SLURRY PUMP

SP100

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'Quality, Strength & Personal Service'

This manual is provided to assist you in getting the best results from your Slurry Pump and ensure that you do so safely. Please see the HSE safe system of work for slurry at the back of this manual before operating the pump. If you have any queries about the use of the Slurry Pump contact your dealer before use. Please keep this manual for future reference.

The Fleming Slurry Pump is robustly designed and manufactured to cater for all size of operations. Stream line design of the paddle box and exit chute, ensure that the operator always achieves maximum output flow with minimum power requirement. The pump is protected with a galvanised coating for extended life.

1.1 FUNDAMENTAL PRECAUTIONS

On delivery, your dealer gave you an explanation of the operation and maintenance of this Fleming Slurry Pump. Please read and understand these operating instructions before operating the machine for the first time. It is essential that you observe all safety instructions.

Incorrect use or mishandling of the Slurry Pump can endanger:

Life and Limb of the operator, other persons or animals within the vicinity of the machine.

The machine and other material assets of the owner or third persons.

The performance of the Slurry Pump

Anyone who is involved in the commissioning, operation or maintenance of the Slurry Pump must read and understand these instructions very carefully and observe them at all times.

1.2 AUTHORISED OPERATORS

Youths under the age of 18 must not operate the Slurry Pump. The owner of the machine must provide the operator with the operating instructions and make sure they have read and understood them. Only then may the Slurry Pump be put into operation.

The owner must ensure that only authorised persons operate/work on this Slurry Pump. He/She is responsible for keeping any third persons or animals out of the working area of the Slurry Pump.

Any bystanders in the vicinity of an operating pump, apart from the person operating the machine must observe a safe distance of at least 10 metres.

1.3 GENERAL SAFETY AND ACCIDENT PREVENTION REGULATIONS

Before operation make yourself familiar with all elements and controls of the Slurry Pump as well as their functions. Ensure the Slurry Pump is correctly and securely attached to the operating tractor. The recommended method of attachment is to use the tractor 3-point linkage.

Never attach the Slurry pump to a tractor below 80HP.The attaching and detaching of the Slurry Pump to a tractor must be carried out by only one operator. There should not be any other people in the vicinity of the implement or in the tractor.

Always attach/detach slurry pump on a hard level surface.

NEVER allow children to play on or around tractors and machinery.

NEVER operate the Slurry Pump unless all safety guards are fitted and are firmly in position. ALWAYS ensure that all guards and covers are replaced after carrying out maintenance or adjustments.

Operators should not wear loose fitting clothing when working close to PTO driven equipment. Keep long hair tied back. **NEVER** be in the vicinity of a rotating PTO shaft.

ALWAYS disengage the PTO shaft, apply the hand brake, stop the tractor and remove the key before carrying out any maintenance or adjustments to the Slurry Pump

Before operation inspect the area around you. Keep children away. All visitors and unauthorised persons should be kept well away from work area.

NEVER attempt to move the Slurry Pump manually.

To avoid personal injury keep hands and limbs well away from the moving parts**.**

Under NO circumstances should anyone, authorised or otherwise attempt to use the Slurry Pump as a means of personal transport. It is designed as a special purpose farm implement and is unsuitable for the safe transportation of passengers. **NEVER** allow anyone especially children to travel anywhere between the tractor and an implement.

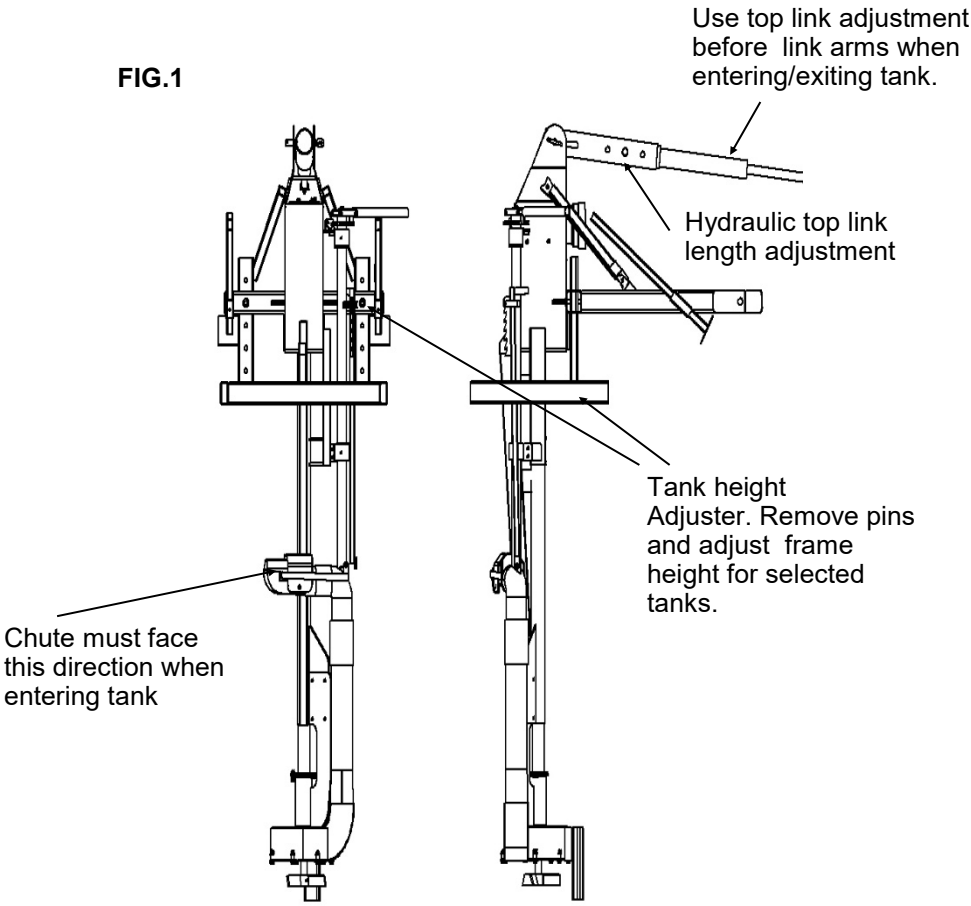
Where local laws permit ensure that a flashing amber beacon is mounted on the cab of the tractor and is always used when transporting the Slurry Pump on the road.

The geometry of the slurry pump leaves a large overhang/tailswing at the back of the tractor. Extra care must be taken when transporting the pump at night.

The operator must always be aware that the tailswing could become a potential crush zone when turning in transport position.

1.4 GENERAL OPERATING INSTRUCTIONS

FIG.1



On entering the slurry tank ,use the hydraulic top link adjustment first. When the ram has reached the end of its stroke,you can then use the lower link arms to lower the slurry pump into tank if required.
To prevent chute damage on tank opening, always position chute as shown in **Figure .1**

Pumping height can be adjusted up/down by 400mm to facilitate various depths of tanks. See **Figure .1** also.

Never run the slurry pump above 540 RPM. (Engage the PTO with the tractor engine idling and gradually increase the RPM until the PTO speed = 540 RPM.

Any areas left uncovered when the pump is in the tank , must be adequately covered up for the entire period when the pump is in the tank. This situation mainly occurs when slats need to be removed.

SLURRY GASES CAN KILL. Vacate slatted houses of animals and people when mixing is in progress. Do not stand near tank openings or stoop to floor level when mixing. Secure suction hoses to prevent them from falling into the tank. Do not enter a below ground level tank. If unavoidable attach a lifeline held by two persons.

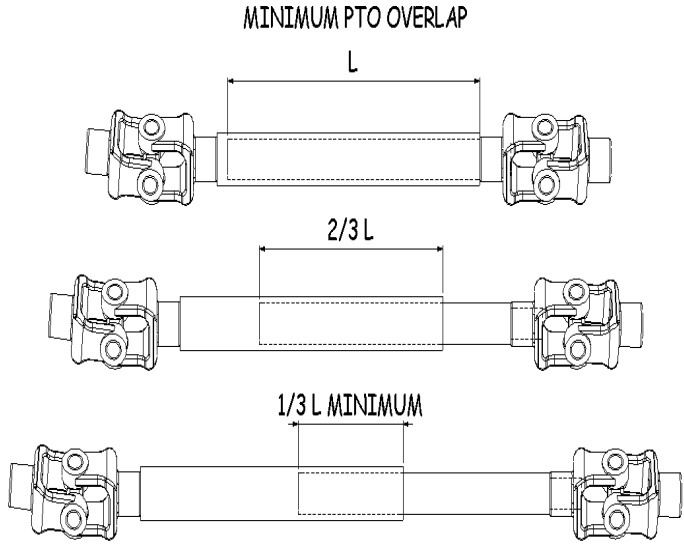
SLURRY GASES CAN BE FLAMMABLE. Never allow naked flames near the tanker or tank openings.

NEVER DISTRACT PERSONS WHO ARE USING THIS MACHINE.

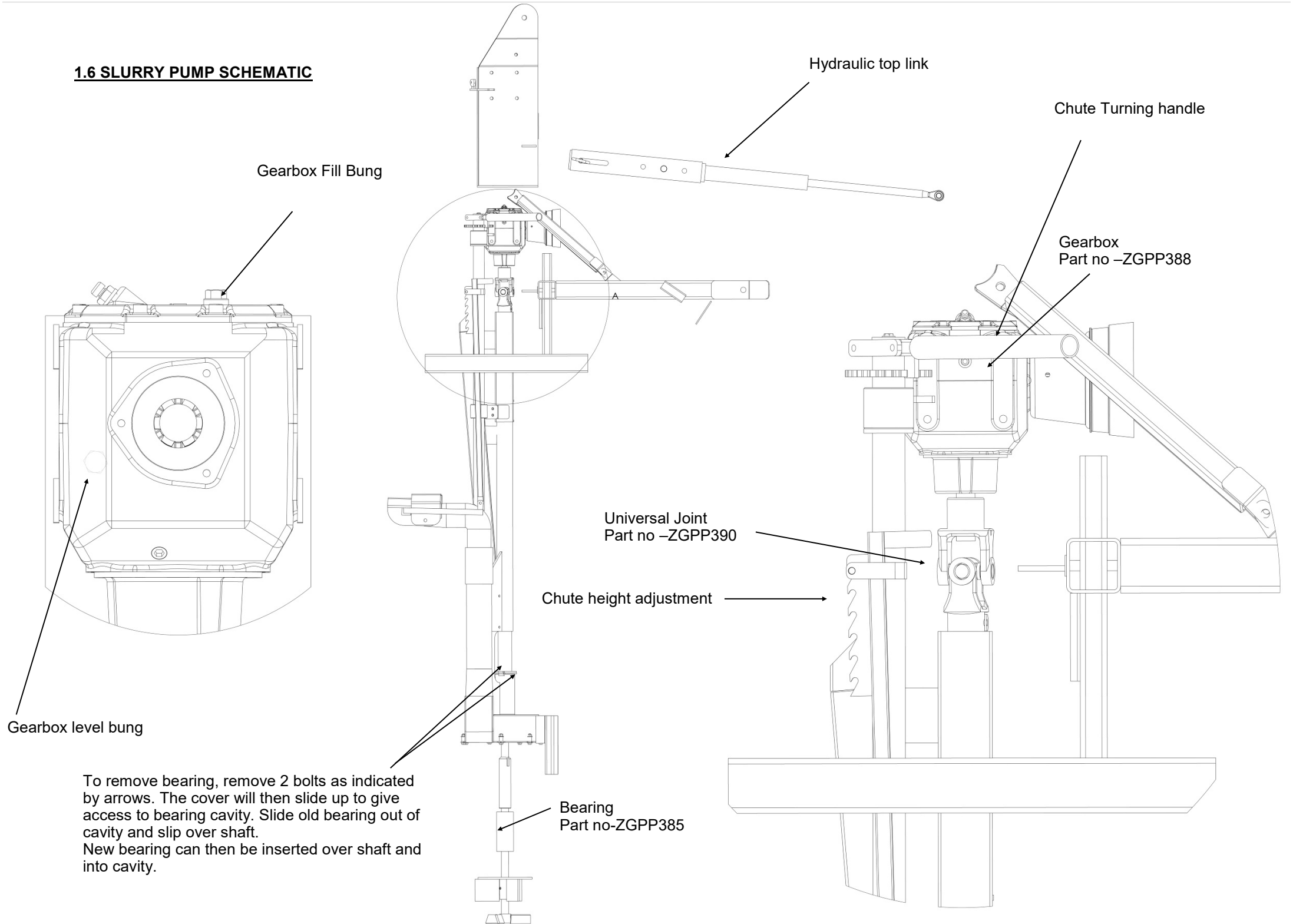
1.5 PTO SHAFT LENGTH

The PTO shaft length may be altered to suit individual tractors. During operation when the PTO is at its maximum extended length there must be a minimum overlap of 1/3 PTO shaft length as shown in the minimum PTO overlap diagram.

The Slurry Pump should be hitched to the tractor and be checked in various positions to ensure that the PTO drive line is the correct length. Remember that undulating ground can also affect the length of the PTO shaft.

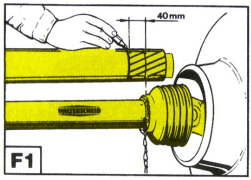


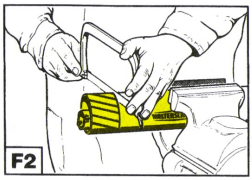
1.6 SLURRY PUMP SCHEMATIC

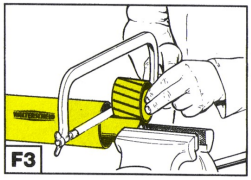


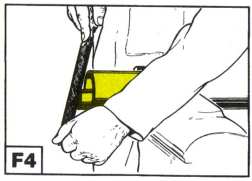
1.7 SHORTENING THE PTO SHAFT.

If the PTO is too short with a tendency to separate, then it must be replaced with a longer one.
If the PTO is too long, it should be shortened using the following method.









- Set the Slurry Pump at its minimum distance from the tractor. Brake the tractor and switch off the engine.
- Separate the PTO. Attach the female part to the tractor PTO and the male part to the pump PTO. Ensure that the fixing pins have “clicked” into position and are engaged.
- Keeping the two halves of the PTO parallel line them up side by side. Fig 1.
- Match mark where the two halves are to be shortened. Fig 1.
- Taking one half of the PTO cut the shield at the mark. Fig 2.
- Using the cut off piece as a guide (fig 3) cut the shaft.
- Proceed in the same way with the other half of the PTO.
- Trim and de-burr the two cut ends of the PTO and clean off all swarf. Fig 4.
- Grease the two profiles and join the two halves of the PTO together.
- Fit the PTO shaft to the tractor and Pump and check as before that its length is correct ensuring that minimum overlap advice is observed.

1.8 MAINTENANCE

As a rule, disengage the driving system and stop the engine prior to carrying out maintenance, servicing, cleaning or repair work. **ALWAYS** remove the ignition key.

The manufacturer will not be responsible for any damages or injuries caused by unauthorised repair, alterations or mishandling of the product.

Maintain the product with care. Check periodically for damage that would affect the safe operation of the Slurry Pump

Regularly check all bolts and tighten if necessary.

Grease all labelled points regularly

Only use clean grease complying to Din 51502.

ALWAYS ensure all warning stickers are kept clean and in good condition.

1.9 GEARBOX MAINTENANCE.

The gearbox requires approximately 3 litres of oil from empty, However the level bung is the level the oil should rise to.

Top gearbox up to required level with Mineral gear oil, according to ISO VG 320.

Suitable oils for slurry pump gearbox

-Mobilgear 632 (MOBIL)

- Spartan EP 320(ESSO)

- Omala Oil 320 (SHELL)

Periodically check the oil level in the gearbox of the pump. This should be done when the pump is in the tank /working position with the hydraulic top-link extended.

Change the gearbox oil after the first 50 working hours and then every 300 working hours.

Grease the following	**Initially**	**8 hours**	**40 hours**
PTO shaft universal joints	Y	Y	
PTO Shaft Male profile	Y		Y
All Bushes	Y		Y

MAINTENANCE SCHEDULE:

2.0 HYDRAULIC SAFETY

CAUTION The hydraulic system is under high pressure.

Ensure that only high-pressure hoses are used to connect supply to the Slurry pump hydraulic cylinder(s). Check hoses regularly and renew any that are damaged or worn.

Before working on the hydraulics release the pressure from the hydraulic system and stop the tractor engine.

When connecting hydraulic rams make sure that the hydraulic hoses are coupled correctly. Pressure should be released from the system both on the tractor and on the implement side prior to coupling the hoses to the tractor hydraulics.

CAUTION Hydraulic oil forced out under pressure can break the skin and cause severe injury. In the event of a hydraulic oil leak stop the tractor flow immediately. **DO NOT PUT HANDS NEAR A LEAKING PIPE.**

3.0 FITTING TO TRACTOR

To safely mount and dismount the implement to a tractor you must follow the instructions below and as a single person operation ensuring that others are at a safe distance before commencing.

Firstly fit Cat. 2 balls to the lift points using the pins provided. Next back the tractor toward the implement. You can then engage the lift arms to the lift points, from the cab ensure the lift arms are correctly engaged to the lift points and locked in place. Next raise the implement enough to allow the top link to be fitted, then fit the hydraulic top link including the hydraulic hoses. At this point the stands should be raised. Following this you can fit the PTO shaft (ensuring the tractor is switched off) and the safety chain. The machine is now ready for use.

To dismount you must first find hard level ground to dismount onto. Following this you should remove the PTO shaft (ensuring the tractor is switched off) and safety chain. Next raise/lower the machine to allow the removal of the hydraulic top link, you can now remove the top link and the relevant hoses as well as lowering the stands at this time. Now you should disengage the lift arm locks and from the cab check they are engaged before lowering the lift arms. Again from the cab ensure the lift arms are fully disengaged, if so you can safely begin to pull the tractor away from the implement. Finally remove the balls from the lift points.

Health And Safety Executive
Safe System Of Work (Slurry)

- If possible, mix on a windy day.
- Keep children away from the area at all times when working with slurry.
- Take all animals out of the building before starting to mix slurry.
- Open all doors and windows.
- Use outside mixing points first.
- If slats are removed, cover exposed areas of the tank beside the pump/mixer to stop anything falling in.
- Start the pump/mixer and then stay out of the building for as long as possible - at least 30 minutes or longer depending on the size of the tank.
- If you have to go into the building make sure that another adult, who knows what you are doing, stays outside the building and can get help if needed.
- If you have to re-enter the house to move the pump, or change the direction of the pump, then you need to leave the building as soon as this is done. Do not go back in for as long as possible - at least another 30 minutes or longer depending on the size of the tank.
- Avoid naked flames, as slurry gas mixture is flammable.
- Do not stand close to the pump/exhaust of a vacuum tanker when it is being filled.

DECLARATION OF CONFORMITY

CONFORMING TO EC Machinery Directive 2006/42/EC

We:

Fleming Agri-Products Ltd
Newbuildings Industrial Estate
Newbuildings
Northern Ireland
BT47 2SX

declare in sole responsibility, that the products

Type: SP100 SLURRY PUMP

to which this certificate applies, conforms to the basic safety and health requirements of the EC Machinery Directive 2006/42/EC, and the Transposed Harmonised Standards:

BS EN 4254-1 (2015)
BS EN 707 (2018)