DRG. No. CN 20 10846	DO NOT SCALE	DIMENSIONS IN mm

SPECIAL CHARACTERISTICS LEGEND
Ⓜ MAJOR CHARACTERISTIC
Ⓒ CRITICAL CHARACTERISTIC

ROUGHNESS VALUE UNLESS SPECIFIED			
SYMBOL	▽	▽▽	▽▽▽
Ra VALUE in µm	12.5	3.2	0.8

DRN No. DRP 24-4066	DATE: 12.06.2024

SYM.	ALTERATIONS	DCP Ref.
A	TIGHTENING TORQUE 12.5 ~ 12.7 Kg.m WAS 55 Nm.	DCP24-6058 27.08.2024
B	REFER SHEET No. 1 OF 2.	DCP24-6078 12.09.2024

SPECIFICATIONS

1.0 GENERAL SPECIFICATIONS

S.No.	ITEM	SPECIFICATIONS
1.1	TYPE	PERMANENT MAGNET, 3 PHASE (DELTA WINDING)
1.2	DIRECTION OF ROTATION	CLOCKWISE (VIEWED FROM SMALL END OF TAPER)
1.3	SPEED RANGE	200 TO 14000 RPM
1.4	IGNITION SYSTEM	BATTERY IGNITION WITH ADVANCE CHARACTERSITICS (AS PER FIG. 1)
1.5	NUMBER OF SPARKS/REVOLUTION	1
1.6	ELECTRICAL SYSTEM	12V, DC
1.7	OUTPUT POWER	308 WATTS MIN @ 4000 RPM @14V
1.8	BATTERY CHARGING OUTPUT (Ich) AMP. (Vb=@14V)	CHARACTERISTICS AS PER FIG. 1
1.9	NUMBER OF POLES	ROTOR = 12 POLE (6 MAGNET) STATOR = 18 POLE
1.10	MOMENT OF INERTIA	112 kg.cm² APPROX. (WITHOUT CLUTCH ASSY.) 119 kg.cm² APPROX. (WITH CLUTCH ASSY.)
1.11	WEIGHT	A. ROTOR ASSY. : 3400 gm. (APPROX.) W/O CLUTCH : 3900 gm. (APPROX.) WITH CLUTCH B. STATOR ASSY. : 1080 gm. (APPROX.)
1.12	OPERATING TEMPERATURE RANGE	−20°C TO +150°C
1.13	OPERATING ENVIRONMENT	WET, (OIL SPLASH)
1.14	ROTOR TIGHTENING TORQUE	12.5 ~ 12.7 Kg.m Ⓐ
1.15	TEMPERATURE CLASS OF COPPER WIRE	CLASS 'C' (220°C Max.)
1.16	ASSOCIATED COMPONENTS	A. ECU : TA351400 B. PULSER COIL : JG351012 C. H.T. COIL : JP351207 D. 3 PHASE REGULATOR : JY402000 E. BATTERY 12V−8Ah(VRLA) : JG401800 (FULLY CHARGED SPECIFIC GRAVITY=1.33 ±0.1)

2.0 PERFORMANCE TESTS

S.No.	TEST	TEST CONDITION	ACCEPTANCE CRITERIA
2.1	PHYSICAL		
2.1.1	OVERALL CONSTRUCTION	VISUAL	TERMINAL MUST BE STRAIGHT. MARKING AS PER DRG. NO BREAK IN WIRES.
2.1.2	DIMENSIONS	MOUNTING	AS PER SHEET 1
2.1.3	CRIMP STRENGTH	WIRE TO TERMINAL (AS PER ABS00007)	26 kgf
2.1.4	TERMINAL ADHESION STRENGTH	PULLING FORCE FOR WIRES TO COUPLER	PULLOUT FORCE : 5 kg. Min.
2.1.5	TERMINATION JOINT STRENGTH	PULLING FORCE FOR WIRES TO STATOR ASSY.	PULLOUT FORCE : 10 kg. Min.
2.2	INSULATION TEST		
2.2.1	INSULATION DURABILITY	SOAK STATOR COIL FOR 1 HR @150±5°C. APPLY 500V, 50HZ AC FOR 1 MINUTE BETWEEN COIL TERMINAL AND CORE	NO ELECTRICAL BREAKDOWN SHALL BE OBSERVED
2.2.2	INSULATION RESISTANCE	ROOM TEMPERATURE APPLY 500V, DC BETWEEN COIL TERMINAL AND CORE USING MEGGER.	INSULATION RESISTANCE Min. 5 MΩ
2.3	BATTERY CHARGING PERFORMANCE	(AFTER 40 MINUTES STABILIZATION AT 4000 RPM IN NIGHT MODE)	
2.3.1	BATTERY CHARGING CURRENT	SET UP AS PER FIG. 2 WITH Vb = 14±0.05V (BY ADJUSTING LOAD) LOAD SWITCH (S) CLOSE	SPEED (RPM): 1400 / 2000 / 4000 / 6000 / 8000 OUTPUT CURRENT: 16.5 MIN / 19.5 MIN / 22 MIN / 24 MIN / 24 MIN
2.3.2	COMMENCEMENT OF CHARGE	SET UP AS PER FIG. 2 SPEED = 700 RPM Max. (Vb=13.2V) LOAD WITH (S) OPEN	Ich 100 mA Min.
	RUN THE TEST SET UP AS PER FIG. 3		
2.3.3	BATTERY CHARGING VOLTAGE (NO LOAD)	SPEED = 800 TO 8000 (USING ASSOCIATED REGULATOR)	14.5±0.3V

NOTE:

1) PERFORMANCE AFTER 40 MINUTES STABILIZATION AT 120° @4000 RPM IN NIGHT MODE IS 20A Min.

2) INSTANTANEOUS PERFORMANCE:

SPEED (RPM)	1400	1500	2000	4000	6000
OUTPUT CURRENT	18.6Min	19.5 Min.	22 Min.	24.8 Min.	25 Min.

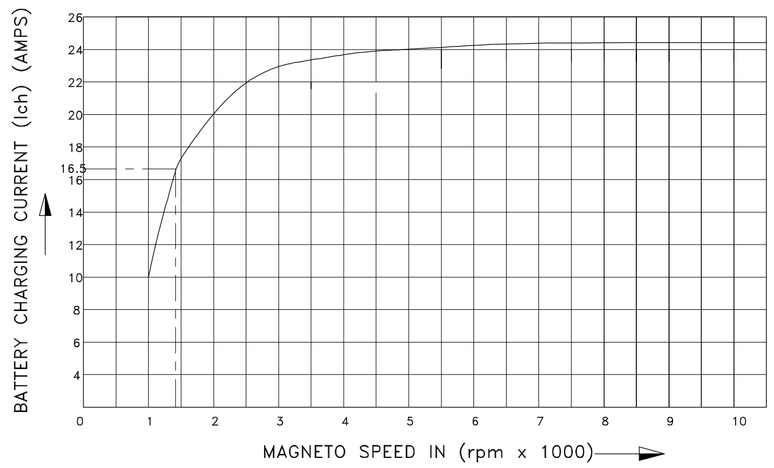

FIG. 1 – PERFORMANCE CHARACTERISTICS

3.0 RELIABILITY TESTS

S.No..	TEST	TEST CONDITION	ACCEPTANCE CRITERIA
3.1	STRENGTH OF TAPER	CRANKSHAFT IN DECREASED CONDITION APPLY A TORQUE OF 45 Nm ON STANDARD BOLT M14X1.5P−6G	TRAVEL OF THE TAPER PORTION OF THE BASE 0.5 mm MAX.
3.2	DEFORMATION OF ROTOR	A) ROTATE AT 15000 RPM FOR 3 MINUTE B) ROTATE AT 20000 RPM (INSTANTANEOUS RPM)	A) DEFORMATION OF OUTER SURFACE OF ROTOR 0.1 mm MAX. B) ROTOR SHALL NOT BE DESTROYED.
3.3	ROTOR DROP STRENGTH	DROP ROTOR 3 TIMES FROM A HEIGHT OF 1.0 METER (IN X,Y,Z DIRECTION)	A) ADHESION OF MAGNETO TO ROTOR SHALL BE INTACT. B) NO DEFORMATION OR CRACKING OF ROTOR SHALL BE OBSERVED.
3.4	ROTOR TAPER GRIP	MOUNT ROTOR ON CRANKSHAFT (WITHOUT KEY) ON STANDARD BOLT M14X1.5P−6G.	TORQUE REQUIRED TO ROTATE ROTOR ON THE CRANKSHAFT 90 Nm.
3.5	REVERSIBLE SHOCK LOAD FOR ROTOR	MOUNTING : ON SHAFT OF STEEL AS PER DIN EN 10083−PART1 : 1996 GR.41CR4. HARDNESS 24 ~ 30 HRC. HOLDING BOLT (M14X1.5P−6G) TIGHTENED TORQUE = 90 Nm. WAVEFORM = SINEWAVE ANGULAR ACCELERATION = 0.6X10⁴ rad/sec² NO. OF CYCLE = 2X10³	NO DAMAGE ALLOWED. TO MEET PERFORMANCE TEST.
3.6	OIL DURABILITY OF STATOR	SOAK STATOR ASSY. COIL 1 HOUR. AT TEMPERATURE 150°C AFTER SOAKING THE STATOR COIL APPLY 500V,50Hz. APPLY 500V, 50Hz. FOR 1 MIN. BETWEEN COIL TERMINAL & STATOR CORE.	NO ELECTRICAL BREAKDOWN SHALL BE OBSERVED.
3.7	VIBRATION FOR STATOR	ACCELERATION = 30G DIRECTION = X,Y,Z FREQUENCY = 50−500 Hz. SWEEP TIME = 6 MIN. LOG. DURATION = 20 HRS. IN EACH DIRECTION.	NO LOOSENESS, CRACKS, DAMAGES ALLOWED. TO MEET PERFORMANCE TEST.
3.8	THERMAL SHOCK	SOAK MAGNETO IN AIR UNDER FOLLOWING CONDITIONS (CONTINUOUS CYCLING) A) −20°C (1 HOUR) B) +200°C (1 HOUR) C) NO. OF CYCLES = 10	DETERIORATION OF RUBBER AND PVC PARTS ALLOWED. TO MEET PERFORMANCE TEST.
3.9	ENDURANCE	A) TEST MODE : IN AIR SPEED = 6000 RPM TEMP. = 85°C INSIDE MAGNETO LOAD : Vb=14V CONSTANT BATTERY = 12V−8AH(VRLA) DURATION = 200 HR B)TEST MODE : IN OIL ATMOSPHERE INSIDE ROTOR 150°C (IN OIL 20W40 OR EQUI.) SPEED : 6000 RPM LOAD : Vb=14V CONSTANT BATTERY : 12V−B Ah DURATION : 200 HRS	A) NO SHORT CIRCUIT B) SHALL PASS IN INSULATION RESISTANCE TEST. C) NO LOOSENING, CRACKS, DAMAGE SHALL BE OBSERVED (RUBBER, PVC PARTS EXCLUDED). D) SHALL MEET THE PERFORMANCE TEST AS PER DRAWING. 10% DETERIORATION OF INITIAL PERFORMANCE IS ALLOWED.

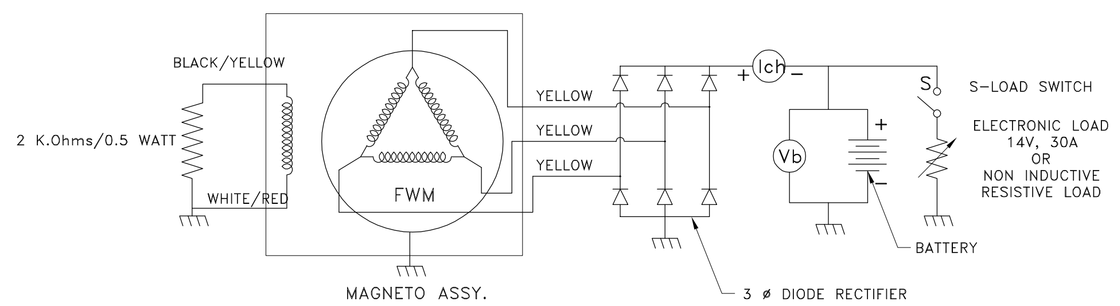

FIG. 2 – TEST CIRCUIT DIAGRAM
(FOR MAGNETO OUTPUT WITH RECTIFIER)

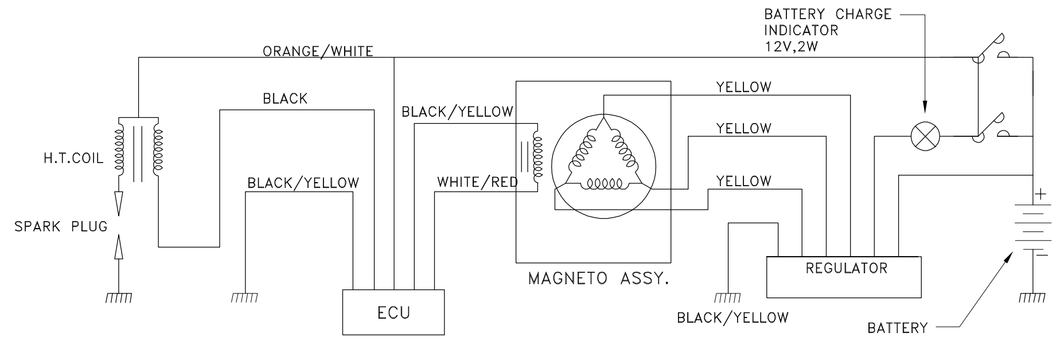

FIG. 3 – APPLICATION DIAGRAM

LIMITS UNLESS STATED			
DIMENSIONS WITH:		MATL.	
NO DECIMALS (eg. 22)	±0.4 mm	SPECN.	
ONE DECIMALS (eg. 22.1)	±0.2 mm	TREATMENT	
TWO DECIMALS (eg. 22.12)	±0.10 mm	FINISH	
ANGLES ± 0 Degs. 30 Minutes.		REF.	

FLYWHEEL MAGNETO
(CUSTOMER OUTLINE)

USED ON BAL T101C

WEIGHT

INDIA NIPPON ELECTRICALS LIMITED., HOSUR.

SUPERSEDES

SCALE	1 : 1	DATE
DRAWN	Rajasundar V	12-09-2024
CHECKED	Pradeepraj S	12-09-2024
APPROVED	Ravikumar S	13-09-2024

CONTROLLED COPY

DRG. No. CN 20 10846
[B : 2]