



**YAMAHA**

**DE CARBON  
MONOCROSS SUSPENSION**

# **Service Manual**

## NOTICE

This manual pertains to the DeCarbon monocross suspension found on the "F" model YZ's (YZ125F, YZ250F, and YZ400F) and on "G" model YZ's and one IT (YZ125G, YZ250G, YZ465G, and IT175G). It is intended for reference and use by a trained and qualified mechanic working in an authorized Yamaha dealership equipped with the facilities, tools, and equipment required to safely service the monocross suspension. Qualified mechanics are those individuals certified by the appropriate Yamaha importer to have the ability to service the monocross suspension according to the manual's recommendations. Certification can include formal training, motorcycle service experience, monocross suspension service experience, or any other requirement deemed necessary by the Yamaha importer.

The maintenance of the monocross suspension system differs considerably from that of conventional suspension systems. The service mechanic must have a complete knowledge of the system to assure that it safely reproduces its original performance characteristics. The mechanic or customer may be harmed if the monocross suspension is not serviced correctly. For this reason, only mechanics authorized by the appropriate Yamaha importer may service the monocross suspension. Under no circumstances may the contents of this manual be disclosed to a third party.

Particularly important information is distinguished in this manual by the following notations:

**NOTE:** A **NOTE** provides key information to make procedures easier or clearer.

**CAUTION:** A **CAUTION** indicates special procedures that must be followed to avoid damage to the monoshock.

**WARNING:** A **WARNING** indicates special procedures that must be followed to avoid injury to a machine operator or person inspecting or repairing the monoshock.

YAMAHA MONOCROSS SUSPENSION  
(DE CARBON SYSTEM)  
SERVICE MANUAL  
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## HOW TO USE THIS MANUAL

This manual provides complete instructions for disassembling and assembling certain DeCarbon monoshocks found on Yamaha motorcycles. Each chapter is sequential. By following the procedure section by section, you can disassemble then assemble a monoshock. Except for the sections entitled "Disassembling the Rod-Piston Assembly" and "Assembling the Rod-Piston Assembly", each section in a chapter applies to all appropriate monoshocks.

Before beginning work on any monoshock, you must identify the external construction (X or R) and the rod-piston assembly used on that particular shock. The external construction will direct you to the correct chapter. Chapter 4: "The X Monoshock" pertains to monoshocks with an X construction; those monoshocks without a separate gas reservoir. Chapter 5: "The R Monoshock" pertains to monoshocks with an R construction; those monoshocks with a separate gas reservoir.

As explained in Chapter 1, Yamaha uses three types of rod-piston assemblies in its monoshocks: 2X3, 2X4, and 3R4 rod-pistons. Each section in this manual that deals with disassembling or assembling a rod-piston assembly is divided into subsections. These subsections give the instructions for disassembling or assembling a specific rod-piston assembly. When you come to the section entitled "Disassembling the Rod-Piston Assembly" or "Assembling the Rod-Piston Assembly", follow the instructions in the subsection that apply to that particular rod-piston assembly found in your monoshock. Ignore the set of instructions in the other subsection, proceed to the next section in the chapter, and continue work.

For example: the monoshock on an IT175G is a 3R6 monoshock. It has an R construction and a 2X3 rod-piston assembly. When working on a 3R6 monoshock, follow the instructions in Chapter 5: "The R Monoshock." The section entitled "Disassembling the Rod-Piston Assembly", however, contains instructions for disassembling two types of rod-pistons: the 2X3 and the 3R4 rod-pistons. Since this monoshock has a 2X3 rod-

piston assembly, follow the instructions in subsection A: "Disassembling the 2X3 Rod-Piston Assembly" and ignore the instructions in subsection B: "Disassembling the 3R4 Rod-Piston Assembly." When you have disassembled the rod-piston, proceed to the next section in Chapter 5 ("Removing the Hose Assembly") and continue your work. Do the same when assembling the rod-piston assembly. Follow the instructions for the 2X3 rod-piston and ignore those for the 3R4 rod-piston.

Whenever a part is mentioned in the text, the part name is followed by a number in parentheses. This number is the reference number for that part. Reference numbers in the text are keyed to the exploded diagram that precedes each section.

You will also notice a number in parentheses following the names of some parts in the legends of the exploded diagrams. This is the number of that part needed for one (1) complete assembly of the exploded component. If no number follows a part in the legend, that part is used once in one complete assembly.

## TERMS

When the manual text refers to a vise, use a vise with soft jaws so no part of the monoshock will be marred or damaged. Use a high-temperature, lithium grease whenever the text calls for grease or directs you to grease a particular part or component.

## SHOP CONDITIONS

**CAUTION:** *The procedures described in this manual MUST be performed in a clean environment. The work area, tools, and equipment must be clean and dust free. A monoshock's performance will be adversely affected if a shock is assembled with dust or any foreign matter on the parts. Always work in a CLEAN area when servicing a monoshock. Blow all parts clean with compressed air before installing them in the monoshock.*

# TABLE OF CONTENTS

<b>HOW TO USE THIS MANUAL</b> .....	i
<b>CHAPTER 1. GENERAL INFORMATION</b> .....	1-1
Theory of Operation .....	1-1
Construction and Identification .....	1-1
Identification Chart .....	1-3
Rod-Piston Components .....	1-4
Service Data .....	1-6
<b>CHAPTER 2. ADJUSTING THE MONOSHOCK</b> .....	2-1
Tuning .....	2-1
A. Adjustments and Effects .....	2-1
B. Symptoms and Adjustments .....	2-1
C. Tuning Notes .....	2-1
Adjustments .....	2-2
A. Checking the Gas Pressure .....	2-2
B. Bleeding the Gas .....	2-2
C. Adding Nitrogen Gas .....	2-2
D. Adjusting the Preload .....	2-2
E. Adjusting the Damping .....	2-3
Handling Notes .....	2-3
<b>CHAPTER 3. SPECIAL TOOLS</b> .....	3-1
<b>CHAPTER 4. THE X MONOSHOCK</b> .....	4-1
Removing the Monoshock From the Motorcycle .....	4-2
Removing the External Parts .....	4-2
Removing the Rod Guide and Related Parts .....	4-5
Removing the Rod-Piston Assembly and Free Piston .....	4-8
Disassembling the Rod-Piston Assembly .....	4-9
A. Disassembling the 2X3 Rod-Piston Assembly .....	4-10
B. Disassembling the 2X4 Rod-Piston Assembly .....	4-11
Cleaning .....	4-12
Inspection .....	4-12
Assembly .....	4-13
Assembling the Rod-Piston Assembly .....	4-13
A. Assembling the 2X3 Rod-Piston Assembly .....	4-14
B. Assembling the 2X4 Rod-Piston Assembly .....	4-16
Installing the Free Piston and the Rod-Piston Assembly .....	4-18
Installing the Rod Guide and Related Parts .....	4-20
Installing the External Parts .....	4-23
Installing the Monoshock on the Motorcycle .....	4-25
<b>CHAPTER 5. THE R MONOSHOCK</b> .....	5-1
Removal From the Motorcycle .....	5-2
Removing the External Parts .....	5-3
Removing the Rod Guide and Related Parts .....	5-5
Removing the Rod-Piston Assembly .....	5-8
Disassembling the Reservoir .....	5-9
Disassembling the Rod-Piston Assembly .....	5-11
A. Disassembling the 2X3 Rod-Piston Assembly .....	5-12
B. Disassembling the 3R4 Rod-Piston Assembly .....	5-13
Removing the Hose Assembly .....	5-14
Cleaning .....	5-14
Inspection .....	5-14
Assembly .....	5-15
Assembling the Hose to the Cylinder .....	5-15
Assembling the Rod-Piston Assembly .....	5-16

A. Assembling the 2X3 Rod-Piston Assembly .....	5-17
B. Assembling the 3R4 Rod-Piston Assembly .....	5-19
Assembling the Gas Reservoir .....	5-21
Installing the Rod-Piston .....	5-23
Installing the Rod Guide and Related Parts .....	5-25
Installing the External Parts .....	5-29
Installing the Monoshock on the Motorcycle .....	5-31
<b>CHAPTER 6. PARTS .....</b>	<b>6-1</b>