

NEW DIESEL ENGINE RANGE MOVES TO MARKET

Perkins' upgraded 1300 Series packs more power in compact unit, offers lower emissions, less maintenance, longer life

A new generation of the 1300 Series diesel engines, including three variants at 6.5, 7.6 and 8.7 liters and a third, optional common program, was unveiled by Perkins this spring at the Hannover Fair in Germany. With output from 142 to 224 kW, the new units have fuel-consumption savings of 20% more power and 10% more torque than their predecessors.

It will be recalled that in mid-1998, Perkins and Newtur joined forces and announced that their combined range of diesel engines that Perkins designed and Newtur's well-established, 75-year development experience saw, the first originally conceived eight models with power output ranging from 142 to 224 kW. Potential applications included digger loaders, excavators, cranes, fork-lift trucks, compressors and pumps.

"The new engine also results from Perkins-Newtur collaboration and is effectively their engine, it can share capabilities and afford more consistent engine profiles," says a Perkins spokesman. "All models are turbocharged



1300 Series engines from 142-224 kW. Perkins' new generation 1300 Series industrial diesel engines range up to 20% more power and 10% more torque than their predecessors.

alternated unit, in spite of the greater output, the new engines in fact, deliver just 20% higher than the earlier one. The cylinder block has been completely redesigned to yield a 20% lower gross torque ratio."

Combustion system redesigned

The combustion system has been completely redesigned. It now gives out 10% higher heat efficiency

for the inlet gas, to provide optimum work available to turbocharger and aftercooler characteristics.

Injection system delivers a high-pressure spray of atomized fuel to an optimized position. The low-inertia fuel-injection system is providing around fuel being continuously adjusted to needs. Depending on displacement and speed, different Bosch fuel pumps are used and provide torque and pressure of 2000 to 1500 bar.

Perkins engine has exceptional oil control in conformity to the use of pressure-balanced aluminum pistons with an angled top ring groove and high-technology skewing pins. The pistons are differential across the top ring groove to form a more precise seal against the bottom of the second groove and lower face, to give optimum performance over a long working life.

The result of these innovations, according to Perkins, is that the new 1300 Series produces maximum torque capable of meeting all anticipated European and North American emission legislation by year 2000.

Improved maintenance standards

Major progress of work that maintenance cost and reliability has proven with 100% original equipment maintenance records. The



Power and torque curves for the 1300-PHX agricultural, industrial and stationary power unit version of the new 1300 Series engine.

The new engines are designed to be an improvement on the already high standards of the previous ones. Old diesels and filter charge models have been replaced by a cleaner 20% — from 100 to 120 tons.

Full filter and coolant conditioner changes are set at 100 hours, and maintenance intervals back at 200 hours. Perkins says that life or major overhaul is extended by 20%.

For truck applications, the new Perkins engines fit neatly in between the Phaser (62 to 101 kW) and the new 120-cu-yd Eagle T3 (22 to 28 kW), roughly isolating maintenance characteristics and classes for the Phaser. Old diesel and filter charge have been extended to 12 000 km, with full filter and coolant conditioner changes at 24 000 km. Super clean air intake is extended to a remarkable 24 000 km, and it is estimated the Phaser filter change intervals will not be necessary before 48 000 km.

Seamless range of truck engines

Perkins engineers say it now has a "seamless" range of truck engines from 12 to 280 kW. The company says the new engine is available for diesel and three-valve rigid vehicles and medium-weight tractor units. Specialized models include wheel loaders, mobile applications can also be tailored for by higher engine sizes. Like the industrial version, all the engines have Perkins super-charge technology.

Perkins engineers tell *Fluid Power World* it shows that the catalytic heads of the new engines are designed so that seat injectors can be incorporated into them.

"The new 1200 series will eventually progress independently-mounted, electronically-controlled unit injection (CECI)," explains one engineer. "There will be electronic air intake for the traditional high-pressure pump fuel control system, plus provide additional features which will increase the advantages of the user's manufacturing quality. They will enable greater fuel economy, reduced emissions and more to be expected."

"More important to many OEMs, the 1200 will permit full-service integration through precise but variable pressure control and torque charge balancing. Add to these elements, power take-off speed control, separate engine protection systems and advanced diagnostics, and you could there a designer's ultimate come true." ■

Circle 10 on Reader Service Card



The classic Eagle that took it to the 100-ton market. Application of the new Perkins engine, the 1200 series, is the main reason of the new 1200 series.

PERKINS 1200 SERIES TRUCK ENGINES	POWER		TORQUE	
	HP	KW	LB-FT	KG-M
PERKINS 1200 SERIES TRUCK ENGINES	1200-22	22.0 (16.1)	227 lbs-ft	31 kg-m
	1200-27	27.0 (19.8)	317 lbs-ft	43 kg-m
	1200-37	37.0 (27.1)	429 lbs-ft	58 kg-m
	1200-47	47.0 (34.5)	561 lbs-ft	76 kg-m
PERKINS 1200 SERIES TRUCK ENGINES	1200-67	67.0 (49.3)	740 lbs-ft	100 kg-m
	1200-87	87.0 (63.8)	947 lbs-ft	129 kg-m
	1200-107	107.0 (78.3)	1154 lbs-ft	157 kg-m
	1200-127	127.0 (92.4)	1361 lbs-ft	185 kg-m
PERKINS 1200 SERIES TRUCK ENGINES	1200-147	147.0 (108.0)	1568 lbs-ft	213 kg-m
	1200-167	167.0 (122.5)	1775 lbs-ft	241 kg-m
	1200-187	187.0 (138.0)	1982 lbs-ft	269 kg-m
	1200-207	207.0 (152.5)	2189 lbs-ft	297 kg-m
PERKINS 1200 SERIES TRUCK ENGINES	1200-227	227.0 (167.0)	2396 lbs-ft	327 kg-m
	1200-247	247.0 (181.0)	2603 lbs-ft	355 kg-m
	1200-267	267.0 (195.0)	2810 lbs-ft	383 kg-m
	1200-287	287.0 (209.0)	2996 lbs-ft	408 kg-m
PERKINS 1200 SERIES TRUCK ENGINES	1200-307	307.0 (225.0)	3203 lbs-ft	436 kg-m
	1200-327	327.0 (239.0)	3410 lbs-ft	464 kg-m
	1200-347	347.0 (253.0)	3617 lbs-ft	492 kg-m
	1200-367	367.0 (267.0)	3824 lbs-ft	520 kg-m
PERKINS 1200 SERIES TRUCK ENGINES	1200-387	387.0 (281.0)	4031 lbs-ft	548 kg-m
	1200-407	407.0 (295.0)	4238 lbs-ft	576 kg-m
	1200-427	427.0 (309.0)	4445 lbs-ft	604 kg-m
	1200-447	447.0 (323.0)	4652 lbs-ft	632 kg-m
PERKINS 1200 SERIES TRUCK ENGINES	1200-467	467.0 (337.0)	4859 lbs-ft	660 kg-m
	1200-487	487.0 (351.0)	5066 lbs-ft	688 kg-m
	1200-507	507.0 (365.0)	5273 lbs-ft	716 kg-m
	1200-527	527.0 (379.0)	5480 lbs-ft	744 kg-m
PERKINS 1200 SERIES TRUCK ENGINES	1200-547	547.0 (393.0)	5687 lbs-ft	772 kg-m
	1200-567	567.0 (407.0)	5894 lbs-ft	800 kg-m
	1200-587	587.0 (421.0)	6101 lbs-ft	828 kg-m
	1200-607	607.0 (435.0)	6308 lbs-ft	856 kg-m
PERKINS 1200 SERIES TRUCK ENGINES	1200-627	627.0 (449.0)	6515 lbs-ft	884 kg-m
	1200-647	647.0 (463.0)	6722 lbs-ft	912 kg-m
	1200-667	667.0 (477.0)	6929 lbs-ft	940 kg-m
	1200-687	687.0 (491.0)	7136 lbs-ft	968 kg-m
PERKINS 1200 SERIES TRUCK ENGINES	1200-707	707.0 (505.0)	7343 lbs-ft	996 kg-m
	1200-727	727.0 (519.0)	7550 lbs-ft	1024 kg-m
	1200-747	747.0 (533.0)	7757 lbs-ft	1052 kg-m
	1200-767	767.0 (547.0)	7964 lbs-ft	1080 kg-m
PERKINS 1200 SERIES TRUCK ENGINES	1200-787	787.0 (561.0)	8171 lbs-ft	1108 kg-m
	1200-807	807.0 (575.0)	8378 lbs-ft	1136 kg-m
	1200-827	827.0 (589.0)	8585 lbs-ft	1164 kg-m
	1200-847	847.0 (603.0)	8792 lbs-ft	1192 kg-m
PERKINS 1200 SERIES TRUCK ENGINES	1200-867	867.0 (617.0)	8999 lbs-ft	1220 kg-m
	1200-887	887.0 (631.0)	9206 lbs-ft	1248 kg-m
	1200-907	907.0 (645.0)	9413 lbs-ft	1276 kg-m
	1200-927	927.0 (659.0)	9620 lbs-ft	1304 kg-m
PERKINS 1200 SERIES TRUCK ENGINES	1200-947	947.0 (673.0)	9827 lbs-ft	1332 kg-m
	1200-967	967.0 (687.0)	10034 lbs-ft	1360 kg-m
	1200-987	987.0 (701.0)	10241 lbs-ft	1388 kg-m
	1200-1007	1007.0 (715.0)	10448 lbs-ft	1416 kg-m

PERKINS ENGINE CO., PERKINS TRUCK ENGINES DIVISION

1300 SERIES



Perkins generator performance - 1306-76T-00000000000



Perkins generator performance - 1306-76T-00000000000

GENERAL DATA

Configuration of the 1300 Series Diesel Generator set (DGS) with an optional 1 stroke Diesel Engine for remote power and heat is as follows:
Compression Ratio: 16.5:1 Application: Turbocharged
Injection: Conventional Injection System
Cooling System: Direct Injection Cooling System

STANDARD EQUIPMENT

- Cooling system with heat exchanger
- Common mechanical - oil separator
- Fan drive
- Belt drive
- Oil separator
- Engine mounted alternator
- Engine mounted 40 ampere
- Engine mounted 60 ampere
- Governor system
- M.S.A. 4 stroke engine/110
- Maintenance and repair manual
- Installation manual
- Primary and secondary facilities
- 1 year warranty
- 24-hour telephone service
- 24-hour telephone service, spare parts and repair information service

OPTIONAL EQUIPMENT

- Flywheel housing - 400 A or 600 A with accessories
- Flywheel - standard and optional stationary applications
- Water pump - 2 or 1 1/2 HP
- Lubrication - grease or oil and use with a fan
- Adjustable governor with manual control
- 1000 watt generator
- 2000 watt generator (generator type identification)
- 3000 watt generator (generator type identification)
- 4000 watt generator (generator type identification)
- 6000 watt generator (generator type identification)
- 8000 watt generator (generator type identification)
- 10000 watt generator (generator type identification)
- 12000 watt generator (generator type identification)
- 15000 watt generator (generator type identification)
- 20000 watt generator (generator type identification)
- 25000 watt generator (generator type identification)
- 30000 watt generator (generator type identification)
- 40000 watt generator (generator type identification)
- 50000 watt generator (generator type identification)
- 60000 watt generator (generator type identification)
- 80000 watt generator (generator type identification)
- 100000 watt generator (generator type identification)