

**EAGLE**<sup>®</sup>  
POLYURETHANE BELTING & O-RINGS



**Fenner Drives<sup>®</sup>**

*an ISO 9001:2000 certified company*

**YOUR #1 SOURCE FOR URETHANE BELTING!**

*The possibilities are endless with Eagle Endless Urethane Belting and O-Rings from Fenner Drives. As a world leader in urethane belting, we have a comprehensive line of high quality non-reinforced and reinforced products.*

*From light-medium-heavy-duty motion transfer to custom profiles, Fenner Drives has the right endless urethane product for your application.*

Technical Help and Ordering:

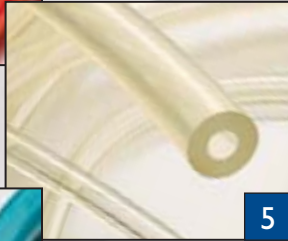
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# Eagle® Polyurethane Belting and O-Rings



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# 4 NON-REINFORCED URETHANE BELTING

**Eagle Opaque 80**  
**Eagle Orange 85**  
**Eagle Clear 85**  
**Eagle Green 89 T**  
**Eagle Red 90**  
**Eagle Clear 95**



**Eagle® Non-Reinforced Urethane Belting — the proven workhorses for material transfer and light-duty power transmission applications.**

- Solid urethane construction
- Round, V- and flat profiles
- Excellent abrasion resistance
- Self tensioning — no take-ups required
- Easily welded on site with a Fenner Drives butt welding kit

**Eagle Clear 85 QC**  
**Eagle Yellow 85 QC**  
**Eagle Clear 85 TOR**



**Eagle® Non-Reinforced Quick-Connect Urethane Belting — the quick and easy way to avoid conveyor and system downtime; no welding required.**

- Ideal quick fixes — zero downtime products
- Round hollow or twisted loop construction
- Quickly connect with easy to use metal or plastic connectors
- No need to dismantle drive components
- Custom colors and durometers available to order

# 6 FACTORY WELDED ENDLESS BELTING

## Eagle Endless O-Rings and Fabricated Belts



**Eagle® Endless O-Rings and Fabricated Belts — let us do the work for you and take the hassle out of fabricating your own endless belts.**

- Available in all Eagle belting colors and durometers
- For line shaft, live roller, transfer conveyors and light duty power transmission drives
- High coefficient of friction
- Elastic with excellent memory
- Popular  $\frac{1}{8}$ ",  $\frac{3}{16}$ " and  $\frac{1}{4}$ " sizes always in stock
- Custom sizes, colors and durometers are made to order
- Rapid order turnaround for all specials

**Eagle Orange 85 R**  
**Eagle Hyfen® 85 R**  
**Eagle Green 89 RT**  
**Eagle Beige 95 R**  
**Eagle Hyfen 95 R**



**Eagle® Reinforced Urethane Belting — the ideal high-strength, low-stretch choices for longer conveyor lengths, heavier conveyed loads, or medium-duty power transmission applications.**

- For more highly loaded applications
- Either polyester cord or tape reinforcement
- High strength — low stretch
- Round, V- and Twin-V profiles
- Can be cogged for increased flexibility
- Patented overlap weld for superior performance
- Take up the slack with a Fenner Drives T-Max™ Tensioner

# 8 REINFORCED POLYESTER CAN CABLE

**Eagle Red 50 CC LCF**  
**Eagle Blue 55 CC**  
**Eagle Natural 55 CC**  
**Eagle Green 63 CC**  
**Eagle Natural 63 CC**



**Eagle® Reinforced Polyester Can Cable — when can lines go down, don't call in the wire splicing team and wait; weld our Can Cables endless in minutes yourself!**

- 100% polyester reinforced with high tensile cord
- High performance, low cost alternative to steel cables
- Fast installation — a zero downtime product
- Easily welded endless on site with overlap weld kit
- Popular  $\frac{3}{8}$ " diameter cable always in stock
- Other sizes and colors made to order
- Eagle Red 50 has a low coefficient of friction (LCF)

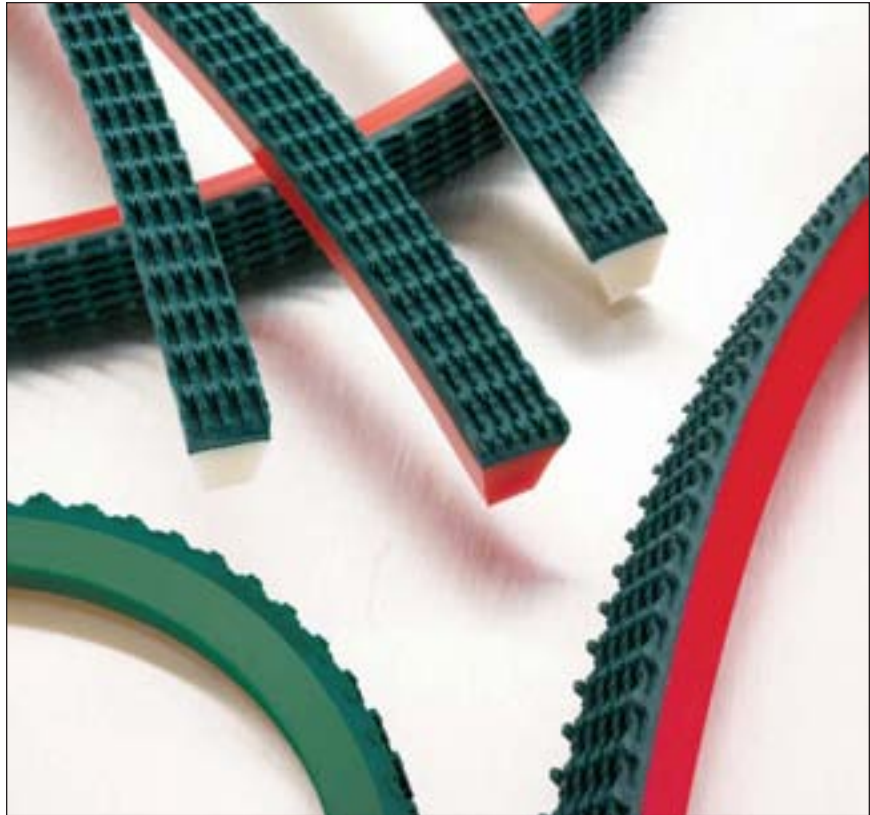
**Eagle Red 85 CXF**  
**Eagle Hyfen 85 CXF®**  
**Eagle Hyfen 85 CXR®**



**Eagle® Red 85 & Reinforced Hyfen 85 Co-Extruded Urethane Belting — whether on flat or inclined conveyors, get extra grip and cushioning on conveyed products.**

- Non-reinforced and reinforced versions
- Ultra-grip co-extruded 60A top surfaces
- Tough 85A bases
- Smooth (CXF) and rough top (CXR) surfaces available
- V- and Twin-V profiles
- Integrally bonded tops cannot delaminate
- Outperforms all adhesively bonded special surface belts
- Reinforced belting is not self-tensioning — use a T-Max™ Tensioner from Fenner Drives

**Eagle Green 89 TGT**  
**Eagle Green 89 RTGT**  
**Eagle Opaque 80 GT**  
**Eagle Orange 85 GT**  
**Eagle Red 90 GT**  
**Eagle White 40 GT**



**Eagle® GT Urethane and Polyester Belting – incorporating high grip, low wear PVC top surfaces & ideally suited for ceramic and woodworking conveying applications.**

- 80A, 85A, 89A, 90A and 40D base durometers
- Non-reinforced and reinforced versions
- Integrally bonded tops cannot delaminate
- V- and Twin-V profiles
- Custom top surfaces available on request

**Work one on one  
with our design  
engineers for your  
perfect solution**



**Eagle® Custom Belting — our product design and engineering teams work with you to develop the correct belt profile and optimum material selection for your specific application.**

- Dual durometers — a variety of options are available to utilize the best properties of two different urethane materials
- Static dissipative and UV stabilized material options
- Tracking features to fit unique pulleys and drive configurations
- Ridged profiles for reduced product contact surface
- Larger surface areas to lower unit pressure on heavy or sensitive product surfaces

## OVERLAP WELDING

**Kit Includes:**

**Welder**  
**Control Box**  
**Carrying Case**  
**Set of Dies**  
**Flash Cutters**  
**Cutting Shears**



If you've chosen our reinforced Eagle® urethane or Can Cable belting for your application, then you'll want to make your belts endless with our patented overlap weld. This is the strongest weld you can make in the field and is far superior to conventional butt welding techniques. This patented, flexible weld delivers 100% of rated tensile belt strength by overlapping the reinforcing tensile member inside the finished belt. It provides a smooth surface that won't damage transferred product. Overlap welds can be completed on site in minutes.

## BUTT WELDING

**Kit Includes:**

**Clamping Tool**  
**Hot Knife**  
**Flash Cutters**  
**Cutting Shears**  
**Carrying Case**



Take the hassle out of fabricating endless non-reinforced urethane belts with the Fenner Drives Butt Welding System. The kit provides a fast, economical way to join all non-reinforced Eagle belting and even hollow Quick-Connect. Our unique clamping tool is the easiest and most reliable to use and ensures proper alignment of belt ends.

# PRODUCT APPLICATION GUIDELINES

With such a range of products, how do you choose what's right for your application? While the possibilities seem endless, there are some general guidelines we can make based on our extensive experience with urethane and polyester belting products. The uses are not limited to those listed here; if you have a question about a product or application that isn't addressed below, please contact our Applications Engineering department. We'll be happy to help.

	Working Load less than 20lbs/belt	Working Load 21-40lbs/belt	Working Load greater than 40lbs/belt	Accumulating Applications	Washdown Applications	Can Conveyors	Highly Abrasive Applications	Over 15' c.d.	Quick Connect	Inclines or Declines	High Coefficient of Friction	FDA Compliant	Static Dissipating
Eagle Opaque 80	● ▽	▽						No				Yes	No
Eagle Orange 85	● ▽ —	● ▽						No				Yes	No*
Eagle Clear 85	● ▽	● ▽						No				Yes	No*
Eagle Green 89 T	●	●		●	●			No				No	No*
Eagle Red 90		●	● ▽				●	No				No	No*
Eagle Clear 95	● ▽	● ▽	● ▽					No				No	No
Eagle Red 85 CXF	▽	▽						No		▽	▽	No	No
Eagle Clear 85 QC	○							No	○			Yes	No*
Eagle Yellow 85 QC	⊙							No	⊙			Yes	No*
Eagle Clear 85 TOR	○							No	○			Yes	No*
Eagle Opaque 80 R	○ ▽	○ ▽						Yes				Yes	No
Eagle Orange 85 R	● ▽	● ▽						Yes				Yes	No
Eagle Green 89 RT	●	●	●	●	●			Yes				No	No
Eagle Hyfen 95 R			▽					Yes				Yes	No
Eagle Hyfen 85 CXF/CXR			▽					Yes		▽	▽	No	No
Eagle Hyfen 85 R		●	▽					Yes				Yes	No*
Eagle Beige 95 R		▽	▽					Yes				Yes	No
Eagle Red 50 CC			●	●	●	●		Yes				No	No
Eagle Blue 55 CC			●			●		Yes				No	No
Eagle Natural 55 CC			●			●		Yes				Yes	No
Eagle Green 63 CC			●			●		Yes				Yes	No
Eagle Natural 63 CC			●			●		Yes				Yes	No

\* Standard product is not static dissipating. A static dissipative version is available. May be subject to minimum order. Consult factory for availability.

*Eagle® Urethane Belting provides solutions for all sorts of applications in virtually every industry. For inspiration on how we might solve your application problem, here's just a small sampling of our belting products at work. Not sure what you need? Contact our applications engineering department for advice on your specific application.*



1



2



3



4



5

1. Eagle® Hyfen® Ridge-Top on a pop-up diverter conveying wood products.
2. Eagle Orange 85 belts driving the roller conveyor.
3. Wood panels being moved by Eagle Opaque 85 chosen for its non-marking characteristics.
4. Eagle Hyfen R on a tray conveyor system, such as found in cafeterias, hospitals, etc.; chosen for its high strength, low stretch characteristics on long center distances.
5. FDA compliant custom Eagle Blue used on tomato packaging line.



- 6. *Eagle® Red 90 moving roofing tile; chosen for its excellent abrasion resistance.*
- 7. *Eagle Twisted O-Rings easily installed without dismantling line shaft.*
- 8. *Custom Eagle Orange profile designed for onion grading equipment.*
- 9. *Custom Eagle White profile for pear sorting machine.*
- 10. *Co-extruded reinforced Eagle Hyfen 85 CXF® on conveying system. Lower durometer top surface increases coefficient of friction for excellent grip to convey or move products.*
- 11. *Eagle Orange 85 on egg conveyor.*

## PART NUMBER LISTING

## Round Profiles

	NON-REINFORCED BELTING						REINFORCED BELTING			
	Eagle Opaque 80	Eagle Orange 85	Eagle Clear 85	Eagle Green 89 T	Eagle Red 90	Eagle Clear 95	Eagle Hyfen 85 R	Eagle Orange 85 R	Eagle Green 89 RT	Eagle Can Cable
3/32"		1032003	4908003			4907003				
1/8"		1032004	4908006			4907006				
3/16"		1032006	4908009		4940022	4907009	5218009			
1/4"	4940003	1032008	4908012		4940023	4907012	5218012	4940058		
5/16"		1032010	4908015			4907015	5218015	4940059		
3/8"	4940005	1032012	4908018		4940025	4907018	5218018	4940060		
1/2"	4940011*	1032016	4908024		4940026	4907024	5218024	4940061		
9/16"		1032018	4908027			4907027*	5218027	4940062*		
5/8"		1032020	4908030			4907030*	5218030	4940063*		
3/4"		1032024	4908033			4907033*	5218033	4940064*		
2 mm	4940018*			4905302	4940017*					
3 mm	4940000			4905303	4940020					
4 mm	4940001			4905304	4940021					
5 mm	4940002			4905305					4940056	
6 mm				4905306					4940057	
7 mm				4905307					4940050	
8 mm	4940004			4905308	4940024				4940051	
10 mm				4905310					4940052	
12 mm				4905312					4940053	
15 mm	4940012*			4905315	4999315				4940054	
18 mm	4940013*				4940031				4940055	
3/8" Red 50 CC										4816020
3/8" Blue 55 CC										4816019
3/8" Natural 55 CC										4816018
3/8" Green 63 CC										4817018
3/8" Natural 63 CC										4899006

## V Profiles

	NON-REINFORCED BELTING					REINFORCED BELTING				
	Eagle Opaque 80	Eagle Orange 85	Eagle Clear 85	Eagle Red 90	Eagle Clear 95	Eagle Hyfen 85 R	Eagle Orange 85 R	Eagle Hyfen 95 R	Eagle Cream 95 R	
8 mm x 5 mm	4940006			4940027						
20 mm	4940014*			4940032*						
22 mm	4940015*									
25 mm	4940016*			4940033*						
Z	4940008			4940028			4940065		4940074*	
3L	4940007	1032030	4912063		4911063*				4940070	
3L T-Top		1032031	4912064		4911064*					
3L Crown-Top		1032032								
3L Twin		1032033	4912065		4911065*	5299010				
3L Cogged									4940078*	
A	4940009	1032038	4912066	4940029	4911066		4940066	5260200	4940075*	
A Ridge-Top		1032039	4912067*		4911067*	5299007				
A Hi-Ridge-Top		1032040	4911102*		4911101*					
A Twin		1032041	4912068		4911068*	5299019				
A Cogged								5220000	4940071	
AA		1232550	4912062*		4911062*					
B	4940010	1032047	4912069	4940030	4911069		4940067	5260300	4940076*	
B Ridge-Top						5299009				
B Ribbed		1032046								
B Wing-Top		1032048								
B Cogged								5230000	4940072	
BB		1232600	4912070*		4911070*					
C		1032072	4912072	4999306	4911072		4940068	5260400	4940077*	
C Ribbed		1032054								
C Cogged								5240000	4940073	
D						5260500				
D Ribbed		1032062	4908077*		4911077*					
E Ribbed		1032070								

# PART NUMBER LISTING

NON-REINFORCED BELTING					
Flat Profiles	Eagle Orange 80		Quick-Connect Round Profiles	Eagle Clear 85 QC	
				Eagle Yellow 85 QC	
0.055" x .375"	1032121		3/16"	4934009	4934021
0.062" x .5"	1032126		1/4"	4934012	4934022
0.062" x .75" w/ 0.156" radius guide	1032210		5/16"	4934015	4934023
0.062" x 1.5"	1032148		3/8"	4934018	4934025
0.062" x 1.75"	1032155		1/2"	4934024	4934026
0.062" x 2"	1032160		5/8"	4934030	4934020*
0.062" x 3"	1032170				
0.125" x .625"	1032133				
0.125" x 1"	1032143				
0.250" x .625"	1032134				
0.078" x .75"	1032136				
0.090" x 1"	1032142				
0.090" x 1.25"	1032146				
0.090" x 1.5"	1032151				
0.090" x 2"	1032163				

REINFORCED BELTING			
Co-Extruded V Profiles	Eagle Hyfen 85 CXF		Eagle Red 85 CXF
		Eagle Hyfen 85 CXR	
A	5260520	5260525	4924320
A Twin	5260572	5260577	
B	5260530	5260535	4924330
C	5260540	5260545*	4924345
D	5260550	5260555*	

For technical assistance and drive design help, contact Applications Engineering at 800-243-3374.

\* May be subject to minimum order.  
Consult factory for availability.



Round Belting

**EAGLE**  
POLYURETHANE BELTING & O-RINGS®

		3/32"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	9/16"	5/8"	3/4"	2 mm	3 mm	4 mm	5 mm	6 mm	7 mm	8 mm	10 mm	12 mm	15 mm	18 mm
Non-Reinforced Belting	Eagle Opaque 80				●	●	●					●	●	●	●		●			●	●	
	Eagle Orange 85	●	●	●	●	●	●	●	●	●												
	Eagle Clear 85	●	●	●	●	●	●	●	●	●	●											
	Eagle Green 89 T											●	●	●	●	●	●	●	●	●	●	
	Eagle Red 90			●	●		●	●				●	●	●				●			●	●
	Eagle Clear 95	●	●	●	●	●	●	●	●	●	●											
	Eagle Red 85 CXF																					
	Eagle Clear 85 QC			○	○	○	○	○			○											
	Eagle Yellow 85 QC			●	●	●	●	●			●											
	Eagle Clear 85 TOR			○																		
Reinforced Belting	Eagle Orange 85 R			●	●	●	●	●	●	●												
	Eagle Green 89 RT														●	●	●	●	●	●	●	●
	Eagle Hyfen 95 R																					
	Eagle Hyfen 85 CXF/CXR																					
	Eagle Hyfen 85 R			●	●	●	●	●	●	●	●											
	Eagle Beige 95 R																					
	Eagle Red 50 CC						●															
	Eagle Blue 55 CC						●															
	Eagle Natural 55 CC						●															
	Eagle Green 63 CC						●															
Eagle Natural 63 CC						●																
Eagle Fabricated Belts	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

*Note: Some diameters and cross sections may be subject to minimum orders*



V Belting

8mm x 5mm	3L	3L T-Top	3L Crown-Top	3L Twin	Z/10	A/13	AA	A Twin	A Ridge-Top	A Ridge-Top R	A Hi-Ridge-Top	B/17	BB	B Ribbed	B Wing-Top	B Ridge-Top	C/22	C Ribbed	D Ribbed	D/32	E Ribbed	
																						Eagle Opaque 80
																						Eagle Orange 85
																						Eagle Clear 85
																						Eagle Green 89 T
																						Eagle Red 90
																						Eagle Clear 95
																						Eagle Red 85 CXF
																						Eagle Clear 85 QC
																						Eagle Yellow 85 QC
																						Eagle Clear 85 TOR
																						Eagle Orange 85 R
																						Eagle Green 89 RT
																						Eagle Hyfen 95 R
																						Eagle Hyfen 85 CXF/CXR
																						Eagle Hyfen 85 R
																						Eagle Beige 95 R
																						Eagle Red 50 CC
																						Eagle Blue 55 CC
																						Eagle Natural 55 CC
																						Eagle Green 63 CC
																						Eagle Natural 63 CC
																						Eagle Fabricated Belts

Non-Reinforced Belting

Reinforced Belting

Note: Flat belting available in Eagle Orange 85. See page 22 for cross sections

## Eagle Opaque 80

 DESCRIPTION  
 Round, Non-Reinforced

 HARDNESS  
 80A  
 FDA COMPLIANT  
 No

 COEFFICIENT OF FRICTION  
 Stainless Steel .75  
 Steel .65  
 UHMW .50

 TEMPERATURE RANGE  
 -22°F to +150°F  
 -30°C to +66°C

Cross Section	Dimensions Ø		Minimum Pulley Ø		Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
	(in)	(mm)	(in)	(mm)	4%		6%		8%		10%			
					(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
2mm		2	.56	14	0.2	0.8	0.4	1.8	0.5	2.2	0.6	2.7	.003	.002
3mm		3	.81	21	0.5	2.2	0.8	3.6	1.1	4.9	1.4	6.2	.006	.004
4mm		4	1.19	30	0.8	3.6	1.4	6.2	2.0	8.9	2.5	11.1	.01	.007
<sup>3</sup> / <sub>16</sub>	<sup>3</sup> / <sub>16</sub>		1.31	33	1.2	5.3	2.0	8.9	2.8	12.5	3.5	15.6	.01	.007
5mm		5	1.38	35	1.3	5.8	2.2	9.8	3.1	13.8	3.9	17.3	.02	.013
6mm		6	1.63	42	1.8	8.0	3.0	13.3	4.2	18.6	5.3	23.4	.025	.017
<sup>1</sup> / <sub>4</sub>	<sup>1</sup> / <sub>4</sub>		1.75	44	1.8	8.0	3.0	13.3	4.2	18.6	5.3	23.4	.03	.020
8mm		8	2.25	56	3.3	14.7	5.6	24.9	7.8	34.0	9.9	44.0	.04	.027
<sup>3</sup> / <sub>8</sub>	<sup>3</sup> / <sub>8</sub>		2.63	67	4.0	17.6	6.7	29.9	9.4	34.7	11.9	52.7	.06	.040
10mm		10	2.75	70	5.2	23.1	8.8	39.1	12.3	54.7	15.4	68.5	.07	.047
<sup>1</sup> / <sub>2</sub>	<sup>1</sup> / <sub>2</sub>		3.50	89	7.0	31.3	12.0	53.2	16.7	74.4	21.1	93.7	.10	.067
15mm		15	4.13	105	11.6	51.6	19.7	87.6	27.6	122.8	34.7	154.3	.14	.094
18mm		18	5.00	126	16.7	74.3	28.4	126.3	39.7	176.6	50.0	222.4	.22	.147

## Eagle Opaque 80

 DESCRIPTION  
 Trapezoidal, Non-Reinforced


Additional cross sections available – consult factory

 HARDNESS  
 80A  
 FDA COMPLIANT  
 No

 COEFFICIENT OF FRICTION  
 Stainless Steel .75  
 Steel .65  
 UHMW .50

 TEMPERATURE RANGE  
 -22°F to +150°F  
 -30°C to +66°C

Cross Section	Dimensions w x h*		Minimum Pulley Ø		Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
	(in)	(mm)	(in)	(mm)	4%		6%		8%		10%			
					(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
8 X 5	8	5	1.38	35	1.7	7.6	3.6	16.0	5.7	25.4	7.7	34.2	.02	.013
3L	9.5	6	1.50	39	2.3	10.2	4.7	20.9	7.5	33.4	10.2	45.4	.03	.020
3L T-Top	<sup>9</sup> / <sub>16</sub>	<sup>19</sup> / <sub>64</sub>	2.00	53	3.4	15.1	7.1	31.6	11.2	49.8	15.2	67.6	.05	.034
Z/10	10	6.5	1.63	42	2.7	12.0	5.6	24.9	8.9	39.6	12.1	53.8	.05	.034
A/13	13	8	2.25	56	4.2	18.7	8.8	39.1	14.0	62.3	19.0	84.5	.07	.047
A Ridge Top	13	16	4.44	112	4.2	18.7	8.8	39.1	14.0	62.3	19.0	84.5	.09	.060
B/17	17	11.5	3.00	77	7.3	32.5	15.2	67.6	24.2	107.6	32.8	145.9	.11	.074
B Ridge Top	17	20	5.50	140	7.3	32.4	15.2	67.6	24.2	107.6	32.8	145.9	.13	.087
C/22	22	14.5	3.88	98	12.7	56.5	26.7	118.8	42.5	189	57.6	256.2	.19	.128
C Ridge Top	22	28	7.75	196	12.7	56.5	26.7	118.8	42.5	189	57.6	256.2	.25	.168

For technical assistance and drive design help, contact Applications Engineering at 800-243-3374.

\* w (width) is the widest part of the belt. h (height) is the tallest part of the belt.

# TECHNICAL DATA

## Eagle Orange 85 Eagle Clear 85

DESCRIPTION  
Round, Non-Reinforced



HARDNESS  
85A  
FDA COMPLIANT  
Yes

COEFFICIENT OF FRICTION  
Stainless Steel .70  
Steel .60  
UHMW .45

TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions Ø		Minimum Pulley Ø		Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
	(in)	(mm)	(in)	(mm)	4%		6%		8%		10%			
					(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
2mm		2	0.63	16	0.2	0.9	0.3	1.3	0.4	1.8	0.5	2.2	.003	.002
3/32	3/32		0.75	19	0.2	0.9	0.3	1.3	0.4	1.8	0.5	2.2	.004	.003
1/8	1/8	3	0.94	24	0.5	2.2	0.7	3.1	1.0	4.4	1.2	5.3	.006	.004
4mm		4	1.25	32	0.8	3.6	1.2	5.3	1.6	7.1	1.9	8.5	.01	.007
3/16	3/16		1.50	38	1.1	4.9	1.7	7.6	2.2	9.8	2.7	12.0	.01	.007
5mm		5	1.56	40	1.2	5.3	1.8	8.0	2.4	10.7	3.0	13.3	.02	.013
6mm		6	1.88	48	1.7	7.6	2.6	11.6	3.5	15.6	4.3	19.1	.025	.017
1/4	1/4		2.00	51	1.9	8.5	2.9	12.9	3.9	17.3	4.8	21.4	.03	.020
5/16	5/16		2.50	64	3.0	13.3	4.6	20.5	6.1	27.1	7.6	33.8	.04	.027
8mm		8	2.50	64	3.0	13.3	4.6	20.5	6.1	27.1	7.6	33.8	.04	.027
3/8	3/8		3.00	76	4.3	19.1	6.6	29.4	8.8	39.1	10.9	48.5	.06	.040
10mm		10	3.13	80	4.7	20.9	7.3	32.5	9.7	43.1	12.0	53.4	.07	.047
1/2	1/2		4.00	102	7.6	33.8	11.8	52.5	15.7	69.8	19.3	85.8	.10	.067
9/16	9/16		4.50	114	9.7	43.1	14.9	66.3	19.9	88.5	24.5	109.0	.13	.087
15mm		15	4.75	120	10.7	47.6	16.4	72.9	21.9	97.4	27.0	120.1	.14	.094
5/8	5/8		5.00	127	11.9	52.9	18.4	81.8	24.5	109.0	30.2	134.3	.16	.095
3/4	3/4		6.00	152	17.7	78.7	26.5	117.9	35.3	157.0	43.5	193.5	.23	.155

## Eagle Orange 85 Eagle Clear 85

DESCRIPTION  
Trapezoidal,  
Non-Reinforced



HARDNESS  
85A  
FDA COMPLIANT  
Yes

COEFFICIENT OF FRICTION  
Stainless Steel .70  
Steel .60  
UHMW .45

TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions w x h*		Minimum Pulley Ø		Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
	(in)	(mm)	(in)	(mm)	4%		6%		8%		10%			
					(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
6 x 4	6 x 4		1.25	32	0.9	4.0	1.6	7.1	2.2	9.8	2.8	12.5	.02	.013
8 x 5	8 x 5		1.56	40	1.6	7.1	2.7	12.0	3.8	16.9	4.8	21.4	.02	.013
Z/10	10 x 6		1.88	48	2.4	10.7	4.1	18.2	5.8	25.8	7.3	32.5	.05	.034
Z Twin	24 x 7		2.25	56	5.4	24.0	9.1	40.5	12.8	56.9	16.2	72.1	.11	.074
3L	3/8 x 7/32		1.75	45	2.2	9.8	3.7	16.5	5.2	23.1	6.5	28.9	.03	.020
3L T-Top	9/16 x 19/64		2.38	60	3.2	14.2	5.5	24.5	7.7	34.2	9.7	43.1	.05	.034
3L Crown-Top	9/16 x 1/4		2.00	51	3.2	14.2	5.5	24.5	7.7	34.2	9.7	43.1	.05	.034
3L Twin	15/16 x 17/64		2.13	54	6.1	27.1	10.3	45.8	14.5	64.5	18.4	81.8	.10	.067
A/13	1/2 x 5/16		2.50	64	4.0	17.8	6.8	30.2	9.6	42.7	12.2	54.3	.07	.047
A Ridge-Top	1/2 x 7/16		2.50	64	4.0	17.8	6.8	30.2	9.6	42.7	12.2	54.3	.07	.047
A Hi-Ridge-Top	1/2 x 5/8		5.00	127	6.7	29.8	11.3	50.3	15.9	70.7	20.1	89.4	.09	.060
A Twin	1 3/16 x 5/16		2.50	64	8.2	36.5	14.0	62.3	19.6	87.2	24.8	110.3	.15	.101
AA	1/2 x 13/32		3.25	83	5.8	25.8	9.8	43.6	13.7	60.9	17.4	77.4	.09	.060
B Ribbed	11/16 x 13/32		3.25	83	7.0	31.1	11.8	52.5	16.6	73.8	21.0	93.4	.11	.074
B/17	11/16 x 13/32		3.25	83	7.0	31.1	11.8	52.5	16.6	73.8	21.0	93.4	.11	.074
B Wing-Top	11/16 x 5/8		3.25	83	7.0	31.1	11.8	52.5	16.6	73.8	21.0	93.4	.11	.074
BB	11/16 x 9/16		4.25	108	8.8	39.1	14.9	66.3	20.9	93.0	26.5	117.9	.16	.108
C Ribbed	29/32 x 17/32		4.50	114	12.1	53.8	20.6	91.6	28.9	128.5	36.6	162.8	.19	.128
C/22	29/32 x 17/32		4.50	114	12.1	53.8	20.6	91.6	28.9	128.5	36.6	162.8	.19	.128
D Ribbed	1 5/16 x 3/4		7.00	178	25.2	112.1	42.7	189.9	59.9	266.4	75.8	337.2	.38	.255
E Ribbed	1 11/16 x 1 3/32		15.00	381	47.8	212.6	81.1	360.7	113.9	505.9	144	640.5	.71	.477

For technical assistance and drive design help, contact Applications Engineering at 800-243-3374.

\* w (width) is the widest part of the belt. h (height) is the tallest part of the belt.

## Eagle Orange 85

DESCRIPTION  
Flat, Non-ReinforcedHARDNESS  
85A  
FDA COMPLIANT  
YesCOEFFICIENT OF FRICTION  
Stainless Steel .70  
Steel .60  
UHMW .45TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions w x h* (in)	Minimum Pulley Ø (in)	(mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
				4%		6%		8%		10%			
				(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
.055 X .375	$\frac{3}{8} \times \frac{7}{128}$	.38	10	0.9	3.9	1.3	5.8	1.7	7.6	2.1	9.3	.01	.007
.062 X .500	$\frac{1}{2} \times \frac{1}{16}$	.50	13	1.3	5.9	2.0	8.8	2.6	11.5	3.1	13.9	.02	.013
.062 X .750 **	$\frac{3}{4} \times \frac{1}{16}$	1.00	25	2.0	8.8	3.0	13.2	3.9	17.2	4.7	20.9	.03	.020
.062 X 1.50	$1 \frac{1}{2} \times \frac{1}{16}$	.50	13	4.0	17.6	5.9	26.4	7.8	34.5	9.4	41.8	.05	.034
.062 X 1.75	$1 \frac{3}{4} \times \frac{1}{16}$	.50	13	4.6	20.5	6.9	30.8	9.0	40.2	11.0	48.8	.06	.040
.062 X 2.00	$2 \times \frac{1}{16}$	.50	13	5.3	23.5	7.9	35.2	10.3	46.0	12.5	55.8	.07	.047
.062 X 3.00	$3 \times \frac{1}{16}$	.50	13	7.9	35.2	11.9	52.7	15.5	68.9	18.8	83.7	.10	.067
.125 X .625	$\frac{5}{8} \times \frac{1}{8}$	1.00	25	3.3	14.8	5.0	22.2	6.5	29.0	7.9	35.1	.04	.027
.125 X 1.00	$1 \times \frac{1}{8}$	1.00	25	5.3	23.6	8.0	35.4	10.4	46.3	12.6	56.2	.07	.047
.250 X .625	$\frac{5}{8} \times \frac{1}{4}$	2.00	51	6.6	29.6	10.0	44.3	13.0	57.9	15.8	70.3	.08	.054
.078 X .750	$\frac{3}{4} \times \frac{5}{64}$	.63	16	2.5	11.1	3.7	16.6	4.9	21.7	5.9	26.3	.03	.020
.090 X 1.00	$1 \times \frac{3}{32}$	.75	19	3.8	17.0	5.7	25.5	7.5	33.4	9.1	40.5	.05	.034
.090 X 1.25	$1 \frac{1}{4} \times \frac{3}{32}$	.75	19	4.8	21.3	7.2	31.9	9.4	41.7	11.4	50.6	.06	.040
.090 X 1.50	$1 \frac{1}{2} \times \frac{3}{32}$	.75	19	5.7	25.5	8.6	38.3	11.3	50.0	13.7	60.7	.07	.047
.090 X 2.00	$2 \times \frac{3}{32}$	.75	19	7.7	34.1	11.5	51.0	15.0	66.7	18.2	81.0	.09	.060

\*\* - indicates belt has .156" radius guide.

## Eagle Red 85 CXF

DESCRIPTION  
Trapezoidal, Non-Reinforced  
with Co-Extruded Flat Top← nominal 0.10"  
Add 0.10" nominal to listed height for total belt height.HARDNESS  
85A Base, 60A Top  
FDA COMPLIANT  
NoCOEFFICIENT OF FRICTION  
Stainless Steel 1.00  
Steel .90  
UHMW .85TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions w x h* (in)	Minimum Pulley Ø (in)	(mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
				4%		6%		8%		10%			
				(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
A/13	$\frac{1}{2} \times \frac{5}{16}$	3.00	76	4.7	20.9	7.4	32.9	10.1	44.9	12.5	55.6	.07	.047
B/17	$\frac{11}{16} \times \frac{13}{32}$	4.00	102	8.0	35.6	12.6	56.0	17.1	76.1	21.4	95.2	.11	.074
C/22	$\frac{29}{32} \times \frac{17}{32}$	5.00	127	14.0	62.3	22.1	98.3	30.0	133.4	37.4	166.4	.19	.128

Eagle Clear 85 QC  
Eagle Yellow 85 QCDESCRIPTION  
Round, Hollow, Non-ReinforcedHARDNESS  
85A  
FDA COMPLIANT  
YesCOEFFICIENT OF FRICTION  
Stainless Steel .70  
Steel .60  
UHMW .45TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions w x h* (in)	Minimum Pulley Ø (in)	(mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
				4%		6%		8%		10%			
				(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
3/16	.1875 x .080	2.00	51	0.5	2.2	0.7	3.1	0.9	4.0	1.1	4.9	.01	.007
1/4	.25 x .098	2.50	64	0.8	3.6	1.3	5.8	1.7	7.6	2.1	9.3	.02	.013
5/16	.3125 x .126	3.00	76	1.3	5.8	2.0	8.9	2.7	12.0	3.3	14.7	.03	.022
3/8	.375 x .152	3.50	89	1.8	8.0	2.9	12.9	3.8	16.9	4.7	20.9	.05	.034
1/2	.500 x .214	4.50	114	3.3	14.7	5.1	22.7	6.8	30.2	8.4	37.4	.09	.060
5/8	.625 x .273	5.50	140	5.0	22.2	7.7	34.2	10.3	45.8	12.7	56.5	.13	.087

For technical assistance and drive design help, contact Applications Engineering at 800-243-3374.

\* w (width) is the widest part of the belt. h (height) is the tallest part of the belt, NOT including the nominal 0.10" of co-extruded belting.

# TECHNICAL DATA

## Eagle Green 89 T

DESCRIPTION  
Round, Textured, Non-Reinforced



HARDNESS  
89A  
FDA COMPLIANT  
No

COEFFICIENT OF FRICTION  
Stainless Steel .50  
Steel .40  
UHMW .30

TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions Ø (mm)	Minimum Pulley Ø (in)	Minimum Pulley Ø (mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
				4%		6%		8%		10%			
				(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
2mm	2	.75	19	0.2	0.9	0.4	1.8	0.5	2.2	0.7	3.1	.003	.002
3mm	3	1.00	27	0.6	2.7	0.9	4.0	1.2	5.3	1.5	6.7	.006	.004
4mm	4	1.44	36	1.0	4.4	1.6	7.1	2.1	9.3	2.6	11.6	.01	.007
5mm	5	1.75	45	1.5	6.7	2.4	10.7	3.3	14.7	4.1	18.2	.02	.013
6mm	6	2.13	54	2.2	9.8	3.5	15.6	4.7	20.9	5.9	26.2	.025	.017
7mm	7	2.50	63	3.0	13.3	4.7	20.9	6.4	28.5	8.0	35.6	.03	.022
8mm	8	2.83	72	3.9	17.3	6.2	27.6	8.4	37.4	10.4	46.3	.04	.027
10mm	10	3.50	90	6.1	27.1	9.7	43.1	13.1	58.3	16.3	72.5	.07	.047
12mm	12	4.25	108	8.7	38.7	13.9	61.8	18.9	84.1	23.5	104.5	.09	.078
15mm	15	5.25	135	13.6	60.5	21.7	96.5	29.6	131.7	36.6	162.8	.14	.094
18mm	18	6.38	162	18.8	83.6	30.9	137.4	42.5	189.0	53.0	235.7	.22	.147
20mm	20	7.00	180	23.2	103.2	38.2	169.9	52.4	233.1	65.5	291.3	.23	.155

## Eagle Red 90

DESCRIPTION  
Round, Non-Reinforced



HARDNESS  
90A  
FDA COMPLIANT  
No

COEFFICIENT OF FRICTION  
Stainless Steel .60  
Steel .50  
UHMW .38

TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions Ø		Minimum Pulley Ø (in)	Minimum Pulley Ø (mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
	(in)	(mm)			4%		6%		8%		10%			
					(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
2mm		2	.75	20	1.1	4.7	1.5	6.7	1.9	8.5	2.2	9.9	.003	.002
3mm		3	1.19	30	2.4	10.5	3.4	15.2	4.3	19.1	5.0	22.3	.006	.004
4mm		4	1.56	40	4.2	18.7	6.1	26.9	7.6	33.9	8.9	39.7	.01	.007
3/16	3/16		1.88	47	6.0	26.5	8.6	38.2	10.8	48.1	12.6	56.2	.01	.007
1/4	1/4		2.75	70	10.6	47.1	15.3	67.9	19.2	85.4	22.5	100.0	.03	.020
8mm		8	3.13	80	16.8	74.8	24.2	107.7	30.5	135.6	35.7	158.7	.04	.027
3/8	3/8		3.75	95	23.8	106.0	34.3	152.7	43.2	192.2	50.6	224.9	.06	.040
1/2	1/2		5.00	127	42.4	188.5	61.0	271.5	76.8	341.7	89.9	399.9	.10	.067
15mm		15	5.90	150	59.1	262.9	85.2	378.8	107.2	476.7	125.4	557.8	.14	.094
18mm		18	7.00	180	85.1	378.6	122.6	545.4	154.3	686.5	180.6	803.3	.22	.147

## Eagle Red 90

DESCRIPTION  
Trapezoidal, Non-Reinforced



*Additional cross sections available - consult factory*

HARDNESS  
90A  
FDA COMPLIANT  
No

COEFFICIENT OF FRICTION  
Stainless Steel .60  
Steel .50  
UHMW .38

TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions w x h* (mm)	Minimum Pulley Ø (in)	Minimum Pulley Ø (mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
				4%		6%		8%		10%			
				(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
8 X 5	8 x 5	2.0	50	9.5	42.1	15.0	66.8	19.9	88.7	24.0	106.9	.02	.013
Z/10	10 x 6.5	2.5	65	14.8	65.8	23.4	104.3	31.1	138.5	37.5	167.0	.05	.034
A/13	13 x 8	3.13	80	24.1	107.0	38.1	169.5	50.6	225.3	61.0	271.5	.07	.047
B/17	17 x 11.5	4.5	115	43.9	195.2	69.5	309.3	92.4	411.0	111.3	495.3	.11	.074
C/22	22 x 14.5	5.75	145	72.2	321.2	114.4	508.9	152.0	676.2	183.2	814.9	.19	.128

For technical assistance and drive design help, contact Applications Engineering at 800-243-3374.

\* w (width) is the widest part of the belt. h (height) is the tallest part of the belt.

## Eagle Clear 95

DESCRIPTION  
Round, Non-ReinforcedHARDNESS  
95A  
FDA COMPLIANT  
YesCOEFFICIENT OF FRICTION  
Stainless Steel .55  
Steel .45  
UHMW .35TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions Ø (in)	Minimum Pulley Ø (in) (mm)		Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
				4%		6%		8%		10%			
		(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)				
<sup>3</sup> / <sub>32</sub>	<sup>3</sup> / <sub>32</sub>	1.00	25	0.7	3.1	1.2	5.3	1.5	6.7	1.9	5.3	.004	.003
<sup>1</sup> / <sub>8</sub>	<sup>1</sup> / <sub>8</sub>	1.25	32	0.9	4.0	1.4	6.2	1.7	7.6	2.1	6.2	.01	.007
<sup>3</sup> / <sub>16</sub>	<sup>3</sup> / <sub>16</sub>	1.88	48	2.0	8.9	3.0	13.3	3.9	17.3	4.6	13.3	.01	.007
<sup>1</sup> / <sub>4</sub>	<sup>1</sup> / <sub>4</sub>	2.50	64	3.6	16.0	5.4	24.0	6.9	30.7	8.2	24.0	.03	.020
<sup>5</sup> / <sub>16</sub>	<sup>5</sup> / <sub>16</sub>	3.13	79	5.7	25.4	8.4	37.4	10.8	48.0	12.9	37.4	.04	.027
<sup>3</sup> / <sub>8</sub>	<sup>3</sup> / <sub>8</sub>	3.75	95	8.2	36.5	12.1	53.8	15.6	69.4	18.5	53.8	.06	.040
<sup>1</sup> / <sub>2</sub>	<sup>1</sup> / <sub>2</sub>	5.00	127	14.5	64.5	21.6	96.1	27.7	123.2	32.9	96.1	.10	.067
<sup>9</sup> / <sub>16</sub>	<sup>9</sup> / <sub>16</sub>	5.63	143	18.4	81.8	27.3	121.4	35.0	155.7	41.7	121.4	.13	.087
<sup>5</sup> / <sub>8</sub>	<sup>5</sup> / <sub>8</sub>	6.25	159	22.7	101.0	33.7	149.9	43.3	192.6	51.4	149.9	.16	.095
<sup>3</sup> / <sub>4</sub>	<sup>3</sup> / <sub>4</sub>	7.50	190	32.7	145.4	48.5	215.7	62.3	277.1	74.1	215.7	.23	.155

## Eagle Clear 95

DESCRIPTION  
Trapezoidal, Non-ReinforcedHARDNESS  
95A  
FDA COMPLIANT  
YesCOEFFICIENT OF FRICTION  
Stainless Steel .55  
Steel .45  
UHMW .35TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions w x h* (in)	Minimum Pulley Ø (in) (mm)		Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
				4%		6%		8%		10%			
		(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)				
3L	<sup>3</sup> / <sub>8</sub> x <sup>7</sup> / <sub>32</sub>	2.19	56	4.1	18.2	6.6	29.4	8.9	39.6	10.8	48.0	.03	.020
3L T-Top	<sup>9</sup> / <sub>16</sub> x <sup>19</sup> / <sub>64</sub>	2.50	64	6.1	27.1	9.9	44.0	13.3	59.2	16.2	72.1	.05	.034
3L Twin	<sup>15</sup> / <sub>16</sub> x <sup>17</sup> / <sub>64</sub>	2.50	64	11.4	50.7	18.6	82.7	25.0	111.2	30.5	135.7	.10	.067
A/13	<sup>1</sup> / <sub>2</sub> x <sup>5</sup> / <sub>16</sub>	3.13	79	7.6	33.8	12.3	54.7	16.6	73.8	20.2	89.8	.07	.047
A Ridge-Top	<sup>1</sup> / <sub>2</sub> x <sup>7</sup> / <sub>16</sub>	3.13	79	7.6	33.8	12.3	54.7	16.6	73.8	20.2	89.8	.07	.047
A Hi-Ridge-Top	<sup>1</sup> / <sub>2</sub> x <sup>5</sup> / <sub>8</sub>	6.00	152	12.5	55.6	20.3	90.3	27.4	121.9	33.4	148.6	.09	.060
A Twin	1 <sup>3</sup> / <sub>16</sub> x <sup>5</sup> / <sub>16</sub>	3.13	79	15.4	68.5	25.1	111.6	33.8	150.3	41.2	183.3	.15	.101
AA	<sup>1</sup> / <sub>2</sub> x <sup>13</sup> / <sub>32</sub>	4.13	105	10.8	48.0	17.6	78.3	23.7	105.4	28.8	128.1	.09	.060
B/17	<sup>11</sup> / <sub>16</sub> x <sup>13</sup> / <sub>32</sub>	4.13	105	13.1	58.3	21.3	94.7	28.6	127.2	34.8	154.8	.11	.074
BB	<sup>11</sup> / <sub>16</sub> x <sup>9</sup> / <sub>16</sub>	5.63	143	16.5	73.4	26.8	119.2	36.1	160.6	44.0	195.7	.16	.108
C/22	<sup>29</sup> / <sub>32</sub> x <sup>17</sup> / <sub>32</sub>	5.38	136	22.7	101.0	37.0	164.6	49.8	221.5	60.7	270.0	.19	.128
D Ribbed	1 <sup>5</sup> / <sub>16</sub> x <sup>3</sup> / <sub>4</sub>	8.50	216	47.1	209.5	76.8	341.6	103.3	459.5	125.9	560.0	.38	.255

For technical assistance and drive design help, contact Applications Engineering at 800-243-3374.

\* w (width) is the widest part of the belt. h (height) is the tallest part of the belt.

# TECHNICAL DATA

## Eagle Hyfen 85 R

DESCRIPTION  
Round, Reinforced



HARDNESS  
85A  
FDA COMPLIANT  
Yes

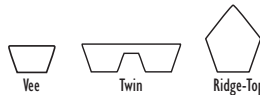
COEFFICIENT OF FRICTION  
Stainless Steel .70  
Steel .60  
UHMW .45

TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions Ø (in)	Minimum Pulley Ø (in)	Minimum Pulley Ø (mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
				1%		2%		3%		4%			
				(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
<sup>3</sup> / <sub>16</sub>	<sup>3</sup> / <sub>16</sub>	2.00	51	2.8	12.5	6.8	30.2	11.2	49.8	15.5	68.9	.01	.007
<sup>1</sup> / <sub>4</sub>	<sup>1</sup> / <sub>4</sub>	2.75	70	3.7	16.3	8.9	39.5	14.9	66.1	20.6	91.5	.03	.020
<sup>5</sup> / <sub>16</sub>	<sup>5</sup> / <sub>16</sub>	3.44	87	3.7	16.3	8.9	39.5	14.9	66.1	20.6	91.5	.04	.027
<sup>3</sup> / <sub>8</sub>	<sup>3</sup> / <sub>8</sub>	4.13	105	5.5	24.5	13.3	59.2	22.3	99.2	30.9	137.3	.06	.040
<sup>1</sup> / <sub>2</sub>	<sup>1</sup> / <sub>2</sub>	5.50	140	7.3	32.6	17.7	78.9	29.7	132.2	41.2	183.1	.10	.067
<sup>9</sup> / <sub>16</sub>	<sup>9</sup> / <sub>16</sub>	6.19	157	8.2	36.7	20.0	88.8	33.4	148.8	46.3	206.0	.13	.087
<sup>5</sup> / <sub>8</sub>	<sup>5</sup> / <sub>8</sub>	6.88	175	11.0	48.9	26.6	118.4	44.6	198.4	61.7	274.6	.16	.095
<sup>3</sup> / <sub>4</sub>	<sup>3</sup> / <sub>4</sub>	8.25	210	11.0	48.9	26.6	118.4	44.6	198.4	61.7	274.6	.23	.155

## Eagle Hyfen 85 R

DESCRIPTION  
Trapezoidal, Reinforced



HARDNESS  
85A  
FDA COMPLIANT  
Yes

COEFFICIENT OF FRICTION  
Stainless Steel .70  
Steel .60  
UHMW .45

TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions w x h* (in)	Minimum Pulley Ø (in)	Minimum Pulley Ø (mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
				1%		2%		3%		4%			
				(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
A Ridge-Top	<sup>1</sup> / <sub>2</sub> x <sup>9</sup> / <sub>16</sub>	6.19	157	17.4	77.4	25.1	111.4	33.8	150.1	42.8	190.2	.09	.060
B Ridge-Top	<sup>2</sup> / <sub>1</sub> x <sup>1</sup> / <sub>16</sub>	7.50	191	25.7	114.4	37.0	164.6	49.8	221.7	63.2	280.9	.04	.027
3L Twin	<sup>1</sup> / <sub>16</sub> x <sup>1</sup> / <sub>64</sub>	3.00	76	14.4	63.9	20.7	91.9	27.8	123.8	35.3	156.8	.10	.067
A Twin	<sup>1</sup> / <sub>16</sub> x <sup>5</sup> / <sub>16</sub>	3.44	87	16.5	73.3	23.7	105.5	31.9	142.1	40.5	180.0	.15	.101
D/32	<sup>1</sup> / <sub>4</sub> x <sup>3</sup> / <sub>4</sub>	12.00	305	77.1	343.0	111.0	493.6	149.5	664.9	189.4	842.4	.38	.255

## Eagle Hyfen 85 CXF Eagle Hyfen 85 CXR

DESCRIPTION  
Trapezoidal, Reinforced



← nominal 0.10"  
Add 0.10" nominal to listed height for total belt height.

HARDNESS  
85A Base, 60A Top  
FDA COMPLIANT  
Yes

COEFFICIENT OF FRICTION  
Stainless Steel .70  
Steel .60  
UHMW .45

TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions w x h* (in)	Minimum Pulley Ø (in)	Minimum Pulley Ø (mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
				1%		2%		3%		4%			
				(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
A/13	<sup>1</sup> / <sub>2</sub> x <sup>5</sup> / <sub>16</sub>	4.50	115	22.2	98.6	29.6	131.7	36.7	163.1	43.4	193.2	.07	.047
B/17	<sup>2</sup> / <sub>1</sub> x <sup>1</sup> / <sub>32</sub>	5.50	140	32.7	145.7	43.7	194.6	54.1	240.9	64.1	285.3	.11	.074
C/22	<sup>7</sup> / <sub>8</sub> x <sup>1</sup> / <sub>32</sub>	7.00	178	48.9	217.6	65.4	290.7	80.9	359.9	95.9	426.3	.19	.128
D/32	<sup>1</sup> / <sub>4</sub> x <sup>3</sup> / <sub>4</sub>	12.50	318	96.4	428.7	128.7	572.6	159.4	708.8	188.8	839.7	.15	.101
A Twin	<sup>1</sup> / <sub>16</sub> x <sup>5</sup> / <sub>16</sub>	4.5	115	21.0	93.3	28.0	124.7	34.7	154.4	41.1	182.9	.38	.255

For technical assistance and drive design help, contact Applications Engineering at 800-243-3374.

\* w (width) is the widest part of the belt. h (height) is the tallest part of the belt, NOT including the nominal 0.10" of co-extruded belting.

## Eagle Orange 85 R

DESCRIPTION  
Round, ReinforcedHARDNESS  
85A  
FDA COMPLIANT  
YesCOEFFICIENT OF FRICTION  
Stainless Steel .70  
Steel .60  
UHMW .45TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions Ø (in) (mm)	Minimum Pulley Ø (in) (mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)	
			1%		2%		3%		4%				
			(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)			
1/4	1/4	2.50	64	0.8	3.6	2.8	12.3	5.4	24.1	7.8	34.6	.03	.020
5/16	5/16	3.13	79	1.3	5.6	4.3	19.3	8.5	37.6	12.1	54.0	.04	.027
8mm	8	3.13	80	1.8	8.0	6.2	27.8	12.2	54.2	17.5	77.8	.04	.027
3/8	3/8	3.75	95	1.8	8.0	6.2	27.8	12.2	54.2	17.5	77.8	.06	.040
1/2	1/2	5.00	127	3.2	14.2	11.1	49.4	21.6	96.3	31.1	138.2	.10	.067
9/16	9/16	5.63	143	4.1	18.0	14.0	62.5	27.4	121.9	39.3	175.0	.13	.087
15mm	15	5.90	150	4.5	20.0	15.5	68.9	30.2	134.3	43.4	193.0	.14	.094
5/8	5/8	6.25	159	5.0	22.3	17.3	77.1	33.8	150.4	48.6	216.0	.16	.095
3/4	3/4	7.50	191	7.2	32.1	25.0	111.1	48.7	216.6	69.9	311.1	.23	.155

## Eagle Orange 85 R

DESCRIPTION  
Trapezoidal, Reinforced

Vee Additional cross sections available – consult factory

HARDNESS  
85A  
FDA COMPLIANT  
YesCOEFFICIENT OF FRICTION  
Stainless Steel 1.00  
Steel .90  
UHMW .85TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions w x h* (mm)	Minimum Pulley Ø (in) (mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)	
			1%		2%		3%		4%				
			(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)			
Z/10	10 x 6	2.38	60	2.6	11.4	6.1	27.0	9.7	43.0	12.7	56.6	.05	.034
A/13	13 x 8	3.13	80	4.0	17.9	9.5	42.4	15.2	67.6	20.0	89.0	.07	.047
B/17	17 x 11	4.38	110	7.0	30.9	16.5	73.3	26.2	116.7	34.5	153.7	.11	.074
C/22	22 x 14	5.50	140	12.1	53.8	28.7	127.7	45.7	203.3	60.2	267.8	.19	.128

## Eagle Green 89 RT

DESCRIPTION  
Round, Reinforced, TexturedHARDNESS  
89A  
FDA COMPLIANT  
NoCOEFFICIENT OF FRICTION  
Stainless Steel .50  
Steel .40  
UHMW .30TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions Ø (mm)	Minimum Pulley Ø (in) (mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)	
			1%		2%		3%		4%				
			(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)			
5	5	2.00	50	1.7	7.4	5.0	22.2	10.2	45.5	15.8	70.1	.02	.013
6	6	2.38	60	2.4	10.6	7.2	32.0	14.7	65.5	22.7	101.0	.025	.017
7	7	2.75	70	3.3	14.5	9.8	43.5	20.0	89.1	30.9	137.4	.03	.022
8	8	3.13	80	4.3	18.9	12.8	56.8	26.2	116.4	40.4	179.5	.04	.027
10	10	3.94	100	6.6	29.6	20.0	88.8	40.9	181.9	63.1	280.5	.06	.047
12	12	4.75	120	9.6	42.6	28.8	127.9	58.9	262.0	90.8	403.9	.09	.078
15	15	5.90	150	15.0	66.5	44.9	199.8	92.0	409.3	141.9	631.1	.14	.094
18	18	7.00	180	21.5	95.8	64.7	287.8	132.5	589.4	204.3	908.8	.22	.147

For technical assistance and drive design help, contact Applications Engineering at 800-243-3374.

\* w (width) is the widest part of the belt. h (height) is the tallest part of the belt.

# TECHNICAL DATA

## Eagle Beige 95 R

DESCRIPTION  
Trapezoidal, Reinforced



HARDNESS  
95A  
FDA COMPLIANT  
Yes

COEFFICIENT OF FRICTION  
Stainless Steel .55  
Steel .45  
UHMW .35

TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions w x h* (mm)	Minimum Pulley Ø (in)	Minimum Pulley Ø (mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
				1%		2%		3%		4%			
				(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
3L	9.5 x 6	2.63	67	11.1	49.2	25.8	114.8	37.9	168.4	46.6	207.2	.03	.020
Z/10	10 x 6	2.81	72	12.5	55.6	29.0	129	42.6	189.5	52.4	233.1	.05	.034
A/13	13 x 8	3.75	96	20.6	91.6	48.0	213.5	70.5	313.6	86.7	385.6	.07	.047
B/17	17 x 11	5.19	132	35.5	157.9	83.0	369.2	121.7	541.3	149.8	666.3	.11	.074
C/22	22 x 14	6.63	168	61.9	275.3	144.5	642.7	212.0	943.0	260.9	1160.5	.19	.128
3L Cogged	9.5 x 6	2.63	67	11.1	49.4	25.8	114.8	37.9	168.6	46.6	207.3	.03	.020
A Cogged	13 x 8	3.13	80	20.6	91.6	48.0	213.5	70.5	313.6	86.7	385.6	.06	.040
B Cogged	17 x 11	4.38	110	35.5	157.9	83.0	369.2	121.7	541.3	149.8	666.3	.10	.067
C Cogged	22 x 14	5.50	140	61.9	275.3	144.5	642.7	212.0	943.0	260.9	1160.5	.18	.127

## Eagle Hyfen 95 R

DESCRIPTION  
Trapezoidal, Reinforced



HARDNESS  
95A  
FDA COMPLIANT  
Yes

COEFFICIENT OF FRICTION  
Stainless Steel .45  
Steel .55  
UHMW .35

TEMPERATURE RANGE  
-22°F to +150°F  
-30°C to +66°C

Cross Section	Dimensions w x h* (in)	Minimum Pulley Ø (in)	Minimum Pulley Ø (mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)
				1%		2%		3%		4%			
				(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)		
A/13	1/2 x 3/8	4.50	114	22.3	99.2	32.4	144.2	41.6	185.2	50.4	224.1	.07	.047
B/17	21/32 x 1/2	6.00	152	32.9	146.5	47.9	213.0	61.5	273.5	74.4	330.9	.11	.074
C/22	7/8 x 5/8	7.50	191	49.2	218.8	71.5	318.2	91.9	408.6	111.2	494.4	.19	.128
A Cogged	1/2 x 3/8	3.50	89	22.3	99.2	32.4	144.2	41.6	185.2	50.4	224.1	.06	.040
B Cogged	21/32 x 1/2	4.50	114	32.9	146.5	47.9	213.0	61.5	273.5	74.4	330.9	.10	.067
C Cogged	7/8 x 5/8	8.50	216	49.2	218.8	71.5	318.2	91.9	408.6	111.2	494.4	.18	.127

For technical assistance and drive design help, contact Applications Engineering at 800-243-3374.

\* w (width) is the widest part of the belt. h (height) is the tallest part of the belt.

## V-Belts

All urethane V-belts in the “classical” profiles, i.e. A, B, C, and D, are designed to fit RMA compliant pulleys as per the groove details illustrated in Fig. 1 below. The light duty 3L cross section belt is designed to fit pulleys as per the groove details illustrated in Fig. 1 below.

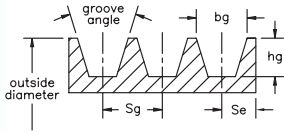
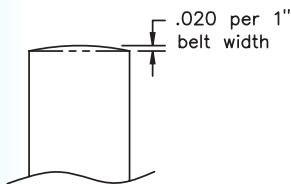


Figure 1

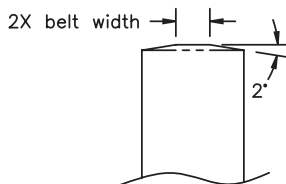
Cross Section	Diameter Range	Groove Angle $\pm 0.33^\circ$	$b_g$	$h_g$ / Min	$S_g$ $\pm 0.025$	$S_e$
A	Up thru 5.4	34°	0.494	0.460	0.625	0.375
	Over 5.4	38°	0.504 $\pm 0.005$	0.460	0.625	0.375
B	Up thru 7.0	34°	0.637	0.550	0.750	0.500
	Over 7.0	38°	0.650 $\pm 0.006$	0.550	0.750	0.500
C	Up thru 7.99	34°	0.879	0.750	1.000	0.688
	Over 7.99 to and incl. 12.0	36°	0.887 $\pm 0.007$	0.750	1.000	0.688
	Over 12.0	38°	0.895	0.750	1.000	0.688
D	Up thru 12.99	34°	1.259	1.020	1.438	0.875
	Over 12.99 to and incl. 17.0	36°	1.271 $\pm 0.008$	1.020	1.438	0.875
	Over 17.0	38°	1.283	1.020	1.438	0.875
3L	2.2 thru 3.1	34°	0.364	0.406	0.500	0.313
	3.2 thru 4.2	36°	0.364 $\pm 0.005$	0.406	0.500	0.313
	Over 4.2	38°	0.364	0.406	0.500	0.313

## Flat Belts

All flat belts have a natural tendency to move laterally. Therefore a flat or straight pulley is not recommended, as the belt would walk off the pulley. To keep the belt in the center of the pulley it must have a crown. Fig. 2 illustrates a round crown and is the preferred method. A modified round crown as illustrated in Fig. 3 is also acceptable. A flat pulley with guide flanges (Fig. 4) is not recommended. Even with the guide flanges the belt will move laterally and potentially could climb up onto them.



RECOMMENDED  
Figure 2



ACCEPTABLE  
Figure 3

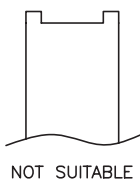


Figure 4

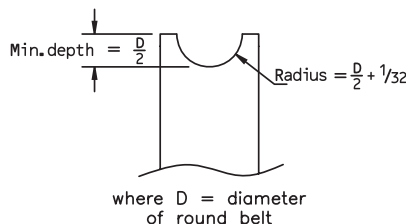


Figure 5

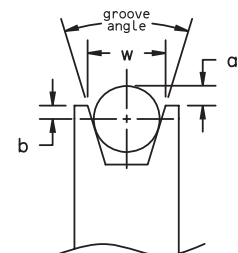


Figure 6

## Round Belts

Round urethane belts are commonly run in pulleys with a round profile, see Fig. 5. In the absence of round groove pulleys, round belts can also be used in pulleys with vee grooves, Fig. 6. The table below shows the dimensional data when a round belt is used in a V-groove.

Pulley Size	Pulley Diameter	Groove Angle	Round Belt	w	a	b
2L	Under 1.50"	32°	3/16"	.240	.010	.084
			1/4"	.243	.153	-.028
2L	1.50" to 1.99" O.D.	34°	3/16"	.243	.016	.078
			1/4"	.246	.151	-.026
2L	2.00" to 2.50" O.D.	36°	3/16"	.246	.020	.074
			1/4"	.250	.146	-.021
2L	Over 2.50" O.D.	38°	3/16"	.250	.020	.074
			1/4"	.250	.146	-.021
3L	Under 2.20" O.D.	32°	1/4"	.360	-.049	.174
			5/16"	.360	.094	.062
3L	2.20" to 3.19" O.D.	34°	1/4"	.364	-.043	.168
			5/16"	.364	.094	.062
3L	3.20" to 4.20" O.D.	36°	1/4"	.368	-.037	.062
			5/16"	.368	.095	.061
3L	Over 4.20" O.D.	38°	1/4"	.372	-.031	.156
			5/16"	.372	.095	.061
A	2.60" to 5.40" P.D.	34°	5/16"	.494	-.118	.274
			3/8"	.494	.019	.168
			1/2"	.494	.297	-.047
A	Over 5.40" P.D.	38°	5/16"	.504	-.097	.253
			3/8"	.504	.030	.157
			1/2"	.504	.286	.036
B	4.60" to 7.00" P.D.	34°	1/2"	.637	.062	.188
			9/16"	.637	.199	.082
			5/8"	.637	.340	-.027
B	Over 7.00" P.D.	38°	1/2"	.650	.074	.176
			9/16"	.650	.200	.081
			5/8"	.650	.331	-.018
C	7.00" to 7.99" P.D.	34°	5/8"	.879	-.056	.369
			3/4"	.879	.218	.157
C	8.00" to 12.00" P.D.	36°	5/8"	.887	-.041	.354
			3/4"	.887	.222	.153
C	Over 12.00" P.D.	38°	5/8"	.895	-.027	.340
			3/4"	.895	.226	.149

# ENGINEERING DATA

## Belt Installation Tension

When non-reinforced urethane is stretched and released, elasticity is the characteristic that brings the material back to its original shape. This “memory” is what gives non-reinforced urethane belting its self-tensioning properties.

When a non-reinforced belt is first installed (stretched) the material does not return to 100% of its original length and in fact, continues to lose elasticity over its life span. This loss in elasticity causes what is commonly called tension decay.

To overcome the initial and continued stretching, a non-reinforced belt will require what is referred to as “installed” tension. Installation tensions in the 6% to 10% range will normally be sufficient for most applications. If higher tensions are required, the application may exceed the belt’s load capacity. For reference, below are installed tensions:

All Eagle® non-reinforced belting: 8 – 10%

Quick-Connect Belting: 6 – 8%

All Eagle reinforced belts contain a reinforcing polyester tensile member, which increases the modulus elasticity of the urethane material and reduces the “stretch” of a non-reinforced belt. Since an endless reinforced belt is essentially a fixed length, the eventual small amount of elongation from tension decay can be dealt with by mechanical take-up devices. This device should accommodate at least 4% of the belt’s length to overcome tension decay.

## Belt Installation Length

The belt tension length, or “cut length,” can be determined from the measured belt length or calculated belt length. The measured length can be obtained by taking a measuring tape and following the path of the belt around all of the pulleys, or through computer aided design (CAD) techniques. The calculated length can be obtained from the following formula.

Note: this formula applies to two-pulley drives only.

$$L = 2C + 1.57 (D + d) + \frac{(D - d)^2}{4C}$$

where: L = Installation length  
 C = center of pulley shaft to center of pulley shaft distance  
 D = pitch diameter of large pulley  
 d = pitch diameter of small pulley

For non-reinforced urethane belting, the cut length is determined by using the measured or calculated (reference) belt length times the percent of required installation tension (6 to 10%).

$$\begin{aligned} \text{Cut length} &= \text{reference length} \times \% \text{ tension} \\ \text{Example: } &44 \text{ inches} \times 8\% \text{ tension} \\ &= 44 \times .08 \\ &= 40.5 \text{ inches} \end{aligned}$$

For reinforced urethane belting, the cut length is the measured or calculated length plus 1½ inches.

## Temperature

The temperature range of urethane belting is determined by the thermoplastic resin. Like all thermoplastic resins its physical properties are reduced at higher temperatures. The material softens, loses strength and elongates excessively to the point of premature failure. Temperature ranges are listed under each individual belt type.

## Minimum Pulley Diameter

Non-reinforced urethane belts can operate on smaller diameter pulleys than urethane belts with a reinforcing tensile member. Reinforced belts require a larger pulley diameter to prevent premature flex fatigue failure of the polyester tensile member. The most common serious mistake in designing urethane belting is the selection of a pulley diameter that is too small. Listed under each individual belt type is the recommended minimum pulley diameter. Smaller diameters can be used only if a reduction in belt service life is acceptable.

## Belt Profile Tolerance

### Round Belts:

Up to and including 3/16" (5mm) diameter:	± 0.005"
Over 3/16" (5mm) up to and including 1/4" (6.3mm) diameter:	± 0.007"
Over 1/4" (6.3mm) up to and including 9/16" (14mm) diameter:	± 0.010"
Over 9/16" (14mm) in diameter:	± 0.012"

### Flat and V-Belts:

All profiles: ± 0.015"

If a tighter tolerance is required, consult Fenner Drives application engineering group with your requirements.

1. Refer to the Engineering Data chart for the belt material and cross section selected.
2. Use the following formula that meets your application requirements (Note: if belt supported by rollers use .17 for  $\mu$ ):

a. Horizontal Transport with Slider Bed  
 $T_e = W_t \times \mu + B_{wt}$

c. Incline or Decline Transport with Slider Bed  
 $T_e = \frac{W_t}{C} \times (H_t + \mu \times \sqrt{C^2 + H_t^2}) + B_{wt}$

b. Horizontal Transport with Slider Bed and Product Accumulation  
 $T_e = W_t \times \mu + B_{wt} + A_{wt}$

d. Incline or Decline Transport with Slider Bed and Product Accumulation  
 $T_e = \frac{W_t}{C} \times (H_t + \mu \times \sqrt{C^2 + H_t^2}) + B_{wt} + A_{wt}$

Where:  $T_e$  = Effective Tension  
 $W_t$  = Total Weight on Conveyor  
 $C$  = Conveyor Center Distance  
 $B_{wt}$  = Belt weight/unit length x C

$A_{wt}$  = Accumulating weight x  $\mu'$   
 (where  $\mu'$  is the COF between belt and product)  
 $H_t$  = Incline or decline height  
 $\mu$  = COF on slider bed material from chart

3. Determine Tight Tension ( $T_1$ ).  
 Flat and round belts —  $T_1 = T_e \times 2$                       V-belts —  $T_1 = T_e \times 1.25$
4. Refer to the Engineering Data chart for the material and cross section selected and compare  $T_1$  to the Working Load at 10% tension. If only one belt is desired  $T_1$  may not be greater than the Working Load at 10% tension. If more than one belt is required divide  $T_1$  by the Working Load at 10% tension to arrive at number of belts. Round up to the nearest whole number of belts.
5. Find load per belt by dividing  $T_1$  by number of belts. From the Engineering Data chart determine the percent installed tension for the load per belt.
6. Belt cut length (in.) = measured or calculated belt length (in.) x (1 – corresponding % tension).

## Engineering Data — Selection Example

Type of belt being considered = Eagle Orange 85A in ¼" round

Head-to-tail center distance (C) = 10 feet

Incline or decline = none

Product accumulation on belt(s)? = no

Total weight on belt(s) = 15 lbs.

Type of belt support = UHMW slider bed

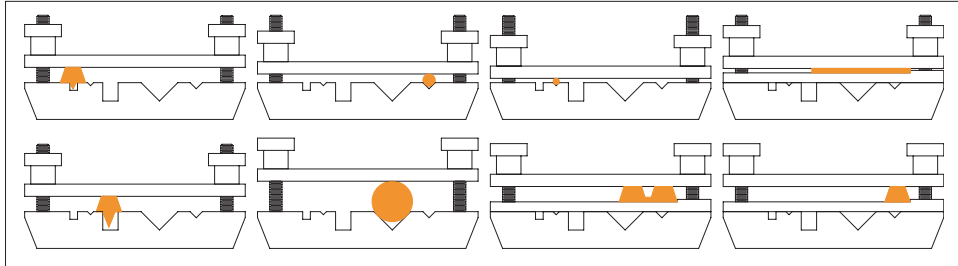
1. Refer to the Engineering Data chart for the belt material and cross section selected.

Eagle Orange 85		DESCRIPTION	HARDNESS	COEFFICIENT OF FRICTION	TEMPERATURE RANGE									
Eagle Clear 85		Round, Non-Reinforced	85A FDA COMPLIANT Yes	Stainless Steel .70 Steel .60 UHMW .45	-30°C to +66°C -22°F to +150°F									
Cross Section	Dimensions $\emptyset$ (in)	Minimum Pulley $\emptyset$ (in)	Minimum Pulley $\emptyset$ (mm)	Working Load @ Percent Tension								Weight per foot (lbs)	Weight per meter (kg)	
				4%		6%		8%		10%				
(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)	(lbs)	(N)					
6mm	6	1.88	48	1.7	7.6	2.6	11.6	3.5	15.6	4.3	19.1	.025	.017	
1/4	1/4	6.3	2.00	51	1.9	8.5	2.9	12.9	3.9	17.3	4.8	21.4	.03	.020

2. Horizontal Transport with Slider Bed. Since the belt will run in UHMW slider bed the COF( $\mu$ ) of .45 is used from Engineering Data chart. From the chart the belt weight is .03 lbs/ft giving a total belt weight of .30 lbs (.03 x 10').  
 $T_e = 15 \text{ lbs} \times .45 + .30 = 7.05$
3. Determine Tight Tension ( $T_1$ ).  
 round belts  $T_1 = 7.05 \times 2 = 14.10$
4. Refer to the Engineering Data chart for the material and cross section selected and compare  $T_1$  to the Working Load at 10% tension. If only one belt is desired  $T_1$  may not be greater than the Working Load at 10% tension. If more than one belt is required divide  $T_1$  by the Working Load at 10% tension to arrive at number of belts. Round up to the nearest whole number of belts.  
 ¼" round rated 4.8 lbs @ 10% tension.  $14.10 \div 4.8 = 2.94$  call 3 belts
5. Find load per belt by dividing  $T_1$  by number of belts. From the Engineering Data chart determine the percent installed tension for the load per belt.  
 Load/belt =  $14.10 \div 3 = 4.70$  lbs  
 corresponding installed tension = 9.8%

# WELDING INSTRUCTIONS — NON-REINFORCED

*A proper butt weld will yield 100% of the belt's ultimate tensile strength. With the tools provided and these instructions, proper welding technique can be achieved. Note: A clean environment contributes toward ensuring a proper weld. Make sure the area is well ventilated and free of dirt, dust and draft.*



Round Belt Sizes		Use V-Groove
3/32" - 1/8"	2mm - 3mm	Small
3/16" - 5/16"	4mm - 8mm	Medium
3/8" - 3/4"	10mm - 15mm	Large

Figure 2

1. Examine the hot knife for scratches in the surface of the coated blade. A damaged hot knife can affect weld results.
2. Plug the hot knife into 110/120v outlet and preheat for approximately ten minutes. Once hot, use a clean, dry cloth and gently remove from the coated surface any urethane residue from previous welding. **Warning: Do not use a hard object to scrape urethane from hot knife blade.**
3. Using the cutting shears provided or a pair of sharp scissors, cut each end of the belt perfectly square. Note: Contact Fenner Drives for instructions on determining correct belt length.
4. Refer to Figure 1. Slide the spacer toward the mounting clamps, squeeze the handles closed, and finger tighten the thumb nut located to the right of the right side mounting clamp.
5. Figure 2 illustrates possible belt clamp mounting positions. Starting on one side, loosen the clamp nuts and place belt in desired clamping position. Slide belt in clamp so that the end is halfway between the two mounting clamps. Tighten clamp nuts. Note: For round and ridge top profiles, remove bottom plate.
6. On the opposite clamp, loosen nuts and place belt in the same clamping position. **Warning: Make sure belt does not contain any twist.** Slide belt in clamp until the two belt ends butt together. Make sure that ends are properly aligned on all sides; see

Fig. 3. Tighten clamp nuts. Note: Try to keep both clamping plates parallel to the grooved base blocks.

7. Loosen thumb nut on right approx. 1½ turns and allow the handles to open. With your left thumb, hold the spacer forward and with your right hand, insert the blade of hot knife between belt ends and squeeze handles together. Refer to Figure 4.

8. As the belt ends begin to melt, the handles will contact the spacer. Hold handles tight against the spacer. After the appropriate time (refer to Table 1), quickly release the handles, slide the spacer toward yourself, withdraw the hot knife blade, and squeeze the handles together.

9. Tighten the thumb nut on the right and allow the welded joint to cure. Small cross section belts should be left in the clamp for a minimum of one minute to allow for initial cooling. Belt cross sections over ¼" wide should be left in the clamp a minimum of three minutes. **Warning: Allow the belt to cure for a minimum of ½ hour prior to installing, tensioning, or putting strain on the belt weld.** Note: While the belt is cooling, this is a good time to use a clean, dry cloth to remove any residue from the hot knife blade.
10. Loosen clamp nuts and remove belt from clamp. Using the flash cutters, remove the bead from the splice; see Fig. 5. Note: The flash cutters have been designed specifically for urethane trimming and are not to be used for cutting metal, wire, etc.



Figure 1



Figure 3



Figure 4



Figure 5

Belt Sizes	Estimated Heating Time
3/32"-1/4", 2mm-6mm, .055" Thick Flats	<10 sec
5/16", 7mm-9mm, all 3L, .06"x.75", .06"x1.5", .08"x.75", .09"x1.00", .13"x.63"	10-20 sec
3/8", 10mm, all A (except Hi-Ridge Top), .06"x1.75", .06"x2.00", .09"x1.25", .09"x1.50", .13"x1.00", .25"x.63"	21-30 sec
1/2"-9/16", 12mm-15mm, all Twin, A Hi-Ridge Top, all B, .06"x3.00", .09"x2.00"	31-50 sec
5/8"-3/4", C, D	>50 sec

Table 1

*If you have any questions, just call us at 1-800-243-3374. One of our Inside Sales Specialists will be happy to assist you.*

*Fenner Drives' Overlap Welder is designed exclusively to produce an overlap joint in Eagle® Reinforced Belting. A proper overlap weld will yield more than 100% of the belt's ultimate tensile strength. With the tools provided and these instructions, proper overlap welding technique can be achieved. Note: A clean environment can contribute to ensuring a proper weld. Make sure the area is well ventilated and free of dust, dirt and draft. Practice makes perfect. We strongly encourage getting familiar with the welder and practicing a weld on a short piece of belt before making a final weld on the belt.*

1. Securely fasten welder to mounting surface.
2. If this is a new welder, proceed to step 4.
3. Examine the light green coated surface of the heating element for scratches. A scratched and damaged coated surface can affect weld results; heating element may need replaced.
4. On the front of the control box is an on/off switch, indicator light and fuse holder. On the left side of the control box is a power supply line and thermocouple. Plug the power supply line and thermocouple into the left side of the control box. On the right side of the control box is the main power cord that is plugged into an 110/120v electrical power source.



Figure 1

5. On top of the control box is the temperature control dial. Set the control dial at 440°F for blue/green Hyfen belts and red LCF Can Cable belt or 500°F for light blue, light green and natural Can Cable belts. Turn the power switch to the on position. The large red indicator light will stay on. On the temperature control dial, an indicator light will come on and remain on while element is heating. **Warning: Do not start welding until this light goes out the first time.** This indicator light will then fluctuate on and off as the heating element maintains the correct welding temperature. Note: If light green coated surface contains urethane residue use a clean, dry cloth to remove it. **Warning: Do not use any object to scrape urethane from surface.**
6. Turn large wing nut several turns counterclockwise until it stops. Pull back on red knob on front (sliding) die. Push down on black knob on top of welder and pull brass pin out to release

coated heating element. Swing heating element away from die area.

7. Remove the black star-shaped thumbnuts from the welder. Select and position the correct vee or round dies in the welder. Insert a black star-shaped thumbnut into each die and finger-tighten as in Fig. 1. When welding V-belt, the split die fits into the front (sliding) section of the welder.

8. Using the cutting shears provided, cut each end of round belt at a 15° angle, or V-belt straight as in Fig. 2.



Figure 2

9. For round belt, continue to step 9a; uncogged V-belt, continue to step 9b; cogged V-belt, to step 9c.

- a. Slide end of the round belt into the rear die until it overhangs approximately 1/16" and angle on belt is parallel with angle on die. Clamp the belt into position by lightly tightening the knurled thumbnut finger tight. On the front (sliding) die, the flat side of the holding clamp must face up. If not, turn knurled thumbnut counter-



Figure 3 Holding Clamp

- clockwise and remove. Push holding clamp from base and rotate clamp 180° until flat side is up. Reassemble knurled thumbnut. Slide end of belt into front die and position exactly same as rear die. Lightly finger-tighten knurled thumbnut. See Fig. 3. **Caution: Make sure belt does not contain any twist.**

b. Slide end of the uncogged V-belt into the rear die until it overhangs approximately 1/16", but not more than 1/8". Clamp belt into position by lightly tightening the knurled thumbnut finger tight. On the front (sliding) die the flat side of the holding clamp must face up. If not, turn knurled thumbnut counterclockwise and remove. Push holding clamp from base and rotate clamp 180° until the flat side is up. Reassemble knurled thumbnut. Slide end of V-belt into front die and position exactly the same as the rear die. Lightly finger-tighten knurled thumbnut. See Fig. 4. **Caution: Make sure red belt does not contain any twist.**

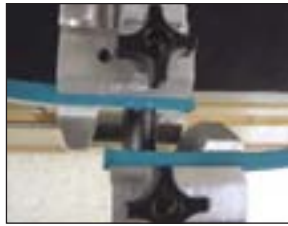


Figure 4

c. Slide end of the cogged V-belt into the rear die until one cog overhangs. Clamp belt into position by lightly tightening the knurled thumbnut finger tight. On the front (sliding) die, the flat side of the holding clamp must face down. If not, turn knurled thumbnut counterclockwise and remove. Push holding clamp from base and rotate clamp 180° till flat side is down. Reassemble knurled thumbnut. Slide end of cogged V-belt into front die and position exactly the same as the rear die. Lightly finger-tighten thumbnut. See Fig. 5. Note: Lip on holding clamp must be engaged in notch on V-belt. **Caution: Make sure belt does not contain any twist.**



Figure 5

10. Swing coated heating element into position above and between dies. Pull out on brass pin, push down and hold black knob (on top of welder) and release brass pin. This locks heating element into position.

11. Turn large wing nut clockwise, moving it forward until both overlapping surfaces contact the coated heating element. Continue turning large wing nut as belt ends melt and material is squeezed out of weld area. Continue turning large wing nut until it stops. **Warning: do not over tighten.** See Fig. 6.



Figure 6

12. After a maximum of 20 seconds (less for smaller profiles), turn large wing nut counterclockwise 3-4 full turns. Pull back on red knob till front (sliding) die stops. Push down on black knob on top of welder; on back of welder, slightly push on the two guide rods to move coated heating element. Pull brass pin out and release coated heating element. Swing heating element away from die area. Immediately push red knob forward and quickly spin large wing nut clockwise until stop is reached. **Important: This sequence must be done very quickly.** See Fig. 7.



Figure 7

13. While weld is cooling, use a clean, dry cloth to wipe excess urethane material from coated heating element. It is important that heating element be cleaned between every weld.

14. After a minimum of one minute, turn large wing nut counterclockwise several turns. Loosen both knurled thumbnuts several turns and pull back on red knob on front (sliding) die. Remove belt from welder, Fig. 8, and using special flash cutters trim weld flash from belt, Fig. 9. Note: The flash cutters have been designed specifically for trimming urethane and are not to be used for cutting metal, wire, etc. **Warning: Allow the belt to cure for a minimum of ½ hour prior to installing, tensioning or putting strain on the belt weld.**



Figure 8



Figure 9

*You'll receive a FREE CD demonstrating the welding technique with your welding kit!*

# Chemical Resistance Chart

Urethane is extremely resistant to many industrial oils and chemicals, but not all. Below are a wide variety of oils and chemicals found in industrial applications. Consult Fenner Drives application engineering group for assistance on projects with design criteria outside these parameters, or obtain a sample belt and determine its compatibility in the precise operating conditions.

<i>Acids</i>	<i>Rating</i>	<i>Fuels</i>	<i>Rating</i>	<i>Solvents</i>	<i>Rating</i>
Acetic, 5%	C	ASTM Fuel A	A	Acetone	C
Boric, 4%	C	ASTM Fuel B	C	Aniline	C
Chromic	C	ASTM Fuel C	C	Benzene	C
Citronic	C	Diesel Fuel	B	Benzyl Alcohol	C
Formic	C	Gasoline, Premium	C	Butane	C
HCl	B	Gasohol (10-15% Methanol)	C	Butyl Acetate	C
Hydrochloric, 10%	C	Jet Fuel, JP-4	A	Butyl Alcohol	C
Lactic	C	Kerosene	A	Carbon Tetrachloride	C
Nitric, >1%	C			Chlorobenzene	C
Oleic	C	<b>Oils</b>	<b>Rating</b>	Chloroform	C
Phosphoric	C	ASTM Oil #1	A	Cyclohexane	C
Sulfuric, <20%	B	ASTM Oil #2	A	Ethanol	C
Sulfuric, >20%	C	ASTM Oil #3	A	Ether	C
		Brake Fluid (ATE or ATS)	C	Ethyl Acetate	C
		Gear Box Oil (SAE 90)	A	Freon 11, 12, 22	C
<b>Alkalines</b>	<b>Rating</b>	Hydraulic Fluid	C	Freon 113	A
Ammonia, >10%	C	Hydraulic/Water Emulsion	C	Glycerine, Glycerol, Glycol	A
Detergent, 1%	A	Mineral Oil	A	Heptane	B
Potassium Hydroxide	B	Motor Oil	A	Hexane	C
Soap, 1%	A	Parafin Oil	A	Isopropyl Alcohol	C
Sodium Hydroxide, 10%	C	Petroleum (Texas Sour Crude)	A	Methanol	C
		Power Steering Fluid	B	Methyl Acetate	C
		Skydrol 500 Oil	C	Methyl Ethyl Ketone	C
<b>Aqueous Solutions</b>	<b>Rating</b>	Transmission Oil A	A	Methyl Glycol	C
Aluminum Chloride, 10%	C			Methylene Chloride	C
Ammonium Chloride, 10%	C	<b>Greases</b>	<b>Rating</b>	N-Methyl Pyrrolidone	C
Bleaching Agent, 40%	B	Calcium Grease	B	Perchloroethylene	C
Bleaching Agent, 100%	C	Sodium Grease	B	Pyridine	C
Calcium Chloride, 40%	C	Teflon Grease	A	Turpentine	A
Caustic Soda, 10%	B			Tetrachloroethylene	C
Cola	A	<b>Miscellaneous</b>	<b>Rating</b>	Tetrahydrofuran	C
Ferric Chloride, 10%	C	Diocetyl Phthalate (DOP)	A	Toluene	C
Hydrogen Peroxide, 3%	B	Ethylene Chloride	C	Trichloroethylene	C
Isopropanol, 50%	C	Ethylene Dichloride	C	Xylene	C
Magnesium Chloride, 30%	C	Ethylene GlycoWater 50/50	C		
Potassium Chloride, 40%	C	Household Cleaner	B		
Potassium Dichromate, 10%	C	Naphtha	A		
Potassium Permanganate, 5%	C	Silage (Silo) Juice	C		
Sea Water	B	Natural Perspiration	B		
Sodium Bisulfate, 10%	C	Tincture of Iodine	C		
Sodium Chloride, 10%	C	Tricresyl Phosphate	C		
Sodium Hypochlorite, 5%	C				
Sodium Thiosulfate, 20%	A				
Water, Deionized	A				

### Rating Key

A - Fluid has little or no effect

B - Fluid has minor to moderate effect

C - Fluid has severe effect

## Frequently Asked Questions

*Q Are all of the urethane products FDA approved?*

*A* Eagle® Green 89 and Eagle Red and Blue Can Cable are not. Standard Eagle Red 85 CXF and Eagle Hyfen CXF and CXR are not; consult factory for availability of FDA compliant materials. All of the other belts are manufactured from FDA compliant materials.

*Q I have an application involving 200°F/93°C temperature. Can I use your urethane belting?*

*A* Our Eagle urethane products are usually limited to 130°F/54°C (see product info for details). At higher temperatures the urethane softens and loses strength, resulting in excessive stretch. However, PowerTwist Plus® should be considered as an option.

*Q My application involves washdown. What effect will it have on the belt?*

*A* Urethane is resistant to water and many industrial chemicals, but not resistant to all. Consult the chemical resistance chart in this catalog or contact Fenner Drives application engineering group with the contaminants present and we will make a recommendation.

*Q The standard profiles shown do not appear to suit my needs. Do you make special profiles?*

*A* Yes! At Fenner Drives, we welcome the opportunity. Contact Fenner Drives application engineering group for assistance.

*Q Can I run your flat belting on pulleys that have no crown?*

*A* No. A crown on the pulley prevents the belt from moving laterally and running off the pulley. Flat pulleys with guide flanges are also not recommended. The belt may want to climb the guide flange.

*Q I plan on using a “B” section urethane belt. Will your belt fit pulleys that I can buy from numerous power transmission distributors?*

*A* Yes. All of our “classical” urethane belts, i.e. A, B, C and D, are designed to fit RMA compliant pulleys.

*Q Why can't I butt weld your reinforced urethane belting?*

*A* You can, but in most applications it is not recommended. To receive the full load carrying capacity of the belt, an overlap weld is recommended.

*Q Do I need some take-up adjustment when using your urethane belts?*

*A* When using non-reinforced urethane belting, take-up is not required. However, all reinforced type belting does require take-up. One good option is our T-Max™ rotary belt tensioners with a PowerMax™ idler pulley.

*Q On my conveying application, the product being moved could occasionally accumulate. What belt do you recommend for this?*

*A* Our Eagle Green 89 with its textured surface provides a lower coefficient of friction and is ideal for applications where product accumulation can occur.

*For any questions about our extensive line of products, just call 1-800-243-3374 and your Inside Sales Specialist will help you.*

# Count on Fenner Drives.

We've got the right product for your application.



**EAGLE**  
POLYURETHANE BELTING & O-RINGS

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**NUTLINK**  
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