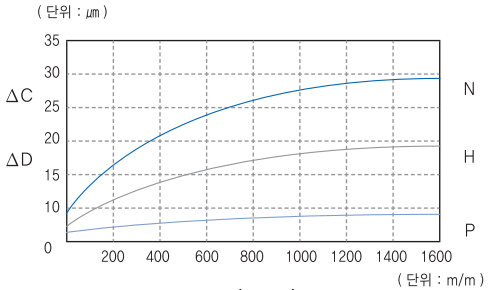


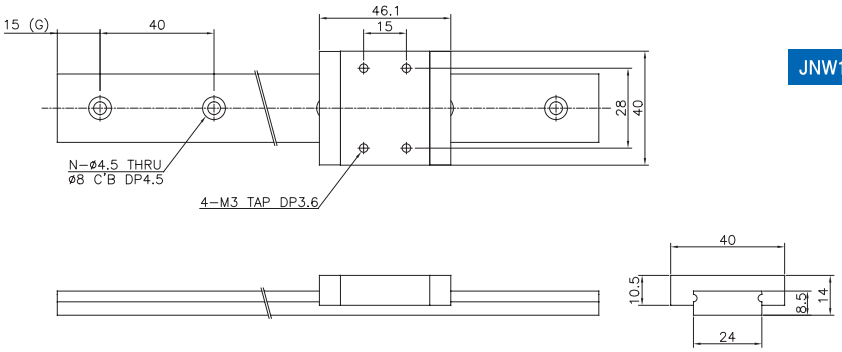
항 목	N (일반급)	H (상 급)	P (정밀급)
높이 H의 치수 허용차	±0.04	±0.02	±0.01
폭 N의 치수 허용차	±0.04	±0.025	±0.015
높이 H의 상호차	0.03	0.015	0.007
폭 N의 상호차	0.03	0.02	0.01
A면에 대한 C면의 주행평행도	ΔC(표1) 참조		
B면에 대한 D면의 주행평행도	ΔD(표1) 참조		



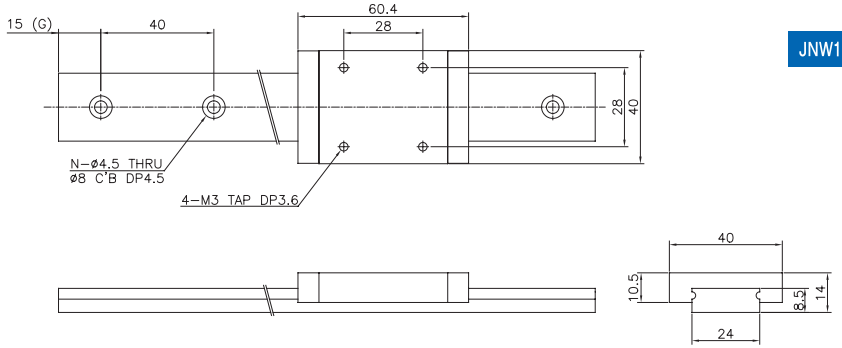


(표 1)

JNW12



JNW12L

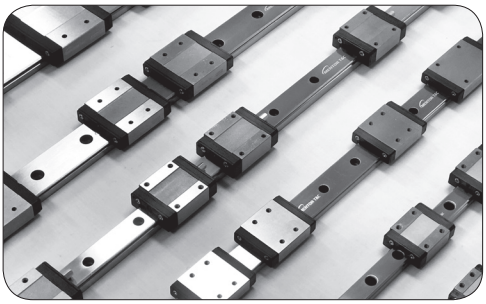


표준길이

70	110	150	190	230	270	310	350
390	430	470	510	550	590	630	670
710	750	790	830	870	910	950	990
1000							

JNW 15

미니츄어 가이드
Miniature Guide



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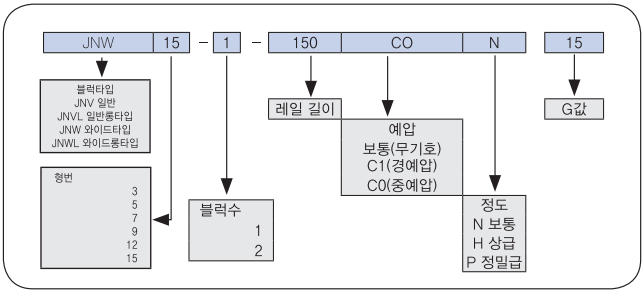
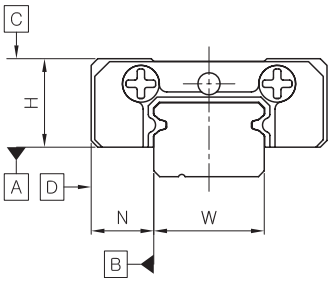
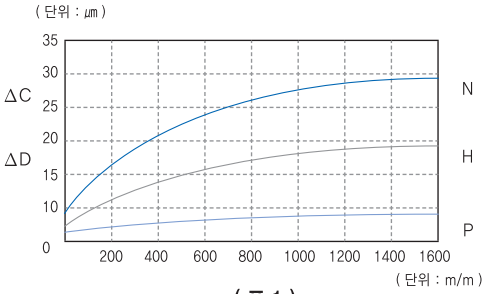


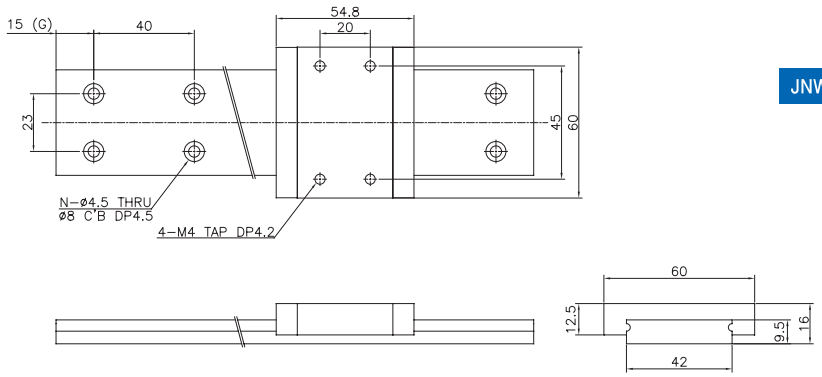
항 목	N (일반급)	H (상 급)	P (정밀급)
높이 H의 치수 허용차	±0.04	±0.02	±0.01
폭 N의 치수 허용차	±0.04	±0.025	±0.015
높이 H의 상호차	0.03	0.015	0.007
폭 N의 상호차	0.03	0.02	0.01
A면에 대한 C면의 주행평행도	ΔC(표1) 참조		
B면에 대한 D면의 주행평행도	ΔD(표1) 참조		



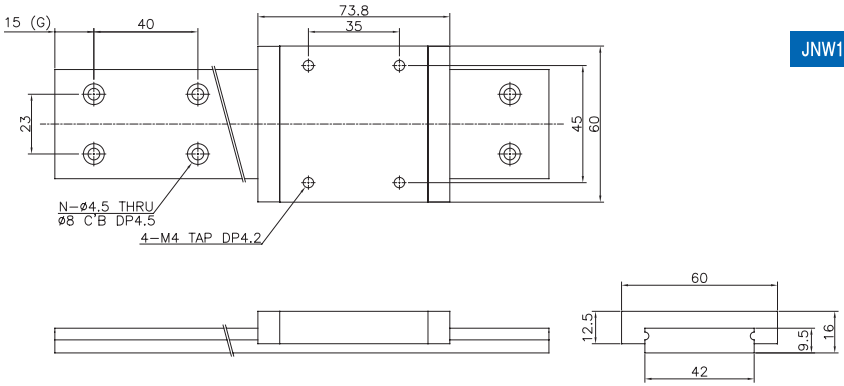


(표 1)

JNW15



JNW15L



표준길이

70	110	150	190	230	270	310	350
390	430	470	510	550	590	630	670
710	750	790	830	870	910	950	990
1000							