

Automotive TechTips

TIMKEN
Where You Turn

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SEAL AND SHAFT INSTALLATION PROCEDURES

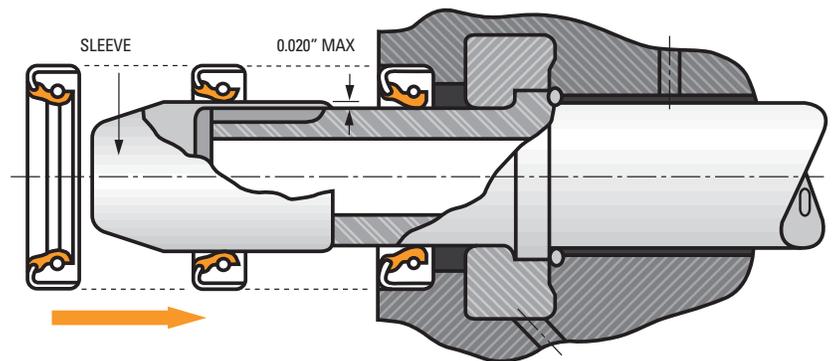


The subject of installation is commonly overlooked when selecting a seal for an application. Improper installation is one of the major causes of premature seal failure. To assist the installation, the seal should be prelubricated with grease or oil to reduce sliding friction of contact surfaces. This also helps protect the seal lips during initial run-in. An installation tool should always be used when installing a seal. Using a tool improves ease of installation and reduces the possibility of seal cocking (non-perpendicular to shaft). A hydraulic or pneumatic press is recommended to supply the necessary force to install the seal. Following are examples of both recommended and improper installation methods.

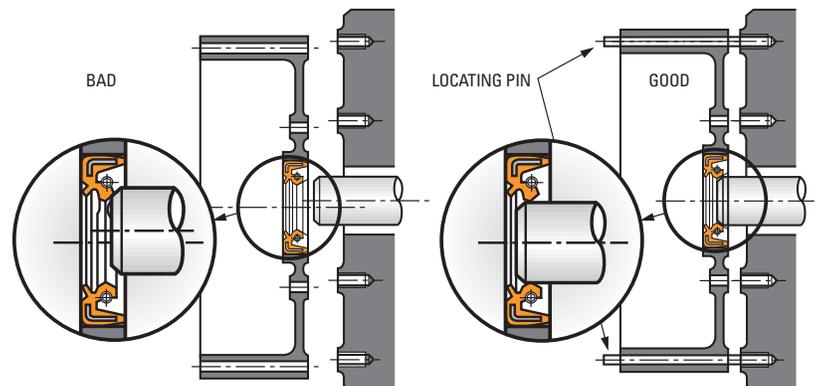
SHAFT INSTALLATION

To help minimize possible damage to the seal, the advisable sequence of installation is to install the seal over the shaft and then into the housing bore. *Note: A shaft with the proper chamfer angle also will help to minimize possible damage to the seal.* When installing a seal over a keyway or spline, employ a sleeve to protect the seal lip from cuts.

SEAL INSTALLATION OVER SHAFT SPLINES

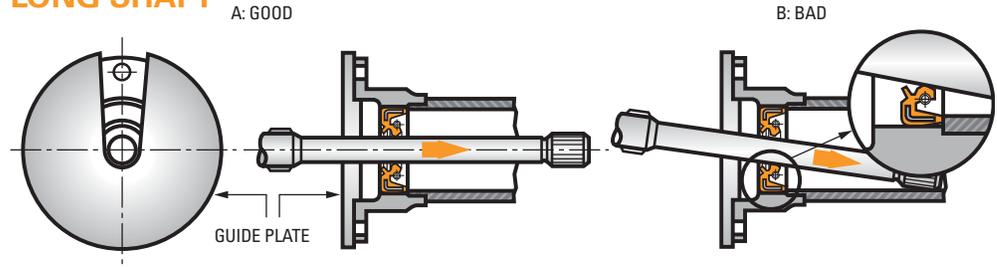


HEAVY WEIGHT HOUSING



Where the shaft must be installed through the seal, centering guides for the shaft help to prevent lip deformation and dislodging of the spring. When possible, the shaft should be rotated as it passes through the seal to reduce sliding friction.

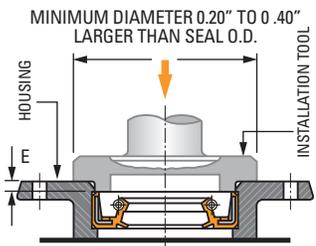
LONG SHAFT



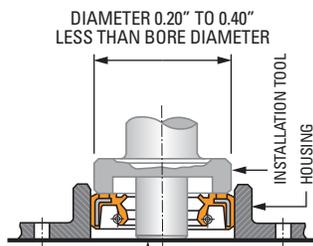
SEAL INSTALLATION

In each preferred method, installation load is absorbed by either the housing or the bottom plate to prevent seal damage and to assist in locating the seal properly within the bore.

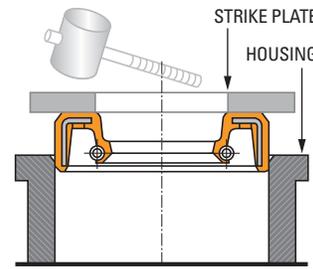
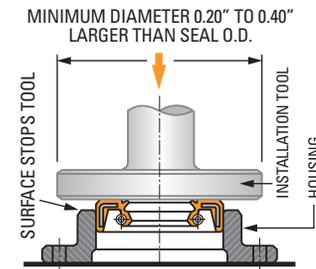
ACCEPTABLE



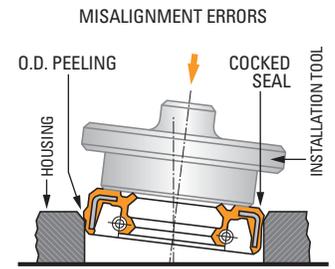
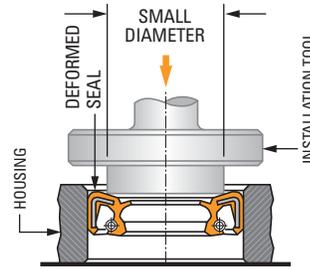
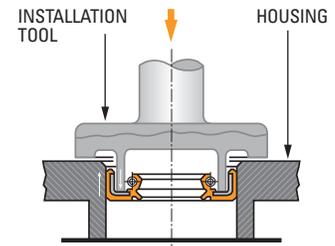
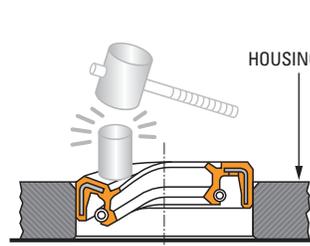
WIDTH "E" = THE CHAMFER WIDTH PLUS 0.020". TOOL STOPS AGAINST HOUSING FACE.



TOOL STOPS AGAINST SUPPORT SURFACE.



IMPROPER



WARNING Failure to follow this warning could create a risk of serious injury.

Proper maintenance and handling procedures are critical. Always follow installation instructions and maintain proper lubrication.

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