

# Magnetic Pulleys

*...Only from Eriez.*

## *Electromagnetic*

*Powerful magnetic pulleys for effective separating of heavy tramp iron and fine iron contaminants from conveyor transported materials.*

**E**riez provides the protection of a separator with a powerful uniform field over its entire surface. This field removes both large and small tramp iron from nonmagnetics traveling at various speeds in various burden depths on belt conveyers.

Eriez Electromagnetic Pulleys are designed for the very toughest iron separation applications and can handle high speeds, heavy burden depths and hard-to-separate materials. Even under the most severe operating conditions these pulleys will provide ideal automatic removal of unwanted iron from materials conveyed on belts to prevent machinery damage and product contamination for food, chemical, mining, rock products, ceramic, paper, coal handling and foundry operations.

Electromagnetic head pulleys are also utilized in iron ore plants as preconcentrators of magnetite. Due to the strong and penetrating magnetic field of electro pulleys, coarse iron ore is easily preconcentrated reducing crushing and milling cost.

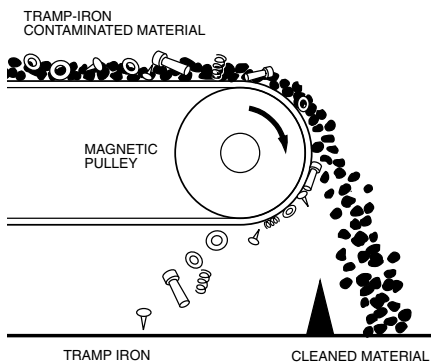


## PRINCIPLE OF OPERATION

Eriez Magnetic Pulleys are widely used as head pulleys in belt conveyors for continuous automatic removal of damaging tramp iron from a great variety of materials.

As illustrated in Figure 1, tramp iron contaminated material comes within the pulley's magnetic field, the tramp iron is attracted and held to the belt until it reaches the underside, passes out of the magnetic field and is separately discharged. The cleaned, nonmagnetic material is discharged over the pulley in a normal trajectory.

A divider arrangement is usually installed as indicated in the sketch. An adjustable divider will permit best positioning for specific conditions of material and tramp iron discharge.



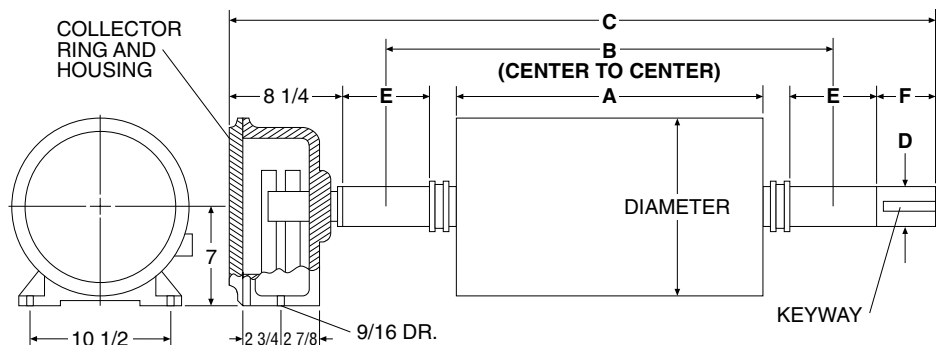
**Figure 1. Operating Principle of a Magnetic Pulley**



**Figure 2. Separated Tramp Iron**

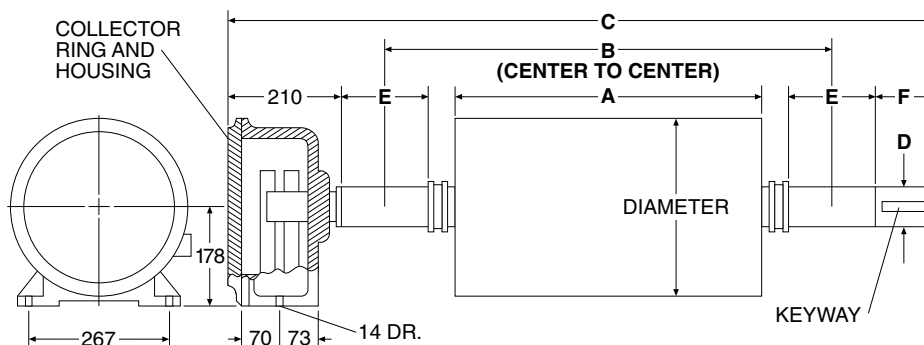
## SPECIFICATIONS – Inch/Lb. System

Pulley Diameter Inches (Belt Speed)	Belt Width Inches	Watts Consumed	Shipping Wt Lbs Approx.	Capacity Cu Ft Per Hr	Dimensions In Inches						Keyway In Shaft W x DP x Lg Inches
					A	B	C	D	E	F	
<b>18</b> (235 FPM)	12	940	900	1,450	14	24	42 1/4	2 7/16	5	5	5/8 X 5/16 X 4 1/2
	14	1,000	950	1,650	16	26	44 1/4	2 7/16	5	5	5/8 X 5/16 X 4 1/2
	16	1,100	1,050	1,900	18	28	46 1/4	2 7/16	5	5	5/8 X 5/16 X 4 1/2
	18	1,200	1,200	2,550	20	30	48 1/4	2 7/16	5	5	5/8 X 5/16 X 4 1/2
	20	1,250	1,300	3,000	22	32 1/2	51 1/4	2 11/16	5 1/2	5	5/8 X 5/16 X 4 1/2
	24	1,440	1,400	4,500	26	37	56 1/4	2 15/16	6	5	3/4 X 3/8 X 4 1/2
	30	1,750	1,500	7,100	32	43	63 1/4	2 15/16	6	6	3/4 X 3/8 X 5 1/2
	36	2,000	1,800	10,500	38	50	71 1/4	3 7/16	7	6	7/8 X 7/16 X 5 1/2
	42	2,300	2,000	14,500	44	56	77 1/4	3 7/16	7	6	7/8 X 7/16 X 5 1/2
	48	2,600	2,400	19,000	50	63	85 1/4	3 15/16	8	6	1 X 1/2 X 5 1/2
<b>20</b> (262 FPM)	16	1,275	1,100	2,100	18	28 1/2	47 1/4	2 11/16	5 1/2	5	5/8 X 5/16 X 4 1/2
	18	1,390	1,200	2,700	20	30 1/2	49 1/4	2 11/16	5 1/2	5	5/8 X 5/16 X 4 1/2
	20	1,450	1,300	3,350	22	33	52 1/4	2 15/16	6	5	3/4 X 3/8 X 4 1/2
	24	1,650	1,500	5,000	26	38	59 1/4	3 7/16	7	6	7/8 X 7/16 X 5 1/2
	30	2,025	2,000	8,000	32	44	65 1/4	3 7/16	7	6	7/8 X 7/16 X 5 1/2
	36	2,250	2,500	11,800	38	51	73 1/4	3 15/16	8	6	1 X 1/2 X 5 1/2
	42	2,625	3,000	16,700	44	57	79 1/4	3 15/16	8	6	1 X 1/2 X 5 1/2
	48	2,850	3,600	21,000	50	64	88 1/4	4 7/16	9	7	1 1/8 X 9/16 X 6 1/2
	18	1,655	1,800	3,100	20	31	50 1/4	2 15/16	6	5	3/4 X 3/8 X 4 1/2
	24	1,905	2,000	5,700	26	38	59 1/4	3 7/16	7	6	7/8 X 7/16 X 5 1/2
<b>24</b> (285 FPM)	30	2,275	2,500	9,000	32	45	67 1/4	3 15/16	8	6	1 X 1/2 X 5 1/2
	36	2,550	3,000	13,400	38	51	73 1/4	3 15/16	8	6	1 X 1/2 X 5 1/2
	42	2,925	3,500	19,000	44	58	82 1/4	4 7/16	9	7	1 1/8 X 9/16 X 6 1/2
	48	3,225	4,000	26,300	50	64	88 1/4	4 7/16	9	7	1 1/8 X 9/16 X 6 1/2
	18	2,025	2,500	3,600	20	33	55 1/4	3 15/16	8	6	1 X 1/2 X 5 1/2
	24	2,355	3,000	6,600	26	39	61 1/4	3 15/16	8	6	1 X 1/2 X 5 1/2
	30	2,775	3,500	10,500	32	46	70 1/4	4 7/16	9	7	1 1/8 X 9/16 X 6 1/2
	36	3,100	4,000	15,500	38	52	76 1/4	4 7/16	9	7	1 1/8 X 9/16 X 6 1/2
	42	3,600	4,500	22,000	44	59	85 1/4	4 15/16	10	8	1 1/4 X 5/8 X 7 1/2
	48	4,000	5,000	30,500	50	65	91 1/4	4 15/16	10	8	1 1/4 X 5/8 X 7 1/2
<b>30</b> (332 FPM)	60	4,450	6,000	41,800	62	78	107 1/4	5 7/16	11	10	1 3/8 X 1 1/16 X 9 1/2
	18	2,400	3,800	4,280	20	33	55 1/4	3 15/16	8	6	1 X 1/2 X 5 1/2
	24	2,800	4,400	7,400	26	40	64 1/4	4 7/16	9	7	1 1/8 X 9/16 X 6 1/2
	30	3,500	5,000	11,500	32	46	71 1/4	4 7/16	9	8	1 1/8 X 9/16 X 7 1/2
	36	3,900	5,800	17,000	38	53	79 1/4	4 15/16	10	8	1 1/4 X 5/8 X 7 1/2
	42	4,300	6,500	24,500	44	59	86 1/4	4 15/16	10	9	1 1/4 X 5/8 X 8 1/2
	48	4,700	7,000	33,700	50	66	95 1/4	5 7/16	11	10	1 3/8 X 1 1/16 X 9 1/2
	60	5,600	8,500	52,600	62	79	111 1/4	5 15/16	12	12	1 1/2 X 3/4 X 11 1/2
	24	3,200	6,500	8,000	26	41	67 1/4	4 15/16	10	8	1 1/4 X 5/8 X 7 1/2
	30	3,750	7,200	12,700	32	47	75 1/4	4 15/16	10	10	1 1/4 X 5/8 X 9 1/2
<b>36</b> (375 FPM)	36	4,600	8,000	18,800	38	54	85 1/4	5 7/16	11	12	1 3/8 X 1 1/16 X 11 1/2
	42	5,100	8,800	26,700	44	61	93 1/4	5 15/16	12	12	1 1/2 X 3/4 X 11 1/2
	48	5,500	9,500	36,800	50	68	103 1/4	6 1/2	13	14	1 5/8 X 13/16 X 13 1/2
	60	6,500	11,000	59,000	63	82	118 1/4	7	14	14	1 3/4 X 7/8 X 13 1/2
	24	4,100	6,500	8,800	26	41	67 1/4	4 15/16	10	8	1 1/4 X 5/8 X 7 1/2
	30	4,600	8,000	13,700	32	47	75 1/4	4 15/16	10	10	1 1/4 X 5/8 X 9 1/2
	36	5,500	10,000	20,400	38	54	85 1/4	5 7/16	11	12	1 3/8 X 1 1/16 X 11 1/2
	42	6,100	12,000	29,000	44	61	93 1/4	5 15/16	12	12	1 1/2 X 3/4 X 11 1/2
	48	6,500	14,000	40,000	50	68	103 1/4	6 1/2	13	14	1 5/8 X 13/16 X 13 1/2
	60	7,600	18,000	64,500	63	82	118 1/4	7	14	14	1 3/4 X 7/8 X 13 1/2



## SPECIFICATIONS – Metric System

Pulley Diameter mm (Belt Speed)	Belt Width mm	Watts Consumed	Shipping Wt Kg Approx.	Capacity Cu M Per Hr	Dimensions In Millimeters						Keyway In Shaft W x DP x Lg mm
					A	B	C	D	E	F	
<b>508</b> (71.6 MPM)	305	940	408	41	356	610	1073	62	127	127	16 X 8 X 114
	356	1,000	431	47	406	660	1124	62	127	127	16 X 8 X 114
	406	1,100	476	54	457	711	1175	62	127	127	16 X 8 X 114
	457	1,200	544	72	508	762	1226	62	127	127	16 X 8 X 114
	508	1,250	590	85	559	826	1302	68	140	127	16 X 8 X 114
	610	1,440	635	127	660	940	1429	75	152	127	19 X 10 X 114
	762	1,750	680	201	813	1092	1607	75	152	152	19 X 10 X 140
	914	2,000	816	297	965	1270	1810	87	178	152	22 X 11 X 140
	1067	2,300	907	411	1118	1422	1962	87	178	152	22 X 11 X 140
	1219	2,600	1088	538	1270	1600	2165	100	203	152	25 X 13 X 140
<b>559</b> (79.8 MPM)	406	1,275	499	59	457	724	1200	68	140	127	16 X 8 X 114
	457	1,390	544	76	508	775	1251	68	140	127	16 X 8 X 114
	508	1,450	590	95	559	838	1327	75	152	127	19 X 10 X 114
	610	1,650	680	142	660	965	1505	87	178	152	22 X 11 X 140
	762	2,025	907	227	813	1118	1657	87	178	152	22 X 11 X 140
	914	2,250	1134	334	965	1295	1861	100	203	152	25 X 13 X 140
	1067	2,625	1361	473	1118	1448	2013	100	203	152	25 X 13 X 140
	1219	2,850	1633	595	1270	1626	2242	113	229	178	29 X 14 X 165
<b>610</b> (86.9 MPM)	457	1,655	816	88	508	787	1276	75	152	127	19 X 10 X 114
	610	1,905	907	161	660	965	1505	87	178	152	22 X 11 X 140
	762	2,275	1135	255	813	1143	1708	100	203	152	25 X 13 X 140
	914	2,550	1360	380	965	1295	1861	100	203	152	25 X 13 X 140
	1067	2,925	1585	538	1118	1473	2089	113	229	178	29 X 14 X 165
	1219	3,225	1815	745	1270	1626	2242	113	229	178	29 X 14 X 165
<b>762</b> (101 MPM)	457	2,025	1135	102	508	838	1403	100	203	152	25 X 13 X 140
	610	2,355	1360	187	660	991	1556	100	203	152	25 X 13 X 140
	762	2,775	1585	297	813	1168	1784	113	229	178	29 X 14 X 165
	914	3,100	1815	439	965	1321	1937	113	229	178	29 X 14 X 165
	1067	3,600	2040	623	1118	1499	2165	125	254	203	32 X 16 X 191
	1219	4,000	2265	887	1270	1651	2318	125	254	203	32 X 16 X 191
	1524	4,450	2720	1184	1575	1981	2724	138	279	254	35 X 17 X 241
<b>914</b> (114.3 MPM)	457	2,400	1725	121	508	838	1403	100	203	152	25 X 13 X 140
	610	2,800	1995	210	660	1016	1632	113	229	178	29 X 14 X 165
	762	3,500	2265	325	813	1168	1810	113	229	203	29 X 14 X 191
	914	3,900	2630	482	965	1346	2013	125	254	203	32 X 16 X 191
	1067	4,300	2950	695	1118	1499	2191	125	254	229	32 X 16 X 216
	1219	4,700	3175	955	1270	1676	2419	138	279	254	35 X 17 X 241
	1524	5,600	3585	1490	1575	2007	2860	151	305	305	38 X 19 X 292
<b>1066</b> (128 MPM)	610	3,200	2950	227	660	1041	1708	125	254	203	32 X 16 X 191
	762	3,750	3265	360	813	1194	1911	125	254	254	32 X 16 X 241
	914	4,600	3630	533	965	1372	2165	138	279	305	35 X 17 X 292
	1067	5,100	3990	756	1118	1549	2369	151	305	305	38 X 19 X 292
	1219	5,500	4310	1043	1270	1727	2623	165	330	356	41 X 21 X 343
	1524	6,500	4990	1955	1600	2083	3004	178	356	356	44 X 22 X 343
<b>1219</b> (134 MPM)	610	4,100	2950	249	660	1041	1708	125	254	203	32 X 16 X 191
	762	4,600	3630	388	813	1194	1911	125	254	254	32 X 16 X 241
	914	5,500	4535	578	965	1372	2165	138	279	305	35 X 17 X 292
	1067	6,100	5440	822	1118	1549	2369	151	305	305	38 X 19 X 292
	1219	6,500	6550	1133	1270	1727	2623	165	330	356	41 X 21 X 343
	1524	7,600	8165	1827	1600	2083	3004	178	356	356	44 X 22 X 343



Dimensions and specifications are subject to change without notice.

## SELECTING PULLEY

Listed capacities are based on operation at rated belt speed shown for each diameter and strength, which are maximum recommended belt speeds. Lower belt speeds will require proportionate reduction in capacity to maintain a reasonable depth of flow consistent with efficient separation performance.

### Determine Diameter

An important factor to remember is — the larger the diameter the greater the magnetic strength.

### Determine Width

The width of your pulley is determined by the width of the conveyor belt to be used. The following information should be submitted when requesting quotation or placing order:

1. Kind of material
2. Size of material
3. Amount of material handled per hour
4. Percent moisture
5. Purpose of separation (i.e., crusher or pulverizer protection, purification, concentration, etc.)
6. Characteristics of available power supply

### Factors for Choosing the Correct Pulley

Use listed capacities for Super Heavy Duty units.

Use 80% of listed capacity for Heavy Duty units.

Figures under Watts Consumed apply to normal applications. For special applications such as elevations above 3,000 feet, ambient temperature in excess of 100°F (38°C) or handling of hot materials, special construction is required.

Listed weights are for Super Heavy Duty units. For Heavy Duty units reduce the amount by 40%.

## DESIGN AND CONSTRUCTION

### Shaft

All shafts are of alloy steel, amply proportioned to handle the required load. Shafts are carefully machined from over-size stock to required finish dimensions.

### Coils

High quality coils are locked securely in place by the unique core design.

### Collector Rings and Housing

Heavy cast bronze rings, insulated by phenolic discs are used. Housing is of cast iron with readily accessible interior. Large carbon brushes insure positive continuous contact. The housing is equipped with grease and dust-proof seals to prevent foreign matter from getting in.

### Equipment Furnished

The shaft, set collars, collector rings, brush holders with brushes and dust-resistant collector ring housing

are furnished with each pulley as standard equipment. Bearings are not included, but can be supplied at moderate cost.

Only direct current is suitable for energizing electromagnetic pulleys. Standard voltage is 230V DC but other non-standard voltages can be supplied at slight additional cost. Where direct current is not available, suitable rectifiers can be supplied.



### World Authority in Advanced Technology for Magnetic, Vibratory and Inspection Applications

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