



CWP Series Pulverizers

Models
CWP2000
CWP2000R
CWP3000
CWP3000R

(CWP2000R Model Pictured)



Operator's & Parts Manual

CWP-Series - Safety, Operation & Maintenance Part #CWPE00002



Connect Work Tools - www.connectworktools.com - 920.238.6657

Contact Information



Connect Work Tools
155 Main Street
Superior, WI 54880

E-mail: info@connectworktools.com
Main Phone: 920-238-6657
Fax: 715-395-3703

Contact your Connect Work Tools Representative or the Connect Work Tools Parts Department for replacement manuals. Inquiries regarding the content of this manual must include the release date shown below.

Information in this manual is subject to change without advance notice.

Table 1.1 About this manual

Document ID No.	CWPE00002
Type	Safety, Operation, Maintenance & Parts
Release Date	October 2021
Product Name	Hydraulic Pulverizer
Series	CWP
Applicable Models	CWP2000, CWP2000R, CWP3000, CWP3000R
Years of Manufacture	2018 & above

Safety Information

Safety Statements and Hazard Alerts

Within this manual, you will find important safety information. The information will include specific information related to the Connect Work Tools attachment as well as the carrier. It is imperative that operators, maintenance personnel, or individuals loading or transporting the equipment read and understand the safety contents of this manual, as well as all safety decals and labels. Safety decals and labels must be kept legible and intact on the attachment. Replace damaged, missing or illegible safety labels or decals.

Purpose of Safety Messages

The reason safety messages and information has been included in this manual is most importantly to protect you and those individuals in the work area. Additionally, it is provided to eliminate damage to surroundings, attachments and the carrier due to incorrect operation and use or lack of maintenance of the equipment.

Key Points before operating equipment

1. Know your surroundings, survey the area prior to operation.
2. Know where the potential hazards are within the work area and notify personnel of those hazards.

Safety messages provide the following information:

1. **Alert** personnel to potential hazards
2. **Identify** the nature of the hazard
3. **Describe** the severity of the hazard, if encountered
4. **Instruct** how to avoid the hazard

ATTENTION, BECOME ALERT, YOUR SAFETY IS INVOLVED.

Signal Words

Safety symbols and signal words, as shown below, are used to emphasize all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to equipment.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



This safety alert and signal word indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



This safety alert and signal word indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



This safety alert and signal word indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



This signal word indicates a potentially hazardous situation which, if not avoided, may result in property damage or damage to the equipment.



This signal word indicates a situation which, if not avoided, may result in damage to the equipment.

Fig. SI.1 Safety Signal Words

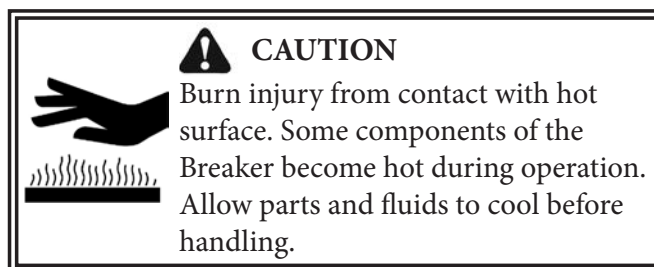


Fig. SI.1 Safety Message

Signal Words Used for Non-Hazard Messages

This manual contains other message types that use the signal words IMPORTANT and NOTE. These are informational messages that provide instructions and are not considered hazardous to workers.

IMPORTANT - Identify instructions that if not followed, may damage the equipment or diminish the service life of components.

NOTE - Highlight suggestions, which will enhance installation, reliability, or operation.










Safety Information

Safety, Information and Identification Labels

Information labels affixed to the Connect Work Tools equipment include safety warnings, identification and instructions important to operation and service. Refer to Figure "L-5" for their location on the equipment.

Keep all safety & identification labels clean. Words and illustrations must be legible.

Before operating this equipment, replace damaged or missing labels. For replacement, refer to the appropriate Parts Manual for identification.

Fig.	Label	Description
Fig. SI.2		READ INSTRUCTIONS - Decal directs personnel to the manual for further information/instructions.
Fig. SI.3		MODEL - Decal identifies the specific model.
Fig. SI.4		CONNECT WORK TOOLS LOGO - This decal is the Connect Work Tools identifier and is a registered trademark of Connect Work Tools.
Fig. SI.5		SERIAL PLATE - Contains identifying information about the equipment, including: Manufacturer's name, serial number, model number, part number, product weight, operating pressure, oil flow, carrier relief pressure, and nitrogen pressure.
Fig. SI.6		LIFT POINT - Decal identifies approved lift points.
Fig. SI.7		ROTATE - Decal depicts hydraulic inlet and outlet ports for rotation on the pulverizer
Fig. SI.8		GREASE POINT DECAL - Directs personnel where to grease the equipment.
Fig. SI.9		STAY CLEAR - Decal alerts personnel and by-standers to maintain a safe distance from the pulverizer while in operation.
Fig. SI.10		OPEN/CLOSE - Decal depicts location of hydraulic inlet and outlet ports that open and close the pulverizer arm assembly

Safety Information

Label Positions

CWP Pulverizer Decal Placement - Rotate Models

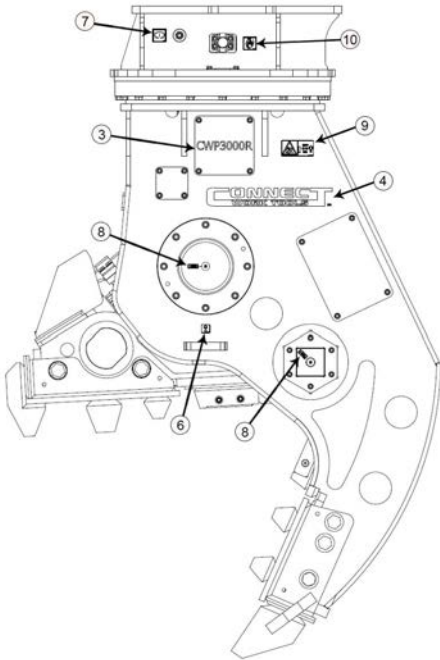


Fig. SI.11

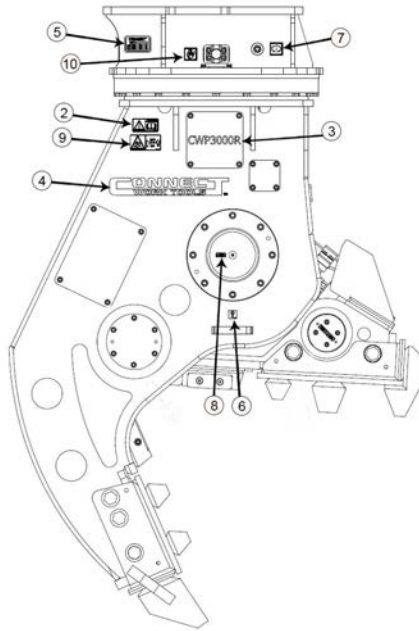


Fig. SI.12

CWP Pulverizer Decal Placement - Fixed Models

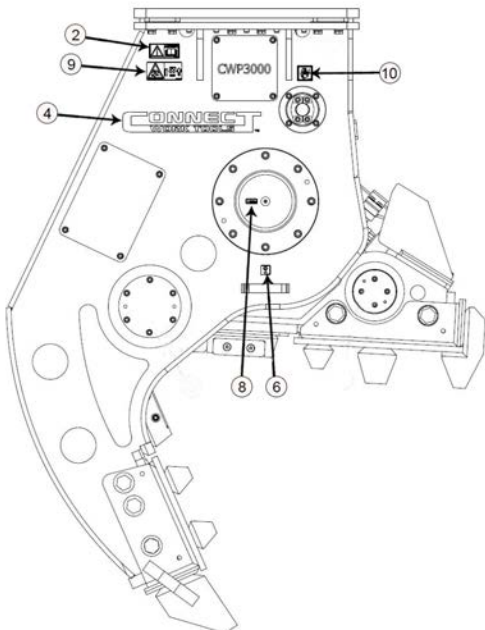


Fig. SI.13

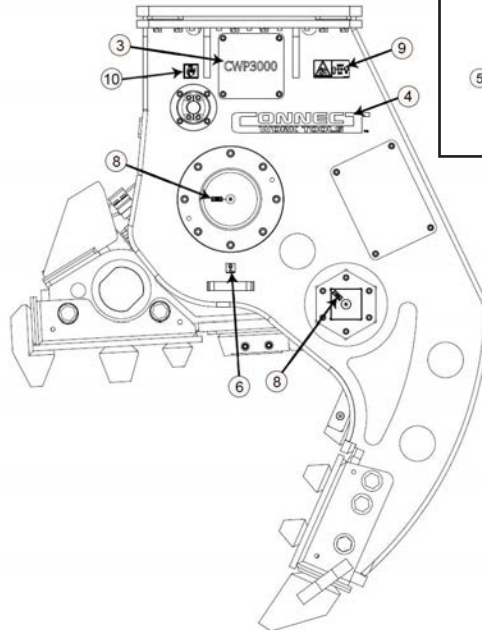
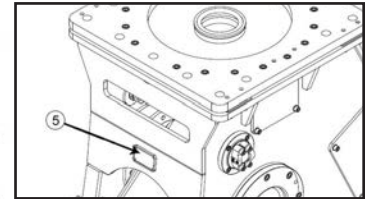


Fig. SI.14



Safety Information

Meaning of Pictograms

Pictograms are used to rapidly communicate information. For the purposes of this manual and labels affixed to the Connect Work Tools equipment, pictograms are defined as follows:



- Read the Manual
- Refer to the manual for further details
- Procedures are explained in the manual



Read the Service Manual for Additional Information



- Crush Point



- Pinch Point



Moving part (in direction indicated by arrow)



- Falling object
- Unsupported loads

Personal Protection Equipment



- Hearing Protection



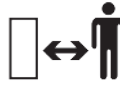
- Safety Eyewear



- Gloves



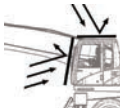
- Safety Shoes
- Falling Part



Personnel maintain a safe distance from breaker



Fragments/debris becoming airborne projectiles



Protective guards required on cab when operating this work tool



Leaking fluid under pressure



Hot Surfaces



Gas/Oil under pressure



Shut off carrier & remove key before servicing



Identifies lift point



Any figure displaying an X-out or a circle with a diagonal slash is a prohibited action. Prohibited actions must be avoided to prevent injury and/or equipment damage



The check mark is used to indicate correct actions or approved methods that are recommended

Fig. SI.15 Meaning of Pictograms

Safety Information

Attention Read the Manual



Improper installation, operation or maintenance of the Connect Work Tools Equipment could result in serious injury or death. Only qualified operators may operate the Connect Work Tools equipment. Personnel responsible for the maintenance of the Connect Work Tools equipment or its systems, including inspection, installation or adjustments must also be qualified. Operators and personnel responsible for the maintenance of this equipment should read this manual. Other manuals, such as those published by the machinery used in support of the Connect Work Tools equipment, should also be read.

General Construction Safety

Always follow procedures that promote safe conditions for workers and bystanders. The standard safety precautions expected and required of those working in construction shall include, but not limited to:

- Locating existing underground service and utility lines
- Establishing pedestrian barriers
- Using personal protection equipment appropriate to working conditions, etc.

Owner's Responsibilities

Ensure that only qualified personnel operate and service the Connect Work Tools equipment.

Ensure personal protection equipment is available to personnel and enforce the use of PPE.

Ensure that carriers are in safe, working order and all guards and safety equipment is installed and in operating condition.

Ensure safety-related materials such as instructions and including this manual are kept in a convenient location so that they are easily accessible to operators and maintenance personnel.

Personal Protective Equipment (PPE)



Personnel operating or nearby the equipment and exposed to the hazard of falling, flying and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases shall use the particular personal protective equipment (PPE) necessary to protect them from the hazard. Such PPE may include safety eyewear, face shield, hearing protection, safety footwear, gloves and dust mask. Supervisors shall review proper PPE selection and ensure PPE is made available to personnel. Personnel are responsible for wearing PPE as directed by the supervisor.

Protective Equipment - Guarding



Construction equipment designed with guards shall have guards in place when equipment is in use. Guards are fitted to the equipment to protect against unsafe situations that could not be eliminated through design measures. Where it was not possible to prevent an unsafe situation by means of a guard, safety messages appear on the equipment, warning personnel of a hazardous condition.

Guards shall not be removed unless for the purpose of inspection and service of components. All guards must be reinstalled after service or adjustments are completed. Do not operate the Connect Work Tools attachments without guards.

Additional guarding, not included with the Connect Work Tools equipment, is necessary at the operator's station to protect the operator and other nearby personnel against flying debris from material being cut or demolished. Do not handle, demolish or cut material overhead without proper guards installed.

To prevent accidental start up, the control switch shall be located in a protected area that is guarded and makes it difficult to accidentally operate the equipment.

Safety Information

Unapproved Modifications



In order to provide and maintain efficient production and reliable service, while ensuring operator safety, the Connect Work Tools equipment may not be modified or used for any other purpose other than, for which it was intended. Use of the Connect Work Tools equipment, other than those specified in this manual, may place personnel at risk of injury and/or may subject the equipment to damage. The Connect Work Tools equipment shall not be modified or used in unapproved applications unless written consent is received from the Connect Work Tools Engineering Department.

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General Information

1. Introduction



Preface

This manual will provide an understanding of the Connect Work Tools Pulverizer by providing instructions for safe and effective operation and instructions for regular maintenance activities of the pulverizer in addition to parts information.

Before installation or operation of the pulverizer for the first time, please read and understand this manual to prevent the possibility of property damage and personal injury.

The specifications and designs presented in this manual are subject to change without prior notice.

2. Safety Precautions

Operation

- Only attach the product to a carrier with a suitable load-bearing capacity.
- Do not allow anyone to enter the work area during operation.
- The product should be serviced and maintained only by qualified service personnel.
- Before performing maintenance or inspections on the equipment, stop the engine and adhere to the safety guidelines and requirements.
- When the product is not in use, open the jaws and place the pulverizer upright on level ground.
- Only Connect Work Tools' spare and replacement parts should be used to ensure efficiency and durability of the product.
- Only mineral oil should be used on the CWP. Please contact Connect Work Tools in case of any uncertainty.

Protective Equipment

- Always wear the following personal protective equipment: safety glasses, ear protection, protective gloves and protective shoes.



Heat Caution



- Never touch the hot parts and wait for them to cool down first if you have to touch them.
- Hot hydraulic oil can cause burns. Never use your fingers to check for hydraulic fluid leaks and always keep your face away from a possible leak.

1.0 Specification

1.1 CWP Pulverizer Component Identification

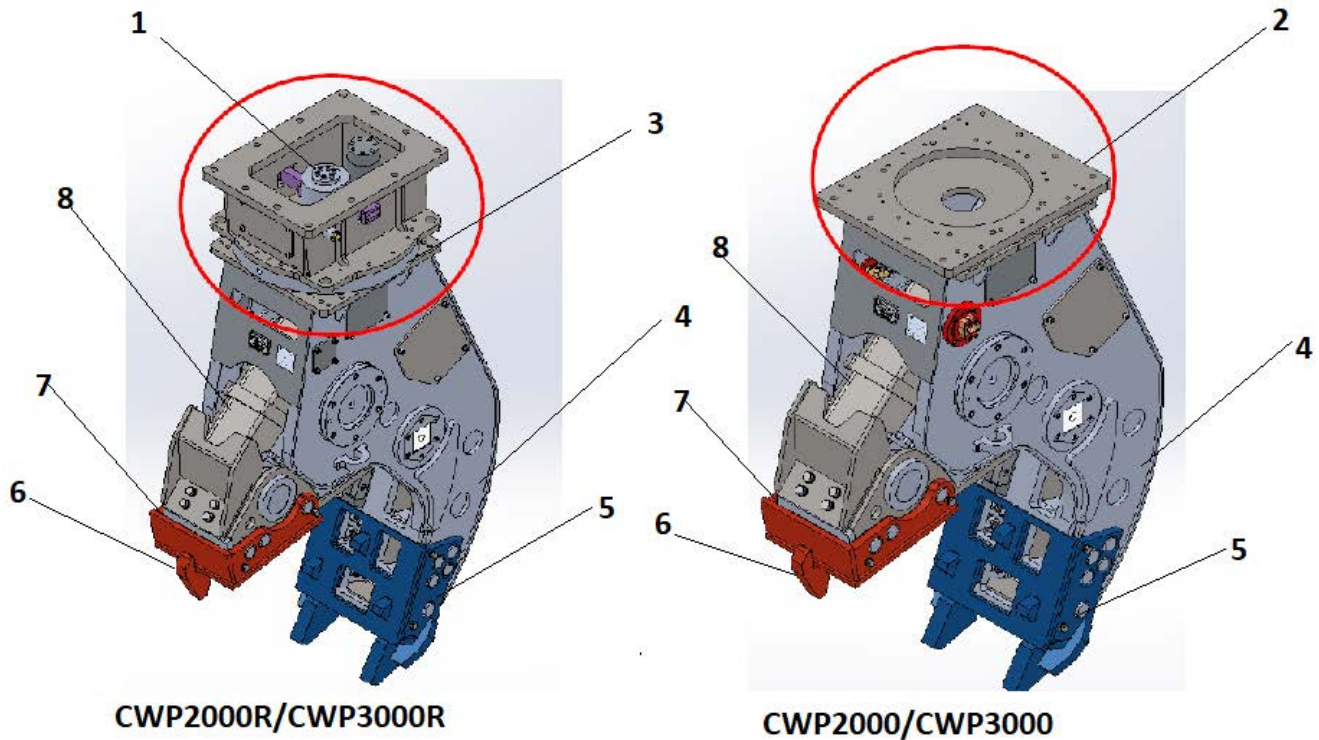


Fig. Sp.1 Component Identification

Item	Model	Description
1	CWP2000R/CWP3000R	Rotation Motor and Turning Joint
2	CWP2000/CWP3000	Fixed Top Assembly (Non-Rotating)
3	CWP2000R/CWP3000R	Slewing Ring Gear (Rotating)
4	All Models	Upper Body Assembly
5	All Models	Upper Tooth Assembly
6	All Models	Lower Tooth Assembly
7	All Models	Lower Arm Assembly
8	All Models	Cylinder Cover and Cylinder

1.0 Specification

Connect Work Tools' hydraulic pulverizer (CWP) is a powerful attachment for demolition and concrete processing. CWP is intended to be used for separating concrete and rebar, breaking reinforced concrete elements, and light to medium duty demolition of buildings.

The jaws on CWP are equipped with wear-resistant wear elements such as teeth and cutters. These teeth and cutter are field-replaceable, which minimizes the service, maintenance and downtime.

1.2 Technical Data

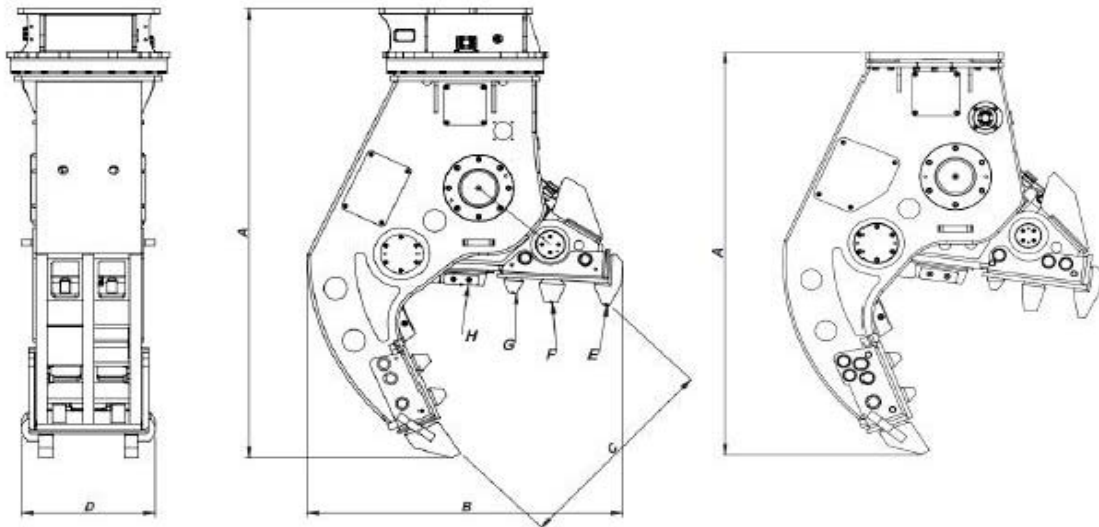


Fig. Sp.2 Technical Data

Description		UNIT	CWP2000	CWP2000R	CWP3000	CWP3000R	Remark
Operating Weight		kg/lbs	1,973/4,350	2,233/4,925	2,983/6,576	3,290/7,253	Without Top Bracket
Dimension	A	mm/in	1,989/78.30	2,312/91.02	2,110/83.07	2,430/95.66	
	B		1,145/57	1,457/57	1,610/63.38	1,610/63.38	
	C		970/38.18	970/38.18	1,110/43.70	1,110/43.70	
	D		607/23.90	607/23.90	687/27.04	687/27.04	
Hydraulic Cylinder Pressure		bar/psi	320/4,642				
Hydraulic Cylinder Flow		lpm/gpm	250/66		300/79		
Rotator Pressure		bar/psi	N/A	140/2,030	N/A	140/2,030	
Rotator Flow		lpm/gpm	N/A	75/20	N/A	75/20	
Closing Force	E	m ton/us lbs	45/99,208		70/154,323		
	F		60/132,277		90/198,416		
	G		80/176,369		120/264,554		
Cutting Force	H		130/286,600		200/440,924		
Carrier Weight				18-27/39,386-59,524		28-38/61,729-83,775	

*the above technical specifications are subject to change without notice

2.0 Transport

In order to lift the attachment, lifting eyes must be used. The lifting eyes are located on both sides of the CWP attachment body.

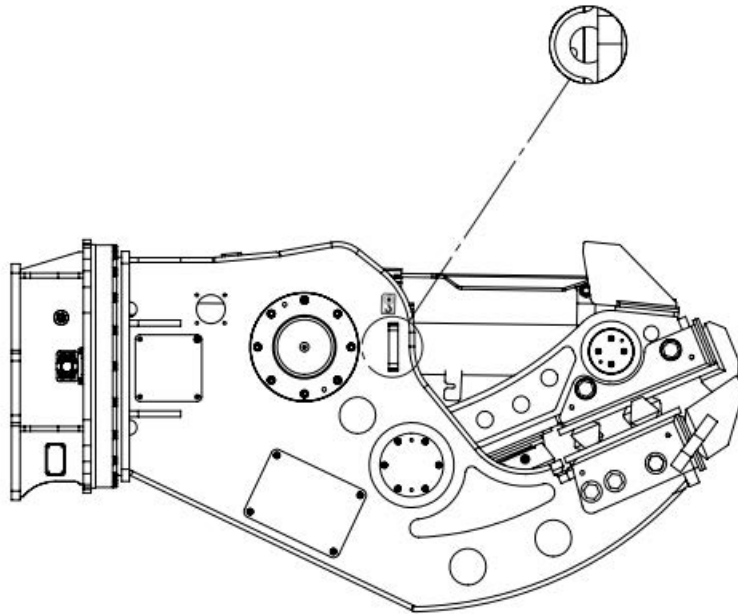


Fig. T.1 Transport Lifting Eyes

Note: Only lift the attachment with proper lifting equipment meeting suitable load-bearing capacity for the weight of the pulverizer.

Keep the work area clear and maintain a safe distance for personnel.

3.0 Installation

3.1 Hydraulic Connections

Two hydraulic circuits are required to operate the pulverizer. One for opening and closing the jaws and one for the rotation of the jaws.

The pulverizer is equipped with couplings for its hydraulic connections. The specifications for the hose connections are shown on the following table.



For safety reasons and to prevent environmental contamination, a carrier shutoff valve for each connection should be installed.

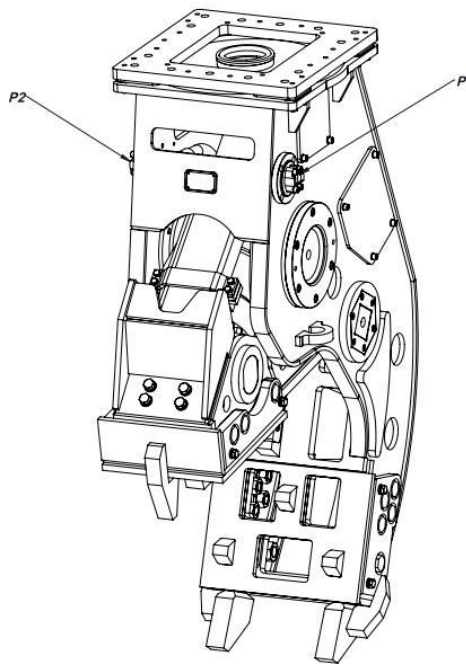


Fig. I.1 Hydraulic Connections

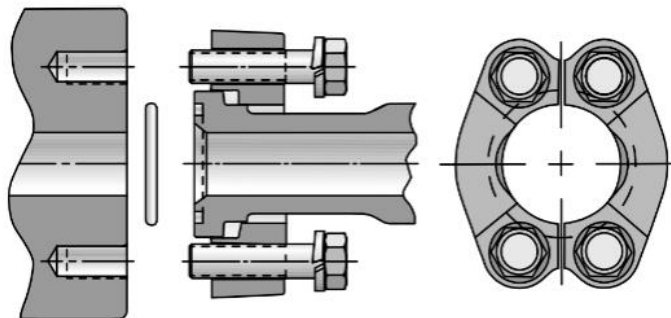


Fig. I.2 Hydraulic Hoses

CWP Hydraulic hoses for fixed model jaws			
Model			Metric
CWP2000	P1: 1" (OPEN)	P2: 1" (CLOSE)	Four Bolt Split Flange (CODE62)
CWP3000	P1: 1 1/4" (OPEN)	P2: 1 1/4" (CLOSE)	

3.0 Installation

3.1 Hydraulic Connections - continued

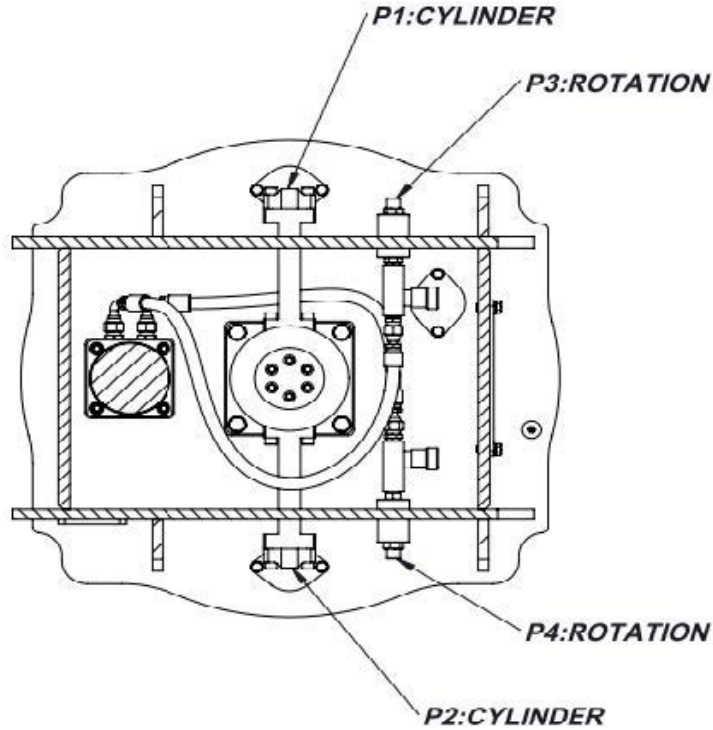


Fig. I.3 Hydraulic Hoses

CWP Hydraulic hoses for rotating models		
Model	Open/Close Ports	Type
CWP2000R	P1: 1" (OPEN) P2: 1" (CLOSE)	Metric Four Bolt Split Flange (CODE62)
CWP3000R	P1: 1 1/4" (OPEN) P2: 1 1/4" (CLOSE)	
Model	Rotate Ports	Type
CWP2000R	P3: 1/2" JIC (ROTATE) P4: 1/2" JIC (ROTATE)	Male JIC
CWP3000R	P3: 1/2" JIC (ROTATE) P4: 1/2" JIC (ROTATE)	

3.0 Installation

3.2 Attaching to the Carrier

In order to mount CWP to the carrier, a top bracket with a suitable bolt pattern for the pulverizer top plate should be prepared.

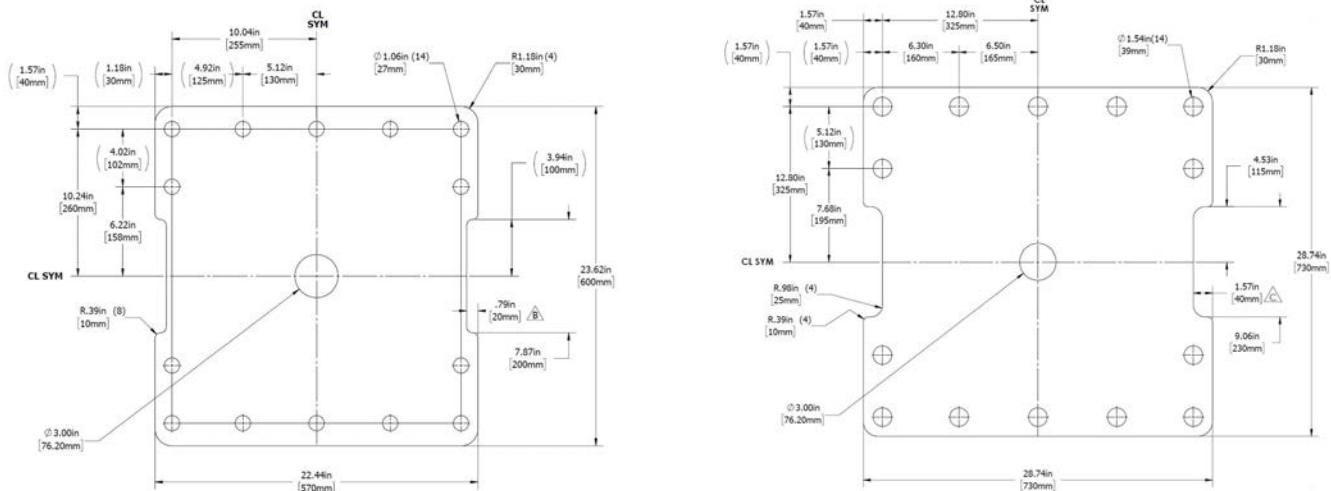


Fig. I.4 Bolt Patterns

Model	Top Plate Part Number
CWP2000/CWP2000R	CHE00104
CWP3000/CWP3000R	CHE00105

1. Assemble the top bracket to CWP top plate.
2. Connect the top bracket to the carrier boom using the boom pins.



Do NOT put hands inside pin holes of the carrier boom while installing the boom pins.

3. Align the pins in the correct position.
4. Lubricate the pins.
5. Move boom cylinder and check the movement of CWP.
6. Connect the hydraulic lines. The hose specifications are provided in the previous table. Make sure that the hoses are long enough for free movement of the CWP.



Before connecting the hoses, remove all foreign materials such as dirt or sand from the connectors.

Hoses must be capable of withstanding high pressure.

After mounting on the carrier, the hydraulic system must be bled to remove trapped air. Failure to do this may result in damage to the cylinder.

Bleeding method: open and close jaw three or four times slowly.

Do not use high pressure while performing this method.

3.0 Installation

3.3 Working Pressure and Opening/Closing Time

For proper operating of CWP, the operating pressure should be within the required range shown in the following table.

Low working pressure may cause reduced closing power of the jaws.

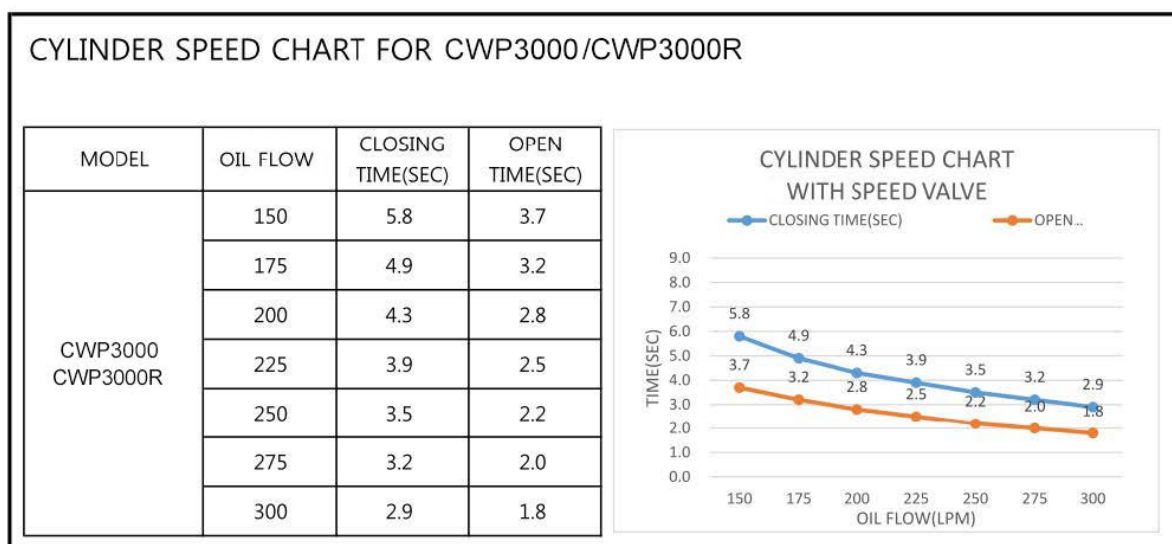
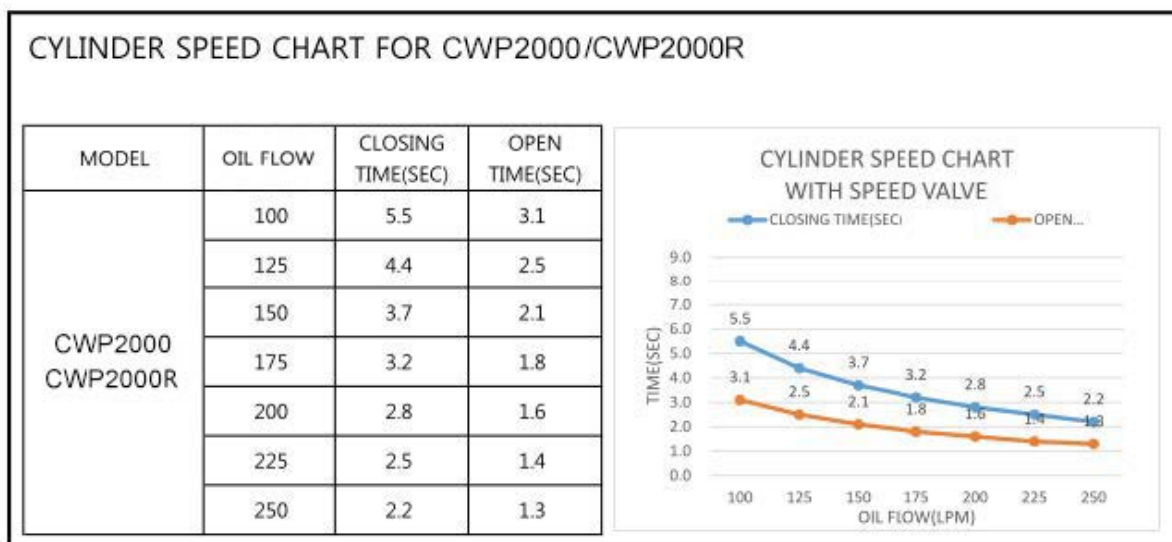
Check the working pressure setting and adjust if necessary.

Cylinder	CWP2000/CWP2000R CWP3000/CWP3000R	Remark
Max Pressure (bar/psi)	320/4,641	

Opening and closing times of the jaws depend on the oil flow.

The following table shows the opening and closing time with relevant oil flow.

If the oil flow is too high, the oil temperature will increase and the oil life may be reduced.



3.0 Installation

3.4 Rotation Time

Rotation	CWP2000R/CWP3000R	Remark
Max Pressure (bar/psi)	170/2,465	
Optimal Flow (l/gal)	20-56/5.28-14.79	

There is a protection system for the hydraulic rotation system.

The maximum turning speed of CWP is 12.5-14 RPM and the oil flow is 45 (l/min)/11.88 (g/min).

It is possible to adjust turning speed through oil flow control valves at each connection.

By turning counter-clockwise, the rotation speed will increase. By turning clockwise, the rotation speed will decrease.

4.0 Operation

4.1 Operation

During operation, make sure to do the following:

- 1) During operation, the carrier should be placed on solid, level ground. Otherwise, the carrier may tip over.
- 2) Do not crush one part of the workpiece for a long time. Move the jaws and apply crushing force on the other part so that the crushing force is well spread over the workpiece.
- 3) During operation, keep the carrier boom clear of the pulverizer attachment.

WARNING

The following actions are prohibited:

- ◆ Striking the object on the ground

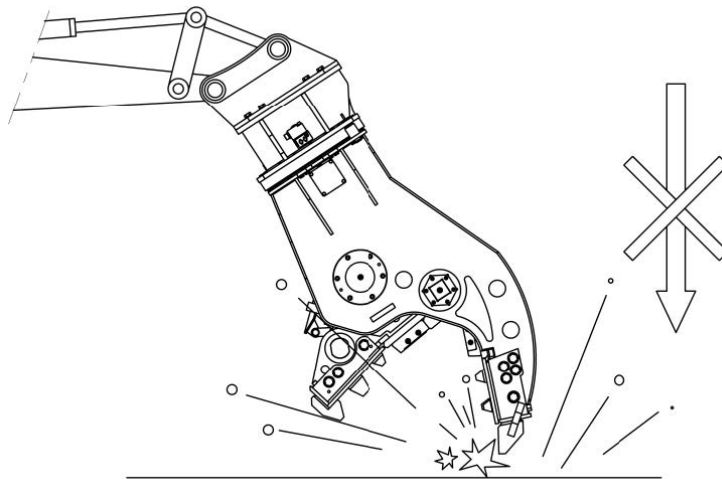


Fig. O.1 Prohibited Actions

- ◆ Pushing the object
- ◆ Pulling the object
- ◆ Operating or over-flowing the attachment with excessive oil flow
- ◆ Do not press down with CWP against the ground or use it as a pivot to turn the carrier

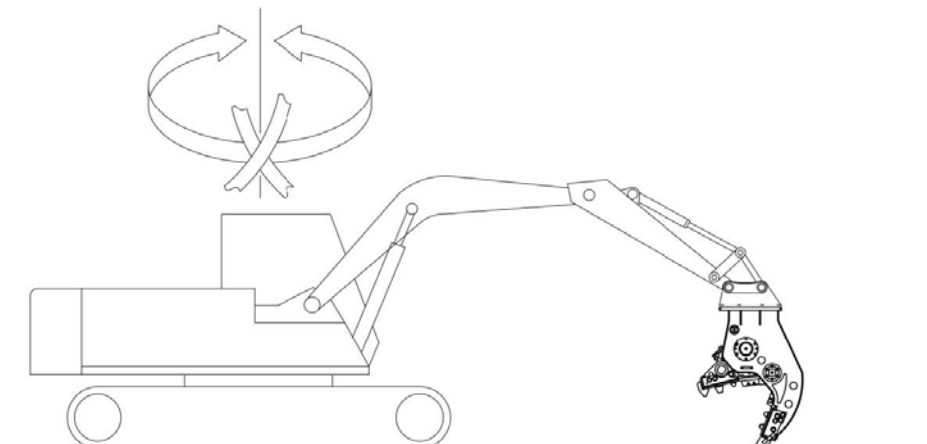


Fig. O.2 Prohibited Actions

4.0 Operation

4.1 Operation - continued

- ◆ Turning the CWP while crushing the workpiece

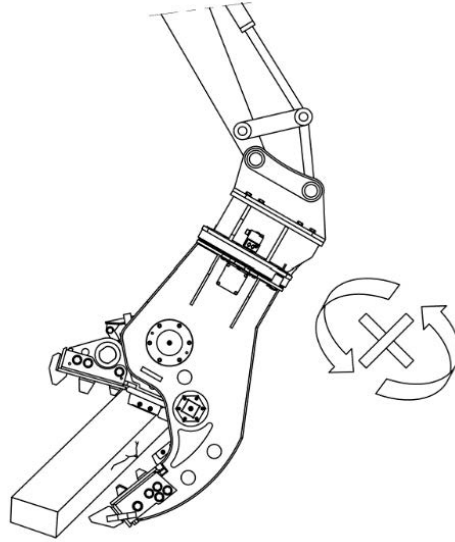


Fig. O.3 Prohibited Actions

- ◆ Moving or rotating the carrier while CWP is holding an object

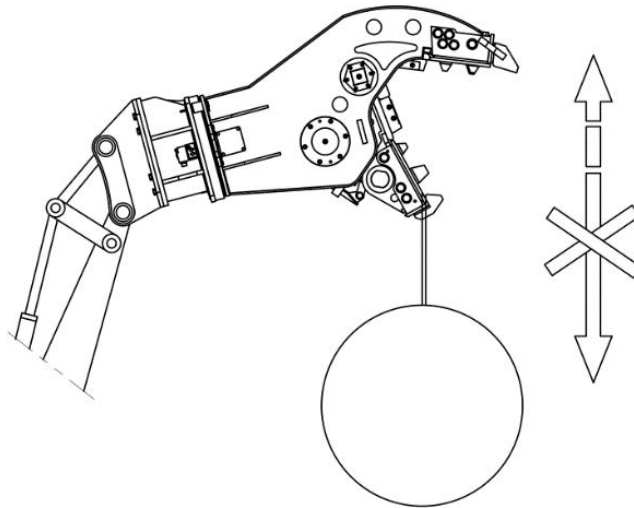


Fig. O.4 Prohibited Actions

5.0 Maintenance

5.1 Safety Precautions



During inspection and maintenance of the product, turn OFF the carrier to prevent injury.

Inspect the hydraulic lines of the product, only after internal pressure is relieved.



Do NOT put hands or head in the opened jaws.

A. Safety precautions before maintenance or repair of the jaws

- 1) Place CWP on level ground with the jaws opened.
- 2) Turn off the carrier engine and close the hydraulic shut off valves.
- 3) Perform maintenance.
- 4) After finishing repair, open the hydraulic shut off valves and move the jaws slowly to check proper jaw movement.

B. Safety precautions before maintenance or repair to the hydraulic system

- 1) Place CWP on level ground with the jaws closed.
- 2) Turn off the excavator engine and close the hydraulic shut off valves.
- 3) After removing hose, plug connection ports of the product.
- 4) Perform maintenance.
- 5) After finishing repair, open the hydraulic shut off valves and move the jaws slowly to check proper jaw movement.



There is still approximately .5 bar/7.5 psi oil pressure in the tube of the tank.

5.0 Maintenance

5.2 Daily Inspection Checklist

- ◆ Visually check for cracks or excessive wear that may cause structural failure.
- ◆ Check hydraulic lines for leaks and damage.
- ◆ Check for missing, loose or damaged fasteners. Replace or tighten the fasteners if necessary.
- ◆ Check teeth and cutter for wear, and rotate or replace the teeth or cutter if necessary.
- ◆ Check cutter clearance and adjust if necessary.
- ◆ Lubricate all grease zerks.

5.3 Lubrication

Inject 4 to 6 pumps of grease per lubrication zerk. Location of all lubrication zerks and lubrication intervals for each zerk are as follows:

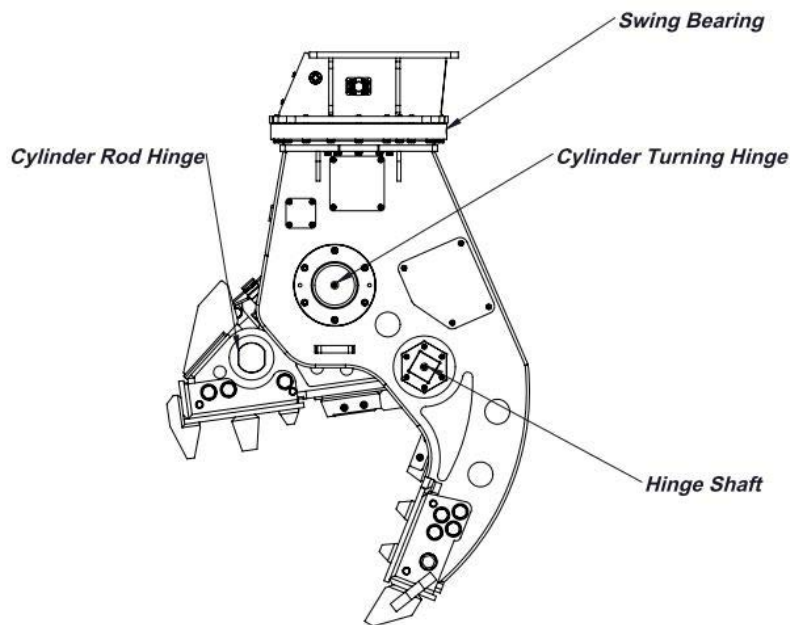


Fig. M.1 Lubrication Zerks

Location on the Product	Lubrication Interval
Hinge Shaft	Every 4 hours
Cylinder Rod Hinge	Every 4 hours
Cylinder Turning Hinge	Every 4 hours
Swing Bearing	Once a month

5.0 Maintenance

5.4 Jaw Teeth Replacement

When the jaw teeth are badly worn or damaged, work efficiency will be lowered due to decrease in clamping force. Replace the teeth according to the following procedures:

- 1) Open the jaws completely.
- 2) Place CWP horizontal on the ground.
- 3) Remove the pins holding Tooth Assembly to the jaw.
- 4) During replacement, make sure the new Tooth Assembly and the mounting area of the jaw is clean.
- 5) Remove the worn Tooth Assembly and replace with the new Tooth Assembly.
- 6) Tighten up the pins.

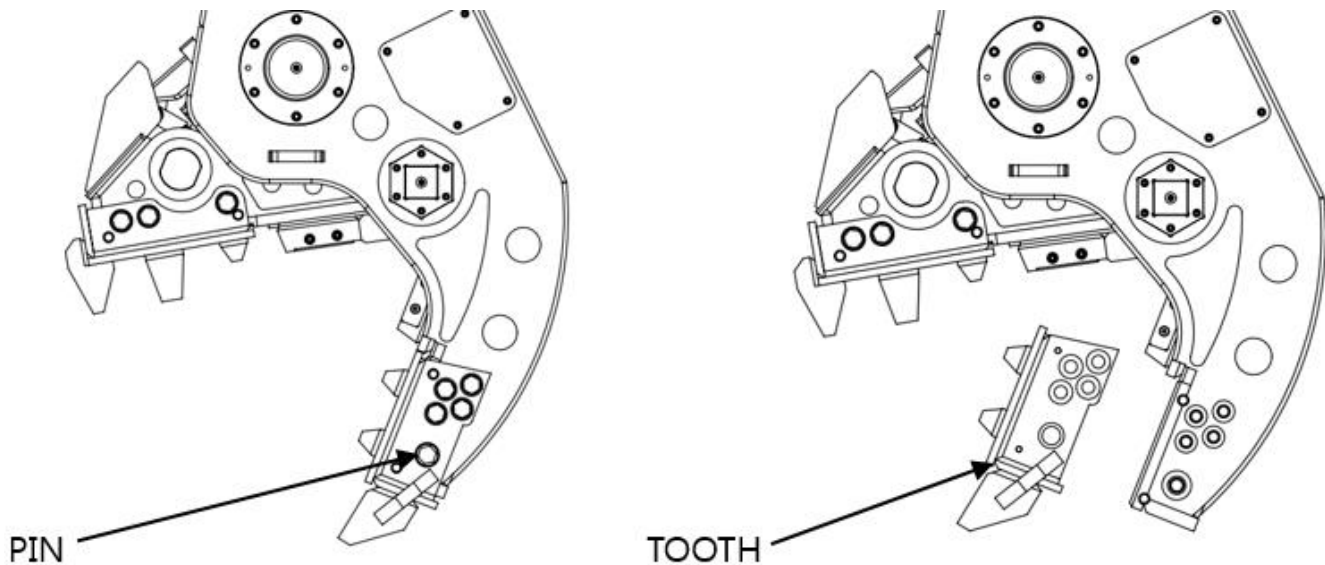


Fig. M.2 Jaw Teeth Replacement

5.0 Maintenance

5.5 Rebar Cutting Blade Maintenance

1. Cutter Replacement

Inspect the blades in the jaw body and main body for damage or wear. If the radius on the blade edge is greater than 3mm (0.12" max) the blade must be turned or rotated. There are four cutting edges on the blades. If all edges are out of specification, the blade will need to be replaced.

2. Slowly close the jaws.

3. Measure the clearance between the blades. The clearance between the blades must be between 0.2mm (0.008") and 0.7mm (0.028"). If the clearance is not correct, you must adjust the clearance by adjusting the amount of shims.

4. To add or subtract shims, remove all the blades and bolts. You may need to heat the bolt up to 260°C (500°F).

5. Clean the blade pockets, remove all the burrs or damage.

6. Coat the pockets, shims and blades with Anti-seize, and install them.

7. Coat the bolt with thread locker (i.e. Loctite™ Red 271), and install the bolts. *Refer to "Tightening Torque" table.

DO NOT reuse old bolts, and always use Class 12.9 for Dish bolts.

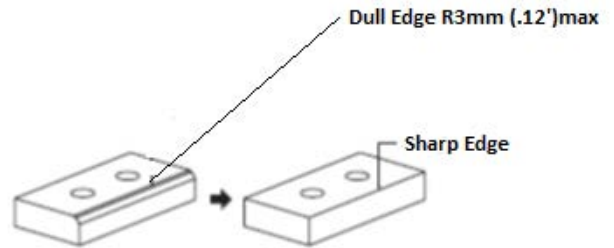


Fig. M.3 Cutter Maintenance

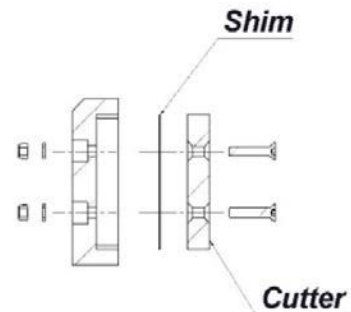
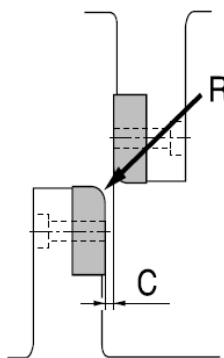


Fig. M.4 Cutter Maintenance

WEAR LIMITS, ADJUSTMENTS AND TORQUES FOR CUTTING BLADES



Item	Wear limit
Cutting blade edge (R)	3 mm (0.12 in)
Item	Adjustment
Cutting blade clearance (C)	0.2-0.7 mm (0.008-0.028 in)

5.0 Maintenance

5.6 Replacing CWP Tooth Assemblies

The Connect Work Tools' Pulverizers have removable tooth assemblies. These assemblies can be replaced or they can be economically rebuilt.

The tooth assemblies can be removed and rebuilt on a weld bench making maintenance and buildup safe and convenient.

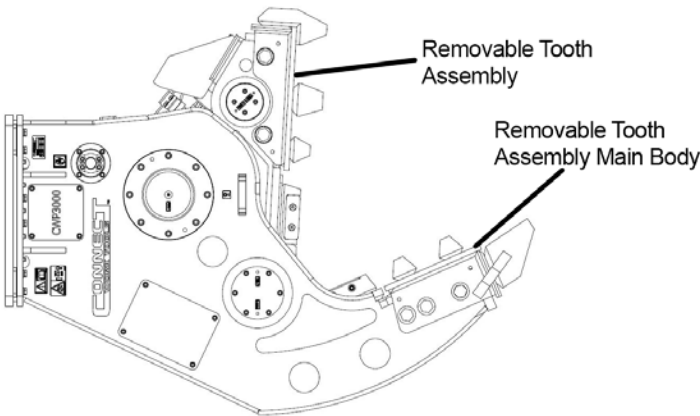


Fig. M.5 Tooth Assembly Replacement

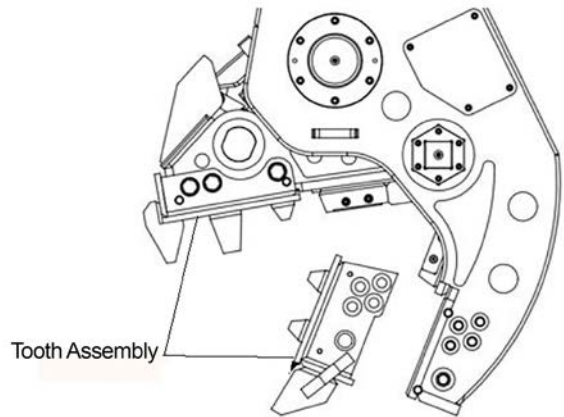


Fig. M.6 Tooth Assembly Replacement

This allows the user to have multiple sets of tooth assemblies which can be interchanged or replaced quickly, reducing the amount of repair or down time when maintenance is required.

Before any thermal process is applied to the steel of the pulverizer, including welding, tack welding, and torch cutting preheat, refer to the area according to the following table. Gas torches and thermal weld blankets can be used for preheating.

Item	Minimum Preheat and Interpass Temperature		Maximum Interpass (During Weld) Temperature		Distance Heat Source to Welding Point		Wait Time Before Measuring (Heated Area)
	°F	°C	°F	°C	inch	mm	Minutes
Jaw Teeth	390	200	430	225	6	150	3 minutes
Arm Assembly	260	125	570	300	8	200	2 minutes
Body	170	75			12		2 minutes

Table 1

Always keep the torch a minimum distance away from the jaw in order to maintain material qualities. Refer to Table 1. Preheat an area of at least 8in (200mm) around the weld point. After heating the area, wait for the proper amount of time before measuring the temperature.

Measure preheat temperature at a distance of 3in (75mm) away from the point to be welded at the opposite side of the heated side. (See Fig. M.7)

5.0 Maintenance

5.7 Hard Facing

If a temperature gun is used, keep it 12in to 20in away from the measuring point to obtain an accurate reading. Preheat should be uniform throughout the thickness of the material until welding is completed. Avoid repetitive heating and large temperature drops.

Interpass Temperature: Proper interpass temperature must be maintained before additional weld pass is applied. If the temperature drops below the required temperature, the area should be heated again. If above, the area must cool down slowly to the required temperature range. Over heating or rapid cooling will affect the steel strength or brittleness. A heat blanket can be used to slow down the cooling process. For build up, Connect Work Tools recommends E7018 rod if E7018 is not available - please refer to the list of AWS Classifications below and choose a suitable build up for your pulverizer.

AWS Classifications Chart			
MMA (STICK)	MAG (SOLID WIRE)	MAG (FLUX CORED WIRE)	MAG (METAL CORED WIRE)
E7018	ER 70S-6	E7XT-1	E70C-6M
E8018	ER 80S-6	E8XT-1	E80C-NI1

Hard Facing:

The service life of the Jaw Body, Arm and Teeth assemblies can be extended greatly by hard facing the affected areas with beads of weld. When existing hard facing is worn off, perform hard facing as illustrated. Connect Work Tools recommends Amalloy 814H or equivalent.

Since the material is hard and brittle, the layer should not be more than 1/8in (3mm) thick. Thicker hard facing has the potential to crack and break off if extended more than an 1/8in thick.

The leading edge of the cutting tooth may break off if extended more than two beads.

The leading edge of the cutting tool pocket may break off if more than two beads for the base metal.

The bead should be placed parallel with the flow of the abrasive material. The parallel beads will support the rocks and protect the base metal while offering the least resistance to flow.

A diamond shaped pattern is used in the large area.

5.0 Maintenance

5.8 Body/Teeth and Hard Surfacing

- Preheat: 210° F Body face 390°F Teeth
- Tooth Assembly areas: cross hatch with stringer beads at 45° degree angles to form 1 to 2 inch squares
- Arm / main body: Single passes approximately 1 inch apart

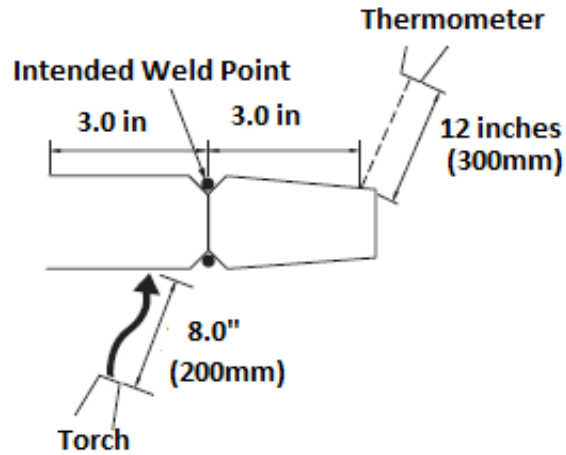


Fig. M.7 Hard Surfacing

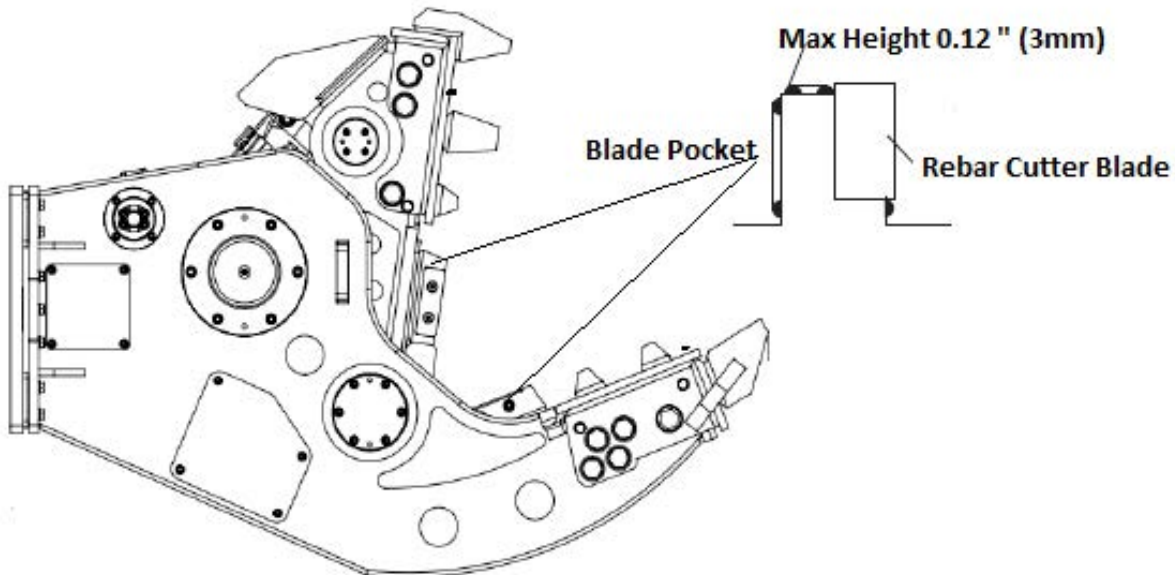
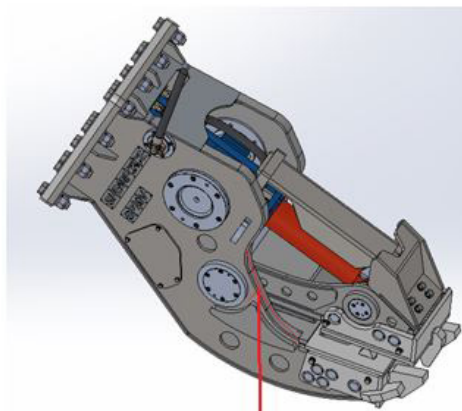
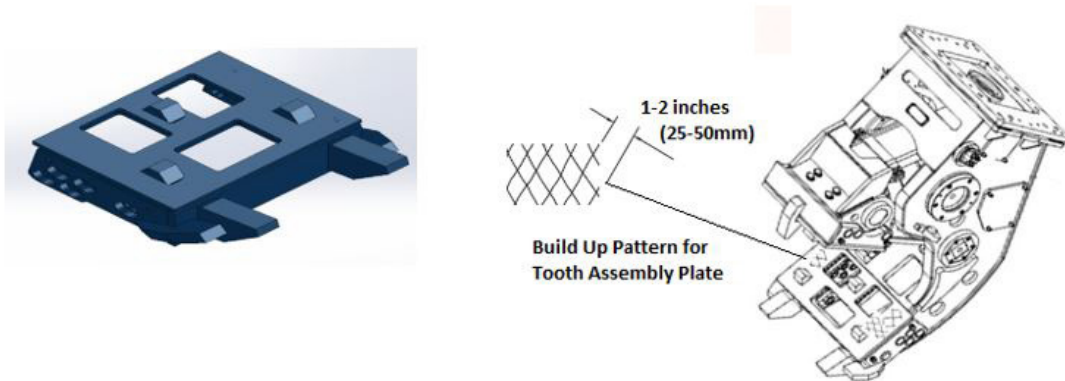
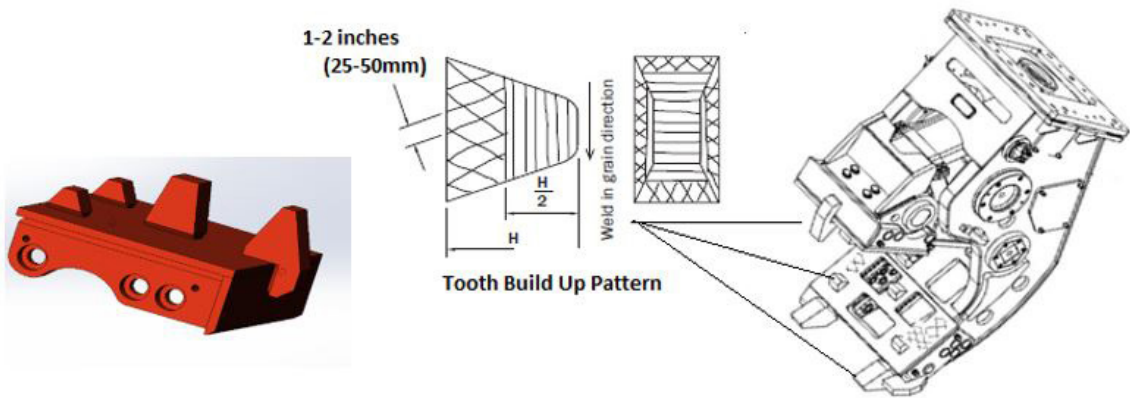


Fig. M.8 Hard Surfacing

5.0 Maintenance

5.8 Body/Teeth and Hard Surfacing- continued

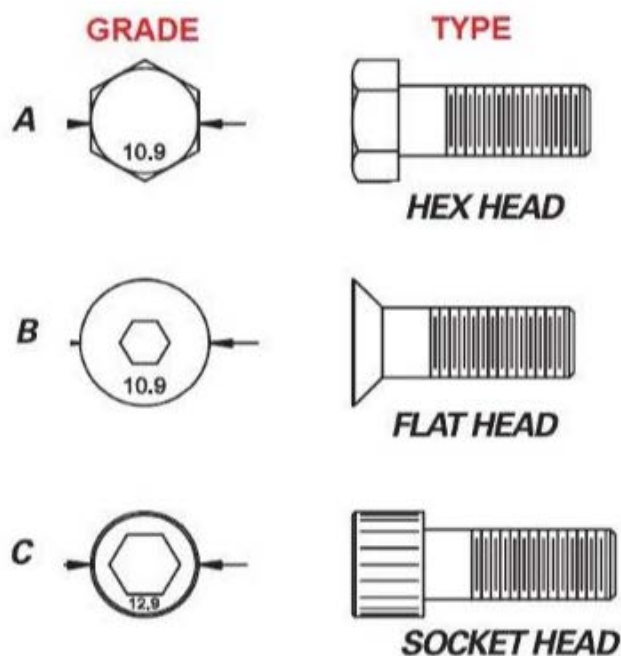


Weld bead along the Wear strips on both sides of the Pulverizer

Fig. M.9 Hard Surfacing

5.0 Maintenance

5.9 Torque Values for Bolts



CWP Fastener Size and Torque Specifications

Cap-Screw Size	A Hex Head	B Flat Head	C Socket Head
M10 X 1.50	0.63" (16mm)	0.79" (20mm)	0.63" (16mm)
M12 X 1.75	0.71" (18mm)	0.94" (24mm)	0.71" (18mm)
M14 X 2.00	0.83" (21mm)	1.06" (27mm)	0.83" (21mm)
M16 X 2.00	0.94" (24mm)	1.18" (30mm)	0.94" (24mm)
M20 X 2.50	1.18" (30mm)	1.42" (36mm)	1.18" (30mm)
M24 X 3.00	1.42" (36mm)	N/A	1.42" (36mm)
M30 X 3.50	1.81" (46mm)	N/A	1.77" (45mm)

METRIC CLASS 10.9

Size	FT-LBS	N-M
M10 X 1.5	53	72
M12 X 1.75	92	125
M14 X 2	146	198
M16 X 2	224	305
M20 X 2.5	435	590
M24 X 3	752	1,020
M30 X 3.5	1,511	2,050

METRIC CLASS 12.9

Size	FT-LBS	N-M
M10 X 1.5	64	87
M12 X 1.75	110	150
M14 X 2	177	240
M16 X 2	269	365
M20 X 2.5	523	710
M24 X 3	899	1,220
M30 X 3.5	1,806	2,450

5.10 Storage Information

Observe the following points when the product is being stored.

The important parts of the pulverizer are to be protected from rust so that the pulverizer is ready to be used when required.

1. The storage area must be dry.
2. To avoid damaging the cylinder rod, operate the cylinder to the shortest position by leaving the pulverizer jaws open.

5.0 Maintenance

5.10 Storage Information - continued

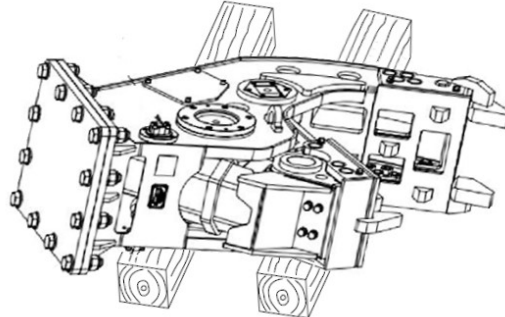


Fig. M.10 Storage Information

3. Insert blocks under the pulverizer to keep it off the ground. If the pulverizer is stored outside, cover it to prevent rusting and exposure to the elements.
4. Apply grease to all pulverizer parts. Protect mounting bracket, pin holes, cutting blades and pivot ends with an anti-corrosive agent.
5. Connections must be sealed with clean plugs to prevent oil leakage and dirt from getting into couplings and contaminating the hydraulic system.
6. Make sure the product is secure when storing on blocks or beams.

6.0 Troubleshooting

Problem	Probable Cause	Remedy
CWP does not work	Stop valve of piping line is closed	Open stop valve
	Shortage of operating oil	After checking level of operating oil tank, replenish operating oil
	Poor connection of switch	Fix connection
Crushing power too low	Low operating pressure	Adjust operating pressure Contact our local dealer or manufacturer
Shearing capacity too low	Wear and damage of cutter	Change cutter if necessary
	Too much gap between the cutters	Add shims to correct gap
CWP cannot be rotated	Failure of hydraulic motor, pinion gear, swing bearing	Replace failed parts
	Shortage of grease inside bearing	Replenish grease
Operating temperature too high	Defective relief valve	Replace relief valve
	Shortage of operating oil	Replenish operating oil
Oil leaks from hydraulic connection	Fitting not torqued properly	Re-torque Adapter
	Defect of O-Ring	Replace O-Rings
Noise from pin parts	Shortage of grease	Grease pin parts

7.0 Hydraulic Diagram

7.1 Swing Motor

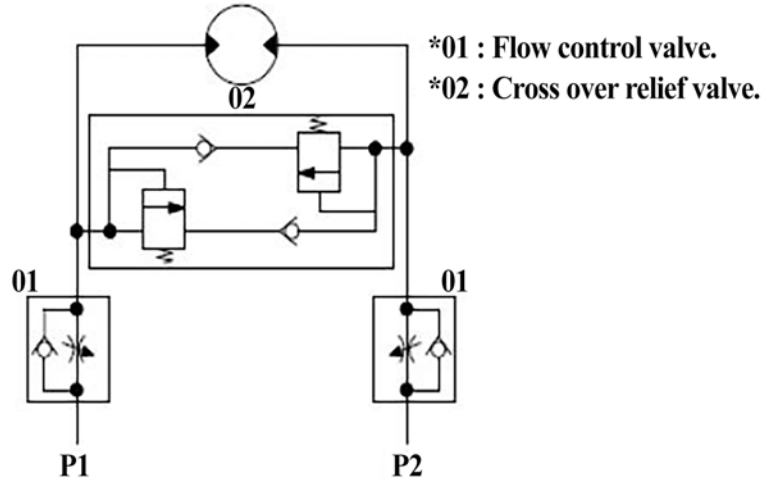
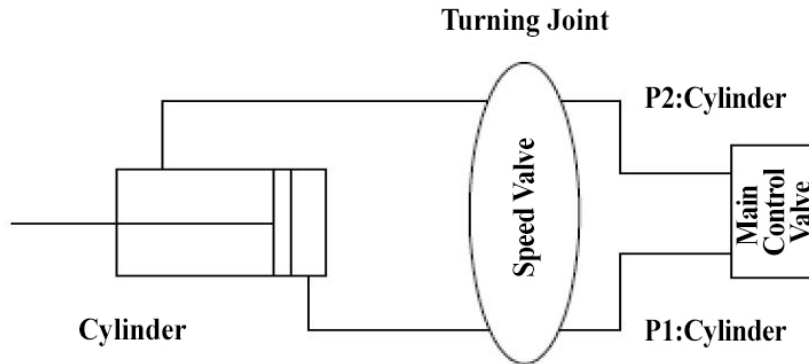


Fig. H.1 Hydraulic Diagram - Swing Motor

7.2 Cylinder



※ Connection of valve and cylinder

Valve	Cylinder
A1	Large Chamber
B2	Small Chamber

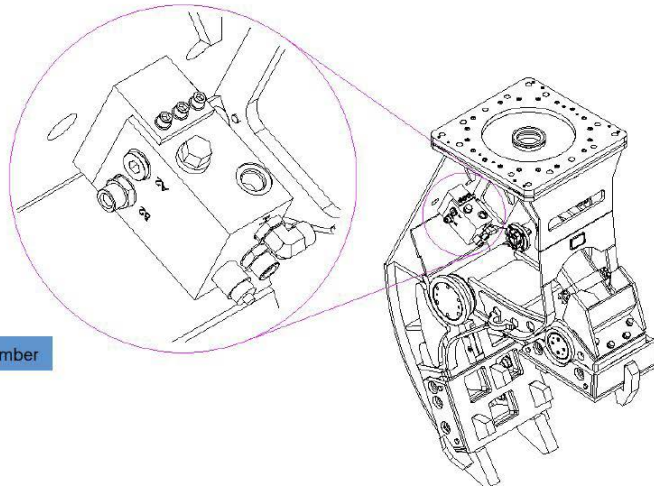
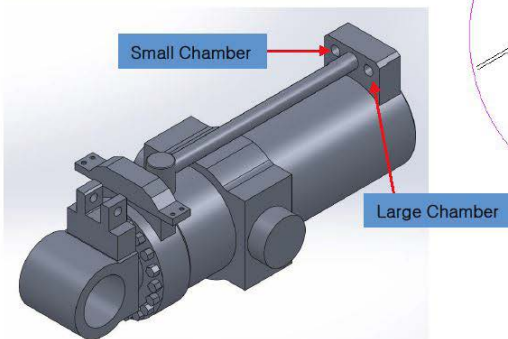


Fig. H.1 Hydraulic Diagram - Speed Valve



CWP Series Pulverizers

*Conversion from Rotating Type
to Non-Rotating Type*

8.0 Conversion - Rotating to Non-Rotating

8.1 Rotating Type - CWP2000R/CWP3000R

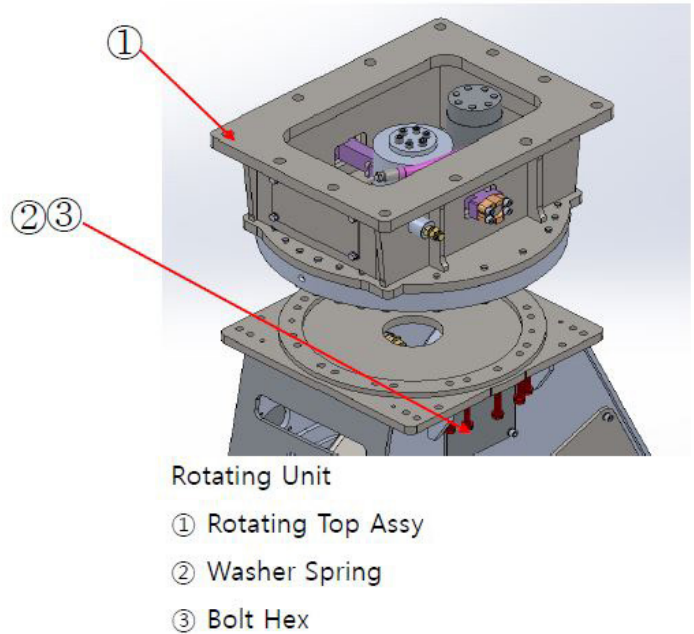
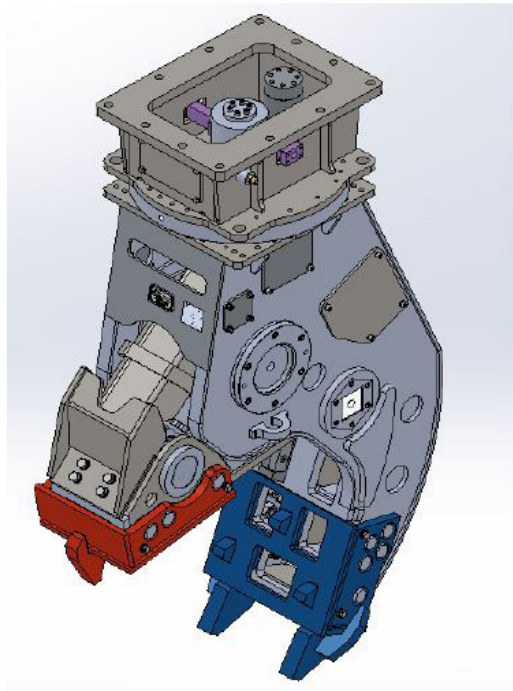


Fig. C.1 Comparison Rotating Type

8.2 Non-Rotating Type - CWP2000/CWP3000

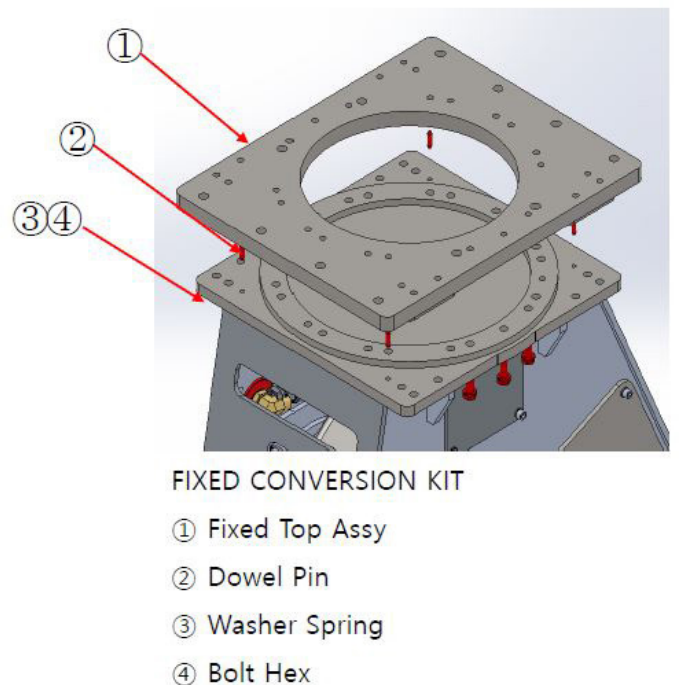
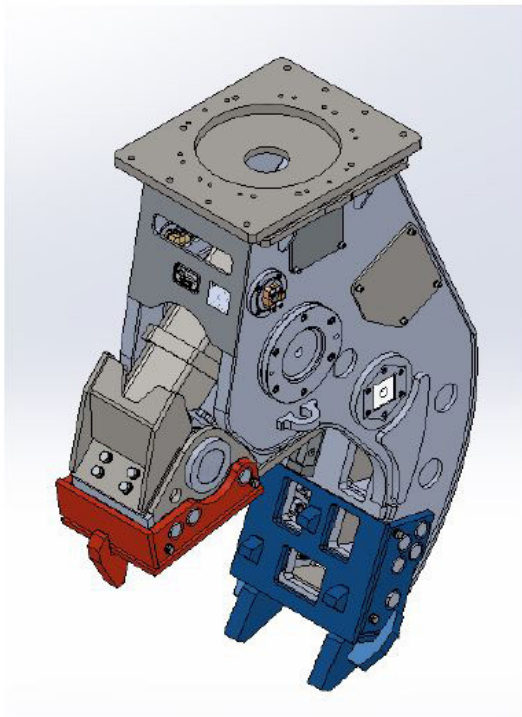


Fig. C.2 Comparison Non-Rotating Type

8.0 Conversion - Rotating to Non-Rotating

8.3 Comparison - Rotating CWP2000R/CWP3000R to Non-Rotating CWP2000/CWP3000

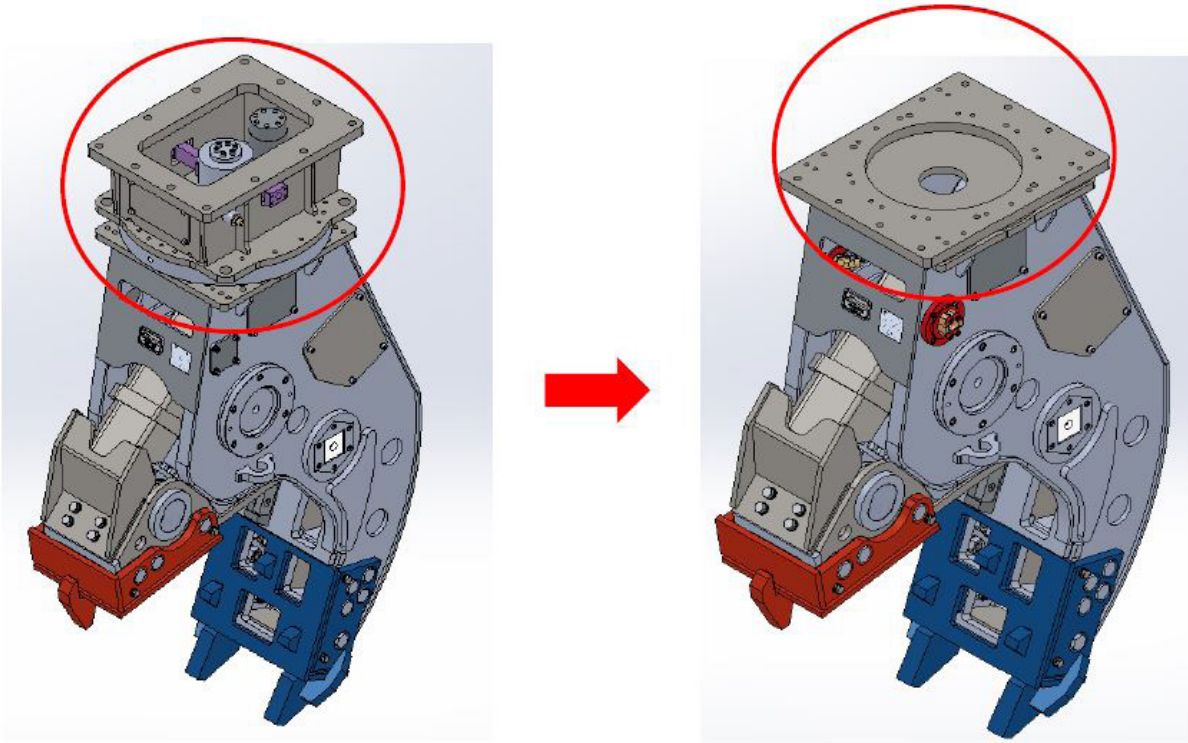


Fig. C.3 Comparison Rotating Type to Non-Rotating Type

8.0 Conversion - Rotating to Non-Rotating

8.4 Conversion - Step 1: Remove Rotating Unit

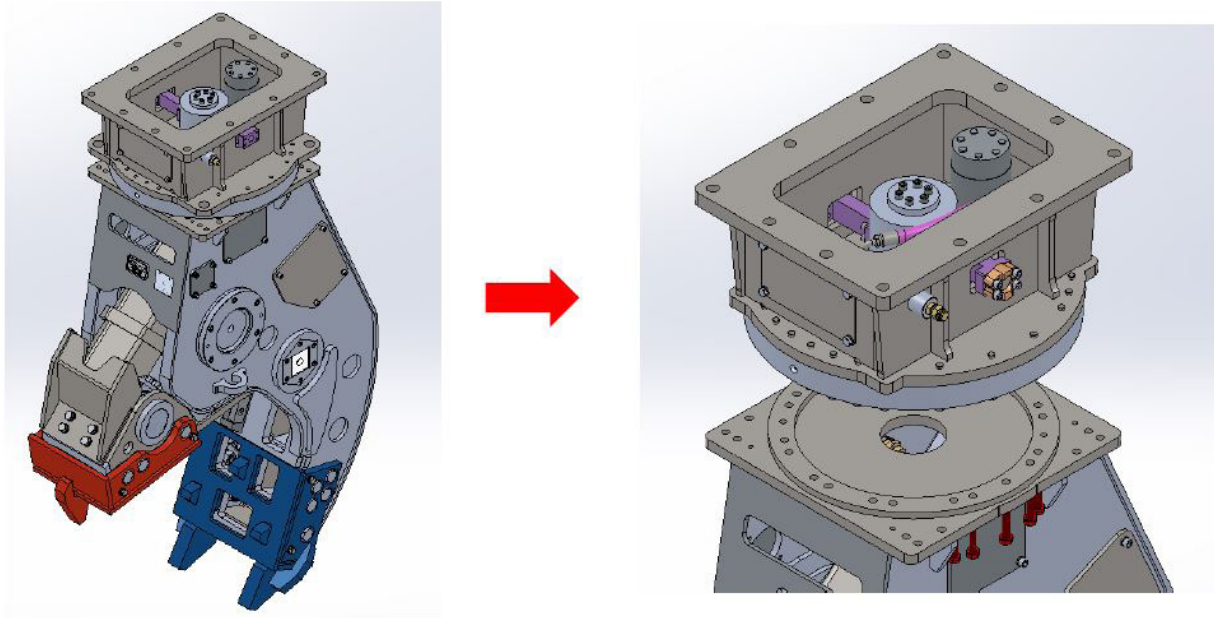


Fig. C.4 Conversion - Step 1

8.4 Conversion - Step 2: Assemble Adaptor Plate

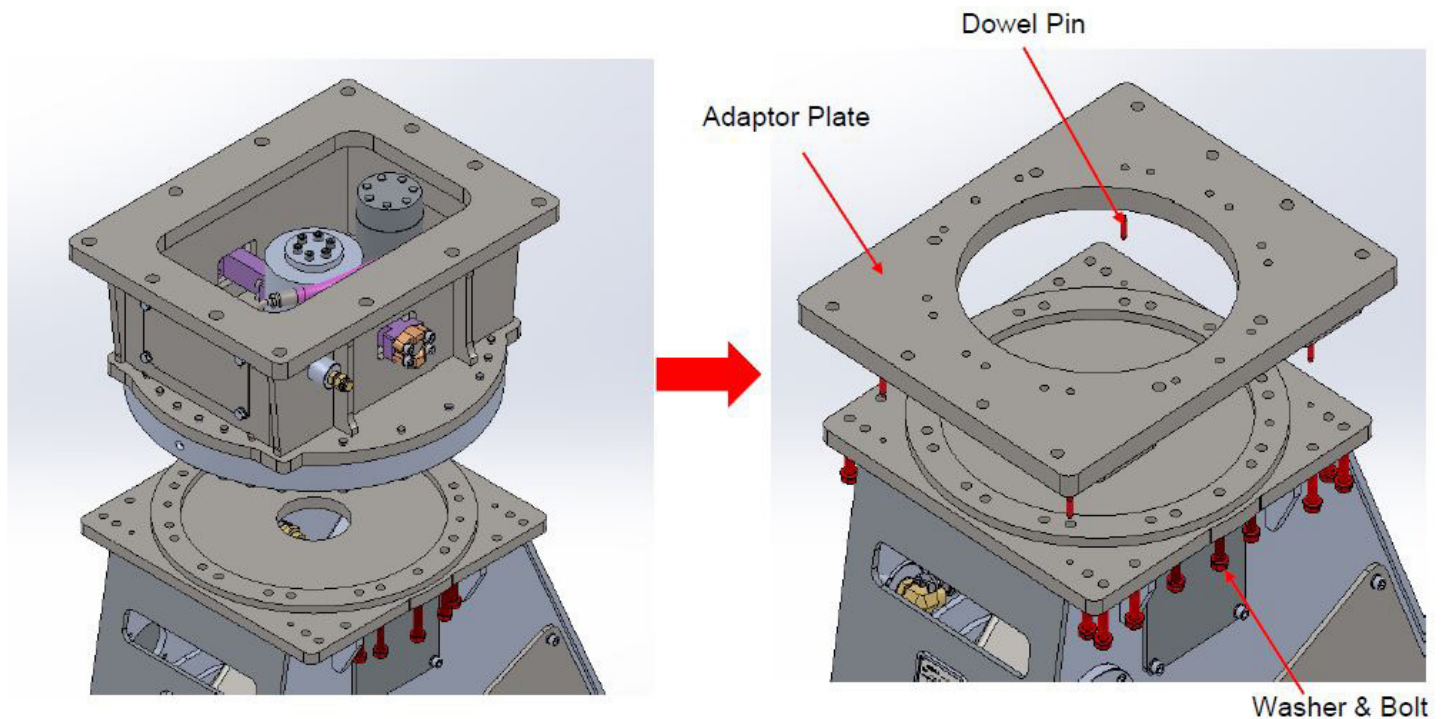


Fig. C.5 Conversion - Step 2

8.0 Conversion - Rotating to Non-Rotating

8.4 Conversion - Step 2 - continued: Shim and Adjustment of the Adapter Plate

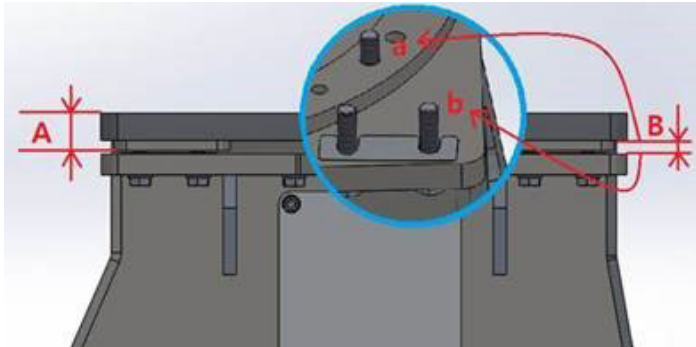


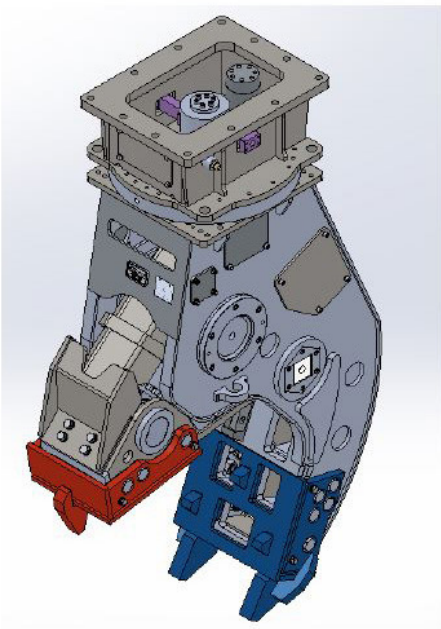
Fig. C.6 Conversion - Step 2

The thickness “A” of the fixed top assembly is controlled within the tolerance by being machined.

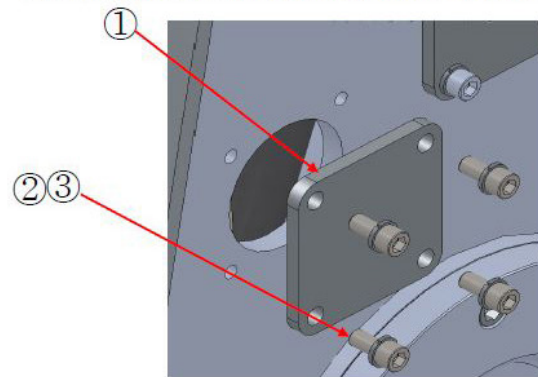
The distance of the contact “B” surfaces between “a” and “b” cannot be controlled because, although the machined surface “a” is controlled, “b” is the natural surface which is not machined.

Shims are used as required in order to obtain the correct clearance.

8.4 Conversion - Step 3: Remove Covers



CWP2000R/CWP3000R CONVERSION ROTATING TYPE



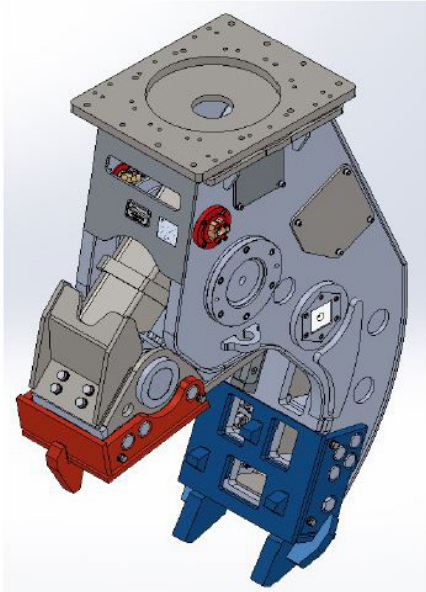
Rotating Unit

- ① Cover
- ② Washer Spring
- ③ Bolt Socket

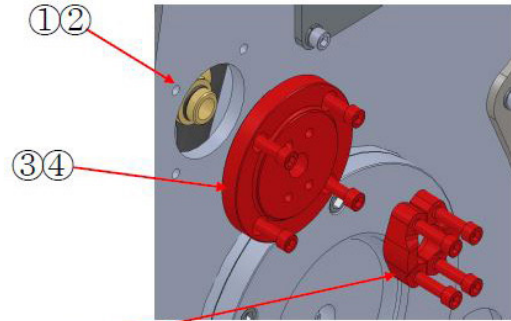
Fig. C.7 Conversion - Step 3

8.0 Conversion - Rotating to Non-Rotating

8.4 Conversion - Step 4: Assemble Port Block for Hose Connection



CWP2000R/CWP3000R CONVERSION ROTATING TYPE



Fixed Conversion Kit

- ① Elbow
- ② O-Ring
- ③ Port Block
- ④ Bolt Socket
- ⑤ Split Flange
- ⑥ Bolt Socket

Fig. C.8 Conversion - Step 4

8.4 Conversion - Step 5: Change Hoses from t/joint to Port Block

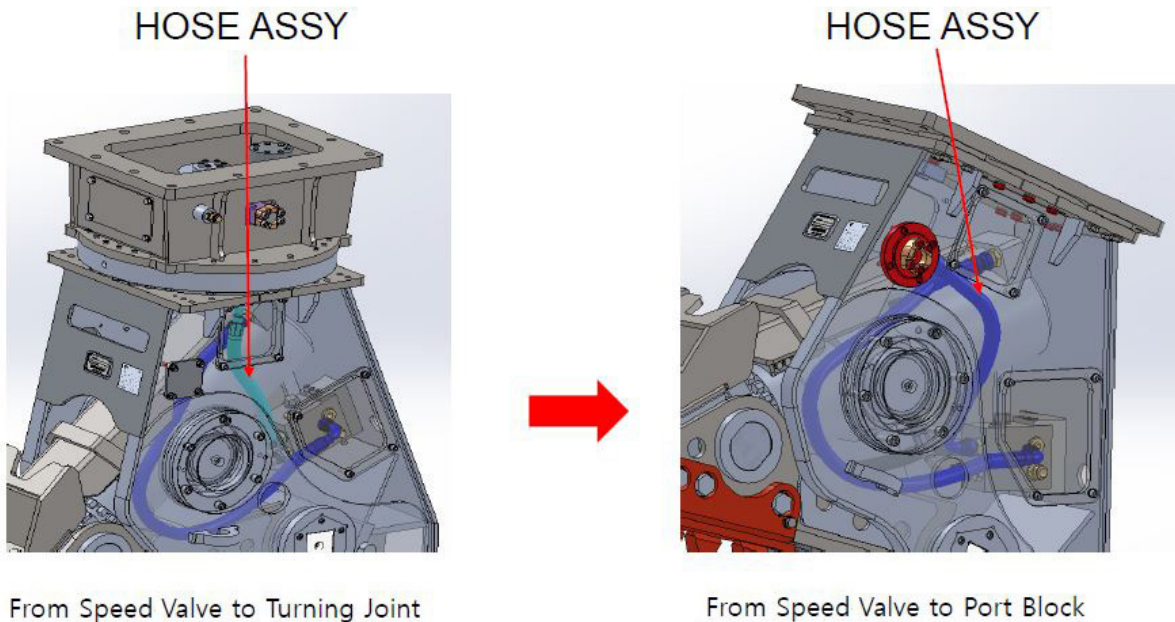


Fig. C.9 Conversion - Step 5



CWP Series Pulverizers

CWP2000
CWP2000R

Parts Manual

9.0 CWP Pulverizer - CWP2000

9.1 CWP Pulverizer - CWP2000

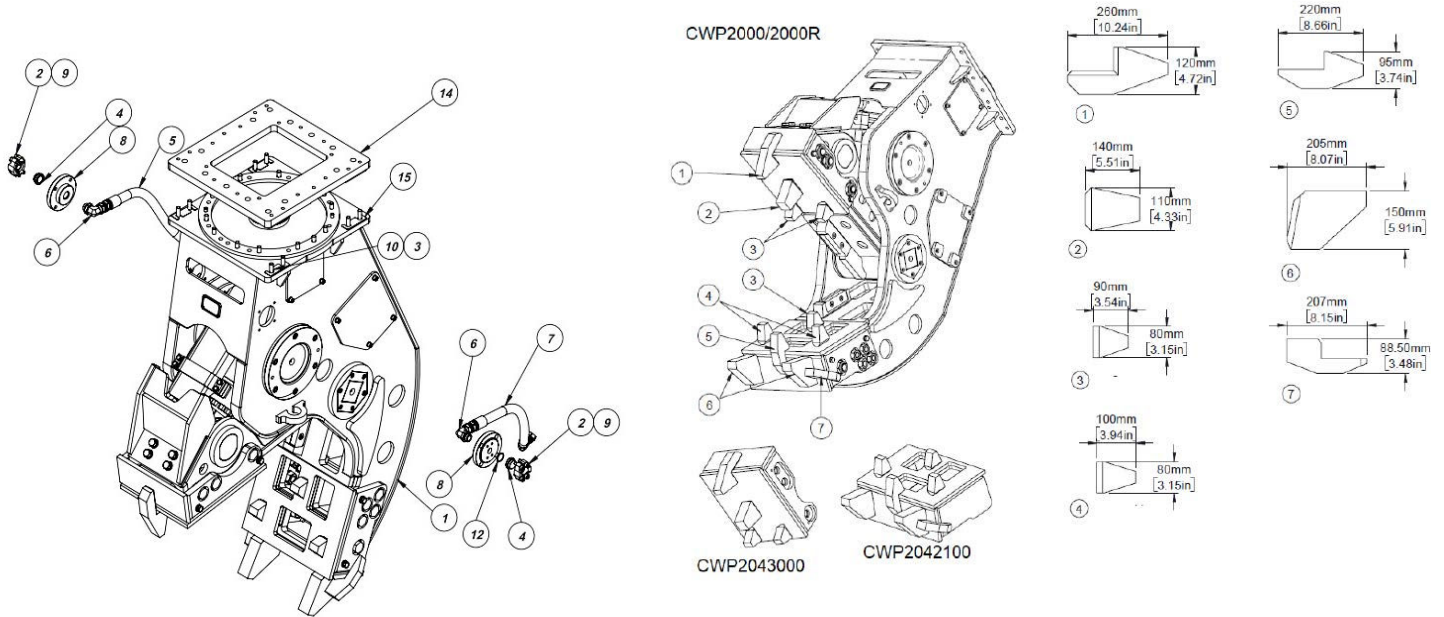


Fig. 9.1 CWP2000 Total Assembly

9.1 CWP Pulverizer - CWP2000 Parts List

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
	CWP26U5000	Pulverizer Assy		
1	CWP25U1100	Body Sub Assy	1	
2	CHSB1217040	Socket Bolt	8	
3	CHPW160000	Plain Washer	8	
4	CWP21U0010	Plug	2	
5	CWP21U6000	Hose Assy	1	
6	CWAPO16MJS16M90	Adapter	2	
7	CWP21U5000	Hose Assy	1	
8	CWP2014130	Flange	2	
9	CWFS621600	Split Flange Half 1"	4	
10	CHHB1620070	Hex Bolt	22	
11	CHSW160000	Spring Washer	14	
12	CWP3201012	O-Ring	2	
13	CHSB1217025	Socket Bolt	4	
14	CWP26U2000	Fixed Top Assy	1	
15	CWP25U0040	Shim Plate	12	Use as required
	CWP26U3000	Fixed Conversion Kit		Only NO.2~ NO.15 are included in kit

9.0 CWP Pulverizer - CWP2000

9.2 CWP Pulverizer - CWP2000R

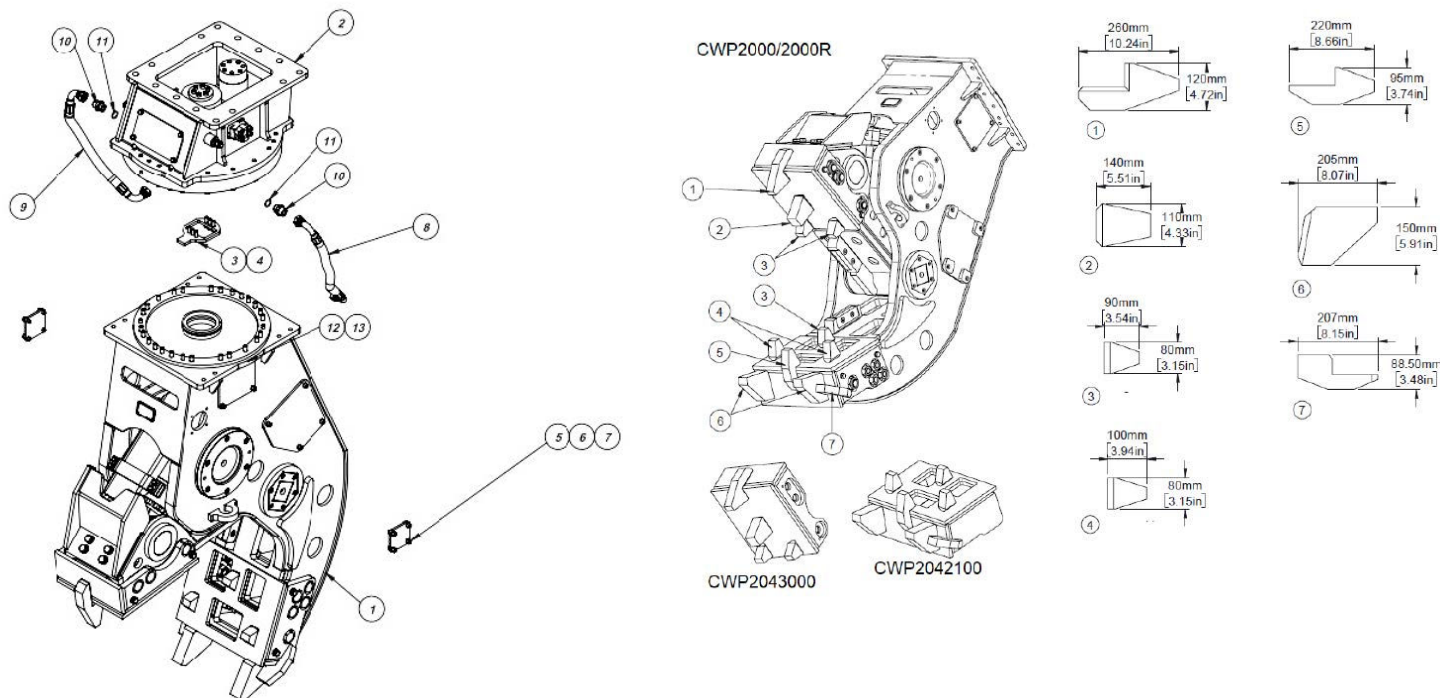


Fig. 9.2 CWP2000R Total Assembly

9.2 CWP Pulverizer - CWP2000R Parts List

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
	CWP26U0000	Pulverizer Assy		
1	CWP25U1100	Body Sub Assy	1	
2	CWS2052000	Top Body Sub Assy	1	
3	CWS2050060	Stopper	1	
4	CHSB127040	Socket Bolt	6	
5	CHSB1217025	Socket Bolt	8	
6	CHSW120000	Spring Washer	8	
7	CWP21U0020	Cover 2	2	
8	CWP21U8000	Hose Assy	1	
9	CWP21U9000	Hose Assy	1	
10	CWAUF16MJC16M	Adapter	2	
11	CWV4300010	O-Ring	2	
12	CWHB1620070	Hex Bolt	27	
13	CHSW160000	Spring Washer	27	
	CWP26U4000	Rotating Conversion Kit		Only NO.2~NO.13 are included in kit

Connect Work Tools CWP Series Pulverizer Model CWP2000R

9.0 CWP Pulverizer - CWP2000

9.3 CWP Pulverizer - CWP2000 Body Sub Assy

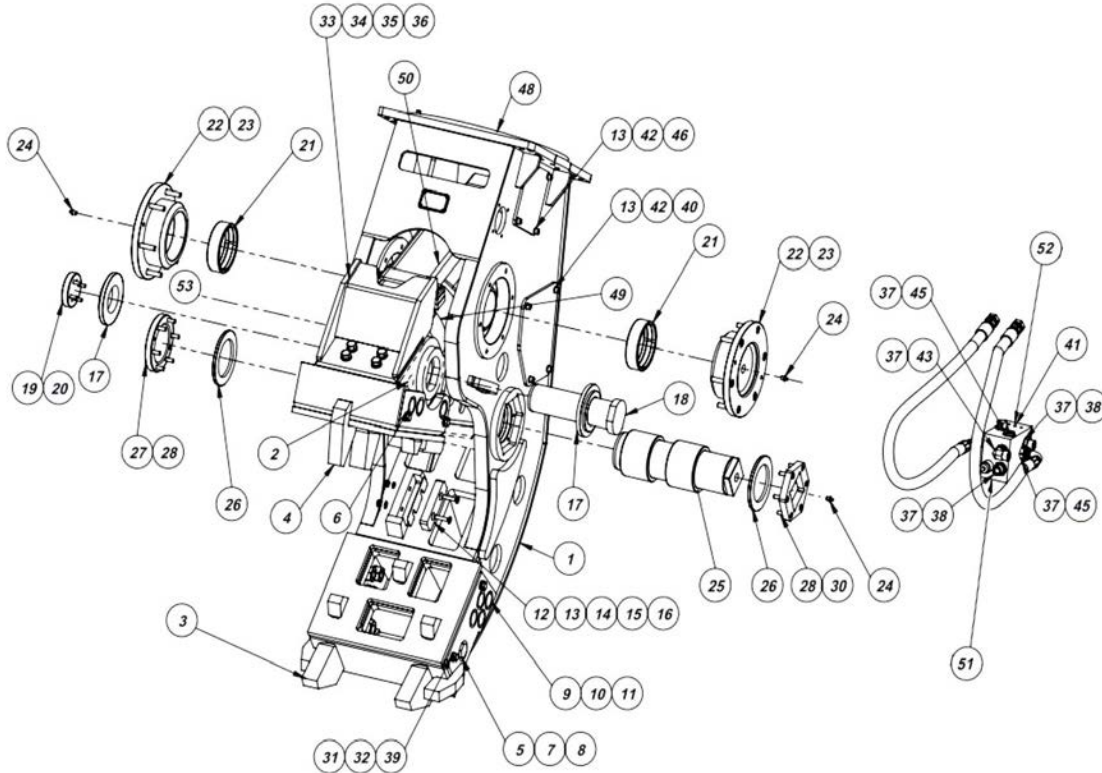


Fig. 9.3 CWP2000 Body Sub Assembly

9.3 CWP Pulverizer - CWP2000 Body Sub Assy Parts List

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
	CWP25U1100	Body Sub Assy		
1	CWP25U1000	Body Weld Assy	1	
2	CWP21U2000	Arm Assy	1	
3	CWP2042100	Tooth w/ Assy (Stationary Side)	1	CWP20M3000
4	CWP2043000	Tooth w/ Assy (Cylinder Side)	1	CWP20M4000
5	CWP2035000	Pin	2	
6	CWP2037000	Pin	6	
7	CHPW360000	Plain Washer	8	
8	CWNN3640000	Hex Nut	8	
9	CWP2036000	Pin	8	
10	CHSW300000	Spring Washer	8	
11	CHHN303503	Hex Nut	8	CFHN303500
12	CWP2014120	Cutter	2	
13	CCSW120000	Spring Washer	27	
14	CWDB1217060	Dish Bolt	4	

9.0 CWP Pulverizer - CWP2000

9.3 CWP Pulverizer - CWP2000 Body Sub Assy Parts List - continued

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
15	CCNN121700	Nylon Nut	4	
16	CWP2014181	Shim Plate	2	
17	CWP2014090	Ring Hinge (2)	2	
18	CWP2014100	Shaft Hinge (2)	1	
19	CWP2014110	Cover Hinge (2)	1	
20	CHSB1015040	Socket Bolt	4	
21	CWP2014020	Bush Hinge (1)	2	
22	CWP2014030	Cover Cylinder Hinge	2	
23	CWSB162065	Socket Bolt	12	
24	CWB4006560	Grease Nipple	3	
25	CWP2014040	Bush Hinge (2)	2	
26	CWP2014050	Ring Hinge (1)	2	
27	CHSB1217140	Cover Hinge (1)	1	
28	CWSB1217040	Socket Bolt	12	
29	CWP2014060	Shaft Hinge (1)	1	
30	CWP2014080	Flange Hex	1	
31	CWHB1620025	Hex Bolt	8	
32	CHSW160000	Spring Washer	8	
33	CWP21A6000	Cylinder Head Cover w/Assy	1	
34	CWHB2025050	Hex Bolt	4	
35	CHSW200000	Spring Washer	4	
36	CCPW200000	Plain Washer	4	
37	CWA2007140	O-Ring	10	
38	CWAPO16MJS16M	Adapter	5	
39	CWPW160000	Plain Washer	8	
40	CWP23U1100	Cover Plate-Left Side	1	CWP21U3000
41	CWC2010330	Speed Valve	1	
42	CHSB1217025	Socket Bolt	22	
43	CWAPO16MJS16M90	Adapter	1	
44	CWP21U7000	Hose Assy	2	
45	CWC2010490	Socket Plug	4	
46	CWP25U0010	Cover 1	2	
47	CWA2506420	Guide Pin	2	
48	CWP25U0030	Trims Seal Rubber	1	
49	CWP2013001	Cylinder	1	
50	CWP21A540A	Cylinder Cover Assy	1	CWP21A500A See Page 36
51	CWC201033A	Counter Balance Valve Cartridge	1	SEAL KIT CWPE00017
52	CWC201033B	Pilot Check Valve Cartridge	1	SEAL KIT CWPE00017
53	CWP23U1200	Cover Plate-Right Side	1	

9.0 CWP Pulverizer - CWP2000

9.4 CWP Pulverizer - CWP2000 Top Body Assy

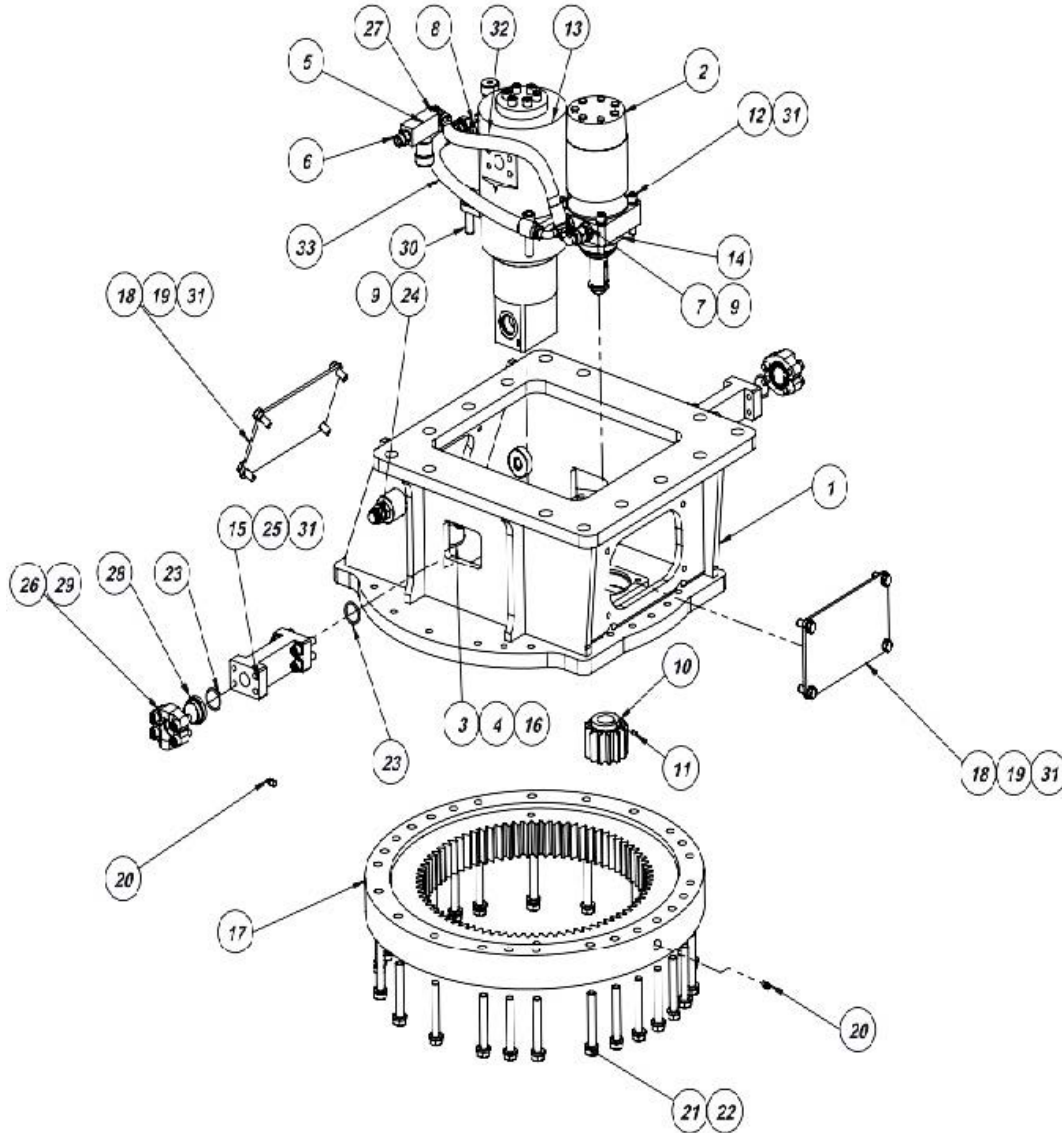


Fig. 9.4 CWP2000 Top Body Assembly

9.0 CWP Pulverizer - CWP2000

9.4 CWP Pulverizer - CWP2000 Top Body Assy Parts List

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
	CWS2052000	Top Body Sub Assy		
1	CWS2052600	Top Body w/Assy	1	
2	CWC2010220	Motor Assy	1	
	CWC201022S	Seal Kit; Motor	1	
3	CWC2010280	Cover	1	
4	CWHB1015020	Hex Bolt	2	
5	CWC2010230	Flow Control Valve	2	
6	CWAP08MPT08M	Adapter	2	
7	CWA2507380	O-Ring	6	
8	CWAPT08MJS08M	Adapter	1	
9	CWAP08MJS08M	Adapter	4	
10	CWC2010180	Pinion Gear	1	
11	CGSS0610010	Seat Screw	1	
12	CWSB1217060	Socket Bolt	4	
13	CWS2050040	Turning Joint	1	
	CWS2050040SK	Seal Kit; T/Joint	1	
14	CWS3025010	Plate	1	
15	CWS3020090	Mach Port Block	2	
16	CHSW100000	Spring Washer	2	
17	CWC2010190	Slewing Ring Assy	1	
18	CWS3025060	Main Plate	2	
19	CWHB1217030	Hex Bolt	8	
20	CHGN180000	Grease Nipple	2	
21	CHSW160000	Spring Washer	30	
22	CWHB1620100	Hex Bolt	26	
23	CWP3201012	O-Ring	4	
24	CWCJS08F	Cap	2	
25	CCSB1217050	Socket Bolt	8	
26	CWFS621600	Split Flange Half 1"	4	
27	CWAPT08MJS08M90	Adapter	1	
28	CWP21U0010	Plug	2	
29	CHSB1217040	Socket Bolt	8	
30	CWSB1620060	Socket Bolt	4	
31	CHSW120000	Spring Washer	20	
32	CWS2056000	Hose Assy	1	
33	CWS2055000	Hose Assy	1	

Connect Work Tools CWP Series Pulverizer Model CWP2000R

9.0 CWP Pulverizer - CWP2000

9.5 CWP Pulverizer - CWP2000 Cylinder Rod Cover Assy

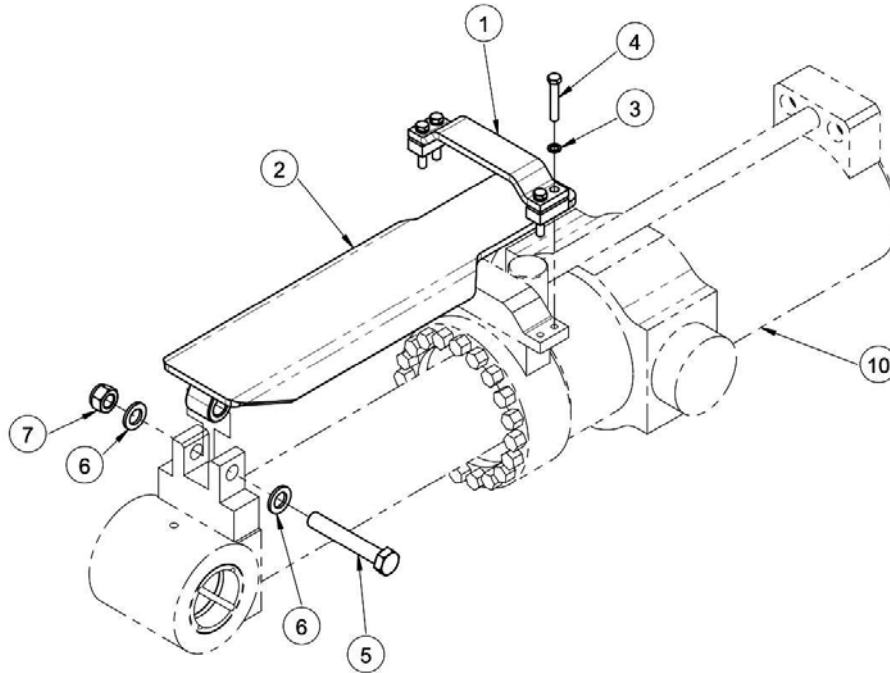


Fig. 9.5 CWP2000 Rod Cover Assembly

9.3 CWP Pulverizer - CWP2000 Rod Body Assy Parts List

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
	CWP21A540A	Cylinder Rod Cover Assy		Includes Items 1-7
1	CWP21A5300	Cover w/Assy	1	
2	CWP21A5330	New Cover w/Assy	1	
3	CWNDLW1200	Nord Lock Washer	4	
4	CWHB1217070	Hex Bolt	4	
5	CWHB2430150	Hex Bolt	1	
6	CHPW24000	Plain Washer	2	
7	CHNN243000	Nylon Nut	1	
10	CWP2013001	Cylinder Assy	1	
	CWP2013001SK	Seal Kit; Cylinder	1	



CWP Series Pulverizers

CWP3000
CWP3000R

Parts Manual

10.0 CWP Pulverizer - CWP3000

10.1 CWP Pulverizer - CWP3000

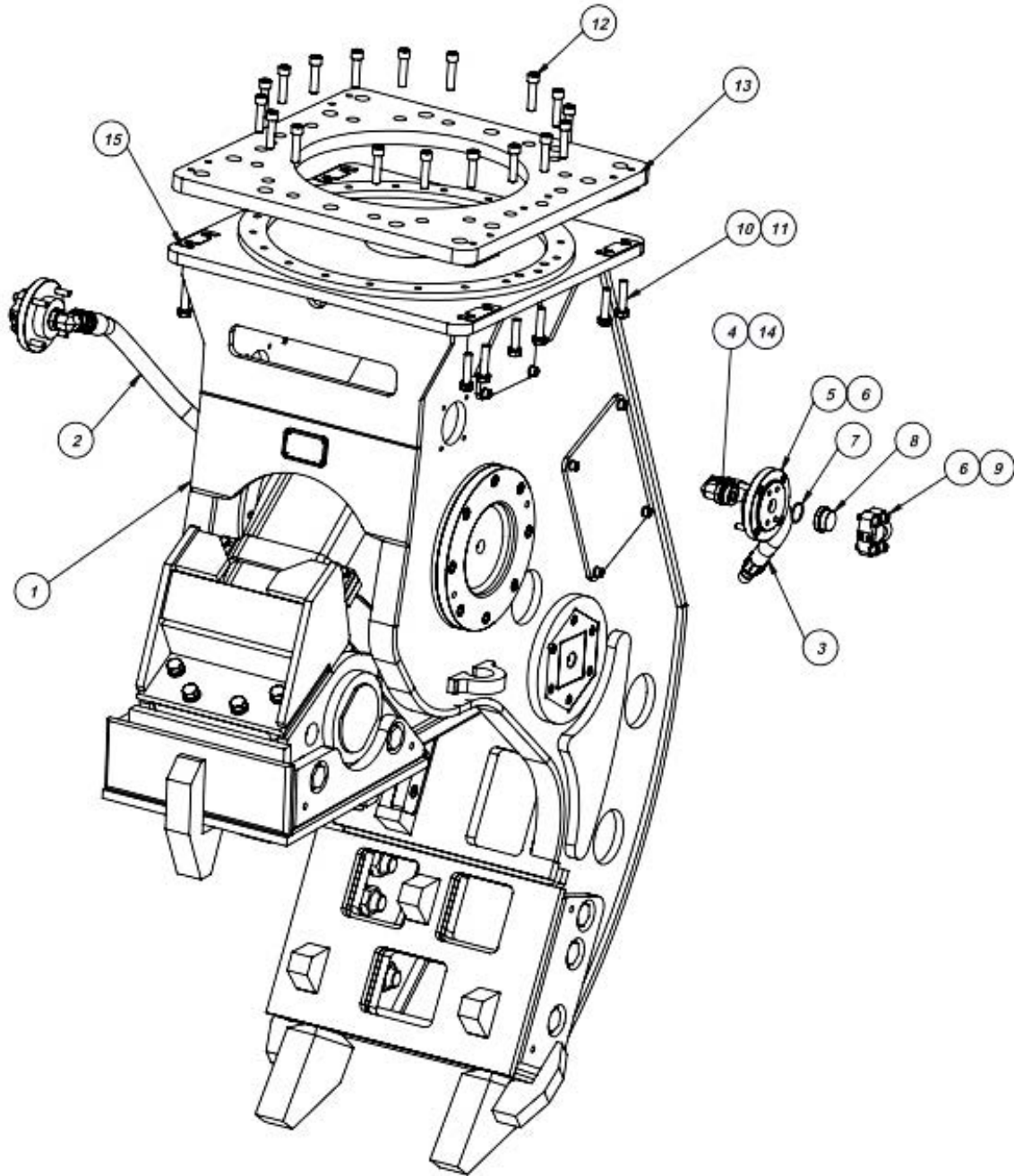
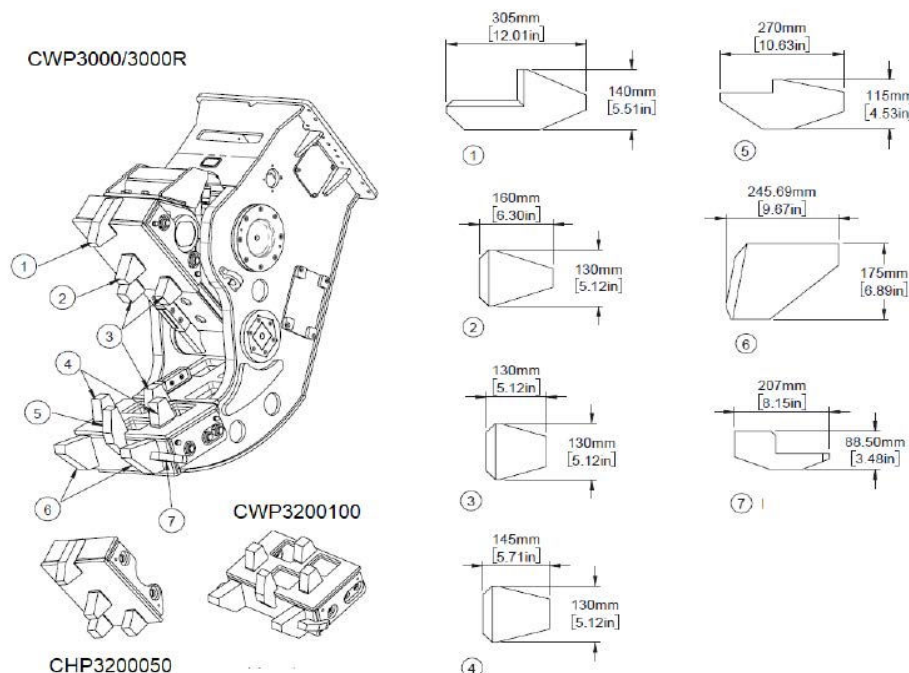


Fig. 10.1 CWP3000 Total Assembly

10.0 CWP Pulverizer - CWP3000

10.1 CWP Pulverizer - CWP3000 Parts List

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
	CWP36U5000	Pulverizer Assy		
1	CWP36U1000	Body Sub Assy	1	See Page 42
2	CWP31U6000	Hose Assy	1	
3	CWP31U5000	Hose Assy	1	
4	CWAPO20MJS16M90	Adapter	2	
5	CWP3010120	Flange	2	
6	CHSB1217040	Socket Bolt	16	
7	CWA4006540	O-Ring	2	
8	CWP31U0010	Plug	2	
9	CWFS622000	Split Flange 1 1/4"	4	
10	CHHB160070	Hex Bolt	12	
11	CHSW160000	Spring Washer	12	
12	CWSB1620065	Socket Bolt	18	
13	CWP36U2000	Fixed Top Assy	1	
14	CWA3206550	O-Ring	2	
15	CWP25U0040	Shim Plate	12	Use as required
	CWP36U3000	Fixed Conversion Kit		Only NO.2~NO.15 are included in kit



10.0 CWP Pulverizer - CWP3000

10.2 CWP Pulverizer - CWP3000R

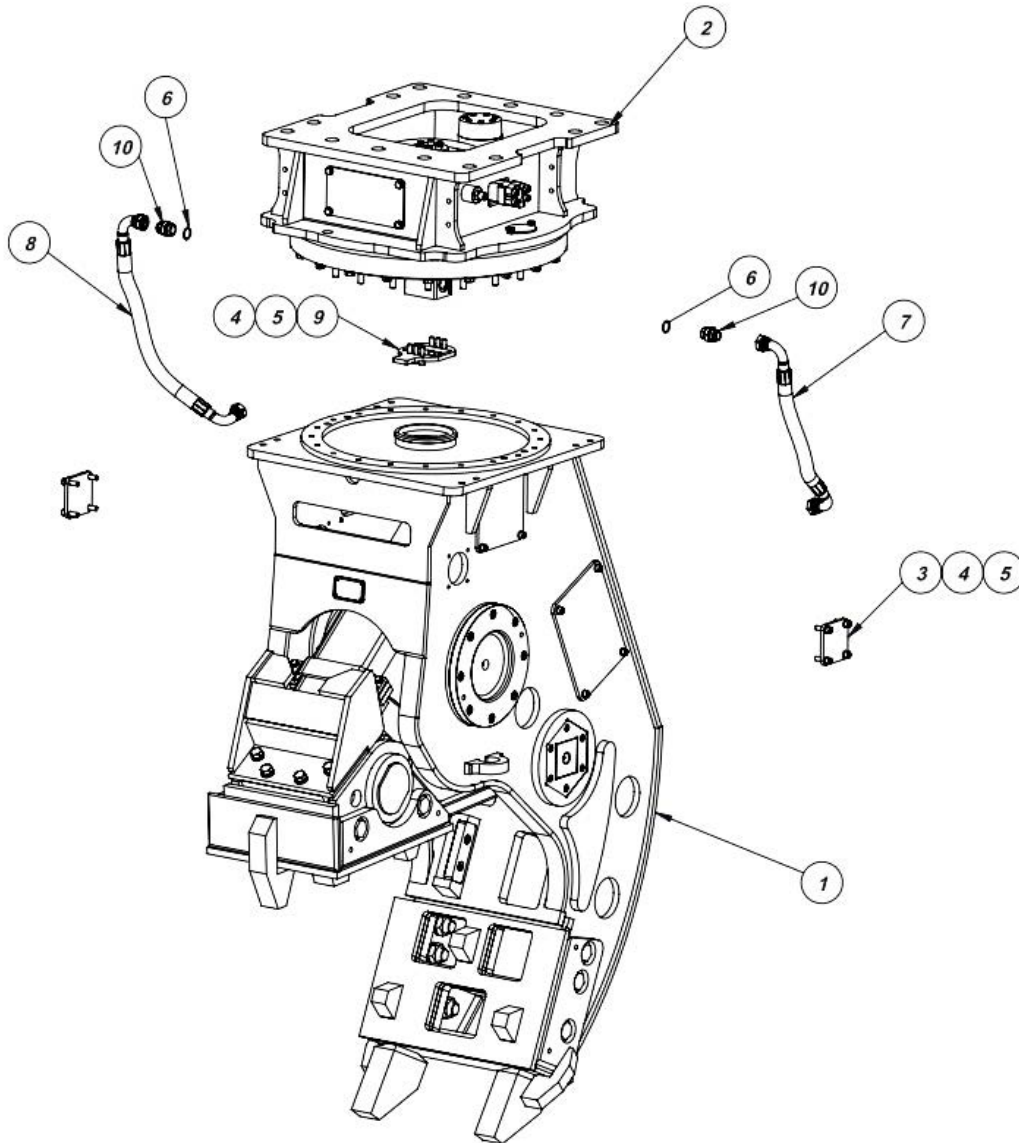


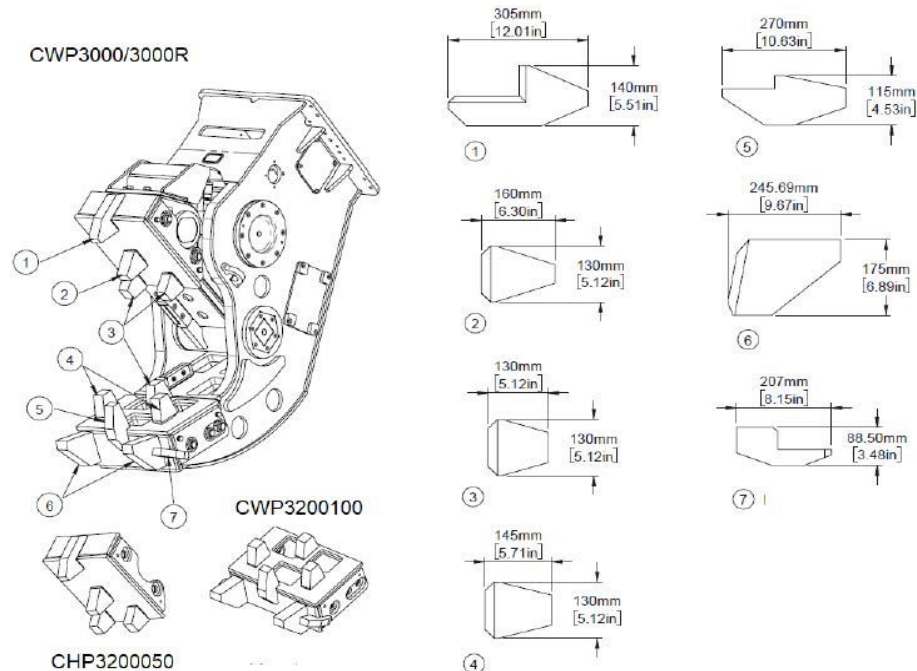
Fig. 10.2 CWP3000R Total Assembly

Connect Work Tools CWP Series Pulverizer Model CWP3000R

10.0 CWP Pulverizer - CWP3000

10.2 CWP Pulverizer - CWP3000R Parts List

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
	CWP36U0000	Pulverizer Assy		
1	CWP36U1000	Body Sub Assy	1	See Page 42
2	CWS3026400	Top Body Sub Assy	1	See Page 44
3	CWP21U0020	Cover 2	1	
4	CHSB1217040	Socket Bolt	6	
5	CHSW120000	Spring Washer	8	
6	CWV4300010	O-Ring	8	
7	CWP31U8000	Hose Assy	2	
8	CWP31U9000	Hose Assy	1	
9	CWS2050060	Stopper	1	
10	CWAUF16MJC16M	Adapter	2	
	CWP36U4000	Rotating Conversion Kit		Only NO.2~NO.10 are included in kit



Connect Work Tools CWP Series Pulverizer Model CWP3000R

10.0 CWP Pulverizer - CWP3000

10.3 CWP Pulverizer - CWP3000 Body Sub Assy

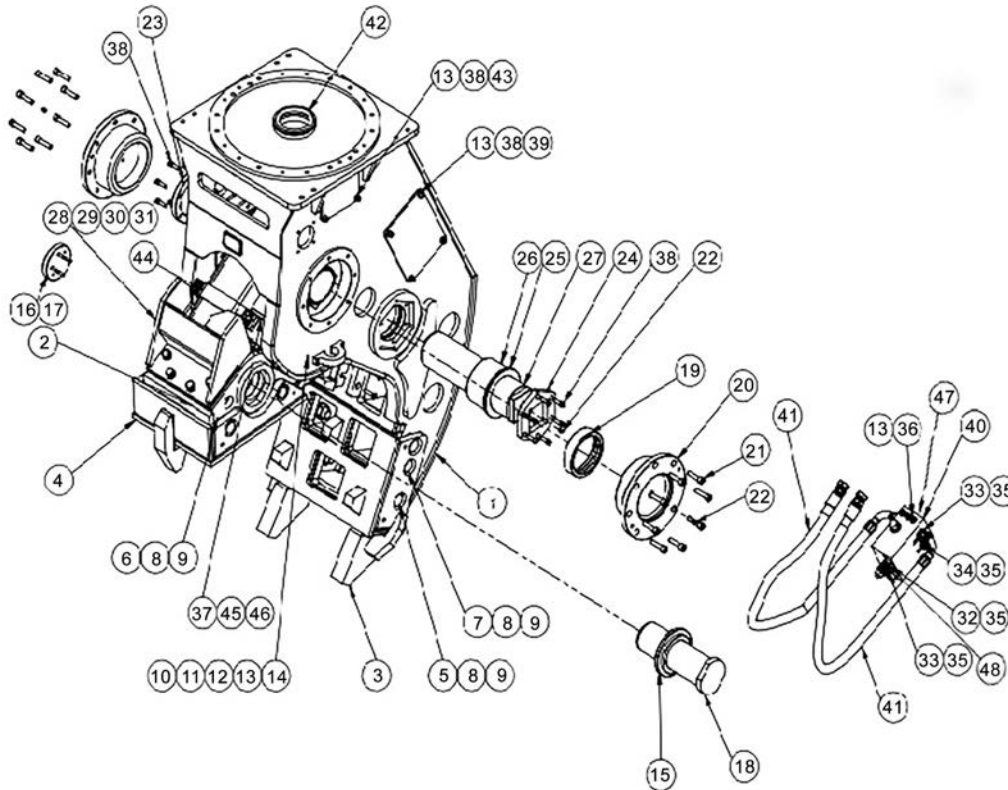


Fig. 10.3 CWP3000 Body Sub Assembly

10.3 CWP Pulverizer - CWP3000 Body Sub Assy Parts List

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
	CWP36U1000	Body Sub Assy		
1	CWP35U1000	Body Weld Assy	1	
2	CWP31U2000	Arm Assy	1	
3	CWP3200100	Tooth w/Assy (Stationary Side)	1	CWP3200020
4	CWP3200050	Tooth w/Assy (Cylinder Side)	1	CWP3200030
5	CWP3025000	Pin	2	
6	CWP3027000	Pin	4	
7	CWP3026000	Pin	4	
8	CWNN3640000	Nylon Nut	10	
9	CHPW360000	Plain Washer	10	
10	CWP2014120	Cutter	2	
11	CWDB1217060	Dish Bolt	4	
12	CWP2014181	Shim Plate	2	
13	CHSW120000	Spring Washer	26	
14	CCNN121700	Nylon Nut	4	

10.0 CWP Pulverizer - CWP3000

10.3 CWP Pulverizer - CWP3000 Body Sub Assy Parts List - continued

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
15	CWP3010070	Hinge Ring 1	2	
16	CWP3010100	Hinge Cover 2	1	
17	CHSB1015040	Socket Bolt	4	
18	CWP3010060	Hinge Shaft 2	1	
19	CWP3010030	Hinge Bush	2	
20	CWP3010010	Cylinder Hinge Cover	2	
21	CWSB162005	Socket Bolt	16	
22	CWGN1400000	Grease Nipple	3	
23	CWP3010090	Hinge Cover 1	1	
24	CWP3010130	Hex Flange	1	
25	CWP3010080	Hinge Ring 1	2	
26	CWP3010040	Hinge Bush 2	2	
27	CWP3010050	Hinge Shaft 1	1	
28	CWP31A6000	Cylinder Head Cover w/Assy	1	
29	CWHB2025050	Hex Bolt	4	
30	CHSW200000	Spring Washer	4	
31	CHPW200000	Plain Washer	4	
32	CWAPO16MJS16M90	Adapter	1	
33	CWAPO16MJS16M	Adapter	3	
34	CWC2010490	Socket Plug	2	
35	CWA2007140	O-Ring	6	
36	CWSB1217015	Socket Bolt	6	
37	CWP3014001	Cylinder Assy	1	
38	CHSB1217040	Socket Bolt	28	
39	CWP31U4000	Cover	2	CWP31U3000
40	CWC3010320	Speed Up V/V	1	
41	CWP31U7000	Hose Assy	2	
42	CWP25U0030	Trims Seal Rubber	1	
43	CWP25U0010	Cover 1	2	
44	CWP31A540A	Cylinder Cover Assy	1	CWP31A500A See Page 46
45	CWAPO20MJS16M	Adapter	2	
46	CWA3206550	O-Ring	2	
47	CWC201033B	Pilot Check Valve Cartridge	1	
48	CWC301032A	Counter Balance Valve	1	

Connect Work Tools CWP Series Pulverizer Model CWP3000

10.0 CWP Pulverizer - CWP3000

10.4 CWP Pulverizer - CWP3000 Top Body Assy

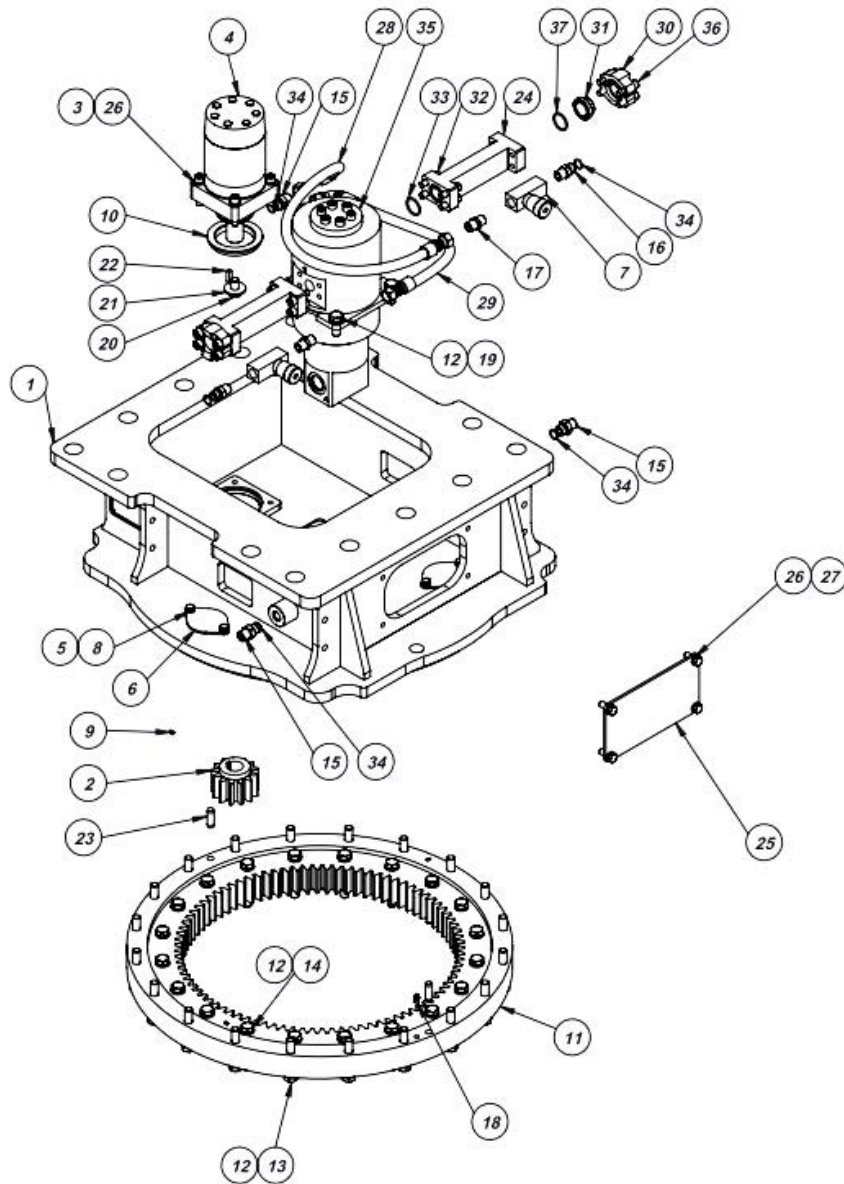


Fig. 10.4 CWP3000 Top Body Assembly

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
	CWS3026400	Top Body Sub Assy		
1	CWS3026500	Top Body w/Assy	1	
2	CWC3010180	Pinion Gear	1	
3	CWSB1217560	Socket Bolt	4	
4	CWC2010220	Motor Assy	1	
	CWC201022S	Seal Kit; Motor		

Connect Work Tools CWP Series Pulverizer Model CWP3000

10.0 CWP Pulverizer - CWP3000

10.4 CWP Pulverizer - CWP3000 Top Body Assy Parts List - continued

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
5	CWHB1015020	Hex Bolt	6	
6	CWC3010280	Cover	3	
7	CWC2010230	Flow Control Valve	2	
8	CWSW100000	Spring Washer	6	
9	CGSS0610010	Seat Screw	1	
10	CWS3025010	Plate	1	
11	CWC3010190	Slewing Ring Gear	1	
12	CWSW160000	Spring Washer	44	
13	CHSW160000	Hex Bolt	20	
14	CWHB1620100	Hex Bolt	20	
15	CWAPO08MJS08M	Adapter	4	
16	CWAPO08MPT08M	Adapter	2	
17	CWAPT08MJS08M	Adapter	2	
18	CHGN180000	Grease Nipple	1	
19	CHHB1620040	Hex Bolt	4	
20	CWC2010222	Hex Bolt	1	
21	CWC2010221	Motor Washer	1	
22	CWC2010223	Key	1	
23	CWC2010050	Dowel Pin	2	
24	CWS3020090	Mach Port Block	2	
25	CWS3025070	Cover	1	
26	CWSW120000	Spring Washer	8	
27	CWHB1217030	Hex Bolt	4	
28	CWS3026700	Hose Assy	1	
29	CWS3026800	Hose Assy	1	
30	CWFS6222000	Split Flange Half 1"	4	CWFS621600
31	CWP31U0010	Plug	2	CWP21U0010
32	CWSB1217040	Socket Bolt	8	
33	CWS0190219	O-Ring	2	
34	CWA2507380	O-Ring	6	
35	CWS2050040	Turning Joint	1	
36	CHSB1420040	Socket Bolt	4	
37	CWA4006540	O-Ring	2	
	CWS2050040SK	Seal Kit; T/Joint	1	

Connect Work Tools CWP Series Pulverizer Model CWP3000

10.0 CWP Pulverizer - CWP3000

10.5 CWP Pulverizer - CWP3000 Cylinder Rod Cover Assy

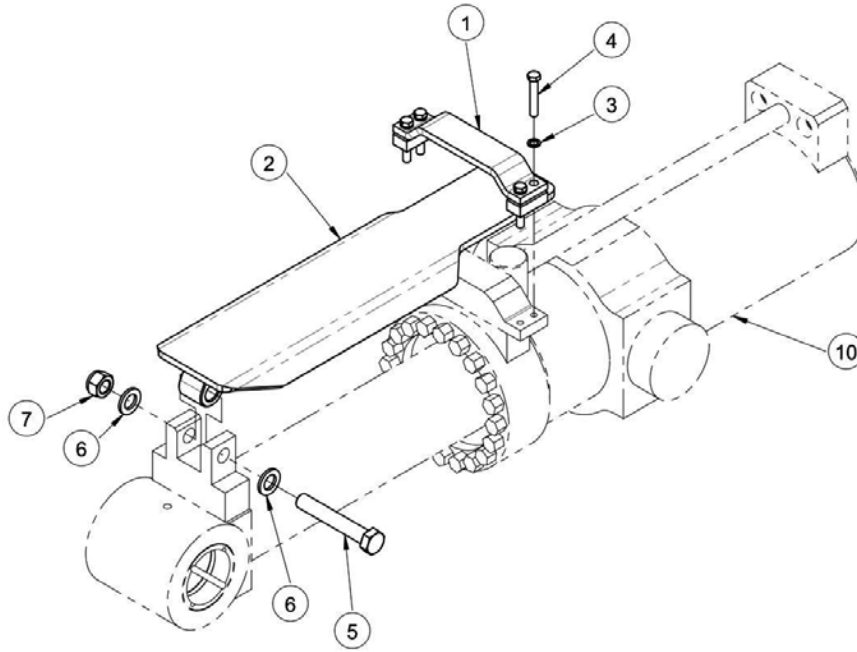


Fig. 10.5 CWP3000 Cylinder Rod Cover Assembly

NO	PART NO.	PART NAME	QTY	ALTERNATE P/N
	CWP31A540A	Cylinder Rod Cover Assy		Includes Items 1-7
1	CWP31A5300	Cover w/Assy	1	
2	CWP31A5330	Cover w/Assy	1	
3	CWNDLW1200	Nord Lock Washer	4	
4	CWHB1217070	Hex Bolt	4	
5	CWHB2430150	Hex Bolt	1	
6	CHPW24000	Plain Washer	2	
7	CHNN243000	Nylon Nut	1	
10	CWP3014001	Cylinder Assy	1	
	CWP3014001SK	Seal Kit; Cylinder	1	

11.0 CWP Pulverizer - Replaceable Tooth Sets

11.1 CWP Pulverizer - CWP Replaceable Tooth Sets

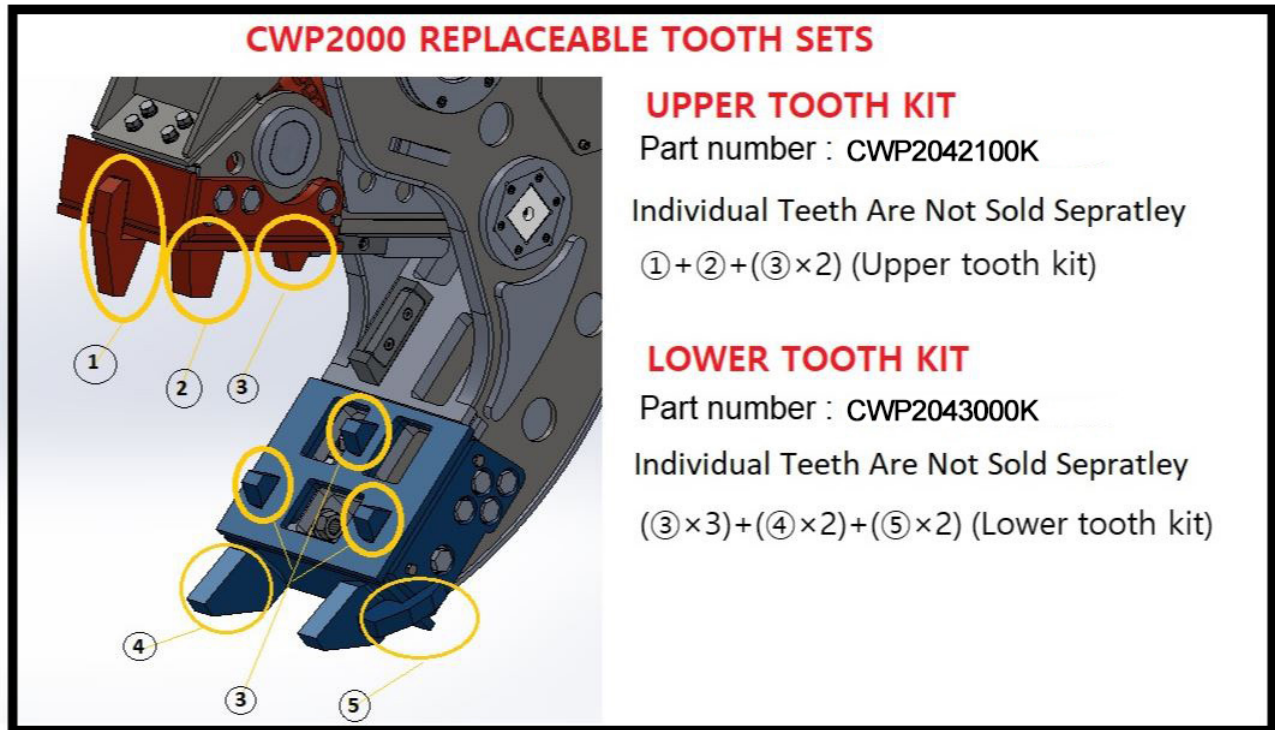


Fig. 11.1 CWP2000 Replaceable Tooth Set

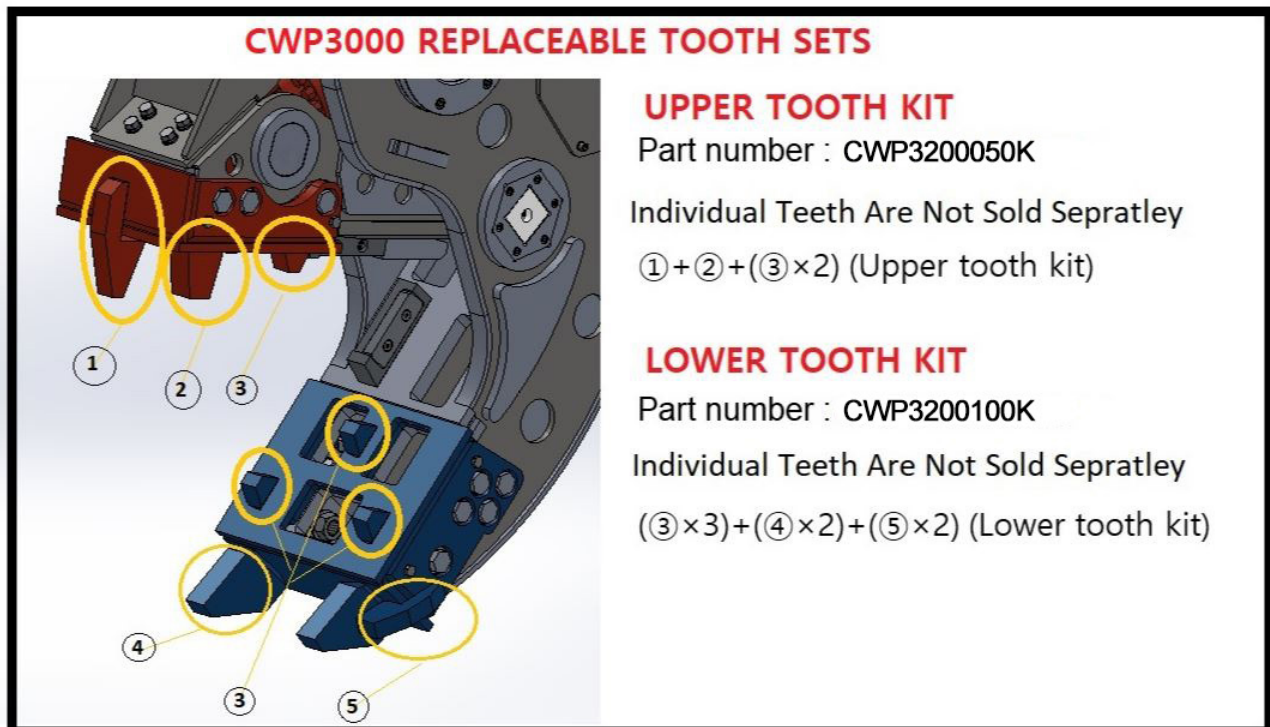


Fig. 11.2 CWP3000 Replaceable Tooth Set

12.0 CWP Pulverizer - Cartridges

12.1 CWP Pulverizer - CWP Cartridges

CWP PULVERIZER CARTRIDGES			
MODEL	CWT PART NUMBER	DESCRIPTION	SEAL KIT
CWP2000	CWC201033A	Counterbalance Valve	CWPE00017
CWP2000	CWC201033B	Pilot Check Valve Cartridge	CWPE00017
CWP3000	CWC301032A	Counterbalance Valve	CWPE00018
CWP3000	CWC201033B	Pilot Check Valve Cartridge	CWPE00017

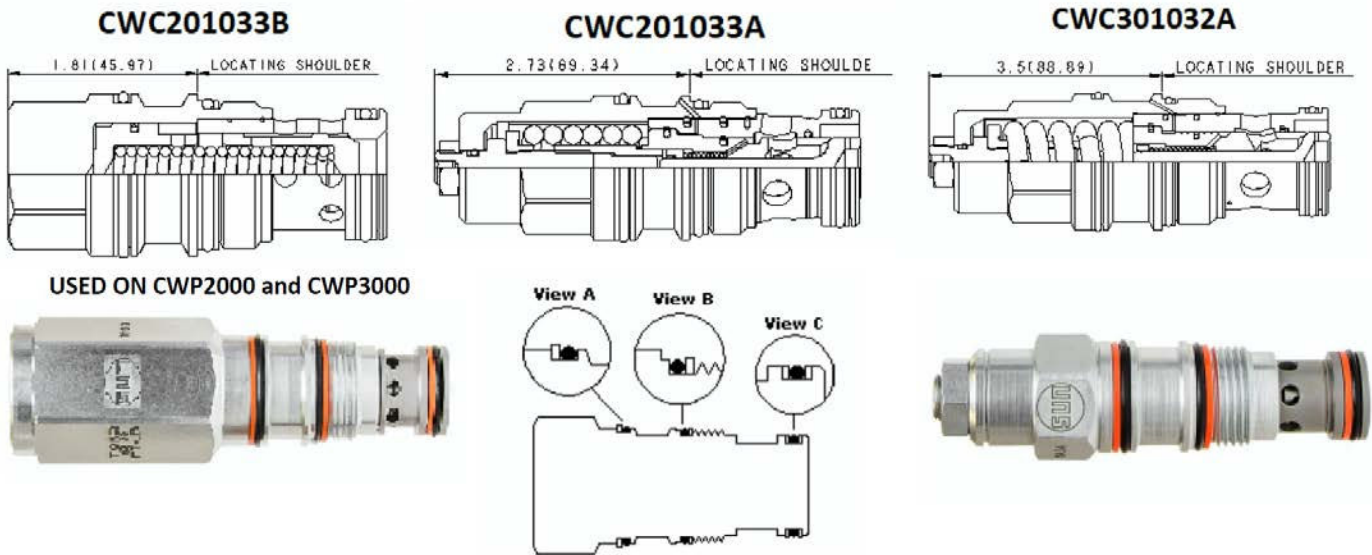
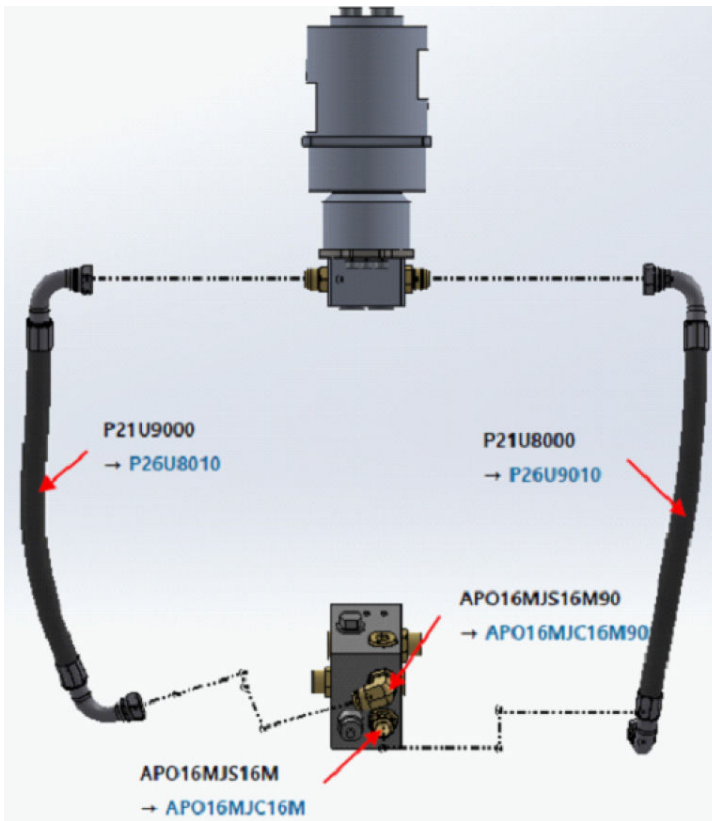


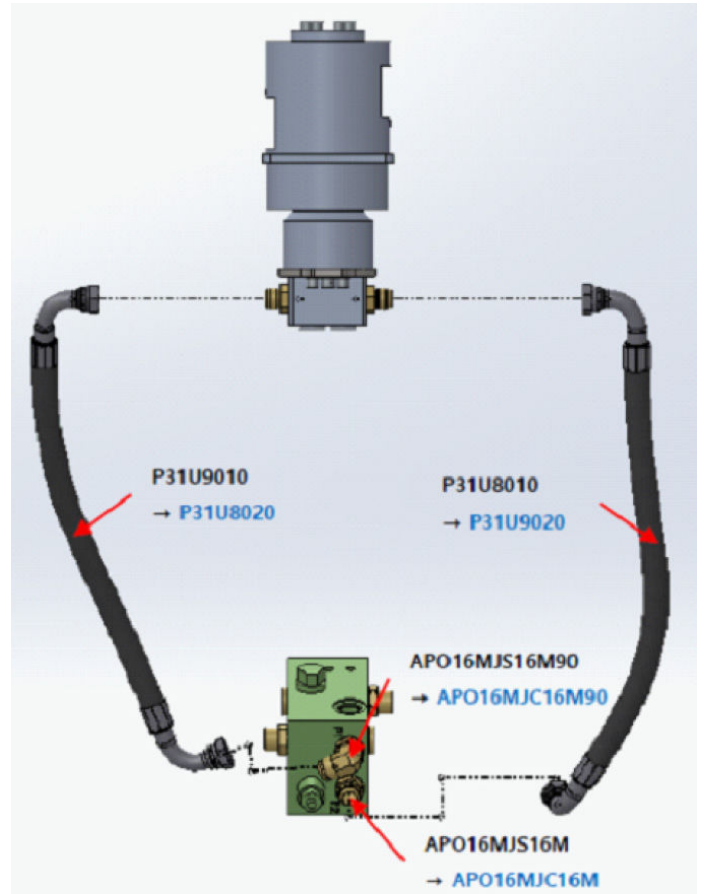
Fig. 12.1 CWP Cartridges

13.0 CWP Pulverizer - Rotation Circuit

13.1 CWP Pulverizer - CWP Rotation Circuit Changes Adapters and Hoses



CWP2000R



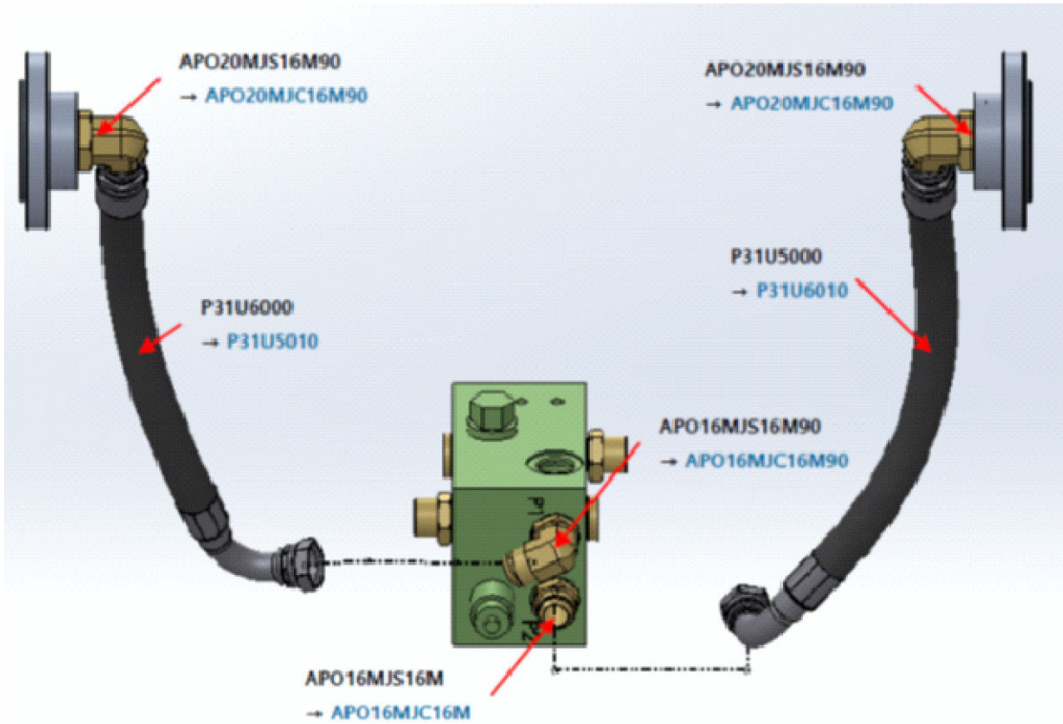
CWP3000R

Fig. 13.1 CWP Rotation Circuit Adapters and Hoses

14.0 CWP Pulverizer - Cylinder Circuit

14.1 CWP Pulverizer - CWP Cylinder Circuit Changes

CWP2000



CWP3000

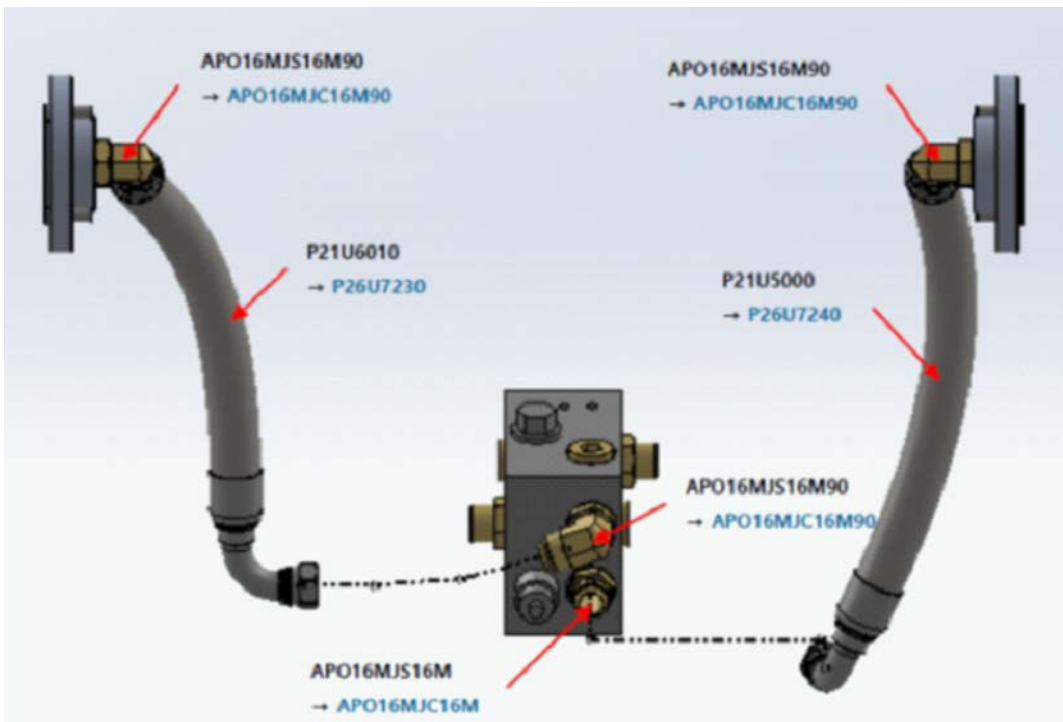


Fig. 14.1 CWP Cylinder Circuit Changes

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