WP0112
Dodge® V-belt drives: storage
Dodge® Customer/Order Engineering
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V-Belt Storage Methods

The storage of V-belts is of interest to users and distributors as well as manufacturers. Under favorable storage conditions, good quality belts retain their initial serviceability and dimensions. Conversely, unfavorable conditions can adversely affect performance and cause dimensional change. Good storage facilities and practices will allow the user to achieve the most value from belt products.

V-belts should be stored in a cool and dry environment with no direct sunlight. When stacked on shelves, the stacks should be small enough to avoid excess weight on the bottom belts which may cause distortion. When stored in containers, the container size and contents should be sufficiently limited to avoid distortion, particularly to those belts at the bottom of the container.

Some things to avoid:

Do not store belts on floors unless a suitable container is provided. They may be susceptible to water leaks or moisture or otherwise damaged due to traffic.

Do not store belts near windows which may permit exposure to sunlight or moisture. Do not store belts near radiators or heaters in the air flow from heating devices.

Do not store belts in the vicinity of transformers, electric motors, or other electrical devices which may generate ozone. Also avoid areas where evaporating solvents or other chemicals are present in the atmosphere.

Methods of Storage

V-Belts

A common method of storing belts is to hang them on pegs or pin racks. Very long belts stored this way should use sufficiently large pins or crescent-shaped “saddles” to prevent their weight from causing distortion. Long V-belts may be “coiled” in loops for easy distortion-free storage.

Joined V-Belts, V-Ribbed Belts, Synchronous Belts

Line V-belts may be stored on pins or saddles with precautions taken to avoid distortion. However, belts of this type up to approximately 120 inches are normally shipped in a “nested” configuration and it is recommended that the belts be stored in this manner as well. Nests are formed by laying a belt on its side on a flat surface and placing as many belts inside the first belt as possible without undue force. When the nests are tight and are stacked with each rotated 180° from the one below, they may be stacked without damage.

Belts of this type over approximately 120 inches may be “rolled up” and tied for shipment. These rolls may stacked for easy storage. Care should be taken to avoid small bend radii which could damage the belts.

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Effects of Storage

The quality of belts has not been found to change significantly within eight years of proper storage at temperatures less than 85° F (30° C), and relative humidity below 70%. Also there must be no exposure to direct sunlight.

If the storage limit is increased beyond 85° F (30° C), then the storage limit for normal service expectancy should be reduced. From a base of eight years at 85° F (30° C), the storage limit should be reduced by one-half for each 15° F (8° C) increase in temperature. Under no circumstances should belts be exposed to storage temperatures above 115° F (46° C).

With a significant increase in humidity, it is possible for fungus or mildew to form on stored belts. This does not appear to cause serious belt damage, but should be avoided if possible.

Humidity, plus storage, may be more important to the length of the belt than to its residual service life, because certain fibers commonly used for the strength member of V-belts are relatively prone to storage shrinkage. No industry-wide figures are available, but shrinkage is related to humidity of the ambient atmosphere and to storage time.

Equipment using belts is sometimes stored for prolonged periods (six months or more) before it is put into service or during other periods when it is idle. It is recommended that the tension on the belts be relaxed during such periods and that equipment storage conditions should be consistent with the guidelines for belt storage. If this is not possible, the belts should be removed and stored separately.

The manufacturing process commonly called “curing” is intended to bring raw material to an optimum point of hardness and tensile strength. Cure beyond this point (and cure continued, although at a reduced rate) tends to reduce the tensile strength and increase the hardness. Thus, an unrelaxed belt may take a compression “set” in protracted storage. Although this may not significantly affect the service life, it may contribute to a rough, unsatisfactory drive.

It follows, of course, that provision must be made to re-tension the drives before the equipment is reactivated after storage.

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