



Installation Instructions

MHV mechanical seal conversion kit (MHV P/N SK-6MS-KIT)
for Stokes 6-inch blowers (607, 615 & 622) with lip seals on input shaft



Updated February 9, 2007

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Part list

SK-6MS-KIT consists of the following parts:

- 2 DWLP-025-125 - Dowel Pin
- 6 F-2022-25-.63 - Fastener Socket Head 1/4-20 x 5/8 long
- 1 F-2022-35-1.00 - Fastener Socket Head 3/8-16x1 long
- 1 F-2022-45-1.00 - Fastener Socket Head 1/2-13x1 long
- 2 F-2522-25-.50 - Set Screw SCR Set Sup 1/4-20 x 1/2
- 4 FHY-7237X8 - SAE Plug w/ O-ring
- 1 FHY-7238X20 Big Plug w/ O-ring
- 1 FHY-7238X3 - Small SAE Plug w/ O-ring
- 1 MES-M - M Seal with -231 & -236 O-rings
- 1 OEY-M32 - Sight Glass
- 1 ORS-920-V90 - Sight Glass O-ring
- 1 SK-0150 – End Cover (casting)
- 1 SK-0151 Seal Carrier
- 1 SK-0152 Slinger Assy (sk-0152a & sk-0152b)
- 1 SK-0153 Belt guard bracket
- 1 SK-615MHR-018 - Dust Seal
- 2 W-112-10 - 1/4 USS Flat Washer
- 1 W-112-20 - 3/8 USS Flat Washer
- 1 W-112-30 - 1/2 USS Flat Washer
- 1 SK-STKR-23 - Lubrication 2 Place Label - ADDED 3/17/06
- 1 RRG-5100-196 - External Retaining Ring ADDED 4/10/06
- 4 F-1523-35-1.50 – 3/8-16 x 1-1/2 SHCS (socket head cap screw) for temporary use only (see step 4 of instructions)

(not in kit)

- 1 Loc-Tite 620 Retaining Compound
- 1 Loc-Tite 242 Thread Locker (Removable – blue)
- 1 Sealant (Gasket Eliminator)

Special Tools

- 1.) P/N ST-1103 for removal & installation of mechanical seal head (rotating, spring-loaded part, with steel-colored face)
- 2.) P/N ST-1102 for pressing mechanical seal seat (stationary part, with carbon face) into the seal carrier



Note: Plugs, oil eyes, and belt guard bracket may be pre-installed on the end cover. Make sure there are o-rings under the plug heads, and use vacuum grease on all o-rings.

Caution: when handling the mechanical seal, do not touch the seal faces with fingers or any hard object. The seal may fail due to very small amounts of contamination or minute damage to the faces. If any oil or dirt accidentally gets onto a seal face, it may be carefully cleaned, using alcohol on a lint-free cloth.

1. Be sure the blower and related equipment are properly disconnected from power and locked out.
2. Drain the oil from the drive end of the blower. There are two reservoirs on this end of the blower. Oil can be left in the reservoir on the other end of the blower.
3. Remove drive hardware:
 - a.) Direct drive units: Remove the motor, coupling housing, coupling, and key from the blower.
 - b.) Belt-drive units: Remove the belts, sheave, key, and back of the belt guard from the blower.
4. Remove 4 long screws from the existing end cover; 1 on each side of the dowel pin, at both the top and bottom of the end cover. Replace them with 4 shorter screws (3/8-16 x 1-1/2 – must be socket head cap screws) that will hold only the bearing housing (end plate) in place and prevent a possible leak after reassembly.
5. Remove the other screws from the end cover. Carefully pry the end cover off the dowel pins and remove it from the blower. Remove the shaft sleeve.
6. Check the radial runout on the shaft – it should be no more than .004". If the runout is greater, the blower should be rebuilt with new bearings.
7. Remove the rectangular oil slinger. There are two set screws holding it in place.
8. Clean the shaft and gasket surfaces of any debris.
9. Install the circular oil slinger from the kit. Be sure it seats against the shoulder on the shaft. Loc-Tite 242 should be applied to the screws.
10. Install the snap ring in its groove on the shaft, next to the oil slinger.
11. Make sure the gasket surface of the bearing housing is clean and dry. Then run a bead of sealant (gasket eliminator) around the gasket surface, staying inside the bolt pattern to prevent vacuum leaks through the screw holes.

Option: The seal head (rotating part with steel-colored face) may be installed now. The seal face must not be touched in the process. Then special tool #1 (ST-1067) will not be needed (see step 11.).



12. Install the m-seal end cover over the dowel pins, using care not to ding the shaft or muck up the sealant. Insert the screws (except where the 4 short screws are), and tighten them. After the other screws are tight, remove the 4 short screws from the bearing housing and replace them with the long screws through the end cover. There will be one long screw left over, because it is blocked by the oil sight glass at the lower right of the end cover.
13. Be sure there is an o-ring in the inside diameter of the seal head. Smear a thin film of vacuum grease on the o-ring. Assemble the seal head to special tool #1 (ST-1067), then carefully press the seal onto the shaft, until it stops against the shoulder. Thread the tool off the seal and remove the tool.
14. Place Loc-Tite #620 Retaining Compound around the outside of the dust seal, and press it into the outboard side the seal carrier, until it is flush.
15. Smear a thin film of vacuum grease on the smaller o-ring from the mechanical seal box, and place it into the groove in the inside diameter of the seal carrier.
16. Use special tool #2 (ST-1102) to press the seal seat into the seal carrier until it stops against the shoulder.
17. Smear a thin film of vacuum grease on the larger o-ring from the mechanical seal box, and place it into its groove in the flange of the seal carrier.
18. Taking care not to touch the seal face with anything but oil, place a few drops of blower oil onto the seal face, about evenly spaced.
19. Making sure the SAE plug on the side of the seal carrier is in the down position (6 o'clock), place the seal carrier assembly over the blower shaft, taking care not to nick the seal face, and keeping the assembly aligned with the shaft.
20. When the seal faces make contact, carefully compress and release the seal springs several times to be sure they are free. Use even pressure to make sure the seal carrier is not cocked in relation to the shaft.
21. While holding the seal faces lightly in contact, insert each of the 4 screws until its head just contacts its counterbore in the seal carrier. In order to compress the seal springs evenly, tighten the screws in sequence, a couple of turns at a time, until the o-ring is compressed and the screws are tight.
22. Fill the oil reservoirs with MHV Formula H blower oil and install the fill plugs.
23. Reinstall the drive components and replace all guards.
24. Do a helium leak check to verify vacuum integrity.

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