BETON TROWEL BV

OPERATING AND SAFETY INSTRUCTION MANUAL

PAVEMENT ROLLER BTPR550H

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BNP FORTIS: BE81 0015 9813 5624 - GEBABEBB

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1. INTRODUCTION

This Pavement Roller is a hand-guided soil compactor that has been specially designed for terrace construction and paving applications.
The machine is composed of a bottom and a top section. The bottom section houses the exciter and rollers made of a surface-friendly plastic, while the top section contains the engine and the required controls.

Warnings for incorrect application and abuse
This machine is hard to move forward on a soil with much water (especially clay soil). It is not suitable for such application. This machine is difficult to level a ground include big stones due to insufficient compacting force. The Pavement Roller is mainly applied for compacting surface smooth and it is nor effective for jobs that requires heavy compaction. In case of compacting ground deeply into lower layer, it is recommended to use Tamping Rammer, Vibro Compactor and Vibration Roller which compacting force is rather effective. Please use this compactor for compacting surface on soil, sediment, sand, beaching and asphalt. It is not recommended for use this machine for the other applications.

Structure
The upper part is made up of Power source, Handle, Belt Cover, Water Tank for sprinkling and Guard hook which are fixed by Engine base. The Engine base is fixed on Vibrating Plate by Shock absorbing Rubber. The lower part is made up of a Vibrating plate and a Vibrator unit that has an Eccentric rotary shaft built in. The power source is transmitted from the centrifugal clutch on the engine output shaft to the Eccentric rotary shaft via a V-belt.

Power Transfer
An Air-cooled Single cylinder Engine is mounted as power source and a Centrifugal Clutch is fixed on the engine output shaft.
The Centrifugal Clutch engages by running up the engine. The engine R.P.M. is reduced to a suitable number for compacting. The rotation of the engine is transmitted form V-pulley integrated with Clutch drum to Vibrator pulley through a V-belt. The Vibrator Pulley rotates an Eccentric rotor shaft that is contained in a Vibrator case. The generated vibration created from eccentric rotor is transmitted to Compacting plate. Vibration of the Vibrating Plate carries the machine forward; the vibration with the weight of the machine makes the compaction of the ground possible.

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2. SPECIFICATION

Model	**BTPR500H**
Dimensions	
Overall Length mm	1150
Overall Width mm	525
Overall Height mm	825
Weight	
Net Weight kg	105
Operating Weight kg	108
Performance	
System	Single Shaft Vibrator
Drive Concept	Mechanical
Frequency Hz	100
Roller No.	4
Power Source	
Manufacturer	HONDA
Model	GX160
Max. Output	4.2kW (5.5PS) 4000min^{-1}
Fuel Tank Capacity L	3.6
Starting system	Recoil starting
Set R.P.M rpm	3600

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3. NOISE & EMISSION

Noise emission:
weight sound pressure level at work station: 102dB
Working Station: 84dB
The sound power level: 108dB
Note: the measurement is according to EN500-1:2006

Vibration emission:
Measured vibration emission value a: 4,9 m/s²
Arm Vibration: 79 m/s^2
Uncertainty K: 789
Note: the measurement is according to EN ISO 20643:2005

4. FOR SAFE OPERATION

Foreword:
It is important to read this manual carefully so that you will fully understand the operational characteristics and performance of the Pavement Roller . Proper maintenance procedures will insure long life and top performance of the unit.

Safety:
This section outlines basic safety procedures that apply to the operation, maintenance and adjustment of the BT Pavement Roller . This unit is designed as a powerful, productive machine that should be operated with respect and caution. Misuse or carelessness can result in serious injury or property damage, or 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 follows. Yours safety is at stake!

Operator Qualifications:
Before operating this equipment, an individual should read this manual. Whenever possible, he should be shown how to operate the unit by an experienced operator. Inexperience is hazardous in operating any machine or attachment. Trial and error is

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not the way to become familiar with a piece of equipment. This is expensive, cuts equipment life and can create machine downtime. Inexperience can cause injury or death. The machine should not be left unattended when operating.

General Safety:

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

CAUTION
Read the instruction manual carefully and operate the machine properly to work safely.
With respect to engine, read the separate engine manual.
Understand the mechanism of the machine sufficiently.
Wear protectors (hard hat, safety shoes, ear plugs, etc.) and proper clothing for working safety.
Always check the machine for loosened threads or any other abnormality before starting your work.
Whenever affixed name plate (such as operating directions and warnings) become difficult to read, replace it with new one.
Machine is hazardous for children to tamper with. Pay enough caution for 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 for servicing. If equipped with starter motor, disconnect battery wiring.
Manufacturer does not assume responsibility for any accident arising from modification.

Refueling Safety:

WARMING
Before refueling, be sure to shutdown engine and wait for 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
Before starting and operating your machine, check for 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 hot in operation.
Be sure to stop engine whenever you leave the machine. Also, do not forget 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
Before 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 hot 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.
For safety, try not to lift to unnecessary height.

Engine:
See engine operations manual

SHUTDOWN:

EMERGENCY SHUTDOWN
Move throttle lever to “OFF” position and also turn stop switch to “OFF”.

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

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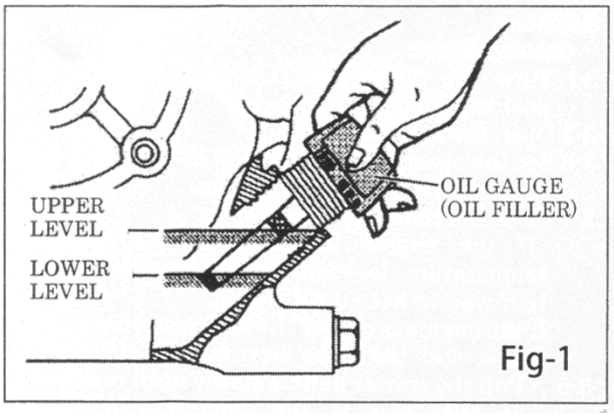
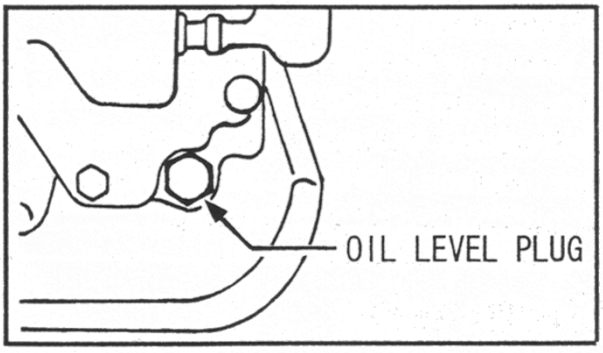
5. BEFORE STARTING YOUR OPERATION

1. Make sure that all dirt, mud, etc., are thoroughly removed from the unit prior to operation. Special effort should be given to the bottom face of the vibrating plate and those areas adjacent to the cooling air inlet of engine, carburetor, and air cleaner.
2. Check all bolts and screws for tightness and make sure all bolts and screws are securely tightened.
   Loose bolts and screws may cause damage to the unit.
3. Check the V-belt for tightness. The normal slack should be approximately 10-15mm (1/2") when the belts are forcibly depressed in the middle position between the two sheaves. If there is excess belt play, there could be a decrease in the impact force or 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)
5. Remove the oil plug in the vibrator assembly and check the oil level. Make sure the compactor is level when checking. The oil level should be up to the oil plug. Every month or every 200 hours of operation, replace the oil. (Fig-2.1 & Fig-2.2)

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 hot





6. 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 to be used
Summer	25℃ or higher	SAE#30
Spring/Fall	25℃～10℃	SAE#30, #20
Winter	0℃ or lower	SAE#10

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6. ENGINE STARTING

Petrol Engine

1. Align fuel cock lever 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 lever to OPERATION position. (Fig.7)

After started, be sure to run the engine at low speed for a few minutes.
It must be done in cold climate in particular.
Check for abnormal noise of gas leak in the meantime.

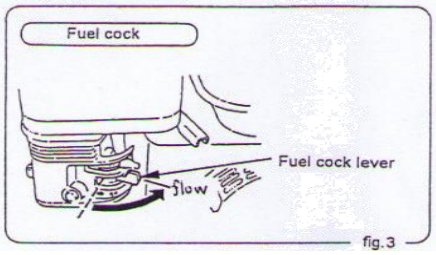
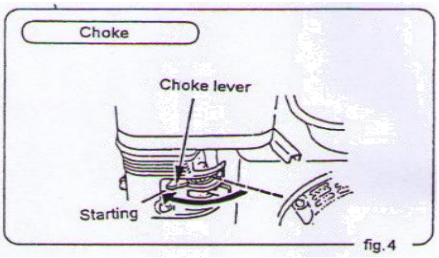


fig.3



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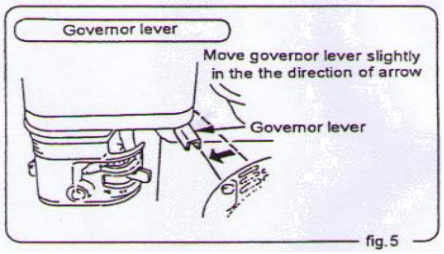

fig.5

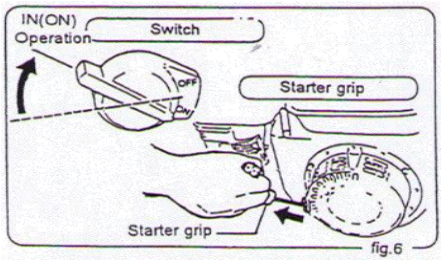

fig.6

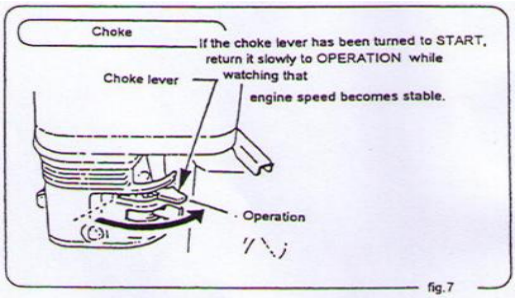

fig.7

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CAUTON
If your engine fails to start, do not rotate starter motor for more than 5 seconds Continuously, but return the key to (Run) mark and wait for 10 seconds or so, before attempting again.

CAUTON
While your engine is running, never turn the key switch to (Star) Mark

CAUTON
In case you start with recoil starter or cranking, the key should be placed in I (Run) position as well.

In case of recoil starter

By pulling the starter knob slowly, you will reach such point where resistance becomes strong (compression point). By pulling it further, you will find a point where resistance is reduced. Return the knob but slowly return it original position.

CAUTON
Don’t pull the rope all the way and don’t take your hand off the pulled knob but slowly return it to original position.

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7. OPERATION

1. As the engine warms up, gradually move the chock lever to the OPEN position.

2. Move the speed control lever from the LOW to the HIGH position. When the engine speed reaches approximately 2300-2600 RPM, the centrifugal clutch engages. If the engine speed increased very slowly, it is possible that the clutch can slip. Do not operate the speed control lever slowly.

3. Set up the machine at its place of use.

CAUTION
While engine is stopped, operating travel lever back and forth a few times causes the lever to be locked at forward position.
This does not mean it is in trouble but the check valve within hand pump is actuated. Do not try to operate the lever forcibly. The travel lever will operate normally when the engine is started and vibrator is in action.

8. 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.

Petrol 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 still hot, it may hasten wear such as burn out of oil slick in cylinder.

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9. TRANSPORTATION & 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℃～40℃; no rapid changes causing dew.
  Ambient humidity: 45%～65% (no dew)

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10. TROUBLE SHOOTING

1. Engine

(1) Starting deficient

Fuel is available but spark plugs do not spark	Power available at high voltage cord	Spark plugs bridged.
		Carbon deposit on spark plug.
		Short- circuit due to deficient spark plug insulation.
		Improper spark plug gap.
	Power not available at high voltage cord	ON-OFF switch short circuiting.
		Ignition coil defective.
		Point not clean or gap improper.
		Condenser insulation deficient or short – circuiting.
		Spark plug coil broken or short – circuiting.
Fuel available and spark plugs spark	Compression is proper	Wrong fuel in use.
		Water or dust entered.
		Air cleaner not clean.
	Compression deficient	Suction/exhaust valve stuck or protruded.
		Piston ring and/or cylinder worn.
		Cylinder head and/or spark plug not tightened properly.
		Head gasket and/or spark plug gasket damaged.
Fuel not available at carburetor	Fuel not available in fuel tank.	
	Fuel cock not opened properly.	
	Fuel filter clogged.	
	Tank cap bleed hole clogged.	
	Aeration in piping.	

(2) Operation deficient

Weak in power	Compression is proper and doesn't misfire.	Air cleaner not clean
		Carbon deposit in cylinder
		Improper oil level in carburetor
	Compression insufficient (See "Compression deficient" above)	
	Compression is proper yet misfires	Water in tank
		Spark plug not clean
		Ignition coil defective
		Spark plug occasionally short-circuits
Engine overheated	Carbon deposit in combustion chamber or around exhaust port	
	Spark plug heat value improper	
	Cooling fins not clean.	
Rotational speed fluctuates	Governor adjustment deficient	
	Governor spring defective	
	Fuel flow deficient	
	Air taken in through suction piping system	

(3) Recoil starter function deficient

Recoil starter function deficient	Rotor clogged with dust
	Spiral spring failure due to fatigue

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2. Machine

Travel speed slow and vibration weak	Engine output deficient and high speed revolution setting improper
	Clutch slips
	V-belts slips
	Excessive oil in vibrator
	Defect in vibrator internals
Travel forward or reverse but impossible to switch direction	Reversing parts defective
	Reversing lever installation deficient
	Oil hose broken
	Aeration in hydraulic oil for reversing system
	Check valve in hand pump clogged with dust
	Piston bearing in cylinder defective
Dows not travel either forward or reverse	V-belt disengaged or slips
	Clutch slips
	Vibrator locked
	Piston bearing in cylinder defective
Travel lever operating resistance great	Gall of hand pump piston
	Gall of vibrator cylinder piston

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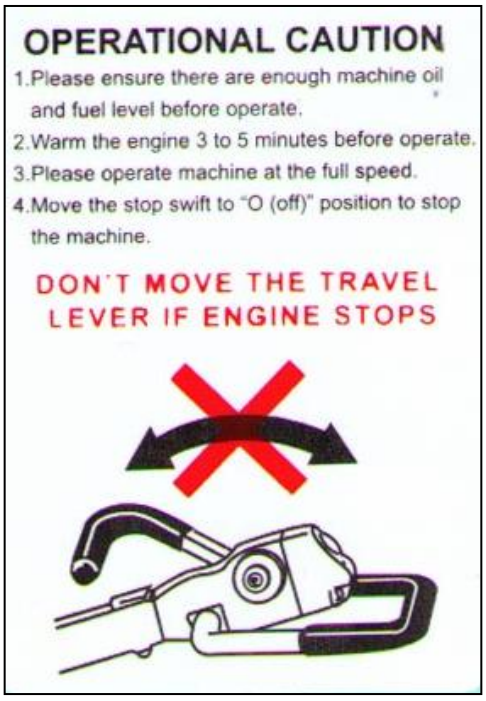
11. SAFETY LABELS



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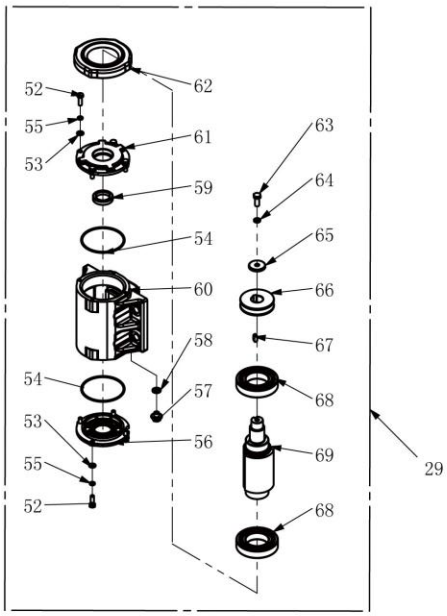
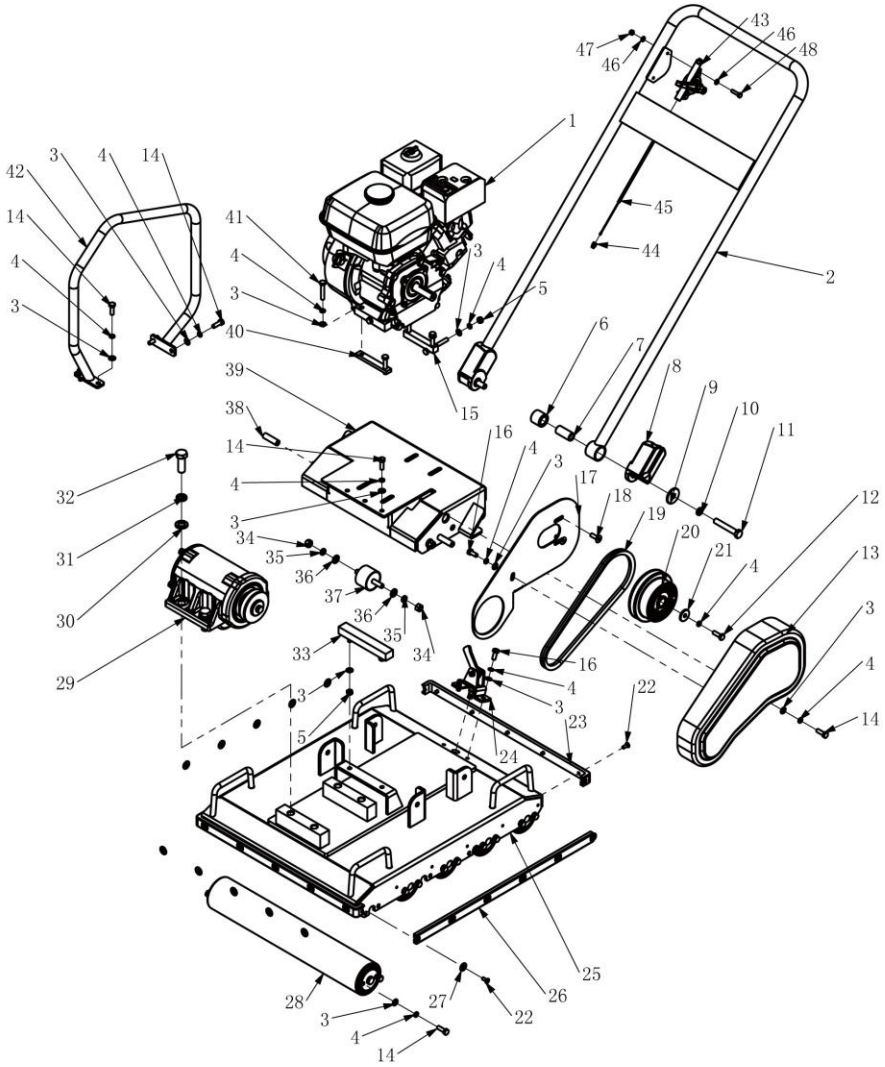
12. SPARE PARTS LIST





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No.	Description	Drawing No.	Qty
1	Engine	25160006	1
2	Handle	2204-02100-3	1
3	Washer M8	11080000	36
4	Spring Washer M8	12080000	35
5	Lock Nut M8	13080001	3
6	Rubber Collar	2204-02002-4	2
7	Collar	2204-02003-1	2
8	Shock Absorber	2204-02001-4	2
9	Washer M12x40x3	11124003	2
10	Spring Washer M12	12120000	2
11	Bolt M12x75	15120751	2
12	Bolt 5/16-24x1	15080300Y	1
13	Belt Cover	PR300106	1
14	Bolt M8x25	15080250	26
15	Engine Nut	2204-20000-3	1
16	Bolt M8x20	15080200	3
17	Plate, Belt Cover	2207-00001-2	1
18	Allen Screw 5/16-24x1	16082504Y	2
19	Belt	PR300100	1
20	Clutch Assy.	2302-10190-1	1
21	Washer M8x30x3	11083003	1
22	Allen Screw M6x12	16061618	22
23	Rubber Strip, Front and Rare	PR300104	2
24	Brake	2207-06000-1	1
25	Main Plate	PR300105	1
26	Rubber Strip, Sides	PR300103	2
27	Disc Washer	14100001	22
28	Roller Assy.	PR300101	4
29	Exciter assy	2202-20000-1	1
30	Washer M16	11160000	4
31	Spring Washer M16	12160000	4
32	Bolt M16x45	15160450	4
33	Square Shock Absorber	PR300102	1
34	Lock Nut M10	13100001	8
35	Spring Waher M10	12100000	8

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No.	Description	Drawing No.	Qty
36	Washer M10	11100000	8
37	Shock Absorber	2202-00002-4	4
38	Handle Position Limit Bar	2207-00005-1	2
39	Engine Plate	2207-02000-3	1
40	Handle Position Limit Bar	2204-00012-1	1
41	Bolt M8x45	15080450	4
42	Protection Frame	2207-03000-3	1
43	Throttle Lever Assy.	2204-33000-1	1
44	Nut, Throttle Cable	2204-00021-4	1
45	Throttle Cable	2204-00008-4	1
46	Washer M6	11060000	4
47	Nylon Nut M6	13060001	2
48	Bolt M6x25	15060250	2
52	Bolt M8x25	15080250	8
53	Washer M8	11080000	8
54	O-Ring Φ105x3.1	261053.1	2
55	Spring Washer M8	12080000	8
56	Right Cover	2202-20006-1	1
57	Plug M12x1.25x10	70000019	1
58	Sealing M12	14120002	1
59	Oil Sealing TCΦ48xΦ35x10	2535481002	1
60	Vibrating Case	2202-20002-1	1
61	Left Cover	2202-20005-1	1
62	Dust Cover	2202-20004-4	1
63	Bolt M10x25	15100250	1
64	Spring Washer M10	12100000	1
65	Washer M10x40x5	11104005	1
66	Pulley	2202-20003-1	1
67	Key 8x19	20080719A	1
68	Bearing 6211	216211C3P6	2
69	Rotator	2202-20001-1	1

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13. DECLARATION OF CONFORMITY

Declaration of Conformity / Certificat de conformite / Gelijkvormighheidscertificaat / Declaracion de Conformidad / Declaracao de Concormidade / Dichiarazione Di Conformita

Model : BTPR550H

We Beton Trowel BV
Declare under our sole responsibility that the product to which this declaration relates is in conformity with the following standard(s) or other normative documents.
Déclarons sous notre responsabilité que le produit cette déclaration est conforme aux normes suivantes ou d'autres documents habituels.
Verklaren onder onze verantwoordelijkheid dat het product naar welke de verklaring verwijst conform de volgende standaards of anders gebruikelijke documenten is.
Declaramos bajo nuestra única responsabilidad que el producto en lo que esta declaración concierne, es conforme con la siguiente normativa u otros documentos.
Declara sob sua responsabilidade que o produto a quem esta declaração interessar, está em comformidade com os seguintes documentos legais ou normas directivas.
Dichiariamo sotto la ns. unica responsibilita che il prodotto al quale questa dichiarazione si riferisce, è fabbricato in conformità ai seguenti standard e documenti di normative.

EN 349:1993	**Safety of Machinery - Minimum gaps to avoid crushing of parts of the human body.**
EN 418:1993	**Safety of Machinery - Emergency stop equipment, functional aspects - Principles for design**
EN 12100-1:2003	**Safety of Machinery - Basic Concepts, general principles for design - Part 1: Basic Terminology, methodology**
EN 12100-2:2003	**Safety of Machinery - Basic Concepts, general principles for design - Part 2: Technical Principles**
EN ISO 4872:1978	**Acoustics - Measurement of Airborne noise emitted by construction equipment Intended for outdoor use - Method for determining compliance with noise limits.**
EN ISO 5349-1:2001	**Mechanical vibration. Measurement and evaluation of human exposure to hand-transmitted vibration. General requirements**
EN ISO 5349-2:2001	**Mechanical vibration. Measurement and assessment of human exposure to hand-transmitted vibration. Practical guidance for measurement at the workplace.**

Following the provisions of Directives / Suivant les directives determines / Volgens de vastgestelde richtlijnen:
Siguiendo las directivas / No sequimento das clausulas da Directivas / Seguendo quanto indicato dalla Direttivas:

98/37/EC Machinery Directive
2000/14/EC Noise Directive
2001/95/EC General Product Safety Directive
2002/95/EC Reduction of Hazardous Waste Directive

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