

DIRECTORATE GENERAL BORDER ROADS
GENERAL MAINTENANCE INSTRUCTION NO 195
OF
PERIODIC MAINTENANCE OF MARUTI GUPSY MG-410

1. **INTRODUCTION**

- 1.1 This org has inducted Maruti Gypsy MG 410 which is highly fuel efficient veh with the latest technology in automobile vehs.
1.2 To maintain such sophisticated veh, it is imperative that maintenance is carried out as per procedure laid down by the manufacturer to get optimal utilization.

2. **WARRANTY SERVICES**

- 2.1 In order to get the warranty claim, units are directed to get the first few free servicing done from Authorized Maruti Service Station (AMSS). As far as possible the subsequent service station be also dine as periodicity laid down from AMSS. Also ref our letter No.55021/TECH INSTR /DGBR/E4 Tech dated 13 Jun 91.

3. **ACTION BY**

- 3.1 User Units – to carry out maintenance scheduled laid down in this instruction.
3.2 Fd WKSP (GREF) – to maintain the record of maint & Fabrication carried out by AMSS or Mobile Maint Team during its inspection and repairs as per maint and lubrication schedule given in this instruction. To advise user units in respect of any lapses noticed.

4. **DETAILS**

- 4.1 This instruction covers the following:-
4.1.1. Periodic Maintenance Module – Appx ‘A’
4.1.1.1. Specification.
4.1.1.2. Operation.
4.1.1.3. Tightening torque.
4.1.2. Oil & lubrication capacity & periodicity
Appx ‘B’. Also ref srl 18 of frequency of oil/filter changes, issued under our letter No.55021/Tech Inst/DGBR/162/E4 Tech dated 22 Mar 91.
4.1.3 Periodic maintenance schedule – Appx ‘C’
4.1.3.1. Free Servicing.
4.1.3.2. Preventive maint servicing at cost.

5. Please acknowledge receipt.

(AJS Khalsha)
SE (E&M) SG
Director (Tech)
For Dir Gen Border Roads

Dated : 10 Jan 1993

PERIODIC MAINTENANCE MODULE

ENGINE

Type	4- stroke cycle, water cooled , OHC
Number of cylinder	4
Lubrication System	Wet sump , high pr, & splash system 3-4.5 kg/cm square 3000 rpm.
Bore	65.5 mm
Stroke	72.0 mm
Piston displacement	0.970 Ltr
Compression ratio	8.8:1
Carburetor	Single barrel type MIKUNI – B32.1
Air cleaner	Dry type, Non/Woven Fabric Element
Ignition timing	10 degree before T.D.C.at 850 rpm.
Standard spark plug	MICO W8DC
Starter	Solenoid type 0.7 KW 30 Sec. Rating
Generator	Alternator, 40A –Max,13500rpm Max,(set Voltage 14.4-15.OV working at 25 degree C.
Battery	NS 40s 30AH/20HP
BHP	45, 5500rpm

ELECTRICAL

Headlight	12V 45/40W
Turn signal light	12V 21W
Parking light (front)	12V,5W
Tail /brake light	12V,21W
Side turn signal light	12V,5W
Licence plate light	12V,10W
Back up light	12V, 21W
Interior (room) light	12V,5W
Meter pilot light	12V,3.4W
Main fuse	Fusible link,(0.5 mm)Sqr
Clutch	Diaphragm type
Transmission type	4 FWD,All Synchronesh , 1 Reverse

APPX 'A' TO GMI NO 195

S.No	Operation	Maruthi Gypsy model MG 410	Remarks
1.	Engine Oil 20W 40	3.2 Ltr	Replace every 10000 km
2.	Oil filter	Replace 1st at 5000km then every 1000 km	
3.	Transmission oil	1.3 Ltr	Replace every 20000km
4.	Differential oil	Front 1.5 Ltr, Rear 1.3 Ltr.	-do-
5.	Transfer Gear box	0.8 Ltr	-do-
6.	Fuel filter	Replace at every 20000 km	
7.	Steering wheel play	10-30 mm	Inspect in every service
8.	Axial play of drive shaft	-	
BRAKES			
9.	Disc pad thickness	15.0 mm STD	
10.	Brake disc thickness	10.0 mm STD 8.5 mm Lmt	
11.	Front/Rear shoe thickness	7 mm STD 3 mm Lmt	
12.	Front/Rear brake drum thickness	220 mm STD 220 mm Lmt	
		Unloaded	Loaded
		Kg/acm ²	
13.	Tyre pressure	Front	1.4
		Rear	1.4
			1.8
14.	Toe in	4+2, 4 -2 mm	
15.	Camber angle	1 ⁰	
16.	Caster angle	2 ⁰ 30 ¹	
17.	King pin Inclination	9 ⁰	
18.	Turning angle	Out	29 ⁰ +3 ⁰ , 29 ⁰ -3 ⁰ , 26 ⁰ +3 ⁰ , 26 ⁰ -3 ⁰
		In	26 ⁰ +3 ⁰ , 26 ⁰ -3 ⁰
19.	Turning Radius	5.7m	
ROAD TEST			
20.	Side slip at a speed of 30 KMPH with hands off the steering wheel for 30 m distance	2 m RH 2 m LH	
	Brake at the speed of 50KMPH the vehicles should stop within	14 M	
	Speedometer variations	+ 1KMPH , -1KMPH	
NOTE:- All rubber parts where greasing is required it should be done with silicone grease only Metal to metal joints can be greased with Servogen IIT			

TIGHTENING TORQUES

ENGINE

Spark plug	250 kg-cm
Valve lash adjusting screw lock nut	180 kg-cm
Cylinder head bolt	580 kg-cm
Cylinder head cover bolt	45 kg-cm
Exhaust manifold bolt	230 kg-cm
Intake manifold bolt	230 kg-cm
Engine oil drain plug	230 kg-cm
Propeller shaft flange yoke bolt or nut	270 kg-cm
Transmission oil drain plug	250/450 kg-cm
Transmission oil level plug	250/450 kg-cm
Differential oil level & filler plug	430 kg-cm FR&RR
Differential oil drain plug	430 kg-cm FR&RR
Ball joint stud castle nut	550 kg-cm
Tie rod end castle nut	480 kg-cm
Wheel nut	850 – 800 kg-cm
U- bolt nut	380 kg-cm
Leaf spring shackle nut	430 kg-cm
Leaf spring front nut	580 kg-cm

CAPACITY, PERIODTICITY, GRADE OF OIL & COOLANT

Srl No	Assy	Capacity in Liters	Periodicity of change KM	Ambient temp	IOC Grade	Remarks
1.	Engine	3.2	10,000	All temp	Servo Superior Multi grade 20W-40	1 st oil change at 5000 km of run
2.	Oil filter	-	1 st at 5000 subsequent every 10,000	All temp	-do-	Inspect oil filter element at 5000km of run, If found UNSV replace it
3.	Gear box	1.3	20,000	-do-	Servo gear super 90	Inspect at every 5000 Kms of runs top up
4.	Transfer case	0.8	20,000	-do-	-do-	-do-
5.	Front differential	1.5	20,000	-do-	-do-	-do-
6.	Rear differential	1.3	20,000	-do-	-do-	-do-
7.	Radiator coolant	4.0	20,000 or 2 years	Up to 15 ⁰ c	30% Natural golden 70% water	(a) Coolant must be changed at every 20,000 kms
				From 16 ⁰ c to 30 ⁰ c	50% Natural Golden 50% water	(b) For top up recommended distilled water only

Note: already reproduced in booklet of frequency of oil/filter changes veh/ eqpt / plants