

Date: August 13, 2026
Subject: Belt Tension Guidelines
Location: e-Tech Library
Revision Summary: Added before and after dates for T-890 and T-1090. New or updated content is highlighted in yellow.

Description: This bulletin contains belt tension information and specifications for all current Thermo King units.

Units Covered in this Bulletin:

Rail/Trailer Units	Truck Units	APU Units	Heater Units
Precedent S-750i	T-80 Series	TriPac Evolution	Heat King
ADVANCER S-DRC	T-90 Series	TriPac 3	
SLXi LOCAL and DRC			
Precedent S and C Series			
SB Series			

Comments:

Thermo King has introduced a new belt-tensioning tool. The Continental™ TensionRite Belt Frequency Meter. This tool measures the belt frequency with high accuracy and easy operation.

This bulletin serves as guide for the specification and best practices of tensioning belts for all units.

Important: See the unit-specific Maintenance Manual for detailed belt service procedures.

Important: The Maintenance Manuals will be updated with this bulletin's information upon the next revision.

Important: VIDEO LINK: [Continental™ TensionRite Belt Frequency Meter Video Link](#)

Figure 1. Aftermarket PN: 2043185



Belt Tension Best Practices:

Belt tension should be checked and adjusted if found out of specification during routine maintenance. Following Thermo King Specifications for belt tension adjustment will maximize unit reliability.

Belt tension must be set properly to avoid accelerated belt wear or early component failure. An over-tensioned belt can cause early bearing, component, or belt failure. Under-tensioned belts can cause belt failure and/or component slippage. Refer to the maintenance manual for proper settings. Note that the P6K poly-V belt design is more sensitive to over-tensioning than the V-belts used in the past.

During belt replacement, it is important to evaluate the bearing condition. With the belt removed, spin the component pulleys. Rotate the fan shafts, alternator, generator, and/or idler pulleys by hand.

Inspect Belt Driven Components:

- Pulleys should spin freely and smoothly.
- Bearings should maintain concentric position without movement. Move the pulleys radially to confirm that bearing clearances are tight, with no more than 0.005" movement.
- Listen for noises as the pulley is rotated and investigate squeaking or rubbing sounds. Roughness, looseness, or abnormal noises can indicate problems, such as a failing bearing.
- Replace damaged components as needed to ensure reliable operation.

Inspect for Belt Wear:

- Glazing
- Broken belt ribs and cracks
- Frayed edges (possible misalignment of pulleys)

Replace the belt as necessary.

T-80 Belt Information:

Table 1. T-680R/T-880R/T-1080R

Belt	Lbs. Tension Using Commercially Available Tool		Frequency Gauge P/N 2043185 Setting Where Applicable	
	New Belt	Field Reset	New Belt	Field Reset
Water Pump Belt	40 lbs.	32 lbs.	126 Hz	118 Hz
Engine/Electric Motor (Jackshaft)	—	—	62 Hz	55 Hz
Electric Motor (Jackshaft)/Compressor	Automatically tensioned by tensioner position. Refer to the Belts information in the Maintenance Manual.			

Table 2. T-680S/T-880S/T-1080S

Belt	Lbs. Tension Using Commercially Available Tool		Frequency Gauge P/N 2043185 Setting Where Applicable	
	New Belt	Field Reset	New Belt	Field Reset
Water Pump Belt	40 lbs.	32 lbs.	126 Hz	118 Hz
Engine/Electric Motor (Jackshaft)	—	—	62 Hz	55 Hz
Electric Motor (Jackshaft)/Compressor	Automatically tensioned by tensioner position. Refer to the Belts information in the Maintenance Manual.			

Table 3. T-1080S SPECTRUM

Belt	Lbs. Tension Using Commercially Available Tool		Frequency Gauge P/N 2043185 Setting Where Applicable	
	New Belt	Field Reset	New Belt	Field Reset
Water Pump Belt	40 lbs.	32 lbs.	126 Hz	118 Hz
Engine/Electric Motor (Jackshaft)	—	—	52 Hz	45 Hz
Electric Motor (Jackshaft)/Compressor	Automatically tensioned by tensioner position. Refer to the Belts information in the Maintenance Manual.			

Table 4. T-1280R SPECTRUM

Belt	Lbs. Tension Using Commercially Available Tool		Frequency Gauge P/N 2043185 Setting Where Applicable	
	New Belt	Field Reset	New Belt	Field Reset
Water Pump Belt	40 lbs.	32 lbs.	126 Hz	118 Hz
Engine/Electric Motor (Jackshaft)	—	—	69 Hz	55-60 Hz
Electric Motor (Jackshaft)/Compressor	Automatically tensioned by tensioner position. Refer to the Belts information in the Maintenance Manual.			

Figure 2. T-680R and T-880R

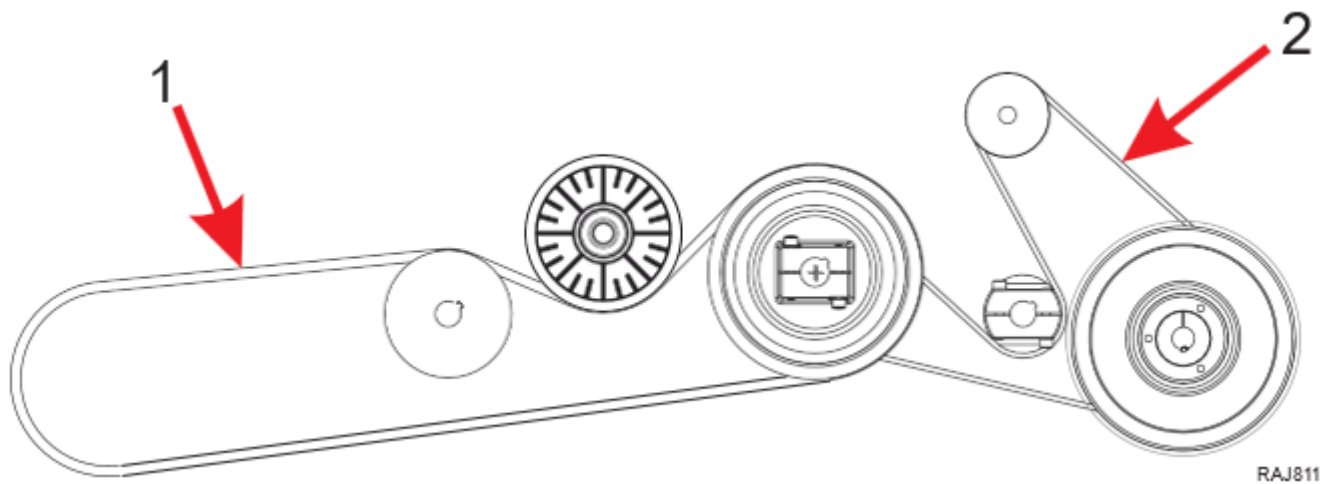
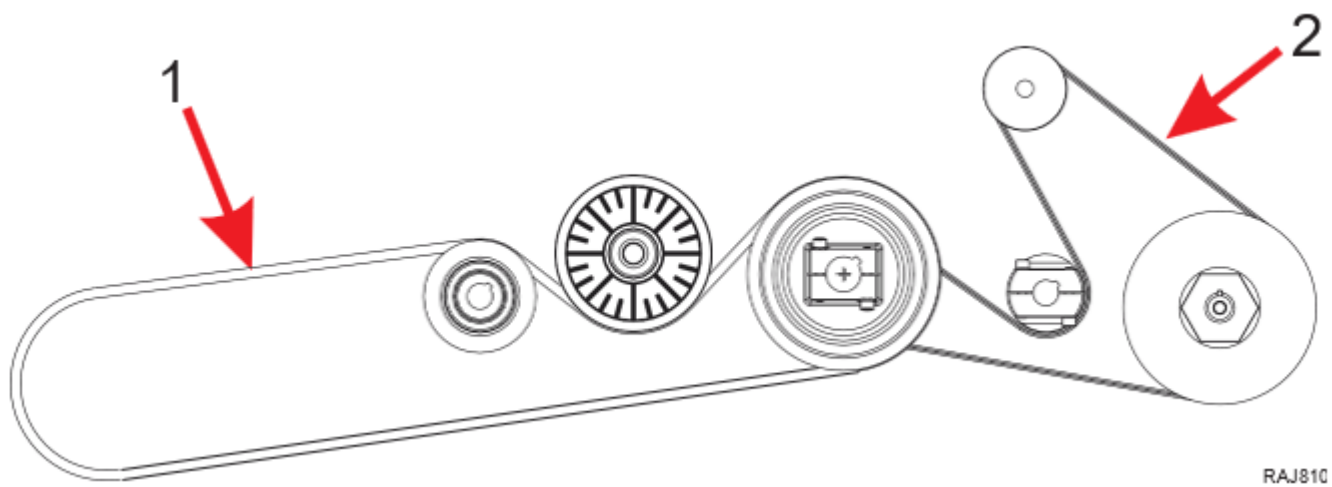


Figure 3. T-180R



1.	Engine Belt Tension Check Location
2.	Compressor Belt Tension Check Location

Figure 4. T-680S, T-880S, and T-1080S

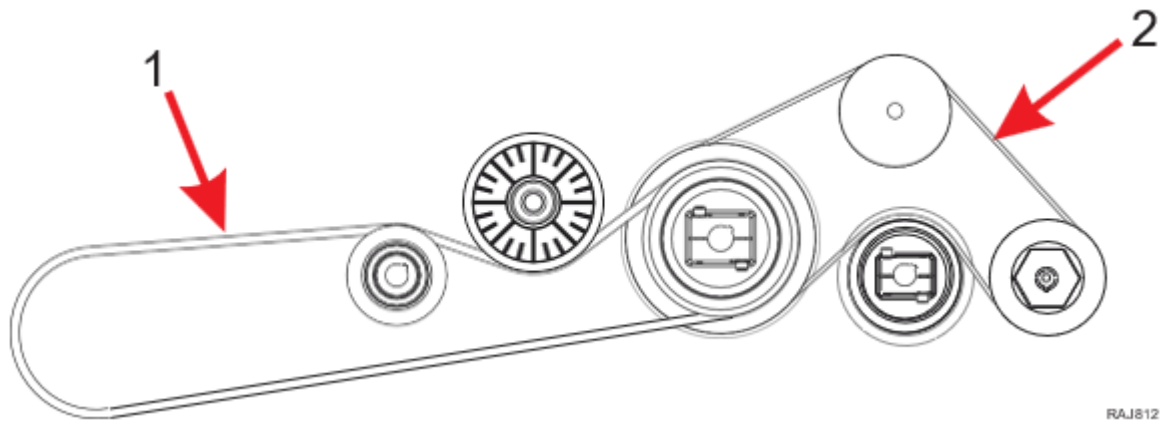


Figure 5. T-1080S SPECTRUM

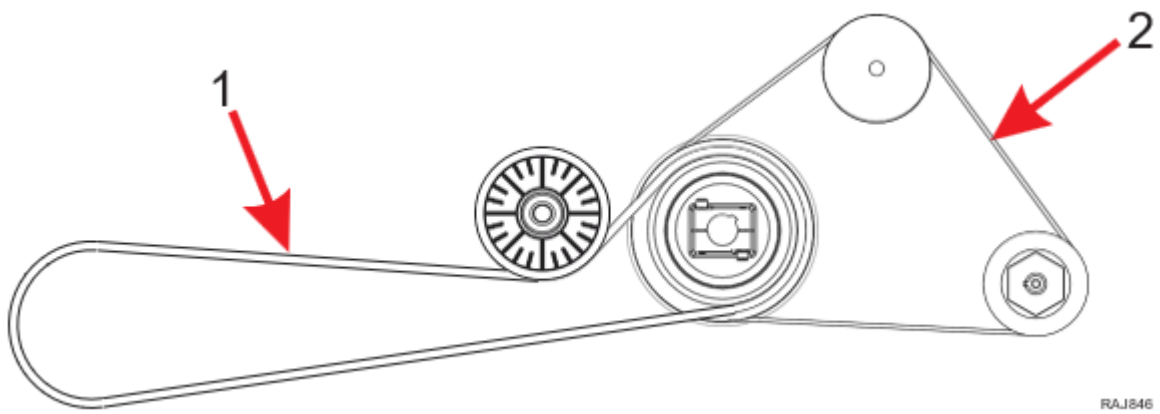
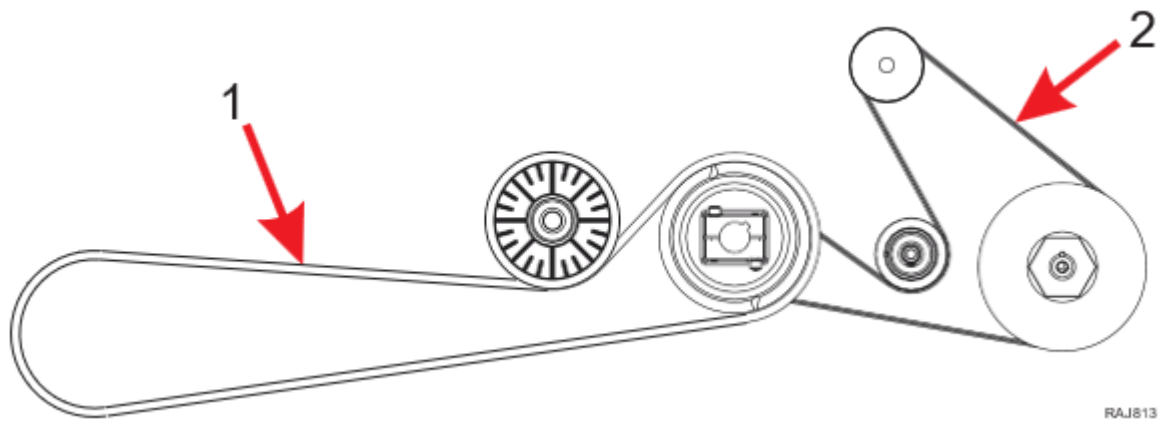


Figure 6. T-1280R SPRECTRUM



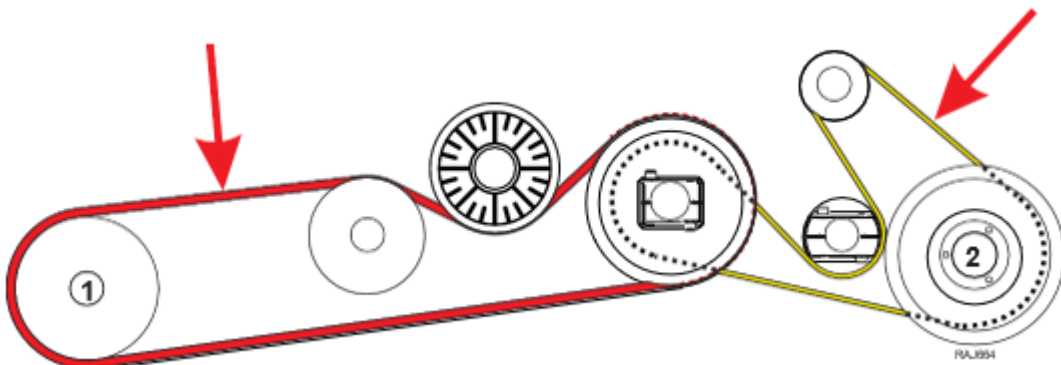
1.	Engine Belt Tension Check Location
2.	Compressor Belt Tension Check Location

T-90 Belt Information:

Important: After installing new belts, the unit must be run for 15 minutes after the belt is tensioned properly. After the 15-minute break in, re-tension the belts to the new belt tension specification. See the maintenance manual for the proper procedure.

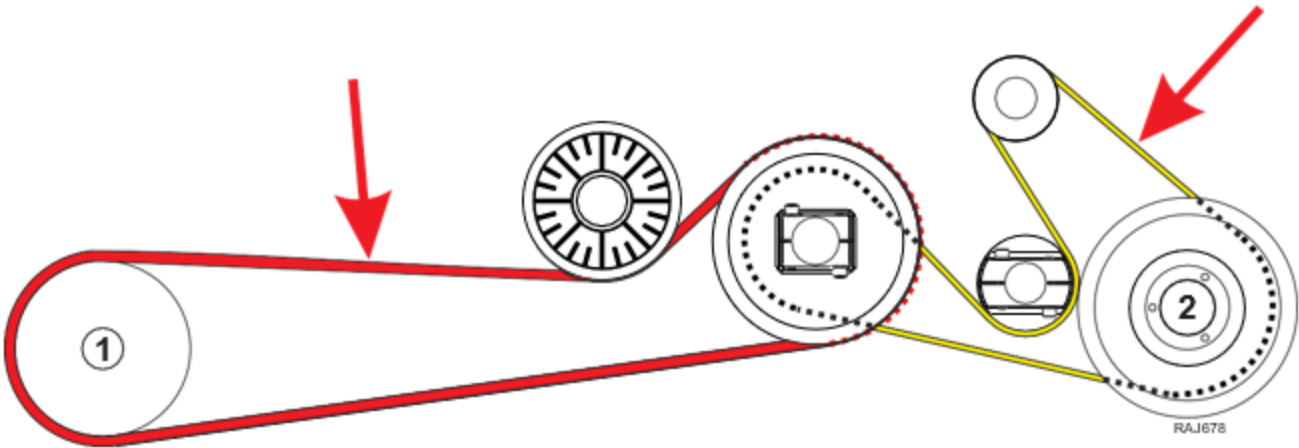
Unit	Belt	Initial, New Belt Tension (Less Than 1 hr. Run Time)	Break-In / Field Reset Tension (More Than 1 hr. Run Time)	Tool Used
ALL	Water Pump Belt	126 Hz (40 lbs.)	118 Hz (32 lbs.)	RECOMMENDED: Hz - TK Belt Tension Tool 2043185 TEMPORARY: Setting Tension in Lbs. with Commercially Available Tool See notes below.
T-590 T-690	Compressor (6-Rib Belt)	156 +/- 4 Hz 134 +/- 8 lbs.	139–156 Hz 90–139 lbs.	
	Engine Belt (3-Rib Belt)	61 +/- 6 Hz 119 +/- 12 lbs.	59–68 Hz 106–144 lbs.	
T-890	Engine Belt (3-Rib Belt)	63 +/- 6 Hz 132 +/- 12 lbs.	60–64 Hz 118–135 lbs.	
	Compressor (6-Rib Belt) Original: 781996 (units built before July 13, 2026)	139 +/- 4 Hz 138 +/- 8 lbs.	125–139 Hz 99–138 lbs.	
	Compressor (6-Rib Belt) New: 782137 (units built July 13, 2026 and after)	175 +/- 4 Hz 226 +/- 8 lbs.	123–144 Hz 99–154 lbs.	
T-1090 Units Built Before June 2, 2025 and SB995 Update not Performed)	Compressor (6-Rib Belt)	150 +/- 4 Hz 147 +/- 8 lbs.	137–150 Hz 109–147 lbs.	
	Engine Belt (3-Rib Belt)	62 +/- 6 Hz 149 +/- 12 lbs.	58–59 Hz 133–135 lbs.	
T-1090 Units Built After June 2, 2025 or SB995 Update Performed)	Compressor (6-Rib Belt)	176 +/- 4 Hz	165–169 Hz	
	Engine Belt (3-Rib Belt)	62 +/- 6 Hz	58–59 Hz	
T-1090 SPECTRUM	Compressor (6-Rib Belt)	149 +/- 4 Hz 144 +/- 8 lbs.	135–143 Hz 106–132 lbs.	
	Engine Belt (3-Rib Belt)	46 +/- 4 Hz 148 +/- 12 lbs.	44–54 Hz 132–201 lbs.	
Note: The most accurate and recommended way to set belt tension is to measure and set the tension Hz with tool 2043185.				
Note: Using a commercially available tool to set belt tension in lbs. may reduce belt life and should only be used as a temporary setting until tool 2043185 can be used. This does not apply to the coolant pump belt.				

Figure 7. Tension Check Locations – T-590, T-690, T-890, and T-1090



1.	Engine Clutch	2.	Compressor Pulley
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Figure 8. Tension Check Locations - T-1090 SPECTRUM



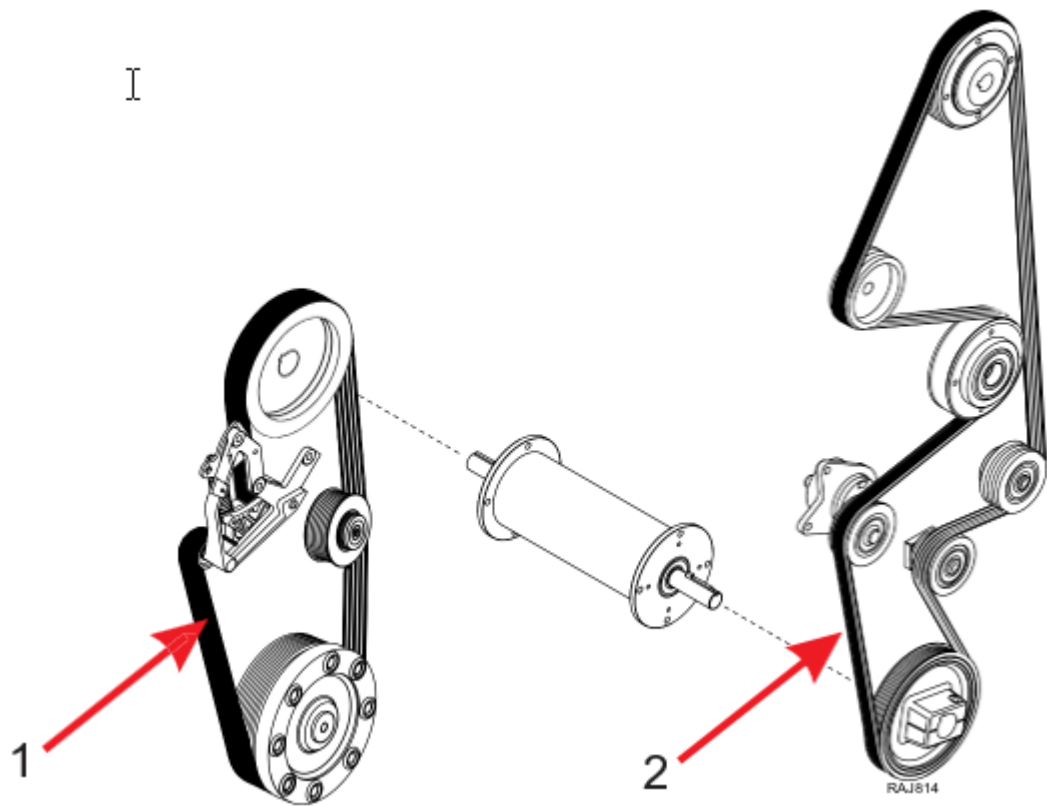
1.	Engine Clutch	2.	Compressor Pulley
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SLXi LOCAL and SLXi-DRC Belt Information:

Table 5. SLXi LOCAL and SLXi DRC

Belt	Specification
Engine/Cross Shaft (Jackshaft) Belt	New Belt and Field Reset: Use service tool P/N 2042436 to set belt tension to a distance of 139.0 mm. See the service procedure.
Fan Drive Belt	New Belt: 106-118 Hz - TK Belt Tension Tool 2043185 Field Reset: 95-106 Hz - TK Belt Tension Tool 2043185
Water Pump Belt	New Belt: 126 Hz - TK Belt Tension Tool 2043185 Field Reset: 118 Hz - TK Belt Tension Tool 2043185

Figure 9. SLXi LOCAL and SLXi DRC



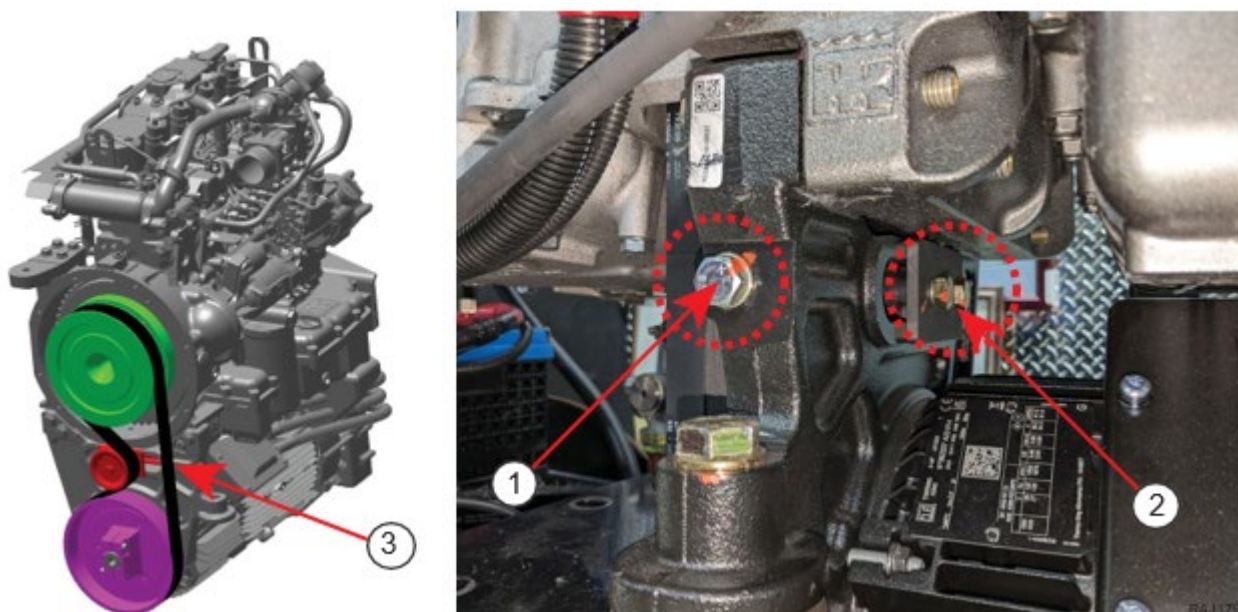
1.	Tension Check Location
2.	Tension Check Location

ADVANCER S-DRC Belt Information:

Table 6. ADVANCER S-DRC

Belt	New Belt	Field Reset
CMG/Compressor Drive Belt	105–111 Hz	82–88 Hz
Water Pump Belt	124–128 Hz (38–42 lbs.)	116–120 Hz (30–34 lbs.)
Use of Frequency Gauge P/N 2043185 or 2041903 to measure frequency (Hz) is recommended.		

Figure 10. ADVANCER S-DRC CMG Belt Routing (Components removed to show detail)



1.	Belt Tensioning Bolt
2.	Belt Tensioner Pulley Lock Bolts (2)
3.	Belt Tension Check Location

Precedent Belt Information:

Table 7. Precedent C-600, C-600M, S-600, S-700, and G-700

Belt		Use of Frequency Gauge P/N 2043185 to measure frequency (Hz) is recommended.	
		New Belt	Field Reset
AC Generator and Alternator Belt - Standard Units	37- or 65-Amp Alternator 120 Amp Alternator	106 Hz (111 lbs.) 121 Hz (144 lbs.)	92 Hz (84 lbs.) 105 Hz (108 lbs.)
AC Generator Belt - SmartPower Units and Standard Units with Optional Battery Charger		106 Hz (111 lbs.)	92 Hz (84 lbs.)
Water Pump Belt		126 Hz (40 lbs.)	118 Hz (32 lbs.)
Compressor Drive Belt - SmartPower Units Only	12 HP Electric Motor 19 HP Electric Motor	131 Hz (236 lbs.) 150 Hz (300 lbs.)	114 Hz (177 lbs.) 130 Hz (223 lbs.)
Alternator Belt - SmartPower Units Only	All Alternators	216 Hz (75 lbs.)	187 Hz (56 lbs.)

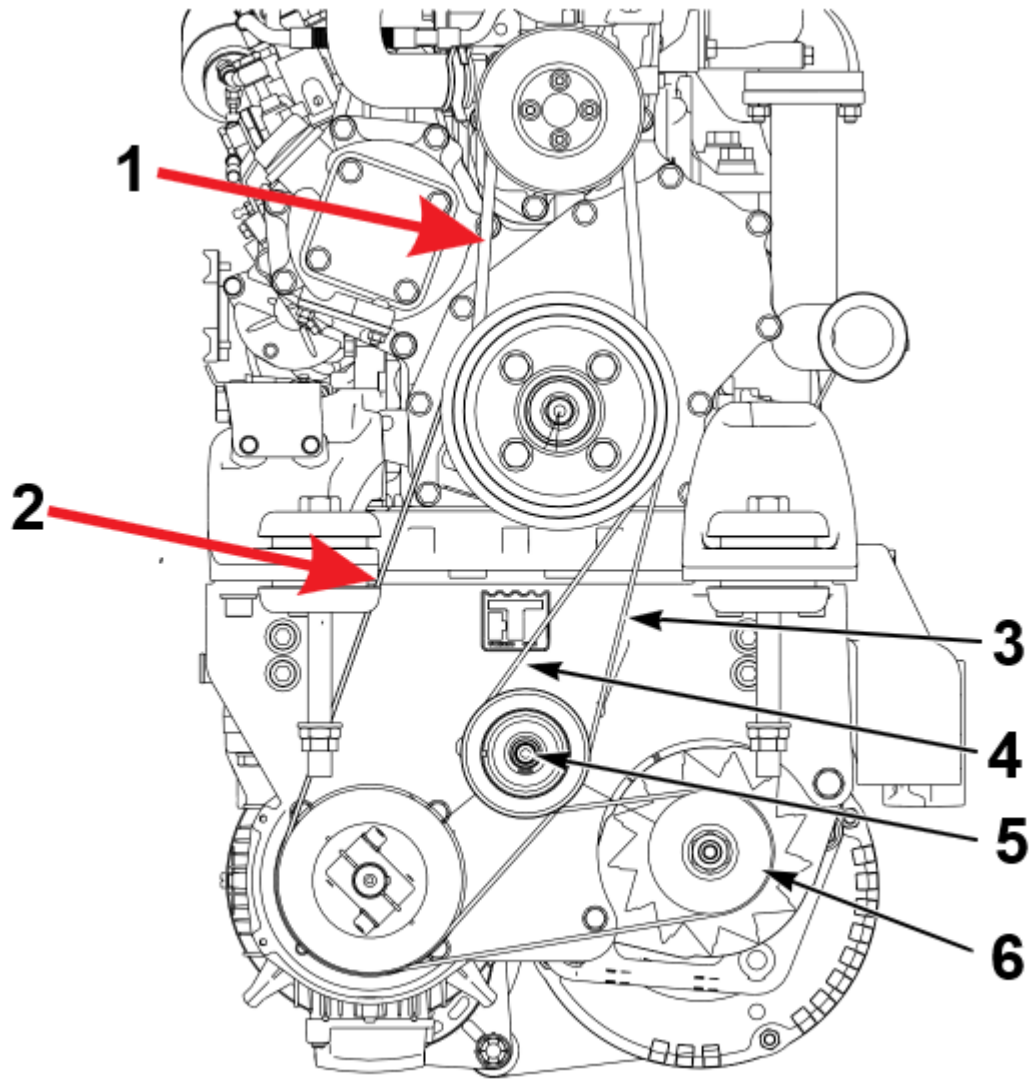
Table 8. S-610M and S-610DE

Belt		Use of Frequency Gauge P/N 2043185 to measure frequency (Hz) is recommended.	
		New Belt	Field Reset
AC Generator and Alternator Belt - Standard Units	37- or 65-Amp Alternator 120 Amp Alternator	106 Hz (111 lbs.) 121 Hz (144 lbs.)	92 Hz (84 lbs.) 105 Hz (108 lbs.)
AC Generator Belt - SmartPower Units and Standard Units with Optional Battery Charger		106 Hz (111 lbs.)	92 Hz (84 lbs.)
Water Pump Belt		126 Hz (40 lbs.)	118 Hz (32 lbs.)
Compressor Drive Belt - SmartPower Units Only	12 HP Electric Motor 15/16 HP Electric Motor 19 HP Electric Motor	131 Hz (236 lbs.) 140 Hz (270 lbs.) 150 Hz (300 lbs.)	114 Hz (177 lbs.) 121 Hz (200 lbs.) 130 Hz (223 lbs.)
Alternator Belt - SmartPower Units Only	All Alternators	216 Hz (75 lbs.)	187 Hz (56 lbs.)

Table 9. S-750i

Belt	New Belt	Field Reset
AC Generator Belt (equipped with automatic tensioner)	79–97 Hz (92–138 lbs.)	79–97 Hz (92–138 lbs.)* see note
Water Pump Belt	124–128 Hz (38–42 lbs.)	116–120 Hz (30–34 lbs.)
Use of Frequency Gauge P/N 2041903 or 2043185 to measure frequency (Hz) is recommended.		
Note: With a new AC Generator belt installed, if the tension does not return to the 79–97 Hz (92–138 lbs.) range, the automatic tensioner should be replaced.		

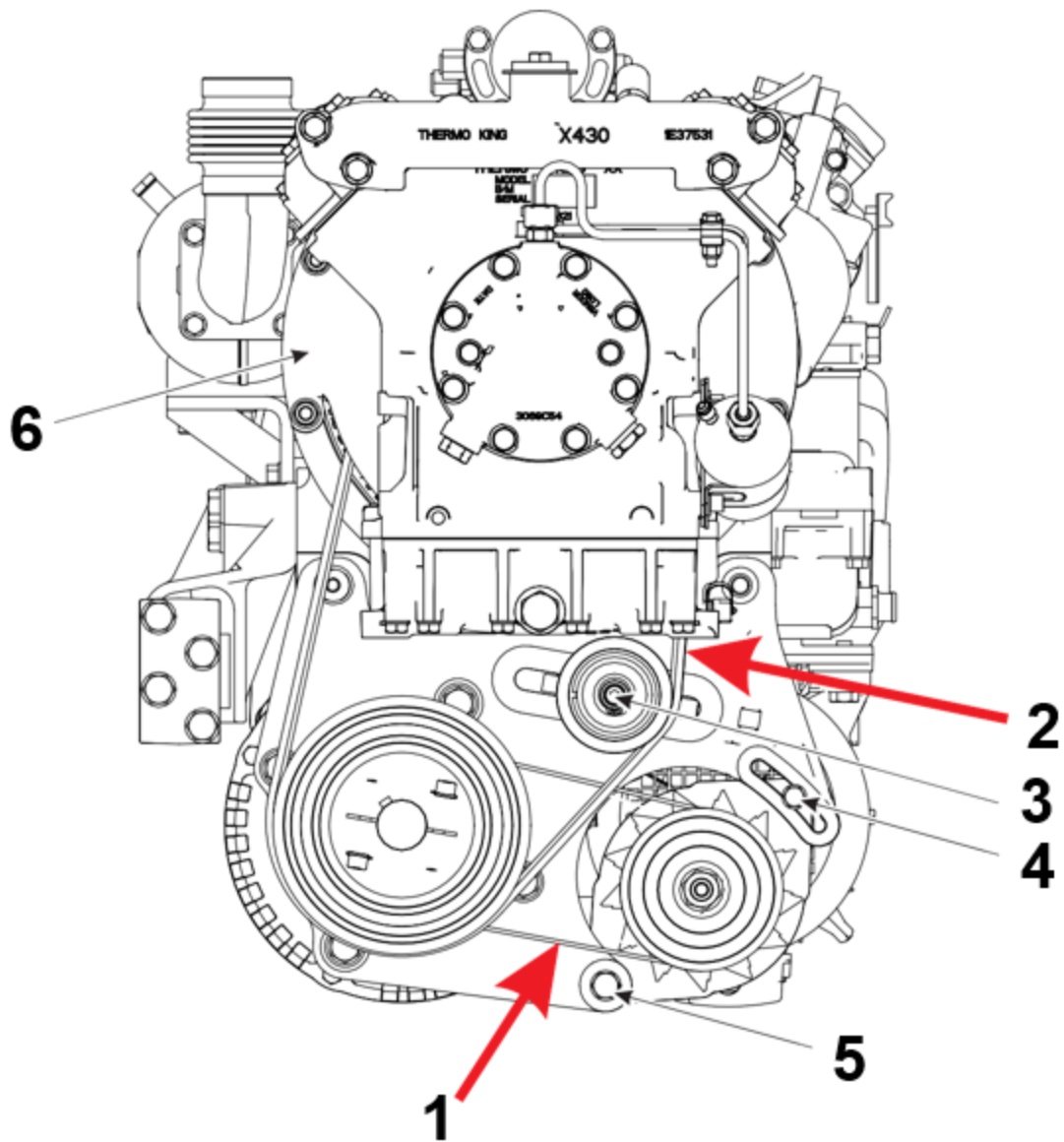
Figure 11. Precedent S-600, S-700, S-610, C-600M



RAJ822

1.	Water Pump Belt (Check Tension Here)	4.	AC Generator Belt with Alternator
2.	Check AC Generator (Check Tension Here)	5.	Idler Mounting Bolt
3.	AC Generator Belt without Alternator	6.	Alternator for Standard Unit

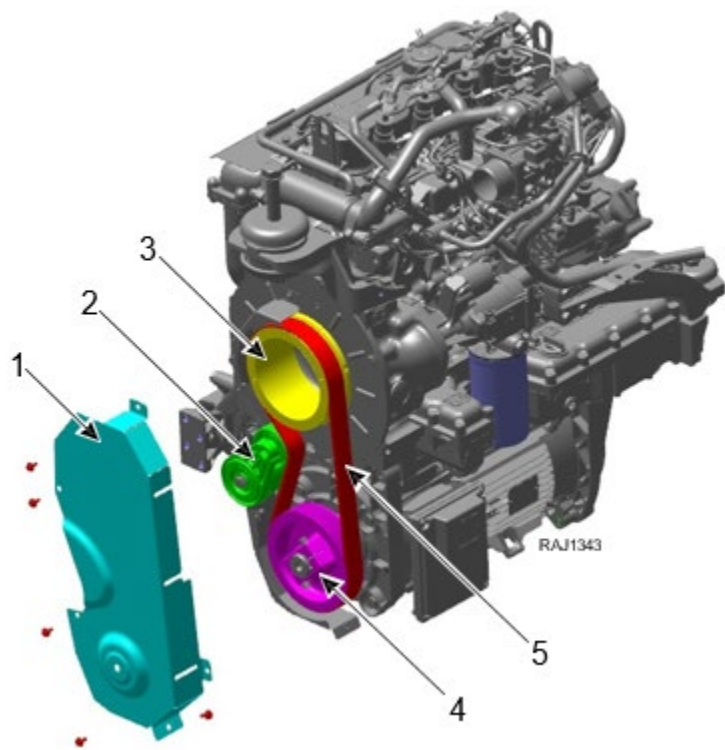
Figure 12. Precedent 50 Model - Alternator and Electric Standby / Compressor Belts



RAJ823

1.	Alternator Belt (Check Tension Here)	4.	Alternator Mounting Bolt
2.	Compressor Drive Belt (Check Tension at Center of this Span)	5.	Alternator Pivot Bolt
3.	Idler Mounting Bolt	6.	Compressor Mounting Flange

Figure 13. S-750i Generator Belt System

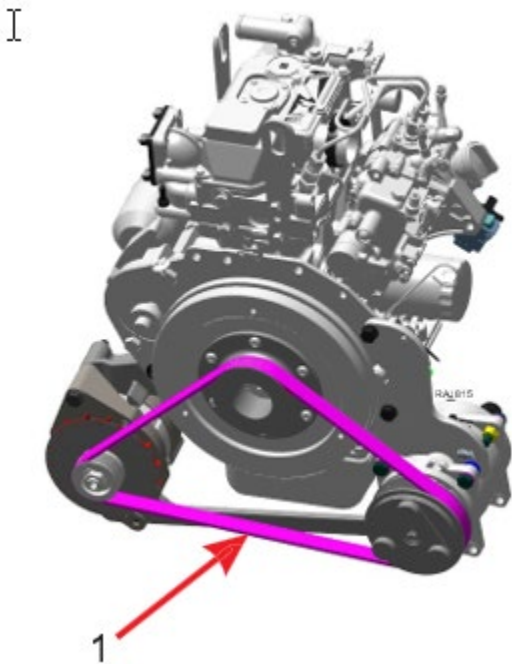


1.	Belt Drive Cover Mounting Screw Torque: 7 ft-lbs. (9 Nm)	4.	Generator Pulley (lower) Pinch Bolt Torque: 24 ft-lbs. (32 Nm)
2.	Automatic Belt Tensioner, spring loaded Mounting Bolt Torque: 30– 44 ft-lbs. (40–60 Nm)	5.	Drive Belt (Check Tension Here)
3.	Engine Pulley (upper)		

TriPac Evolution and TriPac 3 Belt Information:

Belt	New Belt	Field Reset
Engine/Compressor/Alternator	145 +/- 5 Hz	123 +/- 5 Hz
Note: A deflection of 0.25 in. (7 mm) between the alternator and compressor (longest free span of belt) may be used if a gauge is not available to test tension.		
Water Pump Belt	126 Hz (40 lbs.)	118 Hz (32 lbs.)

Figure 14. TriPac Evolution and TriPac 3 Belt

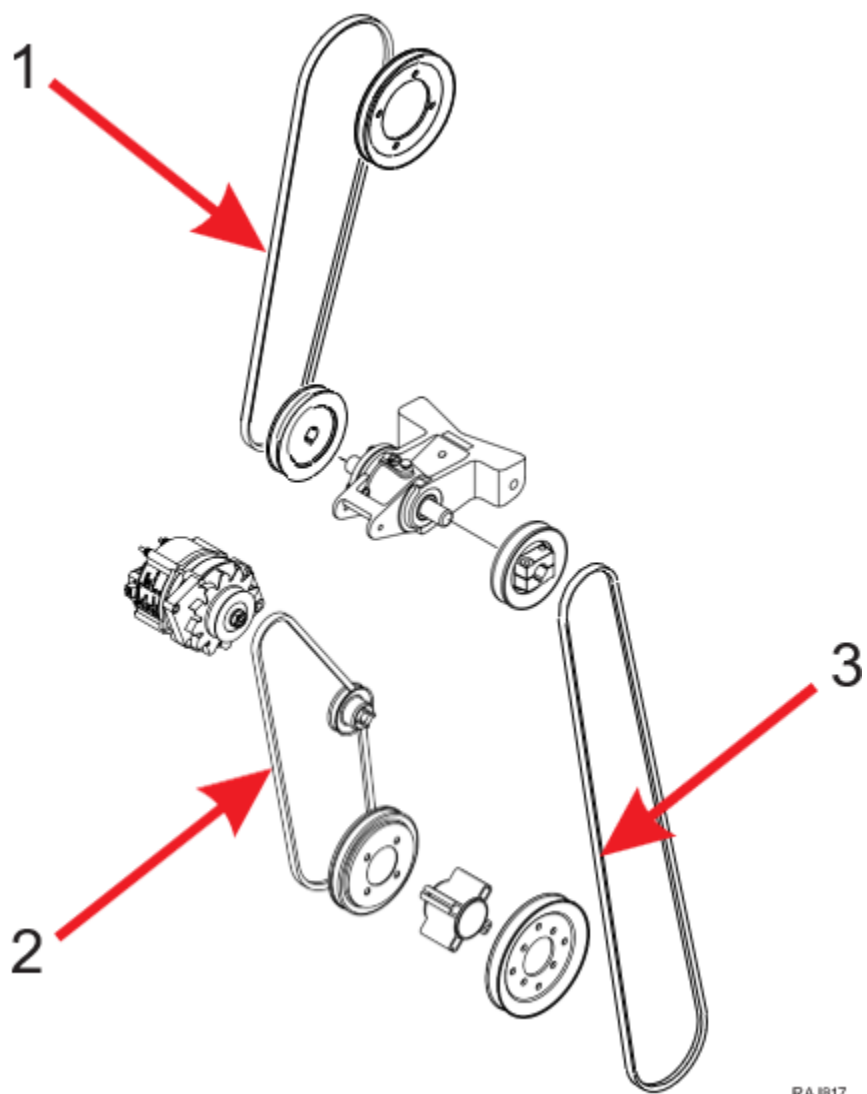


1.	Tension Check Location
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SB Belt Information:

Belt Use of Frequency Gauge P/N 2043185 to measure frequency (Hz) is recommended.			
Model 30 Units			
Alternator Belt		New Belt	Field Reset
SB-130 and SB-230	37 Amp Alternator	67 Hz (74 lbs.)	61 Hz (71 lbs.)
	65 Amp Alternator	70 Hz (75 lbs.)	64 Hz (72 lbs.)
SB-330	37 Amp Alternator	65 Hz (73 lbs.)	59 Hz (70 lbs.)
	65 Amp Alternator	68 Hz (74 lbs.)	61 Hz (71 lbs.)
Lower Fan Belt (Engine to Idler)		New Belt	Field Reset
SB-130 and SB-230		30 Hz (66 lbs.)	27 Hz (84 lbs.)
SB-330		30 Hz (87 lbs.)	27 Hz (84 lbs.)
Upper Fan Belt (Fan to Idler)		51 Hz (88 lbs.)	46 Hz (85 lbs.)
Model 50 Units (SB 230—Only)			
Alternator Belt		New Belt	Field Reset
SB—230 Only	14HP Electric Motor / 37 Amp Alt	105 Hz (76 lbs.)	95 Hz (73 lbs.)
	14HP Electric Motor / 65 Amp Alt	110 Hz (77 lbs.)	100 Hz (74 lbs.)
	24HP Electric Motor / 37 Amp Alt	84 Hz (74 lbs.)	76 Hz (71 lbs.)
	24HP Electric Motor / 65 Amp Alt	87 Hz (75 lbs.)	79 Hz (72 lbs.)
All Units			
Compressor Drive Belts * (Rear Span, See Note Below)		New Belt	Field Reset
All Units		51 Hz (94 lbs.)	45 Hz (91 lbs.)
Fan Belt		New Belt	Field Reset
All Units	14HP Electric Motor	38 Hz (91 lbs.)	34 Hz (88 lbs.)
	24HP Electric Motor	33 Hz (90 lbs.)	29 Hz (86 lbs.)
Water Pump Belt		New Belt	Field Reset
All Units		126 Hz (40 lbs.)	118 Hz (32 lbs.)
*Front belt spans are either too short for the calculation to be accurate, or these belt spans are not accessible.			

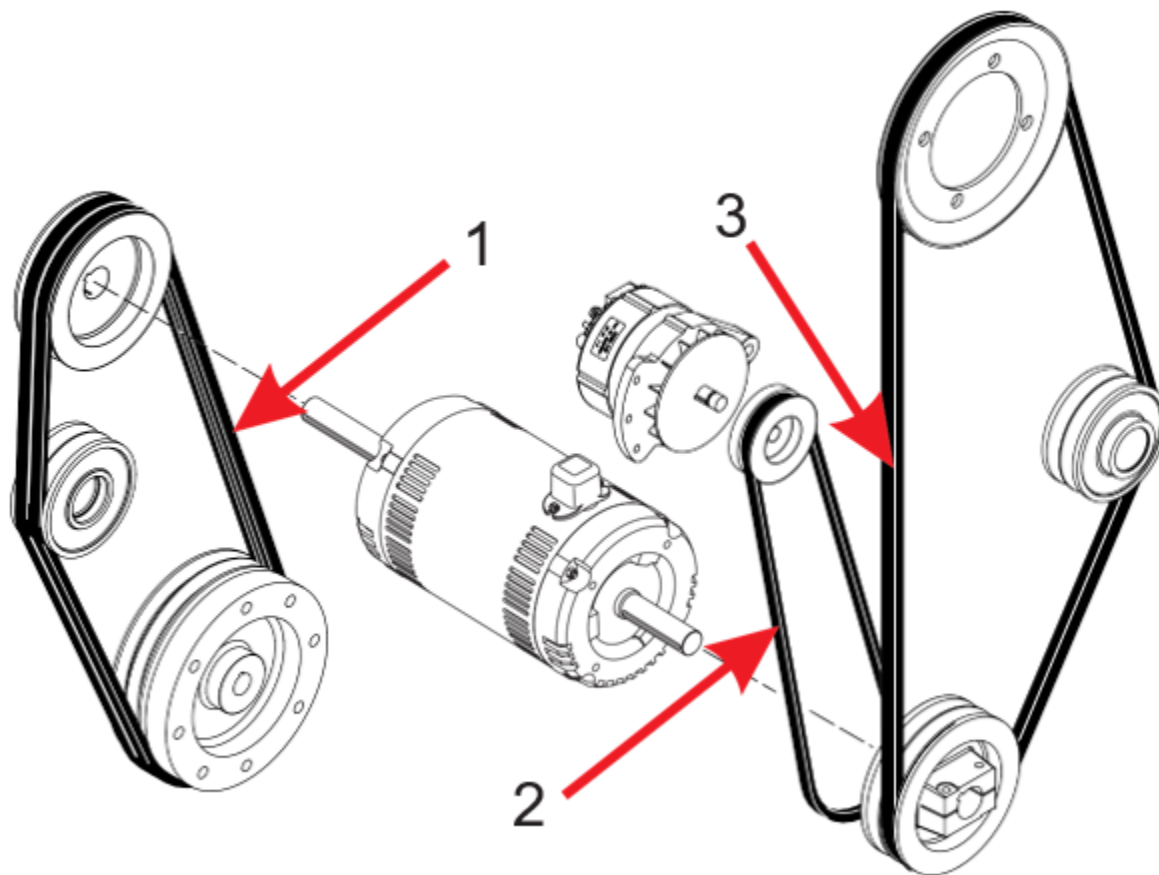
Figure 15. SB-30



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1.	Blower Belt Tension Check Location
2.	Alternator Belt Tension Check Location
3.	Engine Belt Tension Check Location

Figure 16. SB-50

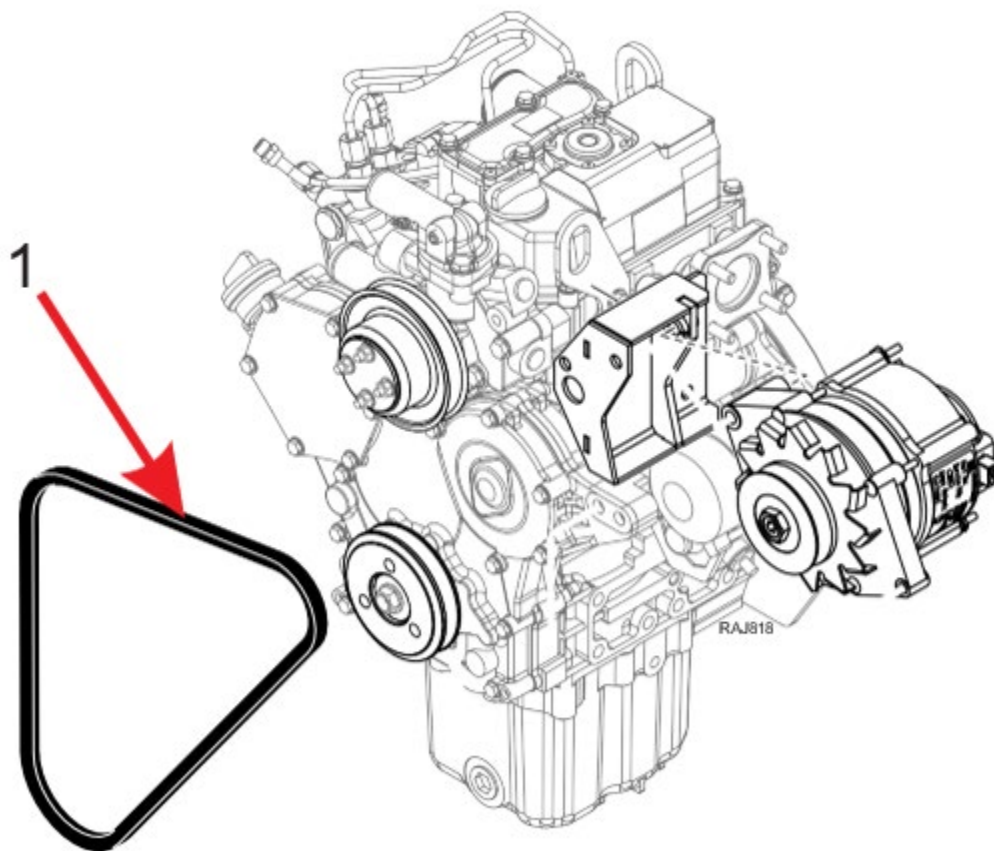


1.	Compressor Belt Tension Check Location (dual belt)
2.	Alternator Belt Tension Check Location
3.	Blower Belt Tension Check Location

Heat King Belt Information:

Belt	New Belt	Field Reset
Engine/Compressor/Alternator	95 Hz (86 lbs.)	75 Hz (54 lbs.)
Water Pump Belt	126 Hz (40 lbs.)	118 Hz (32 lbs.)

Figure 17. Heat King



1.	Belt Tension Check Location
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