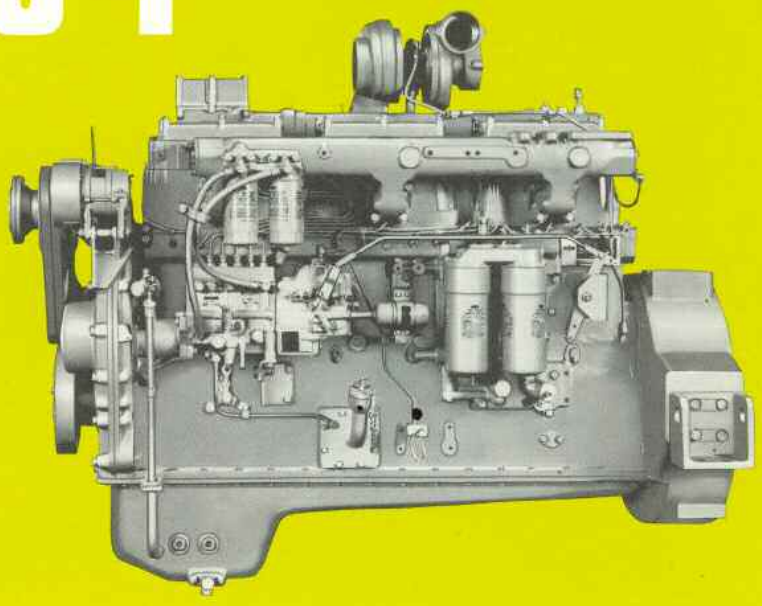
# INDUSTRIAL ENGINE

# S6D155-4



## SPECIAL FEATURES

**High quality:** The S6D155-4 diesel engine is a true achievement of out total engine production system—from the casting of components, all the way through machining processes using Komatsu-made machine tools to final assembly.

**Proven reliability:** The S6D155-4 diesel engine matched with our heavy-duty construction equipment makes for the powerful combination of unbeatable performance and durability.

**Economical operation:** Thanks to the direct-injection system and flawless fuel-minimizing design of the S6D155-4 economy is at its best. Low oil consumption is also a remarkable advantage.

**Lightweight and compact design:** Through an advanced design and an efficient production system, Komatsu diesel engines are made in compact and light in weight, enhancing their versatility.

**Wide applications:** A wide range of optional equipment increases applications to meet any specific customers' requirements.

**Low-noise operation:** Due to the ideal design, the noise and vibration of our engines are kept to a minimum.

## SPECIFICATIONS

| | Metric | English |
|---|---|---|
| Power ratings: | | |
| Intermittent (at 2000 RPM): | 317 kW | 425 HP |
| Continuous (at 2000 RPM): | 287 kW | 385 HP |
| Type | 4-cycle, water-cooled, direct-injection | |
| Aspiration | Turbocharged | |
| Cylinder arrangement | 6 in-line | |
| Bore x stroke | 155 x 170 mm | 6.10" x 6.69" |
| Piston displacement | 19.26 ltr | 1,175 cu.in |
| Compression ratio | 14.5:1 | |
| Lube system oil capacity (including bypass filter) | 70 ltr | 18.5 U.S. Gal |
| Coolant capacity | 50 ltr | 13.2 U.S. Gal |
| Dry weight (approx.) | 2485 kg | 5,479 lb |
| Dimensions: | | |
| Length | 1971 mm | 77.60" |
| Width | 1102 mm | 43.39" |
| Height | 1604 mm | 63.15" |

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## S6D155-4 Design Features

**Cylinder head:** One head for two cylinders to simpliy maintenance. Made of cast iron alloy. The lower surface of the head is water cooled. Air intake port is designed to produce air swirl for efficient combustion. Heat and wear-resistant valve insert is made of stellite for the exhaust valve. Special steel is used for intake valve seat.

**Cylinder block:** Cast iron alloy cylinder block with 7 bearings and deep skirt design for maximum sturdiness. Wet-type cylinder liners made of special cast iron alloy and inner surface is tuft-ride treated. Clevis seal for the top liner seal and the O-ring for the middle and bottom seals prevent liner from cavitation and water leakage.

**Pistons and piston rings:** Pistons made of heat-treated AC8A. Niresist insert cast into the top ring's groove for additional wear resistance. Thermal-flow type piston design for minimum thermal stress. Two compression rings and an oil control ring. The top compression ring is a barrel-faced keystone type, while the second compression ring is a taper-faced, inner-cut, twist keystone type. Bevel-cutter type oil control ring includes a coil expander. The external surfaces of all rings are chrome-plated. Top and ring grooves of the piston are cooled by an oil jet.

**Crankshaft:** One-piece, 12-balance type made of forged carbon steel. Pins and journals are induction-hardened. Viscous-type torsional damper installed on the front end of the crankshaft to minimize excessive torque fluctuation.

**Connecting rods:** Made of chrominum steel for high rigidity. Level-divided type body and cap are fixed with two bolts through a hard washer.

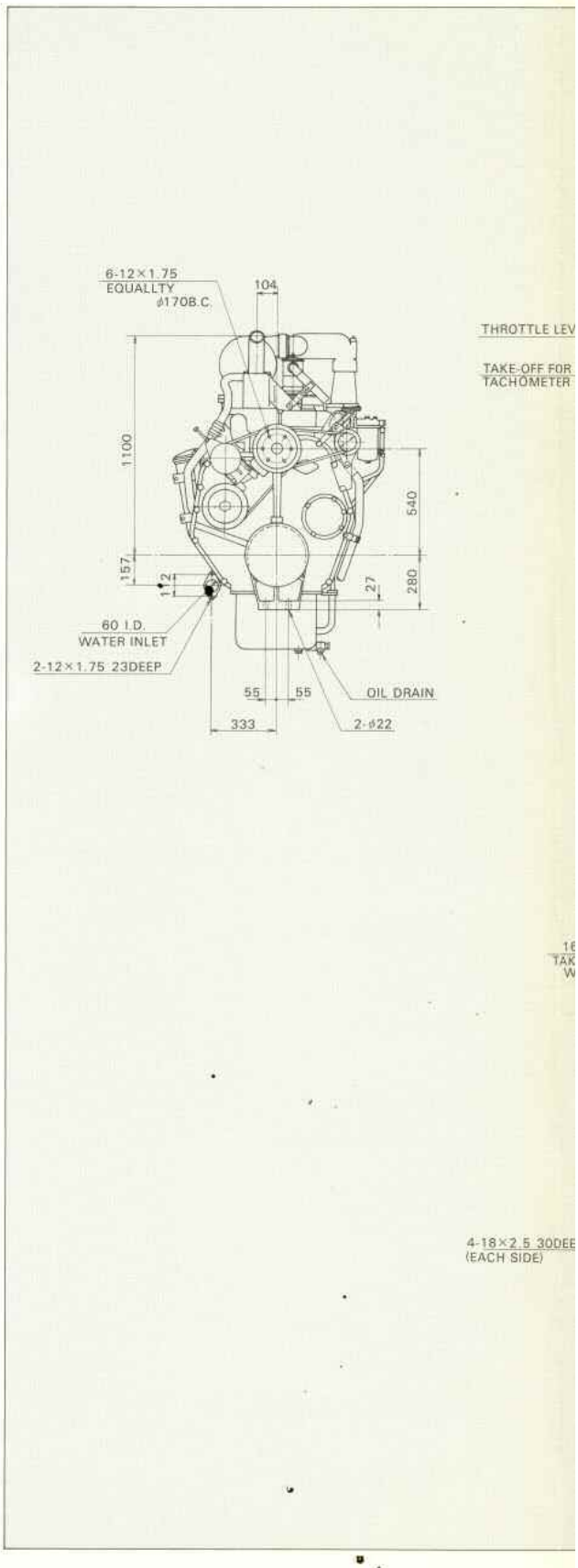
**Valve mechanism:** High camshaft type made of forged carbon steel. Cams and journals are induction hardened. Seven cam journals are supported by bushes inserted into the cylinder block. Cam profile with a large base circle and special outline increases air intake efficiency. Tappet is made of special cast iron and a confrication surface is made of special super alloy to increase wear resistance.

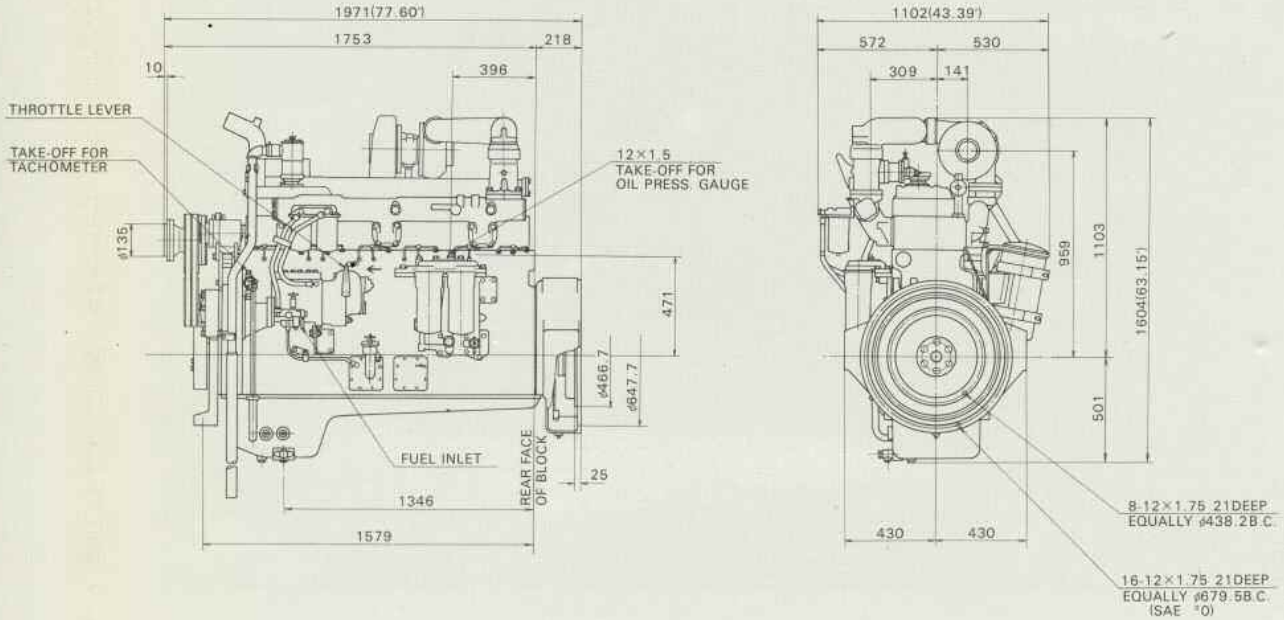
**Injection system:** In-line, Bosch PE-PD A type fuel injection pump with all-speed-control RSUV type governor. The injection pumps are force lubricated by engine oil and maintenance-free. Main parts such as plunger assembly and tappet assembly are easily removed from the housing.

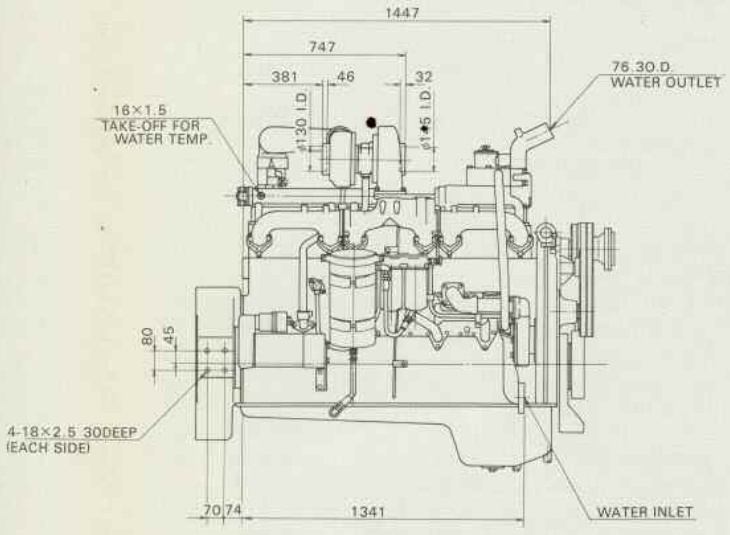
**Lubrication system:** Two gear-type oil pumps are driven by crank gear. Due to the full-flow cooling circuit, all oil passes through the oil cooler and oil filter. Multi-plate type oil cooler is built into the water gallery of the cylinder block. Full-flow oil filters are spin-on/off type for easy element replacement. Bypass oil filter included.

**Cooling system:** Centrifugal water pump is installed on the timing gear case and driven by crankshaft through idle gears. The large volume coolant passage cools efficiently and evenly around cylinder liners and cyliner heads. Two wax-type thermostats are installed. Corrosion resistor purifies coolant to prevent cavitation.

**Intake and exhaust system:** Komatsu KTR-130 turbocharger has a super-back type blower impeller for high efficiency and reliability. Exhaust manifold is box-sectioned and made of cast iron alloy.

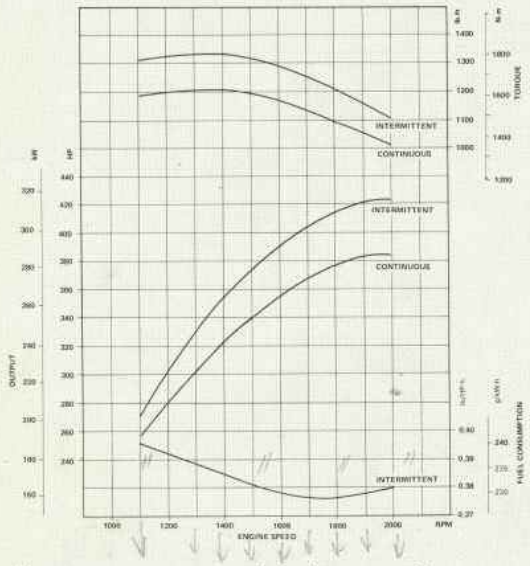



1971(77.60')
1753
218
396
10
THROTTLE LEVER
TAKE-OFF FOR TACHOMETER
12×1.5 TAKE-OFF FOR OIL PRESS. GAUGE
ø135
471
ø466.7
ø647.7
FUEL INLET
REAR FACE OF BLOCK
25
1346
1579
1102(43.39')
572
530
309
141
959
1103
1604(63.15')
501
430
430
8-12×1.75 21DEEP EQUALLY ø438.2B.C.
16-12×1.75 21DEEP EQUALLY ø679.5B.C. (SAE #0)


1447
747
381
46
32
76.3O.D. WATER OUTLET
16×1.5 TAKE-OFF FOR WATER TEMP.
ø130 I.D.
ø145 I.D.
80
45
4-18×2.5 30DEEP (EACH SIDE)
70
74
1341
WATER INLET

## PERFORMANCE

### Performance curves




Horsepower, torque, and fuel consumption curves represent performance measured under the ambient conditions of S.A.E. J816b standards.

- Barometric pressue: 746.25 mmHg (29.38 in.Hg)
- Temperature: 29.4°C (85°F)
- Water vapor pressure: 9.65 mmHg (0.38 in.Hg)

### Ratings

**Intermittent:** This rating conforms to DIN 6270, B-Horsepower "$N_B$" standards. This rating may be applied to intermittent load applications (Full throttle operation does not exceed 60 minutes without interruption, and the average load factor is set at approx. 40%).

**Continuous:** This rating conforms to DIN 6270, A-Horsepower "$N_A$" standards. This rating may be applied to constant load applications (Full throttle for long period without ill-effect, and the average load factor is set at approx. 70%.).

**Operating conditions:** Including water pump, lubricating oil pump and fuel system, and excluding air cleaner, muffler, alternator, compressor, fan, driven components and optional equipment.

**Note:** Rating curves represent a guideline only for selection. Actual power is varied to meet customer's requirements. This horsepower is obtainable with Komatsu's standard fuel pump setting.

## STANDARD EQUIPMENT

- Turbocharger
- Intake manifold
- Exhaust manifold
- Fly wheel housing (SAE #0)
- Flywheel
- Oil pan (front sump)
- Gear oil pump
- Spin-on/off cartridge type oil filter
- Bypass filter
- Centrifugal water pump
- Engine oil cooler
- Thermostat
- Spin-on/off catridge type corrosion resistor
- Bosch type injection pump
- Mechanical all-speed-control governor
- Spin-on/off cartridge type fuel filter
- Mannual priming
- Oil level gauge
- Lifting hooks

## OPTIONAL EQUIPMENT

- Dry-type air cleaner
- Exhaust elbow
- Muffler
- Mounting brackets
- Rear P.T.O.
- Front P.T.O.
- Fan (blower, suction or reversible type)
- Radiator
- Starting motor (24V, 11 kW)
- Alternator (25 A, 35 A or 50 A)
- Air compressor
- Automatic priming
- Ether spray



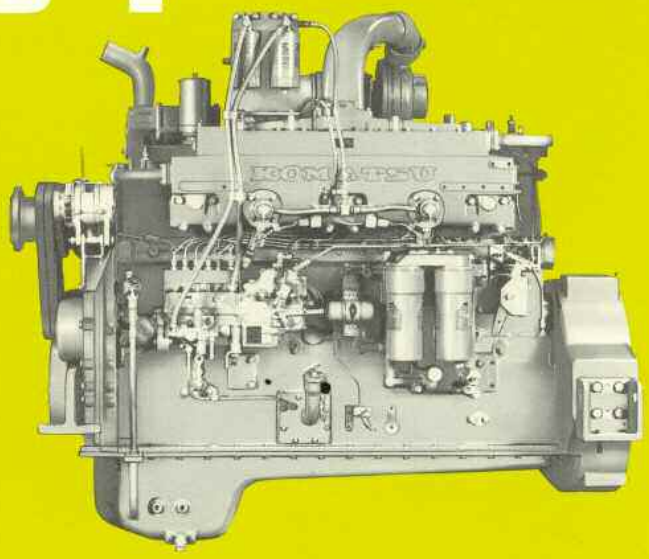
KOMATSU LTD. Tokyo, Japan

Form No. S6D155-04-311

Printed in Japan 3315As

# INDUSTRIAL ENGINE

# SA6D155-4



## SPECIAL FEATURES



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**Economical operation:** Thanks to the direct-injection system and flawless fuel-minimizing design of the SA6D155-4 economy is at its best. Low oil consumption is also a remarkable advantage.

**Lightweight and compact design:** Through an advanced design and an efficient production system, Komatsu diesel engines are made in compact and light in weight, enhancing their versatility.

**Wide applications:** A wide range of optional equipment increases applications to meet any specific customers' requirements.

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## SPECIFICATIONS

| | Metric | English |
|---|---|---|
| Power ratings: | | |
| Intermittent (at 2000 RPM): | 388 kW | 520 HP |
| Continuous (at 2000 RPM): | 347 kW | 465 HP |
| Type | 4-cycle, water-cooled, direct-injection | |
| Aspiration | Turbocharged and after-cooled | |
| Cylinder arrangement | 6 in-line | |
| Bore x stroke | 155 x 170 mm | 6.10" x 6.69" |
| Piston displacement | 19.26 ltr | 1,175 cu.in |
| Compression ratio | 13.5:1 | |
| Lube system oil capacity (including bypass filter) | 70 ltr | 18.5 U.S. Gal |
| Coolant capacity | 60 ltr | 15.8 U.S. Gal |
| Dry weight (approx.) | 2520 kg | 5,557 lb |
| Dimensions: | | |
| Length | 1971 mm | 77.60" |
| Width | 990 mm | 38.98" |
| Height | 1716 mm | 67.56" |

KOMATSU LTD.

## SA6D155-4 Design Features

**Cylinder head:** One head for two cylinders to simply maintenance. Made of cast iron alloy. The lower surface of the head is water cooled. Air intake port is designed to produce air swirl for efficient combustion. Heat and wear-resistant valve insert is made of stellite for the exhaust valve. Special steel is used for intake valve seat.

**Cylinder block:** Cast iron alloy cylinder block with 7 bearings and deep skirt design for maximum sturdiness. Wet-type cylinder liners made of special cast iron alloy and inner surface is tuft-ride treated. Clevis seal for the top liner seal and the O-ring for the middle and bottom seals prevent liner from cavitation and water leakage.

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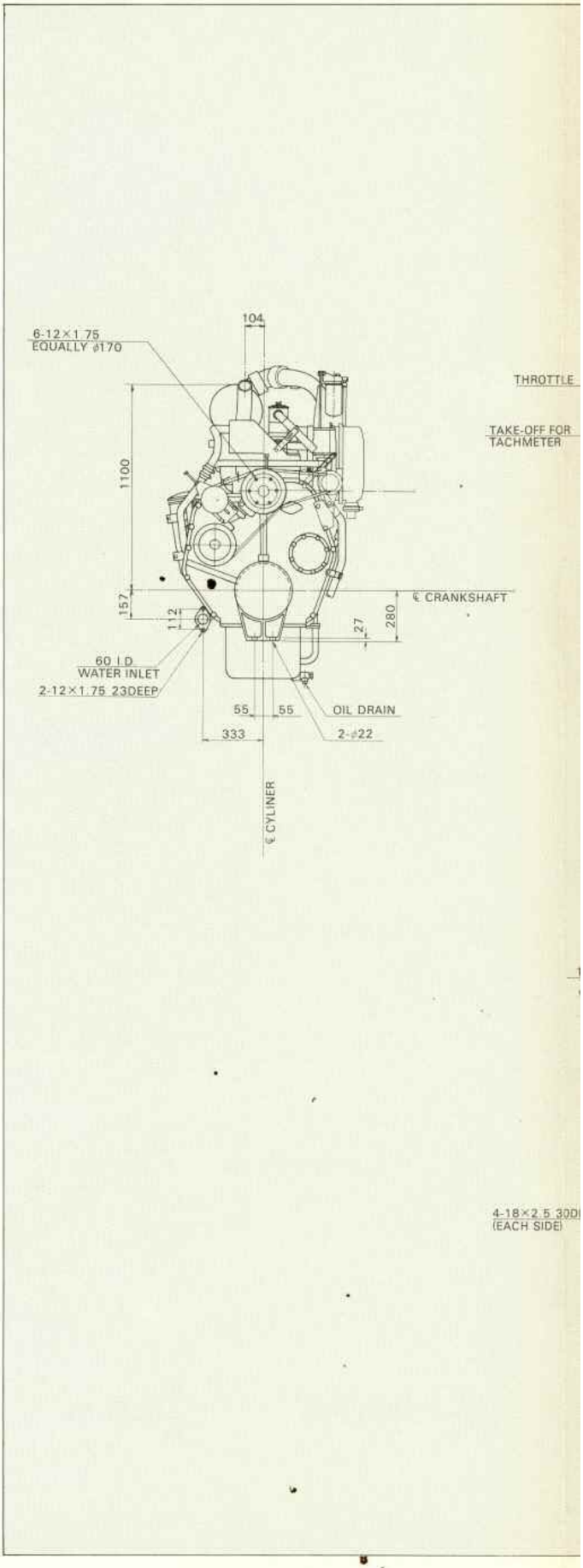
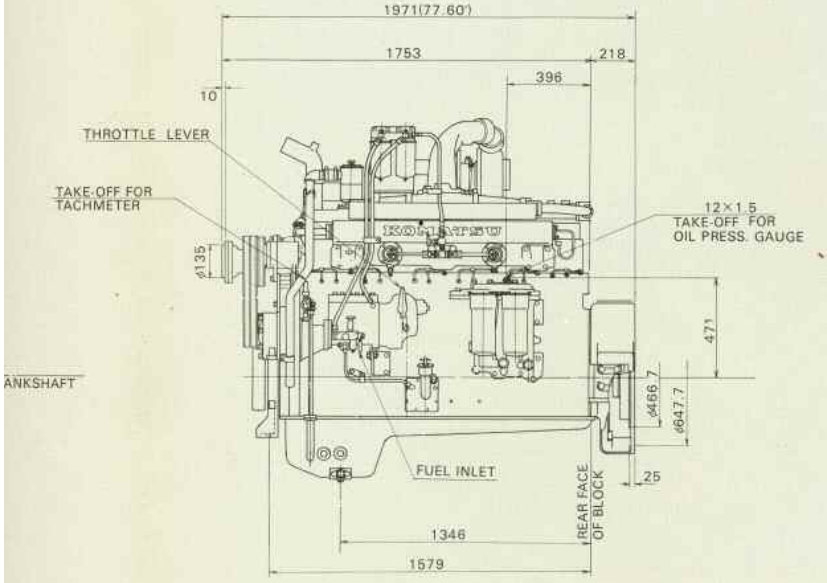
**Intake and exhaust system:** Komatsu KTR-130 turbocharger has a super-back type blower impeller for high efficiency and reliability. Large-capacity aftercooler (fin and plate type) efficiently cools the intake air compressed by the turbocharger, for making the intake air denser for efficient combustion. Exhaust manifold is box-sectioned and made of cast iron alloy.




1971(77.60")
1753
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396
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THROTTLE LEVER
TAKE-OFF FOR
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ø135
12×1.5
TAKE-OFF FOR
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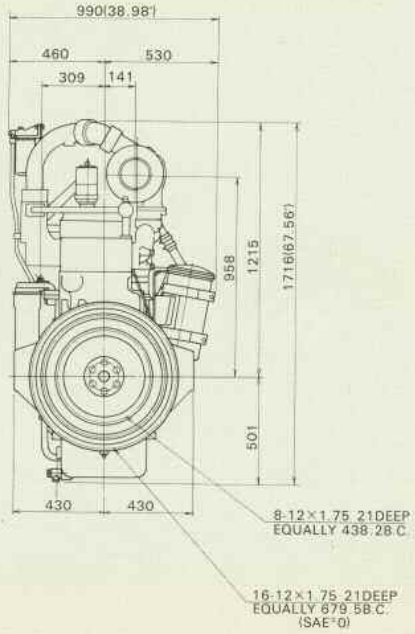
ø466.7
ø647.7
FUEL INLET
25
REAR FACE
OF BLOCK
1346
1579


990(38.98")
460
530
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141
958
1215
1716(67.56")
501
430
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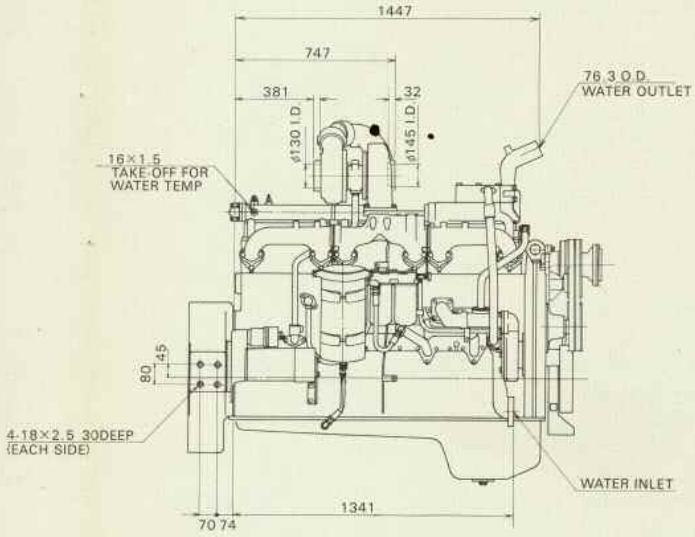
8-12×1.75 21DEEP
EQUALLY 438.28 C.
16-12×1.75 21DEEP
EQUALLY 679.58 C.
(SAE #0)


1447
747
381
32
ø130 I.D
ø145 I.D
76.3 O.D.
WATER OUTLET
16×1.5
TAKE-OFF FOR
WATER TEMP
80
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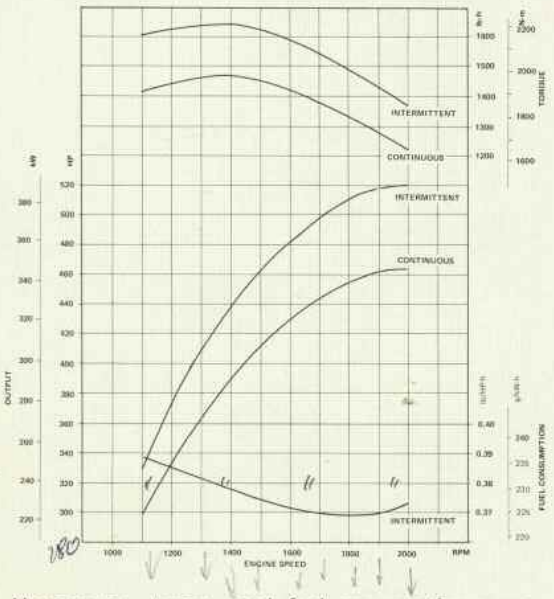
4-18×2.5 30DEEP
(EACH SIDE)
WATER INLET
1341
70
74

## PERFORMANCE

### Performance curves

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**Operating conditions:** Including water pump, lubricating oil pump and fuel system, and excluding air cleaner, muffler, alternator, compressor, fan, driven components and optional equipment.

**Note:** Rating curves represent a guideline only for selection. Actual power is varied to meet customer's requirements. This horsepower is obtainable with Komatsu's standard fuel pump setting.

## STANDARD EQUIPMENT

- Turbocharger
- Intake manifold
- Aftercooler
- Exhaust manifold
- Flywheel housing (SAE #0)
- Flywheel
- Oil pan (front sump)
- Gear oil pump
- Spin-on/off cartridge type oil filter
- Bypass filter
- Centrifugal water pump
- Engine oil cooler
- Thermostat
- Spin-on/off cartridge type corrosion resistor
- Bosch type injection pump
- Mechanical all-speed-control governor
- Spin-on/off cartridge type fuel filter
- Automatic priming
- Oil level gauge
- Lifting hooks

## OPTIONAL EQUIPMENT

- Drytype air cleaner
- Exhaust elbow
- Muffler
- Mounting brackets
- Rear P.T.O.
- Front P.T.O.
- Fan (blower, suction or reversible type)
- Radiator
- Starting motor (24V, 11 kW)
- Alternator (25 A, 35 A or 50 A)
- Air compressor
- Manual priming
- Ether spray



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