

Portable Cylinder Liner Honing Solution for Marine Engines

MEK-500™

Information & Technical - Operating Manual



- PRECISION THAT POWERS THE SEA -

MEK-500™

Portable Cylinder Liner Honing System

After extensive field testing under real repair and maintenance conditions by MEKNAFT's specialized workshop teams, a high-reliability portable honing system was developed specifically for demanding marine applications.

The **MK-500** has successfully transitioned from testing phase to full production, with over 100 units currently in operation, and no negative performance reports to date.

The system is:

- Lightweight and fully portable
- Suitable for onboard repairs
- Easy to install and operate
- Designed for consistent and repeatable precision
- It delivers professional surface finishing results
- Reduction of lubricating oil consumption
- Restoration of cylinder liner surfaces
- Extended component service life
- Reduced dry-docking and repair costs

The **MK-500** is now a proven technical solution for fleet technical departments seeking reliability, efficiency, and measurable performance improvement.

Built by Marine Engineers – For Marine Engineers.

The **MK-500** is not a generic industrial tool. It is a purpose-built marine solution designed around the real operational needs of fleet technical departments.



Engineered for Ultimate Accuracy.

Portable Cylinder Liner Honing System **MEK-500™**

- For liners from 150 up to 500 bore.
- Outstanding Lub-Oil consumption economy.
- Increases the life of liner.
- Removes scuffing and restores cross hatch pattern.
- Easy operation directly on engine or in honing rig.
- Honing head with detachable stones and holders.
- Powerful electric driving unit 1600w
- Adjustable stone pressure for high honing capacity.
- Portable, light weighted and easy to use by crew.
- Competitive price.



• Reliability

Robust mechanical design, built for continuous shipboard use under demanding conditions.

• Value for Money

A cost-effective alternative to oversized workshop systems, without compromising finishing quality or precision.

• Oil Consumption Improvement

Restoration of proper surface geometry and crosshatch pattern contributes directly to:

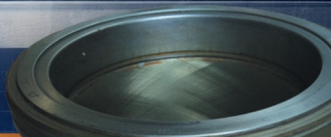
Reduction of lubricating oil consumption - Improved piston ring sealing efficiency

Stabilized engine performance - Extended liner service life

• Onboard Efficiency

Lightweight, portable, and easy to operate by technical crews, minimizing downtime and reducing dry-dock dependency.

Trusted at Sea. Proven in Service.



MEK-500™

Portable Cylinder Liner Honing System

Bore Diameter Specific Configuration

The MEKNAFT MK-500 is supplied with a dedicated honing head configuration per bore diameter range.

Each cylinder bore diameter requires a separate honing head assembly, precisely engineered to ensure:

- Correct radial expansion geometry
- Optimal contact pressure distribution
- Proper crosshatch formation
- Maximum concentricity and finishing accuracy

This approach guarantees consistent professional results and eliminates compromise associated with oversized multi-range systems.

Why Dedicated Heads?

Unlike universal adjustable tools that sacrifice stability, the MK-500 system operates on a precision-matched diameter philosophy.

- Improved mechanical stability
- Better stone alignment
- Controlled expansion force
- Superior surface finish consistency

For vessels operating multiple engine sizes, individual honing heads can be supplied accordingly.



Reduce Oil. Restore Performance. Control Cost.

Portable Cylinder Liner Honing System

MEK-500™



BEFORE HONING PROCEDURE (MAGNIFICATION X 50)



AFTER HONING PROCEDURE (MAGNIFICATION X 50)

Stronger Cylinders. Safer Voyages.

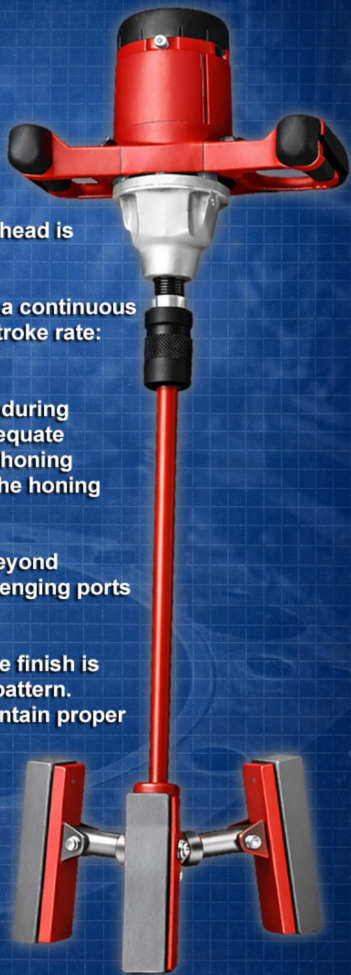


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Portable Cylinder Liner Honing System

OPERATING INSTRUCTIONS

- 1** Insert the honing head fully inside the cylinder liner before starting the machine.
- 2** Start the machine only when the honing head is properly positioned inside the liner.
- 3** Move the tool smoothly up and down in a continuous and controlled motion. Recommended stroke rate: approximately 1 second per stroke.
- 4** Apply sufficient honing oil continuously during operation. Never operate the tool dry. Adequate lubrication is essential to ensure proper honing performance and to prevent damage to the honing stones and cylinder liner.
- 5** Do not allow the honing head to travel beyond the top edge of the cylinder liner or scavenging ports at the lower point during operation.
- 6** Continue honing until the desired surface finish is achieved with a consistent cross-hatch pattern. Avoid excessive material removal to maintain proper clearance and surface integrity.
- 7** Switch off the machine only while the honing head remains inside the liner.
- 8** After rotation has completely stopped, carefully remove the honing head from the cylinder liner.



Reliable. Affordable. Professional.

SAFETY INSTRUCTIONS

ALWAYS WEAR

- Safety glasses
- Gloves
- Hearing protection
- Protective footwear

NEVER OPERATE

- Without lubrication
- With damaged stones
- In explosive atmospheres
- Without proper liner support

ENSURE

- Stable vertical alignment
- No loose clothing near rotating parts
- Proper electrical grounding

MAINTENANCE

- Inspect stones before every use
- Replace worn stones immediately
- Clean expansion mechanism after each operation
- Lubricate moving components
- Store in dry environment



**SAFETY
FIRST**



Built Tough. Honed Perfect.



TECHNICAL SPECIFICATIONS

Motor Type:

Industrial Electric Motor*

Power Output:

1600W

Voltage:

200/230V

Frequency:

50 / 60 Hz compatible (if applicable)

Speed Range:

250 – 600 RPM recommended operating range

Cooling:

Air-cooled industrial design

Heavy-duty Industrial Chuck

Secure connection between drive motor and extension rod.

Main Body:

High-strength steel Y-frame

Guide Shafts:

Hardened precision ground steel

Stone Carriers:

Adjustable radial holders

Abrasives Modules:

Replaceable honing stones

(various grit grades available - 80 grid standard)

Expansion System:

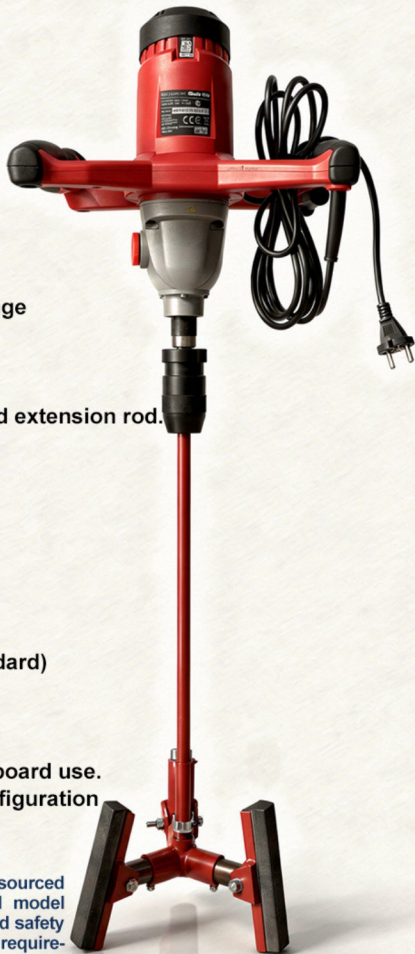
Mechanical radial expansion mechanism

Weight & Portability

Complete system designed for portable onboard use.

Total weight depends on bore diameter configuration and motor specification.

* The drive motor supplied with the HON-500 system is sourced from recognized industrial manufacturers. Brand and model may vary, provided that performance, power output, and safety standards remain compliant with system operational requirements. The motor carries its own certification, marking, and manufacturer warranty.

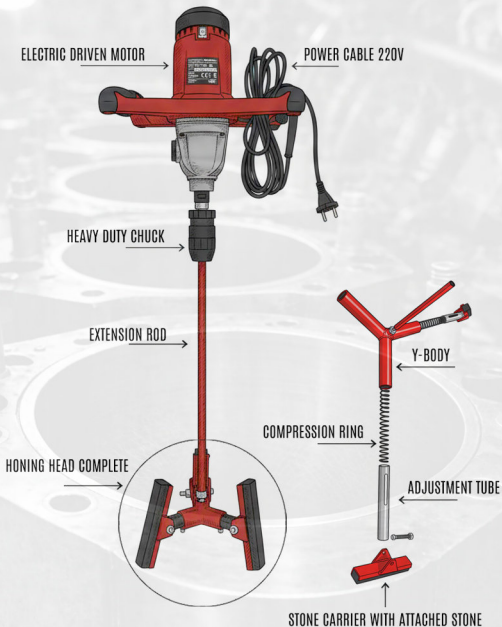


Precision Inside Every Cylinder.



MEK-500™

Portable Cylinder Liner Honing System



Performance Starts with Precision Honing.

MARINE PERFORMANCE STARTS HERE



SPECIAL
DISCOUNTS
FOR **FLEET** ORDERS

Send your inquiry now at:
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