

MITCHELLS

PROCESS AND PRODUCT
HANDLING SPECIALISTS




MITCHELLS
EUROPE

HANDLING EQUIPMENT

DESIGN & FEATURES
SAFETY & QUALITY
CAPACITIES

Complete conveying solutions across a range of industries.

About Mitchells

Mitchells is your solution provider for bulk handling systems

Mitchells is a global group, supplying complete conveying solutions for bulk material handling.

Our experienced engineering team work directly with you to provide collaborative, expert advice and maximise your profitability through efficient machinery and intelligent design.

Mitchells' state of the art workshop is outfitted with the best technologies to ensure our equipment is safe, reliable and robust. We have the capacity and expertise to handle any project, from conceptual design through to operation.

Industry Strengths:

Oilseed

Solutions for Oilseed Processing Facilities

Grain Handling & Storage

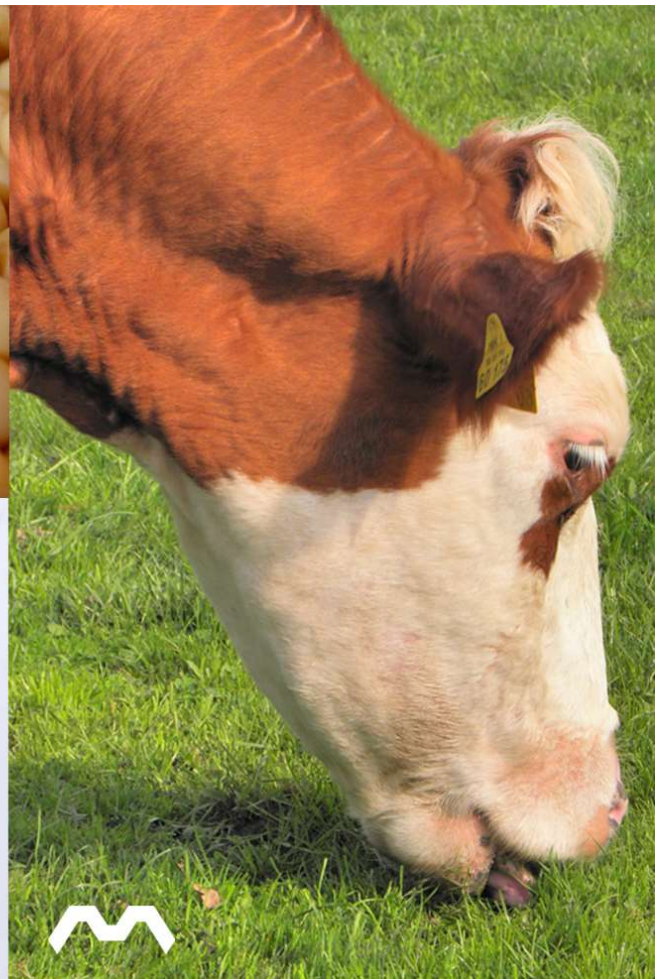
Complete conveying solutions for Grain Handling & Storage

Animal Feed

Feedmills & solutions for the Animal, Aqua & Pet Feed industries

Engineering & Specialty Manufacturing

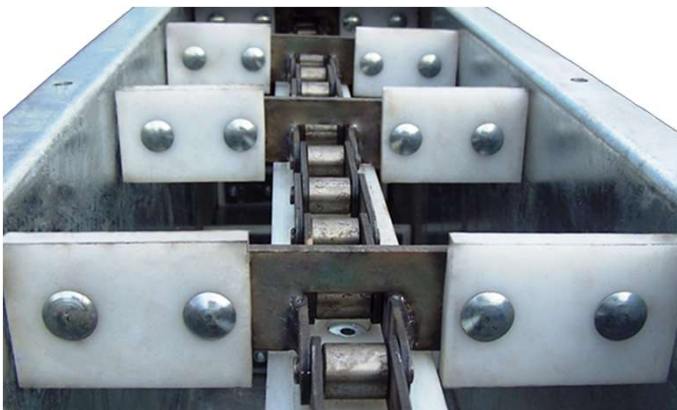
Tailor made solutions for a broad range of specialty industries



En Masse Conveyors

Design & Features

- Up to 2,000 m³/hr. capacity in standard models
- Head and tail sprockets are Split design for ease of maintenance
- Tail sections “rounded” to reduce material accumulation
- Telescopic tail section for chain tension adjustment available as option
- Heavy duty construction, Mild or Stainless steel, Painted or Galvanised finish
- Standard, Divided Flow and Double deck inlet options available
- Welded Steel (WH Series) / DIN / ISO / M series and Drop forge chain styles available
- Bottom & bolt in side plates can be supplied in AR220 - AR500 to increase conveyor life

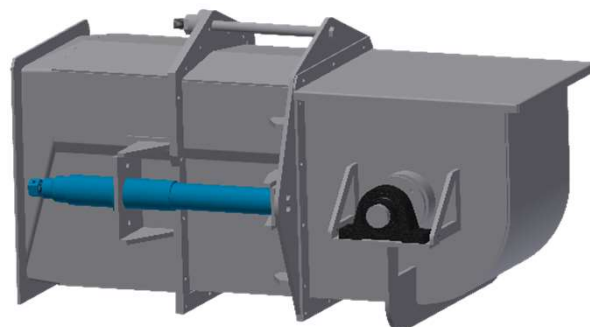
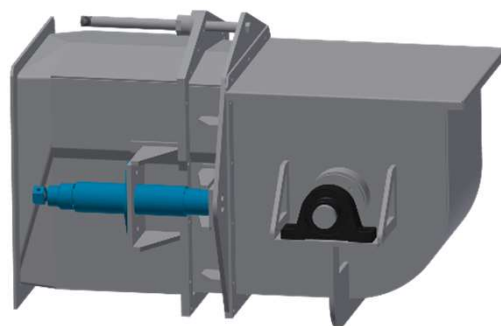


Model	Nominal Width (mm)	Maximum Material height (mm)	Capacity (m ³ /hr)							
			Chain speed (m/s)							
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Model 200	203	145	9.5	19	28.5	38	47.5	57	66.5	76
Model 250	255	218	18	36	54	72	90	108	126	144
Model 300	305	264	26	52	78	104	130	156	182	208
Model 400	406	383	50	100	150	200	250	300	350	400
Model 500L	508	447	74	148	222	296	370	444	518	592
Model 500	508	522	86	172	258	344	430	516	602	688
Model 600	600	522	102	204	306	408	510	612	714	816
Model 750	750	509	124	248	372	496	620	744	868	992
Model 750H	750	609	148	296	444	592	740	888	1036	1184
Model 900	900	509	148	296	444	592	740	888	1036	1184
Model 1050	1050	509	173	346	519	692	865	1038	1211	1384
Model 1050H	1050	609	207	414	621	828	1035	1242	1449	1656
Model 1200	1200	509	200	400	600	800	1000	1200	1400	1600
Model 1200H	1200	609	237	474	711	948	1185	1422	1659	1896
Model 1500	1500	509	247	494	741	988	1235	1482	1729	-
Model 1500H	1500	609	296	592	888	1184	1480	1776	2072	-

* Conveyor capacities based on 90% filling



En Masse Conveyors



Safety & Quality

- CE Certified in accordance with test standards EN 618:2002+A1:2010, EN ISO12100:2010
- ATEX approved for use in areas at risk of explosive atmospheres



Bulk Flow Conveyors

Design & Features

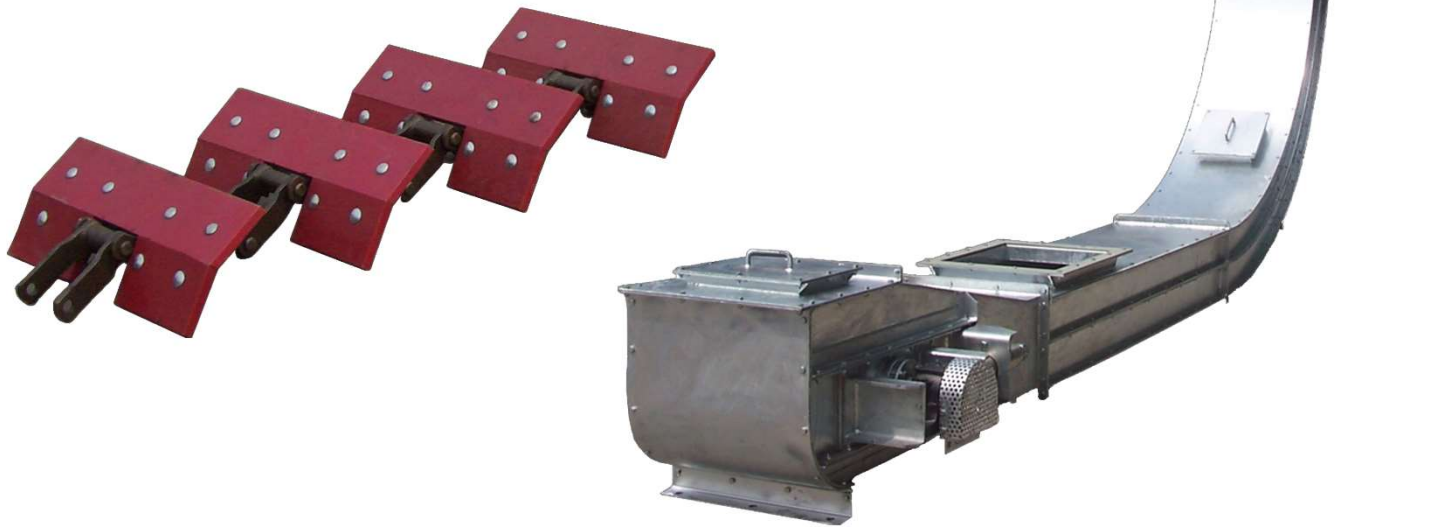
- Up to 1,000 m³/hr. capacity in standard models
- Up to 90 degree incline angle
- Heavy duty construction, Mild or Stainless steel, Painted or Galvanised finish
- Head and tail sprockets are Split design for ease of maintenance
- Tail sections “rounded” to reduce material accumulation
- Telescopic tail section for chain tension adjustment available as option
- Welded Steel (WH Series) / DIN / ISO / BS / M series and Drop forge chain styles available
- Bottom, Divider and bolt in side plates can be supplied in AR200 - AR500 to increase conveyor life
- Vapour tight option for Extractor and DT Discharge available



Bulk Flow Conveyors

Safety & Quality

- CE Certified in accordance with test standards EN 618:2002+A1:2010, EN ISO12100:2010
- ATEX approved for use in areas at risk of explosive atmospheres



Model	Flight Size (w x h) mm	Capacity (m3/hr.)							
		Chain speed (m/s)							
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Model 300 x 100	300 x 100	9	18	27	36	45	54	63	72
Model 450 x 125	400 x 125	15	30	45	60	75	90	105	120
Model 500 x 150	500 x 150	23	46	69	92	115	138	161	184
Model 500 x 200	500 x 200	31	62	93	124	155	186	217	248
Model 500 x 250	500 x 250	39	78	117	156	195	234	273	312
Model 600 x 250	600 x 250	47	94	141	188	235	282	329	376
Model 600 x 300	600 x 300	56	112	168	224	280	336	392	448
Model 600 x 350	600 x 350	66	132	198	264	330	396	462	528
Model 750 x 250	750 x 250	59	118	177	236	295	354	413	472
Model 750 x 300	750 x 300	71	142	213	284	355	426	497	568
Model 750 x 350	750 x 350	83	166	249	332	415	498	581	664
Model 900 x 300	900 x 300	86	172	258	344	430	516	-	-
Model 900 x 350	900 x 350	100	200	300	400	500	600	-	-
Model 1050 x 300	1050 x 300	100	200	300	400	500	600	-	-
Model 1050 x 350	1050 x 350	117	234	351	468	585	702	-	-
Model 1050 x 400	1050 x 400	134	268	402	536	670	804	-	-
Model 1050 x 450	1050 x 450	150	300	450	600	750	900	-	-
Model 1050 x 500	1050 x 500	167	334	501	668	835	1002	-	-
Model 1200 x 300	1200 x 300	115	230	345	460	575	-	-	-
Model 1200 x 350	1200 x 350	134	268	402	536	670	-	-	-
Model 1200 x 400	1200 x 400	153	306	459	612	765	-	-	-
Model 1200 x 450	1200 x 450	172	344	516	688	860	-	-	-
Model 1200 x 500	1200 x 500	191	382	573	764	955	-	-	-

* Conveyor capacities based on 90% filling

* Table is Standard sizes, customer sizes to meet customers requirements can be designed and manufactured



Conveyor Chains & Sprockets

Mitchells offers the following chain styles as standard:

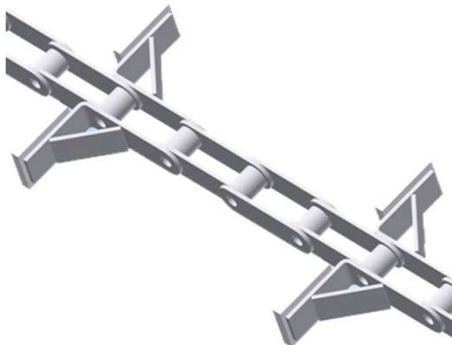
- WHX series chain up 920kN UTS
- DIN 8165/8167 chain up to 900kN UTS
- Drop Forge chain up to 600kN UTS
- Single / Double & Triple strand as chain pull requires

Welded Steel Chain



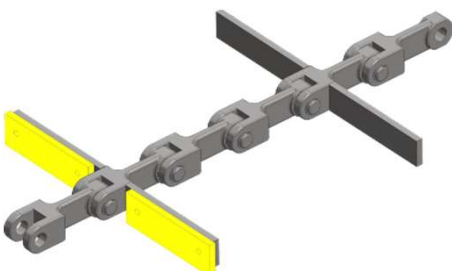
	U.T.S (kN)	U.T.S (lbs)	Pitch (mm)
WHX78	107	24,100	66.3
WHX124	204	45,800	101.6
WHX132	378	84,900	153.7
WHX150	580	130,300	153.7
WHX155	650	146,000	153.7
WHX157	660	148,200	153.7
WS159	908	203,900	155.6

DIN 8165/8167 series Chain



	U.T.S (kN)	U.T.S (lbs)	Pitch (mm)
M40	40	9,000	63 to 250
M56	56	12,600	63 to 250
M80	63	14,200	80 to 250
M112	112	25,200	80 to 250
M160	160	36,000	100 to 250
M224	125	28,100	100 to 250
M315	315	70,800	160 to 250
M450	450	101,100	160 to 250
M630	630	141,500	160 to 250
M900	900	202,100	160 to 250

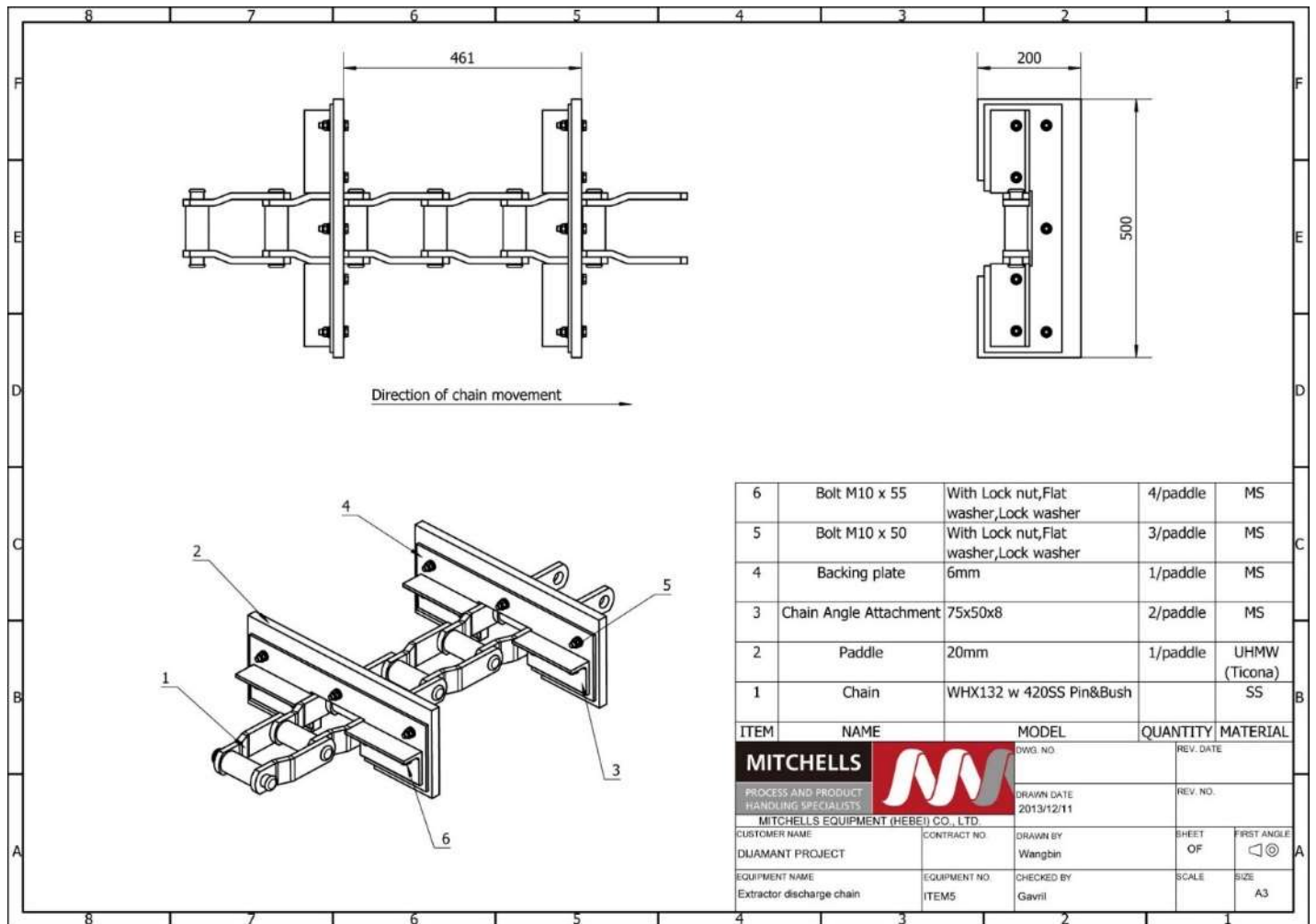
Drop Forge Chain



	U.T.S (kN)	U.T.S (lbs)	Pitch (mm)
102LA	150	33,700	102
102NA	180	40,500	102
125NA	200	44,900	125
142LA	250	56,200	142
142NA	300	67,400	142
142HA	450	101,100	142
142HAD	600	134,700	142
175NA	520	116,800	175
200NA	600	134,700	200
250NA	700	157,200	250

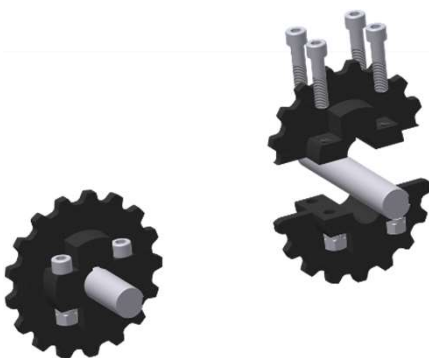


Conveyor Chains & Sprockets



Engineered Sprockets

- Split sprockets for WH / DIN / ISO / BS / M series chains
- Replaceable segmented teeth sections for Drop Forge style chain



Engineered split sprocket

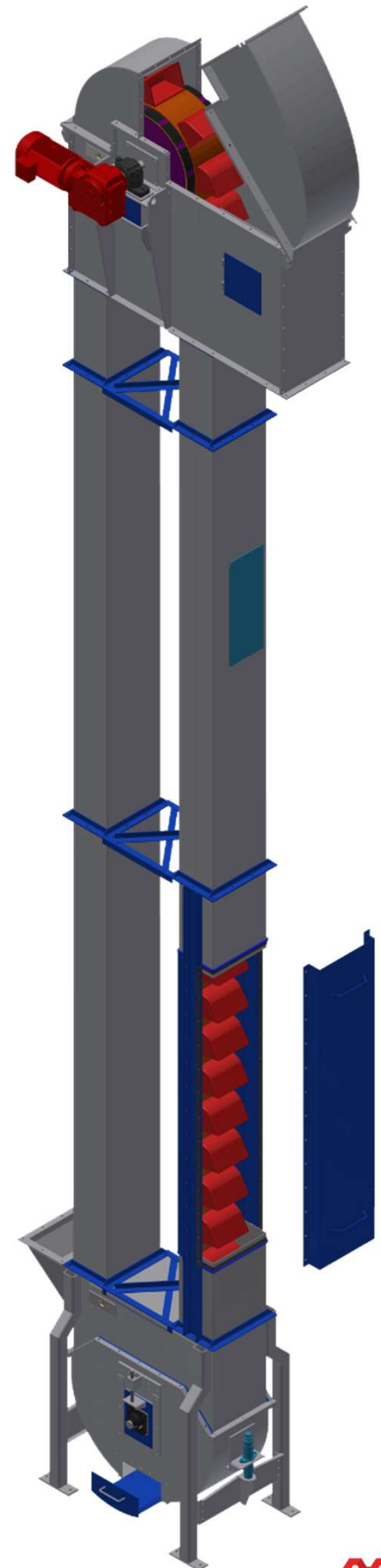


Segmented teeth sprocket

Bucket Elevators

Design & Features

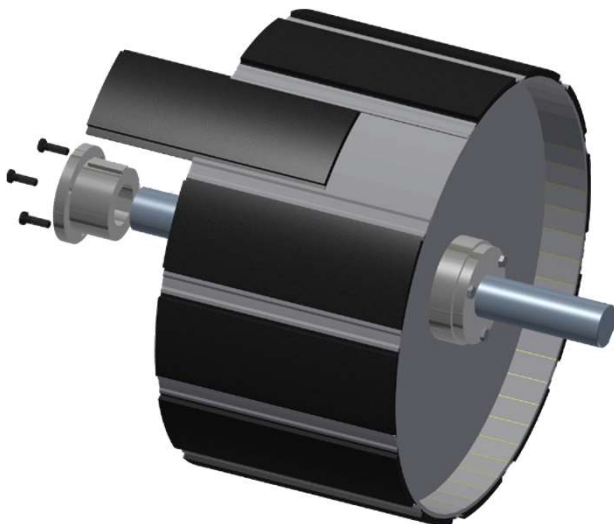
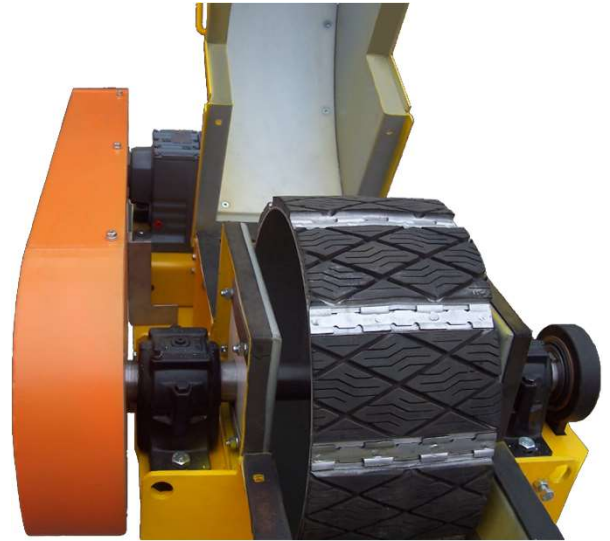
- Up to 2,000 m³/hr capacity in standard models
- 250mm (10") to 1500mm (60") Head Pulley
- Slide in replaceable lagging of head pulley as standard. Vulcanized lagging of pulley on request
- Winged and spiral self cleaning tail pulley
- Standard and Self-cleaning boot sections
- Screw and gravity take-ups
- Heavy duty construction, Mild or Stainless steel, Painted or Galvanised finish
- Explosion venting designed to meet customer requirements
- UHMW PE, Nylon, Urethane & Pressed metal bucket options
- Head access platform, caged ladders & intermediate landings supplied on request
- Impact areas protection options - UHMW, Urethane, AR steel or Ceramic tiles



Bucket Elevators

Safety & Quality

- CE Certified in accordance with test standards EN 618:2002+A1:2010, EN ISO12100:2010
- ATEX approved for use in areas at risk of explosive atmospheres



Model	Pulley Diameter	Belt Width (mm)	Bucket Size	Buckets per row	Standard bucket spacing	Optimal - Grain / Oilseeds			Optimal - Meal			Minimum	
						Pulley RPM	Belt Speed (m/s)	Capacity (m3/hr)	Pulley RPM	Belt Speed (m/s)	Capacity (m3/hr)	Pulley RPM	Belt Speed (m/s)
5410	10" (254mm)	200	5" x 4"	1	6" (152mm)	109	1.45	18	93	1.25	16	53	0.7
7520	20" (508mm)	200	7" x 5"	1	7" (178mm)	90	2.4	57	77	2	49	45	1.2
9624	24" (610mm)	250	9" x 6"	1	8" (204mm)	73	2.3	91	62	2	77	40	1.3
11624	24" (610mm)	330	11" x 6"	1	8" (204mm)	73	2.3	112	62	2	95	40	1.3
12730	30" (762mm)	330	12" x 7"	1	9" (229mm)	73	2.9	198	62	2.5	168	34	1.4
12736	36" (914mm)	330	12" x 7"	1	9" (229mm)	65	3.1	211	55	2.6	180	33	1.6
14736	36" (914mm)	380	14" x 7"	1	9" (229mm)	65	3.1	257	55	2.6	218	33	1.6
14848	48" (1219mm)	380	14" x 8"	1	10" (254mm)	56	3.7	348	48	3.1	298	30	1.9
14848-2	48" (1219mm)	760	14" x 8"	2	10" (254mm)	56	3.7	696	48	3.2	596	30	1.9
14848-3	48" (1219mm)	1160	14" x 8"	3	10" (254mm)	56	3.7	1044	48	3.2	894	30	1.9
18848	48" (1219mm)	500	18" x 8"	1	10" (254mm)	56	3.7	456	48	3.2	391	30	1.9
18848-2	48" (1219mm)	980	18" x 8"	2	10" (254mm)	56	3.7	912	48	3.2	782	30	1.9
18848-3	48" (1219mm)	1480	18" x 8"	3	10" (254mm)	56	3.7	1368	48	3.2	1173	30	1.9
20848-3	48" (1219mm)	1830	20" x 8"	3	10" (254mm)	56	3.7	1522	48	3.2	1300	30	1.9
201060-3	60" (1524mm)	1830	20" x 10"	3	12" (305mm)	45	3.6	1940	40	3.2	1720	25	2

* Bucket capacity based on Maxilift buckets

* Higher capacities for each model can be achieved by using low profile buckets with closer spacings.

* Conveyor capacities based on 90% filling

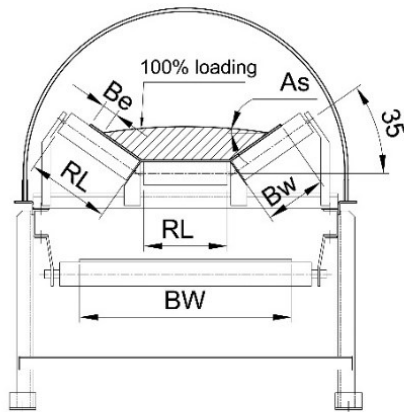
* Meal speeds 85% of Optimal speed



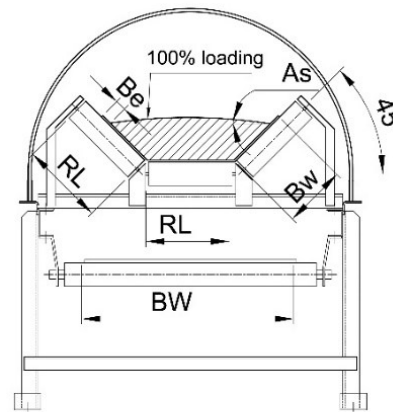
Idler Belt Conveyors

Design & Features

- Idler roller belt conveyor
- Mild steel or HDG finish
- Single & Multiple inlets
- Design built to suit your needs



35 degree idlers



45 degree idlers

Model	500	650	800	1000	1200	1400
BW	500	650	800	1000	1200	1400
RL	200	250	3150	380	465	530
Bw	150	250	243	310	368	435
Be	50	59	67	78	89	100
As	surcharge angle = angle of repose - 15 degrees					

Capacity m3/h, grains (25 degree angle of repose)						
35 degree idlers, 100% loading						
Model	1.0	2.0	2.5	3.0	3.5	4.0
500	70	145	180	n/a	n/a	n/a
650	130	265	330	395	n/a	n/a
800	205	410	510	615	715	n/a
1000	335	670	835	1000	1170	1335
1200	490	975	1220	1465	1710	1955
1400	680	1360	1700	2035	2375	2715

Capacity m3/h, grains (25 degree angle of repose)						
45 degree idlers, 100% loading						
Model	1.0	2.0	2.5	3.0	3.5	4.0
500	80	160	200	n/a	n/a	n/a
650	145	295	370	440	n/a	n/a
800	230	460	575	690	805	n/a
1000	375	750	935	1125	1310	1495
1200	545	1095	1370	1640	1915	2190
1400	760	1520	1900	2280	2660	3040

Inclination, degrees	2	4	6	8	10	12	14	16
Capacity loss, %	0.1%	0.2%	0.6%	1.0%	1.5%	2.2%	3.0%	3.9%

NOTE: For grain conveyors max inclination is 12-16 degrees

Capacity m3/h, softstock (35 degree angle of repose)						
35 degree idlers, 100% loading						
Model	1.0	2.0	2.5	3.0	3.5	4.0
500	85	170	215	n/a	n/a	n/a
650	155	315	390	470	n/a	n/a
800	245	490	610	730	855	n/a
1000	395	795	990	1190	1385	1585
1200	580	1160	1450	1740	2030	2320
1400	805	1610	2010	2415	2815	3220

Capacity m3/h, softstock (35 degree angle of repose)						
45 degree idlers, 100% loading						
Model	1.0	2.0	2.5	3.0	3.5	4.0
500	95	185	235	n/a	n/a	n/a
650	170	340	425	505	n/a	n/a
800	265	530	660	790	925	n/a
1000	430	855	1070	1285	1500	1715
1200	625	1255	1565	1880	2195	2505
1400	870	1740	2175	2605	3040	3475

Inclination, degrees	2	4	6	8	10	12	14	16	18	20
Capacity loss, %	0.1%	0.2%	0.6%	1.0%	1.5%	2.2%	3.0%	3.9%	4.9%	6.0%

NOTE: For softstock conveyors max inclination is 15-20 degrees



Screw Conveyors & Feeders

Design & Features

- Sizes: from 150mm to 600mm. Larger sizes are available
- Direct drive, chain drive and “V” belt drive systems are available
- Flighting at the inlet of a screw feeder can be reduced pitch or tapered flights
- Heavy duty construction, Mild or Stainless steel, Painted or Galvanised finish
- Mixing screws available on request
- Abrasion resistant flighting available on request
- Capital cost effective, low maintenance
- Excellent metering qualities for batching and maximum incline ability



Model	m3/rpm	% loading	m3/rpm	Max Rpm	m3 @ Max. rpm
Model 150	0.14	30%	0.04	165	7
		45%	0.06	165	11
		95%	0.09	70	7
			0.07	70	5
Model 225	0.53	30%	0.16	155	25
		45%	0.24	155	37
		95%	0.34	65	22
			0.25	65	17
Model 300	1.22	30%	0.37	145	54
		45%	0.55	145	80
		95%	0.77	60	47
			0.58	60	35
Model 350	1.99	30%	0.60	140	84
		45%	0.90	140	126
		95%	1.26	55	70
			0.95	55	52
Model 400	2.91	30%	0.87	130	114
		45%	1.31	130	171
		95%	1.84	50	93
			1.38	50	70
Model 450	4.22	30%	1.27	120	152
		45%	1.90	120	228
		95%	2.67	55	147
			2.00	55	111
Model 500	5.71	30%	1.71	110	189
		45%	2.57	110	283
		95%	3.62	40	145
			2.71	40	109
Model 600	10.13	30%	3.04	100	304
		45%	4.56	100	456
		95%	6.42	30	193
			4.81	30	145

Safety & Quality

- CE Certified in accordance with test standards EN 618:2002+A1:2010, EN ISO12100:2010
- ATEX approved for use in areas at risk of explosive atmospheres



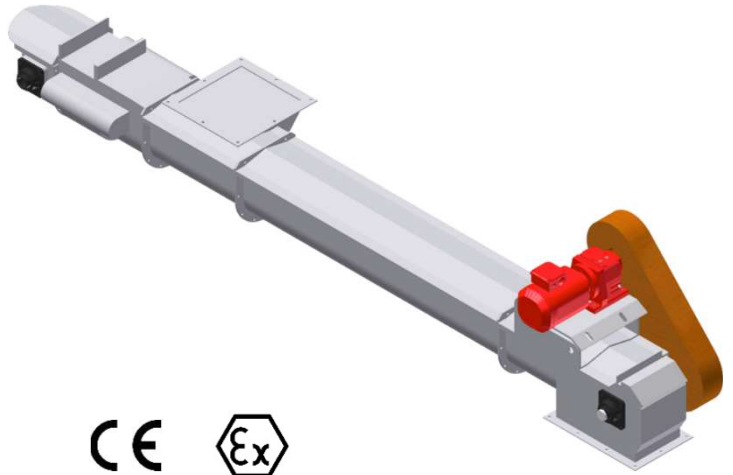
* 95% loading feeder capacities for 1/2 and 2/3rds control pitch



Round Bottom Drag Conveyors

Design & Features

- Sizes: from 150mm to 500mm. Bigger models available upon request
- Capacities: Up to 440MT/hr, based on material density of 721kg/m³ (45lb/ft³).
- Round bottom for clean conveying applications.
- Telescopic tail section to ensure minimal areas for material build-up
- Standard, Divided flow and side entry inlet options available.
- Direct drive, chain drive, "V" belt drive systems are available.
- Heavy duty construction, mild & stainless steel fabrication, painted or hot dip galvanized finish



Safety & Quality

- CE Certified in accordance with test standards EN 618:2002+A1:2010, EN ISO12100:2010
- ATEX approved for use in areas at risk of explosive atmospheres

Model	Nominal Width (mm)	Maximum Material height (mm)	Capacity (m ³ /hr)							
			Chain speed (m/s)							
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Model 150	150	95	4.5	9	13.5	18	22.5	27	31.5	36
Model 225	225	130	8.5	17	25.5	34	42.5	51	59.5	68
Model 300	300	185	16.5	33	49.5	66	82.5	99	115.5	132
Model 350	350	235	25	50	75	100	125	150	175	200
Model 400	400	250	29.5	59	88.5	118	147.5	177	206.5	236
Model 450	450	290	39	78	117	156	195	234	273	312
Model 500	500	360	55	110	165	220	275	330	385	440

* Conveyor capacities based on 95% filling



Ultramax Conveyors

Design & Features

- Sizes: 225mm to 500mm. Capacity: Up to 440MT/hr
- Capacities are based on material density of 400kg/m³ (25lb/ft³) and 721kg/m³ (45lb/ft³)
- No carryover of free flowing dry product when used to fill multiple bin systems and when operated in the ultra clean mode
- Superior capacity when used at maximum fill capability
- Direct drive, chain drive, "V" belt drive systems are available
- Component manufacturing provides for quick assembly and future extensions
- Round top cover provides excellent weather protection and minimum dust build up
- Drop gate discharge provides an opening with no paddle carryover bars
- Adjustable control plate at the inlet provides for ultra clean operation (below the chain) or maximum capacity (above the chain)
- Heavy duty construction, mild & stainless steel fabrication, painted or hot dip galvanized finish



CLEAN CONVEYING

Model	Nominal Width (mm)	Maximum Material height (mm)	Capacity (m ³ /hr)							
			Chain speed (m/s)							
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Model 225	225	100	8	16	24	32	40	48	56	64
Model 300	300	140	14.5	29	43.5	58	72.5	87	101.5	116
Model 350	350	160	19	38	57	76	95	114	133	152
Model 400	400	185	25	50	75	100	125	150	175	200
Model 450	450	225	30	60	90	120	150	180	210	240
Model 500	500	235	35	70	105	140	175	210	245	280

STANDARD CONVEYING

Model	Nominal Width (mm)	Maximum Material height (mm)	Capacity (m ³ /hr)							
			Chain speed (m/s)							
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Model 225	225	225	16.5	33	49.5	66	82.5	99	115.5	132
Model 300	300	305	30	60	90	120	150	180	210	240
Model 350	350	350	40	80	120	160	200	240	280	320
Model 400	400	390	53	106	159	212	265	318	371	424
Model 450	450	470	72	144	216	288	360	432	504	576
Model 500	500	545	94	188	282	376	470	564	658	752

* Conveyor capacities based on 95% filling

* Larger models available on request

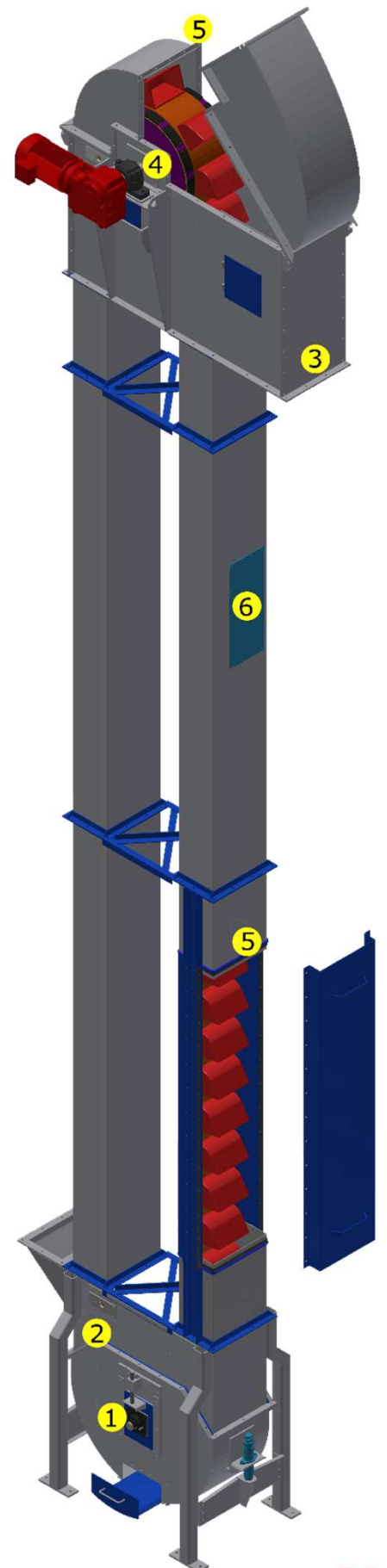


Equipment Safety Sensors

Mitchells takes safety very seriously and provides a full range of safety devices that can be supplied or retrofitted

- Rotation and motion sensors – located in tail / boot pulley
- Plug sensors – Inlet and outlet if requested
- Slack chain sensors
- Bearing temperature sensors
- Belt alignment sensors – Brass block with continuous temperature reading OR touchswitch style
- Position sensors – to detect position of automatic take-up OR inspection door / covers position
- Explosion venting – Designed to meet the local requirements.

- 1 Motion sensor
- 2 Belt alignment sensor
- 3 Plug sensor
- 4 Bearing temperature sensor
- 5 Position sensors to detect open covers
- 6 Explosion vent



Dust Aspiration Systems

Fans

- Direct and “V” belt drive systems are available.
- Heavy duty construction, mild & stainless steel fabrication.



Filters

- Mitchells' dust collector is an air jet pulse bag cleaning system which is used in the Feed and Grain Industry. The collector allows for the discharge of clean air into the environment and protects against the loss of materials. Dust collectors can be optionally fitted with explosion vents if required.



Safety & Quality

- CE Certified in accordance with test standards EN 618:2002+A1:2010, EN ISO12100:2010
- ATEX approved for use in areas at risk of explosive atmospheres



Distributors, Diverters & Slide Gates

Distributors

- Sizes from 150mm(6") to 300mm(12").
Larger sizes are available
- One inlet and single outlets
- Dual inlet and single outlets
- Quick access doors
- Mild or stainless steel
- Manual and electric control
- Optional end fittings for attaching spouts
- Direct weld / Bolted flange / Clamp flange



Diverters

- Sizes from 200mm(8") to 800mm(32").
Other sizes are available
- Straight and offset outlets
- Mounting flanges supplied
- Mild & stainless steel fabrication
- Manual, pneumatic and electric operation

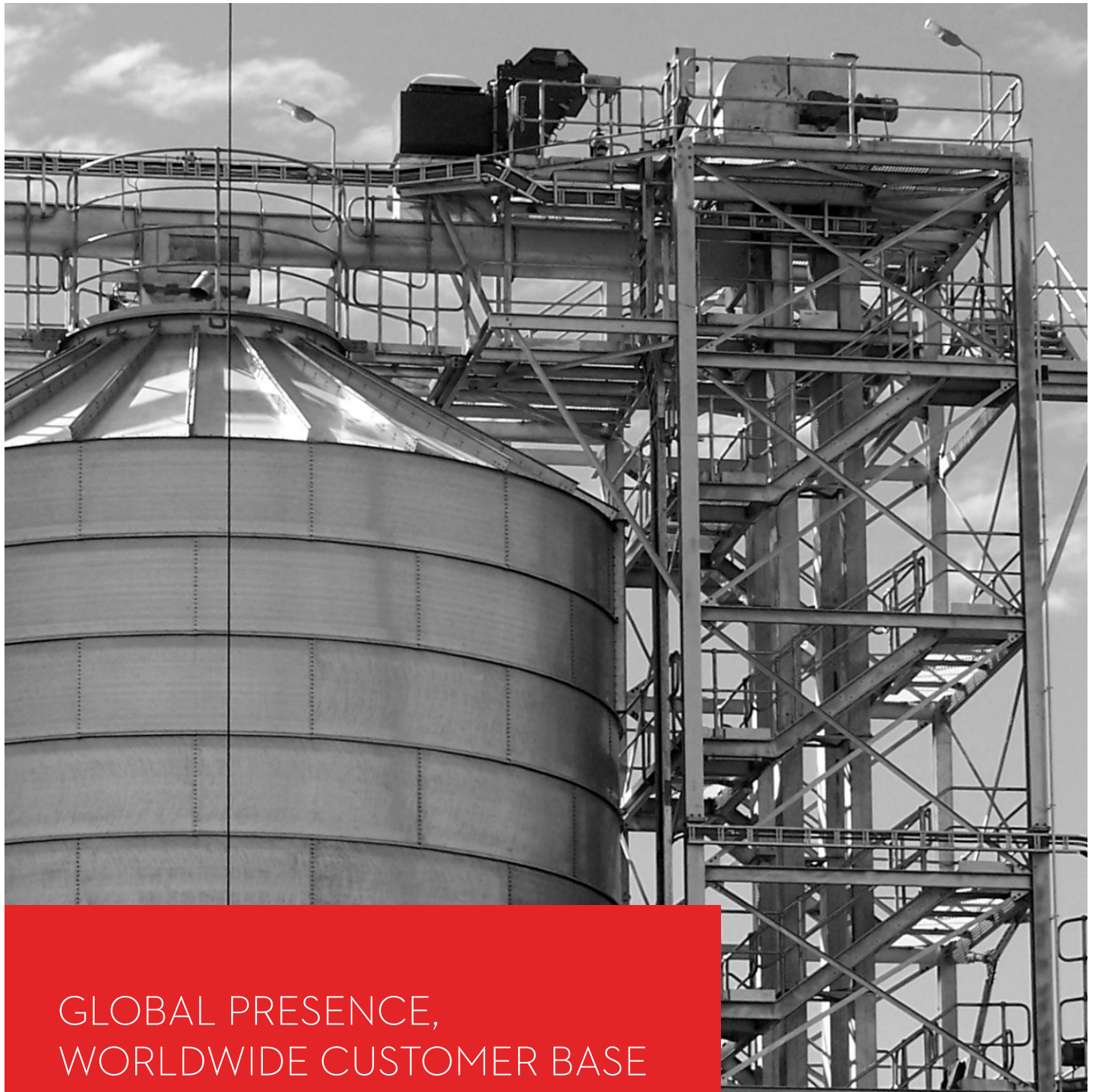
Slide Gates

- Sizes as required
- Mounting flanges supplied
- Optional dust box can be supplied for totally enclosed operation
- Dust proof rollers for slide plate
- Dust tight designs available
- Mild & stainless steel fabrication
- Manual, pneumatic & electric operation

Safety & Quality

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- ATEX approved for use in areas at risk of explosive atmospheres





GLOBAL PRESENCE,
WORLDWIDE CUSTOMER BASE

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