

DIRECTORATE GENERAL OF BORDER ROADS
GENERAL MAINTENANCE INSTRUCTION NO.101
ON
TECHNICAL DATA
OF
STEYR-DAIMLER-PUCH AG 83TK

Introduction

1. Steyr-Daimler-Puch AG 83TK snow clearing equipment is a self propelled machine and has an extremely high PTO power out-puts. The 6 cyls turbo engine fitted to the Steyr 83TK has a power out-put of 260 DIN (280 HP) and stand out because it is high pulling power at all altitudes with its favourable fuel consumption. The Steyr-Daimler-Puch AG 83TK is suitable for :-

- (a) Trench cutting, drainage work and slide clearance,
- (b) Tunnel washing equipment,
- (c) Upkeep of air-ports and open spaces,
- (d) High-output snow clearance work.

2. Steyr-Daimler-Puch AG 83TK is manufactured by M/S Steyr-Daimler-Puch AG Austria. Four stroke 6 cylinders diesel engine in I (in line) shape fitted on this eqpt is having inter cooler hydrostatic adjusting pump and hydraulic operated gear shift arrangements.

Aim

3. To publish technical specifications for inspection, repairs and overhaul of the eqpt, while in operation for optimum and effective utilization.

Action by

4. Technical data of Steyr-Daimler-Puch AG 83TK fitted with four stroke 6 cylinders diesel engine in I (in line) shape having hydrostatic transmission pump with pre-selectage range for forward and reverse is tabulated in Appendix 'A' to this instruction. This information may be desiminated to tradesmen.

(AJS KHALSA)
SE (E&M) SG
Dir Tech

Dated : 08 Jan 90
Border Roads

For Dir General

Appendix 'A' to
GMI No. 101

GENERAL TECHNICAL DATA ENGINE – 8320 AND 83TK INTER COOLER

| | | |
|---|-----------------------|---|
| Engine | _____ | WD |
| 615.85 | | |
| Output | KW (HP DIN) _____ | WD 615.87 206 (280) |
| At a speed of | r.p.m _____ | 2400 |
| Speed at idle motion | r.p.m _____ | 700+100 |
| Working method engine with | _____ | Diesel four stroke Direct injection, exhaust gas Turbocharger and charged air cooling. |
| Maintenance at engine speed 1600 r.p.m | Nm(kpm) _____ | 1110 (112) / |
| Number of cylinders | _____ | 6 in line |
| Bore/stroke | mm _____ | 126/130 |
| Total piston displacement | cm ³ _____ | 9726 |
| Mean piston speed | m/sec _____ | 10.4 |
| Compression ratio | _____ | 16:1 |
| Injection sequence – 2 – 4 | _____ | 1 – 5 – 3 – 6 |
| Valve timing | Intake valve opens. | 2° before T.D.C |

(Control valve closes. 35° after
B.D.C

Clearance 1 mm at Exhaust valve opens 49° before
B.D.C.

Cold engine) closes 5° after T.D.C.

Valve clearance (engine cold)

Intake valve _____ 0.3 mm

Exhaust _____ 0.4 mm

Engine lubrication system _____ Pressure

lubrication with

Oil cooler.

Fuel consumption _____ 25.2 lit per
hour at 2000 r.p.m

Oil pressure _____ at least 0.5
bar idling

Oil filter _____ main circuit
fine filter

Engine cooling system _____ Thermostat
controlled double

Circuit water

cooling with centri-

fugal pump.

Appendix 'A' to GMI No. 101 contd.,

: 2 :

Operating temperature _____ 80 - 95° C

Of radiator coolant

Type of radiator _____ Water-tube-
cooler with long-term

Fillings (frost

protection down to

20° C, corrosion

protection)

Air cleaning _____ Dry-air filter
with safety care and

Precyclone ; electric

maintenance

Indicator.

Fuel filter _____ Double-filter

with prefilter and

.fine filter element

Injection pump _____ BOSCH in-
line injection pump 6

P 110A 721 RS
3101 with governor
RSV 400 – 1200
P1A 527 injection
timer BP/SP 500 –
1000 Z 5R feed
pump FP/K 22P 16
presave valve 2 418
552 027.

Nozzle holder _____ Boach
KBEL 132 P 31 "85"

Injection Nozzle/ _____ DLLA 150 P
167/2 430 422 011
Indication protection

Injection pressure _____ 225 + 8 bar
Delivery start at _____ $16^\circ \pm 1^\circ$
Before T.D.C

Electrical system

Dynamo _____ three-phase
generator with

installed transistor
regulator are
overload protection
8320/8320 at 1
piece 14 V, 66 A =
770 Watt (Bosch)
83TK : 3 pieces 14
V $6\frac{1}{2}$ = 910 W/total
capacity 2730 W

Voltage _____ 12V
Starting aid _____ injection
pump – raised delivery

amount and flame
starting system.

Battery _____ 2
pieces 12 V, 120 Ah,

Power transmission _____ parallel = 240 Ah
adjusting pump by hydrostatic

hydraulic drive engine
on gear shift
mechanism.

Gear shift _____ Hydrostatic
infinitely variable by

hand lever for forward drive and reversing, mechanic claw shift mechanism of gear shift mechanism.

Appendix 'A' to GMI No. 101 contd.,

: 3 :

| | |
|--|--|
| Gears _____ | forward : 3 gears Reverse : 3 gears |
| Driving speed _____ variable adjustment for reversing. | Infinitely Forward driving and |
| - 7 Km/h | Range 1 0 |
| - 14 Km/h | Range 2 0 |
| | Range 3 0 |
| | - 20 Km/h |
| | Range 1 0 |
| | - 10 Km/h |
| | Range 2 0 |
| | - 17 Km/h |
| | Range 3 0 |
| | - 30 Km/h |
| | Alternatively, standardized final speed. |
| Differential lock _____ drive axle. | Self-locking differential in |
| Type all-wheel drive _____ locking | ZF-steering axle with self – Differential |
| All – Wheel shift _____ chargeable under mechanism | Via multiple – clutch Load |
| P.t.o., shaft (cab-side) _____ standard revolution | 1 p.t.o.shaft stub for |

DIN 9611 _____ Of 1000 r.p.m.section : F3

P.t.o.shaft shift _____ Shifting by clamping of the
V-belt _____ (Powerband) with hydraulic cylinder, control of switch on dashboard.

P.t.o. shaft standard revolution at engine Speed (in %) of _____ 2328 r.p.m (97%)

P.t.o. shaft revolution at engine speed max _____ 1031 r.p.m

P.t.o. shaft revolution at engine speed max _____ full engine output transferable.

Sense of rotation _____ left (as seen to the stub)

P.t.o. shaft reversing gear (optional) _____ 2 p.t.o. shaft stub, clockwise and Anticlockwise.

Tyres _____ The eqpt is fitted with ballastotable front
tyres of size 12.5/80 – 18 and the recommended tyre pressure is 1.5 bar, the rear tyres 184/30 should have tyre pressure of 1.1 bar. Water ballasting of driving wheels should be with $\frac{3}{4}$ in filling of water with anti freeze mixture.

Appendix 'A' to GMI No. 101 contd.,

: 4 :

Vehicle weight in Kg

Dead weight _____ 5800

Front axle load (Steering axle load)

Rear axle load (Driving axle load)

Perm. Total weight _____ 8300

Perm. Front axle load _____ 2500
(Steering axle load)

Perm, rear axle load _____ 6360³
(Driving axle load)

Dead weight with full tank and comfort cab (83TK with double gear) without ballet weight.
