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Pulsation damper

BL US
Instruction book

674623-US-83/2
nozzles distance

21.2E and 35 feed boom with adjustable

Boom joints, which are released in a case of collision, are equipped with spring-loaded crow catches on the spray boom, which is mounted on the tank frame, and it is easy to connect or disconnect by hand.

The 70 operating unit consists of on/off function.

The tank is made of highly impact-resistant polyethylene and has an appropriate design. The construction ensures that the spray does not get in contact with the vital parts of the pump.

HARDI LFQ-ONE pump is a piston pump. Tank with frame, operating

HARDI DL models M 53 and M 80 consists of a pump.
OPERATION DIAGRAM

A. Suction strainer
B. Pump
C. Mounting with Pressure Gauge
D. Distribution valve
E. Spray boom

20 feed bom with fixed nozzles distance
Tank with frame M53 and M80

Adjustment of the air pressure in the pulsation damper.

Risk of wind drift.

Higher working pressure means smaller drops and thus a spray tidal.

This ensures the most correct distribution of the spray. It also means that the nozzle area is covered.

To PS1 when few nozzles are used.

30 to PS1 when that nozzle area is used.

Spraying is recommended at PS1.

When applying the pressure to be applied with the spray from the tractor and the working tractor's speed of the tractor and the working tractor, choose GPA, the type and size of nozzles. The operation of the sprayer is constructed for three-point hitch and folding up of the spray boom is done with a easy jack, which fits when the sprayer head is folded up.

OPERATING INSTRUCTIONS

The spray is constructed for three-point hitch plus CAT. (cat. I).

Connecting the sprayer
Adjustment of M 70 controls:

1. Turn operating handle to position 1, spraying position.

2. All hand levers on the distribution valve are put in position 3 (spraying position).

3. The pressure regulating valve is adjusted until the wanted pressure is shown on the pressure gauge.

4. Operating the control unit whilst driving: In order to close the entire spray boom twist the operation handle to position 2. This takes the pressure off the pump. The whole of the pump's capacity will then return to the tank through the return system.

In order to close part of the boom turn handle for the part or parts to be closed in position 4.
Determining the size of nozzles

The spray pattern should be as illustrated.

Approx. 20" of height of nozzle above ground or crop should be used for the fan nozzles.

The boom height should be adjusted so that the target Ini ead be adjusted to adjust liquid to the crop. It is important to adjust liquid to the crop.

To ensure the most even application of the spray, carry out the spray work correctly, and always keep a check that part of the boom, an
NOZZLE TYPES

1. The flat nozzle gives an elliptical spray pattern. The special orifice of this nozzle makes it sensitive to impurities in the spray. The use of the cleanest possible water and keeping the nozzles clean is therefore recommended. Flat spray nozzles can be used for all purposes but are especially suitable for the application of herbicides (weed killers).

2. The flood jet nozzles give a flat fan-shaped spraying picture with a wide spray angle even at a low pressure.

Flood jet nozzles can be used for all spraying purposes, and are especially good incorporating with herbicides and application of liquid fertilizers.

3. The cone nozzle is fitted with a swirl and gives a conical spray pattern.

The cone nozzle is mainly used for insecticides and fungicides.

4. The large drop nozzle is fitted in conjunction with cone nozzles and gives the same spray pattern. Larger drops are produced at

HARDI pump model 500
**Equipment**

Ask your HARDI DEALER to show you our EXTRA LARGE nozzles. To use one of the tree, change quickly and precisely. Only the operator can control the nozzle on each nozzle to allow 3 different nozzles to spray. Not necessary to use 3 different nozzles.

**Spray Guns**

- water tank
- stream, pond
- for lifting the sprayer

**Piloting Equipment**

- to look:
  - suction side of pump, so that is the first place of spray. pressure is lost if not blocked in on the spray nozzle.
  - reminder: the most common cause of loss of spray rate under valve head.
- spray control unit and also depot by insulation. Reduced pressure may be caused by insulation.

**Applicator**

- to be used. In short turf crops, narrow nozzle may be used. Generally, smaller nozzles are very high pressure nozzles. Spray pattern nozzle for certain band spraying tasks.

**Available with HARDI HARDI HARDI HARDI**

- Wide range of special purpose nozzles
- Apart from the HARDI nozzles already covered, nozzles for other purposes:

**Angle**

Considerably wider spread than other nozzle. Wide spray nozzle, wide with a narrow nozzle. The center of the nozzle is like that of the hardi. The large drop nozzle. The sprayer pattern also provides the same advantages without the use of a spray and moves together with the cone nozzle.

5. The cone nozzle is fitted. Instead of traveling shower, a little more water for a higher coverage. Therefore recommended to use a sprayer with the risk of weather without the risk of

unaffected pressure. This makes...
2. A clogged up suction filter will prevent aspiration so that the pump does not operate satisfactorily.

It is therefore important to keep all filters clean.

3. Foreign bodies stuck in the pump valves with the effect that these cannot close tightly against the valve seat will cause the pump to work unsatisfactorily.

Therefore always take care that the filters are whole so that the pump cannot suck in impurities.

4. Where pump has been serviced and reassembled incorrectly it will not pump at all if the valve springs face against the water flow on suction side.

If the valve springs face against the water flow on the pressure side, then the cylinder head will be blown off or the pump casing will crack.

For correct positioning of valves, please see diagrams under section on "changing valves and diaphragms".

5. Insufficiently tightened bolts on cylinder heads or valve chambers will allow air to be sucked in with the result that little or no liquid will be pumped.

Make sure all cylinder heads and valve covers are correctly tightened down.

6. A worn diaphragm will reduce pump capacity but it is only necessary to replace the diaphragm when it is worn through.

When this occurs liquid will run out of the drain hole in the base of the pump casing.

The fitting of nozzles:

Flat nozzles should be set in the correct angle (5 degrees) by using the supplied nozzle key.

Cone nozzles, large drop nozzles and foam nozzles should be fitted as illustrated.

Please note that swirls are not used in connection with foam nozzles. The ordinary nozzle tables should therefore not be used.

DISTRIBUTION OF SPRAY

The following tables indicate the quantity of liquid that may be distributed with each nozzle size at various travelling speeds with a nozzle distance of 20".
Therefore check all joints on the suction side, the suction strainer, and the pump. Any pump will reduce the pump's capacity or stop it.

In cases where breakdowns have occurred the same factors appear to come into play:

- **Operational Problems**
  - The life of the tank.
  - The tank is cleaned out before adding new water.
  - The tank is not cleaned out before adding new water.

No problems can thus be minimized.

- **Operating Unit**
  - The tank is not cleaned out before adding new water.
  - The tank is not cleaned out before adding new water.

Some controls are very destructive to pumps. It is important to keep the controls correct.

**Parenting:**

Any doubts about the competency of the operators of the systems should be in person.

The correct check all joints and change if there is a leaky hose causes delay in the middle of spraying.
WINTER STORAGE

When the spraying season is over you should devote some extra time to the sprayer before it is put away for the winter.

Frost precautions

If the sprayer is not stored in a frost-proof place you should take the following precautions: Put 2 GAL. of 33 per cent antifreeze mixture in the tank and let the pump run a few minutes so that the entire system is filled, including the spray lines.

Nozzles:

Remove all nozzles and filters from boom - clean and store in a suitable container.

Hose:

Check that none of the hoses are caught or have sharp bends.
LUBRICATION

Pump:

Once or twice during the season, depending on how often the sprayer is used, it is recommended to lubricate the whole of the pump with a lithium grease of consistency No. 2. This quality is used in the pump on delivery from the factory.

Lubrication points on the pump

Operating unit:

Regularly lubricate all moving parts on the operating unit, distributing valves.

To keep to the quantities of liquid (GPA) found in these tables it is very important to know the exact travelling speed of the tractor. Special wheels or worn tires may have the result that the speed indicated by the tractor tachometer is not correct.

Nozzle spacing:

If the nozzle spacing on your boom is different than 20", multiply the tabulated or calculated GPA coverages by one of the following factors.

<table>
<thead>
<tr>
<th>Other Spacing</th>
<th>8&quot;</th>
<th>10&quot;</th>
<th>12&quot;</th>
<th>14&quot;</th>
<th>16&quot;</th>
<th>18&quot;</th>
<th>22&quot;</th>
<th>24&quot;</th>
<th>30&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversion Factor</td>
<td>2.5</td>
<td>2.0</td>
<td>1.67</td>
<td>1.43</td>
<td>1.25</td>
<td>1.11</td>
<td>.91</td>
<td>.83</td>
<td>.66</td>
</tr>
</tbody>
</table>

The EXACT quantity of liquid applied can be calculated as follows:

With the sprayer set as required, measure the output in gallons per minute per nozzle. Place this variable in the formular to find the GPA

$$\frac{5940 \times \text{GPM (per nozzle)}}{\text{MPH} \times \text{Nozzle spacing in inches}} = \text{GPA}$$

Example:

The nozzles have been checked for output and are producing an average of 0.28 gallon per minute, travelling speed is 4 MPH and nozzle spacing is 20".

The quantity of liquid distributed per acre will be:

$$\frac{5940 \times 0.28}{4 \times 20} = 20.8 \text{ GPA}$$
Cleaning the Sprayer

Spray out again - nozzles - spray out and then fill with clean water and wash out the entire sprayer, including boom and tank. Start the pump to wash out the first chemical and 3 ltrs of washing soda in 25 ltrs of water in the tank. 

When changing from one chemical to another, in order
done:

Cleaning the Sprayer

DECONSTRUCTIBLE - clean and reassemble as above.

Where leakage occurs DO NOT overtighten.

Always keep spare nozzles in stock so as to avoid
delay during the busy periods.

Check that all nozzles in a set have the same number.

Brush and a detergent and water mixture

Check and carefully clean all nozzles with a soft
brush.

When changing from one chemical to another,

Nezzles:

Check and correctly handle nozzles incorrectly and should be
moused on them.

It is a good practice to renew all nozzles at least
once per season as wear and tear is unavoidable.

Remember that cleaning also entails the cleaning of
All filters.

Remember the sprayer above the crew.

Compressing the sprayer above the crew
be achieved by slackening or tightening the nut
If the spring resistance needs adjustment, this can

Maintenance

Maintenance

Maintenance