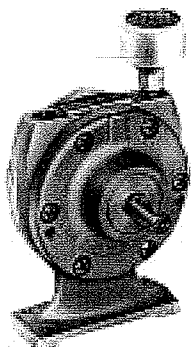
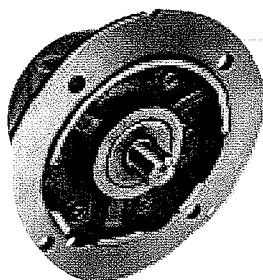


LUBRICATED AIR MOTORS

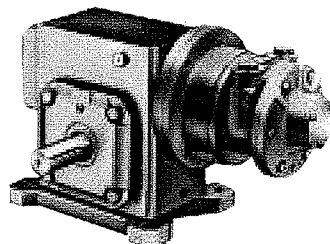
OPERATION & MAINTENANCE MANUAL



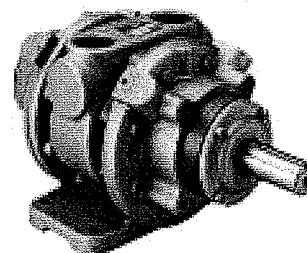
Model 2AM Shown



Model 4AM Shown



Model 6AM Shown



Model 16AM Shown

Thank you for purchasing this Gast product. It is manufactured to the highest standards using quality materials. Please follow all recommended maintenance, operational and safety instructions and you will receive years of trouble free service.

IMPORTANT: PLEASE READ THIS MANUAL AND SAVE FOR FUTURE REFERENCE.

General information

| • Clearances: | Model | Total End Clearance (in/mm) | Top Clearance (in/mm) |
|---|----------|-----------------------------|-----------------------|
| | 1AM/1 UP | 0.0020/0.0508 | 0.0015/0.0381 |
| | 2AM | 0.0025/0.0635 | 0.0015/0.0381 |
| | 2AM * | 0.0025/0.0635 | 0.0025/0.0635 |
| | 4AM | 0.0035/0.0889 | 0.0015/0.0381 |
| | 4AM * | 0.0035/0.0889 | 0.0025/0.0635 |
| | 6AM | 0.0035/0.0889 | 0.0015/0.0381 |
| | 8AM | 0.0048/0.1219 | 0.0015/0.0381 |
| | 16AM | 0.0060/0.1524 | 0.0015/0.0381 |
| * Models with the last three digits greater than 500 (ie 2AM XXX-501) | | | |

- **Vane Life:** Depends upon speed, operating pressure and motor maintenance.
- **Operating Pressure:** 100 psi or below (7 bar)

Product Use Criteria:

- Operate at temperature up to 250°F (121°C).
- Protect unit from dirt and moisture.
- Use ONLY compressed air to drive motor.
- Air lines connected to motor should be the same size or the next size larger than the intake port for efficient output and speed control.
- Protect all surrounding items from exhaust air.
- Bearings are grease packed.
- Use Gast #AD220 or a detergent SAE#10 automotive engine oil for lubricating.



ISO 9001 & 14001 CERTIFIED

www.gastmfg.com

**Your safety and the safety of others
is extremely important.**

**We have provided many important safety messages
in this manual and on your product. Always read
and obey all safety messages.**



**This is the safety alert symbol. This symbol
alerts you to hazards that can kill or hurt you and
others. The safety alert symbol and the words
“DANGER” and “WARNING” will precede all safety
messages. These words mean:**



DANGER

**You will be killed or seriously injured if you don't
follow instructions.**



WARNING

**You can be killed or seriously injured if you don't
follow instructions.**

**All safety messages will identify the hazard, tell you
how to reduce the chance of injury, and tell you
what can happen if the safety instructions are not
followed.**

INSTALLATION

**Correct installation is your responsibility. Make
sure you have the proper installation conditions and that
the specified installation clearances are available.**



WARNING

Injury Hazard

Install proper guards as needed.

**Failure to follow this instruction can result in
burns or other serious injury.**

Mounting

**This product can be installed in any orientation. Mount
the motor to a solid base plate that is mounted to a
stable, rigid operating surface. Install a pressure
regulator or simple shut-off valve to control motor.**

Connection

**Check the direction of the motor airflow. A single
rotation motor will operate properly only in one direction.
Install a filter in the air line before the connection to the
motor. Connect lines to motor in the proper direction.
A reversible motor will work equally well in both
directions. Connecting a 4-way valve with piping to
both air ports of the motor will make reversing possible.**

**Do not add any thrust to the end or side of the shaft
when making connections. Do not use a hammer
on the shaft or connections.**

Accessories

**A muffler is shipped with the air motor (except 16AM)
but is not installed. Consult your Gast representative**

**for additional filter recommendations. Install a moisture
trap and filter in the air line ahead of the motor. For the
most efficient output and control of speed, use air lines
that are the same size or the next pipe size larger than
the motor intake port.**

**An automatic air line lubricator should be installed 18"
or as close as possible in the air line just ahead of the
motor. Adjust the lubricator to feed one drop of oil for
every 50-75 CFM of air moving through the motor. Air
consumption at various speeds and pressures are
available from your local Gast representative or the
factory.**

OPERATION



WARNING

Injury Hazard

**Air stream from product may contain solid or liquid
material that can result in eye or skin damage.**

Do Not use combustible gases to drive this motor.

**Wear hearing protection. Sound level from motor
may exceed 85db(A).**

**Failure to follow these instructions can result in
burns, eye injury or other serious injury.**

**It is your responsibility to operate this product at
recommended speeds, loads and room ambient
temperatures. Do not run the motor at high speeds
with no load. This will result in excessive internal
heat that may cause motor damage.**

**The starting torque is less than the running torque. The
starting torque will vary depending upon the position of
the vanes when stopped in relation to the air intake
port.**

**Use a pressure regulator and/or simple shut-off valve to
regulate the motor's speed and torque. This will provide
the required power and will conserve air.**

MAINTENANCE



WARNING

Injury Hazard

Disconnect air supply and vent all air lines.

Wear eye protection when flushing this product.

**Air stream from product may contain solid or liquid
material that can result in eye or skin damage.**

Flush this product in a well ventilated area.

**Do Not use kerosene or other combustible solvents
to flush this product.**

**Failure to follow these instructions can result in
burns, eye injury or other serious injury.**

**It is your responsibility to regularly inspect and
make necessary repairs to this product in order to
maintain proper operation.**

Lubrication

Use Gast #AD220 or a detergent SAE #10 automotive engine oil for lubricating. Lubricating is necessary to prevent rust on all moving parts. Excessive moisture in the air line may cause rust or ice to form in the muffler when air expands as it passes through the motor. Install a moisture separator in the air line and an after cooler between compressor and air receiver to help prevent moisture problems.

Manual Lubrication

Shut the air motor down and oil after every 8 hours of operation. Add 10-20 drops of oil to the air motor intake port.

Automatic Lubrication

Adjust inline oiler to feed 1 drop of oil per minute for high speed or continuous duty usage. Do Not overfeed oil or exhaust air may become contaminated.

Check intake and exhaust filters after first 500 hours of operation. Clean filters and determine how frequently filters should be checked during future operation. This one procedure will help assure the product's performance and service life.

Flushing

Flushing this product to remove excessive dirt, foreign particles, moisture or oil that occurs in the operating environment will help to maintain proper vane performance. Flush the motor if it is operating slowly or inefficiently.

Use only Gast #AH255B Flushing Solvent. DO NOT use kerosene or ANY other combustible solvents to flush this product.

1. Disconnect air line and muffler.
2. Add flushing solvent directly into motor. If using liquid solvent, pour several tablespoons directly into the intake port. If using Gast #AH255B, spray solvent for 5-10 seconds into intake port.
3. Rotate the shaft by hand in both directions for a few minutes.
4. **You must wear eye protection for this step.** Cover exhaust with a cloth and reconnect the air line. Slowly apply pressure until there is no trace of solvent in the exhaust air.
5. Listen for changes in the sound of the motor. If motor sounds smooth, you are finished. If motor does not sound like it is running smoothly, installing a service kit will be required. (See "Service Kit Installation").

Check that all external accessories such as relief valves or gauges are attached and are not damaged before operating product.

Shutdown

It is your responsibility to follow proper shutdown procedures to prevent product damage.

1. Turn off air intake supply.
2. Disconnect plumbing.
3. Remove air motor from connected machinery.
4. **Wear eye protection.** Keep away from air stream.
Use clean, dry air to remove condensation.
5. Lubricate motor with a small amount of oil in chamber. Rotate shaft by hand several times.

6. Plug or cap each port.
7. Coat output shaft with oil or grease.
8. Store motor in a dry environment.

SERVICE KIT INSTALLATION

Gast will NOT guarantee field-rebuilt product performance. For performance guarantee, the product must be returned to a Gast authorized service facility.

Service kit contents vary. Most contain vanes, end cap gasket, body gasket, bearings and a muffler element or felt.

Major and Minor Rebuilds

Tool kits which include a more in-depth rebuild manual are available through your Gast distributor.

These kits include the tools required to remove and reassemble end plates, bearings and shaft seals, and to set the proper end clearance. The rebuild manual also includes step by step instructions, including illustrations, to help achieve a successful rebuild. Gast Manufacturing, Inc. highly recommends using the air motor rebuild manual and tool kit when attempting a minor or major rebuild to your Gast air motor.

Minor Rebuild:

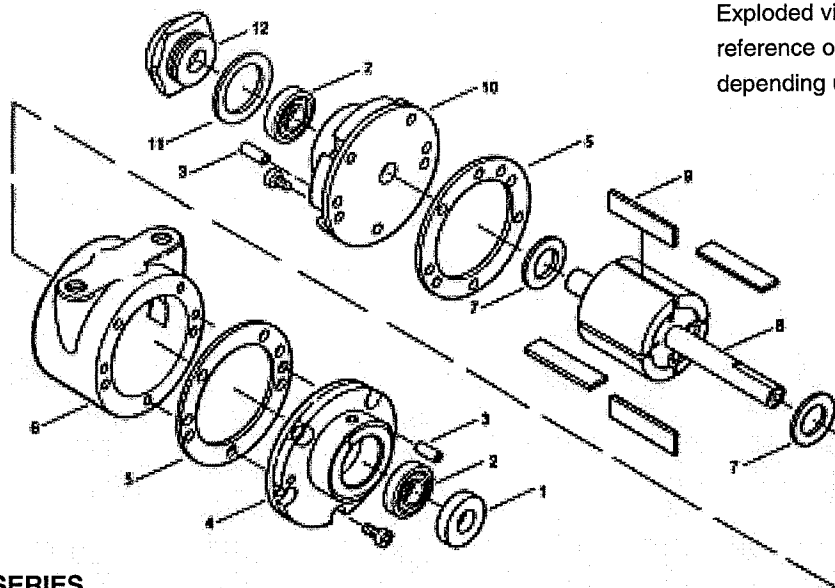
1. Remove the end cap.
2. Remove dead end plate bolts.
3. Remove dead end plate. (Use factory issued tool, do not use screwdriver to remove the end plate.
4. Remove the dowel pins from the body and push back into end plate until flush or just below the machined surface of the end plate.
5. Remove vanes.
6. Clean parts. Check for scoring on the end plate and rotor assembly. If scoring exists, send unit to a Gast authorized service facility.
7. **Lubricated models only:** Lightly oil and reinstall vanes.
8. Place the proper end plate gasket on the end plate. If the original is damaged, replace with a new one supplied in the Service Kit.
9. Place the dead end plate on the body.
10. Press the bearing onto the shaft using a factory supplied bearing pusher.
11. Tap dowel pins into body and install end plate bolts. Tighten bolts to 75-100 in-lbs.
12. Set end clearance as required by model:
1AM-4AM and NL22-NL52 models - use the bearing taper from kit to lightly tap on inner race of the dead end bearing to free up and center the rotor in the body.
6AM-8AM models - lightly strike the drive end shaft with a soft hammer to push the rotor away from the drive end plate. The rotor must NOT rub on either end plate.
13. Reattach end cap.
14. **If the air motor is lubricated,** apply a few drops of Gast #AD220 lubricant into ports. Rotate shaft by hand for a few rotations.

Major Rebuild:

1. Remove the end cap.
2. Remove dead end plate bolts.

3. Remove dead end plate. (Use factory issued tool, do not use screwdriver to remove the end plate.)
4. Remove the dowel pins from the body and push back into end plate until flush or just below the machined surface of the dead end plate.
5. Remove rotor using an arbor press.
6. Remove vanes and ejection mechanism if reversible. (Ejection mechanisms may consist of vane springs, pins, caps or cam rings.)
7. Remove shaft seal and bearings from drive end plate and bearing from dead end plate. (Use factory issued tool.)
8. Do Not remove drive end plate bolts or drive end plate.
9. Clean parts. Check for scoring on the end plates and rotor assembly. If scoring exists, send unit to a Gast authorized service facility.
10. **For reversible models only:**
1AM and 1UP models - place a new cam ring between the rotor and the drive end plate.
2AM and 4AM models - place springs and caps in rotor.
6AM, 8AM and 16AM models - install push pins.
11. Place the drive shaft of the rotor assembly through the drive end plate. Press the drive bearing onto the drive shaft using a factory supplied bearing pusher.
12. Using the bearing taper from the Tool Kit, lightly tap on inner race of the drive end bearing to snug up rotor to drive end plate.
13. Install new vanes as required by model:
All single rotation units - the angle cuts on the vane face to center of the rotor.
Reversible units 2AM and 4AM - the notch on vane faces to center of the rotor.
6AM, 8AM and 16AM models - install the vane spring lip into the notch at one end of the vane and place in rotor vane slot with spring facing pushpin.
14. Place the proper end plate gasket on the body of dead end. If the original is damaged, replace with a new one supplied in the service kit.
If your air motor uses O-rings, place the new O-rings in the body groove. Some models do not use end plate gaskets or O-rings.
15. Place the dead end plate on the body.
16. Install the dead end bearing and press into place with bearing pusher tool from tool kit.
17. Install the dowel pins.
18. Fully tighten the remaining bolts to 75-100 in-lbs.
19. Set end clearance as required by model:
1AM-4AM and NL22-NL52 models - use the bearing taper from the Tool Kit and lightly tap on the inner race of the dead end bearing to free up and center the rotor in the body.
6AM-8AM models - lightly strike the drive end shaft with a soft hammer to push the rotor away from the drive end plate. The rotor must NOT rub on either end plate.
20. Apply a small amount of grease to bearing seal and install the drive end bearing seal by pressing flush with bearing pushing tool from Tool Kit.
21. Reattach end cap.
22. **If the air motor is lubricated**, apply a few drops of Gast #AD220 lubricant into ports and rotate shaft by hand for a few rotations.

EXPLODED PRODUCT VIEW, PARTS & ORDERING INFORMATION



Exploded views are shown for reference only. Units may vary depending upon specific model.

1AM SERIES

| REF# | DESCRIPTION | QTY | 1AM-NCC-12 | 1AM-NCW-14 | 1AM-NRV-39A | 1AM-NRV-56 | 1AM-NRV-60 | 1AM-NRV-63A |
|-------|-----------------|--------|------------|------------|-------------|------------|------------|-------------|
| 1 Δ | SEAL | 1 | AC190A | AC190A | AC190A | AC190A | AC190A | AC190A |
| 2 Δ | BEARING | 2 | AG549 | AG549 | AG549 | AG549 | AG549 | AG549 |
| 3 | DOWEL PIN | 4 | D324A | D324A | D324A | D324A | D324A | D324A |
| 4 | DRIVE END PLATE | 1 | AC537 | AC539 | AC520 | AC520D | AC520D | AC520 |
| 5 ΔΔ | SHIMS | 2 | AC527B | AC527B | AC527B | AC527B | AC527B | AC527B |
| 6 | BODY | 1 | AC521 | AC521 | AC191 | AC191 | AC191 | AC191 |
| 7 | CAM RING | 2 | | | AC195 | AC195 | AC195 | AC195 |
| 8 | ROTOR ASSEMBLY | 1 | AC524 | AC536 | AC193 | AC187 | AC607 | AC193B |
| 9 Δ | VANE | 4 8 | AC205A | AC205A | AC259A | AC259A | AC259A | AC259A |
| 10 | DEAD END PLATE | 1 | AC538 | AC540 | AC192 | AC192 | AC192 | AC192 |
| 11 Δ | END CAP GASKET | 1 | AC229 | AC229 | AC229 | AC229 | AC229 | AC229 |
| 12 | DEAD END CAP | 1 | AC228A | AC228A | AC228A | AC228A | AC228A | AC228A |
| *** Δ | MUFFLER | 1 | AF350 | AF350 | AF350 | AF350 | AF350 | AF350 |
| *** | FOAM | 1 | AG896 | AG896 | AG896 | AG896 | AG896 | AG896 |
| *** | SERVICE KIT | 1 | K200 | K200 | K201 | K201 | K278 | K278 |

1UP SERIES

| REF# | DESCRIPTION | QTY | 1UP-NCC-1A | 1UP-NCW-2A | 1UP-NRV-3A | 1UP-NRV-4 | 1UP-NRV-10 | 1UP-NRV-11 |
|-------|-----------------|--------|------------|------------|------------|-----------|------------|------------|
| 1 Δ | SEAL | 1 | AC190A | AC190A | AC190A | AC190A | AC190A | AC190A |
| 2 Δ | BEARING | 2 | AG549 | AG549 | AG549 | AG549 | AG549 | AG549 |
| 3 | DOWEL PIN | 4 | D324A | D324A | D324A | D324A | D324A | D324A |
| 4 | DRIVE END PLATE | 1 | AC616 | AC520B | AC520 | AC520D | AC520 | AC520D |
| 5 ΔΔ | SHIMS | 2 | AC527B | AC527B | AC527B | AC527B | AC527B | AC527B |
| 6 | BODY | 1 | AE899 | AE899 | AE898 | AE898 | AE898 | AE898 |
| 7 | CAM RING | 2 | | | AC195 | AC195 | AC195 | AC195 |
| 8 | ROTOR ASSEMBLY | 1 | AE896 | AE895 | AE897 | AF746 | AE319 | AE333 |
| 9 Δ | VANE | 4 8 | AE893 | AE893 | AE894 | AE894 | AE894 | AE894 |
| 10 | DEAD END PLATE | 1 | AC617 | AC192A | AC192 | AC192 | AC192 | AC192 |
| 11 Δ | END CAP GASKET | 1 | AC229 | AC229 | AC229 | AC229 | AC229 | AC229 |
| 12 | DEAD END CAP | 1 | AC228A | AC228A | AC228A | AC228A | AC228A | AC228A |
| *** Δ | MUFFLER | 1 | AF350 | AF350 | AF350 | AF350 | AF350 | AF350 |
| *** | FOAM | 1 | AG896 | AG896 | AG896 | AG896 | AG896 | AG896 |
| *** | SERVICE KIT | 1 | K285 | K285 | K286 | K286 | K298 | K298 |

*** Item not shown.

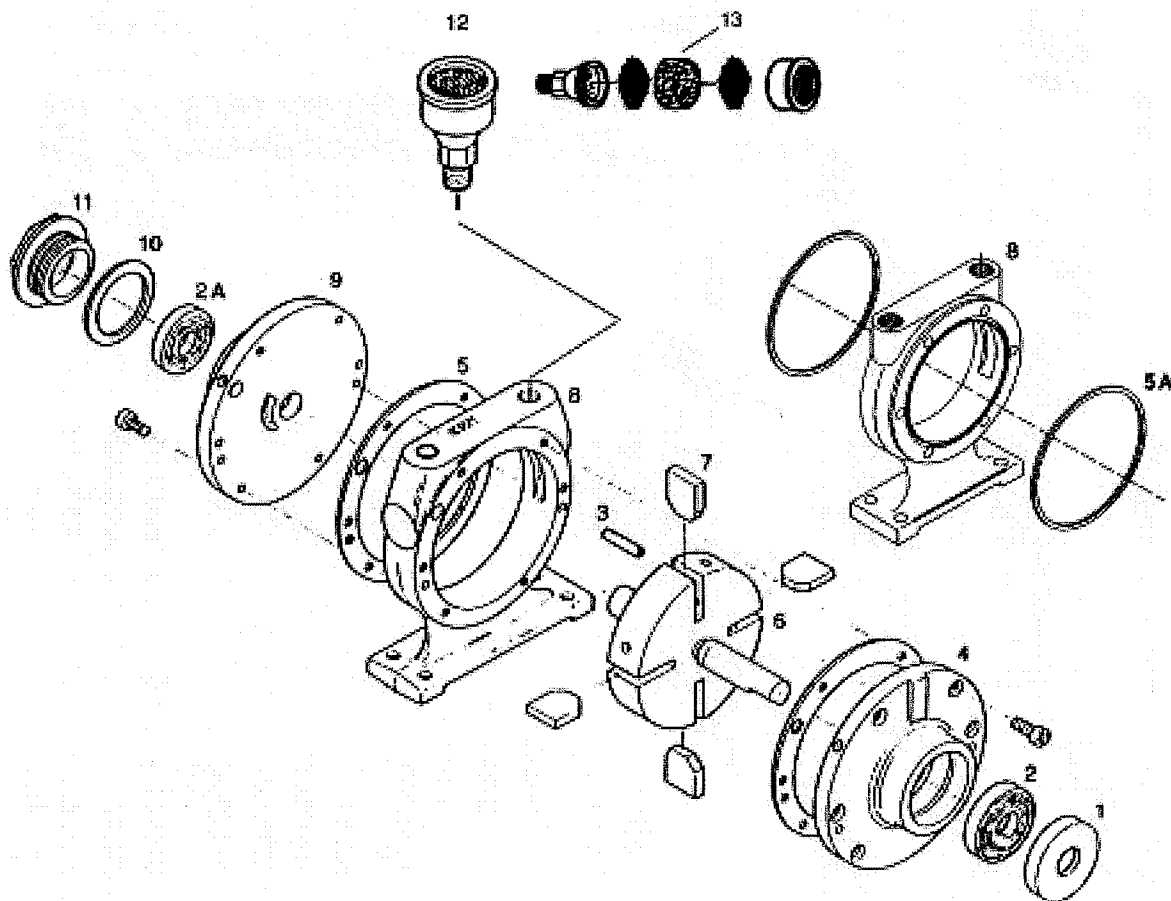
Δ Denotes parts included in the Service Kit.

ΔΔ Parts used on models manufactured prior to 1998.

Parts listed are for stock models. For specific OEM models, please consult the factory.
When corresponding about or ordering parts, please give complete model and serial numbers.

EXPLODED PRODUCT VIEW, PARTS & ORDERING INFORMATION

Exploded views are shown for reference only. Units may vary depending upon specific model.



2AM SERIES

| REF# | DESCRIPTION | QTY | 2AM-FCC-1 | 2AM-NCW-7A | 2AM-FCW-13 | 2AM-NCC-16 | 2AM-NCC-43A | 2AM-ACC-88 METRIC |
|--------|-------------------|-----|-----------|------------|------------|------------|-------------|----------------------|
| 1 Δ | SHAFT SEAL | 1 | AA466B | AA466B | AA466B | AA466B | B2328 | B2328 |
| 2 Δ | DRIVE END BEARING | 1 | AA299J | AA299J | AA299J | AA299J | AB519 | AB519 |
| 2A Δ | DEAD END BEARING | 1 | AA299J | AA299J | AA299J | AA299J | AA299J | AA299J |
| 3 | DOWEL PIN | 4 | AB162 | AB162 | AB162 | AB162 | AB162C | AB162C |
| 4 | DRIVE END PLATE | 1 | AC720 | AC726 | AC722 | AC724 | AG708 | AK425A |
| 5 Δ ** | SHIMS | 2 | B330 | B330 | B330 | B330 | B330 | B330 |
| 6 | ROTOR ASSEMBLY | 1 | AA470A | AA489A | AA489A | AA470A | AM449A | AM449B |
| 7 Δ | VANE | 4 | AA13B | AA13B | AA13B | AA13B | AA13B | AA13B |
| 8 | BODY | 1 | AA477 | AA467 | AA477 | AA467 | AA467 | AA467F |
| 9 | DEAD END PLATE | 1 | AC721 | AC723 | AC723 | AC721 | AC721 | AB622N |
| 10 Δ | END CAP GASKET | 1 | AA46 | AA46 | AA46 | AA46 | AA46 | AA46 |
| 11 | END CAP | 1 | AM307D | AM307D | AM307D | AM307D | AM307D | AM307D |
| 12 | MUFFLER ASSEMBLY | 1 | AC980 | AC980 | AC980 | AC980 | AC980 | AC980 |
| 13 | MUFFLER FELT | 1 | AC983 | AC983 | AC983 | AC983 | AC983 | AC983 |
| *** | SERVICE KIT | 1 | K202 | K202 | K202 | K202 | K203A | K203A |

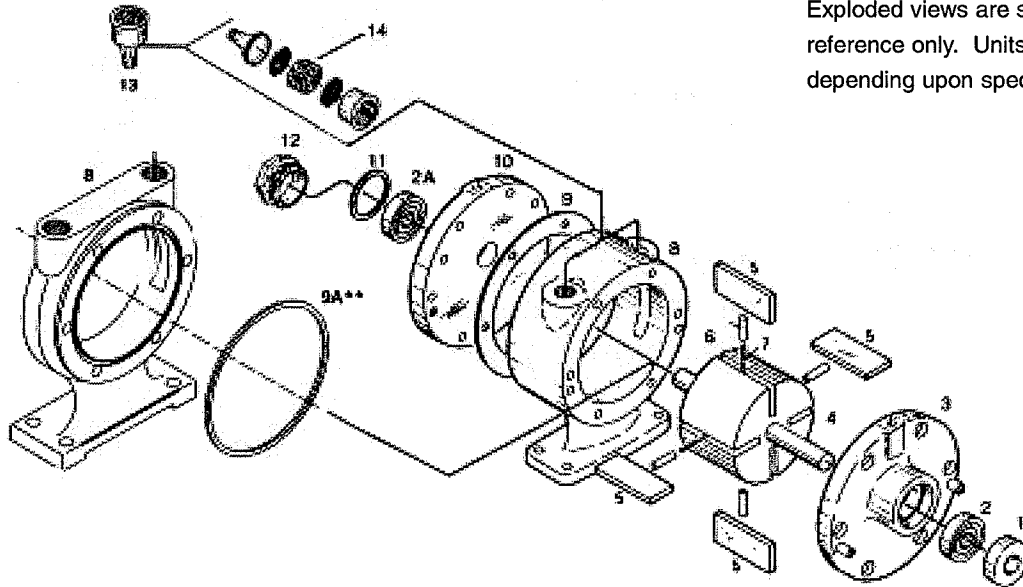
*** Item not shown.

** #AL484 (5A) O-ring replaces shim on some models.

Δ Denotes parts included in the Service Kit.

Parts listed are for stock models. For specific OEM models, please consult the factory.
When corresponding or ordering parts, please give complete model and serial numbers.

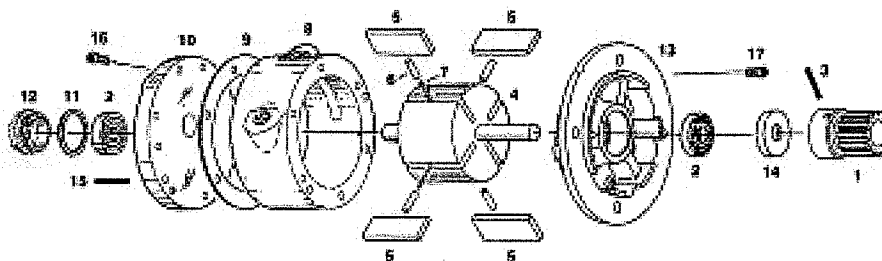
EXPLODED PRODUCT VIEWS, PARTS & ORDERING INFORMATION



Exploded views are shown for reference only. Units may vary depending upon specific model.

4AM SERIES

| REF# | DESCRIPTION | QTY | 4AM-FRV-13C | 4AM-NRV-22B | 4AM-FRV-24 | 4AM-NRV-50C | 4AM-NRV-54A | 4AM-NRV-70C | 4AM-ARV-119 METRIC | 4AM-ARV-120 METRIC |
|--------|-------------------|-----|-------------|-------------|------------|-------------|-------------|-------------|--------------------|--------------------|
| 1 Δ | SHAFT SEAL | 1 | AA466B | AA466B | AA466B (2) | B2328 | AA466B | B2328 | B2328 | B2328 |
| 2 Δ | DRIVE END BEARING | 1 | AA299J | AA299J | AA299J | AB519 | AA299J | AB519 | AB519 | AB519 |
| 2A Δ | DEAD END BEARING | 1 | AA299J | AA299J | AA299J | AA299J | AA299J | AA299J | AA299J | AA299J |
| 3 | DRIVE END PLATE | 1 | AC727 | AC665 | AC727 | AG707 | AC665 | AG707 | AK425A | AK425A |
| 4 | ROTOR ASSEMBLY | 1 | AB617 | AB617 | AM426 | AM455A | AM411 | AM319A | AM455C | AM455B |
| 5 Δ | VANE | 4 | AB876 | AB876 | AB876 | AB876 | AB876 | AB876 | AB876 | AB876 |
| 6 Δ | PUSH PINS | 4 | AM467 | AM467 | AM467 | AM467 | AM467 | AM467 | AM467 | AM467 |
| 7 Δ | VANE SPRING | 2 | AM466 | AM466 | AM466 | AM466 | AM466 | AM466 | AM466 | AM466 |
| 8 | BODY | 1 | AM425 | AM410 | AM425 | AM410 | AM410 | AM410 | AM410M | AM410M |
| 9 Δ ** | SHIMS | 2 | B330 | B330 | B330 | B330 | B330 | B330 | B330 | B330 |
| 10 | DEAD END PLATE | 1 | AC728 | AC728 | AC727 | AC728 | AC728 | AC728 | AB622M | AB622M |
| 11 Δ | END CAP GASKET | 1 | AA46 | AA46 | | AA46 | AA46 | AA46 | AA46 | AA46 |
| 12 | DEAD END CAP | 1 | AM307D | AM307D | | AM307D | AM307D | AM307D | AM307D | AM307D |
| 13 | MUFFLER ASSEMBLY | 1 | AC980 | AC980 | AC980 | AC980 | AC980 | AC980 | AC980 | AC980 |
| 14 Δ | MUFFLER FELT | 1 | AC983 | AC983 | AC983 | AC983 | AC983 | AC983 | AC983 | AC983 |
| *** | SERVICE KIT | 1 | K205 | K205 | K205G | K206A | K279 | K280A | K206C | K206B |



4AM SERIES

| REF# | DESCRIPTION | QTY | 4AM-RV-75 |
|------|--------------------|-----|-----------|
| 1 | GEAR STD. | 1 | AA294 |
| 2 Δ | BEARING | 2 | AA299J |
| 3 | PIN | 1 | AA297 |
| 4 | ROTOR | 1 | AA293 |
| 5 Δ | VANE | 4 | AB876 |
| 6 Δ | SPRING PIN | 4 | AM467 |
| 7 Δ | SPRINGS | 2 | AM466 |
| 8 | BODY | 1 | AM410 |
| 9 Δ | SHIMS | 2 | B330 |
| 10 | DEAD END PLATE | 1 | AC728 |
| 11 Δ | END CAP GASKET | 1 | AA46 |
| 12 | END CAP | 1 | AM307D |
| 13 | DRIVE END PLATE | 1 | AA424 |
| 14 | SEAL | 1 | AA466B |
| 15 | DOWEL PINS | 4 | AB162 |
| 16 | 1/4-28 x .50 PFHMS | 6 | BB631 |
| 17 | 1/4-28 x .625 SHCS | 6 | BB634 |
| *** | SERVICE KIT | 1 | K205 |

*** Item not shown.

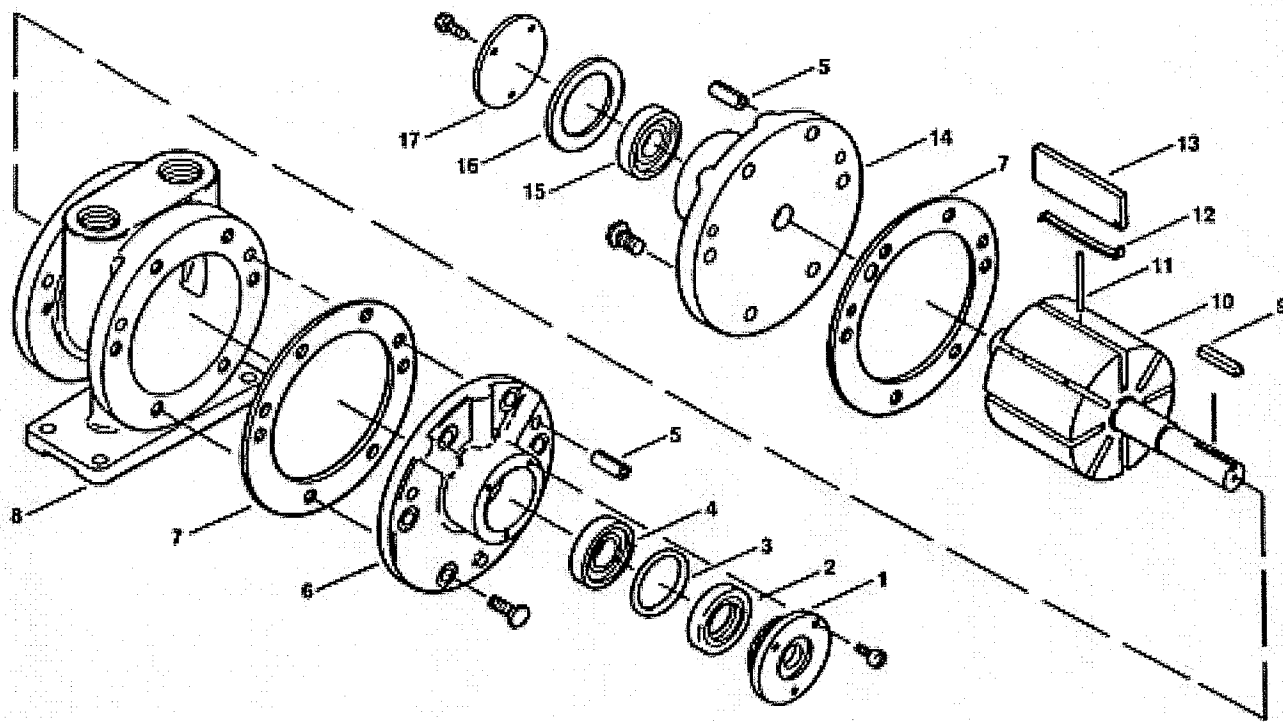
** #AL484 (9A) O-ring replaces shims on some models.

Δ Denotes parts included in the Service Kit.

Parts listed are for stock models. For specific OEM models, please consult the factory. When corresponding or ordering parts, please give complete model and serial numbers.

EXPLODED PRODUCT VIEW, PARTS & ORDERING INFORMATION

Exploded views are shown for reference only. Units may vary depending upon specific model.



6AM SERIES

| REF# | DESCRIPTION | QTY | 6AM-FRV-5A | 6AM-NRV-7A | 6AM-NRV-22A NEMA | 6AM-FRV-23A | 6AM-ARV-54 | 6AM-ARV-55 | 6AM-NRV-11A |
|------|-------------------|-----|------------|------------|---------------------|-------------|------------|------------|-------------|
| 1 | DRIVE END CAP | 1 | AD642A | AD642A | AD642A | AD642A | AC988 | AC988 | AD642A |
| 2 Δ | SHAFT SEAL | 1 | AC849 | AC849 | AC849 | AC849 | AK423 | AK423 | AC849 |
| 3 Δ | O-RING | 1 | AD649 | AD649 | AD649 | AD649 | AC989 | AC989 | AD649 |
| 4 Δ | DRIVE END BEARING | 1 | AD638A | AD638A | AD638A | AD638A | AC894B | AC894B | AD638A |
| 5 | DOWEL PIN | 4 | AB162 | AB162 | AB162C | AB162 | AB162C | AB162C | AB162C |
| 6 | DRIVE END PLATE | 1 | AD651 | AD666 | AD667 | AD651 | AK424 | AK424 | AD667 |
| 7 Δ | BODY GASKET | 2 | AD641 | AD641 | AD641 | AD641 | AD641 | AD641 | AD641 |
| 8 | BODY | 1 | AD650A | AD665 | AD665 | AD650A | AD665D | AD665D | AD665 |
| 9 | KEY | 1 | AB136 | AB136 | AB136 | AB136 | AK422 | AK422 | AB136 |
| 10 | ROTOR ASSEMBLY | 1 | AD652 | AD652 | AC398 | AC779 | AD648E | AD648D | AD648 |
| 11 Δ | PUSH PIN | 2 | AD655A | AD655A | | | AD655A | | AD655A |
| | | 4 | | | AD655A | AD655A | | AD655A | |
| 12 Δ | VANE SPRING | 4 | AD692 | AD692 | | | AD692 | | AD692 |
| | | 8 | | | AD692 | AD692 | | AD692 | |
| 13 Δ | VANE | 4 | AD691 | AD691 | | | AD691 | | AD691 |
| | | 8 | | | AD691 | AD691 | | AD691 | |
| 14 | DEAD END PLATE | 1 | AD651 | AD651 | AD651 | AD651 | AD651 | AD651 | AD651 |
| 15 Δ | DEAD END BEARING | 1 | AB519 | AB519 | AB519 | AB519 | AB519 | AB519 | AB519 |
| 16 Δ | END CAP GASKET | 1 | AD644 | AD644 | AD644 | AD644 | AD644 | AD644 | AD644 |
| 17 | DEAD END CAP | 1 | AD643 | AD643 | AD643 | AD643 | AD643 | AD643 | AD643 |
| *** | MUFFLER ASSEMBLY | 1 | AC990 | AC990 | AC990 | AC990 | AC990 | AC990 | AC990 |
| *** | MUFFLER FELT | 1 | AC993 | AC993 | AC993 | AC993 | AC993 | AC993 | AC993 |
| *** | SERVICE KIT | 1 | K208 | K208 | K281 | K281 | K281A | K281B | K208 |

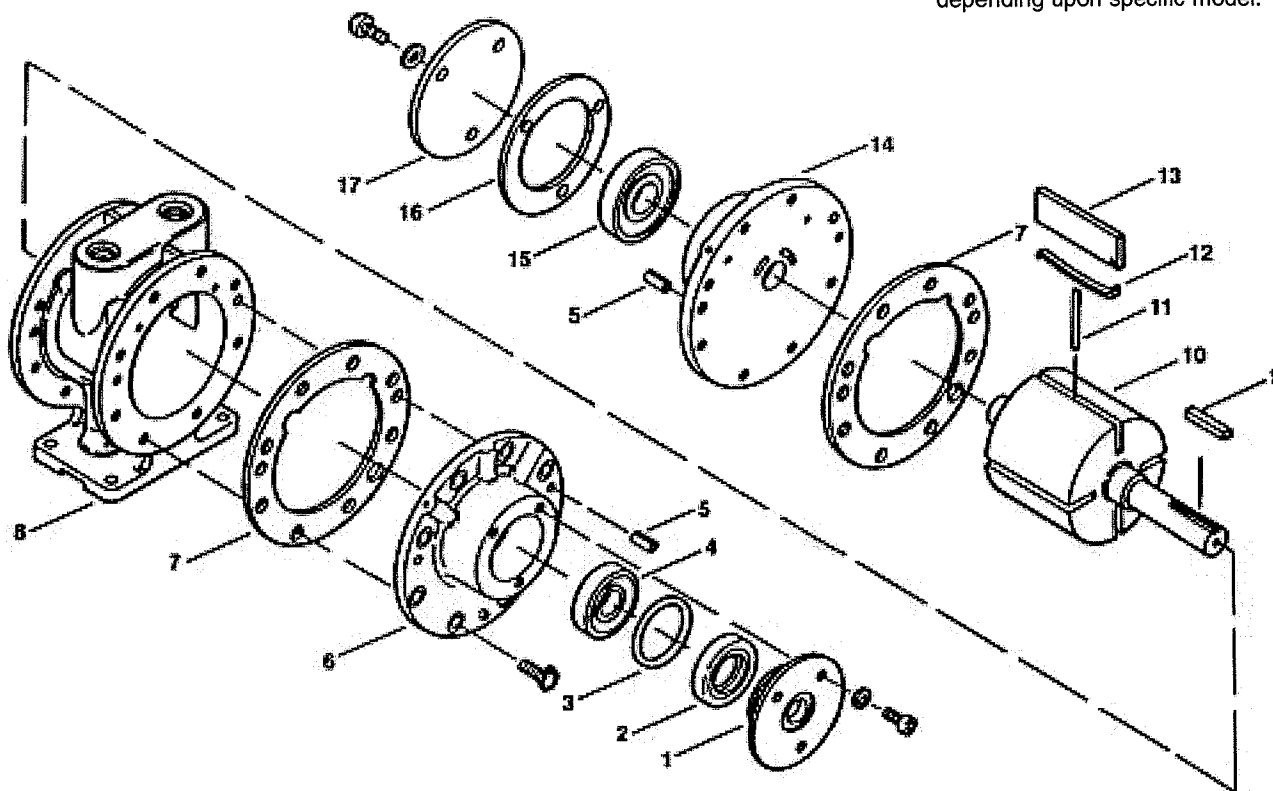
*** Item not shown.

Δ Denotes parts included in the Service Kit.

Parts listed are for stock models. For specific OEM models, please consult the factory.
When corresponding or ordering parts, please give complete model and serial numbers.

EXPLODED PRODUCT VIEW, PARTS & ORDERING INFORMATION

Exploded views are shown for reference only. Units may vary depending upon specific model.



8AM SERIES

| REF# | DESCRIPTION | QTY | 8AM-FRV-2B | 8AN-NRV-5B | 8AM-NRV-28A | 8AM-FRV-30A | 8AM-NRV-32A | 8AM-NRV-42A | 8AM-ARV-70 METRIC | 8AM-ARV-71 METRIC |
|------|-------------------|-----|------------|------------|-------------|-------------|-------------|-------------|----------------------|----------------------|
| 1 | DRIVE END CAP | 1 | AC835A | AC835A | AC988 | AC835A | AC988 | AC835A | AC988 | AC988 |
| 2 Δ | SHAFT SEAL | 1 | AC839 | AC839 | AB936 | AC839 | AB936 | AC839 | AK420 | AK420 |
| 3 Δ | O-RING | 1 | AC808 | AC808 | AC989 | AC808 | AC989 | AC808 | AC989 | AC989 |
| 4 Δ | DRIVE END BEARING | 1 | AA735B | AA735B | AB927 | AA735B | AB927 | AA735B | AB927 | AB927 |
| 5 | DOWEL PIN | 4 | AB162 | AB162 | AB162 | AB162 | AB162 | AB162 | AB162 | AB162 |
| 6 | DRIVE END PLATE | 2 | AC964 | AC963 | AC965 | AC964 | AC965 | AC963 | AK421 | AK421 |
| 7 Δ | BODY GASKET | 2 | AC888 | AC888 | AC888 | AC888 | AC888 | AC888 | AC888 | AC888 |
| 8 | BODY | 1 | AC877A | AC878C | AC878C | AC877A | AC878C | AC878C | AC878G | AC878G |
| 9 | KEY | 1 | AB136D | AB136D | AB136D | AB136D | AB136D | AB136D | AK668 | AK668 |
| 10 | ROTOR ASSEMBLY | 1 | AC977 | AC977 | AC986 | AC977A | AC986A | AC977A | AC986D | AC986C |
| 11 Δ | PUSH PIN | 2 | AC879 | AC879 | AC879 | | | | AC879 | |
| | | 4 | | | | AC879 | AC879 | AC879 | | AC879 |
| 12 Δ | VANE SPRING | 4 | AC817 | AC817 | AC817 | | | | AC817 | |
| | | 8 | | | | AC817 | AC817 | AC817 | | AC817 |
| 13 Δ | VANE | 4 | AC816 | AC816 | AC816 | | | | AC816 | |
| | | 8 | | | | AC816 | AC816 | AC816 | | AC816 |
| 14 | DEAD END PLATE | 1 | AC964 | AC964 | AC964 | AC964 | AC964 | AC964 | AC964 | AC964 |
| 15 Δ | DEAD END BEARING | 1 | AC894B | AC894B | AC894B | AC894B | AC894B | AC894B | AC894B | AC894B |
| 16 Δ | END CAP GASKET | 1 | AC837 | AC837 | AC837 | AC837 | AC837 | AC837 | AC837 | AC837 |
| 17 | DEAD END CAP | 1 | AC836 | AC836 | AC836 | AC836 | AC836 | AC836 | AC836 | AC836 |
| *** | MUFFLER ASSEMBLY | 1 | AC990 | AC990 | AC990 | AC990 | AC990 | AC990 | AC990 | AC990 |
| *** | MUFFLER FELT | 1 | AC993 | AC993 | AC993 | AC993 | AC993 | AC993 | AC993 | AC993 |
| *** | SERVICE KIT | 1 | K210 | K210 | K211 | K283 | K282 | K283 | K282A | K282B |

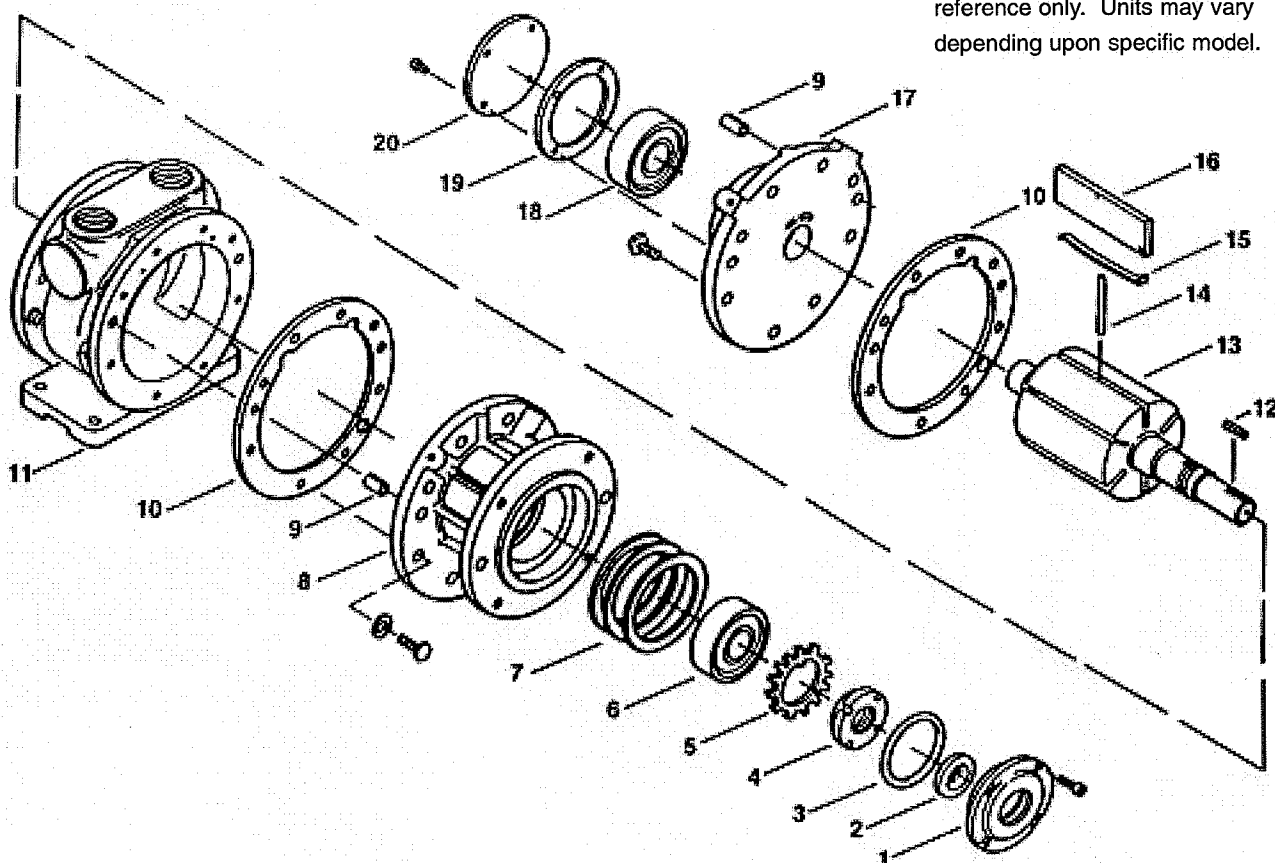
*** Item not shown.

Δ Denotes parts included in the Service Kit.

Parts listed are for stock models. For specific OEM models, please consult the factory.
When corresponding or ordering parts, please give complete model and serial numbers.

EXPLODED PRODUCT VIEW, PARTS & ORDERING INFORMATION

Exploded views are shown for reference only. Units may vary depending upon specific model.



16AM SERIES

| REF# | DESCRIPTION | QTY | 16AM-FCC-2 | 16AM-FRV-2 | 16AM-FRV-13 | 16AM-FCW-28 |
|------|-------------------|-----|------------|------------|-------------|-------------|
| 1 | DRIVE END CAP | 1 | AD816 | AD816 | AD816 | AD816 |
| 2 Δ | SEAL | 1 | AC627 | AC627 | AC627 | AC627 |
| 3 Δ | O-RING | 1 | AD823 | AD823 | AD823 | AD823 |
| 4 | LOCKNUT | 1 | AD784 | AD784 | AD784 | AD784 |
| 5 Δ | LOCKWASHER | 1 | AD712 | AD712 | AD712 | AD712 |
| 6 Δ | DRIVE END BEARING | 1 | AB777A | AB777A | AB777A | AB777A |
| 7 | SPACER | | AD786 | AD786 | AD786 | AD786 |
| 8 | DRIVE END PLATE | 1 | AD771A | AD820A | AC323 | |
| 9 | DOWEL PIN | 4 | AB162A | AB162A | AB162A | AB162A |
| 10 Δ | SPACER GASKET | 2 | AD788 | AD788 | AD788 | |
| 11 | BODY | 1 | AD770 | AD819 | AD819 | AD770B |
| 12 | DRIVE KEY | 1 | AC628 | AC628 | AB136D | AC628 |
| 13 | ROTOR ASSEMBLY | 1 | AD775 | AD794 | AE807 | |
| 14 Δ | PUSH PIN | 3 | | AD822 | AD822 | |
| 15 Δ | VANE SPRING | 6 | | AD796A | AD796A | |
| 16 Δ | VANE | 6 | AD781 | AD795 | AD795 | AD781 |
| 17 | DEAD END PLATE | 1 | AD773A | AD821A | AD821A | |
| 18 | DEAD END BEARING | 1 | AD802 | AD802 | AD802 | AD802 |
| 19 | END CAP GASKET | 1 | AG406 | AG406 | AG406 | AG406 |
| 20 | DEAD END CAP | 1 | AG405 | AG405 | AD405 | AG405 |
| *** | SERVICE KIT | 1 | K212 | K213 | K213 | K212 |

*** Item not shown.

Δ Denotes parts included in the Service Kit.

Parts listed are for stock models. For specific OEM models, please consult the factory. When corresponding or ordering parts, please give complete model and serial numbers.

STANDARD & WORM GEAR REDUCERS - OPERATING AND MAINTENANCE INSTRUCTIONS

General Information:

The product nameplate specifies all information required when ordering parts or requests for information. The type of lubricant required for unit is also specified on the nameplate.

Product Use Criteria:

- All worm gear reducers require that the air motor be mounted so that the intake and exhaust piping is at a 90° angle to the centerline of the reducer output shaft.
- Gear motors are NOT self-locking. If a brake is required for safety (for air pressure failure, etc.) contact your Gast representative.
- Worm gear reducers are shipped with a plug in the top pipe plug. The plug must be removed and the breather plug installed for proper operation.
- Operating an air motor without venting will create internal pressure build-up which can damage the internal parts of gear motor.
- Check the oil level in units which have been stored or not operated for a period of time.
- Gear motors require proper lubrication. Insufficient oil level can cause loss of performance, damage or failure of the gear motor.

Gear Reducer Specifications

| Model | GR11 | GR20 | GR25 |
|---|--|--|---|
| Speed Range (Reducer Output Shaft) | 33.3 to 400 RPM | 30 to 300 RPM | 20 to 200 RPM |
| Gear Reduction | 15:1 | 10:1 | 15:1 |
| Maximum Allowable End Thrust With Zero Overhung Load. (Reducer Output Shaft) | 100 lbs./45,4 kg | 200 lbs/90,8 kg @300 RPM to 800 lbs/363,2 kg at 30 RPM | 250 lbs/113,5 kg at 200 RPM to 800 lbs/363,2 kg at 20 RPM |
| Maximum Allowable Overhung Load With Zero End Thrust. (Reducer Output Shaft) | 100 lbs/45,4 kg at 333 RPM to 200 lbs/90,8 kg at 33.3 RPM | 200 lbs/90,8 kg at 300 RPM to 600 lbs/272,4 kg at 30 RPM | 200 lbs/90,8 kg at 200 RPM to 600 lbs/272,4 kg at 20 RPM |
| Lubrication | Use a 300 ssu at 100°F/38°C turbine quality lubricant – Gast #AG292A, Gulf Harmony 53, Shell Tellus 33, Socony DTE heavy medium or Humble Nuto 53. For horizontal operation , remove both plugs and add oil to top hole until other hole overflows. For vertical operation , fill to overflow point of uppermost hole. | | |

Worm Gear Reducer Series A-F

Gear Reducer Specifications

All output shafts are in the standard location.

| Model | Air Motor | Ratio |
|-------|-----------|-------|
| AG803 | 4AM | 20:1 |
| AG805 | 4AM | 40:1 |
| AG807 | 4AM | 60:1 |
| AG809 | 6AM | 10:1 |
| AG811 | 6AM | 20:1 |
| AG816 | 8AM | 20:1 |

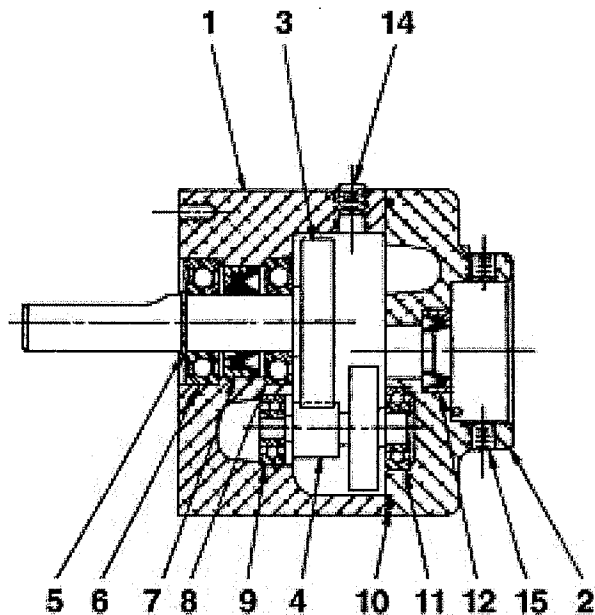
Service, Parts or Repair

For service, parts or repair of the worm gear reducer, contact the manufacturer listed on the nameplate.

Change output shaft direction

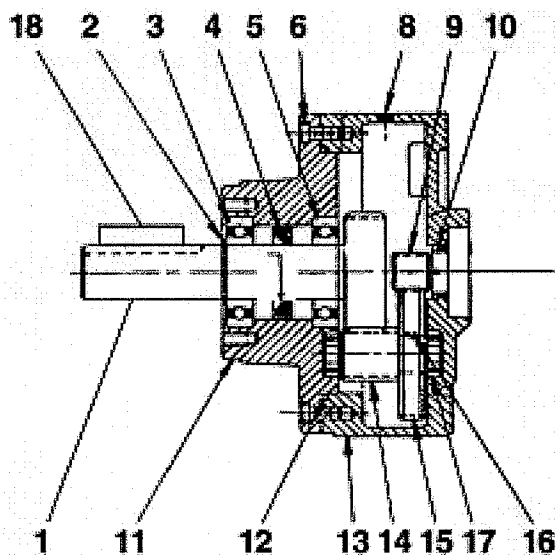
1. Remove drain plug and drain oil from unit.
2. Remove end cover and seal cage cap screws. While supporting output shaft, remove end cover and shims from unit. Keep shims with cover.
3. Remove output shaft and seal cage together from extension side. Keep shims with seal cage.
4. Insert seal cage, shims and sub-assembly into housing from the side opposite from which they were removed.
5. Insert seal cage cap screws and tighten with light pressure.
6. Assemble end cover with shims. Insert end cover cap screws and tighten with light pressure.
7. Turn high speed shaft in both directions to check that gear train is running freely.
8. Cross-tighten seal cage and end cover cap screws.

EXPLODED PRODUCT VIEWS, PARTS & ORDERING INFORMATION



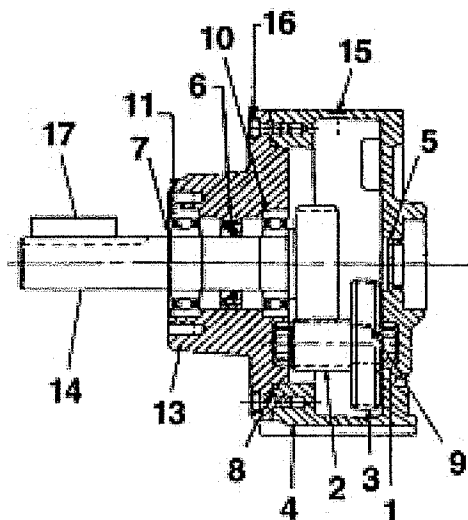
GR11 SERIES

| REF# NO. | DESCRIPTION | QTY | PART |
|----------|--------------------|-----|--------|
| 1 | GEAR HOUSING | 1 | AC737 |
| 2 | GEAR HOUSING COVER | 1 | AC736 |
| 3 | GEAR SHAFT | 1 | AC739 |
| 4 | CLUSTER GEAR | 1 | AC738 |
| 5 | SNAP-RING | 1 | AE189 |
| 6 | BEARING | 1 | AE196A |
| 7 | SEAL | 1 | AA517A |
| 8 | BEARING | 1 | AA498 |
| 9 | BEARING | 1 | AE195 |
| 10 | O-RING | 1 | AD823 |
| 11 | BEARING | 1 | AE197 |
| 12 | SEAL | 1 | AA623D |
| 13 | SCREWS | 4 | BB542 |
| 14 | PIPE PLUG | 2 | BA500 |
| 15 | SET SCREW | 2 | BB626 |
| *** | DOWEL PIN | 2 | AE882 |



GR20 SERIES

| REF# NO. | DESCRIPTION | QTY | PART |
|----------|---------------------|-----|-------|
| 1 | GEAR SHAFT - OUTPUT | 1 | AE848 |
| 2 | RETAINING RING | 1 | AE853 |
| 3 | BEARING | 1 | AE858 |
| 4 | OIL SEAL | 1 | AE852 |
| 5 | BEARING | 1 | AE857 |
| 6 | SCREW | 6 | BB652 |
| *** | DOWEL PIN | 2 | AF482 |
| 8 | MAGNETIC DRAIN PLUG | 2 | AH471 |
| 9 | GEAR - INPUT | 1 | AA294 |
| 10 | OIL SEAL | 1 | AE851 |
| 11 | HOUSING COVER | 1 | AE849 |
| 12 | O-RING | 1 | AE854 |
| 13 | GEAR HOUSING | 1 | AE850 |
| 14 | GEAR SHAFT | 1 | AE845 |
| 15 | GEAR - INTERMEDIATE | 1 | AE846 |
| 16 | KEY | 1 | AE855 |
| 17 | BEARING | 2 | AG549 |
| 18 | KEY | 1 | AC628 |



GR25 SERIES

| REF# NO. | DESCRIPTION | QTY | PART |
|----------|---------------------|-----|-------|
| 1 | BEARING | 2 | AG549 |
| 2 | GEAR SHAFT | 1 | AE845 |
| 3 | GEAR INTERMEDIATE | 1 | AE846 |
| 4 | GEAR HOUSING | 1 | AE850 |
| 5 | SEAL | 1 | AE851 |
| 6 | SEAL | 1 | AE852 |
| 7 | RETAINING RING | 1 | AE853 |
| 8 | O-RING | 1 | AE854 |
| 9 | KEY | 1 | AE855 |
| 10 | BEARING | 1 | AE857 |
| 11 | BEARING | 1 | AE858 |
| *** | DOWEL PIN | 2 | AF482 |
| 13 | HOUSING COVER | 1 | AH278 |
| 14 | GEAR SHAFT - OUTPUT | 1 | AH279 |
| 15 | MAGNETIC DRAIN PLUG | 2 | AH471 |
| 16 | SCREWS | 6 | BB652 |
| 17 | KEY | 1 | AC628 |

*** Item not shown.

WARRANTY

Gast finished products, when properly installed and operated under normal conditions of use, are warranted by Gast to be free from defects in material and workmanship for a period of twelve (12) months from the date of purchase from Gast or an authorized Gast Representative or Distributor. In order to obtain performance under this warranty, the buyer must promptly (in no event later than thirty (30) days after discovery of the defect) give written notice of the defect to Gast Manufacturing Incorporated, PO Box 97, Benton Harbor Michigan USA 49023-0097 or an authorized Service Center (unless specifically agreed upon in writing signed by both parties or specified in writing as part of a Gast OEM Quotation). Buyer is responsible for freight charges both to and from Gast in all cases.

This warranty does not apply to electric motors, electrical controls, and gasoline engines not supplied by Gast. Gast's warranties also do not extend to any goods or parts which have been subjected to misuse, lack of maintenance, neglect, damage by accident or transit damage.

THIS EXPRESS WARRANTY EXCLUDES ALL OTHER WARRANTIES OR REPRESENTATIONS EXPRESSED OR IMPLIED BY ANY LITERATURE, DATA, OR PERSON. GAST'S MAXIMUM LIABILITY UNDER THIS EXCLUSIVE REMEDY SHALL NEVER EXCEED THE COST OF THE SUBJECT PRODUCT AND GAST RESERVES THE RIGHT, AT ITS SOLE DISCRETION, TO REFUND THE PURCHASE PRICE IN LIEU OF REPAIR OR REPLACEMENT.

GAST WILL NOT BE RESPONSIBLE OR LIABLE FOR INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND, however arising, including but not limited to those for use of any products, loss of time, inconvenience, lost profit, labor charges, or other incidental or consequential damages with respect to persons, business, or property, whether as a result of breach of warranty, negligence or otherwise. Notwithstanding any other provision of this warranty, BUYER'S REMEDY AGAINST GAST FOR GOODS SUPPLIED OR FOR NON-DELIVERED GOODS OR FAILURE TO FURNISH GOODS, WHETHER OR NOT BASED ON NEGLIGENCE, STRICT LIABILITY OR BREACH OF EXPRESS OR IMPLIED WARRANTY IS LIMITED SOLELY, AT GAST'S OPTION, TO REPLACEMENT OF OR CURE OF SUCH NONCONFORMING OR NON-DELIVERED GOODS OR RETURN OF THE PURCHASE PRICE FOR SUCH GOODS AND IN NO EVENT SHALL EXCEED THE PRICE OR CHARGE FOR SUCH GOODS. GAST EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE WITH RESPECT TO THE GOODS SOLD. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTIONS SET FORTH IN THIS WARRANTY, notwithstanding any knowledge of Gast regarding the use or uses intended to be made of goods, proposed changes or additions to goods, or any assistance or suggestions that may have been made by Gast personnel.

Unauthorized extensions of warranties by the customer shall remain the customer's responsibility.

CUSTOMER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF GAST PRODUCTS FOR CUSTOMER'S USE OR RESALE, OR FOR INCORPORATING THEM INTO OBJECTS OR APPLICATIONS WHICH CUSTOMER DESIGNS, ASSEMBLES, CONSTRUCTS OR MANUFACTURES.

This warranty can be modified only by authorized Gast personnel by signing a specific, written description of any modifications.

MAINTENANCE RECORD

[illegible]

PART NO. 45-200 D170PL (Rev. K)**TROUBLESHOOTING CHART**

| Problem | | | | | Reason & Remedy For Problem. |
|------------|-----------|-----------|----------|---------------------------|--|
| Low Torque | Low Speed | Won't Run | Runs Hot | Runs Well Then Slows Down | |
| • | • | • | | | Dirt or foreign material present. Inspect and clean. |
| • | • | • | | | Internal rust. Inspect and clean. |
| • | • | • | • | • | Vanes misaligned. Realign vanes. |
| • | • | | | | Low air pressure. Increase pressure. |
| | • | | | | Air line too small. Install larger line(s). |
| | • | | | • | Restricted exhaust. Inspect and repair. |
| • | • | • | | • | Motor is jammed. Disassemble and repair. |
| | • | | | • | Air source inadequate. Inspect and repair. |
| | • | | | • | Air source too far from motor. Reconfigure setup. |

AUTHORIZED SERVICE FACILITIES

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Benton Harbor, MI 49022
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FAX: 269-925-8288
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Gast Manufacturing Inc.
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Carlstadt, NJ 07072
TEL: 201-933-8484
FAX: 201-933-5545
www.gastmfg.com

Air-Oil Products Corp.
301 30th Street NE 31, #112
Auburn, WA 98002
TEL: 800-282-2672
FAX: 877-808-4601
www.air-oil.com

Brenner Fiedler & Assoc
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Cerritos, CA 90701
TEL: 800-843-5558
TEL: 310-404-2721
FAX: 310-404-7975
www.brenner-fiedler.com

D & F Distributors
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Evansville, IN 47725
TEL: 812/867-2441
FAX: 812/867-6822
www.dfistrib.com

John Henry Foster Co.
4700 Lebourget Drive
St. Louis, MO 63134-0820
TEL: 314-427-0600
TEL: 1-800-444-0522
FAX: 314-427-3502
www.jhf.com

Hydraulic & Pneumatic Sales
11100 Park Charlotte Blvd.
Charlotte NC 28273
TEL: 704-588-3234
FAX: 704-588-1569
www.hpsales.com

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