T-207
BENTEC-1500-AC

TECHNICAL OVERVIEW

Rating	1,500 HP	1,100 kW
Static hook load	770,000 lbs @ 10 lines	350 t
Drilling depth theoretical	16,400 ft	5,000 m

Year of construction 2009

MAST

Type	Bentec MVL-770-142-28 Bootstrap vertical erection	
Height	142 ft	43.3 m
Total height (incl. substr.)	173 ft	52.8 m

SUBSTRUCTURE

Type	Bentec SB-770-450-30 Box-on-Box	
Height	30 ft	9 m
Casing load	770,000 lbs	350 t
Setback load	450,000 lbs	200 t

DRAWWORKS

Type	Bentec E-1500-AC	
Horsepower rating	1,500 HP	1,100 kW
Max. line pull	75,450 lbs	34.2 t
Drilling line diameter	1 3/8”	35 mm
Auxiliary brake	Bentec EB6032A	

TOP DRIVE

Type	Bentec TD-500-HT	
Capacity	1,000,000 lbs	454 t
Torque	46,500 ft.lbs	63,000 Nm

ROTARY TABLE

Type	Mud King RT 375-53	
Table opening	37 ½”	952.5 mm

BOP EQUIPMENT

Annular	Due to requirements
Ram type	

DRIVE GROUP

Engine type	Caterpillar 3512B
Horsepower rating	4 x 1,757 HP
Generator type	Caterpillar SR4B
Generator rating	4 x 1,500 kVA
Voltage	690 V, 50 Hz
SCR / VFD Unit	Bentec VFD

MUD SYSTEM

Mud pump	Wirth TPK-1600	
Horsepower	3 x 1,600 HP	
Standpipe pressure	5,000 psi	350 bar
Active mud system	1,260 bbl	200 m^3
Reserve mud system	755 bbl	120 m^3
Shale shaker type	3 pc, MI Swaco PT Mongoose	

ADDITIONAL INFORMATION

Mast: Vertical erection (Bootstrap Mast) for small locations

Soundproofed Equipment:

Generators, Drawworks, pumps, Rigfloor, shale shaker area

Drawworks: Disc brake with 4-Quadrant (4-Q) and joystick operations via drillers house, Automatic Drawworks Control System (ADCS), automatic driller system (FOCS)

Power Supply: Via generator sets (VFD) or alternative from main grid and transformer/VFD

Top Drive: AC-Drive, equipped with helical gear for noise reductions

Certification: ATEX

Miscellaneous:

- Air conditioned driller cabin with Bentec InfoDrill & CCTV
- Iron Roughneck NOV ST-120
- Bentec MCS (mechanised catwalk system)
- Bentec MDM (mechanised derrickman)
- Softpump system & soft torque rotary system
- Skidding system incl. extension kit for 15 m length for HP pumping lines and cabling

DT_02833. Last updated April 2013

CATERPILLAR®

3512B
MARINE AUXILIARY

1125 bkW
(1509 bhp)
1530 mhp

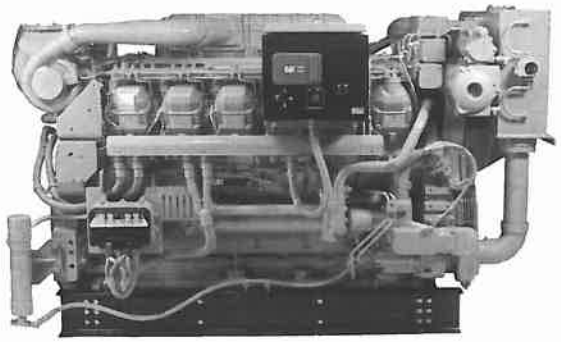


Image may not reflect actual engine

SPECIFICATIONS

V-12, 4-Stroke-Cycle-Diesel

Displacement ..... 51.8 L (3158 cu. in.)
Bore ..... 170 mm (6.7 in.)
Stroke..... 190 mm (7.5 in.)
Aspiration..... Turbocharged-Aftercooled
Governor ..... Electronic
Engine Weight, Net Dry (approx) .. 6532 kg (14400 lb)
Capacity for Liquids
Cooling System (engine only).. 289.3 L (76.4 U.S. gal)
Lube Oil System..... 613 L (162 U.S. gal)
Oil Change Interval..... 1000 hr
Caterpillar DEO 10W30 or 15W40
Rotation (from flywheel end)..... ccw or cw

STANDARD EQUIPMENT

Air Inlet System
Corrosion-resistant, separate circuit aftercooler core (air side); regular duty air cleaner; dual turbochargers, 152 mm (6 in.) OD

Cooling System
Non-self-priming centrifugal auxiliary sea water pump, gear driven centrifugal jacket water pump, auxiliary fresh water pump, expansion tank, oil cooler, thermostats and housing with 92°C (198°F)

Exhaust System
Dry, gas tight manifolds with thermo-laminated heat shields; dual turbochargers with watercooled bearings and thermo-laminated heat shields; vertical exhaust outlet, 305 mm (12 in.) round flanged outlet

Flywheel and Flywheel Housing
SAE No. 00 (183 teeth)

Fuel System
RH fuel filter with service indicators, fuel transfer pump, Electronic Unit Injector (EUI) fuel system

Instruments
RH instrument panel with oil pressure, water temperature, and fuel pressure gauges; system DC voltage gauge; air inlet restriction gauge; exhaust temperature gauges; fuel and oil filter differential pressure gauges; service meter; tachometer; instantaneous fuel consumption; 4-position start-stop

Lube System
Top-mounted crankcase breather, RH oil filter and oil level gauge, gear-type oil pump, deep sump oil pan

Mounting System
Engine length mounting rails, 254 mm (10 in.), C-channel

Power Take-Offs
Lower RH and LH accessory drive, two-sided front housing

General
Vibration damper and guard, Caterpillar yellow paint, lifting eyes

ACCESSORY EQUIPMENT

24V 60 amp alternator
24V electric prelube pump
24V electric starting motor
Air inlet overspeed shutoffs
Air starting motor
Auxiliary drive pulley and shaft
Crankshaft pulleys
Customer Communications Module — CCM
Dual jacket water heater
Duplex fuel filter
Duplex oil filter
Exhaust elbow, flange, flexible fitting
Front enclosed clutch
Front stub shafts
Fuel priming pump
Generator — 880 to 1360 ekW, air filter, bearing temperature detectors, low voltage extension box, RFI filter, voltage regulator (auto, digital, manual)
Heat exchanger
Instrument panel extension harness — 8M or 16M
Keel cooling connections
Load sharing module
Premium instrument panel
Premium wiring harness
Program relay control module
Pyrometer and thermocouples
Pyrometer extension harness — 8M or 16M
Radiator cooling conversion
Self priming auxiliary sea water pump
Shutoff and alarm contactors for oil pres. and water temp.
Spare parts kit
Standard sump oil pan
Sump pump
Upper RH accessory drives
Vibration isolators

PERFORMANCE DATA

Turbocharged-Aftercooled

DM4598-01 Aftercooler Temperature 30°C (86°F)

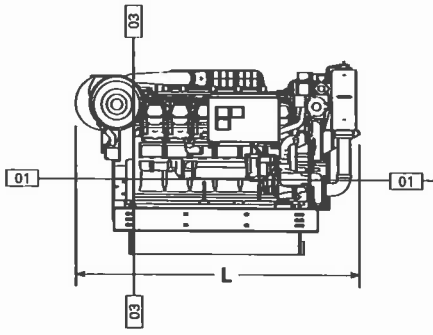
1125 bkW (.8 pf) 1509 bhp			
% load	**bkW**	**Lph**	**gph**
100	1119	276.8	73.1
75	837	214.9	56.8
50	561	153.7	40.6
25	288	93.0	24.6

CATERPILLAR®

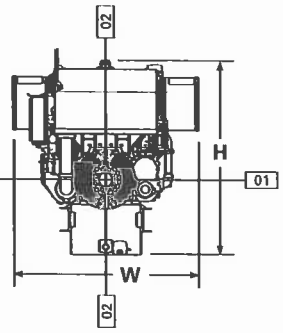
3512B MARINE AUXILIARY

1125 bkW (1509 bhp) 1530 mhp

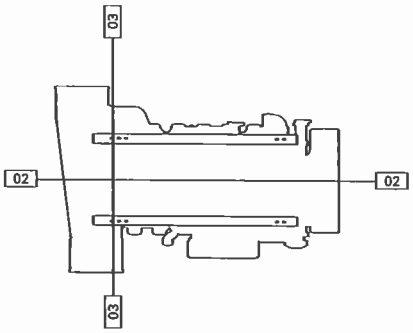
Right Side



Front



Footprint



DIMENSIONS*

	mm	in.
Overall Length	3038.6	119.6
Length from front to rear face of block	2420.0	95.3
Length from rear face of block to back of engine	618.6	24.4
Overall Height	2073.8	81.7
Height from crankshaft centerline to top of engine	1267.1	49.9
Height from crankshaft centerline to bottom of rails	806.7	31.8
Overall Width	1988.0	78.3
Width from crankshaft centerline to port side (left side)	994.0	39.1
Width from crankshaft centerline to starboard side (right side)	994.0	39.1

	Front		Rear	
	mm	in.	mm	in.
Customer mounting hole diameter	23.8	0.9	23.8	0.9
Width from crankshaft centerline to side	444.5	17.5	444.5	17.5
Length from rear face of block to mounting hole	1758.0	69.2	65.7	2.6
	1834.2	72.2	141.9	5.6
			10.5	0.4

*Illustrations and dimensions from drawing: 125-6279.

RATING CONDITIONS

Engine Performance Parameters

Power..... ±3%
Specific Fuel Consumption ..... ±3%
Fuel Rate..... ±5%

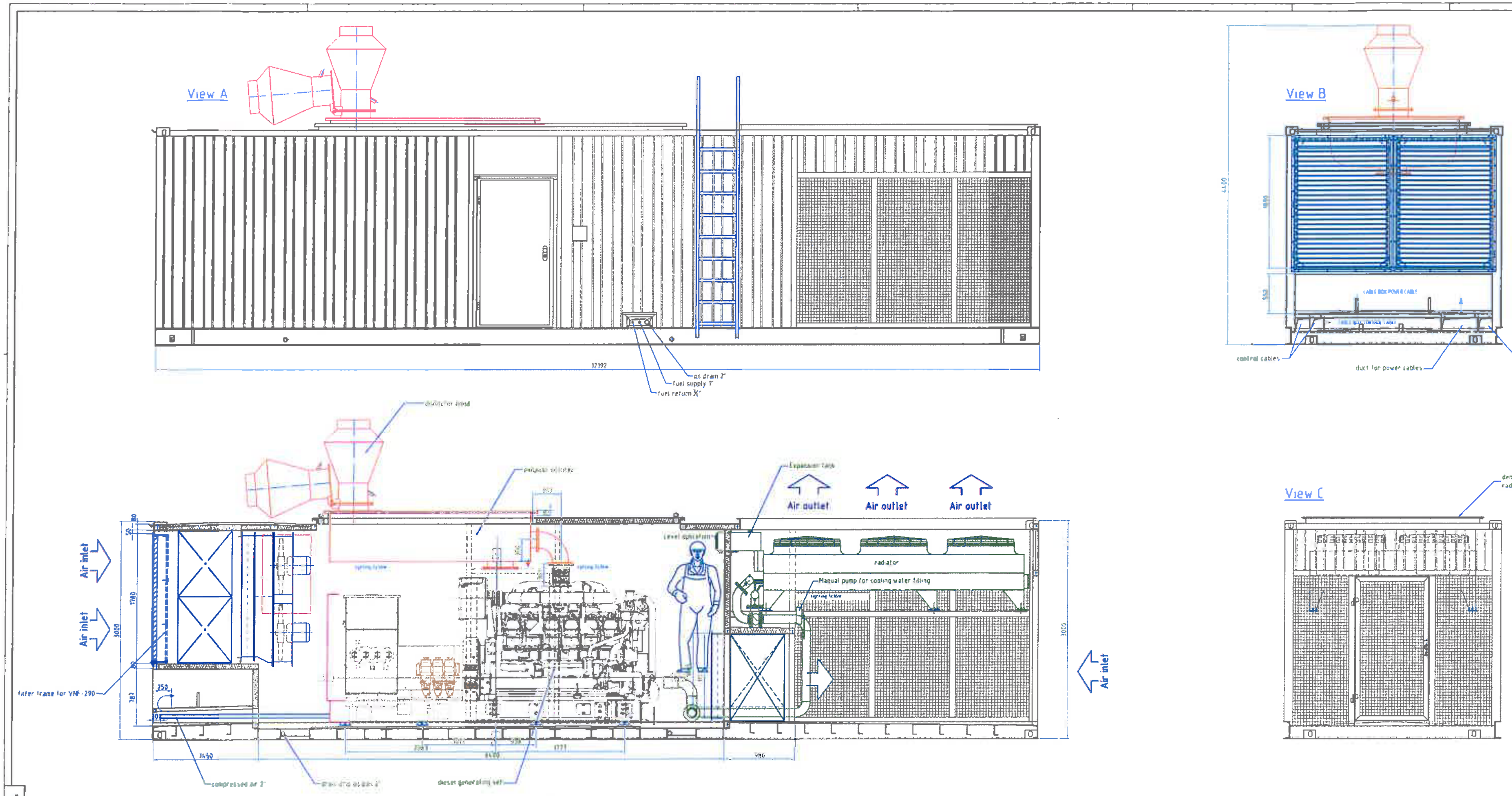
Ratings are based on SAE J1228/ISO8665 standard conditions of 100 kPa (29.61 in. Hg), 25°C (77°F), and 30% relative humidity. These ratings also apply at ISO3046/1, DIN6271/3, and BS5514 conditions of 100 kPa (29.61 in. Hg), 27°C (81°F), and 60% relative humidity.

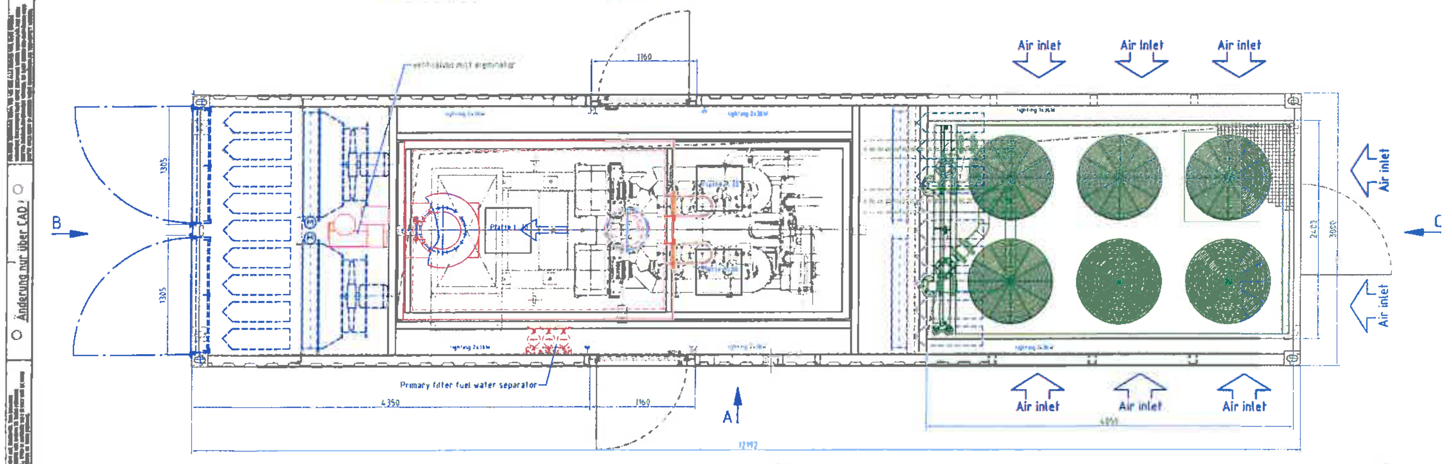
Fuel rates are based on fuel oil of 35° API [16°C (60°F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29°C (85°F) and weighing 838.9 g/L (7.001 lb/U.S. gal).

Additional ratings may be available for specific customer requirements. Consult your Caterpillar representative for additional information.

Performance data is calculated in accordance with tolerances and conditions stated in this specification sheet and is only intended for purposes of comparison with other manufacturers' engines. Actual engine performance may vary according to the particular application of the engine and operating conditions beyond Caterpillar's control.

TMI Reference No.: DM4598-01
LEHM1594-01 (8-07)





FREIGEGEBEN ZUR FERTIGUNG
APPROVED FOR CONSTRUCTION

Weight of Gen Set Container ~ 28000 kg
Colour RAL 9010

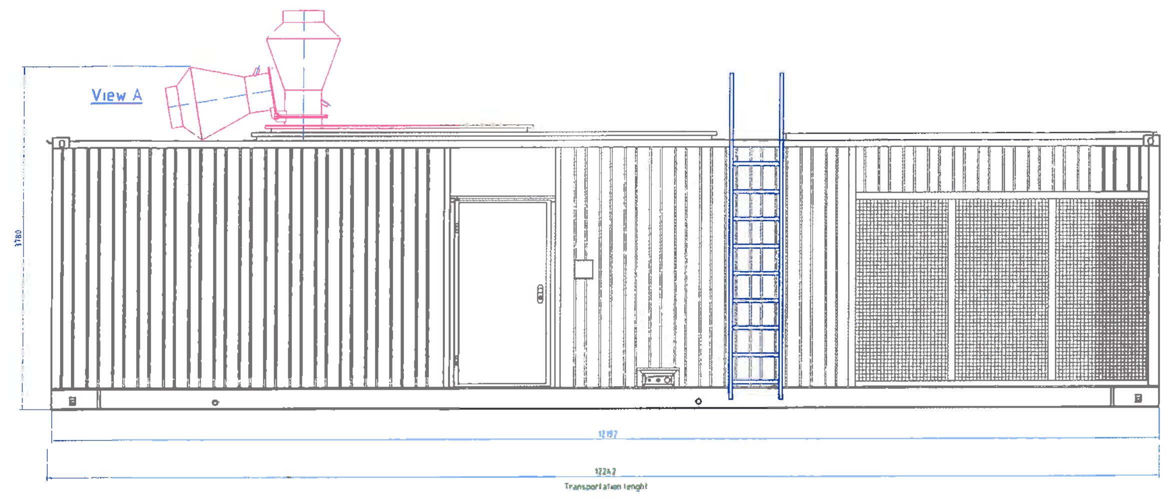
Änderung nur über CAD !

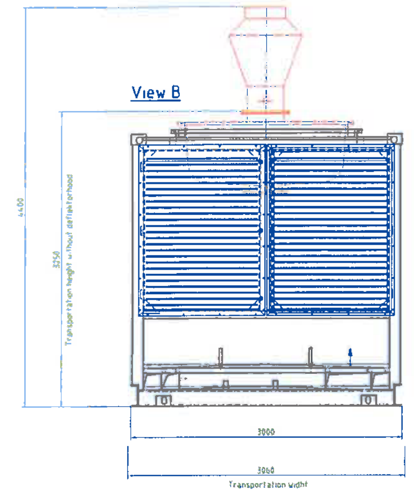
FRERK AGGREGATEBAU GMBH

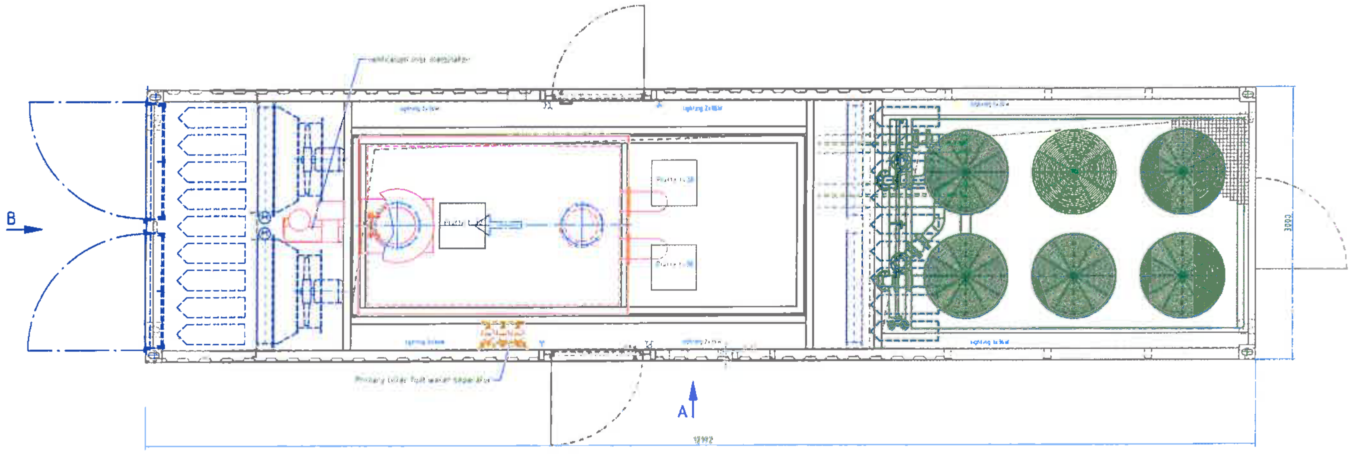
CAT 3516

Installation in special cont
Diesel generating set
JARDBORANIR / HEKLA

01 Aggregat 27.10.06
Rev Aenderung Datum Name







Weight of Gen Set Container ~ 28000 kg

Colour RAL 9010

Änderung nur über CAD !

FRERK AGGREGATEBAU GMBH

Transportation dimensions
Diesel generating set
JARDBORANIR / HEKLA

Rev | Aenderung | Datum | Name

FRERK
AGGREGATEBAU GMBH

Industriestrasse 1, 27333 Schweringen
Tel.: 0 42 57 / 93 00 - 0, Fax.: 0 42 57 / 6 66

Kunde : Customer	Caterpillar S.A.R.L.			**Kennwort** : Code	Hekla		**Aggregate Nr.** : Gen-Set No.	07 63 78
Leistung : Output	1200 KW	**Spannung** : Voltage	690 V	**Frequenz** : Frequency	50 Hz		**Aggregate Typ** : Gen-Set Type	D3512- GD
Motor : Engine	CAT	**Generator** : Generator	CAT	**Kupplung** : Clutch	CAT		**Schalttafel Fabr.** : Switch Board	CAT
Type :	D3512	**Type** :	SR4B	**Type** :			**Type :** :	
No. :	1GZ05304	**No.** :	G6Y00502	**Bohrung** Shaft :			**No. :** :	

Ausführungsklasse des Stromerzeugungsaggregates gemäß ISO 8528-1 :
Engine Performance Acc. ISO 8528-1

Leistung nach ISO 3046-1 :
Engine Performance Output Acc. ISO 3046-1

Leistung nach VDE : O530
Altenator Performance Acc. DIN VDE O530

COP	:	1310 KW	**Scheinleistung**	Reactive Power	:	1500	KVA	**Kraftstoff**	Fuel	:	Dieselöl nach DIN EN 590
PRP	:	KW	**Drehzahl**	Speed	:	1500	1/min	**Dichte**	Density	:	0,83 g/cm³
Temperature	:	°C	**Frequenz**	Frequency	:	50	Hz	**unterer Heizwert**	Heating point low	:	42800 KJ/KG
COP	:	KW red.	**Spannung**	Spannung	:	690	V	**Schmieröltyp**	Lubeoil Type	:	SAE 15 W 40
Drehzahl Speed	:	1500 1/min	**Strom**	Current	:	1255	A				

1. Belastungskennlinie
Load Caracteristic

Umgebungstemperatur : 20 °C
Amb. Temperature

Kühlungsart : Tischkühler
Cooling System

Rel. Luftfeuchte : 45 %
Relative Humidity

Aufstellhöhe : 30 müNN
Set up height

Barometerdruck : 1004 hPa
Barometer pressure

Belastung Load	Zeit Time	Wirkleistung Active Power	cos phi Power Factor	Strom Current	Spannung Voltage	Frequenz Frequency	Drehzahl Speed	Schmieröldruck Oil Pressure	Kühlw. Temp. Cooling Water	Motor Luftfilter L Engine Air Inlet L	Motor Luftfilter R Engine Air Inlet R	Gen.Lufteintritt alternator air inlet	Gen. Luftaustritt altenmator air outlet	HT-temperature Inlet engine	HT-temperature outlet engine	LT-temperature Inlet engine	LT-temperature outlet engine	Exhaust temp. left	Exhaust temp. Right	gen excitation current DC	gen excitation voltage DC	tablecooler air inlet	tablecooler air outlet	Container temperature
%	min	KW		A	V	Hz	1/min	kPA	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	A	V	°C	°C	°C
0	15	0	1	0	690	50	1500	440	81	16,0	14,3	14,3	22,0	15,8	54,0	17,0	20,0	177	143	2,7	11,3	13,6	15,5	14,7
25	30	300	1	251	690	50	1500	420	82	19,7	17,5	17,3	26,0	50,0	82,0	27,0	28,0	345	345	2,9	11,4	18,0	22,4	19,0
50	30	600	1	502	690	50	1500	408	83	23,0	21,8	19,0	30,0	55,0	83,0	39,0	42,0	469	472	3,2	13,3	22,5	44,0	22,0
75	30	900	1	753	690	50	1500	400	83	27,3	26,0	22,5	35,0	61,0	85,0	54,0	62,0	554	563	3,9	16,0	26,0	46,0	26,0
100	30	1200	1	1004	690	50	1500	384	86	31,4	30,0	25,5	40,2	75,0	89,0	67,0	79,0	620	637	4,4	18,4	30,0	56,0	30,0
100	60	1200	1	1004	690	50	1500	384	87	35,0	33,0	28,0	44,0	79,0	91,0	70,0	81,2	626	646	4,5	19,2	34,0	60,0	34,0
100	30	1200	1	1004	690	50	1500	380	87	36,7	35,0	29,0	45,5	83,0	89,0	74,0	83,0	627	646	4,5	19,2	35,5	62,3	35,0
0	15	0	1	0	690	50	1500	424	81	34,0	34,0	27,0	43,0	40,0	78,0	39,0	40,0	199	164	2,75	11,5	33,0	36,0	33,0

KCA DEUTAG

Date: 26.02.2014

EQUIPMENT DATA SHEET

Asset: E0393602
Maint. Plant: EU49
T207
WBS-Element: T207-GER-RWE-2001-OPS
Funct. Location: T0207-PGEN-650-010
Storage Location:

General Data

Class: 3101
Part-No.: 10231782
Condition Status: MPC
Manufact.-Name: CATERPILLAR
Manufact.-Part-No.:
Serial-No.: 5SN00912
Parent: E0393600
Owner Company:
Company/Inv.-No.:

Char. from Legacy System (MP5):
Customs:
Requisition Type:
Requisition No.:
Purchase Order No.:
Goods Rcvd. Note:
Activity Status:
Supplier No.:
Supplier Name:

Char. from SAP System:
Requisition Type:
Requisition No.:
Purchase Order No.:
Goods Rcvd. Note:
Supplier No.:
Supplier Name:

Technical Data

Short Desc. English: GENERATOR;AC;600V 50HZ;1500RPM;PF 0.7
Short Desc.German: GENERATOR;AC;600V 50HZ;1500RPM;PF 0.7
Model/Type: SR4B
Techn. Description:
Generator
Model: SR4B
Voltage: 690V

Drawing No.Own:
Drawing No.Foreign:
Year manufactured: 2010
New/Used/Foreign: N

Transport Data

Length:
Width:
Height:
Weight:

Maintenance Data

Last insp. date:
Last insp. plan:
Last Workorder:
Last insp. sched. interval:
Last insp. document:

Next insp. plan:
Next Workorder:
Next insp. sched. interval:
Next planed Insp.:
Attention: Check Legacy system for further existing document and inspection history!

Remarks

KCA DEUTAG

Date: 26.02.2014

EQUIPMENT DATA SHEET

Asset:	**E0393605**
Maint. Plant:	EU49
	T207
WBS-Element:	T207-GER-RWE-2001-OPS
Funct. Location:	T0207-PGEN-650-020
Storage Location:	

General Data

Class:	3101
Part-No.:	10231782
Condition Status:	MPC
Manufact.-Name:	CATERPILLAR
Manufact.-Part-No.:	
Serial-No.:	5SN00913
Parent:	E0393603
Owner Company:	
Company/Inv.-No.:	

Char. from Legacy System (MP5):

Customs:	
Requisition Type:	
Requisition No.:	
Purchase Order No.:	
Goods Rcvd. Note:	
Activity Status:	
Supplier No.:	
Supplier Name:	

Char. from SAP System:

Requisition Type:	
Requisition No.:	
Purchase Order No.:	
Goods Rcvd. Note:	
Supplier No.:	
Supplier Name:	

Technical Data

Short Desc. English: GENERATOR;AC;600V 50HZ;1500RPM;PF 0.7

Short Desc.German: GENERATOR;AC;600V 50HZ;1500RPM;PF 0.7

Model/Type: SR4B

Techn. Description:

Generator
Model: SR4B
Voltage: 690V

Drawing No.Own:

Drawing No.Foreign:

Year manufactured: 2010

New/Used/Foreign: N

Transport Data

Length:

Width:

Height:

Weight:

Maintenance Data

Last insp. date:

Last insp. plan:

Last Workorder:

Last insp. sched. interval:

Last insp. document:

Next insp. plan:

Next Workorder:

Next insp. sched. interval:

Next planed Insp.:

Attention: Check Legacy system for further existing document and inspection history!

Remarks