

**Type
Tipo**

BPU 3345 A

**Machine No.
No. de máquina**

7785

ENGLISH:

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WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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ADVERTENCIA

Los gases de escape del motor de esta máquina contienen productos químicos que el estado de California tiene conocimiento de causar cáncer, defectos de nacimiento, u otros daños reproductivos.

FOREWORD

For your own safety and protection from physical injury, carefully read, understand and observe the safety instructions.

Please operate and maintain your vibratory plate in accordance with the instructions in this instruction book. Your attention will be rewarded by trouble-free operation and high availability.

Defective machine parts are to be replaced as soon as possible. You will find the spare part you need and the relevant part number in the chapters "Spare parts" in this instruction book.

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**SAFETY INSTRUCTIONS FOR THE USE OF VIBRATORY
PLATES WITH COMBUSTION ENGINES****General instructions**

1. Vibratory plates may only be operated by persons who
 - * are at least 18 years of age
 - * are physically and mentally fit for this job
 - * have been instructed in guiding vibratory plates and proved their ability for the job to the employer
 - * may be expected to carry out the job they are charged with carefully.

The persons must be assigned the job of guiding vibratory plates by the employer.

2. Vibratory plates may only be used for compaction jobs. Both the manufacturer's operating instructions and these safety instructions have to be observed.
3. The persons charged with the operation of vibratory plates have to be made familiar with the necessary safety measures relating to the machine. In case of extraordinary uses the employer shall give the necessary additional instructions.
4. It is possible that this vibratory plate exceeds the admissible sound level of 89 dB (A). According to the rules for the prevention of accidents regarding emission of noise, the employees have to wear ear protection if the sound level reaches 89 dB (A) or more.

Operation

1. When starting a diesel engine with a starter crank make sure you have assumed a proper position with respect to the engine and that your hands are placed properly on the crank.
 **ATTENTION!** Turn hand crank vigorously until engine starts, as otherwise the crank could rebound.
2. The functioning of operating levers or elements is not to be influenced or rendered ineffective.
3. During operation the operator may not leave the control elements.
4. The operator has to stop the engine of the vibratory plate before going on breaks. The machine has to be placed such that it cannot turn over.
5. Stop engine before filling fuel tank. When refilling fuel tank, do not allow fuel to come into contact with the hot parts of the engine or spill onto the ground.
6. Do not smoke or handle open fire near this machine.
7. The tank lid must fit tightly. Shut off fuel cock, if available when stopping the engine. For long distance transports of machine operated by fuel or fuel - mixtures, the fuel tank has to be drained completely.
 **ATTENTION!** Leaky fuel tanks may cause explosions and must therefore be replaced immediately.
8. Do not operate the machine in areas where explosions may occur.
9. Make sure that sufficient fresh air is available when operating vibratory plates with combustion engines in enclosed areas, tunnels, adits and deep trenches.
10. During operation keep your hands, feet and clothes away from the moving parts of the vibrator plate. Wear safety shoes, and eye protection glasses in case of trench operation where falling sand stones maybe ejected.
11. When working near the edges of breaks, pits, slopes, trenches and platforms, vibratory plates are to be operated such that there is no danger of their turning over or dropping in.

12. When traveling backwards the operator has to guide the vibration plate laterally by its guide handle so that he will not be squeezed between the handle and a possible obstacle. Special care is required when working on uneven ground or when compacting coarse material. Make sure of a firm stand when operating the machine under such conditions.
13. Vibratory plates are to be guided such that hand injuries caused by solid objects are avoided.
14. Vibratory plates have to be guided such that their stability is guaranteed.
15. Machines with integrated transport trolley may not be parked or stored on the trolley. This device has only been designed to transport the machine.

Safety checks

1. Vibratory plates may only be operated with all safety devices installed.
2. Before starting operation, the operator has to check that all control and safety devices function properly.
3. In case of defects of the safety devices or other defects reducing the operational safety of the vibration plate, the supervisor has to be informed immediately.
4. In case of defects jeopardizing the operational safety of the vibration plate, the machine has to be stopped immediately.

Maintenance

1. Only use original spare parts. Modifications to this machine, including the adjustment of the maximum engine speed set by the manufacturer, are subject to the express approval of WACKER. In case of non-observance all liabilities shall be refused.
2. All drive units have to be switched off before carrying out maintenance jobs. Deviations from this are only allowed if the maintenance or jobs require a running engine.
3. When working on vibratory plates equipped with electric starter, disconnect battery before carrying out maintenance or repair jobs on the electric parts of the machine.
4. Remove pressure from hydraulic lines before working on them. Caution: take care when removing hydraulic lines, for the oil may be very hot (up to 80° C). Precautions are to be taken to prevent oil from splashing into the operator's eyes.
5. As soon as maintenance and repair jobs have been completed all safety devices have to be reinstalled properly.

Transport

1. During transport, loading and unloading of vibration plates by means of lifting devices, appropriate slinging means or hooks have to be used on the lifting points provided for this purpose on the vibratory plate.
2. The load-carrying capacity of the loading ramps has to be sufficient and the ramps have to be secure such that they cannot turn over. Make sure that no one be endangered by machines turning over by slipping or by moving machine parts.
3. When being transported on vehicles, precautions have to be taken that vibration plates do not slip or turn over.

Maintenance checks

According to the conditions and frequency of use, vibratory plates have to be checked for safe operation at least once a year by skilled technicians, such as those found at WACKER-service depots and have to be repaired if necessary.

Please also observe the corresponding rules and regulations valid in your country.

		BPU 3345 A	
Machine No.		7785	
Forward / reverse speed	m/min:	to 23	
with extension plates	m/min:	to 21	
(with extension plates) accessories	m/min:	to 19	
Surface compaction performance	m ² /h:	to 610	
with extension plates	m ² /h:	to 760	
(with extension plates) accessories	m ² /h:	to 855	
Operating weight (mass)	kg:	267	
with extension plates	kg:	290	
(with extension plates) accessories	kg:	309	
Power transmission		From drive engine directly to exciter unit via centrifugal clutch and diesel engine	
Exciter			
Vibrations	min ⁻¹ (Hz):	4150 (69)	
Centrifugal clutch	kN:	33,5	
Drive		Air-cooled single-cylinder 4-stroke diesel engine	
Piston displacement	cm ³ :	270	
Nominal output	kW (PS):	6,6 (9)	
Engine speed	min ⁻¹ :	3600	
Fuel		gasoline	
Fuel consumption	l/h:	1,5	
Tank capacity	l:	6	

The required sound specifications, called-for by the EC-Machine Regulations per Appendix 1, Paragraph 1.7.4.f, are

- sound pressure level at the operator's location $L_{pA} = 88$ dB(A)
- sound power level $L_{WA} = 101$ dB(A)

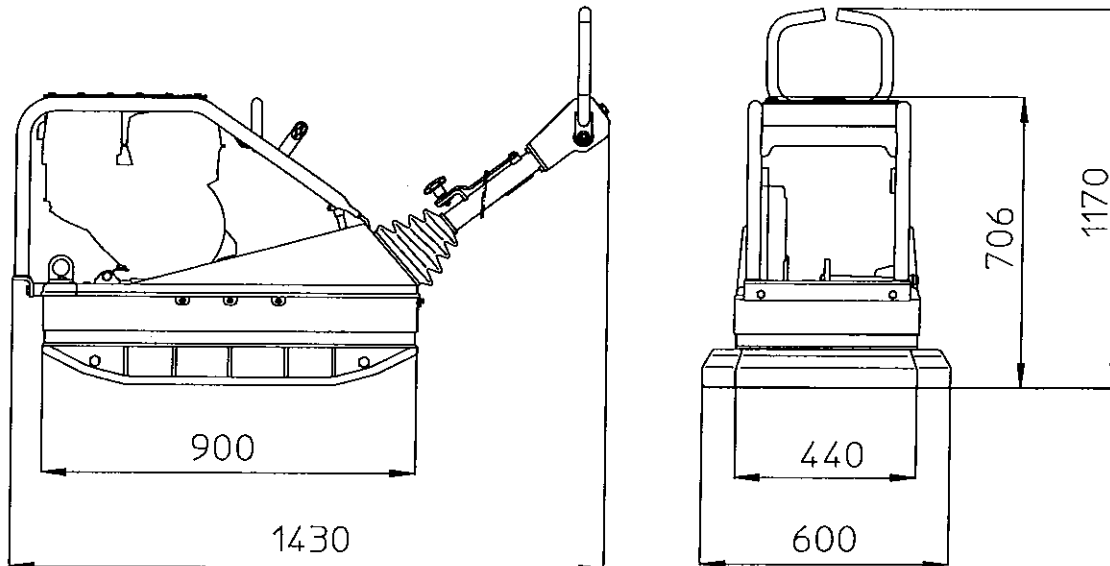
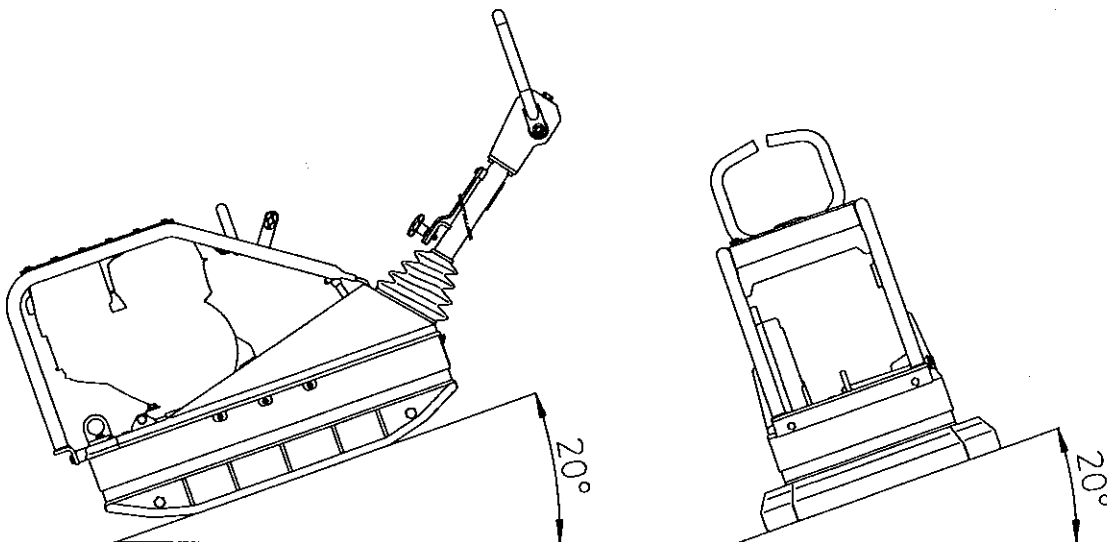
The sound values were determined according to ISO 3744 for the sound power level (L_{WA}) and, alternately, ISO 6081 for the sound pressure level (L_{pA}) at the operator's location.

The weighted effective acceleration value, determined according to ISO 8662, Part 1, is 6,4 m/s².

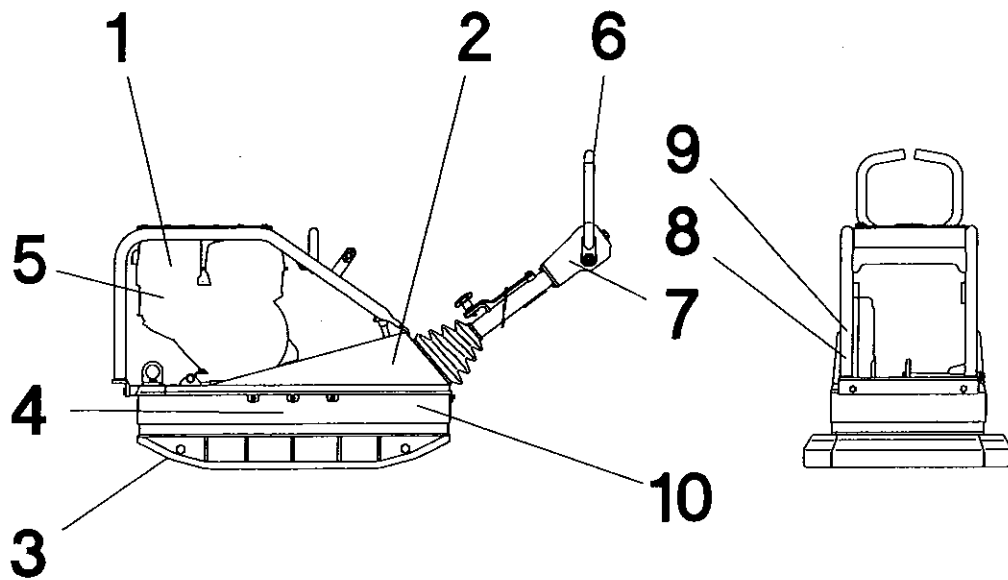
The sound and vibration measurements were carried out and obtained with the machine working on crushed gravel at nominal engine speed.

Field of application

The BPU 3345 A is very well suited for the compaction of all types of soils, including semi-cohesive soils in trench and surface compaction. With extension plates it is the optimum equipment for settling interlocking paving stones.

Dimensions**Max. admissible inclination**

Description of function



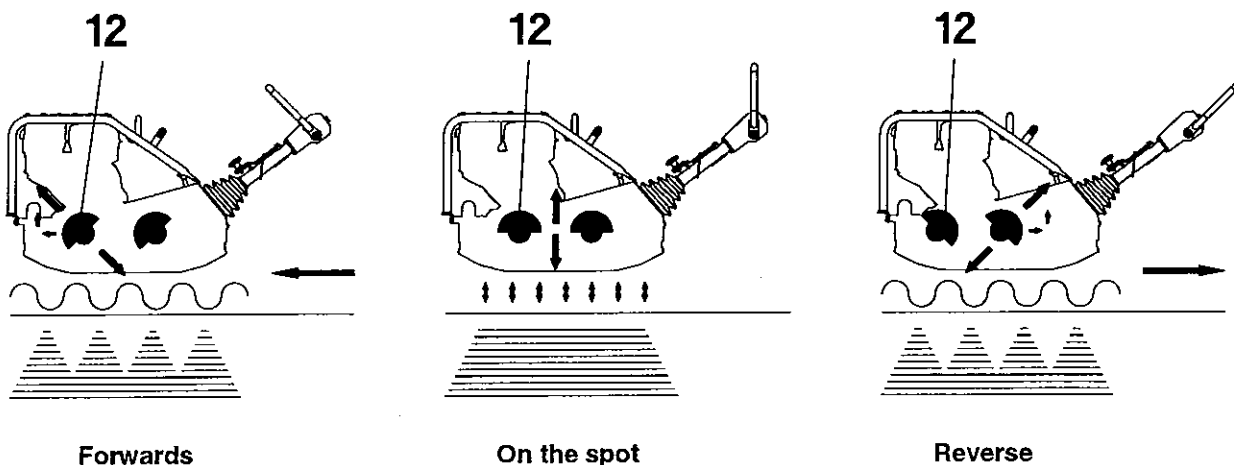
The vibration required for compaction is produced by the exciter (4) which is firmly joined to the lower mass (3). This exciter (4) is designed as a central vibrator with single-plane vibrations. Such a principle permits the direction of vibration to be changed by turning the eccentric weights (12). In this way an infinitely variable transition between vibration in forward motion, on the spot and in reverse motion is possible. This process is hydraulically controlled with the operating control handle (6) on the centre pole head (7).

The drive engine (1) is anchored to the upper mass (2) and drives the exciter (4). The torque is transmitted by means of a friction connection through the centrifugal clutch (8) and the exciter V-belt (9).

The centrifugal clutch (8) interrupts flow of power to the exciter (4) at low engine speeds and thus permits perfect idling of the drive engine (1). The speed of the drive engine (1) can be infinitely varied by way of the throttle control lever (5).

The upper (2) and lower (3) masses are connected to each other by 4 vibration-damping shock mounts (10). This damping system prevents the very high frequencies from being transmitted to the upper mass (2). As a result the functionality of the drive engine (1) is retained in spite of the high compaction performance.

The drive engine (1), is started by way of a rewind starter.



TRANSPORT TO WORK SITE, RECOMMENDATIONS ON COMPACTION

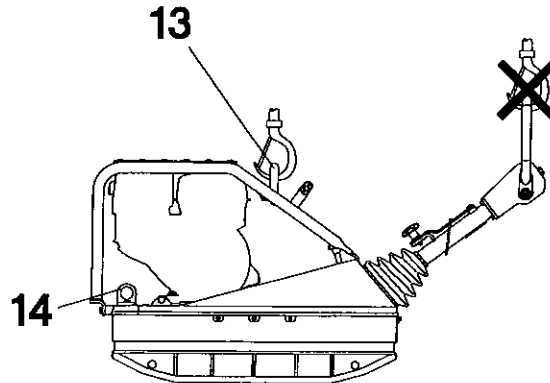
Transport to work site

Conditions:

- To transport the vibration plate, use only suitable lifting equipment with a minimum load-bearing capacity of 350 kg.
- Always switch off engine before transporting the machine!
- Only attach suitable tackle at the central lifting point (13) provided.
- During transport on the loading area of a vehicle, tie down the vibration plate using the lugs (14).

ATTENTION! Do not suspend from the operating control handle!

Note: Also observe the regulations in the safety instructions.



Recommendations on compaction

Ground conditions

The max. compaction depth depends on several factors relating to the ground condition, such as moisture, grain distribution etc.

It is therefore not possible to specify exact values.

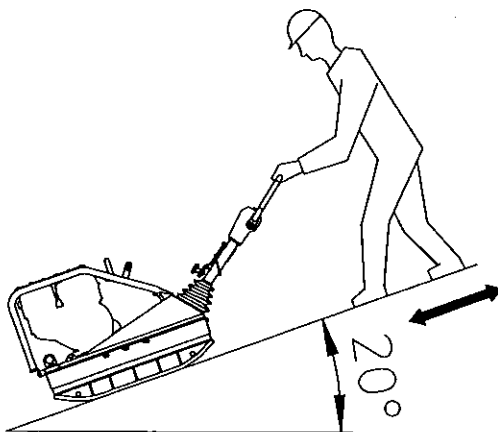
Recommendation: In each case determine the max. compaction depth with compaction tests and soil samples.

Compaction on slopes

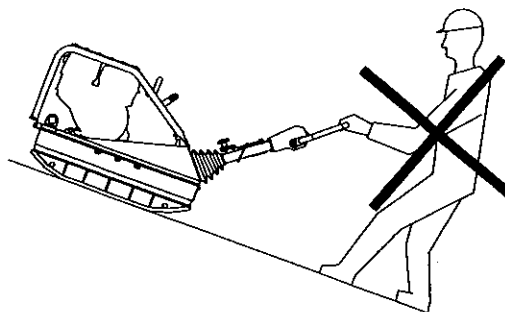
The following points are to be observed when compacting on sloped surfaces (slopes, embankments):

- * Only approach gradients from the bottom (a gradient which can be easily overcome upwards, can also be compacted downwards without any risk).
- * The operator must never stand in the direction of descent (see chapter "Safety instructions").
- * The max. gradient of 20° must not be exceeded.

ATTENTION! If this gradient were exceeded, this would result in a failure of the engine lubrication system and thus inevitably lead to a breakdown of important engine components.



Right !



Wrong !

Starting

Pre-starting check

1. Oil level check

Insert dipstick in oil filler neck, but without screwing in. If oil level is low, fill to the top of the oil filler neck with high grade SAE 15 W 40 oil.

2. Dual-air cleander >Dual element type<

Check the air cleaner elements to be sure they are clean and in good condition. Clean or replace the elements if necessary.

3. Fuel

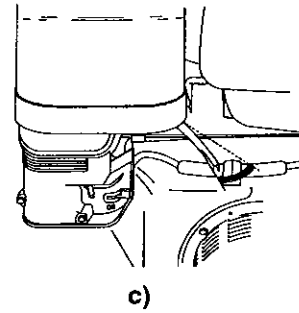
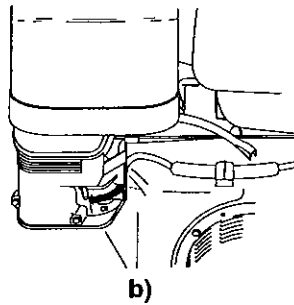
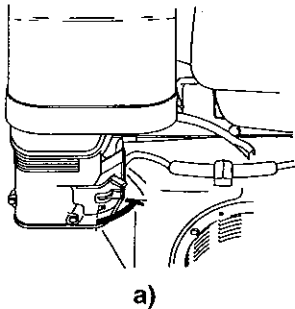
Use any regular grade automotive gasoline (unleaded gasoline is preferred) with a pump octane rating of 86 or higher.

Never use an oil/gasoline mixture or dirty gasoline: Avoid getting dirt, dust or water in the fuel tank.

Caution: Gasoline substitutes are not recommended, they may be harmful to the fuel system components.

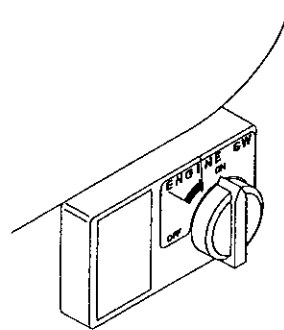
Starting the engine

- a) Turn the fuel valve to the ON position.
- b) Move the choke lever to the CLOSE position.
Note: If the engine is warm or the air temperature is high, move the control lever away from the CHOKE position as soon as the engine starts.
- c) Move the throttle lever slightly to the left.



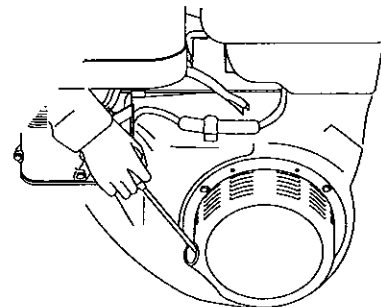
 With recoil starter:

- d) Turn the engine switch to the ON position.



- e) Pull the starter grip lightly until resistance is felt, then pull briskly.

Caution: Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.



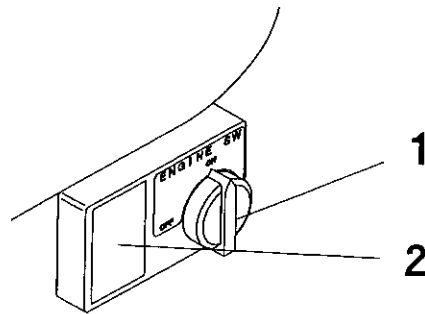
Handling

As the engine warms up, gradually move the choke lever to the OPEN position. Position the throttle lever for the desired engine speed.

Oil alert system

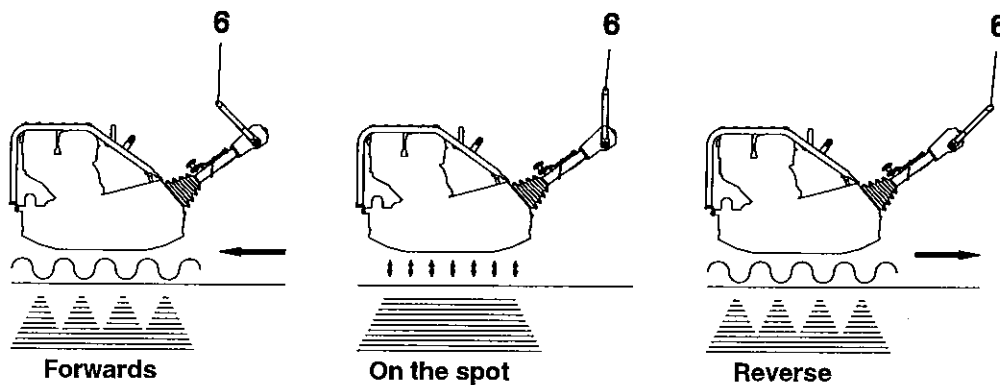
The oil alert system is designed to prevent engine damage caused by an insufficient amount of oil in the crankcase. Before the oil level in the crankcase drops below a safe limit, the oil alert system will automatically shut down the engine (the engine switch will remain in the ON position).

- 1 Engine switch
- 2 Note: If engine does not start check oil level



Forward and reverse motion

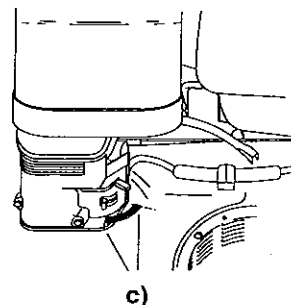
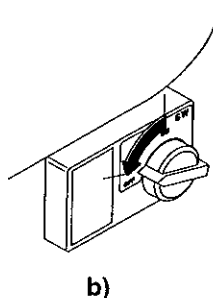
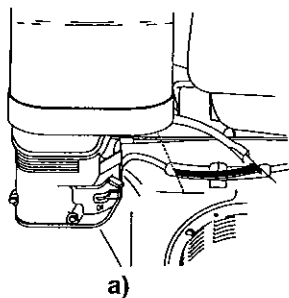
The engine speed can be infinitely varied with the throttle control lever (5). The direction of travel is determined with the operating control handle (6). Depending on the position of the control handle (6), the vibration plate compacts in forward direction, on the spot or in reverse direction.



Stopping the engine

To stop the engine in an emergency, turn the engine switch to the OFF position. Under normal conditions, use the following procedure:

- a) Move the throttle lever fully to the right.
- b) Turn the engine switch to the OFF position.
- c) Turn the fuel valve to the OFF position.



Maintenance schedule

Check all external screw connections for tight fit approx. 8 hours after first operation.		
Parts	Maintenance jobs	Maintenance interval
Air filter Fuel tank Drive engine Exciter	Check for external damage and tight fit. Check filter cartridge, clean or replace if necessary. Check tank lid for tight fit, replace if necessary. Check oil level, top up if necessary. Check for tightness.	daily
Drive engine	First oil change.	20 hours
Centre pole	Grease moveable locking device, and spindle for pole height adjustment.	weekly
Drive engine Centre pole head V-belt Protective frame	Clean spark plug, check spark plug gap 0,7 mm. Check oil level, top up if necessary. Check V-belt tension - retension, if need be. Check fastening screws of protective frame and central suspension for tight fit.	monthly
Drive engine Exhaust muffler Exciter	Oil change. Remove combustion residue from spark arrester. Oil change.	100 hours
Exciter	Check oil level-fill up, if need be.	150 hours
Exciter	Oil change.	250 hours
Drive engine	Valve clearance - Check, set - 0,15 mm intake valve, 0,20 mm exhaust valve.	300 hours

Engine oil

Oil change

Drain the oil while the engine is still warm to assure rapid and complete draining.

1. Remove the oil filler cap and the drain plug to drain the oil.
2. Install the drain plug, and tighten it securely.
3. Refill with the recommended oil and check oil level.
4. Install the oil filter cap.

Engine oil capacity: 1,1 l (1,06 USqt., 1,78 Imp pt)

Air filter

Air filter service

A dirty air filter will restrict air flow to the carburettor. To prevent carburettor malfunction, service the air filter regularly. Service more frequently when operating the engine in extremely dusty areas.

Warning: Never use gasoline or low flash point solvents for cleaning the air cleaner element. A fire or explosion could result.

Caution: Never run the engine without the air cleaner. Rapid engine wear will result.

Dual type air filter

1. Remove the wing nut and the air filter cover. Remove the elements and separate them. Carefully check both elements for holes or tears and replace if damaged.
2. Foam element: Wash the element in a solution of household detergent and warm water, then rinse thoroughly, or wash in nonflammable or high flash point solvent. Allow the element to dry thoroughly. Soak the element in clean engine oil, and squeeze out the excess oil. The engine will smoke during initial start-up if too much oil is left in the foam.
3. Paper element: Tap the element lightly several times on a hard surface to remove excess dirt, or blow compressed air through the filter from the inside out. Never try to brush the dirt off; brushing will force dirt into the fibers.
Replace the paper element if it is excessively dirt.

Fuel tank

Fuel strainer cup cleaning

Turn the fuel valve to Off. Remove the sediment cup and O-ring, and wash them in nonflammable or high flash point solvent. Dry them thoroughly, and reinstall securely. Turn the fuel valve on, and check for leaks.

Spark plug

Spark plug service

Recommended spark plug: BP6ES-11, BPR6ES-11 (NGK), W20EP-U11, W20EPR-U11 (ND).

Caution: Never use a spark plug of incorrect heat range.

To ensure proper engine operation, the spark plug must be properly gapped and free of deposits.

1. Remove the spark plug cap, and use a spark plug wrench to remove the plug.
2. Visually inspect the spark plug. Discard it if the insulator is cracked or chipped. Clean the spark plug with a wire brush if it is to be reused.
3. Measure the plug gap with a feeler gauge. The gap should be 0,7-0,8 mm (0.039-0.043 in). Correct as necessary by bending the side electrode.
4. Check that the spark plug washer is in good condition, and thread the spark plug in by hand to prevent cross-threading.
5. After the spark plug is seated, tighten with a spark plug wrench to compress the washer.

Warning: If the engine has been running, the muffler will be very hot. Be careful not to touch the muffler.

Note: If installing a new spark plug, tighten 1/2 turn after the spark plug seats to compress the washer. If reinstalling a used spark plug, tighten 1/8-1/4 turn after the spark plug seats to compress the washer.

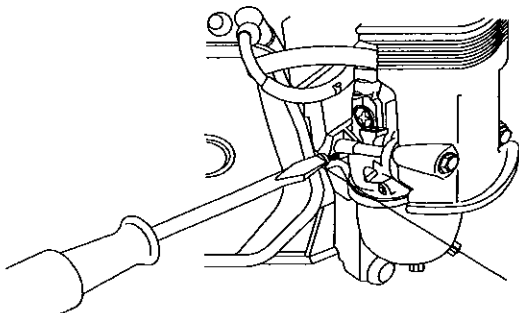
Caution: The spark plug must be securely tightened. An improperly tightened spark plug can become very hot and may damage the engine.

Carburettor

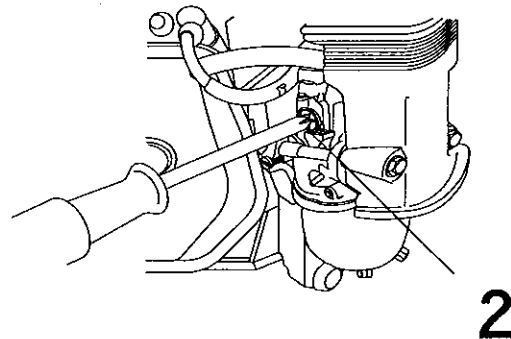
Carburettor adjustment

- * Start the engine and allow it to warm up to normal operating temperature.
- * With the engine idling, turn the pilot screw in or out to the setting that produces the highest idle rpm. The correct setting will usually be approximately 2 1/4 turns from the fully closed position.

Caution: Do not tighten the pilot screw against its seat as this will damage the pilot screw or seat. After the pilot screw is correctly adjusted, turn the throttle stop screw to obtain the standard idle speed. Standard idle speed: 1 400 ± 150 rpm.



1. Pilot screw



2. Throttle stop screw

Service instructions**1. Adjusting the V-belt tension**

Remove belt guard. Loosen nuts situated on the motor V-belt pulley and remove outer V-belt pulley half. Remove necessary number of shims (the removal of one shim is usually sufficient). Install the removed shims on the outside of the V-belt pulley. (If one shim is removed, install it on the outer half of the pulley, if two, one on the outer and one on the inner V-belt pulley half, etc.). Thus V-belt alignment is maintained. Install spring washer in a way such that the large collar comes to lie on the motor V-belt pulley. Loosen nuts and under continual rotation of the engine V-belt pulley tighten nuts alternately. Allow engine to run for a short while, if necessary retighten nuts.

2. Lubricating the exciter

On delivery of the machine, the exciter is filled with oil. Change oil after every 250 hours of operation, use 0,75 l SAE 15 W 40/10 W 40. For this purpose place the vibration plate on level ground. Remove drain plug situated on the outside of the vibration plate. Correct oil level = lower edge of threaded bore.

Hydraulic control

When checking the oil level in the motor and exciter, also check oil level in the centre pole head and top up if necessary. Top up to mark when centre pole is placed in vertical position. If there is too much oil in the centre pole head the reverse motion is hard to engage, if the quantity of oil is insufficient the advance speed is reduced. We use hydraulic oil Fuchs Renolin MR 520, suitable also for low temperatures, in the hydraulic systems as standard. For temperatures above freezing a multigrade oil SAE 15 W 40 is also suitable.

Mounting instruction**1. Exciter**

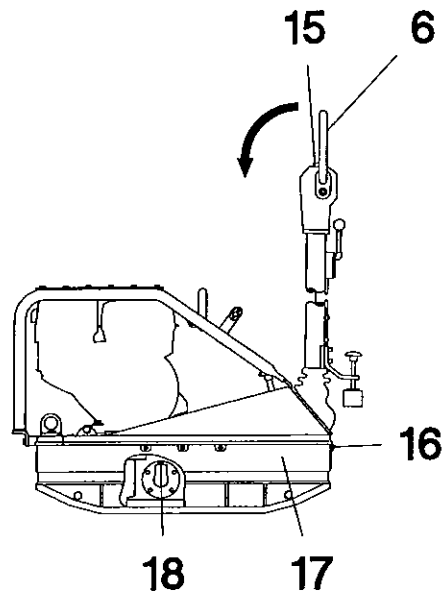
When disassembling exciter components, always remove eccentric weights first. When assembling, the eccentric weights have to be installed last of all. When installing exciter shafts mind marking of toothed gears. Assembly of exciter shaft is correct when all eccentric weights point down while piston is at half stroke. During assembly of eccentric weights on exciter shaft, keep shafts blocked to avoid pinching of fingers. Mind lefthand thread when assembling V-belt pulley. Tighten all screws with the prescribed torque, mind qualities of screws (see screw head).

2. Hydraulic control

Bleed hydraulic system after having topped up with oil, then check oil level again (total quantity required approx. 0,4 liters).

3. Bleeding hydraulic control:

1. Remove apron (17) by undoing the screws (16).
2. Move centre pole into vertical position, move control handle (6) right into the reverse position, open filler bore (15).
3. Loosen connecting screw (18).
4. Slowly push the control handle (6) in forward direction until hydraulic oil emerges bubblefree at the connection screw.
5. Tighten connecting screw (18), mount apron (17).
6. If necessary, top up with Fuchs Renolin MR 520, seal filler bore (15).



4. Centre pole head

ATTENTION! When disassembling the centre pole head, please mind that the piston is installed under spring tension. When assembling, locate toothed rod in toothed gear in a way such that the handle is set a 90° to the centre pole head when piston is fully extended.

5. Test-run equipment for approx. 5 min. to bleed air from system.

Forward speed too low

- Cause: - Too little hydraulic oil in the centre pole head.
- Air in hydraulic control.
- Remedy: - Top up hydraulic oil.
- Bleed system.

Reverse speed too low

- Cause: - Too much oil in centre pole head.
- Remedy: - Correct oil level in accordance with mark.

No reverse motion

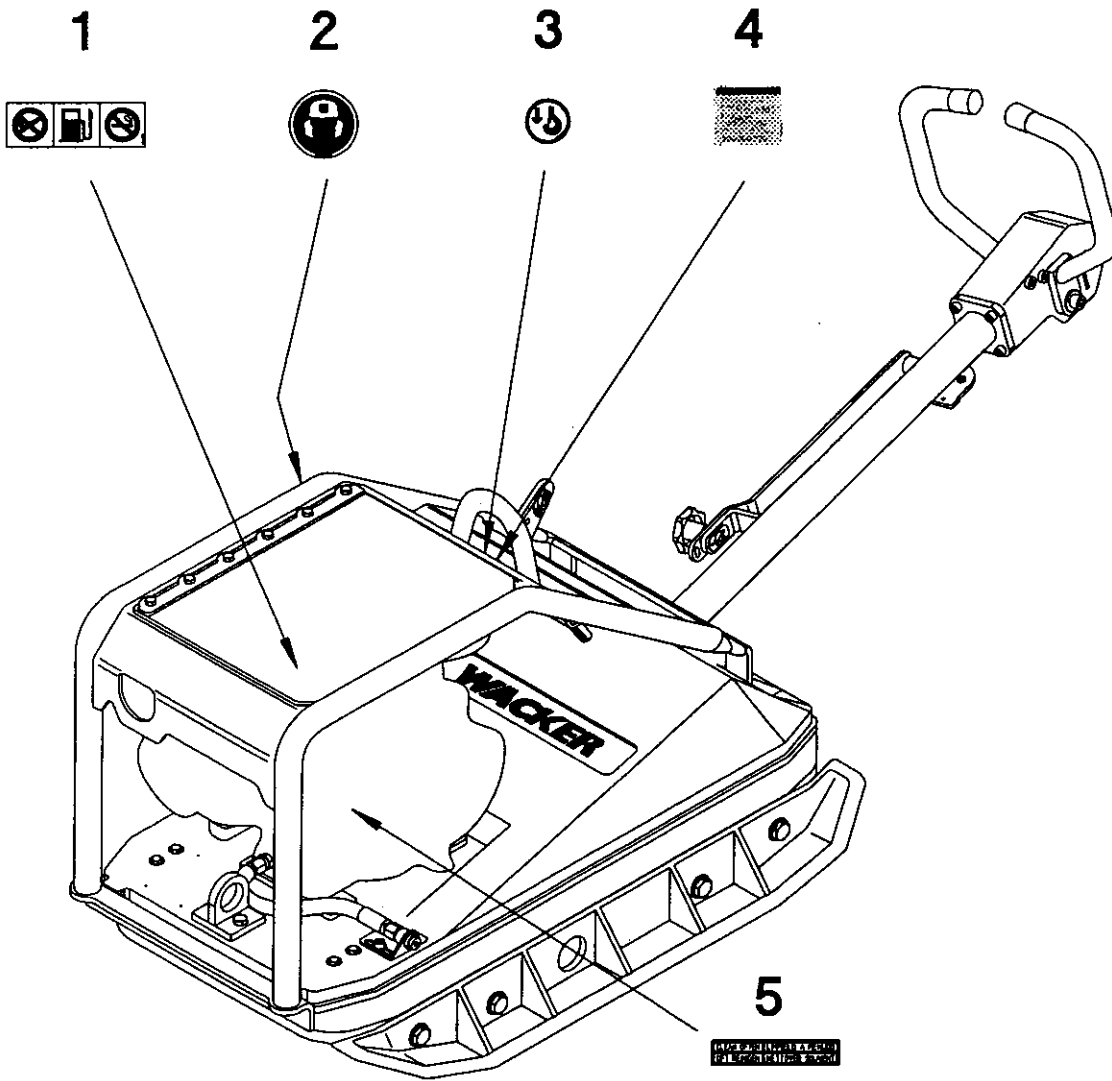
- Cause: - Mechanical fault.
- Remedy: - Contact WACKER service dept.

Loss of hydraulic oil

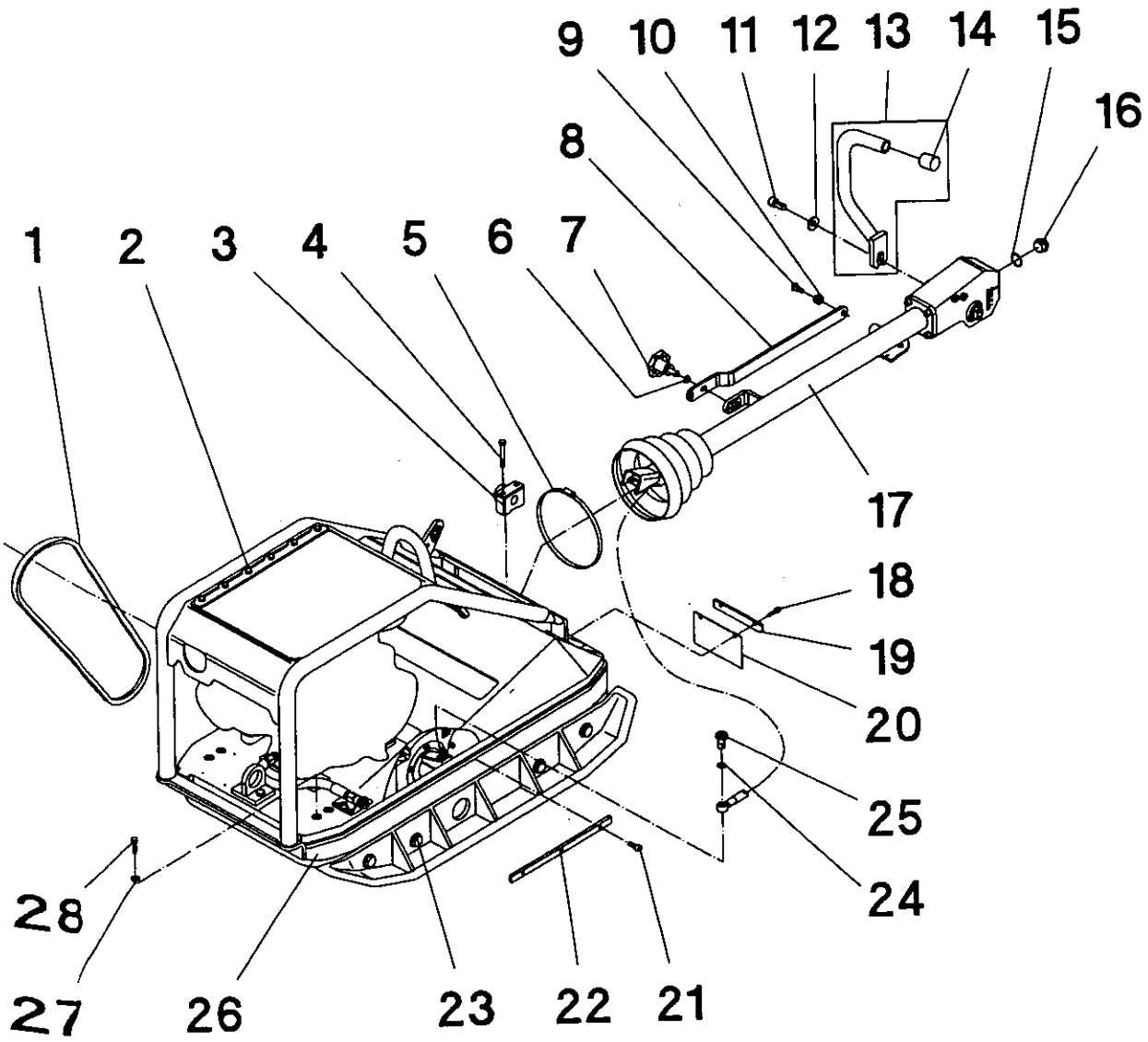
- Cause: - Leaks, hydraulic hose defective.
- Remedy: - Change defective parts.
Note: Bleed system after every dismantling operation.

Engine does not start

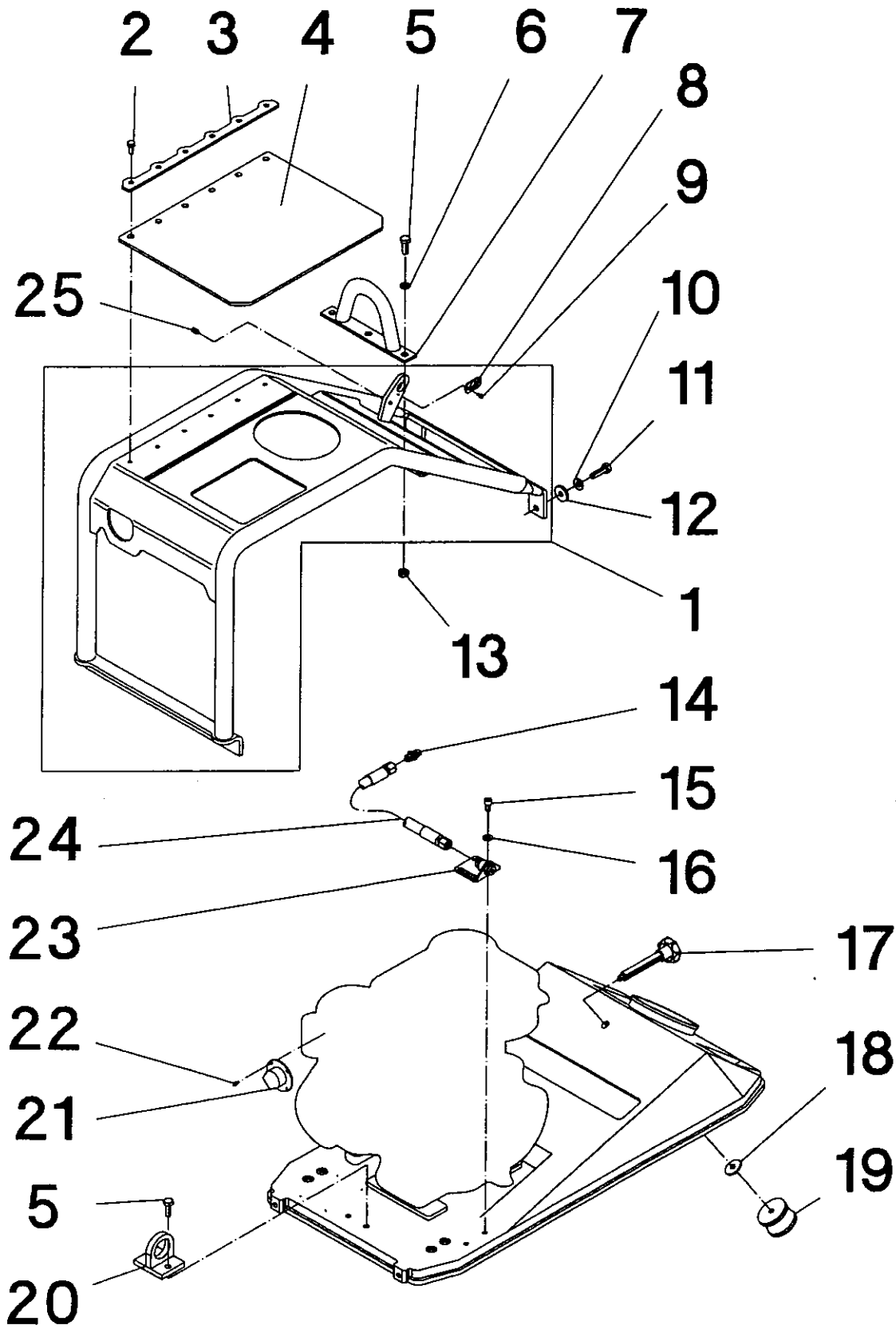
- Cause: - Fuel tank empty.
- Fuel shut-off valve closed.
- Air filter dirty.
- Stop button defective.
- Recoil starter defective.
- Oil alert system has stopped engine.
- Remedy: - Fuel up.
- Open.
- Clean.
- Repair.
- Repair.
- Fill up with engine oil.



Ref.	Part No.	Qty.	Part
1	0079769	1	Decal
2	0038375	1	Ear protection decal
3	0095486	1	Decal-instruction
4	1007190	1	Decal (USA)
5	0026973	1	Decal

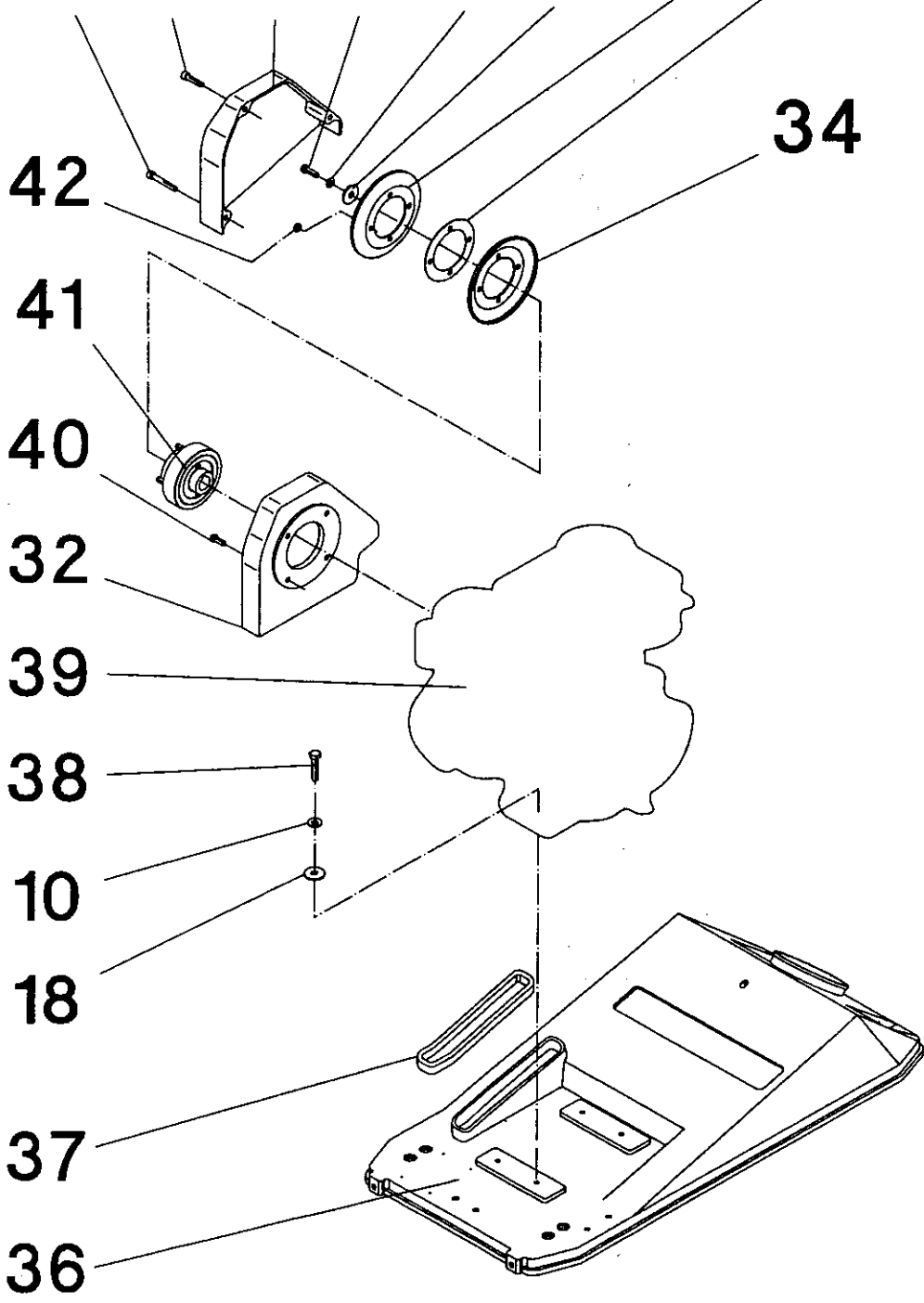


Ref.	Part No.	Qty.	Part
1	0063006	1	Narrow V-belt
2		1	Upper mass cpl.
3	0039125	2	Fixing device cpl.
4	0011345	4	Hexagonal head cap screw DIN931 - M8x60
5	0045109	1	Worm drive hose clip
6	0098536	1	O-ring
7	0065055	1	Star grip
	0065056	1	Catch stop
8	0065064	1	Swivel arm
9	0065058	1	Countersunk screw DIN923 - M8x10
10	2004942	1	Cable passage
11	0011530	2	Socket head cap screw DIN912 - M12x25
12	0031565	2	Spring washer DIN6796 - 12
13	0069822	2	Shift lever bracket cpl.
14	0069186	2	Protective cap
15	0032006	1	Gasket DIN7603 - A26x31
16	0024838	1	Screw plug DIN7604 - AM26x1,5
17	0095249	1	Centre pole cpl.
	0047388	1	Strap
18	0011550	2	Socket head cap screw DIN912 - M6x25
19	0039206	1	Bar
20	0043478	1	Covering
21	0103962	6	Socket head cap screw DIN912 - M8x18
22	0097110	2	Bar
23		1	Base plate cpl.
24	0012624	1	Gasket DIN7603 - A14x18
25	0043201	1	Hollow screw DIN7643 - 10
26	0039145	1	Apron
27	0033198	8	Spring washer DIN6796 - 8
28	0065254	8	Hexagonal head cap screw DIN933 - M8x35

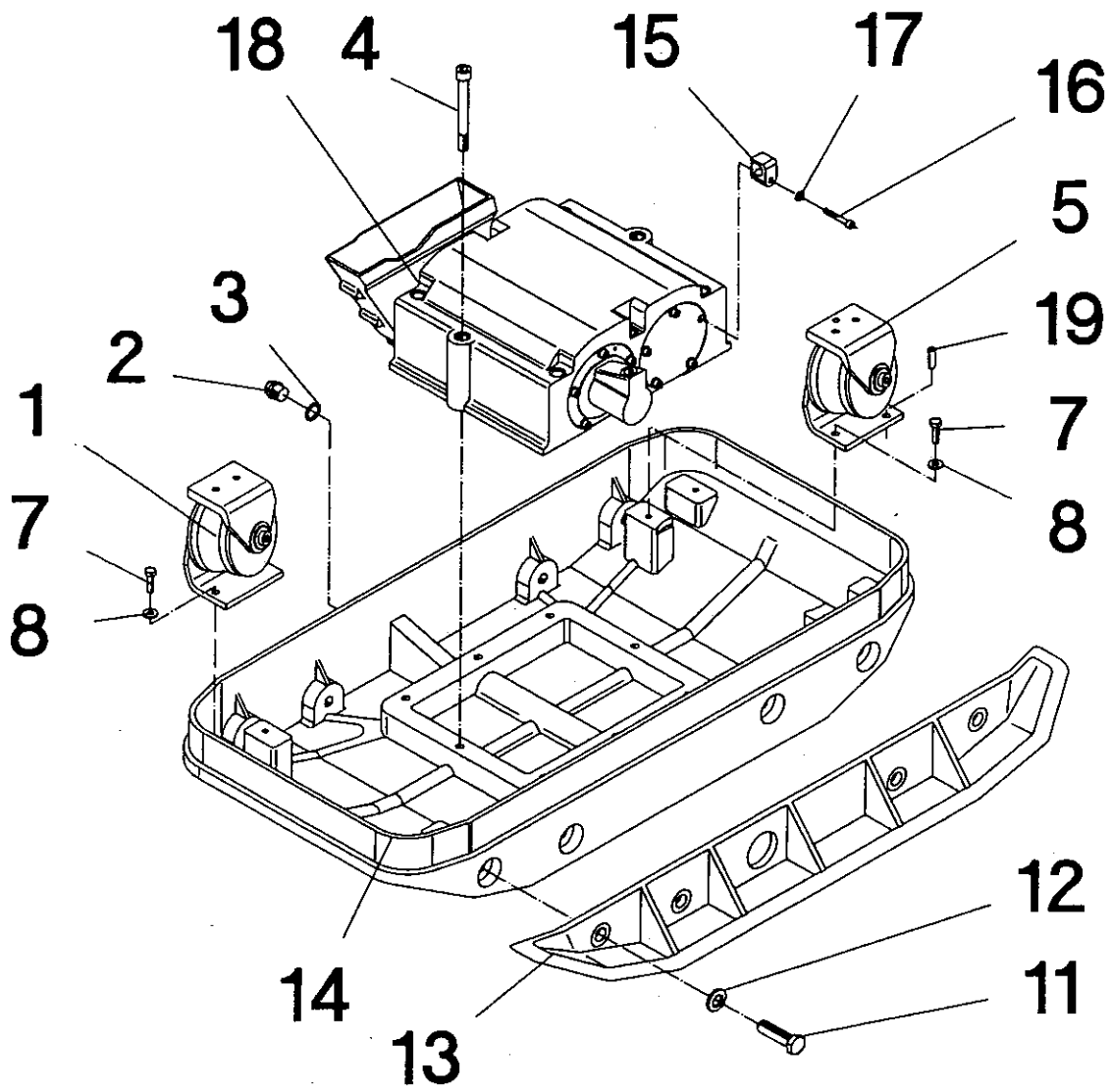


Ref.	Part No.	Qty.	Part
1	0106025	1	Protection guard cpl.
2	0013551	6	Hexagonal head cap screw DIN933 - M8x18
3	0099915	1	Bar
4	0102011	1	Access cover
5	0011440	5	Hexagonal head cap screw DIN933 - M10x25
6	0010741	3	Washer DIN433 - 10,5
7	0066428	1	Shackle
8	0065056	1	Catch stop
9	0011573	2	Socket head cap screw DIN912 - M4x8
10	0033988	8	Spring washer DIN6796 - 10
11	0011438	4	Hexagonal head cap screw DIN933 - M10x35
12	0017091	4	Washer DIN7349 - 10,5
13	0017313	3	Hexagon nut DIN980 - VM10
14	0049277	1	Screwed socket
15	0011543	2	Socket head cap screw DIN912 - M8x20
16	0010622	3	Washer DIN125 - B8,4
17	0043928	1	Threaded spindle cpl.
	0039143	1	Star grip
18	0012976	6	Washer DIN440 - R11
19	0043233	1	Shockmount
20	0047249	1	Towing eye
21	0065259	1	Exhaust deflector
22	0013620	3	Self tapping screw DIN7981 - St4,2x9,5
23	0097896	1	Oil drain cpl.
	0095997	1	Screw plug
24	0099358	1	Hose pipe
25	0108438	1	Screw DIN427 - M8x12

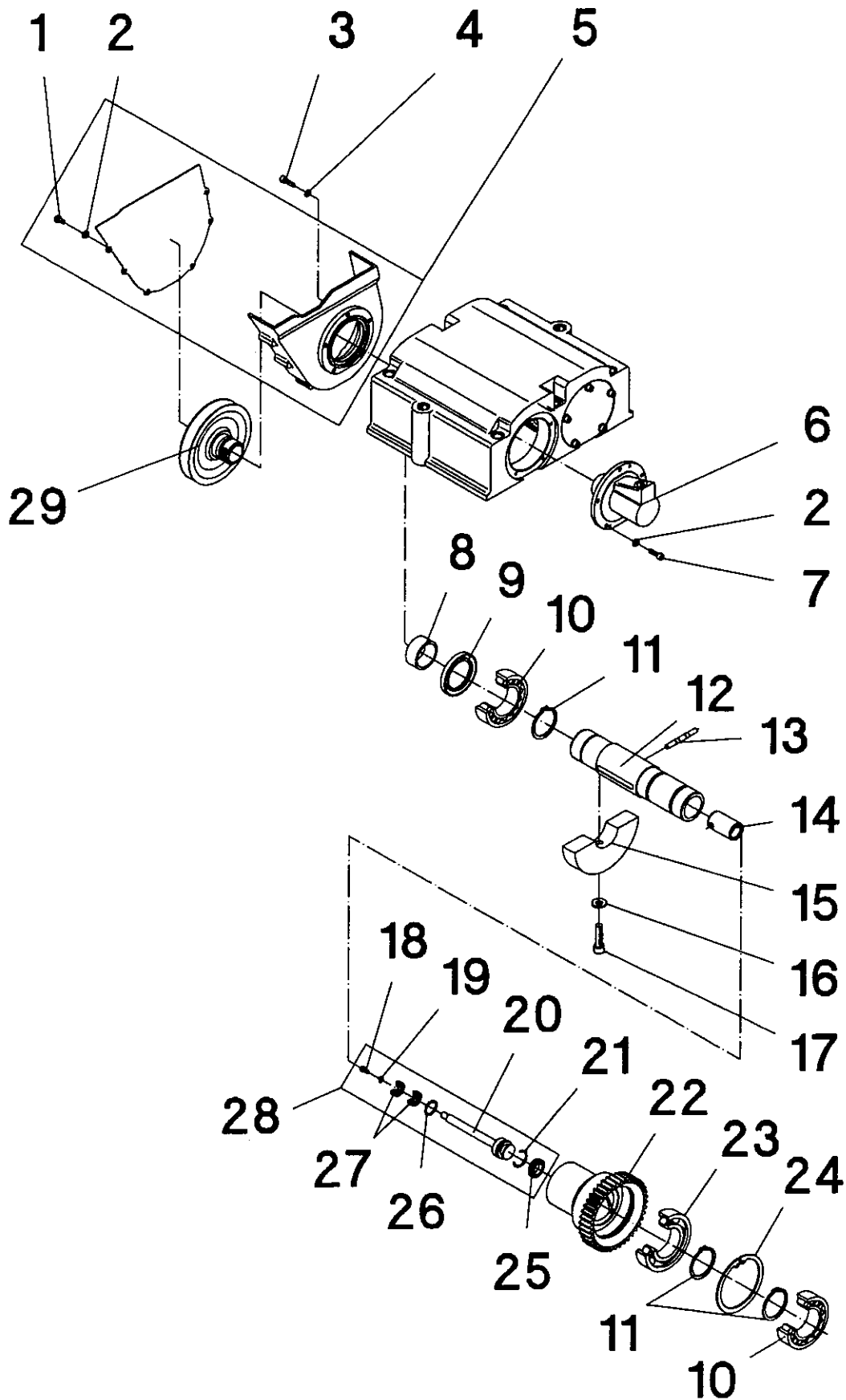
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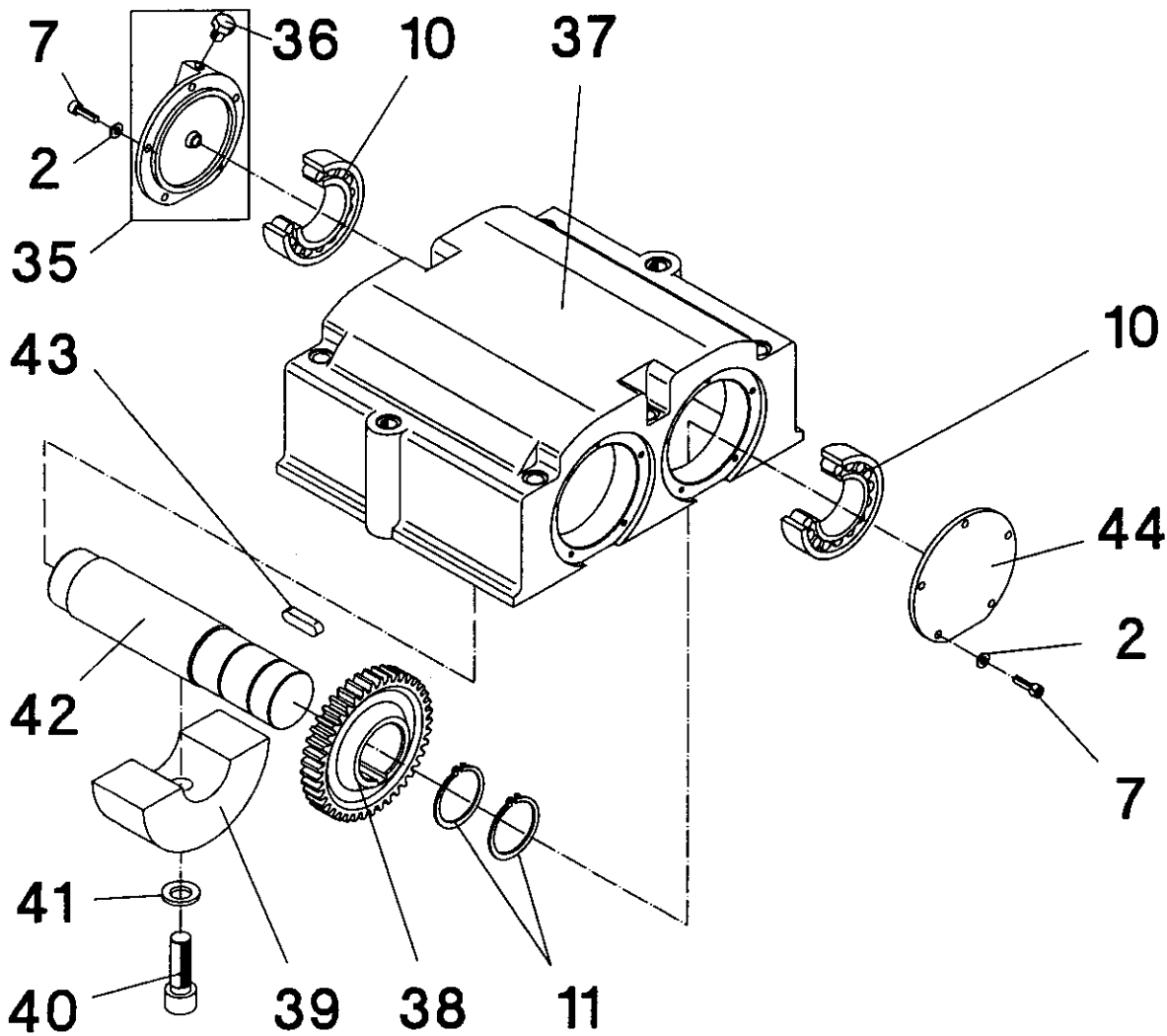
Ref.	Part No.	Qty.	Part
30	0011537	2	Socket head cap screw DIN912 - M8x50
31	0011540	1	Socket head cap screw DIN912 - M8x35
32	0055034	1	Belt guard
33	0011457	1	Hexagonal head cap screw DIN933 - M8x25
34	0058667	2	V-belt pulley half
35	0058668	3	Distance washer
36	0099250	1	Upper mass
37	0047449	1	Four edge cord
38	0011436	4	Hexagonal head cap screw DIN933 - M10x45
39	0105448	1	Petrol engine
	0010879	1	Hexagon nut DIN934 - M5
40	0011263	4	Socket head cap screw DIN6912 - M8x20
41	0058671	1	Centrifugal clutch
42	0010882	4	Hexagon nut DIN934 - M8



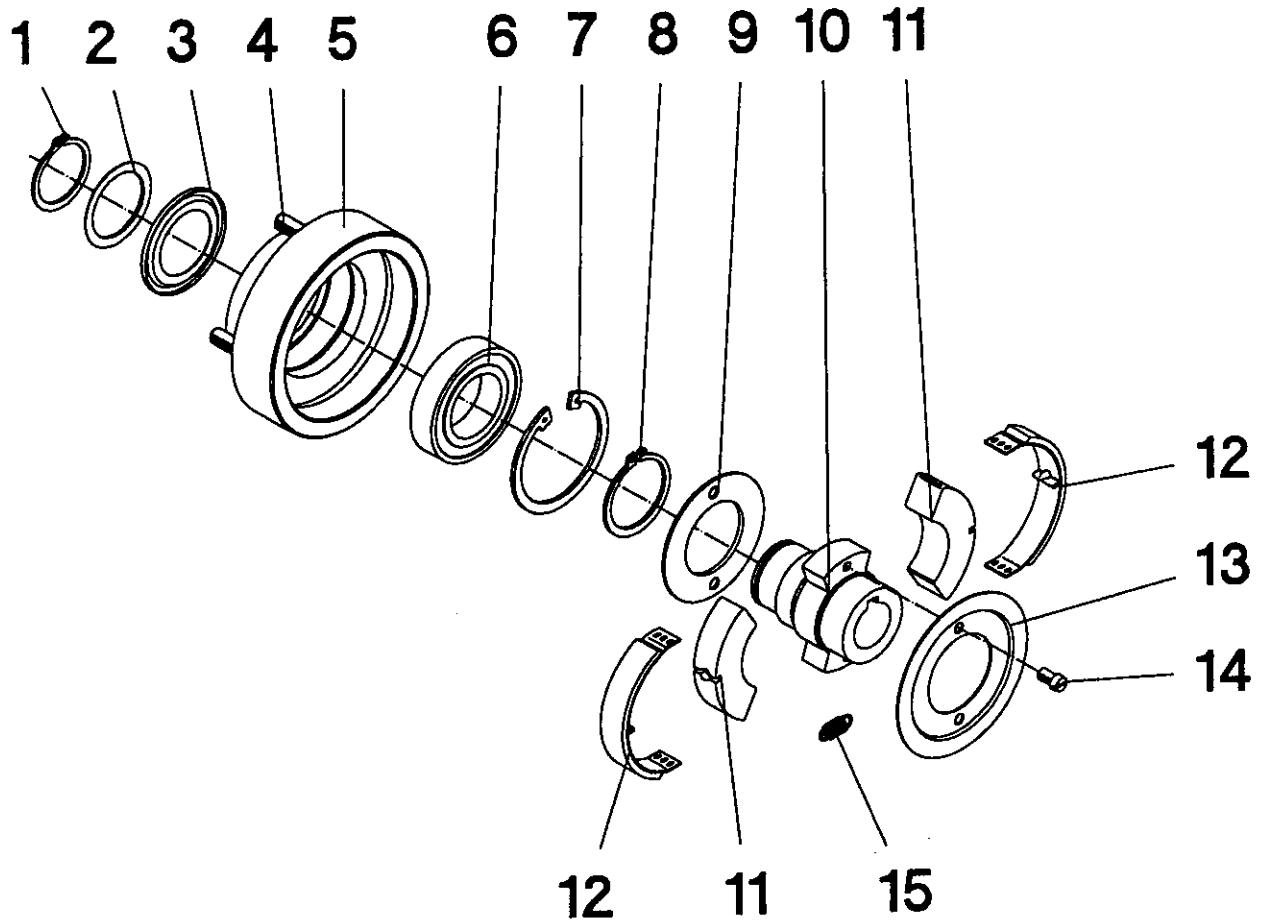
Ref.	Part No.	Qty.	Part
1		2	Shock-mount front cpl.
2	0068222	1	Screw plug DIN910 - M18x1,5
3	0019156	1	Gasket DIN7603 - A18x24
4	0094518	8	Socket head cap screw DIN912 - M12x120
5		2	Shock-mount rear cpl.
7	0065253	8	Hexagonal head cap screw DIN933 - M8x25
8	0033198	8	Conical spring washer DIN6796 - 8
11	0039191	8	Hexagon head cap screw DIN961 - M16x1,5x55
12	0021988	8	Lock washer HS 16
13	0044442	2	Extension plate
14	0043206	1	Base plate
15	0069727	1	Clamp
16	0011547	1	Socket head cap screw DIN912 - M6x40
17	0010624	1	Washer DIN125 - B6,4
18		1	Exciter cpl.
19	0015634	2	Dowel pin DIN1481 - 8x28



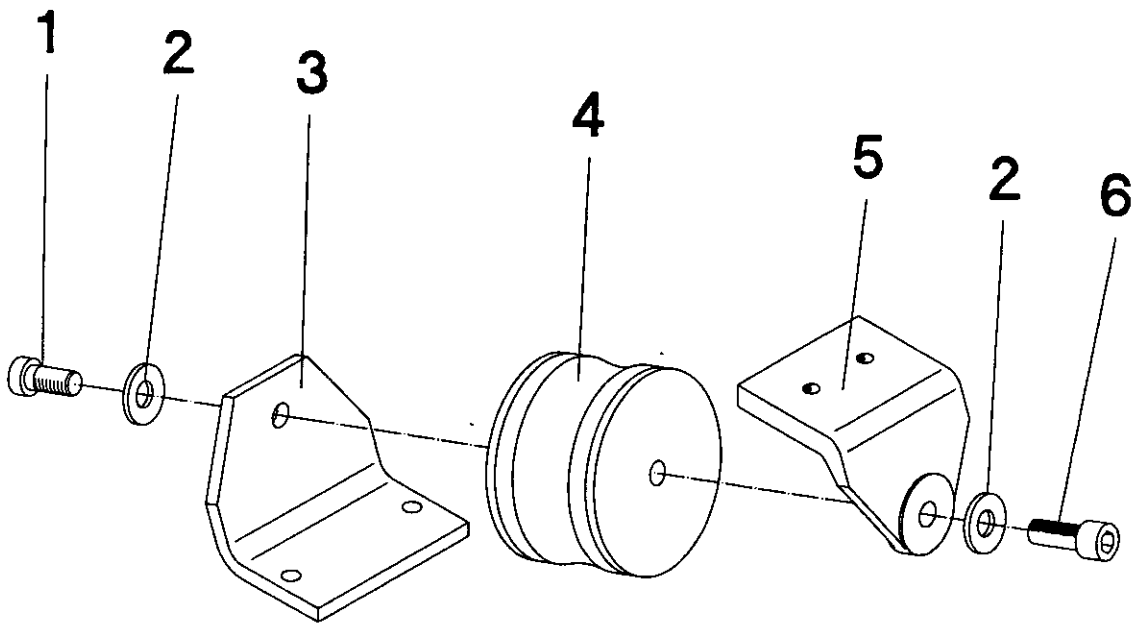
Ref.	Part No.	Qty.	Part
1	0012357	6	Hexagonal head cap screw DIN933 - M6x12
2	0010624	21	Washer DIN125 - B6,4
3	0011550	5	Socket head cap screw DIN912 - M6x25
4	0010744	5	Washer DIN433 - 6,4
5	0104620	1	Protective box cpl.
6	0048604	1	Cylinder cover
7	0011551	15	Socket head cap screw DIN912 - M6x20
8	0039105	1	Inner raceway
9	0048854	1	Rotary shaft seal
10	0103469	4	Cylindrical roller bearing
11	2006113	5	Retaining ring DIN471 - 50x2
12	0049232	1	Shaft
13	0043382	1	Tripping pin
14	0048546	1	Indexing bolt
15	0039114	2	Eccentric weight
16	0033988	2	Conical spring washer DIN6796 - 10
17	0043811	2	Socket head cap screw DIN912 - M10x40
18	0012356	1	Hexagonal head cap screw DIN933 - M6x10
19	0010624	1	Washer DIN125 - B6,4
20	0105206	1	Bolt
21	2006991	1	O-ring
22	0039118	1	Adjusting sleeve
23	2003698	1	Deep groove ball bearing
24	2007057	1	Retaining ring DIN472 - 90x3
25	0043203	1	Lip seal ring
26	0037136	1	Retaining ring DIN472 - 24x1,2
27	0105193	2	Deep groove ball bearing
28	0105195	1	Bolt cpl.
29	0058264	1	V-belt pulley



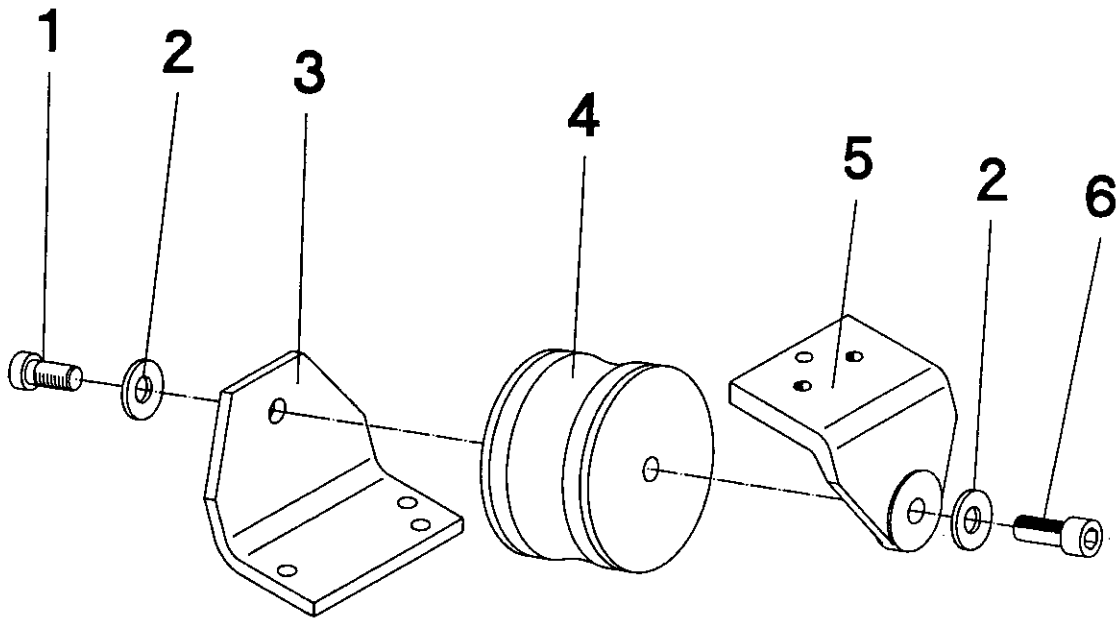
Ref.	Part No.	Qty.	Part
35	0048779	1	Vent cover cpl.
36	1103030	1	Vent screw
37	0039084	1	Exciter housing
38	0039116	1	Gear wheel
39	0039113	1	Eccentric weight
40	0043812	1	Socket head cap screw DIN912 - M16x50
41	0021988	1	Lock washer HS 16
42	0039083	1	Shaft
43	2001399	1	Fitting key DIN6885 - A10x8x28
44	0039110	1	Cover



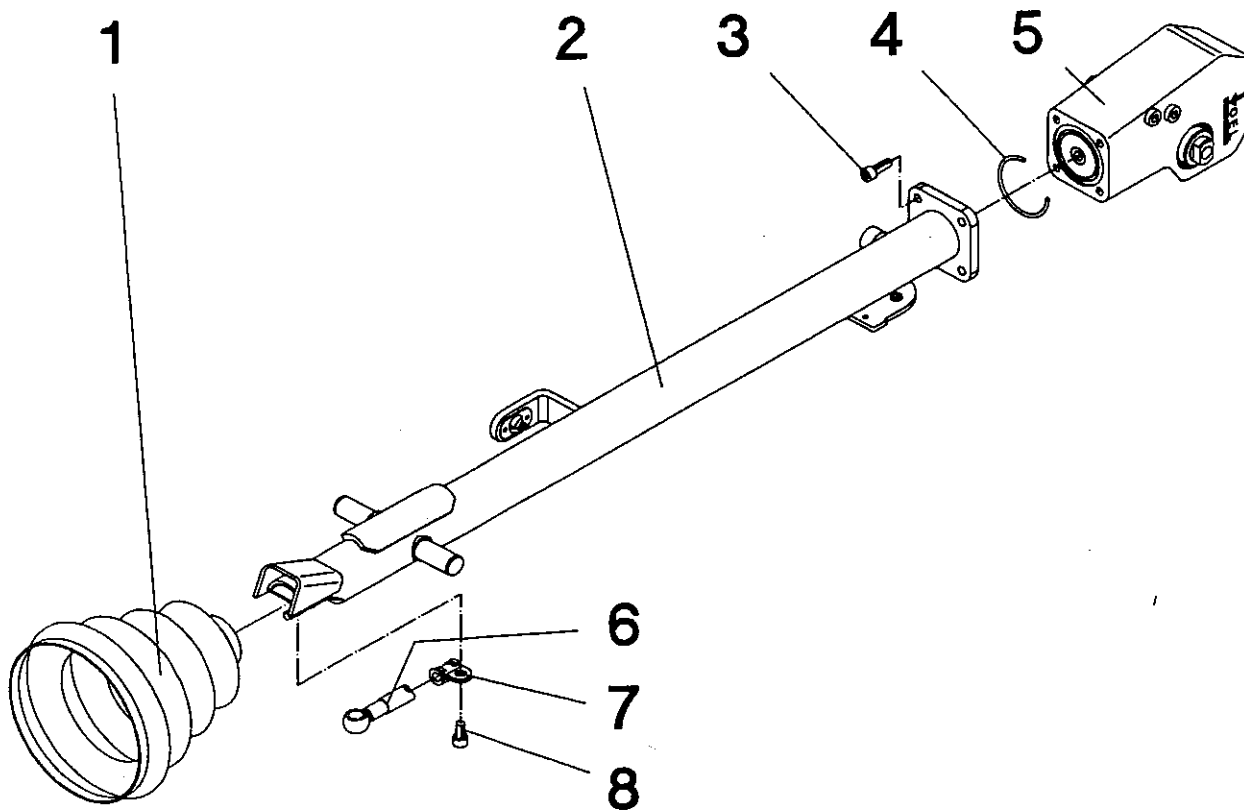
Ref.	Part No.	Qty.	Part
1	2003022	1	Retaining ring DIN471 - 35x1,5
2	0059743	1	Shim ring DIN988 - 35x45x0,5
3	2004336	1	Gasket
4	0046538	4	Threaded pin DIN913 - M8x30
5	0059742	1	Drum cpl.
6	0047510	1	Deep groove ball bearing
7	2001042	1	Retaining ring DIN472 - 62x2
8	2004474	1	Retaining ring DIN471 - 40x1,75
9	0059740	1	Fixing disk
10	0059744	1	Hub
11	0059738	2	Centrifugal weight
12	0022861	2	Lining
13	0059741	1	Washer
14	0011706	2	Socket head cap screw DIN84 - M6x10
15	0059739	2	Spring



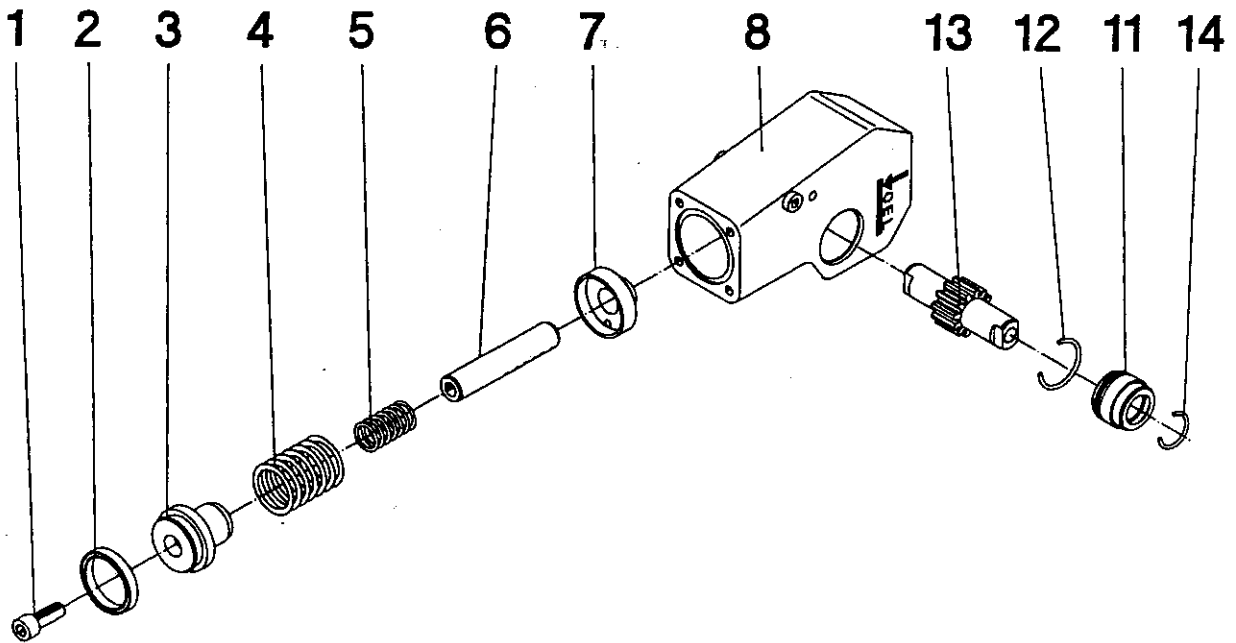
Ref.	Part No.	Qty.	Part
1	0049201	1	Socket head cap screw DIN7984 - M12x25
2	0031565	2	Conical spring washer DIN6796 - 12
3	0039103	1	Shock-mount support front
4	2004814	1	Shock-mount
5	0039102	1	Shock-mount support front
6	0011529	1	Socket head cap screw DIN912 - M12x30



Ref.	Part No.	Qty.	Part
1	0049201	1	Socket head cap screw DIN7984 - M12x25
2	0031565	2	Conical spring washer DIN6796 - 12
3	0039204	1	Shock-mount support rear
4	2004814	1	Shock-mount
5	0039514	1	Shock-mount support rear
6	0011529	1	Socket head cap screw DIN912 - M12x30

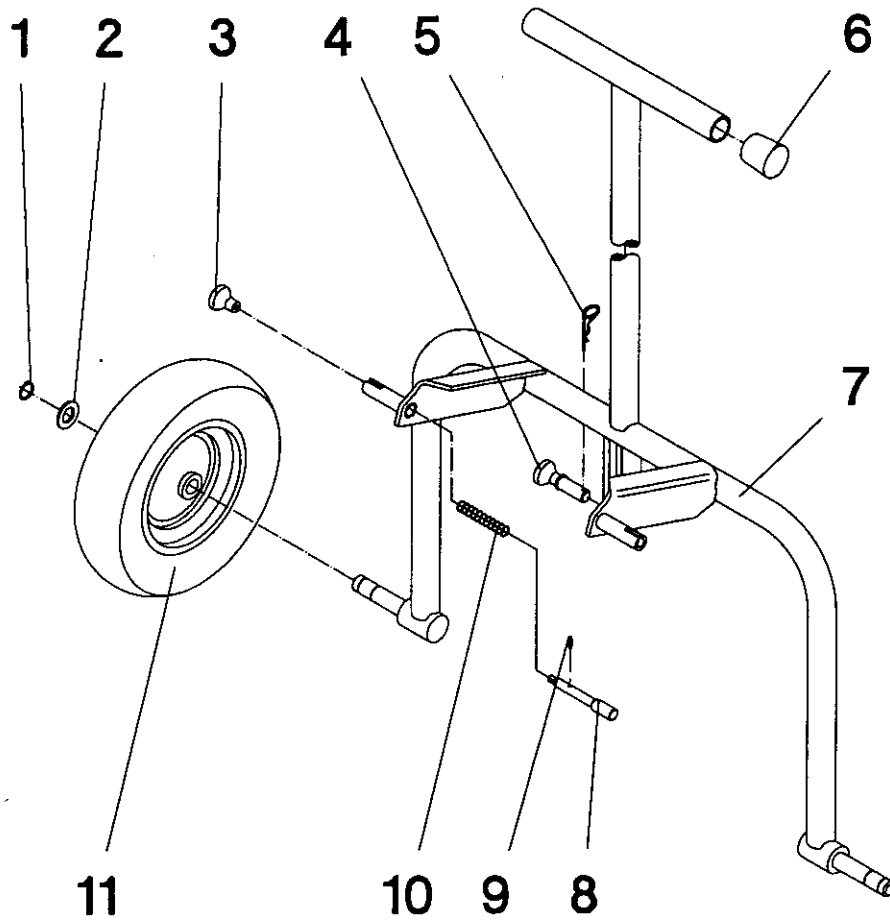


Ref.	Part No.	Qty.	Part
1	0039126	1	Bellows
2	0065241	1	Centre pole
3	0011542	4	Socket head cap screw DIN912 - M8x25
4	0039235	1	O-ring
5	0095249	1	Centre pole head cpl.
6	0069736	1	Hydraulic hose
7	2006921	1	Pipe clamp
8	0011544	1	Socket head cap screw DIN912 - M8x16

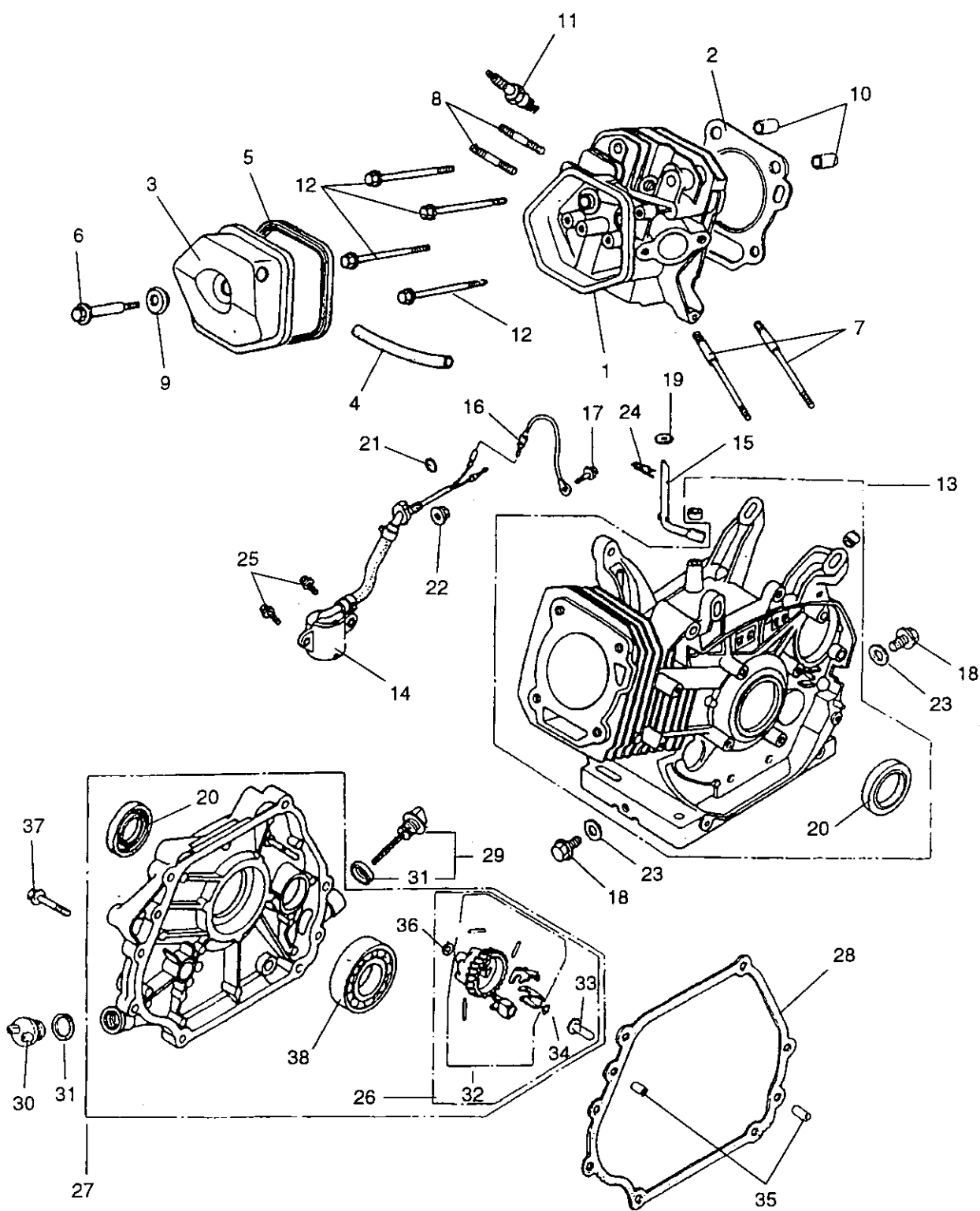


Ref.	Part No.	Qty.	Part
1	0011529	1	Socket head cap screw DIN912 - M12x30
2	0043215	1	Lip seal ring
3	0043213	1	Control piston
4	0103407	1	Compression spring
5	0063972	1	Compression spring
6	0043212	1	Guide bolt
7	0043208	1	Guide
8	0043214	1	Centre pole head
11	0069725	2	Spacer
12	0068752	2	O-ring
13	0069726	1	Long face pinion
14	0018194	2	O-ring

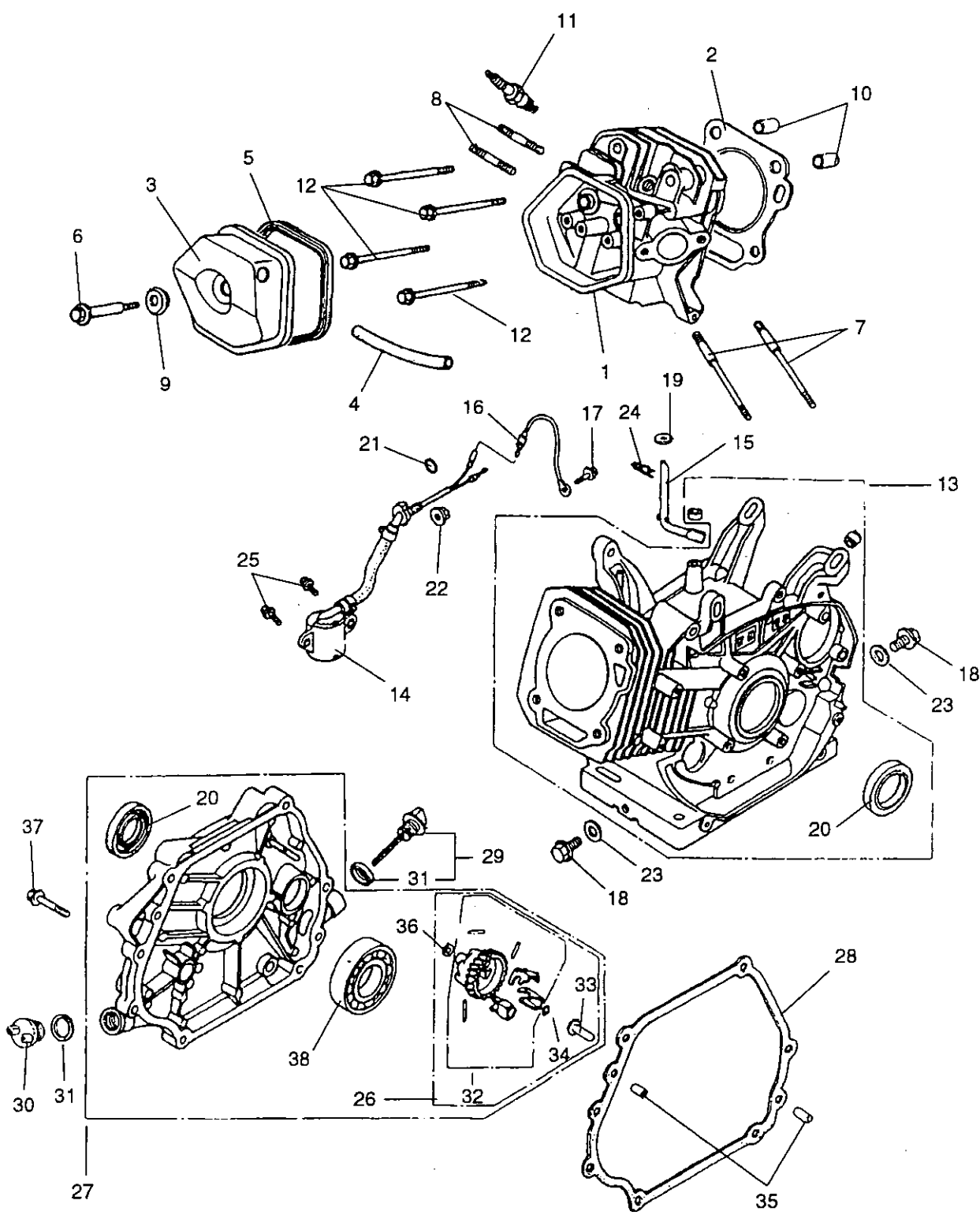
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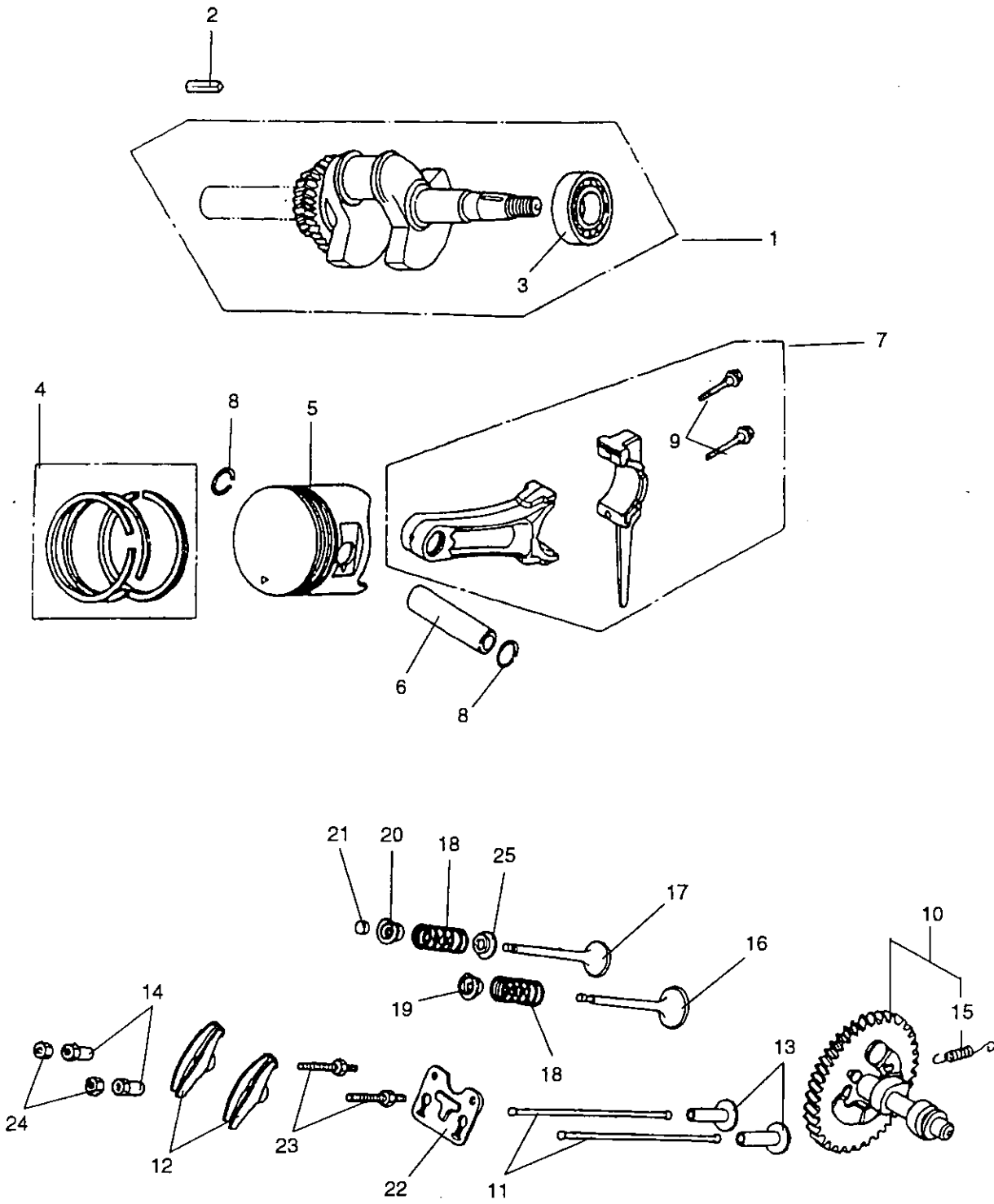
Ref.	Part No.	Qty.	Part
	0102219	1	Trolley cpl.
1	2001041	2	Retaining ring DIN471 - 25x1,2
2	0010614	2	Washer DIN125 - B25
3	0033621	2	Switch handle
4	0048121	1	Bolt cpl.
5	0031312	1	Spring
6	0067826	2	Protective cap
7	0102220	1	Trolley
8	0048042	2	Bolt
9	0010397	2	Dowel pin DIN1481 - 5x20
10	0033476	2	Compression spring
11	0048057	2	Tire



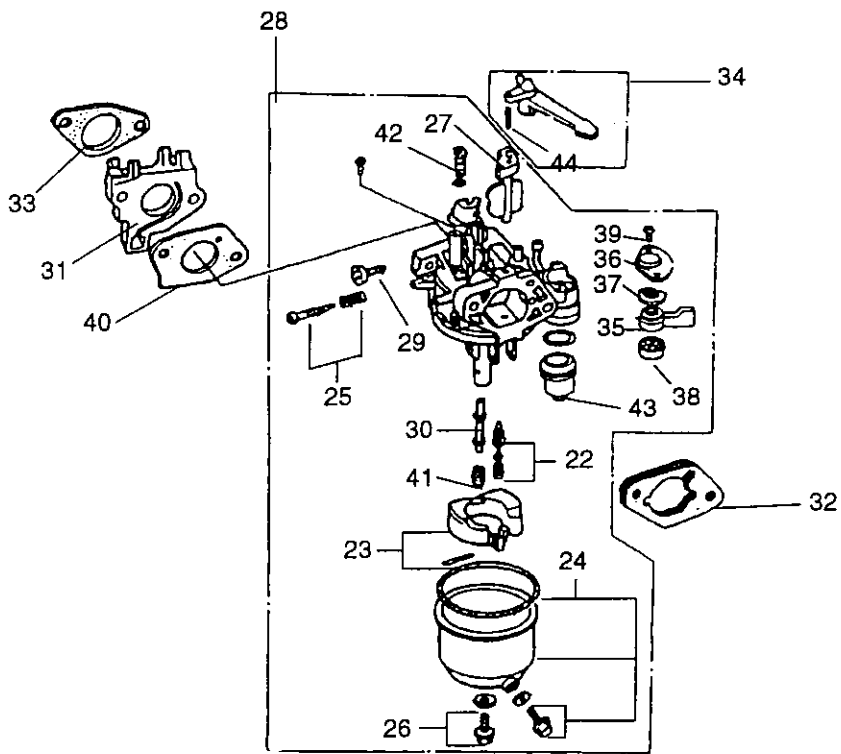
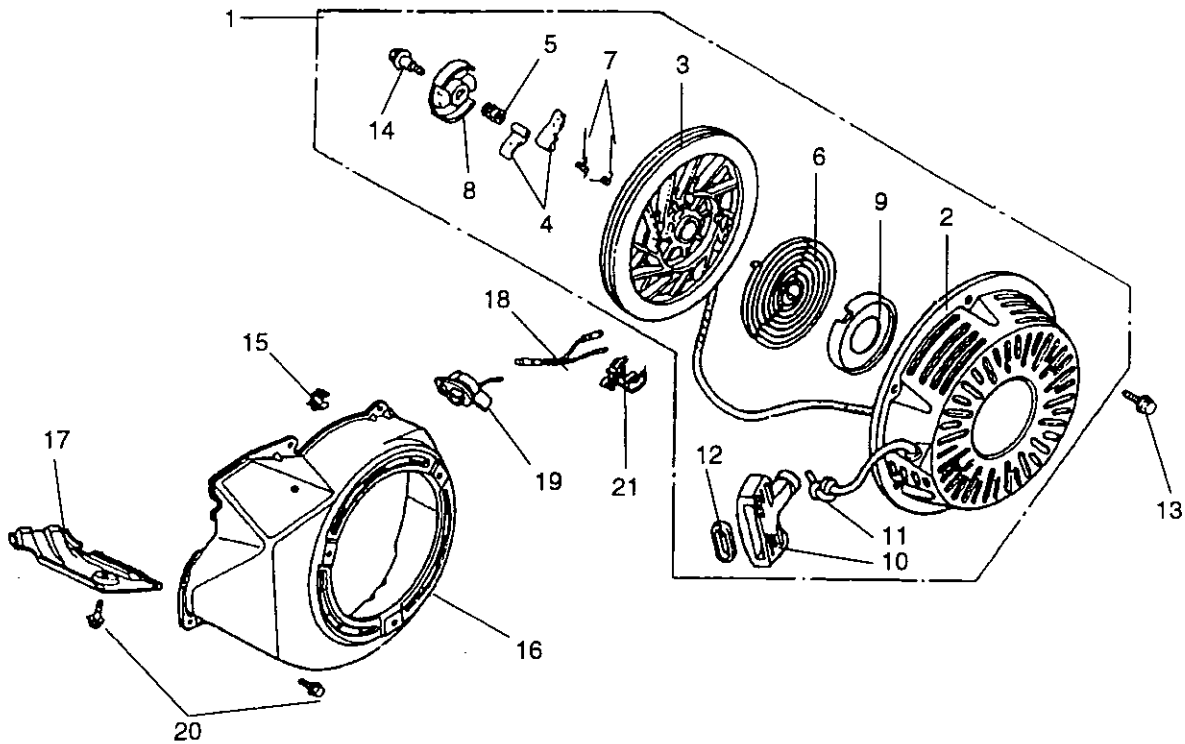
Ref.	Part No.	Qty.	Part
1	0081623	1	Cylinder head cpl.
2	0084643	1	Cylinder head gasket
3	0089273	1	Valve hood
4	0074646	1	Hose piece
5	0074645	1	Seal
6	0074655	1	Screw
7	0075651	2	Stud bolt
8	0074654	2	Stud bolt
9	0074657	1	Disc gasket cpl.
10	0074652	2	Guiding sleeve
11	0070947	1	Spark plug
12	0074647	4	Cylinder head screw
13	0107026	1	Cylinder housing cpl.
14	0075790	1	Oil level switch cpl.
15	0074641	1	Governor arm
16	0089268	1	Earth cable
17	0053990	1	Screw
18	0053993	2	Screw
19	0074657	1	Disc gasket cpl.
20	0071699	2	Rotary shaft seal



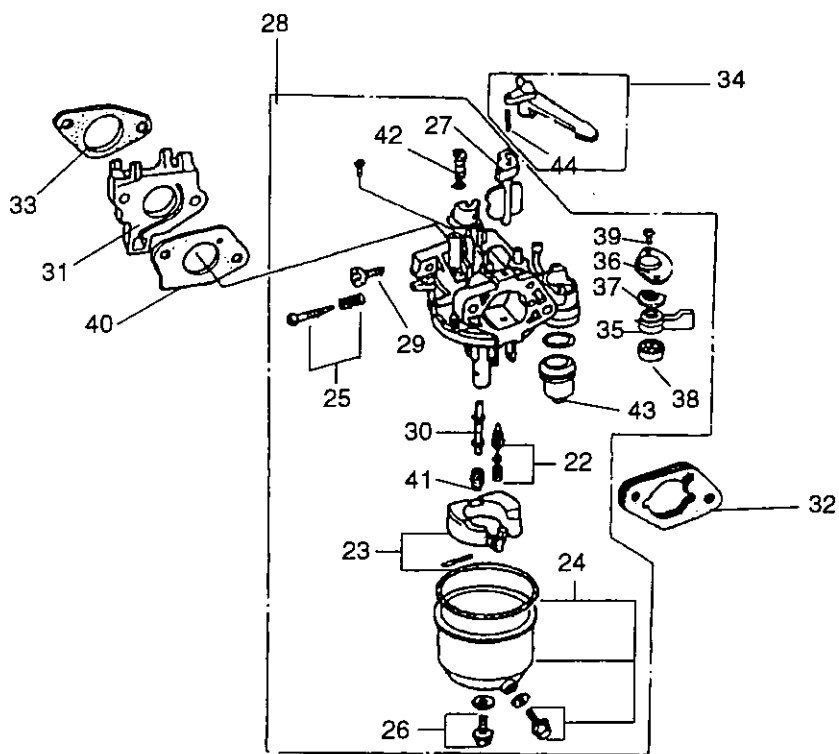
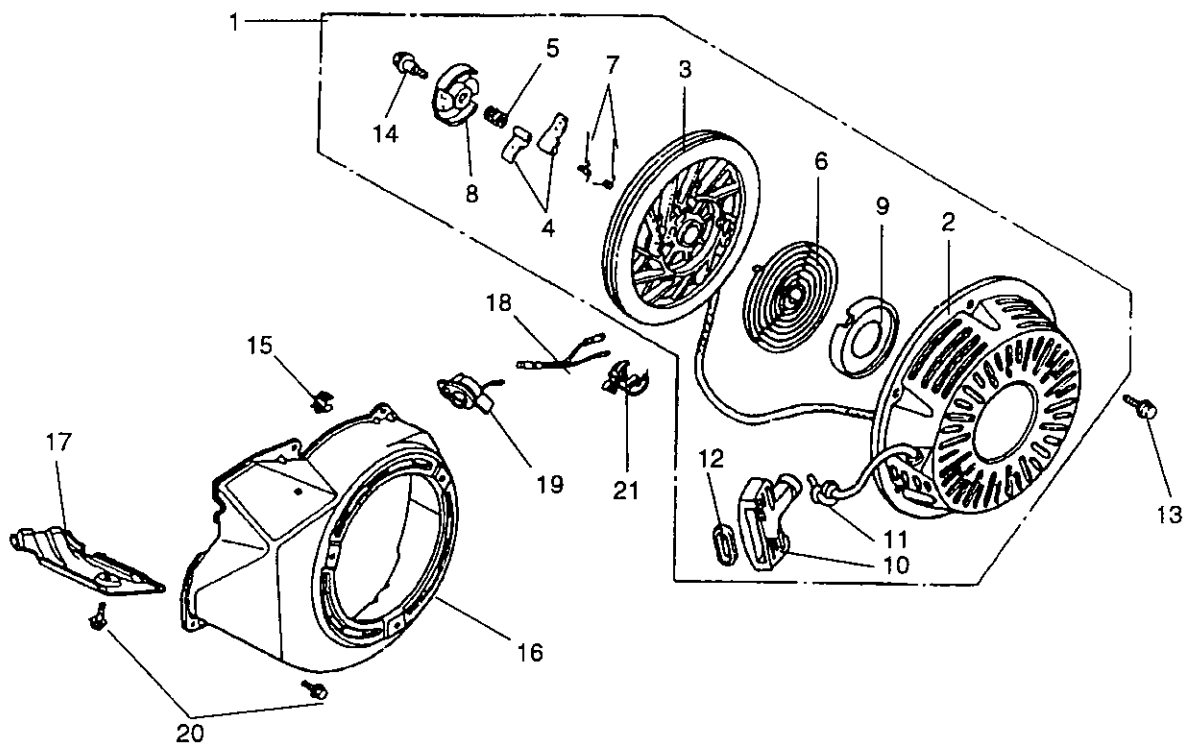
Ref.	Part No.	Qty.	Part
21	0071082	1	O-ring
22	0072332	1	Hexagon nut
23	0076367	2	Gasket
24	0110110	1	Detent spring
25	0072333	2	Hexagonal head cap screw
26	0107028	1	Governor cpl.
27	0068960	1	Housing cover cpl.
28	0081622	1	Seal
29	0110113	1	Oil dip stick
30	0110111	1	Screw plug
31	0070971	2	Seal
32	0068961	1	Governor cpl.
33	0074632	1	Governor pin
34	0081615	1	Retaining ring
35	0081617	2	Guiding sleeve
36	0071639	1	Washer
37	0074629	7	Screw
38	0071700	1	Bearing
	0107038	1	Gasket set



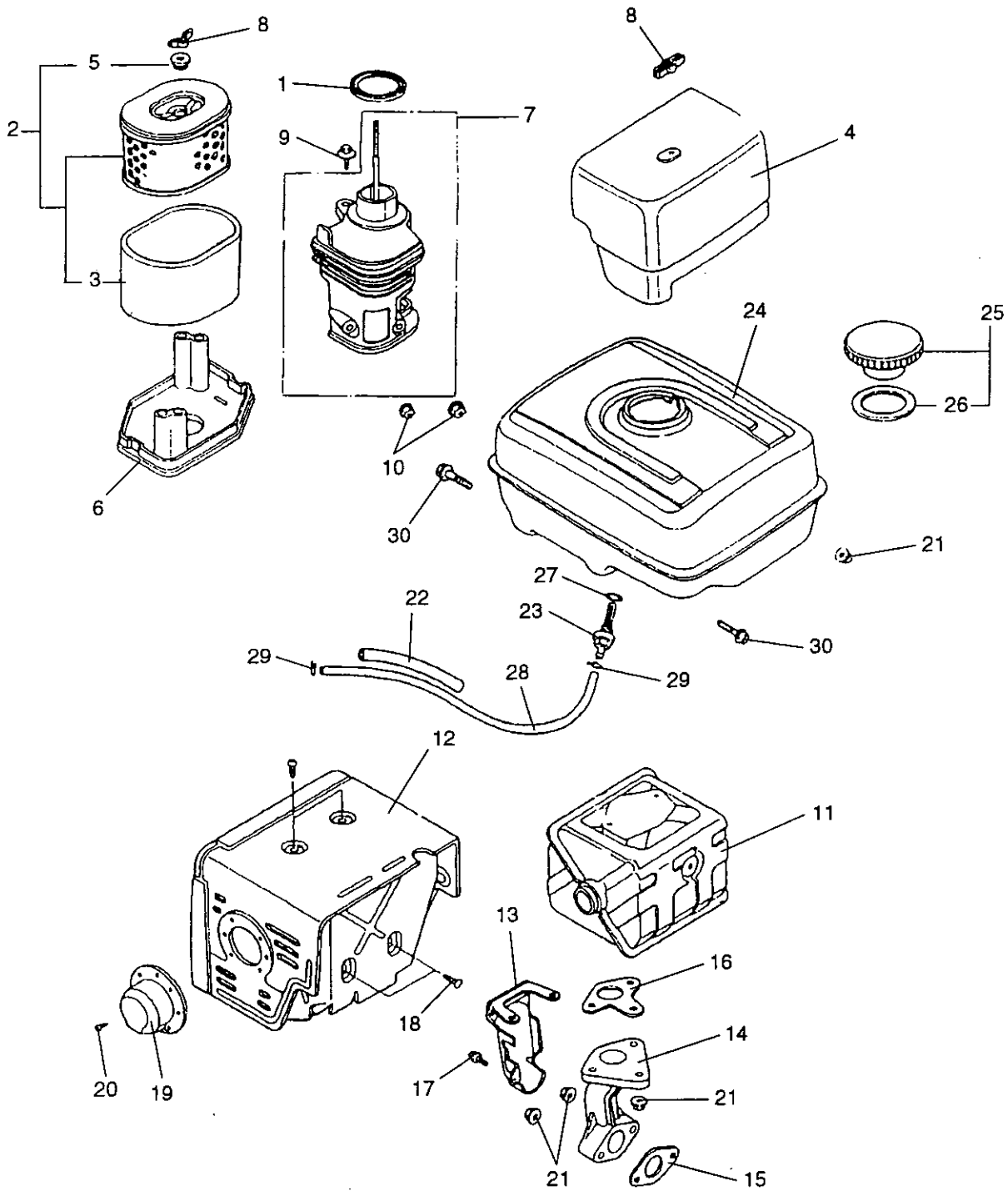
Ref.	Part No.	Qty.	Part
1	0107029	1	Crankshaft cpl.
2	0076770	1	Fitting key
3	0084646	1	Bearing
4	0084647	1	Set of piston rings
5	0084648	1	Piston
6	0074665	1	Piston pin
7	0074663	1	Connecting rod cpl.
	0107030	1	Connecting rod cpl. -0,25mm
8	0081994	2	Wire circlip
9	0075807	2	Connecting rod screw
10	0081626	1	Camshaft cpl.
11	0074677	2	Push rod
12	0074675	2	Rocker arm
13	0074678	2	Valve tappet
14	0070985	2	Adjusting nut
15	0070992	1	Spring
16	0074681	1	Inlet valve
17	0074682	1	Outlet valve
18	0074683	2	Valve spring
19	0074684	1	Spring plate
20	0074685	1	Spring plate
21	0074666	1	Valve cap
22	0074676	1	Guide plate
23	0072778	2	Stud bolt
24	0070984	2	Hexagon nut
25	0074659	1	Spring plate



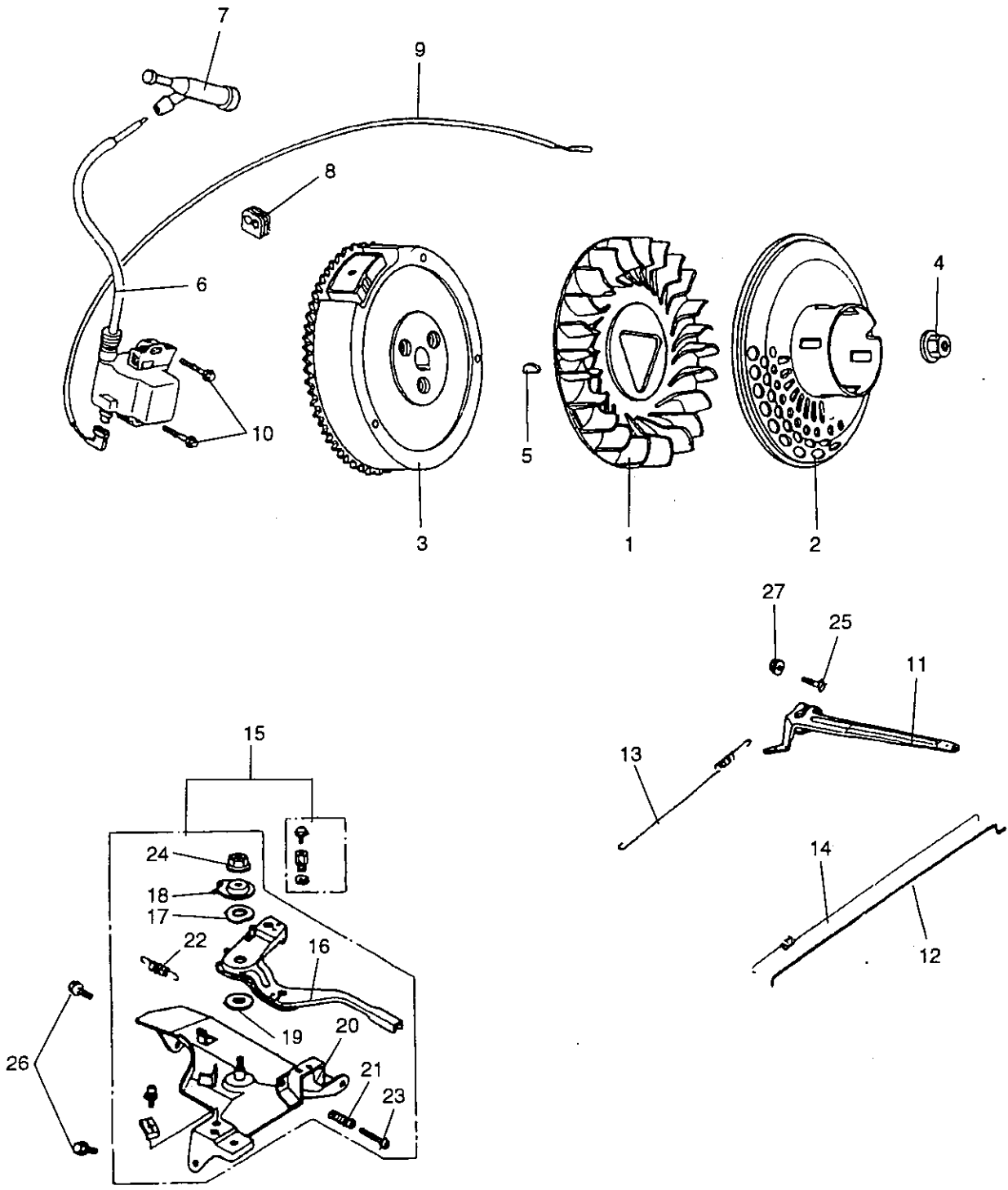
Ref.	Part No.	Qty.	Part
1	0081642	1	Rewind starter cpl.
2	0081643	1	Starter housing
3	0081644	1	Rope disk
4	0081645	2	Ratchet
5	0081646	1	Spring
6	0081647	1	Return spring
7	0081648	2	Spring
8	0081649	1	Covering
9	0081650	1	Spring guide
10	0081653	1	Starter handle
11	0081654	1	Starter rope
12	0081655	1	Holder
13	0081750	3	Screw
14	0081658	1	Screw
15	0074689	1	Clamp
16	0081621	1	Fan housing
17	0081641	1	Cowling plate
18	0086764	1	Short circuit cable
19	0106946	1	Stop switch
20	0053990	6	Screw
21	0076375	1	Cable clamp
22	0074759	1	Float valve cpl.



Ref.	Part No.	Qty.	Part
23	0074760	1	Float cpl.
24	0106974	1	Float housing
25	0074763	1	Adjusting screw cpl.
26	0071021	1	Screw cpl.
27	0074756	1	Choke set
28	0107031	1	Carburetor cpl.
29	0071018	1	Adjusting screw-idle
30	0084652	1	Main jet
31	0074765	1	Insulator
32	0074761	1	Seal
33	0081630	1	Seal
34	0071013	1	Hand lever
35	0107032	1	Valve-fuel shutoff
36	0107033	1	Plate
37	0073270	1	Spring washer
38	0073272	1	Seal
39	0106954	2	Screw
40	0081629	1	Seal
41	0107034	1	Main jet Gr. 82
	0107035	1	Main jet Gr. 85
	0084653	1	Main jet Gr. 88
42	0084654	1	Idling jet
43	0071023	1	Fuel filter
44	0071014	1	Pin
	0084650	1	Carburetor gasket set



Ref.	Part No.	Qty.	Part
1	0074744	1	Gasket
2	0074737	1	Air filter insert cpl.
3	0076373	1	Foam rubber insert
4	0081670	1	Filter cover
5	0072343	1	Rubber funnel
6	0068965	1	Filter holder
7	0076371	1	Filter bracket
8	0071621	2	Wing nut
9	0071036	1	Screw
10	0071056	2	Nut
11	0081636	1	Exhaust
12	0081637	1	Contact safety device
13	0115592	1	Exhaust protection
14	0081639	1	Exhaust tube
15	0110252	1	Seal
16	0074742	1	Seal
17	0053990	1	Screw
18	0071070	4	Tapping screw
19	0074745	1	Separator
20	0071073	3	Screw
21	0074738	5	Nut
22	0081764	1	Hose piece
23	0071083	1	Fuel filter
24	0076369	1	Fuel tank
25	0081662	1	Tank cover cpl.
26	0106947	1	Seal
27	0071082	1	O-ring
28	0074750	1	Fuel line
29	0054136	2	Hose clip
30	0074751	2	Screw



Ref.	Part No.	Qty.	Part
1	0074673	1	Fan wheel
2	0081651	1	Carrier pot
3	0074680	1	Magneto flywheel
4	0106949	1	Nut
5	0074672	1	Woodruff key
6	0081672	1	Ignition system module
7	0070974	1	Spark plug input
8	0081611	1	Grommet
9	0081663	1	Short circuit cable
10	0054000	2	Screw
11	0074735	1	Governor lever
12	0074733	1	Governor rod
13	0074731	1	Governor spring
14	0074732	1	Return spring
15	0074709	1	Speed lever cpl.
16	0074729	1	Control lever
17	0071058	1	Spring washer
18	0081633	1	Fixing disc
19	0071064	1	Washer
20	0081634	1	Console
21	0054088	1	Spring
22	0074730	1	Spring
23	0074728	1	Screw
24	0072782	1	Nut
25	0068966	1	Screw
26	0053900	3	Screw
27	0071056	1	Nut
