Motorized XYR series all-in-one three-axis stages

FA stage

Description:

XYR series motorized all-in-one three-axis stages are parallel-type alignment systems for the workpieces which are needed to be scanned or aligned in production lines to meet requirements of high precision and high operation repetition rate. Each XYR all-in-one stage system includes upper-table, baseplate and four units of motion modular between them. Every module is guided by cross-roller guides and bearings. Three of them can be driven by short-lead ball screws, with standard stepping motors. Five-phase stepping motors and servo motors are optional. Central position of stages is used for keeping a light-through hole for transmission-type applications, or, keep a standard table without hole to meet the requirements of reflection-type operations.

Main characteristics:

- Using ball screws to meet the requirement of high precise and high repetition operations
- Better motion accuracy is guaranteed by employing cross-roller guides and bearings
- Standard modular-design principles present better uniformity of parts and shorter delivery time of products
- Rectangular light-through hole is provided to make stages be suitable for transmission-type applications
- Two-phase stepping motors are standard. Five-phase stepping or servo motors are optional

Naming rules:

XYR 200 230 (S)(-CH)(-ST528)

- XYR — Series code: XYR:All-in-one XY three-axis stages
- 200 — Baseplate dimension: 210: 210mmx210mm; 230: 230mmx230mm; 400: 400mmx400mm
- 230 — Table dimension: 150: 150mmx150mm; 200: 200mmx200mm; 300: 300mmx300mm
- (S) — Main body materials: None (default):black anodic-oxidation aluminum-alloy; S: stainless steel
- (-CH) — Central light-through hole: None (default): No hole; CH:There is a central light-through hole
- (-ST528) — Type of motors: None (default):standard two-phase stepping motors; ST5xx:Optional five-phase stepping motors.xx refers to model number of motors; ASPx: Optional Panasonic servo motors. x refers to power code of servo motors Note: partial products can not employ servo motors

Selection chart:

Model number		XYR150210	XYR200230	XYR300400-CH
Mechanical specifications	Travel range for X- and Y-axis (mm)	±4.5	±10	±15
	Rotation angular range for θz-axis (°)	±5		
	Table dimensions(mm)	150×150	200×200	300×300
	Baseplate dimension (mm)	210×210	230×230	400×400
	Overall height (mm)	62.5	76	98
	Transmission mechanism	precise ball screws, Φ8×2		
	Guides (guiding mechanism)	Cross-roller guides		
	Main body materials and surface treatments	Black anodic-oxidation aluminum-alloy		
	Weight (Kg)	6	8	15
Accuracy specifications	Resolution for X- and Y-axis (step/half-step) (μm)	10/5		
	20-fine-subdivision resolution for X- and Y-axis (μm)	0.5		
	Repositioning accuracy (μm)	≤±3		
	Static parallelism (mm)	≤0.03	≤0.04	≤0.05
	Motion parallelism (μm)	≤20		≤30
	Highest speed (mm/s) *	20		
Electrical specifications	Motor type and its stepping angle (°)	Two-phase 28 stepping motor, 1.8	Two-phase 42 stepping motor, 1.8	
	Brand and model number of motor	Shinano,STP-28D1003-08	Shinano,SST43D2126-10	
	Working current (A)	1.3	1.7	
	Holding torque of motor (N·m)	0.0785	0.456	
	Brand and model number of stepping driver (optional)	Moons, SR2		
	Type of plugs for stages	1*DB9 (pin)		
	Type of connection cable	High flexible cables (Helukabel, Germany)		
	Length of connection cable	0.2		
	Position-limit sensors (built-in), for each axis	2*GP1S09xHCPI (Sharp, Japan)		2*PM-L25 (SUNX, Japan)
	Origin-point sensors (built-in), for each axis	1*GP1S09xHCPI (Sharp, Japan)		1*PM-L25 (SUNX, Japan)
	Voltage of power supply for sensors (V)	DC5～24V ±10%		
	Output for control	NPN open-collector output		NPN open-collector output
	Status of output ports	Output ON when sensor is blocked		
	Algorithms and formulas on multi-axis motion	Can be provided (Free)		
	Software for stage control and alignment	Can be provided (Extra charge needed)		
Operating load	Horizontal direction (Kg)	20	30	50

* Highest speed is measured with the conditions of zero-load and motors being worked at 600rpm

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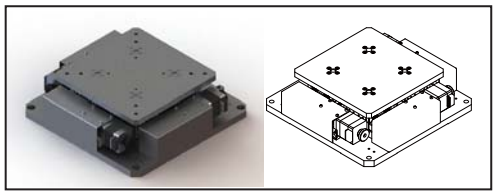
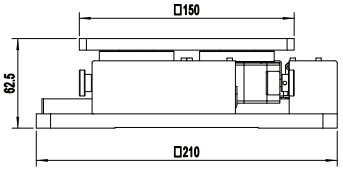
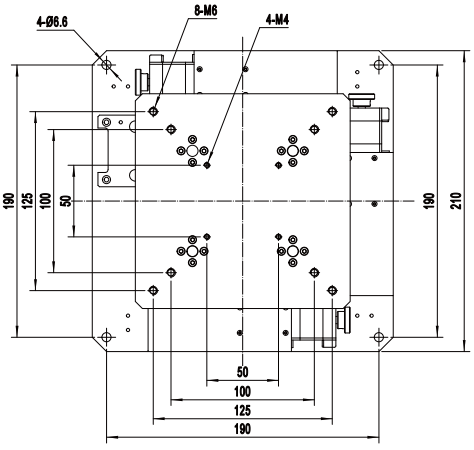
Dimensions:

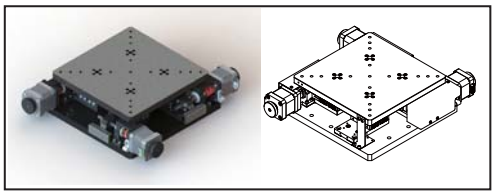
XYR150210

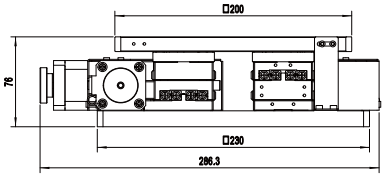


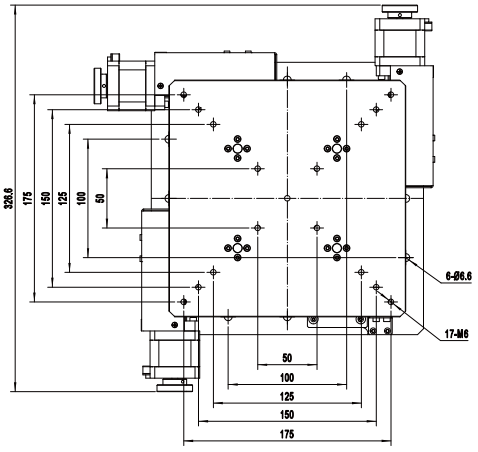




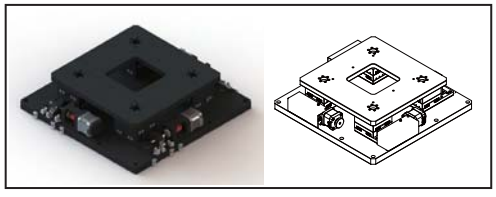
XYR200230

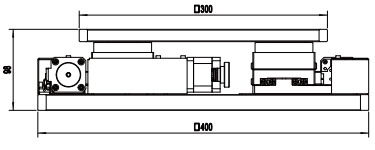


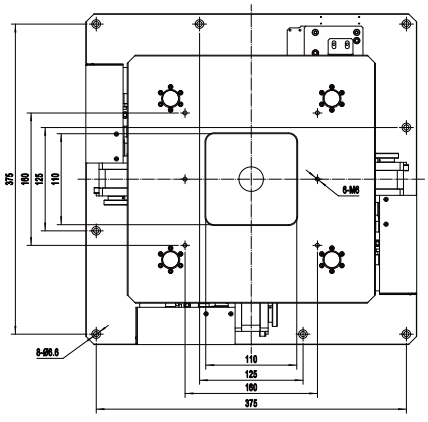




XYR300400-CH







Note: A right-angle fixing block between upper-table and baseplate which is installed in factory for shipment security should be removed before motorized stages being operated.