

AUGER SPEED CHART

SPEED OF AUGER W/ 1750 RPM MOTOR

DRIVE SHEAVE	DRIVEN SHEAVE	AUGER RPM
3"	9"	583
3"	12"	438
3"	15"	350
3"	18"	292
3.5"	9"	681
3.5"	12"	510
3.5"	15"	408
3.5"	18"	340
3.4"	9"	778
3.4"	12"	583
3.4"	15"	467
3.4"	18"	389
3.4"	18.4"	3232
3.8"	9"	875
3.8"	12"	655
3.8"	15"	526
3.8"	18"	438
4.6"	9"	972
4.6"	12"	729
4.6"	15"	583

AUGER SPEED CHART

GEAR REDUCERS WITH 4:1 RATIO & 1750 RPM MOTOR

DRIVE SHEAVE		DRIVEN SHEAVE		AUGER RPM
P.D.	O.D.	P.D.	O.D.	RPM
	3.0		12.0	
4.6	5.0		12.0	110
4.6	5.0		15.0	130
3.8	4.2	8.6	12.0	148
4.6	5.0	8.6	9.0	185
4.6	5.0	7.4	9.0	208
4.6	5.0	6.4	7.8	250
4.6	5.0	5.6	6.8	285
4.6	5.0	4.6	6.0	327
	5.0		5.0	370

AUGER SPEED CHART

GEAR REDUCERS WITH 5:1 RATIO & 1750 RPM MOTOR

DRIVE SHEAVE		DRIVEN SHEAVE		AUGER RPM
P.D.	O.D.	P.D.	O.D.	RPM
3.8	4.2	15.4	15.8	94
4.6	5.0	15.4	15.8	123
4.2	4.6	15.4	15.8	103
3.8	4.2	12.4	12.8	116
4.2	4.6	12.4	12.8	127
4.6	5.0	12.4	12.8	139
5.6	6.0	12.4	12.8	167
5.0	5.4	12.4	12.8	150
6.0	6.4	12.4	12.8	178
4.6	5.0	9.4	9.8	181
5.0	5.4	9.4	9.8	193
5.6	6.0	9.4	9.8	218
6.0	6.4	9.4	9.8	232
6.4	6.8	9.4	9.8	247
4.6	5.0	7.4	7.8	227
5.6	6.0	7.4	7.8	273
6.0	6.4	7.4	7.8	291
6.4	6.8	7.4	7.8	309
6.4	6.8	6.4	6.8	355

MOTOR HP RECOMMENDATIONS

HORIZONTAL AUGERS

AUGER LENGTH	6" 900-1200 BPH	8" 1500-2000 BPH	10" 2500-3500 BPH	12" 4000-5000 BPH
10'	1.5 HP	2 HP	2 HP	3 HP
15'	1.5HP	2 HP	2 HP	3 HP
25'	2 HP	3 HP	3 HP	5 HP
35'	2 HP	3 HP	5 HP	5 HP
40'	3 HP	3 HP	5 HP	7.5 HP
45'	3 HP	3 HP	5 HP	7.5 HP
50'	5 HP	5 HP	7.5 HP	10 HP
70'	5 HP	5 HP	7.5 HP	15 HP
80'	5 HP	7.5 HP	10 HP	15 HP
110'	7.5 HP	10 HP	15 HP	

VERTICAL AUGERS

AUGER LENGTH	6" 900-1200 BPH	8" 1500-2000 BPH	10" 2500-3500 BPH	12" 4000-5000 BPH
10'	2 HP	2 HP	3 HP	5 HP
12'	2 HP	2 HP	3 HP	5 HP
15'	2 HP	3 HP	5 HP	5 HP
20'	2 HP	5 HP	5 HP	7.5 HP
25'	3 HP	5 HP	7.5 HP	7.5 HP
35'	5 HP	7.5 HP	7.5 HP	10 HP
40'	5 HP	7.5 HP	10 HP	10 HP
45'	7.5 HP	10 HP	10 HP	15 HP
50'	7.5 HP	10 HP	15 HP	
60'	10 HP	15 HP		

Horse Power requirements vary with the condition and kind of material, loading factor, RPM and use of reduction. Contact Premier with the details of your conveying job and we will be glad to assist you. Use a 1.5 multiplier for HP requirements for conveying medium with a high moisture content.

CAPACITIES AND POWER REQUIREMENTS

The below ratings are established in horizontal position using a 45% loading factor based upon dry grains including barley, bran, brewers grain, shelled corn, corn germ, corn meal, cottonseed meal, malt, maize, oats, rice, rye, soybeans, timothy, wheat and cracked wheat. For 100% loading, double both the stated B.P.H. and the H.P. requirements. After figuring the requirements show below, use the next size motor up for vertical augers and those moving wet grain (or a material using a higher power factor than dry corn). If any doubts exist in H.P. requirements, please contact a Premier representative for assistance.

Auger Specs.	BPH per 100rpm	HP req'd per 10' per 100rpm
4" w/ 3 1/2" O.D. Flight	30 BPH	.05 HP
6" w/ 5" O.D. Flight	100 BPH	.13 HP
8" w/ 7" O.D. Flight	260 BPH	.25 HP
10" w/ 9" O.D. Flight	700 BPH	.45 HP
12" w/ 11" O.D. Flight	1300 BPH	.65 HP
14" w/ 13" O.D. Flight	1800 BPH	.9 HP

GENERAL CAPACITIES FOR SCREW CONVEYORS

Capacities listed are based on horizontal conveying of clean, dry corn at ~90% load. Capacities will vary according to grain type, condition and loading method.

AUGER	SHEAVE O.D.	RPM	CAPACITY PER 100 RPM (90% LOAD)	NET capacity at stated RPM	% LOSS FOR ANGLE OF OPERATION	% LOSS FOR INCREASE MOISTURE				
4"	2.5" - 5"	875	60 BPH	525 BPH	45°	90°				
	2.5" - 8"	547	60 BPH	328 BPH						
	2.5" - 10"	437	60 BPH	262 BPH						
	2.5" - 12"	365	60 BPH	219 BPH						
	2.5" - 14"	312	60 BPH	187 BPH						
6"	3" - 12"	438	250 BPH	1095 BPH			Approximately 20% loss unless unit is pressure fed	Approximately 50% loss unless unit is pressure fed		
	3.5" - 12"	510	250 BPH	1275 BPH						
	3.5" - 15"	408	250 BPH	1020 BPH						
	3" - 15"	350	250 BPH	875 BPH						
	3.5" - 15"	204	250 BPH	510 BPH						
8"	3" - 12"	438	500 BPH	2190 BPH	Approximately 20% loss unless unit is pressure fed	Approximately 50% loss unless unit is pressure fed				
	3.5" - 15"	350	500 BPH	1750 BPH						
	3.5" - 12"	170	500 BPH	850 BPH						
10"	5" - 12"	243	500 BPH	1215 BPH					Approximately 20% loss unless unit is pressure fed	Approximately 50% loss unless unit is pressure fed
	3" - 15"	350	1100 BPH	3850 BPH						
	5" - 12"	243	1100 BPH	2673 BPH						
12"	3.5" - 15"	136	1100 BPH	1496 BPH			Approximately 20% loss unless unit is pressure fed	Approximately 50% loss unless unit is pressure fed		
	3" - 15"	350	1800 BPH	6300 BPH						
	5" - 12"	243	1800 BPH	4378 BPH						
14"	3.5" - 15"	136	1800 BPH	2448 BPH						
	5-7.4" PD	280	1800 BPH	5040 BPH						
	3.5-11" PD	127	3200 BPH	4064 BPH						
	5-11" PD	200	3200 BPH	6400 BPH						
	7.4"-11" PD	294	3200 BPH	9400 BPH		25% Moisture grain can result in approximately 40% loss in capacity				

