

OPERATION AND PARTS MANUAL



Tamping Rammer *Mikasa* Model MT-86D

(YANMAR L48EE-DRM ENGINE)

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Revision #1 (08/19/04)



MULTIQUIP INC.

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PARTS DEPARTMENT:

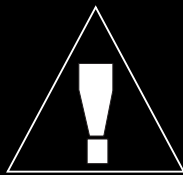
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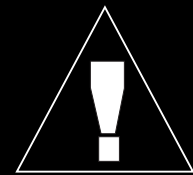
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WARNING



CALIFORNIA — Proposition 65 Warning

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

HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL
NUMBER *ON-HAND* WHEN CALLING

MULTIQUIP'S MAIN PHONE NUMBERS

800-421-1244 FAX: 310-537-3927
310-537-3700

PARTS DEPARTMENT

800-427-1244 FAX: 800-672-7877
310-537-3700 FAX: 310-637-3284

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310-537-3700 FAX: 310-637-3284

SERVICE DEPARTMENT

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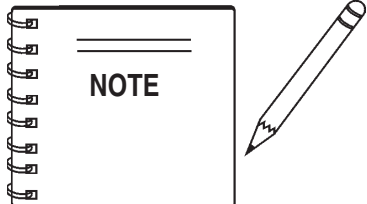
800-421-1244, EXT. 279 FAX: 310-537-1173
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**MIKASA MT-86D —
Tamping Rammer**

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ENGINE**

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Specification and part number are subject to change without notice.

PARTS ORDERING PROCEDURES

When ordering parts, please supply the following information:

- Dealer account number
- Dealer name and address
- Shipping address (if different than billing address)
- Return fax number
- Applicable model number
- Quantity, part number and description of each part
- Specify preferred method of shipment:
 - ✓ FedEx or UPS Ground
 - ✓ FedEx or UPS Second Day or Third Day
 - ✓ FedEx or UPS Next Day
 - ✓ Federal Express Priority One
 - ✓ DHL
 - ✓ Truck

Note: Unless otherwise indicated by customer, all orders are treated as "Standard Orders", and will ship within 24 hours. We will make every effort to ship "Air Shipments" the same day that the order is received, if prior to 2PM west coast time. "Stock Orders" must be so noted on fax or web forms.



Here's how to get help...

Please have the model and serial number on hand when calling.

Parts Department

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310-537-3700 Fax: 310-637-3284

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Service Department

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Multiquip's Main Phone Numbers

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Place Your Parts Order Via Web or Fax For Even More Savings!

Extra Discounts!

All parts orders which include complete part numbers and are received by our automated web parts order system, or by fax qualify for the following extra discounts:

Ordered via	Standard orders	Stock orders (\$750 list and above)
Fax	3%	10%
Web	5%	10%

Special freight allowances when you order 10 or more line items via Web or Fax! **

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NOTE: DISCOUNTS ARE SUBJECT TO CHANGE

Direct TOLL-FREE access to our Parts Department:

Toll-free nationwide — 800-427-1244

MT-86D — RULES FOR SAFE OPERATION

CAUTION:



Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be operated by trained and qualified personnel only! This equipment is for industrial use only.

The following safety guidelines should always be used when operating the MT-86D Tamping Rammer:

GENERAL SAFETY

- **DO NOT** operate or service this equipment before reading this entire manual.



- This equipment should not be operated by persons under 18 years of age.

- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, steel-toed boots and other protective devices required by the job.



- **NEVER** operate this equipment when not feeling well due to fatigue, illness or taking medicine.



- **NEVER** operate this equipment under the influence of drugs or alcohol.



- **NEVER** use accessories or attachments, which are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.

- Manufacture does not assume responsibility for any accident due to equipment modifications.

- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.

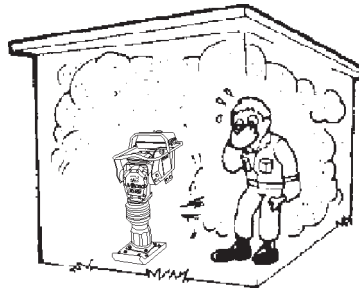
- Always check the machine for loosened threads or bolts before starting.

- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing engine or rammer.



- **High Temperatures** – Allow the engine to cool before adding fuel or performing service and maintenance functions. Contact with *hot* components can cause serious burns.

- The engine section of this rammer requires an adequate free flow of cooling air. Never operate the rammer in any enclosed or narrow area where free flow of the air is restricted. If the air



flow is restricted it will cause serious damage to the rammer or engine and may cause injury to people. Remember the rammer's engine gives off **DEADLY** carbon monoxide gas.

- Always refuel in a well-ventilated area, away from sparks and open flames.



- Always use extreme caution when working with **flammable** liquids. When refueling, **stop the engine** and allow it to cool. **DO NOT** smoke around or near the machine. Fire or explosion could result from fuel vapors, or if fuel is spilled on a hot engine.

- **NEVER** operate the rammer in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe *bodily harm or even death*.

- Topping-off to filler port is dangerous, as it tends to spill fuel.

MT-86D — RULES FOR SAFE OPERATION

- **NEVER** Run engine without air filter. Severe engine may occur.
- Always service air cleaner frequently to prevent carburetor malfunction.
- Always be sure the operator is familiar with proper safety precautions and operations techniques before using rammer.
- Always store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.
- **NEVER** use accessories or attachments, which are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.
- **NEVER** Run engine without air cleaner. Severe engine damage may occur.
- Always read, understand, and follow procedures in Operator's Manual before attempting to operate equipment.
- Always be sure the operator is familiar with proper safety precautions and operations techniques before using pump.
- Always store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.
- Refer to the **ROBIN Engine Owner's Manual** for engine technical questions or information recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.

Transporting

- Always shutdown engine before transporting.
- Tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
- Drain fuel when transporting rammer over long distances or bad roads.
- When placing the rammer inside a truck-bed for transport, always tie-down the rammer.

Emergencies

- Always know the location of the nearest **fire extinguisher** and **first aid kit**. Know the location of the nearest telephone. Also know the phone numbers of the nearest **ambulance**, **doctor** and **fire department**. This information will be invaluable in the case of an emergency.

Maintenance Safety

- **NEVER** lubricate components or attempt service on a running machine.
- Always allow the machine a proper amount of time to cool before servicing.
- Keep the machinery in proper running condition.
- Fix damage to the machine immediately and always replace broken parts.
- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters.
- **DO NOT** use food or plastic containers to dispose of hazardous waste.



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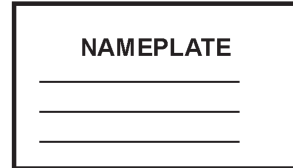
P/N 920203330

SAE 10W-30
MOTOR OIL

P/N 920201950

3650 ~ 3850 RPM
NPA 90

P/N 920205820



CONTACT MULTIQUIP
SERVICE DEPT.

CAUTION !

- READ OWNER'S SERVICE MANUAL BEFORE OPERATING OR SERVICING THIS MACHINE.
- ALWAYS KEEP UNAUTHORIZED, INEXPERIENCED, UNTRAINED PEOPLE AWAY FROM THIS MACHINE.
- MAKE SURE ALL SAFETY DEVICES ARE OPERATIONAL BEFORE THIS MACHINE IS STARTED. MAKE SURE ENGINE IS TURNED OFF AND SPARK PLUG WIRE DISCONNECTED BEFORE SERVICING THE MACHINE OR COMING IN CONTACT WITH ANY MOVING PART. IF EQUIPMENT IS POWERED BY AN ELECTRIC MOTOR, DISCONNECT ELECTRICAL PLUG.
- NEVER LEAVE MACHINE UNATTENDED WHEN OPERATING. ALWAYS STOP ENGINE AND ALLOW ENGINE TO COOL BEFORE ADDING FUEL OR OIL.

NPA-329 ©

P/N 920203290

NOTICE

Clean the element with neutral cleanser solution and rinse it by water. Dry it well before installation. Cleaning is requested more often in dusty conditions.

NPA-583

CAUTION

1. Before operation of this machine, the designated operator must read and completely understand the operating instruction manual.
2. Operator must wear correct protective clothing (safety glasses, steel toed boots, etc.).
3. Check all nuts, bolts and fasteners, retighten as necessary.
4. Lower unit lubrication must be checked daily (oil level must be at least half way on sight glass).
5. Engine oil must be checked daily (a good quality diesel oil must be used). Do not use gasoline motor oil.
6. There are only 3 positions on the throttle lever: Stop, Idle, and Operating.
7. Starting Engine:
 - A. Place the throttle in the idle position.
 - B. Pull the recoil until a slight resistance is felt.
 - C. Allow recoil to retract. Press the decompression lever to decompress. Pull the recoil firmly and quick.
 - D. Allow the recoil to retract before releasing.
 - E. Engine must be allowed to warm-up approximately five minutes before operating unit.
8. Operating:

Place the throttle lever to the operating position.
9. Stop:

The engine must be allowed to idle for approximately three minutes before stopping.

NPA-584 ©

Lubrication Oil Recommendations: Fuel: **Diesel**

Lower Unit: SAE CF class or higher 10W30

Engine: SAE CC class or higher 10W30

P/N 920205840

Definition of Tamping Rammer

The Mikasa MT-86D tamping rammer is a powerful compacting tool capable of applying a tremendous force in consecutive impacts to a soil surface. Its applications include soil compacting for road, embankments and reservoirs as well as backfilling for gas pipelines, water pipelines and cable installation work.

The impact force of the MT-86D levels and uniformly compacts voids between soil particles to increase dry density.

Circular motion is converted to create impact force. The MT-86D tamping rammer develops a powerful compacting force at the foot of the rammer. To maintain optimum performance, proper operation and service are essential.

Construction of Tamping Rammer

The Mikasa MT-86D Tamping Rammer is equipped with an Robin air cooled, four cycle gasoline engine. Transmission of the power takes place by increasing the engine speed to engage the centrifugal clutch.

Rammer Gearbox and Spring Cylinder

The Mikasa MT-86D uses an oil bath lubrication system. Always check the oil level through the oil level sight glass at the rear of the tamper foot.

Controls

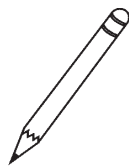
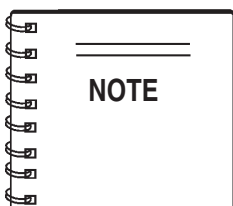
Before starting the MT-86D Tamping Rammer, identify and understand the function of the controls, see Figure 1 on page 11.

Table 1. MT-86D Rammer Specifications

MODEL	MT-86D U.S. (metric)
Overall Height	39.4 in. (1,000 mm)
Overall Width	16.1 in (410 mm)
Over Length	28.3 in (720 mm)
Shoe Size	13 in. (330 mm)
Blows/minute	700
Impact Force	4,500 lbs./blow (2,041 kg/blow)
Clutch	Automatic Centrifugal
Operating Weight	202 lbs. (92 kg)

Table 2. Yanmar L-40 ADRM STD Engine Specifications

MODEL	Yanmar L48EE-DRM ENGINE (EPA)
Type	Air-Cooled 4 Stroke Diesel Engine
Piston Displacement	12.14 cu. in. (199 cc)
Max. Governed Speed, No Load	3,300 rpm
Cooling System	Air-Cooled
Lubrication System	Diesel Engine Lububricating Oil API Classification "CC" or "CD" Grade
Fuel	Automotive Diesel Fuel
Starting System	Recoil Starter with Auto-Return Decompression Device



Specifications are general and are subject to change without notice. If exact measurements are required, equipment should be weighed and measured.

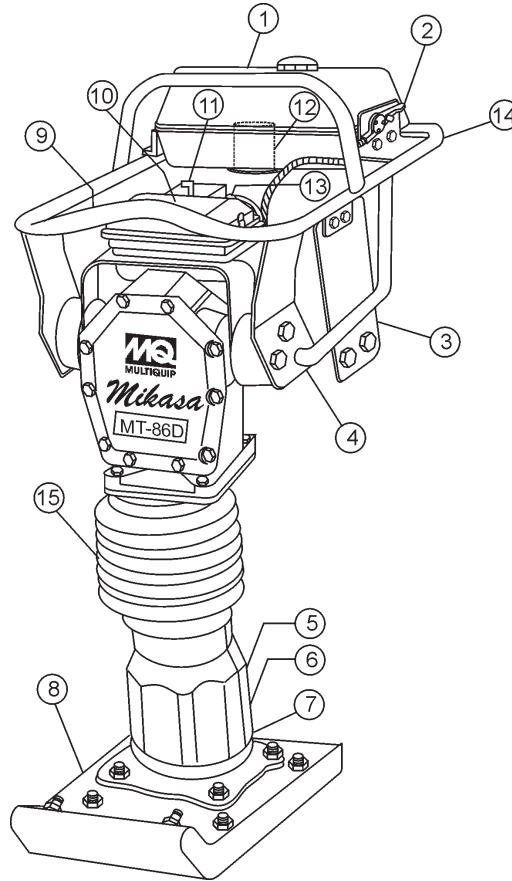


Figure A. MT-86D Tamping Rammer

Figure A shows the location of the controls and components for the MT-86D Tamping Rammer. The functions of each control is described below:

1. **Fuel Tank/Cap** – Remove this cap to add **diesel** fuel. Use high grade automotive diesel fuel only.
2. **Throttle Lever** – Controls engine speed and the tamping action of the rammer.
3. **Engine Oil Dipstick** – Indicates the level of the engine oil. Use CC class or higher grade motor oil.
4. **Oil filter** – Prevents dirt and other debris from entering the engine.
5. **Oil Bath Fill Plug** – Open this plug to add oil to the oil bath reservoir.
6. **Oil Level Sight Glass** – Indicates the level of oil in the oil bath reservoir.
7. **Drain Valve** – Open this valve to remove oil from the bellows.
8. **Foot** – Laminated wood with tempered steel plate for superior shock absorption.
9. **Muffler** – Used to reduce noise and emissions.
10. **Engine Air Cleaner** – Prevents dirt and other debris from entering the engine.
11. **Decompression Lever** – Use in the starting of the engine. Press lever to engage. After engine starts lever will return to original position.
12. **Fuel Filter** – Located inside fuel tank. Prevents dirt and debris from entering fuel system.
13. **Recoil Starting Handle** – Used when starting the engine. Pull starter handle sharply and quickly, then return starter handle to starter case before releasing.
14. **Handle** – To operate rammer **GRIP** handle assembly firmly on both sides.
15. **Bellows** – Reservoir for oil bath.

1. Definition of Tamping Rammer

The Mikasa MT-86D diesel rammer is a powerful compacting tool capable of applying tremendous force in consecutive impacts to a soil surface. The impact force of the MT-86D levels and uniformly compacts voids between soil particles to increase dry density. Its applications include soil compacting for road, embankment and reservoirs as well as backfilling for gas pipelines, water pipelines and cable installation work.

2. Construction of Tamping Rammer

The rammer is equipped with an air-cooled, four-stroke diesel engine. Transmission of the power takes place by increasing engine speed to engage a centrifugal clutch. Circular motion is converted into vertical motion to create impact force.

3-2. Preparation Inspection:

Rammer Gearbox and Spring Cylinder. This unit uses an oil bath lubrication system. Check oil level through oil level sight glass at rear of tamper foot. If oil is not visible, add #10W-30 motor oil. Oil bath contains approx. 1.7 pt. (800cc) for MT-86D.

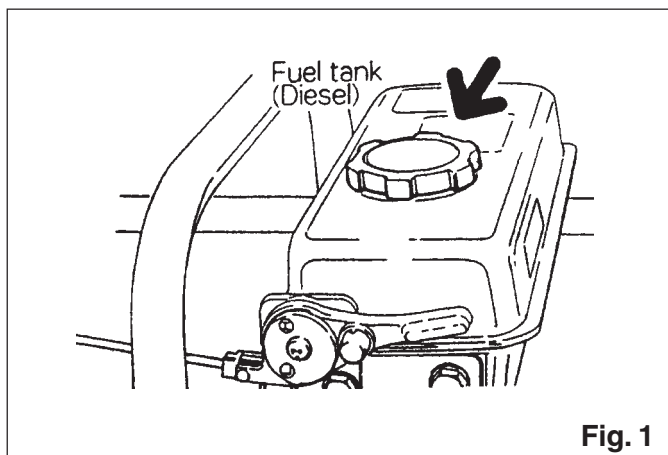
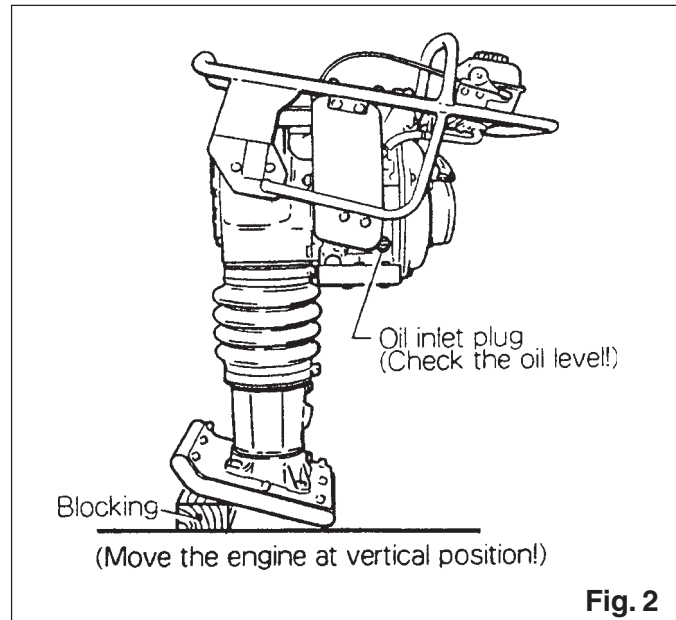
3-3. Engine:

Use only automobile diesel fuel (Fig. 1). Check the engine oil before starting operation and fill the oil regularly (Fig. 2). For checking the oil level, move the engine to vertical position and check that the oil is level with the oil inlet (about 700cc).

3-4. Check all nuts, bolts and fasteners for tightness. Retighten as necessary.

3-5. Clean dirt from the recoil starter and foot. Wipe entire unit clean before operating.

3-6. Replace any missing or damaged Safety/Operation decals.



4. Starting

4-1. Move the throttle lever to IDLE position. (Fig. 3)



Throttle lever is used only at three (STOP, IDLE & OPERATION) positions. When moving the lever from stop to idle position, depress button on lever at same time it is moved.



In cold weather, the engine should be started at operating position or between the idle and operation position of the throttle lever. Use caution as higher engine RPM may engage clutch, when engine starts. Return throttle lever from starting position to idle position when engine starts.

4-2. Grip the recoil starter handle and pull it until you feel a slight resistance. (Fig. 4)

4-3. Press the decompression lever to release decompression. The decompression lever will return automatically when the recoil starter is pulled. (Fig. 5)

4-4. Return the recoil starter, and pull the handle sharply and quickly. Warm up the engine by running at low speed for three to five minutes, while checking for fuel leakage or abnormal sounds.



Do not pull the starter rope all the way to the end and do not let the starter rope snap back as damage may result.

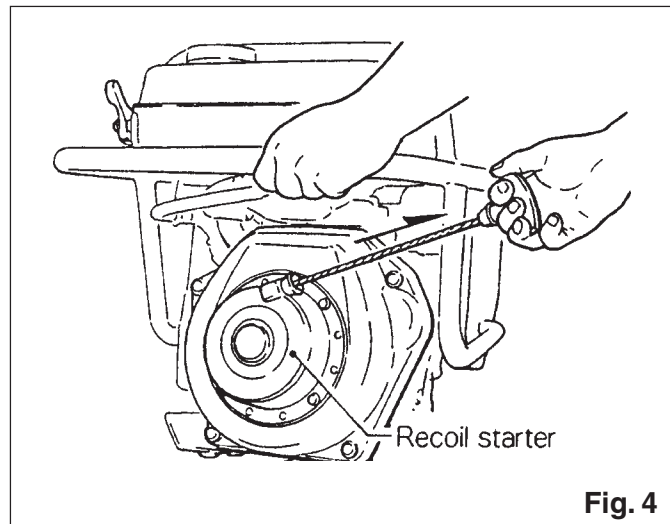


Fig. 4

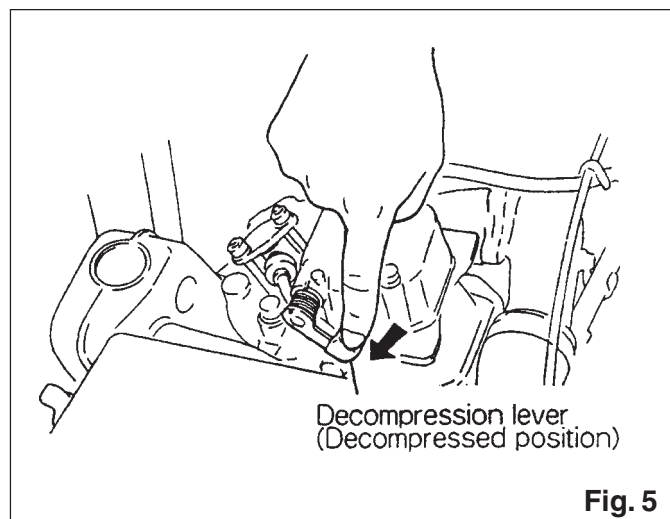


Fig. 5

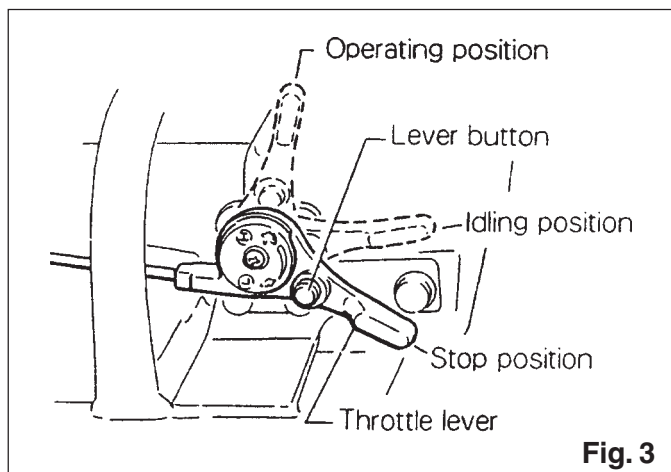


Fig. 3

5. Operation

5-1. Move the throttle lever quickly from the IDLE to OPERATION position to start tamping action. DO NOT move the throttle lever slowly as this may cause damage to the clutch or spring box.

5-2. The tamping rammer is designed to tamp the ground 700 times per minute at an engine speed of 3,300 rpm. Increasing the engine speed above the recommended rpm will not increase the rammer effectiveness. Impact will actually decrease because a resonance is created rather than a tamping effect, and damage to the unit can result.

5-3. The rammer can be warmed by quickly moving the throttle lever from the OPERATION to the IDLE position several times until the rammer operates smoothly.

5-4. The tamping rammer is designed to travel forward while tamping. To increase travel speed, pull back slightly on the handle so that the rear of the foot contacts the soil first.

5-5. To stop tamping, quickly move the throttle lever from the OPERATION to IDLE position. Do not move the lever slowly as irregular action and damage may result.

6. Stopping the Engine

6-1. Move throttle lever quickly from idle to STOP while pressing the throttle lever button. Run the engine for three minutes at idle speed to allow for proper cool down. Following the above procedures will prevent improper cylinder lubrication caused by a overheated engine. (Fig. 6)

7. Service

CAUTION:

Flammable Liquid: When refueling, stop engine and allow it to cool.. Do no smoke or allow work to be performed in the immediate area. Fire or explosion could result from flames or sparks, or if fuel is spilled on a hot engine.



Moving Parts: Shut down the engine before performing service or maintenance functions.

Contact with moving parts can cause serious injury.

High Temperatures: Allow machine and engine to cool before performing service or maintenance functions. Contact with hot components can cause serious burns.

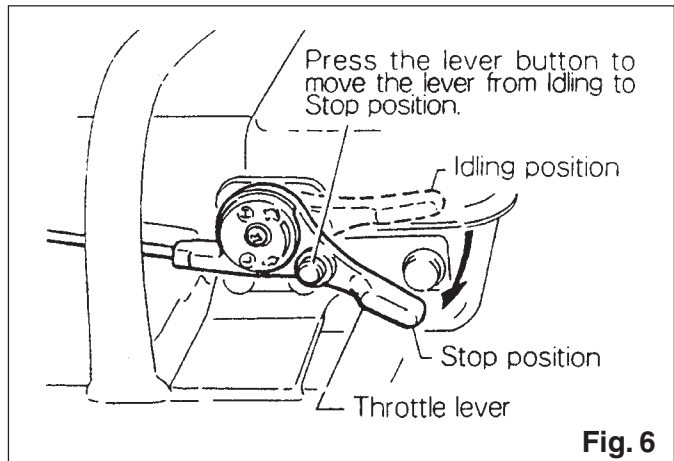


Fig. 6

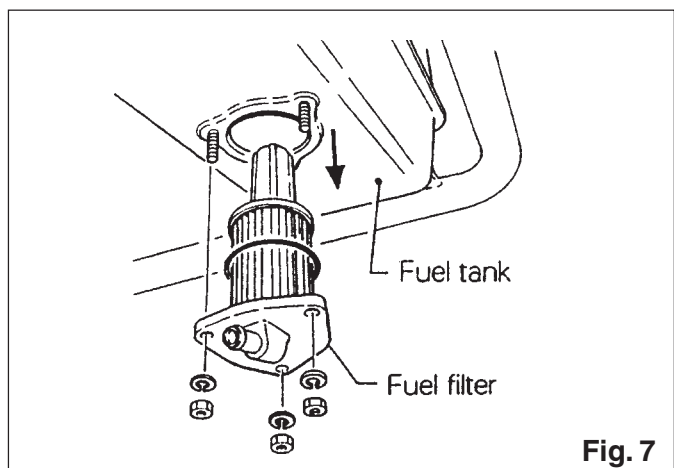


Fig. 7

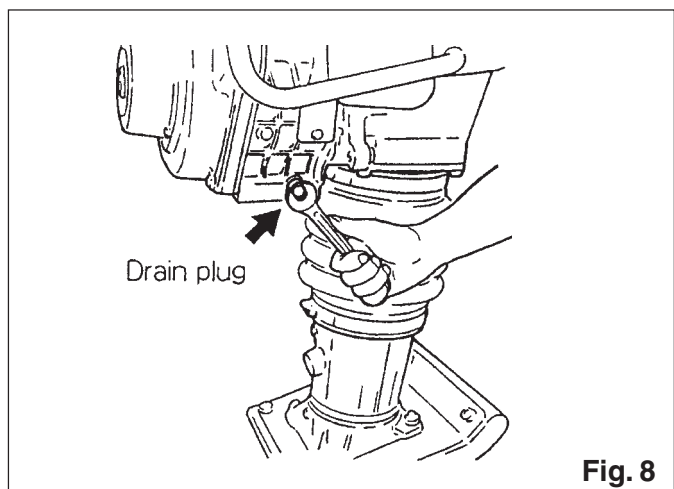


Fig. 8

7-1. Daily

- Thoroughly remove dirt and oil from the engine and control area.
- Clean or replaces air cleaner as necessary.
- Check and retighten all fasteners as necessary.
- Check spring box and bellows for oil leaks. Repair as needed.
- Remove element from pre-cleaner at the top of crankcase (body side) and clean it by air.

7-2. WEEKLY (every 50 hours)

- Remove the fuel filter cap and inspect for dirt in the fuel tank. (Fig. 7)

7-3. Replacement of Lubricant (BODY)

- Remove the drain plug at the rear of tamper foot and drain the dirty oil. Refill with clean oil to the middle of the sight glass. Oil bath contains approx. 1.7 pt. (800 cc) for MT-86D.

INITIAL OIL CHANGE:

After 50 hours of operation

Temperature	Classification of Oil	
20°C (+68°F) or over	CC class or higher grade	SAE 30
10°C (+14°F) to 0°C (+68°F)		SAE 20
Below 10° (+14°F)		SAE 10W-30

SECOND OIL CHANGE AND/OR LATER

Every 200 hours of operation

7-4. Replacement of Lubricant (ENGINE)

7-4-1. While the engine is still warm, remove the drain plug. For quick discharging, it is advisable to take off the oil gauge. Replace drain plug and refill engine crankcase. (Fig. 8)

7-4-2. Refer to the following chart, for oil types

Inferior quality engine oil and/or lack of oil may cause engine trouble or shorten engine life.

7-4-3. The interval of oil replacement

INITIAL OIL CHANGE:

After 20 hours of operation

SECOND OIL CHANGE AND/OR LATER:

Every 100 hours of operation

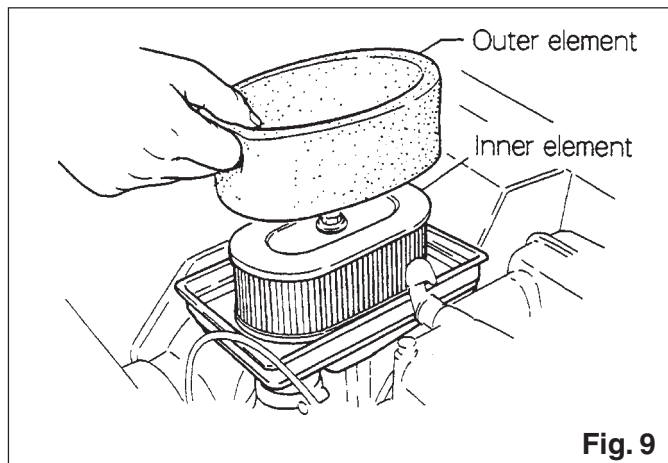


Fig. 9

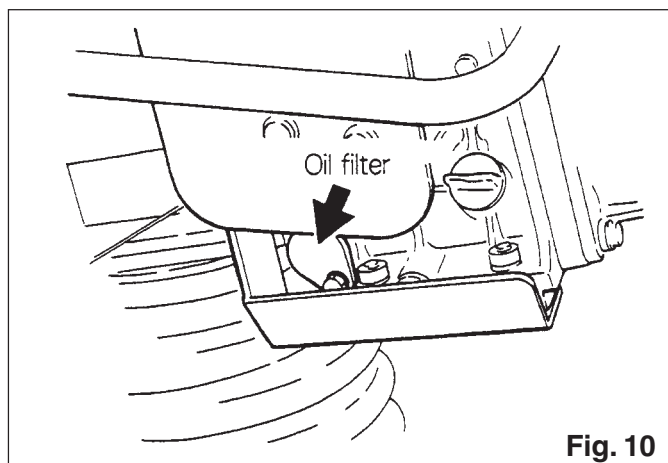


Fig. 10

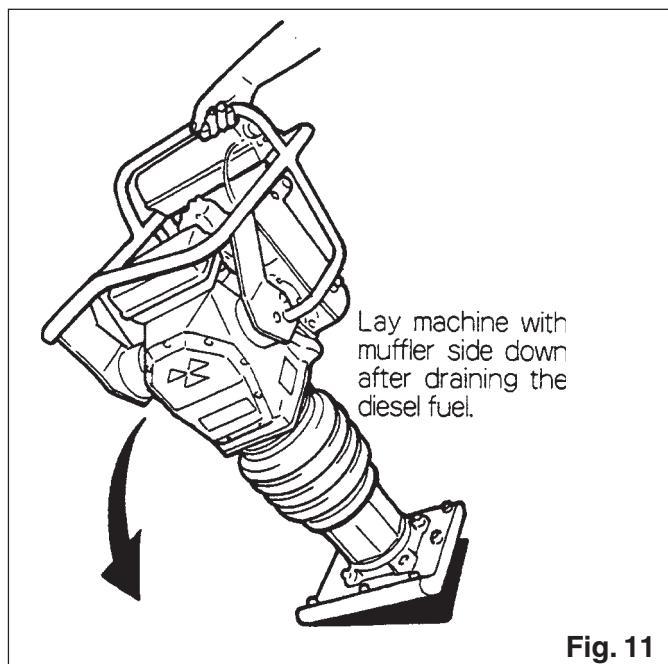


Fig. 11

7-5. Cleaning the Air Cleaner

Cleaning the Air Cleaner (every 200-300 hours) (Fig. 9)

- Remove element from pre-cleaner at the top of crankcase (body side).
- Wash the element (outside) in detergent solution.
- Shake out excess moisture and dry the element.
- Clean inside element with air from the inside of element.

7-6. Cleaning the Oil Filter

Drain oil filter every 100 hours of operation. Replace the oil filter every 1,000 hours of operation. (Fig. 10)

7-7. Fuel Pipe & Oil Pipe



- Check fuel line regularly for damage, paying attention to clamps to assure a tight fit.
- Replace fuel line every two years to maintain original performance.

7-8. Transportation

Maintain upright position of rammer at all times. Transport rammer in upright position. If machine must be laid down for transportation, drain the diesel fuel first and lay machine with muffler side down (Fig. 11)

The fuel filter is installed at the bottom of fuel tank. Should the rammer be laid on its side, dirt from the fuel filter may contaminate the injection nozzle, causing damage to the fuel pump.

7-9. Storage

- When storing the rammer for long periods of time, thoroughly drain all fuel from line.
- Clean exterior of rammer with an oil moistened cloth. Cover and store in a clean, dry place.

Engine

A. Difficult to start

- 1 No diesel fuel
- 2 Throttle lever at wrong position (Stop position)
- 3 Excess engine oil
- 4 Injection nozzle clogged
- 5 Recoil starter not pulled with enough speed.
- 6 Air cleaner clogged
- 7 Clutch failure
- 8 Fuel line clogged

B. Operation not satisfactory

- 1 Engine speed improperly set.
- 2 Clutch slips
- 3 Excess lubricant oil causing irregular jumping or protective sleeve is heated.
- 4 Lack of lubricant oil causing irregular jumping.
- 5 Spring failure
- 6 Spring cylinder locked

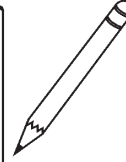
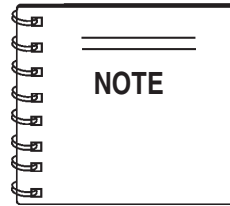
MT-86D — TEXPLANATION OF CODE IN REMARKS COLUMN

How to read the marks and remarks used in this parts book.

Items Found In the “Remarks” Column

Serial Numbers-Where indicated, this indicates a serial number range (inclusive) where a particular part is used.

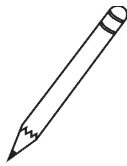
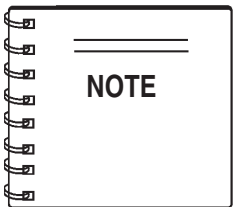
Model Number-Where indicated, this shows that the corresponding part is utilized only with this specific model number or model number variant.



The contents of this catalog are subject to change without notice.

Items Found In the “Items Number” Column

All parts with same symbol in the number column, *, #, +, %, or >, belong to the same assembly or kit.

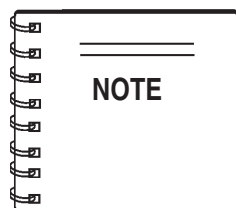


If more than one of the same reference number is listed, the last one listed indicates newest (or latest) part available.

MT-86D DIESEL RAMMER

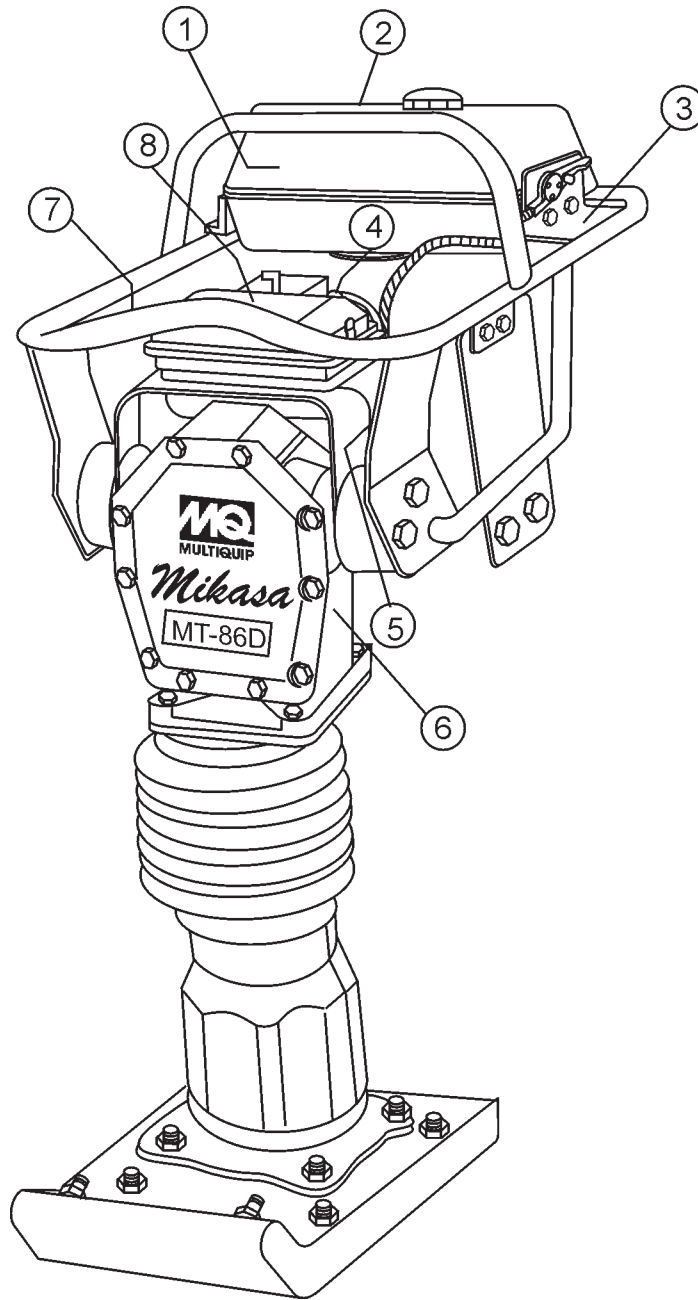
1-3 UNITS

- 1 956200040 THROTTLE LEVER ASSY
- 1 956108040 THROTTLE WIRE
- 3 371010060 ELEMENT ASSY
- 2 954405080 STRAINER, FUEL TANK
- 3 18325455120 STRAINER ASSY, FUEL
- 1 0430430015 CAP, FUEL TANK
- 2 11425035110 STRAINER, OIL LUB.
- 1 16026076630 ROPE, RECOIL STARTER



Part numbers on this Suggested Spare Parts List may super cede/replace the P/N shown in the text pages of this book.

NAME PLATE AND DECALS



MT-86D— NAMEPLATE/DECAL LOCATION

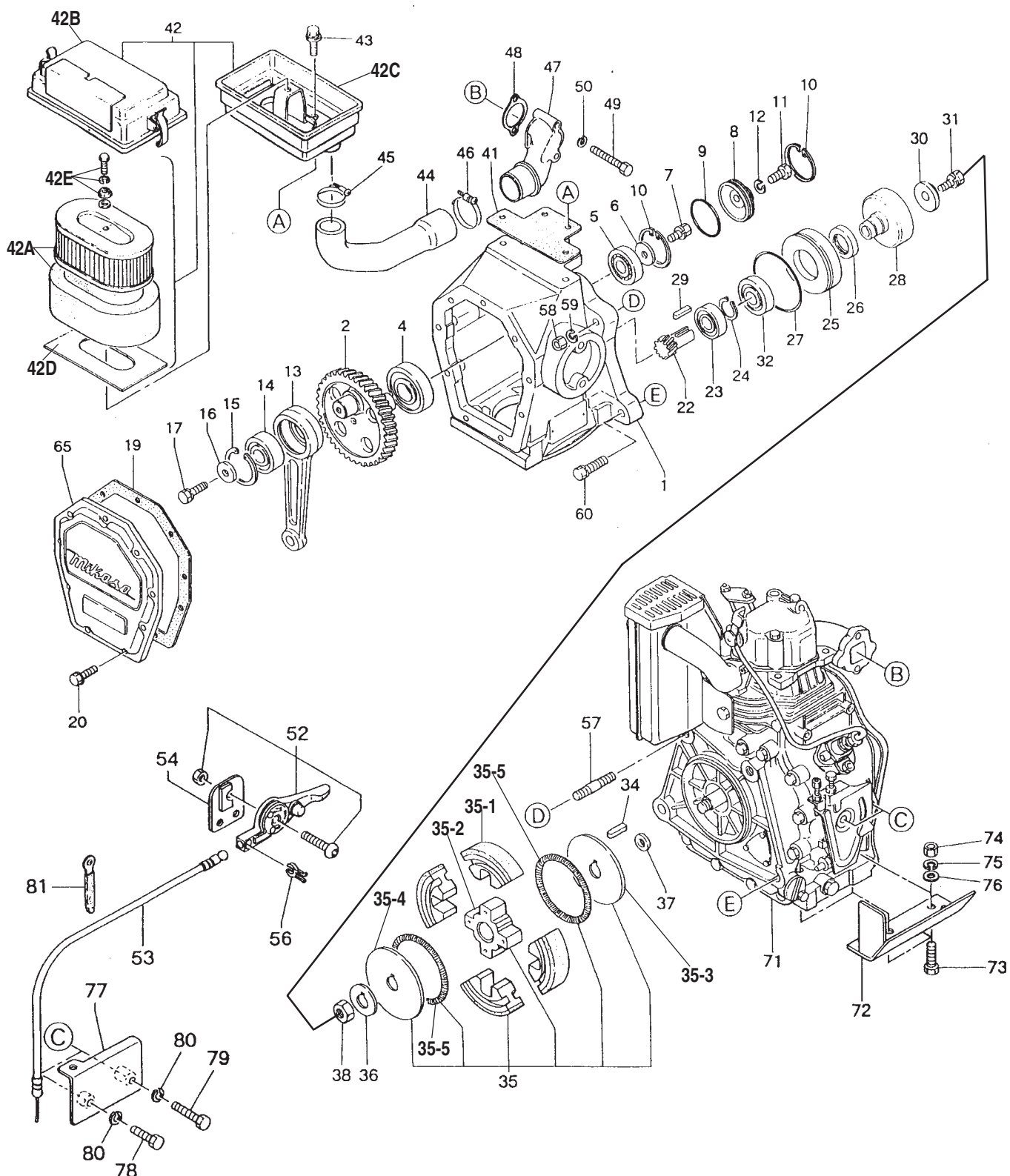
NAME PLATE AND DECALS

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1*	920101580	DECAL: MIKASA MARK	1	
2*	920205840	DECAL: FUEL DIESEL	1	NPA-584
3*	920203330	DECAL: EAR PROTECTION	1	NAA-333
4*	920205820	DECAL ENGINE R.P.M 3100-3300	1	
5*	920203290	DECAL: READ OWNER'S MANUAL	1	NPA-329
6		PLATE: SERIAL NO. MT-86D	1	ORDER FROM MQ SER. DEPT. W/MODEL & S/N
7*	920201950	DECAL: MOTOR OIL	1	
8*	920205830	DECAL, AIR CLEANER	1	NPA-583
9	DCL86D/76D	DECAL KIT, MT-86D/MT-76D	1	INCLUDES ITEMS W/*

FOR DECAL ILLUSTRATIONS SEE PAGE 8.

MT-86D — CRANKCASE AND ENGINE ASSY.

CRANKCASE AND ENGINE ASSY.



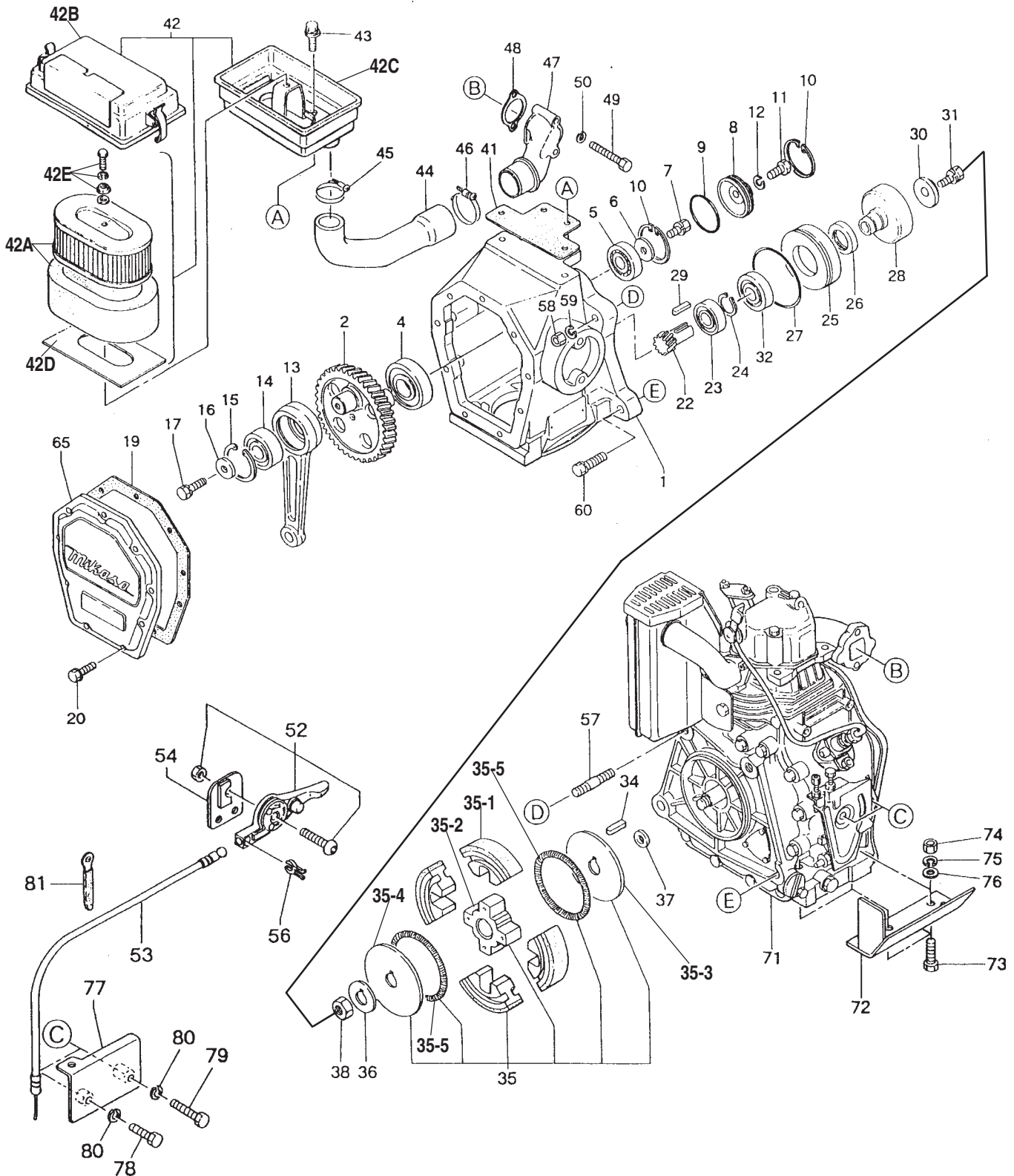
MT-86D — CRANKCASE AND ENGINE ASSY.

CRANKCASE AND ENGINE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	372113340	CRANKCASE	1	
2	372335090	CRANK GEAR	1	
4	040006307	BEARING 6307	1	
5	040006205	BEARING 6205	1	
6	952400690	WASHER 9 X 35 X 4.5	1	
7	002219825	BOLT 8X25H, SW	1	REPLACES 002210825
8	372447660	BEARING COVER	1	
9	050300500	O-RING S-50	1	
10	080100600	STOP RING R-60	2	
11	001210610	BOLT 6X10H	1	
12	031106100	WASHER M6	1	
13	301300530	CONNECTING ROD	1	
14	040006305	BEARING 6305	1	
15	080100520	STOP RING R-62	1	
16	952400690	WASHER 9304	1	
17	002210825	BOLT 8X25H, SW	1	REPLACES 002210825
19	372447670	PACKING, FRONT COVER	1	
20	002210620	BOLT 6X20H, SW	9	REPLACES 002210620
22	372447680	PINION	1	
23	040006205	BEARING 6205	1	
24	080200350	STOP RING S-35	1	
25	371449600	SPACER	1	REPLACES 371335280
26	060404010	OIL SEAL TC-40528	1	
27	050101000	O-RING G-100	1	
28	371447640	CLUTCH DRUM	1	
29	952405610	KEY 5X5X19R	1	
30	952405490	LOCK WASHER	1	
31	002210820	BOLT 8X20H, SW	1	
32	041006007	BEARING 6007Z	1	
34	22512040120	KEY 4X12	1	
35	371447630	CLUTCH ASSY.	1	INCLS. ALL ITEMS W/*
35-1*	943020060	CLUTCH SHOE (4)	1	
35-2*	943950120	CLUTCH BOSS	1	
35-3*	943060070	CLUTCH GUIDE (A)	1	
35-4*	943060080	CLUTCH GUIDE (B)	1	
35-5*	943030060	CLUTCH SPRING	2	REPLACES 943030090
36	301010210	LOCK WASHER, CLUTCH	1	

MT-86D — CRANKCASE AND ENGINE ASSY.

CRANKCASE AND ENGINE ASSY.



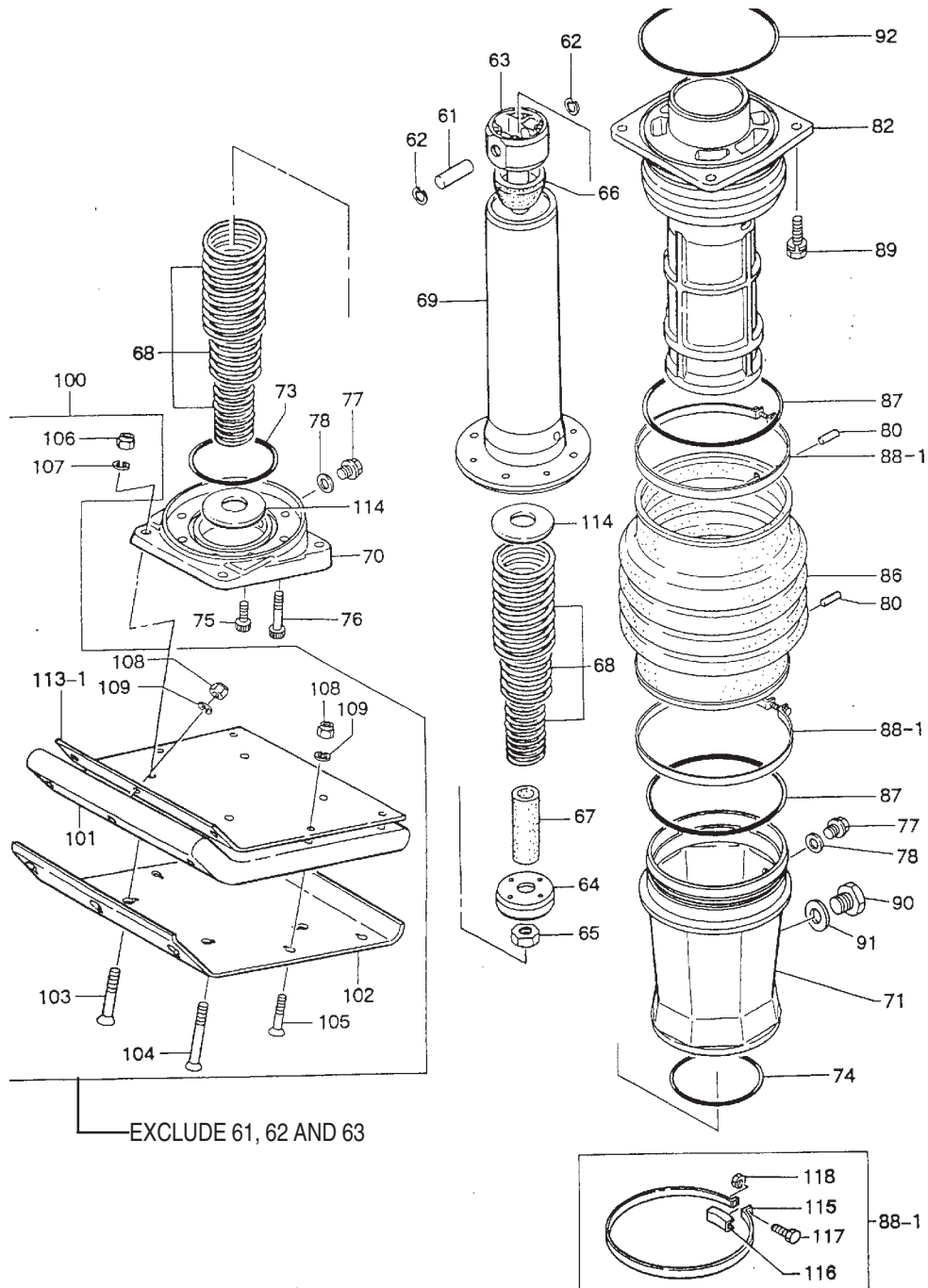
MT-86D — CRANKCASE AND ENGINE ASSY.

CRANKCASE AND ENGINE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
37	371448260	SPACER 15X24X4	1	
38	022910170	NUT M12	1	
41	371448220	PACKING, AIR CLEANER	1	
42	371213392	AIR CLEANER ASSY	1	INCLUDES ITEMS W/# REPLACES 371213390
42A#	371010060	ELEMENT ASSY	1	
42B#	371010030	BODY ASSY	1	
42C#	371010040	BACK PLATE	1	
42D#	371010050	SEAT, AIR CLEANER	1	
42E#	371010070	BOLT ASSY.	1	
43	002210820	BOLT 8X20H, SW	4	
44	371335110	INTAKE PIPE	1	
45	371000010	HOSE BAND (B)	1	
46	371000020	HOSE BAND (B)	1	
47	371335270	INTAKE FLANGE	1	
48	11428412200	GASKET, AIR INTAKE	1	
49	001200652	BOLT 6X60	2	
50	030206150	WASHER SW M6	2	
52	956200040	THROTTLE LEVER ASSY	1	
53	956108040	THROTTLE WIRE	1	
54	371448000	LEVER STAY	1	
56	371448300	CLIP (M)	1	
57	26226100402	STUD M10X20 PLATED	2	
58	020310080	NUT M10	2	
59	030210250	WASHER SW M10	2	
60	002211050	BOLT 10X50H, SW	2	
65	372213560	FRONT COVER MQ	1	
71	914410008	ENGINE ASSY L48EE-DRM	1	
72	371335100	UNDER PROTECTOR	1	
73	001211040	BOLT 10X40 H	2	
74	020310080	NUT M10	2	
75	030210250	WASHER SW M10	2	
76	031110160	WASHER PW M10	1	
77	371448021	LINK PROTECTOR	1	
78	001200630	BOLT 6X30	1	
79	001200635	BOLT 6X35	1	
80	030206150	WASHER SW M6	2	
81	16026078700	CLAMP WIRE	2	

MT-86D — CYLINDER GUIDE AND FOOT ASSY.

CYLINDER GUIDE AND FOOT ASSY.



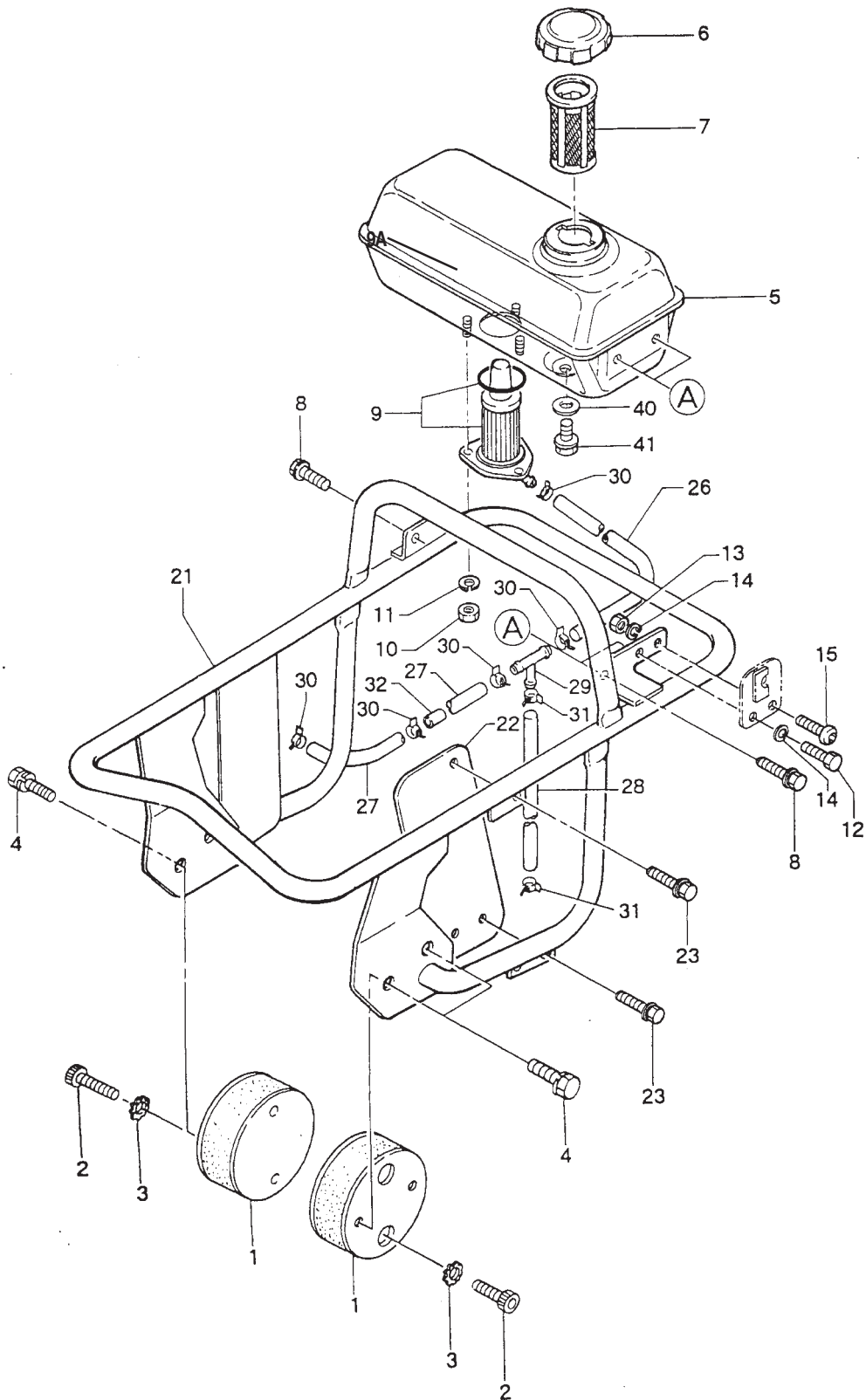
MT-86D — CYLINDER GUIDE AND FOOT ASSY.

CYLINDER GUIDE AND FOOT ASSY.

NO.	PART NO.	PART NAME	QTY.	REMARKS
61	652423290	PISTON PIN	1	REPLACES 352423290
62	080100150	STOP RING R-15	2	
63	352210680	PISTON ROD	1	
64	372427700	PISTON END	1	
65	020118150	NUT M18, P1.5	1	
66	352431430	STOPPER,UPPER	1	
67	352437470	STOPPER,LOWER	1	
68	372335260	MAIN SPRING	2	
69	372213180	SPRING CYLINDER	1	
70	372213570	FOOT PLATE	1	
71	352110042	PROTECTION SLEEVE	1	REPLACES 352110040
73	050100950	O-RING G-95	1	
74	050101100	O-RING G-110	1	
75	014210020	SOCKET HEAD BOLT 10X20 T	4	REPLACES 001521020
76	014210035	SOCKET HEAD BOLT 10X35 T	4	REPLACES 001521035
77	953405270	PLUG 1/4X14 13L	2	
78	953405260	PACKING 1/4(CU)	2	
80	354446170	PIN 6D-8.5L	2	
82	354212490	GUIDE CYLINDER(L)	1	
86	354010010	BELLOWS,ORANGE	1	REPLACES 354332780
87	050931500	O-RING JAS03150	2	
88-1	354910020	BELLOWS CLAMP CP	2	INCLS. ALL ITEMS W/*
89	012710035	BOLT 10X35 H,SW	4	REPLACES 002211035
90	959010150	LEVEL GAUGE,PLUG TYPE	1	
91	953404670	COPPER PACKING 17X25.5X1	1	
92	050201500	O-RING P-150	1	
100	352910081	FOOT ASSY 330W-W/F.COVER	1	INCLS. ALL ITEMS W/#
101#	352326620	FOOT 330B-331L	1	
102#	352326630	METAL SHEET 330B	1	
103	015112075	SUNK HEAD BOLT 12X80 H	4	REPLACES 001611256
104#	001611259	SUNK HEAD BOLT 12X100 H	2	REPLACES 001611260
105#	015110055	SUNK HEAD BOLT 10X55 H	7	REPLACES 001611051
106	021112140	NYLON NUT M12	4	REPLACES 022711214
107	030212300	WASHER SW M12	4	
108#	021110120	NYLON NUT M10	7	REPLACES 022711012
109#	030210250	WASHER SW M10	7	
113-1#	354332070	FOOT COVER	1	
114	352441730	SPRING SEAT 80D-1.6T	1	
115*	354336352	BELLOWS CLAMP MT68, 70V	2	REPLACES 354329380
115*	354336352	BELLOWS CLAMP (1.6T) 171D	2	
116	354442340	BAND GUIDE,BELLOWS	2	
117*	011008040	BOLT 8X40H	2	REPLACES 001210840
118*	020108060	NUT M8	2	REPLACES 020308060

MT-86D — TANK AND HANDLE ASSY.

TANK AND HANDLE ASSY.



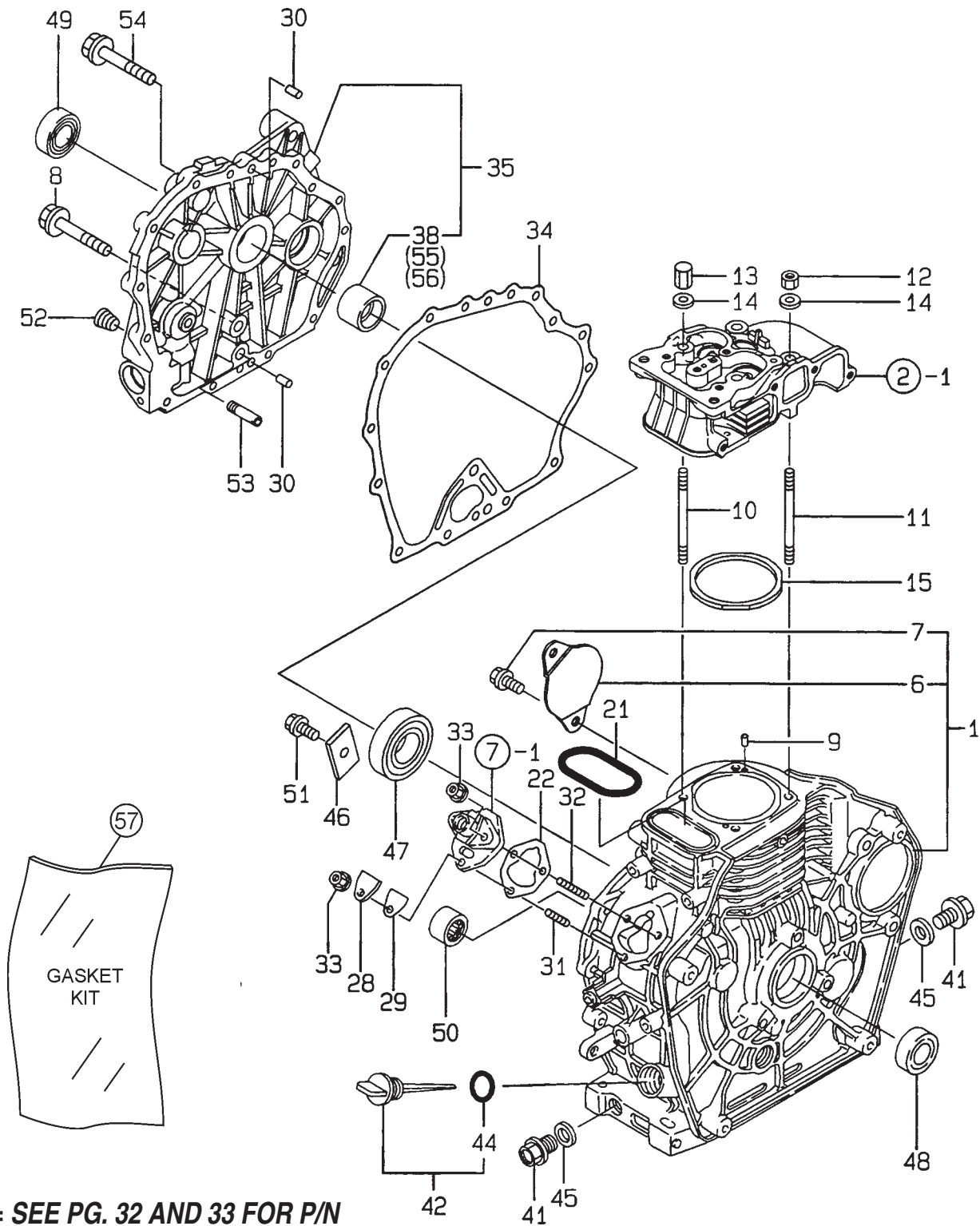
MT-86D — TANK AND HANDLE ASSY.

TANK AND HANDLE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	351319900	SHOCK ABSORBER	2	
2	014210020	SOCKET HEAD BOLT 10X20T	4	REPLACES 001521020
3	033121009	TOOTHED LOCK WASHER B M10	4	
4	012210020	BOLT 10X20H, SW	4	REPLACES 002211020
5	371113650	FUEL TANK	1	
6	0430430015	FUEL TANK CAP	1	REPLACES 953404650
7	954405080	STRAINER (#100)	1	
8	011808015	BOLT 8X15H, SW, PW	3	REPLACES 002410815
9	18325455120	STRAINER ASSY, FUEL	1	INCLUDES ITEM W/*
9A*	24341000450	O-RING	1	
10	020106050	NUT M6	3	REPLACES 020306050
11	030206150	WASHER SW M6	3	
12	001210815	BOLT 8X15H	1	
13	020108060	NUT M8	1	REPLACES 020308060
14	030208200	WASHER SW M8	2	
15	009110011	SOCKET HEAD SCREW 8X20	1	
21	371113560	HANDLE	1	
22	371448010	SIDE PROTECTOR	1	
23	011808015	BOLT 8X15H, SW, PW	3	REPLACES 002410815
26	18366659330	PIPE, FUEL DRAIN	1	
27	18325059050	PIPE, FUEL OIL	1	
28	11435459070	PIPE, FUEL RETURN	1	
29	11428459710	JOINT	1	
30	10699044660	CLAMP	5	
31	12472259050	CLAMP	2	
32	18325059040	PIECE	1	
40	953405810	PACKING PF 1/8	1	
41	953405800	FLANGE PLUG PF 1/8	1	

YANMAR L48EE-DRM ENGINE — CYLINDER BLOCK ASSY.

CYLINDER BLOCK ASSY.



② = SEE PG. 32 AND 33 FOR P/N

⑦ = SEE PG. 40 AND 41 FOR P/N

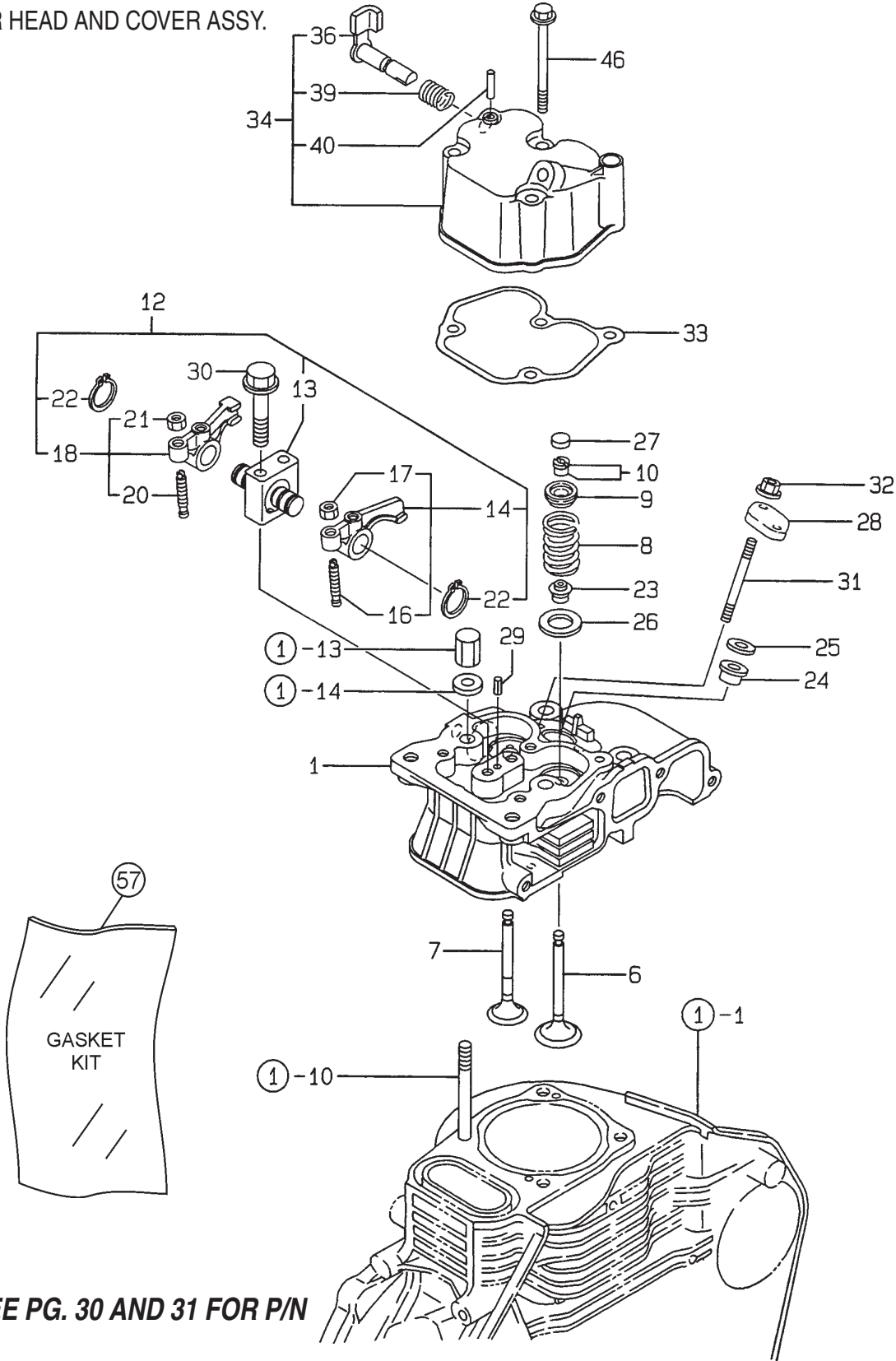
YANMAR L48EE-DRM ENGINE — CYLINDER BLOCK ASSY.

CYLINDER BLOCK ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	71477101560	BLOCK ASSY. CYLINDER	1	INCLUDES ITEM W/*
6*	11435001700	COVER, STARTER	1	
7*	26106100122	BOLT M10X 12 PLATED	2	
8	26106080352	BOLT M 8X 35 PLATED	1	
9	22312040080	PIN 4X8, STRAIGHT	2	
10	11425001200	STUD, CYLINDER HEAD	2	
11	11425001210	STUD, CYLINDER HEAD	2	
12	11425001221	NUT 8	2	
13	11425001251	CAP NUT 8	2	
14	12495001250	WASHER	4	
15+	11477101330	GASKET, CYLINDER HEAD CMP	1	
21+	11465001380	O-RING	1	
22	11425001800	SHIM SET	1	
28	11425001830	COVER, INSPEC. WINDOW	1	
29+	11425001841	GASKET	1	
30	11427001600	PARALLEL PIN 8 X 12	2	
31	26226060182	STUD M 6 X 18 PLATED	1	
32	26226060222	STUD M 6 X 22 PLATED	2	
33	26366060002	NUT M 6	3	
34+	11425001412	GASKET CRANKCASE	1	
35	11428401452	COVER ASSY. CASE DRM	1	INCLUDES ITEMS W/%
38%	11425002100	BEARING, MAIN	1	
41	10542501690	PLUG M16	2	
42	11429901760	CAP, W/LUB.OIL GAUGE	1	INCLUDES ITEM W/#
44#+	11429901950	O-RING	1	
45+	22190160002	SEAL WASHER 16S	2	
46	11429902030	RETAINER	1	
47	11425002113	BALL BEARING	1	
48	16011002220	SEAL, OIL	1	
49	16021002220	SEAL, OIL	1	
50	24162152112	NEEDLE BEARING	1	
51	26106080122	BOLT M 8 X 12 PLATED	1	
52	23876010000	PLUG PTI/8, SCREW	1	
53	11425035150	PIPE, L.O. INLET	1	
54	26106060252	BOLT M 6 X 25 PLATED	14	
55%	11425002200	MAIN BEARING US = 0.25	1	
56%	11425002210	MAIN BEARING US = 0.50	1	
57	71477192620	GASKET KIT	1	INCLUDES ITEMS W/+. SEE GASKET KIT PAGES 44-45

YANMAR L48EE-DRM ENGINE — CYLINDER HEAD AND COVER ASSY.

CYLINDER HEAD AND COVER ASSY.



① = SEE PG. 30 AND 31 FOR P/N

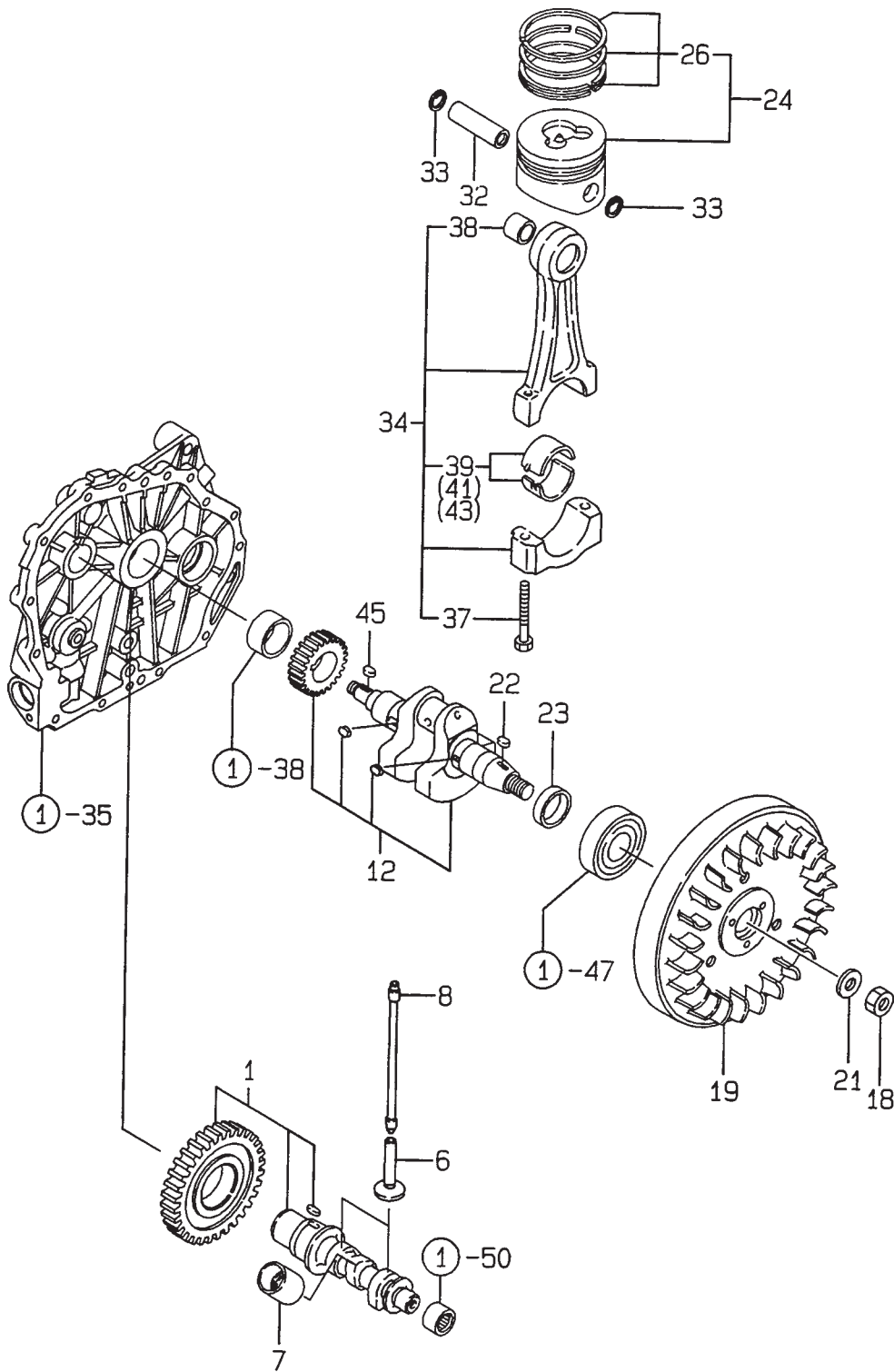
YANMAR L48EE-DRM ENGINE — CYLINDER HEAD AND COVER ASSY.

CYLINDER HEAD AND BONNET ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11477111020	CYLINDER HEAD	1	
6	11477111100	VALVE, SUCTION	1	
7	11477111110	VALVE, EXHAUST	1	
8	11425011120	SPRING, VALVE	2	
9	11425011180	RETAINER, SPRING	2	
10	71425011570	COTTER ASSY.	2	
12	11477111250	SUPPORT CMP, ARM	1	INCLUDES ITEM W/*
13*	11477111260	SUPPORT, ROCKER ARM	1	
14*	11477111650	ARM ASSY. INTAKE	1	
16	11425011240	SCREW, VALVE ADJUST	1	
17	26856060002	LOCK NUT 6	1	
18*	11477111660	ARM ASSY., EXHAUST	1	
20	11425011240	SCREW, VALVE ADJUST	1	
21	26856060002	LOCK NUT 6	1	
22*	22242000120	CIRCLIP 12	2	
23+	11425011340	SEAL, VALVE STEM	2	
24+	11477111461	GASKET, NOZZLE	1	
25	11477111470	SPACER, NOZZLE	1	
26	11425011600	WASHER	2	
27	11926011370	CAP, VALVE	2	
28	11425011901	RETAINER	1	
29	22351040008	SPRING PIN 4 X 8	1	
30	26106060452	BOLT M 6 X 45 PLATED	2	
31	26226060652	STUD M 6 X 65 PLATED	2	
32	26366060002	NUT M 6	2	
33+	11477111310	GASKET, BONNET	1	
34	11477111970	BONNET ASSY. HEAD	1	INCLUDES ITEM W/#
36#	11428803580	SHAFT ASSY., DECOMP.	1	
39#	11428803641	SPRING	1	
40#	11428803950	PIN	1	
46	26106060552	BOLT M 6 X 55 PLATED	3	
57	71477192620	GASKET KIT	1	INCLUDES ITEMS W/+. SEE GASKET KIT PAGES 44-45

YANMAR L48EE-DRM ENG. — CRANKSHAFT, PIS. & CAMSHAFT ASSY.

CRANKSHAFT, PISTON AND CAMSHAFT ASSY.



① = SEE PG. 30 AND 31 FOR P/N

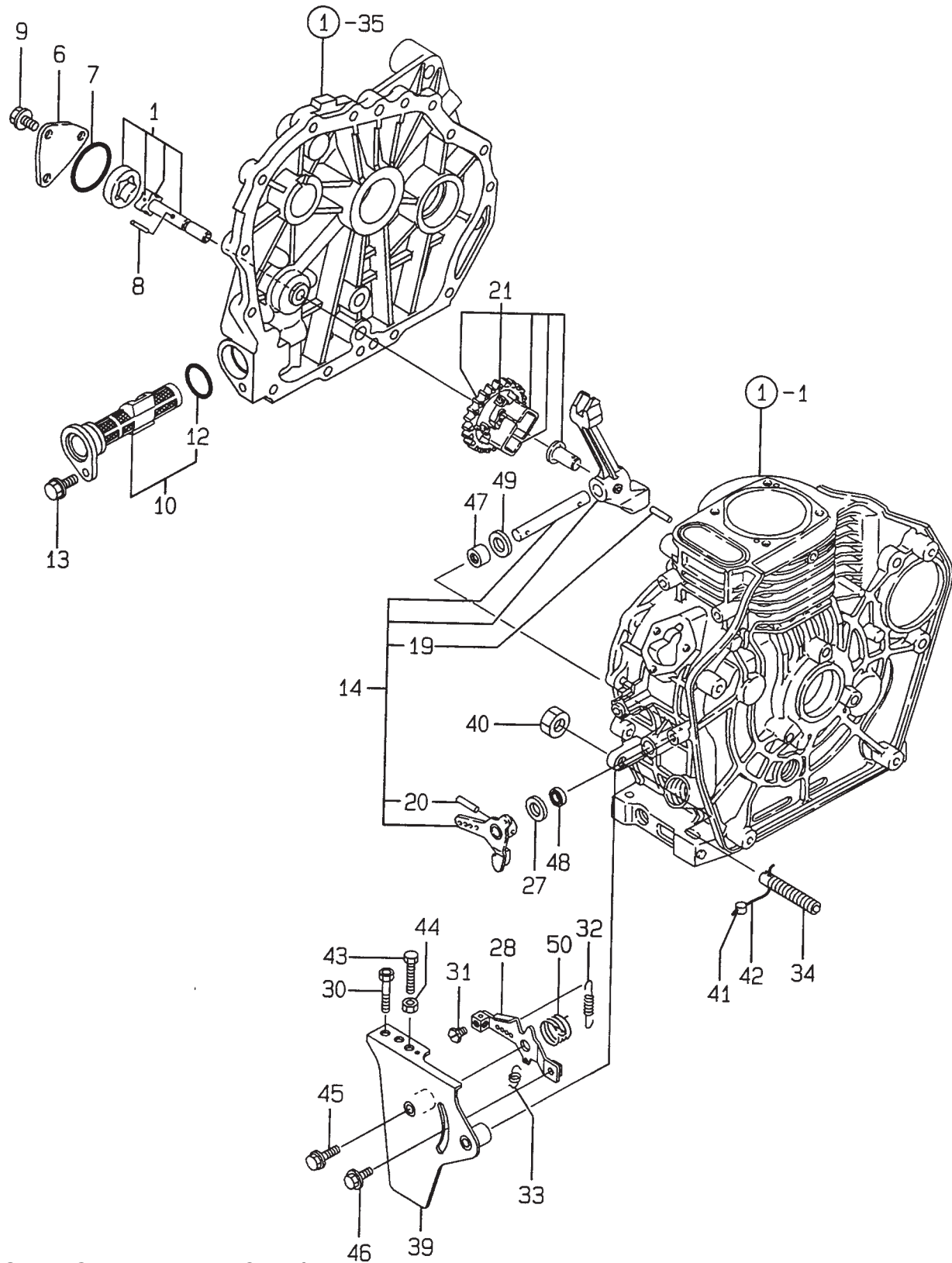
YANMAR L48EE-DRM ENG. — CRANKSHAFT, PIS. & CAMSHAFT ASSY.

CRANKSHAFT, PISTON AND CAMSHAFT ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	71477114580	CAMSHAFT ASSY., D	1	
6	11425014200	TAPPET	2	
7	11477114260	TAPPET, F.O.	1	
8	11425014450	ROD, PUSH	2	
12	71478121700	CRANKSHAFT ASSY.	1	
18	10385401221	NUT, M16	1	
19	11428821402	FLYWHEEL, DRM	1	
21	11425021550	WASHER, FLYWHEEL	1	
22	22512040120	KEY, 4 X 12	1	
23	18325021350	SPACER	1	
24	71477222720	PISTON, W/RINGS	1	INCLUDES ITEM W/#
26#	71477022500	RING SET, PISTON	1	
32	11429922300	PIN, PISTON	1	
33	22252000190	CIRCLIP 19	2	
34	71477023700	ROD ASSY., CONNECTING	1	INCLUDES ITEM W/*
37*	11926523200	BOLT, ROD	1	
38*	11477023100	BUSH, PISTON PIN	2	
39*	71477023600	BEARING, CRANKPIN	1	
41*	71477022610	BEARING, PIN U.S=0.25	1	
43*	71477023620	BEARING, PIN U.S=0.50	1	
45	22512040120	KEY 4 X 12	1	

YANMAR L48EE-DRM ENGINE —LUB. OIL PUMP AND GOVERNOR ASSY.

LUB. OIL PUMP AND GOVERNOR ASSY.



① = SEE PG. 30 AND 31 FOR P/N

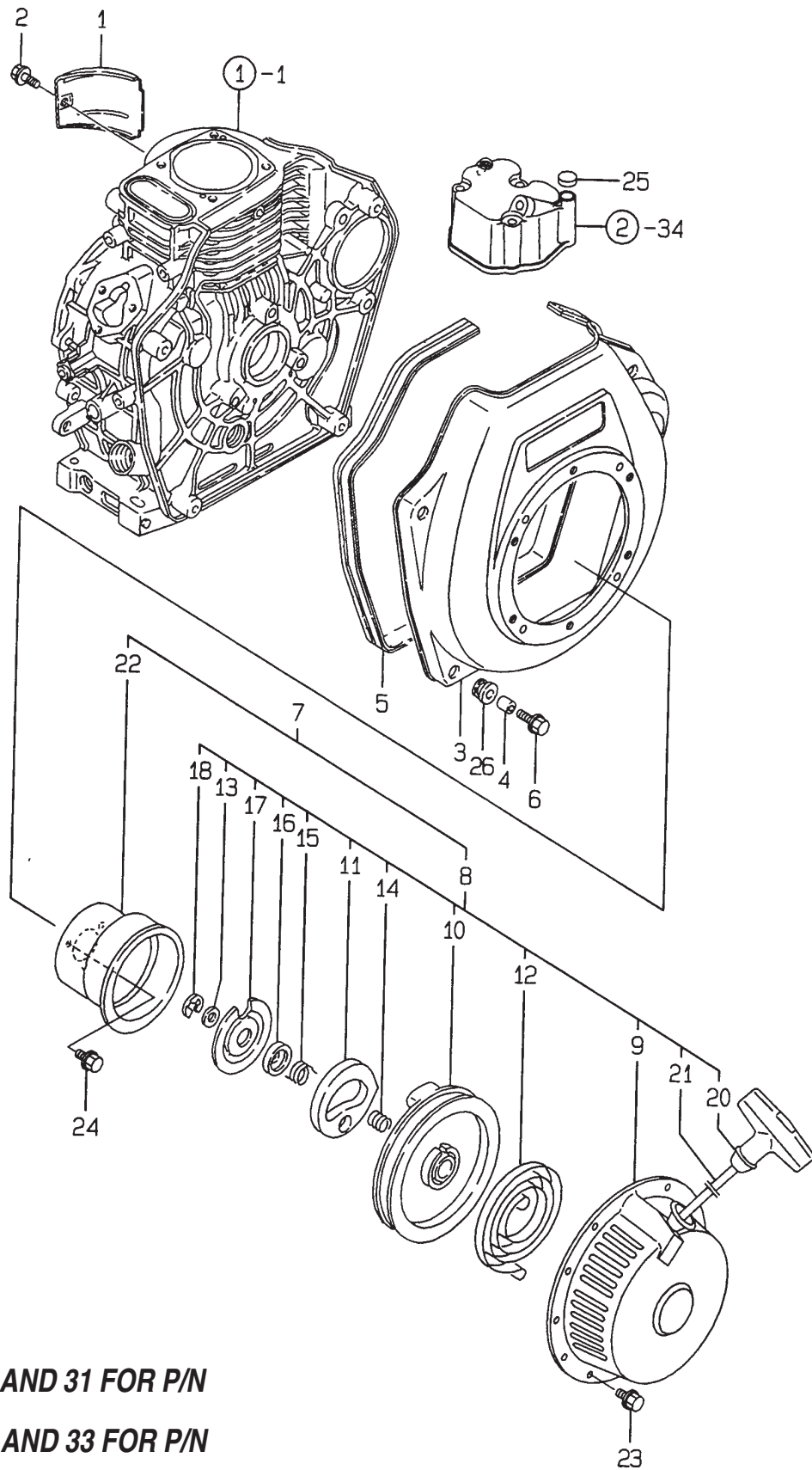
YANMAR L48EE-DRM ENGINE —LUB. OIL PUMP AND GOVERNOR ASSY.

LUB. OIL PUMP AND GOVERNOR ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11465032010	PUMP ASSY. LUB. OIL	1	
6	11425032070	COVER, LUB. OIL PUMP	1	
7+	10333832570	O-RING	1	
8	22312030160	PARALLEL PIN 3 X 16	1	
9	26476060142	BOLT, M 6 X 14, TAPPING	3	
10	11425035110	STRAINER, LUB. OIL	1	INCLUDES ITEM W/#
12#+	24341000224	O-RING 1A S-22.4	1	
13	26106060162	BOLT M 6 X 16 PLATED	1	
14	71425061500	LEVER ASSY. GOVERNOR	1	INCLUDES ITEM W/*
19*	22322030200	TAPER PIN 3 X 20	1	
20*	22322030200	TAPER PIN 3 X 20	1	
21	71477061100	GOVERNOR ASSY.	1	
27	11477061190	WASHER	1	
28	11477166050	HANDLE, REGULATOR	1	
30	10210067080	BOLT, ADJUSTING	1	
31	26117040088	BOLT M 4 X 8 PLATED	1	
32	11477066010	SPRING, REGULATOR	1	
33	11425066200	SPRING, RETURN	1	
34	11477166550	TORQUE SPRING ASSY.	1	
39	11477266100	BASE, HANDLE	1	
40	266961000002	NUT M10	1	
41	13521061090	LEAD	2	
42	22451060000	WIRE 0.6	2	
43	11425066440	BOLT, ADJUSTING	1	
44	26757060002	NUT 6	1	
45	26106060202	BOLT M 6 X 20 PLATED	1	
46	26476060142	BOLT M 6 X 14 TAPPING	1	
47	11477061520	BEARING, NEEDLE	2	
48	11477061600	SEAL, OIL	1	
49	11477061610	WASHER, THRUST	1	
50	11425266252	SPRING, RETURN	1	
57	71477192620	GASKET KIT	1	INCLUDES ITEMS W/+. SEE GASKET KIT PAGES 44-45

YANMAR L48EE-DRM ENGINE —COOLING AND STARTING ASSY.

COOLING AND STARTING ASSY.



① = SEE PG. 30 AND 31 FOR P/N

② = SEE PG. 32 AND 33 FOR P/N

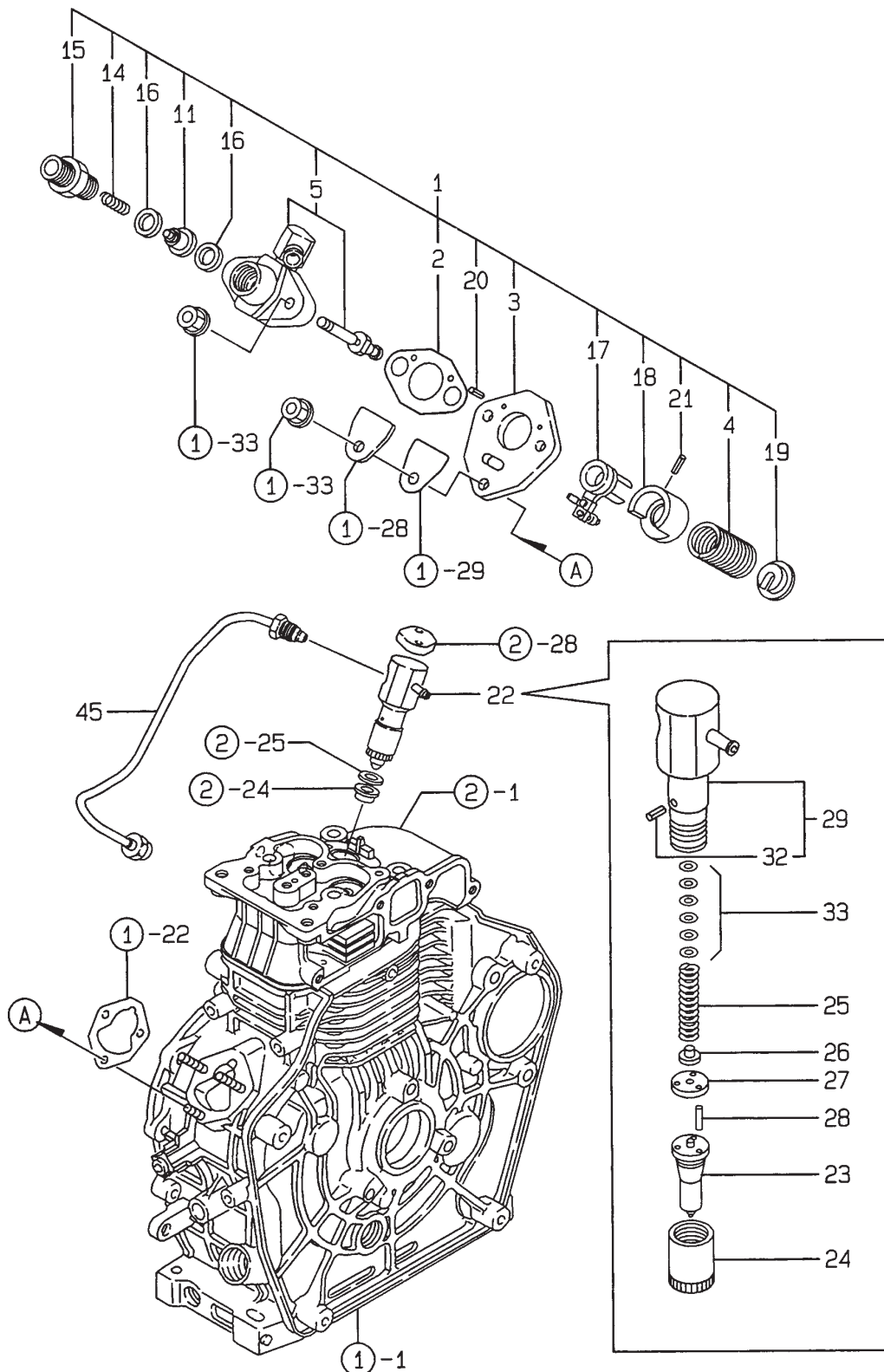
YANMAR L48EE-DRM ENGINE —COOLING AND STARTING ASSY.

COOLING AND STARTING DEVICE ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11429945210	COVER, CYLINDER	1	
2	26106060122	BOLT M 6 X 12 PLATED	1	
3	11477145110	CASE, COOLING FAN	1	
4	11425045310	COLLAR	4	
5	11425045330	SEAL, FAN CASE	1	
6	11437045351	BOLT, FAN CASE	4	
7	11426076051	RECOIL STARTER D ASSY.....	1	INCLUDES ITEM W/#
8	11426076251	RECOIL STARTER D ASSY.....	1	INCLUDES ITEM W/*
9*#	11426076520	CASE D, W/NO LABEL	1	
10*#	16026076520	REEL, RECOIL	1	
11*#	16026076530	RATCHET	1	
12*#	16026076540	SPRING, SPRIAL	1	
13*#	16026076550	WASHER, THRUST	1	
14*#	16026076560	SPRING, FRICTION	1	
15*#	16029076570	SPRING, RETURN	1	
16*#	16026076580	COVER, SPRING	1	
17*#	16026076590	PLATE, FRICTION	1	
18*#	16026076600	CIRCLIP, E	1	
20*#	11425076620	KNOB, STARTER	1	
21*#	16026076630	ROPE, STARTER	1	
22#	11425076590	PULLEY, STARTER	1	
23	26106060082	BOLT M 6 X 8 PLATED	4	
24	26106060122	BOLT M 6 X 12 PLATED	3	
25	12910061850	PLUG, 12 BORE	1	
26	11425045301	RUBBER, CUSHION	4	

YANMAR L48EE-DRM ENGINE — FUEL INJECTION PUMP ASSY.

FUEL INJECTION PUMP ASSY.



① = SEE PG. 30 AND 31 FOR P/N

② = SEE PG. 32 AND 33 FOR P/N

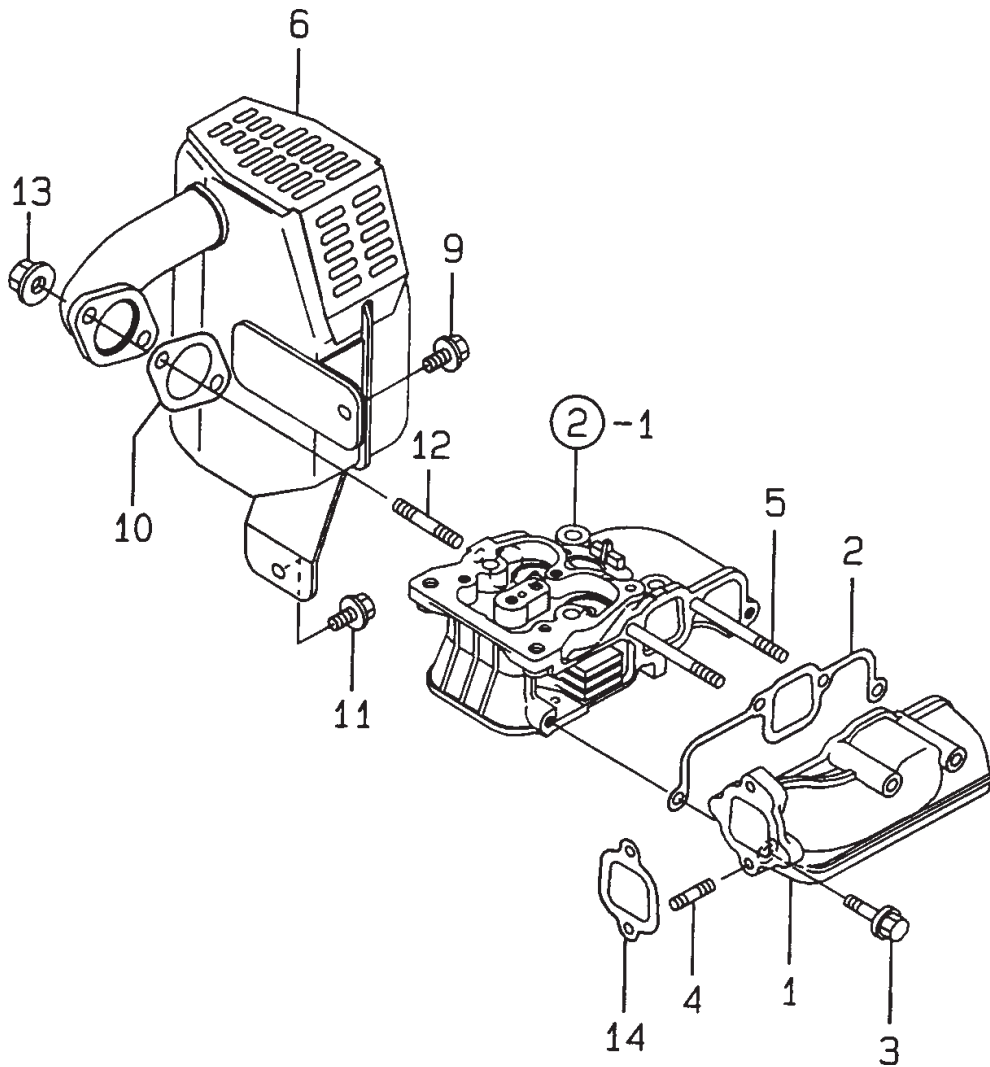
YANMAR L48EE-DRM ENGINE —FUEL INJECTION PUMP ASSY.

FUEL INJECTION PUMP ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	71435051200	PUMP ASSY., F. INJECT.	1	INCLUDES ITEM W/*
2*	10554651020	GASKET	1	
3*	11425051080	PLATE	1	
4*	11425051160	SPRING	1	
5*	11435051200	BODY, F.I. PUMP	1	
11*	11425051300	VALVE ASSY., DELIVERY	1	
14*	10554651330	SPRING, DELIVERY VALVE	1	
15*	11425051340	HOLDER, F. I. P. DELIVERY	1	
16*	12455051350	GASKET, DELIVERY	2	
17*	11425051600	LEVER ASSY., CONTROL	1	
18*	11425051640	SEAT A, SPRING	1	
19*	11425051650	SEAT B, SPRING	1	
20*	22351020006	SPRING PIN 2 X 6	2	
21*	22351030008	SPRING PIN 3 X 8	2	
22	71477153100	VALVE ASSY., F. INJECT	1	
23	11477153000	NOZZLE ASSY.	1	
24	11959353080	NUT, NOZZLE CASE	1	
25	11425053120	SPRING, NOZZLE	1	
26	11959353130	RETAINER, SPRING	1	
27	11477553140	SPACER, VALVE STOP	1	
28	11477553210	PIN	2	
29	11477553100	HOLDER ASSY.	1	
32	11477553330	PIN	1	
33	11425053400	SHIM PACK	1	
45	11477159802	PIPE, FUEI INJECTION	1	

YANMAR L48EE-DRM ENGINE — AIR CLEANER AND MUFFLER ASSY.

AIR CLEANER AND MUFFLER ASSY.



② = SEE PG. 28 AND 29 FOR P/N

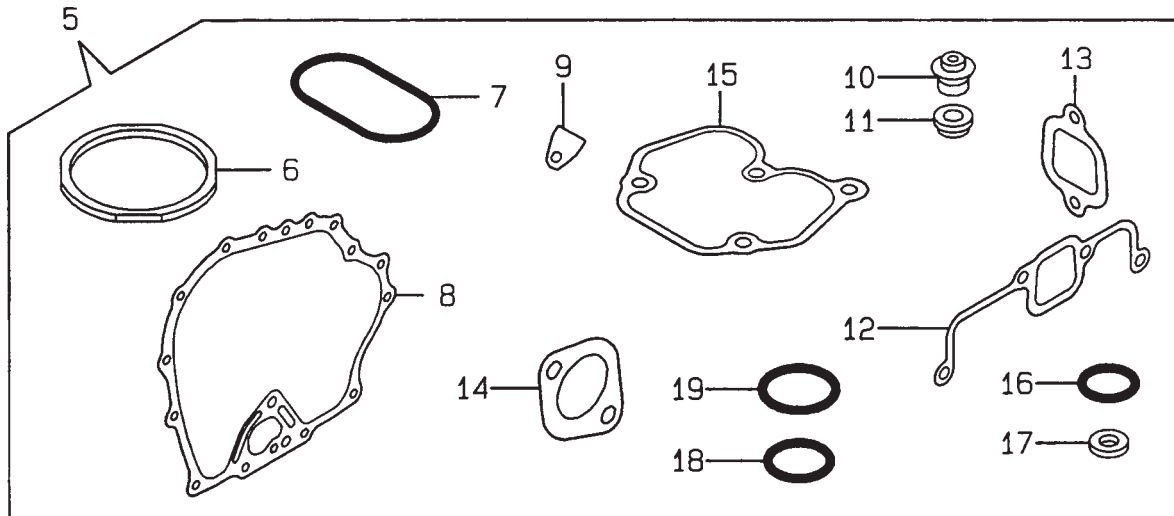
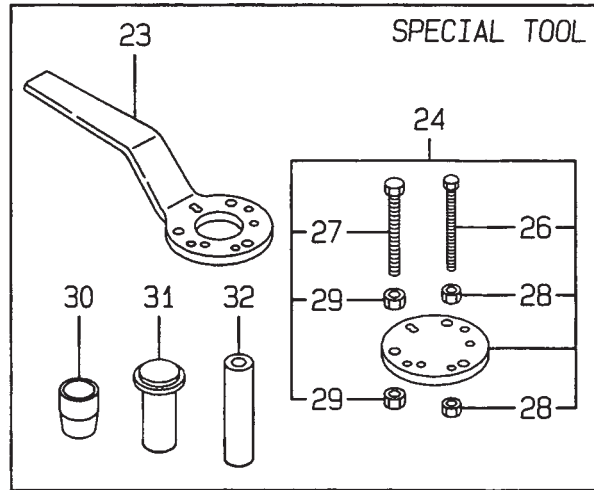
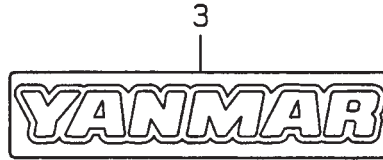
YANMAR L48EE-DRM ENGINE — AIR CLEANER AND MUFFLER ASSY.

MUFFLER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11477212010	PIPE, AIR INTAKE	1	
2	11477112200	GASKET, AIR INTAKE	1	
3	26106060252	BOLT M 6 X 25 PLATED	2	
4	26226060142	STUD M 6 X 14 PLATED	1	
5	26226060552	STUD M 6 X 55 PLATED	2	
6	11428413500	MUFFLER ASSY.	1	
9	26106060182	BOLT, M 6 X 18 PLATED	1	
10	11425013201	GASKET, NON-ASB.	1	
11	26106060142	STUD M 6 X 14 PLATED	1	
12	26216080182	STUD, M 8 X 18 PLATED	2	
13	26366080002	NUT, M 8	2	
14	11428412200	GASKET, AIR INTAKE	1	SEE GASKET SET PAGES 44-45

YANMAR L48EE-DRM ENGINE — LABEL AND GASKET SET ASSY.

LABEL AND GASKET SET ASSY.



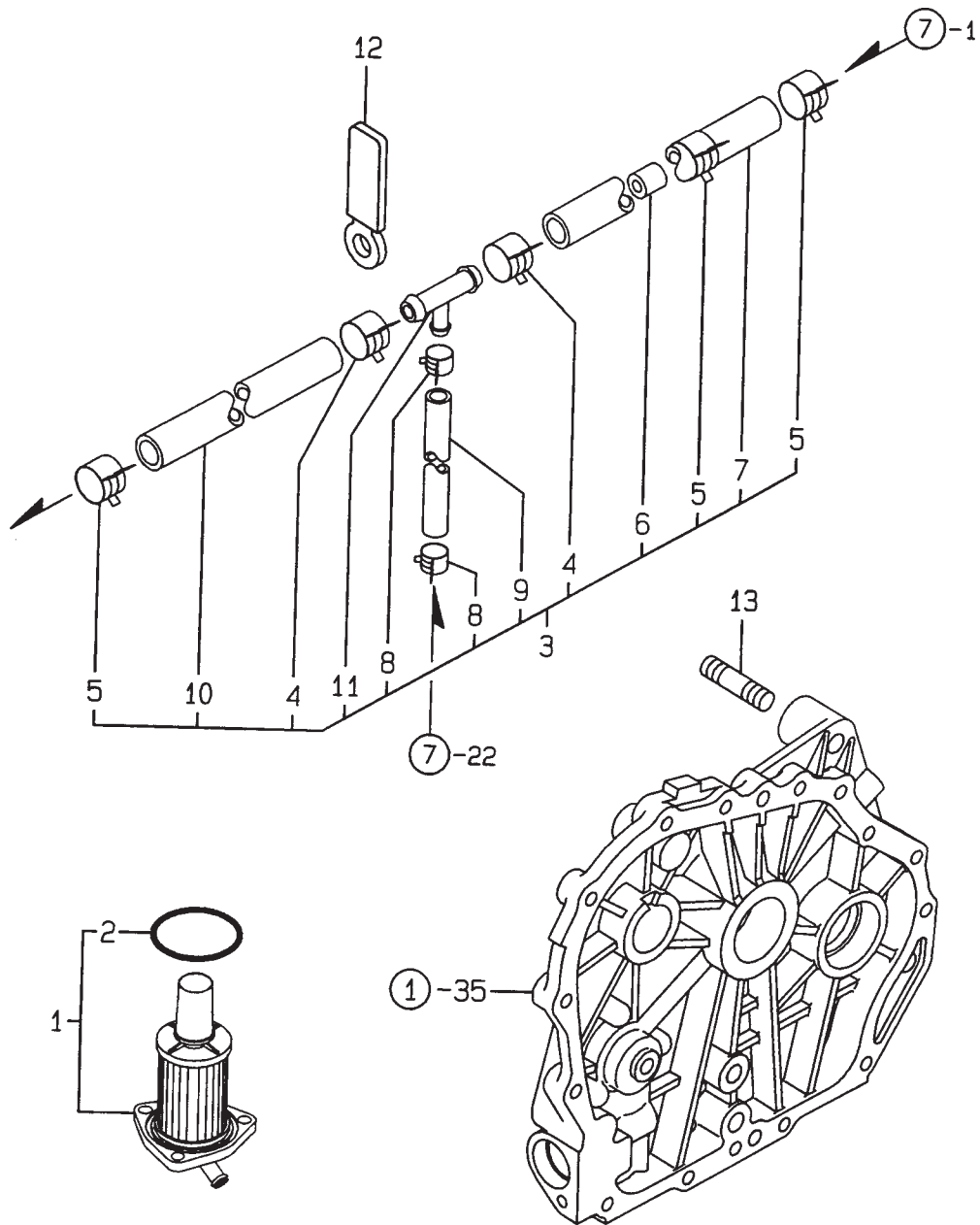
YANMAR L48EE-DRM ENGINE — LABEL AND GASKET SET ASSY.

TOOL, LABEL AND GASKET SET ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
3	11425007111	LABEL, YANMAR	1	
5	71477192620	GASKET SET	1	INCLUDES ITEM W/*
6	11477101330	GASKET, CYLINDER HEAD CMP.	1	
7*	11425001380	O-RING	1	
8*	11425001412	GASKET, CRANKCASE	1	
9*	11425001841	GASKET	1	
10*	11425011340	SEAL, VALVE STEM	2	
11*	11477111461	GASKET, NOZZLE	1	
12*	11477112200	GASKET, AIR INTAKE	1	
13*	11428412200	GASKET, AIR INTAKE	1	
14*	11425013201	GASKET, NON-ASB	1	
15*	11477111310	GASKET, BONNET	1	
16*	11429901950	O-RING	1	
17*	22190160002	SEAL WASHER 16S	2	
18*	24341000224	O-RING 1A S-22.4	1	
19*	10333832570	O-RING	1	
20	11426107350	LABEL	1	
23	11425092101	F.W. LOCKING HANDLE	1	
24	11425092130	REMOVER, FLYWHEEL	1	
26	26116060454	BOLT M 6 X 45 PLATED	4	
27	26116080454	BOLT M 8 X 45 PLATED	3	
28	26716060002	NUT M 6	8	
29	26716080002	NUT M 8	6	
30	11425092301	GUIDE, OIL SEAL	1	
31	11425092311	INSTALLING TOOL	1	
32	11425092350	INSTALLING TOOL	1	

YANMAR L48EE-DRM ENGINE — LOOSE PARTS ASSY.

LOOSE PARTS ASSY.



YANMAR L48EE-DRM ENGINE — LOOSE PARTS ASSY.

LOOSE PARTS ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	18325455120	STRAINER ASSY., FUEL	1	INCLUDES ITEM W/*
2*	24341000450	O-RING 1A S-45.0	1	
3	1142845910	PIPE ASSY., FUEL OIL	1	INCLUDES ITEM W/#
4#	12476659050	CLAMP 12	2	
5#	10699044660	CLIP, HOSE	2	
6#	18325059040	PIECE	1	
7#	18325059050	PIPE, FUEL OIL	1	
8#	12472259050	CLAMP 9	2	
9#	11465459070	PIPE, FUEL RETURN	1	
10#	18326659050	HOSE, RUBBER	1	
11#	11428459710	JOINT	1	
12	16071078710	CLAMP, WIRE	2	
13	26226100452	STUD M10X 45 PLATED	2	

PAYMENT TERMS

Terms of payment for parts are net 10 days.

FREIGHT POLICY

All parts orders will be shipped collect or prepaid with the charges added to the invoice. All shipments are F.O.B. point of origin. Multiquip's responsibility ceases when a signed manifest has been obtained from the carrier, and any claim for shortage or damage must be settled between the consignee and the carrier.

MINIMUM ORDER

The minimum charge for orders from Multiquip is \$15.00 net. Customers will be asked for instructions regarding handling of orders not meeting this requirement.

RETURNED GOODS POLICY

Return shipments will be accepted and credit will be allowed, subject to the following provisions:

1. A Returned Material Authorization must be approved by Multiquip prior to shipment.
2. To obtain a Return Material Authorization, a list must be provided to Multiquip Parts Sales that defines item numbers, quantities, and descriptions of the items to be returned.
 - a. The parts numbers and descriptions must match the current parts price list.
 - b. The list must be typed or computer generated.
 - c. The list must state the reason(s) for the return.
 - d. The list must reference the sales order(s) or invoice(s) under which the items were originally purchased.
 - e. The list must include the name and phone number of the person requesting the RMA.
3. A copy of the Return Material Authorization must accompany the return shipment.
4. Freight is at the sender's expense. All parts must be returned freight prepaid to Multiquip's designated receiving point.

5. Parts must be in new and resalable condition, in the original Multiquip package (if any), and with Multiquip part numbers clearly marked.
6. The following items are not returnable:
 - a. Obsolete parts. (If an item is in the price book and shows as being replaced by another item, it is obsolete.)
 - b. Any parts with a limited shelf life (such as gaskets, seals, "O" rings, and other rubber parts) that were purchased more than six months prior to the return date.
 - c. Any line item with an extended dealer net price of less than \$5.00.
 - d. Special order items.
 - e. Electrical components.
 - f. Paint, chemicals, and lubricants.
 - g. Decals and paper products.
 - h. Items purchased in kits.
7. The sender will be notified of any material received that is not acceptable.
8. Such material will be held for five working days from notification, pending instructions. If a reply is not received within five days, the material will be returned to the sender at his expense.
9. Credit on returned parts will be issued at dealer net price at time of the original purchase, less a 15% restocking charge.
10. In cases where an item is accepted, for which the original purchase document can not be determined, the price will be based on the list price that was effective twelve months prior to the RMA date.
11. Credit issued will be applied to future purchases only.

PRICING AND REBATES

Prices are subject to change without prior notice. Price changes are effective on a specific date and all orders received on or after that date will be billed at the revised price. Rebates for price declines and added charges for price increases will not be made for stock on hand at the time of any price change.

Multiquip reserves the right to quote and sell direct to Government agencies, and to Original Equipment Manufacturer accounts who use our products as integral parts of their own products.

SPECIAL EXPEDITING SERVICE

A \$35.00 surcharge will be added to the invoice for special handling including bus shipments, insured parcel post or in cases where Multiquip must personally deliver the parts to the carrier.

LIMITATIONS OF SELLER'S LIABILITY

Multiquip shall not be liable here under for damages in excess of the purchase price of the item with respect to which damages are claimed, and in no event shall Multiquip be liable for loss of profit or good will or for any other special, consequential or incidental damages.

LIMITATION OF WARRANTIES

No warranties, express or implied, are made in connection with the sale of parts or trade accessories nor as to any engine not manufactured by Multiquip. Such warranties made in connection with the sale of new, complete units are made exclusively by a statement of warranty packaged with such units, and Multiquip neither assumes nor authorizes any person to assume for it any other obligation or liability whatever in connection with the sale of its products. Apart from such written statement of warranty, there are no warranties, express, implied or statutory, which extend beyond the description of the products on the face hereof.

OPERATION AND PARTS MANUAL

HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL
NUMBER *ON-HAND* WHEN CALLING

MULTIQUIP'S MAIN PHONE NUMBERS

800-421-1244 FAX: 310-537-3927
310-537-3700

PARTS DEPARTMENT

800-427-1244 FAX: 800-672-7877
310-537-3700 FAX: 310-637-3284

MAYCO PARTS

800-306-2926 FAX: 800-672-7877
310-537-3700 FAX: 310-637-3284

SERVICE DEPARTMENT

800-478-1244 FAX: 310-537-4259
310-537-3700

MQ POWER SERVICE DEPARTMENT

800-835-2551 FAX: 310-638-8046
310-537-3700

TECHNICAL ASSISTANCE

800-478-1244 FAX: 310-631-5032

WARRANTY DEPARTMENT

800-421-1244, EXT. 279 FAX: 310-537-1173
310-537-3700, EXT. 279



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