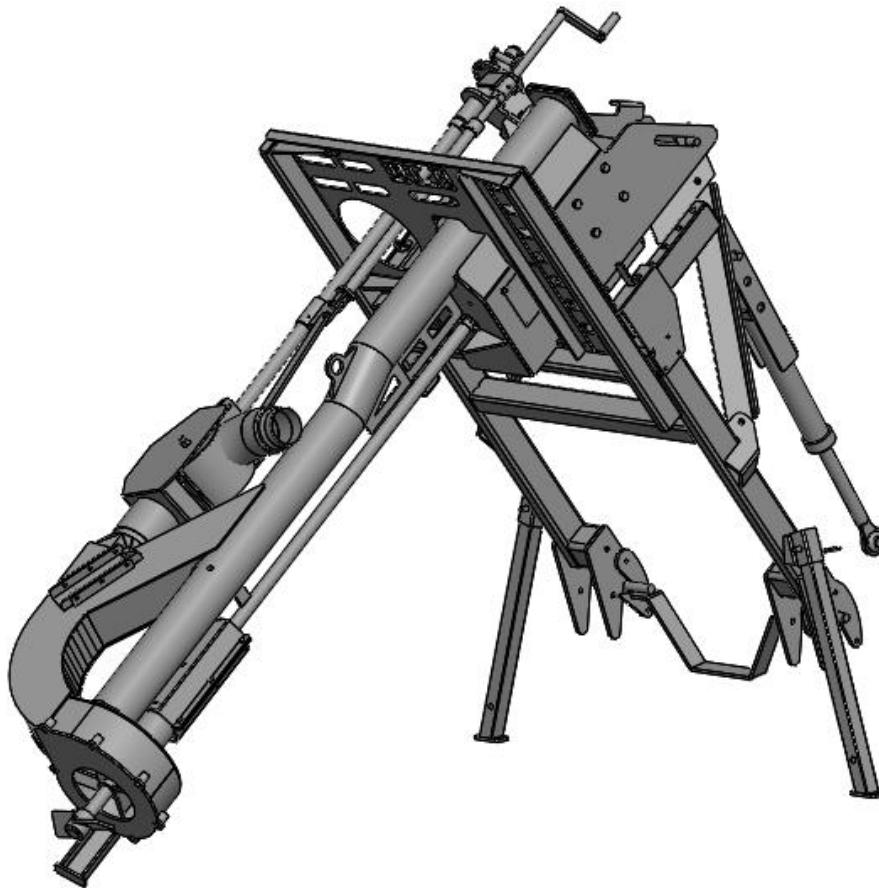




Manufacturers of Agricultural Machinery



**Hi-Spec Slurry Pump**

**Operators**

**Manual**

Model:

Super 300

Hi-Spec Engineering Ltd.

Station Rd,

Bagenalstown,

Co. Carlow

Tel: +353 (0) 59 -9721929 / 9721992

Fax: +353 (0) 59 -9721980

Website: [www.hispec.net](http://www.hispec.net)

E-mail: [sales@hispec.net](mailto:sales@hispec.net)

rev – sp102

*Parts are subject to change at any time, without prior or direct notice to the customer. The contents of this manual can as well be changed without prior notice. For information about adjustment, maintenance or repair, which are not mentioned in this manual, you are advised to consult the technical support of your supplier.*

*This manual has been made with all possible effort, but Hi-Spec Engineering and its suppliers cannot be responsible for possible mistakes in this manual, nor for the consequences.*

# Introduction

## **Congratulations on Purchasing a Hi-Spec Slurry Pump.**

### **Please Read the Following Manual Before Using Machine**

The way you care for and maintain this machine will decide its future performance. This manual has been carefully written to help you maintain the condition of your machine. Read this manual carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or machine damage.

Hi-Spec Slurry Pumps have been designed and manufactured in compliance with the following directives and standards;

*Machinery Directive 2006/42/EEC*

Harmonised standards;

*EN ISO 12100-1:2003, Safety of machinery Part 1: Basic terminology, methodology*

*EN ISO 12100-2:2003, Safety of machinery Part 2: Technical principles*

*EN ISO 4254-1:2005, Agricultural machinery -- Safety -- Part 1: General requirements*

*EN ISO 14121-1:2007, Safety of Machinery – Principle of Risk Assessment*

This manual should be kept within the vicinity of the machine at all times and should be considered a permanent part of your machine. It should remain with the machine should you decide to sell it.

Warranty is provided as a part of Hi-Spec Engineering's support program for customers who operate and maintain this machine and equipment as described in this manual. This warranty provides you the assurance that Hi-Spec Engineering will back its machines should defects appear within the warranty period. If the machine is abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and improvements may be denied.

All information, illustrations and specifications in this manual are based on the latest product information available at the time of publication.

It is the policy of Hi-Spec Engineering to improve its products and designs whenever it is practical and possible to do so. We reserve the right to make changes or improvements at any time without incurring any obligation to make such changes on products sold previously

**Thank You for Choosing Hi-Spec Engineering.**

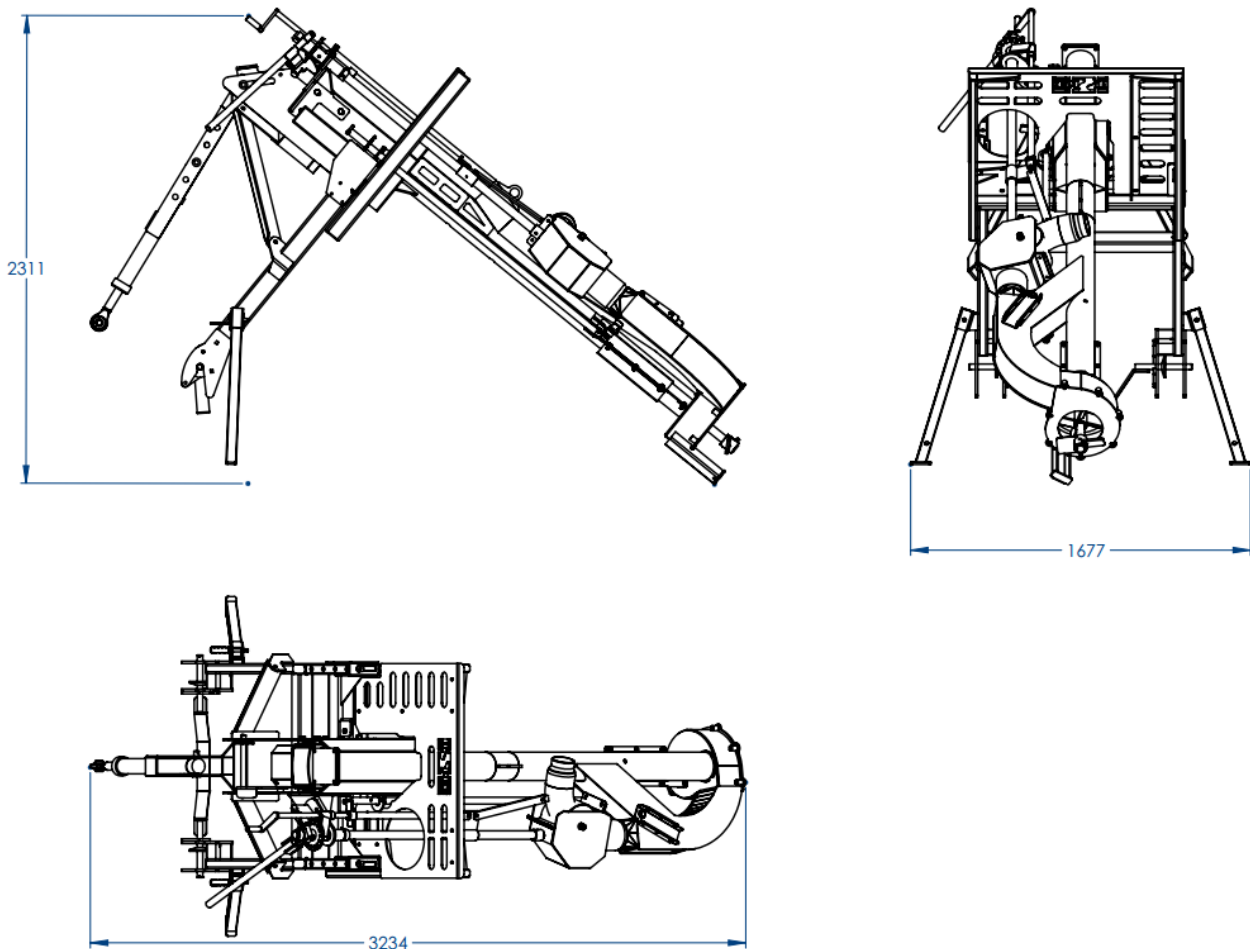
## Designated Use of Machine

The Hi-Spec Slurry Pump is exclusively designed to agitate/circulate/mix slurry in a slurry storage area and/or pump slurry from a slurry storage area, using low power requirements and low maintenance costs.

Hi-Spec Engineering will not be held responsible for any loss or damage resulting from machine applications other than those specified above. Any other use the machine may be put to is entirely at the owners/operator's risk. The Designated use of a Hi-Spec Slurry Pump includes that the operating, maintenance, and repair instructions given by the manufacturer will be strictly fulfilled. Designated use means operating the Super 300 slurry pump is exclusively for persons familiar with the machine and fully aware of the associated risks involved in operating it.

By any alteration of safety equipment, the Declaration of Conformity, as well as the CE sign on machine loses its validity.

## Technical Specifications and Dimensions



# Safety

**Slurry gases can cause intoxication, asphyxiation or explosions if they are not handled in the correct manner.**

**To ensure the safety of all those working in the vicinity of the slurry tank it is important that the following precautions are taken at all times.**

- Slurry should never be allowed to rise above the level of the slats.
- Slurry tanks should be kept free from all foreign objects which could cause damage to the slurry pump or to any other slurry handling equipment. Also, never enter the tank unless thoroughly secured by an adequate safety line.
- The slurry pump should never be operated in a closed area or in the presence of people or animals. All animals should be removed from the shed before commencing the mixing process.
- When mixing slurry in slatted sheds adequate ventilation should be provided at all times. All access doors to the shed should be opened to create a good draft through the shed.
- Do not stand near any openings to the tank while slurry is being mixed
- Some of the gases given off during the mixing process are explosive so do not smoke near the shed while mixing is being carried out.
- All access points which have been opened during the mixing process should be surrounded by secure barriers to prevent anyone from falling into the tank. Children should never be left alone anywhere near or around slurry tanks.
- Do not stand between the machine and the tractor while the P.T.O. is in operation.
- The machine should not be operated unless the P.T.O. guard is properly in place and secured with the accompanying safety chains.
- Before carrying out any maintenance to any parts of the slurry pump ensure that the P.T.O. shaft and hydraulic lines are disconnected from the tractor and that the machine is in a stable position.
- The machine must not be operated unless the bottom bearing is submerged in either slurry or water or it must not be operated if the propeller or any other moving part is restricted in anyway.

## General Safety

Keep a first-aid kit and a fire extinguisher close by at all times, if possible, on your tractor with this operator instruction manual.

- Have an emergency plan.
- Keep all emergency numbers close by; write them into your manual.
- Inspect your machine carefully each time before use; this will only take a minute.
- Stop machine when leaving unattended.
- Children should never be in the area when your slurry pump is in operation.
- Using a slurry pump is a one-man operation therefore there should be no other person(s) in the vicinity of the machine while in use.
- Remember that the first step to avoiding danger is to recognise the hazards.

## Safety Checklist

- Always disconnect all power sources before carrying out any adjustment or maintenance.
- Always check around the machine making sure everything is in order; this will only take a minute.
- Study this manual. Provide training to new users. Like all farm machinery, any machine is potentially dangerous when under the control of untrained personnel.
- Always ensure guards and other safety devices are kept in good working order. Replace if necessary.
- Keep clear of all moving parts.
- Always connect the shear bolt end of the PTO shaft to the tractor.
- Always use shear bolts recommended to you by Hi-Spec Engineering.
- Always keep all hydraulic hoses and electric cables clear from PTO shaft.
- Never permit young persons or spectators to operate PTO driven equipment or stand anywhere close by when the machine is in operation.
- Never permit untrained personnel to operate the machine without reading this manual and or receiving training.
- Never operate the machine without having all guards in place; they are there for your safety and protection against serious injury and death.
- Never remove guards while there is still power going into the machine, all power must be off!

- Never wear loose clothes when operating machinery, if standing too close, your clothing can pull you into the machine.
- Never leave the machine running when unattended.
- If the machine should become blocked with a stone or foreign object, do not attempt to free the object while the tractor is running.
- Keep animals and people out of slatted houses when mixing is in progress
- Secure suction hoses to prevent them falling into the tank.
- Don't stand near tank openings or stoop to floor level when mixing is in progress.
- Never enter a below ground slurry tank unless there is no alternative. If you must go in, wear a lifeline held by 2 men.

Please be aware the release of gas from slurry is variable and difficult to predict. You may not be affected for many years when suddenly a combination of conditions leads to a build-up of gas and you literally won't know what hits you. Because you haven't been affected up to now doesn't mean that is won't happen next time.

## Description of Safety Warnings and Instructions

The following is a list of safety signs and warning labels on the Hi-Spec Vacuum tankers. Look carefully and make sure you know where on the machine they are positioned and what they mean.

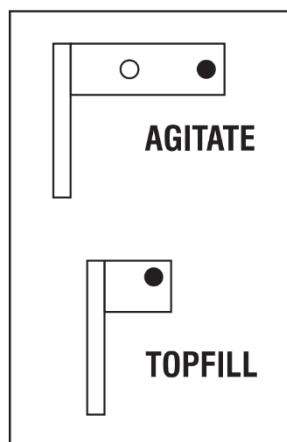
It is important you are fully aware of the areas of risk on your machine.



- This sign reminds the operator of the hazardous gases emitted from slurry.



- General caution sign. There is a danger of getting entangled in the PTO. Keep clear of machine while working.



- This sign indicates the position required for topfilling or agitating.



## PTO Shaft Safety



\* PTO Shafts account for most of tractor related fatalities\*

The PTO shaft is a vital link in driving the machine. It is also a very dangerous piece of equipment; therefore, it is important to follow the manufacturer's guidelines on maintenance and repair. These guidelines are fixed to the PTO when new. They should be removed, read carefully and then stored with this instruction manual for future reference. If the guidelines are missing from the PTO Shaft please contact your Hi-Spec dealer for another copy.

The irregular shape and connection joints of a turning shaft can cause serious injury. The rotational force of the shaft is the main hazard.

Do not wear loose fitting clothing or articles such as jewellery that might get caught in a turning PTO. The rotation of the PTO is 540 rpm when mixing. Accidents can happen very fast therefore keep a safe distance from the shaft when it is in use.

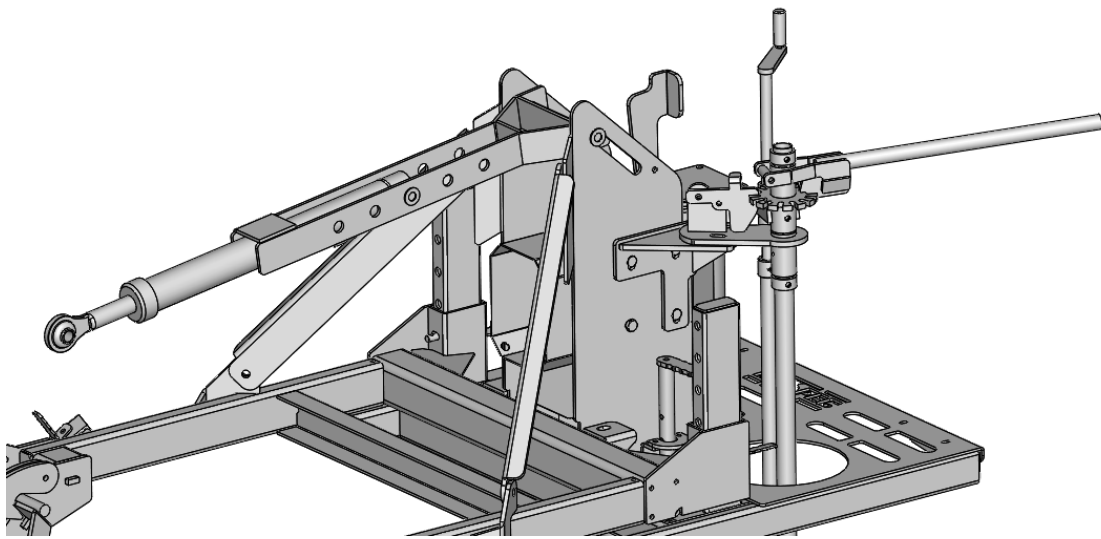
Always adhere to the following points:

- Make sure the shaft is guarded.
- Replace the guards when they are damaged or missing.
- Never use the machine with damaged or missing guards
- In an emergency, take the PTO out of gear, stop the engine and set the brake.

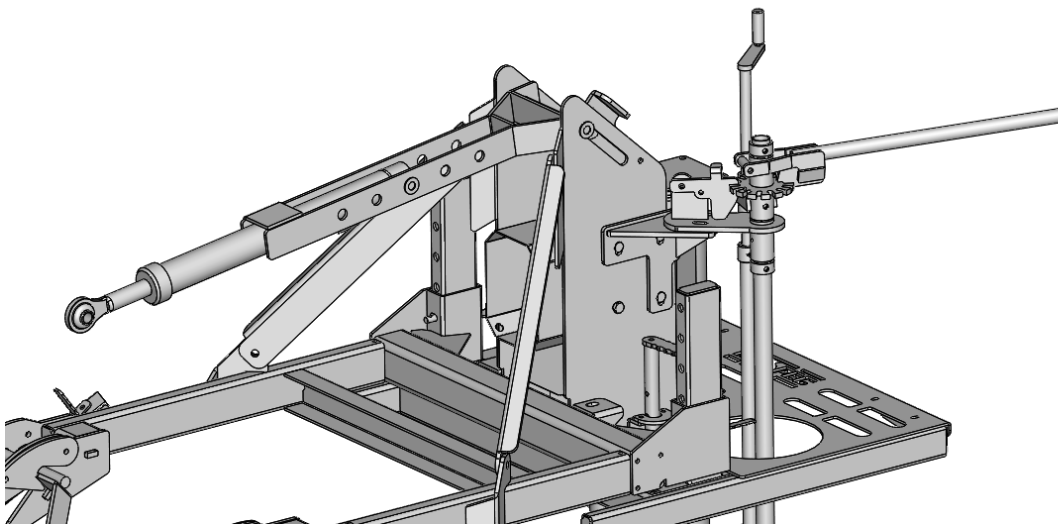
# Getting Started

To fit the slurry pump to the tractor for the first time, please follow the below steps:

- Fit the quick attach cross bar to link arms of the tractor.
- Reverse tractor back and line up link arms, raise arms to engage the quick attach cross bar in the lift hooks of the pump frame. **ALWAYS ENSURE THE QUICK ATTACH LATCHES ARE IN THE DOWNWARD POSITION WITH THE SAFETY CATCHES ENGAGED** otherwise the crossbar may disengage in transit.
- Lift the top link lock to move the top link within the slot. (As shown below)



- Attach the top link to the tractor.
- Place the top link lock back to the transport position (As shown below)



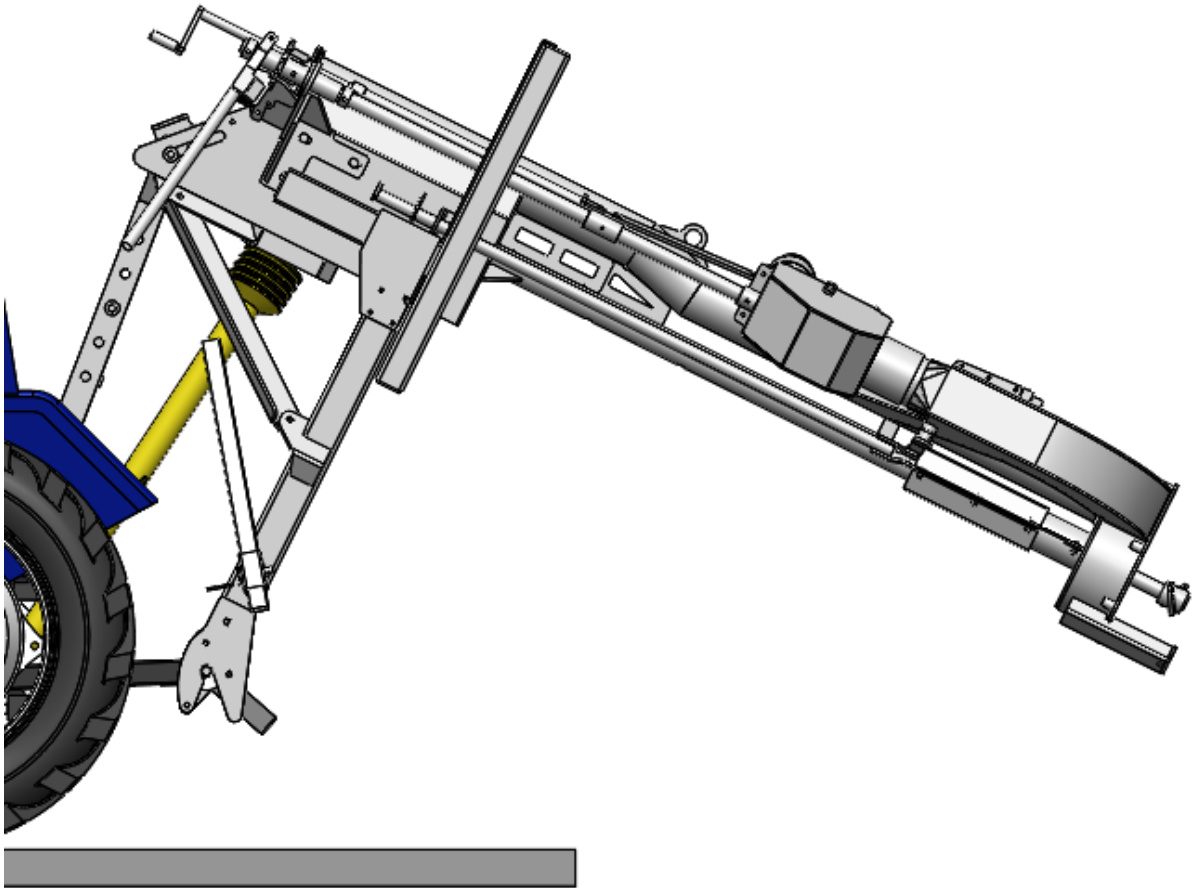
- Attach the PTO shaft.
- Attach the hydraulic pipe to tractor.
- Raise the slurry pump and raise the parking stands.

**Caution**

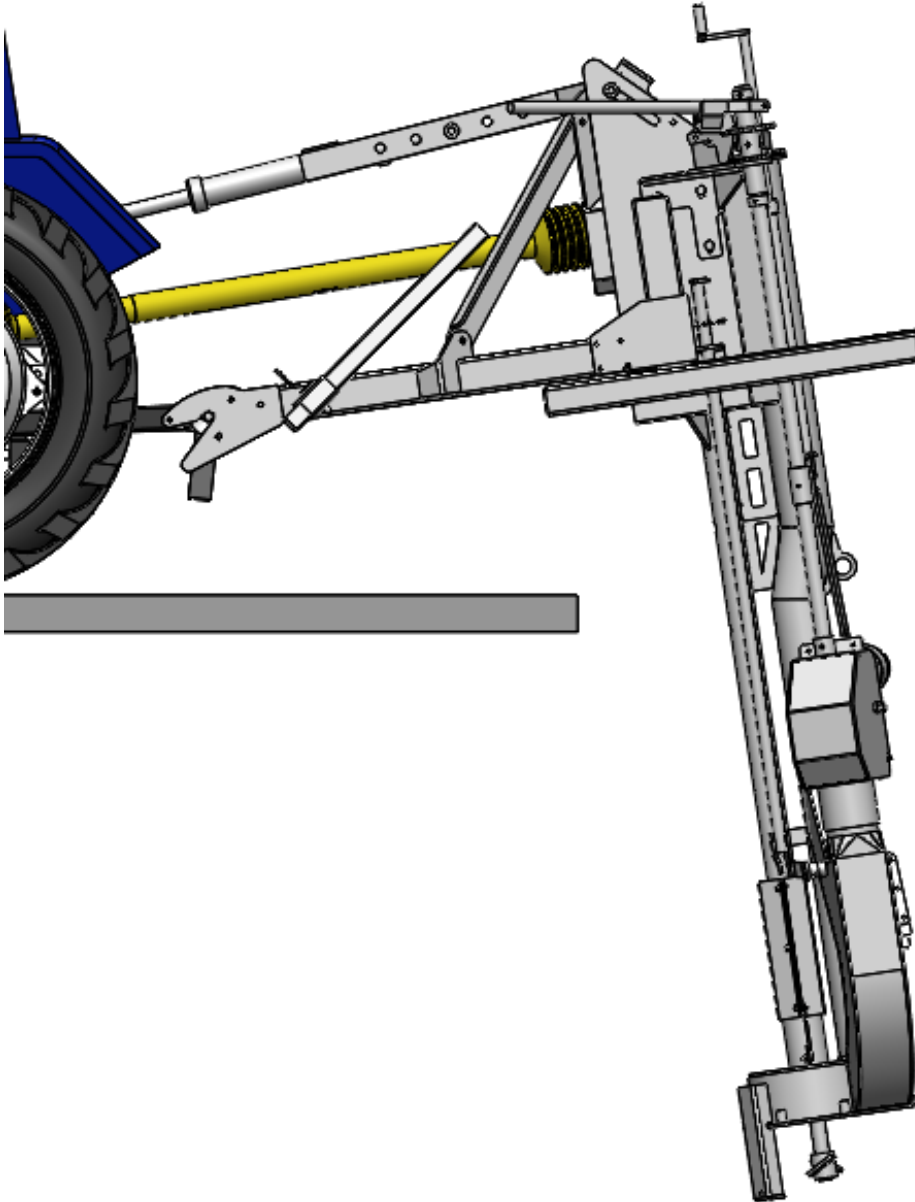
Due to the variations in tractor designs it may be possible to raise the pump against the rear window on some tractors. Be extremely cautious when raising pump.

**Placing the pump in a slurry pit or tank**

- Make sure the slurry nozzle is turned tight against the pumps main frame with the nozzle facing down in its lowest position.
- Raise the link arms to full height. (As shown below)



- Reverse back so that the bottom of the pump is above the manhole. Using the spool valve carefully extend the hydraulic ram and simultaneously reverse back and lower the linkage arms as the pump enters the tank. (As shown below)

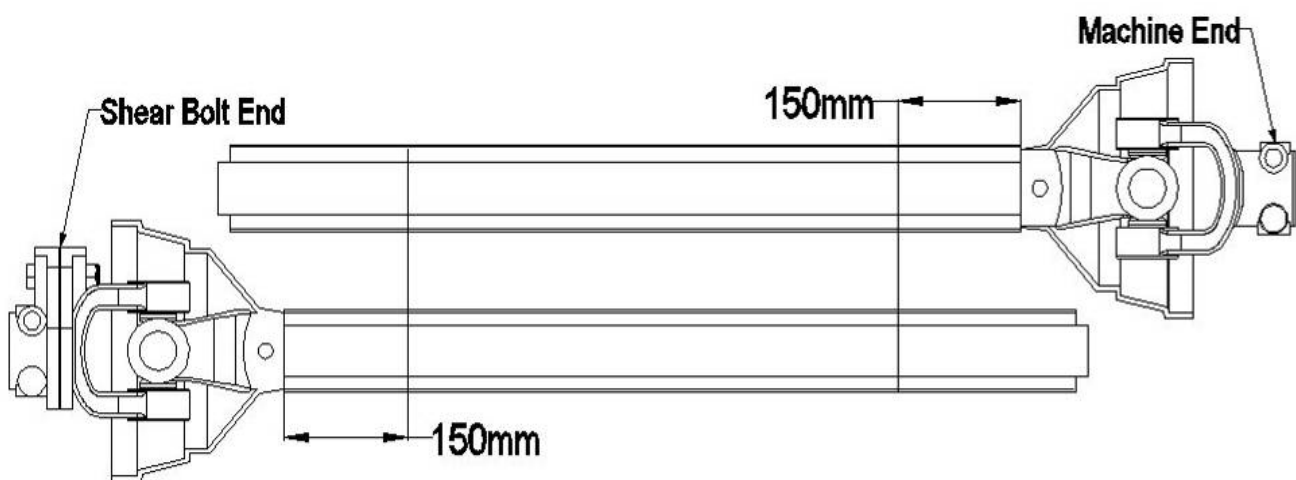


- Inspect the PTO shaft conforms to the standards on the next page.
- Allow the pump to soak for 2-3 minutes after placing in slurry. This will help ensure the bottom bearing is appropriately lubricated.

**NB: It is very important when reassembling the P.T.O. shaft to fit the guard properly.**

## Fitting PTO Shaft

- Turn the tractor to full lock to either the left or right to get the shortest point of the PTO shaft.
- Slide the PTO apart and fit the half with the shear bolt to the tractor and the other end to the machine.
- Lift the two parts of the PTO shaft up so that they are level with each other.
- Mark 150 mm (6") back from each other as shown in the diagram below.
- Cut off the excess profile.



# Operating Instructions

**Note:** Better mixing is achieved with a higher water content.

## Agitate/topfill lever:

- To agitate slurry the agitate/topfill handle must be in the agitate position.
- To pump out to a slurry store or fill a tanker etc, the agitate/topfill handle must be in lowest pin hole.
- To change pump from agitate to topfill position or vice-versa, the pump should be turned off. Any attempt to force the lever against the pressure of the slurry could result in damage to the mechanism or worse injury to the operator.

## Agitating Slurry:

- Position the tractor and lower the pump until just above the opening of the tank.
- Note: before inserting the pump into the tank the jetter nozzle must be turned tight against the main frame of the pump.
- While slowly reversing the tractor, extend the top link hydraulic ram until the pump is in the vertical position and at the required height.
- Allow the pump to soak for 2-3 minutes after placing in slurry. This will help ensure the bottom bearing is appropriately lubricated.
- Finally, with the tractor running at low revs engage the P.T.O. and slowly increase the speed to 540 R.P.M. for mixing.

## Filling:

- Position the tractor and lower the pump until just above the opening of the tank.
- Note: before inserting the pump into the tank the nozzle must be turned inwards to prevent damage to the pump.
- While slowly reversing the tractor, extend the top link hydraulic ram until the pump is in the vertical position and at the required height.
- Ensure topfill/agitate handle is in topfill position.
- Ensure there is an outlet adapter connected to the gatevalve and connect the outlet to a suitable container.
- Open the gate valve, and then engage the PTO drive at idle RPM.
- The flow rate can be increased by increasing the PTO shaft speed upto 540 RPM.
- In the event of blockage during operation:
  - Remove pump from slurry
  - Go to a safe area away from the open pit
  - Stop engine of tractor before attempting to free blockage

## **Removing pump from pit or tank:**

- Disengage the PTO
- Turn the jetter nozzle tight against the main frame of the pump (at right angles to the tractor) with the nozzle deflector in the lower position.
- Raise the tractor link arms to half height.
- Retract the hydraulic ram whilst simultaneously driving forward and lifting the linkage arms.
- Replace manhole cover or slats immediately.
- Wash the slurry pump thoroughly with water to prevent corrosion due to the contents of the slurry.
- When detaching the slurry pump from the tractor use the adjustable stands to support the slurry pump at a convenient level for reattachment to the tractor at a later date.

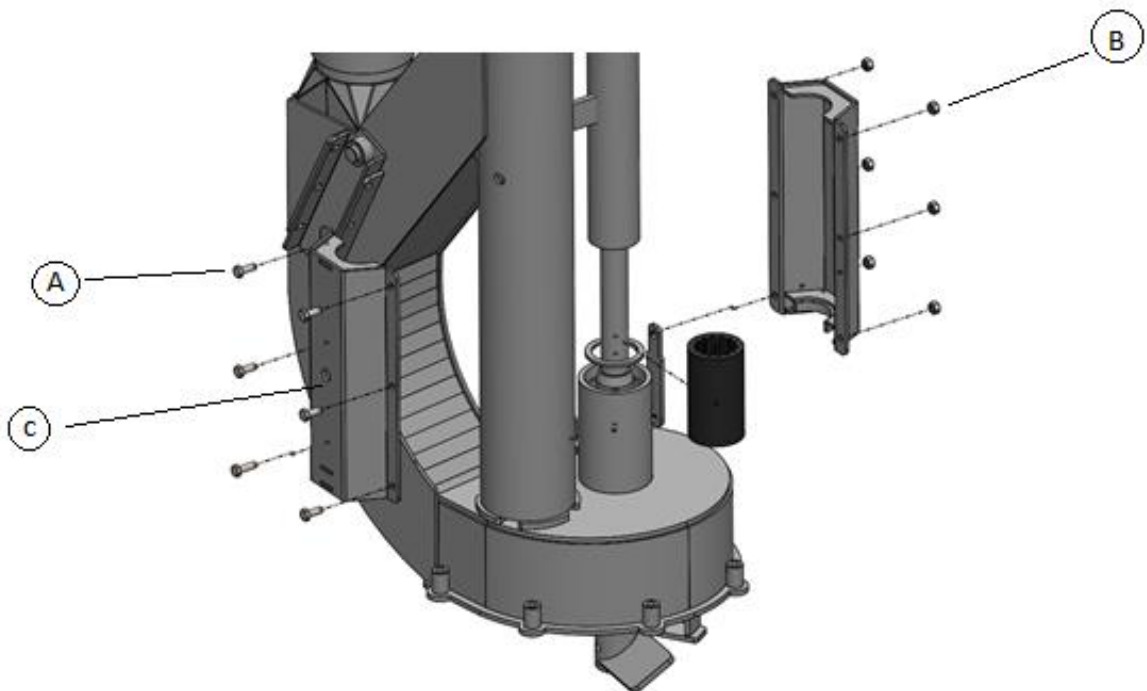
# Maintenance

**Before carrying out any maintenance on any parts of the slurry pump ensure that the P.T.O. shaft and hydraulic lines are disconnected from the tractor and that the machine is in a stable position.**

- Check the oil level in the gearbox before use and ensure that it is up to the required mark on the dip-stick.
- Check that all moving parts are well greased and that they are free to move in the required manner without any obstruction. If necessary rotate the rotor by hand to check its movement.
- Check that the rubber bushing around the rotor is not seized and that it is free to move.
- Check the pump at regular intervals for corrosion or damage of any type and ensure that the necessary repairs are carried out.

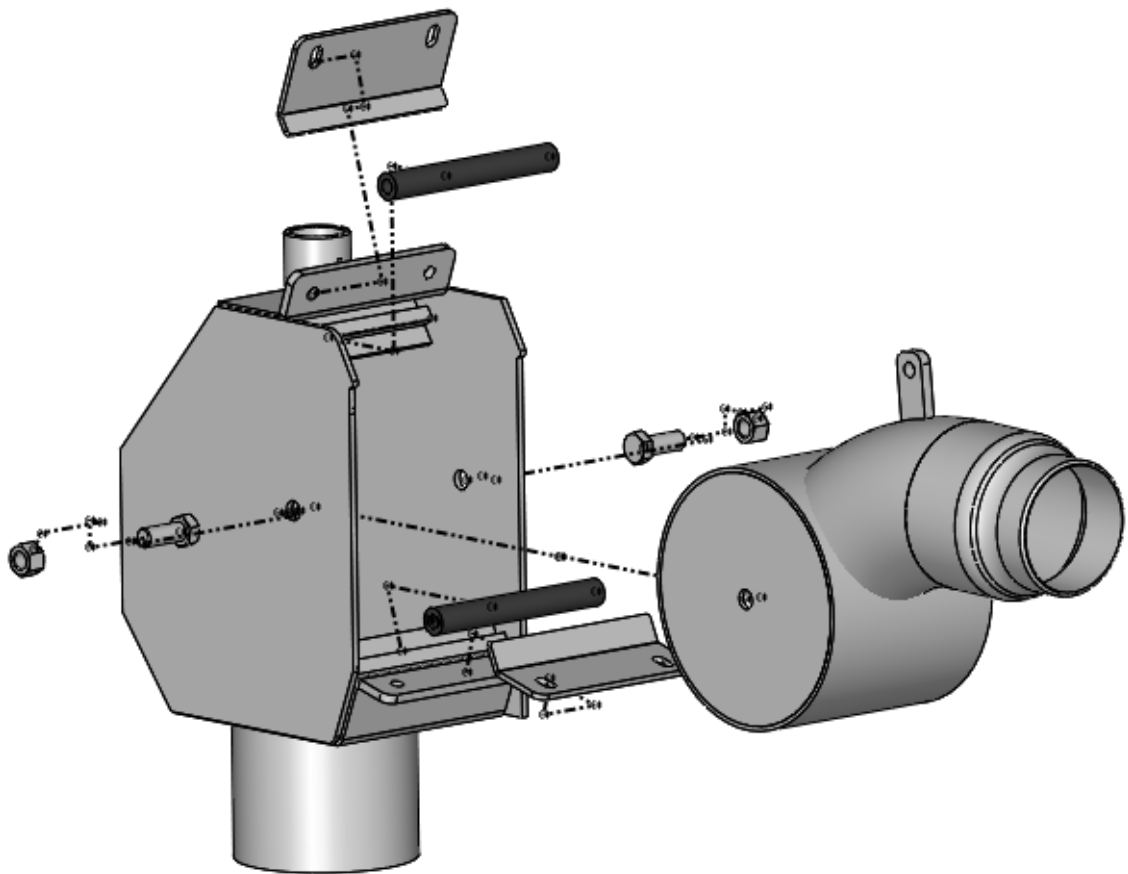
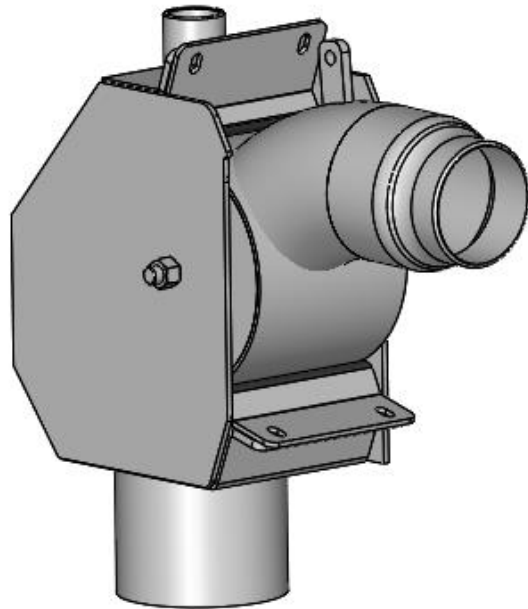
## Changing the bottom bearing:

- For access to the bottom bearing remove bolts A and nuts B
- Remove split guard C exposing the shaft.
- The old bearing insert can then be pulled out using long nose pliers.
- Clean out bearing housing thoroughly.
- Insert new bearing.
- Ribbed surface should be touching the shaft surface.
- Put guard back in place and tighten bolts.





# Spout Assembly:



# Sales and Service

## Ireland

### Head office

Hi-Spec Engineering Ltd., Station Rd, Bagenalstown, Co. Carlow, Ireland

Tel: - +353 59 9721929 Fax: - +353 59 9721980

Email: - [sales@hispec.net](mailto:sales@hispec.net) or [info@hispec.net](mailto:info@hispec.net)

### After Sales Service

Contact: - Eoin Keane, Hi-Spec Engineering Ltd. Tel: - +353 87 2562963

Email: - [eoin@hispec.net](mailto:eoin@hispec.net)

### Machine Servicing

Contact: - Michael Brennan, Hi-Spec Engineering Ltd. Tel: - +353 87 2403312

### Spare Parts Store

Contact: Mike Nolan or Terence Byrne, Hi-Spec Engineering Ltd.

Tel: - +353 59 9721929 Fax: - +353 59 9721980

Email: - [stores@hispec.net](mailto:stores@hispec.net)

## U.K.

### After Sales service:

#### Wales & Southern England

Contact: - Edward Lewis, Hi-Spec Engineering Ltd. Tel: - +44 7876 452698

Email: - [elewis@hispec.net](mailto:elewis@hispec.net)

#### Northern England & Scotland

Contact: - Gordon Brodie, Hi-Spec Engineering Ltd. Tel: - +44 07799 905130

Email: - [gordon@hispec.net](mailto:gordon@hispec.net)

### For spare parts

Contact: - Your local Hi-Spec dealer. If you require a contact name and number you can telephone head office and we would be glad to assist you.

# Warranty

The following is a list of warranty terms. Warranty claims will be disallowed if they do not fall into the categories shown here.

## Warranty Terms

1 Year Warranty on Drive System, Bearings

### **NO Warranty on the following:**

- PTO Shafts
- Hydraulic fittings
- Hydraulic hoses
- Electrical connections between machine and tractor

### **NO Warranty allowed for breakdowns due to:**

- Misuse of the machine, e.g. overloading by the operator
- Lack of maintenance, e.g. failure to carry out regular oiling and greasing of components and bearings where appropriate
- 

# Conditions of Sale

## General

In these conditions the word “Company” means Hi-Spec Engineering Limited. The word “dealer” means a customer of Hi-Spec Engineering Ltd. Purchasing machines from them for resale at recommended retail prices and the word “first user” means the first person to whom the dealer sells any goods for actual use. The company’s employees may negotiate orders and issue quotations but an order is only binding on a company when it has acknowledged the order in writing on the company’s official acknowledgement forms.

Such acknowledgement and confirmation will only be given subject to these conditions of sale. The acceptance of delivery of the goods either at the dealer’s premises or those of the first user if delivered direct to the first user shall bind the dealer and the dealer shall only sell to the first user on conditions which incorporate the company’s warranty. If he fails to sell the dealer shall have no claim whatsoever against the company except insofar as the company will honour the warranty to the dealer

and through him to the first user. The term goods where used means such articles as are invoiced by the company whether manufactured, imported, distributed or otherwise sold by them.

### **Delivery**

Should the company be prevented from delivering any goods owing to any lockout, strike, weather conditions, or other exceptional causes occurring either at their own premises, or elsewhere, then delivery shall be postponed until a reasonable time after the occurrence has ceased to cause delay, unless the parties shall mutually agree to the cancellation of the contract in respect of such goods.

### **Cancellation of Orders**

The only ground for acceptance of a cancellation of an order shall be the non acceptance of these terms and conditions by the dealer and then only if

Within seven days of receiving notification of the terms and conditions the dealer notifies the company in writing of its non-acceptance.

The dealer pays the company any losses suffered including any carriage charges if these have been incurred.

### **Delays**

While every effort has been made to adhere to delivery dates or times quoted by the company, such dates or times given though given in good faith are mere estimates only. The company accepts no responsibility for delay in delivery or for the consequences of such delay however caused nor shall the dealer be entitled to reject goods thereof by reason.

### **Design**

No responsibility is accepted for any deviation from drawings or from illustrations in catalogues, price lists, brochures or advertising material for discrepancies in weight, rated outputs. Performance from those mentioned here in which shall be treated as illustrative and approximate only.

### **Price**

Any fluctuation in prices arising after the contract but before dispatch shall entail adjustment in the contract price and the price to be paid shall be fixed at the date of dispatch.

### **Damage, Shortage or Loss**

The company do not accept any responsibility for any damage, shortage or loss in transit when goods are dispatched to instructions and where the transit is affected through a third party and not by the Company itself.

### **Conditions of Resale**

The dealer shall only re-sell any of the company's products with the full and unaltered warranty that is issued with every machine invoiced by the company. If the dealer either through negligence or for any other cause fails to get the agreement of the first user to accept this warranty the dealer shall have no other recourse against the company except that contained in these conditions of sale and he dealer expressly agrees that in accepting delivery he has recourse in law against the company nor will he join the company as third or other party in any action which results against him from the resale of the company's products.

### **Warranty**

The Company warrants its products through the dealer and through the dealer to the first user. The dealer shall only re-sell the company's machines with the benefit of the company's warrants. The said warranty is as follows:

The company warrants, subject as hereinafter provided, that all new goods supplied by it shall be free from defects in material and workmanship, its liability under such warranty being limited to making good at a factory to be nominated by it, such parts or parts which shall within twelve calendar months from the date which the product was delivered new to the retail purchaser be returned to the company or its authorised representative which the company is satisfied on its examination of the part or parts to have been defective in material or workmanship provided that. All replaced parts shall become the property of the company.

The foregoing warranty does not extend to any product which shall have been repaired, altered, neglected or used in any way so as, in the judgement of the company (whose decision is final) may have adversely affected its stability or reliability, nor does this warranty apply to proprietary articles, accessories or parts not manufactured by the company but where any such warranty is given by the manufacturers of such articles, accessories or parts any benefits under such warranty will be passed on by the company.

The company will not be responsible for damage or loss caused by incorrect machine settings, ground speed or operation of the machine in unsuitable conditions and the company's decision as to the suitability of the condition shall be final. Fair wear and tear is excluded from any claim and no responsibility whatsoever is accepted for damage, which in the company's Opinion is caused by hazards of soil, stones of foreign objects.

The warranty is transferable to a second or subsequent owner (within the warranty period) subject to the company being notified in writing of this change of ownership.

Complaints referring to faulty or incomplete deliveries or to obvious faults must be notified to the dealer in writing within fourteen days after receipt of goods. In the absence of such notification delivery shall be considered as having been accepted as in good order and condition.

The company does not give any warranty in respect of its goods except therefore going Warranty which is given expressly in lieu of and excludes all other warranties and conditions expressed or implied whether under common law, Statute or otherwise and every form of liability for loss or damage direct or consequential or for any accidents resulting from defective material faulty workmanship or otherwise, is expressly excluded.

### **Liability**

In no circumstances whatsoever shall the Company's liability (in contract, tort or otherwise) to a buyer under, out of or in connection with this contract or the goods supplied exceed the invoice price of the particular goods in regard to which component is made.

### **Title of the Goods**

The title in the goods shall not pass to the customer until the customer shall have discharged all sums due by the customer to the company at the date of the final handing over of the possessions of goods

### **Interest**

If the customer shall fail to pay any sum due in foot of this transaction within fourteen days after the same shall become due, the customer shall pay interest thereon calculated from the due date of payment at the annual rate equal to 4% over the prime rate charged from time to time by the associated banks on secured loans to individual customers.

# Registration Forms



Hi-Spec Engineering Ltd.  
Station Rd., Bagenalstown,  
Co. Carlow, Ireland  
**Tel: - 059 9721929**  
**Fax: - 059 9721980**

Please complete the following forms in full.

The first is a warranty registration form; this form is issued in accordance with our conditions of sale and with particular reference to the condition governing warranty. We cannot process a claim unless all particulars are supplied.

The second is an acceptance form, which the purchaser is asked to sign to acknowledge he/she has received a copy of the Operator manual and full training for the machine purchased.

Please do not sign if you have not received both of these.

## ***Warranty Registration***

Date of Purchase: \_\_\_\_\_  
Purchaser's Name: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Dealer's Name: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Machine Type: \_\_\_\_\_  
Machine Model: \_\_\_\_\_  
Serial Number: \_\_\_\_\_

## ***Training & Operator Manual Registration***

Please sign the following declaration to state that on the day you (the purchaser) purchased a Hi-Spec \_\_\_\_\_ you received an operator manual and training instructions.

I the purchaser have received my Hi-Spec \_\_\_\_\_ Operator Manual and training from the below dealer.

Purchaser: \_\_\_\_\_ Signature: \_\_\_\_\_  
Date: \_\_\_\_\_  
Dealer: \_\_\_\_\_ Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

*This copy is to be kept in your manual for your reference.*

# Registration Forms



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Date: \_\_\_\_\_  
Dealer: \_\_\_\_\_ Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

*This copy is to be posted to Hi-Spec Engineering or given to your dealer*



# Declaration of Conformity

## EC Machinery Directive

2006/42/EC

We hereby certify that the machinery stipulated below complies with all relevant provisions of the EC Machinery Directive.

Modifications to the machine without prior approval from the undersigned will render this declaration null and void.

Machine Description and Function: Slurry Pump, designed for agitating and pumping slurry

Make: **Hi-Spec**

Model: **Super 300**

Serial Number:

Manufacturer: **Hi-Spec Engineering Ltd.**

Address: **Station Rd, Bagenalstown, Co. Carlow, Ireland**

Harmonised standards applied:

EN ISO 12100-1:2003, Safety of machinery Part 1: Basic terminology, methodology

EN ISO 12100-2:2003, Safety of machinery Part 2: Technical principles

EN ISO 4254-1:2005, Agricultural machinery -- Safety -- Part 1: General requirements

BS EN 690:1995, Agricultural machinery, Manure spreaders, Safety

Signed: \_\_\_\_\_

Date: **26<sup>th</sup> February 2018**

Name: **Mike Nolan**

Position: **Managing Director**

Being the responsible person appointed by the manufacturer.

Hi-Spec Engineering reserve the right to make changes and improvements at any time without incurring any obligation to make such changes on products previously sold.