



AIR MOTOR FOR SERIES 'DP' DRUM PUMPS

OPERATION AND
SERVICE GUIDE
O-275
AUGUST 1995

MODEL	PRICE CODE NO.
AIR(F)	52-0100

Refer to Bulletin P-402 and
Parts Lists P-1030.

SPECIFICATIONS	MODEL (F)
Air Inlet Connection	3/8" NPT
Air Supply Pressure	100 PSI MAX.
Air Consumption	28 SCFM @ 90 PSI
RPM (at maximum pressure)	7800
Viscosity (maximum)	320 CPS (1490 SUS)
Specific Gravity (maximum)	1.4
Oil Lube Cup Location	Air Inlet

WARNING:

To prevent explosive hazard DO NOT drive this air motor with combustible gases. Injury and/or property damage can result.

CAUTION: Air motors are not recognized under any current Underwriter's Laboratory listing program. Consult a qualified engineer for suitability for use in a hazardous area or on flammables.

SAFETY PRECAUTIONS BEFORE STARTING DRUM PUMP

1. Read operating instructions and instructions supplied with chemicals to be used.
2. Refer to Chemical Resistance Data Chart for compatibility of materials in pump with solution to be used.
3. Note temperature and pressure limitations.
4. Personnel operating pump should always wear suitable protective clothing; face mask or goggles, apron or gloves.
5. Ensure that all fittings and connections are properly tightened.
6. When pumping flammables or in a hazardous duty environment, proper bonding and grounding is required according to NFPA 77 to avoid static electric discharge. See Page 2 for proper method. Bond and Ground before starting.
7. Never use the AIR(F) motor in conjunction with plastic pump tubes when pumping flammables or in a hazardous duty environment.

BEFORE CHANGING APPLICATION OR PERFORMING MAINTENANCE

1. Wear protective clothing as described in item 4 above.
2. Flush pump thoroughly with a neutralizing solution to prevent possible harm to personnel.
3. Verify compatibility of materials as stated in item 2 above.

PRE-START-UP

For efficiency of output and control of speed, use air lines the same size as or the next size larger than the intake port of the motor. Install a moisture separator, filter, filter pressure regulator and automatic lubricator in the air line ahead of motor. Install quick disconnect switch swivel couplings between motor and air hose. Use detergent SAE #10 automotive engine oil is recommended. Continuous or frequent operation and high RPM service requires an automatic lubricator set to feed 1-3 drops per minute. Lubrication is necessary for the bearings, shaft seals and rust prevention.

MODEL	DESCRIPTION	PRICE CODE NO.
SF-A10 $\frac{1}{2}$	Filter 125 PSI $\frac{1}{2}$ " NPT	79-0827
SF-0- $\frac{1}{2}$	Lubricator	79-0276
SF-PR- $\frac{1}{2}$	Pressure regulator w/gauge	79-0277
SF-A38- $\frac{1}{2}$	Kompressed - Air - Konditioner	79-0002A

Excessive moisture in the air line can cause rust formation in motor and might also cause ice to form in muffler due to expansion of air through the motor. The moisture problem can be corrected by installing a moisture separator or dryer in the air line or by installing an aftercooler between the compressor and air receiver.

Always use a filter, lubricator and regulator on the intake side of the unit. Failure to provide one will result in premature failure of the air motor. A filter is necessary to provide moisture free air and avoid rust build up. A lubricator using SAE 10 wt. oil is necessary to provide internal lubrication. The regulator assures proper air pressure.

OPERATION

The starting torque is less than the running torque and could vary depending on the position at which the vanes stop in relation to the air intake port. The speed and torque can be regulated by using a pressure regulator or a single shut-off valve to obtain desired power and conserve air. Motor operates in only one direction. To obtain flow rates shown on pump curve, adjust air pressure to maximum given in the specification table. To reduce pump flow rate, reduce air pressure by adjusting pressure reducing valve.

CAUTION: DO NOT allow the air motor to "run free" at high speeds with no loads. Excessive internal heat build up, loss of internal clearances and rapid motor damage will result.

SERVICING MODEL (F)

Refer to Parts List P-1030.

1. Daily normal maintenance is recommended.
2. If motor slows down or stops, remove motor from pump and air supply. Turn the motor shaft with your finger; it should turn easily. If it does not, check your lubricator to be sure air motor is receiving proper lubrication.
3. Check the muffler to make sure it is not clogged. A safety solvent can be used to clean the clogged muffler. A clogged muffler will cause back pressure and prevent the unit from working freely.
4. Never stand directly in path of muffler exhaust.
5. Never operate the air motor without the muffler in place and tightened properly.

GROUND WIRE is for use with Air Motors (F) on metal pump tubes to prevent static discharge when pumping flammables and combustibles. Secure the spade lug end to motor and attach spring clamp to a ground. Also use **BOND WIRE** to bond containers.

DO NOT USE PLASTIC PUMPS FOR COMBUSTIBLES OR FLAMMABLES.

WARNING

When using a drum pump to fill cans, drums or other portable or fixed containers with flammable or combustible liquids such as gasoline, both the container being pumped from and the container being pumped to must be effectively **BONDED** and **GROUND**ED to prevent discharge of sparks of static electricity which could cause explosion.

BONDING is the electrical interconnection between containers (such as drum and receiving can). Bonding must be completed before pumping begins. (See diagram).

GROUNDING is the electrical connection between a container and a "constant ground". A "constant ground" would be a metal pipe or rod in contact with the earth. An underground tank and piping connected to it would be inherently grounded by nature of the installation.

Both **BONDING** and **GROUNDING** of containers of flammable liquids are required under U.S. Government OSHA regulations and National Fire Protection Association Code 77, static electricity. Metal pumps must be bonded to metal container or grounded, if used with plastic container.

Normal safety procedures must be used at all times when operating any piece of machinery. Do not modify or make any changes to the product without receiving written permission from factory.

TRANSFERRING OF FLAMMABLES OR USE IN HAZARDOUS DUTY ENVIRONMENTS

Bonding is an electrical connection between a primary metal vessel and a metal receiving vessel. See schematic.

Grounding is an electrical connection between a metal vessel, pump, motor and a constant ground; i.e. a metal rod driven into the earth.

Bonding and grounding are required when pumping flammable materials or in hazardous duty environments. Failure to bond and ground properly can cause a discharge

of static electricity resulting in fire, injury or death. Follow NFPA 77 and 30 procedures at all times. If in doubt, do not start pump! Be sure bonding and grounding wires are secure before starting operation. (Ground and bond wires must have less than one ohm resistance for safe usage. Check continuity before starting.) Always check with a safety engineer when any question arises and periodically check safety procedures with a safety engineer.

OPTIONAL	
REQUIRED WHEN PUMPING FLAMMABLES OR COMBUSTIBLES	PRICE CODE NO.
BONDING WIRE 10 ft. long with spring clamp at each end.	55-0245
GROUNDING WIRE 6 ft. long, spring clamp one end, spade lug one end.	55-0246

