VOLVO PENTA

TAD840GE-B / TAD841-843GE

7.7 liter, in-line 6 cylinder



The TAD840GE-B and TAD841-843GE is a powerful, reliable and economical Generating Set Diesel Engine built on the dependable in-line six design.

Durability & low noise
Designed for easiest, fastest and most economical installation. Well-balanced to produce smooth and vibration-free operation with low noise level.
To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling. The engine is also fitted with replaceable cylinder liners and valve seats/guides to ensure maximum durability and service life of the engine.

Low exhaust emission
The state of the art, high-tech injection and charging system with low internal losses contributes to excellent combustion and low fuel consumption. The TAD840GE-B and TAD841-843GE complies with EU Stage II exhaust emission regulations.

Easy service & maintenance
Easily accessible service and maintenance points contribute to the ease of service of the engine.

- **Electronic govering EMS**
- **CAN bus communication**
- **Compact design for the power class**
- **High power to weight ratio**
- **Emission compliant acc. to EU Stage II**
- **Noise optimized engine design**
- **RoHS2 Compliant**
- **Dual speed**

50 Hz / 1500 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TAD840GE-B	130	120	150	177	163	203	194	178	223
TAD841GE	165	152	190	220	202	253	242	223	278
TAD842GE	196	182	228	261	243	303	287	267	334
TAD843GE	210	195	245	280	260	326	308	286	359

60 Hz / 1800 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TAD840GE-B	141	130	162	194	178	223	213	196	245
TAD841GE	169	156	194	225	207	259	248	228	285
TAD842GE	196	182	227	261	243	303	287	267	334
TAD843GE	205	191	239	274	254	318	301	280	350

50 Hz / 1500 rpm

Data Center Power	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TAD840GE-B	177	163	203	194	178	223
TAD841GE	220	202	253	242	223	278
TAD842GE	261	243	303	287	267	334
TAD843GE	280	260	326	308	286	359

60 Hz / 1800 rpm

	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TAD840GE-B	194	178	223	213	196	245
TAD841GE	225	207	259	248	228	285
TAD842GE	261	243	303	287	267	334
TAD843GE	274	254	318	301	280	350

Generator efficiency (typical): TAD840GE-B/TAD841GE 92%, TAD842GE/TAD843GE 93%

kWm = kiloWatt mechanical, net with fan*; **kWe** = kiloWatt electrical = kWm x Generator eff.; **kVA** = kiloVoltAmpere calculations based on a 0.8 power factor = kWe / 0.8
1 kW = 1 hp x 1.36; **1 hp** = 1 kW x 0.7355
*) According to technical data

TAD840GE-B / TAD841-843GE

7.7 liter, in-line 6 cylinder

Technical Data

Configuration and no. of cylinders	in-line 6
Displacement, l (in³)	7.7 (470)
Method of operation	4-stroke
Bore, mm (in.)	110 (4.33)
Stroke, mm (in.)	135 (5.31)
Wet weight, engine only, kg (lb)	737 (1625)

Technical description

Engine and block
- Optimized cast iron cylinder block with optimum distribution of forces
- Piston cooling for low piston temperature and reduced ring temperature
- Drop forged steel connecting rods
- Crankshaft hardened bearing surfaces and fillets for moderate load on main and big-end bearings
- Keystone top compression rings for long service life
- Replaceable valve guides and valve seats
- Lift eyelets
- Flywheel housing with connection acc. to SAE1/SAE2
- Flywheel for flexplate
- Fixed integrated radiator front engine suspension
- Transport brackets, rear

Lubrication system
- Full flow cartrigde insert filter
- Rotary displacement oil pump driven by the crankshaft
- Deep front oil sump
- Oil dipstick, short in front
- Integrated full flow oil cooler, side-mounted

Fuel system
- Common rail
- Gear driven fuel feed pump
- Electronic governor
- Fuel prefilter with water separator
- Fine fuel filter of cartridge insert type

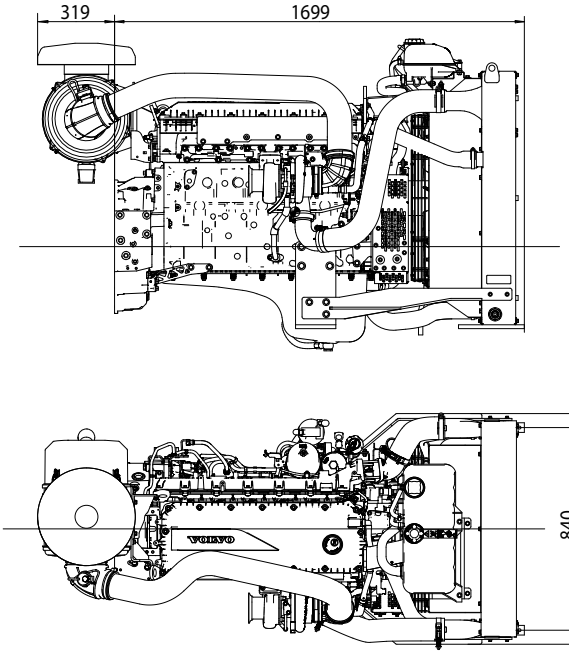
Intake and exhaust system
- Connection flange for exhaust line
- Turbo charger, centre low with exhaust flange
- Two-stage air filter, with cyclon
- Heater flange in charge air inlet (with relay)

Cooling system
- Belt driven, maintenance-free coolant pump with high degree of efficiency
- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block
- Reliable thermostat with minimum pressure drop
- Pusher fan
- Visco fan or fixed fan

Electrical system
- Engine Management System (EMS), an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing
- The instruments and controls connect to the engine via the CAN SAE J1939 interface, either through the Control Interface Module (CIM). The CIM converts the digital CAN bus signal to an anolog signal, making it possible to connect a variety of instruments. The CIM is a control panel with display, engine control, monitoring, alarm, parameter setting and diagnostic functions. The CIM also presents error codes in clear text.
- Sensors for oil pressure, boost pressure, boost temp, exhaust temp, coolant temp, water in fuel, fuel pressure and two speed sensors.

Target dimensions

Not for installation. Dimensions in mm.



Rating guidelines

CONTINUOUS POWER is defined as being the maximum power which the generating set is capable of delivering continuously while supplying a constant electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer.

PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for govering purpose is available for this rating.

STAND-BY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying stand-by electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.

DATA CENTRE POWER is defined as being the maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours. Depending on the sites to supply and the availability of reliable utility, the generating set manufacturer is responsible to define what power level he is able to supply to fulfil that requirement including hardware or software or maintenance plan adaptation.

AB Volvo Penta
SE-405 08 Göteborg, Sweden
www.volvopenta.com

Power standards

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ /kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Power output guaranteed within 0 to +2% att rated ambient conditions at delivery. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 8528-5 G3.

Please contact your local Volvo Penta dealer for further information.

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VOLVO PENTA

TAD1341/1342/1343GE-B

12.78 liter, in-line 6 cylinder



TAD1341GE-B, TAD1342GE-B and TAD1343GE-B are powerful, reliable and economical Generating Set Diesel Engines built on the dependable in-line six design.

Durability and low noise
Designed for easiest, fastest and most economical installation. Field tested to ensure highest standard of durability and long life. Well-balanced to produce smooth and vibration-free operation with low noise level.

To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling. The engine is also fitted with replaceable cylinder liners and valve seats/guides to ensure maximum durability and service life of the engine.

Low exhaust emission
The state of the art, high-tech injection and charging system with low internal losses contributes to excellent combustion and low fuel consumption.

The TAD1341GE-B, TAD1342GE-B and TAD1343GE-B are emission certified. An electronically controlled viscous fan drive is available giving substantially lower noise and fuel consumption.

Easy service and maintenance
Easily accessible service and maintenance points contribute to the ease of service of the engine.

- **Excellent load acceptance**
- **Highly efficient cooling system**
- **RoHS2 compliant**
- **Dual Speed 1500/1800 rpm**
- **EMS**
- **EU Stage 2 emission**
- **Wide range of optional equipment including visco fan**

50 Hz / 1500 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TAD1341GE-B	203	189	236	271	252	315	298	277	346
TAD1342GE-B	227	212	264	303	282	352	333	310	387
TAD1343GE-B	244	227	284	325	302	378	356	331	414

60 Hz / 1800 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TAD1341GE-B	230	214	267	287	267	334	317	295	369
TAD1342GE-B	259	241	301	345	321	401	377	351	438
TAD1343GE-B	265	246	308	353	328	410	388	361	451

50 Hz / 1500 rpm

Data Center Power	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TAD1341GE-B	271	252	315	298	277	346
TAD1342GE-B	303	282	352	333	310	387
TAD1343GE-B	325	302	378	356	331	414

60 Hz / 1800 rpm

	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TAD1341GE-B	287	267	334	317	295	369
TAD1342GE-B	345	321	401	377	351	438
TAD1343GE-B	353	328	410	388	361	451

Generator efficiency (typical): 93%

kWm = kiloWatt mechanical, net with fan*; **kWe** = kiloWatt electrical = kWm x Generator eff.; **kVA** = kiloVoltAmpere calculations based on a 0.8 power factor = kWe / 0.8
1 kW = 1 hp x 1.36; **1 hp** = 1 kW x 0.7355
*) According to technical data

TAD1341/1342/1343GE-B

12.78 liter, in-line 6 cylinder

Technical data

Configuration and no. of cylinders	in-line 6
Method of operation	4-stroke
Bore, mm (in.)	131 (5.16)
Stroke, mm (in.)	158 (6.22)
Displacement, l (in³)	12.78 (780)
Compression ratio	18.1:1
Wet weight, kg (lb)	1325 (2921)
Wet weight with Gen Pac, kg (lb)	1790 (3946)

Performance	TAD1341GE-B		TAD1342GE-B		TAD1343GE-B	
rpm	1500	1800	1500	1800	1500	1800
Prime Power, kW (hp)	271 (369)	287 (390)	303 (412)	345 (469)	325 (442)	353 (480)
Standby Power, kW (hp)	298 (405)	317 (431)	333 (453)	377 (513)	356 (484)	388 (528)

Fuel consumption

Prime Power, g/kWh (lb/hph)

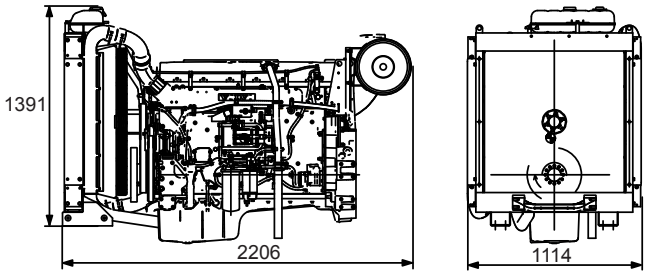
	TAD1341GE-B		TAD1342GE-B		TAD1343GE-B	
	1500 rpm	1800 rpm	1500 rpm	1800 rpm	1500 rpm	1800 rpm
25%	235 (0.381)	254 (0.411)	228 (0.369)	240 (0.389)	224 (0.363)	239 (0.387)
50%	202 (0.327)	210 (0.341)	199 (0.322)	206 (0.334)	198 (0.320)	205 (0.333)
75%	194 (0.314)	201 (0.327)	193 (0.312)	200 (0.325)	193 (0.312)	200 (0.325)
100%	192 (0.312)	201 (0.326)	192 (0.311)	204 (0.331)	192 (0.312)	205 (0.332)

Standby Power, g/kWh (lb/hph)

	TAD1341GE-B		TAD1342GE-B		TAD1343GE-B	
	1500 rpm	1800 rpm	1500 rpm	1800 rpm	1500 rpm	1800 rpm
25%	228 (0.369)	245 (0.396)	222 (0.360)	233 (0.378)	219 (0.355)	232 (0.376)
50%	199 (0.323)	207 (0.335)	196 (0.318)	203 (0.329)	196 (0.317)	202 (0.328)
75%	193 (0.314)	201 (0.326)	193 (0.312)	202 (0.327)	193 (0.313)	202 (0.327)
100%	194 (0.314)	204 (0.331)	193 (0.313)	207 (0.335)	195 (0.316)	207 (0.336)

Dimensions

Not for installation. Dimensions in mm.



Technical description

Engine and block

- Optimized cast iron cylinder block with optimum distribution of forces without the block being unnecessary heavy.
- Wet, replaceable cylinder liners
- Piston cooling for low piston temperature and reduced ring temperature
- Tapered connecting rods for increased piston lifetime
- Crankshaft induction hardened bearing surfaces and fillets with seven main bearings for moderate load on main and high-end bearings
- Case hardened and Nitrocarburized transmission gears for heavy duty operation
- Keystone top compression rings for long service life
- Viscous type crankshaft vibration damper to withstand single bearing alternator torsional vibrations
- Replaceable valve guides and valve seats
- Over head camshaft and four valves per cylinder

Lubrication system

- Full flow oil cooler
- Full flow disposable spin-on oil filters, for extra high filtration
- The lubricating oil level can be measured during operation
- Gear type lubricating oil pump, gear driven by the transmission

Fuel system

- Electronic high pressure unit injectors
- Fuel prefilter with water separator and water-in-fuel indicator / alarm
- Gear driven low-pressure fuel pump
- Fine fuel filter with manual feed pump and fuel pressure switch

Cooling system

- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block. Reliable sleeve thermostat with minimum pressure drop.
- Belt driven coolant pump with high degree of efficiency
- Electronically controlled viscous fan drive provides lower noise and fuel consumption (optional).

Turbo charger

- Efficient and reliable turbo charger
- Electronically controlled Waste-gate
- Extra oil filter for the turbo charger

Electrical system

- Engine Management System (EMS), an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing.
- The instruments and controls connect to the engine via the CAN SAE J1939 interface, either through the Control Interface Module (CIM) or the Digital Control Unit (DCU). The CIM converts the digital CAN bus signal to an anolog signal, making it possible to connect a variety of instruments. The DCU2 is a control panel with display, engine control, monitoring, alarm, parameter setting and diagnostic functions. The DCU2 also presents error codes in clear text.
- Sensors for oil pressure, oil temp, boost pressure, boost temp, coolant-temp, fuel temp, water in fuel, fuel pressure and two speed sensors.

Rating guidelines

CONTINUOUS POWER is defined as being the maximum power which the generating set is capable of delivering continuously while supplying a constant electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer.

PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for govering purpose is available for this rating.

STAND-BY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying stand-by electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.

DATA CENTRE POWER is defined as being the maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours. Depending on the sites to supply and the availability of reliable utility, the generating set manufacturer is responsible to define what power level he is able to supply to fulfil that requirement including hardware or software or maintenance plan adaptation.

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Power standards

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ /kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Power output guaranteed within 0 to +2% att rated ambient conditions at delivery. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 8528-5 G3.

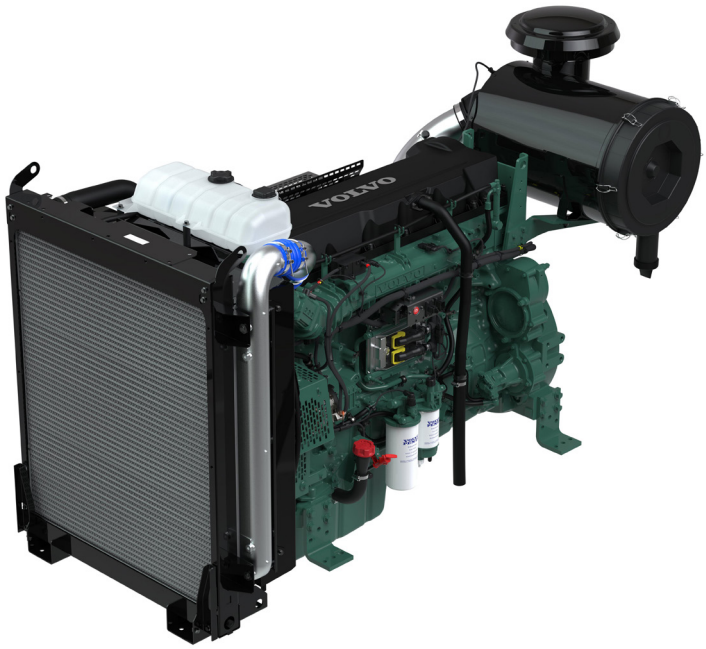
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VOLVO PENTA

TAD1346GE

12.78 liter, in-line 6 cylinder



TAD1346GE is powerful, reliable and economical Generating Set Diesel Engines built on the dependable in-line six design.

Durability and low noise
Designed for easiest, fastest and most economical installation. Field tested to ensure highest standard of durability and long life. Well-balanced to produce smooth and vibration-free operation with low noise level.

To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling. The engine is also fitted with replaceable cylinder liners and valve seats/guides to ensure maximum durability and service life of the engine.

Low exhaust emission
The state of the art, high-tech injection and charging system with low internal losses contributes to excellent combustion and low fuel consumption.

The emission levels for TAD1346GE equal to EU Stage 2. An electronically controlled viscous fan drive is available giving substantially lower noise and fuel consumption.

Easy service and maintenance
Easily accessible service and maintenance points contribute to the ease of service of the engine.

- **Excellent load acceptance**
- **Highly efficient cooling system**
- **RoHS2 compliant**
- **Dual Speed 1500/1800 rpm**
- **EMS**
- **Wide range of optional equipment including visco fan**

50 Hz / 1500 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TAD1346GE	320	301	377	427	402	502	470	442	552

60 Hz / 1800 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TAD1346GE	327	307	384	436	409	512	479	450	563

50 Hz / 1500 rpm

Data Center Power	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TAD1346GE	427	402	502	470	442	552

60 Hz / 1800 rpm

	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TAD1346GE	436	409	512	479	450	563

Generator efficiency (typical): 94%

kWm = kiloWatt mechanical, net with fan*; **kWe** = kiloWatt electrical = kWm x Generator eff.; **kVA** = kiloVoltAmpere calculations based on a 0.8 power factor = kWe / 0.8
1 kW = 1 hp x 1.36; **1 hp** = 1 kW x 0.7355
*) According to technical data

TAD1346GE

12.78 liter, in-line 6 cylinder

Technical data

Configuration and no. of cylinders ..... in-line 6
Method of operation 4-stroke
Bore, mm (in.) 131 (5.16)
Stroke, mm (in.) 158 (6.22)
Displacement, l (in³) 12.78 (780)
Compression ratio 17.8:1
Wet weight, kg (lb) 1243 (2470)
Wet weight with Gen Pac, kg (lb) 1455 (3208)

Performance

	1500 rpm	1800 rpm
Prime Power, kW (hp)	427 (581)	436 (593)
Standby Power, kW (hp)	470 (639)	479 (651)

Fuel consumption

Prime Power, g/kWh (lb/hph)

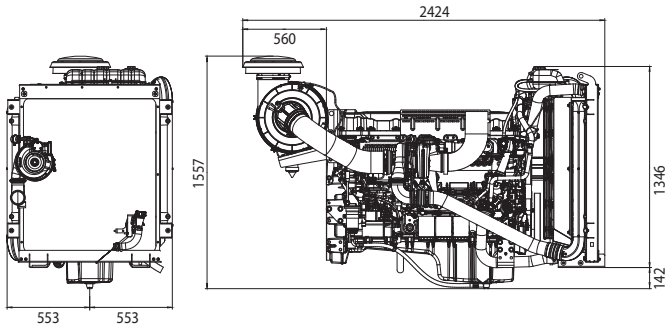
	1500 rpm	1800 rpm
25%	213 (0.345)	224 (0.363)
50%	199 (0.323)	201 (0.326)
75%	198 (0.320)	200 (0.323)
100%	191 (0.310)	196 (0.318)

Standby Power, g/kWh (lb/hph)

	1500 rpm	1800 rpm
25%	210 (0.341)	221 (0.359)
50%	198 (0.321)	202 (0.328)
75%	197 (0.319)	201 (0.326)
100%	191 (0.309)	196 (0.318)

Dimensions

Not for installation. Dimensions in mm.



Technical description

Engine and block

- Optimized cast iron cylinder block with optimum distribution of forces without the block being unnecessary heavy.
- Wet, replaceable cylinder liners
- Piston cooling for low piston temperature and reduced ring temperature
- Tapered connecting rods for increased piston lifetime
- Crankshaft induction hardened bearing surfaces and fillets with seven main bearings for moderate load on main and high-end bearings
- Case hardened and Nitrocarburized transmission gears for heavy duty operation
- Keystone top compression rings for long service life
- Viscous type crankshaft vibration damper to withstand single bearing alternator torsional vibrations
- Replaceable valve guides and valve seats
- Over head camshaft and four valves per cylinder

Lubrication system

- Full flow oil cooler
- Full flow disposable spin-on oil filters, for extra high filtration
- The lubricating oil level can be measured during operation
- Gear type lubricating oil pump, gear driven by the transmission

Fuel system

- Electronic high pressure unit injectors
- Fuel prefilter with water separator and water-in-fuel indicator / alarm
- Gear driven low-pressure fuel pump
- Fine fuel filter with manual feed pump and fuel pressure switch

Cooling system

- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block. Reliable sleeve thermostat with minimum pressure drop
- Belt driven coolant pump with high degree of efficiency
- Electronically controlled viscous fan drive provides lower noise and fuel consumption (optional).

Turbo charger

- Efficient and reliable turbo charger
- Extra oil filter for the turbo charger

Electrical system

- Engine Management System (EMS), an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing.
- The instruments and controls connect to the engine via the CAN SAE J1939 interface, either through the Control Interface Module (CIM) or the Digital Control Unit (DCU). The CIM converts the digital CAN bus signal to an anolog signal, making it possible to connect a variety of instruments. The DCU2 is a control panel with display, engine control, monitoring, alarm, parameter setting and diagnostic functions. The DCU2 also presents error codes in clear text.
- Sensors for oil pressure, oil temp, boost pressure, boost temp, coolant-temp, fuel temp, water in fuel, fuel pressure and two speed sensors.

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Rating guidelines

CONTINUOUS POWER is defined as being the maximum power which the generating set is capable of delivering continuously while supplying a constant electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer.

PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for govering purpose is available for this rating.

STAND-BY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying stand-by electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.

DATA CENTRE POWER is defined as being the maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours. Depending on the sites to supply and the availability of reliable utility, the generating set manufacturer is responsible to define what power level he is able to supply to fulfil that requirement including hardware or software or maintenance plan adaptation.

Power standards

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ /kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Power output guaranteed within 0 to +2% att rated ambient conditions at delivery. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 8528-5 G3.

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VOLVO PENTA GENSET ENGINE

TAD1641GE

484 kW (658 hp) at 1500 rpm, 565 kW (768 hp) at 1800 rpm, acc. to ISO 3046

The TAD1641GE is a powerful, reliable and economical Generating Set Diesel Engine built on the dependable in-line six design.

Durability & low noise

Designed for easiest, fastest and most economical installation. Well-balanced to produce smooth and vibration-free operation with low noise level.

To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling. The engine is also fitted with replaceable cylinder liners and valve seats/guides to ensure maximum durability and service life of the engine.

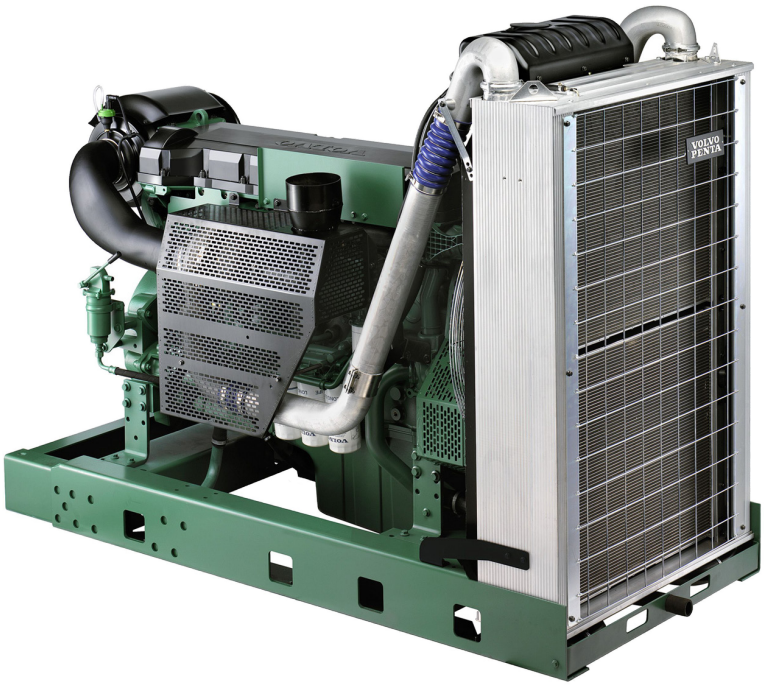
Low exhaust emission

The state of the art, high-tech injection and charging system with low internal losses contributes to excellent combustion and low fuel consumption.

The TAD1641GE complies with EU Stage 2 exhaust emission regulations.

Easy service & maintenance

Easily accessible service and maintenance points contribute to the ease of service of the engine.



Features

- Fully electronic with Volvo Penta EMS 2
- Dual frequency switch (between 1500 rpm and 1800 rpm)
- High power density
- Emission compliant
- Low noise levels
- Gen Pac configuration

Technical description

Engine and block

- Optimized cast iron cylinder block with optimum distribution of forces without the block being unnecessary heavy.
- Wet, replaceable cylinder liners
- Piston cooling for low thermal load on pistons and reduced ring temperature
- Tapered connecting rods to reduce risk of piston cracking
- Crankshaft induction hardened bearing surfaces and fillets with seven main bearings for moderate load on main and big-end bearings
- Nitrocarburized transmission gears for heavy duty operation
- Keystone top compression rings for long service life
- Viscous type crankshaft vibration damper
- Replaceable valve guides and valve seats
- Over head camshaft and four valves per cylinder equipped with camshaft damper to reduce noise and vibrations.

Lubrication system

- Full flow oil cooler
- Full flow disposable spin-on oil filters, for extra high filtration
- The lubricating oil level can be measured during operation (Standard dipstick only)
- Gear type lubricating oil pump, gear driven by the transmission

Fuel system

- Self de-aerating system. When replacing filters all fuel stays in the engine.
- Non-return fuel valve
- Electronic unit injectors
- Fuel prefilter with water separator and water-in-fuel indicator / alarm
- Gear driven low-pressure fuel pump
- Fine fuel filter with manual feed pump and fuel pressure switch
- Fuel shut-off valve, electrically operated

Cooling system

- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block. Reliable sleeve thermostat with minimum pressure drop
- Belt driven, maintenance-free coolant pump with high degree of efficiency

Turbo charger

- Efficient and reliable turbo charger
- Extra oil filter for the turbo charger

Electrical system

- Engine Management System 2 (EMS 2), an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing
- The instruments and controls connect to the engine via the CAN SAE J1939 interface, either through the Control Interface Unit (CIU) or the Digital Control Unit (DCU). The CIU converts the digital CAN bus signal to an anolog signal, making it possible to connect a variety of instruments. The DCU is a control panel with display, engine control, monitoring, alarm, parameter setting and diagnostic functions. The DCU also presents error codes in clear text.
- Sensors for oil pressure, oil temp, boost pressure, boost temp, coolant temp, fuel temp, water in fuel, fuel pressure and two speed sensors. Crank case pressure, piston cooling pressure, oil level and air filter pressure drop sensors.
- Alternator 24V / 80A

VOLVO PENTA

TAD1641GE

Technical Data

General

Engine designation	TAD1641GE
No. of cylinders and configuration	in-line 6
Method of operation	4-stroke
Bore, mm (in.)	144 (5.67)
Stroke, mm (in.)	165 (6.50)
Displacement, l (in³)	16.12 (983.7)
Compression ratio	16.5:1
Dry weight, kg (lb)	1480 (3263)
Dry weight with Gen Pac, kg (lb)	1910 (4211)
Wet weight, kg (lb)	1550 (3417)
Wet weight with Gen Pac, kg (lb)	2020 (4453)

Performance	**1500 rpm**	**1800 rpm**
with fan, kW (hp) at:		
Prime Power	430 (585)	485 (660)
Max Standby Power	473 (643)	546 (743)

Lubrication system	**1500 rpm**	**1800 rpm**
Oil consumption, liter/h (US gal/h) at:		
Prime Power	0.10 (0.026)	0.11 (0.029)
Max Standby Power	0.10 (0.026)	0.12 (0.032)
Oil system capacity incl filters, liter	42	

Fuel system	**1500 rpm**	**1800 rpm**
Specific fuel consumption at:		
Prime Power, g/kWh (lb/hph)		
25 %	216 (0.350)	228 (0.369)
50 %	199 (0.322)	204 (0.331)
75 %	196 (0.318)	202 (0.328)
100 %	199 (0.322)	206 (0.334)
Max Standby Power, g/kWh (lb/hph)		
25 %	217 (0.351)	233 (0.370)
50 %	197 (0.320)	205 (0.332)
75 %	196 (0.318)	203 (0.330)
100 %	200 (0.324)	210 (0.340)

Intake and exhaust system	**1500 rpm**	**1800 rpm**
Air consumption, m³/min (cfm) at:		
Prime Power	35.5 (1254)	44.0 (1554)
Max Standby Power	38.0 (1342)	45.8 (1617)
Max allowable air intake restriction, kPa (In wc)	5 (20.1)	5 (20.1)
Heat rejection to exhaust, kW (BTU/min) at:		
Prime Power	326 (18539)	373 (21212)
Max Standby Power	356 (20245)	442 (25136)
Exhaust gas temperature after turbine, °C (°F) at:		
Prime Power	443 (829)	436 (817)
Max Standby Power	455 (851)	479 (893)
Max allowable back-pressure in exhaust line, kPa (In wc)	10 (40.2)	10 (40.2)
Exhaust gas flow, m³/min (cfm) at:		
Prime power	85.0 (3002)	100.6 (3553)
Max Standby Power	92.0 (3249)	110.4 (3899)

Cooling system	**1500 rpm**	**1800 rpm**
Heat rejection radiation from engine, kW (BTU/min) at:		
Prime Power	18 (1024)	22 (1251)
Max Standby Power	20 (1137)	24 (1365)
Heat rejection to coolant kW (BTU/min) at:		
Prime Power	170 (9668)	212 (12056)
Max Standby Power	184 (10464)	231 (13137)
Fan power consumption, kW (hp)	11 (15)	19 (26)

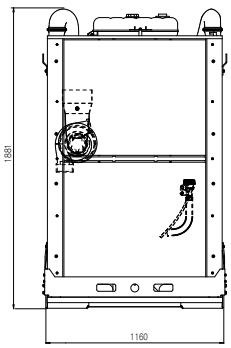
Standard equipment

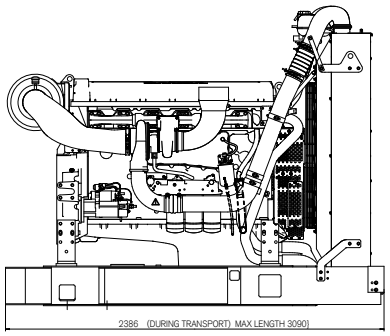
	Engine	Gen Pac
Engine		
Automatic belt tensioner	•	•
Lift eyelets	•	•
Flywheel		
Flywheel housing with conn. acc. to SAE 1	•	•
Flywheel for 14" flex. plate and flexible coupling	•	•
Vibration dampers	•	•
Engine suspension		
Fixed front suspension	•	•
Lubrication system		
Oil dipstick	•	•
Full-flow oil filter of spin-on type	•	•
By-pass oil filter of spin-on type	•	•
Oil cooler, side mounted	•	•
Low noise oil sump	•	•
Fuel system		
Fuel filters of disposable type	•	•
Electronic unit injectors	•	•
Pre-filter with water separator	•	•
Intake and exhaust system		
Air filter with replaceable paper insert	•	•
Air restriction indicator	•	•
Air cooled exhaust manifold	•	•
Connecting flange for exhaust pipe	•	•
Exhaust flange with v-clamp	•	•
Turbo charger, low right side	•	•
Cooling system		
Radiator incl intercooler	•[1)]	•
Belt driven coolant pump	•	•
Fan hub	•	•
Thrust fan	•[1)]	•
Fan guard	–	•
Belt guard	–	•
Control system		
Engine Management System (EMS) with CAN-bus interface SAE J1939	•	•
CIU, Control Interface Unit	–	–
Alternator		
Alternator 80A / 24V	•	•
Starting system		
Starter motor, 7.0kW, 24V	•	•
Connection facility for extra starter motor	•	•
Instruments and senders		
Temp.- and oil pressure for automatic stop/alarm 103°C	•	•
Other equipment		
Expandable base frame	–	•
Engine Packing		
Plastic wrapping	•	•

[1)] must be ordered, se order specification
– optional equipment or not applicable
• included in standard specification

Dimensions TAD1641GE

Not for installation





Note! Not all models, standard equipment and accessories are available in all countries.
All specifications are subject to change without notice.
The engine illustrated may not be entirely identical to production standard engines.

Power Standards
The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ /kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Power output guaranteed within 0 to +2% att rated ambient conditions at delivery. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 3046/IV, class A1 and ISO 8528-5 class G3

Exhaust emissions
The engine complies with EU stage 2 emission legislation according to the Non Road Directive EU 97/68/EEC. The engine also complies with TA-luft -50% exhaust emission regulations.

Rating Guidelines
PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for govering purpose is available for this rating.
MAXIMUM STANDBY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying standby electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.
1 hp = 1 kW x 1.36

Information
For more technical data and information, please look in the Generating Set Engines Sales Guide.

VOLVO PENTA

AB Volvo Penta
SE-405 08 Göteborg, Sweden
www.volvopenta.com

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VOLVO PENTA GENSET ENGINE

TAD1642GE

565 kW (768 hp) at 1500 rpm, 604 kW (821 hp) at 1800 rpm, acc. ISO 3046

The TAD1642GE is a powerful, reliable and economical Generating Set Diesel Engine built on the dependable in-line six design.

Durability & low noise

Designed for easiest, fastest and most economical installation. Well-balanced to produce smooth and vibration-free operation with low noise level.

To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling. The engine is also fitted with replaceable cylinder liners and valve seats/guides to ensure maximum durability and service life of the engine.

Low exhaust emission

The state of the art, high-tech injection and charging system with low internal losses contributes to excellent combustion and low fuel consumption.

The TAD1642GE complies with EU Stage 2 exhaust emission regulations.

Easy service & maintenance

Easily accessible service and maintenance points contribute to the ease of service of the engine.

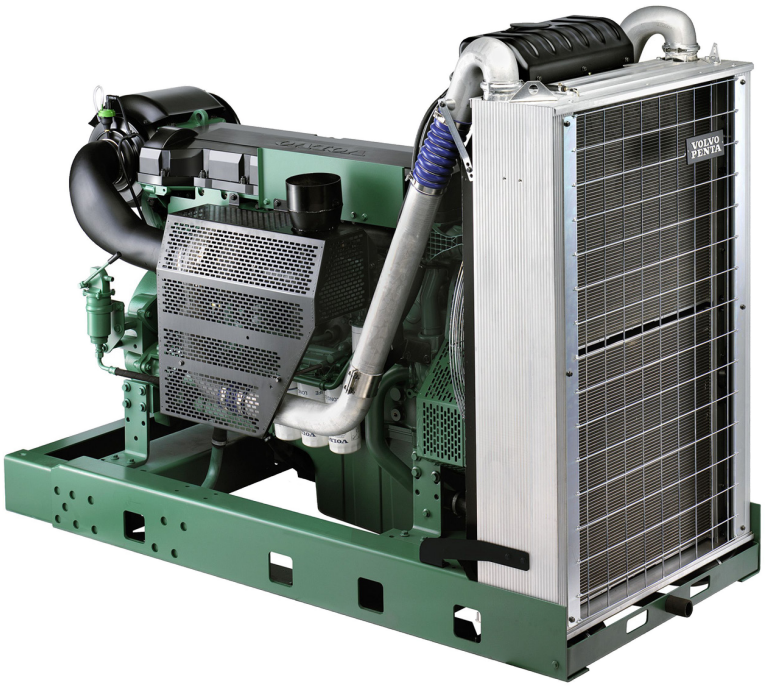
Technical description

Engine and block

- Optimized cast iron cylinder block with optimum distribution of forces without the block being unnessarily heavy.
- Wet, replaceable cylinder liners
- Piston cooling for low piston temperature and reduced ring temperature
- Tapered connecting rods for reduce risk of piston cracking
- Crankshaft induction hardened bearing surfaces and fillets with seven bearings for moderate load on main and high-end bearings
- Case hardened and Nitrocarburized transmission gears for heavy duty operation
- Keystone top compression rings for long service life
- Viscous type crankshaft vibration dampers to withstand single bearing alternator torsional vibrations
- Replaceable valve guides and valve seats
- Over head camshaft and four valves per cylinder

Lubrication system

- Full flow oil cooler
- Full flow disposable spin-on oil filter, for extra high filtration
- The lubricating oil level can be measured during operation
- Gear type lubricating oil pump, gear driven by the transmission



Features

- Fully electronic with Volvo Penta EMS 2
- Dual frequency switch (between 1500 rpm and 1800 rpm)
- High power density
- Emission compliant
- Low noise levels
- Gen Pac configuration

Fuel system

- Non-return fuel valve
- Electronic unit injectors
- Fuel prefilter with water separator and water-in-fuel indicator / alarm
- Gear driven low-pressure fuel pump
- Fine fuel filter with manual feed pump and fuel pressure switch
- Fuel shut-off valve, electrically operated

Cooling system

- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block. Reliable sleeve thermostat with minimum pressure drop
- Belt driven, maintenance-free coolant pump with high degree of efficiency

Turbo charger

- Efficient and reliable turbo charger
- Extra oil filter for the turbo charger

Electrical system

- Engine Management System 2 (EMS 2), an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing
- The instruments and controls connect to the engine via the CAN SAE J1939 interface, either through the Control Interface Unit (CIU) or the Digital Control Unit (DCU). The CIU converts the digital CAN bus signal to an anolog signal, making it possible to connect a variety of instruments. The DCU is a control panel with display, engine control, monitoring, alarm, parameter setting and diagnostic functions. The DCU also presents error codes in clear text.
- Sensors for oil pressure, oil temp, boost pressure, boost temp, coolant temp, fuel temp, water in fuel, fuel pressure and two speed sensors.

VOLVO PENTA

TAD1642GE

Technical Data

General

Engine designation	TAD1642GE
No. of cylinders and configuration	in-line 6
Method of operation	4-stroke
Bore, mm (in.)	144 (5.67)
Stroke, mm (in.)	165 (6.50)
Displacement, l (in³)	16.12 (983.7)
Compression ratio	16.5:1
Dry weight, kg (lb)	1480 (3263)
Dry weight with Gen Pac, kg (lb)	1910 (4211)
Wet weight, kg (lb)	1550 (3417)
Wet weight with Gen Pac, kg (lb)	2020 (4453)

Performance	**1500 rpm**	**1800 rpm**
with fan, kW (hp) at:		
Prime Power	503 (684)	532 (724)
Max Standby Power	554 (753)	585 (796)

Lubrication system	**1500 rpm**	**1800 rpm**
Oil consumption, liter/h (US gal/h) at:		
Prime Power	0.10 (0.026)	0.11 (0.029)
Max Standby Power	0.11 (0.029)	0.12 (0.032)
Oil system capacity incl filters, liter	48	

Fuel system	**1500 rpm**	**1800 rpm**
Specific fuel consumption at:		
Prime Power, g/kWh (lb/hph)		
25 %	213 (0.345)	227 (0.368)
50 %	195 (0.316)	204 (0.331)
75 %	195 (0.316)	202 (0.327)
100 %	198 (0.321)	209 (0.339)
Max Standby Power, g/kWh (lb/hph)		
25 %	210 (0.340)	220 (0.357)
50 %	196 (0.318)	203 (0.329)
75 %	296 (0.318)	204 (0.331)
100 %	200 (0.324)	212 (0.344)

Intake and exhaust system	**1500 rpm**	**1800 rpm**
Air consumption, m³/min (cfm) at:		
Prime Power	39.0 (1377)	45.4 (1603)
Max Standby Power	41.2 (1455)	46.6 (1646)
Max allowable air intake restriction, kPa (psi)	5 (0.7)	5 (0.7)
Heat rejection to exhaust, kW (BTU/min) at:		
Prime Power	379 (21553)	439 (24965)
Max Standby Power	427 (24283)	500 (28435)
Exhaust gas temperature after turbine, °C (°F) at:		
Prime Power	456 (853)	468 (874)
Max Standby Power	482 (900)	512 (954)
Max allowable back-pressure in exhaust line, Prime Power kPa (psi)	8 (1.2)	8 (1.2)
Max allowable back-pressure in exhaust line, Standby Power kPa (psi)	10 (1.5)	10 (1.5)
Exhaust gas flow, m³/min (cfm) at:		
Prime power	94.4 (3334)	108.9 (3846)
Max Standby Power	102.5 (3620)	117.6 (4153)

Cooling system	**1500 rpm**	**1800 rpm**
Heat rejection radiation from engine, kW (BTU/min) at:		
Prime Power	18 (1024)	20 (1137)
Max Standby Power	20 (1137)	24 (1365)
Heat rejection to coolant kW (BTU/min) at:		
Prime Power	187 (10635)	218 (12397)
Max Standby Power	218 (12397)	248 (14104)
Fan power consumption, kW (hp)	11 (15)	19 (26)

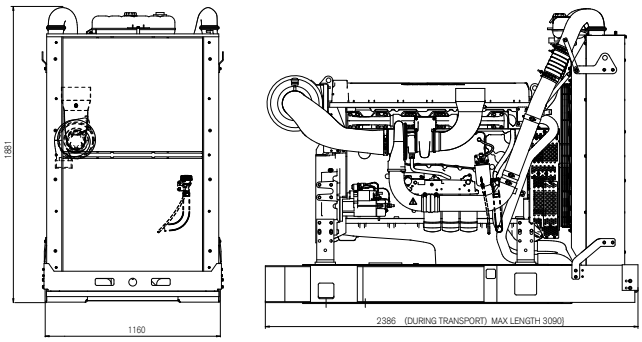
Standard equipment

	Engine	Gen Pac
Engine		
Automatic belt tensioner	•	•
Lift eyelets	•	•
Flywheel		
Flywheel housing with conn. acc. to SAE 1	•	•
Flywheel for 14" flex. plate and flexible coupling	•	•
Vibration dampers	•	•
Engine suspension		
Fixed front suspension	•	•
Lubrication system		
Oil dipstick	•	•
Full-flow oil filter of spin-on type	•	•
By-pass oil filter of spin-on type	•	•
Oil cooler, side mounted	•	•
Low noise oil sump	•	•
Fuel system		
Fuel filters of disposable type	•	•
Electronic unit injectors	•	•
Pre-filter with water separator	•	•
Intake and exhaust system		
Air filter with replaceable paper insert	•	•
Air restriction indicator	•	•
Air cooled exhaust manifold	•	•
Connecting flange for exhaust pipe	•	•
Exhaust flange with v-clamp	•	•
Turbo charger, low right side	•	•
Cooling system		
Radiator incl intercooler	–	•
Gear driven coolant pump	•	•
Fan hub	•	•
Pusher fan	–	•
Fan guard	–	•
Belt guard	–	•
Control system		
Engine Management System (EMS) with CAN-bus interface SAE J1939	•	•
CIU, Control Interface Unit	–	–
Alternator		
Alternator 80A / 24 V	•	•
Starting system		
Starter motor, 7.0kW, 24 V	•	•
Connection facility for extra starter motor	•	•
Instruments and senders		
Temp.- and oil pressure for automatic stop/alarm 103°C	•	•
Other equipment		
Expandable base frame	–	•
Engine Packing		
Plastic warpping	•	•

• included in base engine or standard option, see order specification
– optional equipment or not applicable

Dimensions TAD1642GE

Not for installation



Note! Not all models, standard equipment and accessories are available in all countries.
All specifications are subject to change without notice.
The engine illustrated may not be entirely identical to production standard engines.

Power Standards
The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ /kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Power output guaranteed within 0 to +2% att rated ambient conditions at delivery. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 3046/IV, class A1 and ISO 8528-5 class G3

Exhaust emissions
The engine complies with EU stage 2 emission legislation according to the Non Road Directive EU 97/68/EEC. The engine also complies with TA-luft -50% exhaust emission regulations.

Rating Guidelines
PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for govering purpose is available for this rating.
MAXIMUM STANDBY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying standby electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.
1 hp = 1 kW x 1.36

Information
For more technical data and information, please look in the Generating Set Engines Sales Guide.

AB Volvo Penta
SE-405 08 Göteborg, Sweden
www.volvopenta.com

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VOLVO PENTA GENSET ENGINE

TWD1643GE

613 kW (834 hp) at 1500 rpm, 674 kW (917 hp) at 1800 rpm, acc. to ISO 3046

The TWD1643GE is a powerful, reliable and economical Generating Set Diesel Engine built on the dependable in-line six design.

Durability & low noise

Designed for easiest, fastest and most economical installation. Well-balanced to produce smooth and vibration-free operation with low noise level.

To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling. The engine is also fitted with replaceable cylinder liners and valve seats/guides to ensure maximum durability and service life of the engine.

Low exhaust emission

The state of the art, high-tech injection and charging system with low internal losses contributes to excellent combustion and low fuel consumption.

The TWD1643GE is certified for EPA Tier 2. An additional feature is that TWD1643GE fulfils EU Stage 2 exhaust emission levels.

Easy service & maintenance

Easily accessible service and maintenance points contribute to the ease of service of the engine.



Features

- Fully electronic with Volvo Penta EMS 2
- Dual frequency switch (between 1500 rpm and 1800 rpm)
- High power density
- Emission compliant
- Low noise levels
- Low fuel consumption
- Gen Pac configuration
- Compact design for the power class

Technical description

Engine and block

- Optimized cast iron cylinder block with optimum distribution of forces without the block being unnessarily heavy.
- Wet, replaceable cylinder liners
- Piston cooling for low piston temperature and reduced ring temperature
- Tapered connecting rods for reduce risk of piston cracking
- Crankshaft induction hardened bearing surfaces and fillets with seven bearings for moderate load on main and high-end bearings
- Case hardened and Nitrocarburized transmission gears for heavy duty operation
- Keystone top compression rings for long service life
- Viscous type crankshaft vibration dampers to withstand single bearing alternator torsional vibrations
- Replaceable valve guides and valve seats
- Over head camshaft and four valves per cylinder

Lubrication system

- Full flow oil cooler
- Full flow disposable spin-on oil filter, for extra high filtration
- The lubricating oil level can be measured during operation
- Gear type lubricating oil pump, gear driven by the transmission

Fuel system

- Non-return fuel valve
- Electronic unit injectors
- Fuel prefilter with water separator and water-in-fuel indicator / alarm
- Gear driven low-pressure fuel pump
- Fine fuel filter with manual feed pump and fuel pressure switch
- Fuel shut-off valve

Cooling system

- TWD-cooling system with optimized priority and cold start valves
- Two water cooled charge air coolers
- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block. Reliable sleeve thermostat with minimum pressure drop
- Belt driven, maintenance-free coolant pump with high degree of efficiency

Turbo charger

- Efficient and reliable dual stage turbo chargers
- Intermediate charge air coolers for both turbo chargers
- Waste gate system for the high pressure turbo charger

Electrical system

- Engine Management System 2 (EMS 2), an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing
- The instruments and controls connect to the engine via the CAN SAE J1939 interface, either through the Control Interface Unit (CIU) or the Display Control Unit (DCU). The CIU converts the digital CAN bus signal to an anolog signal, making it possible to connect a variety of instruments. The DCU is a control panel with display, engine control, monitoring, alarm, parameter setting and diagnostic functions. The DCU also presents error codes in clear text.
- Sensors for oil pressure, oil temp, boost pressure, boost temp, exhaust temp, coolant temp, fuel temp, water in fuel, fuel pressure and two speed sensors.

VOLVO PENTA

TWD1643GE

Technical Data

General

Engine designation	TWD1643GE
No. of cylinders and configuration	in-line 6
Method of operation	4-stroke
Bore, mm (in.)	144 (5.67)
Stroke, mm (in.)	165 (6.50)
Displacement, l (in³)	16.12 (983.7)
Compression ratio	16.5:1
Dry weight, kg (lb)	1700 (3748)
Dry weight with Gen Pac, kg (lb)	2200 (4850)
Wet weight, kg (lb)	1770 (3902)
Wet weight with Gen Pac, kg (lb)	2370 (5225)

Performance	**1500 rpm**	**1800 rpm**
with fan, kW (hp) at:		
Prime Power	536 (729)	585 (796)
Max Standby Power	596 (811)	644 (876)

Lubrication system	**1500 rpm**	**1800 rpm**
Oil consumption, liter/h (US gal/h) at:		
Prime Power	0.10 (0.026)	0.10 (0.026)
Max Standby Power	0.11 (0.029)	0.11 (0.039)
Oil system capacity incl filters, liter	48	

Fuel system	**1500 rpm**	**1800 rpm**
Specific fuel consumption at:		
Prime Power, g/kWh (lb/hph)		
25 %	215 (0.349)	224 (0.363)
50 %	196 (0.318)	201 (0.326)
75 %	196 (0.318)	197 (0.319)
100 %	199 (0.323)	202 (0.327)
Max Standby Power, g/kWh (lb/hph)		
25 %	210 (0.340)	220 (0.357)
50 %	195 (0.316)	200 (0.324)
75 %	196 (0.318)	198 (0.321)
100 %	200 (0.324)	204 (0.331)

Intake and exhaust system	**1500 rpm**	**1800 rpm**
Air consumption, m³/min (cfm) at:		
Prime Power	44 (1541)	53 (1874)
Max Standby Power	47 (1658)	55 (1937)
Max allowable air intake restriction, kPa (PSI)	5 (0.7)	5 (0.7)
Heat rejection to exhaust, kW (BTU/min) at:		
Prime Power	415 (23601)	472 (26842)
Max Standby Power	463 (26330)	530 (30141)
Exhaust gas temperature after low pressure turbine, °C (°F) at:		
Prime Power	450 (842)	422 (792)
Max Standby Power	463 (865)	461 (862)
Max allowable back-pressure in exhaust line, kPa (PSI)	10 (1.5)	10 (1.5)
Exhaust gas flow, m³/min (cfm) at:		
Prime power	101.6 (3586)	119 (4201)
Max Standby Power	111.8 (3949)	130.1 (4593)

Standard equipment

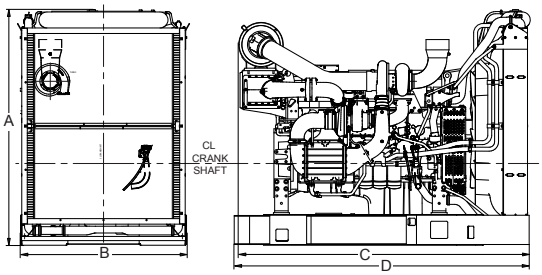
	Engine	Gen Pac
Engine		
Automatic belt tensioner	•	•
Lift eyelets	•	•
Flywheel		
Flywheel housing with conn. acc. to SAE 1	•	•
Flywheel for 14” flex. plate and flexible coupling	•	•
Vibration dampers	•	•
Engine suspension		
Fixed front suspension	•	•
Lubrication system		
Oil dipstick	•	•
Full-flow oil filter of spin-on type	•	•
By-pass oil filter of spin-on type	•	•
Oil cooler, side mounted	•	•
Low noise oil sump	•	•
Fuel system		
Fuel filters of spin-on type	•	•
Electronic unit injectors	•	•
Pre-filter with water separator	•	•
Intake and exhaust system		
Air filter without rain cover	•	•
Air restriction indicator	•	•
Air cooled exhaust manifold	•	•
Connecting flange for exhaust pipe	•	•
Exhaust flange with v-clamp	•	•
Turbo chargers, dual stage, right side	•	•
Cooling system		
TWD-cooling system	•	•
Belt driven driven coolant pump	•	•
Fan hub	•	•
Pusher fan	–	•
Fan guard	–	•
Belt guard	–	•
Control system		
Engine Management System (EMS) with CAN-bus interface SAE J1939	•	•
CIU, Control Interface Unit	–	–
DCU, Display Control Unit	–	–
Alternator		
Alternator 80A / 24 V	•	•
Starting system		
Starter motor, 7.0kW, 24 V	•	•
Instruments and senders		
Temp. and pressure for automatic stop/alarm	•	•
Other equipment		
Expandable base frame	–	•
Engine Packing		
Plastic wrapping	•	•

– optional equipment or not applicable

• included in standard specification

Dimensions TWD1643GE

Not for installation



A* = 1925 mm / 76 in
B* = 1350 mm / 53.1 in (max width 1401 mm / 55.2 in)
C = 2362 mm / 93 in
D = 2399 mm / 94.5 in (During transport)
D = Max 3255 mm / 128.2 in

* Including radiator and intercooler

Note! Not all models, standard equipment and accessories are available in all countries.
All specifications are subject to change without notice.
The engine illustrated may not be entirely identical to production standard engines.

Power Standards

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ /kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Power output guaranteed within 0 to +2% att rated ambient conditions at delivery. Ratings are based on ISO 8528.
Engine speed governing in accordance with ISO 3046/IV, class A1 and ISO 8528-5 class G3

Exhaust emissions

The TWD1643GE is certified for EPA Tier 2. An aditional feature is that TWD1643GE fulfils EU Stage 2 exhaust emission levels.

Rating Guidelines

PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for govering purpose is available for this rating.
MAXIMUM STANDBY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying standby electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.
1 hp = 1 kW x 1.36

Information

For more technical data and information, please look in the Generating Set Engines Sales Guide.

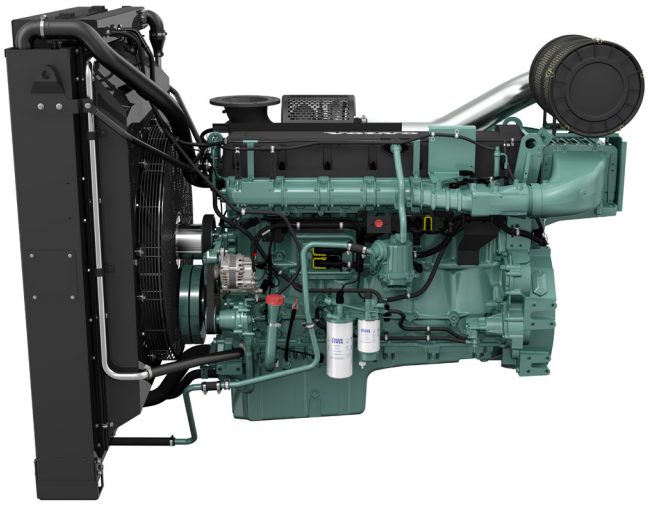
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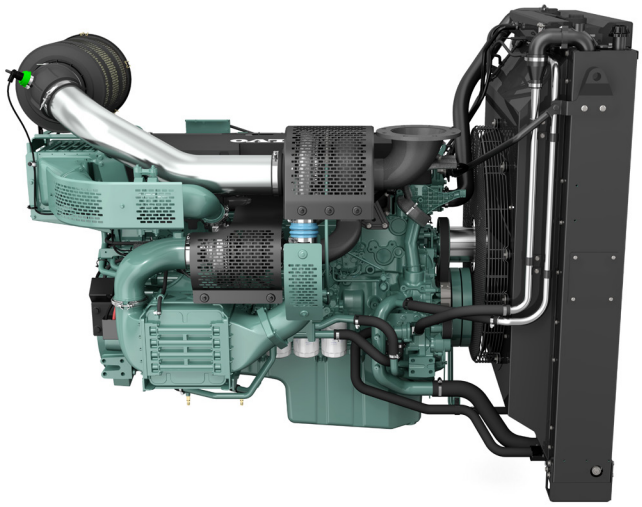
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VOLVO PENTA

TWD1644GE

16 liter, in-line 6 cylinder





TWD1644GE is a reliable, powerful and compact in-line 6 cylinder diesel engine. It´s designed to power a wide range of stand-by and prime power generator sets.

This 16 liter diesel engine utilizes dual-stage turbochargers and heavy-duty steel pistons to provide excellent power density. It features a proven combustion technology with high-pressure unit injectors, resulting in high fuel efficiency and low exhaust emission levels.

The engine also features a compact and low weight design that is well-balanced, providing smooth operation with low noise and vibration. It´s designed for easily accessible service points.

A wide range of options is available, including a heavy-duty frame, cooling package and air-filter that will suit a variety of installations.

- **High power density**
- **High fuel efficiency**
- **Low exhaust emissions - equal to EU stage II**
- **Compact and low weight design**
- **Switchable between 1500/1800 rpm**
- **Suitable for a wide range of applications**

50 Hz / 1500 rpm

60 Hz / 1800 rpm

	Continuous power			Prime power			Standby power			Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TWD1644GE	416	391	489	554	521	652	609	573	717	437	410	513	582	547	684	640	602	752

50 Hz / 1500 rpm

60 Hz / 1800 rpm

Data Center Power	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country			>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TWD1644GE	554	521	652	609	573	717	582	547	684	640	602	752

Generator efficiency (typical): 94%

kWm = kiloWatt mechanical, net with fan*; **kWe** = kiloWatt electrical = kWm x Generator eff.; **kVA** = kiloVoltAmpere calculations based on a 0.8 power factor = kWe / 0.8
1 kW = 1 hp x 1.36; **1 hp** = 1 kW x 0.7355
*) According to technical data

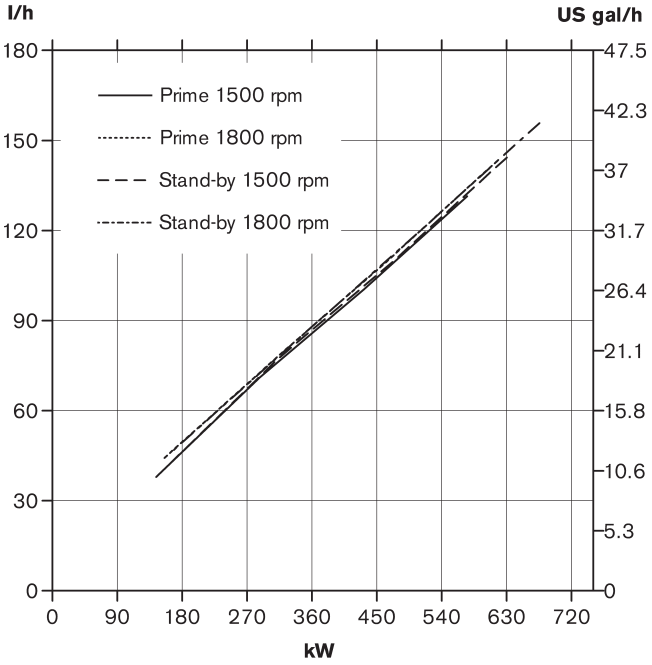
TWD1644GE

16 liter, in-line 6 cylinder

Technical Data

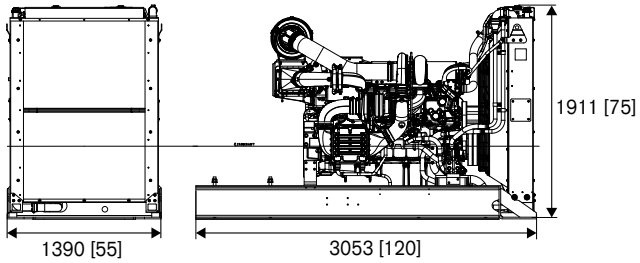
Configuration and no. of cylinders	in-line 6
Displacement, l (in³)	16.12 (983.9)
Method of operation	4-stroke
Bore, mm (in.)	144 (5.67)
Stroke, mm (in.)	165 (6.50)
Compression ratio	16.8:1
Wet weight, engine only, kg (lb)	1810 (3390)
Wet weight, engine incl. cooling system, air filtration system and frame kg (lb)	2767(6100)

Fuel consumption



Dimensions

Not for installation. Dimensions in mm [inch].



Technical description

Engine and block
- Wet, replaceable cylinder liners
- Steel pistons for high durability
- Crankshaft induction hardened bearing surfaces and fillets with seven main bearings
- Case hardened and Nitrocarburized transmission gears for heavy duty operation
- Viscous type crankshaft vibration dampers to withstand single bearing alternator torsional vibrations
- Replaceable valve guides and valve seats
- Overhead camshaft and 4 valves per cylinder

Lubrication system
- Full flow oil cooler
- Full flow disposable spin-on oil filter
- Bypass filter with extra high filtration

Fuel system
- Electronic high pressure unit injectors
- Fuel prefilter with water separator and water-in-fuel indicator / alarm
- Fine fuel filter with manual feed pump and fuel pressure sensor

Cooling system
- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block.
- Dual-circuit
- Belt driven coolant pumps with high degree of efficiency
- Water-cooled charge air coolers

Turbo charger
- Efficient and reliable dual stage turbo chargers
- Dual charge air coolers
- Waste gate system for the high pressure turbo charger

Electrical system
- Engine Management System (EMS), an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing
- The instruments and controls connect to the engine via the CAN SAE J1939 interface.
- Sensors for inputs such as: oil pressure, oil temp, boost pressure, boost temp, coolant temp, fuel temp, air filter pressure, water in fuel, fuel pressure and two speed sensors.

Control and monitoring
- The optional DCU2 control panel features engine control, monitoring, alarm, parameter settings and diagnostic functions. It also
  presents error codes in clear text.

Frame
- Optional heavy duty frames for minimized noise and vibration.

Rating guidelines

CONTINUOUS POWER is defined as being the maximum power which the generating set is capable of delivering continuously while supplying a constant electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer.

PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for govering purpose is available for this rating.

STAND-BY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying stand-by electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.

DATA CENTRE POWER is defined as being the maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours. Depending on the sites to supply and the availability of reliable utility, the generating set manufacturer is responsible to define what power level he is able to supply to fulfil that requirement including hardware or software or maintenance plan adaptation.

Power standards

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ /kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 8528-5 G3.

Please note that products illustrated may differ from production models. Not all models and accessories are available in all markets, and standard equipment may vary between different markets. Every effort has been made to ensure that facts and figures are correct at the time of publication. However, Volvo Penta reserves the right to make changes without prior notice at any time.

Please contact your local Volvo Penta dealer for further information.

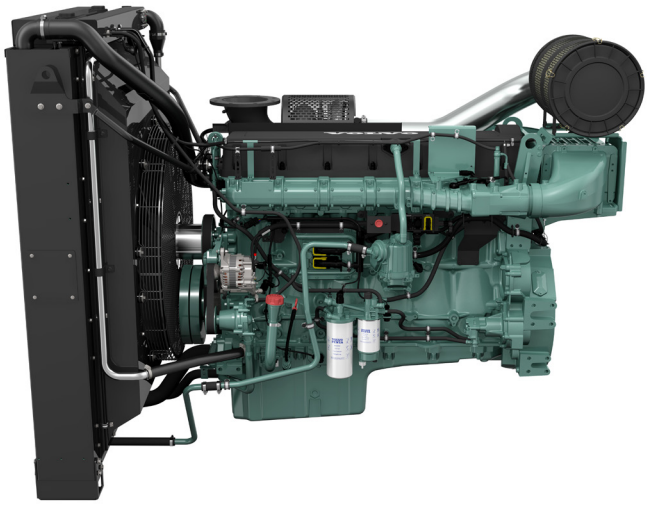
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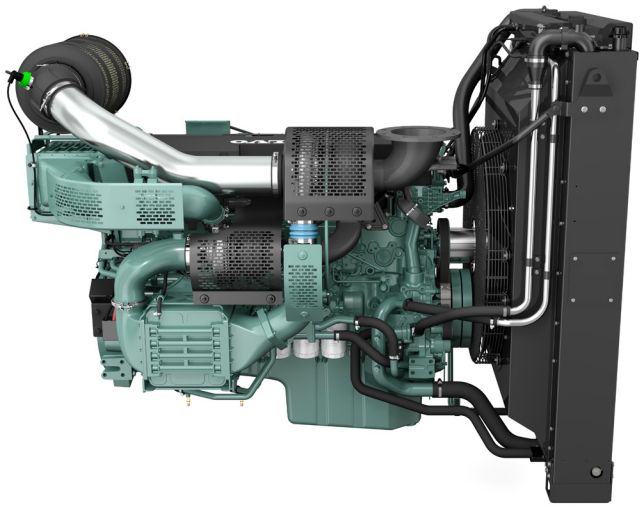
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VOLVO PENTA

TWD1645GE

16.12 liter, in-line 6 cylinder





TWD1645GE is a reliable, powerful and compact in-line 6 cylinder diesel engine. It´s designed to power a wide range of stand-by and prime power generator sets.

This 16 liter diesel engine utilizes dual-stage turbochargers and heavy-duty steel pistons to provide excellent power density.
It features a proven combustion technology with high-pressure unit injectors, resulting in high fuel efficiency and low exhaust emission levels.

The engine also features a compact and low weight design that is well-balanced, providing smooth operation with low noise and vibration. It´s designed for easily accessible service points.

A wide range of options is available, including a heavy-duty frame, cooling package and air-filter that will suit a variety of installations.

- **High power density**
- **High fuel efficiency**
- **Low exhaust emissions - fulfills UNECE REG 96 Stage (equal to EU stage II)**
- **Compact and low weight design**
- **Switchable between 1500/1800 rpm**
- **Suitable for a wide range of applications**

50 Hz / 1500 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TWD1645GE	446	420	525	595	560	700	654	616	770

60 Hz / 1800 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TWD1645GE	464	437	545	619	582	727	681	640	800

50 Hz / 1500 rpm

Data Center Power	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TWD1645GE	595	560	700	654	616	770

60 Hz / 1800 rpm

	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TWD1645GE	619	582	727	681	640	800

Generator efficiency (typical): 94%

kWm = kiloWatt mechanical, net with fan*; **kWe** = kiloWatt electrical = kWm x Generator eff.; **kVA** = kiloVoltAmpere calculations based on a 0.8 power factor = kWe / 0.8
1 kW = 1 hp x 1.36; **1 hp** = 1 kW x 0.7355
*) According to technical data

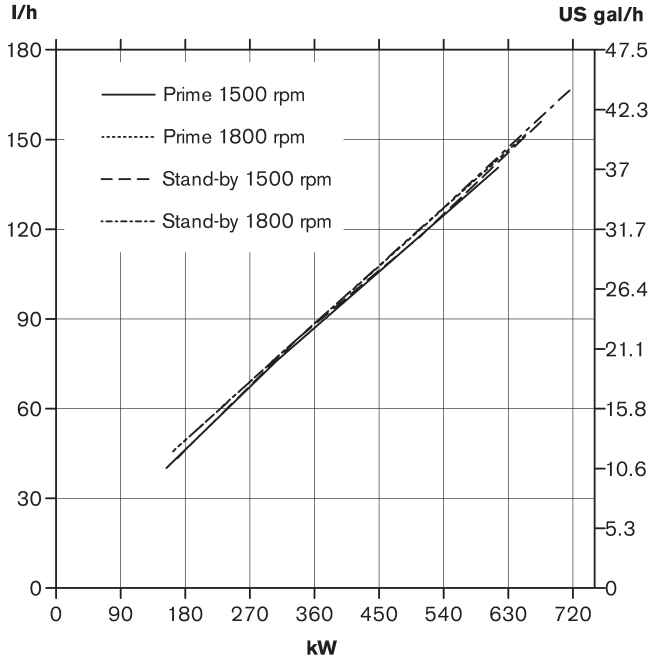
TWD1645GE

16.12 liter, in-line 6 cylinder

Technical Data

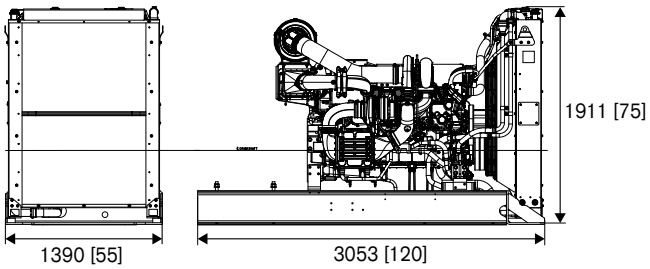
Configuration and no. of cylinders	in-line 6
Displacement, l (in³)	16.12 (983.9)
Method of operation	4-stroke
Bore, mm (in.)	144 (5.67)
Stroke, mm (in.)	165 (6.50)
Compression ratio	16.8:1
Wet weight, engine only, kg (lb)	1810 (3390)
Wet weight, engine incl. cooling system, air filtration system and frame kg (lb)	2767(6100)

Fuel consumption



Dimensions

Not for installation. Dimensions in mm [inch].



Technical description

Engine and block
- Wet, replaceable cylinder liners
- Steel pistons for high durability
- Crankshaft induction hardened bearing surfaces and fillets with seven main bearings
- Case hardened and Nitrocarburized transmission gears for heavy duty operation
- Viscous type crankshaft vibration dampers to withstand single bearing alternator torsional vibrations
- Replaceable valve guides and valve seats
- Overhead camshaft and 4 valves per cylinder

Lubrication system
- Full flow oil cooler
- Full flow disposable spin-on oil filter
- Bypass filter with extra high filtration

Fuel system
- Electronic high pressure unit injectors
- Fuel prefilter with water separator and water-in-fuel indicator / alarm
- Fine fuel filter with manual feed pump and fuel pressure sensor

Cooling system
- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block.
- Dual-circuit
- Belt driven coolant pumps with high degree of efficiency
- Water-cooled charge air coolers

Turbo charger
- Efficient and reliable dual stage turbo chargers
- Dual charge air coolers
- Waste gate system for the high pressure turbo charger

Electrical system
- Engine Management System (EMS), an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing
- The instruments and controls connect to the engine via the CAN SAE J1939 interface.
- Sensors for inputs such as: oil pressure, oil temp, boost pressure, boost temp, coolant temp, fuel temp, air filter pressure, water in fuel, fuel pressure and two speed sensors.

Control and monitoring
- The optional DCU2 control panel features engine control, monitoring, alarm, parameter settings and diagnostic functions. It also
  presents error codes in clear text.

Frame
- Optional heavy duty frames for minimized noise and vibration.

Rating guidelines

CONTINUOUS POWER is defined as being the maximum power which the generating set is capable of delivering continuously while supplying a constant electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer.

PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for govering purpose is available for this rating.

STAND-BY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying stand-by electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.

DATA CENTRE POWER is defined as being the maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours. Depending on the sites to supply and the availability of reliable utility, the generating set manufacturer is responsible to define what power level he is able to supply to fulfil that requirement including hardware or software or maintenance plan adaptation.

Power standards

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ /kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 8528-5 G3.

Please note that products illustrated may differ from production models. Not all models and accessories are available in all markets, and standard equipment may vary between different markets. Every effort has been made to ensure that facts and figures are correct at the time of publication. However, Volvo Penta reserves the right to make changes without prior notice at any time.

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VOLVO PENTA

TWD1744GE

17.26 liter, in-line 6 cylinder



TWD1744GE is a reliable, powerful and compact in-line 6 cylinder diesel engine. It´s designed to power a wide range of stand-by and prime power generator sets.

This 17 liter diesel engine utilizes dual-stage turbochargers and heavy-duty steel pistons to provide excellent power density.
It features a proven combustion technology with Common Rail injection system, resulting in high fuel efficiency and low exhaust emission levels.

The engine also features a compact and low weight design that is well-balanced, providing smooth operation with low noise. It´s designed for easily accessible service points.

A wide range of options are available, cooling package with the option of fixed or visco controlled fan and air-filter that will suit a variety of installations.

- **High power density and fuel efficiency**
- **Low exhaust emissions**
- **Certified according to US EPA Tier 2 Stationary Emergency**
- **Compact and low weight design**
- **Dual speed 1500/1800 rpm**
- **Suitable for a wide range of applications**
- **Service interval 1000 hours**

50 Hz / 1500 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TWD1744GE	532	500	625	645	606	758	710	666	833

60 Hz / 1800 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TWD1744GE	563	529	661	682	641	801	750	705	881

50 Hz / 1500 rpm

Data Center Power	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TWD1744GE	645	606	758	710	666	833

60 Hz / 1800 rpm

	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TWD1744GE	682	641	801	750	705	881

Generator efficiency (typical): 94%

kWm = kiloWatt mechanical, net with fan*; **kWe** = kiloWatt electrical = kWm x Generator eff.; **kVA** = kiloVoltAmpere calculations based on a 0.8 power factor = kWe / 0.8
1 kW = 1 hp x 1.36; **1 hp** = 1 kW x 0.7355
*) According to technical data

TWD1744GE

17.26 liter, in-line 6 cylinder

Technical Data

Configuration and no. of cylinders	in-line 6
Displacement, l (in³)	17.26 (1053.3)
Method of operation	4-stroke
Bore, mm (in.)	149 (5.86)
Stroke, mm (in.)	165 (6.5)
Compression ratio	16.5:1
Wet weight, engine only, kg (lb)	1900 (4190)
Wet weight, Genpac (engine, cooling system, air filtration system kg (lb)	2200 (4851)

Fuel consumption

Prime Power, g/kWh (lb/hph)

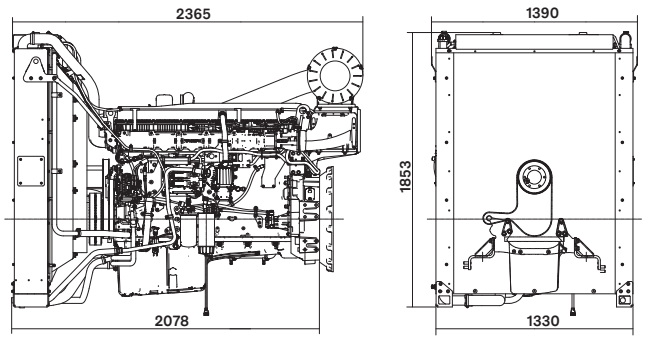
	TWD1744GE	
	1500 rpm	**1800 rpm**
25%	211 (0.343)	225 (0.365)
50%	197 (0.319)	202 (0.328)
75%	194 (0.314)	197 (0.319)
100%	194 (0.314)	196 (0.318)

Standby Power, g/kWh (lb/hph)

	TWD1744GE	
	1500 rpm	**1800 rpm**
25%	208 (0.338)	222 (0.360)
50%	195 (0.317)	200 (0.325)
75%	195 (0.315)	196 (0.318)
100%	194 (0.315)	197 (0.319)

Dimensions

Not for installation. Dimensions in mm.



Technical description

Engine and block
- Wet, replaceable cylinder liners
- Steel pistons for high durability
- Crankshaft induction hardened bearing surfaces and fillets with seven main bearings
- Case hardened and Nitrocarburized transmission gears for heavy duty operation
- Viscous type crankshaft vibration dampers to withstand single bearing alternator torsional vibrations
- Replaceable valve guides and valve seats
- Overhead camshaft and 4 valves per cylinder
- SAE0 alternator interface

Lubrication system
- Full flow oil cooler
- Full flow disposable spin-on oil filter
- Bypass filter with extra high filtration
- Oil quality VDS4.5 10W30
- Engine delivered with oil

Fuel system
- Common Rail injection system
- Improved water separator and water-in-fuel sensor
- Improved fine fuel filtration efficency with fuel pressure sensor
- F3 fuel injection system
- Improved filter capacity

Cooling system
- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block.
- Dual-circuit
- Belt driven coolant pumps (fixed or visco controlled fan drive) with high degree of efficiency
- Fixed or visco controlled fan drive
- Water-cooled charge air coolers
- Visco as option
- Coolant VCS2

Turbo charger
- Efficient and reliable dual stage turbo chargers
- Dual charge air coolers
- Waste gate system for the high pressure turbo charger

Electrical system
- ECM4, an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing
- The instruments and controls connect to the engine via the CAN SAE J1939 interface
- Sensors for inputs such as: oil pressure, oil temp, boost pressure, boost temp, coolant temp, air filter pressure, water in fuel and fuel pressure.

Rating guidelines

CONTINUOUS POWER is defined as being the maximum power which the generating set is capable of delivering continuously while supplying a constant electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer.

PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for govering purpose is available for this rating.

STAND-BY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying stand-by electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.

DATA CENTRE POWER is defined as being the maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours. Depending on the sites to supply and the availability of reliable utility, the generating set manufacturer is responsible to define what power level he is able to supply to fulfil that requirement including hardware or software or maintenance plan adaptation.

Power standards

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ /kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 8528-5 G3.

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