



Introduction:

PP5 Precision Polishing Jigs are used to hold specimens of widely varied shape while they are lapped and/or polished on Logitech PM5 or LP50 machines. The basic jig allows precise control of the orientation of the specimen to the polishing plane and fine adjustment of the load applied to the specimen during polishing. Optional features include a stock removal indicator, a vacuum chuck for location of wafer geometry or slide mounted specimens and a PSM Programmable Sample Monitor system.

Description:

The jigs are constructed throughout from steel, making them sturdy and easily maintained. Samples or sample holders may be affixed directly on to the jig mounting plate or they may be fixed to the jig on an angular adjustment plate. This allows specimen orientation to the polishing plane by means of three angular adjustment screws. For greater precision, this facility is also available with micrometer head adjustment. It is used to prepare samples with extreme parallelism; surfaces on single crystals with precise orientation to the crystal structure; a surface on a sample at a chosen angle.

The load is variable from 0-2800g (6.17lbs) on the heaviest PP5. This accommodates materials covering a wide range of hardness, toughness and size, which are to be processed in different ways, to different finished specifications.

PP5A: Each PP5A jig is supplied with two sample holders, each of which may be screwed either to the piston plate or angular adjustment plate. The Sample Mounting Pot holds irregularly shaped samples or small rods, cubes etc. The Sample Mounting Pad normally holds wafer samples - wax mounted.

PP5 Precision Lapping & Polishing Jig

- Automatic parallelism
- Stock removal indication
- Vacuum chuck sample location
- Precise control of sample orientation
- Variable sample loading from 0-2800g
- Accepts samples up to 3" diameter

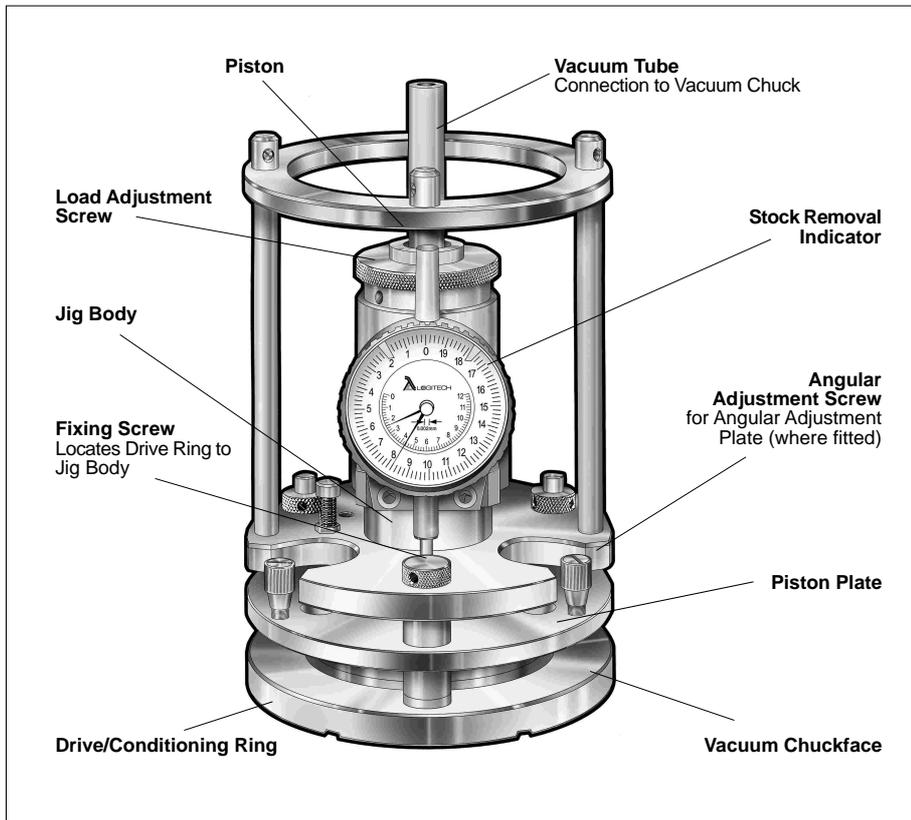
Other holder configurations may be prepared to match more closely specific sample geometries. N.B.: Long, rod-shaped samples (e.g. laser rods) can be accommodated within the hollow central bore of the jig piston.

PP5D: The PP5D is identical in all aspects of construction to the PP5A, but has, in addition, a dial gauge to indicate stock removal. The gauge scale is divided into 10 μ m divisions and 2 μ m sub-divisions. It measures the amount of material removed during lapping or polishing.

PP5GT: The PP5GT incorporates all the features of the PP5A and the PP5D jigs with the addition of a vacuum chuck sample holder. This is used for "wafer geometry" or slide mounted specimens where the specimen is held parallel by a vacuum chuckface instead of wax, avoiding the need to heat the specimen.

To operate the vacuum chuckface, a rotary vacuum adaptor fits over the top of the jig to connect it with a vacuum source. The adaptor allows normal rotation of the jig during polishing.

The two standard patterns are illustrated overleaf, though other patterns may be specified as required to suit individual applications.

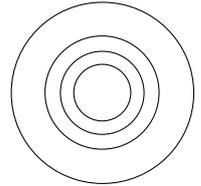


Vacuum Chuck:

The two standard chuckface patterns offered with the PP5GT are illustrated below. The customer should specify which configuration is required when ordering. Special chuckface patterns may be supplied on request.

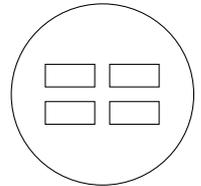
1P5AC-1200

Annular grooves for 83mm (3.27") diameter substrate



1P5AC-1400

Four port for microscope slides 28 x 48mm (1.10 x 1.89")
OR 24 x 76mm (1 x 3")
OR 50 x 76mm (2 x 3")



Specifications:

	Net Weight	Height
PP5A	4.30kg (9.48 lbs)	175mm (6.89")
PP5D	4.50kg (9.92 lbs)	175mm (6.89")
PP5GT	5.40kg (11.88 lbs)	220mm (8.66")

Max. Sample Diameter

	Pot	Pad
PP5A	14mm (0.55")	56mm (2.20")
PP5D	14mm (0.55")	56mm (2.20")
PP5GT	83mm - Vacuum Chuck	

Max. Sample Thickness

	Pot	Pad
PP5A*	24mm (0.94")	13mm (0.51")
PP5D*	24mm (0.94")	13mm (0.51")
PP5GT*	11mm (0.43") - Vacuum Chuck	

* Thicker samples can be processed using extended legs

Outside diameter (PP5): 127mm (5")

Angular adjustment range: +/- 3° (except on GT)

Range of loading: 0-2800g (6.17 lbs)

Specimen parallelism achievable: <2" of arc

Min. achievable thickness: 2.5µm depending on the material being processed

Ordering Data:

Cat.No.	Description	Cat.No.	Description
1PP51	PP5A Precision Polishing Jig with one mounting pot and one mounting pad.	1P5AC-0800	Dial Gauge Kit - converts PP5A to PP5D.
1PP52	PP5D Precision Polishing Jig - as PP5A plus dial gauge.	1P5AC-0900	Micrometer angular adjustment heads.
1PP53	PP5D Precision Polishing Jig resistant to sodium hypochlorite based polishing fluids.	1P5AC-1000	Vacuum chuck body and tube - converts PP5D to PP5GT.
1PP54	PP5GT Precision Polishing Jig - as PP5A plus dial gauge and vacuum mounting system. Specify chuckface when ordering.	1P5AC-2600	Substrate stack clamping fixture for PP5.
1PP55	PP5GT Precision Polishing Jig resistant to sodium hypochlorite based polishing fluids. Specify chuckface when ordering.	1ACCS-0100	Rotary vacuum adaptor with tubing.
1PP56	PP5D Precision Polishing Jig with extended legs for Lithium Niobate processing etc.	1P5AC-3000	PSM Programmable Sample Monitor
1P5AC-1200	Vacuum chuckface for PP5GT - annular grooves for 83mm (3.27") dia. substrate.	1P5AC-3100	PSM Programmable Sample Monitor - resistant to sodium hypochlorite based polishing solutions
1P5AC-1300	As 1P5AC-1200 - suitable for use with sodium hypochlorite based polishing fluids.	1P5AC-3200	Sample Load Measurement Gauge (220V/50Hz - UK adaptor)
1P5AC-1400	Vacuum chuckface for PP5GT - four port for microscope slides 28 x 48mm (1.10 x 1.89"), 25 x 76mm (1 x 3") or 50 x 76mm (2 x 3").	1P5AC-3225	Sample Load Measurement Gauge (220V/50Hz)
1P5AC-1500	As 1P5AC-1400 - suitable for use with sodium hypochlorite based polishing fluids.	1P5AC-3250	Sample Load Measurement Gauge (110V/60Hz)



Certificate No. FM 12025

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