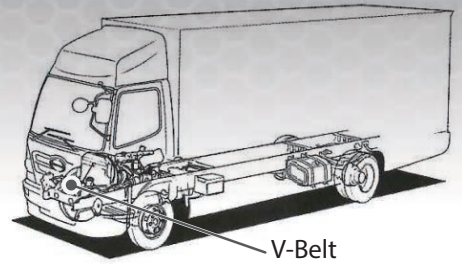




# V-BELT



## 1. Function

V-belts are responsible for transmitting the rotational force of the crankshaft to components such as the cooling water pump which cools the engine, alternator which generates electricity, and the air conditioner (A/C) compressor.

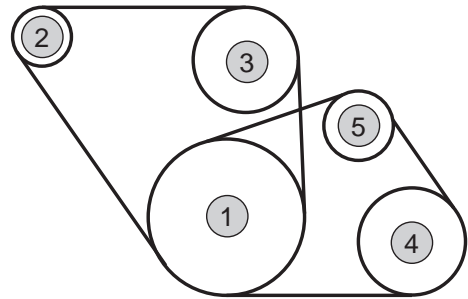
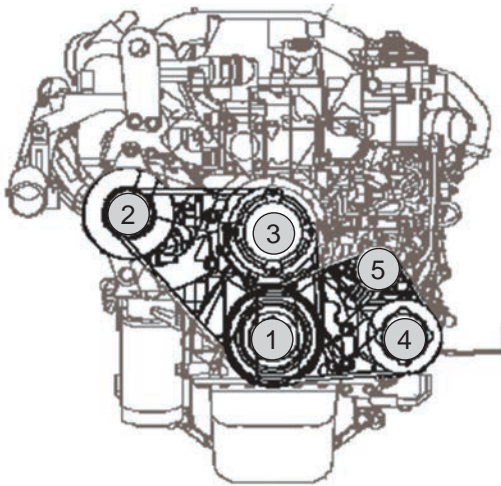
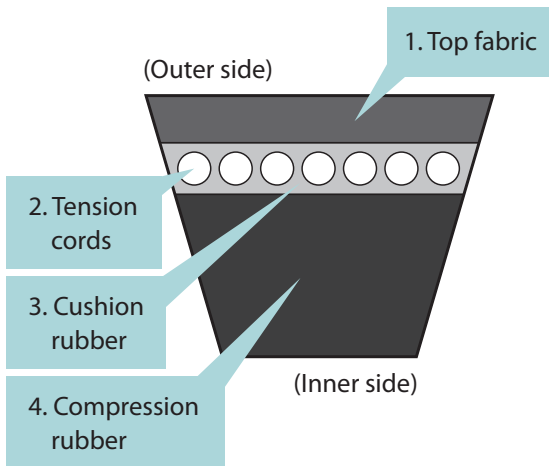


Fig.1 Where V-belts are used.

1. Crank pulley	This pulley is connected to the crankshaft and transmits motive force to various components through the V-belts.
2. Alternator	This is a generator that produces the electricity used in a vehicle.
3. Water pump	This is a pump that distributes coolant to various parts of the engine to keep it cool.
4. A/C compressor	This device sends A/C refrigerant to the unit.
5. Idle pulley	This pulley is used to adjust the tension on the V-belts.

## 2. Construction

This illustration shows the cross section of a V-belt



1. Top fabric	This fabric protects the belt from heat and oils.
2. Tension cords	These maintain the belt at a consistent length.
3. Cushion rubber	This holds the tension cords in place.
4. Compression rubber	This is the main portion of the V-belt.

Fig.2 V-belt section

## 3. Types

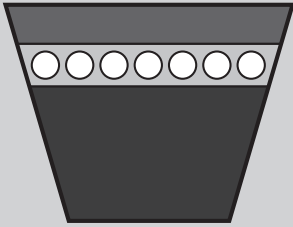
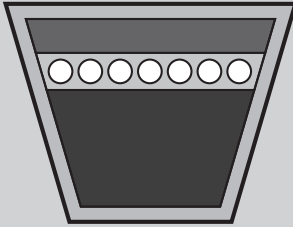
There are four different types of V-belts depending on where they are used.

Type	Images	characteristics
Standard V-belt		Good power transmission and wear resistance
Multi-V-belt		This type consists of several standard V-belts integrated into a single belt. Good durability and is used for high horsepower and high torque applications.
Cogged V-belt		In addition to having the characteristics of standard V-belts, this type of belt offers good flex resistance and longer life cycle.
V-rib belt		Thinner than standard V-belts, these high-performance belts provide greater flexibility, better engagement with pulleys thanks to their grooves, and also better power transmission. They also produce less noise and vibration, and are suited for high-speed high-load transmission applications.

## 4. Differences between genuine and aftermarket parts

Genuine belts are made by layering special synthetic rubbers with high-tensile tension cords and therefore provide lower stretch rates. Additionally, they are able to transmit driving force more precisely to other axles because their sides are not lined with a jacket. Meanwhile, aftermarket parts, although they may appear to be rigid and robust as their entire perimeter is wrapped in jacket fabric, fabrics have a lower transmission efficiency than rubber. Additionally, the jacket fabric on some products may degrade after long-term use and this can lead to shorter life times as well as make the rubber material more susceptible to degradation from heat and/or oil over cycle.

Comparison with aftermarket parts

Item	Genuine	Aftermarket parts
Images		
Material	Special synthetic rubber	Synthetic rubber
Side jacket fabric	Not used	Used (wound)
Service life ratio	3	1

## 5. The importance of maintenance

If the V-belt loses its tension and begins to slip, the coolant pump may lose its ability to pump coolant, which in turn can cause the engine to overheat or seize. If the alternator is unable to generate electricity, this will drain the battery and render your vehicle inoperable. If the V-belt breaks, the different components can run idle or stop, which may cause serious problems, including serious injury by flying shards from broken parts.



Engine overheat



Service truck assistance



Vehicle down

Because V-belts are made of rubber, regular inspections and servicing is critical for avoiding problems such as those listed above.

Examples of inspection items	Description (See your User's Manual for details)
1. Belt tension	1. Is it stretched and slipping? Is it too tight and putting too much stress on the components?(See Image 1)
2. Belt grime	2. Is the belt soiled with oil, etc?
3. Belt wear	3. Are the tension cords exposed? Is the top or bottom fabric coming off?
4. Pulley groove wear	4. When you check the belt, make sure to check the grooves on pulleys for wear.

Inspecting belt tension  
Press the middle section of the belt with a force of about 10kg, or measure it with a special compression gauge.

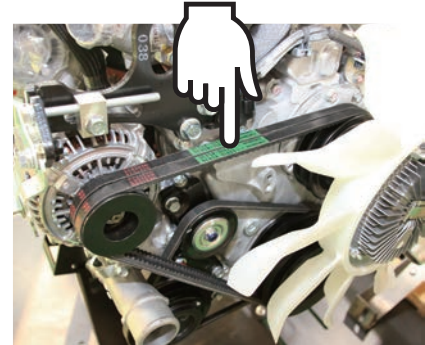


Image 1 Inspecting belt tension

#### Caution!

When replacing V-belts, never use belts that are different from the ones installed on your vehicle. This is critical for getting the maximum performance from your Hino vehicle.

## 6. Summary and points for increasing sales

- V-belts are needed for transmitting rotational force to your engine's cooling unit and power generator.
- V-belts must be inspected on a regular basis, and replaced if any problem is found.
- Hino genuine V-belts are parts that you can use with peace of mind since they provide the excellent performance and quality levels that are standard for Hino vehicles.



- Make sure to explain to your customer that if these belts are not inspected and/or replaced properly, there can be effects on the engine or the vehicle itself, including overheating and breakdowns.
- Encourage your customers to inspect these belts regularly to detect problems early and make replacements early in order to avoid unexpected problems.
- Make sure to recommend Hino genuine parts for replacements to avoid problems and ensure comfortable driving.