

# mitsubishi

## ENGINE 4G5 SERIES

### WORKSHOP MANUAL

#### FOREWORD

This Workshop Manual contains procedures for removal, disassembly, inspection, adjustment, reassembly and installation, etc. for service mechanics.

All information, illustrations and product descriptions contained in this manual are current as at the time of publication. We, however, reserve the right to make changes at any time without prior notice or obligation.

Engine ..... 11A

#### FILING INSTRUCTION

Please keep these manual pages in the binder No. BN940001.

File these pages according to the signs "Added", "Revised" and "Deleted" on the "List of effective pages" which are interpreted below.

**Added:** File the pages with this label additionally in your manual.

**Revised.Deleted:** Replace the existing pages with the corresponding pages with this sign.

Missing sheets will be supplied upon request.

A  
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# HOW TO USE THIS MANUAL

## CONTENTS

The preceding page contains GROUP INDEX which lists the group title and group number.

## PAGE NUMBERS

All page numbers consist of three sets of digits separated by a dash. The digits preceding the dash identify the number of the group and the second digits identify the section. The digits following the dash represent the consecutive page number within the section. The page numbers can be found on the top left or right of each page.

## TEXT

Unless otherwise specified, each service procedure covers all models. Procedures covering specific models and identified by the model codes, destination or similar designation (engine type, transmission type, etc.)

## SERVICE PROCEDURES

The service steps are arranged in numerical order and attentions to be paid in performing vehicle service are described in detail in SERVICE POINTS.

Section number  
Group title    Section title    Group number    Page number

ENGINE - Cylinder Head and Valves    11A-8-1

### 8. CYLINDER HEAD AND VALVES

#### REMOVAL AND INSTALLATION <12-VALVE ENGINE>

Denotes tightening torque

**Nm | kgm | ft. lbs.**

Removal steps

1. Cylinder head bolt
2. Cylinder head, valve assembly
3. Cylinder head gasket
4. Retainer lock
5. Valve spring retainer
6. Valve spring
7. Valve spring seat

10. Retainer lock
11. Valve spring retainer
12. Valve spring
13. Valve spring seat
14. Exhaust valve
15. Valve stem seal
16. Intake valve guide
17. Exhaust valve guide
18. Intake valve seat (primary)
19. Intake valve seat (secondary)
20. Exhaust valve seat
21. Cylinder head

Denotes non-reusable parts

This number shows the sequence of removal or disassembly. For installation or reassembly, reverse the removal or disassembly steps.

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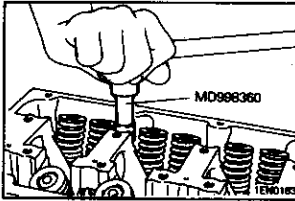
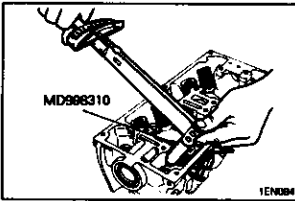


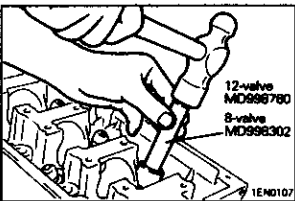
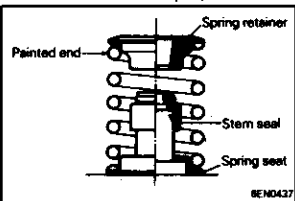
Issue date

Publication number - Revision code

Operating procedures, cautions, etc. on removal, installation, disassembly and reassembly are described.

Denotes service point for removal or disassembly

Denotes service point for installation or reassembly.

| ENGINE  |  | Cylinder Head and Valves   | 11A-8-3 |
|---|--|--|---------|
|   |  | <b>SERVICE POINTS OF REMOVAL</b><br><b>⊖</b> REMOVAL OF CYLINDER HEAD BOLT   |         |
|  |  | <b>⊖</b> REMOVAL OF JET VALVE<br>(1) When loosening a jet valve, hold the special tool securely so that it is not tilted with respect to the jet valve center line. Also avoid applying force abruptly.  |         |
|  |  | <b>⊖</b> REMOVAL OF RETAINER LOCK<br>(1) Store removed valves, springs and other parts, tagged to indicate their cylinder No. and location for reassembly.   |         |
|  |  | <b>NOTE</b><br>The valve spring retainers of the 12-valve engine differ in size between the intake and exhaust sides. Therefore, use the following retainer holders.<br>(4) After installing valve guides, insert new valves in them to check for sliding condition.<br>(5) When valve guides have been replaced check for valve contact and correct valve seats as necessary. |         |
|  |  | <b>SERVICE POINTS OF REASSEMBLY</b><br><b>⊕</b> INSTALLATION OF VALVE STEM SEAL<br>(1) Install the valve spring seat.<br>(2) The special tool must be used to install the valve stem seal. Improper installation could result in oil leaking past the valve guide.   |         |
|  |  | <b>⊕</b> INSTALLATION OF VALVE SPRING<br>(1) Install the valve spring with the painted end on the rocker arm side.   |         |
| <small>ⓈEND437</small>  |  |  |         |
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