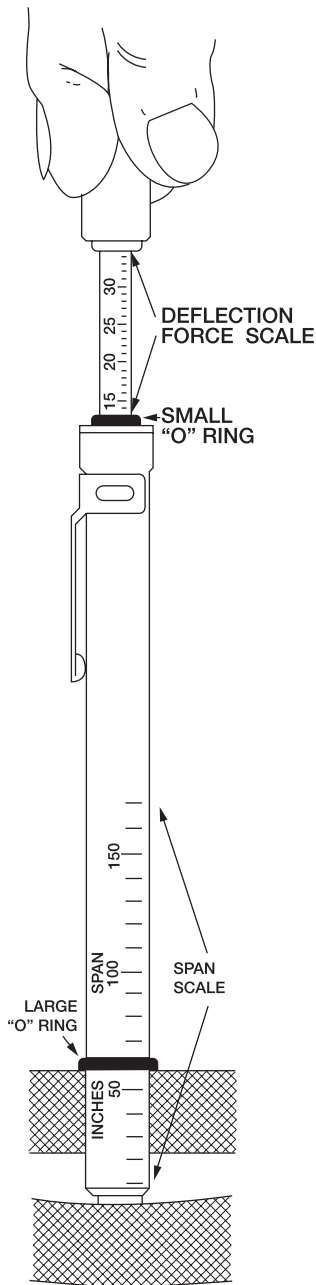


# DODGE V-Belt Tension Tester

Part No. 109082

These instructions must be read thoroughly before installation or operation.

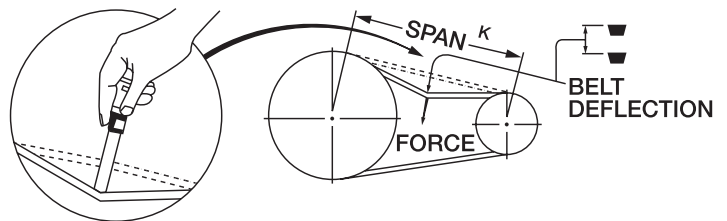


## General Rules for V-Drives:

1. Replace worn sheaves to prevent belt slippage and turnover.
2. Install and maintain sheave alignment to within 1/2 degree, or 0.1" per foot center distance.
3. Never mix old belts and new belts on the same drive. Never mix belts from different manufacturers on the same drive.
4. The ideal belt tension is the lowest tension at which the belts will not slip under peak load conditions.
5. Recheck belt tension during the first 24–48 hours of operation.
6. Excessive belt tension will shorten belt and bearing life.
7. Keep belts free of foreign material. Do not use belt dressing; this deteriorates the belt, causing early failure.

## Tensioning Procedure:

1. Measure belt span. (See Drawing)
2. Position large O-ring on the tester scale at this measured length.
3. Slide the small O-ring flush with the barrel of the tester.
4. Place the large end of the tester on one belt, at the center of the span. Apply a sufficient force to tester to deflect the belt such that the large O-ring is flush with the other belts. If this is a single-belt drive, use a straight-edge or taught string as a reference.
5. Read the deflection force from the position of the small O-ring on the plunger.
6. Compare this force with the value given on Table 1.
7. If the force is below the recommended value, increase the drive center distance to provide greater belt tension.
8. Reduce the center distance if there is too much force.



**Important:** The tensioning values given in Table 1 are valid for drives appropriately selected from DODGE catalogs dated 1985 or later. Consult DODGE for tensioning information for drives that do not follow these guidelines.

**WARNING:** Because of the possible danger to persons(s) or property from accidents which may result from the improper use of products, it is important that correct procedures be followed: Products must be used in accordance with the engineering information specified in the catalog. Proper installation, maintenance and operation procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided, and are neither provided by Baldor Electric Company nor are the responsibility of Baldor Electric Company. This unit and its associated equipment must be installed, adjusted and maintained by qualified personnel who are familiar with the construction and operation of all equipment in the system and the potential hazards involved. When risk to persons or property may be involved, a failsafe device must be an integral part of the driven equipment beyond the speed reducer output shaft.



**Polyband Belts:** To calculate the force required for a Polyband belt, multiply the force required for one belt by the number of belts in the band. Use a straightedge or taut string laid across the sheaves for a deflection reference. If the required force is greater than the capacity of the tension tool, use a larger capacity spring scale or consult DODGE for the alternate "Elogation Method" instruction.

| Table 1 - Minimum Belt Deflection Force in lbs. (Consult DODGE for conditions not covered in this table) |              |      |  |      |      |      |
|--|--------------|------|--|------|------|------|
| V-Belt Section   | Small Sheave |      | Deflection Force in lbs. for Drive Speed Ratio of: |      |      |      |
|  | Speed Range  | Dia. | 1.0  | 1.5  | 2.0  | 4.0+ |
| 3VX  | 1200-3600    | 2.2  | 2.2  | 2.5  | 2.7  | 3.0  |
|  | 1200-3600    | 2.5  | 2.6  | 2.9  | 3.1  | 3.6  |
|  | 1200-3600    | 3.0  | 3.1  | 3.5  | 3.7  | 4.2  |
|  | 1200-3600    | 4.1  | 3.9  | 4.3  | 4.5  | 5.1  |
|  | 1200-3600    | 5.3  | 4.6  | 4.9  | 5.1  | 5.7  |
|  | 1200-3600    | 6.9  | 5.0  | 5.4  | 5.6  | 6.2  |
| 5VX  | 1200-3600    | 4.4  | 6.5  | 7.5  | 8.0  | 9.0  |
|  | 1200-3600    | 5.2  | 8.0  | 9.0  | 9.5  | 10.0 |
|  | 1200-3600    | 6.3  | 9.5  | 10.0 | 11.0 | 12.0 |
|  | 1200-3600    | 7.1  | 10.0   | 11.0 | 12.0 | 13.0 |
|  | 900-1800     | 9.0  | 12.0   | 13.0 | 14.0 | 15.0 |
|  | 900-1800     | 14.0 | 14.0   | 15.0 | 16.0 | 17.0 |
| 8VX  | 900-1800     | 12.5 | 18.0   | 21.0 | 23.0 | 25.0 |
|  | 900-1800     | 14.0 | 21.0   | 23.0 | 24.0 | 28.0 |
|  | 700-1500     | 17.0 | 24.0   | 26.0 | 28.0 | 30.0 |
|  | 700-1500     | 21.2 | 28.0   | 30.0 | 32.0 | 34.0 |
|  | 400-1000     | 24.8 | 31.0   | 32.0 | 34.0 | 36.0 |
| 5V   | 900-1800     | 7.1  | 8.5  | 9.5  | 10.0 | 11.0 |
|  | 900-1800     | 9.0  | 10.0   | 11.0 | 12.0 | 13.0 |
|  | 900-1800     | 14.0 | 12.0   | 13.0 | 14.0 | 15.0 |
|  | 700-1200     | 21.2 | 14.0   | 15.0 | 16.0 | 17.0 |
| 8V   | 900-1800     | 12.5 | 18.0   | 21.0 | 23.0 | 25.0 |
|  | 900-1800     | 14.0 | 21.0   | 23.0 | 24.0 | 28.0 |
|  | 700-1500     | 17.0 | 24.0   | 26.0 | 28.0 | 30.0 |
|  | 700-1200     | 21.2 | 28.0   | 30.0 | 32.0 | 34.0 |
|  | 400-1000     | 24.8 | 31.0   | 32.0 | 34.0 | 36.0 |
| A (AP)   | 1800-3600    | 3.0  | 2.0  | 2.3  | 2.4  | 2.6  |
|  | 1800-3600    | 4.0  | 2.6  | 2.8  | 3.0  | 3.3  |
|  | 1800-3600    | 5.0  | 3.0  | 3.3  | 3.4  | 3.7  |
|  | 1800-3600    | 7.0  | 3.5  | 3.7  | 3.8  | 4.3  |
| B (BP)   | 1200-1800    | 4.6  | 3.7  | 4.3  | 4.5  | 5.0  |
|  | 1200-1800    | 5.0  | 4.1  | 4.6  | 4.8  | 5.6  |
|  | 1200-1800    | 6.0  | 4.8  | 5.3  | 5.5  | 6.3  |
|  | 1200-1800    | 8.0  | 5.7  | 6.2  | 6.4  | 7.2  |
| C (CP)   | 900-1800     | 7.0  | 6.5  | 7.0  | 8.0  | 9.0  |
|  | 900-1800     | 9.0  | 8.0  | 9.0  | 10.0 | 11.0 |
|  | 900-1800     | 12.0 | 10.0   | 11.0 | 12.0 | 13.0 |
|  | 700-1500     | 16.0 | 12.0   | 13.0 | 13.0 | 14.0 |
| D (DP)   | 900-1500     | 12.0 | 13.0   | 15.0 | 16.0 | 17.0 |
|  | 900-1500     | 15.0 | 16.0   | 18.0 | 19.0 | 21.0 |
|  | 700-1200     | 18.0 | 19.0   | 21.0 | 22.0 | 24.0 |
|  | 700-1200     | 22.0 | 22.0   | 23.0 | 24.0 | 26.0 |
| AX   | 1800-3600    | 3.0  | 2.5  | 2.8  | 3.0  | 3.3  |
|  | 1800-3600    | 4.0  | 3.3  | 3.6  | 3.8  | 4.2  |
|  | 1800-3600    | 5.0  | 3.7  | 4.1  | 4.3  | 4.6  |
|  | 1800-3600    | 7.0  | 4.3  | 4.6  | 4.8  | 5.3  |
| BX   | 1200-1800    | 4.6  | 5.2  | 5.8  | 6.0  | 6.9  |
|  | 1200-1800    | 5.0  | 5.4  | 6.0  | 6.3  | 7.1  |
|  | 1200-1800    | 6.0  | 6.0  | 6.4  | 6.7  | 7.7  |
|  | 1200-1800    | 8.0  | 6.6  | 7.1  | 7.5  | 8.2  |
| CX   | 900-1800     | 7.0  | 10.0   | 11.0 | 12.0 | 13.0 |
|  | 900-1800     | 9.0  | 11.0   | 12.0 | 13.0 | 14.0 |
|  | 900-1800     | 12.0 | 12.0   | 13.0 | 13.0 | 14.0 |
|  | 700-1500     | 16.0 | 13.0   | 14.0 | 14.0 | 15.0 |
| DX   | 900-1500     | 12.0 | 16.0   | 18.0 | 19.0 | 20.0 |
|  | 900-1500     | 15.0 | 19.0   | 21.0 | 22.0 | 24.0 |
|  | 700-1200     | 18.0 | 22.0   | 24.0 | 25.0 | 27.0 |
|  | 700-1200     | 22.0 | 25.0   | 27.0 | 28.0 | 30.0 |

Note: 1. Use approximately 130% of above values to tension a new set of belts.  
2. Use closest sheave diameter for sizes not shown



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