



VMC/HMC - Programmable Coolant - Upgrade

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Installation configuration table

This bulletin describes the field replacement of an old style pcool with a new pcool. Two basic kits are available; 93-1475 for the vertical mills and 93-1480 for the horizontal mills. As there are a number of items that need to be installed with the new pcool on a retrofit application, the corresponding hardware for each configuration machine is selected using the following table. In direct replacement of an existing new pcool, some of the below components (e.g. cable cover) may need to be installed to update the assembly (see Figure2.).

One each of kits, 93-1475 and 93-1480 should be kept on hand, as well as one of each component as shown in the table. This will cover all applications

MACHINE >	VF/VS	VR	GR	MDC	MM/ SMM	EC300	EC400/ 500	EC1600	EC630
KIT PART NO. >	93-1475	93-1480	93-1480	93-1475	93-1480	93-1480	93-1480	93-1480	93-1480
COMPONENT V									
Mounting brackets									
25-7850	X***		X	X					
25-7867					X				
25-7858							X		
25-7859								X	
25-8162									X
25-8460		X							
25-8520						X			
25-8165 (AAG) ***	X	NA	NA	NA	NA	NA	NA	NA	NA
Cable covers		NA	NA		NA				
25-8164	X			X					
25-8471						X			
25-8478							X		
25-8470								X	
25-8472									X
Hoses			NA						
52-0026A*	X	X		X	X	X		X	X
52-0035							X		
Tube	NA	NA	NA	NA	NA	NA	NA		NA
58-0789A**								X	

*Hose is installed on kit 93-1475.

**This part can be made from 58-0789 (or 58-0788) by trimming the tube as per Figure 5.

*** If the Auto Air Gun option is installed use 25-8165.

Installations on older machines

On early machines (such as VF-0) where a standard coolant manifold is not installed (see Figure 1.), other hardware will be required to adapt the new pcool to the spindle head (see Figures 2-4). The below list of hardware should be kept on hand to assure proper installation of the kits. The following items will be useful:

59-9178B	Drain tube, Prog. Coolant.	58-1721	3/8NPT X 45 Deg
58-3625	1/2NPTM x 3/8NPTF Reducing bushing	58-1722	3/8NPT X 90 Deg
58-3641	3/8NPT x 2" Threaded nipple		
58-0326	3/8NPT ball valve		
58-1627	1/8NPTM plug (use to air purge connection)		



Figure 1. Typical old installation without coolant manifold

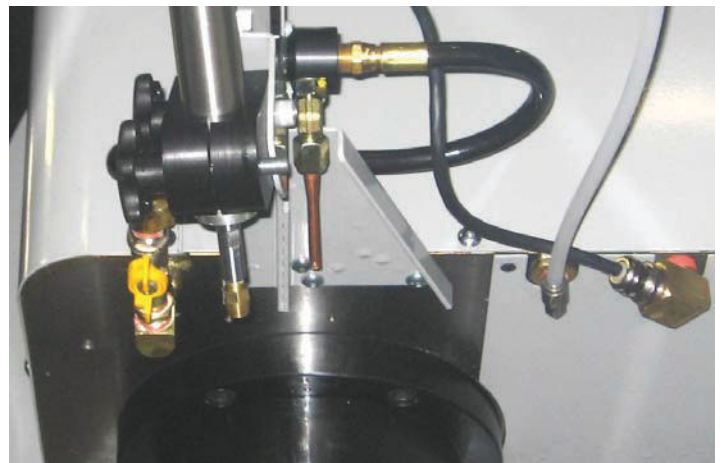


Figure 2. Typical installation of new Pcool without cable cover and coolant manifold

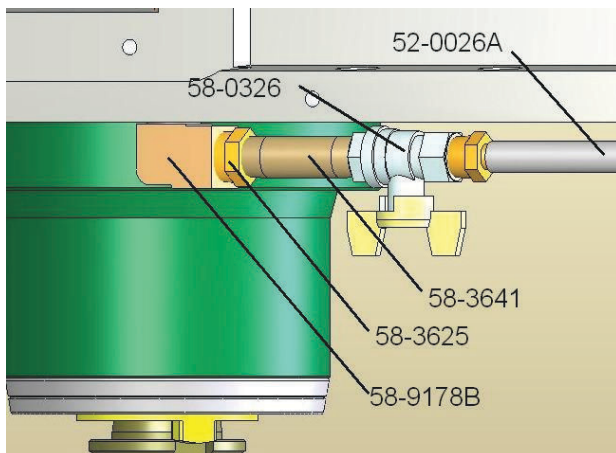


Figure 3. Hardware arrangement for retrofitting without manifold

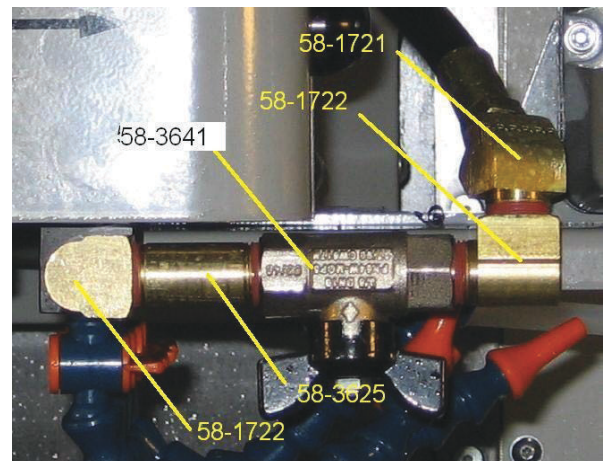


Figure 4. Hardware arrangement with coolant manifold

Checking compatibility with machine.

Some controller software versions do not allow 34 positions for the pcool. Versions M11.17 through M11.21 only allow 14 positions. While the pcool will function, it will be restricted to 14 positions (14° of motion). Software upgrade to M11.22 or later is required for these machines. No other restrictions on other versions of software.

Prior to removing old pcool, verify that the new pcool will function correctly

Reset the pcool by setting Parameter 57, bit 11, "COOLANT SPIGOT" from "1" to "0" and back to "1". This clears the pcool position value, which will force the pcool to seek "HOME". Connect the new pcool connector to **the pcool cable at the connector bracket**. Command the pcool to go "DOWN" from the control pendant. The pcool will seek "HOME" prior to moving to position two (2). If this occurs, the pcool is compatible with the machine. Change the "SPIGOT POSITIONS" Parameter 206 to 34, and command the pcool to all the positions.

After operation is verified, install the new pcool.

Removing old pcool.

Remove the old pcool completely. This includes the bracket, hose at the 45° elbow, conduit assembly. If the pcool is equipped with air purge, disconnect the air line at the TRP valve assembly and plug it off using a pipe plug. Since the new pcool is completely sealed, it does not use air purge.

Installing new pcool.

Install the new pcool in the following steps:

1. Install the cable into the spindle housing and route the cable up to the connector bracket.
2. Install the pcool hose at the 45° elbow. Apply thread sealant as needed.
3. Install cable cover between the mounting bracket and the spindle. Install screw and route the cable in the cable cover. Tighten mounting screws.
4. Verify that the nozzle sprays at the centerline of the spindle. Aim the nozzle by shifting the bracket horizontally on the spindle housing, then re-tightening the mounting screws.
5. Run a program to exercise the pcool with the coolant "ON" to verify operation.

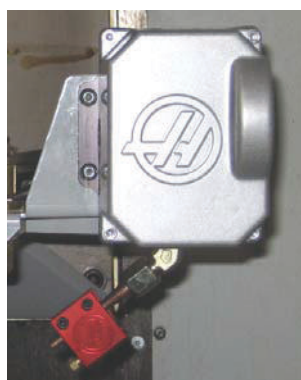


Figure 5. New 93-1475 pcool assembly



Figure 6. Old style pcool assembly

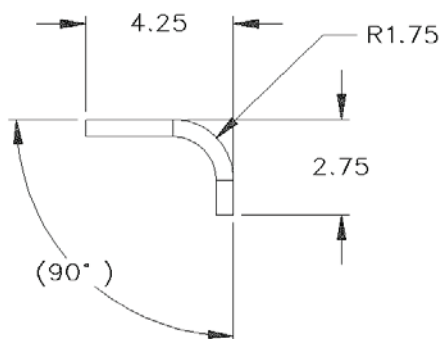


Figure 7. Trim existing water supply tube per this sketch.