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TO: SPORLAN DIVISION CUSTOMERS, FIELD SALES

SUBJECT: RESIDENTIAL AC & HP SYSTEM CONTAMINANTS AFFECTING TEV PERFORMANCE

Many installers and service organizations are finding problems with newly installed residential air-conditioning systems with straight AC or heat-pump versions in the 2-3 ton range primarily and with some reported issues up to 5 tons. After on-site troubleshooting, the problem is linked to a poorly operating thermostatic expansion valve (TEV) causing high superheat. After valve replacement, the system seems to run fine. On the surface this appears to be a valve problem.

Sporlan Division of Parker-Hannifin has examined many returned valves in recent weeks and we find the same problem occurring throughout these returned valves. The valve has a brown or black resin-like material on the pin and the body that is stopping the valve from moving properly so it can maintain the proper superheat. Please see photos on page 2. Obviously, the material is not in the valve at the start-up of the system or the valve would not operate properly when the unit is put into service. The thermostatic expansion valve is actually not the problem; it is simply the location where this material collects.

The source of the unusual materials forming this residue is currently being investigated by both system manufacturers as well as component suppliers including Sporlan. Once identified, it can be eliminated and then future systems will not have this issue. Until then, the same teams are also trying to find the best method to capture the residue before it gets to the valve.

There is no current proven method to capture this contamination before it reaches the valve. The industry standard cleanup procedures are the best recommendation since this is a contamination related issue. This procedure indicates the use of an oversized liquid line filter-drier and a suction line filter-drier. We cannot guarantee that this technique will solve the problem; it is simply the method that has solved most contamination issues in the past. Sporlan does not recommend attempting to clean TEVs in the field to eliminate this contamination.

Sporlan will continue to update the industry with our findings as the investigation continues. If you have any questions, please contact your Sporlan Sales Engineer.

Sincerely,

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Photos of valve body and pins from Various AC & HP Systems

