



GRIZZLYDRIVE® SERIES DRUM MOTORS | TM315 - TM915

ø12.5" to ø36" diameter • 5 to 500 hp

BELT PULL (BP) = (F0 + F1 + F2)

Roller Bed Conveyor

$F0 = 0.04 (2P + Q) L$

$F1 = 0.04 \times R \times L$

$F2 = R \times H$

Slider Bed Conveyor

$F0 = 1.1 \times P \times L \times C$

$F1 = 1.1 \times R \times L \times C$

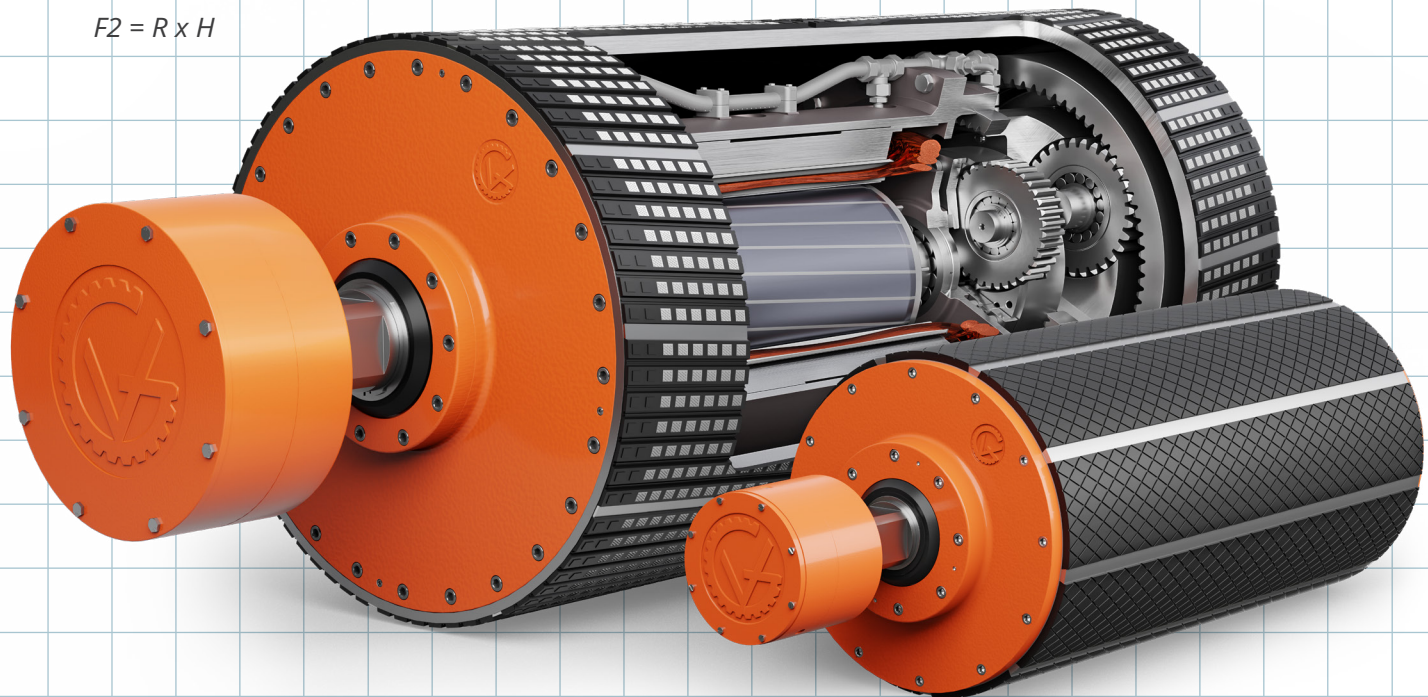
$F2 = R \times H$

- Dimensions and Specifications
- Design Features and Benefits
- Belt Pull Calculations

RPM:

$= \frac{V}{\pi (d/12)}$

$V =$ Velocity (ft/min)



HORSEPOWER:

$HP = \frac{T''\text{lbs.} \times \text{RPM}}{63025}$

TORQUE:

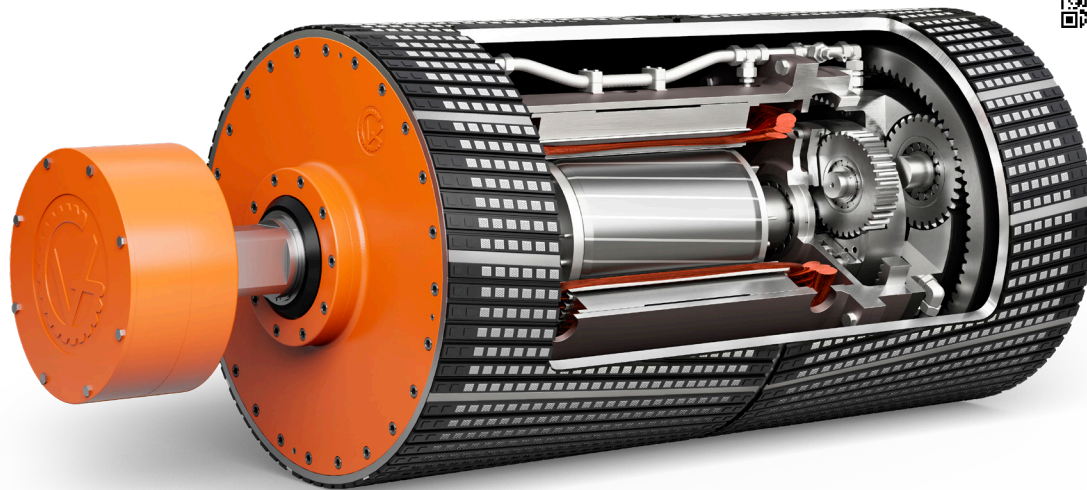
$T''\text{lbs.} = \frac{63025 \times \text{HP}}{\text{RPM}}$



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<i>Drum Motor</i>	
<i>Dimensions</i>	
<i>Specifications</i>	
TM315B50 (12.5" \emptyset , 15 - 5 hp)	4 5
TM315B60 (12.5" \emptyset , 15 - 5 hp)	6 7
TM315A75 (12.5" \emptyset , 15 - 10 hp)	8 9
TM400B60 (16.0" \emptyset , 20 - 4 hp)	10 11-12
TM500A60 (20.0" \emptyset , 20 - 4 hp)	13 14-15
TM500A75 (20.0" \emptyset , 40 - 20 hp)	16 17
TM500A100 (20.0" \emptyset , 75 - 20 hp)	18 19
TM630A100 (24.3" \emptyset , 75 - 20 hp)	20 21
TM762A130 (30.0" \emptyset , 200 - 150 hp)	22 23
TM800A100 (31.5" \emptyset , 75 - 20 hp)	24 25
TM800A130 (31.5" \emptyset , 200 - 75 hp)	26 27
TM915A160 (36.0" \emptyset , 500 - 250 hp)	28 29
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The GrizzlyDrive® Drum Motor is a one-component conveyor belt drive for bulk handling and material processing belt conveyor applications, from ship loading, power generation, and portable plants to surface and underground mining. All components of the GrizzlyDrive® are enclosed inside the drive roller, protected from outside elements that can impact the reliability and performance of the drive. With no external components such as motor, gearbox, sprockets, chain, chain guard, or pillow block bearings, the GrizzlyDrive® improves workforce safety and eliminates routine maintenance cycles, reducing downtime and expenses associated with traditional conveyor belt drives.

The GrizzlyDrive® is built to endure dusty, harsh, and abrasive environments, and all components are designed for 80,000 hours of continuous operation with no required maintenance. The 96% mechanically efficient gear reducer is in-line with the electric motor, increasing energy efficiency by 25% to 30%, resulting in lower energy consumption and costs. GrizzlyDrive® Drum Motors provide a space-saving, less complex, efficient, reliable, and maintenance-free solution to power belt conveyors. Available in a wide range of diameters, belt speeds, horsepower, face widths, and options to suit all types of belt conveyor applications.



REDUCE ENERGY CONSUMPTION

With 96% mechanical efficiency and a premium-efficiency electric motor, VDG Drum Motors reduce energy consumption, resulting in energy savings of 25% to 30% over traditional external conveyor drives.

ELIMINATE MAINTENANCE CYCLES

Maintenance-free VDG Drum Motors are designed for 80,000 hours of continuous operation before an oil change that is performed without removing the drive. With no external drive components, the drum motor eliminates the constant need for lubricating bearings, chain adjustment, and routine maintenance cycles.

INCREASE WORKFORCE SAFETY

With all components enclosed inside the drive roller, the VDG Drum Motor eliminates the external components of a traditional conveyor drive that can pose hazard to workforce safety.

ENHANCE SPACE UTILIZATION

Low-profile VDG Drum Motors reduce the overall footprint of the conveyor (area the conveyor occupies), allowing more conveyors to fit on the same floor or overhead space.

ADVANCED MEACHNICAL SEALING SYSTEM

All GrizzlyDrive® Drum Motors are equipped with an advanced mechanical sealing system for continuous operation in the harshest of conditions without corrosion or contamination.

COMPONENTS

All components are heavy-duty, designed and manufactured in-house by VDG, and can withstand higher levels of belt tension and load to provide years of continuous service compared to traditional conveyor belt drives. Gears are manufactured using state-of-the-art gear cutting and shaping equipment to DIN6 (AGMA12) industry standards. The advanced extreme-duty mechanical sealing system ensures continuous performance in the harshest operating environments without corrosion or contamination.

ELECTRIC MOTORS

All VDG premium-efficiency electric motors are manufactured in-house by VDG to Class H insulation standards, are inverter-duty, and can be supplied for all standard and non-standard voltage at 50 Hz or 60 Hz for 3 phase applications. All VDG electric motors undergo a **Vacuum Pressure Impregnation (VPI)** process, increasing the life of the electric motor.

OVERLOAD PROTECTION (GV-THERM)

The GV-THERM, a thermal bimetal device embedded into the motor windings that reacts to temperature, provides an additional layer of thermal overload protection. GV-THERM is standard for GrizzlyDrive® Series Drum Motor TM500A75 to TM915A160 and optional for TM315B50/B60.

PRESSURE EQUALIZATION SYSTEM (PES)

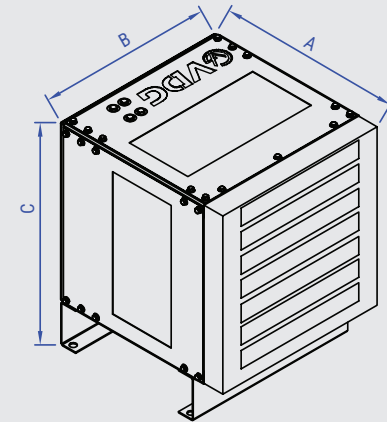
Depending on the application, the heat generated by the electric motor and gear reducer during normal operation will raise the internal pressure to up to 18 psi. The internal pressure will cause tighter than normal engagement of the oil seals to the shaft, resulting in premature oil seal failure. The increased internal pressure will result in oil leakage and a higher operating temperature. The pressure equalization system (PES) releases the internal pressure above 0.5 psi. Lower internal pressure eliminates oil leaves, reduces the operating temperature, and increases the electric motor and gear reducer performance.

VDG OIL COOLING-CONDITIONING SYSTEM

GrizzlyDrive® Drum Motors 75 hp and higher are supplied with the VDG patented Oil Cooling-Conditioning System. The system extracts the oil from inside the drum motor, filters and cools it, then returns the oil directly to lubricate key components inside the drum motor. This system ensures oil viscosity is maintained for optimal lubrication of all critical components. For high horsepower or high temperature applications, the VDG Oil Cooling-Conditioning unit allows the drum motor to withstand demanding operating conditions without compromising motor performance.

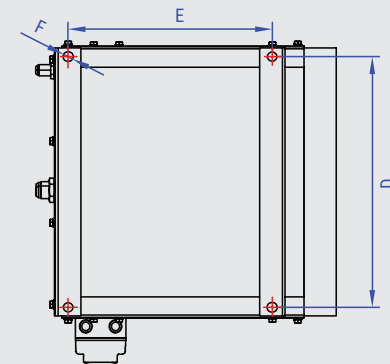


VDG OIL COOLING-CONDITIONING UNIT



Overall Dimensions

	A	B	C
HE-300:	17.0"	13.0"	16.0"
HE-500:	23.0"	21.7"	26.4"



Mounting Hole Dimensions

	D	E	F
HE-300:	10.51"	11.81"	0.50"
HE-500:	19.30"	15.75"	0.75"

NON-STANDARD LENGTH / EXTRA LONG FACE WIDTH

Please contact your VDG technical representative for details.

MECHANICAL BACKSTOP (TB)

To prevent rollback for incline conveyors, the backstop device in the drum motor allows the drum motor to rotate only in one direction.

DRUM MOTOR LAGGING

VDG offers a complete line of lagging materials.

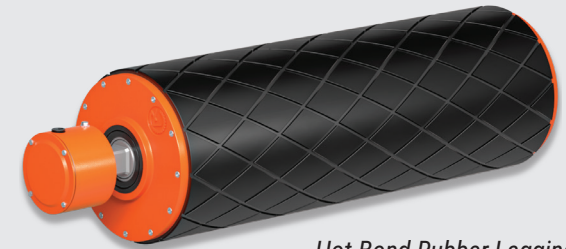
Hot Bond Rubber Lagging

Rubber is wrapped to the desired thickness around the drum using a hot-bond vulcanizing process, providing a seamless and tear-resistant lagging. Various durometer hardness lagging is available in black rubber or USDA/FDA blue or white nitrile rubber in plain, diamond, or chevron patterns.

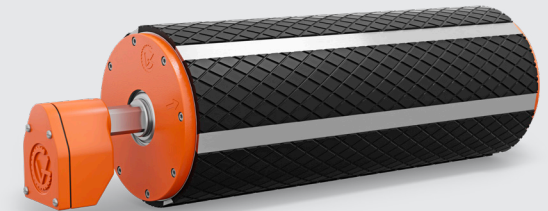
VDG IronGrip™ Lagging

An extremely durable lagging that increases performance and provides 4 to 5 times longer service life than standard rubber lagging. The VDG patented IronGrip™ lagging system has metal bars welded lengthwise on the drum with hot-bond vulcanized rubber lagging sections between the bars. The metal bars prevent the rubber from wearing below the bars. For extremely abrasive applications, rubber lagging with ceramic tile is also available. IronGrip™ lagging increases traction by 40%, improves belt tracking, and eliminates delamination.

DRUM MOTOR LAGGING OPTIONS:



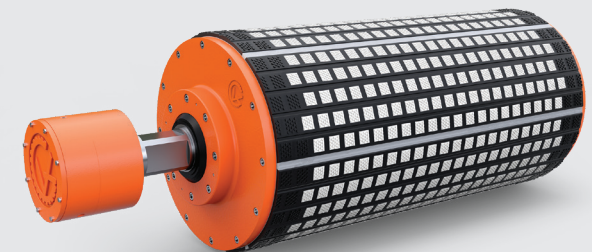
Hot-Bond Rubber Lagging



VDG IronGrip™ Lagging



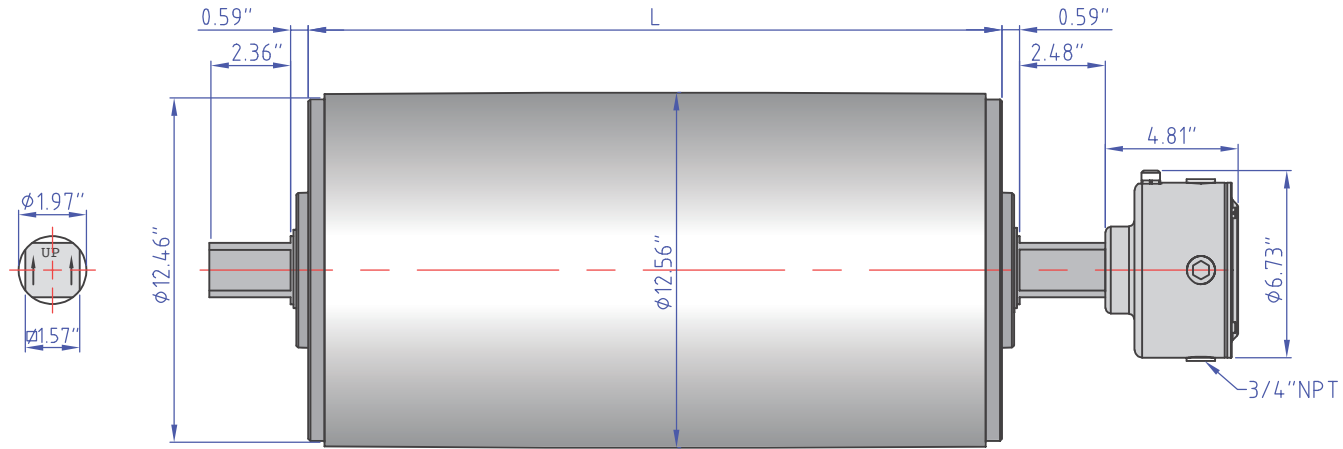
View Video



VDG IronGrip™ Lagging with Ceramic Tile



TM315B50 Drum Motor (maching Idler KT315B50**)



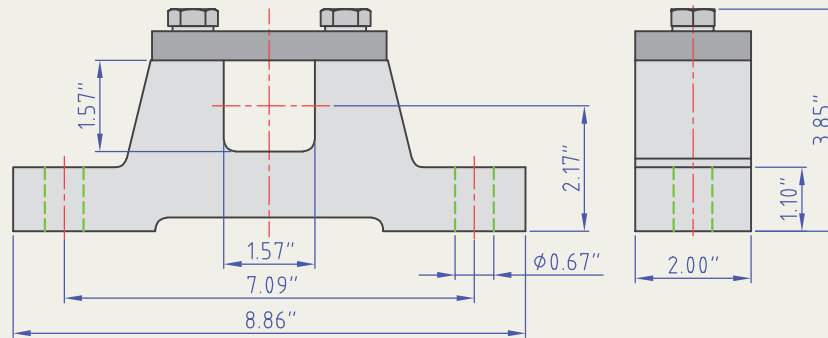
Standard drum motor face widths* (L) in inches:

21.65	23.62	25.59	27.56	29.53	31.50	33.46	35.43	37.40	39.37	41.34	43.31	45.28	47.24
49.21	51.18	53.15	55.12	57.09	59.06	61.02	62.99	64.96	66.93	68.90	70.87	72.83	74.80

*Some face widths are not available in all horsepower. For minimum available face widths refer to page 30.

**Idler dimensions are identical to the drum motor with no junction box.

Brackets: 315-AB-50



TM315B50 Drum Motor

15.0 HP

V (ft/min) M/G	661 2/S2	591 2/S2	567 2/S2	520 2/S2	449 2/S2	378 2/S2					
Belt Pull (lbf)	698	782	814	888	1029	1185					
Drum RPM	204	182	175	160	138	116					

10.0 HP

V (ft/min) M/G	638 4/S2	567 4/S2	520 4/S2	449 4/S2	402 4/S2	354 4/S2	331 4/S2	295 4/S2	283 4/S2	260 4/S2		
Belt Pull (lbf)	493	555	606	701	784	888	952	1066	1110	1211		
Drum RPM	197	175	160	138	124	109	102	91	87	80		

7.5 HP

V (ft/min) M/G	638 4/S2	567 4/S2	520 4/S2	449 4/S2	402 4/S2	354 4/S2	331 4/S2	295 4/S2	268 4/S2	260 4/S2	224 4/S2	189 4/S2		
Belt Pull (lbf)	362	407	444	514	575	651	698	782	814	888	1029	1185		
Drum RPM	197	175	160	138	124	109	102	91	83	80	69	58		

5.0 HP

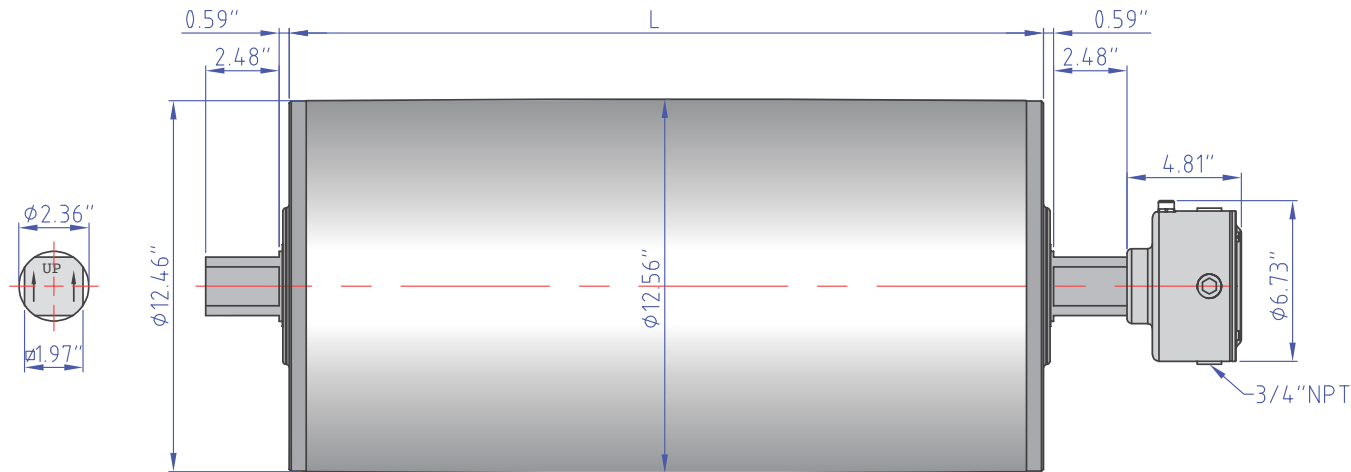
V (ft/min) M/G	638 4/S2	567 4/S2	543 4/S2	449 4/S2	402 4/S2	354 4/S2	331 4/S2	283 4/S2	268 4/S2	213 4/S2	189 4/S2	165 4/S2	154 4/S2	142 4/S2	130 4/S2
Belt Pull (lbf)	245	276	288	349	390	442	473	552	602	736	790	947	1019	1104	1205
Drum RPM	197	175	167	138	124	109	102	87	83	66	58	51	47	44	40

V = Belt Speed (ft/min)

M/G = Motor/Gear Reducer Configuration (at rated horsepower)



TM315B60 Drum Motor (maching Idler KT315B60**)



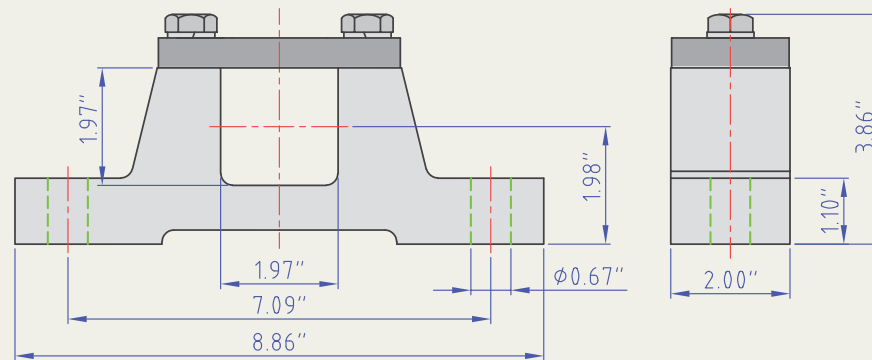
Standard drum motor face widths* (L) in inches:

25.59	27.56	29.53	31.50	33.46	35.43	37.40	39.37	41.34	43.31	45.28	47.24	49.21
51.18	53.15	55.12	57.09	59.06	61.02	62.99	64.96	66.93	68.90	70.87	72.83	74.80

*Some face widths are not available in all horsepower. For minimum available face widths refer to page 30.

**Idler dimensions are identical to the drum motor with no junction box.

Brackets: 315-AB-60



TM315B60 Drum Motor

15.0 HP

V (ft/min) M/G	402 2/S3	335 2/S3	281 2/S3	272 2/S3	236 2/S3	189 2/S3
Belt Pull (lbf)	1095	1309	1560	1626	1866	2312
Drum RPM	124	103	87	84	73	58

10.0 HP

V (ft/min) M/G	201 4/S3	170 4/S3	142 4/S3
Belt Pull (lbf)	1470	1760	2100
Drum RPM	62	52	44

7.5 HP

V (ft/min) M/G	201 4/S3	168 4/S3	142 4/S3	135 4/S3	118 4/S3	107 4/S3	94 4/S3
Belt Pull (lbf)	1095	1309	1560	1626	1866	2128	2312
Drum RPM	62	52	44	42	36	32	29

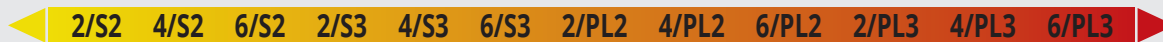
5.0 HP

V (ft/min) M/G	118 4/S3	107 4/S3	94 4/S3	76 4/S3
Belt Pull (lbf)	1275	1418	1594	1922
Drum RPM	36	32	29	23

V = Belt Speed (ft/min)

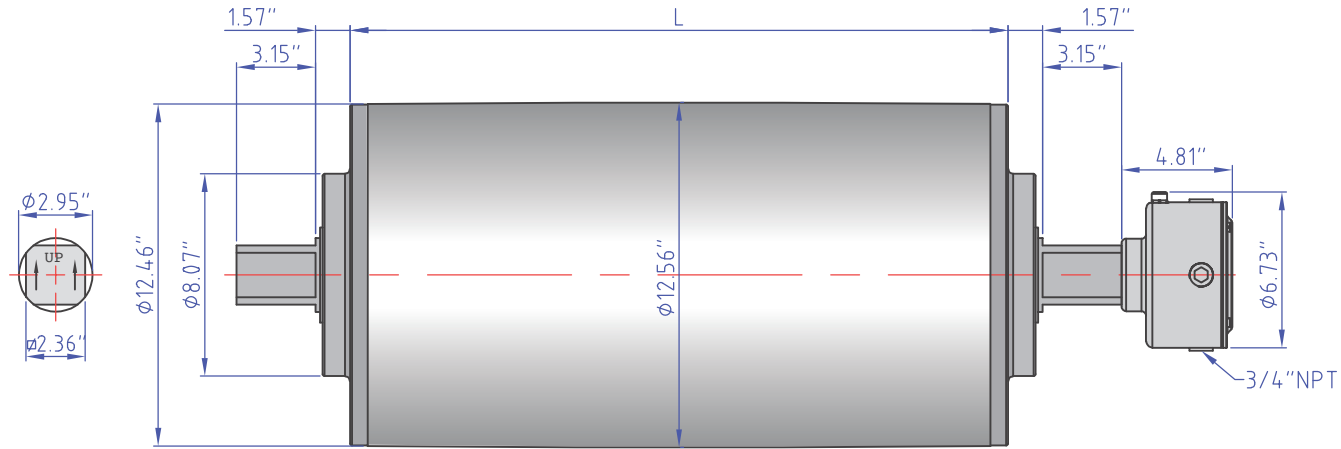
M/G = Motor/Gear Reducer Configuration (at rated horsepower)

High Speed
Low Torque



Low Speed
High Torque

TM315A75 Drum Motor (maching Idler KT315A75**)



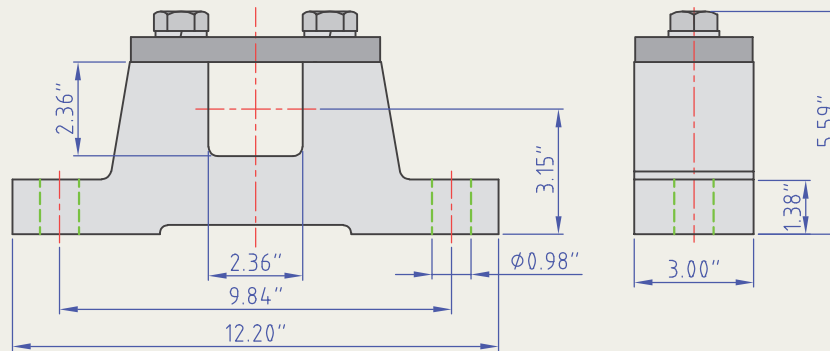
Standard drum motor face widths* (L) in inches:

33.46	35.43	37.40	39.37	41.34	43.31	45.28	47.24	49.21	51.18	53.15
55.12	57.09	59.06	61.02	62.99	64.96	66.93	68.90	70.87	72.83	74.80

*Some face widths are not available in all horsepower. For minimum available face widths refer to page 30.

**Idler dimensions are identical to the drum motor with no junction box.

Brackets: 500-AB-75



TM315A75 Drum Motor

15.0 HP

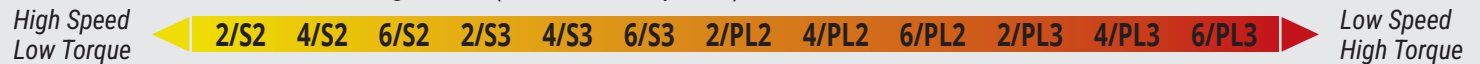
V (ft/min) M/G	100 2/PL3	80 2/PL3
Belt Pull (lbf)	4500	5700
Drum RPM	31	25

10.0 HP

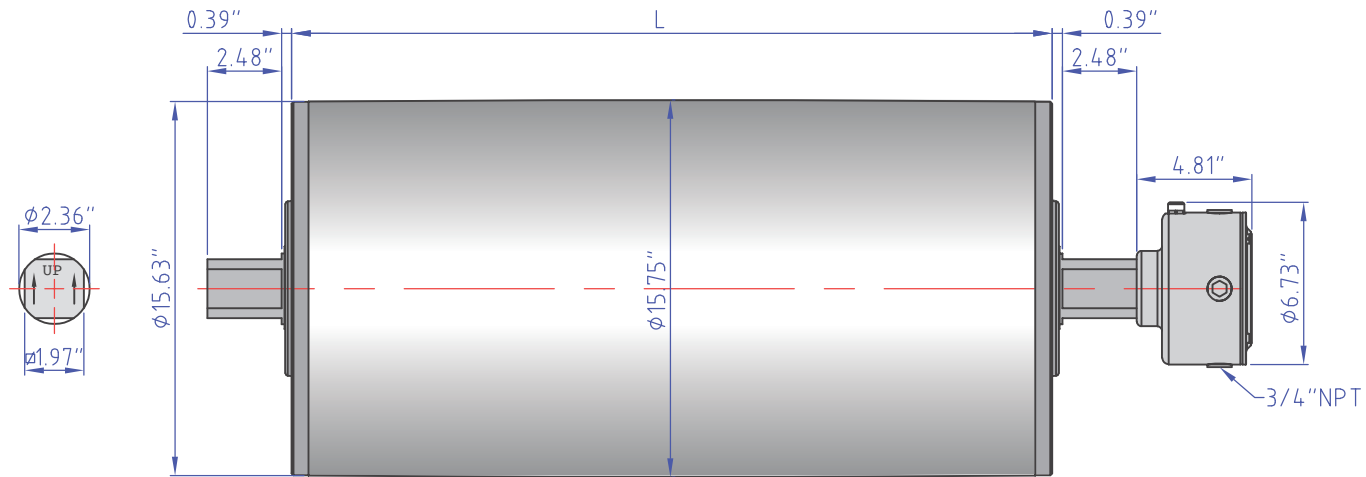
V (ft/min) M/G	50 4/PL3	40 4/PL3	30 4/PL3
Belt Pull (lbf)	6087	7600	11000
Drum RPM	15	12	9

V = Belt Speed (ft/min)

M/G = Motor/Gear Reducer Configuration (at rated horsepower)



TM400B60 Drum Motor (maching Idler KT400B60**)



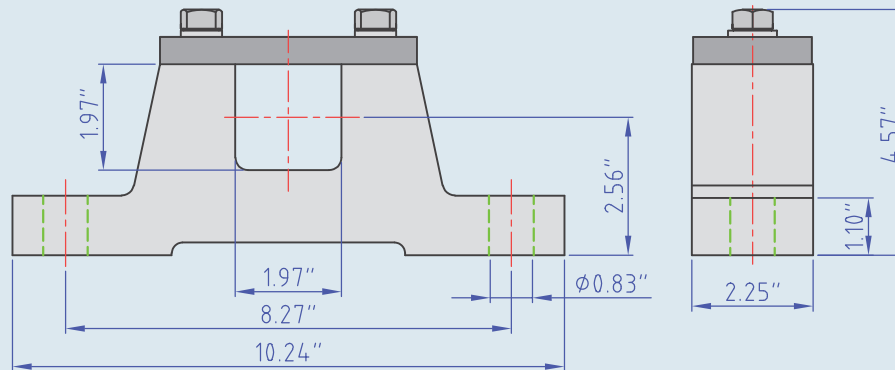
Standard drum motor face widths* (L) in inches:

25.59	27.56	29.53	31.50	33.46	35.43	37.40	39.37	41.34	43.31	45.28	47.24	49.21
51.18	53.15	55.12	57.09	59.06	61.02	62.99	64.96	66.93	68.90	70.87	72.83	74.80

*Some face widths are not available in all horsepower. For minimum available face widths refer to page 30.

**Idler dimensions are identical to the drum motor with no junction box.

Brackets: 400-AB-60



TM400B60 Drum Motor

20.0 HP										
V (ft/min) M/G	885 4/S2	639 4/S2	591 4/S2	534 4/S2	501 4/S2	420 4/S2	386 4/S2	354 4/S2	306 4/S2	254 4/S2
Belt Pull (lbf)	747	1033	1119	1238	1320	1573	1713	1867	2160	2600
Drum RPM	215	155	143	130	122	102	94	86	74	62

15.0 HP												
V (ft/min) M/G	885 4/S2	639 4/S2	591 4/S2	534 4/S2	501 4/S2	420 4/S2	386 4/S2	354 4/S2	306 4/S2	254 4/S2	214 4/S2	185 4/S2
Belt Pull (lbf)	560	775	839	928	990	1180	1285	1400	1620	1950	2321	2685
Drum RPM	215	155	143	130	122	102	94	86	74	62	52	45

10.0 HP													
V (ft/min) M/G	885 4/S2	639 4/S2	591 4/S2	534 4/S2	501 4/S2	420 4/S2	386 4/S2	354 4/S2	306 4/S2	254 4/S2	214 4/S2	185 4/S2	153 4/S2
Belt Pull (lbf)	373	517	559	619	660	787	856	933	1080	1300	1547	1790	2155
Drum RPM	215	155	143	130	122	102	94	86	74	62	52	45	37

7.5 HP							
V (ft/min) M/G	534 4/S2	386 4/S2	302 4/S2	228 4/S2	214 4/S2	185 4/S2	153 4/S2
Belt Pull (lbf)	464	642	821	1088	1160	1343	1616
Drum RPM	130	94	73	55	52	45	37

7.5 HP							
V (ft/min) M/G	356 6/S2	257 6/S2	201 6/S2	152 6/S2	142 6/S2	123 6/S2	102 6/S2
Belt Pull (lbf)	696	964	1231	1632	1741	2014	2424
Drum RPM	86	62	49	37	34	30	25

5.5 HP							
V (ft/min) M/G	534 4/S2	386 4/S2	302 4/S2	228 4/S2	214 4/S2	185 4/S2	153 4/S2
Belt Pull (lbf)	340	471	602	798	851	985	1185
Drum RPM	130	94	73	55	52	45	37

5.5 HP							
V (ft/min) M/G	356 6/S2	257 6/S2	201 6/S2	152 6/S2	142 6/S2	123 6/S2	102 6/S2
Belt Pull (lbf)	511	707	902	1197	1276	1477	1778
Drum RPM	86	62	49	37	34	30	25

V = Belt Speed (ft/min) M/G = Motor/Gear Reducer Configuration (at rated horsepower)

High Speed Low Torque ◀ 2/S2 4/S2 6/S2 2/S3 4/S3 6/S3 2/PL2 4/PL2 6/PL2 2/PL3 4/PL3 6/PL3 ▶ High Speed High Torque

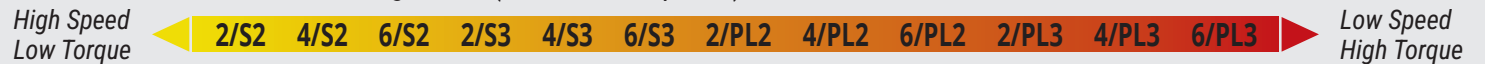
TM400B60 Drum Motor

4.0 HP

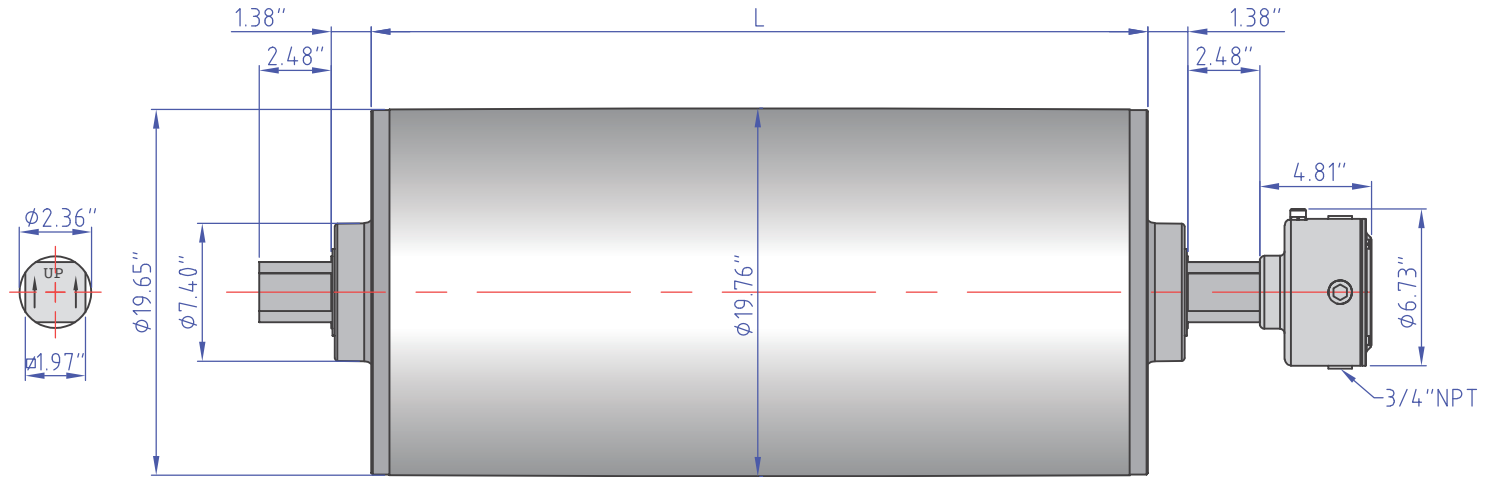
V (ft/min) M/G	534 4/S2	386 4/S2	302 4/S2	228 4/S2	214 4/S2	185 4/S2	153 4/S2
Belt Pull (lbf)	248	343	438	580	619	716	862
Drum RPM	130	94	73	55	52	45	37

V = Belt Speed (ft/min)

M/G = Motor/Gear Reducer Configuration (at rated horsepower)



TM500A60 Drum Motor (maching Idler KT500A60**)



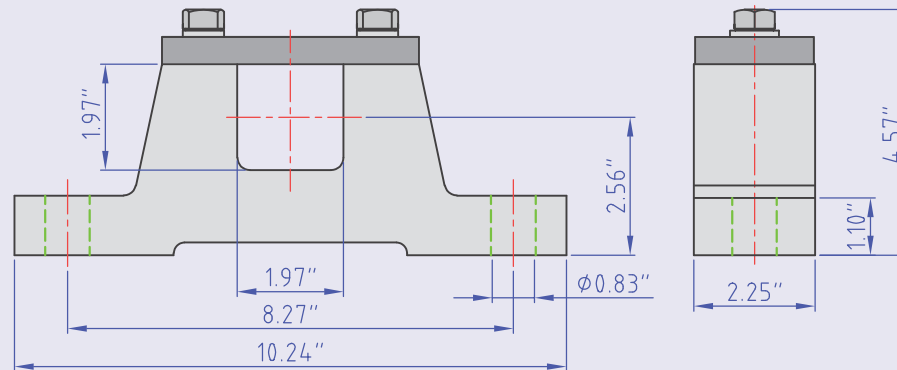
Standard drum motor face widths* (L) in inches:

25.59	27.56	29.53	31.50	33.46	35.43	37.40	39.37	41.34	43.31	45.28	47.24	49.21
51.18	53.15	55.12	57.09	59.06	61.02	62.99	64.96	66.93	68.90	70.87	72.83	74.80

*Some face widths are not available in all horsepower. For minimum available face widths refer to page 30.

**Idler dimensions are identical to the drum motor with no junction box.

Brackets: 400-AB-60



TM500A60 Drum Motor

20.0 HP

V (ft/min) M/G	1111 4/S2	802 4/S2	741 4/S2	670 4/S2	628 4/S2	484 4/S2	527 4/S2	444 4/S2	384 4/S2	319 4/S2
Belt Pull (lbf)	595	823	892	986	1052	1365	1254	1488	1721	2072
Drum RPM	216	156	144	130	122	94	102	86	75	62

15.0 HP

V (ft/min) M/G	1111 4/S2	802 4/S2	741 4/S2	670 4/S2	628 4/S2	484 4/S2	527 4/S2	444 4/S2	384 4/S2	319 4/S2	268 4/S2	232 4/S2
Belt Pull (lbf)	446	618	669	740	789	1024	940	1116	1291	1554	1849	2140
Drum RPM	216	156	144	130	122	94	102	86	75	62	52	45

10.0 HP

V (ft/min) M/G	1111 4/S2	802 4/S2	741 4/S2	670 4/S2	628 4/S2	484 4/S2	527 4/S2	444 4/S2	384 4/S2	319 4/S2	268 4/S2	232 4/S2	192 4/S2
Belt Pull (lbf)	297	412	446	493	526	682	627	744	861	1036	1233	1427	1717
Drum RPM	216	156	144	130	122	94	102	86	75	62	52	45	37

7.5 HP

V (ft/min) M/G	670 4/S2	484 4/S2	379 4/S2	286 4/S2	268 4/S2	232 4/S2	192 4/S2
Belt Pull (lbf)	370	512	654	867	925	1070	1288
Drum RPM	130	94	74	55	52	45	37

7.5 HP

V (ft/min) M/G	447 6/S2	323 6/S2	253 6/S2	191 6/S2	179 6/S2	154 6/S2	128 6/S2
Belt Pull (lbf)	555	768	981	1300	1387	1605	1932
Drum RPM	87	63	49	37	35	30	25

5.5 HP

V (ft/min) M/G	670 4/S2	484 4/S2	379 4/S2	286 4/S2	268 4/S2	232 4/S2	192 4/S2
Belt Pull (lbf)	271	375	479	636	678	785	944
Drum RPM	130	94	74	55	52	45	37

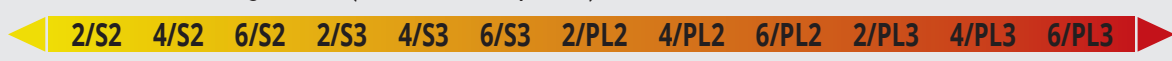
5.5 HP

V (ft/min) M/G	447 6/S2	323 6/S2	253 6/S2	191 6/S2	179 6/S2	154 6/S2	128 6/S2
Belt Pull (lbf)	407	563	719	954	1017	1177	1417
Drum RPM	87	63	49	37	35	30	25

V = Belt Speed (ft/min)

M/G = Motor/Gear Reducer Configuration (at rated horsepower)

High Speed
Low Torque



Low Speed
High Torque

TM500A60 Drum Motor

4.0 HP

V (ft/min) M/G	670 4/S2	484 4/S2	379 4/S2	286 4/S2	268 4/S2	232 4/S2	192 4/S2
Belt Pull (lbf)	197	273	349	462	493	571	687
Drum RPM	130	94	74	55	52	45	37

V = Belt Speed (ft/min)

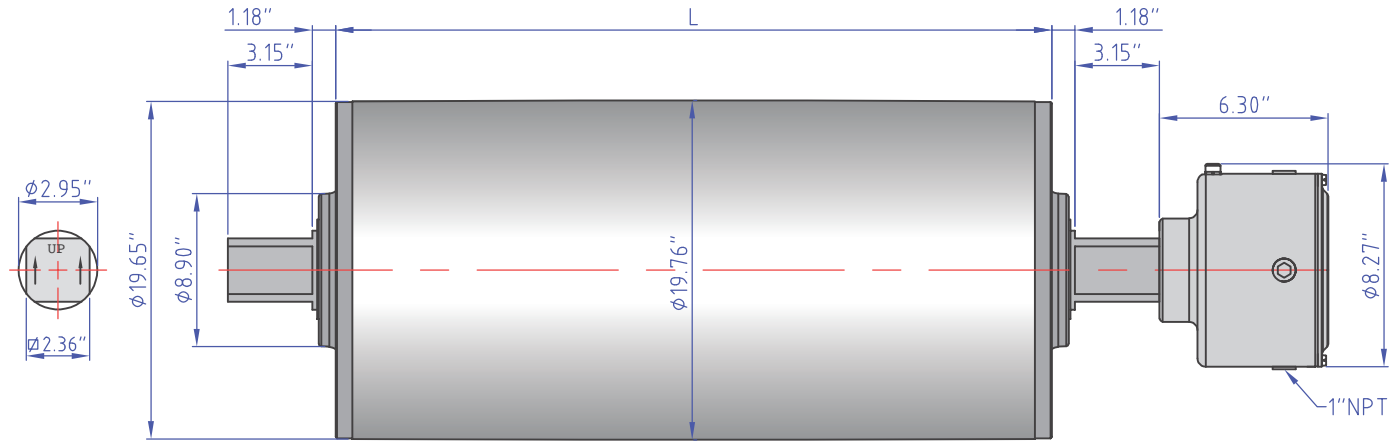
M/G = Motor/Gear Reducer Configuration (at rated horsepower)

High Speed
Low Torque



Low Speed
High Torque

TM500A75 Drum Motor (maching Idler KT500A75**)



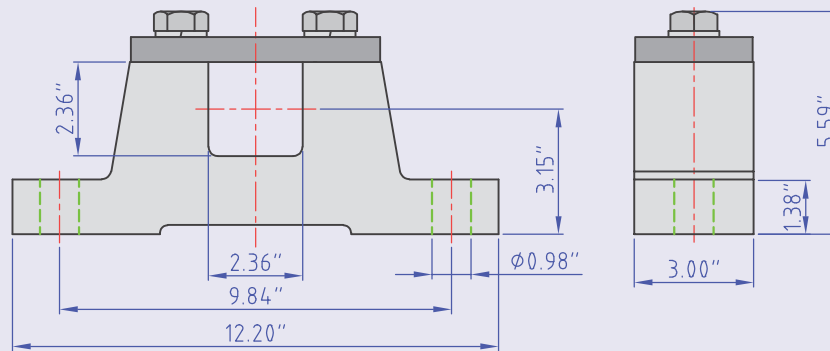
Standard drum motor face widths* (L) in inches:

33.46	35.43	37.40	39.37	41.34	43.31	45.28	47.24	49.21	51.18	53.15
55.12	57.09	59.06	61.02	62.99	64.96	66.93	68.90	70.87	72.83	74.80

*Some face widths are not available in all horsepower. For minimum available face widths refer to page 30.

**Idler dimensions are identical to the drum motor with no junction box.

Brackets: 500-AB-75



TM500A75 Drum Motor

40.0 HP

V (ft/min) M/G	750 4/S2	590 4/S2	468 4/S2
Belt Pull (lbf)	1763	2241	2825
Drum RPM	146	114	91

30.0 HP

V (ft/min) M/G	750 4/S2	590 4/S2	468 4/S2	368 4/S2
Belt Pull (lbf)	1322	1680	2119	2694
Drum RPM	146	114	91	71

25.0 HP

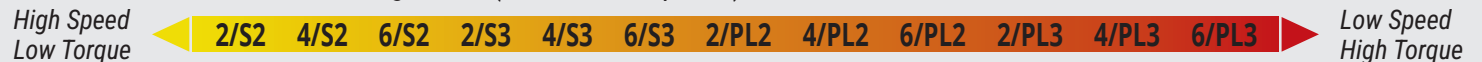
V (ft/min) M/G	750 4/S2	590 4/S2	468 4/S2	368 4/S2
Belt Pull (lbf)	1102	1400	1766	2245
Drum RPM	146	114	91	71

20.0 HP

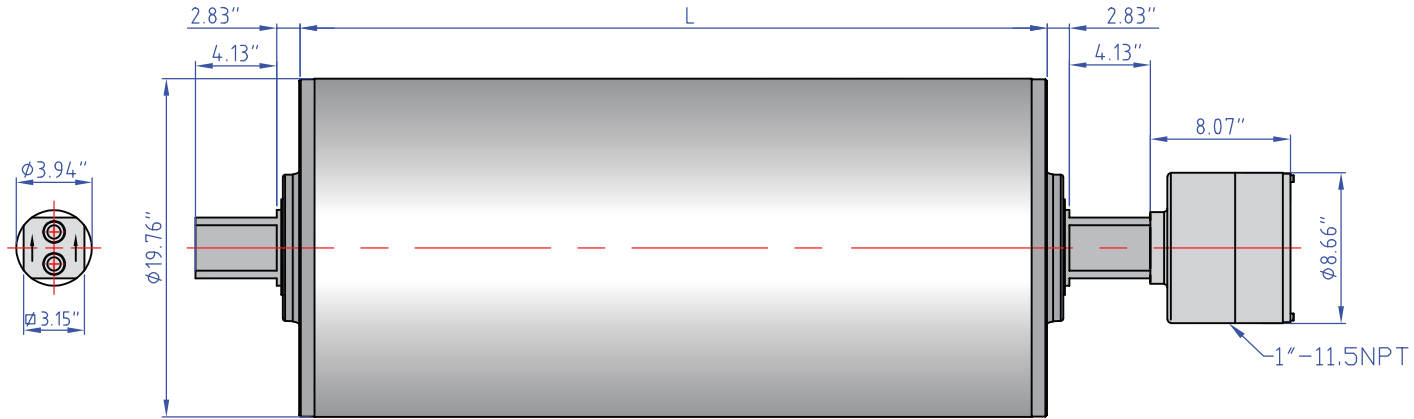
V (ft/min) M/G	500 6/S2	393 6/S2	312 6/S2	245 6/S2
Belt Pull (lbf)	1322	1680	2119	2694
Drum RPM	97	76	61	48

V = Belt Speed (ft/min)

M/G = Motor/Gear Reducer Configuration (at rated horsepower)



TM500A100 Drum Motor (maching Idler KT500A100**)



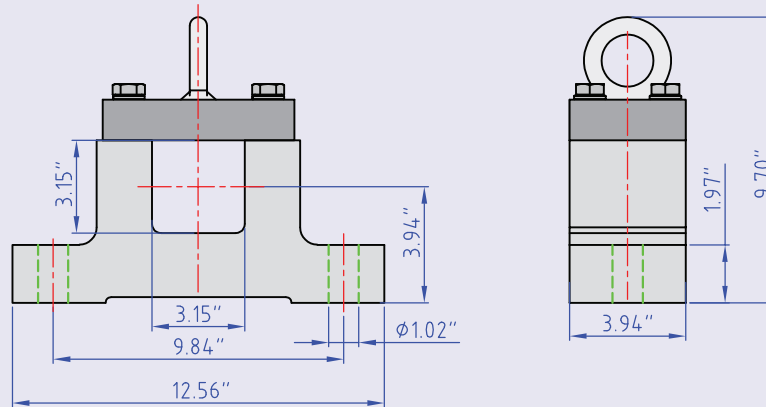
Standard drum motor face widths* (L) in inches:

35.43	37.40	39.37	41.34	43.31	45.28	47.24	49.21	51.18	53.15	55.12	57.09
59.06	61.02	62.99	64.96	66.93	68.90	70.87	72.83	74.80	76.77	78.74	

*Some face widths are not available in all horsepower. For minimum available face widths refer to page 30.

**Idler dimensions are identical to the drum motor with no junction box.

Brackets: 500-AB-100



TM500A100 Drum Motor

75.0 HP

V (ft/min) M/G	600 2/PL2	500 2/PL2	400 2/PL2
Belt Pull (lbf)	3919	4703	5878
Drum RPM	115	95	76

60.0 HP

V (ft/min) M/G	600 2/PL2	500 2/PL2	400 2/PL2	300 4/PL2	250 4/PL2
Belt Pull (lbf)	3135	3762	4703	6200	7500
Drum RPM	115	95	76	57	48

50.0 HP

V (ft/min) M/G	600 2/PL2	500 2/PL2	400 2/PL2	300 4/PL2	250 4/PL2	200 4/PL2
Belt Pull (lbf)	2613	3135	3919	5224	6270	7840
Drum RPM	115	95	76	57	48	38

40.0 HP

V (ft/min) M/G	300 4/PL2	250 4/PL2	200 4/PL2
Belt Pull (lbf)	4180	5000	6270
Drum RPM	57	48	38

30.0 HP

V (ft/min) M/G	300 4/PL2	250 4/PL2	200 4/PL2
Belt Pull (lbf)	3100	3760	4700
Drum RPM	57	48	38

25.0 HP

V (ft/min) M/G	300 4/PL2	250 4/PL2	200 4/PL2
Belt Pull (lbf)	2612	3135	3920
Drum RPM	57	48	38

20.0 HP

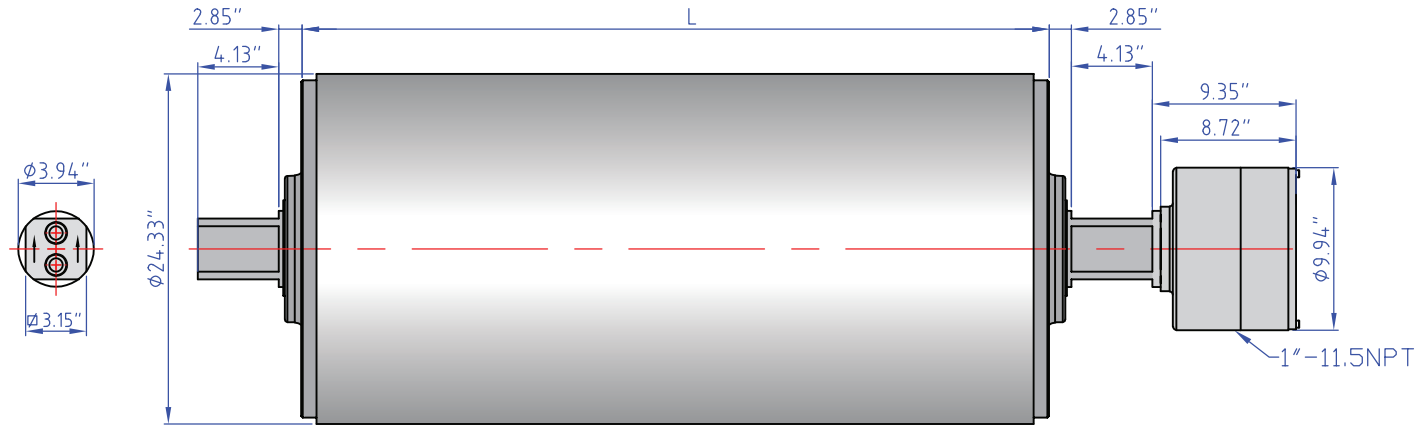
V (ft/min) M/G	200 6/PL2	150 6/PL2	120 6/PL2
Belt Pull (lbf)	2090	2500	3135
Drum RPM	38	29	23

V = Belt Speed (ft/min)

M/G = Motor/Gear Reducer Configuration (at rated horsepower)



TM630A100 Drum Motor (maching Idler KT630A100**)



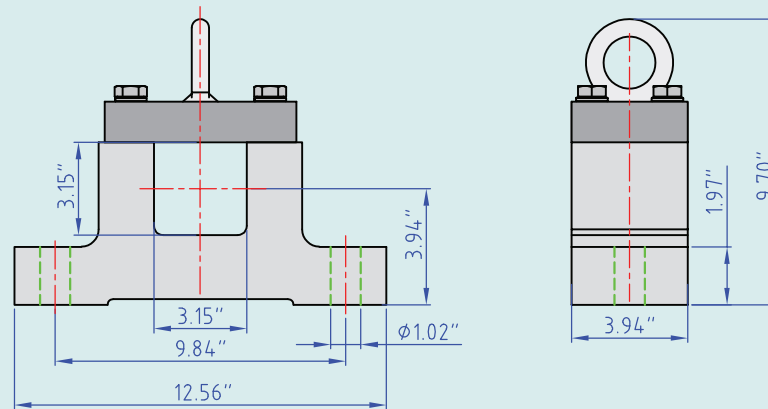
Standard drum motor face widths* (L) in inches:

35.43	37.40	39.37	41.34	43.31	45.28	47.24	49.21	51.18	53.15	55.12	57.09
59.06	61.02	62.99	64.96	66.93	68.90	70.87	72.83	74.80	76.77	78.74	

*Some face widths are not available in all horsepower. For minimum available face widths refer to page 30.

**Idler dimensions are identical to the drum motor with no junction box.

Brackets: 500-AB-100



TM630A100 Drum Motor

75.0 HP

V (ft/min) M/G	744 2/PL2	620 2/PL2	496 2/PL2	372 4/PL2
Belt Pull (lbf)	3171	3805	4756	6341
Drum RPM	115	95	76	57

60.0 HP

V (ft/min) M/G	744 2/PL2	620 2/PL2	496 2/PL2	372 4/PL2	310 4/PL2
Belt Pull (lbf)	2536	3044	3805	5016	6068
Drum RPM	115	95	76	57	48

50.0 HP

V (ft/min) M/G	744 2/PL2	620 2/PL2	496 2/PL2	372 4/PL2	310 4/PL2	248 4/PL2
Belt Pull (lbf)	2114	2536	3171	4227	5073	6343
Drum RPM	115	95	76	57	48	38

40.0 HP

V (ft/min) M/G	372 4/PL2	310 4/PL2	248 4/PL2
Belt Pull (lbf)	3382	4045	5073
Drum RPM	57	48	38

30.0 HP

V (ft/min) M/G	372 4/PL2	310 4/PL2	248 4/PL2
Belt Pull (lbf)	2508	3042	3803
Drum RPM	57	48	38

25.0 HP

V (ft/min) M/G	372 4/PL2	310 4/PL2	248 4/PL2
Belt Pull (lbf)	2113	2536	3172
Drum RPM	57	48	38

20.0 HP

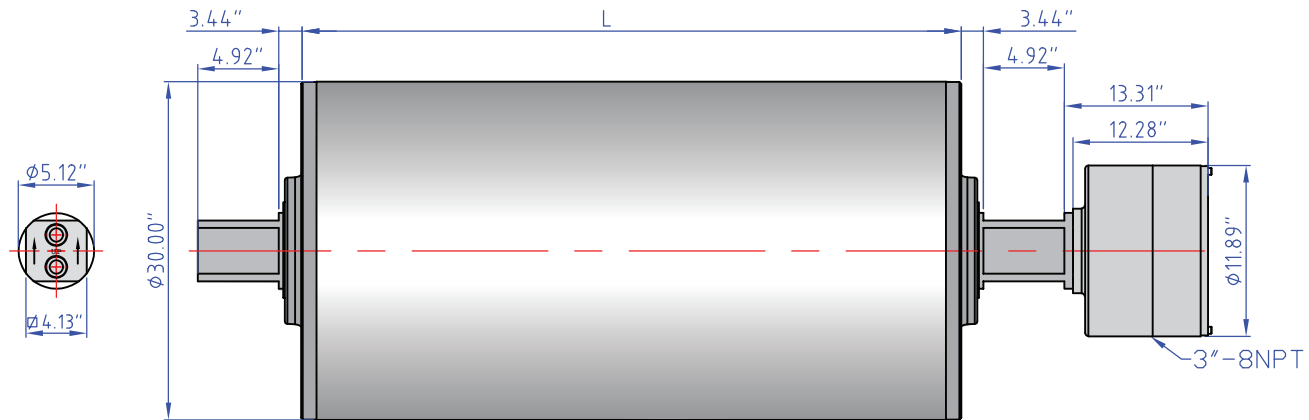
V (ft/min) M/G	248 6/PL2	186 6/PL2	149 6/PL2
Belt Pull (lbf)	1691	2023	2536
Drum RPM	38	29	23

V = Belt Speed (ft/min)

M/G = Motor/Gear Reducer Configuration (at rated horsepower)



TM762A130 Drum Motor (maching Idler KT762A130**)



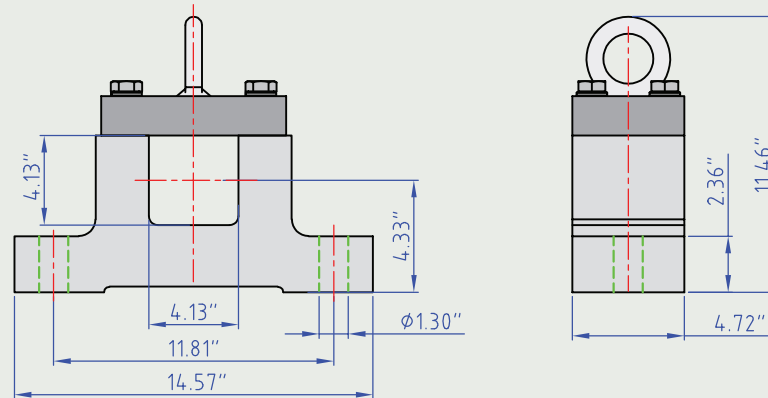
Standard drum motor face widths* (L) in inches:

55.12	57.09	59.06	61.02	62.99	64.96	66.93	68.90	70.87
72.83	74.80	76.77	78.74					

*Some face widths are not available in all horsepower. For minimum available face widths refer to page 30.

**Idler dimensions are identical to the drum motor with no junction box.

Brackets: 800-AB-130



TM762A130 Drum Motor

200.0 HP

V (ft/min) M/G	657 4/PL2	557 4/PL2	457 4/PL2
Belt Pull (lbf)	9704	11461	13949
Drum RPM	84	71	58

150.0 HP

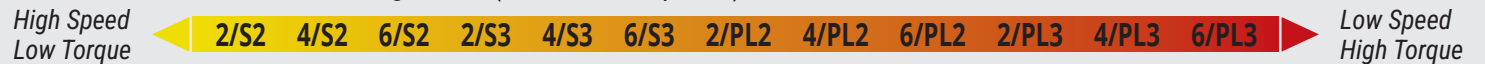
V (ft/min) M/G	657 4/PL2	557 4/PL2	457 4/PL2
Belt Pull (lbf)	7308	8620	10507
Drum RPM	84	71	58

150.0 HP

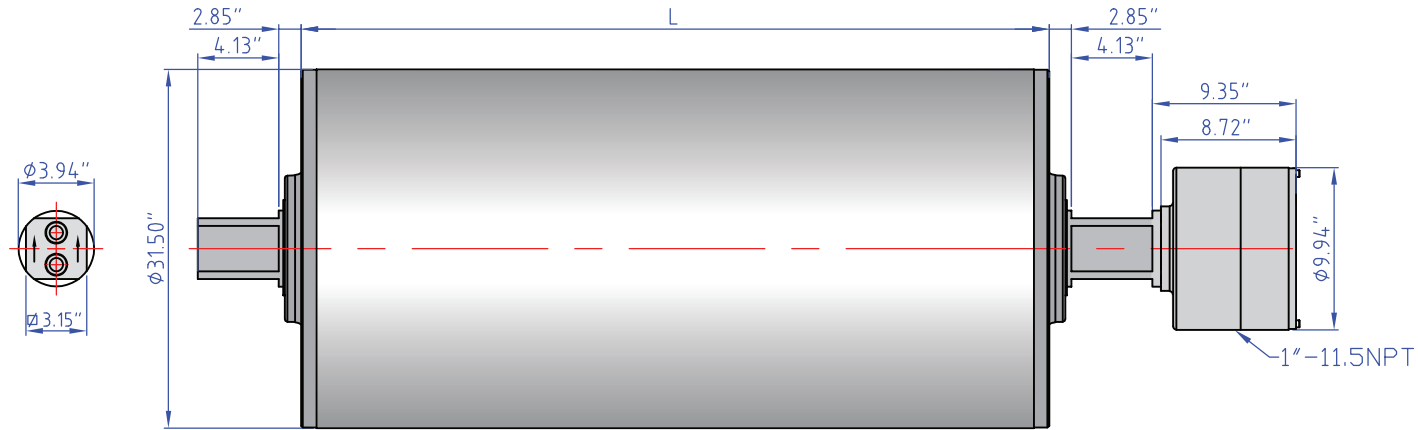
V (ft/min) M/G	437 6/PL2	370 6/PL2	304 6/PL2
Belt Pull (lbf)	10987	12977	15794
Drum RPM	56	47	39

V = Belt Speed (ft/min)

M/G = Motor/Gear Reducer Configuration (at rated horsepower)



TM800A100 Drum Motor (maching Idler KT800A100**)



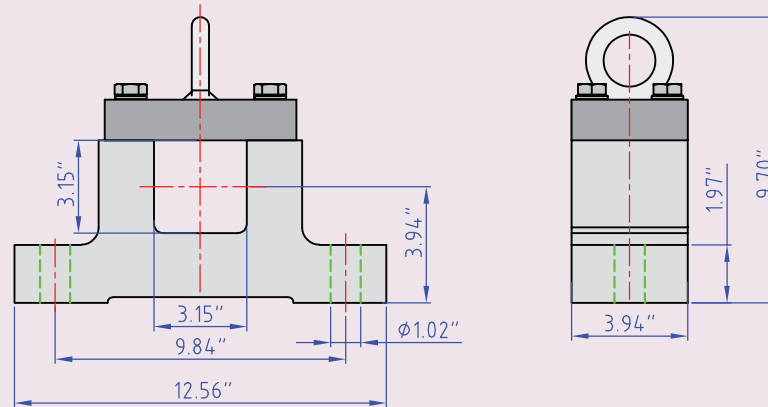
Standard drum motor face widths* (L) in inches:

35.43	37.40	39.37	41.34	43.31	45.28	47.24	49.21	51.18	53.15	55.12	57.09
59.06	61.02	62.99	64.96	66.93	68.90	70.87	72.83	74.80	76.77	78.74	

*Some face widths are not available in all horsepower. For minimum available face widths refer to page 30.

**Idler dimensions are identical to the drum motor with no junction box.

Brackets: 500-AB-100



TM800A100 Drum Motor

75.0 HP

V (ft/min) M/G	960 2/PL2	800 2/PL2	640 2/PL2	480 4/PL2
Belt Pull (lbf)	2449	2939	3674	4898
Drum RPM	116	97	78	58

60.0 HP

V (ft/min) M/G	960 2/PL2	800 2/PL2	640 2/PL2	480 4/PL2	400 4/PL2
Belt Pull (lbf)	1959	2351	2939	3875	4688
Drum RPM	116	97	78	58	49

50.0 HP

V (ft/min) M/G	960 2/PL2	800 2/PL2	640 2/PL2	480 4/PL2	400 4/PL2	320 4/PL2
Belt Pull (lbf)	1633	1959	2449	3265	3919	4900
Drum RPM	116	97	78	58	49	39

40.0 HP

V (ft/min) M/G	480 4/PL2	400 4/PL2	320 4/PL2
Belt Pull (lbf)	2613	3125	3919
Drum RPM	58	49	39

30.0 HP

V (ft/min) M/G	480 4/PL2	400 4/PL2	320 4/PL2
Belt Pull (lbf)	1938	2350	2938
Drum RPM	58	49	39

25.0 HP

V (ft/min) M/G	480 4/PL2	400 4/PL2	320 4/PL2
Belt Pull (lbf)	1633	1959	2450
Drum RPM	58	49	39

20.0 HP

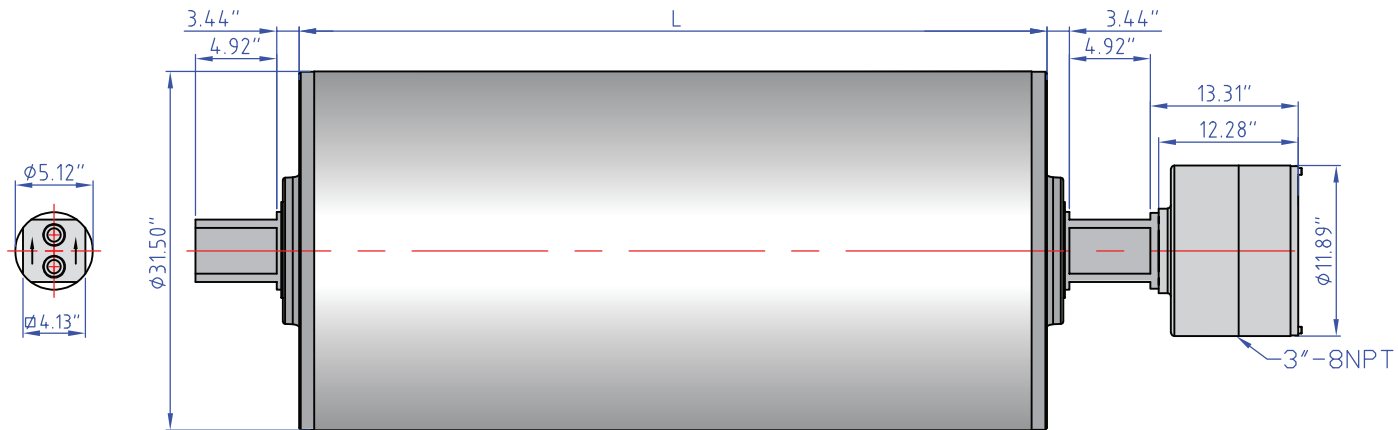
V (ft/min) M/G	320 6/PL2	240 6/PL2	192 6/PL2
Belt Pull (lbf)	1306	1563	1959
Drum RPM	39	29	23

V = Belt Speed (ft/min)

M/G = Motor/Gear Reducer Configuration (at rated horsepower)



TM800A130 Drum Motor (maching Idler KT800A130**)



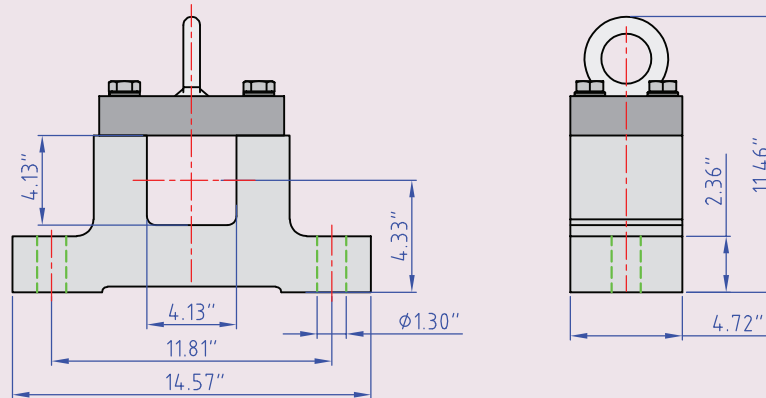
Standard drum motor face widths* (L) in inches:

55.12	57.09	59.06	61.02	62.99	64.96	66.93	68.90	70.87
72.83	74.80	76.77	78.74					

*Some face widths are not available in all horsepower. For minimum available face widths refer to page 30.

**Idler dimensions are identical to the drum motor with no junction box.

Brackets: 800-AB-130



TM800A130 Drum Motor

200.0 HP

V (ft/min) M/G	1077 4/S2	914 4/S2	745 4/S2
Belt Pull (lbf)	5715	6736	8786
Drum RPM	131	111	90

180.0 HP

V (ft/min) M/G	1077 4/S2	914 4/S2	745 4/S2
Belt Pull (lbf)	5144	6063	7908
Drum RPM	131	111	90

150.0 HP

V (ft/min) M/G	1077 4/S2	914 4/S2	745 4/S2	597 6/S2	458 6/S2
Belt Pull (lbf)	4287	5053	6590	7620	9950
Drum RPM	131	111	90	72	56

125.0 HP

V (ft/min) M/G	1091 6/S2	917 6/S2	703 6/S2	597 6/S2	458 6/S2
Belt Pull (lbf)	3462	4117	5369	6328	8253
Drum RPM	132	111	85	72	56

100.0 HP

V (ft/min) M/G	1091 6/S2	917 6/S2	703 6/S2	597 6/S2	458 6/S2
Belt Pull (lbf)	2885	3430	4474	5273	6878
Drum RPM	132	111	85	72	56

75.0 HP

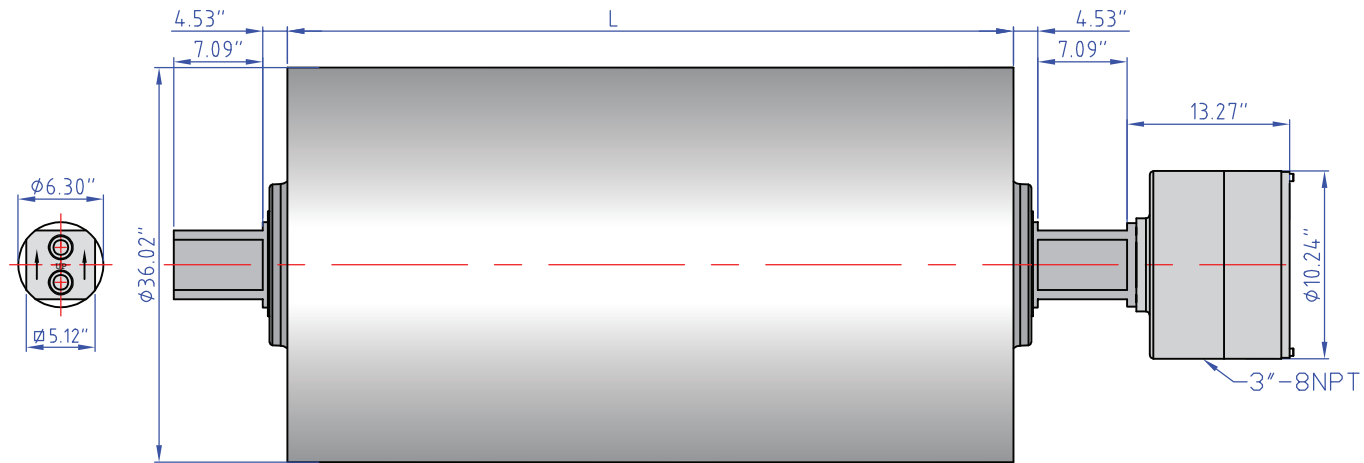
V (ft/min) M/G	1091 6/S2	917 6/S2	703 6/S2	597 6/S2	458 6/S2
Belt Pull (lbf)	2116	2516	3281	3867	5044
Drum RPM	132	111	85	72	56

V = Belt Speed (ft/min)

M/G = Motor/Gear Reducer Configuration (at rated horsepower)



TM915A160 Drum Motor (maching Idler KT915A160**)



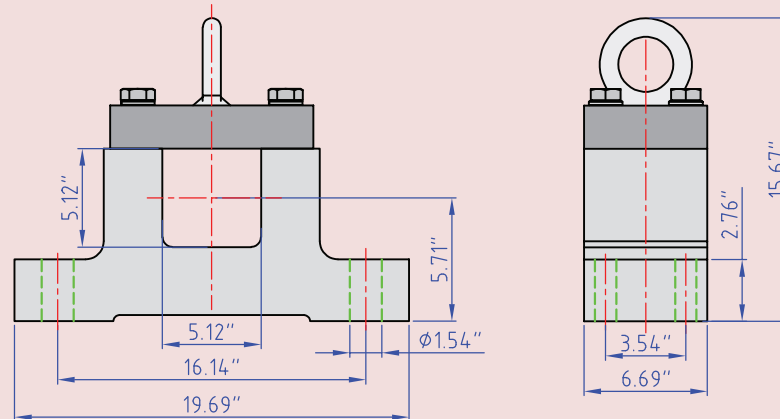
Standard drum motor face widths* (L) in inches:

70.87 72.83 74.80 76.77 78.74

*Some face widths are not available in all horsepower. For minimum available face widths refer to page 30.

**Idler dimensions are identical to the drum motor with no junction box.

Brackets: 915-AB-160



TM915A160 Drum Motor

500.0 HP

V (ft/min) M/G	745 4/PL2	627 4/PL2	550 4/PL2
Belt Pull (lbf)	21483	25526	29100
Drum RPM	79	67	58

400.0 HP

V (ft/min) M/G	745 4/PL2	627 4/PL2	550 4/PL2
Belt Pull (lbf)	17187	20421	23280
Drum RPM	79	67	58

350.0 HP

V (ft/min) M/G	745 4/PL2	627 4/PL2	550 4/PL2
Belt Pull (lbf)	15024	17860	20370
Drum RPM	79	67	58

300.0 HP

V (ft/min) M/G	745 4/PL2	627 4/PL2	550 4/PL2
Belt Pull (lbf)	12890	15316	17460
Drum RPM	79	67	58

250.0 HP

V (ft/min) M/G	745 4/PL2	627 4/PL2	550 4/PL2
Belt Pull (lbf)	10742	12763	14550
Drum RPM	79	67	58

250.0 HP

V (ft/min) M/G	496 6/PL2	417 6/PL2	365 6/PL2
Belt Pull (lbf)	16202	19259	21966
Drum RPM	53	44	39

V = Belt Speed (ft/min)

M/G = Motor/Gear Reducer Configuration (at rated horsepower)



Low Speed
High Torque

TM315B50 /B60 /A75

HP	15			10			7.5		5.0	
Motor/Gear Reducer	2/S2	2/S3	2/PL3	4/S2	4/S3	4/PL3	4/S2	4/S3	4/S2	4/S3
Minimum Face Width (L)	25.59	29.53	33.46	25.59	29.53	33.46	23.62	27.56	21.65	25.59

TM400B60 / TM500A60

HP	20	15	10	7.5		5.5		4.0	
Motor/Gear Reducer	4/S2	4/S2	4/S2	4/S2	6/S2	4/S2	6/S2	4/S2	
Minimum Face Width (L)	29.53	27.56	25.59	25.59	25.59	25.59	25.59	25.59	Mechanical Backstop ADD 1.97" to Minimum Face Width

TM500A75

HP	40	30	25	20
Motor/Gear Reducer	4/S2	4/S2	4/S2	4/S2
Minimum Face Width (L)	37.40	33.47	33.47	33.47

TM500A100 / TM630A100 / TM800A100

HP	75	60		50		40	30	25	20
Motor/Gear Reducer	2/PL2	2/PL2	4/PL2	2/PL2	4/PL2	4/PL2	4/PL2	4/PL2	6/PL2
Minimum Face Width (L)	43.31	43.31	39.37	43.31	39.37	39.37	35.43	35.43	35.43

TM762A130

HP	200	150	150
Motor/Gear Reducer	4/PL2	4/PL2	6/PL2
Minimum Face Width (L)	55.12	55.12	55.12



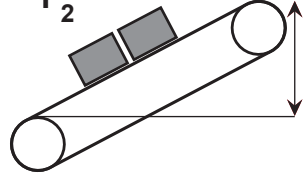
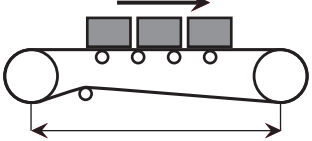
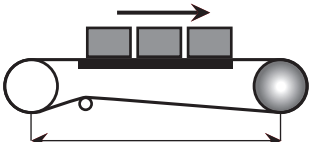
TM800A130

HP	200	180	150	120	100	75
Motor/Gear Reducer	4/S2	4/S2	4/S2	4/S2	4/S2	4/S2
Minimum Face Width (L)	55.12	55.12	55.12	55.12	55.12	55.12

TM915A160

HP	500	400	350	300	250	250
Motor/Gear Reducer	4/PL2	4/PL2	4/PL2	4/PL2	4/PL2	6/PL2
Minimum Face Width (L)	70.87	70.87	70.87	70.87	70.87	70.87

BELT PULL CALCULATION

CONVEYING SYSTEM	F_0  Force without Load	F_1  Force to Convey Materials Horizontally	F_2  Force to Convey Materials on Incline	<p style="text-align: center;">BELT PULL (BP) $BP = (F_0 + F_1 + F_2)$</p> <p>F = Force (lbs.) P = Belt weight (lbs./linear ft.) Q = Weight of rotating parts in pounds per foot of length of belt conveyor R = Weight in pounds of conveyor product per foot of belt conveyor length C = Co-efficient of friction between conveyor belt and top slider bed L = Center to center length (feet) H = Height (feet)</p>
Roller Bed Conveyor R 	$F_0 = 0.04 (2P + Q) L$	$F_1 = 0.04 \times R \times L$	$F_2 = R \times H$	
Slider Bed Conveyor R 	$F_0 = 1.1 \times P \times L \times C$	$F_1 = 1.1 \times R \times L \times C$	$F_2 = R \times H$	

Calculations:

HORSEPOWER TABLES FOR BULK CONVEYORS



TABLE 1: Horsepower to Move Empty Belt (for each 100 ft./min.)

Belt Width	30"	36"	42"	48"
CONVEYING LENGTH (ft.)	HORSEPOWER (hp) (per 100 ft./min.)			
50	0.64	0.8	0.96	1.16
100	0.8	1.0	1.2	1.5
200	1.1	1.4	1.7	2.2
300	1.4	1.8	2.2	2.8
400	1.8	2.2	2.6	3.4
500	2.1	2.6	3.1	4.0
600	2.4	3.0	3.6	4.6
800	3.1	3.8	4.5	5.8
1000	3.6	4.6	5.5	7.0
1400	5.2	6.5	7.9	10.4
2000	6.8	8.4	10.3	13.8
2500	8.4	10.3	12.7	17.2
3000	10.0	12.2	15.1	20.6
3500	11.6	14.1	17.5	24.0
4000	13.2	16.0	19.9	27.4
4500	14.8	17.9	22.3	30.8
5000	16.4	19.8	24.7	34.2
5500	18.0	21.7	27.1	37.6
6000	19.6	23.6	29.5	41.0
6500	21.2	25.5	31.9	44.4
7000	23.8	27.4	34.3	47.8
7500	25.4	29.3	36.7	51.2
8000	27.0	31.2	39.1	54.6
8500	28.6	33.1	41.5	58.0
9000	30.2	35.0	43.9	61.4
9500	31.8	36.9	46.3	64.8
10000	33.4	38.8	48.7	68.2

HORSEPOWER TABLES FOR BULK CONVEYORS



TABLE 2: Horsepower to Move Load Horizontally (any speed, any material, any belt width)

TONS/HOUR CONVEYED	100	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000
CONVEYING LENGTH (ft.)	HORSEPOWER (hp)												
50	0.25	0.5	0.75	1.0	1.25	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
100	0.5	1.0	1.5	2.0	2.5	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
200	1.0	2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
300	1.5	3.0	4.5	6.0	7.5	9.0	12.0	15.0	18.0	21.0	24.0	27.0	30.0
400	2.0	4.0	6.0	8.0	10.0	12.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0
500	2.5	5.0	7.5	10.0	12.5	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0
600	3.0	6.0	9.0	12.0	15.0	18.0	24.0	30.0	36.0	42.0	48.0	54.0	60.0
800	4.0	8.0	12.0	16.0	20.0	24.0	32.0	40.0	48.0	56.0	64.0	72.0	80.0
1000	5.0	10.0	15.0	20.0	25.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0
1400	7.5	15.0	22.5	30.0	37.5	45.0	60.0	75.0	90.0	105.0	120.0	135.0	150.0
2000	10.0	20.0	30.0	40.0	50.0	60.0	80.0	100.0	120.0	140.0	160.0	180.0	200.0
2500	12.5	25.0	37.5	50.0	62.5	75.0	100.0	125.0	150.0	175.0	200.0	225.0	250.0
3000	15.0	30.0	45.0	60.0	75.0	90.0	120.0	150.0	180.0	210.0	240.0	270.0	300.0
3500	17.5	35.0	52.5	70.0	87.5	105.0	140.0	175.0	210.0	245.0	280.0	315.0	350.0
4000	20.0	40.0	60.0	80.0	100.0	120.0	160.0	200.0	240.0	280.0	320.0	360.0	400.0
4500	22.5	45.0	67.5	90.0	112.0	135.0	180.0	225.0	270.0	315.0	360.0	405.0	450.0
5000	25.0	50.0	75.0	100.0	125.0	150.0	200.0	250.0	300.0	350.0	400.0	450.0	500.0
5500	27.5	55.5	82.5	110.0	137.5	165.0	220.0	275.0	330.0	385.0	440.0	495.0	550.0
6000	30.0	60.0	90.0	120.0	150.0	180.0	240.0	300.0	360.0	420.0	480.0	540.0	600.0
6500	32.5	65.0	97.5	130.0	162.5	195.0	260.0	325.0	390.0	455.0	520.0	585.0	650.0
7000	35.0	70.0	105.0	140.0	175.0	210.0	280.0	350.0	420.0	495.0	560.0	630.0	700.0
7500	37.5	75.0	112.5	150.0	187.5	225.0	300.0	375.0	450.0	525.0	600.0	675.0	750.0
8000	40.0	80.0	120.0	160.0	200.0	240.0	320.0	400.0	480.0	560.0	640.0	720.0	800.0
8500	42.5	85.0	127.5	170.0	212.5	255.0	340.0	425.0	510.0	595.0	680.0	765.0	850.0
9000	45.0	90.0	135.0	180.0	225.0	270.0	360.0	450.0	540.0	630.0	720.0	810.0	900.0
9500	47.5	95.0	142.5	190.0	237.5	285.0	380.0	475.0	570.0	665.0	760.0	855.0	950.0
10000	50.0	100.0	160.0	200.0	250.0	300.0	400.0	500.0	600.0	700.0	800.0	900.0	1000.0

HORSEPOWER TABLES FOR BULK CONVEYORS



TABLE 3: Horsepower to Lift Load Vertically - Negative for Downhill Conveyors (any speed, any material, any belt width)

TONS/HOUR CONVEYED	100	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000
LIFT (ft.)	HORSEPOWER (hp)												
10	1.14	2.28	3.42	4.56	5.7	6.84	9.12	11.4	13.68	15.96	18.24	20.52	22.8
20	2.28	4.56	6.84	9.12	11.4	13.68	18.24	22.8	27.36	31.92	36.48	41.04	45.6
30	3.42	6.84	10.26	13.68	17.1	20.52	27.36	34.2	41.04	47.88	54.72	61.56	68.4
40	4.56	9.12	13.68	18.24	22.8	27.36	36.38	45.6	54.72	63.84	72.96	82.08	91.2
50	5.7	11.4	17.1	22.8	28.5	34.2	45.6	57.0	68.4	79.8	91.2	102.6	114.0
60	6.84	13.68	20.52	27.36	34.2	41.04	54.72	68.4	82.08	95.76	109.4	123.1	136.8
70	7.98	15.96	23.94	31.92	39.9	47.88	63.84	79.8	95.76	111.7	127.7	143.6	159.6
80	9.12	18.24	27.36	36.48	45.6	54.72	72.96	91.2	109.4	127.7	145.9	164.2	182.4
90	10.26	20.52	30.78	41.04	51.3	61.56	82.08	102.6	123.1	143.6	164.2	184.7	205.2
100	11.4	22.8	34.2	45.6	57.0	68.4	91.2	114.0	136.8	159.6	182.4	205.2	228.0
150	17.1	34.2	51.3	68.4	85.5	102.6	136.8	171.0	205.2	239.4	273.6	307.8	342.0
200	22.8	45.6	68.4	91.2	114.0	136.8	182.4	228.0	273.6	319.2	364.8	410.4	456.0
250	28.5	57.0	85.5	114.0	142.5	171.0	228.0	285.0	342.0	399.0	456.0	513.0	570.0
300	34.2	68.4	102.6	136.8	171.0	205.2	273.6	342.0	410.4	478.8	547.2	615.6	684.0
350	39.9	79.8	119.6	159.6	200.0	239.4	319.2	399.0	478.8	558.5	638.4	718.0	798.0
400	45.6	91.2	136.8	182.4	228.0	273.6	364.8	456.0	547.2	638.4	729.6	820.8	912.0
450	51.3	102.6	153.9	205.4	256.5	307.8	410.4	513.0	615.6	718.0	820.0	923.5	1026.0
500	57.0	114.0	171.0	228.0	285.0	342.0	456.0	570.0	684.0	798.0	912.0	1026.0	1140.0
600	68.4	136.8	205.2	273.6	342.0	410.4	547.2	684.0	820.8	957.6	1094.0	1231.0	1368.0
700	79.8	159.6	239.4	319.2	399.0	478.8	638.4	798.0	957.6	1117.0	1277.0	1436.0	1596.0
800	91.2	182.4	273.6	364.8	456.0	547.2	729.6	912.0	1094.0	1277.0	1459.0	1642.0	1824.0
900	102.6	205.2	307.8	410.4	513.0	615.6	820.8	1026.0	1231.0	1436.0	1642.0	1847.0	2052.0
1000	114.0	228.0	342.0	456.0	570.0	684.0	912.0	1140.0	1368.0	1596.0	1824.0	2052.0	2280.0



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VDG (Van der Graaf) has provided conveyor drive solutions to the material handling and processing industries for over half a century. VDG continues as the leader in the design and manufacturing of drum motors by consistently investing in research and development and utilizing cutting-edge production technology and automation. With in-house precision manufacturing, VDG ensures product quality, fast delivery, and superior customer support.

VDG adheres to high quality standards and a simple principle: design a superior product to meet customer needs in a changing marketplace.



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