
ROYTEC MAGNETIC SEPARATORS



BGRIMM - MARKET LEADERS IN MAGNETIC SEPARATION
Supported by Roytec

BGRIMM MAGNETIC SEPARATORS

ROYTEC GLOBAL is an International Company specializing in Liquid / Solid and mineral Separation technologies for the Mining and Industrial sectors.

Roytec is privately owned by Directors and Managers. We are passionate about excellence in our services and we pride ourselves in delivery to our promises. Our equipment is fully supported by Roytec Specialists based in Johannesburg, South Africa; Perth, Australia; Toronto, Canada; Yantai, China and Santiago, Chile.



The Beijing General Research Institute for Mining & Metallurgy (BGRIMM) and Roytec Global have combined forces to offer Western clients access to the world leading BGRIMM Magnetic Separation technology backed up with Roytec's local support, Service and spares.

BGRIMM are China's leading Mineral Institute, established in 1956 and employing +3500 technical staff. Over the past 50 years BGRIMM have developed world leading Permanent Magnet Separation technology, with thousands of Magnetic Separators in the field. This includes the world's largest Dry Drum Pulley and Dry Drum Magnetic Separators/cobbers and the world's largest Wet Drums at 1500 x 5000mm.

Intensive BGRIMM R&D has resulted in the best use of permanent magnets ensuring that the Gauss rating at the drum surface is maximised and consistent across the width of the drum. BGRIMM are well established in Southern Africa, with large plants in South Africa, Zambia, DRC and Mozambique. Since 2015 Roytec has been working closely with BGRIMM to ensure world class customer support for Western clients. Roytec's trained engineers and technicians offer assistance from the feasibility & proposal stage, thought project execution, construction & commissioning. After-commissioning services include maintenance contracts and spares stocked Globally as required. The partnership between BGRIMM and Roytec allows for clients to contract directly in China or in one of our global offices with manufacture alternatives in China or South Africa according to project requirements. All mechanical, electrical and control components fitted to the BGRIMM flotation cells are serviced in one of our global offices using our service engineers and reputable local vendors.

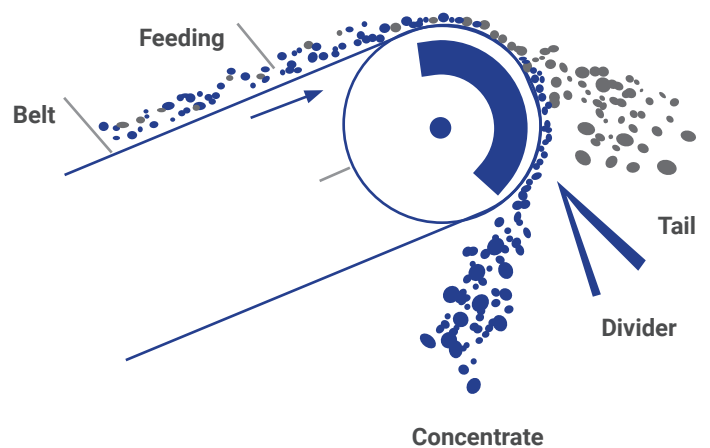


DRY MAGNETIC SEPARATORS

CT SERIES DRY PERMANENT MAGNETIC PULLEY DRUM SEPARATORS

Features

- The permanent magnetic system is composed of high-quality strontium ferrite or high-energy Nd-Fe-B rare earth magnets
- The average magnetic induction intensity on drum surface varies from 150 to 600mT
- The pulleys can be used as the head pulleys in belt conveying system
- Simple structure, convenient operation and easy maintenance



CT SERIES DRY PERMANENT MAGNETIC PULLEY DRUM SEPARATORS

Technical Specification

Type	Drum Diameter (Mm)	Drum Length (Mm)	Belt Width (Mm)	Magnetic Field Strength(Mt)	Mineral Size(Mm)	Processing Capacity(T/Hr)	Weight (T)
CT-0812	800	1150	1000	>160	10-60	65-110	2.4
CT-0816	800	1600	1400	>160	10-60	100-150	2.85
CT-1010	1000	970	800	>200	10-100	60-100	3.41
CT-1012	1000	1170	1000	>200	10-100	60-120	4.01
CT-1014	1000	1400	1200	>200	10-100	80-150	4.6
CT-1016	1000	1600	1400	>200	10-100	150-200	5.2
CT-1210	1200	970	800	>200	10-100	80-120	4.38
CT-1212	1200	1170	1000	>200	≤200	100-150	5.28
CT-1214	1200	1400	1200	>200	≤200	100-200	6.07
CT-1216	1200	1600	1400	>200	≤200	150-250	6.67
CT-1218	1200	1800	1600	>200	≤200	200-300	7.26
CT-1224	1250	2400	2000	≥400	≤300	1000-2000	8.0
CT-1412	1400	1200	1000	>200	≤300	100-200	6.0
CT-1414	1400	1400	1200	>200	≤300	150-250	6.6
CT-1416	1400	1600	1400	≥400	~400	200-350	7.2
CT-1424	1400	2400	2000	≥400	~400	500-800	9
CT-1532	1500	3200	2800	≥400	≤400	1000-5000	17.5
CT-1534	1500	3400	3000	≥400	≤400	1000-6000	19
CT-1627	1600	2700	2500	≥400	≤400	1000-4500	12.5

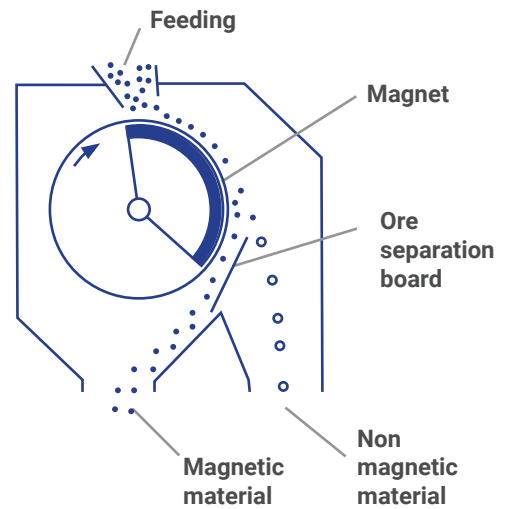
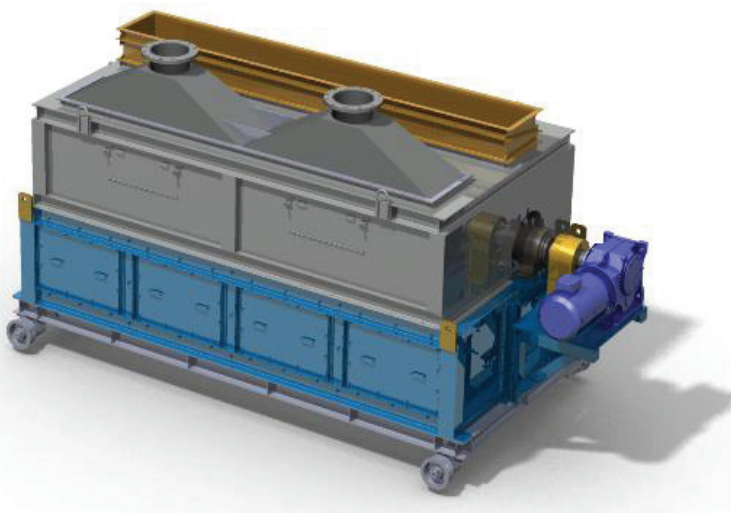
Installation Dimension

Type	B (mm)	D (mm)	A (mm)	L (mm)	L ₁ (mm)	L ₂ (mm)	K (mm)	M (mm)	N (mm)	Q (mm)	P (mm)	H (mm)	h (mm)	h ₁ (mm)	d (mm)	b (mm)	d1 s(mm)
CT-0812	1000	800	1500	1150	1945	900	215	160	90	440	530	160	53	119	110	32	34
CT-0816	1400	800	2000	1600	2445	1150	215	160	90	440	530	160	53	119	110	30	34
CT-1010	800	1000	1300	1000	1660	770	175	130	80	380	460	140	50	97	90	24	27
CT-1012	1000	1000	1500	1150	2020	930	255	170	100	480	570	180	53	140	130	36	34
CT-1014	1200	1000	1750	1400	2270	1055	255	170	100	480	570	180	53	140	130	36	34
CT-1016	1400	1000	2000	1600	2555	1190	275	180	110	540	630	200	63	161	150	40	34
CT-1210	800	1200	1300	1000	1780	790	255	170	100	480	570	180	55	130	120	36	34
CT-1212	1000	1200	1500	1150	2055	960	255	180	110	540	630	200	55	150	140	36	34
CT-1214	1200	1250	1750	1400	2305	1065	275	180	110	540	630	200	63	161	150	40	34
CT-1216	1400	1250	2000	1600	2555	1190	275	180	110	540	630	200	63	161	150	40	34
CT-1218	1600	1200	2250	1800	2820	1320	275	200	120	590	680	200	55	181	170	40	34
CT-1224	2000	1250	2800	2400	3357	1507	250	160	100	630	720	230	80	181	170	40	34
CT-1412	1000	1400	1500	1150	1890	960	170	160	100	540	630	200	60	148	140	36	34
CT-1414	1200	1400	1800	1400	2190	1065	170	160	100	540	630	200	70	158	150	36	34
CT-1416	1400	1400	2000	1600	2685	1200	215	160	100	610	700	220	80	169	160	40	34
CT-1424	1400	2400	2800	2400	3398	1548	250	160	100	630	720	230	80	179	170	40	34
CT-1532	2800	1500	3600	3200	4300	-	-	200	120	540	650	270	50	-	-	-	-
CT-1534	3000	1500	3800	3400	4419	2041	250	210	110	750	880	300	110	181	170	40	34
CT-1627	2500	1600	3100	2700	3600	-	-	200	110	540	650	200	50	-	-	-	-

CT SERIES DRY PERMANENT MAGNETIC DRUM

Features

- Used for high-efficiency dry separation of Magnetite after fine crushing or HPGR
- The magnetic field is consistent across the length of the drum ensuring optimal magnetic mineral capture.
- Maximum size CTF1240
Drum Length 1200mm
Drum Diameter 4000mm
- Maximum Capacity 450tph @ 40mm Topsize



Diameter	Length				
	2100	2400	3000	3500	4000
φ1200	1500	1800	2100	2400	3000
φ1050	2100	2400	3000	3500	4000

WET MAGNETIC SEPARATORS



CT SERIES WET PERMANENT MAGNETIC PULLEY DRUM SEPARATORS

Features

- Composed of high quality strontium ferrite or high energy Nd Fe B rare earth magnets
- Magnetic induction intensity on drum surface varies from 100 to 750mT
- Concurrent, counter current or counter rotation tank configuration is available
- Stable separation, large processing capacity, handy operation and easy maintenance
- Largest drum available 5000mm(l) x 1500mm(dia)





Application

Applicable mainly for wet separation of materials bearing magnetite, pyrrhotite, roasted ore, or titaniferous iron ore etc., also for magnetite recovery in coal plants, non-metalliferous ore and building materials etc.

The equipment can be used for roughing, cleaning and scavenging operations in the magnetic separation process providing good separation efficiency, large processing capacity, simple operation and easy maintenance.

A multi-pole system can be provided to improve concentrate grade. Application references are available in China, Australia, Central Asia, America and other regions.

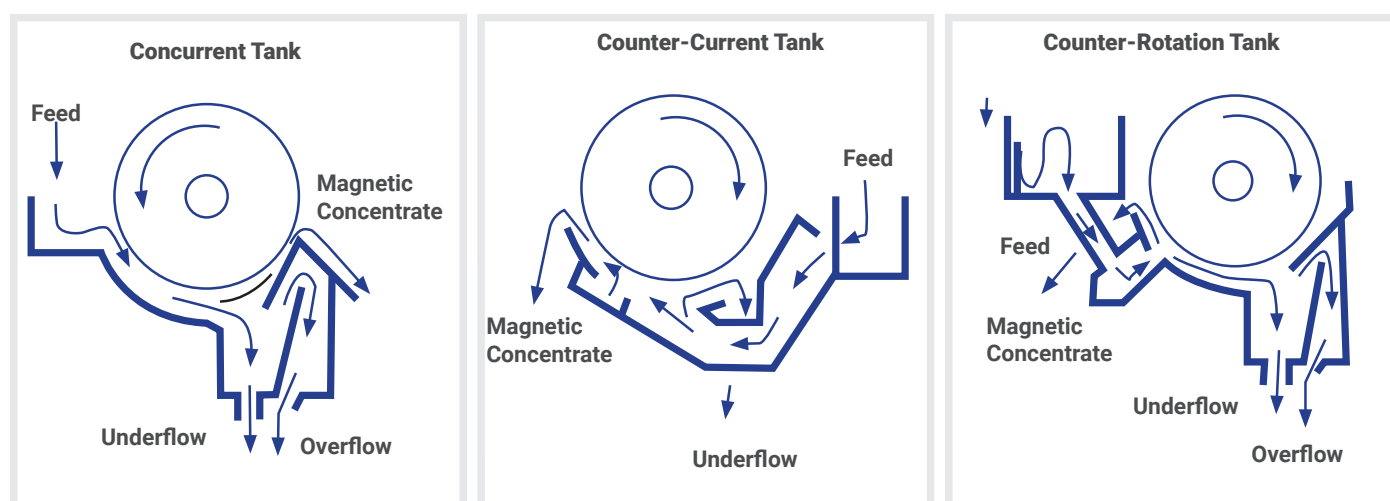


BK SERIES SPECIAL MAGNETIC SEPARATORS

Main Specification & Performance

Type	Drum Diameter (Mm)	Drum Length (Mm)	Magnetic Field Strength(Mt)	Processing Capacity(T/Hr)	Material Particle Size(mm)	Power (kW)	Outline Dimension LxWxH(mm)	Weight (T)
CT-712	750	1200	150-750	10-15	2-0	2.2	2485×1530×1375	2.0
CT-715		1500		15-20		3	2750×1530×1375	2.1
CT-718		1800		20-25		3	3085×1530×1375	2.2
CT-724		2400		25-30		3	2630×1530×1375	2.5
CT-918	900	1800	30-40	3-0	4	5.5	3195×1665×1555	2.8
CT-924		2400	40-50				3700×1665×1555	3.5
CT-930		3000	50-60				4175×1665×1555	4.3
CT-1018	1050	1800	40-60	3-0	4	5.5	3296×1980×1790	4.2
CT-1024		2400	60-80				4100×1980×1790	5.4
CT-1030		3000	70-100				4690×1980×1790	5.9
CT-1218	1200	1800	50-80	3-0	5.5	7.5	3100×2205×1905	5.1
CT-1224		2400	60-100				3740×2205×1905	6.1
CT-1230		3000	80-120				4772×2205×1905	7.0
CT-1235	1200	3500	100-140	3-0	7.5	11	4923×2205×1905	8.0
CT-1240		4000	120-160				5423×2205×1905	9.1
CT-1245		4500	140-180				5923×2205×1905	10.2
CT-1535	1500	3500	120-170	3-0	15	15	5110×2743×2335	11.2
CT-1540		4000	150-200				5610×2743×2335	12.4
CT-1545		4500	170-230				6110×2743×2335	13.6

Tank Types



INSTALLATION DIMENSION

Type	H	L	W	H1	W1	A	B	L1	L2	L3	L4	L5	d'	F	K	E	d	M	I	G/S
CT-712	1375	2385	1530	1000	940	780	270	1500	300	800	1620	900	24	600	300	350	125	430	100	120
CT-715		2685						1800	350	1000	1820	1200	24	600	300	350	125	430	100	
CT-718		3085						2100	400	1200	2220	1500	24	600	300	350	125	430	100	
CT-724		3830						2500	700	1400	2826	2100	24	600	300	350	125	430	100	
CT-918	1555	3195	1665	1000	1100	940	370	2100	500	1200	2220	1500	24	650	350	150	140	485	200	120
CT-924		3700						2700	1000	1800	2826	2100	24	730	280	150	125	485	200	
CT-930		4175						3300	1500	2400	3426	2700	24	730	300	150	125	485	200	
CT-1018	1790	3296	1980	1260	1330	1170	340	2144	600	1200	2264	1500	24	780	300	200	159	570	250	140
CT-1024		4100						2744	900	1800	2864	2100	27	830	300	200	159	570	250	
CT-1030		4690						3310	1000	2000	3470	2700	27	830	300	200	180	545	250	
CT-1218	1905	3100	2205	1300	1510	1190	395	2060	800	1200	2286	1600	27	905	350	300	273	605	250	/160
CT-1224		3740						2660	900	1800	2886	2200	27	905	350	300	273	605	250	
CT-1230		4772						3374	1000	2400	3514	2700	27	905	350	300	273	605	250	
CT-1235		4923						3954	1200	3000	4154	3200	27	905	450	300	273	605	250	200
CT-1240		5423						4454	1600	3500	4654	3700	27	905	450	300	273	605	250	
CT-1245		5923						4954	2000	4000	5154	4200	27	905	450	300	273	605	250	/210
CT-1535	2250	4923	2600	1540	1790	1320	430	3954	1200	3000	4154	3200	27	920	550	300	273	640	300	200
CT-1540		5423						4454	1600	3500	4654	3700	27	920	550	300	273	640	300	
CT-1545		5923						4954	2000	4000	5154	4200	27	920	550	300	273	640	300	/210

Besides providing conventional CT series wet magnetic separators, BGRIMM designed BK series magnetic separators specifically for pre-concentration, rougher concentrate, cleaner and scavenging of tailings in iron ore applications.

- BKY series drum magnetic separators are designed for the pre-concentration of coarser magnetic iron ore in fine crushing and autogenous milling circuits.
- BKC series drum magnetic separators are designed as roughers for magnetic iron ore after milling, to increase grade and remove tailings.
- BKJ series drum magnetic separators are designed for the concentration of magnetic iron ore, to achieve the required grade of concentrate, while ensuring the recovery of Armco magnetic iron.
- BKW series drum magnetic separators are designed for the scavenging of magnetic particles from tailings during unforeseen upset conditions.
- BKF series drum magnetic separators are designed for the recovery of misplaced magnetic iron particles in the froth from a reverse flotation process.



MAGNETIC SEPARATION COLUMN

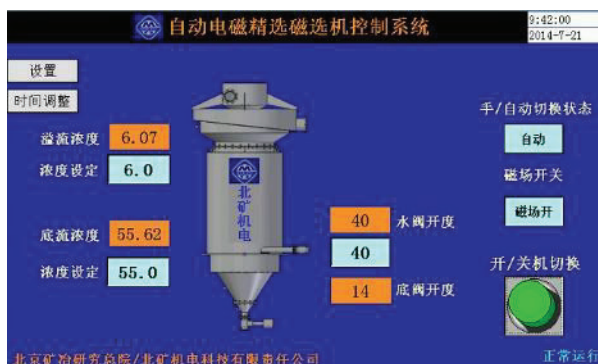
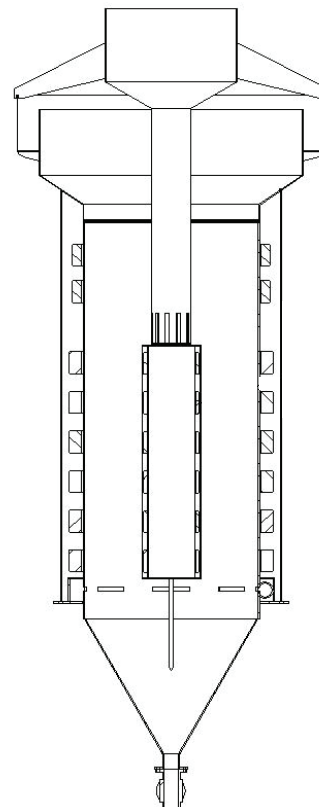
FEATURES

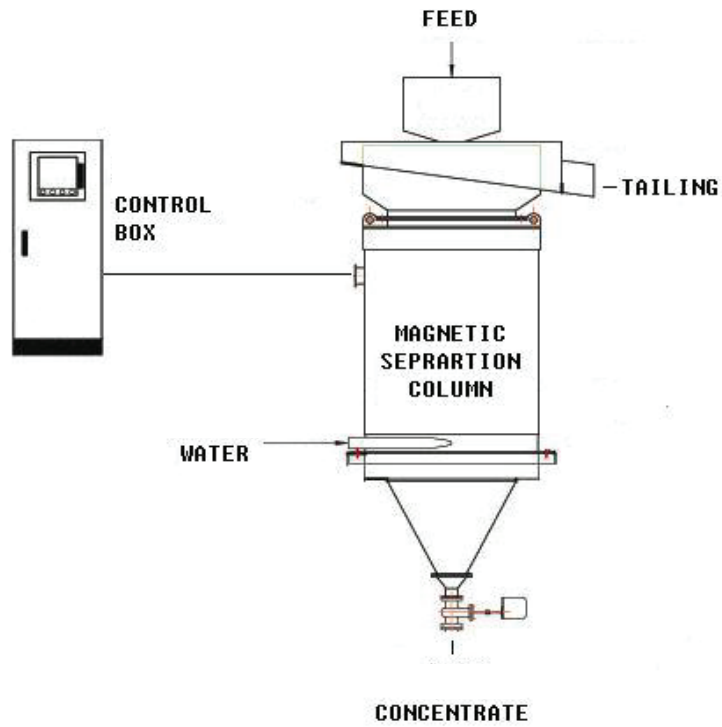
- Improves iron concentrate grade
- Reduces the impurity content
- Deslimes microfine magnetic minerals.



STRUCTURE

- Magnetic field partition control
- Uniform radial magnetic field
- Intelligent PLC control





TECHNOLOGY CHARACTERISTICS

- Alternating magnetic field to improve the quality of concentrate ;
- Controlable separation index ;
- High level of automation
- Remote control
- Final separation stage - improves grade between 2 - 9%

Type	Diameter (Mm)	Reccomeded Output (t/d)	Height (mm)	AV (v)	Power (kW)
BKZ-600	φ600	170	360	220/380	1.8
BKZ-800	φ800	250	4300	220/380	3
BKZ-1000	φ1000	380	4900	220/380	4
BKZ-1200	φ1200	560	5200	220/380	6
BKZ-1400	φ1400	750	5900	220/380	8
BKZ-1600	φ1600	850	6500	220/380	10
BKZ-1800	φ1800	1050	7400	220/380	12



ROYTEC
Global Separation Solutions

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BGRIMM

Other ROYTEC equipment

- Vacuum Belt Filters & Vacuum Disc Filters
- Thickeners using RadFlow Feedwell Technology
- Dual Media Filters
- Filter Presses & Tower Presses
- Ceramic Disc Filters
- Ion Exchange Systems
- Flocculant / Coagulant Preparation Dosing Plants
- Linear Screens
- Dynamic Bed & Pinned Bed Clarifiers
- Vibrating Screens

Other BGRIMM technologies

- Regrind Mills
- Magnetic Separators
- Advanced Control Systems
- On-stream X-ray fluorescent analysers
- Flotation Reagents

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