FL912 series air cooling diesel engine

1. Oil filter
2. Diesel filter
3. Oil bath air cleaner with pre-cleaner and dust collector
4. 12V/24V Starting motor
5. 12V/24V charged generator
6. Diesel engine electrical shutdown device (only generator set)
7. Automatic belt tension unit
8. V-belt break alarm device
9. Belt guard (only for generator set)
10. 4 Engine elastic supports
11. SAW Flywheel and housing
12. Oil temperature sensor and alarm switch (VDO analog signal)
13. Oil pressure sensor and alarm switch (VDO analog signal)
14. Diesel engine accelerator adjust device (only generator set)
15. Mechanical adjusting speed device
16. Diesel engine paint (gray)

Optional configuration

1. Absorption type exhaust silencer suitable for remote mounting
2. Spark arrestor type exhaust silencer
3. Exhaust manifold -cum-silencer (only for non-turbo charge)
4. Dry type air cleaner with restriction indicator
5. Diesel engine supports suitable for rigidly mountings
6. Gear driven hydraulic pump
7. Belt driven air compressor
8. Hydraulic oil radiator
9. Starting aid for engine starting below minus 5°C down to minus 20°C
10. 12V/24V Diesel engine electrical adjusting speed control device
11. Mechanical shutdown lever
12. Diesel engine over speed guard device
13. All kinds of meter of diesel engine
14. Industrial power take-offs

Engine Type	Cyl No.and Arrangement	Bore/Stroke (mm)	Displacement (L)	Cooling system and stroke	Air-intake way	Power/Rev (kw/rpm)				Overall dimensions(mm)	Weight(kg)
F3L912	3-cylinder in-line engines	100/120	2.828	Air-cooled 4-stroke	Naturally intake	24/1500	29/1800	36/2300	38/2500	730X673X815	275
F4L912	4-cylinder in-line engines	100/120	3.77	Air-cooled 4-stroke	Naturally intake	32/1500	38/1800	46/2300	51/2500	860X673X815	300
F4L912T	4-cylinder in-line engines	100/120	3.77	Air-cooled 4-stroke	Turbo charged	41/1500	48/1800	52/2000		865X673X815	315
F6L912	6-cylinder in-line engines	100/120	5.655	Air-cooled 4-stroke	Naturally intake	48/1500	60/1800	74/2300	78/2500	1120X673X815	410

Engine Model			F3L912	F4L912	F4L912T	F6L912
Numbers of Cylinder			3	4	4	6
Induction System			Naturally aspirated	Naturally aspirated	Turbo charging	Naturally aspirated
Type			Vertical 4-Stroke air-cooled direct injection			
Combustion System			Direct injection			
Dispacement (L)			2.828	3.77	3.77	5.655
Bore X Strocking (mm)			100X120	100X120	100X125	100X120
Compression Ratio			17	17	17	17
Direction of Rotation (facing cooling blower)			clockwise	clockwise	clockwise	clockwise
Firing Order			1-2-3	1-3-4-2	1-3-4-2	1-5-3-6-2-4
Overall Dimension			730X673X815	860X673X815	860X673X815	1120X673X815
Governing	Machine Governor		5%	5%	5%	5%
	Electronic Governor		1%	1%	1%	1%
Net Weight (kg)			275	300	310	410
Engine Maximum Power (kW)		1500rpm	26	35	45	52
		1800rpm	30	42	52	62
Engine Continue Power (kW)		1500rpm	24	32	41	48
		1800rpm	28	38	48	55
Generator Power (kW)		Prime (Continue)	20	24	35	40
		Standby (Maximum)	22	28	40	44
Fuel Consumption at Power Rating 110% (g/kwh)		1500rpm	232	228	228	228
		1800rpm	232	228	228	228
Fuel Consumption at Power Rating 100% (g/kwh)		1500rpm	232	228	228	228
		1800rpm	232	228	228	228
Fuel Consumption at Power Rating 75% (g/kwh)		1500rpm	238	238	238	241
		1800rpm	239	239	239	242
Fuel Consumption at Power Rating 50% (g/kwh)		1500rpm	248	248	248	251
		1800rpm	249	249	249	252
Lubrication System Capacity (L)			11	12	12	14
Lubricating Oil Consumption (a per of Max. Fuel Oil Consumption)			1%	1%	1%	1%
Combustion Air Flow (m^3/min)			2.12	2.83	3.61	4.24
Exhaust Gas Flow (m^3/min)			2.18	2.91	3.71	4.37
Exhaust Gas Temperature (°C)		Prime (Continue)	500	500	550	500
Area of Heat Radiation (m^2)			0.12	0.16	0.16	0.24
Noise dB (a)		1500rpm	103	105	105	105
		1800rpm	103	105	105	105
Electric System			12V/24V	12V/24V	12V/24V	12V/24V

1. If the temperature of cylinder wall is higher, the heat radiated in air by diesel engine is lower, so, if heat efficiency is higher, the economy of fuel will be better. Commonly, the temperature of cylinder wall of air-cooling diesel engine is 10°C higher to water cooling one, so its heat efficiency is higher than water cooling one Because of the heat radiated to air by air-cooling diesel engine is low, so its cooling air quantity is 2/3 to water cooling diesel engine, and the power consumed by the fan is lower, so, consumption of fuel of air-cooling diesel engine is low.

2. The usage and practice has proved that above 25-30% trouble of water cooling diesel engine is from cooling system. So, there is no water cooling system in air-cooling diesel engine, so, the trouble is lower by 27% than water cooling diesel engine. And there are no erosion, air-cooling diesel engine is suitable for war environment, and can not lose fighting ability by leaking water after bullet hit.

3. Normal usage lifetime of engine is mainly determined on friction situation between piston group and cylinder hose. But worn quantity of cylinder hose etc and other important components is mainly depend on working time under 0°C. Because of high temperature of cylinder wall of air-cooling diesel engine and fast rising temperature, the acidity erosion and friction are avoided do the most extent.

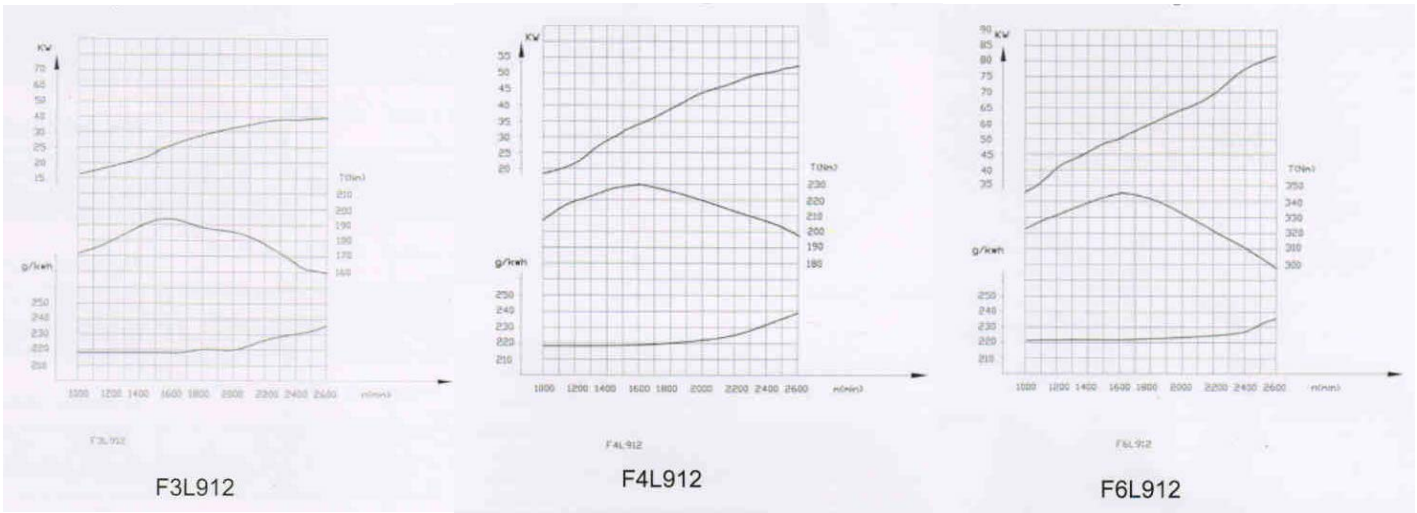
4. The difference of temperature of radiator of water cooling diesel engine and surrounding air is low because of temperature of radiator is limited by boiling point of water (temperature can be up to HCTC for water box cover that has pressure valve), but average temperature of radiation surface of cylinder cover of air-cooling diesel engine is 170°C, there is a larger temperature difference with surrounding air, so there is risk of over heat in air-cooling diesel engine as of water-cooling diesel engine in the environment having(50°C air temperature).

5. Air cooling diesel engine can be well started and work reliably even under-35°C, there is no risk of freezing or breakdown, and doesn't required any anti-frozen liquid. Air cooling diesel engine doesn.t have any risk of water shortage even in drought or desert area, even in area of low pressure and plateaus the air cooling diesel engine there is no cooling water is boiled like water-cooling diesel engine. In air cooled engine the Cylinder body and the cover will not be damaged by direct erosion of cooling water in maritime salt-alkali area.

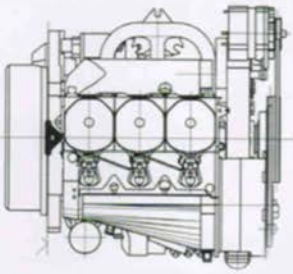
6. Because of the fast warming and good start-up function of the air cooling diesel engine it can attain the working temperature just in 5 to 6 minutes to enter the load status and is suitable for power unit of generator group, fire extinguisher truck, ambulance car and vehicles of battle use.
The noise level of air cooling diesel engine is basically the same as of water cooling diesel engine. For that purpose air cooling diesel engine is closed for lower noise as it can be easily closed because of air quantity required by the air cooling diesel engine is 1/3 of water cooling engine.

7. There are direct spraying model, low pollution turbo chamber model, and increasing pressure model for FL912/913 air cooling diesel engine. The ratio of mated various equipments is: building equipment, tractor, agriculture equipment, automobile, air compression equipment group, generator group, water pump group, equipment group of warehouse etc. Diesel engine can run well in case with a normal technical maintenance because of high reliability, low trouble, long lifetime and easy operation.

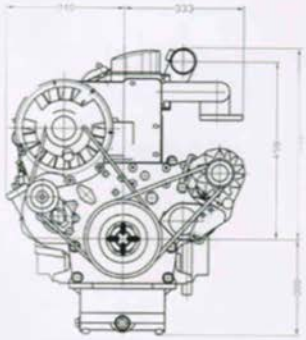
8. Air cooling diesel engine is easy to maintain and keep because of low number of components compare to as water cooling system and having a low maintenance cost. The arrangement of keeping points of diesel engine is integrated, so it is easy to approach for convenient keeping .Air cooling diesel engine is easy and convenient to check and dismantle and exchange because of one cylinder one cover and a mass structure is adopted, so it didn.t need to dismantle oil bottom shell to exchange piston and piston ring of cylinder hose.



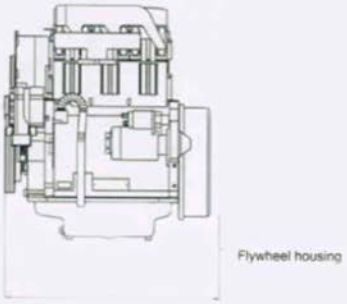
F3L912/913/W



Down side diagram

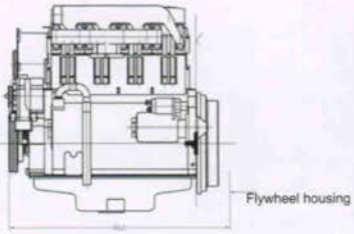


Side portion diagram



Face diagram

F4L912/913/W



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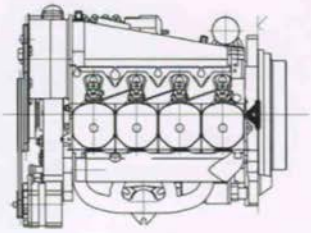
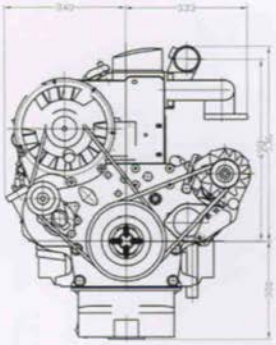
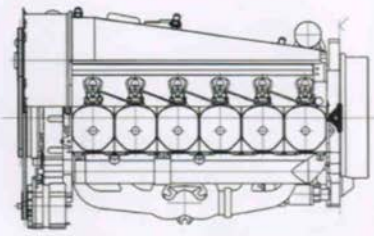


Down side diagram

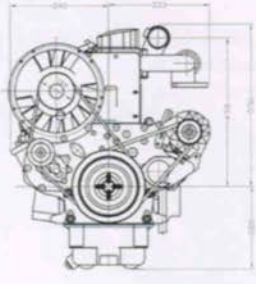


Side portion diagram

F6L912/913/W



Down side diagram



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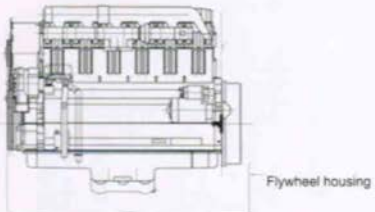

Face diagram