A close-up photograph of industrial machinery, showing several large, polished metal rollers or shafts. The lighting is dramatic, with strong highlights and deep shadows, emphasizing the metallic texture and curved surfaces. A yellow component is visible in the lower right foreground.

ThermaPhase[®]

Evaporative Oil-Water Separator



ThermaPhase® Evaporative Oil-Water Separator

An efficient solution for the toughest compressor condensate

Product Info

Most air compressors produce condensate that needs to be disposed of in an environmentally friendly way, which can be costly. The nature of some lubricants is to form a stable emulsion or become soluble in the water. In these scenarios, you need more than a gravity separator and carbon filter. That's why Summit Lubrication developed the ThermaPhase unit. ThermaPhase is a thermostatically controlled, electrically heated evaporation unit that separates air compressor condensate from spent compressor lubricant. The unit releases the condensate water as atmospheric steam, leaving the oil in the unit, which can be drained yearly.

Rugged Construction, Autonomous Operation

- Stainless steel body - resists rust and corrosion
- No wear parts or consumables
- Sized to be filled by compressor
- Human intervention for cleaning only required once per year
- Lifespan of 25+ years

ThermaPhase units come in multiple sizes for optimized operation. See sizing information on page 4 to find the right model for your needs.



Product Benefits

- **Economical:** ThermaPhase offers an economical alternative to having your condensate hauled away by a licensed disposal company. Its quality parts and construction are built for a long life with little-to-no maintenance. Want to see how much you save? Calculate the volume of condensate created and check your savings by using the Annual Savings chart on page 3.
- **Powerful:** These units handle a broad variety of synthetic (polyglycol, diester, synthetic hydrocarbons, silicone, polyester and mixtures) and petroleum-based compressor lubricants. (ThermaPhase should not be used on lubricants containing significant quantities of phosphate esters.)
- **Environmental:** ThermaPhase is an excellent choice for companies proactively engaging in environmental management. ThermaPhase will also improve onsite safety and reduce potential spill contamination issues by removing the need for a pump out truck being brought onsite. These units help companies who are pursuing **ISO 14001 registration**.

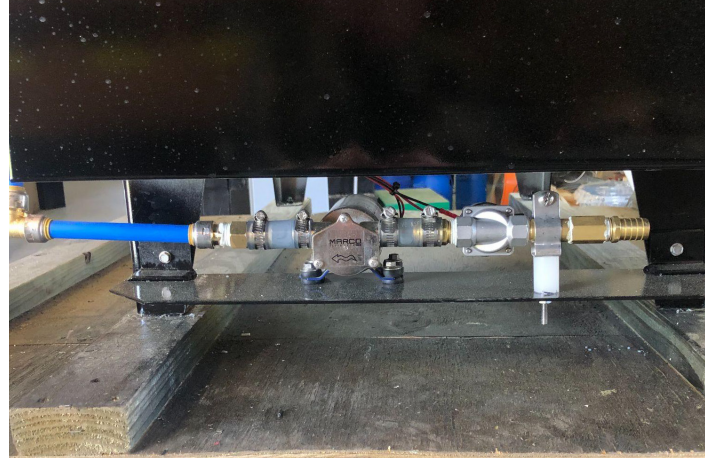
Application

ThermaPhase units are especially useful when applied in:

- Surface and subsurface mines
- Compressor stations
- Railroad (switches)
- Pulp and paper
- Any facility that uses air compressors

Now Available with Autofill Option

Condensate can be pooled from several locations to a holding area without concerns of overwhelming the unit.



Cost and Savings

Save thousands in disposal costs with ThermaPhase®

ThermaPhase TP-72 – Inputs	Cost Parameters
Power Consumption – TP-72 (86.7 A * 480V / 1000 = 41.6 kW)	41.6 kW
Energy Price	.12 \$ / kWh
Usage <i>When running cycles on 50% of time</i>	50% powered
Power consumed in 1 hour	20.8 kW/hr
Cost of 1 hour of operation	\$2.50
Gallons / hour	25.1
Cost per gallon of water disposal	10 Cents / gallon
Savings per gallon compared to \$1.40 / gallon disposal	\$1.30 / gallon savings

Savings per Gallon

Energy Cost (\$ / kWh)	Savings / Gallon
.06	\$1.35
.12	\$1.30
.18	\$1.25
.24	\$1.20

Annual Savings

Condensate / Day (gal)	Annual Savings – 260 working days \$1.30 / gal savings
25	\$8,450
100	\$33,800
200	\$67,600
450	\$152,100

ThermaPhase® Sizing Instructions

To size a ThermaPhase unit correctly, you need three variables: volume of air compressed, relative humidity and ambient temperature.

Step 1

Locate on [Table 1](#) the air factor by using the intersection of the ambient temperature and the relative humidity of the application.

Step 2

Divide the SCF/M of the compressor by the air factor obtained from [Table 1](#). This number is the gallons of condensate per hour produced by the compressor.

Step 3

From [Table 2](#), select the ThermaPhase unit with enough capacity to handle the volume of condensate.

EXAMPLE

500 SCF /M Compressor

Air Temperature - 70° F - Relative Humidity - 70%

Step 1

Referring to [Table 1](#) for an air temperature of 70° F and a relative humidity of 70%, we find an air factor of 174.3.

Step 2

Dividing our compressor capacity of 500 SCF /M by the air factor:
 $500 \text{ SCF/M} / 174.3 \text{ SCF/M/Gal/Hr} = 2.87 \text{ Gallons Per Hour}$

Step 3

Referring to [Table 2](#), we find it takes a **ThermaPhase TP-12** to handle this application.

Table 1

SCF/M Air Per Gallon of Water Per Hour							
Relative Humidity	Temperature						
	40°F	50°F	60°F	70°F	80°F	90°F	100°F
40%	923.5	628.9	436.5	307.3	219.1	158.1	115.5
50%	737.3	502.8	348.9	245.1	174.6	125.9	91.8
60%	613.5	418.8	290.0	203.8	145.0	104.4	76.0
70%	525.4	358.1	248.2	174.3	123.8	89.1	64.7
80%	459.4	313.3	216.6	152.1	108.0	77.5	56.2
90%	408.1	278.1	192.2	134.8	90.8	68.6	49.6
100%	367.1	250.0	172.7	121.0	85.8	61.4	44.4

SCF/M of air required to produce one gallon of water per hour assuming 95% water removed.

Table 2

Evaporation Rate - Gallons Per Hour			
Unit	Gal / Hr	Unit	Gal / Hr
TP-6	1.9	TP-36	12.5
TP-12	4.1	TP-54	18.8
TP-18	6.2	TP-72	25.1
TP-24	8.3		

