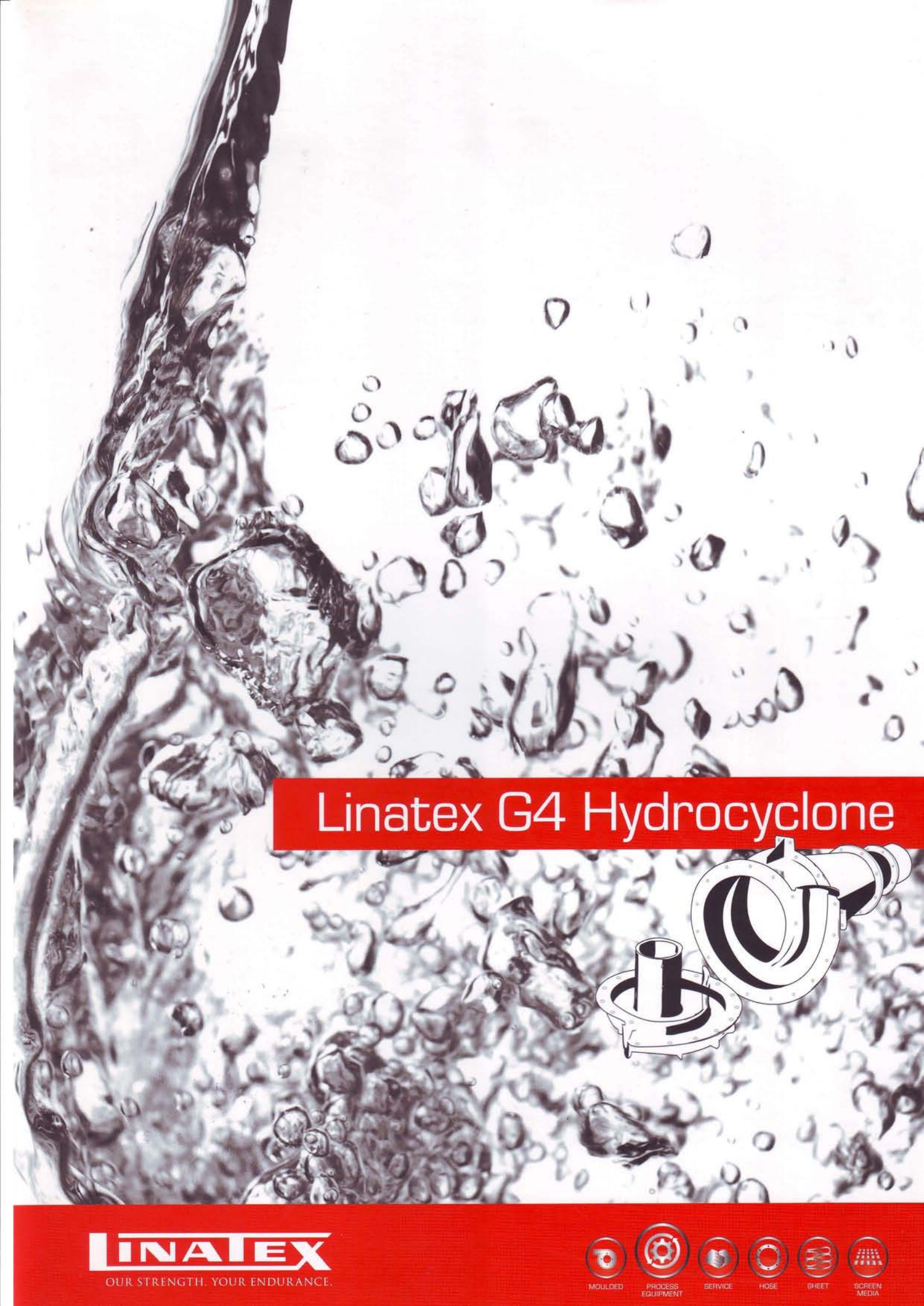




Linatex G4 Hydrocyclone



LINATEX

OUR STRENGTH. YOUR ENDURANCE.



MOULDED



PROCESS
EQUIPMENT



SERVICE



HOSE



SHEET



SCREEN
MEDIA



The **Linatex G4 Hydrocyclone** range provides extremely efficient solutions for even the most challenging extraction applications.

Linatex G4 Hydrocyclone

At Linatex, we have earned our reputation as a leading solutions provider to the mining and mineral extraction industries. With over 50 years experience in the supply and servicing of hydrocyclones, the Linatex G4 Hydrocyclone range is our most innovative.

This comprehensive range is the culmination of our extensive operational experience, intense research and development, and continual innovation.

The unique inlet wedge design of the Linatex G4 Hydrocyclone provides operational flexibility by allowing variation of the inlet area.

This in turn delivers high efficiency of classification which maximises the separation performance of the G4 Hydrocyclone.

Our expert operational team draws on their vast global experience to assist in your cyclone selection and will help customise cluster configurations to suit your project.

Through the use of Computational Fluid Dynamics (CFD) and three dimensional modelling, our Linatex experts provide a variety of detailed scenarios from which the most appropriate solution can be customised to meet your precise needs.

You can be assured that by investing in a customised Linatex G4 Hydrocyclone, you are investing in high efficiency, maximum cost effectiveness and minimal downtime.





Linatex G4 Hydrocyclone

FEATURES

The Linatex G4 Hydrocyclone has three unique features that guarantee a significant industry advantage:

1. An interchangeable Inlet Wedge
2. An involute Swept Entry Design
3. Drop-in Linatex Replacement Liners

Interchangeable Inlet Wedge

- The interchangeable inlet wedge is a unique feature of the Linatex G4 Hydrocyclone. The wedge enables quick and easy variation of inlet size. This provides the ability to fine tune the hydrocyclone's performance without physically removing it from the process line, thereby minimising downtime.
- Replacement inlet wedges can be used to maintain performance without the need to change out full liners.

Involute Swept Entry Design

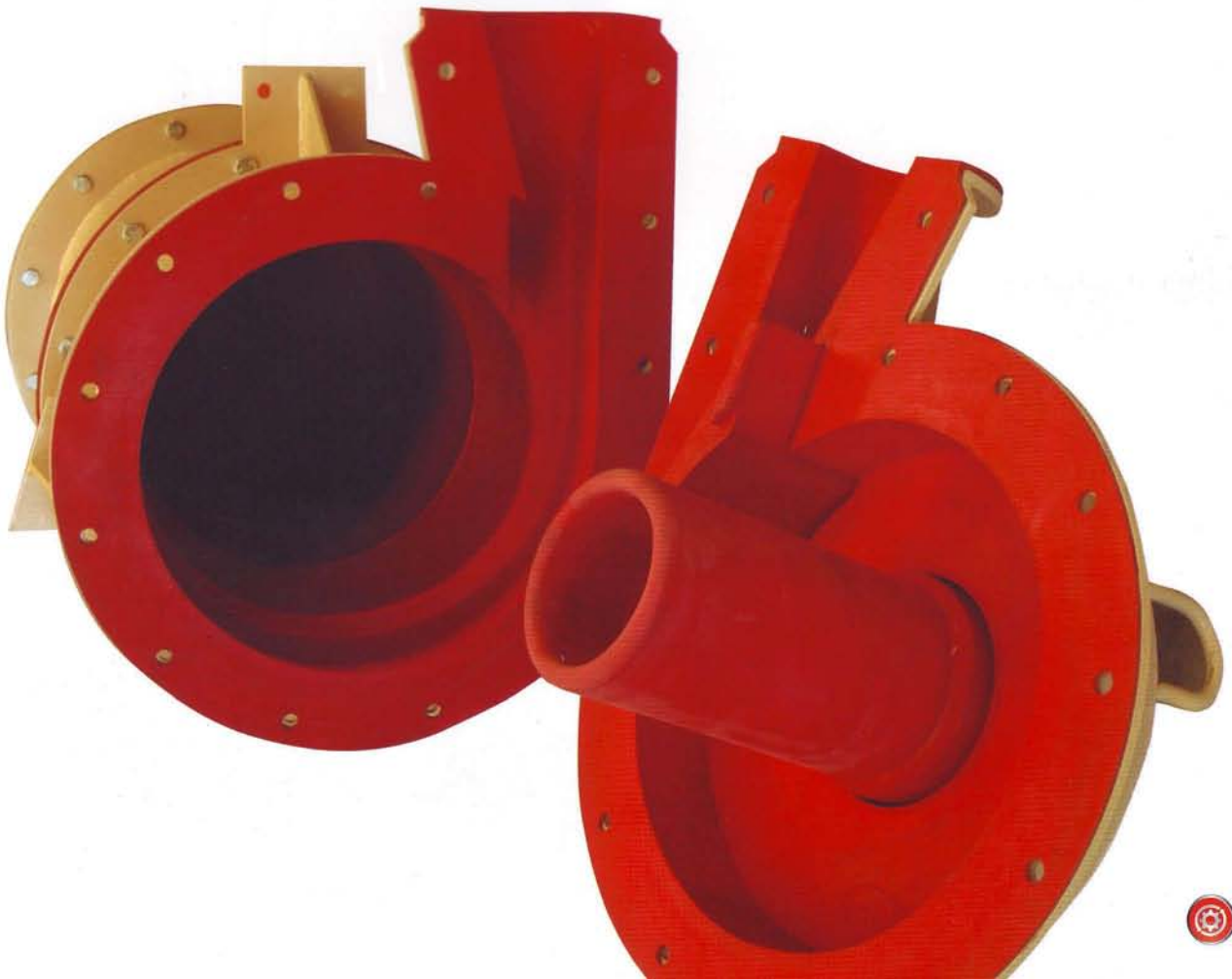
- The involute swept entry design produces a smooth, ribbon like flow regime inside the hydrocyclone. This reduces turbulence and delivers sharper classification.

Drop-in Linatex Replacement Liners

- Linatex wear liners, manufactured from proven superior Linatex Premium Rubber, reduce maintenance cost due to their superior resistance to abrasion.
- Drop-in Linatex replacement liners facilitate economical onsite maintenance.
- Improved liner wear performance maintains internal geometries and, in turn, operational separation efficiencies for longer periods.

- A large range of alternate rubber compounds are available including chemical and oil resistant grades.
- Technical support from experienced engineers equipped with a wealth of global operating experience backs up each Linatex G4 Hydrocyclone installation.
- Proven performance using computer modelling based on proven mathematical techniques.
- Ceramics are available for lower cones and spigots, and high chrome iron liners are available for dense media separation duties.

A wide range of Linatex G4 Hydrocyclone sizes and configurations are available to meet all customer needs.



Linatex G4 Hydrocyclone

GENERAL APPLICATIONS

The Linatex Hydrocyclone G4 range consists of three different models, specifically designed for different applications in the mining and mineral extraction industries. The **Linatex Hydrocyclone G4** range includes:

Hydrocyclone G4 CL



Classification

The **Linatex Hydrocyclone G4 CL** range has proven to be a very economical means of classification, especially in closed circuit grinding operations.

Coarse material that reports to the spigot is returned for further grinding, whilst fine material in the overflow continues for further processing such as leaching, flotation or gravity concentration.

Fines Recovery / De-Gritting

The **Linatex Hydrocyclone G4 CL** range is also used in open circuit applications, such as recovery of very fine solids utilising small hydrocyclones that operate at higher than normal pressure.

The hydrocyclone diameter is determined by the particle size to be recovered, whilst total throughput determines the number of hydrocyclones required.

Clusters of hydrocyclones may also be used to remove oversize grits from cement, clay, drilling mud, effluent and other slurries, as well as de-sliming duties.

Hydrocyclone G4 DW



Dewatering and Desliming

The key to the success of the **Linatex Hydrocyclone G4 DW** lies in the discharge regulator which is fitted below the spigot on the underflow.

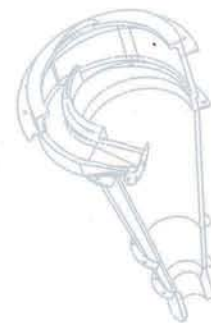
When feed is introduced into the **Linatex Hydrocyclone G4 DW**, the coarser solids report to the spigot where the density and discharge rate of the solids are controlled by the underflow regulator.

Linatex Hydrocyclone G4 DW is applied to dewatering and desliming mineral sands, concrete sands, iron sands, iron ore fines, phosphate rock and coal washery fines in mineral processing circuits, including back-fill feed preparation.

An extended overflow pipe induces a siphon effect which in turn creates a vacuum. This vacuum holds the discharge regulator closed trapping the majority of the water, silts and clays. When the weight of solids inside are sufficient to overcome the vacuum the discharge regulator is forced open and allows discharge of the solids.

The control of the material reporting to the underflow results in a much higher underflow density than otherwise obtainable.

Hydrocyclone G4 DM

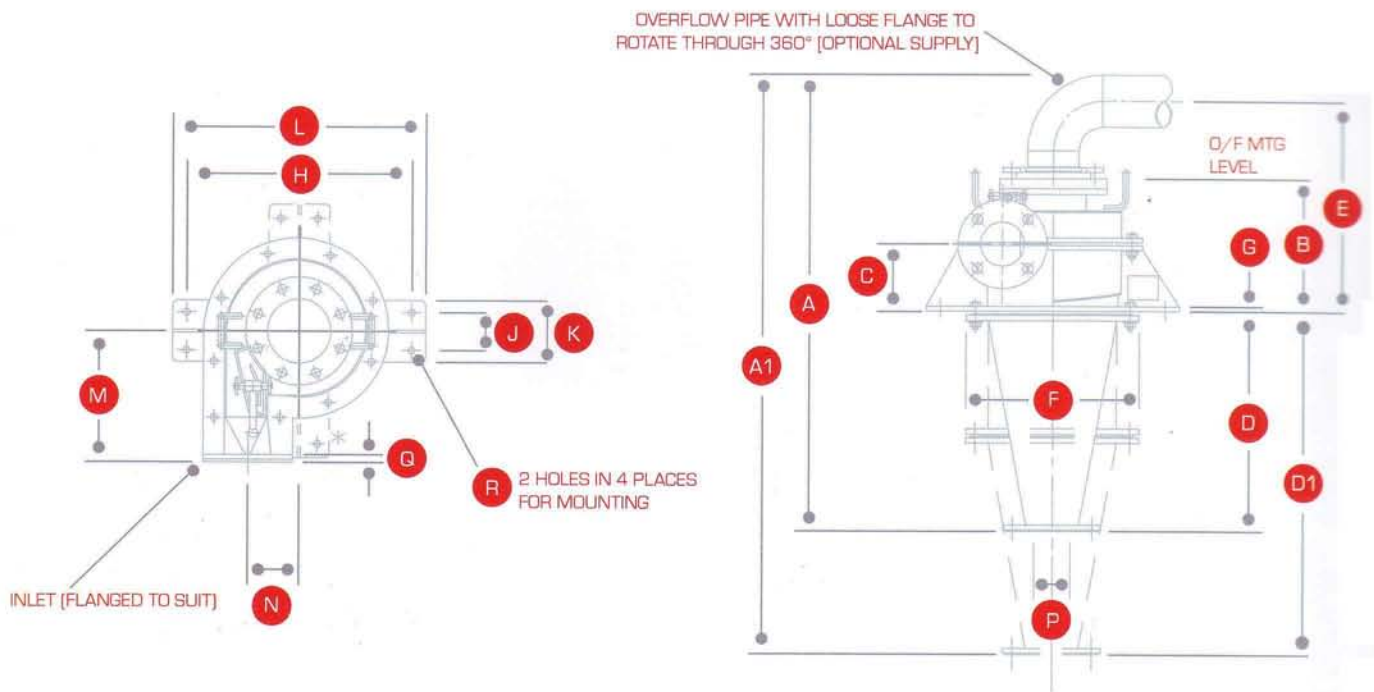


Dense Media Separation

Linatex Hydrocyclone G4 DM is widely used in the coal, iron ore and diamond industries for dense media separation (DMS); fine ore classification, media recovery and media densification.

The **Linatex Hydrocyclone G4 DM** range is available in sizes from 200mm to 1150mm to process a full range of feed tonnages and are manufactured from 27% chrome iron for maximum wear resistance.





150 to 500 Hydrocyclones 10°, 15° & 20° Cone Angles *

WITH CYLINDRICAL SECTION

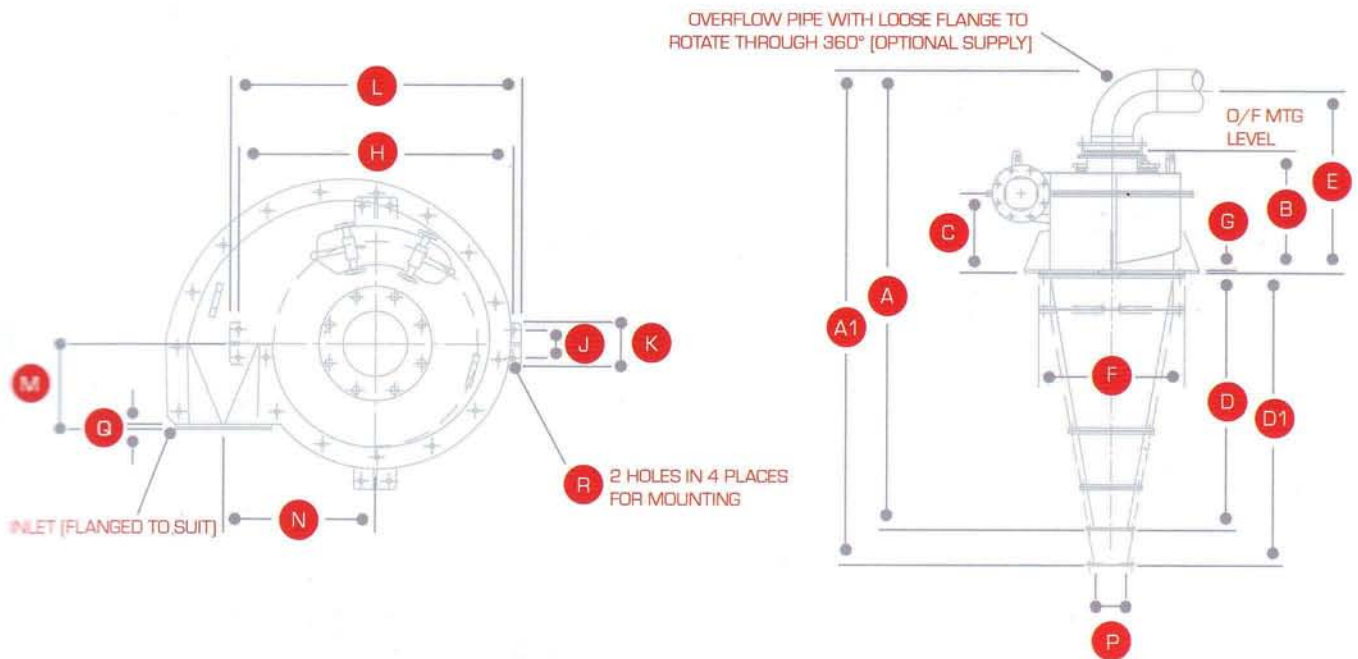
SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	Inlet dia. N.B.	Vol.	Mass	A1	D1	Vol.	Mass
100-10	779	217	60	562	217	173	-	-	-	-	274	153	41	-	-	-	20 32	2.5	-	929	712	3.6	-
150-10	781	205	98	415	327	290	10	400	80	130	460	192	66	80	14	15	50	9	38	978	616	12.6	47
250-10	1468	282	143	966	447	370	10	480	80	130	540	280	109	80	16	18	80	35	69	1728	1226	52	90
250-20	971	282	143	469	447	370	10	480	80	130	540	280	109	80	16	18	80	44	57	1231	729	61	78
375-10	1862	370	194	1186	601	510	10	620	100	150	680	391	145	150	18	18	125	96	145	2246	1570	133	197
375-20	1275	370	194	599	601	510	10	620	100	150	680	391	145	150	18	18	125	60	115	1659	983	97	167
500-15	2165	546	305	1189	863	650	12	760	100	150	820	480	203	150	18	18	150	96	208	2275	1800	248	318

* UNITS = LENGTH (MM), WEIGHT (KG), VOLUME (LITRES)

ALL DIMENSIONS ARE NOMINAL. WE RESERVE THE RIGHT TO MODIFY WITHOUT NOTICE.

INLET AND DISCHARGE FLANGES CAN BE SUPPLIED TO DIFFERENT STANDARDS. CONTACT LINATEX AT TIME OF SPECIFICATION.

Linatex G4 Hydrocyclone



660, 840 & 1200 Hydrocyclones 20° Cone Angles *

WITH CYLINDRICAL SECTION

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	Inlet	Vol.	Mass	A1	D1	Vol.	Mass
						dia.								dia.		dia.	N.B.						
660-20	2721	723	474	1520	1076	870	16	980	100	150	1040	306	543	150	18	19	200	448	557	2929	1728	516	625
840-20	3341	1076	804	1618	1546	1028	16	1000	120	180	1060	392	684	250	22	24	250	897	748	-	-	-	-
1200-20	3828	1220	822	2608	-	1478	25	1640	140	260	1800	524	941	375	22	26	400	-	1400	-	-	-	-

* UNITS = LENGTH (MM), WEIGHT (KG), VOLUME (LITRES)

ALL DIMENSIONS ARE NOMINAL, WE RESERVE THE RIGHT TO MODIFY WITHOUT NOTICE.

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Linatex G4 Hydrocyclone

PROVEN PERFORMANCE

The partition curve (below) shows the efficiency benefit of the Linatex Hydrocyclone G4 compared to standard hydrocyclones.

The steeper curve associated with the Linatex Hydrocyclone G4 proves a higher separation efficiency known as the Alpha number. This increased efficiency leads to less oversized particles in the overflow whilst reducing bypass of fine particles to the underflow.

SERVICE AND MAINTENANCE

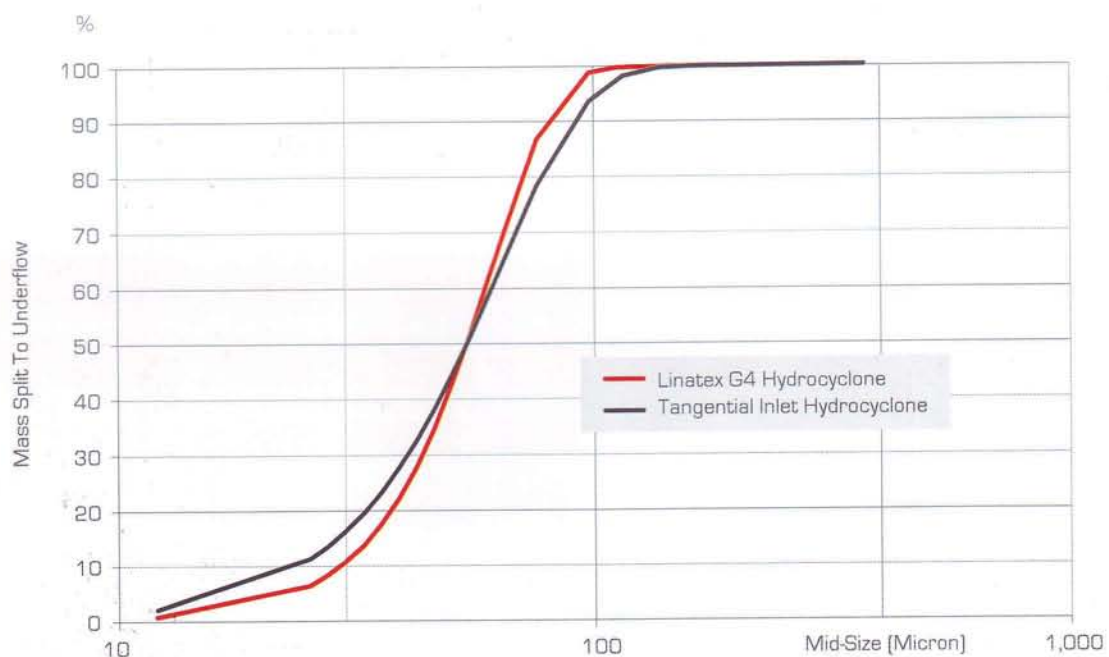
As a truly global company Linatex has a manufacturing and distribution presence on every continent, enabling us to meet your needs, no matter where you are.

Our regional design and support teams bring together world class expertise with detailed local knowledge.

Take advantage of our expert operational know-how to assist with the selection of your Linatex Hydrocyclone G4.

At Linatex, we back up our technical advice with onsite support to ensure that you continue to get the most out of the Linatex Hydrocyclone G4 range.

ACTUAL LINATEX HYDROCYCLONE G4
VS
STANDARD TANGENTIAL INLET HYDROCYCLONE





PROCESS
EQUIPMENT

Combining superior abrasion resistance with integrated processing systems, the Linatex process equipment line includes valves, hard metal and rubber pumps, dewatering screens, and hydrocyclones - each lined with Linatex premium rubber for maximum wear life - and custom engineered to industries such as aggregate, mining, oil sands production, and water treatment and clarification.



SHEET

Utilising our unique proprietary process, the Linatex range of rubber products comprise premium cured or uncured natural rubbers; carbon black and/or silica reinforcements; and numerous compound bases such as nitrile, neoprene and bromo butyl - all field-proven to outlast steel and conventional synthetic rubbers and polyurethane in a variety of heavy duty, high impact and highly abrasive wet or dry applications - while ensuring the lowest cost of ownership due to unparalleled strength, resilience and abrasion resistance.



MOULDED

Custom-fabricated to exact specifications and manufactured in any shape or configuration, Linatex moulded components meet the needs of virtually any industry requiring superior wear resistant parts performance in any application - even those involving high temperatures, oils, chemicals, acids and other highly corrosive materials.



SCREEN
MEDIA

Offering complete separating and sizing solutions backed by meticulous applications analysis, the Linatex range of screen media (manufactured and supplied by our fully-owned subsidiary, Durex Products, Inc.) maximises capacity and cost efficiency, and minimises maintenance and downtime - with innovations that surpass conventional alternatives in preventing plugging, pegging and blinding in tough applications - whether wet, dry, sticky or highly abrasive.



HOSE

Adaptable and compatible to limitless applications, Linatex custom-made material handling hose is engineered with an array of reinforcement cords and end connections, and a wear liner composition specifically formulated for the application - all available within a product range that includes slurry and chemical mining hose, dredge hose and a wide variety of preformed bends, reducers and T-pieces.



SERVICE

Linatex offers reliable and responsive onsite service and parts support as well as turnkey engineered solutions - from the initial onsite consultation, applications analysis and testing, through to design, manufacturing, installation, commissioning and ongoing maintenance - bringing together world class expertise with in-depth knowledge of local culture and practices.



product specifications

LINATEX G4 HYDROCYCLONE CL

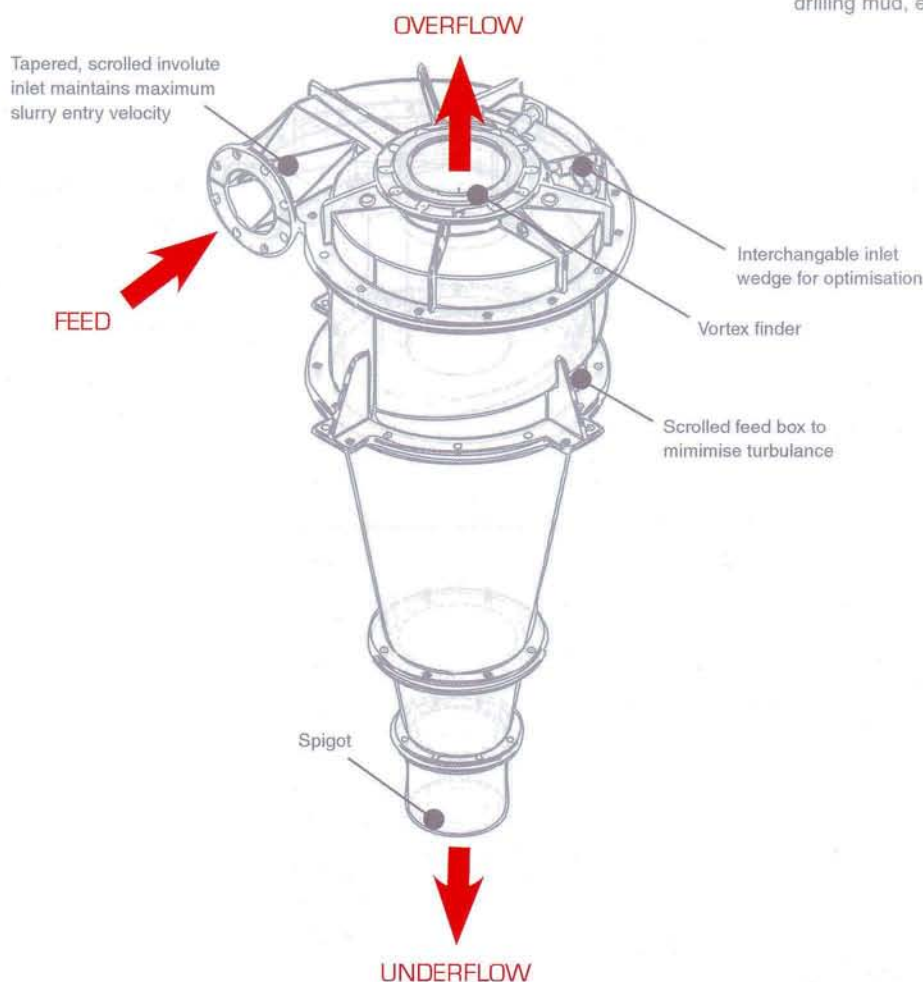
Classification

Linatex G4 Hydrocyclones CL have been proven to be an economical means of classification, especially in closed circuit grinding operations.

Coarse material which reports to the spigot is returned for further grinding, while fine material in the overflow goes on to further processing, for example CIP or floatation.

Fines recovery / De-Gritting Recovery of very fine solids requires small cyclones operating at higher than normal pressures. Particle size to be recovered and total throughput determine the cyclone diameter and numbers respectively.

Clusters of small cyclones can also be used to remove oversize grits from cement, clay, drilling mud, effluent and other slurries.





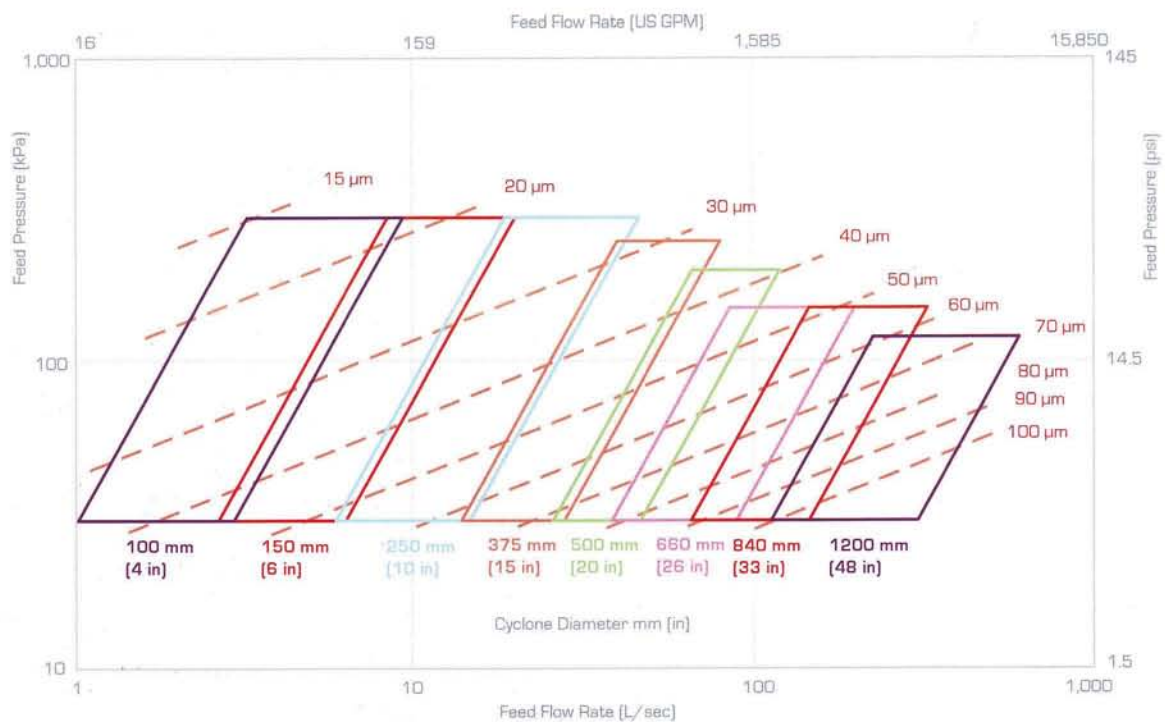
The interchangeable inlet wedge (purple inset, pictured above) enables quick and easy variation of the inlet size. The wedge gives the operator the opportunity to quickly change the size of the inlet. This provides

the ability to fine tune the hydrocyclone's performance without physically removing it from the process line.

Drop in Linatex replacement wear liners, manufactured from proven superior Linatex rubber, reduce maintenance cost due to their superior resistance to abrasion.

Unique combinations of Linatex Premium Rubber and high quality ceramics that are available for lower cones and spigots provide an even wear pattern within the Hydrocyclone.

RECOMMENDED OPERATING RANGES



Dimensions and sizes indicated are for reference only. Please contact your Linatex representative for more information.

LINEATEX
OUR STRENGTH. YOUR ENDURANCE.





product specifications

LINATEX G4 HYDROCYCLONE DM

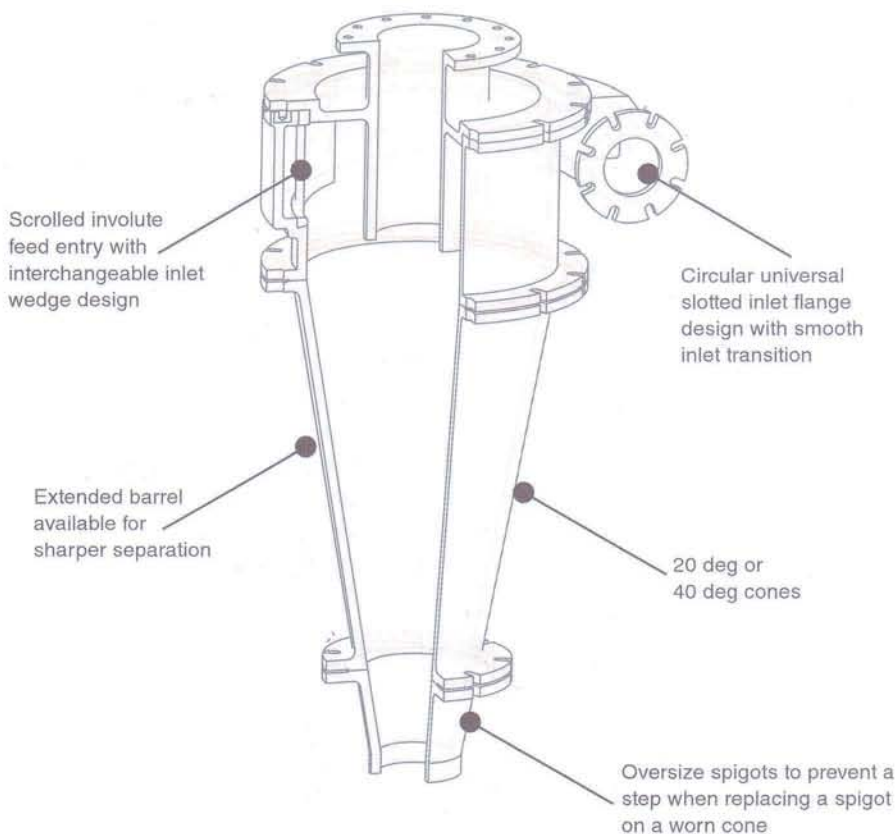
Dense Media

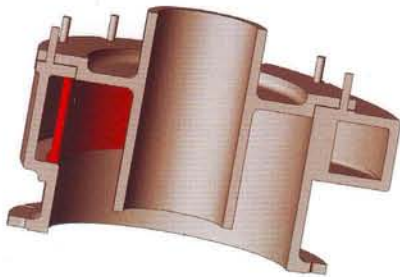
Widely used in South African coal, diamond and iron ore mineral plants for 30 years, the DM range of Linatex G4 Hydrocyclones have been specifically developed for the most arduous of duties.

The coarse size of the particles being treated in these particular mineral treatment processes demands the highest quality of design and wear materials to be used.

FEATURES

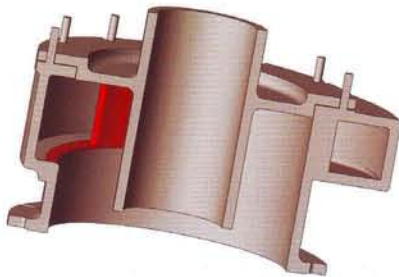
- The DM range are cast in hard wearing 27% chromium iron for maximum abrasion resistance that offers the customer lowest cost of ownership of their mineral processing assets.
- Both a reversible vortex finder and flanged overflow connection are available for supply, giving customers flexibility of plant design.
- Alternate wear materials are available for selection depending on application including our large range of premium rubber compounds and a full range of ceramics from the Linagard SC Ceramic range.
- The DM cyclones are available in a range of sizes from 200 mm to 1150 mm, to process a full range of feed tonnages and flow rates.
- Capacity selection is based on the head factors which range from 9 to 20 times the diameter depending on application. Linatex engineers are experts in this field with many years of knowledge and experience.





Unique to Linatex the DM Hydrocyclone is fitted with interchangeable inlet wedges (as pictured).

The various inlet wedges allow the cyclone capacity to be fine tuned to suit the application, using only small interchangeable components, rather than complete feed box sections. The wedge can be changed over quickly by removing the vortex finder cover plate.



Implementation of a round to rectangular long sweep involute entry with a downward sweeping ramp complete the advanced feature set of the Linatex DM Hydrocyclone.

APPLICATIONS

Coal

- Fine Coal Classification
- Dense Media Separation
- Media Recovery
- Media Densification

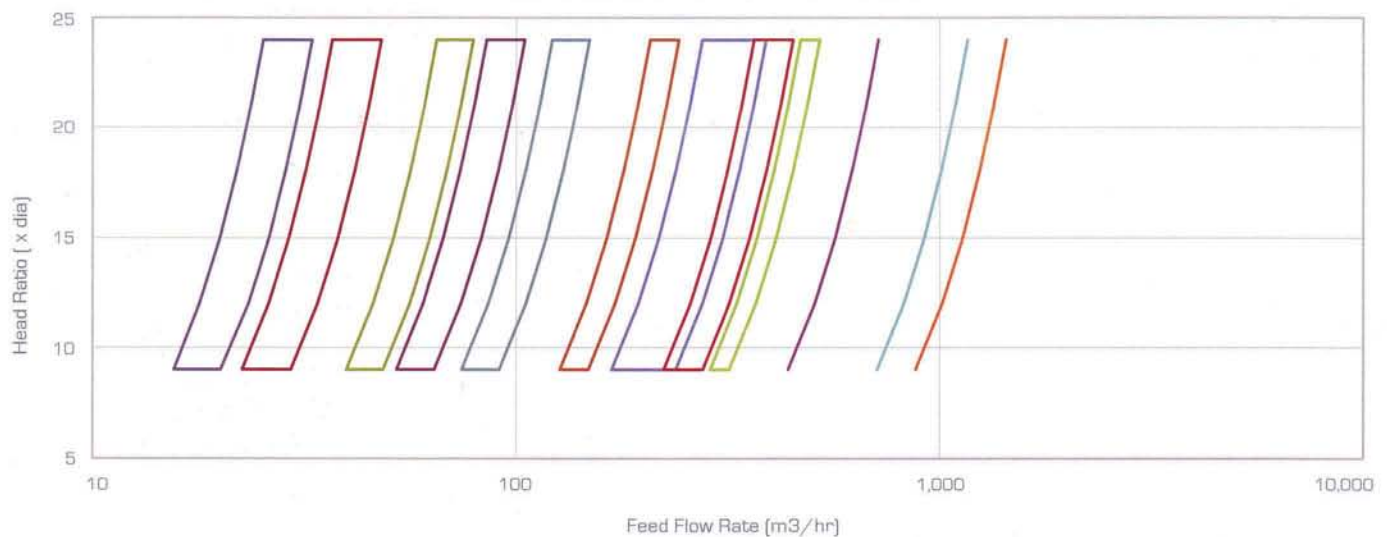
Diamonds

- Dense Media Separation
- Media Recovery
- Media Densification

Other Minerals

- Iron Ore
- Andalusite
- Phosphate
- Magnetite

RECOMMENDED OPERATING RANGES



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product specifications

LINATEX G4 HYDROCYCLONE DW

Dewatering

FEATURES

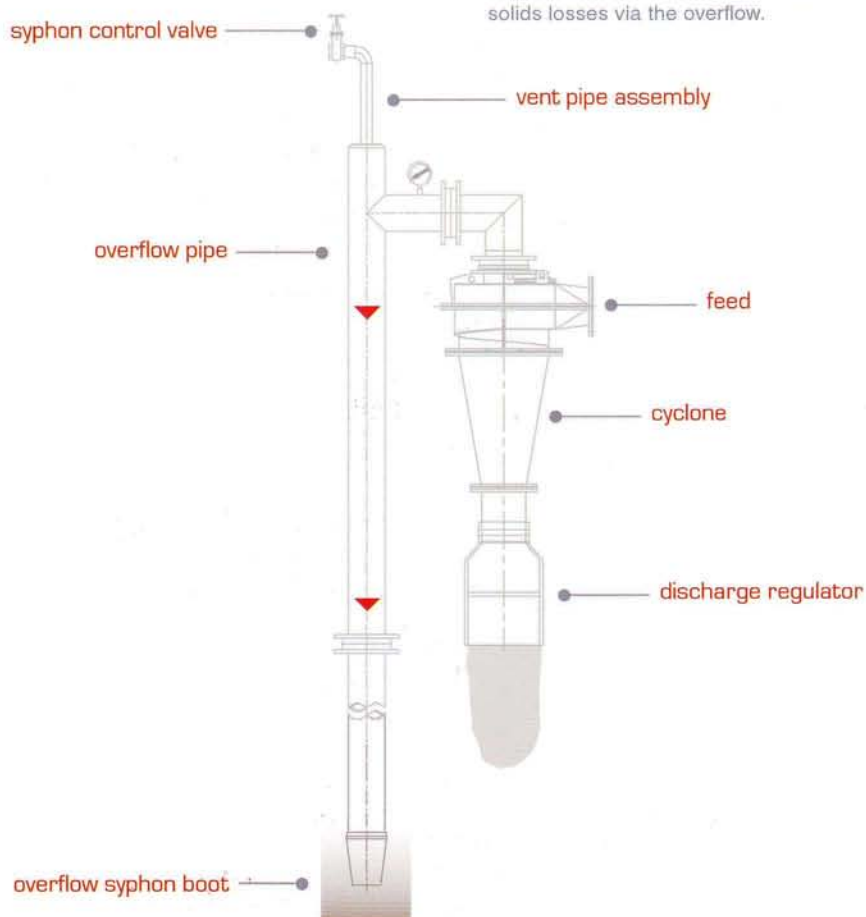
- Delivers the same underflow density regardless of any uncontrolled variation in solids content in the feed.
- Readily handles unexpected tramp oversize in the feed without plugging.
- Produces a very high underflow density (essentially water and slime free) without risking 'roping' conditions that result in solids losses via the overflow.

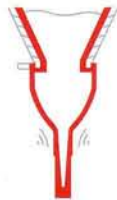
- Features simple variation of the underflow density, as required via the syphon control valve, without the need to resort to troublesome and expensive mechanical or hydraulic adjustable spigot arrangements.
- Delivers lower spigot maintenance.

The various features and benefits of the Linatex G4 Hydrocyclone DW mean that the unit can be sized considerably smaller than other dewatering devices. This means it can easily be mounted on structures or over bins for use with screens.

APPLICATIONS

- Coal fines dewatering
- Coal refuse dewatering
- Phosphate beneficiation
- Iron ore processing
- Dewatering mine tailings
- Sand washing and dewatering
- Dewatering crushed stone screenings
- Desliming processes
- Concentrate dewatering
- Classification in grinding operations
- Preparation of flotation conditioner feed
- Heavy metal (titanium sands) processing
- Degritting wastewater effluents
- Mill scale recovery and dewatering
- Dewatering granulated slag
- Pre-thickening of feed to vacuum filters
- Closed Circuit Milling





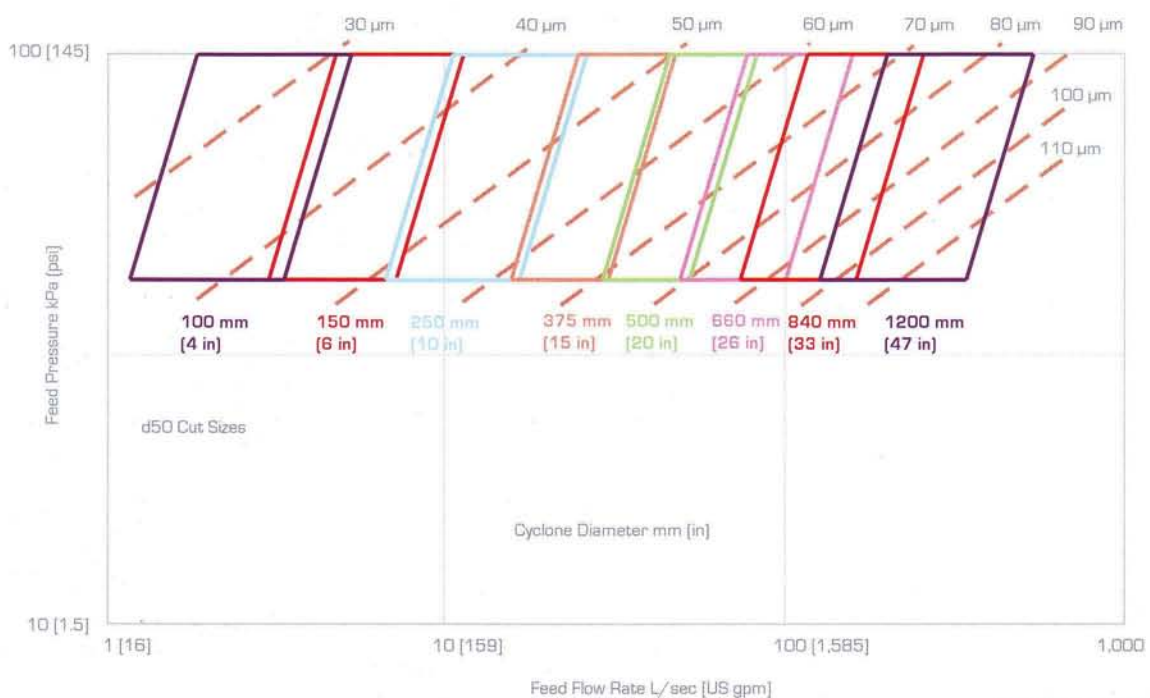
The key to the success of the Linatex G4 Hydrocyclone DW lies in the discharge regulator which is fitted below the spigot on the underflow.

When feed is introduced into the Linatex G4 Hydrocyclone DW, the coarser solids report to the spigot where the density and discharge rate of the solids are controlled by the underflow regulator.

An extended overflow pipe induces a syphon effect which in turn creates a vacuum on the discharge regulator, causing it to close and trap the majority of the water, silts and clays. When the weight of solids inside are sufficient to overcome the vacuum the discharge regulator is forced open and allows discharge of the solids.

The control of the material reporting to the underflow results in a much higher underflow density than otherwise obtainable.

RECOMMENDED OPERATING RANGES



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