

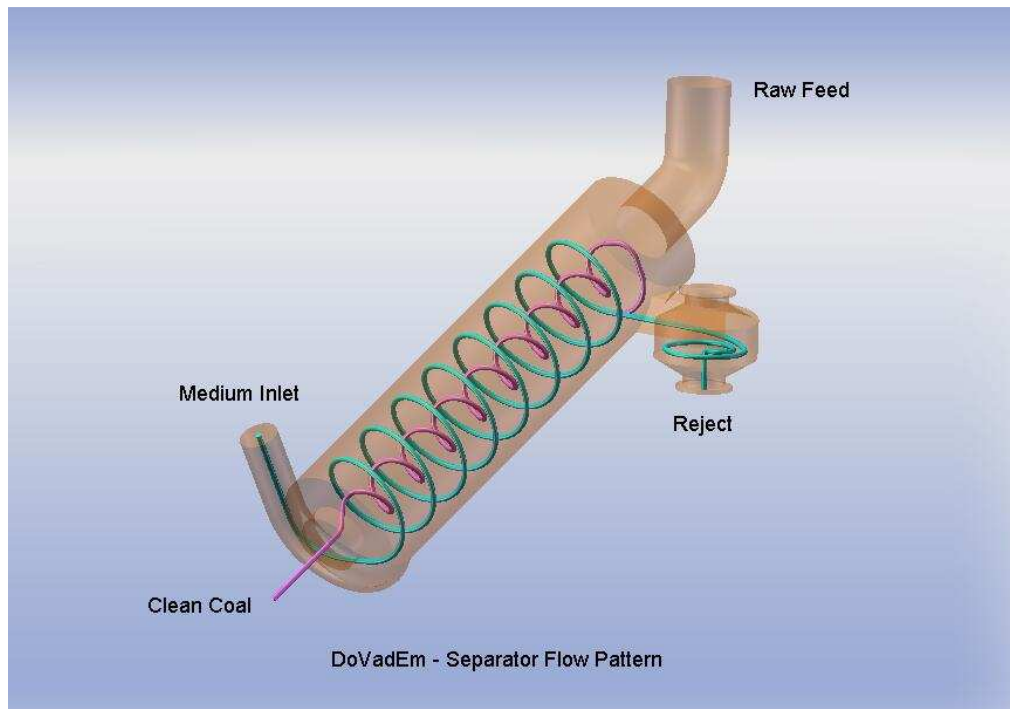
# DoVadEm

## Dense Medium Separator

### The DoVadEm Separator

Don Valley Engineering Co. Ltd were heavily involved with British Coal in developing the design of their Larcodems vessel into a fully functioning and marketable product. We were the first Company to design and build a fully functioning enclosed stand alone Larcodems plant, the design of which was utilised as the basis for a further plant of 1000 tonnes per hour prior to the privatisation of British Coal. The lessons learnt, in helping develop the Larcodems vessel and also designing economic plants around them has enabled DVE to take the development of this type of vessel forward into their own separator. The unique combination of being both a manufacturer of equipment and plant constructor enables DVE to provide the necessary comprehensive backing and support to all their supplies.

Based on the principles of separated medium and product input, pioneered in earlier designs, the Larcodems separator scaled up the capacities to a more marketable level however its shale discharge system left a lot to be desired and it is this area where the improvements of the DoVadEm are best illustrated. The Vortextractor design of the Larcodems severely restricts the machines ability to handle long slivers of reject material because it can be very difficult to discharge. The DoVadEm separator employing a more conventional cyclonic shaped shale discharger overcomes this problem allowing the separator to increase its operating hours without blockage and improve operating efficiency and profitability.



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The feed of medium to the vessel is conventionally based on a headbox feed arrangement to avoid expensive variable speed pumping arrangements and the reliance on unreliable pressure transducers for control of the vessels operation and accuracy of separation. In the DoVadEm arrangement all the required medium required by the vessel is delivered to a head tank from where the vessel draws what it requires at a constant static head with the excess being returned to the correct medium sump. The result of this is a constantly varying medium volume that automatically adjusts to any fluctuation of feed material, which is delivered at a constant pressure head leading to more effective control of the separation.

The DoVadEm separator also has an extended vortex feed arrangement to move the medium addition point further around the vessel body to aid circulation, reduce blockages and produce a more laminar flow on entry to the vessel.

**Specification for the Don Valley Dense Medium Cyclonic Separator Vessels**  
**DoVadEm**

<b>Duty</b>	Duty per vessel of up to 300 tonnes per hour of 100mm to 1.0mm Raw Coal.
<b>Equipment Offered</b>	Don Valley Dense Medium Cyclonic Separator.
<b>Drawing Number</b>	DMS1200.001.
<b>Description</b>	The <b>DoVadEm</b> cyclonic separator is a large capacity dense medium separator, which utilises the principle of separated medium and mineral addition. The advantage of such an arrangement is that the feed mineral does not have to be lifted to the static feed height of the vessel and it is also wetted for the shortest possible time. An advantage when the feed mineral deteriorates rapidly when wet.
<b>Capacity</b>	Up to 300 tonnes per hour each vessel.
<b>Maximum Lump Size</b>	Up to 100mm.
<b>Diameter</b>	1200 mm.
<b>Length</b>	5000 mm.
<b>Angle of Inclination</b>	30°.
<b>Medium Volume</b>	1100 m <sup>3</sup> per hour on start up.
<b>Medium Feed Head</b>	10.8 metres static head (preferably via head box feed).
<b>Construction</b>	Ceramic lined steel bodied.
<b>Access</b>	Man access through removable door.

