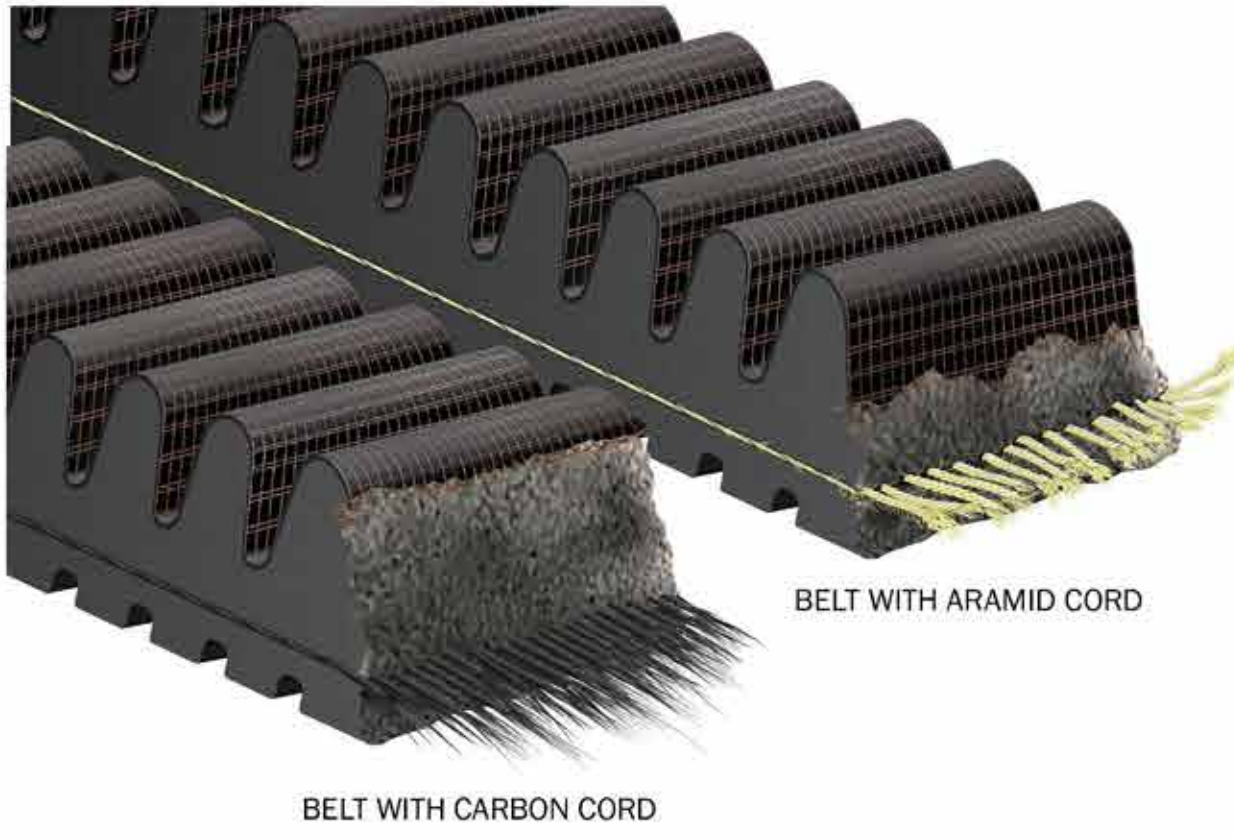


## 1. TENSILE CORD BREAK



## 2. CHUNK-OUT



## 3. EDGE CORD PULLOUT



## 4. CRACKS BETWEEN COGS



## 5. HOUR-GLASSING, UNEVEN BELT WEAR, SPIN BURNS



## 6. BELT DISINTEGRATION



## 7. GLAZING



SYMPTOM	POTENTIAL CAUSES	RECOMMENDATIONS
<b>1. TENSILE CORD BREAK:</b> Complete belt break through the tensile cord	<ul style="list-style-type: none"> <li>Belt subjected to shock-loading from sudden excessive engagement RPM, repeated aggressive hard acceleration and braking (especially with heavy weight on vehicle)</li> <li>Back-bending, crimping, or prying on belt during installation compromised tensile cord integrity and irreversibly damaged belt</li> <li>Improper gear ratio, clutch center-to-center distance too long, or jammed/locked drive train</li> </ul>	<ul style="list-style-type: none"> <li>Drive using smooth acceleration taking into account vehicle load; avoid repetitive hard braking and immediate acceleration</li> <li>Follow proper storage and handling procedures (do not back-bend, crimp, or invert the belt)</li> <li>Verify the correct belt is being used</li> <li>Ensure engagement RPM is appropriate, clutch center-to-center spacing is correct, and proper gear is utilized for terrain</li> <li>While in park or neutral at idle, the secondary clutch should be stationary</li> </ul>
<b>2. CHUNK-OUT:</b> Sheared cogs, compression section (undercord) fractured/torn (chunk-out)	<ul style="list-style-type: none"> <li>Improper belt installation; belt was back-bent, crimped, or pried on during installation</li> <li>Belt worn past its service limits from high mileage, evidenced by cracks between cogs and eventual cog shearing</li> <li>Belt hit or rubbed against a stationary object</li> </ul>	<ul style="list-style-type: none"> <li>Replace belt and perform proper new belt break-in procedure, allowing extra time when performing heat cycles in very cold conditions</li> <li>Never back-bend or crimp a CVT belt; never turn a CVT belt inside out; do not pry on belt during installation</li> <li>Always check drive components to confirm clear belt travel path</li> </ul>
<b>3. EDGE CORD PULLOUT:</b> Tensile cord is frayed or separating/unraveling from belt body	<ul style="list-style-type: none"> <li>Clutch misalignment or incorrect belt-pulley angle prevented the belt from riding fully on the sidewalls; resulting extreme friction, heat, and belt material loss led to cord exposure</li> <li>Improper or insufficient belt break-in</li> </ul>	<ul style="list-style-type: none"> <li>Replace belt; further use will cause belt disintegration</li> <li>Inspect primary and secondary clutches for any defects and ensure proper alignment; always prep clutches prior to belt installation</li> <li>On snowmobiles, always verify the integrity of the motor mounts and torque stop when replacing a drive belt; adjust clutches to proper offset and center-to-center distance</li> <li>Always perform proper new belt break-in procedure after installation</li> </ul>
<b>4. CRACKS FORMING IN BETWEEN COGS:</b> Flex fatigue; worn belt	<ul style="list-style-type: none"> <li>Belt is worn past its service limit due to considerable use</li> <li>New belt was flexed/bent in extremely cold weather, or turned inside out at any time</li> </ul>	<ul style="list-style-type: none"> <li>Replace belt and perform proper new belt break-in procedure, allowing extra time when performing heat cycles in very cold conditions</li> <li>Never back-bend or crimp a CVT belt; never turn a CVT belt inside out</li> </ul>
<b>5. HOUR-GLASSING, UNEVEN BELT WEAR, SPIN BURNS:</b> A belt that is worn unevenly in one section, forming a groove (hour-glassing)	<ul style="list-style-type: none"> <li>Belt was not moving while drive clutch was spinning at full speed; this generated extreme heat and burned the belt</li> <li>Vehicle idled in gear for extended period of time; high belt engagement RPM settings</li> <li>Drive system was locked or jammed, possibly due to improper gear ratio selection</li> <li>Opening the throttle to get a vehicle unstuck</li> <li>Belt-to-sheave clearance was incorrect or, on snowmobiles, belt deflection was set improperly</li> </ul>	<ul style="list-style-type: none"> <li>Verify the correct belt and gear ratio are being used; confirm proper belt engagement RPM</li> <li>Ensure the belt-to-sheave clearance (gaps between belt side wall and sheave on both sides) is within optimal range. On snowmobiles, check and adjust belt deflection to vehicle specifications</li> <li>Verify clutches are properly tuned for vehicle modifications, added weight, tire size/style, terrain, and riding style</li> </ul>
<b>6. BELT DISINTEGRATION:</b> Belt has broken apart into many pieces	<ul style="list-style-type: none"> <li>Repeated shock-loading, excessive belt speed, or excessive operation in low gear (high torque loads beyond what is intended for the stock vehicle)</li> <li>Intense heat build up caused by extreme drive conditions (stuck in deep sand, gravel, or mud; spinning at full throttle)</li> <li>Misaligned or improperly tuned clutches (not tuned to match vehicle modifications)</li> <li>Excessive heat conditions led to glazing and hardening, increased slip, and rapid wear</li> <li>Back-bending, crimping, or prying on belt during installation compromised tensile cord integrity and irreversibly damaged belt</li> </ul>	<ul style="list-style-type: none"> <li>Verify correct belt for the application, clutches aligned and properly tuned for any vehicle modifications beyond stock (especially tire size) and added vehicle weight</li> <li>Ensure the proper gear ratio is used for the terrain and riding conditions</li> <li>Ensure the belt-to-sheave clearance (gaps between belt side wall and sheave on both sides) is within optimal range</li> <li>On snowmobiles, always verify the integrity of the motor mounts and torque stop when replacing a drive belt; adjust belt deflection to vehicle specifications, and ensure correct center-to-center distance</li> <li>Inspect primary and secondary clutches for any defects and ensure proper alignment; always prep clutches prior to belt installation and follow proper belt break-in procedure</li> <li>Never back-bend or crimp a CVT belt; never turn a CVT belt inside out; do not pry on belt during installation</li> <li>In extremely cold conditions, warm the belt to room temperature prior to open-throttle riding</li> </ul>
<b>7. GLAZING:</b> Belt looks melted and shiny, or has baked appearance due to overheating	Intense heat from repeated and excessive belt slippage due to: <ul style="list-style-type: none"> <li>Improperly tuned clutches for any vehicle modifications beyond stock (added weight, tire size/style) or terrain (sand, rock crawling, mud)</li> <li>Insufficient pressure on belt sides due to worn or stuck rollers, worn helix or clutch bushings</li> <li>Excessive horsepower for belt; inappropriate torque loads beyond stated capability of stock vehicle</li> <li>Improper gear ratio for the application (use of high gear range while towing, climbing steep hills, or riding in deep snow/mud)</li> <li>Excessive operation in low gear for extended periods of time</li> <li>Dirty clutches; oil, dirt, or belt residue</li> </ul>	<ul style="list-style-type: none"> <li>Verify correct belt for the application, clutches aligned and properly tuned for any vehicle modifications beyond stock (especially tire size) and added vehicle weight</li> <li>Always perform proper new belt break-in procedure after installation to seat the belt</li> <li>Verify clutch sheaves and belt are clean and free of contaminants; examine rollers, helix and bushings for signs or wear and replace if necessary</li> <li>Always drive in appropriate gear range for terrain and conditions</li> </ul>



BELT FAILURE ANALYSIS PDF



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