SOOSAN HYDRAULIC PULVERIZER
OPERATION MANUAL

SOOSAN
SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS HYDRAULIC PULVERIZER. REPAIRS AND / OR SERVICE TO THIS HYDRAULIC PULVERIZER MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

<table>
<thead>
<tr>
<th>Model</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Number</td>
<td></td>
</tr>
<tr>
<td>Year of Construction</td>
<td></td>
</tr>
</tbody>
</table>
EC Declaration of Incorporation according to EC Machinery Directive 2006/42/EC

We herewith declare, Soosan Heavy Ind. Co., Ltd.
of
109-2, Songsan-Ri, Yanggam-Myeon,
Hwaseong-Si, Kyunggi-Do,
Korea

that the following machine complies with the appropriate basic safety and health requirements of the EC Directive (2006/42/EC) based on its design and type, as brought into circulation by us. In case of alteration of the machine, not agreed upon by us, this declaration will lose its validity.

The machinery is incomplete and must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the Directive.

Technical documentation for the machinery is made by:
Place: Soosan Heavy Ind. Co., Ltd
109-2, Songsan-Ri, Yanggam-Myeon, Hwaseong-Si, Kyunggi-Do, Korea
Position: Manager, R&D team
Name: Lee, Young-dong

The technical documentation for the machinery is available from:
Name: SOOSAN HEAVY INDUSTRIES CO., LTD EUROPE
Address: Ohmweg 18, 3208 ke, Spijkenisse, Netherlands

Machine Description: Construction Machinery (not appendix IV)
(Hydraulic Pulverizer)

Machine Type:
Serial Number:


Applicable Harmonized Standards:
EN ISO 12100-1:2003
EN ISO 12100-2:2003
EN 982/A1:2008
EN ISO 14121-1:2007
CEN/TS 13778:2004

Applicable National Technical Standards And Specifications:
Weight (kg):
Crushing Force (ton):
Max Working Press (bar):

Date/Authorized Signature:
Title of Signatory:
CAUTION

Before use the concrete pulverizer,
Read carefully below clauses.

1. Before use the concrete pulverizer, Operator have to read "OPERATION MANUAL"
2. Before connect the hoses, Clean the shovel's pipe-line.
3. Before use, Lubricate the frame-pin, arm-pin, and the other move parts.
4. Every time to work, Check if bolts are loosened, hoses and connection-parts are leaked,
   frame and arm are cracked.
5. After work, Select a level place where there are no mud, dust, etc. and place the pulverizer
   on the wood blocks.
6. Do not allow the pulverizer to drop and strike a material or strike against the side of a
   material.
7. Store the pulverizer with the hydraulic cylinder retracted.
8. In order not to diffuse of dust, Use FOG-FOUNTAIN-NOZZLE which is very effective.
9. The manual is writing in English basically.
   Any other language will be serviced on request.
PREFACE

We appreciate your purchasing a Soosan Hydraulic Pulverizer.

The Hydraulic Pulverizer, designed and built to provide durable operation under any working conditions, has been developed by Soosan's excellent engineering techniques with accumulated experiences for many years. Without proper handling, regular inspection and maintenance, however, the machine fails to display its full capacity, resulting in various troubles of machine parts.

This publication should be carefully read prior to installation and operation in order to prevent any mishandling of hydraulic pulverizer.

We guarantee that a faithful compliance of the instruction will contribute to the best operation condition.

Customers are, therefore, required to keep in mind that the company is not responsible for troubles caused by not following our guidelines or not using genuine parts.

Soosan Heavy Industries Co., Ltd.
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PARTS LIST
1. Safety Precautions.

1.1 General safety precautions

This manual contains safety, operation, and routine maintenance instructions. It doesn’t contain service disassembly and service assembly instructions. If needed, complete service disassembly and service assembly instructions are contained in manual which can be ordered from your Soosan Hydraulic Pulverizer authorized and certified dealer.

Please read the following warning.

Serious injury or death could result from the improper repair or service of this pulverizer. Repairs or service to this Pulverizer must only be done by an authorized and certified dealer.

Most of the accidents are caused by disregarding the basic rules of operation inspection or repair, or by neglecting the inspection before operation. Many accidents can often be avoided by recognizing potentially hazardous situations before an accident occurs. Before operating, inspecting or repairing this machine, be sure to read and fully understand the preventive methods and warnings described on the machine or in this manual. If not, never operate, inspect or repair this machine.

Safety labels and messages are classified as follows so that the users can understand the warnings on the machine or in this manual.

- **Danger**: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

- **Warning**: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

- **Caution**: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

- **Notice**: Signs used to indicate a statement of company policy directly or indirectly related to the safety of personal or protection of property.

The safety messages including the preventive measures to avoid danger.

For safety, common items are described in “SAFETY PRECAUTIONS”, and others are mentioned in the succeeding pages.
Soosan cannot anticipate every possible circumstance that might involve a potential hazard on operation, inspection or repair. Therefore the warnings in this manual are not all inclusive. If an operation, inspection or repair not described in this manual is used, you must take measures for safety by yourself.

**DANGER**

Observe the cautions and take a preventive measure for safety

The Soosan Hydraulic pulverizer will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual, any decals and tags attached to the pulverizer before operation. Failure to do so could result in personal injury or equipment damage.

- Operate the pulverizer in accordance with all laws and regulations which affect you, your equipment, and the worksite.
- Do not operate the pulverizer until you have read this manual and thoroughly understood all safety, operation and maintenance instructions.
- Do not operate the pulverizer until you have read the carrier equipment manual and thoroughly understood backhoe or excavator or similar equipment used to operate the pulverizer. The word “carrier”, as used in this manual, means a backhoe or excavator or similar equipment used to operate the pulverizer.
- Ensure that all maintenance procedures recommended in this manual are completed before using the equipment.
- The operator must not operate the pulverizer or carrier if any people are within the area where they may be injured by flying debris or movement of the equipment.
- Know the limits of your equipment.
- Before starting a work, Check the prohibitions, cautions and working processes in a working site with the field overseer. Observe all of them strictly.
- Wear such protective tools as a helmet, safety shoes, etc. to perform a work. Make use of the protective glasses, earplugs, gloves and other protective tools if necessary.
- Establish a training program for all operators to ensure safe operation. Do not operate the pulverizer unless thoroughly trained or under the supervision of an instructor. Become familiar with the carrier controls before operating carrier and pulverizer. While learning operate the pulverizer and carrier, do so at a slow pace. If necessary, set the carrier to the slow position.
- Make sure all controls(levers and pedals) are in the neutral position before starting the carrier.
- Before leaving the carrier, always lower the boom and insure the carrier is stable. Never leave the machine with the engine running. Always engage the parking brake.
- Stop the engine before attempting to make any repairs, adjustments or servicing to either the carrier or the pulverizer.
- Do not operate the pulverizer at oil temperature above 175°F/80°C. Operation at higher temperature can damage the internal components of the pulverizer and carrier and will result in reduced pulverizer performance.
- Do not operate a damaged, leaking, improperly adjusted, or incompletely assembled pulverizer.
- Do not modify this pulverizer in any manner.
- Use only pulverizer parts manufactured by Soosan. Usage of pulverizer rod produced by another manufacturer may damage the pulverizer and will void the warranty.
To avoid personal injury or equipment damage, all pulverizer repair, maintenance and service must only be performed by authorized and properly trained personnel.

If you do not understand how to operate safely your pulverizer, contact an authorized Soosan Dealer for assistance.

Keep this manual with the pulverizer.

Do not operate this equipment if you are taking medication which may affect your mental judgement or physical performance.

Do not operate this equipment if you are under the influence of drug or alcohol.

Remove pulverizer from carrier during transportation.

1.2 Sticker list & Placed on the pulverizer

- Warning sticker
  1) Use hearing protection
  2) Use eye protection
  3) Use breathing protection
  4) Use the manual before use

- Greasing Sticker

  1. Fill cavity with recommended grease.
  2. Grease whenever pin looks dry.
  3. Failure to comply with these instruction can result in damage to demolition & sorting grab and will void the warranty.

- Specification Plate (For Example POSHER200)
<table>
<thead>
<tr>
<th>Model</th>
<th>POSHER 200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial No.</td>
<td></td>
</tr>
<tr>
<td>Year Of Construction</td>
<td>200</td>
</tr>
<tr>
<td>Weight</td>
<td>1850 kg</td>
</tr>
<tr>
<td>Max. Oil Pressure</td>
<td>320 kg/cm</td>
</tr>
<tr>
<td>Max. Oil Flow</td>
<td>250 L/min</td>
</tr>
<tr>
<td>Excavator Weight Class</td>
<td>16 ~ 24 Tn</td>
</tr>
</tbody>
</table>

MADE IN KOREA
### Sticker List & Placed on Pulverizer (POsher200, Posh300)

<table>
<thead>
<tr>
<th>No</th>
<th>Sticker Name</th>
<th>POSHER200</th>
<th>POSHER300</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>P/N</td>
<td>Q’ty</td>
</tr>
<tr>
<td>1</td>
<td>Lifting Sticker</td>
<td>H81 210</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Waming Sticker-D</td>
<td>H81 211</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Soosan Sticker</td>
<td>E73 161</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Model Sticker-A</td>
<td>L31 182</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Model Sticker-B</td>
<td>L31 183</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Name Plate-E</td>
<td>L31 180</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Danger Sticker-A</td>
<td>L31 184</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Danger Sticker-B</td>
<td>H81 217</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Warning Sticker-B</td>
<td>H81 219</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Warning Sticker-C</td>
<td>H81 220</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Greasing Sticker</td>
<td>H81 223</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>Danger Sticker-C</td>
<td>H81 249</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>CE Sticker</td>
<td>D83 163</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Danger Sticker-D</td>
<td>H81 282</td>
<td>2</td>
</tr>
</tbody>
</table>

![Diagram of Sticker Placement](image)
2. Standard specifications and external dimensions

2.1 Standard specifications

<table>
<thead>
<tr>
<th>No.</th>
<th>Specifications</th>
<th>Unit</th>
<th>POSHER200</th>
<th>POSHER300</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Operating Weight</td>
<td>kg</td>
<td>1850(4079)</td>
<td>2630(5798)</td>
</tr>
<tr>
<td>2</td>
<td>Overall Length</td>
<td>mm</td>
<td>1938(76.3)</td>
<td>2254(88.7)</td>
</tr>
<tr>
<td>3</td>
<td>Overall Width</td>
<td>mm</td>
<td>620(24.4)</td>
<td>710(28)</td>
</tr>
<tr>
<td>4</td>
<td>Max. Jaw Opening</td>
<td>mm</td>
<td>864(34)</td>
<td>1004(39.5)</td>
</tr>
<tr>
<td>5</td>
<td>Jaw Width</td>
<td>mm</td>
<td>540(21.3)</td>
<td>580(22.8)</td>
</tr>
<tr>
<td>6</td>
<td>Cutter Length</td>
<td>mm</td>
<td>220(8.7)</td>
<td>220(8.7)</td>
</tr>
<tr>
<td>7</td>
<td>Max. Operating Pressure</td>
<td>kg/cm²</td>
<td>320(4551)</td>
<td>320(4551)</td>
</tr>
<tr>
<td>8</td>
<td>Oil Flow</td>
<td>lpm</td>
<td>150<del>250(33</del>55)</td>
<td>200<del>300(44</del>66)</td>
</tr>
<tr>
<td>9</td>
<td>Crushing Force</td>
<td>ton</td>
<td>70</td>
<td>88</td>
</tr>
<tr>
<td>10</td>
<td>Cutting Force</td>
<td>ton</td>
<td>200</td>
<td>267</td>
</tr>
<tr>
<td>11</td>
<td>Recommended Carrier Weight</td>
<td>ton(lbs)</td>
<td>18<del>25(39683</del>55116)</td>
<td>25<del>36(55116</del>79366)</td>
</tr>
<tr>
<td>12</td>
<td>Recommended Hydraulic Hose Size</td>
<td>mm(in)</td>
<td>25(1)</td>
<td>32(1 ¼)</td>
</tr>
</tbody>
</table>

2.2 External Dimensions

**POsher 200**

**POsher 300**
3. Installing and removing from hydraulic shovel

3.1 Installation
A> As shown below, Let the pulverizer place on the wood blocks, Which are used as big as possible.
B> Connect the Cylinder - Hose to the Boom pipe-line.
C> Open the stop valve at the front end of the arm.

If the pulverizer fall down on the ground. The fittings and Hoses will be put out of shape.

3.2 Remove
A> Select a level place where there are no mud, dust, etc. and place the pulverizer on wood blocks.
B> Stop the engine and turn OFF the main switch to prime the oil tank.
C> Close the stop valve to prevent the hydraulic oil from flowing out.
D> After disconnecting the oil hoses, install the hose plugs to the oil hoses to prevent the hydraulic oil from flowing out of the pulverizer and mud, dust, etc. from getting into the pulverizer
4. Inspection before operating

4.1 Before starting the operation, place this pulverizer on the concrete floor or hard ground, make sure that the engine is stopped and then check the following points.

A> Check if the bolts locking the pulverizer and hydraulic shovel connection pins are proper.
B> Check each part of the pulverizer for cracks and other damages.
C> Be sure to lubricate the pins, bushes and the other move parts.

The lubrication points are shown below.

D> Recommended Lubricants

<table>
<thead>
<tr>
<th>Maker</th>
<th>Lubricant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cosmo</td>
<td>Grease Dynamax No. 2</td>
</tr>
<tr>
<td>Mobil</td>
<td>Mobil Mobilux 2</td>
</tr>
<tr>
<td>Shell</td>
<td>Alvania Grease 2</td>
</tr>
<tr>
<td>Esso</td>
<td>Esso Beacon 2</td>
</tr>
</tbody>
</table>

4.2 Start the engine and check the following points.

A> Move the control pedal to the UP or DOWN position from the neutral position to extend or retract the hydraulic cylinder for checking of the external operation is proper and no oil leaks form the joint of each hose.

B> Operate the pedal to move the pulverizer arm several times for checking if each movable part moves smoothly.
5. Precautions for pulverizer

[1] Before every time to work, Lubricate the frame-pin arm-pin, Cylinder-pin. Recommended Lubricants and the lubrication points are illustrated(P5).

[2] Don't lift or rotate the hydraulic shovel manipulating the boom. Since the entire concrete pulverizer is longer than the bucket (see above the picture: A<B) so, the force of about 1.5~2 times is directly applied to the bucket cylinder, or bucket link, swivel bearing. Keep in mind above, otherwise, the bucket, cylinder bucket link, swivel bearing will be broken.
[3] Do not allow the pulverizer body to drop and strike a material or strike against the side of a material because not only the pulverizer body but also the hydraulic shovel may be damaged or become defective.

[4] Perform the pulverizing operation by utilizing the pulverizing force. Do not move the pulverizer body in all directions with a material gripped with pulverizer arm because an unreasonable force may be applied to each part of body.
[5] Operating the pulverizer beyond equipment's power causes shorten pulverizer's life also shovel's

[6] Beware of electric contact!!
Keep away from the pulverizer when working in energized area.
[7] Because works always have danger of collapse, Demolish the building from the upstairs. Consult Soosan for modifications if you have an underwater requirement.

[8] pulverizer mainly works under Hard working condition, therefore the Teeth are worn out very fast, so if the pulverizing parts are worn out, Build it up by welding (see the table of 11 page)
[9] Don't lift, move, or load an overweighted material with pulverizer. Otherwise, Not only the pulverizer but also the shovel will be damaged.
6. Maintenance

1) After using the pulverizer in water, wash thoroughly and lubricate properly with grease.
2) Repair when the pulverizer arm’s pulverizing parts (tooth) and the lower central part of the main

☞ Use below table.

<table>
<thead>
<tr>
<th>Standards</th>
<th>Under laid–welding Rod</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWS</td>
<td>E–308 L–16</td>
</tr>
<tr>
<td>BS</td>
<td>23.12R</td>
</tr>
<tr>
<td>DIN</td>
<td>ETI 221 226</td>
</tr>
<tr>
<td>ISO</td>
<td>E 23. 12R 26</td>
</tr>
<tr>
<td>JIS</td>
<td>D 309 L–16</td>
</tr>
</tbody>
</table>

When the pulverizing parts are built up by welding rod, The welder has to observe a property, use, precaution of welding rod. Moreover, in order not to crack, Observe a preheating and post heating of base metal.

3) Store the pulverizer with the hydraulic cylinder retracted, Also retract the cylinder when the operation has been finished.

☞ Replace if hydraulic cylinder’s seals worn out, or the seals are used over one year.

4) Check the following points before user the pulverizer.
   A> Check the arm and main frame and bracket for damage, wear and deformation.
   B> Check the piping connections for oil leakage and damage.
   C> Check the pins and bushes for wear and damage.
   D> Check the bolts and nuts for looseness, coming off the damage.

5) When replacing a part, use a genuine SOOSAN PART.
7. Replacement of reinforced cutter

7.1 Procedure

If the cutter is rotated 180°, then the cutter \(^1\) can be used two times.
Accordingly, when the cutter is worn properly, it can be reversed and the reused.
The cutter retaining socket bolts are coated with thread lock cement.
When loosening each bolt, heat it with a burner or the like.
When installing the socket bolts, remove stains from the cutter attaching part, remove oil with cleaning fluid and then apply thread lock cement on the socket bolts \(^2\).
The clearance between the cutters \(^1\) are factory-adjusted to 1mm or below.
When replacing a reinforced cutter, check the two cutters for engagement and adjust with the shim \(^3\) if necessary.(Two Shims <0.5mm> are supplied)
7.2 Proper clearance between Frame and Arm cutters.

![Diagram showing proper clearance between Frame and Arm cutters]

7.3 Type of shim

<table>
<thead>
<tr>
<th>No.</th>
<th>Part No.</th>
<th>Part Name</th>
<th>Q’ty</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>L41 159</td>
<td>shim-1</td>
<td>1</td>
<td>t=1.0</td>
</tr>
<tr>
<td>2</td>
<td>L41 160</td>
<td>shim-0.5</td>
<td>1</td>
<td>T=0.5</td>
</tr>
</tbody>
</table>
MAINTENANCE FOLLOW-UP

In order to follow the maintenance of a hydraulic crusher, a maintenance card presented below can be used.

<table>
<thead>
<tr>
<th>HYDRAULIC CRUSHER SERVICE CARD NO.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>S/No.</td>
</tr>
<tr>
<td>Model type</td>
<td>S/No.</td>
</tr>
</tbody>
</table>

## SERVICE INFORMATION

<table>
<thead>
<tr>
<th>Purpose of the service</th>
<th>Serviceman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Date</td>
<td>Engine working hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Replaced parts</th>
<th>Part inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qty</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>Cylinder</td>
</tr>
<tr>
<td></td>
<td>Motor</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Percussion mechanism tested
- Rotation mechanism tested

Remarks

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**Soosan Heavy Industries Co., Ltd**