**OILPURESYSTEMS**
The Machine Reliability Company

**OS1 Oil Sensor for On-line Equipment Oil Reservoir Monitoring**

# SS-50 Dedicated OilPurifier with OS1 Series 6.5  EXTERIOR VIEW

**GSM ONLINE**

**REMOTE ALARM**
Message on IPhone
GSM Satellite Remote Control with SIMM Card
Send Alarm Messages to Smart Mobile Phones

Alarm Messages on iPhone with Remote Stop Control

Optional **CLOUD SERVER with 3G**

**MINI SCADA**

**TOP VIEW**

Purified Oil Discharge Port

28"

37.875"

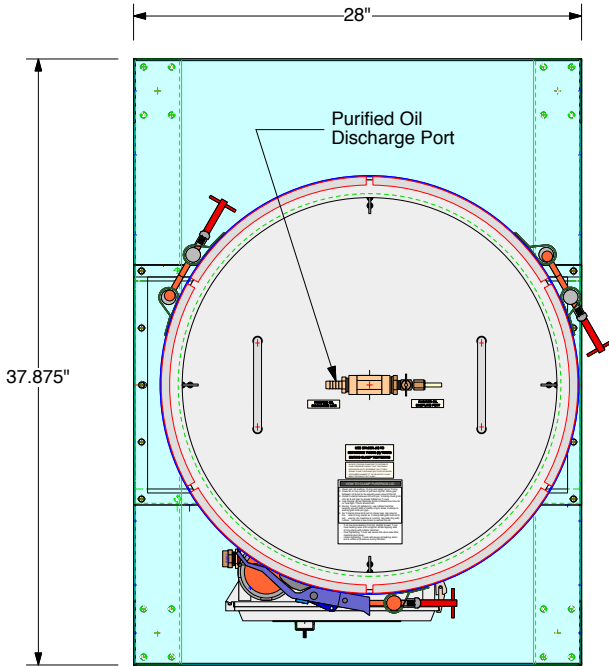### Dedicated Oil Dialysis Machine with OS1 Oil Sensor Monitoring Features:

1. Particulate removal down to 1 to 3 micron or get ISO 16/14/11 to ISO 15/13/10 oil cleanliness.
2. Absorb emulsified water down to less than 100 ppm from max 2,000 ppm.
3. Remove oxidation by-products causing high acidity in Total Acid Number (TAN).
4. 30 to 50 GPH flow capacity with over 90% filtration efficiency.
5. Good for oil reservoir from 500 to 1,000 gal capacity.
6. Low operating pressure at 10 psi. Auto stop operation at 20 psi pressure or timer switch at 1,000 hours (6 wks) for Continuous Oil Dialysis.
7. Immersion heater with built-in thermostat and high temperature alarm shut down.
8. Double pumps, P1 for primary pump and P2 for secondary pump
9. 3.50" LCD digital touch screen display for operational messages with NEMA 4 enclosure.
10. Automatic operation by *Programmable Logic Control (PLC) with SD memory card.*
11. 110VAC-1ph or 220VAC-1ph or 380V-3ph or 480V-3ph
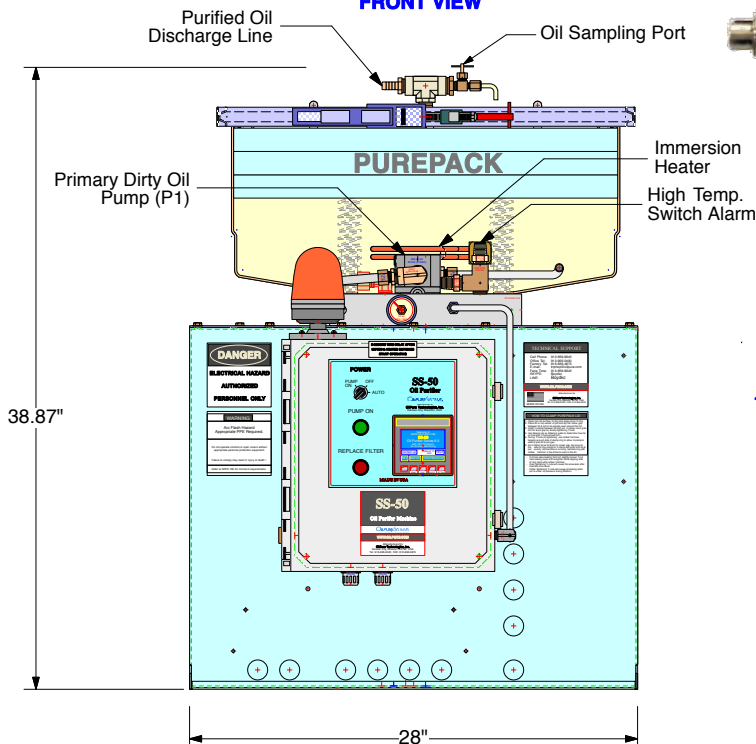12. Dry weight is 300 pounds (136 kgs). Dimension 28" W x 38" Lx 39" H with 24" dia Pot

### OS1 Oil Sensor Monitoring:

13. OS1 Oil Sensor is an on-line oil condition monitoring device which continuously monitors oil degradation and disrupted water breakdown. When oil condition in the oil reservoir degrades to the alarming level, OS1 will send analog signal to PLC to display the new oil changing status.
14. OS1 Oil Sensor signal and oil degradation data curve can be stored for 3 months and downloaded to PC laptop computer by Blue Tooth. Oil degradation will be monitored and displayed in a curve which indicates the lubrication quality.

### Optional GSM wireless Remote Control & ZigBee Wireless Communication:

15. Optional GSM wireless remote control that can send alarm in SMS text message up to 6 mobile phones with security passwords. SS-50 operation can be remotely operated by mobile phone by sending SMS text message codes to turn on or turn off the SS-50.
16. Optional CLOUD Server for on-line web base Mini SCADA monitoring process.

**FRONT VIEW**

Purified Oil Discharge Line
Oil Sampling Port
**PUREPACK**
Immersion Heater
High Temp. Switch Alarm
Primary Dirty Oil Pump (P1)
38.87"
DANGER ELECTRICAL HAZARD AUTHORIZED PERSONNEL ONLY
POWER
PUMP ON
REPLACE FILTER
SS-50 Oil Purifier
28"

**LEFTSIDE VIEW**

OS1 Oil Sensor Real Time Monitoring
Purified Oil Discharge Line
Pressure Adjusting Valve
**PUREPACK**
Pressure Relief Valve For Safety
Dirty Oil Suction Line
Digital Programmable Controller
Optional **ZigBee** Wireless Control from OS1 Oil Sensor to PLC
OIL STRAINER
LE-100 Oil Strainer
37.875"

*Specifications are subject to change without notice.*

**OilPure Technologies, Inc.   www.oilpure.com**
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OILPURESYSTEMS.
The Machine Reliability Company
*www.oilpure.com*

*OS1 Oil Monitoring Sensor*

Purified Oil Discharge Line

Purified Oil

**GSM ONLINE**

Optional
**CLOUD SERVER with 3G**

**MINI SCADA**

*SS-50S Oil Purifier*

VG1
Vacuum Gauge (10 - 20 " Hg.)

Purified Oil

710
1277

ACK

**PUREPACK**

**REMOTE ALARM Message on iPhone**

Alarm Messages on iPhone with Remote Stop Control

GSM Satellite Remote Control with SIMM Card Send Alarm Messages to Smart Mobile Phones

P1
Primary Pump

H1 HEATER

Pressure switch shut off at 20 psi

PS1

Pressure By-pass Valve

PG1

Vacuum By-pass Valve

Dirty Oil Inlet

Continuous Oil Dialysis, Timer switch is set at 1,000 hours to shut down for PurePack replacement.

LE-100 Oil strainer sets at 3,000 hours replacement.

OIL STRAINER

PRV

Pressure relief valve open at 30 psi

AE-100 Oil Strainer

1/2 HP Tandem Motor

TH1 Thermostat (115 °F)
HTH1 High Temp. Switch (200 °F)

Purified Oil Discharge

**OS1 Oil Sensor Probe**

OS1 Oil Sensor Probe
Real Time Monitoring
OilpureSystems

P2
Secondary Pump

Electric Enclosure 14" x 16"x 8"H
AM1648RT #2123

**Oil Reservoir**
**LUBRICATING OIL**

OS1
OS1 Oil Sensor Proble

Optional
**ZigBee**

Wireless Control from OS1 Oil Sensor to PLC

Note: Each lubrication will show different oil degradation curve. History data of oil degration should be collected for 3 month period in order to obtain the oil contamination & degradation base line.

*3.50" LCD Touch Screen Display*

Welcome to
WWW.OILPURE.COM
**SS-50**
Oil Purifier Series 6.5

Contact us        HELP
SETTING        CONTINUOUS
HOME        SETTING
F1    F2    F3    F4

SS-50

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### OS1 Oil Sensor Alarm Warning Conditions

1. Oil Contamination Alarm such as fuel dilution, coolant leakage etc.
2. Sensor detects abnormal reading in the oil such as oil oxidation, excessive water, oil additive depletion etc.
3. Oil level in equipment oil reservoir is lower than usual.
4. Excessive water breakdown alarm.
5. Corrective time of new oil replacement, rather than waiting for oil analysis result which can be too slow and complicated for decision.

**Oil Oxidation & Additive Depletion in Hydraulic Oil**

HF Permittivity

Oil Oxidation Increasing
New Oil Change
Normal Oil Degradation
New Oil Change
Oil Additive Depletion
Major Hydraulic Component Breakdown

Run Time in Hours (0 - 1400)

**Oil Oxidation & Additive Depletion in Lubricant with Oil Purifier from OilPure**

HF Permittivity

No Oil Degradation
New PurePack Filter Change
Oil Oxidation is Undercontrolled by OilPure
New Oil Change
Zero Machine Breakdown
No Oil Additive Depletion
No New Oil Change

Run Time in Hours (0 - 1400)

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Oil Degradation Curve Reading from OS1 Oil Sensor that monitors lubrication quality. This signal can activate PLC to send warning alarm to central control operation.

Each lubrication will show different oil degradation curve. History data of oil degratdaion should be collected for 3 month period in order to obtain the oil contamination & degradation base line.

**Oil Oxidation & TBN Additive Depletion for Diesel Engine Oil**

MF Total Z - % Peak

Impedance    TBN    TAN
Oil Change    Oil Change    Oil Change

4-21-2010   6-10-2010   7-30-2010   9-18-2010   11-7-2010   12-27-2010   2-15-2011

Impedance    TBN    TAN

Run Time - Hours

**Water Breakdown Alarm**

Corrective action taken
Warning alarm
Water begins breakdown
Back to Normal Operation

Sat 15:12 8-25-2010    Tue 10:24 8-28-2010    Fri 5:36 8-31-2010

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Purified Oil Discharge Line

**GSM ONLINE**

**PUREPACK**

**REMOTE ALARM Message on iPhone**

Wire Cable

**Oil Reservoir**

OS1

OS1 Oil Sensor Probe

SS-50

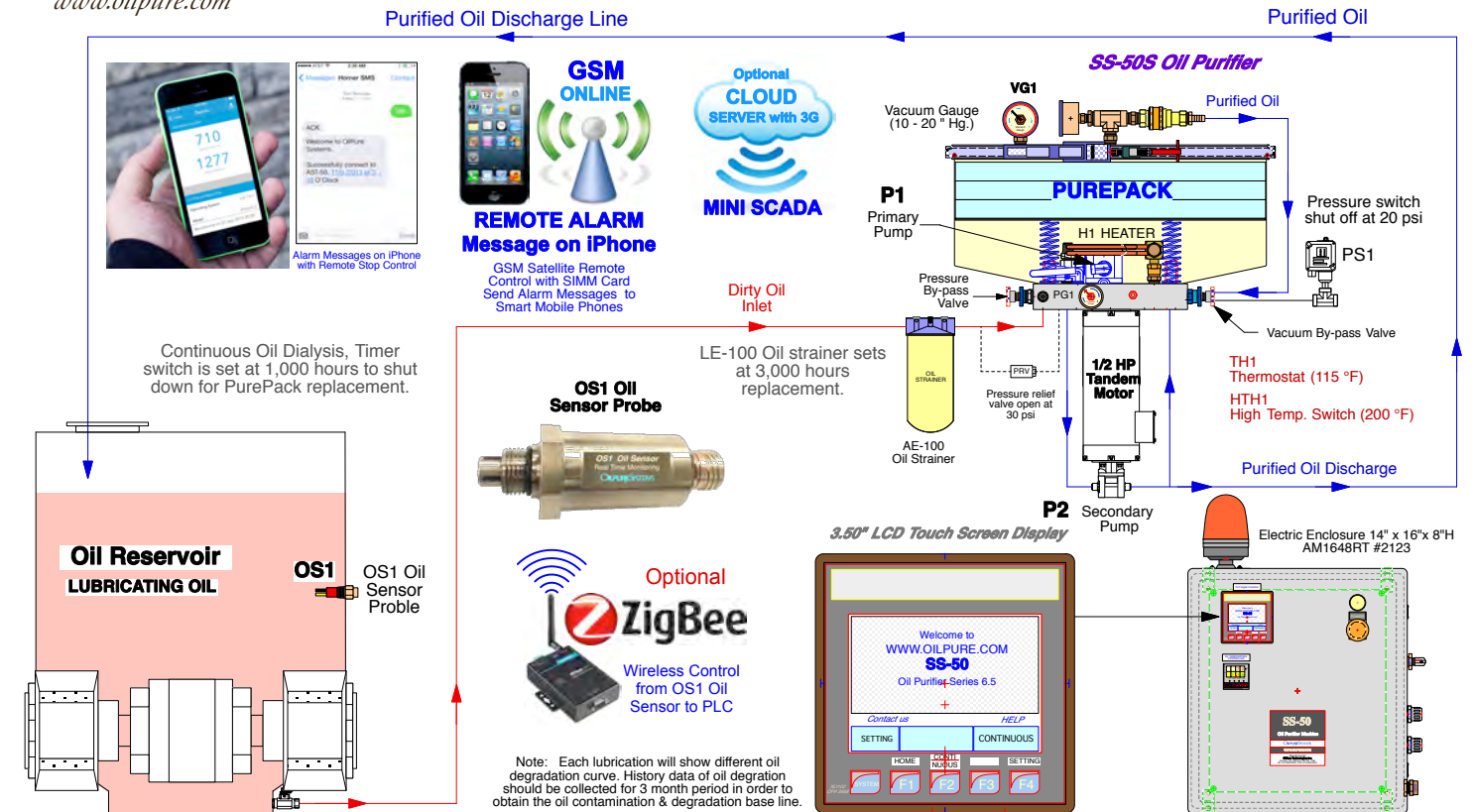Dirty Oil Suction Line

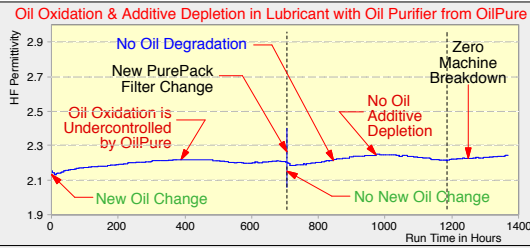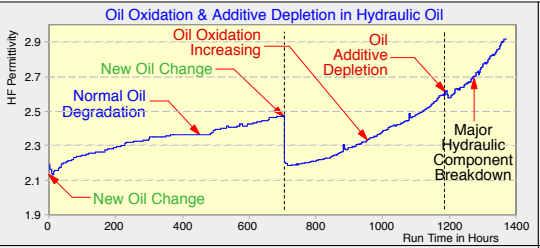*Specifications are subject to change.*

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*OS1 Oil Monitoring Sensor*

**Continuous Oil Purification Fluid Flow Diagram**
**SS-50S Oil Dialysis Machine Series 6.5**

Purified Oil Discharge Line

Purified Oil

**GSM ONLINE**

Optional
**CLOUD SERVER with 3G**

**MINI SCADA**

**REMOTE ALARM Message on iPhone**

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Alarm Messages on iPhone with Remote Stop Control

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VG1

Vacuum Gauge (10 - 20 " Hg.)

Purified Oil

**P1** Primary Pump

**PUREPACK**

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Pressure switch shut off at 20 psi

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*OS1 Oil Sensor Real Time Monitoring*

AE-100 Oil Strainer

Purified Oil Discharge

**P2** Secondary Pump

**Oil Reservoir**
**LUBRICATING OIL**

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Oil Purifier Series 6.5

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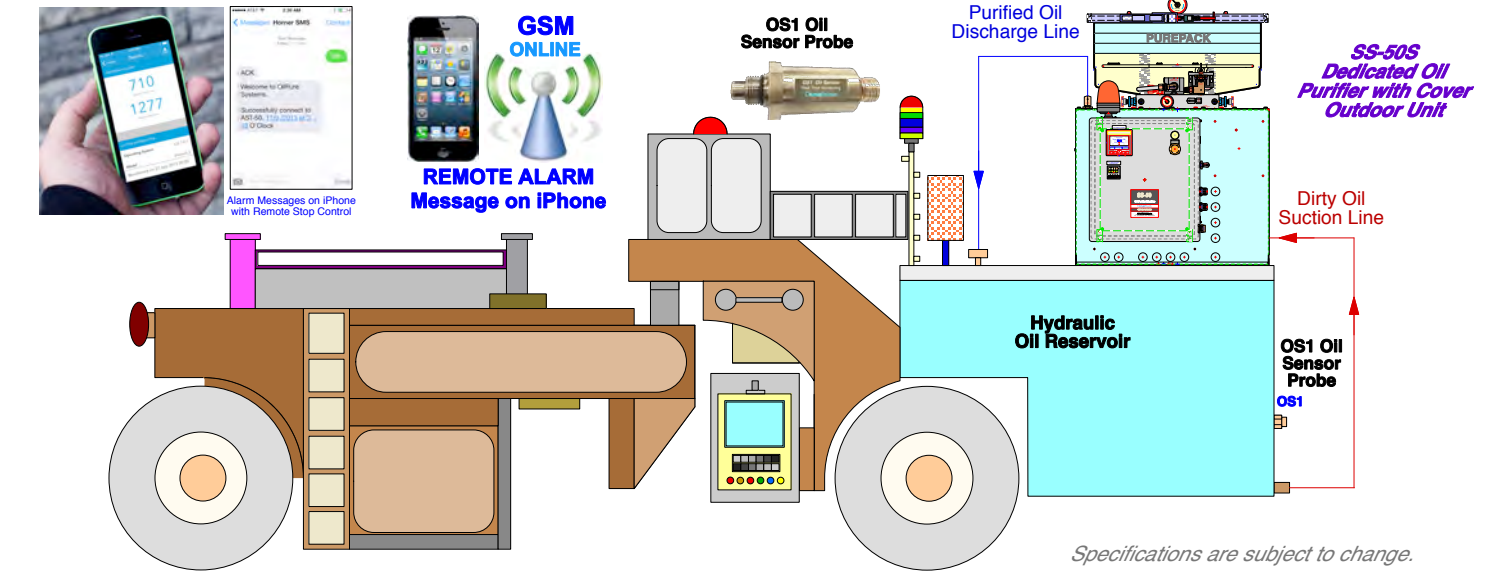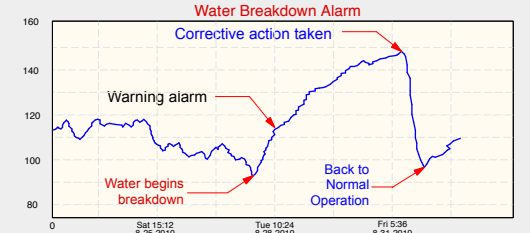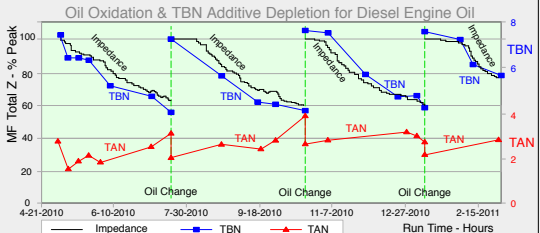Electric Enclosure 14" x 16"x 8"H
AM1648RT #2123

**SS-50**

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New Oil Change
Normal Oil Degradation
Oil Additive Depletion
Major Hydraulic Component Breakdown
New Oil Change

HF Permittivity
2.9 2.7 2.5 2.3 2.1 1.9
0 200 400 600 800 1000 1200 1400
Run Time in Hours

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Zero Machine Breakdown
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Run Time in Hours

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TBN
TAN
Oil Change    Oil Change    Oil Change

MF Total Z - % Peak
100 80 60 40 20 0
4-21-2010  6-10-2010  7-30-2010  9-18-2010  11-7-2010  12-27-2010  2-15-2011
Run Time - Hours
Impedance    TBN    TAN
8 6 4 2 0

**Water Breakdown Alarm**

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160 140 120 100 80
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**OS1 Oil Sensor Probe**

Purified Oil Discharge Line

**PUREPACK**

**SS-50S Dedicated Oil Purifier with Cover Outdoor Unit**

Dirty Oil Suction Line

**Hydraulic Oil Reservoir**

**OS1 Oil Sensor Probe**
**OS1**

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