POWER REQUIREMENTS
The SNJ-10 Hone is designed to be used in a heavy duty electric drill motor or drill press with chuck capacity of no less than 5/8 in. (16mm).

Hand-Feed Hones are supplied with only one universal joint, which is sufficient if the Hone is being used in a portable electric drill motor. If the Hone is used in a drill press, lathe, or other machine with a fixed spindle, a second AN-70 Universal Joint must be substituted in place of the AN-26A Drive Shaft (see Repair Parts List).

To determine the best rotation speed use the following formulas:

\[
\text{RPM} = \frac{1200}{\text{BORE DIA. (in.)}}
\]

\[
\text{RPM} = \frac{30000}{\text{BORE DIA. (mm)}}
\]

IMPORTANT
DO NOT exceed 960 RPM’s.

To ensure cutting action and prevent galling and pick-up, a continuous supply of Honing Oil MUST be provided.
For best results use only Sunnen Industrial Honing Oil which has been specially formulated for honing.

ASSEMBLY
The stones come in a set of three. Replace all three stones at the same time. Differences in stone height can cause chatter and poor cutting action.

Insert stones in slots in the Hone Body as shown in Figure 1.

NOTE: Occasionally, a NEW set of stones cannot be inserted into the slots in the hone body. If this occurs, loosen the three Slotted Head Spring Plungers 1/2 turn in the top of the hone head; insert new stones; and then retighten plungers.

HONE BORE
The Hone should be stroked fast enough to produce a crosshatch in the bore. If the stroke is too slow, cutting action slows down and stones can glaze and chatter.

When starting out, it is best to "short stroke" in the tight spots of the bore and gradually lengthen the stroke as the tight spots are honed out.

1. Slide Hone into the bore until the entire length of stone is in bore.
2. Expand Hone by turning Feed Screw clockwise until stones contact bore.
3. Wiggle Hone and further expand Hone by turning Feed Screw until stones are firmly seated in bore.
4. Direct a continuous stream of Honing Oil into bore.
5. Turn ON drill motor, to start Hone rotating and begin stroking Hone back and forth (up and down) over the full length of the bore. Overstroke both ends of the bore by 1 in. (25mm).
6. Periodically, as the bore becomes larger and the stones become loose, stop drill motor and expand stones by turning Feed Screw clockwise. Then resume honing.

SPRING PLUNGER ADJUSTMENT
Periodically the three slotted head Spring Plungers in the top of the hone head should be adjusted to allow just enough force to prevent the stones from falling out when Hone Head is removed from bore. Excessive force or "bottoming" of plunger will impede Feed System operation (refer to Figure 1):

REPAIR PARTS LIST

![Diagram of repair parts]
TROUBLESHOOTING

Stone cuts too slowly:
- Check that you are using the right stone (refer to chart).
- Check that a continuous supply of Sunnen Industrial Honing Oil is being directed into bore.
- Stone may be glazed. Dress using Sunnen MAN-700 Dresser.

Chatter:
- Hone should be rotating in a clockwise direction as viewed from the drive shank end of the tool.
- Increase stroke speed.
- Expand stones firmly against bore.

ACCESSORIES

AN-70 UNIVERSAL JOINT
- Order an additional Universal Joint when using the Hone in a drill press, lathe or other machine with a fixed spindle. Use in place of AN-26A Drive Shaft.

AN-80 QUICK-COUPLER
- Provides instant coupling or uncoupling of Hone from drill motor. Installs between AN-241 Drive Shaft and AN-26A Drive Shank; between SNJ-11 Hone Head and AN-26A Drive Shank on short bores.

STONE SET SELECTOR

<table>
<thead>
<tr>
<th>MATERIALS</th>
<th>DIAMETER RANGE (INCHES/MILL METERS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.250 - 1.437 in. 31.75 - 36.50 mm</td>
<td>DEBURRING (Rough Bores, All Materials)</td>
</tr>
<tr>
<td>1.418 - 1.604 in. 36.02 - 40.74 mm</td>
<td></td>
</tr>
<tr>
<td>1.580 - 1.770 in. 40.13 - 45.00 mm</td>
<td>For FAST STOCK REMOVAL in Bored, Ground or Deburred Holes in the following materials</td>
</tr>
<tr>
<td>ALUMINUM or BRONZE</td>
<td>SNJ1-J45 SNJ2-J45 SNJ3-J45</td>
</tr>
<tr>
<td>SOFT BRASS</td>
<td>SNJ1-J63 SNJ2-J63 SNJ3-J63</td>
</tr>
<tr>
<td>CAST IRON</td>
<td>SNJ1-J45 SNJ2-J45 SNJ3-J45</td>
</tr>
<tr>
<td>SOFT STEEL</td>
<td>SNJ1-A45 SNJ2-A45 SNJ3-A45</td>
</tr>
<tr>
<td>HARD STEEL (First choice)</td>
<td>SNJ1-A45 SNJ2-A45 SNJ3-J45</td>
</tr>
<tr>
<td>HARD STEEL if A45 doesn't cut</td>
<td>SNJ1-J63 SNJ2-J63 SNJ3-J63</td>
</tr>
<tr>
<td>Very HARD STEEL if A43 doesn't cut</td>
<td>SNJ1-J63 SNJ2-J63 SNJ3-J63</td>
</tr>
<tr>
<td>For FINE FINISHING in the following materials</td>
<td></td>
</tr>
<tr>
<td>ALUMINUM or BRONZE</td>
<td>SNJ1-J87 SNJ2-J87 SNJ3-J87</td>
</tr>
<tr>
<td>SOFT BRASS</td>
<td>SNJ1-J85 SNJ2-J85 SNJ3-J85</td>
</tr>
<tr>
<td>CAST IRON</td>
<td>SNJ1-J87 SNJ2-J87 SNJ3-J87</td>
</tr>
<tr>
<td>SOFT STEEL</td>
<td>SNJ1-J87 SNJ2-J87 SNJ3-J87</td>
</tr>
<tr>
<td>HARD STEEL</td>
<td>SNJ1-J85 SNJ2-J85 SNJ3-J85</td>
</tr>
</tbody>
</table>

For assistance on unusual honing problems, contact your local Sunnen Field Engineer or Sunnen Customer Service Department, St. Louis, Missouri.