



INTRODUCTION

Akse power generation system, providing optimum performance, and reliability, for stationary standby, prime power, and continuous duty applications. All generator sets are factory build, and production tested.

Power (kVA)

3 Phase, 50 Hz, PF 0.8

VOLTAGE	STANDBY RATING (ESP)		PRIME RATING (PRP)		Standby Amper
	kW	kVA	kW	kVA	
400/231	1340,00	1675,00	1200,00	1500,00	2417,73

STANDBY RATING (ESP) Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. ESP is in accordance with ISO 8528-1. Overload is not allowed.

PRIME RATING (PRP) Applicable for supplying power to varying electrical load for unlimited hours. PRP is in accordance with ISO 8528-1. 10 % overload capability is available for a period of 1 hour within 12-hour period of operation.

General Characteristics

Model Name	AC 1675
Frequency (Hz)	50
Fuel Type	Diesel
Engine Make and Model	CUMMINS KTA50-G88
Alternator Make and Model	PI734C
Control Panel Model	DSE 7320
Canopy	AK 98

ENGINE SPECIFICATIONS

Engine	CUMMINS
Engine Model	KTA50-G88
Number of Cylinder (L)	16 cylinders - V type
Bore (mm.)	159
Stroke (mm.)	159
Displacement (lt.)	50.3
Aspiration	Turbo Charged and AfterCooled
Compression Ratio	14.9:1
RPM (d/dk)	1500

Manufacturer reserves the right to make change in the model, technical specifications, color, equipment, accessories and images without prior notice. (22.11.2021)

Oil Capacity (Total With Filter) (lt)	204
Standby Power (kW/HP)	1429/1915
Prime Power	1287/1725
Block Heater QTY	2
Block Heater Power (Watt)	3000
Fuel Type	Diesel
Injection Type and System	Direct
Type of Fuel Pump	Cummins PT
Governor System	Electronic
Operating Voltage (Vdc)	24 Vdc
Battery and Capacity (Qty/Ah)	4x143
Charge Alternator (A)	35
Cooling Method	Water Cooled
Cooling Fan Air Flow (m ³ /min)	2631
Coolant Capacity (engine only / with radiator) (lt)	165/420
Air Filter	Dry Type
Fuel Cons. Prime With %100 Load (lt/hr)	309
Fuel Cons. Prime With %75 Load (lt/hr)	238
Fuel Cons. Prime With %50 Load (lt/hr)	167

ALTERNATOR CHARACTERISTICS

Manufacturer	STAMFORD
Alternator Made and Model	PI734C
Frequency (Hz)	50
VOLTAGE (V)	400

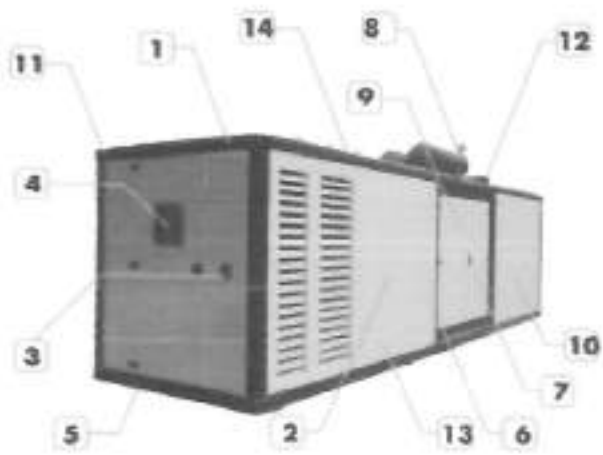
Open Gen.Set Dimensions (mm)

LENGTH	5450
WIDTH	1950
HEIGHT	2450
DRY WEIGHT (kg.)	10400
TANK CAPACITY (lt.)	2000/1900

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Gen.Set Canopy Dimensions (mm)

LENGTH	9000
WIDTH	2270
HEIGHT	2550
DRY WEIGHT (kg.)	15100
TANK CAPACITY (lt.)	1900



1. Steel structure made from steel sheet and steel profiles.
2. Canopy and panels made from powder coated sheet steel.
3. Emergency stop push button.
4. Control panel is mounted on the baseframe . Located at the back of the generator set
5. Cables out locations are under of the canopy.
6. Corrosion.resistant locks and hinges.
7. Oil could be drained via valve and a hose
8. Exhaust system on the canopy.
9. special large access doors (marine type) for easy maintenance
10. Fuel tank is at front of the canopy ,easy access to the fuel tank via lockable door.
11. Lifting points similar to ISO container , located on each top corner of the canopy.
12. The cap on the canopy provides easy access to radiator cap.
13. sound proofing materials
14. Integrated ladder built in to side of the canopy allows access to the top of the canopy.

INTRODUCTION

Sound-attenuated and weather protective enclosures for generating sets from Akxa, meet even the sound requirements and provide optimum protection from inclement weather and development by our specialist acoustic engineers. Our modular designed sound insulated canopies provide ease of access for servicing and general maintenance and interchangeable components permitting on-site repair. Enclosures are designed to optimize genset cooling performance, providing you with confidence that genset ratings and ambient capability.

Control Panel

Control Module	DSE
Control Module Model	DSE 7320
Communication Ports	MODBUS



1. Menu navigation buttons
2. Close mains button
3. Main Status and instrumentation display
4. Alarm LED's
5. Close generator button
6. Status LED's
7. Operation selecting buttons

Devices

DSE, model 7320 Auto Mains Failure control module Static battery charger Emergency stop push button and fuses for control circuits

CONSTRUCTION and FINISH

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- CE
- SZUTEST
- 2000/14/EC

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OPTIONAL EQUIPMENTS**ENGINE**

- Remote Radiator Cooling
- Fuel-Water Separator Filter
- Oil heater

ALTERNATOR

- Anti-Condensation Heater
- Over sized alternator
- Main line circuit breaker

CONTROL SYSTEM

- Automatic synchronising and power control system (multi gen-set Parallel)
- Parallel system with mains.
- Transition synchronization with mains
- Remote annunciator panel
- Remote relay output
- Alarm output relays
- Remote communication with modem
- Earth fault, single set
- Charge Ammeter

TRANSFER SWITCH

- Three or four pole contactor
- Three or four pole motor operated circuit breaker

OTHER ACCESSORIES

- Main Fuel Tank
- Automatic or manual fuel filling system
- Electrical oil drain pump
- Low and high fuel level alarm
- Residential silencer
- Enclosure: weater protective or sound attenuated
- Duct adapter (on radiator)
- Inlet and outlet motorised louvers
- Inlet and outlet acoustic baffles
- Tool kit for maintenance
- 1500/3000 hours maintenance kit
- Double wall chassis
- Supplied with oil and coolant - 30 °C
- Automatic transfer switch

AKSA CERTIFICATES

- TS ISO 8528

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Low fuel level shut down

Low fuel level alarm

High fuel level alarm

EXPANSION MODULES

Editional LED module (2548)

Expansion relay module (2157)

Expansion input module (2130)

Standards

Electrical Safety / EMC compatibility

BS EN 60950 Electrical business equipment

BS EN 61000-6-2 EMC immunity standard

BS EN 61000-6-4 EMC emission standard

STATIC BATTERY CHARGER

Battery charger is manufactured with switching-mode and SMD technology and it has high efficiency.

Battery charger models' output V-I characteristic is very close to square

2405 has fully output short circuit protection and it can be used as a current source.

2405 charger has high efficiency, long life, low failure rate, light weight and low heat radiated in accordance with linear alternatives.

The charger is fitted with a protection diode across the output.

Charge fail output is available.

Connect charge fail relay coil between positive output and CF output.

Input: 196-264V.

Output: 27,6V 5A or 13,8V 5A.

STANDARD SPECIFICATIONS

- Water cooled diesel engine
- Radiator with mechanical fan
- Protective grille for rotating and hot parts
- Electric starter and charge alternator
- Starting battery (with lead acid) including rack and cables
- Engine coolant heater
- Steel base frame and anti-vibration isolators
- Spare external fuel tank (open set)
- Flexible fuel connection hoses
- Single bearing, class H alternator
- Industrial exhaust silencer and steel bellows supplied separately
- Static battery charger
- Manual for application and installation
- Generators Sets' voltage and frequency regulation comply with ISO 8528-5
- Generators Sets' can take 100% load at one step according to NFPA110

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Phase sequence

MAINS

Voltage (L-L, L-N)

Frequency

WARNING

Charge failure

Battery under voltage

Fail to stop

Low fuel level (opt.)

kW over load

Negative phase sequence

Loss of speed signal

PRE-ALARMS

Low oil pressure

High engine temperature

Low engine temperature

Over /Under speed

Under/over generator frequency

Under/over generator voltage

ECU warning

SHUT DOWNS

Fail to start

Emergency stop

Low oil pressure

High engine temperature

Low coolant level

Over /Under speed

Under/over generator frequency

Under/over generator voltage

Oil pressure sensor open

Phase rotation

ELECTRICAL TRIP

Earth fault

kW over load

Generator over current

Negative phase sequence

Options

High oil temperature shut down

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KTA50-GS8 Advantage Data Sheet

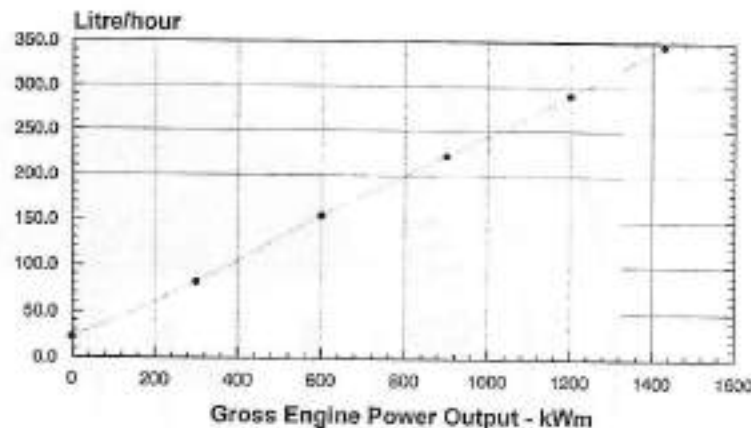
Cummins Inc. Columbus, Indiana 47201

Curve Number: FR-6261	Engine Critical Parts List: 2354 (1P/2L), 2859 (2P/2L)	Date: 21Jan02
Displacement : 50.3 litre (3087 in ³)	Bore : 159 mm (6.25 in.)	Stroke : 159 mm (6.25)
No. of Cylinders : 16	Aspiration : Turbocharged and Low Temperature Aftercooled	

Engine Speed RPM	Overload Power Rating		Prime Power Rating	
	kWm	BHP	kWm	BHP
1500	1429	1915	1287	1725
1800	-----	-----	-----	-----

Engine Performance Data @ 1500 RPM

OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	BHP	kg/ kWm-h	lb/ BHP-h	litre/ hour	U.S. Gal/ hour
OVERLOAD POWER						
100	1429	1915	0.206	0.338	345	91.2
PRIME POWER						
100	1287	1725	0.204	0.336	309	81.6
75	985	1294	0.210	0.345	238	62.8
50	644	863	0.221	0.363	167	44.1
25	322	431	0.232	0.383	88	23.3



Engine Performance Data @ 1800 RPM

Not Available at 1800 RPM

Not Available at 1800 RPM

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)

Data shown above represent gross engine performance capabilities obtained and corrected in accordance with ISO-3046 conditions of 100 kPa (29.53 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 of 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.

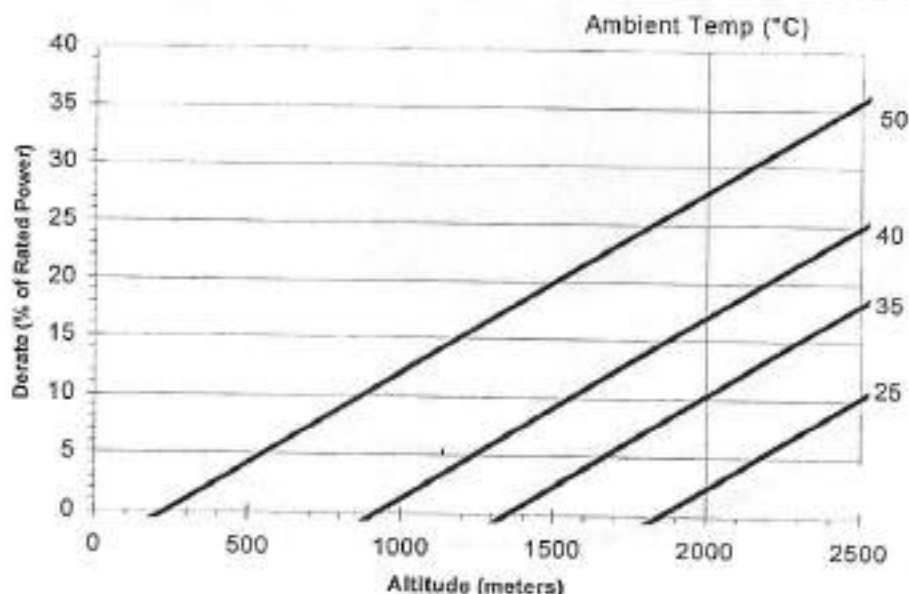
CERTIFIED WITHIN 5%

D.K. Trueblood
CHIEF ENGINEER

POWER RATING APPLICATION GUIDELINES FOR EMERGENCY STANDBY ENGINES FOR APPLICATION IN CORPORATE GENERATOR SETS ONLY

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

Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this standby rating. Under no condition is an engine allowed to operate in parallel with the public utility at the Emergency Standby Power rating. This rating should be applied where reliable utility power is available. An emergency standby rated engine should be sized for a maximum of an 70% typical load factor and 200 hours of operation per year. This includes a maximum of 1 hour in a 12 hour period at the Emergency Standby Power rating. Emergency Standby rating should never be applied except in true emergency power outages. Negotiated power outages contracted with a utility company are not considered an emergency.



Reference Standards:

BS-5514 and DIN-8271 standards are based on ISO-3046.

Operation At Elevated Temperature And Altitude:

For sustained operation above these conditions, derate by an additional 4.6% per 300m (1000ft) and 12% per 10°C (18°F)

NOTE: Derates shown are based on 15" HgD air intake restriction and 2" Hg exhaust back pressure.



KTA50-GS8 Advantage Data Sheet

Cummins Inc. Columbus, Indiana 47201

ENGINE MODEL : KTA50-GS8

CONFIGURATION NUMBER : D283022DX02

DATA SHEET : DS-6261

DATE : 21 Jan 02

PERFORMANCE CURVE : FR-6261

INSTALLATION DIAGRAM

- Fan to Flywheel (1P/2L) : 3170289
- Fan to Flywheel (2P/2L) : 3626419

CPL NUMBER

- Engine Critical Parts List (1P/2L) : 2354
- Engine Critical Parts List (2P/2L) : 2859

GENERAL ENGINE DATA

Type.....	4-Cycle, 60° Vee; 16-Cylinder Diesel	
Aspiration.....	Turbocharged & Low Temp. Aftercooled	
Bore x Stroke.....	6.25 x 6.25 (159 x 159)	
Displacement.....	3057 (50.3)	
Compression Ratio.....	14.9 : 1	
Dry Weight		
Fan to Flywheel Engine.....	— lb (kg)	11820 (5360)
Wet Weight		
Fan to Flywheel Engine.....	— lb (kg)	12485 (5662)
Moment of Inertia of Rotating Components		
• with FW 6009 Flywheel.....	— $I_m \cdot ft^2$ (kg · m ²)	271 (11.4)
• with FW 6017 Flywheel.....	— $I_m \cdot ft^2$ (kg · m ²)	515 (21.7)
Center of Gravity from Rear Face of Flywheel Housing (FH 6024).....	— in (mm)	47.5 (1206)
Center of Gravity Above Crankshaft Centerline.....	— in (mm)	11.0 (279)
Maximum Static Loading at Rear Main Bearing.....	— lb (kg)	2000 (908)

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Block.....	— lb · ft (N · m)	4500 (6100)
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EXHAUST SYSTEM

Maximum Back Pressure.....	— in Hg (mm Hg)	2 (51)
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AIR INDUCTION SYSTEM

Maximum Intake Air Restriction		
• with Dirty Filter Element.....	— in H ₂ O (mm H ₂ O)	25 (635)
• with Clean Filter Element.....	— in H ₂ O (mm H ₂ O)	15 (381)

COOLING SYSTEM (Low Temperature Aftercooling)

Coolant Capacity — Engine Only.....	— US gal (liter)	43.5 (165)
Maximum Coolant Friction Head External to Engine		
— 1500 rpm [High Flow].....	— psi (kPa)	10 (70)
— 1500 rpm [Low Flow].....	— psi (kPa)	5 (35)
Maximum Static Head of Coolant Above Engine Crank Centerline.....	— ft (m)	60 (18.3)
Standard Thermostat Modulating Range		
— High Flow (Jacket).....	— °F (°C)	180 - 200 (82 - 93)
— Low Flow (Aftercooler).....	— °F (°C)	150 - 175 (66 - 79)
Minimum Pressure Cap (For Cooling Systems with less than 2 m [6 ft.] Static Head).....	— psi (kPa)	14 (96)
Maximum Top Tank Temperature for Overload Power / Prime Power.....	— °F (°C)	220 / 212 (104 / 100)
Target Coolant Inlet Temperature to Aftercoolers @ 77 °F (25 °C) Ambient.....	— °F (°C)	130 (55)
Maximum Coolant Temperature to Aftercoolers — Overload Power / Prime Power.....	— °F (°C)	160 / 150 (71 / 66)

LUBRICATION SYSTEM

Oil Pressure @ Idle Speed.....	— psi (kPa)	20 (138)
@ Governed Speed.....	— psi (kPa)	50 - 70 (345 - 483)
Maximum Oil Temperature.....	— °F (°C)	250 (121)
Oil Capacity with OP 6027 Oil Pan : High - Low.....	— US gal (liter)	47 - 39 (178 - 148)
Total System Capacity (Including Bypass Filter).....	— US gal (liter)	54 (204)

FUEL SYSTEM

Type Injection System.....	Direct Injection Cummins PT	
Maximum Restriction at PT Fuel Injection Pump		
— with Clean Fuel Filter.....	— in Hg (mm Hg)	4.0 (102)
— with Dirty Fuel Filter.....	— in Hg (mm Hg)	8.0 (203)
Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head)	— in Hg (mm Hg)	6.5 (165)
Maximum Fuel Flow to Injection Pump.....	— US gph (liter / hr)	151 (570)



ELECTRICAL SYSTEM

Cranking Motor (Heavy Duty, Positive Engagement).....	— volt	24
Battery Charging System, Negative Ground.....	— ampere	35
Maximum Allowable Resistance of Cranking Circuit.....	— ohm	0.002
Minimum Recommended Battery Capacity		
• Cold Soak @ 50°F (10°C) and Above.....	— 0°F CCA	1280
• Cold Soak @ 32°F to 50°F (0°C to 10°C).....	— 0°F CCA	1800
• Cold Soak @ 0°F to 32°F (-18°C to 0°C).....	— 0°F CCA	1800

COLD START CAPABILITY

Minimum Ambient Temperature for Aided (with Coolant Heater) Cold Start within 10 seconds.....	— °F (°C)	50	(10)
Minimum Ambient Temperature for Unaided Cold Start.....	— °F (°C)	45	(7)

PERFORMANCE DATA

- All data is based on:
- Engine operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer; not included are battery charging alternator, fan, and optional driven components.
 - Engine operating with fuel corresponding to grade No. 2-D per ASTM D875.
 - ISO 3046, Part 1, Standard Reference Conditions of:

Barometric Pressure	: 100 kPa (29.53 in Hg)	Air Temperature	: 25 °C (77 °F)
Altitude	: 110 m (361 ft)	Relative Humidity	: 30%

Steady State Stability Band at any Constant Load.....	— %	± 0.25
Estimated Free Field Sound Pressure Level of a Typical Generator Set:		
Excludes Exhaust Noise; at Rated Load and 7.5 m (24.6 ft); 1500 rpm.....	— dBA	92.4
Exhaust Noise at 1 m Horizontally from Centerline of Exhaust Pipe Outlet Upwards at 45°.....	— dBA	N.A.

Governed Engine Speed.....	— rpm	
Engine Idle Speed.....	— rpm	
Gross Engine Power Output.....	— BHP (kW _m)	
Brake Mean Effective Pressure.....	— psi (kPa)	
Piston Speed.....	— ft / min (m / s)	
Friction Horsepower.....	— HP (kW _m)	

Engine Data with Dry Type Exhaust Manifold

Intake Air Flow.....	— cfm (liter / s)	
Exhaust Gas Temperature.....	— °F (°C)	
Exhaust Gas Flow.....	— cfm (liter / s)	
Air to Fuel Ratio.....	— air : fuel	
Radiated Heat to Ambient.....	— BTU / min (kW _m)	
Heat Rejection to Exhaust.....	— BTU / min (kW _m)	

Additional Engine Aftercooler Data (2 Pump / 2 Loop)

Engine Jacket Coolant Flow at Stated Friction Head External to Engine:		
• 4 psi Friction Head.....	— US gpm (liter / s)	
• Maximum Friction Head.....	— US gpm (liter / s)	
Heat Rejection to Coolant (Aftercooler).....	— BTU / min (kW _m)	
Heat Rejection to Coolant (Engine).....	— BTU / min (kW _m)	
Aftercooler Coolant Flow at Stated Friction Head External to Engine:		
• 2 psi Friction Head.....	— US gpm (liter / s)	
• Maximum Friction Head.....	— US gpm (liter / s)	

Additional Engine Aftercooler Data (1 Pump / 2 Loop)

Engine Jacket Coolant Flow at Stated Friction Head External to Engine:		
• 4 psi Friction Head.....	— US gpm (liter / s)	
• Maximum Friction Head.....	— US gpm (liter / s)	
Heat to be Rejected by Low Temperature Radiator*.....	— BTU / min (kW _m)	
Heat to be Rejected by Jacket Water Radiator*.....	— BTU / min (kW _m)	
Aftercooler Coolant Flow at Stated Friction Head External to Engine:		
• 2 psi Friction Head.....	— US gpm (liter / s)	
• Maximum Friction Head.....	— US gpm (liter / s)	

	OVERLOAD POWER		PRIME POWER	
	1500		1500	
	725 - 775		725 - 775	
	1915 (1429)		1725 (1286)	
	330 (2275)		299 (2052)	
	1592 (7.9)		1562 (7.9)	
	155 (116)		155 (116)	
	3500 (1655)		3350 (1581)	
	950 (510)		930 (499)	
	9210 (4350)		8555 (4038)	
	23.2 : 1		24.5 : 1	
	12000 (210)		10700 (299)	
	54200 (954)		47500 (835)	
	440 (27.8)		440 (27.8)	
	400 (25.2)		400 (25.2)	
	15900 (275)		12600 (221)	
	35000 (615)		32500 (571)	
	100 (6.3)		100 (6.3)	
	95 (6.0)		95 (6.0)	
	352 (22.2)		352 (22.2)	
	320 (20.2)		320 (20.2)	
	30400 (535)		32500 (571)	
	22030 (390)		12250 (215)	
	85 (5.4)		85 (5.4)	
	80 (5.0)		80 (5.0)	

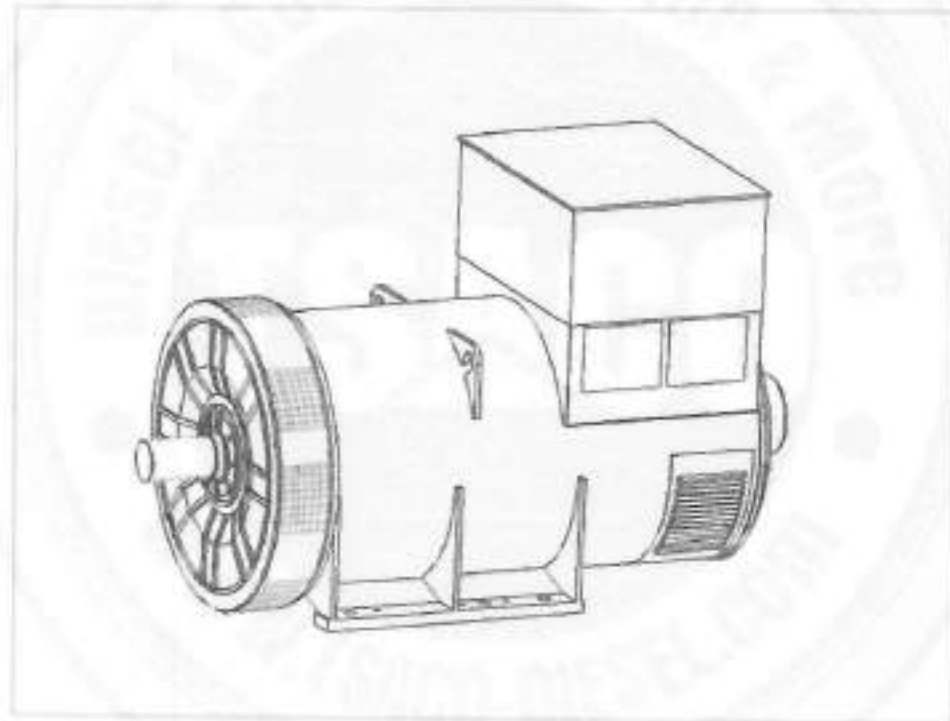
* See AEB 90.39 1 Pump / 2 Loop KTA50-G8/9 system.

N.A. - Data is Not Available
 N/A - Not Applicable to this Engine
 TBD - To Be Determined
 Columbus, Indiana 47202-3005

ENGINE MODEL : **KTA50-GS8**
 DATA SHEET : DS-6261
 DATE : 21 Jan 02
 CURVE NO. : FR-6261

STAMFORD

PI734C - Technical Data Sheet



STANDARDS

Newage Stamford industrial generators meet the requirements of BS EN 60034 and the relevant sections of other national and international standards such as BS5000, VDE 0530, NEMA MG1-32, IEC60034, CSA C22.2-100, AS1359.

Other standards and certifications can be considered on request.

DESCRIPTION

The STAMFORD PI range of synchronous ac generators are brushless with a rotating field. They are separately excited by the STAMFORD Permanent Magnet Generator (PMG). This is a shaft mounted, high frequency, pilot exciter which provides a constant supply of clean power via the Automatic Voltage Regulator (AVR) to the main exciter. The main exciter output is fed to the main rotor, through a full wave bridge rectifier, protected by surge suppression.

VOLTAGE REGULATORS

The PI range generators, complete with a PMG, are available with one of two AVRs. Each AVR has soft start voltage build up and built in protection against sustained over-excitation, which will de-excite the generator after a minimum of 8 seconds.

Underspeed protection (UFRO) is also provided on both AVRs. The UFRO will reduce the generator output voltage proportional to the speed of the generator below a pre-settable level.

The MX341 AVR is two phase sensed with a voltage regulation of $\pm 1\%$. (see the note on regulation).

The MX321 AVR is 3 phase rms sensed with a voltage regulation of 0.5% rms (see the note on regulation). The UFRO circuit has adjustable slope and dwell for controlled recovery from step loads. An over voltage protection circuit will shutdown the output device of the AVR, it can also trip an optional excitation circuit breaker if required. As an option, short circuit current limiting is available with the addition of current transformers.

Both the MX341 and the MX321 need a generator mounted current transformer to provide quadrature droop characteristics for load sharing during parallel operation. Provision is also made for the connection of the STAMFORD power factor controller, for embedded applications, and a remote voltage trimmer.

WINDINGS & ELECTRICAL PERFORMANCE

All generator stators are wound to 2/3 pitch. This eliminates triplen (3rd, 9th, 15th ...) harmonics on the voltage waveform and is found to be the optimum design for trouble-free supply of non-linear loads. The 2/3 pitch design avoids excessive neutral currents sometimes seen with higher winding pitches. A fully connected damper winding reduces oscillations during paralleling. This winding, with the 2/3 pitch and carefully selected pole and tooth designs, ensures very low levels of voltage waveform distortion.

TERMINALS & TERMINAL BOX

Standard generators feature a main stator with 6 ends brought out to the terminals, which are mounted on the frame at the non-drive end of the generator. A sheet steel terminal box contains the AVR and provides ample space for the customers' wiring and gland arrangements. It has removable panels for easy access.

SHAFT & KEYS

All generator rotors are dynamically balanced to better than BS6861:Part 1 Grade 2.5 for minimum vibration in operation. Two bearing generators are balanced with a half key.

INSULATION/IMPREGNATION

The insulation system is class 'H', and meets the requirements of UL1448.

All wound components are impregnated with materials and processes designed specifically to provide the high build required for static windings and the high mechanical strength required for rotating components.

QUALITY ASSURANCE

Generators are manufactured using production procedures having a quality assurance level to BS EN ISO 9001.

NOTE ON REGULATION

The stated voltage regulation may not be maintained in the presence of certain radio transmitted signals. Any change in performance will fall within the limits of Criteria 'B' of EN 61000-6-2:2001. At no time will the steady-state voltage regulation exceed 2%.

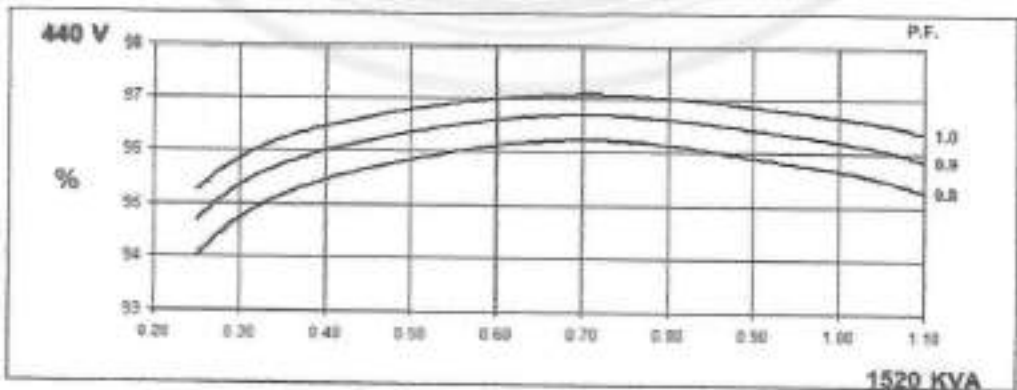
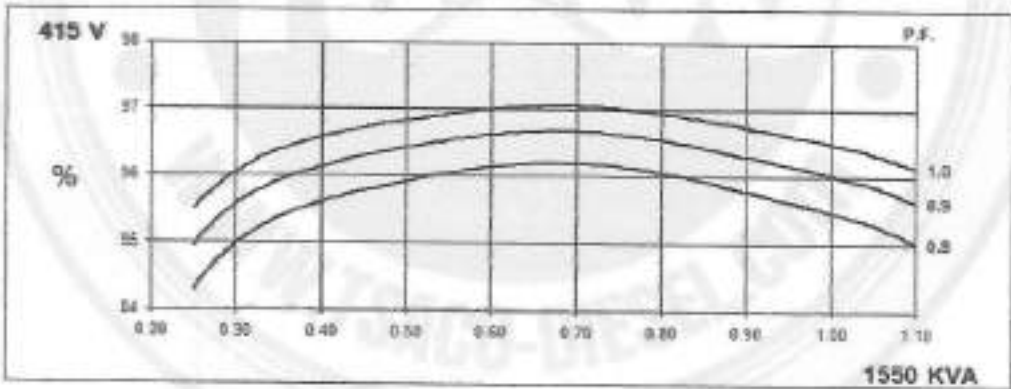
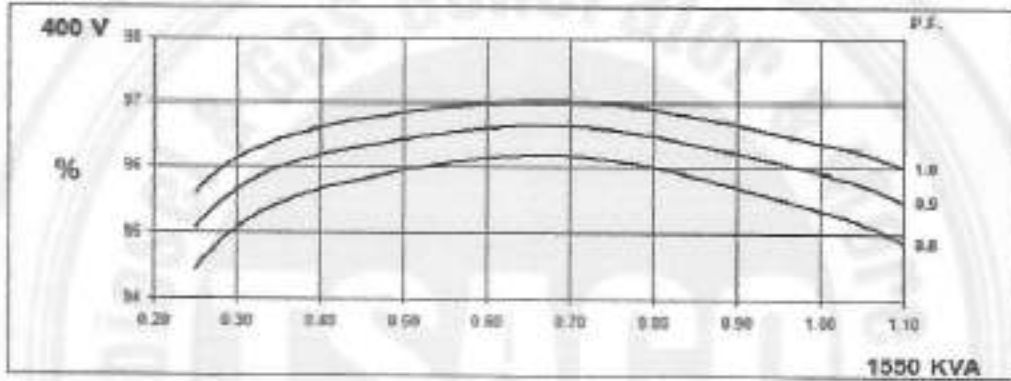
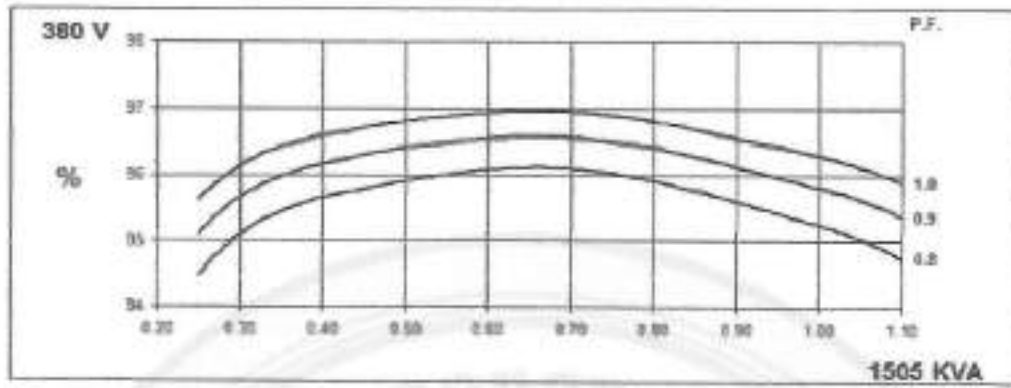
Note: Continuous development of our products entitles us to change specification details without notice, therefore they must not be regarded as binding.

Front cover drawing is typical of the product range.

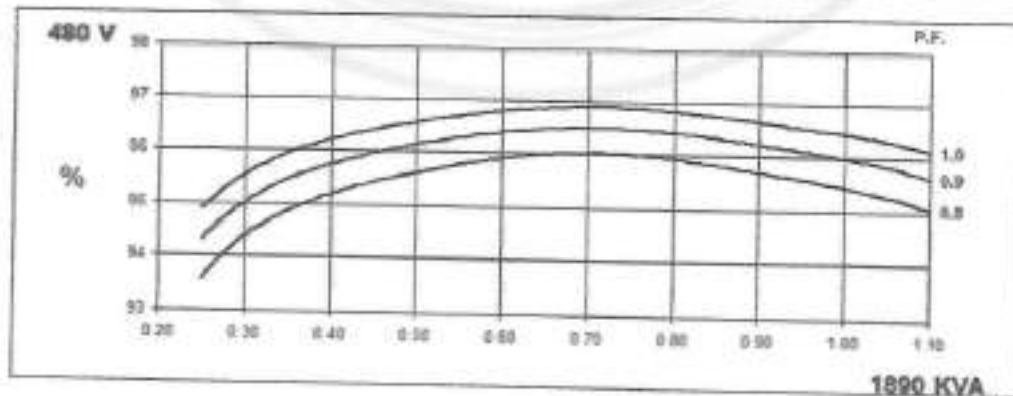
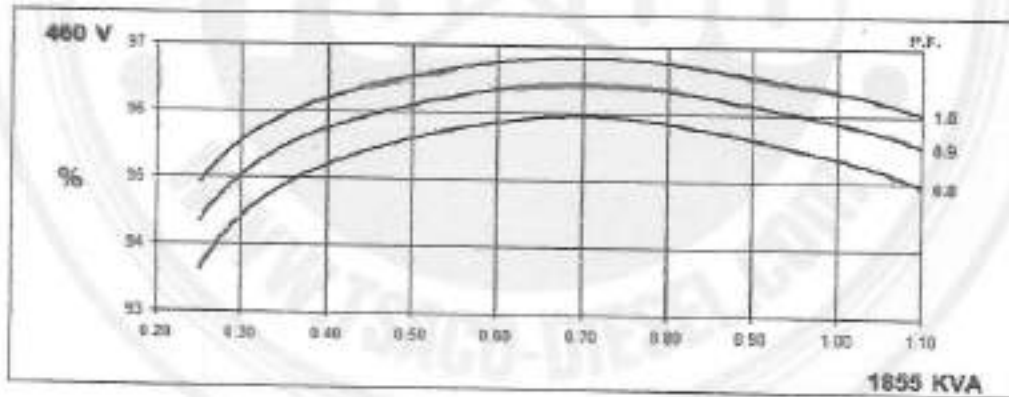
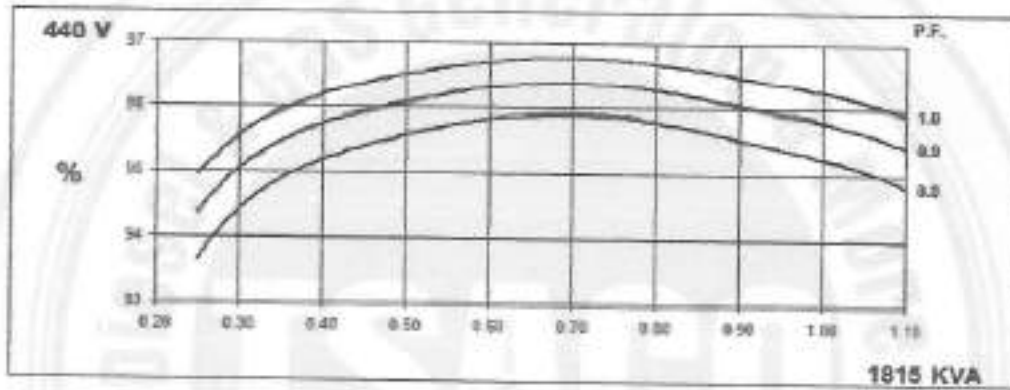
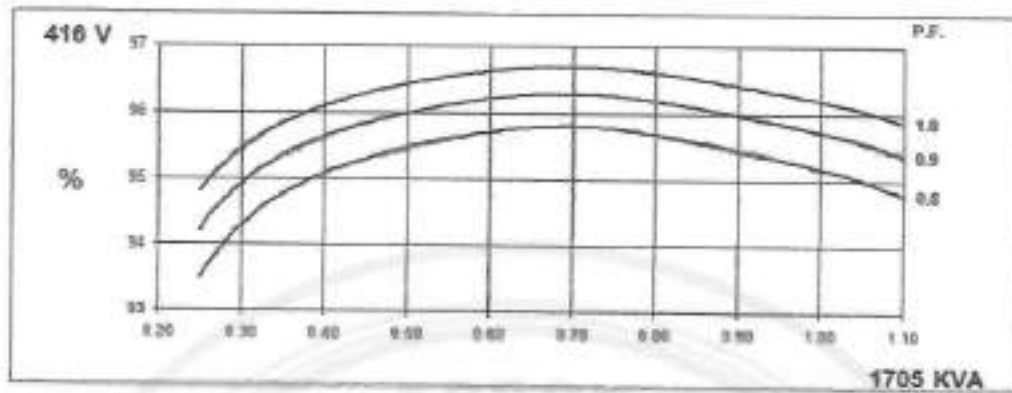
WINDING 312

CONTROL SYSTEM	SEPARATELY EXCITED BY P.M.G.							
A.V.R.	MX341	MX321						
VOLTAGE REGULATION	± 1 %	± 0.5 %	With 4% ENGINE GOVERNING					
SUSTAINED SHORT CIRCUIT	REFER TO SHORT CIRCUIT DECREMENT CURVES (page 7)							
INSULATION SYSTEM	CLASS H							
PROTECTION	IP23							
RATED POWER FACTOR	0.8							
STATOR WINDING	DOUBLE LAYER LAP							
WINDING PITCH	TWO THIRDS							
WINDING LEADS	6							
MAIN STATOR RESISTANCE	0.00126 Ohms PER PHASE AT 22°C STAR CONNECTED							
MAIN ROTOR RESISTANCE	1.65 Ohms at 22°C							
EXCITER STATOR RESISTANCE	17.5 Ohms at 22°C							
EXCITER ROTOR RESISTANCE	0.063 Ohms PER PHASE AT 22°C							
R.F.I. SUPPRESSION	BS EN 61000-6-2 & BS EN 61000-6-4, VDE 0875G, VDE 0875N, refer to factory for others							
WAVEFORM DISTORTION	NO LOAD < 1.5% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%							
MAXIMUM OVERTSPEED	2250 Rev/Min							
BEARING DRIVE END	BALL 6228 C3							
BEARING NON-DRIVE END	BALL 6319 C3							
	1 BEARING				2 BEARING			
WEIGHT COMP. GENERATOR	3018 kg				2967 kg			
WEIGHT WOUND STATOR	1445 kg				1445 kg			
WEIGHT WOUND ROTOR	1257 kg				1195 kg			
WR ² INERTIA	37.3368 kgm ²				36.33 kgm ²			
SHIPPING WEIGHTS in a crate	3091kg				3036kg			
PACKING CRATE SIZE	194 x 105 x 154(cm)				194 x 105 x 154(cm)			
	50 Hz				60 Hz			
TELEPHONE INTERFERENCE	THF<2%				TIF<50			
COOLING AIR	2.69 m ³ /sec 5700 cfm				3.45 m ³ /sec 7300 cfm			
VOLTAGE STAR	380/220	400/231	415/240	440/254	415/240	440/254	460/266	480/277
KVA BASE RATING FOR REACTANCE VALUES	1005	1550	1550	1520	1705	1815	1855	1890
X _d DIR. AXIS SYNCHRONOUS	3.18	2.96	2.75	2.40	3.86	3.67	3.43	3.21
X' _d DIR. AXIS TRANSIENT	0.19	0.18	0.17	0.15	0.23	0.22	0.21	0.20
X'' _d DIR. AXIS SUBTRANSIENT	0.14	0.13	0.12	0.11	0.17	0.16	0.15	0.14
X _q QUAD. AXIS REACTANCE	2.05	1.91	1.77	1.55	2.49	2.37	2.22	2.07
X'' _q QUAD. AXIS SUBTRANSIENT	0.29	0.27	0.25	0.22	0.35	0.33	0.31	0.29
X _l LEAKAGE REACTANCE	0.04	0.03	0.03	0.03	0.04	0.04	0.04	0.04
X ₂ NEGATIVE SEQUENCE	0.20	0.19	0.18	0.15	0.25	0.23	0.22	0.21
X ₀ ZERO SEQUENCE	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03
REACTANCES ARE SATURATED				VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED				
T' _d TRANSIENT TIME CONST.	0.135s							
T'' _d SUB-TRANSIENT TIME CONST.	0.01s							
T' _{do} O.C. FIELD TIME CONST.	2.23s							
T _a ARMATURE TIME CONST.	0.02s							
SHORT CIRCUIT RATIO	1.0Xd							

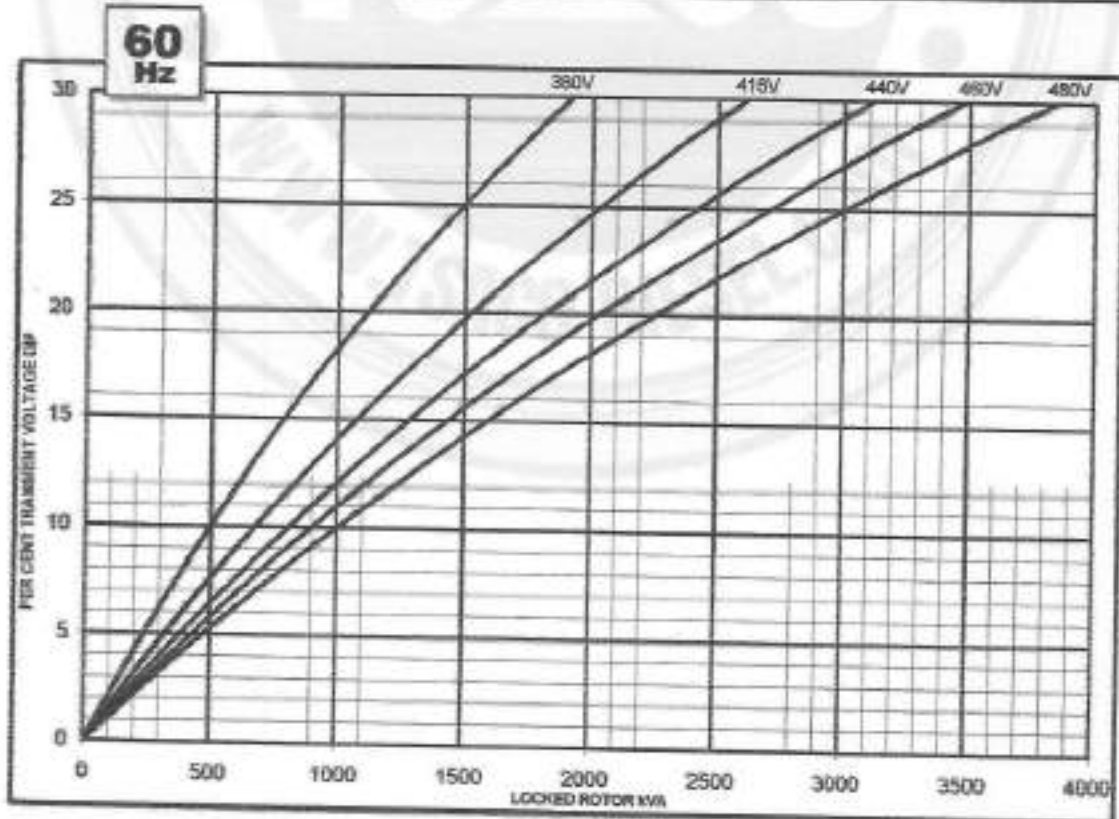
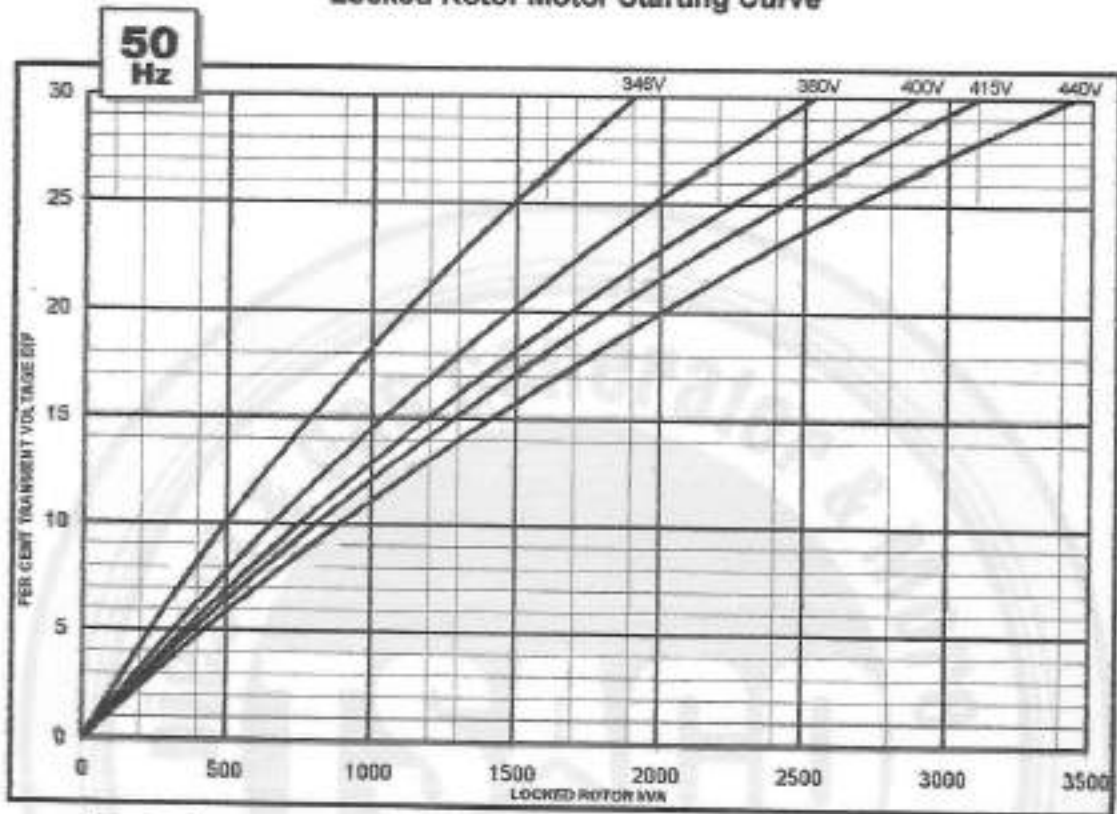
THREE PHASE EFFICIENCY CURVES



THREE PHASE EFFICIENCY CURVES

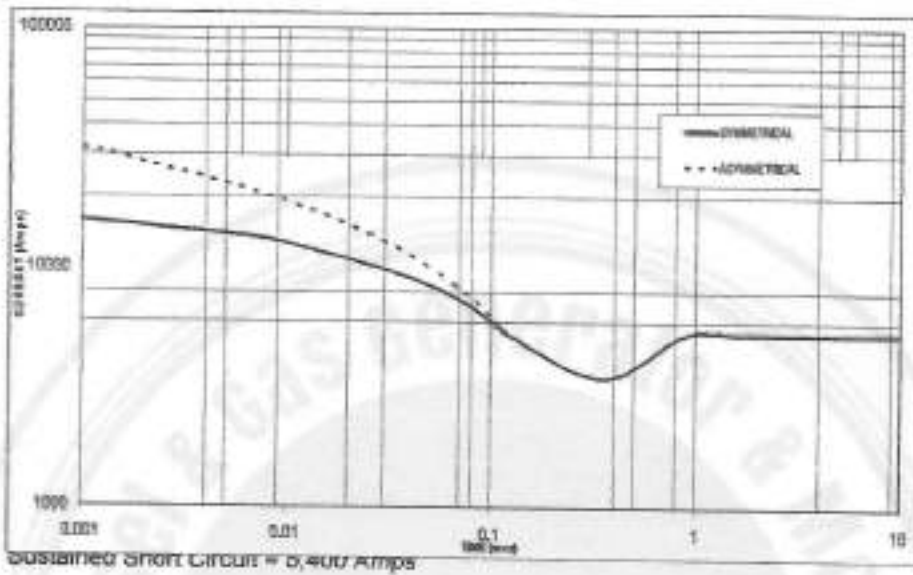


Locked Rotor Motor Starting Curve

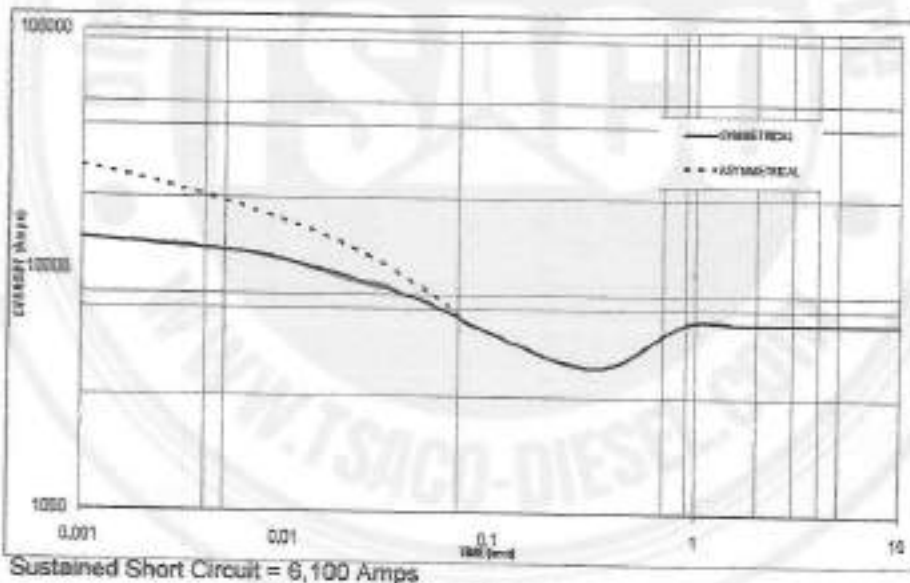


Three-phase Short Circuit Decrement Curve. No-load Excitation at Rated Speed
Based on star (wye) connection.

50
Hz



60
Hz



Note 1

The following multiplication factors should be used to adjust the values from curve between time 0.001 seconds and the minimum current point in respect of nominal operating voltage :

50Hz		60Hz	
Voltage	Factor	Voltage	Factor
380v	x 1.00	415v	x 1.00
400v	x 1.05	440v	x 1.05
415v	x 1.09	460v	x 1.10
440v	x 1.16	480v	x 1.15

The sustained current value is constant irrespective of voltage level

Note 2

The following multiplication factor should be used to convert the values calculated in accordance with NOTE 1 to those applicable to the various types of short circuit :

	3-phase	2-phase L-L	1-phase L-N
Instantaneous	x 1.00	x 0.87	x 1.30
Minimum	x 1.00	x 1.80	x 3.20
Sustained	x 1.00	x 1.50	x 2.50
Max. sustained duration	10 sec.	5 sec.	2 sec.

All other times are unchanged

Note 3

Curves are drawn for Star (Wye) connected machines.

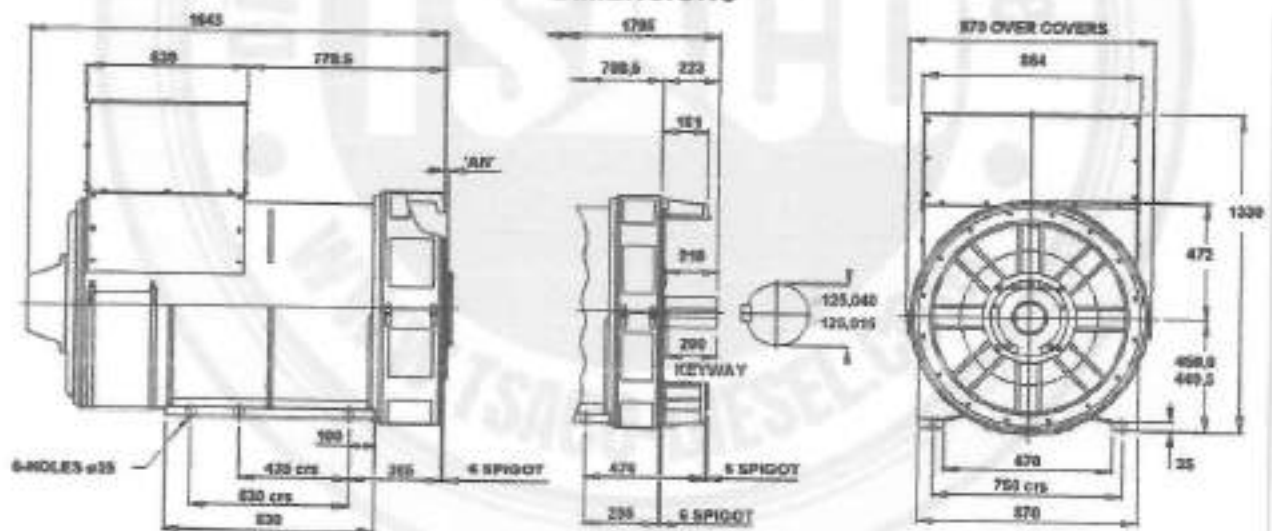
Winding 312 / 0.8 Power Factor

RATINGS

Class - Temp Rise		Cont. F - 105/40°C				Cont. H - 125/40°C				Standby - 150/40°C				Standby - 163/27°C			
50Hz	Star (V)	380	400	415	440	380	400	415	440	380	400	415	440	380	400	415	440
	kVA	1400	1445	1445	1415	1505	1550	1550	1520	1570	1615	1615	1590	1615	1660	1660	1630
	kW	1120	1156	1156	1132	1204	1240	1240	1216	1256	1292	1292	1272	1292	1328	1328	1304
	Efficiency (%)	95.4	95.5	95.6	95.6	95.2	95.4	95.5	95.7	95.1	95.2	95.4	95.6	95.0	95.1	95.3	95.5
	kW Input	1174	1210	1209	1182	1265	1300	1298	1271	1321	1357	1354	1331	1360	1396	1393	1365

60Hz	Star (V)	415	440	460	480	415	440	460	480	415	440	460	480	415	440	460	480
	kVA	1590	1690	1725	1790	1705	1815	1855	1890	1770	1890	1930	1970	1820	1945	1985	2025
	kW	1272	1352	1380	1408	1364	1452	1484	1512	1415	1512	1544	1576	1456	1556	1588	1620
	Efficiency (%)	95.3	95.4	95.5	95.6	95.2	95.2	95.3	95.4	95.1	95.1	95.2	95.3	95.0	95.0	95.2	95.3
	kW Input	1335	1417	1445	1473	1433	1525	1557	1585	1489	1590	1622	1654	1533	1636	1668	1700

DIMENSIONS



COUPLING DISC	'AN'
S.A.E No 10	55.7
S.A.E No 21	0
S.A.E No 34	0

1-BRG ADAPTORS
S.A.E No 6
S.A.E No 60

2-BRG ADAPTORS
S.A.E No 6
S.A.E No 60

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