YAMAHA

SUPPLEMENTARY SERVICE MANUAL

MZ300
MZ360

LIT-19616-01-81

7CR-F8197-10

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and new data for the MZ300 and MZ360.
For complete information on service procedures, it is necessary to use this Supplementary Service Manual together with following manual:

MZ300/MZ300R, MZ360/MZ360R
SERVICE MANUAL:
7RJ-28197-N0 (310069). April 1996

This manual was written by the YAMAHA MOTOR POWERED PRODUCTS CO., LTD. primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha Multi-Purpose Engine have a basic understanding of the mechanical precepts and procedures inherent to Multi-Purpose Engine repair technology. Without such knowledge, attempted repairs or service to this model may render it unfit for use and/or unsafe.
YAMAHA MOTOR POWERED PRODUCTS CO., LTD. is continually striving to further improve all models manufactured by Yamaha. Modifications and significant changes in specifications or procedures will be forwarded to all Authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.

MZ300/MZ360
SUPPLEMENTARY SERVICE MANUAL

1st Edition, February 2012

Printed in USA
LIT-19616-01-81

HOW TO USE THIS MANUAL

PARTICULARLY IMPORTANT INFORMATION

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

⚠
This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ WARNING
A WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

NOTICE
A NOTICE indicates special precautions that must be taken to avoid damage to the machine or other property.

TIP
A TIP provides key information to make procedures easier or clearer.

MANUAL FORMAT

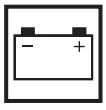
The procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and inspection operations.
In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required will follow the symbol, e.g.,

- Bearings
  Pitting/damage → Replace.

EXPLODED DIAGRAM

Each chapter provides exploded diagrams before each disassembly section for ease in identifying the correct disassembly and assembly procedures.

ILLUSTRATED SYMBOLS
(Refer to the illustration)

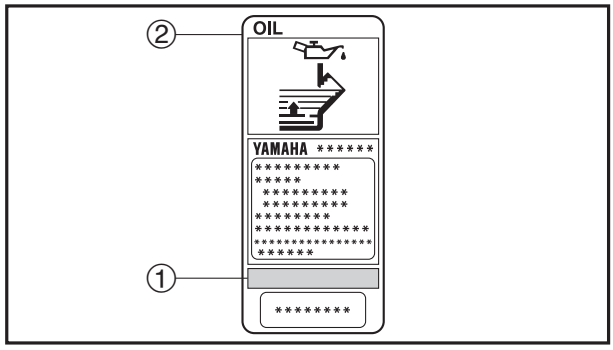
SYMBOL	DEFINITION	SYMBOL	DEFINITION
	General information		Wear limit, clearance
	Periodic inspections and adjustments		Engine speed
	Engine		Electrical data
	Electrical		Molybdenum disulfide oil
	Specifications		Engine oil
	Special tool		Lithium-soap base grease
	Filling fluid		Apply locking agent (LOCTITE®).
	Lubricant	New	Replace the part with a new one.
	Tightening torque		Molybdenum disulfide grease

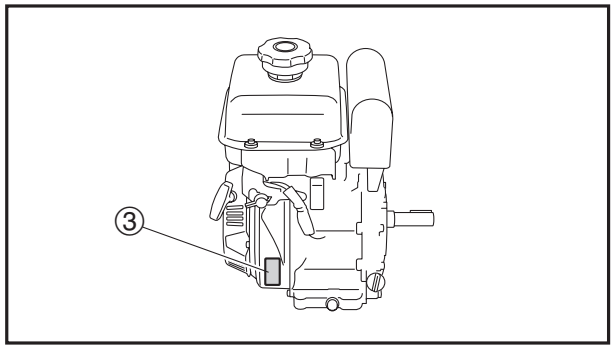
INDEX

CHAPTER 1.
GENERAL INFORMATION

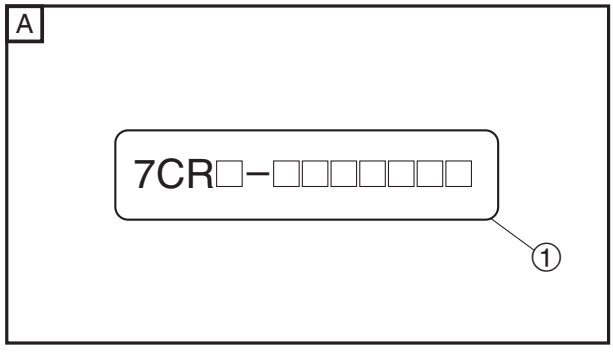
CHAPTER 2.
PERIODIC INSPECTIONS AND ADJUSTMENTS

CHAPTER 3.
SPECIFICATIONS

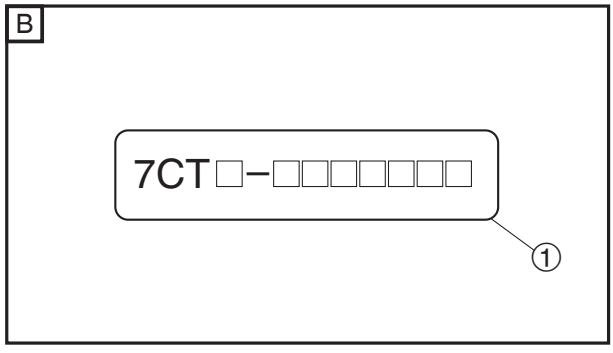




A



B



GENERAL INFORMATION

MACHINE IDENTIFICATION

SERIAL NUMBER

The serial number ① is printed on the label ② affixed to the position ③ of the Multi-Purpose Engine as shown in the illustration.

TIP

The first four digits identifies a model, and the remaining digits indicates a production number.

STARTING SERIAL NUMBER

	Model	Code	Serial number
A	MZ300 A2	7CRJ	7CRJ-1000101
B	MZ360 A2	7CTJ	7CTJ-1000101

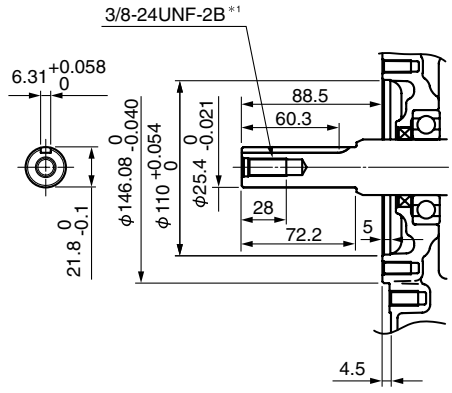
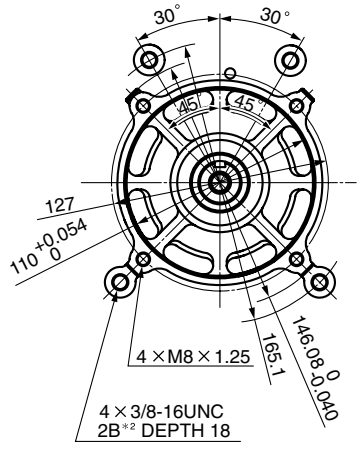
TIP

Designs and specifications are subject to change without notice.

DIMENSIONS

DIMENSION CHART

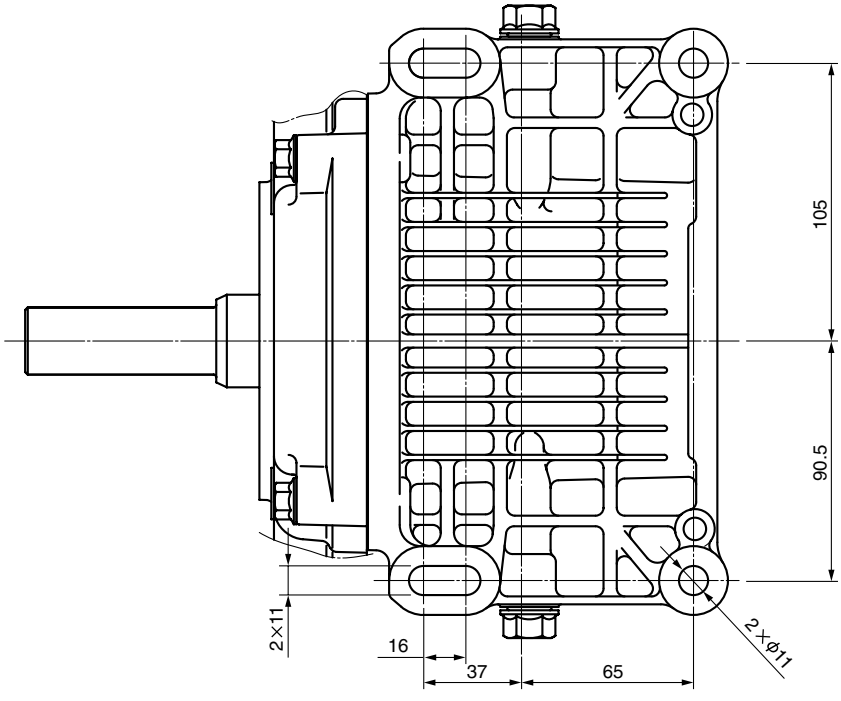
Unit: mm

Model (Code)	PTO shaft dimensions (Type)	Mounting face dimensions
MZ300 A2 (7CRJ)		
MZ360 A2 (7CTJ)		

*1: UNF; Unified fine thread (Unit: in)
*2: UNC; Unified coarse thread (Unit: in)

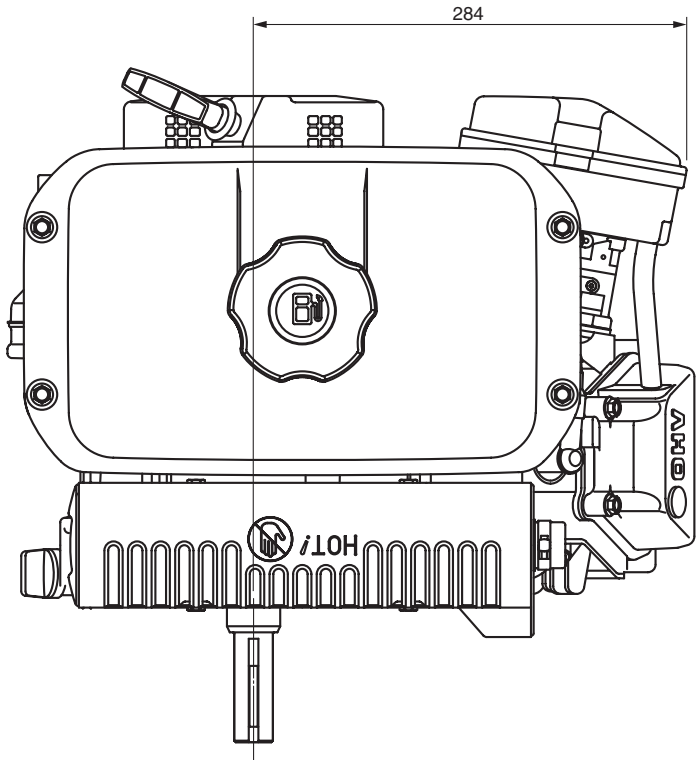
MOUNTING BASE

(Unit: mm)



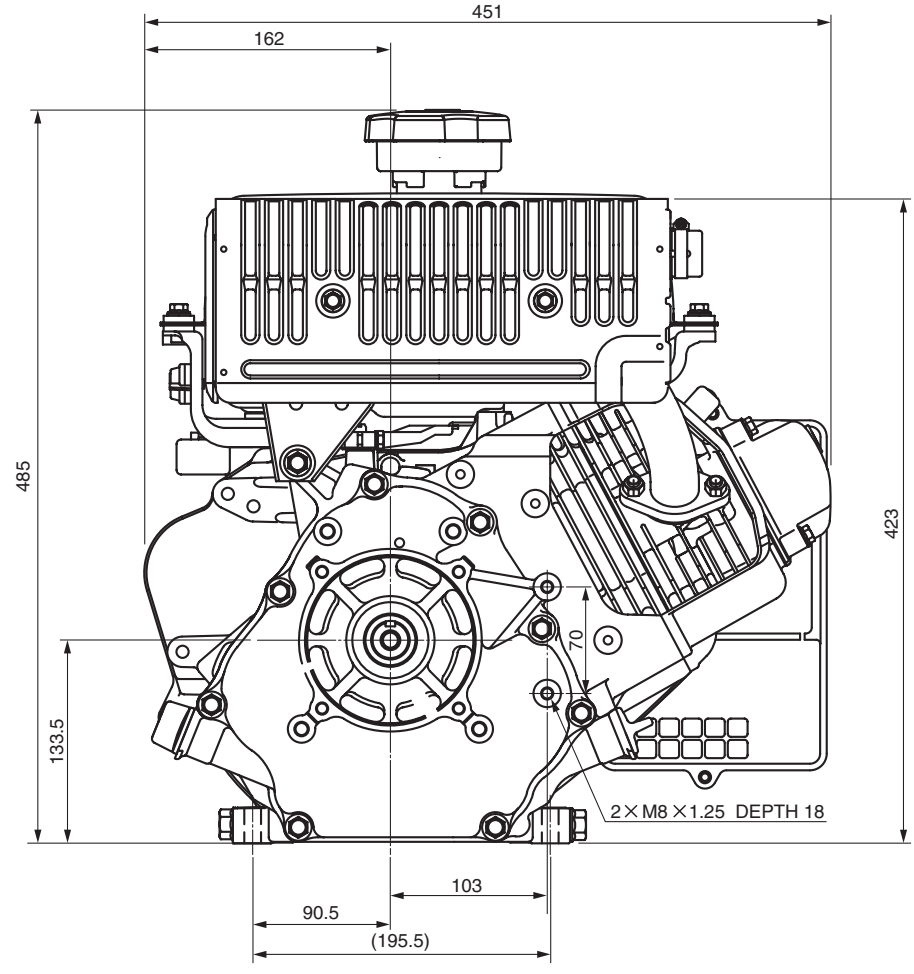
TOP

(Unit: mm)



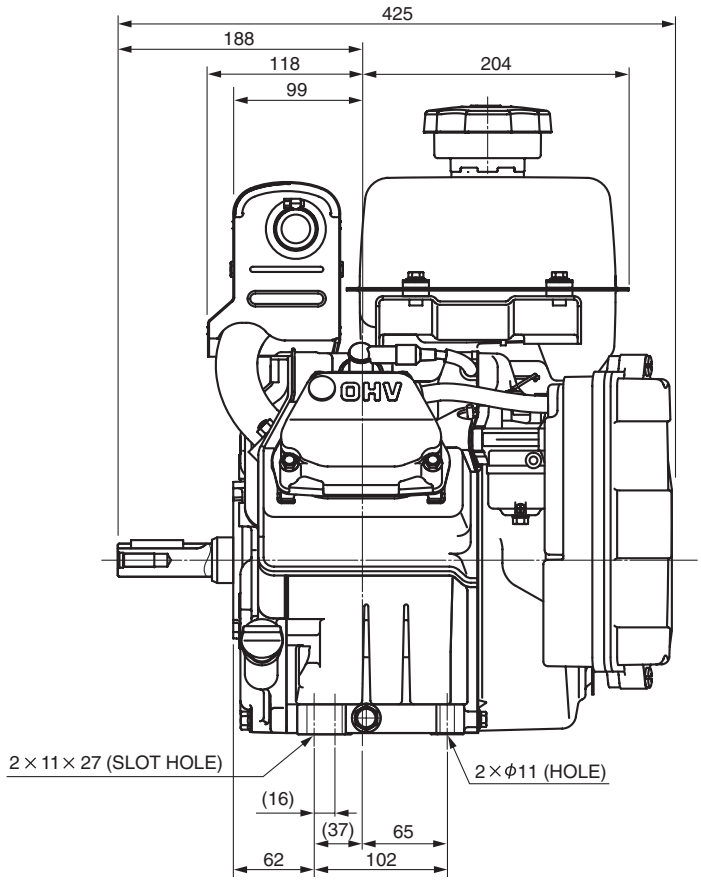
SIDE

(Unit: mm)



FRONT

(Unit: mm)

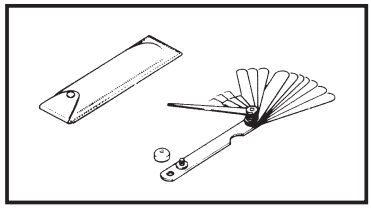


SPECIAL TOOLS AND TESTERS

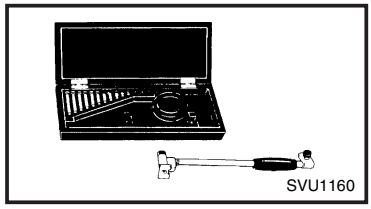
The proper special tools are necessary for complete and accurate tune-up and assembly. Using the correct special tool will help prevent damage caused by the use of improper tools or improvised techniques.

TIP

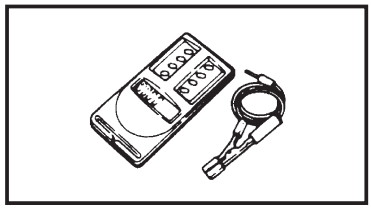
- For U.S.A. and Canada, use part number starting with “YM-”, “YU-”, or “ACC-”.
- For others, use part number starting with “90890-”.



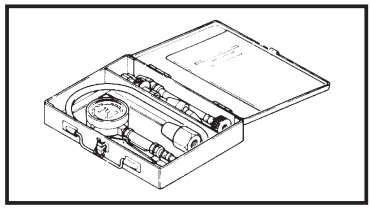
1. Narrow gauge set
   P/N. YM-34483
   Thickness gauge
   P/N. 90890-03079
   This gauge is used to adjust valve clearance, piston clearance and piston ring end gap.



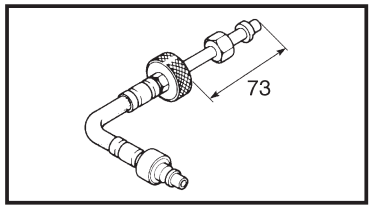
2. Cylinder gauge
   Commercially obtainable
   This instrument is used for checking cylinder bore size and condition.



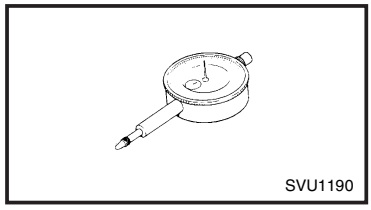
3. Digital tachometer
   P/N. YU-39951-B, 90890-06760
   This tool is needed for observing engine r/min.



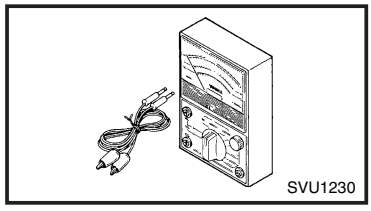
4. Engine compression tester
   P/N. YU-33223
   Compression gauge
   P/N. 90890-03081
   This tool is used for checking engine compression.



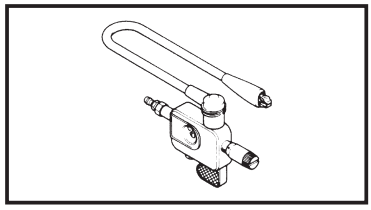
5. Extension
   P/N. YU-33223-3, 90890-04082
   This tool is used for checking engine compression.



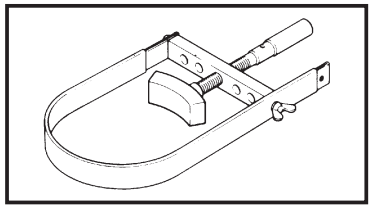
6. Dial indicator gauge
   P/N. YU-03097
   Dial gauge
   P/N. 90890-03097
   This instrument is used for checking crankshaft side clearance.



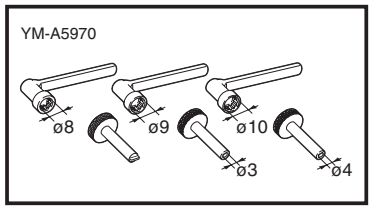
7. Analog pocket tester
   P/N. YU-03112-C
   Pocket tester
   P/N. 90890-03112
   This instrument is necessary for checking the electrical system.



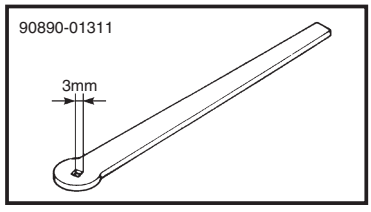
8. Oppama pet-4000 spark checker
   P/N. YM-34487
   Ignition checker
   90890-06754
   This instrument is necessary for checking the ignition system components.

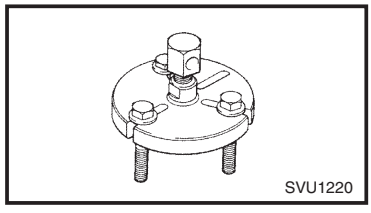


9. Primary clutch holder
   P/N. YS-01880-A
   Sheave holder
   P/N. 90890-01701
   This tool is necessary for holding the magneto rotor.

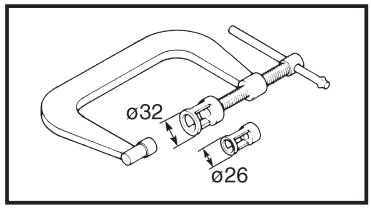


10. Six piece tappet set
    P/N. YM-A5970
    Tappet adjusting tool
    P/N. 90890-01311
    This tool is used to adjust the valve clearances.

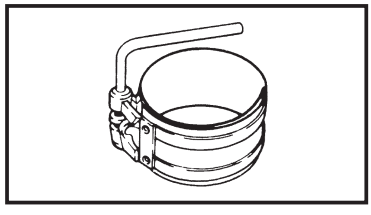




11. Heavy duty puller
    P/N. YU-33270-B
    Flywheel puller
    P/N. 90890-01362
    This tool is necessary for removing the magneto rotor.



12. Valve spring compressor
    P/N. YM-01253, 90890-01253
    This tool is used to remove the valve springs.



13. Piston ring compressor
    P/N. YM-08037, 90890-05158
    This tool is used to compress the piston rings when installing the piston.

PERIODIC INSPECTIONS AND ADJUSTMENTS

INTRODUCTION

This chapter includes all information necessary to perform recommended inspections and adjustments. These preventive maintenance procedures, if followed, will ensure more reliable machine operation and a longer service life. The need for costly overhaul work will be greatly reduced. This information applies to machines already in service as well as new machines that are being prepared for sale. All service technicians should be familiar with this entire chapter.

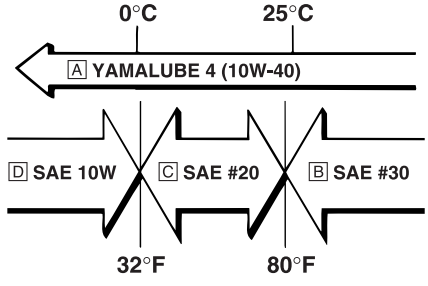
PERIODIC MAINTENANCE/LUBRICATION INTERVALS

No.	Item	Remarks	Pre-Operation check (daily)	Initial	Every		
				1 month or 20 hr	3 months or 50 hr	6 months or 100 hr	12 months or 300 hr
1.	Spark plug	Check condition, adjust gap and clean. Replace if necessary.			●		
2.	Valve clearance	Check and adjust when engine is cold.					●
3.	Crankcase breather system	Check breather hose for cracks or damage. Replace if necessary.					●
4.	Idle speed	Check and adjust engine idle speed.					●
5.	Exhaust system	Check for leakage. Retighten or replace gasket if necessary.	●				
		Check spark arrester. Clean/replace if necessary.					●
6.	Engine oil	Check oil level.	●				
		Replace.		●		●	
7.	Air filter	Clean. Replace if necessary.			●		
8.	Fuel filter	Clean fuel petcock and fuel tank filter. Replace if necessary.				●	
9.	Fuel line	Check fuel hose for cracks or damage. Replace if necessary.	●				
10.	Choke lever	Check choke operation.	●				
11.	Cooling system	Check for fan damage.					●
12.	Starting system	Check recoil starter operation.	●				
13.	Muffler screen	Clean. Replace if necessary.				●	
14.	Spark arrester	Check condition. Clean and replace if necessary.				●	

No.	Item	Remarks	Pre-Operation check (daily)	Initial	Every		
				1 month or 20 hr	3 months or 50 hr	6 months or 100 hr	12 months or 300 hr
15.	Decarbonization	More frequency if necessary.					•
16.	Fittings/ fasteners	Check all fittings and fasteners. Correct if necessary.				•	

SPECIFICATIONS

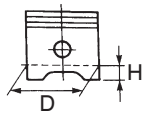
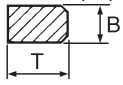
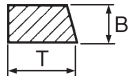
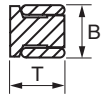
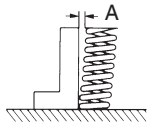
GENERAL SPECIFICATIONS

Model name	MZ300	MZ360
Model code number	7CRJ	7CTJ
Dimensions:		
Overall length mm (in)	425 (16.7)	
Overall width mm (in)	451 (17.8)	
Overall height mm (in)	485 (19.1)	
Engine:		
Type	Air cooled 4-stroke gasoline OHV	
Rated out put kW (PS) / r/min	6.8 (9.2) / 3600	7.6 (10.3) / 3600
Starting method	Recoil starter	
Ignition timing	BTDC 23° ± 3°	
Fuel tank:		
Fuel tank capacity L (US gal, Imp gal)	6.1 (1.61, 1.34)	
Engine oil:		
Engine oil quantity L (US qt, Imp qt)	1.1 (1.16, 0.97)	
Recommended engine oil	A YAMALUBE 4 (10W-40), SAE 10W-30 or 10W-40 B SAE #30 C SAE #20 D SAE 10W 	
Recommended engine oil grade	API service SE type or higher	

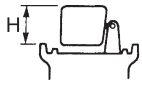
3

MAINTENANCE SPECIFICATIONS

ENGINE

Model name	MZ300	MZ360
Model code number	7CRJ	7CTJ
Piston: mm (in)		
Piston skirt "D" 	77.960–77.980 (3.0693–3.0701)	84.977–84.998 (3.3456–3.3463)
<Limit>	77.904 (3.0671)	84.921 (3.3433)
Piston pin hole inside diameter	20.004–20.015 (0.7874–0.7880)	
Piston ring: mm (in)		
Top ring 		
Dimensions "B × T"	1.50 × 3.40 (0.059 × 0.134)	1.50 × 3.60 (0.059 × 0.142)
End gap	0.20–0.35 (0.008–0.014)	
<Limit>	0.9 (0.0354)	
2nd ring 		
Dimensions "B × T"	1.50 × 3.40 (0.059 × 0.134)	1.50 × 3.60 (0.059 × 0.142)
End gap	0.30–0.45 (0.012–0.018)	0.20–0.35 (0.008–0.014)
<Limit>	0.9 (0.0354)	
Oil ring 		
Dimensions "B × T"	2.50 × 2.80 (0.098 × 0.110)	3.0 × 3.0 (0.118 × 0.118)
Valve: mm (in)		
Valve clearance (cold)		
IN	0.07 (0.003)	
EX	0.07 (0.003)	
Valve spring: mm (in)		
Set length		
IN	29.0 (1.1417)	
EX	29.0 (1.1417)	
Set force 		
IN	10.0 kg (22.0 lb)	
EX	10.0 kg (22.0 lb)	
Tilt limit "A"	1.6 (0.06)	

Model name	MZ300	MZ360
Model code number	7CRJ	7CTJ
Carburetor:		
Type	BV24-18	BV26-20
Bore size mm	ø24	ø26
Main jet	#100	#112.5
Pilot jet	#53.8	#57.5
Pilot screw	1-1/2	1-3/4
Valve seat size mm	ø1.8	
Float height “H” mm (in)	14.9 (0.59)	



ELECTRICAL

Model name	MZ300	MZ360
Model code number	7CRJ	7CTJ
Ignition system:		
Spark plug cap resistance	3.75–6.25 kΩ	
TCI:		
Primary coil resistance	1.2 Ω	
Secondary coil resistance	11.7 kΩ	

PRINTED IN USA
(E)