

Polar Extraction HPE

Condensate Separator

Installation, Operation, and
Maintenance Manual

FAILURE TO INVEST YOUR TIME TO READ AND UNDERSTAND THE FOLLOWING INSTRUCTIONS MAY CAUSE YOU UNNECESSARY COMPLICATIONS IN THE INSTALLATION OR OPERATION OF THIS EQUIPMENT.

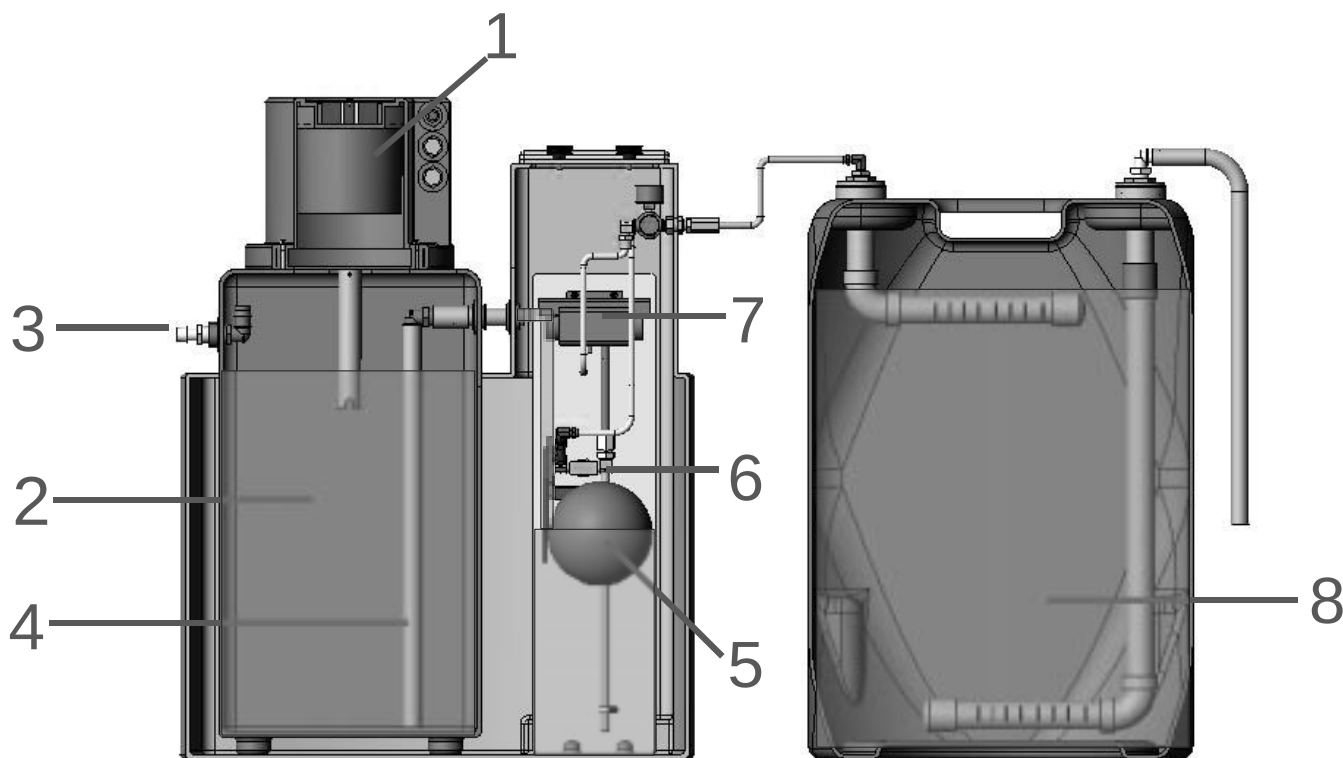
How It Works...

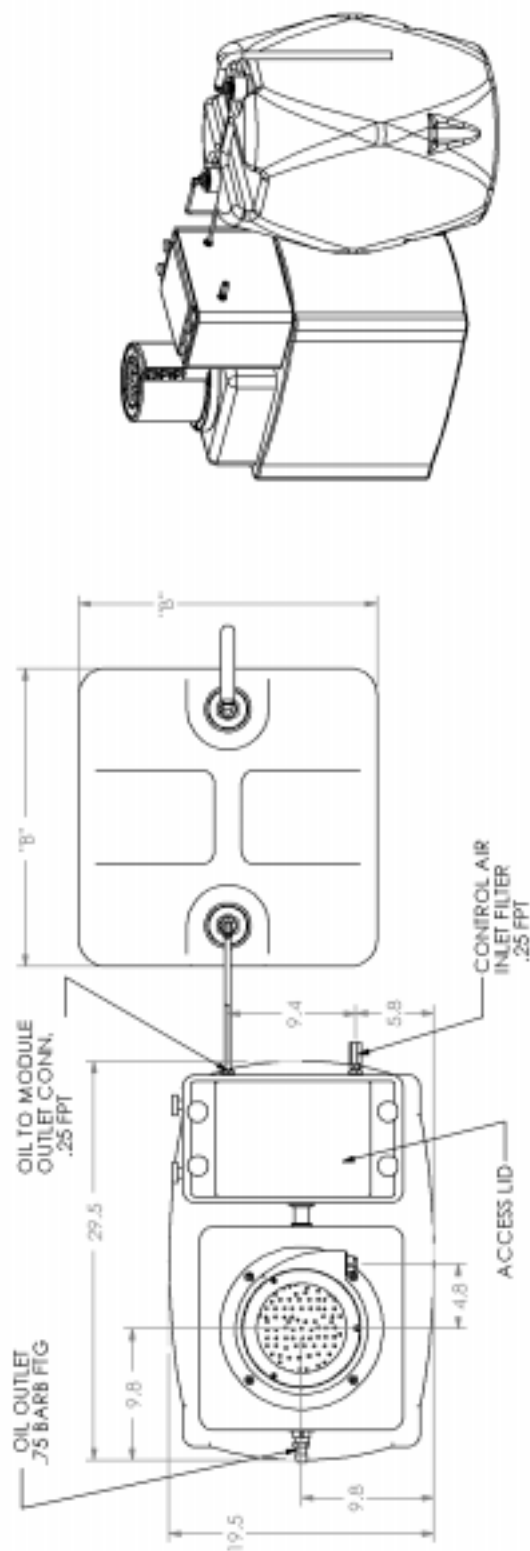
Traditional gravity type separators do very well in separating oils that have good separation characteristics. However, many compressor oils do not fully separate. These types of oils, known as emulsions, tend to foul-up the carbon filters as well as the pre-adsorption and coalescing medias that are commonly installed in front of the carbon filters. Those filters have to be replaced before their capacity is fully used.

The Separator was designed to effectively separate emulsified compressor condensate to levels of 15 PPM or less without premature element failure and backup spillages. To do this, the Separator uses two very unique features. **First**, the delivery system has a pneumatically operated pump that is used to feed the filter module. The use of pressure assures the filter will not clog. **Second**, the Filter Module contains a specially formulated zeolite adsorbent. The substrate is coated with a hydrophobic compound. This combination gives the media an ability to hold up to four times the amount of oil that standard activated carbon can hold.

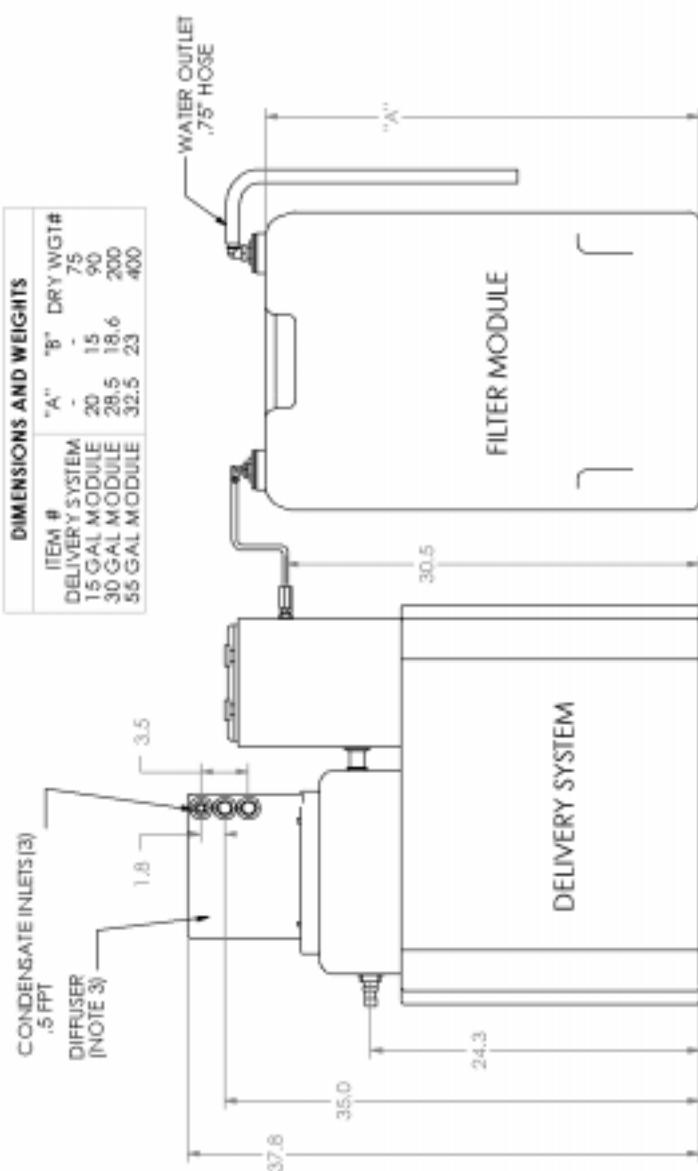
The condensate enters the (1) **Diffuser Chamber** where it is depressurized. The oily condensate then enters a (2) **Main Reservoir** where sedimentation occurs. Any oil that floats to the surface can be skimmed off through an adjustable (3) **Oil Weir**. The condensate then moves to a separate chamber through a (4) **Pick-Up Tube**. As the condensate accumulates in the next chamber, a (5) **Float** rises with the level of condensate. The float is connected to a (6) **Ball Valve** by a lever arm. The increased level of condensate causes the float to rise and open the ball valve. As the valve opens, the air-operated (7) **Pump** is allowed to push the condensate out to the (8) **Filter Module**. If the level of condensate continues to rise, the float also rises and further opening the ball valve. This results in additional condensate being pushed to the filter module. Thus, the system will self adjust to the quantity of condensate entering the system. This system assures maximum contact time for the filter module.

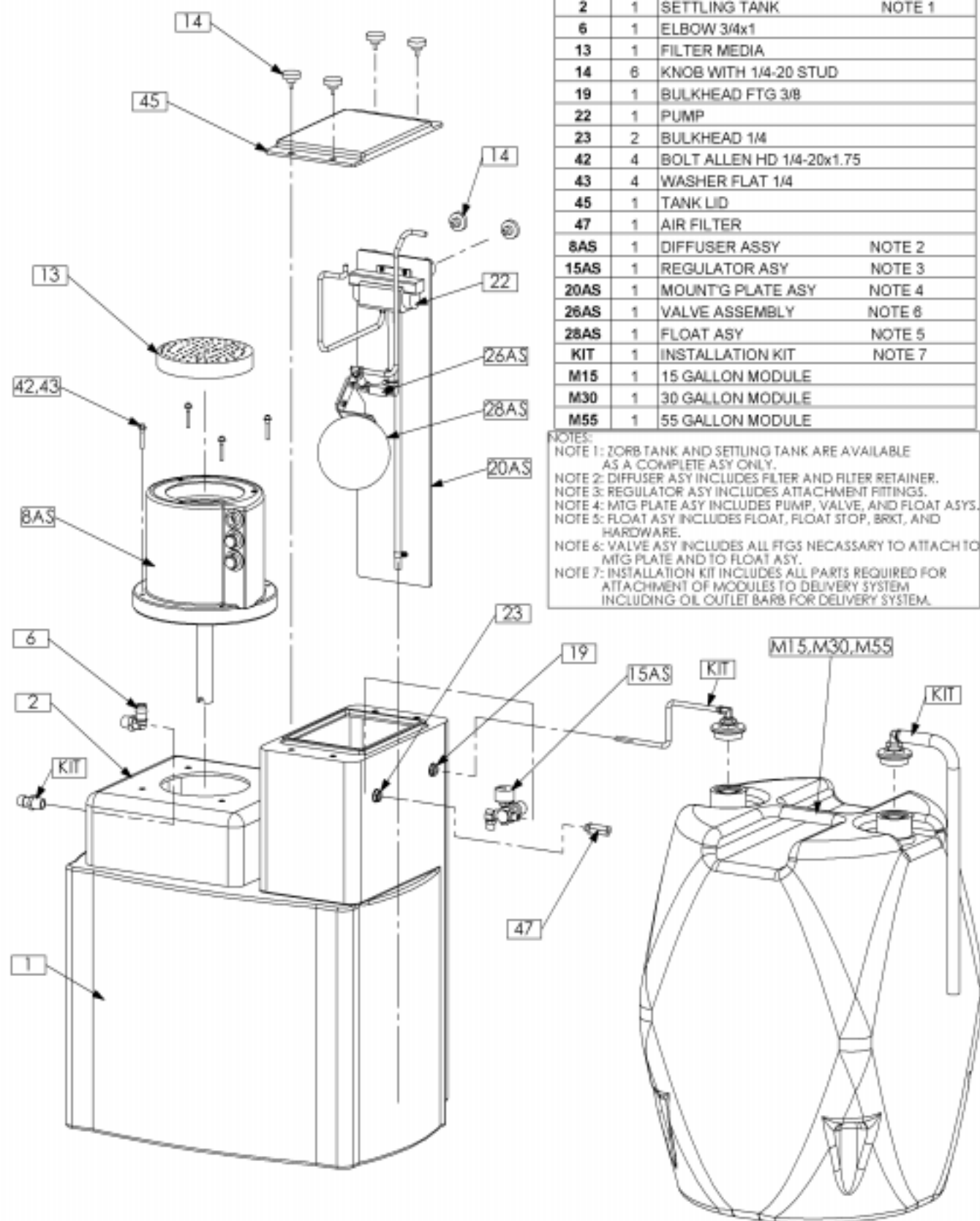
How It Works:





DIMENSIONS AND WEIGHTS			
ITEM #	"A"	"B"	DRY WGT#
DELIVERY SYSTEM	-	-	75
15 GAL MODULE	20	15	90
30 GAL MODULE	28.5	18.6	200
55 GAL MODULE	32.5	23	400





INSTALLATION INSTRUCTIONS

PLACEMENT:

Position the SEPARATOR Delivery System Adsorption Module and an Oil Collection Container (not supplied) in an easily accessible location near your Compressor Station.

The following Adsorption Module Backwash Procedure **MUST** be performed each time you install a new Adsorption Module. It will purge the Adsorption Module of air and clarify the water by removing the fine dust created during transportation.

ADSORPTION MODULE BACKWASH PROCEDURE:

1. Remove the 2" npt plug from the Inlet Port on the Adsorption Module. Replace with the 2" npt (m) x 3/4" npt (f) reducing bushing and a 3/4" npt (m) x 3/4" hose barb elbow.
2. Supply your required length of 3/4" discharge tubing (clear is recommended) (not supplied) and secure it with a hose clamp (not supplied) to the 3/4" hose barb connection. Route this tubing to your Sanitary Sewer Floor Drain.
3. Remove the 3/4" npt plug from the Outlet Port on Adsorption Module AM15 and replace it with the 3/4" npt (m) x 3/4" garden hose adapter.

Note: The Plug is 2" on Modules AM30 & AM55. Replace with a 2" npt (m) x 3/4" npt (f) reducer bushing. Then install the garden hose adapter.

4. Connect one end of a garden hose to your tap water valve. Next, connect the opposite end to the hose adapter on the Adsorption Module. **Open the Tap Water Valve ONLY one-quarter (1/4) turn** to purge the air and fill the Adsorption Module with clean water. Continue to backwash the Adsorption Module until the water exiting the discharge hose runs clear.
5. When water runs clear, shut off the tap water valve, disconnect the garden hose and, remove the garden hose adapter fitting from the outlet port. (Keep the garden hose adapter fitting for future use).

The Backwash Procedure is now complete. Prepare the Adsorption Module for Air Compressor Condensate Service as follows:

6. Remove the 3/4" npt (m) x 3/4" hose barb elbow and discharge hose from the inlet port and, reinstall them into the outlet port.
7. Install a 3/4" npt (m) x 3/8" npt (f) reducer bushing into the inlet port, then install a 3/8" npt (m) x 3/8" tubing

adapter elbow. Next, fasten one end of the White 3/8" condensate delivery tubing to the tubing adapter.

DELIVERY SYSTEM INSTALLATION:

1. Level the Delivery System.
2. Thread the 1/4" npt (m) in-line, sintered bronze, particulate Control Air Filter into the Control Air Inlet Port. Connect a clean, dry, oil-free compressed air line to the Adsorption.

NOTE: PROPER OPERATION OF THE DELIVERY SYSTEM REQUIRES THAT CLEAN, DRY, OIL-FREE 30-150 PSI COMPRESSED AIR BE PIPED TO THE CONTROL AIR ADSORPTION. FAILURE TO DO SO MAY DAMAGE THE PUMP AND VOID THE WARRANTY.

WE RECOMMEND INSTALLING A 1/4" NPT, .01 MICRON COALESCING ADSORPTION IF OIL IS PRESENT IN YOUR CONTROL AIR.

3. Install the Clear 3/4" x 18" Hose into the Oil Outlet Port with the 3/4" npt (m) x 3/4" hose barb Straight Fitting and, place the end of the hose into your Oil Collection Container (not supplied).
4. To connect the SEPARATOR Delivery System to the Adsorption Module, first, install a 3/8" npt (m) x 3/8" tubing adapter into the 3/8" npt Condensate Discharge Port. Then, fasten the White 3/8" Condensate Delivery Tube (that you connected to the Adsorption Module in step #7) to the tubing adapter. Be careful not to kink the tubing.

SERVICE PREPARATION PROCEDURE:

1. Remove the lid from the top of the Delivery System Carefully, set the lid aside.
2. Check the Internal Pressure Gauge. It should read 40 PSI. **DO NOT ADJUST ANY HIGHER.**
3. Position the oil outlet elbow, located within the Main Reservoir, so that it is pointing straight up.
4. Remove Diffuser. Slowly, fill the Main Reservoir with tap water. (Water will automatically exit through the pick-up tube and spill into the Delivery System Reservoir.
5. The rising water level will open the discharge valve by lifting the ball float. This will cause the pump to start cycling and push the Water through the Adsorption Module.
6. Watch the discharge hose on the Adsorption Module to determine that water is being pumped through the system. If it is not, add about a half-a-gallon to the reservoir and check again. The Pump will continue to run until the

receding water level lowers the ball float enough to close the valve. This will stop the Pump.

SYSTEM COMMISSIONING:

1. Replace the Lid on the Delivery System.
2. Connect your Condensate Drain Lines to the 1/2" npt (F) inlet connections on the Diffuser Chamber.

Note: The Diffuser Chamber can be rotated at 90 degree intervals to ease your piping restraints. Simply remove the four socket head cap screws, position as needed and, replace the screws.

3. SAVE ALL PLUGS AND FITTINGS!!!

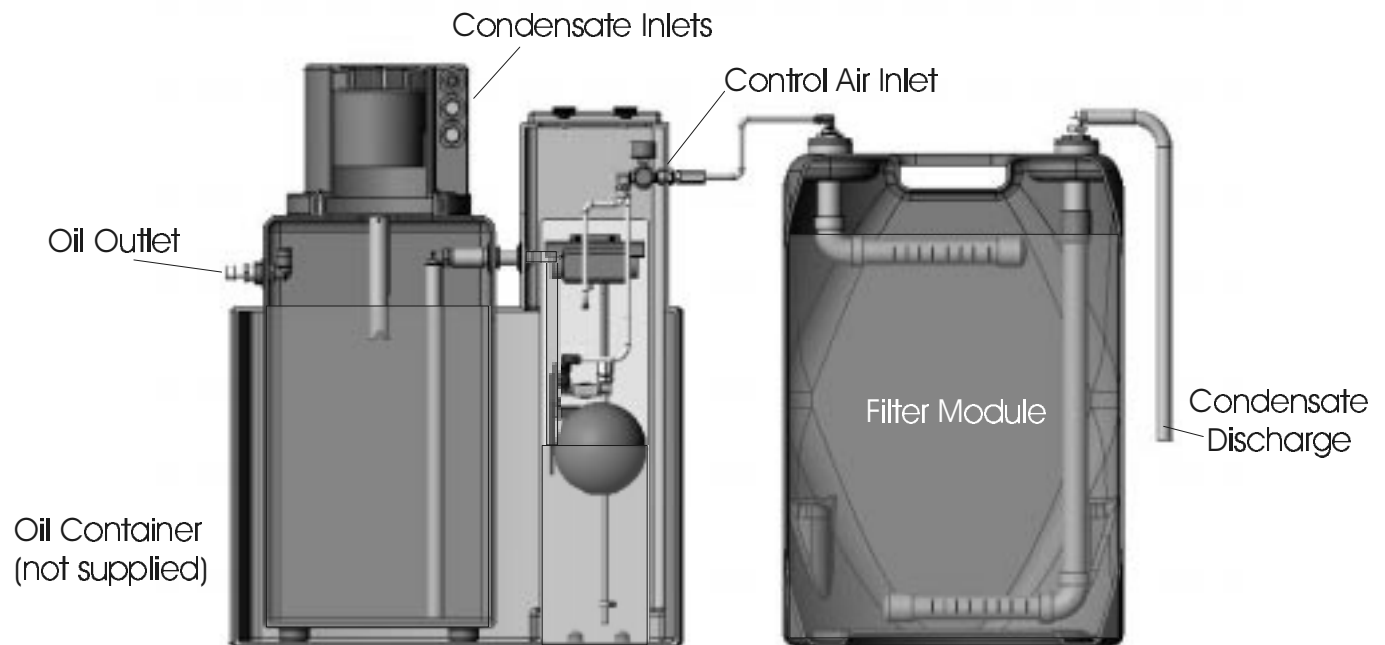
4. The SEPARATOR is ready for service.

OPERATION:

- ✓ The SEPARATOR Delivery System will automatically start and stop as required by the condensate load.
- ✓ Weekly, collect a sample of the discharge water in a clear glass vessel and, compare it to tap water checking for cloudiness.
- ✓ Replace the Adsorption Module when cloudiness appears in the discharge water sample.

Polar Extraction HPE Installation Parts List

P/N	Quantity	Description
3044392	1	Air Filter for Control Air
PZP5-2T	2	2" x 3/4" FNPT Tank Fitting
TR5-8	1	3/4" x 3/8" Reducer Bushing
PZP5-34H	1	Brass 3/4" MNPT x 3/4" Garden Hose Connector
TR9-7	1	3/4" MNPT x 3/4" Barb Street Elbow Fitting
TR9-1	1	3/4" x 3/4" Barb Street Straight Fitting
PZP5-38E	1	3/8" MNPT x 3/8" Tube Elbow Fitting
	18"	3/4" Clear PVC Tubing
	6'	3/8" Nylon Tubing



Limited One Year Warranty

The Sepaator is warranted to be free from defects in material and workmanship, under proper use, installation, application, and maintenance in accordance with the manufacturer's written recommendations and specification for a period of 15 months from the date of shipment from the factory or 12 months from the date of installation, whichever comes first. The manufacturer's obligation under this warranty is limited to, and the sole remedy for any such defect shall be, the repair or replacement (at manufacturer's option) of unaltered products returned to manufacturer within said period.

This is the only authorized manufacturers warranty and is in lieu of all other express or implied warranties or representation, including any implied warranties of merchantability or fitness, or of any other obligations on the part of the manufacturers.

Warranty claims must be submitted and shall be processed in accordance with the manufacturers established warranty claim procedure. In no event, shall the manufacturer be liable for business interruptions, loss of profits, personal injury, costs of delay or any other special, indirect, incidental, or consequential losses, cost, or damages.

NOTE - Routine maintenance and minor adjustments to the Separator are not covered under this warranty. Prior to performing any possible warranty service or replacing a possible warranted part, please contact your local Manufacturer Distributor. Failure to comply with this procedure will result in denial of warranty claim.