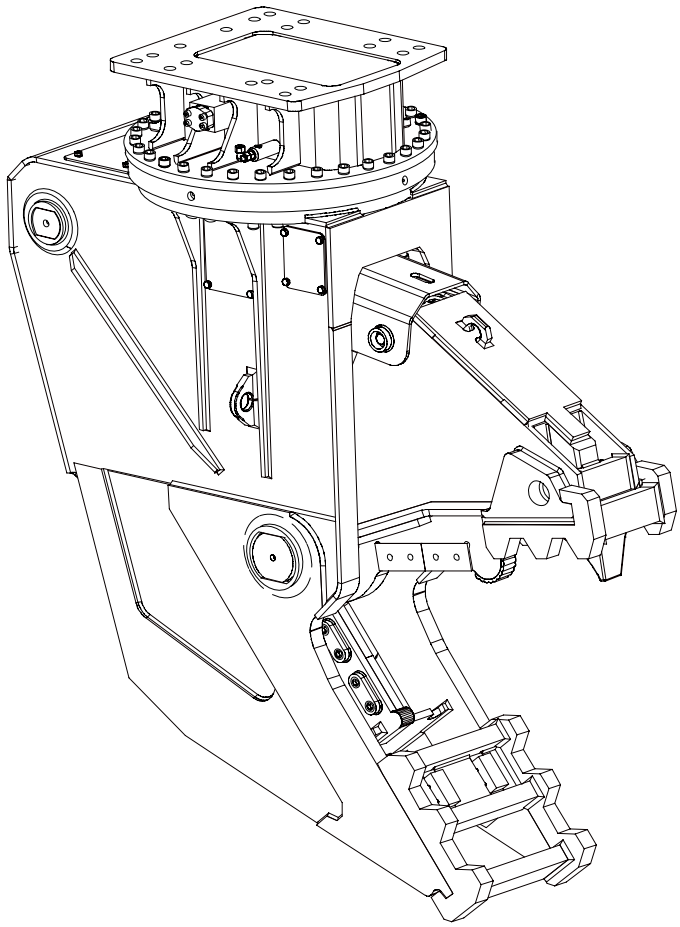
Operating manual
Hydraulic Bulk pulverizer

BP 2100 and BP 2900



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Atlas Copco

Operating manual
Hydraulic Bulk pulverizer

BP 2100
BP 2900

Atlas Copco Construction Tools GmbH

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Table of contents

1 Foreword

Please read this operating manual before using your Atlas Copco hydraulic Bulk pulverizer for the first time so as to avoid errors and breakdowns through incorrect usage.

These operating instructions contain:

- important safety regulations
- operating instructions for the hydraulic Bulk Pulverizer
- maintenance instructions for the hydraulic Bulk pulverizer
- aids to troubleshooting

The operating instructions describe how to use the Bulk pulverizer on site and should therefore be kept in the document compartment of the excavator cab.

Please pay careful attention to the safety regulations which are listed at the beginning of this manual and repeated in the relevant sections.

Responsibility for the observation of these safety regulations lies at all times with the operator.

All safety regulations listed in this manual comply with the laws and regulations of the European Union. Additional national regulations have also been taken into consideration wherever applicable.

Hydraulic Bulk pulverizer operation outside the European Union is subject to the laws and regulations valid in the country of use. More specific national regulations and laws that apply in your country must be observed.

Please note that reliable operation of the hydraulic Bulk pulverizer can only be guaranteed if genuine spare parts are used.

We wish you every success with your hydraulic Bulk pulverizer.

Atlas Copco Construction Tools GmbH

2 Accident prevention regulations

To avoid the risk of injury, please observe the following instructions.

Familiarise yourself with the operating manual and the applicable regulations before starting work with the Bulk pulverizer.

When using Bulk pulverizer in states of the European Union, the regulations contained in the EC machinery directive 2006/42/EC must be observed and followed, as must all applicable national accident prevention regulations. In countries outside the European Union, the valid local statutes and regulations shall apply. Please observe any other, more stringent national/regional regulations and legislation.

Explanation of the symbols used in this operating instructions

To emphasise their importance, certain points in the operating instructions are marked with symbols, which are described below.

Note

The marked text provides instructions on the correct use of the hydraulic tool aimed at avoiding incorrect operation or errors during work.

CAUTION!

The marked text provides safety regulations and instructions aimed at **avoiding damage to equipment.**

DANGER!

The marked text provides safety regulations and instructions aimed at **avoiding accidents and possible injuries.**

Qualification

Transporting the hydraulic attachment is only allowed if carried out by people who:

- are authorised to operate a crane or a forklift truck according to the applicable national provisions,
- know all the relevant national/regional safety provisions and accident prevention rules,
- have read and understood the safety and transport sections of these Safety and operating Instructions.

Installing, storing, maintaining and disposing of the hydraulic attachment are only allowed if carried out by people who:

- know all the relevant national/regional safety provisions and accident prevention rules,
- have read and understood these Safety and operating Instructions.

Operating the hydraulic attachment is only allowed if carried out by qualified carrier drivers. Carrier drivers are qualified if they:

- have been trained to operate a carrier according to the national regulations,
- know all the relevant national/regional safety provisions and accident prevention rules,
- have read and understood these Safety and operating Instructions.

Testing the hydraulic installation is only allowed if carried out by professionals. Professionals are people who are authorised to approve a hydraulic installation for operation according to the national regulations.

The hydraulic attachment must only be repaired by professionals trained by Atlas Copco Construction Tools who have read and understood these Safety and operating Instructions. The operational safety of the hydraulic attachment is not guaranteed otherwise.

Intended use

Only attach the hydraulic pulverizer to a hydraulic carrier of a suitable load-bearing capacity. Read the carrier manufacturer's Safety and Operating Instructions before attaching the hydraulic pulverizer to the carrier and operating it. Observe all instructions.

Only use the hydraulic pulverizer for follonwing operations:

- Light to medium-duty demolition of buildings,
- Secondary breaking of concrete elements
- Breaking lightly reinforced concrete elements
- Separating concrete and rebar

Intended use also implies observing all instructions in these Safety and operating instructions.

Use other than intended

Never use the hydraulic pulverizer:

- to pull/tear at girders, braces and walls.
  This damages the hydraulic pulverizer and adapter plate. The carrier may lose stability.
- to hit or chop
  This destroys the hydraulic pulverizer.
- as a crow bar
  This destroys the hydraulic pulverizer.
- to push debris aside
  This destroys the hydraulic pulverizer.
- to move the carrier supported by the hydraulic pulverizer
  This severely damages the hydraulic pulverizer.
- to lift or transport loads with attachments
  This damages the hydraulic pulverizer.
- under water
  This destroys the hydraulic hydraulic pulverizer.
- in explosion-hazard environments
  Explosions cause serious injury or death.

Protective equipment:

Personal protective equipment must comply with the applicable health and safety regulations.
Always wear the following personal protective equipment:

- protective helmet
- safety glasses with side protectors
- protective gloves
- protective shoes
- warning vest

Before the first installation:

Before mounting/dismounting the hydraulic tool and/or any maintenance work on the hydraulics of the hydraulic tool/carrier the hydraulic system must be depressurized!

When using or transporting the carrier with the Bulk pulverizers attached, the instructions included in the operating manual supplied by the carrier manufacturer must also be observed.

Do not run any hydraulic lines through the driver's cab since they may spring leaks or even burst. During operations, the hydraulic oil becomes very hot.

Do not run any hydraulic lines for attachment of the Bulk pulverizer through the driver's cab!
Hydraulic lines may spring a leak or even burst! During operations, the hydraulic oil becomes very hot.

Mounting the Bulk pulverizer:

Mounting the Bulk pulverizer requires the presence of an assistant, who must be instructed by the carrier driver. The carrier driver and assistant should agree beforehand on clear hand signals.

For transport purposes, use only the lugs provided and hoisting equipment of sufficient capacity.

The Bulk pulverizer should only be mounted on an excavator with sufficient load capacity. The carriers specified under Section 11, Technical specifications are needed to install the Bulk pulverizer.

Carriers below this weight class will not provide the required degree of stability and could even fall over during Bulk pulverizer use, causing injury and damage.

Carriers above this weight class may apply excessively high mechanical loads to the attachment.

When attaching the adapter use only the special steel screws included in supply.

Check the nominal width of the hydraulic lines on existing hydraulic systems. It is important that supply and return lines for the hydraulic oil are adequately dimensioned.

Keep your hands away from bores and fitting surfaces when mounting the Bulk pulverizer, especially when the carrier boom is moving.

Collect any oil which runs out and dispose of it in accordance with the applicable statutory provisions to avoid environmental hazards.

Operating the Bulk pulverizer:

Close the front screen/splinter guard on the driver's cab to protect the driver from flying rock splinters during Bulk pulverizer operations.

Do not start up the Bulk pulverizer until both carrier and Bulk pulverizer are in the correct position.

Stop the Bulk pulverizer immediately as soon as persons are in the danger zone. The danger zone during the Bulk pulverizer operation is considerably greater than during the excavation operation - on account of fractions of stones and pieces of steel flying around - and for this reason, the danger zone must, depending on the type of material to be worked on, be enlarged correspondingly, or the danger zone must be secured in a suitable manner through corresponding measures.

Do not touch any hot parts

The Bulk pulverizer heats up during operation.

Monitor the oil temperature

The temperature of the hydraulic oil must never exceed 80 °C. If higher temperatures are measured in the tank, the hydraulic system and/or the pressure-relief valve have to be checked.

Observe the excavator manufacturer's safety regulations.

CAUTION!

The Bulk pulverizer is only to be used for the applications described.

Dismounting the Bulk pulverizer:

Dismounting the Bulk pulverizer from the carrier requires the presence of an additional assistant who must be instructed by the carrier driver. The carrier driver and assistant should agree beforehand on clear hand signals.

When using the excavator or putting it out of operation, the safety instructions of the excavator manufacturer must be observed.

Keep your hands away from bores and fitting surfaces when dismounting the Bulk pulverizer, especially when the carrier boom is moving.

Collect any oil which runs out and dispose of it in accordance with the applicable statutory provisions to avoid environmental hazards.

Secure the Bulk pulverizer after dismounting so that it cannot fall over.

3 Marking according with machinery directive 2006/42/EC

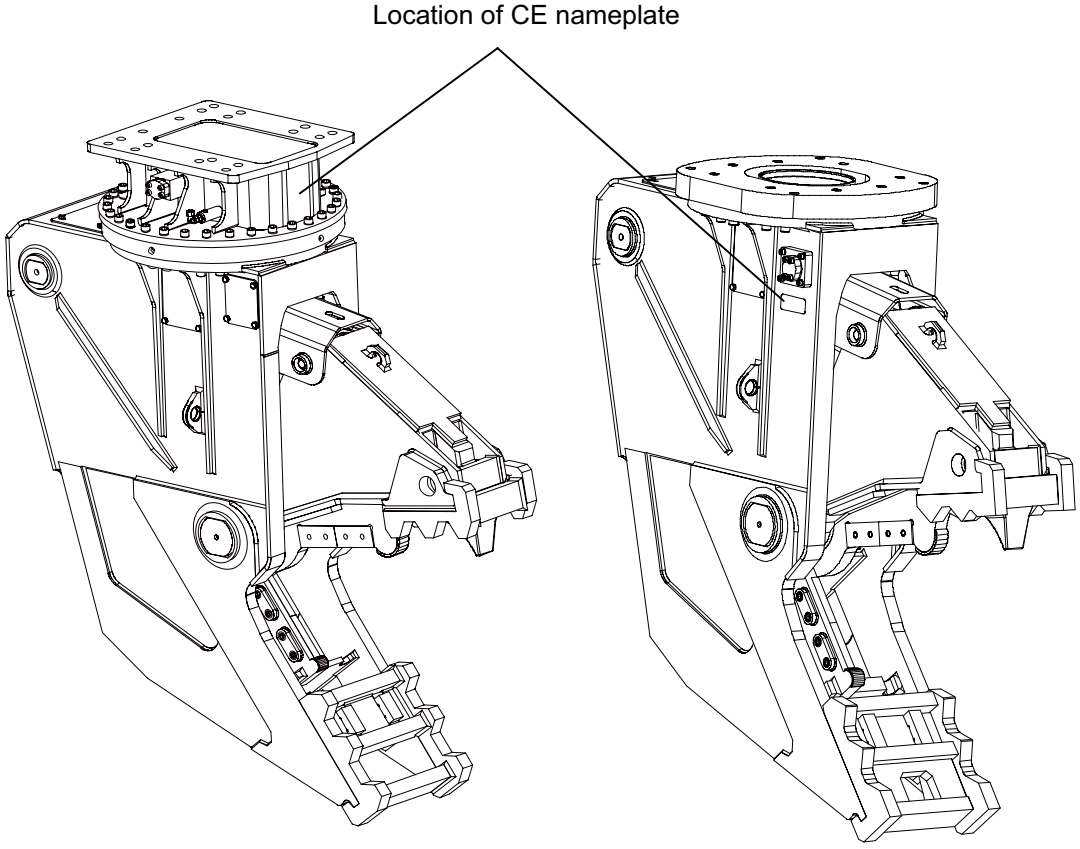
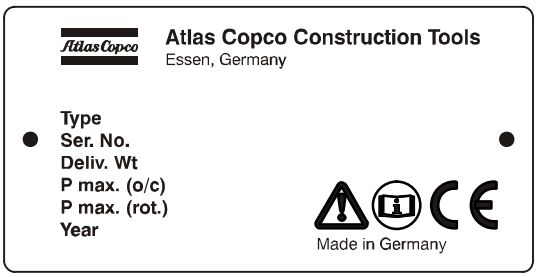


Fig. 1

3.1 CE-nameplate of product group Bulk pulverizer



Name and address of manufacturer
Model
Serial no.
Weight of the hydraulic tool
Max. operating pressure »Open/Close«
Max. operating pressure »Rotation«
Year of production of the hydraulic tool

The CE nameplate contains information on the Bulk pulverizer. The weight indicated refer to the weight of the Bulk pulverizer.

When selecting hoists and suspension aids for transporting the unit, the weight of the and adapter may also have to be considered.

In according with EC directives CE nameplates must be affixed firmly and in a clearly visible position. Should these nameplates be lost or defaced, replacements can be ordered from your dealer/from Atlas Copco Construction Tools GmbH.

4 General informations

4.1 Applications

The Bulk Pulverizer is an attachment suitable for mounting on hydraulic-powered excavators.

The Bulk Pulverizer has been suited for the following operations:

Light to medium-duty demolition of buildings, lightly reinforced concrete elements

Secondary breaking of concrete elements

Separating concrete and rebar

CAUTION!

Incorrect operation may result in damage to the Bulk Pulverizer and to the equipment of the excavator.

Under normal circumstances the Bulk Pulverizer is operated from the driver's cab of the carrier.
Please refer to Sections 2 and 6.6.

4.2 Scope of supply

The scope of supply of a Bulk Pulverizer generally includes:

Bulk Pulverizer, operating instructions, spare parts list and EC declaration of conformity.

Accessories: hoses and service tools according to the order.

Special accessories: e. g. adapter, hydraulic adapter kit for the excavator according to the order.

5 Main components

5.1 Pulverizer - rotating

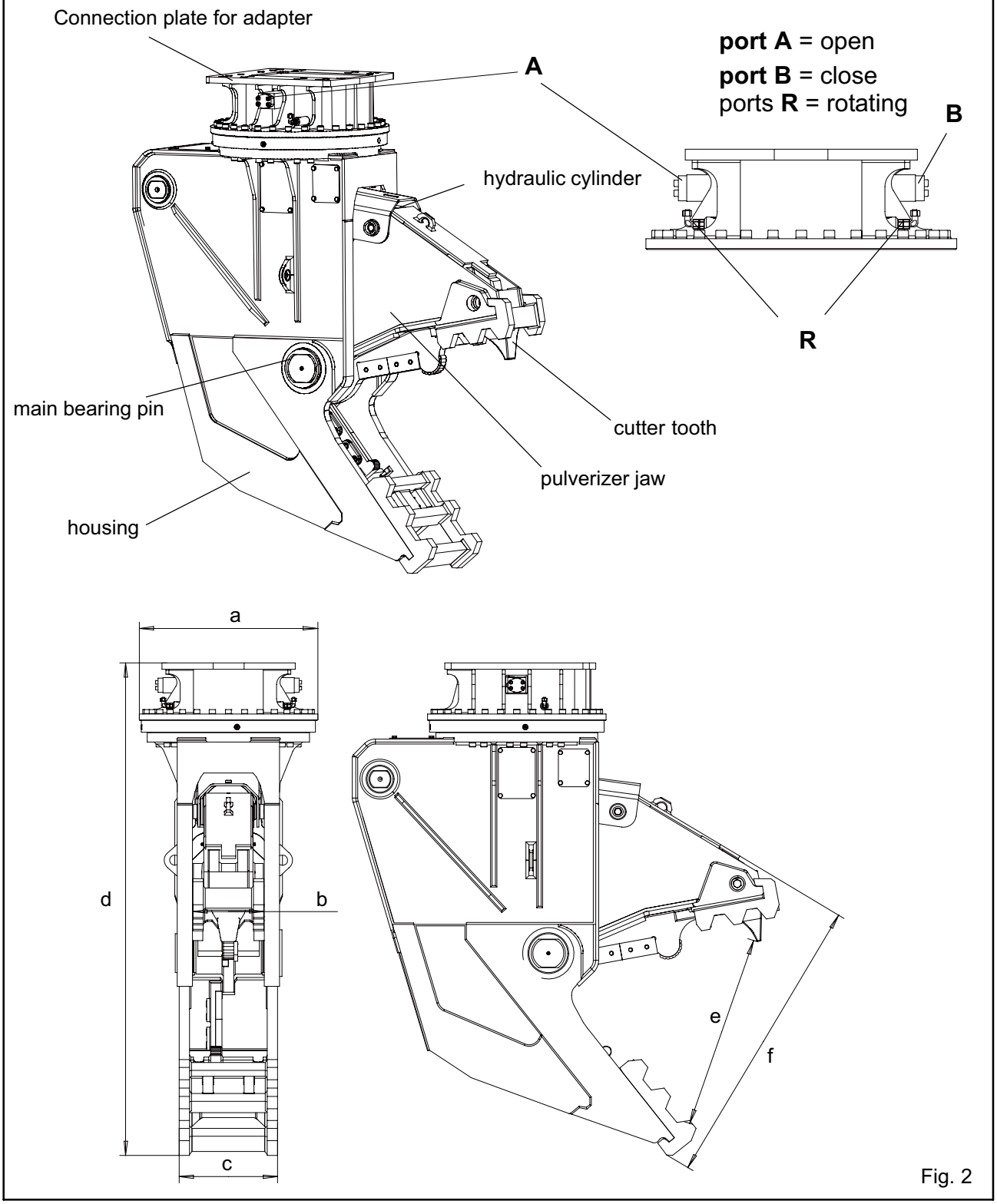


Fig. 2

5.2 Table of dimensions puverizer - rotating

Type	a	b	c	d	e	f
BP 2100	680 mm	345 mm	470 mm	2225 mm	795 mm	1290 mm
BP 2900	870 mm	345 mm	480 mm	2404 mm	950 mm	1433 mm

5.3 Pulverizer - non rotating

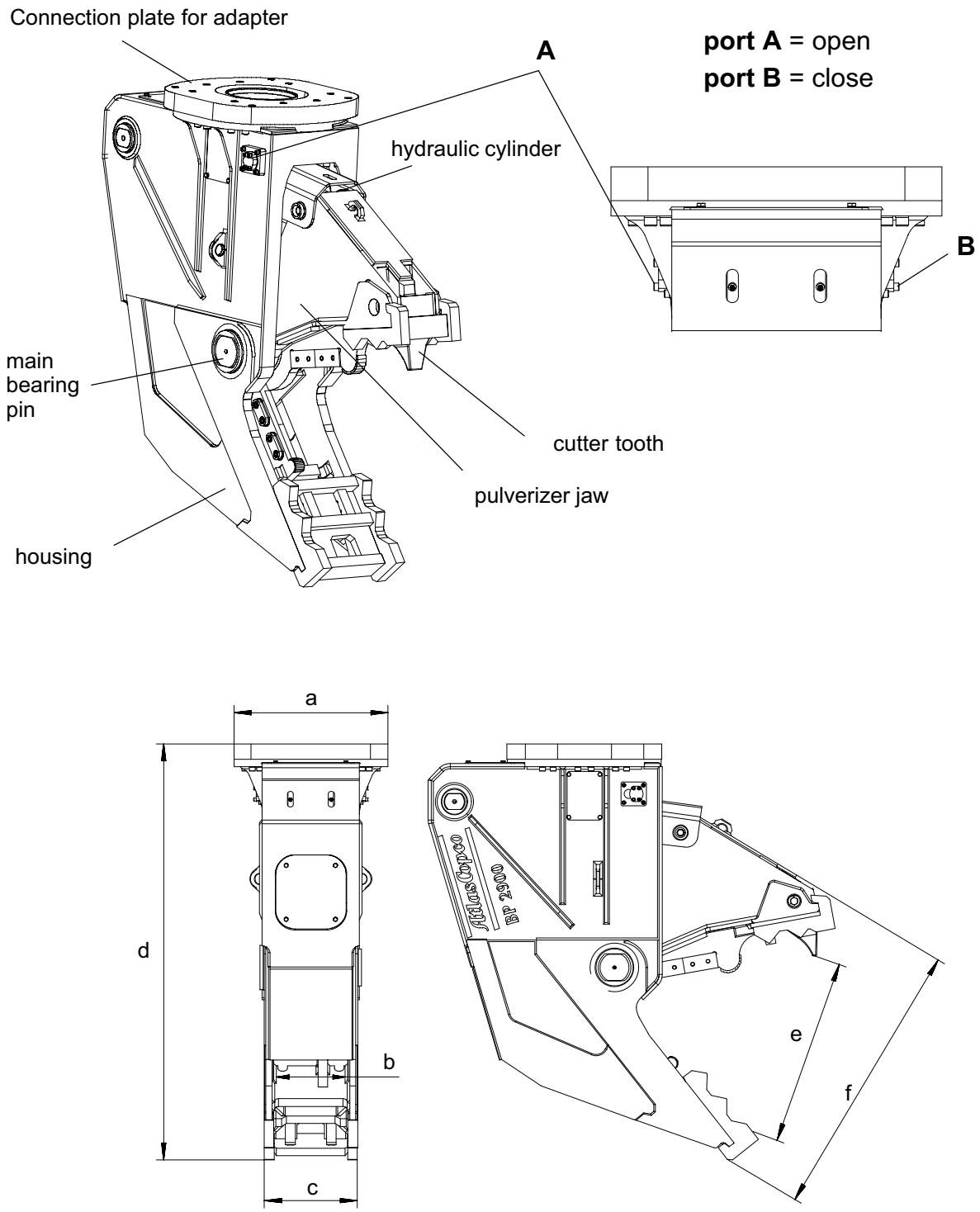


Fig. 3

5.4 Table of dimensions puverizer - non rotating

Type	a	b	c	d	e	f
BP 2100	625 mm	345 mm	470 mm	1945 mm	795 mm	1290 mm
BP 2900	790 mm	345 mm	480 mm	2134 mm	950 mm	1433 mm

6 Installation

6.1 Media/consumables

Operating the Bulk pulverizer requires the following resources:

6.1.1 Mineral hydraulic fluids

All hydraulic oil brands prescribed by the carrier manufacturer are suitable for operating the Bulk pulverizer.

The oil should however correspond to viscosity class HLP 32 or higher.

In summer and in hotter climates, oils of viscosity class HLP 68 or higher should be used.

In all other respects the regulations of the carrier manufacturer are to be considered.

Optimum viscosity range	= 30 - 60 cSt
Max. initial viscosity	= 2000 cSt
Max. oil temperature	= 80 °C

Please refer to section 7.7 for low-temperature Bulk pulverizer applications.

Check the oil filter.

An oil filter has to be installed in the return line of the hydraulic system. The mesh width of this filter should not exceed 50 micrometers and a magnetic separator must be fitted.

CAUTION!

Monitor the oil temperature.

The temperature of the hydraulic oil must never exceed 80 °C. If higher temperatures are measured in the tank, the hydraulic system and/or the pressure-relief valve have to be checked.

6.1.2 Non-mineral hydraulic oil

In order to protect the environment or on technical grounds, hydraulic oils are currently being used which are not classified as HLP mineral oils.

Before using hydraulic oils of this kind it is imperative to enquire with the carrier manufacturer whether operations with such hydraulic oils are possible.

Our tools are basically designed for use with mineral oils. Before using other hydraulic oil types which have been approved by the carrier manufacturer, Atlas Copco Customer Center / dealer in your region must always be consulted. Following initial assembly and after any workshop repairs, our tools are subjected to a test run on a test bed powered by **mineral oil**.

Note:

When returning tools for repair, it is imperative that the name of the oil in use be indicated if you are using non-mineral oil.

CAUTION!

Never mix mineral and non-mineral hydraulic oils! Even small traces of mineral oil mixed in with non-mineral hydraulic oil can result in damage to both hydraulic attachment and carrier.

CAUTION!

Non-mineral oil is no longer biodegradable if it is contaminated with mineral oil. Contaminated non-mineral oil must be disposed of as special waste in accordance with the applicable statutory regulations for environmental protection.

6.1.3 Grease

Grease type	Pt.-Id.-No.
Cutter grease	3363 0949 14

Always observe the relevant safety regulations when handling oils and greases.

6.2 Transportation and storage

Danger!

When lifting the hydraulic Bulk pulverizer, use only the lug provided and sufficiently powerful lifting equipment.

Ropes and lug must be in good condition.

The hydraulic Bulk pulverizer should be deposited on a wooden support of sufficient size and strength.

Collect any oil which runs out when the hydraulic hoses are disconnected and dispose of it correctly.

Always observe the relevant safety regulations when handling oils and greases.

CAUTION!

To avoid damage to the piston rod of the hydraulic cylinder when transporting the hydraulic Bulk pulverizer, the piston rod must be retracted, i.e. the Bulk pulverizer must be in ”**open**” position.

6.3 Attaching the adapter to the Bulk pulverizer

Deposit the Bulk pulverizer on squared beams or pallets within reach of the carrier boom. The jaw must be facing upward.

Bolt the adapter to the Bulk pulverizer's mounting plate swivel or mounting plate. The tightening torques and required Allen key sizes are listed in the table below.

Pulverizer	Wrench and wrench size / tightening
BP 2100 BP 2900	Allen key size 22 / 1500 Nm

DANGER!

Use only the special steel screws included in supply.

When transporting the cutter use only the transport lug provided and sufficiently powerful lifting equipment. Note the weight (name plate, section 3.1)

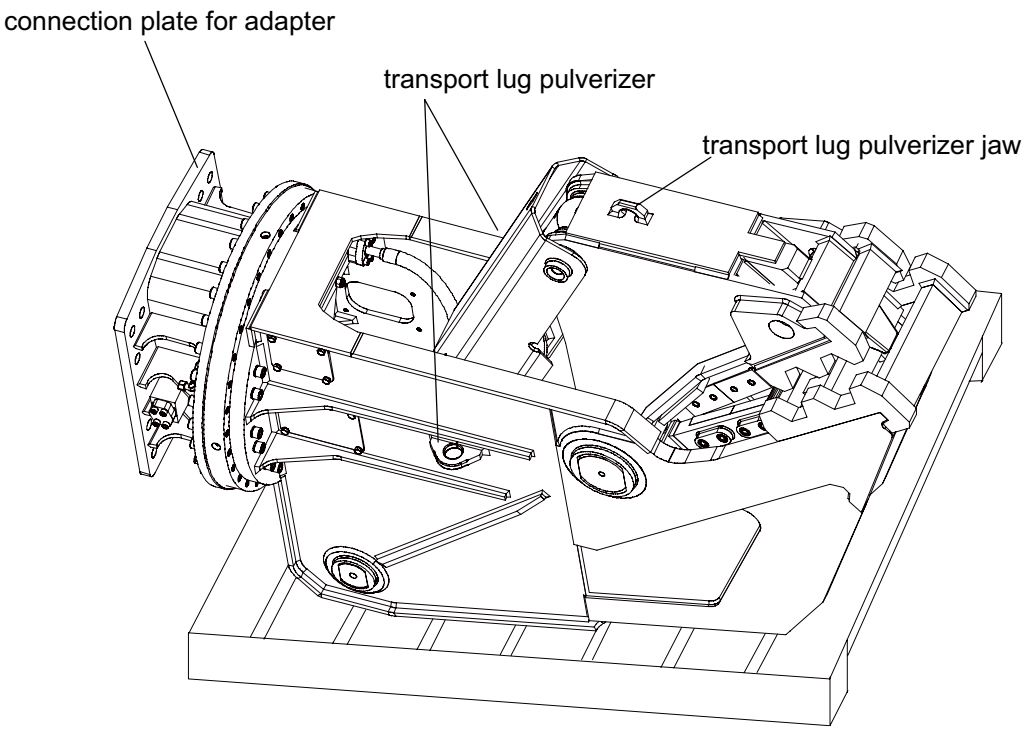


Fig. 4

6.4 Mounting the Bulk pulverizer on the excavator - mechanical aspects

DANGER!

Only mount the Bulk pulverizer on an excavator with sufficient load capacity. If the excavator is too light it may become unstable and fall over.

The operator of the carrier must remain in the driver's seat when the Bulk pulverizer is being installed.

Agree with the assistant on clear hand signals. The assistant must be instructed by the excavator driver.

Keep your hands away from bores and fitting surfaces when mounting the Bulk pulverizer.

Do not touch any parts when the boom is moving.

Never use your fingers to check whether the bores are flush.

Once the adapter has been attached, position the Bulk pulverizer facing the carrier boom (stick) as shown in Figs 5 and 6 In this way the stick of the excavator boom can be moved into the adapter in such a way that the bores in the stick/adapter are aligned.

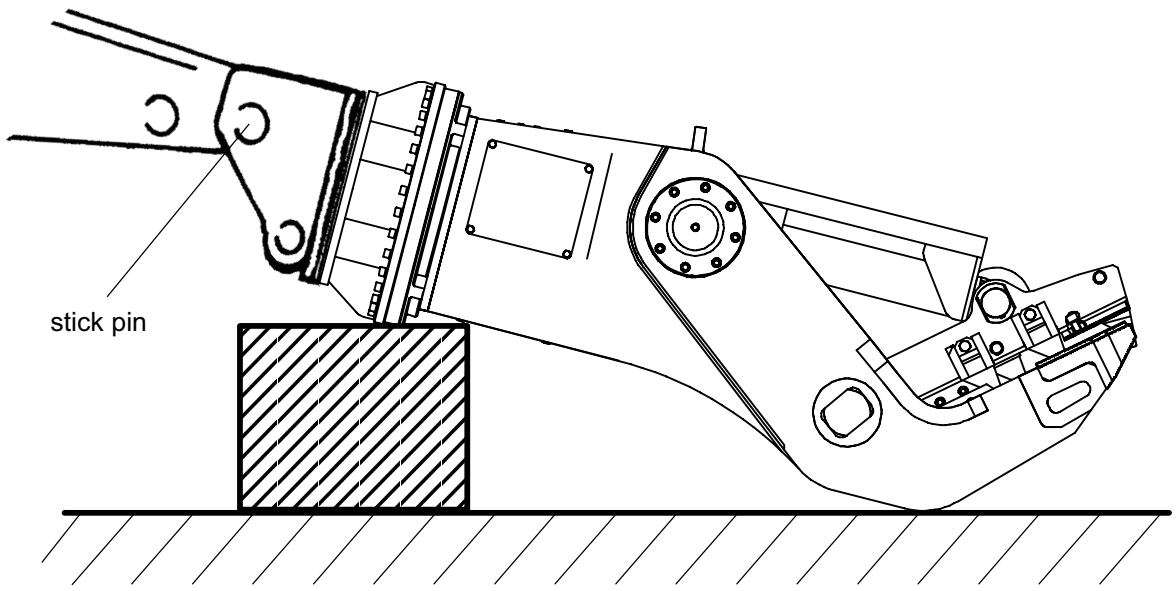
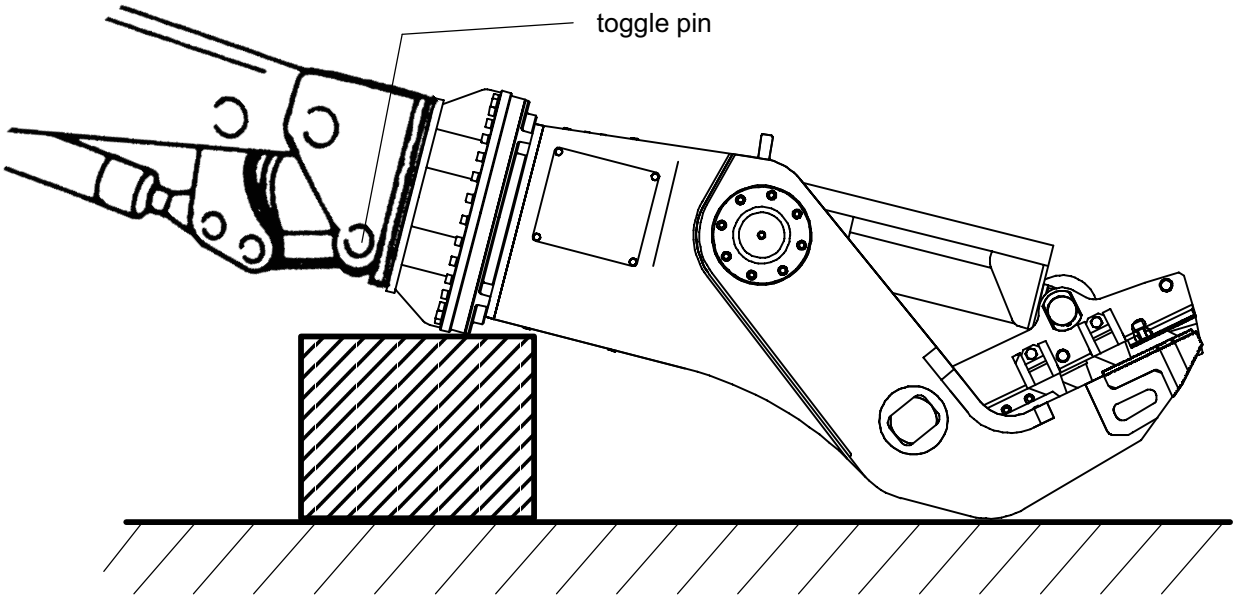


Fig. 5

To fit the toggle pin, extend the shovel cylinder and position the toggle by hand until the bores are aligned with those in the adapter. Insert toggle pin and secure.

Fig. 6



CAUTION!

After installing the Bulk pulverizer, carefully drive the bucket cylinder to both end positions. The cylinder must travel smoothly and without hindrance to both end positions without striking the adapter (unless the adapter is fitted with an end stop).

6.5 Mounting the Bulk pulverizer on the excavator - hydraulic aspects

DANGER!

<u>Before</u> mounting/dismounting the hydraulic tool and/or any maintenance work on the hydraulics of the hydraulic tool/carrier the hydraulic system <u>must be depressurized</u>.

The excavator must have a hydraulic system suitable for Bulk pulverizer operations.

Check the nominal width of the hydraulic lines on existing hydraulic systems. All feed and return lines for the hydraulic oil must have a sufficient inside diameter. Refer to Section 11, Technical specifications.

Use only hoses/pipes which satisfy the following quality criteria:
Hydraulic hoses with 4 wire spiral layers to DIN EN 856. Hydraulic pipes: seamless, cold drawn steel pipes to DIN EN 10305.

The safety facilities on the hydraulic system must be checked by a professional/authorised persons for their quality (CE mark etc.), suitability and proper functioning prior to their first use. By checking the setting of and, where possible, attaching a lead seal to the pressure limiting valve, it can be guaranteed that the system's working pressure, laid down in accordance with Section 11, Technical Specifications, can never be exceeded.

The pressure-relief overflow line must run direct from the pressure-relief valve to the tank to ensure the reliable functioning of the valve.

The return line from the Bulk pulverizer must run direct to the oil tank in order to guarantee a reliable return oil flow.

Do not run any hydraulic lines for attachment of the Bulk pulverizer through the driver's cab!
Hydraulic lines may spring a leak or even burst, releasing hot hydraulic oil.

Detach the screw caps from the connections, and keep them in a safe place.

Check the connecting threads on the Bulk pulverizer ports and the corresponding hose connectors to ensure they are undamaged. Sand or other foreign bodies in the threads must be cleaned away.

Screw the hoses to the ports. (Tightening torques see section 8.7)

If you come to the conclusion that the system does not comply with the requirements listed above, the hydraulic breaker must not be operated. For reasons of safety, you should absolutely contact the Atlas Copco Customer Center / dealer in your region.

6.6 Switching the Bulk pulverizer on/off from the carrier

The installation of a genuine conversion kit in the carrier's hydraulic system allows the Bulk pulverizer to be powered using the carrier hydraulics. All functions for normal excavator operations remain intact. The Bulk pulverizer is switched on/off via electrical signals.

When leaving the driver's cab, the safety switch for these electrical signals must be set to "OFF" position so as to reliably prevent any unintended start-up of the Bulk pulverizer.

6.7 Dismounting the Bulk pulverizer from the excavator for short or lengthy periods of non-use

DANGER!

<u>Before</u> mounting/dismounting the hydraulic tool and/or any maintenance work on the hydraulics of the hydraulic tool/carrier the hydraulic system <u>must be depressurized</u>.

For safety reasons, the carrier must be switched off before performing the following work.

Keep your hands away from bores and fitting surfaces when dismounting the Bulk pulverizer. Do not touch any parts when the boom is moving.

Unless otherwise stipulated, the Bulk pulverizer is dismounted in reverse order to mounting.

Close the pulverizer jaws.

Deposit the Bulk pulverizer on squared beams or pallets away from other transport routes. The hoses must be facing upward.

CAUTION!

Collect any oil which runs out and dispose of it in accordance with the applicable statutory provisions to avoid environmental hazards.

Seal off all open hose connections.

Unlock the toggle and stick pins and knock out the pins using a steel rod and a hammer.

Cover up the Bulk pulverizer to protect it against the weather.

Agree on hand signals with the assistant.

Observe the excavator manufacturer’s safety regulations.

When putting the excavator out of operation, please observe the excavator manufacturer’s instructions.

7 Operating the Bulk pulverizer

7.1 Start-up the Bulk pulverizer

First of all, precautionary measures should be taken to rule out the risk of accidents.

DANGER!

Only operate the Bulk pulverizer from the driver's seat in the excavator cab.

Close the front screen / splinter guard on the driver's cab to avoid injury from flying rock splinters.

Stop the Bulk pulverizer immediately as soon as persons are in the danger zone. The danger zone during the Bulk pulverizer operation is considerably greater than during the excavation operation - on account of fractions of stones and pieces of steel flying around - and for this reason, the danger zone must, depending on the type of material to be worked on, be enlarged correspondingly, or the danger zone must be secured in a suitable manner through corresponding measures.

7.2 Functional test

The pulverizer is raised and maneuvered using the carrier's boom functions.

First functional test: **opening - closing**

The cutter jaws are opened and closed by actuating the switch in the leg-space area of the cab.

Functional test: **Rotating the pulverizer**

If the pulverizer is equipped with a hydraulic rotation unit, and this unit is connected to the carrier's hydraulic system - usually via the "rotate attachment" function or a new, additional installation - pulverizer rotation should be tested in both directions.

7.3 Limits when cutting steel

The Bulk pulverizer can cut all steel sections with a tensile strength of up to approx. 500 N/mm^2.

The maximum sizes are as follows:

Model	Steel bar
BP 2100	∅ 28 mm
BP 2900	∅ 38 mm

7.4 Instructions on the correct use of the hydraulic Bulk pulverizer

The Bulk pulverizer must be used exclusively for the work listed under subsection 4.1. In the following a number of examples show how the Bulk pulverizer is operated properly.

The depictions are not intended to reproduce the Bulk pulverizers, but to illustrate the circumstances described.

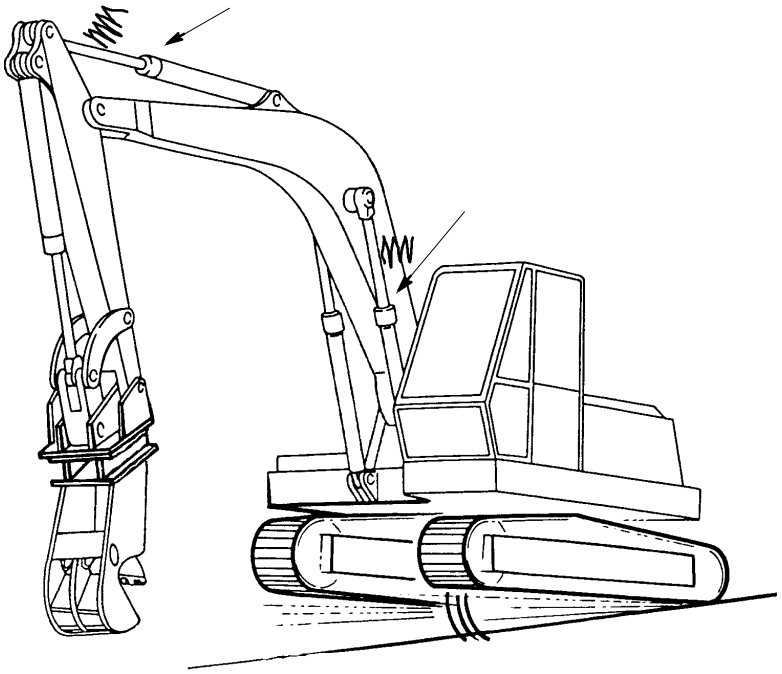


Fig 7

CAUTION!

The hydraulic cylinders on the carrier boom must **not** be retracted to their full extent, since this could result in damage to both carrier and Bulk pulverizer.

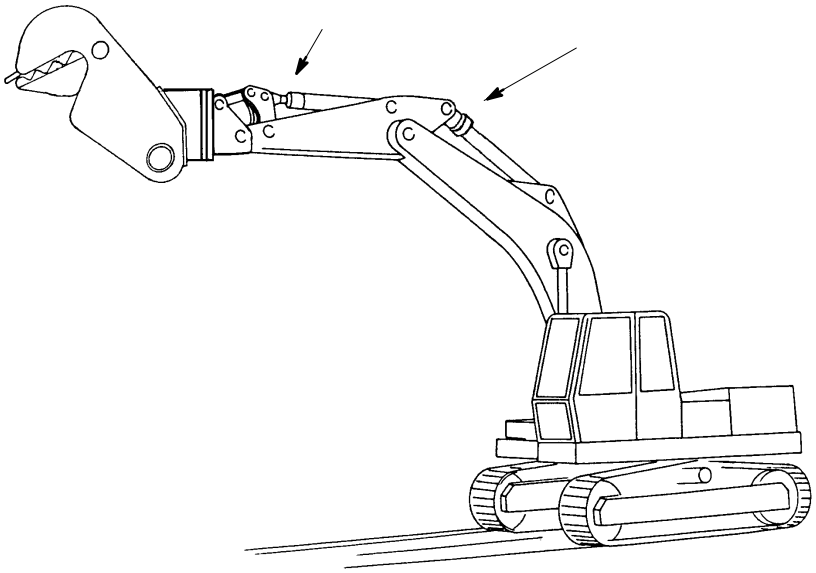


Fig 8

CAUTION!

The hydraulic cylinders on the carrier boom must **not** be extended to their full extent, since this could result in damage to both carrier and Bulk pulverizer.

Instructions on the correct use of the hydraulic Bulk pulverizer

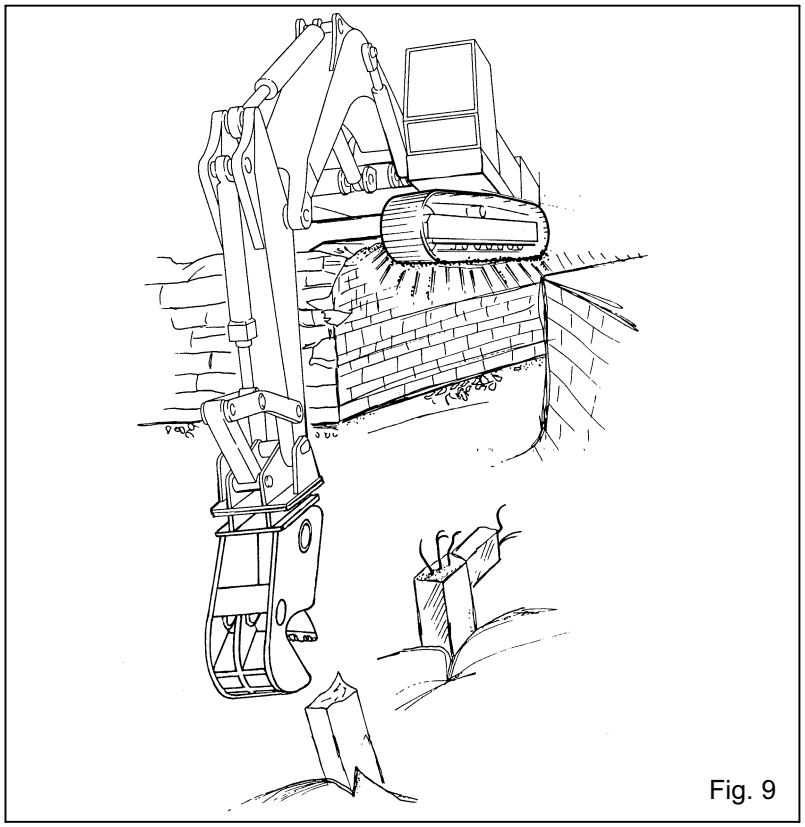


Fig. 9

DANGER!

Ensure that the carrier is positioned on firm ground. If this is not the case, the carrier may fall over!

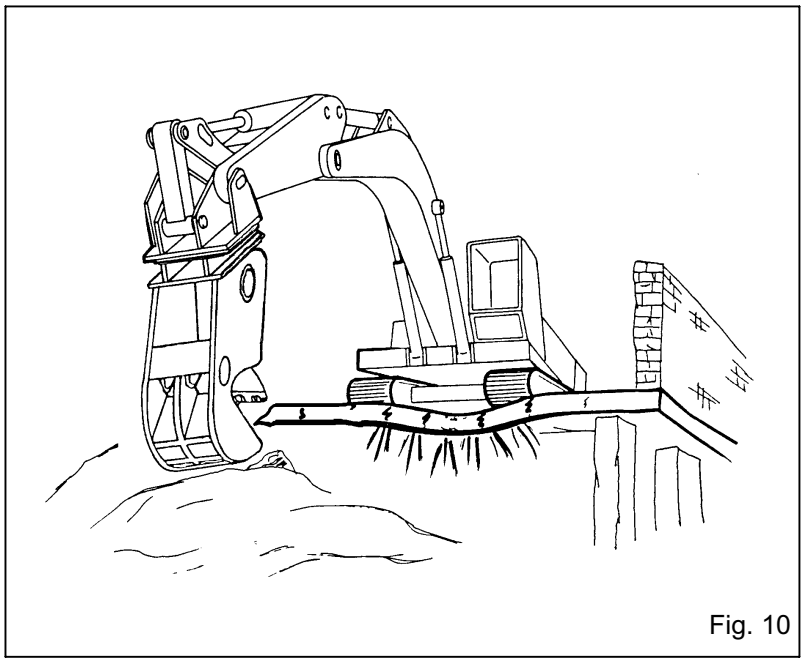


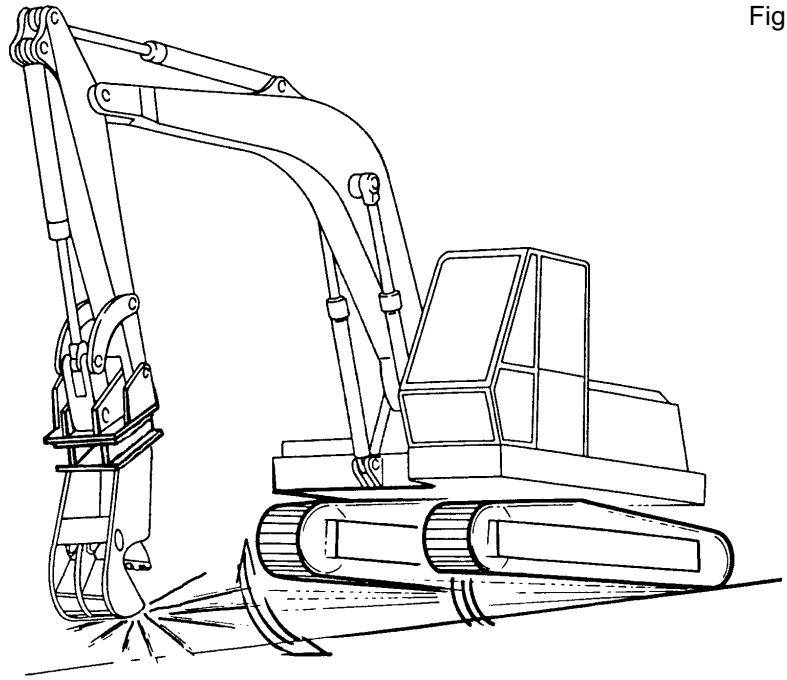
Fig. 10

DANGER!

When working on floors / roofs, ensure that they are strong enough to bear the weight of the carrier. Danger of collapse!

Instructions on the correct use of the hydraulic Bulk pulverizer

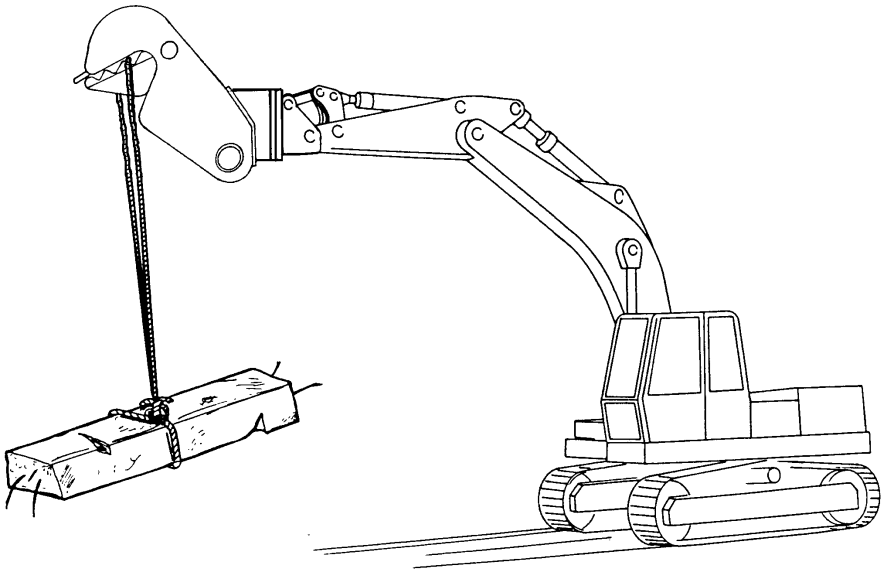
Fig. 11



CAUTION!

Never support the weight of the carrier on the hydraulic Bulk pulverizer so as to shift the carrier to the side.

Fig. 12



CAUTION!

Never lift or transport loads with the hydraulic Bulk pulverizer.

Instructions on the correct use of the hydraulic Bulk pulverizer

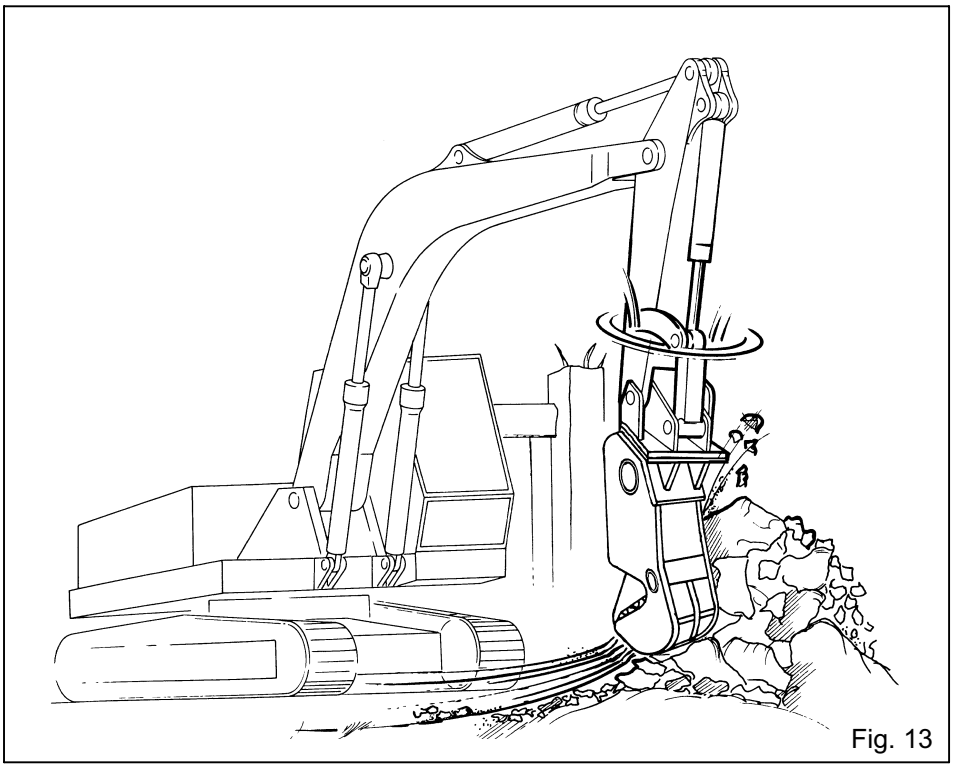


Fig. 13

CAUTION!

Never use the hydraulic Bulk pulverizer to clear away broken material.
The hydraulic Bulk pulverizer is not designed for this kind of work.

Fig. 14

CAUTION!

Never hack or pound with the hydraulic Bulk pulverizer since this will cause serious damage to the Bulk pulverizer.

7.5 Underwater applications

The Bulk pulverizer must never be used for underwater applications.

Special applications, e.g. in high temperatures or involving abrasive materials, must be discussed in advance with the Atlas Copco Customer Center / dealer in your region.

7.6 Working in high ambient temperature

The temperature of the hydraulic oil must be monitored to ensure it does not exceed 80 °C. If higher temperatures are measured in the tank, oil cooler must be fitted, and/or installation andpressure-relief valve have to be checked. Only use hydraulic oils of sufficient viscosity. In summer and in tropical climates, the minimum requirement is a hydraulic oil of type HLP 68.

7.7 Working in low ambient temperature

For temperatures down to 20 °C below freezing there are no special regulations.

At temperatures below minus 20 °C, the carrier must be warmed up prior to use in the way described by the excavator manufacturer. In the majority of cases, carriers and attachments are kept in protected or even heated areas when not in use.

However, if the carrier and the Bulk pulverizer are left out in the open, the carrier and all equipment must be warmed up before the Bulk pulverizer can be started up. The excavator manufacturer's regulations must be observed in full.

Ensure that the hydraulic oil in the carrier is at least at 0 °C.

The Bulk pulverizer cannot be started up until the oil temperature is over 0 °C.

Observe the excavator manufacturer's regulations.

CAUTION!

During operations, leave the excavator engine and pumps running even during breaks.

Note:

The Bulk pulverizer and excavator will not operate to full capacity until the oil temperature has reached at least 60 °C.

CAUTION!

Feeding hot hydraulic oil to an extremely cold Bulk pulverizer will cause internal stresses in the unit resulting in its failure.

Operations with hydraulic oil may cause damage when the oil has not been preheated adequately.

7.8 Operating the Bulk pulverizer with the cylinders fully extended or retracted

CAUTION!

Operating the Bulk pulverizer with the shovel/stick cylinders fully extended or retracted must be avoided at all costs. These end positions are equipped with damping functions; continuous operation at full extension/retraction can result in damage to the hydraulic cylinders

Remedy: Reposition carrier and/or boom.

8 Maintenance and care of the Bulk pulverizer

8.1 General informations

In order to obtain the best performance from the Bulk pulverizer, maintenance work should be carried out by the operator at the prescribed intervals.

DANGER!

Observe all relevant safety regulations when performing maintenance work.

The hydraulic system must be <u>depressurised</u> before all maintenance work on the Bulk pulverizer!

Procedure as follows:

- Switch off engine but leave ignition switched on.
- Repeatedly actuate the switches for opening / closing / rotating Bulk pulverizer.

When working on the Bulk pulverizer, ensure that no-one is standing between the open jaws.
Risk of injury!

8.2 Maintenance to be carried out by the carrier driver

8.2.1 Lubrication

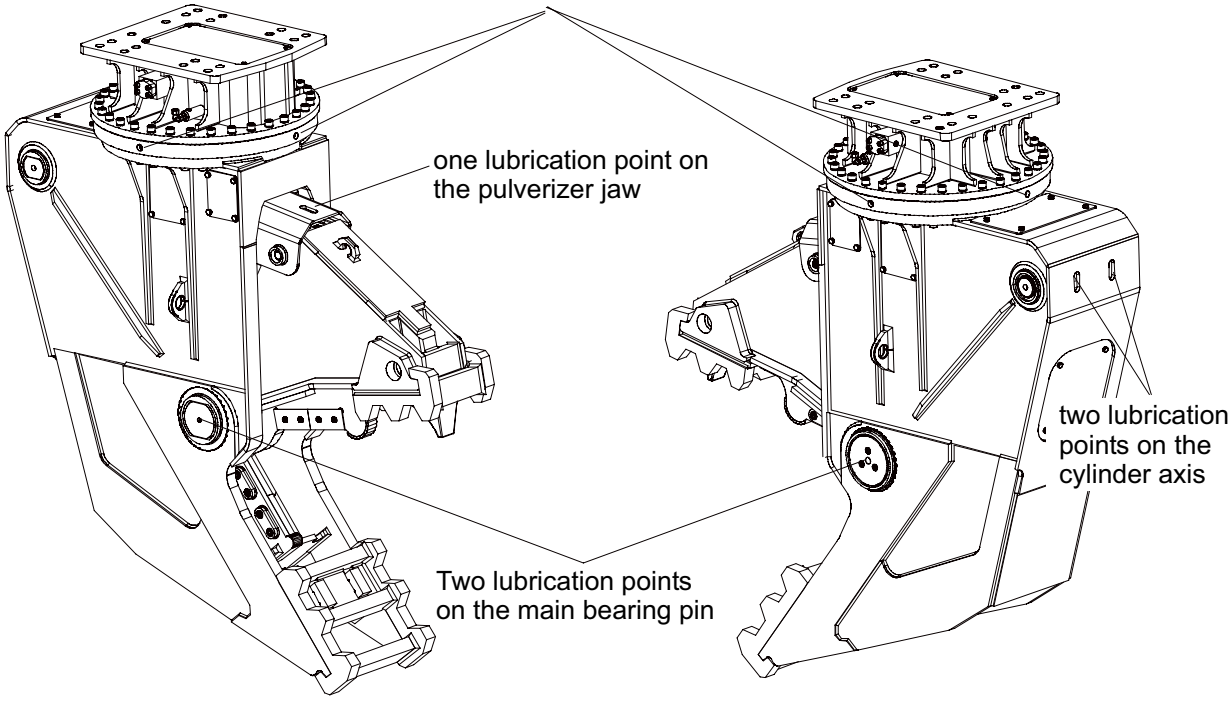


Fig. 15

The five lubrication points at the Bulk pulverizer must be lubricated every three hours! (see Fig. 15)

BP 2100 - rotating:
The two lubrication points on the 4-point bearing of the upper part, which require lubrication once per week.

BP 2900 - rotating:
The four lubrication points on the 4-point bearing of the upper part, which require lubrication once per week.

Use Atlas Copco cutter grease.

400 g cartridges of cutter grease
in a carton of 12 pieces,
part ident. no. 3363 0949 14.

Four to six shots from a grease gun 3363 0345 67 are sufficient.

8.2.2 Checking for cracks

Before starting work, check the Bulk pulverizer and adapter for cracks.

(Visual inspection of load-bearing components and welds).

8.2.3 Checking for wear

Wear occurs in the jaw area.
Worn or broken shear blades must be replaced in good time.

Worn/missing teeth must be replaced in good time (see chapter 8.5).

Worn tooth plates must be replaced in good time (see chapter 8.5).

Worn surfaces should be repair welded in good time by an expert (see chapter 8.6).

In all cases, timely repair/replacement will save high costs.

8.2.4 Checking the hydraulic lines before starting work

Carry out a visual check on all lines (pipes and hoses) from the pump to the Bulk pulverizer and back to the tank. Tighten any loose screw couplings and hose clamps. Damaged pipes/hoses must be replaced.

8.2.5 Checking the adapter bolts for wear

This visual check is only possible when the Bulk pulverizer has been dismounted from the excavator. If excessive wear is detected (cracks, notches, noticeable indentations etc.) the screws must be replaced.

8.2.6 Checking and cleaning the hydraulic oil filter

In the return line of the hydraulic system there must be installed an oil filter. This filter, with a mesh width not exceeding 50 micrometers, must be fitted with a magnetic separator and changed at regular intervals.

On a new Bulk pulverizer the oil filter should be changed after the first 50 operating hours and thereafter 500 operating hours must be controlled and replaced as necessary.

8.2.7 Checking screw couplings

All screw couplings should be checked; if they have worked loose, they must be retightened to the prescribed torque.

The table in Section 8.7 and Fig. 20 show the type and location of the screw couplings and indicate the required tightening torques and wrench sizes.

8.3 Maintaining and replacing shear blades

DANGER!

When working on the Bulk pulverizer, ensure no-one is standing between the opened jaws (prop the jaws open).
Risk of accident!

■ **Replacing the blades**

Damaged or worn shear blades can be turned. Broken blades or blades on which both cutting edges are worn must be replaced.

For safety reasons, new fastening screws should always be used when replacing the blades.

Use only genuine Atlas Copco spare parts.

Ensure that the screws are fitted properly.

DANGER!

It may be necessary to use a copper drift to release blades.

The blades are made of hardened steel. Striking them with a normal hammer may cause metal chips to fly off which could cause injury.
Wear protective eyewear!

8.4 Checking and correcting the blade gap

8.4.1 Checking the blade gap

Measure the gap using a fine gauge.

If the gap exceeds 2 mm, the correct gap must be reset by shimming.

8.4.2 Correcting the blade gap

Close the Bulk pulverizer.

Measure the gap using a gauge.

If the gap exceeds 2 mm it must be reset to the reference value by shimming.

Reference value = 0.1 - 2 mm
Shims, see spare parts list, pulverizer jaw.

Repeatedly open and **slowly** close the Bulk pulverizer and then check the gap again. If necessary, repeat the above procedure until the setting matches the reference value.

Setting the blade gap

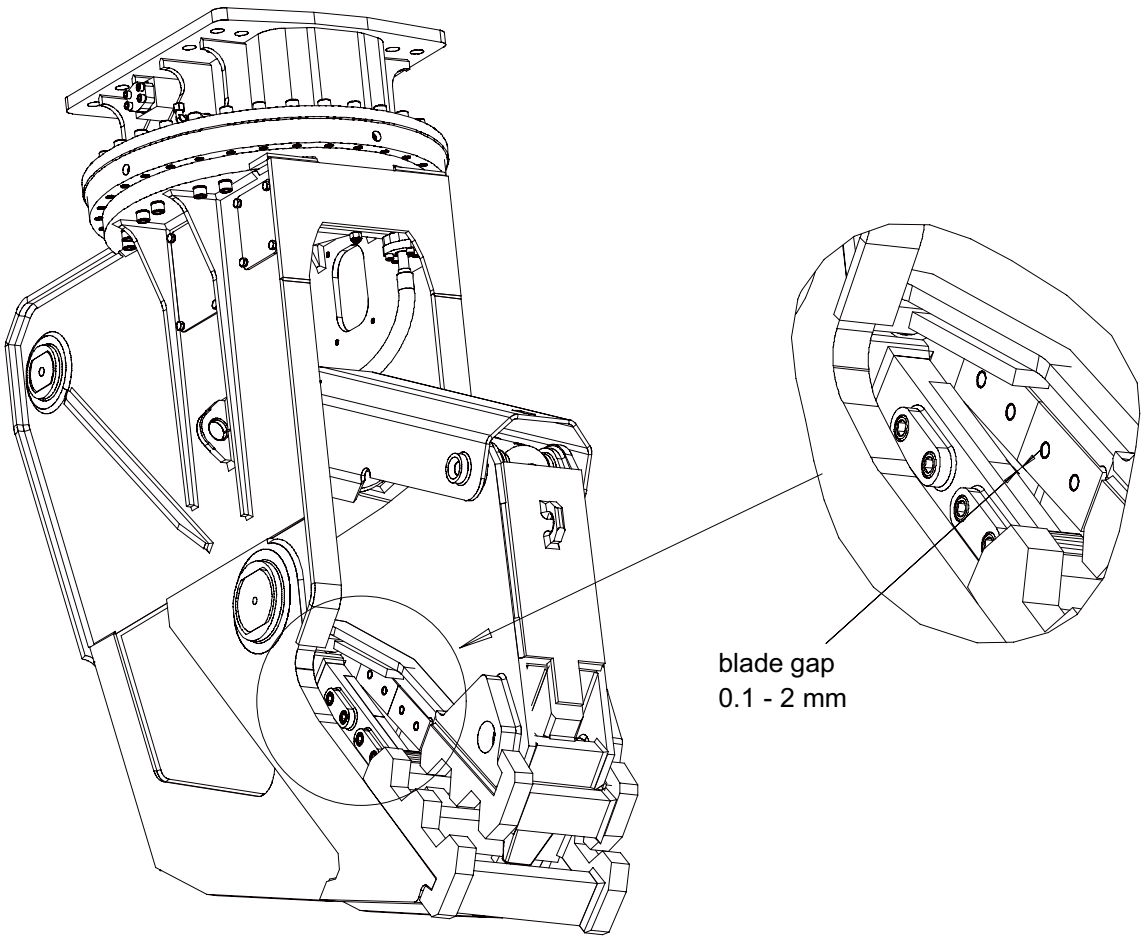


Fig. 16

8.5 Replace tooth plate and cutter tooth

DANGER!

When working on the Bulk pulverizer, ensure no-one is standing between the opened jaws (prop the jaws open).
Risk of accident!

8.5.1 Tooth plate - housing

Dismount worn tooth plate:

- Loosen the screws (3) and nuts (4).
- Remove the fastener (1).
- Remove the worn tooth plate (2).

Mount new tooth plate:

- Attach the new tooth plate (2).
- Apply the fastener (1).
- Fix the fastener (1) with the screws (3) and nuts (4).
  (Tightening torques see chapter 8.7)

dismount worn tooth plate

attach new tooth plate

fix new tooth plate

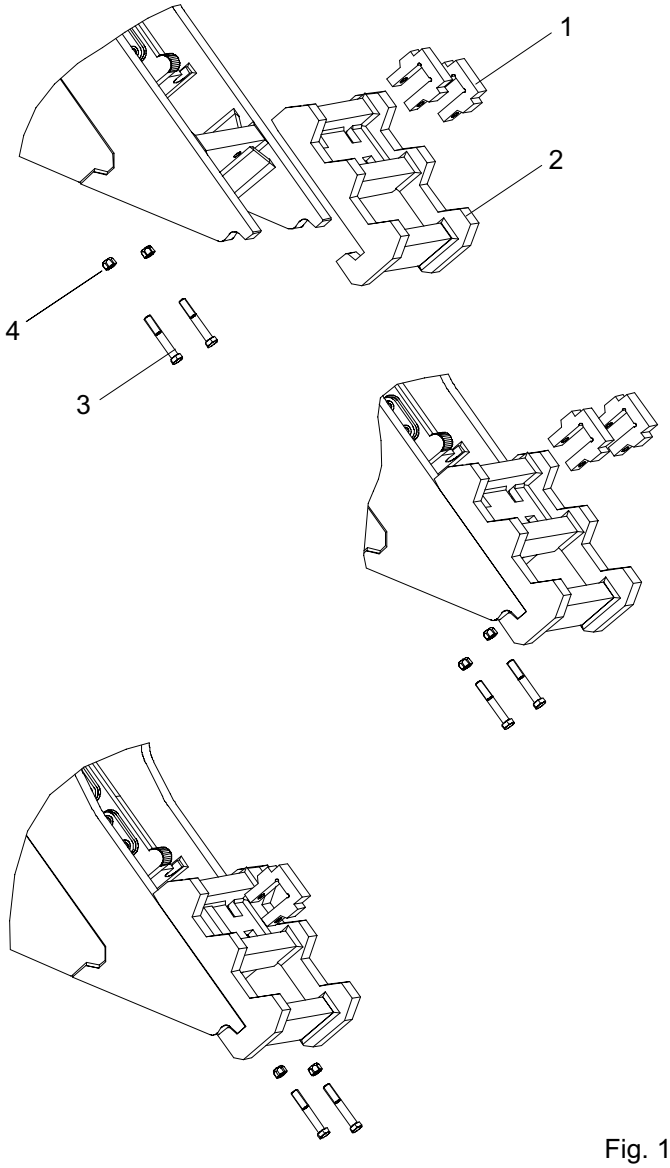


Fig. 17

8.5.2 Tooth plate/cutter tooth - pulverizer jaw

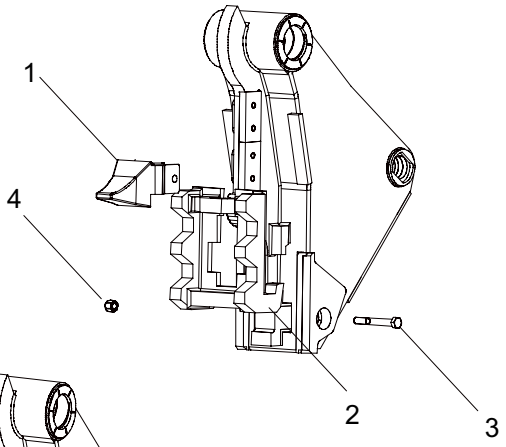
Dismount worn tooth plate:

- Loosen the screws (3) and nuts (4).
- Remove the cutter tooth (1).
- Remove the worn tooth plate (2).

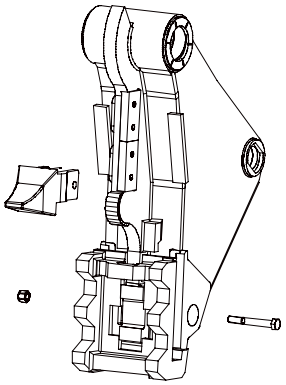
Mount new tooth plate:

- Attach the new tooth plate (2).
- Apply the cutter tooth (1).
- Fix the cutter tooth (1) with the screws (3) and nuts (4).
  (Tightening torques see chapter 8.7)

dismount worn tooth plate



attach new tooth plate



fix new tooth plate and cutter tooth

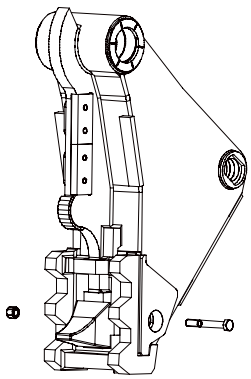


Fig. 18

8.6 Repair welding

CAUTION!

Welding must be performed by a qualified welding specialist.

Observe the following welding regulations for optimal results.

Welding instructions:

Hard facing:
A buffer layer must be welded between the base material and the hard facing.

Pre-heating temperature for buffer layer: . . . . . max. 150 - 180 °C
Filler material: . . . . . V 10 A - 4370 SG DIN 8556: SG X15 Cr Ni Mn 18 8
Shield gas: . . . . . CO_2 M 21 DIN 32526
Intermediate layer temperature: . . . . . max. 160 °C
Preheating temperature for hard facing: . . . . . max. 100 °C
Intermediate layer temperature: . . . . . max. 200 °C
Filler material: . . . . . DIN 8555/MSG-1-GZ-60 Dura EA-600-SG
Shield gas: . . . . . CO_2 M 21 DIN 32526
Cooling: . . . . . under cover

CAUTION!

Hard facing is not permissible on any other areas of the pulverizer. Please contact the Atlas Copco Customer Center / dealer in your region.

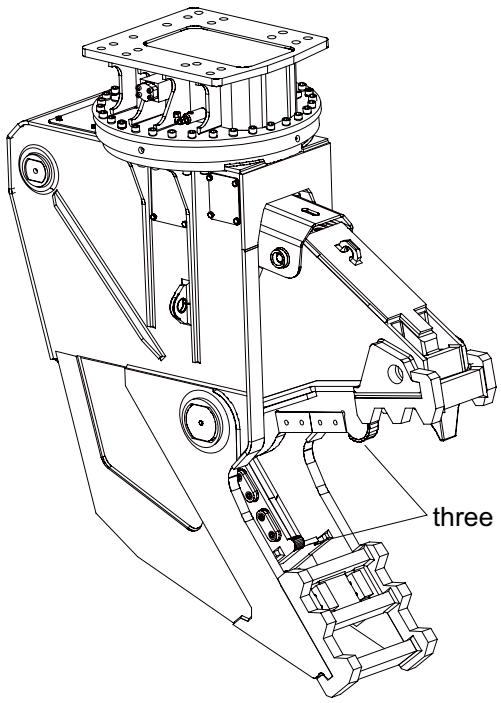


Fig. 19

8.7 Screw couplings with Tightening torques

Connection point	No.	Interval	Tool required	Tightening torque [Nm]
Adapter	1	daily	Allen key size 22	1500
Connection pulverizer - upper part/connection plate for adapter	2	weekly	**BP 2100:** Allen key size 14 **BP 2900:** Allen key size 17	255 + 30 530 + 30
Cutter tooth	3	weekly	Ring spanner size 36	920 + 30
Main bearing pin	4	weekly	Allen key size 14	190 + 5
Tooth plate, housing	5	daily	Ring spanner size 36	385 + 5
Cutter blade, housing	6	daily	Allen key size 17	530 + 30
Cutter blade, pulverizer jaw	7	daily	Allen key size 17	530 + 30
Piston axis	8	daily	Ring spanner size 36	385 + 5
Hydraulic ports rotating	9	daily	Jaw spanner size 24	70 + 10
Hydraulic ports operning / closing	10	daily	Allen key size 10	75 + 10

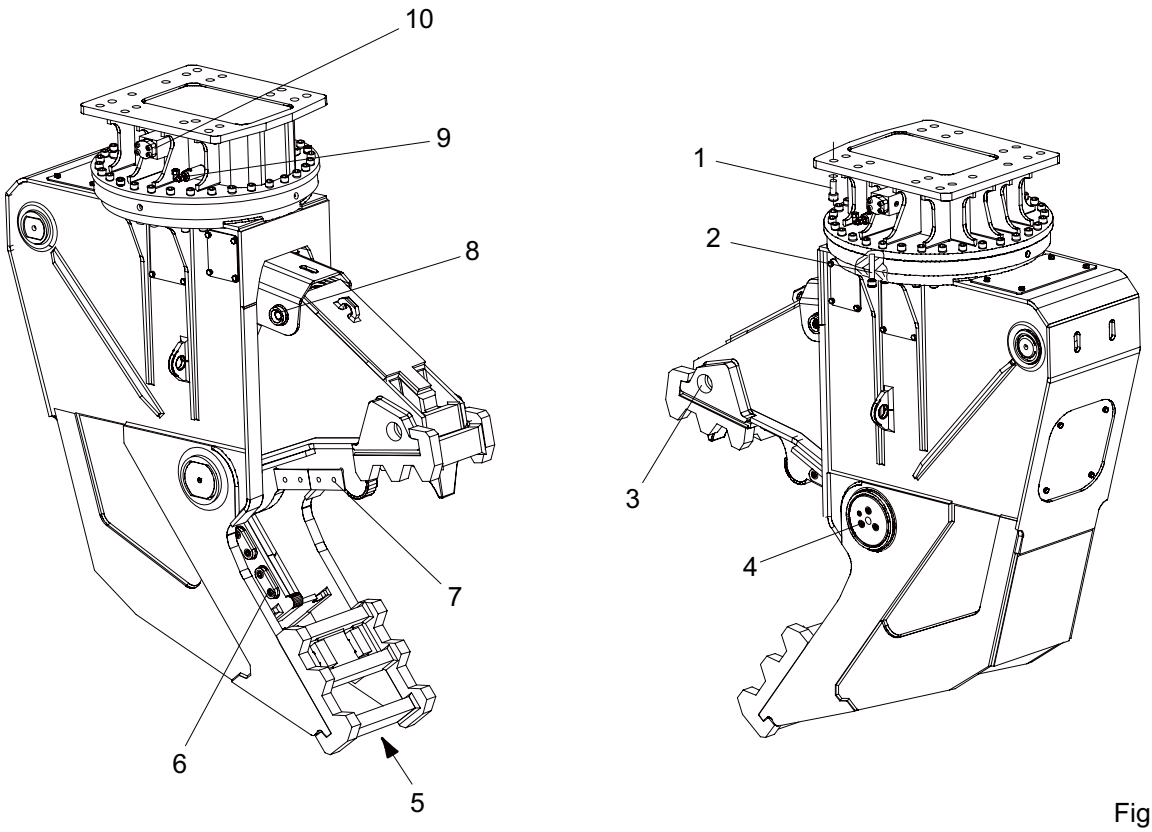


Fig. 20

9 Troubleshooting

9.1 Hydraulic Bulk pulverizer does not work

Cause	Remedy	By
Check valve in line **A** or **B** closed	Open check valve	Carrier driver
Defective couplings blocking lines **A** / **B**	Replace defective coupling parts	Workshop
Electrical equipment for pulverizer hydraulics defective	Check electrical equipment for pulverizer hydraulics, repair as necessary	Workshop
Oil level in tank too low	Top up oil to prescribed level	Workshop
Magnet on switch-on valve defective	Replace magnet	Workshop

9.2 Insufficient breaking force

Cause	Remedy	By
Operating pressure too low, connections for lines **A** and **B** mixed up	Connect up lines **A** and **B** correctly Only with different pressure settings for Lines **A** and **B**, i.e. existing hydraulic system also permits pulverizer operations.	Carrier driver
Operating pressure too low	Correct operating pressure	Workshop or Atlas Copco Customer Center / dealer in your region

9.3 Hydraulic pulverizer does not cut

Cause	Remedy	By
Blades worn/broken. Blade clearance too great	Check blades, if necessary reset or replace	Workshop

9.4 Bulk pulverizer cannot be rotated

Cause	Remedy	By
Rotary motor/gear unit/transmission defective	Replace defective parts	Atlas Copco Customer Center / dealer in your region

9.5 Operating temperature too high

Cause	Remedy	By
Pump delivery too high - excess oil flows to tank via pressure relief valve	Correct carrier engine speed. Correct pump pilot system if available	Carrier driver or Atlas Copco Customer Center / dealer in your region
Pressure relief valve defective	Fit new pressure relief cartridge	Atlas Copco Customer Center / dealer in your region
Oil level in tank too low	Top up oil	Carrier driver or workshop

9.6 Oil leaks from hydraulic ports

Cause	Remedy	By
Cap nuts loose	Tighten cap buts	Carrier driver

9.7 Insufficient lubrication

Cause	Remedy	By
Intervals between lubrication too long	Lubricate more frequently	Carrier driver

10 Disposal

CAUTION!

Dispose of the Bulk pulverizer and the hydraulic oil in accordance with the applicable statutory provisions on environmental protection.

Dismount the demolition pulverizer as described in section 6.7.

Dispose of the Bulk pulverizer in line with all applicable regulations or consult an authorised and specialised recycling company.

11 Technical specifications

11.1 Pulverizer - rotating

Type		BP 2100	BP 2900
Rotary unit		yes	
Service weight★	[kg]	2145	2930
Recommended carrier class	[t]	18 - 27	25 - 35
Oil consumption.	[l/min]	150 - 250	250 - 350
Oil flow rate rotating mechanism	[l/min]	35 - 50	
Rotation	[°]	> 360	
Operating pressure	[bar]	350	
Operating pressure (rotating mechanism)	[bar]	150 - 220	
Max. jaw opening.	[mm]	795	950
Max. jaw width	[mm]	470	480
Max. jaw depth	[mm]	800	870
Blade length	[mm]	190	350
Connecting thread (hydraulic)		SAE 1” 6000 PSI	
Connecting thread (rotating)		Non-soldered coupling with cutting ring DIN 2353 or 24° conical seal M 20 x 1.5	
Hose size hydraulic (nominal ID)	[mm]	25	
Hose size rotating mechanism (nominal ID)	[mm]	8	
Pipes hydraulic (nominal ID)	[mm]	30 x 4	
Pipes rotating mechanism (nominal ID)	[mm]	12 x 1.5	

★ Hydraulic Bulk pulverizer with medium-sized adapter.
Please note that the working weight can be considerably higher, depending on the adapter plate.

11.2 Pulverizer - non rotating

Type		BP 2100	BP 2900
Service weight★	[kg]	2020	2740
Recommended carrier class	[t]	16 - 27	23 - 35
Oil consumption.	[l/min]	150 - 250	250 - 350
Operating pressure	[bar]	350	
Max. jaw opening.	[mm]	795	950
Max. jaw width	[mm]	470	480
Max. jaw depth	[mm]	800	870
Blade length	[mm]	190	350
Connecting thread (hydraulic)		SAE 1” 6000 PSI	
Hose size hydraulic (nominal ID)	[mm]	25	
Pipes hydraulic (nominal ID)	[mm]	30 x 4	

★ Hydraulic Bulk pulverizer with medium-sized adapter.
Please note that the working weight can be considerably higher, depending on the adapter plate.

12 EC Declaration of Conformity (EC Directive 2006/42/EC)

We, Atlas Copco Construction Tools GmbH, hereby declare that the machines listed below conform to the provisions of EC Directive 2006/42/EC (Machinery Directive), and the harmonised standards mentioned below.

Bulk pulverizer	**Part number**	**Year of first marketing**
BP 2100	3363 0969 01	05/2007
BP 2100	3363 1009 77	06/2008
BP 2900	3363 0996 01	03/2007
BP 2900	3363 1009 73	06/2008

Following harmonised standards were applied:

- EN 12100-1
- EN 12100-2
- EN ISO 14121-1
- EN ISO 9001:2000

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Place and date:

Essen, 29 December 2009

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