

# **LPHB-M**

---

## **Hydraulic posthole borer mounted**



### **LPHB-M**

## **Safety and Operating Instructions**

***Atlas Copco***

# CONTENTS

INTRODUCTION .....	2
SAFETY INSTRUCTIONS.....	2
Introduction to safety .....	2
Safety symbols used .....	2
General safety rules.....	3
Protective equipment.....	3
MARKINGS .....	4
Identification .....	4
CE .....	4
GENERAL INFORMATION.....	4
OPERATING INSTRUCTIONS .....	4
Starting/stopping the Posthole Borer .....	5
Connecting/disconnecting hoses.....	6
Service schedules .....	6
Scrapping and waste disposal.....	6
TECHNICAL DATA .....	7
Mounting set.....	8
TROUBLE SHOOTING .....	9
Augers and bits .....	10
Noise declaration statement .....	10


## INTRODUCTION

These operating and safety instructions must be read before operating the machine. Instructions for operation and basic maintenance are included. The purpose of this booklet is to give the machine user an understanding of how to safely and efficiently use and maintain the machine.

Operation and service other than in accordance with the instructions given may subject the posthole borer and connected power source to conditions beyond the design capability, which may result in system failure or personal injury.

## SAFETY INSTRUCTIONS

### Introduction to safety

SAFETY INSTRUCTIONS	
<ul style="list-style-type: none"> <li>• Before starting, read all instructions carefully</li> <li>• Special attention must be paid to information alongside this symbol</li> <li>• Only use Atlas Copco genuine parts</li> </ul>	

1. ***Before attempting to use the Posthole Borer, carefully read the entire book and warranty conditions. Special attention should be paid to the section "Safety Instructions".***
2. ***Read the operating manual for the hydraulic power source to be used.***
3. ***Make sure that the power source is correctly sized for the tool.***

To reduce the risk of serious injury to yourself or others, read these safety instructions before using the Posthole Borer. Post these safety instructions at work locations, provide copies to employees, and make sure that everyone reads the safety instructions before using the Posthole Borer. Comply with all safety regulations.

These instructions have been compiled from international safety standards and form part of the operating instructions. Signs and decals that are important for your safety and the care of the Posthole Borer are included with each Posthole Borer. Make sure that they are legible. New decals can be ordered using the spare parts list.

### Safety symbols used

The indications DANGER, WARNING and CAUTION, as used in the safety instructions, have the following meanings:



#### DANGER

Immediate hazard which WILL result in serious or fatal injury if the warning is not observed



#### WARNING

Hazard or hazardous procedure which COULD result in serious or fatal injury if the warning is not observed



#### CAUTION

Hazard or hazardous procedure which COULD result in injury or damaged equipment if the warning is not observed

## **General safety rules**

The design of the Atlas Copco posthole borer guarantees maximum operator safety, and the noise and vibration level has been kept as low as possible. However, wrong use of the posthole borer might cause serious injuries, and therefore the following precautions must be taken:

- The Posthole Borer must only be used for its purpose
- Learn how the power source is switched off in the event of an emergency
- Only qualified and trained persons may operate or maintain the Posthole Borer
- Drill only in places, where the machine can stand firmly on the ground outside of the drill
- Keep away other persons from the auger in order to avoid serious injuries
- Do not use the Posthole Borer in an explosive environment
- Never change auger or bit, when the Posthole Borer is connected to the power source
- Keep the Posthole Borer in a safe place out of the reach of children, locked up
- Pay attention and look at what you are doing
- Use your common sense
- The operator should be attentive to falling material when boring and always be aware of his own risk of slipping or falling down.
- Do not use the Posthole Borer when you are tired or under influence of drugs, alcohol or anything else that may influence your vision, reaction or judgement
- Do not use the posthole borer longer than prescribed in your local environmental working regulations, as the noise load from extensive daily use may result in hearing defects.
- Always disconnect the hydraulic circuit before dismounting hoses, changing the auger or servicing the Posthole Borer
- Never leave the Posthole Borer connected with the power source turned on
- Fine jets of hydraulic oil at high pressure can penetrate the skin. Do not use your fingers to check for hydraulic oil leaks. Do not put your face close to suspected leaks. Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of hydraulic oil. If hydraulic oil penetrates your skin, get medical help quickly.
- Regular maintenance is prerequisite for machine safety. Carefully follow the operating instructions. Replace damaged and worn components in good time. For major service to the Posthole Borer, contact your nearest authorized workshop. When cleaning mechanical parts with solvent, make sure to comply with current health and safety regulations and ensure sufficient ventilation

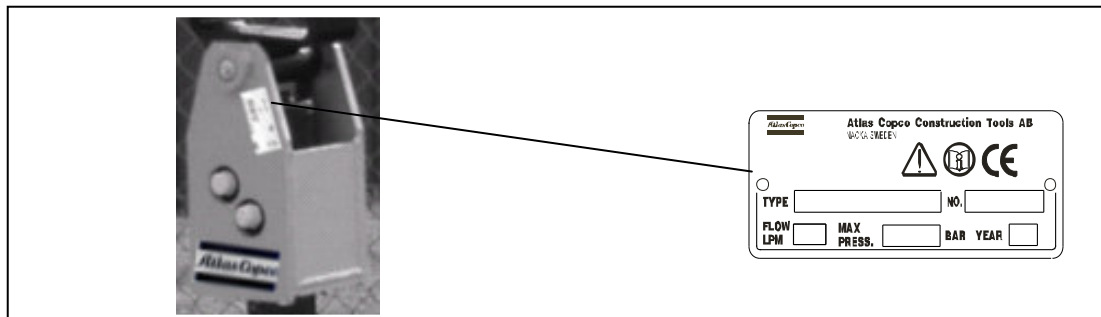
## **Protective equipment**

Always use approved personal protective equipment. Operators and other staff in the proximity areas where work is in progress must as a minimum use the following approved protective equipment:

- Protective helmet
- Safety glasses with side protection (if the carrier machine cab is not equipped with protective glass)
- Respiratory protection, when appropriate
- Protective gloves
- Protective boots

## MARKINGS

### Identification



### CE

The CE marking verifies that the machine is CE approved. The marking is on the ID-tag. See the “Declaration of Conformity” supplied with the Posthole Borer for more information.

## GENERAL INFORMATION

The mounted Atlas Copco posthole borer is a robust and flexible hydraulic tool suitable for all jobs in connection with the setting up of poles, piles, fences etc. and where there is a need of drilling holes down to a depth of 1-1.3 m with standard Atlas Copco augers in sizes from  $\varnothing 90$  to  $\varnothing 350$  mm.

The posthole borer is to be mounted on the shovel or on the arm of small skid-steer loaders weighing 0.7-3.5 t.

## OPERATING INSTRUCTIONS

To achieve standard performance, the Atlas Copco Posthole Borer requires a nominal oil supply from the power source of 20-60 l.p.m. at a pressure of 120 to max. 160 bar.

## Hoses

For connection use high-pressure hoses (inside diameter 1/2") which, as a minimum, are designed for a working pressure of 175 bar. We recommend the use of double wire-braided hoses that better stand outside wear. The Posthole Borer socket "P" is oil inlet (pump) and the socket "T" is oil outlet (tank).

## Starting/stopping the Posthole Borer

1. Connect the Posthole borer to the machine boom. (See MOUNTING SET)
2. Check that the drive unit is in a good condition and properly attached.
3. Remove the protective caps from the nipples. Connect the hoses to the power source
4. Make sure that the Posthole Borer is supplied with correct flow according to the technical data
5. Make sure that the drilling does not involve the risk of getting into contact with electric cables, gas mains, water pipes etc.
6. Make sure that the operator is familiar with the operation of the tool
7. Start the power source and allow it to run for a few minutes to warm the hydraulic oil
8. Activate the control valve of the power source to start the hydraulic oil flow
9. When work is finished, activate the control valve to stop the hydraulic oil flow
10. Stop the engine of the power source.



### CAUTION

Ensure that any power source you plan to use is compatible with the Posthole Borer you are using.

Non-compatible power sources might harm the Posthole Borer.

Check the flow rate in this instruction book and compare the flow rate with the technical specifications in the instruction book for the power source.



### WARNING

Do not disconnect the hoses, when the power source is running, or if the hydraulic oil is hot. Hot hydraulic oil might cause serious burns.



### WARNING

Fine jets of hydraulic oil at high pressure can penetrate the skin. Do not use your fingers to check for hydraulic oil leaks. Do not put your face close to suspected leaks. Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of hydraulic oil. If hydraulic oil penetrates your skin, get medical help quickly.

## Connecting/disconnecting hoses

### Connecting hoses

1. Prepare the drive unit
  - a) Turn the by-pass valve to the OFF position
  - b) Stop the engine
2. Inspect the couplings
  - a) Ensure that the couplings are clean and serviceable
3. Connect the hoses to the Posthole Borer
  - a) Attach the return line
  - b) Attach the feed line
  - c) Rotate the collar on the female coupling to secure the coupling

## Service schedules

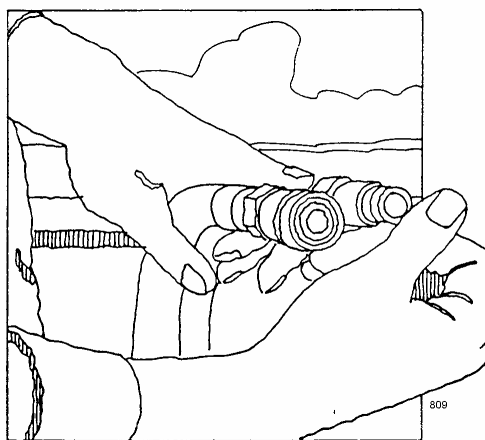
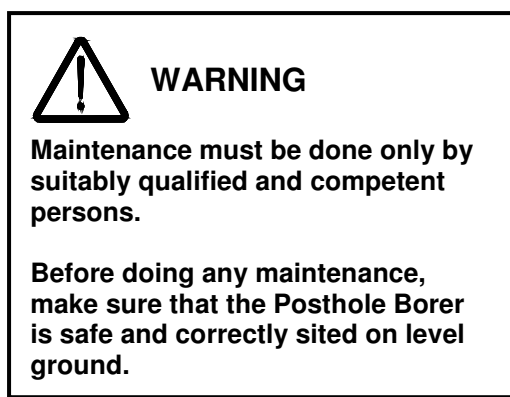
### Daily

The daily maintenance of the Posthole Borer and the quick-release couplings is confined to cleaning after use.

1. Check the hoses regularly for damages. Replace if necessary
2. Clean the quick-release couplings before use. Use this maintenance schedule to maximize service life

### Monthly

1. Perform a thorough inspection of the hydraulic hoses and fittings as described above
2. Moving parts, auger, seals and bolts are checked and replaced if necessary
3. The function of the tool is checked



## Scrapping and waste disposal

Used and worn out parts must be treated and disposed of in such a way that the greatest possible part of them can be recycled and the influence on the environment kept as low as possible.

## Recommended Hydraulic Oil

To protect the environment, Atlas Copco recommends the use of biodegradable oil.

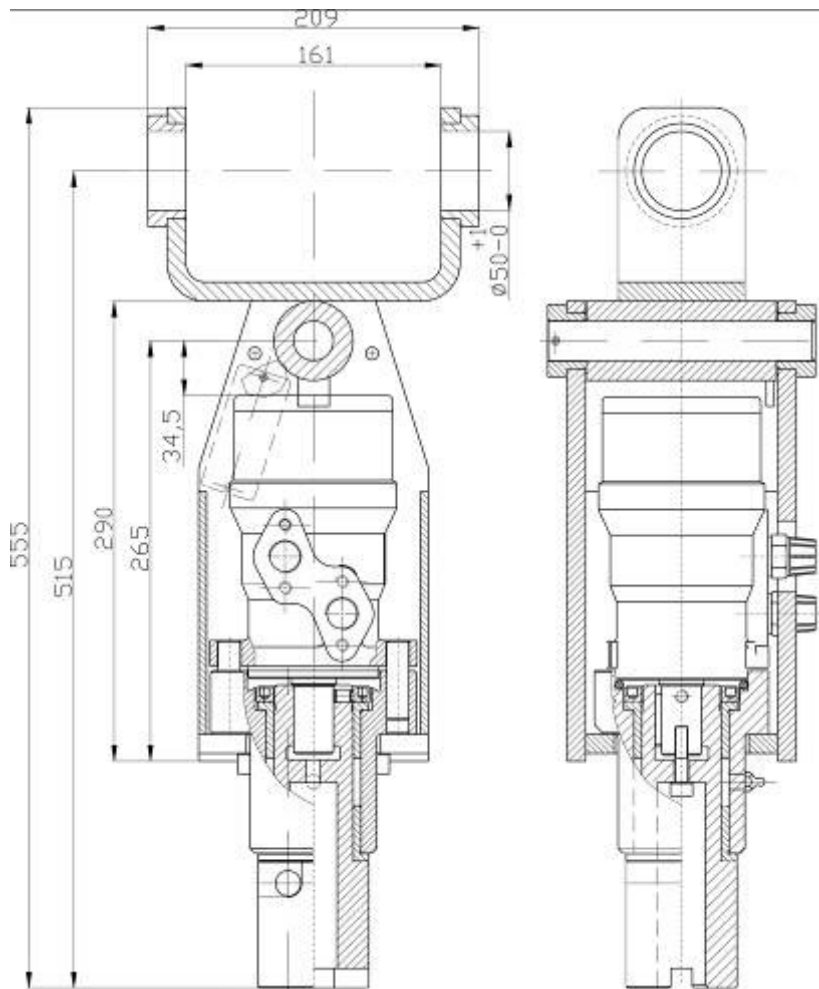
Viscosity (ideal).....	20-40 cSt
Viscosity (allowable) .....	15-1000 cSt
Viscosity index .....	Min. 100

Standard mineral or synthetic oil can be used.

When the tool works continuously, the oil temperature will steady at a certain level called the oil working temperature. This will, depending on the nature of the job and the cooling capacity of the system, be 20-40°C above the air temperature. At working temperature, the oil viscosity must be within the ideal area. The tool may not be operated if the oil viscosity is not within the allowable area, or if the temperature is not within  $\pm 20^{\circ}$   $\rightarrow$   $+70^{\circ}$  °C. The viscosity index expresses the dependence of the viscosity on the temperature. That is the reason why a high viscosity index is preferable, so that the oil can be used within a wide temperature interval.

### Technical Data Atlas Copco Mounted Posthole Borer

Weight.....	31 kg
Measurement inside .....	161 mm
Auger size .....	ø90-350 mm
Boring depth .....	Max. 1.5 m
Normal working pressure.....	100-150 bar
Max. back pressure in return line (measured at tool) .....	30 bar
Torque.....	450 Nm at 140 bar
Revolutions .....	80-200 1/min.
Oil flow .....	20-60 l.p.m.
Connections P and T .....	Standard ½" BSP
Pressure relief valve setting on carrier machine (max.) .....	160 bar



## Mounting Set

Measure A: Mounted posthole borer = 161 mm

Measure B: Variable in steps of 5 mm up to 50 mm below measure A

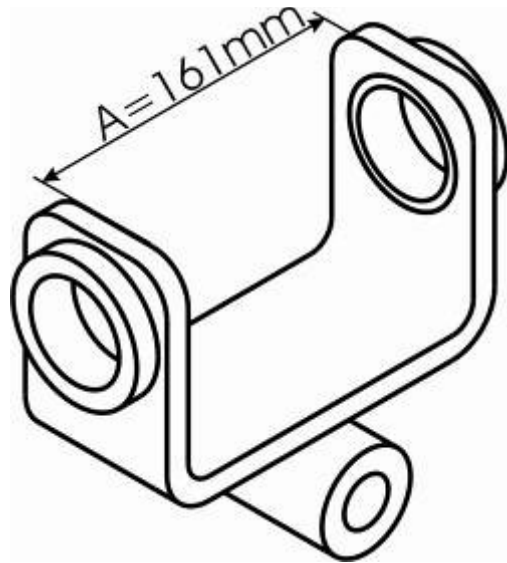
Measure C: Standard pin size:  
 $\varnothing 25$ ,  $\varnothing 30$ ,  $\varnothing 35$  and  $\varnothing 40$

### Example of choice of mounting set

Carrier pin =  $\varnothing 30$  mm  
 Carrier dipper width = 115 mm

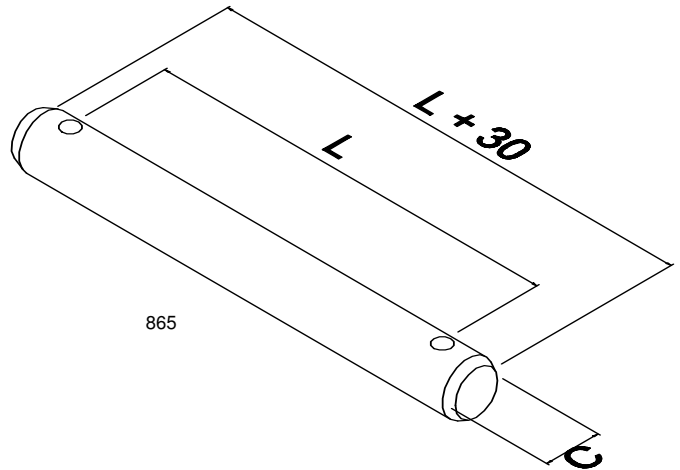
Mounted posthole borer A = 161 mm  
 Carrier dipper width = 115 mm  
 Max. reduction of A = 46 mm

In this case the choice is 2 bushings with B-measure 20 mm giving a reduction of 40 mm.



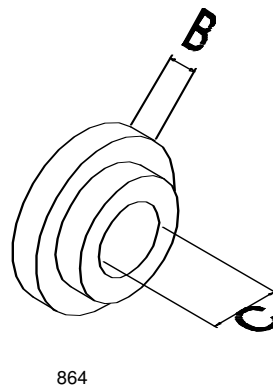
### Outline pins

Measure L	Measure C	Order No.
233	$\varnothing 25$	337 6001030
233	$\varnothing 30$	337 6001031
233	$\varnothing 35$	337 6001032
233	$\varnothing 40$	337 6001033



### Outline bushings

Measure C	Measure B	Order No.
$\varnothing 25$	5	337 6001001
$\varnothing 25$	10	337 6001002
$\varnothing 25$	20	337 6001003
$\varnothing 25$	25	337 6001004
$\varnothing 30$	5	337 6001005
$\varnothing 30$	10	337 6001006
$\varnothing 30$	20	337 6001007
$\varnothing 30$	25	337 6001008
$\varnothing 35$	5	337 6001009
$\varnothing 35$	10	337 6001010
$\varnothing 35$	20	337 6001011
$\varnothing 35$	25	337 6001012
$\varnothing 40$	5	337 6001013
$\varnothing 40$	10	337 6001014
$\varnothing 40$	20	337 6001015
$\varnothing 40$	25	337 6001016



### The mounting set now consists of the following parts:

2 bushings 337 6001007 + 1 pin  $\varnothing 30$  mm 337 6001031 + 2 split pins 337 1805153

## TROUBLE SHOOTING

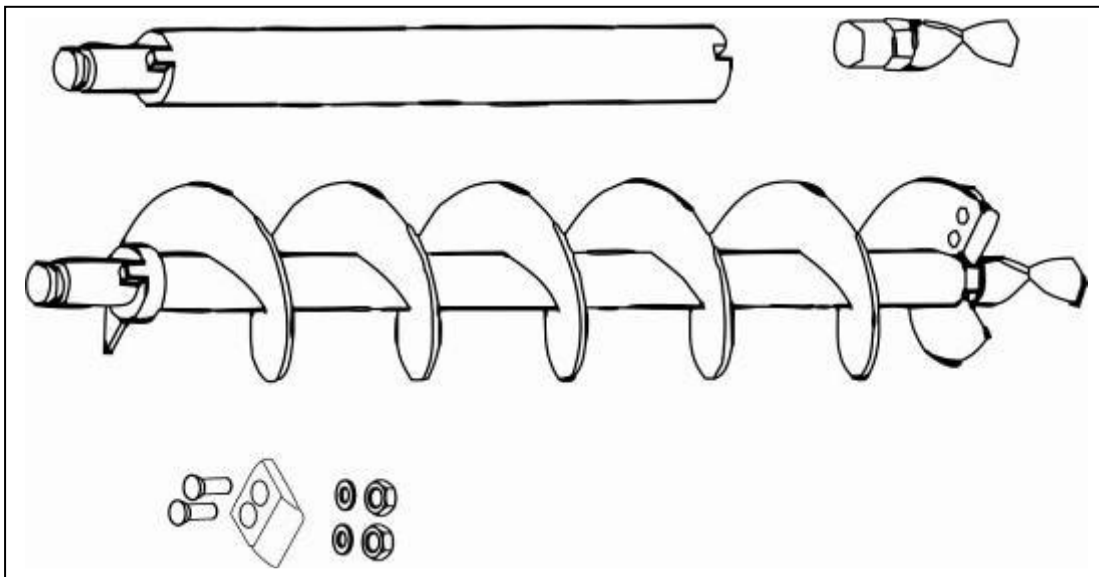


**WARNING**

Maintenance must be done only by suitably qualified and competent persons.

<b>PROBLEM</b>	<b>CAUSE</b>	<b>SOLUTION</b>
<b><i>Borer turns too fast or develops too much torque</i></b>	Connected to improper power source	Use proper power supply
	Power source not adjusted correctly	Adjust power source flow and pressure settings to be within specifications
<b><i>Borer will not turn at all or turns too slow</i></b>	Power source defective	Disconnect tool and check power supply
	Motor defective	Disconnect power source and try to turn motor shaft by hand. Repair or replace
<b><i>Borer does not develop enough torque (insufficient power to bore)</i></b>	Power source defective	Repair or replace
	Motor defective	Repair or replace

## Augers and Bits



Auger $\varnothing 90 \times 870$ mm .....	337 8005045
Bit set (incl. all fasteners) .....	337 8099928
Auger $\varnothing 150 \times 870$ mm .....	337 8005046
Bit set (incl. all fasteners) .....	337 8099930
Auger $\varnothing 200 \times 870$ mm .....	337 8005044
Bit set (incl. fasteners) .....	337 8099931
Auger $\varnothing 250 \times 870$ mm .....	337 8005047
Bit set (incl. all fasteners) .....	337 8099932
Auger $\varnothing 280 \times 870$ mm .....	337 8005049
Bit set (incl. all fasteners) .....	337 8099933
Auger $\varnothing 350 \times 870$ mm .....	337 8005048
Bit set (incl. fasteners) .....	337 8099934
Tip for auger (all sizes) .....	337 8099936
Extension rod 0.5 m.....	337 8005055

## Noise declaration statement

Sound pressure level at work station $L_{PA}$	< 70 dB
---	---------

### IMPORTANT

We, Atlas Copco Construction Tools AB, cannot be held liable for the consequences of using the declared values, instead of values reflecting the actual exposure, in an individual risk assessment in a work place situation, over which we have no control.

