

# TENSION EQUIPMENT SPECIFICATION

(Please return to or fax to DFE)

COMPANY \_\_\_\_\_ PREPARED BY \_\_\_\_\_

ADDRESS \_\_\_\_\_ TELEPHONE \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_ DATE \_\_\_\_\_

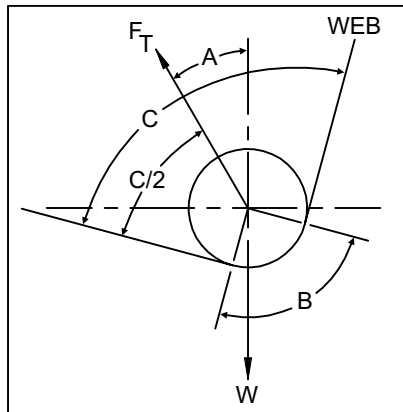
## TRANSDUCER SPECIFICATION (use the UPB or TR Transducer Specifications for sizing UPB or Tension Roll® transducers)

**A. INSTRUCTIONS.** The load rating of the transducers is determined by the weight of the idler roll, wrap angle on the roll, tension in the web and the direction of the resultant force due to web tension. The drawings below illustrate different combinations of those factors. Record information requested below in terms B - E. Then use the formula below the appropriate drawing to determine load rating, or call Dover Flexo Electronics and we will determine rating for you.

**B. TYPE OF WRAP.** Cross out boxes that do not apply.

**WRAP 1**

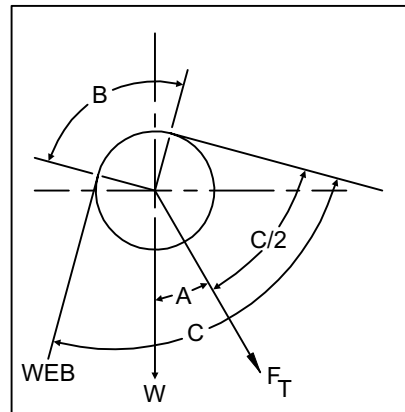
Tension Force  $F_T$ , **above** horizontal



$$\text{LOAD RATING} = \frac{4T \sin\left(\frac{B}{2}\right) - W \cos(A)}{2}$$

**WRAP 2**

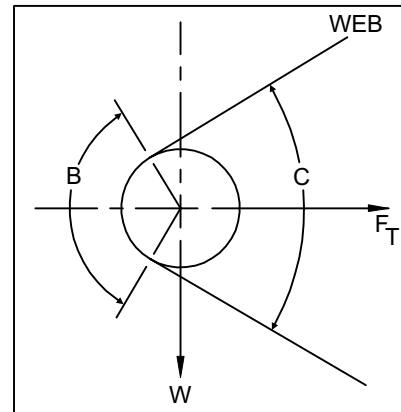
Tension Force  $F_T$ , **below** horizontal



$$\text{LOAD RATING} = \frac{4T \sin\left(\frac{B}{2}\right) + W \cos(A)}{2}$$

**WRAP 3**

Tension Force  $F_T$  **is** horizontal



$$\text{LOAD RATING} = \frac{4T \sin\left(\frac{B}{2}\right)}{2}$$

NOTE: the resultant force  $F_T$ , points in the same direction as the arrow on the transducer.

**TABLE 1**

Angle (Degrees)	SINE	COSINE
0	.000	1.000
5	.087	.996
10	.174	.985
15	.259	.966
20	.342	.940
25	.423	.906
30	.500	.866
35	.574	.819
40	.643	.766
45	.707	.707
50	.766	.643
55	.819	.574
60	.866	.500
65	.906	.423
70	.940	.342
75	.966	.259
80	.985	.174
85	.996	.087
90	1.000	.000

## C. ANGLES AND IDLER WEIGHT

Record information in boxes. If you do not know wrap angle, be sure to give Angle "C".

W = idler roll weight .....  pounds

B = wrap angle .....  degrees

$F_T$  = force on idler roll due to web tension.  $F_T$  is in the same direction as the arrow on the transducer.

A = angle between  $F_T$  and vertical axis .....  degrees

C = angle between entering and exiting web ....  degrees

## D. WEB CHARACTERISTICS

- Total Estimated Operating Tension, Max. \_\_\_\_\_ Min. \_\_\_\_\_ pounds (if known)
- Type of Web Material \_\_\_\_\_ • Width: Max. \_\_\_\_\_ Min. \_\_\_\_\_ inches
- Basis Weight or Thickness \_\_\_\_\_ • Max. Web Speed \_\_\_\_\_ FPM

NOTE: If more than one material is used, give information for the two requiring the most and least tension.

## E. TRANSDUCER CHARACTERISTICS <sup>(1)</sup>

(use TR or UPB specification sheets for those transducers)

- Type: C  RS  RFA  LT  NW  (Specify roll width \_\_\_\_\_)
- Bore Size <sup>(2)</sup> \_\_\_\_\_ inches • Mounting Style S  FL  PB  TF \* PFL \* (\*Model C only)
- Load Rating \* \_\_\_\_\_ pounds. (DFE will calculate if you wish) • Connector Position <sup>(3)</sup> 3  6  9  12  o'clock  
\* multiply formula results by 2 for RFA and LT transducers (arrow on transducer points to 6 o'clock)

## CONTROLLER SPECIFICATION

- Is the equipment for: Unwind  Intermediate  Rewind  • Tension Meter Scale: 0 to 1, 5, 10, 25, 50, 100, 250, 500, 1000 (Circle One)
- Full Roll Dia. \_\_\_\_\_ • Core Dia. \_\_\_\_\_ • Roll Wt. \_\_\_\_\_ pounds
- Machine Type (Printing Press, Laminator, Coater, etc.) \_\_\_\_\_
- Describe Drive, Brake, or Clutch to be controlled (include model number and maker if possible) \_\_\_\_\_  
\_\_\_\_\_ • DFE to supply brake/clutch? Yes  No
- Controller Model number \_\_\_\_\_ standard enclosure  Panel only  double enclosure
- Interconnection Cable Length (double enclosure system only) \_\_\_\_\_ ft. • Type: <sup>(5)</sup> C-C  C-N  N-N
- Options \_\_\_\_\_

## INDICATOR SPECIFICATION

- Tension Meter Scale: 0 to 1, 5, 10, 25, 50, 100, 250, 500, 1000 (Circle One)
- Indicator Model number \_\_\_\_\_ standard enclosure  Panel only  double enclosure
- Options \_\_\_\_\_

## TRANSDUCER CABLE SPECIFICATION

- Length <sup>(4)</sup> \_\_\_\_\_ ft. and \_\_\_\_\_ ft. • Type: <sup>(5)</sup> C-C  C-N  N-N

 THE TENSION CONTROL SPECIALISTS  
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NOTES: (1) Refer to UPB or TR data sheet or specification for sizing procedure  
(2) Standard Model C bore sizes are: Size 0 = 7/8 inch, Size 2 = 1 1/4"  
(3) 6 o'clock position is standard on Styles S and FL, rear is standard on PB. No optional positions on TF.  
(4) Standard cable pair consists of one 15 ft. and one 20 ft. cable.  
(5) C-C = connectors on both ends, N-C = connector one end, and N-N = no connectors