

YANMAR[®]
SERVICE MANUAL

EXCAVATOR

MODEL *ViO*45-5, *ViO*55-5

YANMAR SERVICE MANUAL

MODEL
ViC45-5
ViC55-5

FOREWORD

This service manual outlines procedures for servicing YANMAR construction machinery. It contains specifications, servicing instructions and handling cautions. To obtain the maximum life and performance from YANMAR construction machinery, read this manual carefully and follow its instructions.

Please note that all dimensions and numerical values in this manual are for service reference, and are not inspection standards. Descriptions and specifications in this manual are subject to change without notice due to design improvements, etc.

WARNING

California

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

WARNING

California

Proposition 65 Warning

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm.

Wash hands after handling.

CONTENTS

CHAPTER 1

GENERAL CAUTIONS FOR MAINTENANCE WORK

1-1 Correct Work	1-1
1-2 Safety Precautions	1-1
1-3 Preparations	1-1
1-4 Cautions for Disassembly and Reassembly	1-1
1-5 Cautions for Removal and Installation of Hydraulic Equipment	1-2
1-6 Cautions for Removal and Installation of Hydraulic Piping	1-2
1-7 Cautions for Handling Seals	1-3
1-8 Correct Installation of Hydraulic Hose	1-3
1-9 Specifications of Hydraulic Hose	1-6
1-10 Air Release of Hydraulic Equipment	1-11

CHAPTER 2

TECHNICAL DATA

2-1 Specifications	2-1-1
2-2 Outline Drawing and Working Area	2-2-1
2-2-1 Canopy type	2-2-1
2-2-2 Cabin type	2-2-2
2-3 Weight List of Main Parts	2-3-1
2-4 Lifting Capacity List	2-4-1

CHAPTER 3

SERVICE STANDARDS

3-1 Machine Performance	3-1-1
3-2 Engine	3-2-1
3-3 Undercarriage	3-3-1
3-3-1 Rubber Track Specifications	3-3-1
3-3-2 Steel Track Specifications	3-3-2
3-3-3 Common Specifications of Steel & Rubber Tracks	3-3-3
3-4 Controls	3-4-1
3-5 Hydraulic Equipment	3-5-1
3-5-1 Hydraulic Cylinders	3-5-1
3-6 Implement	3-6-1
3-6-1 Front Attachments	3-6-1
3-6-2 Blade Moving Device	3-6-2
3-6-3 Bucket Teeth	3-6-2
3-7 List of Tightening Torque	3-7-1
3-7-1 Machine	3-7-1
3-7-2 Engine	3-7-4
3-7-3 Tightening Torque for General Bolts and Nuts	3-7-4

CHAPTER 4 ENGINE

4-1 General	4-1-1
4-1-1 How to Read This Manual	4-1-1
4-1-2 Precautions for Service Work	4-1-3
4-1-3 Engine External Views	4-1-4
4-1-4 Structural Description	4-1-4
4-1-5 Exhaust Gas Emission Regulation	4-1-5
4-2 Troubleshooting	4-2-1
4-2-1 Quick Reference Table for Troubleshooting	4-2-1
4-2-2 Troubleshooting by Measuring Compression Pressure	4-2-4
4-3 Inspection and Adjustment	4-1
4-3-1 Oil Inspection	4-3-1
4-3-2 Cooling Water Inspection	4-3-1
4-3-3 Inspecting Water Leak from Cooling Water System and Radiator	4-3-1
4-3-4 Fan Belt Tension Inspection and Adjustment	4-3-2
4-3-5 Adjusting the Valve Clearance	4-3-3
4-3-6 Inspecting the Fuel Injection Valve Injection Pressure and Spray Pattern	4-3-5
4-3-7 Fuel Injection Timing Adjustment / Fuel Injection Pump Inspection and Adjustment	4-3-9
4-3-8 Sensor Inspection	4-3-12
4-3-9 Battery Inspection	4-3-13
4-3-10 Adjusting Operation	4-3-15
4-3-11 Long Storage	4-3-16
4-3-12 Periodic Maintenance Schedule	4-3-17
4-4 Engine Body	4-4-1
4-4-1 Introduction	4-4-1
4-4-2 Cylinder Head	4-4-2
4-4-3 Gear Train and Camshaft	4-4-11
4-4-4 Cylinder Block	4-4-16
4-5 Lubrication System	4-5-1
4-5-1 Lubrication System Diagram	4-5-1
4-5-2 Trochoid Pump Components	4-5-1
4-5-3 Disassembly (Reverse the Procedure Below for Assembly)	4-5-1
4-5-4 Servicing Points	4-5-2
4-5-5 Parts Inspection and Measurement	4-5-2
4-6 Cooling System	4-6-1
4-6-1 Cooling Water System	4-6-1
4-6-2 Cooling Water Pump Components	4-6-1
4-6-3 Disassembly (Reverse the Procedure Below for Assembly)	4-6-2
4-6-4 Servicing Points	4-6-2
4-7 Fuel Injection Pump / Governor	4-7-1
4-7-1 Introduction	4-7-1
4-7-2 Fuel Injection Pump	4-7-1
4-8 Electrical Equipment	4-8-1
4-8-1 Starter Motor	4-8-1
4-8-2 Alternator	4-8-3
4-8-3 Air Heater	4-8-6

CHAPTER 5 HYDRAULIC SYSTEM

5-1 Outline	5-1-1
5-1-1 Control Valve Operation	5-1-4
5-1-2 Additional Operation of Control Valve	5-1-6
5-2 Hydraulic Circuit Schematic	5-2-1
5-2-1 Quick Coupler	5-2-1
5-2-2 W/O Quick Coupler	5-2-2
5-3 Circuit Operation	5-3-1
5-3-1 Boom	5-3-1
5-3-2 Arm	5-3-3
5-3-3 Bucket	5-3-5
5-3-4 Swing	5-3-7
5-3-5 Boom Swing	5-3-9
5-3-6 Blade	5-3-11
5-3-7 Travel	5-3-13
5-3-8 Non-Deviation Travel (with Boom, Arm or Boom Swing Operation).....	5-3-15
5-3-9 Non-Deviation Travel (with Bucket Operation).....	5-3-17
5-3-10 Simultaneous Operation of Boom Up and Arm Retract.....	5-3-19
5-3-11 Simultaneous Operation of Boom Up and Bucket.....	5-3-21
5-3-12 Simultaneous Operation of Boom Up and Swing	5-3-23
5-3-13 Simultaneous Operation of Arm and Bucket	5-3-25
5-3-14 Hydraulic P.T.O.	5-3-27
5-3-15 Quick Coupler.....	5-3-29
5-4 Pressure Adjustment.....	5-4-1
5-4-1 Relief Valves	5-4-1
5-4-2 Swing Brake Valve	5-4-3
5-4-3 Cut-Off Valve.....	5-4-4

CHAPTER 6 HYDRAULIC EQUIPMENT

6-1 Hydraulic Pump	6-1-1
6-2 Control Valve.....	6-2-1
6-3 Pilot Valve	6-3-1
6-4 Swing Motor	6-4-1
6-5 Travel Motor	6-5-1
6-6 Blade Control Pilot Valve	6-6-1
6-7 Solenoid Valve for P.T.O. Operation	6-7-1
6-8 Pilot Check Valve (For Quick Coupler Circuit)	6-8-1

CHAPTER 7

ADJUSTMENT AND REPAIR

7-1 Electric Equipment of Machine	7-1-1
7-1-1 Parts Layout of Electrical Equipment	7-1-1
7-1-2 Monitor and Alarm Systems	7-1-3
7-1-3 Wiring Diagram	7-1-6
7-1-4 Circuit Description of Engine Start and Stop, and Battery Charging	7-1-7
7-1-5 Removal and Reinstallation of Engine	7-1-9
7-1-6 Removal and Reassembly of Starter Motor	7-1-18
7-1-7 Removal and Reassembly of Drive Belts for Generator and Compressor	7-1-19
7-2 Undercarriage	7-2-1
7-2-1 Outline	7-2-1
7-2-2 Main Parts	7-2-1
7-2-3 Points of Reassembly (Rubber Track)	7-2-2
7-2-4 Points of Reassembly (Steel Track)	7-2-3
7-2-5 Removal and Reinstallation of Track	7-2-4
7-2-6 Removal and Reinstallation of Steel Track	7-2-5
7-2-7 Disassembly and Reassembly of Front Idler	7-2-8
7-2-8 Disassembly and Reassembly of Track Roller	7-2-10
7-2-9 Installation of Floating Seal	7-2-12
7-2-10 Drawings of Jigs	7-2-13
7-2-11 Disassembly and Reassembly of Carrier Roller	7-2-15
7-3 Controls	7-3-1
7-3-1 Control Train	7-3-1
7-3-2 Mechanical Control Linkage	7-3-2
7-3-3 Adjustment of Travel Levers	7-3-4
7-3-4 Adjustment of Boom Swing Pedal	7-3-5
7-3-5 Adjustment of Lock Lever	7-3-6
7-3-6 Adjustment Procedure of Travel Alarm Switch	7-3-7
7-3-7 Adjustment Procedure of P.T.O. Pedal	7-3-8
7-3-8 Adjustment Procedure of P.T.O. Pedal Lock	7-3-8
7-3-9 Adjustment of Accelerator Lever	7-3-9
7-4 Swing Bearing	7-4-1
7-5 Hydraulic Equipment	7-5-1
7-5-1 Removal and Reinstallation of Hydraulic Pump	7-5-1
7-5-2 Removal and Reinstallation of Control Valve	7-5-3
7-5-3 Removal and Reinstallation of Swing Motor	7-5-6
7-5-4 Removal and Reinstallation of Swivel Joint	7-5-9
7-5-5 Disassembly and Reassembly of Swivel Joint	7-5-13
7-5-6 Disassembly and Reassembly of Hydraulic Cylinders	7-5-16
7-5-7 Hydraulic Oil Tank	7-5-20
7-5-8 Piping Layout	7-5-26
7-6 Work Implements	7-6-1
7-6-1 Removal and Reinstallation of Work Implements	7-6-1
7-6-2 Quick Coupler	7-6-10

7-7 Cabin	7-7-1
7-7-1 Cabin	7-7-1

CHAPTER 8

Periodic Inspection and Servicing

8-1 List of Periodic Inspection and Servicing.....	8-1
--	-----

CHAPTER 9

FUEL, LUBE OIL AND GREASE RECOMMENDED

9. Fuel, Lube Oil and Grease Recommended	9-1
--	-----

CHAPTER 10

TROUBLESHOOTING

10-1 Non-breakdowns	10-1-1
10-1-1 Natural Release of Bucket.....	10-1-1
10-1-2 Discontinuous Arm Movement	10-1-1
10-1-3 Drifting of Upperstructure on Quick Travel Operation	10-1-2
10-1-4 Thermal Shock of Travel Motor	10-1-3
10-1-5 Elongation of Boom Swing Cylinder on 70 degrees Swing	10-1-4
10-1-6 Telescopic Motion of Boom Swing Cylinder with Lock Lever Set to Lock Position	10-1-5
10-1-7 Time Lag on Travel Speed Switching.....	10-1-6
10-1-8 Fluctuation in Oil Level of Hydraulic Oil Tank Due to Temperature Change	10-1-7
10-1-9 Operation of Quick Coupler Cylinder (for Quick Coupler Type)	10-1-8
10-2 Troubleshooting	10-2-1
10-2-1 Machine and Engine.....	10-2-1
10-2-2 Electrical Equipment on Panel	10-2-23

CHAPTER 11

REFERENCE DATA

11-1 Dimensions and Specifications for Attachment.....	11-1
--	------

Please Click Here To Download The Complete Manual
Download Other Manuals
If Having Any Questions Feel Free To Contact us

admin@servicemanualbit.com