

# 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 Standard	Screw			Set Screw		
				Tapped	Threaded	Screw Mounted	Circumference Groove	Notch	Set Screw Flat
Tapered	Large Head	Not provided	Round						
		Provided	Diamond						
			Round						
			Diamond						
	Small Head	Not provided	Round						
		Provided	Diamond						
			Round						
			Diamond						
Straight	Not provided	Round							
	Provided	Round							
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						
		Provided	Diamond						
Straight	Not provided	Round							
	Provided	Round							
Flat	Large Head	Not provided	Round						
		Provided	Diamond						
	Small Head	Not provided	Round						
		Provided	Diamond						
Tip Shape Selectable	Large Head	Not provided	Round						
		Provided	Diamond						
	Small Head	Not provided	Round						
		Provided	Diamond						

### 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	Shouldered
Spherical					
	P.1379	P.1380	P.1381	P.1383	P.1382
Flat					
	P.1379	P.1380	P.1381	P.1383	P.1382
Tapered					
	P.1379	P.1380	P.1381	P.1383	P.1382
Taper R					
	P.1379	P.1380	P.1381	-	P.1382

### 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

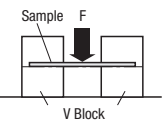
Carbon tool steels specified in JIS G 4401, which is not easily broken.

#### <Testing Method>

Place the sample on V blocks arranged in 60mm interval, then push vertically with a load gage.  
Ø2.0mm, L100mm

#### <Sample>

Material : ①W1-9 Tool Steel (Hardened)  
②SWRH6 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	Precision Grade P1413 P1417	Standard Grade P1419 P1425	Precision Grade P1415 P1418	Standard Grade P1421 P1425	(Standard Grade) P1426	(Standard Grade) P1426	Precision Grade P1413 P1417	Standard Grade P1419 P1423	Precision Grade P1415 P1418
		Tip Shape Selectable	Precision Grade			-	-					
			Standard Grade	Precision Grade P1414	Standard Grade P1420	Precision Grade P1416	Standard Grade P1422	-	-	Precision Grade P1414 P1420	Standard Grade P1424	Precision Grade P1416 P1422
Special	Round, Diamond Round Edge	Tip Shape Selectable	Standard Grade			-	-			-	-	
	Round, Diamond Bullet Nose	Standard (Taper R)	Standard Grade							-	-	
	Square Head	Tip Shape Selectable	Standard Grade			-	-			-	-	
	Oval	Tip Shape Selectable	Precision Grade			-	-			-	-	
			Standard Grade	P1430	P1430	-	-	P1430	P1430	-	-	

### Type of Locating Pins for Fixtures II Other Shapes

Shape Product Name	Feature	Shape Product Name	Feature
	Pins with embedded sensors for detection of nut and positioning of workpiece.		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.
	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.		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.
	Flange thickness tolerance as good as $\pm 0.05$ enables both horizontal and height positioning.		By using in combination with locating pins for fixtures, vertical positioning is enabled. * Shoulder Thickness Tolerance: $\pm 0.05$