
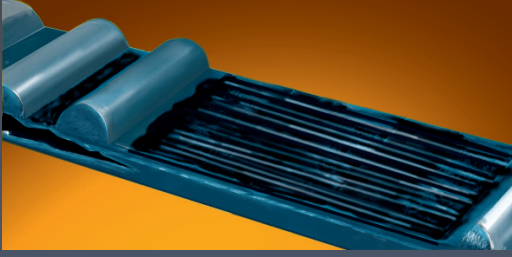
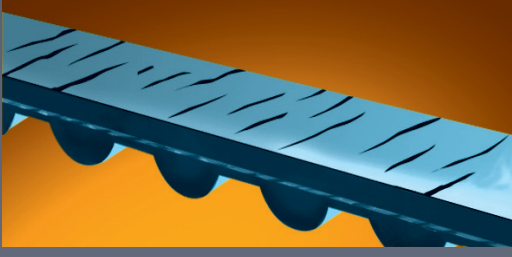



# Problem – Diagnosis – Solution

## Timing belts

Problem and cause		Solution
<b>Timing belts</b>		
<b>Running noises from belt</b> <ul style="list-style-type: none"> <li>① Tension too high: Belt whines, whistles</li> <li>② Tension too low: Belt knocks against covering</li> </ul>		<ul style="list-style-type: none"> <li>① ② <b>Adjust tension properly</b></li> </ul>
<b>Edge wear</b> <ul style="list-style-type: none"> <li>① Belt not parallel to axis: Belt runs against flanged pulley</li> <li>② Wheels axially off-centre: Timing belt cannot be properly aligned</li> <li>③ Flanged pulley has flaws</li> <li>④ Bearing play in components</li> </ul>		<ul style="list-style-type: none"> <li>① ② <b>Check drive, line up or, if necessary, replace any non-aligned pulleys, change the belt</b></li> <li>③ ④ <b>Replace idler/tensioning pulleys, change the belt</b></li> </ul>
<b>Fabric wear in the tooth root</b> <ul style="list-style-type: none"> <li>① Belt excessively tensioned</li> <li>② Belt is overheating</li> <li>③ Timing belt pulley is worn out</li> </ul>		<ul style="list-style-type: none"> <li>① <b>Change the belt, adjust tension correctly</b></li> <li>② <b>Find out cause (e.g. check cold performance), take corrective action, change the belt</b></li> <li>③ <b>Replace timing belt pulley, change the belt</b></li> </ul>
<b>Unacceptable wear of tooth flanks/ base separating and tooth shearing</b> <ul style="list-style-type: none"> <li>① Tension too high/too low</li> <li>② Trapped foreign matter</li> <li>③ Jammed timing belt pulley or tensioning pulley</li> </ul>		<ul style="list-style-type: none"> <li>① <b>Change the belt, adjust tension properly</b></li> <li>② <b>Remove foreign matter, check covering is seated properly, change the belt</b></li> <li>③ <b>Find out cause (e.g. defective bearing), take corrective action, change the belt</b></li> </ul>
<b>Teeth and fabric separating from belt body</b> <ul style="list-style-type: none"> <li>① Leaks in the engine or engine compartment (e.g. escape of oil, antifreeze etc.)</li> </ul>		<ul style="list-style-type: none"> <li>① <b>Repair leak(s), change the belt</b></li> </ul>
<b>Running marks on teeth side</b> <ul style="list-style-type: none"> <li>① Foreign matter in timing belt drive</li> <li>② Flaws in teeth of timing belt pulley caused by foreign matter or tools during fitting</li> <li>③ Timing belt damaged before/during fitting</li> </ul>		<ul style="list-style-type: none"> <li>① <b>Remove foreign matter, change the belt, check the cover is seated properly</b></li> <li>② <b>Replace timing belt pulley, change the belt, ensuring it is properly fitted</b></li> <li>③ <b>Change the belt, ensuring it is properly fitted</b></li> </ul>
<b>Cracks on back of timing belt</b> <ul style="list-style-type: none"> <li>① Ambient temperature too high/low</li> <li>② Contact with foreign media</li> <li>③ Back idler pulley sluggish</li> <li>④ Ageing</li> </ul>		<ul style="list-style-type: none"> <li>① <b>Find out cause (e.g. check cold performance), take corrective action, change the belt</b></li> <li>② <b>Change the belt, check the covering is seated properly</b></li> <li>③ <b>Replace pulley, change the belt</b></li> <li>④ <b>Change the belt</b></li> </ul>
<b>Timing belt snaps</b> <ul style="list-style-type: none"> <li>① Foreign matter in the drive</li> <li>② Contact with foreign media</li> <li>③ Excessive tensioning</li> <li>④ Belt was crimped before/during fitting</li> </ul>		<ul style="list-style-type: none"> <li>① <b>Remove foreign matter/media, change the belt</b></li> <li>② <b>Change the belt, check the covering is seated properly</b></li> <li>③ <b>Change the belt, adjust tension properly</b></li> <li>④ <b>Change the belt and fit it correctly</b></li> </ul>
<b>Defective system components</b> <ul style="list-style-type: none"> <li>① Bearing play</li> <li>② Damaged running surface</li> </ul>		<ul style="list-style-type: none"> <li>① ② <b>Replace the idler, tensioning and/or guide pulley</b></li> </ul>

