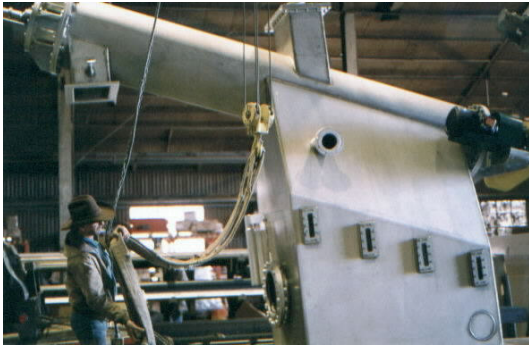


B. W. SINCLAIR INFORMATION UPDATE

INCLINED SOLIDS-WATER SEPARATOR SCREWS DEWATER POLYETHYLENE

BWSI recently commissioned a series of five Powder-Water Separator Screws for an international petrochemical firm. The units, manufactured from AISI-316LSS materials, serve to offer a first-stage solids screening before the material is deposited in centrifugal dewatering machines.

Low and high-density polyethylene powders are carried into the machine in slurry. The plastics, lighter than water, float to the top of the integral quench tank filled with hot water (~ 212° F.). The surface of the tank is continually skimmed by a slowly rotating close-tolerance helix, inclined at ~ 30° from horizontal, which draws the floating solids off and upward to the discharge spout. A nitrogen lance is installed in the quench tank to prevent solids from settling to the bottom.



The quench tank features four tempered glass view ports to provide real-time visual inspection of the liquid level and the floating solid particulate. The discharge end of the tank is fitted with a 24" diameter manway with a special flush-mount bolted door on a swing-away davit arm.

The internal helix is a special close-tolerance rotor design featuring intermittent flight notches to allow excess water to drain out of the sodden product. The tumbling and backflow of the material prompted by the notches increases the dewatering efficiency of the machine.

All product contact surfaces are ground, polished, and buffed to a 120-140 grit surface profile, consistent with the dictates of the Conveyor Equipment Manufacturers Association CEMA-IV finish. This smooth

surface promotes a clean release of the sluggish and potentially adhesive plastic.



The lower shaft seal is a special Woodex-MECO™ elastomer gland unit, water-purged to provide a positive seal against liquid leakage. The upper seal is also a MECO unit, air-purged and field-adjustable.

The Separators are powered by Inverter-Duty hazardous area electric motors, coupled to Sumitomo SM-Cyclo™ Series 4000 cycloidal gear reducers. Roller chain primary drives operating within bath lubrication OSHA safety guards complete the speed reduction. Toshiba TASOVERT™ Variable Frequency Inverters control the rotor speeds.

The units were completely ship assembled and tested at the factory prior to shipment. Shop tests included standard quality control observations for alignment, rotation, water leakage, and vibration, as well as speed calibration and seal sufficiency.

After installation, the customer insulated each separator to retain heat and to prevent accidental personnel contact with the heated metal.



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