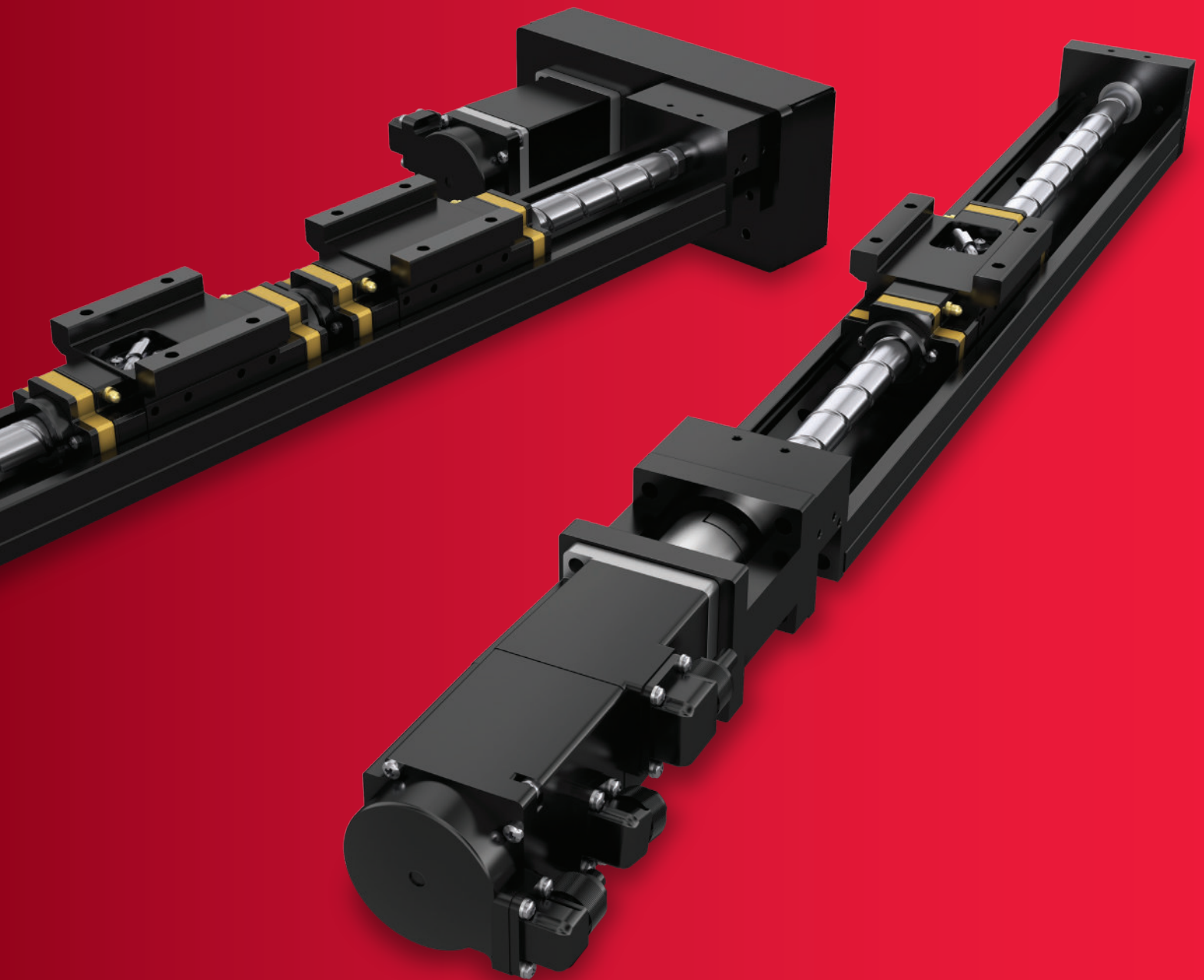




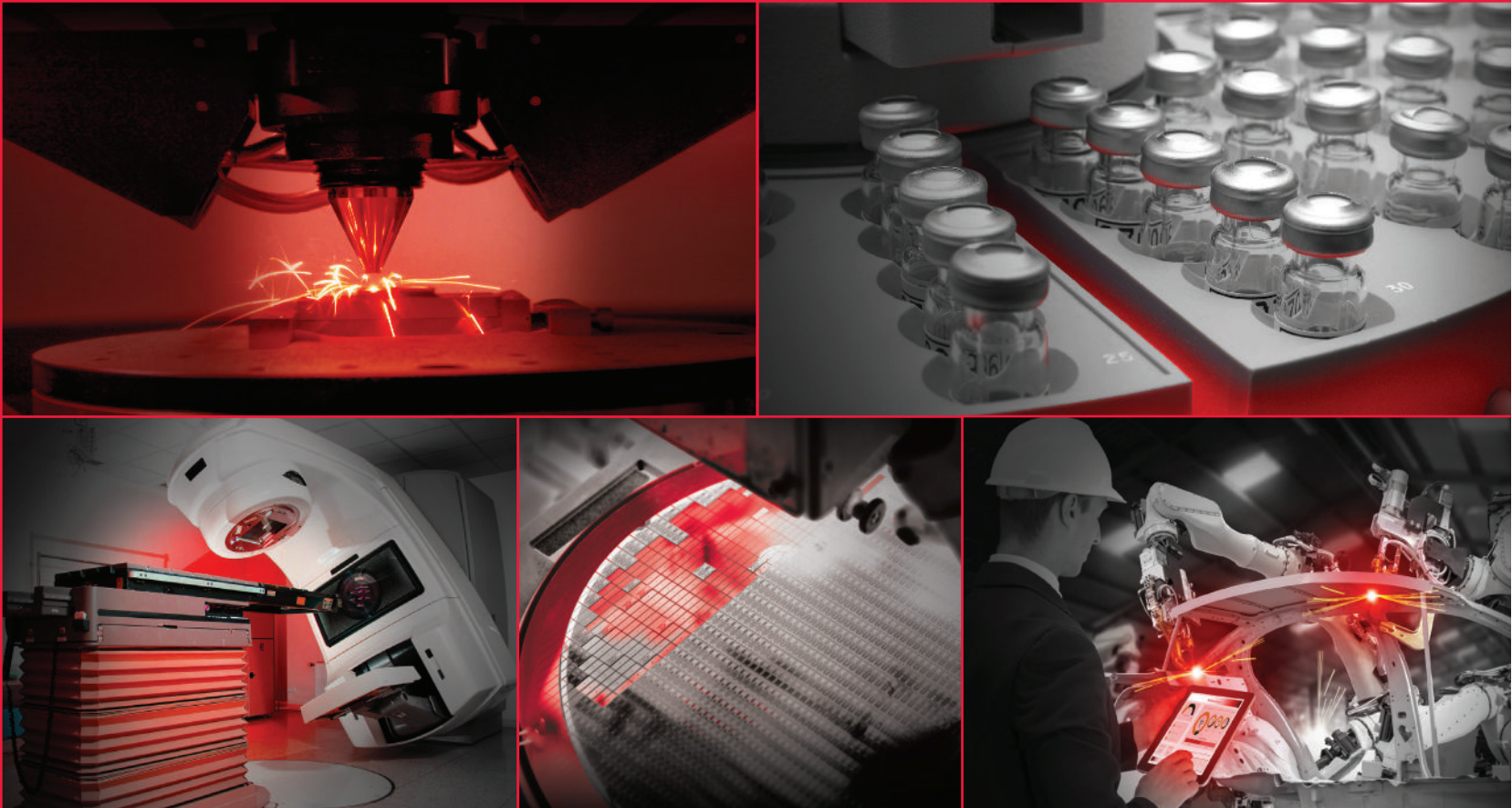
## MCE ELECTRIFIED MONOCARRIER™

PREASSEMBLED HIGH-PERFORMANCE LINEAR ACTUATOR



ENABLING AUTOMATION IN MOTION & CONTROL

[NSKAUTOMATION.COM](https://www.nskautomation.com)



# ENABLING AUTOMATION

## NSK MECHATRONIC SYSTEM SOLUTIONS

For decades, NSK has specialized in developing electromechanical solutions – integrating our precision machine components with control technology – to deliver advanced, reliable and precise motion and control.

Robotic surgery. Medical imaging. Biomedicine. Semiconductor. 3D printing. Factory automation. Our customers are vast and diverse, united by precision-critical applications and NSK’s ability to achieve coherent mechatronic solutions that offer:

- › Augmented machine function and accuracy
- › Optimized system performance, space and life
- › Reduced costs and complexity

From complex systems to single-axis solutions, NSK delivers innovative and ideal integrated motion solutions to enable automation and accuracy in machine function, for a competitive edge to our customers.

## INTEGRATED, ELECTRIFIED PRECISION: MCE

With our pioneering Monocarrier™ series, NSK seamlessly integrates our accumulated expertise with ball screws, linear guides and support bearings into a lightweight, compact and highly precise single-axis actuator. NSK has expanded our line of Monocarriers to deliver the MCE series: a preassembled and pretested motorized actuator. For NSK automation customers, the MCE Electrified Monocarrier is a turnkey solution that offers significant benefits:

- › Streamline – consolidating multiple components into a single, compact and customizable part number
- › Simplify – reducing design, test and installation time
- › Support – dedicated collaboration, project management and technical expertise from NSK and Sanyo Denki

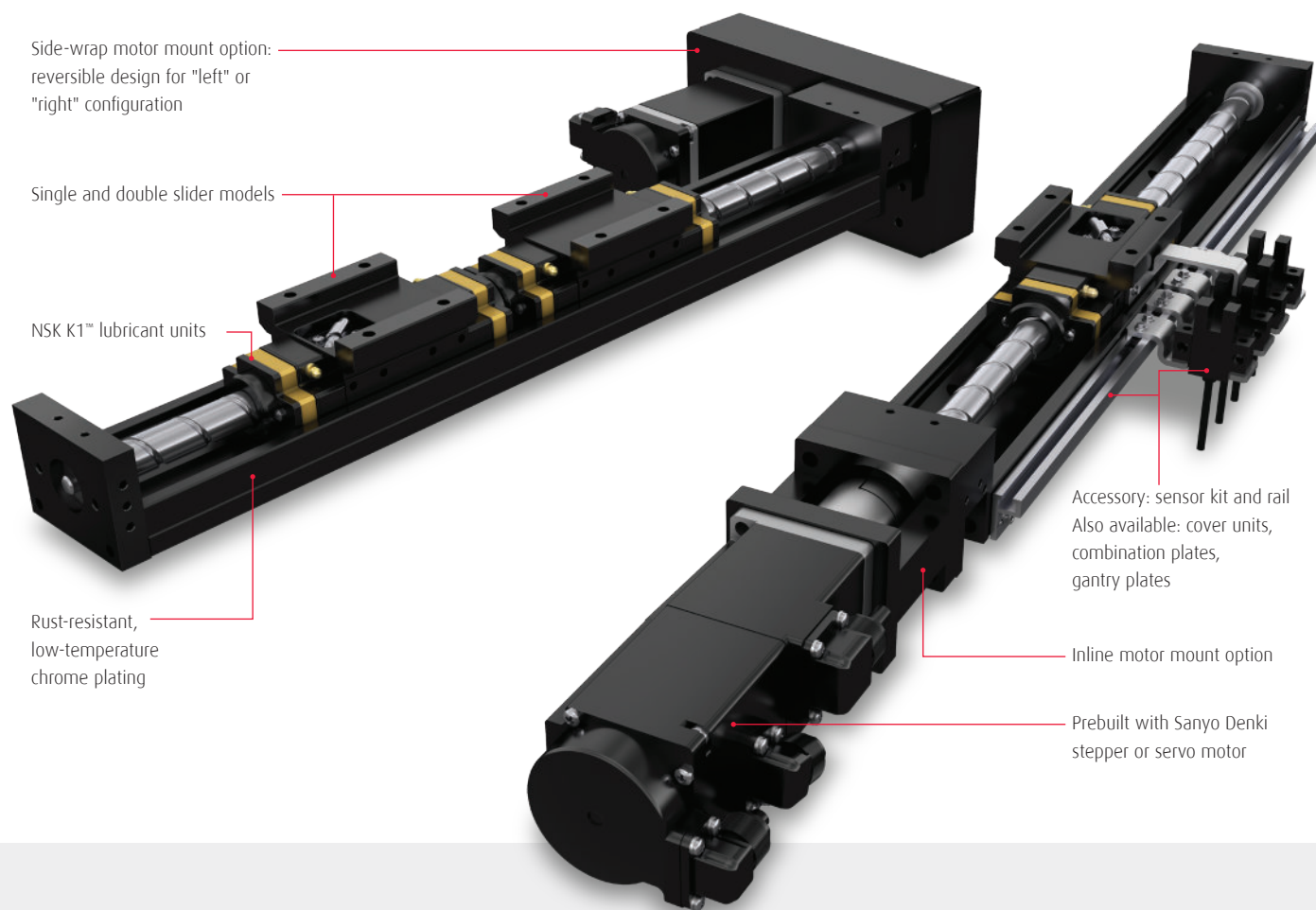




## DESIGN AND OPERATIONAL BENEFITS

### CUSTOMIZABLE FEATURES FOR OPTIMIZED PERFORMANCE

NSK's MCE series actuator is a highly compact and cost-effective alternative to building a linear motion system from multiple, separately-sourced components. Optimally designed for ease and accuracy, MCE Monocarriers are supplied preassembled, pretested and ready to install.



#### DESIGN FEATURES

- › Lightweight, compact, maintenance-free linear actuator that integrates a high-accuracy NSK ball screw, linear guide and support bearings
- › Prebuilt with a Sanyo Denki stepper/servo motor
- › Inline or side wrap motor mount options
- › Available in single and double slider models
- › With long-term, maintenance-free NSK K1 lubrication units
- › Rust-resistant, low-temperature chrome plating on bodies and sliders; fluoride chrome plating for increased rust protection is available upon request
- › Multiple datum planes – the bottom and a lateral side of the rail – facilitate highly accurate installation
- › Optional accessories including covers, sensors, combination and gantry plates available

## MCE COMPONENTS AND ACCESSORIES

### EXPANDING THE PERFORMANCE ENVELOPE

**NSK**

#### MOTOR MOUNTS

Selected and preassembled (with motor) with your MCE electrified actuator:

- › Pre-machined inline brackets for a straight motor mount
- › Side-wrap mounting kit consisting of timing belt, pulleys, motor plate and belt cover to install motor parallel with the Monocarrier, reducing overall unit length

#### COMBINING AND GANTRY PLATES

- › Combining plates - machined aluminum plate and fasteners to combine two MCE assemblies into an XY system
- › D style – X and Y axis sliders facing upward
- › G style – X axis slider facing upward, Y axis slider facing sideways
- › Gantry plates - machined aluminum plate and fasteners to add a support rail for severe cantilevered Y axis load conditions in an XY system

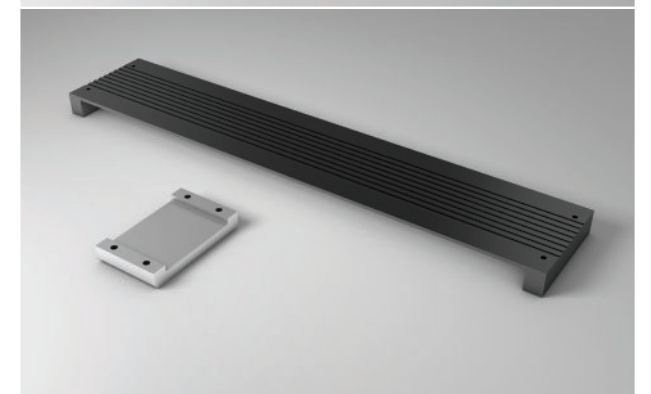
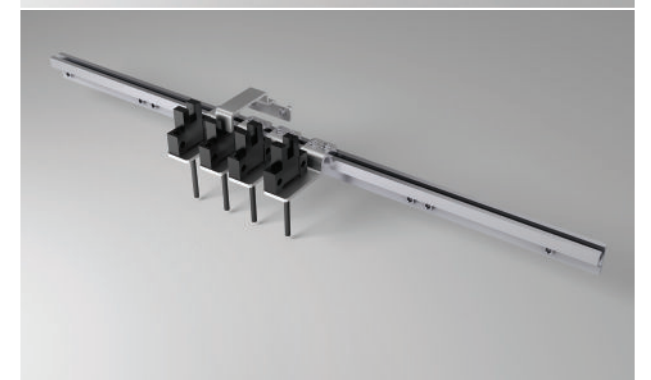
#### SENSOR RAIL AND KITS

- › Sensor kits consist of 3 sensors, a sensor flag and fasteners
- › Two sensor kit options:
  - › Proximity Switch (Normally Open or Normally Closed)
  - › Photo Sensor: NPN and PNP Type
- › Sensor rail must be ordered separately
- › RoHS compliant

#### COVER UNITS

- › Top- or full-cover options available to protect from contaminants
- › Spacer plates to accommodate cover units for select models

Ready to configure an MCE electrified Monocarrier?  
Visit [www.nskautomation.com/mc](http://www.nskautomation.com/mc)



A BROAD PORTFOLIO OF MODEL OPTIONS

BALL SCREW LEAD / STROKE COMBINATIONS



STANDARD COMBINATIONS - SINGLE SLIDER																							
MODEL		MCE02		MCE03					MCE05				MCE06			MCE08				MCE10			
LEAD		1	2	1	2	5	10	12	15	5	10	20	30	5	10	20	5	10	20	30	10	20	30
STROKE	50																						
	100																						
	150																						
	200																						
	250																						
	300																						
	400																						
	500																						
	600																						
	700																						
	800																						
	900																						
	1000																						

MCE model / lead / stroke combination available

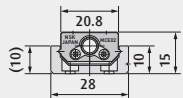
RANGE OF AVAILABILITY

- › 6 model sizes, with optimized combinations of lead and stroke
- › Single and double slider options
- › Ball screw shaft diameters ranging from 6 to 20 mm
- › Stroke length as short as 50 mm, as long as 1000 mm
- › Inline or side-wrap motor mount options

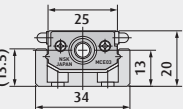
STANDARD COMBINATIONS - DOUBLE SLIDER										
MODEL		MCE05		MCE06			MCE08		MCE10	
LEAD		10	20	5	10	20	10	20	10	20
STROKE	60									
	70									
	80									
	110									
	160									
	170									
	180									
	210									
	270									
	280									
	310									
	370									
	380									
	410									
	470									
	480									
	510									
	570									
	580									
	610									
	670									
	680									
	710									
	870									

MCE model / lead / stroke combination available

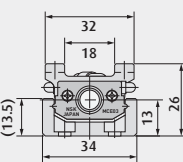
MCE02



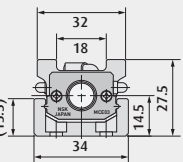
MCE03 LEAD 1, 2



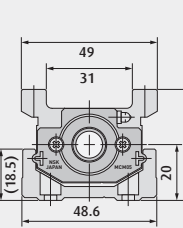
MCE03 LEAD 5, 10, 12



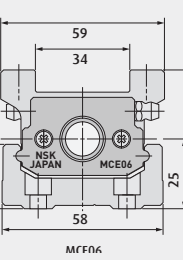
MCE03 LEAD 15



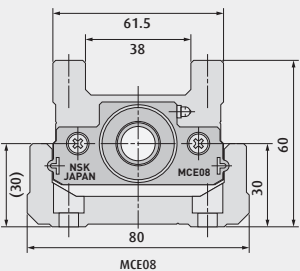
MCE05



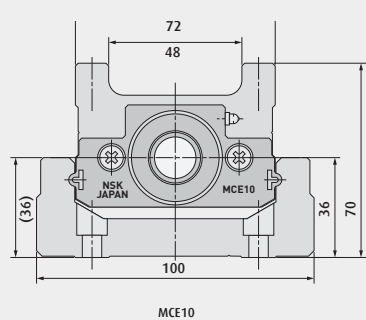
MCE06



MCE08



MCE10



MCE SERIES MOTOR OPTIONS

MCE SERIES MOTOR OPTIONS												
MODEL	LEAD	STEPPER MOTOR			SERVO MOTOR							
		NEMA 11	NEMA 17 (33 MM)	NEMA 17 (59.5 MM)	30 W		100 W		200 W		400 W	
		No Brake			No Brake	Brake	No Brake	Brake	No Brake	Brake	No Brake	Brake
MCE02	1, 2											
MCE03	1, 2											
	5											
	10, 12, 15											
MCE05	5, 10, 20, 30											
MCE06	5, 10, 20											
MCE08	5, 10, 20, 30											
MCE10	10, 20, 30											

MCE model / lead / stroke combination available

SANYO DENKI MOTOR INTEGRATION

When you purchase an MCE series electrified Monocarrier, the Sanyo Denki motor is included – preassembled and pretested for easy installation and optimized performance.

For driver,controller, cable and connector information, please contact Sanyo Denki at S-AE@sanyo-denki.com or visit SanyoDenki.com/America.

Ready to configure an MCE electrified Monocarrier?

Visit [www.nskautomation.com/mc](http://www.nskautomation.com/mc)

MCE SERIES DESIGNATION SYSTEM



Actuator Type		Nominal Size		Accuracy Grade		Slider Type		NSK Mgmt. No.		Cover Unit		Motor/Brake Option	
MC		E		03		010		H		10		K	
0		0		1		0		S		A		F	
Series		Stroke		Ball Screw Lead		Grease		Sensor Unit		Motor Orientation		NSK Mgmt. No.	

DESIGNATION	ATTRIBUTE	
Actuator Type	MC	Monocarrier
Series	E	compact, electrified type
Nominal Size		rail width, unit: 10 mm
Stroke		unit: 10 mm
Accuracy Grade	H	high precision
	P	precision grade
Ball Screw Lead		in millimeters
Slider Type	K	single slider
	D	double slider
Grease Specification	0	standard AS2
	B	clean grease LG2 <sup>(1)</sup>
NSK Mgmt. No.	0	for all sizes except as noted below
	2	for MCE06 and 08 screw shafts with 5 mm leads + MCE06051, 061, 071 double slider with 10 mm lead
Sensor Unit <sup>(2)</sup>	0	no sensor unit
	1	proximity switch, normally closed (3 pieces)
	2	proximity switch, normally open (3 pieces)
	3	proximity switch, normally open (1 piece), normally closed (2 pieces)
	4	photo sensor, NPN (3 pieces)
	5	photo sensor, PNP (3 pieces)

DESIGNATION	ATTRIBUTE	
Cover Unit	0	no cover
	1	top cover
	-	full cover <sup>(3)</sup>
Motor Orientation <sup>(4)</sup>	S	straight, inline motor mount
	L	left, side-wrap motor mount
	R	right, side-wrap motor mount
Motor / Brake Option <sup>(5)</sup>	A	servo motor - 30 W, no brake
	B	servo motor - 30 W, with brake
	C	servo motor - 100 W, no brake
	D	servo motor - 100 W, with brake
	E	servo motor - 200 W, no brake
	F	servo motor - 200 W, with brake
	G	servo motor - 400 W, no brake
	H	servo motor - 400 W, with brake
	J	stepper motor - NEMA 11, no brake
	K	stepper motor - NEMA 17 (33 mm), no brake
	L	stepper motor - NEMA 17 (59.5 mm), no brake
NSK Mgmt. No.	F	NSK Precision America, Inc. - Franklin

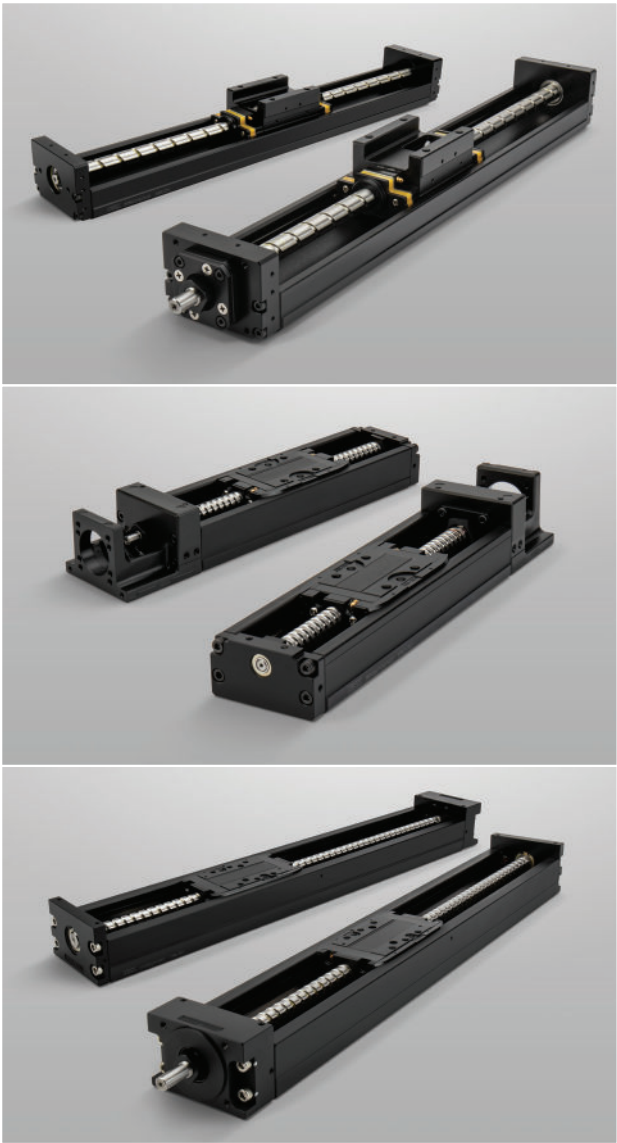
Note: 1) Clean grease LG2 is not available from the NSK Quick Ship program.  
2) Sensor rail is included when a sensor kit is requested for MCE actuators.  
3) A full-cover unit cannot be used in conjunction with a sensor unit.  
4) For side-wrap motor mount, left or right is defined by the motor's position relative to the non-driven end of the MCE Monocarrier.  
5) Power and feedback cables not included. Stepper motors will have pigtails, while servo motors will be pre-terminated with standard Sanyo Denki connectors. For additional information contact Sanyo Denki application engineering at S-AE@sanyo-denki.com.



# MONOCARRIER AND TOUGHCARRIER

## OUR COMPLETE LINEAR ACTUATOR PROGRAM

The MCE series actuator is the culmination of NSK’s focus on customer ease to enable automation and accuracy in machine function. It’s derived from the expertise that NSK offers across our entire range of linear actuator products. All series offer a wide selection of ball screw leads. All are available with single and double sliders for most model sizes. All are equipped with long-term, maintenance-free K1 lubrication units. And all can be fully accessorized.



### MONOCARRIER SERIES MCM - COMPACT TYPE

NSK’s hallmark actuator series, suitable for applications ranging from small-sized transporting equipment to cantilever beams and transportation of heavy loads.

- › In model sizes MCM02, 03, 05, 06, 08 and 10
- › With ball screw shaft diameters ranging from 6 to 20 mm
- › Available from NSK’s Quick Ship program for quick-turnaround requirements. (Available within a 6-week delivery time)

### MONOCARRIER SERIES MCH - INTERCHANGEABLE TYPE

Suitable for cantilever beams and other factory automation applications.

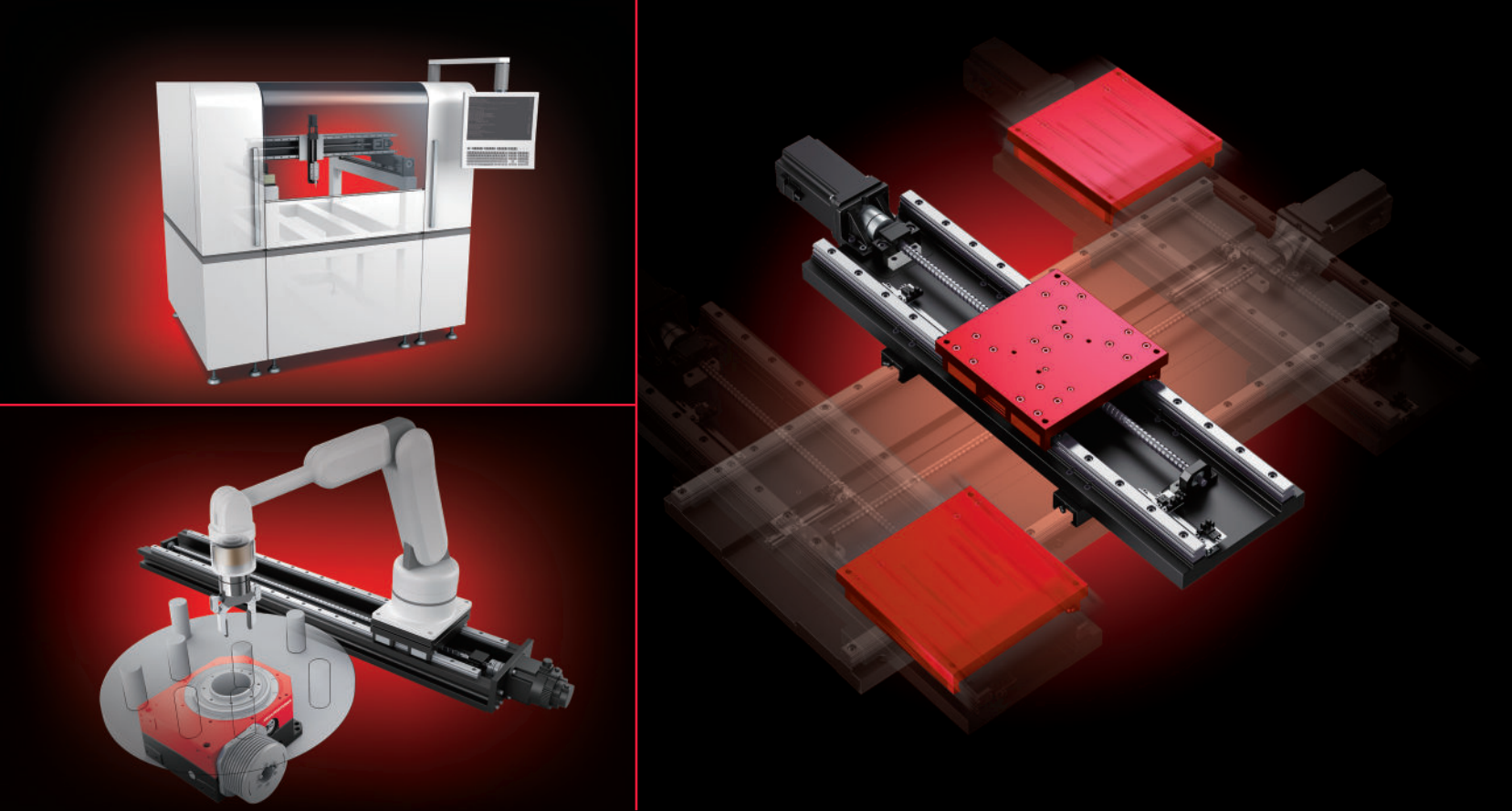
- › Model sizes MCH06, 08 and 10
- › With ball screw shaft diameters ranging from 12 to 20 mm
- › Includes low profile rail model MCL06

### TOUGHCARRIER™ – HEAVY DUTY TYPE

Utilizing rollers for linear guide rolling elements, TCH series actuators offer ultra-high load capacity markedly higher than standard Monocarriers.

- › Model sizes TCH06, 08 and 10
- › With ball screw shaft diameters ranging from 12 to 20 mm
- › Dimensionally interchangeable with MCH series, delivering higher load-carrying capacity from the same footprint when required

For additional technical information or a copy of our **Linear Actuators** catalog, contact NSK or visit [www.nskautomation.com](http://www.nskautomation.com)



## ACCUMULATED EXPERTISE, OPTIMAL SUPPORT

For your precision machine component and integrated system requirements, you can rely on the optimum interaction of NSK design solutions, comprehensive engineering support, domestic manufacturing capabilities and access to our global technology network. Our local automation experts will collaborate closely with you through all aspects of design, provide intensive project management and extend comprehensive technical support. We aim to deliver to our customers the ideal motion and control solution and experience.

Visit [nskautomation.com](http://nskautomation.com) to review products and services, case studies and videos, and to find an NSK distributor near you.

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