

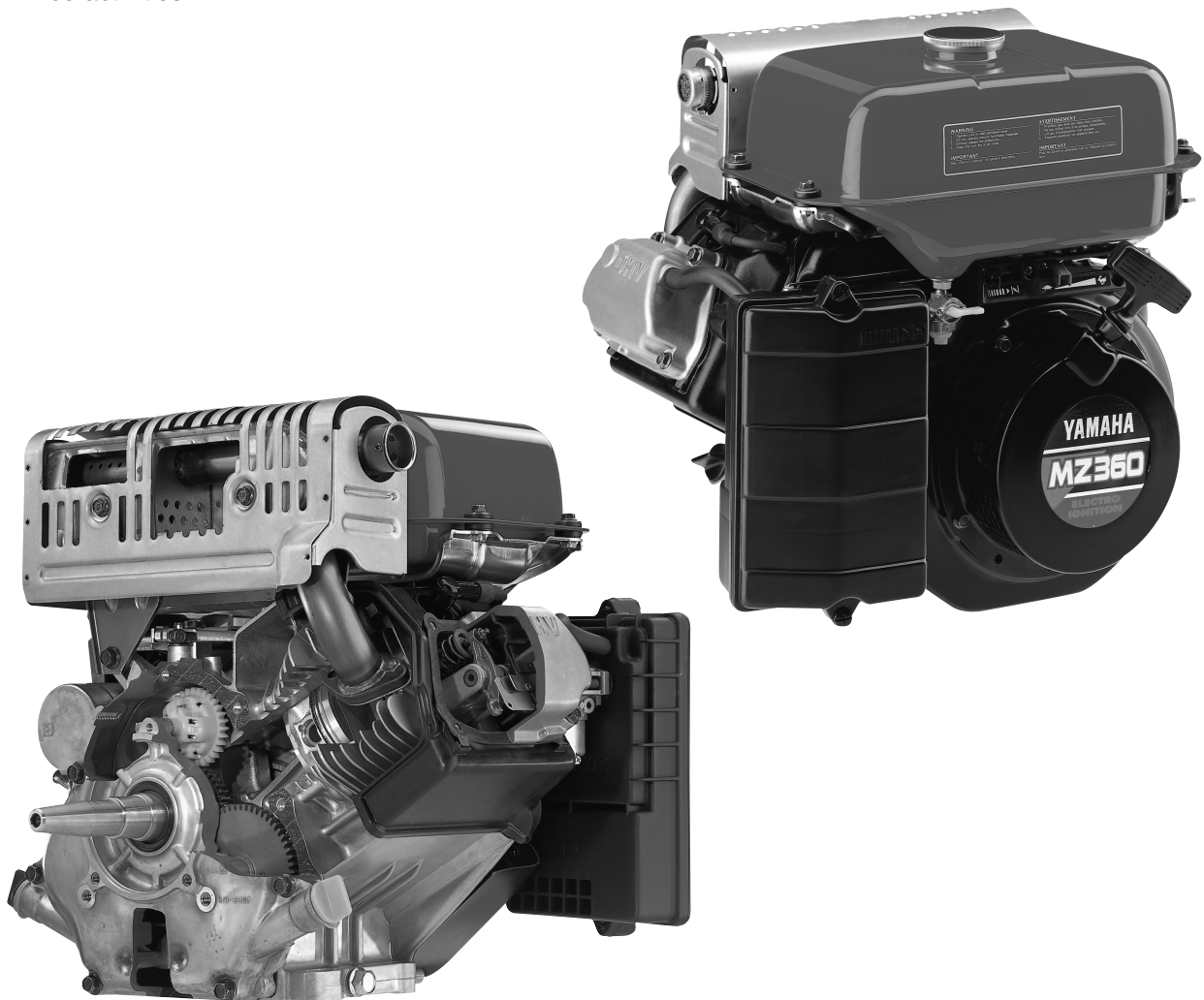


YAMAHA MULTI-PURPOSE ENGINE

MODEL GUIDE

MZ125/MZ175/MZ250/MZ300/MZ360

This guide provides you with information on the MZ series models to give the customers a wider range of choices to fit their specific application needs. It should be used in your sales/after-sales service activities.



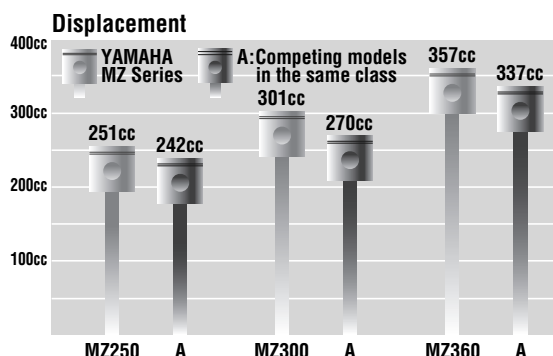
Four practical features

Yamaha's compact engine MZ series sets new standards of high performance, high quality, long running time and quiet operation.

1

High Performance

- Extra power from extra displacement .

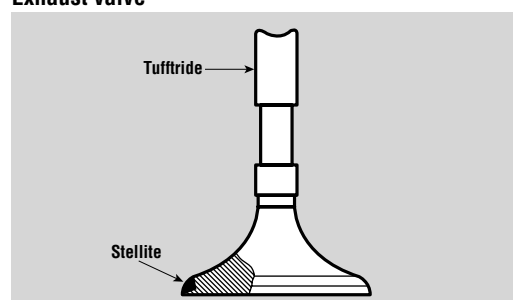


2

High Quality

- Tough Stellite coatings are used on the exhaust valve of all models, and Tuffride coatings are used on the intake and exhaust valves of the MZ250, MZ300 and MZ360.

Exhaust valve

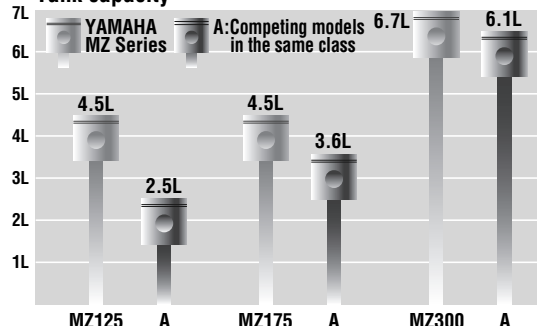


3

Long Running

- Large tank capacity and low fuel consumption.

Tank capacity

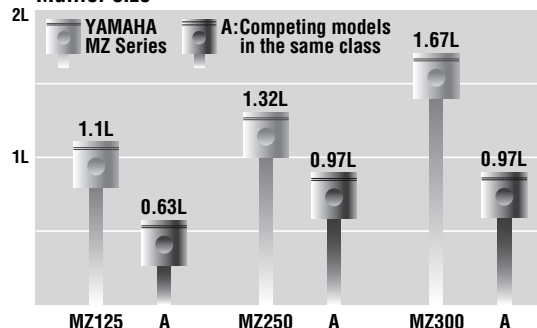


4

Quiet Operation ($\Delta 2\text{dBA}$)

- Large size muffler and air cleaner with modified configuration for lower noise.

Muffler size



Standard Features Options

- Decompression system for easy starting
- Oil warning function
- Spark arrester
- Electronic ignition

STD equipped a resistance type spark plug BPR4ES

Large tank cap

Large capacity fuel tank

- MZ125/175 : 4.5 l
- MZ250 : 6.0 l
- MZ300/360 : 6.7 l

Hi-idle adjusting screw

Easy to pull starter with auto-decompressor

Throttle lever

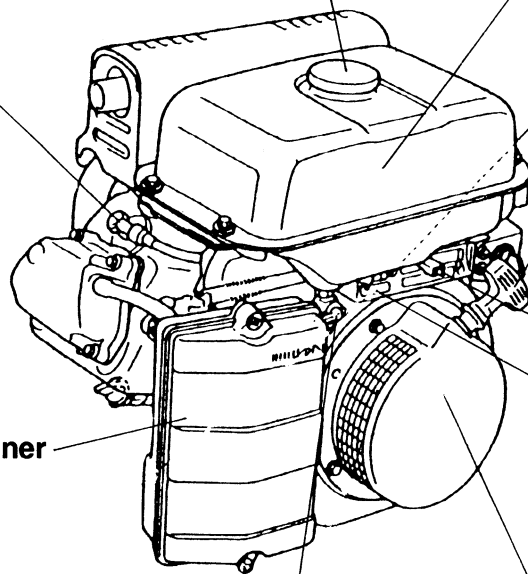
Choke lever

Three types air cleaner

- Silent Semidry
- Silent Dual
- Semi-Cyclone

Reliable T.C.I. ignition

Fuel cock



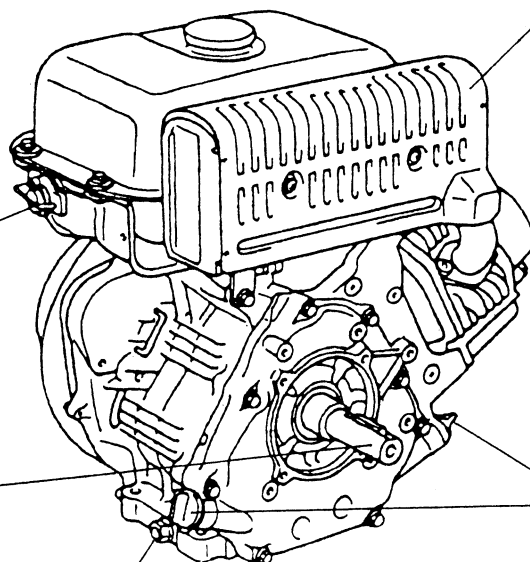
Quiet operation large size muffler

Engine Stop Switch

P.T.O. Shaft with a wide range of specifications

Oil drain plugs on both sides

Engine oil fillers on both sides



Specificatoins

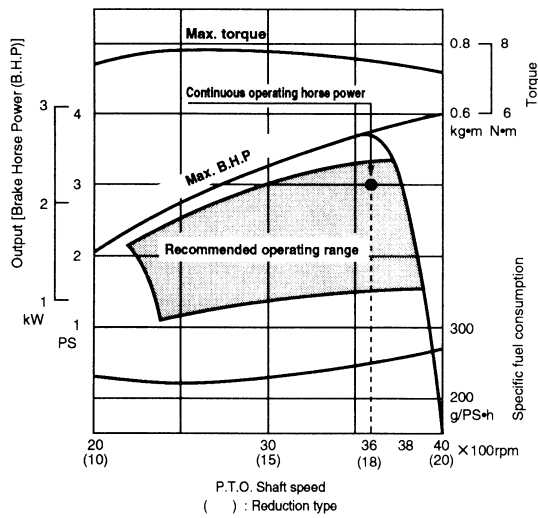
| | MZ125. ()=MZ125R | MZ175. ()=MZ175R | MZ250. ()=MZ250R | MZ300. ()=MZ300R | MZ360. ()=MZ360R |
|----------------------|--|------------------------------|------------------------------|------------------------------|------------------------------|
| Type | 4-stroke, OHV, air-cooled, gasoline engine | | | | |
| Displacement (cc) | 123 | 171 | 251 | 301 | 357 |
| Max.horsepower | | | | | |
| (ps/rpm) | 4.0/4,000(2,000) | 5.5/4,000(2,000) | 8.5/4,000(2,000) | 10.0/4,000(2,000) | 12.0/4,000(2,000) |
| (kw/rpm) | 2.9/4,000(2,000) | 4.0/4,000(2,000) | 6.3/4,000(2,000) | 7.4/4,000(2,000) | 8.8/4,000(2,000) |
| Rated horsepower | | | | | |
| (kw/rpm) | 3.0/3,600(1,800) | 4.5/3,600(1,800) | 6.8/3,600(1,800) | 7.9/3,600(1,800) | 9.7/3,600(1,800) |
| (kw/rpm) | 2.2/3,600(1,800) | 3.3/3,600(1,800) | 5.0/3,600(1,800) | 5.8/3,600(1,800) | 7.1/3,600(1,800) |
| Max.torque | | | | | |
| (kgf-m/rpm) | 0.78/2,500(1.56/1,250) | 1.1/2,500(2.2/1,250) | 1.7/2,500(3.4/2,500) | 2.0/2,500(4.0/1,250) | 2.5/2,500(5.0/1,250) |
| (N-m/rpm) | 7.65/2,500(15.3/1,250) | 10.8/2,500(21.6/1,250) | 16.7/2,500(33.4/1,250) | 19.6/2,500(39.2/1,250) | 24.5/2,500(49.0/1,250) |
| Noise level (dBA/7m) | 71.7 | 73.2 | 74.6 | 74.9 | 78.2 |
| Dimensions | PTO B type | PTO B type | PTO B type | PTO B type | PTO C type |
| LxWxH (mm) | 315x352x370 (353x352x370) | 315x352x370 (353x352x370) | 388x430x428 (424x430x428) | 399x445x441 (450x445x441) | 424x445x441 (450x445x441) |
| Net weight (kg) | 15.5(16.5) | 16.0(17.0) | 26.0(30.0) | 32.0(35.0) | 32.0(35.0) |

General Service Data

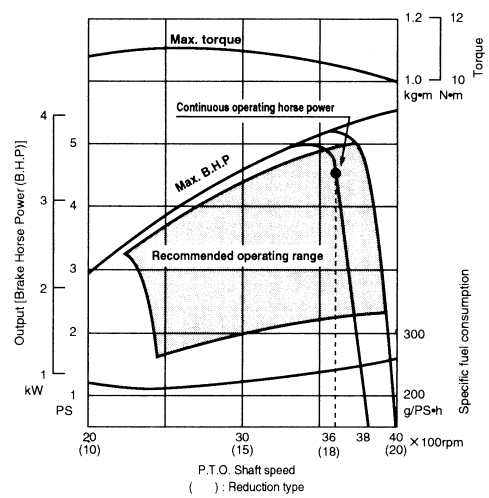
| Fuel | Unleaded Regular Gasoline | | | | |
|---------------------------|--|-----|-------|-----|-------|
| Fuel Tank Capacity(L) | 4.5 | | 6.0 | 6.7 | |
| Fuel Consumption (g/ps-h) | 220 | 210 | 250 | 220 | 220 |
| Electrical | | | | | |
| Spark Plug | BPR4ES | | | | |
| Spark Plug Gap (mm) | 0.7~0.8 | | | | |
| Ignition System | T.C.I. | | | | |
| T.C.I. Air Gap (mm) | 0.5 | | | | |
| Valve Clearance (mm) | | | | | |
| IN: | 0.1 | | | | |
| EX: | 0.1 | | | | |
| Engine Oil (cc) | | | | | |
| Capacity Max. | 600 | | 1,000 | | 1,100 |
| Min. | 300 | | 500 | | 500 |
| Oil Grade | 4-stroke engine oil API service classification SE or SF, if not available, SD | | | | |
| | <p style="text-align: center;"> 0°C 25°C 32°F 80°F C SAE 10W or 10W-30 or 10W-40 B SAE #20 or 10W-30 or 10W-40 A SAE #30 or 10W-30 or 10W-40 </p> | | | | |

PERFORMANCE CURVE

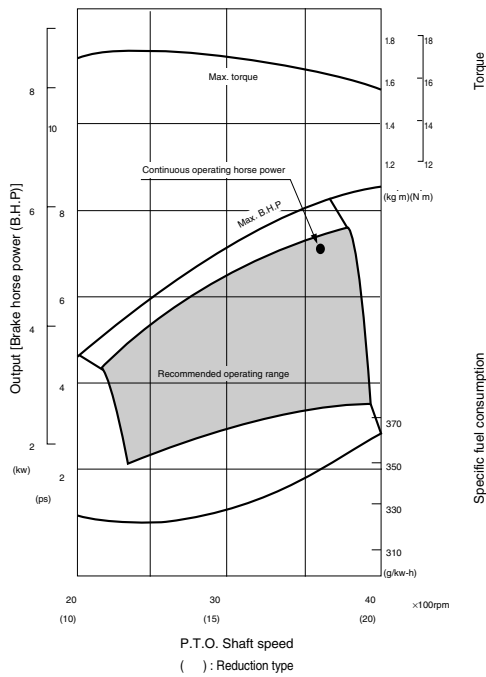
MZ125



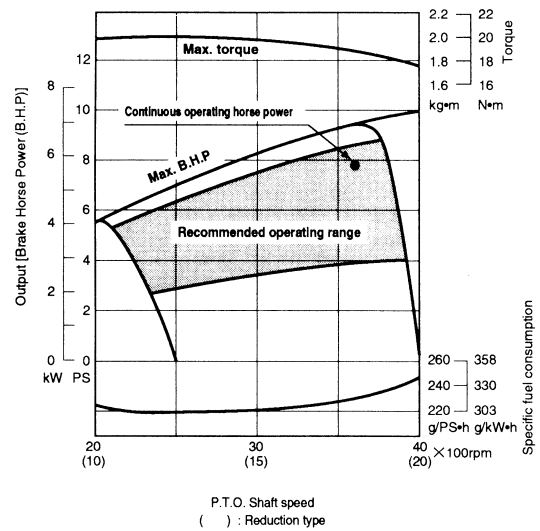
MZ175



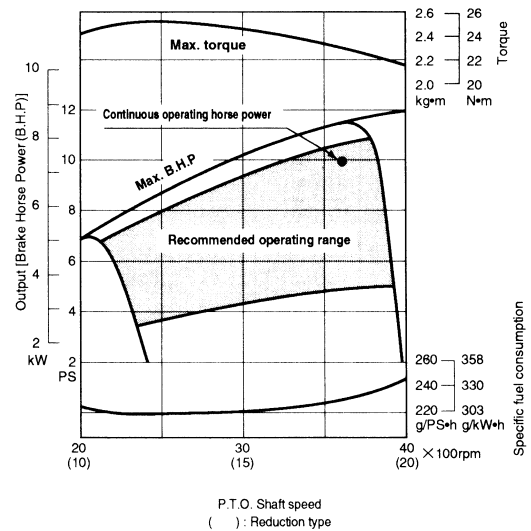
MZ250



MZ300

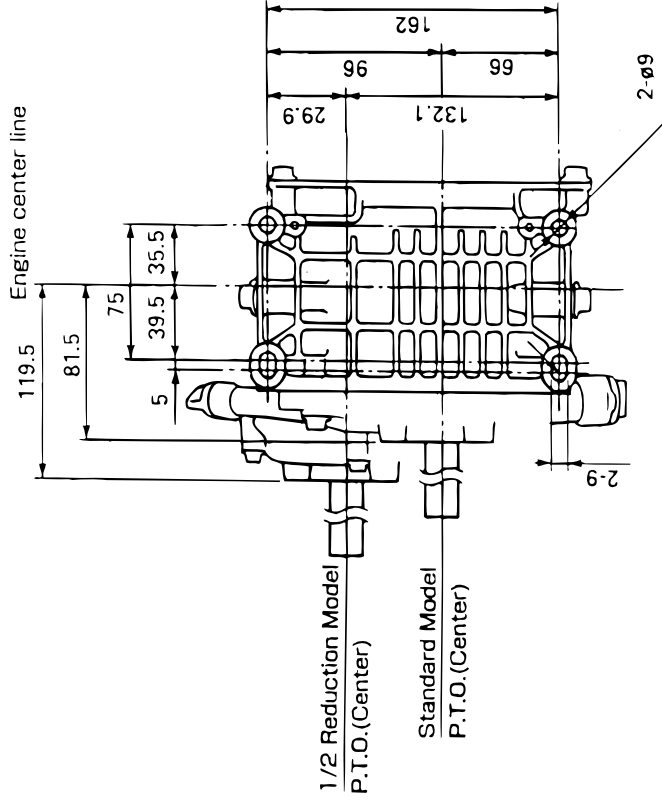


MZ360

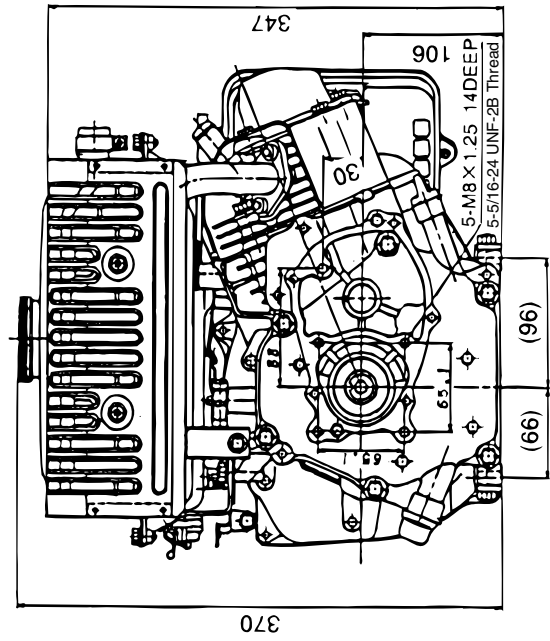
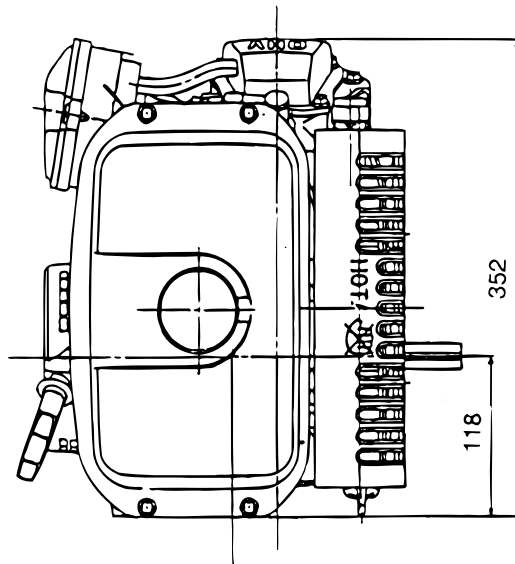
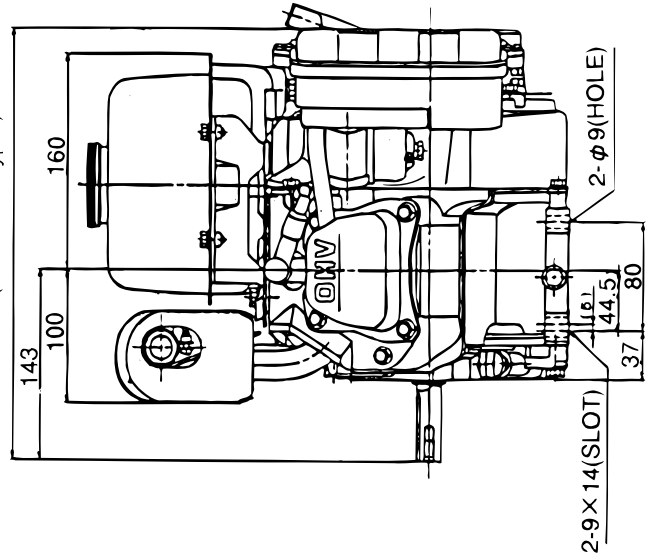


DIMENSIONS

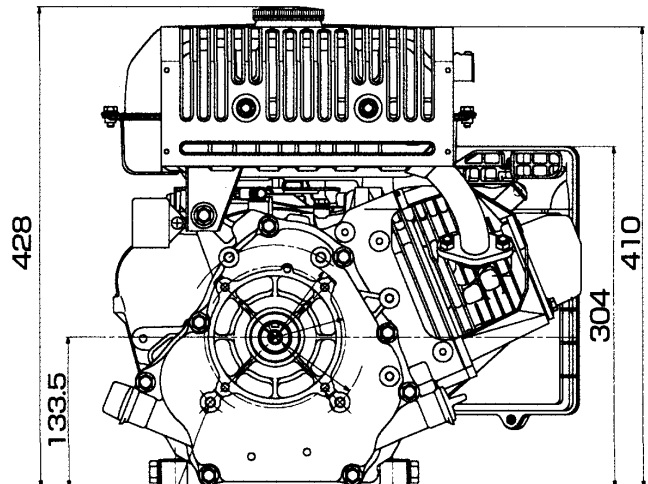
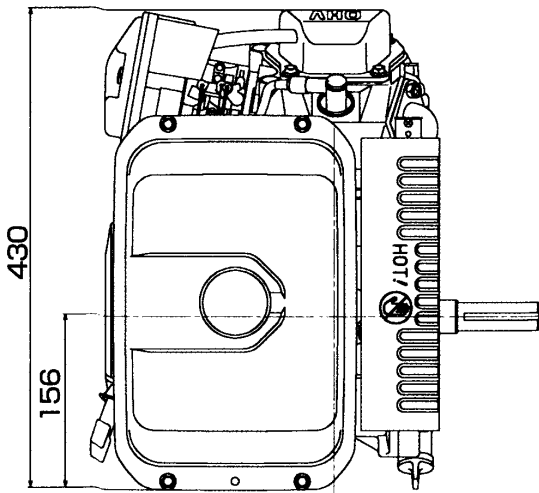
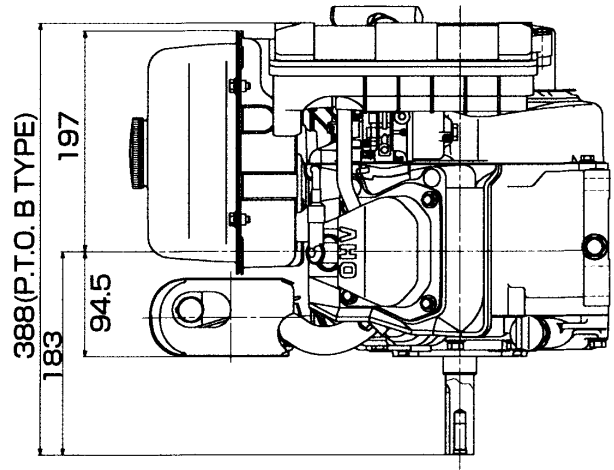
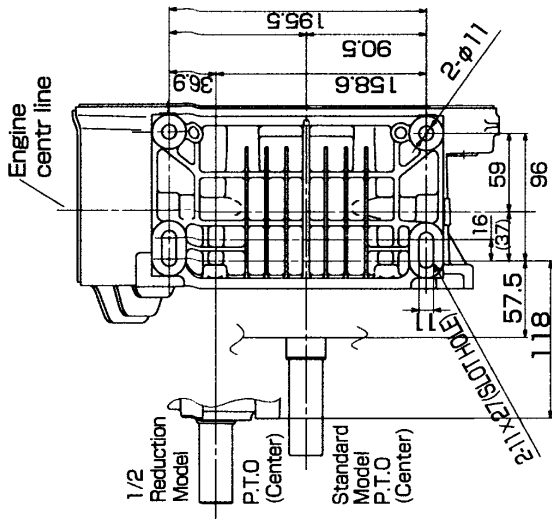
MZ125/175



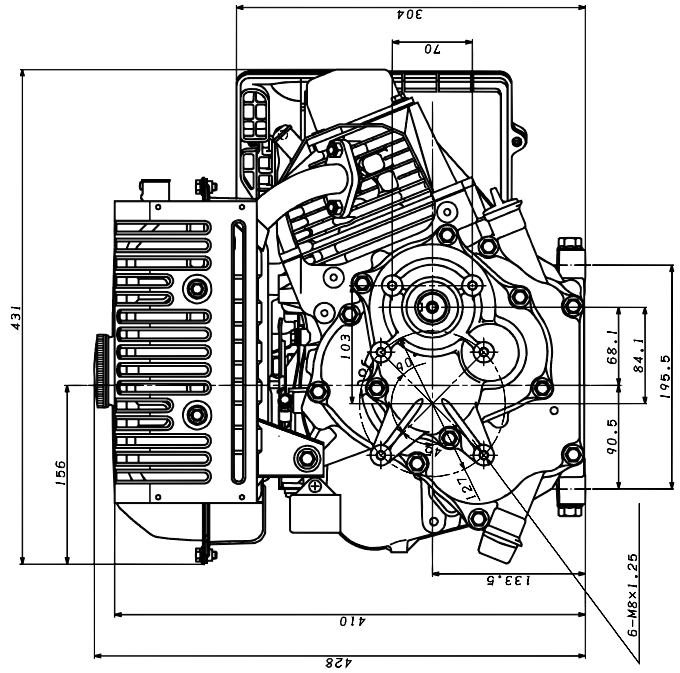
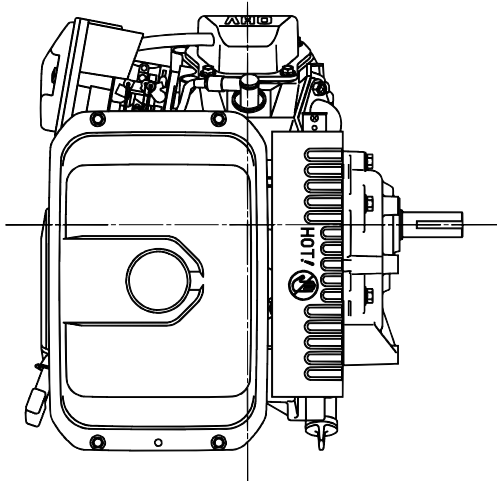
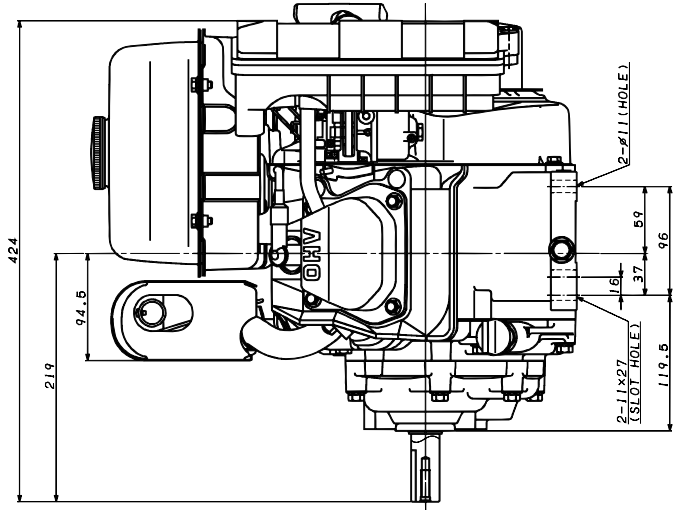
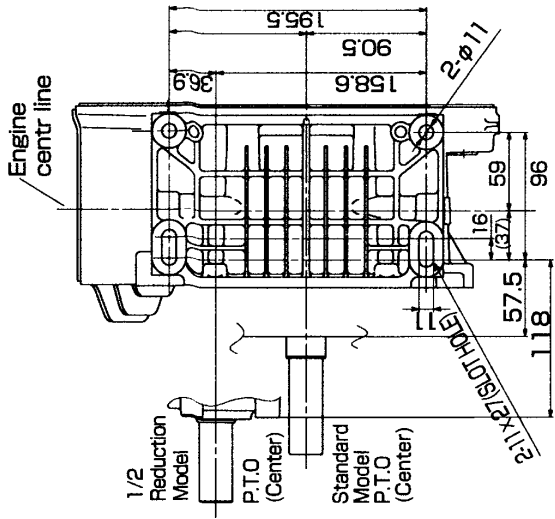
323 (P.T.O. A Type)



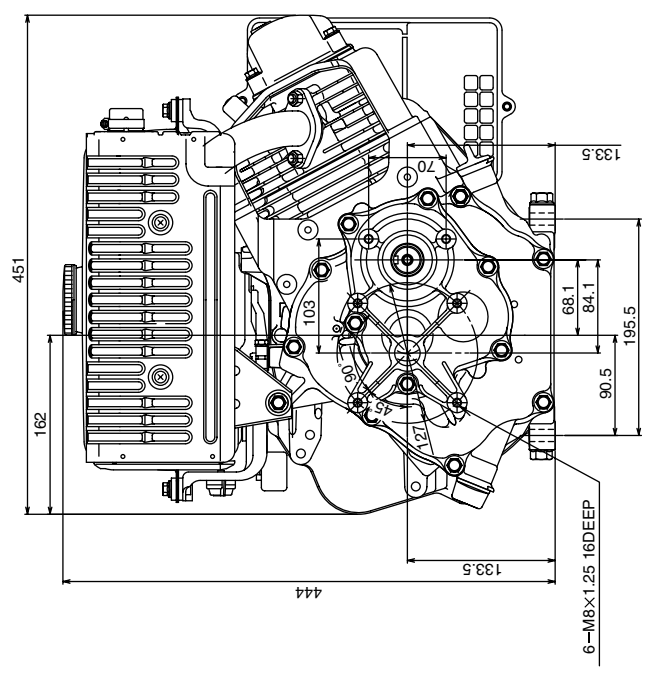
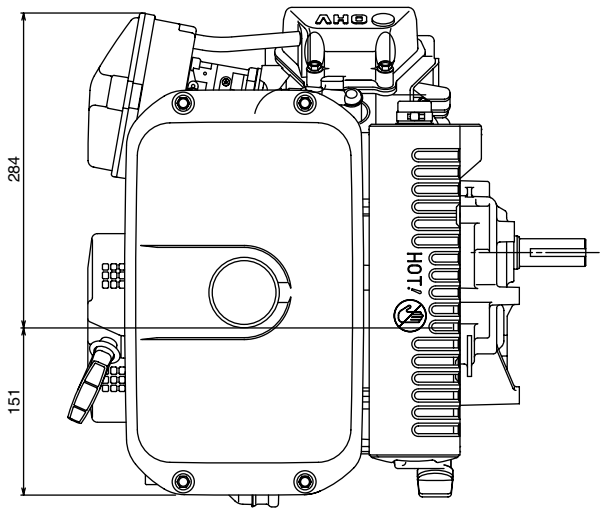
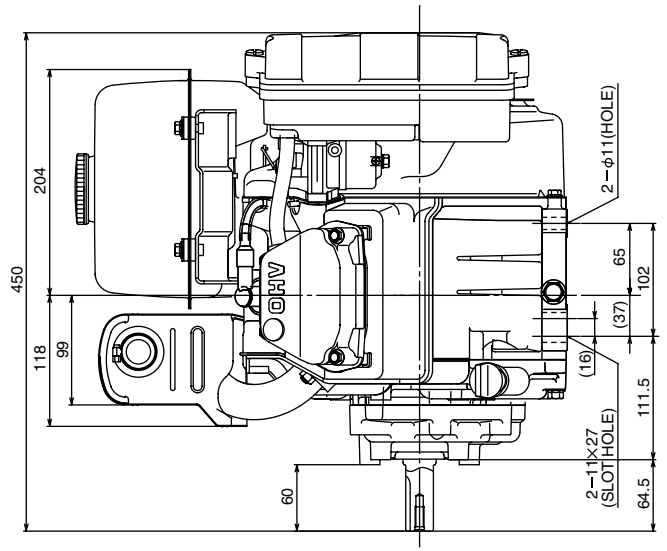
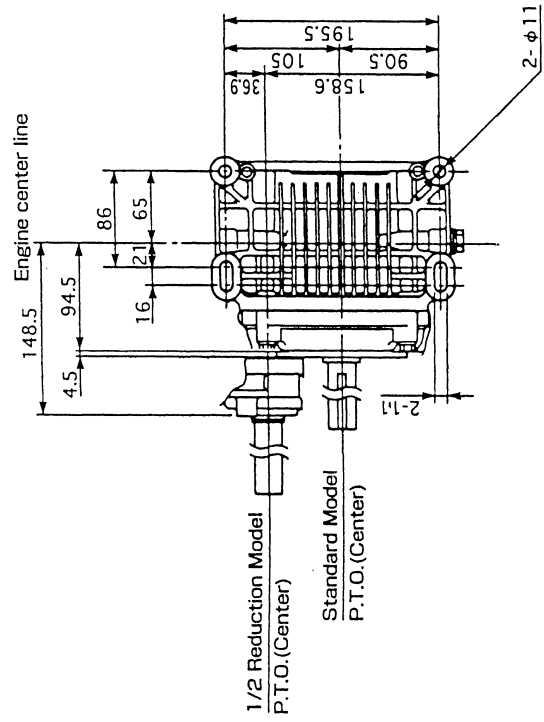
MZ250



MZ250R



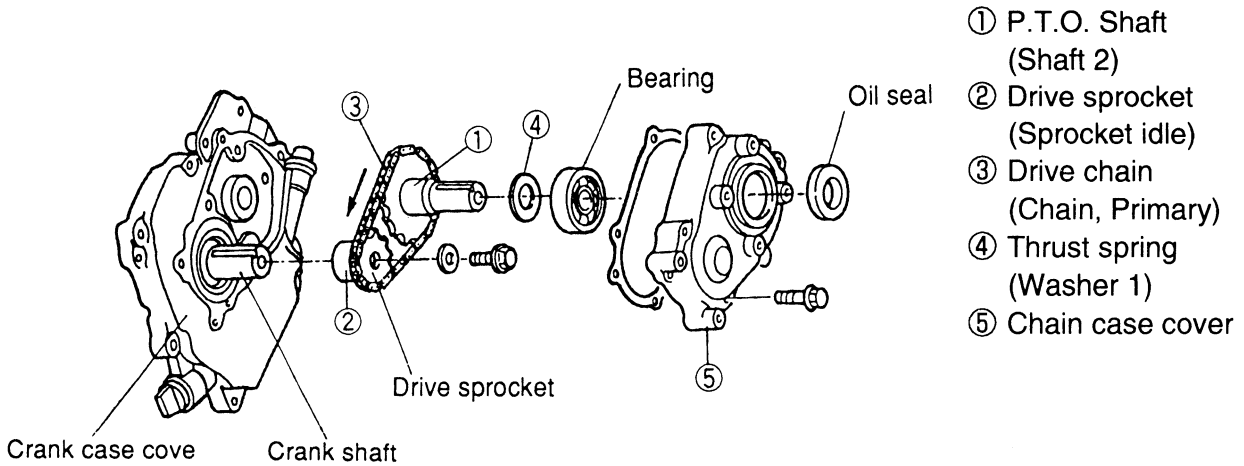
MZ300R/360R



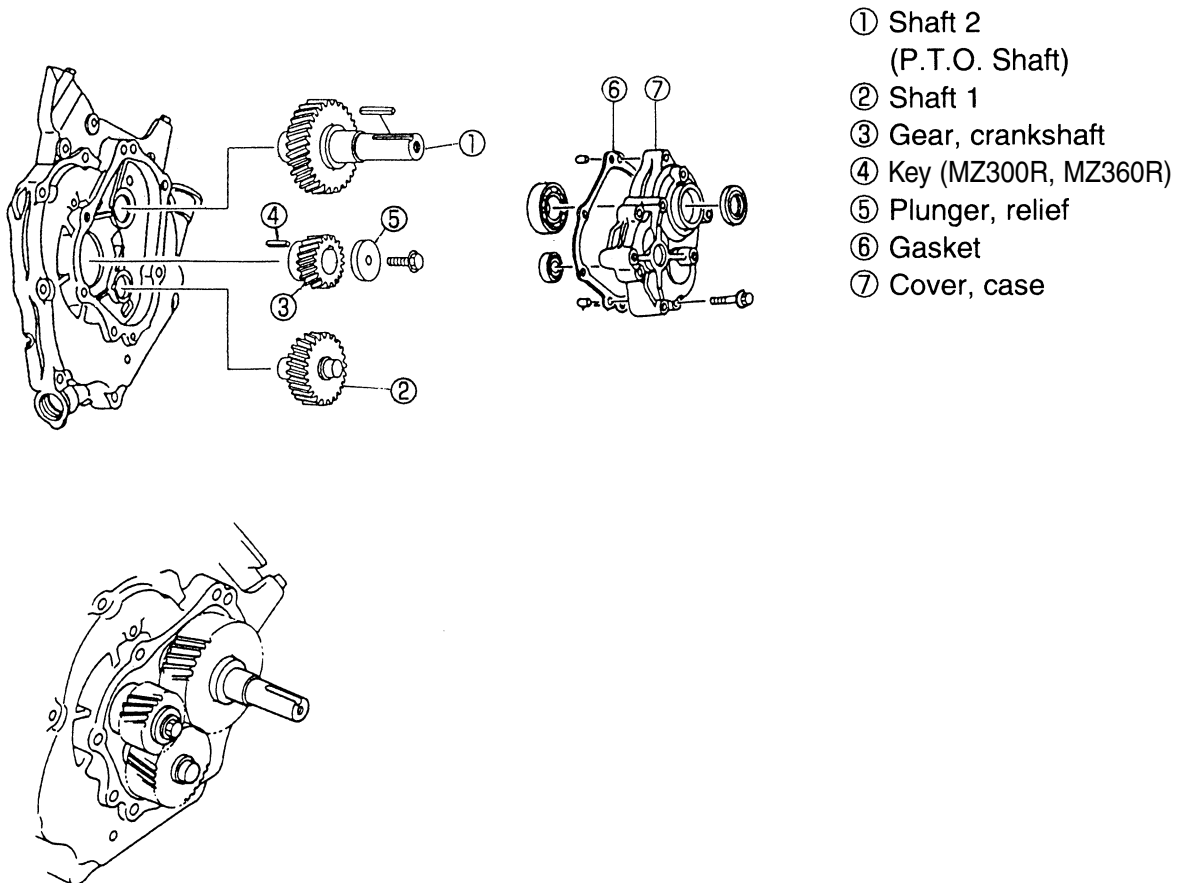
REDUCTION TYPE

The 1/2 reduction gear is located outside the crankcase cover.
The P.T.O. shaft rotates clockwise (as viewed from the P.T.O. side).

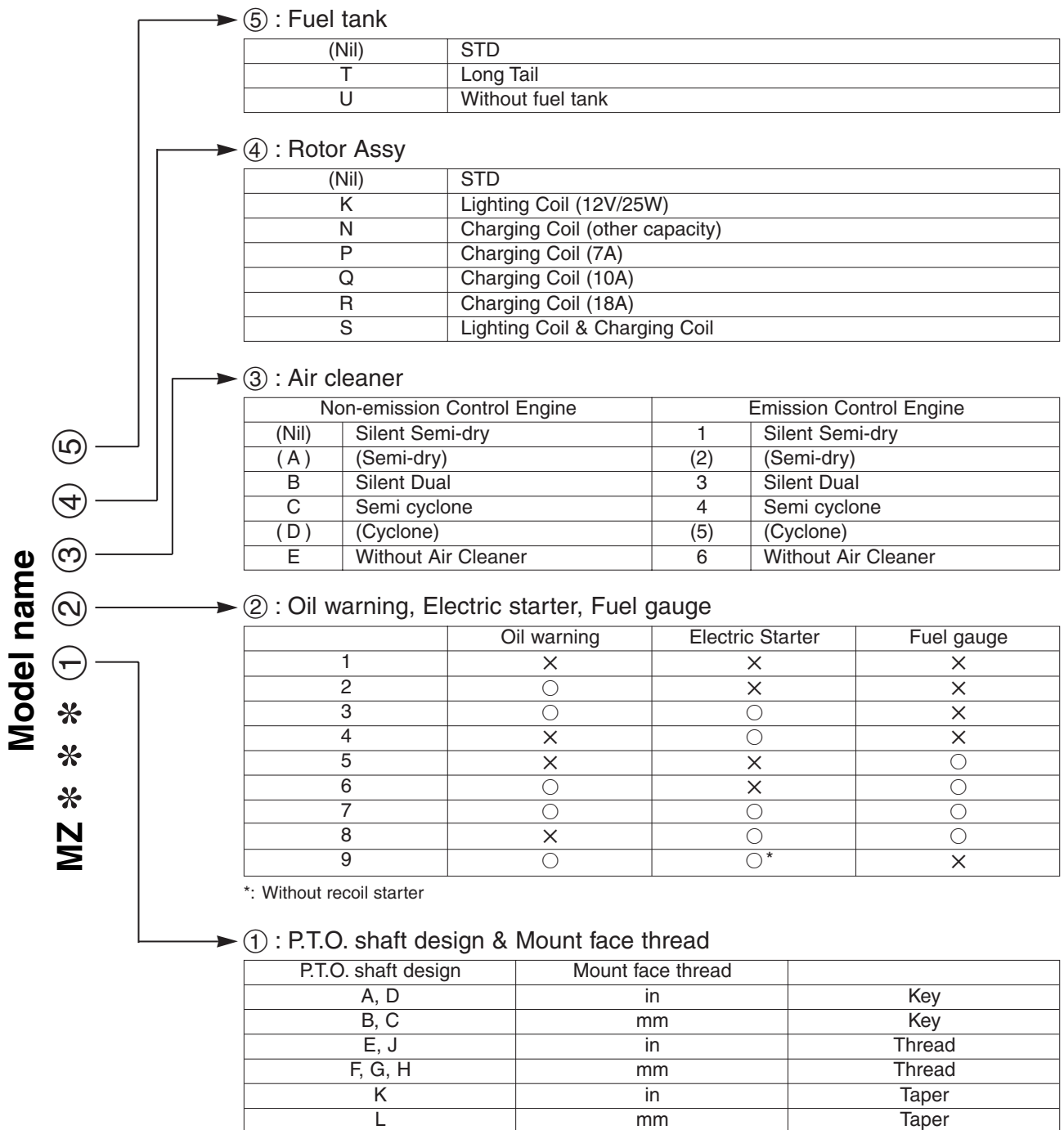
[MZ125R/175R/250R] 1/2 Reduction Type



[MZ300R/360R] 1/2 Reduction Type, [MZ250] 1/6 Reduction Type



MZ SERIES VARIATION



In "K" and "L", the following number indicates the specification.

*: "r" is added to PTO marks to indicate 1/2 reduction.

*: "r" is added to PTO marks and "6" is added to model names to indicate 1/6 reduction.

*: Parts other than those noted above (such as mufflers, tools, remote control) are STD in current specifications and are not indicated.

α: Special destination

Put the abbreviation of the destination if specified destinations exist.

EX : MZ300 A 3 B

- Silent Dual type air cleaner.
- With Oil Warning & Electric Starter.
- A type P.T.O. shaft

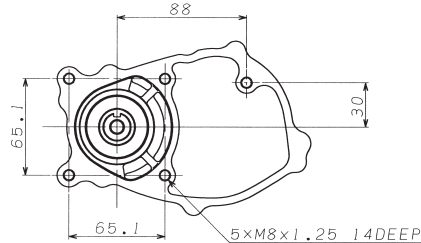
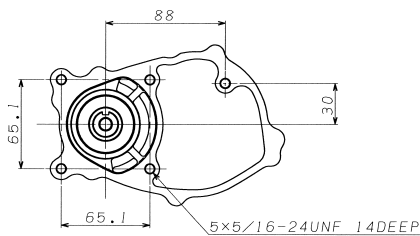
VARIATIONS

MZ125 /175

Mount Face

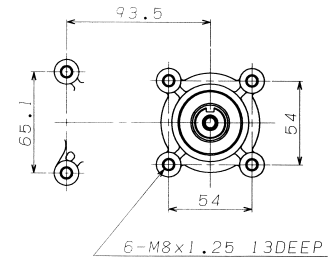
■ DIRECT TYPE

A UNF (5/16-24 UNF-2B Thread) **B** M8 (8mm × 1.25 Thread)



■ REDUCTION TYPE

C M8 (8mm × 1.25 Thread)



| Dimension | M. Face | Dimension | M. Face | Dimension | M. Face |
|----------------------|----------|----------------------|----------|-----------------------|----------|
| <p>P.T.O. Type A</p> | A | <p>P.T.O. Type G</p> | B | <p>P.T.O. Type L</p> | B |
| <p>P.T.O. Type B</p> | B | <p>P.T.O. Type H</p> | B | <p>P.T.O. Type Cr</p> | C |
| <p>P.T.O. Type E</p> | A | <p>P.T.O. Type K</p> | A | <p>P.T.O. Type Br</p> | C |

MZ125/175 MODEL VARIATION CHART

| MODEL | MODEL CODE | CODE | SHAFT | THREAD | OIL WARNING | THROTTLE LEVER | ELECTRIC STARTER | LIGHTING COIL | AIR CLEANER | | | REGULATION | REMARKS | |
|-------|------------|------|-------------|--------|-------------|----------------|------------------|---------------|-----------------|-------------|--------------|------------|---------|---------------|
| | | | | | | | | | SILENT SEMI DRY | SILENT DUAL | SEMI CYCLONE | | | |
| MZ125 | A2B | 7CL1 | 7CL100-020A | Key | in | ○ | ○ | | | ○ | | | | |
| | B1T | 7CL2 | 7CL200-020A | Key | mm | | ○ | | | ○ | | | | For Long Tail |
| | B2B | 7CL2 | 7CL201-030A | Key | mm | ○ | ○ | | | ○ | | | | |
| | H2 | 7CL8 | 7CL800-020A | Thread | mm | ○ | ○ | | | ○ | | | | |
| | K2-60 | 7CLB | 7CLB00-020A | Taper | in | ○ | | | | ○ | | | | |
| | K2-50 | 7CLB | 7CLB01-030A | Taper | in | ○ | | | | ○ | | | | |
| | Cr2B | 7CLF | 7CLF00-020A | Key | mm | ○ | ○ | | | | ○ | | | 1/2Reduction |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|-------|------|-------------|--------|----|---|---|--|---|---|---|---|--|----------------------|
| MZ175 | A1 | 7CN1 | 7CN100-010A | Key | in | | ○ | | | ○ | | | | |
| | A2B | 7CN1 | 7CN101-020A | Key | in | ○ | ○ | | | | ○ | | | |
| | A2C | 7CN1 | 7CN102-030A | Key | in | ○ | ○ | | | | | ○ | | |
| | B1T | 7CN2 | 7CN200-020A | Key | mm | | ○ | | | ○ | | | | For Long Tail |
| | B2B | 7CN2 | 7CN201-030A | Key | mm | ○ | ○ | | | | ○ | | | |
| | B2BK | 7CN2 | 7CN203-050A | Key | mm | ○ | ○ | | ○ | | ○ | | | L/C(12V25W) |
| | B2C | 7CN2 | 7CN202-040A | Key | mm | ○ | ○ | | | | | ○ | | |
| | E2 | 7CN5 | 7CN500-020A | Thread | in | ○ | ○ | | | ○ | | | | |
| | H2 | 7CN8 | 7CN800-020A | Thread | mm | ○ | ○ | | | ○ | | | | |
| | K2-60 | 7CNB | 7CNB00-020A | Taper | in | ○ | | | | ○ | | | | |
| | K2-50 | 7CNB | 7CNB01-050A | Taper | in | ○ | | | | ○ | | | | |
| | K2U | | | Taper | in | ○ | | | | ○ | | | | W/O F.tank & Muffler |
| | L2 | 7CNC | 7CNC00-020A | Taper | mm | ○ | | | | ○ | | | | |
| | L2U | 7CNC | 7CNC01-0300 | Taper | mm | ○ | | | | ○ | | | | W/O F.tank & Muffler |
| | Br1 | 7CNF | 7CNF00-010A | Key | mm | | ○ | | | ○ | | | | 1/2Reduction |
| | Br2B | 7CNF | 7CNF01-020A | Key | mm | ○ | ○ | | | | ○ | | | 1/2Reduction |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

MZ250

Mount Face

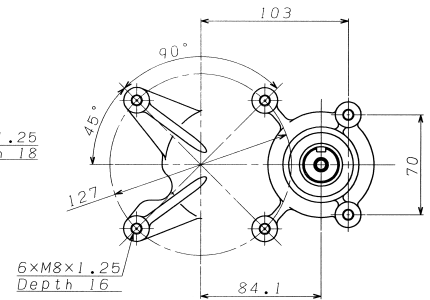
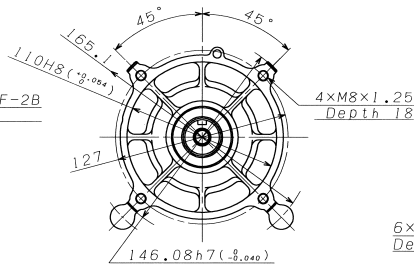
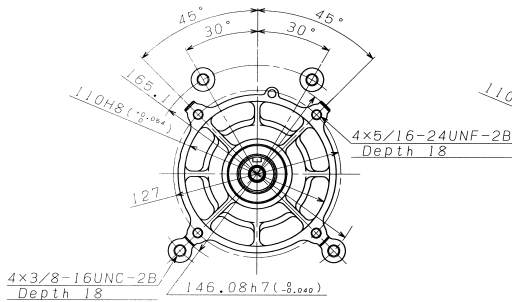
■ DIRECT TYPE

A UNF (5/16-24 UNF-2B Thread)

B M8 (8mm × 1.25 Thread)

■ REDUCTION TYPE

C M8 (8mm × 1.25 Thread)



| Dimension | M. Face | Dimension | M. Face |
|----------------------|----------|------------------------|----------|
| <p>P.T.O. Type A</p> | A | <p>P.T.O. Type K</p> | A |
| <p>P.T.O. Type B</p> | B | <p>P.T.O. Type Br2</p> | C |
| <p>P.T.O. Type H</p> | B | <p>P.T.O. Type Br6</p> | C |

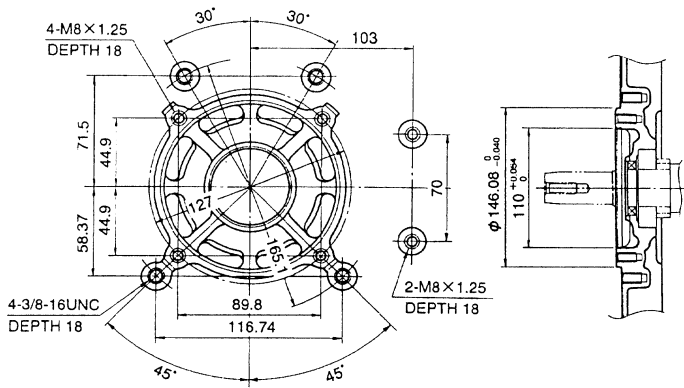
MZ250 MODEL VARIATION CHART

| MODEL | MODEL CODE | CODE | SHAFT | THREAD | OIL WARNING | THROTTLE LEVER | ELECTRIC STARTER | BALANCER SHAFT | LIGHTING COIL | AIR CLEANER | | | REGULATION | REMARKS |
|-------|------------|------|-------------|--------|-------------|-----------------------|-----------------------|----------------|-----------------------|-----------------|-----------------------|-----------------------|------------|----------------------|
| | | | | | | | | | | SILENT SEMI DRY | SILENT DUAL | CYCLONE | | |
| MZ250 | A2 | 7VJ1 | 861470-0020 | Key | in | <input type="radio"/> | <input type="radio"/> | | | | <input type="radio"/> | | | |
| | A2D | 7VJ1 | 861483-0030 | Key | in | <input type="radio"/> | <input type="radio"/> | | | | | <input type="radio"/> | | |
| | B2 | 7VJ2 | 861471-0020 | Key | mm | <input type="radio"/> | <input type="radio"/> | | | | <input type="radio"/> | | | |
| | B2BK | 7VJ2 | 861472-0030 | Key | mm | <input type="radio"/> | <input type="radio"/> | | <input type="radio"/> | | <input type="radio"/> | | | |
| | H2 | 7VJ8 | 861473-0020 | Thread | mm | <input type="radio"/> | <input type="radio"/> | | | | <input type="radio"/> | | | |
| | K2-60 | 7VJB | 861474-0020 | Taper | in | <input type="radio"/> | | | | | <input type="radio"/> | | | |
| | K2-50 | 7VJB | 861475-0030 | Taper | in | <input type="radio"/> | | | | | <input type="radio"/> | | | |
| | L2U | 7VJC | JVJC00-020A | Taper | mm | <input type="radio"/> | | | | | <input type="radio"/> | | | W/O F.tank & Muffler |
| | Br2 | 7VJF | 861482-0020 | Key | mm | <input type="radio"/> | <input type="radio"/> | | | | <input type="radio"/> | | | 1/2Reduction |
| | Br2/6 | 7VJJ | 861481-0020 | Key | mm | <input type="radio"/> | <input type="radio"/> | | | | <input type="radio"/> | | | 1/6Reduction |
| | K7 | 7VJB | 861581-0000 | Taper | in | <input type="radio"/> | | | | | <input type="radio"/> | | CE | 50Hz, Red Tank |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

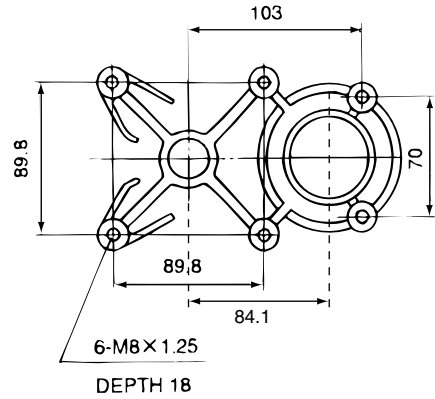
MZ300/360

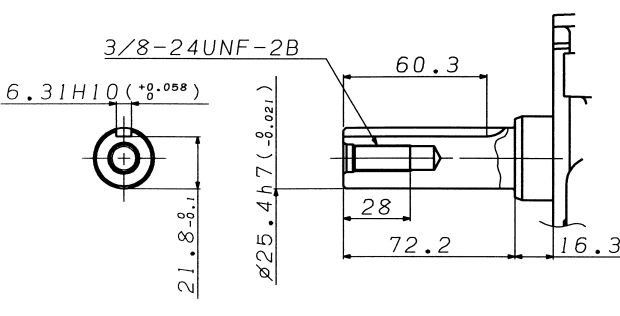
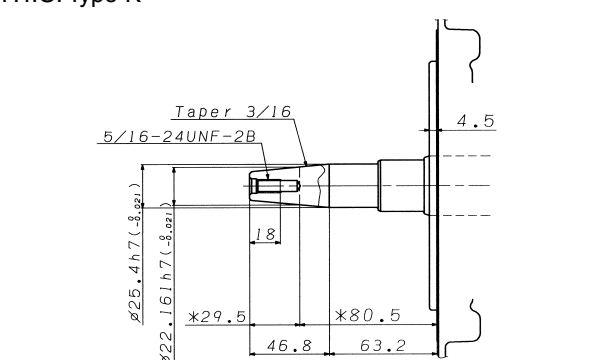
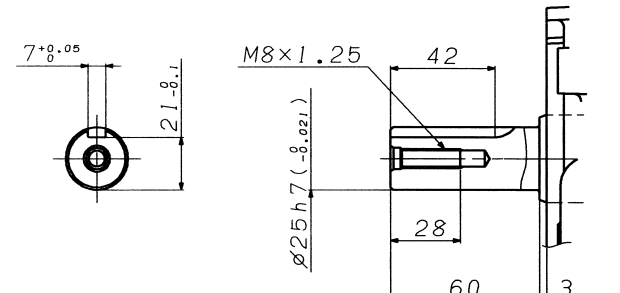
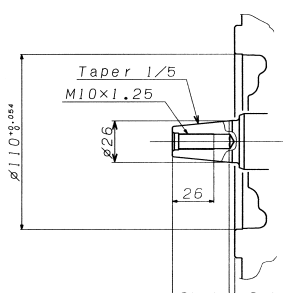
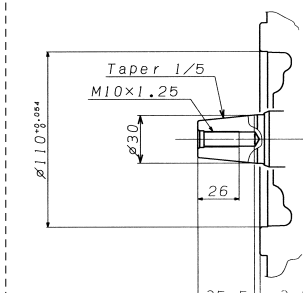
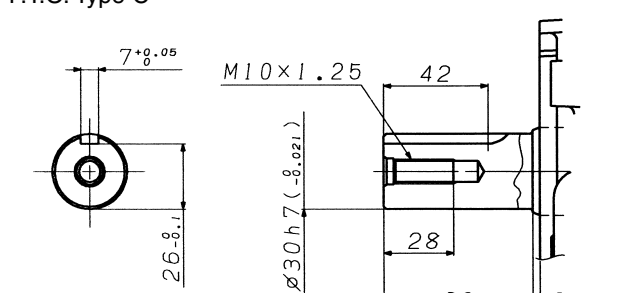
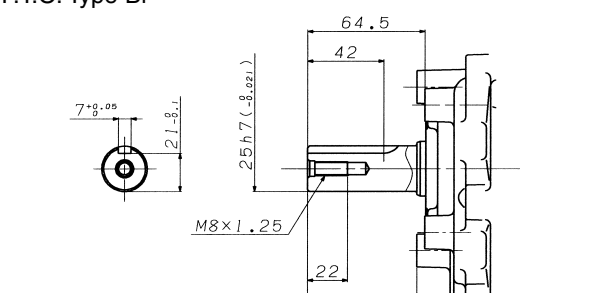
Mount Face

■ DIRECT TYPE



■ REDUCTION TYPE



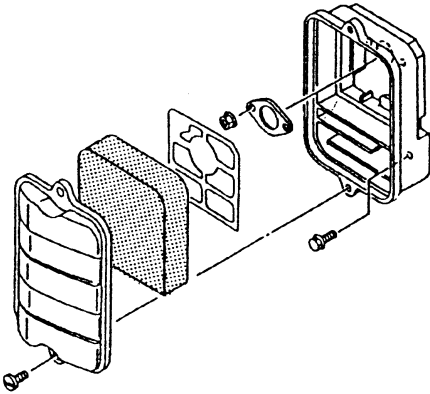
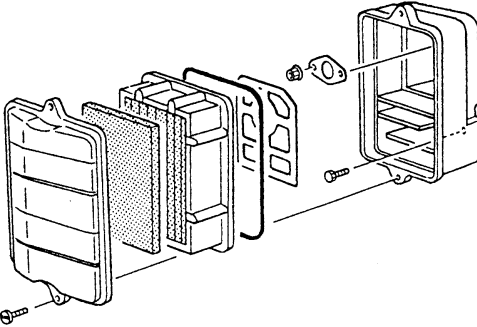
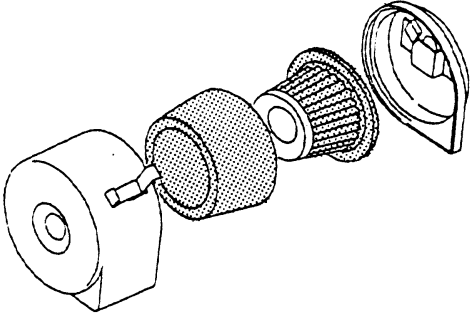
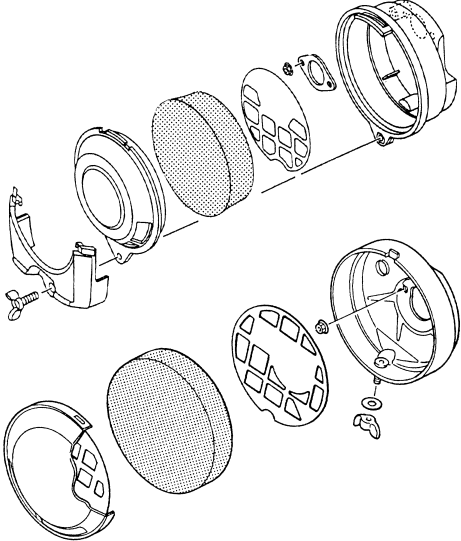
| Dimension | Dimension |
|--|--|
| <p>P.T.O. Type A</p>  | <p>P.T.O. Type K</p>  |
| <p>P.T.O. Type B</p>  | <p>P.T.O. Type L For MZ300</p>  <p>P.T.O. Type L For MZ360</p>  |
| <p>P.T.O. Type C</p>  | <p>P.T.O. Type Br</p>  |

MZ300/360 MODEL VARIATION CHART

| MODEL | MODEL CODE | CODE | SHAFT | THREAD | OIL WARNING | THROTTLE LEVER | ELECTRIC STARTER | LIGHTING COIL | AIR CLEANER | | | REGULATION | REMARKS |
|-------|------------|------|-----------|--------|-------------|----------------|------------------|---------------|-----------------|-------------|--------------|------------|----------------------|
| | | | | | | | | | SILENT SEMI DRY | SILENT DUAL | SEMI CYCLONE | | |
| MZ300 | A2B | 7CR1 | 7CR1-040A | Key | in | ○ | ○ | | | ○ | | | |
| | A2C | 7CR1 | 7CR1-030A | Key | in | ○ | ○ | | | | ○ | | |
| | A3B | 7CS1 | 7CS1-010A | Key | in | ○ | ○ | ○ | | ○ | | | |
| | B1T | 7CR2 | 7CR2-020A | Key | mm | | ○ | | | ○ | | | For Long Tail |
| | B2B | 7CR1 | 7CR2-030A | Key | mm | ○ | ○ | | | ○ | | | |
| | B2BK | 7CR2 | 7CR2-040A | Key | mm | ○ | ○ | | ○ | ○ | | | L/C(12V25W) |
| | K2-60 | 7CRB | 7CRB-020A | Taper | in | ○ | | | | ○ | | | |
| | K2-50 | 7CRB | 7CRB-040A | Taper | in | ○ | | | | ○ | | | |
| | K2U | 7CRB | 7CRB-0300 | Taper | in | ○ | | | | ○ | | | W/O F.tank & Muffler |
| | K3U | 7CSB | 7CSB-0200 | Taper | in | ○ | | ○ | | ○ | | | W/O F.tank & Muffler |
| | L2 | 7CRC | 7CRC-020A | Taper | mm | ○ | | | | ○ | | | |
| | L2U | 7CRC | 7CRC-030A | Taper | mm | ○ | | | | ○ | | | W/O F.tank & Muffler |
| | Br2B | 7CRF | 7CRF-020A | Key | mm | ○ | ○ | | | | ○ | | 1/2Reduction |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|-------|-------|------|-------------|-------|----|---|---|---|--|---|---|---|----------------------|
| MZ360 | A2B | 7CT1 | 7CT100-020A | Key | in | ○ | ○ | | | | ○ | | |
| | A2C | 7CT1 | 7CT101-030A | Key | in | ○ | ○ | | | | | ○ | |
| | C1T | 7CT3 | 7CT300-020A | Key | mm | | ○ | | | ○ | | | For Long Tail |
| | C2B | 7CT3 | 7CT301-030A | Key | mm | ○ | ○ | | | ○ | | | |
| | K2-60 | 7CTB | 7CTB00-020A | Taper | in | ○ | | | | ○ | | | |
| | K2-50 | 7CTB | 7CTB01-030A | Taper | in | ○ | | | | ○ | | | |
| | K2U | | | Taper | in | ○ | | | | ○ | | | W/O F.tank & Muffler |
| | K3U | 7CUB | 7CUB00-0200 | Taper | in | ○ | | ○ | | ○ | | | W/O F.tank & Muffler |
| | L2 | 7CTC | 7CTC00-020A | Taper | mm | ○ | | | | ○ | | | |
| | L2U | 7CTC | 7CTC01-0300 | Taper | mm | ○ | | | | ○ | | | W/O F.tank & Muffler |
| | L3 | 7CUC | 7CUC00-020A | Taper | mm | ○ | | ○ | | ○ | | | |
| | L3U | 7CUC | 7CUC01-0300 | Taper | mm | ○ | | ○ | | ○ | | | W/O F.tank & Muffler |
| | Br2B | 7CTF | 7CTF01-030A | Key | mm | ○ | ○ | | | | ○ | | 1/2Reduction |
| | Br2C | 7CTF | 7CTF00-020A | Key | mm | ○ | ○ | | | | | ○ | 1/2Reduction |
| | Br3B | 7CUF | 7CUF00-020A | Key | mm | ○ | ○ | ○ | | | ○ | | 1/2Reduction |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

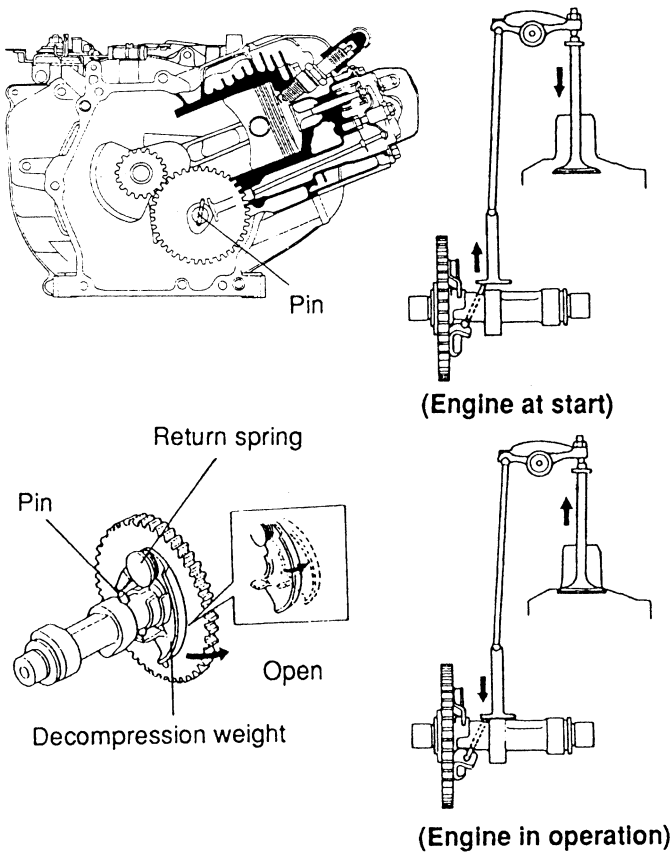
General combination of air cleaner types and engine applications.

| Type | |
|---|---|
| <p>Silent Semidry Type</p> <p>1</p>  <p style="text-align: center;">Foamed urethan</p> | <p>Silent Dual Type</p> <p>2</p>  <p style="text-align: center;">Paper filter + Foamed urethan</p> |
| <p>Semi-Cyclone Type</p> <p>3</p>  <p style="text-align: center;">Paper filter + Foamed urethan</p> | <p>[Semidry type]</p> <p>4</p>  <p style="text-align: center;">Foamed urethan</p> |

| | Dust Condition | Application Example | Notes on Using |
|---|--|--|--|
| 1 | Where there is not much dust or dust is coarse | Stationary engines such as pump and generator rice-planting machine | To secure cleaning efficiency, dip the urethan in engine oil and then squeeze it tightly before use. |
| 2 | Where there is fine dust | Harvesting machines (binder, harvester) Caring machines (tiller, etc.) | Even if cleaned, the material can be hardly restored. The element needs to be replaced periodically. |
| 3 | Where there is much dust | Construction machinery (plate, rammer, etc.) Harvesting machines (binder, harvester, etc) Caring machines (earth-scattering machine) | Even if cleaned, the material can be hardly restored. The element needs to be replaced periodically. |
| 4 | Where there is not much dust or dust is coarse | | To secure cleaning efficiency, dip the urethan in engine oil and then squeeze it tightly before use. |

TECHNICAL FEATURES

AUTO-DECOMPRESSION SYSTEM



<Mechanisms>

When starting the engine, the compression pressure is reduced by forcing the exhaust valve to open, thus facilitating the start operation.

When stopping / starting the engine:

- The decomp weight pushes up the pin to push the lifter.



- The exhaust valve is not opened or closed as the camshaft turns but forced to open.

When operating engine:

- The centrifugal force causes the decomp weight to open, and this movement lowers the pin.

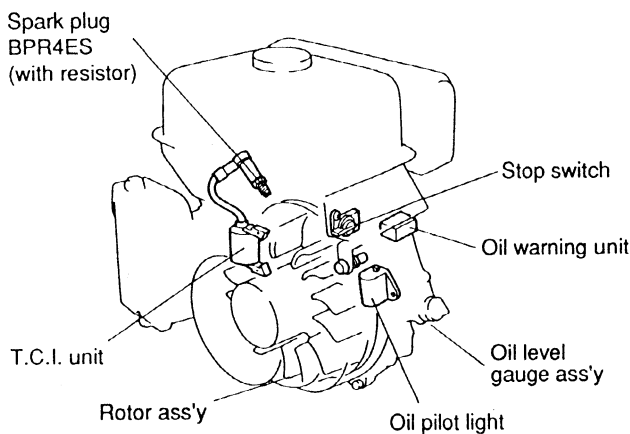


- The lifter is not forced to be pushed up but normally moves as the camshaft turns.



- The exhaust valve is not opened and closed with the normal timing.

IGNITION SYSTEM



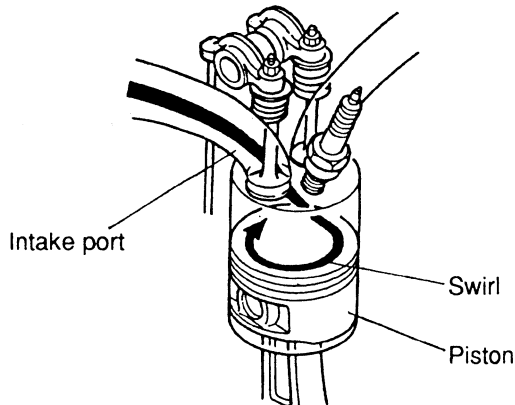
<Mechanisms>

1. T.C.I. (Transistor Controlled Ignition) system employed.

2. Having no contacts, the system requires no inspection or adjustment. It provides stable sparking through accurate ignition timing and is maintenance free.

3. T.C.I. unit air gap: 0.5mm

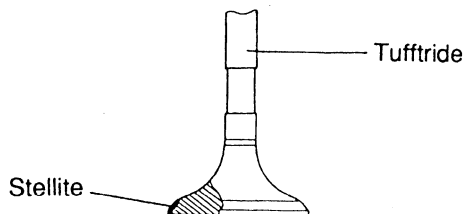
COMBUSTION SYSTEM



The intake port is shaped to produce a swirl in inlet air fuel mixture.

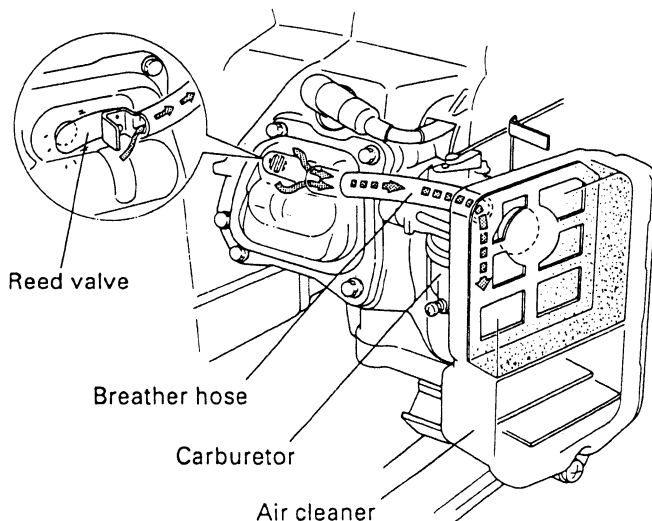
The combustion chamber of the cylinder head has a new type of shape. It is the optimum combustion chamber with consideration given to its combustion efficiency, exhaust gas, noise, and power. Less carbon depositing in the combustion chamber (as compared with the previous) extends the carbon cleaning maintenance interval.

STELLITE-FOCUSED EXHAUST VALVE



Stellite-face exhaust valve is common to all MZ series for added durability due to its excellent heat resistance and wear resistance.

BREATHER SYSTEM



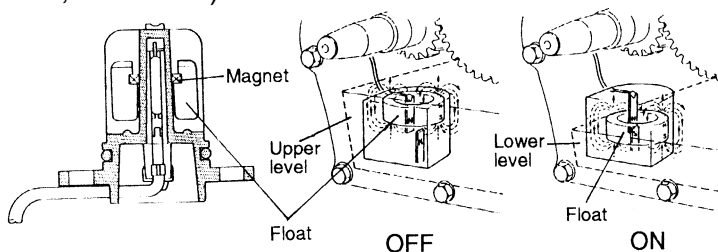
The reed valve is provided in the cylinder head to reduce engine oil from coming out through the breather hose to decrease oil consumption.

The oil-mixed air in the cylinder head is forced out through the reed valve located on the steel plate which separates the independent air chamber from the rocker arm chamber.

The oil hits the reed valve and drops into the air chamber, then returns to the crankcase.

OIL WARNING SYSTEM

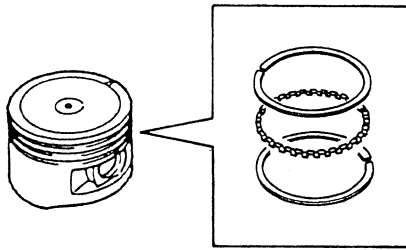
(Since this system varies according to specifications, check with the equipment tables on pages 13,16 and 18.)



The engine stops automatically when the oil level goes below the lower level. Unless you refill with oil, engine will not start again.

*Quantity of oil causing
Warning : Approx. 500ml (MZ250/300/360)
Warning : Approx. 300ml (MZ125/175)

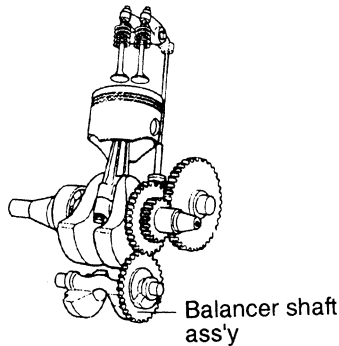
OIL RING for MZ300 and MZ360



Three-piece oil control ring assembly is used in the pistons.

The dual-rail and expander spacer type oil ring assembly scrape off excessive oil from cylinder wall efficiently and return it to the oil pan, consequently, better oil consumption can be achieved.

BALANCER for MZ300 and MZ360

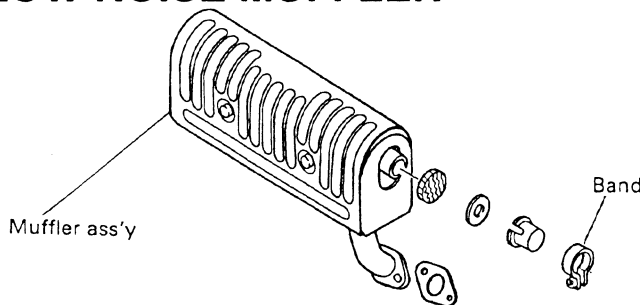


A single shaft balancer is employed to reduce engine vibration.

This mechanism is simple and effective to minimize the engine vibration for convenient operation with larger displacement engine.

(Optional for MZ250)

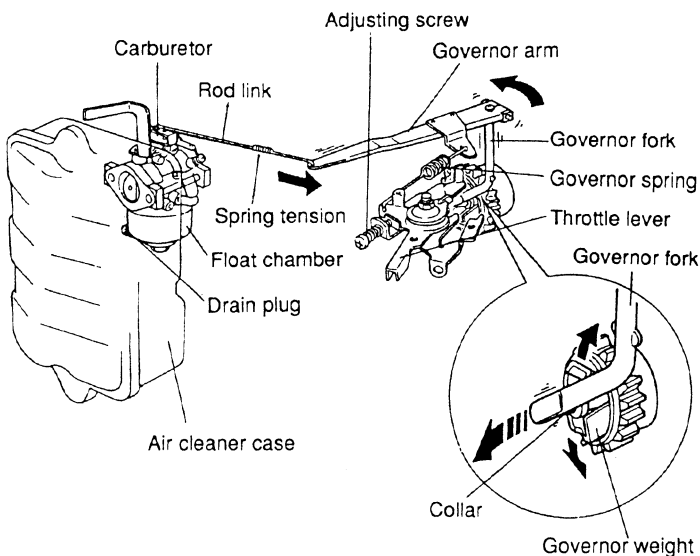
LOW NOISE MUFFLER



The adoption of a large muffler reduces the exhaust noise.

The tail screen is also adopted to MZ125 and MZ175.

GOVERNOR SYSTEM / CARBURETOR

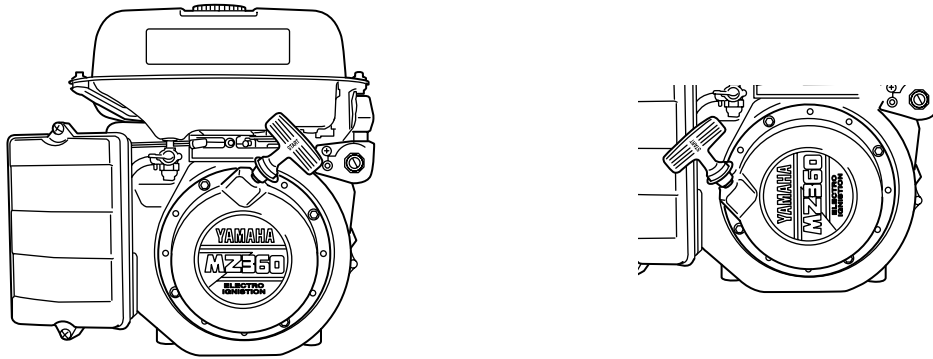


<Mechanisms>

1. The governor system maintains the engine speed constant even under fluctuating loads.
2. The governor weights, collar, governor arm and fork, governor spring, and carburetor, and setting all meeting the optimum conditions make the engine speed and frequency stable.
3. The float chamber is equipped with drain plug, thus making the fuel drain easy.
4. The needle valve is equipped with rubber.
5. The governor fork and weight are heat treated by carburizing and hardening to provide outstanding durability.

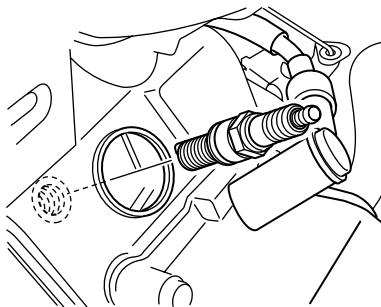
RECOIL STARTER ANGLE

The location of the recoil starter can be changed every 30 degrees by changing the recoil starter case installation angle.



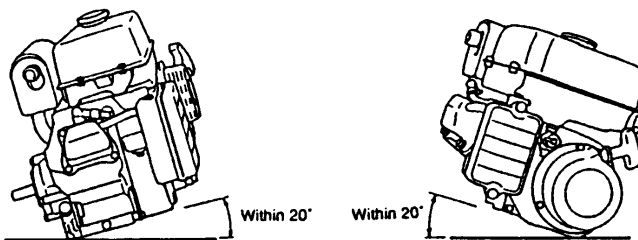
SPARK PLUG

Standard equipped a resistance type SPARK PLUG “BPR4ES”



INCLINATION ANGLE ALLOWANCE

Within 20° :P.T.O., Carburetor, Air cleaner, Oposit, Recoil,etc



Reason of within 20° :

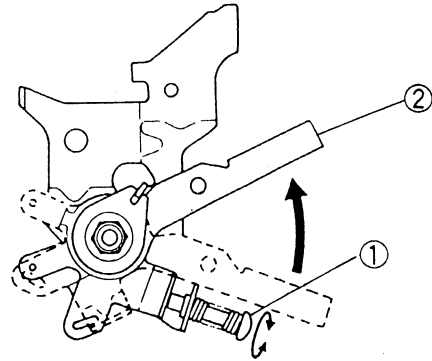
1. Fuel leak from fuel tank
2. Engine rpm fluctuates due to float level reduced
3. Carburetor overflow, engine oil gush out from breather hose

NOTES WHEN INSTALLING THE ENGINE THE WORKING MACHINE

Idle Adjustment

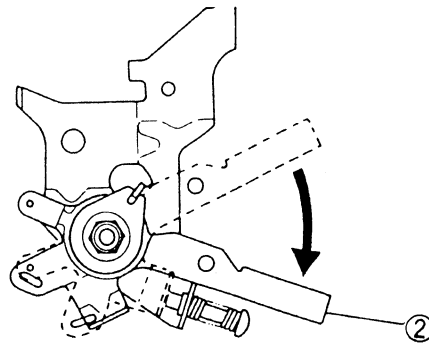
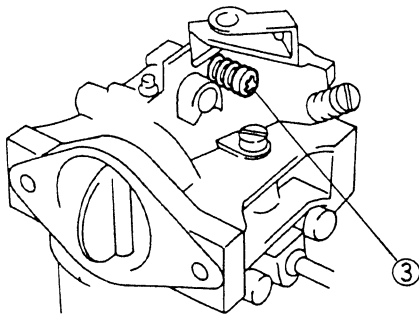
a) High Idle Engine speed : 3800 ± 50 rpm

- Loosen the throttle adjusting screw ①.
- Adjust the high idle engine speed by turning the throttle lever ②.
- Tighten the throttle adjusting screw ① until it stops.



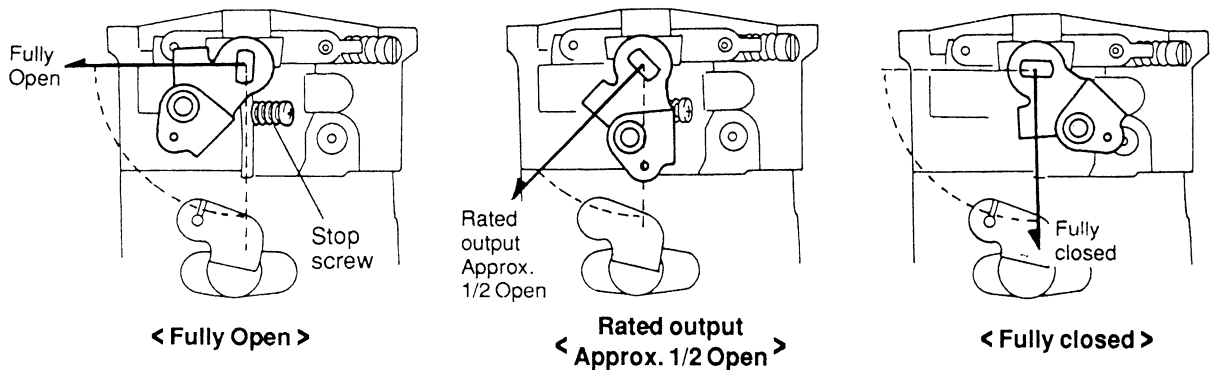
b) Low Idle Engine speed : 2000 ± 100 rpm

- Adjust the idling speed by turning the carburetor stop screw ③ with the throttle lever ② fully closed.



c) How to Check Power

1. Checking the degree of opening and closing the carburetor throttle valve.
 - a. When the degree of opening of the throttle valve is moving within a certain range with the middle point between full opening and full closing during operation as shown above, the engine is used within the rated power range.
 - b. If the rotation sometimes moves near the full opening, the engine is overloaded.



2. Method by measuring the fuel consumption

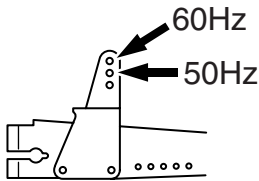
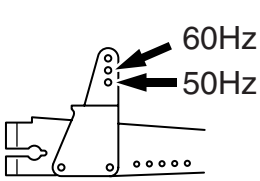
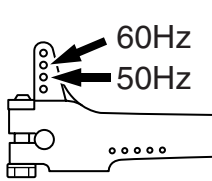
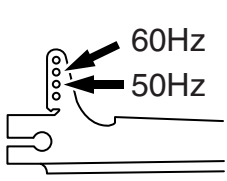
- Fill up the tank and adjust the engine for the rated speed. Run the engine for a certain period and measure the consumed quantity of gasoline.
- The consumption of fuel varies depending on the fluctuation of load, temperature change, and altitude where used. In actual use, the load and rotation change, and therefore the consumption of fuel may be slightly different from the calculated value.
- If it is found that the measured consumption (ℓ/h) is almost the same as the rated fuel consumption in the specification table for each model, the engine is used at rated power.

3. Precautions

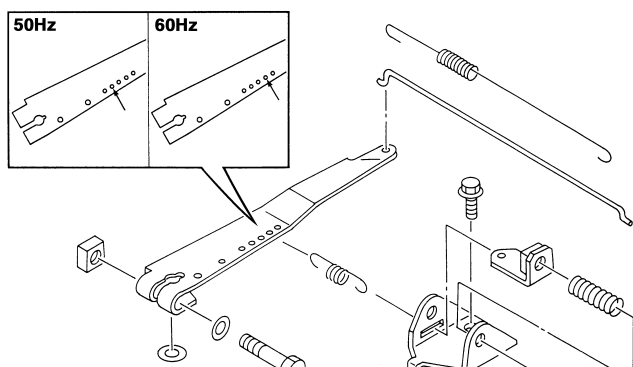
- The engine must be used within the recommended power range.
- When continuously using the engine under a certain load, as with water pump, the throttle valve should be open less than half.
- Always using the engine with the load exceeding the rated power may cause the following problems.
 - Unstable rotation
 - Engine overheat (seizure)
 - Increased engine oil discharge from the breather
 - Increased engine oil consumption

GOVERNOR (50Hz/60Hz)

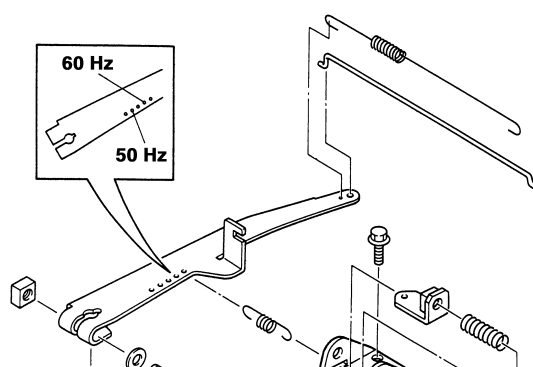
Spring hook position and a governor spring must be carefully selected according to the following chart to meet your requirement of rated rpm of the governor control when MZ series with P.T.O. shaft "L" "K"(WITH F.TANK) is used for generators.

| MZ125 | MZ175 | MZ250 | MZ300/MZ360 |
|---|---|--|---|
|  |  |  |  |

For MZ175 K-U, L-U (W/O F.TANK)



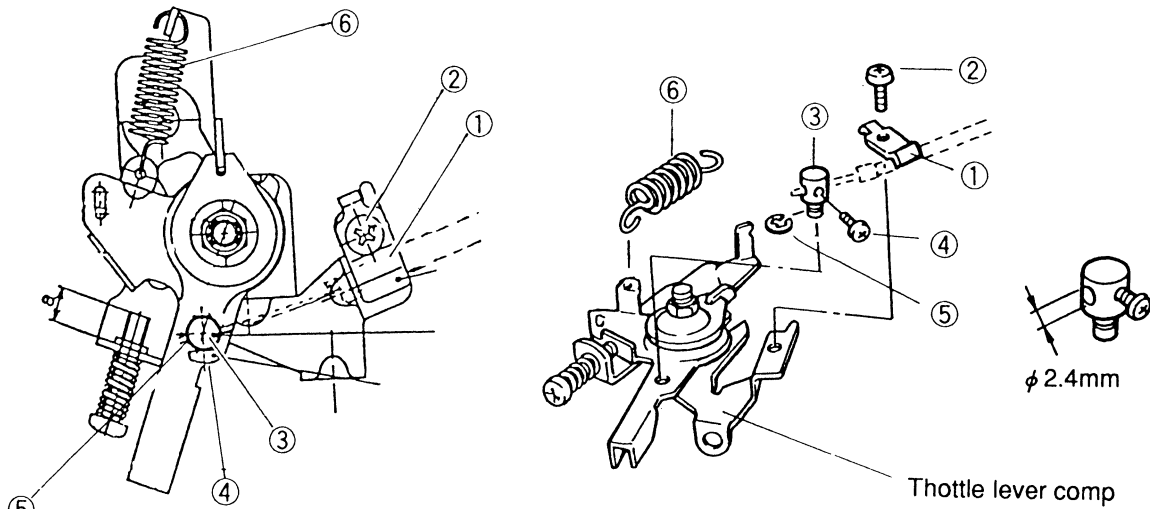
For MZ300/360 K-U, L-U (W/O F.TANK)



ABOUT OPTION PARTS

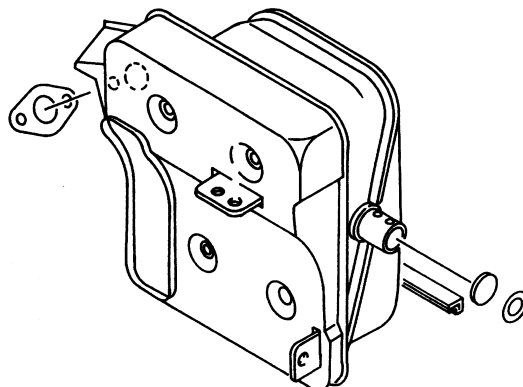
Parts for remote control

For mounting the remote control cable wire, the following parts are required.



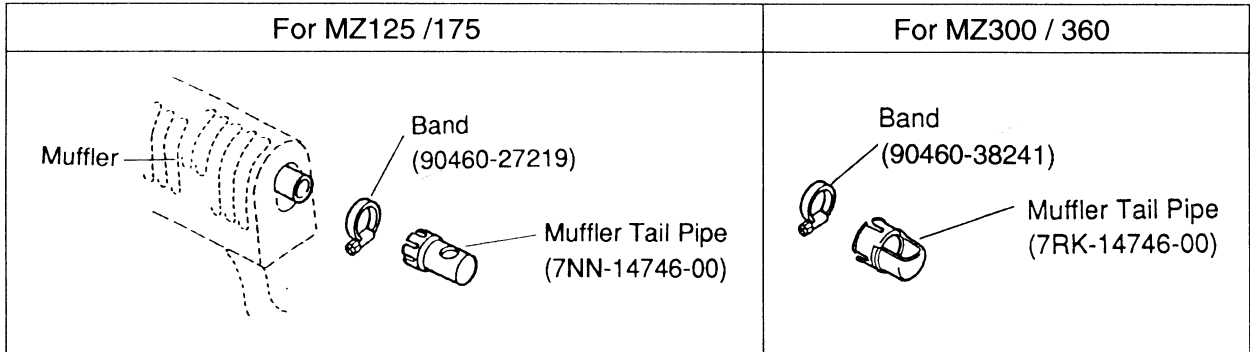
| | | | | |
|------------------------------------|---|------------------|--------------|------|
| Remote control kit 7NN-41240-10 | ① | Adjusting plate | 77Y-11950-01 | 1pc. |
| | ② | Screw pan head | 98517-05012 | 1pc |
| | ③ | Setter wire | 77Y-11932-00 | 1pc. |
| | ④ | Screw pan head | 98507-04008 | 1pc. |
| | ⑤ | Circlip (E type) | 99080-04600 | 1pc. |
| | ⑥ | Spring tension | 90506-07412 | 1pc. |
| | | Washer | 92907-05600 | 1pc. |

Large Muffler (for Generator)



Muffler Tail Pipe

To change the exhaust gas escaping direction, use the muffler tail pipe.



NOTE: Remove the following parts associated with the tail silencer and mount the muffler tail pipe. (for MZ125/175)



The absence of a tail silencer pipe will slightly increase the exhaust sound.

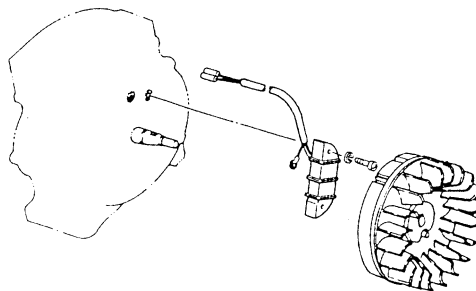
Lighting Coil/Charge Coil

Provide a lighting coil so that a light (12V/25W) for night illumination can be installed.

The charge coil for electric starter model is as follows:

MZ125, MZ175: 7A

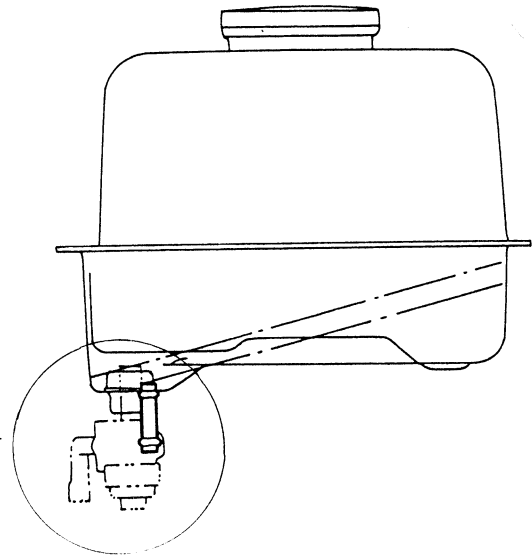
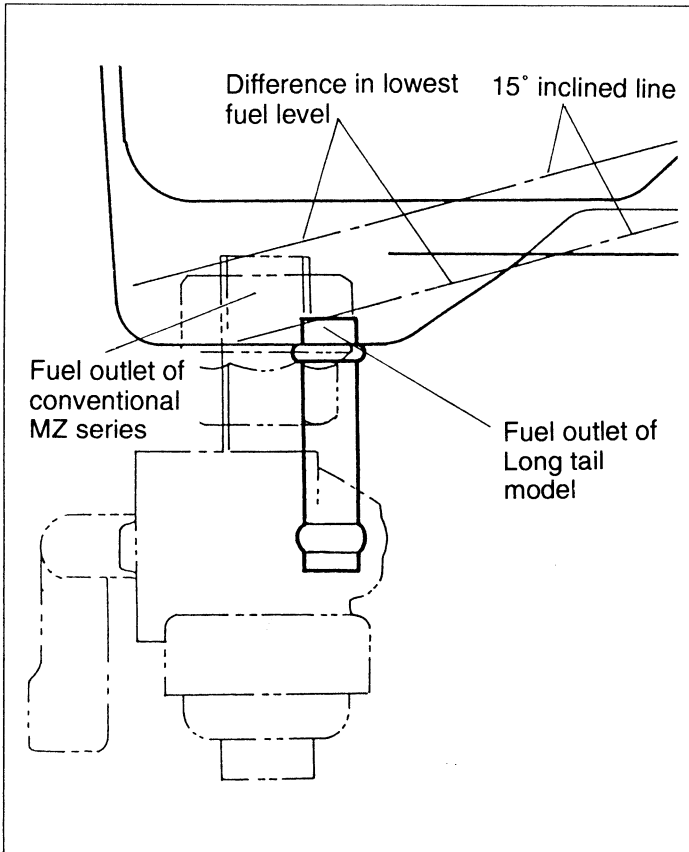
MZ250, MZ300, MZ360: 3A, 10A, and 18A



FUEL TANK (for Long tail)

Coped for inclination.

Fuel outlet fuel tank is relocated to utilize maximum capacity of fuel tank.



The amount of fuel remaining on MZ Long tail series is reduced in comparison with conventional MZ series when the engine is used on a long tail with the engine tilted 15 to 20 degrees.

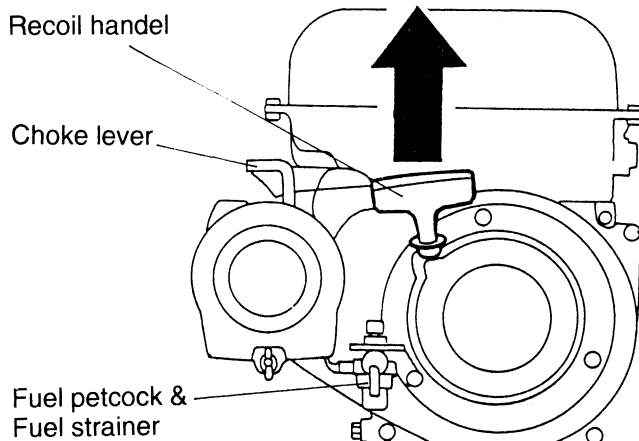
Amount of remaining fuel :
(with engine tilted 20 degrees)

Conventional MZ : approx. 13%

Long tail MZ : approx. 8%

RECOIL STARTER (for Long tail)

Pull upward to start engine



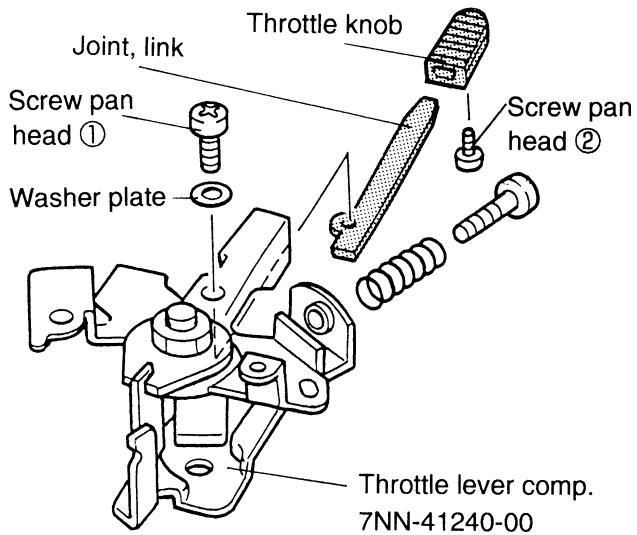
Recoil starter handle is positioned for easy engine start on board.

Like conventional MZ series, auto-decompression device is standard equipment to make engine start easier.

THROTTLE LEVER (for Long tail)

*This feature is only for MZ125 / MZ175

Throttle knob is added for easier throttle operation.



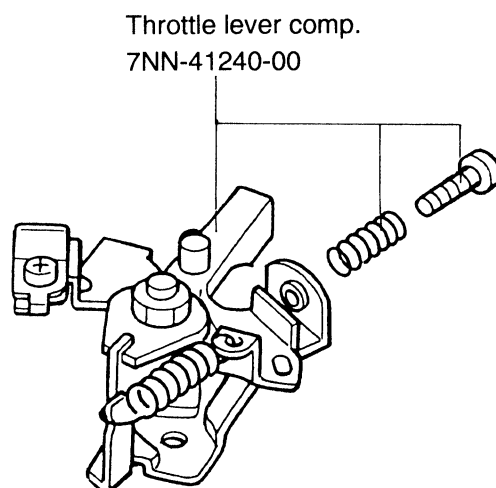
- | | |
|----------------------------------|--------------|
| • Screw pan head ① | 90157-05003 |
| • Washer plate | 92907-05600 |
| • Throttle knob (Knob, choke) | 7X9-41271-00 |
| • Screw pan head ② | 90157-03038 |
| • Joint, link | 7NN-41238-00 |

OPTION PARTS (for Long tail)

*This feature is only for MZ125 / MZ175

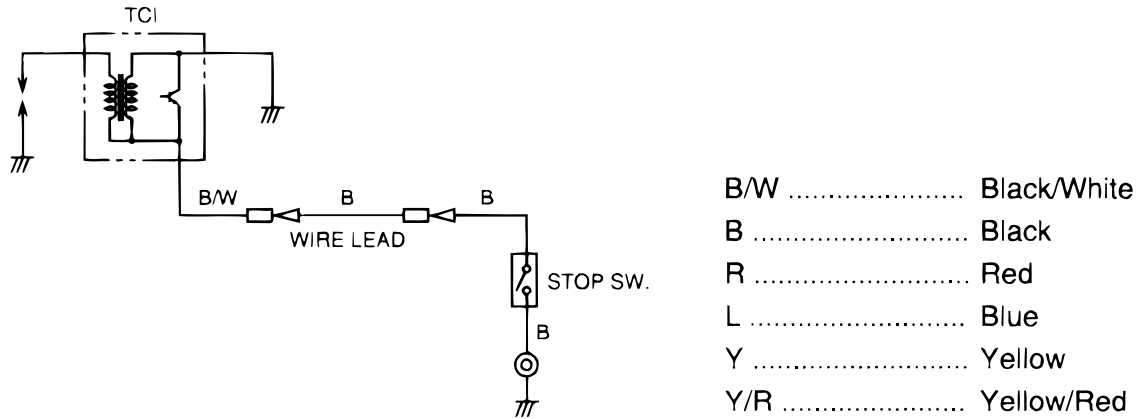
Parts for remote control.

For mounting the remote control cable wire, the following parts are required.

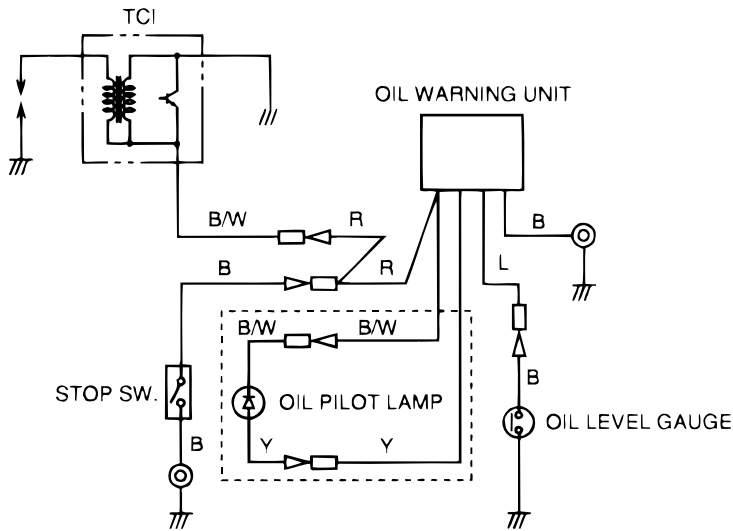


CIRCUIT DIAGRAM

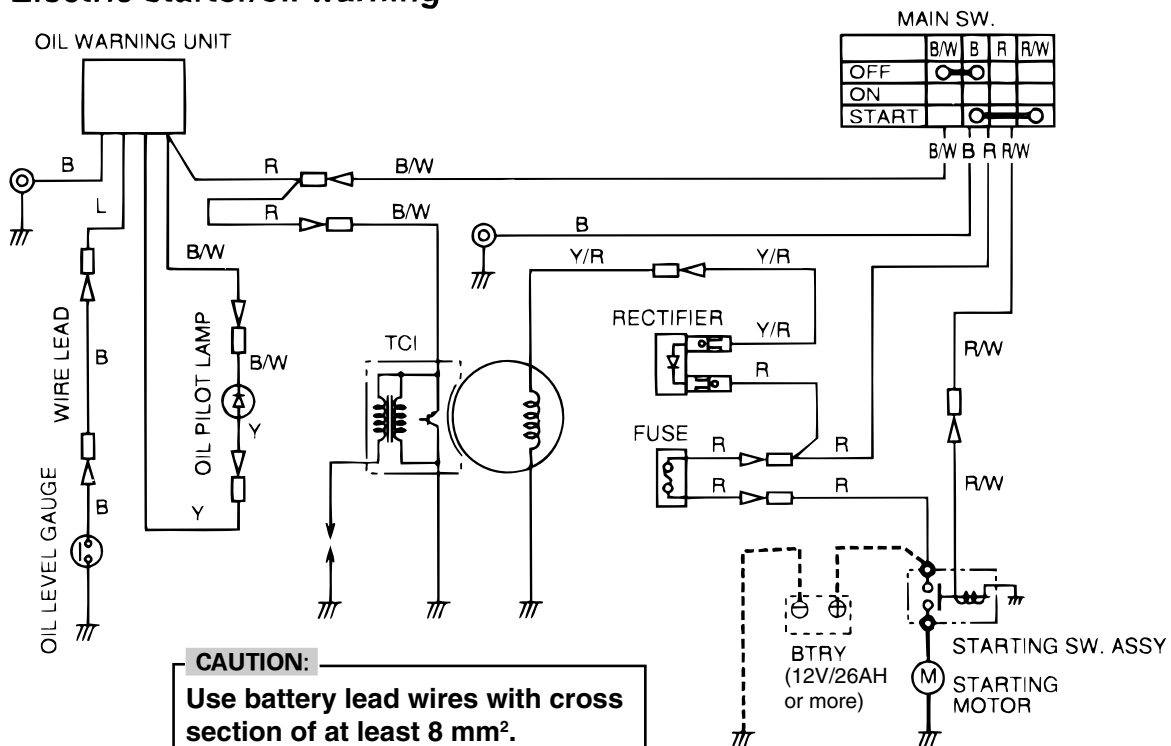
1) Standard



2) Oil Warning



3) Electric starter/oil warning



PERIODIC INSPECTIONS

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. | Engine oil | Check oil level. | ● | | | | |
| | | Replace | | ● | | ● | |
| 3. | Air filter | Clean. Replace if necessary. | | | | ● | |
| 4. | Fuel filter | Clean fuel petcock and fuel tank filter. Replace if necessary. | | | | ● | |
| 5. | Valve clearance | Check and adjust when engine is cold. | | | | | ● |
| 6. | Fuel line | Check fuel hose for cracks or damage. Replace if necessary. | ● | | | ● | |
| 7. | Exhaust system | Check for leakage. Retighten or replace gasket if necessary. | ● | | | | ● |
| 8. | Carburetor | Check choke operation. | ● | | | ● | |
| 9. | Cooling system | Check for fan damage. | | | | | ● |
| 10. | Starting system | Check recoil starter operation. | ● | | | ● | |
| 11. | Decarbonization | More frequently if necessary. | | | | | ● |
| 12. | Fittings/Fasteners | Check all fittings and fasteners. Correct if necessary. | | | | ● | |

FREQUENTLY ASKED QUESTIONS (FAQ)

Q1. What is the difference between SV and OHV?

A1. The valve layout differs.

- SV: As the intake and exhaust valves are on the side of cylinder head, the combustion chamber is flat.
- OHV: As this is an overhead valve, the combustion chamber is nearly spherical and has good combustion efficiency.

Q2. Why is OHV good?

A2. Because the nearly spherical combustion chamber has a small SV (surface/volume) ratio. It mixes air and fuel uniformly and has a high compression ratio to produce high output and high fuel efficiency (small and lightweight but with the same output). It also features 20% better fuel efficiency compared with its SV ratio, as well as cooling advantages, little warpage in the cylinder, and high durability.

Q3. What are the features of the Yamaha MZ series?

- A3. (1) A large muffler, air cleaner, reduced clearance in sliding parts, and low noise due to the improved gear precision.
- (2) High durability due to the improved precision of processing, cooling balance and parts material.
- (3) Clean exhaust gas and high fuel efficiency with light combustion using the swirl port system.
- (4) Extended operation with a large capacity fuel tank.

Q4. Why is the cylinder inclined?

A4. Because the inclined cylinder makes the total size compact which gives it advantages in both cost and noise reduction. The vertical and horizontal oscillation is dispersed and it has less oscillation than a straight type.

Q5. What does the kw of horsepower mean?

A5. The kw is employed in the specification data. 1 ps = 0.735 kw.

ISO should be used according to regulations, but the old terminology is still in use because customs don't change easily.

Q6. Is it all right to use 80 octane gasoline?

A6. Recommended octane rate is over 85 but basically there isn't a problem with 80.

Q7. What is the atmospheric temperature range for the use?

A7. When using the engine, temperature range should be between -15°C and +45°C.

Q8. At what altitude can the engine run properly?

A8. There is no problem at an altitude below 1,000 m. When using the engine at 1,000 m or higher, the carburetor setting should be changed.

Q9. What basic maintenance should be done?

A9. (1) Oil replacement, (2) Spark plug cleaning and gap check, (3) Air cleaner cleaning, (4) Carburetor cleaning, (5) Governor adjustment, (6) Fuel tank and fuel cock cleaning, (7) Combustion chamber cleaning. (8) Valve clearance adjustment, (9) Recoil link greasing, (10) Application of rust-inhibitor oil to the exterior metal parts.

Q10. Can it be run with a full throttle at 4000 rpm?

A10. It is out of the recommended usage range, but basically isn't problem.

Q11. What is the durability of the starter rope?

A11. There isn't a problem using it over 10,000 times. Impregnation of oil into the rope gives it a longer life. Pulling the rope with the pawl hooked at the compression top dead center avoids damage to the pawls and pulleys.

Q12. What is the engine generator efficiency?

A12. Normally approximately 80%.

Q13. How can frequency regulation be improved?

A13. Changing the governor spring hook position changes governor performance, besides changes the spring constant of the governor spring.
→ Please refer P26 for the details.

Q14. At what inclination can it be used?

A14. Up to 20 degrees is fine, and approximately 40 degrees for a short time is possible.

Q15. What is the difference in high durability compared with other companies' products?

A15. We employ high quality materials and have reduced cylinder warpage to increase cooling performance. We have also reduced the surface pressure on each part, applied lubrication to each part, and have designed with strength and reliability in mind. Testing is conducted in actual usage conditions.

Q16. Why is less oil needed?

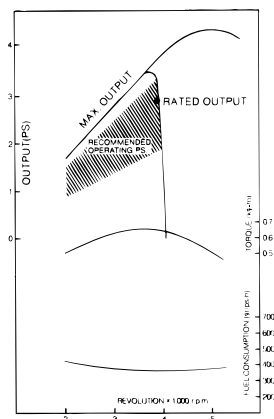
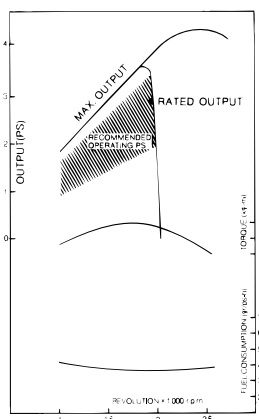
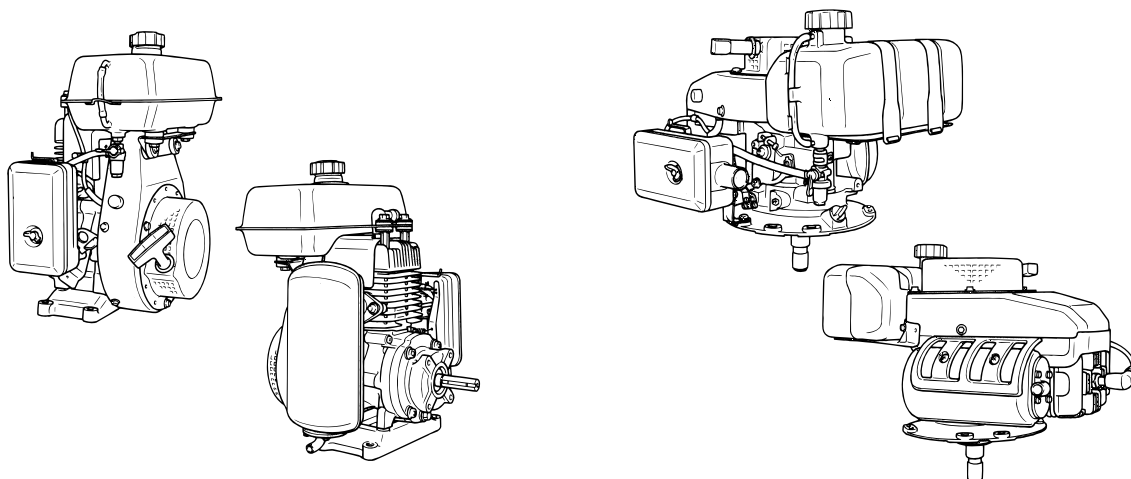
A16. By ensuring enough cooling performance, reducing cylinder warpage and using correct ring and piston specifications, therefore reducing the amount of oil required.

Q17. Why is the fuel efficiency good?

A17. The combustion chamber shape, compression ratio, ignition timing, all contribute to fuel efficiency, as well as the followed light combustion limit by using a correcting swirl port.

ALSO, YAMAHA'S 2-STROKE MULTI-PURPOSE ENGINE IS AVAILABLE

Yamaha's new MT110S, MT110SR, and MT110VLS stand out in virtually every category of performance. The key is Yamaha technology, the kind that makes these light, compact 2-stroke multi-purpose engine so durable, quiet, and easy to maintain. Features abound: The transistor-controlled ignition system ensures quick, smooth starting. The engine's ability to incline 40 degrees allows greater versatility. A new 50:1 gas-oil mixing ratio reduces oil costs, carbon build-up and exhaust smoke. A simplified throttle lever mechanism streamlines operation. And a large fuel tank improves convenience. In addition, you can choose between a standard or 1/2 reduction drive and a variety of options and fittings. With Yamaha, the choice...and the quality...are all yours.



SPECIFICATIONS

| Item \ Model | MT110S | MT110SR | MT110VLS |
|---------------------|--|--|--|
| Type | 2-stroke | 2-stroke | 2-stroke |
| Max. output | 4.3 PS/5,000 rpm | 4.3 PS/2,428 rpm | 4.3 PS/5,000 rpm |
| Rated output | 3.0 PS/3,800 rpm | 3.0 PS/1,845 rpm | 3.0 PS/3,800 rpm |
| Max. torque | 0.68 kg-m/3,500 rpm | 1.4 kg-m/1,700 rpm | 0.68 kg-m/3,500 rpm |
| Displacement | 106 cm ³ | 106 cm ³ | 106 cm ³ |
| Fuel | Gasoline and oil mixture (50:1) | Gasoline and oil mixture (50:1) | Gasoline and oil mixture (50:1) |
| Fuel tank capacity | 3.25 l | 3.25 l | 2.6 l |
| Fuel consumption | 1.5 l/h | 1.5 l/h | 1.5 l/h |
| Engine oil capacity | 100 cm ³ | 80 cm ³ | 100 cm ³ |
| Ignition system | T.C.I (Transistor Controlled Ignition) | T.C.I (Transistor Controlled Ignition) | T.C.I (Transistor Controlled Ignition) |
| Spark plug | B-7HS | B-7HS | B-6HS |
| Starting system | Recoil starter | Recoil starter | Recoil starter |
| Dimensions (L×W×H) | 338 × 368 × 425 mm | 340 × 368 × 425 mm | 454 × 362 × 374 mm |
| Weight | 15.5 kg. | 16.6 kg | 14.8 kg |

Specifications are subject to change without notice.

* Installation is indicated by ✓

| P.T.O. DIMENSIONS Unit : mm (inch) | ENGINE TYPE | MOUNTING FACE | | T.C.I. IGNITION SYSTEM | STARTING SYSTEM | | MUFFLER | |
|---------------------------------------|-------------|---------------|---|------------------------|-----------------|--------|---------|-------------------------|
| | | A | B | | ROPE | RECOIL | S.T.D. | SILENT (with protector) |
| | | | | | | | | |
| MT110S | S0-1 | ✓ | | ✓ | ✓ | | ✓ | |
| | S0-2 | ✓ | | ✓ | | ✓ | ✓ | |
| | S0-3 | ✓ | | ✓ | | ✓ | | ✓ |
| | P1-3 | ✓ | | ✓ | | ✓ | | ✓ |
| | P3-3 | ✓ | | ✓ | | ✓ | | ✓ |
| MT110SR | P7-4 | | ✓ | ✓ | | ✓ | | ✓ |
| | R0-1 | ✓ | | ✓ | ✓ | | ✓ | |
| | R0-2 | ✓ | | ✓ | | ✓ | ✓ | |
| MT110VLS | R0-3 | ✓ | | ✓ | | ✓ | | ✓ |
| | | | | ✓ | | ✓ | | ✓ |

MOUNTING BASE/FACE

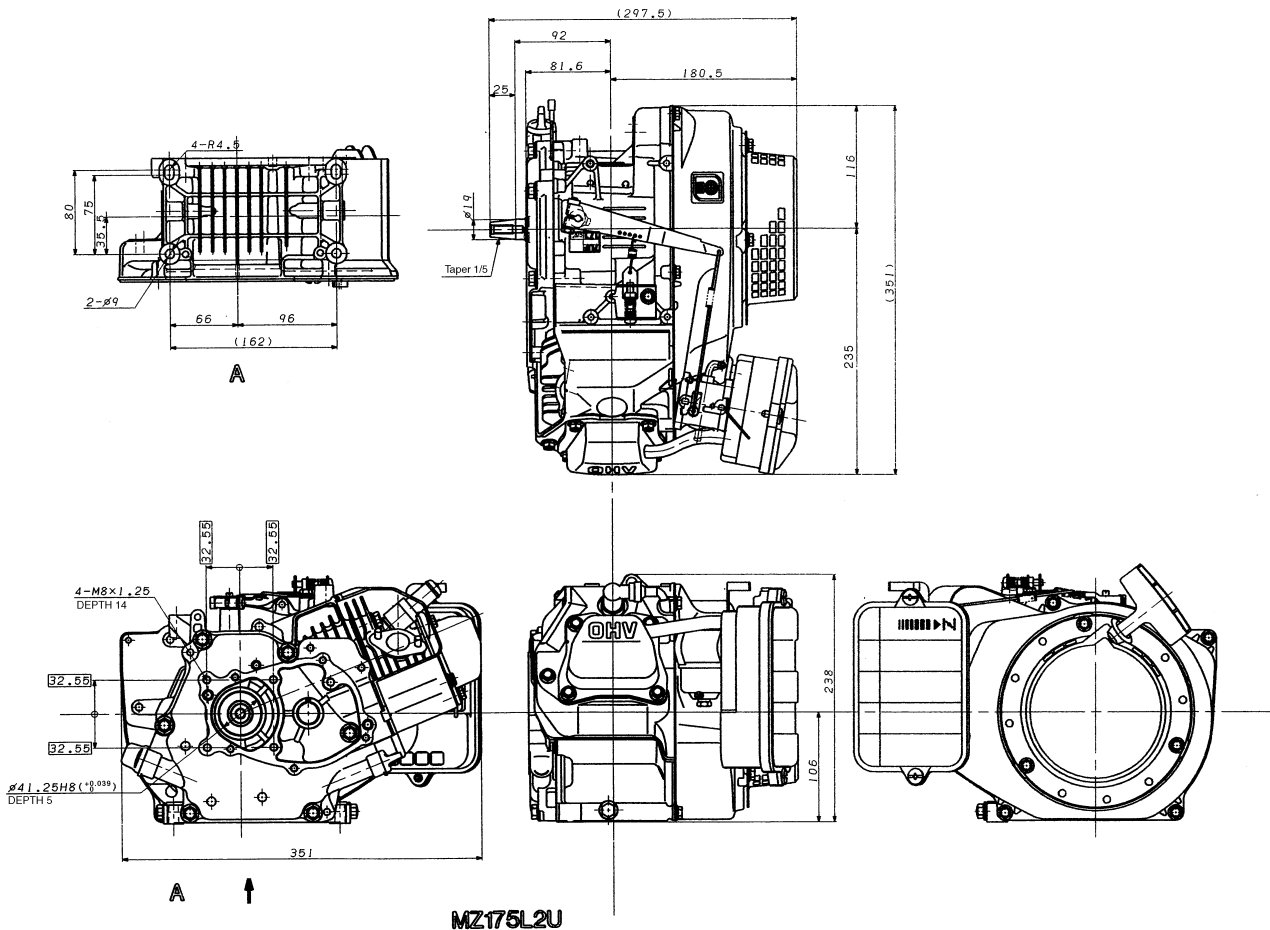
Unit: mm (inch)

| MOUNTING BASE | | MOUNTING FACE | |
|---------------|----------|---------------|----------|
| MT110S/SR | MT110VLS | A MT110S | B MT110S |
| | | | |

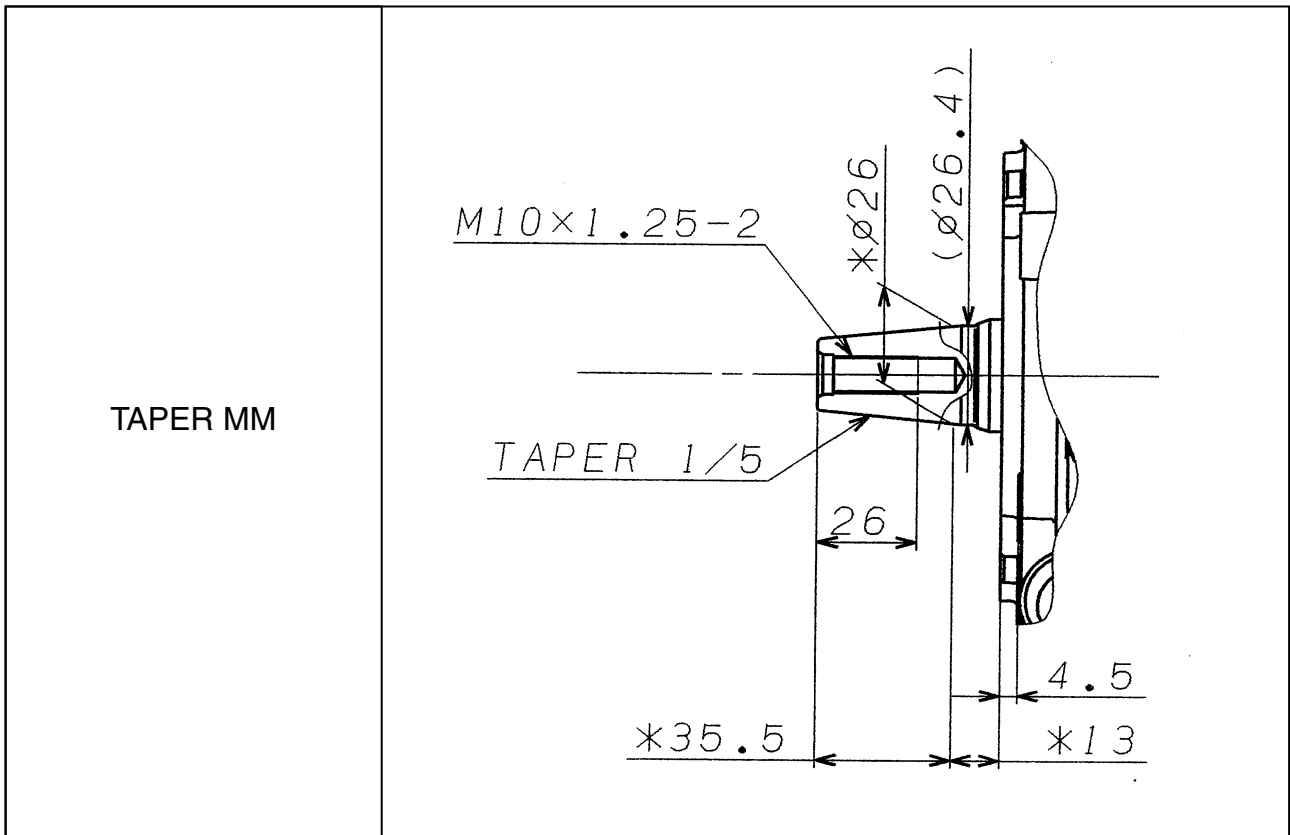
P.T.O. TYPE "L" DIMENSION

P.T.O. Type "L" Dimension (mm)

| | L | W | H |
|----------|-------|-----|-----|
| MZ175L2U | 297.5 | 351 | 238 |
| MZ175K2U | 334 | 351 | 238 |
| MZ250L2U | 348 | 431 | 304 |
| MZ300L2U | 375 | 451 | 308 |
| MZ300K2U | 441.5 | 451 | 308 |
| MZ360L2U | 375 | 451 | 308 |
| MZ360K2U | 441.5 | 451 | 308 |

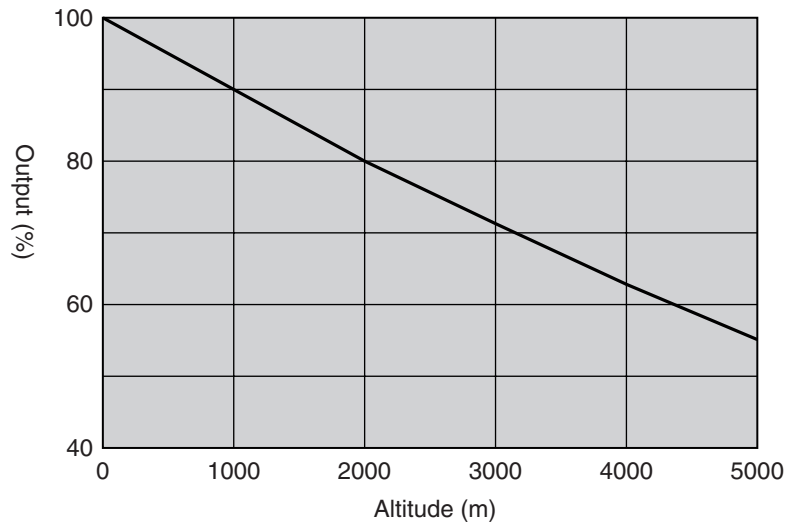


MZ250 P.T.O. Type "L" Dimension



PERFORMANCE AT HIGH ALTITUDE

At high altitude, the atmospheric pressure is low and the air becomes thin, therefore, the engine performance falls, as shown in the figure.



When the air becomes thin, the weight of the air inhaled into the engine will decrease. However, the fuel absorbed into the carburetor will not accordingly decrease and the air-fuel mixture will become richer.

Therefore, the engine will malfunction and stall. The ratio of the fuel consumption will drop. For this reason, the caliber size of the main jet needs to be changed to the smaller one.

An example of the relationship of the above-mentioned is as follows:

Example of the relationship between outputs drop by altitude and main jet replacement

| Altitude (m) | Output drop (%) | Caliber of main jet |
|--------------|-----------------|-----------------------------------|
| 0–1000 | 0–10 | Standard ↓ Small (see note) |
| 1000–2000 | 10–20 | |
| 2000–3000 | 20–30 | |
| 3000–4000 | 30–40 | |

Note: The caliber size of the main jet varies according to the engine displacement or the type of the carburetor, etc.

— MEMO —

COMPARISON CHART

MZ125

| Maker Model | | YAMAHA MZ125 | HONDA GX120 | KAWASAKI FE120 | KUBOTA GH120-D | ROBIN EH12 | mitsubishi GM131PN | | |
|-----------------------------------|------------------------------|--|---|------------------------|-----------------------|------------------------|-------------------------------|--|--|
| Type | | 4-stroke, OHV, air-cooled gasoline engine | ← | ← | ← | ← | ← | | |
| Displacement | [cc] | 123 | 118 | 124 | 121 | 121 | 126 | | |
| Bore × Stroke | [mm] | 56×50 | 64×42 | 60×44 | 60×43 | 60×43 | 60×42 | | |
| Compression Ratio | | 8.3 | 8.5 | 8.5 | 8.0 | 8.5 | | | |
| Inclination Angle | [degree] | 68 | 65 | 55 | Upright | Upright | 60 | | |
| Maximum Horsepower | [kw/rpm] [PS/rpm] | 2.9/4000 4.0/4000 | 2.9/4000 4.0/4000 | 2.9/4000 4.0/4000 | 2.9/4000 4.0/4000 | 2.6/3600 3.5/3600 | 2.9/ 4.0/ | | |
| Rated Horsepower | [kw/3600rpm] [PS/3600rpm] | 2.2 3.0 | 2.1 2.8 | 2.2 3.0 | 2.1 2.8 | 2.1 2.8 | 2.1 2.8 | | |
| Maximum Torque | [N · m/rpm] [kgf · m/rpm] | 7.65/2500 0.78/2500 | 7.45/2500 0.75/2500 | 7.45/2800 0.76/2800 | 6.86/3200 0.7/3200 | 7.45/2600 0.76/2600 | 7.65/2800 0.78/2800 | | |
| Fuel Consumption | [g/kw · h] [g/PS · h] | 299 220 | 313 230 | 340 250 | 313 230 | 313 230 | | | |
| Fuel Tank Capacity | [liter] | 4.5 | 2.5 | 2.5 | 3.0 | 3.6 | 3.0 | | |
| Lubrication Oil Capacity | [liter] | 0.6 | 0.6 | 0.6 | 0.5 | 0.6 | 0.6 | | |
| Fuel | | unleaded gasoline | | | | | Lead Free Automobile Gasoline | | |
| Oil | | SAE:10W-30-10W-40 API:SE-SF | | | | | Engine Oil SD Class or Higher | | |
| Fuel Supply System | | Gravity | ← | | | | | | |
| Lubrication System | | Forced splash | ← | ← | ← | ← | ← | | |
| Oil Filler | | Dual | ← | | | | | | |
| Oil Alert | | Option | ← | ← | Not available | Option | | | |
| Spark Plug | | NGK BPR4ES | | | | | | | |
| Ignition System | | Transistor (T.C.I.) | ← | ← | ← | ← | ← | | |
| Air Cleaner Element | | Semi-dry, Dual, Semicyclone [Oil bath, Chimney] | Semi-dry, Oil bath, Dual, Silent, Cyclone | | | | | | |
| Governor System | | Mechanical governor | ← | ← | ← | ← | ← | | |
| Balancer | | Not available | ← | ← | ← | ← | ← | | |
| Starting System | | Recoil [Electric] | ← | | | | Recoil, Electric | | |
| Decompressor | | Mechanical | ← | ← | ← | ← | Mechanical | | |
| Recoil Starting Pulling Direction | | Changeable by 30° | Changeable by 60° | Changeable by 120° | Changeable by 90° | ← | Changeable by 30° | | |
| Cast Iron Cylinder Liner | | Yes | ← | ← | ← | ← | ← | | |
| Ball Bearing Crankshaft | | Yes | ← | | ← | ← | ← | | |
| Revolution Direction (PTO shaft) | | Counterclockwise | ← | ← | ← | ← | ← | | |
| Gauge-equipped Fuel Tank | | Not available | Option | Yes | | Option | Yes | | |
| Dry Weight | [kg] | 15.5 | 14.5 | 14.6 | 13.0 | 14.0 | 15.0 | | |
| Dimension (L × W × H) | [mm] | 315×352×370 (P.T.O. B type) | 300×345×320 | 291×349×344 | 303×326×365 | 301×330×366 | 312×339×336 | | |

MZ175

| Maker Model | | YAMAHA MZ175 | HONDA GX160 | KAWASAKI FE170D | KUBOTA GH170-D | ROBIN EH17 | mitsubishi GM181PN | | |
|-----------------------------------|------------------------------|--|---|------------------------|--------------------------|------------------------|-------------------------------|--|--|
| Type | | 4-stroke, OHV, air-cooled gasoline engine | ← | ← | ← | ← | ← | | |
| Displacement | [cc] | 171 | 163 | 171 | 169 | 172 | 181 | | |
| Bore × Stroke | [mm] | 66×50 | 68×45 | 60×55 | 67×48 | 67×49 | 68×50 | | |
| Compression Ratio | | 8.5 | 8.5 | 8.5 | 8.3 | 8.5 | | | |
| Inclination Angle | [degree] | 68 | 65 | 55 | Upright | Upright | 60 | | |
| Maximum Horsepower | [kw/rpm] [PS/rpm] | 4/4000 5.5/4000 | 4.0/4000 5.5/4000 | 4.1/4000 5.6/4000 | 4.4/4000 6.0/4000 | 3.7/3600 5.0/3600 | 4.4/ 6.0/ | | |
| Rated Horsepower | [kw/3600rpm] [PS/3600rpm] | 3.3 4.5 | 2.9 4.0 | 3.1 4.2 | 3.2 4.3 | 2.9 4.0 | 3.3 4.5 | | |
| Maximum Torque | [N · m/rpm] [kgf · m/rpm] | 10.8/2500 1.1/2500 | 10.8/2500 1.10/2500 | 11.1/2800 1.13/2800 | 10.8/3200 1.10/3200 | 10.7/2600 1.09/2600 | 11.6/2800 1.18/2800 | | |
| Fuel Consumption | [g/kw · h] [g/PS · h] | 285 210 | 313 230 | 340 250 | 313 230 | 313 230 | | | |
| Fuel Tank Capacity | [liter] | 4.5 | 3.6 | 3.4 | 3.6 | 3.6 | 4.0 | | |
| Lubrication Oil Capacity | [liter] | 0.6 | 0.6 | 0.6 | 0.6 | 0.65 | 0.7 | | |
| Fuel | | unleaded gasoline | | | | | Lead Free Automobile Gasoline | | |
| Oil | | SAE10W-30SE or SAE10W-40SE | | | | | Engine Oil SD Class or Higher | | |
| Fuel Supply System | | Gravity | ← | | | | | | |
| Lubrication System | | Forced splash | ← | ← | ← | ← | ← | | |
| Oil Filler | | Dual | ← | | Opposite Carburetor Side | | | | |
| Oil Alert | | Option | ← | ← | Not available | Option | | | |
| Spark Plug | | NGK BPR4ES | | | | | | | |
| Ignition System | | Transistor (T.C.I.) | ← | ← | ← | ← | ← | | |
| Air Cleaner Element | | Semi-dry, Dual, Semicyclone [Oil bath, Chimney] | Semi-dry, Oil bath, Dual, Silent, Cyclone | | | | | | |
| Governor System | | Mechanical governor | ← | ← | ← | ← | ← | | |
| Balancer | | Not available | ← | ← | ← | ← | One axis | | |
| Starting System | | Recoil, Electric | ← | | | | Recoil, Electric | | |
| Decompressor | | Mechanical | ← | ← | ← | ← | ← | | |
| Recoil Starting Pulling Direction | | Changeable by 30° | Changeable by 60° | Changeable by 120° | Changeable by 90° | ← | Changeable by 30° | | |
| Cast Iron Cylinder Liner | | Yes | ← | ← | ← | ← | ← | | |
| Ball Bearing Crankshaft | | Yes | ← | | ← | ← | ← | | |
| Revolution Direction (PTO shaft) | | Counterclockwise | ← | ← | ← | ← | ← | | |
| Gauge-equipped Fuel Tank | | Not available | Option | Yes | | Option | Yes | | |
| Dry Weight | [kg] | 16.0 | 14.0 | 17.5 | 15.0 | 15.5 | 18.5 | | |
| Dimension (L×W×H) | [mm] | 315×352×370 (P.T.O. B type) | 305×365×335 | 299×354×370 | 314×356×392 | 313×330×380 | 334×363×368 | | |

MZ300


| Maker Model | | YAMAHA MZ300 | HONDA GX270 | KAWASAKI FE290 | KUBOTA GH280-D | ROBIN EH30 | mitsubishi GM301PN | | |
|-----------------------------------|------------------------------|---|---|------------------------|--------------------------|------------------------|-------------------------------|--|--|
| Type | | 4-stroke, OHV, air-cooled gasoline engine | ← | ← | ← | ← | ← | | |
| Displacement | [cc] | 301 | 270 | 286 | 274 | 291 | 296 | | |
| Bore × Stroke | [mm] | 78×63 | 77×58 | 78×60 | 79×56 | 78×61 | 80×59 | | |
| Compression Ratio | | 8.1 | 8.2 | 8.4 | 8.2 | 8.3 | | | |
| Inclination Angle | [degree] | 62 | 65 | 55 | Upright | Upright | 60 | | |
| Maximum Horsepower | [kw/rpm] [PS/rpm] | 7.4/4000 10.0/4000 | 6.6/3600 9.0/3600 | 6.9/4000 9.4/4000 | 7.0/4000 9.5/4000 | 6.6/3600 9.0/3600 | 7.4/ 10.0/ | | |
| Rated Horsepower | [kw/3600rpm] [PS/3600rpm] | 5.8 7.9 | 5.1 7.0 | 5.4 7.4 | 4.9 6.6 | 5.1 7.0 | 5.5 7.5 | | |
| Maximum Torque | [N · m/rpm] [kgf · m/rpm] | 19.6/2500 2.0/2500 | 19.1/2500 1.95/2500 | 18.5/2500 1.89/2500 | 18.6/2800 1.9/2800 | 19.1/2500 1.95/2500 | 19.3/2800 1.97/2800 | | |
| Fuel Consumption | [g/kw · h] [g/PS · h] | 299 220 | 313 230 | 326 240 | 313 230 | 313 230 | | | |
| Fuel Tank Capacity | [liter] | 6.7 | 6.0 | 6.1 | 6.0 | 6.0 | 6.0 | | |
| Lubrication Oil Capacity | [liter] | 1.1 | 1.1 | 1.1 | 0.9 | 1.2 | 1.2 | | |
| Fuel | | unleaded gasoline | | | | | Lead Free Automobile Gasoline | | |
| Oil | | SAE10W-30SE or SAE10E-40SE | | | | | Engine Oil SD Class or Higher | | |
| Fuel Supply System | | Gravity | ← | | | | | | |
| Lubrication System | | Forced splash | ← | Full pressurized | Forced splash | ← | ← | | |
| Oil Filler | | Dual | ← | | Opposite Carburetor Side | Dual | | | |
| Oil Alert | | Option | ← | ← | Option | ← | | | |
| Spark Plug | | NGK BPR4ES | | | | | | | |
| Ignition System | | Transistor (T.C.I.) | ← | ← | ← | ← | ← | | |
| Air Cleaner Element | | Semi-dry, Dual, Semicyclone | Semi-dry, Oil bath, Dual, Silent, Cyclone | | | | | | |
| Governor System | | Mechanical governor | ← | ← | ← | ← | ← | | |
| Balancer | | One axis | One axis (Option) | Reciprocating | | Two axes | One axis | | |
| Starting System | | Recoil, Electric | ← | | | | Recoil, Electric | | |
| Decompressor | | Mechanical | ← | ← | ← | ← | ← | | |
| Recoil Starting Pulling Direction | | Changeable by 30° | Changeable by 60° | Changeable by 90° | ← | Changeable by 90° | Changeable by 30° | | |
| Cast Iron Cylinder Liner | | Yes | ← | ← | ← | ← | ← | | |
| Ball Bearing Crankshaft | | Yes | ← | | ← | ← | ← | | |
| Revolution Direction (PTO shaft) | | Counterclockwise | ← | ← | ← | ← | ← | | |
| Gauge-equipped Fuel Tank | | Not available | Option | Yes | | Option | Yes | | |
| Dry Weight | [kg] | 31.0 | 25.0 | 33.6 | 25.0 | 30.0 | 27.0 | | |
| Dimension (L×W×H) | [mm] | 399×445×441 (P.T.O. B type) | 350×430×410 | 363×408×441 | 380×426×460 | 363×395×482 | 395.5×426.5×431 | | |

MZ360

| Maker Model | | YAMAHA MZ360 | HONDA GX340 | HONDA GX390 | KAWASAKI FE350 | KUBOTA GH400-D | ROBIN EH34 | VANGIARD 235432 | |
|-----------------------------------|------------------------------|--|---|---|-----------------------|--------------------------|------------------------|-----------------------|--|
| Type | | 4-stroke, OHV, air-cooled gasoline engine | ← | ← | ← | ← | ← | ← | |
| Displacement | [cc] | 357 | 337 | 389 | 351 | 389 | 338 | 391 | |
| Bore × Stroke | [mm] | 85×63 | 82×64 | 88×64 | 88×65 | 84.2×70 | 84×61 | 89×63 | |
| Compression Ratio | | 8.1 | 8.0 | 8.0 | 8.4 | 8.5 | 8.3 | | |
| Inclination Angle | [degree] | 62 | 65 | 65 | 55 | Upright | Upright | 60 | |
| Maximum Horsepower | [kw/rpm] [PS/rpm] | 8.8/4000 12.0/4000 | 8.1/3600 11/3600 | 9.6/3600 13/3600 | 8.5/4000 11.6/4000 | 9.6/3600 13/3600 | 8.1/3600 11/3600 | 8.1/3600 11.0/3600 | |
| Rated Horsepower | [kw/3600rpm] [PS/3600rpm] | 7.1 9.7 | | 6.6 9.0 | 6.3 8.5 | 6.6 9.0 | 5.9 8.0 | | |
| Maximum Torque | [N · m/rpm] [kgf · m/rpm] | 24.5/2500 2.5/2500 | 23.5/2500 2.4/2500 | 26.5/2500 2.7/2500 | 23.5/2500 2.4/2500 | 25.5/2400 2.6/2400 | 23.6/2500 2.41/2500 | | |
| Fuel Consumption | [g/kw · h] [g/PS · h] | 299 220 | 313 230 | ← 230 | 326 240 | 313 230 | 313 230 | | |
| Fuel Tank Capacity | [liter] | 6.7 | 6.5 | 6.5 | 6.4 | 6.0 | 6.0 | 7.9 | |
| Lubrication Oil Capacity | [liter] | 1.1 | 1.1 | 1.1 | 1.3 | 1.1 | 1.2 | 1.5 | |
| Fuel | | unleaded gasoline | | | | | | | |
| Oil | | SAE10W-30SE or SAE10W-40SE | | | | | | | |
| Fuel Supply System | | Gravity | ← | ← | | | | | |
| Lubrication System | | Forced splash | ← | ← | Full pressurized | Full pressurized | Forced splash | Forced splash | |
| Oil Filler | | Dual | ← | ← | | Opposite Carburetor Side | Dual | | |
| Oil Alert | | Option | ← | ← | ← | ← | ← | | |
| Spark Plug | | NGK BPR4ES | | | | | | | |
| Ignition System | | Transistor (T.C.I.) | ← | ← | ← | ← | ← | ← | |
| Air Cleaner Element | | Semi-dry, Dual, Semicyclone | Semi-dry, Oil bath, Dual, Silent, Cyclone | Semi-dry, Oil bath, Dual, Silent, Cyclone | | | | | |
| Governor System | | Mechanical governor | ← | ← | ← | ← | ← | ← | |
| Balancer | | One axis | ← | ← | Reciprocating | | Two axes | One axis | |
| Starting System | | Recoil, Electric | ← | ← | | Electric | | Recoil, Electric | |
| Decompressor | | Mechanical | ← | ← | ← | ← | ← | ← | |
| Recoil Starting Pulling Direction | | Changeable by 30° | Changeable by 60° | ← | Changeable by 90° | | Changeable by 90° | ← | |
| Cast Iron Cylinder Liner | | Yes | ← | ← | ← | ← | ← | ← | |
| Ball Bearing Crankshaft | | Yes | ← | ← | | ← | ← | ← | |
| Revolution Direction (PTO shaft) | | Counterclockwise | ← | ← | ← | ← | ← | ← | |
| Gauge-equipped Fuel Tank | | Not available | Option | ← | Yes | | Option | Yes | |
| Dry Weight | [kg] | 31.0 | 31.0 | 31.0 | 34.4 | 38.0 | 30.0 | 33.2 | |
| Dimension (L×W×H) | [mm] | 399×445×441 (P.T.O. C type) | 405×450×443 | 380×450×435 | 378×422.5×454.5 | 369×472×447 | 363×395×485 | 420.5×464.5×466 | |



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