

INSTALLATION INSTRUCTIONS FOR MODEL 505

EQUIPMENT PREPARATION:

- A. Do not remove seal parts from protective packaging until equipment has been inspected and repaired.
- B. Disassemble and clean equipment. Radius end of shaft or sleeve to help start seal shaft o-ring. Remove any burrs or marks which may cut o-rings. If sleeve shows signs of wear, check to determine if points of wear are located in an area where either the shaft o-ring or the set screws are mounted on the sleeve. If these two areas are free from wear, the old sleeve may be used.
- C. If the impeller is adjustable, check and set before installation of seal.
- D. Dial indicate shaft or sleeve. Maximum allowable runout is .003" (0,08 mm) T.I.R. Allowable end play is .010" (0,25 mm). If excessive movement is observed, check for bent shaft or bad bearings and correct.
- E. Chemical compatibility between the materials of construction of the mechanical seal and the product must be established. If materials of construction are not compatible, do not attempt to install seal. If compatibility cannot be established, consult factory for assistance.

INSTALLATION FOR SINGLE-ENDED PUMPS:

1. Remove seals parts from protective packaging, keeping seal faces clean. Do not lubricate seal faces. Do not remove retainer clips.
2. Lubricate seal o-ring with silicone grease provided. **DO NOT USE PETROLEUM BASED LUBRICANTS.**
3. Carefully slide seal rotary unit over end of shaft or sleeve, taking care not to cut o-ring. A slight twisting action will help compress o-ring. Slide rotary back to first obstruction, do not remove retainer clips.
4. Place stationary seat and stuffing box gasket against stuffing box face. Apply second gasket provided to outer portion of stationary seat.
5. Place gland plate and stationary seat over gland studs.
6. Finger tighten gland nuts evenly. Then, in an opposing sequence, tighten gland nuts two to three flats (just enough to compress gasket).
7. Install impeller.
8. Make any final impeller and/or bearing adjustments.
9. Slide seal rotary up to stationary seat and touch the two seal faces together, making certain seal is compressed with clips.
10. Tighten set screws. Screws should be set evenly and not overtightened.
11. Remove retainer clips.
12. Reassemble remaining pump parts.
13. Install pump on line, making certain that seal flush connection is attached.

INSTALLATION FOR DOUBLE-ENDED PUMPS:

1. Remove seals parts from protective packaging, keeping seal faces clean. Do not lubricate seal faces. Do not remove retainer clips.
2. Insert stationary clamp-in seat into seal gland and slide gland, seat and gaskets onto shaft towards stuffing box.
3. Lubricate seal shaft o-ring with silicone grease provided. **DO NOT USE PETROLEUM BASED LUBRICANTS.**
4. Install seal rotary unit onto shaft. A slight twisting action will help compress the o-ring over the end of the shaft. Do not remove retainer clips or tighten set screws.
5. After all seal parts have been assembled loosely on rotary element, install pump bearings making any final impeller and/or bearing adjustments.
6. Care should be taken to make a new head gasket for the pump. The gasket should protrude over the edge of the stuffing box face by a minimum of 1/16" (1,6 mm).
7. Carefully reassemble pump casing, taking care not to hit the seal.
8. Cut gasket protrusions flush with the stuffing box face using a razor or sharp knife.
9. Pull up seal gland on studs. Finger tighten gland nuts evenly. Then, in an opposing sequence, tighten gland nuts two to three flats (just enough to compress gasket).
10. Tighten set screws. Screws should be set evenly and not overtightened.
11. Remove retainer clips.
12. Reassemble remaining pump parts.
13. Install pump on line, making certain that seal flush connections are attached and open.

INSTALLATION INSTRUCTIONS FOR MODEL SD-3

EQUIPMENT PREPARATION:

- A. Do not remove seal parts from protective packaging until equipment has been inspected and repaired.
- B. Disassemble and clean equipment. Radius end of shaft or sleeve to help start seal shaft o-ring. Remove any burrs or marks which may cut o-rings. If sleeve shows signs of wear, check to determine if points of wear are located in an area where either the shaft o-ring or the set screws are mounted on the sleeve. If these two areas are free from wear, the old sleeve may be used.
- C. If the impeller is adjustable, check and set before installation of seal.
- D. Dial indicate shaft or sleeve. Maximum allowable runout is .003" (0,08 mm) T.I.R. Allowable end play is .010" (0,25 mm). If excessive movement is observed, check for bent shaft or bad bearings and correct.
- E. Chemical compatibility between the materials of construction of the mechanical seal and the product must be established. If materials of construction are not compatible, do not attempt to install seal. If compatibility cannot be established, consult factory for assistance.

INSTALLATION FOR SINGLE-ENDED PUMPS: (USING CLAMP-IN SEAT)

1. Reinstall pump stuffing box.
2. Apply bluing to shaft or sleeve at a point directly under the stuffing box.
3. Scribe sleeve or shaft to show location of stuffing box.
4. Remove stuffing box.
5. Scribe a second mark 1 15/16" (49,2 mm) back from first scribe mark.
6. Carefully remove seal from package
7. Insert stationary clamp-in seat into seal gland and slide gland, seat and gaskets onto shaft toward bearing housing.
8. Lubricate seal shaft o-ring with silicone grease provided. DO NOT USE PETROLEUM BASED LUBRICANTS.
9. Install seal rotary unit onto shaft. A slight twisting action will help compress the o-ring over the end of the shaft.
10. Slide seal rotary unit over the shaft, locating the rear of the seal over the scribe mark (see note #5) which should be located 1 15/16" (49,2 mm) back from stuffing box face.
11. Tighten set screws. Screws should be set evenly and not overtightened.
12. Reinstall stuffing box and impeller.
13. Place gland and stationary seat assembly over gland studs. Slide stationary seat up to a point where it is in contact with the rotary seal face. At this point, when seal faces are just touching, there should be 5/32" (4,0 mm) between the face of the stuffing box and the gasket on the gland.
14. Finger tighten gland nuts evenly. Then, in an opposing sequence, tighten gland nuts two to three flats (just enough to compress gasket).
15. Reinstall and open flush connections.

INSTALLATION FOR DOUBLE-ENDED PUMPS: (USING CLAMP-IN SEAT)

1. Carefully remove seal from package.
2. Lubricate seal shaft o-ring with silicone grease provided. DO NOT USE PETROLEUM BASED LUBRICANTS.
3. Install seal rotary unit onto shaft. A slight twisting motion will help compress the o-ring over the end of the shaft.
4. Insert stationary clamp-in seat into seal gland and slide gland, seat and gaskets onto shaft towards stuffing box.
5. After all seal parts have been assembled loosely on rotary element, install pump bearings making any final impeller and/or bearing adjustments.
6. Set rear of rotary unit at the installation mark, 1 15/16" (49,2 mm) from the stuffing box face. Tighten set screws. At this point, when seal faces are just touching, there should be 5/32" (4,0 mm) between the face of the stuffing box and the gasket on the gland.
7. Care should be taken to make a new head gasket for the pump. The gasket should protrude over the edge of the stuffing box face by a minimum of 1/16" (1,6 mm) and should not touch rotary element.
8. Carefully reassemble pump casing, taking care not to hit the seal.
9. Cut gasket protrusions flush with stuffing box with a razor or sharp knife.
10. Pull up seal gland on studs. Finger tighten gland nuts evenly. Then, in an opposing sequence, tighten gland nuts two to three flats (just enough to compress gasket).
11. Reinstall and open all flush connections.

INSTALLATION INSTRUCTIONS FOR MODEL 500

EQUIPMENT PREPARATION:

- A. Do not remove seal parts from protective packaging until equipment has been inspected and repaired.
- B. Disassemble and clean equipment. Radius end of shaft or sleeve to help start seal shaft o-ring. Remove any burrs or marks which may cut o-rings. If sleeve shows signs of wear, check to determine if points of wear are located in an area where either the shaft o-ring or the set screws are mounted on the sleeve. If these two areas are free from wear, the old sleeve may be used.
- C. If the impeller is adjustable, check and set before installation of seal.
- D. Dial indicate shaft or sleeve. Maximum allowable runout is .003" (0,08 mm) T.I.R. Allowable end play is .010" (0,25 mm). If excessive movement is observed, check for bent shaft or bad bearings and correct.
- E. Chemical compatibility between the materials of construction of the mechanical seal and the product must be established. If materials of construction are not compatible, do not attempt to install seal. If compatibility cannot be established, consult factory for assistance.

INSTALLATION FOR SINGLE-ENDED PUMPS: (USING CLAMP-IN SEAT)

1. Reinstall pump stuffing box.
2. Apply bluing to shaft or sleeve at a point directly under the stuffing box.
3. Scribe sleeve or shaft to show location of stuffing box.
4. Remove stuffing box.
5. Scribe a second mark 1 7/16" (36,5 mm) back from first scribe mark.
6. Carefully remove seal from package
7. Insert stationary clamp-in seat into seal gland and slide gland, seat and gaskets onto shaft toward bearing housing.
8. Lubricate seal shaft o-ring with silicone grease provided. DO NOT USE PETRO-LEUM BASED LUBRICANTS.
9. Install seal rotary unit onto shaft. A slight twisting action will help compress the o-ring over the end of the shaft.
10. Slide seal rotary unit over the shaft, locating the rear of the seal over the scribe mark (see note #5) which should be located 1 7/16" (36,5 mm) back from stuffing box face.
11. Tighten set screws. Screws should be set evenly and not overtightened.
12. Reinstall stuffing box and impeller.
13. Place gland and stationary seat assembly over gland studs. Slide stationary seat up to a point where it is in contact with the rotary seal face. At this point, when seal faces are just touching, there should be 1/8" (3,2 mm) between the face of the stuffing box and the gasket on the gland.
14. Finger tighten gland nuts evenly. Then, in an opposing sequence, tighten gland nuts two to three flats (just enough to compress gasket).
15. Reinstall and open flush connections.

INSTALLATION FOR DOUBLE-ENDED PUMPS: (USING CLAMP-IN SEAT)

1. Carefully remove seal from package.
2. Lubricate seal shaft o-ring with silicone grease provided. DO NOT USE PETRO-LEUM BASED PRODUCTS.
3. Install seal rotary unit onto shaft. A slight twisting motion will help compress the o-ring over the end of the shaft.
4. Insert stationary clamp-in seat into seal gland and slide gland, seat and gaskets onto shaft towards stuffing box.
5. After all seal parts have been assembled loosely on rotary element, install pump bearings making any final impeller and/or bearing adjustments.
6. Set rear of rotary unit at the installation mark, 1 7/16" (36,5 mm) from the stuffing box face. Tighten set screws. At this point, when seal faces are just touching, there should be 1/8" (3,2 mm) between the face of the stuffing box and the gasket on the gland.
7. Care should be taken to make a new head gasket for the pump. The gasket should protrude over the edge of the stuffing box face by a minimum of 1/16" (1,6 mm) and should not touch rotary element.
8. Carefully reassemble pump casing, taking care not to hit the seal.
9. Cut gasket protrusions flush with stuffing box with a razor or sharp knife.
10. Pull up seal gland on studs. Finger tighten gland nuts evenly. Then, in an opposing sequence, tighten gland nuts two to three flats (just enough to compress gasket).
11. Reinstall and open all flush connections.

INSTALLATION INSTRUCTIONS FOR MODELS 525, 585-1, 585-2, 724, 730
MECHANICAL SEAL ASSEMBLY

EQUIPMENT PREPARATION:

- A. Visually inspect shaft or sleeve over which seal is to be installed for excessive burrs or sharp edges which might cut sleeve o-ring upon installation. If necessary, correct or replace part.
- B. Check for excessive shaft movement, maximum whip .003" T.I.R. (including sleeve, if so equipped) and .010" maximum end play. If necessary, replace shaft sleeve or bearing.
- C. If pump is equipped with shaft sleeve, inspect o-ring or gasket seal and replace if necessary to prevent possible leakage.
- D. Compare actual stuffing box dimensions with those shown on assembly drawing. If actual dimensions do not fall within tolerances shown on assembly drawing, do not attempt to install mechanical seal.
- E. The mechanical seal is manufactured from materials shown on contents label. Chemical compatibility with the product and barrier fluid must be established. If compatibility cannot be established, do not attempt to install mechanical seal. Consult factory.

INSTALL SEAL AS FOLLOWS: (USE ASSEMBLY DRAWING TO LOCATE PARTS SPECIFIED BELOW)

- 1. Only after equipment has been thoroughly inspected, necessary repairs made, and dimensional and chemical compatibility established, should seal be removed from protective packaging.
- 2. Lubricate sleeve o-ring with silicone lubricant furnished. DO NOT USE PETROLEUM BASED LUBRICANTS.
- 3. Slide seal assembly over shaft or sleeve.
- 4. Reassemble pump.
- 5. Slide seal assembly into position against stuffing box face.
- 6. Install nuts over gland studs and finger tighten. Then, in an opposing sequence, torque gland nuts uniformly.
- 7. Make any final impeller or bearing adjustments.
- 8. Tighten set screws (in lock collar) uniformly.
- 9. Loosen hex head screws and move assembly cams/clips out of path of lock collar, then retighten hex head screws. If cams are inaccessible, loosen hex head screws (if possible) and cams will automatically disengage from seal once equipment is started. If seal is equipped with alignment bushings, remove bushings (after clips are relocated) and discard.
- 10. Install any applicable seal flush or bypass connections.

REMOVE SEAL AS FOLLOWS: (USE ASSEMBLY DRAWING TO LOCATE PARTS SPECIFIED BELOW)

- 1. Before removing seal, loosen hex head screws and refasten assembly cams/clips to lock collar, then retighten hex head screws.
- 2. Remove any pipe connections from seal gland plate.
- 3. Loosen shaft set screws (in lock collar).
- 4. Remove gland nuts.
- 5. With both hands, grasp seal gland plate by outer diameter and pull seal assembly beyond end of shaft.

INSTALLATION INSTRUCTIONS FOR MODEL 585-3
MECHANICAL SEAL ASSEMBLY

EQUIPMENT PREPARATION:

- A. Visually inspect shaft or sleeve over which seal is to be installed for excessive burrs or sharp edges which might cut sleeve o-ring upon installation. If necessary, correct or replace part.
- B. Check for excessive shaft movement, maximum whip .003" T.I.R. (including sleeve, if so equipped) and .010" maximum end play. If necessary, replace shaft sleeve or bearing.
- C. If pump is equipped with shaft sleeve, inspect o-ring or gasket seal and replace if necessary to prevent possible leakage.
- D. Compare actual stuffing box dimensions with those shown on assembly drawing. If actual dimensions do not fall within tolerances shown on assembly drawing, do not attempt to install mechanical seal.
- E. The mechanical seal is manufactured from materials shown on contents label. Chemical compatibility with the product and barrier fluid must be established. If compatibility cannot be established, do not attempt to install mechanical seal. Consult factory.

INSTALL SEAL AS FOLLOWS: (USE ASSEMBLY DRAWING TO LOCATE PARTS SPECIFIED BELOW)

1. Only after equipment has been thoroughly inspected, necessary repairs made, and dimensional and chemical compatibility established, should seal be removed from protective packaging.
2. Lubricate sleeve o-ring with silicone lubricant furnished. DO NOT USE PETROLEUM BASED LUBRICANTS.
3. Slide seal assembly over shaft or sleeve.
4. Reassemble pump.
5. Slide seal assembly into position against stuffing box face.
6. Install nuts over gland studs and finger tighten. Then, in an opposing sequence, torque gland nuts uniformly.
7. Make any final impeller or bearing adjustments.
8. Tighten set screws (in lock collar) uniformly.
9. Loosen hex head screws and slide assembly clips out of path of lock collar, then retighten hex head screws.
10. Install any applicable seal flush or bypass connections.
11. FOR QUENCH/DRAIN SERVICE: Connect quench (in top of seal gland plate) to a clean liquid flush source. Connect drain (in bottom of seal gland plate) to a liquid collection point.
FOR VENT/DRAIN SERVICE: Connect vent (in top of seal gland plate) to a vapor collection point. Connect drain (in bottom of seal gland plate) to a liquid collection point.

REMOVE SEAL AS FOLLOWS: (USE ASSEMBLY DRAWING TO LOCATE PARTS SPECIFIED BELOW)

1. Before removing seal, loosen hex head screws and reinstall assembly clips into groove on lock collar, then retighten hex head screws.
2. Remove any pipe connections from seal gland plate.
3. Loosen shaft set screws (in lock collar).
4. Remove gland nuts.
5. With both hands, grasp seal gland plate by outer diameter and pull seal assembly beyond end of shaft.

INSTALLATION INSTRUCTIONS FOR MODEL 585-4
MECHANICAL SEAL ASSEMBLY

EQUIPMENT PREPARATION:

- A. Visually inspect shaft or sleeve over which seal is to be installed for excessive burrs or sharp edges which might cut sleeve o-ring upon installation. If necessary, correct or replace part.
- B. Check for excessive shaft movement, maximum whip .003" T.I.R. (including sleeve, if so equipped) and .010" maximum end play. If necessary, replace shaft sleeve or bearing.
- C. If pump is equipped with shaft sleeve, inspect o-ring or gasket seal and replace if necessary to prevent possible leakage.
- D. Compare actual stuffing box dimensions with those shown on assembly drawing. If actual dimensions do not fall within tolerances shown on assembly drawing, do not attempt to install mechanical seal.
- E. The mechanical seal is manufactured from materials shown on contents label. Chemical compatibility with the product and barrier fluid must be established. If compatibility cannot be established, do not attempt to install mechanical seal. Consult factory.

INSTALL SEAL AS FOLLOWS: (USE ASSEMBLY DRAWING TO LOCATE PARTS SPECIFIED BELOW)

1. Only after equipment has been thoroughly inspected, necessary repairs made, and dimensional and chemical compatibility established, should seal be removed from protective packaging.
2. Lubricate sleeve o-ring with silicone lubricant furnished. DO NOT USE PETROLEUM BASED LUBRICANTS.
3. Slide seal assembly over shaft or sleeve.
4. Reassemble pump.
5. Slide seal assembly into position against stuffing box face.
6. Install nuts over gland studs and finger tighten. Then, in an opposing sequence, torque gland nuts uniformly.
7. Make any final impeller or bearing adjustments.
8. Tighten set screws (in lock collar) uniformly.
9. Loosen hex head screws and rotate assembly cams out of path of lock collar, then retighten hex head screws. If cams are inaccessible, loosen hex head screws (if possible) and cams will automatically disengage from seal once equipment is started.
10. Install any applicable seal flush or bypass connections.
11. FOR VENT/DRAIN SERVICE: Connect vent (in top of seal gland plate) to a vapor collection point. Connect drain (in bottom of seal gland plate) to a liquid collection point.

REMOVE SEAL AS FOLLOWS: (USE ASSEMBLY DRAWING TO LOCATE PARTS SPECIFIED BELOW)

1. Before removing seal, loosen hex head screws and reinstall assembly cams onto lip on lock collar, then retighten hex head screws.
2. Remove any pipe connections from seal gland plate.
3. Loosen shaft set screws (in lock collar).
4. Remove gland nuts.
5. With both hands, grasp seal gland plate by outer diameter and pull seal assembly beyond end of shaft.

INSTALLATION INSTRUCTIONS FOR MODELS 590, 595, 600
MECHANICAL SEAL ASSEMBLY

EQUIPMENT PREPARATION:

- A. Visually inspect shaft or sleeve over which seal is to be installed for excessive burrs or sharp edges which might cut sleeve o-ring upon installation. If necessary, correct or replace part.
- B. Check for excessive shaft movement, maximum whip .003" T.I.R. (including sleeve, if so equipped) and .010" maximum end play. If necessary, replace shaft sleeve or bearing.
- C. If pump is equipped with shaft sleeve, inspect o-ring or gasket seal and replace if necessary to prevent possible leakage.
- D. Compare actual stuffing box dimensions with those shown on assembly drawing. If actual dimensions do not fall within tolerances shown on assembly drawing, do not attempt to install mechanical seal.
- E. The mechanical seal is manufactured from materials shown on contents label. Chemical compatibility with the product and barrier fluid must be established. If compatibility cannot be established, do not attempt to install mechanical seal. Consult factory.

INSTALL SEAL AS FOLLOWS: (USE ASSEMBLY DRAWING TO LOCATE PARTS SPECIFIED BELOW)

1. Only after equipment has been thoroughly inspected, necessary repairs made, and dimensional and chemical compatibility established, should seal be removed from protective packaging.
2. Lubricate sleeve o-ring with silicone lubricant furnished. DO NOT USE PETROLEUM BASED LUBRICANTS.
3. Slide seal assembly over shaft or sleeve.
4. Reassemble pump.
5. Slide seal assembly into position against stuffing box face.
6. Install nuts over gland studs and finger tighten. Then, in an opposing sequence, torque gland nuts uniformly.
7. Make any final impeller or bearing adjustments.
8. Tighten set screws (in lock collar) uniformly.
9. Loosen hex head screws and move assembly cams/clips out of path of lock collar, then retighten hex head screws. If cams are inaccessible, loosen hex head screws (if possible) and cams will automatically disengage from seal once equipment is started.
10. Install any applicable seal flush or bypass connections.
11. **FOR DOUBLE SEAL OPERATION:** Circulate barrier fluid in through connection in BOTTOM of gland plate, out through connection in TOP of seal gland plate. Maintain a constant pressure of 15 p.s.i. (min.) over maximum stuffing box pressure.
FOR TANDEM SEAL OPERATION: Circulate barrier fluid in through connection in BOTTOM of gland plate, out through connection in TOP of seal gland plate. Maintain a constant pressure below stuffing box pressure but above product vapor pressure.

REMOVE SEAL AS FOLLOWS: (USE ASSEMBLY DRAWING TO LOCATE PARTS SPECIFIED BELOW)

1. Before removing seal, loosen hex head screws and reinstall assembly cams/clips into groove on lock collar, then retighten hex head screws.
2. Remove any pipe connections from seal gland plate.
3. Loosen shaft set screws (in lock collar).
4. Remove gland nuts.
5. With both hands, grasp seal gland plate by outer diameter and pull seal assembly beyond end of shaft.

INSTALLATION INSTRUCTIONS FOR MODEL 510
MECHANICAL SEAL ASSEMBLY

EQUIPMENT PREPARATION:

- A. Visually inspect shaft or sleeve over which seal is to be installed for excessive burrs or sharp edges which might cut sleeve o-ring upon installation. If necessary, correct or replace part.
- B. Check for excessive shaft movement, maximum whip .003" T.I.R. (including sleeve, if so equipped) and .010" maximum end play. If necessary, replace shaft sleeve or bearing.
- C. If pump is equipped with shaft sleeve, inspect o-ring or gasket seal and replace if necessary to prevent possible leakage.
- D. Compare actual stuffing box dimensions with those shown on assembly drawing. If actual dimensions do not fall within tolerances shown on assembly drawing, do not attempt to install mechanical seal.
- E. The mechanical seal is manufactured from materials shown on contents label. Chemical compatibility with the product and barrier fluid must be established. If compatibility cannot be established, do not attempt to install mechanical seal. Consult factory.

INSTALL SEAL AS FOLLOWS: (USE ASSEMBLY DRAWING TO LOCATE PARTS SPECIFIED BELOW)

1. Only after equipment has been thoroughly inspected, necessary repairs made, and dimensional and chemical compatibility established, should seal be removed from protective packaging.
2. Lubricate sleeve o-ring with silicone lubricant furnished. DO NOT USE PETROLEUM BASED LUBRICANTS.
3. Slide seal assembly over shaft or sleeve.
4. Reassemble pump.
5. Slide seal assembly into position against stuffing box face.
6. Install nuts over gland studs and finger tighten. Then, in an opposing sequence, torque gland nuts uniformly.
7. Make any final impeller or bearing adjustments.
8. Tighten set screws (in lock collar) uniformly.
9. Loosen hex head screws and move assembly cams/clips out of path of lock collar, then retighten hex head screws. If cams are inaccessible, loosen hex head screws (if possible) and cams will automatically disengage from seal once equipment is started.
10. Install any applicable seal flush or bypass connections.
11. FOR DOUBLE SEAL OPERATION: Circulate barrier fluid in through connection in gland plate labeled "inlet", out through connection in seal gland plate labeled "outlet". Maintain a constant pressure of 15 p.s.i. (min.) over maximum stuffing box pressure.

REMOVE SEAL AS FOLLOWS: (USE ASSEMBLY DRAWING TO LOCATE PARTS SPECIFIED BELOW)

1. Before removing seal, loosen hex head screws and reinstall assembly cams/clips into groove on lock collar, then retighten hex head screws.
2. Remove any pipe connections from seal gland plate.
3. Loosen shaft set screws (in lock collar).
4. Remove gland nuts.
5. With both hands, grasp seal gland plate by outer diameter and pull seal assembly beyond end of shaft.