# ENGINEERING MANUAL

Superior V-Guided Belt Tracking 24VDC iDrive v2 Technology Fast & Simple to Use Online Configurator Affortable Precision Conveyors



# **DCMOVE** BELTED SERIES

Heavy Duty, Painted Steel Construction Fabric Belt Conveyors



# **INDUSTRY LEADING TECHNOLOGY**



### **End Drive**

 Provides cost effective package handling, widths 254 mm (10 in) to 1219 mm (48 in) with 76 mm (3 in) diameter rollers



### **Nose Bar**

• 32mm (1-1/4 in) bar option; ideal for accurate package transfer



### **Flush Side Frames**

 All bearings and components located inside conveyor frame for flat sided tails that fit in tight spaces



## **iDRIVE**

 The industry's most compact internal drive for 24/7 operation in conveyors as narrow as 254 mm (10 in) wide



### **Center Drive**

 Provides longer length of conveyor up to 30,000 mm (98 ft)



# **V-Guided Belt Tracking**

 Superior V-guided belting eliminates the need for tracking adjustments

# The Benefits of a Dorner DCMove Material Handling Conveyor

#### Low Maintenance

- Dorner's industry best V-guiding provides positive belt tracking, even under demanding side load applications
- · Painted steel construction for most cost competitive package movement
- · Precise rack and pinion belt tensioning
- Sealed for life bearings

#### **Time Saving**

- · Dorner's online configurator engineers simple or complex conveyors to meet your needs in minutes
- The industry leading tool delivers a complete 3D CAD assembly model for instant validation of fit
- · Dorner provides the industry's fastest deliveries



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# **BELTED CONVEYOR FEATURES**



# iDRIVE V2 CONTINUOUS DUTY 24VDC MOTORS

MOST COMPACT CONVEYOR DRIVE PACKAGE. INTERNAL GEARMOTOR ALLOWS THE CONVEYOR TO FIT IN TIGHT SPACES

### BELTING CONFIGURATION FLEXIBILITY

1. 1

ALLOWS CONVEYOR CONFIGURATION TO MEET A VARIETY OF APPLICATIONS

BLACK POWDER PAINT STEEL CONSTRUCTION PROVIDES DURABILITY & RIGIDITY TO THE CONVEYOR FRAME

## V-GROOVED ROLLER & V-GUIDED BELTS PROVIDES MAINTENANCE-

FREE BELT TRACKING EVEN ON DEMANDING SIDE TRANSFER APPLICATIONS

### **eDRIVE**<sup>®</sup>

LOW INERTIA MOTOR OPTION WITH ALUMINUM BODY PROVIDES LOW TEMPERATURE IN A SMALL PACKAGE

## CENTER DRIVE CONFIGURATION

RELOCATES THE MOTOR TO THE CENTER OF THE CONVEYOR FREEING UP BOTH ENDS OF THE CONVEYOR, AND ALLOWS FOR LONGER LENGTHS



FLUSH TAIL DESIGN DESIGNED WITH SEALED GREASE FOR LIFE BEARINGS MOUNTED INTERNALLY TO MINIMIZE CONVEYOR PROFILE AND ALLOW CONVEYOR TO FIT IN TIGHT SPACES



# **BELTED CONVEYOR FEATURES**





#### VARIETY OF PRODUCT GUIDING ALLOWS CONVEYOR TO MEET AN ASSORTMENT OF PRODUCTS

RACK AND PINION BELT TENSIONING SYSTEM STANDARD TENSIONING SYSTEM

PROVIDES QUICK AND ACCURATE BELT TENSIONING

# FLEXIBLE FLUSH SIDE DESIGN

FRAME SIDES COMES WITH SLOT HOLES FOR ACCESSORY MOUNTING, AND NO PROTRUDING HARDWARE FOR SNAG-FREE COMPACT PROFILE THAT FITS IN TIGHT SPACES

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## ACCURATE TIGHT-FITTING, NO GAP DESIGN

PROVIDES SNAG-FREE CONVEYOR, PRODUCTS WILL NOT FALL IN GAPS AND PROVIDES AN OPERATOR SAFE CONVEYOR



### **NOSEBAR TAIL OPTIONS**

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V-GUIDED, 32MM (1-1/4") NOSEBAR PROVIDES MEANS OF ACCURATELY HANDLING SMALL PACKAGES THROUGH TRANSFERS



5)



### Specifications

- Loads up to 181 kg (400 lbs)\*
- Belt speeds up to 183 m/min (600 ft/min)
- Belt widths: 254 to 1,219 mm (10 to 48 in)
- Conveyor lengths: 960 to 12,000 mm (38 in to 40 ft)
- 33 mm (1.30 in) of belt take-up on conveyors
- 76 mm (3 in) diameter drive pulley turns approximately 246 mm (9.7 in) of belt per revolution
- V-groove bedplate with guided belt provides positive belt tracking, even under demanding side load applications
- Belt take-up indicator allows for quick reading of remaining belt life



STANDARD FEATURE: Cam Belt Tracking Accurate cam tracking for adjusting non V-Guided belts.



OPTIONAL: Auxiliary Shaft Ideal for mounting external devices.



OPTIONAL: Nose Bar Tail Includes sealed bearings, 32 mm (1.25 in) diameter rollers and is available at idler end for small part transfers.



#### STANDARD FEATURE: Rack and Pinion

Allows the tail section to be easily slid back for quick belt removal.



\* Conveyor load capacity depends on conveyor size, incline, motor position, accumulated loads and other factors.

Order gearmotor mounting packages and gearmotors separately, see pages 21-32. For support stands and accessories, see page 37.



# **FLAT BELT END DRIVE**

Position A

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#### 1219 mm (48 in) R17 mm R0.69 in] Since belts are being pulled, positions A & D are preferred. Pushing belts (B & C) reduce con-veyor load capacity by approximately 66%. 1219 12,000 mm (39.3 ft) **Drive Shaft Position** 1118 mm 1168 mm (44 in) (46 in) ပ ရ 12000 1168 **Optional Nose Bar Transfer** W+15 mm [0.58 in] [3.15 in] 80 mm 1118 ≷ | 0 . 0 - **6**4 1067 mm (42 in) 1067 ľ ł [8.08 in] 205 mm 1016 mm . (40 in) W = Conveyor Belt Width Dim = mm (in) 1016 965 mm (38 in) 965 [2.32 in] 59 mm 914 mm (36 in) [R1.58 in] R40 mm 914 864 mm (34 in) 864 ≥ 56 mm [2.21 in] 762 mm 813 mm 1 (30 in) (32 in) 5 mm (0.19 in) Increments up to ... 0 813 00005 Increments up to ... Position D • • • • • with 6 mm [0.24 in] Keyway 762 20 mm [0.79 in] Shaft 207 mm [8.16 in] I 660 mm 711 mm 7 (26 in) (28 in) 71 660 559 mm 610 mm 6 (22 in) (24 in) • 610 • 0 559 FLOW 508 mm (20 in) 508 ۰ 0 457 mm (18 in) • 0 457 406 mm (16 in) ۰ 406 220 mm [8.67 in] 356 mm (14 in) ۰ 356 960 mm (3.1 ft) 305 mm 3 (12 in) 09600 305 254 mm 3 (10 in) ė 254 Standard Sizes N+29 mm **Conveyor Length** [1.17 in] **Conveyor Width** 96 mm [3.79 in] **Conveyor Belt** Reference Width (W) Reference Length (L) Conveyor

NOTE: Conveyor longer than 2,985 mm (10 ft) will be constructed using a multiple piece frame. Consult factory for locations. NOTE: Conveyors wider than 1016 mm (40 in) require v-guide belt tracking.



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### Specifications

- Loads up to 455 kg (1,000 lbs)\*
- Belt speeds up to 183 m/min (600 ft/min)
- Belt widths: 254 to 1,219 mm (10 to 48 in)
- Conveyor lengths: 1,510 to 30,000 mm (60 in to 99 ft)
- 406 mm (16 in) of belt take-up
- 152 mm (6 in) diameter drive pulley turns approximately 479 mm (18.8 in) of belt per revolution
- Center drive module frees up both ends of conveyor for operator and machine interface
- The center drive module can be easily repositioned along the length of the conveyor, in increments of 450mm depending on conveyor length . Consult factory for exact location



STANDARD FEATURE: Cam Belt Tracking

Accurate cam tracking for adjusting non V-Guided belts.



**OPTIONAL:** Spring Belt Take-up Provides automatic belt take-up without the need for shop air.



OPTIONAL: Nose Bar Tail Includes sealed bearings, 32 mm (1.25 in) diameter rollers and is available at both ends for small part transfers.



\* Conveyor load capacity depends on conveyor size, incline, motor position, accumulated loads and other factors.

Order gearmotor mounting packages and gearmotors separately, see pages 21-32. For support stands and accessories, see page 37.



# **FLAT BELT CENTER DRIVE**

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NOTE: Conveyor longer than 2,985 mm (10 ft) will be constructed using a multiple piece frame. Consult factory for locations. NOTE: Conveyors wider than 1016 mm (40 in) require v-guide belt tracking.



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#### **Specifications**

- Belt widths: 254 to 914 mm (10 to 36 in)
- Conveyor lengths: 1,010 to 3,022 mm (40 in to 10 ft)
- Conveyor load capacity (non-accumulated, distributed load):
   Single 24VDC brushless motor; 5 gear ratios to select from
  - from 1 m/min (3.3 ft/min) to 37.9 m/min (124 ft/min)
  - up to load of 68 Kg (150 lbs)
  - Dual 24VDC brushless motors; 7 gear ratios to select from
  - from 0.8 m/min (2.6 ft/min) to 45.8 m/min (150 ft/min)
     up to load of 80 Kg (176 lbs)
- Indexing capable: Up to 30 indexes per minute
- Duty cycle: continuous rated
- Built-In / fixed acceleration and deceleration
- iDrive v2 control models:
  - Integrated forward/ off / reverse switch, variable toggle switch, and optional 115V 1 Ph input power supply
  - User controlled direction and speed via remote location, and optional 115V 1 Ph input power supply
  - Controller only to be integrated in central panel, motor leads can be purchased separately. Maximum motor lead distance can not exceed 3m (9.8 ft)
- · V-guided belts for maintenance free belt tracking
- Maintenance free sealed bearings
- Grease filled, sealed for life gear boxes
- Maintenance free brushless DC Motor

#### OPTIONAL: Dual iDrive v2

Provides added capacity with synchronized motors, driven by one controller.



For support stands and accessories, see pages 37-38.



# **iDRIVE**



### DCMove BELTED SERIES

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#### Specifications

- Belt widths: 254 to 914 mm (10 to 36 in)
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OPTIONAL: Dual iDrive v2 Provides added capacity with synchronized motors, driven by one controller.



#### For support stands and accessories, see pages 37-38.





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#### DCMove BELTED SERIES



### Specifications

- Loads up to 181 kg (400 lbs)\*
- Belt speeds up to 183 m/min (600 ft/min)
- Belt widths: 254 to 1,219 mm (10 to 48 in)
- Conveyor lengths: 960 to 12,000 mm (38 in to 40 ft)
- · Cleats available from 6 to 150 mm (0.24 to 5.9 in) high
- 51 mm (2 in) minimum cleat spacing
- 33 mm (1.30 in) of belt take-up on conveyors
- 76 mm (3 in) diameter drive pulley turns approximately 246 mm (9.7 in) of belt per revolution



**OPTIONAL:** Auxiliary Shaft Ideal for mounting external devices.



#### STANDARD FEATURE: Rack and Pinion Allows the tail section to be easily slid back for quick belt removal.



\* Conveyor load capacity depends on conveyor size, incline, motor position, accumulated loads and other factors.

Order gearmotor mounting packages and gearmotors separately, see pages 21-32. For support stands and accessories, see page 37.



# **CLEATED BELT END DRIVE**

# **DCMove** BELTED SERIES



# **FLAT BELT PROFILES**





Profile 03 75 mm (3.00 in) High Side Profile 06 150 mm (6.00 in) High Side



Profile 14 Tool-less Adjustable Guiding 33 mm [1.30 in] HDPE Face



Profile 44 Tool-less Adjustable Guiding Aluminum Face

**02 Guide** 25 mm (1 in) High Side



**14 & 06 Guide** Combination of Tool-less Adjustable Guiding and 150 mm (6.00 in) High Side

Due to the wide variety of drive set ups and applications, point of installation guarding is the responsibility of the end user.



# **CLEATED BELT PROFILE**





Dimensions = mm (in)



**3 Guide** 75 mm (3.00 in) High Side





### **Standard Belt Selection Guide**

Standard belt material is stocked at Dorner, then cut & spliced at the factory for fast conveyor shipment.

Belt Type - Finger Splice	Belt Type - Plastic Clipper	Belt Type - Metal Clipper	Belt Specifications	Thickness	Surface Material	Carcass Material	Maximum Part Temperature	Coefficient of Friction	FDA Approved	Anti-Static	ESD	Chemical Resistance	Special Characteristics or Applications
01	A1	1A	FDA Accumulation	1.7 (0.067)	Urethane	Polyester	212°F (100°C)	Low	x	х		Good	Packaging, clean room and inspection
02	A2	2A	General Purpose	1.8 (0.071)	Urethane	Polyester	212°F (100°C)	Med	x	х		Good	Most versatile belt offering
03	A3	3A	FDA High Friction	1.7 (0.067)	Urethane	Polyester	212°F (100°C)	High	x	х		Good	Packaging, clean room and inspection
05	A5	5A	Accumulation	1.2 (0.047)	Urethane	Polyester	212°F (100°C)	V-Low	x	х		Good	Accumulation of products
06	A6	6A	Static Dissipative	1.6 (0.063)	Urethane	Polyester	176°F (80°C)	Low		х	x	Good	Electronics Handling
08	<b>A</b> 8	8A	High Friction	2.1 (0.083)	PVC	Polyester	158°F (70°C)	V-High		х		Poor	Conveys up to 35° inclines*

Dim = mm (in)

Note: See below for splice details. Plastic Clipper splice requires longer lead times. Clipper splice not available on Z-Frame Series Conveyors. Note: Conveyors wider than 40" (1,016 mm) require V-Guide belt tracking

Note: Belts with V-guiding may have a slight high spot or rib on the top surface. This rib would run longitudinally along the center of the belt. Consult factory with applications for which this may cause interference.

\*Incline varies due to factors like dust, fluids and part material.

# **BELT SPLICING**



#### **Finger Splice**

All belts are available with a standard Thermoformed finger splice. This splice makes the belt continuous and is virtually undetectable. Splice bonding methods vary by belt type. Consult factory for details.



**Plastic Clipper\*\*** An optional plastic clipper splice is available for quick removal of belts or when conveyors are installed in tight spaces.



Metal Clipper\*\* An optional metal clipper splice is also available for quick removal of belts or when conveyors are installed in tight spaces.

\*\* See belt charts for compatibility. Not for use with DCMove Nose Bar Transfer option. Plastic and Metal Clippers are slightly thicker than base belt. Contact factory for details.



# **SPECIALTY BELTING**



#### Specialty belt material is not stocked at Dorner and needs Specialty Belt Selection Guide to be custom ordered for your special conveyor needs. Part Temperature 32 mm (1-1/4 in) Nose Bar Belt Type - Plastic Clipper **Belt Type - Finger Splice** Special Characteristics or Applications - Metal Clipper **Belt Specifications** Coefficient of Friction **Chemical Resistance** Static Conductive Surface Material **Belt Thickness** FDA Approved V-Guideable Anti-Static Type Aaximum Belt Material Handling High Х PVC 18 **R**8 8**R** 2.0 (0.08) 158°F (70°C) High Х Poor High friction, general product handling Friction 356°F (180°C) 50 Heat Resistant Х 1.3 (0.05) Silicone Low Х V-Good High temperature 51 Heat Resistant Mesh 1.2 (0.05) PTFE 550°F (288°C) Low V-Good Product cooling Х 0.5 (0.02) Urethane 212°F (100°C) 53 Translucent V-Low Х Good Back lit inspection 54 F4 4F FDA Sealed Edge\*\* Х Х 1.5 (0.06) 176°F (80°C) Х Х Urethane Low Good Packaging, clean room and inspection F5 FDA Sealed Edge\*\* Х Х 1.5 (0.06) 176°F (80°C) Х Х 55 5F Urethane High Good Packaging, clean room and inspection 56 Cut Resistant Х Х 2.1 (0.08) Urethane 212°F (100°C) Med. Х Good Oily product release, metal stamping 6F Felt-like, dry metal stamping, glass and 57 7F Cut Resistant х Х 2.5 (0.10) Nitrile 176°F (80°C) х Poor Med ceramic 58 8F Cut Resistant Х Х 1.6 (0.06) Urethane 194°F (90°C) Low Х Good Hard surface, gold colored Х Х 1.5 (0.06) PVC 158°F (70°C) Med. Х Poor Black colored, hides overspray from ink jet 59 F9 9F Color Contrasting 60 GO 0G **Color Contrasting** Х Х 1.3 (0.05) Urethane 212°F (100°C) Low Х Х Good Green colored 61 G1 **Color Contrasting** Х Х 1.3 (0.05) Urethane 212°F (100°C) Med. Х Х Blue colored 1G Good 63 3G **Electrically Conductive** Х Х 1.2 (0.05) Urethane 176°F (80°C) V-Low Х Х Good Static conductive, electronics handling Dark Green colored, rough top surface, 64 **High Friction** х Х 4.4 (0.17) PVC 176°F (80°C) V-High Х Poor **4**G product cushioning, incline/decline apps 66 **Chemical Resistant** Х Х 1.7 (0.07) 212°F (100°C) Х Х V-Good Good cut resistance, metal stamping apps 6G Polyester Med. Urethane enclosed for FDA Encased\*\* G8 Х Х 176°F (80°C) Х Х 68 1.6 (0.06) Urethane low Good added sanitary protection Urethane enclosed for Med. G9 FDA Encased\*\* Х Х 2.2 (0.09) Urethane 176°F (80°C) Х Х 69 Good added sanitary protection 75 Black Urethane Х Х 1.5 (0.06) Urethane 176°F (80°C) Х Good Low Х 76 Black Nose bar Х Х 1.2 (0.05) Urethane 176°F (80°C) Med. Black Color, 8 mm (5/16 in) nose bar Good Green color, high friction, 77 High Friction, green Х Х 2.3 (0.09) Urethane 212°F (100°C) High Х Good urethane, grooved 140°F (60°C) 78 Chemical, Polyolefin, HF Х 1.4 (0.06) Polvolefin High Х V-Good Chemical resistant, food grade 79 Chemical, Polyolefin, LF Х 1.3 (0.05) Polyolefin 140°F (60°C) Х Х V-Good Chemical resistant, food grade Med. 80 High Friction, silicone Х Х 1 (0.04) Silicone 176°F (80°C) V-High Х Good Silicone material, high friction

Dim = mm (in)

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Note: Clipper Splices not available on Z-Frame Series Conveyors. Note: Conveyors wider than 1,016 mm (40 in) require V-Guide belt tracking

Low Friction, silicone

х х

0.9 (0.04)

Silicone

212°F (100°C)

Note: Belts with V-Guiding may have a slight high spot or rib on the top surface. This rib would run longitudinally along the center of the belt. Consult factory with applications for which this may cause interference. \*\* Not available in 51 mm (2 in) widths

Silicone material, low to medium friction

Good

х

Med.



# **DCMove** BELTED



# **Cleated Belt Spacing**

- Minimum cleat spacing = 50 mm (2 in)
- Maximum cleat spacing for 457 mm (18 in) and wider conveyors = 508 (20 in)

• A,B,C cleats width larger than 660 mm (26 in) are limited to one section conveyor

- Maximum cleat spacing for 2.1 m (7 ft) and longer conveyors = 508 (20 in)
- 457 mm (18 in) and wider conveyors are limited to 2.1 m (7 ft) long
- X,Y,W cleats are limited to one section conveyors (2985 mm, 9.8 ft)



Width (W)	CLEAT TYPES	CLEAT WIDTH( A)	OFFSET/INSET(B)	Gap
10"	ALL	W-1.06*2	1.06	n/a
10" 0 4"	A,B,C,F,G	W-1.06*2	1.06	n/a
12"-24"	X,Y,W	(W-1.06*2-1.25)/2	1.06	1.25
24" up	A,B, C	(W-1.06*2-1.25)/2	1.06	1.25





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# Side Mount Package, Parallel Shaft Gearmotor



· Includes gearmotor mounting bracket, 3 jaw flexible coupling, coupling guard and mounting hardware

## **Bottom Mount Package, Parallel Shaft Gearmotor**



- Includes gearmotor mounting bracket, timing belt, pulleys, guard and mounting hardware
- · Conveyor belt speed can be adjusted with optional ratio pulley kits





# Side Mount Package, 90° Gearmotor



· Includes gearmotor mounting bracket, 3-jaw flexible coupling, coupling guard and mounting hardware

# **Bottom Mount Package, 90° Gearmotor**



· Includes gearmotor mounting bracket, timing belt, pulleys, guard and mounting hardware



· Conveyor belt speed can be adjusted with optional ratio pulley kits

# 90° Gearmotor Location Options



**Bottom Mount** 



Note: Conveyor and gearmotor are not included in the mounting package and must be ordered separately. Dimensions = mm (in)

For ordering information, see pages 23-24.



# **End Drive Belt Speed**

Fixed	Fixed Speed												
DCMove	e Series	RPM	Mount F	Package	Pulle	ey Kit	Gearmotor Chart						
m/min	Ft/min	From Gearmotor	Top & Bottom	Side	Drive Pulley	Driven Pulley	Standard Load						
2.4	8	10	х	х	16	16	7						
3.4	11	10	х		24	16	7						
7.0	23	29	x	х	16	16	6, 7						
10.4	34	43	х	х	16	16	6						
11.3	37	47	х	х	16	16	21						
14.0	46	58	х	х	16	16	7						
15.9	52	43	х		24	16	6						
21.0	69	86	х	х	16	16	6, 7						
31.4	103	86	х		24	16	6, 7						
33.0	107	134	х	х	16	16	21						
41.8	137	173	х	х	16	16	6, 7						
52.5	172	173	х		20	16	6, 7						
62.8	206	173	x		24	16	6, 7						
64.0	210	264	x	х	16	16	21						
83.9	275	345	x	x	16	16	6, 7						
104.6	343	345	х		20	16	6, 7						
125.7	412	345	х		24	16	6, 7						

Note: Cleated Belts operate at maximum 280 ft/min (86 m/min) Red = Parallel Shaft, Blue = 90°

Other speeds available. See www.dorner.com and run the DTools program for a full list of belt speeds.

Variable	Variable Speed											
DCMove	e Series	RPM	Mount F	Package	Pulle	ey Kit	Gearmotor Chart					
m/min	Ft/min	Gearmotor	Top & Bottom	Side	Drive Pulley	Driven Pulley	Standard Load					
0.4 - 3.4	1.3 - 11	14	х	х	16	16	12					
0.6 - 5.2	2 - 17	14	х		24	16	12					
0.7 - 7	2.3 - 23	29	х	х	16	16	10, 13, 14					
1 - 10.4	3.4 - 34	43	х	х	16	16	10, 14					
1.2 - 10.1	4 - 33	42	х	х	16	16	9, 12					
1 - 11	4 - 37	47	х	х	16	16	22					
1.5 - 15.6	5 - 51	43	х		24	16	10, 14					
1.8 - 15.3	6 - 50	63	х	х	16	16	9					
2.1 - 20.7	7 - 68	86	х	х	16	16	10, 13, 14					
2.4 - 20.1	8 - 66	83	х	х	16	16	12					
3 - 23	9 - 75	63	х		24	16	9					
3 - 31	10 - 103	86	х		24	16	10, <mark>13</mark> , 14					
3 - 33	11 - 107	134	х	х	16	16	22					
4 - 31	12 - 100	125	х	х	16	16	9, 12					
4 - 42	14 - 137	173	х	х	16	16	10, 13, 14					
5 - 46	18 - 150	125	х		24	16	9, 12					
6 - 63	21 - 206	173	х		24	16	10, 13, 14					
6 - 64	21 - 210	264	х	х	16	16	22					
7 - 61	24 - 200	250	х	х	16	16	9, 12					
8 - 84	27 - 275	345	х	х	16	16	10, 13, 14					
9 - 76	30 - 250	250	х		20	16	9, 12					
10 - 105	34 - 343	345	х		20	16	10, 13, 14					
11 - 92	36 - 300	250	х		24	16	9, 12					
13 - 126	41 - 412	345	х		24	16	10, 13, 14					
15 - 121	48 - 398	500	х	х	16	16	9					



position with a 16:16 drive / driven pullt combination.

Refer to the Gearmotor Selection Steps on page 25.



# **Center Drive Belt Speed**

Fixed S	Fixed Speed										
Belt S	Speed	RPM From	Gearmotor								
m/min	Ft/min	Gearmotor	Chart #								
6.4	21	13	22								
8.4	28	17	15								
10.5	35	22	15								
14.0	46	29	15								
16.8	55	35	15								
18.0	61	38	22								
21.0	69	43	15								
28.0	92	58	15								
33.7	110	70	15								
42.1	138	86	15								
52.0	170	106	22								
56.1	184	115	15								
84.1	276	173	15								
98.0	321	201	22								
112.2	368	230	15								

Variable Speed										
Belt S	Speed	RPM From	Gearmotor							
m/min	Ft/min	Gearmotor	Chart #							
0.8 - 8.4	2.8 - 28	17	18, 19							
1 - 6.4	3.5 - 21	13	23							
1.1 - 10.5	3.5 - 35	22	18							
1.2 - 12.2	4 - 40	25	17							
1.4 - 14.0	4.6 - 46	29	18, 19							
1.5 - 15.2	5 - 50	31	17							
1.7 - 16.8	5.5 - 55.2	35	18							
2.0 - 20.3	6.7 - 66.7	42	17							
2.1 - 21.0	6.9 - 69	43	18, 19							
2.8 - 28.0	9.2 - 92	58	18							
3 - 18	10-61	38	23							
3.4 - 33.7	11 - 110.4	70	18, 19							
4.2 - 42.1	13.8 - 138	86	18, 19							
5.6 - 56.0	18.4 - 184	115	18, 19							
8.4 - 84.1	27.6 - 276	173	18							
9 - 52	28 - 170	106	23							
16 - 98	53 - 321	201	23							
11.2 - 112.2	36.8 - 368	230	18							

Other speeds available. Go to http://tools.dornerconveyors.com/ to configure a conveyor for a full list of belt speeds.

DCMove: Center Drive Mounting Packages	Drive Shaft Position
3 2       M       B       P       S       A       -       1 6 1 6         - Drive / Driven Pulley Combination (Top and Bottom Mounts Only)       -       Belt Style: "-" = Flat Belt or add Cleat Tyle: A, B, C, F, G, W, X, Y         - Gearmotor Mounting Position: A, B, C, D       -       -       Gearmotor Type: L, V, S, H, K         - Gearmotor Output Shaft: P = Parallel Shaft, E = eDrive <sup>TM</sup> , W = 90° SEW       -       Mount Style: S = Side Mount, B = Bottom Mount         - Documentation Language: M = US, U = Europe       -       Conveyor Series: 32 = DCMove	A B C C D D Since belts are being pulled, positions A & D are pre- ferred. Pushing belts (B & C) reduce conveyor load capacity by approximately 66%.
Example: 32MBPSA-1616 Description: Bottom mount package with English documentation. Configured for a parallel shaft, standard load motor in the A mount position with a 16:16 drive / driven pullt combination.	



# Standard Load, Fixed Speed



(vp) = Voltage and Phase 11 = 115V, 1 phase 23 = 208 - 230 / 460V, 3 phase

#### Chart 7 Parallel Shaft NEMA

- Sealed gearmotor
- Totally enclosed, fan cooled
- 115V 1 phase includes switch, cord and overload protection
- 230V 3 phase wiring by others
- 60 Hz
- Order 3 phase starter separately, see page 72





Deat New Los	5514	Gearmotor Type	1 Phase				3 Pha	se	in -lbc	Nex	
Part Number	КРМ		Нр	kW	FLA	Нр	kW	FLA	inids.	NM	Starter Ullart
62M180PS4(vp)FN	10	S	0.08	0.06	1.2	.17	0.13	1.0	341	38.5	L
62M060PS4(vp)FN	29	S	0.17	0.13	1.9	.17	0.13	1.0	270	30.5	L
(x)2M030PS4(vp)FN	58	S	0.33	0.25	4	.38	0.28	1.9	250	28.3	М
(x)2M020PS4(vp)FN	86	S	0.33	0.25	4	.38	0.28	1.9	167	18.9	М
(x)2M010PS4(vp)FN	173	S	0.33	0.25	4	.38	0.28	1.9	108	12.2	М
(x)2M005PS4(vp)FN	345	S	0.33	0.25	4	.38	0.28	1.9	56	6.3	М

(vp) = Voltage and Phase 11 = 115V, 1 phase 23 = 208 - 230 / 460V, 3 phase (x) = 3 for 1 phase, 6 for 3 phase

FLA = Full Load Amperes



# Standard Load, Fixed Speed (continued)



#### Chart 20 90° SEW



(vp) = Voltage and Phase 21 = 230V, 1 phase 23 = 230V / 460V, 3 phase 43 = 400V, 3 phase

#### FLA = Full Load Amperes

Some motors and gear reducers may normally operate hot to the touch. Consult factory for specific operating temperatures. Note: Dimensions = mm (in)

C € Note: When buying a gearmotor only without the starter, the customer must supply their own on/off switch and motor overload protection to comply with the CE Safety Directive.



# Standard Load, Variable Speed



\* = At 60 Hz \*\* = Motor is de-rated to 0.5 Hp for full torque throughout the speed range.



**Regulatory** 

**Approvals** 

CE

# Standard Load, Variable Speed (continued)

#### Chart 11

90° eDrive IEC C-Face VFD Rated



\* = At 50 Hz

CENote: When buying a gearmotor only without the starter, the customer must supply their own on/off switch and motor overload protection to comply with the CE Safety Directive.

11.00

(281)

121 [4.75

Ø 19 [.75]

51 [2.00]

67 [2.62]

#### Chart 13

#### Parallel Shaft NEMA VFD Rated

- · Variable frequency drive, 10 to 60 Hz
- · Sealed gearmotor
- · Totally enclosed, fan cooled
- 230/460 Volts / 3 Phase, VFD duty
- Order controller separately, see page 70

• Order controller separate	ely, see page 70	[6.73]						RoHS
Part Number	RPM	Gearmotor Type	Нр	kW	FLA	inIbs.	Nm	Vari-Speed Control Chart
62M180PS423EN	10	S	0.17	0.13	1.0	341	38.5	D and E
62M060PS423EN	29	S	0.17	0.13	1.0	270	30.5	D and E
62M030PS423EN	58	S	0.38	0.28	1.9	250	28.3	D and E
62M020PS423EN	86	S	0.38	0.28	1.9	167	18.9	D and E
62M010PS423EN	173	S	0.38	0.28	1.9	115	13.0	D and E

52 \_ [2.04]

.171

38 [1.49]

121

[4.75]

61 [2.39]

FLA = Full Load Amperes



# Standard Load, Variable Speed (continued)



# Heavy Load, Fixed Speed



#### FLA = Full Load Amperes



# Heavy Load, Fixed Speed (continued)



23 = 230V, 3 phase 43 = 430V, 3 phase **Note:** LPZ Conveyors are not reversible

### Chart 22 90° SEW

- SEW SA47 Gearmotor
- · Center mount packages only
- · 230 / 460 V 3 Phase
- VFD Compatible with constant torque from 10 to 60 Hz
- Sealed gear head, totally enclosed fan cooled motor

CE Note: When buying a gearmotor only without the starter, the customer must supply their
own on/off switch and motor overload protection to comply with the CE Safety Directive.



Part Number	RPM*	Gearmotor Type	Нр	kW	FLA	in-lbs	Nm	Starter Chart
32M128WH423EN*	13	W	0.33	0.25	1.14 / 0.57	991	112.0	L
32M044WH423EN*	38	W	0.75	0.56	2.50 / 1.25	973	109.9	M
32M016WH423EN*	106	W	1.50	1.12	4.50 / 2.25	787	88.9	Q
32M008WH423EN*	201	W	2.00	1.49	5.70 / 2.85	575	65.0	Q

\* 20 day lead time required

#### FLA = Full Load Amperes



# Heavy Load, Variable Speed



\* = At 60 Hz

FLA = Full Load Amperes



# Heavy Load, Variable Speed (continued)

#### Chart 19 90° eDrive IEC C-Face, VFD Rated

- Variable frequency drive, 25 to 63 Hz
- Sealed gearmotor
- IP55 protection rating
- 230/400 Volts, 50 Hz nominal
- IEC B5 C face mount (see table for size)
- Totally enclosed, fan cooled
- Order controller separately, see page 70





Dest New Les	DDM	Gearmotor Type	Belt Speed		Motor	П.,	1.147	EI A	in lha	Nm	Controller
Part Number	RPM		ft/min	m/min	Face	нр	KW	FLA	in-ids	NM	Chart
52Z100HH423EN	7 to 18	Н	7 to 18	2 to 5	71	0.5	0.37	2.1 / 1.2	1142	129	В
52Z080HH423EN	9 to 22	Н	9 to 22	3 to 7	71	0.5	0.37	2.1 / 1.2	1018	115	В
52Z050HH423EN	14 to 35	Н	14 to 35	4 to 11	80	0.7	0.55	2.6 / 1.5	1097	124	В
52Z040HH423EN	18 to 44	Н	18 to 44	5 to 13	80	0.7	0.55	2.6 / 1.5	929	105	В
52Z030HH423EN	23 to 59	Н	23 to 59	7 to 18	90	1.5	1.10	4.7 / 2.7	1478	167	В
52Z020HH423EN	35 to 88	Н	35 to 88	11 to 27	90	1.5	1.10	4.7 / 2.7	1080	122	В
52Z015HH423EN	47 to 118	Н	47 to 118	14 to 36	90	2.0	1.50	6.1 / 3.5	1124	127	В
52Z010HH423EN	70 to 176	Н	70 to 176	21 to 54	90	2.0	1.50	6.1 / 3.5	788	89	В
52Z008HH423EN	93 to 235	Н	93 to 235	28 to 72	90	2.0	1.50	6.1 / 3.5	602	68	В

23 = 230V, 3 phase 43 = 430V, 3 phase **FLA** = Full Load Amperes **Note:** LPZ Conveyors are not reversible

**C € Note:** When buying a gearmotor only without the starter, the customer must supply their own on/off switch and motor overload protection to comply with the CE Safety Directive.



\* 20 day lead time required

#### FLA = Full Load Amperes



# **Control Product Family**



#### **Manual Motor Starter**

(see page 36) Provides motor overload protection and lockout/ tagout capability



#### **Basic VFD Control**

#### (see page 35)

Simple on/off, direction, and speed control right at the side of the conveyor



#### **Full Feature VFD Control**

#### (see page 35)

All the features of a Basic VFD with options to control remotely from a Dorner accessory, discrete I/O, or using a variety of industrial network protocols



### **Full Feature VFD with Accessory**

#### (see page 35)

Full feature control with M12 Accessory port for a variety of applications



**iDrive Motor Control** 

#### (see pages 10 & 12) Brushless DC Controls, 24VDC with preset speeds programed ready to use package. Variety of configuration available



# **Variable Speed Controllers**

Chart A						
<ul> <li>PWM DC control</li> <li>Nema 1 enclosure</li> <li>Line cord and motor cord</li> <li>On/Off switch for 62MD1134</li> <li>Forward/Off/Reverse switch for 62MD1134R</li> <li>Speed potentiometer</li> <li>Mounting hardware</li> </ul>						
Part Number	Input Volts	Input Phase	Input Hz	Output Volts	Max Amps*	Reversing
62MD1134 62MD1134R	115 115	1 1	60 60	130VDC 130VDC	3.2 5.0	No Yes
Chart C	Chart C. Pruch Type DC Controller					
<ul> <li>PWM DC control</li> <li>NEMA 1 enclosure</li> <li>Line cord and motor co</li> <li>On/Off switch for 62MD and 62MD1193</li> <li>Forward/Off/Reverse sv 62MD1192R and 62MD</li> <li>Speed potentiometer</li> <li>Mounting hardware</li> </ul>	Brush- type DC Controller $62MD1192 \& 62MD1192R$ $62MD1193 \& 62MD1193R$ $r \operatorname{cord}_{2MD1192}$ $re switch for MD1193R$				Regulatory Approvals RoHS	
Part Number	Input Volts	Input Phase	Input Hz	Output Volts	Max Amps*	Reversing
62MD1192 62MD1192R 62MD1193 62MD1193R	115 115 115 115 115	1 1 1 1	60 60 60 60	90VDC 90VDC 90VDC 90VDC 90VDC	5.0 5.0 7.5 7.5	No Yes No Yes



# Variable Speed Controllers (continued)





\*Reversing is controlled by parameter change



35

### **Manual Motor Starters**

Manual motor starters are manual electronic disconnects that provide motor overload protection and are required by the National Electric Code (NEC) for safe motor operation.



#### Chart M 230/460V 60Hz to 2.5 amp

• 230/460 Volts, 3 phase wiring to starter by others

• Wiring between motor and starter provided when ordered together • 60 Hz

Part Number	In Volts	In Phase	Amp Range	Illustration
62MM23M 62MM43M	208 - 230	3 3	1.6 - 2.5 1.0 - 1.6	B B
	460			

#### Chart Q 230/460V 60Hz to 6.3 amp

• 230/460 Volts, 3 phase wiring to starter by others

• Wiring between motor and starter provided when ordered together

• 60 Hz

Part Number	In Volts	In Phase	Amp Range	Illustration
62MM23Q 62MM43Q	208 - 230 460	3 3	4.0 - 6.3 2.5 - 4.0	B B

#### Chart L 230/460V 60 Hz to 1.6 amp

• 230/460 Volts, 3 phase wiring to starter by others

• Wiring between motor and starter provided when ordered together • 60 Hz

Part Number	In Volts	In Phase	Amp Range	Illustration
62MM23L	230	3	1.0 - 1.6	B
62MM43L	460	3	0.463	B

#### Chart P 230/460V 60Hz to 4 amp

• 230/460 Volts, 3 phase wiring to starter by others

• Wiring between motor and starter provided when ordered together • 60 Hz

Part Number	In Volts	In Phase	Amp Range	Illustration
62MM23U 62MM43P	208 - 230 460	3 3	2.5 - 4.0 1.6 - 2.5	B B

C E Note: When buying a gearmotor only without the starter, the customer must supply their own on/off switch and motor overload protection to comply with NEC and CE safety directive.





# **Fixed Height Supports Stands**

Fixed Foot Model			
Stand Width (WWWW)	254 mm (10 in)	51 mm (2 in) increments up to	1219 mm (48 in)
Part # Reference	0254	in 51 increments up to	1219
Stand Height (HHHH)*	600 - 700 mm (24 - 28 in)	25 mm (1 in) increments <b>up to</b>	1900 - 2000 mm (75 - 79 in)
Part # Reference Belt	0600-0700	in 0025 increments <b>up to</b>	1900-2000

\* Top of Belt Measurement

Swivel Locking Caster Model							
Stand Width (WWWW)	254 mm (10 in)	51 mm (2 in) increments <b>up to</b>	1219 mm (48 in)				
Part # Reference	0254	in 51 increments up to	1219				
Stand Height (HHHH)*	725 - 825 mm (29 - 33 in)	in 25 mm (1 in) increments <b>up to</b>	1900 - 2000 mm (75 - 79 in)				
Part # Reference	0725-0825	in 0025 increments <b>up to</b>	1900-2000				

\* Top of Belt Measurement

- 100 mm (4 in) Height Adjustment
- Provides most access to outside T-Slots
- Support stands can be moved on 150mm
- increments depending on conveyor configuration



\*Outrigger is used when conveyor height to width ratio exceeds 3.5, and on side drive motor mount packages.

### **Short Support Stands**

Fixed Foot Model			
Stand Width (WWWW)	254 mm (10 in)	51 mm (2 in) increments up to	1219 mm (48 in)
Part # Reference	0254	in 51 increments up to	1219
Stand Height (HHHH)*	350 - 400 mm (14 - 16 in)	in 25 mm (1 in) increments up to	600 - 650 mm (24 - 26 in)
Part # Reference	0350-0400	in 0025 increments <b>up to</b>	0600-0650

\* Top of Belt Measurement

Swivel Locking Caster	r Model		
Stand Width (WWWW)	254 mm (10 in)	51 mm (2 in) increments <b>up to</b>	1219 mm (48 in)
Part # Reference	0254	in 51 increments up to	1219
Stand Height (HHHH)*	475 - 525 mm (19 - 21 in)	in 25 mm (1 in) increments <b>up to</b>	700 - 750 mm (28 - 30 in
Part # Reference	0475-0525	in 0025 increments <b>up to</b>	0700-0750

\* Top of Belt Measurement

#### DCMove Material Handling Support Stands

3 5	<u>z wwww</u> -	HHHH       HHHH       B       S       T       F         - Feet or Casters:       F = Fixed Foot Pad       C = Total Lock Swivel Caster         B       = Fixed Foot with Brace (not available on shortest Low height stands)         - Stand Type:       LH = Short Stand       FH = Fixed Height         - Belt:       B = Belt         - Maximum TOB:       0100 more then minimum					
		- Minimim TOB: 0325 to 1900 in 25mm increments					
	- Conveyor Width Reference: 152 mm to 1219 mm						
	- Documentation	n Language: Z = Universal					
- Pre	fix: 3S = 32 MH (	(Steel) Mounting Packages					



- For top belt heights below 600 mm (24 in)
- Support stands can be moved on 150mm increments depending on conveyor configuration





# **Quantity Charts**

DCMove Series				
Conveyor Length	Number of Supports			
960 - 2,985mm (3 - 10ft)	2			
2,986 - 5,970mm (10 - 20ft)	3			
5,971 - 8,955mm (20 - 29ft)	4			
8,956 - 11,940mm (29 - 39ft)	5			
11,941 - 14,925mm (39 - 49ft)	6			
14,926 - 17,910mm (49 - 59ft)	7			
17,911 - 20,895mm (59 - 69ft)	8			
20,896 - 23,880mm (69 - 78ft)	9			
23,881 - 26,865mm (78 - 88ft)	10			
26,866 - 29,850mm (88 - 98ft)	11			

DCMove (per section) Required Return Roller						
max feet between return rollers						
Conveyor Width 10" 12"- 20" 22"- 30" 32"- 40" 40"- 48"						
Flat Belt Cleated Belt	8 6	7 5	6 4	5 3	4 3	

# **Mounting Brackets**



\* for cleared belt application spacers maybe needed.

# **Photo Eye Bracket Kits**





A = 92 [3.61] for 51 [2] Adjustment 168 [6.61] for 127 [5] Adjustment

### **Specifications**

 Standard mounting for 18 mm barrel/nose mount photoeyes

- · Reflective version includes reflector
- Through beam mount version
- · Fully adjustable mount for industrial conveyors

Part Number	Photo Eye Mount Type	Adjustment Height
75M-PM-1 75M-PM-2 75M-PM-3 75M-PM-4	Reflective Reflective Through Beam Through Beam	51 mm (2 in) 127 mm (5 in) 51 mm (2 in) 127 mm (5 in)
75M-PM-5 75M-PM-6	Convergence	51 mm (2 in) 127 mm (5 in)

Note: Dimensions = mm (in)

Due to the wide variety of drive set ups and applications, point of installation guarding is the responsibility of the end user.



# **Regulatory Approvals:**

### **Gearmotors and Controllers:**

All Dorner DCMove Series gearmotors and controllers carry one or more of the following approvals. Products are not covered by each approval. Please see the appropriate part number on the Gearmotor and controller charts located in this manual. In addition, regulatory symbols are located on the product information tags located on the product.

CE	CE Marking on a product is a manufacturer's declaration that the product complies with the essential requirements of the relevant European health, safety and environmental protection legislation, in practice by the Product Directives. CE Marking on a product ensures the free movement of the product within the European Union (EU).
RoHS	This directive restricts (with exceptions) the use of six hazardous materials in the manufacture of various types of electronic and electrical equipment. It is closely linked with the Waste Electrical and Electronic Equipment Directive (WEEE) 2002/96/EC which sets collection, recycling and recovery targets for electrical goods and is part of a legislative initiative to solve the problem of huge amounts of toxic e-waste.
<b>9</b> 1	The UL Recognized Component mark is for products intended to be installed in another device, system or end product. This Recognized Component Mark is for the United States only. When a complete product or system containing UL Recognized Components is evaluated, the end-product evaluation process can be streamlined.
	The UL Recognized Component mark is for products intended to be installed in another device, system or end product. This Recognized Component Mark is for the United States and Canada. When a complete product or system containing UL Recognized Components is evaluated, the end-product evaluation process can be streamlined.
<b>S</b> ₽®®	CSA International (Canadian Standards Association), is a provider of product testing and certification services for electrical, mechanical, plumbing, gas and a variety of other products. Recognized in the U.S., Canada and around the world, CSA certification marks indicate that a product, process or service has been tested to a Canadian or U.S. standard and it meets the requirements of an applicable CSA standard or another recognized document used as a basis for certification.
cUUus	The UL Listing Mark means UL found that representative product samples met UL's safety require- ments. These requirements are primarily based on UL's own published standards for safety. The C-UL-US Mark indicates compliance with both Canadian and U.S. requirements. The products with this type of Mark have been evaluated to Canadian safety requirements and U.S. safety requirements.



#### **Belting:**

The following is a list of the top coat materials used in DCMove Series conveyor belting:

Material	Belt Number
Urethane	01,02,03,05,06,09,54,55,56,53,60,61,63,68,69
PVC (non FDA approved)	08,18,59,64
Silicone	50
Polyester	66
Nitrile	57
Urethane (hard)	58

#### Resistance to Materials: Belting

The following table provides the resistance to belt materials used in the conveyor to several chemicals. Application testing is recommended to determine long term material durability.

Legend: 1 = Good resistance | 3 = Limited resistance | 4 = Not recommended

Materials	Urethane	PVC (non FDA)	Silicone	Polyester	Urethane (hard)		
Chemicals							
Acetic acid (glacial acetic acid)	4	3	1	1	4		
Acetic acid 10 %	3	1	1	3	1		
Acetic anhydride	3	4	1	1	4		
Acetone	4	4	1	3	4		
Aluminium salts	1	1	1	1	1		
Alum	1	1	1	1	1		
Ammonia, aqueous	3	1	1	3	1		
Ammonia, gaseous	1	1	3	1	1		
Ammonium acetate	1	1	1	1	1		
Ammonium carbonate	1	1	1	1	1		
Ammonium chloride	1	1	1	1	1		
Ammonium nitrate	1	1	1	1	1		
Ammonium phosphate	1	1	1	1	1		
Ammonium sulphate	1	1	1	1	1		
Amyl alcohol	1	4	3	1	1		
Aniline	3	3	3	4	4		
Barium salts	1	1	1	1	1		
Benzaldehyde	4	4	4	4	4		
Benzine (see also Motor fuels)	1	3	3	1	1		
Benzoic acid	1	1	1	1	1		
Benzol	3	4	4	3	3		
Boric acid	1	1	1	1	1		
Boric acid, solution	1	1	1	1	1		
Bromine	4	4	4	4	4		
Bromine water	4	3	1	4	3		
Butane, gaseous	1	1	1	1	1		
Butane, liquid	1	1	1	1	1		
Butyl acetate	4	4	4	3	4		
n-Butyl alcohol	1	3	1	1	1		
Calcium chloride	1	1	1	1	1		

Designation		De biner	
Registrance	n warena	IS' RAITINA	rcontintent
incolorunoc i	o materia	io. Derting	(continueu)

<b>Legend:</b> 1 = Good resistance   3 = Limited resistance   4 = Not recommended					
Materials	Urethane	PVC (non FDA)	Silicone	Polyester	Urethane (hard)
Calcium nitrate	1	1	1	1	1
Calcium sulphate	1	1	1	1	1
Carbon disulphide	4	4	3	4	4
Carbon tetrachloride	3	4	4	4	3
Chlorine, liquid	4	4	4	4	4
Chlorine, gaseous, dry	4	4	4	4	4
Chlorine, gaseous, wet	4	4	4	4	4
Chlorine water	4	1	3	4	3
Chlorobenzene	4	4	4	4	4
Chloroform	4	4	4	4	4
Chlorosulphonic acid	4	4	4	4	4
Chromic acid	4	4	4	4	4
Chromium salts	1	1	1	1	1
Chromium trioxide	1	1	1	1	1
Citric acid	4	1	1	1	4
Copper salts	1	1	1	1	3
Cresols	3	3	3	4	3
Cresols, aqueous	3	3	3	3	3
Cvclohexane	4	4	4	1	4
Cyclohexanol	4	4	4	4	4
Cyclohexanone	4	4	4	4	4
Decahydronaphthalene	4	4	4	4	4
Dibutyl phthalate	3	4	1	4	4
Diethyl ether	4	4	4	4	4
Dimethyl formamide	4	4	3	4	4
1.4 Dioxan	4	4	3	4	4
Fther	4	4	4	4	4
Ethyl acetate	4	4	4	3	4
Ethyl alcohol, non-denatured 100%	1	3	3	1	1
Ethyl alcohol, non-denatured 96%	1	3	3	1	1
Ethyl alcohol, non-denatured 50%	1	3	3	1	1
Ethyl alcohol, non-denatured 10%	1	3	1	1	1
Ethyl benzene	4	4	4	4	4
Ethyl chloride	4	4	4	4	4
Ethylene chloride	4	4	4	4	4
2-Ethyl hexanol	1	3	1	1	1
Formaldehvde	1	3	1	3	1
Formic acid, dilute	4	1	1	3	3
Glycerine	1	1	1	1	1
Glycerine. aqueous	1	1	1	1	1
Glycol	1	3	1	1	1
Glycol. aqueous	1	1	1	1	1
Heptane	1	3	3	1	1
Hexane	. 1	3	3	1	1
Hydrochloric acid, conc.	3	1	4	3	1



<b>Legend:</b> 1 = Good resistance   3 = Limited resistance   4 = Not recommended					
Materials	Urethane	PVC (non FDA)	Silicone	Polyester	Urethane (hard)
Hydrochloric acid 10 %	3	1	1	1	1
Hydrofluoric acid 40 %	4	4	4	4	4
Hydrogen chloride, gaseous, dilute	3	1	3	3	1
Hydrogen chloride, gaseous, conc.	3	3	3	4	3
Hydrogen peroxide 10%	3	1	1	3	1
Hydrogen sulphide	3	3	3	3	3
Iron salts (sulphate)	1	1	1	1	1
Isooctane	1	3	3	1	1
Isopropyl alcohol	1	3	1	1	1
Lactic acid	1	3	1	1	1
Magnesium salts	1	1	1	1	1
Mercury	1	1	1	1	1
Mercury salts	1	1	1	1	1
Methyl alcohol, aqueous 50 %	3	3	1	1	1
Methyl alcohol (methanol)	1	3	1	1	1
Methyl ethyl ketone	4	4	1	3	4
Methylene chloride	4	4	4	4	4
Nanhthalene	2	4	4	2	4
Niphal salts	1	1	1	1	
Nitrio soid	1	2	1	1	1
	4	ى م	4	4 2	4
	4	4	4	3	4
Octane (see also isooctane)	1	3	4	1	1
	1	3	4	-	1
	1	1	1	1	1
Uzone		3	3		3
Perchloroethylene	4	4	4	4	4
Phenol	3	3	1	4	3
Phenol, aqueous	4	3	1	4	3
Phosphoric acid 85 %	4	1	1	3	1
Phosphoric acid 50 %	1	1	1	1	1
Phosphoric acid 10 %	1	1	1	1	1
Phosphorus pentoxide	1	1	1	1	1
Potash lye 50 %	4	1	4	3	4
Potash lye 25 %	4	1	4	1	4
Potash lye 10 %	4	1	3	1	4
Potassium carbonate (potash)	1	1	1	1	1
Potassium chlorate	1	1	1	1	1
Potassium chloride	1	1	1	1	1
Potassium dichromate	1	1	1	1	1
Potassium iodide	1	1	1	1	1
Potassium nitrate	1	1	1	1	1
Potassium permanganate	1	1	1	1	1
Potassium persulphate	1	1	1	1	1
Potassium sulnhate	1	1	1	1	1
Propane, gaseous	1	1	1	1	1



<b>Decistance</b>	lo Matoria	e Rolting	(continued)
nesistance	lu materia	is. Derting	(continueu)

<b>Legend:</b> 1 = Good resistance   3 = Limited resistance   4 = Not recommended					
Materials	Urethane	PVC (non FDA)	Silicone	Polyester	Urethane (hard)
Propane, liquid	1	1	1	1	1
Pyridine	4	4	3	4	4
Silver salts	1	1	1	1	1
Soda lye 50% (see potash lye)	4	1	4	4	4
Soda lye 25%	4	1	4	3	4
Soda lye 10%	4	1	3	1	4
Sodium bisulphite	1	1	1	1	1
Sodium carbonate (natron)	1	1	1	1	1
Sodium carbonate (soda)	1	1	1	1	1
Sodium chlorate	1	1	1	1	1
Sodium chloride (common salt)	1	1	1	1	1
Sodium hydroxide (caustic soda)	4	1	4	1	4
Sodium hypochlorite	1	1	1	3	1
Sodium nitrate	1	1	1	1	1
Sodium nitrite	1	1	1	1	1
Sodium perborate	1	1	1	1	1
Sodium phosphate	1	1	1	1	1
Sodium sulphate (Glauber salt)	1	1	1	1	1
Sodium sulphide	1	1	1	1	1
Sodium sulphite	1	1	1	1	1
Sodium thiosulphate (fixing salt)	1	1	1	1	1
Stearic acid	1	1	1	1	1
Succinic acid	1	1	1	1	1
Sulphur	1	1	1	1	1
Sulphur dioxide	3	3	3	3	4
Sulphuric acid 96%	4	4	4	4	4
Sulphuric acid 50%	4	3	4	3	4
Sulphuric acid 25%	4	3	3	1	3
Sulphuric acid 10%	4	3	1	1	3
Tartaric acids	1	1	1	1	1
Tetrachloroethane	4	4	4	4	4
Tetrachloroethylene (perchloroethylene)	4	4	4	4	4
Tetrahydrofuran	4	4	4	4	4
Tetrahydronaphthalene	4	4	4	4	4
Thiophene	4	4	4	4	4
Tin II chlorides	1	1	1	1	1
Toluene	4	4	4	4	4
Trichloroethylene	4	4	4	4	4
Urea, aqueous	1	1	1	1	1
Water	1	1	1	1	1
Xylene	4	4	4	3	4
Zinc salts	1	1	1	1	1



Resistance to Materials: Belti	Resistance to Materials: Belting (continued)						
Legend:							
1 = Good resistance   3 = Limited resistance   4 = Not recommended							
Materials	Urethane	PVC (non FDA)	Silicone	Polyester	Urethane (hard)		
Products	Products						
Alum	1	1	1	1	1		
Anti-freeze*	1	3	1	1	1		
Aqua regia	4	4	4	4	4		
Asphalt	1	3	3	1	1		
Battery acid	4	4	4	4	4		
Benzine	1	3	3	1	1		
Bleaching lye (12.5%)	1	1	1	1	3		
Bone oil	1	3	4	1	1		
Borax	1	1	1	1	1		
Brake fluid* Bosch	1	3	1	1	3		
Brake fluid* Skydrol	4	4	3	4	4		
Chloride of lime (aqueous suspension)	1	1	1	1	3		
Chlorine (active)	4	4	4	4	4		
Chrome baths* (technical)	1	3	3	1	1		
Chromosulphuric acid	4	4	4	4	4		
Cresol solution	3	3	4	4	4		
Diesel oil	1	1	3	1	1		
Fertilizer salts	1	1	1	1	1		
Fixing salt	1	1	1	1	1		
Floor wax	1	3	3	1	1		
Formalin	1	3	3	1	1		
Fuel oils*	1	1	3	1	1		
Furniture polish*	1	3	3	1	1		
Gypsum	1	1	1	1	1		
Ink*	1	1	1	1	1		
Linseed oil	1	3	1	1	1		
Litex (styrene)	4	4	4	4	4		
Mineral oils (non-aromatic)	1	1	1	1	1		
Moth balls	3	4	3	3	3		
Diesel oil*	1	1	3	1	1		
Petrol (gasoline) DIN51635	1	3	3	1	1		
Petrol, regular	1	3	3	1	1		
Petrol. super	3	4	3	1	3		
Motor oils*	1	1	1	1	1		
Oil no. 3 (ASTM)	1	3	1	1	1		
Oleum	4	4	4	4	4		
Paraffin	1	1	1	1	1		
Paraffin oil	1	1	1	1	1		
Petroleum	1	3	3	1	1		
Petroleum ether	1	3	4	1	1		
Photographic developer	. 1	1	1	1	1		



# **Bearings and Lubrication:**

All bearings on the DCMove Series conveyor are sealed and lubricated for life. No grease zerk is available and no greasing over the life of the product is required.

All gearmotors used on the DCMove Series conveyor are sealed and may be mounted in any position. Changing gear oil lubrication may be needed over the life of the gearbox. Please check the appropriate gearmotor manual for instructions.

#### Support Stand Locations:

Support S	Stand Locations	
Symbol	Description	Value mm (in)
А	Maximum distance back at drive end	619 (24)
В	Maximum distance back at idler end	821 (32)
С	Maximum distance between supports*	2,165 (85)
*Intermediat	te stands must be located on frame connec	tion.

# **Conveyor Drive Shaft Tolerances:**

End Drive:





#### Center Drive:



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# **Conveyor Noise Level (Decibel Ratings)**

The actual noise level generated by the conveyor depends on several factors; the installation configuration, the product running on the conveyor, the surrounding equipment, the conveyor options and belt speed. The noise level generated by the conveyor is typically less than the general noise level of factory equipment.

Generally a higher belt speed will result in a higher noise level. The following charts provide basic decibel ratings for a typical conveyor arrangements.



# **Maximum Load Capacity**

The following Load Capacity Charts **do not** take into account the conveyor configuration, length or gearmotor selection. Your specific conveyor may not be capable of the maximum load condition. Please confirm your maximum load per application with the Dorner DTools program at www.dornerconveyors.com.

All load capacities shown are non-accumulated evenly distributed loads.

DCMove Series End Drive Belted Conveyor						
Belt Width	Direction 1, Pulling the Belt Direction 2, Pushing the B					
254 to 1219 mm (10 to 48 in) wide	181 kg (400 lbs)	60 kg (132 lbs)				
DCMove Series Center Drive Belted Conveyor						
Belt Width	Direction 1, Pulling the Belt	Direction 2, Pushing the Belt				
254 mm (10 in) wide	272 kg (600 lbs)	90 kg (198 lbs)				
305, 356 and 406 mm (12, 14 and 16 in) wide	318 kg (700 lbs)	105 kg (231 lbs)				
457, 508, 559 and 610 mm (18, 20, 22 and 24 in) wide	363 kg (800 lbs)	120 kg (264 lbs)				
660 to 1219 mm (26 to 48 in) wide	454 kg (1000 lbs)	150 kg (330 lbs)				





## No Load Torque

No load torque is the amount of torque required to turn an empty conveyor. The torque value varies by conveyor length and configuration. The following charts provide basic values for an average length conveyor. Your specific conveyor may not have a higher value. Please confirm your no load torque and maximum load per application with the Dorner DTools program at www. dornerconveyors.com.

Belted Conveyor No Load Torque			
Belt Width mm (in)	End Drive mm-kg (in-lbs)	Center Drive m-kb (in-lbs)	
254 (10)	728 (13)	7840 (140)	
305 (12)	840 (15)	8400 (150)	
356 (14)	1120 (20)	8680 (155)	
406 (16)	1120 (20)	8680 (155)	
203 (18)	1400 (25)	8960 (160)	
508 (20)	1512 (27)	9240 (165)	
559 (22)	1512 (27)	9520 (170)	
610 (24)	1680 (30)	10080 (180)	
660 (26)	1848 (33)	10640 (190)	
711 (28)	1848 (33)	10640 (190)	
762 (30)	1960 (35)	11200 (200)	
813 (32)	2128 (38)	11760 (210)	
864 (34)	2128 (38)	11760 (210)	
914 (36)	2128 (38)	12320 (220)	
965 (38)	2240 (40)	12600 (225)	
1016 (40)	2240 (40)	12880 (230)	
1067 (42)	2240 (40)	12880 (230)	
1118 (44)	2240 (40)	13160 (235)	
1168 (46)	2240 (40)	13440 (240)	
1219 (48)	2240 (40)	13440 (240)	



# **Belting and Coefficient of Friction**

The coefficient of friction is used to determine the load a conveyor can carry. It affects a conveyor in two ways: the friction that exists between the conveyor belt and the bed surface, and if accumulating product the friction that exists between the conveyor top surface and the product.

Coefficient of Friction, between the bottom of the conveyor belt and bed surface			
Product	Surfaces	Application Condition	<b>Coefficient of Friction</b>
DCMove Series Belted	Impregnated polyester fabric to Painted Steel bed plate	Dry	0.23

#### Coefficient of Friction, between the top surface of conveyor belt and product:

DCMove Series Belted		
The following table provides the coefficient of friction between steel product and various belt top surfaces. All factors below are assuming dry conditions.		
Belt Number	Top Surface Material and Type	<b>Coefficient of Friction</b>
01, 54, 58, 68	Smooth hard urethane	0.40
02, 59, 60, 61, 66	Smooth medium urethane	0.50
03, 19, 55, 69	Glossy soft urethane	>1.0, do not accumulate
05, 06, 50, 53, 63	Impregnated polyester fabric	0.20
08, 18, 64	PVC, Very High friction	>1.0, do not accumulate

# **Calculating Conveyor Belt Speed**

#### **DCMove Series Belted Conveyors:**

To calculate the conveyor belt speed you need to know the following factors:

- Drive roller diameter
  - 76.2 mm (3 in) for end drives
  - 1152.4 mm (6 in) for center drives
- Number of teeth of pulley located at drive roller (if equipped)
- Number of teeth of pulley located at gearmotor (if equipped)
- · RPM of gearmotor

Belt Speed (ft/min) = (Drive roller diameter/12)\*(3.14)\*(RPM of gearmotor)\*  $\frac{(\text{Teeth at gearmotor})}{(\text{Teeth at drive roller})}$ 

#### Example:

DCMove Series End Drive with a Bottom mount with a 16 tooth pulley located at the drive roller and a 24 tooth pulley located on the gearmotor. The gearmotor is a 10:1 ratio with 173 rpm output.

Belt Speed (ft/min) = (3/12)\*(3.14)\*(173)\*(24/16) Belt speed (ft/min) = 204 ft/min





# **Calculating Conveyor Load Capacity**

There are several factors that affect the overall conveyor load of the DCMove Series conveyor. These include:

- Conveyor size and configuration
- Conveyor speed
- Application temperature
- Product accumulation
- Number of starts and stops per hour

Located online at www.dornerconveyors.com is the Dorner conveyor configuration tool, DTools. This tool allows you to configure your conveyor layout and determine the maximum load capacity for the conveyor. It is suggested that this program be used to calculate the conveyor load as the calculation is quite complicated. This configuration program however does not take into account temperature, dirty conditions, and conveyor starts and stops. If these conditions are part of your application please use the load reducing factors as shown below.

Maximum Load = (Load from DTools)(Temperature Factor)(Start/Stop Factor)

Temperature Factor		
Ambient temperature can negatively affect the capacity of the conveyor.		
Temperature F	Temperature C	Temperature Factor
-4	-20	1.0
32	0	1.0
68	20	1.0
104	40	0.9
140	60	0.8

Start / Stop Factor		
Frequent Start / Stops of the conveyor can negatively affect the capacity of the conveyor. All start / stop applications must use a soft start mechanism such as a Frequency Inverter with a 1 second acceleration cycle.		
Application Condition	Start / Stop Factor	
Continuous Dun on 1 start/star non hour	1.0	

Continuous Run or 1 start/stop per hour	1.0
Maximum 10 starts/stop per hour	0.83
Maximum 30 starts/stop per hour	0.70
Greater than 30 starts/stop per hour	0.62





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