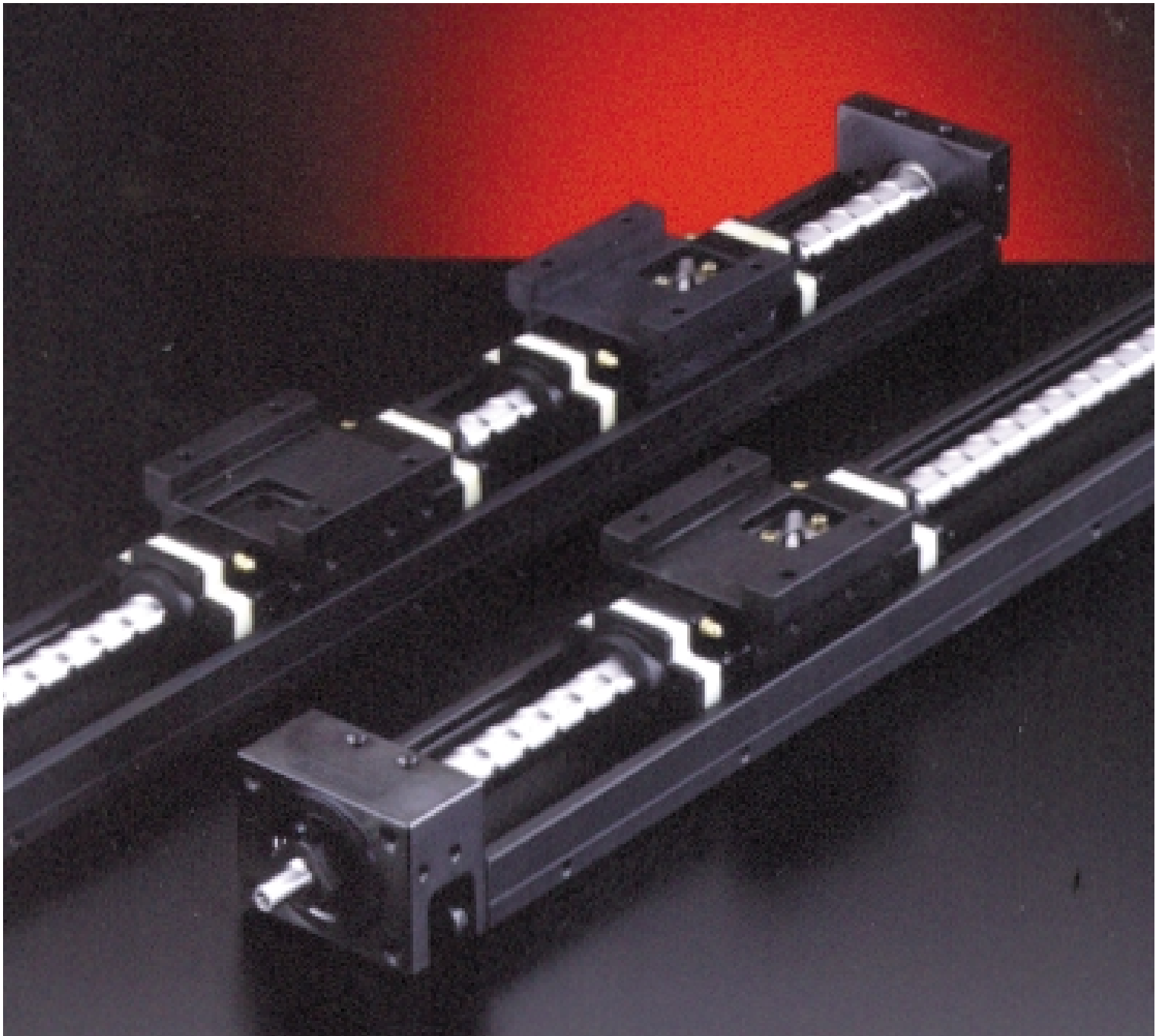


# Maintenance-free Series MCM Monocarrier



Compact actuator combines ball screws and linear motion bearings. Clean lubricating unit protects the environment while providing low-cost, maintenance-free operation. An upgraded series of Monocarrier with NSK K1®.



*The landmark multi-functional actuator dramatically reduces design and assembly loads due to the unique construction of Monocarrier, which was developed as a key component for automation device mechanical parts.*

*In addition, the maintenance-free NSK K1® lubrication unit is equipped as a standard feature and surface-treatment is included in standard specifications.*



Monocarrier is a standard-setting product developed to meet accelerating industry needs for labor saving, energy conservation and factory automation. Production systems adopting integrated automation devices are currently coming in line in every area of the industry. This production system is well suited for a variety of applications, including automatic assembly, inspection, packaging and transportation and will be further promoted.

Monocarrier was developed as a key component of automation device mechanical parts, the core of this production system. The sophisticated multi-functional electric actuator represents a successful combination of NSK ball screws (for feeding) and linear guides (for guide way), which are internationally recognized for reliability. This combination dramatically reduces design and assembly loads of automation devices, total costs and line operation time, while achieving high precision, high speed, and lower costs. Long-term, maintenance-free operation was achieved by installing the NSK K1® lubrication unit, which contributed to reduced piping for lubrication and maintenance cost, and improved machine economization, with full consideration for the global environment.

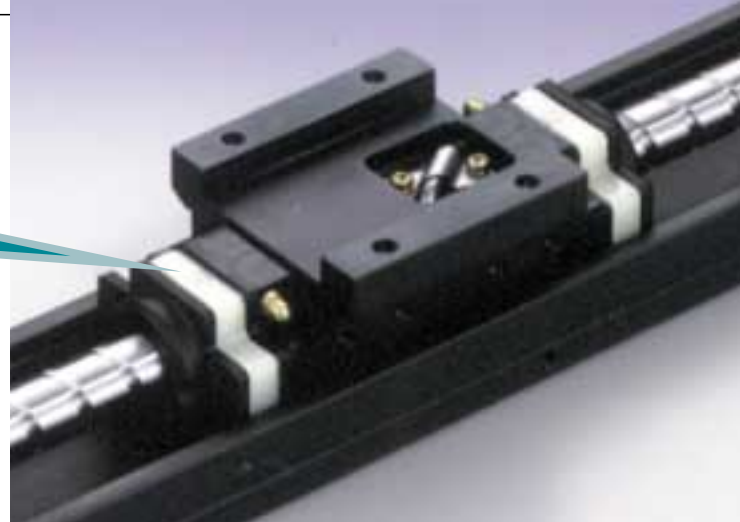
1. Features.....	2
2. Performance .....	3
2.1 High-speed durability test of linear guide without lubricant	
2.2 High-speed durability test of ball screws without lubricant	
3. Standard Specification .....	3
4. Reference Numbers .....	4
5. Stroke and Lead of Products with Standard Specification.....	5
6. Accuracy Standard.....	5
7. Monocarrier Rigidity .....	6
7.1 Linear guide rigidity	
7.2 Rail material rigidity	
8. Dimensions of Standard Products .....	7
9. Optional Components .....	16
9.1 Optional components	
9.2 Sensor specification	

# Maintenance-free Series MCM Monocarrier

## Guide to NSK K1®

NSK K1 is applied to the Monocarrier guide and ball screw parts.

In combination with grease, meets demand for long-term and maintenance-free operation.



Incorporates porous synthetic resin, a newly developed material which retains a generous volume of lubricating oil; the continuous release of oil reinforces overall lubricating performance.

### 1. Features

Exhibits outstanding efficiency with NSK K1, an effective lubricating unit, incorporating a light-weight, compact Monocarrier designed for easy installation, with surface-treatment on rail and slider for maintaining optimum performance.

#### Long-term, maintenance-free usage

In mechanical environments where lubrication is difficult to apply, long-term running efficiency is maintained by using the NSK K1 in combination with grease.

Manufacturing equipment for automobile parts processing, etc.

#### Prevention of oil-related environmental pollution

In locations where oil greatly affects the environment, or in mechanisms with severe hygienic restrictions, sufficient lubrication is provided using the NSK K1 in combination with minimal grease.

Food Processing, medical equipment, manufacturing devices for liquid crystal displays and semi-conductors, etc.

#### Excellent corrosion resistance capability

Low-temperature black chrome plating on rail and slider as a standard feature prevents corrosion under ordinary storage and usage conditions.

FA line

#### Simplified design and installation

The main base, ball screw, and support bearings are fully integrated into one unit. Combining these four parts brings considerable savings in man-hours for design and time and effort for installation. (Installation dimensions are identical to the existing Monocarrier.)

#### Lightweight and compact size

Integration minimizes cross sectional size, while reducing weight by one-half of the existing combination type, mono-axis table.

#### High rigidity

Although light in weight, the main base is concave to resist bending, and can be handled even with cantilever support. Elastic deformation of the linear guide bearing is small due to preload.

#### Longer operating life

Rolling bearings contribute to less wear and longer operation.

#### Smooth movement and high precision

Rolling bearings contribute to less friction and higher positioning accuracy.

#### Four-directional iso-load

Contact angle of guide bearing is set at 45° to provide equivalent support for vertical and lateral loads.

#### Double slider

Double slider specifications for improving moment load capacity or straightness are also available.

# Maintenance-free Series MCM Monocarrier

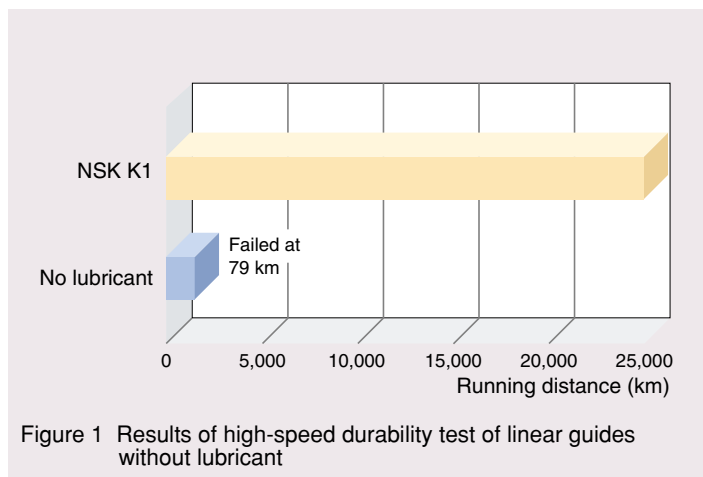
## 2. Performance

NSK K1 unit exhibits outstanding features, confirmed by abundant experimental data, along with proven performance of the NSK K1 Equipped Linear Guide and NSK K1 Equipped Ball Screw.

### 2.1 High-speed durability test of linear guides without lubricant

Results of high-speed durability testing of linear guide without lubricant are shown in Figure 1. While the linear guide cannot be operated without lubricant for even short periods without damage, the installation of the NSK K1 permits the linear guide to run over 25,000 km without any problem.

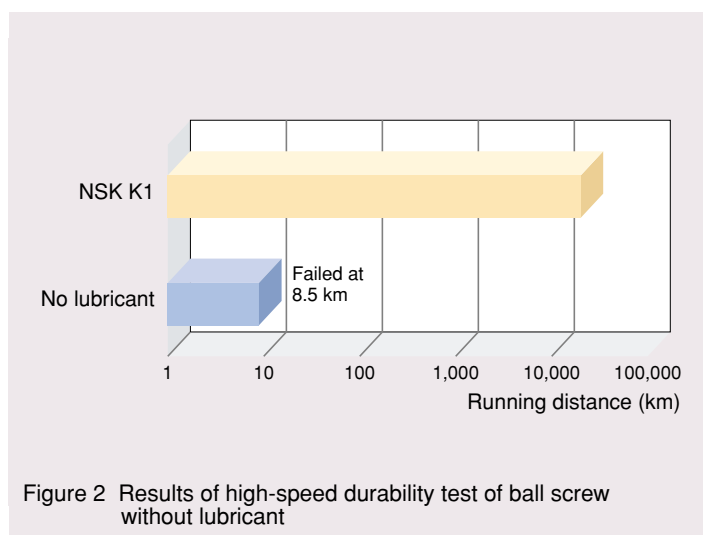
Conditions	Test piece: LH30AN (Preload Z1)
	Speed: 200 m/min
	Stroke: 1800 mm
No lubricant	All grease removed
NSK K1	All grease removed + NSK K1



### 2.2 High-speed durability test of ball screws without lubricant

Results of high-speed durability testing of ball screw without lubrication are shown in Figure 2. While the ball screw cannot be operated without a lubricant at 8.5 km without damage, the installation of the NSK K1 permits the ball screw to run over 21,000 km without any problem.

Conditions	Test piece: RBS2020 (ball screw)
	Shaft diameter: 20 mm
	Lead: 20 mm
	Load: none
	Speed: 4000 rpm (80 m/min)
	Stroke: 600 mm
No lubricant	All grease removed
NSK K1	All grease removed + NSK K1

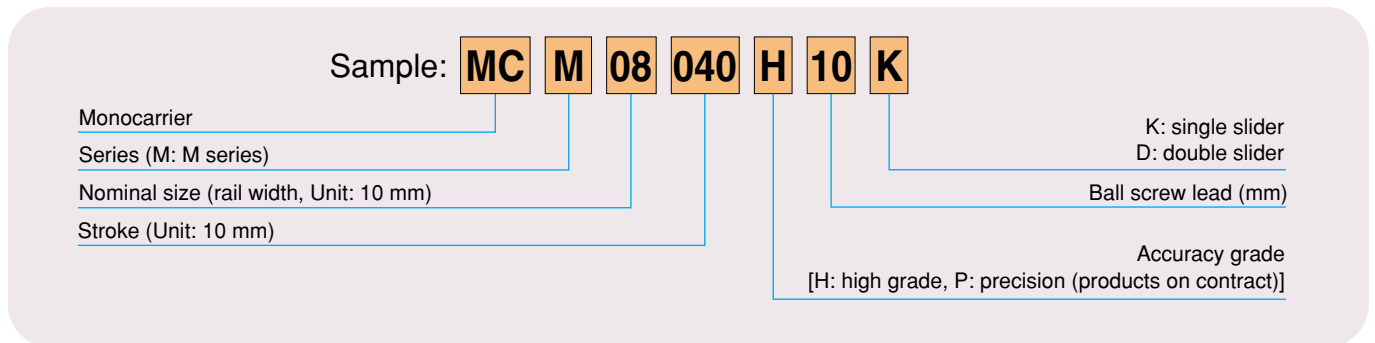


## 3. Standard Specification

- (1) NSK K1 is equipped between the side seal and end cap.
- (2) Surfaces of rail and slider are treated with low-temperature black chrome plating.
- (3) NSK standard grease is packed into a slider for shipment (AV2 grease).
- (4) Accuracy grade, preload and ball screw lead are the same specification as the existing standard series.  
(Dynamic torque is slightly increased due to the equipped NSK K1.) Please refer to torque specifications in each dimension table.

## 4. Reference Numbers

The reference number of Monocarrier Maintenance-free Series is composed of main basic specifications.



NSK also offers E series in addition to M series; please contact NSK for details.

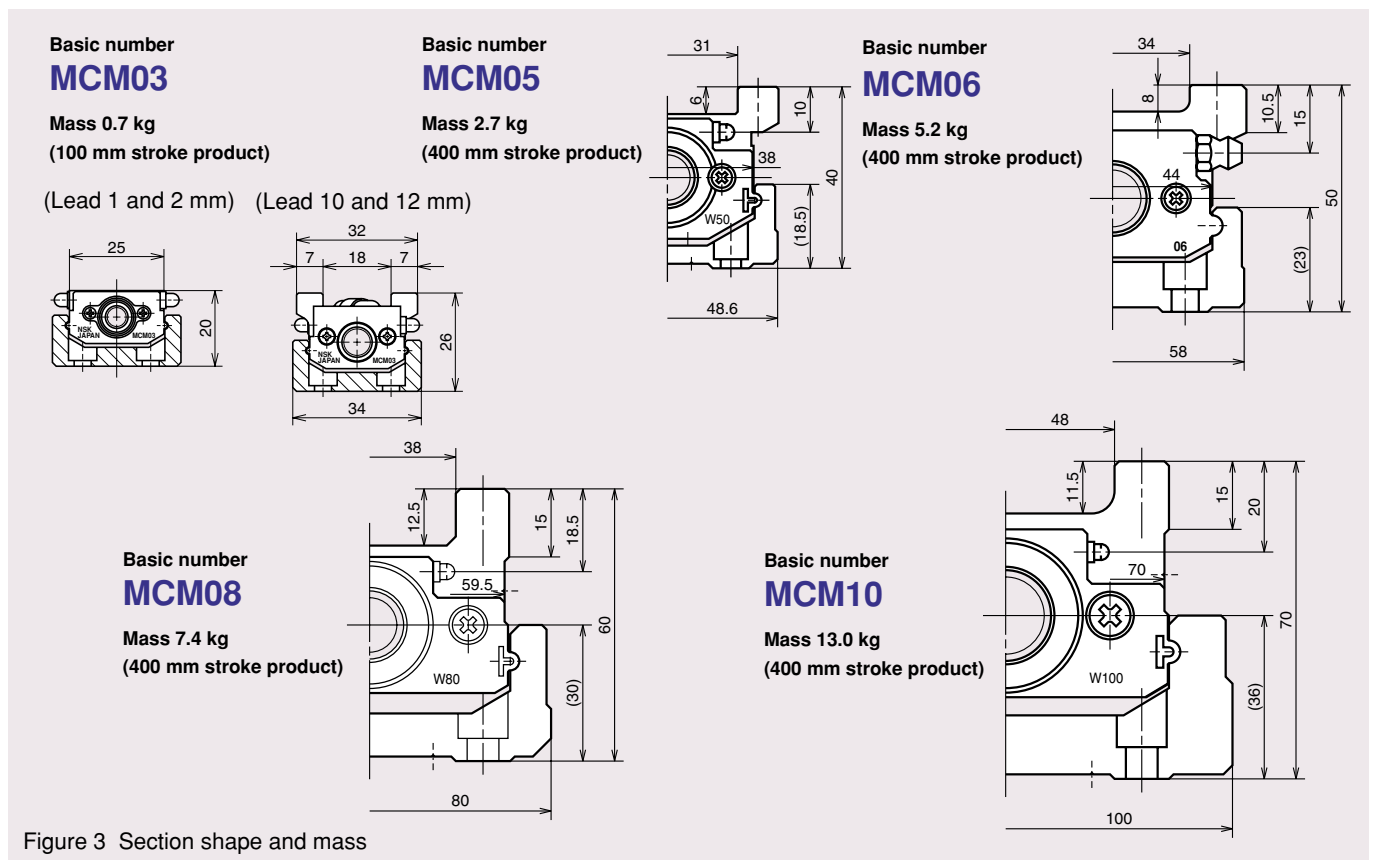


Figure 3 Section shape and mass

## Handling instructions

To maintain the high efficiency of NSK K1 over a long period of time, please follow these instructions.

- Permissible temperature range
  - Max. operating temperature: 50°C
  - Max. peak temperature: 80°C
- Use of chemicals
  - Never leave the Monocarrier in close proximity to grease-removing organic solvents such as hexane, thinners, etc.
  - Never immerse the Monocarrier in kerosene or rust preventative oils which contain kerosene.

Note: Other oils present no problems: water-based cutting oil, oil-based cutting oil, grease (mineral oil-AV2, ester-PS2).

# Maintenance-free Series MCM Monocarrier

## 5. Stroke and Lead of Products with Standard Specification

In order to meet customer requests for fast delivery, three types of ball screw lead are available as standard: 5, 10 and 20 mm. The accuracy grades of high grade (H) products are also provided as standard inventory by type of stroke as shown in Table 1. As for MCM03, leads 1, 2, 10 and 12 mm are available.

In order to increase rigidity and load capacity for guides, double slider specifications with an additional subslider provided only with linear guide function are set as standard specifications, and the types of stroke shown in Table 2 are available. (A double slider is not included as a standard specification for MCM03.)

Table 1 Stroke and lead of products with a single slider as a standard specification

● mark: standard inventory, ○ mark: made to order Unit: mm

Nominal size Stroke \ Lead	MCM03				MCM05			MCM06			MCM08			MCM10	
	1	2	10	12	5	10	20	5	10	20	5	10	20	10	20
50	●	●	—	—	○	●	—	○	○	—	○	—	—	—	—
100	●	●	●	●	○	●	—	●	●	—	○	●	—	—	—
150	○	○	○	○	○	●	—	—	—	—	○	—	—	—	—
200	—	—	●	○	○	●	—	●	●	—	○	●	—	●	—
250	—	—	○	○	—	●	—	—	—	—	—	—	—	—	—
300	—	—	—	—	—	●	●	●	●	●	—	●	●	●	●
400	—	—	—	—	—	●	●	●	●	●	—	●	●	●	●
500	—	—	—	—	—	●	●	○	○	○	—	●	●	○	○
600	—	—	—	—	—	●	○	—	○	○	—	●	○	●	○
700	—	—	—	—	—	—	—	—	●	●	—	○	○	○	○
800	—	—	—	—	—	—	—	—	○	○	—	○	○	●	○
900	—	—	—	—	—	—	—	—	—	—	—	—	—	○	○
1000	—	—	—	—	—	—	—	—	—	—	—	—	—	○	○

Table 2 Products with a double slider as a standard specification

○ mark: made to order Unit: mm

Nominal size Stroke \ Lead	MCM05		MCM06			MCM08		MCM10	
	10	20	5	10	20	10	20	10	20
60	○	—	—	—	—	—	—	—	—
70	—	—	—	—	—	—	—	○	—
80	—	—	—	—	—	○	—	—	—
110	○	—	○	○	—	—	—	—	—
160	○	—	—	—	—	—	—	—	—
170	—	—	—	—	—	—	—	○	○
180	—	—	—	—	—	○	○	—	—
210	○	○	○	○	○	—	—	—	—
270	—	—	—	—	—	—	—	○	○
280	—	—	—	—	—	○	○	—	—
310	○	○	○	○	○	—	—	—	—
370	—	—	—	—	—	—	—	○	○
380	—	—	—	—	—	○	○	—	—
410	○	○	○	○	○	—	—	—	—
470	—	—	—	—	—	—	—	○	○
480	—	—	—	—	—	○	○	—	—
510	○	○	—	○	○	—	—	—	—
570	—	—	—	—	—	—	—	○	○
580	—	—	—	—	—	○	○	—	—
610	—	—	—	○	○	—	—	—	—
670	—	—	—	—	—	—	—	○	○
680	—	—	—	—	—	○	○	—	—
710	—	—	—	○	○	—	—	—	—
870	—	—	—	—	—	—	—	○	○

## 6. Accuracy Standard

The accuracy grade of Monocarrier standard inventories is high grade(H).

Please contact NSK for details on precision grade (P).

Table 3 Accuracy standard

Unit: μm

Class Stroke (mm)	High grade (H)			Precision (P)			
	Repeatability	Running parallelism (vertical)	Backlash	Repeatability	Positioning accuracy	Running parallelism (vertical)	Backlash
50	±10	14	20 or less	±3	20	8	3 or less
100							
150							
200							
250							
300		16			25		
400							
500						12	
600							
700		23			30	15	
800							
900							
1000							

NSK assessment system is adopted.



## 7. Monocarrier Rigidity

### 7.1 Linear guide rigidity

Using its own high-precision processing technique, NSK successfully eliminated Monocarrier linear guide clearance with micron-meter level processing accuracy. The linear guide requires virtually no clearance and exhibits the load/deformation characteristics shown in Figure 4.

Rigidity value for load in each direction is shown in Table 4.

Table 4 Monocarrier rigidity

Basic number	Rigidity in radial direction (N/ $\mu\text{m}$ )		Moment rigidity ( $\times 10^3\text{N}\cdot\text{m}/\text{rad}$ )		
	Vertical direction	Lateral direction	Rolling direction	Pitching direction	Yawing direction
MCM03 (lead 1 and 2)	25	25	19	9	9
MCM03 (lead 10 and 20)	34	34	20	11	11
MCM05	120	120	39	20	20
MCM06	145	145	69	39	39
MCM08	195	195	175	98	98
MCM10	215	215	265	125	125

The above figures are obtained as a result of calculations based on the deformation amount under 2.8% of dynamic load rating for radial rigidity and 5% load of static moment rating for moment rigidity.

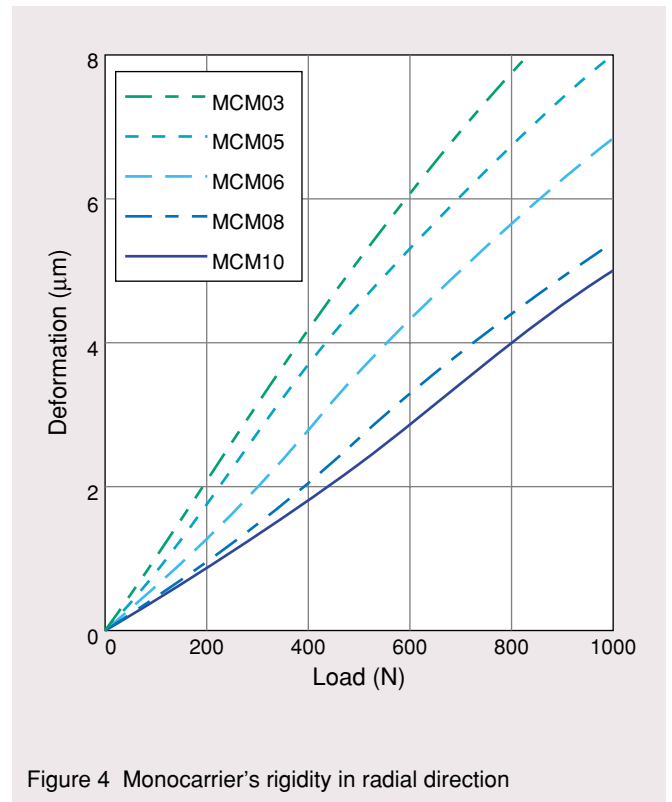
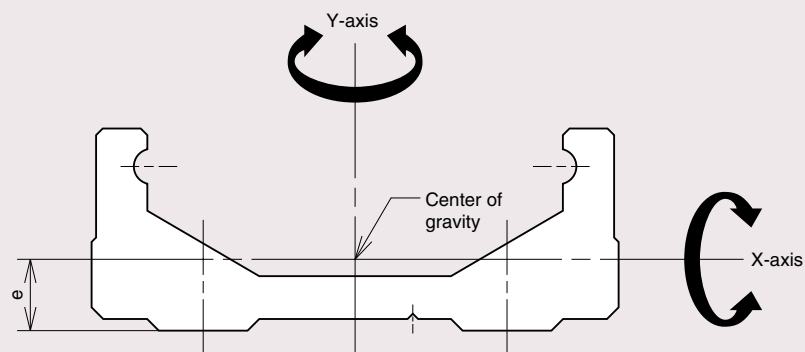


Figure 4 Monocarrier's rigidity in radial direction

### 7.2 Rail rigidity

The Monocarrier rail features a special concave shape with a small space maintaining high resistance to deflection and distortion. Geometrical moment of inertia and polar moment of inertia of area of rail in each direction are shown in Figure 5.



Basic number	Geometrical moment of inertia (mm <sup>4</sup> )		Polar moment of inertia of area (mm <sup>4</sup> /rad)	Center of gravity (mm)
	I <sub>x</sub> (X-axis periphery)	I <sub>y</sub> (Y-axis periphery)	I <sub>p</sub> (Torsion)	e
MCM03	$0.30 \times 10^4$	$0.33 \times 10^4$	$0.22 \times 10^4$	4.5
MCM05	$0.78 \times 10^4$	$1.14 \times 10^5$	$0.53 \times 10^4$	6.0
MCM06	$2.14 \times 10^4$	$2.61 \times 10^5$	$2.64 \times 10^4$	7.0
MCM08	$5.90 \times 10^4$	$8.10 \times 10^5$	$5.10 \times 10^4$	9.2
MCM10	$15.6 \times 10^4$	$21.9 \times 10^5$	$18.4 \times 10^4$	12.2

Figure 5 Rail moment of inertia

# 8. Dimensions of Standard Products (MCM03 and double slider specifications are manufactured upon order.)

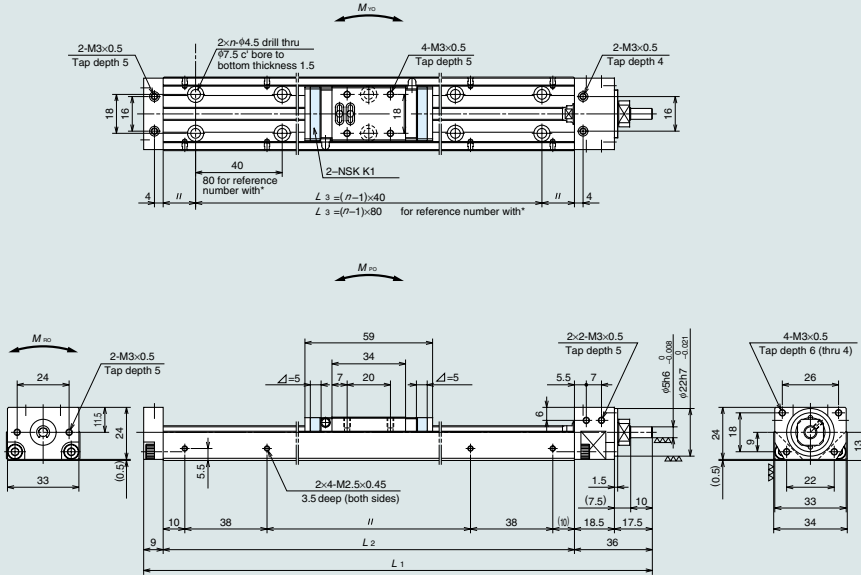
# MCM03

Made to order

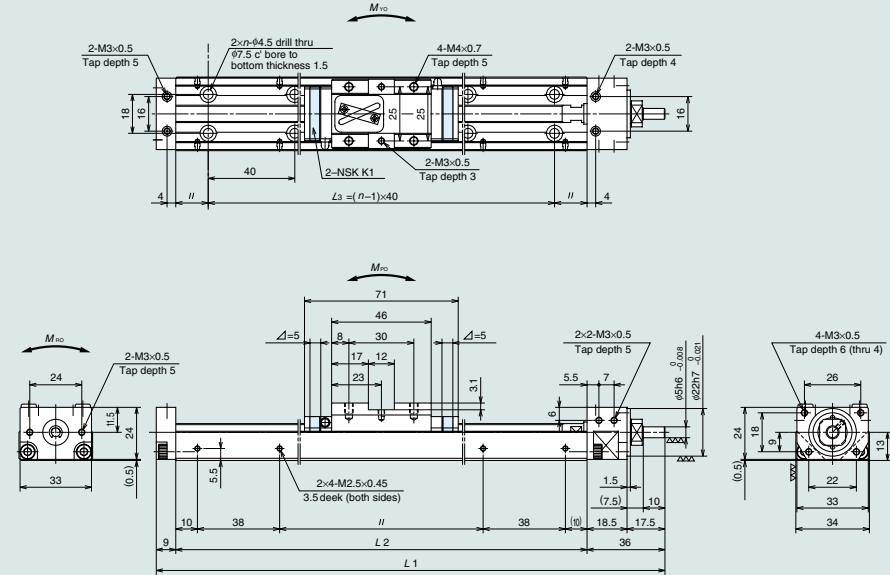
(Single slider specification) / Accuracy grade: High grade (H)

Lead 1 and 2

Accuracy grade: Precision



Lead 10 and 12



### NSK standard specification

Reference number	Nominal stroke (mm)	Stroke limit (mm)	Ball screw lead (mm)	Body length (mm)			No. of mounting holes	Inertia $\times 10^{-5} (\text{kg}\cdot\text{m}^2)$	Mass (kg)
				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>			
*MCM03005P01K	50	56	1	160	115	80	2	0.015	0.6
*MCM03005P02K			2						
*MCM03010P01K	100	131	1	235	190	160	5	0.021	0.7
*MCM03010P02K			2						
*MCM03010H10K			10						
*MCM03010H12K			12						
MCM03015P01K	150	181	1	285	240	200	6	0.025	0.8
MCM03015P02K			2						
MCM03015H10K			10						
MCM03015H12K			12						
*MCM03020H10K	200	219	10	355	290	240	7	0.118	0.9
MCM03020H12K			12						
MCM03025H10K	250	269	10	385	340	280	8	0.131	1.0
MCM03025H12K			12						

Units marked with \* are standard stock. Others will be made to order.

Ball screw specification			
Shaft diameter (mm)	6		8
Lead (mm)	1	2	10   12
Effective turns	1 × 4		1.5 × 1
Basic load rating (N)	Dynamic Coa	735	1230
	Static Coa	1230	1690

Linear guide specification			
Lead (mm)	1		2   10   12
Basic load rating (N)	Dynamic Ca	2950	3650
	Static Coa	4900	6620
Preload (N)		30	34
Static moment (N·m)	M <sub>RO</sub>	68	92
	M <sub>PO</sub>	28	51
	M <sub>YO</sub>	28	51

Monocarrier dynamic torque specification (N·cm)		
Ball screw lead (mm)	1	0.2-1.7
	2	
	10	0.3-3.0
	12	

### Notes

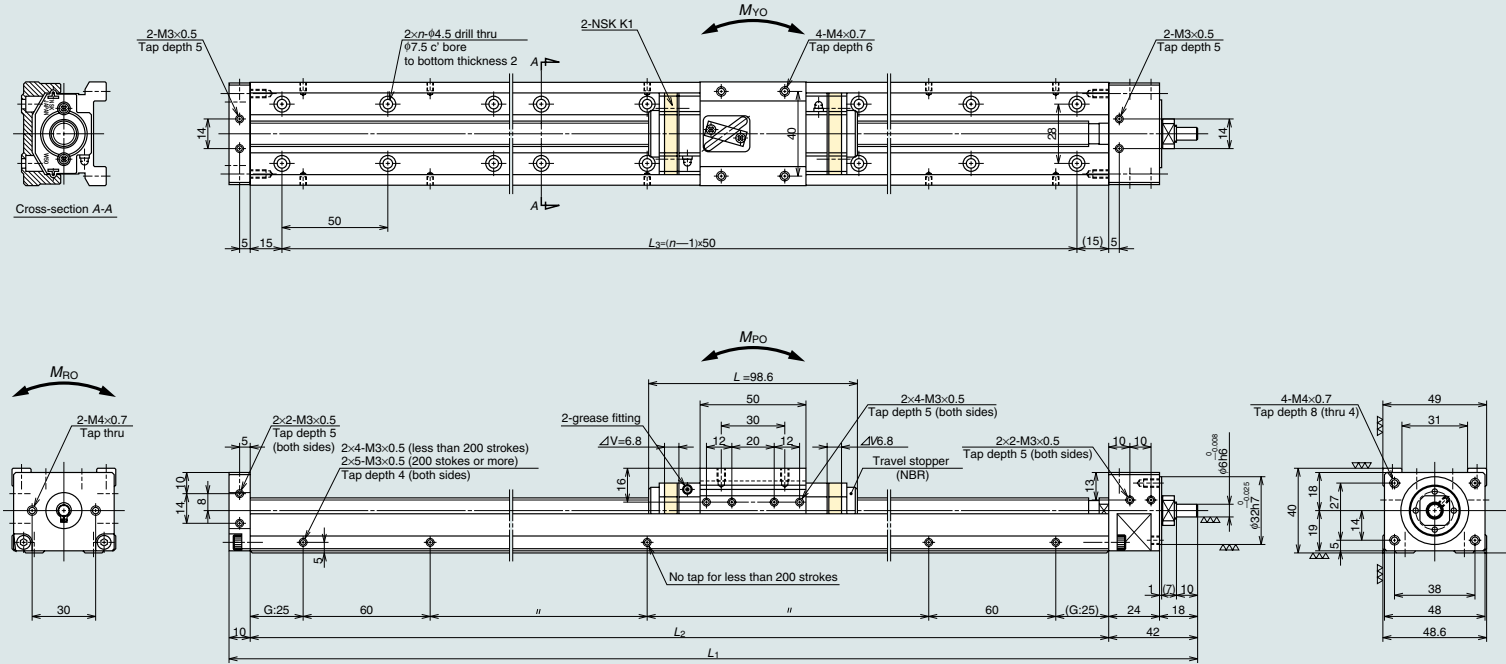
- Frictional resistance of NSK K1 is included in the dynamic torque in the table.
- Grease (Shell AV2) is packed into ball screw and linear guide parts.
- Consult NSK for life estimates under large moment loads.



# MCM05

Standard inventory (Listed with pink ground color)

(Single slider specification) / Accuracy grade: High grade (H)



## NSK standard specification

Reference number	Nominal stroke (mm)	Stroke limit (mm)	Ball screw lead (mm)	Body length (mm)			No. of mounting holes $n$	Inertia $\times 10^{-4}$ (kg·m <sup>2</sup> )	Mass (kg)
				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>			
*MCM05005H05K	50	80	5	232	180	150	4	0.025	1.4
*MCM05005H10K			10					0.035	
MCM05010H05K	100	130	5	282	230	200	5	0.031	1.6
*MCM05010H10K			10					0.040	
MCM05015H05K	150	180	5	332	280	250	6	0.036	1.8
*MCM05015H10K			10					0.046	
MCM05020H05K	200	230	5	382	330	300	7	0.042	2.0
*MCM05020H10K			10					0.051	
*MCM05025H10K	250	280	10	432	380	350	8	0.057	2.2
*MCM05030H10K	300	330	10	482	430	400	9	0.063	2.3
*MCM05030H20K			20					0.101	
*MCM05040H10K	400	430	10	582	530	500	11	0.074	2.7
*MCM05040H20K			20					0.112	
*MCM05050H10K	500	530	10	682	630	600	13	0.085	3.1
*MCM05050H20K			20					0.123	
*MCM05060H10K	600	630	10	782	730	700	15	0.086	3.5
MCM05060H20K			20					0.134	

Dimension G is 15 for those marked with \*.  
Units mark with \* are standard stock. Others will be made to order.

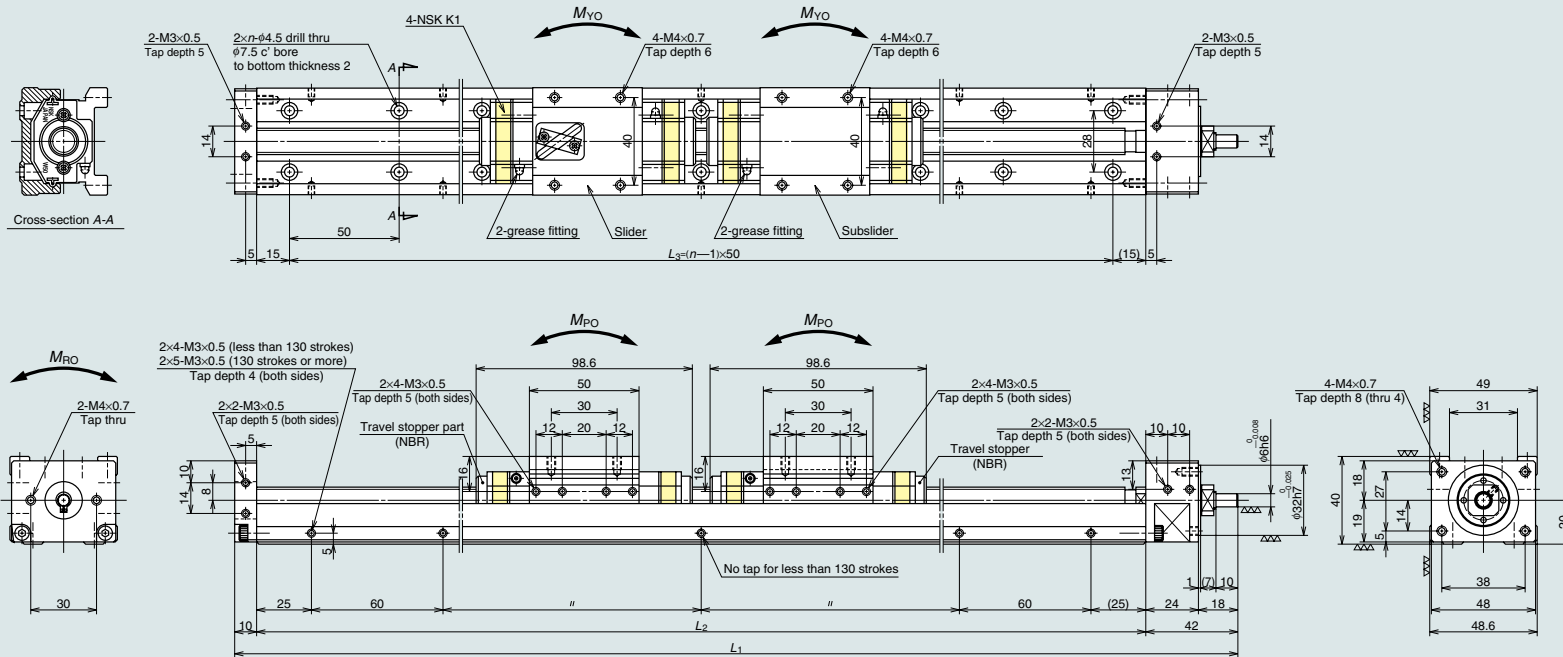
Ball screw specification			
Shaft diameter (mm)	12		
Lead (mm)	5	10	20
Effective turns	2.5 × 1	1.5 × 1	1.5 × 1
Basic load rating (N)	Dynamic Ca	3730	2260
	Static Coa	6280	3780
	3780	3780	3780

Linear guide specification		
Basic load rating (N)	Dynamic Ca	7260
	Static Coa	10900
Preload (N)		69
Static moment (N·m)	M <sub>Ro</sub>	226
	M <sub>Po</sub>	88
	M <sub>Yo</sub>	88

Monocarrier dynamic torque specification (Ncm)		
Ball screw lead (mm)	5	1.0-4.8
	10	1.1-5.8
	20	1.6-7.9

### Notes

1. Frictional resistance of NSK K1 is included in the dynamic torque in the table.
2. Grease (Shell AV2) is packed into ball screw and linear guide parts.
3. Consult NSK for life estimates under large moment loads.
3. Stroke limit = stroke + (15 [margin] × 2)

**Made to order****(Double slider specification) / Accuracy grade: High grade (H)****NSK standard specification**

Reference number	Nominal stroke (mm)	Ball screw lead (mm)	Body length (mm)			No. of mounting holes $n$	Inertia $\times 10^{-4}(\text{kg}\cdot\text{m}^2)$	Mass (kg)
			$L_1$	$L_2$	$L_3$			
MCM05006H10D	60	10	332	280	250	6	0.058	2.3
MCM05011H10D	110	10	382	330	300	7	0.064	2.5
MCM05016H10D	160	10	432	380	350	8	0.070	2.7
MCM05021H10D	210	10	482	430	400	9	0.075	2.8
MCM05021H20D		20	482	430	400		0.151	
MCM05031H10D	310	10	582	530	500	11	0.086	3.2
MCM05031H20D		20					0.162	
MCM05041H10D	410	10	682	630	600	13	0.098	3.6
MCM05041H20D		20					0.174	
MCM05051H10D	510	10	782	730	700	15	0.109	4.2
MCM05051H20D		20					0.185	

Ball screw specification			
Shaft diameter (mm)	12		
Lead (mm)	10	20	
Effective turns	1.5 × 1	1.5 × 1	
Basic load rating (N)	Dynamic Ca	2260	2260
	Static Coa	3780	3780
Monocarrier dynamic torque specification (N·cm)			
Ball screw lead (mm)	10	1.5–7.6	
	20	2.3–11.8	

Linear guide specification		
Basic load rating (N)	Dynamic Ca	7260
	Static Coa	10900
Preload (N)		69
Static moment (N·m)	$M_{RO}$	455
	$M_{PO}$	765
	$M_{VO}$	765

## Notes

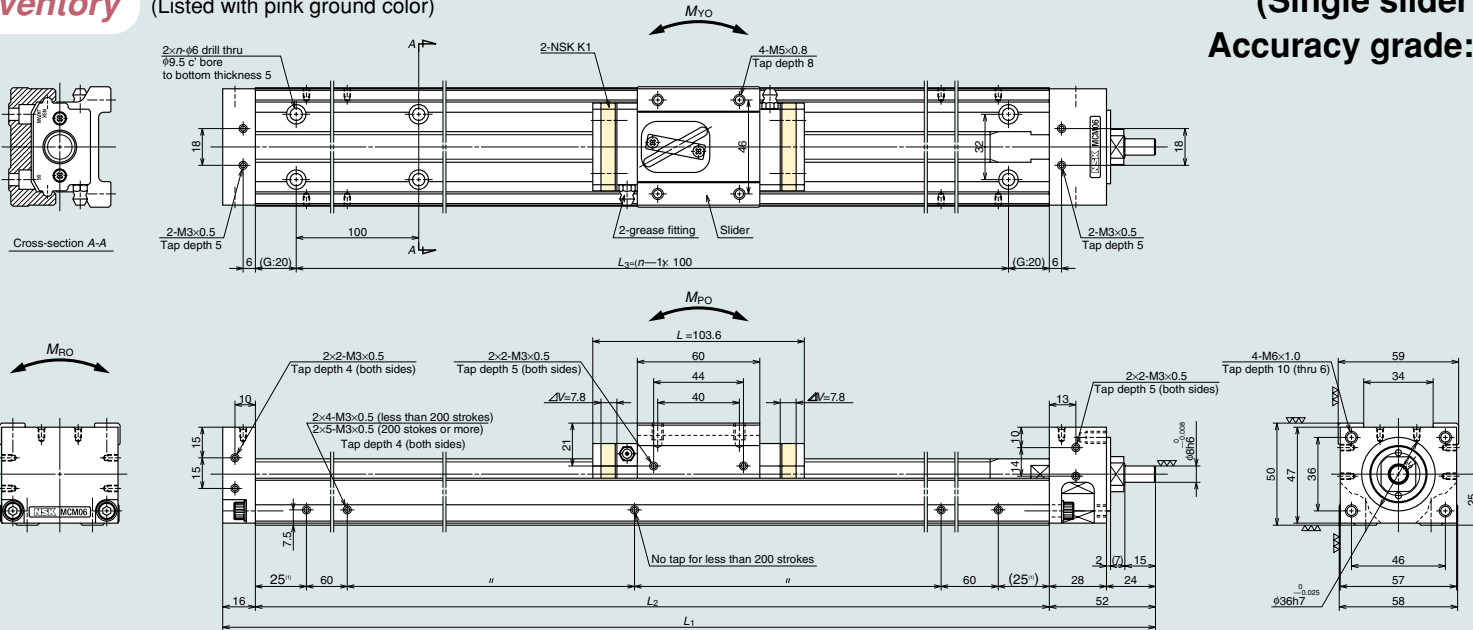
- Frictional resistance of NSK K1 is included in the dynamic torque in the table.
- Grease (Shell AV2) is packed into ball screw and linear guide parts.
- Consult NSK for life estimates under large moment loads.
- Stroke limit = stroke + (11.4 [margin] × 2)
- Static moment is a value when two sliders equipped with NSK K1 are butted against each other.

# MCM06

## Standard inventory

(Listed with pink ground color)

(Single slider specification) /  
Accuracy grade: High grade (H)



## NSK standard specification

Reference number	Nominal stroke (mm)	Stroke limit (mm)	Ball screw lead (mm)	Body length (mm)			No. of mounting holes $n$	Inertia $\times 10^{-4}(\text{kg}\cdot\text{m}^2)$	Mass (kg)
				$L_1$	$L_2$	$L_3$			
*MCM06005H05K	50	85	5	258	190	100	2	0.083	2.7
*MCM06005H10K			10						
*MCM06010H05K	100	135	5	308	240	200	3	0.103	3.0
*MCM06010H10K			10						
*MCM06020H05K	200	235	5	408	340	300	4	0.142	3.8
*MCM06020H10K			10						
*MCM06030H05K	300	335	5	508	440	400	5	0.180	4.5
*MCM06030H10K			10						
*MCM06030H20K	300	335	20	508	440	400	5	0.196	4.5
*MCM06040H05K			5						
*MCM06040H10K	400	435	5	608	540	500	6	0.219	5.2
*MCM06040H20K			10						
*MCM06050H05K	500	535	5	708	640	600	7	0.225	6.0
MCM06050H10K			10						
MCM06050H20K	500	535	20	708	640	600	7	0.258	6.0
MCM06060H10K			10						
MCM06060H20K	600	635	10	808	740	700	8	0.239	6.7
MCM06060H20K			20						
*MCM06070H10K	700	735	10	908	840	800	9	0.284	7.4
*MCM06070H20K			20						
MCM06080H10K	800	835	10	1008	940	900	10	0.268	8.1
MCM06080H20K			20						

Dimension G is 45 and 25<sup>(\*)</sup> is 15 for those marked with\*.  
Units marked with \* are standard stock. Others will be made to order.

Ball screw specification			
Shaft diameter (mm)	16	15	
Lead (mm)	5	10	20
Effective turns	2.5 × 1	2.5 × 1	1.5 × 1
Basic load rating (N)	Dynamic Coa	7310	7060
	Static Coa	13500	12700
Dynamic Ca	7310	7060	4560
	13500	12700	7750
Monocarrier dynamic torque specification (N·cm)			
Ball screw lead (mm)	5	1.9–7.4	
	10	2.2–8.6	
	20	2.8–11.0	

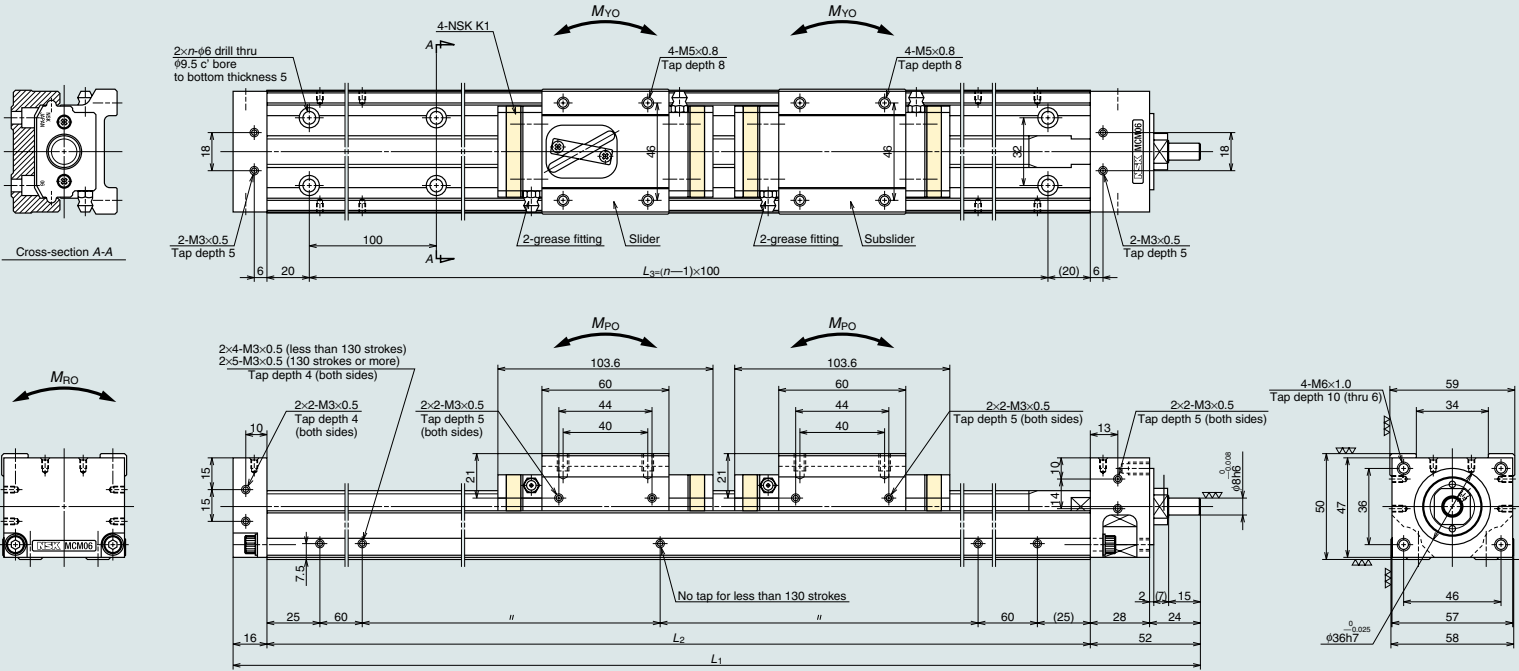
Linear guide specification		
Basic load rating (N)	Dynamic Ca	11700
	Static Coa	17000
Preload (N)		118
Static moment (N·m)	$M_{RO}$	415
	$M_{PO}$	174
	$M_{YO}$	174

### Notes

- Frictional resistance of NSK K1 is included in the dynamic torque in the table.
- Grease (Shell AV2) is packed into ball screw and linear guide parts.
- Consult NSK for life estimates under large moment loads.
- Stroke limit = stroke + (17.5 [margin] × 2)

Made to order

(Double slider specification) / Accuracy grade: High grade (H)



**NSK standard specification**

Reference number	Nominal stroke (mm)	Ball screw lead (mm)	Body length (mm)			No. of mounting holes $n$	Inertia $\times 10^{-4}(\text{kg}\cdot\text{m}^2)$	Mass (kg)
			$L_1$	$L_2$	$L_3$			
MCM06011H05D	110	5	408	340	300	4	0.145	4.4
MCM06011H10D		10						
MCM06021H05D	210	5	508	440	400	5	0.184	5.1
MCM06021H10D		10						
MCM06021H20D		20						
MCM06031H05D	310	5	608	540	500	6	0.233	5.8
MCM06031H10D		10						
MCM06031H20D		20						
MCM06041H05D	410	5	708	640	600	7	0.262	6.6
MCM06041H10D		10						
MCM06041H20D		20						
MCM06051H10D	510	10	808	740	700	8	0.254	7.3
MCM06051H20D		20						
MCM06061H10D	610	10	908	840	800	9	0.283	8.0
MCM06061H20D		20						
MCM06071H10D	710	10	1008	940	900	10	0.313	8.7
MCM06071H20D		20						

Ball screw specification			
Shaft diameter (mm)	16	15	
Lead (mm)	5	10	20
Effective turns	$2.5 \times 1$	$2.5 \times 1$	$1.5 \times 1$
Basic load rating (N)	Dynamic Ca	7310	7060
	Static Coa	13500	12700
	7750		
Monocarrier dynamic torque specification (N·cm)			
Ball screw lead (mm)	5	2.3-8.5	
	10	2.7-10.9	
	20	4.0-15.9	

Linear guide specification		
Basic load rating (N)	Dynamic Ca	11700
	Static Coa	17000
Preload (N)		118
Static moment (N·m)	$M_{RO}$	825
	$M_{PO}$	1220
	$M_{VO}$	1220

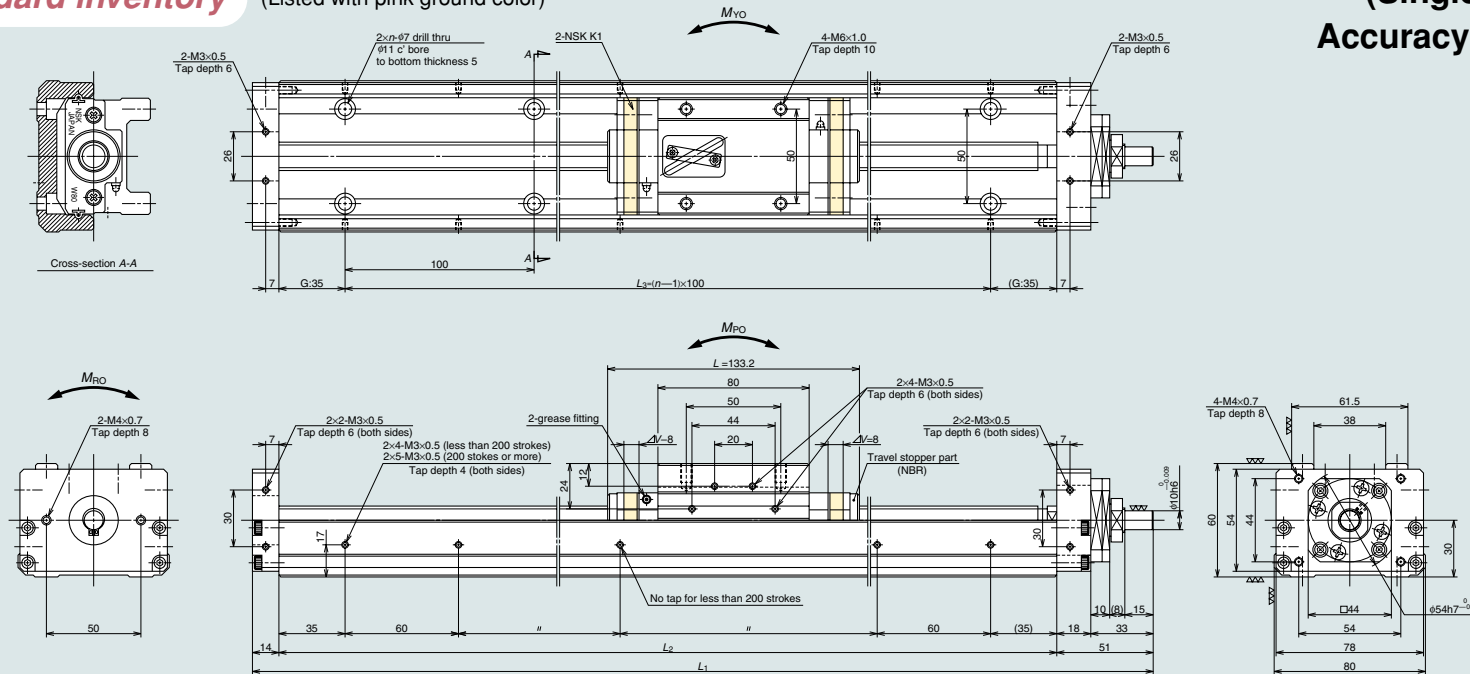
**Notes**

- Frictional resistance of NSK K1 is included in the dynamic torque in the table.
- Grease (Shell AV2) is packed into ball screw and linear guide parts.
- Consult NSK for life estimates under large moment loads.
- Stroke limit = stroke + (11.4 [margin] × 2)
- Static moment is a value when two sliders equipped with NSK K1 are butted against each other.

# MCM08

(Single slider specification) /  
Accuracy grade: High grade (H)

Standard inventory (Listed with pink ground color)



## NSK standard specification

Reference number	Nominal stroke (mm)	Stroke limit (mm)	Ball screw lead (mm)	Body length (mm)			No. of mounting holes	Inertia $\times 10^{-4}$ (kg·m <sup>2</sup> )	Mass (kg)
				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>			
*MCM08005H05K	50	85	5	285	220	100	2	0.101	4.1
MCM08010H05K	100	135	5	335	270	200	3	0.120	4.6
*MCM08010H10K			10						
*MCM08015H05K	150	185	5	385	320	200	3	0.139	5.1
MCM08020H05K	200	235	5	435	370	300	4	0.159	5.5
*MCM08020H10K			10						
*MCM08030H10K	300	335	10	535	470	400	5	0.173	6.5
*MCM08030H20K			20						
*MCM08040H10K	400	435	10	635	570	500	6	0.203	7.4
*MCM08040H20K			20						
*MCM08050H10K	500	535	10	735	670	600	7	0.232	8.4
*MCM08050H20K			20						
*MCM08060H10K	600	635	10	835	770	700	8	0.262	9.3
MCM08060H20K			20						
MCM08070H10K	700	735	10	935	870	800	9	0.291	10.5
MCM08070H20K			20						
MCM08080H10K	800	835	10	1035	970	900	10	0.320	11.2
MCM08080H20K			20						

Dimension G is 60 for those marked with\*.  
Units marked with \* are standard stock. Others will be made to order.

Ball screw specification		
Shaft diameter (mm)	16	15
Lead (mm)	5	10 20
Effective turns	2.5 × 1	2.5 × 1 1.5 × 1
Basic load rating (N)	Dynamic Ca	7310 7060 4560
	Static Coa	13500 12700 7750
Monocarrier dynamic torque specification (N·cm)		
Ball screw lead (mm)	5	1.0-5.9
	10	2.0-7.8
	20	2.0-10.8

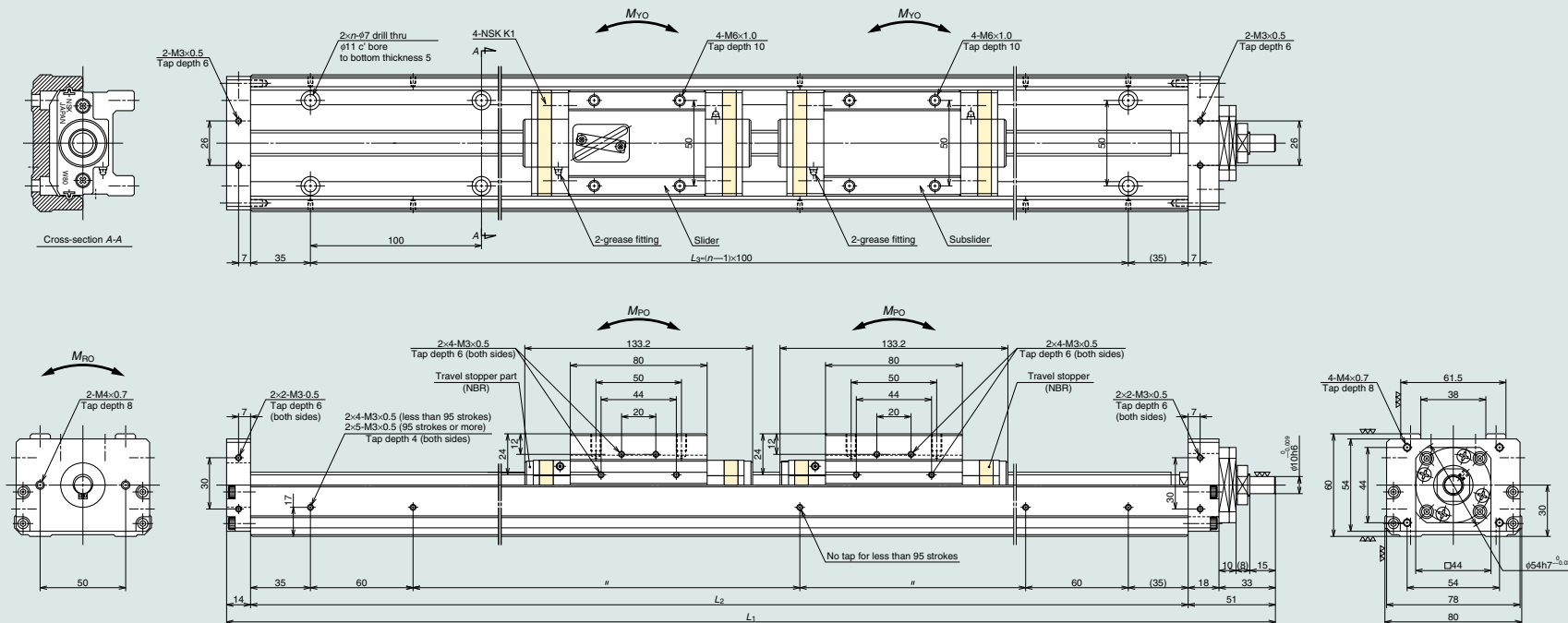
Linear guide specification		
Basic load rating (N)	Dynamic Ca	14300
	Static Coa	22800
Preload (N)		147
Static moment (N·m)	M <sub>RO</sub>	770
	M <sub>PO</sub>	300
	M <sub>YO</sub>	300

### Notes

- Frictional resistance of NSK K1 is included in the dynamic torque in the table.
- Grease (Shell AV2) is packed into ball screw and linear guide parts.
- Consult NSK for life estimates under large moment loads.
- Stroke limit = stroke + (17.5 [margin] × 2)

Made to order

(Double slider specification) / Accuracy grade: High grade (H)



## NSK standard specification

Reference number	Nominal stroke (mm)	Ball screw lead (mm)	Body length (mm)			No. of mounting holes $n$	Inertia $\times 10^{-4} (\text{kg}\cdot\text{m}^2)$	Mass (kg)
			$L_1$	$L_2$	$L_3$			
● MCM08008H10D	80	10	435	370	300	3	0.169	6.5
MCM08018H10D	180	10	535	470	400	5	0.199	7.5
MCM08018H20D		20					0.351	
MCM08028H10D	280	10	635	570	500	6	0.228	8.4
MCM08028H20D		20					0.380	
MCM08038H10D	380	10	735	670	600	7	0.257	9.4
MCM08038H20D		20					0.409	
MCM08048H10D	480	10	835	770	700	8	0.287	10.3
MCM08048H20D		20					0.439	
MCM08058H10D	580	10	935	870	800	9	0.316	11.5
MCM08058H20D		20					0.468	
MCM08068H10D	680	10	1035	970	900	10	0.346	12.2
MCM08068H20D		20					0.498	

150 mm for reference number marked by ●.

Ball screw specification			
Shaft diameter (mm)		15	
Lead (mm)		10	20
Effective turns		2.5 × 1	1.5 × 1
Basic load rating (N)	Dynamic Ca	7060	4560
	Static Coa	12700	7750
Monocarrier dynamic torque specification (N·cm)			
Ball screw lead (mm)	10	2.5–10.8	
	20	4.0–17.2	

Linear guide specification		
Basic load rating (N)	Dynamic Ca	14300
	Static Coa	22800
Preload (N)		147
Static moment (N·m)	$M_{RO}$	1540
	$M_{PO}$	2050
	$M_{YO}$	2050

## Notes

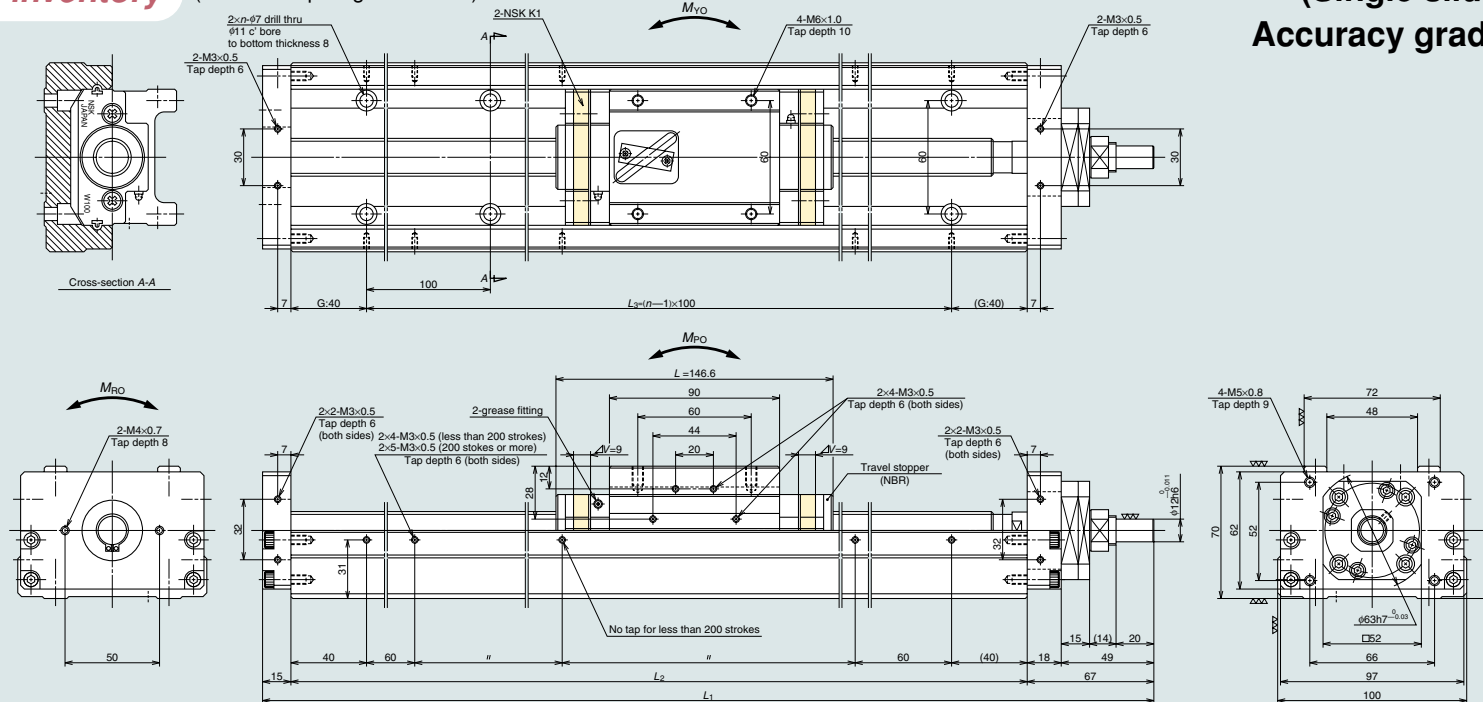
- Frictional resistance of NSK K1 is included in the dynamic torque in the table.
- Grease (Shell AV2) is packed into ball screw and linear guide parts.
- Consult NSK for life estimates under large moment loads.
- Stroke limit = stroke + (11.8 [margin] × 2)
- Static moment is a value when two sliders equipped with NSK K1 are butted against each other.



# MCM10

(Single slider specification) /  
Accuracy grade: High grade (H)

Standard inventory (Listed with pink ground color)



## NSK standard specification

Reference number	Nominal stroke (mm)	Stroke limit (mm)	Ball screw lead (mm)	Body length (mm)			No. of mounting holes $n$	Inertia $\times 10^{-4}(\text{kg}\cdot\text{m}^2)$	Mass (kg)
				$L_1$	$L_2$	$L_3$			
* MCM10020H10K	200	230	10	462	380	300	4	0.425	9.5
* MCM10030H10K	300	330	10	562	480	400	5	0.519	11.2
* MCM10030H20K			20					0.633	
* MCM10040H10K	400	430	10	662	580	500	6	0.612	13.0
* MCM10040H20K			20					0.726	
MCM10050H10K	500	530	10	762	680	600	7	0.706	14.6
MCM10050H20K			20					0.820	
* MCM10060H10K	600	630	10	862	780	700	8	0.800	16.3
MCM10060H20K			20					0.914	
MCM10070H10K	700	730	10	962	880	800	9	0.893	18.0
MCM10070H20K			20					1.007	
* MCM10080H10K	800	830	10	1062	980	900	10	0.987	19.7
MCM10080H20K			20					1.101	
MCM10090H10K	900	930	10	1162	1080	1000	11	1.081	21.4
MCM10090H20K			20					1.195	
*MCM10100H10K	1000	1030	10	1262	1180	1000	11	1.174	23.1
*MCM10100H20K			20					1.288	

Dimension G is 90 for those marked with\*.  
Units marked with \* are standard stock. Others will be made to order.

Ball screw specification			
Shaft diameter (mm)		20	
Lead (mm)		10	20
Effective turns		$2.5 \times 1$	$1.5 \times 1$
Basic load rating (N)	Dynamic Coa	10900	7060
	Static Coa	21700	12700
Monocarrier dynamic torque specification (N·cm)			
Ball screw lead (mm)	10	2.7–10.8	
	20	3.1–12.7	

Linear guide specification		
Basic load rating (N)	Dynamic Ca	19600
	Static Coa	29400
Preload (N)		196
Static moment (N·m)	$M_{RO}$	1170
	$M_{PO}$	425
	$M_{YO}$	425

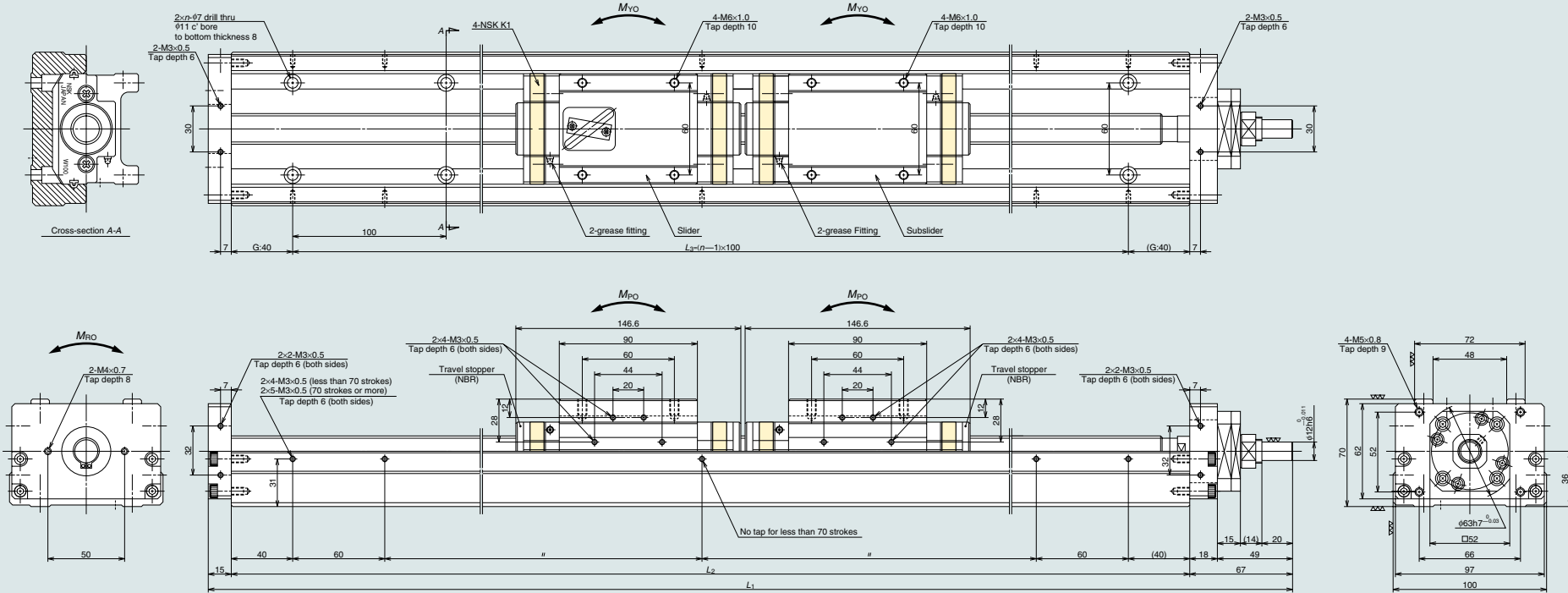
### Notes

- Frictional resistance of NSK K1 is included in the dynamic torque in the table.
- Grease (Shell AV2) is packed into ball screw and linear guide parts.
- Consult NSK for life estimates under large moment loads.
- Stroke limit = stroke + (15 [margin] × 2)

# MCM10

Made to order

(Double slider specification) / Accuracy grade: High grade (H)



**NSK standard specification**

Reference number	Nominal stroke (mm)	Ball screw lead (mm)	Body length (mm)			No. of mounting holes $n$	Inertia $\times 10^{-4}(\text{kg}\cdot\text{m}^2)$	Mass (kg)
			$L_1$	$L_2$	$L_3$			
● MCM10007H10D	70	10	462	380	300	3	0.463	11.0
MCM10017H10D	170	10	562	480	400	5	0.557	12.7
MCM10017H20D		20						
MCM10027H10D	270	10	662	580	500	6	0.650	13.4
MCM10027H20D		20						
MCM10037H10D	370	10	762	680	600	7	0.744	15.1
MCM10037H20D		20						
MCM10047H10D	470	10	862	780	700	8	0.838	17.8
MCM10047H20D		20						
MCM10057H10D	570	10	962	880	800	9	0.931	19.5
MCM10057H20D		20						
MCM10067H10D	670	10	1062	980	900	10	1.025	21.2
MCM10067H20D		20						
*MCM10087H10D	870	10	1262	1180	1000	11	1.212	23.6
*MCM10087H20D		20						

Dimension G is 90 mm for those marked with \*, and 150 mm for that marked with ●.

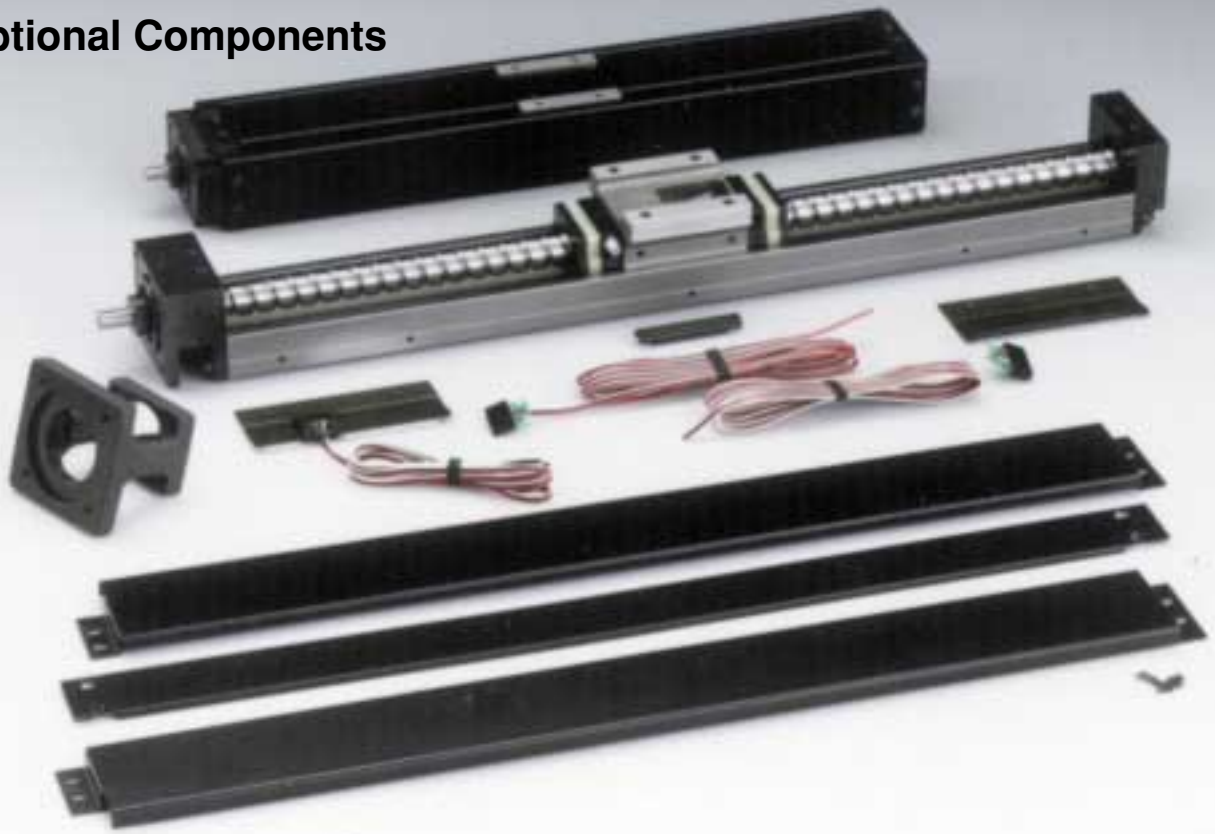
Ball screw specification		
Shaft diameter (mm)	20	
Lead (mm)	10	20
Effective turns	2.5 × 1	1.5 × 1
Basic load rating (N)	Dynamic Ca	10900
	Static Coa	21700
Monocarrier dynamic torque specification (N·cm)		
Ball screw lead (mm)	10	4.2–15.6
	20	5.0–19.6

Linear guide specification		
Basic load rating (N)	Dynamic Ca	19600
	Static Coa	29400
Preload (N)		196
Static moment (N·m)	$M_{RO}$	2340
	$M_{PO}$	2940
	$M_{YO}$	2940

**Notes**

- Frictional resistance of NSK K1 is included in the dynamic torque in the table.
- Grease (Shell AV2) is packed into ball screw and linear guide parts.
- Consult NSK for life estimates under large moment loads.
- Stroke limit = stroke + (8.4 [margin] × 2)
- Static moment is a value when two sliders equipped with NSK K1 are butted against each other.

## 9. Optional Components



### 9.1 Optional components

Monocarrier M series offers optional parts as standard inventory.

Note: Optional components are sold separately from the main unit. Please contact NSK for details.

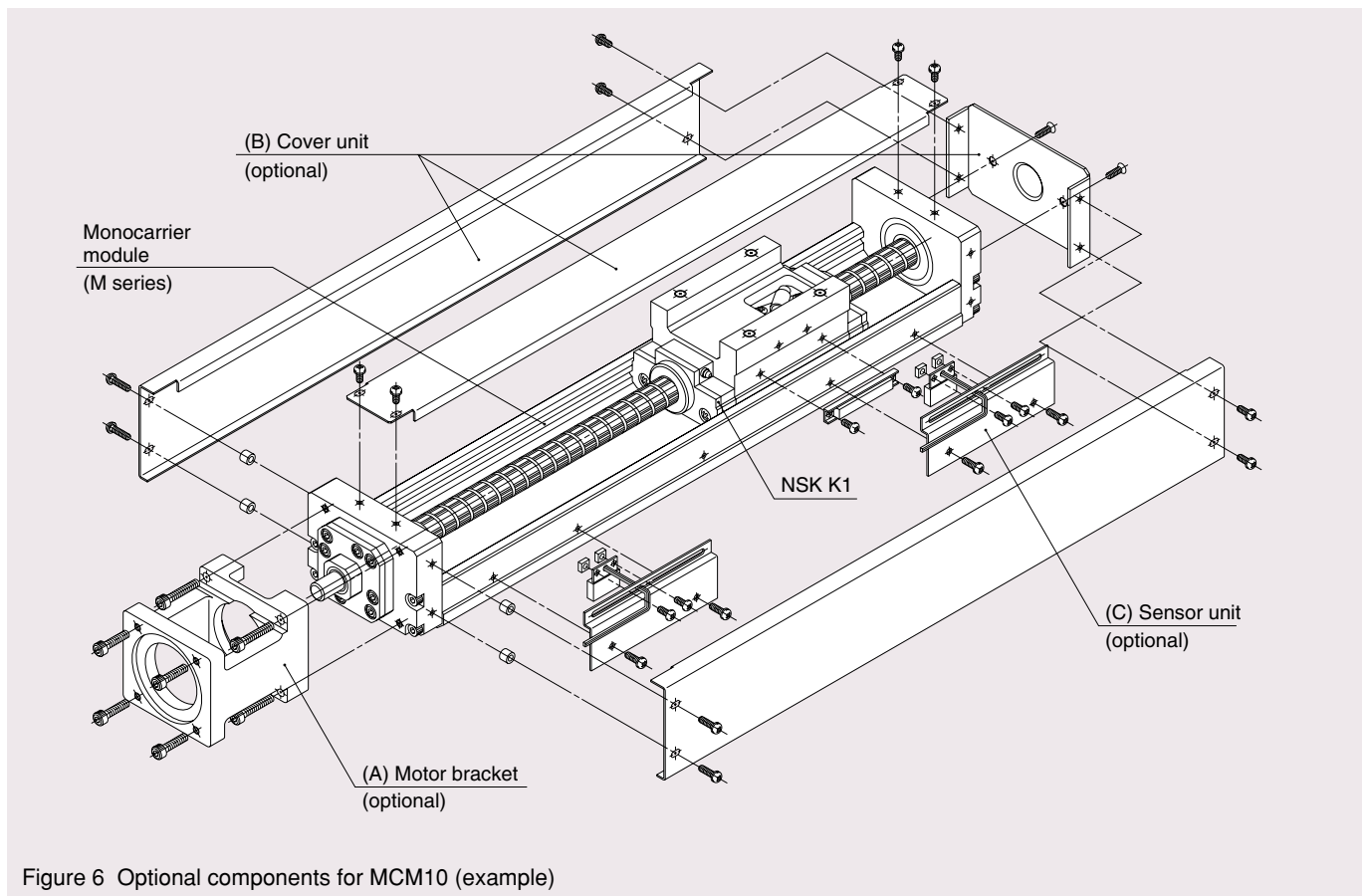


Figure 6 Optional components for MCM10 (example)

(A) Motor bracket: bracket for mounting motor is available. (P. 22 – 34)

(B) Cover unit: top cover and side cover are available. (P. 17 – 19)

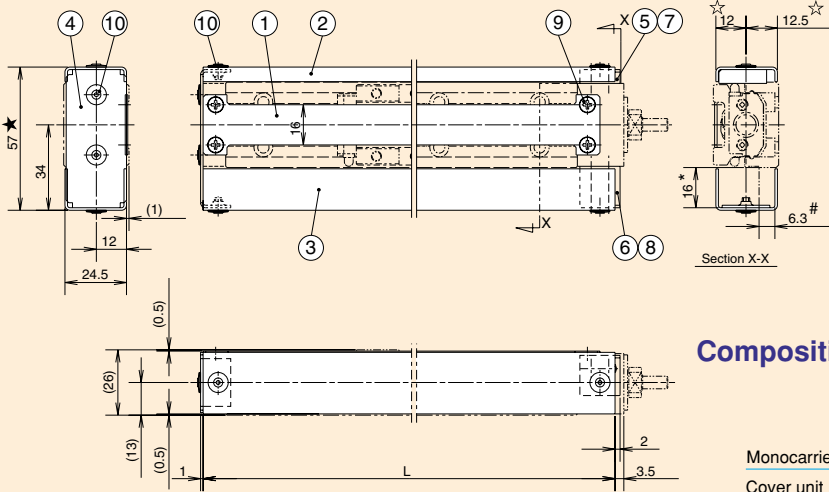
(C) Sensor unit: sensor and sensor-mounting parts are available. (P. 19 – 22)

NSK offers combination sets for (A) to (C) above as well as for motors (MCE series). Please contact NSK for details.

# Maintenance-free Series MCM Monocarrier

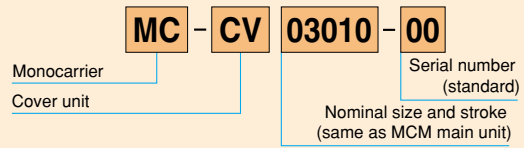
## NSK Monocarrier Cover Unit for MCM03 (for lead 10 and 12)

Optional



- \* Inside measurement of space for sensor
- # Inside measurement of wiring space for sensor
- The side covers are common to each other (left and right). When assembling be sure to keep vertical tolerance as marked with ☆.
- Optional spacer (MC-SP03-00) is required for a main unit with ball screw lead of 1 and 2 mm.
- If you do not require a sensor unit, a cover unit, of which space for the sensor is narrowed down, is available. (The width marked with ☆ changes to 46 mm.)

### Composition of reference number (example)



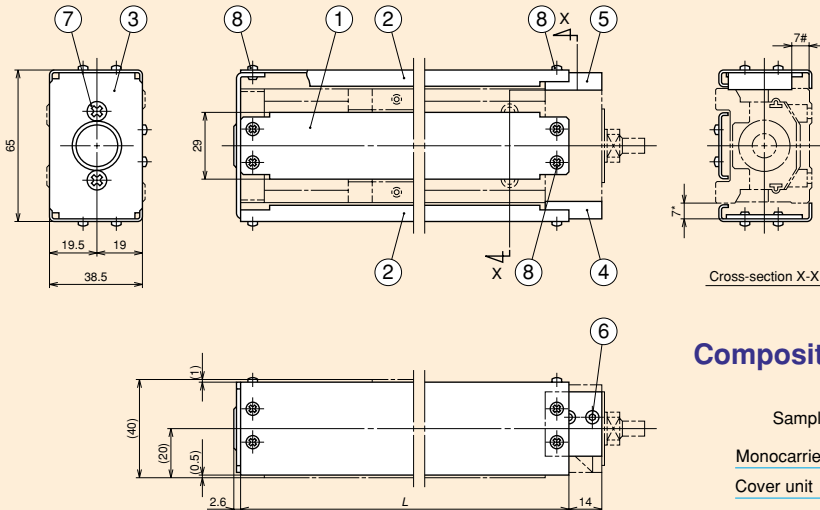
Unit: mm

Parts	Part name	Quantity per set	Notes
(1)	Top cover	1	SPCC Baked finish with black semi-gloss
(2)	Side cover	1	
(3)	Side cover	1	
(4)	Cover mounting plate	1	A5052 Black anodized aluminum
(5)	Cover mounting plate	1	
(6)	Cover mounting plate	1	M3 × 6
(7)	Hexagon socket head cap bolt	2	
(8)	Hexagon socket head cap bolt	2	M3 × 16
(9)	Countersunk head screw	4	M3 × 5
(10)	Hexagon socket button head screw	4	M3 × 5

Stroke	Reference number	L
50	MC-CV03005-00	139
100	MC-CV03010-00	214
150	MC-CV03015-00	264
200	MC-CV03020-00	314
250	MC-CV03025-00	364

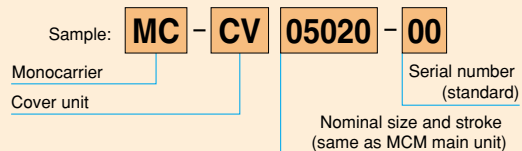
## NSK Monocarrier Cover Unit for MCM05

Standard inventory



- \* Inside measurement of space for sensor
  - # Inside measurement of wiring space for sensor
- Machine screw part number (8) for mounting top cover is a pan-head screw M3, with 2 mm screw head height and 0.5 mm thick flat washer, totaling 2.5 mm.
- Consider these specifications when determining interface with other parts.

### Composition of reference number (example)



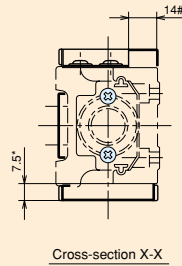
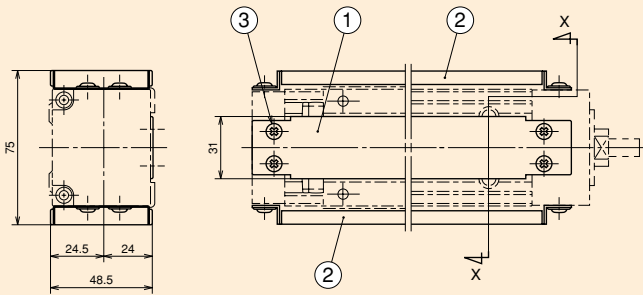
Unit: mm

Parts	Part name	Quantity per set	Notes
(1)	Top cover	1	SPCC Baked finish with black semi-gloss
(2)	Side cover	2	
(3)	Cover mounting plate	1	
(4)	Cover mounting plate	1	A5052 Black anodized aluminum
(5)	Cover mounting plate	1	
(6)	Hexagon socket head cap bolt	4	M3 × 8
(7)	Countersunk head screw	2	M4 × 8
(8)	Cross-recessed pan-head machine screw with flat washer	12	M3 × 5

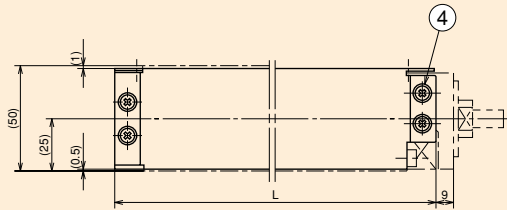
Stroke	Reference number	L
50	MC-CV05005-00	200
100	MC-CV05010-00	250
150	MC-CV05015-00	300
200	MC-CV05020-00	350
250	MC-CV05025-00	400
300	MC-CV05030-00	450
400	MC-CV05040-00	550
500	MC-CV05050-00	650
600	MC-CV05060-00	750

# NSK Monocarrier Cover Unit for MCM06

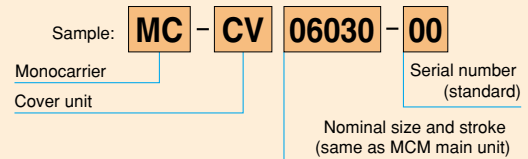
Standard inventory



\* Inside measurement of space for sensor  
# Inside measurement of wiring space for sensor



## Composition of reference number (example)



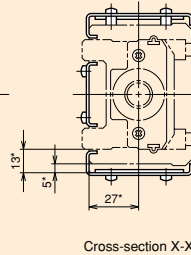
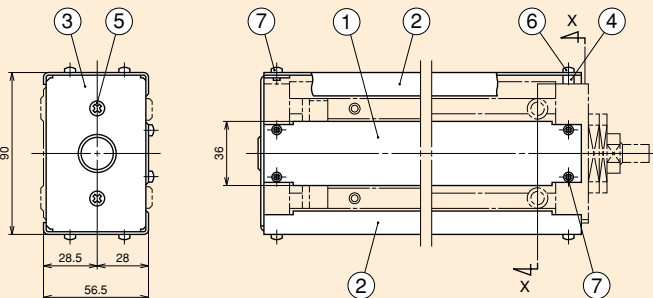
Unit: mm

Parts	Part name	Quantity per set	Notes
(1)	Top cover	1	SPCC
(2)	Side cover	2	Baked finish with black semi-gloss
(3)	Countersunk head screw	4	
(4)	Cross-recessed pan-head machine screw with flat washer	8	M3 × 5

Stroke	Reference number	L
50	MC-CV06005-00	175
100	MC-CV06010-00	275
200	MC-CV06020-00	375
300	MC-CV06030-00	475
400	MC-CV06040-00	575
500	MC-CV06050-00	675
600	MC-CV06060-00	775
700	MC-CV06070-00	878
800	MC-CV06080-00	975

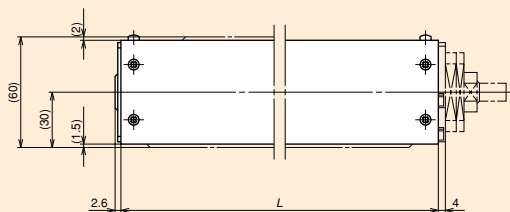
# NSK Monocarrier Cover Unit for MCM08

Standard inventory

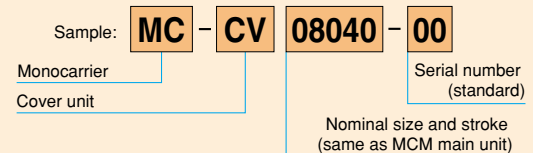


\* Inside measurement of space for sensor

Machine screw part number (7) for mounting top cover is a pan-head screw M3, with 2 mm head height and 0.5 mm thick flat washer, totaling 2.5 mm. Consider these specifications when determining interface with other parts.



## Composition of reference number (example)



Unit: mm

Parts	Part name	Quantity per set	Notes
(1)	Top cover	1	SPCC
(2)	Side cover	2	Baked finish with black semi-gloss
(3)	Cover mounting plate	1	
(4)	Cover support	4	Polyacetal
(5)	Countersunk head screw	2	M4 × 8
(6)	Cross-recessed pan-head machine screw with flat washer	4	M3 × 10
(7)	Cross-recessed pan-head machine screw with flat washer	8	M3 × 5

Stroke	Reference number	L
100	MC-CV08010-00	298
200	MC-CV08020-00	398
300	MC-CV08030-00	498
400	MC-CV08040-00	598
500	MC-CV08050-00	698
600	MC-CV08060-00	798
700	MC-CV08070-00	898
800	MC-CV08080-00	998

# Maintenance-free Series MCM Monocarrier

## NSK Monocarrier Cover Unit for MCM10

Standard inventory

\* Inside measurement of space for sensor

Machine screw part number (7) for mounting top cover is a pan-head screw M3, with 2 mm head height and 0.5 mm thick flat washer, totaling 2.5 mm. Consider these specifications when determining interface with other parts.

Cross-section X-X

**Composition of reference number (example)**

Sample: **MC** - **CV** **10060** - **00**

Monocarrier: MC  
Cover unit: CV  
Nominal size and stroke (same as MCM main unit): 10060  
Serial number (standard): 00

Unit: mm

Parts	Part name	Quantity per set	Notes
(1)	Top cover	1	SPCC
(2)	Side cover	2	Baked finish with black semi-gloss
(3)	Cover mounting plate	1	
(4)	Cover support	4	Polyacetal
(5)	Countersunk head screw	2	M4 × 8
(6)	Cross-recessed pan-head machine screw with flat washer	4	M3 × 10
(7)	Cross-recessed pan-head machine screw with flat washer	8	M3 × 5

Stroke	Reference number	L
200	MC-CV10020-00	408
300	MC-CV10030-00	508
400	MC-CV10040-00	608
500	MC-CV10050-00	708
600	MC-CV10060-00	808
700	MC-CV10070-00	908
800	MC-CV10080-00	1008
900	MC-CV10090-00	1108
1000	MC-CV10100-00	1208

## 9.2 Sensor specification

Table 5 Sensor rating and performance

Item	Specification	
Power source voltage	12–24V DC	
Electric current consumption	15 mA TYP	
Operating distance characteristics	Standard value	3 mm (in case of 1.0 mm of gap from magnet)
	Product dispersion	±2 mm of standard value
	Repeatability	±20 μm
	Temperature characteristics	Within ±1 mm at 20°C between 0°C and 50°C
	Hysteresis	0.4mm TYP
Operating ambient conditions	0°C – 50° 20 – 85% (no condensation)	
Signal output	a- and b-contact point (output transistor switches ON/OFF by magnetic flux sensor) Open collector output	
Max. switching current	100mA	
Operating principle	Use of Hall effect S-pole unidirectional magnetic field actuation type	
Magnet	Ferrite BH MAX. 4MGOe-equivalent	

The above values are at 25°C unless otherwise noted.

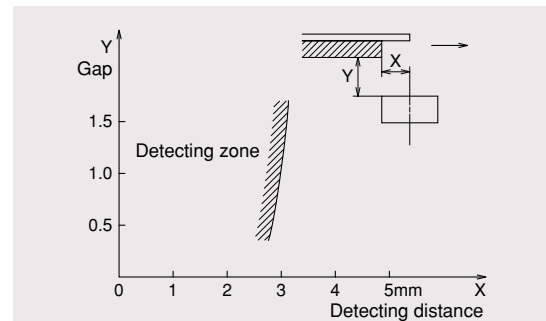
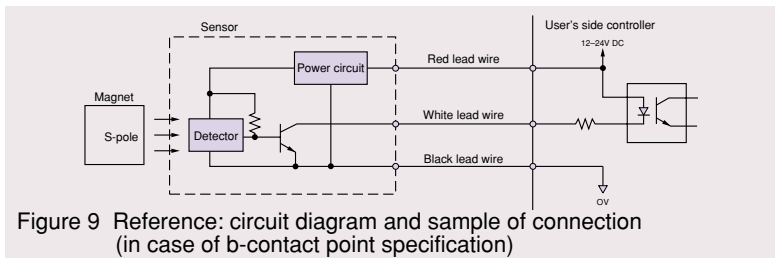


Figure 7 Characteristics (representative sample 1)

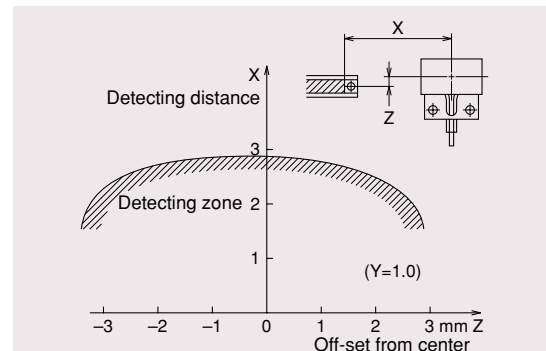


Figure 8 Characteristics (representative sample 2)

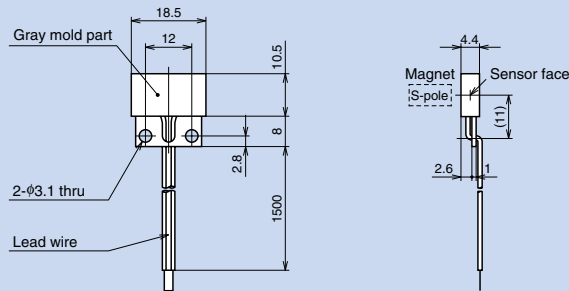
- Install sensor side facing magnet (S-pole). Reverse side does not react with S-pole.
- Add surge suppression for driving inductive load. The sensor is not provided with surge protection and is therefore vulnerable to damage.
- Consult NSK regarding sensor for MCM03.



# NSK Monocarrier Sensor Unit

Standard inventory

## Reference number (model number) MC-SR-HSA



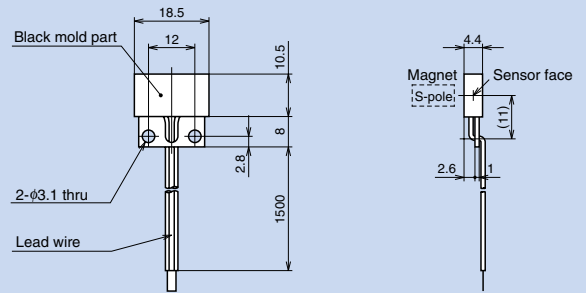
① Sensor

No.	Part name	Material	Quantity	Notes
(1)	Sensor		1	NSK-made a-contact point
(2)	Flat washer built-in cross-recessed pan-head machine screw	SWRCH10A	2	M3 × 0.5 × 5
(3)	Square nut	SS41	2	M3

### Sensor specification

Method	Hall element, S-pole unidirectional magnetic field actuation type
Power source voltage	12–24V DC
Electric current consumption	15mA TYP
Contact form	a-contact open collector output
Max. switching current	100mA
Operating ambient temperature	0°C–50°C

## Reference number (model number) MC-SR-HSB



① Sensor

No.	Part name	Material	Quantity	Notes
(1)	Sensor		1	NSK-made b-contact point
(2)	Flat washer built-in cross-recessed pan-head machine screw	SWRCH10A	2	M3 × 0.5 × 5
(3)	Square nut	SS41	2	M3

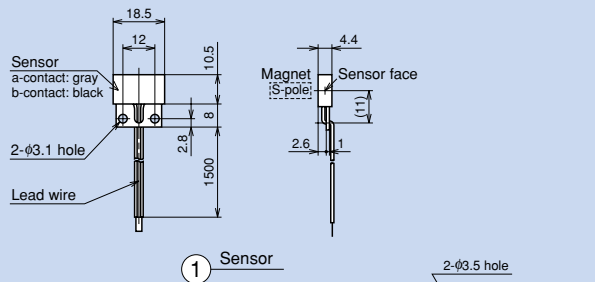
### Sensor specification

Method	Hall element, S-pole unidirectional magnetic field actuation type
Power source voltage	12–24V DC
Electric current consumption	15mA TYP
Contact form	b-contact open collector output
Max. switching current	100mA
Operating ambient temperature	0°C–50°C

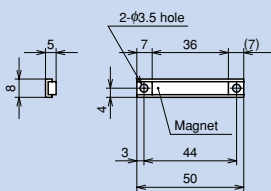
# NSK Monocarrier Sensor Unit for MCM05

Standard inventory

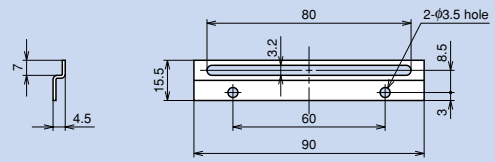
## Reference number (model number) MC-SR05-XX



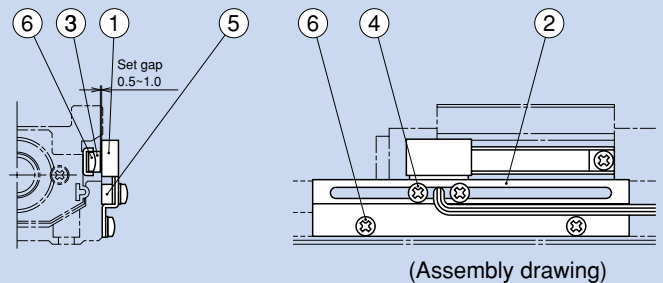
① Sensor



③ Magnet yoke



② Sensor mounting plate (SPCC) t=1



(Assembly drawing)

No.	Part name	Quantity			Notes
		MC-SR05-00	MC-SR05-01	MC-SR05-02	
(1)	Sensor (NSK-made a-contact point)		3	1	
	Sensor (NSK-made b-contact point)	3		2	
(2)	Sensor-mounting plate	2	2	2	
(3)	Magnet yoke	1	1	1	
(4)	Cross-recessed pan-head machine screw with flat washer	6	6	6	M3 × 5
(5)	Nut for sensor	3	3	3	M3
(6)	Cross-recessed pan-head machine screw with spring washer	6	6	6	M3 × 5

For sensor specification, refer to "Sensor specification" (P. 19).

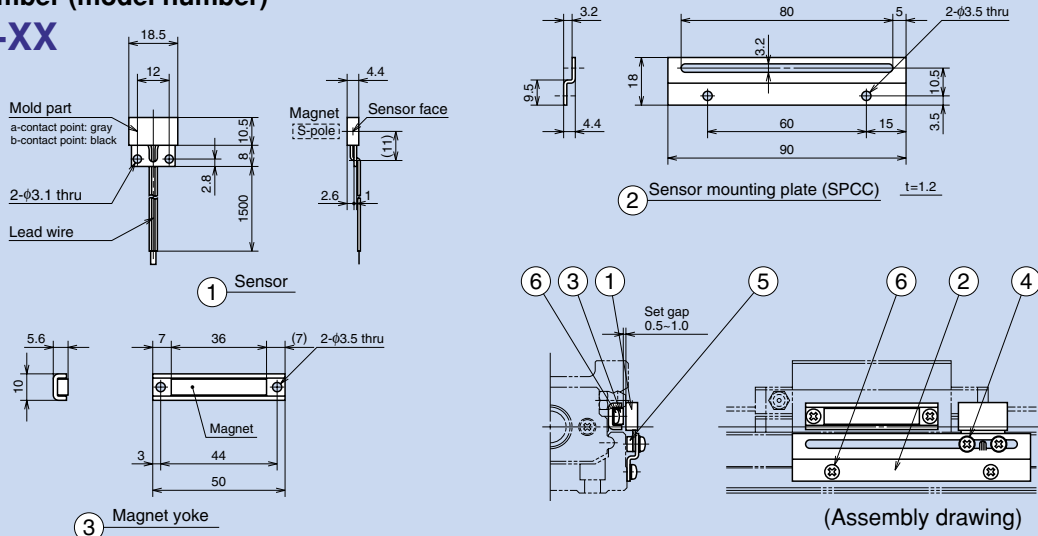
# Maintenance-free Series MCM Monocarrier

## NSK Monocarrier Sensor Unit for MCM06

Standard inventory

Reference number (model number)

**MC-SR06-XX**



No.	Part name	Quantity			Notes
		MC-SR06-00	MC-SR06-01	MC-SR06-02	
(1)	Sensor (NSK-made a-contact point)		3	1	
	Sensor (NSK-made b-contact point)	3		2	
(2)	Sensor-mounting plate	2	2	2	Blackening
(3)	Magnet yoke	1	1	1	
(4)	Cross-recessed pan-head machine screw with flat washer	6	6	6	M3 × 5
(5)	Nut for sensor	3	3	3	M3
(6)	Cross-recessed pan-head machine screw with spring washer	6	6	6	M3 × 5

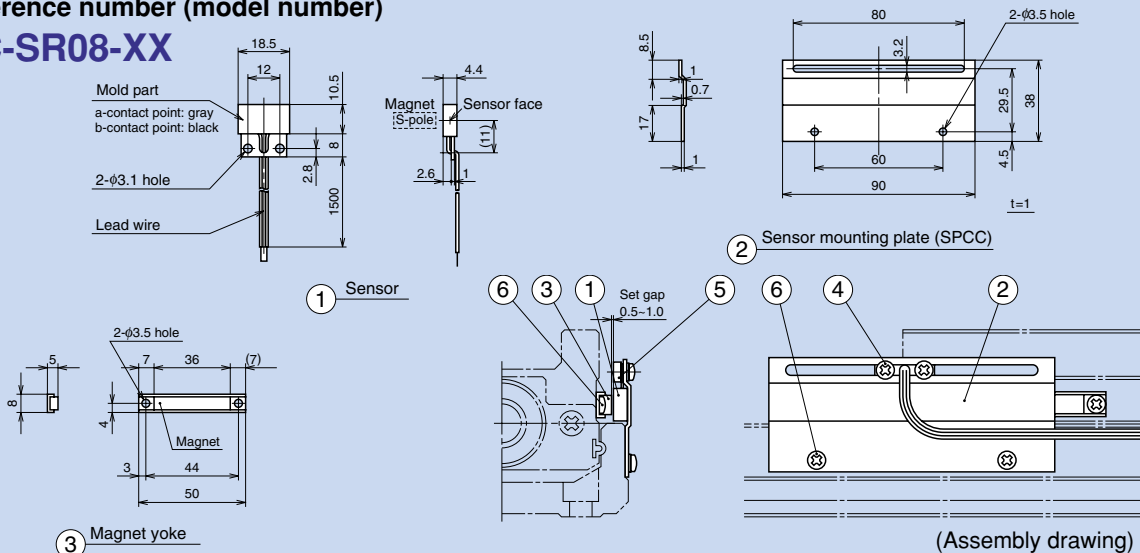
For sensor specification, refer to "Sensor specification" (P. 19).

## NSK Monocarrier Sensor Unit for MCM08

Standard inventory

Reference number (model number)

**MC-SR08-XX**



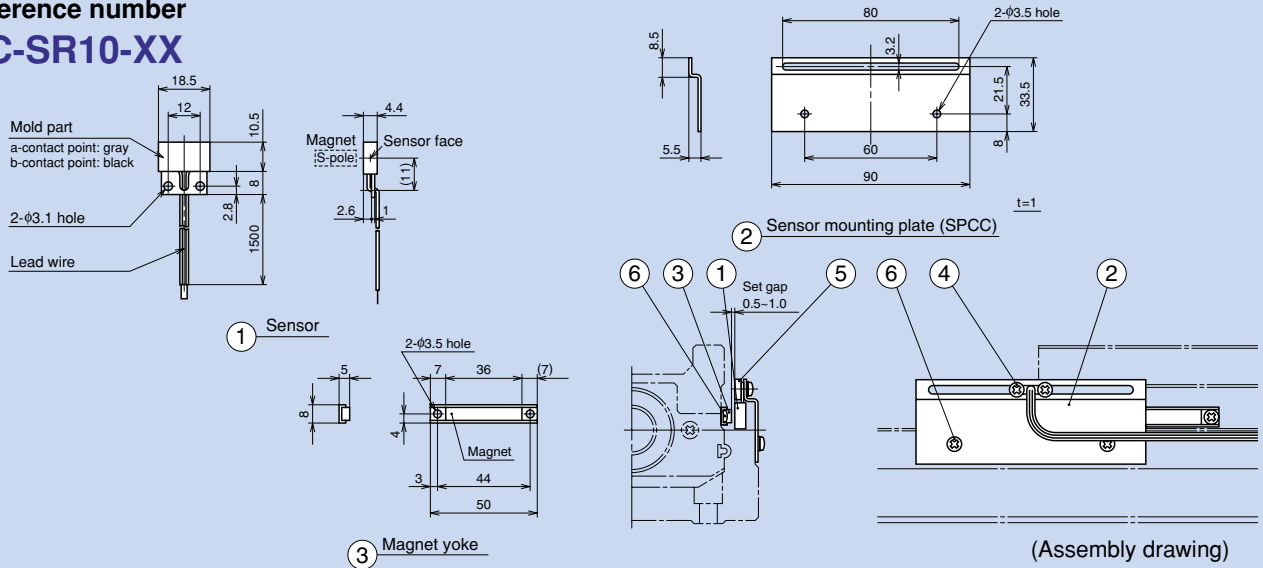
No.	Part name	Quantity			Notes
		MC-SR08-00	MC-SR08-01	MC-SR08-02	
(1)	Sensor (NSK-made a-contact point)		3	1	
	Sensor (NSK-made b-contact point)	3		2	
(2)	Sensor-mounting plate	2	2	2	Blackening
(3)	Magnet yoke	1	1	1	
(4)	Cross-recessed pan-head machine screw with flat washer	6	6	6	M3 × 5
(5)	Nut for sensor	6	6	6	M3
(6)	Cross-recessed pan-head machine screw with spring washer	6	6	6	M3 × 5

For sensor specification, refer to "Sensor specification" (P. 19).

# NSK Monocarrier Sensor Unit for MCM10

Standard inventory

Reference number  
**MC-SR10-XX**



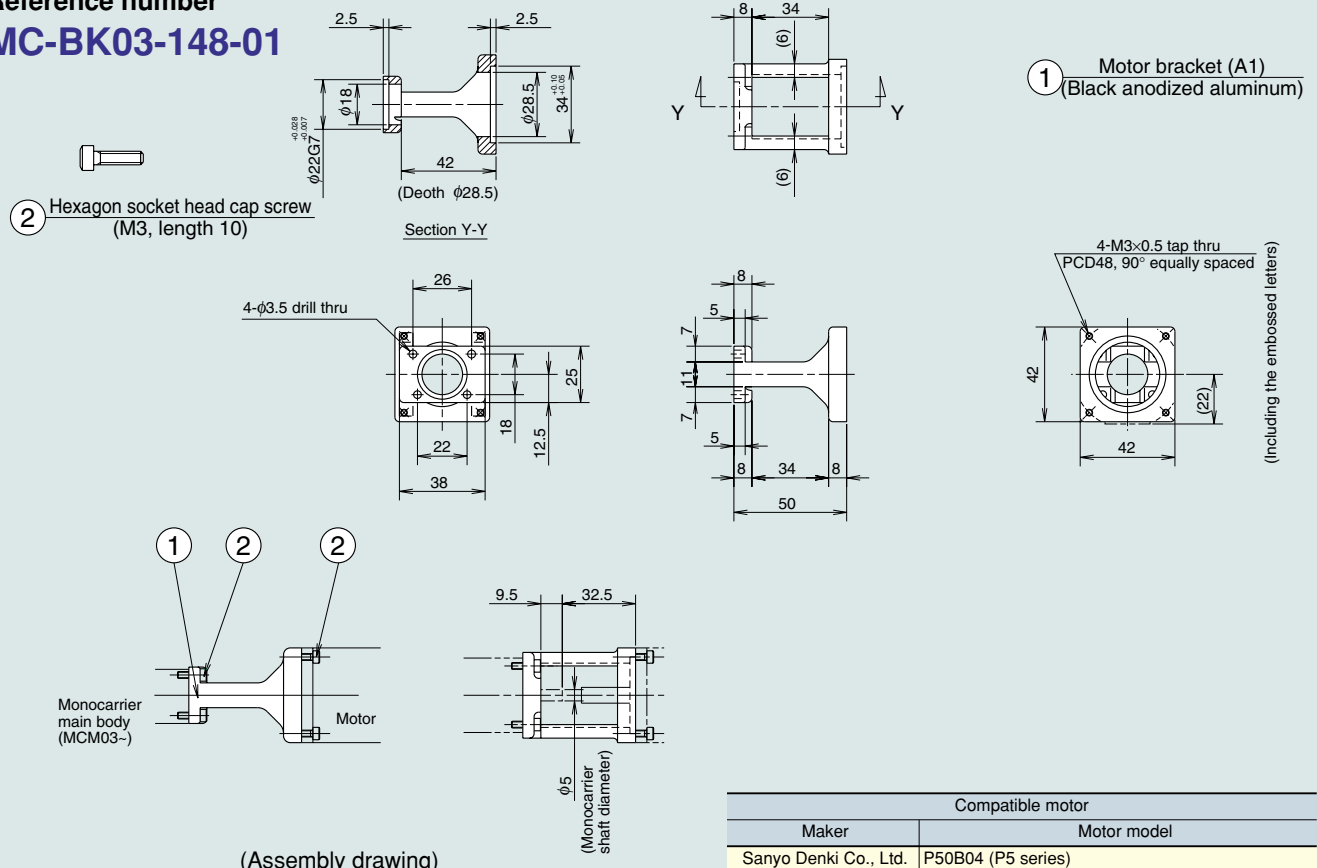
No.	Part name	Quantity			Notes
		MC-SR10-00	MC-SR10-01	MC-SR10-02	
(1)	Sensor (NSK-made a-contact point)		3	1	
	Sensor (NSK-made b-contact point)	3		2	
(2)	Sensor-mounting plate	2	2	2	Blackening
(3)	Magnet yoke	1	1	1	
(4)	Cross-recessed pan-head machine screw with flat washer	6	6	6	M3 × 5
(5)	Nut for sensor	6	6	6	M3
(6)	Cross-recessed pan-head machine screw with spring washer	6	6	6	M3 × 5

For sensor specification, refer to "Sensor specification" (P. 19).

# NSK Monocarrier Motor Bracket for MCM03

Optional

Reference number  
**MC-BK03-148-01**



Compatible motor	
Maker	Motor model
Sanyo Denki Co., Ltd.	P50B04 (P5 series)

# Maintenance-free Series MCM Monocarrier

## NSK Monocarrier Motor Bracket for MCM05

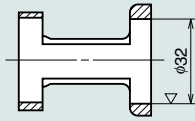
Standard inventory

Reference number

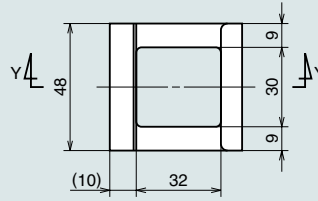
**MC-BK05-145-00**

- ② Hexagon socket head cap bolt  
(M4 underhead length 15)

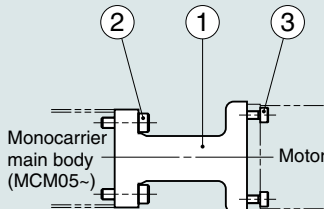
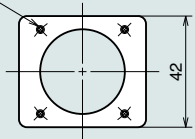
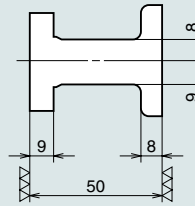
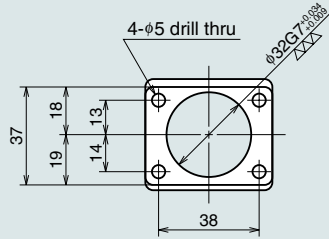
- ③ Hexagon socket head cap bolt  
(M3 underhead length 12)



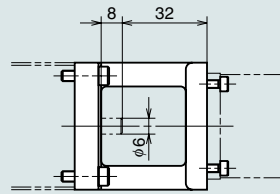
Cross section Y-Y



- ① Motor bracket (A1)  
(Black anodized aluminum)



(Assembly drawing)



Compatible motor	
Maker	Motor models
Matsushita Electric Industrial Co., Ltd.	MSM3AZAIA (B) (30W)
	MSM5AZAIA (B) (50W)
	MSM01XAIA (B) (100W)

## NSK Monocarrier Motor Bracket for MCM05

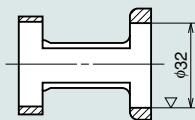
Standard inventory

Reference number

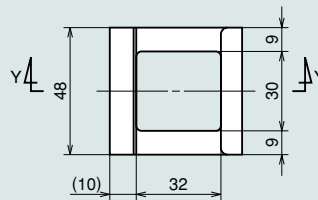
**MC-BK05-146-00**

- ② Hexagon socket head cap bolt  
(M4 underhead length 15)

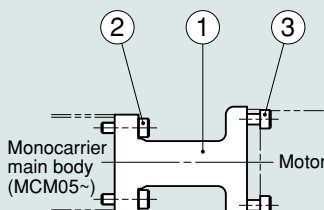
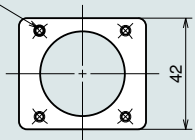
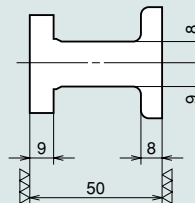
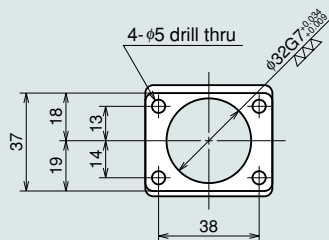
- ③ Hexagon socket head cap bolt  
(M4 underhead length 12)



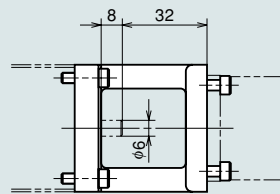
Cross section Y-Y



- ① Motor bracket (A1)  
(Black anodized aluminum)



(Assembly drawing)



Compatible motor	
Makers	Motor models
Yaskawa Electric Corp.	SGM-A3xxx (30W)
	SGM-A5xxx (50W)
	SGM-01xxx (100W)
OMRON Corp.	R88M-U03030H/U0303L (30W)
	R88M-U05030H/U05030L (50W)
	R88M-U10030H/U10030L (100W)

# NSK Monocarrier Motor Bracket for MCM05

Standard inventory

Reference number

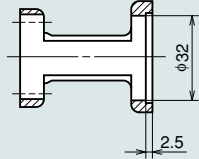
**MC-BK05-148-00**



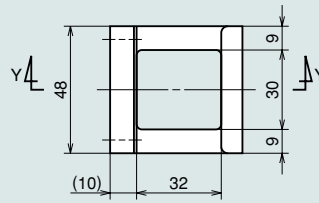
- ② Hexagon socket head cap bolt (M4x0.7 underhead length 15)



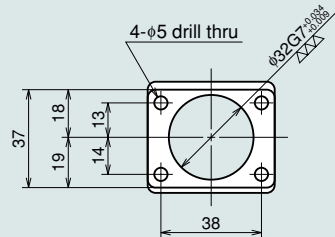
- ③ Hexagon socket head cap bolt (M3x0.5 underhead length 12)



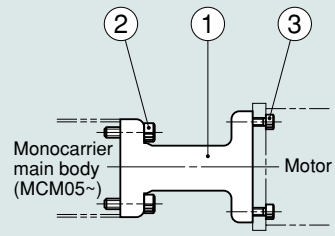
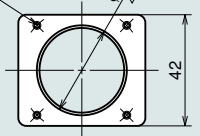
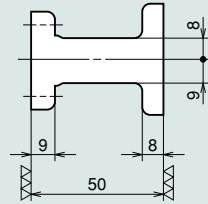
Cross section Y-Y



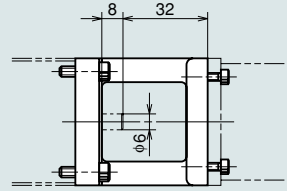
- ① Motor bracket (A1)  
(Black anodized aluminum)



4-M3x0.5 tap thru  
PCD48, 90° equally spaced



(Assembly drawing)



Compatible motor	
Maker	Motor models
Sanyo Denki Co., Ltd.	L4XX (L4 series), R4XX (R4 series)

# NSK Monocarrier Motor Bracket for MCM05

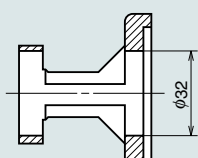
Standard inventory

Reference number

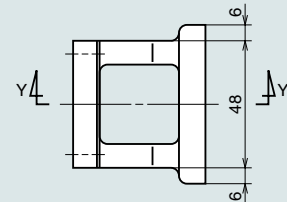
**MC-BK05-160-00**



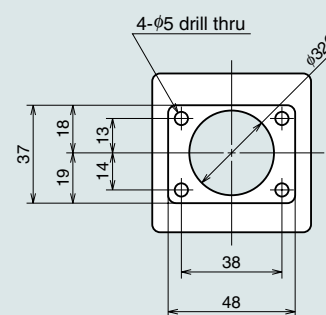
- ② Hexagon socket head cap bolt (M4x0.7 underhead length 15)



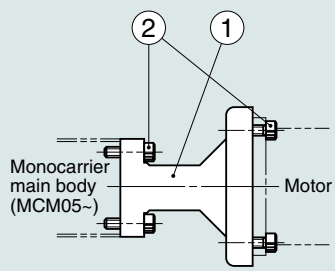
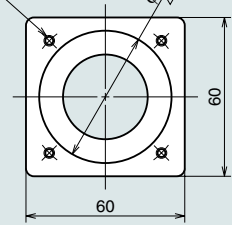
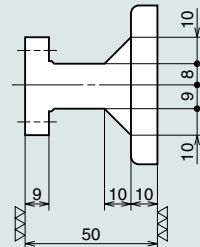
Cross section Y-Y



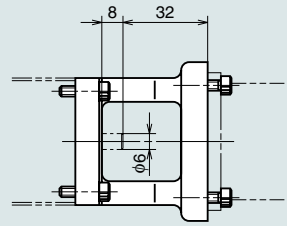
- ① Motor bracket (A1)  
(Black anodized aluminum)



4-M4x0.7 tap thru  
PCD60, 90° equally spaced



(Assembly drawing)



Compatible motor	
Makers	Motor models
Sanyo Denki Co., Ltd.	L5XX (L5 series), U5XX (U5 series), R5XX (R5 series) BL865BM002HXE, BL865BM003HXE ABS865BM002HXR, ABS865BM003HXR
Tamagawa Seiki Co., Ltd.	TS3273XX, TS3275XX
Mitsubishi Electric Corp.	HA-FE053XX, HA-FE13XX

# Maintenance-free Series MCM Monocarrier

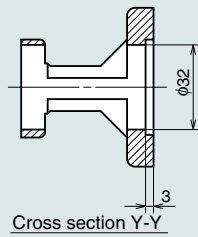
## NSK Monocarrier Motor Bracket for MCM05

Standard inventory

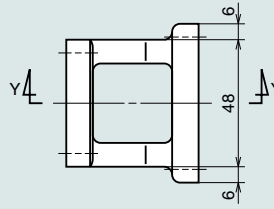
Reference number  
**MC-BK05-250-00**



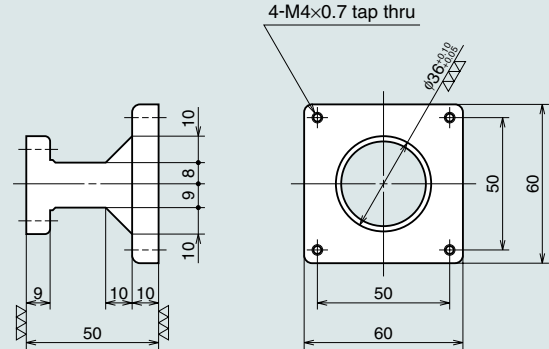
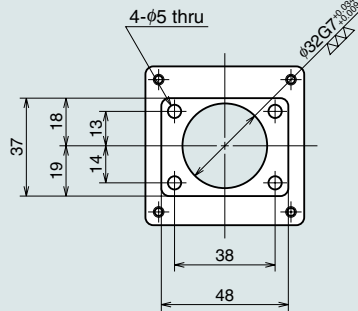
② Hexagon socket head cap bolt  
(M4 underhead length 15)



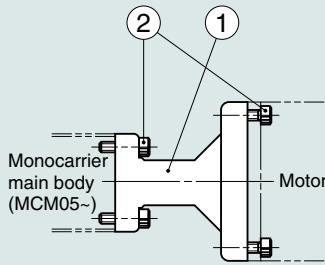
Cross section Y-Y



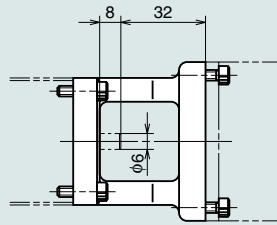
① Motor bracket (A1)  
(Black anodized aluminum)



4-M4×0.7 tap thru



(Assembly drawing)



Compatible motor	
Makers	Motor models
Sanyo Denki Co., Ltd.	103-7501, 103-7506, 103-7516
	103-7551, 103-7556, 103-7566
	103H7522-XXR, 130G7523-XXR
Oriental Motor Co., Ltd.	UPX564XX, CSD564XX
	UPX566X, CSD566X
	UPX569XX, CSD569XX

## NSK Monocarrier Motor Bracket for MCM06

Standard inventory

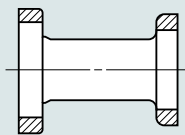
Reference number  
**MC-BK06-145-00**



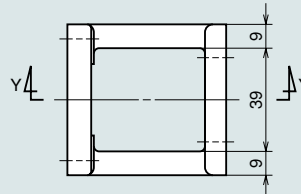
② Hexagon socket head cap bolt  
(M6 underhead length 16)



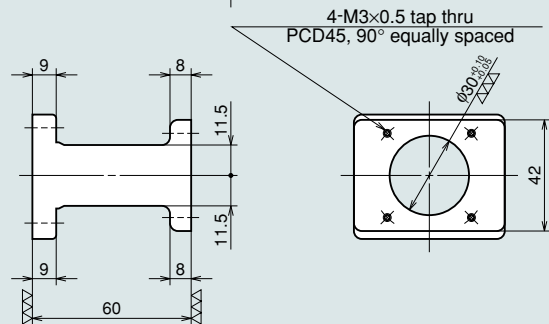
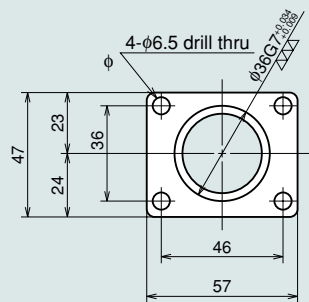
③ Hexagon socket head cap bolt  
(M3 underhead length 12)



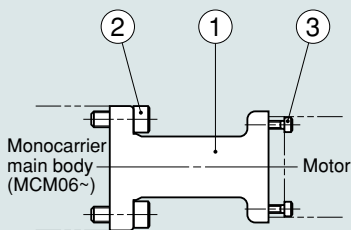
Cross section Y-Y



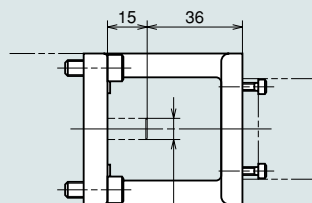
① Motor bracket (A1)  
(Black anodized aluminum)



4-M3×0.5 tap thru  
PCD45, 90° equally spaced



(Assembly drawing)



Monocarrier shaft diameter  $\phi 8$

Compatible motor	
Maker	Motor models
Matsushita Electric Industrial Co., Ltd.	MSM3AZAIA (B) (30W)
	MSM5AZAIA (B) (50W)
	MSM01XAIA (B) (100W)



# NSK Monocarrier Motor Bracket for MCM06

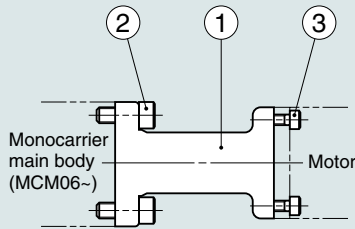
Standard inventory

Reference number

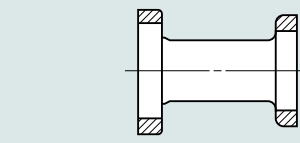
**MC-BK06-146-00**

② Hexagon socket head cap bolt  
(M6 underhead length 16)

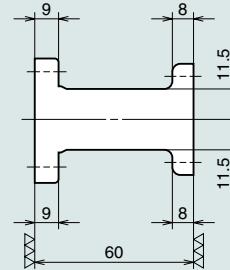
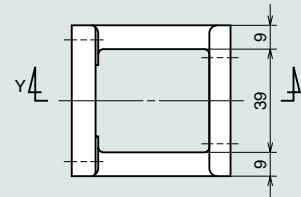
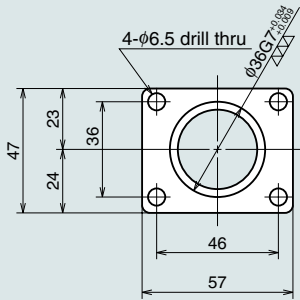
③ Hexagon socket head cap bolt  
(M4 underhead length 12)



(Assembly drawing)

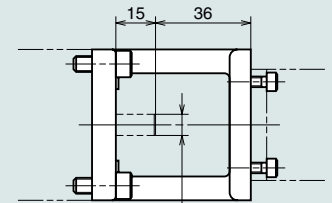
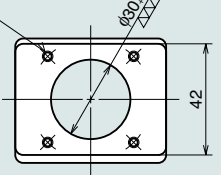


Cross section Y-Y



① Motor bracket (A1)  
(Black anodized aluminum)

4-M4×0.7 tap thru  
PCD46, 90° equally spaced



Monocarrier shaft diameter φ8

Compatible motor	
Makers	Motor models
Yaskawa Electric Corp.	SGM-A3xxx (30W)
	SGM-A5xxx (50W)
	SGM-01xxx (100W)
OMRON Corp.	R88M-U03030H/U0303L (30W)
	R88M-U05030H/U05030L (50W)
	R88M-U10030H/U10030L (100W)

# NSK Monocarrier Motor Bracket for MCM06

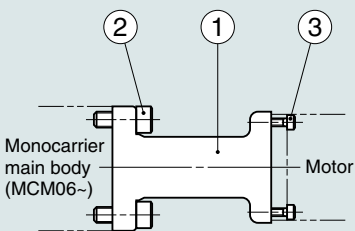
Standard inventory

Reference number

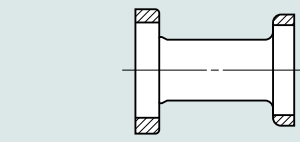
**MC-BK06-148-00**

② Hexagon socket head cap bolt  
(M6 underhead length 16)

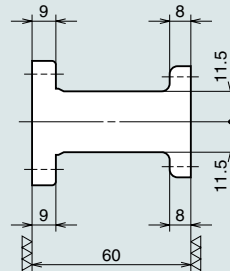
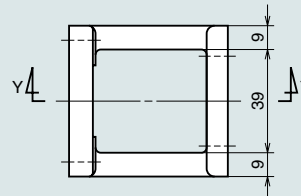
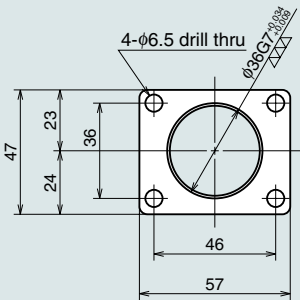
③ Hexagon socket head cap bolt  
(M3 underhead length 12)



(Assembly drawing)

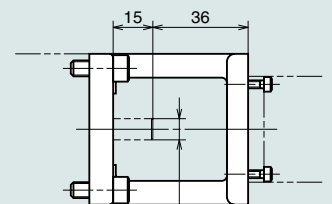
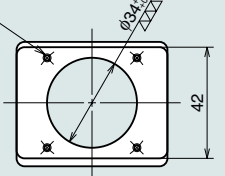


Cross section Y-Y



① Motor bracket (A1)  
(Black anodized aluminum)

4-M3×0.5 tap thru  
PCD48, 90° equally spaced



Monocarrier shaft diameter φ8



Compatible motor	
Maker	Motor models
Sanyo Denki Co., Ltd.	L4XX (L4 series), R4XX (R4 series)

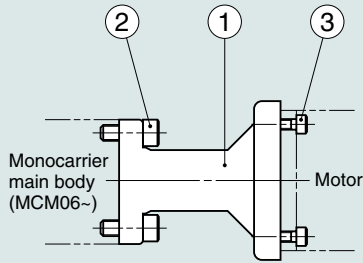
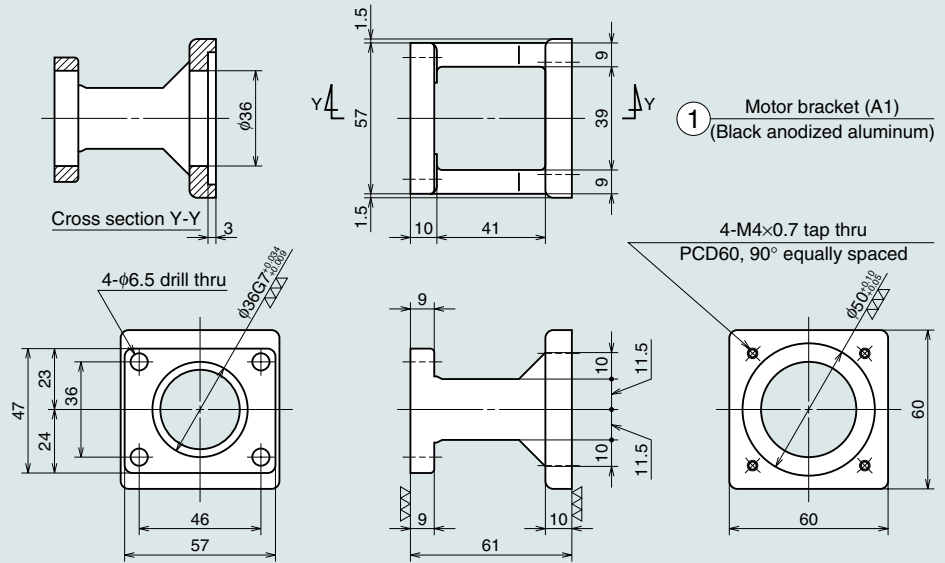
# Maintenance-free Series MCM Monocarrier

## NSK Monocarrier Motor Bracket for MCM06

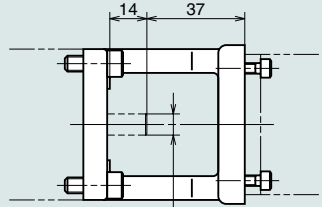
Standard inventory

Reference number  
**MC-BK06-160-00**

-  ② Hexagon socket head cap bolt (M6 underhead length 16)
-  ③ Hexagon socket head cap bolt (M4 underhead length 14)



(Assembly drawing)



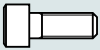

Monocarrier shaft diameter  $\phi 8$

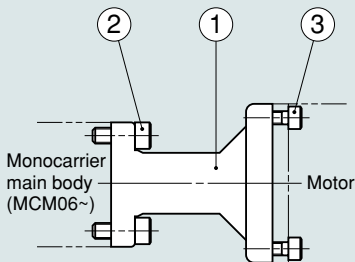
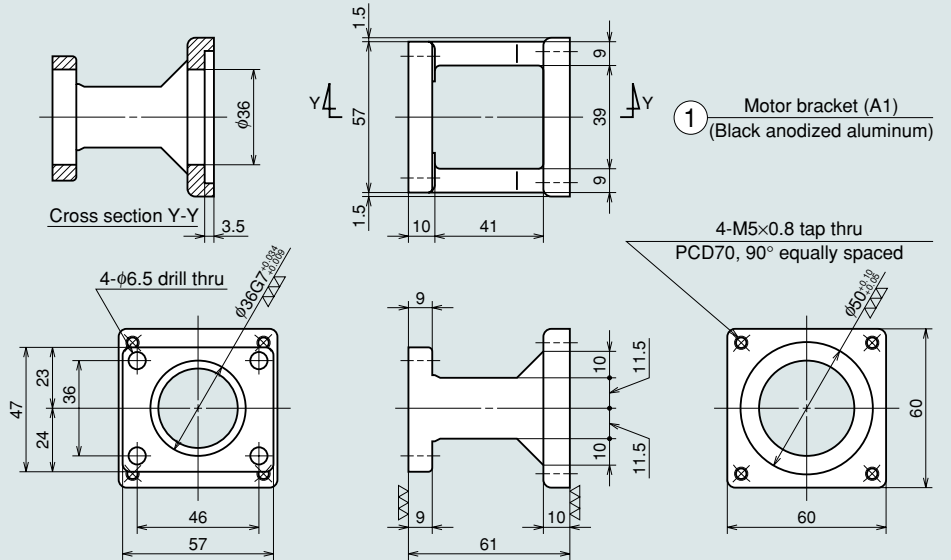
Compatible motor	
Makers	Motor models
Sanyo Denki Co., Ltd.	L5XX (L5 series), U5XX (U5 series), R5XX (R5 series) BL865BM002HXE, BL865BM003HXE ABS865BM002HXR, ABS865BM003HXR
Tamagawa Seiki Co., Ltd.	TS3273XX, TS3275XX
Mitsubishi Electric Corp.	HA-FE053XX, HAFE013XX

## NSK Monocarrier Motor Bracket for MCM06

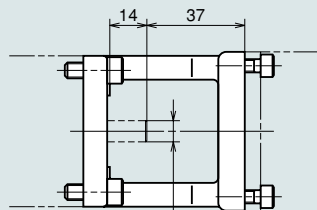
Standard inventory

Reference number  
**MC-BK06-170-00**

-  ② Hexagon socket head cap bolt (M6 underhead length 16)
-  ③ Hexagon socket head cap bolt (M5 underhead length 14)



(Assembly drawing)



Monocarrier shaft diameter  $\phi 8$

Compatible motor	
Makers	Motor models
Yaskawa Electric Corp.	SGM-02xxx (200W)
OMRON Corp.	R88M-U20030H/20030L (200W)

# NSK Monocarrier Motor Bracket for MCM06

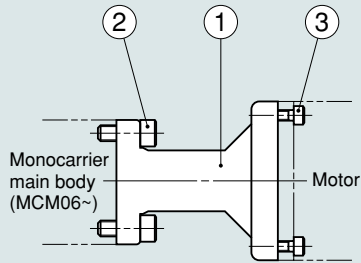
Standard inventory

Reference number

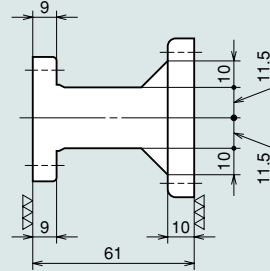
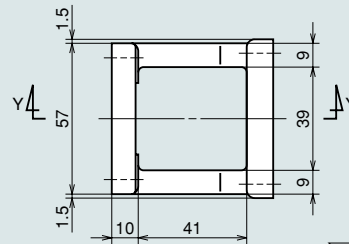
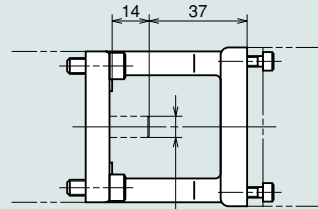
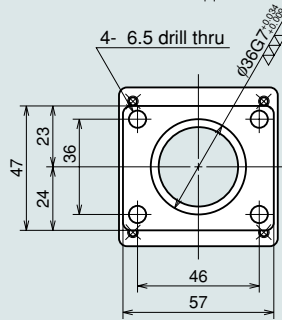
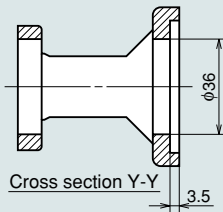
**MC-BK06-170-01**

② Hexagon socket head cap bolt  
(M6 underhead length 16)

③ Hexagon socket head cap bolt  
(M4 underhead length 14)

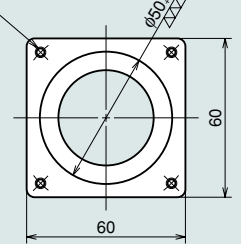


(Assembly drawing)



① Motor bracket (A1)  
(Black anodized aluminum)

4-M4×0.7 tap thru  
PCD70, 90° equally spaced



Compatible motor	
Maker	Motor model
Matsushita Electric Industrial Co., Ltd.	MSM02XAIA (B) (200W)

# NSK Monocarrier Motor Bracket for MCM06

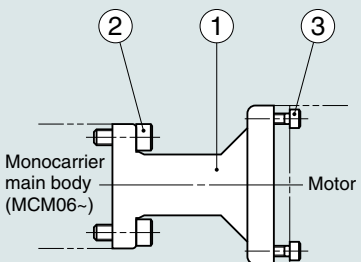
Standard inventory

Reference number

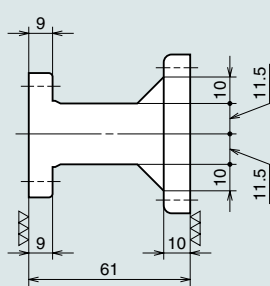
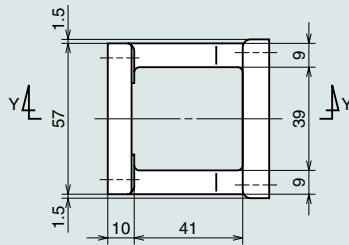
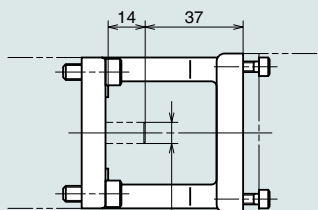
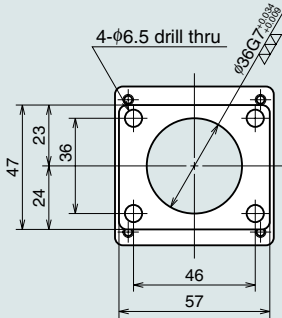
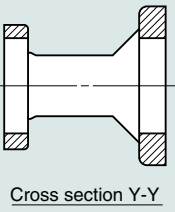
**MC-BK06-250-00**

② Hexagon socket head cap bolt  
(M6 underhead length 16)

③ Hexagon socket head cap bolt  
(M4 underhead length 14)

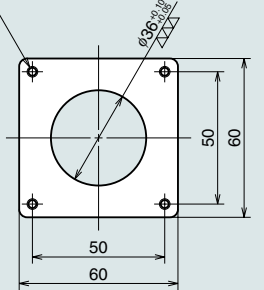


(Assembly drawing)



① Motor bracket (A1)  
(Black anodized aluminum)

4-M4×0.7 tap thru



Compatible motor	
Makers	Motor models
Sanyo Denki Co., Ltd.	103-7501, 103-7506, 103-7516
	103-7551, 103-7556, 103-7566
	103H7522-XXR, 103H7523-XXR
Oriental Motor Co., Ltd.	UPX564XX, CSD564XX
	UPX566XX, CSD566XX
	UPX569XX, CSD569XX

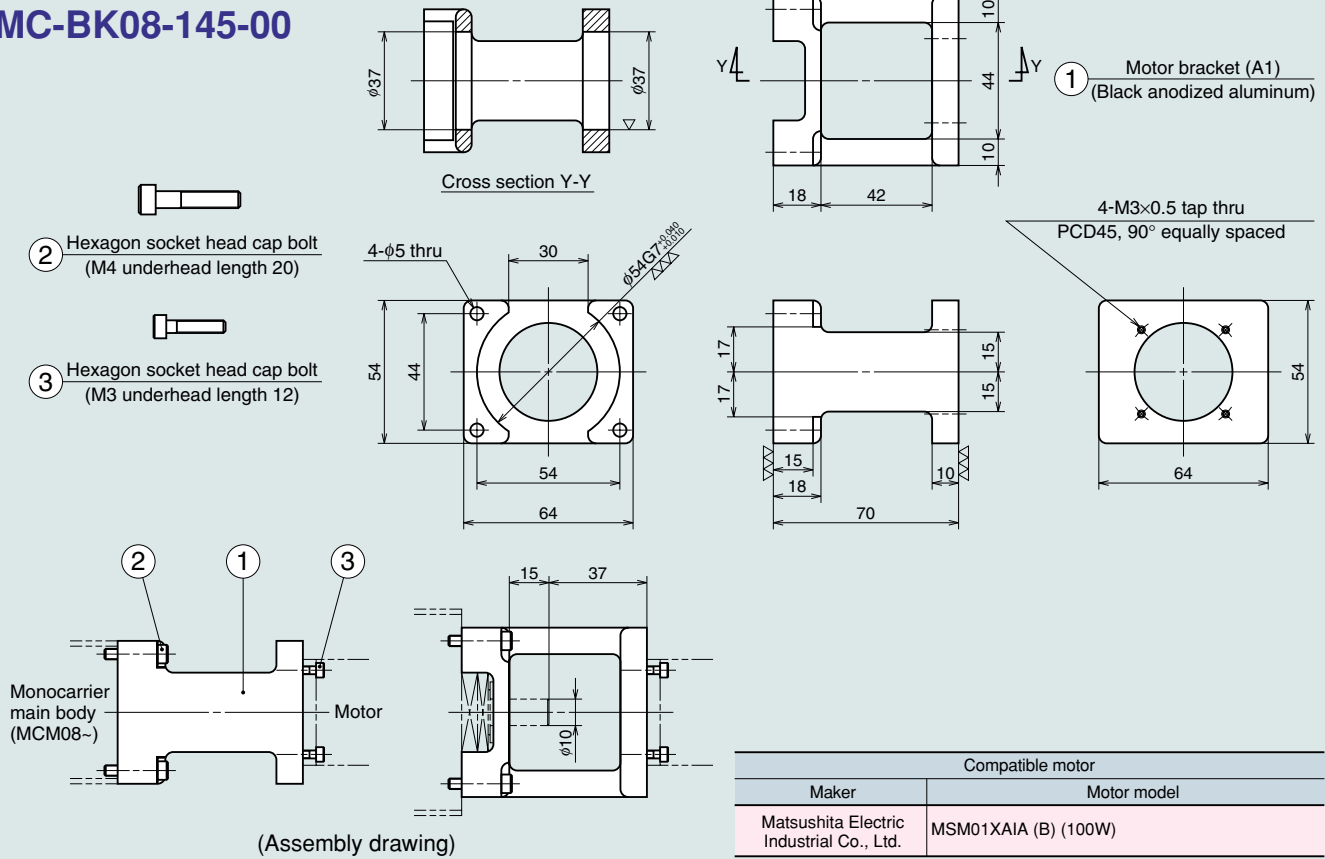
# Maintenance-free Series MCM Monocarrier

## NSK Monocarrier Motor Bracket for MCM08

Standard inventory

Reference number

**MC-BK08-145-00**

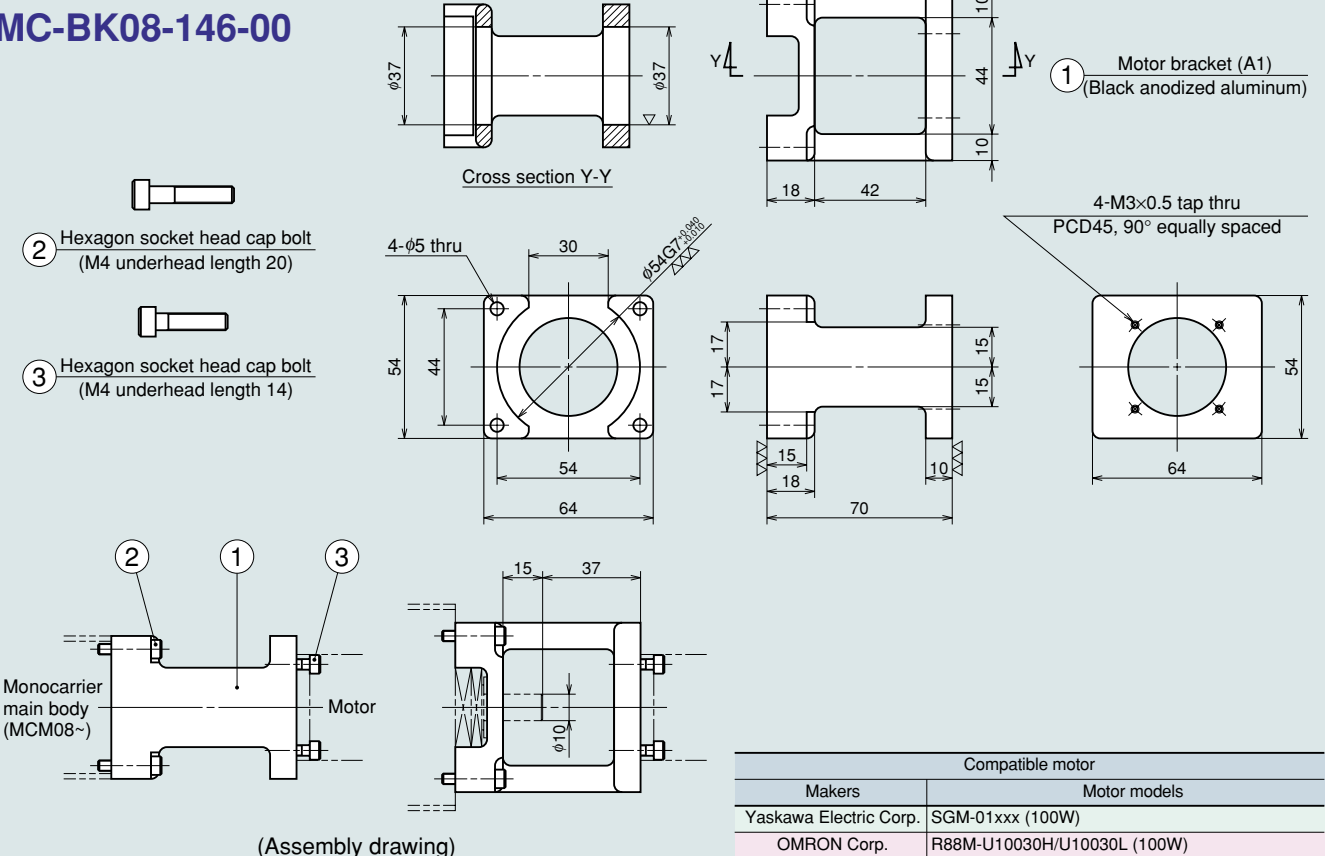


## NSK Monocarrier Motor Bracket for MCM08

Standard inventory

Reference number

**MC-BK08-146-00**



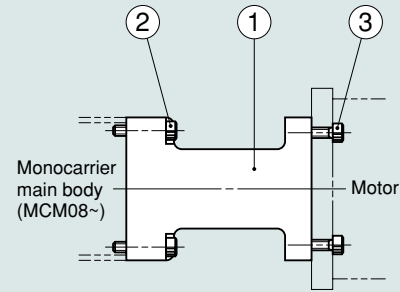
# NSK Monocarrier Motor Bracket for MCM08

Standard inventory

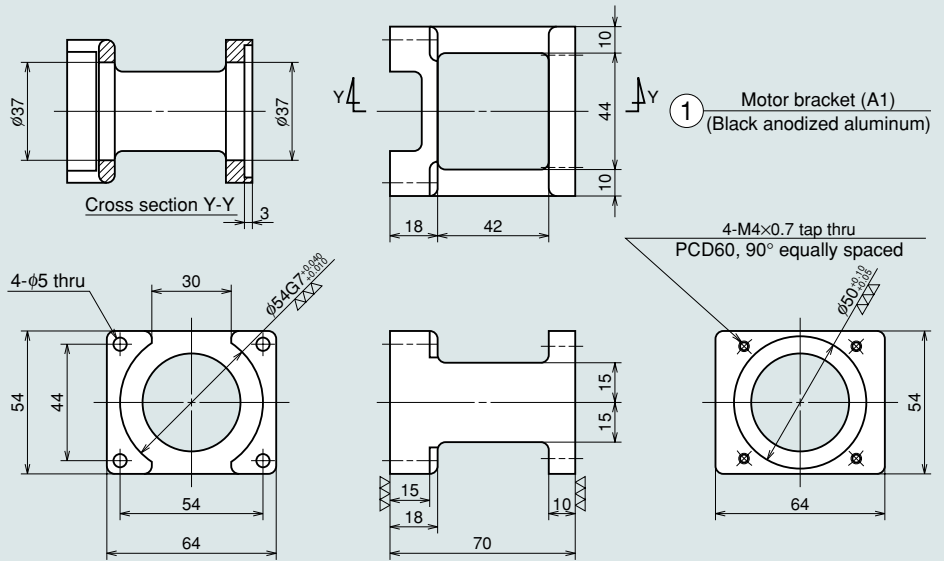
Reference number  
**MC-BK08-160-00**

② Hexagon socket head cap bolt  
(M4×0.7 underhead length 20)

③ Hexagon socket head cap bolt  
(M4×0.7 underhead length 14)



(Assembly drawing)



Compatible motor	
Makers	Motor models
Sanyo Denki Co., Ltd.	L5XX (L5 series), U5XX (U5 series), R5XX (R5 series) BL865BM002HXE, BL865BM003HXE ABS865BM002HXR, ABS865BM003HXR
Tamagawa Seiki Co., Ltd.	TS1981XX, TS3273XX, TS3275XX
Yaskawa Electric Corp.	UGRMEM-04XX
Mitsubishi Electric Corp.	HA-FE053XX, HAFE013XX

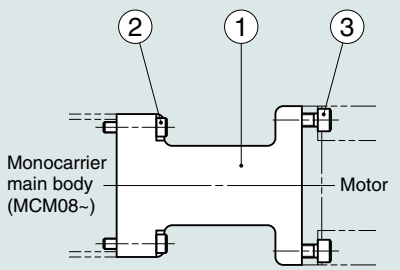
# NSK Monocarrier Motor Bracket for MCM08

Standard inventory

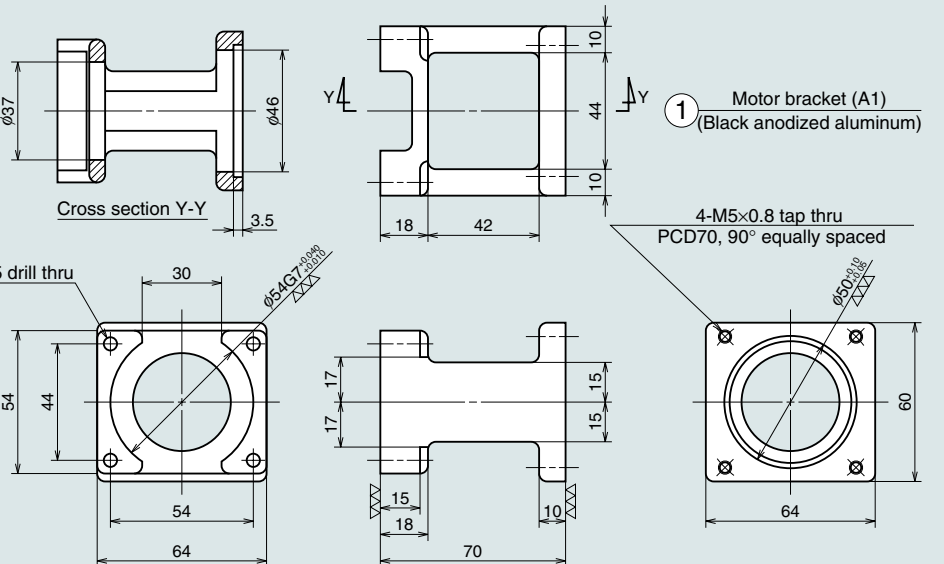
Reference number  
**MC-BK08-170-00**

② Hexagon socket head cap bolt  
(M4 underhead length 20)

③ Hexagon socket head cap bolt  
(M5 underhead length 14)



(Assembly drawing)



Compatible motor	
Makers	Motor models
Yaskawa Electric Corp.	SGM-02xxx (200W) SGM-04xxx (400W)
OMRON Corp.	R88M-U20030H/20030L (200W) R88M-U40030H/40030L (400W)

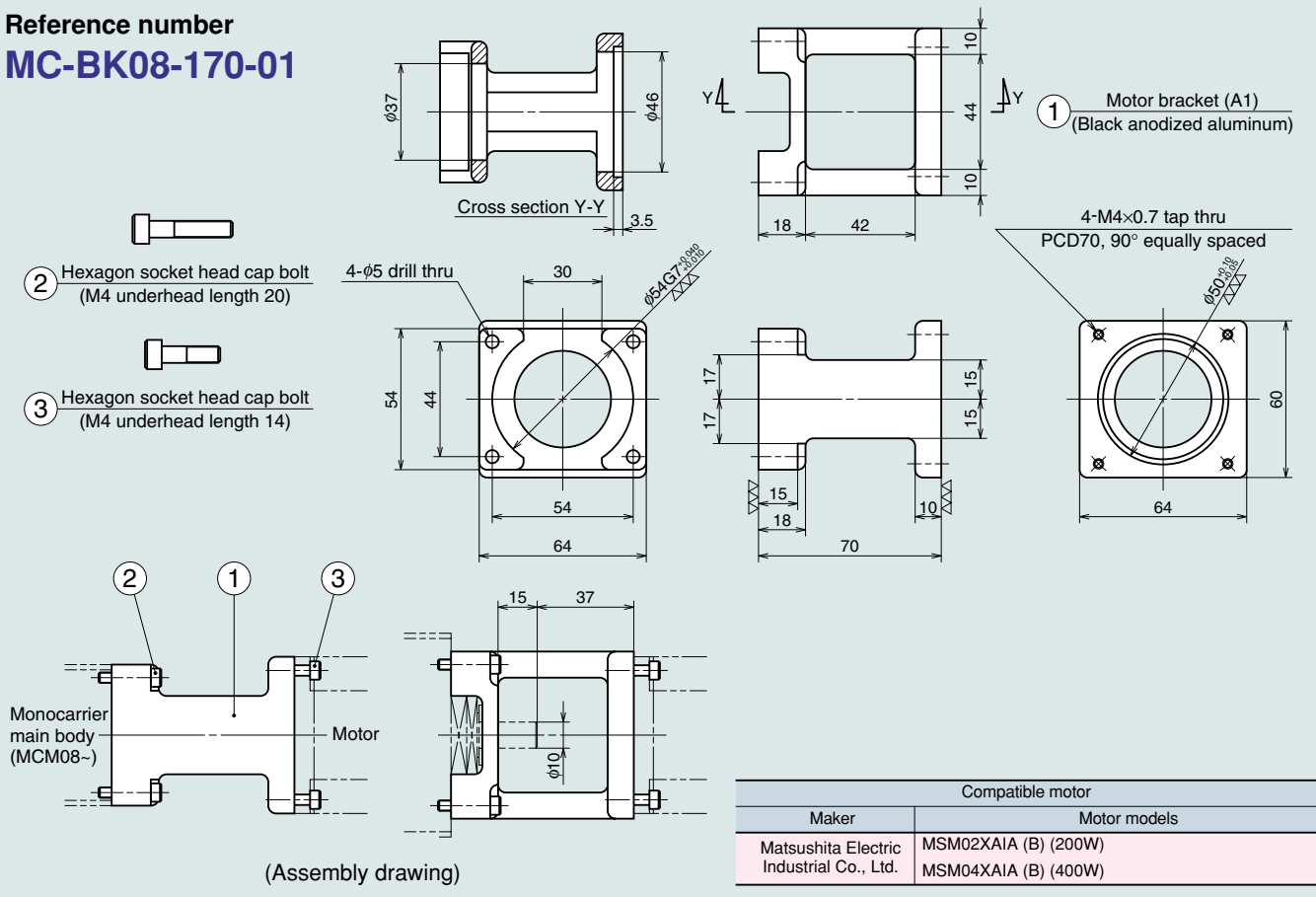
# Maintenance-free Series MCM Monocarrier

## NSK Monocarrier Motor Bracket for MCM08

Standard inventory

Reference number

**MC-BK08-170-01**

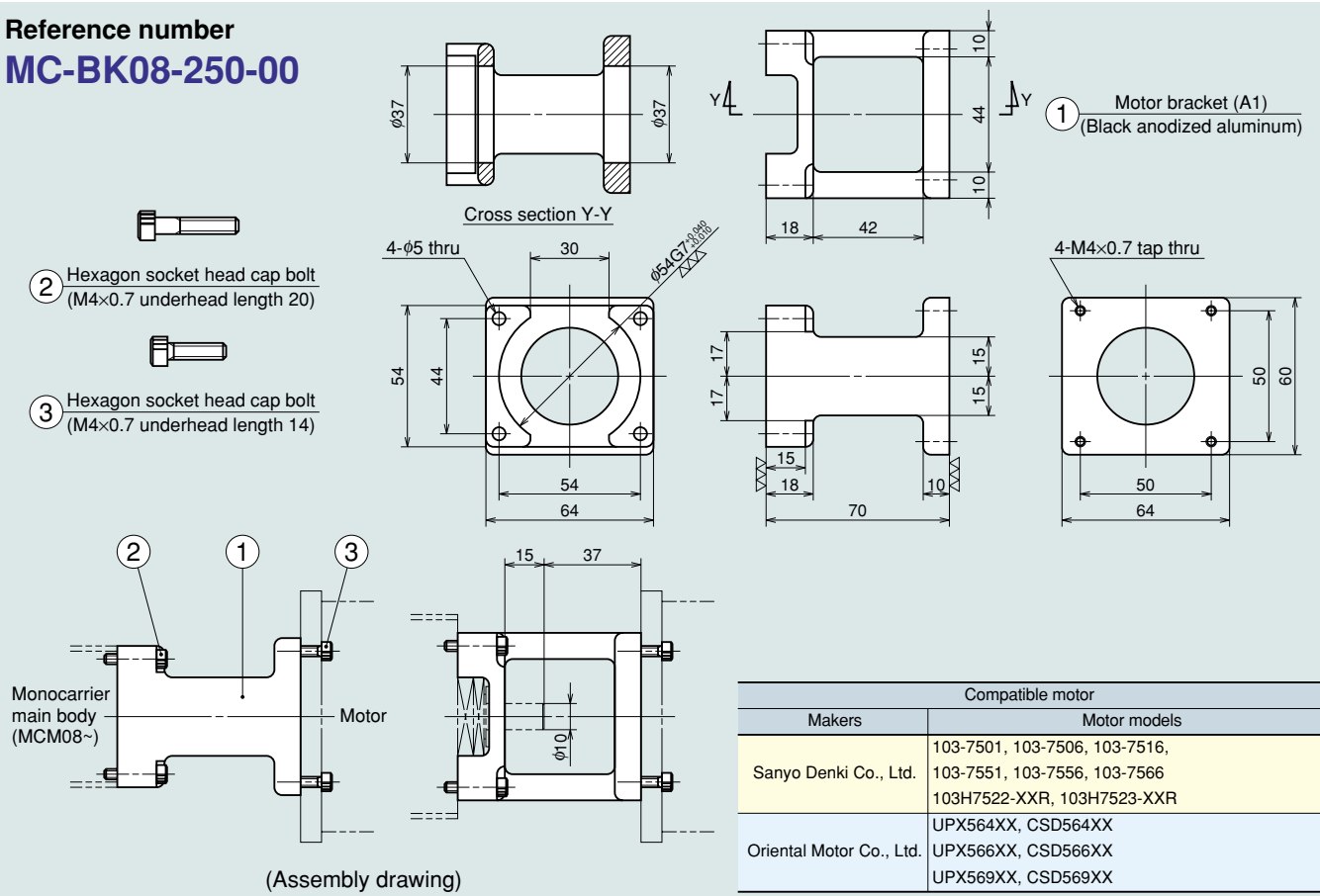


## NSK Monocarrier Motor Bracket for MCM08

Standard inventory

Reference number

**MC-BK08-250-00**



# NSK Monocarrier Motor Bracket for MCM08

Standard inventory

**Reference number**  
**MC-BK08-190-00**

① Motor bracket (A1)  
(Black anodized aluminum)

thru  
4-M5×0.8 tap thru  
PCD90, 90° equally spaced

② Hexagon socket head cap bolt  
(M4×0.7 underhead length 22)

③ Hexagon socket head cap bolt  
(M5×0.8 underhead length 16)

Monocarrier main body (MCM08~) Motor

(Assembly drawing)

Compatible motor	
Makers	Motor models
Sanyo Denki Co., Ltd.	L7XX (L7 series), U7XX (U7 series), R7XX (R7 series) BL865BM007HXE, BL865BM010HXE ABS865BM007HXR, ABS865BM010HXR
Tamagawa Seiki Co., Ltd.	TS3277XX, T4077XX
Mitsubishi Electric Corp.	HA-SC23XX (B), HA-FE23, HA-FE33, HA-SO203 (B)
Yaskawa Electric Corp.	USASEM-03A32, -05A32, -03AS2, -05AS2 USACEM-02AA2, -03AA2, UGRMEM-04XX
OMRON Corp.	R88M-S20030, -S30030, -M20030, -M30030

# NSK Monocarrier Motor Bracket for MCM08

Standard inventory

**Reference number**  
**MC-BK08-270-00**

① Motor bracket (A1)  
(Black anodized aluminum)

4-M5×0.8 tap thru

② Hexagon socket head cap bolt  
(M4×0.7 underhead length 22)

③ Hexagon socket head cap bolt  
(M5×0.8 underhead length 16)

Monocarrier main body (MCM08~) Motor

(Assembly drawing)

Compatible motor	
Makers	Motor models
Sanyo Denki Co., Ltd.	103-8541, -8542, -8543, -8571 103-8572, -8573, -8575
Oriental Motor Co., Ltd.	UPX596, 599, 5913



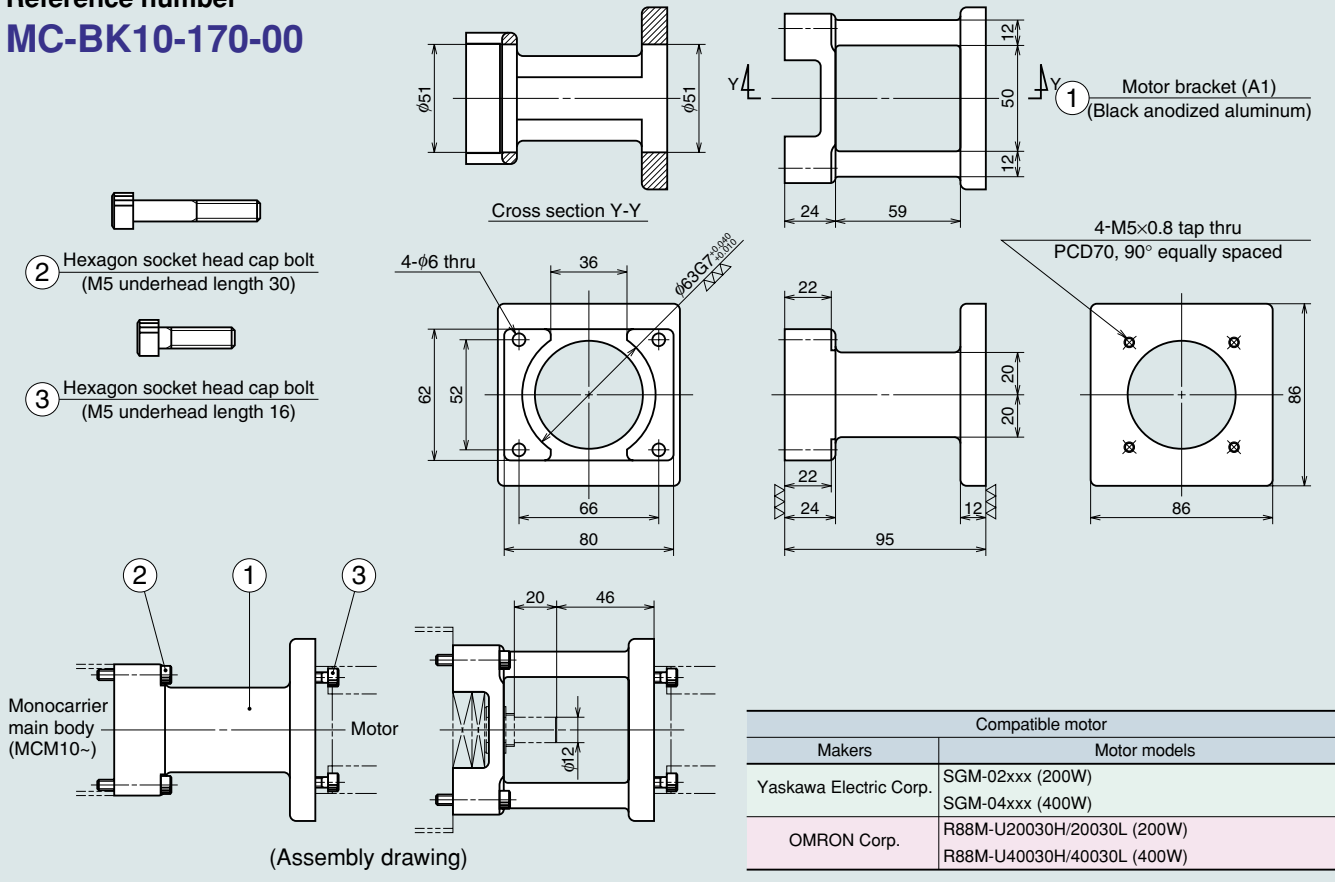
# Maintenance-free Series MCM Monocarrier

## NSK Monocarrier Motor Bracket for MCM10

Standard inventory

Reference number

**MC-BK10-170-00**

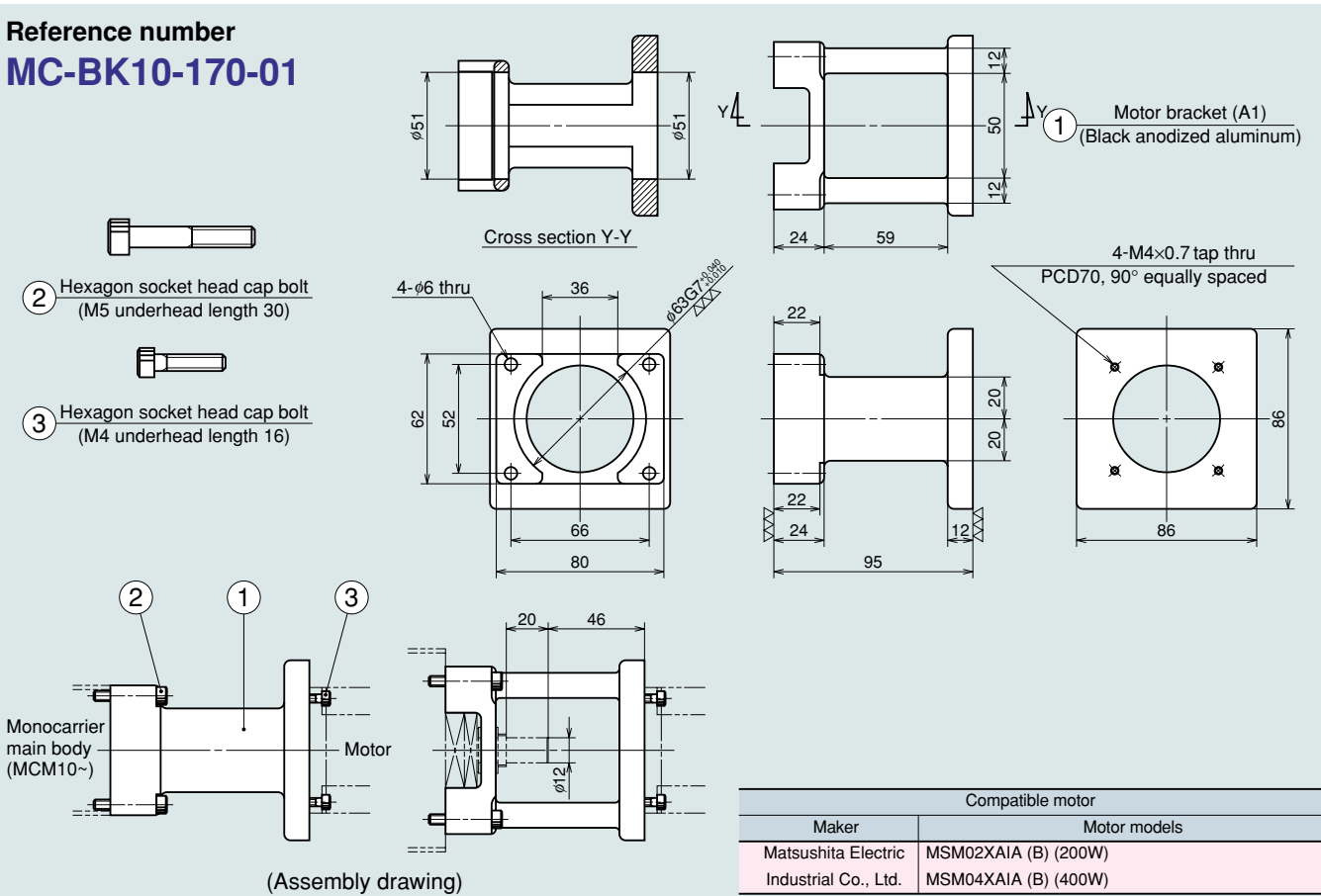


## NSK Monocarrier Motor Bracket for MCM10

Standard inventory

Reference number

**MC-BK10-170-01**



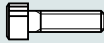
# NSK Monocarrier Motor Bracket for MCM10

Standard inventory

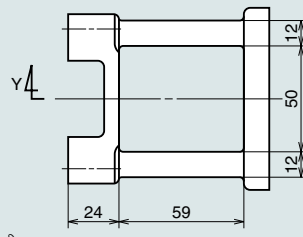
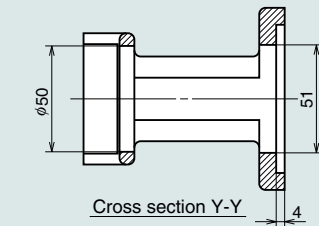
Reference number  
**MC-BK10-190-00**



② Hexagon socket head cap bolt  
(M5x0.8 underhead length 30)

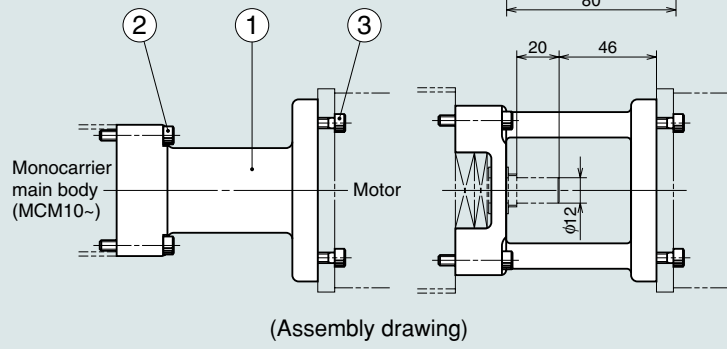
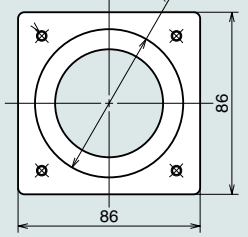
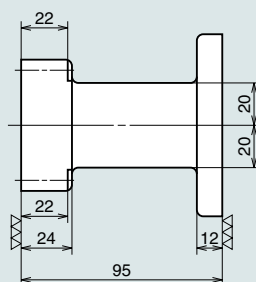
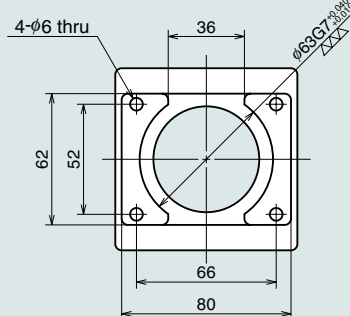


③ Hexagon socket head cap bolt  
(M5x0.8 underhead length 18)



① Motor bracket (A1)  
(Black anodized aluminum)

4-M5x0.8 tap thru  
PCD90, 90° equally spaced



Compatible motor	
Makers	Motor models
Sanyo Denki Co., Ltd.	L7XX (L7 series), U7XX (U7 series), R7XX (R7 series) BL865BM007HXE, BL865BM010HXE ABS865BM007HXR, ABS865BM010HXR
Tamagawa Seiki Co., Ltd.	TS3277XX, T4077XX
Mitsubishi Electric Corp.	HA-SC23XX (B), HA-FE23, HA-FE33, HA-SO203 (B)
Yaskawa Electric Corp.	USASEM-03A32, -05A32, -03AS2, -05AS2 USACEM-02AA2, -03AA2, UGRMEM-04XX
OMRON Corp.	R88M-S20030, -S30030, -M20030, -M30030

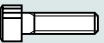
# NSK Monocarrier Motor Bracket for MCM10

Standard inventory

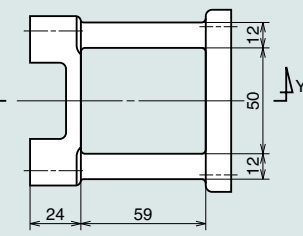
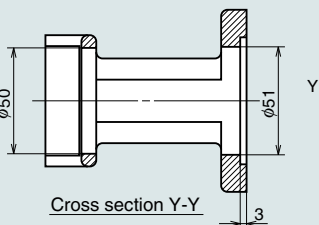
Reference number  
**MC-BK10-270-00**



② Hexagon socket head cap bolt  
(M5x0.8 underhead length 30)

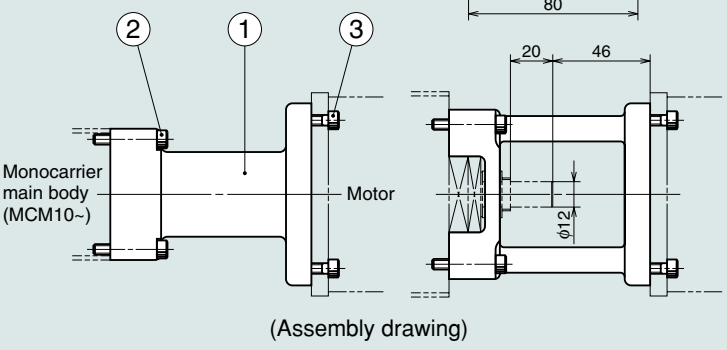
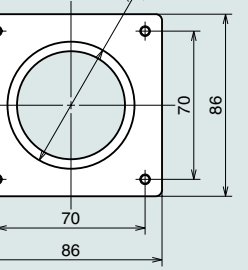
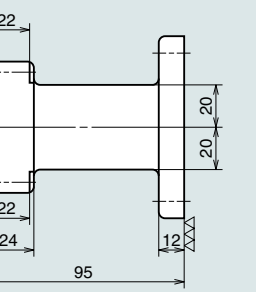
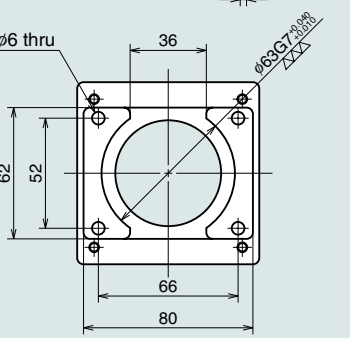


③ Hexagon socket head cap bolt  
(M5x0.8 underhead length 18)



① Motor bracket (A1)  
(Black anodized aluminum)

4-M5x0.8 tap thru



Compatible motor	
Makers	Motor models
Sanyo Denki Co., Ltd.	103-8541, -8542, -8543, -8571 103-8572, -8573, -8575
Oriental Motor Co., Ltd.	UPX596, 599, 5913