



Barring Motor

T480 Series

Maintenance Information



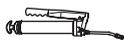
Save These Instructions

 **WARNING**

Always wear eye protection when operating or performing maintenance on this Barring Motor. Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this Barring Motor or before performing any maintenance on this Barring Motor.

Note: When reading the instructions, refer to exploded diagrams in parts Information Manuals when applicable (see under Related Documentation for form numbers).

Lubrication


Ingersoll Rand No. 28

Ingersoll Rand No. 10

We recommend the use of an air line lubricator in the air supply line. Attach the unit as close to the tool as practical. We recommend using an **Ingersoll Rand No. C28-04-FKG0-28 Filter-Regulator-Lubricator Unit**. Where the lubricator cannot be permanently mounted, use **Ingersoll Rand No. 3LUB8 lubricator**. After each 40,000 cycles or one month, whichever occurs first, inject 1.5 cc of **Ingersoll Rand No. 28 Grease** into the Grease Fitting (14). Do not grease excessively. Too much grease in the Gear Case (13) will cause heating.

Grease leakage from the spindle end is also an indication that an excessive amount of grease has accumulated within the Gear Case.

For continuous operation:

Continuous operation of geared motors generates heat which can cause grease to dry out and cake. The addition of fresh grease temporarily rectifies this problem. However, a small amount of oil should be added to the grease to replace the oil which was lost during continuous operation. The oil creates a slurry which makes the grease less likely to dry out and cake. **After each eight hours of continuous operation or as experience indicates**, remove Grease Fitting (14) and add ten drops of the recommended oil to the opening of grease fitting.

Maintenance

Disassembly

NOTICE

Always disconnect the air supply before doing any maintenance on this Barring Motor. Always use protective eyewear when performing maintenance on a tool or when operating a tool.

General Instructions

- Do not disassemble the tool any further than necessary to replace or repair damaged parts.
- Do not disassemble the Motor unless you have a complete set of new gaskets and O-rings for replacement.
- Do not remove any part which is a press fit in or on a subassembly unless the removal of that part is necessary for repair or replacement.
- Whenever grasping a tool or part in a vise, always use leather-covered or copper-covered vise jaws to protect the surface of the part and help prevent distortion. This is particularly true of threaded members and housings.
- The modular construction of the Series T480 Barring Motors permits selective disassembly whereby gearing can be separated from the power unit and disassembled without removing the Multi-Vane Motor from the Motor Housing, or the Multi-Vane Motor can be removed and disassembled without removing the gear train from the gear chambers. Because of the modular construction, the steps in the following Disassembly Procedures can be sequentially changed to meet the particular situation.
- When removing a Planet Gear Shaft, always support the rear (short hub end) of the Gear Head, Gear Frame or Spindle and press on the front end of the Shaft being removed. The shaft holes through the webs are slightly tapered so that the Shaft is a tighter fit in the front web.

Pinion & Hose removal

- Refer to drawing 45535762, and associated parts list, for additional information regarding part numbers and position within the assembly. It is not necessary to remove the Mounting Flange to proceed with this disassembly.
- Disconnect, and remove if necessary, the Piston Activation Air Tubes, (two places) (22).

- Remove the Piston Locking Plunger Assembly (18).
- Disconnect Air Supply Tube (11).
- Disconnect Swivel Elbow (two places) (12) from Barring Motor Assembly (13).
- Place the Barring Motor on a workbench in a horizontal position, grasp Pinion (20) in copper-covered, or leather-covered, vise jaws.

NOTICE

Do not use excessive clamping force on the Drive Pinion. Grasp it just firmly enough to hold it. Make certain the Barring Motor is firmly supported on the workbench.

- Remove the Drive Pinion Screw (21).
- Loosen the vise and remove the Drive Pinion from the Barring Motor Assembly (13).

Separation of Major Module Sub-assemblies

NOTICE

Removal of the Mounting Flange is not necessary for service.

- Refer to drawing 45505153, and associated parts list, for additional information regarding part numbers and position within the assembly. It is not necessary to remove the Mounting Flange to proceed with this disassembly.
- If necessary, mark the location of the mounting flange to ensure proper orientation upon reassembly. Remove the six Mounting Flange Screws (10). Remove the Mounting Flange (9) from the Barring Motor.
- Remove the four Screws (6) that attach the Motor-Brake/Gearing Assembly (1, 2) to the offset gear case and separate the Motor-Brake/Gearing Assembly from the Drive Assembly (3).
- Remove the three Screws (4) that secure the Motor/Brake Assembly (1) to the Gearing Assembly (2) and separate the two assemblies.

Disassembly of the Drive Module

1. Refer to drawing 45504115 and associated parts list, for additional information regarding part numbers and position within the assembly. The procedure outlined in the section assumes that the Pinion, Mounting Flange, and Piston Locking Plunger have already been removed per the instructions of the previous section. It is not necessary to remove the Mounting Flange to proceed with this disassembly.
2. Remove the eleven Screws and Lockwashers (26, 27) that secure the Drive Housing (25) to the Offset Gear Case (3) and separate the Drive Housing, Gear Case Cover and Drive Gear (8, 14, 25), plus associate parts, from the Offset Gear Case.
3. Separate the Drive Gear (8) and Gear Case Cover (14) from the Drive Housing (25).
4. If necessary, press the Drive Gear (8) from the Gear Case Cover (14).
5. Do not remove the Gear Case Cover Seal (11) from the Gear Case Cover unless necessary, and if you have another on hand.
6. If necessary, drive the Seal (24) and the Bearing (23) from the Drive Housing. Removal of these parts will likely cause damage and will necessitate their replacement.
7. Pull the Output Shaft (22) and the Piston Assembly (13, 17, 18, 19, 20, and 21) out of the Drive Gear (8).
8. Remove the Retaining Ring (13, 21), and disassembly the Piston Assembly.

Disassembly of the Gearing Module

1. Refer to Drawing 45503422, and associated parts list, for detailed information regarding the part numbers and position within the sub-assembly. This section assumes the Barring Motor has been broken into major Module sub-assemblies, as outlined earlier in the manual.
2. Grasp the Gear Head Bearing (1) and pull the assembled Gear Head (6) out of the Gear Case (13).
3. Using a bearing puller, pull the Gear Head Bearing (1) off the rear hub of the Gear Head (6).
4. Support the short hub end of the Gear Head on the table of an arbor press and press the Gear Head Planet Gear Shafts (2) from the Gear Head. Make certain the Shafts are pressed out toward the short hub because the holes in the Gear Head are tapered smaller toward the front of the Gear Head.
5. Remove the Gear Head Planet Gears (4) from the Gear Head, (6). Remove the Rotor Pinion (3).
6. If the Gear Head Planet Gear Bearings (5) must be replaced, press them from the Planet Gears.
7. Remove the Screws (20) that attach the Flange (18) to the Gear Case (13) and remove the Flange.
8. Supporting the Front Spindle Bearing (17) from the back side (opposite the output end), Press the Spindle (12) from the bearing.
9. Holding the Gear Case, push the output end of the Spindle (12) to move the Spindle Assembly out the motor end of the Gear Case.
10. Using a bearing puller, pull the Spindle Rear Bearing (8) off the rear hub of the Spindle (12).
11. Support the short hub end of the Spindle on the table of an arbor press and press the Spindle Planet Gear Shafts (9) from the Spindle. Make certain the Shafts are pressed out toward the short hub because the holes in the gear frame of the Spindle are tapered smaller toward the output end of the spindle shaft. Remove the Spindle Planet Gears (11) from the Spindle.

12. If the Spindle Planet Gear Bearings (10) must be replaced, press them from the Planet Gears.
13. Insert a hooked tool into the flange end of the Gear Case and catching the spindle end of the Internal Gear (7), pull it from the Gear Case.

Disassembly of the Motor/Brake Module

1. Refer to Drawing 045503323 and associated part lists, for detailed information regarding the part numbers and position within the sub-assembly. This section assumes the Barring Motor has been broken into major Module sub-assemblies, as outlined earlier in the manual.
2. Remove the two Motor Retaining Washers (43).
3. Grasp the pinion of the Rotor (39) and pull the assembled motor out of the Motor Housing (33). It may be necessary to gently tap the face of the Motor Housing with a plastic hammer to jar the assembly free.
4. Grasp the Cylinder (38) in one hand and using a plastic hammer, sharply rap the spline on the end of the Rotor to remove the Front End Plate (41) and Front Rotor Bearing (42) which will free the Cylinder and Vanes (40). Remove the Cylinder Dowel (35).
5. Jar the Front Rotor Bearing (42) out of the Front End Plate (41) by bumping the End Plate on a wooden block.
6. Using snap ring pliers remove the Rear Rotor Bearing Retainer (34) from the hub of the Rotor and remove the Rear Rotor Bearing (36) and Rear End Plate (37).
7. Unscrew the four Shoulder Bolts (1) and remove the assembled Spring and Piston Housing (11).
8. If you are going to disassemble the Spring and Piston Housing (11), proceed as follows:
 - a. Remove the Plate Screws (3) and the Plate (4).
 - b. Place the assembly, Pressure Plate (6) downward, on an arbor press or place the assembly vertically in a vise.
 - c. While holding the Housing (11) against the compression of the Springs (12), hold the Pressure Plate Screw (7) with a wrench and unscrew the Piston Nut (5).
 - d. Ease up on the arbor press slowly and carefully.
 - e. Pull off the Pressure Plate and push the Piston (9) from the Housing.
9. Withdraw the Brake Plates (14) and Brake Discs (15).
10. Withdraw the Brake Driver (19) and sub-assembly, includes items (16, 17, 18, 20, 21, 22, 23, and 30) from the Backhead.
11. Clamp the Brake Driver (19) in a vise, or hold the hex end with the appropriate wrench, and remove the Screw (16) from the Brake Driver. Disassemble the remaining components.
12. To separate the Backhead (25) from the Motor Housing (33) remove the three Screws (24) located within the Backhead.
13. Remove the Motor Gasket (31) from the bottom of the bore for the motor.
14. Remove the Spool (29), if necessary, to access the Ball (27) that provides direction control to the brake.

Assembly

General Instructions

1. Always use protective eyewear when performing maintenance on a tool or operating a tool.
2. Unless otherwise noted, always press on the stamped end of a needle bearing when installing the needle bearing in a recess.
3. Always press on the inner ring of a ball-type bearing when installing the bearing on a shaft.
4. Always press on the outer ring of a ball-type bearing when installing the bearing in a bearing recess.
5. Check every bearing for roughness. If an open bearing must be cleaned, wash it thoroughly in clean solvent and dry with a clean cloth. Sealed or shielded bearings should never be cleaned. Work grease thoroughly into every open bearing before installation.
6. Except for bearings, always clean every part and wipe every part with a thin film of oil before installation.

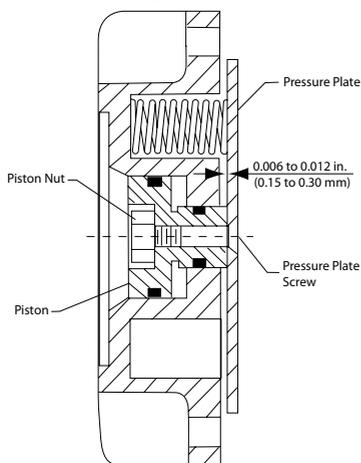
- When grasping a Motor or one of its parts in a vise, always use leather or copper vise jaw covers to protect the surface of the part and reduce the likelihood of damage. This is particularly important when clamping threaded members, shafts with splines, etc. Apply o-ring lubricant to each o-ring before assembly and use only new gaskets when reassembling the Motor.
- When installing Planet Gears in a Spindle, Gear Head or Gear Frame, always support the front web and press in the shaft from rear to front. Shaft holes through the webs are slightly tapered so that shaft is tighter in front web. Always replace Planet Gears in sets.

Assembly of the Motor/Brake Module

- Refer to Drawing 45503323 and associated part lists, for detailed information regarding the part numbers and position within the sub-assembly.
- If previously disassembled, position the Ball (27), within the Backhead (25). Place the O-Ring (28) onto the Spool (29). Apply a small amount of thread sealant to the threads of the Spool and thread into the Backhead, tighten securely.
- Assemble the Brake Driver sub-assembly.
 - Place the Snap Ring (21) onto the Brake Driver (19). Place Washer (20) over Snap Ring. Using an arbor press, and a punch appropriate to press on the bearing inner race only, press the Bearing (22) onto the brake driver until it stops against the Snap Ring.
 - Clamp the Brake Adapter (30) in a vise, vertically; clamping on the hex portion of the Adapter. Position the Spacer (23) on the Adapter.
 - Position the Brake Driver, Bearing, Washer, and Snap Ring assembly (19, 20, 21, and 22) onto the Adapter.
 - Place the O-ring (18) and Retainer (17) onto the Brake Drive and secure with the Screw (16). Tighten to 30 in-lbs.
- Insert the Gasket (31) into the counterbore of the Backhead for the Motor Housing and make sure it is properly aligned.
- Place O-ring (32) in Backhead (25).
- Assemble the Backhead (25) to the Motor Housing (33) using three Screws (24). Tighten to 120 in-lbs.
- Place the Brake Driver sub-assembly (see paragraph 3 in this section) in the Backhead (25); the bearing must seat fully in the bore provided in the Backhead. Set aside and proceed with the next item.

- Lightly coat the Piston Seals (8, 10) with O-ring lubricant, and install them in their respective grooves on the Brake Piston (9).
- Taking care not to cut the Seals, slide the Piston into the Brake Spring and Piston Housing (11).
- Place the Spring and Piston Housing on the workbench so that the three spring cavities are upward.
- Place a Spring (12) in each cavity.
- Install the Pressure Plate Screw (7) so that the screw head enters the counterbore in the Pressure Plate (6). Place the Pressure Plate and Screw over the Springs so that the Screw enters the hole in the Brake Piston.
- Using a vise, carefully compress the Pressure Plate against the Brake Spring and Piston Housing until the Screw or stud protrudes through the Piston. Start the Piston Nut (5) onto the Screw (7).
- Remove the assembly from the vise.
- Tighten the Pressure Plate Screw and Piston Nut until a .006 to .012 in. (0.15 to 0.30 mm) gap exists between the Pressure Plate and Piston. See Dwg. MHTPA0488.
- Place Plate (4) in the recess of the Spring and Piston Housing, and install the Plate Screws (3).
- Place the Backhead (25), and assembled components on a work table so that the brake side is up.
- Place a Brake Plate (14) followed by a Brake Disc (15), Brake Plate, Brake Disc, and two Brake Plates over the Brake Driver, aligning the notches in the Brake Plates with the bolt holes in the Backhead (25). Insert the O-ring (13) into the hole in the Brake Piston Housing (11). Align the bolt holes in the Brake Spring and Piston Housing with those in the Backhead (25) and install the four Shoulder Bolts (1) and Lockwashers (2).
- Push the Rear End Plate (37), flat face leading, onto the short hub of the Rotor (39).
- Push the Rear Rotor Bearing (36) onto the short hub of the Rotor into the recess of the Rear End Plate and install the Rear Rotor Bearing Retainer (34) in the groove on the shaft of the Rotor to retain the Bearing and End Plate.
- Place a Vane (40) in each vane slot in the Rotor and place the Cylinder (38) down over the Rotor and Vanes and against the Rear End Plate. Make certain the holes in the Cylinder and End Plate can be aligned. If they don't align, invert the Cylinder.
- Press the Front Rotor Bearing (42) into the bearing recess of the Front End Plate (41).
- Press the Front Rotor Bearing, Front End Plate leading, onto the spline end of the rotor shaft until the End Plate contacts the Cylinder.
- Use a 1/8" rod approximately 12" long to align the cylinder dowel holes in the Front End Plate, Cylinder and Rear End Plate. Insert the end of the rod at the Rear End Plate end into the dowel hole in the Motor Housing. Slide the assembled motor along the rod into the Motor Housing until it stops against the bottom of the motor bore.
- Remove the assembly rod and install the Cylinder Dowel (35) in its place.
- Install the two Motor Retaining Washers (43), the concave face of both Washers trailing, over the hub of the Front End Plate.

Brake Spring and Piston Housing Assembly



(Dwg. MHTPA0488)

Assembly of Gearing Module

- Refer to Drawing 45503422 and associated parts list, for detailed information regarding the part numbers and position within the sub-assembly.
- If the Spindle Planet Gear Bearings (10) were removed from the Spindle Planet Gears (11), press new Bearings into the Gears using a needle bearing inserting tool similar to the one shown in Dwg. TPC488. Press one Bearing in from each end of the Gear until they are flush with the face of the Gear. If any Gears are damaged, install a complete new set of Gears.
- Support the web at the output end of the Spindle (12) on the table of an arbor press and position a Spindle Planet Gear with bearing inside the web making certain that the pin holes are in alignment. The holes in the webs of the Spindle are tapered and smaller toward the output end of the Spindle. Press the Spindle Planet Gear Shafts (9) through the rear web and Bearings into the front web until the Shaft is flush with the face of the rear web.

4. Pressing only on the inner race of the Bearing, mount the Rear Spindle Bearing (8) onto the Spindle.
5. Apply lubricant to the gearing and position the Spindle within the Gear Case (13), making sure the Planet Gears properly engage the gear teeth of the Gear Case.
6. On the table of an arbor press and using a piece of tubing that will clear the Spindle, Support the rear end of the Spindle and press the Spindle Front Bearing (17) onto the Spindle.
7. Align one of the exterior slots on the Internal Gear (7) with the two Internal Gear Keys (16) located opposite the Grease Fitting (14) in the Gear Case (13). Push the Internal Gear into the Gear Case until it stops against the gear teeth in the Case.
8. If the Gear Head Planet Gear Bearings (5) were removed from the Gear Head Planet Gears (4), press new Bearings into the Gears using a needle bearing inserting tool similar to the one shown in Dwg. TPC488. If any Gears are damaged, install a complete new set of Gears. Do not mix old Gears with new Gears in the same motor.
9. Support the web at the spline shaft end of the Gear Head (6) on the table of an arbor press and position a Gear Head Planet Gear with a Bearing in the web. The holes in the webs of the Gear Head are tapered and smaller toward the spline shaft end of the Gear Head. Press a Gear Head Planet Gear Shaft (2) through the rear web and Bearing into the front web until the Shaft is flush with the face of the rear web.
10. Repeat Step 9 with the remaining Gear Head Planet Gear and Bearing.
11. Stand and support the assembled Gear Head on the table of an arbor press with the spline shaft end downward and press the Gear Head Bearing (1) onto the hub of the Gear Head.
12. Apply lubricant to the gear head gearing and while engaging the spline of the Gear Head with the gearing of the Spindle and Internal Gear, slide the assembled Gear Head into the Gear Case.
13. Mount the Offset Gear Case Adapter (18) to the Gear Case (13) using the six Screws (20).
14. Slide the Offset Gear (21) onto the spline shaft and secure with the Snap Ring (22).
15. Lubricate and install the O-ring (19).
10. Place the Gasket (5) on the Offset Gear case, and slide the assembled Gear Case Cover (14), bearing recess first and seal to the outside, down over the Drive Gear until it contacts the Offset Gear Case.
11. Position the Drive Shaft (22) along with the Bearing and Snap Ring, into the Piston (18).
12. Insert the Spacer (20) and secure with the Snap Ring (21).
13. Place the O-ring (17) on the Piston and lubricate with an appropriate O-ring lubricant. Apply a thin coat of **Ingersoll Rand** No. 11 Bearing Grease to the outside surface of the Piston.
14. Mount the Piston (18) and Drive Shaft Assembly into the Drive Gear (8).
15. Place the Drive Housing (25) over the Drive Shaft (22) and down until it contacts the Gear Case Cover. Wipe a thin film of **Ingersoll Rand** No. 11 Bearing Grease on the bore of the Drive Housing.
16. Rotate to the proper alignment and secure with the eleven Bolts (27) and Lock washers (26). Tighten to 11-12 ft-lbs.
17. Lubricate and install the O-ring (1) in the groove at the motor end of the Offset Gear case.

Assembly of the Major Modules

1. Refer to drawing 45505153, and associated parts list, for more details on Module assembly and the associated components.
2. Insert the Gearing Module (2) into the Drive Assembly (3). Rotate the Output Shaft as necessary to allow the Gearing Module to fully seat. Mount the Valve Mounting Bracket (8) onto the Gearing Module. Secure with the four Screws (6) and Lockwashers (7). Tighten to between 4-1/2 and 5 ft-lbs.
3. Insert the Motor/Brake Module (1) into the Gear Module (2). Rotate the Output Shaft as necessary to allow the Motor/Brake Module to fully seat. Secure with the three Screws (4) and Lockwashers (5). Orient as necessary to align the holes and to position the inlet air holes. Tighten to between 4-1/2 and 5 ft-lbs.
4. Mount the Flange (9) onto the Drive Housing. Rotate to properly position, and to align the holes. Fasten with the six screws (10). Tighten the Screws to between 12-14 ft-lbs.

Assembly of the Pinion and Associated Components

1. Refer to drawing 45535762, and associated parts list, for more details on assembly and the associated components.
2. Place the Pinion (20) onto the Drive Shaft and secure with the Pinion Bolt (21) and tighten to 180 - 220 ft-lbs.
3. Make sure the Pinion and the Drive Shaft are fully retracted into the Drive Housing. Insert the Lock Pin Assembly (18) into the forward most hole in the Drive Housing and tighten securely.
4. Reconnect the Piston Activation Air Tubes, (two places) (22).
5. Reconnect the Air Supply Tube (11).
6. Apply thread sealant (5MB-441) to threads of the Swivel Elbow (two places) (12) and reconnect to the Barring Motor Assembly (13). Tighten to hand tight plus 1 to 2 turns.
7. Attach remaining valving and hose if necessary.

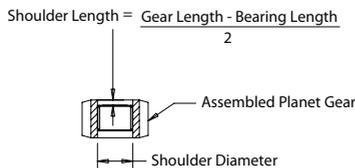
Assembly of the Valve and Connector Kit

1. Refer to drawing 45535762, and associated parts list, for more details on assembly and the associated components.
2. Thread Sealant (5MB-441) required on all NPT connections in the assembly.
3. Tighten all NPT threads in the assembly to hand tight plus 1 to 2 turns.
4. Assemble three Elbows (14) to Valve (16). Place the Elbows in Port 1, Port 2, and Port 4 of Valve and tighten to hand tight.
5. Assemble the Valve (16) to the Valve Mounting Bracket on the Barring Motor Assembly using the Screws (15).
6. Tighten the Elbows (14) on the Valve (16) to the required specifications and orient as shown for routing of the Piston Activation Tubes (11, 22).
7. Place the Elbow (17) into the "IN" Port of the Drive Housing and orient approximately as shown to facilitate routing of the Piston Activation Tube (22). Tighten to the specified requirements.

Assembly of the Drive Module

1. Refer to Drawing 45504115 and associated parts list, for detailed information regarding the part numbers and position within the sub-assembly.
2. If removed during disassembly, place the Bearing Washer (4) in the bearing recess, and using a needle bearing insertion tool similar to the one shown in Dwg. TPC488, press a new Needle Bearing (6) into the Offset Gear Case (3). Work some **Ingersoll Rand** No. 11 Bearing Grease between the rollers of the bearing.
3. Position the Drive Gear (8) on an arbor press, spline end up, and, pressing only on the inner race of the bearing with a driver with an inside diameter sufficient to clear the gear shaft, press on the Bearing (9), and install snap Ring (10). Apply about 227g (8 oz.) of **Ingersoll Rand** No. 11 Bearing Grease to the assembled Drive Gear, making certain to work the grease between all the gear teeth, splines, and bearing surfaces.
4. Similarly, press the Bearing (19) onto the Drive Shaft (22), and install Retaining Ring (13).
5. If removed for service, Press a new Seal (24), spring to the inside, and Bearing (23) into the Drive Housing (25). Work some **Ingersoll Rand** No. 11 Bearing Grease between the rollers of the bearing.
6. If removed for service, press a new Seal (11) into the Gear Case Cover (14), seal spring to the inside. Install the Seal Retaining Ring (12) into the Gear Case Cover.
7. Position the Offset Gear Case (3) flat on a table with the Drive Housing side, the side with the twelve hole pattern, facing upward.
8. Wipe a thin film of grease on the Drive Gear Thrust Washer (7), and place the Washer on the lip of the bearing recess in the Gear Case, and position the Drive Gear (8) properly.
9. Moisten the Gear Case Cover Seal (15) and Piston Seal (16) with O-Ring lubricant and install them in their respective grooves on the Gear Case Cover (14).

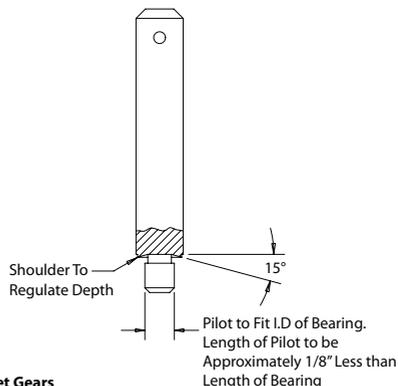
8. Place the Lock Pin Assembly (18) into the top "OUT" Port of the Drive Housing and tighten to the specified requirements.
9. Place the Elbow (19) into the out Port of the Drive Housing and orient approximately as shown to facilitate routing of the Piston Activation Tube (22).
10. Connect the Air Supply Tube (11) to the Connector (10) and to the Elbow (14), assembled in Port "1" of the Valve (16).
11. Connect the Piston Activation Tube (22) to the Elbow (17) and to the Elbow (14), assembled in Port "4" of the Valve (16).
12. Connect the Piston Activation Tube (22) to the Elbow (19) and to the Elbow (14), assembled in Port "2" of the Valve (16).



Needle Bearing Tool For Planet Gears

Assembly of the Pendant and Hose Kit

1. Refer to drawing 45535762, and associated parts list, for more details on assembly and the associated components.
2. Thread Sealant (SMB-441) required on all NPT connections in the assembly.
3. Tighten all NPT threads in the assembly to hand tight plus 1 to 2 turns.
4. Assemble the Swivel Elbows (12) to the Backhead of the Barring Motor as shown and tighten to the specified requirements.
5. Attach the Air Supply Tube (11) to the Connector (10).



(Dwg. TPC488)

Troubleshooting Guide

Trouble	Probable Cause	Solution
Motor will not operate	Rotor shaft and Gear Frame Planet Gears binding due to improper installation.	Disassemble and correct as necessary
	Spline in shaft of Gear Head and Planet Gears binding due to improper installation	Solution same as above
Loss of power	Low air pressure at Motor	Check air supply. For top performance, the air pressure must be 90 psig (6.2 bar) at the inlet to the motor
	Worn Vanes	Install a new set of Vanes
	Damaged Rear End Plate Gasket	Install a new Rear End Plate Gasket
	Inadequate Motor lubrication	Check air line lubricator. Refer to Lubrication Section for lubrication specifications
	Worn or damaged parts	Disassemble the Motors and examine parts. Replace any worn or damaged parts
Motor heats up	Inadequate lubrication	Refer to Lubrication Section
Gear case heats up	Improper lubrication	Refer to Lubrication Section
Grease leakage	Too much grease in the Gear case	Refer to Lubrication Section

Related Documentation

For additional information refer to:

Product Safety Information Manual 45526654.

Product Information Manual 80238041.

Parts Information Manual 45528262.

Manuals can be downloaded from www.irtools.com.

Notes:

