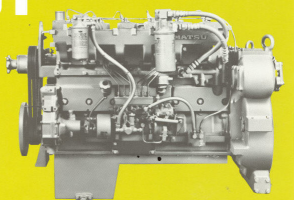
INDUSTRIAL ENGINE

6D125-1



SPECIAL FEATURES

High quality: The 6D125-1 diesel engine is a true achievement of our total engine production system—from the casting of components, all the way through machining processes using Komatsu-made machine tools to final assembly.

High reliability: Based on Komatsu's proven success with various engine manufacturing technologies, the 6D125-1 diesel engine will power all heavy-duty construction equipment with outstanding reliability and durability.

Economical operation: The direct-injection system and special fuel-minimizing design of the 6D125-1 provide maximum economy. Low lube oil consumption is also a remarkable advantage.

Lightweight and compact design: Advanced design and an efficient production system make Komatsu diesel engines compact and lightweight, enhancing their versatility.

Wider applications: A wide range of optional equipment offer a variety of applications to meet any specific customers' requirements.

Low-noise operation: Ideal designing keeps engine noise and vibration to a minimum.

SPECIFICATIONS

Power ratings:	Metric	English
Intermittent (at 2200RPM):	153 kW	205 HP
Continuous (at 2100 RPM):	131 kW	175 HP
Type	4-cycle, water-cooled, direct-injection	
Aspiration	Natural aspiration	
Cylinder arrangement	6 in-line	
Bore x stroke	125 x 150 mm	4.92" x 5.91"
Piston displacement	11.0 ltr.	674 cu.in
Compression ratio	16.5:1	
Lube system oil capacity	32 ltr.	8.5 U.S. Gal
Coolant capacity	19 ltr.	5.0 U.S. Gal
Dry weight (approx.)	845 kg	1,863 lb
Dimensions:		
Length	1349.9 mm	53.15"
Width	699 mm	27.52"
Height	1044.9 mm	41.14"

KOMATSU

6D125 Design Features

Cylinder head: One cast-iron alloy head for each cylinder simplifies maintenance. The lower surface of the head with water cooling line inside is force cooled. Each head has four independent ports. Spiral air intake port design and its ultra-smooth internal surface increase the force of air swirl and air absorption capacity.

Cylinder block: Cylinder block with 7 bearings is made of cast iron alloy. Compact design and short overall length. Lubricating oil lines are built in the cylinder block. Wet type, easy-to-replace cylinder liner is made of special cast iron alloy. The surface of the cylinder liner is tuft-ride treated for low oil consumption and it is scuff-free. Clevis seal is used to seal the liner preventing the liner from cavitation and water leakage.

Pistons and piston rings: Deep chamber design. Pistons made of heat-treated AC8A aliminum alloy. Niresist ring insert cast into the top ring's groove for added wear resistance. Cutback type top land design for low oil consumption. The top compression ring is a barrel-faced plain type, while the second compression ring is a taper-faced inner-cut type. The oil control ring has a coil expander.

Crankshaft: Single-piece, eight-balance type made of forged alloy steel. Large main journal diameter of 110 mm increases sturdiness. Rubber-type torsional damper installed on the front end of the crankshaft to minimize excessive torque fluctuation.

Connecting rods: Made of froged alloy steel Bolt fitting of the large end increases strength.

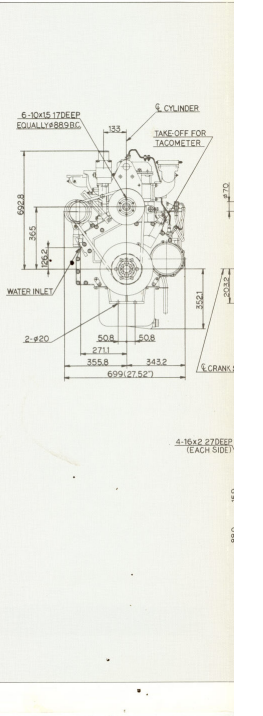
Valve mechanism: Low camshaft type made of forged carbon steel. Seven bearings of 60 mm (2.36") diameter are replaceable precision type. Special cam profile and swing-type cam follower assure smooth valve action and they are scuff- and pit-proof. Four valves for each cylinder.

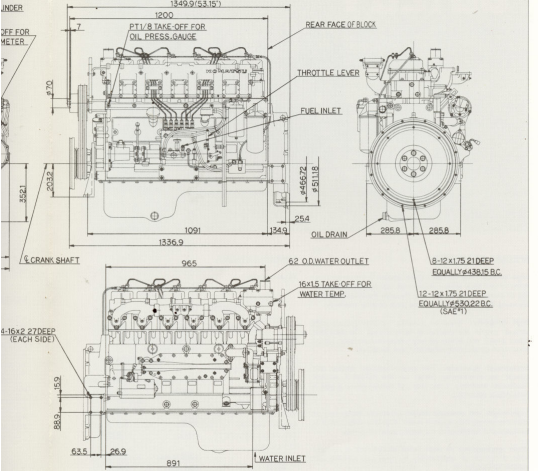
Lubrication system: A gear-type oil pump is built into the cylinder block. In-block oil line prevents oil leakage. Plate-type oil cooler with a thermostat, which controls the oil temperature to reduce parasitic losses, is also built into the cylinder block to simplify construction. Full-flow type oil filter with paper element. Since the oil filter is a spin-on/off type, filter element is replaced quickly and easily.

Cooling system: Gear-driven centrifugal water pump is installed on the side of the cylinder block. The large volume coolant passage cools efficiently and evenly around the cylinder liners and the lower surface of the cylinder head. Wax-type thermostats provided.

Injection system: In-line Bosch NB type injection pumps are driven by front gear train. Since pipings for injection pumps are externally mounted, leaked fuel is not mixed with lubricating oil. Injection pumps are force lubricated and equipped with an all-speed RSV type governor. Automatic priming system facilitates smooth engine starts.

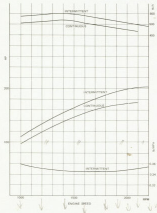
Intake and exhaust system: Three-sectioned exhaust manifold and aluminum intake manifold.




1349.9(53.15")
1200
PT1/8 TAKE-OFF FOR OIL PRESS.GAUGE
REAR FACE OF BLOCK
THROTTLE LEVER
FUEL INLET
370
2032
3521
ø456.72
ø511.18
254
1091
1340
1336.9
OIL DRAIN
285.8
285.8
8-12x1.75 21DEEP EQUALLY ø438.15 B.C.
12-12x1.75 21DEEP EQUALLY ø530.22 B.C. (SAE-1)
℄ CRANK SHAFT
965
62 O.D.WATER OUTLET
16x1.5 TAKE-OFF FOR WATER TEMP.
6-16x2 27DEEP (EACH SIDE)
152
88.9
63.5
26.9
891
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 "Nq" 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 "Na" 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

- Intake manifold
- Exhaust manifold
- Flywheel housing
- Flywheel
- Oil pan (front sump)
- Gear oil pump
- Spin-on/off cartridge type oil filter
- Centrifugal water pump
- Engine oil cooler
- Thermostat
- Bosch type injection pump
- Mechanical all-speed-control governor
- Spin-on/off cartridge type fuel filter
- Automatic priming
- Oil level gauge
- Lifting hooks
- Air intake heater

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 motors (24 V, 7.5 kW)
- Alternator (25 A, 35 A or 50 A)
- Air compressor
- Freon compressor
- Ether spray
- Spin-on/off cartridge type corrosion resistor

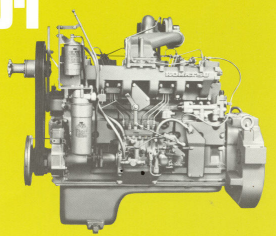
KOMATSU

Form No. 60125-01-311

Printed in Japan 5310As

INDUSTRIAL ENGINE

S6D125-1



SPECIAL FEATURES

High quality: The S6D125-1 diesel engine is a true achievement of our total engine production system—from the casting of components, all the way through machining processes using Komatsu-made machine tools to final assembly.

High reliability: Based on Komatsu's proven success with various engine manufacturing technologies, the S6D125-1 diesel engine will power all heavy-duty construction equipment with outstanding reliability and durability.

Economical operation: The direct-injection system and special fuel-minimizing design of the S6D125-1 provide maximum economy. Low lube oil consumption is also a remarkable advantage.

Lightweight and compact design: Advanced design and an efficient production system make Komatsu diesel engines compact and lightweight, enhancing overall versatility.

Wider applications: A wide range of optional equipment offer a variety of applications to meet all specific customers' requirements.

Low-noise operation: Ideal designing keeps engine noise and vibration to a minimum.

SPECIFICATIONS

Power ratings:

	Metric	English
Intermittent (at 2200 RPM):	220 kW	295 HP
Continuous (at 2100 RPM):	168 kW	225 HP
Type	4-cycle, water-cooled, direct-injection	
Aspiration	Turbocharged	
Cylinder arrangement	6 in-line	
Bore x stroke	125 x 150 mm	4.92" x 5.91"
Piston displacement	11.0 ltr.	674 cu.in
Compression ratio	15.5:1	
Lube system oil capacity	32 ltr.	8.5 U.S. Gal
Coolant capacity	19 ltr.	5.0 U.S. Gal
Dry weight (approx.)	880 kg	1,940 lb
Dimensions:		
Length	1349.9 mm	53.15"
Width	699 mm	27.52"
Height	1133.5 mm	44.63"

KOMATSU

Cylinder head: One cast-iron alloy head for each cylinder simplifies maintenance. The lower surface of the head with water cooling line inside is force cooled. Each head has four independent ports. Spiral air intake port design and its ultra-smooth internal surface increase the force of air swirl and air absorption capacity.

Cylinder block: Cylinder block with 7 bearings is made of cast iron alloy. Compact design and short overall length. Lubricating oil lines are built in the cylinder block. Wet type, easy-to-replace cylinder liner is made of special cast iron alloy. The surface of the cylinder liner is tuft-ride treated for low oil consumption and it is scuff-free. Clevis seal is used to seal the liner, preventing the liner from cavitation and water leakage.

Pistons and piston rings: Deep chamber design. Pistons made of ductile cast iron to increase thermal strength and improve fuel consumption with high top ring design. Two compression rings and one oil control ring. The top compression ring is a barrel-faced keystone type, while the second compression ring is a taper-faced inner-cut type. The oil control ring has a coil expander.

Crankshaft: Single-piece, eight-balance type made of forged alloy steel. Large main journal diameter of 110 mm increases sturdiness. Rubber-type torsional damper installed on the front end of the crankshaft to minimize excessive torque fluctuation.

Connecting rods: Made of forged alloy steel. Bolt fitting of the large end increases strength.

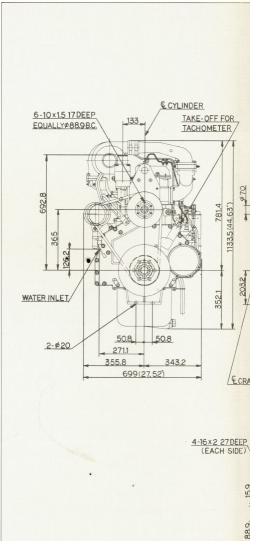
Valve mechanism: Low camshaft type made of forged carbon steel. Seven bearings of 60 mm (2.36") diameter are replaceable precision type. Special cam profile and swing-type cam follower assure smooth valve action and they are scuff- and pit-proof. Four valves for each cylinder.

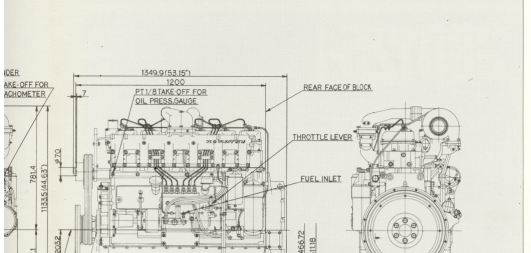
Lubrication system: A gear-type oil pump is built into the cylinder block. In-block oil line prevents oil leakage. Plate-type oil cooler with a thermostat, which controls the oil temperature to reduce parasitic loses, is also built into the cylinder block to simplify construction. Full-flow type oil filter with paper element. Since the oil filter is a spin-on/off type, filter element is replaced quickly and easily.

Cooling system: Gear-driven, centrifugal water pump is installed on the side of the cylinder block. The large volume coolant passage cools efficiently and evenly around the cylinder liners and the lower surface of the cylinder head. Wax-type thermostats provided.

Injection system: In-line Bosch P type injection pumps are driven by front gear train. Since pipings for injection pumps are externally mounted, leaked fuel is not mixed with lubricating oil. Injection pumps are force lubricated and equipped with an all-speed RSV type governor. Automatic priming system facilitates smooth engine starts.

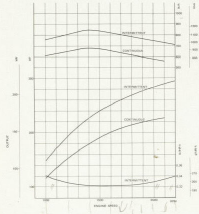
Intake and exhaust system: Airesearch TV-77 turbocharger is used. Three-sectioned exhaust manifold and aluminum intake manifold.




IDER
AKE OFF FOR
ACHOMETER
1349.9 (53.15")
1200
7
PTI/BTAKE OFF FOR
OIL PRESS.GAUGE
REAR FACE OF BLOCK
THROTTLE LEVER
FUEL INLET
730
781.4
1133.5 (44.63")
352.1
203.2
ø466.72
ø311.18
254
1091
1340
1336.9
285.8
285.8
OIL DRAIN
℄ CRANK SHAFT
965
ø88.9
62 O.D.WATER OUTLET
16×15 TAKE OFF FOR
WATER TEMP.
8-12×1.75 21DEEP
EQUALLY ø436.15 B.C.
12-12×1.75 21DEEP
EQUALLY ø530.22 B.C.
(SAE #1)
4-16×2.27DEEP
(EACH SIDE)
15.9
88.9
63.5
265
891
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 "Nb" 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 "NA" 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
- Flywheel housing
- Flywheel
- Oil pan (from sump)
- Gear oil pump
- Spin-on/off cartridge type oil filter
- Centrifugal water pump
- Engine oil cooler
- Thermostat
- Bosch type injection pump
- Mechanical all-speed-control governor
- Spin-on/off cartridge type fuel filter
- Automatic priming
- Oil level gauge
- Lifting hooks
- Air intake heater

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 motors (24 V, 7.5 kW)
- Alternator (25 A, 35 A or 50 A)
- Air compressor
- Freon compressor
- Ether spray
- Spin-on/off cartridge type corrosion resister

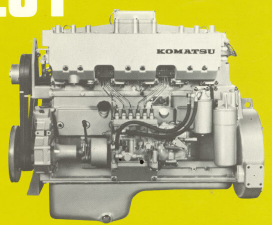
KOMATSU

Form No. 5E0125-01-311

Printed in Japan 5310As

INDUSTRIAL ENGINE

SA6D125-1



SPECIAL FEATURES

High quality: The SA6D125-1 diesel engine is a true achievement of our total engine production system—from the casting of components, all the way through machining processes using Komatsu-made machine tools to final assembly.

High reliability: Based on Komatsu's proven success with various engine manufacturing technologies, the SA6D125 diesel engine will power all heavy-duty construction equipment with outstanding reliability and durability.

Economical operation: The direct-injection system and special fuel-minimizing design of the SA6D125-1 provide maximum economy. Low lube oil consumption is also a remarkable advantage.

Lightweight and compact design: Advanced design and an efficient production system make Komatsu diesel engines compact and lightweight, enhancing overall versatility.

Wider applications: A wide range of optional equipment offer a variety of applications to meet all specific customers' requirements.

Low-noise operation: Ideal designing keeps engine noise and vibration to a minimum.

SPECIFICATIONS

Power ratings:	Metric	English
Intermittent (at 2200 RPM):	276 kW	370 HP
Continuous (at 2100 RPM):	205 kW	275 HP
Type	4-cycle, water-cooled, direct-injection	
Aspiration	Turbocharged and after-cooled	
Cylinder arrangement	6 in-line	
Bore x stroke	125 x 150 mm	4.92" x 5.91"
Piston displacement	11.0 ltr.	674 cu.in
Compression ratio	14.5:1	
Lube system oil capacity	32 ltr.	8.5 U.S. Gal
Coolant capacity	20 ltr.	5.3 U.S. Gal
Dry weight (approx.)	900 kg	1,984 lb
Dimensions:		
Length	1349.9 mm	53.15"
Width	699 mm	27.52"
Height	1135 mm	44.68"

KOMATSU

SA6D125-1 Design Features

Cylinder head: One cast-iron alloy head for each cylinder simplifies maintenance. The lower surface of the head with water cooling line inside is force cooled. Each head has four independent ports. Spiral air intake port design and its ultra-smooth internal surface increase the force of air swirl and air absorption capacity.

Cylinder block: Cylinder block with 7 bearings is made of cast iron alloy. Compact design and short overall length. Lubricating oil lines are built in the cylinder block. Wet type, easy-to-replace cylinder liner is made of special cast iron alloy. The surface of the cylinder liner is tuft-ride treated for low oil consumption and it is scuff-free. Clevis seal is used to seal the liner, preventing the liner from cavitation and water leakage.

Piston and piston rings: Pistons made of ductile cast iron to increase thermal strength and improve fuel consumption with high top ring design. Two compression rings and one oil control ring. The top compression ring is a barrel-faced keystone type, while the second compression ring is a taper-faced inner-cut type. The oil comtrol ring has a coil expander.

Crankshaft: Single-piece, eight-balance type made of forged alloy steel. Large main journal diameter of 110 mm increases sturdiness. Rubber-type torsional damper installed on the front end of the crankshaft to minimize excessive torque fluctuation.

Connecting rods: Made of forged alloy steel. Bolt fitting of the large end increases strength.

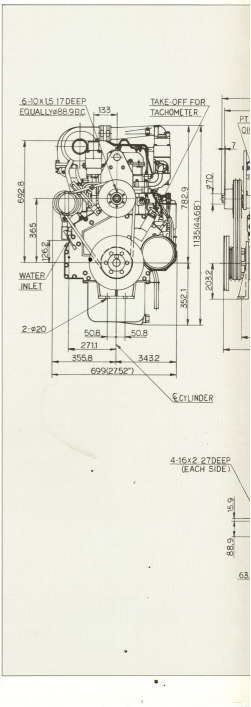
Valve mechanism: Made of forged carbon steel. Seven bearings of 60 mm (2.36") diameter are replaceable precision type. Special cam profile and swing-type cam follower assure smooth valve action and they are scuff- and pit-proof. Four valves for each cylinder.

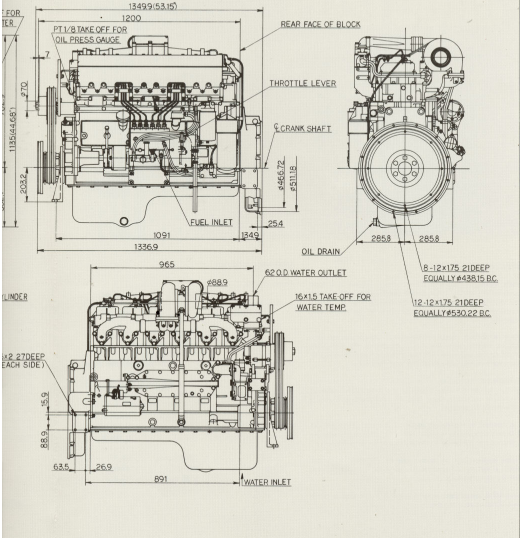
Lubrication system: A gear-type oil pump is built into the cylinder block. In-block oil line prevents oil leakage. Plate-type oil cooler with a thermostat, which controls the oil temperature to reduce parasitic loses, is also built into the cylinder block to simplify construction. Full-flow type oil filter with paper element. Since the oil filter is a spin-on/off type, filter element is replaced quickly and easily.

Cooling system: Gear-driven, centrifugal water pump is installed on the side of the cylinder block. The large volume coolant passage cools efficiently and evenly around the cylinder liners and the lower surface of the cylinder head. Wax-type thermostats provided.

Injection system: In-line Bosch P type injection pumps are driven by front gear train. Since pipings for injection pumps are externally mounted, leaked fuel is not mixed with lubricating oil. Injection pumps are force lubricated and equipped with an all-speed RSV type governor. Automatic priming system facilitates smooth engine starts.

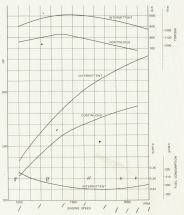
Intake and exhaust system: Large-capacity aftercooler (fin and plate type) efficiently cools the intake air compressed by the turbocharger for cooler, denser intake air and more efficient combustion. Three-sectioned exhaust manifold and aluminum, box-sectioned intake manifold. Airesearch TV-77 type turbocharger is used.




13499(53.15)
1200
PT 1/8 TAKE OFF FOR OIL PRESS GAUGE
REAR FACE OF BLOCK
THROTTLE LEVER
℄ CRANK SHAFT
1335(44.68)
270
2032
Ø466.72 Ø511.18
FUEL INLET
254
1091
1340
1336.9
OIL DRAIN
285.8
285.8
8-12×1.75 21DEEP EQUALLY ø438.15 P.C.
12-12×1.75 21DEEP EQUALLY ø530.22 P.C.
965
2889
62.0 O.D WATER OUTLET
16×1.5 TAKE OFF FOR WATER TEMP.
88.9
63.5
26.9
891
WATER INLET

PERFORMANCE

Performance curves



Horsepower, torque, and fuel consumption curves represent performance measured under the ambient conditions of S.A.E. J1349 standards.

- Barometric pressure: 99 kPa (29.2 in Hg)
- Temperature: 25°C (77°F)
- Water vapor pressure: 1 kPa (0.3 in Hg)

Ratings

Intermittent: This rating conforms to DIN 6270, B-Horsepower "Ng" 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 "Na" 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
- After cooler
- Exhaust manifold
- Flywheel housing
- Flywheel
- Oil pan (front sump)
- Gear oil pump
- Spin-on/off cartridge type oil filter
- Centrifugal water pump
- Engine oil cooler
- Thermostat
- Bosch type injection pump
- Mechanical all-speed-control governor
- Spin-on/off cartridge type fuel filter
- Automatic priming
- Oil level gauge
- Lifting hooks
- Air intake heater

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 motors (24 V, 7.5 kW)
- Alternator (25 A, 35 A or 50 A)
- Air compressor
- Freon compressor
- Ether spray
- Spin-on/off cartridge type corrosion resistor

KOMATSU LTD. Tokyo, Japan

Form No. SA&D 125-01-312

Printed in Japan 6315As