

ROBINS

SINCE 1983



Signature brand ...World's First (Patent pending)

"Unique revolutionary concept in valve guide honing."

GH12 SMART

VALVE GUIDE HONING

- Automatic Guide Honing
- Core Drilling of Guide Bores
- Guide Reaming

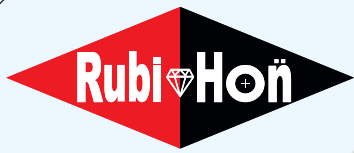
Designing & Manufacturing Patented Technologies

US 7 726 919B

US 17879818

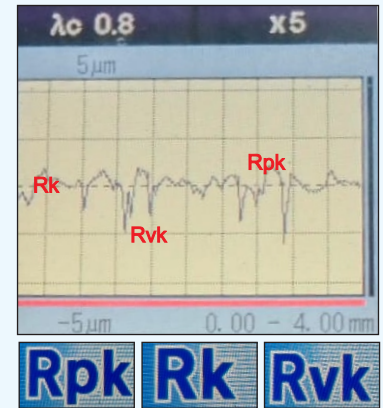
US 17892165

Introducing New and most advanced designs by Robins - hone valve guides... the Rubi-Smart way



WORLD'S FIRST

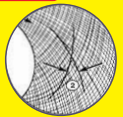
Automatic Guide Honing with cross hatch & plateau honing features:



Cross Hatch & Plateau Honing Tools available to Control Rpk, Rk, Rvk



- To improve surface finish in guide bore.
- Less wear - reduced friction.
- Better Lubrication .
- Better sealing - more power for improved engine performance.
- Tighter clearance - near zero - valve seat concen.

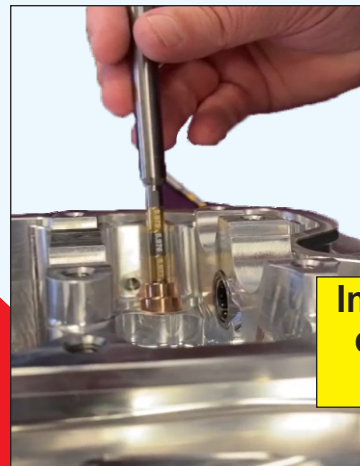


SCAN TO WATCH

GH12 Guide Honing Video

Technical Tip

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



Inspection gauges to check taper, size & bore geometry

- Hone Valve Guides within 0.0001"

- One push button- auto cycle.
- Fixed dia diamond honing tools.
- Learn to operate RubiHoning in less than 10 mins..
- Repeat guide bore accuracy automatically.

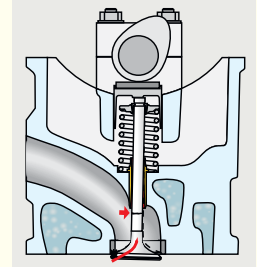
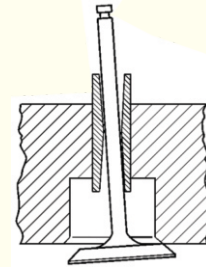
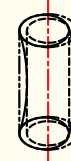
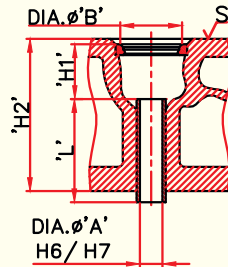
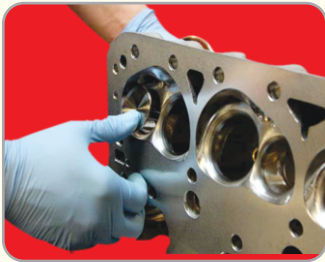
- **Automatic Honing Cycle**
Stock removal from 0.00005" to 0.004" in one cycle
- **Automatic Ream & Hone cycle**
Stock Removal in excess of 0.004"
- **Automatic Cross Hatch & Plateau**
New Honing Tools to control Rk, Rpk & Rvk

NO SKILL - INNOVATIVE TECHNOLOGY - BY ROBINS

- Automatic Guide Honing
- Core Drilling of Guide Bores
- Guide Reaming

'UNDERSTANDING VALVE GUIDES & TOLERANCES'

(Specifications most O.E.M 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

'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 µ In • 0.5 CLA • 3.8 Rz ISO • 0.6 RMS	0.006 mm (0.00025")	0.005 mm / 50 mm L (0.0002" / 2" L)

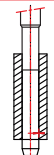
In case of air-cooled cylinder heads and high-performance engines, due to the higher thermal load - the upper range of the clearance tolerance is aimed for.

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

Valve Seats achievable accuracy on Robins Seat & Guide Machines

Plateau honed guides

'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

GH12 Smart Specifications

Cylinder Head Size (In Roll fixture)

47" x 15" x 10" (1200 x 380 x 254 mm)

Diamond Honing Tools for GH12 HD Guide Honing Machine:-

- **Rubi-One Cycle**...World's **First** (Patent applied for) Fixed Dia. (non-adjustable) Diamond Honing Tools.
- Various diamond grit honing tools to achieve surface finish as low as 0.10 Ra µm
- Plateau / Cross Hatch honing tools available to achieve desired Rk, Rpk, Rvk parameters
- Tool life - several thousand guide bores.