



**SUPPLEMENTARY
SERVICE MANUAL**

**MZ125/MZ125R
MZ175/MZ175R
MZ200/MZ200R**

7NN-F8197-E1

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and new data for the MZ125/MZ125R, MZ175/MZ175R, MZ200/MZ200R.

For complete information on service procedures, it is necessary to use this Supplementary Service Manual together with following manual:

<p>MZ125, MZ175 SERVICE MANUAL: 7NN-28197-E0 (310083)</p>
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TIP

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.

<p>MZ125/MZ125R, MZ175/MZ175R, MZ200/MZ200R SUPPLEMENTARY SERVICE MANUAL ©2010 by YAMAHA MOTOR POWERED PRODUCTS CO., LTD. 1st Edition, December 2010 All rights reserved. Any reprinting or unauthorized use without the written permission of YAMAHA MOTOR POWERED PRODUCTS CO., LTD. is expressly prohibited.</p>
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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.







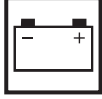










In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required will follow the symbol, e.g.,

- 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

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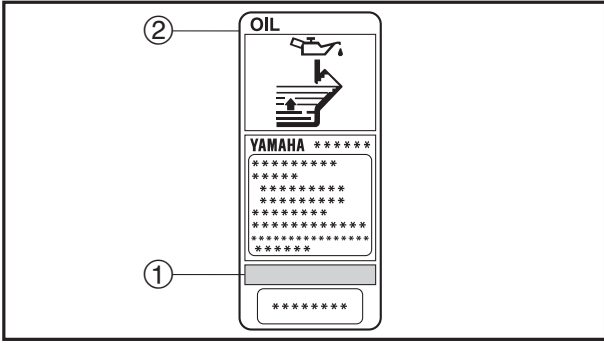
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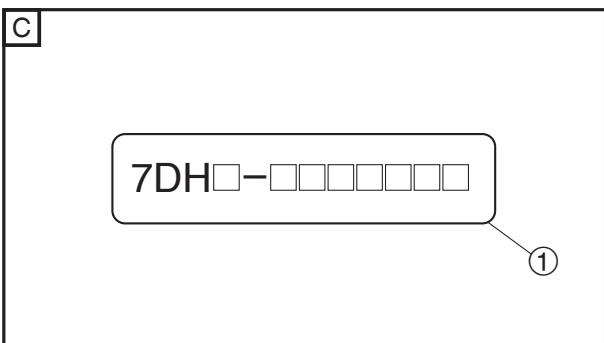
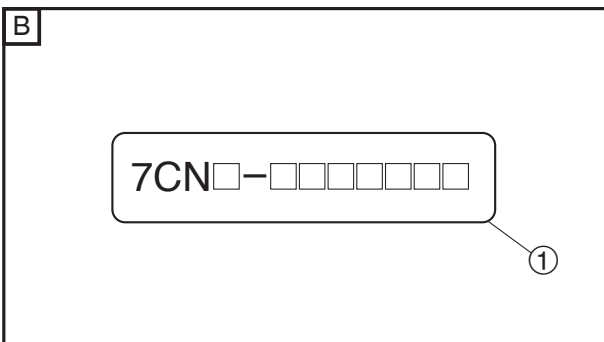
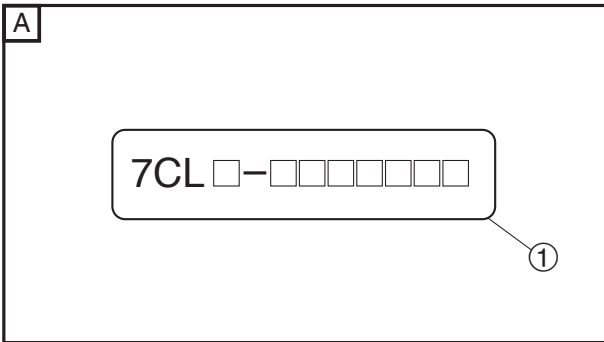
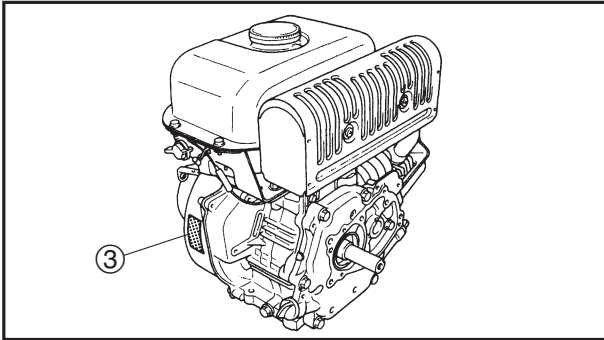


**GENERAL INFORMATION
MACHINE IDENTIFICATION
SERIAL NUMBER**

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	MZ125 A2B	7CL1	7CL1-1000101
	MZ125 B1T	7CL2	7CL2-1000101
	MZ125 B2B	7CL2	7CL2-2000101
	MZ125 K2-60	7CLB	7CLB-1000101
	MZ125 K2-50	7CLB	7CLB-2000101
	MZ125 Cr2B	7CLF	7CLF-1000101
B	MZ175 A1	7CN1	7CN1-1000101
	MZ175 A2B	7CN1	7CN1-2000101
	MZ175 A2C	7CN1	7CN1-3000101
	MZ175 B1T	7CN2	7CN2-1000101
	MZ175 B2B	7CN2	7CN2-2000101
	MZ175 B2C	7CN2	7CN2-3000101
	MZ175 B2BK	7CN2	7CN2-4000101
	MZ175 E2	7CN5	7CN5-1000101
	MZ175 L2U-EF	7CNC	7CNC-3000101
	MZ175 K2U	7CNB	7CNB-3000101
MZ175 Br1	7CNF	7CNF-1000101	
MZ175 Br2B	7CNF	7CNF-2000101	
C	MZ200 B1AT	7DH1	7DH1-1000101
	MZ200 Br1AT	7DHF	7DHF-1000101

TIP

Designs and specifications are subject to change without notice.

DIMENSION CHART (STANDARD MODEL, MZ125/ MZ175/MZ200)

**GEN
INFO**



DIMENSION CHART (STANDARD MODEL, MZ125/MZ175/MZ200)

Unit: mm

Model (Code)	PTO shaft dimensions (Type)	Mounting face dimensions (Type)
MZ125 A2B (7CL1) MZ175 A1 (7CN1) MZ175 A2B (7CN1) MZ175 A2C (7CN1)	<p>(A)</p>	
MZ175 E2 (7CN5)	<p>(E)</p>	
MZ125 K2-60 (7CLB) MZ125 K2-50 (7CLB) MZ175 K2U (7CNB)	<p>(K)</p>	
MZ125 B1T (7CL2) MZ125 B2B (7CL2) MZ175 B1T (7CN2) MZ175 B2B (7CN2) MZ175 B2C (7CN2) MZ175 B2BK (7CN2) MZ200 B1AT (7DH1)	<p>(B)</p>	
MZ175 L2U-EF (7CNC)	<p>(L)</p>	

*: UNF; Unified fine thread (Unit: in)

DIMENSION CHART (REDUCTION MODEL, MZ125R/ MZ175R/MZ200R)/MOUNTING BASE DIMENSION

**GEN
INFO**



DIMENSION CHART (REDUCTION MODEL, MZ125R/MZ175R/MZ200R)

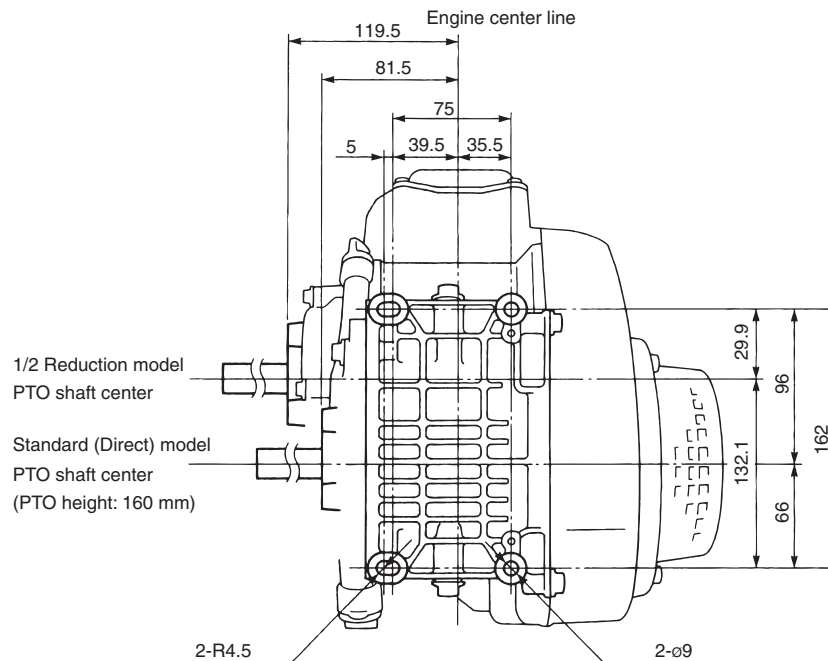
Unit: mm

Model (Code)	PTO shaft dimensions (Type)	Mounting face dimensions
MZ125 Cr2B (7CLF)	<p style="text-align: center;">(Cr)</p>	
MZ175 Br1 (7CNF) MZ175 Br2B (7CNF) MZ200 Br1AT (7DHF)	<p style="text-align: center;">(Br)</p>	

*: UNF; Unified fine thread (Unit: in)

MOUNTING BASE DIMENSION

(Unit: mm)





PERIODIC INSPECTIONS AND ADJUSTMENTS

INTRODUCTION

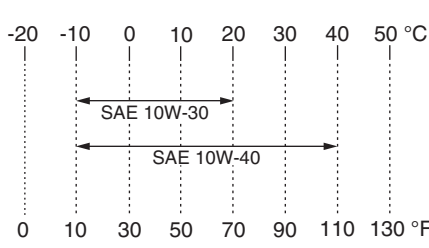
This chapter includes all information necessary to perform recommended inspections and adjustments. These preventive maintenance procedures, if followed, will ensure more reliable machine operation and a longer service life. The need for costly overhaul work will be greatly reduced. This information 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)	Every			
				Initial 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.	Decarbonization	More frequency if necessary.					•
15.	Fittings/fasteners	Check all fittings and fasteners. Correct if necessary.				•	

SPECIFICATIONS

GENERAL SPECIFICATIONS

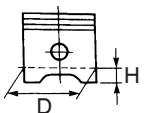
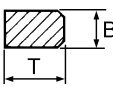
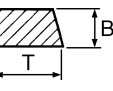

Model name	MZ125	MZ125R	MZ175	MZ175R	
Model code number	7CL		7CN		
Dimensions:					
Overall length	mm (in)	323 (12.7)	353 (13.9)	315 (12.4)	353 (13.9)
Overall width	mm (in)	352 (13.9)			
Overall height	mm (in)	370 (14.6)			
Weight	kgf (lbf)	15.5 (34)	16.5 (36)	16.0 (35)	17 (38)
Engine:	Air cooled 4-stroke gasoline OHV				
Type	Single cylinder				
Cylinder arrangement	Single cylinder				
Displacement	L (cm ³)	0.123 (123)		0.171 (171)	
Bore × Stroke	mm (in)	56.0 × 50.0 (2.20 × 1.97)		66.0 × 50.0 (2.60 × 1.97)	
Compression ratio		8.3 : 1		8.5 : 1	
Rated output	kW (PS) / r/min	2.2 (3.0) / 3600	2.2 (3.0) / 1800	3.3 (4.5) / 3600	3.3 (4.5) / 1800
Rated engine speed	r/min	3600	1800	3600	1800
Starting method	Recoil starter				
Ignition system	TCI				
Ignition timing	BTDC 23° ± 3°				
Spark plug type	BPR4ES (NGK)				
Spark plug gap	mm (in)	0.7–0.8 (0.028–0.031)			
Fuel tank:	Unleaded regular gasoline				
Recommended fuel	Unleaded regular gasoline				
Fuel tank capacity	L (US gal, Imp gal)	4.5 (1.18, 0.99)			
Engine oil:	0.6 (0.63, 0.53)				
Engine oil quantity	L (US qt, Imp qt)	0.6 (0.63, 0.53)			
Recommended engine oil type	YAMALUBE SAE 10W-30 or 10W-40				
					
Recommended engine oil grade	API service SE type or higher JASO standard MA				

GENERAL SPECIFICATIONS



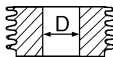
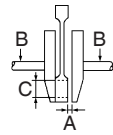
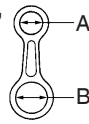
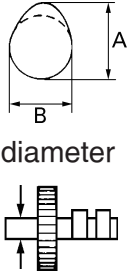
Model name	MZ200	MZ200R
Model code number	7DH	
Dimensions:		
Overall length mm (in)	331 (13.0)	369 (14.5)
Overall width mm (in)	362 (14.3)	
Overall height mm (in)	370 (14.6)	
Weight kgf (lbf)	17.7 (39)	18.7 (41)
Engine:		
Type	Air cooled 4-stroke gasoline OHV	
Cylinder arrangement	Single cylinder	
Displacement L (cm ³)	0.192 (192)	
Bore × Stroke mm (in)	70.0 × 50.0 (2.76 × 1.97)	
Compression ratio	8.4 : 1	
Rated out put kW (PS) / r/min	3.8 (5.2) / 3600	3.8 (5.2) / 1800
Rated engine speed r/min	3600	1800
Starting method	Recoil starter	
Ignition system	TCI	
Ignition timing	BTDC 28° ± 3°	
Spark plug type	BPR4ES (NGK)	
Spark plug gap mm (in)	0.7–0.8 (0.028–0.031)	
Fuel tank:		
Recommended fuel	Unleaded regular gasoline	
Fuel tank capacity L (US gal, Imp gal)	4.5 (1.18, 0.99)	
Engine oil:		
Engine oil quantity L (US qt, Imp qt)	0.6 (0.63, 0.53)	
Recommended engine oil type	YAMALUBE SAE 10W-30 or 10W-40	
Recommended engine oil grade	API service SE type or higher JASO standard MA	

**MAINTENANCE SPECIFICATIONS
ENGINE**

Model name	MZ125	MZ125R	MZ175	MZ175R	MZ200	MZ200R
Model code number	7CL		7CN		7DH	
Piston: mm (in)						
Piston clearance	0.015–0.040 (0.0006–0.0016)					0.031–0.045 (0.0012–0.0018)
Piston skirt "D" 	55.968–55.997 (2.2035–2.2046)		65.968–65.997 (2.5971–2.5983)		69.961–65.982 (2.7544–2.5977)	
<Limit>	55.9 (2.2008)		65.9 (2.5945)		69.9 (2.7520)	
Measuring point "H"	5.0 (0.197)		10.0 (0.394)			
Oversize 1st	56.25 (2.215)		66.25 (2.608)		70.25 (2.766)	
2nd	56.50 (2.224)		66.50 (2.618)		70.50 (2.776)	
Piston pin hole inside diameter	16.002–16.013 (0.6300–0.6304)					
<Limit>	16.05 (0.63)					
Piston pin: mm (in)						
Piston pin diameter	15.995–16.000 (0.6297–0.6299)					
<Limit>	15.95 (0.628)					
Piston ring: mm (in)						
Top ring 						Barrel face
Type						
Dimensions "B x T"	1.5 x 2.4 (0.059 x 0.094)		1.5 x 2.7 (0.059 x 0.106)			
End gap	0.20–0.40 (0.008–0.016)					
<Limit>	0.9 (0.0354)					
Side clearance	0.04–0.08 (0.0016–0.0031)					
<Limit>	0.1 (0.0039)					
2nd ring 						Taper
Type						
Dimensions "B x T"	1.5 x 2.4 (0.059 x 0.094)		1.5 x 2.7 (0.059 x 0.106)			
End gap	0.20–0.40 (0.008–0.016)					
<Limit>	0.9 (0.0354)					
Side clearance	0.02–0.06 (0.0008–0.0024)					
<Limit>	0.1 (0.0039)					
Oil ring 						3-piece type
Type						
Dimensions "B x T"	2.5 x 2.5 (0.098 x 0.098)		2.5 x 2.8 (0.098 x 0.110)			
End gap	0.20–0.70 (0.008–0.028)					
<Limit>	0.9 (0.0354)					

MAINTENANCE SPECIFICATIONS



Model name	MZ125	MZ125R	MZ175	MZ175R	MZ200	MZ200R
Model code number	7CL		7CN		7DH	
Cylinder: mm (in) Inside diameter "D" 	56.005–56.015 (2.2049–2.2053)		66.005–66.015 (2.5986–2.5990)		70.000–70.020 (2.7559–2.7567)	
Warpage limit	0.05 (0.002)					
Cylinder head: mm (in) Warpage limit	0.1 (0.004)					
Crankshaft: mm (in) Big end side clearance "A" <Limit> Runout "B" <Limit> Crank pin outside diameter "C" <Limit> 			0.2–0.6 (0.008–0.024) 0.8 (0.03) 0.02 (0.0008) 0.04 (0.0016)			
Connecting rod: mm (in) Small end diameter "A" Big end diameter "B" Oil clearance <Limit> 			16.006–16.020 (0.6302–0.6307) 28.000–28.015 (1.1024–1.1030) 0.016–0.046 (0.0006–0.0018) 0.1 (0.0039)			
Camshaft: mm (in) Cam dimension "A" IN "A" EX "B" IN "B" EX Camshaft journal diameter 			26.9 (1.059) 26.68 (1.050) 22.0 (0.866) 22.0 (0.866) 14.965–14.990 (0.5892–0.5902)			

MAINTENANCE SPECIFICATIONS

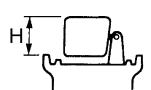
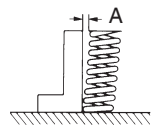


Model name	MZ125	MZ125R	MZ175	MZ175R	MZ200	MZ200R
Model code number	7CL		7CN		7DH	
Valve:	mm (in)					
Valve dimension						
Head diameter "A"						
IN	21.0 (0.83)		24.0 (0.94)		26.0 (1.02)	
EX	19.0 (0.75)		22.0 (0.87)			
Stem diameter "B"						
IN	5.5 (0.22)					
EX	5.5 (0.22)					
Stem length "C"						
IN	64.5 (2.54)		65.9 (2.59)			
EX	64.5 (2.54)		66.2 (2.61)			
Valve face contact width "D"						
IN						
EX	0.7 (0.028)					
<Limit>						
IN	1.7 (0.067)					
EX	1.7 (0.067)					
"θ"	90°					
Valve guide						
Guide inside diameter						
IN	5.5 (0.22)					
EX	5.5 (0.22)					
Stem to guide clearance						
IN	0.04–0.06 (0.0016–0.0024)					
EX	0.06–0.08 (0.0024–0.0031)					
Valve clearance (cold)						
IN	0.1 (0.0039)					
EX	0.1 (0.0039)					
Push rod:	mm (in)					
Vend limit	0.5 (0.02)					

MAINTENANCE SPECIFICATIONS



Model name	MZ125	MZ125R	MZ175	MZ175R	MZ200	MZ200R		
Model code number	7CL		7CN		7DH			
Valve spring: mm (in)								
Free length								
IN							26.5 (1.04)	
EX							26.5 (1.04)	
<Limit>								
IN							25.0 (0.98)	
EX							25.0 (0.98)	
Set length mm (in)								
IN							21.6 (0.85)	
EX							18.9 (0.74)	
Set force								
IN	4.4 kg (9.7 lb)							
EX	7.0 kg (15.4 lb)							
Tilt limit "A" mm (in)	1.6 (0.06)							
Carburetor:								
Type	BV18-11		BV20-15					
Bore size mm	ø11		ø15					
Main jet	#76.3		#91.3		#92.5			
Pilot jet	#38.8		#41.3		#37.5			
Pilot screw	2-1/4 turns out		1-3/4 turns out		2-1/2 turns out			
Valve seat size mm	ø1.8				ø1.2			
Float height "H" mm (in)	16 (0.63)							



ELECTRICAL

Model name	MZ125	MZ125R	MZ175	MZ175R	MZ200	MZ200R
Model code number	7CL	7CL	7CN	7CN	7DH	7DH
Ignition system:						
Ignition timing	BTDC 23° ± 3°				BTDC 28°	
Spark plug type	BPR4ES (NGK)					
Spark plug gap mm (in)	0.7–0.8 (0.028–0.031)					
Spark plug cap resistance	3.75–6.25 kΩ (at 20 °C (68 °F))					
Minimum spark gap mm (in)	6 (0.24)					
TCI:						
Primary coil resistance	1.2 Ω ± 20 % (at 20 °C (68 °F))					
Secondary coil resistance	6.5 kΩ ± 20 % (at 20 °C (68 °F))					
Air gap mm (in)	0.4–0.6 (0.016–0.024)					

TIGHTENING TORQUE/ GENERAL TORQUE SPECIFICATIONS



TIGHTENING TORQUE

Item	Model	MZ200	
		Thread size	Torque Nm (m·kgf, ft·lbf)
Cylinder head		M 8 × 1.25	20 (2.0, 14.5)
Cylinder head cover		M 6 × 1.0	10 (1.0, 7.2)
Crankcase cover		M 8 × 1.25	22 (2.2, 15.9)
Spark plug		M14 × 1.25	20 (2.0, 14.5)
Fan case		M 6 × 1.0	7 (0.7, 5.1)
Connecting rod		M 7 × 1.0	12 (1.2, 8.7)
Flywheel magneto		M14 × 1.5	68 (6.8, 49.2)
Governor arm		M 6 × 1.0	8 (0.8, 5.8)
TCI unit		M 6 × 1.0	10 (1.0, 7.2)
Oil drain plug		M10 × 1.25	17 (1.7, 12.3)
Valve adjuster locknut		M 6 × 0.5	10 (1.0, 7.2)
Engine stop switch		M 6 × 1.0	4.5 (0.45, 3.3)

GENERAL TORQUE SPECIFICATIONS

This chart specifies torque for standard fasteners with standard ISO pitch threads. Torque specifications for special components or assemblies are included in the applicable sections of this book. To avoid warpage, tighten multi-fastener assemblies in a crisscross fashion, in progressive stages, until full torque is reached. Unless otherwise specified, torque specifications call for clean, dry threads. Components should be at room temperature.

Tread size	Tightening torque		
	Nm	m·kgf	ft·lbf
M4	2	0.2	1.4
M5	3	0.3	2.2
M6	7	0.7	5.1
M7	10	1.0	7.2
M8	15	1.5	10.8
M10	30	3.0	21.7
M12	60	6.0	43.4

