KRAFT	**WORLD PRİME STEEL GmbH Hamburg Germany**	Basic Engine Model: KT4-105	Cruve Number:	Page No.
		Engine Critical Parts List:	Date:	

Displacement : 4.3 litre (262.4 in³)	Bore: 105 mm (4.14 in.) Stroke: 124 mm (4.89 in.)
No. Of Cylinders : 4	Aspiration : Turbocharged and Watercooled

Engine Speed	Standby Power Rating		Prime Power Rating		Continuous Power Rating	
RPM	kWm	PS	kWm	PS	kWm	PS
1500	116	160	105	143	N/A	N/A

Engine Performance Data @ 1500 RPM

OUTPUT POWER			FUEL CONSUPTION	
%	kWm	PS	Litre/ hour	U.S. Gal/ hour
STANDBY POWER				
100	116	160	27.7	7.317
PRIME – LIMITED TIME RUNNING POWER				
100	105	143	25.0	6.604
PRIME – UNLIMITED TIME RUNNING POWER				
100	105	143	25.0	6.604
75	78	107	16.7	4.411
50	52	71	12.8	3.402
25	26	35	6.6	1.743

Gross Engine Power Output - kWm

CONVERSIONS: (Litres = U.S. Gal x 3,785) (kWm = BHP x 0,746) (U.S. Gal = Litres x 0,2642) (BHP = Engine kWm x 1,34)

These guidelines have been formulated to ensure proper application of generator drive engines in A.C. generator set installations.
Generator drive engines are not designed for and shall not be used in variable speed D.C. generator set applications.

STANDBY POWER RATING

Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. Under no condition is an engine allowed to operate in parallel with the public utility at the Standby Power rating. This rating should be applied where reliable utility power is available. A Standby rated engine should be sized for a maximum of an 80% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Standby Power rating. Standby ratings should never be applied except in true emergency power outages. Negotiated power outages contracted with a utility company are not considered an emergency.

PRIME POWER RATING

Applicable for supplying electric power in lieu of commercially purchased power. Prime Power applications must be in the form of one of the following two categories:

UNLIMITED TIME RUNNING PRIME POWER

Prime Power is available for an unlimited number of hours per year in a variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 250 hours. The total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour within a 12-hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

LIMITED TIME RUNNING PRIME POWER

Limited Time Prime Power is available for a limited number of hours in a non-variable load application.It is intended for use in situations where power outages are contracted, such as in utility power curtailment. Engines may be operated in parallel to the public utility up to 750 hours per year at power levels never to exceed the Prime Power rating. The customer should be aware, however, that the life of any engine will be reduced by this constant high load operation. Any operation exceeding 750 hours per year at the Limited Time Prime Power rating should use the Continuous Power rating.

COUNTINUOUS POWER RATING

Applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating.

Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.5 in Hg) barometric pressure [110 m (361 ft) altitude], 25 °C (77 °F) air inlet temperature, and relative humidity of 30% with No. 2 diesel or a fuel corresponding to ASTM D2.
See reverse side for application rating guidelines.
The fuel consumption data is based on No. 2 diesel fuel weight at 0.85 kg/litre (7.1 lbs/U.S. gal).
Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan, optional equipment and driven components.

TECHNICAL DATA DEPT. **CERTIFIED WITHIN 5%** **CHIEF ENGINEER**
CHIEF ENGINEER

WORLD PRİME STEEL

Engine Data Sheet

DATA SHEET :
ENGINE MODEL :KT4-105 CONFIGURATION NUMBER : DATE :
PERFORMANCE CURVE :

INSTALLATION DIAGRAM
- Fan to Flywheel :

CPL NUMBER
Engine Critical Parts List :

SPECIFICATIONS

Engine Type	In-line,4 strokes, water-cooled
Combustion Type	Direckt injection
Cylinder Type	Dry liner
Number of cylinders	4
Bore x stroke	105(4.14) x 124(4.89)
Displacement	4.3(262.4) lit.(in3)
Compression ratio	16:1
Firing order	1-3-4-2
Injection timing	13.5°BTDC
Dry Weight	Approx. 450kg (992.1 Ib)
Dimension (LxWxH)	1012x723x1102 mm (39.9x28.5x43.4in)
Rotation	Counter clockwise viewed from
Fly wheel housing	SAE NO.3
Fly wheel	SAE NO.11.54

ENGINEERING DATA

Water Flow	155 liters/min @1,500 rpm
Heat Rejiction to coolant	15.5 kcal/sec 1,500 rpm
Heat rejiction to CAC	7.8 kcal/sec @1,500 rpm
Air flow	7.39 m3/min @1,500 rpm
Exhaust gas flow	16.3 m3/min @1,500 rpm
Exhaust gas temp	600 °C @1,500 rpm
Max. Permissible restrictions	
Intake system	3 kPa inital 6 kPa final
Exhaust system	6 kPa max.
Max. Permissible altitude	2,000 m

MECHANISM

Type	Over head valve
Number of valve	Intake 2, exhaust 2 per cylimder
Valve lashes at cold	Intake 0.25mm (0.0099 in) Exhaust 0.50mm (0.0197 in.)

VALVE TIMING

	Opening	**Close**
Intake valve	20.9° BTDC	44.9° ABDC
Exhaust valve	51.7° BBDC	11.7° ATDC

COOLING SYSTEM

Cooling method	Fresh water forced circulation
Water capacity (engine only)	6.8 liters (1.8 gal.)
Pressure system	Max. 0.5 kg/cm2 (7.11 psi)
Water pump	Centrifugal type driven by belt
Water pump capacity	155 liters (136 gal.)/min at 1,500 rpm (engine)
Thermostat	Wax-pellet type Opening temp. 82°C Full open temp. 95°C
Cooling fan	Blower type, plastic 620 mm diameter, 9 blades

FUEL SYSTEM

Injection pump	In-line “P” type
Governor	Electric type
Feed pump	Mechanical type
Injectıon nozzle	Multi hole type
Opening pressure	250 kg/cm2 (3556 psi)
Fuel filter	Full flow, cartridge type
Used Fuel	Diesel fuel oil

LUBRICATION SYSTEM

Lub. Method	Fully forced pressure feed type
Oil pump	Gear type driven by crankshaft
Oil filter	Full flow, cartridge type
Oil pan capacity	High level 13 liters (3.4 gal.) Low level 11 liters (2.9 gal.)
Angularity limit	Front down 25 deg. Front up 35 deg.

ELECTRICAL SYSTEM

Charging generator	24V x 55A
Voltage regulator	Built-in type IC regulator
Starting motor	24V x 4.5kW
Battery Voltage	24V
Battery Capacity	120 AH

PERFORMENCE DATA

All data is based on: Engine operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer; no included are battery charging alternatör, fan, and optional driven components

- Engine operating with fuel corresponding to grade No. 2-D per ASTM D975
- ISO 3046, Part 1, Standard Reference Conditions of:

Barometric Pressure	:	Air Temperature	:
Altitude	:	Relative Humidity	:

N.A. – Data is Not Available
N/A - Not Applicable to this Engine
TBD - To Be Determined

ENGINE MODEL : KT4-105
DATA SHEET :
DATE :
CURVE NO. :