

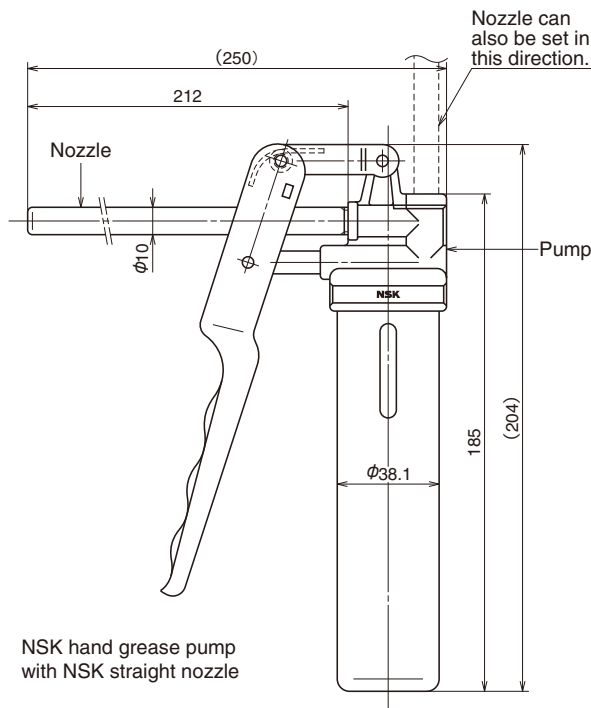
NSK Hand Grease Pump Unit



Feature

- ▶ **Easy operation**
Can be operated by one hand, yet there is no worry to making a mistake.
- ▶ **Inserting by high pressure**
Insert at 15 MPa.
- ▶ **No leaking**
Does not leak when held upside down.
- ▶ **Easy to change grease**
Simply attach grease in bellows tubes.
- ▶ **Prevents entry of foreign matter**
Foreign matter such as dust cannot enter since grease can be changed while in bellows tubes.
- ▶ **Remaining grease**
Can be confirmed through slit on pump.
- ▶ **Several nozzles**
Six types of nozzles and two extension pipes to choose from.

NSK Hand Grease Pump (Reference number: NSK HGP) (Contains one NSK straight nozzle)



Specifications

Discharge pressure	15 MPa
Spout volume	0.35cc /shot
Mass of main body (without nozzle)	240 g
Provided nozzle	90 g
Body diameter	φ38.1
Accessory	Several nozzles for a unique application can be attached

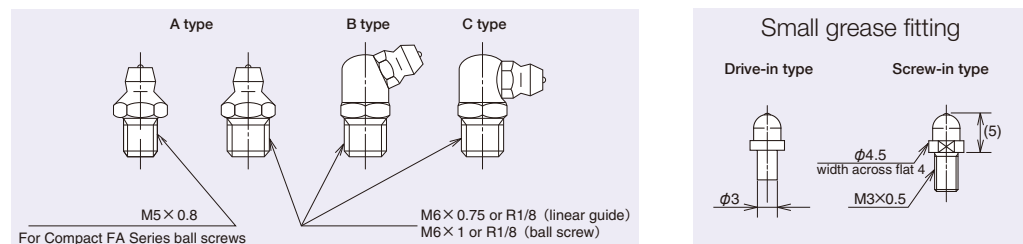
Grease nozzle

Specifications

Type	Reference no.	Applications	Dimensions
NSK straight nozzle	NSK HGP NZ1	Can be used with grease fitting A, B, and C under JIS B1575 standard.	
NSK chuck nozzle	NSK HGP NZ2	Same as above. However, there is no need to press the hand pump because the grease fitting and the nozzle come to contact due to the chucking mechanism at the tip.	
NSK fitting nozzle	NSK HGP NZ3	Dedicated for the - φ3 drive-in grease fitting.	
NSK point nozzle	NSK HGP NZ4	Used for linear guides and ball screws which do not have grease fitting. Supplies grease directly to the ball grooves, or through the opening of ball slide or ball slide to inside.	
NSK flexible nozzle	NSK HGP NZ5	The tip of the flexible nozzle is chuck nozzle. Used to supply grease to the area where hand cannot reach.	
NSK flexible extension pipe	NSK HGP NZ6	Flexible extension pipe connects the grease pump and the nozzle.	
NSK straight extension pipe	NSK HGP NZ7	Straight extension pipe connects the grease pump and the nozzle.	
NSK MCH exclusive fitting nozzle	NSK HGP NZ8	For MCH Series grease replenishment	

Applicable Grease Nozzle and Grease Fitting

► Grease fitting specifications



The tables show applicable nozzles and fittings for each products, series and sizes.

► Applicable grease nozzles for NSK linear guides

Series	Model No.	Tap hole for grease fitting	Standard grease fitting	Straight nozzle NZ1	Chuck nozzles NZ2	Drive-in fitting nozzle NZ3	Point nozzle NZ4	Flexible nozzle NZ5
LH	LH08, 10	—	—				○	
	LH12, 15	φ 3	Drive-in type			○		
	LH20, 25, 30, 35* ¹	M6 × 0.75	B type	○	○			○
	LH45, 55, 65	Rc1/8	B type	○	○			○
SH	SH15	φ 3	Drive-in type			○		
	SH20, 25, 30, 35* ¹	M6 × 0.75	B type	○	○			○
	SH45, 55	Rc1/8	B type	○	○			○
VH	VH15	φ 3	Drive-in type			○		
	VH20, 25, 30, 35* ¹	M6 × 0.75	B type	○	○			○
	VH45, 55	Rc1/8	B type	○	○			○
TS	TS15	φ 3	Drive-in type			○		
	TS20, 25, 30, 35* ¹	M6 × 0.75	B type	○	○			○
LS	LS15	φ 3	Drive-in type			○		
	LS20, 25, 30, 35* ¹	M6 × 0.75	B type	○	○			○
SS	SS15	φ 3	Drive-in type			○		
	SS20, 25, 30, 35* ¹	M6 × 0.75	B type	○	○			○
LW	LW17	φ 3	Drive-in type			○		
	LW21, 27, 35* ¹	M6 × 0.75	B type	○	○			○
	LW50	Rc1/8	B type	○	○			○
PU	PU05, 07, 09, 12	—	—				○	
	PU15	φ 3	Drive-in type			○		
LU	LU05, 07, 09, 12, 15	—	—				○	
PE	PE05, 07, 09, 12	—	—				○	
	PE15	φ 3	Drive-in type			○		
LE	LE05, 07, 09, 12, 15	—	—				○	
RA	RA15, 20	φ 3	Drive-in type			○		
	RA25, 30, 35* ¹	M6 × 0.75	B type	○	○			○
	RA45, 55, 65	Rc1/8	B type	○	○			○
LA	LA25, 30, 35* ¹	M6 × 0.75	B type	○	○			○
	LA45, 55, 65	Rc1/8	B type	○	○			○
HA	HA25, 30, 35* ¹	M6 × 0.75	B type	○	○			○
	HA45, 55	Rc1/8	B type	○	○			○
HS	HS15	φ 3	Drive-in type			○		
	HS20, 25, 30, 35* ¹	M6 × 0.75	B type	○	○			○

1 If using a chuck nozzle, avoid interference with table and rail.

* For PU, LU, PE, and LE Series, apply grease directly to ball groove, etc. using point nozzle.

* A long threaded grease fitting is required for NSK linear guides because of dust-proof parts.

► Applicable grease nozzle for Ball Screws

Series			Model no.		Tap hole for grease fitting	Standard grease fitting	Straight nozzle NZ1	Chuck nozzles NZ2	Drive-in fitting nozzle NZ3	Point nozzle NZ4	Flexible nozzle NZ5
Finished shaft end	Compact FA	High-accuracy, clean	USS		M5×0.8	A type	○	○			○
		General	PSS			A type	○	○			○
		Transfer equipment	FSS			A type	○	○			○
	Miniature, fine lead		MA	Shaft dia. 12 or less	—	—				○	
				Shaft dia. 16 or over	M6×1	—	○	○			○
	Small equipment		FA		M6×1	—	○	○			○
	Machine tools		SA	Shaft dia. 36 or less	M6×1	—	○	○			○
				Shaft dia. 40 or over	Rc1/8	—	○	○			○
	Stainless steel		KA	Shaft dia. 12 or less and lead 2 or less except above	M3×0.5	—			○		
					M6×1	—	○	○			○
	Transfer equipment		VFA	Shaft dia. 12 or less	φ2.7	—				○	
				Shaft dia. 15 or over	φ3.5	—				○	
			RMA			—	—				○
Blank shaft end	Miniature, fine lead		MS	Shaft dia. 12 or less	—	—				○	
				Shaft dia. 16 or over	M6×1	—	○	○			○
	Small equipment		FS		M6×1	—	○	○			○
	Machine tools		SS	Shaft dia. 36 or less	M6×1	—	○	○			○
				Shaft dia. 40 or over	Rc1/8	—	○	○			○
	Transfer equipment		RMS		—	—				○	
			RNFTL	Shaft dia. 12 or less	M3×0.5	—			○		
				Shaft dia. 14 or over	M6×1	—	○	○			○
			RNFBFL	Shaft dia. 12 or less	M3×0.5	—			○		
				Shaft dia. 14 or over	M6×1	—	○	○			○
			RNCT		—	—				○	
			RNFCFL	Shaft dia. 12 or less	M3×0.5	—			○		
	Shaft dia. 15 or over	M6×1		—	○	○			○		
RNSTL			M6×1	—	○	○			○		

* Normally, grease fitting is not provided to NSK ball screw except Compact FA Series. Ball nut has a tap hole to install a grease fitting. The user should install a grease fitting if necessary.

* For M3 × 0.5 tap hole, small fitting (screw-in type) is available. Please contact NSK.

* VFA type cannot install grease fitting. Apply grease directly to inside the nut through oil hole using point nozzle.

* MA, RMA, MS, RMS, and RNCT types have no tap hole, apply grease directly to the screw shaft and ball grooves using point nozzle.

► Applicable grease nozzles for Monocarriers

Series	Model no.	Tap hole for grease fitting	Standard grease fitting	Straight nozzle NZ1	Chuck nozzles NZ2	Drive-in fitting nozzle NZ3	Flexible nozzle NZ5	MCH exclusive fitting nozzle NZ8
MCM	MCM02	—	—					
	MCM03, 05, 08, 10	φ 3	Drive-in type			○		○*
	MCM06	M6 × 0.75	A type	○	○		○	
MCH	MCH06, 09, 10	φ 3	Drive-in type					○

* Use of NZ3 is recommended.

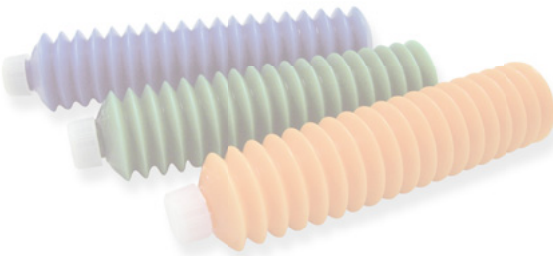
Before use of NSK Linear Guides, Ball Screws and Monocarriers

Wipe off rust preventive oil before use if it is supplied to the products.
For the products not applied grease, try the system a few times (operate the ball slide of linear guide, ball nut of ball screw or monocarrier slider for whole stroke length 5 to 10 times) after supplying grease, and wipe off excess grease.

Intervals of checks and replenishments

Although the grease is of high quality, it gradually deteriorates and its lubrication function diminishes. Also, the grease in the ball slide, ball nut and monocarrier slider is gradually removed by stroke movement. In some environments, the grease becomes dirty, and foreign objects may enter. Grease should be replenished depending on frequency of use.
The following is a guide of grease replenishment intervals.

Intervals of checks	Items to check	Intervals of replenishments
3 - 6 months	Dirt, foreign matters such as cutting chips	Usually once per year. Every 3 000 km for material handling system that travels more than 3 000 km per year. Replenish if checking results warrant it necessary.



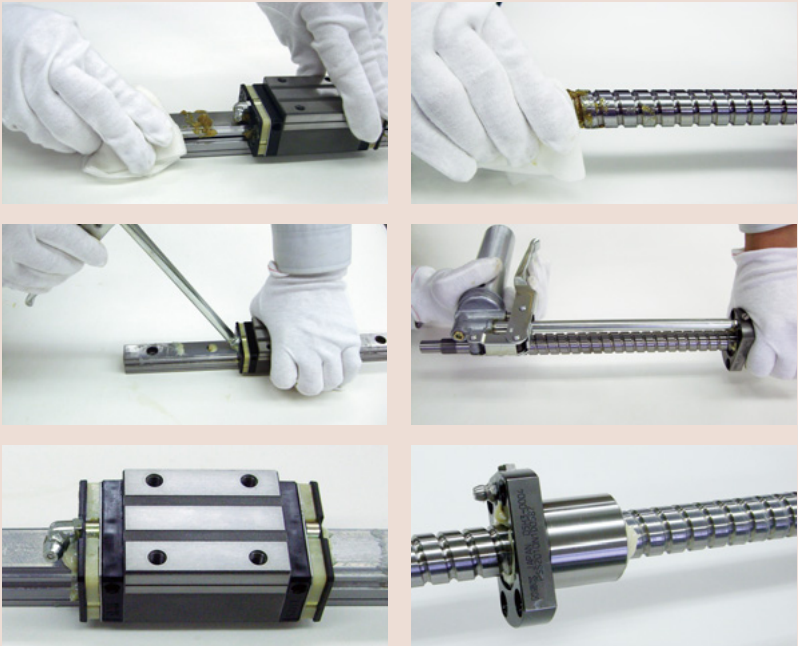
How to replenish the grease and volume of grease replenished

Supply required amount through grease fitting by a grease pump. Wipe off old grease and accumulated dust before supplying new grease. If grease fitting is not used, or there is no holes for grease replenishment, apply grease directly to the rail or to the ball groove of the screw shaft, and move a ball slide, ball nut or monocarrier slider few strokes so the grease permeates into the ball slide, monocarrier slider and inside the nut.

Once grease is replenished, another supply is not required for a long time. But under some operational conditions, it is necessary to periodically replenish grease.
When replenishing using a grease pump, fill the inside of ball slide, ball nut and monocarrier slider with grease. Supply grease until it comes out from the ball slide, ball nut or monocarrier slider area. Move ball slide, ball nut and monocarrier slider by hand while filling them with grease, so the grease permeates all areas.
Do not operate the machine immediately after replenishing. Always try the system a few times to spread the grease throughout the system and to remove excess grease. Trial operations are necessary because the resistance to sliding force and screw torque greatly increases immediately after replenishment (full-pack state) and may cause problems. Wipe off excess grease that accumulates at end of rail and screw shaft after trial runs so the grease does not move to other areas.

How to replenish

- 1** Wipe off old greases on the rail and screw shaft by clean cloth.
- 2** Supply grease until it comes out from the ball slide or ball nut area. Move the ball slide or ball nut by hand while filling them with grease.
- 3** Full-pack state.



Internal space

Refer to the tables below for the grease quantity of full-pack state.

Inside space of the ball slide of linear guide

► LH、SH Series Unit: cm³

Series Model No.	LH		SH	
	High-load type	Super-high-load type	High-load type	Super-high-load type
08	0.2	—	—	—
10	0.4	—	—	—
12	1.2	—	—	—
15	3	4	2	3
20	6	8	5	7
25	9	13	9	12
30	13	20	11	17
35	22	30	20	27
45	47	59	42	53
55	80	100	73	93
65	139	186	—	—

► LW Series Unit: cm³

Series Model No.	LW
17	3
21	3
27	7
35	24
50	52

► RA Series Unit: cm³

Series Model No.	RA	
	High-load type	Super-high-load type
15	1.0	1.5
20	2	2.5
25	3	3.5
30	5	6
35	6	8
45	10	13
55	15	20
65	33	42

► LA Series Unit: cm³

Series Model No.	LA	
	High-load type	Super-high-load type
25	8	12
30	14	18
35	21	29
45	38	48
55	68	86
65	130	177

► HA、HSシリーズ Unit: cm³

Series Model No.	HA	HS
15	—	5
20	—	9
25	16	16
30	27	25
35	42	40
45	67	—
55	122	—

► VH Series Unit: cm³

Series Model No.	VH	
	High-load type	Super-high-load type
15	3	4
20	6	8
25	9	13
30	13	20
35	22	30
45	47	59
55	80	100

► PU、LU Series Unit: cm³

Series Model No.	PU		LU	
	Standard type	High-load type	Standard type	High-load type
05	0.1	—	0.1	—
07	0.1	—	0.1	—
09	0.2	0.3	0.2	0.3
12	0.3	0.4	0.3	0.4
15	0.8	1.1	0.8	1.1

► TS Series Unit: cm³

Series Model No.	TS
15	2
20	3
25	6
30	9
35	15

► PE、LE Series Unit: cm³

Series Model No.	PE		LE		
	Standard type	High-load type	Medium-load type	Standard type	High-load type
05	0.1	—	0.1	0.1	—
07	0.2	—	0.1	0.2	0.3
09	0.4	0.5	0.2	0.4	0.5
12	0.5	0.7	0.3	0.5	0.7
15	1.2	1.6	0.8	1.2	1.6

► LS、SS Series Unit: cm³

Series Model No.	LS		SS	
	Medium-load type	High-load type	Medium-load type	High-load type
15	2	3	1.5	2
20	3	4	3	4
25	5	8	5	7
30	8	12	7	11
35	12	19	11	17

Inside space of ball nut

► Compact FA PSS, USS and FSS types

Shaft dia. × Lead (mm)	Inside space (cm ³)	Shaft dia. × Lead (mm)	Inside space (cm ³)	Shaft dia. × Lead (mm)	Inside space (cm ³)	Shaft dia. × Lead (mm)	Inside space (cm ³)
10×05	0.8	15×05	2	20×05	3.4	25×05	4.4
10×10	0.7	15×10	2	20×10	3.2	25×10	4.7
12×05	1	15×20	2.8	20×20	3.2	25×20	3.9
12×10	1	15×30	3.4	20×30	4.6	25×25	4.3
12×20	1.2			20×40	5.3	25×30	5.5
12×30	1.5			20×60	7	25×50	7.7

* For other standard ball screws, refer to the catalog "Precision Machine Components".

Inside space of the slider of monocarrier

Model No.	Lead (mm)	Inside space (cm ³)	Model No.	Lead (mm)	Inside space (cm ³)	Model No.	Lead (mm)	Inside space (cm ³)
MCM03	1	1	MCM06	5	8.3	MCH06	5	4.9
	2	0.9		10	6.5		10	4.7
	10	1.8		20	5.5		20	4.7
	12	1.7	MCM08	5	11.6	MCH09	5	10
MCM05	5	4.2		10	9.8		10	10
	10	4		20	8.7		20	9.7
	20	2.1		30	7.2	MCM10	10	17.8
	30	3.6	MCM10	10	19.4		20	16.2
				20	17.4			
				30	13.6			