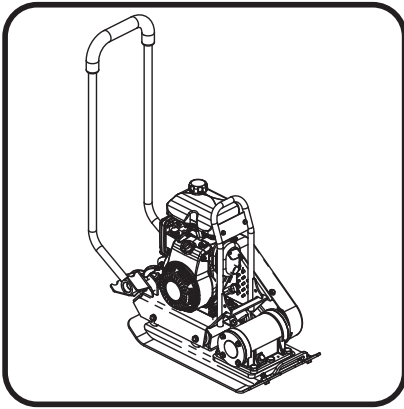




PCLX

320/320S/400



204

- Spare Parts Book
- Pièces détachées
- Libro Despiece
- Lista de Peças
- Onderdelen Boekje
- Reservedele Skrift
- Ersatzteilhandbuch
- Manuale dei ricambi
- Bruksanvisning
- Bruksanvisning
- Varaosaluettelo
- Lista Części Zamiennych
- Запасные части Книга
- Varuosade nimekiri
- Rezerves daļu saraksts
- Atsarginiu daliu sarašas
- Част Списък
- Část Barevný pruh
- Lista Pieselor de Schimb
- Részek Oldalra dől
- Rezervni djelovi Knjiga

(GB) Operators Manual	6
(US) Operators Manual	15
(F) Manuel De L'Opérateur	24
(E) Manual del Operador	33
(P) Manual de Operação	42
(NL) Handleiding	51
(DK) Betjeningsvejledning	60
(D) Bedienungshandbuch	69
(I) Manuale Dell'Operatore	78
(S) Bruksanvisning	87
(NO) Betjene Håndbok	96
(SF) Käyttöohje	105
(PL) Instrukcja Obsługi	114
(RUS) Руководство для оператора	123
(EST) Kasutusjuhend	132
(LV) Lietotāja rokasgrāmata	141
(LT) Naudojimo Instrukcija	150
(BG) Оператор Ръчен	159
(CZ) Na'vod K Obzluze	168
(RO) Manual de Utilizare	177
(HUN) Kezelők Kézi	186
(HR) Uputstvo za rukovatelja	195

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

Foreword

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

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

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 '**Operating Instructions**' section helps you with the setting up and use of the machine.

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

The '**Service & Maintenance**' 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.

The '**Dual Force**' section shows the compaction specification the machine can achieve.

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.

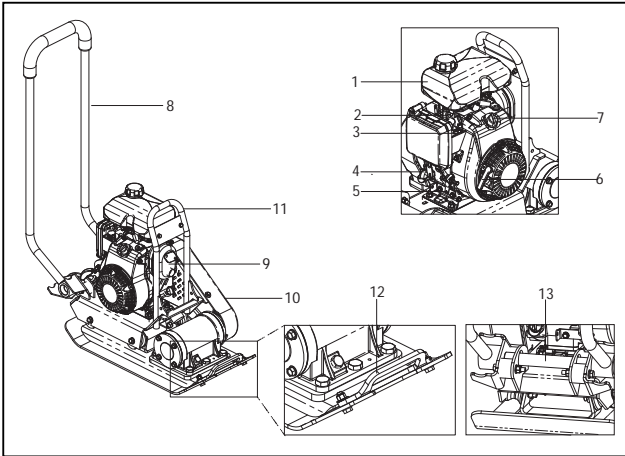
KNOW how to safely use the unit's controls and what you must do for safe maintenance. (NB Be sure that you know how to switch the machine off before you switch on, in case you get into difficulty.)

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: **BELLE GROUP (UK): +44 (0) 1298 84606**

Contents

How to use this manual.....	6
Warning	6
Machine Description.....	7
Technical Data	7
Decals.....	8
Environment	9
Reasons For compaction	9
Compaction Specification	9
Applications	10
Safety Instructions.....	10
Health and Safety.....	11
Pre-Start Checks	11
Operating Instructions	11 - 12
Trouble Shooting Guide	12
Service & Maintenance	13
'Dual Force' / HAUC / NRSWA Certificate	14
Warranty.....	14
Declaration of Conformity.....	2

Machine Description



Machine type:
Single Direction Plate Compactor

1. Fuel Tank,
2. Choke Lever,
3. Fuel ON/OFF Lever,
4. Engine Oil Filler / Dipstick,
5. Throttle Lever,
6. Recoil Starter Handle,
7. Engine ON/OFF Switch
8. Operating Handle,
9. Exhaust,
10. Belt Guard,
11. Mechanical Hoist Lifting Point,
12. Hand Lifting Point
13. Hand Lifting Point (Strut)

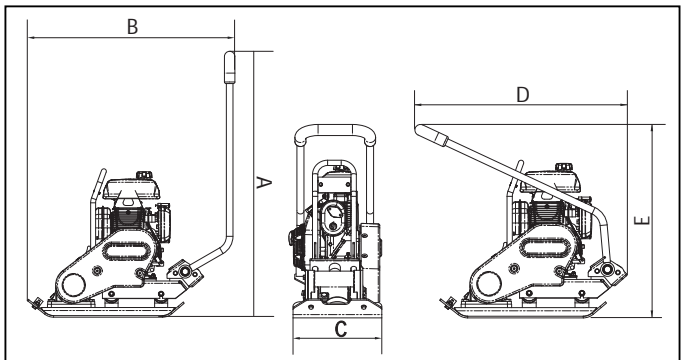
DO NOT use a Mechanical Hoist on the Hand Lifting Points (No's 12 & 13)

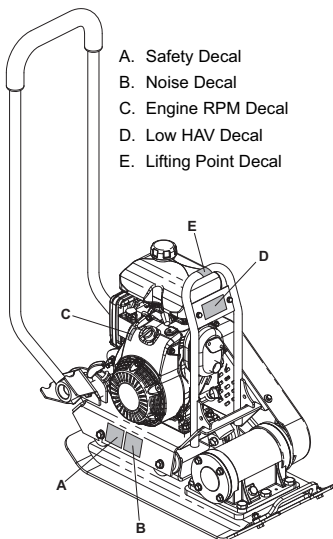
Technical Data



Model	PCLX320	PCLX320S	PCLX400
A - Height - Operation (mm)	920	928	920
B - Length - Operation (mm)	875	875	875
C - Width (mm)	320	320	400
D - Length - Storage (mm)	775	775	775
E - Height - Storage (mm)	590.5	590.5	590.5
Engine	Honda GX100		
Engine Power (Hp/kW)	3.0/2.2 @ 3600Rpm		
Weight (kg)	61.5	64.5	64
Vibrator Force (kN)	13	13	13
Frequency (Hz)	101	101	101
Maximum Travel Speed (m/min)	21.2	14.37	21.2
Compaction Force (kg/m ²)	398	-	336
Dual Force (NRSWA) (kg/m ²)	-	1569	-
3 Axis Vibration* (m/sec ²)	3.14	2.14	3.68
Usage Time (Hrs)	10.7	11.4	10.2
Sound Power Level (LWA)	105dB(A)	105dB(A)	105dB(A)

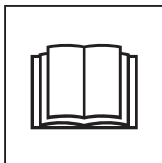
* Minimum level to EN500 Part 4





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

A - Safety Decal (Part No. 19.0.373)



**Please Read
Operators Manual**



**Wear Protective
Footwear**



**Wear Ear
Protection**



**Wear Eye
Protection**

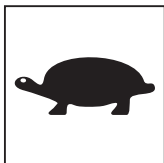
B - Noise Decal (800-99942)

The Noise Level of the machine during operation is 105 dB(A)

C - Engine RPM Decal



**Fast Engine Speed
Position**



**Slow Engine Speed
Position**

D - Low HAV Decal (800-99954)

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

E - Lifting Point Decal



Lifting Point

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
Operator Handle	Steel
Hand Grip	Rubber
Base Plate	Steel
Eccentric weights	Steel
Petrol engine housing	Aluminium
Petrol engine covers	Synthetic material
Various parts	Steel & Aluminium

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.

NRSWA (HAUC specification).

The specification was compiled by HAUC (Highways Authorities & Utilities Committee). The 'New Roads and Street Works Act 1991, set a new standard for road repairs and reinstatements in the UK. It covers materials, methods, equipment and safety when carrying out reinstatements on roads and footways. The reason for the act is to ensure repairs and reinstatements are carried out to a higher standard and ultimately last longer. This in turn will reduce the need for costly remedial work and reduce traffic delays.

There are two categories specified for plate compactors.

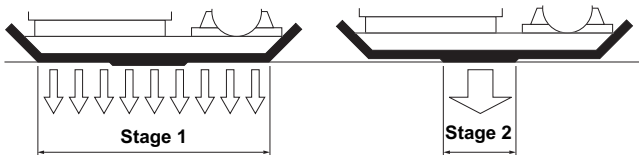
1. 1400 to 1800kg/m²
2. Over 1800kg/m²

These figures relate to the static pressure applied by the machine

NOTE: No standard single direction plate compactors comply with this minimum specification. For highways work always use a 'Dual Force' plate compactor.

DUAL FORCE

Belle Group studied the act then developed and patented equipment to enable contractors to comply with the act's requirements. The NRSWA legislation requires that compaction equipment meets the minimum specification. By purchasing an Belle Group 'Dual Force' plate, you are immediately complying with this part of the act. To comply with the specification and maintain surface tolerance, Belle Group 'Dual Force' base plates are divided into two areas providing two stages of compaction.



Stage 1: The full base area compacts the material like a standard machine.

Stage 2: The base rises onto the 'Dual Force' section to give 3 to 4 times the compaction force of standard plates.

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).

The chart shows the HAUC specifications for layer depth and number of passes for Dual Force' plates. If standard machines are used, optimum compaction can not be guaranteed, however, if layer depths are reduced and number of passes increased, results can be improved.

Moisture content of cohesive & granular materials is critical to effective compaction. If granular material is too dry it will flow around the plate instead of compacting. If the moisture content is too high the material may dry out after compaction and shrinkage will occur.

1400 -1800 kg/m2	COMPACTION PASSES REQUIRED PER LAYER OF COMPACTED THICKNESS UP TO.					
	40MM	60MM	80MM	100MM	150MM	200MM
Cohesive Materials**	.*	.*	.*	NP	NP	NP
Granular Materials	.*	.*	.*	5	NP	NP
Bituminous	6	NP	NP	NP	NP	-

* Usually placed in 100mm minimum layer so not specified by HAUC.

** The nature of cohesive materials makes plate compaction difficult. Optimum compaction is not guaranteed and not recommended by HAUC.

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 'PCLX' Plate compactor, consult your supervisor or Belle Group.



CAUTION

Improper maintenance 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.
- Cordon off the work area and keep members of the public and unauthorized 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 MACHINE until the guard has been replaced or repaired.
- Do not operate the MACHINE when you are ill, feeling tired, or when under the influence of alcohol or drugs.



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.

Fuel Safety.

- 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.

Vibration

Some vibration from the trowelling operation is transmitted through the handle to the operator's hands. 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 (with anti-slip soles for added protection). Wear clothing suitable for the work you are doing. Always protect skin from contact with concrete.

Dust.

The compaction process can 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 vapors 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.

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



WARNING

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

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 'PCLX' must not be used until the fault is rectified.

1. Thoroughly inspect the 'PCLX' for signs of damage. Make sure that the belt guard is secure before using the machine.
2. Check hoses, filler openings, drain plugs and any other areas for signs of leakage. Fix any leaks before operating.
3. Check the engine oil level and top up as necessary.
4. Check the engine fuel level and top up as necessary.
5. Check for fuel and oil leaks.

Operating Instructions

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

Where it is necessary to use lifting equipment to position the 'PCLX', make sure the lifting equipment has a WLL (Working Load Limit) suitable for the 'PCLX's' weight (see Technical Data section or machine serial plate). Attach suitable chains or slings **ONLY** to the lifting point on the top of the 'PCLX'.

• NEVER leave the engine running whilst transporting or moving the 'PCLX', even if it is only a short distance.

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

The Belle Group 'PCLX' 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 'PCLX'.**

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 'PCLX' 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 'PCLX's' direction of travel. If necessary, use a suitable rope attached to the 'PCLX' at a low point on the chassis, to allow a helper to take part of the 'PCLX's' weight. Work up and down a slope not across.

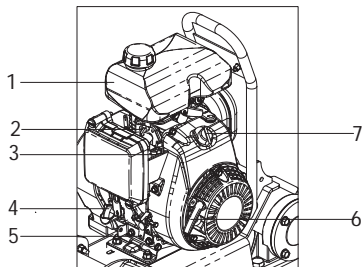
• **Work the 'PCLX' over the surface in an organized pattern until the required compaction has been achieved.**

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



WARNING

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



Honda GX100

1. Fuel Tank,
2. Choke Lever,
3. Fuel ON/OFF Lever,
4. Engine Oil Filler / Dipstick,
5. Throttle Lever,
6. Recoil Starter Handle,
7. Engine ON/OFF Switch

Stopping the engine

1. To stop the engine, set the throttle to idle. Allow the engine to idle for at least 2 minutes
2. Turn the engine ON / OFF switch anti-clockwise to the '0' position.
3. Turn the fuel off.

Starting the 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 right. 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 bottom.
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 and 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 left.
9. If the engine fails to fire after several attempts, follow the trouble-shooting guide.
10. Due to the centrifugal clutch, the plate will not vibrate until the engine speed is increased.

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.	Open choke, fully open throttle, pull recoil starter until engine fires.
Engine still will not start Unit will not vibrate.	Major Fault	Contact Agent or Belle Group.
	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 Belle Group.
Asphalt adhering to plate. Bituminous surface flaking (laminating).	Vibrator failure.	Contact Agent or Belle Group.
	Lack of lubrication.	Use water
Low travel speed (plate sinking).	Over compaction.	Remove and relay.
	Layer thickness too deep.	Remove some of the material.
	Moisture content too high or too low.	Remove material and adjust.

Maintenance

The Belle Group 'PCLX' range is designed to give many years of trouble free operation. It is recommended that an approved Belle Group dealer carries out all major maintenance and repairs. Always use genuine Belle Group replacement parts, the use of spurious parts may void your warranty.

Before any maintenance is carried out on the machine, switch off the engine and disconnect the HT lead from the sparkplug.

Always set the 'PCLX' on level ground to ensure any fluid levels will be correctly read. Only use recommended oils (see chart on following page).

Running In Period

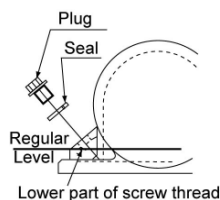
When the 'PCLX' is first used from new, the engine oil must be changed after the initial running in period (see engine manual for full detail). The vibrator shaft case oil must be replaced after the first 100 hours use, then after every 500 working hours. For detail on vibrator shaft case oil replacement,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

The belt tension should be checked after 4 hours use.

Routine Maintenance		After First 4 hours	First month / 20Hours	3 Months 50 Hours	6 months 100 Hours
Engine Oil	Check Level	✓			
	Change		✓		✓
Air Filter	Check Condition		✓		✓
	Clean / Replace			✓	
Spark Plug	Check / Clean				✓
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 GX100	S.A.E. 10W 30	0.4	Unleaded	1.2	BM4a or BmR4a	0.6 - 0.7
Vibrator	Turbine Oil 32	0.22	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).



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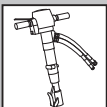
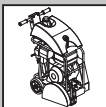
BarOmix...

FORT...

Limex...

Richard Fraisse...

Plettac



COMPACTING...

MIXING...

CONCRETING...

CUTTING...

BREAKING...

MOVING...

WHEELBARROWS...

SCAFFOLDING