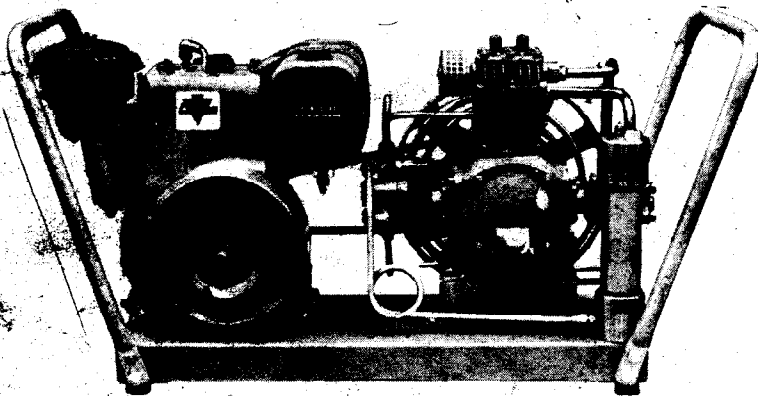


# CYCLONE COMPRESSOR

U.S. DIVERS PART NOS. 2210, 2218 & 2220



## I. DESCRIPTION

High pressure three stage compressor, air cooled, belt driven.

### Specifications

Delivery capacity:	3.5	C.F.M.
Working pressure:	2,400	P.S.I.
Maximum pressure:	2,800	P.S.I.
Speed:	1,500	R.P.M.
Absorbed power:	3.5	H.P.
Crank Case capacity:	1	Pint

## II. INSTALLATION

Install the compressor in a well ventilated area, free of toxic gas, moisture, and dust. The compressor fly-wheel must be a minimum of 8 inches from a wall for proper cooling.

## III. LUBRICATION

- Oil system: Piston pump.
- Remove all tape and coverings.
- Oil: Must have a Saybolt viscosity at 122 degrees F 200 sus non-toxic, no smell and no taste. Recommend: U.S.D. 2203 pint, 2204 quart, 2205 gallon. Caution: Oil must be of mineral base, no other can be used safely.
- Filling with oil: remove the oil filler cap on the front of crank case. Fill slowly in order not to overflow. The oil level is to the edge of the filling cup, the low level is the bottom of the filling cup.

## IV. BREAK-IN & OPERATION PROCEDURE

A. After completing above instructions, turn the fly-wheel by hand (20 revolutions). Disconnect line running to filter from compressor. Free run compressor 30 min. allowing rings to seat in and compressor to pump out storage accumulations of oil. Compressor may pump some oil, due to the rings being in a stationary position. This time will benefit you and your compressor. After completing this first 30 minute free-run, stop compressor, and hook up the line you removed. Attach tank to filler line. Open bleeder knob on filter and at the same time open tank valve. If your tank pressure is less than 1400 you may open your tank valve after you have put on the filler attachment. During pumping period bleed filter every ten minutes to eliminate any oil and water build-up in the filter. When tank pressure has been accomplished, (1) stop compressor, (2) turn off tank valve (3) bleed filter (4) disconnect filler gauge. After each filling allow compressor to cool enough so that you can rest your hand on the large top line of the compressor.

DO NOT ALLOW COMPRESSOR TO RUN OVER A TWO HOUR PERIOD WITHOUT COOLING.

### Note:

To equalize pressure, hook up filler line to tank. Keep tank valve closed. Keep bleeder knob closed on the filter. When the pressure gauge reads the same as the tank pressure, open tank valve.

### Caution:

Use extreme vigilance—pressure build-up in the filler line very fast - (5 or 6 seconds)

## V. PREVENTIVE MAINTENANCE OF THE COMPRESSOR

- Check the oil level everyday before starting the compressor and add oil if necessary.
- Every 50 hours or after a long stop, or in case of malfunctioning.
  - Check the valves and springs of all three stages, (one intake valve in the first stage, three exhaust valves, one in each stage). Check springs: remove 2-3 stage heads. Check lantern spring tension by placing pencil in the lantern exhaust hole. Purge lantern clappette with pencil, lantern clappette should move  $\frac{1}{8}$  inch and return to original position. If the clappette does not return or move in any direction, valve has too much carbon build-up and should be cleaned.
  - Cleaning instructions - clean valve and spring with a mixture of water and detergent. Rinse thoroughly and abundantly with clean hot water and lubricate the assembly with compressor oil. DO NOT CLEAN WITH GASOLINE.
  - Eliminate all traces of oxidation using a small piece of hardwood. DO NOT USE ANY METAL OBJECT. Wipe thoroughly both valve and spring.
- Every 25 hours:
  - Change oil of crank case: Under the oil filler cap is an oil drain wingscrew. Unscrew it until the oil flows freely. It is not necessary to unscrew it completely.
  - Clean air intake filter by shaking it in non-detergent soap solution. Rinse well and let it dry before replacing.
  - Replace carbon in high pressure air filter (see filter instructions)
- To store:
  - Remove air intake filter and inject new oil (paragraph III C) while turning the flywheel by hand, 20 revolutions in order to distribute the oil in all of the stages.
  - Replace the air intake filter after cleaning and cover air tight.
  - Cover crank case ventilation valve in back of the flywheel to prevent dust in the crank case.
  - Leave oil in crank case.
  - If the exhaust pipe of the last stages has been removed, cover.
- Restarting the compressor after being stored.
  - Remove covers.
  - Drain oil, remove back crank case cover and inspect moving parts for rust.
  - Dismantle the 2nd and 3rd stage. Make sure cylinders, piston, also valves, are not oxidized or in need of cleaning. Lubricate parts with clean compressor oil.
  - Replace and cover and refill with new oil.
  - Turn the flywheel by hand (20 revolutions) then free run the compressor 30 minutes with the bleeder valve on filter open.

### Special Note:

Topping Off Tanks.

If tank pressure is over 1500 P.S.I. then equalize the filler pressure with the tank pressure before opening tank valve. This prevents harmful back pressure.