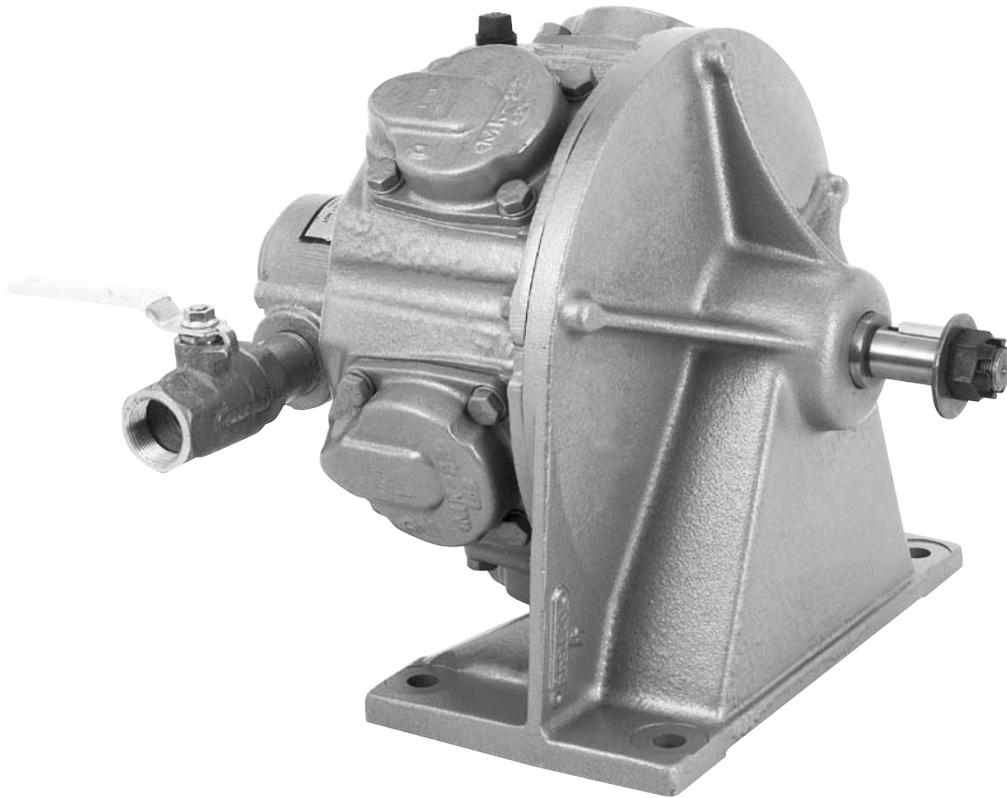


Parts Manual  
PL70-1011  
11/30/2010

# Cleco®

**MK Series**  
Radial Piston Air Motors

**Model Numbers:**  
MKW-2258 (AM2-1561-01)



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**GENERAL INSTRUCTIONS:**

Cleco MK series air motors are of the five-cylinder radial piston type. The five-cylinder radial design, with its overlap of power impulses, provides even torque at all speeds, and full power in either direction of rotation. At least two pistons are always on a power stroke.

These motors are designed for continuous service on 60 to 100 PSI air pressure. If overloaded beyond their power capacity, the air motor will simply stall without damage.

**INSTALLATION:**

Be sure the airline is clean and free of scale and dirt before connecting to the air motor. Check all pipe fittings to make sure there are no air leaks.

During **continuous service**, these air motors should not operate faster than 65% of their rated free speed. An airline filter/lubricator should be installed as close to the air motor as possible.

During **intermittent service**, the splash lubrication from the motor case is adequate.

Check all cap screws to make sure they are properly tightened.

If an excessive amount of water is present in the airline, a water trap should be installed to trap as much as possible before it reaches the machine.

**LUBRICATION:**

Fill the motor case to the proper level before operating the motor.

Use Engine Oil\* API Service Classified "SC" in the following weights:

**Above 32° F - SAE 30W**

**Below 32° F - SAE 10W**

Check the oil level daily and fill as necessary. If an airline lubricator has been installed, check daily and fill as necessary.

**Motor Case:** Approximately one and one-half (1-1/2) quarts of oil is required to fill the motor case to proper level.

To check the motor case for proper oil level, open the oil level cock (90C12). If oil does not flow from the cock, add the appropriate oil until it starts to

flow and then close the oil level cock.

If the airline carries an excessive amount of water and a water trap can't be installed, use a good grade of motor oil (an oil that will emulsify with water) to prevent damage to vital motor parts.

**Gear Case:** Approximately one (1) quart of oil is required to fill the gear case to the proper oil level.

Use Engine Oil\* API Service Classified "SC" in the following weights:

**Above 32° F - SAE 30W**

**Below 32° F - SAE 10W**

The oil must flow at all times to properly lubricate the gears and bearings.

To check the gear case for proper oil level, open the oil level cock (90C12). If oil does not flow from the cock, add the appropriate oil until it starts to flow and then close the oil level cock.

**CARE AND MAINTENANCE:**

Service the air motor regularly. The breather cap should be inspected frequently to make sure it is not plugged with dirt.

The drain plug in the motor case should be removed occasionally to allow any water or condensate in the bottom of the case to drain off. This should be done before adding new oil and after the motor has been idle long enough to permit the water and oil to separate.

Excessive use of oil is usually due to worn pistons and rings, a worn distributing valve and bushing, a damaged oil seal or a clogged breather cap.

**ASSEMBLY INSTRUCTIONS:**

Place the motor case face up (cylinder opening up) on a table. Install the valve bushing into the motor case counterbore from the outside until it bottoms out. *NOTE: The valve bushing must be put in a freezer before assembling into the motor case.*

Install the piston rings into the grooves on the pistons (step on ring toward open part of piston). Put a retainer in one end of the hole in the pistons. Slip the bushing (MK33), chamfer down, over the drive end of the crankshaft until it bottoms out. Line up the oil holes with the groove in the crankshaft. Put a light coating of oil on the bushing (MK28)

**MKW Series Radial Piston Motors**

and Tap the key (35D13) into the keyway on the crankshaft.

Place one connecting rod retainer over the bushing (MK28). Place the five (5) connecting rods into the connecting rod retainer (lettering on rod up). Place the other connecting rod retainer over the connecting rods and the bushing (MK28). Assemble the crankshaft (drive end) to the crankshaft (valve end). Line up the shaft groove with the hole in the crankshaft and insert the screw (MK32). Secure with the nut (50E5) and cotter pin (P101J).

Press the bearing (12J30) onto the crankshaft assembly until it bottoms out. Place the crankshaft assembly into the motor case and tap into position. Attach the five (5) pistons to the connecting rods with the piston pins and secure with the retainers (MK26).

Oil the inside wall of each cylinder. Place a gasket (MK23) on each cylinder. Compress the piston rings and slide a cylinder over each piston. Secure each cylinder with four (4) washers (95G24) and four (4) screws (75A4). Tighten to 45 ft. lbs. torque.

Oil the valve bushing and distributor valve, then insert the distributor valve into the valve bushing (locate in dowel pin). Slide the valve chest over the bushing and secure with two (2) washers (95G24) and two (2) screws (75A208). Tighten to 45 ft. lbs. torque. Apply air to the unit and test run in one direction only.

Press the bearing (525424) onto the large gear end of the gear and pinion. Press the bearing (526576) onto the geared end of the gear and shaft until it bottoms out. Press the bearing (12J37) and then the wear ring (MKGP40R) onto the threaded end of the gear and shaft until they bottom out.

Press the oil seal (60G115) into the gear housing until it is flush with the outside edge of the housing. Press the bearing (526576), for the gear and pinion, into the housing until it bottoms out. Insert the gear and shaft into the gear housing and tap in until it bottoms out. Install the gear and pinion into the gear housing.

Press the oil seal (60G116) into the bearing housing (MK20). Place the bearing housing (MK39) on the bearing housing (MK20) and secure with three

(3) washers (W125) and three (3) screws (75B4). Tighten to 45 ft. lbs. torque. Thread wire through the holes in the screws and secure the ends.

Place the gasket (HK25) over the gear housing and assemble the bearing housing. Make sure the pin in the bearing housing fits into the mating hole in the gear housing.

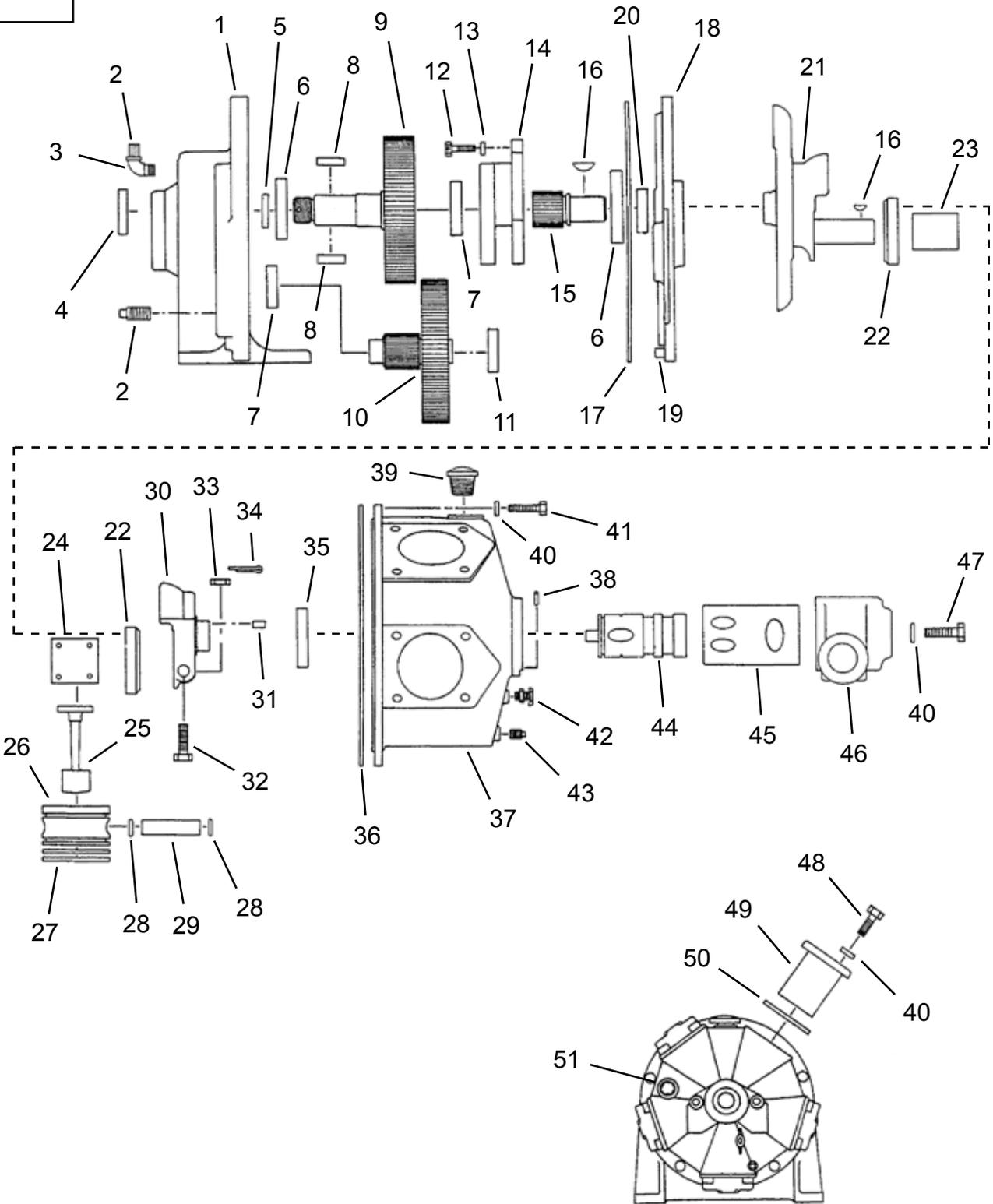
Press the bearing (12J37) onto the pinion gear until it bottoms out. Tap the key (35D13) into the keyway on the pinion gear. Insert the pinion gear into the crankshaft assembly until it bottoms out. Place the gasket (MK19) on the motor case and assemble the motor case to the gear housing assembly (breather hole up). Secure with five (5) washers (95G24) and five (5) screws (B154M). Tighten all screws to 45 ft. lbs. torque.

Assemble the plugs and cock, then fill the motor case with two (2) quart of oil and the gear housing with one (1) quart of oil.

**Cleco®**  
MKW Series Radial Piston Motors

**Models**  
MKW-2258

“A”



**MKW Series Radial Piston Motors**

**Illustration "A"**

Ref	Number	#	X	EN
				Description
1	MKG1	1		Gear Case (includes 1 Ref. 2 and Ref. 3)
2	B110E	24	2	Pipe Plug
3	F583	1	2	Street Elbow
4	60G115	1	3	Oil Seal
5	MKGP40R	1	2	Wear Ring
6	12J37	2	4	Bearing
7	526576	2	4	Bearing
8	35B117	2	6	Key
9	MKG52S	1		Gear and Shaft
10	MK38A	1		Gear and Pinion
11	525424	1	2	Bearing
12	75B4	3	6	Screw
13	W125	3	6	Washer
14	MK39	1		Bearing Housing
15	MK37	1		Pinion Gear
16	35D13	2	6	Key
17	HK25	1	3	Gasket
18	MK20	1		Bearing Housing (includes Ref. 19)
19	DP162	3	6	Pin
20	60116	1	3	Oil Seal
21	MK30Y	1		Crankshaft (Drive End)
22	MK29	2		Connecting Rod Retainer
23	MK33	1		Bushing
24	MK28	1		Bushing
25	MK27	5		Connecting Rod
26	MK24	5		Piston
27	65A222	10	20	Piston Ring
28	MK26	10	20	Piston Pin Retainer
29	MK25	5		Piston Pin
30	MK31	1		Crankshaft (Valve End) (includes Ref. 31)
31	DP142	1	2	Pin
32	MK32	1	1	Crankshaft Bolt
33	50E5	1	2	Castle Nut
34	P101J	1	3	Cotter Pin
35	12J30	1	2	Bearing
36	MK19	1	3	Gasket
37	MK18	1		Motor Case (includes Ref. 38)
38	DP114	1	3	Pin
39	542139	1	3	Breather Cap
40	95G24	27	54	Washer
41	B154M	5	10	Motor Case Screw
42	90C12	2	6	Cock
43	64AA5	1	2	Pipe Plug
44	MKL13	1		Distributor Valve
45	MK11	1		Valve Bushing
46	533763	1		Valve Chest
47	75A208	2	4	Valve Chest Screw
48	75A4	20	40	Cylinder Screw
49	MK22	5		Cylinder
50	MK23	5	15	Gasket
51	64A5	1	2	Pipe Plug
52	MBA15	1		Instruction Plate (Not Shown)
53	530322	1		Nameplate (Not Shown)
54	534820	4		Drive Screws (Not Shown)

(#) Quantity

(X) Recommended Spare Parts





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