



# OPT

*PHILIPPINES, Inc.*

**Oil Purification Technology and Service**





# OPT Korea Headquarters

The oil purification technology is now being widely used in different Asian countries.

Aside from in Korea, where OPT Headquarters is located, it has also geographically expanded to Laos, Vietnam, Thailand, and Indonesia.

and  
in the Philippines.

**we CARE about  
ENVIRONMENT**

Oil Purification Service  
**OPT PHILIPPINES, Inc.**

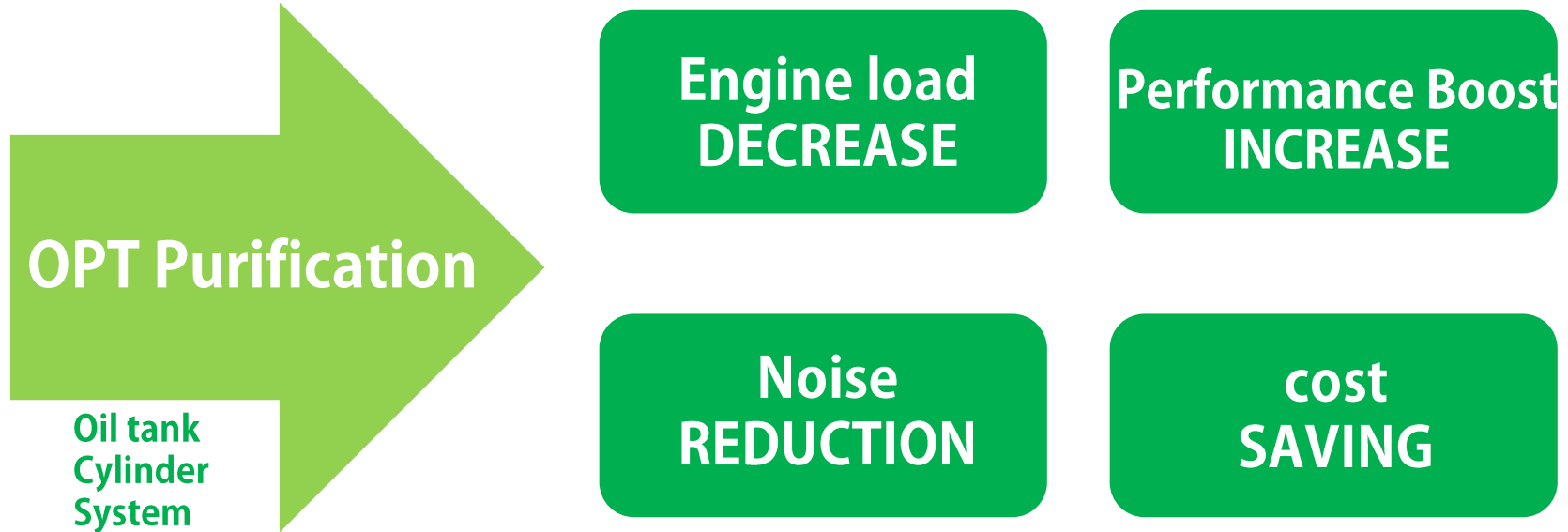


# OPT appearance





# Why OPT purification



New oil change **ONLY** in oil tank – OLD oil in system and cylinder will be mixed **AGAIN**

Excavators 6 tons : **Total 190 liter** , Oil tank – 70 liters , **System – 120 liters**

Excavators 18 tons : **Total 430 liter** , Oil tank – 160 liters , **System – 270 liters**

# Oil Purification Process

## • Work Environment

- Electricity Power required
- 50 Amperes UP – Single line
- 75 Amperes UP – Double line

• **Moisture removal** is the first process. This refers to the condensing of water contained in the used oil, discarding it in the air as steam.

• **Particle removal** goes after moisture removal. The used oil now then goes through numerous filters to totally remove foreign particles.





# Oil Purification Process

Click [HERE](#) to watch the oil purification process video

**HYUNDAI** backhoe R450 LC-7

Hydraulic Oil Purification Service

Hyundai heavy equipment in Balintawak, Q.C



Inc.

# Quality Assurance

## Certificate of Analysis

Tested Oil : ISO VG 46

Test Report by Certified Institution



### Certificate of Analysis

PRODUCT : AZOLLA ZS 68 (200L DM)  
CERT. NO. : 20180914-0011  
CUSTOMER :  
DATE SAMPLED : 2018/08/16

D A T E : 2018/09/14  
TANK No. : AZOLLA(BLENDING)  
LOT No. : 182831

| TEST ITEMS                                     | UNIT              | TEST METHOD | RESULTS |
|------------------------------------------------|-------------------|-------------|---------|
| Color                                          |                   | ASTM D 1500 | L1.0    |
| Density, 15°C                                  | g/cm <sup>3</sup> | ASTM D 4052 | 0.8705  |
| Viscosity, 40°C                                | cSt               | ASTM D 445  | 69.23   |
| Viscosity, 100°C                               | cSt               | ASTM D 445  | 9.146   |
| Viscosity Index                                |                   | ASTM D 2270 | 107     |
| Pour Point                                     | °C                | ASTM D 97   | -28     |
| Flash Point, COC                               | °C                | ASTM D 82   | 240     |
| Foaming Test<br>Tendency/Stability, Sequence 1 | ml                | ASTM D 892  | 10/0    |
| Foaming Test<br>Tendency/Stability, Sequence 2 | ml                | ASTM D 892  | 10/0    |
| Foaming Test<br>Tendency/Stability, Sequence 3 | ml                | ASTM D 892  | 10/0    |
| Water Content                                  | ppm               | ASTM D 6304 | 117     |
| Copper Strip Corrosion, 100°C/3h               |                   | ASTM D 130  | 1a      |
| Rust Prevention A                              |                   | ASTM D 866  | No rust |
| Demulsibility, 54°C                            | min               | ASTM D 1401 | 20      |

- End of analytical results -

I CERTIFY THE ABOVE TEST RESULTS ARE TRUE AND CORRECT.

Chief Chemist  
JB.Shin

*[Signature]*

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Plant : 436, Daejeon-ro, Daejeon, Korea Tel: +82 42 240 3133 Fax: +82 42 240 3134

1 of 1

| Inspection item                               |                     |                  | KS Standard    | ①New oil     | ②Used oil    | ③Flushed oil |
|-----------------------------------------------|---------------------|------------------|----------------|--------------|--------------|--------------|
| Pollution level                               | Level               | ISO 4406         | 18/16/13       | 18/15/12     | 22/20/17     | 17/13/9      |
|                                               |                     | NAS 1638         | 7              | 7            | 12           | 5            |
|                                               | Number of particles | 2~5 $\mu$ m      | 220,000        | 194,501      | 1,785,107    | 102,810      |
|                                               |                     | 5~15 $\mu$ m     | 32,000         | 13,854       | 700,313      | 7,237        |
|                                               |                     | 15~25 $\mu$ m    | 5,700          | 2,104        | 80,043       | 190          |
|                                               |                     | 25~50 $\mu$ m    | 1,012          | 513          | 29,120       | 93           |
|                                               |                     | 50~100 $\mu$ m   | 180            | 91           | 4,410        | 20           |
|                                               |                     | Over 100 $\mu$ m | 32             | 8            | 487          | 0            |
| Moisture(ppm)                                 |                     |                  | 500 or less    | 289          | 524          | 266          |
| Kinematic viscosity(mm <sup>2</sup> /s, 40°C) |                     |                  | 41.4~50.6      | 44.29        | 47.45        | 47.14        |
| Viscosity index                               |                     |                  | Over 90        | 112          | 113          | 113          |
| Pour point(°C)                                |                     |                  | -22.5 or lower | -36          | -42          | -42          |
| Flash point(°C)                               |                     |                  | Over 170       | 240          | 252          | 254          |
| Copper plate corrosion(100°C, 3h)             |                     |                  | 1 or less      | 1            | 1            | 1            |
| Rustproof performance(Distilled water, 24h)   |                     |                  | No rust        | No rust      | No rust      | No rust      |
| Anti-inflammatory(54°C, minute)               |                     |                  | 30 or less     | 15           | 10           | 15           |
| Bubble                                        | 24°C                | Air bubble       | 65 or less     | 10           | 10           | 10           |
|                                               |                     | Bubble stability | 0 or less      | Not detected | Not detected | Not detected |
|                                               | 93.5°C              | Air bubble       | 65 or less     | 10           | 10           | 50           |
|                                               |                     | Bubble stability | 0 or less      | Not detected | Not detected | Not detected |
|                                               | 24°C after 93.5°C   | Air bubble       | 65 or less     | 10           | Not detected | 10           |
|                                               |                     | Bubble stability | 0 or less      | Not detected | Not detected | Not detected |

Oil Purification Service  
**OPT PHILIPPINES, Inc.**



# Quality Assurance

## Intertek Test Report



### TEST REPORT

Customer: OPT PHILIPPINES INC.,  
Address: Unit 405 Emerald Place Bldg., 604 Shaw Blvd., Kaptolyo/Pasig City  
Requestor: Ms. Lorena Magdalena

#### Equipment Information

Source: \_\_\_\_\_  
Equipment Name: \_\_\_\_\_  
Equipment Brand/Model: \_\_\_\_\_  
Sample Location: \_\_\_\_\_  
Type of Lubricant Oil: \_\_\_\_\_

#### Sample Information

ITS Job Reference No: 0418-0918-COM  
ITS Sample No: ITS-1-2518-0918  
Date Received: 10-Sep-18  
Date Tested: 12-11-Sep-18  
Report Date: 24-Sep-18  
Sampling Date: August 25, 2015 @0500H  
Equipment Service, hrs: \_\_\_\_\_  
Oil Service, hrs: \_\_\_\_\_

Tested By: DNV JACS (PAB)

| Test Conducted                            | Oil Analysis Data Unit | RESULT       | Lubricant Condition Rating |
|-------------------------------------------|------------------------|--------------|----------------------------|
| Physical Properties                       |                        |              |                            |
| Appearance/Color                          |                        | Light Yellow |                            |
| Viscosity @ 40°C (ASTM D445-17)           | cSt                    | 51.62        |                            |
| Viscosity @ 100°C (ASTM D445-17)          | cSt                    | 7.666        |                            |
| Viscosity Index (ASTM D2270-04.1)         |                        | 113          |                            |
| Total Acid Number (ASTM D664-17)          | mg KOH/g               | 0.74         |                            |
| Contaminants                              |                        |              |                            |
| Water Content (ASTM E203-08)              | % mass                 | 0.048        |                            |
| Elemental Analysis by ICP (ASTM E2335-13) |                        |              |                            |
| Iron (Fe)                                 | mg/kg                  | <1           |                            |
| Chromium (Cr)                             | mg/kg                  | <1           |                            |
| Molybdenum (Mo)                           | mg/kg                  | <1           |                            |
| Copper (Cu)                               | mg/kg                  | <1           |                            |
| Lead (Pb)                                 | mg/kg                  | <1           |                            |
| Silver (Ag)                               | mg/kg                  | <1           |                            |
| Tin (Sn)                                  | mg/kg                  | <1           |                            |
| Aluminum (Al)                             | mg/kg                  | <1           |                            |
| Nickel (Ni)                               | mg/kg                  | <1           |                            |
| Vanadium (V)                              | mg/kg                  | <1           |                            |
| Silicon (Si)                              | 1                      |              |                            |
| Boron (B)                                 | mg/kg                  | <1           |                            |
| Sodium (Na)                               | mg/kg                  | <1           |                            |
| Magnesium (Mg)                            | mg/kg                  | <1           |                            |
| Phosphorus (P)                            | mg/kg                  | 322          |                            |
| Zinc (Zn)                                 | mg/kg                  | <1           |                            |
| Barium (Ba)                               | mg/kg                  | <1           |                            |
| Calcium (Ca)                              | mg/kg                  | 51           |                            |
| Potassium (K)                             | mg/kg                  | 1            |                            |
| Titanium (Ti)                             | mg/kg                  | <1           |                            |

Remarks: Sample tested as received. The analysis was conducted by ITS Singapore CCM Lab, reference to GC065840.

\*Test is accredited by Philippine Accreditation Bureau (PAB), D/L, Philippines in accordance with the scope of PMS ISO/IEC 17025:2005

#### Checked and Reviewed By:

Elia Joy T. Tapan, RCNE



Maribel M. Magaña  
Intertek Philippines  
PMS ISO/IEC 17025  
Reg. 2012, 21 January 1986  
Reg. 2012, 21 January 1986  
Reg. 2012, 21 January 1986  
Date tested: 25 January 2018  
Exp. 2024 (6 December 2024)

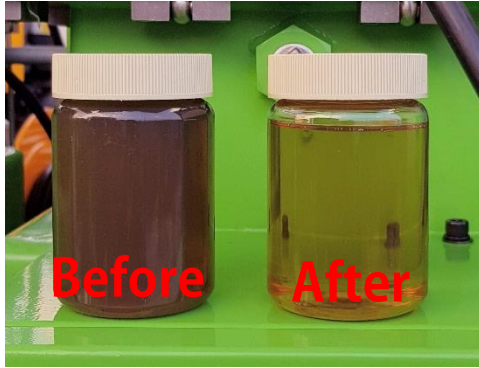
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Attention is drawn to the terms and conditions which was agreed and signed upon together with the proposal or test application form.

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intertek.com



# Work Reference



Hydro crane . Concrete pump crane . Excavator . Backhoe . Heavy Equipment

# Client Reference



**Petroleum plant**



**Oil hydraulic press**



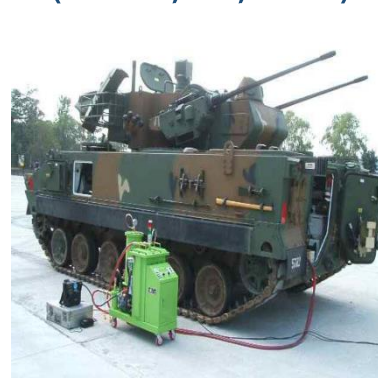
**Power plant  
(nuclear, fire, water)**



**Republic of Korea Army  
(Missile Truck)**



**Republic of Korea Army  
(K-9)**



**Republic of Korea Army  
(Antiaircraft armored tank)**

**Republic of Korea Army  
Ministry of Nation Defense KOREA**

**LOTTE world**

**KIA motors**

**HYUNDAI engineering  
HYUNDAI heavy equipment**

**SAMSUNG tech  
SAMSUNG c&c**

**DAEWOO heavy equipment**

**YOUNGKWANG nuclear power plant  
ULJIN nuclear power plant**

**KOREA water  
KOREA water power plant  
KEPCO electricity  
CASS beer Korea**

**SHELL petroleum Korea**

**And more**



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ENVIRONMENT**

