Cylinder Liner Maintenance, 4-stroke engines

Honing accessories

Vibration dampers

- Chris-Marine has recently introduced **vibration dampers** in order to minimize head wear, avoid vibration patterns in the cylinder liner and improve productivity.
- The vibration dampers effectively reduce rotational vibration modes, making it possible to operate at higher stone pressure.
- Vibration damper upgrade kits are available for most existing honing head types.

Remote control box and chain slack detector

- The control handles for driving speed and stone pressure have been moved from the honing machine (HON S) to the same external control box where the reset and emergency buttons are situated. The new **remote control box** makes HON S much easier and even safer to use.
- The **chain slack detector (optional)** stops the machine if there is slack in the chain from the hoist. This can occur for instance if the stone pressure is too high, thus preventing the honing head from sliding down in the liner.
- There are two upgrade kits available for HON S users:
  - Remote control box
  - Remote control box & chain slack detector

Stone holders

- Three types of **honing stones** are needed in 4-stroke honing.
- A new running-in process starts when a stone is re-mounted into a stone holder. This can be avoided by keeping stones in holders and by using the same mounting order on the head every time.
- We therefore recommend having **one set of holders for each set of stones used**. This saves up to 20% honing time as the time for switching stones and running-in time is reduced significantly.
- Other benefits are reduced stone consumption and **more repeatable honing** results.

Honing stones

- Initially, a **diamond stone** is used for removing wear edge, micro-seizures and surface glazing and for providing a well-defined starting surface for the next step.
- A **rough ceramic stone** is then used for removing smeared liner particles from the diamond stone and for giving the surface excellent oil-retaining properties.
- Finally, a **fine ceramic stone** is used for removing edgy peaks from the surface while sustaining the good oil-retaining property of the surface.

Dressing tool for ceramic stones

- The Chris-Marine **dressing tool** re-sharpens the cutting edges on the stone surface.

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Honing accessories

**Honing liquid**

The Chris-Marine **honing liquid** ensures shortest possible honing time by preventing residues from clogging the stones. The liquid also provides corrosion resistance for the cylinder liner.

**Cleaning brushes**

Proper surface cleaning is important after completing the honing process to remove loose particles from the surface. Our **honing brushes** efficiently remove these particles when used together with clean honing liquid.

**Torque wrench and adapter - option**

For HON S and HON A machines with mechanical stone pressure control, a kit that improves stone pressure accuracy has recently been introduced. The kit includes a **torque wrench** and an **adapter** that significantly reduce honing time and risk for human error.

**Honing cage - option**

The solid Chris-Marine **Honing cage** makes the honing process much safer for the user.

**HR80 to HR800 - upgrade**

The honing rig HR80 has recently been upgraded to enable honing throughout the liner.

The upgraded rig is called HR800.

An upgrade kit is available for HR80 users who would like to have the latest standard.

**Honing App**

The Chris-Marine **Honing App** makes it easy to control process quality, produce measurement record and save time throughout the honing process. The App is available for all honing/deglazing machines.

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