



Binks 55 GALLON GEAR DRIVEN DRUM COVER AGITATOR UNITS

Stainless Steel Fitted

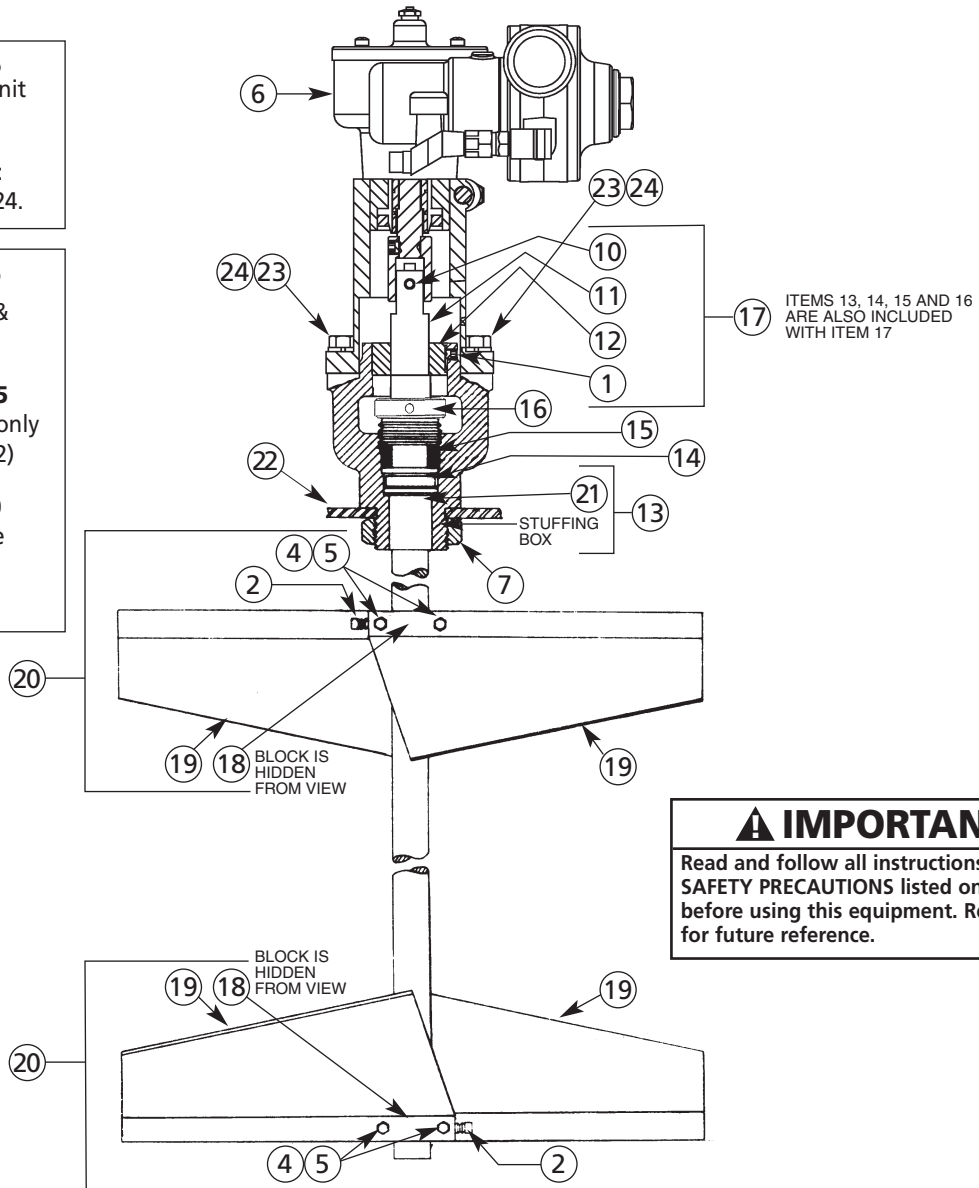
MODEL 31-396
Air Motor Drive Unit

Includes the following items:
3, 6, 8, 9, 23 and 24.

MODEL 31-397
Cover, Agitator & Drive Assembly

MODEL 41-3305
Agitator Assembly only
(Less Items 6 & 22)

MODEL 31-400
Agitator & Drive Assembly
(Less Item 22)



IMPORTANT

Read and follow all instructions and SAFETY PRECAUTIONS listed on page 2 before using this equipment. Retain for future reference.

PARTS LIST

When ordering, please specify Part No.

ITEM NO.	PART NO.	DESCRIPTION	QTY.	ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	20-1237	SOC. HD. SET SCREW, 1/4-20 x 1/4" Lg.	1	12	83-2107	BEARING ASSEMBLY	1
2	20-1741	SQ. HD. SET SCREW, Stainless	2	13	83-2109	BOX ASSEMBLY	1
3*	20-1753	BUSHING, 1/4 NPT(F) x 3/8 NPT(M), (Not Shown)	1	14	83-2110	WASHER	1
4	20-2077	HEX. HD. CAP SCREW, 5/16-18 x 1-1/2" Lg., Stainless	4	15	83-2111	PACKING	4
5	20-2079	HEX. NUT, 5/16-18, Stainless	4	16	83-2112	GLAND	1
6	31-401	AIR MOTOR DRIVE UNIT	1	17	83-2114	STUFFING BOX ASSEMBLY	1
7	41-172	LOCK NUT	1	18	83-2132	BLOCK	2
8*	H-2008	D.M. NIPPLE (Not Shown)	1	19	83-2194	PADDLE	4
9*	HA-57011	HOSE ASSEMBLY, 1/4" I.D. x 13" Lg., (Not Shown)	1	20	83-2197	PADDLE ASSEMBLY	2
10	83-1211	PIN	1	21	83-3032	BEARING	1
11	83-2099	SHAFT	1	22	31-124	COVER ASSEMBLY	1
				23•	Purchase Locally	LOCK WASHER, 3/8"	2
				24•	Purchase Locally	HEX HD CAP SCREW, 3/8-16 X 1" Lg Plated	2

• Item Nos. 23 & 24 are included with Item No. 6

Replaces Part Sheet 77-2804R-2 | Part Sheet 77-2804R-3

*FOR AIR CONTROL WHEN REQUIRED.

In this part sheet, the words **WARNING**, **CAUTION** and **NOTE** are used to emphasize important safety information as follows:

⚠ WARNING
Hazards or unsafe practices which could result in severe personal injury, death or substantial property damage.

⚠ CAUTION
Hazards or unsafe practices which could result in minor personal injury, product or property damage.

NOTE
Important installation, operation or maintenance information.

⚠ WARNING

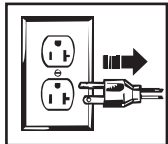
Read the following warnings before using this equipment.



READ THE MANUAL
Before operating finishing equipment, read and understand all safety, operation and maintenance information provided in the operation manual.



WEAR SAFETY GLASSES
Failure to wear safety glasses with side shields could result in serious eye injury or blindness.



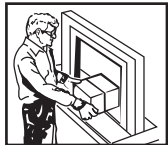
DE-ENERGIZE, DISCONNECT AND LOCK OUT ALL POWER SOURCES DURING MAINTENANCE
Failure to De-energize, disconnect and lock out all power supplies before performing equipment maintenance could cause serious injury or death.



OPERATOR TRAINING
All personnel must be trained before operating finishing equipment.



EQUIPMENT MISUSE HAZARD
Equipment misuse can cause the equipment to rupture, malfunction, or start unexpectedly and result in serious injury.



KEEP EQUIPMENT GUARDS IN PLACE
Do not operate the equipment if the safety devices have been removed.



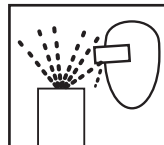
HIGH PRESSURE CONSIDERATION
High pressure can cause serious injury. Relieve all pressure before servicing. Spray from the spray gun, hose leaks, or ruptured components can inject fluid into your body and cause extremely serious injury.



PRESSURE RELIEF PROCEDURE
Always follow the pressure relief procedure in the equipment instruction manual.



ELECTRIC SHOCK/GROUNDING
Improper grounding or sparks can cause a hazardous condition and result in fire, explosion or electric shock and other serious injury.



PROJECTILE HAZARD
You may be injured by venting liquids or gases that are released under pressure, or flying debris.



INSPECT THE EQUIPMENT DAILY
Inspect the equipment for worn or broken parts on a daily basis. Do not operate the equipment if you are uncertain about its condition.



NEVER MODIFY THE EQUIPMENT
Do not modify the equipment unless the manufacturer provides written approval.



FIRE AND EXPLOSION HAZARD
Improper equipment grounding, poor ventilation, open flame or sparks can cause hazardous conditions and result in fire or explosion and serious injury.



KNOW WHERE AND HOW TO SHUT OFF THE EQUIPMENT IN CASE OF AN EMERGENCY



STATIC CHARGE
Fluid may develop a static charge that must be dissipated through proper grounding of the equipment, objects to be sprayed and all other electrically conductive objects in the dispensing area. Improper grounding or sparks can cause a hazardous condition and result in fire, explosion or electric shock and other serious injury.



PROP 65 WARNING
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PROVIDE THIS INFORMATION TO THE OPERATOR OF THE EQUIPMENT.

FOR FURTHER SAFETY INFORMATION REGARDING BINKS AND DEVILBISS EQUIPMENT, SEE THE GENERAL EQUIPMENT SAFETY BOOKLET (77-5300).

OPERATION AND MAINTENANCE

INSTALLATION

Installation onto Drum Mounted Agitator Units (refer to page 1 and figure 1, page 5)

1. Align holes on coupling adapter (30) to the mounting holes on the stuffing box assembly (17). Secure with lock washers (23) and hex head bolts (24).
2. Apply medium strength thread lock to set screw (28), then screw into coupling (26).
3. Align the set screw (28) with the set screw detent on the drive shaft assembly (27). Tighten set screw.
4. Align coupling (26) with the pin (10) on agitator shaft. Drop down over agitator shaft (11).
5. Rotate gear reducer (25) and air motor (39) until the square flats on the drive shaft assembly (27) line up with the female flats in the bottom of gear reducer (25). Drop down to top of coupling adapter (30).
6. Align the inlet for the air supply after mounting. This is accomplished by rotating the gear reducer with air motor (25 and 39) to the desired position to connect the air supply. Tighten hex head cap screw (29).
7. Connect the air supply to the air motor.

CAUTION

The gear reducer is shipped with a plastic 1/4 NPT plug to prevent leakage. Make sure the plastic plug on top of the gear reducer has been replaced with the QS-108 vented oil fitting (Item No. 55, page 7) before operation.

OPERATION

Before operating air motor, lubricate as covered in next section. Open valve to main air line; then slowly open air adjusting valve until agitator turns. To extend air motor life, adjust air pressure setting to run motor at about one revolution per second. The agitator should be run continuously while in use.

PREVENTIVE MAINTENANCE

Air Motor Lubrication

CAUTION

Failure to properly lubricate the air motor will result in premature motor failure and will void warranty. Lubricate air motor daily by adding 4 or 5 drops of SAE 10 weight oil into air inlet fitting. For convenience, an automatic oiler may be connected to the air inlet.

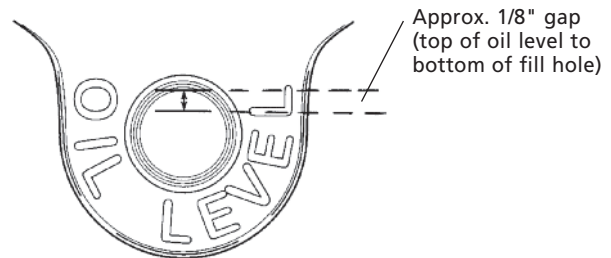
Periodically – Remove air adjusting valve and air strainer and flush motor with a clean suitable solvent. Remove trapped particles from screen in air inlet and clean air strainer felt.

Air Motor Gear Box Lubrication

Every 2 Days – Remove oil fill plug and check oil level. Proper oil level is indicated on outside of gear box housing. If oil level is low, add 140-weight SAE Gear Oil or a high quality worm gear lubricant. Replace pipe plug and tighten to 20 foot-pounds (27 N-m) of torque.

NOTE

Gear box oil is most easily drained just after motor operation, while oil is still warm.



NOTE

Do not overfill. Overfilling may cause oil to leak out of vent cap on top of gear box.

After first 250 hours of operation, remove gear box and drain gear oil. Refill gear box with 140-Weight SAE Gear Oil or a high quality worm gear lubricant. Replace pipe plug and tighten to 20 foot-pounds (27 N-m) of torque.

Six months or 2500 Operating Hours – Replace gear oil according to instructions above. Replace gear oil more often if environment causes oil to become contaminated during use.

REPLACEMENT OF PARTS

Removal of Air Motor and Gear Box (refer to figure 1, page 5 – typical assembly.)

1. Turn off valve to main air supply and disconnect air adjusting valve (38) at nipple (37).
2. Loosen cap screw (29) and remove air motor and gear box assembly from coupling adapter (30).

Air Motor (refer to figure 2, page 6)

Holes must be drilled for new dowel pins (44) after assembling front plate (49) on new body (48) for alignment of parts.

Do not pry front plate (49) or end plate (43) from air motor body (48) with a screw driver; this will dent the surface of the body and plates causing leaks. A puller tool should be used to remove the plate from the motor body while maintaining the position of the shaft.

(continued on page 4)

OPERATION AND MAINTENANCE

Always install new gaskets (45) when reassembling air motor.

Assemble the end plates to the body using an arbor press with a pusher acting on both races of the bearing while rigidly supporting the opposite (drive) end of the shaft.

Gear Box (refer fo figure 3, page 7)

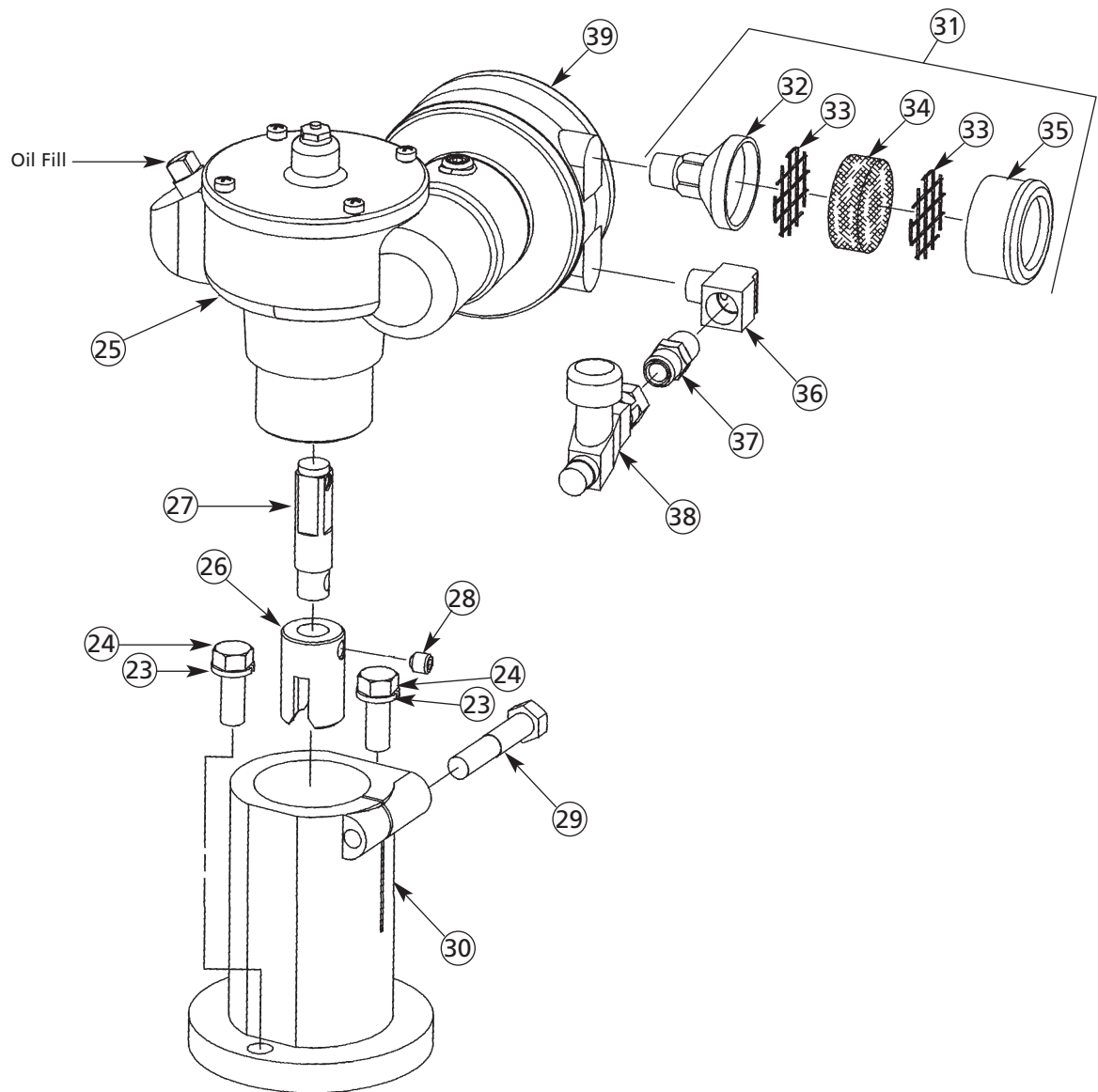
1. Remove oil fill plug (60) or cover plate (56) and drain gear box lubricant.
2. Remove set screws (63) and remove gear box from air motor.
3. Disassembly gear box per exploded view, Figure 3. Discard gaskets (59 and 64). Do not remove oil seal (62) unless leakage or seal damage is indicated.
4. If oil seal (62) was removed, inspect seal seating bore in housing (61). Remove any burrs or contaminants from seal seating bore. Burrs or contaminants could distort new oil seal during installation.

5. Inspect gear and shaft assembly (58) for wear grooves, burrs, or contamination of seal seating area. If seal seating area is damaged, shaft must be repaired or replaced.
6. Inspect all other parts for wear spots, chipping, or other damage. Replace damaged or worn parts.
7. If oil seal (62) is being replaced, inspect new seal for damage before installing. Use arbor press to install seal. Press fixture diameter must be close fit with gear box bore diameter to avoid damage to seal. Install with inner casing and sealing lip toward bottom of bore. Drive seal squarely into bore to avoid warping. Oil seal is recessed 3/32 inch from bottom of housing (61) when properly installed.
8. Reassemble gear box per exploded view. Install new gaskets (59 and 64). Just prior to assembling gear box with air motor, apply a small dab of thread locking compound (53) to threads of setscrews (63). Connect motor and gear box and torque set screws (63) to 60 inch-pounds (6.8 N-m), minimum. Refill gear box per gear box lubrication instructions.

AIR MOTOR DRIVE SERVICE CHECKS

CONDITION	CAUSE	CORRECTION
Air motor sluggish or inefficient	<ol style="list-style-type: none"> 1. Air motor needs lubrication or cleaning. 2. Motor vanes need replacing or contaminants present in motor chamber, Figure 2. 3. Low oil level in gear box, Figure 3. 4. Gear and shaft assembly (58) and/or worm gear (65) worn, Figure 3. 5. Air motor bearing (40 or 51) worn, Figure 2. 	<ol style="list-style-type: none"> 1. Lubricate (see "Air Motor Lubrication" section). Disassemble and clean per parts replacement instructions. 2. Disassemble, clean motor per parts replacement instructions. Replace worn vanes. 3. Add oil per lubrication instructions. 4. Replace worn parts per parts replacement instructions. 5. Replace bearings per parts replacement instructions.
Oil leakage from gear box.	<ol style="list-style-type: none"> 1. Seal (62, Figure 3) worn. 	<ol style="list-style-type: none"> 1. Replace seal per parts replacement instructions.

FIGURE 1 — 31-401 GEAR DRIVE WITH AIR MOTOR



PARTS LIST

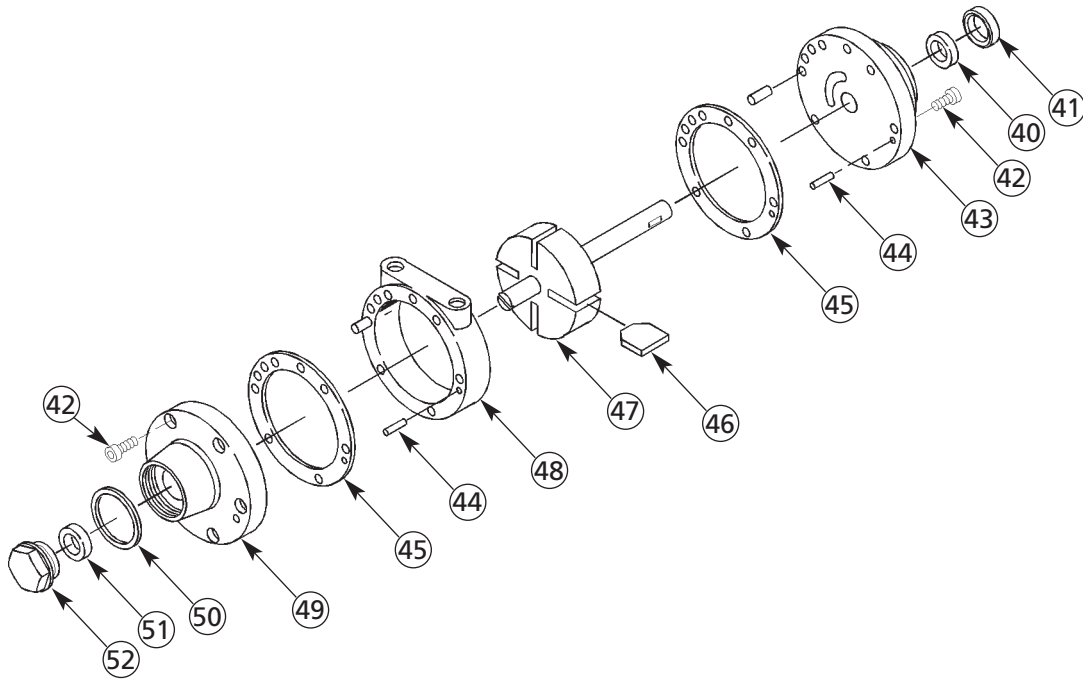
When ordering, please specify Part No.

ITEM NO.	PART NO.	DESCRIPTION	QTY.	ITEM NO.	PART NO.	DESCRIPTION	QTY.
23	Purchase Locally	LOCK WASHER 3/8"	2	33+	---	SCREEN.....	2
24	Purchase Locally	HEX HEAD CAP SCREW	2	34+	•---	FELT	1
		3/8-16 x 1" long (plated)		35	---	STRAINER CAP	1
25	---	GEAR BOX (Figure 3)	1	36	Purchase Locally	STREET ELBOW,	1
26	31-57	COUPLING	1			1/4" (M) x 1/4" (F) NPT brass	
27	31-398	DRIVE SHAFT ASSEMBLY.....	1	37	H-2008	NIPPLE, 1/4" NPS (M) x 1/4" NPT (M)	1
28	Purchase Locally	SET SCREW 5/16-18 x 5/16" long	1	38	HAV-500	AIR ADJUSTING VALVE	1
29	Purchase Locally	HEX HEAD CAP SCREW	1			1/4" NPS (M) x 1/4" NPS (F) swivel	
		3/8-16 x 2" long (plated)		39	---	AIR MOTOR, (Figure 2)	1
30	31-395	COUPLING ADAPTER.....	1				
31	350-401	AIR STRAINER	1				
32	---	STRAINER BODY	1				

• Included in KK-5001-1 Air Motor Repair Kit. See page 6 for additional parts included in this kit.

+ Item No. 33 (2 ea.) and Item No. 34 (4 ea.) included in KK-5006 Strainer Screen and Felt Kit.

FIGURE 2 — QS-4016 AIR MOTOR



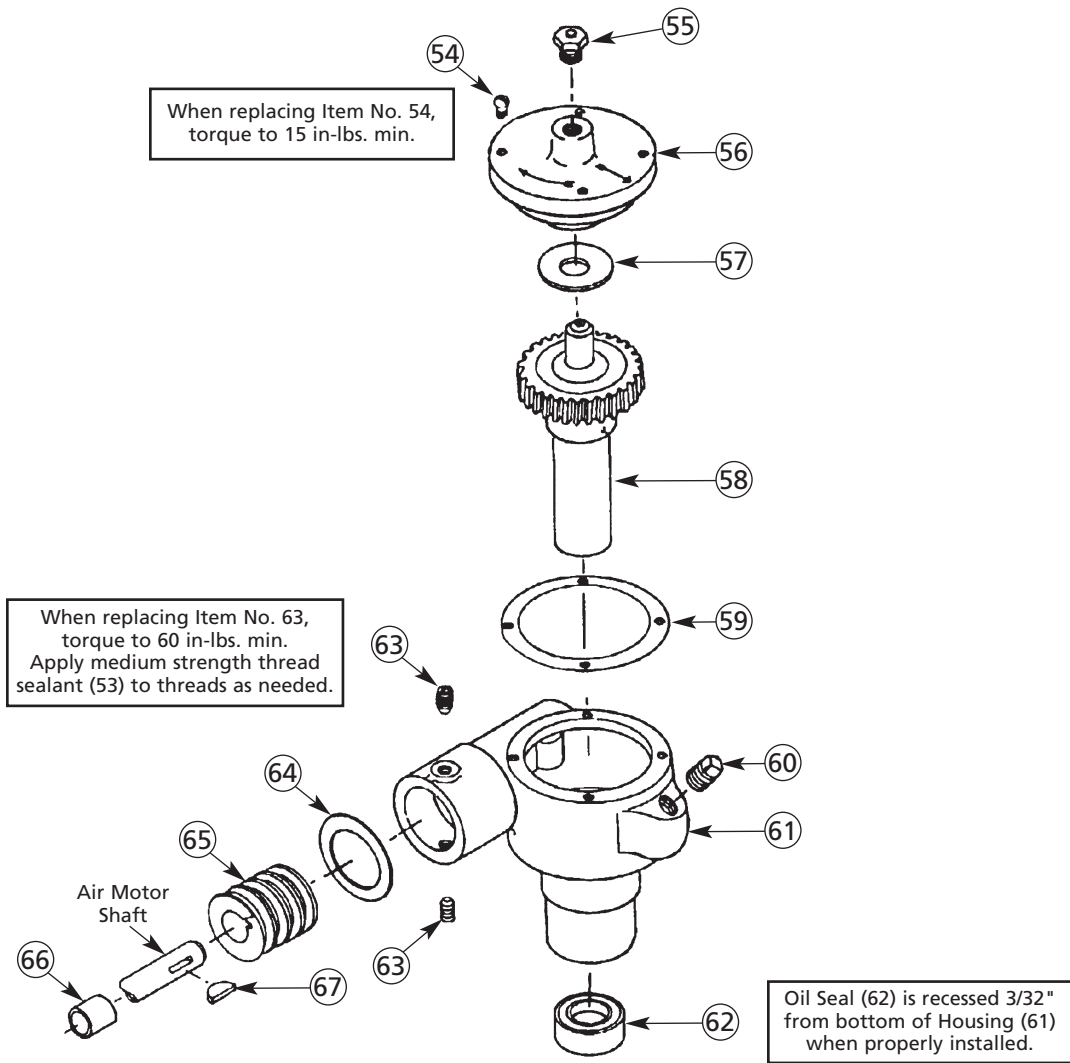
PARTS LIST

When ordering, please specify Part No.

ITEM NO.	PART NO.	DESCRIPTION	QTY.	ITEM NO.	PART NO.	DESCRIPTION	QTY.
40	QS-336	OIL SEAL	1	47	QS-442	ROTOR AND SHAFT ASSEMBLY	1
41	QS-197	BEARING	1	48	QS-335	BODY	1
42	Purchase Locally	MACHINE SCREW, 1/4-28 x 1/2	12	49	QS-333	FRONT PLATE	1
43	QS-334	END PLATE.....	1	50•	---	END CAP GASKET	1
44	QS-189-1-K10	DOWEL PIN (Kit of 10)	4	51	PT-58	BEARING	1
45•	PT-59-1-K10	END PLATE SPACER KIT (Kit of 10)	2	52	QS-190	END CAP	1
46•	---	VANE	4				

• Parts available in KK-5001-1 Air Motor Repair Kit.

FIGURE 3 — GEAR BOX ASSEMBLY



PARTS LIST

When ordering, please specify Part No.

ITEM NO.	PART NO.	DESCRIPTION	QTY.	ITEM NO.	PART NO.	DESCRIPTION	QTY.
53	---	THREAD LOCKING COMPOUND (not shown)		60	Purchase Locally	PIPE PLUG, 1/4" Galvanized	1
54•	---	FILLISTER HEAD MACHINE SCREW....	4	61	QS-36-1	HOUSING	1
		10-24 x 5/8"		62•	---	OIL SEAL.....	1
55	QS-108	PRESSURE RELIEF FITTING	1	63•	---	CUP POINT SETSCREW, 5/16-18 x 3/8"	2
56	QS-37-1	COVER PLATE.....	1	64•	---	GASKET	1
57•	---	WASHER	1	65	QS-59	WORM GEAR	1
58	QS-416-1	GEAR AND SHAFT ASSEMBLY.....	1	66•	---	SPACER.....	1
59•	---	GASKET	1	67•	---	KEY, No. 5, 5/8" x 1/8"	1

• Parts included in KK-5010 Gear Box Kit.

WARRANTY

This product is covered by Binks' 1 Year Limited Warranty.

Binks Sales and Service: www.binks.com



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77-2804R-3 Revisions: Trademark updates.