

1.1 Land diesel engine

1.1.1 In line land diesel engine

Rated power: 220 ~ 720kW, Rated speed: 1000 ~ 1500r/min

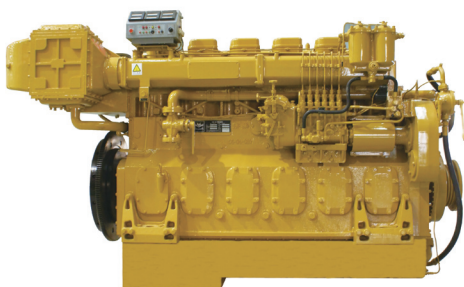
Features of product:

In-line diesel engines is a new-typed diesel engine for the power supply of boat. It adopts advanced design idea and introduces advanced technology. Featured with good economic performance, small volume, compact structure, great power, in-line diesel engine can operate reliably with good dynamic performance. It has maintained the serialization and generalization with series 190 diesel engine. Up to now, it has been on the leading position at the same kind of diesel engine in China.

The in-line diesel engines is not only used in fishing boat, shipping transport, but also in generating and engineering machinery.

Technical parameter:

Model	Rated power (kW)	Rated speed (r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L × B × H)(mm)	Net weight (kg)
4190ZL	330	1500	≤208	≤1.5	2290 × 1240 × 1750	3000
4190PZL	330	1500	≤208	≤1.5	3119 × 1370 × 1896	3600
4190PZLG-1	270	1200	≤208	≤1.5	3119 × 1370 × 1896	3600
4190PZL-2	220	1000	≤208	≤1.5	3119 × 1370 × 1896	3600
4190PZLG-3	300	1300	≤208	≤1.5	3119 × 1370 × 1896	3600
6190ZL	450	1500	≤204	≤1.5	2990 × 1243 × 1763	3960
6190PZL	450	1500	≤204	≤1.5	3923 × 1730 × 2294	4600
6190ZL-2	330	1000	≤204	≤1.5	2990 × 1243 × 1763	3960
6190PZL-2	330	1000	≤204	≤1.5	3923 × 1730 × 2294	4600
G6190ZL	540	1500	≤204	≤1.5	2995 × 1295 × 1754	4500
G6190PZL	540	1500	≤204	≤1.5	3923 × 1730 × 2294	5100
8190ZL	720	1500	≤205	≤1.2	3175 × 1208 × 2055	5200



No. and layout of cylinders	4/6/8-cylinder, in-line
Type	Four stroke, water cooled, turbocharged and aftercooled, direct injection
Bore	190mm
Stroke	210mm
Total displacement	23.82/35.73/47.6L
Compression ratio	14:1/14.5:1
Direction of rotation	Counter-clockwise (facing to flywheel)
Starting method	Air motor, electric motor
Lubricating method	Pressure and splash lubrication

1.1.2 Model Z12V190B diesel engine

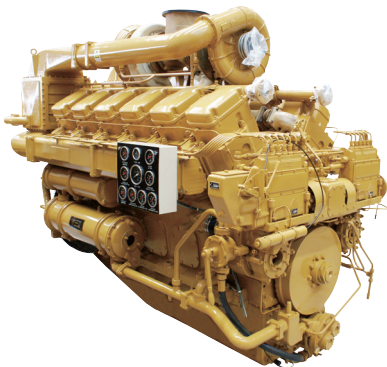
Rated power: 390 ~ 882kW, Rated speed: 1000 ~ 1500r/min

Features of product:

Model Z12V190B diesel engine is a kind of high power,high speed engines,with excellent properties and wide application.In 1986,it was rewarded with the National Gold Prize Medal,and in 1994 it was honoured with National Customer Satisfactory Title.Years of development and constantly adopting latest technology and effective achievements in the internal combustion engine field,all these bring an engine of advanced technical and economic data,compact in structure,easy to start,easy for operation and convenient for maintenance and also widely applicable even under severe.

Technical parameter:

Model	12 hour power (kW)/Speed(r/min)	Continuous hour power (kW)/Speed(r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
Z12V190B	882/1500	794/1500	≤209.4	≤1.6	2692 × 1560 × 2070	5300
PZ12V190B	882/1500	794/1500	≤209.4	≤1.6	4301 × 1980 × 2678	7500
Z12V190B-3	820/1300	738/1300	≤209.4	≤1.6	2692 × 1560 × 2070	5300
PZ12V190B-3	820/1300	738/1300	≤209.4	≤1.6	4301 × 1980 × 2678	7500
Z12V190B-1	735/1200	662/1200	≤209.4	≤1.6	2692 × 1560 × 2070	5300
PZ12V190B-1	735/1200	662/1200	≤209.4	≤1.6	4301 × 1980 × 2678	7500
Z12V190B-2	588/1000	529/1000	≤209.4	≤1.6	2692 × 1560 × 2070	5300
PZ12V190B-2	588/1000	529/1000	≤209.4	≤1.6	4301 × 1980 × 2678	7500
Z8V190B	588/1500	529/1500	≤213.5	≤2.7	2112 × 1560 × 2080	4300
PZ8V190B	588/1500	529/1500	≤213.5	≤2.7	3950 × 1980 × 2678	6750
Z8V190B-1	471/1200	425/1200	≤213.5	≤2.7	2112 × 1560 × 2080	4300
PZ8V190B-1	471/1200	425/1200	≤213.5	≤2.7	3950 × 1980 × 2678	6750
Z8V190B-2	390/1000	350/1000	≤213.5	≤2.7	2112 × 1560 × 2080	4300
PZ8V190B-2	390/1000	350/1000	≤213.5	≤2.7	3950 × 1980 × 2678	6750

	No. and layout of cylinders	12(8),60° Vee
	Type	Four stroke,water cooled,turbocharged and aftercooled,direct injection
	Bore	190mm
	Stroke	210mm
	Total displacement	71.45(47.6)L
	Compression ratio	14: 1
	Direction of rotation	Counter-clockwise(facing to flywheel)
	Starting method	Air motor,electric motor
	Lubricating method	Pressure and splash lubrication

1.1.3 Series 2000 land diesel engine

Rated power: 390 ~ 1000kW, Rated speed: 1000 ~ 1500r/min

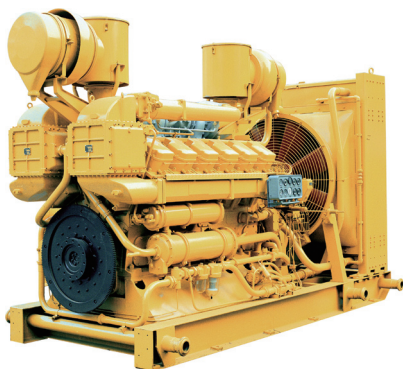
Features of product:

On the basis of Z12V190B diesel engine, series 2000 diesel engines has made great improvement in the aspect of reliability, economy, performance, appearance, three leakage as well as maintenance in order to meet the power requirements of generating sets, petroleum drilling rig and engineering machinery.

Series 2000 diesel engines can be equipped as the torque converter sets, coupling sets as well as diesel generating set for drill rig driving or dredging. We can also package it with fire-fighting pump, flood control pump etc.

Technical parameter:

Model	12 hour power (kW)/ Speed(r/min)	Continuous hour power (kW)/ Speed(r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
G12V190ZL1	1000/1500	900/1500	≤209.4	≤1.6	2692 × 1560 × 2070	5300
G12V190PZL1	1000/1500	900/1500	≤209.4	≤1.6	3860 × 2040 × 2678	8100
G12V190ZL	900/1500	800/1500	≤209.4	≤1.6	2692 × 1560 × 2070	5300
G12V190PZL	900/1500	800/1500	≤209.4	≤1.6	3860 × 2040 × 2678	8100
G12V190ZL-3	810/1300	730/1300	≤209.4	≤1.6	2692 × 1560 × 2070	5300
G12V190PZL-3	810/1300	730/1300	≤209.4	≤1.6	3860 × 2040 × 2678	8100
G12V190ZL-1	740/1200	660/1200	≤209.4	≤1.6	2692 × 1560 × 2070	5300
G12V190PZL-1	740/1200	660/1200	≤209.4	≤1.6	3860 × 2040 × 2678	8100
G12V190ZL-2	600/1000	540/1000	≤209.4	≤1.6	2692 × 1560 × 2070	5300
G12V190PZL-2	600/1000	540/1000	≤209.4	≤1.6	3860 × 2040 × 2678	8100
G8V190ZL	600/1500	540/1500	≤213.5	≤2.7	1802 × 1560 × 2070	4300
G8V190PZL	600/1500	540/1500	≤213.5	≤2.7	3280 × 2040 × 2678	6750
G8V190ZL-3	510/1300	460/1300	≤213.5	≤2.7	1802 × 1560 × 2070	4300
G8V190PZL-3	510/1300	460/1300	≤213.5	≤2.7	3280 × 2040 × 2678	6750
G8V190ZL-1	470/1200	425/1200	≤213.5	≤2.7	1802 × 1560 × 2070	4300
G8V190PZL-1	470/1200	425/1200	≤213.5	≤2.7	3280 × 2040 × 2678	6750
G8V190ZL-2	390/1000	350/1000	≤213.5	≤2.7	1802 × 1560 × 2070	4300
G8V190PZL-2	390/1000	350/1000	≤213.5	≤2.7	3280 × 2040 × 2678	6750

	No. and layout of cylinders	12(8),60° Vee
	Type	Four stroke, water cooled, turbocharged and aftercooled, direct injection
	Bore	190mm
	Stroke	210mm
	Total displacement	71.45(47.6)L
	Compression ratio	14: 1
	Direction of rotation	Counter-clockwise(facing to flywheel)
	Starting method	Air motor, electric motor
	Lubricating method	Pressure and splash lubrication

1.1.4 Series 3000 land diesel engine

Rated power: 600 ~ 1200kW, Rated speed: 1000 ~ 1500r/min


Features of product:

In order to meet the demand of increasingly developing petroleum industry, improve the reliability of oil drilling equipment and make them reach the advanced level, our company has developed the series 3000 diesel engines by using up-to-date engine structure and technology for reference, on the basis of the series 6000 diesel engines. The power and economic targets of the engines have been greatly improved and main performance targets reached the level of the world advanced drill rig engines.

The series 3000 diesel engines could satisfy the power requirements of the mechanical and electric drill rig engines at 4000~7000km. We can install the torque converter and coupling on the same bedplate to form a set, thus we can use the set as the driving drill rig engine and slush pump. We can also match the generating set with single or double supporting to form a power plant or supply as the power of fire-fighting pump and flood control pump.

Technical parameter:

Model	12 hour power (kW)/Speed(r/min)	Continuous hour power (kW)/Speed(r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
A12V190ZL	1200/1500	1080/1500	≤205	≤1.0	2950 × 1980 × 2206	9300
A12V190PZL	1200/1500	1080/1500	≤205	≤1.0	3980 × 2250 × 2739	11000
A12V190ZL-3	1100/1300	990/1300	≤205	≤1.0	2950 × 1980 × 2206	9300
A12V190PZL-3	1100/1300	990/1300	≤205	≤1.0	3980 × 2250 × 2739	11000
A12V190ZL-1	1000/1200	900/1200	≤205	≤1.0	2950 × 1980 × 2206	9300
A12V190PZL-1	1000/1200	900/1200	≤205	≤1.0	3980 × 2250 × 2739	11000
A12V190ZL-2	900/1000	810/1000	≤205	≤1.0	2950 × 1980 × 2206	9300
A12V190PZL-2	900/1000	810/1000	≤205	≤1.0	3980 × 2250 × 2739	11000
A8V190ZL	900/1500	810/1500	≤205	≤1.4	2300 × 1774 × 2173	7200
A8V190PZL	900/1500	810/1500	≤205	≤1.4	3380 × 2250 × 2738	9100
A8V190ZL-3	760/1300	684/1300	≤205	≤1.4	2300 × 1774 × 2173	7200
A8V190PZL-3	760/1300	684/1300	≤205	≤1.4	3380 × 2250 × 2738	9100
A8V190ZL-1	700/1200	630/1200	≤205	≤1.4	2300 × 1774 × 2173	7200
A8V190PZL-1	700/1200	630/1200	≤205	≤1.4	3380 × 2250 × 2738	9100
A8V190ZL-2	600/1000	540/1000	≤205	≤1.4	2300 × 1774 × 2173	7200
A8V190PZL-2	600/1000	540/1000	≤205	≤1.4	3380 × 2250 × 2738	9100

	No. and layout of cylinders	12(8),60° Vee
	Type	Four stroke, water cooled, turbocharged and aftercooled, direct injection
	Bore	190mm
	Stroke	215mm
	Total displacement	73.15(48.77)L
	Compression ratio	14.5: 1
	Direction of rotation	Counter-clockwise (facing to flywheel)
	Starting method	Air motor, electric motor
	Lubricating method	Pressure and splash lubrication

1.1.5 Series 3000 long stroke land diesel engine

General product description:

Rated power: 1000 ~ 1300kW, Rated speed: 1000 ~ 1300r/min


Features of product:

Considering the development status of domestic and abroad ICE industry, aiming at meeting the power demands of dredgers, mechanic drilling rigs and industrial water pump etc., Series 3000 long stroke diesel engine is designed with the targets of dynamic performance, economy and operation reliability having achieved international leading position, and can match generator of 50Hz and 60Hz power frequency and satisfy various kinds of power demands.

Combining years of experience, cooperating with domestic universities and research institutes, the engine is developed with AVL's simulation software to be compact, easy to operate and highly dynamic.

Technical parameter:

Model	12 hour power (kW)/ Speed(r/min)	Continuous hour power (kW)/Speed(r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L × B × H) (mm)	Net weigh (kg)
L12V190ZL-1	1200/1200	1080/1200	≤202	≤1.0	2950 × 1980 × 2312	9300
L12V190PZL-1	1200/1200	1080/1200	≤202	≤1.0	3980 × 2250 × 2850	11000
L12V190ZL-2	1000/1000	900/1000	≤202	≤1.0	2950 × 1980 × 2312	9300
L12V190PZL-2	1000/1000	900/1000	≤202	≤1.0	3980 × 2250 × 2850	11000
L12V190ZL-3	1300/1300	1170/1300	≤202	≤1.0	2950 × 1980 × 2312	9300
L12V190PZL-3	1300/1300	1170/1300	≤202	≤1.0	3980 × 2250 × 2850	11000

	No. and layout of cylinders	12(8),60° Vee
	Type	Four stroke,water cooled,turbocharged and aftercooled,direct injection
	Bore	190mm
	Stroke	255mm
	Total displacement	86.72L
	Compression ratio	14.5; 1
	Direction of rotation	Counter-clockwise(facing to flywheel)
	Starting method	Air motor,electric motor
	Lubricating method	Pressure and splash lubrication

1.1.6 Series B3000 land diesel engine

General product description:

Rated power: 960 ~ 1360kW, Rated speed: 1000 ~ 1500r/min

Features of product:


On the basis of the original series 3000 diesel engines, our has improved the design of series B3000, aiming at increasing reliability, economy and monitoring and automatic control quality, eliminating water, oil and gas leaks, achieving good appearance quality and convenience of maintenance, for the purpose of meeting the demands of oilfield drilling, especially the increasing demands of going drilling abroad without and on-duty staff.

B3000 drilling rig engine, which is of high reliability and no on-duty staff is needed, making the series be able to compete with the imported drilling power products, laying firm foundation for enlarging and enhancing the industry plate of petroleum power equipment headed by JDEC, establishing the leading position of 190 series in China's middle and large power internal combustion engine field and making JDEC's engine products acquire international recognition.

In addition to drilling rigs, the engine type is also widely applicable to locomotives of factories and mines, middle and small power plants for customer oneself, prime engine for ships and auxiliary engine for large vessels.

Technical parameter:

Model	12 hour power (kW)/Speed (r/min)	Continuous hour power (kW) /Speed(r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L×B×H) (mm)	Net weight (kg)
BH12V190ZL	1360/1500	1235/1500	≤202	≤1.0	2950 × 1980 × 2206	9300
BH12V190PZL	1360/1500	1235/1500	≤202	≤1.0	3980 × 2250 × 2739	11000
BH12V190ZL-3	1210/1300	1100/1300	≤202	≤1.0	2950 × 1980 × 2206	9300
BH12V190PZL-3	1210/1300	1100/1300	≤202	≤1.0	3980 × 2250 × 2739	11000
BH12V190ZL-1	1160/1200	1060/1200	≤202	≤1.0	2950 × 1980 × 2206	9300
BH12V190PZL-1	1160/1200	1060/1200	≤202	≤1.0	3980 × 2250 × 2739	11000
BH12V190ZL-2	960/1000	870/1000	≤202	≤1.0	2950 × 1980 × 2206	9300
BH12V190PZL-2	960/1000	870/1000	≤202	≤1.0	3980 × 2250 × 2739	11000

	No. and layout of cylinders	12, 60° Vee
	Type	Four stroke, water cooled, turbocharged and aftercooled, direct injection
	Bore	190mm
	Stroke	215mm
	Total displacement	73.15L
	Compression ratio	14.5: 1
	Direction of rotation	Counter-clockwise (facing to flywheel)
	Starting method	Air motor, electric motor
	Lubricating method	Pressure and splash lubrication

1.1.5 Series 3000 long stroke land diesel engine

Rated power: 1000 ~ 1300kW, Rated speed: 1000 ~ 1300r/min


Features of product:

Considering the development status of domestic and abroad ICE industry, aiming at meeting the power demands of dredgers, mechanic drilling rigs and industrial water pump etc., Series 3000 long stroke diesel engine is designed with the targets of dynamic performance, economy and operation reliability having achieved international leading position, and can match generator of 50Hz and 60Hz power frequency and satisfy various kinds of power demands.

Combining years of experience, cooperating with domestic universities and research institutes, the engine is developed with AVL' s simulation software to be compact, easy to operate and highly dynamic.

Technical parameter:

Model	12 hour power (kW)/ Speed(r/min)	Continuous hour power (kW)/Speed(r/ min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
H12V190ZL	1740/1500	1560/1500	≤200	≤1.0	3234 × 1140 × 2286	9500
H12V190PZL	1740/1500	1560/1500	≤200	≤1.0	5417 × 3145 × 3174	13700
H12V190ZL-1	1400/1200	1260/1200	≤200	≤1.0	3234 × 1140 × 2286	9500
H12V190PZL-1	1400/1200	1260/1200	≤200	≤1.0	5417 × 3145 × 3174	13700
H12V190ZL-2	1160/1000	1040/1000	≤200	≤1.0	3234 × 1140 × 2286	9500
H12V190PZL-2	1160/1000	1040/1000	≤200	≤1.0	5417 × 3145 × 3174	13700
H16V190ZL	2400/1500	2160/1000	≤200	≤1.0	3525 × 2060 × 2331	13000

	No. and layout of cylinders	12(16),60° Vee
	Type	Four stroke,water cooled,turbocharged and aftercooled,direct injection
	Bore	190mm
	Stroke	215mm
	Total displacement	73.15(97.53)L
	Compression ratio	14.5: 1
	Direction of rotation	Counter-clockwise(facing to flywheel)
	Starting method	Air motor,electric motor
	Lubricating method	Pressure and splash lubrication

1.2 Gas engine & Generating unit

1.2.1 Series 190 outer mixing gas engines and gensets

Rated power: 110~550kW, Rated speed: 1000~1500r/min

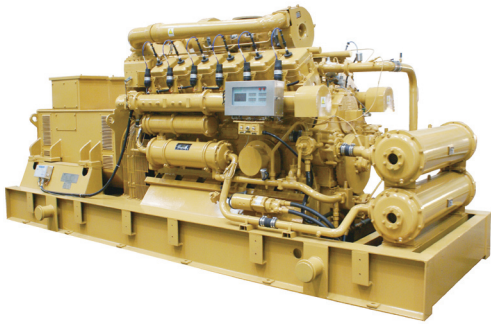
Features of product:

Series 190 outer mixing gas engine is the first generation of gas engine developed by our company based on the 190 diesel engine. It fills up the gap of turbocharged high-power gas engine in China, and the main targets reach the world advanced level of 1980s. After continual improvement for years, the 190 gas engines have formed a series which are widely used in oil fields and other places with rich fuel gas, bringing tremendous economic benefits.

Technical parameter:

Model of generating sets	Model of gas engine	Rated power (kW/kVA)	Rated voltage (V)	Rated frequency (Hz)	Overall dimension (L×B×H) (mm)	Net weigh (kg)	Fuel
75GFZ-T	41 90T1-2	75/93.75	400/230	50	3766 × 1560 × 1737	5300	Natural gas
125GFZ-T	4190ZLT1-2	125/156.25	400/230	50	4106 × 1900 × 1896	7500	Natural gas
210GFZ-T	6190ZLT-2	210/262.5	400/230	50	5105 × 2006 × 2110	8690	Natural gas
250GF-TK	6190ZLT-2	250/312.5	400/230	50	4935 × 1760 × 2441	8690	Natural gas
400GF-NK	12V190Z-2	400/500	400/230	50	5120 × 2200 × 2312	11300	Biogas
400GF-T	12V190DT2-2	400/500	400/230	50	6470 × 2110 × 2195	11800	Natural gas
400GF-TK	12V190DT2-2	400/500	400/230	50	4566 × 2040 × 2195	11300	Natural gas
450GF1-NK	12V190ZLDZ-2	450/562.5	400/230	50	5120 × 2200 × 2312	11300	Biogas
500GF18-TK	12V190ZDT-2	500/625	400/230	50	4566 × 2040 × 278	11800	Natural gas

Model	12 hour power (kW)/ Speed(r/min)	Continuous hour power (kW)/ Speed(r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L×B×H) (mm)	Net weigh (kg)	Fuel
4190T1-2	110	1000	9:1	4,in-line	2405 × 1442 × 1645	3000	Natural gas
4190ZLT1-2	165	1000	10:1	4,in-line	3560 × 1525 × 1730	3000	Natural gas
6190ZLT-2	270	1000	8:1	4,in-line	2990 × 1725 × 1801	3960	Natural gas
12V190DT2-2	450	1000	9:1	12,60° Vee	2670 × 1588 × 1898	5300	Natural gas
12V190ZLDZ-2	500	1000	8:1	12,60° Vee	2670 × 1588 × 2072	5300	Biogas
12V190ZLDM-2	500	1000	8:1	12,60° Vee	2670 × 1588 × 2072	5300	Coal gas
12V190Z-2	500	1000	9:1	12,60° Vee	2670 × 1588 × 1898	5300	Biogas
12V190ZDT-2	550	1000	8:1	12,60° Vee	2670 × 1588 × 2538	5300	Natural gas

	Type	Four stroke,water cooled,turbocharged and aftercooled,spark plug ignition,outer mixing
	Bore	190mm
	Stroke	210mm
	Direction of rotation	Counter-clockwise(facing to flywheel)
	Starting method	Electric motor
	Lubricating method	Pressure and splash lubrication
	Specific heat consumption	≤11386kJ/kW.h
	Specific oil consumption	≤1.63g/kW.h
	Stable speed regulating rate	0 ~ 5% adjustable

1.2.2 Series 190 inner mixing gas engines and gensets

Rated power: 450 ~ 800kW, Rated speed: 1000 ~ 1500r/min

Features of product:

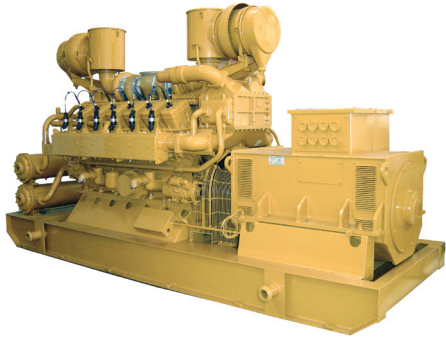
Series 190 inner mixing gas engine is developed by our company to meet the requirement of market. The whole engine is optimized by amending the shortages of the first gas engine generation. The powerperformance, fuel economy and reliability of this gas engine are improved a lot by adopting inner mixing mode, increasing compression ratio and boost ratio, enhancing swirl ratio, realizing lean-burnt by controlling air fuel ratio, using high-energy ignition, and etc.

This engine series is mainly used in generating by single engine or several engines forming a power station. It also can be used as power of compressor, oil transfer pump, water injection pump, and etc.

Technical parameter:

Model of generating sets	Model of gas engine	Rated power (kW/kVA)	Rated voltage (V)	Rated frequency (Hz)	Overall dimension (L×B×H) (mm)	Net weigh (kg)	Fuel
400GF-MK1	12V190ZLM-2	400/500	400/230	50	5120×2040×2678	12000	Coal gas
450GF-T1	G12V190ZLDT-2	450/562.5	400/230	50	5120×2040×2678	12000	Natural gas
500GF-TK	G12V190ZLT-2	500/625	400/230	50	5120×2040×2678	12000	Natural gas
500GF-MK1	12V190ZLM	500/625	400/230	50	5120×2040×2678	12000	Coal gas
500GF-LK	G12V190ZLL-2	500/625	400/230	50	5120×2040×2678	12000	Refinery gas
700GF-TK	G12V190ZLT	700/875	400/230	50	5120×2040×2678	12000	Natural gas

Model	Rated power (kW)	Rated speed (r/min)	Compression ratio	No. and layout of cylinders	Overall dimension (L×B×H) (mm)	Net weigh (kg)	Fuel
12V190ZLM-2	450	1000	10:1	12,60° Vee	2785 × 1628 × 2437	5300	Coal gas
G12V190ZLL-2	550	1000	10:1	12,60° Vee	2785 × 1628 × 2437	5300	Refinery gas
12V190ZLM	550	1500	10:1	12,60° Vee	2785 × 1628 × 2437	5300	Coal gas
G12V190ZLT-2	600	1000	10:1	12,60° Vee	2785 × 1628 × 2437	5300	Natural gas
12V190ZLZ	700	1500	10:1	12,60° Vee	2785 × 1628 × 2437	5300	Biogas
G12V190ZLT	800	1500	10:1	12,60° Vee	2785 × 1628 × 2437	5300	Natural gas
12V190ZLT	800	1500	10:1	12,60° Vee	2670 × 1588 × 2538	5300	Natural gas

	Type	Four stroke, water cooled, turbocharged and aftercooled, spark plug ignition, inner mixing
	Bore	190mm
	Stroke	210mm
	Direction of rotation	Counter-clockwise (facing to flywheel)
	Starting method	Electric motor
	Lubricating method	Pressure and splash lubrication
	Specific heat consumption	≤9800kW.h
	Specific oil consumption	≤1.6g/kW.h
	Stable speed regulating rate	0 ~ 5% adjustable

1.2.3 Series 190 closed-loop electronic control gas engines and gensets

Rated power: 550 ~ 800kW, Rated speed: 1000 ~ 1500r/min

Features of product:

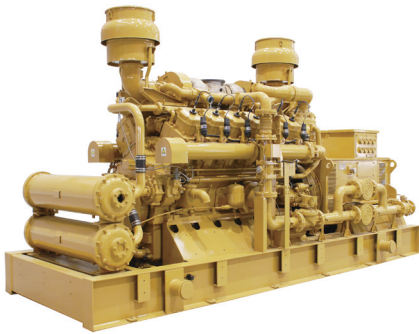
Series 190 closed-loop electronic control gas engine is developed by our company with the cooperation of American WOODWARD. It is the engine that mixes air and fuel before turbocharger. The power performance, fuel economy and reliability of this gas engine reach world advanced level by adopting world advanced outer mixing mode, electronic control technology and lean-burnt strategy.

The gas fuel of this engine series can be natural gas, biogas, coal gas, coal mine gas, and etc. In order to meet the requirements of different customers, this gas engine can be packaged into generating set or other power take-off.

Technical parameter:

Model of generating sets	Model of gas engine	Rated power (kW/kVA)	Rated voltage (V)	Rated frequency (Hz)	Overall dimension (L × B × H) (mm)	Net weigh (kg)	Fuel
500GF-T1	G12V190ZLDT1-2	500/625	400/230	50	5120 × 2040 × 2776.5	11800	Natural gas
500GF-TK1	G12V190ZLDT-2	500/625	400/230	50	5120 × 2040 × 2776.5	11800	Natural gas
500GF-NK	G12V190ZLDZ-2	500/625	400/230	50	5120 × 2040 × 2776.5	11800	Biogas
500GF-WK	G12V190ZLDW-2	500/625	400/230	50	5120 × 2040 × 2776.5	11800	Coal mine gas
500GF-WK1	G12V190ZLWD-2	500/625	400/230	50	5120 × 2040 × 2776.5	11800	Coal mine gas
700GF-T1	G12V190ZLDT1	700/875	400/230	50	5120 × 2040 × 2776.5	11800	Natural gas
700GF-TK1	G12V190ZLDT	700/875	400/230	50	5120 × 2040 × 2776.5	11800	Natural gas
700GF-NK	G12V190ZLDZ	700/875	400/230	50	5120 × 2040 × 2776.5	11800	Biogas
700GF-WK	G12V190ZLDW	700/875	400/230	50	5120 × 2040 × 2776.5	11800	Coal mine gas
700GF-WK1	G12V190ZLWD	700/875	400/230	50	5120 × 2040 × 2776.5	11800	Coal mine gas
700GF-WK2	G12V190ZLWd2	700/875	400/230	50	5120 × 2040 × 2776.5	11800	Coal mine gas

Model	Rated power (kW)	Rated speed (r/min)	Compression ratio	No. and layout of cylinders	Overall dimension (L × B × H) (mm)	Net weigh (kg)	Fuel
G12V190ZLDT	800	1500	12:1	12,60° Vee	2817 × 1645 × 2536.5	5300	Natural gas
G12V190ZLDT1	800	1500	12:1	12,60° Vee	2817 × 1645 × 2536.5	5300	Natural gas
G12V190ZLDT-2	550	1000	12:1	12,60° Vee	2817 × 1645 × 2536.5	5300	Natural gas
G12V190ZLDT1-2	550	1000	12:1	12,60° Vee	2817 × 1645 × 2536.5	5300	Natural gas
G12V190ZLDZ	800	1500	12:1	12,60° Vee	2817 × 1645 × 2536.5	5300	Biogas
G12V190ZLDZ-2	550	1000	12:1	12,60° Vee	2817 × 1645 × 2536.5	5300	Biogas
G12V190ZLDW	800	1500	12:1	12,60° Vee	2817 × 1645 × 2536.5	5300	Coal mine gas
G12V190ZLDW-2	550	1000	12:1	12,60° Vee	2817 × 1645 × 2536.5	5300	Coal mine gas
G12V190ZLWd	800	1500	12:1	12,60° Vee	2817 × 1645 × 2536.5	5300	Coal mine gas
G12V190ZLWd1	800	1500	12:1	12,60° Vee	2817 × 1645 × 2536.5	5300	Coal mine gas
G12V190ZLWd2	800	1500	12:1	12,60° Vee	2817 × 1645 × 2536.5	5300	Coal mine gas

	Type	Four stroke, water cooled, turbocharged and aftercooled, spark plug ignition, outer mixing
	Stroke	190mm
	Direction of rotation	210mm
	Starting method	Counter-clockwise (facing to flywheel)
	Lubricating method	Electric motor
	Lubricating method	Pressure and splash lubrication
	Specific heat consumption	≤11000kW.h
	Specific oil consumption	≤1.6g/kW.h
	Stable speed regulating rate	0~5% adjustable

1.2.4 Series 3000/6000 gas engines and gensets

Rated power: 800 ~ 1500kW, Rated speed: 1000 ~ 1500r/min

Features of product:


Nowadays the power range of gas engine in China is mainly between 200kW and 800kW. Gas engine above 800kW, especially above 1000kW, which is almost depending on import, are in urgent demand in the market. In this situation, our company develops series 3000/6000 high-power gas engine to meet the requirement. At present, the power of this series can reach 1500kW, and in the future the power of 16V gas engine can reach 2000kW, which can replace the import high-power gas engine with a totally competitive price.

The power performance, fuel economy, reliability and safeness of this series are improved a lot, and the main performance targets reach world advanced level. It can be packaged into generating set to meet the power supply requirements of city and well field, or compressor set to meet the requirement of compressor market.

Technical parameter:

Model of generating sets	Model of gas engine	Rated power (kW/kVA)	Rated voltage (V)	Rated frequency (Hz)	Overall dimension (L×B×H) (mm)	Net weigh (kg)	Fuel
1000GF-TK2	AD12V190ZLT2	1000/1250	400/230	50	5735 × 2312 × 2776.5	16500	Natural gas
1000GF-NK	AD12V190ZLZ	1000/1250	400/230	50	5735 × 2312 × 2776.5	16500	Biogas

Model	Rated power (kW)	Rated speed (r/min)	Compression ratio	Specific heat consumption (kJ/kW.H)	Specific oil consumption (g/kW.H)	Overall dimension (L×B×H) (mm)	Net weigh (kg)	Fuel
AD12V190ZLT1	1100	1500	12:1	≤11000	≤1.6	2979 × 2312 × 2471	9300	Natural gas
AD12V190ZLT2	1100	1500	10:1	≤9500	≤1.0	2979 × 2312 × 2471	9300	Natural gas
AD12V190ZLT2-1	900	1200	10:1	≤9500	≤1.0	2979 × 2312 × 2471	9300	Natural gas
AD12V190ZLT2-2	800	1000	10:1	≤9500	≤1.0	2979 × 2312 × 2471	9300	Natural gas
H12V190ZLT	1500	1500	12:1	≤9500	≤1.0	3830 × 1792 × 2315	9300	Natural gas
H16V190ZLT-2	1200	1000	10:1	≤9500	≤1.0	3692 × 2516 × 2536.405	13000	Natural gas

	No. and layout of cylinders	12,60° Vee
	Type	Four stroke,water cooled,turbocharged and aftercooled,spark plug ignition
	Bore	190mm
	Stroke	215mm
	Direction of rotation	Counter-clockwise(facing to flywheel)
	Starting method	Electric motor
	Lubricating method	Pressure and splash lubrication
	Stable speed regulating rate	0 ~ 5% adjustable

1.2.5 Dual fuel engines and gensets

Rated power: 520 ~ 1100kW, Rated speed: 1000 ~ 1500r/min

Features of product:


Dual fuel engine is a new production developed by our company to meet the requirements of cutting cost, improving economic benefit and “Gas Substitutes Oil” strategy for oil field. This diesel/gas engine has two work modes, mixture fuel (diesel oil and natural gas) mode and pure diesel fuel mode, which can be interchanged easily. It has the advantages of good fuel economy, good performance, good dynamic response, reliable work, long service life, convenient operation and maintenance, and safe protection for over temperature and knocking.

This engine can be packaged into generating set, torque converter set, etc. as power facilities for drilling well. Two or more generating sets can form a power station as normal or standby power supply for factory, mine, resource development base, and etc.

Technical parameter:

Model of generating sets	Model of gas engine	Rated power (kW/kVA)	Rated voltage V)	Rated frequency (Hz)	Overall dimension (L × B × H) (mm)	Net weigh (kg)	Fuel
400GF-S	G12V190ZLSD-2	400/500	400/230	50	5820 × 2040 × 2779.5	14800	Diesel/Natural gas
800GF-S	A12V190ZLS	800/1000	400/230	50	6398 × 2252 × 2569	18300	Diesel/Natural gas

Model	Rated power (kW)	Rated speed (r/min)	Compression ratio	Specific heat consumption (kJ/kW.H)	Specific oil consumption (g/kW.H)	Overall dimension (L×B×H) (mm)	Net weigh (kg)	Fuel
A12V190ZLS	1100	1500	14.5:1	≤10300	≤1.0	2950 × 1980 × 2206	10300	Diesel/ Natural gas
G12V190ZLS	840	1500	14:1	≤11000	≤1.6	3055.5 × 1745 × 2422	5300	Diesel/ Natural gas
G12V190PZLS	800	1500	14:1	≤11000	≤1.6	4125 × 2130 × 2577	8100	Diesel/ Natural gas
G12V190ZLS-3	755	1300	14:1	≤11000	≤1.6	3055.5 × 1745 × 2422	5300	Diesel/ Natural gas
G12V190ZLS1-3	755	1300	14:1	≤11000	≤1.6	4125 × 2130 × 2577	8100	Diesel/ Natural gas
G12V190PZLS-3	715	1300	14:1	≤11000	≤1.6	3055.5 × 1745 × 2422	5300	Diesel/ Natural gas
G12V190ZLS-1	690	1200	14:1	≤11000	≤1.6	4125 × 2130 × 2577	8100	Diesel/ Natural gas
G12V190PZLS-1	650	1200	14:1	≤11000	≤1.6	3055.5 × 1745 × 2422	5300	Diesel/ Natural gas
G12V190ZLS-2	560	1000	14:1	≤11000	≤1.6	3055.5 × 1745 × 2422	5300	Diesel/ Natural gas
G12V190PZLS-2	520	1000	14:1	≤11000	≤1.6	4125 × 2130 × 2577	8100	Diesel/ Natural gas

	No. and layout of cylinders	12,60° Vee
	Type	Four stroke, water cooled, turbocharged and aftercooled, spark plug ignition
	Bore	190mm
	Stroke	210/215mm
	Direction of rotation	Counter-clockwise (facing to flywheel)
	Starting method	Electric motor
	Lubricating method	Pressure and splash lubrication
	Stable speed regulating rate	0 ~ 5% adjustable

1.3 MARINE DIESEL ENGINE

1.3.1 4 in-line marine diesel engines

Rated power: 180 ~ 330kW, Rated speed: 1000 ~ 1450r/min


Features of product:

4 in-line diesel engines are new models that our company has developed for market needs. Adopting latest design idea and advanced technology, this series engines have good economic performance targets, compact structure, high power, easy operation and maintenance and perfect reliability, which keep series and common-use components of series 190 diesel engines and remain a leading level in its class.

The engines are mainly used in fishing and ship transport as well as land power generation and engineering machinery, etc.

Technical parameter:

Model	Rated power (kW)	Rated speed (r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L × B × H) (mm)	Net weigh (kg)
4190ZLCZ-R	330/450	1450	≤205	≤1.5	2290 × 1240 × 1750	3000
4190ZLC	330/450	1450	≤205	≤1.5	2290 × 1240 × 1750	3000
4190ZLC1	330/450	1450	≤205	≤1.5	2290 × 1240 × 1750	3000
4190ZLCZ-1R	270/360	1200	≤205	≤1.5	2290 × 1240 × 1750	3000
4190ZLC-1	270/360	1200	≤205	≤1.5	2290 × 1240 × 1750	3000
4190ZLCZ-2R	220/300	1000	≤205	≤1.5	2290 × 1240 × 1750	3000
4190ZLC-2	220/300	1000	≤205	≤1.5	2290 × 1240 × 1750	3000
4190ZLCZ1-2R	180/240	1000	≤205	≤1.5	2290 × 1240 × 1750	3000
4190ZLC1-2	180/240	1000	≤205	≤1.5	2290 × 1240 × 1750	3000
4190ZLCZ-3R	300/400	1300	≤205	≤1.5	2290 × 1240 × 1750	3000
4190ZLC-3	300/400	1300	≤205	≤1.5	2290 × 1240 × 1750	3000

	No. and layout of cylinders	4cylinder,in-line
	Type	Four stroke,water cooled,turbocharged and aftercooled,direct injection
	Bore	190mm
	Stroke	210mm
	Total displacement	23.82L
	Compression ratio	14; 1
	Direction of rotation	Counter-clockwise(facing to flywheel)
	Starting method	Air motor,electric motor
	Lubricating method	Pressure and splash lubrication

1.3.2 6 in-line marine diesel engines

Rated power: 330 ~ 540kW, Rated speed: 1000 ~ 1450r/min


Features of product:

6 in-line engines include three great sorts with common model, intensified model left & right engines (series G) and series B left & right engines. 6190 common engines remain the advantages of the original series 190 engines considering the special requirements of marine engines. Adapting new technology and new structure, it is obvious to improve the economy, reliability, assembling on boat and maintenance. In order to meet the requirements of the inner river shipping and the main propulsion with two engines and two propellers, we develop the B6190 left & right engines. Based on the successful experience of 601 engines, we also make modifications to G6190 to increase the power of single cylinder by 20%. G6190 engines, with high level main technical targets of similar size engines, have become the ideal engines for fishing and shipping boats and this series engines got Scientific Technology Advancement Award in province at the end of 2002.

Since these engines 6190, B6190 and G6190 taking into production, the market has become larger and larger year by year, the north to Peony River at Liaotung Peninsula, the south to Zhanjiang in Guangdong province. 6190 engines are widely used for fishing, harbor boats, tugboats, transportation and other kinds of cargoboats. At present, there are about 3,000 engines in the markets. In Changjiang River area, these engines are well used as main propulsion for a lot of cargoboats and also medium & low power stations (350~450kW). Owing to good economy and reliability, this series engines, with high power, low consumption and easy maintenance, cater for the customers very much. Single engine, fire control pumping sets with single bearing, gearbox sets, marine gen sets are well sold to a lot of countries and areas, such as Taiwan, Malaysia, Indonesia, VietNam, Tunisia, Morocco, etc.

Technical parameter:

Model	Rated power (kW)	Rated speed (r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
6190ZLC	450/610	1450	≤204	≤1.2	2990 × 1243 × 1763	3960
6190ZLC-1	400/540	1200	≤204	≤1.2	2990 × 1243 × 1763	3960
6190ZLC-2	330/450	1000	≤204	≤1.2	2990 × 1243 × 1763	3960
6190ZLC-3	400/540	1300	≤204	≤1.2	2990 × 1243 × 1763	3960
B6190ZLC	450/610	1450	≤204	≤1.2	3000 × 1324 × 1820	3960
B6190ZLC-R	450/610	1450	≤204	≤1.2	3000 × 1324 × 1820	3960
B6190ZLC-1	400/540	1200	≤204	≤1.2	3000 × 1324 × 1820	3960
B6190ZLC-1R	400/540	1200	≤204	≤1.2	3000 × 1324 × 1820	3960
B6190ZLC-2	330/450	1000	≤204	≤1.2	3000 × 1324 × 1820	3960
B6190ZLC-2R	330/450	1000	≤204	≤1.2	3000 × 1324 × 1820	3960
B6190ZLC-3	400/540	1300	≤204	≤1.2	3000 × 1324 × 1820	3960
B6190ZLC-3R	400/540	1300	≤204	≤1.2	3000 × 1324 × 1820	3960
G6190ZLC	540/740	1450	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLC-R	540/740	1450	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLCZ	540/740	1450	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLCZ-R	540/740	1450	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLC-1	450/610	1200	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLCZ-1R	450/610	1200	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLCZ-1	450/610	1200	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLC-1R	450/610	1200	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLC-2	380/520	1000	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLC-2R	380/520	1000	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLCZ-2	380/520	1000	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLCZ-2R	380/520	1000	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLC-3	480/650	1300	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLC-3R	480/650	1300	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLCZ-3	480/650	1300	≤204	≤1.2	2995 × 1259 × 1754	4500
G6190ZLCZ-3R	480/650	1300	≤204	≤1.2	2995 × 1259 × 1754	4500

	No. and layout of cylinders	6cylinder,in-line
	Type	Four stroke,water cooled,turbocharged and aftercooled,direct injection
	Bore	190mm
	Stroke	210mm
	Total displacement	35.73L
	Compression ratio	14; 1/14.5:1
	Direction of rotation	Counter-clockwise(facing to flywheel)
	Starting method	Air motor,electric motor
	Lubricating method	Pressure and splash lubrication

1.3.3 8 in-line marine diesel engines

Rated power: 500 ~ 720kW, Rated speed: 1000 ~ 1450r/min


Features of product:

Introducing the latest design idea and advanced technology, this series engines have good performance targets, compact structure, high power, easy operation and maintenance and perfect reliability, which keep series and common. Cuse components of series 190 diesel engines and remain a leading level in this size engines.

8190 in-line engine can be loaded power 500~720kW with easy operation and maintenance and low running charge. For the ocean, it is used for transporting ships and ocean ships with medium & large power; for the inner river, it can be used for matching 900Model gear box, especially for medium size container ships, buck cargo ships, etc. In order to meet the market demands, we also make some modifications and optimization, and the product amount become more and more.

Technical parameter:

Model	Rated power (kW)	Rated speed (r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
8190ZLCZ-R	720/980	1450	≤204	≤1.2	3175 × 1220 × 2055	5200
8190ZLC	720/980	1450	≤204	≤1.2	3175 × 1220 × 2055	5200
8190ZLCZ-1R	600/820	1200	≤204	≤1.2	3175 × 1220 × 2055	5200
8190ZLC-1	600/820	1200	≤204	≤1.2	3175 × 1220 × 2055	5200
8190ZLCZ-2R	500/680	1000	≤204	≤1.2	3175 × 1220 × 2055	5200
8190ZLC-2	500/680	1000	≤204	≤1.2	3175 × 1220 × 2055	5200
8190ZLCZ-3R	650/880	1300	≤204	≤1.2	3175 × 1220 × 2055	5200
8190ZLC-3	650/880	1300	≤204	≤1.2	3175 × 1220 × 2055	5200

	No. and layout of cylinders	8cylinder,in-line
	Type	Four stroke,water cooled,turbocharged and aftercooled,direct injection
	Bore	190mm
	Stroke	210mm
	Total displacement	47.6L
	Compression ratio	14.5:1
	Direction of rotation	Counter-clockwise(facing to flywheel)
	Starting method	Air motor,electric motor
	Lubricating method	Pressure and splash lubrication

1.3.4 Series 2000V marine diesel engines

Rated power: 800 ~ 1000kW, Rated speed: 1450/1500r/min

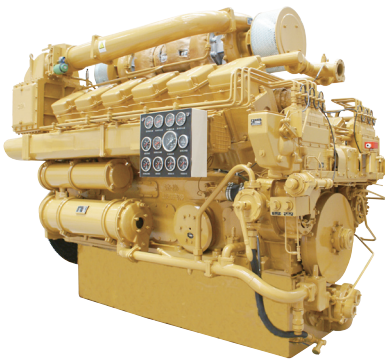
Features of product:

According to the special requirements of the marine engines, basing on the golden medal Z12V190B engine, we made modification of the crank train, lubrication system, monitoring system of series 2000 in point view of safety, reliability and maintenance. The variant speed of the gear box fulfills the requirements of the ships for transportation and engineering ships with higher speeds and loads. It is convenient for connecting the mudding pump, hydraulic pump and water pump. Furthermore, it also realizes the pneumatic and electrical starters, remote operation and two engines combined.

This series of engine have been wildly used for the main propulsion of fishing management vessels, high speed passenger liners and seafood transporting ships. Additionally, they also provide power take-off for the tugboats and dredgers in the Changjiang River, ports and coastal area. They are also sold to North Africa for trawlboats and fishing boats. In naval market, the main applications are for destroyers, frigates,gunboat, electrical detection and measuring boats as the main power of main propulsion and auxiliary engines.

Technical parameter:

Model	Rated power (kW)	Rated speed (r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
Z12V190BC1	800/1080	1500	≤209.4	≤1.6	2642 × 1588 × 2070	5300
Z12V190BC2	882/1200	1500	≤209.4	≤1.6	2642 × 1588 × 2070	5300
Z12V190BC8	1000/1360	1500	≤209.4	≤1.6	2642 × 1588 × 2070	5300
Z12V190BC9	882/1200	1500	≤209.4	≤1.6	2642 × 1588 × 2070	5300
Z12V190BC10	900/1225	1450	≤209.4	≤1.6	2642 × 1588 × 2070	5300
Z12V190BC11	882/1200	1500	≤209.4	≤1.6	2642 × 1588 × 2070	5300
G12V190ZLC1	1000/1360	1450	≤209.4	≤1.6	2642 × 1588 × 2070	5300
G12V190ZLC2	1000/1360	1450	≤209.4	≤1.6	2642 × 1588 × 2070	5300

	No. and layout of cylinders	12,60° Vee
	Type	Four stroke,water cooled,turbocharged and aftercooled,direct injection
	Bore	190mm
	Stroke	210mm
	Total displacement	71.45L
	Compression ratio	14: 1
	Direction of rotation	Counter-clockwise(facing to flywheel)
	Starting method	Air motor,electric motor
	Lubricating method	Pressure and splash lubrication

1.3.5 Series 3000 marine diesel engines

Rated power: 810 ~ 1200kW, Rated speed: 1000 ~ 1500r/min


Features of product:

Series 3000 marine diesel engines, with large power, low oil consumption, high reliability and long using life, have introduced the advanced technology. Basing on the series 6000 engines, we made improvement and reach the international level of power and economy target. Matching generators with single or double bearings, gear box sets, pumping sets, they can be used on shipping and engineering boats.

Recent years, with the developing of the irrigation works and dredging along large rivers and coastal ports, series 3000 are applied for several different kinds of dredgers. According to different characteristics, we made modifications on design as the main propulsion and auxiliary engines to fulfill the special requirements of the working conditions. Furthermore, this series engines are considered as power take off for engineering boats, such as dredging, transmission, suction.

Technical parameter:

Model	Rated power (kW)	Rated speed (r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
A12V190ZLC	1200/1630	1500	≤205	≤1.0	2969×1907×2206	9300
A12V190ZLC1	1080/1470	1450	≤205	≤1.0	2969×1907×2206	9300
A12V190ZLC-1	900/1225	1200	≤205	≤1.0	2969×1907×2206	9300
A12V190ZLC-2	810/1100	1000	≤205	≤1.0	2969×1907×2206	9300
L12V190ZLC-1	1200/1630	1200	≤202	≤1.0	2950×1980×2312	9300
L12V190ZLC-2	1000/1360	1000	≤202	≤1.0	2950×1980×2312	9300

	No. and layout of cylinders	12,60° Vee
	Type	Four stroke, water cooled, turbocharged and aftercooled, direct injection
	Bore	190mm
	Stroke	215/255mm
	Total displacement	71.45/86.72L
	Compression ratio	14.5:1
	Direction of rotation	Counter-clockwise (facing to flywheel)
	Starting method	Air motor, electric motor
	Lubricating method	Pressure and splash lubrication

1.3.6 Series 6000 marine diesel engines

Rated power: 700 ~ 2400kW, Rated speed: 1000 ~ 1500r/min


Features of product:

Series 6000 diesel engines is co-developed by JDEC and AVL, Austria as well as some domestic famous university and research institute, and the simulation calculation and optimization have been carried out for the combustion process, crankshaft torque and vibration, turbocharger match and intake and exhaust system etc. by means of using latest development methods such as CAD, computer simulation, FEM and so on. Advanced technology and well-developed parts & components have been adopted and targets of BEMP, fuel consumption and emission, operation reliability and safety have been improved very much on the basis of original 190 engine series' design.

Series 6000 diesel engine can be widely used for petroleum drilling, diesel power plants, ocean drilling platforms, locomotives, prime & auxiliary marine engines and other kinds of power units.

Technical parameter:

Model	Rated power (kW)	Rated speed (r/min)	Specific fuel consumption (g/kW.h)	Specific oil consumption (g/kW.h)	Overall dimension (L × B × H) (mm)	Net weight (kg)
H12V190ZLC	1580/2150	1450	≤200	≤1.0	3212 × 1597 × 2211	9500
H12V190ZLC2	1500/2040	1500	≤200	≤1.0	3212 × 1597 × 2211	9500
H12V190ZLC-1	1200/1630	1200	≤200	≤1.0	3212 × 1597 × 2211	9500
H16V190ZLC1	2400/3200	1500	≤200	≤1.0	3525 × 2060 × 2331	13000
H16V190ZLC	2200/3000	1500	≤200	≤1.0	3525 × 2060 × 2331	13000
H16V190ZLC-1	1650/2240	1200	≤200	≤1.0	3525 × 2060 × 2331	13000
H8190ZLC	1000/1360	1450	≤200	≤1.0	3349 × 1416 × 2225	8200
H8190ZLC-1	830/1120	1200	≤200	≤1.0	3349 × 1416 × 2225	8200
H8190ZLC-2	700/950	1000	≤200	≤1.0	3349 × 1416 × 2225	8200
H8190ZLC-3	900/1225	1300	≤200	≤1.0	3349 × 1416 × 2225	8200

	No. and layout of cylinders	12(16), 60° Vee/8 in-line
	Type	Four stroke, water cooled, turbocharged and aftercooled, direct injection
	Bore	190mm
	Stroke	215mm
	Total displacement	73.15(97.53)/48.77L
	Compression ratio	14.5:1
	Direction of rotation	Counter-clockwise (facing to flywheel)
	Starting method	Air motor, electric motor
	Lubricating method	Pressure and splash lubrication

1.4 Diesel generating unit

1.4.1 Series L190 diesel generating sets

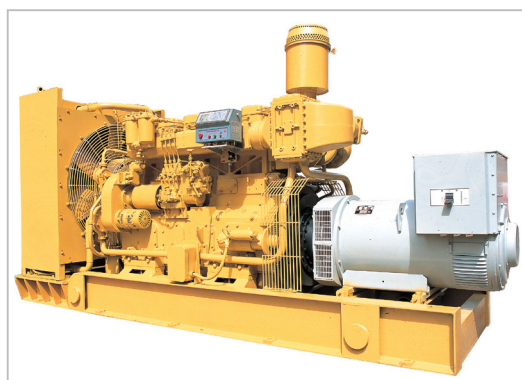
Rated power: 150 ~ 450kW

Features of product:

Series L190 diesel engines is mainly developed for marine diesel engine market. Currently, this type of engine has been applied for electric power generation comprehensively. This series of engine can be described into 4, 6, and 8 inline, with the power ranges from 160 to 720kW. Character by compact structure, larger power, small volume, convenience of maintenance, good economic effect and dynamic performance, and well reliability, this engine has been in a leading position among the same kind of diesel engine. Series L190 diesel engines keep the serialization and unitization with the series 190 diesel engines maximumly.

Series L190 diesel generating sets are motivated by in-line diesel engines and equipped with high quality generator from domestic and abroad. The power range of it is from 160 to 600kW. Two or more than two of these generating sets can be combined to a power station.

Technical parameter:



Model of generating sets	Model of diesel engines	Rated power (kW)	Rated voltage (V)	Rated frequency (Hz)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
150GF-K1	4190ZLD-2	150	400/230	50	3120 × 1298 × 1864	5000
CCFJ150/1000	4190ZLCD-2	150	400/230	50	3376 × 1298 × 1864	5000
160GF	4190PZLD-2	160	400/230	50	3940 × 1298 × 1896	6300
163GFZ	4190PZLD-2	163	400/230	50	4175 × 1298 × 1916	6300
200GF-K	4190ZLCD1-2	200	400/230	50	3691 × 1298 × 1864	5000
250GF	6190ZLD-2	250	400/230	50	5993 × 1760 × 2268	8690
300GF5	4190PZL	300	400/230	50	4022 × 1298 × 1896	6200
300GF-K	6190ZLD-2	300	400/230	50	4478 × 1498 × 2037	7500
CCFJ350/1500	6190ZLD	350	400/230	50	4705 × 1498 × 2037	7800
400GF-K	G6190ZLCD	400	400/230	50	4478 × 1498 × 2037	7500
CCFJ400/1200	G6190ZLCD-1	400	400/230	50	4705 × 1498 × 2037	7800
450GF	G6190PZLD	450	400/230	50	4954 × 1488 × 2268	8000

1.4.2 Series 8VB diesel generating sets

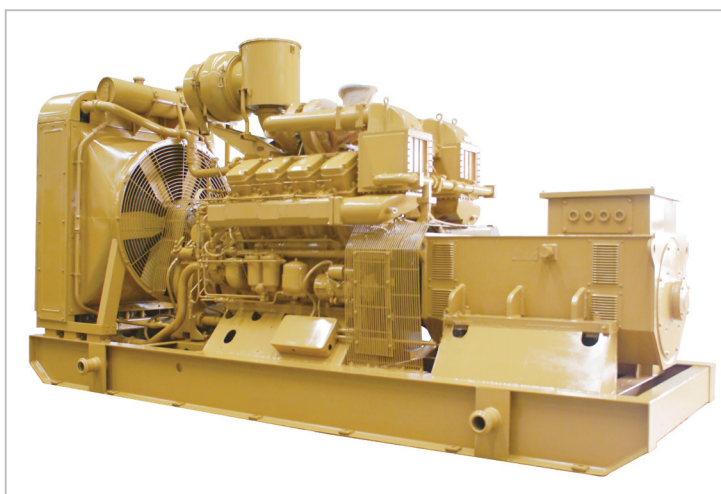
Rated power: 300 ~ 500kW

Features of product:

Series 8VB diesel engines are high-speed, heaving-duty engines which have widely applications and good performance. The power range is 390~588kW. Years of development and constantly adopting the advanced scientific achievements in the modern internal combustion engine field, all this bring a engine of advanced technical and economic data, compact structure, easy to start, easy for operation and maintenance and also widely applicable even under severe conditions.

Series 8VB diesel generating sets are motivated by series 8VB diesel engines and equipped with advanced generators produced both in domestic and on abroad. The power range of it is from 230 to 500kW. Two or more than two of these generating sets can be combined to a power station.

Technical parameter:



Model of generating sets	Model of diesel engines	Rated power (kW)	Rated voltage (V)	Rated frequency (Hz)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
300GF4	Z8V190D-2	300	400/230	50	5270 × 1970 × 2778	10700
300GF4-K	Z8V190D-2	300	400/230	50	4073.5 × 1970 × 2778	8900
300GFZ5	Z8V190D3-2	300	400/230	50	5270 × 1970 × 2778	10700
400GF12	Z8V190D2	400	400/230	50	5270 × 1970 × 2778	10700
400GF12-K	Z8V190D2	400	400/230	50	4073.5 × 1970 × 2778	8900
400GFZ4	Z8V190D3	400	400/230	50	5270 × 1970 × 2778	10700
500GF35	Z8V190D2	500	400/230	50	5270 × 1970 × 2778	10700
500GF35-K	Z8V190D2	500	400/230	50	4073.5 × 1970 × 2778	8900

1.4.3 Series 12VB diesel generating sets

Rated power: 500 ~ 800kW

Features of product:

Series 12VB diesel engines are high-speed, heaving-duty engines which have widely applications and good performance. In 1986, model 12VB won China national gold medal while in 1994, it has won the title of National User Satisfaction Products. Years of development and constantly adopting the advanced scientific achievements in the modern internal combustion engine field, all this bring a engine of advanced technical and economic data, compact structure, easy to start, easy for operation and maintenance and also widely applicable even under severe conditions.

Series 12VB diesel generating sets are motivated by series 12VB diesel engine and equipped with high quality generator form domestic and abroad. The power range of it is from 500 to 800kW. Two or more than two of these generating sets can be combined to a power station.

Technical parameter:



Model of generating sets	Model of diesel engines	Rated power (kW)	Rated voltage (V)	Rated frequency (Hz)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
500GF17	Z12V190BD-2	500	400/230	50	5925 × 1970 × 2778	13800
500GF17-1	Z12V190BD2-2	500	400/230	50	5925 × 1970 × 2778	13800
500GF17-K	Z12V190BD-2	500	400/230	50	4733 × 1970 × 2778	11800
500GF17-K1	Z12V190BD2-2	500	400/230	50	4733 × 1970 × 2778	11800
500GFZ	Z12V190BD1-2	500	400/230	50	5925 × 1970 × 2778	13800
500GFZ-K	Z12V190BD1-2	500	400/230	50	4733 × 1970 × 2778	11800
630GF6	Z12V190BD2	630	400/230	50	5925 × 1970 × 2778	13800
630GFZ5	Z12V190BD5	630	400/230	50	5925 × 1970 × 2778	13800
630GFZ5-K	Z12V190BD5	630	400/230	50	4733 × 1970 × 2778	11800
700GF1	Z12V190BD2	700	400/230	50	5925 × 1970 × 2778	13800
700GF1-2	Z12V190BD8	700	400/230	50	5925 × 1970 × 2778	13800
700GF1-K	Z12V190BD2	700	400/230	50	4733 × 1970 × 2778	11800
700GF1-K1	Z12V190BD3	700	400/230	50	4733 × 1970 × 2778	11800
700GFZ1	Z12V190BD5	700	400/230	50	5925 × 1970 × 2778	13800
800GF4-K	Z12V190BD7	800	400/230	50	4733 × 1970 × 2778	11800
800GF4-K5	Z12V190BD7	800	400/230	50	4733 × 1970 × 2778	11800

1.4.4 Series 2000 diesel generating sets

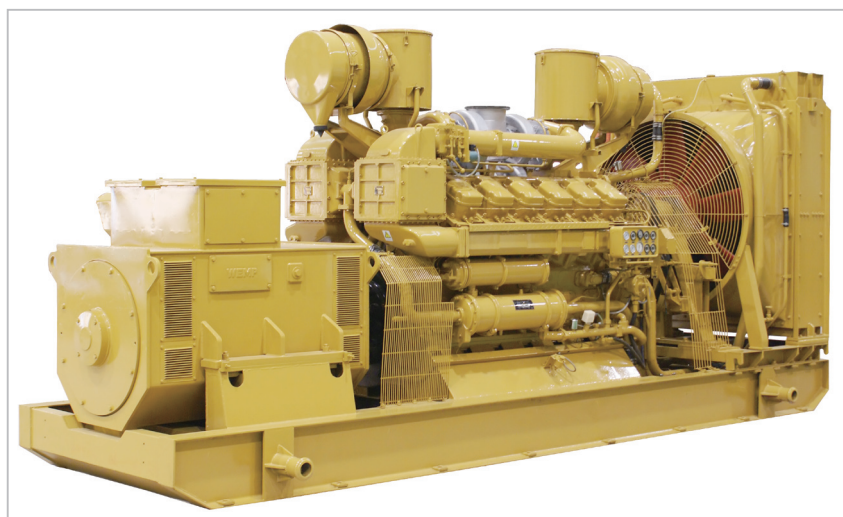
Rated power: 300 ~ 800kW

Features of product:

On the basis of the Z12V190B series diesel engine, JDEC has improved the design of 2000 series, aiming at increasing reliability, economy and dynamic performance, eliminating water, oil and gas leaks, achieving good appearance quality and convenience of maintenance to meet the power demand of oil drilling, diesel generating sets as well as engineering machinery.

Series 2000 diesel generating sets are motivated by series 2000 diesel engines and equipped with high quality generator form domestic and abroad. The power range of it is from 500kW to 800kW. Two or more than two this of generating sets can be combined to a power station.

Technical parameter:



Model of generating sets	Model of diesel engines	Rated power (kW)	Rated voltage (V)	Rated frequency (Hz)	Overall dimension (L × B × H) (mm)	Net weigh (kg)
300GF4	G8V190PZL-2	300	400/230	50	5270 × 2040 × 2778	10700
500GF17-2	G12V190ZLD1-2	500	400/230	50	5925 × 2040 × 2678	13800
700GF1-3	G12V190ZLD1	700	400/230	50	5925 × 2040 × 2678	13800
700GF1-K3	G12V190ZLD1	700	400/230	50	4515 × 2040 × 2678	11800
800GF4-7	G12V190ZLD2	800	400/230	50	5925 × 2040 × 2678	13800
800GF4-K1	G12V190ZLD4	800	400/230	50	4515 × 2040 × 2678	11800
800GF4-K4	G12V190ZLD4	800	400/230	50	4515 × 2040 × 2678	11800
800GF6	G12V190ZLD5	800	400/230	50	5925 × 2040 × 2678	13600
800GF7	G12V190ZLD5	800	400/230	50	5925 × 2040 × 2678	13800
800GFZ-1	G12V190ZLD3	800	400/230	50	5925 × 2040 × 2678	13600

1.4.5 Series 3000/B3000 diesel generating sets

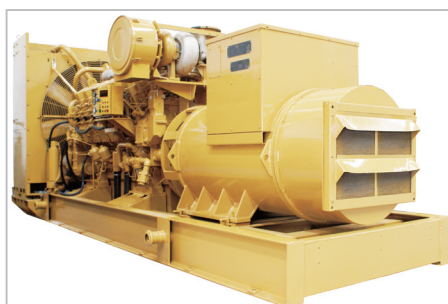
Rated power: 700 ~ 1200kW

Features of product:

In order to meet the power demand of the developing oil industrial and increase the progress and reliability of our oil drilling equipment, JDEC developed a new generation of diesel engine Series 3000/B3000. On the basis of series 6000 diesel engine and adopting the advanced structure and techniques both in domestic and on abroad, the economic effect and dynamic performance have increased by a large margin. The main performance data has achieved or approached the advanced level of the international world.

Series 3000/B3000 diesel generating sets are motivated by series 3000/B3000 diesel engines and equipped with high quality generator from domestic and abroad. The power range is 700~ 1200kw. Two or more than two of these generating sets can be combined to a power station.

Technical parameter:



Model of generating sets	Model of diesel engines	Rated power (kW)	Rated voltage (V)	Rated frequency (Hz)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
700GF2	A8V190ZL	700	600/480	50	5450 × 2252 × 2738	15800
800GF5	A12V190ZL-2	800	600/480	50	6410 × 2252 × 2739	17200
800GF8	BH12V190ZL-2	800	600/480	50	6410 × 2200 × 2636	17200
1000GF2	A12V190ZLD1	1000	400/230	50	6250 × 2250 × 2739	19300
1000GF4	BH12V190ZL-1	1000	600/480	60	6381 × 2200 × 2636	17200
1000GF5	BH12V190ZL	1000	600/480	50	6381 × 2200 × 2636	17200
1000GF6	L12V190ZL-2	1000	600/480	50	6410 × 2335 × 2740	19300
1000GF21	A12V190ZL	1000	600/480	50	6250 × 2250 × 2739	19300
1000GF-K	A12V190ZLD1	1000	400/230	50	4975 × 2180 × 2303	15000
CCFJ1000/1500	A12V190ZLCD	1000	400/230	50	4950 × 2180 × 2337	15500
1100GF	A12V190ZLD	1100	6300	50	6651 × 2180 × 2739	20200
1100GF2	A12V190ZLD1	1100	400/230	50	6250 × 2250 × 2739	19300
1100GF3	B12V190ZL	1100	400/230	50	6381 × 2200 × 2636	17200
1100GF7	L12V190ZL-1	1100	600/480	60	6410 × 2335 × 2740	19300
1200GF	BH12V190ZL	1200	600/480	50	6381 × 2200 × 2636	17200

1.4.6

Series 6000 diesel generating sets

Rated power: 1350~2000kW

Features of product:

Series 6000 diesel engines is a new kind of engine instead of series 190 diesel engines by cooperating with AVL, Austria. It has formed a series of product in a way of 8 inline, 12V, and 16V. By combining the international advanced design techniques and mature experience together, its dynamic, economic as well as reliable data has approached the international level. The power range of series 6000 diesel engines is 700~2400kW and the speed range is from 1000 to 1500 r/min.

Series 6000 diesel generating sets are motivated by series 6000 diesel engines and equipped with high quality generator form domestic and abroad. The power range is 1350~2000kW. Two or more than two of these generating sets can be combined to a power station.

Technical parameter:



Model of generating sets	Model of diesel	Rated power (kW)	Rated power (kW)	Rated voltage (V)	Overall dimension (L×B×H) (mm)	Net weigh (kg)
1350GF	H12V190ZL	1350	400/230	50	7880 × 2869 × 3175	19500
1350GF-K	H12V190ZLD	1350	400/230	50	5930 × 2180 × 2421	17000
1350GFZ	H12V190PZLD	1350	400/230	50	7880 × 2869 × 3175	19500
1500GF	H12V190ZL	1500	400/230	50	7880 × 2869 × 3175	19500
1500GF-K	H12V190ZL	1500	400/230	50	5930 × 2180 × 2421	17000
1500GFZ	H12V190ZLD	1500	400/230	50	7880 × 2869 × 3175	19500
2000GFZ	H16V190ZLD	2000	400/230	50	9060 × 2869 × 3175	24000
2000GF-K	H16V190ZLD	2000	400/230	50	7150 × 2180 × 2421	21000
2000GFZ	H16V190ZLD	2000	400/230	50	9060 × 2869 × 3175	24000

2. Series 26/32 diesel engines

Rated power: 4170kW, Rated speed: 1000r/min

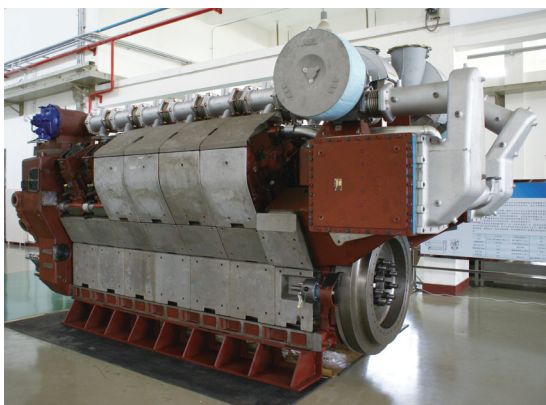
Features of product:

Series 26/32 engines are co-developed by JDEC and world famous engine research institute, which aim to enlarge our products application field and meet the power demand of ships.

The manufacturing technology and performance of Series 26/32 engines have achieved the advanced level of the international world. The main performance index such as mean effective pressure, thermal efficiency and emission all reach the internal advanced level. The development of this series engine has important meaning to enlarge our products power coverage and application field and improve dynamic performance, economic effect and emission level of our products.

Series 26/32 engines include V type 12、16、18 cylinders engines and inline type 6、8、9 cylinders engines, 12 cylinders V type engine is its basic type. Series 26/32 engines are ship power- oriented, which can burn marine diesel and heavy fuel oil. This series of engine can also be used for electricity generation and locomotive engines.

Technical parameter:

	Model of engines	12V26/32
	Type	Four stroke,direct injection,turbocharged and aftercooled
	Layout of cylinders	V
	No. of cylinders	12
	Bore × Stroke	260mm × 320mm
	Total displacement	204l
	Injection system	Common rail system
	Rated power	4170kW
	Rated speed	1000r/min
	Average effective pressure	2.45MPa
	Specific fuel consumption	184 g/kW·h
	Specific oil consumption	0.6-0.8g/kW·h
	Emission levels	IMO 和 US EPA TIER 2
	Overall dimension	5827 × 2238 × 3355mm

3. Model JC15 diesel engines

Rated power: 427kW, Rated speed: 2100r/min

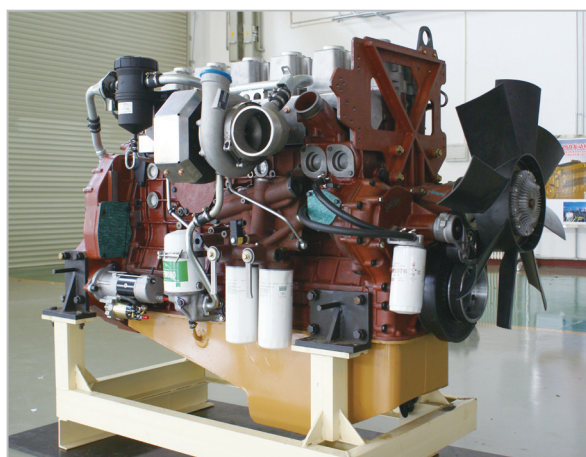
Features of product:

Model JC15 diesel engines, which aim to meet the power demand of light drilling and introduce the latest design idea and advanced technology, is co-developed by Jichai and world famous engine research institute AVL. Jichai has all the independent intellectual property.

Model JC15 diesel engines are mainly used in light drilling, petroleum machinery, mobile station, engineering machinery, heavy trucks, etc.

Model JC15 diesel engines will be in favor of enhancing oil exploration equipment and participating in international competition for China petroleum enterprise. Model JC15 diesel engines will also enlarge our products application field and can improve our product performance, fuel economy and emission levels.

Technical parameter:



Model of engines	JC15
Bore × Stroke	140mm × 165mm
Single volume	2.5l/cyl
No. of cylinders	L6
Rated power/speed	427kW / 2100rpm
average effective pressure	1.60MPa
Specific fuel consumption	212g/kW·h
Specific oil consumption	0.35g/kW·h
Injection system	Common rail system
Emission levels	US EPA TIER 2

4. Hydraulic transmission device

4. 1 YOTFJ450/560/650/750/875 hydraulic coupling reducing gear box

This type can be packaged with Jichai 190 series diesel engine, Volvo and Cummins engine or other electric motors. Those packaged set is used to drive the mud pump.

Features of product:

Adopt the adjustment manner of fixed tubing drain oil control and imported valve control system to realize the adjustment of speed. This gear box has the advantages like starting with load, overload protection, stepless speed governing, isolating torsional vibration, impact reducing etc. so it is an ideal choose for mud pump package.

Technical parameter:



Input speed	1000 ~ 1500r/min
Transfer power	200 ~ 3000kW
Rated power	≥96%
Gear ratio	2.0 ~ 3.3 (can be defined according to the customers)
Rated slippage	3%
Governor range	1 ~ 1/5
Sensitivity for clutch	6 ~ 8S

4.2 series YOTGC450/560/650/700/875/1000/1150 movable tubing governing hydraulic coupling

This type of hydraulic coupling is specially designed by combining the requirements of steel, coal, and electric field. It can specially packaged with belt conveyer, blower, water pump etc. It has the function of governing and energy-saving etc.

Features of product:

This series of product adopts the manner of adjusting the outlet of ladle tubing to realize the adjustment of speed. This gear box has the advantages like starting with load, overload protection, stepless speed governing, isolating torsional vibration, impact reducing and multi engine power balancing etc. so it is the ideal governing transmission device for belt conveyer, blower, water pump etc.

Technical parameter:



Input speed	750 ~ 1500r/min
Power range	150 ~ 3260KW
Rated slip ratio	1.5% ~ 3%
Governing range	1:1/5
Sensitivity for clutch	6 ~ 8S

4.3 Series YOCQH1000 hydraulic coupling gear box

Rated power: 1600 ~ 8000kW

Features of product:

Series YOCQH1000 engineering marine application hydraulic gear box has the advantages like starting with load, overload protection, isolating torsional vibration, impact reducing, stepless speed governing, rapid clutch stabilized etc. this series product can replace the traditional engineering marine application hydraulic gear box completely and improve the transmission quality of engineering marine application power unit to resolve the defect exist in the traditional devices. So it is an ideal power transmission device for engineering marine power set.

According to the working conditions of dredger, sand pump vessel, Jichai now has developed a series of products with the power 1600Kw, 2400Kw, 4500Kw, 6000Kw, 8000Kw, that is the series YOCQH1000, YOCQH1000A, YOCQH1000B, and YOCQH1000C etc. with high performance data, good reliability and easy for maintenance advantages, this kind of product has got very good reputation from the customers.

Technical parameter:



Model	YOCQH1000	YOCQH1000A	YOCQH1000B
Rated input speed (r/min)	290	600	600
Transfer power (kW)	1600	2200	4500
Front gear speed increase ratio	3.4	1.74	2.19
Rear gear speed increase ratio	3.33	3.4	4.23
Rated slippage ratio	3% ~ 5%		
Rated output speed(r/min)	290	300	300
Work oil temp. (°C)	110		
Oil quality	Grade 6 or 8(when ambient temp above minus 20℃, grade 6 oil can be used. Below minus 20℃, grade 8 oil can be used.		
Cooling mode	水冷却		
Overhaul dimension(L × W × H)	2140 × 1956 × 2035	2140 × 1956 × 2035	2532 × 2288 × 2165
Weight (kg)	6850	8450	9850

5. Gas Power Integration

The medium and small power gas engines and packaged sets have been developed to 5 main types and 200 categories, with main performance targets being in domestic leading level, applicable to the utilization of oilfield natural gas, wellhead associated gas and combustible gas; stand-by power supply of gas collecting and transport station as well as pipeline transport power unit. Many of the products fill the gaps of domestic power equipment.

5.1 C-Series gas engine generating sets of Jichai

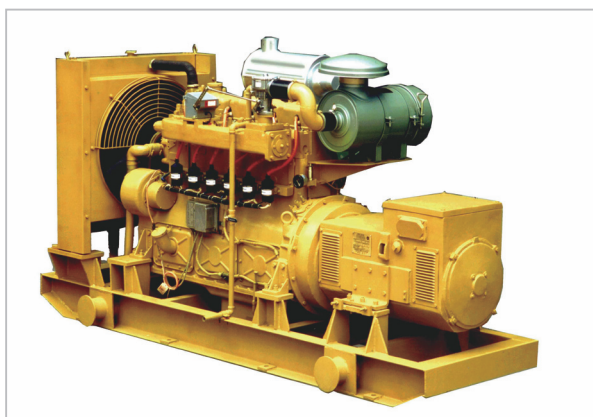
Rated power: 85 ~ 250kW

Features of product:

C series gas engine generating sets of JICHAI depending on its advanced technique, reliable quality becoming the best choice in common use power resource or reserve power mainly regarding as power supplying in oil field, strict condition area etc, and place with high stability of engine combination.

- Low poison emission no pollution to the air good environmental protection
- Adapting function widely suit for natural gas and varied obviously changed gas component of coal seam.

Technical parameter:



Model of generating sets	Model of engines	Rated power (kW/KVA)	Volume of oil	Bore × Stroke (mm)	Total displacement (L)	Overall dimension (mm)	Net weigh (kg)
85GF-T2	C6114ZLDT	85/106	24	114 × 135	8.3	2500 × 850 × 1700	1800
120GF-T2	C6125ZLDT	120/150	39	125 × 147	10.8	3000 × 1100 × 1700	2700
180GF-T2	C6140ZLDT	180/225	39	140 × 152	14	3300 × 1150 × 1900	2900
250GF-T2	C6159ZLDT	250/312	50	159 × 159	19	3500 × 1420 × 2200	4800

5.2 D-Series gas engine generating sets of Jichai

Rated power: 24 ~ 75kW

Features of product:

D-series gas generating sets of Jichai adopted DEUTZ joint venture of China-German technology 226B engine refitted from which mechanism well-knit, high power, economical, high adopt environment ability, stability reliable. Mainly regarding as power resource or emergency resource also form a complete set of silent automation emergency resource of hotel or enterprise.

Technical parameter:



Model of generating sets	Model of engines	Rated power (kW/KVA)	Volume of oil	Bore × Stroke (mm)	Overall dimension (mm)	Net weigh (kg)
24GF-T2	D3105DT	24/30	7.25	105 × 120	1650 × 650 × 1200	700
30GF-T2	D4105DT	30/38	9		1900 × 650 × 1200	730
35GF-T2	D3105ZDT	35/44	7.25		1650 × 650 × 1200	720
45GF-T2	D4105ZDT	45/55	9		1900 × 650 × 1200	750
55GF-T2	D6105ZDT	55/70	13		2500 × 820 × 1400	1050
75GF-T2	D6105ZLDT	75/90	13		2500 × 820 × 1400	1150

5.3 Series 100、105、135、138、140 gas generating sets

Rated power: 24 ~ 200kW

Features of product:

Series 100,105,135,138,140 gas engine of Jichai,most widely used product,also developed by Jichai earlier which technique advanced,quality excellent function reliable fittings parts disposed easily power range widely.Mainly used in oil field and natural gas abundant area as power source or reserve power which is stable,environmental protection,economic,power supply equipment.

Simultaneously to respond the national call of energy saving,reducing consume also developed biological gas,straw gas engine combination.In the lead level in our own country supplying individual character product and technique service to satisfy the need according to the customer or special use.

Technical parameter:



Model of generating sets	Model of engines	Rated power (kW/ KVA)	Volume of oil	Bore × Stroke (mm)	Total displacement (L)	Overall dimension (mm)	Net weigh (kg)
24GF-T	R4100DT	24/30	7	100 × 115	3.61	2000 × 730 × 1320	620
30GF-T	R4105DT	30/38	9	105 × 125	4.33	2100 × 730 × 1320	710
40GF-T	R6105DT	40/50	13	105 × 125	6.49	2440 × 730 × 1390	810
50GF-T	H6135DT	50/62	25.2	135 × 150	8.6	2220 × 900 × 1310	2120
75GF-T	H6135DT	75/93	28.7	135 × 150	12.9	2600 × 1010 × 1430	2410
90GF-T	N6135DT	90/112.5	28.7	135 × 160	13.8	2600 × 1010 × 1470	2530
120GF-T	W6140DT	120/150	28.7	140 × 160	14.8	2750 × 1010 × 1470	2600
160GF-T	W12V135DT	160/200	57.4	135 × 150	25.8	3058 × 1325 × 1820	3200
200GF-T	W12V138DT	200/250	57.4	138 × 150	26.9	3058 × 1325 × 1820	3300

5.4 Series 100、105、135、138、140 turbocharged gas generating sets

Rated power: 35 ~ 300kW

Features of product:

Series 100,105,135,138,140 turbocharged gas engine of Jichai is a new type developed abased on the old non-turbocharged gas engine.As the liquid fuel engine,turbocharged technique which gas fuel engine adopted is an effective valid way which is further raised average effective pressure.

Technical parameter:



Model of generating sets	Model of engines	Rated power (kW/KVA)	Volume of oil	Bore × Stroke (mm)	Total displacement (L)	Overall dimension (mm)	Net weigh (kg)
A35GF-T	R4100ZDT	35/43.7	7	100 × 115	3.61	2000 × 730 × 1320	620
A45GF-T	R4105ZDT	45/56	9	105 × 125	4.33	2100 × 730 × 1320	710
A60GF-T	R6105ZLDT	60/75	13	105 × 125	6.49	2440 × 730 × 1390	810
A75GF-T	H4135ZLDT	75/135	25.2	135 × 150	8.6	2220 × 900 × 1310	2120
A100GF-T	H6135ZLDT	100/125	28.7	135 × 150	12.9	2600 × 1010 × 1430	2410
A120GF-T	N6135ZLDT	120/150	28.7	135 × 160	13.8	2600 × 1010 × 1470	2530
A150GF-T	W6140ZLDT	150/187	28.7	140 × 160	14.8	2750 × 1010 × 1470	2600
A250GF-T	W12V135ZLDT	250/312.5	57.4	135 × 150	25.8	3058 × 1325 × 1820	3200
A300GF-T	W12V138DT	200/250	57.4	138 × 150	26.9	3058 × 1325 × 1820	3300

6. Power electric control

Powerful electric control system

General product description: With Siemens technology, R&D and manufacture control systems and monitoring instruments for engine power plant and wind generating set, and autocontrol equipment for plant.

Features of product:

6.1 Features of diesel & gas generator unit control panel:

It is specially designed and manufactured for engines power units for monitoring to voltage, power, frequency etc. It also can give out flash & rotary alarm in the case of conk out to ensure units' reliability.



The Technique Parameter:

The Parameter of Diesel Generator Set Panel					
Type	DPL-500	DPL-700	DPL-800	DPL-1200	DPL-1500
Structure	Full Height Framework Shaped Materials				
Used Power (kw)	500	700	800	1200	1500
Rated Voltage (V)	400、450、600				
Rated Frequency (Hz)	50、60				

the Parameter of Natural Gas ,Biogas ,CBM(coal-bed methane) and Gas Generator Set Panel					
Type	GPL-200	GPL-400	GPL-500	GPL-700	GPL-1000
Structure	Full Height Framework Shaped Materials				
Used Power (kw)	200	400	500	700	1000
Rated Voltage (V)	400、450				
Rated Frequency (Hz)	50、60				

6.2 Features of SIVACON 8PT low voltage switch box:

All equipments are made of standardization and modularization modules conforming to Siemens design standard. All modules can be assembled neatly to satisfy different demands. With quality Siemens semiconductor components, the boxes are able to run reliably and chronically. Satisfying world demand through localization manufacture.



The Technique Parameter:

- All the level bus is above the switch cabinet
- The rated current of level bus systems with 3 grade and 4 grade can be 400A
- The rated peak tolerance current I_{pk} can be 375KA
- In-line can be applied from above or below the panel
- The out-line cable can be connected from the front or behind of the panel

6.3 Features of MNS low-voltage switchgear assembly:

Using immobilization technology and drawer technology. MNS low voltage switch box is made of PC, MM, and GCS. MNS low voltage drawer switch box can be used in power plants, transformer substations, petrochemical engineering, metallurgy, factory and mine corporations, residence communities and high-rise buildings etc., as the controlling of electric energy conversion and consuming of AC 50~60HZ, below AC 660V.



The Technique Parameter :

the Parameter of MNS Low-Voltage Complete Switchgear		
Rated Operating Voltage (V)		380、660
Rated Isolation Voltage (V)		660
Rated Operating Current (A)	Level Bus	630-5000
	Vertical Bus	800-2000
Rated short-time Tolerance Current rms Value (1S) (Ka)	Level Bus	50-100/105-250
	Vertical Bus	60/130-150
Protection Grade of the shell		IP30 、 IP40、 IP54
Figuration Dimension(widthXdepthXheight)mm		600X600X2200、600X1000X2200、800X600X2200、800X1000X2200、1000X600X2200、1000X1000X2200

6.4 Features of GCS low-voltage withdrawable switchgear:

GCS low-voltage withdrawable switchgear is made of PDC and MCC, using in high automation and computer-based place such as big power stations, petrochemical engineering and chemical industry as centralized controlling, current limiting and reactive power compensation of generating/feed system of three phase current 50~60HZ, rated current 4000A, AC380/660.



The Technique Parameter:

The Parameter of the GCS Low-Voltage Withdrawable Switchgear	
The Rated Voltage of Main Circuit (V)	AC 380、 (660)
The Rated Voltage of Aided Circuit (V)	AC 220、 (380)
	DC 110、 220
Rated Frequency (Hz)	50、 (60)
Rated Isolation Voltage (V)	660
工频耐压 (V)	2500
Withstand Voltage (V)	1600, 2500, 3150, 4000
Rated Current of Level Bus (A)	1000
Rated Current of Vertical Bus (A)	50, 80
Rated short-time Tolerance Current rms Value of the Bus	105, 176
The rated peak tolerance current of the Bus	50 (KA/1S)
The Rated Short-Circuiting Breaking Current rms Value of Feeder Circuit	200, 400
Connector of the Main Circuit (A)	15
Control Motors Max Power (kw)	200
Protection Grade	IP30 、 IP40
Operation Manner	Near、 Far、 Auto

6.5 Features of GCK low-voltage withdrawable switchgear:

GCK low-voltage withdrawable switchgear is made of PDC 、 MCC and power compensator and applies for control system and distribution system of

50~60HZ,660V. GCK is widely used as a measure of power distribution equipments include power distribution, motor control, capacitance compensation and illumination.



The Technique Parameter:

The Parameter of GCK Low-Voltage Withdrawable Switchgear	
Rated Isolation Voltage (V)	660
Rated Operating Voltage (V)	380、660
Rated Operating Voltage of Aided Circuit (V)	AC 380、(660)
Rated Current of Main Circuit (A)	1000、1250、1600、2000、2500、4000
Rated short-time Tolerance Current of Main Bus (KA/S)	50
Rated Peak Tolerance Current of Main Bus (KA/S)	105
The Rated Current of Branch Bus	1000
Rated short-time Tolerance Current of Branch Bus (KA/S)	50
Rated Peak Tolerance Current of Branch Bus (KA/S)	105
Protection Grade of the Shell	IP30、IP40

6.6 Features of KYN28-12(GZSI) withdrawable switchgear

KYN28-12 style indoor metal armoring GZSI is the power distribution unit of AC 3~10V, three phase current 50HZ single busbar and break system, applying for controlling, protecting and detecting to power transmission of power stations & small and medium alternating current synchronous generator, power distribution of factory and mine corporations, receiving & transmitting power of secondary substations, startup of high-voltage motors.



The Technique Parameter:

The Parameter of KYN28-12(GZSI) WiWithdrawable Switchgear		
Rated Voltage （KV）	3.6 7.2 12	
Rated Isolation Grade	1min Withstand Voltage （KV）	42
	Lightning Impulse Withstand Voltage (KV)	75
Rated Frequency （Hz）	50	
Rated Current of Main Bus （A）	630、1250、1600、2000、2500、3150、4000	
Rated Current of Branch Bus （A）	630、1250、1600、2000、2500、3150	
3S Heat Stability Current （KA）	16、20、25、31. 5、40、50	
Rated Dynamic Stability Current （KA）	40、50、63、80、100、125	
Protection Grade	The Shell is IP4X;When the Isolation and Breaker Door are open ,it is IP3X	
Comment: *Short-circuiting power of the current transformer should be considered.		

7.Manufacturing and packaging of compressor set

7.1 Air Drilling Package Equipment

Air Displacement: 240Nm³/min, Discharge Pressure: 3.5 ~ 17MPa, The Maximum Nitrogen Displacement: 120Nm³/min, Nitrogen Purity: ≥95%, Exhaust Temperature: ≤65℃. This machine is suitable for 6" - 17 1/2" drilling hole for pure air, air atomization, air-foam liquid, inflating mud, and nitrogen well drilling.

Air Drilling Package Equipment attained the certificate for Independently Developed & Important Product of CNPC. FY400 won the certificates for Key & New Product and Independently Developed & New Product of Nation. We have 6 national patents, including 2 patents for invention, because of this system.

FY400 Booster Technical Features:

- 1 Compact structure, simple operation, no fixed-base to operate, suitable for the field work;
- 2 Adopted the level horizontal type symmetrically-balanced structure, the reciprocating weight difference of every row's motion, balanced the inertia force and moment effectively, the vibration is small, and the noise is low;
- 3 The special structure and design of the valve to achieve high efficiency, wide operating mode range and long service life;
- 4 The various gas volume regulation functions such as the adjustable clearance, recirculation in the bypass, cylinder single-double function, etc. is suitable for the unstable operating mode change;
- 5 Perfect security and monitoring system, high reliability.



LK-35/2.5-3QZ Screw Compressor Technical Characters:

- 1 Adopt the integrated design, using the compact structure, convenient for mobile capability, can be operated without the base, meet the needs of the harsh field environment;
- 2 Adopt the optimization design and computer simulation methods, the use of fan and cooler of the compressor to realize the thermal balance of the complete machine ingeniously, have solved the ventilation technological difficulties of the covering type special-purpose natural gas compressor of gas well drilling completely;
- 3 The internal noise insulation plate and the double-deck ceiling structure, reduce the noise under 76dB (A), reached the international advanced level;
- 4 Adopt new type Caterpillar engine, high-efficient twin-screw compressor, accurate filter and aftercooling system to guarantee air quality for gas drilling;
- 5 Adopt explosion-proof instrument system and automatic pressure regulated system to guarantee the efficiency and security of the equipment.

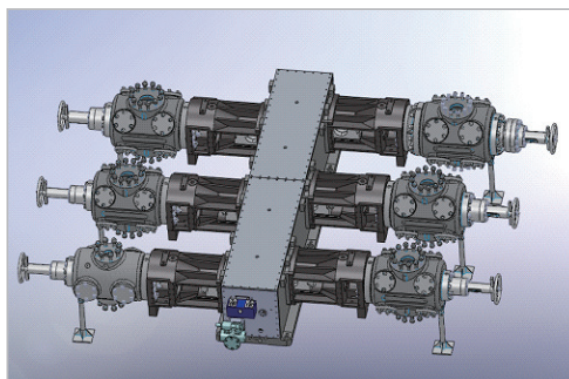


QZD-3600/2.5 Membrane Separation Nitrogen Producing Unit Technical Features:

- 1 PRISM membrane, high reliability, long service life;
- 2 Adopt automatic temperature control system to protect the membrane separating components, to raise separation efficiency and lengthen service life;
- 3 The automatic control and regulation system of the purity and flow of nitrogen can adjust the nitrogen purity between 90% and 99%;
- 4 Container type transportation structure and the whole stainless steel pipeline totally meet the needs of the field work;
- 5 Perfect security and monitoring system, high automation.

Technical parameter:

FY400 Booster Main Technical and Performance Index:	
Suction Pressure	1.0 ~ 2.2MPa
Discharge Pressure	17MPa
Displacement	35 ~ 70Nm ³ /min
External Dimension (Length × Width × Height)	7 × 2.5 × 2.6m
Total Weight	13000kg
LK-35/2.5-3QZ Screw Compressor Main Technical and Performance Index:	
Inlet Pressure	Ambient Atmosphere Pressure
Rated Discharge Pressure	2.4Mpa
Displacement	≥27.1 ~ 32Nm ³ /min
Cleanliness of the Compressing Air	Oil Content ≤5PPM, Solid Particle ≤3 μ m
Noise	≤76dB (A)
External Dimension (Length × Width × Height)	小于6.5 × 2.3 × 2.4m
Total Weight	≤6500kg
QZD-3600/2.5 Membrane Separation Nitrogen Producing Unit Technical and Performance Index:	
Nitrogen Output	≥3600Nm ³ /h
Purity Adjustable Range of the Nitrogen	90% ~ 99.9%
Maximum Allowable Working Pressure	2.5MPa
Nitrogen Output Pressure	≥2.1MPa (input pressure 2.5MPa)
Input and Output Pressure Difference	≤0.4MPa
Nitrogen Dew Point (Under Atmosphere Pressure)	≤-40℃
Nitrogen Outlet Temperature	≤Atmosphere Temperature + 5℃



General product description:

The power range is 100 ~ 5500KW, displacement is $0.5-350 \times 104\text{Nm}^3/\text{d}$, maximum discharge pressure is 35MPa, can be used for gas collecting and dispatching outside, light hydrocarbon recovery, gas-lift, natural gas storage, etc. The series products have won 10 national patents, including 3 patents of invention.

Features of product:

- 1 Design and manufacture according to API618, API 11P standards;
- 2 Adopted the level horizontal type symmetrically-balanced structure, the reciprocating weight difference of every row's motion, balanced the inertia force and moment effectively, the vibration is small, and the noise is low;
- 3 Many kinds of power engines such as diesel, gas engines, motors, etc. for option, can meet various kinds of demands;
- 4 U-shaped and up-opening frame, great bearing capacity;
- 5 Wide air ways, water-cooling cylinder structure makes the air current steady, to improve efficiency of the compressor;
- 6 The anti-sulfur design and manufacture technology of the compressor, make the machine can run in high sulfur gas field safely and reliably;
- 7 The special structure and design of the gas valve, to achieve high efficiency, wide operating mode range and long service life;
- 8 The automation degree is rather high in such fields as on the field or remote control, network data collecting and monitoring, etc. proved that the machine is monitored reliably and perfectly.

CCTY serial Vehicle-mounted Compressor Main

Features:

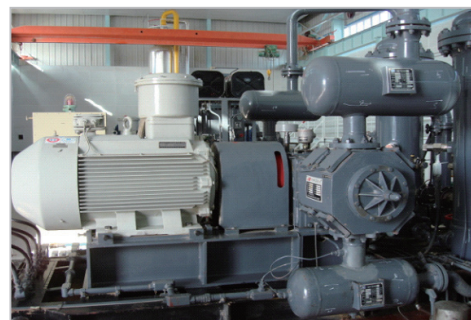
- 1 The compressor is powered by the diesel engine, connected through the elastic coupling;
- 2 The compressor and its complete equipments are mounted on the automobile chassis, mobile work, used in gas-lift, gas recovering, oil recovering, pipeline pressure test and other field operation places needing mobile work.;
- 3 The suction pressure is 0.5-2.4MPa, the discharge pressure is 8-35MPa, the displacement is $2.5\sim 9 \times 104\text{Nm}^3/\text{d}$, the working medium is air, nitrogen, natural gas, etc.



DTY Series Motor Powered Compressor Main

Features:

- 1 The compressor is powered by explosion-proof motor and connected by elastic coupling;
- 2 Integrally skid-mounted, compact structure, small size, light weight;
- 3 Perfect and reliable security and monitoring system, high automation level;
- 4 The suction pressure is 0.1~6MPa, the maximum discharge pressure is 35MPa, the power range is 100-5500KW, the displacement is $0.5\sim 350 \times 104\text{Nm}^3/\text{d}$.



RTY series Gas Engine Powered Compressor Main Features:

- 1 The compressor is powered by the gas engine (the fuel can be gaseous fuel such as natural gas, coal methane, marsh gas, etc.), connected by elastic coupling;
- 2 Integrally skid-mounted, compact structure, convenient for operation and maintaining;
- 3 Perfect and reliable security and monitoring system, high automation level;
- 4 The suction pressure is 0.1 ~ 6MPa, the maximum discharge pressure is 35MPa, the power range is 100 ~ 5500KW, the displacement is 1 ~ 350 × 104Nm³/d.



Technical parameter:

Series Number	Type	Throw Number	Power (kW)	Stroke (in)	Speed (rpm)	Rod Load (KN)
CFP	2CFP	2	100	3	1500	20
	4CFP	4	200	3	1500	20
CFA	2CFA	2	200	3.5	1500	55
	4CFA	4	400	3.5	1500	55
	6CFA	6	600	3.5	1500	55
CFC	2CFC	2	1150	5.5	1200	220
	4CFC	4	2300	5.5	1200	220
	6CFC	6	3500	5.5	1200	220
CFV	2CFV	2	2750	7.25	750	400
	4CFV	4	5500	7.25	750	400

7.3 Integral Natural Gas Compressor

General product description:

The power range is 85 ~ 630KW, the displacement is 0.4~63.5 × 104Nm³/d, the maximum discharge pressure is 35MPa, can be widely used for gas collecting and dispatching outside, gas-lifting, gas recovery by draining water, light hydrocarbon recovery, and so on. The series products have won a certificate for Key & New Product of nation in 2002 and 1 nation patent.

Features of product:

1 The design and manufacture of the engine is according to the DEMA standard, the compressor is according to the API618, API11P standards;

2 Heavy load and low-speed, naturally-aspirated, fixed natural-gas engine-compressor unit, don't need external power unit and water, is adapted to harsh environments,;

3 The compressor and the engine share the same frame and crank shaft, the power cylinder and the compressing cylinder are arranged symmetrically and horizontally, the mass force and inertia moment get well balanced;

4 Wide fuel adaptive capacity, low heating value is within the range of 16510KJ/Nm³- 47700KJ/Nm³, the engines can work normally, has no deflagration and power losing;

5 Wide speed and torsion range, can be operated under the 60%~100 % of the specified terms, is favorable for the regulation of the minimum displacement, its minimum displacement can be as low as the 36% of the design displacement;

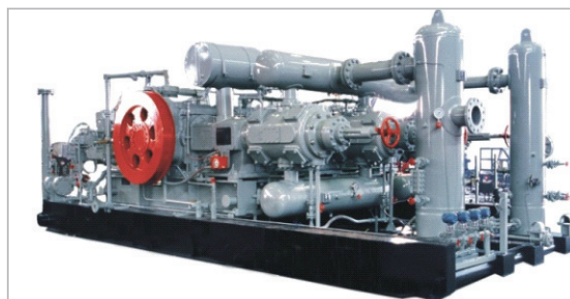
6 The various regulation functions of the rotational speed, clearance organization, single/double acting of the air cylinder, operation parameters such as displacement, load, temperature, etc. can be regulated timely, in order to meet the larger operating mode change;

7 The anti-sulfur design and fabrication technology, makes the compressor can be running in the high sulfur gas field safely and reliably;

8 The automation level is rather high in such fields as on the field or remote control, network data collecting and monitoring, etc. proved that the machine is monitored reliably and perfectly;

9 Integrally skid-mounted structures make it convenient in installation and maintenance, easy for operation. It is firm and durable, with few quick-wear parts and less maintenance.

Technical parameter:



Type	Throw Number of the Power Cylinder	Power Cylinder Diameter × Stroke (mm)	Calibrated Power (KW)	Calibrated Speed (r/min)	Mean Effective Brake Pressure (MPa)	Throw Number of Compressing Cylinder	Allowable Rod Load of Compressing Piston Rod (kN)	Suction Pressure (MPa)	Discharge Pressure (MPa)	Displacement (Nm ³ /d)
ZTY85	1	336 × 406	85	360	0.395	1	97.861	Determined according to the customers' working condition, the maximum discharge pressure is 35MPa		
ZTY170	2	336 × 406	170	360	0.395	2	97.861			
ZTY310	2	381 × 406	310	440	0.433	2	133.449			
ZTY470	3	381 × 406	470	440	0.48	2	177.811			
ZTY630	4	381 × 406	630	440	0.48	3	177.811			