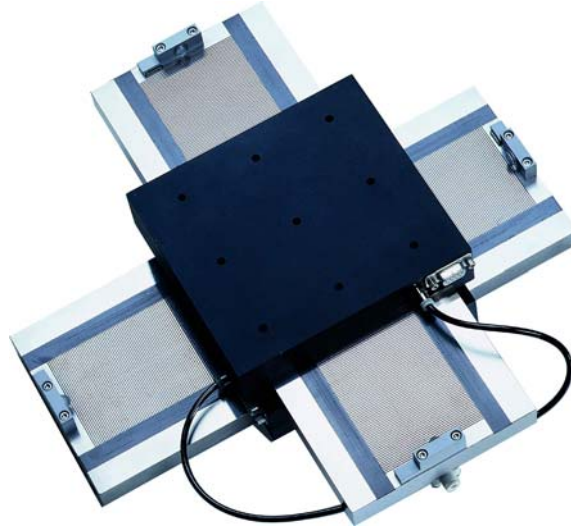


# COBRA: X-Y



## Compact 'X-Y' linear stepping motor systems for large loads

Often linear movement in machines and plant is required. This is usually produced from the rotating motion of a motor and the subsequent transformation of this movement into a linear movement. This transformation of movement requires unfavourable and system-dependent characteristics such as play, elasticity and friction to be taken into account for the system in question.

The **COBRA: X-Y** linear stepping motor system is based on a hybrid stepping motor design which offers one of the few possibilities of realizing linear movement with high speed and accelerating power coupled with very good positioning accuracy. Each carriage (which are bolted together) incorporates the windings and magnets of a stepping motor enabling movement in both the X and Y directions to be realized. The carriage 'floats' a mere 50µm off the surface of the stator on an 'air bearing'. In order to counteract the effect of cantilevered forces the **COBRA: X-Y** has specially widened stators enabling these forces to be dissipated across the an air bearing of greater area than that of the single axis **COBRA**.

Without the requirement of additional measuring systems a micro step operation of high resolution can be obtained with the **COBRA: X-Y**. When used in conjunction with the **PS6410** stepping motor drives an accuracy of <5µm can be attained.

Due to the integrated air system absolute wear is greatly reduced and as a consequence of this downtime for regular maintenance is a thing of the past.

Another great advantage of the **COBRA: X-Y** is the compact design of the unit making it ideal where space is an optimum. The **COBRA: X-Y** is available in various stator sizes enabling working strokes. The type: 'A' carriage has a 90N permissible static force and the type: 'B' carriage has a 145N permissible static force. The permissible maximum load is 400N.

For the control of the **COBRA: X-Y** any commercial 2-phase stepping motor controller can be used. For optimal control we recommend the stepping motor **STAR2000** series or the **PS6410** when increased accuracy is required.

As well as the **COBRA** we can deliver the following accessories:

**Star2000** series stepping motor controllers: APD1 (dual axes control); APS1; APS2; APS3; APS4; APS5; **PS6410** high precision stepping motor controller; filter pressure reducers; spare 3µm and 5µm pneumatic filters; compressors; cable carrier systems heat-sinks; hoses and cable.

# Technical characteristics

## Linear motor type:

	1A-X-90 & 1A-Y-90	1B-X-145 & 1B-Y-145
Maximum static force (N) – pneumatics ON	90	145
Maximum static force (N) – pneumatics OFF	450	725
Force at 1ms <sup>-1</sup> velocity (N)	50	70
Maximum speed (m/s)	2	2
Maximum acceleration (ms <sup>-2</sup> )	90	90
Permissible load (N)	400	400
Positional accuracy @ 1/8 step (mm) with a Star2000 drive	± 0.05	± 0.05
Positional accuracy @ 51,200 micro steps (mm) with a PS6410 drive	± 0.005	± 0.005

## Dimensions: (carriage)

Length (mm)	159	159
Width (mm)	159	159
Height (mm)	43	43
Weight of carriage (kg)	1.2	1.2

## Dimensions: (stator)

Stroke (mm)	102, 153, 204, 305, 408, 510, 612	
Maximum length (mm)	Stroke (mm)+carriage length 159 mm + limit switch 9 mm	
Width (mm)	125	125
Thickness (mm)	18	18
Weight per 100mm stator length (kg)	1.77	1.77
Total height of X-Y-system (mm)	86	86

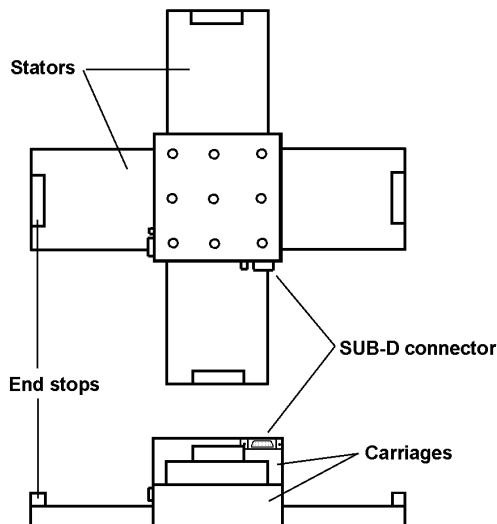
## Electrical data:

Current (A)	3	3	
Voltage (VDC)	80	80	
Stepping motor controller type	(For applications requiring <50µm accuracy) (For applications requiring <5µm accuracy)	APS 1 PS6410	APS 1 PS6410 (5A max.)

## Pneumatic details:

Air supply required (l/min)	15	15
Pressure (bar)	4	4
Filter requirements µm	3 - 5	3 - 5

## Outline drawing:



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