DIRECTORATE GENERAL BORDER ROADS
GENRAL MAINTENANCE INSTRUCTION NO. 156
ON
CONVERTER-INVERTER (KIRLOSKAR) 103 KP INSTALLED ON TRACTOR BHARAT TIGER SK-120

INTRODUCTION

1. The converter-Inverter (Model 103 KP) is compact and combined unit of two deferent elements namely the hydraulic torque converter and the inverter which is a gear box with hydraulic clutches, each one of them use of a gear pump, selector valve, and oil cooling system commonly.

AIM

2. This instruction gives the description of Technical data of Kirloskar converter-Inverter (Model 103 KP) fitted to Tractor Bharat Tiger SK-120 and its maintenance periodicity to be undertaken as per Appendix ‘A’ and ‘B’ respectively.

ACTION BY

3. Field Wksp/Base Wksp : To diagnose the exact cause and repair the converter-Inverter assy.

MISCELLANEOUS

4. Earlier Instruction on maintenance and repair issued on the subject may also be referred, in conjunction to this instruction.

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Appendix 'A' to HQ DGBR GMI No. 156 dated 78/

TECHNICAL DATA

OIL PRESSURE

a)	Converter Basic circuit	:	5.6 Kg/Cm^2 Max 4.2 Kg/Cm^2 min
b)	Inverter engaged		
	i) **Forward**	:	14.7 Kg/Cm^2 max 12.7 Kg/Cm^2 min
	ii) **Reverse**	:	14.7 Kg/Cm^2 Max 12.7 Kg/Cm^2 Min

OIL TEMPERATURE

Heat exchanger inlet	:	250^0 F max 160^oF Min 180^0-220^o F normal

OIL CAPACITY

At full mark on gauge excepting the radiator	:	32 Litres.

OIL PUM[P CAPACITY

Weight (dry)	:	339 Kgs

MOUNTING

Suitable for SAE-I : type flywheel housing

LUBRICATION

Approved oils to be used in this assy has already been communicated to all Project/Base Wksp as [per this HQ DGBR GMI No. 150 at page 2 Srl No. 2 (c). It is very important to not that only the recommended oils have to be used to get the utmost output from the eqpt.

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Appendix 'B' to HQ DGBR GMI No. 156 dated _____Oct 78

MAINTENANCE CHART

Proper maintenance of converter-Inverter will increase the life of the machine and is given in succeding paragraphs.

DAILY

a) Check oil level in sump. Add oil if necessary.

b) Check water level in radiator . Add water if necessary.

c) Check proper functioning of pressure and temperature gauges operation.

EVERY 60 HRS (IN ADDITION TO ABOVE)

a) Check converter cooling system, for leakages.

b) Chek looseness of engine fan belt.

EVERY 1000 HRS OF OPERATION

a) Change oil in converter-Inverter.

b) Change filter elements.

c) Clean suction screen of pump.

d) Clean regulators valve,

e) Clean selector valve.

WORKING TEMPERATURE

During operation the oil temperature in converter-Inverter should be between 180^0 F (82.2^0 C) and 220^0 F(or 120^0 C) and should not exceed in any case 250^0 F (or 121^0C).

WORKING PRESSURE

The pressure should be checked at remain at min limit is 180 Psi (or 12.7 Kg/cm^2)
The working pressure should not be allowed to go less than 12.7 Kg/Cm^2 .

When the overhaul of the engine is being undertaken then converter-inverter should also be completely overhauled. All the parts showing signs of wear and tear, fatigue etc, should be replaced at that time.

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