VPD1.2 Vibrating Post driver

Operators Manual & Parts Book

8/31/2017

Rev – E
Introduction

We thank you for buying this Attachment. We hope it gives you many years of good service.

These units have been designed to give high performance, and have been made out of heavy-duty components. They have also been designed to be safe, if used correctly. Please read the Manual, and follow the instructions, contained therein, and also follow the instructions on the decals on the outside of the attachment.

Ensure that the Dealer shows you and your operators how to use the machine, and if you have any further questions, please do not hesitate to contact your Dealer.

IMPORTANT

It is imperative that the entire manual is read and understood prior to any assembly, installation, operation or maintenance of the machine. Pay particular attention to instructions concerning safety, operation and maintenance; so as to avoid all risk of injury.

CE Plate

Make sure the CE Plate is attached at all times to your attachment. Loss or damage may result in Loss of Warranty and the inability to sell your machine at a later date.
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SAFETY WARNINGS & SYMBOLS
Please note that the following warnings and symbols are to be found Throughout this manual. It is important that you understand that if you do not heed these warnings, your safety and the safety of people working near you will be at risk
Warning – Read operators manual safety decal

Warning – Pinch point safety decal

Serial number plate

Post cup support plates **MUST** face forwards as per above diagram.
Safety Precautions
Accidents can be prevented with your help

Incorrect use of this machine, or failure to follow instructions Concerning safety can lead to serious injury or death.
Before using the machine :
1) Read this manual carefully
2) Make sure the machine, has been correctly attached to the loader, and is suitable for the job.
3) Familiarise yourself with Local safety regulations, prevailing on the job site, and in the trade.

It is imperative that you exercise extreme caution when hitching and, removing, the Vibrating Post Driver from the host machine and also carrying out service or maintenance.

Ensure that all workers present are at least 25 feet away from any part of the Vibrating Post Driver, or host machine, when they are being worked on or operated. And that they are wearing full clear plastic face masks.

We always make operator and public safety an utmost priority when designing machines. Rotating and moving parts are guarded where necessary. It is not always possible to guard all moving parts, to allow the proper operation and function of the machine. It is important to follow the instructions in the operating manual, and the instructions on the Decals on the machine. (See safety Decals)

Do not let people stand near to, in front of, or to the rear of the Vibrating Post Driver or host machine when in use.

If using a person to signal, position the post with the VPD and the signaller. Then move the signaller at least 25 feet from machine before operating Vibrating Post Driver.
Mandatory Shutdown Procedure.

Before adjusting, maintaining, servicing, or cleaning the Vibrating Post Driver, you MUST ALWAYS follow the MANDATORY SHUTDOWN PROCEDURE.

1) Follow the instructions in the manual of the host machine for the method of shutting down and stopping the machine.
2) In the event of having our vibrating post driver fitted to the host machine, we would advise the following additions to that procedure.
3) Allow the drive levers on the host machine to spring return to the Neutral position.
4) Move all the auxiliary flow control levers into the OFF Position.
5) Lower the arm of the host machine with the vibrating post driver attached, until the vibrating post driver fits into its parking frame that is provided.
6) Engage the Parking Brake if fitted.
7) Return the throttle lever to idle, turn off the engine, and remove the ignition key.
8) Move the auxiliary hydraulic lever, the main arm lift lever, and the crowd levers, backwards and forwards to ensure that all the hydraulic circuits are depressurised, and that no hydraulic rams are carrying any weight.
9) Get off the machine, following the correct procedure for leaving the machine as indicated in the Loaders Operator Manual.

When getting off the Excavator, to adjust, repair or maintain the Vibrating Post driver ALWAYS complete the MANDATORY SHUTTING DOWN PROCEDURE. Failure to do so could lead to serious injury or death.
Safety

THE FOLLOWING PRECAUTIONS MUST BE OBSERVED FOR THE SAFETY OF THE OPERATOR AND/OR SERVICE PERSONNEL

A well-trained and careful operator is the best protection against accidents. Most accidents are caused by NOT FOLLOWING BASIC SAFETY PROCEDURES.

Make sure you familiarise yourself with all the precautions listed:

1) Read and understand all safety information, supplied in the Operators manual of the host machine and the Vibrating Post Driver. Read and follow all the decals on the host machine and the Vibrating Post Driver, and at all times follow the procedures as laid down in the manual, and on the decals of the machine.
2) Check that all the safety devices supplied, on the Vibrating Post Driver and the host machine, are working properly before using any of the equipment.
3) Ensure that you understand fully, all those instructions, and if at all unclear, make sure you contact the local dealer who will explain anything you do not understand.
4) Read and understand the host machine’s operators manual, before using the Vibrating Post Driver attachment on the machine. Make sure you observe all the manuals recommendations.
5) When loading, make sure the Vibrating Post Driver stays near to ramps etc.
6) Always lower the main arm fully before leaving the operator’s seat.
7) Carefully inspect all hydraulic pipes and connections on a routine basis. Always use a piece of paper or cardboard when looking for leaks.
8) If you suspect a leak, NEVER place any part of your body near the leak, carry out the Mandatory Shutting down Procedure, and have a qualified hydraulics engineer test and repair any leaks.
9) Ensure that you follow all the above safety procedures, and ALWAYS carry out the Mandatory Shutting down Procedure before working on the Vibrating Post Driver.
Setting Up the Vibrating Post Driver

READ THE COMPLETE MANUAL AS WELL AS THE DECALS ON THE VIBRATING POST DRIVER BEFORE TRYING TO SET UP, USE, OR SERVICE AND MAINTAIN THE UNIT.

The Vibrating Post Driver is supplied fully assembled and tested for your safety. However, it is advisable to carry out the following checks before using the Attachment.

**Safety Decals**
Make sure the machine is fitted with all the safety decals that should be provided, see (Section safety Decals), and that they are clearly and easily readable, and will always be followed.

**Hoses and Fittings.**
Ensure that all the hydraulic hoses, and fittings are tight and secure, and that the Quick release couplings are properly fitted, before starting the excavator, and letting oil into the Vibrating Post Driver circuit. Check that hoses are not damaged in any way, which may later lead to leaks, when under pressure.

Start the loader up, and at low idle RPM, test all the circuits of the Vibrating Post Driver. If all are working with no leaks, then activate dipper ram to its full extent, ensuring that the hoses are not kinked or stretched.

**Safety Guards**
Ensure that the safety guards are in place, correctly fitted and secure.

**Loader Attachment**
To attach the Vibrating Post Driver to the host machine:
- Start the host machine and rotate the dipper crowd ram forward.
- Move forward hooking the machine arm end into the Vibrating Post Driver attachment bracket
- Now go through the Mandatory Shutting down Procedure
- Get off the host machine
- Attach the locking levers (skid steer) or pins (excavator)

Follow the manufacturer’s instructions when using a semi-quick or hydraulic hitch on an excavator.
- Connect the two hydraulic hoses from the Vibrating Post Driver to the auxiliary quick release couplings on the host machine as per the machine’s owner’s manual. **Failure to connect these correctly will damage the hydraulic motor, and void your warranty.**

- **MAKE SURE THE RETURN LINE OF THE AUXILIARY CIRCUIT GOES DIRECTLY BACK TO TANK. IF IT DOES NOT DO SO, IT COULD RUIN THE HYDRAULIC MOTOR, AND YOUR WARRANTY WILL BE VOIDED**

**THERE MUST BE NO BACKPRESSURE OR SPIKES CAUSED WHEN OPERATING THE POST DRIVER**
Operating Instructions

This Vibrating Post Driver Attachment, is designed for driving Fence Posts or any other wooden/metal/plastic posts into the ground. If used correctly, this unit will give a high output and will be very reliable and safe to use. It is therefore advised that to achieve these aims you follow the Operating Instructions carefully. Misuse of the machine could cause injury or death, and also void your warranty.

The Vibrating Post Driver is hydraulically powered, and needs a minimum flow of 11 GPM at a minimum 2900 PSI. Failure to provide such flow and pressure will severely inhibit the Vibrating Post Driver’s performance.

- Attach the Vibrating Post Driver to the host machine - (see Safety Precautions).
- Check that all the Quick release hydraulic couplings are correctly fitted.
- Start the host machine, as per the Operator manual.
- Move the Loader and Vibrating Post Driver into position by the Post
- Gently lower the post cup over the end of the post.
- Activate the hydraulic control valve, so that the post driver pushes vertically down on the top of the Vibrating Post Driver and the post. Ensure that the movement of the dipper ram is not too fast, and drives the Post in too deep.
- Now level the VPD using the host machine.
- Level the VPD left and right hand position until vertical –side to side.
- Check with signaller, if used, that post is vertical in all directions.
- Ensure the host machine has positioned Vibrating Post Driver the best position to drive the post all the way in.
- Engage full RPM of host machine
- Engage the auxiliary hydraulic circuit.
- **Always ensure the Post and Vibrating Post Driver, are vertical in both planes before driving in the post. Drive in SLOWLY TO START WITH, making sure you maintain verticality at all times**
- **After the post is in 12”-18” you can exert maximum downforce, as the ground will now keep the post vertical.**

- When stopping the Vibrating Post Driver, activate the opposite procedure.
- Lift VPD off post.
- **AT NO TIME LET THE VIBRATOR WORK IN FREE AIR(dry fire) FOR MORE THAN VERY SHORT PERIODS OF TIME – OTHERWISE THIS WILL CAUSE SERIOUS DAMAGE**

- Turn off auxiliary hydraulic circuit.
Operating Method

ALWAYS FOLLOW THE METHODS USED IN THE MANUAL FOR THE OPERATION AND USE OF THIS VIBRATING POST DRIVER, THE METHODS HAVE BEEN DESIGNED FOR YOUR SAFETY, AND THE SAFETY OF THOSE AROUND YOU ON THE WORKSITE.

Basic check when connecting and operating the VPD post driver

1) Ensure the excavator/skid steer has less than 175 PSI back pressure

2) Ensure the hydraulics are set in one way flow

3) Varify which hose is supply and which is return

4) The post driver should “hum” at high speed, rather than”banging”

5) This high speed “hum” vibration travels through the post rather than the excavator when downward force is exerted on the post.

6) Always check that the anti-vibration (A/V) rubber bolts are tight every 30minutes when the post driver is new.
Exploded view and parts list

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Fixings</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Description</td>
</tr>
<tr>
<td>1</td>
<td>Front Bearing Holder</td>
</tr>
<tr>
<td>2</td>
<td>Front Vibrator Plate</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Vibrator Bearing</td>
</tr>
<tr>
<td>4</td>
<td>6” Post Hat Assy (Shown)</td>
</tr>
<tr>
<td>5</td>
<td>Main Vibrator Housing Assy</td>
</tr>
<tr>
<td>6</td>
<td>Vibrator Weight</td>
</tr>
<tr>
<td>7</td>
<td>Rear Vibrator Plate</td>
</tr>
<tr>
<td>8</td>
<td>Rear Bearing Holder</td>
</tr>
<tr>
<td>9</td>
<td>Hydraulic Motor</td>
</tr>
<tr>
<td>10</td>
<td>A/V Rubber Mount</td>
</tr>
<tr>
<td>11</td>
<td>Rear Housing Assy</td>
</tr>
</tbody>
</table>

#2 Bolts BOLT M8X30X1.25MM (FITS ON VIBRATING POST DRIVER FACE PLATE) 299015
#9 Motor VIBRATING POST DRIVER REPLACEMENT GEAR MOTOR 200650
#9 Seal VIBRATING POST DRIVER MOTOR SEAL KIT (INCL SHAFT SEAL, BRASS RETAINING WASHER, CIRCLIP & ALL SEALS) 200651
Hydraulic Circuit

½” return hose this must return direct to tank.
# Hydraulic Circuit Parts List

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>No. Off</th>
<th>Spec:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3/8” 2 wire hydraulic pipe 2mtrs long</td>
<td>1</td>
<td>1/2 FM for QRC &amp; 3/8 FM for post driver</td>
</tr>
<tr>
<td>2</td>
<td>1/2” 2 wire hydraulic pipe 2mtrs long</td>
<td>1</td>
<td>1/2 FM for QRC &amp; 3/8 FM for post driver</td>
</tr>
<tr>
<td>3</td>
<td>3/8” M/FM/M tee</td>
<td>2</td>
<td>FM swivel on branch</td>
</tr>
<tr>
<td>4</td>
<td>3/8” M/M adaptor</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3/8” Dowty Seal</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Non-return Check Valve</td>
<td>1</td>
<td>3/8 inch BSP – 0.5 bar</td>
</tr>
<tr>
<td>7</td>
<td>25mm Stauff single clamp</td>
<td>1</td>
<td>2no M6x65mm bolts, washers &amp; nylocks</td>
</tr>
<tr>
<td>8</td>
<td>3/8” 2 wire hydraulic pipe 0.75mtrs long</td>
<td>2</td>
<td>3/8” FM and 3/8” 45° swept FM</td>
</tr>
<tr>
<td>9</td>
<td>16mm Stauff single clamp</td>
<td>2</td>
<td>2no M6x45mm bolts &amp; washers</td>
</tr>
<tr>
<td>10</td>
<td>3/8” M/FM compact swivel 90°</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>½” – 3/8” M/M adaptor</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>½” Dowty Seal</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Hydraulic Motor</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Maintenance

The correct maintenance of the machine will lead to a longer life, safer operation, and a more cost effective use of this attachment.

Maintenance of the unit can be divided into three separate operations.

1. Lubricating the machine
3. Daily checking of the machine, and its hydraulic hoses valves etc. for leaks, cracks, breaks, etc.

1) Greasing and Lubricating the Machine
- Make sure the machine has been put through the Mandatory Shutting down Procedure
- Ensure that the host machine has been put in the advised Servicing Position (see Diagram)

2) Maintenance and Replacement of the Rubber Vibration Mounts
- This should only have to be carried out – when faulty, or at least once every 6 months if the machine is in constant use.
- Only use the AVB mounts supplied by Blue Diamond.
- Fit The Vibrating Post Driver to the host machine.
- Attach the vibrating side plate side firmly to a work bench with a clamp or other device so that it can’t fall over.
- Undo the rubber mounts on one side first, replace them with new units, and bolt up.
- Repeat procedure on the other side.
- Unclamp machine from bench and test.
- Replace –anti- vibration washers as supplied, at same time

3) Daily checking of the machine, and its hydraulic hoses valves etc. for leaks, cracks, breakage's etc.

Also thoroughly check the Vibrating Post Driver before use, ensuring that all bolts are tight, that the hoses are undamaged and that there are no structural defects on the main plates. The bolts for the rubber vibration mounts need tightened after the first 2 hours of use, and then checked for 180 ft/lbs torque once a week.
DO NOT use the Vibrating Post Driver until all/any defects are corrected by a qualified engineer.
Service

1) Servicing the Hydraulic Circuit/ Motor etc.

In the event of you having to replace any of the hydraulic components in the Circuit, follow this procedure

- Contact either your Dealer or Blue Diamond to verify the problem with the attachment.
- If the Attachment is still under Warranty, contact your dealer or Blue Diamond.
- If the attachment is out of warranty, and you wish to carry out the repair yourself, it is imperative you follow the correct procedure as detailed below

PROCEDURE

1) Place Vibrating Post Driver on the floor resting on its stand.
2) Go through the MANDATORY STOPPING PROCEDURE.
3) DE-PRESSURISE THE EXCAVATOR AUXILIARY HYDRAULICS (see host machine's Operators Manual)
4) When you are sure this is complete, remove both quick release couplings.
5) Make sure Vibrating Post Driver is resting on its stand correctly, and remove locking clips and knock out pins.
6) Remove host machine from the vicinity of the Vibrating Post Driver.
7) De-Pressurise the hydraulic circuit of the Vibrating Post Driver, by removing the quick release coupling on the Return line. Drain oil into clean container.
8) De-Pressurise the other side of the circuit, by removing the Pressure side quick release coupling. WHEN YOU HAVE LOOSENED THE QRC COUPLING COVER THE PIPE AND COUPLING, WITH A THICK PLASTIC SHEET, OR RAG. ALWAYS wear a face mask, before undoing it and taking the QRC off

WHEN DE-PRESSURISING HYDRAULIC CIRCUITS, ALWAYS MAKE SURE YOUR EYES AND FACE ARE PROTECTED BY GOGGLES OR A FACE MASK, AND THAT YOU WEAR HEAVY DUTY LIQUID PROOF GLOVES. HIGH PRESSURE OIL CAN BLIND YOU, AND CAUSE SERIOUS INJURY AND DEATH

9) Remove and replace Motor or valves as required, ensuring all old oil is drained from circuit. If you find any metal filings etc. in the oil, flush the system out properly.
10) Re-connect all the hydraulic pipes and hoses in the correct manner as per our hydraulic circuit, in this Operators manual.

OIL: 200ml SAE30
BEWARE - WHEN STARTING THE VIBRATING POST DRIVER, AFTER IT HAS BEEN SERVICED, OR BEEN DISCONNECTED FROM THE EXCAVATOR'S HYDRAULICS, ALWAYS DO SO MAKING SURE WHEN THE AUXILIARY HYDRAULICS ON THE HOST MACHINE ARE CONNECTED AND ACTIVATED TO RUN THE VIBRATING POST DRIVER THAT THE HOST MACHINE ENGINE IS RUN AT IDLE OVER FOR AT LEAST TWO THREE MINUTES. THIS ALLOWS THE AUXILIARY CIRCUIT TO BE PURGED OF AIR, WITHOUT DAMAGING THE HYDRAULICS OF BOTH THE VIBRATING POST DRIVER AND THE EXCAVATOR.
# Troubleshooting Chart for Vibrating Post Driver

<table>
<thead>
<tr>
<th>Problem</th>
<th>Probable Cause</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Vibrating Post Driver Loses Power</td>
<td>Relief valve in Excavator not set at 2400 PSI or higher</td>
<td>Reset or replace</td>
</tr>
<tr>
<td></td>
<td>Motor has failed</td>
<td>Replace motor, and oil in Vibrating Post Driver &amp; Excavator circuit</td>
</tr>
<tr>
<td>2) Hydraulic motor leaks at shaft seal</td>
<td>Too high a back pressure in return line</td>
<td>Check Quick release coupling is functioning correctly.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check host machine for problem. Return line must go directly back to tank.</td>
</tr>
<tr>
<td>3) Vibrating Post Driver functions don't work at all.</td>
<td>Quick release Coupling not correctly fitted</td>
<td>Check and fit correctly.</td>
</tr>
<tr>
<td></td>
<td>Auxiliary Circuit not activated.</td>
<td>Look in host machine’s manual to find correct method of operation.</td>
</tr>
<tr>
<td></td>
<td>Hydraulic circuit of host machine not working.</td>
<td>Call out a qualified fitter from the host machine Dealer. The Vibrating Post Driver will only work if connected the correct way. It will only work with pressure going down the pressure line, and return going directly to tank.</td>
</tr>
<tr>
<td></td>
<td>Hydraulic Hoses fitted to Host machine auxiliary outlet QRC's wrong way round.</td>
<td></td>
</tr>
</tbody>
</table>
Technical Specifications

Machine Type: Vibrating Post Driver
Model No  : VPD1.2
Centrifugal Force: 10,116 ft lbs at 50 Hz, Amplitude: 2.10mm
              4,945 ft lbs at 35 Hz- Amplitude: 3.75mm

Drive      : Direct - Gear - Hydraulic motor
Hydraulic Flow  : Min 7.4 GPM - Max 26 GPM
Hydraulic Pressure : Min 2400 PSI max 3000 PSI.

Dimensions (Excluding mounting bracket)

Width        : 22”
Max Height    : 12”
Length        : 30”
Weight        : 355 lbs
Warranty

This machine is warrantied against faulty materials and workmanship, for a period of one (1) year from the date of purchase by the end user, provided date of purchase has been proved. This warranty is subject to the machine being used correctly, under normal working conditions, and in compliance with the instructions within this Operators manual.

This warranty will not apply, should this machine be materially altered, repaired, changed, added to, or in any way be different, than when it was supplied new and as manufactured. The warranty will not extend to any product not repaired at a Qualified Approved dealer, who has been authorised by us to carry out any such repair. Such repairs will be carried out only following our agreement that Warranty has been authorized.

No warranty shall be given on any products, misused, been subject to negligence, or been in an accident.

We make no other Warranty express or implied.

We shall not in any event be liable for any form of direct or consequential loss, or damages to anyone.

Warranty Claims & Procedures.

Copies of these are available from the manufacturer on request.

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