

PARTS AND OPERATION MANUAL



Mikasa

Reversible Plate Compactor Model MVH-304DSB

Revision #2 (11/16/05)

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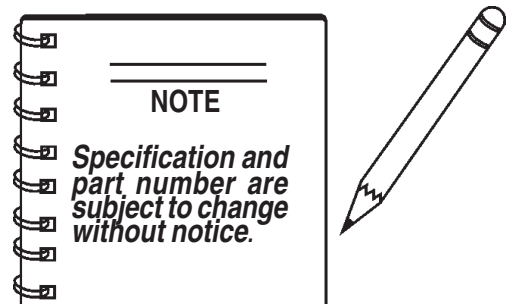
MIKASA MVH-304DSB- PLATE COMPACTOR

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MVH-304DSB — SAFETY MESSAGE ALERT SYMBOLS

FOR YOUR SAFETY AND THE SAFETY OF OTHERS!

Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the Safety Messages and Operating Instructions could result in injury to yourself and others.

NOTE

This Owner's Manual has been developed to provide complete instructions for the safe and efficient operation of the Multiquip Model MVH-304DSB Reversible Plate Compactor. Refer to the engine manufacturer's instructions for data relative to its safe operation.

Before using this reversible plate compactor, ensure that the operating individual has read and understands all instructions in this manual.

SAFETY MESSAGE ALERT SYMBOLS

The three (3) Safety Messages shown below will inform you about potential hazards that could injure you or others. The Safety Messages specifically address the level of exposure to the operator, and are preceded by one of three words: **DANGER**, **WARNING**, or **CAUTION**.



DANGER: You **WILL** be **KILLED** or **SERIOUSLY** injured if you do not follow directions.



WARNING: You **CAN** be **KILLED** or **SERIOUSLY** injured if you do not follow directions.



CAUTION: You **CAN** be injured if you do not follow directions.

Potential hazards associated with this reversible plate compactor operation will be referenced with Hazard Symbols which appear throughout this manual, and will be referenced in conjunction with Safety Message Alert Symbols.

HAZARD SYMBOLS



Lethal Exhaust Gases



Engine exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled. **NEVER** operate this equipment in a confined area or enclosed structure that does not provide ample free flow air.



Explosive Fuel



GASOLINE is extremely flammable, and its vapors can cause an explosion if ignited. **DO NOT** start the engine near spilled fuel or combustible fluids. **DO NOT** fill the fuel tank while the engine is running or hot. **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system. Store fuel in approved containers, in well-ventilated areas and away from sparks and flames. **NEVER** use fuel as a cleaning agent.



Burn Hazards



Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operations. Never operate the engine with heat shields or heat guards removed.



Rotating Parts



NEVER operate equipment with covers, or guards removed. Keep fingers, hands, hair and clothing away from all moving parts to prevent injury.

MVH-304DSB — SAFETY MESSAGE ALERT SYMBOLS

Accidental Starting



OFF

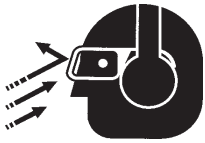
ALWAYS place the engine ON/OFF switch in the **OFF** position, when the reversible plate compactor is not in use.

Respiratory Hazard



ALWAYS wear approved respiratory protection.

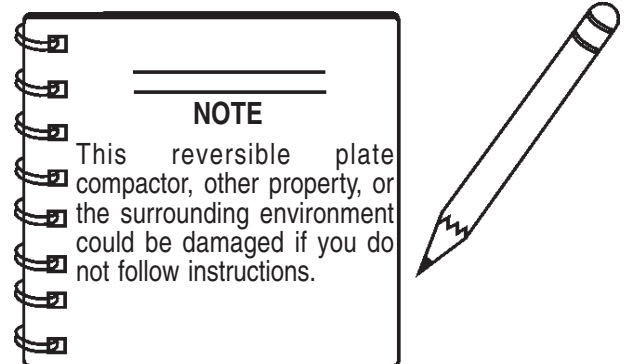
Sight and Hearing hazard



ALWAYS wear approved eye and hearing protection.

Equipment Damage Messages

Other important messages are provided throughout this manual to help prevent damage to your reversible plate compactor, other property, or the surrounding environment.



MVH-304DSB — 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 MIKASA MVH-304DSB Reversible Plate Compactor:

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. **ALWAYS** wear slip resistant safety shoes or boots.

- **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.

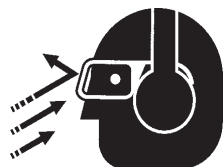


- **NEVER** use accessories or attachments, which are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.

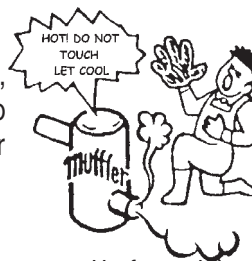
- Manufacturer does not assume responsibility for any accident due to equipment modifications.

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

- **ALWAYS** wear proper respiratory (mask), hearing and eye protection equipment when operating the reversible plate compactor.

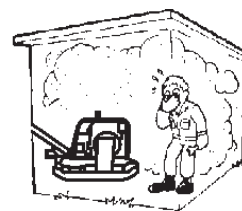


- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing engine or reversible plate compactor.



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

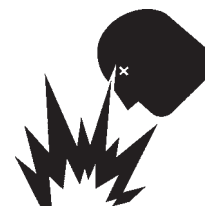
- The engine of this reversible plate compactor requires an adequate free flow of cooling air. **NEVER** operate the reversible plate compactor in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause serious damage to the reversible plate compactor or engine and may cause injury to people and property. Remember the reversible plate compactor's engine gives off **DEADLY** gases.



- **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 reversible plate compactor 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.

- **ALWAYS** store the reversible plate compactor in a clean, dry location out of the reach of children.

- **NEVER** run engine without air cleaner. Severe engine damage may occur.

- **NEVER** leave the reversible plate compactor unattended, turn off engine.

- **CAUTION** must always be observed while servicing this reversible plate compactor. Rotating parts can cause injury if contacted.

- **DO NOT** leave reversible plate compactor with engine running. Use chock blocks if parking reversible plate compactor on a grade.

MVH-304DSB — RULES FOR SAFE OPERATION

- **NEVER** disconnect any "**emergency or safety devices**". These devices are intended for operator safety. Disconnection of these devices can cause severe injury, bodily harm or even death! Disconnection of any of these devices will void all warranties.

Loading and Unloading (Crane)

- Before lifting, make sure that machine parts (hook and vibration insulator) are not damaged and screws are not loosened or lost.
- Always make sure crane or lifting device has been properly secured to the hook of guard frame on compactor.
- **NEVER** lift the machine while the engine is running.
- Use adequate lifting cable (wire or rope) of sufficient strength.
- Use one point suspension hook and lift straight upwards.
- **NEVER** allow any person or animal to stand underneath the machine while lifting.
- Try not to lift machine to unnecessary heights.

Transporting

- Always shutdown engine before transporting.
- Tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
- Drain fuel when transporting compactor over long distances or bad roads.
- Always tie-down the compactor during transportation by securing the compactor's guard frame with rope.

Emergencies

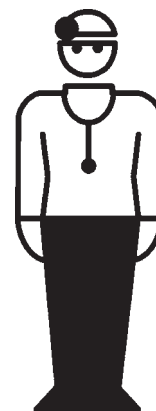
- **ALWAYS** know the location of the nearest **fire extinguisher**.



- **ALWAYS** know the location of the nearest and **first aid kit**.



- In emergencies **always** know the location of the nearest phone or **keep a phone on the job site**. 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.
- **DO NOT** pour waste, oil or fuel directly onto the ground, down a drain or into any water source.

MVH-304DSB — OPERATION AND SAFETY DECALS

Figure 1 displays the operation and safety decals as they appear on the reversible plate compactor. Should any of these decals become damaged or unreadable, contact the Multiquip Parts Department for a replacement set.



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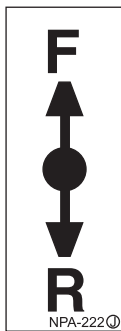
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MVH-304

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<p>OPERATIONAL CAUTION Prior to OPERATION: Check engine oil and fuel levels. If not enough, add to proper levels.</p> <p>To START engine: 1. Warm up engine at low speed for 3 to 5 minutes. 2. Operate machine at full throttle speed. (Incorrect clutch engagement cause clutch to burn.) 3. Use travel lever for forward and reverse motion. Do not push or pull travel lever strongly.</p> <p>To STOP engine: (for electric start engine) Move stop key switch to "OFF" position.</p> <p>To LIFT machine: Use lifting hook in center.</p> <p>Outdoor Storage Store until covered with plastic sheet in a moisture.</p> <p>MIKASA SANGYO CO., LTD TOKYO JAPAN NPA-638</p>	<p>DANGER FUEL</p> <p>Fire Risk</p>	<p>DANGER FUEL</p> <p>Operate only in well-ventilated area</p>	<p>DANGER LIFTING</p> <p>Do not stand next to machine while lifting</p>	<p>DANGER LIFTING</p> <p>Do not use machine handle</p>	<p>CAUTION READ</p> <p>Use caution while operating in reverse</p>
	<p>WARNING NOISE</p> <p>Wear eye protection</p>	<p>WARNING HOT TEMP.</p> <p>Operate only in well-ventilated area</p>	<p>WARNING TRANSPORT</p> <p>Set transport wheel tightly by chain</p>	<p>CAUTION MOVING PARTS</p> <p>Do not touch moving parts in operation</p>	<p>CAUTION READ</p> <p>Read operator's manual carefully before use</p>

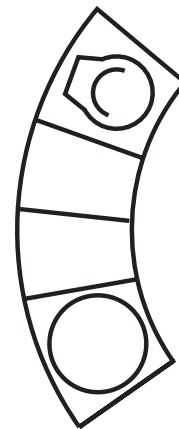
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Figure 1. Operation and Safety Decals

Table 1. MVH-304DSB REVERSIBLE PLATE COMPACTOR SPECIFICATIONS

Centrifugal Force	39.2 kN (4000 kg)
Vibration Frequency	4200 vpm (70 Hz)
Traveling Speed	0 to 65.6 ft/min (0 to 20 m/min)
Plate Size (L x W)	34 x 24 in (61 x 86 cm)
Overall Length	63.8 in (1620 mm)
Overall Width	17.5 in (445 mm)
Overall Height	38.2 in (970 mm)
Operating Weight	748 lbs. (340 kg)
Lubricating Oil in Vibration Case	50.7 fl oz (1500 cc)

Table 2. ENGINE SPECIFICATIONS (YANMAR)

Engine Make	YANMAR
Engine Model	L100EE-DEVMK3
Engine Type	Diesel
Cylinder Bore X Stroke	3.46 x 2.75 in (88 x 70 mm)
Displacement	13.7 fl oz (406 cc)
Maximum Output	10 HP
Fuel Tank Capacity	5.8 quarts (5.5 liters)
Oil Capacity	1.74 quarts (1.65 liters)
Dry Net Weight	116.6 lbs. (53 kg)
Dimensions (L x W x H)	16.4 x 18.5 x 19.4 in (417 x 470 x 494 mm)

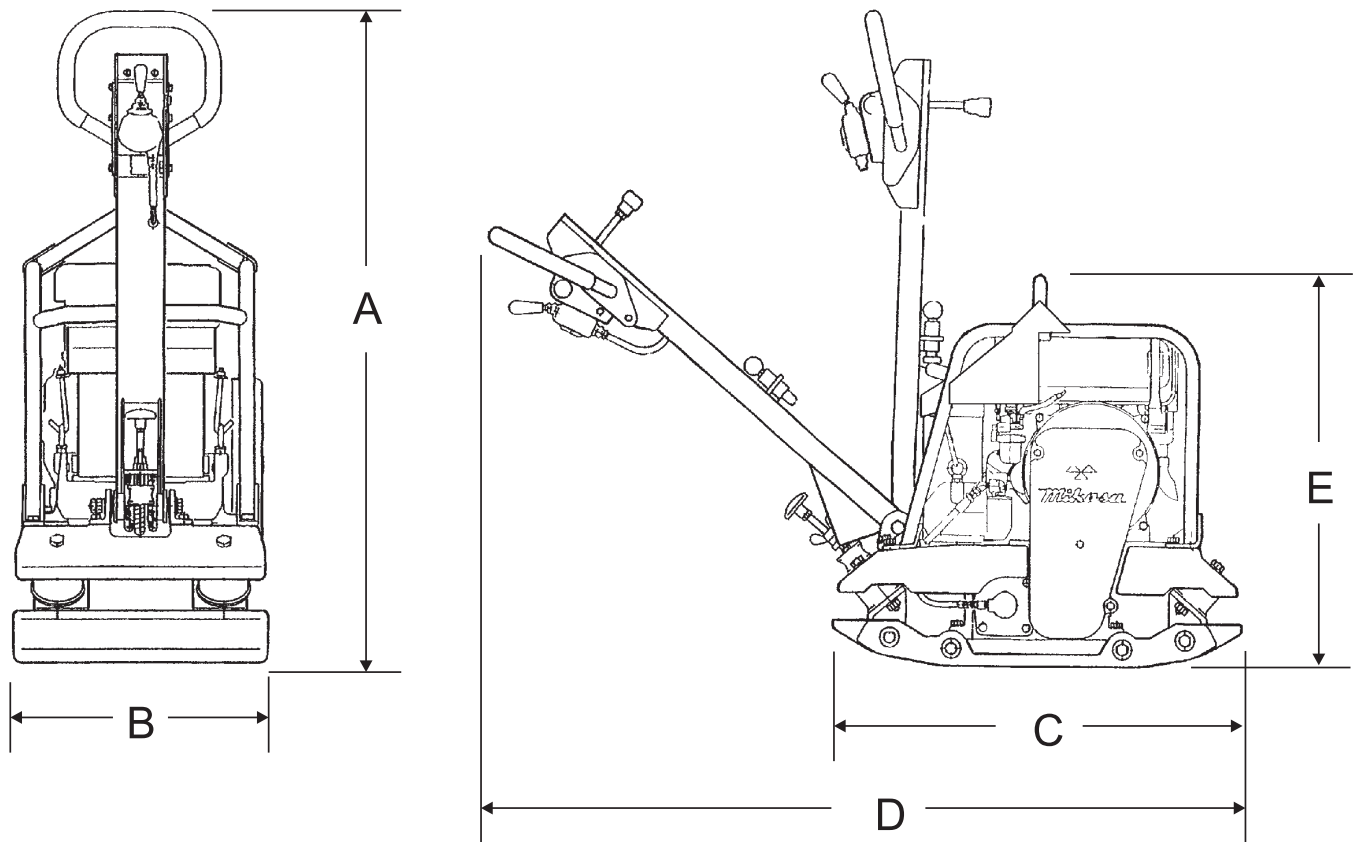


Figure 2. MVH-304DSB Reversible Plate Compactor Dimensions

TABLE 3. DIMENSIONS

REF.	DIMENSIONS
A	53 in. (134.6 cm.)
B	24 in. (61 cm.)
C	34 in. (86 cm.)
D	63.8 in. (162 cm.)
E	38.2 in. (97 cm.)

Plate Compactor

The Mikasa MVH-304DSB is a walk behind, reversible plate compactor designed for the compaction of sand, clay and asphalt. This plate compactor is a powerful compacting tool capable of applying a tremendous force in consecutive high frequency vibrations 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.

Vibratory Plates

The vibratory plates of the MVH-304DSB produce low amplitude high frequency vibrations, designed to compact granular soils.

The resulting vibrations cause forward motion. The engine and handle are vibration isolated from the vibrating plate. The heavier the plate, the more compaction force it generates.

Reversible Vibratory Plates

Reversible vibratory plates have two eccentric weights that allow a smooth transition for forward and reverse travel, plus increased compaction force as the result of dual weights.

Due to their weight and force, reversible plates are ideal for semi-cohesive soils.

Frequency/Speed

The compactor's vibrating plate maximum frequency is 4200 vpm (vibrations per minute). The forward and reverse travel speed of the compactor is approximately 66 ft./minute (20 meters/minute).

Engine

The Mikasa MVH-304DSB Plate Compactor is equipped with a Yanmar L100EE-DEVMK3 diesel engine.

Controls

Before starting the MVH-304DSB Plate Compactor, identify and understand the function of the controls and components as indicated in Figure 3.

MVH-304DSB— PLATE COMPACTOR COMPONENTS

Figure 3. MVH-304DSB Reversible Plate Compactor Components

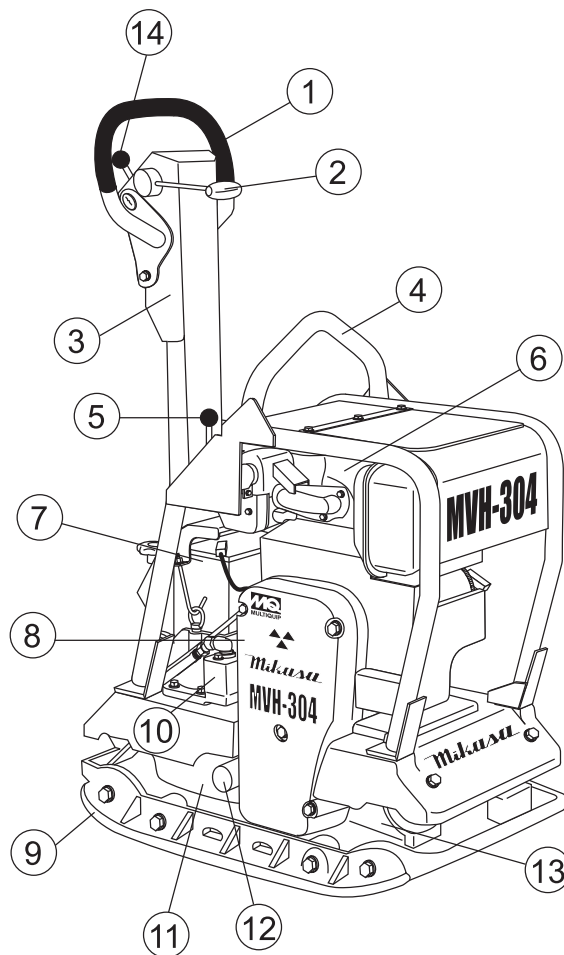


Figure 3 illustrates the location of the major components for the MVH-304DSB Reversible Plate Compactor. The function of each component is described below:

1. **Hand Grip** – When operating the compactor use this hand grip to maneuver the compactor.
2. **Forward & Reverse Lever** – **Push** the lever forward, the compactor will move in a forward direction, **pull** the lever backwards, the compactor will move in backwards direction. Placing the lever in the middle (midway) will cause the compactor not to move (neutral).
3. **Handle Bar** – When operating the compactor, this handle is to be in the downward position. When the compactor is to be **stored**, move the handle bar to the upright position.
4. **Guard Hook** - Used to lift the machine with crane or other lifting device.
5. **Stopper** - Locks the handle in place in the upward position for stowing.
6. **Engine** – This plate compactor uses a **YANMAR L100EE-DEVMK3** diesel engine. Refer to the owner's manual for engine information and related topics.
7. **Battery** - Maintenance-free type requiring no electrode replenishment.
8. **Belt Cover** – Remove this cover to gain access to the V-belts. **NEVER** run the compactor without the V-belt cover. If the V-belt cover is not installed, the possibility exist that your hand may get caught between the V-belt and clutch, thus causing serious injury and bodily harm.
9. **Base Plate** – Designed to compact sand, clay, and asphalt.
10. **Oil Tank** – Fill with proper grade of diesel engine oil.
11. **Vibration Case** – Encloses the eccentric, gears and counter weights.
12. **Hydraulic Cylinder** – Activated by moving the travel lever. The cylinder controls the direction of movement by the plate compactor.
13. **Shock Absorber** – Protects plate compactor from damage by absorbing vibration durring operation.
14. **Throttle Lever** – Controls speed of the plate compactor. Place straight vertically to start, **push** fully counter-clockwise for full throttle and fully clockwise to stop plate compactor.

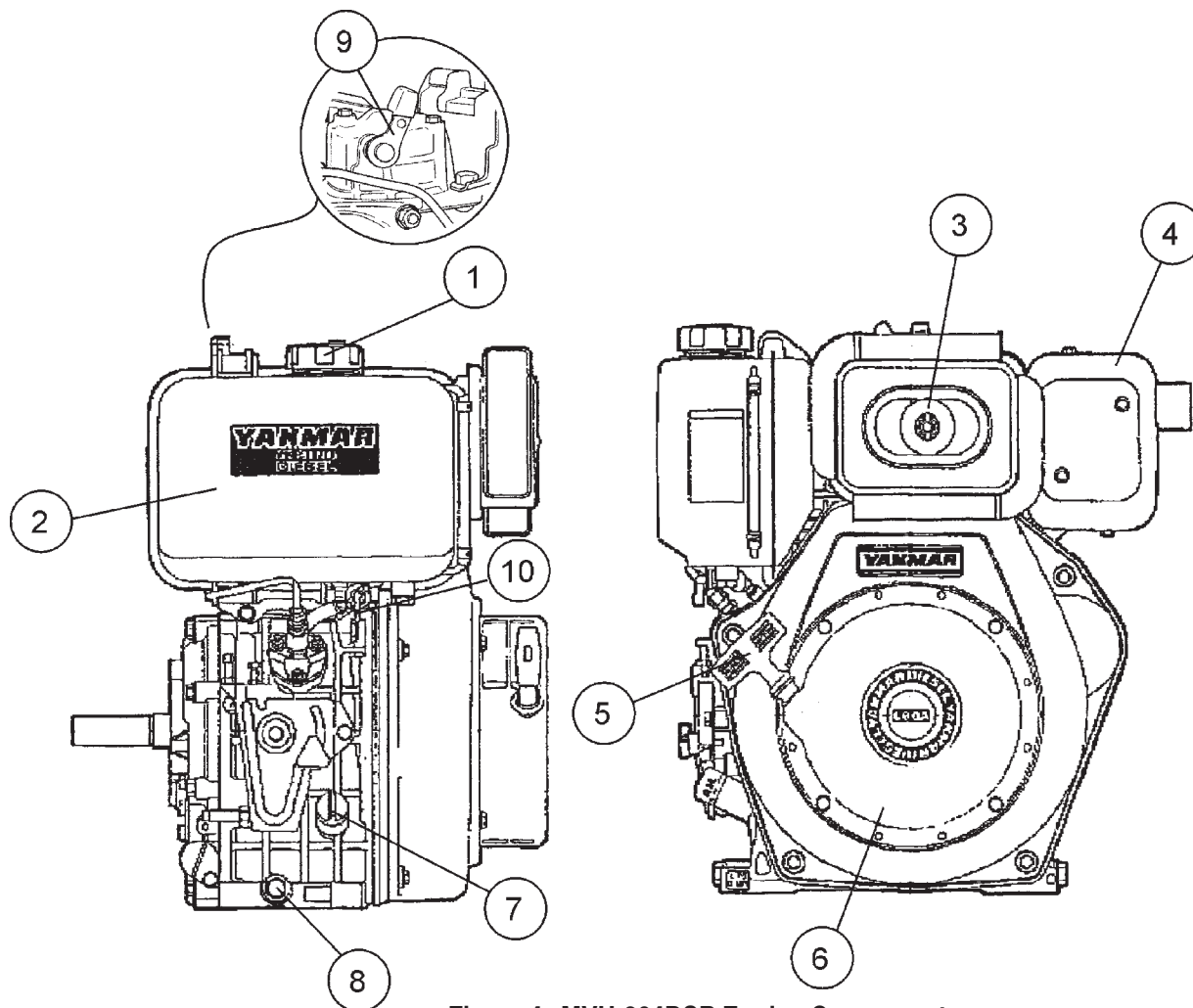


Figure 4. MVH-304DSB Engine Components

ENGINE COMPONENTS

Figure 4 illustrates the location of the major lever components of the machine. Each component is described below:

1. **Fuel Filler Cap** – Remove this cap to add unleaded gasoline to the fuel tank. Make sure cap is tighten securely. **DO NOT** over fill.
2. **Fuel Tank** – Gasoline engine Holds 3.8 quarts of unleaded gasoline. Diesel engine holds 3.4 quarts of diesel fuel.
3. **Air Cleaner** – Prevents dirt and other debris from entering the fuel system. Remove wing-nut on top of air filter cannister to gain access to filter element.
4. **Muffler** – Used to reduce noise and emissions.
5. **Recoil Starting Handle (pull rope)** – Type of engine starting method. Alternate type would be electric start (ignition key).
6. **Recoil Starter**– Manual-starting method. Pull the starter grip until resistance is felt, then pull briskly and smoothly.
7. **Oil Filler Cap / Dipstick** – Remove this cap to add oil to the engine crankcase. Read dipstick to determine if oil level is low. **DO NOT** over fill.
8. **Oil Drain Plug** – Unscrew plug to drain oil from engine crankcase. Dispose of oil in a safe manner.
9. **Decompression Lever**– Press down before starting engine. To prevent damage to engine, **DO NOT** use for any other purpose.
10. **Fuel Cock**– Controls the flow of diesel fuel to the carburetor. Must be in the ON position when starting and running the engine.

CAUTION :



NEVER operate the compactor in a confined area or enclosed area structure that does not provide ample *free flow of air*.



ALWAYS wear approved eye and hearing protection before operating the compactor.



Before Starting

1. Read safety instructions at the beginning of manual.
2. Familiarize yourself with the operating and control elements of the machine and the working environment. This includes obstacles in the working area, bearing capacity of the ground and the necessary safety provisions.
3. Check the air filter for dirt and dust. If air filter is dirty, replace air filter with a new one as required.
4. Check fastening nuts and bolts for tightness. Loose threads may cause damage to the machine when vibrating.
5. Understand the geographical features and regulations of the job site.
6. Clean the compactor, removing dirt and dust. Particularly, the bottom of the plate, engine cooling air inlet.



3. If the oil level is low, fill to the edge of the oil filler hole with the recommended oil type (Table 4). Maximum oil capacity is 1.74 quarts (1.65 liters).

Table 4. Oil Type

Season	Temperature	Oil Type
Summer	25°C or Higher	SAE 10W-30
Spring/Fall	25°C~10°C	SAE 10W-30/20
Winter	0°C or Lower	SAE 10W-10

Explosive Fuel

DANGER



Diesel fuel is highly flammable and can be dangerous if mishandled. **DO NOT** smoke while refueling. **DO NOT** attempt to refuel the compactor if the engine is *hot!* or *running*.



Checking The Fuel

1. Remove the fuel cap located on top of fuel tank.
2. Visually inspect to see if fuel level is low. If fuel is low, replenish with diesel fuel (Figure 6).
3. When refueling, be sure to use a strainer for filtration. **DO NOT** top-off fuel. Wipe up any spilled fuel.

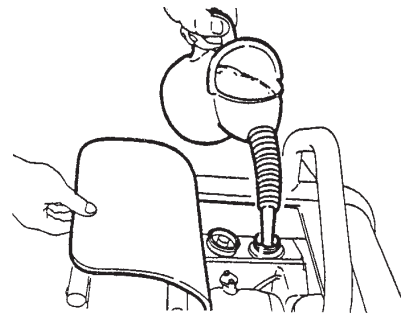


Figure 6. Refueling

CAUTION :



DO NOT overfill oil tank. This could cause oil leaks and sluggish operation. Clean cap and surrounding area before opening to prevent dirt from entering tank.

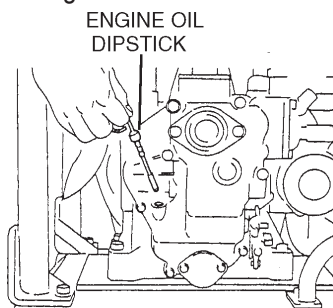


Figure 5. Oil Dipstick Removal

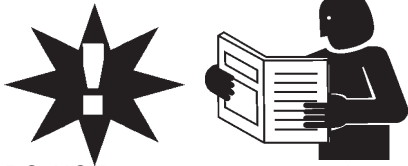
DANGER



Fuel spillage on a hot engine can cause a **fire** or **explosion**. If fuel spillage occurs, wipe up the spilled fuel completely to prevent fire hazards. **NEVER!** smoke around or near the compactor.



CAUTION :



DO NOT attempt to operate the compactor until the Safety, General Information and Inspection sections of this manual have been *read and thoroughly understood*.

This section is intended to assist the operator with the *initial start-up* of the compactor. It is extremely important that this section be read carefully before attempting to use the compactor in the field.

Refer to Figures 3 and 4 for the location of controls and components.

Adjusting Handle Height

The height of the handle is adjustable for your comfort .

1. Loosen the butterfly screw (Figure 8).
2. Turn the grip clockwise to raise the handle or counterclockwise to lower the handle.
3. When the handle is raised to the desired height, tighten the butterfly screw.

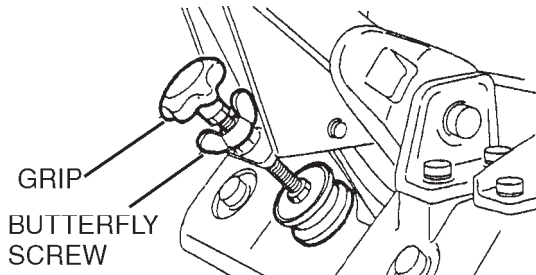


Figure 8. Handle Adjustment

STARTING THE ENGINE

Electric Start

1. Open the fuel cock (Figure 9).

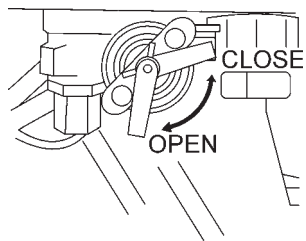


Figure 9. Open Fuel Cock

2. Move the throttle lever to the **START** position by opening it to about 20 degrees (Figure 10).

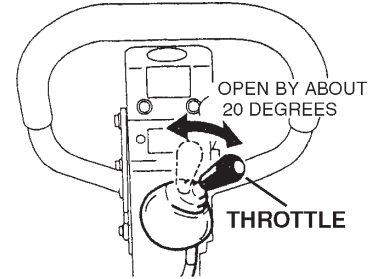


Figure 10. Throttle Lever (Start Position)

3. Insert the starter key into the key switch and turn it to the **RUN** position (Figure 11). The buzzer should sound at this time.
4. Turn the starter key further to the right to the **START** position to start the engine. Buzzer stops sounding and the engine starts.
5. If the engine fails to start, **DO NOT** continue to rotate the starter key for more than 5 seconds. Return the key to the **RUN** position and wait 10 seconds before starting again.

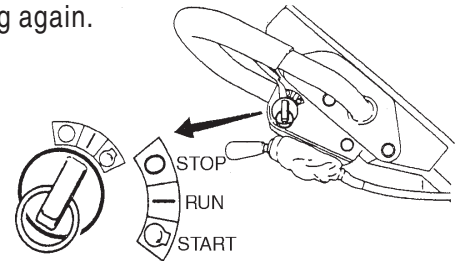


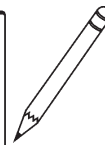
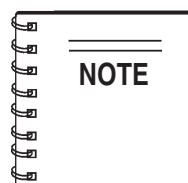
Figure 11. Starter Switch

CAUTION :



While the engine is running, never try to turn the starter key to the **START** position.

6. After starting the engine, continue to warm up the engine for about 3 to 10 seconds especially in cold weather.
7. If the buzzer does not stop sounding after the engine has started, shutdown engine immediately and check engine oil level. The buzzer functions as engine oil level warning also.



When starting a unit with an electric start capability, a decompressor is not normally required. However, when ambient temperature or battery charger level is low, use of a decompressor will help make the start-up easier.

Recoil Start

1. Open the fuel cock (Figure 9).
2. Move the throttle lever to the **START** position by opening it to about 20 degrees (Figure 10).
3. Grasp the starter grip (Figure 12) and slowly pull it out. The resistance becomes the hardest at a certain position, corresponding to the compression point. Pull the starter grip briskly and smoothly for starting.

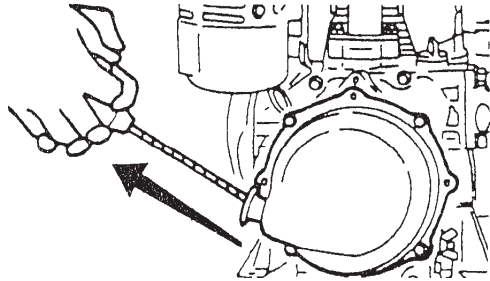


Figure 12. Engine Start Handle

4. Push down decompression lever (Figure 13) and release.

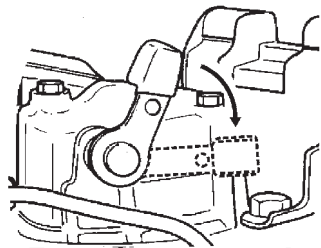


Figure 13. Decompression Lever

5. If the engine does not start, repeat steps 4 and 5.

TRAVELING

CAUTION :



Make sure to follow all safety rules referenced in the safety section of this manual before operating compactor. Keep work area clear of debris and other objects that could cause damage to the compactor or bodily harm.

1. Grasp the compactor's hand grip (Figure 14), and move the engine throttle lever (Figure 14) quickly to the **fast** position.
2. With the throttle lever in the fast position, the engine speed should be around 2,300 RPM, therefore engaging the centrifugal clutch

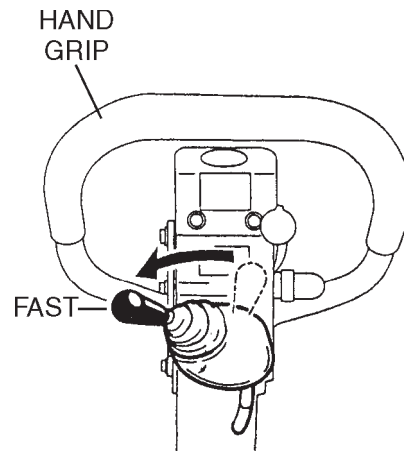
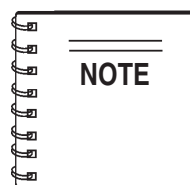


Figure 14. Throttle Lever (Fast)



ALWAYS move the throttle lever quickly without hesitation, because increasing the engine speed slowly causes the clutch to slip.

3. To make the compactor move in the forward direction push the travel lever (Figure 15) forward.

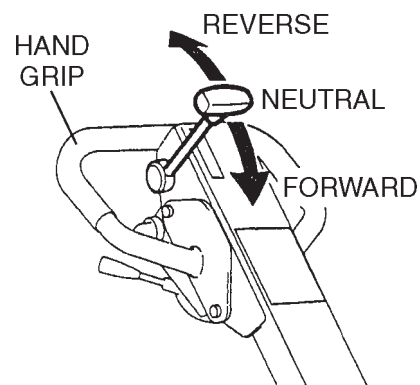


Figure 15. Direction Lever

- To make the compactor move in the reverse direction pull the travel lever (Figure 15) backwards.
- Firmly gasp the compactor's hand grip, the compactor will begin moving in the desired position when the direction lever has been placed in the desired position.
- Slowly walk behind the compactor and be on the lookout for any large objects or foreign matter that might cause damage to the compactor or bodily injury.
- If travel lever is placed in the neutral position, the machine will vibrate in place.
- To move the compactor laterally, hold the hand grip firmly and swing compactor. Do not swing compactor while gripping the travel lever.

STOPPING

- Return the throttle lever to the **START** position (Figure 10). Allow the machine to cool down for 2 to 3 minutes.
- Turn the throttle lever to the **STOP** position (Figure 16) to stop the engine. If using an electric start unit, return the key switch to the **STOP** position (Figure 17) as soon as the engine stops.
- Close the fuel cock (Figure 9).

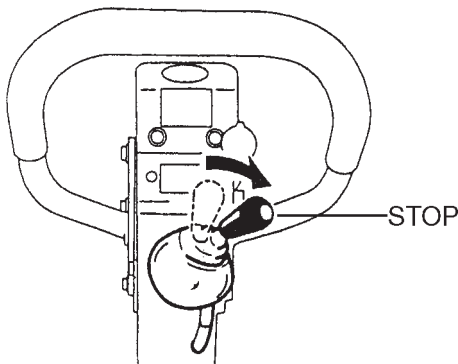


Figure 16. Throttle Lever (Stop)

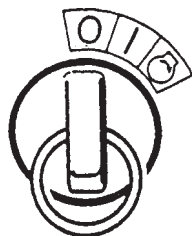


Figure 17. Starter Switch (STOP)

Emergency Shutdown

- Move the throttle lever quickly to the **STOP** position, and place the engine **IGNITION** switch in the **OFF** position.

STOWING THE HANDLE

- Push up the handle (Figure 18).
- Pull the stopper grip upward into the hole of the guard frame to lock the handle.

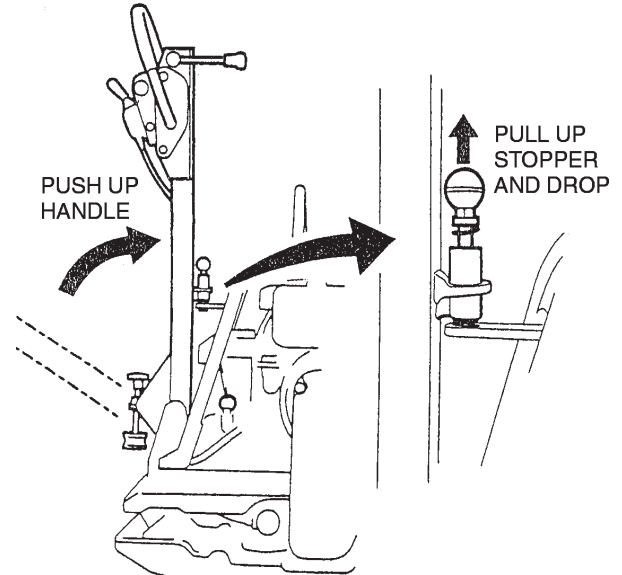


Figure 18. Stowing the Handle

LIFTING

- Use a crane or lift to load and unload the machine. A skilled crane operator is required to perform the job.
- When lifting the machine, check for any damaged or loose bolts, lifting hooks, and shock mounts.
- Check any damaged or loose bolts in the guard frame to avoid machine sliding off.
- Make sure that the machine is shut off before machine is lifted.
- Use reliable cable for lifting.
- Always lift the machine vertically and keep the machine away from workers and animals.
- Do not lift the machine higher than the required height.

TRANSPORTING

- Always make sure that the machine is shut off while being transported.
- Check that the fuel cap is properly closed and tightened.
- When traveling long distances or on rugged terrain, drain the fuel of the machine before transporting.
- Tie down the machine securely on the transportation so that it will not move or topple over.

CAUTION:



Inspection and other services should **always** be carried out on hard and level ground with the engine shutdown.

Inspection and Maintenance Service Tables.

- To make sure your plate compactor is always in good working condition before using, carry out the maintenance inspection in accordance with Tables 5 through 7.

TABLE 5. MVH-304DSB MACHINE INSPECTION

ITEM	HOURS OF OPERATION	REMARKS
Loose or Missing Screws	Every 8 hours (every day)	
Damaged Parts	Every 8 hours (every day)	
Function of Controlling System Part	Every 8 hours (every day)	
Hydraulic System Leak	Every 100 hours	See page 20
Vibrator Oil Check	Every 100 hours	See page 22
Vibrator Oil Replacement	Every 300 hours	See page 22
Hydraulic Oil Check	Every 100 hours	See page 22
Hydraulic Oil Replacement	First after 200 hours, then every 1,000 hours	See page 22
V-belt (clutch) Check	Every 200 hours	See page 21
Battery Check	Every 100 hours	See page 23

CAUTION:



These inspection intervals are for operation under normal conditions. Adjust your inspection intervals based on the number hours plate compactor is in use, and particular working conditions.

CAUTION:



Fuel piping and connections should be replaced every 2 years.

TABLE 6. MVH-304DSB ENGINE CHECK

ITEM	HOURS OF OPERATION
Oil or Fuel Leak	Every 8 hours (every day)
Tightness of Fastening Threads	Every 8 hours (every day)
Engine Oil Check and Replenishment	Every 8 hours (every day) (Replenish to specified maximum level)
Engine Oil Replacement	After first 25 hours then every 50 to 100 hours
Air Filter Cleaning	Every 100 hours
See separate engine manual for details on engine check.	

Daily Service

- Check for leakage of fuel or oil.
- Check for loose screws including tightness. See Table 7 below (tightening torque), for retightening:

**TABLE 7. TIGHTENING TORQUE
(in. kg/cm) Diameter**

Material	6mm	8mm	10mm	12mm	14mm	16mm	18mm	20mm
4T	70	150	300	500	750	1,100	1,400	2,000
6-8T	100	250	500	800	1,300	2,000	2,700	3,800
11T	150	400	800	1,200	2,000	2,900	4,200	5,600
*	100	300~ 350	650 ~ 700					

* (In case counter-part is of aluminum)
(Threads in use with this machine are all right handed)
Material and quality of material is marked on each bolt, and screw.

- Remove soil and clean the bottom of compaction plate.
- Check hydraulic pump, piping and hose for any leakage. A loosened hydraulic hose can be a cause for leakage. Check hydraulic hose connections with wrench applied for tightness.
- Check engine oil.

Engine Oil Replacement:

1. Replace engine oil, first in 25 hours of operation and every 50 to 100 hours afterwards.
2. Oil may be drained more easily when it is warm after operation (For more details, see separate engine Owner's Manual).

Air Filter

1. The air filter element should be cleaned because a clogged air cleaner can cause poor engine starting, lack of power and shorten engine life substantially.

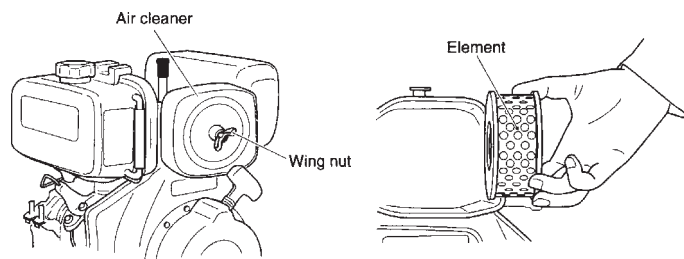


Figure 19. Engine Air Filter and Element

2. To clean or replace air filter loosen the wing nut on the air filter housing (Figure 19) remove the cover and take out air filter cartridge. If only cleaning of the air filter is desired blow through the air filter cartridge from the inside, moving a jet of dry compressed air up and down until all dust is removed.

CAUTION:

NEVER attempt to check the V-belt with the engine running. Severe injury can occur if your hand gets caught between the V-belt and the clutch (Figure 20). Always use safety gloves.

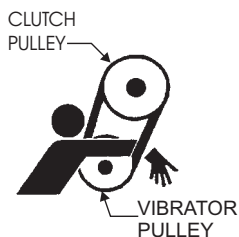


Figure 20 V-Belt Hazard

Checking and Replacing the V-Belt and Clutch

1. After 200 hours of operation, remove the belt cover to check the V-belt tension (Figure 21). Tension is proper if the belt bends about 3/8" (10 mm) when depressed strongly with finger between shafts. Loose or worn V-belts reduces power transmission efficiency, causing weak compaction and reduces the life of the belt itself.

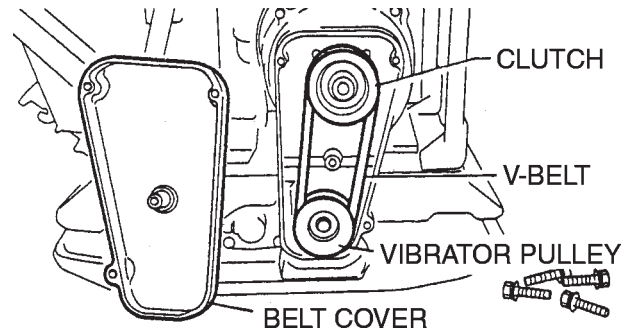


Figure 21. V-Belt Check

● Replacing the V-belt

Remove the belt cover. Engage an offset wrench 3/4" (19 mm) or the like to vibrator pulley (lower) fastening bolt. Engage waste cloth or the like at midway of V-belt on the left side and while pulling it back strongly, rotate the offset wrench clockwise so that the V-belt will come off.

● Reinstalling the V-belt

Engage V-belt to lower vibrator pulley and push the V-belt to left side of upper clutch and, in the same manner as in removal, rotate offset wrench clockwise so that the V-belt goes back on.

● Checking Clutch

Check the clutch simultaneously with V-belt checking. With belt cover removed, check outer drum of the clutch for seizure and "V" groove for wear or damage with your eyes. Clean the "V" groove as necessary. Wear of lining or shoe should be checked with running check. If the shoe is worn, power transmission becomes deficient and slipping will result.

● Replacing Clutch

Remove V-belt. Remove bolt at engine power output by giving a shock to an engaged wrench (tapping with hammer or the like) and rotating bolt counterclockwise. Remove clutch with a pulley extractor. To reinstall, reverse the procedure.

CAUTION:



Whenever the compactor's vibration becomes weak or lost during normal operation regardless of operation hours, check the V-belt and clutch immediately.

Vibrator Oil Level Check

CAUTION:



Always clean the area around the vibrator oil level check hole before removing oil check plug. This will prevent dirt and debris from entering the system.

1. In every 100 hours of operation, with the machine positioned horizontally, remove vibrator oil level check plug (Figure 22) off vibrator 3/4" (19 mm wrench) and see if oil is up to filler port. Be sure to clean area around check hole to prevent dirt and dust from entering.
2. In every 300 hours of operation, replace oil (capacity 1,500 cc). For draining oil through level check hole, have the machine inclined with a sleeper or the like placed under the compaction plate on opposite side.

* Use engine oil 10W-30 for this lubrication.

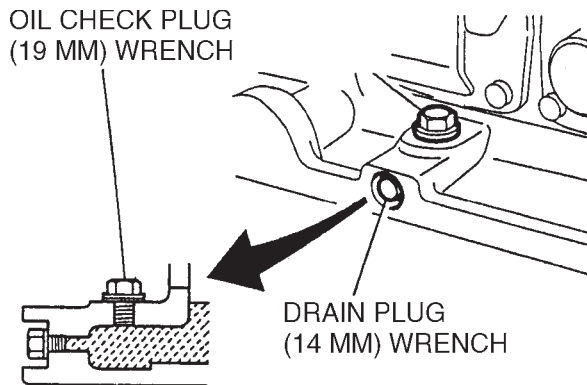


Figure 22. Vibrator Oil Maintenance

Replacing Hydraulic Oil

1. Remove the drain plug (Figure 23) at the bottom of the oil tank with a 6 mm hex wrench and drain the hydraulic oil.
2. Clean the filter with light oil.
3. Reinstall the drain plug to the oil tank. Apply seal tape or Roctite #575 to thread portion.
4. Fill tank with hydraulic oil. (Capacity: About 2,500 cc). Use **Shell Tellus Oil #46** or equivalent.
5. After filling tank, temporarily install cover. Loosen bleeder plug located at the top of the cylinders on side of vibrator (Figure 23). Air remaining in the circuit will be forced out of the bleeder plug.
6. Tighten the breather plug. Check oil level in the tank again.
7. Install the cover of oil tank. Coat packing with liquid packing such as Threebond #1215. Use loctite #242 for mounting screw.

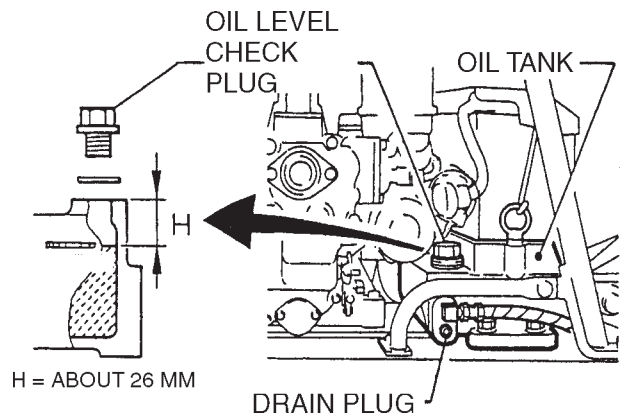


Figure 23. Hydraulic Oil Maintenance

Hydraulic Oil

1. Check hydraulic oil in every 100 hours of operation. With handle bar positioned vertically (storage position), remove **breather plug** (Figure 24) off the top of hydraulic pump and check for proper oil level.
2. Replace hydraulic oil after first 200 hours and in every 1,000 hours of operation.

CAUTION:



Make sure hydraulic oil is at a normal safe operating level. **DO NOT** over fill. Over filling (excessive oil) will cause excess oil to blow out of breather plug.

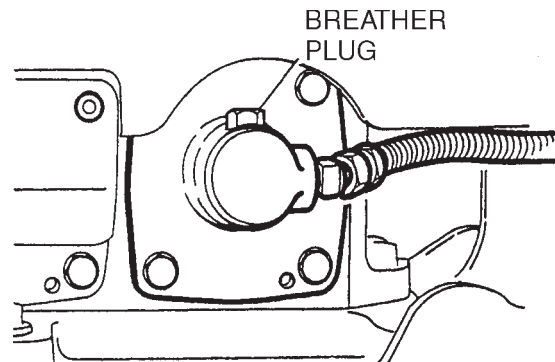


Figure 24. Bleeder Plug

BATTERY MAINTENANCE

1. Check the battery terminals periodically to ensure that they are in good condition.
2. Use wire brush or sand paper to clean the battery terminals.
3. Check battery for cracks or any other damage. If white pattern appears inside the battery or paste has accumulated at the bottom, replace the battery.
4. If the machine will not be in operation for a long period of time, store in cool dry place and check the battery charge level every month to maintain the performance of the battery.

BATTERY CABLE CONNECTION

1. Take off the battery cover by removing the M6 nuts (Figure 25).
2. When removing cable, disconnect the ground side (normally negative) first (Figure 25).
3. When installing cable connect the ground side (normally negative) last.

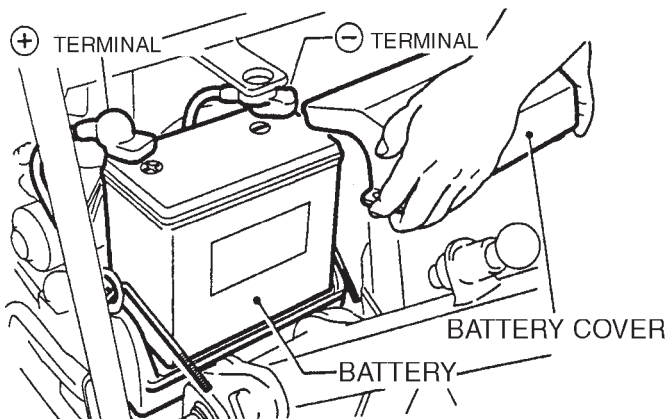


Figure 25. Battery Maintenance

CAUTION :



Wear **safety glasses** or **face mask**, **protective clothes**, and **rubber gloves** when working with battery.



Troubleshooting

See Tables 8 (engine) and 9 (plate compactor) on proceeding pages for engine and plate compactor troubleshooting guide.

MVH-304DSB—TROUBLESHOOTING

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, please take a remedial action following the

diagnosis based on the Engine Troubleshooting (Table 8) information shown below. If the problem cannot be remedied, please leave the unit just as it is and consult our company's business office or service plant.

TABLE 8. ENGINE TROUBLESHOOTING

SYMPTON	POSSIBLE PROBLEM	SOLUTION
Engine will not start or start is delayed, although engine can be turned over.	Speed control lever is in "STOP" position?	Set speed control lever to "START" position.
	No fuel reaching injection pump?	Add fuel. Check entire fuel system.
	Defective fuel pump?	Replace fuel pump.
	Fuel filter clogged?	Replace fuel filter and clean tank.
	Faulty fuel supply line?	Replace or repair fuel line.
	Compression too low?	Check piston, cylinder and valves. Adjust or repair per engine repair manual.
	Fuel injector not working correctly?	Repair or replace injector in accordance with engine repair manual.
	Oil pressure too low?	Check engine oil pressure.
At low temperatures engine will not start.	Low starting temperature limit exceeded	Comply with cold starting instructions and proper oil viscosity.
	Fuel separates has inadequate resistance to low temperatures?	Check whether clear (not turbid) fuel emerges from the fuel line (detach from injection pump). If the fuel is turbid or separated, warm up the engine or drain the complete fuel supply system. Refuel with winter grade diesel fuel.
Engine oil too thick?	Engine oil too thick?	Refill engine crankcase with correct type of oil for winter environment.
	Throttle lever in STOP position?	Reposition throttle lever to RUN position.
Engine fires but stops soon as starter is switched off.	Fuel filter blocked?	Replace fuel filter.
	Fuel supply blocked?	Check the entire fuel system.
	Fuel tank empty?	Add fuel.
Engine stops by itself during normal operation.	Fuel filter blocked?	Replace fuel filter.
	Fuel tank empty?	Fill with No.2 diesel fuel.
Low engine power, output and speed.	Fuel filter clogged?	Replace fuel filter.
	Fuel tank venting is inadequate?	Ensure that tank is adequately vented.
	Speed control lever does not remain in selected position?	See engine manual for corrective action.
	Engine oil level too full?	Correct engine oil level?
	Air filter blocked?	Clean or replace air filter.
Low engine power output and low speed, black exhaust smoke.	Incorrect valve clearances?	Adjust valves per engine specification.
	Malfuction at injector?	See engine manual.

MVH-304DSB—TROUBLESHOOTING

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, please take a remedial action following the

diagnosis based on the Compactor Troubleshooting (Table 9) information shown below. If the problem cannot be remedied, please leave the unit just as it is and consult our company's business office or service plant.

TABLE 9. TROUBLESHOOTING COMPACTOR

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Travel speed low and vibration weak.	Clutch slips?	Adjust or replace clutch.
	V-belt slips?	Adjust or replace V-belt.
	Excessive Oil in vibrator?	Fill to correct level..
	Trouble in vibrator internals?	Check vibrator assembly for any worn or defective parts, replace any defective parts.
	Aeration in hydraulic oil for for travel reversing syste.?	Purge air in hydraulic oil. (Bleed plug)
	Engine speed incorrect?	Set engine speed to correct RPM.
Travels forward or backward but unable to switch direction.	Travel reversing system inoperative.?	Check entire travel system.
	Reversing lever installation correct?	Clean installation of reversing lever.
	Broken or defective oil hose?	Replace oil hose.
	Aeration in hydraulic oil for for travel reversing syste.?	Purge air in hydraulic oil. (Bleed plug)
	Excessive oil in reversing system?	Fill to correct level..
	Selector valve clogged with trash?	Clean selector valve.
	Cylinder piston bearing failure?	Check piston bearing in cylinder for leakage at USH packing.
Does not travel in forward or reverse.	V-belt dis-engaged or slips?	Engage V-belt, adjust or replace.
	Clutch slips?	Adjust clutch, replace if necessary.
	Pump input shat key or adapter key-way damaged?	Replace input shatkey or adapter key-way
	Cylinder piston bearing failure?	Check piston bearing in cylinder for leakage at USH packing.
Reversing lever operating resistance great.	Excessive hydraulic oil?	Fill to correct level.

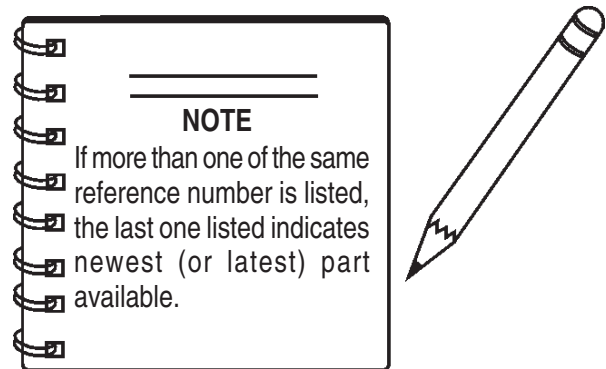
EXPLANATION OF CODE IN REMARKS COLUMN

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

Section 1: 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.



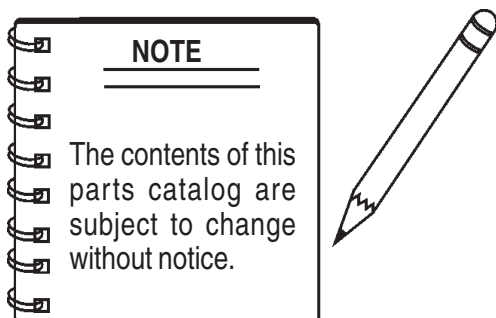
Section 2: Items Found In the “Remarks” Column

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.

Section 3: Items Found In the “Items Number” Column

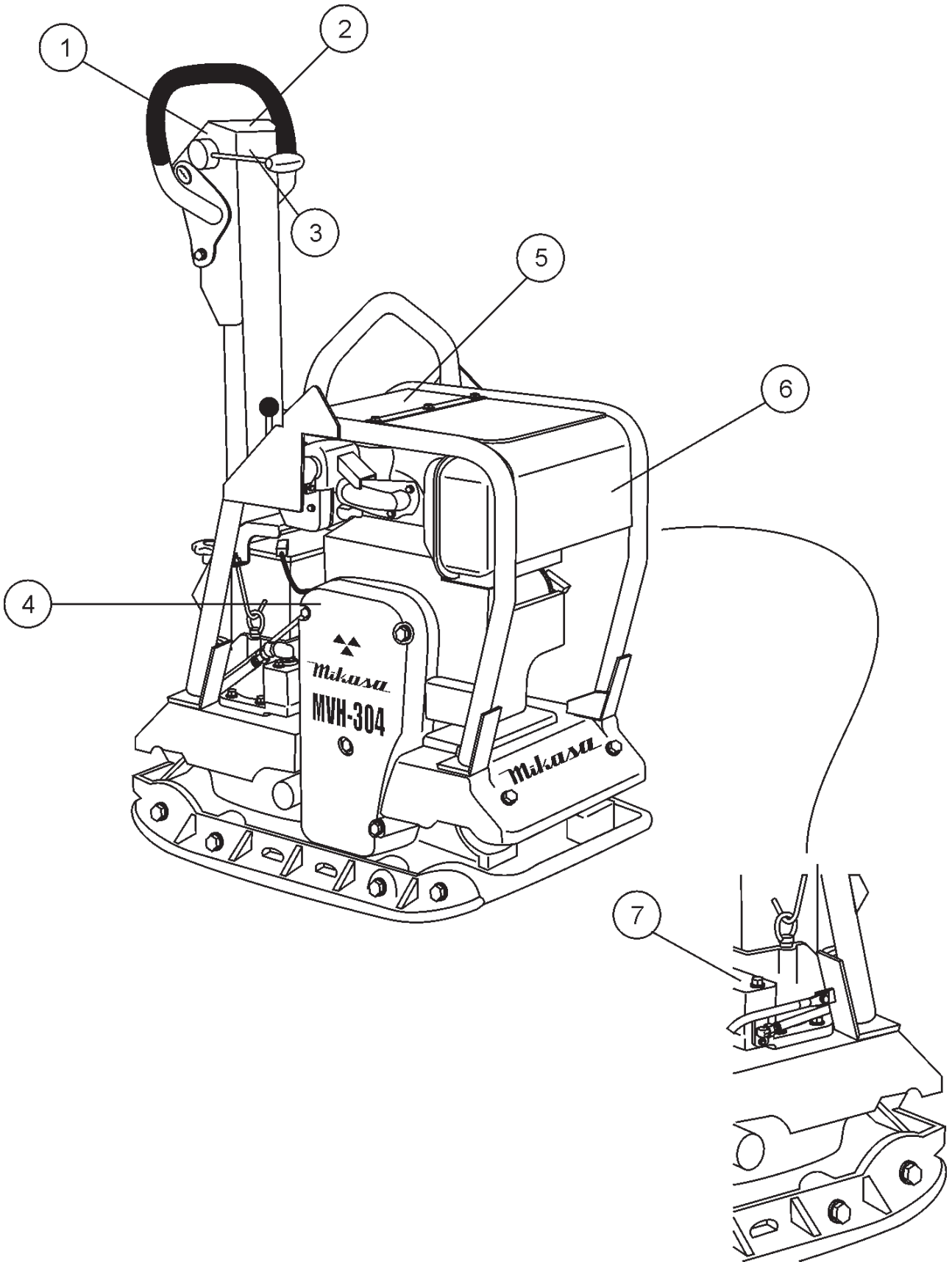
All parts with same symbol in the number column, *, #, +, %, or ■, belong to the same assembly or kit.



MVH-304 W/YANMAR DIESEL ENGINE*1 to 3 Units*

Qty.	P/N	Description
1	956100031	THROTTLE WIRE
2	070200363	V-BELT
2	456449280	FILTER, OIL TANK
3	11465012590 ..	ELEMENT W/ PRE-FILTER
1	11465076631 ..	STARTER ROPE
2	11425055121 ..	FUEL FILTER W/GASKET
1	11428855041 ..	CAP, FUEL TANK W/GASKET

DECALS

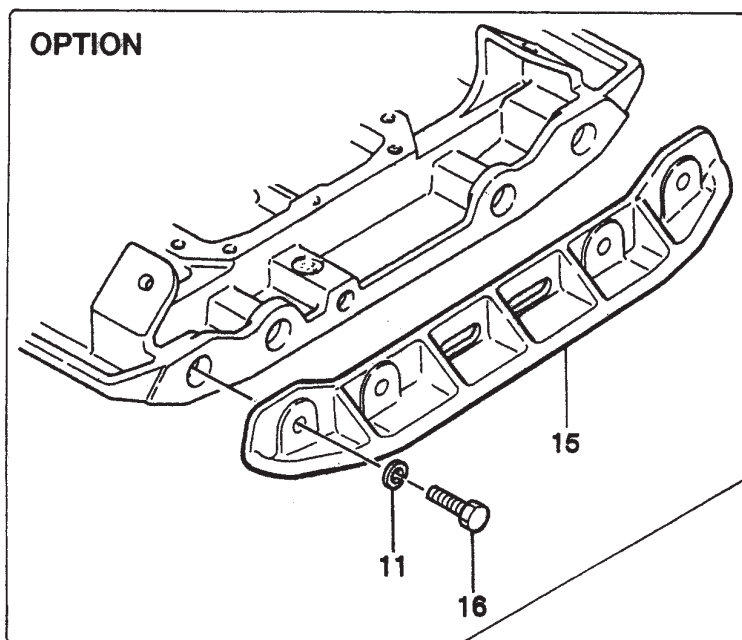
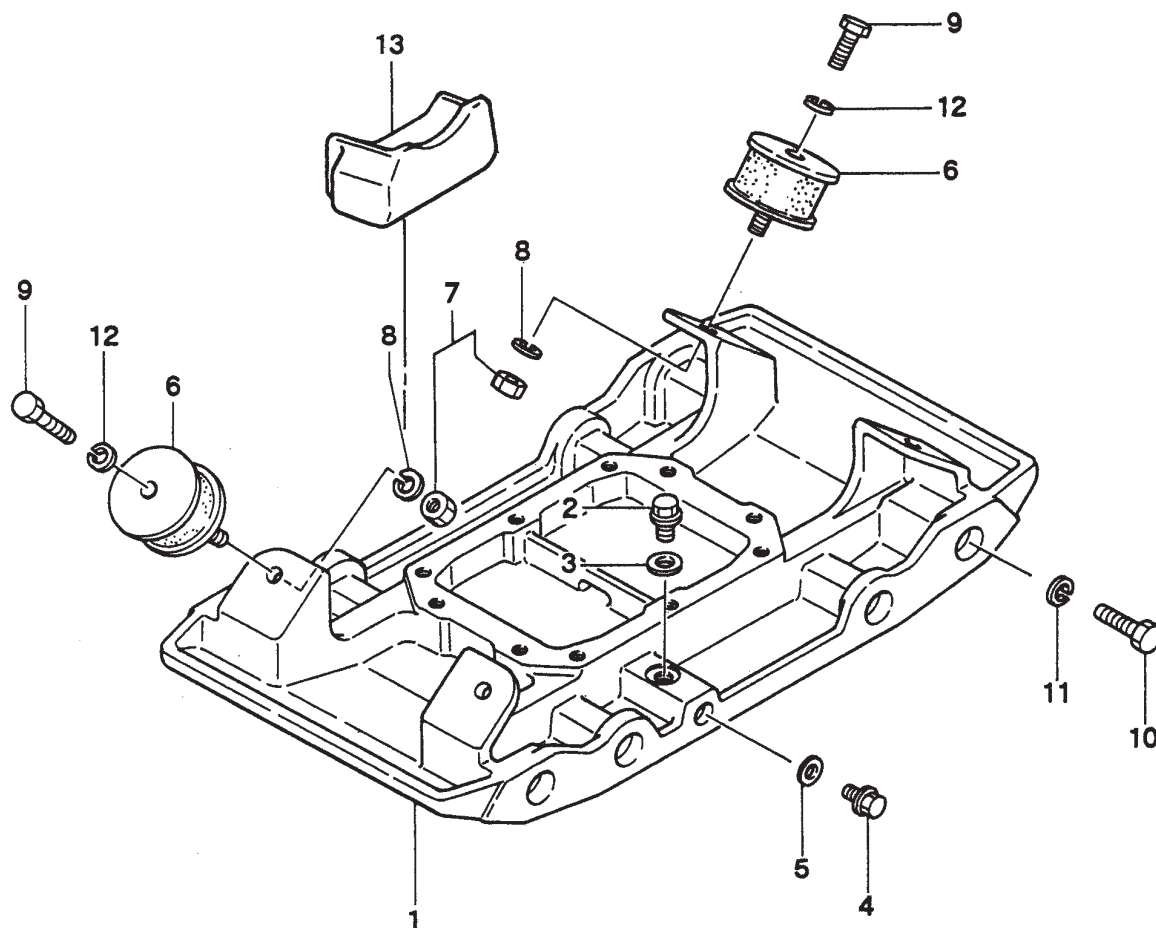


DECALS

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	0732004460	IGNITION SYSTEM DECAL	1	
2	920204580	FULL THROTTLE DECAL	1	NPA458
3	920202220	FORWARD/REVERSE DECAL	1	NPA222
4	920201580	MULTIQUIP LOGO DECAL	1	
5	920206370	OPERATIONAL CAUTION DECAL	1	NPA638
6	920108400	MVH-304 DECAL	1	
7	920207480	SHELL OIL #46DECAL	1	NPA748

MVH-304DSB VIBRATING PLATE ASSY.

VIBRATING PLATE ASSY.



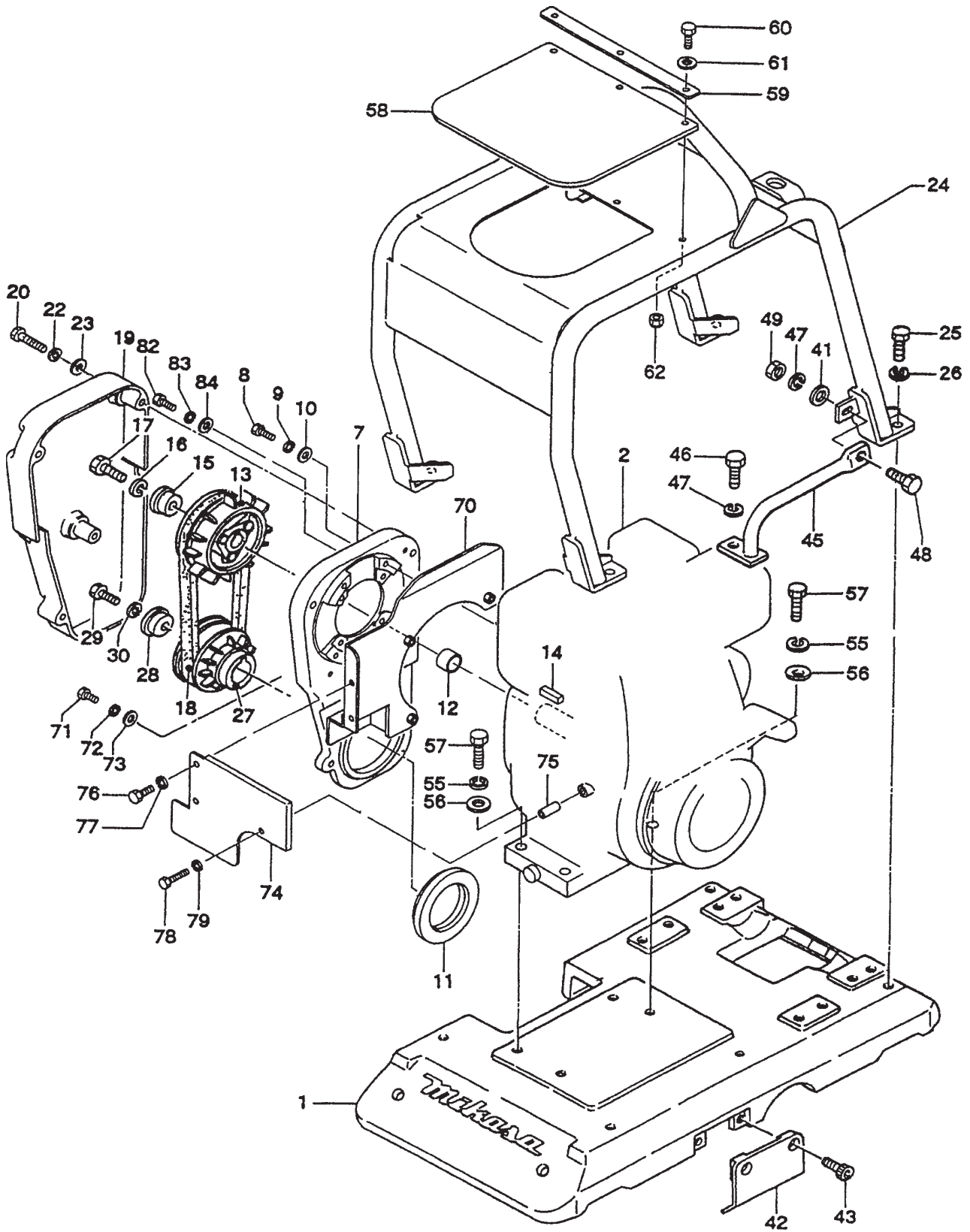
MVH-304DSB — VIBRATING PLATE ASSY.

VIBRATING PLATE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	456113260	VIBRATING PLATE 445B	1	
2	953405840	DRAIN PLUG M18 (H)	1	
3	953402930	COPPER PACKING 19X30X1	1	
4	953405270	PLUG 1/4X14 13L	1	
5	953405260	PACKING 1/4 (CU)	1	
6	939010070	SHOCK ABSORBER 100	4	
7	020316130	NUT M16	4	
8	030216400	WASHER 16	4	
9	001221645	BOLT 16X45 T	4	
10	001201830	BOLT 18X30	8	
11	030218460	WASHER M18	8	
12	030216400	WASHER M16	4	
13	456336550	COVER GUARD	1	
15	456210690	EXTENSION PLATE	2.....	OPTION
16	001221850	BOLT 18X50 T	8.....	OPTION

MVH-304DSB — BASE AND ENGINE ASSY.

VIBRATING PLATE ASSY.



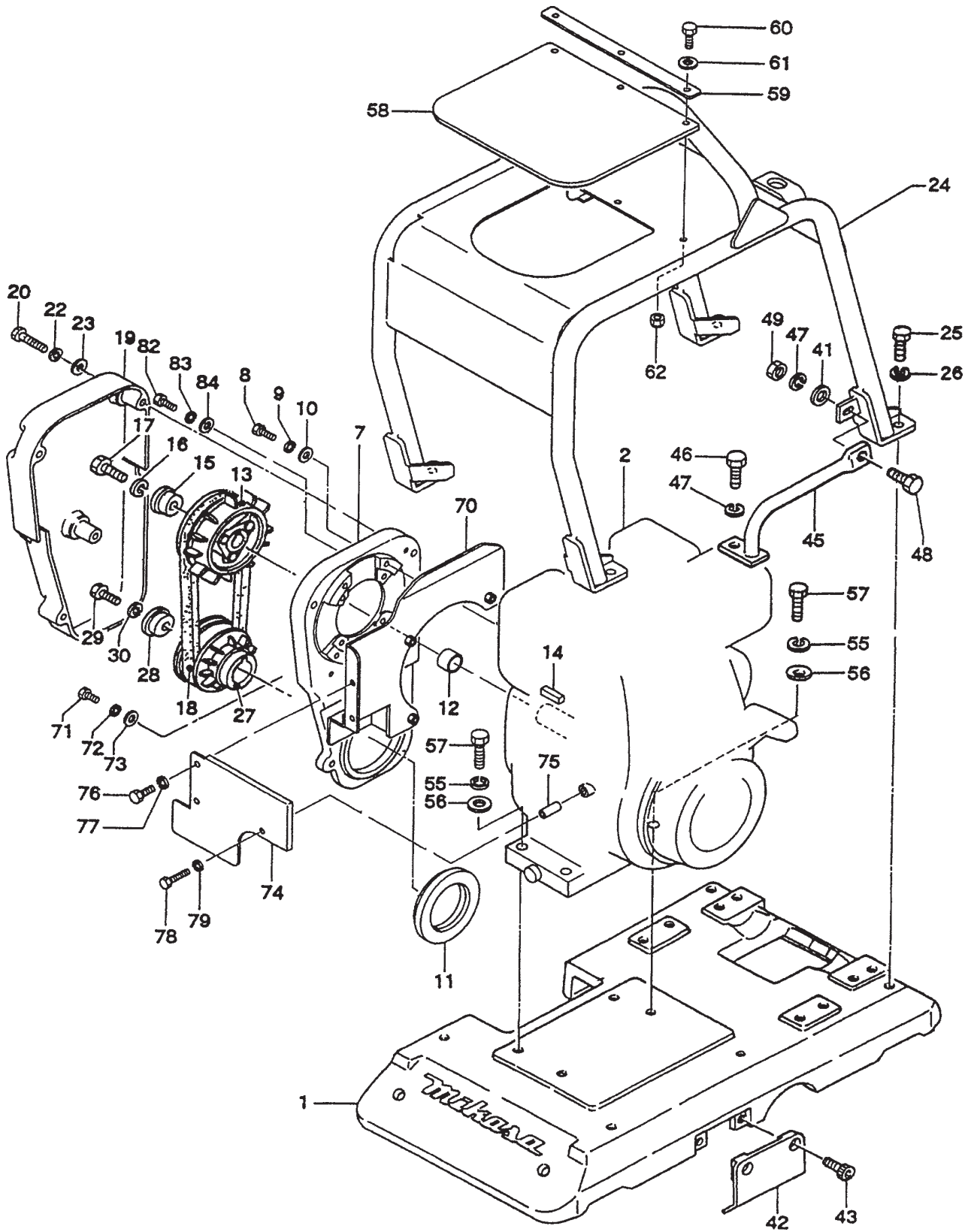
MVH-304DS — B BASE AND ENGINE ASSY.

VIBRATING PLATE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	456115310	BASE (L90)	1	
2	914410013	ENGINE ASSY. (L100EE-DEV MK3)	1	
7	456115040	BELT COVER (IN)	1	UP TO S/N G4384
7	456116070	BELT COVER (IN)	1	FROM S/N G4385 AND UP
8	001220830	BOLT 8X30 T	4	
8	001220835	BOLT 8X35 T	4	
9	030208200	WASHER M8	4	
10	031108160	WASHER M8	4	
11	456445120	COVER SEAL 125D	1	
12	456445721	SPACER 25-32-21	1	
13	456335600	CLUTCH AY W/ FAN	1	
14	951400110	KEY 7X77X35	1	
15	455444351	WASHER, CLUTCH	1	
16	030208200	WASHER M8	1	
17	001220825	BOLT 8X25 T	1	
18	070200363	V-BELT B-36 GREEN/HDPF536	1	
19	456115130	BELT COVER (OUT)	1	
20	001221052	BOLT 10X60 T	4	
22	030210250	WASHER M10	4	
23	0311-10160	WASHER M10	4	
24	456115050	GUARD FRAME	1	
25	001221230	BOLT 12X30 T	4	
26	030212300	WASHER M12	4	
27	456335520	PULLEY B1-105 W/ FAN	1	
28	456437920	WASHER, PULLEY	1	
29	001221235	BOLT 12X35 T	1	
30	0302-12300	WASHER M12	1	
41	031110160	WASHER M10	1	

MVH-304DSB — BASE AND ENGINE (CONTINUED) ASSY.

VIBRATING PLATE ASSY.



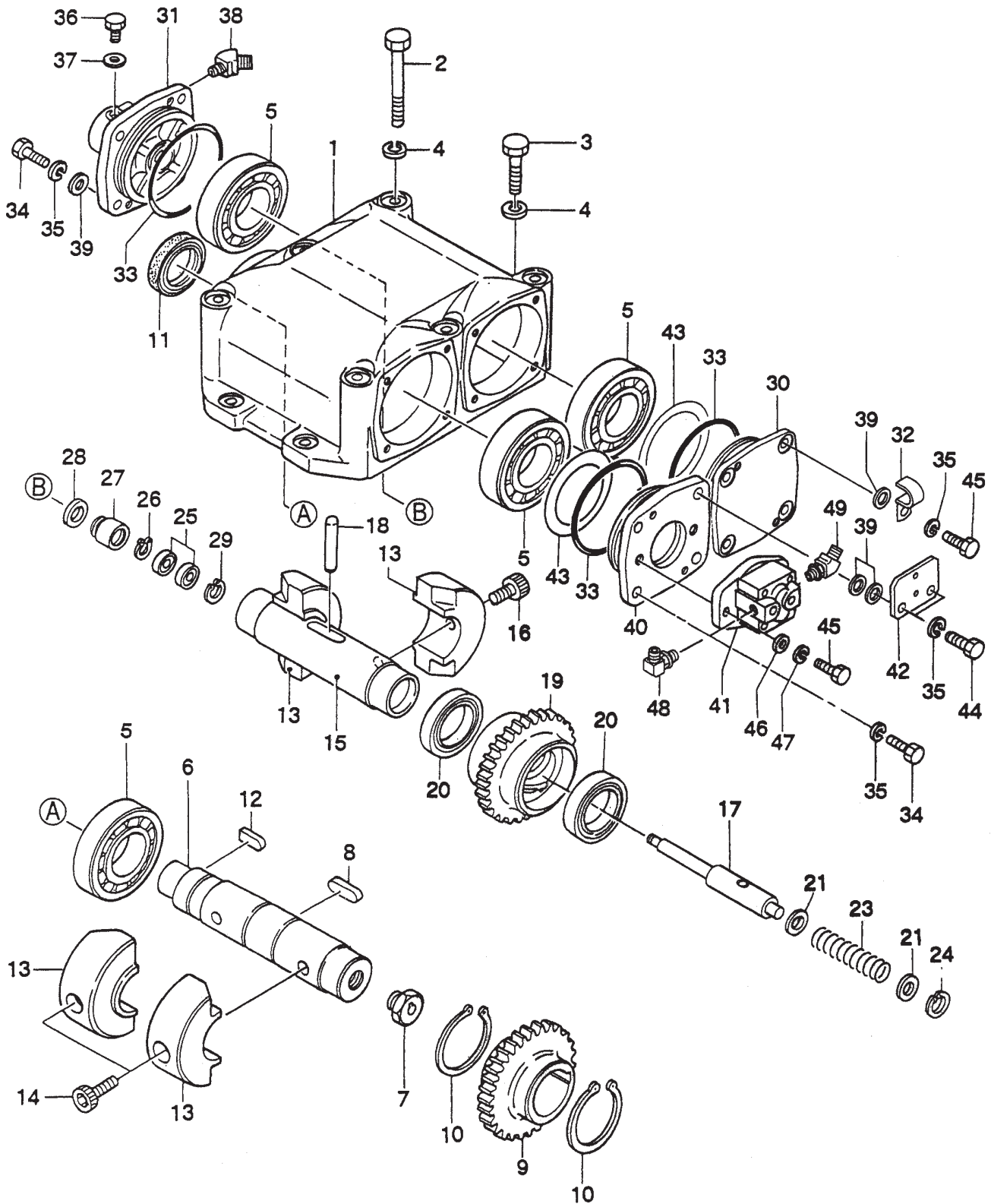
MVH-304DS — B BASE AND ENGINE (CONTINUED) ASSY.

VIBRATING PLATE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
42	456334630	PUMP COVER	1	
43	001520816	SOCKET HEAD BOLT 8X16 T	2	
45	456334860	GUARD PIE	1	
46	001221020	BOLT 10X20 T	1	
47	030210250	WASHER M10	2	
48	001221030	BOLT 10X30 T	1	
49	020310080	NUT M10	1	
55	030210250	WASHER M10	4	
56	031110160	WASHER M10	4	
57	001221040	BOLT 10X40 T	4	
58	456449960	RUBBER COVER	1	
59	456449950	PLATE COVER	1	
60	001220825	BOLT 8X25 T	3	
61	031108160	WASHER M8	3	
62	0227-10809	NYLON NUT M8	3	
70	456337640	BELT COVER PLATE	1	
71	001220820	BOLT 8X20 T	3	
72	030208200	WASHER M8	3	
73	031108160	WASHER M8	3	
74	456337650	ENGINE GUARD PLATE	1	
75	456451270	COLLER	1	
76	001220820	BOLT 8X20 T	2	
77	030208200	WASHER M8	2	
78	001200650	BOLT 6X50	1.....	FOR L90
78	001200615	BOLT 6X15	1.....	FOR L100
79	030206150	WASHER M6	1	
82	001220830	BOLT 8X30 T	4.....	S/N G4385 AND UP
83	030208200	WASHER M8	4.....	S/N G4385 AND UP
84	031108160	WASHER M8	4.....	S/N G4385 AND UP

MVH-304DSB — VIBRATOR ASSY.

VIBRATOR ASSY.



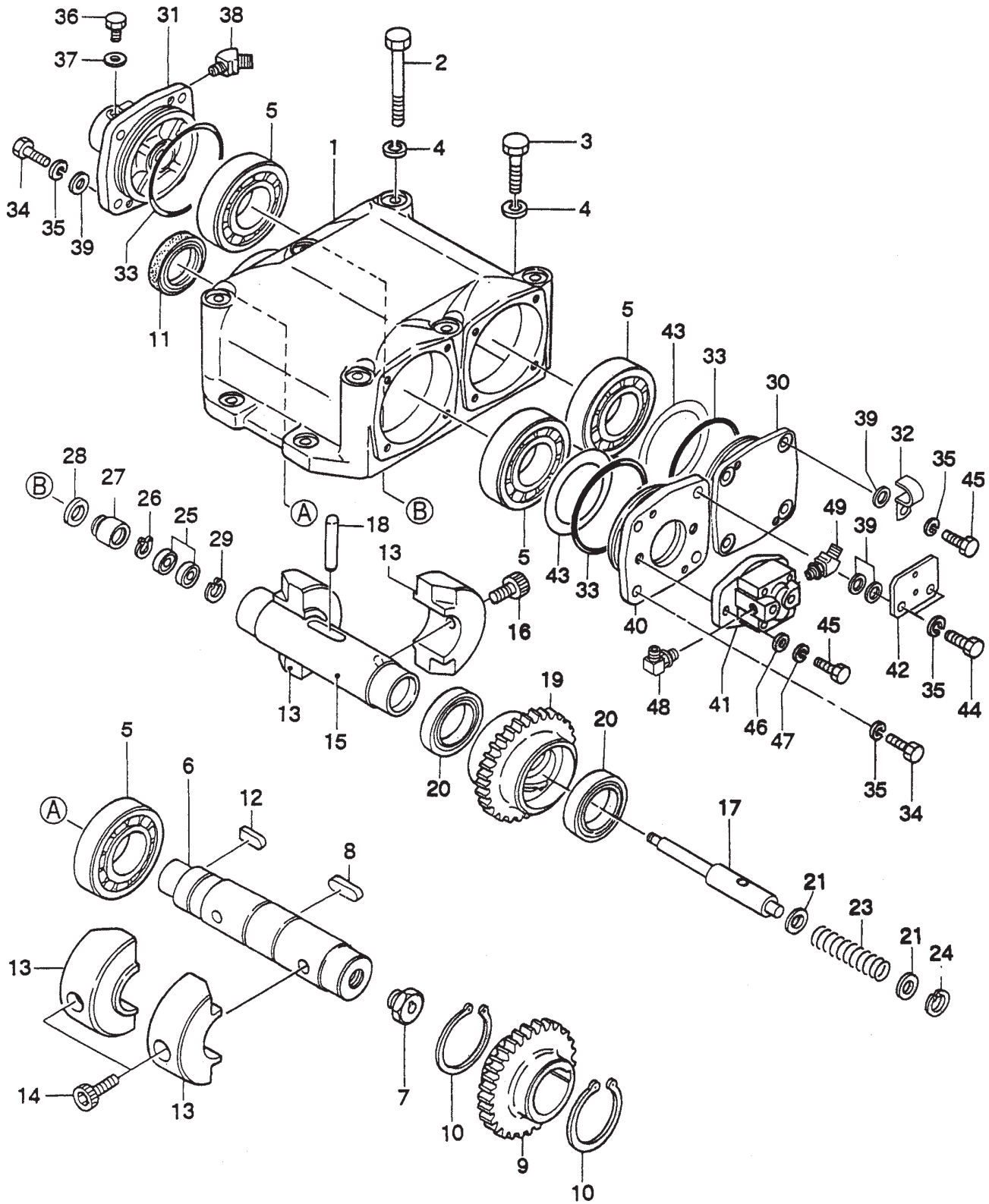
MVH-304DSB — VIBRATOR ASSY.

VIBRATOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	456110250	VIBRATING CASE	1	
2	001221470	BOLT 14X150 T	6	
3	001221450	BOLT 14X50 T	4	
4	030214350	WASHER M14	10	
5	047920060	ROLLER BEARING NJ310MC4	4	
6	457212410	ROTARY SHAFT, DRIVE	1	
7	457445830	ADAPTER, PUMP	1	
8	951405370	KEY 15X10X39 RR	1	
9	456327150	GEAR, DRIVE	1	
10	080200550	STOP RING S-55	2	
11	060105030	OIL SEAL SB-50729	1	
12	951404970	KEY 12X8X30 R	1	
13	456327170	ECCENTRIC ROTOR	4	
14	009120301	SOCKET HEAD BOLT 16X40T	2	
15	456337670	ROTARY, SHAFT DRIVEN	1	
16	009120302	SOCKET HEAD BOLT 16X30T	2	
17	456337380	PISTON ROD	1	
18	456010010	KNOCK PIN 10X70	1	
19	456327120	GEAR, DRIVEN	1	
20	040306911	BEARING 6911C3	2	
21	455435020	COLLAR 17X30X3	2	
23	456451280	SPRING 3.2-26.3-102L	1	
24	080100300	STOP RING R-30	1	
25	042506000	BEARING 6000ZZSG	2	

MVH-304DSB — VIBRATOR ASSY.

VIBRATOR ASSY.



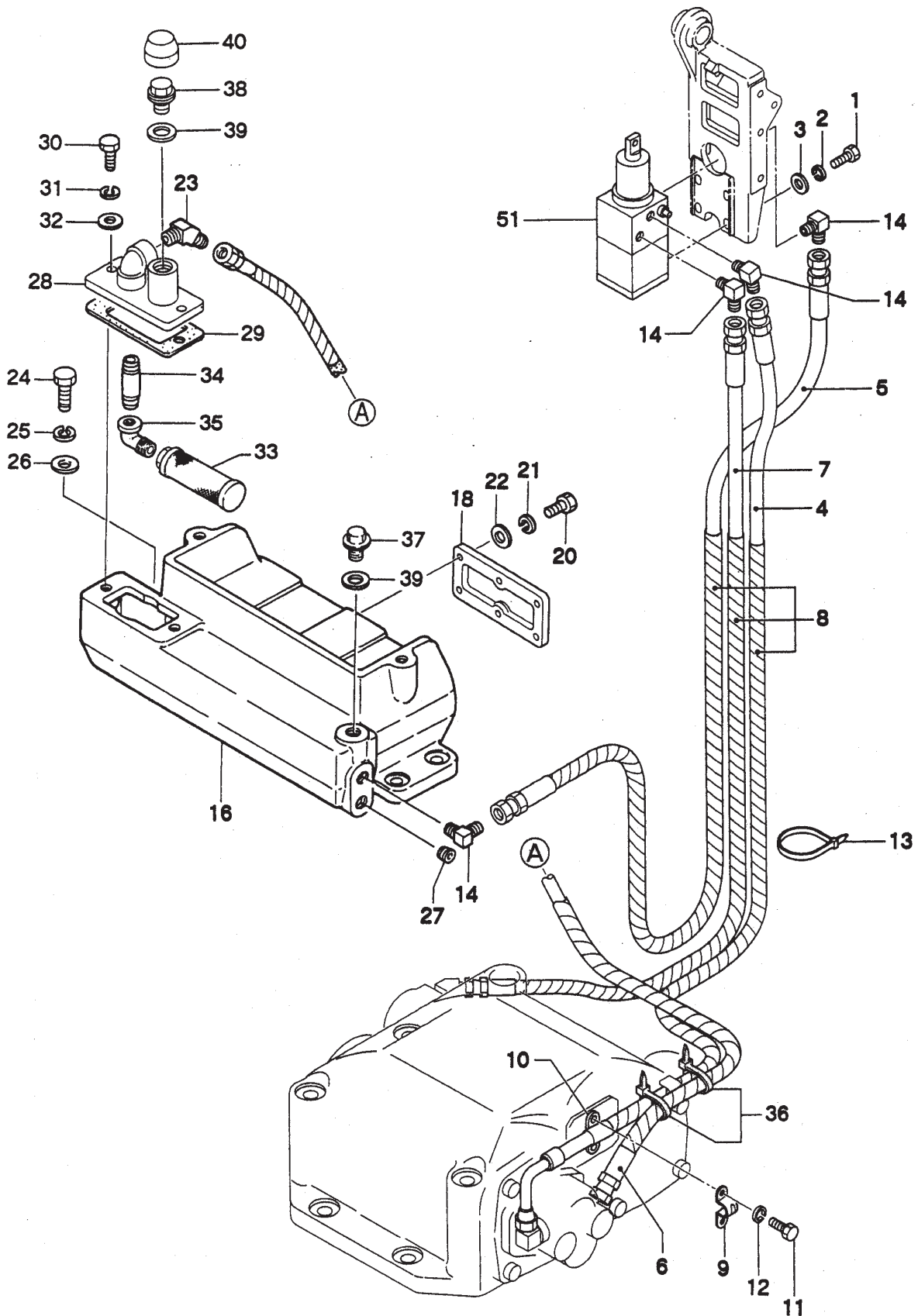
MVH-304DSB — VIBRATOR (CONTINUED) ASSY.

VIBRATOR ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
26	080200100	STOP RING S-10	1	
27	455435051	PISTON, 22.4D	1	
28	455010070	PACKING USH-22.4X30X5	1	
29	080100260	STOP RING R-26	1	
30	455327130	BEARING COVER	1	
31	456210646	CYLINDER (R)	1	
32	954405550	CLAMP 15R	1	
33	050101050	O-RING G-105	3	
34	001221025	BOLT 10X25 T	9	
35	030210250	WASHER M10	12	
36	001220812	BOLT 8X12 T	1	
37	953404600	COPPER PACKING 8X16X2	1	
38	455010020	ELBOW 45 15-0404	1	
39	031110160	WASHER M10	10	
40	457332430	FLANGE, PUMP	1	
41	457010010	PUMP FBL	1	
41-1	457010090	CRESCENT KEY 2.5X10 GEAR PUMP	1	
42	457445840	BRACKET, CLAMP	1	
43	952405470	SHIM 90X110X0.5	2	
44	001221035	BOLT 10X35 T	2	
45	001221030	BOLT 10X30 T	3	
46	952405540	WASHER 10.5-22-3	2	
47	030210250	WASHER M10	2	
48	954010140	ELBOW 90 UES90G02G02	1	
49	954001780	ELBOW 45 PF3/8-PF1/4	1	

MVH-304DSB — HYDRAULIC SYSTEM ASSY.

HYDRAULIC SYSTEM ASSY.



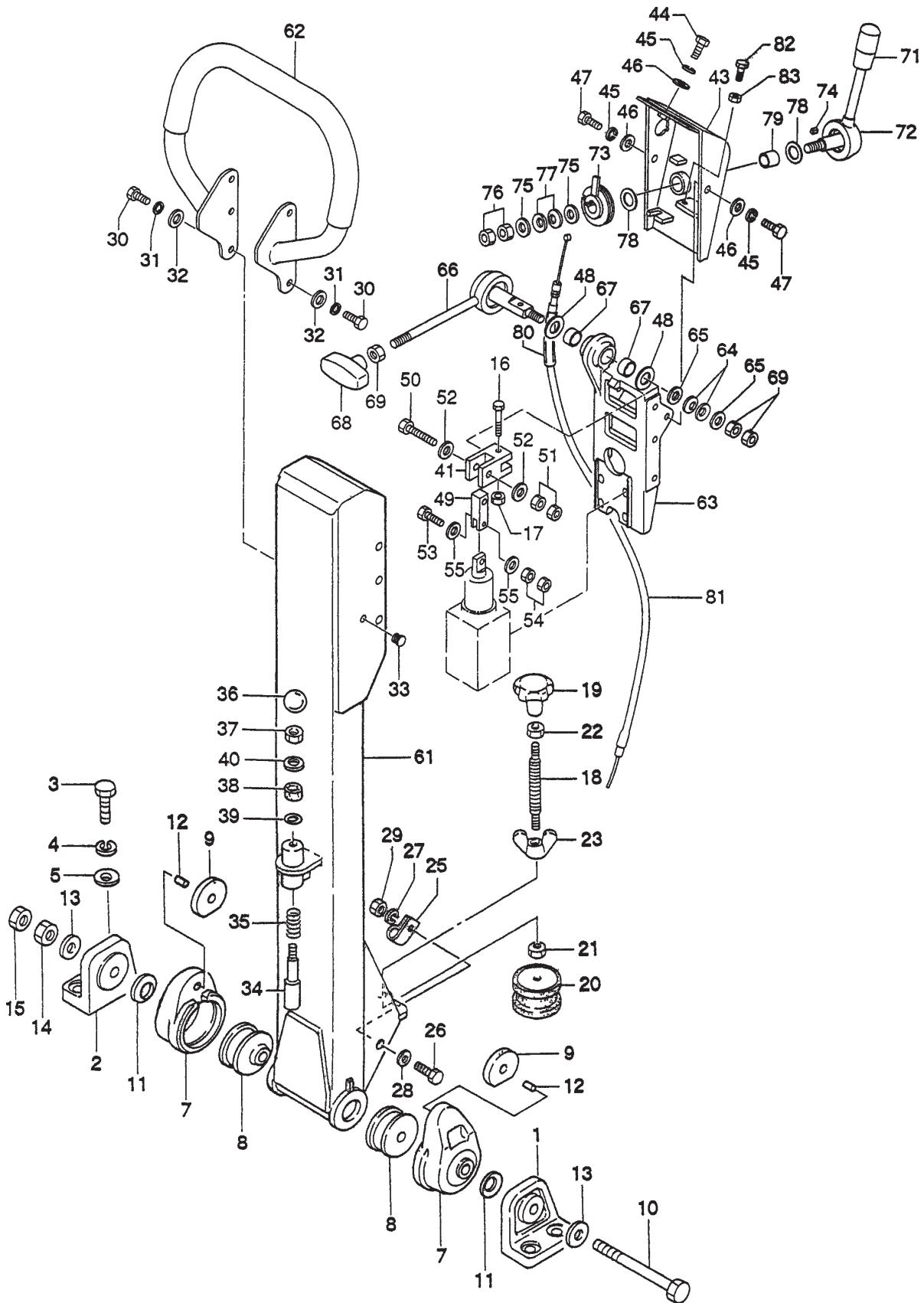
MVH-304DSB — HYDRAULIC SYSTEM ASSY.

HYDRAULIC SYSTEM ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	001220820	BOLT 8X20 T	4	
2	030208200	WASHER M8	4	
3	031108160	WASHER M8	4	
4	456451310	OIL HOSE 1300L	1	
5	456451340	OIL HOSE 1100L	1	
6	456451320	OIL HOSE 730L	1	
7	456451330	OIL HOSE 1050L	1	
8	955404271	SPIRAL TUBE, SR15-850L	3	
9	954403060	CLAMP HC-40	1	
10	954403070	CLAMP SPACER HC-40	1	
11	001220612	BOLT 6X12 T	2	
12	030206150	WASHER M6	2	
13	506010070	CLAMP TC-150	1	
14	954001160	ELBOW 90 PT1/4-PF1/4	4	
16	456114080	OIL TANK	1	
18	456335830	COVER (SLIDE), OIL TANK	1	
20	001220620	BOLT 6X20 T	6	
21	030206150	WASHER M6	6	
22	031106100	WASHER M6	6	
23	954001280	ELBOW 45 PT1/4XPF3/8	1	
24	001221230	BOLT 12X30 T	4	
25	030212300	WASHER M12	4	
26	031112230	WASHER M12	4	
27	505015380	PLUG PT1/4	1	
28	456337460	UPPER COVER, OIL TANK	1	
29	457445870	PACKING, OIL TANK	1	
30	001200820	BOLT 8X20	2	
31	030208200	WASHER M8	2	
32	031108160	WASHER M8	2	
33	456449280	FILTER, OIL TANK	1	
34	456447490	JOINT PIPE	1	
35	954001720	ELBOW PT1/4	1	
36	506010060	CLAMP TC-350	2	
37	953402781	DRAIN PLUG M18	1	
38	457448680	BREATHER PLUG	1	
39	953400020	PACKING 19302	2	
40	457448380	BREATHER CAP	1	
51	456337780	SELECTOR VALVE	1	

MVH-304DSB — CONTROL HANDLE ASSY.

CONTROL HANDLE ASSY.



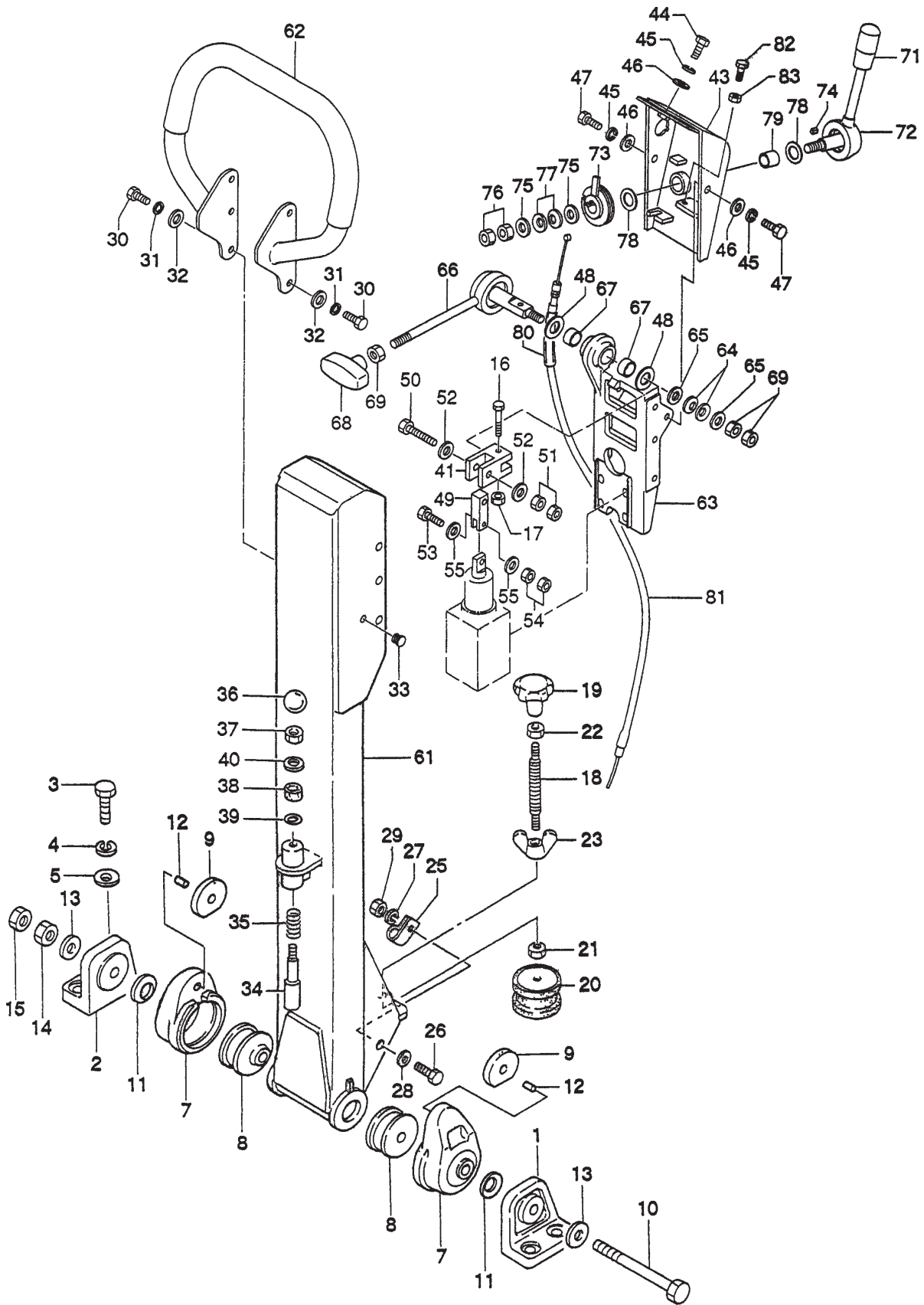
MVH-304DSB — CONTROL HANDLE ASSY.

CONTROL HANDLE ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	456336410	HANDLE BRACKET (L)	1	
2	456336420	HANDLE BRACKET (R)	1	
3	001221235	BOLT 12X35 T	4	
4	030212300	WASHER M12	4	
5	031112230	WASHER M12	4	
7	456336400	RUBBER COUPLING	2	
8	456449940	SHOCK ABSORBER	2	
9	456449930	RUBBER PLATE	2	
10	001221681	BOLT 16X250 T	1	
11	032124400	CONICAL SPRING WASHER M24	2	
12	025406016	SPRING PIN 6X16	2	
13	031116260	WASHER M16	2	
14	020316130	NUT M16	1	
15	020416100	NUT M16, H=10	1	
16	001220640	BOLT 6X40 T	1	
17	020306050	NUT M6	1	
18	455434950	SPINDLE	1	
19	455010030	KNOB	1	
20	939010060	SHOCK ABSORBER 60	1	
21	020410060	NUT M10, H=6	1	
22	020412070	NUT M12, H=7	1	
23	022411635	WING NUT M16	1	
25	954404230	CLAMP SA120-18	1	
26	001220620	BOLT 6X20 T	1	
27	030206150	WASHER M6	1	
28	031106100	WASHER M6	1	
29	020306050	NUT M6	1	
30	001220825	BOLT 8X25 T	6	
31	030208200	WASHER M8	6	
32	031108160	WASHER M8	6	
33	953401580	PLUG	1	
34	501402870	HANDLE STOPPER	1	
35	501402880	SPRING/HANDLE (1.4X18X44)	1	
36	959403460	BALL GRIP 32D-M10	1	
37	020410060	NUT M10, H=6	1	
38	456449980	RUBBER PACKING 9D-200-5T	1	
39	954305260	PACKING 1/4 (CU)	1	
40	031110160	WASHER M10	1	
41	456450760	JOINT	1	
43	456214360	LEVER BRACKET	1	

MVH-304DSB — CONTROL (CONTINUED) ASSY.

CONTROL ASSY.



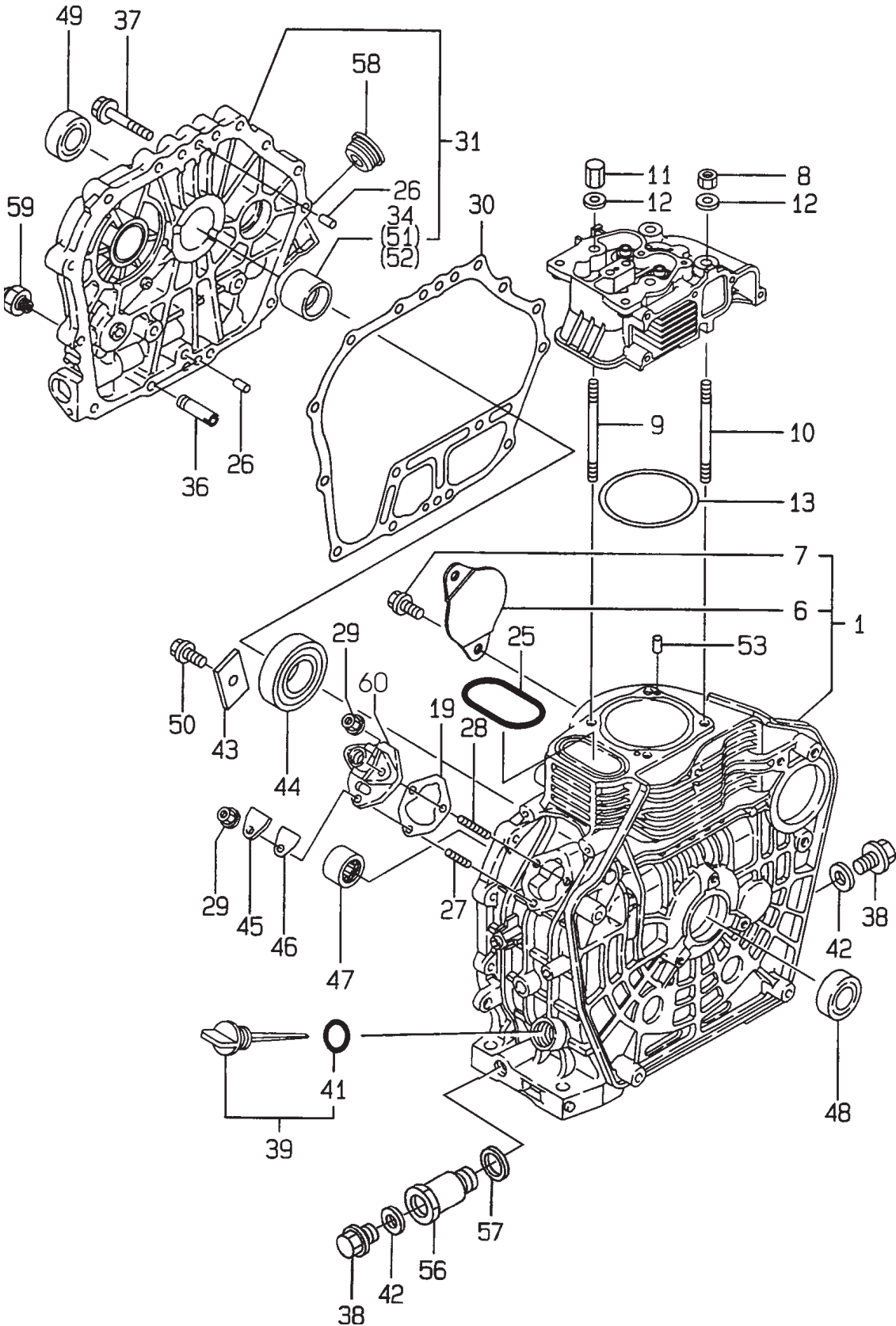
MVH-304DSB — CONTROL (CONTINUED) ASSY.

CONTROL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
43	456214720	LEVER BRACKET	1	
44	001220820	BOLT 8X20 T	1	
45	030208200	WASHER M8	3	
46	031108160	WASHER M8	3	
47	001220815	BOLT 8X15 T	2	
48	033910020	THRUST WASHER 20-36-1.5T	2	
49	457445910	CLEVIS /MVH-400	1	
50	001220850	BOLT 8X50 T	1	
51	020308060	NUT M8	2	
52	031108160	WASHER M8	2	
53	001220630	BOLT 6X30 T	1	
54	020306050	NUT M6	2	
55	031106100	WASHER M6	2	
61	456114840	HANDLE (FOR JPN)	1	
62	456214222	HANDLE GRIP	1	
63	456214210	VALVE BRACKET	1	
64	032112220	CONICAL SPRING WASHER M12	2	
65	456451400	WASHER 12.2-27-0.6T	2	
66	456337400	TRAVEL LEVER	1	
67	608010090	BUSHING MB2015DU	2	
68	457332480	GRIP, TRAVEL LEVER	1	
69	020412070	NUT M12, H=7	3	
71	959403840	BAR GRIP I.D. 12MM	1	
72	456337690	THROTTLE LEVER	1	
73	456451290	WIRE GUIDE	1	USE UP TO S/N G3897
73	456452070	WIRE GUIDE	1	USE FROM S/N G3898 AND UP
74	951401431	KEY 5X5X8	1	
75	031112230	WASHER M12	2	
76	020412070	NUT M12, H=7	2	
77	032112220	CONICAL SPRING WASHER M12	2	
78	953402930	COPPER PACKING 19X30X1	2	
79	509010130	BUSHING MB1825DU	1	
80	959021624	TUBE 8-13-150L	1	
81	956100031	THROTTLE WIRE 1710-1980	1	
82	001820830	BOLT 8X30 T WHOLE THREAD	1	USE UP TO S/N G3897
83	020308060	NUT M8	1	USE FROM S/N G3898 AND UP

YANMAR L100EE-DEVMK3 — CYLINDER BLOCK ASSY.

CYLINDER BLOCK ASSY.



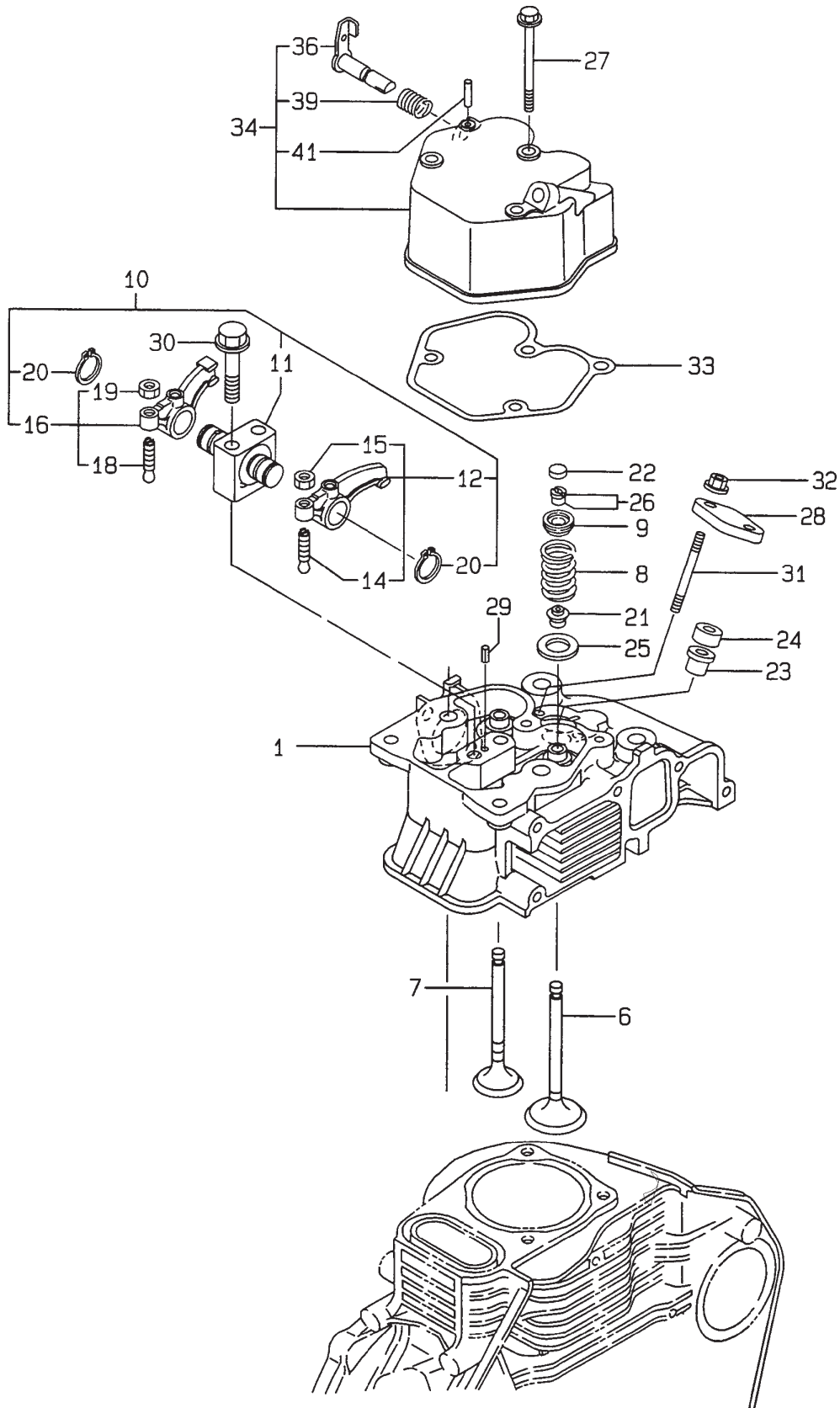
YANMAR L100EE-DEV MK3 — CYLINDER BLOCK ASSY.

CYLINDER BLOCK ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	71497001560	BLOCK ASSY. CYLINDER	1	INCLUDES ITEMS W/*
6*	11435001700	COVER, STARTER	1	
7*	26106100122	BOLT M10X 12 PLATED	2	
8	10502501220	NUT 10	2	
9	11465001230	STUD, CYLINDER HEAD	2	
10	11465001240	STUD, CYLINDER HEAD	2	
11	11465001250	NUT 10	2	
12	11465001260	WASHER	4	
13	11465101330	GASKET, CYLINDER HEAD CMP	1	
19	11425001800	SHIM SET	1	
25	11465001380	O-RING	1	
26	11427001600	PARALLEL PIN 8 X 12	2	
27	26226060182	STUD M 6 X 18 PLATED	1	
28	26226060222	STUD M 6 X 22 PLATED	2	
29	26366060002	NUT M 6	3	
30	11465001412	GASKET CRANKCASE	1	
31	11466001471	COVER D, CRANKCASE	1	INCLUDES ITEMS W/+
34+	11465002100	BEARING, MAIN	1	
36	11425035150	PIPE, L.O. INLET	1	
37	26106080352	BOLT M 8 X 35 PLATED	16	
38	10542501690	PLUG M16	2	
39	11469901760	CAP, W/LUB.OIL GAUGE	1	INCLUDES ITEMS W/#
41#	11429901950	O-RING	1	
42	22190160002	SEAL WASHER 16S	2	
43	11429902030	RETAINER	1	
44	11465002150	BALL BEARING	1	
45	11425001830	COVER, INSPEC. WINDOW	1	
46	11425001841	GASKET	1	
47	24162152112	NEEDLE BEARING	1	
48	24423355008	SEAL, OIL	1	
49	22423355008	SEAL, OIL	1	
50	26106080122	BOLT M 8 X 12 PLATED	1	
51	11465002200	MAIN BEARING US = 0.25	1	
52	11465002210	MAIN BEARING US = 0.50	1	
53	22312040080	PIN 4 X 8 STRAIGHT	2	
56	18327908350	NIPPLE, DRAIN	1	
57	22190160002	SEAL WASHER 16S	1	
58	16011001870	PLUG, RUBBER W/SCREW	1	
59	12125239450	SENDER, OIL PRESSURE	1	
60	71465651130	PUMP ASSY., FUEL INJECTION	1	

YANMAR L100EE-DEVMK3 — CYLINDER HEAD AND COVER ASSY.

CYLINDER HEAD AND COVER ASSY.



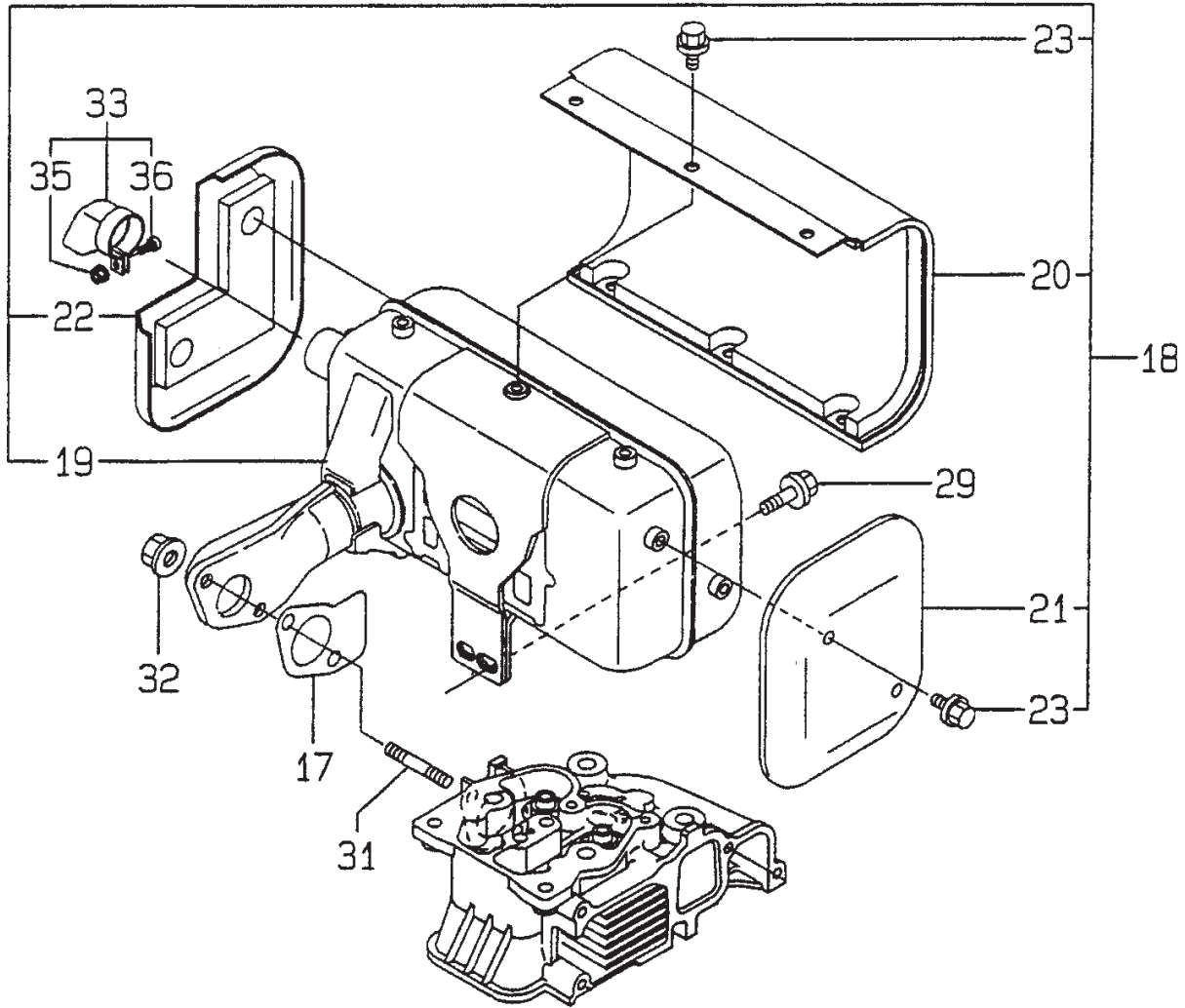
YANMAR L100EE-DEVK3 — CYLINDER HEAD AND COVER ASSY.

CYLINDER HEAD AND COVER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11465111020	CYLINDER HEAD	1	
6	11465111100	VALVE, SUCTION	1	
7	11465111110	VALVE, EXHAUST	1	
8	11465011121	SPRING, VALVE	2	
9	11962011180	RETAINER, SPRING	2	
10	11465111250	SUPPORT CMP, ARM	1	INCLUDES ITEMS W/*
11*	11465111260	SUPPORT, ROCKER ARM	1	
12*	11465111650	ARM ASSY. INTAKE	1	
14*	11425011240	SCREW, VALVE ADJUST	1	
15*	26856060002	LOCK NUT 6	1	
16*	11465111660	ARM ASSY., EXHAUST	1	
18	11425011240	SCREW, VALVE ADJUST	1	
19	26856060002	LOCK NUT 6	1	
20*	22242000150	CIRCLIP 15	2	
21	11465011340	SEAL, VALVE STEM	2	
22	10421111370	CAP, VALVE	2	
23	11477111461	GASKET, NOZZLE	1	
24	11477111470	SPACER, NOZZLE	1	
25	11465011600	WASHER	2	
26	27310070000	COTTER 7	4	
27	26106060702	BOLT M 6 X 70 PLATED	3	
28	11425011901	RETAINER	1	
29	22351040008	SPRING PIN 4 X 8	1	
30	26106080552	BOLT M 8 X 55 PLATED	2	
31	26226060552	STUD M 6 X 55 PLATED	2	
32	26366060002	NUT M 6	2	
33	11465111310	GASKET, BONNET	1	
34	11465111950	COVER ASSY. HEAD	1	INCLUDES ITEMS W/#
36#	11425003591	SHAFT ASSY., DECOMP.	1	
39#	11425003640	SPRING	1	
41#	22312030160	PARALLEL PIN 3 X 16	1	

YANMAR L100EE-DEVMK3 — MUFFLER ASSY.

MUFFLER ASSY.



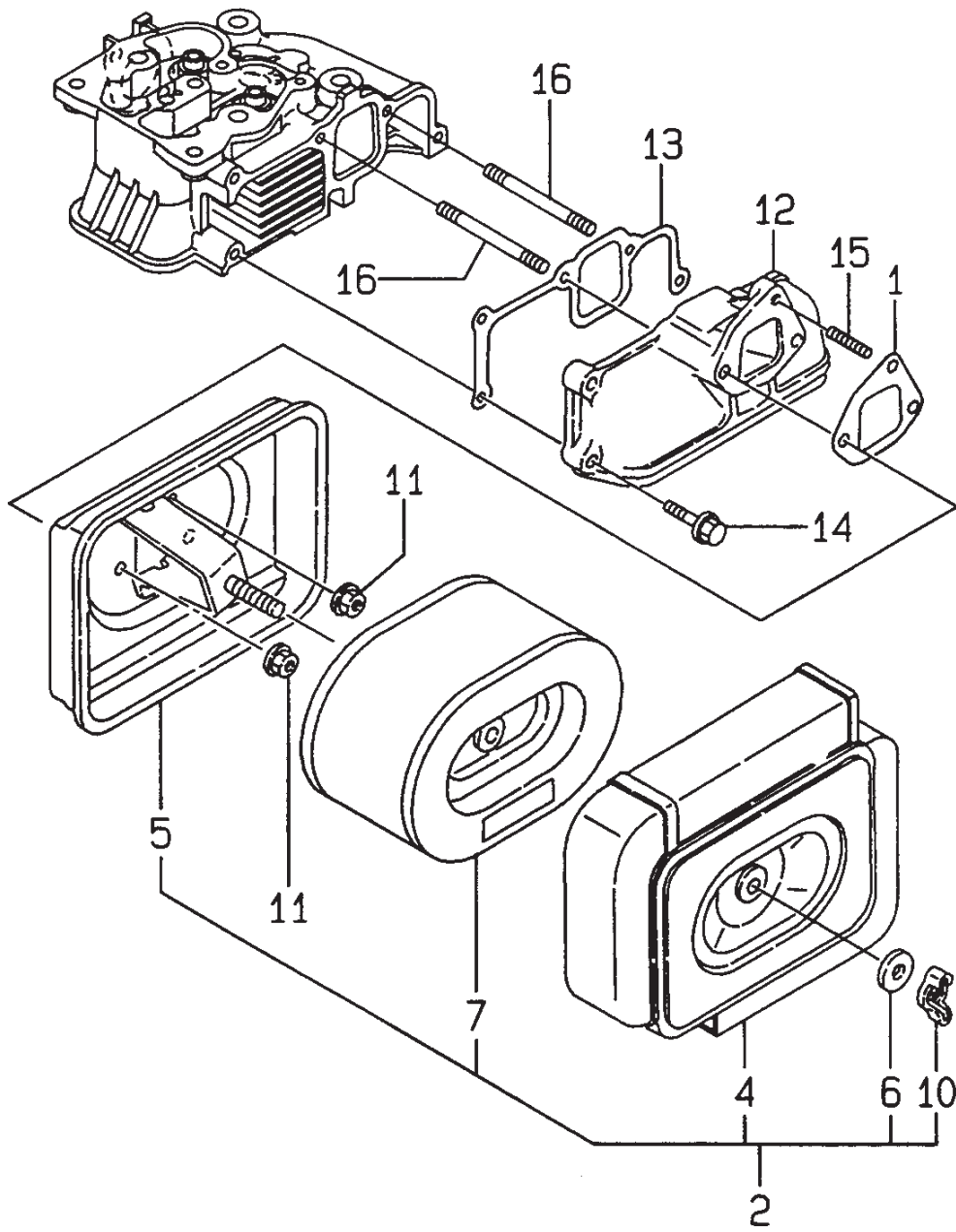
YANMAR L100EE-DEVMK3 — MUFFLER ASSY.

MUFFLER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
17	11465013201	GASKET, NON-ASB.	1	INCLUDES ITEMS W/*
18	11467413551	MUFFLER ASSY.	1	
19	11467413511	MUFFLER	1	
20*	18338213700	COVER, MUFFLER	1	
21*	11497013710	COVER, MUFFLER	1	
22*	11497313710	COVER, MUFFLER	1	
23*	16026001580	BOLT, M 6 X 6	10	
29*	26106080162	BOLT, M 8 X 16 PLATED	2	
31	26216080182	STUD, M 8 X 18 PLATED	2	
32	26366080002	NUT, M 8	2	
33*	11498513800	DEFLECTOR, EXHAUST	1	INCLUDES ITEMS W/#
35*#	26367060002	NUT, 6	1	
36*#	26554060162	SCREW, M 6 X 16	1	

YANMAR L100EE-DEVK3 — AIR CLEANER ASSY.

AIR CLEANER ASSY.



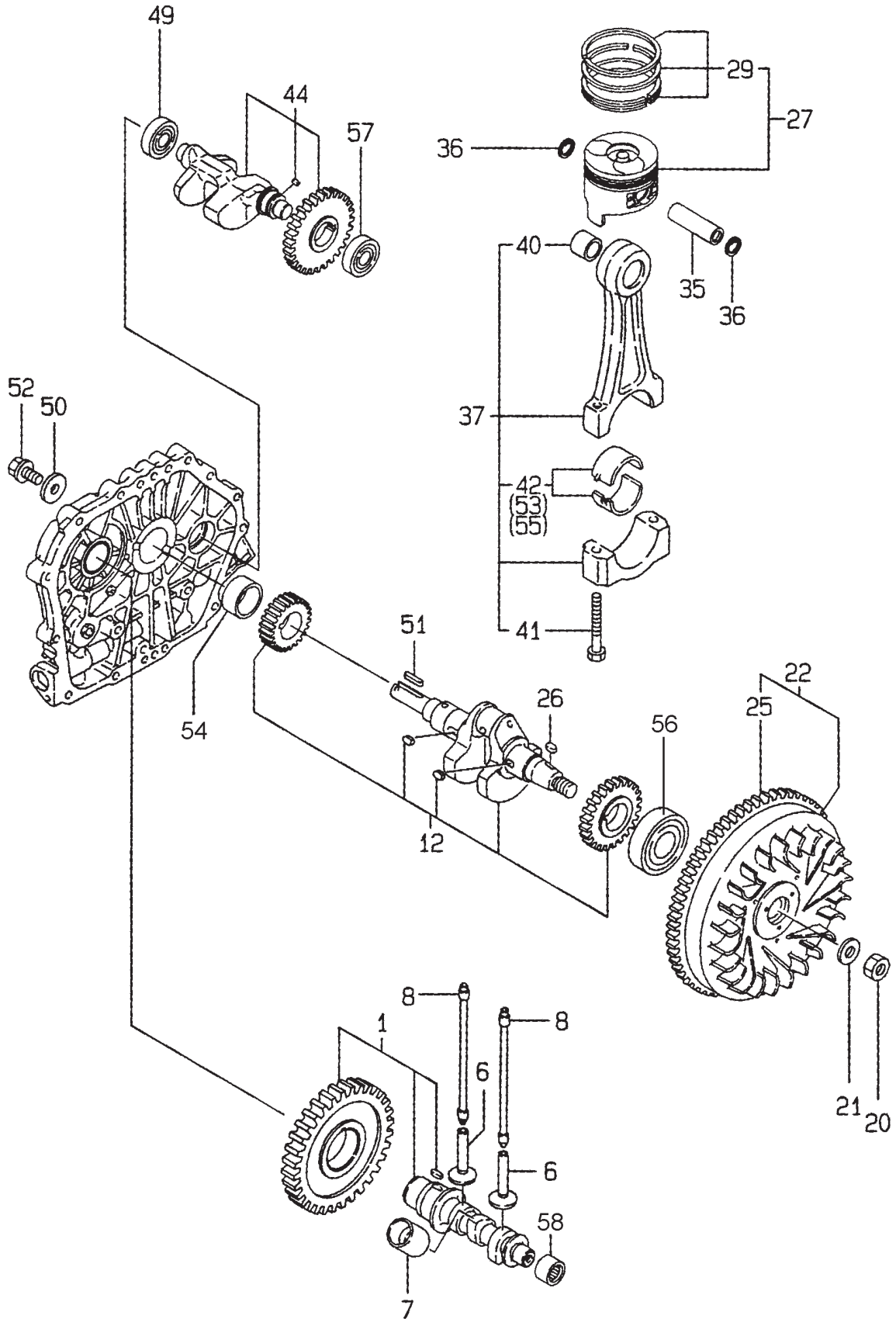
YANMAR L100EE-DEVK3 — AIR CLEANER ASSY.

AIR CLEANER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11465012211	GASKET, AIR CLEANER	1	
2	71465012560	CLEANER ASSY. AIR	1	INCLUDES ITEMS W/*
4*	11465012520	COVER, AIR CLEANER	1	
5*	11465012530	CASE, AIR CLEANER	1	
6*	11425212560	WASHER M 8, SEAL	1	
7*	11465012590	ELEMENT W/PRE-FILTER	1	
10*	11425212550	WING, NUT M 8	1	
11	11425012300	U-NUT	3	
12	11469912020	PIPE, AIR INTAKE	1	
13	11465012301	GASKET, AIR INTAKE	1	
14	26106060252	BOLT M 6 X 25 PLATED	3	
15	26226060142	STUD M 6 X 14 PLATED	1	
16	26226060752	STUD M 6 X 75	2	

YANMAR L100EE-DEVMK3 — CRANKSHAFT, PISTON & CAMSHAFT ASSY.

CRANKSHAFT, PISTON AND CAMSHAFT ASSY.



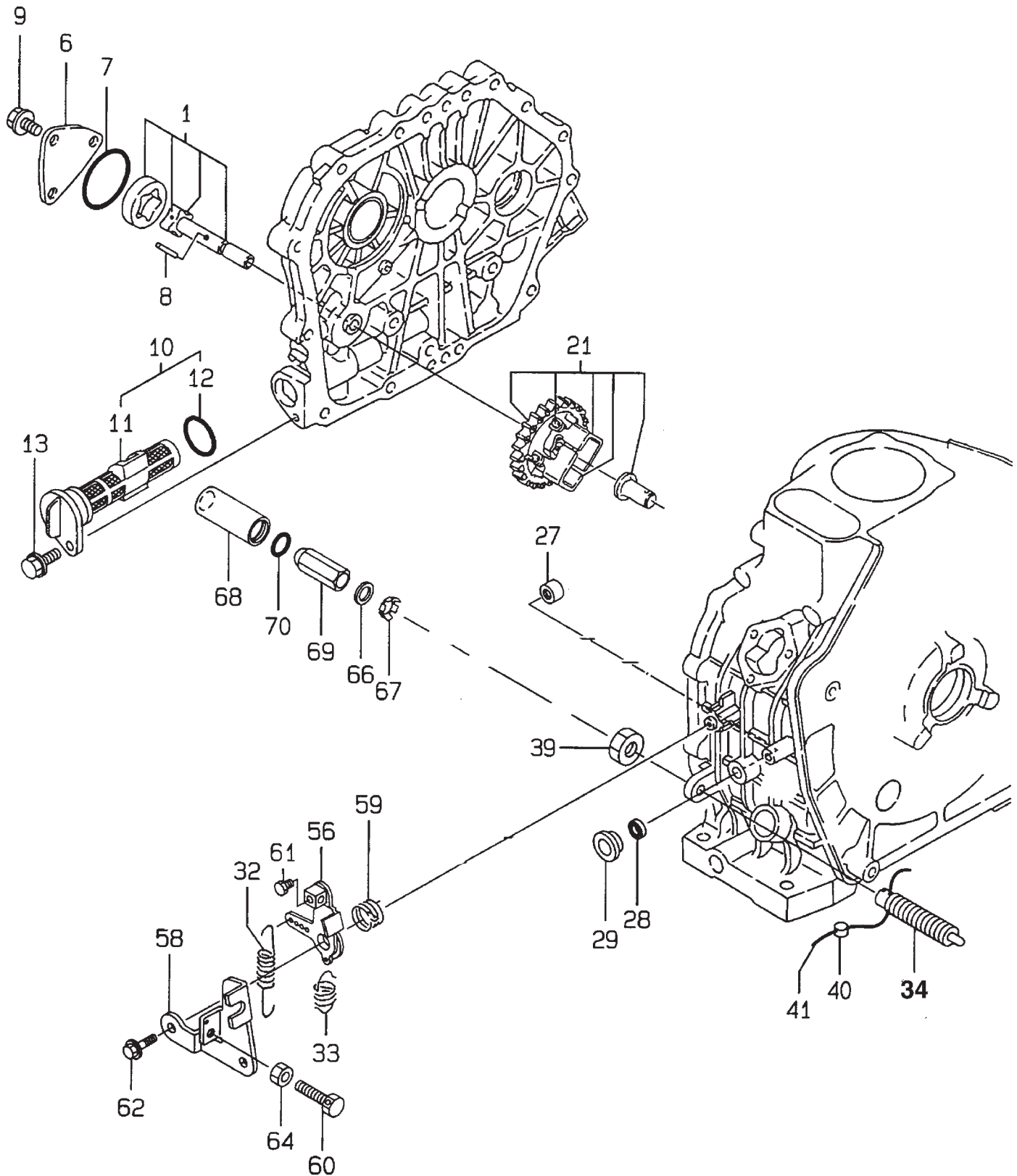
YANMAR L100EE-DEVMK3 — CRANKSHAFT, PISTON & CAMSHAFT ASSY.

CRANKSHAFT, PISTON AND CAMSHAFT ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	71466014100	CAMSHAFT ASSY., D	1	
6	11465014200	TAPPET	2	
7	11477114260	TAPPET, F.O.	1	
8	11465014401	ROD, PUSH	2	
12	71465421730	CRANKSHAFT ASSY.	1	
20	12271001220	NUT, M18	1	
21	11465021551	WASHER, FLYWHEEL	1	
22	11466221593	FLYWHEEL, DEJ., W/GEAR	1	INCLUDES ITEMS W/ #
25 #	11466221601	GEAR, RING	1	
26	22512050140	KEY, 5 X 14	1	
27	71465222720	PISTON, W/RINGS	1	INCLUDES ITEMS W/*
29*	71497022500	RING SET, PISTON	1	
35	11469922300	PIN, PISTON D=23	1	
36	12979222400	CIRCLIP 23	2	
37	71465023100	ROD ASSY., CONNECTING	1	INCLUDES ITEMS W/%
40%	12406023100	BUSH, PISTON PIN	1	
41%	10530023200	BOLT, ROD	2	
42%	71465023600	BEARING, CRANKPIN	1	
44	71497028100	SHAFT ASSY., BALANCER	1	
49	24101062034	BALL BEARING	1	
50	16031014550	WASHER	1	
51	22512070360	KEY 7 X 36	1	
52	26106080202	BOLT M 8 X 20 PLATED	1	
53	71465023610	BEARING, PIN U.S=0.25	1	
55	71465023620	BEARING, PIN U.S=0.50	1	
57	24101063034	BALL BEARING	1	
54	11465002100	BEARING, MAIN	1	
56	11465002150	BALL BEARING	1	
58	24162152112	NEEDLE BEARING	1	

YANMAR L100EE-DEVMK3 — LUB. OILPUMP AND GOVERNOR ASSY.

LUB. OIL PUMP AND GOVERNOR ASSY.



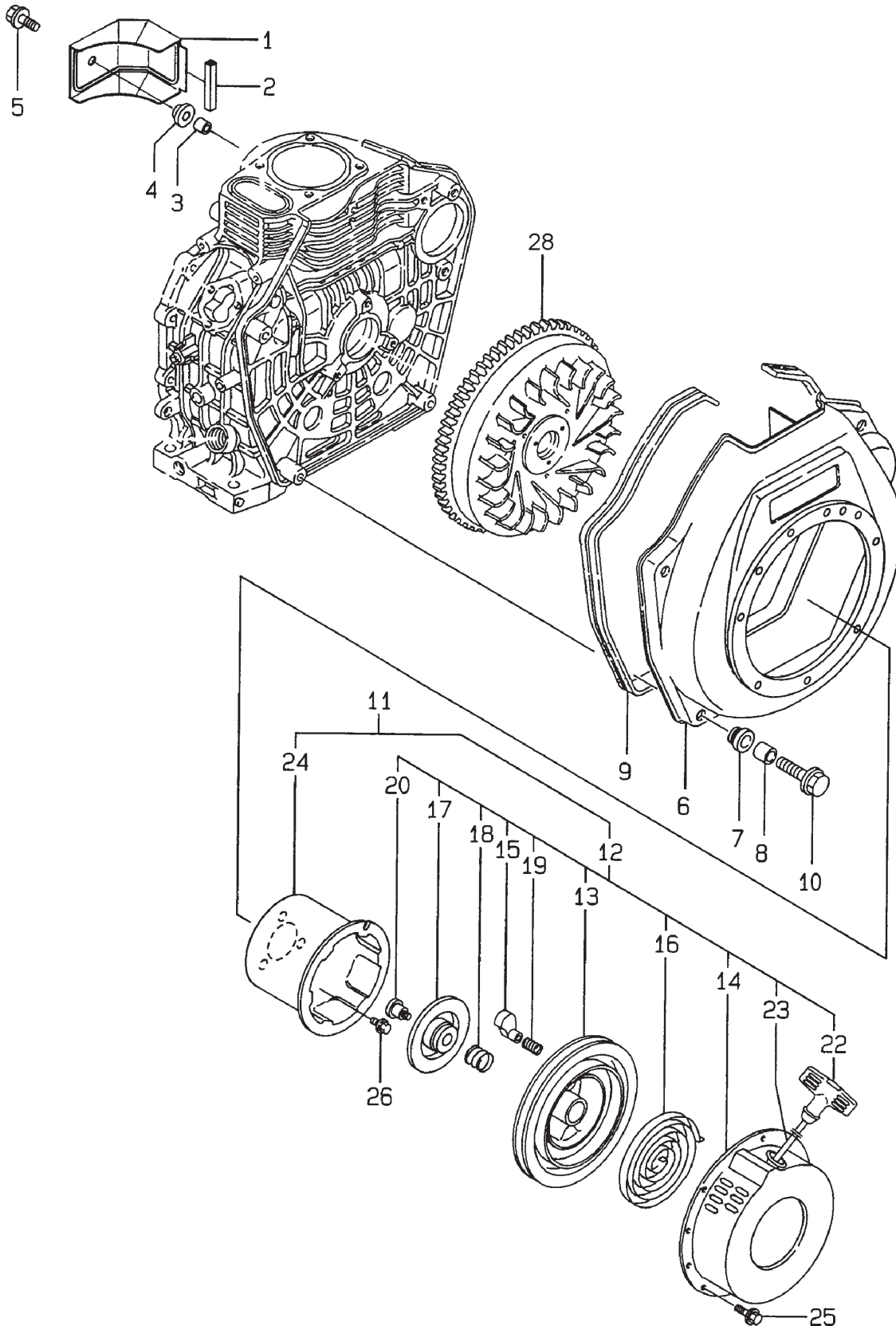
YANMAR L100EE-DEV MK3 — LUB. OILPUMP AND GOVERNOR ASSY.

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 ITEMS W/*
11*	11425035070	STRAINER, LUB. OIL	1	
12*	24341000224	O-RING 1A S-22.4	1	
13	26106060162	BOLT M 6 X 16 PLATED	1	
14	71465061500	LEVER ASSY. GOVERNOR	1	
19	22322030200	TAPER PIN 3 X 20	1	
20	22322030200	TAPER PIN 3 X 20	1	
21	71468561700	GOVERNOR ASSY.	1	
27	11477061520	BEARING, NEEDLE	2	
28	11477061600	SEAL, OIL	1	
29	11477061610	WASHER, THRUST	1	
31	11477061190	WASHER	1	
32	11497066010	SPRING, REGULATOR	1	
33	11425066200	SPRING, RETURN	1	
34	11465066750	TORQUE SPRING ASSY.	1	
39	26776100002	LOCK NUT M10 PLATED	1	
40	13521061090	LEAD	1	
41	22451060000	WIRE 0.6	1	
56	11425266051	HANDLE, REGULATOR	1	
58	18336066110	BRACKET, REGULATOR	1	
59	11425266252	SPRING, RETURN	1	
60	11425066440	BOLT, ADJUSTING	1	
61	10522566990	SCREW	1	
62	26106060202	BOLT M 6 X 20 PLATED	1	
64	26757060002	NUT 6	1	
65	11465166150	BOLT	1	
66	11477161800	WASHER	1	
67	11477161820	PLATE	1	
68	11477161900	PROCTECTOR	1	
69	11477161930	NUT	1	

YANMAR L100EE-DEVK3 — COOLING AND STARTING DEVICE ASSY.

COOLING AND STARTING DEVICE ASSY.



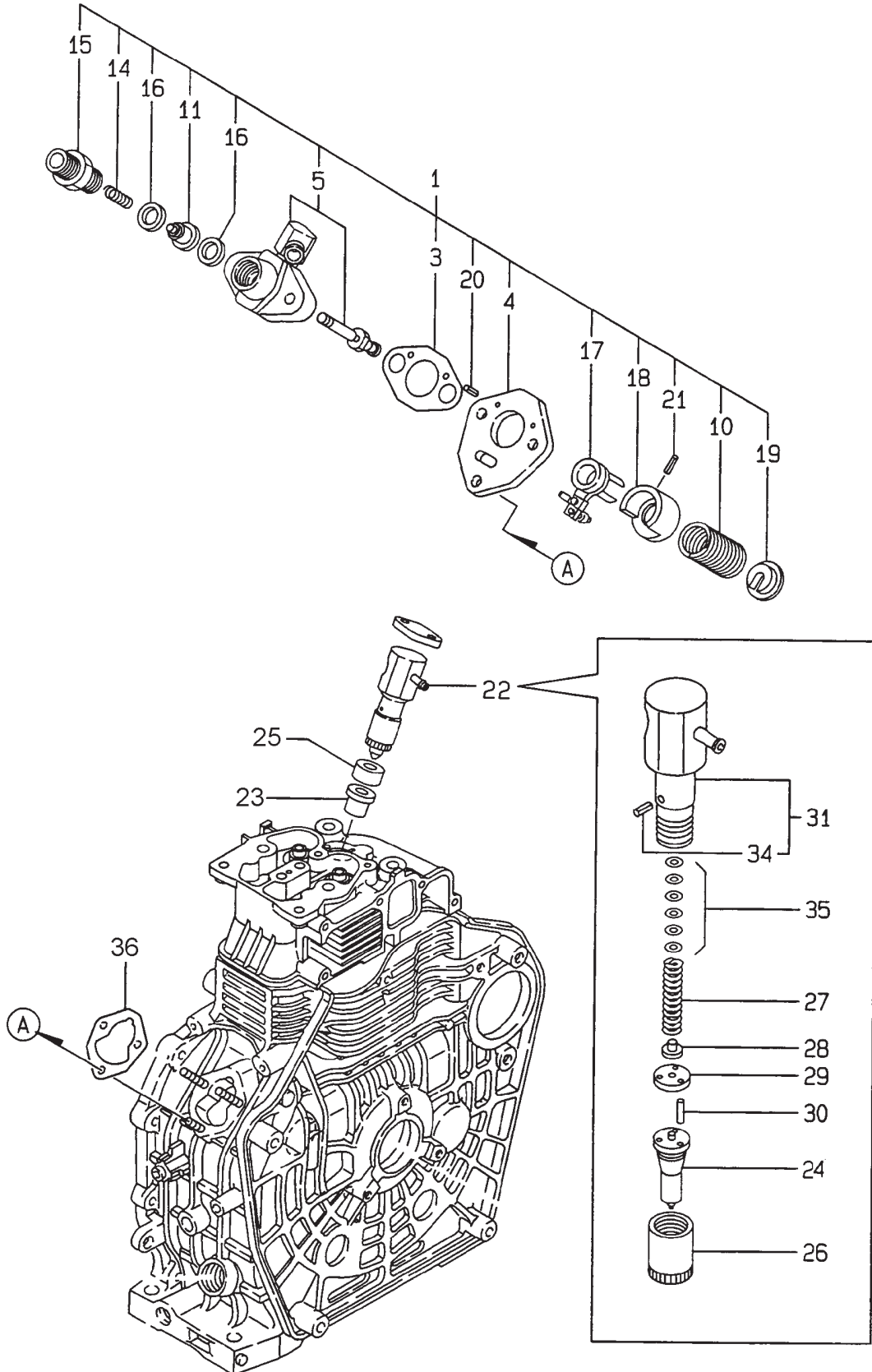
YANMAR L100EE-DEV MK3 — COOLING AND STARTING DEVICE ASSY.

COOLING AND STARTING DEVICE ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11465045201	COVER	1	
2	11435045320	RUBBER, SEAL	1	
3	11435045340	COLLAR	1	
4	18372055210	GROMMET	1	
5	26106060202	BOLT M 6 X 20 PLATED	1	
6	11466845102	CASE, FAN SILVER 17	1	
7	11425045301	RUBBER, CUSHION	4	
8	11425045310	COLLAR	4	
9	11465045330	SEAL, FAN CASE	1	
10	11437045351	BOLT, FAN CASE	4	
11	11466076052	RECOIL STARTER D ASSY.....	1	INCLUDES ITEMS W/*
12*	11466076251	RECOIL ASSY.	1	INCLUDES ITEMS W/ +
13* +	11488076520	REEL, RECOIL	1	
14* +	11466076531	CASE D, W/NO LABEL	1	
15* +	11487076530	RATCHET	2	
16* +	11487076540	SPRING, SPRIAL	1	
17* +	11487076550	GUIDE, RATCHET	1	
18* +	11487076560	SPRING, FRICTION	1	
19* +	11487076570	SPRING, RETURN	2	
20* +	11487076580	SET SCREW	1	
22* +	11487076620	KNOB, STARTER	1	
23* +	11465076631	ROPE, RECOIL STARTER	1	
24*	11466076592	PULLEY, STARTER	1	
25	26106060082	BOLT M 6 X 8 PLATED	4	
26	26106060122	BOLT M 6 X 12 PLATED	3	
28	11466221593	FLYWHEEL W/GEAR	1	

YANMAR L100EE-DEVMK3 — FUEL INJECTION PUMP ASSY.

FUEL INJECTION PUMP ASSY.



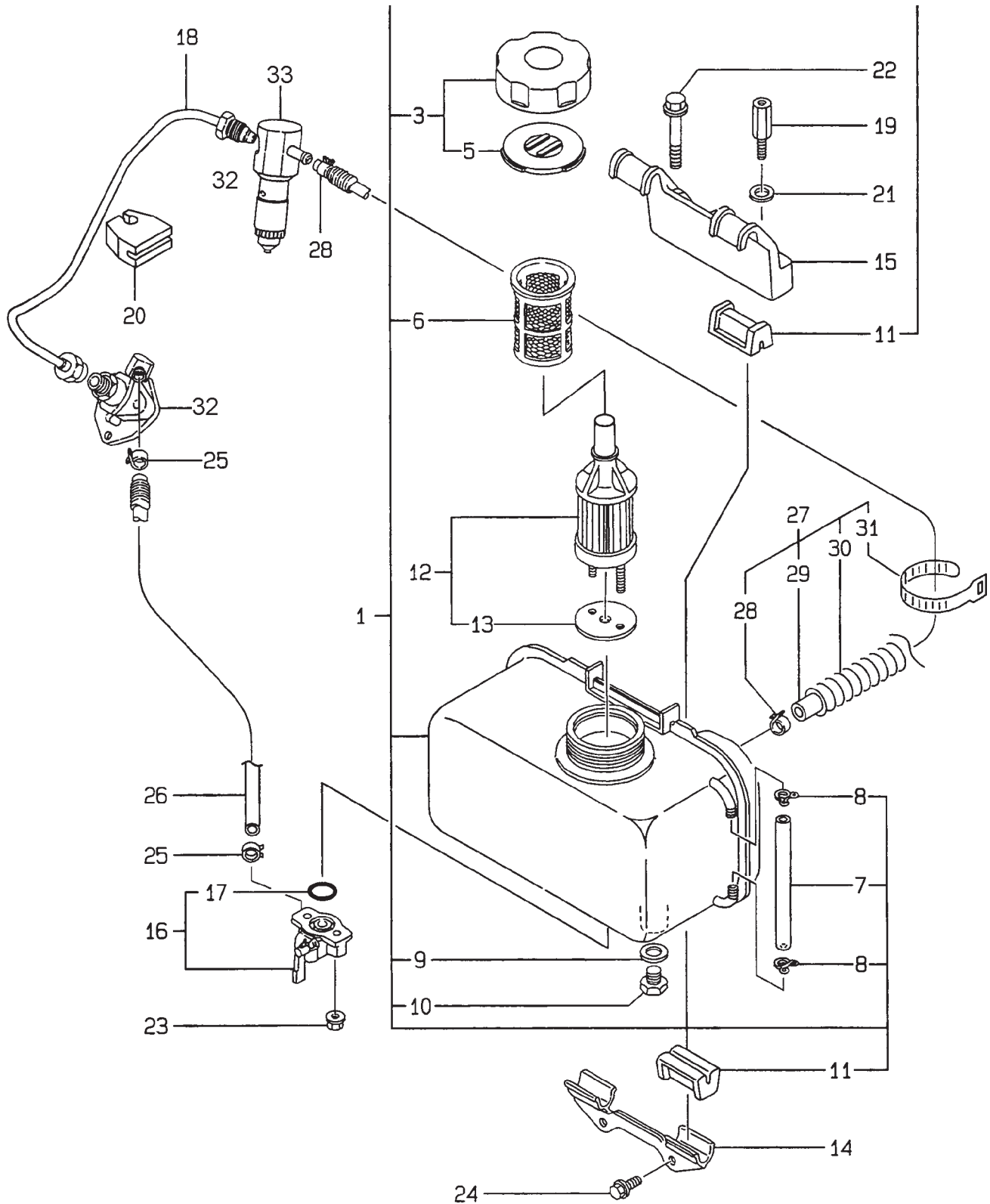
YANMAR L100EE-DEV MK3 — FUEL INJECTION PUMP ASSY.

FUEL INJECTION PUMP ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	71465651130	PUMP ASSY., F. INJECT.	1	INCLUDES ITEMS W/*
3*	10554651020	GASKET	1	
4*	11425051080	PLATE	1	
5*	11497051100	BODY, F.I. PUMP	1	
10*	11425051160	SPRING	1	
11*	11465051300	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	71465653101	VALVE ASSY., F. INJECT	1	INCLUDES ITEMS W/+
23	11477111461	GASKET, NOZZLE	1	
24+	11465153000	NOZZLE	1	
25+	11477111470	SPACER, NOZZLE	1	
26+	11959353080	NUT, NOZZLE CASE	1	
27+	11425053120	SPRING, NOZZLE	1	
28+	11959353130	RETAINER	1	
29+	11477553140	SPACER, VALVE STOP	1	
30+	11477553210	PIN	2	
31+	11487553100	HOLDER ASSY.	1	INCLUDES ITEMS W/%
34+%	11425053331	PIN, SPRING	1	
35+	11425053400	SHIM PACK	1	
36	11425001800	SHIM SET	1	

YANMAR L100EE-DEVK3 — FUEL TANK AND FUEL LINE ASSY.

FUEL TANK AND FUEL PIPE ASSY.



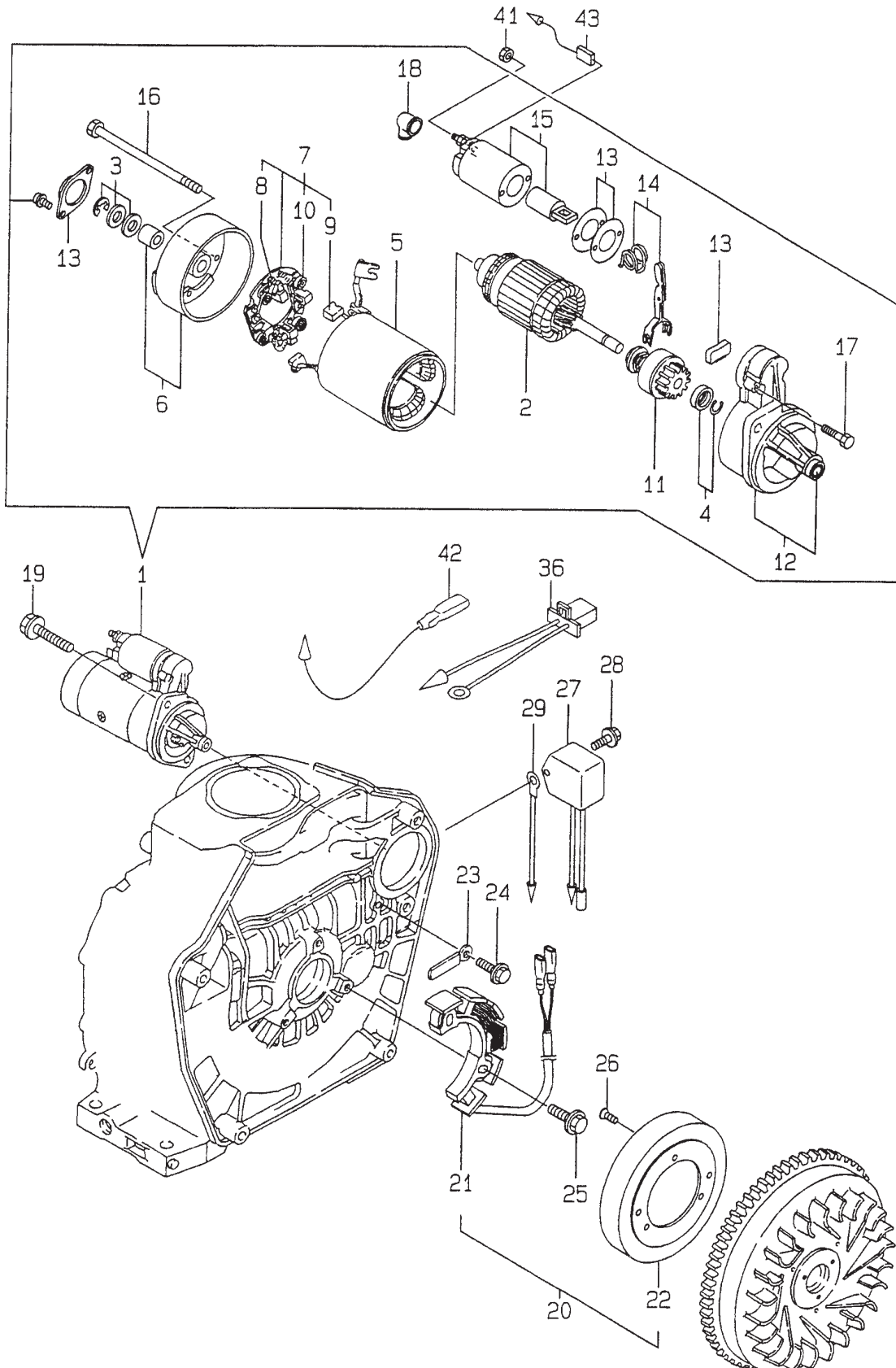
YANMAR L100EE-DEVMK3 — FUEL TANK AND FUEL LINE ASSY.

FUEL TANK AND FUEL PIPE ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	71465055130	TANK ASSY., FUEL	1	INCLUDES ITEMS W/*
3*	11428855041	CAP ASSY., FUEL TANK	1	INCLUDES ITEMS W/+
5* +	11428855081	VALVE	1	
6*	11425055100	FILTER, FUEL	1	
7	11465055150	PIPE, GAUGE	1	
8	10385455220	CLAMP	2	
9*	23414080000	GASKET 8, ROUND	1	
10*	10530055080	PLUG, DRAIN	1	
11	11425055201	DAMPER, FUEL TANK	4	
12*	11425055121	FILTER, FUEL OIL	1	INCLUDES ITEMS W/#
13#	11425055130	GASKET	1	
14	11429955210	STAY	1	
15	11469955230	STAY B, FUEL TANK	1	
16	11425055300	COCK ASSY., FUEL	1	
17%	24341000150	O-RING 1A S-15.0.....	1	INCLUDES ITEMS W/%
18	11465159802	PIPE, FUEL INJECTION	1	
19	11456055810	BOLT, LIFTING	1	
20	11465059850	BRACKET, PIPE	1	
21	22117080000	WASHER 8	1	
22	26106080452	BOLT M 8 X 45 PLATED	1	
23	26366060002	NUT M 6	2	
24	26476060142	BOLT M 6 X 14 TAPPING	2	
25	10699044660	CLIP, HOSE	2	
26	11426859061	PIPE, FUEL OIL	1	
27	11465259300	PIPE, FUEL RETURN	1	INCLUDES ITEMS W/■
28■	12472259050	CLAMP 9	2	
29■	11465059060	PIPE, FUEL RETURN	1	
30■	11465259310	TUBE, PROTECT	1	
31■	12175059890	CLAMP 140	1	
32	71465651130	PUMP ASSY., FUEL INJECTION	1	
33	71465653101	VALVE ASSY., FUEL INJECTION	1	

YANMAR L100EE-DEVK3 — STARTING MOTOR AND DYNAMO ASSY.

STARTING MOTOR AND DYNAMO ASSY.



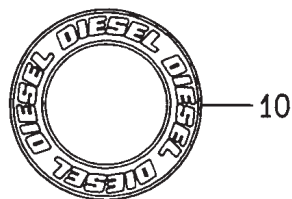
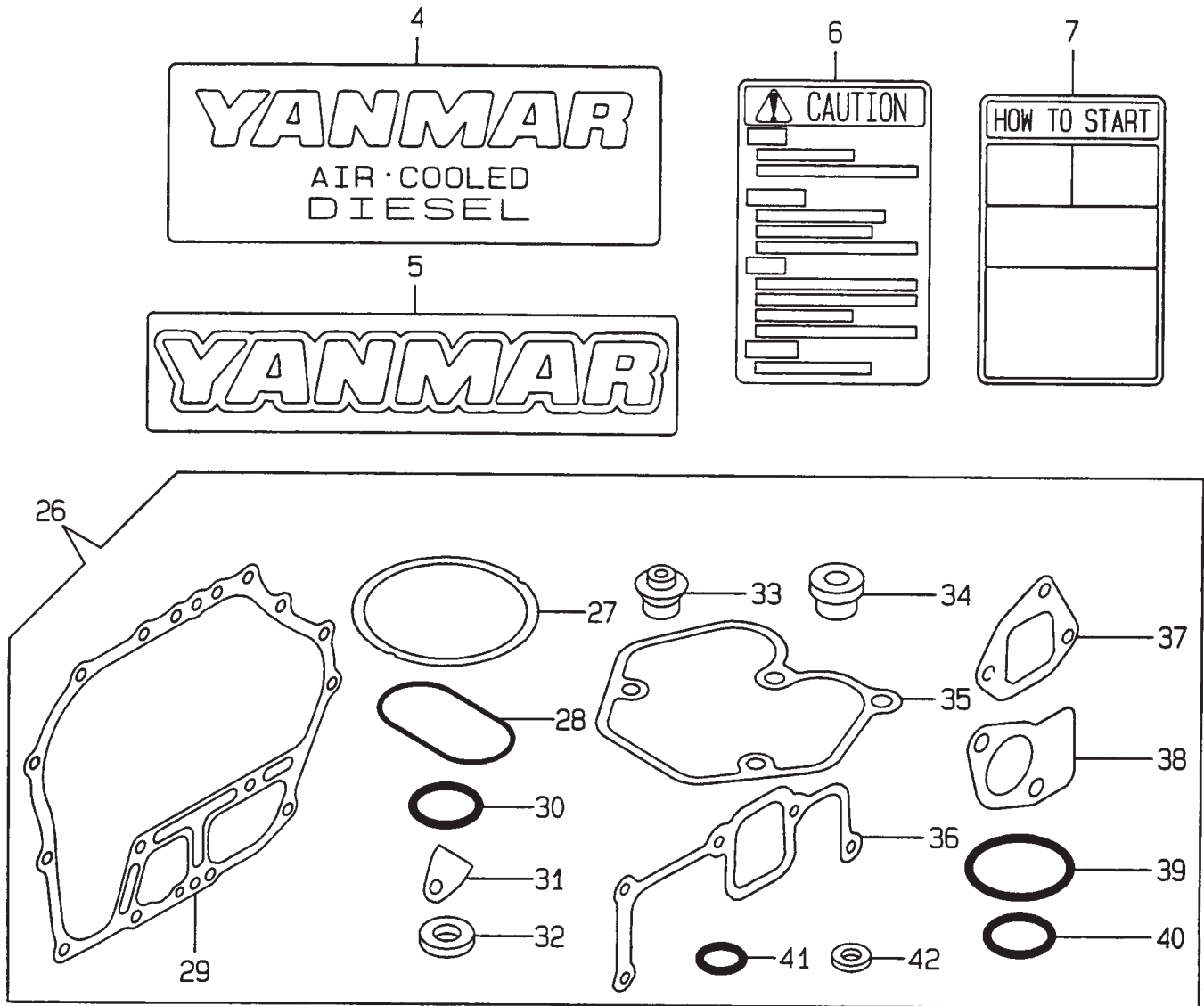
YANMAR L100EE-DEVMK3 — STARTING MOTOR AND DYNAMO ASSY.

STARTING MOTOR AND DYNAMO ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	11436277011	STARTER, S114-651A	1	INCLUDES ITEMS W/*
2*	11438177110	ARMATURE	1	
3*	X2114811000	WASHER KIT, THRUST	1	
4*	X2114715500	STOPPER SET, PINION	1	
5*	11438177130	COIL ASSY., FIELD	1	
6*	11438177140	COVER, REAR	1	
7*	11437177160	HOLDER ASSY., BRUSH	1	INCLUDES ITEMS W/ +
8* +	11437179040	BRUSH, -	1	
9* +	11437179050	BRUSH, +	1	
10* +	11437179060	SPRING, BRUSH	4	
11*	X211485016	PINION ASSY.	1	
12*	11438177151	HOUSING ASSY. GEAR	1	
13*	11437177170	COVER KIT, DUST	1	
14*	11437177180	SHIFT LEVER KIT	1	
15*	12429877020	SWITCH, MAGNET	1	
16*	12419577770	BOLT, THROUGH	2	
17*	11437179070	BOLT M 6 X 37	2	
18	X2114274200	COVER, TERMINAL	1	
19	26106100302	BOLT M 10 X 30 PLATED	2	
20	11435178251	DYNAMO ASSY.	1	INCLUDES ITEMS W/ #
21#	11435178751	STATOR ASSY.	1	
22#	11435178761	WHEEL, DYNAMO	1	
23	16071078710	CLAMP, CORD	1	
24	26106060122	BOLT M 6 X 12 PLATED	1	
25	26106060202	BOLT M 6 X 20 PLATED	3	
26	26577060142	SCREW M 6 X 14	3	
27	16097077350	RECTIFIER	1	
28	26106060122	BOLT M 6 X 12 PLATED	2	
29	18335607740	WIRE, LEAD	1	
36	10519878570	HARNESS C, WIRE	1	
41	26716080002	NUT M 8	1	
42	16067178200	WIRE, LEAD	1	
43	11468578560	WIRE HARNESS	1	

YANMAR L100EE-DEVMK3 — TOOL, LABEL AND GASKET SET ASSY.

TOOL, LABEL AND GASKET SET ASSY.



YANMAR L100EE-DEV MK3 — TOOL, 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>
1	11436277011	STARTER, S114-651A	1	
4	11425007090	LABEL, AIR COOLED	1	
5	11425007111	LABEL, YANMAR	1	
6	11426807240	LABEL, CAUTION	1	
7	11426107350	LABEL	1	
26	71465192620	GASKET SET	1	INCLUDES ITEMS W/*
27*	11465101330	GASKET, CYLINDER HEAD CMP.	1	
28*	11465001380	O-RING	1	
29*	11465001412	GASKET, CRANKCASE	1	
30*	11429901950	O-RING	1	
31*	11425001841	GASKET	1	
32*	22190160002	SEAL WASHER 16S	4	
33*	11465011340	SEAL, VALVE STEM	2	
34*	11477111461	GASKET, NOZZLE	1	
35*	11465111310	GASKET, BONNET	1	
36*	11465012301	GASKET, AIR INTAKE	1	
37*	11465012211	GASKET, AIR CLEANER	1	
38*	11465013201	GASKET, NON-ASB	2	
39*	10333832570	O-RING	1	
40*	24341000224	O-RING 1A S-22.4	1	
41*	24311000125	O-RING 1A P-12.5	1	
42*	23414080000	GASKET 8, ROUND	1	