

Locating Pin Selection Table

Small Diameter Locating Pin / Locating Pins for Fixtures Selection Table

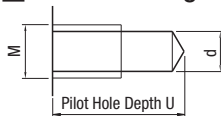
Locating Pin Type I Standard Shape

Insertion Guide (Tip) Classification			How to Mount						
Shape	Shoulder	Type	Press Fit		Screw			Set Screw	
			Standard	Tapped	Threaded	Screw Mounted	Circumference Groove	Notch	Set Screw Flat
Tapered	Large Head	Not provided	Round						
		Provided	Diamond				-		
	Small Head	Not provided	Round			-	-		
		Provided	Diamond				-		
	Straight	Not provided	Round			-	-	-	-
		Provided	Diamond				-		
Round Tapered	Large Head	Not provided	Round				-	-	-
	Small Head	Not provided	Round			-	-	-	-
Bullet Nose	Large Head	Not provided	Round			-	-	-	-
	Small Head	Not provided	Round			-	-	-	-
Spherical	Large Head	Not provided	Round				-		
		Provided	Diamond				-		
	Small Head	Not provided	Round			-	-		
Flat	Large Head	Not provided	Round				-	-	-
		Provided	Round (Side Locating)				-	-	-
	Small Head	Not provided	Round			-	-	-	-
Tip Shape Selectable	Large Head	Not provided	Round	Tip Shape Selectable P.1363	Tip Shape Selectable P.1364	Tip Shape Selectable P.1365, 1366	-	-	-
		Provided	Diamond	Tip Shape Selectable P.1374	Tip Shape Selectable P.1374	Tip Shape Selectable P.1374	-	-	-

Locating Pin Types II Other Shapes and Materials

Product Name	Feature	Page
Nonmagnetic Locating Pin	Nonmagnetic Aluminum Locating Pins suitable for environments where magnetism must be avoided.	P.1386
Plastic Locating Pin	Plastic Locating Pins which prevent work-piece damages.	P.1387-P.1390
Height Adjusting Pin	Locating Pins suitable for locating in vertical direction.	P.1401-P.1405
Support Pin	Pins for use in higher position to avoid interference.	P.1407-P.1412

Notes on Strength of Under-head Part of Tapped Locating Pins



List of Tapped Pilot Hole

Thread Dia.	M2	M2.6	M3	M4	M5	M6	M8	M10
Pilot Hole Dia. d	1.8	2.3	2.6	3.4	4.3	5.1	6.9	8.6
Pilot Hole Depth U	8	8.5	9.5	12	14.5	17	21	24

Ⓢ Pilot hole depth is for reference.

Strength of neck under part will be decreased when the length of locating pin mounting shank is shorter than pilot hole depth U.

Locating Pin - Small Diameter Type I

Ⓢ Locating Pins with Ø3 or less diameter suitable for small work-pieces.

Insertion Guide (Tip) Classification	First Line: How to Mount / Second Line: Shape				
	Press Fit				Threaded
	Solid	Small Head	Shouldered	With Shoulder Seat	
Spherical					
Flat					
Tapered					
Taper R					

Locating Pins - Small Diameter Types II Other Shapes and Materials

Product Name	Feature	Page
Plunging Locating Pins - Small Diameter	The pin will compress when load is applied on.	P.1384
Small Diameter Height Adjusting Pin	Locating Pins - Small Diameter - achievable accuracy in height tolerance is 1/100	P.1384
Locating Pins for Height Adjusting	Locating Pins with short head for thin boards.	P.1385

Features of Material W1-9 Tool Steel for Small Diameter Locating Pins

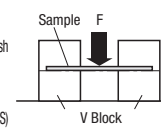
Carbon tool steels specified in JIS G 4401, which is not easily broken.

Testing Method

Place the sample on V blocks arranged in 60mm interval, then push vertically with a load gage.

Sample

Material: ① W1-9 Tool Steel (Hardened)
② SWRH6 Carbon Wire Steel (JIS) ②A Carbon Wire Steel (JIS)



Testing Results

Material	Load at Deflection 5mm (kg)	Detection of Damage	Damaging Load (kg)	Deflection at Damage (mm)
① W1-9 Tool Steel (Hardened)	13.4	Not provided	-	-
② SWRH6 Carbon Wire Steel (JIS) ②A Carbon Wire Steel (JIS)	12.8	Provided	19	14.9

Ⓢ Above values are for reference only, not guaranteed.

Type of Locating Pins for Fixtures I

Insertion Guide (Tip) Classification				How to Mount									
Standard / Special	Shape	Tip Shape	Accuracy	Threaded		Tapped		Circumference Groove		Notch			
				Shouldered	No Flange	Shouldered	No Flange	Shouldered	No Flange	Shouldered	No Flange		
Standard	Round, Diamond	Standard (Taper R)	Precision Grade										
			Standard Grade										
Standard	Tip Shape Selectable	Standard (Taper R)	Precision Grade										
			Standard Grade										
Standard	Round, Diamond Round Edge	Tip Shape Selectable	Standard Grade										
			Standard Grade										
Special	Round, Diamond Bullet Nose	Standard (Taper R)	Precision Grade										
			Standard Grade										
Special	Square Head	Tip Shape Selectable	Precision Grade										
			Standard Grade										
Special	Oval	Tip Shape Selectable	Precision Grade										
			Standard Grade										

Type of Locating Pins for Fixtures II Other Shapes

Shape Product Name	Feature	Shape Product Name	Feature
Detecting Pin (Sensor Embedded Unit) (P.1432)	Pins with embedded sensors for detection of nut and positioning of workpiece.	Pedestal Pin (P.1433)	The pocket is for collecting dusts (spatter etc.) generated during welding. Usable as locating pins for arc welding processes with large amounts of spatters are generated. Often used in automotive muffler welding applications.
Detecting Pin (Work Detecting Units) (P.1432)	Pin diameter smaller than that of pilot hole on bottom of workpiece and larger than that of I.D. of nut enables detection of nuts.	Locating Pin Holder for fixtures (P.1434)	Can be used in combination with a cylinder for applications where insertion and extraction of workpiece is difficult. Two types that are with or without pins are available.
Height Adjusting Pins (P.1433)	Flange thickness tolerance as good as ±0.05 enables both horizontal and height positioning.	Height Adjusting Washer (P.1434)	By using in combination with locating pins for fixtures, vertical positioning is enabled. * Shoulder Thickness Tolerance: ±0.05