DESERT MACHINERY
آليات الصحراء

AIRMAN GENERATOR

125 KVA (100 KW)

(JAP)

SPECIFICATIONS

OF

DIESEL GENERATOR SET

Model : SDG125S-3A6

AIRMAN®

HOKUETSU INDUSTRIES CO., LTD.

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1. GENERAL

1-1 Structure

The generator set is designed direct coupling with brushless type of generator and diesel engine. The A.C. generator and diesel engine are mounted on the robust steel skid frame with radiator, fuel tank and control panel.
It is provided large doors on both sides of unit and constructed to have easy daily maintenance works.
Moreover, it is put large inhalation of air and discharge duct on and make lining for sound absorption inside the unit. It is also installed large discharge silencer to have good effect of soundproof.
All control devices, operating switches and meters are positioned on a control panel so that it is easy to operate.

1-2 Applicable Standards

The generator is designed, manufactured and tested in accordance with the following standards.

JIS	Japanese Industrial Standards
JEM	Standard of the Japan Electrical Manufacturers' Association
JEC	Standard of the Japanese Electrotechnical Committee

1-3 Site Conditions

(Unless otherwise specified the generator shall be able to keep the performances.)

Temperature	-15℃～+40℃
Humidity	below 85%
Altitude	below 1,000m (Above sea level)

1-4 Standard condition

The rated output is assumed to be a value in a standard JIS atmospheric condition.

Atmospheric temp.	25 ℃
Humidity	30%
Atmospheric pressure	100kPa

1-5 Strong point

The second exhaust gas restriction
Super low nise approval (less than 92 dB/sound power level)
Dual voltage switch equipment
(200/220(50Hz/60Hz) 3 Phase and 400/440(50Hz/60Hz) 3 phase)
Leakage protection device standard equipment

2. Specification

2-1 Dimensions & Weight

Model name	SDG125S-3A6	
Overall length	Approx.	2,990 mm
Overall width	Approx.	1,180 mm
Overall height	Approx.	1,480 mm
Net dry mass	Approx.	2,050 kg
Operating mass	Approx.	2,300 kg

Allowable inclination of the machine below 5°

2-2 Capacity for Water, Oil, and Battery

Cooling water capacity	22	Liters
Fuel tank capacity	250	Liters
Lubricating oil capacity	24.5	Liters
Battery	95D31R-MF x 2	

2-3 Painting Color

External painting	Peaceful Green Kawakami SP-189
External painting of frame	Charcoal Gray Kansai paint NS-388-X31

3. Generator

3-1 A.C. Generator

		Dual Voltage type	
Type		Revolving field brushless type	
3P, 4W	Output	100/125 kVA (80/100 kW)	
	Voltage	200/220 V	400/440 V
Current		289 / 328 A	144 / 164 A
Frequency		50/60 Hz	
No. of phases		3phase 4wire	
No. of poles		4	
Power factor		80%	
Rated revolution		1,500/1,800 min-1 (1,500/1,800 rpm)	
Class of insulation		Class F	
Class of rating		Continuous	
Driving system		Direct coupled to engine	
Connection		Star Connection	

3-2 Rise of Temperature

When the ambient temperature is 40℃, the temperature of the following components shall be within the limit of the following figure.

Armature winding	105K (105deg) (Insulation class F)
Field winding	110K (110deg) (Insulation class F)
Bearing	40K (40deg)

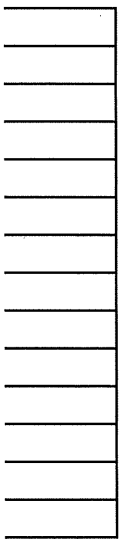
3-3 Dielectric test

An approximately sine wave form voltage of commercial frequency in the following table shall be applied for one minute.
Appropriate if no trouble takes place in such test.
(not include AVR)

Between armature winding and earth	AC 1500V (one minute)
Between field winding and earth	AC 1500V (one minute)
Between control panel and earth	AC 1500V (one minute)

3-4 Steady state voltage regulation

The steady state voltage regulation shall be maintained between ±1.5% from full load to no load.



4. Diesel Engine

4-1	Maker	HINO
	Model	J08C-UP
	Type	Water-cooled 4 cycle, direct injection turbocharged
	No. of cylinder	6
	Bore dia. × stroke	114 mm × 130 mm
	Total displacement	7.961 L
	Rated output	96.3 kW / 1,500 min-1
		112.5 kW / 1,800 min-1
	Dry weight	580 kg
	Diesel fuel	Cetane Value over 45
	Cooling system	Water-cooled
	Charging generator	24V, 35 A
	Starter motor	24V, 4.5 kW
	Engine Oil	API, Up to CD class, SAE 10W-30

4-2 Fuel consumption (reference value)

Frequency	50 / 60 Hz
Full load	20.8 / 27.4 L/Hr
75% load	16.4 / 21.0 L/Hr

5. Protection

	Engine stop	Breaker trip	Warning lamp	Actuating
Engine oil pressure	○	○	○	Engine oil pressure drop Actuating pressure 0.05MPa
Engine water temp.	○	○	○	Engine water temp. rise Actuating temp. 105 ℃
Overcurrent, Short circuit		○		Overcurrent and Short circuit
Leakage		○	○	Leakage Actuating current 30mA
Battery			○	Not charging
Air filter			○	clogging of air filter

This machine have above devices which are equipped to protect from each trouble during operation. The mark ○ means to function for each kind of trouble.

6. Control Panel

6-1 Control panel for A.C. generator

1) Voltmeter	1pc.
2) Ammeter	1pc.
3) Frequency meter	1pc.
4) Voltage regulator	1pc.
5) Ammeter change-over switch	1pc.
6) Leakage relay	1pc.
7) Circuit breaker	1pc.
8) Circuit breaker to single phase	1pc.
9) Output indicator lamp (200V - 400V)	1pc.
10) Synchronous detection lamps	1pc.
11) Synchronizing switch	1pc.

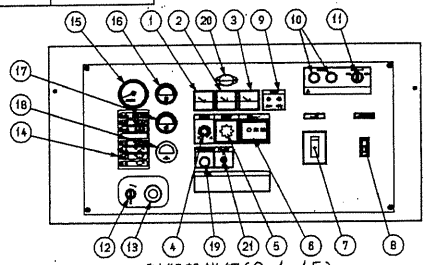
6-2 Control panel for engine

1) Starter switch	1pc.
2) Speed control knob	1pc.
3) Glow lamp/warning lamp	1pc.
4) Engine tachometer current (with hour meter)	1pc.
5) Fuelmeter	1pc.
6) Coolant temperature gauge	1pc.
7) Oil pressure gauge	1pc.
8) Panel light	1pc.
9) Panel light switch	1pc.

※Warning lamps (1 set)

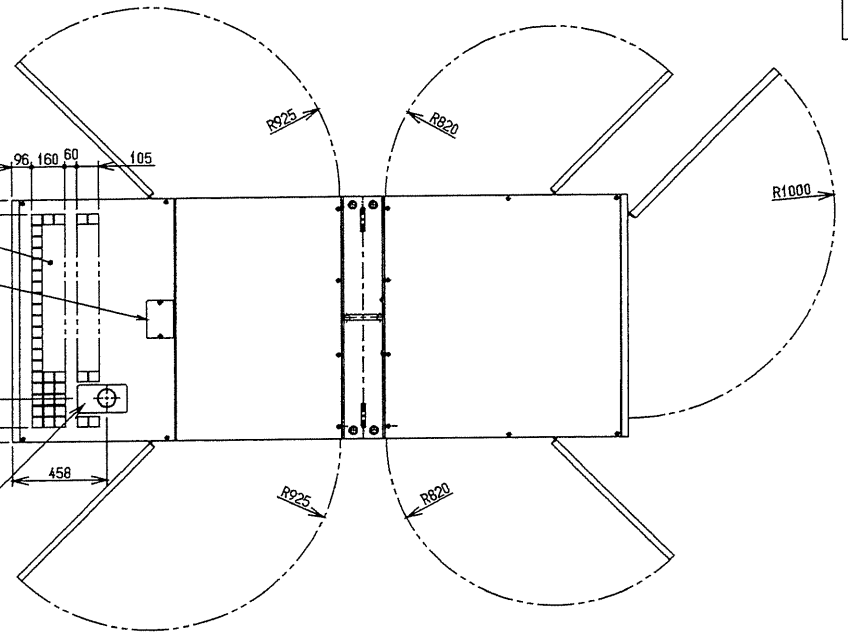
- Engine oil pressure drop
- Engine water temperature rise
- Leakage
- Not charging
- Air filter clogging

基にした図面 10465 80001

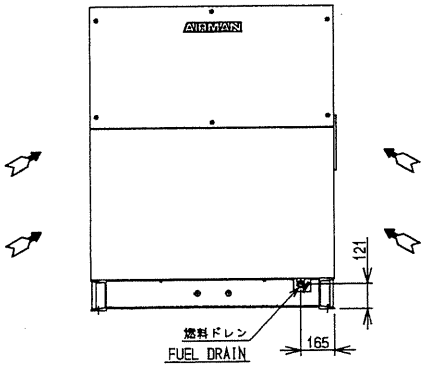


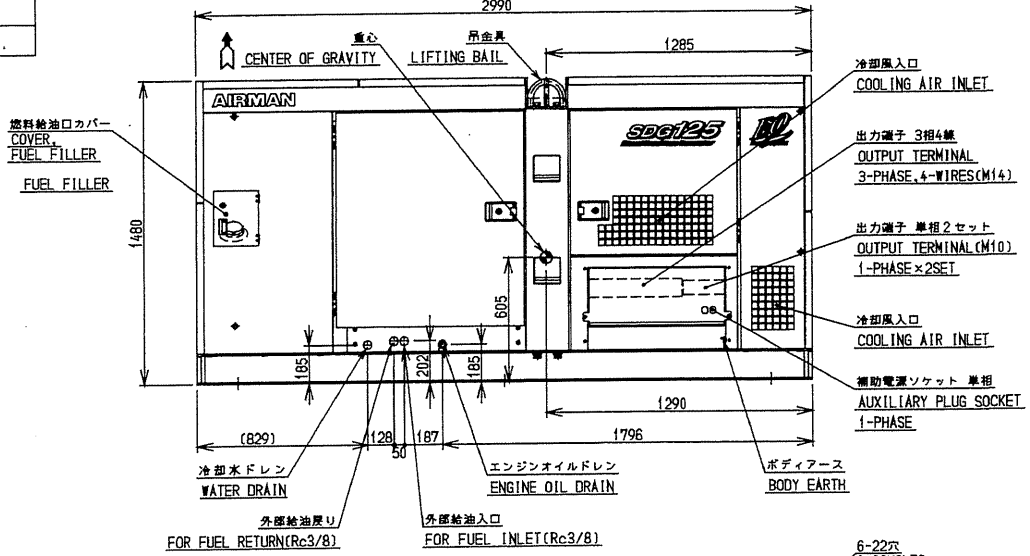
制御盤詳細(S:1:15)
DETAIL OF CONTROL PANEL

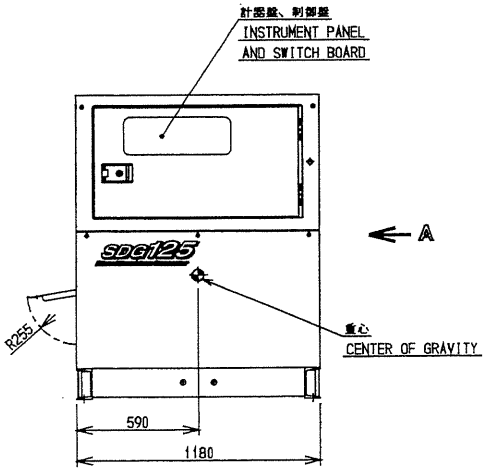
発電機制御盤 GENERATOR CONTROL PANEL		エンジン制御盤 ENGINE CONTROL PANEL	
番号 No.	部品名称 PARTS NAME	番号 No.	部品名称 PARTS NAME
1	電圧計 VOLTMETER	12	スタータスイッチ STARTER SWITCH
2	電流計 AMMETER	13	スピードコントロールノブ SPEED CONTROL KNOB
3	周波数計 FREQUENCY METER	14	予熱ランプ・警報表示灯 MONITOR LAMP
4	電圧調整器 VOLTAGE REGULATOR	15	回転計(時間計付) ENGINE TACHOMETER CURRENT (WITH HOURMETER)
5	電流計切替器 CURRENT SELECTION SWITCH	16	燃料計 FUELMETER
6	漏電リレー LEAKAGE RELAY	17	水温計 WATER TEMPERATURE GAUGE
7	しゃ断器 CIRCUIT BREAKER	18	油圧計 OIL PRESSURE GAUGE
8	しゃ断器(単相専用) CIRCUIT BREAKER (DEDICATED TO SINGLE PHASE)	19	燃料エア抜きポンプスイッチ FUEL AIR-BLEEDING ELECTROMAGNETIC PUMP SWITCH
9	200V-400V表示灯 OUTPUT INDICATOR LAMP	20	パネルライト PANEL LIGHT
10	同期検定灯 SYNCHRONOUS DETECTION LAMP	21	パネルライトスイッチ PANEL LIGHT SWITCH
11	同期スイッチ SYNCHRONIZING SWITCH		

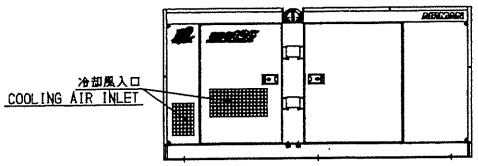


仕様 SPECIFICATION		
発電機 GENERATOR	名称 MODEL	回転界磁型 TWH7 25CS
	相数 PHASES	3相、4線式 3φ,4-WIRES
	力率 POWER FACTOR	80%
	周波数 FREQUENCY	50/60Hz
	交流出力 OUTPUT	100/125kVA(80/100kW)
	電圧 VOLTAGE	200/400・220/440V
	電流 CURRENT	289/144・328/164A
	回転速度 SPEED	1500/1800 min⁻¹
	単相出力 SINGLE PHASE OUTPUT	10/11kVA×2 100/110V
エンジン ENGINE	名称 MODEL	日野自動車 J08C-UP
	型式 TYPE	水冷4サイクル、直接噴射式 過給機付 4-CYCLE,WATER-COOLED, DIRECT INJECTION TURBO-CHARGED
	気筒数 NUMBER OF CYLINDER	6
	総排気量 TOTAL STROKE VOLUME	7.961 l
乾燥質量 NET DRY MASS		APPROX. 2,050kg
運転整備質量 OPERATING MASS		APPROX. 2,300kg

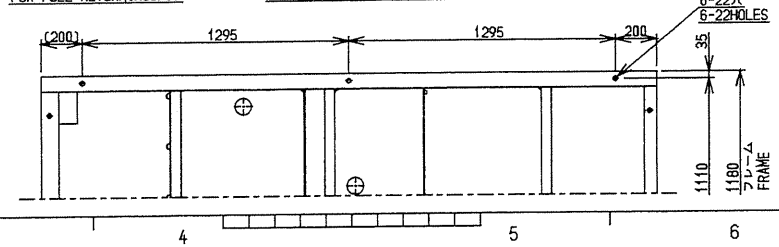








A VIEW S:1:50



計算質量 CALCULATING MASS	kg	素材質量 MATERIAL MASS	kg	製品質量 PRODUCT MASS	kg	水圧試験 HYDRAULIC TEST	MPa

仕上精度Ra標準 FINISH ROUGHNESS ACCURACY Ra STD.	普通寸法差 VARIATION OF TOLERANCE			記号 MARK	年月日 DATE	改訂理由 ALTERATIONS	記当 NAME	承認 APPROVED
12.5a (▽ 50 ▽)	もとの寸法 mm to Pcs.	機械加工 MACHINING	板金加工 PLATE WORK	1	2010. 8.25	PG全般改訂259号により、ステップを変更	小林洋	山崎
6.3a (▽▽ 25 ▽)	3	4	± 0.1	± 0.2				
1.6a (▽▽▽ 6.3▽)	4	16	± 0.2	± 0.3				
0.2a (▽▽▽▽ 0.8▽)	16	63	± 0.3	± 1				
	63	250	± 0.5	± 1.5				
	250	1000	± 0.8	± 2				
	1000			± 3				

型式 INDEX	部品番号 PARTS NO.	部品名称 PARTS NAME	個数 QUANTITY	材質 MATERIAL	備考 REMARKS

型式 MODEL	SDG125S-3A6	尺度 SCALE	1:25	承認 APPROVED	山崎	照査 CHECKED	製図 DRAWING	製図日 DATE	2009. 1.19
材質 MATERIAL	——	三角法 THIRD ANGLE PROJECTION		部品名称 PARTS NAME	SILENT SEMI-PORTABLE GENERATOR				
北越工業株式会社 HOKUETSU INDUSTRIES CO.,LTD.				図面(部品)番号 PARTS NO. (DRWG.NO.)	10465 81300				

(輸出英文仕様)

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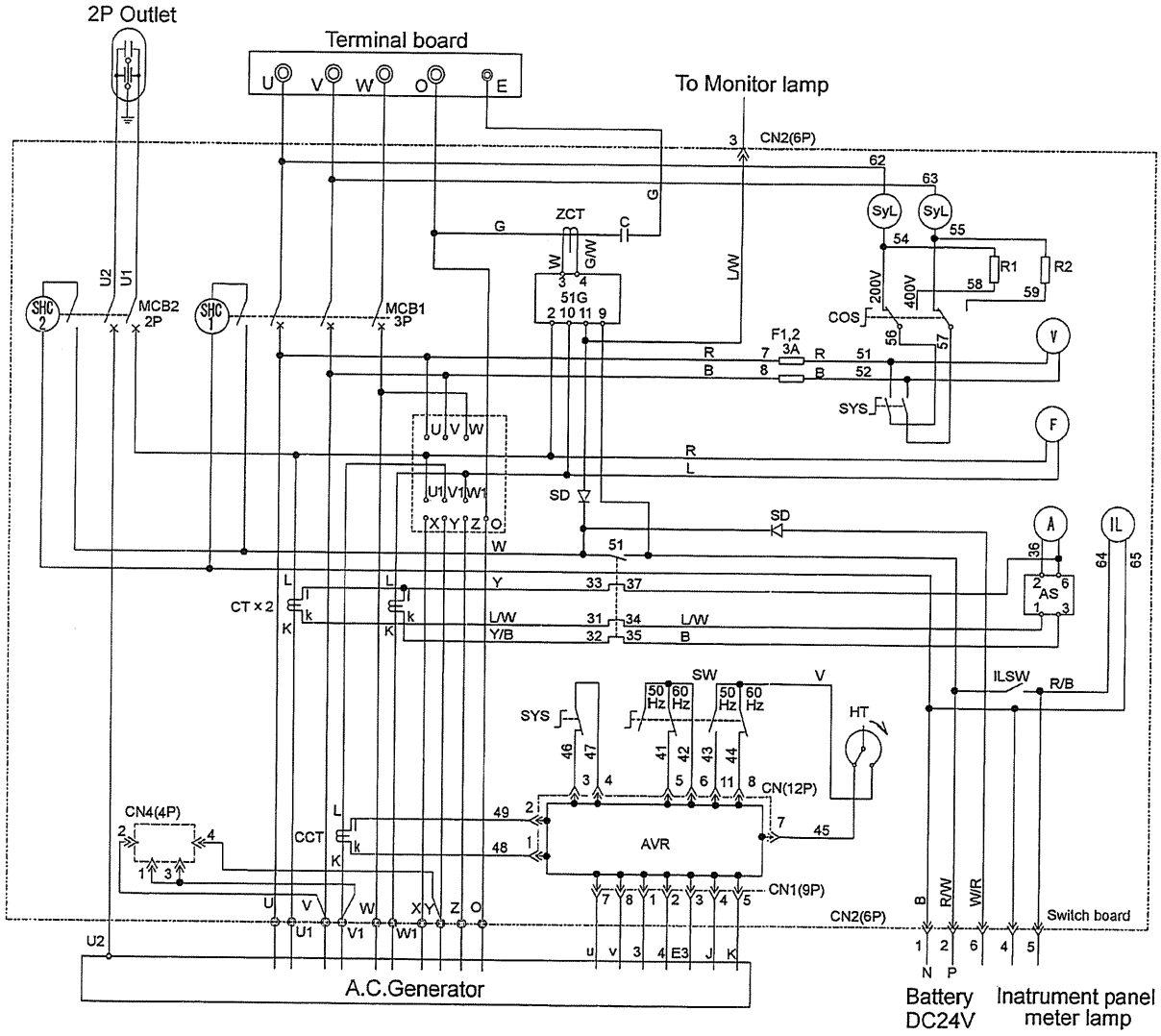
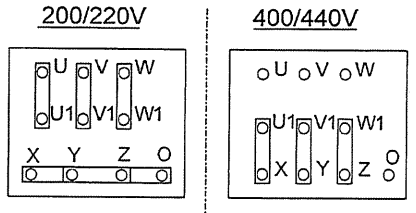
9. Wiring Diagram

9.1 Generator wiring Diagram



B	Black
Y	Yellow
L	Blue
G	Green
R	Red
W	White
Br	Brown
O	Orange
V	Violet
Gr	Gray



Procedure for voltage selection

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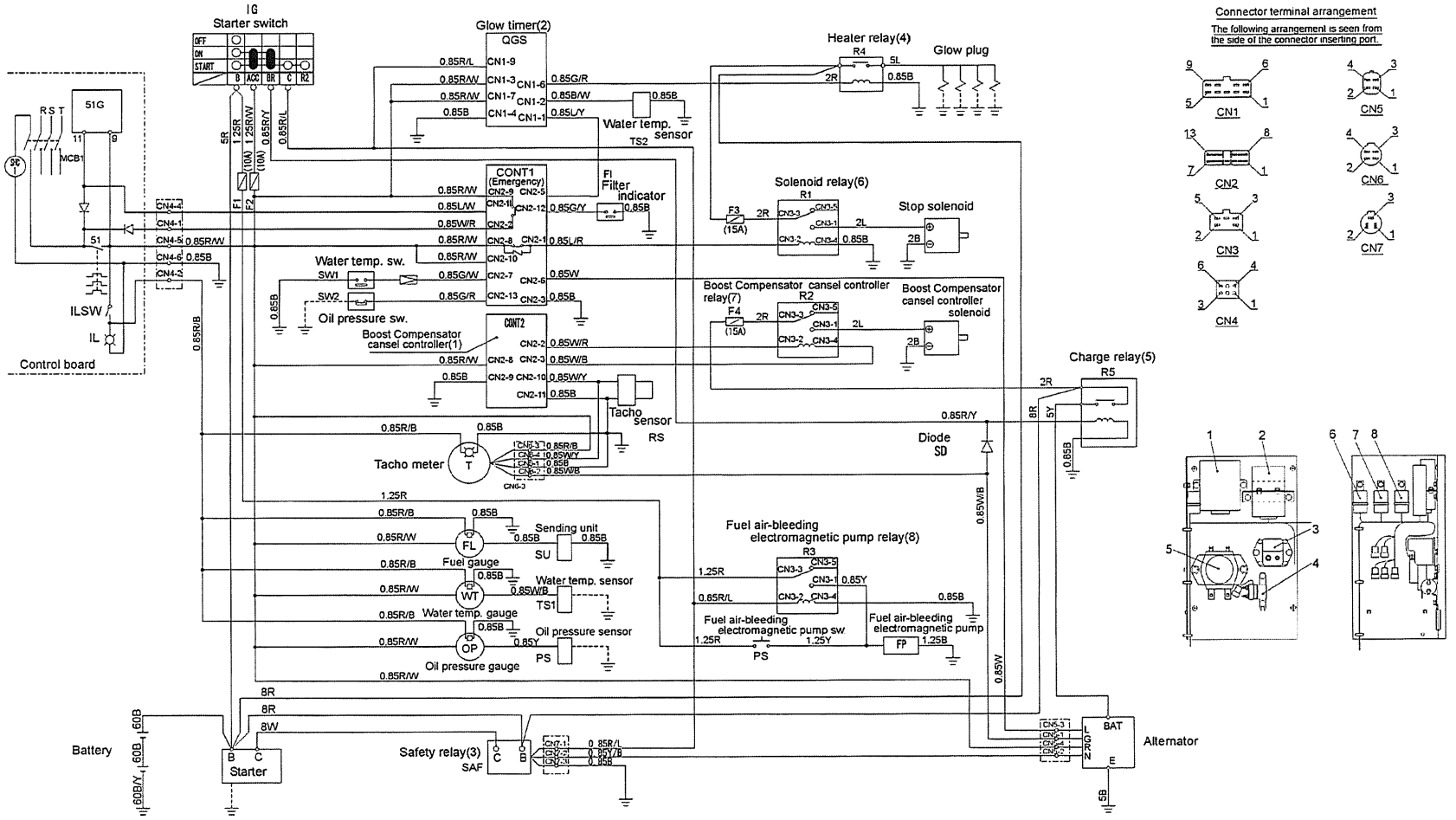
9. Wiring Diagram

9.2 Engine Wiring Diagram



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