New Small Frame Shaft Seal Introduction

TB TC TE TS

Parker Hannifin Pump & Motor Division Europe (PMDE), in response to our ongoing efforts to continuously improve our products, is pleased to announce the release of a **new, single-piece, high-pressure shaft seal** for our small frame motor product line. The new shaft seal will be implemented in the **TB, TC, TE, and TS** family of motors **in Febraury 2025.** The Parker small frame motor has proven capability in a wide range of applications and the new seal is designed to work within these challenging environments.

The previous design utilized a fully elastomeric seal, a back-up washer, and a back-up ring. This design has served Parker and our customers well for many years but, to account for the small frame motor product line being used in more and more challenging applications, a new design was needed. The new design has been in development for several years and provides improved performance and life with a simplified design. The back-up ring and back-up washer have been eliminated and replaced with a one-piece, metal case seal that simplifies installation. The new seal incorporates an engineered polymer that allows the seal to function from -40^{o}C to 140^{o}C making it a drop-in replacement for all current NBR and FKM designs. The seal lip design is specifically engineered to provide durability and leak resistance over the life of the motor.

Both our lab testing, and our alpha customer test units have provided equivalent or beter performance and life than our current design. We've tested these new seals in various conditions, including high-speed, high-pressure combinations, extreme side load and pressure combinations, rapid high-pressure reversals, and full field duty cycle tests. We're excited to introduce the new seal design and look forward to your support as we strive for continued life and performance improvements in our small frame motor product lines.

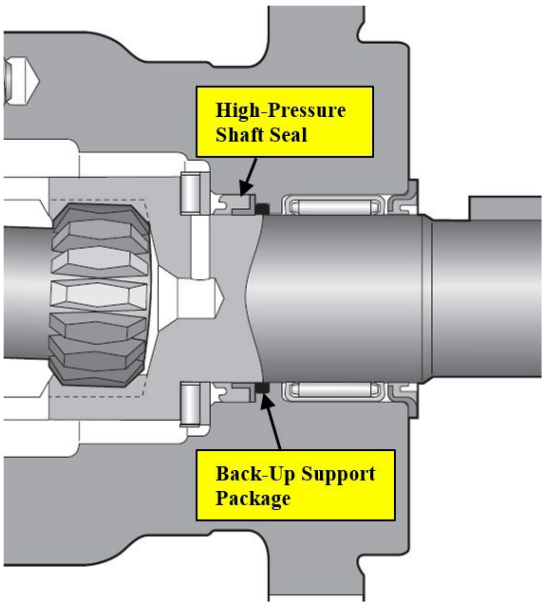
Comparison of the current and new seal are shown below for reference:

Current Design
(NBR & FKM Materials)

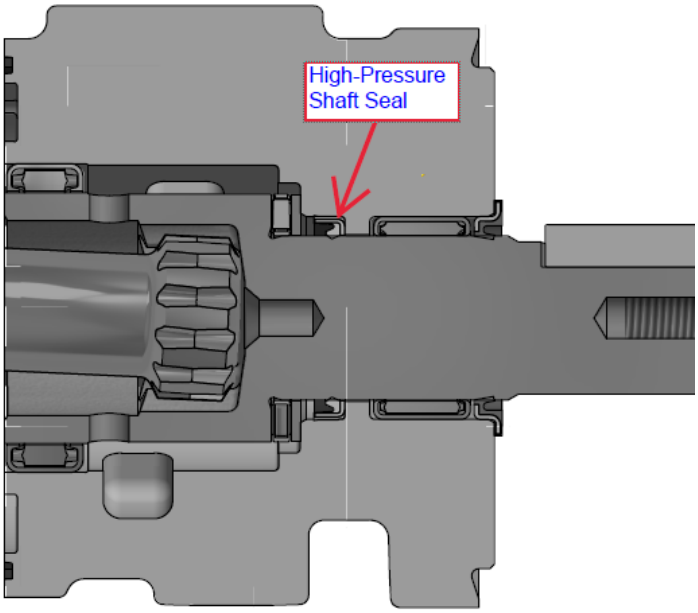
New Design
(HNBR Only)

Motor Cross Section Comparing Current Shaft Seal Package and New Shaft Seal Package:

Current Design

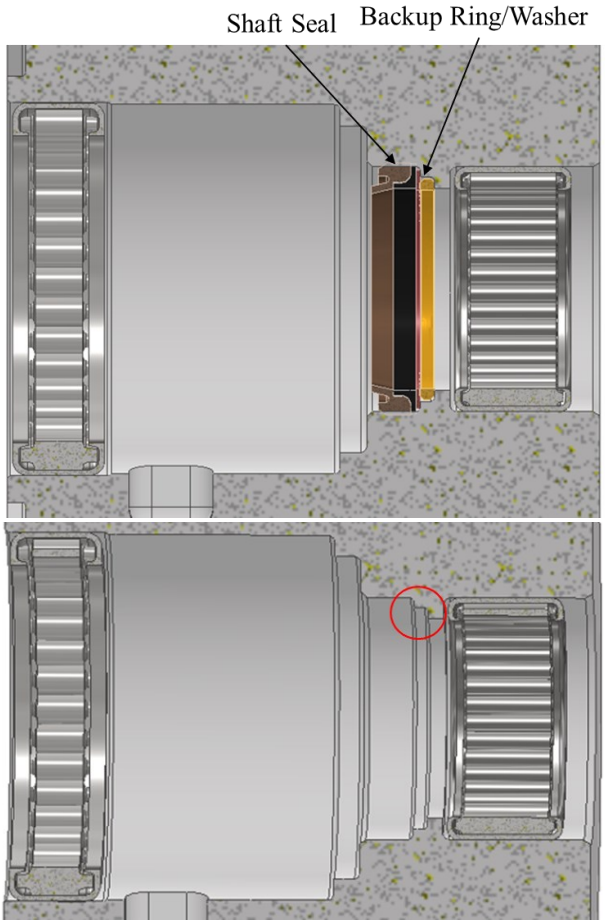


New Design

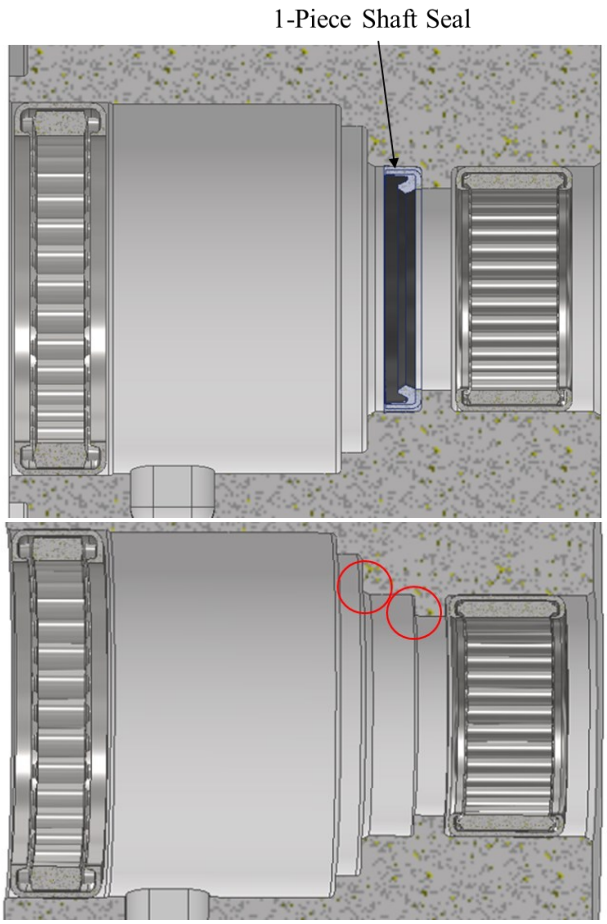


To fit the new shaft seal into the housing a slight housing internal geometry change has to be done.
The new seal seat is equal in depth to the back-up washer.
Because of this internal change the old shaft seal combination will not fit into the new housing.

Current Design



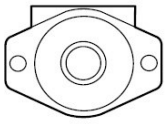
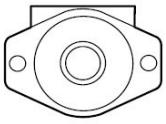
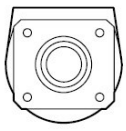
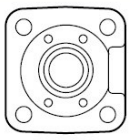
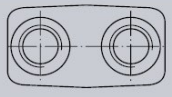
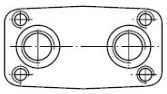
New Design



There will be no change to the current motor model code, so continue ordering the same part number as usual. The new shaft seal is backwards compatible with back-up ring & washer, however the old seals **cannot** be installed into new design housings. The current seal kits will remain available for a period of time to service legacy motors. The new seal kits can be orderded under a new part number and must pressed in and out of the new housing (not by hand). There are therefore two different new seal kits with and without the required tool to press the seal into and out of the housing.

Pos. 6	Current Seal Kit	New Seal Kit
Dichtsatz komplett **Seal Kit** **Jeu de joints** **Kit guarnizioni**	SK000090 Standard	SK000472 HNBR With Tool
Dichtsatz komplett **Seal Kit** **Jeu de joints** **Kit guarnizioni**	SK000091 FPM	SK000473 HNBR Without Tool
Dichtsatz komplett **Seal Kit** **Jeu de joints** **Kit guarnizioni**	SK000100 Vespel	

The housing designation will change from „MF012...“ to „MF022...“. The old housing will no longer be availible.

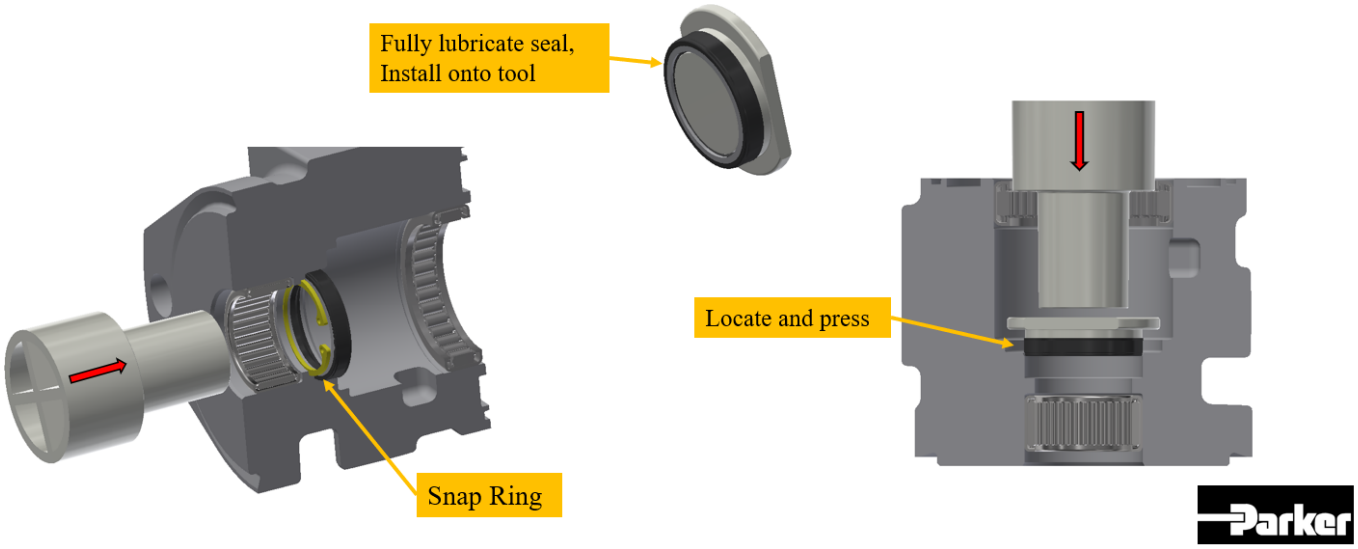
Pos. 1				
Gehäuse komplett Housing assembly Carter Scatola motore				
 G 1/2	MF022237J3 CODE CW	MF022256J3 CODE MW	MF022231J3 CODE DW	MF022260J3 CODE LW
 Universal	MF022253J3 CODE CN	MF022252J3 CODE MN	MF022254J3 CODE DN	----------
Endanschluss Rear port Orifices arriève Alim. laterale	MF022032J3 CODE CY	MF022021J3 CODE MY	MF022033J3 CODE DY	MF022041J3 CODE LY

Removal and Installation

The new seal must be pressed out and into the new housing. A specifically designed tool was delevloped to assist this process and is availibale with the seal kit (Seal kit with tool).

Instruction to remove and install new seal:

- Install snap ring through bearing to edge of seal
- Insert press tool through front bearing. Press out seal
- Lubricate new shaft seal
- Installl new seal onto installation tool
- Locate seal / tool into shaft seal bore
- Insert press tool and press until hard stop (0,9-1,3 kN)
- Remove tools



Thank you again for being a valued customer of Parker Hannifin's Pump & Motor Division Europe, we look forward to continued growth, success, and enhancements of our products in the years to come. Over the many years we've been supplying LSHT motors to the industry, you've come to expect exceptional performance and durability in our products, and we continue to strive for an ever-improving product to support your on-going and future needs for LSHT motors and Hydrostatic Transmissions. Thanks again for your partnership as we look forward to the next generation of Parker products to meet your new challenges and opportunities.

Please work with your local Parker representative and/or email the address below regarding this bulletin:

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