

Actuators & Adjusters



Actuator Mounting System Chart

F003

Micrometer Heads

	Micrometer Heads (Maintenance parts) Travel: 15mm or less SFN/SHTS/SHT/SHSS/SHS/SHM	F004
---	---	-------------

	Micrometer Heads (Maintenance parts) Travel: 25mm or more SHS/SHN/SHH/MHN	F005
---	---	-------------


	Differential Micrometer Heads (Maintenance parts) MHF	F006
---	---	-------------

	Nut Drivers MNS	F006
---	--------------------	-------------


	Sub-micron Worm Drive Micrometer Heads WGP	F007
---	--	-------------


	Angled Micrometer Heads MDC	F008
---	--------------------------------	-------------

Differential Micrometer Heads


	Differential Micrometer Heads SHSP/SHPA/SHPB/SHPT/SHPC	F009
---	---	-------------


Fine Adjustment Screws

	Fine-pitch Screw Adjusters FPSA	F010
---	------------------------------------	-------------


	Hex Wrench with Knob KCL	F010
---	-----------------------------	-------------


Remote


	Remote Actuator SGDC	F012
---	-------------------------	-------------


	Remote Controller SRC	F013
---	--------------------------	-------------


PKA

	Ultrasonic Motor Driven Actuator Guide PKA	F014
--	--	-------------

	Translation Stages PKA	F014
--	---------------------------	-------------

	Remote Control Mirror Holder PKA	F015
--	-------------------------------------	-------------

	Compact Actuator PKA	F015
--	-------------------------	-------------

	2-Axis Controller PKA	F015
---	--------------------------	-------------

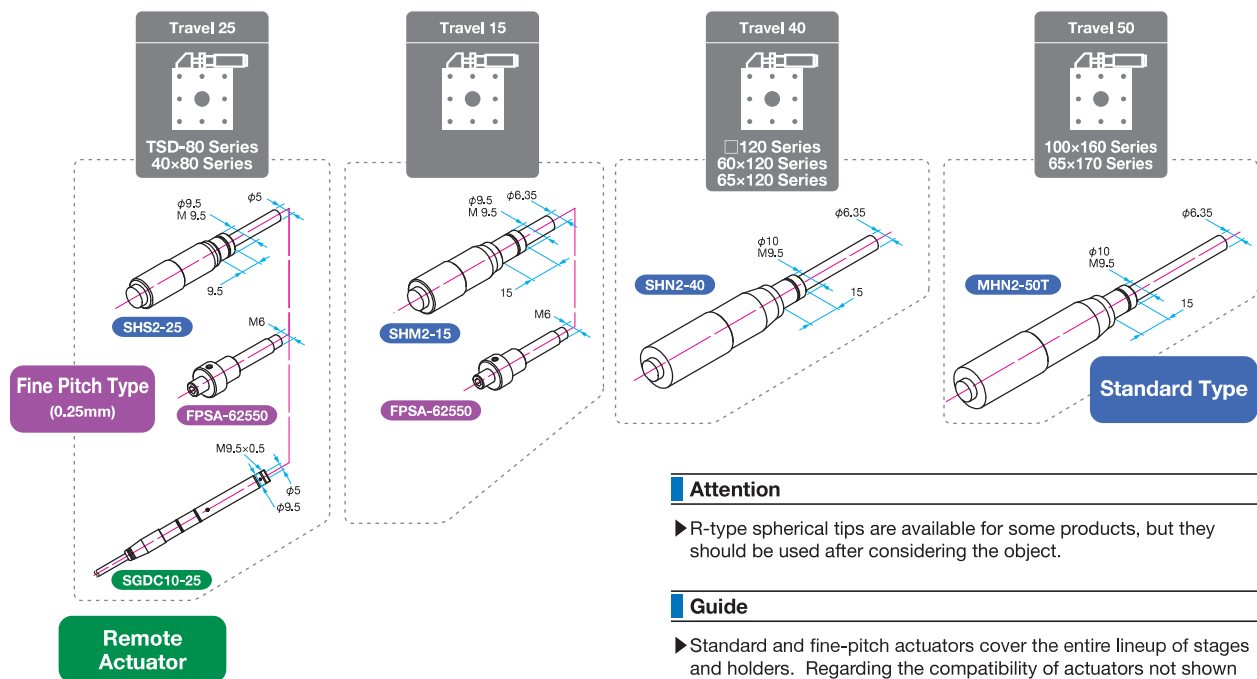
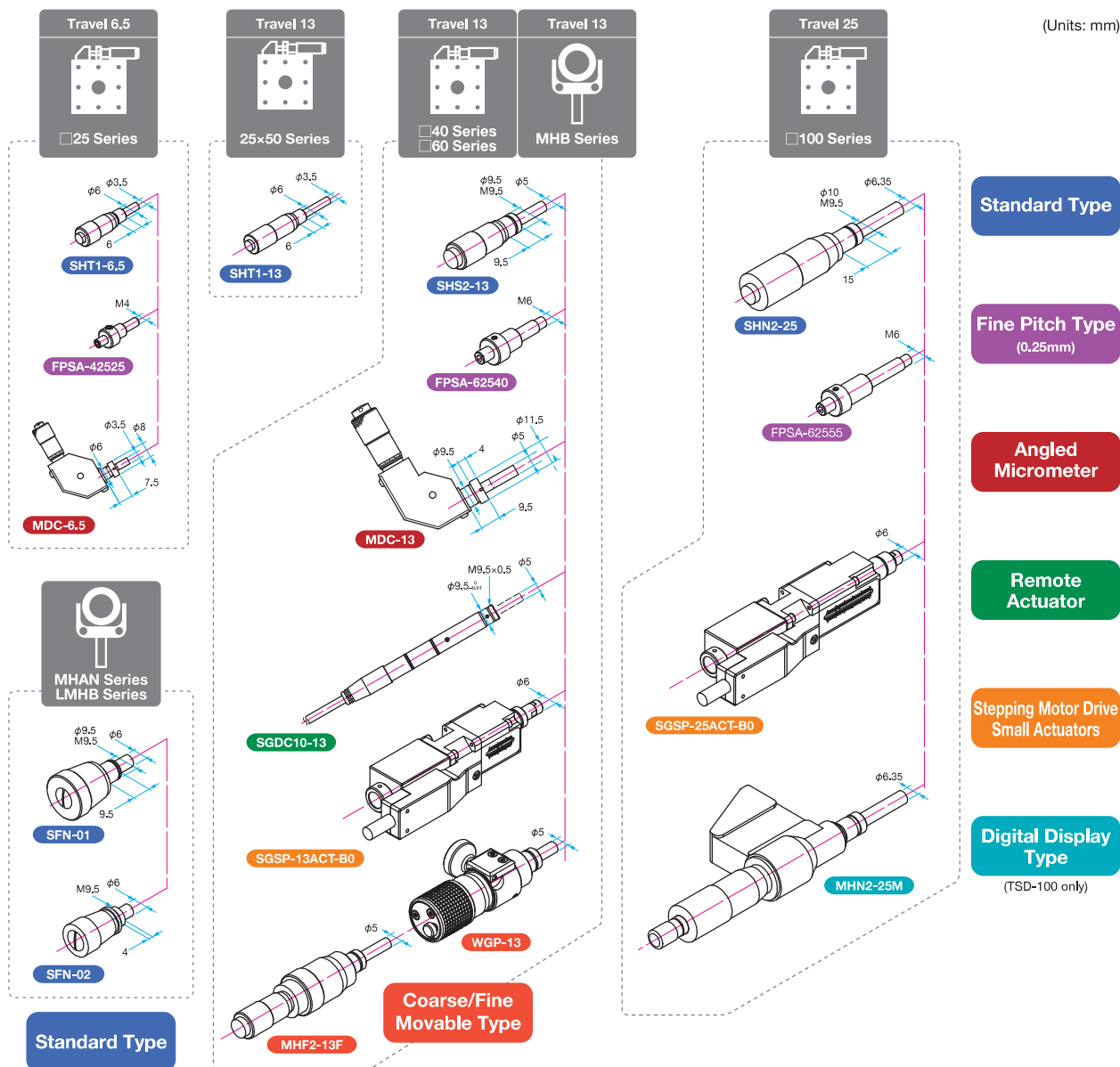
ACT

	Compact Stepping Motor Actuators SGSP-ACT	F016
--	--	-------------

List of Products Compatible with SOM-C and SGSP-ACT **F018**

Actuator Mounting System Chart

(Units: mm)



Attention

- ▶ R-type spherical tips are available for some products, but they should be used after considering the object.

Guide

- ▶ Standard and fine-pitch actuators cover the entire lineup of stages and holders. Regarding the compatibility of actuators not shown above, refer to the page of each product or outline drawing.

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Micrometer Heads

Differential Micrometer Heads

Fine-pitch Screws

Remote

PKA

ACT

Micrometer heads used with Sigma Koki manual stages and holders.

Travel: 15mm or less

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Micrometer Heads

Differential Micrometer Heads

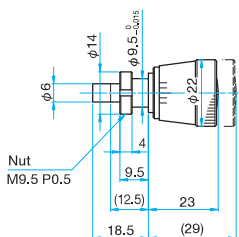
Fine-pitch Screws

Remote

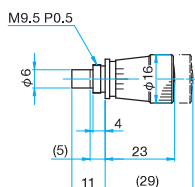
PKA

ACT

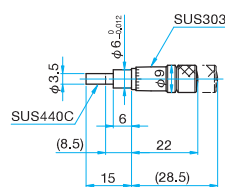
SFN-01



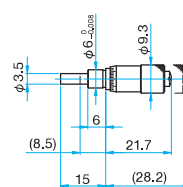
SFN-02



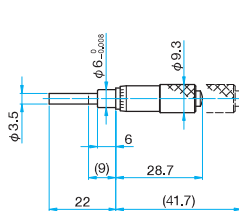
SHTS1-6.5



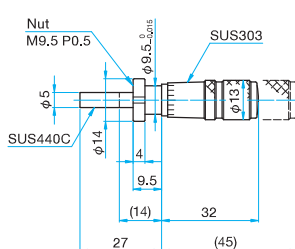
SHT1-6.5



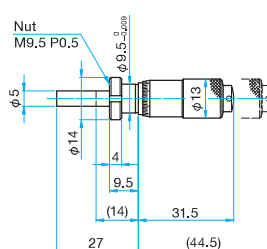
SHT1-13



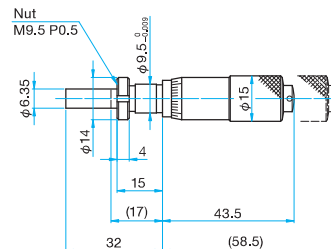
SHSS2-13



SHS2-13



SHM2-15



Attention

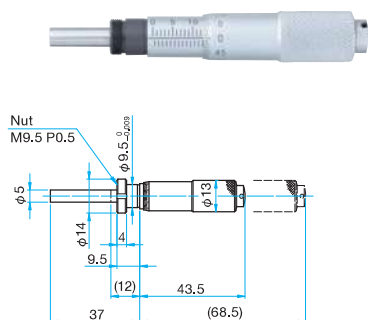
► Depending on the stage type, there is the possibility of shortened travel or interference with mounting parts. Contact our Sales Division when you swapping micrometer heads.

Specifications

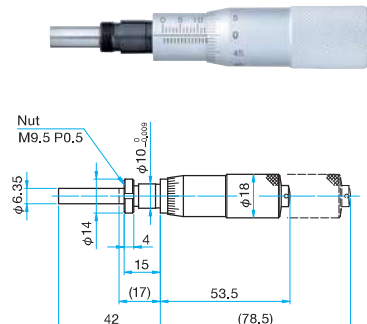
Part Number	Travel [mm]	Type	Readable Resolution [mm]	Lead of Actuator [mm]	Load Capacity (Static load) [N]	Weight [kg]
SFN-01	0 - 6	Fine pitch	0.005	0.25	19.6 (2kgf)	0.06
SFN-02	0 - 6	Fine pitch	0.005	0.25	19.6 (2kgf)	0.03
SHTS1-6.5	0 - 6.5	Stainless steel	0.01	0.5	29.4 (3kgf)	0.01
SHT1-6.5	0 - 6.5	Standard	0.01	0.5	29.4 (3kgf)	0.01
SHT1-13	0 - 13	Small diameter	0.01	0.5	39.2 (4kgf)	0.015
SHSS2-13	0 - 13	Stainless steel	0.01	0.5	39.2 (4kgf)	0.04
SHS2-13	0 - 13	Standard	0.01	0.5	39.2 (4kgf)	0.03
SHM2-15	0 - 15	Standard	0.01	0.5	39.2 (4kgf)	0.06

Travel: 25mm or more

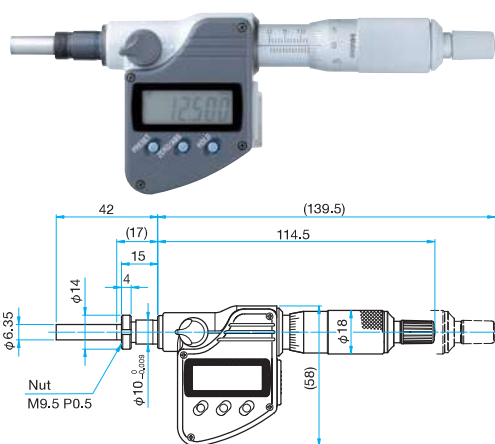
SHS2-25



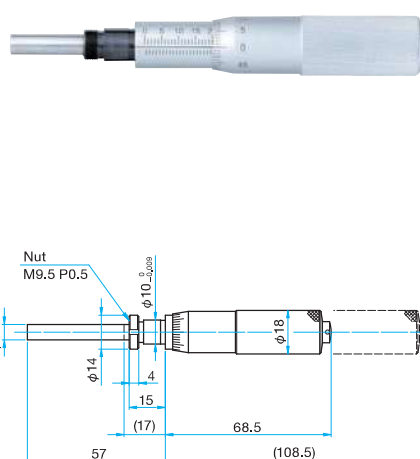
SHN2-25



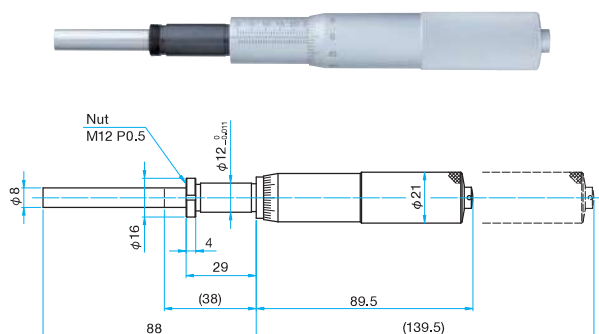
MHN2-25M



SHN2-40



SHH2-50



Attention

► Depending on the stage type, there is the possibility of shortened travel or interference with mounting parts. Contact our Sales Division when you swapping micrometer heads.

Specifications

Part Number	Travel [mm]	Type	Readable Resolution [mm]	Lead of Actuator [mm]	Load Capacity (Static load) [N]	Weight [kg]
SHS2-25	0 – 25	Small diameter	0.01	0.5	39.2 (4kgf)	0.05
SHN2-25	0 – 25	Standard	0.01	0.5	39.2 (4kgf)	0.09
MHN2-25M	0 – 25	Digital display	0.001	0.5	39.2 (4kgf)	0.235
SHN2-40	0 – 40	Small diameter	0.01	0.5	39.2 (4kgf)	0.12
SHH2-50	0 – 50	Standard	0.01	0.5	39.2 (4kgf)	0.23

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Micrometer Heads

Differential Micrometer Heads

Fine-pitch Screws

Remote

PKA

ACT

Differential Micrometer Heads (Maintenance parts) Nut Drivers

MHF
MNS

MHF (Travel Coarse: 0 – 13mm, Fine: 0 – 0.2mm)

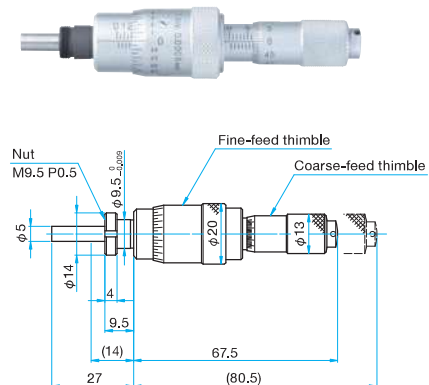
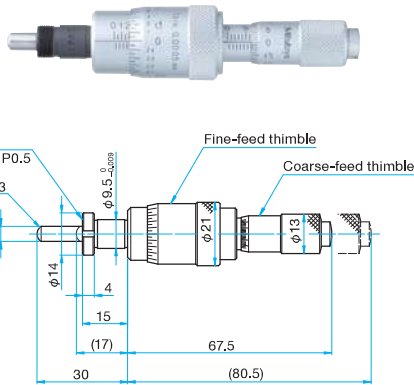


Catalog Code **W8003**



MHF2-13

MHF2-13F



Attention

- ▶ Depending on the stage type, there is the possibility of shortened travel or interference with mounting parts. Contact our Sales Division when you swapping micrometer heads.

Specifications

Part Number	Travel [mm]	Type	Readable Resolution [mm]	Lead of Actuator [mm]	Load Capacity (Static load) [N]	Weight [kg]
MHF2-13	Coarse: 0 – 13 Fine: 0 – 0.2	Coarse/Fine	Coarse: 0.01 Fine: 0.0005	Coarse: 0.5 Fine: 0.025	9.8 (1kgf)	0.1
MHF2-13F	Coarse: 0 – 13 Fine: 0 – 0.2	Coarse/Fine	Coarse: 0.01 Fine: 0.0005	Coarse: 0.5 Fine: 0.025	9.8 (1kgf)	0.1

MNS

Catalog Code **W8004**

Special tool required to remove or secure micrometer heads.

- Special nuts are used for fastening micrometers on some manual stages (TSD and TSDS series). This custom nut driver makes removing and attaching these nuts easier and faster.



Specifications

Part Number	MNS-8
	MNS-12.5-14.5

Guide

- ▶ This product comes as a set of two head sizes. Refer to the following table for compatible stages.

Head Size [mm]	Part Number of Compatible Stage
For $\phi 8$	MDC-6.5/6.5R
For $\phi 12.5$	TSD-40*/60/65/-80, TSDC-40/60, TSDH-40/60
For $\phi 14.5$	TSD-100/TSD-120

* TSD-40 C type only.

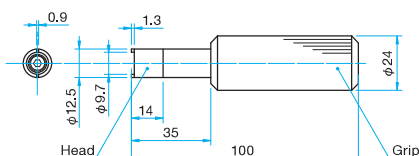
Attention

- ▶ Not all manual stages (TSD and TSDS series) are compatible. Contact our Sales Division if you have any questions.
- ▶ Micrometer heads can be swapped with a finepitch screw upon request. Note self installation may not be covered by the warranty of the stage's warranty.

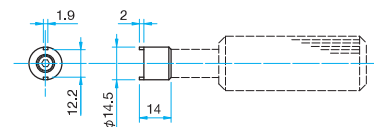
Outline Drawing

MNS-12.5-14.5

- Head for $\phi 12.5$ (mounted on the grip) (compatible with TSD-40/60/65/-80, TSDC-40/60, TSDH-40/60)



- Head for $\phi 14.5$ (compatible with TSD-100 and 120)

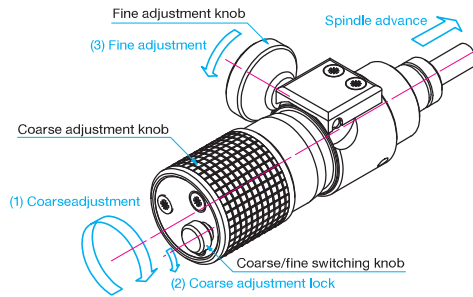


OptoSigma's unique worm-gear mechanism enables coarse and fine adjustment over the entire travel (13mm). The design reduces a system sizes as well as adjustment time.

- The fine or coarse knob can be use at any position along the 13 mm of travel.
- Allows resolution of 0.5μm over the entire travel.
- Non-rotating spindle



Part Names and Handling Instructions



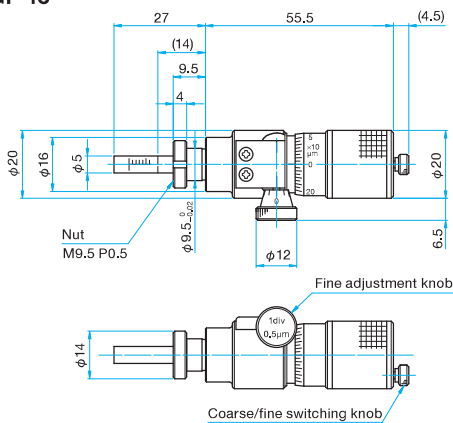
- (1) Coarse adjustment**
Make a rough position adjustment using the coarse adjustment knob.
- (2) Coarse adjustment lock**
Lock the coarse drive with the coarse/fine switching knob.
- (3) Fine adjustment**
Make a fine adjustment using the fine adjustment knob.

Common Specifications	
Travel [mm]	Coarse: 0 – 13, Fine: 0 – 13
Load Capacity (Static load) [N]	39.2 (4kgf)
Readable Resolution [mm]	Coarse: 0.005, Fine: 0.0005
Lead of Actuator [mm]	Coarse: 0.25, Fine: 0.005
Weight [kg]	0.1

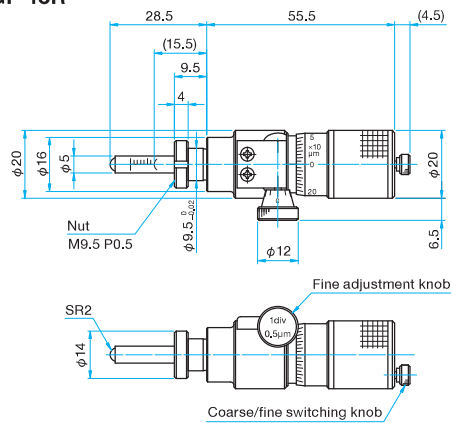
Part Number	Tip Shape
WGP-13	Flat type
WGP-13R	R type

Outline Drawing

WGP-13



WGP-13R



Guide

▶ The micrometer head can be preinstalled with a manual stage. Contact our Sales Division for more information.

Attention

- ▶ Depending on the stage type, there is the possibility of shortened travel or interference with mounting parts. Contact our Sales Division when you exchange the micrometer head.
- ▶ The stopper inside the micrometer locks when you keep turning the coarse/fine adjustment knob. Stop turning the knob if you feel the micrometer overloaded or the micrometer will become damaged.
- ▶ Since the fine-adjustment uses a worm-gear mechanism, we recommend positioning from one direction to minimize backlash effects.



Example of combination with stage

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Micrometer Heads

Differential Micrometer Heads

Fine-pitch Screws

Remote

PKA

ACT

Angled Micrometer Heads | MDC

RoHS

Catalog Code

W8006

Unique right angle drives are direct replacements for micrometer heads used on OptoSigma's manual stages. Unidirectional control units are suitable for assembly into systems, offering excellent operability in confined spaces and improving work efficiency.



- Compatible with the mounting brackets of micrometer heads used in products listed in the catalog.
- Angled micrometer heads can be rotated and secured at any position. Adjust to the most convenient position depending on the situation.

Guide

- ▶ Angled micrometer heads will be assembled onto a stage when purchased together. Contact the Sales Division if you need a certain orientation.
- ▶ The feed rate at the end of the micrometer is not 1:1, but is slightly less. The scale on the micrometer should be used as an estimate.

Attention

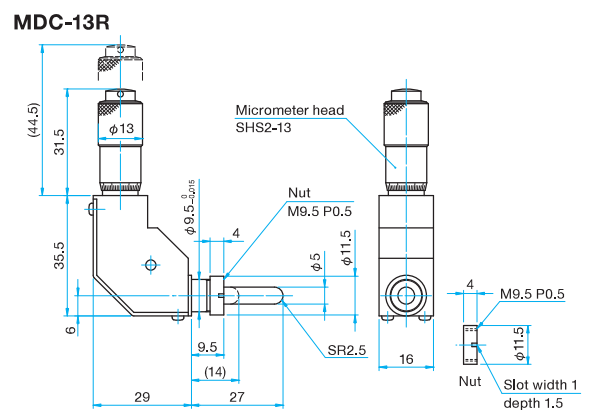
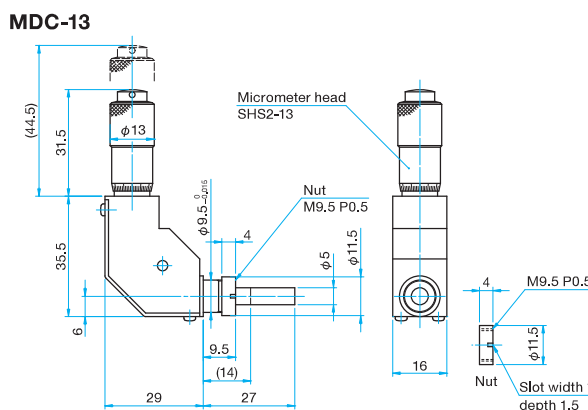
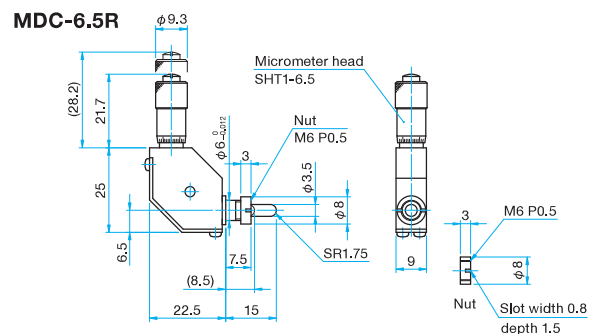
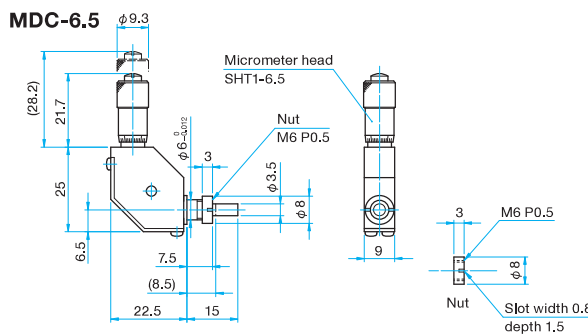
- ▶ Depending on the stage type and installation angle of the micrometer head, there can be shortened travel or interference with mounting parts. Contact our Sales Division when you swap the micrometer head.
- ▶ MDC-6.5 requires a special nut driver (MNS). Contact our Sales Division for more information.



Example of mounting onto stage



Outline Drawing



Specifications

Part Number	Travel [mm]	Readable Resolution [mm]	Lead of Actuator [mm]	Load Capacity (Static load) [N]	Tip Shape	Weight [kg]
MDC-6.5	0 – 6.5	0.01	0.5	29.4 (3kgf)	Flat type	0.03
MDC-6.5R	0 – 6.5	0.01	0.5	29.4 (3kgf)	R type	0.03
MDC-13	0 – 13	0.01	0.5	39.2 (4kgf)	Flat type	0.07
MDC-13R	0 – 13	0.01	0.5	39.2 (4kgf)	R type	0.07

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Micrometer Heads

Differential Micrometer Heads

Fine-pitch Screws

Remote

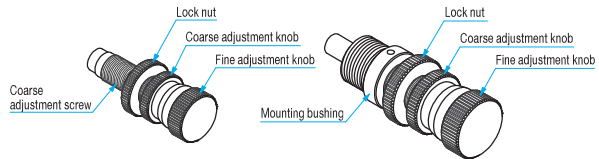
PKA

ACT

Differential adjustment screws combine the ability to translate over long distances with the precision of a differential thread for fine motion. The double-spindle differential mechanism offers smooth coarse- and fine-adjustment.



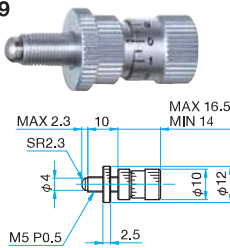
Part Names



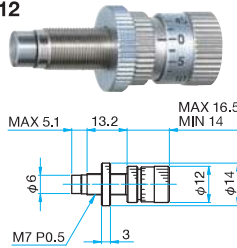
Attention

- ▶ Note that fine adjustment is fitted with a scale, but coarse adjustment is not.
- ▶ Depending on the stage type, there is the possibility of shortened travel or interference with mounting parts. Contact our Sales Division when you exchange the micrometer head.
- ▶ Travel distance of coarse drive is about the length of coarse screw in the outline drawing. Contact our Sales Division for more information.

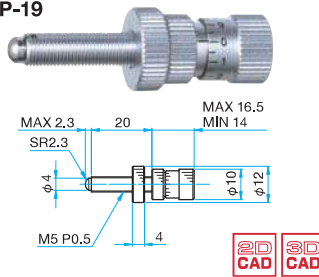
SHSP-9



SHSP-12



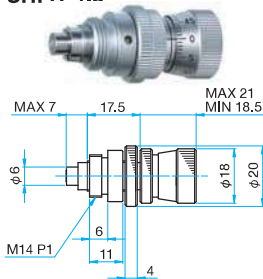
SHSP-19



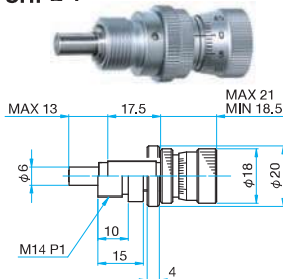
Specifications

Part Number	Travel of Fine Drive [mm]	Readable Resolution for Fine Drive [mm]	Lead of Actuator for Coarse Drive [mm]	Lead of Actuator for Fine Drive [mm]	Load Capacity (Static load) [N]	Weight [kg]
SHSP-9	0 - 0.25	0.0025	0.5	0.05	19.6 (2kgf)	0.01
SHSP-12	0 - 0.25	0.0025	0.5	0.05	29.4 (3kgf)	0.02
SHSP-19	0 - 0.25	0.0025	0.5	0.05	29.4 (3kgf)	0.01

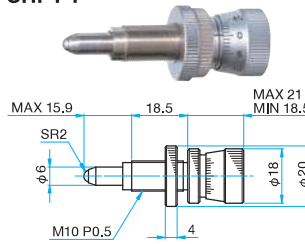
SHPA-4.5



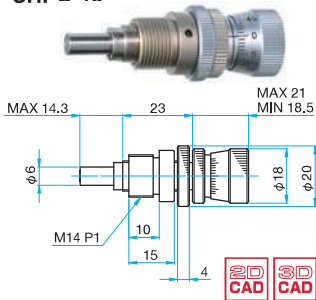
SHPB-7



SHPT-7



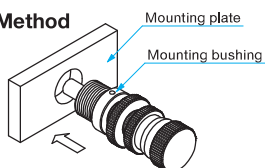
SHPC-10



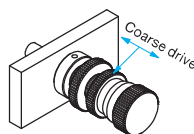
Specifications

Part Number	Screw size of Coarse Drive [mm]	Travel of Fine Drive [mm]	Readable Resolution for Fine Drive [mm]	Lead of Actuator for Coarse Drive [mm]	Lead of Actuator for Fine Drive [mm]	Load Capacity (Static load) [N]	Weight [kg]
SHPA-4.5	M10 P0.5	0 - 0.25	0.001	0.5	0.05	29.4 (3kgf)	0.06
SHPB-7	M10 P0.5	0 - 0.25	0.001	0.5	0.05	29.4 (3kgf)	0.06
SHPT-7	—	0 - 0.25	0.001	0.5	0.05	29.4 (3kgf)	0.05
SHPC-10	M10 P0.5	0 - 0.25	0.001	0.5	0.05	29.4 (3kgf)	0.06

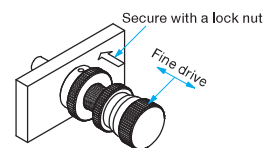
Mounting Method



(1) Screw the mounting bushing into the mounting plate to attach the micrometer.



(2) Make coarse adjustment using the coarse adjustment knob.



(3) After coarse adjustment, tighten the lock nut on the mounting bushing, and make fine adjustment using the fine adjustment knob.

Fine-pitch Screw Adjusters | FPSA



Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Micrometer Heads

Differential Micrometer Heads

Fine-pitch Screws

Remote

PKA

ACT

These adjusters are direct replacements for micrometers used on OptoSigma stages. The knob-less design saves space and prevents inadvertent operation.

- The screw bushing can be lock with the clamp screw.
- The flat-type tip is compatible with OptoSigma manual stages and holders.
- The knobbed KCL hex wrench or other customer supplied hex wrench can be used.



Guide

▶ These FPSA can be purchased preassembled onto a stage. Please contact our Sales Division for more information.

Attention

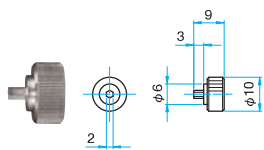
▶ The flat type-tip works best against spheres and the R-Type works best pushing against flats.



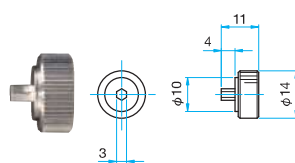
Example of combination with stage

Hex Wrench with Knob

KCL-203



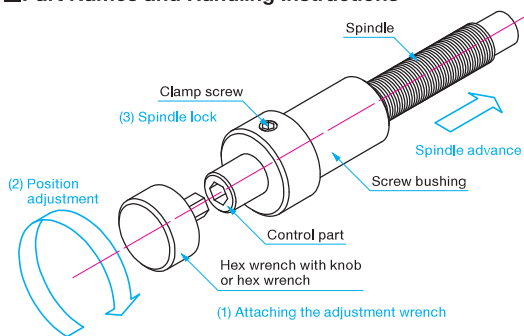
KCL-304



Specifications

Part Number	Compatible Products
KCL-203	FPSA-42525(R)
KCL-304	FPSA-62540(R)/FPSA-62550(R)/FPSA-62555(R)

Part Names and Handling Instructions



- (1) Attaching the adjustment wrench**
Attach the hex wrench or hex wrench with knob.
- (2) Position adjustment**
Adjust the position by turning the wrench.
- (3) Spindle lock**
Lock the spindle with the clamp screw.

Hex wrench used

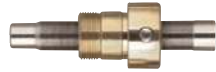
Part Number	FPSA-42525(R)	FPSA-62540(R)/62550(R)/62555(R)
Control Part	Wrench size for adjustment: B=2	Wrench size for adjustment: B=3
Clamp Lock	Wrench size for clamp: B=1.5mm	



Length 25mm



Length 40mm



Length 50mm

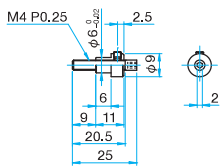


Length 55mm

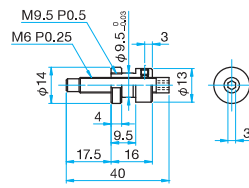


Tip Shape/Flat Type

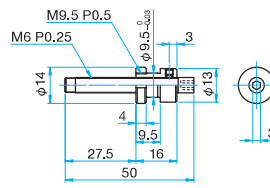
FPSA-42525



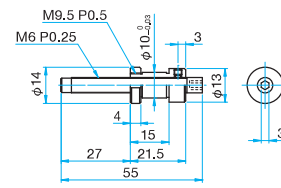
FPSA-62540



FPSA-62550



FPSA-62555

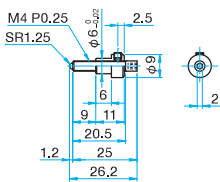


Specifications

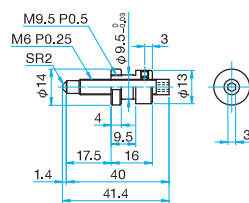
Part Number	Screw	Pitch [mm]	Length [mm]	Bush Diameter [mm]	Bush Length [mm]	Load Capacity (Static load) [N]	Weight [kg]
FPSA-42525	M4	0.25	25	6.0	6.0	29.4 (3kgf)	0.005
FPSA-62540	M6	0.25	40	9.5	5.5	39.2 (4kgf)	0.019
FPSA-62550	M6	0.25	50	9.5	5.5	39.2 (4kgf)	0.021
FPSA-62555	M6	0.25	55	10.0	11.0	39.2 (4kgf)	0.025

Tip Shape/R Type

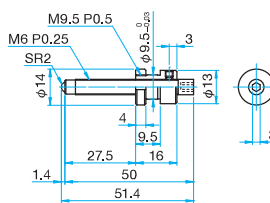
FPSA-42525R



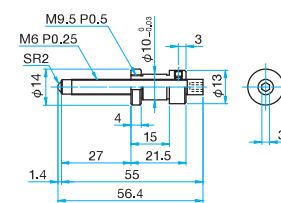
FPSA-62540R



FPSA-62550R



FPSA-62555R



Specifications

Part Number	Screw	Pitch [mm]	Length [mm]	Bush Diameter [mm]	Bush Length [mm]	Load Capacity (Static load) [N]	Weight [kg]
FPSA-42525R	M4	0.25	26.2	6.0	6.0	29.4 (3kgf)	0.005
FPSA-62540R	M6	0.25	41.4	9.5	5.5	39.2 (4kgf)	0.019
FPSA-62550R	M6	0.25	51.4	9.5	5.5	39.2 (4kgf)	0.021
FPSA-62555R	M6	0.25	56.4	10.0	11.0	39.2 (4kgf)	0.025

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Micrometer Heads

Differential Micrometer Heads

Fine-pitch Screws

Remote

PKA

ACT

Remote Actuator Remote Controller

**SGDC
SRC**
SGDC
RoHS
CE
**Catalog
Code**
W8016

 Application
Systems

 Optics &
Optical
Coatings

 Opto-
Mechanics

Bases

 Manual
Stages

**Actuators &
Adjusters**

 Motoeized
Stages

 Light Sources &
Laser Safety

Index

Micrometer Heads

 Differential
Micrometer Heads

Fine-pitch Screws

Remote

PKA

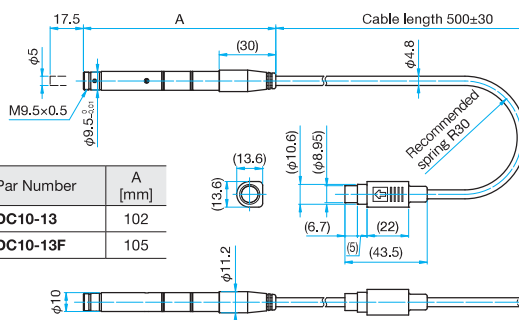
ACT

It is a low cost actuator equipped with a DC motor of a small size and high thrust force. It is compatible with micrometer head using the manual stage of Sigma Koki and can be easily automated.

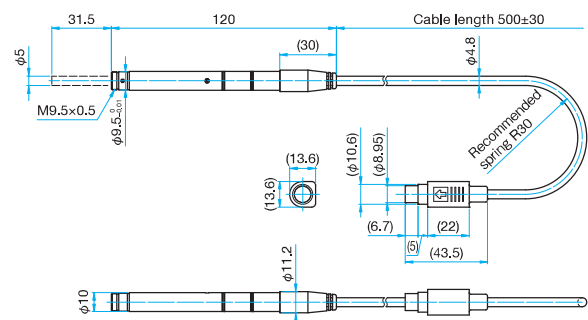
- A customer can remove the micrometer head on its own and replace with the remote actuator.
- It is possible to select the movement amount of 13mm and 25mm depending on the application.
- Since USB interface is a standard feature, it can easily be operated from the PC.
- Since the remote control is possible, it can also be used in a hard place to work as well as a narrow place.
- The speed can be adjusted while driving. * Adjust by variable speed knob and I/O


Attention

- ▶ When replacing the micrometer head with the remote actuator, micro nut is required in order to remove the micro. Please contact our international Sales Division, if the micro nut is required.
- ▶ Please be careful when handling cable. Shock, compression, bending, twisting, tensile bring to the disconnection of the cable.


Outline Drawing
SGDC-10-13/13F


Par Number	A [mm]
SGDC10-13	102
SGDC10-13F	105

SGDC10-25

Specifications

Sensitivity (resolving power)	Under 0.1μm for reference
Lead of Screw	M3 P=0.5mm
Backlash	<0.03mm
Motor Type	DC motor (DC6V)
Temperature of Operation	5 – 40°C
Ambient Humidity	20 – 80%RH (no condensation)
Length of Cable	0.5m

Specifications

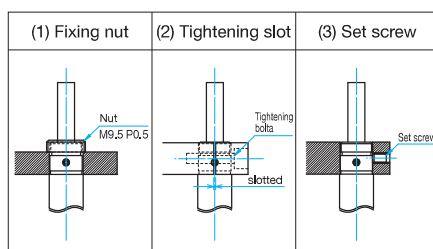
Par Number	Travel [mm]	Travel Speed* ¹ [mm/s]	Thrust Force* ² [N]	Weight [kg]
SGDC10-13	17.5	1	>29.5 (3kgf)	0.06
SGDC10-13F	17.5	0.2	>68.6 (7kgf)	0.06
SGDC10-25	31.5	1	>29.5 (3kgf)	0.08

*1 It is the guaranteed value for maximum speed. The speed can be adjusted.

*2 It is the guaranteed value at the maximum speed setting on the controller. Please be careful that the maximum thrust force can be over 20kgf.

Method of fixation

There are three methods of fixing for the actuator. When installing the unit, we recommend Fixing Nut method with the nut (M9.5×0.5).


Mounting methods (ex. TSD-601S)

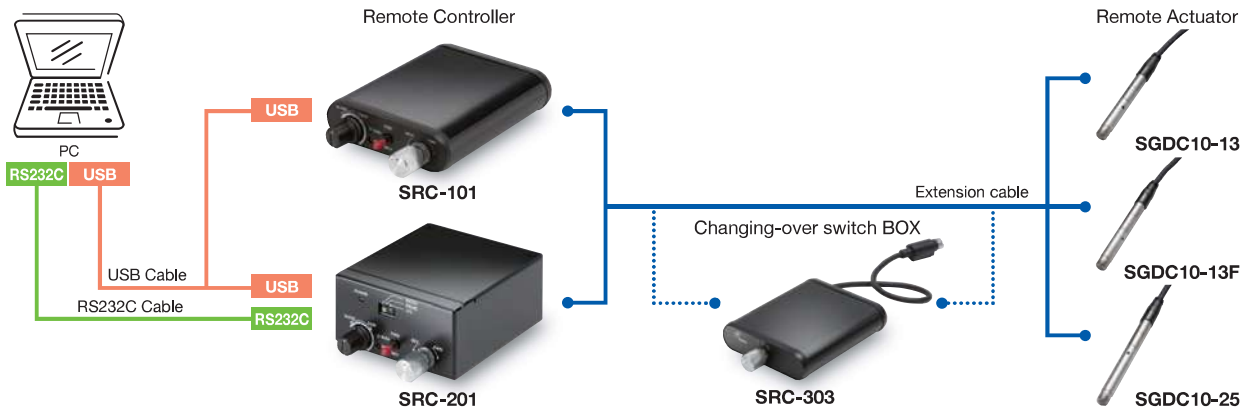
Compatible with most manual translation stages



1. Fixing a stage to tighten the Clamp screw of the stage.
2. Use the Allen wrench and remove the bracket from the stage.
3. Set screw is removed with Allen wrench and nut is removed with Nut driver. Micrometer can be removed.
4. Remote actuator is inserted and it fixes with Set screw and Nut. Please attach to direction of motor cable or twist of cable carefully.
5. A remote actuator is attached to a stage.

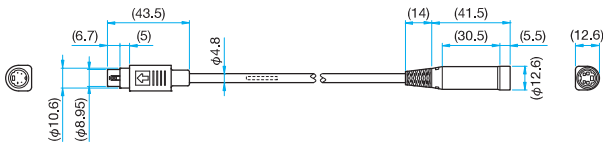
* Please attach a stage and an actuator in parallel.

System Chart



Option Extension cable

MDC-4-2/3/5



Specifications

Par Number	Product Name	Length of Cable [m]
MDC-4-2	Extension cable	2
MDC-4-3	Extension cable	3
MDC-4-5	Extension cable	5
USB/MINI-B-2	USB cable	2

SRC

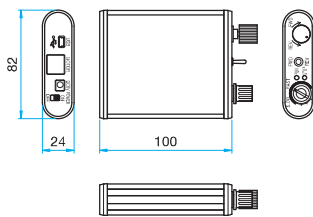
RoHS CE Catalog Code W8017



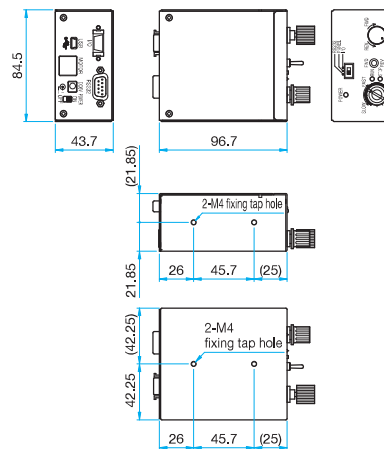
Outline Drawing

* excluding protrusions

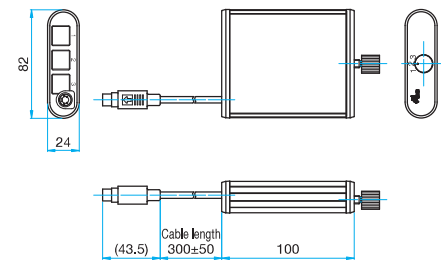
SRC-101



SRC-201



SRC-303



Specifications for SRC-101/201

Number of Controlling Axis	1 axis
Source Voltage	DC6V
Apparent Power	30VA
AC adaptor	AC100 - 240V ±10%
Drive System	PWM Control
Limit Sensor	Overload Detection Style
Motor type	DC motor (DC6V)
Temperature of Operation	5 - 40°C
Storage Temperature	20 - 80%RH (no condensation)
Control Switch	-20°C - 60°C
Control Switch	Shift Transmission, Micromotion, JOG

Specifications

Par Number	Interfaces	Control Signals	Weight [kg]
SRC-101	USB	-	0.15
SRC-201	USB, RS232C	Input Signals 6, Output Signals 4	0.38
SRC-303	-	-	0.15

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

Motoeized Stages

Light Sources & Laser Safety

Index

Micrometer Heads

Differential Micrometer Heads

Fine-pitch Screws

Remote

PKA

ACT

Ultrasonic Motor Driven Actuator | PKA



Ultrasonic Motor Driven Actuator Guide

These actuators have high resolution and high-speed. Provides a compact shape with silent and remote activation. Position can be held with the friction even when the power is OFF.



Features

■ Compact

Smaller motors are used compared to electromagnetic motors, enabling configuration of compact systems. These actuators are approximately the same size as manual types and allow remote control, making them suitable for position adjustment in compact spaces.

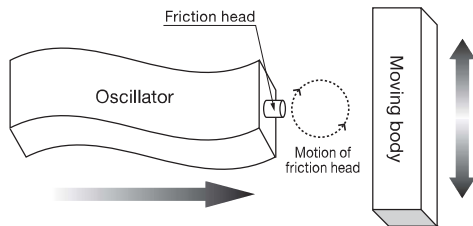
■ Fine Adjustment

The SPD SEL HI/LOW selection switch of the 2-axis controller (PKA-ID-02) allows switching between coarse drive and fine drive to make fine angle and position adjustment smoothly.

■ Silent Operation

Since the PKA series uses ultrasonic motors, the driving sound is extremely quiet, only a friction sound comes out.

Drive System



The PKA series uses the ultrasonic motor drive system, in which the stage and actuator are powered by friction drive. It drives the table face by controlling the oscillator so that the tip of ultrasonic motor (friction head) moves in a circular orbit, and moving the pressure contacted moving object.

Translation Stages

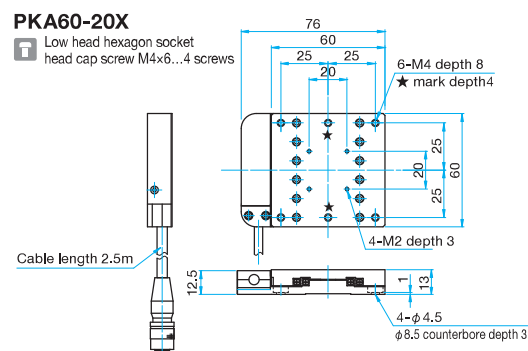
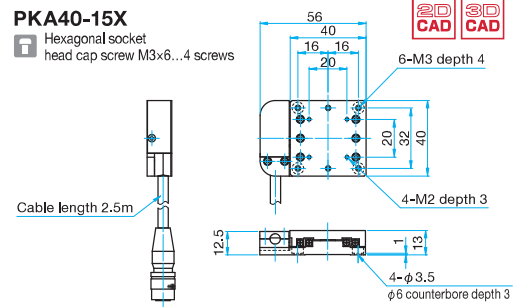
- Stage type actuator utilizing a cross roller guide with excellent rigidity and straightness.
- While the drive source is a small ultrasonic motor, high load capacity of 20N is ensured.
- Two table sizes, □40mm and □60mm, are available.



Specifications		
Part Number	PKA40-15X	PKA60-20X
Table Size [mm]	40×40	60×60
Travel [mm]	15	20
Resolution [μm]	2 or lower	2 or lower
Holding Power [N]	1	1
Load Capacity [N]	20 (about 2kgf)	20 (about 2kgf)
Weight [kg]	0.1	0.2

Catalog Code **W8009**

Outline Drawing



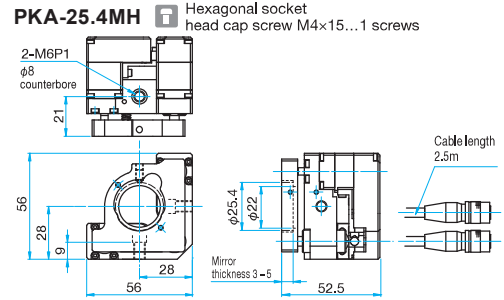
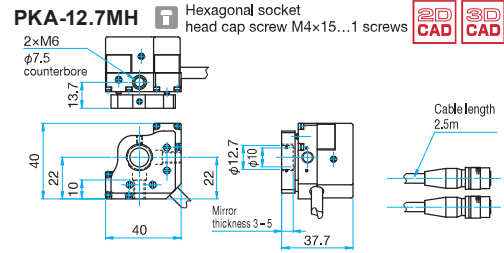
Remote Control Mirror Holder

Catalog Code **W8010**



- These compact ultrasonic actuators are mounted on our high stability mirror holders (MHG series).

Outline Drawing



Specifications

Part Number	PKA-12.7MH	PKA-25.4MH
Compatible Optics Diameter [mm]	φ12.7	φ25.4
Compatible Optics Thickness [mm]	3 - 5	3 - 5
Number of Adjustable Axes	2	2
Travel [°]	±2.5	±3
Resolution ["]	2.0 or lower	0.5 or lower
Weight [kg]	0.2	0.4

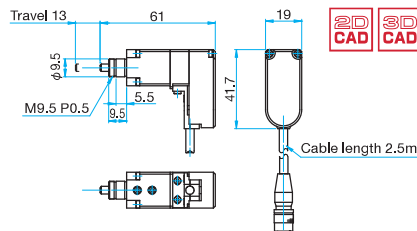
Compact Actuator

Catalog Code **W8011**

- High thrust force produced by using ball screw design.
- Can be used to automate manual stages by replacing manual micrometer heads (travel: 13mm).
- High speed motion (about 0.5mm/sec)



Outline Drawing



▶ Mounting nut and spanner are included.

Specifications

Part Number	PKA-13ACT
Travel [mm]	13
Resolution [μm]	1 or lower
Holding Power [N]	30
Maximum Travel Speed [mm/s]	0.5 or more
Weight [kg]	0.2

2-Axis Controller

Catalog Code **W8012**



- Actuators can be manually controlled with jog sticks.
- Can be programmed with a PC WITH RS232C.

Guide

- ▶ Compatible with the measurement and control software SGADVANCEE. [Reference](#) G024
- ▶ Sample programs are available for download on the website.
 - SG Sample 32/64-bit version for Windows® (only for RS232C)

Attention

- ▶ Power requirement of the PKA-ID-02 is DC24V 1.8A. You need to purchase the PAT-001-POW1 (AC adapter) or prepare your own power supply separately.

List of Commands

Command Name	Command	Details
Absolute coordinate pulse set command	A	Specifies the absolute coordinate value.
Absolute travel pulse set command	M	Specifies the absolute travel.
Drive command	G	Starts driving.
Theoretical origin return command	N	Returns to the theoretical origin.
Stop command	L	Stops travel.
Theoretical origin setting command	R	Resets the coordinate value.
Status check command	Q	Returns the status of coordinate value, etc.
Status check command 2	!	Returns B (Busy) or R (Ready).
Internal information check command	?	Returns the internal information.
Speed setting command	S	Sets the pulse per step when the SPDSEL switch is set to LOW.

Specifications

Part Number	PKA-ID-02
Number of Adjustable Axes	2
Interface	RS232C
Manual Operation	Jog stick
Power Voltage	DC24V 1.8A
Current Consumption [A]	1.8
Outer Dimensions [mm]	(W)50 × (D)142 × (H)100
Weight [kg]	0.53

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Micrometer Heads

Differential Micrometer Heads

Fine-pitch Screws

Remote

PKA

ACT

Compact Stepping Motor Actuators

SGSP-ACT

RoHS

CE

A low price actuator fitted with a high-performance compact stepping motor and precision ground screws. Use to replace micrometer heads on OptoSigma manual stages or mirror holders to motorize them.

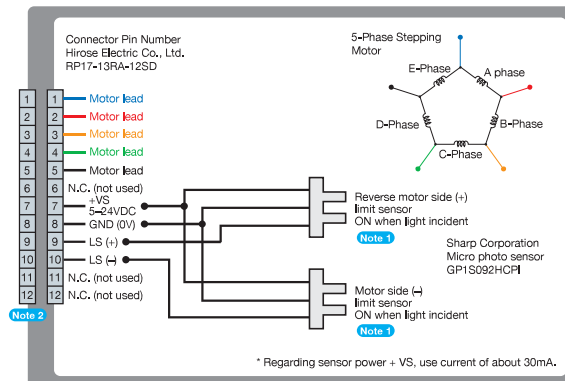


- Compatible with all OptoSigma stepper motor controllers.
- Available with 13mm or 25mm travel.

Guide

- ▶ Refer to the list of compatible products. [Reference](#) F020
- ▶ Custom tapped tips can be supplied. Contact our Sales Division for more information.
- ▶ Recommended controllers include the single axis stage controller (GSC-01) and 2 axis stage controllers (GSC-02).
 GSC-01 [Reference](#) G108 [Catalog Code](#) W9042
 GSC-02 [Reference](#) G109 [Catalog Code](#) W9044

Schematic

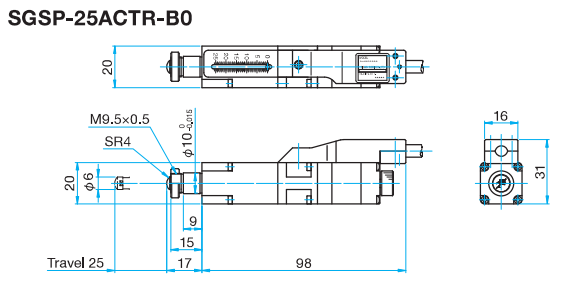
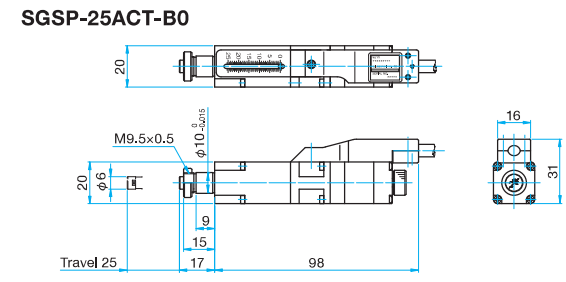
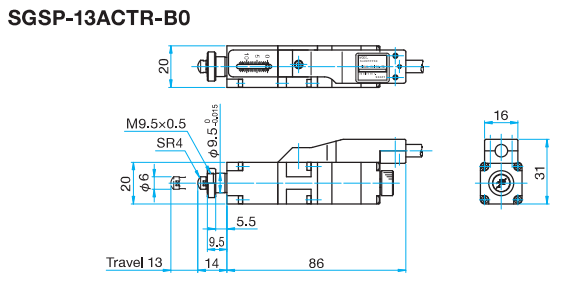
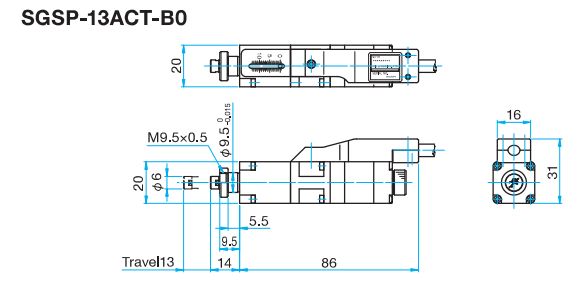


Note 1 The limit sensor on the motor side is the minus limit sensor. Motorized stages are not fitted with origin and origin proximity sensors. Limit sensors are used as origin detection sensors.
Note 2 Compatible cable connector: Hirose Electric Co., Ltd, RP17-13PA-12PC/RP17-PC-122



Common Specifications	
Single-Pulse Travel [μm] (full step/half step)	1/0.5
Type	5-phase stepping motor 0.35A/phase (Oriental Motor Co., Ltd.)
Motor Part Number	PK513PB-C9 (□20mm)
Feed screw [mm]	Precision ground screw φ4, 0.5mm lead

Outline Drawing



Part Number	Tip Shape	Travel [mm]	Maximum Travel [mm/sec]	Positioning Accuracy [mm]	Positional Repeatability [mm]	Lost Motion [mm]	Load Capacity (Static load) [N]	Weight [kg]
SGSP-13ACT-B0	Flat type	13	2	0.01	0.003	0.005	29.4 (3kgf)	0.16
SGSP-13ACTR-B0	R type	13	2	0.01	0.003	0.005	29.4 (3kgf)	0.16
SGSP-25ACT-B0	Flat type	25	2	0.015	0.003	0.005	29.4 (3kgf)	0.18
SGSP-25ACTR-B0	R type	25	2	0.015	0.003	0.005	29.4 (3kgf)	0.18

Application Systems
 Optics & Optical Coatings
 Opto-Mechanics
 Bases
 Manual Stages

Actuators & Adjusters

MotORIZED STAGES

Light Sources & Laser Safety

Index

Micrometer Heads

Differential Micrometer Heads

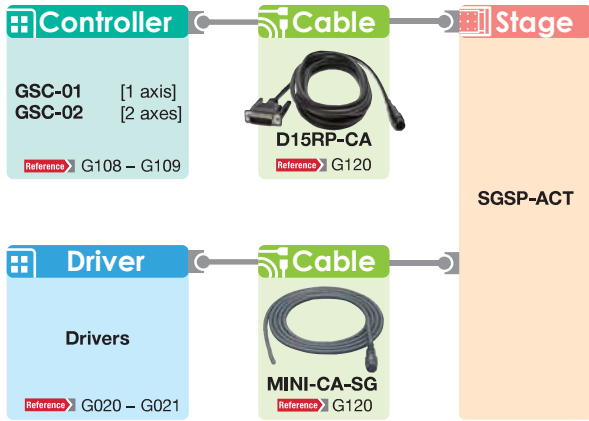
Fine-pitch Screws

Remote

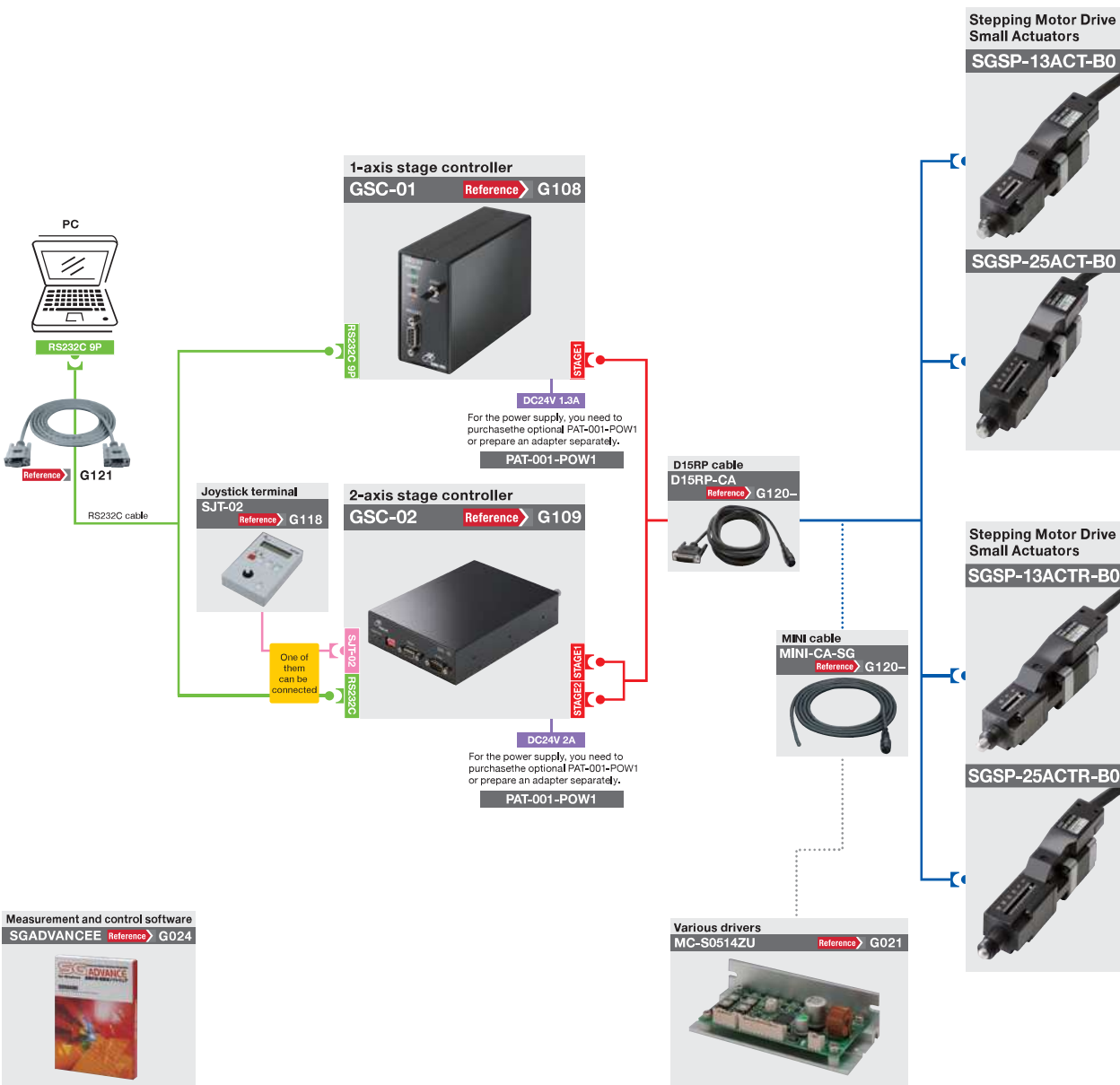
PKA

ACT

Compatible Controllers / Drivers and Cables



System Chart



Measurement and control software
SGADVANCEE Reference G024



Sample program WEB Reference

- LabVIEW
- SG Sample

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Micrometer Heads

Differential Micrometer Heads

Fine-pitch Screws

Remote

PKA

ACT

List of Products Compatible with SGSP-ACT

List of Products Compatible with SGSP-13ACT-B0/SGSP-25ACT-B0

Part Number	Products name		Actuator part number (SGSP-ACT series)	Quantity	Adopter
	Products name	Stage size			
TSD Serie					
TSD-401C	X axis Steel Stages	□40mm×40mm	SGSP-13ACT-B0	1	
TSD-401S			SGSP-13ACT-B0	1	Need
TSD-402C			SGSP-13ACT-B0	2	
TSD-403L			SGSP-13ACT-B0	1	
TSD-601C	X axis Steel Stages	□60mm×60mm	SGSP-13ACT-B0	1	
TSD-601S			SGSP-13ACT-B0	1	
TSD-602C			SGSP-13ACT-B0	2	
TSD-603L			SGSP-13ACT-B0	1	
TSD-603			SGSP-13ACT-B0	1	Need
TSD-801C	X axis Steel Stages	□80mm×80mm	SGSP-25ACT-B0	1	Need
TSD-801S			SGSP-25ACT-B0	1	Need
TSD-802C			SGSP-25ACT-B0	2	Need
TSD-1001C			X axis Steel Stages	□100mm×100mm	SGSP-25ACT-B0
TSD-1001S	SGSP-25ACT-B0	1			
TSD-1002C	SGSP-25ACT-B0	2			
TSD-1002S	SGSP-25ACT-B0	2			
TSD-120**	X axis Steel Stages	□120mm×120mm	Travel:±12,5		
TAM Series					
TAM-401C	X axis Aluminum Crossed Roller Slide Stages	□40mm×40mm	SGSP-13ACT-B0	1	
TAM-401S			SGSP-13ACT-B0	1	
TAM-402C			SGSP-13ACT-B0	2	
TAM-403L			SGSP-13ACT-B0	1	
TAM-601C	X axis Aluminum Crossed Roller Slide Stages	□60mm×60mm	SGSP-13ACT-B0	1	
TAM-601S			SGSP-13ACT-B0	1	
TAM-602C			SGSP-13ACT-B0	2	
TAM-602S			SGSP-13ACT-B0	2	
TAM-603L			SGSP-13ACT-B0	1	
TAM-1001C	X axis Aluminum Crossed Roller Slide Stages	□100mm×100mm	SGSP-25ACT-B0	1	
TAM-1001S			SGSP-25ACT-B0	1	
TAM-1002C			SGSP-25ACT-B0	2	
TAM-1002S			SGSP-25ACT-B0	2	
MHAN Series					
MHAN-25.4M	Gimbal Beamsplitter Holders (Micrometer Type)	—	SGSP-13ACT-B0	2	Need
MHAN-30M			SGSP-13ACT-B0	2	Need
MHAN-40M			SGSP-13ACT-B0	2	Need
MHAN-50M			SGSP-13ACT-B0	2	Need
MHAN-50.8M			SGSP-13ACT-B0	2	Need
MHAN-60M			SGSP-13ACT-B0	2	Need
LMHB					
LMHB-30M	Topmike Vertical Control Mirror Holders	—	SGSP-13ACT-B0	2	Need
LMHB-50M			SGSP-13ACT-B0	2	Need
LMHB-60M			SGSP-13ACT-B0	2	Need

● Combined with steel extended contact slide stage TSD-403L



Guide

- ▶ For its cost and lead time, please ask international Sales Division.
- ▶ Please contact us if you want us to mount the actuator with your previously purchased stages / holders..
- ▶ For some products , it would require a special adopter for mounting . Please contact us for further information.