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TC No.: 0295m

Pages: 6
Annexes: 2
**Replacement for TC 0295b**

# Technical Conditions

## Synchronous generators SGT 215-12D and SGT215-12Y

| Name: | Position. | Signature and stamp: | Date |
|---|---|---|---|
| Ing. Michal Nincak | Technical Director | | 21.8.2008 |
| Ing. Rudolf Tholt | Business Director | | |
| Validity of TC: for series production | | | |

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## I. GENERAL

### 1. Object of technical conditions

The technical conditions (hereinafter referred to as TC) define the technical requirements, operating conditions, parameters, methods of testing, transportation and storage of the generators, types SGT 215-12D and SGT 215-12Y (hereinafter referred to as generator/s).

They replace the original generators of model 5506 205 and 5506 206 in complete volume of electric parameters and the mechanical measures.

### 2. Field of application

The generator is intended for operating as a power supply to be used on railway carriages. It is a 3-phase claw-pole synchronous generator driven by a gear unit attached to the axle bearing by a flange. The three-phase current generated on the run by the generator in co-operation with regulator is used, after rectification, for supplying electrical appliances and for charging carriage accumulators.

3.-9. Reserved for supplements

## II. OPERATING CONDITIONS

Loading of the generator assumes cooling by ambient air flow with minimum speed of 10 m/s.

### 10. AMBIENT CONDITIONS

The generators are intended for operaiting not exceeding follwing limiting conditions :
Altitude above sea level up 1200m
Ambiet temperature in range from -25°C to +40°C

Relative humidity of air can reach outside of railway carriage 95% at temperature 20°C,absolute humidity can not exceed 16,3g/m at higer temperatures .

## III. TECHNICAL PARAMETERS

### 11.

| Operating parameters | SGT 215-12 D | SGT215-12Y |
|---|---|---|
| Replacament of the original generator | 5506 206 | 5506 206 |
| Rated output | 4500 W | 3000 W |
| Duty type | continuous | |
| D.c. voltage after rectification by a rectifier connected in series | 30 V | |
| Current (d.c.) | 150 A | 100 A |
| Frequency | 280 - 850 Hz | 165 - 850 Hz |
| Starting speed | 1800 mm"[1] | • 940 min[1] |
| Idle speed | 2100 min"' | 1120 min "' |
| Rated speed | 2800 min"[1] | 1650 min "' |
| Max. speed | 8500 min"' | 8500 min" |
| Excitation d.c.voltage | 30 V | |
| Excitation current (d.c.) | max. 5 A | |
| Generator weight | 42 kg | |

12. Construction data

12.1 Type of construction - flange mounted machine with a flange on the bearing cover, with one shield, with the flange accessible from the back, with contact surface on side D, with vertical mounting, with shaft end facing down, with one tapered shaft end.

12.2 Degree of protection - IP 66 , after mounting on the gear unit.

12.3 Cooling - IC 48

12.4 Insulation system - class of thermal resistance "F"

12.5 Dimensioned sketch - refer to Annex 1 - drawing No. 45002667.

12.6 Rating plate data

- manufacturer
- type designation
- year of manufacture
- rated output
- rated d.c. voltage
- rated current (d.c.)
- speed - starting, idle, rated, max. allowable
- frequency
- excitation d.c. voltage
- excitation current (d.c.)
- power factor
- amount of cooling air
- factory No.

12.7 Sense of machine rotation - both directions.

13. Surface finish - the generators are delivered without surface finish.

14. - 20. Reserved for supplements

IV. TESTS

21. Purpose of tests

The tests shall prove that in respect of mechanics and electricity the machine meets the requirements of the TC as well as those of the standards related to the machine. The tests fall into two categories: type tests and check tests.

22. Type test

Min. 2 pieces of the generators shall be submitted to the type test , complemented by checking the requirements according to the TC. The type test shall be carried out in a state testing laboratory.

23. Check test

The check test shall be performed on each manufactured piece at rated loading.

## V. ATTENDANCE AND MAINTENANCE

24. Under normal operation, the generators require no maintenance. In one-year intervals a general examination shall be carried out and the rolling bearings shall be re-oiled. Time limits of re-oiling are determined by the current state of technology, with respect to high requirements of dependability.They depend of quantity of speeds at wich generators are used and on duration of daily work of the railway carriages .Therefore, it is necessary for the user to establis a cycle of check ups und greasings of bearings.The durability of bearings corresponds to usual values of railway transport .After breaking of torque bar in a gear-box the bearing s of generator have to be checked up or exchanged.

## VI. TRANSPORTATION. STORAGE. GUARANTEE AND CLAIMS

25. Transportation

The generators shall be transported only in spring-cushioned means of transport.

26. Storage

The generators shall be stored in dry and clean rooms providing the protection against, accidental damage. The rooms shall be free from sudden temperature variations causing dew formation on the machine surface. Max. allowable relative air humidity in the storing room is 80% at 20°C. In case of the prolonged storage, it is necessary in 6-month intervals to recheck or restore the preservation, in particular the protective coating of fitted machined surfaces, as well as to recheck the state of insulation before a subsequent use of the generator.

27. Guarantee and claims

Guarantee for the generators is 12 months from the day of putting them into operation, however, as a maximum 18 months from the day of dispatching them from the factory. The manufacturer undertakes the guarantee for the delivered generators provided that:

1.before the use, the machine was being stored in compliance with the conditions of current TC;

2. at installation, putting into operation, service and attendance, the manufacurer's instructions stated in the TC and operating rules are observed;

3. the machine is run in compliance with the data stated on the rating plate, label of wiring diagram and current TC.

4. For improve of quality the following deliveries and for faster diagnosing of eventual brake-downs we require for installation of generators to fill in the attached service form, then it is needed to be sent to the producer.

**Without filling and delivering serviceform to the producer the clain will not be accepted!**

5. At lodging claims, the generators shall be reclaimed for any apparent defects without unnecessary delay after taking over the delivery. As for hidden defects, the generators shall be reclaimed without unnecessary delay after discovering the defects, however, not later than within 12 months from the day of putting the generators into operation, or 18 months from the day of dispatching them from the manufacturer. Provided the claim is admitted by the manufacturer, the defects shall be cleared at no charge by the manufacturer within the stated guarantee time.

VII. MANUFACTURER

The manufacturer and supplier of the generators is SLOVRES a.s., Rastislavova 100, 040 01 KOŠICE., slovres@slovres.sk,www.slovres.sk

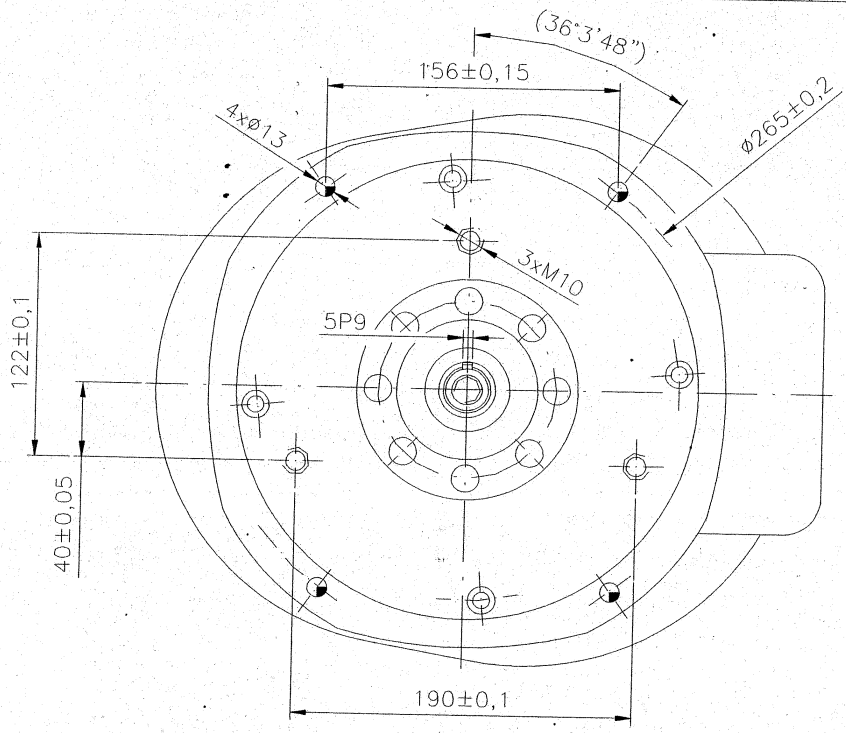
VIII.. ANNEXES

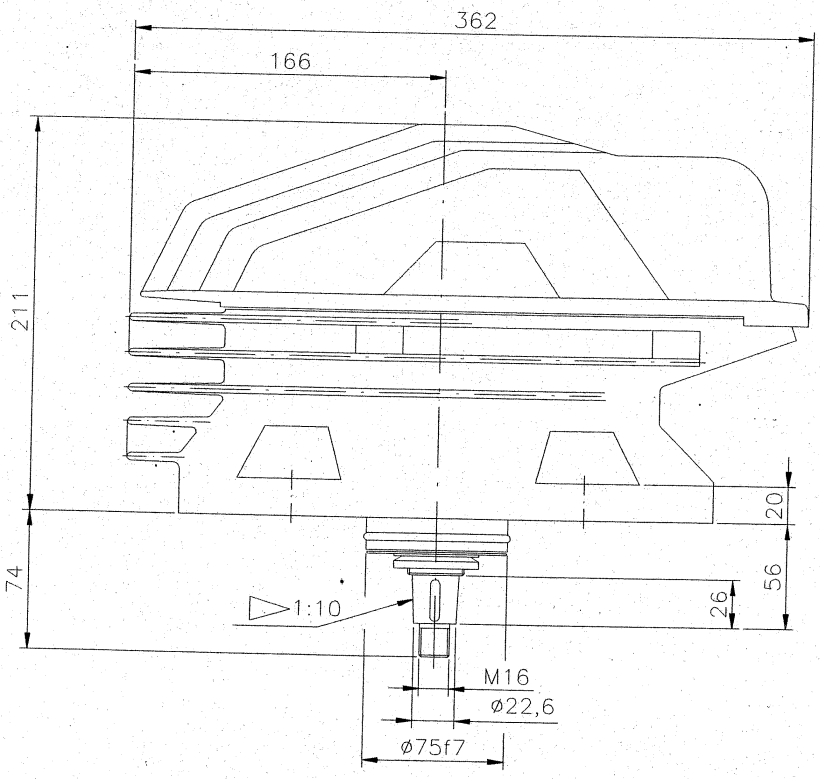
1/ Dimensioned sketch of the SGT 215-12D generator No. 45002667.

2/Service form for the railway generator SGT215-12

SLOVRES a.s.
KOŠICE, SLOVAKIA

ANNEX 1 OF TC N° 0295m
SYNCHRONOUS GENERATOR SGT215-12D & SGT215-12Y




| | |
|---|---|
| Kreslil | |
| Schválil | |
| Dátum 22.8.2008 | 45002667 |
| | Listov: 1 List: 1 |

Annex 2 of TC No.:0295m

**SLOVRES a.s.**
Rastislavova 100, 040 01 Košice
Slovenská republika
www.slovres.sk

# Service form for the railway generator SGT 215-12

Typ of the generator ☐ **SGT215-12D** ☐ **SGT215-12Y**

| | | |
|---|---|---|
| Rated output, W | 4500 | 3000 |
| D.c.voltage after rectification,V by a rectifier connected in series | 30 | |
| Current(d.c.), A | 150 | 100 |
| Max.speed, $min^{-1}$ | 8500 | |
| Excitation d.c. voltage, V | 30 | |
| Field direct current, A | max. 5 | |
| Generator weight, kg | 42 | |
| Factory number of the generator. | | |
| Date of manufacturing. | | |

## Data about installation of the generetor

| | | |
|---|---|---|
| Nuber of the waggon | | |
| Gear- box | typ : | factory number: |
| | The original safety lock is used | ☐ yes ☐ no |
| | The original pinion is used | ☐ yes ☐ no |
| The rectifier a block | typ : | factory number: |
| | Checking of working capacity | ☐ yes ☐ no |
| Typ regulator | typ : | factory number: |
| | Checking of working capacity | ☐ yes ☐ no |

Date: Installation has made:

The filled questionnaire we ask send to address of Slovres a.s. To above specified address.