



SERVICE BULLETIN No.1182

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COACH MODEL	: T2100 and C2000 Series
BULLETIN TYPE	: Service Information
SECTION	: Section 02 - Cooling Section 10 - HVAC
DATE	: February 22, 2006
SUBJECT	: Constant torque hose clamps
TERMS & CONDITIONS	: No claims will be accepted with reference to this Bulletin.

APPLICATION:

Constant torque hose clamps have been progressively cut into production on all T and C units as from manufacturing year 1997.

DESCRIPTION:

Constant torque hose clamp features

- On the above-mentioned coaches, many hose clamps, used on the heating, cooling, and induction systems are of the constant torque type.
They are worm-driven, and provided with a Belleville spring assembly.
They feature an extended integral liner that covers the band slots, protecting the silicone hoses from damage. The liner also helps maintaining a consistent clamping pressure.
- The constant torque hose clamp is designed to automatically adjust its diameter to compensate for the normal expansion and contraction of hose and tubing during vehicle operation and shutdown. Coolant losses are virtually eliminated and clamp maintenance is greatly minimized.
- Typical applications are sealed systems where clamps are difficult to get to, applications requiring higher torque, large diameters, extremes of heat or cold, or system expansion and contraction. Constant torque clamps are specifically recommended for air intake and coolant connections.

Description continued on next page.

Service personnel: please read, initial and circulate.

Service Manager	Parts Manager	Warranty Administrator	Workshop Foreman	Service Technician

Continued from page 1.

- Figure 1 shows the difference between a standard worm gear hose clamp with through slots and a constant torque type clamp.

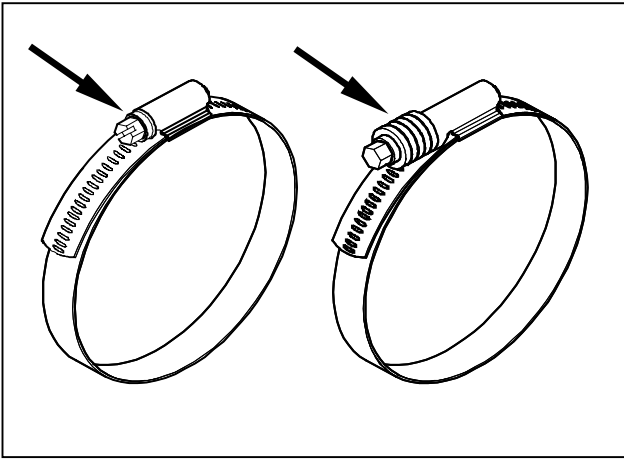
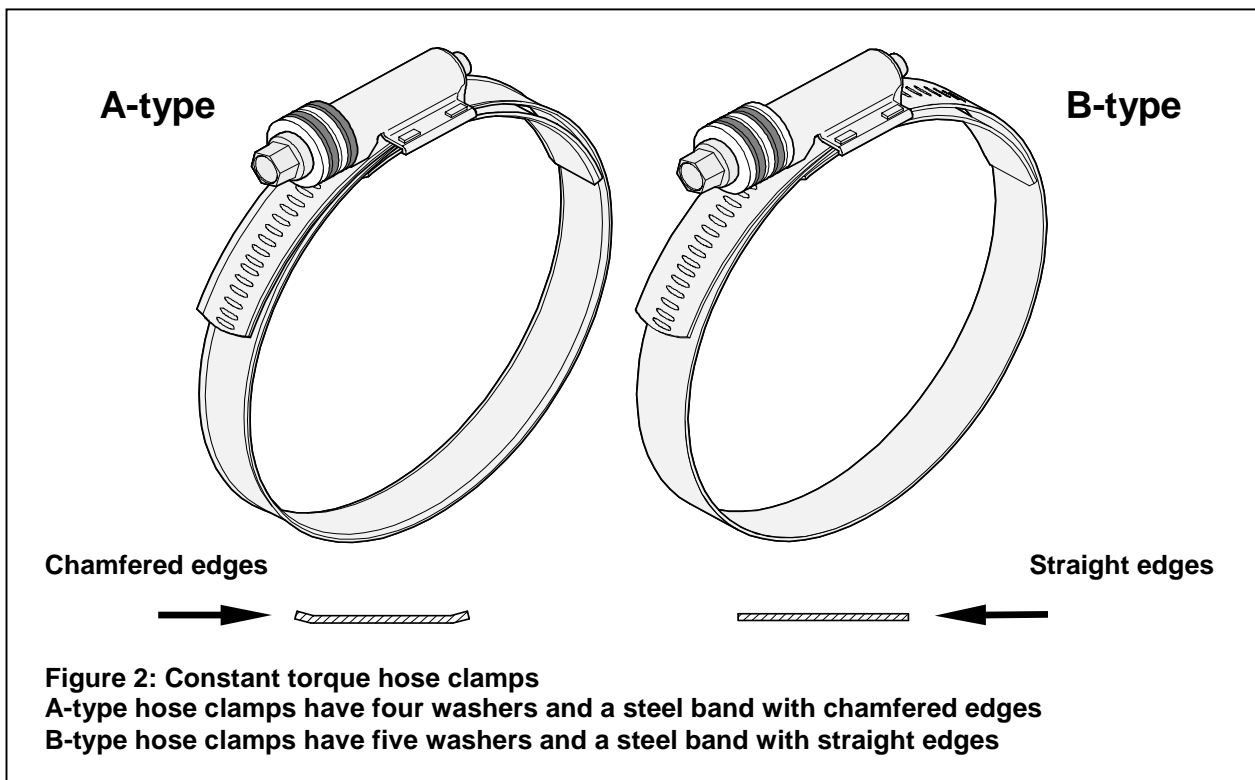


Figure 1: Worm gear hose clamps with through slots on the left, constant torque type on the right

- On Van Hool units, constant torque hose clamps come in two types:

Type A is 9/16 inch wide and has four Belleville washers. These clamps have a steel band with chamfered edges (see Figure 2). They are primarily used on coolant tubing.

Type B is 5/8 inch wide and has five Belleville washers. These clamps have a steel band with straight edges (see Figure 2). Application is for intercooler tubing and the lavatory dump tube only.



Constant torque hose clamp installation

Installation recommendations:

- Fitting or tubing must be clean and free of defects.
- Hose ID should closely match fitting or tubing OD.
- Select the proper style and size clamp for the system application.
- Position the clamp over the hose perpendicular to the hose/piping assembly approximately ¼ to ½ inch from the end of the hose but not past or over the fitting/piping bead.
- Tighten the clamp slowly to the recommended installation torque. Do not over-torque.

CAUTION: Do not use clamps having a steel band with straight edges on heating/coolant hoses. When tightened the band will cut through the tubing material, damaging the hose and causing leakage.

Tools:

- For proper tightening use a torque wrench, ranging between 30 and 200 in.lbf with 1 in.lbf increments. Socket sizes are 5/16 inch (8 mm) for type A clamps and 3/8 inch (10 mm) for B-type.

Tightening torque:

- The torque for hose clamps type A is 62 ± 4.5 in.lbf (7 ± 0.5 Nm).
- Hose clamps type B torque is 79 ± 9 in.lbf (9 ± 1.0 Nm).
- The Belleville spring washer stack should be nearly collapsed flat as shown in 1, Figure 3.
- The screw tip of the hose clamps should clearly extend beyond the housing when properly torqued.

***NOTE:** Since the constant torque clamp is self-adjusting to keep a consistent sealing pressure, there is no need to re-torque the hose clamp on a regular basis. When the tip of the screw is extending out of the housing and the washers are collapsed flat, the clamp is properly installed and maintains a leak proof connection.*

Proper torque installation should be checked at room temperature.

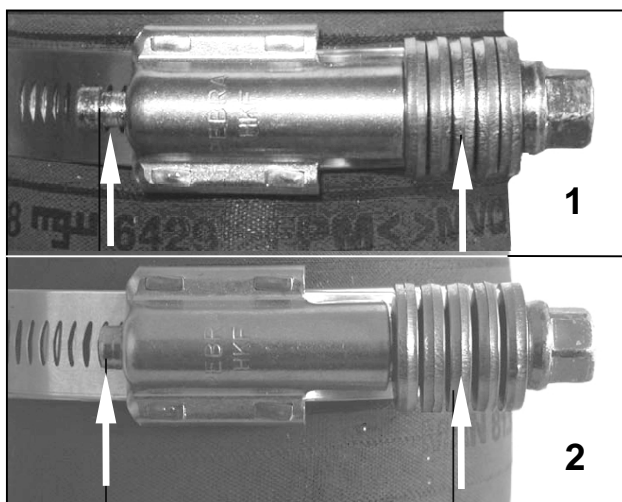


Figure 3: Constant torque hose clamp installation

- 1. Properly torqued - the spring washer stack is nearly collapsed flat and the screw tip extends beyond the housing**
- 2. Undone – the spring washer stack is loose and the screw tip is retracted in the housing**

PARTS AND PRODUCTS:

Following constant torque hose clamps may be installed on Van Hool units:

A-type clamps

VH reference	Size (Ø) mm	Qty.	Application
VH 10716346	20 → 32	#	Heating/cooling system
VH 10716348	20 → 40	#	
VH 10716349	30 → 45	#	
VH 10716350	35 → 50	#	
VH 10716351	40 → 60	#	
VH 10716352	50 → 70	#	
VH 10716353	60 → 80	#	
VH 10716354	70 → 90	#	

B-type clamps

VH reference	Size (Ø) mm	Qty.	Application
VH 10628956	83 → 105	#	Lavatory dump tube
VH 10617357	95 → 118	#	Charge air cooler

- Parts may be purchased from your nearest ABC Customer Care & Parts Source service center.
- Parts and products disposition: discard according to applicable environmental regulations.

SERVICE INFORMATION:

Service Bulletins are issued to supplement or supersede information in the Van Hool manuals. Note Service Bulletin number, date and subject on the register at the end of the relevant chapter(s). File Service Bulletin separately for future reference.