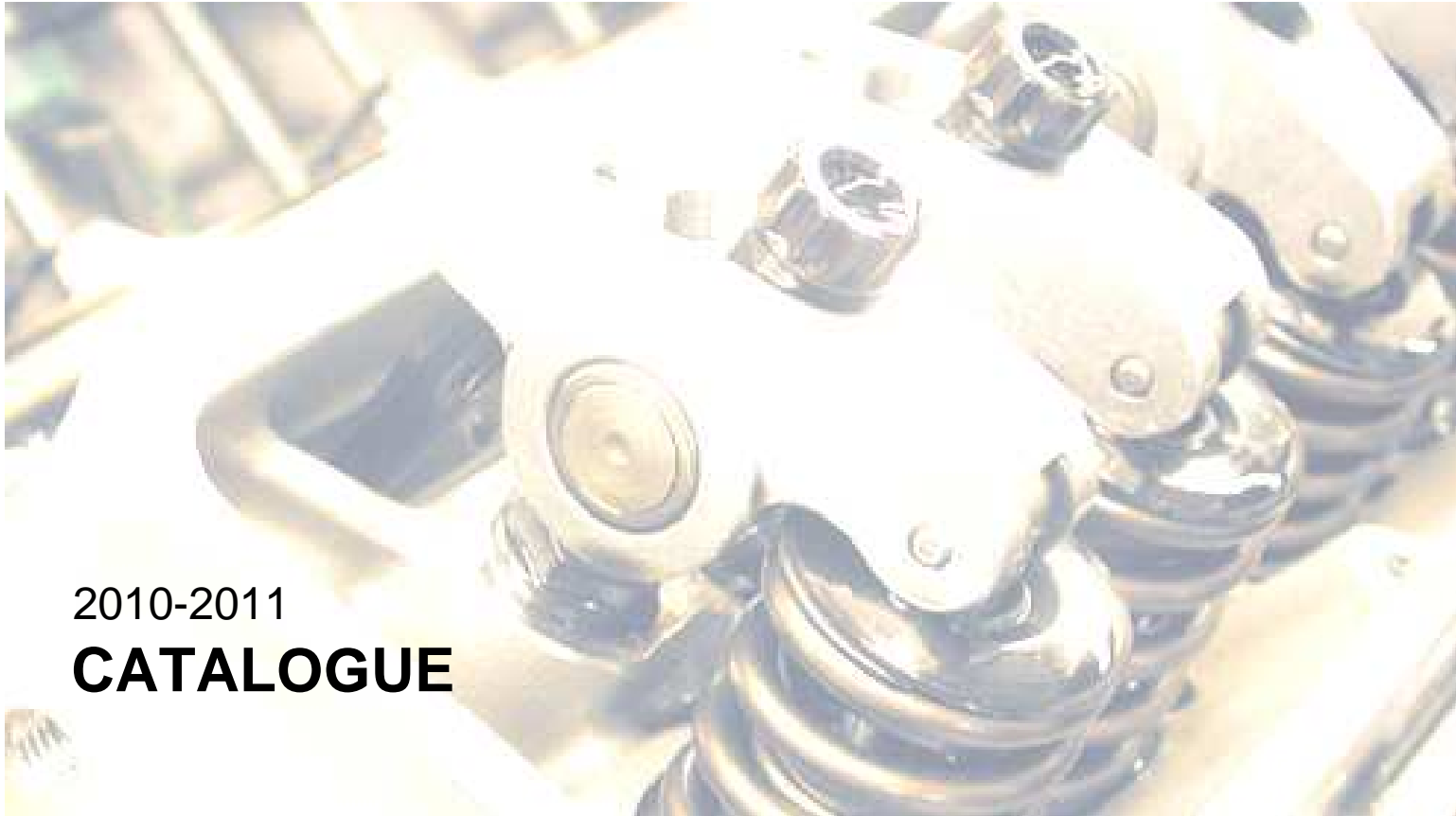


FORWARD
ENGINE

Professional power solution for greater value!



2010-2011
CATALOGUE

FORWARD ENGINE

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Isuzu technology

Genset

Water pump



Perkins technology

Genset

Nature gas

Water pump

Marine

Tractor

FORWARD ENGINE



Lovol 1000 Diesel Engine – Genset

Inheriting from the leading European technology – Perkins, Lovol 1000 series provides professional power solution for genset, marine, water pump and agricultural equipment etc.



Important Features

- International brands of key parts adopted to insure the reliable performance
- Mechanical governing rate is less than 3% and electronic governing rate is less than 1%
- The combustion system and fuel-supply system is optimized which insure the accuracy of the oil supply amount for single cylinder of the engine and improve the combustion efficiency.
- Easy for daily maintenance, the key parts could be replaced at the same side, with the character of strong commonality, the maintaining work is very convenient.

Lovol 1000 Diesel Engine – Genset

Item #	1004G	1004TG	1006TG1A	1006TG2A	1006TAG
Speed - rpm	1500	1500	1500	1500	1500
Constant power - kW	40	65.7	84.3	92.3	121
Standby power - kW	44	72.3	92.7	102	134
Fuel consumption – g/kW.h	≅ 210	≅ 205	≅ 205	≅ 205	≅ 205
Net weight - kg	540	550	780	780	730
Dimension - mm	1253*706*946	1253*706*946	1484*740*1107	1484*740*1107	1600*800*1064
Bore * Stroke - mm	100*127	100*127	100*127	100*127	100*127
Displacement - L	3.99	3.99	5.99	5.99	5.99
Max. ambient temperature	50°C	50°C	50°C	50°C	50°C
Governing typel	Mechanical	Mechanical	Mechanical	Mechanical	Electronic
Governing rate	≅ 5%	≅ 5%	≅ 5%	≅ 5%	≅ 1%
Configuration	In-line, direct injection, water-cooled				
Rotation of crankshaft	Counter-clockwise – viewed from flywheel side				
Cylinder number	4	4	6	6	6
Ignition system	Natural	Turbo	Turbo	Turbo	Turbo, A-A inter cool

Standard Accessories

- 24V electric system (12V optional)
- S.A.E. 3 flywheel housing
- 10" & 11.5" flywheel
- Fuel, air and oil filter
- Qualification certificate, handbook & service manual
- Oil pressure and water temperature alarm switch & sensor (2 in 1) in accordance with VDO parameter
- Separate fan
- Cold start aid
- Engine front support
- 24V start motor, alternator and solenoid
- Radiator - fan guard & front guard included

FORWARD ENGINE



Lovol 1000 Diesel Engine – Genset

Item #	1004G	1004TG	1006TG1A	1006TG2A	1006TAG
Speed - rpm	1800	1800	1800	1800	1800
Constant power - kW	44	75.6	97.6	108.4	134
Standby power - kW	48	83.2	107.3	119.2	147
Fuel consumption – g/kW.h	≅ 210	≅ 205	≅ 205	≅ 205	≅ 205
Net weight - kg	540	550	780	780	730
Dimension - mm	1253*706*946	1253*706*946	1484*740*1107	1484*740*1107	1600*800*1064
Bore * Stroke - mm	100*127	100*127	100*127	100*127	100*127
Displacement - L	3.99	3.99	5.99	5.99	5.99
Max. ambient temperature	50°C	50°C	50°C	50°C	50°C
Governing typel	Mechanical	Mechanical	Mechanical	Mechanical	Electronic
Governing rate	≅ 5%	≅ 5%	≅ 5%	≅ 5%	≅ 1%
Configuration	In-line, direct injection, water-cooled				
Rotation of crankshaft	Counter-clockwise – viewed from flywheel side				
Cylinder number	4	4	6	6	6
Ignition system	Natural	Turbo	Turbo	Turbo	Turbo, A-A inter cool

Standard Accessories

- 24V electric system (12V optional)
- S.A.E. 3 flywheel housing
- 10" & 11.5" flywheel
- Fuel, air and oil filter
- Qualification certificate, handbook & service manual
- Oil pressure and water temperature alarm switch & sensor (2 in 1) in accordance with VDO parameter
- Separate fan
- Cold start aid
- Engine front support
- 24V start motor, alternator and solenoid
- Radiator - fan guard & front guard included

FORWARD ENGINE



Lovol 1000 Nature gas engine - Genset

Inheriting from the leading European technology – Perkins, Lovol 1000 series provides professional power solution for genset, marine, water pump and agricultural equipment etc.



Important Features

- Adopting the electronic control multi-point injection and theoretic air and fuel ratio combustion strategy, the power performance and acceleration performance of nature gas engine are much higher than that of single-point injection and lean burn engine.
- The main maintenance parts, such as oil filter, air filter, pressure reducing valve and ignition coil, are all mounted in the right side, while the inlet and outlet in the left side (facing the fan), which brings the convenience to the maintenance.
- The adoption of the world advanced multi-point electronic fuel injection system not only brings the lower gas consumption and better economy, but also the higher emission standard.

Lovol 1000 Nature gas engine - Genset

Item #	1004NG	1006NG	1004NG	1006NG
Speed - rpm	1500	1500	1800	1800
Rated power - kW	30	40	35	45
Standby power - kW	33	42	38	47
Compression ratio	16.5 : 1	17.5 : 1	17.5 : 1	17.5 : 1
Noise - dB(A)	92	92	94	94
Dimension - mm	1150*810*980	1150*810*980	1430*900*1000	1430*940*1000
Bore * Stroke - mm	100*127	100*127	100*127	100*127
Displacement - L	3.99	3.99	5.99	5.99
Governor type	Electronic	Electronic	Electronic	Electronic
Governing rate	≤ 1%	≤ 1%	≤ 1%	≤ 1%
Oil pressure - Mpa	0.34-0.45	0.34-0.45	0.34-0.45	0.34-0.45
Configuration	In-line, direct injection, water-cooled			
Rotation of crankshaft	Counter-clockwise – viewed from flywheel side			
Cylinder number	4	4	6	6
Ignition system	Natural	Natural	Natural	Natural

Standard Accessories

- 24V electric system (12V optional)
- S.A.E. 3 flywheel housing
- 10" & 11.5" flywheel
- Fuel, air and oil filter
- Qualification certificate, handbook & service manual
- Oil pressure and water temperature alarm switch & sensor (2 in 1) in accordance with VDO parameter
- Separate fan
- Cold start aid
- Engine front support
- 24V start motor, alternator and solenoid
- Radiator - fan guard & front guard included

FORWARD ENGINE



Lovol 1000 Diesel Engine – Water pump

Inheriting from the leading European technology – Perkins, Lovol 1000 series provides professional power solution for genset, marine, water pump and agricultural equipment etc.



Important Features

- Good cold start performance – the engine can be started up at -15°C without the pre-heat device. With pre-heating, it can work well at even -25°C
- Equipped with the radiator and independent fan drive, the engine can operate normally at the ambient temperature 50°C
- The instrument control box with the function of high water temperature, low oil pressure and over-speed alarm shut down etc. which makes the manipulation more conveniently, simply and reliably.
- Air filter, radiator and base frame are assembled with engine, which turns out the convenient installation.
- Clutch and control box are optional based on users requirements

Lovol 1000 Diesel Engine – Water pump

Item #	1004-4Z	1004-4TZ	1006-6TZ	1006-6TAZ
Rated power - kW - 1500rpm	36	60	84	110
Rated power - kW - 1800rpm	40	67	95	118
Rated power - kW - 2200rpm	46	70	100	124
Compression ratio	16.5 : 1	17.5 : 1	17.5 : 1	17.5 : 1
Net weight - kg	540	550	780	730
Dimension - mm	1250*706*940	1250*706*940	1520*708*1100	1600*800*1050
Bore * Stroke - mm	100*127	100*127	100*127	100*127
Displacement - L	3.99	3.99	5.99	5.99
Max. ambient temperature	50°C	50°C	50°C	50°C
Governing typel	Mechanical	Mechanical	Mechanical	Mechanical
Governing rate	≅ 10%	≅ 10%	≅ 10%	≅ 10%
Configuration	In-line, direct injection, water-cooled			
Rotation of crankshaft	Counter-clockwise – viewed from flywheel side			
Cylinder number	4	4	6	6
Ignition system	Natural	Turbo	Turbo	Turbo, A-A, inter cool

Standard Accessories

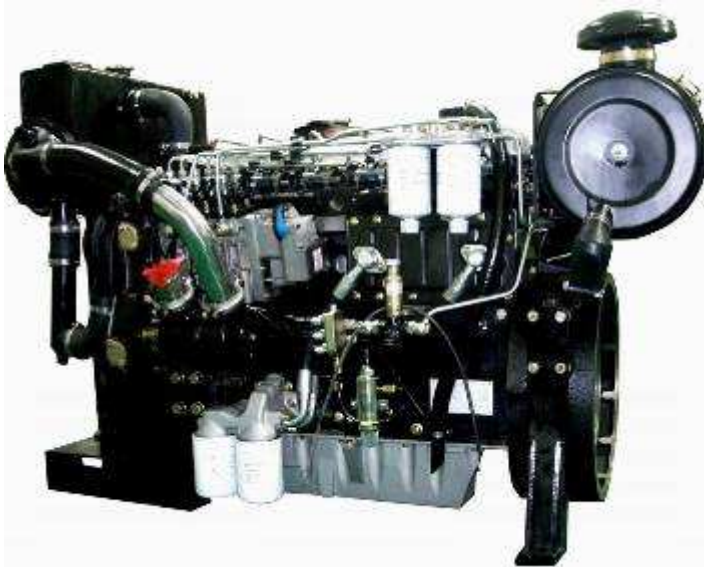
- 24V electric system (12V optional)
- S.A.E. 3 flywheel housing
- 10" & 11.5" flywheel
- Fuel, air and oil filter
- Qualification certificate, handbook & service manual
- Oil pressure and water temperature alarm switch & sensor (2 in 1) in accordance with VDO parameter
- Separate fan
- Cold start aid
- Clutch - **optional**
- Control box - **optional**
- Radiator - fan guard & front guard included

FORWARD ENGINE



Lovol 1000 Diesel Engine – Marine

Inheriting from the leading European technology – Perkins, Lovol 1000 series provides professional power solution for genset, marine, water pump and agricultural equipment etc.



Important Features

- It adopts the double closed cycle cooling system with seawater and freshwater cooling.
- With alarm and automatic shut-down protection function for water temperature, oil pressure, fuel temperature and speed etc.
- Jacketed high pressure fuel pipe for safe and reliable operation.
- Gear driven seawater pump with high efficiency and impact structure.
- Exhaust system is equipped with Germany quality high temperature shield, which features free of asbestos, nontoxic, safe and environment friendly.

Loval 1000 Diesel Engine – Marine

Item #	1004GM	1004TGM	1006TGM	1006TWGM
Speed - rpm	1500	1500	1500	1500
Rated power - kW	40	60	90	110
Standby power - kW	44	66	99	121
Compression ratio	16.5 : 1	17.5 : 1	17.5 : 1	17.5 : 1
Noise - dB(A)	92	92	94	94
Dimension - mm	1150*810*980	1150*810*980	1430*900*1000	1430*940*1000
Bore * Stroke - mm	100*127	100*127	100*127	100*127
Displacement - L	3.99	3.99	5.99	5.99
Fuel consumption - g/kwh	215	215	215	210
Exhaust temperature	≤600 °C	≤550 °C	≤550 °C	≤550 °C
Oil pressure - Mpa	0.34-0.45	0.34-0.45	0.34-0.45	0.34-0.45
Configuration	In-line, direct injection, water-cooled			
Rotation of crankshaft	Counter-clockwise – viewed from flywheel side			
Cylinder number	4	4	6	6
Ignition system	Natural	Turbo	Turbo	Turbo, A-A, inter cool

Standard Accessories

- 24V electric system (12V optional)
- S.A.E. 3 flywheel housing
- 10" & 11.5" flywheel
- Fuel, air and oil filter
- Qualification certificate, handbook & service manual
- Oil pressure and water temperature alarm switch & sensor (2 in 1) in accordance with VDO parameter
- Separate fan
- Cold start aid
- Engine front support
- 24V start motor, alternator and solenoid
- Radiator - fan guard & front guard included

FORWARD ENGINE



Lovol 1000 Diesel engine - Tractor

Inheriting from the leading European technology – Perkins, Lovol 1000 series provides professional power solution for genset, marine, water pump and agricultural equipment etc.



Important Features

- Optimize performance curves, increase torque reserve, the max. torque of 4-cylinder engine is up to 405N.m, and the max. torque of 6-cylinder is up to 735N.m, the torque reserve even reach up to 40%, so it totally meet the requirements of heavy-duty works like tractor deep ploughing and combine harvester.
- The power output with equivalent torque increases the working efficiency effectively, which is 5% higher than other similar products.
- Dynamic balance control will be conducted to all the moving parts of each engine to reduce the mechanical vibration efficiently.



Loval 1000 Diesel engine - Tractor

Item #	1004-4RT60	1004-4TRT70	1004-4TART82	1004-4TART90	1004-4TWR82
Rated power/speed – kW/rpm	53/2200	61/2200	69/2300	74/2300	69/2300
Peak torque/speed – Nm/rpm	265/1600	307/1600	350/1600	380/1600	350/1600
Firing order	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2
Dimension - mm	711*610*767	711*614*767	711*614*767	711*614*767	711*610*845
Bore * Stroke - mm	100*127	100*127	100*127	100*127	100*127
Displacement - L	3.99	3.99	3.99	3.99	3.99
Cylinder number	4	4	4	4	4
Ignition system	Turbo	Turbo	Turbo, A-A inter cool	Turbo, A-A inter cool	Turbo, W-A inter cool


Item #	1004D-4TA60	1004D-4TA65	1004D-4TA70	1004D-4TA74	1006D-6TA92	1006D-6TA106	1006D-6TA115
Rated power/speed – kW/rpm	60/2200	65/2200	70/2200	74/2200	92/2300	106/2300	115/2300
Peak torque/speed – Nm/rpm	320/1500	360/1500	380/1500	390/1500	480/1600	545/1600	610/1600
Firing order	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2
Dimension - mm	711*614*767	711*614*767	711*614*767	711*614*767	945*677*780	945*677*780	945*677*780
Bore * Stroke - mm	100*127	100*127	100*127	100*127	100*127	100*127	100*127
Displacement - L	3.99	3.99	3.99	3.99	3.99	3.99	3.99
Cylinder number	4	4	4	4	6	6	6
Ignition system	Turbo, A-A inter cool						

Standard Accessories

- 24V electric system (12V optional)
- Fuel, air and oil filter
- Qualification certificate, handbook & service manual
- Oil pressure and water temperature alarm switch & sensor (2 in 1) in accordance with VDO parameter
- Cold start aid
- Engine front support
- 24V start motor, alternator and solenoid

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A close-up photograph of an engine's internal components, showing several pistons and connecting rods. The pistons are arranged in a row, and the connecting rods are visible below them. The image is slightly blurred, focusing on the mechanical details.

We provide 7d/24h customer service, if you have any questions, please feel free to let us know!

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