EHC System Solution | Water Removal Solution | AW Oil Solution | Gas Turbine Solution | Steam Turbine Solution

EPT CLEAN OIL

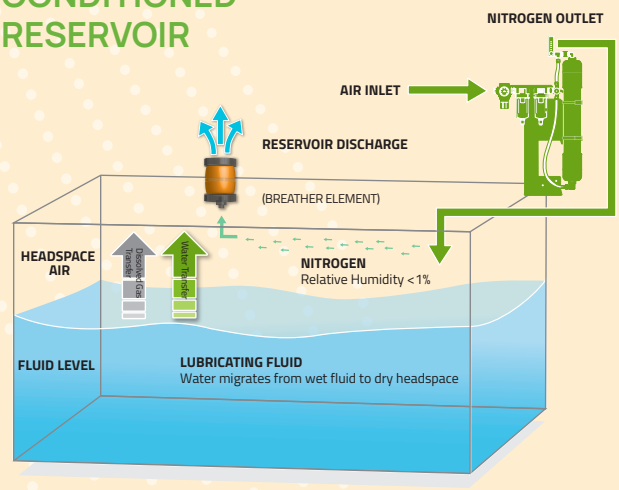
TMR™ N_2 PRODUCT BULLETIN

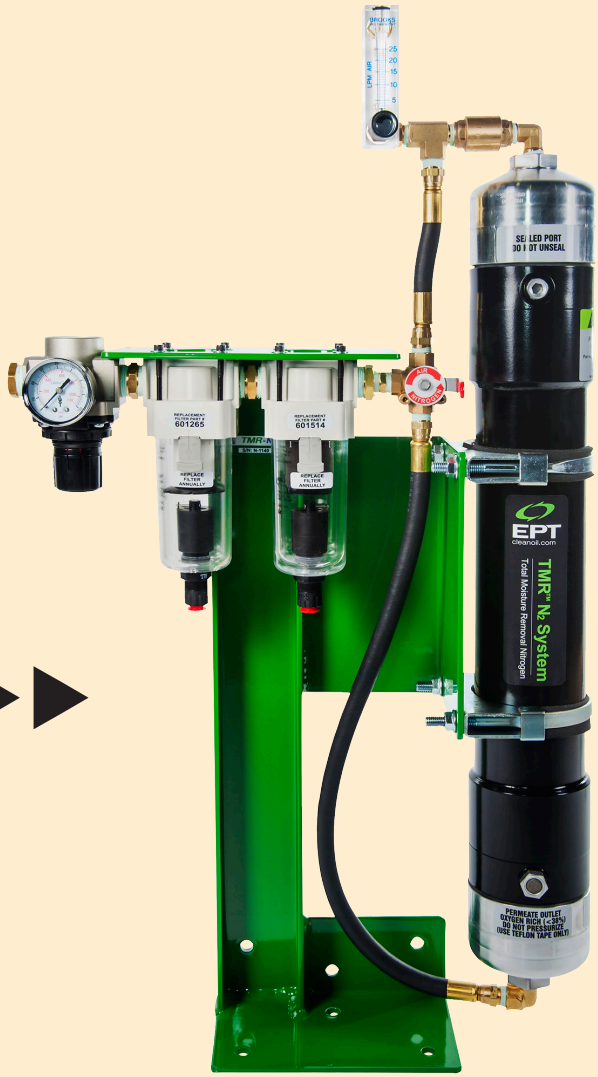
Highly effective, low cost water removal systems for atmospheric breathing lubricant reservoirs

THE TMR™ N_2 NITROGEN BLANKETING SYSTEM PROVIDES UNLIMITED CAPACITY TO REMOVE WATER AND ELIMINATE ATMOSPHERIC WATER INGRESSION.

TMR N_2 manages factors that accelerate oxidation lowering the rate of lubricant breakdown, reducing maintenance requirements and extending fluid life.

TMR N_2 CONDITIONED RESERVOIR





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Rethink. Remove. Restore.

FREE FLOWING NITROGEN BLANKETS

Water is the most common and damaging contaminant found in hydraulic and lubricating systems. Water can exist in 3 forms: free, dissolved and emulsified. The TMR z - Total Moisture Removal Nitrogen system cost effectively removes all 3 forms of water from lubricants and hydraulic fluids through mass transfer which is a highly effective, non-mechanical process. Most water removal systems use heat, vacuum and pumps, which are all expensive to operate and maintain, to force the separation of water from the lubricant. The TMR N_2 system exploits the principle of chemical equilibrium to remove all types of water in a much more gentle, and energy efficient methodology.

In many applications, the primary mode of water ingression is atmosphere, which provides an unlimited source of water whenever the moisture content in the atmosphere is higher than in the lubricant. Atmospheric water ingression rates are typically low and constant, which lends itself perfectly to the TMR N_2 system. Using mechanical separation systems in this scenario would simply dehydrate the lubricant to an unsaturated state so that it can absorb more water from atmosphere. This creates an energy intensive cycle that fails to address the primary cause of water ingression.

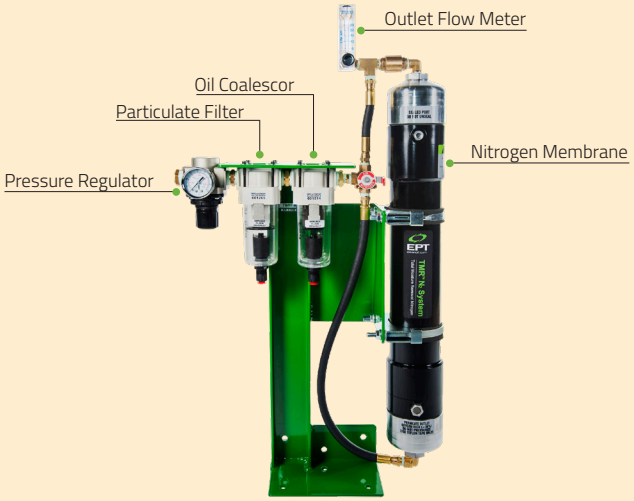
TMR N_2 FEATURES AND BENEFITS

- High purity nitrogen (≥97%) is generated at the source providing unlimited capacity to reduce existing moisture
- Free flowing nitrogen is exhausted out the breather element or facility exhaust, reversing the typical flow configuration and eliminating one of the key ingression points for water and particulate contamination
- Eliminate the ingression of atmospheric water, particulate and metal ions through a free-flowing nitrogen blanket that in turn eliminates fluid contact with oxygen
- Maintains water at very low levels (<50 ppm total or <350 ppm for EHC fluids) reducing the rate of lubricant breakdown
- Eliminates lubricant contact with oxygen, reducing oxidation and promoting the removal of H_2, CO, C_2H_4 and other harmful breakdown gases
- Very low maintenance requirements
- **Immediate payback, high ROI**

TMR N_2 SYSTEM SIZING

TMR™ N_2 systems are regulated, intrinsically safe and have a manually adjusted flow control valve with flow meter. They are designed to remove up to 100 – 300 ppm water per day and sized according to the headspace volume.

Reservoirs need a breather element (or suitable exhaust) and excessive atmosphere access points should be sealed. Reservoir extraction fans are not ideal in applications without bearings and should be removed if feasible.



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TMR N_2 SYSTEM SPECIFICATIONS

	601902	60190	601904	601905
Dimension LxWxH	466 x 162 x 762 mm 18⅜" x 6⅜" x 30"	466 x 162 x 1217 mm 18⅜" x 6⅜" x 47⅞"	499 x 168 x 1217 mm 19⅝" x 6⅝" x 47⅞"	442 x 365 x 1769 cm 17⅜" x 14⅜" x 69⅝"
Shipping Dimension LxWxH	508 x 254 x 864 mm 20" x 10" x 34"	534 x 280 x 1296 mm 21" x 11" x 51"	534 x 280 x 1296 mm 21" x 11" x 51"	**Part 1** 508 x 250 x 607 mm 20" x 10" x 29" **Part 2** 127 x 127 x 1677 mm 5" x 5" x 66"
Shipping Weight	10 kg / 21 lb	20 kg / 44 lb	22 kg / 48 lb	**Part 1**: 11 kg / 23 lb **Part 2**: 10 kg / 21 lb
Connections Inlet/Outlet FNPT:	¼"	¼"	¼"	¼"
Reservoir Volume	≤1532 L / 400 gal	≤3028 L / 800 gal	≤7570 L / 2000 gal	≤11356 L / 3000 gal
Daily Water Removal (ppm)	100 - 300	100 - 300	100 - 300	100 -300
N2 Output - Manual Control with Flow Meter	0-25 LPM 0-50 SCFH	0-25 LPM 0-50 SCFH	0-50 LPM 0-100 SCFH	0-100 LPM 0-200 SCFH
Pre-Set Flow Rate	14 LPM 30 SCFH	21 LPM 45 SCFH	35 LPM 75 SCFH	70 LPM 150 SCFH
% N2 at Pre-set Flow Rate at 0.69 MPa/100 psi Air Temp. of 21°C/70°F	97%	>97%	>97%	>97%
Air Consumption Max. at 0.69 MPa/100 psi	0-38 LPM 0-80 SCFH	0-64 LPM 0-136 SCFH	0-114 LPM 0-241 SCFH	0-187 LPM 0-397 SCFH

Note: Temperature of membrane must stay ≥24°C/75°F for optimal performance. Nitrogen recovery will be hindered if temperature averages ≤24°C/75°F.

TMR N_2 REPLACEMENT PARTS

	601902	60190	601904	601905
Particulate Filter	601265	601265	601265	601265
Oil Coalescer	601514	601514	601514	**601514**
Pressure Gauge	601556	601556	601556	**601556**
Replacement Membrane	601341	601551	601559	601609

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