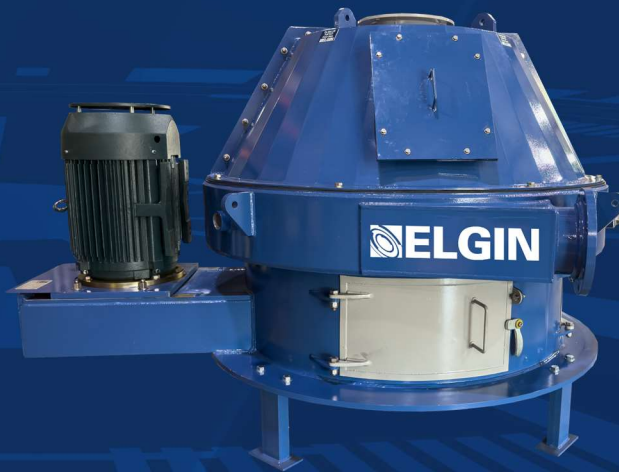




CSI-E4 Cyclone™ Vertical Cuttings Dryer



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

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Section 1: Elgin's Cyclone VCD General Application Description

Typical flow-line shaker cuttings maintain a liquid content on average between 15% and 20%. When properly managed, Elgin Separation Solutions CSI™ VCD's can lower the liquid content below 4%, in some cases 1%. This can be done while managing up to 80 tons (73,000 kilograms) per hour of drilling cuttings, depending on the selected VCD system.

Best fed via screw conveyor or pneumatic system from the flow-line shakers, drill cuttings are fed into the VCD hopper, and distributed along the inner wall of the screen with the aid of the flites. The liquid phase, or "filtrate", passes through the screen openings while the flites, scrape the accumulating cake solids towards the bottom of the VCD for disposal. The filtrate gravity flows into a containment tank and pumped to a high-speed decanter centrifuge. Upon discharge, the dried cuttings are then safely



CSI-E4 Cyclone™

discharged to the environment, are collected for further treatment or off-site disposal. CSI™ VCD's significantly improves liquid phase recovery, thereby paying for itself (VCD's are specifically designed for oil-based drill cuttings management in which operators are concerned about drilling fluid losses and the environmental impact of oily cuttings).

Elgin Separation Solutions' CSI™ VCD's incorporate several unique features, including an automatic shut-off system to protect the gearbox when low oil pressure is identified, and individually balanced rotating components to ensure vibration-free operation.

Each system can be supplied with a support stand (Standard configuration that includes wrap-around decks/walkways, discharge chute, handrails, and jib pole), or in a fully enclosed 20' high-cube international shipping container.

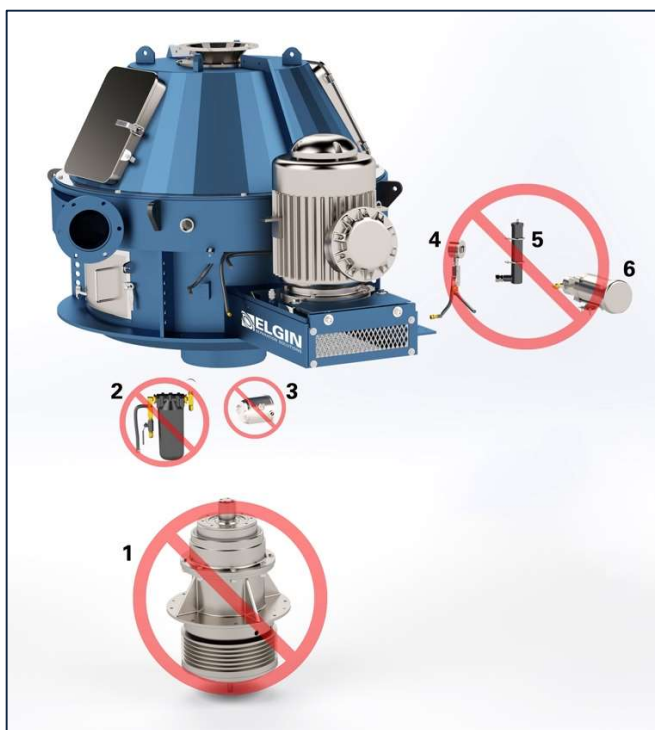
Section 2: CSI-E4 Cyclone™ Oil Sealed Gearbox Design

Elgin's CSI-E4 Cyclone™ VCD is the next evolution of the industry leading CSI-04™. The new CSI-E4 Cyclone™ Vertical Cuttings Dryer is designed with an oil-sealed gear box drive unit that requires no active lubrication system for operation.

The most common problems causing system shutdown, during operation of the CSI-04™, is associated with the active lubrication system. Whether it is low pressure levels, exhausted filter, flow switch monitoring, fluid levels, or damaged hoses, the operation of the VCD comes to a stop. Elgin's CSI-E4 Cyclone™ removes all active lubrication equipment, including the main drive gear box.



Benefits

Dramatically Reduced System Downtime • Reduced Repair Costs • Reduced Maintenance Costs •
No Active Lubrication System • No Filter Replacement • No Pressure / Flow Switch • No Fluid Hoses






The original CSI-04™ VCD featured an onboard active lubrication system and oil circulated gear box. Featuring an oil-sealed, belt-driven gear box, the CSI-E4 Cyclone™ eliminates the most common problems associated with the CSI-E4 Cyclone™. In addition, the new gear box only requires maintenance every six months.

Section 3: CSI Cyclone™ VCD Technical Specifications

Model Number:	CSI-E3 Cyclone™	CSI-E4 Cyclone™
Equipment Image:		
Feed Capacity:	40 TPH (40 m³/h)	80 TPH (80 m³/h)
Maximum G-Force (Sheave Size Denoted in Inches):	460V / 60Hz 518 (8.0") or 642 G's (9.0") 360V / 50Hz 445 G's (9.0")	460V / 60Hz 403 G's (10.5") or 526 G's (12.0") 360V / 50Hz 426 G's (13.0")
Screen Opening Sizes:	0.008" (0.2mm) to 0.04" (1.0mm)	0.008" (0.2mm) to 0.04" (1.0mm)
Gear Box Ratio:	74:1	71:1
Lubrication System	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.)
Motor Horsepower:	30 hp (22.71 kw)	75 hp (60 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 Motor)
Electrical Classification:	Class I – Division I Explosion Proof – Group D (Temp. Rating of 55° C)	Class I – Division I Explosion Proof – Group D (Temp. Rating of 55° C)
Dimensions (without stand):	7' (2.1 m) L x 6' (1.8 m) W x 5' (1.5 m) H	8.10' (2.5 m)L x 7.3' (2.2 m)W x 5.9' (1.8 m)H
Weight (Without Stand):	4,400 lbs (1,995 kgs)	7,700 lbs (3,492 kgs)

1 – Actual capacity and discharge oil-on-cuttings ("OOC") content will vary, contingent upon, but not limited to, cuttings composition, cuttings particle size distribution, level of drilling fluid inhibition, feed OOC, particle shape and feed rate.

Section 4: Vertical Cuttings Dryer Screen and Flite Selection Guide

CSI-04™ / CSI-E4™ / CSI-D4™ Screens		
0.010" (250 micron) Profile Wire Screen Part #325-2-010	0.015" (400 micron) Profile Wire Screen Part #325-2-015	0.020" (500 micron) Profile Wire Screen Part #325-2-020
		
Universal Drilling Fluids Cuttings Treatment Minimizes Centrate Fines, But Lowers Solids Discharge Dryness. Best Utilized for Fine Cuttings.	Universal Drilling Fluids Cuttings Treatment Balances Centrate Fines and Discharge Dryness. Good Starter Screen for Average to Large Cuttings.	Universal Drilling Fluids Cuttings Treatment Balances Centrate Fines and Discharge Dryness. Best Starter Screen for Average to Large Cuttings.

Individual Hard Chrome Flites (Set of 8) Part #330-5C	Tungsten Carbide Flites (Set of 8) Part #330-10
	
Universal Drilling Fluid Cuttings Treatment Hard-Chrome is Applied to Reduce the Time Required Between Changes and Ensures a Precision Fit Each Time.	Universal Drilling Fluid Cuttings Treatment Tungsten Carbide Tiles Dramatically Reduce the Time Required Between Changes. Will Provide the Longest Life.

Section 5: CSI-E3 Cyclone™ VCD Recommended Spare Parts

PART NUMBER	DRYER SPARE PARTS DESCRIPTION
176-2	STAINLESS ROTOR STUD
3/4-10SS	STAINLESS HEX NUT (ROTOR)
WSM 401-1	GASKET, CONE CAP
327-1	STAINLESS SUPPORT BASKET
1/2-13SS	STAINLESS STEEL NUT (SCREEN BASKET)
1/2-13X1SS	STAINLESS STEEL HEX HEAD (CONE CAP)
1/2-13x2SS	STAINLESS CAP SCREW (SCREEN BASKET)
160-2	BANDED BELT SET
5/8-11x1	L-9 CAP SCREW (FLITES)
5/8-11x1-1/2SS	STAINLESS CAP SCREW (LAUNDER RING)
970-2	RUBBER COUPLING
WSM-10XW-1	EXTENDED WEAR ROTOR
360-3XP-T3C	75 HP MOTOR, DUAL V, EXPL PROOF, IP56,T3C
322-4	TWO-PIECE CONE CAP
WSM 900-118-04	FITTING ADAPTER KIT
971-3	SWIVEL FITTING