Workshop Series

THE MORRIS MINI RANGE

PRODUCTION CHANGES 1961 - 1982

Tony Cripps

Contents

Preface

This book gives details of the various modifications made to the Mini and Moke range of vehicles produced in Australia. It is not the intention to list *every* change made since this information is already provided in Service Parts Lists. Rather, listed here are the major changes and, where possible, the significance of the change, as advised to Dealers through Service Bulletins and Summaries to assist them in identifying a vehicle and repairing it correctly.

Acknowledgements

Thanks as always to company stalwarts Bruce Elson, Peter Davis (dec) and Ron Moss (dec). Thanks also to Doug Jenkins for his work on digitising various service documents.

Note from Tony Cripps

This book has arisen out of a need to correct the numerous errors and misinformation published in print and in social media concerning production details of the Australian Mini and Moke range. All the information in this book is taken directly from original factory documentation:

Service Bulletin (SB): Issued to Dealer service managers for use in their service departments. Usually describes a major change, or solution to an in-service problem. Not for viewing by customers.

Service Liaison Summary (SLS): Advanced developments at the factory. Most of these subsequently formed the basis of a Service Bulletin. Issued to Factory Service Engineers and not for distribution or viewing by Dealers.

How to Use This Book

First, established what vehicle you actually have. The best way is to consult the Table in Chapter 1 and determine the Model Design Code (e.g. YDO5 for Morris Mini Deluxe). Identification of parts and fitments is far easier if you start from the Design Code. Individual Model Codes (e.g. YMA2S1 etc) change from time to time, but the Design Code is the top-level identifier from which all else follows.

Once you have the Design Code, use your vehicle body stamping and engine number to determine the applicability of the changes listed in the Table in Chapter 2.

Other details are shown in Chapter 3 that will assist you in identifying the correct parts and assemblies for your vehicle.

Chapter 1. Model Range

1.1 Morris 850 Saloon and Van, Morris Cooper

ADO15		
Morris 850 Saloon	848cc[1]	January 1961 (23rd March) [2] – October 1965

Fig. 1.2 *Morris 850 Saloon, 1960 (Aust. Prototype).*

Morris 850 Van	848cc	February 1964 (27th April) – ≈ October 1965

Fig. 1.3 *Morris 850 Van, 1964*.

ADO50		
Morris Cooper Saloon	997cc	September 1962 (March 1963) – July 1964
Morris Cooper Saloon	998cc	July 1964 – December 1964

Fig. 1.4 *Morris Cooper Saloon, 1962*.

[1] CKD power unit from Feb/Mar 1964.

[2] Production start dates shown in the Table are earlier than the release dates (shown in brackets where known) due to manufacturing lead time. As well, in some cases, vehicles were sold to fleet buyers before the release dates. The end dates are approximate, each depending on the exhaustion of stock. In some cases, the end date represents the date at which the model was no longer available. Some models continued to be offered to fleet customers after sales to the general public ceased.

DESCRIPTION	REMARKS	ADO15	ADO15V	ADO50	YDO4	YDO4V	YDO5	MINI-MATIC	YDO6	Refer.
AIR CLEANER SILENCER	NEW AIR CLEANER CONTAINING PAPER ELEMENT	-	-	9F/SA/ 21672	-	-	-	-	-	SLS 36
CYLINDER SIDE COVER	NEW SIDE COVER WITH RAISED ELBOW	NO CP SPECIFIED	-	-	-	-	-	-	-	SLS 42
SUMP GUARD	SUMP GUARD AVAILABLE AS AN OPTIONAL EXTRA HYL3013	NO CP SPECIFIED	-	NO CP SPECIFIED	NO CP SPECIFIED	-	-	-	-	SLS 42
MECHANICAL FUEL PUMP	ADVICE THAT MECHANICAL FUEL PUMP WILL BE INTRODUCED SEPTEMBER 1964	NO CP SPECIFIED	-	-	-	-	-	-	-	SLS 49
CAMSHAFT GEAR AND TIMING CHAIN	AUSTRALIAN MADE CAMSHAFT GEAR AYA60 AND TIMING CHAIN AYG62 fitted	8Y/U/H 25504	-	-	-	-	-	-	-	
IMPROVED BYPASS HOSE	IMPROVED BYPASS HOSE AYG44 LENGTH 2.0" STOCKINETTE COVERED NEOPRENE	8Y/U/H 3026	8Y/U/H 3026	-	-	-	-	-	-	
GENERATOR PULLEY	GENERATOR PULLEY REALIGNMENT WITH WASHER	8Y/U/H 3229-5118	8Y/U/H 3229-5118	-	-	-	-	-	-	SLS 49
GEARBOX MODIFICATION	CAGED SHELL NEEDLE ROLLER BEARINGS GEARBOX FIRST MOTION SHAFT	8Y/U/H 5312	8Y/U/H 5312	NO CP SPECIFIED	-	-	-	-	-	SLS 52
HEAVIER EXHAUST PIPE	HEAVIER GAUGE EXHAUST PIPE INTRODUCED	YMA2S1 51791	YJBAV1R 1581	-	-	-	-	-	-	SLS 52
DOOR CHECK STRAP	TERYLENE TYPE DOOR STRAP HYA2671 HYA 2672 INTRODUCED	YMA2S1 51893	YJBAV1R 1696	YKA2S1 3632	-	-	-	-	-	SLS 52
CYLINDER HEAD	NEW INLET MANIFOLD WITH FERRULES INTRODUCED AT FIRST AUSTRALIAN PRODUCTION	-	-	9Y/SA/ 1001	-	-	-	-	-	SLS 56
SHOCK ABSORBERS	INCREASED LENGTH OF FERRULE AT SHOCK ABSORBER	YMA2S1 54948	-	YKA2S1 3876	-	-	-	-	-	SLS 63
MECHANICAL FUEL PUMP	MECHANICAL FUEL PUMP AYA9964 INTRODUCED FOR VAN	-	8Y/U/H 13907	-	-	-	-	-	-	SLS 58

DESCRIPTION	REMARKS	ADO15	ADO15V	ADO50	YDO4	YDO4V	YDO5	MINI-MATIC	YDO6	Refer.
PRIMARY DRIVE GEAR SEAL	SILICON RUBBER SCROLL LIP 13H2934	-	-	-	8Y/U/H 24562	8Y/U/H 24562	9YA/TA/H 15508	-	-	C 5066
CYLINDER BLOCK DRAIN TAP	DRAIN COCK REPLACED WITH PLUG AND WASHER	-	-	-	8Y/U/H 24860	-	9YA/TA/H 16402	-	-	SLS 99
LOCALLY MANUFACTURED GEARS	LOCALLY MANUFACTURED PRIMARY DRIVE GEARS	-	-	-	8Y/U/H 24957	8Y/U/H 24957	9YA/TA/H 16516	-	-	C 5066
VALVE GUIDE SHROUD	VALVE GUIDE SHROUD DELETED AND CUP REPLACED BY AEA402	-	-	-	8Y/U/H 24957	8Y/U/H 24957	9YA/TA/H 17162	-	-	C 5066
ENGINE SIDE COVER	AYG117 UPWARD POINTING VENT (0.010-0.016" gap).	-	-	-	8Y/U/H/ 25602	8Y/U/H/ 25602	-	-	-	
PISTONS LOCAL	AYA89 LOCALLY MANUFACTURED PISTONS	-	-	-	-	-	9YA/TA/H 17755	-	-	C 5166
PISTON - LOCAL	LOCALLY MANUFACTURED PISTONS AYA89 INTRODUCED	-	-	-	-	-	9YA/TA/H 17755	-	-	SLS 101
PISTON SLAP	RECTIFICATION OF MISALIGNEMENT OF GUDGEON PIN DURING ASSEMBLY CAUSING PISTON SLAP	-	-	-	-	-	9YA/TA/H 17755-27287	-	-	C 4667
LOCALLY MANUFACTURED CONTENT	CONROD BEARINGS MAIN BEARING CRANKSHAFT GEAR CAMSHAFT GEAR TIMING CHAIN FRONT ENGINE PLATE GASKET ENGINE MOUNTING PLATE	-	-	-	8YU/H 25504	8YU/H 25504	9YA/TA/H 18005	-	-	C 5066
CONNECTING ROD BEARING - LOCAL	LOCALLY MANUFACTURED CONROD BEARINGS AYA108 MAIN BEARINGS AYA130 CRANKSHAFT GEAR AYA59 CAMSHAFT GEAR AYA60 TIMING CHAIN AYA62	-	-	-	-	-	9YA/TA/H 18005	-	-	SLS 101
UNITS ORANGE BAND	MODIFIED DISPLACER UNIT WITH LENGTHENED PISTON STEM SHORTENED REAR STRUT	-	-	-	-	-	YMA2S2 16758	-	YKG2S2 1220	C 5166

2.2 Explanatory Notes

2.2.1 Change Dates

Information in the table is ordered approximately according to the date of the change. The year of the relevant service documentation is given by the last two digits of the reference number for "C" entries.

2.2.2 Engine Type Codes

Engine type numbers 1001, 1004, 1000, 1003 are remote change housing. Engine type numbers 1007 mark the introduction of the rod-change. Engine type numbers 1009, 1011 signify the introduction of new offset sphere inboard drive joints (pot joints), and engine type numbers 1010, 1012 and 1015 signify a change in final drive ratio in early 1974 from 3.65:1 to 3.44:1. The 1275cc engine has a final drive ratio of 3.937[12].

2.2.3 Consecutive Serial Numbers

From 1st March 1974 Car Numbers were combined to run consecutively instead of having different series for different model types. As such, change points for YDO21 and YDO22 often show the same body serial number since these numbers are now intermixed. Mini Van was not combined with saloons. Moke body serial numbers did not reset to 1001 as did saloons, but carried on from the previous numbering system.

2.2.4 ADR27A

ADR27A was introduced generally for passenger cars in 1976 but ADR27A not shown on Compliance plates until 1979. For Moke, TDY32 shows EPAI was introduced in mid-1976 although PUB27 shows introduction of some ADR27A components (e.g. radiator) from 018X0B1M09 17680 is mid-1977. Fuel tank with evaporative loss not introduced until 1979.

2.2.5 1275cc Power Units

1275cc engines 12H879 and 12H902 are Austin Allegro power units. In standard spec, the final drive ratio for this power unit is 3.937:1 but it is unknown if this carries through to Australian assembly for Moke.

2.2.6 Upgraded Transmissions

With a change in design of transmission in 1980, those arriving in CKD packs to Australia contained a progressive fitment of uprated components. The significant changes are:

- The laygear DAM3169 and layshaft DAM3187 are modified to incorporate uprated bearings with one roller bearing replacing two bearings at the front, and a larger roller bearing UKC3371 at the first gear speed end. Reverse idler gear, with larger 45° chamfer on the 18T side gives clearance for the new laygear which has a filleted radius at the 1st gear end. To accommodate the new layshaft, the transmission case has also been modified with a deeper counterbore for the new layshaft; therefore, these parts are only interchangeable with their predecessors as a complete set.

[12] 1275cc engines 12H879 and 12H902 are Austin Allegro power units. In standard spec, the final drive ratio for this power unit is 3.937:1 but it is unknown if this carries through to Australian assembly.

sometimes GPa. In the imperial system, we may see stress expressed in units tfsi (or tons force per square inch).

The table below shows the strength rating for those grades of interest. Also shown are the specification for hardness of which we shall discuss further.

	Grade T	**Grade W**	**Grade X**	**EN24-Y**
Tensile Strength	55 tfsi (850 MPa)	70 tfsi (1080 MPa)	75 tfsi (1160 MPa)	1225-1375 MPa
Hardness	248-302 BHN 25-30 HRC	311-375 BHN 33-41 HRC	345-401 BHN 38-43 HRC	363-429 BHN

Table 3.4.2 *Book value properties of Grade T, W and X steels. (https://www.steelexpress.co.uk/steel-hardness-conversion.html)*

3.5 Wheel Studs and Nuts

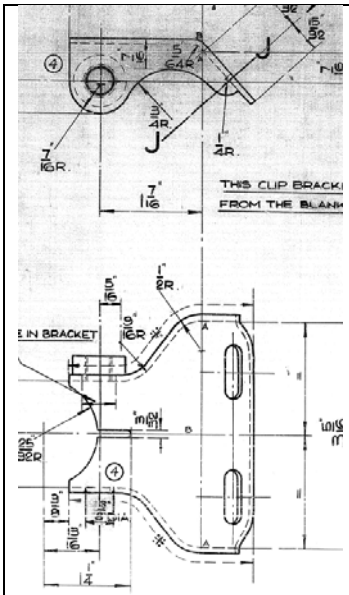
3.5.1 Part Numbers

An examination of various Service Parts Lists shows a number of wheel studs specified.

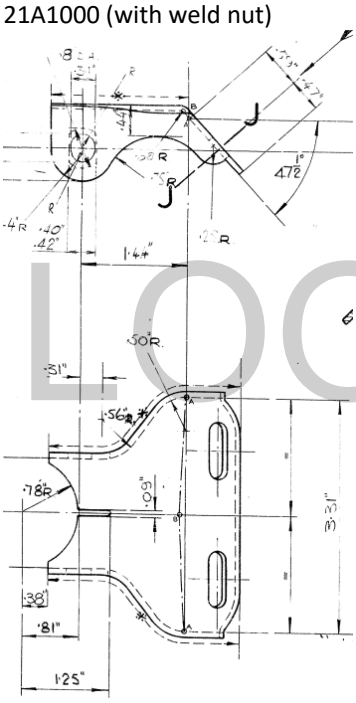
Model	**Parts Book**	**Wheel Stud Front**	**Wheel Stud Rear**	**Wheel Nut**	**Comment**
Morris 850	AKD1153 HYL2980 PUB1012 PUB1056	2A4066 “ 21A326 or AYA4061 AYK4147	2A4066 “ 21A326 or AYA4061 AYK4147	2A8012 “ AYA4023 “ “	
Morris Mini Deluxe	PUB1012 PUB1056	AYA4061 AYK4147	21A326 or AYA4061 AYK4147	AYA4023 “ “	Hydrolastic
Morris Cooper 997 998	PUB1012 PUB1056	BTA190 21A2064	21A326 AYA4061 AYK4147	AYA4023 “ “	Front Discs
Morris Cooper S	PUB1012 PUB1056	21A1267 21A2064 AYK4086	21A1278 “ AYK4086	AYA4023 “	Hydrolastic Front Discs MKII
Morris Mini Clubman	PUB1052	AYK4147	AYK4074 AYK4147	AYA4023	
Morris Mini Clubman GT	PUB1052	21A2064	AYK4086	AHA8785	Early GT with Rostyle wheels 21A2363
Leyland Mini, S, SS and LS	PUB23	AYK4061 AYK4147 AYK4086	AYA4061	AYA4023 HYL6604 AYG4155	 Nut with collar for SS alloy wheels Leyland Mini S, and LS 998 have Innocenti Wheels AYG8026
Leyland Mini LS 1275	PAA11	BTA339		FAM3721 (FAM3428)	12” Road wheel

Table 3.5.1 *Summary of Wheel Studs, Mini range*

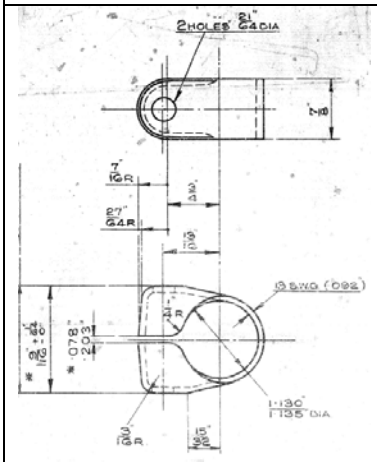
As with all these service parts lists, there are likely to be some inconsistencies in the above, and especially when older parts are substituted with newer part numbers.



21A1000 (with weld nut)

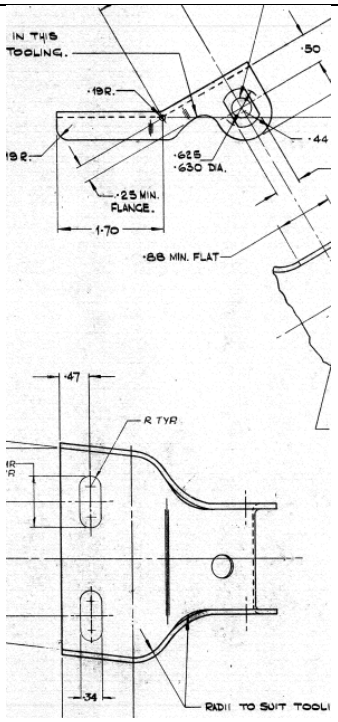


21A2242



21A29

PUB1052 incorrectly lists the clip as AYG6011 (which is a spacer plate). PUB7 and PUB23 incorrectly lists this clip as AYG6020 (which is a weld nut/retaining plate). It is presumed the clip is 21A29 as per YDO5 and previous.



AYG6028
Change to AYG6028 unknown