

**OPERATOR'S  
SPARE PARTS &  
SERVICE MANUAL**



®

**Power trowel  
Model FPT90**

**FAIRPORT**

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# FPT90 POWER TROWEL MANUAL

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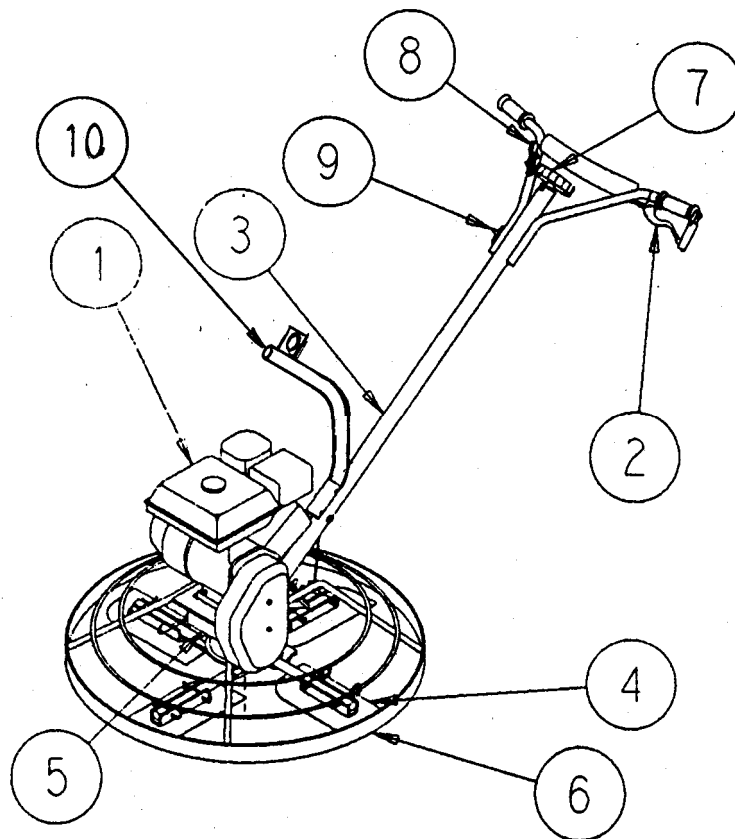
## 1. INTRODUCTION

The FPT90 is driven by a four-stroke petrol engine (1) and is fitted with a dead-man's handle (2) which disengages the drive to the blades and operates a brake as soon as it is released or if the operator loses control of the operating handle (3).

The engine power is transmitted to the hub supporting the blades (4) through a Vee belt clutch and a reduction gearbox, which give an overall reduction ratio of 30:1. The blades are protected by a frame and guard ring (6).

The blade control knob (7) provides an accurate and easy adjustment of the blade angle. The speed of rotation of the blades is adjusted by the throttle lever (8). An engine ON-OFF switch (9) is provided to enable the operator to stop the engine without releasing the handle (3).

A lifting eye for craning is also provided (10).



## 2. SAFETY

1. Do not smoke whilst refuelling
2. Do not refuel with engine running
3. Wipe up spilt fuel
4. Do not start engine in area where fuel has been spilt
5. Do not run engine in areas without adequate ventilation
6. Do not run engine in hazardous or explosive atmosphere
7. Do not run engine unless all guards are in position and secure

8. Wear protective footwear
9. Stop engine and turn engine switch to "off" before changing blades or carrying out any form of maintenance
10. Keep animals and unauthorised persons well clear of machine
11. Comply with site safety regulations
12. Turn fuel tap off when not in use
13. Do not release handle unless drive is disengaged.
14. Check operation of handle mounted stop switch at least weekly
15. Do not hoist with floating disc attached.
16. **MANUAL HANDLING.** This equipment weighs approximately 72kgs without the floating disc. It should be lifted and handled using good practice as laid down in the Manual Handling Operations Regulations. Grasping the bottom outer ring of the frame may lift it.

## 2.2 SAFETY PICTOGRAMS USED ON FAIRPORT EQUIPMENT



**Wear ear protectors**



**Wear eye protection**



**Wear gloves**



**Wear protective footwear**



**Wear a mask**



**Read the operators manual for this equipment**



**This surface may be hot**

### 3. TECHNICAL DATA

#### Engine

Make and Model	Honda GX160
Net BHP	4.8
At Operating Speed	3600 RPM max

#### Dimensions

Length, Inc handle	1800mm
Width	930mm
O/A Height	1010mm
Weight (without disc)	72kg

#### Noise Levels - dB (A) according to ISO6081

Sound Pressure at workstation, L (P) a	91.6
Sound power level, L (W) a	98.7

#### Vibration Levels - m/sec<sup>2</sup> according to ISO8662-1

Hand/Arm Vibration	5.8
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#### Performance

Blade Speed at Engine Speed of 3600 RPM	120 rpm
Overall Reduction ratio	30:1

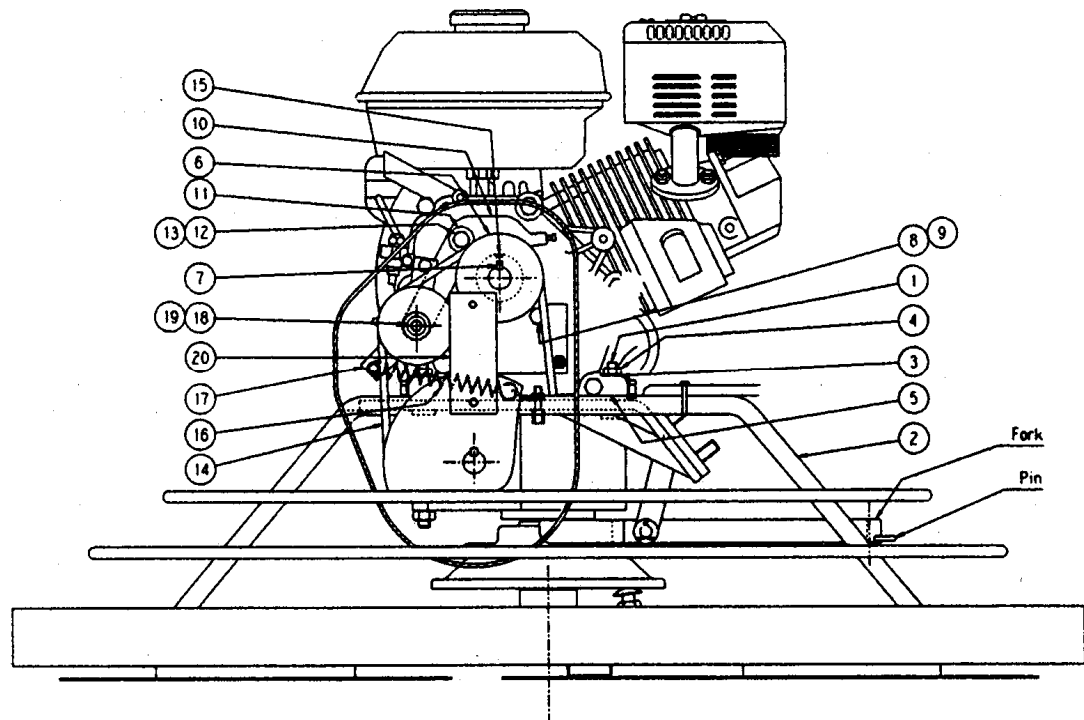
### 4. ASSEMBLY

To minimise packing volume the Power Trowel may be delivered partially dismantled. Assemble as follows: -

#### 4.1 INSTALLATION OF ENGINE (See also diagram in section 9)

- 1) Apply Loctite 243 or equivalent and screw the four studs (1) into the base (2) using a 5mm screwdriver. Put the engine in place and secure with washers (3) and nuts (4).
- 2) Position the drive pulley (6) onto the engine shaft, do not forget the key (7). Do not fit locking screw at this stage.
- 3) Fit the cover brackets to the engine and secure it with screws (8) and washers (9).
- 4) Mount the complete lever (10) onto the engine fitting one washer (11) between the nut and the engine. Fit the screw (13) and secure it with a nut (12). Ensure the lever is free to rotate.
- 5) Fit Vee belt (14) and tighten locking screws (15) ensuring the three pulleys are in line.
- 6) Hook the spring (16) to the guide screw (17).
- 7) When tensioning the Vee belt by hand using the lever (10), the gap between the

guide screws and the Vee belt should be approximately 3mm. If necessary adjust the gap after slackening screw (18). Retighten after adjustment.



#### 4.2 INSTALLATION OF OPERATING HANDLE (See also diagram in section 10)

- 1) Remove the four nuts and washers from the bottom bracket. Position the handle and secure with the nuts and washers.
- 2) Slide the electric cable inside the protective tube on the handle and connect to the ON/OFF switch.
- 3) Connect the throttle cable to the throttle control lever on the engine. Check that when the throttle lever on the handle bar is pushed in the throttle lever on the engine is pushed against the idle screw stop. Final adjustment may be made at the lever on the handle bar.
- 4) Remove the Vee belt cover. Slide the clutch cable through the adjusting screw on the guard ring and through the tensioning lever hole. Operate the tension lever by hand to slightly tension the Vee belt and then tighten the cable screw. Ensure that when the dead-man's handle is pulled the Vee belt is tensioned and when the handle is released the Vee belt is slack. If necessary use the screws at each end of the clutch cable to achieve this condition.
- 5) Replace the Vee belt cover.
- 6) Turn blade elevating control knob in a counter clockwise direction until further rotation is not possible. Remove the pin from the end of the elevating fork, slide the end of the cable into the fork end, and replace the pin to secure the cable.

## **5. PRE START CHECKS**

The Gearbox is charged with lubricant, sealed for life and requires no pre start check.

Check engine oil level.

Check air filter is clean.

Check fuel - use unleaded petrol.

Check blade-elevating mechanism. Rotate knob clockwise for angling blades and anti clockwise for lowering blades

Check blade axles have been lubricated via grease nipples (4 in total, see page 8).

Check all guards are in position and secure.

## **6. STARTING AND STOPPING THE ENGINE**

See section "Pre-Start Checks" - See also the engine manufacturer's instructions issued with the machine.

Check engine oil level.

Turn ignition switch on (1). Check also ON/OFF switch on handle is on.

Turn fuel tap on.

Close choke (if engine cold).

Check throttle lever is in tick-over position.

Grasp the handle tube with left hand and starter rope toggle with right hand.

Pull on starter rope using a quick sharp pull. Do not pull rope to full extent.

When engine starts allow to warm up on tick-over.

Open choke when warmed up.

To operate machine see next section.

To stop machine put switch on handlebars to off position.

Turn ignition switch off (0) at engine.

Turn fuel tap off.

## 7. USER HINTS AND INSTRUCTIONS

Read this complete section before using the Power Trowel.

1. Rough towelling with a disc or combinations blades may be started when the concrete is sufficiently hard that footprints are no more than 3mm deep. Generally rough towelling may be started earlier with a disc than with blades. Run the engine as fast as the condition of the concrete will allow, see paragraph 5 below.
2. The use of a disc is more efficient than combination blades because of its continuous edge. Always use a disc when rough towelling a vacuum dewatered slab.
3. To fit a disc, place the power trowel on the disc locating the leading edge of the blades in the clips. Secure the disc by elevating the blades but ensure the disc does not distort
4. Rough towelling with combination blades should start with the blades flat.
5. If the action of rough towelling brings a lot of water to the surface it may be necessary to slow the engine speed or wait for the slab to dry more.
6. Fine towelling with finishing blades or combination blades may start when the palm of the hand pressed on the concrete surface comes away with no concrete adhering to it. Do not leave it too late. Run the engine at high speed.
7. For the first pass set the blades at a low angle.
8. For the second pass set the blades at a higher angle. If swirl marks appear on the surface it may be necessary either to reduce the angle of the blades or to wait and allow the concrete to harden more. Depending on the quality of finish required further passes might be necessary with ever steeper blade angles.
9. To elevate the blades rotate the knob at the upper end of the handle tube clockwise, to lower rotate it anti-clockwise.
10. Manoeuvre the power float by lightly raising the handle to move it to the left and pressing down to move it to the right.
11. Start and stop engine as described in section 6. See also the engine manufacturer's instructions issued with each machine.
12. To engage drive pull in the clutch lever and hold in.
13. Adjust engine speed with lever on side of handle bar.
14. To disengage drive release clutch lever.



15. Finishing blades may be reversed when the trailing edge becomes feathered. Combination blades cannot be reversed.
16. At the end of the day's use the machine must be cleaned of all adhering concrete especially the disc, blades, hub and blade arms.
17. If further information or training is required on the use of this machine please contact Fairport Construction Equipment Ltd or their agent.

## **8. ROUTINE SERVICE**

### DAILY

Check engine oil level; refer to engine manufacturer's handbook.

Clean the machine of all adhering concrete.

### WEEKLY

Check blade wear. Reverse if necessary.

Clean air filter, refer to engine manufacturer's handbook.

Change engine oil as recommended in engine manufacturer's handbook

### MONTHLY

Pump a good quality moly-graphite grease (Castrol BM2) into each of the four nipples on the blade arms.

Lightly oil throttle lever and linkages on engine.

Note: The gearbox is a "sealed for life" unit and requires no regular maintenance.

## **9. WARRANTY CONDITIONS AND CLAIMS PROCEDURE**

All products supplied by Fairport Construction Equipment Ltd (hereafter referred to as FCE) are warranted to be free of defects due to faulty materials or workmanship for a period of 12 months from the date of original despatch from FCE or as specified below:

Hydraulic hoses and hydraulic couplings – 3 months.

Hydraulic accumulators – 6 months.

Flexible drives – 6 months.

All spare parts used in repairs carried out by FCE or an authorised dealer or repairer – 3 months.

If the goods have been purchased through a stockist the above warranty periods also apply from receipt of the goods by the user of the equipment up to a total of a further 6 months from date of despatch from FCE whichever is earlier.

Filter elements, gauges and oils are specifically excluded from this warranty.

FCE shall at their option repair or replace during normal working hours goods accepted as faulty free of charge to the user.

For proprietary items such as engines, the original manufacturer's warranty and conditions shall apply.

## 9.1 CONDITIONS

The goods shall be returned at the purchaser's expense to FCE or to a destination FCE may reasonably direct. Carriage costs will be refunded if warranty is accepted.

Warranty claims will not be considered where there is evidence that failure has been caused by carelessness, improper use, negligence, inadequate servicing, incorrect engine speeds, fair wear and tear or non-compliance with instructions issued by the manufacturer.

To the extent permitted by law, the liability of FCE under this section is confined only to providing a remedy for defective goods and does not extend to any consequential loss, loss of profit, injury or damage suffered.

Warranty will not be accepted on dismantled goods unless dismantling was carried out with the written permission of FCE.

No claim shall be considered if other than genuine parts supplied by FCE have been used.

Products are only covered by this warranty in the country to where they were supplied by FCE.

Warranty on products applies only to the original user of the equipment.

This warranty shall not apply if the serial number or other identifying numbers or marks applied by FCE have been removed, defaced or are otherwise illegible.

## 9.2 CLAIMS PROCEDURE

Check that the goods are still under warranty before returning them to FCE (see above for warranty periods).

Return the goods to FCE with an order number for the work to proceed. If warranty is accepted no charge will be made. If warranty is not accepted a quotation will be given for the repair and the conditions under the section headed REPAIRS AND ESTIMATES will apply.

In the customer's interest, goods must be accompanied by documentation detailing the nature of the fault or its symptoms. Phrases such as 'Faulty' are unacceptable and will result in delays and possible charges to defray costs incurred in identifying the fault.

In the case of hydraulic breakers and power packs, both the breaker and the pack should be returned

## **10. REPAIRS AND ESTIMATES**

When returning a machine, or an assembly for repair, always include an Advice Note quoting model and serial number of the machine.

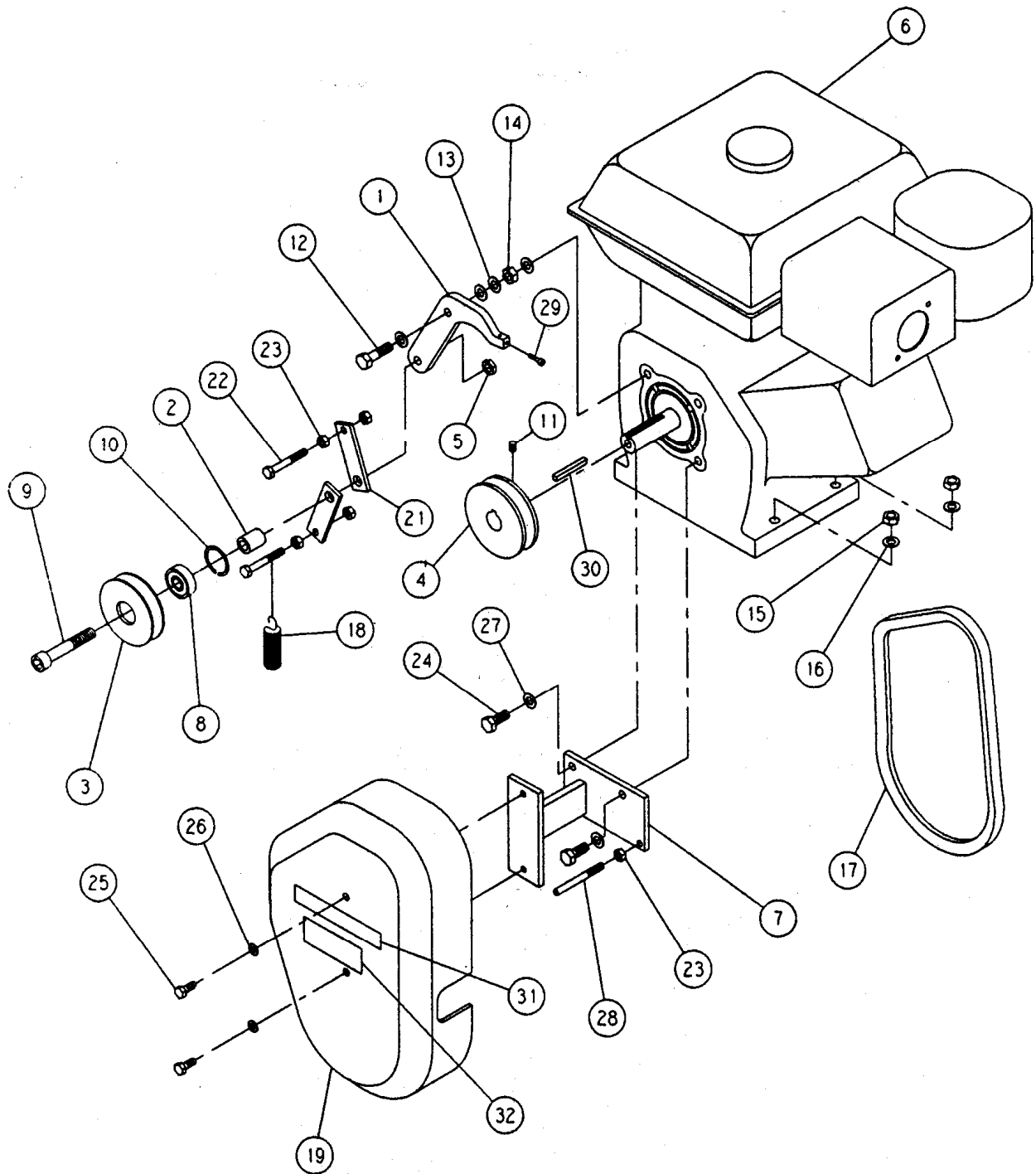
An official order must also be forwarded to FCE giving detailed instructions. No repair work can be carried out unless covered by an official order.

An estimate will be submitted before proceeding with any repair. To partly cover the cost in dismantling, cleaning and inspection, a small charge will be made, this however will be waived upon receipt of your official instructions to proceed with the repair.

In the event of the estimate not being accepted, a further charge will be made to defray the rebuilding of the machine.

Estimates must be treated as approximate only as it may be found necessary to use additional parts on further examination.

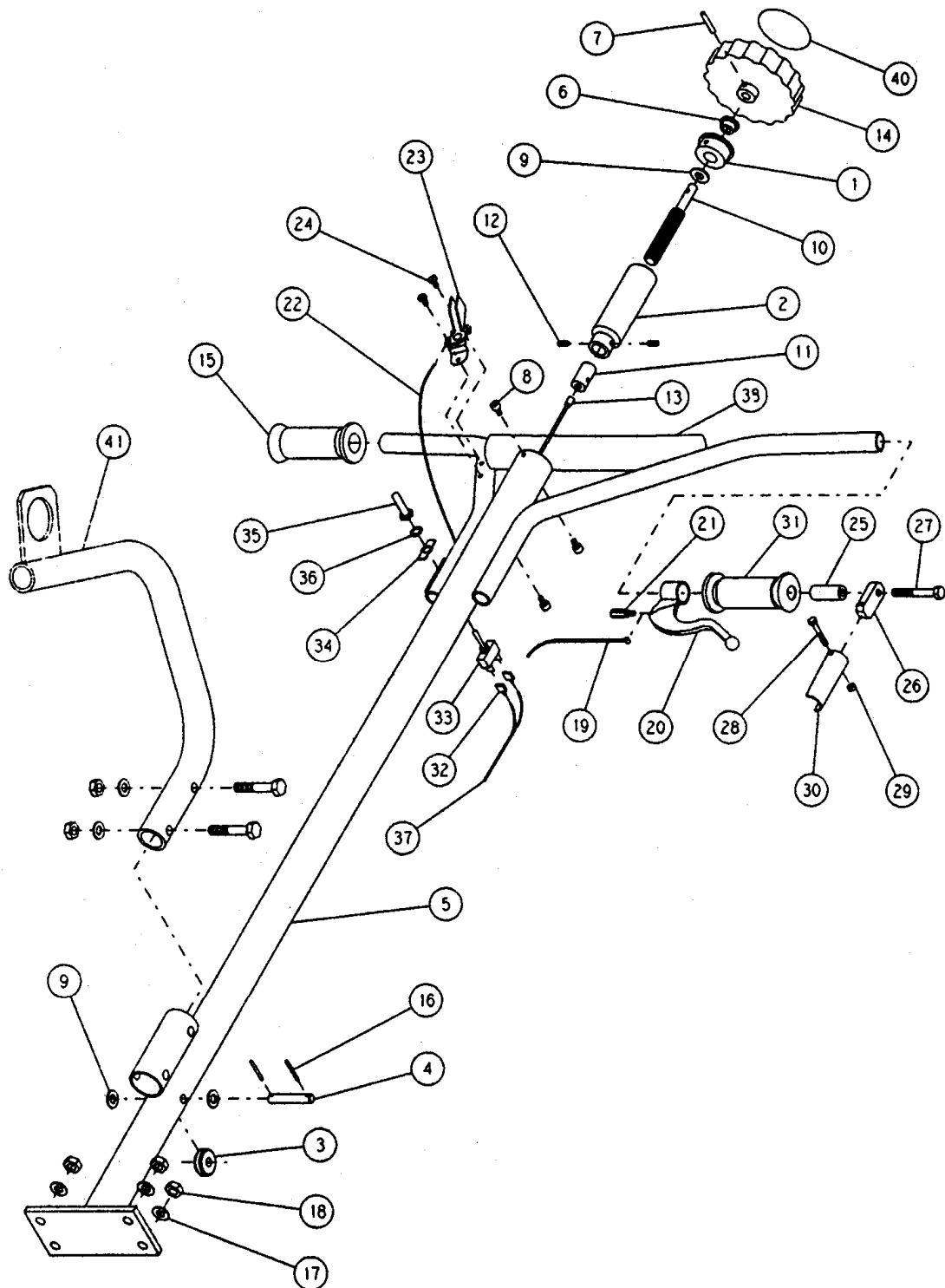
# 11. PARTS DIAGRAM AND PARTS LIST – CLUTCH & ENGINE



## PARTS LIST – CLUTCH AND ENGINE

<u>Item</u>	<u>Part No</u>	<u>Description</u>	<u>Qty</u>
1	DP-363489	Lever	1
2	DP-363490	Spacer	1
3	DP-363491	Pulley	1
4	DP-363498	Pulley	1
5	DP-182119	Nut	1
6	W81731	Engine, Honda	1
7	DP-363509	Cover bracket	1
8	DP-363511	Bearing	1
9	DP-508074	Screw	1
10	DP-100322	Retaining ring	1
11	DP-516002	Screw	1
12	DP-503013	Screw	1
13	DP-180918	Washer	4
14	DP-363512	Nut	1
15	DP-570005	Nut	4
16	DP-615043	Washer	4
17	DP-363516	V-belt	1
18	DP-363534	Spring	1
19	DP-363422	Cover	1
20	-	-	-
21	DP-363536	Belt guide	2
22	DP-500171	Screw	2
23	DP-570004	Nut	5
24	DP-503010	Screw	2
25	DP-500013	Screw	2
26	DP-600004	Washer	2
27	DP-600006	Washer	2
28	DP-187171	Screw	1
29	DP-533002	Screw	1
30	W84040	Key	1

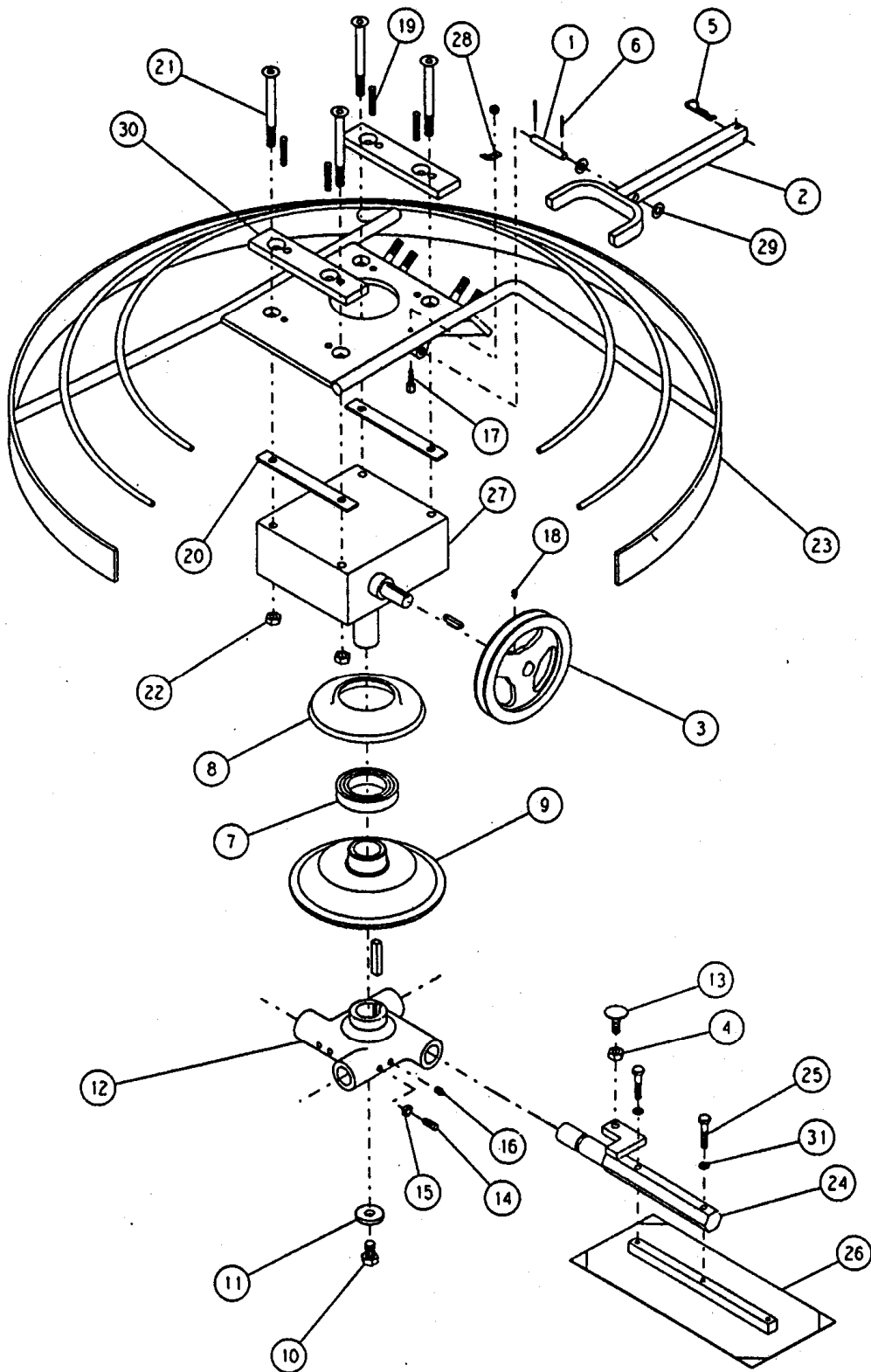
## 12. PARTS LIST AND PARTS DIAGRAM – HANDLE



## PARTS LIST - HANDLE

<u>Item</u>	<u>Part No</u>	<u>Description</u>	<u>Qty</u>
1	DP-363492	Handle holder	1
2	DP-363493	Cable tensioner	1
3	DP-363494	Pulley	1
4	DP-363495	Shaft	1
5	DP-364761	Operating handle	1
6	DP-363500	Sleeve	1
7	DP-110682	Pin	1
8	DP-363501	Screw	3
9	DP-600007	Washer	3
10	DP-363502	Screw	1
11	DP-363503	Cable stop	1
12	DP-185920	Screw	2
13	DP-365494	Blade angle cable	1
14	DP-363505	Knob	1
15	DP-363506	Handle grip	1
16	DP-630007	Pin	2
17	DP-604007	Washer	4
18	DP-586018	Nut	4
19	DP-363517	Clutch cable	1
20	DP-363518	Dead man's handle	1
21	DP-363519	Cable stop	1
22	DP-363520	Throttle cable	1
23	DP-362625	Throttle lever	1
24	DP-541537	Screw	2
25	DP-364762	Expanding screw	1
26	DP-364758	Handle holder	1
27	DP-500026	Screw	1
28	DP-533034	Screw	1
29	DP-586001	Nut	1
30	DP-364759	Handle	1
31	DP-364757	Handle grip	1
32	DP-185645	Cable shoe	2
33	DP-364763	On/off switch	1
34	DP-365538	On/off plate	1
35	DP-364765	Membrane	1
36	DP-364766	Sealing washer	1
37	DP-364119	Electric cable	1.7m
38	DP-365494	Bell cushion	1
39	-	-	-
40	-	-	-
41	DP-364768	Lifting eye	1

### 13. PARTS DIAGRAM AND PARTS LIST – BOTTOM END





PARTS LIST - BOTTOM END

<u>Item</u>	<u>Part no</u>	<u>Description</u>	<u>Qty</u>
1	DP-363495	Shaft	1
2	DP-365493	Elevating fork	1
3	DP-363497	Pulley	1
4	DP-182119	Nut	1
5	DP-635002	Pin	1
6	DP-630007	Pin	2
7	DP-182322	Bearing	1
8	DP-182314	Cup	1
9	DP-365170	Plate	1
10	DP-500035	Screw	1
11	DP-603008	Washer	1
12	DP-363507	Hub	1
13	DP-182122	Screw	4
14	DP-185912	Screw	4
15	DP-573008	Nut	4
16	DP-363510	Grease nipple	4
17	DP-182174	Cable stop	1
18	DP-516002	Screw	1
19	DP-186265	Bolt, Honda	4
20	DP-363513	Spacer	2
21	DP-186573	Screw	4
22	DP-586018	Nut	4
23	DP-364756	Guard ring	1
24	DP-364796	Blade shaft	4
25	-	-	-
26	W52001	Finishing blade	4
26	W52000	Combination blade	4
27	-	-	-
28	DP-363535	Spring holder	1
29	DP-600007	Washer	2
30	-	-	-
31	DP-604005	Washer	8

**EC Declaration of Conformity**

**We Fairport Construction Equipment Limited**

Blagden Street

Sheffield

S2 5QS

**Declare that the product **FPT90 Power Trowel****

Manufactured from 1 Sept 2004

**conforms to the following Directives:**

89/336/EEC, 89/392/EEC, 91/368/EEC, 2000/14/EC

**uses the following standards:**

BS EN 292-1, BS EN 292-2, BS EN 60204-1, BS EN 294

**complies with the relevant essential health and safety requirements of the Machinery Directive, and is in conformity with the protection requirements of Council Directive 89/336/EEC**

Technical Construction File no.93044

Competent Body (name, address) N/A



Technical Manager

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Signature	Position
Robert Castle G.C.G.I.   I.Eng M.I.Mech.E.	12/12/2005

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Signed by	Date
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