ABCONTROL
INGENIERIA S.A.S

GE Power Quality

GPEnergy

APC

Rad No. 20192000072442
Fecha: 2019-12-12 14:04:46
Destino: DIRECCION ADMINISTRATIVA Y FINANCIERA
Remitente: ABCONTROL INGENIERIA SAS

Bogotá D.C., 12 de diciembre de 2019

Señores,
AGENCIA PRESIDENCIAL DE COOPERACIÓN INTERNACIONAL DE COLOMBIA
Atención: SR. WILLY ALEXANDER VIJALBA
SUPERVISOR DEL CONTRATO No.147 DE 2019
DIRECCIÓN ADMINISTRATICA Y FINANCIERA - TICS
Bogotá, Distrito Capital.

Asunto: RADICADO DE DOCUMENTOS

Respetado señor:

Por medio de la presente se radican los siguientes documentos que forman parte del compromiso de la CONTRATISTA para el contrato No.147 de 2019:

Sobre No.1:

1. Minuta de Entrega 10/12/2019. **Cantidad: 2 (hojas)**
2. Declaración de Importación 032019001606188-7. **Cantidad: 2 (hojas)**
3. Declaración de Importación 872019000205212-1. **Cantidad: 1 (hoja)**
4. Certificado de distribución MONTECARLO MOTORS. **Cantidad: 1 (hoja)**
5. Garantía extendida de 24 meses. **Cantidad: 1 (hoja)**
6. Certificado de Conformidad de Producto DGR 3200S. **Cantidad: 1 (hoja)**
7. Certificado de Conformidad de Producto YDY15S3. **Cantidad: 6 (hojas)**
8. Certificado de Conformidad de Producto ITA0050CH. **Cantidad: 2 (hojas)**
9. TP, CC y HV del ingeniero Jairo Carantón. **Cantidad: 4 (hojas)**
10. Manual de operación y mantenimiento YANGDONG. **Cantidad: 25 (hojas)**
11. Manual YORKING. **Cantidad: 14 (hojas)**

Sobre No.2:

12. Manual GENSET CONTROLLER. **Cantidad: 25 (hojas)**
13. Catálogo de partes Y80 Diesel. **Cantidad: 28 (hojas)**

Cordialmente,

HARVEY RIAÑO CASTELLANOS
Representante legal
ABCONTROL INGENIERIA SAS
NIT. 830.108.265-1
CONTRATISTA

Sobre No. 1/2

ABCONTROL INGENIERIA S.A.S

GE Power Quality

GPEnergy

Documento:

MINUTA DE ENTREGA

Código del Proyecto: **PEG-02118-JC**

Nombre del Proyecto: **CRUE Santa Marta**

Fecha de Elaboración:		
Día	**Mes**	**Año**
10	12	2019

Nombre/Apellido	Empresa	Firma
Fredy Rodríguez	Abcontrol Ingenieria SAS	
Juan Bautista	CRUE Centro Regulador de Urgencias y Emergencias	

Firma

1. ACTA DE ENTREGA Y RECIBO A SATISFACCIÓN FINAL

Contrato N°	147
Contratista:	ABCONTROL INGENIERIA S.A.S.
Nit N°:	830.108.265-1
Objeto:	Adquisición e instalación de plantas eléctricas para el fortalecimiento del centro regulador de urgencias y emergencias – CRUE del Magdalena, de conformidad con las especificaciones técnicas que hacen parte integral del presente proceso.
Contratante:	Agencia de Cooperación Internacional de Colombia, APC - Colombia
Fecha de Aprobación:	27-11-2019

En la ciudad de Santa Marta del Departamento de Magdalena, a los 10 días del mes de Diciembre año dos mil diecinueve (2019), se reunieron en las instalaciones de la CRUE Santa Marta, ubicado Calle 23 No. 13 A 02, los señores mencionados a continuación:

Nombre/Apellido	N° de Identificación	Empresa	Firma
Fredy M. Rodriguez	79.757.102	ABControl Ingeniería SAS	
Juan Bautista	12546033	CRUE Santa Marta	

En representación del CONTRATISTA y del CONTRATANTE, en calidad de verificadores del contrato, con el fin de entregar el primero y recibir el segundo los bienes objeto del presente contrato, suscribir la correspondiente acta de recibo a satisfacción de los mismos, cuyas características se describen a continuación:

ITEM	Elementos	Cantidad	Cumple
1	Planta Eléctrica 3,3kW 60Hz **Modelo: DGR-3200S** **Serial: 01-0001-2875** **Año de Fabricación:2019**	1	CUMPLE

Firma

2	Planta Eléctrica 15kVA 60Hz **Modelo: YDY15S3** **Serial: YN1901090007** **Año de Fabricación: 2019**	1	CUMPLE

Dejamos constancia que el contratista ha entregado a entera satisfacción los elementos objeto del contrato, han sido verificados y están conforme a las especificaciones y recibidos de conformidad con lo establecido en el mismo bajo el objeto "Adquisición e instalación de plantas eléctricas para el fortalecimiento del centro regulador de urgencias y emergencias – CRUE del Magdalena, de conformidad con las especificaciones técnicas que hacen parte integral del presente proceso".

Los elementos descritos han sido verificados en su calidad.

Para constancia se firma la presente acta por quienes en ella intervinieron, dada en la ciudad de Santa Marta el 10 de Diciembre de dos mil diecinueve (2019).

Fredy Rodriguez
Abcontrol Ingenieria SAS
C.C. N° 79.757.102

Juan Bautista
Centro Regulador de Urgencias y Emergencias
C.C. N° 12546033

NOTA: En los casos en que se generen obligaciones adicionales por parte del contratista, se debe dejar constancia en esta acta en el ítem de observaciones indicando la fecha de cumplimiento, como en el caso de instalación, capacitación y acompañamiento, cuando la compra ha sido de equipos de cómputo, equipos científicos, entre otros siempre y apliquen.

La instalación eléctrica de la planta eléctrica de 15 kva se realizó con las especificaciones suministradas por la entidad en cuanto a distancia y cantidad de conexiones.

2. OBSERVACIONES

La entidad tiene a cargo el suministro del combustible para las dos plantas, las pruebas de operación no se pueden realizar por falta de abastecimiento del combustible.

Firma

Doc 2

REPÚBLICA DE COLOMBIA
DIAN

Declaración de Importación

Privada

500

1. Año **2019**

Espacio reservado para la DIAN (Antes de diligenciar este formulario lea cuidadosamente las instrucciones)

4. Número de formulario
032019001606188-7

Importador

5. Número de Identificación Tributaria (NIT)	6. DV.	11. Apellidos y nombres o Razón Social
830040045	3	IMPORTADORA MONTECARLO MOTORS SAS

13. Dirección	15. Teléfono	12. Cód. Admón.	16. Cód. Dpto	17. Cód. Ciudad Municipio
AC 6 31 63	2477777	03	11	001

Declarante

24. Número de Identificación Tributaria (NIT)	25. DV.	26. Razón social del declarante autorizado	27. Tipo usuario	28. Cód. usuario
830003950	0	AGENCIA DE ADUANAS COLMAS SAS NIVEL 1	26	0072

29. Número documento de identificación	30. Apellidos y nombres
53139060	OVIEDO VARGAS ANGELA PATRICIA

31. Clase importador	32. Tipo declaración	33. Cod.	34.No.Formulario Anterior	35. Año - Mes - Día	36. Cod. Admón.	37. Declaración de Exportación	38. Año - Mes - Día	39. Cod. Admón.
02	Inicial	1	XXXXXXXXXXXXX	XXXX - XX - XX	XX	No. XXXXXXXXXXXXXX	XXXX - XX - XX	XX

40. Cod. lugar ingreso de las mercancías	41. Cod. Depósito	42. Manifiesto de carga	43. Año - Mes - Día	44. Documento de transporte	45. Año - Mes - Día
BOG	13907	No. 9193297374	2019 - 09 - 27	No. SLYE19070690	2019 - 07 - 17

51. No. de factura	52. Año - Mes - Día	53. Cod. país procedencia	54. Cod. Modo Transporte	55. Código de Bandera	56. Cod. Depto destino	57. Empresa transportadora	58. Tasa de cambio $ cvs.
A 1906150	2019 - 07 - 17	215	1	169	11	TRANSPORTES LODISCARGA S.A.S.	3,377.72

59. Subpartida arancelaria	60. Cod. Complementario	61. Cod. Suplementario	62. Cod. Modalidad	63. No. cuotas o meses	64. Valor cuota USD	65. Periodicidad del pago de la cuota	66. Cod. país de origen	67. Cod. Acuerdo
8502201000	XX	XX	C200	XX	XXXX	XX	215	XXX

68. Forma de pago de la importación	69. Tipo de importación	70. Cod. país compra	71. Peso bruto kgs. dcms.	72. Peso neto kgs. dcms.	73. Código embalaje	74. No. bultos	75. Subpartidas	76. Cod. unidad comercial	77. Cantidad dcms.
01	01	245	1,042.54	938.28	YY	74	1	U	30.00

78.Valor FOB	79. Valor fletes USD

80. Valor Seguros USD	81. Valor Otros Gastos USD
	0.00

82. Sumatoria de fletes, seguros y otros gastos USD	83. Ajuste valor USD
	0.00

84. Valor aduana USD	85. Código régimen o licencia	86. Número
4,003.21	R	50115851

87. Cod. oficina	88. Año	89. Programa No	90. Cód interno del Producto
3	2019	XXXXXXXXXX	0

Autoliquidación

Concepto	%	Base	Total Liquidado ($)	Total a pagar con esta declaración ($)	Total Liquidado (USD)
Arancel	92 0,00	93	94 0	95 0	96 0
IVA	97 19.00	98	99	100 0	101 0
Salvaguardia	102 0.00	103 0	104 0	105 0	106 0
Derechos Compensatorios	107 0.00	108 0	109 0	110 0	111 0
Derechos Antidumping	112 0	113 0	114 0	115 0	116 0
Sanción	117 0	118 0	119 0	120 0	
Rescate	121 0	122 0	123 0	124 0	
		Total	125		126 0

91. Descripción de las mercancías(No inicie la descripción de las mercancías a importar con lo señalado en el arancel de aduanas en la subpartida arancelaria - Incluya marcas, seriales y otros) (Si el campo es insuficiente, continúe al reverso de este formulario)

DO 20010082339-001 PEDIDO TRAMITE: 123MR1907 DECLARACION(2-2) // REGISTRO DE IMPORTACIÓN NO. REG-50115851-20190520N DE 2019-05-20 FECHA DE VENCIMIENTO 2020-05-19 // VISTO BUENO SIC NO. VSIC-1915075 DE 2019-05-16 // CONTINUACIÓN DE VIAJE.NO 3518919M01294 DE 2019-09-11 DOCUMENTO TRANSPORTE MULTIMODAL NO: M31429NDE DE 2019-07-12 //. COD: DGR361300S; PRODUCTO: GENERADOR DUCATI 900M // 1300-110V, MARCA: DUCATI, MODELO: MM1300, REFERENCIA: DGR 1300S, USO O DESTINO: GENERADOR DE ELECTRICIDAD, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 900 W, TIPO DE MOTOR: AGASOLINA, SERIAL: 01-0001-2740, 01-0001-2741, 01-0001-2742, 01-0001-2743, 01-0001-2744, 01-0001-2745, 01-0001-2746, 01-0001-2747, 01-0001-2748, 01-0001-2749, 01-0001-2750, 01-0001-2751, 01-0001-2752, (continúa al respaldo)

127. Valor pagos anteriores: 0	128. Recibo oficial de pago anterior No.: XXXXXXXXXXXXXXX	129. Fecha: XXXX XX XX
130. Espacio reservado DIAN - Actuación aduanera Estado de levante: Levante automático No hay declaración posterior	131. Espacio reservado uso exclusivo Ministerio de Relaciones Exteriores	132. No. Aceptación declaración 032019001606188 133. Fecha: 2019 09 28

134. Levante No. 032019001347898	135. Fecha 2019 - 10 - 28	Firma funcionario responsable	136. Nombre 137. C.C. No.

Firma declarante	997. Espacio exclusivo para el sello de la entidad recaudadora (Fecha efectiva de la transacción) Coloque el timbre de la máquina registradora al dorso de este formulario	980. Pago Total $ 0 996. Espacio para Número autoadhesivo **9100302130390 1**

Fecha de Impresión: 2019-10-28 15:45:38

DIAN
REPÚBLICA DE COLOMBIA



Declaración de Importación

Aceptación : 032019001606188-7
Subpartida : 8502201000

105. Continuación descripción mercancías (incluya marcas, seriales y otros)

01-0001-2753, 01-0001-2754, 01-0001-2755, 01-0001-2756, 01-0001-2757, 01-0001-2758, 01-0001-2759, 01-0001-2760, 01-0001-2761, 01-0001-2762, 01-0001-2763, 01-0001-2764, 01-0001-2765, 01-0001-2766, 01-0001-2767, 01-0001-2768, 01-0001-2769, PAÍS DE ORIGEN. CHINA - 215 CANT (30) U (ITEM 3).XXXX

REPÚBLICA DE COLOMBIA

DIAN

Declaración de Importación

Privada 500

1. Año 2019

Espacio reservado para la DIAN (Antes de diligenciar este formulario lea cuidadosamente todas las instrucciones)

4. Número de formulario

032019001606444-8

Importador

5. Número de Identificación Tributaria (NIT): 830040045 | 6. DV: 3 | 11. Apellidos y nombres o Razón Social: IMPORTADORA MONTECARLO MOTORS SAS

13. Dirección: AC 6 31 63 | 16. Teléfono: 2477777 | 12. Cód. Admón.: 03 | 10. Cód. Dpto: 11 | 17. Cód. Ciudad Municipio: 001

Declarante

24. Número de Identificación Tributaria (NIT): 830003960 | 25. DV: 0 | 26. Razón social del declarante autorizado: AGENCIA DE ADUANAS COLMAS SAS NIVEL 1 | 27. Tipo usuario: 26 | 28. Cód. usuario: 0072

29. Número documento de identificación: 53139060 | 30. Apellidos y nombres: OVIEDO VARGAS ANGELA PATRICIA

31. Clase Importador	32. Tipo declaración	33. Cod.	34.No.Formulario Anterior	35. Año - Mes - Día	36. Cod. Admón.	37. Declaración de Exportación	38. Año - Mes - Día	39. Cod. Admón.
02	Inicial	1	XXXXXXXXXXXXXXX	XXXX - XX - XX	XX	No. XXXXXXXXXXXXXXX	XXXX - XX - XX	XX

40. Cod. lugar ingreso de las mercancías	41. Cod. Depósito	42. Manifiesto de carga	43. Año - Mes - Día	44. Documento de transporte	45. Año - Mes - Día
BOG	13907	No. 8193207374	2019 - 09 - 27	No. SLYE19070690	2019 - 07 - 17

51. No. de factura	52. Año - Mes - Día	53. Cod. país procedencia	54. Cod. Modo Transporte	55. Código de Bandera	56. Cod. Depto destino	57. Empresa transportadora	58. Tasa de cambio $ cvt.
A 1906150	2019 - 07 - 17	215	1	169	11	TRANSPORTES LODISCARGA S.A.S.	3,377.72

59. Subpartida arancelaria	60. Cód. Compensatorio y/o Suspensivo	61. Cód. Subdivisión	62. Cod. Modalidad	63. No. cuotas o meses	64. Valor cuota USD	65. Periodicidad del pago de la cuota	66. Cod. país de origen	67. Cod. Acuerdo
8502201000	XX	XX	G200	XX	XXXX	XX	215	XXX

68. Forma de pago de la importación	69. Tipo de importación	70. Cod. país compra	71. Peso bruto kgs.	dcms.	72. Peso neto kgs.	dcms.	73. Código embalaje	74. No. bultos	75. Subpartidas	76. Cod. unidad comercial	77. Cantidad dcms.
01	01	245	19,627.46		17,684.72		YY	74	1	U	296.00

78.Valor FOB | 78. Valor fletes USD

80. Valor Seguros USD	81. Valor Otros Gastos USD	82. Sumatoria de fletes, seguros y otros gastos USD	83. Ajuste valor USD	84. Valor aduana USD	85. Código registro o licencia	86. Número	87. Cod. Unidad	88. Año	89. Programa No	90. Cód Interno del Producto
	0.00	1,943.18	0.00		R	50105693	3	2019	XXXXXXXXXX	0

Autoliquidación

Concepto	%	Base	Total Liquidado ($)	Total a pagar con esta declaración ($)	Total Liquidado (USD)
Arancel	0.00		0	0	0
IVA	19.00		0	0	0
Salvaguardia	0.00	0	0	0	0
Derechos Compensatorios	0.00	0	0	0	0
Derechos Antidumping	0	0	0	0	0
Sanción	0	0	0	0	
Rescate	0	0	0	0	
		Total			0

91. Descripción de las mercancías (No incluir la descripción de las mercancías o insertar con lo señalado en el arancel de aduanas en la subpartida arancelaria - incluya marcas, modelos y otros) (Si el campo es insuficiente, continúe al respaldo de este formulario)

DO 20010082339-001 PEDIDO TRAMITE: 123MR1907 DECLARACIÓN (1-2) REGISTRO DE IMPORTACIÓN INICIAL NO: REG-S0105693-20190429N DE 2019 -04-29 FECHA DE VENCIMIENTO: 2020-04-27 VISTO BUENO SIC NO: V SIC-1912861 DE 2019-04-26 // REGISTRO DE IMPORTACIÓN MODIFICACIÓN N O: REG-50105693-20190429N.M01 DE 2019-05-06 FECHA DE VENCIMIENTO 2020-04-27 VISTO BUENO SIC NO: V SIC-1913448 DE 2019-05-03 // CO NTINUACIÓN DE VIAJE.NO 3518919N01294 DE 2019-09-11 DOCUMENTO TRANSPORTE MULTIMODAL NO: M3 14 29 MD E DE 2019-07-12 // DGR 367_000 E S; PRODUCTO: GENERADOR DU CA TI, MARCA: DU CA TI, MODELO: W N 7000 // W N 7000 E, REFERENCIA: DGR 7000 ES, USO O DESTINO: INDU STRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 7 K W TIPO DE MOTOR: 4 T - GASOLINA, SERIAL: 01-0001-2644, 01 (continúa al respaldo)

127. Valor pagos anteriores	128. Recibo oficial de pago anterior No.	129. Fecha: XXXX-XX-XX
0	XXXXXXXXXXXXXX	

130. Espacio reservado DIAN - Aceptación aduanera	131. Espacio reservado uso exclusivo Ministerio de Relaciones Exteriores	132. No. Aceptación declaración
		032019001606444
		133. Fecha: 2019-09-28

134. Levante No.	135. Fecha	Firma funcionario responsable	136. Nombre 137. C.C. No:
032019280000129709	10:30		

Firma declarante

Acepto la oferta
NIT 830.040.045
CARRERA 72
OVIEDO V.
BOG

997. Espacio exclusivo para el sello de la entidad recaudadora (Fecha efectiva de la transacción)

Coloque el timbre de la máquina registradora al dorso de este formulario

680. Pago Total $: 0

Fecha de Impresión: 2019-09-28 15:52:08

DIAN
REPÚBLICA DE COLOMBIA

Declaración de Importación

Aceptación : 032019001606444-8
Subpartida : 8502201000

105. Continuación descripción mercancías (Incluya marcas, serietes y otros)

-0001-2645, 01-0001-2646, 01-0001-2647, 01-0001-2648, 01-0001-2649, 01-0001-2650, 01-0001-2651, 01-0001-2652, 01-0001-2653, 01-00
01-2654, 01-0001-2655, 01-0001-2656, 01-0001-2657, 01-0001-2658, 01-0001-2659, 01-0001-2660, 01-0001-2661, 01-0001-2662, 01-0001-
2663, 01-0001-2664, 01-0001-2665, 01-0001-2666, 01-0001-2667, 01-0001-2668, 01-0001-2669, 01-0001-2670, 01-0001-2671, 01-0001-267
2, 01-0001-2673, 01-0001-2674, 01-0001-2675, 01-0001-2676, 01-0001-2677, 01-0001-2678, 01-0001-2679, 01-0001-2680, 01-0001-2681,
01-0001-2682, 01-0001-2683, 01-0001-2684, 01-0001-2685, 01-0001-2686, 01-0001-2687, 01-0001-2688, 01-0001-2689, 01-0001-2690, 01-
0001-2691, 01-0001-2692, 01-0001-2693, 01-0001-2694, 01-0001-2695, 01-0001-2696, 01-0001-2697, 01-0001-2698, 01-0001-2699, 01-000
1-2700, 01-0001-2701, 01-0001-2702, 01-0001-2703, REF C C: DGR 7000 ES // PAIS DE ORIGEN CHINA 215 // CANT (60) U (ITEM 1). DGR 3
65500 E S; PRODUCTO: GENERADOR DU CA TI, MARCA: DU CA TI, MODELO: WM 5500 // WM 55005, REFERENCIA: DGR 5500 E S, USO O DESTINO: I
NDUSTRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 6 KW TIPO DE MOTOR: 4T - GASOLINA, SERIAL: 01-0001-2704, 01-0001-2705, 01-0001-27
06, 01-0001-2707, 01-0001-2708, 01-0001-2709, 01-0001-2710, 01-0001-2711, 01-0001-2712, 01-0001-2713, 01-0001-2714, 01-0001-2715,
01-0001-2716, 01-0001-2717, 01-0001-2718, 01-0001-2719, 01-0001-2720, 01-0001-2721, 01-0001-2722, 01-0001-2723, 01-0001-2724, 01
-0001-2725, 01-0001-2726, 01-0001-2727, 01-0001-2728, 01-0001-2729, 01-0001-2730, 01-0001-2731, 01-0001-2732, 01-0001-2733, 01-00
01-2734, 01-0001-2735, 01-0001-2736, 01-0001-2737, 01-0001-2738, 01-0001-2739, PAIS ORIGEN: CHINA - 215. CANT (36) U (ITEM 2). DG
R 3625 00S; PRODUCTO: GENERADOR DU CA TI, MARCA: DU CA TI, MODELO: WM 2500 // WM 2500 E, REFERENCIA: DGR 2500 S, USO O DESTINO: I
NDUSTRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 2,5 KW, TIPO DE MOTOR: 4T - GASOLINA, SERIAL: 01-0001-2770, 01-0001-2771, 01-000
1-2772, 01-0001-2773, 01-0001-2774, 01-0001-2775, 01-0001-2776, 01-0001-2777, 01-0001-2778, 01-0001-2779, 01-0001-2780, 01-0001-2
781, 01-0001-2782, 01-0001-2783, 01-0001-2784, 01-0001-2785, 01-0001-2786, 01-0001-2787, 01-0001-2788, 01-0001-2789, 01-0001-2790
, 01-0001-2791, 01-0001-2792, 01-0001-2793, 01-0001-2794, 01-0001-2795, 01-0001-2796, 01-0001-2797, 01-0001-2798, 01-0001-2799, 0
1-0001-2800, 01-0001-2801, 01-0001-2802, 01-0001-2803, 01-0001-2804, 01-0001-2805, 01-0001-2806, 01-0001-2807, 01-0001-2808, 01-0
001-2809, 01-0001-2810, 01-0001-2811, 01-0001-2812, 01-0001-2813, 01-0001-2814, 01-0001-2815, 01-0001-2816, 01-0001-2817, 01-0001
-2818, 01-0001-2819, 01-0001-2820, 01-0001-2821, 01-0001-2822, 01-0001-2823, 01-0001-2824, 01-0001-2825, 01-0001-2826, 01-0001-28
27, 01-0001-2828, 01-0001-2829, 01-0001-2830, 01-0001-2831, 01-0001-2832, 01-0001-2833, 01-0001-2834, 01-0001-2835, 01-0001-2836,
01-0001-2837, 01-0001-2838, 01-0001-2839, 01-0001-2840, 01-0001-2841, 01-0001-2842, 01-0001-2843, 01-0001-2844, 01-0001-2845, 01
-0001-2846, 01-0001-2847, 01-0001-2848, 01-0001-2849, 01-0001-2850, 01-0001-2851, 01-0001-2852, 01-0001-2853, 01-0001-2854, 01-00
01-2855, 01-0001-2856, 01-0001-2857, 01-0001-2858, 01-0001-2859, 01-0001-2860, 01-0001-2861, 01-0001-2862, 01-0001-2863, 01-0001-
2864, 01-0001-2865, 01-0001-2866, 01-0001-2867, 01-0001-2868, 01-0001-2869, REF C C: DGR 2500 S // PAIS ORIGEN: CHINA - 215. CANT
(100) U (ITEM 4). PRODUCTO: GENERADOR DU CA TI, MARCA: DU CA TI, MODELO: WM 3500 / WM 3500 N, REFERENCIA: DGR 3200 S, USO O DEST
INO: INDUSTRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 4,5KW TIPO DE MOTOR: 4T - GASOLINA, SERIAL: 01-0001-2870, 01-0001-2871, 01
-0001-2872, 01-0001-2873, 01-0001-2874, 01-0001-2875, 01-0001-2876, 01-0001-2877, 01-0001-2878, 01-0001-2879, 01-0001-2880, 01-00
01-2881, 01-0001-2882, 01-0001-2883, 01-0001-2884, 01-0001-2885, 01-0001-2886, 01-0001-2887, 01-0001-2888, 01-0001-2889, 01-0001-
2890, 01-0001-2891, 01-0001-2892, 01-0001-2893, 01-0001-2894, 01-0001-2895, 01-0001-2896, 01-0001-2897, 01-0001-2898, 01-0001-289
9, 01-0001-2900, 01-0001-2901, 01-0001-2902, 01-0001-2903, 01-0001-2904, 01-0001-2905, 01-0001-2906, 01-0001-2907, 01-0001-2908,
01-0001-2909, 01-0001-2910, 01-0001-2911, 01-0001-2912, 01-0001-2913, 01-0001-2914, 01-0001-2915, 01-0001-2916, 01-0001-2917, 01-
0001-2918, 01-0001-2919, 01-0001-2920, 01-0001-2921, 01-0001-2922, 01-0001-2923, 01-0001-2924, 01-0001-2925, 01-0001-2926, 01-000
1-2927, 01-0001-2928, 01-0001-2929, 01-0001-2930, 01-0001-2931, 01-0001-2932, 01-0001-2933, 01-0001-2934, 01-0001-2935, 01-0001-2
936, 01-0001-2937, 01-0001-2938, 01-0001-2939, 01-0001-2940, 01-0001-2941, 01-0001-2942, 01-0001-2943, 01-0001-2944, 01-0001-2945
, 01-0001-2946, 01-0001-2947, 01-0001-2948, 01-0001-2949, 01-0001-2950, 01-0001-2951, 01-0001-2952, 01-0001-2953, 01-0001-2954, 0
1-0001-2955, 01-0001-2956, 01-0001-2957, 01-0001-2958, 01-0001-2959, 01-0001-2960, 01-0001-2961, 01-0001-2962, 01-0001-2963, 01-0
001-2964, 01-0001-2965, 01-0001-2966, 01-0001-2967, 01-0001-2968, 01-0001-2969 // CODIGO SEGÚN FACTURA. DGR 363200 S // PAIS ORIG
EN: CHINA - 215 CANT (100) U (ITEM 5).XXXX

Doc 3

REPÚBLICA DE COLOMBIA

DIAN

Declaración de Importación

Privada

500

1. Año 2019

Espacio reservado para la DIAN (Antes de diligenciar este formulario lea cuidadosamente las instrucciones)

4. Número de formulario

872019000205212-1

Importador

5. Número de Identificación Tributaria (NIT)	6. DV.	11. Apellidos y nombres o Razón Social
830040045	3	IMPORTADORA MONTECARLO MOTORS SAS

13. Dirección	15. Teléfono	12. Cód. Admón.	16. Cód. Dpto	17. Cód. Ciudad Municipio
AC 6 31 63	2477777	87	11	001

Declarante

24. Número de Identificación Tributaria (NIT)	25. DV.	26. Razón social del declarante autorizado	27. Tipo usuario	28. Cód. usuario
830003960	0	AGENCIA DE ADUANAS COLMAS S.A.S.NIVEL 1	26	0072

29. Número documento de identificación	30. Apellidos y nombres
49720309	MAESTRE ALONSO ERIKA PATRICIA

31. Clase Importador	32. Tipo declaración	33. Cod.	34.No.Formulario Anterior	35. Año - Mes - Día	36. Cod. Admón.	37. Declaración de Exportación	38. Año - Mes - Día	39. Cod. Admón.
02	Inicial	1	XXXXXXXXXXXXXX	XXXX - XX - XX	XX	No. XXXXXXXXXXXXXXX	XXXX - XX - XX	XX

40. Cod. lugar ingreso de las mercancías	41. Cod. Depósito	42. Manifiesto de carga	43. Año - Mes - Día	44. Documento de transporte	45. Año - Mes - Día
BAQ	20870	No. 116575010361476	2019 - 10 - 17	No. SHX60274642	2019 - 09 - 16

46. Nombre exportador o proveedor en el exterior	47. Ciudad	48. Cod.País Exportador

49. Dirección exportador o proveedor en el exterior	50. E-mail

51. No. de factura	52. Año - Mes - Día	53. Cod. país procedencia	54. Cod. Modo Transporte	55. Código de Bandera	56. Cod. Depto destino	57. Empresa transportadora	58. Tasa de cambio $ cvs.
19YK01SQ023-2	2019 - 09 - 11	215	1	434	11	FRONTIER AGENCIA MARITIMA	3,387.72

S

59. Subpartida arancelaria	60. Cod. Complementario	61. Cod. Suplementario	62. Cod. Modalidad	63. No. cuotas o meses	64. Valor cuota USD	65. Periodicidad del pago de la cuota	66. Cod. país de origen	67. Cod. Acuerdo
8502111000	XX	XX	C100	XX	XXXX	XX	215	XXX

68. Forma de pago de la importación	69. Tipo de importación	70. Cod. país compra	71. Peso bruto kgs. dcms.	72. Peso neto kgs. dcms.	73. Código embalaje	74. No. bultos	75. Subpartidas	76. Cod. unidad comercial	77. Cantidad dcms.
10	01	215	44,335.00	43,587.00	YY	187	1	U	187.00

78. Valor FOB USD	Valor fletes USD
	0

79. Valor Seguros USD	80. Valor Otros Gastos USD
0	0

81. Sumatoria de fletes, seguros y otros gastos USD	83. Ajuste valor USD
0	0

84. Valor aduana USD	85. Código registro o licencia	86. Número
0	R	50181304

87. Cod. Año oficina	88.	89. Programa No	90. Cód Interno del Producto
3	2019	XXXXXXXXXX	0

Autoliquidación

Concepto	%	Base	Total Liquidado ($)	Total a pagar con esta declaración ($)	Total Liquidado (USD)
Arancel	0.00	0	0	0	0
I.V.A.	19.00	0	0	0	0
Salvaguardia	0.00	0	0	0	0
Derechos Compensatorios	0.00	0	0	0	0
Derechos Antidumping	0	0	0	0	0
Sanción	0	0	0	0	
Rescate	0	0	0	0	
		Total			0

91. Descripción de las mercancías (No incluir la descripción de las mercancías a importar con lo señalado en el arancel de aduanas en la subpartida arancelaria - Incluya marcas, seriales y otros) (Si el campo es insuficiente, continúe al respaldo de este formulario)

DO 24010090139-001 DECLARACION(1-1) // REGISTRO DE IMPORTACION NO. REG-50181304-20190926N DE 2019-09-26 FECHA DE VENCIMIENTO 2020-03-25 // VISTO BUENO SIC NO VSIC-1931908 DE 2019-09-25 //. PRODUCTO: PLANTA ELECTRICA DIESEL, MARCA: YORKING, MODELO: YDE6500E3, REFERENCIA: YDE6500E3, USO O DESTINO: INDUSTRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 6.3 KVA - 7 KVA, TIPO DE MOTOR: DE ÉMBOLO (PISTÓN) DE ENCENDIDO POR COMPRESION DIESEL, SERIAL: NKDFB08063359, NKDFB08063360, NKDFB08063361, NKDFB08063362, NKDFB08063363, NKDFB08063364, NKDFB08063366, NKDFB08063367, NKDFB08063368, NKDFB08063369, NKDFB08063370, NKDFB08063371, NKDFB08063372, NKDFB08063373, NKDFB08063374, NKDFB08063375, NKDFB08063376, NKDFB08063377, NKDFB08063378, VOLTAJE 220/127 VOLTS, TR(continúa al respaldo)

127. Valor pagos anteriores: 0	128. Recibo oficial de pago anterior No.: XXXXXXXXXXXXXX	129. Fecha: XXXX XX XX
130. Espacio reservado DIAN - Actuación aduanera	131. Espacio reservado Uso exclusivo Ministerio de Relaciones Exteriores	132. No. Aceptación declaración 872019000205212 133. Feha: 2019 10 29

134. Levante No.	135. Fecha	Firma funcionario responsable	136. Nombre 137. C.C. No.

Firma declarante	997. Espacio exclusivo para el sello de la entidad recaudadora (Fecha efectiva de la transacción) Coloque el timbre de la máquina registradora al dorso de este formulario	980. Pago Total $ 0

Fecha de Impresión: 2019-10-29 14:18:54

1

DIAN
Dirección de Impuestos y Aduanas Nacionales
REPÚBLICA DE COLOMBIA

Declaración de Importación

Aceptación : **872019000205212-1**

Subpartida : **8502111000**

105. Continuación descripción mercancías (Incluya marcas, seriales y otros)

IFASICO, 60Hz, MOTOR. DIESEL MARCA YORKING, DE 4TIEMPOS, MODELO YD186FA 1 CILINDRO, REFRIGERADO POR AIRE, TARJETA AVR GENERADOR, TABLERO DE CONTROL DIGITAL / ANALOGO, INCLUYE BATERIA, CABLES DE BATERIA, BREAKER, TANQUE COMBUSTIBLE, Y LOS DEMAS INSTRUMENTOS PARA SU NORMAL FUNCIONAMIENTO, PAIS ORIGEN: CHINA - 215. CANT (19) U (ITEM 1). PRODUCTO: PLANTA ELECTRICA DIESEL, MARCA: YORKING, MODELO: YDE8500E3, REFERENCIA: YDE8500E3, USO O DESTINO: INDUSTRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 8.2 KVA - 9 KVA, TIPO DE MOTOR: DE ÉMBOLO (PISTÓN) DE ENCENDIDO POR COMPRESION DIESEL, SERIAL: KDFB08063380, KDFB08063382, KDFB08063389, KDFB08063391, VOLTAJE 220/127 VOLTS, TRIFASICO, 60Hz, MOTOR. DIESEL MARCA YORKING, DE 4 TIEMPOS, MODELO YD192FA 1CILINDRO, REFRIGERADO POR AIRE , TARJETA AVR GENERADOR, TABLERO DE CONTROL DIGITAL / ANALOGO, INCLUYE BATERIA, CABLES DE BATERIA, BREAKER, TANQUE COMBUSTIBLE, Y LOS DEMAS INSTRUMENTOS PARA SU NORMAL FUNCIONAMIENTO., PAIS ORIGEN: CHINA -215. CANT (4) U (ITEM 2). PRODUCTO: PLANTA ELECTRICA DIESEL, MARCA: YORKING, MODELO: YDE8500T, REFERENCIA: YDE8500T, USO ODESTINO: INDUSTRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 6 .5 KVA - 7 KVA, TIPO DE MOTOR: DE ÉMBOLO (PISTÓN) DE ENCENDIDO POR COMPRESION DIESEL, SERIAL: KDFB08062477, KDFB08062478, KDFB080 62479, KDFB08062480, KDFB08062481, KDFB08062482, KDFB08062483, KDFB08062484, KDFB08062485, KDFB08062486, KDFB08062487, KDFB080624 89, KDFB08062490, KDFB08062491, KDFB08062492, KDFB08062493, KDFB08062494, KDFB08062495, KDFB08062499, KDFB08062501, KDFB08062502, KDFB08062504, KDFB08062508, KDFB08062509, KDFB08062513, KDFB08062514, KDFB08062516, KDFB08062517, KDFB08062519, KDFB08062522, KD FB08062524, KDFB08062525, KDFB08062529, KDFB08062531, KDFB08062535, KDFB08062536, KDFB08062538, KDFB08062539, KDFB08062540, KDFB0 8062541, KDFB08062542, KDFB08062543, KDFB08062545, KDFB08062546, KDFB08062547, KDFB08062548, KDFB08062549, KDFB08062550, KDFB0806 2552, KDFB08062553, KDFB08062554, KDFB08062556, KDFB08062557, KDFB08062558, KDFB08062561, KDFB08062563, KDFB08062565, KDFB0806256 7, KDFB08062568, KDFB08062573, KDFB08062576, VOLTAJE 220/127 VOLTS, MONOFASICO 60Hz,MOTOR. DIESEL MARCA YORKING, DE 4 TIEMPOS, MO DELO YD192FA 1 CILINDROS, REFRIGERADO POR AIRE, TARJETA AVR GENERADOR, TABLERO DE CONTROL DIGITAL / ANALOGO, INCLUYE BATERIA, CAB LES DE BATERIA, BREAKER, TANQUE COMBUSTIBLE, Y LOS DEMAS INSTRUMENTOS PARA SU NORMAL FUNCIONAMIENTO., PAIS ORIGEN: CHINA - 215. C ANT (61) U (ITEM 3). PRODUCTO: PLANTA ELECTRICA DIESEL, MARCA: YORKING, MODELO: YDE8500T3, REFERENCIA: YDE8500T3, USO O DESTINO: INDUSTRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 8.2 KVA - 9 KVA, TIPO DE MOTOR: DE ÉMBOLO (PISTÓN) DE ENCENDIDO POR COMPRESION DIESEL, SERIAL: KDFB08062589, KDFB08062587, VOLTAJE 220/127 VOLTS, TRIFASICO, 60Hz, MOTOR. DIESEL MARCA YORKING, DE 4TIEMPOS, MOD ELO YD192FA 1 CILINDRO, REFRIGERADO POR AGUA, TARJETA AVR GENERADOR, TABLERO DE CONTROL DIGITAL / ANALOGO, INCLUYE BATERIA, CABLE S DE BATERIA, BREAKER, TANQUE COMBUSTIBLE, Y LOS DEMAS INSTRUMENTOS PARA SU NORMAL FUNCIONAMIENTO., PAIS ORIGEN: CHINA -215. CANT (2) U (ITEM 4). PRODUCTO: PLANTA ELECTRICA DIESEL, MARCA: YORKING, MODELO: YDE6700TA, REFERENCIA: YDE6700T, USO ODESTINO: INDUST RIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: DE 5 / 5,5 KVA, TIPO DE MOTOR: DE ÉMBOLO (PISTÓN) DE ENCENDIDO POR COMPRESION DIESEL, SERIAL: NKDFB08060000, NKDFB08060001, NKDFB08060002, NKDFB08060003, NKDFB08060004, NKDFB08060005, NKDFB08060006, NKDFB08060007, NKDFB08060008, NKDFB08060009, NKDFB08060010, NKDFB08060011, NKDFB08060012, NKDFB08060013, NKDFB08060014, NKDFB08060015, NKDFB0806 0016, NKDFB08060017, NKDFB08060018, NKDFB08060019, NKDFB08059972, NKDFB08059979, NKDFB08059985, NKDFB08059988, NKDFB08059989, NKD FB08059992, NKDFB08059994, NKDFB08059995, NKDFB08059998, NKDFB08059999, VOLTAJE 220/127 VOLTS, MONOFASICO 60Hz, MOTOR. DIESEL MAR CA YORKING, DE 4 TIEMPOS, MODELO YD186FA, 1 CILINDRO, REFRIGERADO POR AIRE, TARJETA AVR GENERADOR, PANEL DE CONTROL HGM1790, INCL UYE BATERIA, CABLES DE BATERIA, BREAKER, TANQUE COMBUSTIBLE, Y LOS DEMAS INSTRUMENTOS PARA SU NORMAL FUNCIONAMIENTO., PAIS ORIGEN : CHINA - 215. CANT (30) U (ITEM 5). PRODUCTO: PLANTA ELECTRICA DIESEL SIN CABINA / CABINADO, MARCA: YORKING, MODELO: YDE6700TA3, REFERENCIA: YDE6700T3, USO O DESTINO: INDUSTRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 6.3 KVA - 7 KVA, TIPO DE MOTOR: DE ÉMBOL O (PISTÓN) DE ENCENDIDO POR COMPRESION DIESEL, SERIAL: NKDFB08060020, NKDFB08060021, NKDFB08060022, NKDFB08060023, NKDFB08060024, NKDFB08060025, NKDFB08060026, NKDFB08060027, NKDFB08060028, NKDFB08060029, NKDFB08060030, NKDFB08060031, NKDFB08060032, NKDFB080 60033, NKDFB08060034, VOLTAJE 220/127 VOLTS, TRIFASICO, 60Hz, MOTOR. DIESEL MARCA YORKING, DE 4 TIEMPOS, MODELO YD186FA 1 CILINDR O, REFRIGERADO POR AIRE, TARJETA AVR GENERADOR, TABLERO DE CONTROL DIGITAL / ANALOGO, INCLUYE BATERIA, CABLES DE BATERIA, BREAKER , TANQUE COMBUSTIBLE, Y LOS DEMAS INSTRUMENTOS PARA SU NORMAL FUNCIONAMIENTO., PAIS ORIGEN: CHINA -215. CANT (15) U (ITEM 6). PRO DUCTO: PLANTA ELECTRICA DIESEL SIN CABINA / CABINADO, MARCA: YORKING, MODELO: YDE8500TA/YDE8500T, REFERENCIA: YDE8500T, USO O DES TINO: INDUSTRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 6.5 KVA - 7 KVA, TIPO DE MOTOR: DE ÉMBOLO (PISTÓN) DE ENCENDIDO POR COMPR ESION DIESEL, SERIAL: KDFB08062597, KDFB08062598, KDFB08062599, KDFB08062600, KDFB08062601, KDFB08062602, KDFB08062603, KDFB08062 604, KDFB08062605, KDFB08062606, KDFB08062607, KDFB08062608, KDFB08062609, KDFB08062610, KDFB08062611, KDFB08062612, KDFB08062613 , KDFB08062614, KDFB08062615, KDFB08062616, VOLTAJE 220/127 VOLTS, MONOFASICO 60Hz,MOTOR. DIESEL MARCA YORKING, DE 4 TIEMPOS, MOD ELO YD192FA 1 CILINDROS, REFRIGERADO POR AIRE, TARJETA AVR GENERADOR, TABLERO DE CONTROL DIGITAL / ANALOGO, INCLUYE BATERIA, CABL ES DE BATERIA, BREAKER, TANQUE COMBUSTIBLE, Y LOS DEMAS INSTRUMENTOS PARA SU NORMAL FUNCIONAMIENTO., PAIS ORIGEN: CHINA - 215. CA NT (20) U (ITEM 7). PRODUCTO: PLANTA ELECTRICA DIESEL SIN CABINA / CABINADO, MARCA: YORKING, MODELO: YDE8500T3/YDE8500TA3, REFERE NCIA: YDE8500T3, USO O DESTINO: INDUSTRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 8.2 KVA - 9 KVA, TIPO DE MOTOR: DE ÉMBOLO (PIST ÓN) DE ENCENDIDO POR COMPRESION DIESEL, SERIAL: KDFB08062617, KDFB08062618, KDFB08062619, KDFB08062620, KDFB08062621, KDFB0806262 2, KDFB08062623, KDFB08062624, KDFB08062625, KDFB08062626, VOLTAJE 220/127 VOLTS, TRIFASICO, 60Hz, MOTOR. DIESEL MARCA YORKING, D E 4TIEMPOS, MODELO YD192FA 1 CILINDRO, REFRIGERADO POR AGUA, TARJETA AVR GENERADOR, TABLERO DE CONTROL DIGITAL / ANALOGO, INCLUYE BATERIA, CABLES DE BATERIA, BREAKER, TANQUE COMBUSTIBLE, Y LOS DEMAS INSTRUMENTOS PARA SU NORMAL FUNCIONAMIENTO., PAIS ORIGEN: C HINA - 215. CANT (10) U(ITEM 8). PRODUCTO: PLANTA ELECTRICA DIESEL SIN CABINA / CABINADO, MARCA: YORKING, MODELO: YDY15S3, REFERE NCIA: YDY15S3, USO O DESTINO: INDUSTRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 14 KVA - 16,5 KVA, TIPO DE MOTOR: DE ÉMBOLO (PIST ÓN) DE ENCENDIDO POR COMPRESION DIESEL, SERIAL: YN1901090001, YN1901090002, YN1901090003, YN1901090004, YN1901090005, YN190109000 6, YN1901090007, YN1901090008, YN1901090009, YN1901090010, YN1901090011, YN1901090012, YN1901090013, YN1901090014, YN1901090015, VOLTAJE 220 /127 VOLTS, TRIFASICO, 60Hz, MOTOR. DIESEL MARCA YTO, DE 4TIEMPOS, MODELO YD480D CILINDROS EN LINEA, REFRIGERADO POR AGUA, TARJETA AVR GENERADOR, TABLERO DE CONTROL DIGITAL, INCLUYE BATERIA, CABLES DE BATERIA, BREAKER, TANQUE COMBUSTIBLE, Y LOS D EMAS INSTRUMENTOS PARA SU NORMAL FUNCIONAMIENTO. USO.INDUSTRIAL. MERCANCIA NUEVA.AÑO DE FABRICACION 2018. REF. YDY15S3,, PAIS ORI GEN: CHINA - 215. CANT (15) U (ITEM 9). PRODUCTO: PLANTA ELECTRICA DIESEL SIN CABINA / CABINADO, MARCA: YORKING, MODELO: YDY25S3, REFERENCIA: YDY25S3, USO O DESTINO: INDUSTRIAL, TIPO DE CORRIENTE: ALTERNA, POTENCIA: 22 KVA - 24 KVA, TIPO DE MOTOR: DE ÉMBOLO (PISTÓN) DE ENCENDIDO POR COMPRESION DIESEL, SERIAL: YN1901090016, YN1901090017, YN1901090018, YN1901090019, YN1901090026, YN1901 090027, YN1901090033, YN1901090034, YN1901090035, YN1901090036, YN1901090037, VOLTAJE 220/ 127 VOLTS, TRIFASICO, 60Hz. MOTOR. DIE SEL MARCA YTO, DE 4TIEMPOS, MODELO YSD490D CILINDROS EN LINEA, REFRIGERADO POR AGUA, TARJETA AVR GENERADOR, TABLERO DE CONTROL DI GITAL, INCLUYE BATERIA, CABLES DE BATERIA, BREAKER, TANQUE COMBUSTIBLE, YLOS DEMAS INSTRUMENTOS PARA SU NORMAL FUNCIONAMIENTO. US O.INDUSTRIAL. MERCANCIA NUEVA.AÑO DE FABRICACION 2018. REF. YDY25S3,, PAIS ORIGEN: CHINA - 215. CANT (11) U (ITEM 10).XXXXXXXXXXX
XXXXXXXXXX

IMPORTADORA
MONTECARLO MOTORS

ISO 9001
BUREAU VERITAS
Certification

Bogotá, Noviembre 19 de 2019

IMM-MR-018-1119

Señor(es):
AGENCIA PRESIDENCIAL DE COOPERACION INTERNACIONAL DE COLOMBIA – APC

Respetados señores:

IMPORTADORA MONTECARLO MOTORS SAS, se permite certificar que la empresa **ABCONTROL INGENIERIA S.A.S**, con Nit 830-108-265-1, esta autorizada para distribuir nuestro productos de las marcas: YORKING – POWER MOTORS – DUCATI y GROWAY, contando con nuestro respaldo y garantía en sus operaciones comerciales a nivel nacional.

Igualmente nos permitimos respaldar y avalar la disponibilidad de manuales, planos, apoyo técnico, mano de obra calificada y repuestos para atender el servicio Post Venta.

Cordialmente,

Carolina Castañeda T.

Carolina Castañeda
Dirección Comercial
IMPORTADORA MONTECARLO MOTORS S.A.S.

Doc 5

IMPORTADORA
MONTECARLO MOTORS

ISO: 9001
BUREAU VERITAS
Certification

Bogotá, Noviembre 19 de 2.019

IMM-MR-017-1119

Señor(es):
AGENCIA PRESIDENCIAL DE COOPERACION INTERNACIONAL DE COLOMBIA-APC

Respetados Señores:

IMPORTADORA MONTECARLO MOTORS S.A.S, se permite certificar el término de la garantía que ampara defectos de fabricación y/o mala calidad en los elementos y materiales empleados en la fabricación de los equipos de comercializa, así:

Plantas Eléctricas YORKING y/o DUCATI motor 3.600 rpm: 500 horas o 12 meses, lo que primero ocurra.
Plantas Eléctricas YORKING motor 1.800 rpm: 1.000 horas o 12 meses, lo que primero ocurra.
Plantas Eléctricas POWER MOTORS: 1.500 horas o 12 meses, lo que primero ocurra.

La empresa **ABCONTROL INGENIERIA S.A.S., con Nit. 830.108.265-1** en calidad de distribuidor autorizado de nuestros productos, podrá ofrecer la garantía extendida de los equipos hasta por 1 año más, siempre que se cumplan los requisitos de esta figura, consistentes en el estricto cumplimiento del mantenimiento preventivo de las máquinas y el uso adecuado de las mismas. En todos los casos, esta garantía extendida estará bajo la responsabilidad del distribuidor.

Cualquier duda o inquietud, con gusto será atendida.

Cordialmente,

Carolina Castañeda T.

Carolina Castañeda
Dirección Comercial
IMPORTADORA MONTECARLO MOTORS SAS

CERTECNICA
Certificaciones Técnicas

CER-FO-13 V:1

CERTIFICADO DE CONFORMIDAD DE PRODUCTO

ESQUEMA 5

CERTECNICA S.A.S. Certifica que el producto:

GENERADOR ELÉCTRICO

Referencias: Anexo 1 Referencias Certificadas

Importado por

IMPORTADORA MONTECARLO MOTORS S.A.S

NIT: 830.040.045-3
Avenida calle 6 # 31-63, Bogotá (Colombia)

Fabricado por:

Weima Agricultural Machinery Co., Ltd.
Area B, Luohuang Industrial Park, Jiangjin District, Chongqing City People's (China)

Evaluado conforme a los requisitos de:

Resolución 90708 del 30 de agosto de 2013 – Reglamento de instalaciones de Instalaciones eléctricas -RETIE artículo 20 numeral 20.21

Nota:

1. El presente certificado cubre únicamente las referencias o unidades descritas en el anexo.
2. La vigencia y validez del presente certificado está sujeto a cumplimiento de los requisitos estipulado en el CER-DI-05 "Términos y Condiciones para certificación"
3. CERTECNICA S.A.S. realiza seguimiento para verificar la conformidad del producto de acuerdo a los estipulado el CER-DI-05 "Términos y Condiciones para certificación"
4. Para verificar la validez y novedades del presente certificado puede consultar la página www.certecnica.com o a través de la consulta pública en SICERCO (SOLO PARA REGLAMENTOS TÉCNICOS)

Fecha de aprobación: 15-noviembre-2018
Fecha del primer seguimiento: Antes del 15-noviembre-2019
Fecha del segundo seguimiento: Antes del 15-noviembre-2020
Fecha de vencimiento:14-noviembre-2021

Autorizado por

CARLOS FERNANDO CASTAÑEDA NIÑO
Gerente, CERTECNICA S.A.S.
Calle 114 No. 47A -09, Bogotá D.C., Colombia
Tel: (+57-1) 215 70 53

ACREDITADO ONAC
ORGANISMO NACIONAL DE ACREDITACIÓN DE COLOMBIA
ISO/IEC 17065:2012
12-CPR-007

CERTIFICADO No 696
Versión: 0

2018/09/24

4250

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ANEXO 1 REFERENCIAS CERTIFICADAS

ITEM NO.	NOMBRE	DESCRIPCIÓN				REFERENCIA
		MODELO	TENSIÓN	MARCA	ARRANQUE	
1	GENERADOR ELÉCTRICO	WM1300	1300 - 110V	DUCATI	---	DGR 1300S
2	GENERADOR ELÉCTRICO	WM2500 / WM2500E	2500 - 110V	DUCATI	---	DGR 2500S
3	GENERADOR ELÉCTRICO	WM3500 / WM3500E	3200 - 110V	DUCATI	---	DGR 3200S
4	GENERADOR ELÉCTRICO	WM4500 / WM4500E	4500 - 110V	DUCATI	---	DGR 4500S
5	GENERADOR ELÉCTRICO	WM5500 / WM5500E	5500 - 110V	DUCATI	---	DGR 5500S
6	GENERADOR ELÉCTRICO	WM5500 / WM5500E	5500 - 110V	DUCATI	ELÉCTRICO	DGR 5500ES
7	GENERADOR ELÉCTRICO	WM5500 / WM5500E	5500 - 110V	DUCATI	---	DGR 5500TS
8	GENERADOR ELÉCTRICO	WM7000 / WM7000E	7000 - 110V	DUCATI	---	DGR 7000S
9	GENERADOR ELÉCTRICO	WM7000 / WM7000E	7000 - 110V	DUCATI	ELÉCTRICO	DGR 7000ES

ACREDITADO ONAC
ORGANISMO NACIONAL DE ACREDITACIÓN DE COLOMBIA

ISO/IEC 17065:2012
12-CPR-007

CARLOS FERNANDO CASTAÑEDA NIÑO
Gerente, CERTECNICA S.A.S.
Calle 114 No. 47A -09, Bogotá D.C., Colombia
Tel: (+57-1) 215 70 53

CERTECNICA
Certificaciones Técnicas

CER-FO-13 V:1

CERTIFICADO DE CONFORMIDAD DE PRODUCTO

ESQUEMA 5

CERTECNICA S.A.S. Certifica que el producto:

GENERADORES ELÉCTRICOS

Referencias: Anexo 1 Referencias Certificadas

Importado por

IMPORTADORA MONTECARLO MOTORS S.A.S.

NIT: 830.040.045-3
Avenida calle 6 # 31-63, Bogotá (Colombia)

Fabricado por:
Wuxi Yorking Power Co., Ltd.
No 25 West Dujuan Road, Hudai Town, Binhu District, Wuxi, 21400

Evaluado conforme a los requisitos de:
Resolución 90708 del 30 de agosto de 2013 – Reglamento de instalaciones de instalaciones eléctricas -RETIE artículo 20 numeral 20.21

Nota:

1. El presente certificado cubre únicamente las referencias o unidades descritas en el anexo.
2. La vigencia y validez del presente certificado está sujeto a cumplimiento de los requisitos estipulado en el CER-DI-05 "Términos y Condiciones para certificación"
3. CERTECNICA S.A.S. realiza seguimiento para verificar la conformidad del producto de acuerdo a los estipulado el CER-DI-05 "Términos y Condiciones para certificación"
4. Para verificar la validez y novedades del presente certificado puede consultar la página www.certecnica.com o a través de la consulta pública en SICERCO (SOLO PARA REGLAMENTOS TÉCNICOS)

Fecha de aprobación: 15-noviembre-2018
Fecha del primer seguimiento: Antes del 15-noviembre-2019
Fecha del segundo seguimiento: Antes del 15-noviembre-2020
Fecha de vencimiento: 14-noviembre-2021

Autorizado por

CARLOS FERNANDO CASTAÑEDA NIÑO
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CERTIFICADO No 695
Versión: 0
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ANEXO 1 REFERENCIAS CERTIFICADAS

ITEM	NOMBRE	REFERENCIA	DESCRIPCIÓN						
			POTENCIA		FASE	CABINA	COMBUSTIBLE	MODELO MOTOR	MARCA
			PRIME (kVA)	STANDBY (kVA)					
1	Generadores eléctricos	YDE2800X	1,8	2,2	MONOFÁSICO	SIN CABINA	DIESEL	YD173FA	YORKING
2	Generadores eléctricos	YDE2800E	1,8	2,2	MONOFÁSICO	SIN CABINA	DIESEL	YD173FA	YORKING
3	Generadores eléctricos	YDE3800X	3	3,3	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD178FA	YORKING
4	Generadores eléctricos	YDE3800E	3	3,3	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD178FA	YORKING
5	Generadores eléctricos	YDE3800T	3	3,3	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD178FA	YORKING
6	Generadores eléctricos	YDE6500X	5	5,5	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD186FA	YORKING
7	Generadores eléctricos	YDE6500E	5	5,5	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD186FA	YORKING
8	Generadores eléctricos	YDE6700T	5	5,5	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD186FA	YORKING
9	Generadores eléctricos	YDE6500X3	6,3	7	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD186FA	YORKING
10	Generadores eléctricos	YDE6500E3	6,3	7	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD186FA	YORKING
11	Generadores eléctricos	YDE6700T3	6,3	7	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD186FA	YORKING
12	Generadores eléctricos	YDE7500X	5,5	6	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD188FA	YORKING
13	Generadores eléctricos	YDE7500E	5,5	6	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD188FA	YORKING
14	Generadores eléctricos	YDE7500T	5,5	6	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD188FA	YORKING
15	Generadores eléctricos	YDE7500X3	6,9	7,5	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD188FA	YORKING
16	Generadores eléctricos	YDE7500XE3	6,9	7,5	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD188FA	YORKING
17	Generadores eléctricos	YDE7500T3	6,9	7,5	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD188FA	YORKING
18	Generadores eléctricos	YDE8500X	6,5	7	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD192FA	YORKING
19	Generadores eléctricos	YDE8500E	6,5	7	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD192FA	YORKING
20	Generadores eléctricos	YDE8500T	6,5	7	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD192FA	YORKING
21	Generadores eléctricos	YDE8500X3	8,2	9	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD192FA	YORKING
22	Generadores eléctricos	YDE8500E3	8,2	9	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD192FA	YORKING

ITEM	NOMBRE	REFERENCIA	DESCRIPCIÓN						
			POTENCIA		FASE	CABINA	COMBUSTIBLE	MODELO MOTOR	MARCA
			PRIME (kVA)	STANDBY (kVA)					
23	Generadores eléctricos	YDE8500T3	8,2	9	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD192FA	YORKING
24	Generadores eléctricos	YDE7000ST	4,5	5	MONOFÁSICO	CABINADO	DIESEL	YD186FA	YORKING
25	Generadores eléctricos	YDE7000ST3	5,7	6,2	TRIFÁSICO	CABINADO	DIESEL	YD186FA	YORKING
26	Generadores eléctricos	YDE7500ST	5	5,5	MONOFÁSICO	CABINADO	DIESEL	YD188FA	YORKING
27	Generadores eléctricos	YDE7500ST3	6,2	6,8	TRIFÁSICO	CABINADO	DIESEL	YD186FA	YORKING
28	Generadores eléctricos	YDE8500ST	6	6,5	MONOFÁSICO	CABINADO	DIESEL	YD192FA	YORKING
29	Generadores eléctricos	YDE8500ST3	7,5	8,1	TRIFÁSICO	CABINADO	DIESEL	YD192FA	YORKING
30	Generadores eléctricos	YDE6500XW	3	3,3	MONOFÁSICO	SIN CABINA	DIESEL	YD186FA	YORKING
31	Generadores eléctricos	YDE6500EW	3	3,3	MONOFÁSICO	SIN CABINA	DIESEL	YD186FA	YORKING
32	Generadores eléctricos	YDE12E	9,5	10	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	EV80	YORKING
33	Generadores eléctricos	YDE12T	9,5	10	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	EV80	YORKING
34	Generadores eléctricos	YDE12E3	11	12,5	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	EV80	YORKING
35	Generadores eléctricos	YDE12T3	11	12,5	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	EV80	YORKING
36	Generadores eléctricos	YDE12000E	10	10,5	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD2V88F	YORKING
37	Generadores eléctricos	YDE12000T	10	10,5	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD2V88F	YORKING
38	Generadores eléctricos	YDE12000E3	11,5	12,5	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD2V88F	YORKING
39	Generadores eléctricos	YDE12000T3	11,5	12,5	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD2V88F	YORKING
40	Generadores eléctricos	YDE15E	12	13	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD292F	YORKING
41	Generadores eléctricos	YDE15T	12	13	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD292F	YORKING
42	Generadores eléctricos	YDE15E3	15	16	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD292F	YORKING
43	Generadores eléctricos	YDE15T3	15	16	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD292F	YORKING
44	Generadores eléctricos	YGE1000i	0,9	1	MONOFÁSICO	CABINADO	GASOLINA	144F	YORKING
45	Generadores eléctricos	YDE1000Xi	0,9	1	MONOFÁSICO	CABINADO	GASOLINA	144F	YORKING
46	Generadores eléctricos	YGE2000i	1,8	2	MONOFÁSICO	CABINADO	GASOLINA	160F	YORKING
47	Generadores eléctricos	YDE2000Xi	1,8	2	MONOFÁSICO	CABINADO	GASOLINA	160F	YORKING
48	Generadores eléctricos	YGE3000i	2,8	3	MONOFÁSICO	CABINADO	GASOLINA	170F	YORKING

ITEM	NOMBRE	REFERENCIA	DESCRIPCIÓN						
			POTENCIA		FASE	CABINA	COMBUSTIBLE	MODELO MOTOR	MARCA
			PRIME (kVA)	STANDBY (kVA)					
49	Generadores eléctricos	YDE3000Xi	2,8	3	MONOFÁSICO	CABINADO	GASOLINA	170F	YORKING
50	Generadores eléctricos	YGE3500i	3	3,5	MONOFÁSICO	CABINADO	GASOLINA	JD168F	YORKING
51	Generadores eléctricos	YGE3500Vi	3	3,5	MONOFÁSICO	CABINADO	GASOLINA	JD168F	YORKING
52	Generadores eléctricos	YGE5500i	5	5,5	MONOFÁSICO	CABINADO	GASOLINA	JD190F	YORKING
53	Generadores eléctricos	YGE550Vi	5	5,5	MONOFÁSICO	CABINADO	GASOLINA	JD190F	YORKING
54	Generadores eléctricos	YGE8000i	7,2	7,5	MONOFÁSICO / TRIFÁSICO	CABINADO	GASOLINA	JD190F	YORKING
55	Generadores eléctricos	YGE8000Vi	7,2	7,5	MONOFÁSICO / TRIFÁSICO	CABINADO	GASOLINA	JD190F	YORKING
56	Generadores eléctricos	YDY8E	8	8,8	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD380D	YORKING
57	Generadores eléctricos	YDY8S	8	8,8	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD380D	YORKING
58	Generadores eléctricos	YDY10E	9,5	10,5	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD385D	YORKING
59	Generadores eléctricos	YDY10S	9,5	10,5	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD385D	YORKING
60	Generadores eléctricos	YDY12E	12	13	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD480D	YORKING
61	Generadores eléctricos	YDY12S	12	13	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YD480D	YORKING
62	Generadores eléctricos	YDY15E	14	15,5	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YND485D	YORKING
63	Generadores eléctricos	YDY15S	14	15,5	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YND485D	YORKING
64	Generadores eléctricos	YDY20E	16,5	18,5	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YSD490D	YORKING
65	Generadores eléctricos	YDY20S	16,5	18,5	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	YSD490D	YORKING
66	Generadores eléctricos	YDY25E	21	23	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	Y495D	YORKING
67	Generadores eléctricos	YDY25S	21	23	MONOFÁSICO	SIN CABINA / CABINADO	DIESEL	Y495D	YORKING
68	Generadores eléctricos	YDY15E3	14	16,5	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD480D	YORKING
69	Generadores eléctricos	YDY15S3	14	16,5	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YD480D	YORKING
70	Generadores eléctricos	YDY20E3	17,5	20	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YND485D	YORKING
71	Generadores eléctricos	YDY20S3	17,5	20	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YND485D	YORKING
72	Generadores eléctricos	YDY25E3	22	24	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YSD490D	YORKING
73	Generadores eléctricos	YDY25S3	22	24	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	YSD490D	YORKING
74	Generadores eléctricos	YDY30E3	26	31	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	Y495D	YORKING

ITEM	NOMBRE	REFERENCIA	DESCRIPCIÓN						
			POTENCIA		FASE	CABINA	COMBUSTIBLE	MODELO MOTOR	MARCA
			PRIME (kVA)	STANDBY (kVA)					
75	Generadores eléctricos	YDY30S3	26	31	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	Y495D	YORKING
76	Generadores eléctricos	YDY40E3	33	36	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	Y4100D	YORKING
77	Generadores eléctricos	YDY40S3	33	36	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	Y4100D	YORKING
78	Generadores eléctricos	YDY50E3	44	48	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	Y4105D	YORKING
79	Generadores eléctricos	YDY50S3	44	48	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	Y4105D	YORKING
80	Generadores eléctricos	YDPK12E3	11	12	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	403D-11G	YORKING
81	Generadores eléctricos	YDPK12S3	11	12	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	403D-11G	YORKING
82	Generadores eléctricos	YDPK18E3	16	18	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	403D-15G	YORKING
83	Generadores eléctricos	YDPK18S3	16	18	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	403D-15G	YORKING
84	Generadores eléctricos	YDPK19E3	18	19	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	403A-15G2	YORKING
85	Generadores eléctricos	YDPK19S3	18	19	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	403A-15G2	YORKING
86	Generadores eléctricos	YDPK28E3	24	27	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	404D-22G	YORKING
87	Generadores eléctricos	YDPK28S3	24	27	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	404D-22G	YORKING
88	Generadores eléctricos	YDPK34E3	31	34	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	404D-22TG	YORKING
89	Generadores eléctricos	YDPK34S3	31	34	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	404D-22TG	YORKING
90	Generadores eléctricos	YDPK39E3	35	39	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	404D-22TAG	YORKING
91	Generadores eléctricos	YDPK39S3	35	39	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	404D-22TAG	YORKING
92	Generadores eléctricos	YDPK39-1E3	35	39	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1103A-33G	YORKING
93	Generadores eléctricos	YDPK39-1S3	35	39	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1103A-33G	YORKING
94	Generadores eléctricos	YDPK48E3	44	48	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1103A-33TG1	YORKING
95	Generadores eléctricos	YDPK48S3	44	48	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1103A-33TG1	YORKING
96	Generadores eléctricos	YDPK55E3	50	55	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1103A-33TG1	YORKING
97	Generadores eléctricos	YDPK55S3	50	55	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1103A-33TG1	YORKING
98	Generadores eléctricos	YDPK66E3	60	66	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1103A-33TG2	YORKING
99	Generadores eléctricos	YDPK66S3	60	66	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1103A-33TG2	YORKING
100	Generadores eléctricos	YDPK74E3	68	74	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1103A-33TG2	YORKING

ITEM	NOMBRE	REFERENCIA	DESCRIPCIÓN						
			POTENCIA		FASE	CABINA	COMBUSTIBLE	MODELO MOTOR	MARCA
			PRIME (kVA)	STANDBY (kVA)					
101	Generadores eléctricos	YDPK74S3	68	74	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1103A-33TG2	YORKING
102	Generadores eléctricos	YDPK83E3	75	83	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1104A-44TG1	YORKING
103	Generadores eléctricos	YDPK83S3	75	83	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1104A-44TG1	YORKING
104	Generadores eléctricos	YDPK99-1E3	90	99	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1104C-44TAG1	YORKING
105	Generadores eléctricos	YDPK99-1S3	90	99	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1104C-44TAG1	YORKING
106	Generadores eléctricos	YDPK99-2E3	90	99	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1104A-44TG2	YORKING
107	Generadores eléctricos	YDPK99-2S3	90	99	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1104A-44TG2	YORKING
108	Generadores eléctricos	YDPK124E3	113	124	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1104C-44TAG2	YORKING
109	Generadores eléctricos	YDPK124S3	113	124	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1104C-44TAG2	YORKING
110	Generadores eléctricos	YDPK165E3	150	165	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1106A-70TG1	YORKING
111	Generadores eléctricos	YDPK165S3	150	165	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1106A-70TG1	YORKING
112	Generadores eléctricos	YDPK186E3	169	186	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1106A-70TAG2	YORKING
113	Generadores eléctricos	YDPK186S3	169	186	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1106A-70TAG2	YORKING
114	Generadores eléctricos	YDPK220E3	200	220	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1106A-70TAG3	YORKING
115	Generadores eléctricos	YDPK220S3	200	220	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1106A-70TAG3	YORKING
116	Generadores eléctricos	YDPK275-2E3	250	275	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1506A-E88TAG2	YORKING
117	Generadores eléctricos	YDPK275-2S3	250	275	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1506A-E88TAG2	YORKING
118	Generadores eléctricos	YDPK303E3	275	303	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1506A-E88TAG3	YORKING
119	Generadores eléctricos	YDPK303S3	275	303	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1506A-E88TAG3	YORKING
120	Generadores eléctricos	YDPK344E3	313	344	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1506A-E88TAG4	YORKING
121	Generadores eléctricos	YDPK344S3	313	344	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1506A-E88TAG4	YORKING
122	Generadores eléctricos	YDPK370E3	338	371	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1506A-E88TAG5	YORKING
123	Generadores eléctricos	YDPK370S3	338	371	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	1506A-E88TAG5	YORKING
124	Generadores eléctricos	YDPK440E3	400	440	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	2206C-E13TAG5	YORKING
125	Generadores eléctricos	YDPK440S3	400	440	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	2206C-E13TAG5	YORKING
126	Generadores eléctricos	YDPK481E3	438	481	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	2206C-E13TAG6	YORKING

ITEM	NOMBRE	REFERENCIA	DESCRIPCIÓN						
			POTENCIA		FASE	CABINA	COMBUSTIBLE	MODELO MOTOR	MARCA
			PRIME (kVA)	STANDBY (kVA)					
127	Generadores eléctricos	YDPK481S3	438	481	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	2206C-E13TAG6	YORKING
128	Generadores eléctricos	YDPK550-1E3	500	550	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	2506C-E15TAG1	YORKING
129	Generadores eléctricos	YDPK550-1S3	500	550	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	2506C-E15TAG1	YORKING
130	Generadores eléctricos	YDPK550-2E3	500	550	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	2506C-E15TAG2	YORKING
131	Generadores eléctricos	YDPK550-2S3	500	550	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	2506C-E15TAG2	YORKING
132	Generadores eléctricos	YDPK688-1E3	625	688	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	2806C-E18TAG1A	YORKING
133	Generadores eléctricos	YDPK688-1S3	625	688	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	2806C-E18TAG1A	YORKING
134	Generadores eléctricos	YDPK688-2E3	625	688	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	2806A-E18TAG1A	YORKING
135	Generadores eléctricos	YDPK688-2S3	625	688	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	2806A-E18TAG1A	YORKING
136	Generadores eléctricos	YDPK825E3	750	825	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4006-23TAG2A	YORKING
137	Generadores eléctricos	YDPK825S3	750	825	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4006-23TAG2A	YORKING
138	Generadores eléctricos	YDPK935E3	850	935	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4006-23TAG3A	YORKING
139	Generadores eléctricos	YDPK935S3	850	935	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4006-23TAG3A	YORKING
140	Generadores eléctricos	YDPK963E3	875	963	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4008TAG1	YORKING
141	Generadores eléctricos	YDPK963S3	875	963	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4008TAG1	YORKING
142	Generadores eléctricos	YDPK1100E3	1000	1100	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4008TAG2	YORKING
143	Generadores eléctricos	YDPK1100S3	1000	1100	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4008TAG2	YORKING
144	Generadores eléctricos	YDPK1375E3	1250	1375	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4012-46TWG2A	YORKING
145	Generadores eléctricos	YDPK1375S3	1250	1375	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4012-46TWG2A	YORKING
146	Generadores eléctricos	YDPK1513E3	1375	1513	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4012-46TWG3A	YORKING
147	Generadores eléctricos	YDPK1513S3	1375	1513	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4012-46TWG3A	YORKING
148	Generadores eléctricos	YDPK1650E3	1500	1650	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4012-46TAG2A	YORKING
149	Generadores eléctricos	YDPK1650S3	1500	1650	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4012-46TAG2A	YORKING
150	Generadores eléctricos	YDPK1856E3	1688	1856	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4012-46TAG3A	YORKING
151	Generadores eléctricos	YDPK1856S3	1688	1856	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4012-46TAG3A	YORKING
152	Generadores eléctricos	YDDC32E3	29	32	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4B3.9-G1	YORKING

ITEM	NOMBRE	REFERENCIA	DESCRIPCIÓN						
			POTENCIA		FASE	CABINA	COMBUSTIBLE	MODELO MOTOR	MARCA
			PRIME (kVA)	STANDBY (kVA)					
153	Generadores eléctricos	YDDC32S3	29	32	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4B3.9-G1	YORKING
154	Generadores eléctricos	YDDC34E3	31	34	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4BT3.9-G1	YORKING
155	Generadores eléctricos	YDDC34S3	31	34	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4BT3.9-G1	YORKING
156	Generadores eléctricos	YDDC41E3	38	41	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4BT3.9-G1	YORKING
157	Generadores eléctricos	YDDC41S3	38	41	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4BT3.9-G1	YORKING
158	Generadores eléctricos	YDDC47E3	43	47	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4BT3.9-G1	YORKING
159	Generadores eléctricos	YDDC47S3	43	47	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4BT3.9-G1	YORKING
160	Generadores eléctricos	YDDC55E3	50	55	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4BTA3.9-G2	YORKING
161	Generadores eléctricos	YDDC55S3	50	55	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4BTA3.9-G2	YORKING
162	Generadores eléctricos	YDDC69E3	63	69	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4BTA3.9-G2	YORKING
163	Generadores eléctricos	YDDC69S3	63	69	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4BTA3.9-G2	YORKING
164	Generadores eléctricos	YDDC103E3	94	103	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6BT5.9-G2	YORKING
165	Generadores eléctricos	YDDC103S3	94	103	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6BT5.9-G2	YORKING
166	Generadores eléctricos	YDDC110E3	100	110	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6BT5.9-G2	YORKING
167	Generadores eléctricos	YDDC110S3	100	110	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6BT5.9-G2	YORKING
168	Generadores eléctricos	YDDC138E3	125	138	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6BTA5.9-G2	YORKING
169	Generadores eléctricos	YDDC138S3	125	138	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6BTA5.9-G2	YORKING
170	Generadores eléctricos	YDDC165E3	150	165	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6BTAA5.9-G2	YORKING
171	Generadores eléctricos	YDDC165S3	150	165	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6BTAA5.9-G2	YORKING
172	Generadores eléctricos	YDDC206E3	188	206	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6CTA8.3-G2	YORKING
173	Generadores eléctricos	YDDC206S3	188	206	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6CTA8.3-G2	YORKING
174	Generadores eléctricos	YDDC220E3	200	220	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6CTAA8.3-G2	YORKING
175	Generadores eléctricos	YDDC220S3	200	220	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6CTAA8.3-G2	YORKING
176	Generadores eléctricos	YDDC275E3	250	275	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6LTAA8.9-G2	YORKING
177	Generadores eléctricos	YDDC275S3	250	275	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	6LTAA8.9-G2	YORKING
178	Generadores eléctricos	YDCC344E3	313	344	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	NTA855-G1	YORKING

ITEM	NOMBRE	REFERENCIA	DESCRIPCIÓN						
			POTENCIA		FASE	CABINA	COMBUSTIBLE	MODELO MOTOR	MARCA
			PRIME (kVA)	STANDBY (kVA)					
179	Generadores eléctricos	YDCC344S3	313	344	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	NTA855-G1	YORKING
180	Generadores eléctricos	YDCC380E3	345	380	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	NTA855-G1B	YORKING
181	Generadores eléctricos	YDCC380S3	345	380	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	NTA855-G1B	YORKING
182	Generadores eléctricos	YDCC433E3	394	433	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	NTAA855-G3	YORKING
183	Generadores eléctricos	YDCC433S3	394	433	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	NTAA855-G3	YORKING
184	Generadores eléctricos	YDCC481E3	438	481	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA19-G2	YORKING
185	Generadores eléctricos	YDCC481S3	438	481	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA19-G2	YORKING
186	Generadores eléctricos	YDCC564E3	513	564	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA19-G3	YORKING
187	Generadores eléctricos	YDCC564S3	513	564	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA19-G3	YORKING
188	Generadores eléctricos	YDCC619E3	563	619	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA19-G3A	YORKING
189	Generadores eléctricos	YDCC619S3	563	619	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA19-G3A	YORKING
190	Generadores eléctricos	YDCC853E3	775	853	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KT38-G	YORKING
191	Generadores eléctricos	YDCC853S3	775	853	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KT38-G	YORKING
192	Generadores eléctricos	YDCC997E3	906	997	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA38-G2	YORKING
193	Generadores eléctricos	YDCC997S3	906	997	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA38-G2	YORKING
194	Generadores eléctricos	YDCC1100E3	1000	1100	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA38-G2A	YORKING
195	Generadores eléctricos	YDCC1100S3	1000	1100	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA38-G2A	YORKING
196	Generadores eléctricos	YDCC1238E3	1125	1238	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA38-G4	YORKING
197	Generadores eléctricos	YDCC1238S3	1125	1238	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA38-G4	YORKING
198	Generadores eléctricos	YDCC1513E3	1375	1513	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA50-G3	YORKING
199	Generadores eléctricos	YDCC1513S3	1375	1513	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA50-G3	YORKING
200	Generadores eléctricos	YDCC1719E3	1563	1719	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA50-G9	YORKING
201	Generadores eléctricos	YDCC1719S3	1563	1719	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	KTA50-G9	YORKING
202	Generadores eléctricos	YDW20E3	19	20	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4DW81-28D	YORKING
203	Generadores eléctricos	YDW20S3	19	20	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4DW81-28D	YORKING
204	Generadores eléctricos	YDW30E3	28	30	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4DW91-38D	YORKING

ITEM	NOMBRE	REFERENCIA	DESCRIPCIÓN						
			POTENCIA		FASE	CABINA	COMBUSTIBLE	MODELO MOTOR	MARCA
			PRIME (kVA)	STANDBY (kVA)					
205	Generadores eléctricos	YDW30S3	28	30	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4DW91-38D	YORKING
206	Generadores eléctricos	YDW35E3	31	35	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4DW92-45D	YORKING
207	Generadores eléctricos	YDW35S3	31	35	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4DW92-45D	YORKING
208	Generadores eléctricos	YDW50E3	45	50	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4DX21-61D	YORKING
209	Generadores eléctricos	YDW50S3	45	50	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4DX21-61D	YORKING
210	Generadores eléctricos	YDW58E3	53	58	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4DX22-75D	YORKING
211	Generadores eléctricos	YDW58S3	53	58	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4DX22-75D	YORKING
212	Generadores eléctricos	YDW70E3	63	69	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4DX23-90D	YORKING
213	Generadores eléctricos	YDW70S3	63	69	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4DX23-90D	YORKING
214	Generadores eléctricos	YDW90E3	81	90	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4110/125Z-11D	YORKING
215	Generadores eléctricos	YDW90S3	81	90	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	4110/125Z-11D	YORKING
216	Generadores eléctricos	YDW117E3	106	117	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA4DF2-14D	YORKING
217	Generadores eléctricos	YDW117S3	106	117	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA4DF2-14D	YORKING
218	Generadores eléctricos	YDW130E3	119	131	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DF2D-16D	YORKING
219	Generadores eléctricos	YDW130S3	119	131	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DF2D-16D	YORKING
220	Generadores eléctricos	YDW150E3	138	151	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DF2-18D	YORKING
221	Generadores eléctricos	YDW150S3	138	151	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DF2-18D	YORKING
222	Generadores eléctricos	YDW180E3	163	179	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DF2-21D	YORKING
223	Generadores eléctricos	YDW180S3	163	179	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DF2-21D	YORKING
224	Generadores eléctricos	YDW228E3	206	228	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DL1-27D	YORKING
225	Generadores eléctricos	YDW228S3	206	228	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DL1-27D	YORKING
226	Generadores eléctricos	YDW275E3	250	275	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DL2-32D	YORKING
227	Generadores eléctricos	YDW275S3	250	275	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DL2-32D	YORKING
228	Generadores eléctricos	YDW370E3	338	371	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DM2J-42D	YORKING
229	Generadores eléctricos	YDW370S3	338	371	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DM2J-42D	YORKING
230	Generadores eléctricos	YDW413E3	375	413	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DN1J-46D	YORKING

ITEM	NOMBRE	REFERENCIA	DESCRIPCIÓN						
			POTENCIA		FASE	CABINA	COMBUSTIBLE	MODELO MOTOR	MARCA
			PRIME (kVA)	STANDBY (kVA)					
231	Generadores eléctricos	YDW413S3	375	413	TRIFÁSICO	SIN CABINA / CABINADO	DIESEL	CA6DN1J-46D	YORKING

ACREDITADO ONAC
ORGANISMO NACIONAL DE ACREDITACIÓN DE COLOMBIA

ISO/IEC 17065:2012
12-CPR-007

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Doc 8

No. de Certificado

2300

ISO/IEC 17065:2012
11- CPR-003

VELASQUEZ S.A.S.
NIT. 890333030

CERTIFICACIÓN TIPO MARCA DE CONFORMIDAD (ESQUEMA 5)

El organismo de certificación **QCERT** otorga el presente certificado de conformidad de producto, de acuerdo con la siguiente información:

Producto: Transferencias automáticas y manuales de carga marca Velásquez.

Referencia: Ver referencias en el anexo del certificado

Documento normativo: De acuerdo con los requisitos establecidos en el Numeral 20.23 del Reglamento Técnico de Instalaciones Eléctricas - RETIE. Resolución 90708 del 30 de agosto de 2013 del Ministerio de Minas y Energía.

La certificación otorgada está sujeta a los resultados de las evaluaciones de seguimiento anuales tal como se establece en el Reglamento RG-01.

Anexo a éste certificado se entrega un documento que contiene 20 hojas donde se describen las especificaciones técnicas de los productos certificados. Este certificado solo puede ser reproducido en su totalidad y la validez del mismo se puede consultar en www.qcert.com.co

Gerente

Fecha Otorgamiento: 2018-07-17

Fecha Vencimiento: 2021-07-16

Este documento es exclusivo del titular.

ESPECIFICACIONES TÉCNICAS

Aspecto	Descripción
Producto	**Transferencias automáticas y manuales de carga marca Velásquez.**
Reglamento	De acuerdo con los requisitos establecidos en el Numeral 20.23 del Reglamento Técnico de Instalaciones Eléctricas - RETIE. Resolución 90708 del 30 de agosto de 2013 del Ministerio de Minas y Energía.
Fabricante y planta de producción	Velásquez S.A.S Dirección: Calle 4C No 38 D 45 Ciudad – País: Cali - Colombia
Referencias particulares	Ver anexo del certificado
Tensión de serie	0.6 Kv – 60 Hz
Tensión de aislamiento	1000 V
Capacidad de corriente	Desde 25 hasta 1050 A con contactores, desde 40 a 3200 A con doble tiro motorizado y desde 40 a 4000A con Interruptores motorizados
Capacidad de cortocircuito	10 KA para las transferencias con contactores, hasta 105KA para las transferencias con sistema doble tiro, y hasta 100KA para las transferencias con interruptores motorizados
Encerramiento	Cofre marca Rebra certificado
Equipo de control de transferencia	Marca Velásquez, ABB, Lovato y COMAP
Equipos eléctricos	Contactores marca Chint, ABB, LG, Hyunday, General Eléctric, schneider y MITSUBISHI; Doble tiro marca OSEMCO, ABB, LG, VIZROTECH, schneider y CHINT. Interruptores Motorizados marca ABB, CHINT, LG, HYUNDAI, schneider y MITSUBISHI
No de fases - hilos	1F – 3 Hilos, 2F – 4Hilos y 3F-5Hilos
Grado de protección IP/IK	44 / 10 solo para el encerramiento
Resistencia a la corrosión	400 Horas de cámara salina para el encerramiento metálicos
Exclusiones (*)	
Usos	Unidades de transferencias de carga para operar con plantas de emergencia.

Listado de referencias particulares:

Tipo	Referencia	Descripción	Corriente AC1	Corriente AC3	Voltajes de operación	Elemento de transferencia
Auto	ITA0025ABB	Transferencia con contactores ABB de 25AC1/9AC3	25	9	110 a 480VAC	Contactores
Auto	ITA0028ABB	Transferencia con contactores ABB de 28AC1/12AC3	28	12	110 a 480VAC	Contactores
Auto	ITA0030ABB	Transferencia con contactores ABB de 30AC1/16AC3	30	16	110 a 480VAC	Contactores
Auto	ITA0045ABB	Transferencia con contactores ABB de 45AC1/26AC3	45	26	110 a 480VAC	Contactores
Auto	ITA0050ABB	Transferencia con contactores ABB de 50AC1/32AC3	50	32	110 a 480VAC	Contactores
Auto	ITA0070ABB	Transferencia con contactores ABB de 70AC1/40AC3	70	40	110 a 480VAC	Contactores
Auto	ITA0100ABB	Transferencia con contactores ABB de 100AC1/53AC3	100	53	110 a 480VAC	Contactores
Auto	ITA0105ABB	Transferencia con contactores ABB de 105AC1/65AC3	105	65	110 a 480VAC	Contactores
Auto	ITA0125ABB	Transferencia con contactores ABB de 125AC1/80AC3	125	80	110 a 480VAC	Contactores
Auto	ITA0130ABB	Transferencia con contactores ABB de 130AC1/96AC3	130	96	110 a 480VAC	Contactores
Auto	ITA0160ABB	Transferencia con contactores ABB de 160AC1/116AC3	160	116	110 a 480VAC	Contactores
Auto	ITA0200ABB	Transferencia con contactores ABB de 200AC1/140AC3	200	140	110 a 480VAC	Contactores
Auto	ITA0225ABB	Transferencia con contactores ABB de 225AC1/146AC3	225	146	110 a 480VAC	Contactores
Auto	ITA0275ABB	Transferencia con contactores ABB de 275AC1/190AC3	275	190	110 a 480VAC	Contactores
Auto	ITA0350ABB	Transferencia con contactores ABB de 350AC1/205AC3	350	205	110 a 480VAC	Contactores
Auto	ITA0400ABB	Transferencia con contactores ABB de 400AC1/265AC3	400	265	110 a 480VAC	Contactores
Auto	ITA0500ABB	Transferencia con contactores ABB de 500AC1/305AC3	500	305	110 a 480VAC	Contactores
Auto	ITA0600ABB	Transferencia con contactores ABB de 600AC1/400AC3	600	400	110 a 480VAC	Contactores
Auto	ITA0700ABB	Transferencia con contactores ABB de 700AC1/460AC3	700	460	110 a 480VAC	Contactores
Auto	ITA0800ABB	Transferencia con contactores ABB de 800AC1/580AC3	800	580	110 a 480VAC	Contactores
Auto	ITA1050ABB	Transferencia con contactores ABB de 1050AC1/750AC3	1050	750	110 a 480VAC	Contactores
Auto	ITA0032CH	Transferencia con contactores CHINT de 32AC1/18AC3	32	18	110 a 480VAC	Contactores
Auto	ITA0040CH	Transferencia con contactores CHINT de 40AC1/25AC3	40	25	110 a 480VAC	Contactores
Auto	ITA0050CH	Transferencia con contactores CHINT de 50AC1/32AC3	50	32	110 a 480VAC	Contactores
Auto	ITA0060CH	Transferencia con contactores CHINT de 60AC1/40AC3	60	40	110 a 480VAC	Contactores
Auto	ITA0080CH	Transferencia con contactores CHINT de 80AC1/65AC3	80	65	110 a 480VAC	Contactores
Auto	ITA0110CH	Transferencia con contactores CHINT de 110AC1/95AC3	110	95	110 a 480VAC	Contactores
Auto	ITA0200CH	Transferencia con contactores CHINT de 200AC1/150AC3	200	150	110 a 480VAC	Contactores

Consejo Profesional Nacional de Ingenierías Eléctrica, Mecánica y Profesiones Afines



Titular **JAIRO ALEJANDRO CARANTON ALVAREZ**

D.I **1.010.170.083**

Ingeniero **ELECTROMECÁNICO**

Matrícula **CN250-127544**

Resol. Secc. **38/2017**

Fecha de Exp **25/09/2017**

Consejo Profesional Nacional de Ingenierías Eléctrica, Mecánica y Profesiones Afines

Esta tarjeta acredita a su titular el derecho de ejercer la ingeniería en su especialidad en cualquier lugar del país, de acuerdo con la Ley 51 de 1986 y su Decreto Reglamentario 1873 de 1996.

Para efectos de información adicional o pérdida dirigirse a la Secretaría del Consejo Profesional Nacional, Calle 70 No. 9-10 PBX 3127393, Bogotá, D.C.

Consejo Profesional
Nacional de Ingenierías
Eléctrica, Mecánica
y Profesiones Afines

CERTIFICADO DE MATRICULA PROFESIONAL

Original

EL SECRETARIO EJECUTIVO DEL
CONSEJO PROFESIONAL NACIONAL DE INGENIERÍAS ELÉCTRICA, MECÁNICA Y PROFESIONES AFINES

CERTIFICA:



1. Que en cumplimiento de la Ley 51 de 1986 y del Decreto 1873 de 1996, JAIRO ALEJANDRO CARANTON ALVAREZ, identificado con Cédula de Ciudadanía 1.010.170.083 de Bogotá (D.C.), presentó solicitud de matrícula profesional de Ingeniero Electromecánico ante el Consejo Profesional de Ingenierías Eléctrica, Mecánica y Profesiones Afines, Seccional de Cundinamarca, acreditando para el efecto su grado profesional, otorgado por la Universidad Antonio Nariño el día 13 de Septiembre de 2017.

2. Que, estudiada la solicitud, el Consejo Profesional de Ingenierías Eléctrica, Mecánica y Profesiones Afines, Seccional de Cundinamarca, mediante la Resolución 38 del 25 de Septiembre de 2017 expidió la matrícula profesional a JAIRO ALEJANDRO CARANTON ALVAREZ para ejercer la profesión de INGENIERO ELECTROMECÁNICO de acuerdo con lo señalado en la ley y el decreto antes citados.

3. Que, mediante la Resolución 101 del 26 de Septiembre de 2017, el Consejo Profesional Nacional de Ingenierías Eléctrica, Mecánica y Profesiones Afines confirmó la matrícula anterior y le asignó el número de registro:

CN250-127544

Este certificado se expide en Bogotá el día 26 de Septiembre de 2017.

MARCO ANTONIO GÓMEZ ALBORNOZ
Secretario Ejecutivo

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IDENTIFICACION PERSONAL
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INDICE DERECHO



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JAIRO ALEJANDRO CARANTÓN ALVAREZ



Perfil

Soy Ingeniero electromecánico, capaz de desempeñarme laboralmente con criterios de responsabilidad, seguridad, y conocimiento; con especiales aptitudes en las áreas de electricidad mecánica y electrónica. Poseo capacidades intelectuales y personales que me identifican como un profesional íntegro, respetuoso y sincero, con más de 10 años de experiencia en manejo de cargas críticas en clientes con centros de datos.

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CONTE. 22 junio 2011

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Instalación, Reparación y mantenimiento de UPS APC MGE Galaxy 5000.
SCHNEIDER ELECTRIC. Cajamar SP/brasil 2012

Funcionamiento y mantenimiento de Plantas electricas Diesel y transferencias automaticas de carga.
GENERACIÓN Y CONTROL. Medellin/ Colombia 2012

Instalación y mantenimiento de sistemas de refrigeración y aire acondicionado domestico.
ACAIRE. Bogotá/colombia 2007

Diseño de Redes y Cableado Estructurado.
UNIVERSIDAD DISTRITAL FRANSISCO JOSÉ DE CALDAS. Facultad Tecnológica Bogotá/Colombia 2007

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CARGO: Soporte Técnico
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JAIRO ALEJANDRO CARANTÓN ALVAREZ

C.C.: 1.010.170.083 de Bogotá
Bogota, 28 de Febrero 2018

YANGDONG DIESEL ENGIEN

FOR GENERATOR

OPERATION&MAINTENANCE MANUAL

YTO(JIANGYAN)POWER MACHINERY CO.,LTD

YANGDONG CO., LTD

Foreword

Series Yangdong multi-cylinder diesel engines are ideal power units for light vehicle, agro motor, small tractor, air conditioner in bus, generator set and engineering machinery.

The normal and reliable operation and long service life of the engine depend not only on the manufacturing quality, but also on the reasonable operation and correct maintenance.

In order to provide the detailed description and instruction of this engine for operators to manipulate it correctly in short time, we offer this manual which briefly describes the performance of series Yangdong diesel engines to operators, maintenance workers and relevant mangers.

Since the construction of this engine is subject to frequent improvement and development during production and practice, it is possible that the engine supplied is somewhere not exactly the same as one described herein. Please pay attention to that when reading the manual.

Warning Notice

1,It is strictly forbidden to use inferior and dirty diesel fuel or lube oil. Please choose to use fuel and lube oil with stipulated number according to the instruction.

2,It is strictly forbidden to leak out from an intake system (air filter, pipelines and connecting components)

3, It is strictly forbidden to have hard water (well water or spring water)as cooling water, if necessary to apply the hard(water),soften it first.

4, It is strictly forbidden to start under the circumstances of lack of lube oil or water

5, It is strictly forbidden to operate at overload or under other conditions against the rules

6, It is strictly forbidden to regulate the fuel injection pump at will

7, It is strictly forbidden to change the diameter of the pulley

8,To control the starting time(less than 15 seconds) and the starting interval(more than 2 minutes)strictly

9, It's must to maintain the diesel engine technically in the allotted time

10, Ambient temperature under 0℃, discharge all the coolant to prevent frostbite after stop

11, All the filters(include air pump filter) maitain,repair or instead according to the provision

Notice of winter

Make sure the usual running of engine; please pay attention the items as following:

1、please use "-10#"light diesel oil

2、please use Class CC or CD 10W/30 or 5w/30 diesel fuel, and the Class CD diesel fuel for turbine charger

3、Make sure the connecting reliable and available between battery and start motor

Battery capacity should be conform to specification of manual

The total length of front line, ground line should less than 2 meters, and area more than 40 mm^2

The total length of front line, ground line should more than 2 meters, and area more than 70 mm^2

4、The temperature starting should be below -5℃,and add hot water and fuel

5、Eliminate the air of fuel system

6、Check if the pulverization of injector is normal or no

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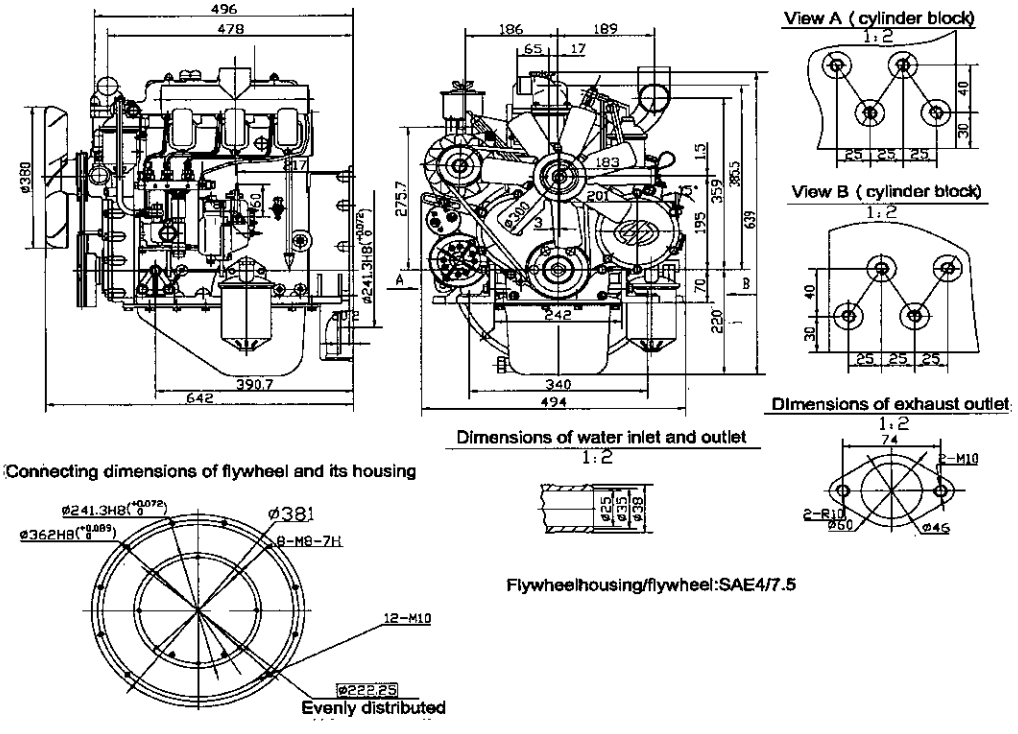
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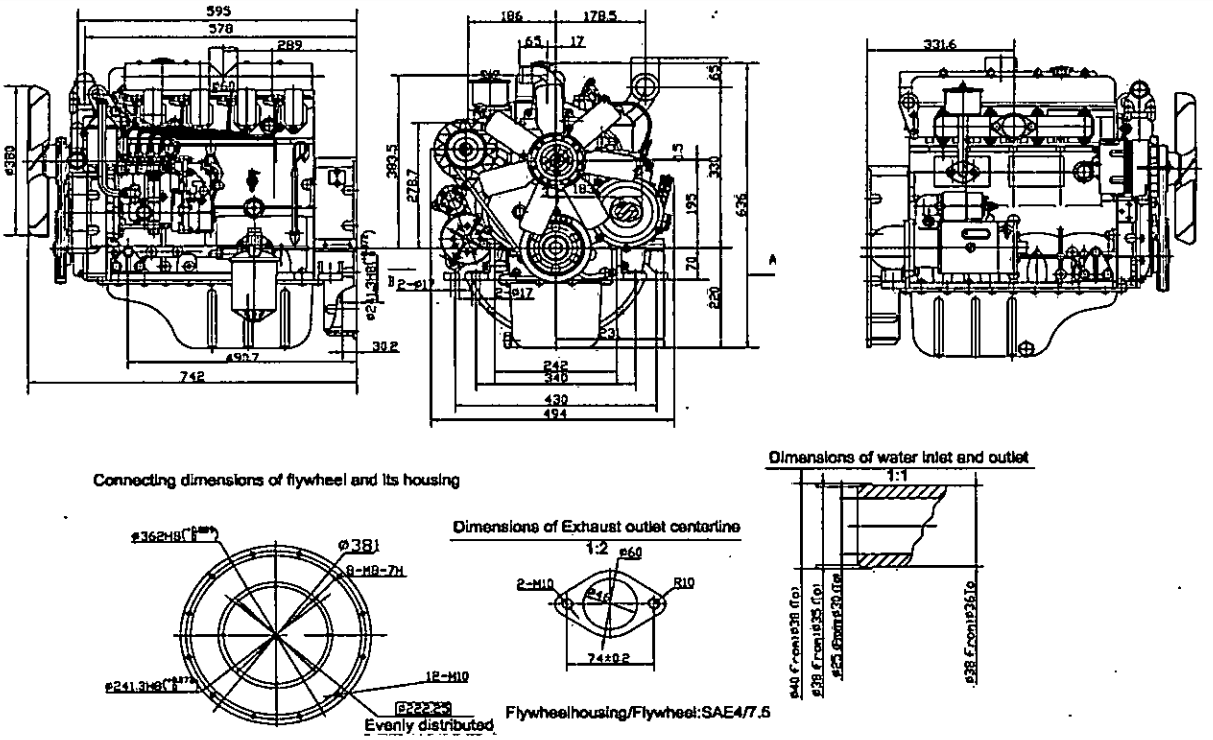
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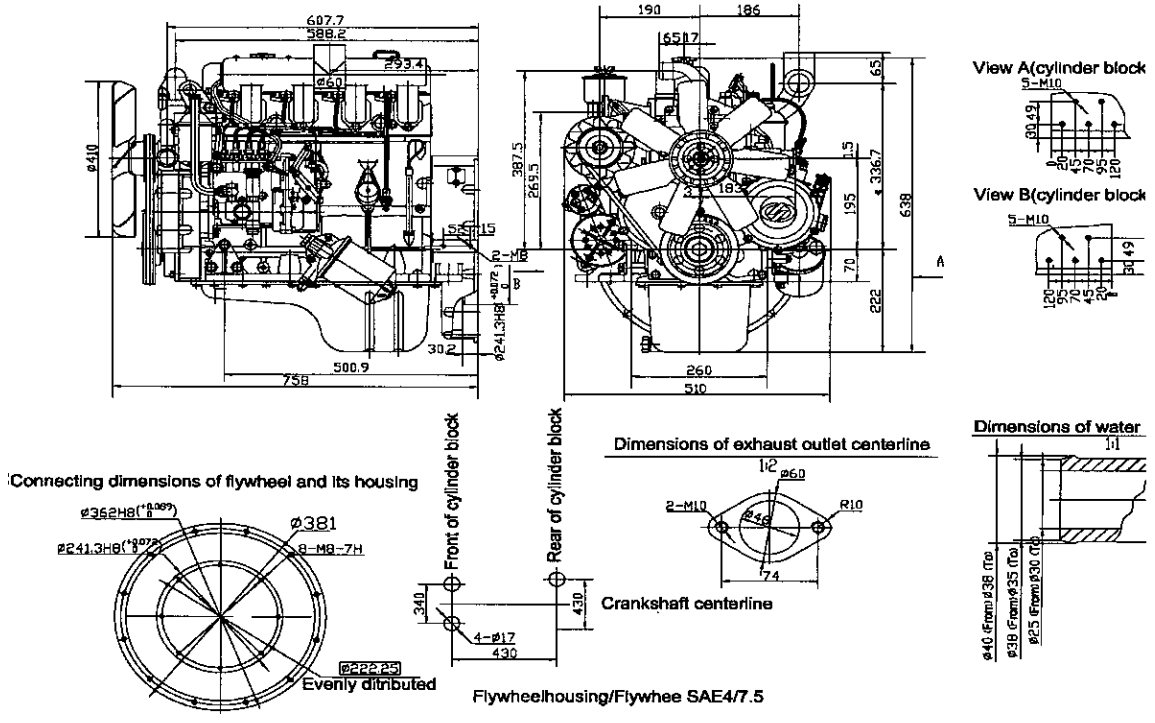
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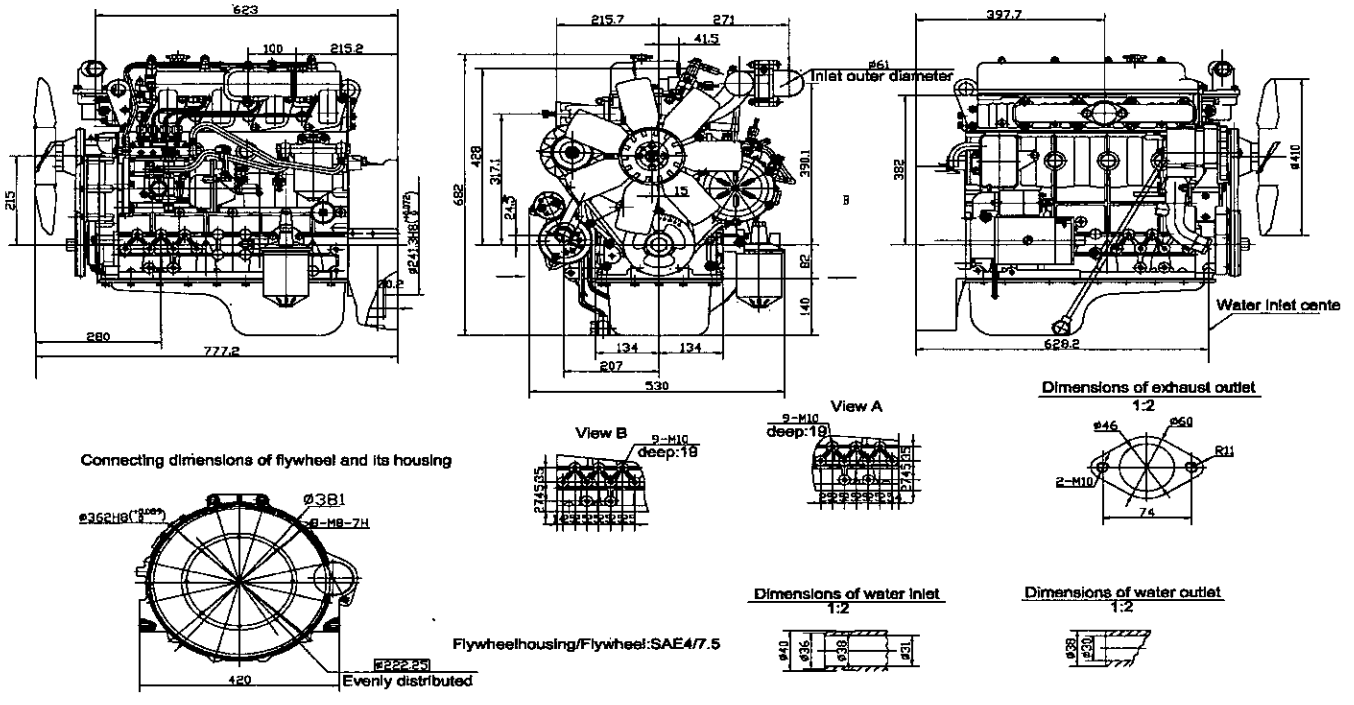
Schematic Diagram of Wiring Dimensions for installation of YD380D and YD385D



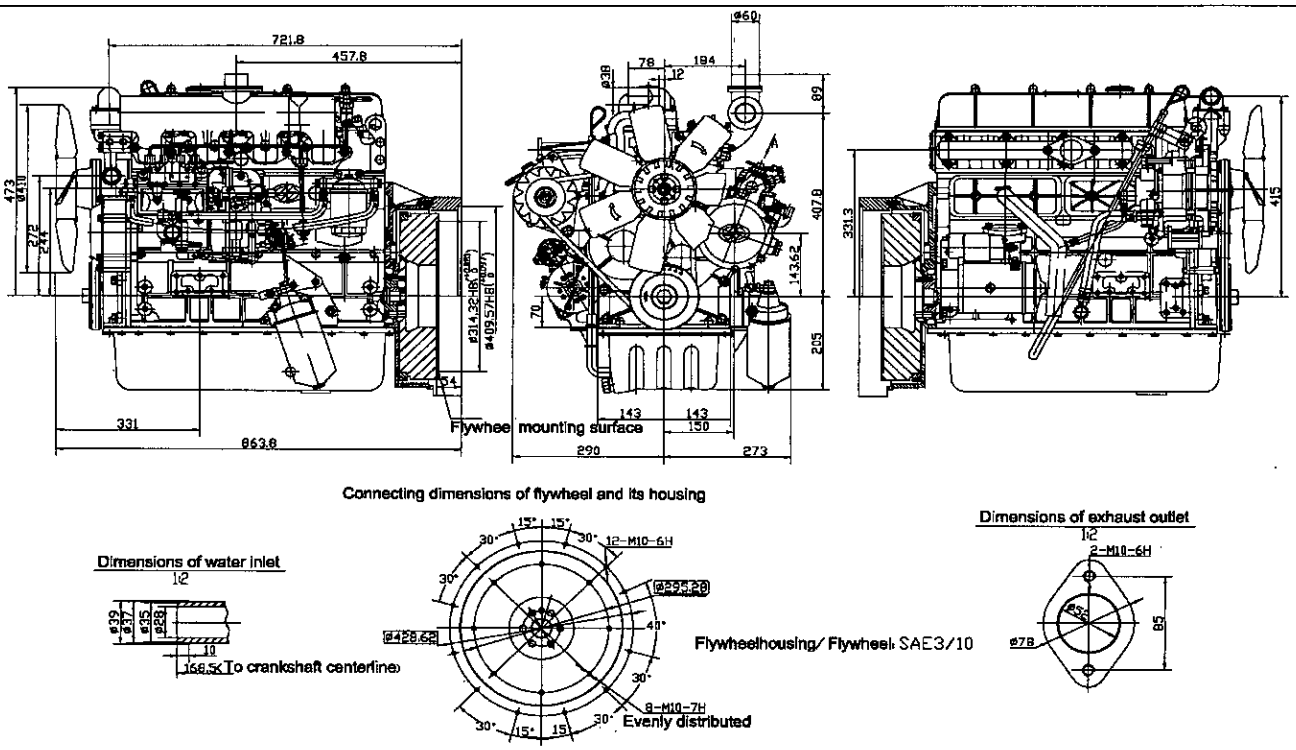
Schematic Diagram of Wiring Dimensions for installation of YD480D



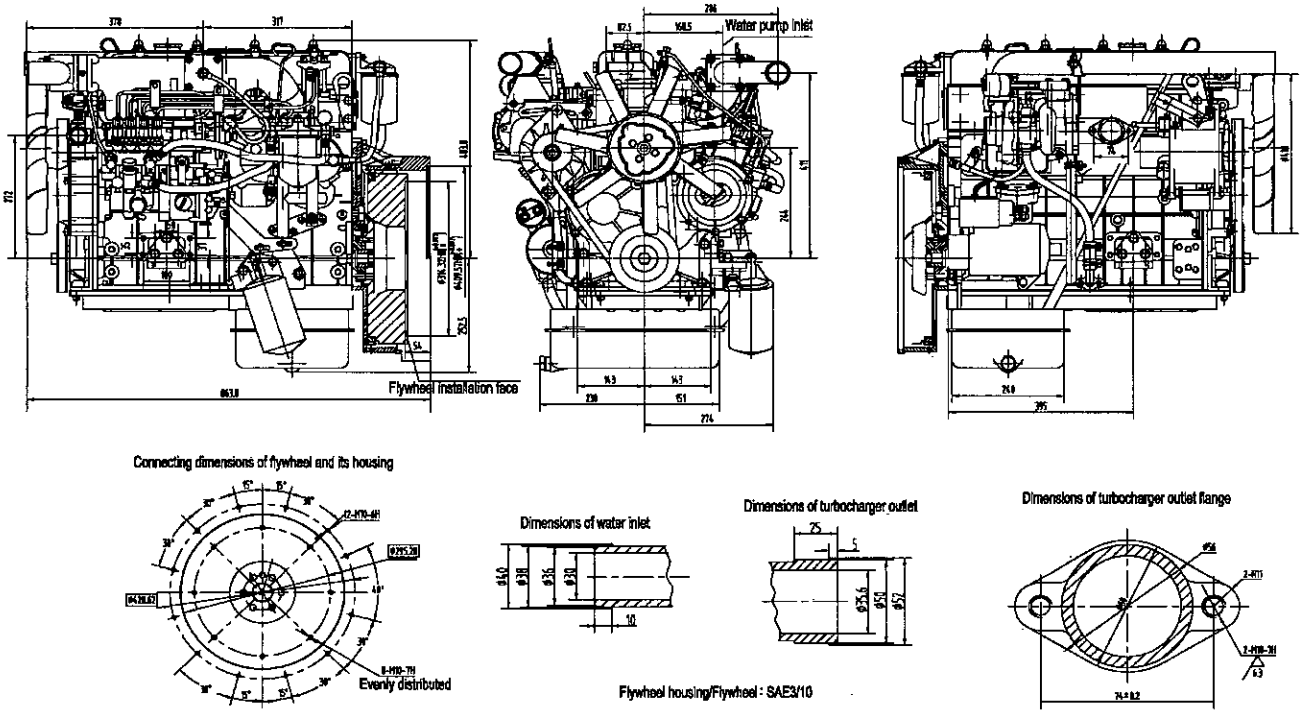
Schematic Diagram of Wiring Dimensions for installation of YND485D



Schematic Diagram of Wiring Dimensions for installation of YSD490D and Y495D



Schematic Diagram of Wiring Dimensions for installation of Y4100D、Y4102D and Y4105D



Schematic Diagram of Wiring Dimensions for installation of Y4102ZLD and Y4105ZLD

Section 1. Diesel engine specification and technical dates

1.Specification of diesel engine

Model	YD380D	YD385D	YD480D	YND485D	YSD490D	Y490D	Y495D	Y4100D	Y4102D	Y4105D	Y4102ZLD	Y4105ZLD
Type	Vertical,water cooling, four stroke											
Combustion chamber type	Direct injector											
Number of cylinders	3		4									
Bore(mm)	80	85	80	85	90	90	95	100	102	105	102	105
Stoke(mm)	90			95	100	105		118				
Compression ratio	18											
Total displacement(L)	1.357	1.532	1.809	2.156	2.54	2.67	2 997	3.707	3.875	4.1	3.875	4.1
Firing order	1-3-2			1-3-4-2								
Rated power (KW)	10/1500 12/1800	11/1500 13/1800	14/1500 16/1800	17/1500 20/1800	21/1500 25/1800	24/1500 28/1800	27/1500 30/1800	30/1500 33/1800	33/1500 36/1800	38/1500 45/1800	48/1500 53/1800	55/1500 60/1800
Min.specific fuel consumption at full load (g/kW.h)	≤260	≤255	≤250.5	≤247	≤246	≤243	≤240	≤237	≤235	≤235	≤225	≤220
Intake Type	Natural Aspiration										Turbo-Charger with intercooler	
Cooling methed	Forced watercooling											
Starting methed	Electric											
flywheel size	SAE7.5"							SAE10" or SAE11.5"				
Bell housing size	SAE4#							SAE3#				
Net mass	165	175	195	200	230	240	250	300	320	330	340	350
Overall dimensions (L*W*H) (mm)	587*474*628	587*474*615	687*494*610	820*590*638	716*530*670	716*530*670	716*530*670	892*618*718	892*618*740	892*618*740	892*618*740	892*618*740

2, Specification of Main Accessories

No.	Name		Specification			
			YD380D	YD385D	YD480D	YND485D
1	Fuel injection pump	Type	BQ pump			
		Governor	All-speed,mechnical centrifugal			
		Fuel delivery pump	Single-acting piston-type			
2	Fuel injector	model	S Series			
		Diameter of nozzle hole (mm)	Ø0.23			
		Injection pressure (Mpa)	22±0.5			19.6^{+1}_{0}
3	Lube pump	Model	Rotor type			
		speed (r/min)	1300			
		capacity(L/min)	26			
		Pressure (kpa)	392-441			
4	Water pump	Model	Centrifugal, volute, single-suction			
		speed (r/min)	3000		4000	
		capacity(L/min)	80		170	
5	Starting motor	Type	Silicon rectifying shunt dynamo			
		Model	QD138Y			
		Voltage (V)	12			
		power (KW)	3			
		Model	JF11			
		Voltage (V)	14			
		Power (W)	350			
7	Fuel filter	Type	Single stage, paper element			
		Model	C0506C			
8	Lube oil filter	Type	Single stage, paper element			
		Model	JX0810K			

No.	Name		Specification			
			YSD490D	Y490D	Y495D	Y4100D
1	Fuel injection pump	Type	BQ pump			
		Governor	All-speed,mechnical centrifugal			
		Fuel delivery pump	Single-acting piston-type			
2	Fuel injector	model	S Series			
		Diameter of nozzle hole	Ø0.255		Ø0.27	Ø0.29
		Injection pressure	19.6^{+1}_{0}		20^{+1}_{0}	21^{+1}_{0}
3	Lube pump	Model	Rotor type			
		speed（r/min）	1500			1500
		capacity	37.5			53
		Pressure（kpa）	400			392
4	Water pump	Model	Centrifugal, volute, single-suction			
		speed（r/min）	4000			4000
		capacity（L/min）	270			230
5	Starting motor	Type	Silicon rectifying shunt dynamo			
		Model	QDJ1329D			QDJ2925D
		Voltage（V）	12			24
		power（KW）	3.5			5
		Model	JFWZ13	JFW24X	JFWZ13	JFWZ25
		Voltage （V）	14	28	14	28
		Power （W）	350	500	350	500
7	Fuel filter	Type	Single stage, paper element			
		Model	CXZ0708A			CX0708B
8	Lube oil filter	Type	Single stage, paper element			
		Model	JX0810	JX0810K		JX0814D2

No.	Name		Specification			
			Y4102D	Y4105D	Y4102ZLD	Y4105ZLD
1	Fuel injection pump	Type	BQ pump			
		Governor	All-speed,mechnical centrifugal			
		Fuel delivery pump	Single-acting piston-type			
2	Fuel injector	model	S Series			
		Diameter of nozzle hole	Ø0.29	Ø0.26	Ø0.28	
		Injection pressure (Mpa)	21^{+1}_{0}	26^{+1}_{0}	$21^{+0.75}_{-0.25}$	
3	Lube pump	Model	Rotor type			
		speed (r/min)	1500			
		capacity (L/min)	53			
		Pressure (kpa)	392			
4	Water pump	Model	Centrifugal, volute, single-suction			
		speed (r/min)	4000			
		capacity (L/min)	230	260		
5	Starting motor	Type	Silicon rectifying shunt dynamo			
		Model	QDJ2925D			
		Voltage (V)	24			
		power (KW)	5			
		Model	JFWZ25	JFWZ17	JFW25C1	
		Voltage (V)	28	14	28	
		Power (W)	500	750	500	
7	Fuel filter	Type	Single stage, paper element			
		Model	CX0708B			
8	Lube oil filter	Type	Single stage, paper element			
		Model	JX0814D2	JX0814		

3, Main technical Data of diesel engines

1. Valve lash(mm)	YD380D	YD385D	YD480D	YND485D
intake valve(cold)	0.20～0.25			
exhaust valve(cold)	0.25～0.30			
1. Valve lash(mm)	YSD490D	Y490D	Y495D	Y4100D
intake valve(cold)	0.30～0.35			0.35～0.40
exhaust valve(cold)	0.35～0.40			0.40～0.45
1. Valve lash(mm)	Y4102D	Y4102ZLD	Y4105D	Y4105ZLD
intake valve(cold)	0.35～0.40			
exhaust valve(cold)	0.40～0.45			

2. Sink age of valve	YD380D	YD385D	YD480D	YND485D
sink age of valve	0.7～0.9			
2. Sink age of valve	YSD490D	Y490D	Y495D	Y4100D
sink age of valve	0.7～0.9			0.6～0.8
2. Sink age of valve	Y4102D	Y4102ZLD	Y4105D	Y4105ZLD
sink age of valve	0.6～0.8			

3. Temperature and pressure limit	YD380D	YD385D	YD480D	YND485D
exhaust temperature (℃)	500			
3. Temperature and pressure limit	YSD490D	Y490D	Y495D	Y4100D
exhaust temperature (℃)	500		550	
3. Temperature and pressure limit	Y4102D	Y4105D	Y4102ZLD	Y4105ZLD
exhaust temperature (℃)	550		600	

（1）exhaust temperature （℃） refer to above chart
（2）Cooling water temperature （℃） 80-95
（3）Lube oil temperature （℃） ≤100

（4）Lube oil pressure in main passage（MPa）

At normal operation 0.2～0.4

At min. steady speed ≥0.065

4. torque limits of main bolts and nut（N.m）	YD380D	YD385D	YD480D
cylinder head bolts	175～195	210～230	175～195
connecting rod bolts	50～60	60～70	50～60
main bearing cap bolts	110～130	115～135	110～130
flywheel bolts	60～70	60～70	60～70
crankshaft belt bolts	140～160	140～160	140～160
4. torque limits of main bolts and nut（N.m）	YND485D	YSD490D	Y490D
cylinder head bolts	210～230	130～150	
connecting rod bolts	70～80	120～140	
main bearing cap bolts	140～160	145～165	
flywheel bolts	60～70	105～125	
crankshaft belt bolts	140～160	140～160	
4. torque limits of main bolts and nut（N.m）	Y495D	Y4100D	Y4102D
cylinder head bolts	130～150	160～200	
connecting rod bolts	120～140	100～140	
main bearing cap bolts	145～165	200～240	
flywheel bolts	105～125	130～150	
crankshaft belt bolts	140～160	200～260	
4. torque limits of main bolts and nut（N.m）	Y4105D	Y4102ZLD	Y4105ZLD
cylinder head bolts	160～200		
connecting rod bolts	130～150		
main bearing cap bolts	200～240		
flywheel bolts	130～150		
crankshaft belt bolts	200～260		

5. Governor characteristics

800≤ Min .Idling steady speed （r/min） ≤900 steady regulation（%）≤5

6. Battery (engine not include) capacity (A) ≥150

Section 2. Operation and security requirements of engine

1, Fuel, lube Oil and Cooling water

1. Fuel. Users can choose diesel adopted according to local ambient temperature. In China, we choose according to GB252 light diesel. In summer adopt No."0" light diesel, in winter adopt No."10" light diesel. The diesel must be a long time precipitation before inject into tank (not less than 48h). During refueling should us cloth filters. Thus can extended fuel pump and injector life.

2. Oil. In China generally adopt according to GB11122 Diesel Oil. In summer adopt No.CC40 diesel oil; in winter adopt No.30 diesel oil, used CD class diesel oil for turbo diesel engine. Must filter through strainer when inject in to diesel engine.

3. Coolant. Applications of rainwater, tap water or clean water are suitable. The water wells for water or well water should not be used. If the water contains more minerals, diesel engine cooling water system will have more scale, easy to cause failure. Therefore, If you want to use wells, springs and other water sources, must be softening. There are two ways to soften: (1) boiled (2) in 30 liters of water to add 20 grams of caustic soda (caustic soda), made solution. Can add antifreeze in cold winter. Ant freezing Fluid is the most commonly used public glycol (TEG) aqueous or alcohol. Diesel difficult to start in low temperature, cooling water can be heated to 80 °C to use.

2. Preparation before starting

1, Check if the joints that fix the diesel engine are reliable and if the operating handle is flexible.

2, Rotate the crank for several times to check if the moving parts are flexible and if there is any obstacle.

3, Check if the oil surfaces inside the oil sump and injection pump are within regulated scale range, and if the oil tank is full and if the fule loop is smooth.

4, Turn on the fuel tank valve to check if there is are inside the loop, if yes; loosen the

discharge bolts of the diesel filter and injection pump. Then press handle pump on the transmission oil pump until the air inside the oil loop is discharged completely. Then screw up the discharge bolt before loosening the high pressure oil pipe joint nut at the end of the oil injector. Rotate the rank to discharge the air inside the high pressure oil pipe. After air is totally discharge, screw up the pipe joint nut and meanwhile check if there is any oil leakage at each oil pipe joint.,

5, Check if the water tank is filled with coolant, and if there is any water leakage at the water pipe joints.

6, Check if the joints of the parts of diesel engine are reliable or not. Check if the storage battery is charged sufficiently, and if the joints of the lines of electric appliance system are correct and reliable.

7, Check if the clutch is out of position.

3. Starting

1, Position the timing handle and medium speed position;

2, Rotate the ignition switch to the pre-heating position to make the thermo switch preheated for 20 to 30 seconds;

3, Rotate the ignition switch to open position, and press the start button to make the diesel engine start. If the diesel engine cannot be started, loosen the button right away and wait for 2 to 3 minutes to restart it. If the diesel engine fails in starting for three times successively, check the fault cause and eliminate the faults before restart.

4, After the diesel engine is started, loosen the button, and rotate the ignition switch to another position. Connect the generator charging circuit to charge the generator. At the same time, adjust the gun to observe the rotation velocity meter. Make the diesel engine runs in 600~800rpm and check if the diesel engine is normal or if there are any abnormal sounds. Especially pay attention to see if the pressure of oil is correct. Then pull the timing handle gradually to make the rotation speed of diesel engine reach 1800~2000 rpm, and warm the machine without load.

4, Running

1, when the coolant temperature reaches 50℃ and the oil temperature over 40℃

working with load is permitted. When using normal conditions, the water temperature shall reach about 80℃.

2, Increase or decrease of the diesel engine load and rotation speed shall be carried out evenly and gradually. Under normal conditions, it is not allowed to add or remove the load suddenly.

3. During the operation time of the diesel engine, pay attention often to seek if the reading on the instruments on the instrument panel is normal. Pay attention to the exhausted gas color and the operation sound. Stop the machine for inspection if there is anything abnormal.

5、Stopping

1. Before diesel engine stopping, it should reduce the load speed gradually to make the speed at 900rpm around until the water temperature dropped to below 70 ° C, then it can be stopped by manipulation of the handle.

2. After diesel engine stops, it should rotate the ignition switch to the middle Place.

3. In Winter, when the environmental temperature below 5 ° C, after stopping, open the water switch on the body and radiator when temperature is below 60 ° C, give out the cooling water to prevent frozen machine. There is no need of giving water out if water has been added Ant freezing Fluid.

6、**Security requirements**

1. When engine works for generating-set, all the exposed parts and rotation parts that may be danger to operators must device with a warning mark.

Protective Shell, partition steel should have sufficient rigidity, that only be removed in the use of tools.



2. Diesel engine workplace must be well-ventilated, whenever possible accumulation of flammable, toxic or asphyxiated gas in place, should be installed ventilation facilities.

3. The Diesel Engine operation place must have non-slip cover. Work channel, manipulation platforms, staircases and other regional operators must be installed guardrail to prevent people and goods sliding down.

4. The engine when is working, need to equipped with water temperature meter, oil pressure meter and instructions system.

5. When engine is in operation of adjustment, and there is abnormal sound, running away or lubrication failure or the environment when used in the combustible exhaust temperature exceeds the limit, we should promptly cut off fuel (put handle off, cut off the fuel line method) and air (blocked) inlet or adopt other effective measures to stop the engine quickly.

6. The inlet of fuel tank and the outlet of air flow should far away from the surface of high temperature and the electronic equipment. Make sure the fixing bolt of fuel tank is well fixed to allow the fuel tank without leakage.

7. When locate the heat changer should put at eye-catching place with warning mark. And make a caution to operator that shouldn't open the cover of heat changer immediately to prevent burn injury.

8. The air outlet of diesel engine and silencer are the surface of high temperature. Operator should not touch the surface under the operation state of diesel engine. If the user takes the insulation material as a protection, make sure the fuel oil not into it to prevent fire.

9. When use the diesel engine at follow condition: 1.ship use 2. Gasoline industry use 3. Fuel use 4. Chemical industry use 5. Gen-set use 6. Common use, use coolant to the air outlet and the silencer of the diesel engine or some effected protection as well as warning mark. And the insulation material should be flameproof also make sure the fuel not leak into it to against the burn and fire.

Section 3 Maintenance

To make engine work reliably, lower abrasion parts, extend service life, make sure the regular maintenance for the engine system according to the following technology rules:

1、Routine maintenance

1、Check the oil level is under the gauge rated range. New machine or long time no used machine should stop after five~ten minute low speed running when gas. Then use gauge measure the oil level.

2、Check the water level of heat changer

3、Check the oil level on the oil pump of the governor whether if at rated level.

4 、Exclude the leakage situation of water, oil and gas on the diesel engine.

5、Check the fasten class and the layout correction of parts on the diesel engine.

6、Check every holding parts and connectors whether if connect well.

7、Pretend the clear of diesel engine. Use the duster that diped some gas to clear oil, water, and dust especially make sure the clear and dry of electronic equipment, also clear the dust of the heat sink on the water tank

8、Should replace the oil at the oil house, oil pump and governor at once after the 50 hours running, and wash clear the oil filter, the oil house and the oil filter net.

9、Eliminate all faulty and unmoral situations.

2、Maintenance after 100 accumulated operating hours

Except the daily maintenance, make sure to do the following as well:

1. Replace the sump oil.
2. Clean or replace oil filters.
3. Clean or replace diesel filter (after working continuously 200 hours).
4. Check the bolt firmness of cylinder
5. Check Valve Gap to measure up, adjusted it if necessary.
6. Check fan belt tension extent, adjust it if necessary.
7. Oil ZG-4 lubricant into the water pump bearing with grease gun.

8. Clean the dust accumulated in the air inlet pipe, dust pan of the air filter and on the surface of paper filtering core, and remove the dust inside the air exhaust pipe and the muffler.

9. After 200 hours running in total, check the oil injection pressure and the injection status. Clean the needle valve parts if necessary, and re-adjust the oil injection pressure.

10. Check the battery voltage and liquid proportion, which shall be 1.27-1.28(when the air temperature is 20℃).If the proportion drop to 1.14,charge the battery. The electrolyzed liquid surface shall be 10-15mm higher than the electrode board, and supplement distilled water when the electrolyzed liquid is insufficient.

11, Components disassembled due to maintenance work shall be cleaned before re-assembly, and the installation position shall be guaranteed correctly. Then start the diesel engine and check its operation. Remove errors and abnormal phenomena found.

3、The maintenance after 500 hours' operation

Besides the items in "maintenance after 100 hours' operation", the following jobs shall be added as well:

1, Check the oil injection pressure of the injector and observe the pulverization quality of oil injection. Clean the needle valve parts and re-adjust the oil injection pressure if necessary.

2, Check the working conditions and the oil supply advanced angle of the oil injection pump, re-adjust if necessary. Re-adjust the oil supply to the oil pump on the oil pump test bench if conditions allow.

3, Check the sealing condition of air inlet and exhaust valve and the air valve stand. Grand and rectify if necessary, and re-adjust the clearance between the air valves.

4, Check the fixing status of connection rod bolt, main bearing bolt and flywheel bolt.

5, Re-fasten the bolt of cylinder cover, and adjust the clearance between the air valves according the regulations.

6, Clean or change the filtering core of the air filter.

7: Clean the cooling system, the detergent comprised by 150g NaOH and 1L

water. Discharge the water in cooling system before cleaning, and then fill full it with detergent. Start the diesel engine after reserving the detergent for 8~12 hours. and stop when the water temperature reaches the working temperature. Discharge the detergent immediately to avoid the furring deposit. Clean the cooling system with water at last.

8, Check the working conditions of the thermostat, and check the water prop inside the water discharging hole in the water pump. If water drop is serious, replace the water seal.

9, Check the joints of the electric circuits of the electric equipment are firm or not, and the lead contact is good or not. If there is burning mark found, clean it immediately.

10. After 1000 hours of working accumulatively, add the following work:

(1) Generally inspect the parts of the diesel engine, and carry out necessary repair and adjustment.

(2) Dismantle the generator and the motor to clean the old butter on the bearing and replace new butter, meanwhile check the gears on the driving motor.

11. After 1500 hours of working accumulatively, add the following work:

(1) Dismantle the cylinder cover; check other parts between air valve and air valve stand and cylinder cover set.

(2) Remove the deposited carbon on such parts as cylinder lid, cylinder cover, piston and piston ring, and clean thoroughly.

(3) Check and measure the abrasion of piston and piston ring.

(4) Check and measure the abrasion of internal holes of cylinder cover.

(5) Check and measure the abrasion of crank necks.

(6) Check and measure the abrasion of main shafting and connection rod shaft.

(7) Clean the oil tunnels inside the engine and change oil.

4、preservation and storage of engine

When the diesel engine is to be stopped for a long time, the following methods can be taken for sealing and preservation.

1. After stopping the engine, discharge oil, coolant and fuel thoroughly when they are hot. Clean the oil sump and the filter.

2, Clean the dust and oil on the surface. Apply anti-rust oil onto the parts that without paint. No oil shall be supplied onto rubber and plastic products.

3, Heat the filtered oil to 110~120℃, until foams disappear totally. Then fill the dehydrated oil to the oil sump until it reaches the upper scale of the oil gauge and turn the crank to make the whole lubrication system full of oil.

4, Add some dehydrated oil to the cylinder from the oil injector installation hole on the cylinder lid and then turn the crank to make the oil adhere onto piston,piston ring, cylinder cover and air valve sealed surface.

5, The mouths of air inlet and exhaust pipes(muffler) shall be blocked with wood lid or plastic cloth to avoid immunities enter.

6, Diesel engine shall be placed in dry and clean location with good ventilation. It shall be covered to avoid dust drop. It is prohibited to pile chemical products near the diesel engine.

The aforesaid oil sealing method can be used to preserve the machine for 3 months. When exceeding such time limit, re-seal it with oil.

Section 4 Engine adjustment

1、Adjustment of valve lash

When carrying repair or technical maintenance to the diesel engine, it necessary to check the clearance between the air valves. The adjustment method for clearance between the air valves and the distribution structure is as follows(Please refer to the figure):

1, Dismantle the cylinder cover, check and fasten the bolt on the air valve rocker shaft stand.

2 Turn the crank to the first cylinder piston stop position, when the "O" scale on the crank belt wheel aims exactly with the indicator in the timing gear cover.

3, Insert the thick and thin dividers respectively into the air and exhaust valves of the first cylinder and the rocker, check and adjust the clearance between the air valves and keep the cool clearance between within regulated valve. After that, according to the cylinder working order 1-3-4-2 to rotate the crank(i.e. 1800),and adjust

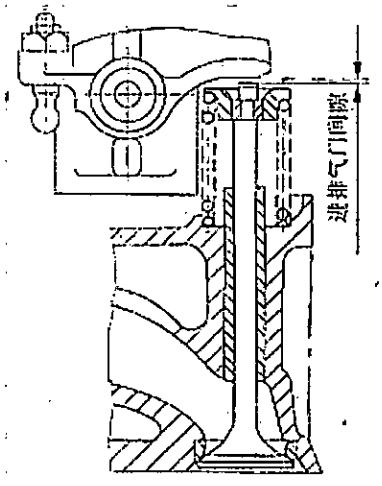


图1 气门间隙的调整

Figure 1
adjustment of valve lash

2、Adjustment of injection timing

In order to obtain the most economic fuel consumption rate and good operation functions of the diesel engine, the advanced for oil supply shall be adjusted properly. The adjusted value of the advanced angle for oil supply must comply with the requirements of technical parameters of the diesel engine.

The method for adjusting the advance angle for oil supply is as following:

1, Remove the air inside the fuel system, and repeated the rotating of crank to make the oil injection pump full of fuel. Dismantle the high pressure oil pipe of the first cylinder, and slowly turn the crank in positive directions, and pay close attention to the oil surface inside the oil pipe joint hole. When the oil surface waves, stop rotating the crank.

2, Check the scale that the finger marked on the crank belt wheel according to the best angle in regulation.

3, If the advanced angle for oil supply is too large or too small, loosen the 3 bolts that connect the high pressure oil pump with the gear room and adjust by rotate the high pressure oil pump,(as figure 2). From the front to the rear, the oil injection pump will move clockwise, and the advanced angle for oil supply gets smaller; move anticlockwise, the advanced angle gets enlarger. During every rotate, it shall be fasten 3 bolts and countercheck the advanced angle, till to make the oil supply advanced angle according the regulation.

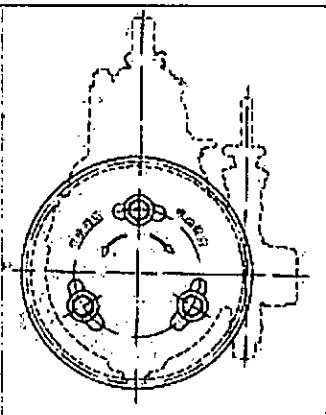


图2 供油提前角的调整

Figure 2
adjustment of injection timing

3、Adjustment of injector

The test and adjustment of oil injector shall be carried out on the test bench, with its purpose to adjust the oil injection pressure, and observe the pulverization quality and remove the errors.

When the oil injection pressure of the oil injector is too high or too low, injection abnormal or parts are damaged, the diesel engine might have errors during operations such as block smoke, power and rotation speed decreases, temperature discharge too high or impact on the cylinder, etc. The judgment on oil injector with errors can adopt stop-in-turn method, i.e. loosen the connection nuts between oil injector and high presser oil pipe one by one to stop oil injection, and meanwhile observe the color of

smoke exhaust. If there is any oil injector with faults, stop the oil injection and no smoke will be discharged; rotation speed changes little or without any change. It is also feasible to rotate the flywheel one by one to listen to the oil injection sound, when clear sound is lost; it means the oil injector in this cylinder might have errors on it.

1. Adjustment of the oil injector

(1) Handle the pump to the gauge pressure close to the oil injection pressure, and keep slowly pressing the handle pump to increase the surface pressure to regulated oil injection pressure. Observe the oil injection hole, where should not have oil drop or leakage. If after several times of test, there is still oil drop, dismantle the injection nozzle parts to clean, check or grind before carrying out the test.

(2) Adjust the oil injection pressure to regulated the pressure, and dismantle the pressure adjusting nut, loosen or fasten this nut , make the oil injection pressure accord to the regulated oil injection pressure, then fasten the nut and try again.

(3) Observe the spraying quality. Carry out pulverization test in the once/second oil injection speed. The oil shall be even fog without any visible splashed oil foam, partially uneven thickness or single side injection abnormal, etc .Clear sound shall be occur when cutting off the fuel. In general , abnormal oil injection occurs caused by the inflexible movement of injection nozzle needle valve. The drop of oil on the injection hole usually occurs because of damage on the sealed surface, and the oil separation from the carbon accumulation on the nozzle or hears deformation.

1. Dismantle and repair of oil injection

(1) When dismantle the oil injection, clean the external part to make the nozzleface upward and clamp it to the table pliers with bronze pad. Screw down the nut to take out the needle valve parts and pull out the needle valve to soak into clean diesel. Turn the oil injector for 1800 and clamp. Take down the pressure adjusting nuts and screw to take out pressure adjusting spring and top rod.

(2) If the needle valve parts are snapped or the pulverization is not good, clean it right away. If the needle valve parts are snapped, soak them in diesel for some time, and then clamp the needle valve with iron thread plier, and pull out lightly to avoid napping. When cleaning the needle valve parts, scratch with wooden piece with gasoline or diesel but metal piece is not allowed. When the needle valve and its parts are not smooth or the movement is inflexible, grind adjustment can be carried out. Use

clean diesel when grinding. Grinding in pairs shall not impact on the needle valve or its stand, and clean after grinding without any metal dirt reserved.

4、Adjustment of lube oil pressure

Adjustment of oil pressure is shown in Figure 3. Loosen and fasten the nuts; adjust the nuts with spanner to make the oil pressure within 200-400kPa (it is allowed to be higher when the machine is cold). Screw up the nuts after adjustment.

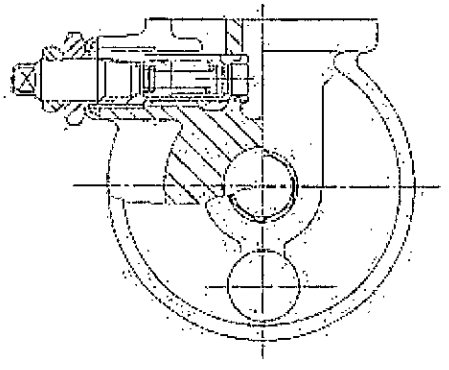


图3 机油压力的调整

Figure 3: adjustment of lube oil pressure

5、Adjustment of injection pump

The oil injection pump has been adjusted and checked before delivery. If re-adjustment is required, it shall be carried out on special oil injection pump test bend fro standard oil injector and standard length high pressure oil pipe according to relevant instructions on oil injection pump.

6、Adjustment of decompression arm lash

Turn the Crank to the first cylinder piston stop position, when the "0" scale on the crank belt wheel aims exactly with the indicator in the timing gear cover. Inset the thick and thin dividers respectively into the air inlet and exhaust valves of the first cylinder and the rocker, check and adjust the clearance between the air valves and keep the cool clearance between within regulated value. After that, according to the cylinder working order to half rotate the vcrand and adjust the clearance between the air valves.

Section 5 Construction of diesel engine

1、Cylinder head

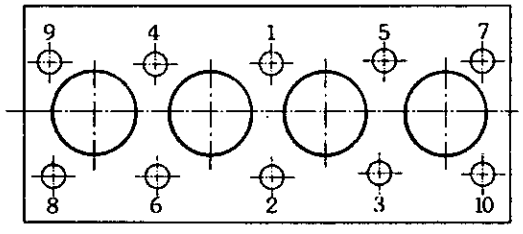


Fig.4 Tightening sequence of cylinder head bolts

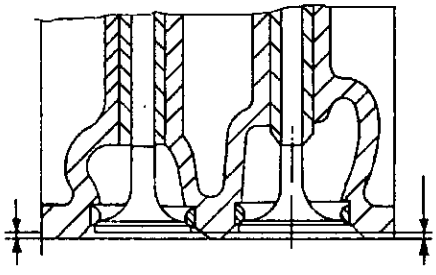


Fig.5 Valve sinkage

The cylinder head is made of HT200 cast iron (with copper chrome). Fix it on the cylinder body with bolts for the cylinder head. When tightening the bolts for assembling, torsion spanner is employed to tighten as the figure 4 indicated below, then the required tightening force moment is achieved. After the cylinder head has been assembled and heated for the first time, all the bolts for the cylinder head shall be re-tightened as required and readjust clearance of the air valves.

The air inlet and air outlet is made of different materials. The air inlet, air outlet and valve seat have been matched and grinded to avoid air leakage.

When the air valve and seal surface of the valve seat are burned, air leakage, grinding is required. After grinding is completed, check air leakage of the valve and inspect the sealing conditions.

The valve seat is made of alloy cast iron. Normal width of the air valve and valve seat is 1.2-1.6mm. After long-term use and grinding for many times, if the sealing surface becomes wider which leads to poor sealing, reamer is adopted to amend inner hole positioning of air valve conduit, then grind the valves and the inner hole positioning as required.

As for a new one, sinking distance between the plane of the air inlet and air outlet and the plane of the cylinder head is 0.7-0.9mm, as figure 5 indicated. After amendment to it for many times, the sinking distance may be increased. When it exceeds 2mm, it's recommended to change the valve seat.

The valve clearance shall be checked regularly. See Section 1 of chapter V for detail on adjustment methods. If the valve clearance is excessive, it may affect correctness of

gas distribution and timing and increase noise of the valve structure; insufficient clearance may lead to incomplete closing and burning of the air valve.

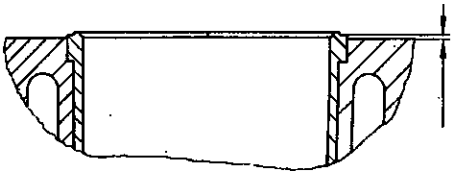


Fig.6 protruding height of the liner flange plane relative to the plane of cylinder block

2、Cylinder block

The cylinder body is made of cast iron HT250 and portal shape structure is adopted. Besides the installation hole, bolt hole for cylinder head on the top of the cylinder body, the water hole to the cylinder head, and lubricant hole at the back of the cylinder body to the cylinder head are on it.

Water pump and engine oil pump are installed at upper part and lower part of front-end of the cylinder body. Fly wheel casing is installed at back-end of the cylinder body. The lubricant inlet and bolt hole for installing crankcase oil tray are located at the bottom of the cylinder body. When dismantling the diesel for repair, each oil channel shall be repaired to ensure clean and unblocking. Bulkhead of each channel shall be sealed and oil leakage is not allowed.

The main bearing is of fully-supported suspending type. Matching brazing is employed for main bearing casing and the cylinder body. Matching marks are marked on the cylinder body and main bearing casing. Any exchange or reverse assembling is not allowed. The main shaft bushing is the shafting bushing of high tin broze zergarl. When dismantling it for cleaning, do not mistake the upper and low shaft bushings (the upper shaft bushing with oil groove). The thrust plate is locates at the last piece of the main bearing. Each of the two is located at the front and back end respectively. The thrust plate bears axial thrust of the crankshaft, with oil groove on the work surface and the reverse side. After crankshaft assembly is completed, it shall be flexible.

The cylinder sleeve is made of boron cast-iron and of wet type. Flange surface of the cylinder surface is 0.02-0.10mm higher than the body top to ensure sealing of cylinder sleeve and head. See figure 6.

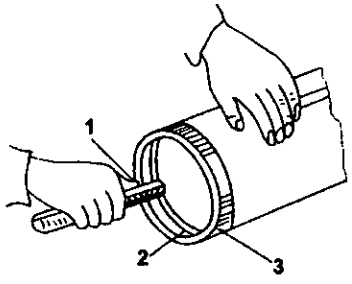


Fig.7 Measurement of piston ring end gap

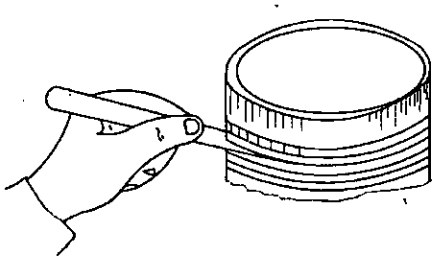


Fig.8Measurement of side surface gap of piston ring

1. Thickness feeler(gauge) 2.piston ring 3. Cylinder liner

3、Piston and connecting Rod

The piston connection rod assembly consists of piston, piston ring, piston pin, retainer ring, connecting rod, connecting rod casing, connecting rod bolt, connecting rod bushing and connecting rod lining and etc. Mass deviation of the connecting rod assembly of the piston for the same diesel shall be no more than 3g. ZL109 alloy aluminum is employed for the piston.

The gaseous ring is made of alloy cast iron. External circle of the first gaseous ring is coated with porosity chrome, which can reduce abrasion between cylinder sleeve and piston ring. The second gaseous ring is a taper-face ring, the surface marked TOP faces the top face. Reversing assembly is not allowed.

Caulking ring is employed for the oil control ring. As its resilience reduces by abrasion, it still remains a certain of radial resilience, therefore, it extends service life of the oil control ring.

Please check clearance of the opening before installing the piston. Keep the piston ring flat. 15-20mm away from top face of the cylinder sleeve. Then measure it gas feeler, clearance of the opening shall be 0.3-0.4mm. See figure 7 for detail. If with clearance of the opening is smaller, amend it with a file; if clearance of the opening is larger, change a new one, In addition, it's necessary to measure the end face clearance between the piston ring and the piston ring groove with a gap feeler. Clearance for the first gaseous

ring shall be 0.060-0.092mm, and the second gaseous ring shall be 0.040-0.072mm, see figure 8 for detail.

Special purpose tool shall be employed for dismantling the piston ring. When assembling, opening positions of each piston ring shall stagger 120 degrees and not put on the direction of the piston pin.

During maintenance, if the piston ring can not move smoothly, immerse it in diesel (diesel or petroleum) for twenty-four hours or longer, then knock on the piston ring. After it is released by itself, take it out of the diesel and clean it with diesel or carbon tetrachloride.

Check if there is any rupture or crack on the piston ring, change a new one if any defect is found.

No.45 steel with die forging technology is made of the connecting rod. Section surface of the connection rod body is I-beam axle. Parting plane of the big end is 45 degrees to the connecting rod body. The connecting rod and connecting rod casing shall be corresponding borehole. Assemble it with marks and no error shall be made during assembly. Positioning lip is used for positioning for the connecting rod and connecting rod casing. Bolts for connecting rod are made of 40Cr steel. The upper and lower shaft bushings for the connecting rod are made of copper-lead alloy and tin-aluminum with support. When the clearance exceeds its limit value by abrasion or the surface wears off or burns. Please change the new ones in couple.

Before overhaul for the diesel or assembling(disassembling) the connecting rod assembly, clean the deposit carbon and oil stain on upper part of the cylinder sleeve. Coat clean engine oil on cylinder trepan boring, external surface of the piston, piston ring, shaft bush for connecting rod, crankshaft, connecting rod journal and etc, then place the guide bush on the cylinder sleeve. Rotate the crankshaft, assemble the connecting rod in the cylinder sleeve carefully, and tighten the bolts in turn with required force moment.

4、Crankshaft and flywheel

Timing gear for the crankshaft and belt pulley are installed at the front of the crankshaft, The flying wheel is installed at the back flange and positioned by the positioning pin. Six bolts are used for tightening the flying wheel as specified force moment, one6203-z bearing is installed at the center of flange of the back of the

crankshaft to support the transmission shaft of the transmission case, scale mark of provided at belt pulley of the crankshaft for observing the angle of the advance for blowout.

The flying wheel is made of high temperature. Ring gear of the flying wheel is located at the external circle of the flying wheel. Scale mark is provide at flying wheel for observing the angle of advance of oil blowout

5、Camshaft

In the front of the last cam of the cam shaft (from the frond side), there is gear which support the driving oil pump. When the cam shaft is rotating, the cam pushed the standing pillar to control air inlet and air outlet of each cylinders.

Thrust flange is provided for the second shift can bearing casing, it can control axial direction drunkenness of the can shaft. Bearings for each shift of the can shaft receive lubricant from the main oil channel. When installing lining for the front end, please check the oil holes of the lining and body are connected or not. As the camshaft gear is engaged with the driven gear on the oil pump, therefore, before dismantling the camshaft, it is necessary to disassemble the lube oil pump, and then draw the camshaft out from the front end.

The axis of the tappet deviates from the center line of of cam width. During operating, the tappet rotates so as to provide an even wearing on the bottom surface and the cylindrical surface of tappet.

6、Gear transmission system

The gear transmission system consists of timing gear for crankshaft, timing gear for cam shaft, timing gear for fuel injection pump and one inertia pump.

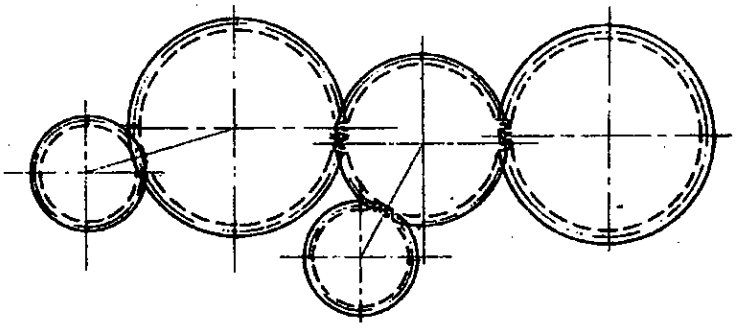


Fig9: timing gear meshing signs

Each timing gear is marked with timing gear except the gear for hydraulic pump. Tooth position is the gear shall be in corresponding position, (the gear marked with number shall be in the middle of th4e gears adjacent numbers), to ensure mutual motion relation of the parts, see figure 9 for detail. When installing gear for fuel injection pump separately, the angel of advance for oil supply shall be met first, and no mark is necessary, if marking is required, marks of the said three positions shall be aligned.

Special purpose tools are employed for assembling and disassembling for timing gear of the crankshaft maybe installed by utilizing the two M8 screws on the wheel spoke of the gear and serrated screws. Slippage positioning is employed for timing inertia gear and the body. The timing gear of fuel injection pump is installed at the advance for oil supply, which is fixed on the cam shaft of the fuel injection pump, only by unscrewing two M8X35 bolt should we take out the gear for fuel injection pump.

7、Fuel and governing system

Seventh. Fuel and speed adjustment system is the mail operational parts of the diesel, which includes fuel conveying pimp, diesel filter, oil blowout pump, adjuster, advancer, high-low duct and etc, see figure 10 for details

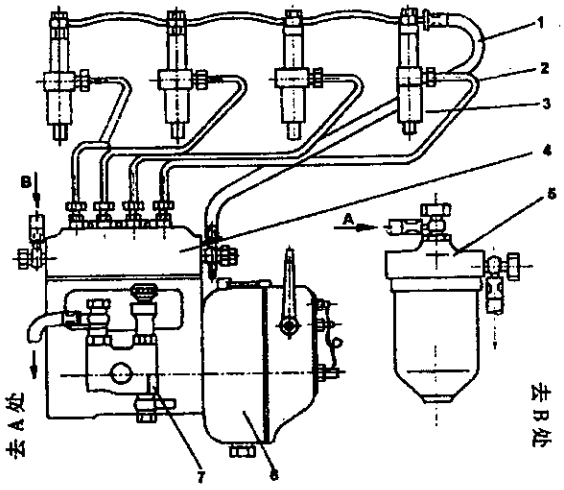


Figure 10 fuel adjustment diagrams

1. fuel return pipe 2. Fuel injection pipe 3. Injector 4. injection pump 5. Fuel filter 6. Governor 7. fuel delivery pump

The fuel conveying pump takes charge of conveying the fuel to the diesel filter, then to the fuel blowout pump. The fuel generates high pressure in the fuel blowout pump, then spray into the combustion room to burn from fuel injector through high pressure duct in the form of mist.

The fuel conveying pump is a single action piston oil pump. Installed at the external side of the oil injection pump and driven by the eccentric gear on cam shaft of the fuel injection pump.

The fuel injection pump has been calibrated by the manufactured. Do not dismantle it without permission. If dismantling for repair and adjustment are required, please keep it clean. Plunger piston, oil outlet and other couple part can not be exchanged.

Fully mechanical adjuster is employed. Rotation speed of the diesel increase relatively; when the speed adjustment handle moves towards the direction for releasing the spring, the oil supply amount reduces and rotation speed of the diesel reduces, too. Do not change positions of the two screws for rotation speed limitation and limit screws for maximum oil amount.

Stop working handle is installed on the casing of the adjuster, when the diesel needs stopping, move the stopping working handle to realize emergency stop.

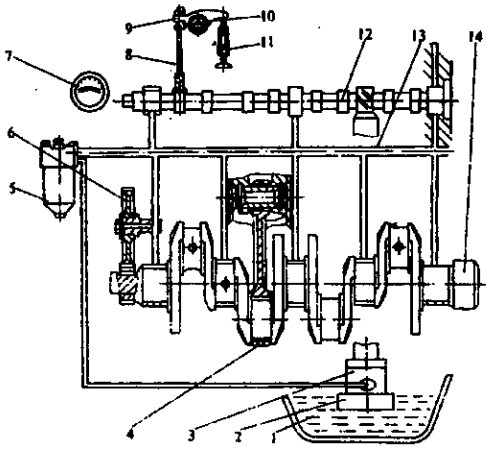
Pin valve of the fuel injection nozzle and pin valve body are the precise couple parts by grinding, during dismantling, do not exchange it and keep it clean.

8、 Lubrication systems

The lubrication system consists of the oil collecting and filter, oil pump, lubrication filter and kinds of the pipes, referring to Fig11.

Diesel adopts pressure and splash lubricate. Crankshaft headstock, connecting rod bearing, rocker shaft and camshaft and bushing adopt pressure lubricate. cylinder bushing,piston,piston pin, connecting rod bushing, camshaft and lever, valve and valve guide and so on are depend on the oil-burme splash lubricate. Moreover the roll bearing in water pump adopts to inject the grease lubricate.

The lubrication in the sump must to pass the oil collecting and filter, and will be inbreathed to the oil pump pass the vitta,after adding the pressure get to the lubrication filter, then put in the engine divide into three ways: one of them pass the headstock, reach the connecting rod bearing through the crankshaft hole; one reach to oil slot on the back shaft of the cam bush and supply the oil by intermissive; one reach to the gear wheel bearing. oil pump adopt rotor pump by slantwise. oil filter is single paper sieve core, and it is instead. during useing,if the filter core plug, open the safety valve the lubrication in flood the main oil pipe, but lose the filter, so must conform to the rule of "maintain technology", clear or change the filter core by stated.



1, Sump 2, Oil collecting filter 3, Oil pump 4, Piston-connecting rod assembly 5,Oil filter 6,Great system 7,Oil pressure gauge 8,Valve push rod, Valve lever 9,Rocker arm 10,Valve rocker shaft 11,Vavle and valve Guide 12,Camshaft and bushing 13,Oil passage in the cylinder block 14,Cramshaft and bearing

Fig.11 the Lubricating System Schematic Map

9、Cooling system

The cooling system is of forcible circulating water-cooled type, see figure 12 for detail. The cooling system contains radiator, water pump, fan, heat retainer, air guide cover and etc.(diesel engine without air guide cover and radiator)

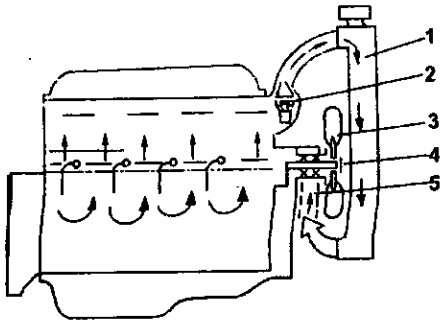


Fig12 Cooling system

1 radiator 2 heat retainer 3 fan 4 water pump 5 inlet pipe

Cooling liquid in the radiator is delivered to water channel by water pump, and then enters into the surrounding of the cylinder sleeve and last flows into cylinder header by the cylinder sleeve. The used cooling liquid returns to the radiator through heat retainer at the front of the cylinder head and the outlet pipe. The heat retainer closes when the temperature of the water flowing out is less than 70℃, and the cooling liquid flows into inlet pipe of the water pump through a small circulation on front plate of the cylinder, then it flowed into the water pump a second time to realize a small circulation; when the water flowing out is 70℃~80℃,the heat retainer opens, and the cooling liquid flows into the header tank of the radiator through the heat retainer, and flows into the lower tank through a flat copper pipe. During the process, the cooling liquid is cooled by the drafting or exhausted by the fan. Up to now, a big circulation is completed. Air drafting or exhausting is adopted for the fan as required.

Water pump is a centrifugal type. The water pump is driven by fan belt surround the shaft belt pulley. During use, if the water backfill is damaged, which leads to serious water leakage in the lower part of the water pump, please change a new one. Do not clock the water backfill if it is damaged, otherwise, it may enter into the bearing and accelerate abrasion of the bearing. If some unusual noise be heard when bearing operates, it should be changed. As the "Technical Maintenance" required, the calcium-radical lubricant will be added to the Oil cup of the water pump regularly. The lubricant should not be added more than 1/2~1/3 of cavum of the bearing, otherwise will cause the bearing hotness. Hot retainer is a rival pipe and single valve type, contains liquid sensitive to temperature which can auto control the valve's operation.

According to "Technical Maintenance", check and adjust tension of the belt between the fan and belt of generator regularly. The adjustment method is press down it 10-20mm.

10、Electric system

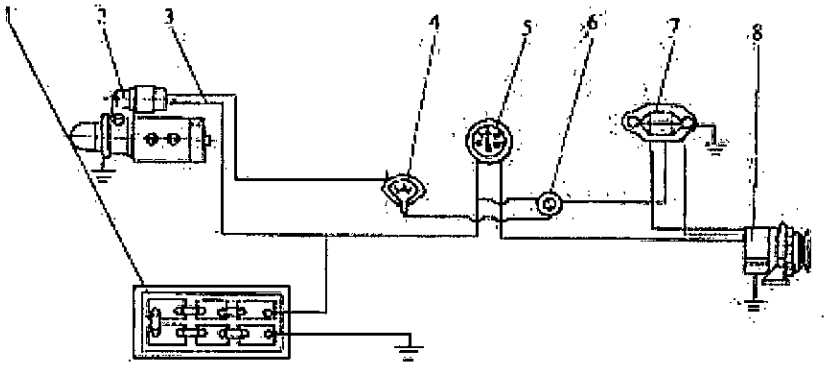


图 13 电器系统示意图

1. 蓄电池 2. 起动电机 3. 电线部件 4. 预热起动开关 5. 电流表 6. 点火开关
7. 调节器 8. 充电发电机

Fig13: electric system

1 storage battery 2 starting motor 3 wiring 4 preheat starting switch
5 ampere meter 6 ignition switch 7 adjuster 8 charging generator

Appliance system

The appliance system includes storage battery, stating motor, charging generator, electric heating plug, starting button, instrument and etc.(diesel without storage battery, starting button , instrument and etc.)

Storage battery adopts 6-Q-135 type.

Charging generator adopt silicon commutate and shunt excitation JF21 model. It is comprised of three-phase A.C motor and silicon diode. The negative pole is grounded; otherwise, it may damage the generator. See operation and maintenance Manual for Silicon Commutate Generator of JF Series on operation and maintenance of the generator.

Tooth of starting motor and flying wheel gear ring of diesel is controlled by

electromagnetic switch. When the starting switch is connected, the electromagnetic switch makes tooth of the gear and flying wheel gear ring, connect the circuit for starting the motor and then drive the flying wheel.

After the diesel is connected, turn off the starting motor immediately. The iron core drives the gear to its original position under the control of spring. Continuation for use of the starting motor may not exceed 15 seconds. The interval for two starts shall be 2-3 minutes. If the diesel can not be started for continual three times, please check and remove the faults. The duration for powering the electric heating plug may not exceed 30 minutes.

Section 6 Operation notice of turbo- charger diesel engine

Turbocharger mounted at the exhaust pipe of the diesel engine. Exhaust gas discharged from the cylinder entry turbocharger casing through exhaust pipe drives impeller of the turbine, then drives impeller of the compressor push the pressed air filtered by air filtered into cylinder. Due to more air pressed into cylinder, more fuel can be injected and burned more enough, then diesel discharge more power and lower displacement. Meanwhile, it can be compensated the power when the diesel engine operates at plateau area(turbocharger with discharge valve owns advantages such as large torque at low speed , high and low speed performance)

Caution for diesel operation as followed:

1 Favorable lubrication is the key to extend service life of turbocharger and diesel engine, because turbocharger is a precise part. The faster speed of the rotor, the higher temperature of the turbine (usual above 640°C), and the pressure of the lubricant set up rotor shaft (called floating bearing) to work. So the lubricant shall be clear and pressurized, with high quality. Pressured lubricant filtered from lubricant system be used at turbocharger. Speed of turbocharger is much higher than that of diesel, then inferior quality, dirty or poor lubricate capability, all can damage the turbocharger. So seriously affect the diesel to work well. Therefore, it is necessary to use CD oil for diesel, change oil, filter core of oil filter, clear oil sump and oil pump suction regularly according to the technical maintenance requirement of diesel operation manual. If the damage of the turbocharger and diesel is caused by the above caution such as use inferior quality oil, not change oil, filter core of oil filter, clear oil sump and oil pump suction regularly , causes oil aging, deterioration result in coking of oil or blocking lubrication pipe, the responsibilities shall be borne by the customers.

Selected oil brand under different temperatures

Ambient temperature	oil brand	corresponding oil brand of SAE
-10℃or colder	15W/40 CD grade	15W/40 CD grade
-5℃~20℃	10W/30 CD grade	10W/30 CD grade
20℃or warmer	5W/30 CD grade	5W/30 CD grade

The above-mentioned brand can be sold around China. The manufacturers are: Dalian Petrochemical Company(Qixing brand),Lanzhou Oil Refining Plant (Feitian brand), Jinxi Oil Refining Plant(Bohai brand), Maoming Petroleum Industry Company(Nanhai brand),Jinan Oil Refining Plant and etc.

2 Air flow in the air filter of turbocharger diesel engine shall be no less than 250m3/h, and the mounted place shall be more then 500mm away from exhaust pipe and turbocharger. Change filter core regularly as requirement of the technical maintenance to ensure ventilation. Inner diameter of the inlet pipe shall be no less then 54mm.Keep its inner wall smooth and clean. Air leakage is not allowed at any connection of the pipe system. The flexible duct for connection adopts rubber pipe with steel inside. Meanwhile set a net to prevent aspirating large dust, otherwise the dust will block the duck, which may cause insufficient air supply, low power, smoking and oil leakage in the compressor of the turbocharger. Turning angle of the pipe shall exceed 90 degrees, and no more than two turnings shall be provided. Radius of turning shall be 3 time as diameter of the pipe, which shall be shortened as much as possible.

3 Inner diameter of the exhaust pipe shall no less than 48mm. Turning angle of connection pipe shall exceed 90 degrees, and no more than two turning shall be provided. Radius of turning shall be 3 times as diameter of the pipe, which shall be shortened as much as possible. Muffler not only meeting the requirement of noise-damping, but also the resistance not exceed the permissible value(13~20kPa),power loss of the diesel not exceed than 3%~4%.

4 Fan of diameter 420mm is a standby accessories for turbcharging diesel. We recommend to use the fan whose a diameter no less than 420mm when change it.

Heat radiation area: heat radiation area for turbo charging diesel according to the power. It shall be adjusted and checked during install the whole engine. Air guide cover must be installed, 20mm away from the fan in axial distance. Front end surface of the fan shall be at least 20mm away from the radiator.

6 Fuel injection pump and adjuster of the diesel have been adjusted to the best conditions at the leaving factory test and sealed. If the lead seal is damaged or it is adjusted, the customers shall bear its responsibilities. If any adjustment is required, please contact the nearest service center of our factory to conduct for you, then seal.

7 After the diesel is started, running at idling speed of 2-3 minutes is required before loading more capacity to ensure lubricate. Immediate loading may lead to insufficient lubrication of bearing in the turbocharger and damage to the bearing.

8 If customers wants to repair the diesel by itself , need to assembly or disassembly the turbocharger, please prevent any foreign material from entering into turbocharger and inlet or inlet system. Otherwise cause deadly damage to the turbocharger and diesel. If we find the damage of the turbocharger due to foreign material in the inlet and outlet system, the customer bears the responsibility. Attention: do not take the push rod for exhaust valve mounted outside of the bypass type turbocharger as a carry-gripe. Do not push it without purpose, otherwise, it may affect sensitivity of the push rod and turbocharger can not work normally. Attention: the diesel can not work under the conditions of no air filter providing or available, and leakage of the air inlet and outlet system.

9 Prohibit operations under long-term overload condition. The diesel work overload for a long time, the speed of engine will be slow, cause low speed of the turbocharger, departure high effective area. The turbocharger can not increase air inlet flow, but increase air inlet resistance, then the diesel work badly , temperature rise of outlet water ,accelerating oil aging so much as coking oil, the depravation of the whole lubricant system, a series of grave faults, come into be a vicious circle, affect the service life of the diesel and its reliability.

10 Do not stop the diesel immediate when you want to park. Likewise, a 3-5 minute idling speed is necessary. After temperature of the diesel drops evidently, stop the diesel. Stopping the diesel at once when driving on declining area is not allowed.

11 Pay attentions to start diesel under low temperature. when the ambient temperature is too low or the vehicle stop for long time, strong sticky will affect the diesel have oil pressure and flow. Check and fill lubrication for the oil filter at the front of the turbo charging and its oil inlet pipe. Running 3-5 minutes in idling speed after start the diesel, and then running at high speed.

Running at idling speed shall not exceed ten minutes. The long-term idling speed running will cause temperature fall of the firebox, insufficient burn, blocking fuel injection and cause coking of plunger ring and air valve. As for turbo charging , low pressure of turbine and compressor or low speed of turbo charging may leak oil into the turbine casing from the sealing parts.

When open and check the turbo charging, please operate after the diesel is cooled. The turbo charging will be damaged if the diesel without inlet pipe and oil filter.

When the diesel is heated, do not touch the turbo charging and its connections to avoid scalding.

Section 7 Faults and Remedies for Diesel Engine

1、 Hard or Refuse to Start

causes	remedies
1、fuel filter and fuel pipeline blocked	clean
2 air in the fuel system	exhaust the air and tighten all of the fuel pipeline connector
3 fuel delivery advance angle incorrect	Readjust it according to specifications
4 spray fuel atomization is bad	readjust the spray fuel pressure according to specification
5、compression pressure low	clean or replace the injector needle valves sets
6、clearance between the air vales is wrong	check or replace the piston ring、cylinder sleeve and grind valves, cylinder head nuts should be tightened in case of leakage on cylinder head gaskets
7、battery lose electricity	Charge the battery
8、wires connections loosened	check and tighten wire connections, clean contact points
9 ambient tem. is too low, and oil too vicious	Heat up the cooling water and lubricant

2、 Power Insufficiency

cause	remedies
1 Compress pressure in cylinder is too low	Reference to fifth solution of first fault, replace a new part if exceed its wear limit
2 delivery fuel advance angle incorrect	Adjust according to specifications
3 clearance between air valves is incorrect	Adjust according to specifications
4 fuel supply imbalance among every cylinder	Adjust injection pumps to proper supply
5 air filter blocked	Clean
6 fuel injection pumps, fuel injector sets worn off or fuel injection pressure incorrect	Replace them with new patrts,adjust fuel injection pressure and check fuel spray
7 speed incorrect	adjust the speed control handle, make the speed to reach rated speed

3、 Smoking Exhaust

causes	remedies
1 over load	reduce the load, if they are unsuitable matching , adjust it
2 spray instruction ill	check the spray pressure and atomization, if the fuel pump is damaged, replace it
3 inferior quality of fuel	Use eligible fuel
4 combustion incomplete	Main reason is :fuel pump atomizes bad, delivery fuel advanced angle incorrect , leakage at cylinder cover gaskets and low compression pressure. solute in accordance with specific problems

4、 Knocking Noise in Engine

causes	remedies
1 delivery fuel advance angle is incorrect	Adjust the angle according to the specification
2 air in fuel system	Exhaust air
3 fuel supply imbalance among every cylinder	Adjust injector pump to proper supply
4 inferior quality fuel	replace to eligible fuel
5 parts are worn exceed itself limit	replace the part

5、 Lube Oil Insufficiency Or No Pressure

1 oil lever in oil sump too low	Add oil up to mark line on dip sticks
2 serious leakage from oil pipelines	Eliminate leakage
3 extract oil filter, oil filter and pipe blocked	Clean, or replace filter core
4 oil gauges damaged or gauge pipe blocked	Repair or replace it
5 oil is too dilute	use the eligible oil
6 oil pump gears seriously worn off, with excessive clearance	Adjust the clearance or replace them
7 pressure relief valves of oil filter cease to function	Check and repair or replace it
8 main bearings connecting-rod bearings and camshaft bushing seriously worn off with excessive clearance	Repair or replace them

6 、0verheating Of Engine

cause	remedies
1 temperature of cooling water too high	
(1)insufficient cooling water or vapor lock in water pipes	(1)fill the rank to make cooling water level higher than the center line of water pump
(2)bad working state of water pumps	(2)check water pump clearance and tightness of belts, eliminate leakage
(3)water scale in cooling systems too thick	(3)remove it
2 oil temperature too high	
(1)insufficient or excessive oil	(1)check whether the oil level is between the dip stick scale lines
(2)oil pressure too low with insufficient flow	(2)refer to paragraph V.
3 engines overload	Relieve load

7、engine running away

CAUSE	REMEDIES
1 governor failure	Stop immediately ,then check and repair
2 the fuel pump pull rod locked	Stop immediately ,then check and repair
3 injection pump supply to much more fuel	Stop immediately, readjust oil supply
4 burn lubricant to much	Stop immediately ,then check and repair

8.Appendix: wearing parts order sheet

No.	Name	No.	Name
1	Cylinder sleeve	10	Waterproof ring
2	Piston ring	11	Bead apex
3	Piston	12	Bearing bush/sleeve
4	Oil seal	13	fuel injector
5	Charger	14	injection pump plunger
6	Start motor	15	injection pump fuel-out valve
7	Air gate	16	Gaskets
8	Valve retainer	17	Filter element
9	Valve guide		

The life of wearing parts has a great deal with customer's operation, maintenance. Please operate and maintenance according to our manual to prolong wearing part's life, otherwise the life will be shortened seriously.

Production permit No.:XK06-205-00141/XK06-00141
Product standard:Q/321284 JCA03-2002;Q/321284 JCA06-2002

®

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YORKING

USER MANUAL

DIESEL GENERATING SET

Please read the manual carefully
before using the engine.
This guide contains important guidance
for safe operation.

handle generator or electrical cords while standing in water, while barefoot, or while hands or feet are wet. Before performing any maintenance on the generator, disconnect the battery cable first. When finished, reconnect that cable last.

1.1.2 Carbon monoxide hazards

Exhaust gas contains poisonous carbon monoxide, a colorless and odorless poison gas. Inhaling exhaust can cause loss of consciousness and lead to death. If you run the generator set in unventilated or confined place, the air you breathe could contain a dangerous amount of exhaust gas. So be sure to keep the good ventilation to prevent the exhaust gas from building up. Breathing carbon monoxide can cause headache, fatigue, dizziness, vomiting, confusion, seizures, nausea, fainting of death.

1.1.3 Safe running

DO NOT expose generator set to excessive moisture, dust, dirt, corrosive or explosive vapors. DO NOT approach the generator set if you are wearing loose clothes or objects that may be attracted by the airflow or by the mobile parts of the engine. It is forbidden to lean on the generator set or to leave objects on it. DO NOT touch the engine and muffler during operation of just after the engine stops, because the temperature can reach extremely high.

1.1.4 Fire and burn hazard

Keep the generator set clean and the generator set house tidy. The exhaust gets hot enough to ignite some materials. Keep flammable materials away from the generator set. The fuel is flammable and fuel vapor can explode. Safety dictated that fully charged BC and ABC fire extinguishers are kept on hand.

1.1.5 Battery and charging

Battery electrolyte fluid contains acid and is extremely caustic. Contact with battery contents will cause severe chemical burns and blindness. If electrolyte contacts skin or eyes, immediately flush the area with water and seek medical attention quickly.

Storage batteries give off explosive hydrogen gas during recharging. Slightest spark will ignite hydrogen and cause explosion.

1.1.6 Safety during using fuel and oil

If fuel or oil contacts skin, immediately flush the area with water. Wear protective gloves to avoid contacting fuel or oil. Do not add oil or fuel to a hot engine. Allow the engine to cool down firstly.

1.1.7 Safety during using coolant

Always check the coolant level before operating the generator set. DO NOT open the radiator cap during operation or just after stopping the engine. The radiator fluid is hot and under pressure and may cause serious burns. Only when engine is cool, coolant level could be checked.

1.1.8 Grouding

The generator set has been equipped with grounding bolt on the base frame. Grounding should be made before running the generator set, and all the bonnets of the loads must be also grounded to the earth. Take extreme caution to avoid risk of fulguration, make sure the grounding has been fitted according to theregulations.

1.1.9 Safety during maintenance

When performing check or maintenance, make sure that the engine has been stopped. Disconnect all external loads and the poles from battery before maintenance.

2. Generator set introduction

The generator set is designed to be safe when used in correct manner. However responsibility for safety is also highly conbined with the person who install, use and maintain the set. Before performing any procedure or operating technique, it is up to the user to ensure that it is safe. The generator set should be operated by people who are authorized and trained.

2.1 General description

Generator set is a power station which is driven by the diesel engine. Generally speaking, it contains the diesel engine, alternator and control system. The engine drives the alternator to produce electrical power while the control system controls the operation and output of the generator set and protects the machine from possible malfunctions. Besides, the generator set also includes accessories such as the control system, radiator, fuel tank, battery, muffler and base frame.

2.1.1 Diesel engine

The diesel engine powering the generator set has been chosen for its superior performance and reliability and the fact that it has been specifically designed for powering the generator set.

2.1.2 Alternator

The alternator producing output electrical power has been chosen for its superior performance and reliability. All the standard alternator are the machines without slip rings and revolving field brushes with class H insulation.

2.1.3 Control system

The control system is equipped to control the operation and output, and protect the machine from possible malfunctions. The control module are being used to automatically start and stop the engine, indicating the operational status and fault conditions, automatically shutting down the engine and indicating the engine failure by alarm on the panel display. It can display presenting all output values and various alarms information.

2.1.4 Electrical system and cooling system

The engine electrical system is 12（or 24）volt DC electricity, which consists of the start motor and battery.

The engine cooling system is comprised of radiator, pusher fan and a thermostat. The alternator cooling system is air cooled which consists of a fan to pull cool air across alternator to cool it.

2.1.5 Vibration isolator

The engine and alternator are coupled together and mounted on the base frame. The generator set is fitted with vibration isolators which are designed to reduce engine vibration being transmitted to the foundation on which the generator set is mounted. These vibration isolators are fitted between the engine/alternator feet and the base frame.

2.2 Ambient condition

Temperature: -35℃ to 55℃ (Yorking may suggest optional equippment for extreme temperature conditions)

Humidity: Less than 80%

Altitude: Less than one thousand meters above sealevel

2.3 Power derating

For environmental conditions of installation and operation different from those above specified, it is necessary to foresee an eventual loss of power, or derating, not only in the engine but also in the generator that is fitted into it.

The user/customer must clearly establish the effective environmental conditions in which the generator set will operate when placing the order, so that both the engine and the alternator are correctly sized.

3. Installation

3.1 General

When the generator set is delivered, it is advisable to check that the received matches the order, and to compare it to with the delivery note. Also, check the machine if it is damaged or not.

If any flaw is detected, you must contact YORKING as well as the shipping company immediately in order to report the incident to the insurance company.

3.2 Base and foundation

Special foundation is unnecessary. A level and sufficiently strong concrete floor is adequate.

Provides a rigid support to prevent deflection and vibration.

Support the total weight of the generator set.

Isolate generator set vibration from surrounding structure.

The width and depth of the foundation need to meet the requirement. Typically the foundation should be 150mm to 200mm (6 to 8 inches) deep and at least as wide and long as the generator set. The following formula may be used to calculate the minimum foundation depth:

$T=K/(D\times W\times L)$

T= thickness of foundation in m

K= net weight of generator set in Kg

D= density of concrete (take 2403 Kg/m^3 as reference)

W= width of foundation in m

L= length of foundation in m

The foundation strength may still vary depending on the safe bearing capacity of supporting materials and the soil bearing load of the installation site, therefore reinforced gauge steel wire mesh or reinforcing bars or equivalent may be required to be used.

It is essential that the foundation should be leveled, preferably within $\pm 0.5°$ of any horizontal plane.

If the ground or floor may be wet from time to time such as in a boiler room, the foundation should be raised above the floor. This will provide a dry footing for generator set and for those who connect service or operate it. It will also minimize corrosive action on the base frame.

3.3 Room design

In order to start to consider the possible layouts for the room, the follow criteria must be determined:

Room should have one or two entrances. The one size should make allowance for the delivery and installation of the equipment, and afterwards for servicing and maintenance of the equipment.

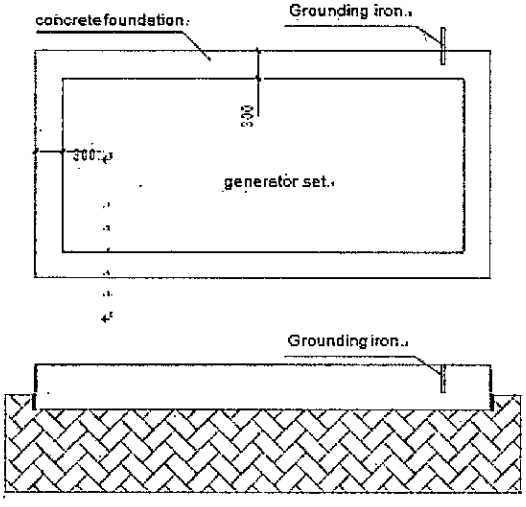
Room should be well ventilated. The air inlet and outlet openings should be large enough to ensure free of air into and out of the room. As rough guide, the opening should be at least 1.5 times the area of the radiator core. It is important that adequate ventilation is provided to keep engine and alternator cool. Proper air flow requires that the air comes in at the alternator end of the set, pass over the engine, through the radiator and out the room via a flexible exhaust duct. Without the ducting of the hot air outside the room, the fan will tend to draw that hot air around and back through the radiator, reducing the cooling effective.

Room should keep the good ventilation to prevent the exhaust gas from building up. Do not install generator set where exhaust gas could accumulate and enter inside or be drawn into a potentially occupied building.

Room dimension should allow for good maintenance/escape access around the generator: at least 1 meter around the set and at least 2 meters headroom above the set.

Room must be equipped with fully charged BC and ABC fire extinguishers.

Protection from exposure to airborne contaminants such as abrasive or conductive dust, lint, smoke, oil vapors, engine exhaust fumes or other contaminants.

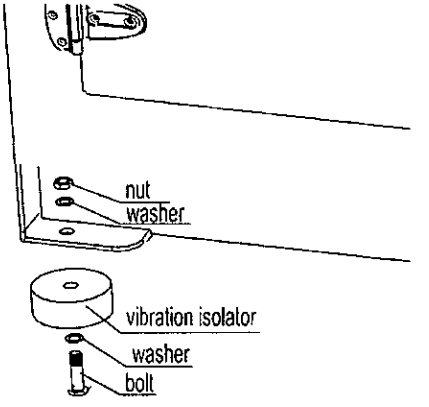


3.4 Installation

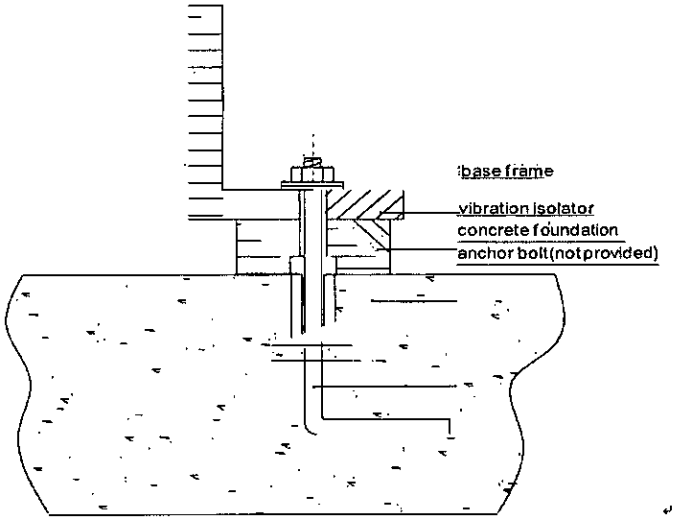
⚠WARNING

All piping and electrical connections should be flexible to prevent damage from the vibration of the generator set.

Fix the vibration isolators to the base frame with bolts as below. And place the generator set at a level and sufficiently strong foundation.



Use the anchor bolt to fix the generator to the foundation if necessary.



3.5 Utility power

Utility can provide power to critical components on the generator set, like battery charger, water jacket heater, oil heater and other devices.

The battery naturally discharges while it is stored or not running. To maintain the generator set in a good capability of starting, recharge it once a month in summer, and every 2 months in winter. The user can charge the battery through ATS equipment, or by connecting utility wirings to terminals of the battery charger.

The engine will be hard to start in the cold environment. It is recommended to equip appropriate heater unit. Connect wirings of the heater to utility before starting the engine. Tum on the utility switch, the heater unit starts to work. When the temperature reaches the preset value or the engine has started, the heater unit will stop working automatically.

3.6 Load connections

3.6.1 Select load cable

Select the cable with proper diameter, based on its allowable amperage and the distance between the generator set and the load.

Recommend to select the proper diameter and length of cable. There is maximum 5% marginal drop only for the rated voltage between the terminals of loads generator set via the cable. It should be considered while selecting the cable.

⚠WARNING

(1) If load exceeds allowable amperage, the cable may be damaged in overheating.

(2) If the cable is either too long or too small, there will be greater voltage drop between cables which bring voltage drop to loads. It may result in reduced performance in the connected loads.

3.6.2 Connecting load cable

The generator set is ready for user connections. The user load cable should be connected to the corresponding wire terminal which is located inside the control cabinet or switch cabinet, then use a wrench to tighten cable connections and fix them.

Power cables must be placed in suitable channel, tunnels or protective conduct-holder. Do not include AC and DC cables in the same channeling.

⚠WARNING

Connection must be carried out only by a licensed electrician.

3.7 Ground connections

Metal parts of installation, which are exposed to human or have insulation flaw or other reasons, may get in contact with voltage. There must be connected to the ground.

The generator set and electric components have been equipped with their respective grounding terminals which are all connected to the ground terminal in the control cabinet. The terminal is connected to the ground bolt on the base frame. Connect the ground bolt to the land-dispersion.

The connection to the land-dispersion must be made with bare copper wires conductors with a minimum section of 16mm^2, or if not available, galvanized iron with a 50mm^2 section.

⚠WARNING

1) ***If the grounding terminal is unconnected by mistake or accident, it will be very dangerous for human because leaking current inevitably goes through the body.***
2) ***All the bonnets of the loads must be grounded to the earth.***
3) ***Grounding should be made before running the generator set.***

3.8 Battery connections

The battery cable should be disconnected to the posts when the generator set is required to transport or store for a long term. Before running the machine, connect the battery cables.

⚠WARNING

Do not dispose of battery in a fire. The battery is capable of exploding. If it explodes, electrolyte solution will be released in all directions. Battery electrolyte solution is extremely caustic and can cause severe chemical burns and blindness. If electrolyte contacts skin or eyes, immediately flush the area with water and seek medical attention quickly.

4. Pre-check before starting

4.1 General pre-check

Before starting the generator set, check each item below to make sure that the machine can be started up properly and reduce possible problems.

Check engine oil, fuel and coolant leakage at the hose connections.

Check to make sure no debris has lodged in vents, near radiator or around fan.

Check to make sure that nothing is touching the muffler or exhaust pipes.

Check the looseness of the parts and all the electrical connections.

Check to make sure that the battery cables are firmly secured to the post. Tighten the clamps more if necessary.

Check to make sure that fan belt and hoses on engine have no loose connections or fraying. Tighten or replace asrequired.

Check that all the loads connections were made in compliance with local regulations and NEC standards.

Check that generator set is grounded to a good earthen ground per local regulations.

Close and secure access doors, control cabinet and switch cabinet doors.

Review and follow safety instructions in the front of this manual.

⚠WARNING

1) ***Do not use the machine when any leak is found. Repair it first of all. Tighten or change the connection hose if necessary.***
2) ***Failure to follow the procedures listed may cause injury to personnel or damage to the generator set. Be certain that all persons setting up the generator set are certified or fully trained on the installation of the generator set.***
3) ***Always wear protective gloves and clothe during operation.***

4.2 Checking engine oil level

Keep the generator set level when checking engine oil, insert the oil gauge all the way in. The appropriate level should be between the lower limit and upper limit on the oil gauge.

Add the engine oil if the level is below the lower limit:

Select the proper engine oil.

Loosen the oil inlet cap and remove it.

Fill engine oil into the oil inlet through an oil filter until the level is slightly less than the upper limit by checking the oil gauge.

Tighten the oil inlet cap.

⚠WARNING

1) ***If the generator set is not level when checking the engine oil, you can not obtain accurate oil level.***
2) ***Do not overfill the engine oil. The level can not exceed the upper limit because the excessive amount of engine oil may damage the engine.***

Do not smoke or make light fires near the generator set when filling the engine oil.

Remove the coolant inlet cap and radiators cap, check the radiator if full of the cooling water or not. Engine coolant must include antifreeze according to the coolest weather conditions in the area. A mixture of 50% antifreeze and 50% water is recommended.

Add coolant in case of shortage:

Select the proper coolant.

Remove the coolant inlet cap.

Remove the radiator cap.

Fill coolant up to the radiator inlet top.

Tighten the radiator cap and coolant inlet cap.

⚠WARNING

1) ***Make sure that the gas is fully drained out of the cooling system.***
2) ***Do not open the radiator cover when the engine is running of after the engine is stopped just for a while. Because the coolant temperature is very high in this time. The vapor and splashed coolant may scald you seriously.***

4.3 Checking fuel level

Check the fuel level in the tank. Add fuel in case of shortage:

Select the proper fuel.

Loosen the fuel cap and remove it.

Fill the fuel through the inlet until the fuel is slightly less than the full tank level.

Tighten the fuel cap.

⚠WARNING

1) ***Do not smoke or make light fires near the generator set when filling the engine oil.***
2) ***Often open the drain plug in the fuel tank to drain the sediment and impurity.***

4.4 Checking the fan belt

Check the tension and the extend length of the belt. Check the belt if good or not. Replace it if necessary. Refer to its engine manual for the regulation or replacement of the belt.

4.5 Checking the fan belt

Check the tension and the extend length of the belt. Check the belt if good or not. Replace it if necessary. Refer to its engine manual for the regulation or replacement of the belt.

4.6 Checking the battery

Check if the battery is full charged. Check the battery connection cables. Take care to tighten the loosened battery terminal with spanner and keep clean in order to avoid oxidation.

4.7 Checking the grounding protection

The generator set frame and load must be installed grounding protection, and make sure the grounding protection is ok.

4.8 Checking the coolant and oil leakage

Inspect the wholly unit and open the door to check if there is coolant leakage and oil leakage. If there is, please contact with your dealer for service.

4.9 Check the looseness of the parts

Check the nuts and screws if loosened. If loosened, tighten them. Specially inspect the air cleaner, muffler and charging alternator. Pay attention to the broken cables and loosened terminal.

4.10 Clean the dirty and dusty in the unit

Check the unit inner for dusty and dirty and clean it. Check the muffler and the place near the engine for trash and flammable materials and clean them. Check the intake and exhaust port if clogged by the dirty. Clean it, if necessary.

4.11 Electrical connection with load

Make sure that load does not exceed the power capacity of your unit. Connect electrical connections properly.

4.12 Checking the emergency stop button

Make sure that the emergency stop button is not pressed.

5. Operation

5.1 Start-up

Turn off every circuit breaker and all switches ofloads.

Turn off the generator set main circuit breaker and other circuitbreakers.

Put the Main Switch to ON position and press the START button on the generator set panel and the engine begins to start. It will attempt to start in about 10 seconds. If the engine fails to start, you need to wait at least 2 minutes before retry.

After the engine starts successfully, allow the engine to warm up no more than 10 minutes.

The control module will check the value of voltage and frequency. If the value is abnormal, the warning LED would flash.

Once the generator is running at the correct voltage and frequency, turn on the generator set main circuit breaker and the circuit breaker of loads, send power to the load side.

⚠WARNING

1) ***Before turning on the main circuit breaker, make sure any circuit breaker and switch of loads are positioned to OFF. Otherwise, it may cause electric shock to the operator.***

2) ***Do not touch wires and connections to the alternator when the generator set is running because they are live.***

5.2 Stop

1) Turn off every switch and circuit breaker of loads.

2) Keep the engine idle for about 3-5 minutes to allow cool down.

3) Press the STOP button on generator set panel and the engine begins to stop. It will attempt to stop in about 10 seconds.

5.3 General precautions during operation

1) Check the value of voltage, current and frequency, which should be desired.

2) Check the value of engine oil pressure and the coolant temperature.

3) Check for any leakage of coolant, oil and fuel.

4) Check for any unusual vibration or noise.

5) Check for any unusual color from the exhaust. Under normal condition, the exhaust gas has no color or light bluish color.

6) If engine speed is not stable or engine can not run because of no fuel, extract the air in the fuel system.

6. Maintenance

Before performing any check or maintenance, stop the engine.

For detailed maintenance procedures on the engine and alternator, refer to engine and alternator operator's manual.

In hot and dusty environments maintenance procedure of changing engine oil and oil filter should be performed more frequently.

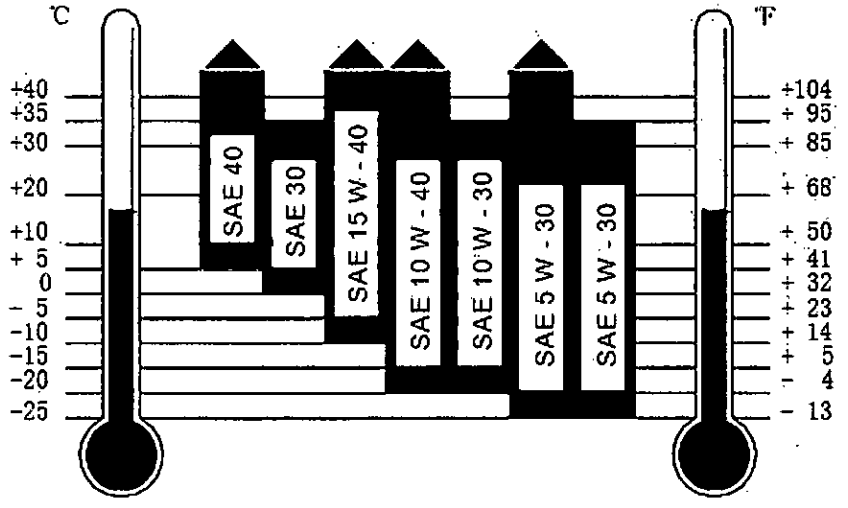
⚠WARNING

1) ***Accidental starting of the machine during maintenance can cause severe personal injury or death. Disconnect generator set starting battery cables before performing maintenance.***
2) ***Maintenance should be performed by a licensed engineer.***

6.1 Lubrication oil

Oil system of diesel engine is one of the most important elements of the engine. Correctly made engine overhaul prolongs the life cost of the engine.

We recommend that high quality multi grade SAE 15W/40 high service engine oil in diesel engines is used. At ambient temperatures above -15℃ is 15W/40. The minimum API oil quality levels recommended for use is CH/CI-4.



6.2 Engine coolant

Water for coolant should be clean and free from any corrosive chemicals such as chlorides, sulphates and acids. It should be kept slightly alkaline with a PH value in the range 8.5 to 10.5. Antifreeze must

be added to the coolant where is any possibility of freezing to protect the engine form damage due to coolant freezing. A 50% antifreeze / 50% water mixture is recommended.

6.3 Fuel choice

It is very important that the fuel oil purchased for use in any engine be as clean and water-free as possible. Dirt in fuel, the fuel can clog injector outlets and ruin the finely machined precision parts in the fuel injection system. Water in the fuel will accelerate corrosion of these parts. The fuel temperature is a critical factor for appropriate working conditions of the engine.

6.4 Daily check

Inspect the generator set daily or after every 8 hours of operation. Check the mechanical, exhaust, fuel and DC electrical systems as described below.

6.4.1 New machine

1) Run the generator set at least 60-100% of continuous load for the first 100 hours.
2) Change engine oil and replace oil filter after the first 50 hours.

6.4.2 Mechanical system

Inspect any signs of mechanical damage. Start the generator set and listen for any unusual noises, which may indicate mechanical problems. Repair them immediately.

Inspect the mounting fasteners to make sure the generator set is secure in its compartment.

Check the generator set air inlet and outlet areas, make sure that they are not blocked with debris.

Clean the machine whenever dust and dirt begin to accumulate. Usually remove dust and dirt with a damp cloth.

⚠WARNING

1) ***Do not clean the generator set when the engine is running.***
2) ***Protect the alternator, air cleaner, control panel and electrical connections form cleaning solvents because cleaning solvents can damage electrical connections.***

6.4.3 Fuel system

Inspect the fuel supply lines, return lines, filters and fittings for leaks during the machine running. Replace worm fuel line components if necessary before leaks occur.

6.4.4 Exhaust system

Inspect the entire exhaust system including the exhaust manifold, exhaust elbow, muffler and exhaust pipe during the machine running.

Visually and audibly check for leaks at all connections, welds, gaskets and joints.

If any leaks are found out, shut down the machine and do not operate until corrected. Replace corroded exhaust components if necessary before leaks occur.

6.4.5 DC electrical system

Inspect the battery terminals for clean and tight connections with the generator set off. Loose or corroded connections cause resistance which can impede starting. Clean and reconnect loose battery cables if necessary.

In order to reduce the possibility of arcing, always disconnect the negative battery cable first and connect it last.

6.5 Periodic maintenance schedule

Following the maintenance schedule and using the machine properly will result in longer generator set life, better performance and safe operation. Perform each maintenance procedure at the time period indicated of after the number of operating hours indicated, which comes first.

7. Troubleshooting

When performing any troubleshooting, follow the guideline below. For detailed troubleshooting procedures about engine and alternator, refer to engine and alternator operator's manual.

Keeping engine oil level, making battery connections clean and tight, checking fuel level, not overloading etc. will prevent most shutdowns.

Contact our authorized distributor to ask for help for complicated maintaining and replacing operation.

WARNING

1) Performing troubleshooting should be carried out by a licensed engineer. Before performing any troubleshooting, stop engine and always allow engine to cool because hot engine parts can cause severe burns.

2) Before performing any troubleshooting, stop engine and always allow engine to cool because hot engine parts can cause severe burns.

7.1 Generator Set Trouble

Trouble	Cause	Solution
Low engine oil pressure	1.Lubricant oil is insufficient	1. Add lubricant oil
	2.Oil hose has leak	2.Tighten or change oil hose
	3.Oil filter is clogged	3.Change oil filter
	4.Wrong oil is used	4.Change to proper kind oil
High coolant temperature	1.Coolant is insufficient	1.Add coolant
	2.Coolant pipe has leak	2.Tighten or change coolant pipe
	3.Fan belt is loose	3.Tighten the belt
	4.Radiator core is clogged	4.Clean radiator core
	5.Water temp sensor is defective	5.Repair or change the sensor
	6.Engine thermostat is defective	6.Repair or change the thermostat
Low fuel level	1.Fuel is insufficient	1.Add fuel
	2. Fuel pipe has leak	2.Tighten or change fuel hose
	3. Fuel tank has leak	3.Repair or change fuel tank
	4. Fuel filter is clogged	4.Drain water/sediment or change fuel filter
Power drops after running a period of time	1.Air filter element is clogged and air is insufficient	1.Clean or change air filter element
	2.Fuel filter is clogged and fuel is insufficient	2. Drain water/sediment or change fuel filter
	3.Engine ignition time is incorrect	Adjust the ignition time as required

7.2 Engine Trouble

Trouble	Cause	Solution
Starter motor can not drive or speed is low	1.Battery switch is off	1.Turn the switch to on
	2.Battery output is weak	2.Change the battery
	3.Battery is deteriorate	3.Change the battery
	4.Battery terminal is loose	4.Tighten the terminal
Starter motor drives, but engine can not start	1.Fuel is insufficient	1.Check fuel system and add fuel if necessary
	2.Fuel hose has leak	2.Tighten or change fuel hose
	3.Fuel filter is clogged	3.Drain water/sediment or change fuel filter
	4.Gauze filter is clogged	4.Clean or change gauze filter
	5.Air is mixed in fuel line	5.Extract the air
Engine starts but stalls at once	1.Fuel hose has leak	1.Tighten or change fuel hose
	2.Fuel filter is clogged	2.Drain water/sediment or change fuel filter
	3.Gauze filter is clogged	3.Clean or change gauze filter
	4.Air is mixed in fuel line	4.Extract the air
	5.Lubricant oil is insufficient	5.Check oil level, add oil as required
	6.Air filter element is clogged	6.Clean or change air filter element
Output is insufficient	1.Fuel is insufficient	1.Check fuel system and add fuel if necessary
	2.Overheating of moving parts	2.Check to see if lubricating oil filter is working properly
	3.Air filter element is dirty	3.Clean or change air filter element
	4.Injection pump wear	4.Check the fuel injection pump element and delivery valve assembly, replace if necessary
Muffler release black smoke	1.Fuel is of very poor quality	1.Select good quality fuel
	2.Air filter element is clogged	2.Clean or change air filter element
	3.Loads total exceeds the rated current	3.Adjust the loads to meet the rated output

Engine surge at idle	1.Fuel is insufficient	1.Add fuel
	2.Air is mixed in fuel line	2.Extract the air in fuel system and check for suction leaks
	3.Idle speed is set too low	3.Check and adjust low idle screw
	4.Fuel filter is clogged	4.Drain water/sediment or change fuel filter

7.3 Alternator Trouble

Trouble	Cause	Solution
No voltage or voltage is insufficient while generator set running	1.Winding is cut	1.Intertwist the cut winding and weld firmly
	2.Wiring terminal is loose	2.Tighten the wiring terminal
	3.Wiring terminal is defective	3.Clean or replace the defective terminal
	4.Speed is too low	4.Check the speed and keep the rated speed
Voltage is unstable	1.Speed is unstable	1.Keep the rated speed
	2.AVR is defective	2.Check AVR and change if necessary
Alternator overheats	1.Overload running	1.Reduce load
	2.Vent-pipe inside the alternator is clogged	2.Blow and clean the inner
Voltage is too high	1.Speed is too high	1.Keep the rated speed
	2.AVR is defective	2.Check AVR and change if necessary
Voltage is too low while running without load	1.Speed is too low	1.Keep the rated speed
	2.AVR is defective	2.Check AVR and change if necessary
Voltage is correct without load, but too low under load	1.Speed setting is incorrect	1.Check and adjust the speed
	2.Short circuit on the rotor	2.Check resistance of the circuit
	3.Armature of excitation is defective	3.Check resistance of the circuit
Voltage disappears while running	1.Winding of magnetic field is cut	1.Check the cut winding, intertwist and weld firmly
	2.Rotor of excitation is defective	2.Check rotor, repair it and change if necessary
	3.AVR is defective	3.Check AVR and change if necessary

7.4 Control System Trouble

Trouble	Cause	Solution
Main breaker can not be turn to on	1.The main breaker position is between on and off	1.Once turn the breaker to off, turn it to on
	2.Short circuit on the load	2.Check and repair the load circuit
Control module can not run	1.Control module cable is disconnected to the battery	1.Connect the module cable to the battery
	2.Battery power is insufficient	2.Charge the battery with the utility power
	3.The fuse is damaged	3.Change the fuse
Voltage drops quickly when connecting to the load	1.Loads total exceeds the rated current	1. Decrease the loads to meet the rated output
	2.Loads sharing to each terminal is unbalanced	2.Balance the loads sharing to each terminal
	3.AVR of alternator is defective	3.Check AVR and change it if necessary
	4.Use wrong frequency	4.Adjust the frequency to the load frequency
Frequency is stable, but voltage is unstable	1. AVR of alternator is defective	1.Check AVR and change it if necessary
After connecting to the load, voltage and frequency is stable, but current is unstable	1.Customer load is unstable	1.Check and adjust the customer load
Voltage can not go up to the rated value	1.AVR of alternator is defective	1.Check AVR and change it if necessary
	2.Frequency is low	2.Adjust frequency as required
Voltage exceeds the rated value	1. AVR of alternator is defective	1.Check AVR and change it if necessary

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