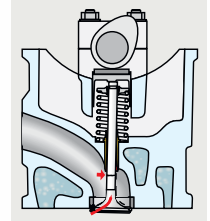
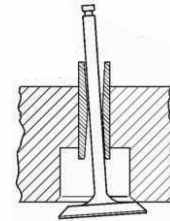
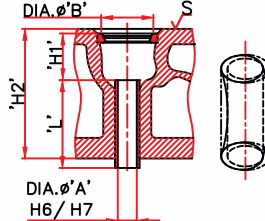
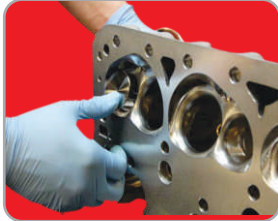




'UNDERSTANDING GUIDES & SEATS TOLERANCES'

(Specifications most O.E.M'S and High Performance shops use)



Standard Valve Stem To Guide Clearance

Valve Stem Diameter	Intake Valves	Exhaust Valves
5 - 7mm	10 - 40 µm	25 - 55 µm
>7 - 9mm	20 - 50 µm	35 - 65 µm
>9 - 12mm	40 - 70 µm	55 - 85 µm

In case of air-cooled cylinder heads and high-performance engines, due to the higher thermal load - the upper range of the clearance tolerance is aimed for.

- Worn valve guides will damage valve stem & valve seat sealing.
- Valve seats - "accuracy & finish" - depend on valve guide precise tolerance.

'O.E.M - Valve Guide Machining Tolerances'

Dia. Ø 'A'	SURFACE FINISH	CIRCULARITY (Roundness)	CYLINDRICITY (Straightness & Roundness)
GUIDE BORE TOLERANCE (Ø 6-10 mm) H6 Ø 'A'-0.000 +0.009 mm (0.00035") or H7 Ø 'A'-0.000 +0.015 mm (0.0006")	0.5 Ra µm • 20 Ra µm • 3.8 Rz ISO	0.006 mm (0.00025")	0.005 mm / 50 mm L (0.0002" / 2" L)

'High Performance Specs for Valve Guide Machining'

Dia. Ø 'A'	SURFACE FINISH	CIRCULARITY (Roundness)	CYLINDRICITY (Straightness & Roundness)
GUIDE BORE TOLERANCE (Ø 6-10 mm) Ø 'A'-0.000 +0.003 mm (0.0001")	0.3 Ra µm	0.003 mm (0.0001")	0.003 mm / 50 mm L (0.0001" / 2" L)

Valve Seats achievable accuracy on Robins Seat & Guide Machines (After guides are Honed)

'Fixed-pilot' axis & guide axis remain same while cutting seats. 'Rotate pilot in guide to check concen'	Concentricity & total run out < 0.005 mm. (0.0002")	Roundness < 0.003 mm (0.0001")	Surface Finish < 0.4 Ra µm
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Technical Tip:

Valve Seat surface finish & concen depend on;
"How precise Valve Guide Bore is?"

Rubi-OnePass
"Finish valve guides within 0.0001"

"Do the job once ... Rubi-Hon"

SUPER PRECISION GUIDE HONING

"So Simple-anyone can operate this machine !"

- No skills • No CNC training
- Learn to operate Rubi-Hon in aprx. 10-minutes
- Repeat Bore accuracy automatically.
- No Reaming • Hone Guides within 0.0001"
- Semi & fully automated hole-to-hole guide honing.

Newly designed honing tools control guide bores;

- Circularity: < 0.003 mm
- Cylindricity: < 0.005 mm / 50 mm 'L'
- Bore diameter within 0.003 mm
- Surface finish: < 0.4 Ra µm
- Perpendicularity w.r.t deck surface within 0.10 mm / 50 mm 'L'
- Tool life - several thousand guide bores.

Diamond Honing Tools For GH8 Guide Honing Machine:-

- 'Fixed Dia One-Pass' Diamond Honing tools for valve guides.
- 'Adjustable - One-Pass' Diamond Honing tools for valve guides.
- High precision-extra fine grit honing tools for Plateau honing with desired Cross-Hatch patterns.
- Related fixtures, Setting and inspection gages.

Aiming to meet or exceed O.E.M Specs in Valve Guide and Seat Machining.