

# ELGIN



## CSI Cyclone Pro™ Vertical Cuttings Dryers

Patented Design to Maximize Fluid Recovery

Natural Resource Recycling • Product Classification • Dewatering • Fluid Recovery  
Waste Management • Material Handling • Liquid/Solid Separation • Crushers • Feeders

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**GUNDLACH**  
CRUSHERS

**JEFFREY RADER**

**Pennsylvania**  
Crusher

**ELGIN**

# Intelligent Design

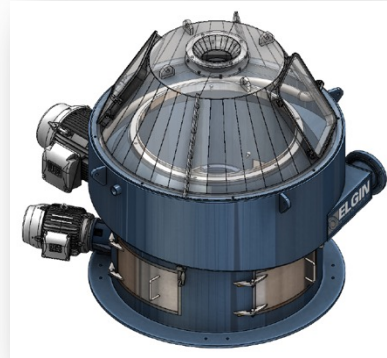
The Industry's First Fully Variable Vertical Cuttings Dryer ("VCD")



## Patented Dual Independent Drives

Elgin's Cyclone Pro™ VCD's exclusively provide customers independent differential control of the screen and flites.

This technology, along with our proprietary programming, allows the VCD to perform in a variety of conditions previously off-limits to traditional VCD's.



## Proprietary Tapered Centrate Collection Zone

By tapering the launder section, collected fluids flow more efficiently, therefore lowering the risk of a back-up within the VCD.

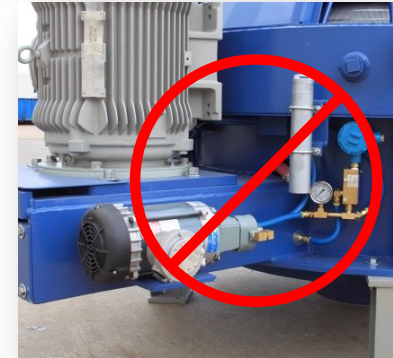
However, Elgin has taken this concept one step further by providing a conical slope to the entire centrate collection zone, dramatically improving centrate flow.



## Engineered Conical and Flite Sets

Using a host of abrasion-resistant materials, Elgin has developed the industry's most durable & precise conical and flite sets in the market.

Utilizing precision engineered conical and chrome plated or tungsten carbide flites, tolerances can be controlled, therefore improving dewatering and mitigating screen blinding.



## Proprietary Oil-Sealed Gearbox System

By using a combination of oil-sealed gear boxes, Elgin has been able to remove the complete lube pump system.

All competing VCD's continue to use an active lube system which results in higher operating costs and more down time. Elgin's oil-sealed gearboxes provide for a truly continuous duty product.

Elgin's Engineering Team continues to develop unique & proprietary improvements to maximize performance and durability.

# Operational Advantages

Setting a New Standard in VCD Technology:

## Patented Design Eliminates Belts & Sheaves

- The use and service of belts and sheaves require a significant amount of labor.
- Beyond the labor required to service and maintain the sheaves, belts must be routinely replaced.
- By eliminating the belt and sheave system, the cost of replacement belts is completely eliminated.



## Patented Design Provides Independent Differential

- No other dryer in the market provides for independent differential control of the flites and the screen.
- For the first time in the industry, operators have the ability to adjust the cakewall accumulation and the residence time of the solids within the dryer.

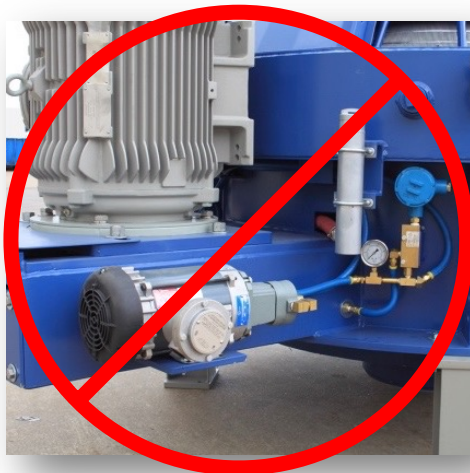


# Operational Advantages

Setting a New Standard in VCD Technology:

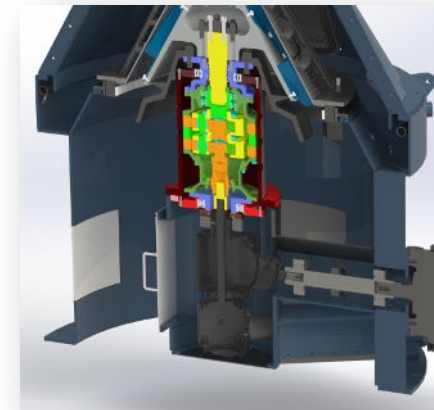
## Proprietary Design Eliminates Active Pump Lubrication System

- Elgin's new oil sealed gear box eliminates the oil pump, oil reservoir, oil filtration system, flow switch and pressure switch.
- These systems require frequent service and are the root cause of frequent equipment failures.
- Not only will service support be lowered, but the cost of spare parts and maintenance of such a system has been eliminated.



## Proprietary Design Dramatically Reduces Solids Build-Up

- The more obstructions present below the screen, the more potential for solids build-up.
- Elgin's D-Series VCD's eliminate 70% of the traditional obstructions due to the elimination of the belt tunnel and smaller gear-box enclosure.
- Further, the new drive shaft tunnel includes a domed enclosure, whereas the previous belt and sheave tunnel enclosure was flat.

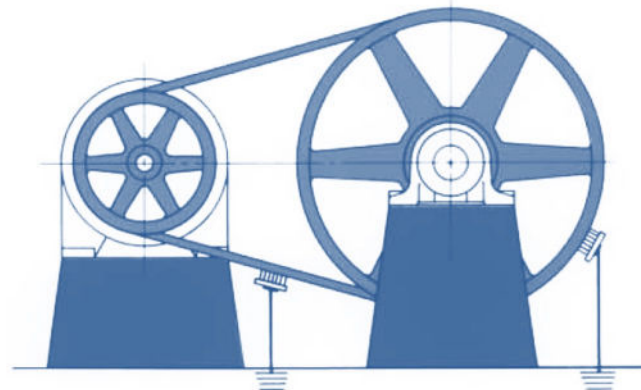


# Operational Advantages

Setting a New Standard in VCD Technology:

## Patented Design Ensures Class 1 – Division 1 Explosion Proof Design

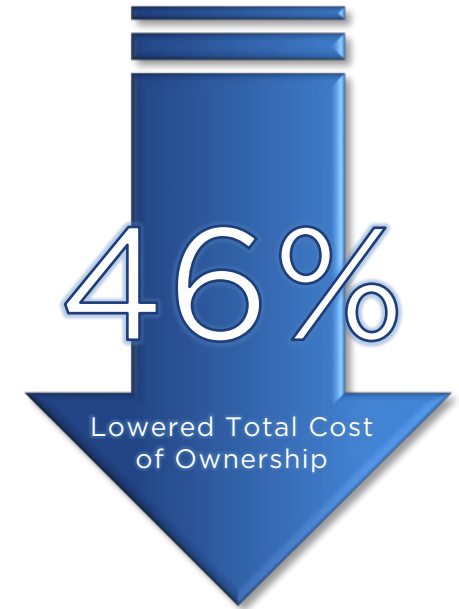
- By their very design, VCD's have the potential to create high volumes of dust.
- Belt-driven systems are known to spark upon failure, which creates a Class 1 - Division 1 hazard.
- Elgin's D-Series™ VCD's eliminate this hazard by eliminating drive belts and allowing operators to “tune” the VCD to operating conditions that mitigate dust generation.



Proper V-drive installation in explosive atmospheres

## Patented & Proprietary Design Provides for Lowest Total Cost of Ownership

- By eliminating both the traditional oil lube system and the belt drive system, Elgin has developed a dryer that is dramatically less expensive to operate.
- Combined with our proprietary chrome-hardened, TIG-welded, profile wire screens and hard surfaced scraper flites, consumable consumption is also lowered.
- By deploying VFD drive technology, energy consumption is improved.



# Cyclone Pro™ VCD Options

Three Quality Field-Proven Products are Available:

Model Number:	CSI-D3 Cyclone Pro™	CSI-D4 Cyclone Pro™	CSI-D5 Cyclone Pro™
Equipment Image:			
Feed Capacity <sup>1</sup> :	40 TPH (40 m <sup>3</sup> /h)	80 TPH (80 m <sup>3</sup> /h)	100 TPH (100 m <sup>3</sup> /h)
Maximum G-Force:	460V / 60Hz 300 to 700 G's (VFD)  360V / 50Hz 300 to 500 G's (VFD)	460V / 60Hz 300 to 550 G's (VFD)  360V / 50Hz 300 to 450 G's (VFD)	460V / 60Hz 300 to 550 G's (VFD)  360V / 50Hz 300 to 450 G's (VFD)
Screen Opening Sizes:	0.008" (0.2mm) to 0.04" (1.0mm)	0.008" (0.2mm) to 0.04" (1.0mm)	0.008" (0.2mm) to 0.04" (1.0mm)
Gear Box Ratio:	VFD Variable	VFD Variable	VFD Variable
Lubrication System	Oil Sealed Gearbox	Oil Sealed Gearbox	Oil Sealed Gearbox
Screen Surface Area:	7.11 sq. ft. (0.661 sq. m.)	13.3 sq. ft. (1.25 sq. m.)	15.5 sq. ft. (1.44 sq. m.)
Motor Horsepower:	(1) 25 hp (18.3 kw) & (1) 5 hp (3.7 kw)	(1) 60 hp (44.74 kw) & (1) 15 hp (11.19 kw)	(1) 75 hp (55.16 kw) & (1) 20 hp (14.71 kw)
Voltage:	460v / 60Hz or 380V / 50Hz 3-Phase (Dual Rated Inverter-Duty Motor)	460v / 60Hz or 380V / 50Hz 3-Phase (Dual Rated Inverter-Duty Motors)	460v / 60Hz or 380V / 50Hz 3-Phase (Dual Rated Inverter-Duty Motors)
Electrical Classification:	Class I – Division I VFD Explosion Proof – Group D (Temp. Rating of 55° C)	Class I – Division I VFD Explosion Proof – Group D (Temp. Rating of 55° C)	Class I – Division I VFD Explosion Proof – Group D (Temp. Rating of 55° C)
Dimensions (without stand):	84" (2,134 mm) L x 62" (1,575 mm) W x 56" (1,422 mm) H	101" (2,565 mm) L x 71" (1,803 mm) W x 76" (1,930 mm) H	101" (2,565 mm) L x 74" (1,880 mm) W x 78" (1,981 mm) H
Weight (Without Stand):	3,900 lbs (1,769 kgs)	8,300 lbs (3,765 kgs)	9,400 lbs (4,264 kgs)

Today, Elgin stands as the only full-portfolio supplier of VCD's for both water-based and oil-based drilling environments.

# Cyclone Pro™ Packaging Options

Elgin can provide a host of VCD options.



## Telescoping Stands with Decks

Depending on the manner in which the VCD will be installed, telescoping stands, with or without walkways and cantilevered jib cranes, can be provided.

Elgin's custom stands can be fitted with hydraulic actuation and can be supplied with control rooms and polishing decanter centrifuges.



## Harsh Environment Protection

Elgin's VCD packages can be fully enclosed in air conditioned, fully insulated structures for easy transport and operation in extreme weather conditions.

Full integration with ancillary centrate collection tanks, transfer pumps and screw conveyors can be provided.



## Fully Integrated System Packaging

Elgin can fully integrate feed hoppers, screw conveyors and progressive cavity feed pump and discharge belt conveyors, screw conveyors and chutes.

Elgin's proprietary designs ensure that all systems communicate together and are provided the highest level of safety interlocks.

There are a myriad of options available for each installation that should be considered before finalizing the system configuration.

# Integrated Mobile VCD Packages

Elgin Full-Service Engineering, Manufacturing & Commissioning

Elgin Rack & Pinion Actuated, VFD Screw Conveyor Fed, Cuttings Hopper

Elgin CSI-D4™ Vertical Cuttings Dryer

Elgin Retractable Fully-Enclosed Belt Conveyor with Belt Wiper.

Elgin Fully Integrated Oil-Field Skid and Support Structure.

Elgin Agitated Centrate Tank with Level Gauges & High Level Alarm.

Elgin Proprietary HMI Touch-Screen Control Panel Technology

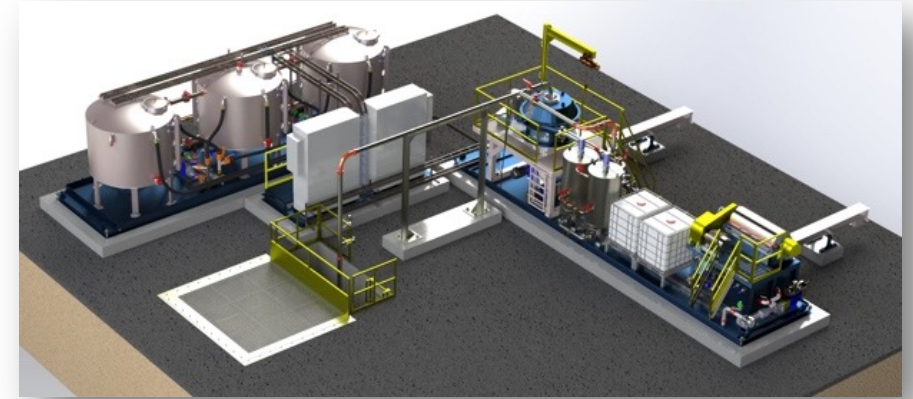
Elgin Redundant Transfer, Centrate Gun, and Agitation Self-Priming Pumps.

Elgin's diversified product line, inclusive of lighting, pumps, & conveyors sets us apart from other non-integrated equipment suppliers.



# Turn-Key Plant Packages

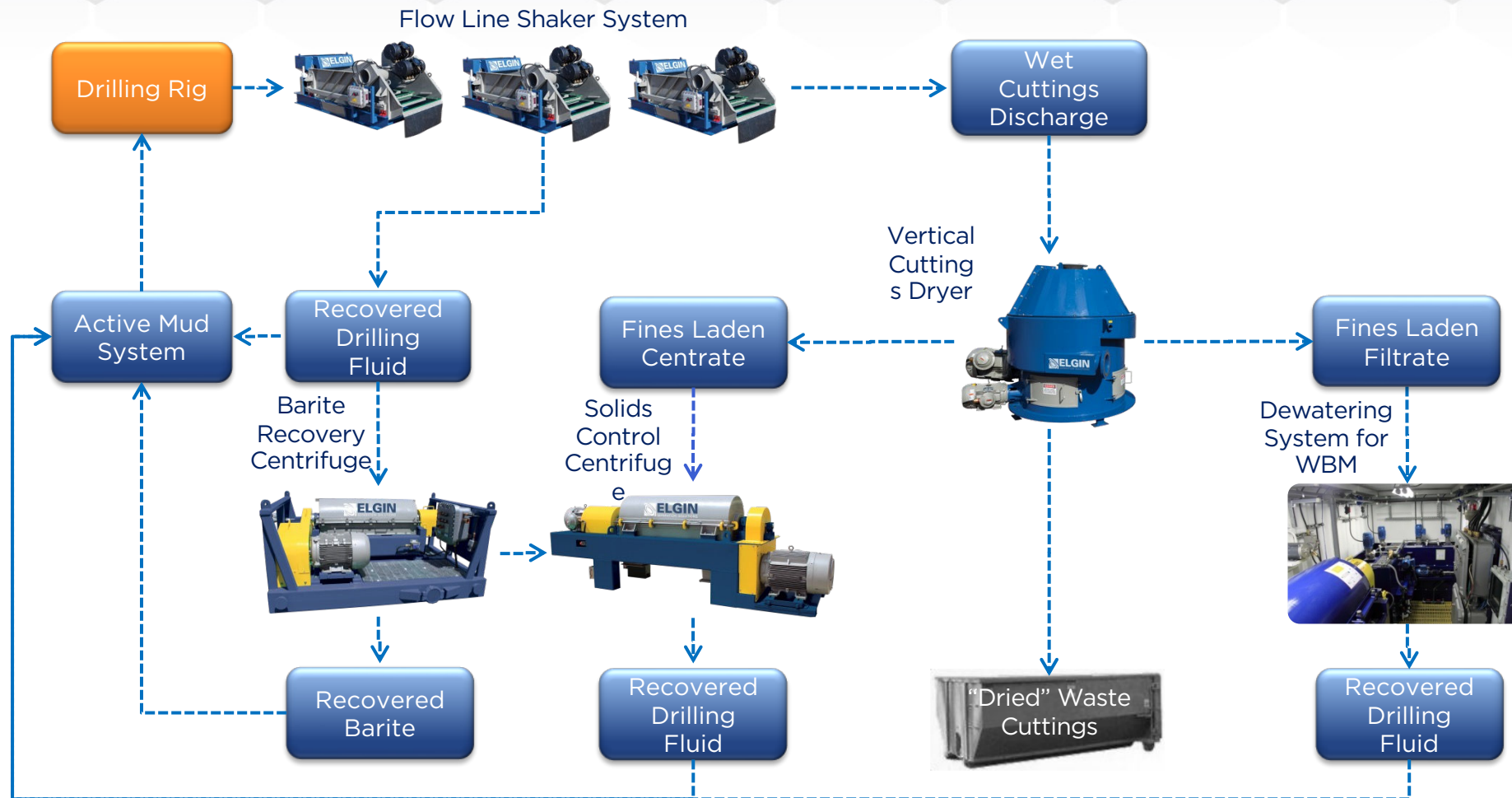
Elgin Full-Service Engineering, Manufacturing & Commissioning



Elgin's engineering team can also provide full plant engineering services for semi-permanent and permanent waste management systems.

# Closing the WBM & OBM Loop

While at the Same Time, Eliminating the Need for Drying Shakers.



Elgin's D-Series VCD's eliminate the need for deployment of drying shakers, which were previously deployed to manage WBM cuttings.

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