



MULTOTEC

Coal Spiral Concentrators



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Multotec has designed and optimised both single (SX4) and double stage (MX7 and SX7) Coal Spiral Concentrators with a size range of 2.0 to 0.1 mm.

The Multotec two-stage spirals (MX7 and SX7) incorporate two stages of spiralling into a single spiral assembly. This has the advantage of reduced plant height and floor space requirements, as well as reduced capital and operating costs.

The MX7 and SX7 spirals were developed for difficult to wash coals. These two-stage spirals present additional flexibility to the user to bring about an overall improvement in separation efficiency.

Multotec Coal Spirals have a 1 m diameter as follows:

- SX4: 4 turns, standard model
- SX7: Two-stage, 7 turns, auto-reject profile
- MX7: Two-stage, 7 turns, gully

Feed Box

- Solid polyurethane casting
- Impact wall provides longer life
- Design ensures homogenous pulp mix
- Replaceable



Auto Reject Channel®

- Removal of particles:
 - Excellent removal of coarse particles
 - Improved removal of high-density particles
 - Improved removal of misplaced material
 - Higher reject capacity
- Spirals may be supplied in twin- and triple-start configurations
- Spirals are manufactured without delamination
- Double stage spirals offer low capital and operating cost incentives



Housing Frame

- Each module houses two spiral assemblies
- Access cat ladder
- Dismantles fully for retrofitting
- Hot-dip galvanised to prevent corrosion
- Optional features:
 - Safety handrails
 - Cat ladder hoops
 - Kick-plate
- Modular as well as custom designed
- Upper level walkway

SX4 Single Stage

SX7 / MX7 Double Stage

Launders

Mild steel rubber-lined or PVC / polyurethane pipe launder system



Distributor and Piping

- Even distribution to each spiral is attained using gravity distributors
- Top or bottom fed
- Robust, galvanised steel shell
- Cast polyurethane lining
- Replaceable parallel throat orifice
- Anti-syphoning offtakes
- Rigid HDPE piping
- Modular polyurethane elbows
- The spiral does not require any commissioning spares other than orifices
- The feed piping and accessories between the distributor and the spiral feed box have a very long expected life, and typically a third of the total requirement may be kept as operating spares for two years

Repulper

- Solid polyurethane casting with integral auxiliary splitter
- Forced rejection of discard to reject gully or centre column
- Homogenous mixing of middlings and product for reintroduction onto trough
- Divides spiral into two stages

Spiral Trough

- Working surface is sprayed with polyurethane to a required thickness
- Rubber integral edge:
 - Improves circumferential strength
 - Prevents spillage
 - Integrally moulded
- Ribbed for extra strength

Product Box and Splitters

- Solid lightweight polyurethane casting
- Splitter calibration
- Box design assures no solids build-up
- Linked reinforced splitters
- Splitters are independent to trough surfaces and offer knife-edge cutting of pulp stream

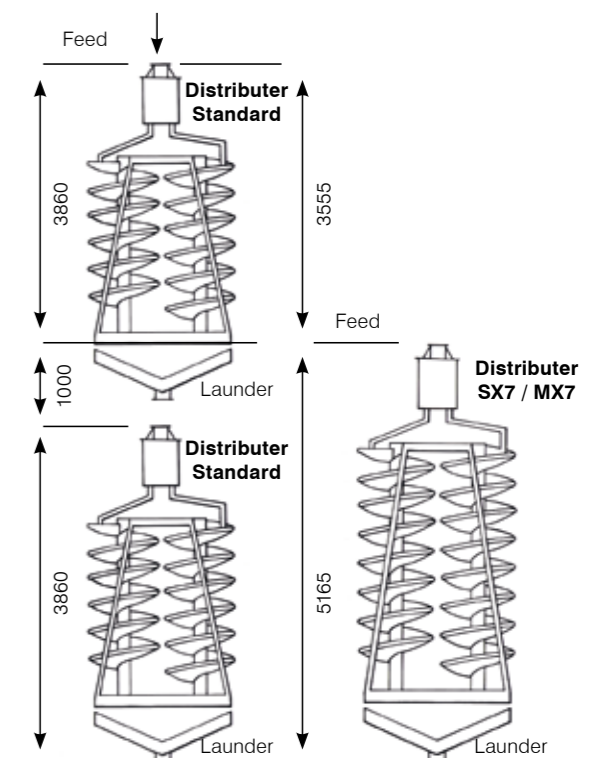
Benefits

- Three different basic models and two different combinations to suit the coal quality, making the Multotec coal spiral range one of the most extensive in the world
- Assemblies supplied in single, twin or triple starts. 4 and 7 turns in high- or low-feed ash profiles
- Compact modular design to add flexibility when building or replacing the spiral plant
- Construction material selected to give a long-life, low-cost and low-maintenance, high-quality product

Additional Services

- Pilot scale test work on spiral concentrators using the full size spiral
- Consultation regarding spirals and plants
- Commissioning of spiral plant and equipment

Plant Layout - SX4 vs SX7 / MX7:





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