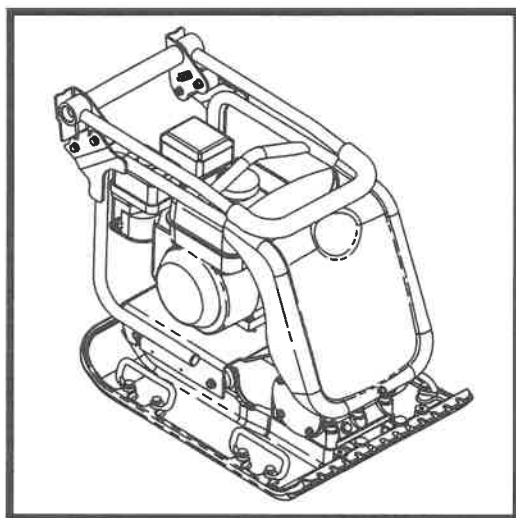




BELLE PCX 20/45 & 20/50

870/10012/7
08/23



2

UKCA Declaration of Conformity

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EC Declaration of Conformity

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BELLE
LIGHT
CONSTRUCTION
EQUIPMENT



How To Use This Manual

This manual has been written to help you operate and service the Plate Compactor safely.
This manual is intended for dealers and operators of the Plate Compactor.

Foreword

The **'Environment'** section gives instructions on how to handle the recycling of discarded apparatus in an environmentally friendly way.

The **'Machine Description'** section helps you to familiarise yourself with the machine's layout and controls.

The **'General Safety'** and **'Health and Safety'** sections explain how to use the machine to ensure your safety and the safety of the general public.

The **'Start and Stop Procedure'** helps you with starting and stopping the machine.

The **'Trouble Shooting Guide'** helps you if you have a problem with your machine.

The **'Servicing'** section is to help you with the general maintenance and servicing of your machine.

The **'Warranty'** Section details the nature of the warranty cover and the claims procedure.

Directives with regard to the notations.

Text in this manual to which special attention must be paid are shown in the following way:



CAUTION

The product can be at risk. The machine or yourself can be damaged or injured if procedures are not carried out in the correct way.



WARNING

The life of the operator can be at risk.



WARNING



WARNING

*Before you operate or carry out any maintenance on this machine **YOU MUST READ** and **STUDY** this manual.*

KNOW how to safely use the unit's controls and what you must do for safe maintenance. (NB Be sure that you know how to switch the machine off before you switch on, in case you get into difficulty.)

ALWAYS wear or use the proper safety items required for your personal protection. If you have **ANY QUESTIONS** about the safe use or maintenance of this unit, **ASK YOUR SUPERVISOR OR CONTACT: Altrad Belle (UK): +44 (0) 1298 84606**

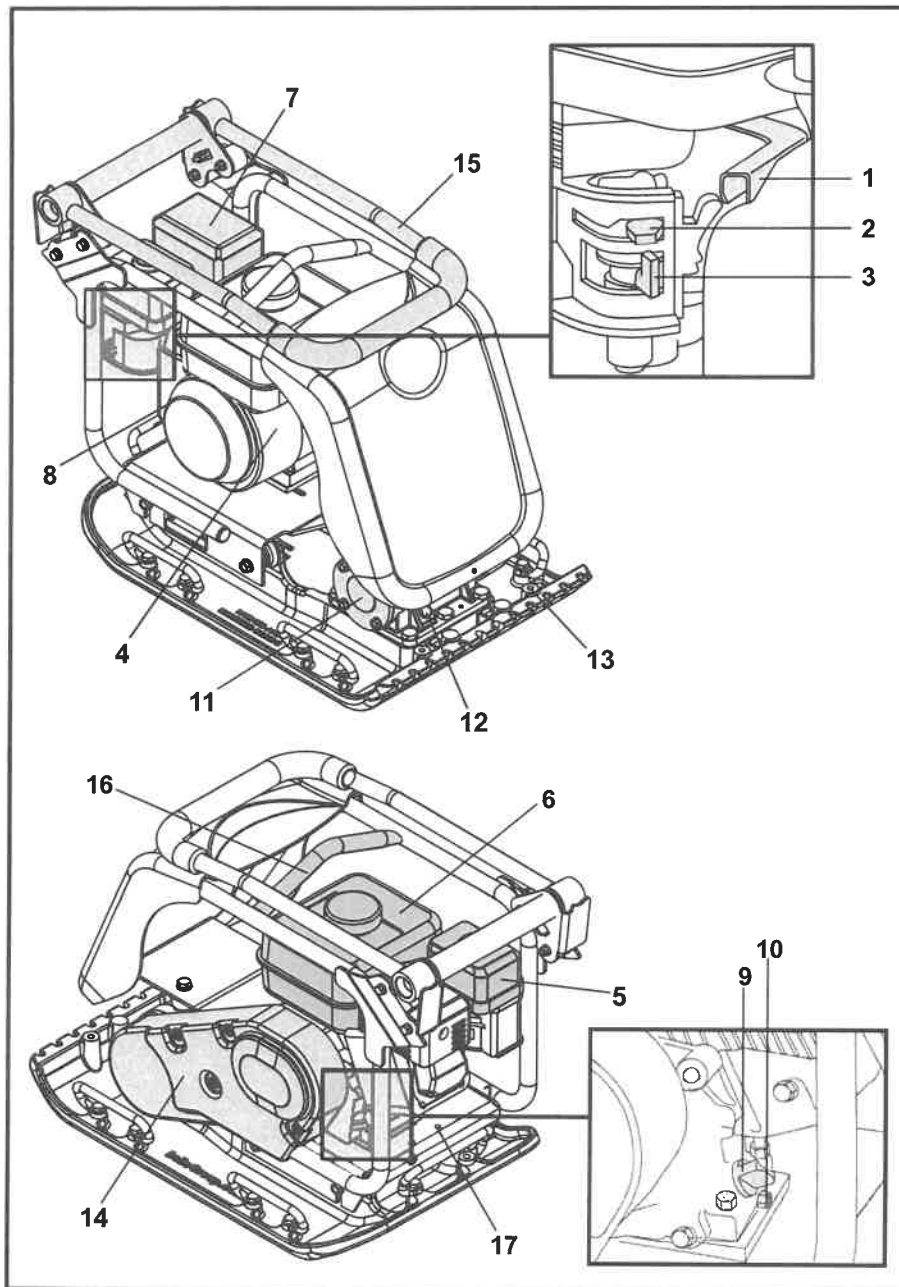


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Altrad Belle reserves the right to change machine specification without prior notice or obligation.

Machine Description



1. Throttle lever.
2. Choke lever.
3. Fuel ON / OFF lever.
4. Engine ON / OFF switch.
5. Air Filter Housing.
6. Fuel Tank.
7. Exhaust.
8. Recoil Starter Handle.
9. Engine oil filler / dipstick.
10. Engine oil drain plug.
11. Vibrator.
12. Vibrator oil check plug.
13. Attachment point for Paving Pad.
14. Belt guard.
15. Control Handle.
16. Lifting Point.
17. Attachment points for Transporter Options.

N.B. Drawing based a Honda GX160 engine. Please refer to the manufacturer's literature for Hatz engine details.

Environment

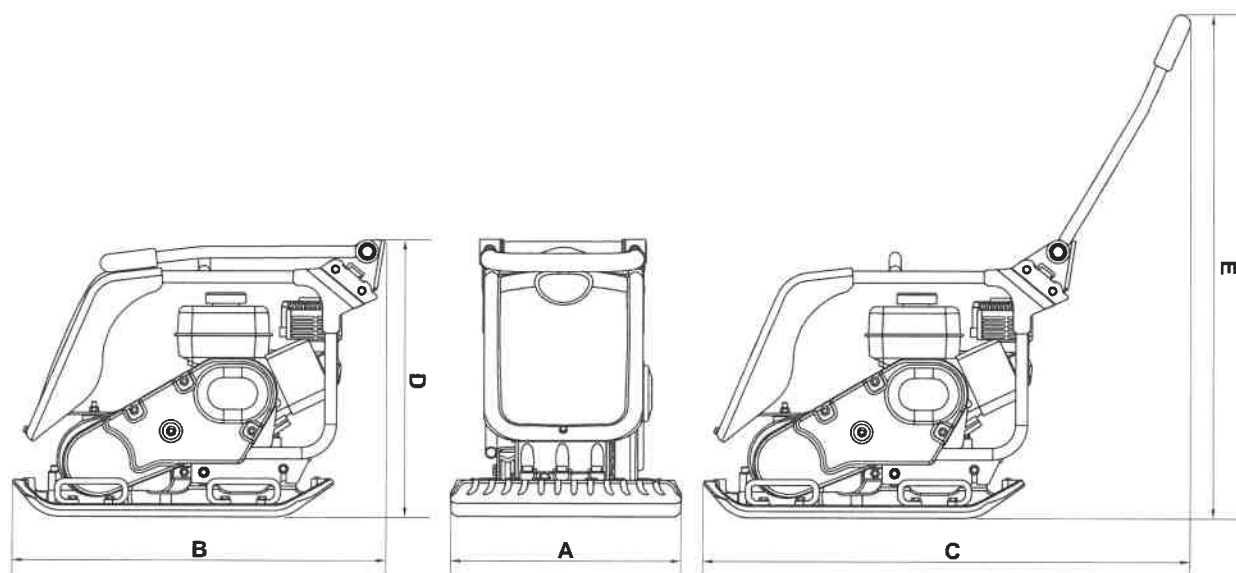


Safe Disposal.



Instructions for the protection of the environment. The machine contains valuable materials. Take the discarded apparatus and accessories to the relevant recycling facilities.

| Component | Material |
|--------------------------|---------------------|
| Handle | Steel |
| Front Cover | HDPE |
| Main Frame | Steel |
| Baseplate | Steel |
| Hand Grips | Rubber |
| Engine | Aluminium |
| Flexible Mounts | Steel and Rubber |
| Various Parts | Steel and Aluminium |
| Water Bottle (If Fitted) | Plastic |

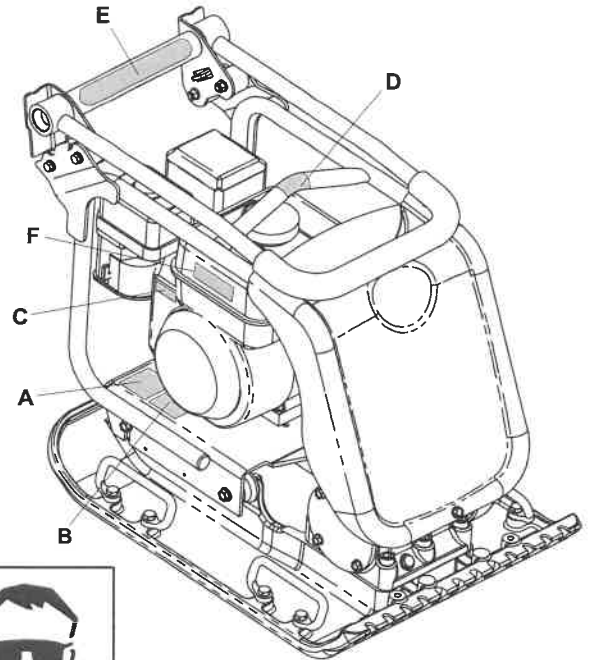


| Model | PCX 20/45 Honda GX160 | PCX 20/45D Hatz 1B20 | PCX 20/50 Honda GX160 | PCX 20/50D Hatz 1B20 |
|--|--------------------------|-------------------------|--------------------------|-------------------------|
| A - Machine Width (mm) | 450 | 450 | 500 | 500 |
| B - Machine Length Storage (mm) | 880 | 880 | 880 | 880 |
| C - Machine Length Operating (mm) | 1167 | 1167 | 1167 | 1167 |
| D - Machine Height Storage (mm) | 585 | 585 | 585 | 585 |
| E - Machine Height Operating (mm) | 987 | 987 | 987 | 987 |
| Plate Contact Area W x L (mm) | 418 x 470 | 418 x 470 | 467 x 470 | 467 x 470 |
| Weight (kg) | 91 | 115 | 97 | 120 |
| Engine Power (Hp / kW) | **4.9 / 3.6 | 4.6 / 3.4 | **4.9 / 3.6 | 4.6 / 3.4 |
| Engine RPM | 3600 | 3350 | 3600 | 3350 |
| Vibrator Force (kN) | 20 | 20 | 20 | 20 |
| Frequency (Hz) | 80 | 80 | 80 | 80 |
| Maximum Travel Speed (m/min) | 26 | 25 | 25 | 24 |
| Max. Gradient (°) | 20 | 20 | 20 | 20 |
| Compaction Force (kg/m²) | 463 | 585 | 442 | 547 |
| *3 Axis Vibration (m/sec²) | 3.5 | 2.64 | 3.5 | 2.45 |
| Usage Time (Mins) | 245 | 430 | 245 | 500 |
| Sound Power Level (dB L_{WA}) | 108 | 108 | 108 | 108 |

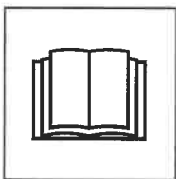
* Minimum level to EN500 Part 4.

** The power rating of the petrol engines indicated in this document is the net power tested on a production petrol engine for the petrol engine model and measured in accordance with SAE J1349 at a specified rpm.
Mass production petrol engines may vary from this value. Actual power output for the petrol engine installed in the final machine will vary depending on numerous factors, including the operating speed of the petrol engine in application, environmental conditions, maintenance and other variables. Honda reserves the right to modify its specifications at any time and without notice.

- A. Safety Decal
- B. Noise Decal
- C. Engine RPM Decal
- D. Lifting Point Decal
- E. Low HAV Decal
- F. Engine Warning Decal



A - Safety Decal



**Please Read
Operators
Manual**



**Wear Protective
Footwear**



**Wear Ear
Protection**



**Wear Eye
Protection**

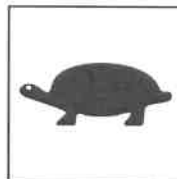
B - Noise Decal

The Noise Level of the machine during operation.

C - Engine RPM Decal



**Fast Engine
Speed Position**



**Slow Engine
Speed Position**

D - Lifting Point Decal



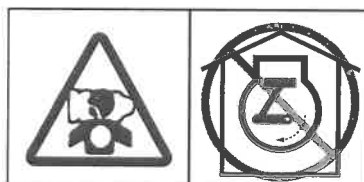
E - Low HAV Decal

The machine has a UK Patented Design which reduces HAV levels allowing a greater Usage Time.

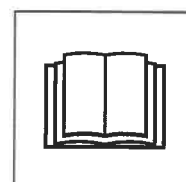
F - Engine Warning Decal



**Petrol is highly flammable. Turn
off the engine and allow time to
cool before refuelling.**



**The Engine emits toxic Carbon
Monoxide. Do not run the Engine
in an enclosed area.**



**Please Read
Engine Manual**



General Safety

For your own personal protection and for the safety of those around you, please read and ensure you fully understand the following safety information. It is the responsibility of the operator to ensure that he/she fully understands how to operate this equipment safely. If you are unsure about the safe and correct use of the Plate Compactor, consult your supervisor or Altrad Belle.



CAUTION

Improper maintenance or use can be hazardous. Read and Understand this section before you perform any maintenance, service or repairs.

- This equipment is heavy and must not be lifted single-handedly, either **GET HELP** or use suitable lifting equipment. A special transport assembly is available for the compactor (see options).
- Cordon off the work area and keep members of the public and unauthorised personnel at a safe distance.
- Personal Protective Equipment (PPE) must be worn by the operator whenever this equipment is being used (see Health & Safety).
- Make sure you know how to safely switch this machine **OFF** before you switch it **ON** in case you get into difficulty.
- Always switch **OFF** the engine before transporting, moving it around the site or servicing it.
- During use the engine becomes very hot, allow the engine to cool before touching it. Never leave the engine running and unattended.
- Never remove or tamper with any guards fitted, they are there for your protection. Always check guards for condition and security, if any are damaged or missing, **DO NOT USE THE COMPACTOR** until the guard has been replaced or repaired.
- Do not operate the Compactor when you are ill, feeling tired, or when under the influence of alcohol or drugs.

Fuel Safety



CAUTION

Fuel is flammable. It may cause injury and property damage. Shut down the engine, extinguish all open flames and do not smoke while filling the fuel tank. Always wipe up any spilled fuel.

- Before refuelling, switch off the engine and allow it to cool.
- When refuelling, **DO NOT** smoke or allow naked flames in the area.
- Spilt fuel must be made safe immediately, using sand. If fuel is spilt on your clothes, change them.
- Store fuel in an approved, purpose made container away from heat and ignition sources.



Health and Safety

Vibration

Some vibration from the compaction operation is transmitted through the handle to the operator's hands. The Altrad Belle Plate Compactor range has been specifically designed to reduce hand/arm vibration levels. Refer to specifications & technical data for vibration levels and usage times (recommended maximum daily exposure time). **DO NOT** exceed the maximum usage times.

PPE (Personal Protective Equipment).

Suitable PPE must be worn when using this equipment i.e. Safety Goggles, Gloves, Ear Defenders, Dust Mask and Steel Toe capped footwear. Wear clothing suitable for the work you are doing. Tie back long hair and remove any jewellery which may catch in the equipment's moving parts.

Dust.

The compacting process will occasionally produce dust, which may be hazardous to your health. Always wear a mask that is suited to the type of dust being produced.

Fuel.

Do not ingest fuel or inhale fuel vapours and avoid contact with your skin. Wash fuel splashes immediately. If you get fuel in your eyes, irrigate with copious amounts of water and seek medical attention as soon as possible.

Exhaust Fumes



CAUTION

The exhaust fumes produced by this equipment are highly toxic and can kill!

Do not operate the compactor indoors or in a confined space, make sure the work area is adequately ventilated.



Pre-Start Checks

Pre start-up inspection

The following Pre-start-up inspection must be performed before the start of each work session or after every four hours of use, whichever is first. Please refer to the service section for detailed guidance. If any fault is discovered, the compactor must not be used until the fault is rectified.

1. Thoroughly inspect the compactor for signs of damage. Check components are present and secure. Pay special attention to the belt drive safety guard fitted between the engine and the vibrator unit.
2. Check the engine oil level and top up as necessary.
3. Check the engine fuel level and top up as necessary.
4. Check for fuel and oil leaks.

Reasons For Compaction



Soil, which has been disturbed or new infill, subbase and blacktop, will have small voids or air pockets which, if not compacted, will lead to one or more problems occurring.

1. As traffic crosses the surface of an uncompacted area, the material is compressed. This leads to subsidence of the top surface as the material fills the voids.
2. A similar situation occurs with static loads on uncompacted ground. The load (e.g. a building) will sink.
3. Materials with voids are more susceptible to water seepage, leading to erosion. Water ingress may also cause the soil to expand during freezing temperatures and contract during dry spells. Expansion and contraction is a major cause of damage to building foundations and normally leads to the structure requiring underpinning.

Compaction increases the density of the material and therefore increases its load bearing capacity. Reduces air voids and therefore reduces the risk of subsidence, expansion and contraction, due to ingress of water.

Compaction Specification



Various methods have been employed in the past to specify the compaction required for various applications. The factors to consider are, material properties, layer thickness, pressure applied, vibration and number of passes. Greater understanding of how compaction works has led to new compaction specifications being introduced. The most up to date specification is part of the U.K.'s NRSWA (New Roads & Street Works Act). Civil Engineers are now adopting these specifications to ensure good compaction for all site work.

Applications



Applications/materials fall into three categories:

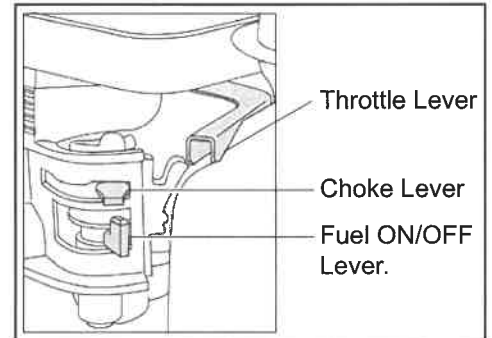
1. Cohesive materials (less than 20% granular) e.g clay, silt & heavy soils.
2. Granular materials (more than 20% granular) e.g hard core, sand & light soils.
3. Bituminous materials e.g asphalt (tarmac), cold lay (bitumin emulsion products).

**CAUTION**

Improper maintenance can be hazardous. Read and Understand this section before you perform any maintenance, service or repairs.

Honda GX160 Petrol Engine

1. Open the fuel tap by moving the fuel **ON/OFF** lever fully to the right.
2. If starting the engine from cold, set the choke **ON** by moving the choke lever fully to the left. If restarting a warm engine, the choke is usually not required, however, if the engine has cooled to a degree, partial choke may be required.
3. Turn the engine **ON/OFF** switch clockwise to the 'I' position.
4. Set the throttle to the idle position by moving the throttle lever fully to the right. Do not start the engine on full throttle, as the compactor will vibrate as soon as the engine starts.
5. Taking a firm hold of the control handle with one hand, grasp the recoil starter handle with the other. Pull the recoil starter until engine resistance is felt, then let starter return.
6. Taking care not to pull the starter's rope fully out, pull the starter handle briskly.
7. Repeat until the engine fires.
8. Once the engine fires gradually set the choke lever to the **OFF** position by moving it to the right.
9. If the engine fails to fire after several attempts, follow the Troubleshooting Guide.
10. To stop the engine, set the throttle to idle and turn the engine **ON/OFF** switch anticlockwise to the 'O' position.
11. Turn the fuel off.

**Hatz 1B20 Diesel Engine** (please refer to the engine manual for full details)

1. Turn **ON** the fuel by moving the fuel **ON/OFF** lever fully to the right.
2. Set the engine speed control to start.
3. Taking a firm hold of the control handle with one hand, grasp the recoil starter handle with the other. Pull the handle until engine resistance is felt, then let the starter return.
4. Taking care not to pull the starter's rope fully out, pull the starter handle briskly with both hands.
5. Repeat this procedure until the engine fires.
6. If the engine fails to start after several attempts, consult the engine manual supplied with the compactor.
7. To stop the engine, set the throttle control to idle, then press and hold the red stop button until the engine stops.

- **Take the compactor to where it is required.**

If using the 'Detachable' transport attachment to wheel the unit, tilt the compactor forward to raise the transport wheels off the ground. Swing the transporter frame back, then across to disconnect it from the rear of the compactor. Place the transporter frame somewhere safe until next required. For machines with the 'Fixed' transporter tilt the machine forward, pull the transporter rearwards and upwards, lower the machine to the floor and latch the transporter into the 'up' position. Where it is necessary to use lifting equipment to position the compactor, make sure the lifting equipment has a WLL (Working Load Limit) suitable for the compactors weight (see Technical Data section or the machine number plate). Attach suitable chains or slings **ONLY** to the lifting point on the top of the compactor.

- If the compactor is fitted with the water spray system and the application requires its use, check that the water outlet valve is closed, then fill the water bottle with clean water.

- **Having carried out the checks listed in the 'pre start' section, you may start the engine.**

The Altrad Belle 'PCX' range of compactors are fitted with a centrifugal clutch, this allows the engine to run at idle without driving the vibrator.

As the engine speed is increased the clutch will engage and will drive the vibrator.

For correct operation, the engine speed should be set to maximum.

- **Set the throttle to maximum and use the control handle to steer or turn the compactor.**

The vibrator will not only cause the baseplate to vibrate but will also cause it to travel forward. During normal operation you should not have to push the compactor but allow it to travel at its own pace. The speed of travel will be determined by the condition of the surface being compacted.

If the surface to be compacted is on a slope, great care must be taken when controlling the compactor's direction of travel. If necessary, use a suitable rope attached to the compactor at a low point on the chassis, to allow a helper to take part of the compactor's weight. Work up and down a slope not across.

- **Work the compactor over the surface in an organised pattern until the required compaction has been achieved.**

Where there are a number of different layers to be compacted on top of each other, compact each layer individually.

- To stop the compactor vibrating, set the throttle to idle.

| Problem | Cause | Remedy |
|---|--|--|
| Engine will not start. | No fuel. | Open fuel tap. Fill fuel tank. |
| | Engine switched off. | Switch engine on. |
| | Spark plug fouled. | Clean and reset plug gap. |
| | Engine cold. | Close choke. |
| | Engine flooded. | Honda, open choke, fully open throttle, pull recoil starter until engine fires. |
| | | Hatz, move speed control to stop, pull recoil starter 5 times then repeat start procedure. |
| Engine still will not start. | Major Fault | Contact Agent or Altrad Belle. |
| Unit will not vibrate. | Engine speed too slow. | Set engine speed control to fast. |
| | Drive belt tension loose. | Adjust belt tension. |
| | Air filter blocked | Clean or renew air filter. |
| | Drive failure. | Contact Agent or Altrad Belle. |
| | Vibrator failure. | Contact Agent or Altrad Belle. |
| Asphalt adhering to plate. | Lack of lubrication. | Use a water spray system. |
| Paving blocks damaged. | Plate in direct contact with material. | Use a paving pad. |
| Bituminous surface flaking (laminating). | Over compaction. | Remove and relay. |
| Low travel speed (plate sinking). | Layer thickness too deep. | Remove some of the material. |
| | Moisture content too high or too low. | Remove material and adjust. |

Maintenance

The Altrad Belle 'PCX' range of Single Direction Plate Compactors are designed to give many years of trouble free operation. It is, however, important that the simple regular maintenance listed in this section is carried out.

It is recommended that an approved Altrad Belle dealer carries out all major maintenance and repairs. Always use genuine Altrad Belle replacement parts, the use of spurious parts may void your warranty.

Before any maintenance is carried out on the machine, switch off the engine. If working on a petrol engine machine, disconnect the HT lead from the sparkplug. If working on a diesel engine, make sure that the stop switch is in the stop position. Always set the compactor on level ground to ensure any fluid levels will be correctly read. Only use recommended oils (see chart on following page).

Running In Period

When the compactor is first used from new, the engine oil must be changed after the initial running in period (see engine manual for full detail). The vibrator shaft case oil must be replaced after the first 100 hours use, then after every 500 working hours. For detail on vibrator shaft case oil replacement, see 'Vibrator unit'. The belt tension should be checked after 4 hours use.

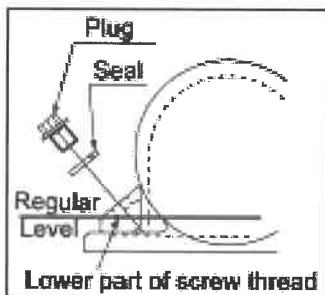
Drive Belt

Remove the belt guard then check the belt tension by placing light finger pressure on the top of the belt, as near central between the engine drive and vibrator pulley. The belt should deflect by between 5mm and 10mm. If the belt tension requires adjustment, loosen the four engine mount bolts enough to allow the engine to be moved. Adjust the engine's position by turning the tension bolt clockwise to increase belt tension, anti-clockwise to decrease. Once set, retighten the engine mount bolts and check the belt tension a second time. Finally, replace the belt guard ensuring it is correctly and securely fitted.

| Routine Maintenance | | First 4 Hours | First Month / 20 Hours | 3 Months / 50 Hours | 6 Months / 100 Hours |
|---------------------|--|---------------|------------------------|---------------------|----------------------|
| Engine Oil | Check Level | ✓ | | | |
| | Change | | ✓ | | ✓ |
| Air Filter | Check Condition / Clean | | ✓ | | ✓ |
| | Replace when necessary / Every 12 months | | | | |
| Spark Plug | Change | | | | ✓ |
| Drive Belt | Tension | ✓ | ✓ | ✓ | |

Oil / Fuel Type & Quantity - Spark Plug Type

| | Oil Type | Quantity (Litre) | Fuel Type | Capacity (Litre) | Spark Plug Type | Electrode Gap (mm) |
|--------------------|---------------|------------------|-----------------|------------------|-----------------|--------------------|
| Petrol Honda GX160 | S.A.E. 10W 30 | 0.6 | Unleaded | 3.6 | BM6ES or BPR6ES | 0.6 - 0.7 |
| Diesel Hatz 1B20-6 | S.A.E. 10W 30 | 0.9 | Diesel (BS2869) | Refer to Manual | N/A | N/A |
| Vibrator | S.A.E. 10W 40 | 0.3 | N/A | N/A | N/A | N/A |



Vibrator Unit.

Remove the plug complete with seal, check that the oil level reaches the bottom thread on the oil plug hole. Top up as necessary with the correct oil (see chart).

Paving Pad

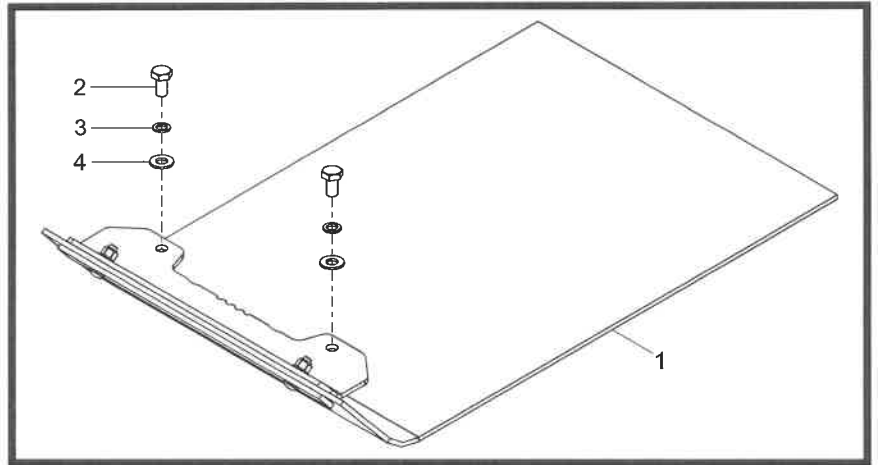
The Paving Pad has been designed to be used when tamping down Paving Slabs and Block Pavers. However, it should not be used for normal compaction work.

Before fitting, make sure the Paving Pad you have is the correct size and the correct type.

The Paving Pad will arrive pre-assembled and will just need to be fitted to the Plate Compactor.

To fit the Paving Pad (Item 1), place the Pad under the Plate Compactor ensuring the securing holes line up with the holes on the front of the baseplate.

Apply Loctite 262 to the Screw (Item 2) and secure the Paving Pad using all Fasteners (Items 2-4). Tighten to 50Nm.



Transporter Attachment

The transporter attachment enables the operator to move the compactor to the work place with the minimum of effort.

Removable Transporter Attachment

To fit the transport attachment, align the pivot bracket with the holes on the rear of the baseplate.

The two securing bolts should be passed through the pivot bracket and the baseplate. Tighten to 50Nm.

Slide the wheel frame onto the pivot bracket, tilt the compactor forward then swing the wheel frame forward and under. Finally, tilt the compactor back and onto the wheels.

Fixed Transporter Attachment

To fit the transport attachment, align the bracket with the holes on the rear of the bedplate. The two securing bolts should be passed through the bracket and into the bedplate.

Warranty



Your new Altrad Belle 'PCX' Single Direction Plate Compactor is warranted to the original purchaser for a period of one-year (12 months) from the original date of purchase. The Altrad Belle warranty is against defects in design, materials and workmanship.

The following are not covered under the Altrad Belle warranty:

1. Damage caused by abuse, misuse, dropping or other similar damage caused by or as a result of failure to follow assembly, operation or user maintenance instructions.
2. Alterations, additions or repairs carried out by persons other than Altrad Belle or their recognised agents.
3. Transportation or shipment costs to and from Altrad Belle or their recognised agents, for repair or assessment against a warranty claim, on any machine.
4. Materials and/or labour costs to renew, repair or replace components due to fair wear and tear.

The following components are not covered by warranty.

- Drivebelt/s
- Engine air filter
- Engine spark plug

Altrad Belle and/or their recognised agents, directors, employees or insurers will not be held liable for consequential or other damages, losses or expenses in connection with or by reason of or the inability to use the machine for any purpose.

Warranty Claims

All warranty claims should firstly be directed to Altrad Belle, either by telephone, by Fax, by Email, or in writing.

For warranty claims:

Tel: +44 (0)1298 84606

Fax: +44 (0)1298 84073

Email : Warranty@belle-group.co.uk

Write to:

Altrad Belle Warranty Department,
Sheen, Nr. Buxton,
Derbyshire,
SK17 0EU
England.

Warranty Registration:

In the bid for ALTRAD Belle to become greener and more eco friendly, we have now introduced online Warranty registration. To access the registration page of our website, please use the following address:-

http://www.bellegroup.com/index.php?p=warranty_registration

Alternatively, please scan the adjacent QR Code (Quick Response Code) using your smartphone to access the registration page.



Replacement Parts



When maintaining this product only the manufacturers original, genuine replacement parts may be used.

The user will lose any possible claims if replacement parts used are other than the makers original replacement parts.

Replacement parts for this product can be ordered online 24 hours a day, 7 days a week at www.Altrad-Belle247.com

For more information regarding the availability of replacement parts for this product, please contact Altrad Belle using the following contact details:-

Tel:- +44 (0)1298 84606

Fax:- +44 (0)1298 84073

Email:- sales@altrad-belle.com

Alternatively, please scan the adjacent QR Code (Quick Response Code) using your smartphone to access the Altrad Belle online parts portal.

