

# BUCKET ELEVATORS & CONVEYORS **Norstar**<sup>®</sup>



**MOVE WITH EASE. MOVE WITH CONFIDENCE.**

The performance of your handling system can be the difference between success and failure in your farm or agri-business. It can save or drain time and money. Planning and building an efficient handling system can help you better manage your costs. It can also be overwhelming with so many factors to consider. You cannot afford to make a mistake. Your profit depends on it.

At Norstar, we do more than build your conveyance equipment; we help you visualize, plan and design a handling system that is custom built to fit your needs. We partner you with experienced dealers and millwrights to fully equip and complete your system. We help make it simple to build a system that maximizes your efficiency and boosts your profit.

**MOVE WITH EASE. MOVE WITH CONFIDENCE.**

	BUCKET ELEVATORS
CAPACITY	100 - 60,000 BPH (up to 1,500 MT) <b>NEW</b>
PULLEY SIZES	6", 8", 12", 16", 24", 30", 36", 42", 48"
DISCHARGE HEIGHTS	up to 200'
FINISH OPTIONS	Powder Coated, Galvanized, Stainless Steel

	SCREW CONVEYORS	EN-MASSE CHAIN CONVEYORS	INCLINE CHAIN CONVEYORS
CAPACITY	Contact Us For Specific Capacity Requirements	up to 60,000 BPH (1,500 MT) <b>NEW</b>	up to 40,000 BPH (1,000 MT) <b>NEW</b>
CONVEYOR SIZES	6", 8", 10", 12", 14" 16", 18", 20", 24" <b>NEW</b>	9", 12", 15", 18", 21" 24", 27", 30", 36"	9", 12", 15", 18", 21" 24", 27", 30", 36", 44"
MAXIMUM HORIZONTAL LENGTH (FT)	N/A	150'	150'
INCLINE RANGE	up to 15°	5° - 15°	15° - 45°
FINISH OPTIONS	Powder Coated Galvanized Stainless Steel	Powder Coated Galvanized Stainless Steel	Powder Coated Galvanized Stainless Steel



### BUILT FOR PERFORMANCE AND PRODUCT PROTECTION

Norstar bucket elevators are designed and built to provide you with reliable performance. We offer a wide range of models, options and accessories to ensure a solution that is right for your application.

#### CAPACITY

▶ up to 60,000 BPH (1,500 MT)

#### MAX. HEIGHT

▶ 200'



### ELEVATOR HEAD FEATURES:

- Curved design for minimal product impact
- Two-piece hood design for interior access
- UHMW shaft seals for dust and weather protection
- Crown-faced drum pulley with SCOFR (static conductive, oil resistant & fire retardant) rubber lagging
- Inspection ports for belt tracking
- Shaft-mounted DODGE gearbox
- Double or triple ply SCOFR Goodyear belting

#### OPTIONAL:

- Liner packages (incl: UHMW and tile) for abrasive use



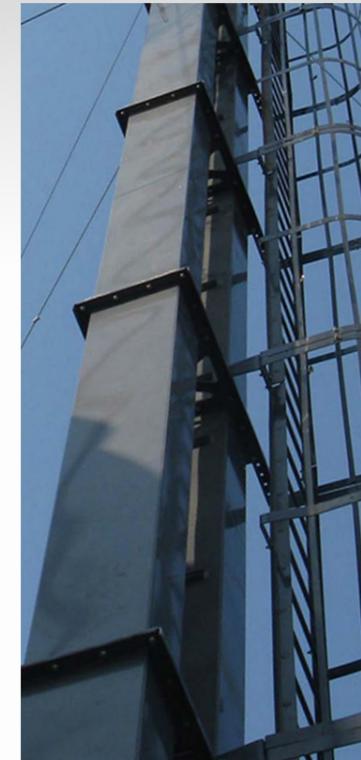
#### Inspection Doors

Providing convenient access to inside of head section.



#### Head Bearings

Heavy-duty pillow block bearings are externally mounted on all models.



### ELEVATOR BOOT FEATURES:

- Heavy gauge steel construction
- Winged "easy clean" pulley
- Easy-access cleanout doors (16" pulley and larger)
- Externally mounted pillow block bearings
- UHMW shaft seals for weather/dust protection
- Threaded rod belt adjustment

#### OPTIONAL:

- Up-Leg or Down-Leg boot hoppers
- Flanged boot hoppers

### ELEVATOR TRUNKING FEATURES:

- Double legged trunking design
- 14ga, 12ga and 10 ga available (size dependent)
- Flanges are laser-cut (to ensure hole pattern alignment and jigged).
- Trunking seams are track welded for strength and dust/ weather protection.
- Connector plates included with each section to ensure square and simple installation.
- Service trunking with inspection ports with hinged doors for easy access to belting and buckets



#### Connector Plates

Provide rigidity and ensure a straight install



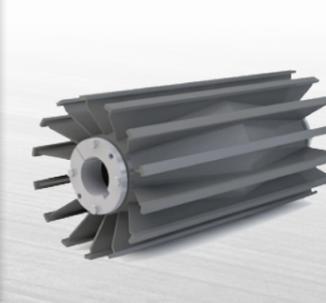
#### Laser Cut Flanges

Reliable strength and hole pattern alignment.



### WHY RUBBER BELTING?:

We use a SCOFR (static conductive, oil resistant & fire retardant) rubber belting specifically designed for grain handling applications. We use rubber belting for the best combination of strength, and flexibility in the widest climate range. It also offers better bolt retention.



#### Winged Pulley

Prevents material buildup on elevator boot pulley face, preserving the product.



#### Clean-Out Doors

Easily slide open to access elevator floor for clean-out. **NOW ON ALL MODELS**

### ELEVATOR ACCESSORIES:

There are many components that contribute to a bucket elevator's function. Norstar offers a full array of accessories for use in installation and running of a material handling site. From big-ticket items like support towers, distributors and staircase systems, to smaller accessories like valves, clamps and buckets; Norstar has what you need.



#### Ladders & Cages

Norstar ladders and cages are built in 5' and 10' sections and are designed to meet OSHA standards. Safely access your bucket elevator for inspection and maintenance.



#### Platforms

Norstar offers work and rest platforms for head, distributor and ladder sections for all models. All platforms are built to OSHA standards.



#### Buckets

Our standard buckets are built of UHMW and feature a heavy-duty front lip and tapered design for longer wear life. Steel, stainless steel, and nylon buckets are also available.



#### Distributors

Norstar offers manual or electronic distributor models with multiple duct configurations to direct your product accurately. We also offer transitions, valves and gates.



#### Spouting

Norstar offers carbon and stainless steel spouting with sizes ranging from 6" - 20". We also offer truss kits, elbows, bands, and sleeves.



#### Support Towers

Norstar support towers are engineered to Canadian wind loads and are welded by CWB certified welders. Towers offer you reliable stability without guy-wiring. We also offer staircases.

### ELEVATOR FINISHES:

The finish that is right for you depends on your application, geographic location and the material that is being handled. Choosing the finish for your elevator is an important decision and that is why Norstar offers the following options.



#### Powder Coated

Powder Coating provides excellent durability and all-around protection while maintaining a new look.



#### Galvanized

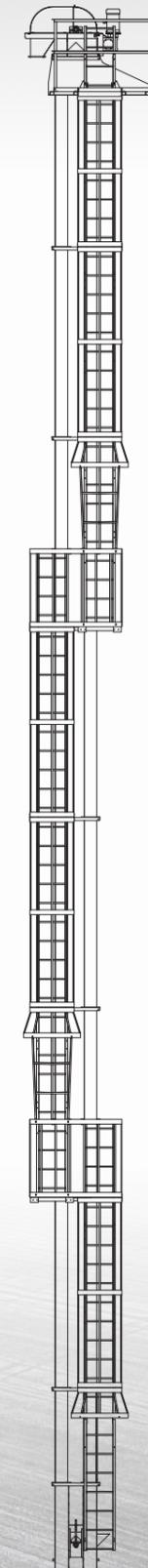
The traditional Galvanized finish provides a sturdy protective coating to your elevator.



#### Stainless Steel

A Stainless Steel finish is ideal when handling highly corrosive material like fertilizer.

### SPECIFICATIONS: (for specs on capacities greater than 20,000 BPH please contact our office)

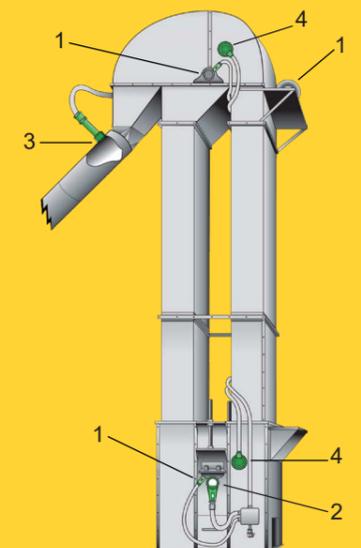


Series	Pulley Dia (")	BPH	FPM	RPM	Bucket Size (")	Bucket Spacing (")	Belt Width (")	Trunking Size (")	Max Height	Head Shaft Dia	Boot Shaft Dia	Trunking Gauge (over 150')	Gauge of Boot / Head
600	6	100	177	115	4 x 3	12	5	7 x 6	100'	1 1/4	1 1/4	12	10 / 12
	6	140	177	115	4 x 3	8	5	7 x 6	100'	1 1/4	1 1/4	12	10 / 12
	6	200	269	175	4 x 3	8	5	7 x 6	100'	1 1/4	1 1/4	12	10 / 12
	6	400	269	175	4 x 3	4	5	7 x 6	100'	1 1/4	1 1/4	12	10 / 12
800	8	500	349	175	6 x 4	12	7	9 x 7	100'	1 1/2	1 1/4	12	10 / 12
	8	700	230	115	6 x 4	6	7	9 x 7	100'	1 1/2	1 1/4	12	10 / 12
	8	1000	349	175	6 x 4	6	7	9 x 7	100'	1 1/2	1 1/4	12	10 / 12
1200	12	1000	620	192	7 x 5	12	8	10 x 8	100'	1 3/4	1 1/4	12	10 / 12
	12	1500	565	175	7 x 5	6	8	10 x 8	100'	1 3/4	1 1/4	12	10 / 12
	12	2000	620	192	7 x 5	6	8	10 x 8	100'	1 3/4	1 1/4	12	10 / 12
1600	16	2500	413	95	9 x 6	7.75	10	10 x 16	200'	3 7/16	1 11/16	14 (12)	10 / 10
	16	3000	413	95	10 x 6	7	11	10 x 16	200'	3 7/16	1 11/16	14 (12)	10 / 10
2400	24	3000	471	73	11 x 6	9.5	12	10 x 16	200'	3 7/16	2	14 (12)	10 / 10
	24	4000	471	73	11 x 6	7	12	10 x 16	200'	3 15/16	2	14 (12)	10 / 10
3000	24	5000	471	73	11 x 6 LP	5.25	12	10 x 16	200'	3 15/16	2	14 (12)	10 / 10
	30	4000	537	67	11 x 6	9.5	12	12 x 18	200'	3 15/16	2 7/16	14 (12)	10 / 10
	30	5000	537	67	13 x 6	7.5	14	12 x 18	200'	4 7/16	2 7/16	14 (12)	10 / 10
3600	30	6000	537	67	13 x 6 LP	5.75	14	12 x 18	200'	4 7/16	2 7/16	14 (12)	10 / 10
	36	6000	614	64	13 x 7	10.5	14	12 x 18	200'	4 7/16	2 15/16	12 (10)	10 / 10
	36	7000	614	64	13 x 7	9	14	12 x 18	200'	4 7/16	2 15/16	12 (10)	10 / 10
	36	8000	614	64	13 x 7	8	14	12 x 18	200'	4 15/16	2 15/16	12 (10)	10 / 10
4200	36	10000	614	64	14 x 7 LP	6	15	12 x 18	200'	5 1/2	2 15/16	12 (10)	10 / 10
	42	10000	670	60	16 x 8	12.25	17	14 x 22	200'	5 1/2	3 7/16	12 (10)	7 / 7
4800	42	12000	670	60	16 x 8	10	17	14 x 22	200'	5 1/2	3 7/16	12 (10)	7 / 7
	48	15000	713	56	20 x 8	11	21	14 x 26	200'	6 7/16	3 15/16	10 (10)	7 / 7
	48	18000	713	56	20 x 8	9	21	14 x 26	200'	6 15/16	3 15/16	10 (10)	7 / 7
	48	20000	713	56	20 x 8 LP	7.5	21	14 x 26	200'	6 15/16	3 15/16	10 (10)	7 / 7

### MONITORING OPTIONS:

Norstar offers a variety of monitoring options that can help you increase the efficiency of your operation by analyzing performance and preventing equipment breakdowns.

- 1. BEARING & SURFACE TEMPERATURE SENSOR**  
- fits into existing grease zerk fittings on a bearing and is fitted with a grease nipple to maintain bearing lubrication without having to remove sensor.
- 2. SPEED SWITCH**  
- signals alarm at 10% & 20% underspeed.
- 3. PLUG SENSOR**  
- detects level or plug situations for granular solids
- 4. BELT ALIGNMENT SENSOR**  
- detects tracking and misalignment issues on belts



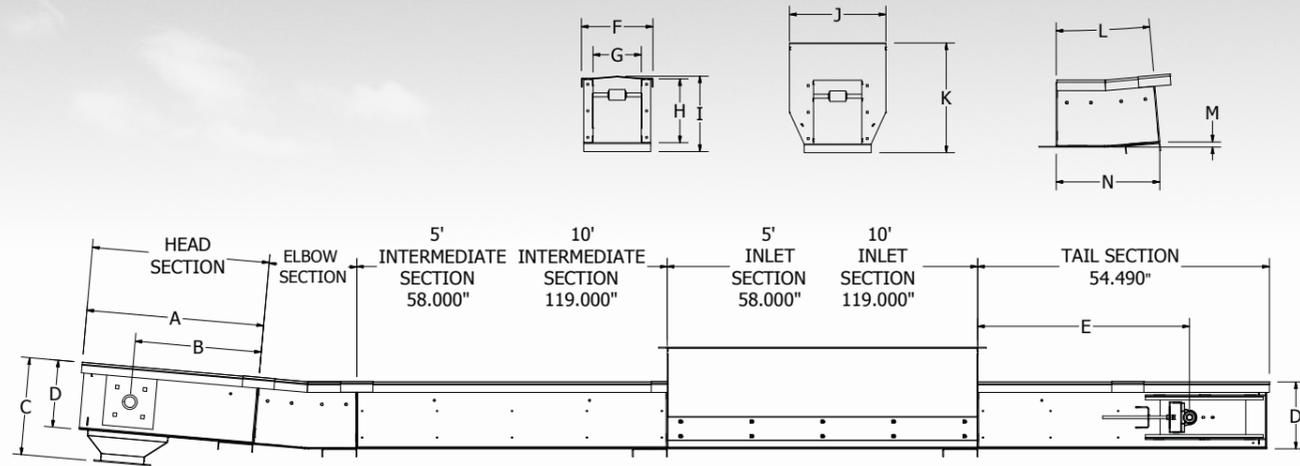




# EN-MASSE CHAIN CONVEYORS

## SPECIFICATIONS

**EN-MASSE SPECIFICATIONS:** (for specs on conveyor sizes larger than 18" contact our office)



MODEL	A		B		C		D		E		F		G		H		I		J		K		
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
9 x 9	33.125"	24.625"	15.364"	9.603"	39.750"	44.000"	13.149"	9"	9"	11.177"	16.000"	32.500"	18.635"										
9 x 12	33.125"	23.625"	18.400"	12.603"	38.600"	42.900"	13.149"	9"	12"	14.177"	18.000"	32.500"	20.635"										
12 x 12	33.125"	23.625"	18.500"	12.734"	38.625"	42.900"	16.149"	12"	12"	14.770"	20.000"	42.000"	20.635"										
12 x 15	33.125"	21.625"	21.496"	15.734"	36.000"	40.400"	16.149"	12"	15"	17.308"	24.000"	46.000"	23.635"										
15 x 15	33.125"	21.625"	21.627"	15.865"	36.000"	40.375"	19.149"	15"	15"	17.300"	26.000"	48.000"	26.635"										
15 x 18	33.625"	25.125"	24.627"	18.865"	33.500"	38.200"	19.149"	15"	18"	20.439"	30.000"	58.625"	28.635"										
18 x 18	33.625"	25.125"	24.788"	18.996"	33.500"	38.200"	22.149"	18"	18"	20.439"	32.000"	58.625"	30.635"										

MODEL	L			M			N		
	5°	10°	15°	5°	10°	15°	5°	10°	15°
9 x 9	5°	10°	15°	0.965"	1.880"	2.873"	19.012"	19.947"	20.779"
9 x 12	5°	10°	15°	0.980"	1.940"	3.009"	19.360"	20.642"	21.834"
12 x 12	5°	10°	15°	0.980"	1.940"	3.090"	19.360"	20.642"	21.834"
12 x 15	5°	10°	15°	0.995"	2.000"	3.145"	19.709"	21.336"	22.870"
15 x 15	5°	10°	15°	0.995"	2.001"	3.145"	19.070"	21.336"	22.870"
15 x 18	5°	10°	15°	1.010"	2.062"	3.282"	20.057"	22.031"	23.905"
18 x 18	5°	10°	15°	1.010"	2.062"	3.282"	20.057"	22.031"	23.905"

To calculate an approximate discharge height;

$$(\sin(L) \times (\text{Total Length of Inclined Intermediate Sections} + B)) - (C - D) + M$$

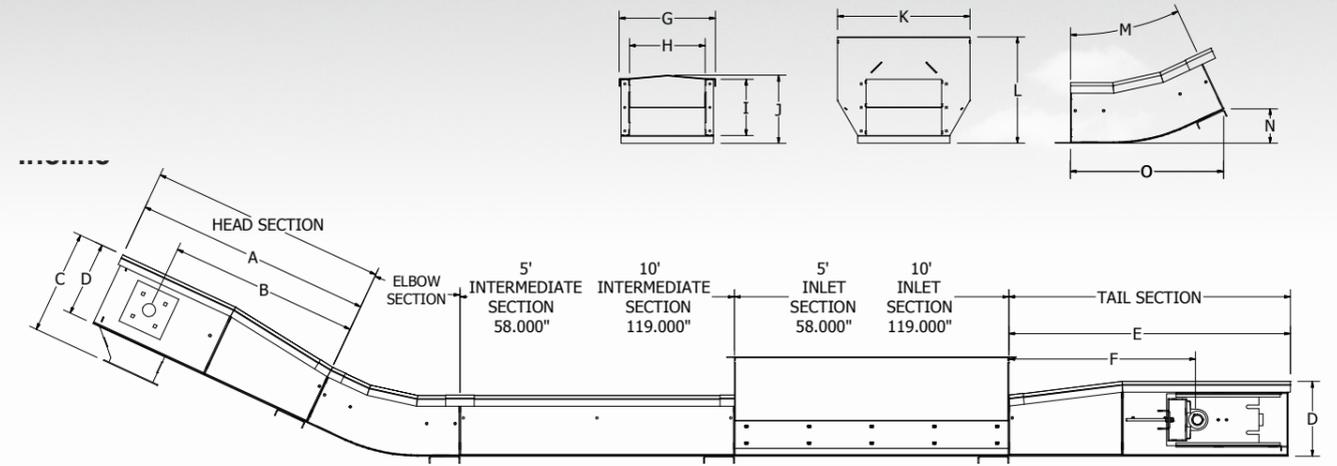
Conveyor Size	9" x 9"	9" x 12"	12" x 12"	12" x 15"	15" x 15"	15" x 18"	18" x 18"
Chain Speeds	0 - 175 FPM	0 - 175 FPM					
Capacity (BPH)	Up to 2,500	Up to 3,900	Up to 5,200	Up to 7,375	Up to 9,225	Up to 11,700	Up to 14,000
Head Shaft RPM	27 - 97	20 - 72	20 - 72	15 - 53	15 - 53	12 - 42	12 - 42
Paddle Thickness	1/4"	1/4"	1/4"	1/4"	1/2"	1/2"	1/2"
Discharge Size	8" x 8"	8" x 8"	10" x 10"	10" x 10"	14" x 14"	14" x 14"	16" x 16"
Max. Length	150'	150'	150'	150'	150'	150'	150'

	175 FPM	125 FPM	110 FPM	100 FPM	75 FPM	50 FPM	RPM (50 FPM)
9" x 9"	2,500 BPH	1,800 BPH	1,575 BPH	1,425 BPH	1,075 BPH	700 BPH	27
9" x 12"	3,900 BPH	2,800 BPH	2,475 BPH	2,250 BPH	1,675 BPH	1,100 BPH	20
12" x 12"	5,200 BPH	3,750 BPH	3,275 BPH	3,000 BPH	2,250 BPH	1,450 BPH	20
12" x 15"	7,375 BPH	5,275 BPH	4,650 BPH	4,225 BPH	3,175 BPH	2,050 BPH	15
15" x 15"	9,225 BPH	6,575 BPH	5,775 BPH	5,250 BPH	3,975 BPH	2,600 BPH	15
15" x 18"	11,700 BPH	8,350 BPH	7,350 BPH	6,700 BPH	5,000 BPH	3,325 BPH	12
18" x 18"	14,000 BPH	10,000 BPH	8,800 BPH	8,000 BPH	6,000 BPH	4,000 BPH	12

## SPECIFICATIONS

# INCLINE CHAIN CONVEYORS

**INCLINE SPECIFICATIONS:** (for specs on conveyor sizes larger than 24" contact our office)



MODEL	A		B		C		D		E		F		G		H		I		J		K		L		
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
10 x 9	50.255"	41.750"	18.835"	12.646"	59.500"	42.000"	46.500"	14.149"	10"	9"	11.146"	22.000"	32.500"	17.385"											
16 x 9	50.255"	41.750"	18.835"	12.646"	59.500"	42.000"	46.500"	20.149"	16"	9"	11.149"	26.000"	48.500"	19.635"											
16 x 12	50.255"	40.250"	22.119"	15.909"	59.500"	41.375"	45.500"	20.149"	16"	12"	14.409"	28.000"	48.500"	22.635"											
18 x 15	50.255"	38.750"	25.207"	18.996"	64.500"	42.750"	48.250"	22.149"	18"	15"	17.308"	30.000"	58.625"	26.635"											
20 x 18	66.510"	53.500"	28.271"	22.080"	78.475"	54.300"	60.366"	24.149"	20"	18"	20.688"	34.000"	48.000"	31.635"											
21 x 21	68.510"	54.000"	31.315"	25.124"	80.475"	54.250"	60.500"	25.149"	21"	21"	23.732"	35.000"	54.000"	34.635"											
24 x 24	70.510"	54.000"	34.446"	28.255"	82.475"	55.000"	61.400"	28.149"	24"	24"	26.863"	38.000"	54.000"	39.635"											

MODEL	M				N				O			
	15°	25°	35°	45°	15°	25°	35°	45°	15°	25°	35°	45°
10 x 9	15°	25°	35°	45°	3.384"	6.468"	10.180"	14.407"	24.681"	28.567"	31.859"	34.456"
16 x 9	15°	25°	35°	45°	3.384"	6.468"	10.180"	14.407"	24.681"	28.567"	31.859"	34.456"
16 x 12	15°	25°	35°	45°	3.691"	7.311"	11.807"	17.043"	27.011"	32.370"	37.021"	40.820"
18 x 15	15°	25°	35°	45°	3.990"	8.154"	13.435"	19.679"	29.340"	36.175"	42.183"	47.184"
20 x 18	15°	25°	35°	45°	4.304"	8.997"	16.783"	24.436"	31.670"	39.978"	52.800"	58.669"
21 x 21	15°	25°	35°	45°	4.508"	10.827"	17.868"	26.193"	33.222"	48.233"	56.244"	62.912"
24 x 24	15°	25°	35°	45°	5.694"	11.952"	22.333"	32.537"	42.226"	53.304"	70.404"	78.225"

To calculate an approximate discharge height;

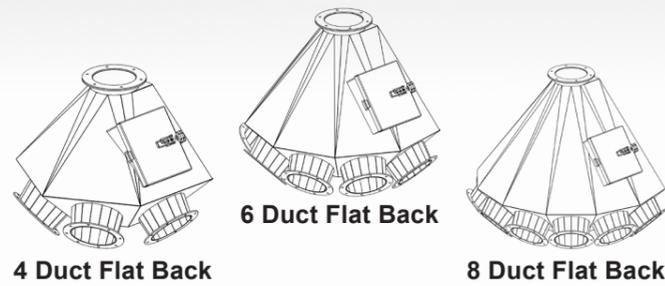
$$(\sin(M) \times (\text{Total Length of Inclined Intermediate Sections} + B)) - (C - D) + N$$

Conveyor Size	10" x 9"	16" x 9"	16" x 12"	18" x 15"	20" x 18"	21" x 21"	24" x 24"
Chain Speeds	0 - 175 FPM	0 - 175 FPM	0 - 175 FPM				
Capacity (BPH)	Up to 2,525	Up to 4,025	Up to 5,375	Up to 7,575	Up to 10,100	Up to 12,375	Up to 16,175
Head Shaft RPM	25 - 87	25 - 87	21 - 72	17 - 61	15 - 53	13 - 47	13 - 44
Paddle Thickness	1/4"	1/4"	1/2"	1/2"	1/2"	1/2"	1/2"
Discharge Size	10" x 10"	14" x 14"	14" x 14"	16" x 16"	18" x 18"	20" x 20"	22" x 22"
Max. Length	150'	150'	150'	150'	150'	150'	150'

	175 FPM	125 FPM	110 FPM	100 FPM	75 FPM	50 FPM	RPM (50 FPM)
10" x 9"	2,525 BPH	1,810 BPH	1,590 BPH	1,585 BPH	1,080 BPH	725 BPH	25
16" x 9"	4,025 BPH	2,900 BPH	2,535 BPH	2,310 BPH	1,725 BPH	1,150 BPH	25
16" x 12"	5,375 BPH	3,870 BPH	3,400 BPH	3,100 BPH	2,300 BPH	1,550 BPH	21
18" x 15"	7,575 BPH	5,425 BPH	4,775 BPH	4,350 BPH	3,250 BPH	2,150 BPH	17
20" x 18"	10,100 BPH	7,250 BPH	6,350 BPH	5,800 BPH	4,350 BPH	2,900 BPH	15
21" x 21"	12,375 BPH	8,850 BPH	7,800 BPH	7,100 BPH	5,300 BPH	3,550 BPH	13
24" x 24"	16,175 BPH	11,600 BPH	10,200 BPH	9,250 BPH	6,900 BPH	4,650 BPH	13

### MILL ACCESSORIES:

Norstar Industries offers a wide range of mill and elevator accessories. We provide accessories in Primed, Powder Coated, Galvanized or Stainless Steel finishes as per your order and can provide a large variety of sizes to ensure that your specific on-site needs are met. Whether you are in the installation business or looking to upgrade your site, Norstar has the components that you need.

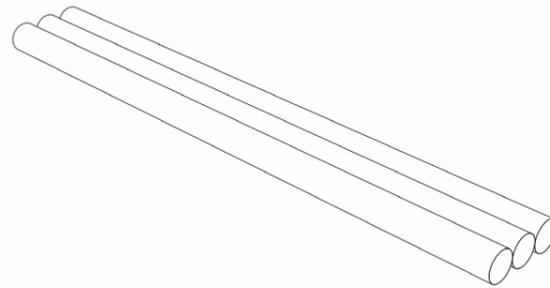


### DISTRIBUTORS

- Powder Coated, Galvanized or Stainless Steel
- 6" - 16" models
- 4 - 12 ducts
- 45° and 60°
- Flat Back design

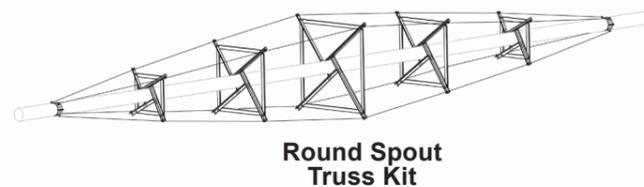
### ROUND SPOUTING

- Carbon Steel, Galvanized, or Stainless Steel
- Raw or Powder Coated (carbon only)
- All spouting available in 20' and 40' lengths
- 4" - 16" diameters
- Truckload quantities available



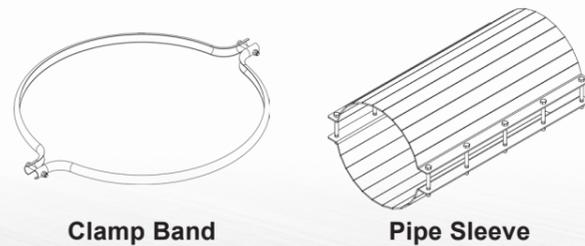
### TRUSS KITS

- Compatible with 6" to 16" spouting
- Powder Coated or Galvanized
- 40' - 100' kits
- Kits include star and anchor assemblies, wire rope, turnbuckles, wire clamps and hardware
- Components also available separately



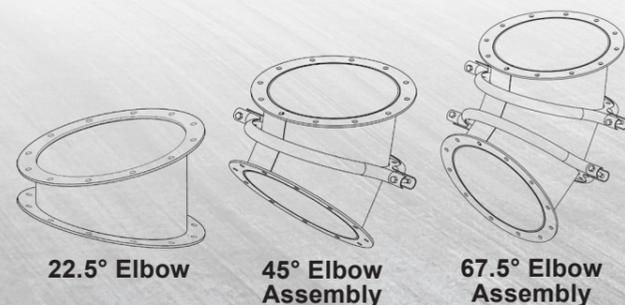
### CLAMP BANDS & PIPE SLEEVES

- 4" - 24" Bolted Clamp Bands
- Galvanized or Stainless Steel
- 24" long Bolted Pipe Sleeves
- Powder Coated, Galvanized or Stainless Steel
- 6" - 18" diameters



### ELBOWS

- 22.5° elbows
- 6", 8", 10", 12", 14", 16", 18", 20", and 24" diameters
- Single, Double and Triple assemblies (up to 67.5° angle)
- Powder Coated, Galvanized or Stainless Steel

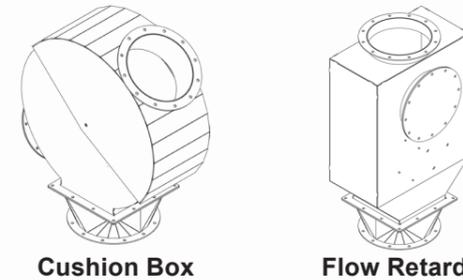


### PAN VALVES

- Powder Coated, Galvanized or Stainless Steel
- 6" - 16" models
- 2-way, 3-way and offset designs
- 45° angles

### TRANSITIONS

- Powder Coated, Galvanized or Stainless Steel
- Square-to-square, square-to-round, round-to-round
- up to 24" in size

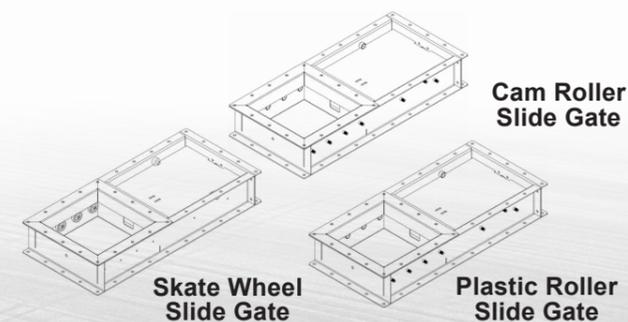
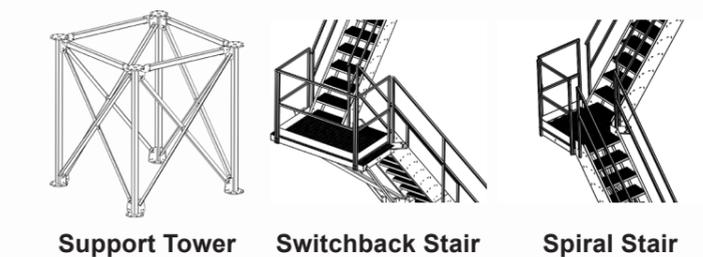


### CUSHION BOXES & FLOW RETARDERS

- Powder Coated, Galvanized or Stainless Steel
- 6" - 16" Adjustable Cushion Boxes
- 6" - 16" Flow Retarders (10ga and 7ga)

### SUPPORT TOWERS & STAIRCASES

- Powder Coated or Galvanized
- 8'x8', 10'x10' and 12'x12' towers
- Engineered towers up to 160'
- Switchback and Spiral Staircases
- Diamond Grip® stair tread



### SLIDE GATES

- Powder Coated, Galvanized or Stainless Steel
- Plastic Slider, Cam Roller & Skate Wheel models
- Manual or Actuator (Cam Roller & Skate Roller) compatible
- Motor/Gearbox operation packages
- Hand Wheels and Chain Wheels
- 6" - 36" Wide



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Mill Accessories | 14



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