

# The FigTri Grain Pump

## What is a Grain Pump?

The FigTri Grain Pump is a continuous loop grain conveying system that moves grain between the many operations required by an efficient grain handling system. The FigTri grain loop can replace all of the traditional conveying systems (vertical conveyors, vertical bucket elevators, chain conveyors, grain legs, and drag chain conveyors) with one versatile grain handling system. The Grain Pump is a continuous loop of chain conveyor and tubing encircling your bins at the bottom and around the top, enabling the connection of many bins into one grain system that can be selectively filled and emptied with ease.

The FigTri Grain Pump lets you move grain with gentle efficiency and at high capacities using a very simple and powerful chain conveyor system, in an enclosed loop. This loop chain conveyor will both elevate and convey your grain horizontally all with one simple piece of equipment. Compared to the traditional bucket elevator / level drag conveyor system design the loop conveyor accomplishes all of the same tasks with one piece of equipment that would require as much as 10 different pieces in the traditional way of handling grain – obviously there are going to be some cost savings with the loop conveyor. The other obvious savings is reduced maintenance cost, if you have one piece of equipment with one drive (loop conveyor) compared to the traditional bucket elevator system that achieves all the same tasks as a loop with 10 different drives – which do you think will produce more maintenance issues?

The paddles inside the continuous loop of tubing are designed to keep your grain flowing gently and evenly from inlet to discharge – just like the paddles you will see in traditional level drag conveyors these paddles prevent steel on steel contact in the conveyor which reduces wear and increases conveyor life. These round, plastic paddles cover most of the circle inside the pipe (notched on one side to allow the paddle to pass by the sprocket corners) which allows this chain conveyor to elevate the grain as well as convey it horizontally. The paddles move through the pump on heavy-duty chain designed specifically for the system and the loads presented.

The closed-loop design offers the versatility to create a complete load-in/load-out system that also provides recirculation capabilities. One or more bins can be unloaded at a time into the loop. Reduced drying costs can be achieved with this innovative system by blending higher moisture and dried grain from one bin to another.

The possibilities are nearly unlimited. Install the pump beneath a row of bins, or in an existing in-line system, the pump may be angled to pick up from conventional unload in front. The system may provide down-the-road expansion capabilities.

The pump can incorporate many storage bin units and provide easy in-load and out-load to trucks or wagons, moving product vertically and horizontally with ease.

## Advantages of using a Grain Pump

The FigTri system, when joining a line of storage bins, can be designed to provide the following advantages for your farm or commercial storage system:

- Quick convenient in-load
- Quick convenient out-load
- Blending of grains
- Turning product within one bin or from one bin to another bin
- Easy incorporation of "off-line" functions such as drying, cleaning, rolling, grinding or other processing
- Ease of expansion
- Ability to incorporate many bins into the system
- And, all with push button automation

## Features

- An entire family of attachments and options enable the system to accommodate any bin combination.
- Provides expansion capabilities. In the first phase of the system install large enough drive corners to allow you to extend the loop length to more bins in the future.
- Needs less maintenance than traditional conveying system. This is one piece of equipment doing the work of as many as ten in the traditional Bucket Elevator / Level drag Conveyor system design
- Can reduce drying costs by blending higher and lower moisture product from one bin to another.
- Can increase your volume of higher grades of grain by allowing you to easily blend off lower quality grains into higher quality at the push of a button.

## How the Grain Pump Works

The FigTri Grain Pump is a continuous loop of chain conveyor and tubing encircling bins at the bottom and around the top, enabling the connection of many bins into one grain system, which can be selectively filled and emptied with ease.

## Pictures

The grain moving mechanism consists of an encased chain and paddles, 2 horizontal runs, 2 vertical runs and 4 - 90° corners. The paddles are notched to facilitate the chain moving around the big sprockets in the corners within the system. The FigTri Grain Pump is a totally enclosed and sealed system, the most innovative system made today.

The chain and paddles in the FigTri Grain Pump move the grain en masse in the round conveying chamber, resulting in gentler grain handling and the consumption of less power to move the same amount of grain.

This arrangement facilitates a number of grain handling operations within a single system. Inload/Outload, blending, turning, and offline functions are all easily accomplished with one simple system. The systems modularity also provides for easy expansion as demands change.

Because of the conveyor chain, the system must run in a straight line between the sprocket corners. Although a number of functions can be provided for, the straight-line requirement remains constant.

The Pump can be installed vertically, in a new system, or may be installed on a slant, where pre-existing bins are being incorporated into an upgraded system. To see a variety of potential layouts, see the grain system layouts.

Grain exits the system through a manual or electric switch-controlled top discharge gate. The function of top discharge gates is to change the direction of grain flow with minimal stress on the system. It slows the grain down as it is being directed into the bin or back to the truck at a 90° angle.

At the bottom, material can be fed back into the system from bins through a hopper discharge transition mechanism. This promotes smooth, controlled grain flow, and avoids grain hang-up.

The top discharge gate and the bottom hopper discharge transition are only two of a whole host of ways to get product into and out of the system. You can enter or exit the system with gravity from bins, trucks, spouts or by augers, chain conveyors, truck hoppers, and railcar loaders/unloaders, to name only a few.

### Features

- One or both top corners will have reducer drives with electric motors, depending on the length and height of the system.
- One bottom corner will be the inspection corner leaving one or two standard sprocket corners.
- Automatic Chain Tightener (on the inspection corner)
- Motor Mount(s) and pulley(s)
- Sheaves
- Drive Belts
- Housing Connectors

All components are galvanized steel or powder coated.



Inspection Corner Complete with Automatic Weighted Chain Tightener.



Truck Dump



Top Discharge Gate



Sprocket Corner

