

FULLER KINYON® PUMPS

FOR PNEUMATIC CONVEYING

ROBUST, RELIABLE WORKHORSES
OF INDUSTRY SINCE 1919



FLSMIDTH
CEMENT

REVOLUTIONIZING MATERIALS HANDLING

The Versatile Fuller-Kinyon® Screw Pump for Today's Pneumatic Conveying

Originally designed as a way to safely transport pulverised fuels, the Fuller-Kinyon® screw pump has proven itself to be a must-have component in materials handling systems worldwide. Evolving to be capable of handling greater throughputs, longer conveying distances, and the increasing complexities of today's dry bulk materials processes.



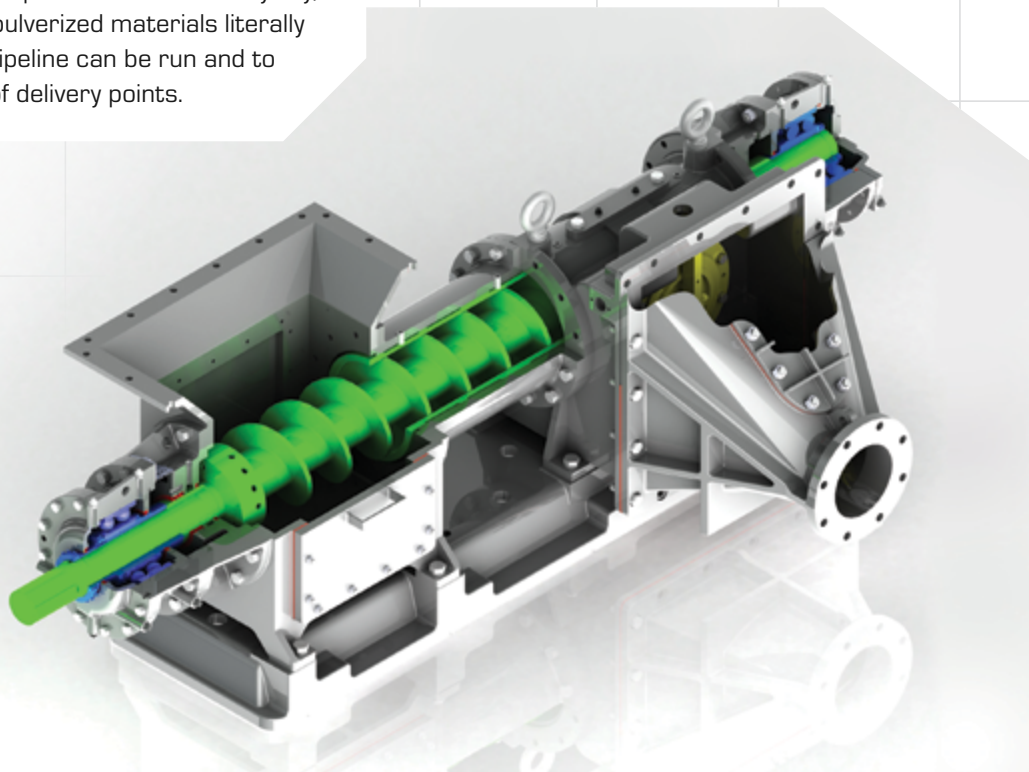
BENEFITS

- Simple maintenance
- Cost effective operation
- Suitable for high capacities and long distances
- Energy efficient
- Robust, durable design
- Versatile and flexible

TYPE M FULLER-KINYON® PUMP

Robust, flexible conveying over long distances

Achieve reliable, clean, consistent conveying across distances up to 4500 ft. (1375 m) with the Type M Fuller-Kinyon Pump. These heavy-duty, screw-type pneumatic pumps are used to convey dry, free-flowing, pulverized materials literally anywhere a pipeline can be run and to any number of delivery points.

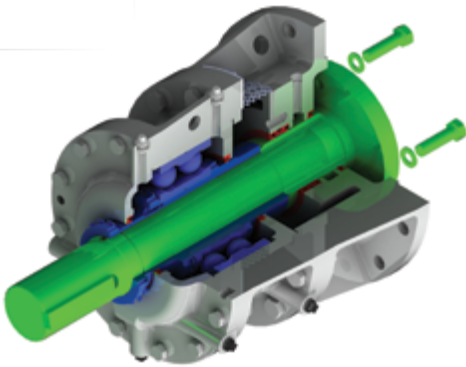
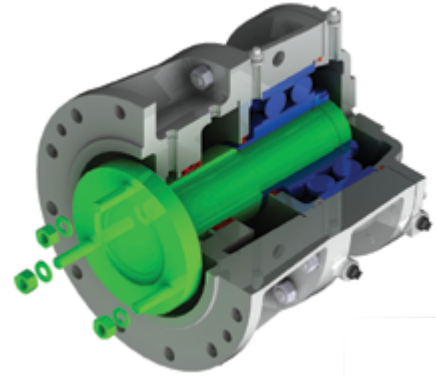


HOW DOES IT WORK?

The screw pump hopper is gravity-fed. Materials are pushed through the barrel by the screw, which compacts the material as it advances. The material density is further increased in the space between the terminal flight of the screw and the face of the non-re-turn valve, forming a seal against the transport line pressure, which prevents blowback. When the material enters the discharge body it is fluidized by compressed air and conveyed into the transport line.

ROBUST DESIGN

Like all FK Pumps, the M Pump is built to last, with a cast iron and steel construction that is further strengthened with wear-resistant material and special hard surfacing at all points where the pump is in direct contact with the material being conveyed.



Fuller-Kinyon Type M pumps are equipped with ball bearings that support a pump screw at both ends to help provide a smooth, balanced operation. Standard equipment on Type M pumps includes a pressurized seal and bearing assembly that extends the service life of the discharge seals by preventing the material being handled from entering the bearing area. Each pump system includes the pump, drive motor and compressed air source. The screw is directly coupled to the driving motor but can be v-belt driven.

SPECIFICATIONS TYPE M PUMP

Capacities

Diameters ranging from 150mm to 350mm with capacities up to 450 mtph of standard Portland cement

Conveying Air Line Pressure Range

Up to 25 psig (~ 1.72 Bar)

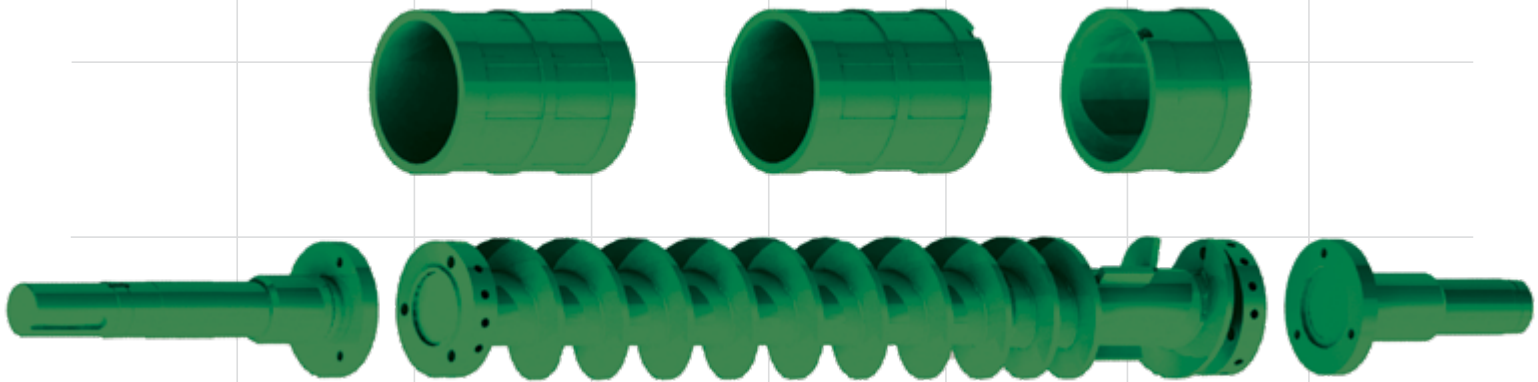
SPECIALTIES

Maximum material temperature

for standard Type M: 400°F (~ 200° C)

Type M Pump can be furnished to meet NFPA / ATEX requirements for pulverized fuel firing systems.

QUICKER, EASIER MAINTENANCE WITH 3-PIECE SCREW

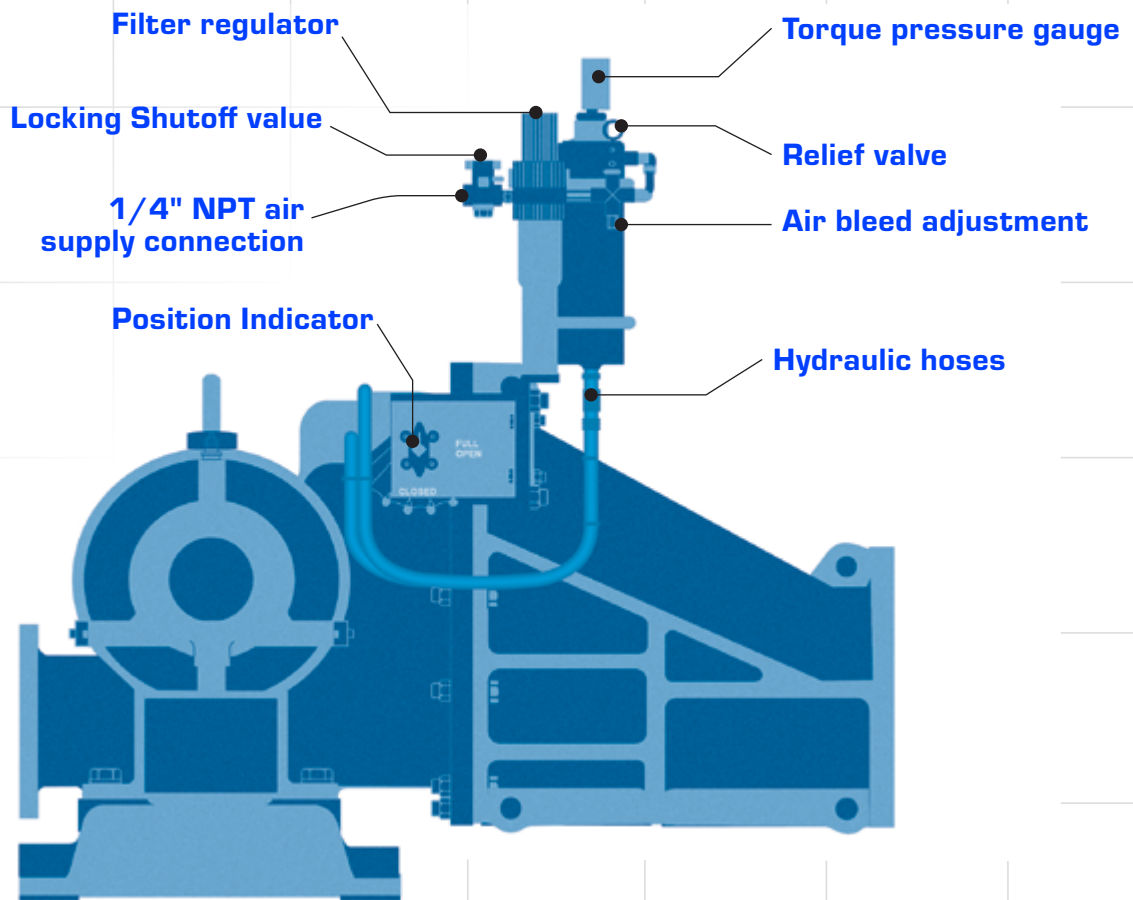


FLSmidth Cement introduced the 3-piece screw design as a conversion kit for existing pumps and as the standard for all new Type M pumps sold. The 3-piece screw makes maintenance both quicker and easier, cutting screw change-out time by up to a third.

The 3-piece screw splits the pump screw into three sections – the centre section being the replaceable wear part. This eliminates the need to disconnect the coupling to perform maintenance, saving the bearings and seals from being exposed to a dusty, dirty plant environment.

IMPROVE PERFORMANCE WITH PNEU-FLAP PNEUMATIC TORQUE CONTROLLER

The Pneu-Flap Pneumatic Torque Controller is designed to provide a constant torque through the full range of motion of the pump discharge flapper valve, thereby maintaining a good material seal at all times between the pressurized conveying line and the pump screw. This upgrade to the M Pump improves performance and increases capacity, while also reducing wear due to less blow-back through the flapper valve. Because it is easily adjustable to specific operating conditions on the fly, you get reduced power consumption, more stable operation and a lower overall maintenance cost.



Pneu-Flap, Pneumatic flapper Torque Controller

TYPE N FULLER KINYON PUMP

**Greater capacities,
greater flexibility –
now also suitable
for ship and barge
unloading**

Increased energy efficiency and higher convey line pressures are now possible with the latest generation Type N Fuller-Kinyon Pump. Based on the same design principles as the M Pump, the N Pump incorporates upgrades that improve throughput, flexibility and efficiency.

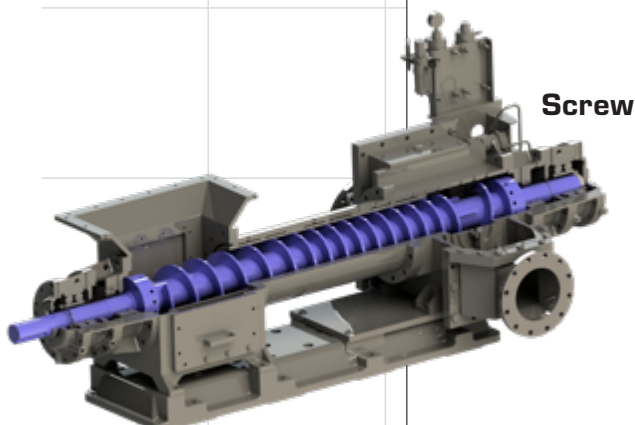
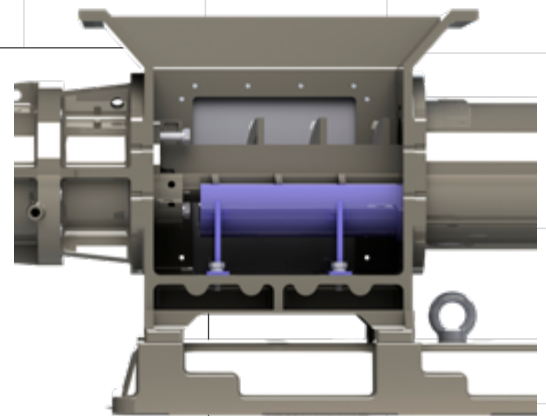
FK N PUMP UPGRADES

The FK N Pump uses the same operating principles as the M Pump, but with four main improvements.

1 IMPROVED THROUGHPUT

The inlet housing was initially designed as an open chamber that collects the material for the screw to begin conveying. We have added a trough inside the inlet housing, which enables the pump to better collect the material and improve throughput through the inlet hopper.

Inlet Housing



Screw

2 HIGHER CONVEY LINE PRESSURES

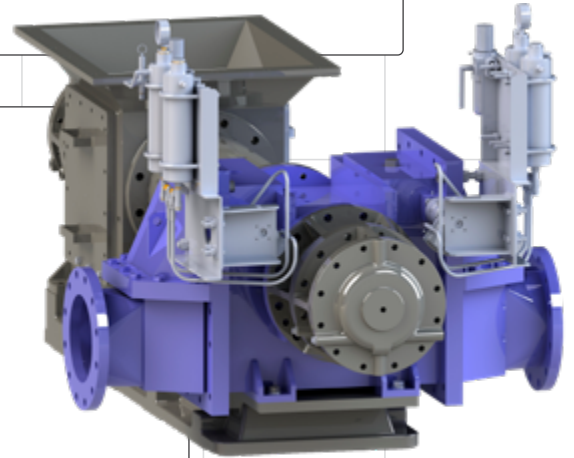
The length of the barrel and screw have been increased, enabling us to increase the seal inside the barrel. The flights on the screw have been redesigned to take full advantage of the larger barrel. This improves volumetric efficiency by more than 15% and enables higher-pressure capabilities.

3 POWER SAVINGS

The improved seal also results in greater energy savings on the higher-pressure applications (20 – 25 psi and higher) and power savings of up to 15% in like-for-like applications.

4 DUAL DISCHARGE HOUSING AS STANDARD

This gives you flexibility on the direction of the convey line and air supply. We've also been able to eliminate nozzles for acceleration, as the new discharge air chamber has a smaller cross-section while still allowing material to be picked up and accelerate out of the pump.



Dual Discharge

SPECIFICATIONS TYPE N PUMP

Capacities

Diameters from 150 mm – 350 mm with capacities up to 600 mtph depending on bulk density.

Conveying Air Line Pressure Range

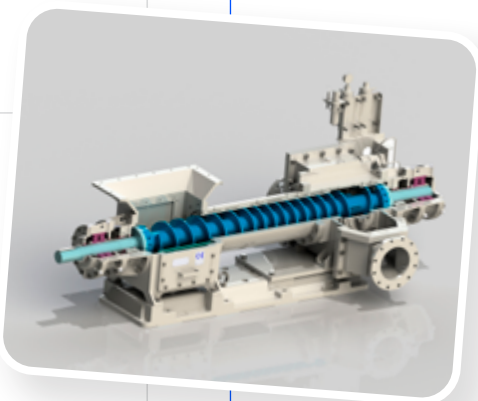
up to 35 psig (~2.4 Bar)

SPECIALTIES

Maximum material temperature

Built to withstand material temperatures up to 400 °F (~200 °C) as standard.

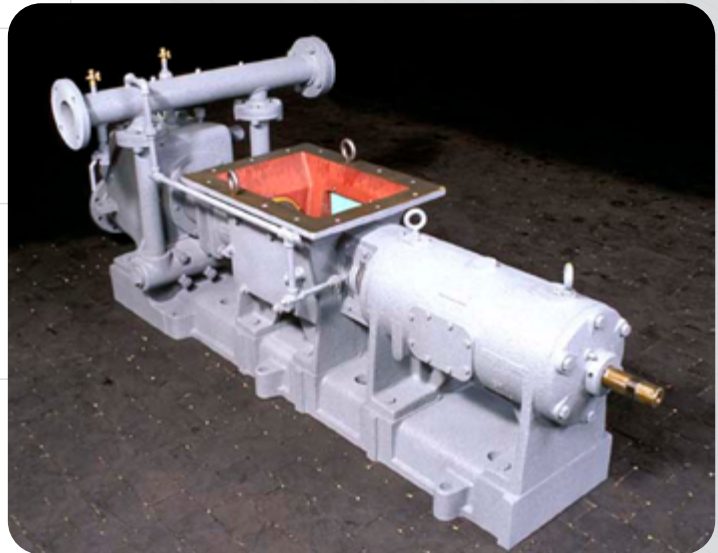
Conveying distances over 5000 ft (1525 m) are possible



TYPE H FULLER KINYON PUMP

One of the older generations of FK Pumps, the Type H Pump remains a workhorse in the industry. Installed at hundreds of sites worldwide, this heavy-duty pump transports dry, free-flowing pulverised bulk materials to and from silos, dust collectors, railcars, ships and barges over distances up to 4500 ft (1370 m). Capacities range from 5 m³/hr (180 ft³/hr) to 187m³/hr (6600 ft³/hr) and temperatures up to 700 °F (~370 °C) can be accommodated with our special Type H model.

The Type H Pump is of cast iron and steel construction, mounted on a cast iron base. The pump screw is dynamically balanced and supported in a unitary bearing housing at the drive end. Areas of the impeller screw, along with other parts of the pump in direct contact with the material to be conveyed, are made of hardened wear-resistant material and special hard surfacing where applicable. The impeller screw is direct-coupled to the driving motor and can also be V-belt driven. The screw is also available in a two-piece design, reducing maintenance and replacement costs.



SPECIFICATIONS TYPE H PUMP

Capacities

Diameters ranging from 4 in. to 10.5 in. diameter with capacities up to 270 mtph of standard Portland cement

Conveying Air Line Pressure Range

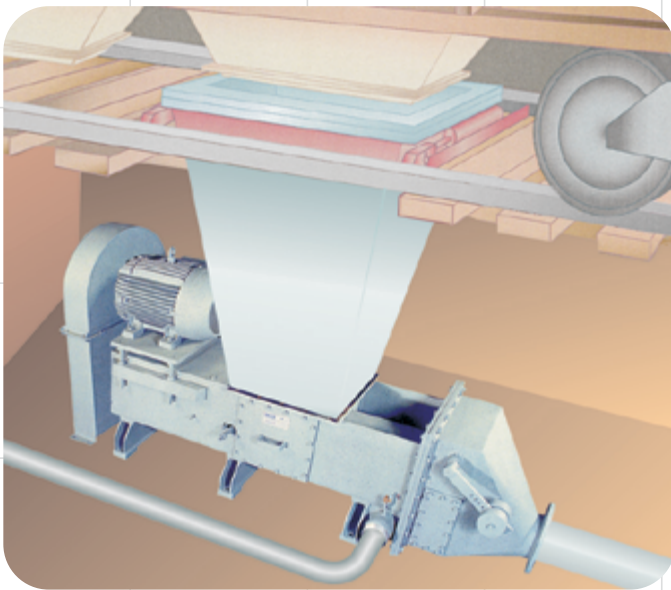
Up to 25psig (1.72 Bar)

SPECIALTIES

Maximum material temperature standard Type H

400°F (~200 °C), for special Type H: 700°F (~370 °C)

FULLER-KINYON KOMPACT PUMPS



If you're looking for an alternative to heavy-duty pumps for intermittent applications, the Fuller-Kinyon Kompact Pumps are a cost-effective, energy efficient choice.

Available in two options – the Kompact II Pump and the 61V Kompact Pump, these pumps transport dry pulverised materials such as cement, limestone, and clay in a totally enclosed, dust-free system at rates up to 4400 ft³/hr (125 m³/hr). The low silhouette and short profile make these pumps perfect for hopper-bottom car unloading.

Fuller-Kinyon Kompact pumps require only a low-pressure, low-velocity air supply to efficiently meet its large throughput capacity at conveying line pressures of up to 20 psig for the Kompact II Pump or 12 psig for the 61V Kompact Pump. The two-piece screw design reduces maintenance and replacement costs, while the cast iron and steel construction ensures longevity and robust, reliable performance.

SPECIFICATIONS TYPE KOMPACT PUMP

Capacities

Diameters ranging from 5.5 in. and 6 in. diameter for the 61VS and 200 mm and 250 mm diameter for the KII with capacities up to 180 mtph of standard Portland cement

Conveying Air Line Pressure Range

Up to 12 psi (0.83 Bar) with 61VS and 20 psig (1.38 Bar)

SPECIALTIES

Maximum material temperature for Kompact II and 61V Kompact
400°F (~200° C)

MAXIMISE UPTIME WITH PROACTIVE MAINTENANCE STRATEGIES

Take advantage of our global service network and expertise

Nothing is more of a budget buster in a manufacturing plant than unplanned/unscheduled down time. Even with a high-quality machine like a Fuller-Kinyon® pump, it's not a question of if a bearing assembly will wear out, it's a matter of when. The typical removal, rebuild, and reassembly of a worn bearing unit can take up to 7 - 10 hours, depending on the extent of wear to the original parts. That's an entire day, lost.

But there is another way. Instead of taking the time - and time is money - to rebuild a worn bearing unit from scratch, you can maximise the benefits of the 3-piece screw in your Type M Fuller-Kinyon® Pumps by keeping Hot Swap bearing assemblies on your shelf. Having complete bearing assemblies readily available cuts downtime by more than half. In fact, you can be back up and running in approximately 3 hours.

FULLY ASSEMBLED UNITS, READY TO GO

Each Hot Swap is a fully-assembled unit complete with seals, bushings, bearings, and drive or stub shaft. The cost of each assembly is significantly less than buying the individual parts. The savings get even better when you factor in the reduced overall system downtime.



Every Hot Swap exchange bearing assembly is backed by an FLSmidth Cement one-year material and workmanship warranty.

HOW DOES IT WORK?

When you join the 12-month program, we decide together on the optimal inventory mix for your facility (US\$100,000 minimum), whether that's parts required for normal preventive maintenance or for an emergency. We will then ship that inventory out to you - but until those parts are put to use in your plant, ownership of the stock stays with FLSmidth Cement.

The benefits are clear: you have the reassurance of knowing that the spares you need for the year are on site, ready to go when you need them. No lengthy waits for spare parts, or high costs for emergency deliveries. At the same time, your capital isn't tied up in that spare parts stock - you only pay for what you use until the end of the contract, when we'll invoice for any remaining inventory.

HOT SWAP BEARING EXCHANGE PROGRAM

Once the new assembly is "swapped" onto the pump, you can rebuild the worn assembly when time allows. Or, for additional savings, send us the old unit. If an inspection reveals that its shaft, bearing housing, bearing support and cover plate can be used again (many can be) for a future rebuild, we'll give you credit for the reusable parts.



SPARE PARTS STOCKING PROGRAM

A ready supply of spare parts is essential for the continued, efficient operation of your plant. But the cost of carrying all the necessary spare parts can be prohibitive. We've developed a Spare Parts Stocking Program (SPSP) that enables you to keep up safe inventory levels in your storeroom while minimising costs.



FULLER-KINYON PUMP TRAINING

The better you understand how your FK Pump operates, the better the performance you'll get. That's why we've developed the Pump and Compressor Roadshow – so that we can bring our expertise to your site, and help plant engineers and maintenance professionals to:

- Understand the principles of pneumatic conveying
- Troubleshoot systems/equipment
- Perform best maintenance practices on Fuller-Kinyon pumps, Ful-Vane compressors and other FLSmidth Cement pneumatic conveying equipment.

We think that wherever possible, training on plant equipment ought to involve getting your hands on the actual equipment. But that's not always possible on a working plant. So for this two-day roadshow training, we'll ship an equipment container to your facility ahead of the seminar.



www.flsmidth-cement.com

Copyright © 2024 FLSmidth Cement. All Rights Reserved. FLSmidth is a (registered) trademark of FLSmidth A/S, and FLSmidth Cement is authorized to use the trademark under a license agreement. This brochure makes no offers, representations or warranties (express or implied), and information and data contained in this brochure are for general reference only and may change at any time.