Vertical Screw Elevator

Martin Screw Elevators

For over fifty years, Martin standard screw elevators have been successfully elevating a wide range of materials. In 1956, we added the heavier duty superscrew elevator, giving our customers the ability to elevate larger capacities to greater heights.

The Martin screw elevator is ideally suited to elevate a wide range of bulk materials in a relatively small space. If a material can be classified as very free flowing or free flowing, it can probably be elevated in a crew elevator.

We offer both our standard and superscrew elevators with several different drive arrangements to meet our customers' individual requirements. Martin has an experienced staff in over twenty locations throughout the u.S.A. And canada that can help you design the right screw elevator for your application. We have the capability of manufacturing our screw elevators in six locations in the U.S.A.

Contact your nearest Martin facility with your application information and we will design the right elevator for your needs.

Partial Material List

- Alfalfa Meal
- Barley, Malted
- Bone Meal
- Cement
- Coffee
- Corn Meal
- Cotton Seed
- Cryolite
- Flours
- Grains
- Hops
- Ice
- Kaolin Clay
- Lead Oxide
- Lime
- Malt
- Mica
- Milk, Dried
- Mixed Feeds
- Mustard Seed
- Oats
- Paper Pulp
- Peanuts
- Resin
- Rubber, Ground
- Salt
- Sawdust
- Screened Wood Chips
- Shellac, Powder
- Soda Ash
- Soybean Meal
- Sugar
- Sunflower Seeds
- Tobacco
- Wheat
- Wood Flour

Type 4
Superscrew Elevator

*Conveyors shown without cover for illustration purposes only. Please follow manufacturing safety guidelines when operating conveyors.

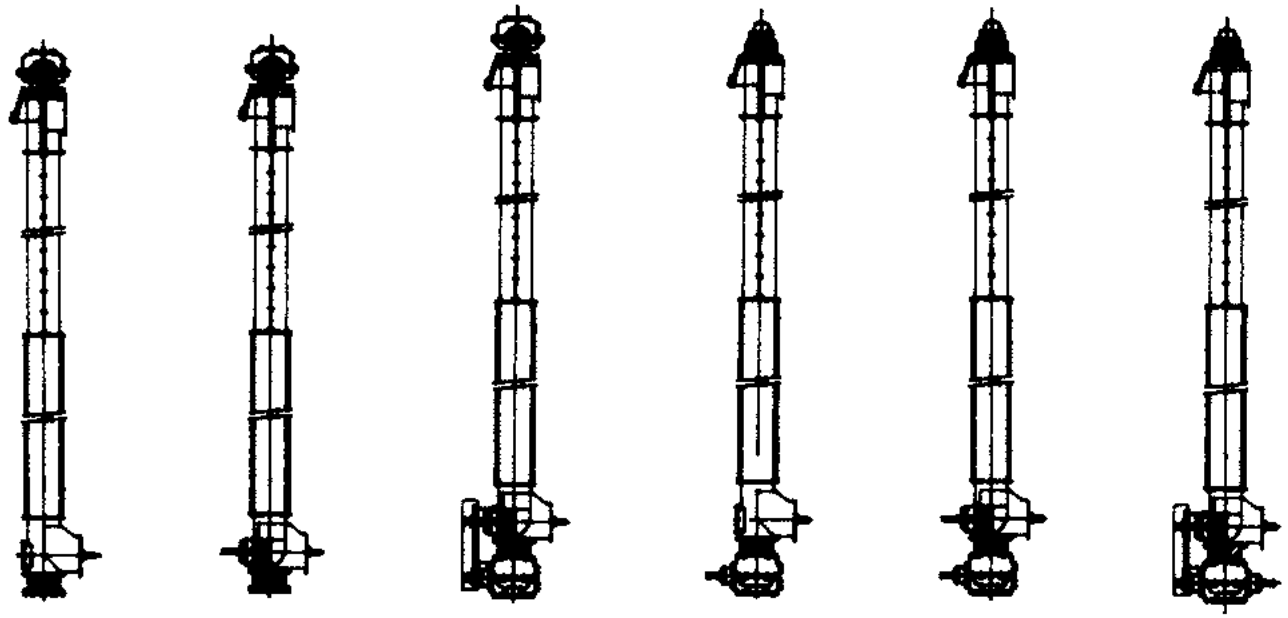
Martin Screw Elevators

To help better meet the needs of our customers, we offer both the Martin standard and superscrew elevators in sixteen different types. The different types allow us to vary the drive location, discharge location and feed arrangement. We are also able to drive the feeder or take-away conveyor by the screw elevator drive.

The Martin screw elevators are easy to install because they are factory assembled, match-marked and disassembled prior to shipment. All Martin screw elevators are of a sturdy self-supporting design and only need lateral support when installed.

The drives for the Martin standard and superscrew elevators are manufactured by Martin and are specifically designed for use with our screw elevators. We can also offer a screw conveyor drive arrangement for lighter duty applications.

Super Screw Elevator Types



Type 1
Straight Inlet
Top Drive,
Pedestal Base

Type 2
Offset Inlet
Top Drive,
Pedestal Base

Type 4
Offset Inlet
Top Drive,
Bottom P.T.O.
With Drive

Type 5
Straight Inlet
Bottom Drive,
Thrust Head

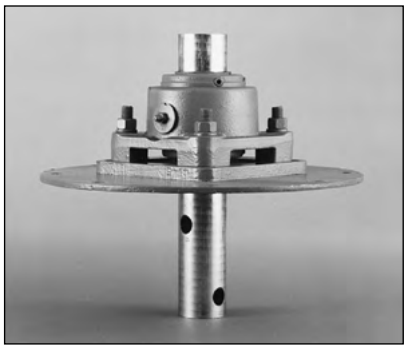
Type 6
Offset Inlet
Bottom Drive,
Thrust Head

Type 8
Offset Inlet
Bottom Drive,
Thrust Head
With Drive

NOTE: All elevators are furnished less feeder and/or feeder drive unless otherwise specified.

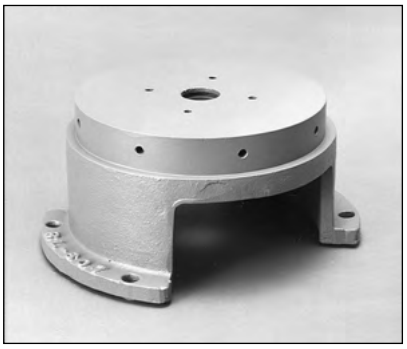
CAUTION: Never operate without covers and guards. Always LOCKOUT/TAGOUT electrical power when working on equipment for inspection, cleaning, maintenance, or other purposes.

Screw Elevator



Standard Screw Thrust Unit

Stabilizer Bearing Used on Standard Screw Elevator



Standard Screw Pedestal Base

Standard Screw Thrust Head

All Martin screw elevators come with heavy duty helicoid or sectional screws which are checked for straightness and run-out to ensure a smooth running elevator. When handling free flowing material, we add stabilizers as needed, as the height of the elevator increases. The stabilizer bearings are available in a wide range of bearing materials to meet our customers' requirements, including wood, hard iron, bronze, uhmw, and others.

Both the Martin standard screw and superscrew elevators are supplied with split intermediate housing to allow easier maintenance.

Martin's specially engineered inlet/bottom section assures a smooth transfer to conveyed material from the horizontal to vertical with a minimum of back-up and product degradation.

The bottom inspection panel is bolted to minimize any product leakage. It also has a shroud to assure that the conveyed material is moving smoothly through the area.

The drives for both the standard screw and the superscrew elevator are manufactured by Martin to guarantee their quality and availability.

Clearance Between Screw and Housing

Size	Type of Housing	Clearance	Standard Screw Elevator			Superscrew Elevator		
			Intermediate	Top and Bottom Sections	Screw	Intermediate	Top and Bottom Sections	Screw
6	Standard Clearance	1/2	14	14	6H304	14	10	6H304
	Close Fitting Clearance	1/4	14	14	6.5S312*	14	10	6.5S312*
9	Standard Clearance	1/2	12	12	9H306	12	3/16	9H306
	Close Fitting Clearance	1/4	12	12	9.5S312*	12	3/16	9.5S312*
12	Standard Clearance	1/2	10	10	12H408	10	3/16	12H408
	Close Fitting Clearance	1/4	10	10	12.5S412*	10	3/16	12.5S412*
16	Standard Clearance	1/2	–	–	–	10	3/16	16H610
	Close Fitting Clearance	1/4	–	–	–	10	3/16	16.5S612*

* Close clearance sectional screws supplied as required.

Screw Elevator

The Martin standard screw elevator is designed to handle under normal conditions, capacities ranging from 360 cfh to 3600 cfh in 6" dia., 9" Dia., and 12" dia. Sizes. With complete information, Martin engineering staff can help you design the right screw elevator for your application.

Martin Standard Screw Elevator Speed / Capacity

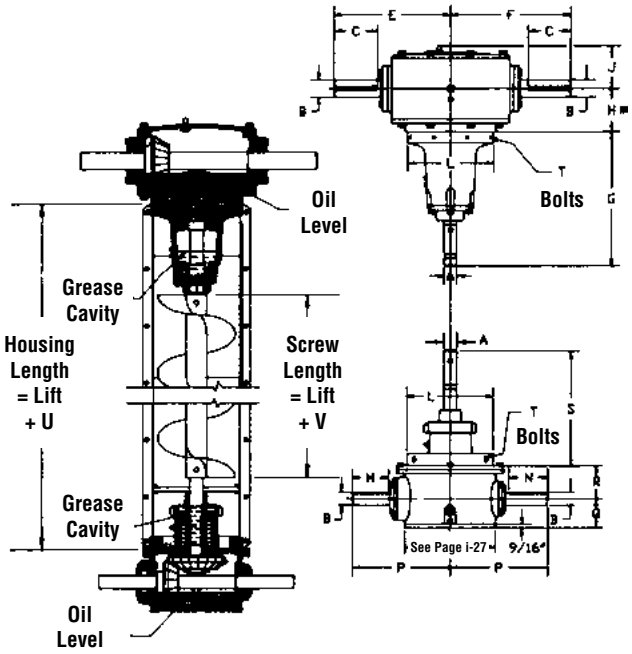
Clearance Between Screw and Housing

Size	Vertical Shaft Diameter	Ratio Top Drive	Ratio Bottom Drive	▲ Recommended Minimum and Maximum Speeds			RPM Horizontal Feeder Screw 45 Percent Loading	Capacity Cubic Foot per Hour
				Vertical Screw	Input Top Drive	Input Bottom Drive		
6	1 1/2	2:1	1.4:1	200	400	280	165	360
				215	430	301	177	400
				275	550	385	226	500
9	1 1/2	2:1	1.4:1	170	340	238	139	1100
				200	400	280	163	1300
				230	460	322	187	1500
12	2	2:1	2:1	155	310	310	147	2700
				165	330	330	156	3000
				200	400	400	189	3600

▲ For speeds in excess or less than shown, consult Martin.

The standard screw elevator drive unit will function efficiently with the elevator erected at any angle of incline from horizontal to vertical. The input shaft can be driven in either direction, and the input shaft extension may be used to drive a horizontal feeder or discharge conveyor.

Both top and bottom drives are required when the elevator, feeder and discharge conveyor are all driven from one power source. A top drive and pedestal base are used when the elevator and discharge conveyor are driven from one source. A bottom drive and thrust unit are necessary if the elevator and feeder are driven from one power source. The drives are designed and constructed to withstand all radial and thrust loads and support the entire weight of a fully loaded elevator.



Size	Ratio		A	B		C	E	F	G	H	J	L	M	N	P	Q	R	S	T Bolts		U		V
	Top Drive	Bottom Drive		Top Drive	Bottom Drive														No. Rec'd	Size	B & BO	All Other Types	All Types
6*	2:1	1.4:1	1 1/2	2	1 1/2	5	13 1/2	14	15 1/4	7 5/8	4 15/16	7	4 1/4	4 1/2	11 11/32	3 3/8	3 13/16	13 1/4	4	3/8 - 16 NC	16 7/8	23 1/8	6 5/8
9	2:1	1.4:1	1 1/2	2	1 1/2	5	13 1/2	14	15 1/4	5	4 15/16	10	4 1/4	4 1/2	11 11/32	3 3/8	3 13/16	13 1/4	8	3/8 - 16 NC	21 1/2	27 3/4	8 3/4
12	2:1	2:1	2	2	2	5	13 1/2	14	15 1/4	4 7/8	4 15/16	13	5	5 9/16	14 7/16	3 7/8	4 9/16	13 1/4	8	1/2 - 13 NC	26	31 3/4	12 3/4

*2 5/8" lg. adapter for 6" head not illustrated.
Note: Dimensions not certified for construction.
Dimensions in Inches

CAUTION: Never operate without covers and guards. Always LOCKOUT/TAGOUT electrical power when working on equipment for inspection, cleaning, maintenance, or other purposes.

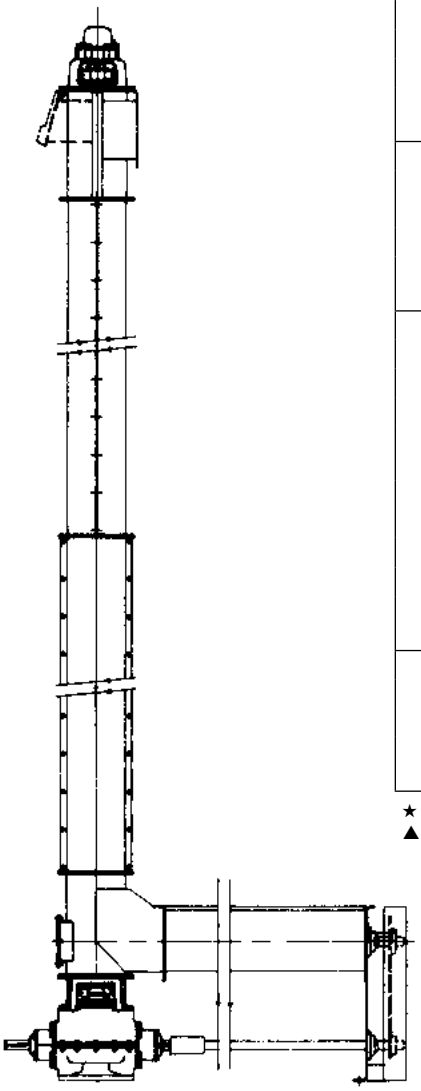
Superscrew Elevator

The Martin superscrew elevator is designed to handle capacities ranging from 360 CFH to 7000 CFH in 6" dia., 9" dia., 12" dia., and 16" dia. sizes.

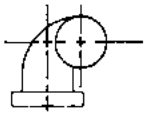
Martin Superscrew Elevator Speed / Capacity

Size	Vertical Shaft Diameter	Ratio Top Drive	Ratio Bottom Drive	▲ Recommended Minimum and Maximum Speeds			RPM Horizontal Feeder Screw 45 Percent Loading	Capacity Cubic Foot per Hour
				Vertical Screw	Input Top Drive	Input Bottom Drive		
1	2	3	4	5	6	7	8	9
6	1 1/2	2:01	2:01	200	400	400	165	360
				215	430	430	177	400
				275	550	550	226	500
				330	660	660	272	600
				Up to 425	Up to 850	Up to 850	★	★
9	2	2:01	2:01	170	340	340	139	1100
				200	400	400	163	1300
				230	460	460	187	1500
				240	480	480	196	1600
				Up to 425	Up to 850	Up to 850	★	★
12	2 7/16	2:01	2:01	155	310	310	147	2800
				165	330	330	156	3000
				200	400	400	189	3600
				210	420	420	199	3800
				Up to 425	Up to 850	Up to 850	★	★
	2 7/16★ 3	2.06:1	2.06:1	155	319	319	151	2800
				165	340	340	161	3000
				200	412	412	195	3600
				210	433	433	205	3800
				Up to 425	Up to 876	Up to 876	★	★
16	3	2.06:1	2.06:1	138	284	284	132	6000
				150	309	309	144	6500
				161	332	332	155	7000
				Up to 425	Up to 876	Up to 876	★	★

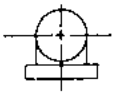
★ Consult Martin.
▲ For speeds in excess or less than those shown, consult Martin.



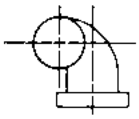
Type 7 Superscrew Elevator



Elevator Offset to the Right of Inlet



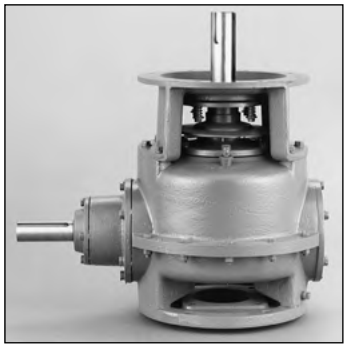
Straight Inlet

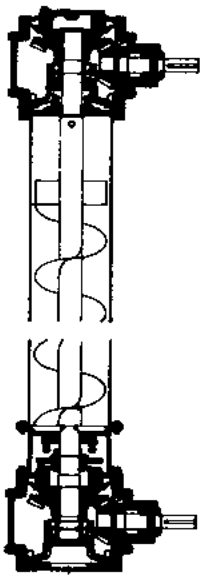


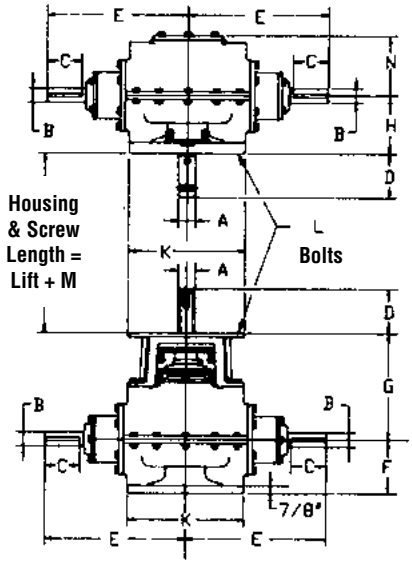
Elevator Offset to the Left of Inlet

CAUTION: Never operate without covers and guards. Always LOCKOUT/TAGOUT electrical power when working on equipment for inspection, cleaning, maintenance, or other purposes.

Superscrew Elevator D.S.D (Dry Shaft Drive)







DSD (Dry Shaft Drive) is a completely new design and construction concept especially developed to enable the Superscrew Elevator to broaden the application of screw elevators.

The DSD unit is designed to meet special conditions encountered in vertical installations and may be installed in the range of 70° to 90° incline. If a smaller angle of incline is required, special units may be furnished.

A patented lubrication system precisely "meters" the proper amount of lubricant to those points where needed with no danger of damaging seals.

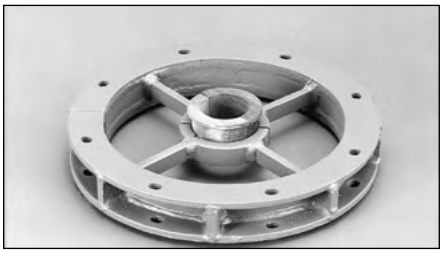
DSD units may be furnished at both the top and the bottom of the elevator. The top drive incorporates special design features to assure that no lubricant may pass into the elevator to contaminate the material being elevated. In the bottom drive unit other special features prevent entrance of foreign material into lubricant.

DSD units may also be furnished at the top only with a pedestal base or at the bottom only with a thrust head.

The compactness of the DSD requires a minimum of head room providing maximum lift with minimum overall elevator height.

DSD units are sturdily constructed to withstand all radial and thrust loads encountered and to support the entire weight of elevators and materials handled.

Size	Ratio	A	B	C	D		E	F	G	H	K	L		M
					Top	Bottom						No.	Size	
6	2:1	1 1/2	1 5/8	4	4 3/4	5	16	6 1/8	12	7 1/2	10 1/8	8	3/8	12 1/4
9	2:1	2	1 5/8	4	4 3/4	5	16	6 1/8	12	7 1/2	13 1/4	8	3/8	13 1/4
12	2:1	2 7/16	1 5/8	4	4 7/8	5	16	6 1/8	12	7 1/2	16 1/4	8	1/2	18 1/4
	2.06:1	2 7/16	1 5/8	4 1/4	4 7/8	5	18.1	6 7/8	12 5/8	7 1/4	17 1/4	8	1/2	18 1/4
	2.06:1	3	2 3/16	4 1/4	5	5	18.1	6 7/8	12 5/8	7 1/4	17 3/8	8	1/2	18 1/4
16	2.06:1	3	2 3/16	4 1/4	5	5	18.1	6 7/8	12 5/8	7 1/4	20 1/4	12	1/2	241 /4

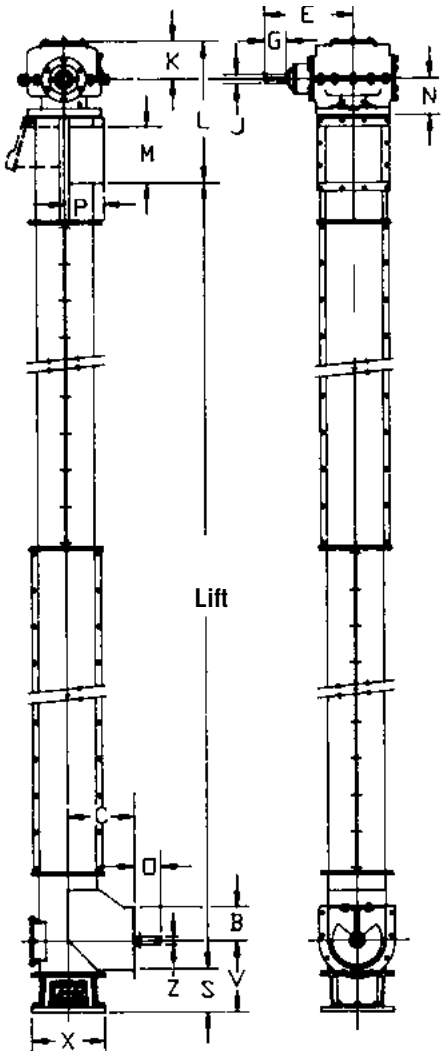


Spider Type Stabilizer Used on Superscrew

Superscrew Thrust Head

Superscrew Pedestal Base

Superscrew
Elevator Dimensions



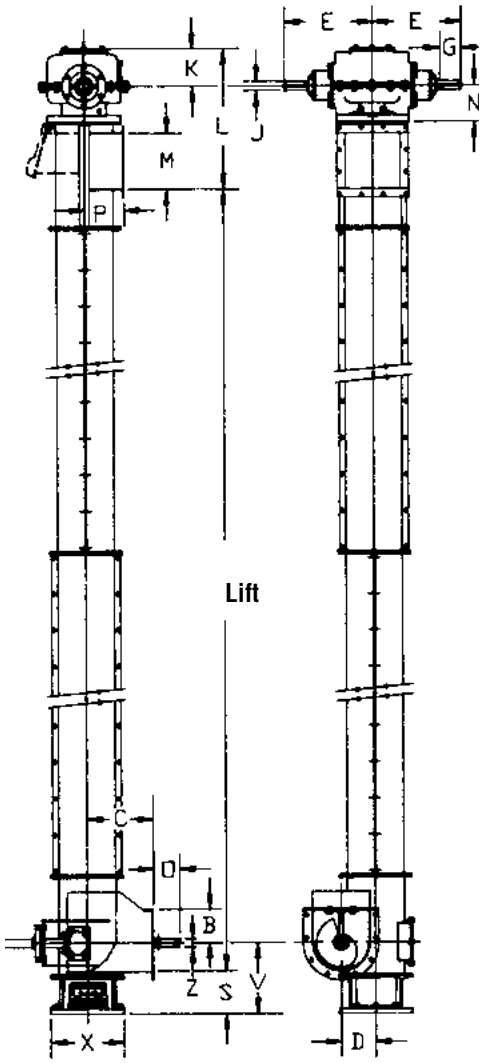
Type 1

Size of Elevator	Vertical Shaft Diameter	Ratio	B	C	E	G	J	K	L	M	N	O	P	S	V	X	Z ◇
6	1 1/2	2:1	4 1/2	10 1/2	16	4	1 5/8	6 3/4	26 3/4	7	6 1/2	4 3/4	5	8 3/8	11 7/8	13 1/4	1 1/2
9	2	2:1	6 1/8	12	16	4	1 5/8	6 3/4	28 1/4	10	6 1/2	4 3/4	7 1/8	7 7/8	12 7/8	13 1/4	1 1/2
12	2 7/16	2:1	7 3/4	15	16	4	1 5/8	6 3/4	32 1/4	13	6 1/2	4 3/4	8 7/8	8 7/8	15 3/8	13 1/4	2
	○2 7/16	2.06:1	7 3/4	15	18.1	4 1/4	2 3/16	7 15/16	34 3/8	13	7 1/4	4 3/4	8 7/8	9	15 1/2	17 3/8	2
	3	2.06:1	7 3/4	15	18.1	4 1/4	2 3/16	7 15/16	34 3/8	13	7 1/4	4 3/4	8 7/8	9	15 1/2	17 3/8	2
16	3	2.06:1	10 5/8	20	18.1	4 1/4	2 3/16	7 15/16	39 7/8	17	7 1/4	5	11 1/8	9 1/2	18	17 3/8	3

CAUTION: Never operate without covers and guards. Always LOCKOUT/TAGOUT electrical power when working on equipment for inspection, cleaning, maintenance, or other purposes.

Note: Dimensions not certified for construction.

Superscrew Elevator Dimensions



Normally Furnished Offset to the Left

Type 2

Size of Elevator	Vertical Shaft Diameter	Ratio	B	C	D	E	G	J	K	L	M	N	O	P	S	V	X	Z ◇
6	1 1/2	2:1	4 1/2	10 1/2	4 3/4	16	4	1 5/8	6 3/4	23 3/4	7	6 1/2	4 3/4	5	8 3/8	11 7/8	13 1/4	1 1/2
9	2	2:1	6 1/8	12	6 1/4	16	4	1 5/8	6 3/4	25 1/4	10	6 1/2	4 3/4	7 1/8	7 7/8	12 7/8	13 1/4	1 1/2
12	2 7/16	2:1	7 3/4	15	8	16	4	1 5/8	6 3/4	29 1/4	13	6 1/2	4 3/4	8 7/8	8 7/8	15 3/8	13 1/4	2
	○2 7/16	2.06:1	7 3/4	15	8	18.1	4 1/4	2 3/16	7 15/16	31 3/8	13	7 1/4	4 3/4	8 7/8	9	15 1/2	17 3/8	2
	3	2.06:1	7 3/4	15	8	18.1	4 1/4	2 3/16	7 15/16	31 3/8	13	7 1/4	4 3/4	8 7/8	9	15 1/2	17 3/8	2
16	3	2.06:1	10 5/8	20	10 1/2	18.1	4 1/4	2 3/16	7 15/16	36 3/4	17	7 1/4	5	11 1/8	9 1/2	18	17 3/8	3

Dimensions in Inches

◇ Horizontal coupling diameter may vary upon length of feeder.

○ Consult Martin before using.

CAUTION: Never operate without covers and guards. Always LOCKOUT/TAGOUT electrical power when working on equipment for inspection, cleaning, maintenance, or other purposes.

Note: Dimensions not certified for construction.