

Vehicle Engineering Series



MORRIS 850

Saloon • Van

Tony Cripps

Contents

Preface	4
Acknowledgements	4
Disclaimer and Warning	4
References	4
Chapter 1. Introduction	6
1.1 Design and Model Introduction	6
1.2 Production.....	9
1.2.1 Body Shell.....	9
1.2.2 Power Unit	9
1.2.3 Local Content	10
1.2.4 Production.....	10
Chapter 2. Power Unit	11
2.1 Cylinder Block/Crankcase.....	11
2.2 Connecting Rods and Bearings.....	17
2.3 Camshaft	18
2.4 Crankshaft	21
2.5 Tappets and Push Rods	24
2.6 Distributor Housing & Spindle.....	25
2.7 Cylinder Head, Valves, Guides, Springs, and Rocker arms	26
2.8 Water outlet, Thermostat	34
2.9 Cylinder block Front & Side Covers	36
2.10 Oil Pump.....	37
2.11 Oil Filter.....	38
2.12 Water Pump	40
2.13 Crankshaft Pulley	42
2.14 Dynamo Mounting and Pulley.....	42
2.15 Fan Belt	45
2.16 Oil Dipper Rod	46
2.17 Inlet and Exhaust Manifold	46
2.18 Engine Mountings	47
Chapter 3. Exhaust System	51
Chapter 4. Engine Controls	53
Chapter 5. Ignition System	56
5.1 Distributor.....	56
5.2 Vacuum Control	58
5.3 Coil	59
5.4 HT Cables.....	60
Chapter 6. Cooling System	61
6.1 Radiator.....	61
6.2 Front Grille	66
Chapter 7. Fuel System	67
7.1 Fuel Tank	67
7.2 Fuel Pump	69
7.3 Carburetter	73
7.4 Air Cleaner.....	81
Chapter 8. Flywheel, Idler Gear and Clutch ... 83	
8.1 Flywheel	83
8.2 Idler Gear	86
8.3 Clutch	87
8.3.1 Clutch	87
8.3.2 Clutch Master and Slave Cylinders	90
Chapter 9. Transmission, Differential and Final Drive	92
9.1 Transmission	92
9.2 Differential and Final Drive	103
Chapter 10. Rear Suspension	106
Chapter 11. Steering	113
Chapter 12. Front Suspension	119
Chapter 13. Brakes	131
13.1 Brake Drums and Shoes	131
13.2 Brake and Clutch Pedals.....	131
13.3 Brake Master Cylinder.....	133
13.4 Brake Lines	134
13.5 Handbrake.....	137
Chapter 14. Electrical Equipment	139
14.1 Battery.....	139
14.2 Dynamo	141
14.3 Starter	141
14.4 Switches	141
14.5 Regulator.....	143
14.6 Flasher.....	144
14.7 Lights	145
14.8 Horn	148
14.9 Windscreen Wiper	148
14.10 Wiring Loom.....	150
Chapter 15. Instruments	157
Chapter 16. Road Wheels	163
Chapter 17. Sub Frames	166
Chapter 18. Body	170
18.1 Body Panels.....	170
18.2 Boot Lid	176
18.3 Windscreen Back Light and Rear Quarter Light.....	180
18.4 Windscreen Washer	184
18.5 Front Doors	186
18.6 Bonnet.....	195
18.7 Body Finishers	198
18.8 Number Plates.....	201
18.9 Rear Doors.....	203
18.10 Interior	205
18.10.1 Fittings.....	205
18.10.2 Floor Coverings	208
18.10.3 Seats.....	213
Chapter 19. Tools	219
Appendix 1. Standards	221
Appendix 2. Production Data	225
Appendix 3. Identification Data	226
A3.1 Identification Plate: Saloon.....	226
A3.2 Identification Plate: Van	227
Appendix 4. Part Numbers	229
4.1 Schedule of Parts.....	229
4.2 Part Numbers	229
4.2.1 Body components	230
4.2.2 Mechanical components.....	230

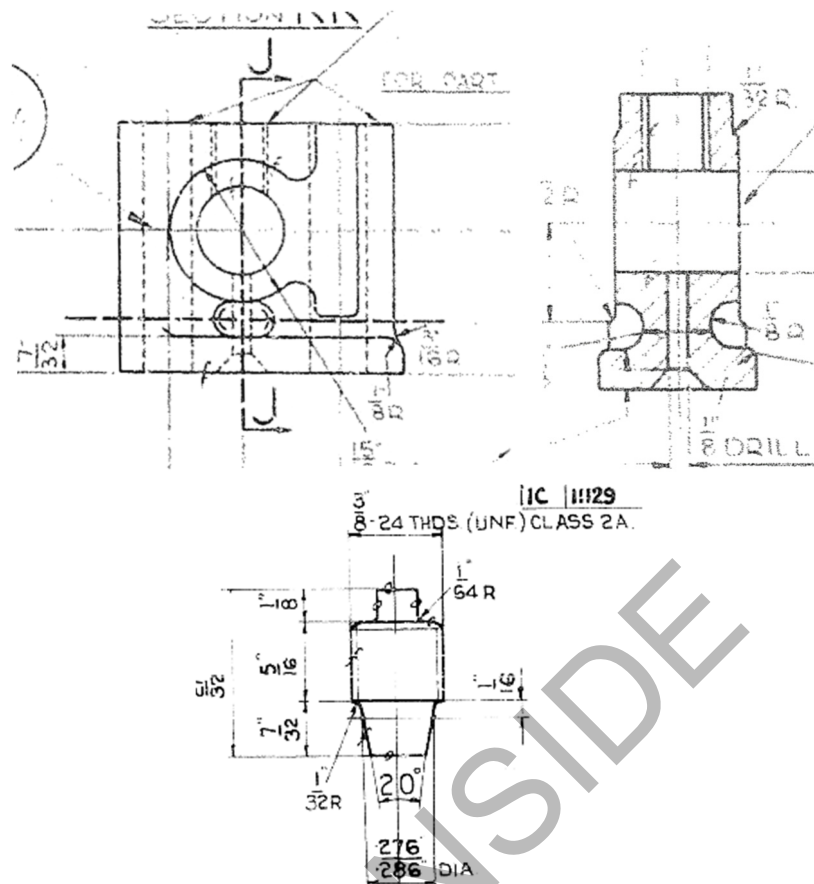


Fig. 2.7.11 Rocker arm pedestal 2A22 and location screw 2A258.

The tappet adjusting screws 2A535 have a 1/16" oilway in the end of an induction hardened spherical ball end. The thread is 9/32 BSF.

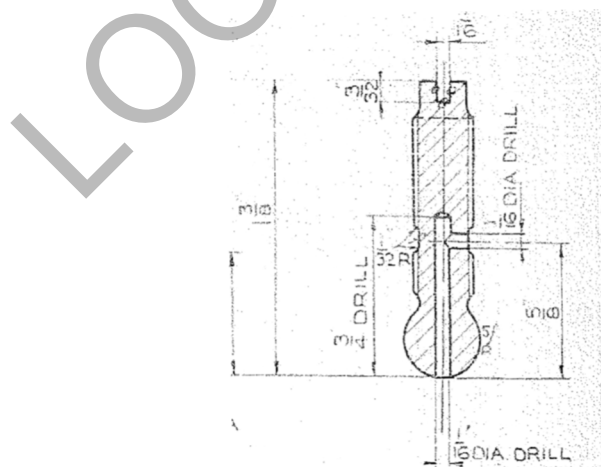


Fig. 2.7.12 Tappet adjusting screw 2A535.

The inlet 2A877 and exhaust 2A878 valves have 45.5° seat angles. The inlet valve has a larger head diameter (1.093-1.098") than the exhaust valve 1.005". A hard stellite-faced exhaust valve AUA400 is also available. The inlet valve is 3 7/16" long. The exhaust valve is 3 27/64" long. Both have 45.5 ° seat angles.

Chapter 3. Exhaust System

The exhaust system is made from 1 1/4" OD, 16 gauge steel tube swaged out to 1 5/8" for clamping to the cast iron combined inlet and exhaust manifold. The front pipe AYA2021 (Saloon) is 73 3/16" long while 21A1150 (Van) is 76 1/4" long.

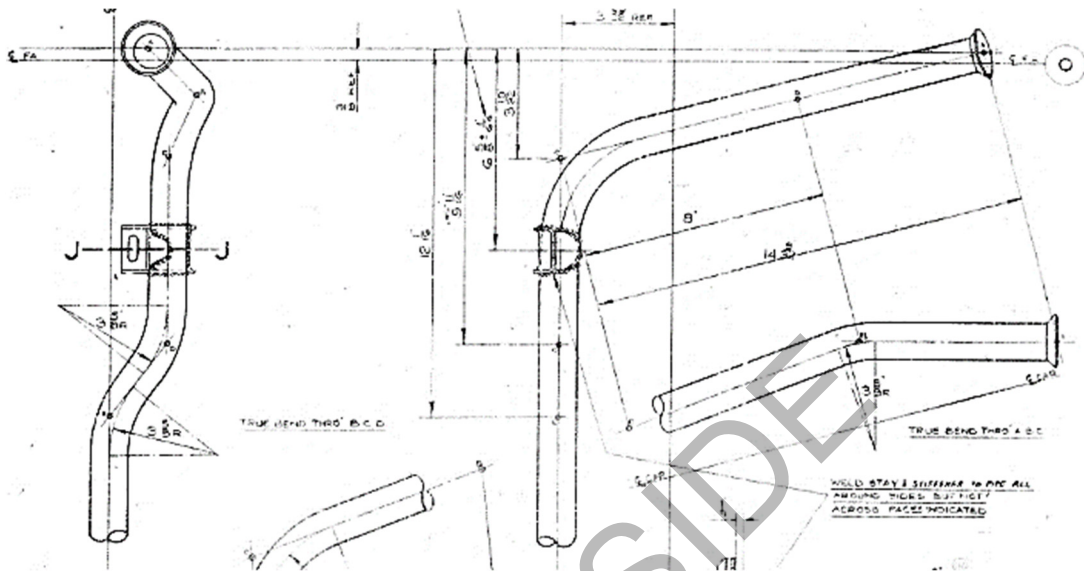


Fig. 3.1 Exhaust pipe detail near engine AYA2021.

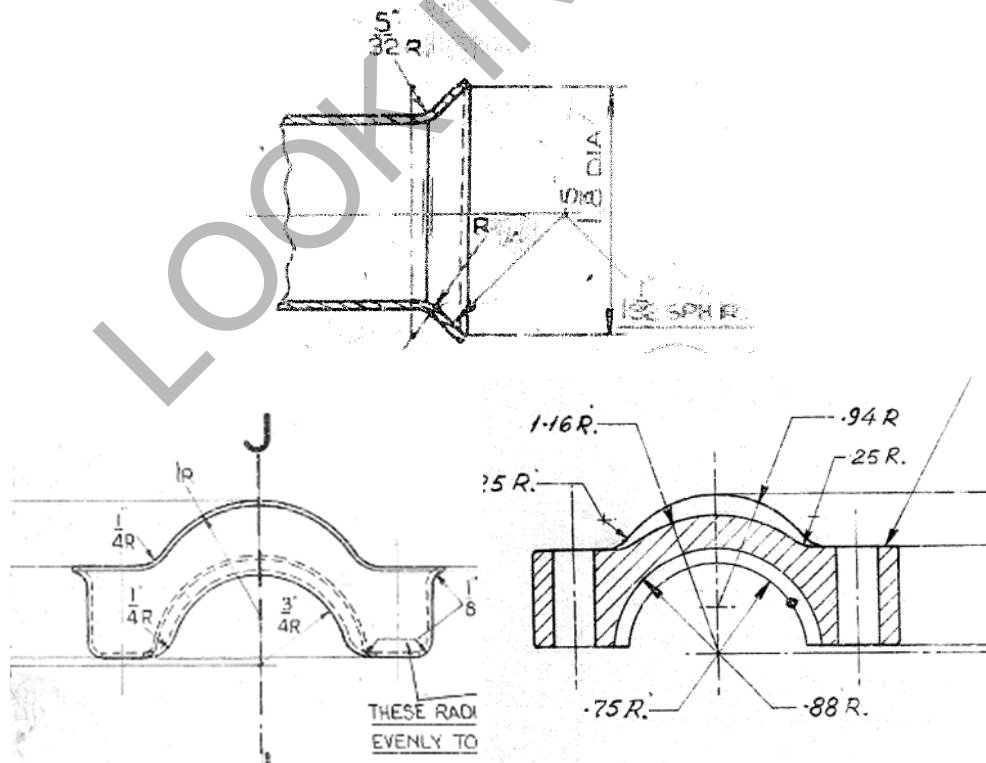


Fig. 3.2 Detail at exhaust clamp flange on manifold, clamps 2A237 and AYG2018.

The clamp 2A237 for the exhaust pipe at the manifold is of a pressed steel construction, the later cast type AYG2018, which requires longer through bolts HBZ520, not being introduced until mid 1966.

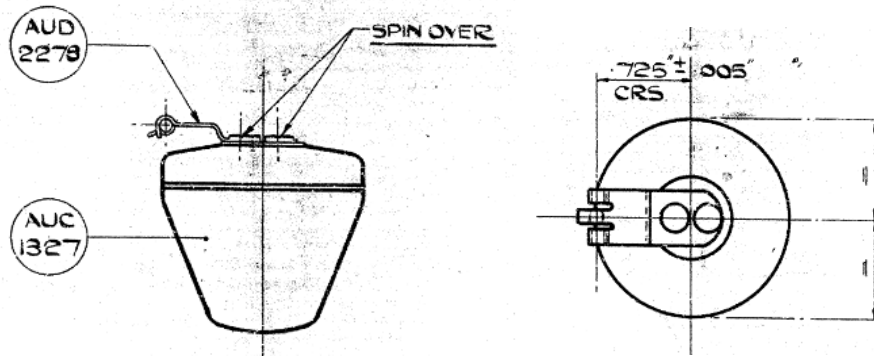


Fig. 7.3.11 Nylon float AUD9202/ AUC1327.

For both carburetters, the suction chamber is attached by two screws AUC5156 which are 3/16" 24 TPI BSW with no spring washer. These are short screws as distinct from the long screws AUC2175 fitted to carburetter AUC976 for the float chamber lid. On the earlier carburetter, AUC912, these same screws are used to fix the float chamber lid to the float chamber.

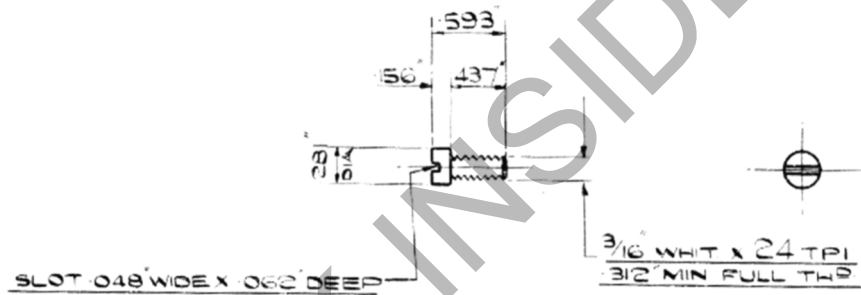


Fig. 7.3.12 Short screw AUC5156.

On carburetter AUC 976, the float chamber securing screws AUC2175 have a length 9/16" measured from under the head to the length of the screw and use spring washer AUC2246. The short screws AUC5156 are used for the suction chamber with no spring washer.

The jet centering screw AUC2002 has a 3/8" BSP thread and bears against adjusting spring AUC2114 on the lower side and washer AUC8478 on the upper side.

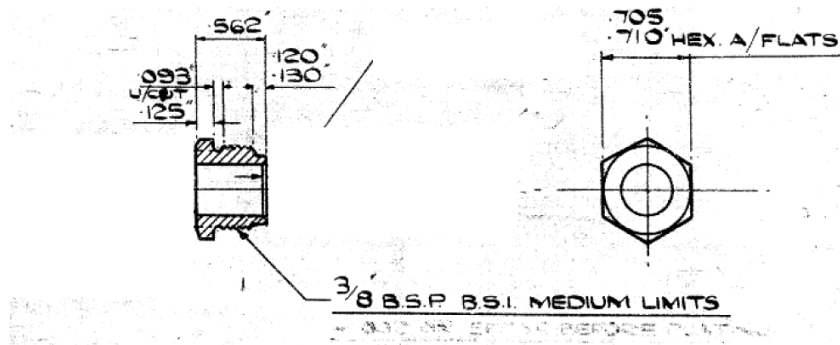


Fig. 7.3.13 Jet centering screw AUC2002.

The clutch pressure plate 2A3509 has either a ground or finely machine surface finish on its bearing surface and is dynamically balanced off the three counterbored mounting holes 5/16 24 TPI. The clutch pressure plate is dynamically balanced. The facings of the clutch pressure plate and the flywheel are ground finish.

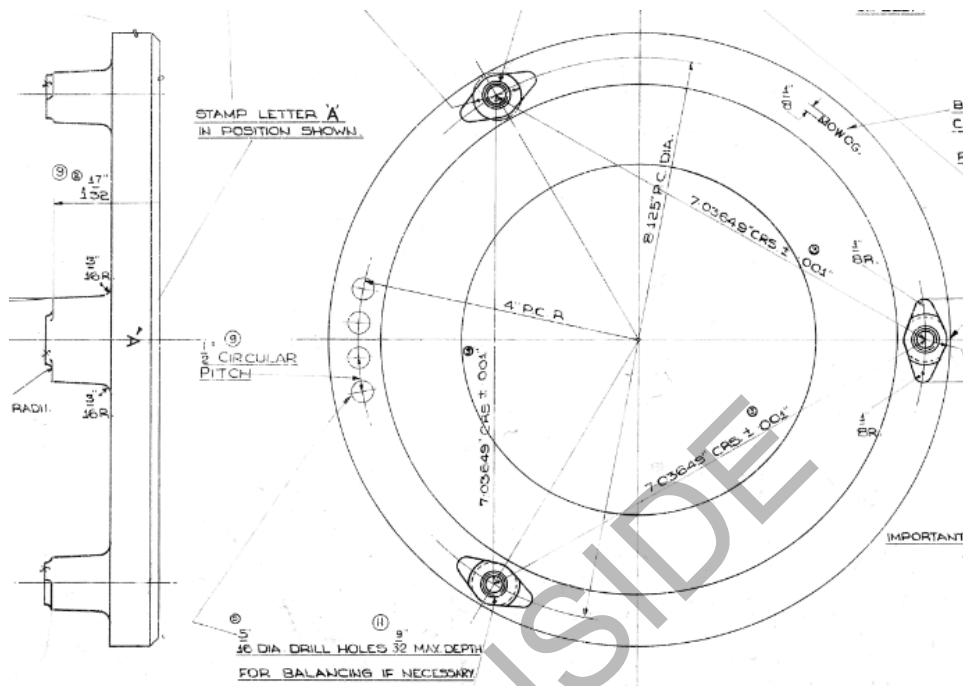


Fig. 8.3.1.4 Clutch pressure plate 2A3509.

The clutch release thrust bearing 2A3653 is a Ransom and Marles MJT 5/8 and has 8 x 9/32" diameter balls and bears against the throwout flange mounted on the spring housing.

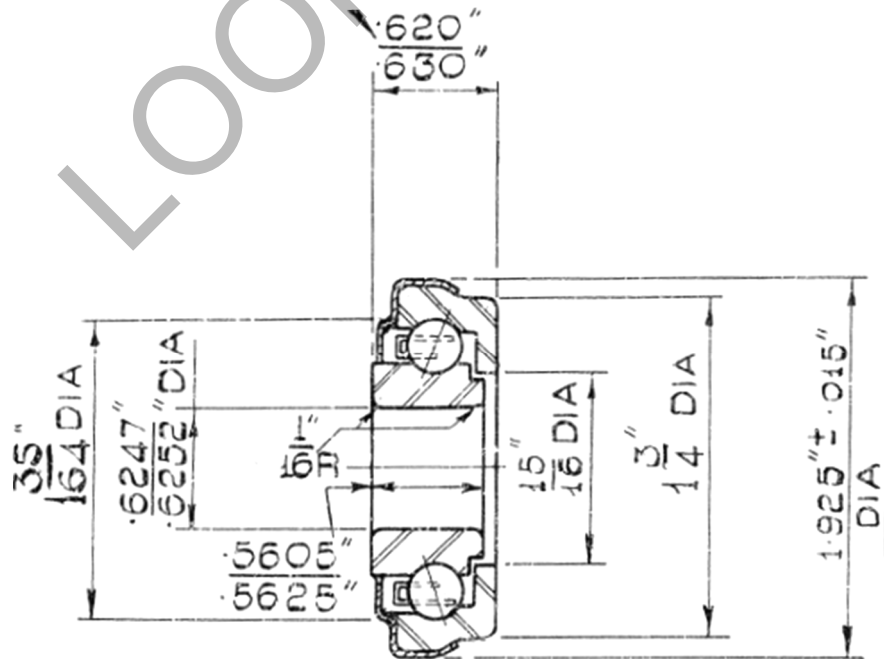


Fig. 8.3.1.5 Clutch release bearing 2A3653.

The clutch and brake pedals are a mirror image with the exception that the brake pedal has a welded gusset between the fulcrum tube and lever arm.

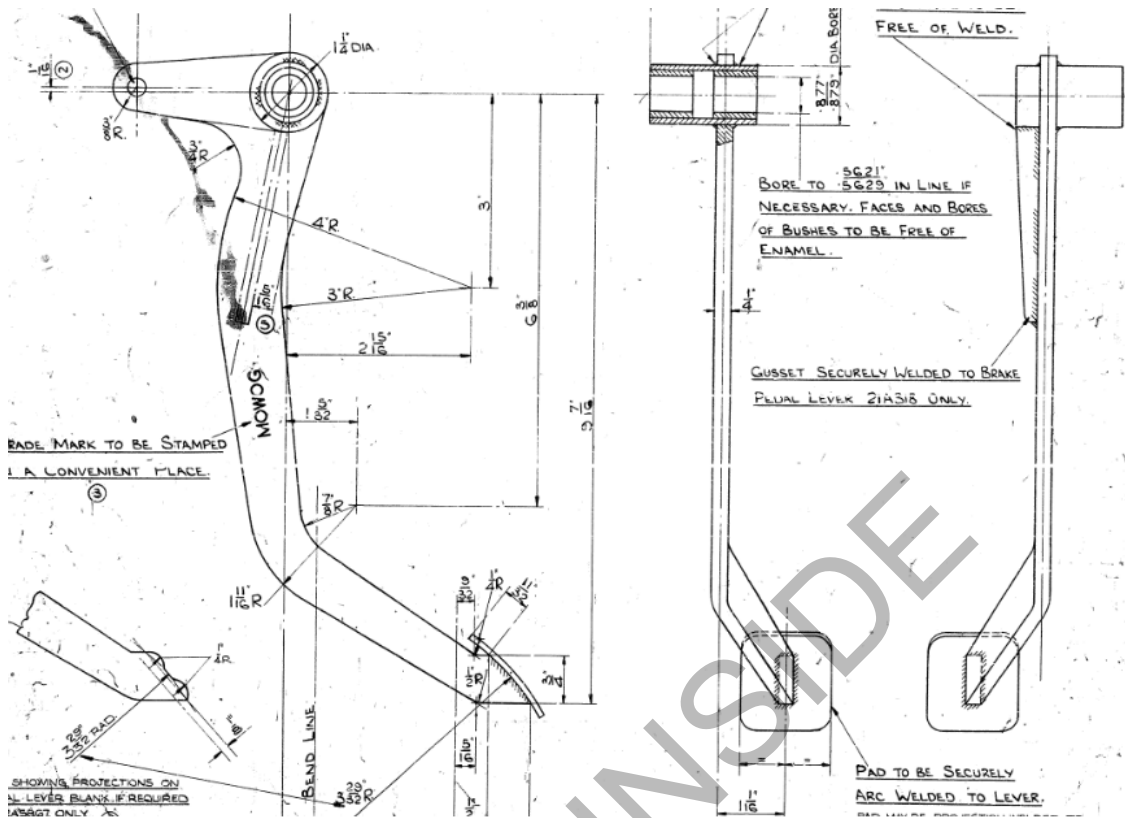


Fig. 13.2.2 Brake and clutch pedals 2A5866.

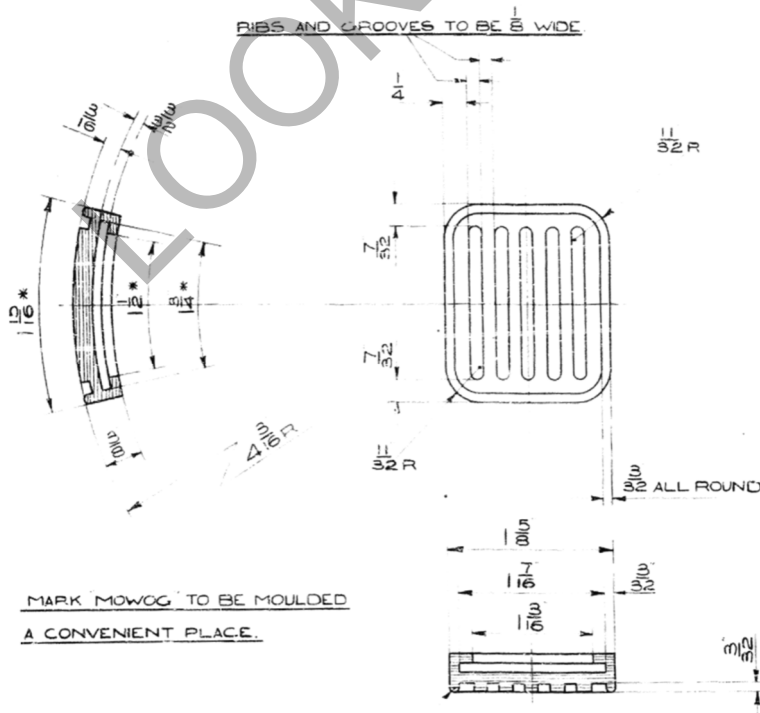


Fig. 13.2.3 Brake and clutch pedal pad 2A5865.

