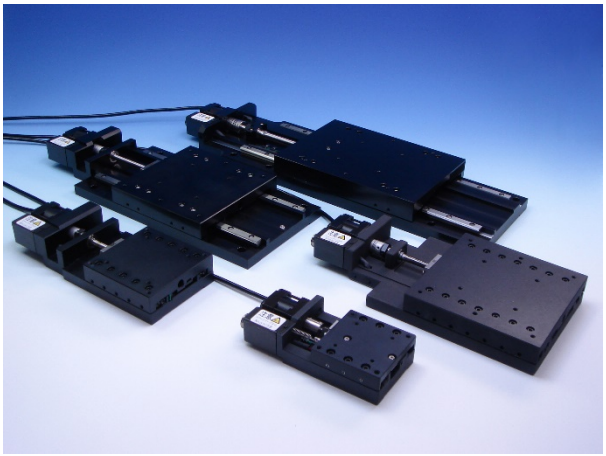
Sub micron feedback stage FS-X

RoHS

FS-X is feedback stage with sub-micron resolution positioning.
In-house optical linear encoder are built-in at the center of stage to detect position.
Positioning to target position, positioning repeatability and holding the position with high resolution is achieved by feedback control using position information of encoder.
There are seven types of the stages. It is ideal for collecting the data in a wide range or for performing precise positioning and movement of a sample on a single stage by the large travel range.



Applicable controller and cable	
Controller	FC-411
Cable	PM-CA

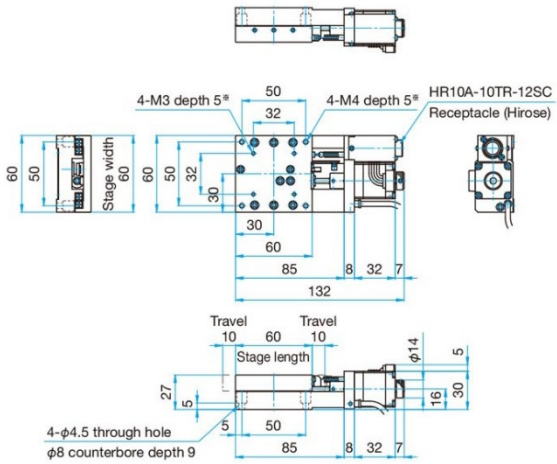
Specifications

Part number			FS-1020X	FS-1050X	FS-1100X	FS-3150X
Mechanical spec	Travel [mm]		20	50	100	150
	Size of the stage [mm]		60×60	120×120	120×120	120×170
	Feed screw [mm]		Ball screw dia.4, 1mm lead	Ball screw dia.6, 1mm lead	Ball screw dia.6, 1mm lead	Ball screw dia.8, 1mm lead
	Positioning slide		Crossed roller	Crossed roller	LM guide	LM guide
	Primary material		Aluminum			
	Finish		Black anodized			
	Motor type		□28mm 5 phase stepping motor			
	Weight [kg]		0.5	1.6	2.1	2.8
Accuracy spec	Minimum resolution [nm] ※1	FC-411	50	50	50	50
		FC-414	-	-	-	-
	Positioning repeatability [nm] ※1	FC-411	+/- 100	+/- 100	+/- 100	+/- 100
		FC-414	-	-	-	-
	Load capacity [N]		49(5kgf)	98(10kgf)	98(10kgf)	98(10kgf)
	Running parallelism[μm]		10	10	10	10※2
	Max speed [mm/sec]		10	10	10	10
Sensor	Limit sensor		Equipped	Equipped	Equipped	Equipped
	Slow down sensor		None	None	None	None
	Origin sensor		None	None	None	None
	Proximity origin sensor		None	None	None	None
Equipped scale	Signal cycle		4μm	4μm	4μm	4μm
	Scale cable (※3)		2m	2m	2m	2m

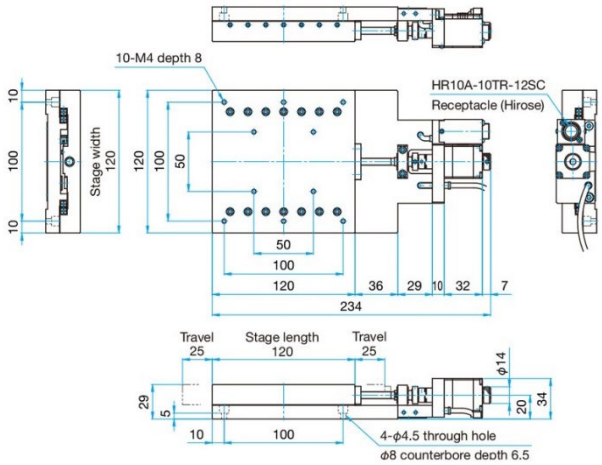
※1： Minimum resolution and position repeatability accuracy for built-in scale read.
※2： Running parallelism per 100mm travel.
※3： Scale cable comes directly out of the stage. Please prepare "extension cable for scale" separately if 2m or longer cable are needed.

Outline drawing

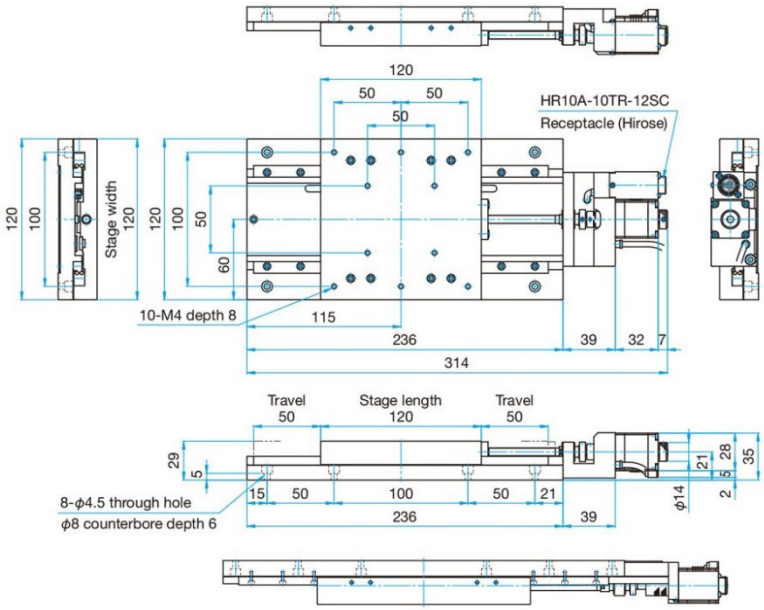
FS-1020X



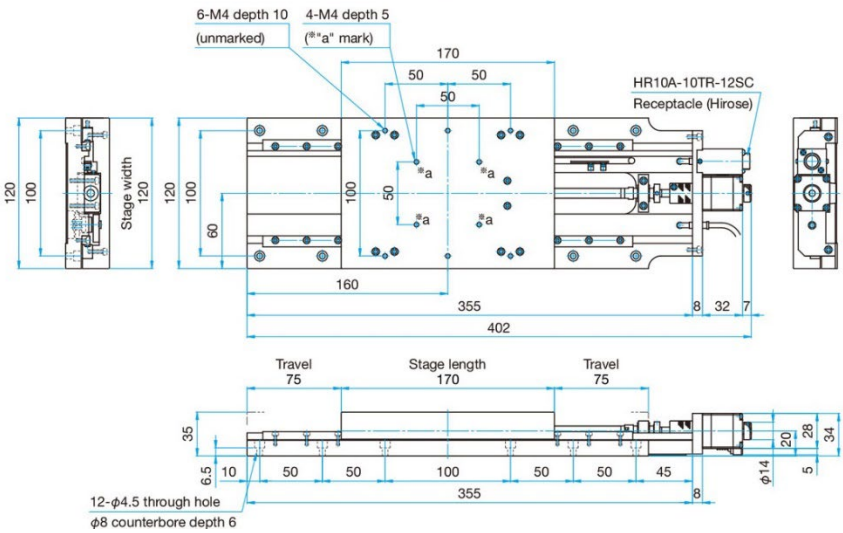
FS-1050X



FS-1100X

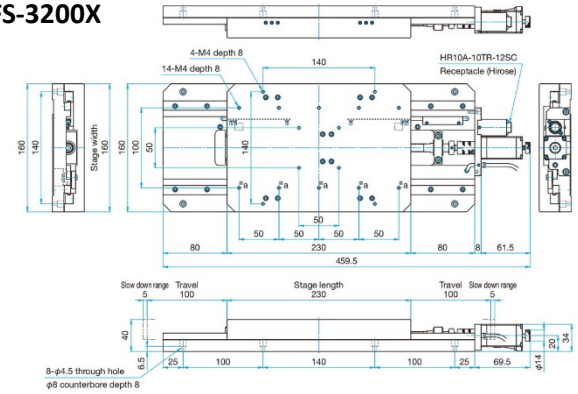


FS-3150X

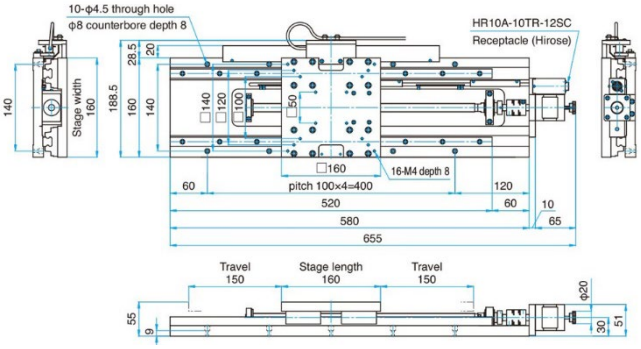


Outline drawing

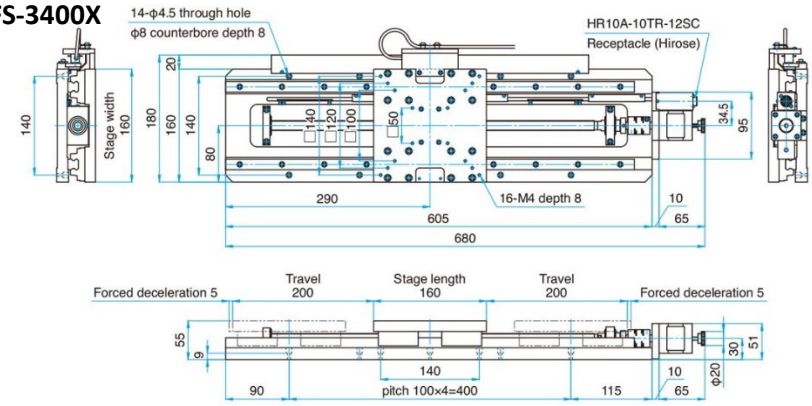
FS-3200X



FS-3300X



FS-3400X



Applicable controller and cable	
Controller	FC-414
Cable	PM4N-CA-*SD

Specifications

Part number			FS-3200X	FS-3300X	FS-3400X
Mechanical spec	Travel [mm]		200	300	400
	Size of the stage [mm]		160×230	160×160	160×160
	Feed screw [mm]		Ball screw dia. 10, 2mm lead	Ball screw dia. 14, 5mm lead	Ball screw dia. 14, 5mm lead
	Positioning slide		LM guide	LM guide	LM guide
	Primary material		Aluminum		
	Finish		Black anodized		
	Motor type		□28mm 5 phase stepping motor	□42mm 5 phase stepping motor	
	Weight [kg]		5	8.5	9.5
Accuracy spec	Minimum resolution [nm] ※1	FC-411	-	—	-
		FC-414	50	50	50
	Positioning repeatability [nm] ※1	FC-411	-	—	-
		FC-414	+/- 100	+/- 100	+/-100
	Load capacity [N]		196(20kgf)	196(20kgf)	196(20kgf)
	Running parallelism[μm]		10※2	10※2	10※2
	Max speed [mm/sec]		10	20	20
Sensor	Limit sensor		Equipped	Equipped	Equipped
	Slow down sensor		Equipped	Equipped	Equipped
	Origin sensor		None	None	None
	Proximity origin sensor		None	None	None
Equipped scale	Signal cycle		4μm	4μm	4μm
	Scale cable (※3)		2m	2m	2m

※1： Minimum resolution and position repeatability accuracy for built-in scale read.
※2： Running parallelism per 100mm travel.
※3： Scale cable comes directly out of the stage. Please prepare "extension cable for scale" separately if 2m or longer cable are needed.

FS-X dedicated controller for Sub micron feedback stage FC-411/FC-414 RoHS

Dedicated controller for sub micron feedback stage (FS-X series) to control with sub micron resolution. Highly safe and easy to operate with various error detection functions, general-purpose I / O, and teaching functions.

Specification					
Part number				FC-411	FC-414
Primary spec	Number of control axis			2	
	Minimum command unit			50nm	
	In position range			+/- 50nm (+/- 150, +/- 350nm selectable)	
	Max operating speed set value			100mm/sec	
	Max travel range set value			−6710.88640～+6710.88635mm	
	Number of control interface port	Jog controller		1	
		Emergency stop		1	
		GP-IB		1	
		USB		1	
		Ethernet		1	
		General I/O		1	
	Teaching	Number of register channel		5	
		Number of registered lines per channel		200	
		Operational interface		Controller key operation	
				Jog control key operation	
				Communication command	
				General I/O	
General spec	Power voltage			AC100～240V 50/60Hz	
	Power supply voltage fluctuation allowable range			AC90V～264V	
	Power consumption			110VA	
	Fuse			250V, 2.5A, time lag, 2	
	Outer dimensions（W×H×Dmm)			W220×H88×D290mm	
	Weight［kg］			5.2	
	Operating temperature/humidity			0 deg.C to 40 deg.C / 20% to 80%RH(without condensation)	
	Storage temperature/humidity			-10deg.C to 55 deg.C / 20%～80%RH (without condensation)	
	Connectable option			JC-01	
	Slow down sensor input			N/A	Applicable
	Communication port	GP-IB	Address	1～30	
			Delimiter	CR+LF, EOI, CR, LF	
			Service request	Valid or invalid	
			Flow control	None (fixed)	
		USB	Function	Virtual COM port	
			Transfer speed	Full speed transfer (12Mbps max)	
			Delimiter	CR+LF, CR, LF	
		Ethernet	Standard	IEEE802.3x standard flow control compliant	
			Transfer speed	10Mbps and 100Mbps	
			Delimiter	CR+LF, CR, LF	
	General I/O port	Input	General input	3 port	
			Teaching	1 set	
			Busy error cancel	1 set	
		Output	General output	3 port	
			Scale division pulse signal	1 set for each axis	
			Alarm signal	1 set for each axis	
			In position signal	1 set for each axis	
			Teaching status	1 set	
	Emergency stop input			B contact (fixed)	