Greaves Light Gensets with 3000 rpm Water cooled Engine (I Phase)

kVA/kW	Engine Model	BHP @ 3000 rpm	Elec. Starting	DG set Dimensions (mm)			Dry Weight
				L	W	H	Kg
5 25/4 ?	GD5250	11	12V DC	1800	880	1275	540
7.5/6	GD7500	15	12V DC	1972	1130	1350	660
10/8	GD10000	15	12V DC	1972	1130	1350	660

Note : 3 Phase Gensets are also available for 7.5/10 kVA

GreavesPower Gensets Powered by "Y" Series Air cooled Engines

kVA/kW	Engine Model	BHP @ 1500 rpm	Elec. Starting	DG set Dimensions (mm)			Dry Weight
				L	W	H	Kg
7.5/6	1YWA MK-6	12.6	12V DC	1700	900	1650	900
15/12	2YWA MK-5	20.4	12V DC	1700	900	1650	1000

GreavesPower Gensets Powered by "G" Series Water cooled Engines (3 Phase)

kVA/kW	Engine Model	BHP @ 1500 rpm	Elec. Starting	DG set Dimensions (mm)			Dry Weight
				L	W	H	Kg
25/20	3G11NAG1	33	12V DC	2190	1150	1380	1250
30/24	3G11NAG2	38	12V DC	2190	1150	1380	1250
40/32	3G11TG1	52	12V DC	2280	1150	1640	1300
45/36	3G11TG2	59	12V DC	2280	1150	1640	1300
50/40	3G11TG3	64	12VDC	2280	1150	1640	1300
62.5/50	4G11TG1	83	12V DC	2700	1150	1640	1600
75/60	4G11TG2	94	12V DC	2700	1150	1640	1600
82.5/66	4G11TAG1	105	12V DC	3000	1150	1640	2100
100/80	4G11TAG2	127	12V DC	3000	1150	1640	2100
125/100	4G11TAG3	155	12VDC	3500	1350	1750	2300

Note :- Single Phase Gensets available upto 30 kVA

GreavesPower Gensets Powered by Greaves "D" Series Water cooled Engines

kVA/kW	Engine Model	BHP @ 1500 rpm	Elec. Starting	DG set Dimensions (mm)			Dry Weight
				L	W	H	Kg
160/128	TBD2V6-I	197	12V DC	4000	1600	2050	3100
180/144	TBD3V6	230	24V DC	4000	1600	2100	3400
200/160	TBD3V6-I	253	24V DC	4000	1600	2100	3400
250/200	TBD3V8	313	24V DC	4000	1800	2150	4100
320/256	TBD2V12-II	396	24V DC	5950	2000	2500	7500
400/320	TBD3V12-I	485	24V DC	5300	2000	2500	7800
500/400	TBD4IV12	604	24V DC	5600	2000	2250	8000

All the above prime ratings are with a provision for 10% overload as per applicable standards.
Canopy height excludes silencer.
Due to continuous product improvements, the specifications mentioned in this document are subject to change without prior notice.

Also Available • Dual Fuel Genset • Gas Genset • Trailer-mounted Genset • Auto Synchronising / Load-sharing Panels

GREAVES
SINCE 1859

Greaves Cotton Limited
Auxiliary Power Division
Chinchwad, Pune - 411 019. Tel.: 020 - 67308200 Fax : 020 - 27472276
E-mail : vd.sivakumar@greavescotton.com Website : www.greavescotton.com

ISO 9001:2000 certified by BVQI
ISO 14001:2004 certified by BVQI

APTRANSCO

Standardised Guaranteed Technical Particulars for Diesel Generator Set
STD/GTP-DWG/Approval No. 223-0/ Revision Mo. 0
Prepared & Approved during October – 2011

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ANNEXURE I

Specifications & Scope of Supply for 15 kVA GREAVESPOWER Sound-Proof DG set powered by Greaves 2YWA MKV engine.

ENGINE

Greaves make model 2YWA MKV, Direct Injection, 2 cylinder, Compression Ignited, Naturally aspirated , Air-Cooled diesel engine developing 23.6 hp at 1500 rpm & complying with BS5514 / ISO 3046 standards.
Besides standard components, the engine will be complete with:

- 12 V electrical starting system consisting of Starter motor, Charging alternator & 1 no. 12 V AH Battery.
- Air cleaner with restriction indicator
- Fuel injection system with Mechanical Governor (Class A1 governing)
- Spin-on Lube oil filter elements
- Air Blower arrangement
- Sensors for Oil pressure,
- First fill of Lube oil. (API CF4 grade, Greaves Maxtherm Lube.)

ALTERNATOR

Crompton Greaves/suitable make 3Phase, single Bearing Type, Class H insulated AC generator developing 15 kVA at 415 V, 0.8 PF (lag) with IP23 protection.

CONTROL PANEL-Ready To Use-Inbuilt- type

Control panel is 16 / 14 gauge sheet steel fabricated, dust & Vermin proof & will be complete with internal wiring. The following Protection / Control / Display / Annunciation features are provided for the DG set.

- MCB of adequate rating
- Indicating lamps for DG ON & LOAD ON.
- Key switch
- Set of Current transformers
- Set of control fuses

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- **Micro-processor based Integrated DG set Controller type GCU 926 with built-in Remote Auto START / STOP facility mounted in the facia of the**

control panel with a large 2 Line LCD display panel with the following continuous scrolling features :

Display parameters	Audio-Visual warning	Shut-down with Audio-visual annunciation
Engine Oil pressure	Low Oil pressure	Low Oil Pressure
Canopy temperature	High Cyl temp.	High Cyl temp.
Fuel level Indication %	High Canopy temp.	Low Fuel level
Battery Voltage	Low Battery Voltage	Engine Over speed
Battery cranking Voltge	High Battery Voltage	Engine under speed
Engine rpm	Charging altr.failure	Under voltage
DG set hours run	Low Fuel Level	Over voltage
Gen.Volts (Phase- neutral & Phase-Phase)		Over frequency
Gen.Current (Amps.)		Under frequency
Gen.Frequency (Hz.)		
Power factor		
kWhr.		
Kw		

- The contoller has data logging facility for the latest 50 faults recorded & option for RS232 / RS485 connectivity for remote monitoring / BMS integration
- Manual Change over/Auto Change over-Optional

Sound-proof Acoustic Enclosure

The Engine, Alternator & Control Panel are housed in an acoustic enclosure which is both sound-proof & weather-proof and complying with the latest noise pollution norms of the Ministry of Environment & Forests & certified by the ARAI, Pune.

Engine & Alternator are mounted in the canopy through AVMs on fabricated under-base. Fuel tank is built-in with easy access for fuel fill and removal for cleaning & Fuel piping. Control panel is also housed inside the canopy with excellent visibility through a hardened glass inspection window.

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Salient features of the Ready to Use DG set

- The acoustic enclosure is manufactured with CNC / Laser machines with 1.6 mm CRCA steel with an aesthetically pleasing finish.
- Rigorous pre-treatment of sheet metal parts with Nine-tank phosphating & Power coated with Pure polyester based compound.
- Extremely Compact. Lowest foot print / Space envelope.
- Ideal for out-door installation due to excellent corrosion & UV resistance properties.
- Long lasting Green passivated fasteners. Cast aluminium hinges & stainless steel locks for long durability & ease of operation.
- Acoustic insulation with Fire-retardant acoustic foam to better the statutory norms of 75 dB(A) at 1 m distance under Free-Field conditions.
- Fully completed Exhaust piping & heavy duty residential silencer fitment.
- Fully completed fuel piping
- Complete with incoming Cabling from Alternator to Control panel .

DG Set data-15kva

Compliance Standards – Engine	BS 5514 / ISO 3046
Compliance Standards- Alternator	IS 4722 / BS 5000
Compliance standards – DG set	ISO 8728 / Noise pollution norms of MoEF & certified by ARAI,Pune.
DG set Rating	Prime rating as per ISO 8728. 10% overload provision available for intermittent periods.
Integral Fuel Tank Capacity	100 Litres
DG set Dimensions (L x W x H)	1700 x 900 x 1650 mm
DG set Dry Weight (Aprx,)	1250 kg.

Greaves YWA series fuel consumption on 100% load (+/-5% tolerance)

Kva	kw	hour	specific gravity of diesel	in to ltrs
15kva	12	1	0.856	4

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	STD/GTP-DWG/Approval No. 223-1/ Revision Mo. 0
	Prepared & Approved during October – 2011

Brief Technical Data & Specifications
of Diesel Engines Used for Genset Application
(for Family / Parent engine selection as per ISO 8178 Part -7)

1	Manufacturer's Name	**Greaves Cotton Ltd.(D.E.U), Chinchwad PUNE-19**
2	Engine family identified	**Parent Engine, 2YWA-Mk5**
		Family, F33
3	Engine Model	2YWA-Mk5
4	Engine Layout (inline / V)	Inline
5	Working principle : 2 / 4 stroke	4 Stroke
6	Bore x Stroke (mm)	111 x 116
7	Cylinder Number	2
8	Total swept volume (ltr)	2.24
9	Displacement / cyl. (ltr/cyl)	1.12
10	Rated Speed (rpm)	1500
11	Rated Power (kW)	**15**
12	Power / cylinder (kW / cyl)	**7.5**
13	BMEP at rated power (bar)	5.46
14	Combustion type: DI / IDI	DI
15	Type of combustion chamber (attach the diagram)	Re-entrant
16	Cooling type (Air cooled / water cooled)	Air cooled
17	Compression ratio (specify tolerance	17 +/- 1
18	No. of valves : 2 / 4 valves	2
19	Aspiration: NA / TC / TCI	NA
20	**Additional details for TC and TC – IC engine**	NA
	Turbocharger – make & type	NA
	Inter cooler (water-water / water-air)	NA
	Inter cooler – make & type	
	Intake air pressure in inlet manifold	NA
	Intake air temp. in inlet manifold	
21	**Injection system details**	
	Type: (inline / rotary / PF / other)	PF
	Fuel pump make	BOSCH
	Static injection timing (°BTDC)	13 +/- 1
	Injectors: Make / Type	BOSCH/P-Type
	Injector hole No. x size (mm)	6 x 0.17
	Type of timing advance device	NA
22	After treatment device, if any	NA

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Standardised Guaranteed Technical Particulars for Diesel Generator Set
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No	Parameter	AIR COOLED 2YWA	Unit
A	General	15	KVA
1	KVA (415 VAC-3 ph- 0.8 PF- 50 Hz)	ISO8528 - at Iso conditions on a well run in engine	KW
2	KW rated (PRP - gross)	ISO8528 - at Iso conditions on a well run in engine	KW
3	KW overload (1 hour in 12 hours)	1500	RPM
4	Rated RPM	50	Hz
5	Hz	7.07	kg/cm2
6	Rated BMEP	As per CPCB norms	
7	Emission certification	MECHANICAL	
8	Governing Type	A2	%
9	Governing	ANTI CLOCKWISE WHEN LOOKING FROM FLYWHEEL	
10	Direction of rotation		
11	Flywheel housing	close/open coupling will be provided	
12	Flywheel	1700 X 900 X 1650	mm
13	DG set Dimensions L x W x H	1000	Kg
14	Dry Weight		
B	Components	PF TYPE, MICO MAKE	
1	Fuel pump	A TYPE, MICO MAKE	
2	Injector	NA	
3	Water pump	GREAVES MAKE	
4	Lub oil pump	ALUMINIUM	
5	Cylinder head	SG IRON	
6	Crank shaft	2 Valves/ cylinder	
7	Valves	NA	
8	Fan drive	NA	
9	Lub oil cooler	FUEL OFF SOLENOID CAN BE PROVIDED	
10	Stopping arrangement	12V	
11	Electrical system	12V, 35 amps	
12	Battery charging alternator	12V	
13	Starter	OIL BATH TYPE	
14	Air cleaner	SINGLE BOWL	
15	Lub oil filter	SINGLE BOWL	
16	Fuel filter		
C	Fuel circuit	HSD	
1	Fuel to be used	20	micron
2	Fuel filteration	1	meter
3	Max suction lift by feed pump	1	bar
4	Fuel feed pump pressure	250 Bar	Bar
5	Nozzle opening pressure	239.3	g/kw.h
6	SFC at rated power	241.3	g/kw.h
7	SFC at 75 % power	264.3	g/kw.h
8	SFC at 50 % power	53.5	mm3/str
9	Fuelling	500	hrs
10	Fuel Filter Change		
D	Lub oil circuit	GREAVES MAXTHERM	
1	Lub oil to be used	7.7	
2	Lub oil sump capacity	250	hours
3	Lub oil change period	0.022 kg/hr	kg /hr
4	Lub oil consumption	3 - 3.5	Bar
6	Typical lub oil pressure	120	Deg C
7	Typical lub oil temperature	250	hours
8	Lub oil filter change period	Rated power	kcal/hr
9	Heat lost in Lub oil		
		Not applicable	
E	Water circuit		rpm
1	Fan rpm		mm
2	Fan dia	For a canopy with 75 dBA at 1 m noise suitable for running at 45 deg C ambient	M3/hr
3	Fan air flow	Rated power	kcal/hr
4	Heat lost in water		

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No	Parameter	AIR COOLED	Unit
1	Combustion air flow	88.3	kg/hr
2	Typical suction depression	0.676	kpa
3	Air cleaner filter element change period	oil bath type	hrs
G	Exhaust circuit		
1	Exaust back pressure (Typical)	12.75	mmHg
2	Exhaust gas outlet temperature (typical)	600	deg C
3	Exhaust gas flow rate	Rated power	Kg/hr
4	Smoke	Rated power	M-1
5	Heat lost in exhaust	Rated power	Kcal/hr
H	Assembly parameters		
1	Tappet clearance (Inlet valve)	0.076	mm
2	Tappet clearance (Exhaust valve)	0.076	mm
3	Valve timing (1 mm valve lift)		
	Inlet valve opens	16° B.T.D.C.	deg
	Inlet valve closes	36° A.B.D.C.	deg
	Exhaust valve opens	45° B.B.D.C.	deg
	Exhaust valve closes	15° A.T.D.C.	deg
J	Other parameters		
1	Applicability for deration		
	Altitude	Above mean sea level	
	Ambient	deg C	
2	Noise level	75db@ 1mtr	
3	Sudden loading capability	ISO 8528	%
4	Radiated heat	Rated power	% of input

Notes

The data is for reference only . Due to continuous improvement the data may change without notice. If data is to be used for technical purpose please

The tolerances for the above data are in line with ISO 3046 ISO8528 standards

The engine performance is specified for a well run-in engine at ISO ambient conditions, running on high speed diesel fuel as per BIS 1460- (2005) with calorific value of 10200 Kcal/kg and density of 0.835 gm/cc at a fuel temperature of 35-40 deg C temperature

The engines have been designed and proven for canopised genset application with noise level of 75 dBA at 1 m (ISO 8528) - at ambient temperature of 45

For special applications like- Dusty area operation, corrosive area operation, very high altitude application, very cold area application, marine application, mobile genset application,military applications, paralleling with grid or other gensets - Contact Greaves Cotton Ltd

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CHIEF ENGINEER / CONSTRUCTION-1

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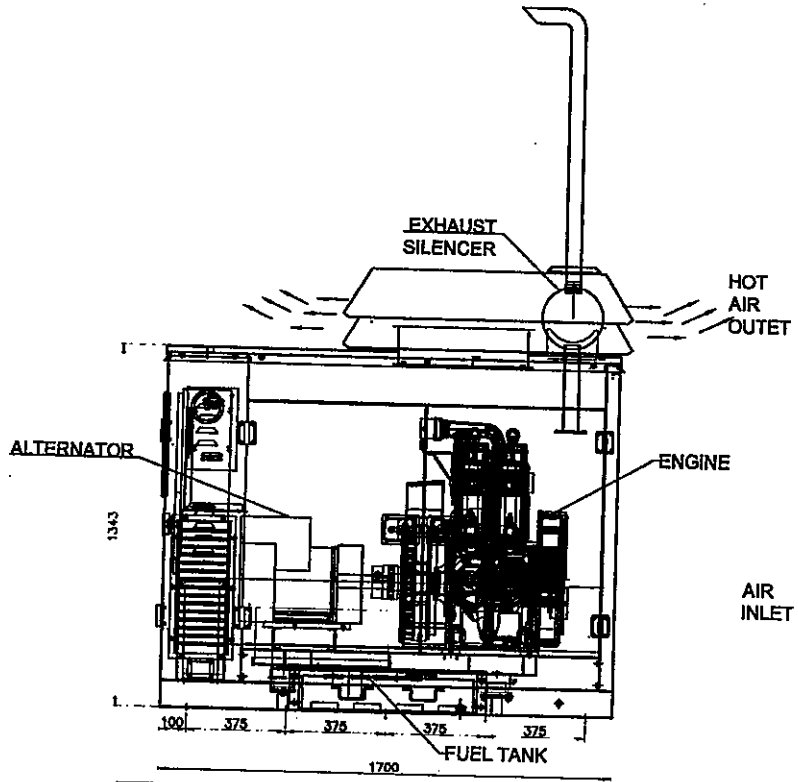
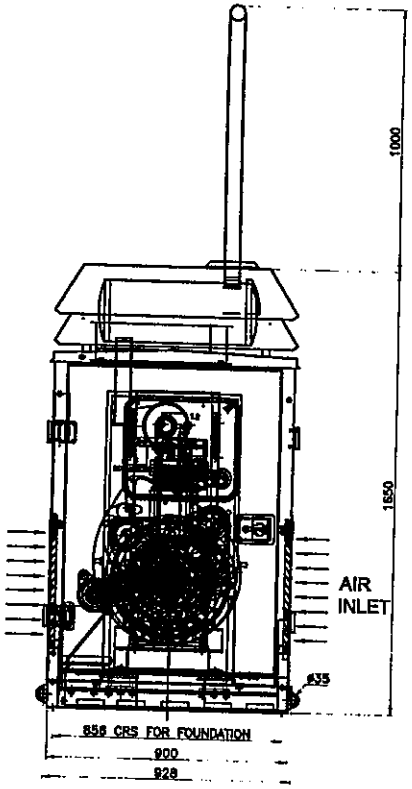
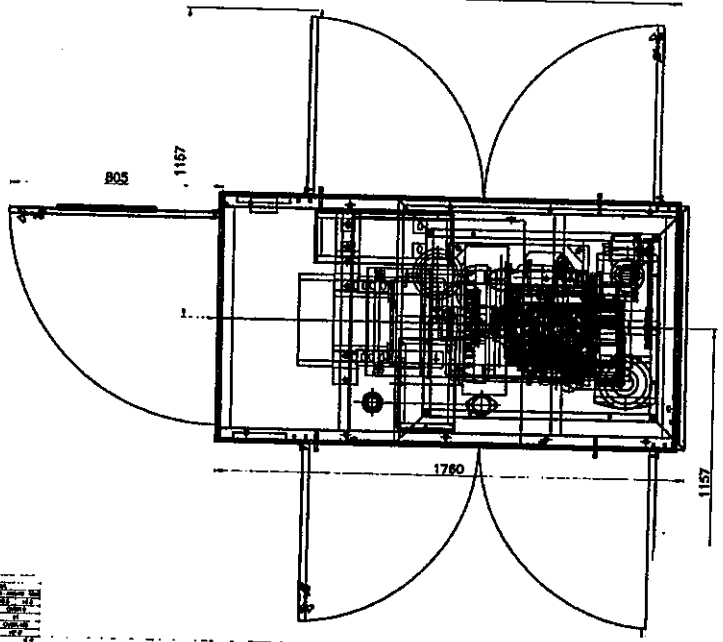
APTRANSCO	Standardised Guaranteed Technical Particulars for Diesel Generator Set
	STD/GTP-DWG/Approval No. 293-1/ Revision No. 0
	Prepared & Approved during October – 2011







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CHIEF ENGINEER / CONSTRUCTION-1
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APTRANSCO

Standardised Drawing for Diesel Generator Set
STD/GTP-DWG/Approval No. 283-1 / Revision No. **0**
Prepared & Approved during October – 2011

GREAVES COTTON LTD.

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ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED
IF IN DOUBT ASK
UNMENTIONED
MATERIAL:
WEIGHT:

	NAME	SIGN	DATE
DRAWN			
CHECKED			
APPROVED			

CAD REF:

SCALE 1:1

TITLE: INSTALLATION G.A. FOR 15 KVA

DRAWING NO: 0 0 0 1 2 7 0 1 0 3 1 0

ENGINE: YWA

SHEET

Brief Technical Data & Specifications
of Diesel Engines Used for Genset Application
(for Family / Parent engine selection as per ISO 8178 Part -7)

1	Manufacturer's Name	**Greaves Cotton Ltd.(D.E.U), Chinchwad PUNE-19**
2	Engine family identified	**Parent Engine, 3G11TA**
3	Engine Model	3G11NAG1
4	Engine Layout (inline / V)	Inline
5	Working principle : 2 / 4 stroke	4 Stroke
6	Bore x Stroke (mm)	105 x 130
7	Cylinder Number	2
8	Total swept volume (ltr)	3.4
9	Displacement / cyl. (ltr/cyl)	1.12
10	Rated Speed (rpm)	1500
11	Rated Power (kW)	**20**
12	Power / cylinder (kW / cyl)	**8.2**
13	BMEP at rated power (bar)	5.46
14	Combustion type: DI / IDI	DI
15	Type of combustion chamber (attach the diagram)	Direct injection
16	Cooling type (Air cooled / water cooled)	Radiator cooled
17	Compression ratio (specify tolerance	18:1 +/- 1
18	No. of valves : 2 / 4 valves	2
19	Aspiration: NA / TC / TCI	NA
20	**Additional details for TC and TC – IC engine**	NA
	Turbocharger – make & type	NA
	Inter cooler (water-water / water-air)	NA
	Inter cooler – make & type	
	Intake air pressure in inlet manifold	NA
	Intake air temp. in inlet manifold	
21	**Injection system details**	
	Type: (inline / rotary / PF / other)	Inline
	Fuel pump make	BOSCH
	Static injection timing (°BTDC)	17 +/- 1
	Injectors: Make	BOSCH
	Injector hole No.	4
	Type of timing advance device	NA
22	After treatment device, if any	NA

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Standardised Guaranteed Technical Particulars for Diesel Generator Set
STD/GTP-DWG/Approval No. 223-2/ Revision Mo. 0
Prepared & Approved during October – 2011

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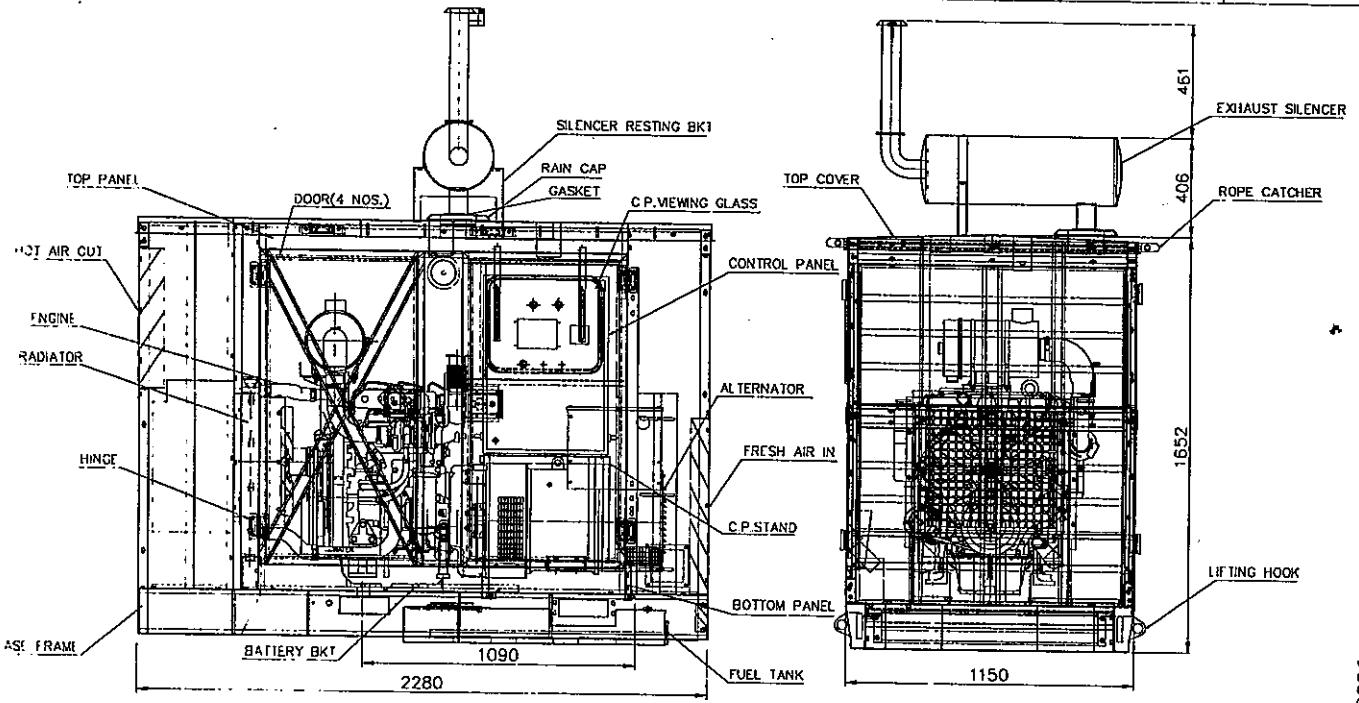

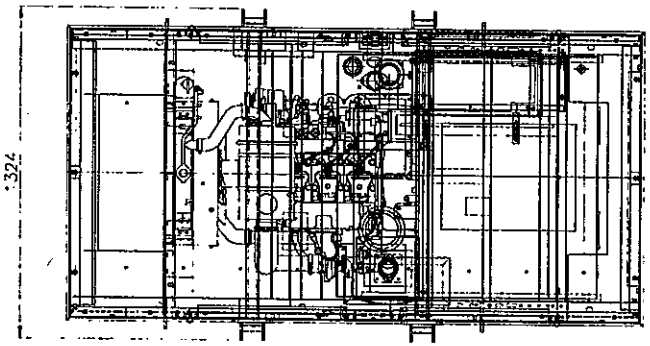

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NOTES -

01) ACCOUSTIC INSULATION : FIRE RETARDENT PU FOAM
A) UP TO 50 KVA 25 MM THICKNESS PU FOAM WITH DENSITY 26/32 Kg/M3.
B) 62.5 KVA TILL 250 KVA 50 MM THICKNESS PU FOAM WITH DENSITY 32 Kg/M3.
C) ABOVE 250KVA 75 MM THICK ROCKWOOL OF DENSITY 96 Kg/M3125 MM PU FOAM WITH 26/32 KG/M3 DENSITY WITH 0.8 MM THICK 3 MM DIA PERFORATED SHEET ON ROCKWOOL ROCKWOO TO BE COVERED WITH TISSUE,AND PERFORATED SHEET EDGES ARE TO BE COVERED WITH AL/GI SHEET
02) MATERIAL -
A) CANOPY MEMBERS M.S. CRCA OF 1.2 MM THICKNESS,TANK 2 MM THK
B) BASE FRAME: M.S. 5 MM THICKNESS
03) HARDWARE -
A) EXTERNAL FASTENERS:- CLASS . 8.8, STAINLESS STEEL.
B) INTERNAL FASTENERS:- CLASS . 8.8, GREEN PASSIVATED
C) UP TO 250 KVA: DOOR LOCK SHOULD OF S.S DARSHANA MAKE (DPL 140 SS)
320 KVA &ABOVE: DOOR LOCK SHOULD OF S.S. DARSHANA MAKE (DPL 1214 SS)
D) UP TO 250 KVA: HINGES ARE TO BE ALUMINIUM DIE CASTED DARSHANA DHM-8083-PC R & L
320 KVA & ABOVE: HINGES ARE TO STAINLESS STEEL DARSHANA DHM 1008
ALL ROCKWOOL CANOPY: HINGES ARE TO STAINLESS STEEL DARSHANA DHM 1008
E) FOR EXH PIPING ALL MATCHING 3 MM ASBESTOS GASKET TO BE PROVIDED.
F) ALL TANK FITTING SHOULD HAVE 3 MM CORK GASKET INBETWEEN.
G) TOUGHNED GLASS TO BE USED
H) FUEL FILLING NECK WITH LOCK& KEY TO BE WELDED.FILLER HOSE TO BE FITTED WITH CLIPS.
I) FUEL FILLER HOSE TO BE FITTED WITH CLPS
04) BULB BEADING OF n 18 TO BE USED ON PANEL FOR DOOR SEALING
05) RUBBER GASKET TO BE USED BETWEEN LOCK.
06) RUBBER PACKING TO BE USED BETWEEN CANOPY BOTTOM FRAME & GENSET BASE PLATE.
07) UP TO 160 KVA TUBE LIGHT:-12V,DC WITH TWO WAY CONNECTOR FIXED ON CANOPY TOP
180 KVA & ABOVETUBE LIGHT -24V,DC WITH TWO WAY CONNECTOR FIXED ON CANOPY TOP
08) ALTERNATOR - STAMFORD/CROMPTON/TRIDENT SUITABLE CROSS MEMEBR TO BE USED
09) UP TO 50 KVA,ALL DOORS SHOULD BE WITH FOAM OF 25+25 MM THICKNESS
62.5/75/82.5/100 KVA CANOPY IS WITH 50 MM FOAM ALLOVER
ABOVE100 KVA TILL 250 KVA,ALL DOORS SHOULD BE WITH FOAM OF 50+50 MM THICKNESS
10)EXHAUST PIPE BETWEEN SILENCER AND
EXPANSION BELLOW TO BE LAGGED WITH 50MM THICK 96Kg/m3
DENSITY MINERAL WOOL AND ALUMINIUM SHEET CLADDING
11)NO AIR LEAKAGE ALLOWED FROM RADIATOR EXPANSION CHAMBER TO ENGINE SIDE
12)ALL MATING JOINTS SHOULD HAVE 5 MM FLAT BEADING IN BETWEEN

WELDING NOTES-
01) ALL JOINTS TO BE CO2 WELDED
02) WELDING SHOULD BE NEAT, UNIFORM AND CONTINUOUS.
03) OUTER FACES OF WELD JOINTS TO BE POLISHED BY
'140'GRADE PAPER AFTER WELDING.

PAINTING NOTES -
1) ALL CANOPY PARTS, FUEL TANK AND BASE PLATE TO BE TREATED FOR PAINTING/POWDER COATING USING 9 TANK PROCESS. FOR HIGHER KVA BASE FRAME SHOULD BE SAND BLASTED BEFORE COATING.
2) FOR POWDER COATING USE SHADE
FOR INLAND/EXPORT CANOPY: SAND STONE YELLOW PURE POLYSTER
BASE FRAME MATT FINISH BLACK
3) TO BE POWDER COATED AFTER TREATMENT AS ABOVE
4) ALL THREADS TO BE SUITABLY PROTECTED WHILE POWDER COATING
5) POWDER COATING SHOULD BE TEXTURE FINISH.
6) BASE FRAME AND FUEL TANK TO BE
A) UP TO 100 KVA : POWDER COATED WITH BLACK
B) ABOVE 100 KVA : 2 COAT OF BLACK POLYURETHINE PAINT.
AFTER SAND BLASTING WITH 2 COAT OF EPOXY PRIMER
7) SILENCER TO BE BLACK PAINTED\POWDER COATED TO WITHSTAND 750°C

	Standardised Drawing for Diesel Generator Set
APTRANSCO	STD/GTP-DWG/Approval No. 223-2/ Revision Mo. 0
	Prepared & Approved during October – 2011

REFERENCE DRAWING & TOLERANCING STDS. BIS 696 & BIS 8000						
UNMENTIONED TOLERANCES (BIS 2102 : 1993/ISO 2768- 1:1989) MEDIUM GR.						
BASIC SIZE RANGE (IN mm).	0.5 - 3	3 - 6	6 - 30	30 - 120	120 - 400	400 - 1000
DEVIATION IN LINEAR DIMN.	±0.1	±0.1	±0.2	±0.3	±0.5	±0.8
BASIC SIZE RANGE (IN mm).	0.5 TO 3		3 TO 6		OVER 6	
DEVIATION FOR BROKEN EDGES.	±0.2		±0.5		±1	
BASIC SIZE RANGE (IN mm).	UP TO 10	10 - 50	50 - 120	120 - 400	OVER 400	
DEVIATION FOR ANGULAR DIMN.	±1°	±0°30'	±0°20'	±0°10'	±0°5	

INDICE	ECN NO.	ZONE	DESCRIPTION	DATE	SIGN
01	ECN:10117		EMS 936 MTG. BLOTS ON CP STAND MODIFIED.	10.04.10	

GREAVES SINCE 1859
GREAVES COTTON LTD.
DIESEL ENGINES UNIT
CHINCHWAD, PUNE - 411019

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SCALE :

TITLE :
INSTALLATION 25 TO 45

ALL DIMENSION ARE IN mm. UNLESS OTHERWISE SPECIFIED

IF IN DOUBT ASK

UNMENTIONED	
RADII	
CHAMFER	
UNDERCUT	

NO BURR, SHARP EDGES PERMITED

COMPONENT TO BE APPROPRIATELY PACKED FOR PROTECTION AGAINST CORROSION AND TRANSPORTATION, HANDLING ,STORAGE DAMAGE.

MATERIAL:

WEIGHT:

	NAME	SIGN	DATE
DRAWN	DRS		24-04-10
CHECKED	SAP		
APPROVED			

CAD REF:

DRAWING NO

P	2	1	1	9	9	6	3	0	9	2	7

ENGINE: 3G11NA &3G11T

SHEET OF

SIZE A3

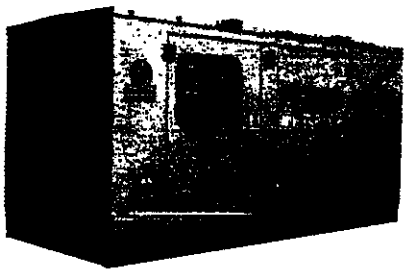
Page 1 of 13

G Series Engine Features and Benefits

- Very low basic engine noise level. Contributes to bettering the statutory MoEF stipulated noise level of 75 dB(A) for the DG set.
- Lowest exhaust emissions. Meets the next generation CPCB and US Tier-2 norms.
- Individual Cylinder head design. Savings on maintenance cost and time.
- Modular design. High degree of commonality of hardware and components over entire range.
- Easy accessibility of all maintenance parts.
- Deep skirted crank case design. High degree of rigidity and ruggedness.
- Higher reserve margins in the lube and cooling circuits – gives the benefit of increased wear life of the engine, extended period between overhauls and hassle-free operation especially at high ambient temperatures commonly seen across the Indian sub-continent. Operates efficiently at temperatures from -20° C to 50° C.
- Wet Liner construction eliminates time consuming and expensive block re-boring during overhauls.
- Gear drive for water pump improves the reliability of the cooling system.
- Easy fitment of electronic governor when required.

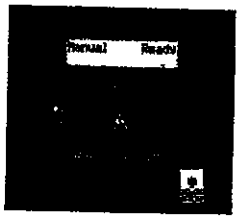
Greaves G series DG sets — State-of-the-art Acoustic Enclosures

- Most compact acoustic enclosures. Best-in-class in India. Have the smallest foot print and space envelope. Their low height make installation in low-headroom situations an easy task. Saves space, a very precious resource in an increasingly crowded world.
- Top-lift capability and suitable for fork lift handling.
- Liberally designed doors with easy access for maintenance.
- Easy access to radiator for maintenance and wide cable entry provision.
- Toughened glass inspection window for clear view of control panel.
- Green Passivated / Die-cast aluminium fasteners and hardware for trouble-free operation.
- Fabricated out of 1.6 mm CRCA steel after 9 tank surface pre-treatment and pure polyester powder coating in a fully automated process with CNC / Laser machines.
- Excellent UV resistance. High retention of surface finish in outdoor installations and corrosive environments.
- Acoustic insulation with foam material conforming to IS 8183.
- Water and lube oil drain outlets located on the outer surface – Leading to ease of maintenance and cleanliness.
- Lowest vibrations – Better than 30 microns. Most suitable for roof-top installations.



Integrated DG set controller (EMS 926)

The unique Integrated DG set controller (EMS 926) incorporates both engine and alternator parameters in one console. This micro- processor based controller provides the most exhaustive display of critical engines and alternator performance parameters with alarm and safety features.



* EMS 927 with enhanced features for 125 kVA

EMS 926 Integral DG set Controller

Display Parameters

Engine Oil pressure
Coolant temperature
Fuel level indication %
Battery Voltage
Battery cranking Voltage
Engine rpm
DG set hours run
Gen. Volts (phase-neutral and phase-phase)
Gen. Current (Amps.)
Power factor
kWhr.
kW

Audio-Visual warning

Low Oil pressure
High Coolant temperature
Low Battery Voltage
High Battery Voltage
Charging altr. failure
Low fuel level

Shut-down with Audio-Visual annuciation

Low Oil pressure
High Coolant temperature
Engine over speed
Engine under speed
Low Coolant level in radiator
Under Voltage
Over Voltage

Over frequency
Under frequency

Scope of Supply :

The RTU DG set is supplied with the following standard accessories

- Inbuilt control panel with complete internal wiring/cabling
- Residential silencer - mounted with complete exhaust piping
- 12V 88 AH battery
- Inbuilt fuel tank

Optionals :

- Electronic Governor in lieu of Mech. Governor
- AMF Control Panel with Auto Change- over feature
- Cold Starting Aid
- Trailer / Trolley mounted Mobile sets.
- Single phase alternator in lieu of 3

The contoller has data logging facility for the latest 50 faults recorded and option for RS232 / RS485 connectivity for remote monitoring / BMS integration.

APPROVED FOR TURNKEY PROJECTS

31/10/2011

CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUT SOUDHA/HYD.

APTRANSCO	Standardised Guaranteed Technical Particulars for Diesel Generator Set
	STD/GTP-DWG/Approval No. 223-2/ Revision Mo. 0
	Prepared & Approved during October – 2011

GreavesPower DG set Technical Information

Genset

Model	GPW25	GPW30	GPWT40	GPWT45	GPW50	GPW62.5	GPW75	GPW82.5	GPW100	GPW125
Power Rating kVA/kW	25/20	30/24	40/32	45/36	50/ 40	62.5/50	75/60	82.5/66	100/80	125/100
No.of Phases	3	3	3	3	3	3	3	3	3	3
Power Factor	0.8(lag)	0.8(lag)	0.8(lag)	0.8(lag)	0.8(lag)	0.8(lag)	0.8(lag)	0.8(lag)	0.8(lag)	0.8(lag)
Max. load current @ 0.8 PF (Amps)	35	42	56	63	70	87	104	115	139	173
Battery Rating	12V 88AH	12V 88AH	12V 88AH	12V 88AH	12V 88AH	12V 88AH	12V 88AH	12V 88AH	12V 88AH	12V 88AH
Integral Fuel Tank Capacity (Ltrs)	100	100	100	100	100	150	150	150	150	220

Engine

Model	3G11NAG1	3G11NAG2	3G11TG1	3G11TG2	3G11TG3	4G11TG1	4G11TG2	4G11TAG1	4G11TAG2	4G11TAG3
Cooling	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Aspiration	Natural	Natural	Turbocharged	Turbocharged	Turbocharged	Turbocharged	Turbocharged	Turbocharged and Aftercooled	Turbocharged and Aftercooled	Turbocharged and Aftercooled
No. of Cylinders	3	3	3	3	3	4	4	4	4	4
RPM	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Compression Ratio	18	18	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
Bore x Stroke mm	105 x 130	105 x 130	105 x 130	105 x 130	105 x 130	105 x 130	105 x 130	105 x 130	105 x 130	105 x 130
Cubic Capacity (Ltrs)	3.4	3.4	3.4	3.4	3.4	4.5	4.5	4.5	4.5	4.5
Power (HP)	33	38	52	59	64	83	94	105	127	155
Governing	Mech. /A1	Mech. /A1	Mech. /A1	Mech. /A1	Mech. /A1	Mech. /A1	Mech. /A1	Mech. /A1	Mech. /A1	Mech. /A1
Starting System	12V ESE	12V ESE	12V ESE	12V ESE	12V ESE	12V ESE	12V ESE	12V ESE	12V ESE	12V ESE
Lube Oil Specification	Greaves Maxtherm API CF4	Greaves Maxtherm API CF4	Greaves Maxtherm API CF4	Greaves Maxtherm API Cf4	Greaves Maxtherm API CF4	Greaves Maxtherm API CF4	Greaves Maxtherm API CF4	Greaves Maxtherm API CF4	Greaves Maxtherm API CF4	Greaves Maxtherm API CF4
Lube Oil Sump capacity (Ltrs)	8	8	8	8	8	10	10	10	10	10

Alternator

Voltage	415 V	415 V	415 V	415 V	415 V	415 V	415 V	415 V	415 V	415 V
Frequency	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
Voltage Regulation (max.)	+/- 1%	+/- 1%	+/- 1%	+/- 1%	+/-1%	+/- 1%	+/- 1%	+/- 1%	+/- 1%	+/- 1%
Insulation	Class H	Class H	Class H	Class H	Class H	Class H	Class H	Class H	Class H	Class H
Enclosure	IP23	IP23	IP23	IP23	IP23	IP23	IP23	IP23	IP23	IP23
Excitation	Brushless with AVR control	Brushless with AVR control	Brushless with AVR control	Brushless with AVR control	Brushless with AVR control	Brushless with AVR control	Brushless with AVR control	Brushless with AVR control	Brushless with AVR control	Brushless with AVR control

DG set Installation

Al.armoured cable (3,5 C, Sq.mm)	25	25	35	50	50	70	95	95	120	150
Exh.pipe Size (mm)	75	75	100	75	75	100	100	100	100	125

The DG set Prime Power ratings mentioned above are in line with ISO 8528 with provision for 10% overload.

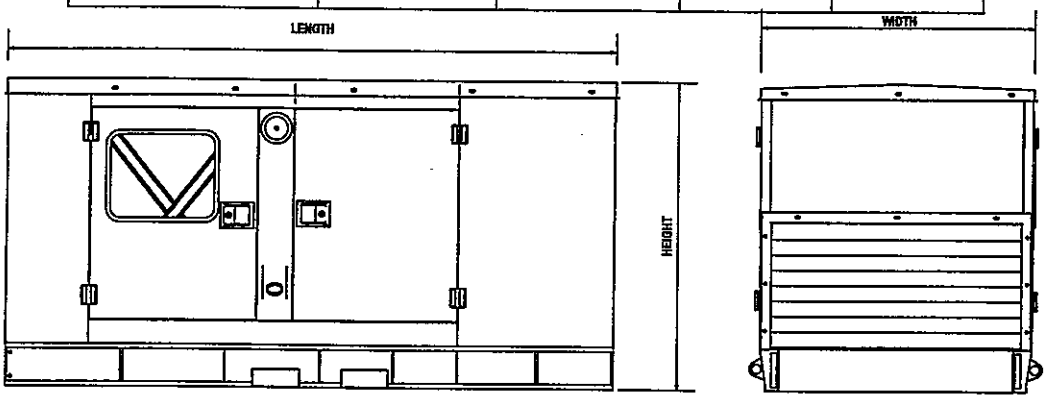
Conformance standards : IS 4722, BS 5000 (For Alternator), BS 5514, ISO 3046 (For Engine) and ISO 8528 (For DG set)

APPROVED FOR TURNKEY PROJECTS
1N 25KVA

CHIEF ENGINEER / CONSTRUCTION

DG set Dimensions (Including acoustic Enclosure)

	kVA	Length (mm)	Width (mm)	Height (mm)
GPW25	25	2190	1150	1380
GPW30	30	2190	1150	1380
GPWT40	40	2280	1150	1640
GPWT45	45	2280	1150	1640
GPW50	50	2280	1150	1640
GPW62.5	62.5	2700	1150	1640
GPW75	75	2700	1150	1640
GPW82.5	82.5	3000	1150	1640
GPW100	100	3000	1150	1640
GPW 125	125	3500	1350	1750



*Due to our continuous product improvement efforts, the specifications in this brochure are subject to change without prior notice.

GREAVES
SINCE 1859

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E-mail : vd.sivakumar@greavescotton.com Website : www.greavescotton.com

ISO 9001:2000 certified by BVQI
ISO 14001:2004 certified by BVQI

APTRANSCO

Standardised Guaranteed Technical Particulars for Diesel Generator Set
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