DODGE®

CONTENTS

Conveyor Components

FEATURES/BENEFITS

Today, the industrial marketplace demands quality products and services. DODGE has the experience and expertise to meet those demands from engineering support to on-time delivery. DODGE offers the broadest range of conveyor pulleys with a combination of the best resources for pulley manufacturing. The DODGE Conveyor Components Team is ready to provide you the best customer service in the industry.

Lagged Drum Pulley

T-Section Super Pulley

Wing Pulley

Mine Duty Xtra Pulley

Steel Split Pulley

Conveyor Pulley Locking Devices

HE Bushing/Hub

- Most dependable mounting system for conveyor pulleys
- Specifically designed for drum and wing pulleys
- Flange mount design
- Easy installation/removal
- Shaft diameters to 12”
- Taper angle of 14° reduces axial movement along the shaft to tighten the bushing
- Disc deflection and prestressing are greatly reduced

Keyless Locking Devices

- High torque capability
- No axial movement during assembly
- Shrink fit design assures a tight mechanical fit
- Easy installation/removal
- No keyway stress

Details for TAPER-LOCK Bushings – See page PT6-2
Details for QD Bushings – See page PT6-15

SPECIFICATIONS

DODGE

Belt Conveyor Pulleys

DODGE offers two standard designs that are stocked for quick delivery, CEMA duty (Conveyor Equipment Manufacturers Association), HE (High Endurance) welded hub and Mine Duty Extra HE integral hub construction. These are available with a plain surface and rubber lagged. HE bushings with 14 degree taper and 1/2 inch 60 diameter SBR rubber with herring bone groove lagging, are standard, stocked features.

DODGE recommends pulley designs within the four classes of service detailed below. All of our designs strive for balance between cost and reliability. When possible, welds are avoided or eliminated to maintain the full strength of the base metal. Our welded designs rely upon the chemistry of the base metal, the type of weld and the geometry of the structure to achieve optimum post-weld performance as explained below. *(Detailed descriptions of the four service classes are available in the Rockwell Automation publication, DODGE Global Conveyor Pulley Specifications & Technical Aspects, Selection and Applications.)*

WARRANTY

- Class IV and III pulleys are conditionally warranted against defects in material and workmanship for one year of operation. A two-year warranty is available when loading information is provided.
  Note: Special Construction features listed at the top of page PT13-6 can be added to both Class IV and III pulleys to extend service life. Because these pulleys are made-to-order, they will require longer lead-time for shipment. The Special Construction modifications must be quoted at the time of inquiry and before order entry.
- Class II and I pulleys are conditionally warranted against defects in material and workmanship for two years of operation because loading information must be provided.

CLASS IV

DODGE Heavy Duty CEMA Standard drum pulleys use 14 degree taper welded hubs and bushings, and certified steel with special consideration for post weld strength with submerged arc welds. These pulleys meet or exceed all requirements for steel drum pulleys established by CEMA and as detailed in ANSI standard number B105.1. The standard establishes load ratings and dimensions for use with fabric belts rated to 750 PIW (Pounds per Inch of belt Width).

CLASS III

DODGE Mine Duty Extra pulleys use a proprietary 14 degree one piece integral hub to accept HE bushings. This eliminates the two welds of the hub into the end disc and delivers 100% of the capacity of the end disc steel. There is not a universal standard published for this class of service. The DODGE MDX design gives much higher safety factors than pulleys designed to meet the CEMA load ratings while fitting into the CEMA dimensions.

CLASS II

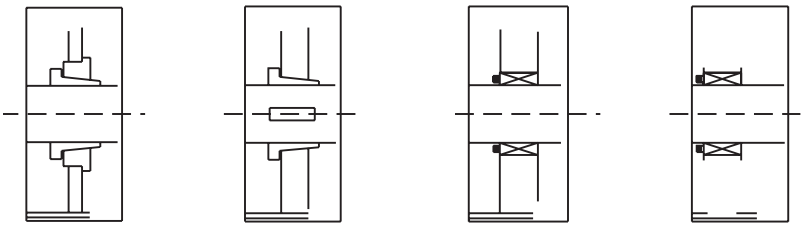
DODGE Engineered pulleys utilize one-piece integral hub-and-end-discs and either HE 14 degree taper compression bushings or keyless locking devices. They are designed specifically to meet customer supplied load and tension ratings. This class is for fabric or steel cable conveyor belts rating to 2,499 PIW. These pulleys incorporate machined rims and laggings, static balance, stress relieving, magnetic particle and/or ultrasonic weld testing.

CLASS I

DODGE Engineered pulleys with one piece “T” section machined end discs are continuously butt welded to the pulley rim for fabric or steel cable belts rated over 2,500 PIW up to the maximum available from belt manufactures, currently in excess of 10,000 PIW. These pulleys use keyless locking devices for shafts up to 30" in diameter. These pulleys incorporate machined rims and lagging, static balance, stress relieving, magnetic particle and/or ultrasonic weld testing. All Class I pulleys are manufactured within a 60 step documented Quality Assurance Process.

Important Note: To Ensure You Get The Right Class Of Pulley For Your Application, Please Fill Out And Send In Form DMR 1477, Shown On Page PT13-9.

Bushing and End Disc Constructions



CLASS IV | CLASS III | CLASS II | CLASS I

Dodge Conveyor Design Program

The DODGE Computerized Conveyor Design Program selects DODGE/RELIANCE drive products for simple horizontal or uphill conveyors up to 2500 feet long, 800 feet lift, and 2500 tons per hour. The program operates with a minimum of input information and provides detailed design and product information as output. Input variables and output data are:

INPUT

- Conveyor Capacity (tons per hour)
- Length of Conveyor
- Lift of Conveyor
- Basic Conveyor Profile (7 main profiles)
- Materials to be Moved
- Belt Speed (not required, can be selected by program)
- Belt Width (not required, can be selected by program)
- Idler Angle (not required, can be selected by program)

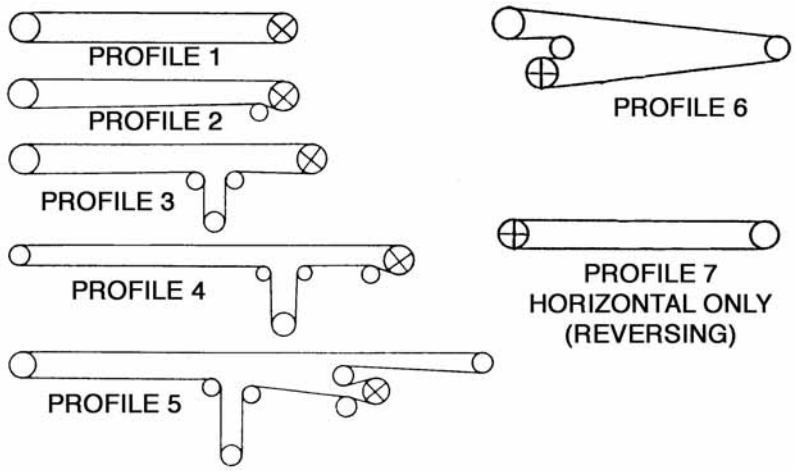
OUTPUT

- Motor Horsepower
- Belt Width (if not input)
- Idler Angle (if not input)
- Belt Speed (if not input)
- Drive Pulley RPM
- Belt Tensions (& take-up weight)
- Pulley Diameters, Face Width & Shaft Diameter
- Bearing Centers
- Lagging
- Shaft Lengths
- Bearing Diameter with L10 Life
- Maximum Running Belt Tension (PIW)
- Backstop Requirement
- DODGE Torque-Arm Reducers Selected

Pulley Profiles

Rockwell Automation has a conveyor design program for selecting pulleys for conveyor profiles shown. For more information and License Agreement, call 864-297-4800 or FAX 864-281-2318.

Only the seven types of profiles shown are available for design program analysis.



HOW TO ORDER

Standard, Stocked CEMA and Mine Duty Extra Pulleys

The DODGE Global Pulley Specifications on page PT13-4 direct customers to one of the four service or application classes. If customers know their pulley description and the dodge catalog, they can order pulleys for Class IV (CEMA Standard) and Class III (Mine Duty Extra) by part number, bare or lagged, flat faced or taper crowned.

However, the DODGE part number is often not known and the customer will inquire based upon pulley diameter, face width and hub size. CEMA standards for pulley face width are belt width + 2 inches up to 42 inch belts and belt width + 3 inch from 48 inch to 60 inch belts. Drum and wing pulley diameters are dependent upon belting and the shaft diameter required for the application. Availability from stock is best for standard CEMA dimensions.

PULLEY ASSEMBLIES

One of the most popular services we offer is to package and assemble pulleys, shaft, bearings and coupling halves for shipment, ready to install on the customer's conveyor truss. However, to do this we must have accurate shaft dimensions and tolerances at the time of order entry. These determine the hub size of the pulley and the bearing size. Bearings are ordered from another DODGE plant. The pulley assembly process can be shortened by providing the shaft details outlined in form **DMR 1446** (page PTPT13-7). Please note – all pulley assemblies are considered non-standard because of the variability of size and weight.

Special Construction Pulleys

There are Special Construction specifications that can be stipulated by the customer to extend the service life of Class IV CEMA and Class III Mine Duty Extra pulleys, for demanding applications, or to meet special job requirements. If these modifications are required, the products will become Special Construction made-to-order and identified by order number. These nonstandard modifications must be documented and quoted at the time of inquiry and before order entry.

Special Construction Features Include
But Are Not Limited To:

1. Rim and rubber lagging thickness
2. Lagging rubber material and durometer
3. Turning steel rims and/or rubber lagging to a specified total indicated run-out (TIR)
4. End disc steel thickness
5. Shaft material surface finish (RMS) and turndown radii
6. Keyless locking devices with dust covers vs standard HE 14-degree compression bushings
7. Post weld thermal stress relieving before machining
8. Magnetic particle and/or ultra sonic weld inspections
9. Static or dynamic balancing
10. Identification tags
11. Export or other special packaging

ENGINEERED, MADE-TO-ORDER PULLEYS

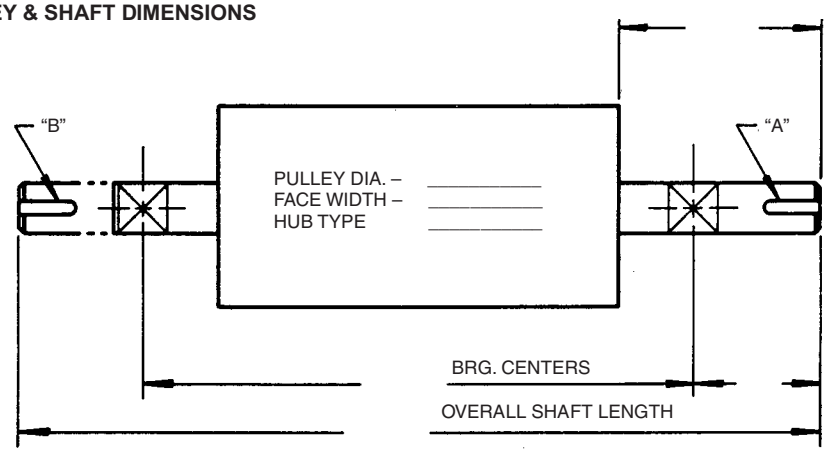
All DODGE heavy duty CEMA or Mine Duty Extra pulleys are designed to meet or exceed the CEMA steel pulley ANSI standard B105.1. However, for pulleys engineered to the customer's application loads and tensions, we require completion of the Engineered Pulley Data Sheet, **DMR 1447** (page PT13-9).

The selection process recommended by Rockwell Automation for DODGE conveyor pulley is covered on page PT13-10.

Pulley Assemblies

To order shafting, please copy and complete the sketches shown below (DMR1446).

DRIVE PULLEY & SHAFT DIMENSIONS

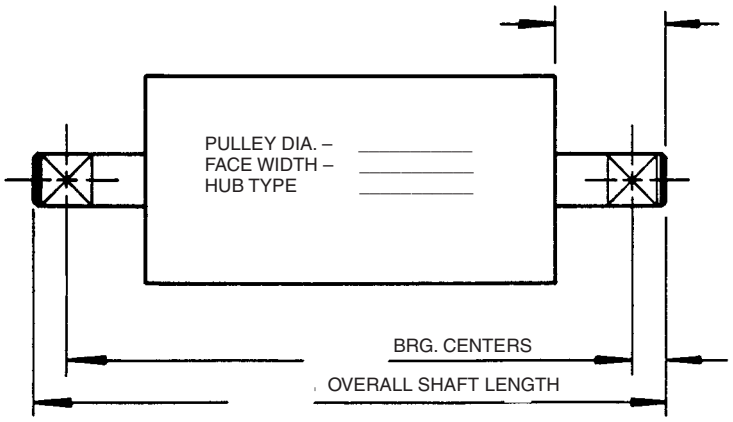


SHAFT DIA. AT HUB – _____
SHAFT DIA. AT BRG. – _____
SHAFT DIA. AT "A" – _____
SHAFT DIA. AT "B" – _____
NUMBER OF KEYSEATS – _____

KEYSEAT "A" – _____ X _____ X _____ LONG
KEYSEAT "B" – _____ X _____ X _____ LONG
DIRECTION OF ROTATION _____
(LOOKING AT DRIVEN END)
LAGGING – THICKNESS – _____
TYPE – _____

NON-DRIVE PULLEY & SHAFT DIMENSIONS

DRUM – ☐
WING – ☐



SHAFT DIA. AT HUB – _____
SHAFT DIA. AT BRG. – _____

KEYSEAT – 0 _____ , 1 _____ , 2 _____

NOMENCLATURE

DODGE®

Pulleys

(QTY) Diameter X Face Width • Face Type • Hub Type & Size • Class
(QTY) Lagging Thickness & Type
(QTY) Bushing Size & Bore

Diameter:	6”-60” (Other diameters available upon request)
Face Width:	12”-78” (Other face widths available upon request)
Face Type:	CR – Crown Face ST – Straight Face
Pulley Type:	DR – Drum WI – Wing
Hub Type & Size:	HE – (High Endurance) and Size (HE25) T-L – (TAPER-LOCK) QD – (Quick Disconnect) Keyless Locking
Class:	CEMA (Heavy Duty) MDX (Mine Duty Extra) MD (Mine Duty) ENG (engineered)
Lagging Thickness:	1/4”, 3/8”, 1/2”, 3/4”, 1” (Standard) Other Thickness Available on Request
Lagging Material & (Durometer):	SBR (60/45/70), D-LAG (60), Neoprene (60/45/70), Ceramic, Holz
Lagging Pattern:	Plain, Herringbone, Chevron, Diamond, Tuff-Top, Concentric, Parallel, Lorig Aligner
Bushing Size:	HE25 (Max. Bore 2-1/2”) F30 (Max. Bore 3,) E (Max. Bore 2-15/16”)
Examples:	1-12 x 26 CR DR HE25 MDX 3/8” Herringbone Lagging 2-HE25 x 2-7/16” Bushings 1-14 x 42 CR WI T-L F25 2-2517 x 2-7/16” TAPER-LOCK Bushings 1-16 x 44 ST DR QD F 2-F x 3-7/16” QD Bushings

Shafting

Diameter X Length • # of Keyseats • # of Turndowns x Turndown Diameters

Examples:	2-7/16” x 63" 3-7/16” x 84”, 3KS 3-15/16” x 76”, 3KS, 2TD X 3-7/16”

NOTE: All shafts require a drawing which indicates the location of keyseats, length of turndowns, bearing centers, turndown radii and location of pulley on the shaft.

Engineered Pulley Data Sheet

LIMITED WARRANTY: Rockwell Automation offers a 2-year limited warranty and a serialized name plate for all engineered pulleys designed to customer supplied loading information.

Selection of DODGE Conveyor Pulleys can be simplified by supplying the information in the Application Data Sheet provided below (DMR1447). DODGE can then engineer the correct pulleys or pulley assemblies for your application.

Company Name _____ Date _____ By _____

Address _____ Est. No. _____

Project _____

Conveyor Information –

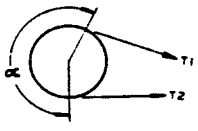
Belt: [ ] Fabric [ ] Steel [ ] Other _____ Belt Width _____ in.

Take-Up: [ ] Screw [ ] Gravity [ ] Hyd. [ ] Other _____

Drive Motor: HP _____ Belt Speed _____ FPM Capacity _____ TPH

Center to Center Distance _____ Lift in Feet _____

Pulley Data:

Conveyor Identification						
Pulley Location (Drive, Tail, etc.)						
Pulley Quantity						
Pulley Type (Drum or Wing)						
Diameter x Face						
Crown or Straight						
Lagging Thickness - Type of Grooves						
Shaft Diameter through Pulley						
Shaft Diameter through Bearing						
Shaft Diameter at Drive						
Shaft Length						
Number of Keyseats						
Drive Type (Sprocket, Coupling, Shaft Mount Reducer, etc.)						
Bearing Centers						
Arc of Contact _____° T_1 _____ Lbs. T_2 _____ Lbs. 	○	○	○	○	○	○

Special Requirements:

SELECTION

Drum and Wing Pulleys - CEMA, MDX, Mine Duty

Proper selection of pulley diameter, face width and shaft diameter can easily be determined if the following information is known:

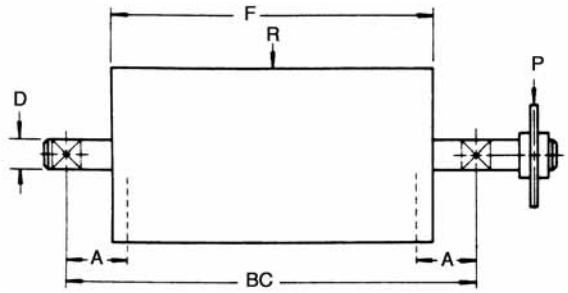
Belt Width (BW)

Bearing Centers (BC)

Arc of Belt Contact (∝)

Tight Side Belt Tension (T_1) (for drive pulleys only)*

Slack Side Belt Tension (T_2)*



A = Moment arm for pulley (inches)
BC = Bearing centers (inches)
D = Shaft diameter (inches)
F = Face width
P = Overhung load
R = Resultant pulley load (pounds)

STEP 1

Determine Required Pulley Face Width

From: F = BW + 2" (for BW 42" and under)
F = BW + 3" (for BW over 42")

Where: F = Pulley face width
BW = Belt width

Note: For replacement pulleys use face width of existing pulleys.

STEP 2

Determine Bearing Center Minus Face Dimension

From: BCMF=BC-F

Where: BCMF = Bearing center minus face dimension
F = Face width
BC = Bearing centerline to centerline dimension

Note: This selection guide is for conveyors with fabric belting. For other conveyor systems, consult factory for pulley selection.

***Note:** If belt tensions T_1 and T_2 are not known, see page for determination.

STEP 3

Determine Pulley Pounds Per Inch of Belt Width

From: PIW = T_1 ÷ BW (for drive pulleys)
PIW = T_2 ÷ BW (for non-drive pulleys)

Where: PIW = Pounds per inch of width value
T1 = Tight side tension
T2 = Slack side tension
BW = Belt Width

STEP 4

Determine Minimum Pulley Diameter

(Drum pulleys only) Determine minimum pulley diameter using PIW, arc of belt contact (∝) and Table 1. Reading across table from proper arc of contact select pulley diameter with PIW rating greater than actual PIW. Final pulley diameter may be greater than the diameter selected from Table 1 and must be greater than the belt manufacturer's recommended minimum diameter.

(Wing pulleys only) Determine minimum pulley diameter using PIW and Table 2. Select pulley diameter with PIW rating greater than actual PIW. Final pulley diameter may be greater than the diameter selected from Table 2 and must be greater than the belt manufacturer's recommended minimum diameter.

Drum and Wing Pulleys

TABLE 1

Use in STEP 4 to determine minimum pulley diameter for *Drum Pulleys Only*
MAXIMUM BELT TENSION (Pounds Per Inch of Belt Width)

Arc of Contact (Deg.)	PULLEY DIAMETER (Inches)													
	8	10	12	14	16	18	20	24	30	36	42	48	54	60
10	65	80	95	120	145	175	205	260	345	430	520	605	690	775
20	50	60	75	95	115	135	160	200	265	335	400	465	535	600
30	45	55	65	80	100	115	140	175	230	290	345	405	460	520
40	35	45	55	70	85	100	120	150	200	245	295	345	395	445
50	30	40	45	60	70	85	100	130	170	215	255	300	340	385
60	30	40	45	60	70	85	100	125	165	205	250	290	330	375
70	30	40	50	60	75	85	105	130	175	220	260	305	350	395
80	35	45	50	65	80	95	115	140	190	235	285	330	375	425
90	35	45	55	70	85	100	120	150	200	255	305	355	405	455
100	40	50	60	75	90	110	130	160	215	270	325	380	430	485
110	45	55	65	80	100	115	140	175	230	290	345	405	460	520
120	45	55	65	85	105	120	145	185	245	305	365	425	490	550
130	50	60	75	95	115	135	160	200	265	335	400	465	535	600
140	55	70	80	105	125	150	180	225	300	375	450	525	600	675
150	60	75	90	115	140	170	200	250	335	420	505	590	670	755
160	70	85	100	130	160	185	225	280	375	465	560	650	745	840
170	75	95	115	145	175	205	250	310	415	520	620	725	830	930
180	85	105	125	160	195	230	275	345	460	575	690	805	920	1035
190	75	95	115	145	175	205	250	310	415	520	620	725	830	930
200	70	85	100	130	160	185	225	280	375	465	560	650	745	840
210	60	75	90	115	140	170	200	250	335	420	505	590	670	755
220	55	70	80	105	125	150	180	225	300	375	450	525	600	675
230	50	60	75	95	115	135	160	200	265	335	400	465	535	600
240	45	55	65	85	105	120	145	185	245	305	365	425	490	550

STEP 5

Determine Pulley Resultant Load

Determine pulley resultant load from belt tensions and arc of contact.

Resultant load is calculated by:

$R = 2 \times T_2 \times \sin(\propto/2)$ (non-drive)*

$R = (T_1 + T_2) \times \sin(\propto/2)$ (drive)*

Where: R = Pulley resultant load
T_1 = Tight side tension
T_2 = Slack side tension
$\propto$ = Arc of contact

***Note:** If non-drive pulley is on tight side of belt, substitute T_1 for T_2. Wing pulleys should not be used as drive pulleys.

STEP 6

Determine Shaft Diameter

Determine shaft diameter from Table 3. Go down the proper pulley face width column and across from the bearing center minus face value (if the correct value is not listed, interpolate or use the next higher value) until a load rating greater than the resultant load calculated in Step 5 is found. The proper shaft diameter is then read from the vertical shaft diameter column.

TABLE 2

Use in STEP 4 to determine minimum pulley diameter for *Wing Pulleys* only
MAXIMUM BELT TENSION
(Pounds Per Inch of Belt Width)

Dia.	Pounds Per Inch	Dia.	Pounds Per Inch
8”	80#	18”	180#
10”	100#	20”	200#
12”	120#	24”	240#
14”	140#	30”	280#
16”	160#	36”	350#

Drum and Wing Pulleys

TABLE 133 – Use in Step 6 to determine shaft diameter
LOAD RATINGS (POUNDS) FOR PULLEY AND SHAFT COMBINATIONS

SHAFT DIAMETER (Inches)	(L) BEARING CENTERS MINUS FACE	PULLEY FACE WIDTH (inches)													
		12	14	16	18	20	22	26	32	38	44	51	57	63	66
1-3/16	2	1000	920	780	670	590	530	440	350	290	240	210	180	170	160
	6	570	520	440	380	340	300	250	700	160	140	170	100	94	90
	10	400	370	310	270	230	210	170	140	110	96	82	73	66	63
	14	300	280	240	200	180	160	130	110	87	74	63	56	51	48
1-7/16	3	1500	1500	1400	1200	1100	950	790	620	510	440	370	330	300	290
	6	1000	1000	950	820	720	640	530	420	350	300	250	220	200	190
	10	700	700	660	570	500	450	370	290	240	210	180	160	140	130
	14	540	540	510	440	390	350	290	230	190	160	140	120	110	100
1-11/16	3	2400	2400	2400	2300	2000	1800	1500	1200	980	830	710	630	570	540
	6	1600	1600	1600	1600	1400	1200	1000	800	660	560	480	430	380	370
	10	1100	1100	1100	1100	960	850	700	560	460	390	340	300	270	260
	16	780	780	780	750	660	590	490	380	320	270	230	210	180	180
1-15/16	3	3700	3700	3700	3700	3500	3100	2600	2100	1700	1400	1200	1100	990	940
	6	2500	2500	2500	2500	2400	2100	1800	1400	1100	980	840	740	670	640
	10	1700	1700	1700	1700	1700	1500	1200	970	800	680	580	520	470	420
	16	1200	1200	1200	1200	1100	1000	840	670	550	470	400	360	320	310
2-3/16	3	5300	5300	5300	5300	5300	5100	4200	3300	2800	2400	2000	1800	1600	1500
	8	2900	2900	2900	2900	2900	2800	2300	1900	1500	1300	1100	990	890	850
	12	2200	7200	2200	2200	2200	2100	1700	1400	1100	970	820	730	660	630
	18	1500	1500	1500	1500	1500	1500	1200	980	810	690	590	530	470	450
2-7/16	4	6300	6300	6300	6300	6300	6300	5600	4400	3700	3100	2700	2400	2100	2000
	8	4000	4000	4000	4000	4000	4000	3600	2900	2400	2000	1700	1500	1400	1300
	12	3000	3000	3000	3000	3000	3000	2700	2100	1700	1500	1300	1100	1000	910
	18	2100	2100	2100	2100	2100	2100	1900	1500	1300	1100	910	810	130	690
2-11/16	4	8100	8100	8100	8100	8100	8100	8100	6400	5300	4500	3800	3400	3100	2900
	8	5300	5300	5300	5300	5300	5300	5300	4200	3400	2900	2500	2200	2000	1900
	12	3900	3900	3900	3900	3900	3900	3900	3100	2600	2200	1900	1600	1500	1400
	18	2800	2800	2800	2800	2800	2800	2800	2200	1800	1600	1300	1200	1100	1000
2-15/16	4	10600	10600	10600	10600	10600	10600	10600	9100	7500	6400	5500	4900	4400	4200
	8	6900	6900	6900	6900	6900	6900	6900	6000	4900	4200	3600	3200	2900	4700
	14	4600	4600	4600	4600	4600	4600	4600	3900	3200	2800	2300	2100	1900	1800
	20	3400	3400	3400	3400	3400	3400	3400	2900	2400	2000	1700	1600	1400	1300
3-7/16	6	11600	11600	11600	11600	11600	11600	11600	11600	10100	8500	7200	6400	5700	5500
	10	8500	8500	8500	8500	8500	8500	8500	8500	7400	6300	5300	4700	4200	4000
	14	6700	6700	6700	6700	6700	6700	6700	6700	5800	4900	4200	3700	3300	3200
	20	5100	5100	5100	5100	5100	5100	5100	5100	4400	3800	3200	2800	2500	2400
3-15/16	6	16700	16700	16700	16700	16700	16700	16700	16700	16700	14200	12000	10600	9500	9000
	10	12400	12400	12400	12400	12400	12400	12400	12400	12400	10600	8900	7900	7100	6700
	14	9800	9800	9800	9800	9800	9800	9800	9800	9800	8400	7100	6300	5600	5300
	20	7500	7500	7500	7500	7500	7500	7500	7500	7500	6400	5400	4800	4300	4100
4-7/16	8	19600	19600	19600	19600	19600	19600	19600	19600	19600	19100	16100	14200	12700	12100
	12	15300	15300	15300	15300	15300	15300	15300	15300	15300	14800	12500	11100	9900	9400
	16	12500	12500	12500	12500	12500	12500	12500	12500	12500	12100	10300	9100	8100	7700
	22	9800	9800	9800	9800	9800	9800	9800	9800	9800	9500	8100	7100	6400	6000
4-15/16	8		25200	25200	25200	25200	25200	25200	25200	25200	25200	23600	20800	18500	17600
	12		19900	19900	19900	19900	19900	19900	19900	19900	19900	18600	16400	14600	13900
	16		16400	16400	16400	16400	16400	16400	16400	16400	16400	15400	13500	12100	11500
	22		13000	13000	13000	13000	13000	13000	13000	13000	13000	12200	10700	9600	9100
5-7/16	10			26600	26600	26600	26600	26600	26600	26600	26600	26600	25100	22300	21100
	14			22000	22000	22000	20000	22000	22000	22000	22000	22000	20700	18400	17500
	18			18700	18700	18700	18700	18700	18700	18700	18700	18700	17700	15700	14900
	24			15300	15300	15300	15300	15300	15300	15300	15300	15300	14500	12800	12200

Drum and Wing Pulleys

TABLE 3 (cont'd) – Use in Step 6 to determine shaft diameter
LOAD RATINGS (POUNDS) FOR PULLEY AND SHAFT COMBINATIONS

SHAFT DIAMETER (Inches)	(L) BEARING CENTERS MINUS FACE	PULLEY FACE WIDTH (inches)													
		12	14	16	18	20	22	26	32	38	44	51	57	63	66
6	10			35700	35700	35700	35700	35700	35700	35700	35700	35700	35700	33100	31300
	14			29500	29500	29500	29500	29500	29500	29500	29500	29500	29500	27300	25900
	18			25100	25100	25100	25100	25100	25100	25100	25100	25100	25100	23300	22100
	24			20600	20600	20600	20600	20600	20600	20600	20600	20600	20600	19000	19000
6-1/2	12				39200	39200	39200	39200	39200	39200	39200	39200	39200	39200	38000
	16				33200	33200	33200	33200	33200	33200	33200	33200	33200	33200	32100
	20				28800	28800	28800	28800	28800	28800	28800	28800	28800	28800	27800
	26				24000	24000	24000	24000	24000	24000	24000	24000	24000	24000	23200
7	12				49000	49000	49000	49000	49000	49000	49000	49000	49000	49000	49000
	16				41400	41400	41400	41400	41400	41400	41400	41400	41400	41400	41400
	20				35900	35900	35900	35900	35900	35900	35900	35900	35900	35900	35900
	26				29900	29900	20000	29900	29900	29900	29900	29900	29900	29900	29900
7-1/2	14				54100	54100	54100	54100	54100	54100	54100	54100	54100	54100	54100
	18				46500	46500	46500	48500	48500	46500	46500	46500	46500	46500	46500
	22				40800	40800	40800	40800	40800	40800	40800	40800	40800	40800	40800
	28				34400	34400	34400	34400	34400	34400	34400	34400	34400	34400	34400
8	14				65700	65700	65700	65700	65700	65700	65700	65700	65700	65700	65700
	18				56400	56400	56400	56400	56400	56400	56400	56400	56400	56400	56400
	22				49500	49500	49500	49500	49500	49500	49500	49500	49500	49500	49500
	28				41800	41800	41800	41800	41800	41800	41800	41800	41800	41800	41800
8-1/2	16						67700	67700	67700	67700	67700	67700	67700	67700	67700
	20						59400	59400	59400	59400	59400	59400	59400	59400	59400
	24						52900	52900	52900	52900	52900	52900	52900	52900	52900
	30						45400	45400	45400	45400	45400	45400	45400	45400	45400
9	16						80400	80400	80400	80400	80400	80400	80400	80400	80400
	20						70500	70500	70500	70500	70500	70500	70500	70500	70500
	26						59500	59500	59500	59500	59500	59500	59500	59500	59500
	32						51500	51500	51500	51500	51500	51500	51500	51500	51500
9-1/2	16						94500	94500	94500	94500	94500	94500	94500	94500	94500
	22						78100	78100	78100	78100	78100	78100	78100	78100	78100
	28						66500	66500	66500	66500	66500	66500	66500	66500	66500
	34						57900	57900	57900	57900	57900	57900	57900	57900	57900
10	16						110000	110000	110000	110000	110000	110000	110000	110000	110000
	22						91100	91100	91100	91100	91100	91100	91100	91100	91100
	28						77600	77600	77600	77600	77600	77600	77600	77600	77600
	34						64800	64800	64800	64800	64800	64800	64800	64800	64800

Drum and Wing Pulleys

STEP 7

Determine Drive Pulley Shaft Diameter

(For drive pulleys only) The shaft diameter determined in Step 6 must be checked for torque capacity. The shaft diameter required for torque is determined from:

$$D_T = 3\sqrt{\frac{16}{\pi \times S} \times \sqrt{(K_B \times A \times R \div 2)^2 + [(T_1 - T_2) \times D \div 2]^2}}$$

Where: D_T = Required shaft diameter from torque
π = 3.1416
S = 8000 psi for 1042 -1045 shafting
(10,000 for 4140)
K_B = 1.5*
A = Moment arm (from Table 4)
R = Resultant load from Step 5
T_1 = Tight side tension
T_2 = Slack side tension
D = Pulley Diameter

***Note:** Use K_B = 2.5 for overhung load drive (chain, torque arm, etc.)

If D_T is greater than the shaft diameter from Step 6, round D_T up to the next standard shaft diameter and use that value. If D_T is less than the shaft diameter from Step 6, use the diameter selected from Step 6.

Table 4 – A-Values

Shaft Dia. (inches)	A	Shaft Dia. (inches)	A
1 to 2-7/16	N+1-5/8	4-15/16	N+3-1/4
2-11/16 to 2-15/16	N+1-3/4	5-7/16 to 6	N+4-1/2
3-7/16	N+2-1/2	6-1/2 to 7	N+5
3-15/16	N+2-3/4	7-1/2 to 8	N+5-1/4
4-7/16	N+3	8-1/2 to 10	N+6-1/4

N = BCMF÷2

STEP 8

Compare Pulley Diameter

Compare the pulley diameter, face width combination selected with the standard drum pulley listing on pages PT13-15 - PT13-21 or the standard wing pulley listing on pages PT13-22 - PT13-27 to insure the selected combination is available. If the selected combination is not available increase shaft diameter or pulley diameter until a standard pulley is listed.

Example 1 (Drive Pulley)

Given: 36" belt width — 3600 lb. T_1
52" bearing centers — 1600 lb. T_2
210° arc of contact

Step 1
Determine required face width from:
F=BW+2" F=36+2=38

Step 2
Determine bearing center minus face dimension from:
BCMF= BC-F BCMF=52-38= 14"

Step 3
Determine pounds per inch of face width from:
PIW=T_1÷BW PIW=3600÷36=100 PIW

Step 4
Determine minimum pulley diameter using Table 1. Since PIW = 100 and arc of contact is 210°, the minimum pulley diameter is 14".

Step 5
Determine resultant load from:
R=(T_1 + T_2) x sin (∝/2)
R=(3600 + 1600) x sin (210/2)=5023 lb.

Step 6
Determine shaft diameter using Table 3. Using a face width of 38" bearing center minus face dimension of 14" and a pulley resultant load of 5023 lbs., read down the 38" face width column until the load rating at BCMF = 14" exceeds 5023 lb. The first value to exceed 5023 lbs. is 5800 lbs. at a shaft diameter of 3-7/16.

Step 7
Check torque capacity of selected shaft using:

$$D_T = 3\sqrt{\frac{16}{\pi \times S} \times \sqrt{(K_B \times A \times R \div 2)^2 + [(T_1 - T_2) \times D \div 2]^2}}$$

$$D_T = 3\sqrt{\frac{16}{3.1416 \times 8000} \times \sqrt{(1.5 \times 9.5 \times 5023 \div 2)^2 + [(3600 - 1600) \times D \div 2]^2}}$$

D_T = 2.86"

The 3-7/16 shaft diameter selected in Step 6 is greater than 2.86: therefore 3-7/16 is the final shaft diameter selection.

Step 8
Checking the standard pulley listing on page PT13-18, a 14 x 38 pulley with 3-7/16 shaft (HE35 Hub) is a standard pulley.

Example 2 (Non-drive wing pulley).

Given: 54" belt width — 1805 arc of contact
71 bearing centers — 8600 lb. T_2

Step 1
Determine required face width from:
F = BW + 3, F = 54 + 3 = 57,

Step 2
Determine bearing center minus face dimension from:
BCMF=BC-F BCMF=71 -57=14,

Step 3
Determine pounds per inch of face width from:
PIW=T_2÷BW PIW=8600÷54=159 PIW

Step 4
Determine minimum pulley diameter using Table 2. Since PIW = 159 the minimum pulley diameter is 16".

Step 5
Determine resultant load from:
R=2 x T_2 x sin (∝/2)
R = 2 x 8600 x sin (180/2) = 17,200 lbs.

Step 6
Determine shaft diameter using Table 3. Using a face width of 57", bearing center minus face dimension of 14" and a pulley resultant load of 17,200 lbs., read down the 57" face width column until the load rating at BCMF = 14" exceeds 17,200 lbs. The first value to exceed 17,200 lbs. is 20,700 lbs. at a shaft diameter of 5-7/16.

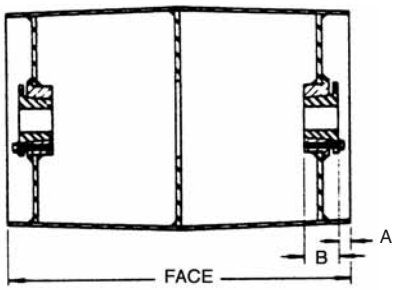
Step 7
Checking the standard wing pulley listing on page PT13-24, a 16 x 57 wing pulley with 5-7/16 shaft (HE60 hub) is a standard pulley.

HE Heavy Duty Drum Pulleys

- HE mounting system designed specifically for conveyor pulleys
- Most dependable mounting system for conveyor pulleys
- Flange mount design
- Designed to CEMA specifications
- Standard crown face or straight face available
- One piece die formed through 30”
- Diameters to 60”, face widths exceeding 78”
- Available from stock

HE Dimensions

Hub	A	B	Bushing	Max. Bore	Screw Torque (in.-lb.)
HE25	3/4	2-1/4	HE25	2-1/2	360
HE30	3/4	2-3/4	HE30	3	710
HE35	3/4	3	HE35	3-1/2	1080
HE40	3/4	3-1/2	HE40	4	1680
HE45	3/4	4	HE45	4-1/2	1680
HE50	3/4	4-1/2	HE50	5	2400
HE60	1	5-1/4	HE60	6	4200
HE70	1	6-1/4	HE70	7	6000
HE80	1-1/4	7	HE80	8	6000
HE100	1-1/4	9	HE100	10	7200
HE120	1-1/4	10	HE120	12	7200



SELECTION

HE Heavy Duty Drum Pulley Part Numbers

Dia.	Hub	FACE WIDTH														
		12	14	16	18	20	22	24	26	30	32	36	38	40	44	51
6	HE25	206001	206003		203500	203501	206009	203502	206012	203503	203504	203505	206014			203511
8	HE25	206020	206022		206024	203516			206029	203519	206031		206032		206033	206034
10	HE25	206035			206039	206041	206042	203530	206044		206046		206048		206049	206052
	HE30								203533		203538		203543		206051	206050
12	HE25	209716	206056	206057	206058	206060	209718	203561	206063	209720	206066		206069		206072	206074
	HE30								206064		206067		206070	209722	206073	203587
	HE35								203565		203571		203577		203581	203588
14	HE25	203594	209726			206080			206081	209730	206083		206084		203633	203642
	HE30					209727			206082		203620		206085		203907	206087
	HE35												203629		203634	203643
	HE40	209725											203630			203644
16	HE25	203651			206091	206092	209736		206095	209749	206097		206099		203685	203695
	HE30		209734			209775		209737	206096		206098		206100		206102	203696
	HE35								203666		203674		203682		203686	206103
	HE40										203675		203683		203687	206104
18	HE25					206110		209746	206111		206114		206116			
	HE30					209745			206112		206115		206117		203745	203756
	HE35								206113		203729		206118	209751	206121	203757
	HE40										203730		203740	206119	203746	206120
	HE45												203741		209752	203758
20	HE25	209756				206125			206126		206089		206131			
	HE30					209757		209758	206127		206129		206132		206134	203807
	HE35								206128		206130		206133		206135	203808
	HE40								209759		203790		203797		206136	203809
24	HE30	203815							206140		206142		206145		206148	203848
	HE35								206141		206143		206146		206149	203849
	HE40								203908		206144		206147		203844	203850
	HE45										203836		203841		206150	206151
	HE50												203343		209742	209776
30	HE35										203879					
	HE40			209780							203880		203888		209741	

Note: All stock pulleys are crown face.

HE Heavy Duty Lagged Drum Pulley Part Numbers

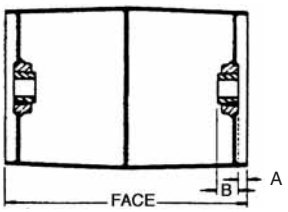
Dia.	Hub	FACE WIDTH					
		Lagging	26	32	38	44	51
12	HE30	3/8 HBG	206105	206106	209907	209909	209910
14	HE25	3/8 HBG	207954	207950	207951	207205	207952
16	HE25	3/8 HBG	207206		207209		
	HE30	3/8 HBG	207207	207208	207210	209922	209923
	HE35	3/8 HBG	206054	206075	206076		
18	HE30	3/8 HBG	207211	207212	207213		
	HE35	3/8 HBG	206107	206077	206108	209927	
20	HE30	3/8 HBG		207214	209934		
	HE40	3/8 HBG	206078	206079	206088		
24	HE35	3/8 HBG	207977	209938	209939		
	HE40	3/8 HBG	207978	207215	207216	209940	209941
	HE45	3/8 HBG	206017	206018	206019	206053	

TAPER-LOCK Heavy Duty Drum Pulleys

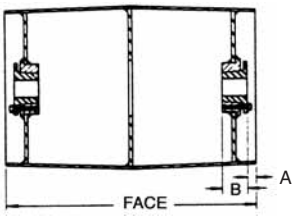
- Flush mount, compact design mounting system
- Designed to CEMA specifications
- Standard crown face or straight face available
- One piece die formed through 30”
- Diameters to 60”, face widths exceeding 78”
- Available from stock

TAPER-LOCK Dimensions

Hub	A	B	Bushing	Max. Bore	Screw Torque (in.-lb.)
K25	1	1-3/4	2517	2-1/2	430
F25	1	1-3/4	2517	2-1/2	430
F30	1	2	3020	3	800
K35	1	3-1/2	3535	3-1/12	1000
K40	1	4	4040	4	1700
K45	1	4-1/2	4545	4-1/2	2450
K50	1	5	5050	5	3100
K60	2-1/4	5	6050	6	7820
K70	2-1/4	6	7060	7	7820
K80	2-1/4	6-1/2	8065	8	7820
K100	2-1/4	8-1/2	10085	10	13700
K120	2-1/4	10	120100	12	13700



F25 and F30



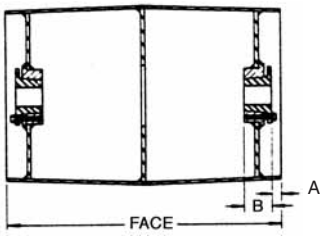
K25 through K120

QD Heavy Duty Drum Pulleys

- Flange mount bushing system
- Designed to CEMA specifications
- Standard crown face or straight face available
- One piece die formed through 30”
- Diameters to 60”, face widths exceeding 78”
- Available from stock

QD Dimensions

QD Hub	A	B	Bushing	Max. Bore	Screw Torque (in.-lb.)
SF	7/8	2-1/16	SF	2-7/16	360
E	1	2-3/4	E	2-15/16	720
F	1-1/16	3-3/4	F	3-7/16	900
JS	1-1/8	3-3/8	J	3-15/16	1620
MS	1-1/4	4-13/16	M	4-7/16	2700
NS	1-5/16	6	N	4-15/16	3600
PS	1-3/8	6-1/2	P	6	5400
WS	1-9/16	7-1/4	W	8	7200
SS	1-5/8	8-3/4	S	10	9000
ZS	1-9/16	8-3/4	Z	12	7200



SELECTION

DODGE®

Heavy Duty Drum Pulley Average Weights – HE, TAPER-LOCK, QD

Dia.	Max. Bore	Face Width										
		12	14	16	18	20	22	24	26	30	32	36
6	2.5	27	29	31	33	35	37	39	41	45	47	52
8	2.5	34	37	40	42	45	48	51	53	59	62	69
10	2.5	43	46	50	53	56	60	63	67	74	77	88
	3	49	53	56	60	63	67	70	74	80	84	94
12	2.5	52	56	60	64	69	73	77	81	89	93	107
	3	60	64	68	72	77	81	85	89	97	102	115
	3.5	75	79	83	87	92	96	100	104	112	116	129
14	2.5	62	67	72	77	82	87	91	96	106	111	128
	3	62	67	72	77	82	86	91	96	106	111	128
	3.5	85	90	95	100	105	110	114	119	129	134	150
	4	95	100	105	110	114	119	124	129	139	144	160
16	2.5	67	72	78	83	89	94	100	105	117	122	144
	3	72	77	83	88	94	99	105	111	122	127	148
	3.5	90	96	101	107	112	118	124	129	140	146	166
	4	106	112	117	123	129	134	140	145	156	162	182
	4.5	...	126	131	137	142	148	153	159	170	176	195
18	2.5	77	83	89	96	102	108	114	121	133	139	165
	3	90	97	103	109	115	122	128	134	147	153	178
	3.5	100	107	113	119	125	132	138	144	157	163	188
	4	123	131	139	148	156	164	173	181	198	206	235
	4.5	...	145	154	162	170	179	187	193	212	220	248
	5	...	...	192	201	209	217	226	234	251	259	286
20	2.5	101	111	120	129	138	148	157	166	185	194	229
	3	117	127	136	145	154	164	173	182	201	210	245
	3.5	125	134	144	153	162	171	181	190	208	218	252
	4	135	144	154	163	172	181	191	200	218	228	261
	4.5	...	159	168	177	186	196	205	214	233	242	275
	5	...	...	207	216	225	234	244	253	271	281	313
24	3	149	160	171	183	194	205	216	227	249	260	307
	3.5	167	179	190	201	212	223	234	245	268	279	325
	4	177	188	199	211	222	233	244	255	277	288	334
	4.5	...	202	213	224	235	247	258	269	291	302	347
	5	...	...	274	287	301	315	329	343	371	385	434
	6	...	...	...	386	403	419	436	453	486	502	561
30	3	204	218	232	246	260	274	288	301	329	343	409
	3.5	222	236	250	264	278	292	306	320	348	362	427
	4	253	270	287	305	344	340	357	374	409	426	498
	4.5	...	284	301	319	336	353	371	388	423	440	512
	5	...	...	340	357	374	392	409	427	461	479	550
	6	...	...	...	462	483	504	524	545	587	608	693
	7	...	...	...	536	557	578	598	619	703	724	765
	8	...	...	...	...	613	634	655	676	758	779	820

- Crown face pulleys will be provided unless straight face is specified
- **These pulleys are designed to meet the CEMA Pulley Specification B105.1–1993. They are not to be used with steel cable belts or other high modulus belts.**

Heavy Duty Drum Pulley Average Weights – HE, TAPER-LOCK, QD

Face Width												
38	**40**	**44**	**46**	**51**	**54**	**57**	**60**	**63**	**66**	**72**	**75**	**78**
54	56	60	62	67	71	74	77	80	83	90	93	96
72	75	80	83	90	96	100	104	108	112	122	127	131
91	94	101	105	113	122	127	132	138	143	157	162	167
97	101	108	111	120	128	133	138	143	149	162	167	172
111	116	124	128	138	150	156	163	169	175	193	199	205
119	123	135	139	149	160	167	173	179	185	203	209	215
134	138	146	150	161	171	178	184	190	196	213	220	226
133	138	148	153	165	180	187	194	202	209	231	239	246
133	137	162	166	179	193	200	208	215	222	244	251	259
155	160	170	175	187	201	208	216	223	230	252	259	266
164	169	179	184	196	210	217	224	231	239	260	267	274
149	155	166	171	185	204	212	221	229	237	264	273	281
154	159	190	196	210	228	236	245	253	261	288	296	305
172	177	189	194	214	232	241	249	257	266	292	300	308
187	193	204	210	224	241	249	257	266	274	300	308	316
201	206	217	223	237	254	262	270	279	287	312	320	329
172	178	190	197	212	235	244	254	263	273	305	314	323
185	191	212	218	234	256	266	275	284	294	325	335	334
194	200	213	219	243	265	275	284	293	303	334	343	353
243	251	268	276	297	321	334	346	359	371	408	421	433
256	265	281	290	311	334	347	359	372	384	421	433	446
295	303	320	350	371	394	406	419	431	444	480	492	504
238	248	266	275	299	329	343	357	371	385	429	443	457
254	263	282	291	314	344	358	372	386	400	444	457	471
261	270	289	298	321	351	365	379	393	406	450	464	478
271	280	298	308	331	360	374	388	402	415	458	472	486
284	294	312	321	344	373	387	401	415	429	471	485	499
323	332	350	360	383	411	425	439	452	466	508	522	536
318	329	351	362	390	431	447	464	481	497	555	571	588
336	347	369	380	408	448	465	482	498	515	572	589	605
345	356	378	389	417	457	473	490	507	524	580	597	613
358	369	391	403	430	470	486	503	520	536	592	609	626
448	462	490	504	538	581	602	623	643	664	728	749	769
577	594	627	644	685	735	760	785	810	834	909	934	959
423	437	465	479	514	573	594	615	636	657	737	757	778
441	455	483	497	532	590	611	632	653	674	754	775	796
516	533	568	585	629	692	718	744	770	796	886	912	938
529	547	581	599	642	705	731	757	783	809	898	924	950
567	584	619	637	680	742	768	794	820	847	935	961	987
714	735	777	797	849	925	956	987	1018	1049	1156	1187	1218
786	807	849	869	921	995	1026	1057	1088	1120	1182	1213	1287
841	862	904	925	977	1049	1080	1111	1142	1174	1236	1267	1339

SELECTION

DODGE®

Heavy Duty Drum Pulley Average Weights – HE, TAPER-LOCK, QD

Dia.	Max. Bore	Face Width										
		12	14	16	18	20	22	24	26	30	32	36
36	3	292	313	334	355	376	397	417	438	480	501	617
	.5	310	331	352	373	394	415	436	457	498	519	635
	4	320	341	362	383	404	425	445	466	508	529	644
	4.5	...	355	376	397	417	438	459	480	522	543	657
	5	...	...	447	472	497	522	547	572	622	647	769
	6	...	...	...	546	571	596	621	646	697	722	839
	7	...	...	...	620	645	670	695	720	836	861	911
	8	...	...	...	...	702	727	752	777	891	916	966
	10	...	...	...	...	...	...	1221	1254	1321	1423	1490
42	3.5	386	411	435	459	484	508	533	557	606	630	780
	4	475	504	534	563	592	621	651	680	738	768	926
	4.5	...	468	497	527	556	585	614	644	702	731	889
	5	...	...	536	565	594	623	653	682	740	770	927
	6	...	...	...	686	716	745	774	803	862	891	1044
	7	...	...	...	846	885	924	963	1002	1195	1234	1312
	8	...	...	...	...	941	980	1018	1057	1249	1288	1366
	10	...	...	...	...	...	...	1398	1437	1515	1657	1735
48	4	579	613	646	680	713	747	780	814	881	914	1113
	4.5	...	626	660	693	727	760	794	827	894	928	1126
	5	...	...	698	731	765	798	832	865	932	966	1163
	6	...	...	...	803	837	870	904	937	1004	1038	1231
	7	...	...	...	976	1020	1065	1109	1154	1398	1442	1531
	8	...	...	...	...	1076	1120	1165	1209	1452	1497	1586
	10	...	...	...	...	...	...	1592	1636	1725	1913	2002
54	4.5	...	745	783	821	859	896	934	972	1047	1085	1327
	5	...	...	821	859	897	934	972	1010	1085	1123	1364
	6	...	...	...	1124	1174	1124	1274	1324	1425	1475	1777
	7	...	...	...	...	1246	1296	1346	1396	1697	1747	1847
	8	...	...	...	...	1301	1351	1401	1451	1750	1800	1901
	10	...	...	...	...	...	...	1803	1853	1953	2191	2291
60	4.5	...	1283	1338	1394	1450	1506	1561	1617	1729	1784	2155
	5	...	...	1375	1431	1847	1543	1598	1654	1765	1821	2191
	6	...	...	...	1497	1552	1608	1664	1720	1831	1887	2251
	7	...	...	...	1567	1622	1678	1734	1790	2151	2207	2319
	8	...	...	...	...	1676	1732	1788	1844	2204	2259	2371
	10	...	...	...	...	...	...	2030	2086	2198	2491	2602

- Crown face pulleys will be provided unless straight face is specified
- **These pulleys are designed to meet the CEMA Pulley Specification B105.1–1993. They are not to be used with steel cable belts or other high modulus belts.**

Heavy Duty Drum Pulley Average Weights – HE, TAPER-LOCK, QD

Face Width												
38	**40**	**44**	**46**	**51**	**54**	**57**	**60**	**63**	**66**	**72**	**75**	**78**
638	659	701	721	774	879	910	942	973	1004	1141	1173	1204
656	676	718	739	791	896	928	959	990	1022	1158	1189	1221
665	685	727	748	800	905	936	967	999	1030	1165	1197	1228
678	699	740	797	850	953	984	1016	1047	1078	1213	1245	1276
794	819	869	894	957	1066	1103	1141	1178	1216	1362	1400	1437
864	889	939	964	1206	1131	1169	1206	1244	1281	1423	1461	1499
936	961	1011	1036	1099	1201	1239	1276	1314	1351	1427	1464	1567
991	1016	1066	1091	1154	1255	1293	1330	1368	1405	1480	1518	1620
1523	1556	1623	1656	1739	1858	1908	1958	2008	2058	2157	2207	2326
805	829	878	902	1014	1151	1188	1225	1261	1298	1472	1509	1545
956	985	1043	1073	1046	1290	1334	1377	1421	1465	1653	1697	1741
919	946	1006	1085	1158	1302	1346	1390	1433	1477	1665	1708	1752
956	985	1044	1073	1146	1289	1333	1377	1421	1464	1651	1696	1739
1073	1103	1161	1190	1263	1402	1446	1490	1533	1577	1760	1803	1847
1351	1389	1467	1506	1603	1777	1836	1894	1952	2011	2127	2186	2360
1405	1444	1521	1560	1658	1830	1888	1947	2005	2063	2180	2238	2411
1773	1812	1890	1929	2026	2188	2246	2304	2362	2421	2538	2596	2758
1146	1180	1247	1280	1364	1546	1596	1646	1696	1747	1979	2029	2079
1159	1193	1259	1293	1377	1558	1608	1658	1709	1759	1990	2040	2091
1196	1230	1297	1330	1414	1595	1645	1695	1745	1795	2026	2076	2126
1264	1298	1364	1398	1462	1658	1708	1758	1808	1859	2085	2135	2186
1576	1620	1709	1754	1865	2087	2154	2221	2287	2354	2468	2554	2777
1630	1675	1764	1808	1919	2140	2207	2273	2340	2407	2540	2607	2828
2046	2091	2180	2224	2335	2545	2612	2679	2745	2812	2946	3012	3222
1365	1402	1478	1515	1610	1833	1890	1946	2003	2059	2339	2396	2452
1402	1440	1515	1553	1647	1870	1926	1983	2039	2096	2375	2431	2468
1827	1878	1978	2028	2153	2431	2506	2581	2656	2732	3084	3160	3235
1897	1947	2048	2098	2223	2498	2573	2649	2724	2799	2949	3024	3350
1951	2001	2101	2151	2277	2550	2625	2701	2776	2851	3001	3077	3550
2341	2391	2492	2542	2667	2930	3005	3080	3155	3231	3381	3456	3719
2210	2266	2378	2433	2573	2915	2999	3082	3166	3249	3675	3759	3843
2246	2302	2414	2469	2609	2950	3034	3117	3201	3285	3710	3793	3877
2306	2362	2474	2529	2669	3005	3089	3172	3256	3339	3759	3843	3926
2374	2430	2541	2597	2737	3070	3154	3238	3321	3405	3572	3656	3989
2427	2482	2594	2650	2789	3121	3205	3288	3372	3456	3623	3707	4039
2658	2714	2825	2881	3021	3342	3426	3509	3593	3676	3844	3927	4249

SELECTION/DIMENSIONS

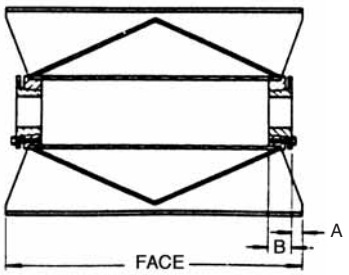
DODGE®

HE Heavy Duty Wing Pulleys

- HE mounting system designed specifically for conveyor pulleys
- Most dependable mounting system for conveyor pulleys
- Designed to CEMA specifications
- Standard crown face or straight face available
- Diameters to 60", face widths exceeding 78"
- Available with replaceable WING-LAG
- Available from stock

HE Dimensions

Hub	A	B	Bushing	Max. Bore	Screw Torque (in.-lb.)
HE25	1	2-1/4	HE25	2-1/2	360
HE30	3/4	2-3/4	HE30	3	720
HE35	3/4	3	HE35	3-1/2	1080
HE40	3/4	3-1/2	HE40	4	1680
HE45	3/4	4	HE45	4-1/2	1680
HE50	3/4	4-1/2	HE50	5	2400
HE60	1	5-1/4	HE60	6	4200
HE70	1	6-1/4	HE70	7	6000
HE80	1-1/4	7	HE80	8	6000



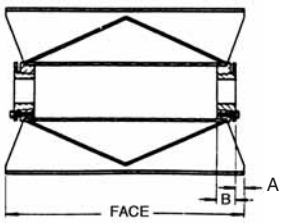
HE Heavy Duty Wing Pulley Part Numbers

		FACE WIDTH					
Dia.	Hub	20	26	32	38	44	51
8	HE25	206196	206199	206213	206214		
10	HE25	206200	206201	206202	206203	206253	207418
	HE30				207566	207567	207568
12	HE25	206205	206206	206207	206208	206210	206264
	HE30		206212	206374	206209	206211	206378
14	HE25		206216	206217	206218	206277	206278
	HE30		206387	206389	206392	206394	206395
16	HE25	206220	206221	206223	206225	206303	
	HE30		206222	206224	206226	206408	206410
	HE35				206227	206480	206482
18	HE25		206231	206233	206235	206320	
	HE30		206232	206234	206236	206423	
	HE35			207402	206485	206487	
	HE40				207569	207570	207571
20	HE25		206240	206242	206334	206336	
	HE30		206241	207407	206243	206437	
	HE35				206495	206497	206499
	HE40				207572	207408	207410
24	HE30		206447	206448	206245		
	HE35				206246	206247	
	HE40				206527	206528	206530

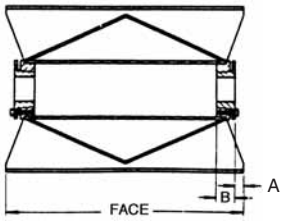
Note: All stock pulleys are crown face.

TAPER-LOCK Heavy Duty Wing Pulleys

- Flush mount, compact design mounting system
- Designed to CEMA specifications
- Standard crown face or straight face available
- Diameters to 60", face widths exceeding 78"
- Available with replaceable WING-LAG
- Available from stock



W16 through K50



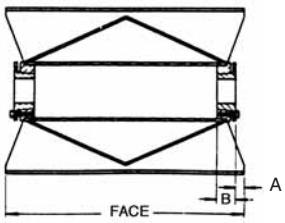
K60 through K80

TAPER-LOCK Dimensions

Hub	A	B	Bushing	Max. Bore	Screw Torque (in.-lb.)
W16	1-5/8	1-1/2	1615	1-5/8	175
W25	1-1/2	1-3/4	2517	2-1/2	430
K30	1-3/4	2	3020	3	1800
K35	2-3/4	3-1/2	3535	3-1/2	1000
K40	2-3/4	4	4040	4	1750
K45	2-5/8	4-1/2	4545	4-1/2	2450
K50	3-3/8	5	5050	5	3100
K60	3-3/8	5	6050	6	7820
K70	3-1/4	6	7060	7	7820
K80	3-1/4	6-1/2	8065	8	7820

QD Heavy Duty Wing Pulleys

- Flange mount bushing system
- Designed to CEMA specifications
- Standard crown face or straight face available
- Diameters to 60", face widths exceeding 78"
- Available with replaceable WING-LAG
- Available from stock



QD Dimensions

QD Hub	A	B	Bushing	Max. Bore	Screw Torque (in.-lb.)
SF	3/4	2-1/16	SF	2-7/16	360
E	7/8	2-3/4	E	3-7/16	720
F	15/16	3-3/4	F	3-15/16	900
JS	1-1/16	3-3/8	J	4-7/16	1620
MS	1-9/16	4-13/16	M	5-7/16	2700
NS	1-1/4	6	N	6	3600
PS	1	6-1/2	P	7	5400

SELECTION

DODGE®

Heavy Duty Wing Pulley Average Weights – HE, TAPER-LOCK and QD

Dia.	Max. Bore	Face Width									
		12	14	16	18	20	22	24	26	30	32
8	1.63	33	38	44	49	55	61	66	72	83	88
	2.5	37	42	46	51	55	60	64	68	77	82
10	1.63	49	58	66	74	82	90	99	107	123	132
	2.5	52	59	66	73	80	87	94	101	115	122
	3	66	72	79	85	92	98	105	112	125	131
12	1.63	59	69	78	88	97	107	117	126	146	156
	2.5	62	70	78	87	95	103	112	120	137	146
	3	75	83	91	99	107	115	123	131	147	155
	3.5	83	90	98	106	113	121	126	136	151	159
14	1.63	81	94	107	120	133	146	159	172	198	211
	2.5	83	94	106	117	129	140	152	164	187	199
	3	95	106	117	128	139	150	161	173	195	206
	3.5	102	112	123	133	144	155	165	176	197	208
	4	110	121	133	145	157	169	181	193	216	228
16	1.63	94	108	123	137	152	167	182	197	212	243
	2.5	96	108	121	135	148	161	174	188	215	228
	3	108	120	132	145	158	171	184	197	222	235
	3.5	115	126	138	150	163	175	187	199	224	237
	4	122	135	148	162	175	189	202	216	243	257
	4.5	...	148	162	175	189	203	217	231	259	273
18	2.5	109	123	138	152	167	182	197	212	243	258
	3	121	135	149	163	177	192	206	221	250	265
	3.5	128	141	154	168	182	196	210	224	252	266
	4	135	149	164	179	194	209	225	240	271	286
	45	...	162	177	192	208	224	239	255	286	302
	5	...	...	210	225	240	256	271	286	317	333
20	2.5	125	141	158	174	191	208	225	242	276	294
	3	137	153	169	185	201	217	234	250	284	301
	3.5	144	159	174	189	205	221	237	253	285	302
	4	151	167	184	200	217	235	252	269	304	322
	4.5	...	180	197	214	231	249	266	284	320	337
	5	...	...	210	225	240	256	271	286	317	333

- Crown face pulleys will be provided unless straight face is specified
- DODGE Heavy Duty wing Pulleys are designed to meet CEMA wing Pulley Specification 501.1–1988. They are not to be used with steel cable or other high modulus belting. They should not be used at belt speeds greater than 450 FPM.

Heavy Duty Wing Pulley Average Weights – HE, TAPER-LOCK and QD

Face Width										
36	**38**	**40**	**44**	**46**	**51**	**54**	**57**	**60**	**63**	**66**
99	105	110	121	127	141	149	157	166	174	182
91	95	126	139	145	160	169	178	188	197	206
148	157	165	181	190	210	223	235	248	260	272
136	143	177	194	202	224	237	250	263	276	289
145	151	178	194	202	222	234	245	257	269	281
175	185	195	214	224	248	263	278	292	307	322
163	171	206	227	237	262	277	292	308	323	338
171	179	208	227	236	260	274	288	302	316	330
174	182	239	260	271	298	b14	330	346	362	378
238	251	264	291	304	337	357	377	396	416	436
223	234	246	270	282	311	329	347	364	382	400
229	240	252	274	285	314	331	348	365	382	399
229	240	251	272	283	310	326	342	358	374	390
252	264	276	300	312	342	360	378	396	414	432
258	288	304	319	350	365	403	426	451	473	496
255	269	282	310	323	357	378	398	418	439	459
262	275	288	314	327	360	379	399	419	438	458
262	274	287	312	324	355	374	393	412	431	449
285	298	312	340	353	388	409	429	450	471	491
301	315	329	358	372	407	428	449	470	492	513
288	304	319	350	365	403	426	450	473	496	519
294	309	324	354	369	406	428	450	473	495	517
294	309	323	351	366	401	423	444	466	487	509
317	333	348	379	395	434	457	481	504	527	551
334	350	365	397	413	453	476	500	524	548	572
364	379	395	426	441	480	504	527	550	574	597
328	346	363	398	416	459	486	512	538	565	591
334	351	368	402	419	462	487	513	538	564	589
334	351	367	400	416	457	482	507	531	556	581
357	375	392	428	445	489	516	543	569	596	622
373	391	409	445	463	508	535	562	589	616	644
364	379	395	426	441	480	504	527	615	642	669

SELECTION

DODGE®

Heavy Duty Wing Pulley Average Weights – HE, TAPER-LOCK and QD

Dia.	Max. Bore	Face Width									
		12	14	16	18	20	22	24	26	30	32
24	2.5	175	198	220	243	267	290	314	337	385	409
	3	186	208	230	253	275	298	321	344	391	414
	3.5	192	213	234	256	278	300	322	345	390	412
	4	198	220	242	265	288	311	334	358	405	429
	4.5	...	232	254	277	300	324	347	371	419	443
	5	...	...	285	307	330	353	376	399	446	470
	6	...	...	...	375	397	419	442	464	510	533
30	2.5	281	318	354	391	429	466	504	542	618	656
	3	291	326	362	398	434	471	508	545	619	657
	3.5	295	329	363	398	434	469	505	541	614	650
	4	298	333	368	404	440	476	513	549	623	660
	4.5		343	378	414	450	486	523	559	633	670
	5	...	...	406	441	476	511	548	582	654	691
	6	...	...	...	503	537	571	605	640	709	744
	7	...	...		559	592	625	658	691	758	792
	8	...	...	...	...	630	663	697	731	800	834
36	3	452	510	568	627	686	745	804	864	984	1044
	3.5	453	509	566	623	680	738	795	854	970	1029
	4	453	509	566	623	680	738	796	854	971	1029
	4.5	...	517	547	630	686	744	801	859	975	1033
	5	...	...	596	651	706	762	817	874	987	1044
	6	...	...	...	705	758	812	866	920	1028	1083
	7	...	...	...	754	805	856	908	959	1064	1117
	8	...	...	...	...	830	881	932	983	1086	1138

- Crown face pulleys will be provided unless straight face is specified
- DODGE Heavy Duty wing Pulleys are designed to meet CEMA wing Pulley Specification 501.1–1988. They are not to be used with steel cable or other high modulus belting. They should not be used at belt speeds greater than 450 FPM.

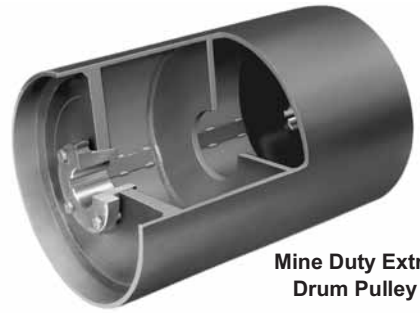
Heavy Duty Wing Pulley Average Weights – HE, TAPER-LOCK and QD

Face Width										
36	**38**	**40**	**44**	**46**	**51**	**54**	**57**	**60**	**63**	**66**
457	482	506	555	579	640	676	713	750	787	823
461	485	508	556	579	639	674	710	746	782	818
458	481	504	550	573	630	665	700	734	769	804
477	501	525	573	597	657	694	730	766	803	839
491	515	539	588	612	673	710	746	783	819	856
517	541	564	612	636	695	731	767	803	839	875
579	602	625	671	694	752	787	821	856	891	926
733	772	811	889	928	1025	1084	1142	1201	1260	1319
732	770	808	884	922	1017	1074	1132	1189	1247	1304
723	760	797	871	908	1001	1056	1112	1168	1224	1280
735	773	810	886	923	1018	1075	1132	1189	1246	1303
745	782	820	895	933	1028	1084	1141	1198	1255	1312
764	800	837	911	948	1040	1095	1151	1207	1262	1318
815	850	886	957	993	1082	1136	1190	1243	1297	1351
860	895	929	998	1032	1119	1170	1222	1274	1326	1378
904	939	974	1044	1079	1167	1220	1272	1325	1378	1431
1165	1225	1286	1408	1469	1621	1713	1805	1897	1989	2082
1147	1206	1265	1384	1443	1592	1682	1772	1861	1951	2041
1147	1207	1266	1385	1445	1594	1684	1774	1864	1954	2044
1150	1209	1268	1386	1446	1594	1683	1772	1862	1951	2041
1158	1215	1273	1388	1446	1590	1677	1764	1852	1939	2026
1193	1249	1304	1415	1471	1610	1694	1778	1862	1946	2031
1223	1276	1329	1436	1490	1624	1705	1786	1867	1948	2029
1243	1296	1349	1454	1508	1640	1720	1800	1880	1961	2041

SELECTION

DODGE®

Mine Duty Extra Drum & Wing Pulleys



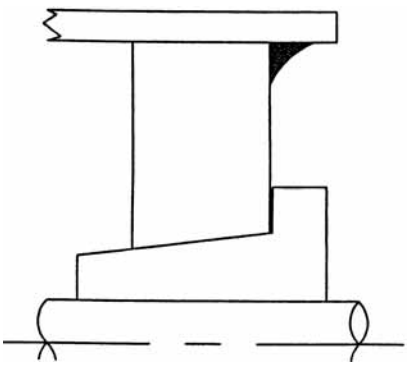
Mine Duty Extra Drum Pulley

- Greater capacity than standard mine duty pulleys
- Rigid duty construction
- Hub is integral to the end disc eliminating stresses at the hub weld
- Standard crown face or straight face available
- HE compression hubs
- Diameters to 60", face widths exceeding 78"
- Balanced design: all components have matched safety factors
- Available in spiral drum and wing pulley construction

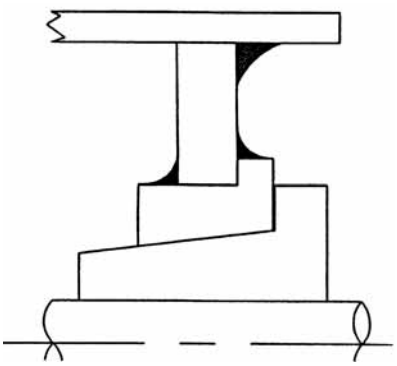
Mine Duty Extra Drum Pulley

Mine Duty Extra Wing Pulley

Mine Duty Pulley Types



Mine Duty Extra (Integral Hub Design)



Standard Mine Duty (Welded Design)

Spiral Wing Pulleys

Mine Duty Spiral Wing Pulley

- Self cleaning, maximizes belt life
- Diameters to 60”, face widths exceeding 78”

Shafting

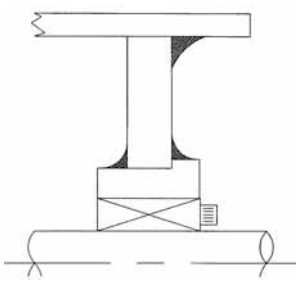
- Shafting up to 30” diameter, 22’ in length
- Precision machined, custom designed
- C1045 turned and polished through 5-15/16
- C1045 hot rolled 6” and above
- 4140 and stainless steel available upon request
- Available from stock for stock CEMA drum and wing pulleys
- Integrate shafting with other DODGE components
- Shafting available for non conveyor component applications

SELECTION

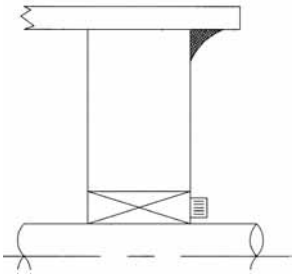
DODGE®

Engineered Class Pulleys

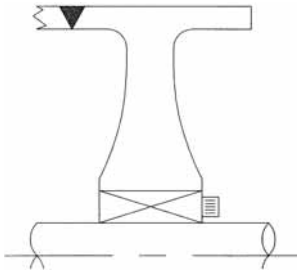
- Maximum strength and reliability
- Two year warranty
- Serialized nameplate
- Custom designed for specific applications
- Bore range exceeding 23”
- Integral hub design utilizing one of the styles shown below.



Welded Design



Integral Hub Design



T-Section Design

Super Pulleys

- Proven leader in design and manufacturing
- 400+ successful super pulley installations
- Dedicated manufacturing facility with complete in-house capabilities
- 60-step quality control process including complete weld inspection and test
- Finite element design
- Complete material certification
- Certified welding
- Technologically advanced lagging material

SELECTION

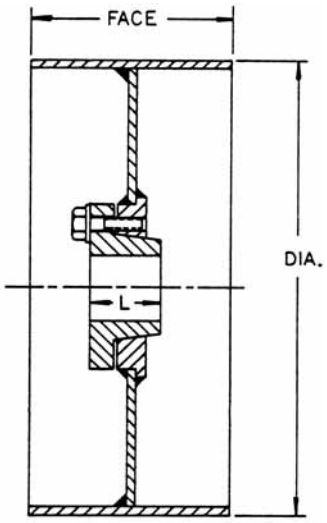
DODGE®

Dead Shaft Pulleys

- Compact design, used where space is critical
- Shaft diameters exceeding 7-1/2”
- Bearings are integral to the end disc allowing for shaft misalignment

Elevator Pulleys

- Heavy, all steel construction
- Economical alternative in narrow belt applications
- Standard crown face or available straight face
- HE compression hubs
- Diameters to 30”, face widths to 16”



Steel Split Pulleys

- Applied in narrow belt applications
- Die formed, riveted construction
- Provides the best possible weight to strength ratio
- Interchangeable bushings for bores from 3/4" to 3-1/2"
- Available from stock
- Max speed = 2500 ft/min
- Pulleys can be lagged with any standard lagging

Bore Size	L BUSHING P/N	Bushing Keyway	Shaft Keyway	Key Required	Bore Size	G BUSHING P/N	Bushing Keyway	Shaft Keyway	Key Required
3/4	**051009**	3/16 x 3/32	3/16 x 3/32	3/16 x 3/16	1-3/16	**051211**	1/4 x 1/8	1/4 x 1/8	1/4 x 1/4
1	**051020**	1/4 x 1/8	1/4 x 1/8	1/4 x 1/4	1-1/4	**051212**	1/4 x 1/8	1/4 x 1/8	1/4 x 1/8
1-3/16	**051016**	*	*	*	1-7/16	**051215**	3/8 x 1/8	3/8 x 3/16	3/8 x 5/16
	N BUSHING				1-1/2	**051216**	3/8 x 1/8	3/8 x 3/16	3/8 x 5/16
3/4	**051029**	3/16 x 3/32	3/16 x 3/32	3/16 x 3/16	1-11/16	**051219**	3/8 x 1/8	3/8 x 3/16	3/8 x 5/16
1	**051033**	1/4 x 1/8	1/4 x 1/8	1/4 x 1/4	1-15/16	**051223**	1/2 x 1/8	1/2 x 1/4	1/2 x 1/8
1-3/16	**051036**	1/4 x 1/8	1/4 x 1/8	1/4 x 1/4	2	**051224**	1/2 x 1/8	1/2 x 1/4	1/2 x 1/8
1-1/4	**051037**	1/4 x 1/8	1/4 x 1/8	1/4 x 1/4	2-3/16	**051227**	1/2 x 1/8	1/2 x 1/4	1/2 x 1/8
1-7/16	**051040**	3/8 x 1/8	3/8 x 1/16	3/8 x 5/8	2-7/16	**051231**	5/8 x 3/16	5/8 x 5/16	5/8 x 1/2
1-1/2	**051048**	3/8 x 1/8	3/8 x 1/16	3/8 x 5/16	2-15/16	**051250**	3/4 x 3/16	3/4 x 3/8	3/4 x 9/16
1-11/16	**051044**	*	*	*	3-7/16	**051247**	*	*	*
	SF BUSHING								
3/4	**051059**	3/16 x 3/32	3/16 x 3/32	3/16 x 3/16					
1	**051063**	1/4 x 1/8	1/4 x 1/8	1/4 x 1/4					
1-3/16	**051066**	1/4 x 1/8	1/4 x 1/8	1/4 x 1/4					
1-1/4	**051067**	1/4 x 1/8	1/4 x 1/8	1/4 x 1/4					
1-7/16	**051070**	3/8 x 1/8	3/8 x 1/16	3/8 x 5/16					
1-1/2	**051071**	3/8 x 1/8	3/8 x 1/16	3/8 x 5/16					
1-15/16	**051078**	1/2 x 1/8	1/2 x 1/8	1/2 x 3/8					
2-3/16	**051082**	*	*	*					

* Keyways are not available in these sizes.

Max bore does not use a bushing. Bushing can not be re-bored.

SELECTION/DIMENSIONS

DODGE®

Steel Split Pulleys

Face Width *	Part No.	Wt. Δ	Max. Bore	Overall Hub Length	Bushing Symbol ◊
3" Diameter					
3	**203005**	1.3	1-7/16	3	L
4	**203006**	1.4	1-7/16	3	L
5	**203007**	1.6	1-7/16	3	L
6	**203008**	1.7	1-7/16	3	L
4" Diameter					
3	**203015**	1.7	1-15/16	3	N
4	**203016**	2.4	1-15/16	3	N
5	**203017**	3.2	1-15/16	3	N
6	**203018**	5.6	1-15/16	3	N
5" Diameter					
3	**203025**	2.8	1-15/16		N
4	**203026**	3.0	1-15/16	3	N
5	**203027**	3.5	1-15/16	3	N
6	**203028**	6.3	1-15/16	3	N
6" Diameter					
2	**200001**	4.3	2-7/16	2-3/8	SF
3	**200002**	4.5	2-7/16	2-3/8	SF
4	**200003**	5.3	2-7/16	2-3/8	SF
5	**200004**	6.0	2-7/16	2-3/8	SF
6	**200005**	6.8	2-7/16	2-3/8	SF
8	**200006**	10	2-7/16	6-3/4	2-SF
10	**200007**	12	2-7/16	8-3/4	2-SF
12	**200008**	14	2-7/16	10-3/4	2-SF
7" Diameter					
3	**200010**	5.1	2-7/16	2-3/8	SF
4	**200011**	6.0	2-7/16	2-3/8	SF
5	**200012**	7.0	2-7/16	2-3/8	SF
6	**200013**	7.9	2-7/16	2-3/8	SF
8	**200014**	11	2-7/16	6-3/4	2-SF
10	**200015**	13	2-7/16	8-3/4	2-SF
12	**200016**	15	2-7/16	10-3/4	2-SF
8" Diameter					
2	**200017**	5.6	2-7/16	2-3/8	SF
3	**200018**	7.7	3-1/2	3-5/8	G
4	**200019**	8.5	3-1/2	3-5/8	G
5	**200020**	9.3	3-1/2	3-5/8	G
6	**200021**	9.9	3-1/2	3-5/8	G
8	**200022**	16	3-1/2	7-1/21	2-G
10	**200023**	17	3-1/2	9-1/2	2-G
12	**200024**	19	3-1/2	11-1/2	2-G
9" Diameter					
3	**200026**	8.9	3-1/2	3-5/8	G
4	**200027**	9.5	3-1/2	3-5/8	G
5	**200028**	11	3-1/2	3-5/8	G
6	**200029**	12	3-1/2	3-5/8	G
8	**200030**	18	3-1/2	7-1/2	2-G
10	**200031**	20	3-1/2	9-1/2	2-G
12	**200032**	22	3-1/2	11-1/2	2-G
10" Diameter					
3	**200034**	9.7	3-1/2	3-5/8	G
4	**200035**	9.5	3-1/2	3-5/8	G
5	**200036**	11	3-1/2	3-5/8	G
6	**200037**	12	3-1/2	3-5/8	G
8	**200038**	18	3-1/2	7-1/2	2-G
10	**200039**	20	3-1/2	9-1/2	2-G
12	**200040**	22	3-1/2	11-1/2	2-G
11" Diameter					
3	**200042**	11	3-1/2	3-5/8	G
4	**200043**	9.5	3-1/2	3-5/8	G
6	**200045**	12	3-1/2	3-5/8	G
12" Diameter					
3	**200050**	13	3-1/2	3-5/8	G
4	**200051**	14	3-1/2	3-5/8	G
5	**200052**	15	3-1/2	3-5/8	G
6	**200053**	17	3-1/2	3-5/8	G
8	**200054**	26	3-1/2	7-1/2	2-G
10	**200055**	29	3-1/2	9-1/2	2-G
12	**200056**	31	3-1/2	11-1/2	2-G
14" Diameter					
3	**200070**	14	3-1/2	3-5/8	G
4	**200071**	16	3-1/2	3-5/8	G
5	**200072**	18	3-1/2	3-5/8	G
6	**200073**	19	3-1/2	3-5/8	G
7	**200074**	30	3-1/2	7-1/2	2-G
10	**200075**	32	3-1/2	9-1/2	2-G
12	**200076**	36	3-1/2	11-1/2	2-G
16" Diameter					
3	**200088**	17	3-1/2	3-5/8	G
4	**200089**	18	3-1/2	3-5/8	G
5	**200090**	19	3-1/2	3-5/8	G
6	**200091**	21	3-1/2	3-5/8	G
8	**200092**	34	3-1/2	7-1/2	2-G
10	**200093**	37	3-1/2	9-1/2	2-G
12	**200094**	40	3-1/2	11-1/2	2-G
18" Diameter					
3	**200106**	18	3-1/2	3-5/8	G
4	**200107**	20	3-1/2	3-5/8	G
5	**200108**	22	3-1/2	3-5/8	G
6	**200109**	26	3-1/2	3-5/8	G
20" Diameter					
3	**200124**	20	3-1/2	3-5/8	G
4	**200125**	22	3-1/2	3-5/8	G
5	**200126**	24	3-1/2	3-5/8	G
6	**200127**	25	3-1/2	3-5/8	G

* Crown face will be furnished unless straight face is specifically ordered.

Δ Weight does not include weight of bushing.

◊ One bushing required per pulley except two required where figure 2 precedes bushing symbol.

Keyways – Pulleys are designed to transmit power by gripping the shaft, and the keyways are not ordinarily required. Bushings will not have a keyway unless requested.

Bushings

Bushing Symbol	Avg. Wt.	Max. Bore		Min. Bore	Out-side Diam.	Lgth.
		No Keyway Δ	With Key-way			
L	.4	1-3/16	1	3/4	1-7/16	3
N	1.0	1-11/16	1-1/2	3/4	1-15/16	3
SF	1.3	2-3/16	1-15/16	3/4	2-7/16	2-3/8
G	2.7	3-7/16	2-15/16	1-3/16	3-1/2	3/5/8

Overall Pulley Face Widths

Pulley Diam.	Overall Face Width for Various Nominal Face Widths Pulley								
	2	3	4	5	6	8	10	12	14
3	....	3-11/16	4-11/16	5-11/16	6-11/16	....	....	....	....
4	....	3-9/16	4-7/16	5-7/16	6-5/16	....	....	....	....
5	....	3-9/16	4-5/16	5-5/16	6-5/16	....	....	....	....
6-7	2-3/16	3-5/8	4-11/16	5-11/16	6-11/16	8-11/16	10-11/16	12-11/16	....
8-11	2-3/16	4	4-11/16	5-11/16	6-11/16	8-11/16	10-11/16	12-11/16	....
12-11	....	4	4-11/16	5-11/16	6-11/16	8-11/16	10-11/16	12-11/16	....
18-20	....	4	4-11/16	5-11/16	6-11/16	....	....	....	....

Δ Bushing will not have a keyway unless requested. Keys are not included in price. For quantity of bushings required per pulley and symbol of bushing see table above.

Conveyor Pulley Lagging

Diamond Grooved

- Increases belt tractions
- Eliminates rim wear due to abrasive conditions
- Promotes cleaning action
- 60 durometer hardness standard, 70 and 45 available on request

Lagging Styles

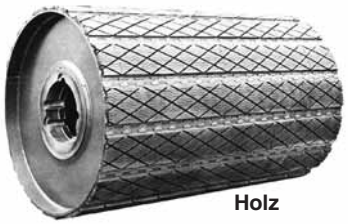
- Vulcanized: plain or grooved
- D-LAG: DODGE exclusive premium rubber polymer designed to maximize abrasion resistance
- Neoprene: flame retardant and oil resistant
- Tuff-Top: vulcanized with a rough top finish
- Holz: replaceable slide on lagging can be installed or replaced with pulley installed
- WING-LAG: replaceable high abrasion slide on wing pulley lagging
- Wing Pulleys can have vulcanized lagging
- Ceramic Lagging: For pulleys with slippage and high wear characteristics

Plain

D-LAG

Contact Bar

Slotted WING-LAG slides over contact bars



Holz

MODIFICATIONS/ ACCESSORIES

DODGE®

Lagging Weights

1/4" PLAIN VULCANIZED RUBBER LAGGING WEIGHTS

Pulley Dia.	Weights for Various Face Widths																			
	12	14	16	18	20	22	24	26	30	32	36	38	44	46	51	54	57	60	63	66
6	3	4	4	5	5	6	6	6	7	8	9	10	11	12	13	14	15	16	17	17
8	4	5	6	6	6	7	8	9	10	11	12	13	15	16	17	18	19	20	21	23
10	6	6	6	7	8	9	10	11	13	14	16	17	18	19	22	23	24	26	27	28
12	6	7	8	9	10	11	12	13	15	16	18	19	22	23	26	27	29	30	32	33
14	7	8	9	11	12	13	15	16	17	19	21	23	26	28	30	32	34	36	38	40
16	8	9	11	12	14	15	17	17	20	22	25	26	30	31	35	37	39	41	43	45
18	9	10	12	14	15	16	18	19	22	25	28	29	34	35	39	41	43	45	48	51
20	10	12	14	16	17	18	20	22	26	28	30	32	41	40	43	46	49	51	53	56
24	12	14	16	18	20	22	24	26	30	32	36	38	44	46	51	54	57	60	64	66
30	16	17	20	23	26	28	30	33	39	40	45	49	56	59	65	69	73	76	80	84
36	18	20	24	27	30	33	36	39	45	49	55	58	67	71	78	83	87	92	97	101
42	...	...	29	32	36	40	43	46	53	57	64	68	78	82	92	97	102	107	112	118
48	...	...	32	36	40	44	48	52	60	63	72	75	87	92	104	111	116	122	129	135
54	...	...	36	40	45	50	64	60	64	74	82	87	101	106	117	124	131	137	144	152
60	...	...	40	46	51	56	61	66	76	82	92	97	102	118	130	138	145	153	161	168

NOTE: For weights of other lagging, multiply weight given above by factors listed below.

3/8", 1/2" VULCANIZED RUBBER LAGGING WEIGHT FACTORS

Type	Weight Factor	Type	Weight Factor
3/8" Plain	1.49	3/8" Grooved	1.40
1/2" Plain	1.99	1/2" Grooved	1.89

See instructions in footnote above.

Lagging Comparison

Description	Compound	DURO	Abrasion Ranking	DIN Abrasion (mm^3)	Tensile (psi)	Elongation (%)
DODGE D-LAG	PROPRIETARY	65	173	117	2895	600
DODGE STD60	SBR	60	100	202	1660	380
DOSGE STD 70	SBR	70	146	138	2075	400
DODGE STD 45	SBR	45	51	393	1753	650
DODGE NEO60 (MSHA)	NEOPRENE	60	125	162	1425	350
DODGE NEO 70	NEOPRENE	70	166	122	1528	275

SLIDE LAG®

Exclusive elastomer compounding provides a lagging pad with exceptional drive-pulley traction, abrasion resistance and extra long service life. The elastomer retains its integrity under the most severe operating conditions.

Factory hot-vulcanization under pressure assures the best possible bond of rubber to backing plate. No lagging failures from loss of adhesion and separation-the most common problems associated with conventional lagging.

Steel backing plates are precision formed at the factory to fit the curved surface provided by each individual pulley diameter. Insures proper pad stability and long life.

Rust resistant metal retainers are permanently welded or bolted to the pulley face to securely hold the lagging pads in place. When properly installed, lagging cannot shift or pull free from the effects of impact, trapped material or belt or product movement.

Replaceable pads are designed to fit under the lips of the retainers, allowing the pads to slide in and out during installation. Slide Lag can be installed on conveyor systems without removing the pulleys from their operating positions.

Part Numbers for Style #5 Slide Lag

Part Number	Description
207349	6" Diameter Style 5
207325	8" Diameter Style 5
207326	10" Diameter Style 5
207327	12" Diameter Style 5
207328	14" Diameter Style 5
207329	16" Diameter Style 5
207330	18" Diameter Style 5
207331	20" Diameter Style 5
207332	24" Diameter Style 5
207333	30" Diameter Style 5
207334	36" Diameter Style 5

Other styles of Slide Lag are available upon request. DODGE conveyor pulleys can be readily obtained with Slide Lag pre-installed from the factory.

Ordering Slide Lag with Retainers

For the most common pulley sizes, select the number of 72" pads needed from the Table below.

PULLEY DIAMETER	PULLEY FACE WIDTH																				
		12"	14"	16"	18"	20"	22"	24"	26"	30"	32"	36"	38"	40"	44"	46"	51"	54"	60"	66"	72"
	6"	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3	3	3
	8"	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	3	4	4	4
	10"	1	1	2	2	2	2	2	2	3	3	3	3	3	4	4	4	4	5	5	5
	12"	1	2	2	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	6	6
	14"	2	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	6	6	7	7
	16"	2	2	2	2	3	3	3	3	4	4	4	5	5	5	6	6	6	7	8	8
	18"	2	2	2	3	3	3	3	4	4	4	5	5	5	6	6	7	7	8	9	9
	20"	2	2	3	3	3	4	4	4	5	5	5	6	6	7	7	8	8	9	10	10
	24"	2	3	3	3	4	4	4	5	5	6	6	7	7	8	8	9	9	10	11	12
	30"	3	3	4	4	5	5	5	6	7	7	8	8	9	10	10	11	12	13	14	15
	36"	3	4	4	5	5	6	6	7	8	8	9	10	10	11	12	13	14	15	17	18
	42"	4	5	5	6	6	7	7	8	9	10	11	12	12	13	14	15	16	18	20	21
	48"	4	5	6	6	7	8	8	9	10	11	12	13	14	15	16	17	18	20	22	24
	54"	5	6	6	7	8	9	9	10	12	12	14	15	15	17	18	20	21	23	25	27
	60"	5	6	7	8	9	10	10	11	13	14	15	16	17	19	20	22	23	25	28	30
	72"	6	7	8	9	10	11	12	13	15	16	18	19	20	22	23	26	27	30	33	36

MODIFICATIONS/ ACCESSORIES

DODGE®

WING-LAG™

A space age poly-elastomer that improves the performance of conventional wing pulleys. Designed to beat the heat or cold...oil, chemicals or abrasivies...for any tough conveyor operation where the job calls for lagged wing pulleys...WING-LAG will do the job better and last longer.

Tougher than rubber. WING-LAG will outlast rubber lagging 2-5 times.

Resists chemicals and abrasives. WING-LAG is not affected by most oils, hydraulic fluids, fuels, chemicals and abrasives.

Excellent temperature range. WING-LAG has an effective operating temperature range of -60 degrees F to +212 degrees F.

WING-LAG grips the wing pulley and stays in place as if it were glued. However, it requires no special metal channeling, retaining grooves or other designed-in retaining feature, therefore it goes on easily and removes easily.

Greater protection from foreign objects. Because of its tough composition, rocks, coal chunks and other debris trapped between the conveyor belt and the wing will simply be thrown out when the pulley has completed its turn.

Ordering WING-LAG

For the most common pulley sizes, select the number of the wings from the Table below. To calculate the number of 72" pieces needed, multiple the number of wings by the face width and divide by 72. Round the number of pieces up to the next largest number.

Diameter	Heavy Duty No. of Wings	Part Number	Mine Duty No. of Wings	Part Number
8	7	**207300**	7	**207301**
10	8	**207300**	8	**207301**
12	8	**207300**	10	**207301**
14	10	**207300**	10	**207301**
16	10	**207300**	10	**207301**
18	10	**207300**	12	**207301**
20	10	**207301**	12	**207301**
24	12	**207301**	14	**207301**
30	16	**207301**	16	**207301**
36	18	**207301**	18	**207301**
42	22	**207301**	22	**207301**
48	24	**207301**	24	**207301**
54	28	**207301**	28	**207301**
60	30	**207301**	30	**207301**

WING-LAG is available on standard or custom wing pulleys pre-installed at the factory or it can be retro-fit in the field. Either way a WING-LAG wing pulley will extend the life of conveyor belts and conventional wing pulleys under the most severe operating conditions.

Conveyor Pulley Assemblies

Drum Pulley Assembly

- Maximize return on investment
- Single source supplier, single source warranty
- Computer aided product selection
- No on-site component assembly
- Complete package of bearing and power transmission components

Engineered Class Pulley Assembly

Drum Pulley Assembly

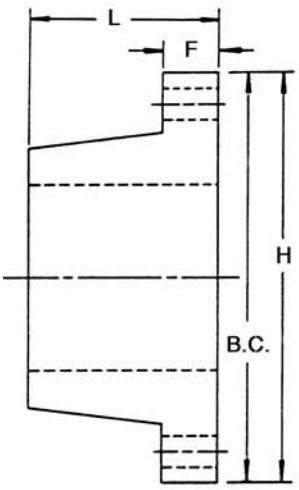
Wing Pulley Assembly

Spiral Wing Pulley Assembly

HE Bushings

HE BUSHING DIMENSIONS

Bushing	Maximum Bore (in.)	L (in.)	B.C. (in.)	F (in.)	H (in.)	Number of Bolts	Size of Bolts (in.)
HE-25	2-1/2	2-1/4	3-15/16	3/4	4-5/8	4	3/8-16 x 1-3/4
HE-30	3	2-3/4	4-11/16	7/8	5-5/8	4	1/2-13 x 2-1/4
HE-35	3-1/2	3	5-9/16	7/8	6-5/8	4	9/16-12 x 2-1/4
HE-40	4	3-1/2	6-5/16	1	7-1/2	4	5/8-11 x 2-1/2
HE-45	4-1/2	4	7-5/16	1-1/4	8-3/4	6	5/8-11 x 2-1/2
HE-50	5	4-1/2	8	1-1/2	9-5/8	6	3/4-10 x 3
HE-60	6	5-1/4	9-1/4	1-3/4	11-1/8	6	7/8-9 x 3-1/2
HE-70	7	6-1/4	10-9/16	2	12-3/4	6	1-8 x 4
HE-80	8	7	12-1/8	2-1/4	14-1/2	6	1-1/8-7 x 4-1/2
HE-100	10	9	14-1/2	3	17	6	1-1/4-7 x 5-1/2
HE-120	12	10	17-1/2	3	20	8	1-1/4-7 x 5-1/2



HE-25 to HE120

Wrench Torque

Bushing	Wrench Torque (ft.-lbs.)
HE-25	30
HE-30	60
HE-35	90
HE-40	140
HE-45	140
HE-50	200
HE-60	350
HE-70	500
HE-80	500
HE-100	600
HE-120	600

Details for TAPER-LOCK Bushings - See page PT6-2
Details for QD Bushings - See page PT6-15

HE Bushings

Bush. No.	Bore	Part No.	Wt.	Bushing Keyway	Shaft Keyway
HE-25	1	**206623**	4	1/4 x 1/8	1/4 x 1/8
	1-1/8	**206744**	3		
	1-3/16	**206615**	3		
	1-1/4	**206745**	3		
	1-5/16	**206747**	3	5/16 x 5/32	5/16 x 5/32
	1-3/8	**206748**	3		
	1-7/16	**206617**	3	3/8 x 3/16	3/8 x 3/16
	1-1/2	**206750**	3		
	1-11/16	**206752**	3		
	1-3/4	**206754**	3		
	1-13/16	**206756**	3	1/2 x 1/4	1/2 x 1/4
	1-7/8	**206758**	3		
	1-15/16	**206619**	3		
	2	**206760**	3		
	2-1/8	**205997**	3		
	2-3/16	**206763**	3		
	2-1/4	**206765**	3		
	2-5/16	**206767**	3	5/8 x 3/16▲	5/8 x 5/16
	2-3/8	**206768**	3		
	2-7/16	**206621**	3		
	2-1/2	**206770**	3		
HE-30	1-3/8	**206635**	6	5/16 x 5/32	5/16 x 5/32
	1-7/16	**206625**	6	3/8 x 3/16	3/8 x 3/16
	1-1/2	**206637**	6		
	1-11/16	**206639**	6		
	1-3/4	**206772**	6		
	1-15/16	**206627**	6	1/2 x 1/4	1/2 x 1/4
	2	**206774**	6		
	2-3/16	**206775**	6		
	2-7/16	**206629**	6	5/8 x 5/16	5/8 x 5/16
	2-1/2	**206777**	6		
	2-9/16	**206838**	6		
	2-11/16	**206631**	6		
	2-3/4	**206778**	5		
	2-13/16	**206779**	5	3/4 x 1/8▲	3/4 x 3/8
	2-7/8	**206780**	5		
	2-15/16	**206633**	6		
	3	**206781**	5		
HE-35	1-3/16	**206648**	8	1/4 x 1/8	1/4 x 1/8
	1-7/16	**206649**	8	3/8 x 3/16	3/8 x 3/16
	1-1/2	**206784**	8		
	1-11/16	**206786**	8		
	1-3/4	**206839**	9		
	1-15/16	**206640**	9	1/2 x 1/4	1/2 x 1/4
	2	**206788**	8		
	2-3/16	**206790**	8		
	2-1/4	**206792**	8		
	2-3/8	**206794**	8	5/8 x 5/16	5/8 x 5/16
	2-7/16	**206642**	8		
	2-1/2	**206795**	8		
	2-11/16	**206796**	8		
	2-3/4	**206798**	8		
	2-7/8	**206800**	8	3/4 x 3/8	3/4 x 3/8
	2-15/16	**206644**	8		
	3	**206801**	8		
	3-3/16	**206803**	8		
	3-3/8	**206840**	8	7/8 x 3/16▲	7/8 x 7/16
	3-7/16	**206646**	8		
	3-1/2	**206807**	8		
HE-40	1-15/16	**206658**	13	1/2 x 1/4	1/2 x 1/4
	2-3/16	**206659**	13		
	2-7/16	**206810**	13	5/8 x 5/16	5/8 x 5/16
	2-1/2	**206811**	13		
	2-11/16	**206650**	13		
	2-15/16	**206652**	13	3/4 x 3/8	3/4 x 3/8
	3-3/16	**206812**	13		
	3-11/16	**206813**	13	7/8 x 7/16	7/8 x 7/16
	3-7/16	**206654**	13		
	3-7/8	**206841**	21	1 x 1/4▲	1 x 1/2
	3-15/16	**206656**	13		
	4	**206815**	12		

Bush. No.	Bore	Part No.	Wt.	Bushing Keyway	Shaft Keyway
HE-45	1-15/16	**206670**	22	1/2 x 1/4	1/2 x 1/4
	2-7/16	**206660**	22	5/8 x 5/16	5/8 x 5/16
	2-15/16	**206662**	22	3/4 x 3/8	3/4 x 3/8
	3-7/16	**206664**	22	7/8 x 7/16	7/8 x 7/16
	3-1/2	**206671**	22		
	3-15/16	**206666**	21	1 x 1/2	1 x 1/2
	4-3/16	**206672**	21	1 x 1/4▲	1 x 1/2
	4-7/16	**206668**	21		
	4-1/2	**206673**	21		
HE-50	2-15/16	**207998**		7/8 x 7/16	7/8 x 7/16
	3-7/16	**206817**	30		
	3-15/16	**206818**	40	1 x 1/2	1 x 1/2
	4-7/16	**206675**	35		
	4-15/16	**206677**	29	1-1/4 x 1/4▲	1-1/4 x 5/8
	5	**206821**	23		
HE-60	3-15/16	**206686**	50	1 x 1/2	1 x 1/2
	4-1/4	**206687**	47		
	4-7/16	**206688**	65		
	4-15/16	**206680**	50	1-1/4 x 5/8	1-1/4 x 5/8
	5-7/16	**206682**	49		
	5-1/2	**206823**	40		
	5-15/16	**206684**	49	1-1/2 x 1/4▲	1-1/2 x 3/4
	6	**206825**	38		
HE-70	5-15/16	**206690**	72	1-1/2 x 3/4	1-1/2 x 3/4
	6	**207396**	71		
	6-7/16	**206692**	71		
	6-1/2	**206845**	71		
	6-15/16	**206694**	69	1-3/4 x 1/4▲	1-3/4 x 3/4
	7	**206847**	69		
HE-80	6-7/16	**206700**	111	1-1/2 x 3/4	1-1/2 x 3/4
	7-1/2	**206849**	105	1-3/4 x 3/4	1-3/4 x 3/4
	6-15/16	**206702**	108		
	7-7/16	**206704**	105		
	7-15/16	**206706**	102	2 x 3/4	2 x 3/4
	8	**206708**	100		
HE-100	7-1/2	**206710**	200	1-3/4 x 3/4	1-3/4 x 3/4
	7-15/16	**206712**	198	2 x 3/4	2 x 3/4
	8	**206718**	195		
	8-1/2	**206720**	193		
	8-15/16	**206714**	196		
	9	**206722**	191		
	9-1/2	**206724**	189	2-1/2 x 7/8	2-1/2 x 7/8
	10	**206716**	190		
HE-120	8-1/2	**207380**	415	2 x 3/4	2 x 3/4
	9	**207382**	395		
	9-1/2	**207384**	375	2-1/2 x 7/8	2-1/2 x 7/8
	10	**207386**	353		
	10-1/2	**207388**	330		
	11	**207390**	308		
	11-1/2	**207392**	285	3 x 1	3 x 1
	12	**207394**	261		

▲ Keys Furnished For These Sizes Only

Reborable HE Bushings

Bushing	Part Number	Minimum Bore	Inch		Metric	
			Maximum Bore (in.) Sq. Key	Maximum Bore (in.) Shallow Key	Minimum Bore (mm)	Maximum Bore (mm)
HE25	**207960**	15/16	2-1/4	2-1/2	24	60
HE30	**207961**	15/16	2-3/4	3	24	75
HE35	**207962**	1-3/16	3-1/4	3-1/2	32	85
HE40	**207963**	1-15/16	3-3/4	4	50	100
HE45	**230794**	1-15/16	3-15/16	4-1/2	50	110
HE50	**207965**	2-15/16	4-1/2	5	75	125
HE60	**207966**	3-7/16	5-1/2	6	90	150
HE70	**207967**	4-7/16	6-1/2	7	120	170
HE80	**207968**	5-7/16	8	-	140	200
HE100	**207969**	6-15/16	10	-	180	250
HE120	**207970**	7-15/16	12	-	220	300

Keyless Locking Assemblies

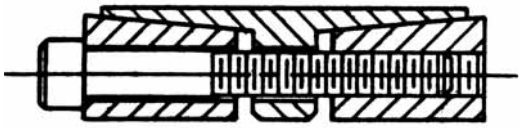
The DODGE Pulley Pros have been designing and fabricating special pulleys with Keyless Locking Assemblies for over 30 years. Hubs are computer designed for use with single or dual locking assemblies.

Keyless locking assemblies are available in two basic configurations – short series and long series. Long series locking assemblies feature a longer length thru bore with a corresponding increase in contact area between the locking assembly and the shaft and hub.

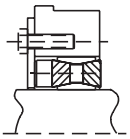
Most conveyor pulley applications require only one short series locking assembly in each pulley hub to transmit the bending and torsional moments. Heavier loaded pulleys require long series or dual short series locking assemblies to transmit increased loads. The DODGE Pulley Pros have the experience and expertise to determine the best keyless locking assembly configuration for any application.

DODGE Keyless Locking Assemblies are self-contained, high torque capacity, shaft-hub locking devices. They provide many features and benefits to conveyor pulley assemblies, including no keyway stress concentration, no axial movement during assembly, high torque capacity, and easy assembly and disassembly. The locking assembly design includes concentric, tapered rings. As the locking screws are torqued, the locking assembly clamps down on the shaft and expands into the hub bore, establishing a tight mechanical shrink fit.

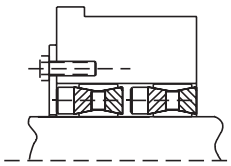
Short Series Locking Assembly



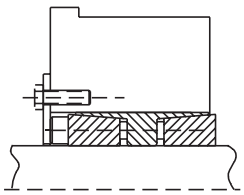
Long Series Locking Assembly



Short Series



Duplex Series
Locking Assembly



Long Series
Locking Assembly

Available in Weld On Hub, Integral Hub or T-Section. See Page PT13-30.

Horsepower and Belt Tension for Simple Conveyors *

Horsepower

The horsepower required to operate a belt conveyor depends on the following:

1. Maximum tonnage to be handled
2. Length of the conveyor
3. Vertical lift of the conveyor

To determine horsepower required for a horizontal conveyor, use Table 1 only.

To determine horsepower required for an inclined conveyor, use Table 1 and Table 2. Figure each table separately and sum the results to determine total horsepower required.

Note: Other factors, such as conveyor plows, scrappers, and skirt boards over 12 feet, will require additional factors for horsepower. See conveyor design program or call conveyor component engineering for assistance.

Table 1 – HP Required to Operate Loaded Conveyor on the Level

Length of Conveyor in feet	Short Tons Per Hour (2000 lbs.)												
	100	150	200	250	300	350	400	500	600	700	800	900	1000
25	2.0	2.3	2.5	2.7	3.0	3.3	3.5	4.0	4.5	5.0	5.5	6.0	6.5
50	2.4	2.7	3.0	3.3	3.6	3.9	4.2	4.8	5.4	6.0	6.6	7.2	7.8
75	2.8	3.1	3.5	3.8	4.1	4.5	4.8	5.5	6.2	6.9	7.6	8.3	9.0
100	3.0	3.4	3.8	4.2	4.5	4.9	5.3	6.0	6.8	7.5	8.3	9.0	9.8
125	3.4	3.8	4.2	4.6	5.0	5.4	5.8	6.6	7.4	8.2	9.0	9.8	10.6
150	3.7	4.1	4.6	5.0	5.5	5.9	6.3	7.2	8.1	9.0	9.9	10.8	11.5
175	4.0	4.5	5.0	5.5	6.0	6.5	7.0	8.0	9.0	10.0	11.0	12.0	13.0
200	4.3	4.8	5.3	5.8	6.4	7.0	7.5	8.6	9.7	10.8	11.9	13.0	14.1
225	4.6	5.1	5.7	6.2	6.8	7.3	8.0	9.2	10.4	11.6	12.8	14.0	15.2
250	4.9	5.5	6.2	6.8	7.5	8.0	8.8	10.1	11.4	12.7	14.0	15.3	16.6
300	5.6	6.2	7.0	7.6	8.4	9.0	9.8	11.2	12.6	14.0	15.4	16.8	18.2
350	6.2	6.9	7.7	8.4	9.2	10.0	10.7	12.2	13.7	15.2	16.7	18.2	19.7
400	6.8	7.6	8.5	9.2	10.2	11.0	11.9	13.6	15.3	17.0	18.7	20.4	22.1
450	7.3	8.3	9.2	10.2	11.1	12.0	13.0	14.9	16.8	18.7	20.6	22.5	24.4
500	8.0	9.0	10.1	11.1	12.2	13.2	14.3	16.4	18.5	20.6	22.7	24.8	26.9

Table 2 – HP Required to Lift Load on Belt Conveyor

Lift in Feet	Short Tons Per Hour (2000 lbs.)												
	100	150	200	250	300	350	400	500	600	700	800	900	1000
10	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0
20	2.0	3.0	4.0	5.0	6.0	7.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
30	3.0	4.5	6.0	7.5	9.0	10.5	12.0	15.0	18.0	21.0	24.0	27.0	30.0
40	4.0	6.0	8.0	10.0	12.0	14.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0
50	5.0	7.5	10.0	12.5	15.0	17.5	20.0	25.0	30.0	35.0	40.0	45.0	50.0
60	6.0	9.0	12.0	15.0	18.0	21.0	24.0	30.0	36.0	42.0	48.0	54.0	60.0
70	7.0	10.5	14.0	17.5	21.0	24.5	28.0	35.0	42.0	49.0	56.0	63.0	70.0
80	8.0	12.0	16.0	20.0	24.0	28.0	32.0	40.0	48.0	56.0	64.0	72.0	80.0
90	9.0	13.5	18.0	22.5	27.0	31.5	36.0	45.0	54.0	63.0	72.0	81.0	90.0
100	10.0	15.0	20.0	25.0	30.0	35.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0

Belt Tension:

The belt tensions developed in a belt conveyor depend on the following:

1. Motor horsepower
2. Belt speed in feet per minute
3. Drive configuration

To determine tight side (T_1) and slack side (T_2) operating tensions, first determine the effective tension (difference between T_1 and T_2) from: Te = 33,000 x HP/FPM

Where: Te = Effective tension
HP = Motor horsepower
FPM = Belt speed

The slack side belt tension is calculated from Te and the drive factor Cw (from Table 7) by: T_2 = Te x Cw

Where: T_2 = Slack side tension
Te = Effective tension
Cw = Drive factor from Table 7

Table 7 – Drive Factor

Type of pulley drive	0 Wrap	Automatic takeup		Manual takeup	
		Bare Pulley	Lagged Pulley	Bare Pulley	Lagged Pulley
Single no snub	180°	0.84	0.50	1.2	0.8
Single with snub	200°	0.72	0.42	1.0	0.7
	210°	0.66	0.38	1.0	0.7
	220°	0.62	0.35	0.9	0.6
	240°	0.54	0.30	0.8	0.6

The tight side tension is calculated from Te and T_2 by:

$T_1 = Te + T_2$

Where: T_1 = Tight side tension
Te = Effective tension
T_2 = Slack side tension

Example: Horsepower and Tension calculation

Calculate horsepower and belt tensions for a conveyor given:

1. Capacity of 300 tons per hour
2. 300 ft. conveyor length
3. 20 ft. conveyor lift
4. Belt speed of 450 feet per minute
5. Screw take-up system
6. 180° arc of contact on drive pulley
7. Lagged drive pulley

Horsepower:

From Table 5 the horsepower required to operate the belt on the level is 8.4. From Table 6 the horsepower required for lift is 6.0. The total horsepower required is 8.4 + 6.0 = 14.4. (A 15 HP motor would be selected.)

Tension:

First calculate effective tension from:

$$Te = \frac{33000 \times HP}{FPM} \qquad Te = \frac{33000 \times 15}{450} = 1100 \text{ lbs.}$$

Calculate T_2 from Te and drive factor Cw (From Table 7 Cw = .8)

T_2=Cw x Te T_2=.8 x 1100 = 880 lbs.

Finally calculate T_1 from T_2 and Te

T_1=T_2+Te T_1=880+1100=1980 lbs.

* These calculations are limited to level or uphill conveyors with single drive pulley and a maximum length of 500 ft. For other systems, consult DODGE.

NOTES