

SPECIFICATIONS

MITSUBISHI HIGH SPEED DIESEL ENGINE
△ MODEL MITSUBISHI S4Q2-Z365SP

(MEE : For Power Unit)

For reference only



DATE Nov. 21. 2005

MITSUBISHI HEAVY INDUSTRIES, LTD.

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| CHG | DATE | APPROVED | CHECKED | DRAWN |
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| △ | Nov.13.2007 | A. Takai | R. Nagase | K.Ajiro |
| △ | Nov.16.2006 | | | |
| △ | Feb. 9.2006 | | | |

Revised record

[illegible]

1. Principal Particulars of Diesel Engine

General Specification

| | | |
|-----------------------------|---|----------------------------|
| Standard | All items, unless otherwise specified, are in accordance with JIS and maker's standards | |
| Model | Mitsubishi S4Q2 (Mitsubishi S4Q2-Z365SP, MHI No. 32C00-07580) | |
| Regulations | 97/68/EC STAGE IIIA | |
| Type | 4 cycle water-cooled, vertical overhead valve, cylinder in line, swirl chamber type | |
| Number of cylinders | 4 | |
| Bore × Stroke | 88mm × 103mm | |
| Piston displacement | 2.505 liters | |
| Compression ratio | 22 : 1 | |
| Rotation | Anti-Clockwise rotation as viewed from flywheel side | |
| Firing order | 1-3-4-2 | |
| Engine weight(Dry) | Approx. 195kgf | |
| Dimensions(Length) | Approx. 709mm | |
| (Width) | Approx. 487mm | |
| (Height) | Approx. 637mm | |
| Inclination(Continuous) | 15° | |
| (Temporary) | 20°(Max 30 min.) | |
| Fuel | ASTM diesel fuel oil No.2-D (JIS K2204 gas oil specification No.2 or 3) | |
| Lubricating oil | API classification service CD class | |
| Engine performance | Rating | Rating at delivery |
| | Breaking in around 50hr | Breaking in around 0.25 hr |
| Rated Power ; without fan | 34.6±1.7kW/2500rpm | 32.9±1.6kW/2500rpm |
| Maximum torque; without fan | 142±7Nm/(2000rpm) | 135±7Nm/(2000rpm) |
| Fuel consumption | 260±8% g/kW-h | 274±8% g/kW-h |
| Low Idle | 750 (+50,0) rpm | |
| High Idle | 2700 (±25) rpm | |
| Rating conditions | ISO 3046, without fan Total barometric pressure:0.1MPa Air temperature :25°C Relative humidity:30% | |
| Oil consumption | Within 2.7g/kW-h{2.0g/PS-h} | |
| Fuel injection timing | 6°BTDC at 0.6mm cam lift point | |
| Mean effective pressure | 0.66MPa{6.8kgf/cm ² } | |
| Piston speed | 8.6m/s at 2500rpm | |

Fuel system

| | |
|-----------------------|-----------------------------|
| Fuel injection pump | Distributor type |
| Fuel injection nozzle | Throttle type |
| Governor | Mechanical centrifugal type |
| Fuel filter | Filtering paper type |

Lubricating system

| | |
|------------------------|--|
| Lubricating system | Forced circulation by trochoid pump |
| Lubricating oil filter | Filtering paper type, full flow |
| Oil pressure | 0.10~0.39MPa (1~4kgf/cm ²) at duty run 0.05MPa (0.5kgf/cm ²) min. at low idling |
| Oil capacity | 9.2 liters (Oil pan 8.2 liters, high level, Oil filter etc. 1.0 liters) |
| Oil dipstick | Standard dipstick |
| Oil pressure switch | Yes |

Cooling system

| | |
|-----------------------|---|
| Cooling system | Forced circulation of fresh water by centrifugal pump with thermostat |
| Engine water capacity | Approx. 4 liters |
| △ Cooling fan | Yes; 380mm diameter, suction |
| Water pump pulley | PCD 116mm |
| Pulley ratio | 1.32 (Crankpulley : Water pump pulley = 153 : 116) |
| △ Fan spacer | 35mm thickness |
| Water temp. switch | Yes |
| Thermo. Unit | No |
| Thermostat | Open at 76.5deg.C - full open at 90deg.C |

Electrical system

| | |
|------------------------|-------------------------------|
| Alternator | 12V - 50A |
| Voltage regulator | IC type (Built in alternator) |
| Alternator pulley | PCD 70mm |
| Starting system | Electric starting |
| Starter motor | 12V-2.0kW |
| Glow plug | 10.5V, 9.7A X4 |
| Engine shut off system | Electric solenoid (ETR) |

Intake and Exhaust system

| | |
|---------------------------------|-------------------------------------|
| Intake manifold(cover) | Upper side |
| Exhaust manifold | Upper side |
| Allowable Induction Resistance | Max 1.96kPa {0.2mH ₂ O} |
| Allowable Exhaust Back Pressure | Max 6.67kPa {0.68mH ₂ O} |

<Remarks>

| | |
|------------------|----------------------------|
| Engine color | Black(MHI standard color) |
| Flywheel | With (similar to SAE 7.5") |
| Flywheel housing | With (SAE #4) |

2. Accessories (Loose Supply)

③

| | Parts Name | Parts No. | Q'ty | Remarks |
|---|---------------------|-------------|------|--------------------|
| 1 | SWITCH,OIL PRESSURE | 31A90-00701 | 1 | Attached To Engine |
| 2 | SWITCH,THERMO | MC880-900 | 1 | |

MITSUBISHI DIESEL ENGINE

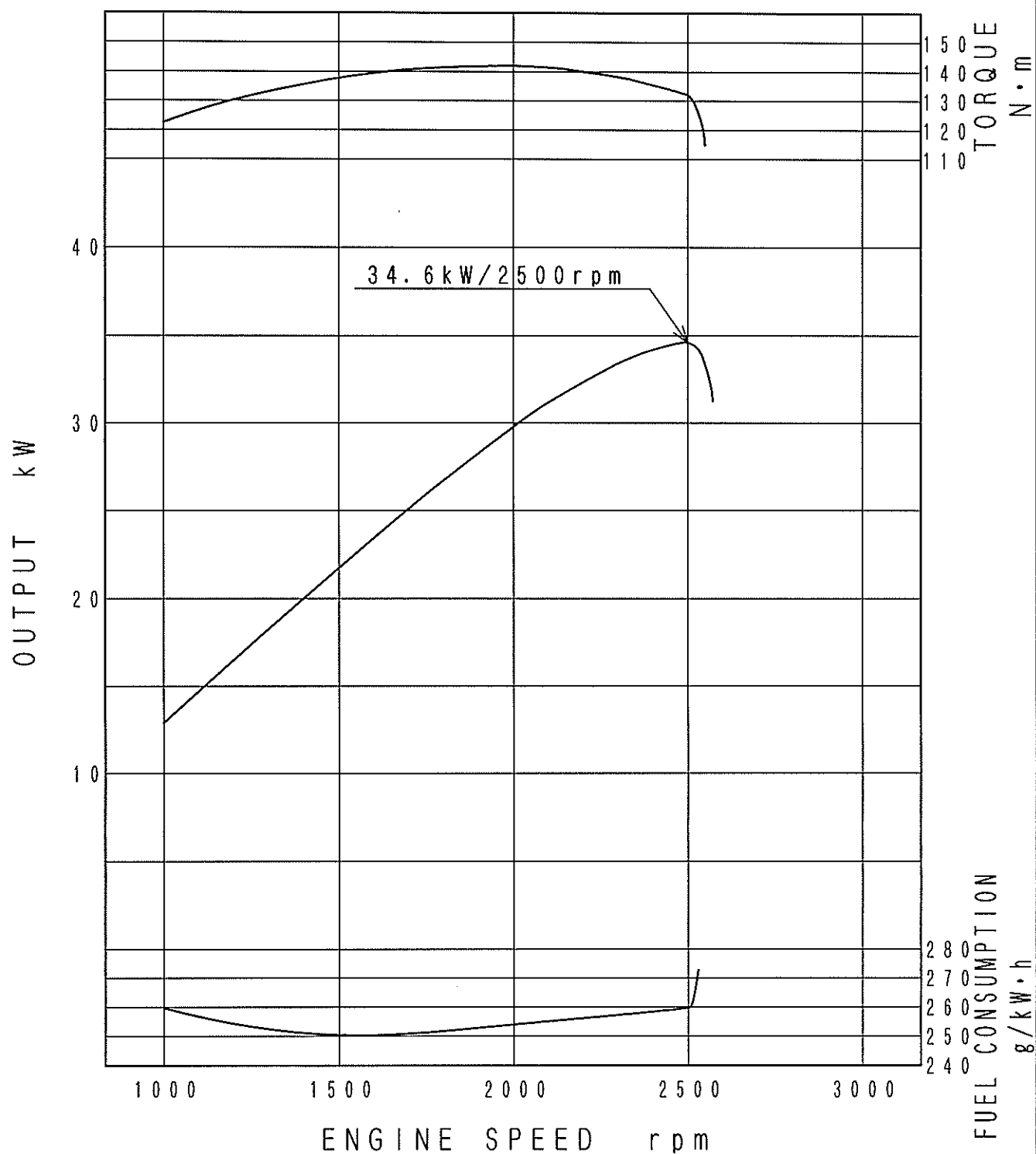
MODEL S4Q2-Z365SP

PERFORMANCE CURVE

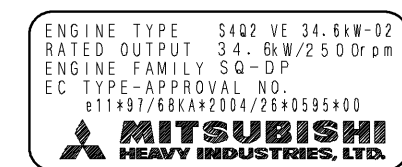
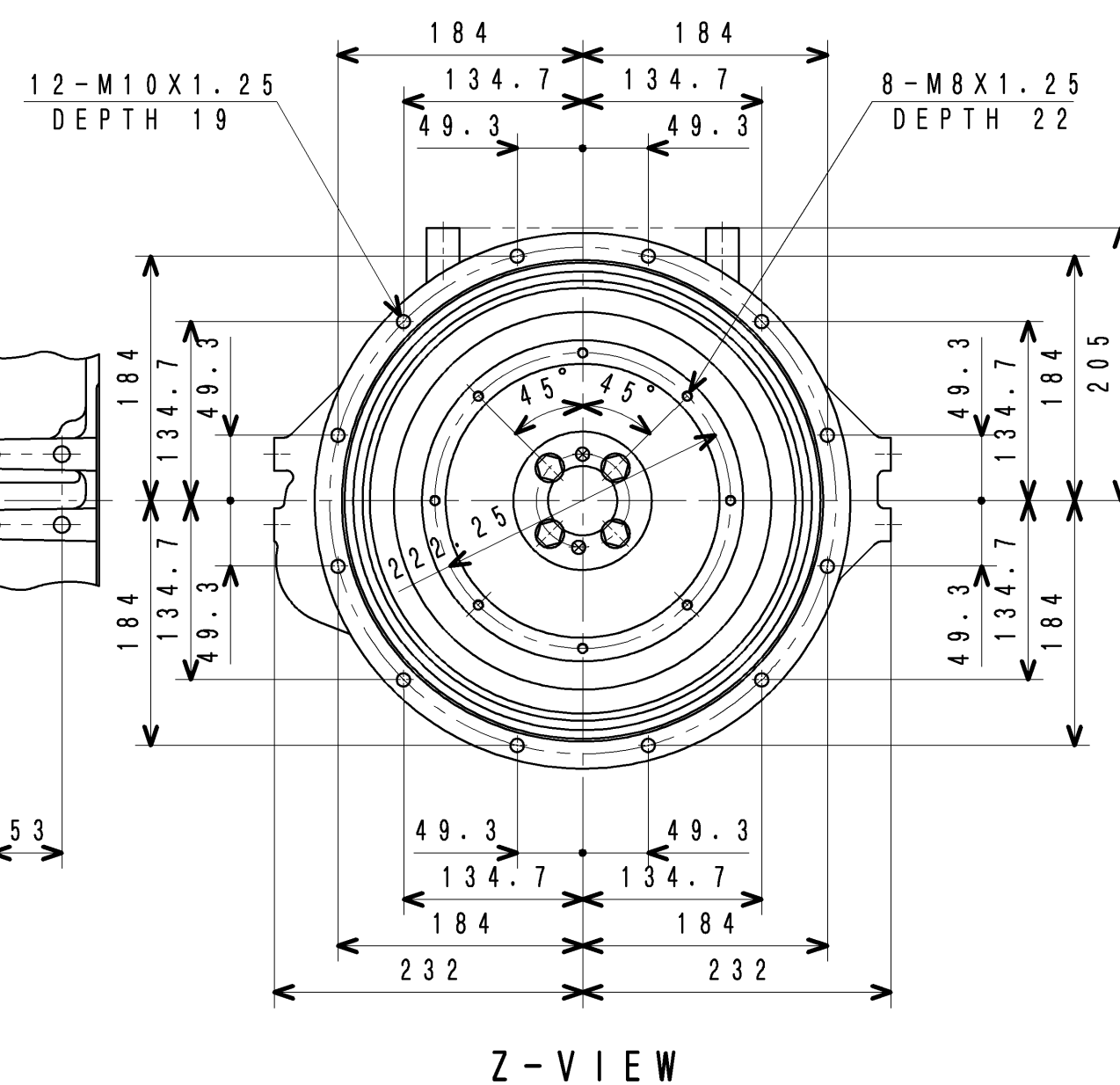
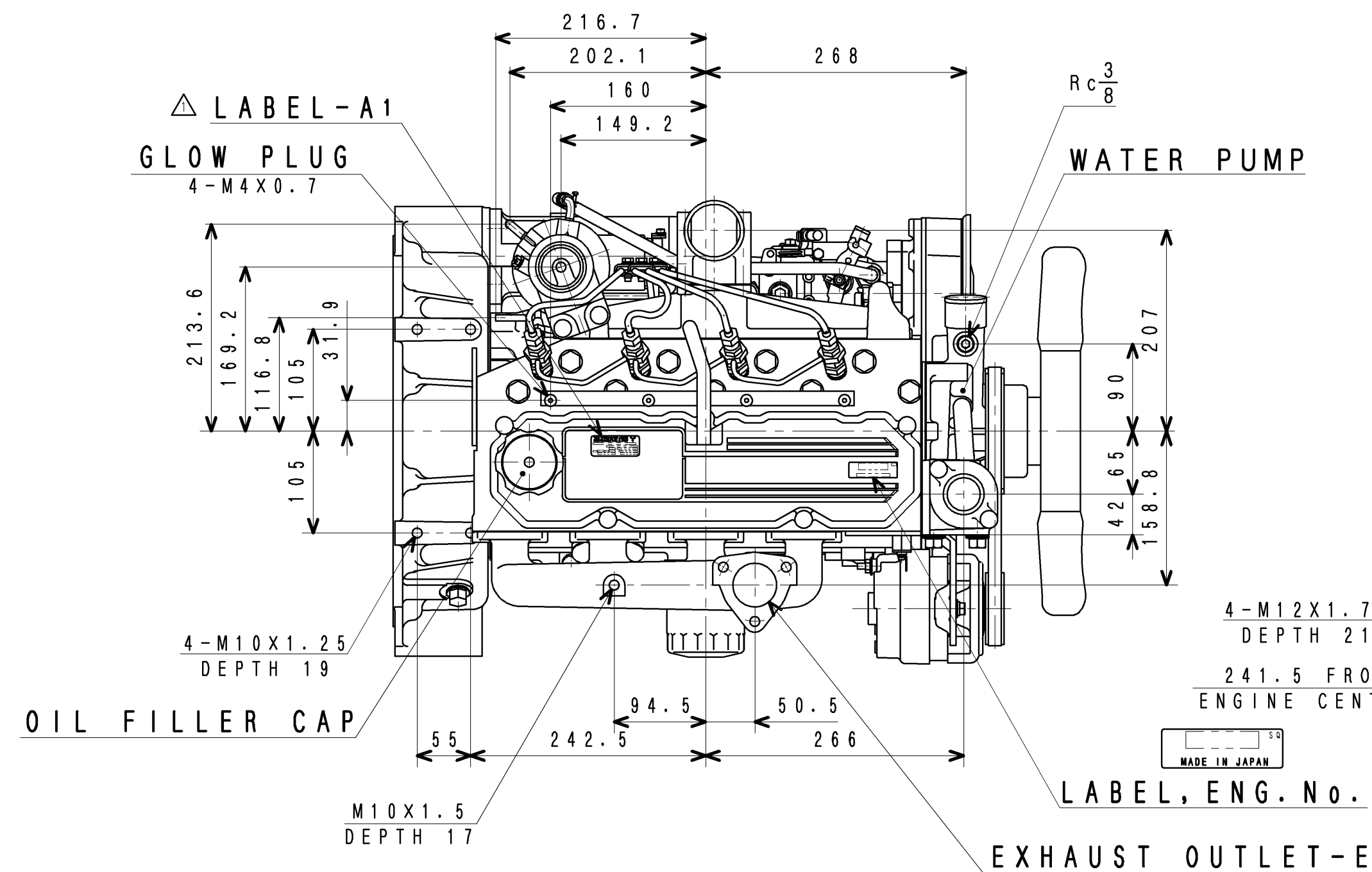
ISO 3046

WITHOUT FAN

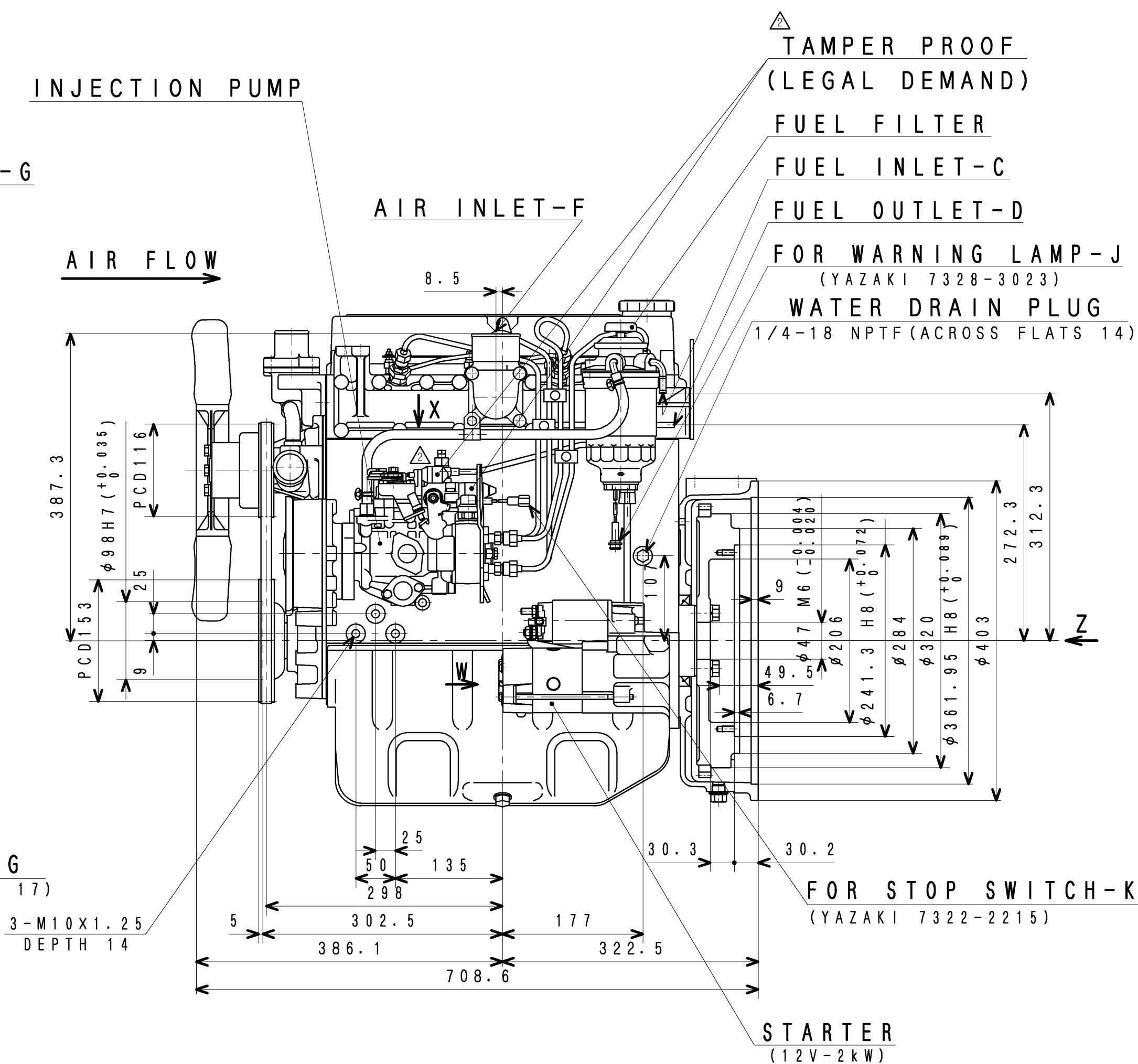
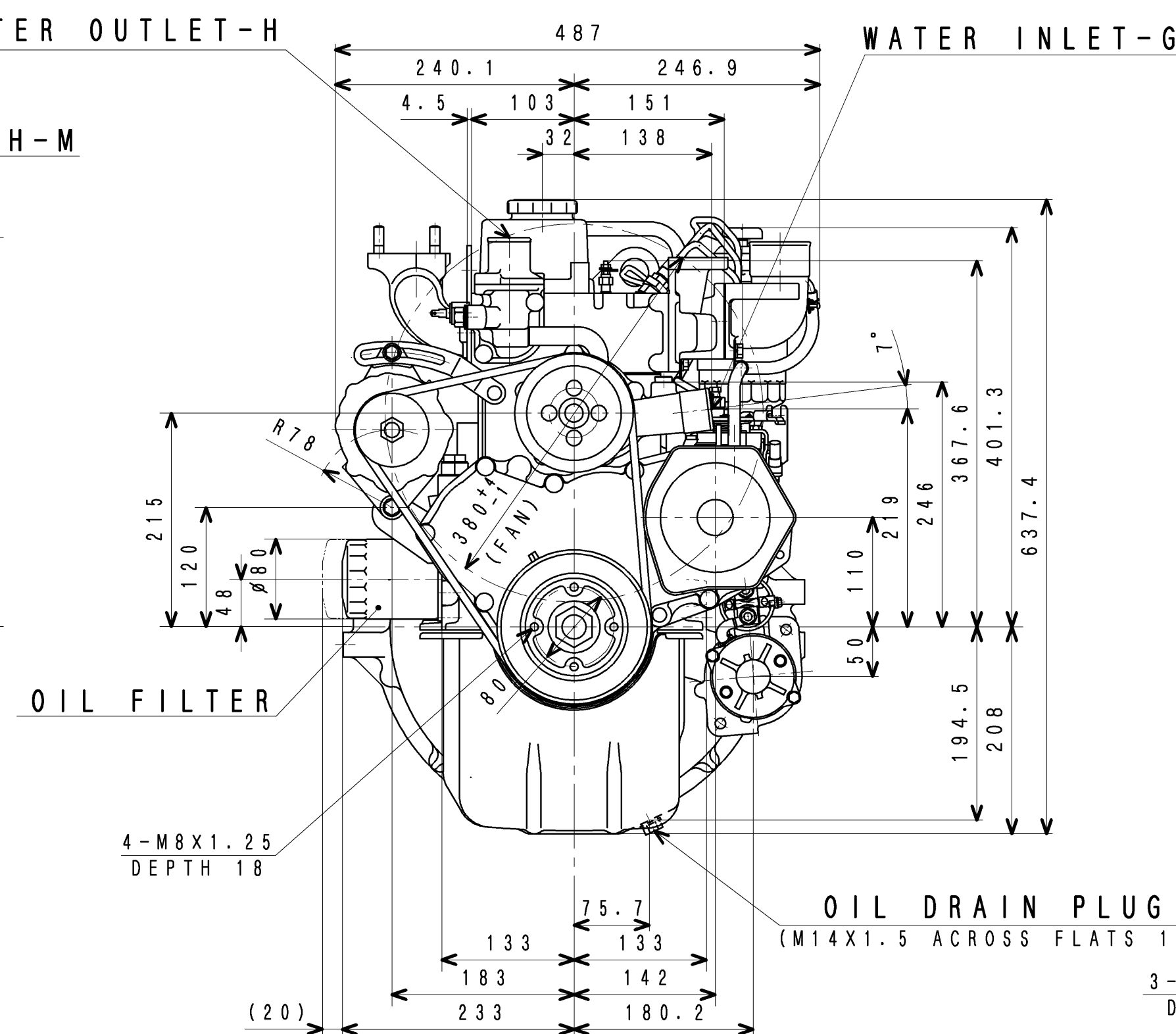
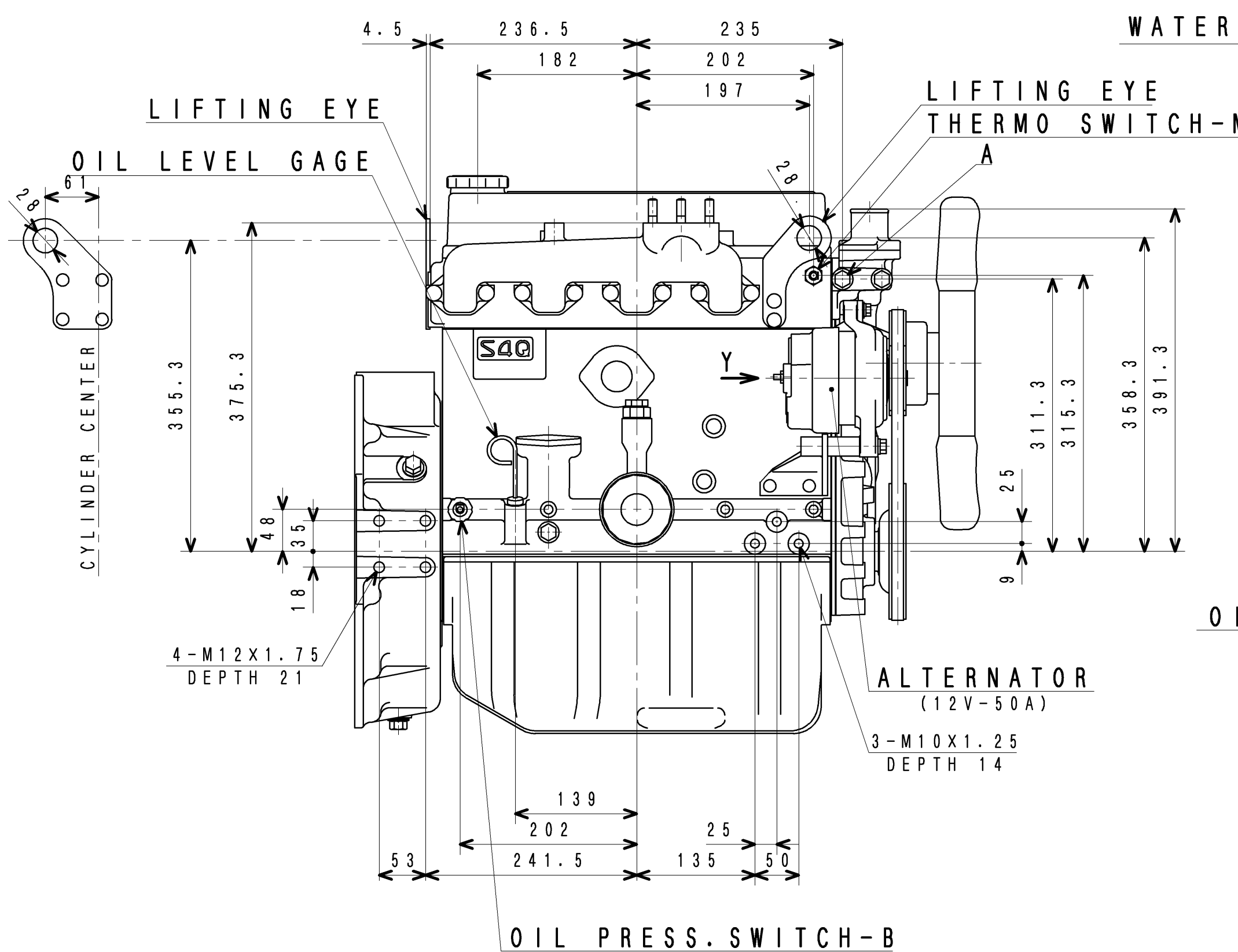
After 30-50hrs breaking in



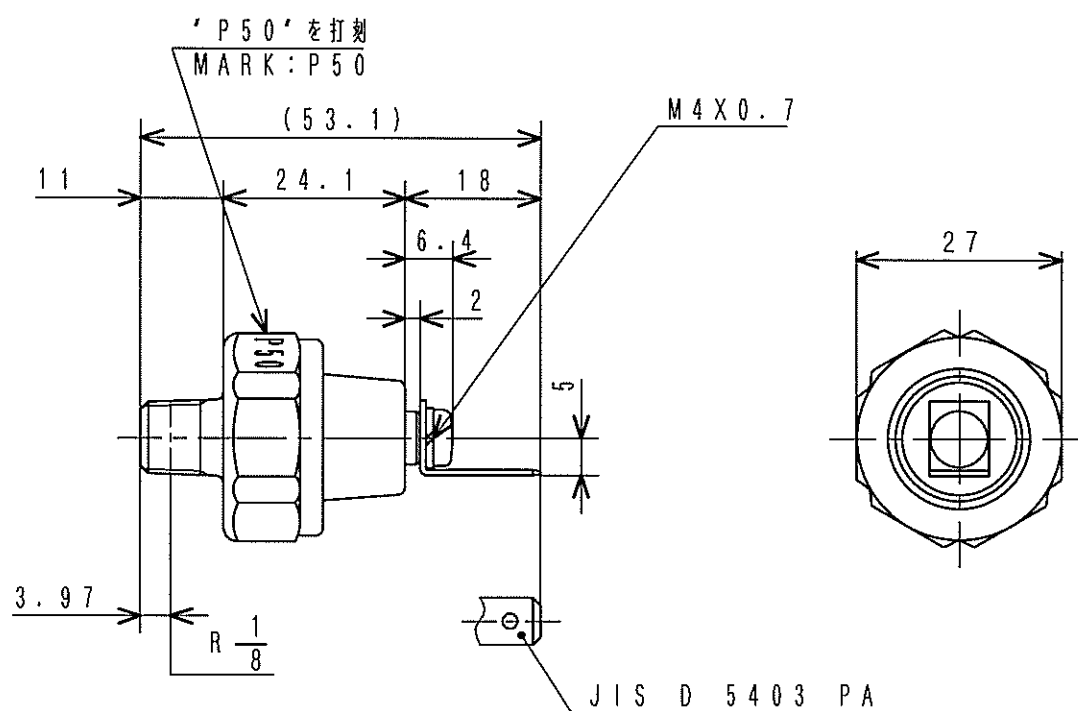
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△ A1-DETAIL



| | | | | | |
|-----------|-----------|----------|---------|--|---|
| 2 | 3060-B097 | 07.10.24 | 後藤 | 3RD ANGLE PROJECTION | S4Q2-Z365SP ENG ASSY |
| 1 | 3060-A663 | 06.6.14 | 黒澤 | 尺度 SCALE 1:5 | 三菱重工業株式会社 汎用機・特車事業本部 MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS. |
| CHG | ED-NO | DATE | CHK | 製図 (MSH) DRW F.H/ROSE A.KUROKAWA | 図面番号 32C00-07580 |
| 認可 印 | 承認 印 | 検図 印 | 検図 印 | 2008. 2. 9 | DRAWING NO. 1 2 |
| 1. Yamada | R. NAGASE | K. AJIRO | | 3 新図 7421 4 旧図 1 1 | 1 組立品 2 組立品 3 組立品 4 組立品 5 組立品 6 その他(購入品) |



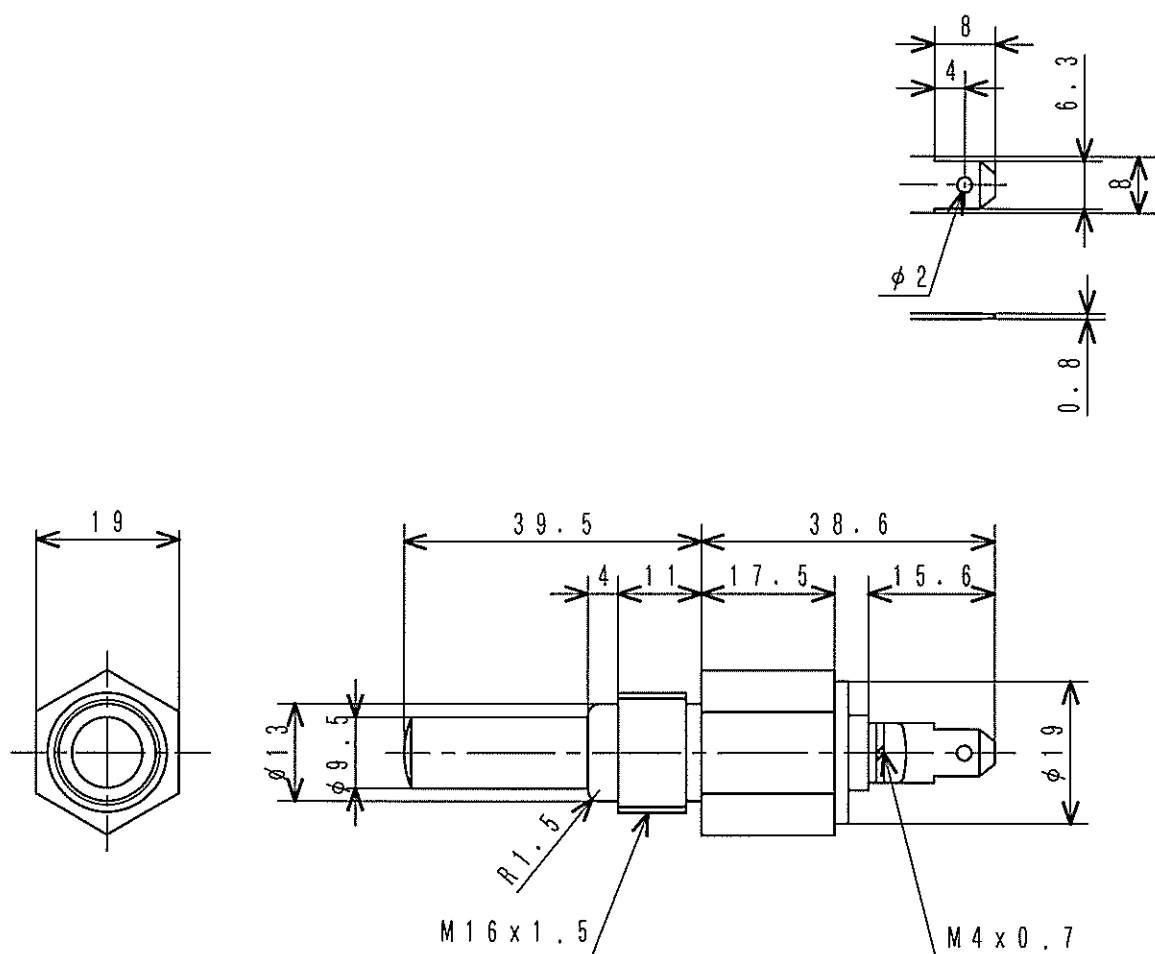
仕様
SPECIFICATIONS

| | |
|--------------------------|-----------------------------------|
| 作動圧力 OPERATING PRESS. | 49 kPa (0.5 kgf/cm ²) |
| 作動電圧 OPERATING VOLT. | 12 V - 5 W 24 V - 3 W |
| 結線様式 CONNECTION | a (—○—○—) |

油圧スイッチ

SWITCH, OIL PRESSURE

31A90-00701



| 部 品 番 号 PART No. | 作 動 温 度 OPERATING TEMP. | | |
|---------------------|----------------------------|--|---------------|
| MC880-900 | 温度下降時 DECREASE | $\leq 100^{\circ}\text{C} \pm 4^{\circ}\text{C}$ | で接点開 OPEN |
| | 温度上昇時 RISE | $\geq 100^{\circ}\text{C} \pm 2^{\circ}\text{C}$ | で接点閉 CLOSE |
| MC880-901 | 温度下降時 DECREASE | $\leq 105^{\circ}\text{C} \pm 4^{\circ}\text{C}$ | で接点開 OPEN |
| | 温度上昇時 RISE | $\geq 105^{\circ}\text{C} \pm 2^{\circ}\text{C}$ | で接点閉 CLOSE |

| | | |
|-------------------------|-------------|---------------|
| 定 格 負 荷 RATED LOADED | 1 A 以上 MIN. | 0.5 A 以上 MIN. |
| 定 格 電 圧 RATED VOLT. | 12 V | 24 V |

サーモスイッチ
SWITCH, THERMO

MC880-900
MC880-901