KARADENİZ MAKİNA®
YEDEK PARÇA SAN.TİC.LTD.ŞTİ
İnşaat Makinaları & Jeneratör

POWER TROWEL

OPERATION MANUEL

KM-P90

For the service and maintenance of your machine, please use your authorized service or user manual. Before starting your machine, take adequate safety precautions in the working area.

1. INTRODUCTION

Application

This walk-behind trowel is design for the floating and finishing of concrete slabs.

Noise emission:

A-weight sound pressure level at work station: 5678987(dB)
The sound power level: 3333333333
Note: the measurement is according to EN12649:2008

Vibration emission:

Measured vibration emission value a: 888888
Uncertainty K: 789
Note: the measurement is according to EN ISO 20643:2005

Warnings for incorrect application and abuse

Take a walk around the trowel. Take notice of ali of major components like the engine, blades, quick adjust control, air cleaner, centrifugal stop switch ete. Check that there is always oil in the engine.
Read ali the safety instructions carefully. Safety instructions will be found throughout this manual and on the trowel. Keep all safety information in good, readable condition. Operators should be well trained on the operation and maintenance of the trowel.

Structure

The upper part is made up of Power source, Handle, Belt Cover and Guard hook which are fixed by Engine base.
The Engine base is fixed on Gearbox.
The lower part is made up of Gearbox, Spider and Blade.

Power Transfer

Air-cooled Single cylinder Petrol Engine is amounted as power source and Centrifugal Clutch is fixed on engine output shaft.
The power source is transmitted from the centrifugal clutch on engine output shaft to the Gearbox input shaft via V-belt or pulley drive system. The pulley engages using a centrifugal clutch.
The gearbox is located beneath the engine and transfers power to the rotor or spider assembly.

The ***gearbox*** controls the rotational speed of the trowel and is equipped with two shafts.

The vertical output shaft of the gearbox connects to a cast hub called the ***spider .*** The spider has 4 arms that extend outward that are used for attachment of blades or other accessories. Remember as the gearbox output shaft rotates so does the spider assembly.

The blades of the trowel finish the concrete as they are rotated around the surface. Blades are classified as ***combination*** (8 inches wide) and ***finish*** (6 inches wide). This trowel comes equipped with four blades per rotor equally spaced in a radial pattern and attached to vertical rotating shaft by means of a ***spider assembly.***

2. SPECIFICATION

Model	P60	P70	P90	P120
Dımensıons				
Overall Length mm	1200	1450	1610	2100
Overel Width mm	600	710	1010	1200
Overall Height mm	600	510	810	1000
Net Weight kg	55	65	80	110
Operation Weight kg	60	70	85	115
Performance				
Number of Blades	4	4	4	4
Blade Tip size m/s	6,5	6,5	6,5	6,5
Ring Width	610	710	910	1200
Power Source				
Manufacturer	HONDA	HONDA	HONDA	HONDA
Model	GX160	GX160	GX200	GX270
Maz .Output	5,5 PS	5,5 PS	6,5 PS	9 PS
Fuel Tank Capacity L	3,6	3,6	3,6	3,6
Starting System	Recoil Starting	Recoil Starting	Recoil Starting	Recoil Starting
Set R.P.M rpm	3600	3600	3600	3600

3. FOR SAFETY OPERATION

Foreword:

it is important ta read this manual carefully sa that you will fully understand the operational characteristics and performance of the plate compactor. Proper maintenance procedures will insure long life and top performance of the unit.

Safetv:

This section outlines basic safety procedures that apply ta the operation, maintenance and adjustment of the CIMAR power trowel. This unit is designed as a powerful, productive machine that should be operated with respect and caution.

Misuse ar carelessness can result in serious injury ar property damage, ar both. Safety precautions must be observed at all times.

- This safety alert symbol identifies important safety messages throughout this manual and on the machine.
  When you see the symbol, carefully read the message that fallows. Yours safety is at stake!

Operator Qualifications:

Befare operating this equipment, an individual should read this manual. Whenever possible, he should be shown how ta operate the unit by an experienced operator. lnexperience is hazardous in operating any machine ar attachment. Trial and error is not the way ta become familiar with a piece of equipment. This is expensive, cuts equipment life and can create machine downtime. lnexperience can cause injury ar death. The machine should not be left unattended when operating.

General Safety:

WARMING

+ Refrain from working in such cases as below:
+ When not feeling well due ta fatigue ar disease.
+ When taking medicine.
+ Under the influence of alcohol.

CAUTION

+ Read the instruction manual carefully and operate the machine properly ta work safely.
+ With respect ta engine, read the separate engine manual.
+ Understand the mechanism of the machine sufficiently.
+ Wear protectors (hard hat, safety shoes, ear plugs, ete.) and proper clothing far working safety.
+ Always check the machine far loosened threads ar any other abnormality befare starting your work.
+ Whenever affixed name plate (such as operating directions and warnings) become difficult ta read, replace it with new one.

+ Machine is hazardous far children to tamper with. Pay enough caution far how and where to store it. Particularly in case of the machine equipped with starting motor, remove starting key to store at designated location.
+ Be sure to shutdown engine far servicing. If equipped with starter motor, disconnect battery wiring.
+ Manufacturer does not assume responsibility far any accident arising from modification.

Refueling Safety:

WARMING

+ Befare refueling, be sure to shutdown engine and wait far it to cool.
+ Select location where there is no inflammable matter and be careful not to spill fuel. When spilled however, wipe it off thoroughly.
+ Never use fire in the vicinity while refueling. (Definitely no smoking!)
+ Topping up to filler port is dangerous as it tends to spill fuel.

Starting Safety:

CAUTION

+ Befare starting and operating your machine, check far safety of personnel or obstacle around.
  - Always pay attention to ground so you can work in stable position.
+ Whenever machine fails to work properly or any abnormality is noticed during work, suspend your work immediately.
+ Do not touch engine body or muffler as they are hat in operation.
+ Be sure to stop engine whenever you leave the machine. Alsa, do not farget to stop the engine when you move the machine as well.
+ Poisonous fumes. Start and operate only in well ventilated area. Breathing exhaust gases can result in sickness or death.

Servicing Safety:

CAUTION

+ Befare lifting, make sure that machine parts (hook and vibration insulator in particular) are not damaged and screws are not loosened or lost.
+ Stop the engine before lifting your machine. Contact with moving parts can cause serious injury.
+ Allow machine and engine to cool before performing service or maintenance. Contact with hat components can cause serious burns.
+ Use wire rope which has sufficient strength.
+ Use one point suspension hook and lift strait upward without giving any shock.
+ Be sure not to allow any person or animal to enter underneath the lifted machine.
+ Far safety, try not to lift to unnecessary height.

Engine:

See engine operations manual

SHUTDOWN:

EMERGENCYSHUTDOWN

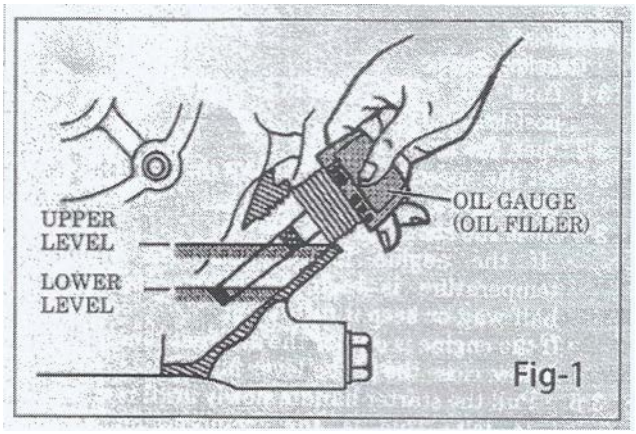
Move throttle lever to "OFF" position and alsa turn stop switch to "OFF".

NORMAL SHUTDOWN

Move throttle lever quickly form "ON" to "OFF" and run engine far 3 to 5 minutes at low speed. After engine cools, turn stop switch to "OFF" position. Close fuel shutoff valve.

4. PRIOR TO OPERATION

1. Make sure that ali dirt, mud, ete., are thoroughly removed from the unit prior ta operation. Special effort should be given ta the bottom face of the gearbox and those areas adjacent ta the cooling air inlet of engine, carburetor, and air cleaner.
2. Check ali bolts and screws far tightness and make sure ali bolts and screws are securely tightened. Loose bolts and screws may cause damage ta the unit.
3. Check the V-belt far tightness. The normal slack should be approximately 10-15mm (1/2") when the belts are farcibly depressed in the middle position between the two sheaves. lf there is excess belt play, there could be a decrease in the impact farce ar erratic vibration, causing machine damage.
4. Check the engine oil level and if the engine oil level is low, it should be refilled. Use the proper motor oil as suggested in the table below. (Fig-1)



IMPORTANT:

Use the Motor oil SAE

When changing the oil, the old oil can be drained by tipping the unit.The oil will drain easily while it is hat

5. A regular grade gasoline should be used in the engine. When filling the fuel tank, make sure the fuel filter is used.

Season	Temperature	Oil ta be used
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

5. STARTING-UP

Gasoline Engine

1. Align fuel cock !ever with FLOW position (Fig.3)
2. When cold or somehow starting is difficult, turn choke lever to START position. This is not necessary when engine is warm. (Fig.4)
3. Turn governor lever slightly to high speed side. (Fig.5)
4. Turn engine start switch to ON position. (Fig.6)
5. Hold recoil starter grip and pull it slightly until you feel light resistance. Pull it strongly there. Be careful not to pull it too hard however because it may come off. Do not release the grip from the pulled position but return it to starter case before releasing.(Fig.6)
6. If engine has started, while listening to explosion sound, slowly return the choke !ever to OPERATION position. (Fig.7)

   After started, be sure torun the engine at low speed fora few minutes.

   it must be done in cold climate in particular.

   Check for abnormal noise of gas leak in the meantime.

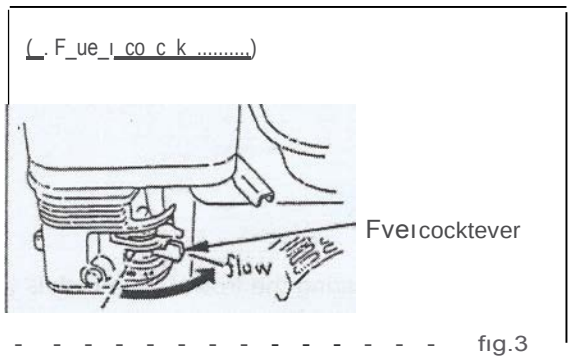
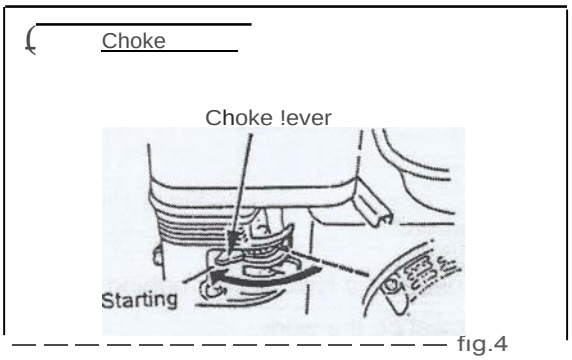


fıg.3



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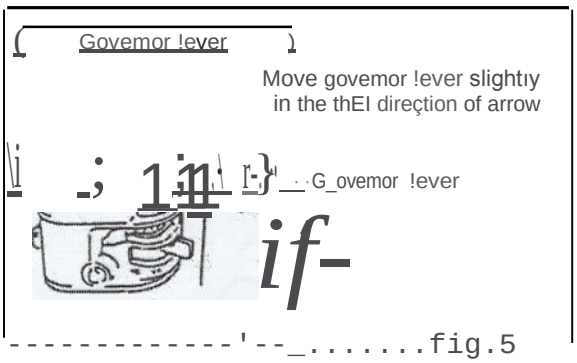


fig.5

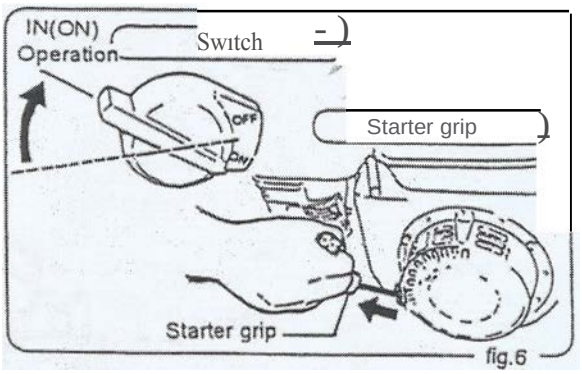
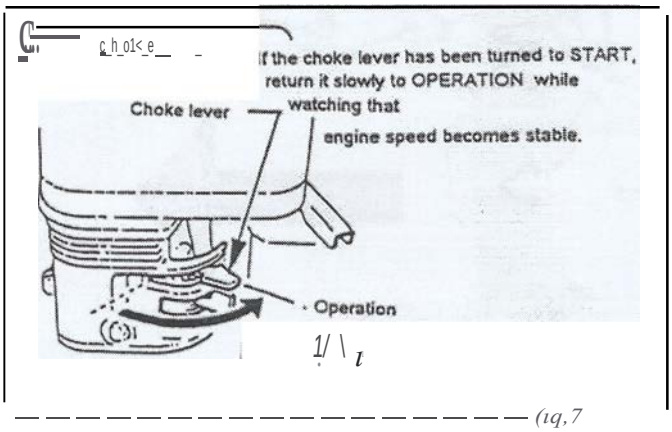


fig.6



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Maneuvering the Trowel

1. With a secure foothold and a firm grasp on the handles slowly increase the engine speed until the desired blade speed is obtained.
2. Ta maneuver the trowel, gently lift up on ar press down on the main trowel handle. Tamover the machine ta the operator's left, **lift up** on the handle, ta move machine ta the right, **push down** on the handle.
3. The best method far finishing concrete is ta slowly walk backwards with the trowel, guiding the trowel from side ta side. This will cover all footprints on wet concrete.
4. Remember that if you let go of the trowel, just step away and let the trowel come ta a complete stop before trying ta recover the trowel.
5. Continue ta practice maneuvering the trowel. Try ta practice as if you were finishing a slav of concrete. Practice edging and covering a large area.

WARNING

NEVER place your ***feet*** **ar** ***hands*** inside the guard rings while starting ar operating this equipment.

ALWAYS keep clear of ***rotating*** **ar** ***moving*** parts while operating this equipment.

7. STOPPING

For stopping the engine with your work discontinued, return the throttle lever to low position to be in idle state for 2-3 minutes. After cooling down engine, stop the engine completely.

Gasoline Engine

a. Turn the engine switch to off (O) position to stop.
b. After stopping the engine, align the fuel cock lever to off (O) position.

&. CAUTION

If the engine is stopped while it is stili hot, it may hasten wear such as burn out of oil slick in cylinder.

8. TRANSPORTATION AND INSTALLATION

Transportation Safety:

CAUTION

+ Shutdown the engine during transport.
+ Tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
+ Drain fuel before transporting over long distance or on poor road.
+ Lock the machine securely so the machine does not move or topple over.
+ Operators for movement and installation shall hold a qualification certificate.
+ Please move the press with proper, safe and reliable tools.

Installation Safety:

CAUTION

+ The field installation after unpacking shall follow requirements in this manual.
+ Installation conditions:
  Ambient temperature: 5'C 4Q'C; no rapid changes causing dew.
  Ambient humidity: 45% 65% (no dew)

9. TROUBLE SHOOTING

1. Engine

(1) Starting deficient

SYMPTOM	POSSIBLEM PROMBLEM	SOLUTION
Fuel is available but spark plug will not ignite. (Power available at high tension cable).	Ignition plug being bridge?	Check ignition system.
	Carbon deposit at ignition?	Clean ar replace ignition.
	Short circuit due ta defective insulators?	Replace insulators.
	Improper spark gap?	Set spark plug gap ta the correct gap.
Fuel is available but spark plug will not ignite, (Power NOT available at high tension cable.)	Short circuit at stop switch?	Check stop switch circuit. Replace stop switch if defective.
	Ignition coil defective?	Replace ignition coil.
Fuel is available and spark plug ignites (compression normal).	Muffler clogged with carbon deposits?	Clean ar replace muffler.
	Fuel in use inadequate (water, dust)?	Flush fuel system and replace with fresh fuel.
	Air Cleaner clogged?	Clean ar replace air cleaner.
Fuel is available and spark plug ignites (compression low).	Defective cylinder head gasket?	Tighten cylinder head bolts ar replace head gasket.
	Cylinder worn?	Replace cylinder.
	Spark plug loose?	Tighten spark plug.

(2) Operation deficient

SYMPTOM	POSSIBLEM PROMBLEM	SOLUTION
Not enough power available (compression normal, na misfiring).	Air cleaner clogged?	
	Air in fuel line?	Bleed (remove air) from fuel line.
	Fuel level in carburetor float chamber improper?	Adjust carburetor float
	Carbon deposits in cylinder?	Clean ar replace cylinder
Not enough power available (compression normal, misfiring).	Ignition coil defective?	Flush fuel system and replace with fresh fuel.
	Ignition plug often shorts?	Replace ignition wires, clean ignition.
	Fuel in use inadequate (water, dust)?	Flush fuel system and replace with fresh fuel.
Engine overheats.	Excessive carbon deposition in combustion chamber?	Clean ar replace crankcase.
	Exhaust ar muffler clogged with carbon.	Clean ar replace muffler.
	Spark plug heat value incorrect?	Replace spark plug with correct type spark plug.

(3) Operation not satisfactory

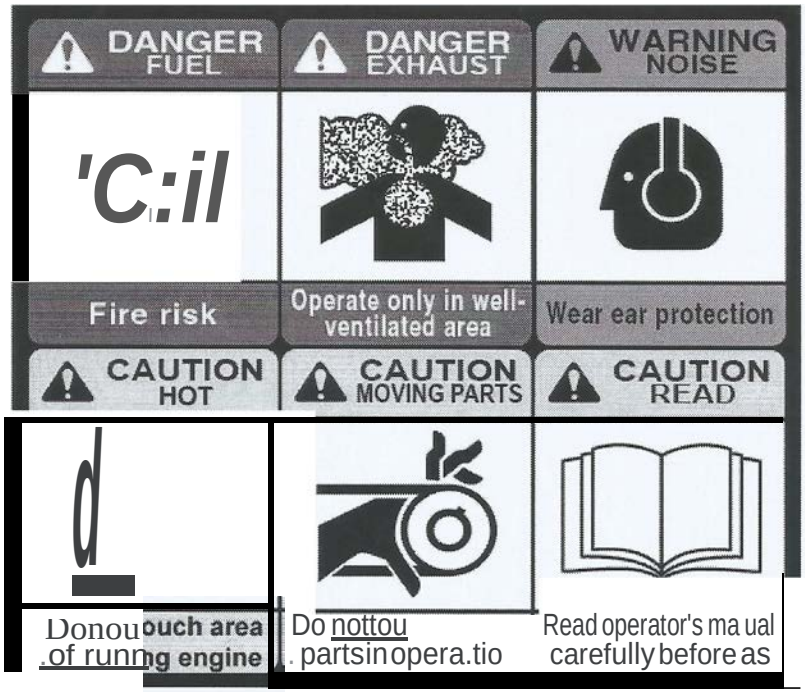
SYMPTOM	POSSIBLEM PROMBLEM	SOLUTION
Rotational speed fluctuates.	Governor adjustment improper?	Adjust governor to correct lever.
	governor spring defective?	Clean or replace ignition.
	Fuel flow erratic?	Check fuel line.
	Air taken in through suction line?	Check suction line.
Recoil starter not working properly.	Dust in rotating part?	Clean recoil starter assembly.
	Spiral spring failure?	Replace spiral spring

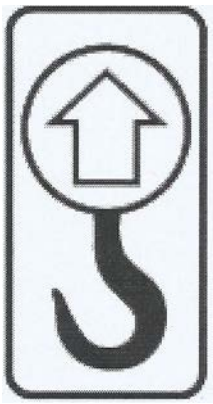
2. Machine

SYMPTOM	POSSIBLEM PROMBLEM	SOLUTION
Engine running rough or not at all.	Safety stop switch malfunction?	Make sure that the Safety Stop Switch is **ON** or replace switch if necessary.
	Fuel?	Look at the fuel system. Make sure there is fuel being supplied to the engine. Check to ensure that the fuel filter is not clogged.
	Ignition?	Check to ensure that the ignition switch has power and is functioning correctly.
Safety stop switch not functioning.	Other problems?	Consult engine manufacturer's manual.
	Loose wire connections?	Check wiring. Replace as necessary.
	Bad contacts?	Replace switch.
If trowel "bounces, rolls concrete, or makes uneven swirls in concrete".	Blades?	Make certain blades are in good condition, not excessively worn, Finish blades should measure no less than 2" (50mm) from the blade bar to the trailing edge, combo blades should measure no less than 3.5 (89mm) . Trailing edge of blade should be straight and parallel to the blade bar.
	Spider?	Check that ali blades are set at the same pitch angle as measured at the spider. A field adjustment tool is available far height adjustment of the trowel arms.
	Bent trowel arms?	Check the spider assembly far bent trowel arms. lf one of the arms is even slightly bent, replace it immediately.
	Trowel arm bushings?	Check the trowel arm bushings far tightness. This can be done by moving the trowel arms up and down. If there is more than 1/8" (3.2mm) of travel at the tip of the arm, the bushings should be replaced. Ali bushings should be replaced at the same time.
	Thrust collar?	check the flatness of th thrust collar by rotating it one the spider. lf it varies by more than 0.02" (0.5mm) replace the thrust collar.
	Thrust collar bushing?	Check the thrust collar by rocking it on the spider. lf it can tilt more than 3/32" (2.4mm) [as measured at the thrust collar O.O.] replace the bushing in the thrust collar.
	Thrust bearing worn?	Check the thrust bearing to see that it is spinning free. Note: Thrust cap, replace if necessary.

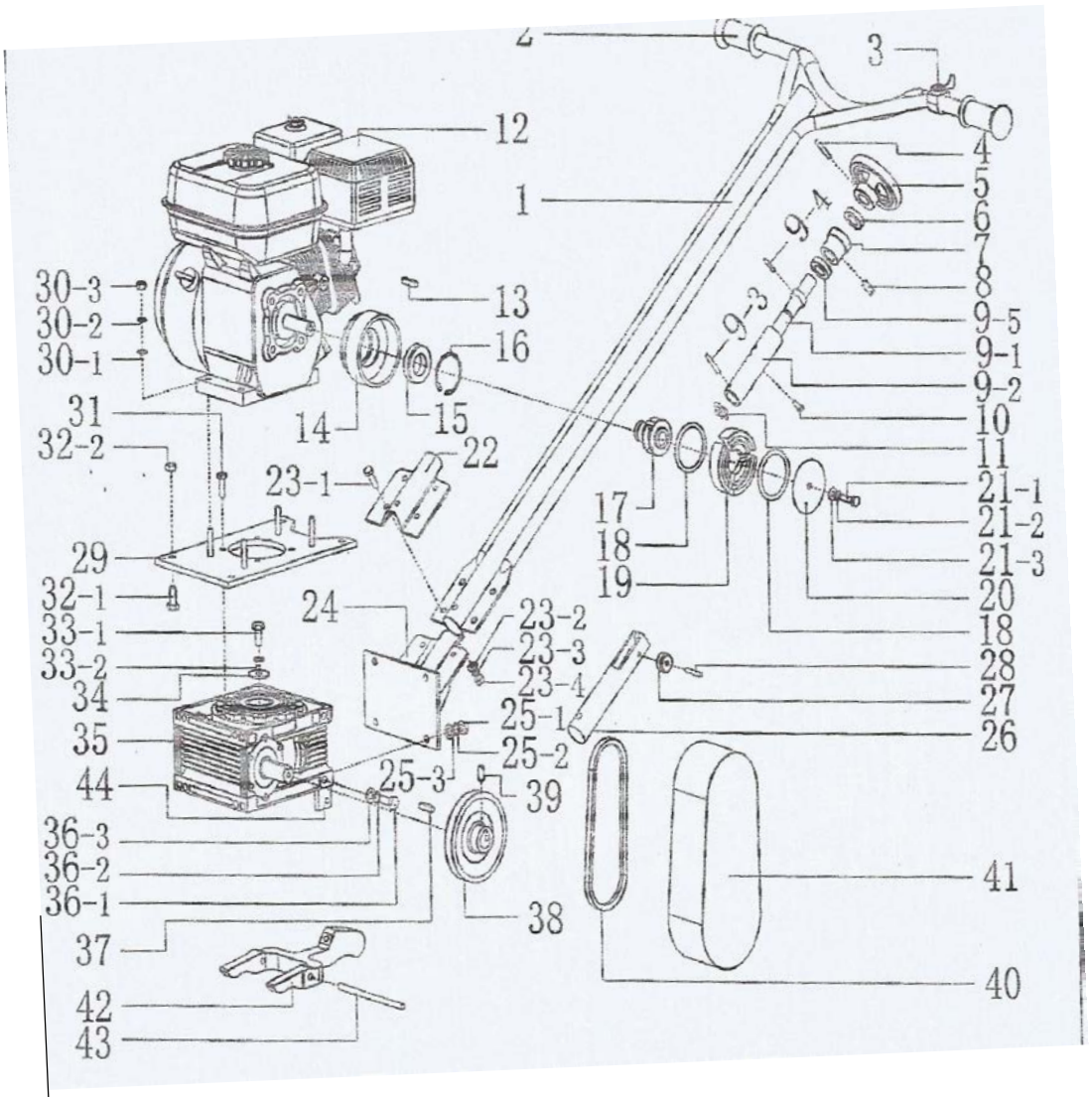
Machine has a perceptible rolling motion while running.	Main shaft?	The main output shaft of the gearbox assembly should be checked far straightness. The main shaft must run straight and cannot be more than 0.003" (0.08mm) aut of round at the spider attachment point.
	Yoke?	Check to make sure that both fingers of the yoke press evenly on the wear cap. Replace yoke as necessary.
	Blade Pitch?	Check to ensure that each blade is adjusted ot have the same pitch as all other blades. Adjust per maintenance section in manual.
Sluggish response to engine speed change.	Worn V-belts?	Replace V-belt.
	Dirty centrifugal clutch?	Disassemble and clean clutch.
	Defective or worn aut centrifugal clutch?	Replace entire clutch.
	Worn bearings in gearbox?	Rotate input shaft by hand. If shaft rotates with difficulty, check the input and output shaft bearing. Replace as necessary .
	Worn or broken gears in gearbox?	Verify that the gearbox shaft rotated when the input shaft is rotated. Replace both the worm and worm gear as a set.

10. SAFETY LABELS





PAST LIST(A)-ENGINE KIT & **HANDLE KIT**



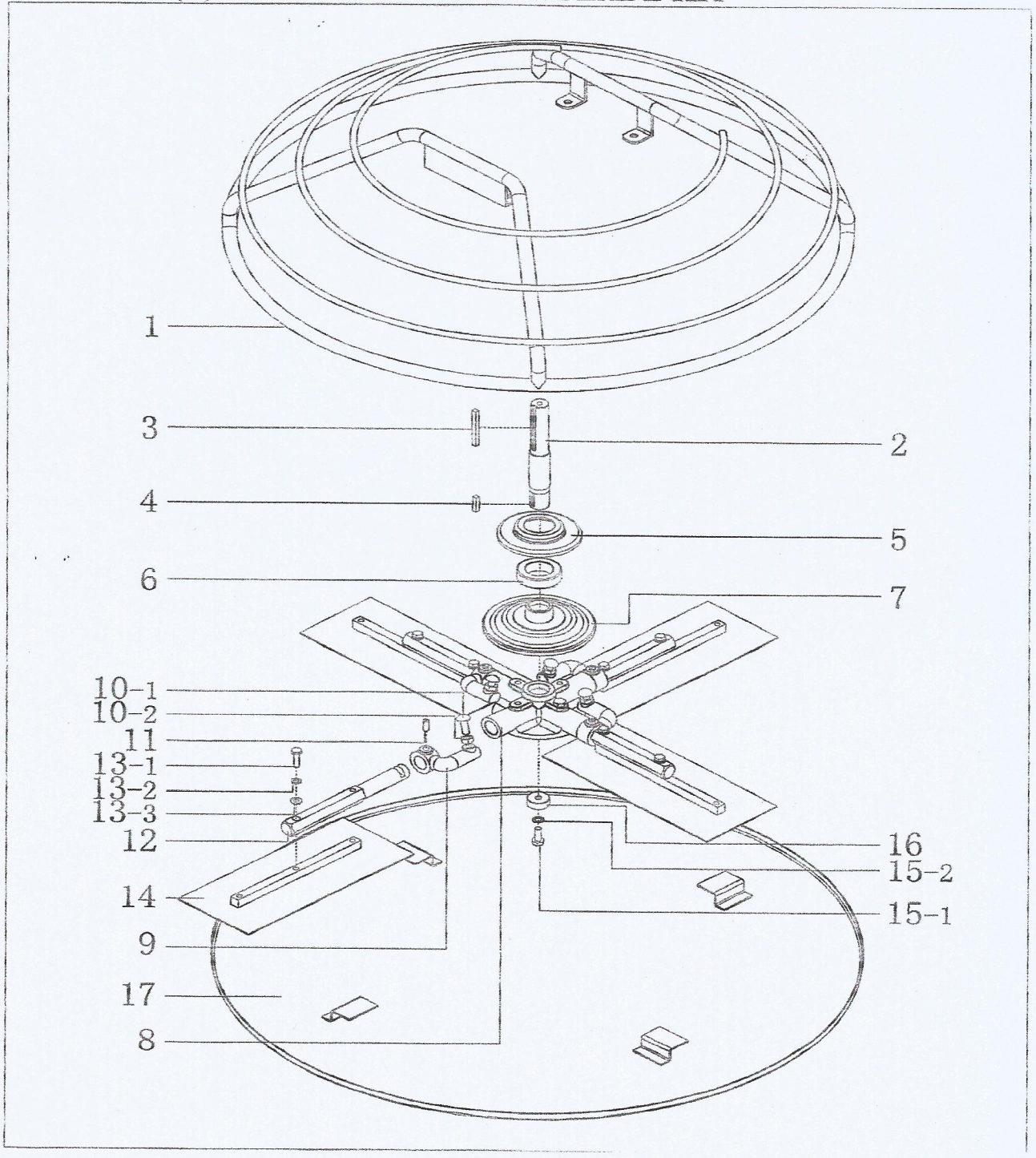
PART LIST -ENGiNE KIT& HANDLE KIT

S/NO	PARTNO'	DESCRIPTION	QTY
1	KM -P90 -01A	HANDLE	1
2	KM - P90 -02A	HANDLE GRIB	2
3	KM -P90 -0 3A	THROTTLE LEVER	1
4	KM -P90-04A	COTTER PiN M6	1
5	KM -P90 -0SA	ADJUSTABLE HAND WHEEL	1
6	KM -P90 -0 6A	BEARING	1
7	KM-P90-07A	BUSH	1
8	KM - P90-08A	BOLT6X10T	1
9-1	KM - P90-09-1A	ADJUSTABLE AXIS	1
9-2	KM-P90-09-2A	ADJUSTABLE NUT	1
9-3	KM -P90-09 -3A	COTTER PiN M5	1
9-4	KM -P90 -09 -4A	COTTER PiN MS	1
9-5	KM -P90-09 -5A	ADJUSTABLE SHEATH	1
10	KM - P90-010A	BOLT6X10T	1
11	KM - P90 -011A	LOCK WEDGE	1
12	KM -P90 -0 12A	ENGiNE	1
13	KM -P90 -013A	KEY	1
14	KM-P90-014A	CLUTCH DRUM	1
15	KM -P90 -015A	BEARING	1
16	KM -P90 -016A	CIRCLIP	1
17	KM-P90-017 A	CLUTCH BOSS	1
18	KM-P90-018A	CLUTCH SPRING	2
19	KM -P90 -019A	CLUTCH SHOE	1
20	KM-P90-020A	CLUTCH GUIDE	1
21-1	KM-P90-021-1A	BOLT 8X20T	1
21-2	KM - P90-021-2A	SWM8	1
21-3	KM -P90 -021 -3A	WACHER M8	1
22	KM -P90 -0 22A	TOP ARMOR PLATE	1
23-1	KM -P90 -023-1A	BOLT 10X25 T	4
23-2	KM-P90-023-2A	WASHER MlO	4
23-3	KM-P90-023-3A	SWM10	4
23-4	KM - P90-023-4A	NUTM10	4

?ART LIST-ENGINE KIT&HANDLE KIT

S/NO	PARTNO	DESCRIPTION	QTY
24	KM -P90 -24A	UNDERSIDE ARMOR PLATE	1
25-1	KM -P90- 25-1A	NUTM12	4
25-2	KM -P90-2 5-2A	SWM12	4
25-3	KM -P90 -25-3A	WASHER M12	4
26	KM-P90-26A	WHEEL BRACKET	1
27	KM - P90- 27A	AERO WHEEL	1
28	KM -P90 -28A	SPINDLE	1
29	KM -P90 -29A	BLADE BASE , ENGiNE	1
30-1	KM -P90 -30-1A	WASHER M8	4
30-4	KM -P90 -30-2A	SWM8	4
30-3	KM -P90 -30-3A	NUTM8	4
31	KM -P90 -31A	BOLT8X17 T	4
32-1	KM -P90 -32-1A	NUT Ml0	4
33-1	KM -P90-33-1A	BOLT 10X20T	4
33-2	KM-P90-33-2A	SWMI0	1
34	KM -P90 -34A	CAP FOR SPEED REDUCER	1
35	KM-P90-35A	REDUCER GEAR BOX	1
36-1	KM -P90 -36-1A	BOLT 10X25 T	1
36-2	KM -P90 -36-2A	SWMIO	2
36-3	KM -P90 -36 -3A	WASHER MlO	2
37	KM-P90-37A	KEY	2
38	KM -P90 -38A	PULLEY	1
39	KM-P90-39A	SLIDE BOLT 8XlOT	1
40	KM-P90-40A	V-BELT	1
41	KM -P90 -41A	BELT COVER	1
42	KM -P90 -42A	FORK LEVER	1
43	KM -P90-43A	FIXATION PiN	1
44	KM -P90 -44A	SUSPEND AURIS	2

PAST LIST(B)-GUARD RING & ARM BLADE KIT



POWER TROWEL KM-P90

PART LIST -GUARD RiNG& ARM BLADE KIT

S/NO	PARTNO	DESCRIPTION	QTY
1	KM-P90-01B	GUARD RiNG	1
2	KM -P90-02B	SPEED REDUCER	1
3	KM-P90-03B	KEY 7X8X90	1
4	KM-P90-04B	KEY 7X8X90	1
5	KM-P90-05B	PRESURE CAP FOR THRUST BEARING	1
6	KM-P90-06B	THRUST BEARING	1
7	KM-P90-07B	PRESSURE CAP	1
8	KM-P90-08B	BLADE BASE	1
9	KM-P90-09B	ELBOW BLADE	4
10-1	KM-90-10-1B	BOLT 10X35 T	4
10-2	KM-90-10-2B	NUT MI0	4
11	KM-P90-11B	SLIDE BOLT 10X25 T	4
12	KM-P90-12B	ARM BLADE	4
13-1	KM-P90-13-1B	BOLT8X45 T	8
13-2	KM-P90-13-2B	SWM8	8
13-3	KM-P90-13-3B	WASHER M8	8
14	KM-P90-14B	TROWEL BLADE	4
15-1	KM-P90-15-1B	BOLT 10X40T	1
15-2	KM-P90-15-2 B	SWMI0	1
16	KM-P90-16B	BOTTOM BLADE BASE CAP	1
17	KM-P90-17B	BLADE BASE COVER	1