

# B. W. SINCLAIR, INC.

BULK MATERIAL HANDLING

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## TYPE 700 BUCKET ELEVATOR DATA SHEET CONTINUOUS DISCHARGE WITH STEEL CHAIN

Bulletin 300.004

Standard Type 700 elevators include head shaft machinery, pillow block roller bearings, discharge spout, casing, chain, "MF" style buckets, boot terminal and screw take-ups with ball bearings. Capacities are based on buckets filled to 75% of theoretical capacity and are proportional to the weight and volume of the material carried and the chain speed. Horsepower information is based on buckets filled to 100% theoretical capacity. Fluffy or lightweight materials may require slower chain speeds, and wet or sticky materials may need different buckets.

### CAPACITY DATA

Model	Max. Lump Size		Buckets		Chain	Cu. Ft. Hr.	CAPACITY* TPH			
	% of Lumps		Size	Ctrs.	Speed		Material Weight, Lbs. / Cu. Ft.			
	10%	100%			FPM		35	50	75	100
702	2-1/2	3/4	8 x 5	8	125	680	12	17	25	34
704	2-1/2	3/4	10 x 5	8	125	840	15	21	32	42
706	3	1	10 x 7	12	125	1080	19	27	41	54
708	3	1	12 x 7	12	125	1300	23	32	49	65
710	3	1	14 x 7	12	125	1520	26	38	57	76
712	4	1-1/4	12 x 8	12	125	1560	27	39	58	78
714	4	1-1/4	14 x 8	12	125	1820	32	45	68	91
716	4-1/2	1-1/2	16 x 8	12	125	2080	36	52	78	104
718	4-1/2	1-1/2	18 x 8	12	125	2340	41	58	88	117

\* Based on buckets filled to 75% theoretical capacity

### HORSEPOWER CALCULATION

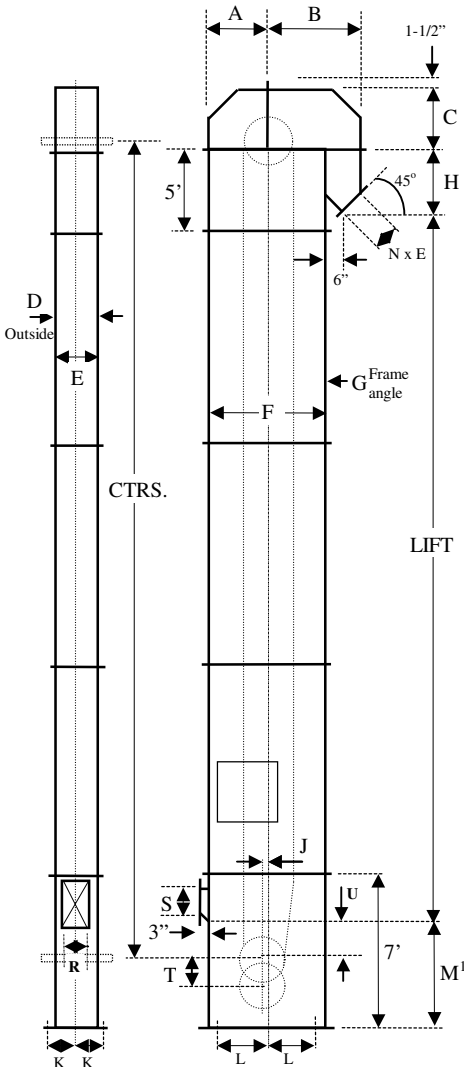
The horsepower required at the head shaft can be calculated with the following equation. The values required in the formula are listed in the following tables:

$$SHP = \frac{THP + (CHP \times C)}{0.85}$$

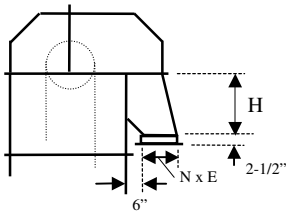
Legend: SHP = Horsepower at the head shaft      CHP = Horsepower per foot of centers  
 THP = Terminal horsepower      C = Center distance in feet  
 0.85 = Drive efficiency factor, to compensate for power loss in drive train

Model	Material Weight per Cubic Foot								Head Shaft		Boot Shaft	
	35 PCF		50 PCF		75 PCF		100 PCF		Spkt.		Spkt.	Shaft
	Terminal	Per Ft. Centers	Terminal	Per Ft. Centers	Terminal	Per Ft. Centers	Terminal	Per Ft. Centers	P. D.	RPM	P. D.	Dia.
702	.100	.016	.100	.023	.100	.034	.100	.045	20-1/2	23.4	14-1/4	1-15/16
704	.100	.020	.100	.028	.100	.043	.100	.057	20-1/2	23.4	14-1/4	1-15/16
706	.125	.025	.136	.036	.155	.055	.173	.073	25	19.1	19-1/2	1-15/16
708	.131	.031	.144	.044	.165	.065	.187	.087	25	19.1	19-1/2	1-15/16
710	.135	.035	.151	.051	.177	.077	.210	.102	25	19.1	19-1/2	1-15/16
712	.236	.036	.252	.052	.278	.078	.304	.104	25	19.1	17-1/2	2-3/16
714	.243	.043	.261	.061	.292	.092	.323	.123	25	19.1	17-1/2	2-3/16
716	.252	.052	.270	.070	.305	.105	.340	.140	25	19.1	17-1/2	2-3/16
718	.255	.055	.278	.078	.319	.119	.358	.157	25	19.1	17-1/2	2-3/16

Note: Values based on buckets filled to 100% theoretical capacity



Anchor bolts :  
 3/4" dia.  
 2" projection



Optional Style 2 Discharge

**Other BWSI Products:**

- Screw conveyors
- Screw feeders
- Belt conveyors
- Flex-wall conveyors
- Diverter valves
- Roller gate valves
- Hoppers & bins
- Engineered systems

Model	A	B	C	D	E	F	G	H
702	19-1/2	32-1/2	21-1/2	15-1/8	11-3/4	39	1-1/2	29
704	19-1/2	32-1/2	21-1/2	17-1/8	13-3/4	39	1-1/2	29
706	24	40-5/8	27-1/2	18-1/8	13-3/4	48	2	33-1/4
708	24	40-5/8	27-1/2	20-1/8	15-3/4	48	2	33-1/4
710	24	40-5/8	27-1/2	22-1/8	17-3/4	48	2	33-1/4
712	24	40-5/8	27-1/2	20-1/8	15-3/4	48	2	33-1/4
714	24	40-5/8	27-1/2	22-1/8	17-3/4	48	2	33-1/4
716	24	40-5/8	27-1/2	24-1/8	19-3/4	48	2	33-1/4
718	24	40-5/8	27-1/2	26-1/8	21-3/4	48	2	33-1/4

Model	J	K	L	M <sup>1</sup>	N	R	S	T	U
702	3-1/8	7-3/4	16-1/2	37-1/2	10	6	12	6	17
704	3-1/8	8-3/4	16-1/2	37-1/2	10	8	12	6	17
706	2-3/4	8-3/4	21	49-1/2	15	8	15	9	21-1/2
708	2-3/4	9-3/4	21	49-1/2	15	10	15	9	21-1/2
710	2-3/4	10-3/4	21	49-1/2	15	12	15	9	21-1/2
712	2-3/4	9-3/4	21	49-1/2	15	10	15	9	21-1/2
714	2-3/4	10-3/4	21	49-1/2	15	12	15	9	21-1/2
716	2-3/4	11-3/4	21	51-1/2	15	14	15	9	23-1/2
718	2-3/4	12-3/4	21	51-1/2	15	16	15	9	23-1/2

Model	Casing Size <sup>2</sup>	Chain	Casing Thickness (Ga.)			Weight (-)	
		Size	Hood	Case	Boot	Term <sup>3</sup>	Ctrs <sup>4</sup>
702	11-3/4 x 39	S102B	14	12	10	862	83
704	13-3/4 x 39	S102B	14	12	10	816	94
706	13-3/4 x 48	S110	14	12	10	1223	103
708	15-3/4 x 48	S110	14	12	10	1293	114
710	17-3/4 x 48	S110	14	12	10	1359	120
712	15-3/4 x 48	S110	14	12	10	1462	121
714	17-3/4 x 48	S110	14	12	10	1568	127
716	19-3/4 x 48	S110	14	12	10	1607	132
718	21-3/4 x 48	S110	14	12	10	1642	137

- Notes:
1. "M" is the minimum height from material inlet point to bottom
  2. Dimensions are inside the casing enclosure
  3. Term = Weight of each terminal
  4. Ctrs. = Weight of casings, chain, and buckets, per foot of centers

Type 700 Elevators are recommended for the following products ...				Wt.
Material	Abrasion	Corrosion	Flowability	PCF
Alumina	Moderate	Low	Sluggish	60-95
Bauxite	High	Low	Moderate	75-85
Carbon black	Consult	Consult	Consult	20-40
Cement	Moderate	Low	Moderate	75-85
Clinker	High	Low	Moderate	75-80
Coal	Low	Moderate	Sluggish	50-55
Dolomite	Moderate	Low	Moderate	80-95
Flue dust	High	Low	Moderate	40-95
Granite	High	Low	Moderate	100
Gypsum	Moderate	Low	Sluggish	75-95
Ilmenite ore	High	Low	Moderate	140
Lime, pebble	Low	Low	Sluggish	55-60
Limestone	High	Low	Moderate	85-90
Phosphate	Moderate	Low	Moderate	75-85
Salt	Moderate	Moderate	Moderate	70-80
Soda ash	Moderate	Low	Moderate	55-65