

UNITED STATES OF AMERICA
U.S. DISTRICT COURT -- EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

JOHN DIPPOLITI,

Plaintiff,

-vs-

TRANE U.S. INC. and
C & C HEATING AND AIR
CONDITIONING COMPANY
doing business as
HINSON HOME COMFORT SERVICES,

Defendants.

COMPLAINT – CLASS ACTION

Plaintiff is not aware of any related cases.

1. Plaintiff John Dippoliti brings this action against defendants Trane U.S. Inc. (“Trane”) and C & C Heating and Air Conditioning Company (“C&C”) to secure redress for the conduct of defendants in selling defective HVAC units.
2. Plaintiff allege violation of written and express warranties, fraud, and unfair and deceptive trade practices.

PARTIES

3. Plaintiff John Dippoliti is a resident of Macomb, Michigan and a citizen of Michigan.
4. Defendant Trane is a Delaware corporation with principal offices at One Centennial Ave., Piscataway, NJ 08854. It manufactures and markets heating, ventilation and cooling (“HVAC”) equipment. It was formerly known as American Standard Inc. It does business in Michigan. Its registered agent and office is CSC-Lawyers Incorporating Service (Company), 601 Abbot Road, East Lansing, MI 48823.
5. Defendant C&C is a Michigan corporation with its principal place of business at 29420 Groesbeck Highway, Roseville, MI 48066. It is an authorized retail seller of HVAC equipment manufactured by Trane. Its registered agent is Donna Corrion at that address.

JURISDICTION AND VENUE

6. This Court has jurisdiction over this case pursuant to 28 U.S.C. §1332(d) (Class Action Fairness Act). There are over 100 proposed class members. The claims of the proposed class members exceed the sum or value of \$5,000,000, exclusive of interest and costs. Most members of the class are of diverse citizenship from defendant Trane.

7. Personal jurisdiction and venue are proper because defendant Trane intentionally markets and sells its products within the state of Michigan and because defendant C&C is located in the state of Michigan.

FACTS – GENERAL

8. On or about October 9, 2014, plaintiff and his late wife Gail Dippoliti purchased a Trane furnace and condenser from C&C for \$6,495, to heat and cool their residence. (Exhibit A)
9. Trane extended a written warranty against manufacturing defects. (Exhibit B)
10. Plaintiff purchased a Trane HVAC unit because of its purported reliability.
11. Trane represents (<https://www.trane.com/residential/d/why-trane.html>) That it sells “America’s Most Reliable™ HVAC System”. It explains, “Trane has more than 120 years of experience in the business. We don't just build our products – we own patents on them. And we don't just test our products – we push them to the extreme. If our product can't make it through torturous testing, you'll never see it in your home. It's that kind of reliability that's earned us America's Most Trusted HVAC System*, three years in a row by Lifestory Research.” Trane further represents that its air conditioners are “expertly designed”

(<https://www.trane.com/residential/d/products.html>).

12. Trane's representations of reliability were part of the basis of the bargain.
13. Plaintiff's late wife registered the unit. (Exhibit C)
14. In 2018, within the warranty period, the Thermostatic Expansion Valve (TXV) in plaintiff's unit malfunctioned.
15. Such malfunctions are a persistent problem, and Trane has issued one or more service bulletins documenting the problem. (Exhibit D)
16. On information and belief, the problem should have been known to Trane prior to the date on which plaintiff and his late wife purchased their unit.
17. On information and belief, a rust inhibitor used by Trane in the compressor reacts with the oil in the compressor, resulting in the formation of matter which causes the TXV valve to stick and fail.
18. Plaintiff reported the problem to C&C when it occurred. C&C dispatched a qualified technician. The technician first added MJ-X oil as indicated in the service bulletin. When that failed to fix the problem, the technician replaced the TXV valve with another Trane TXV valve.
19. While the replacement valve was covered under the warranty, plaintiff had to pay \$550 for labor to replace it.
20. Numerous complaints about TXV malfunctions are reported on the Internet.

21. Another HVAC retailer has issued a series of bulletins regarding the problem. (Exhibit E)
22. As a result, purchasers of Trane HVAC systems do not receive that which they bargained for, a reliably functioning HVAC system.
23. Trane has sold tens of thousands of HVAC units with the same combination of rust inhibitor, compressor oil and TXV valve design as that in plaintiff's unit.
24. Plaintiff would not have purchased the Trane HVAC unit, would not have paid as much for it, or would have purchased another brand altogether, had he known of the problem.

COUNT I – BREACH OF EXPRESS WARRANTY

25. Plaintiff incorporates paragraphs 1-24.
26. This claim is against Trane.
27. Trane's statement that its HVAC units were reliable and expertly designed create an express warranty that such system does not contain the type of inherent defect represented by the combination of rust inhibitor, compressor oil and TXV valve design as used in plaintiff's unit. Uniform Commercial Code, §2-313; Mich. Comp. Laws §440.2313.
28. The representation is not true.

29. Notice of breach was given to defendant when plaintiff requested service and subsequently in writing.

CLASS ALLEGATIONS

30. Pursuant to Fed. R. Civ. P. 23(a) and (b)(3), plaintiff brings this claim on behalf of a class.
31. The class consists of all persons who purchased, within the last 4 years, Trane HVAC units with the same combination of rust inhibitor, compressor oil and TXV valve design as that in plaintiff's unit, in the United States, except Louisiana and Puerto Rico.
32. Excluded from the class are defendants; any affiliate, parent, or subsidiary of a defendant; any entity in which a defendant has a controlling interest; any officer, director, or employee of a defendant; any successor or assign of a defendant; anyone employed by counsel for plaintiff in this action; and any judge to whom this case is assigned, his or her spouse, and all persons within the third degree of relationship to them, as well as the spouses of such persons.
33. The class includes thousands of persons and is so numerous that joinder of all members is not practicable.
34. There are common questions of law and fact with respect to the class, which

common questions predominate over questions affecting only individual class members. These common questions include:

- a. Whether the combination of rust inhibitor, compressor oil and TXV valve design as found in plaintiff's Trane unit is defective;
 - b. Whether this violates express warranties;
 - c. Whether Trane violated its limited written warranty when it purported to repair the problem by replacing the TXV valve with one of same design;
 - d. Whether Trane engaged in deceptive practices when it sold the HVAC units.
35. Plaintiff's claims are typical of those of the proposed class. Plaintiff's claims have the same legal and factual basis as the claims of the class members.
36. Plaintiff will fairly and adequately represent the class. There is no conflict of interest between the plaintiff and the class members. Plaintiff has retained counsel competent and experienced in class action litigation, and intend to prosecute this action vigorously.
37. This class action is superior to other available means for the fair and efficient adjudication of this dispute. While the individual injuries suffered

by each proposed class member are meaningful, they are sufficiently small that individual actions are not economical. Even if class members could afford individual litigation, there is no reason to burden the courts with multiple actions seeking modest damages.

WHEREFORE, the Court should enter judgment in favor of plaintiff and the class members for the following relief:

- i. Actual damages;
- ii. Costs;
- iii. Such other or further relief as the Court deems proper.

**COUNT II – BREACH OF IMPLIED
WARRANTY – UCC AND MAGNUSON MOSS ACT**

38. Plaintiff incorporates paragraphs 1-24.
39. This claim is against C&C.
40. The combination of rust inhibitor, compressor oil and TXV valve design as found in plaintiff's Trane unit is defective and unmerchantable, violating implied warranties under Uniform Commercial Code, §2-314; Mich. Comp. Laws §440.2314. Such breaches are actionable under the Magnuson Moss Consumer Products Warranty Act, 15 U.S.C. §2310.
41. Notice of breach was given to defendants when plaintiff presented the

vehicle for service and subsequently in writing.

CLASS ALLEGATIONS

42. Pursuant to Fed. R. Civ. P. 23(a) and (b)(3), plaintiff brings this claim on behalf of a class.
43. The class consists of all persons who purchased, during the last 4 years, from C&C Trane units with the same combination of rust inhibitor, compressor oil and TXV valve design as found in plaintiff's Trane unit.
44. Excluded from the class are defendants; any affiliate, parent, or subsidiary of a defendant; any entity in which a defendant has a controlling interest; any officer, director, or employee of a defendant; any successor or assign of a defendant; anyone employed by counsel for plaintiff in this action; and any judge to whom this case is assigned, his or her spouse, and all persons within the third degree of relationship to them, as well as the spouses of such persons.
45. The class includes over 40 persons and is so numerous that joinder of all members is not practicable.
46. There are common questions of law and fact with respect to the class, which common questions predominate over questions affecting only individual class members. These common questions include:

- a. Whether the combination of rust inhibitor, compressor oil and TXV valve design as found in plaintiff's Trane unit is defective;
 - b. Whether the units are unmerchantable.
47. Plaintiff's claims are typical of those of the proposed class. Plaintiff's claims have the same legal and factual basis as the claims of the class members.
48. Plaintiff will fairly and adequately represent the class. There is no conflict of interest between the plaintiff and the class members. Plaintiff has retained counsel competent and experienced in class action litigation, and intends to prosecute this action vigorously.
49. This class action is superior to other available means for the fair and efficient adjudication of this dispute. While the individual injuries suffered by each proposed class member are meaningful, they are sufficiently small that individual actions are not economical. Even if class members could afford individual litigation, there is no reason to burden the courts with multiple actions seeking modest damages.

WHEREFORE, the Court should enter judgment in favor of plaintiff and the class members for the following relief:

- i. Actual damages;

- ii. Attorney's fees, litigation expenses and costs (15 U.S.C. §2310);
- iii. Such other or further relief as the Court deems appropriate.

COUNT III – FRAUD

- 50. Plaintiff incorporates paragraphs 1-24.
- 51. This claim is against Trane.
- 52. Trane represented to each person purchasing a Trane HVAC unit that such units were reliable and expertly designed.
- 53. The representation is not true.
- 54. Trane knew that such representation was not true, and that the units sold were defective and could not be made good under its limited written warranty.
- 55. Trane continued selling systems with that feature anyway.

CLASS ALLEGATIONS

- 56. Pursuant to Fed. R. Civ. P. 23(a) and (b)(3), plaintiff bring this claim on behalf of a class.
- 57. The class consists of all persons who purchased, within the last 6 years, Trane HVAC units with the same combination of rust inhibitor, compressor

oil and TXV valve design as that in plaintiff's unit, in the United States.

58. Excluded from the class are defendants; any affiliate, parent, or subsidiary of a defendant; any entity in which a defendant has a controlling interest; any officer, director, or employee of a defendant; any successor or assign of a defendant; anyone employed by counsel for plaintiff in this action; and any judge to whom this case is assigned, his or her spouse, and all persons within the third degree of relationship to them, as well as the spouses of such persons.
59. The class includes over 100,000 persons and is so numerous that joinder of all members is not practicable.
60. There are common questions of law and fact with respect to the class, which common questions predominate over questions affecting only individual class members. These common questions include:
 - a. Whether the combination of rust inhibitor, compressor oil and TXV valve design as found in plaintiff's Trane unit is defective;
 - b. Whether Trane committed fraud by representing its units to be reliable when they were defective and by concealing the defect.
61. Plaintiff's claims are typical of those of the proposed class. Plaintiff's claims have the same legal and factual basis as the claims of the class

members.

62. Plaintiff will fairly and adequately represent the class. There is no conflict of interest between the plaintiff and the class members. Plaintiff has retained counsel competent and experienced in class action litigation, and intend to prosecute this action vigorously.
63. This class action is superior to other available means for the fair and efficient adjudication of this dispute. While the individual injuries suffered by each proposed class member are meaningful, they are sufficiently small that individual actions are not economical. Even if class members could afford individual litigation, there is no reason to burden the courts with multiple actions seeking modest damages.

WHEREFORE, the Court should enter judgment in favor of plaintiff and the class members for the following relief:

- i. Actual damages;
- ii. Punitive damages;
- iii. Costs;
- iv. Such other or further relief as the Court deems proper.

COUNT IV – DECEPTIVE TRADE PRACTICES – MICHIGAN LAW

64. Plaintiff incorporates paragraphs 1-24.

65. This claim is against Trane.
66. Trane's statement that its HVAC units were reliable and expertly designed is not true because the systems contained the type of inherent defect represented by the combination of rust inhibitor, compressor oil and TXV valve design as used in plaintiff's unit.
67. Trane knew or should have known that such representation was not true, and could not be made good under its limited written warranty.
68. Trane continued selling systems with that feature anyway.
69. Trane thereby violated Mich. Comp. Laws §445.903 by:
 - a. Representing that goods have characteristics, uses, and benefits that they do not have;
 - b. Failing to reveal a material fact, the omission of which tends to mislead or deceive the consumer, and which fact could not reasonably be known by the consumer.
 - c. Failing to reveal facts that are material to the transaction in light of representations of fact made in a positive manner.

CLASS ALLEGATIONS

70. Pursuant to Fed. R. Civ. P. 23(a) and (b)(3), plaintiff bring this claim on behalf of a class.

71. The class consists of all persons who purchased, within the last 6 years, Trane HVAC units with the same combination of rust inhibitor, compressor oil and TXV valve design as that in plaintiff's unit, which was installed in Michigan or sold by a Michigan dealer.
72. Excluded from the class are defendants; any affiliate, parent, or subsidiary of a defendant; any entity in which a defendant has a controlling interest; any officer, director, or employee of a defendant; any successor or assign of a defendant; anyone employed by counsel for plaintiff in this action; and any judge to whom this case is assigned, his or her spouse, and all persons within the third degree of relationship to them, as well as the spouses of such persons.
73. The class includes over 100,000 persons and is so numerous that joinder of all members is not practicable.
74. There are common questions of law and fact with respect to the class, which common questions predominate over questions affecting only individual class members. These common questions include:
 - a. Whether the Trane units were defective;
 - b. Whether Trane knew or should have known that they were defective;
 - c. Whether the sale of the system notwithstanding this problem

constitutes an unfair or deceptive practice.

75. Plaintiff's claims are typical of those of the proposed class. Plaintiff's claims have the same legal and factual basis as the claims of the class members.
76. Plaintiff will fairly and adequately represent the class. There is no conflict of interest between the plaintiff and the class members. Plaintiff has retained counsel competent and experienced in class action litigation, and intend to prosecute this action vigorously.
77. This class action is superior to other available means for the fair and efficient adjudication of this dispute. While the individual injuries suffered by each proposed class member are meaningful, they are sufficiently small that individual actions are not economical. Even if class members could afford individual litigation, there is no reason to burden the courts with multiple actions seeking modest damages.

WHEREFORE, the Court should enter judgment in favor of plaintiff and the class members for the following relief:

- i. Actual damages;
- ii. Attorney's fees, litigation expenses and costs (Mich. Comp. Laws §445.911);

iii. Such other or further relief as the Court deems proper.

COUNT V – DECEPTIVE TRADE PRACTICES – NEW JERSEY LAW

78. Plaintiff incorporates paragraphs 1-24.
79. This claim is against Trane.
80. Trane’s statement that its HVAC units were reliable and expertly designed is not true because the systems contained the type of inherent defect represented by the combination of rust inhibitor, compressor oil and TXV valve design as used in plaintiff’s unit.
81. Trane knew or should have known that such representation was not true, and could not be made good under its limited written warranty.
82. Trane continued selling systems with that feature anyway.
83. On information and belief, the key decisions regarding the marketing of the systems took place at Trane’s headquarters in New Jersey.
84. Trane thereby violated N.J.S.A. 56:8-2, which provides that “The act, use or employment by any person of any unconscionable commercial practice, deception, fraud, false pretense, false promise, misrepresentation, or the knowing, concealment, suppression, or omission of any material fact with intent that others rely upon such concealment, suppression or omission, in connection with the sale or advertisement of any merchandise or real estate,

or with the subsequent performance of such person as aforesaid, whether or not any person has in fact been misled, deceived or damaged thereby, is declared to be an unlawful practice . . . “

85. N.J.S.A. 56:8-2 applies to practices directed from New Jersey to consumers elsewhere. *Kugler v. Haitian Tours, Inc.*, 120 N.J. Super. 260, 293 A.2d 706 (1972); *Boyes v. Greenwich Boat Works, Inc.*, 27 F.Supp.2d 543, 547 (D.N.J. 1998); *In re Norvergence, Inc.*, 424 B.R. 663 (Bankr. D.N.J. 2010).
86. N.J.S.A. 56:8-19 provides that “Any person who suffers any ascertainable loss of moneys or property, real or personal, as a result of the use or employment by another person of any method, act, or practice declared unlawful under this act or the act hereby amended and supplemented may bring an action or assert a counterclaim therefor in any court of competent jurisdiction. In any action under this section the court shall, in addition to any other appropriate legal or equitable relief, award threefold the damages sustained by any person in interest. In all actions under this section, including those brought by the Attorney General, the court shall also award reasonable attorneys' fees, filing fees and reasonable costs of suit.”
87. Trane engaged in unconscionable and deceptive acts and practices by:
 - a. Representing that goods have characteristics, uses, and benefits that

they do not have;

- b. Failing to reveal a material fact, the omission of which tends to mislead or deceive the consumer, and which fact could not reasonably be known by the consumer.
- c. Failing to reveal facts that are material to the transaction in light of representations of fact made in a positive manner.

CLASS ALLEGATIONS

- 88. Pursuant to Fed. R. Civ. P. 23(a) and (b)(3), plaintiff brings this claim on behalf of a class.
- 89. The class consists of all persons who purchased, within the last 6 years, Trane HVAC units with the same combination of rust inhibitor, compressor oil and TXV valve design as that in plaintiff's unit.
- 90. Excluded from the class are defendants; any affiliate, parent, or subsidiary of a defendant; any entity in which a defendant has a controlling interest; any officer, director, or employee of a defendant; any successor or assign of a defendant; anyone employed by counsel for plaintiff in this action; and any judge to whom this case is assigned, his or her spouse, and all persons within the third degree of relationship to them, as well as the spouses of such persons.

91. The class includes over 100,000 persons and is so numerous that joinder of all members is not practicable.
92. There are common questions of law and fact with respect to the class, which common questions predominate over questions affecting only individual class members. These common questions include:
 - a. Whether the Trane units were defective;
 - b. Whether Trane knew or should have known that they were defective;
 - c. Whether the sale of the system notwithstanding this problem constitutes an unconscionable or deceptive practice.
93. Plaintiff's claims are typical of those of the proposed class. Plaintiff's claims have the same legal and factual basis as the claims of the class members.
94. Plaintiff will fairly and adequately represent the class. There is no conflict of interest between the plaintiff and the class members. Plaintiff has retained counsel competent and experienced in class action litigation, and intend to prosecute this action vigorously.
95. This class action is superior to other available means for the fair and efficient adjudication of this dispute. While the individual injuries suffered by each proposed class member are meaningful, they are sufficiently small

that individual actions are not economical. Even if class members could afford individual litigation, there is no reason to burden the courts with multiple actions seeking modest damages.

WHEREFORE, the Court should enter judgment in favor of plaintiff and the class members for the following relief:

- i. Actual damages;
- ii. Statutory damages;
- iii. Attorney's fees, litigation expenses and costs;
- iv. Such other or further relief as the Court deems proper.

JURY DEMAND

Plaintiff demands trial by jury.

Respectfully submitted,

ADAM G. TAUB & ASSOCIATES
CONSUMER LAW GROUP, PLC

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Dated: June 2018

NOTICE OF LIEN AND ASSIGNMENT

Please be advised that we claim a lien upon any recovery herein for 1/3 or such amount as a court awards. All rights relating to attorney's fees have been assigned to counsel.

/s/ Daniel A. Edelman

Daniel A. Edelman

Daniel A. Edelman
Tara L. Goodwin
David S. Kim
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& GOODWIN, LLC
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(312) 739-4200
(312) 419-0379 (FAX)

EXHIBIT A

Invoice

C & C Heating & A/C Co., Hinson Home Comfort Services

29420 Groesbeck
 Roseville MI 48066
 586-776-3144 FAX: 586-776-7864
 38-2217592

Account # [REDACTED]

Invoice # [REDACTED]
 Date: 10/09/14
 Page # 1 of 1

GAIL DIPPOLITI
 [REDACTED]

Service At:
 GAIL DIPPOLITI
 [REDACTED]

Service Date	PO #	Job #	Description Of Service	Quantity	Unit Price	Extended Price	Tx
		[REDACTED]	TRANE TUH2B080A9V4VA FURNACE	1	\$0.00	\$0.00	
			TRANE 4TTR3042D1000A CONDENSOR	1	\$0.00	\$0.00	
			TRANE COIL	1	\$0.00	\$0.00	
			1 YEAR CLUB MEMBERSHIP	1	\$0.00	\$0.00	
			COMPLETE INSTALL	1	\$6,495.00	\$6,495.00	

check # [REDACTED]
 Rec. by Rikw.
 pd. in Full

Total \$6,495.00
 Payment 1,300.00
 Balance Due \$5,195.00
 cover 42.50
 \$5,237.50

No Returns On Electrical Counter Sales

Terms: Due Upon Receipt

Please pay from this Invoice. Thank You

Please Detach and Return with Remittance

Check Enclosed [] Method of Payment
 Master Card [] Visa [] AmExp [] Discover []
 Acct # _____ Exp Date _____
 Name on Card _____
 Signature _____

Invoice # [REDACTED]
 Date: 10/09/14
 Account # [REDACTED]
 DIPPOLITI, GAIL

Remit To:
 C & C Heating & A/C Co., Hinson Home Comfort Services
 29420 Groesbeck
 Roseville MI 48066

Amount Due \$5,195.00
 Amount Paid \$5,237.50

EXHIBIT B

2013 Product Warranties



It starts at trane.com



It's Hard To Stop A Trane.®

Base Limited Warranty

Subject to the terms and conditions of this limited warranty, Trane U.S., Inc. ("Company") extends a limited warranty against manufacturing defects for the product(s) identified in **Tables 1, 1A, 1B** attached hereto ("Products") that are installed in a residential/multi-family application (personal, family or household purposes) under normal use and maintenance in the United States and Canada.

This limited warranty applies to Products manufactured on or after August 1, 2011.

In order to maximize the available benefits under this limited warranty, the Purchaser (as defined below) should read it in its entirety. All repairs of Product parts covered under this limited warranty must be made with authorized service parts and by a licensed HVAC service provider. Additionally, commercial applications are treated differently under this limited warranty as stated in **Tables 1, 1A, 1B** attached hereto. For purposes of this limited warranty, "commercial applications" shall mean any application other than for personal, family, or household use.

TERM: The limited warranty period for Products is as stated in **Tables 1, 1A, 1B** attached hereto. If the Purchaser properly registers the Products, the limited warranty period shall be extended as stated in **Tables 1, 1A, 1B** attached hereto. Regardless of registration, the Commencement Date for a limited warranty period shall be the date that the original installation is complete and all Product start-up procedures have been properly completed and verified by an installer's invoice. If the installation and start-up date cannot be verified by the installer's invoice, the Commencement Date shall be sixty (60) days after the factory manufacture date which is verified by the Product serial number. Where a Product is installed in a newly constructed home, the Commencement Date is the date the Purchaser purchased the residence from the builder. Proof of Product purchase, installation, and/or closing date of the residence may be required to confirm the Commencement Date.

The installation of Product replacement parts under this limited warranty shall not extend the original warranty period. The warranty period for any Product part replaced under this limited warranty is the applicable warranty period remaining under the original Product warranty.

WHO IS COVERED: This limited warranty is provided only to the original owner and his or her spouse ("Purchaser") of the residence where the Products are originally installed. This warranty is not transferable except according to terms stated on the applicable website identified below under Registration Requirements. Company has the right to request any and all proof of Product purchase or installation and/or closing date of the residence.

WHAT COMPANY WILL DO: Company may request proof of Product purchase and/or installation in order to provide Product parts under this limited warranty. As Company's only responsibility and Purchaser's only remedy under this limited warranty, Company will furnish a replacement part to the licensed HVAC service provider, without charge for the part only, to replace any Product part that fails due to a manufacturing defect under normal use and maintenance. The Purchaser must pay for any and all shipping and handling charges and other costs of warranty service for the replacement part. If a Product part is not available, Company will, at its option, provide a free suitable substitute part or provide a credit in the amount of the then factory selling price for a new suitable substitute part to be used by the Purchaser towards the retail purchase price of a new Company product. Any new Product purchase shall be at Purchaser's sole cost and expense including, but not limited to, all shipping, removal, and installation costs and expenses.

REGISTRATION REQUIREMENTS: All Products must be properly registered online by the Purchaser within sixty (60) days after the Commencement Date to receive the registered limited warranty terms. To register online, go to:
<http://www.trane.com/Residential/For-Owners/Warranties> or
<http://www.americanstandardair.com/servicesupport/pages/warranty.aspx>
 and click "Begin Online Registration." If a Purchaser does not register within this stated time period, the base limited warranty terms shall apply.

ELIGIBILITY REQUIREMENTS: The following items are required in order for the Products to be covered under this limited warranty:

- The Products must be in the same location where they were originally installed.
- The Products must be properly installed, operated, and maintained by a licensed HVAC service provider in accordance with the Product specifications or installation, operation, and maintenance instructions provided by Company with each Product. Failure to conform to such specifications and/or instructions shall void this limited warranty. Company may request written documentation showing the proper preventative maintenance.
- All Product parts replaced by Company under this limited warranty must be given to the servicing provider for return to Company.
- Air handlers, air conditioners, heat pumps, cased or uncased coils and stand-alone furnaces must be part of an Air Conditioning, Heating, and Refrigeration Institute rated and matched system or a specification in a Company provided bulletin or otherwise approved in writing by a Company authorized representative.

EXCLUSIONS: The following are not covered by this limited warranty:

- Labor costs including, but not limited to, costs for diagnostic calls or the removal and reinstallation of Products and/or Product parts.
- Shipping and freight expenses required to ship Product replacement parts.
- Failures, defects, or damage (including, but not limited to, any loss of data or property) caused by (1) any third party product, service, or system connected or used in conjunction with the Products; (2) any use that is not designed or intended for the Products; (3) modification, alteration, abuse, misuse, negligence, or accident; (4) improper storage, installation, maintenance, or operation including, but not limited to, operation of electrical equipment at voltages other than the range specified on the Product nameplate; (5) any use in violation of written instructions or specifications provided by Company; (6) any acts of God including, but not limited to, fire, water, storms, lightning, or earthquakes; or any theft or riots; or (7) a corrosive atmosphere or contact with corrosive materials such as, but not limited to, chlorine, fluorine, salt (provided that indoor and outdoor coils will only be covered if a Sea Coast Kit is installed), sulfur, recycled waste water, urine, fertilizers, rust, or other damaging substances or chemicals.
- Products purchased direct including, but not limited to, Internet or auction purchases and purchases made on an uninstalled basis.
- Cabinets or cabinet pieces that do not affect product performance, air filters, refrigerant, refrigerant line sets, belts, wiring, fuses, surge protection devices, non-factory installed driers, and Product accessories (unless otherwise specified).
- Increased utility usage costs.

REFRIGERANT POLICY: (1) Manufacturer-Installed Refrigerant: Beginning on January 1, 2010, R-22 refrigerant will no longer be used as a manufacturer-installed refrigerant as required by federal regulation. All Products with manufacturer-installed refrigerant will include R410-A refrigerant. Any and all expenses or costs associated with replacing Product parts that are not R-410A compatible will not be covered by the terms and conditions of this limited warranty. (2) Non-Manufacturer installed Refrigerant: For Products manufactured and sold by the Company without refrigerant, only manufacturer approved and genuine alternate refrigerants shall be used. The use of contaminated, counterfeit, non-genuine, or non-manufacturer approved alternate refrigerant will void this limited warranty. (3) All Products: Products include a liquid line filter drier which must be replaced when a compressor replacement is necessary. A suction line filter drier must be added for compressors defined as burnouts and failure to do so will void this warranty. Non-approved refrigerant and/or non-approved refrigerant system additives including, but not limited to dyes will void this limited warranty.

ADDITIONAL TERMS:

THIS LIMITED WARRANTY AND LIABILITY SET FORTH HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, WHETHER IN CONTRACT OR IN NEGLIGENCE, EXPRESS OR IMPLIED, IN LAW OR IN FACT. THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE DURATION OF THE APPLICABLE PRODUCT WARRANTY. COMPANY DOES NOT AUTHORIZE ANY PERSON TO CREATE FOR IT ANY OBLIGATION OR LIABILITY IN CONNECTION WITH THE PRODUCTS.

NOTWITHSTANDING ANYTHING IN THIS LIMITED WARRANTY TO THE CONTRARY, COMPANY SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL AND/OR PUNITIVE DAMAGES, WHETHER BASED ON CONTRACT, WARRANTY, TORT (INCLUDING, BUT NOT LIMITED TO, STRICT LIABILITY OR NEGLIGENCE), PATENT INFRINGEMENT, OR OTHERWISE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. COMPANY'S MAXIMUM LIABILITY HEREUNDER IS LIMITED TO THE ORIGINAL PURCHASE PRICE OF THE PRODUCTS.

No action arising out of any claimed breach of this limited warranty may be brought by a Purchaser more than one (1) year after the cause of action has arisen. This limited warranty gives you specific legal rights, and you may also have other rights as otherwise permitted by law. If this Product is considered a consumer product, please be advised that some local laws do not allow limitations on incidental or consequential damages, how long a warranty lasts based on registration, or how long an implied warranty lasts, so that the above limitations may not fully apply. Refer to your local laws for your specific rights under this limited warranty.

Consumer Relations
 20 Corporate Woods Dr.
 Bridgeton, MO 63044

Or visit our website at www.trane.com or www.americanstandardair.com

GW-658-2913

TABLE 1: Warranty Time Periods for Outdoor Units, Air Handlers, Packaged Air Conditioners and Heat Pumps, Furnaces, Ductless Systems Cased and Uncased Coils - Trane and American Standard Products

COVERAGE TERMS FOR RESIDENTIAL APPLICATIONS: Pursuant to the Trane U.S., Inc. ("Company") limited warranty terms and conditions, the following Products are covered for the base time periods as stated below ("Base Limited Warranty Period"). If registered, the Base Limited Warranty Periods for certain Products will be extended as stated below ("Registered Limited Warranty Period").

SINGLE PHASE R-110A OUTDOOR UNITS:

4TTB, 4TTM, 4TTR, 4TTV8, 4TWB, 4TWR, 4TWV8, 4A6B, 4A6H3/5, 4A6V8, 4A7A3/5, 4A7A60xxH, 4A7B, 4A7M, 4A7V8:
 Base Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – five (5) years.
 Registered Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – ten (10) years.

4TTX, 4TTZ, 4TTV0, 4TWX, 4TWZ, 4TWV0, 4A6H6/7, 4A6Z, 4A6V0, 4A7A60xxEG, 4A7A7, 4A7Z, 4A7V0:

Base Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – five (5) years.
 Registered Limited Warranty Period:
 Compressor – twelve (12) years, Outdoor Coil, Parts – ten (10) years.

SINGLE PHASE R-22 OUTDOOR UNITS:

2TTB, 2TTM, 2TWB, 2A6B, 2A7B:
 Base Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – one (1) year.
 Registered Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – five (5) years.

AIR HANDLERS:

TAM4, TAM7, TAM8, GAT2, GAF2, GAM2, GAM5, TGB, 2/4TEE, 2/4TFE, 4FWCAF, 4FWHA/F, 4FWNA/F, 4FWFA, 4FWDA, TAMG:
 Base Limited Warranty Period:
 Indoor Coil and Parts – five (5) years.
 Registered Limited Warranty Period:
 Indoor Coil and Parts – ten (10) years.

4TEC (Installed after 01/01/2013) and TEM:

Base Limited Warranty Period:
 Indoor Coil and Parts – one (1) year.
 Registered Limited Warranty Period:
 Indoor Coil and Parts – ten (10) years.

PACKAGED AIR CONDITIONERS and PACKAGED HEAT PUMPS (SINGLE-PHASE):

4TCC, 4TCY, 4TCX, 4WC, 4WCY, 4WCC, 4WHC:
 Base Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – five (5) years.
 Registered Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – ten (10) years.

4YCC (SINGLE-PHASE):

Base Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – five (5) years, Heat Exchanger – ten (10) years.
 Registered Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – ten (10) years, Heat Exchanger – ten (10) years.

4DCY, 4CY, 4YCC (SINGLE-PHASE):

Base Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – five (5) years, Heat Exchanger – twenty (20) years.
 Registered Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – ten (10) years, Heat Exchanger – twenty (20) years.

4WCZ (SINGLE-PHASE):

Base Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – five (5) years.
 Registered Limited Warranty Period:
 Compressor – twelve (12) years, Outdoor Coil, Parts – ten (10) years.

4DCZ, 4YCZ (SINGLE-PHASE):

Base Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – five (5) years, Heat Exchanger – twenty (20) years.
 Registered Limited Warranty Period:
 Compressor – twelve (12) years, Outdoor Coil, Parts – ten (10) years, Heat Exchanger – twenty (20) years.

FURNACES (*First digit may be a "T" or an "A"):

***UD1/*DD1, *UD1-H/*DD1-H, *UD2/*DD2, *UE1/*DE1:**
 Base Limited Warranty Period:
 Parts – five (5) years, Heat Exchanger – twenty (20) years.
 Registered Limited Warranty Period:
 Parts – ten (10) years, Heat Exchanger – twenty (20) years.

***UC1/*DC1, *UD2-V/*DD2-V, *UD2-C-V/*DD2-C-V, *UH1/*DH1,*UX1/*DX1; *UH2/*DH2; *UHM/*DHM:**

Base Limited Warranty Period:
 Parts – five (5) years, Heat Exchanger – twenty (20) years.
 Registered Limited Warranty Period:
 Parts – ten (10) years, Heat Exchanger – Lifetime

Note Regarding Heat Exchangers: If a heat exchanger fails because of a manufacturing defect within the sixth through twentieth year of the applicable warranty period, Company will, at its sole option, provide either a replacement heat exchanger without charge, or allow a credit in the amount of the then factory selling price of an equivalent heat exchanger toward the retail purchase price of a new heating unit.

CASED AND UNCASSED COILS:

2/4TXA, 2/4TXC, 4CX, 4NXA, 4NXC, 4TXF-CC/CZ, 4FXC/A, 4FXFH, 4FXCH:
 Base Limited Warranty Period:
 Coil, Parts – five (5) years.
 Registered Limited Warranty Period:
 Coil, Parts – ten (10) years.

DUCTLESS SYSTEMS:**

4TYK/4MYW, 4TXK/4MXW, 4TXM, 4MXC, 4MXL, 4MXD, 4MXF, 4MXX:
 Base Limited Warranty Period:
 All Parts – one (1) year.
 Registered Limited Warranty Period:
 All Parts – five (5) years.

***If any part of your Ductless System fails because of a manufacturing defect under normal use and maintenance within the Limited Warranty Period, the Company will furnish the required replacement part, or if the compressor, outdoor coil or indoor coil should be the part that fails during the Limited Warranty period, the affected unit will be replaced. The Purchaser must pay for any and all shipping and handling charges and other costs of warranty service for the replacement part including, but not limited to, any related service labor, diagnosis calls and refrigerant. There is no distinction between residential and commercial use for this Limited Warranty term and coverage.*

SPECIFIC TERMS FOR COMMERCIAL APPLICATIONS

SINGLE PHASE and ALL 3-PHASE

(Models listed in Tables 1, 1A, 1B - excluding ductless systems)
 Base Limited Warranty Period: Coil, Parts – one (1) year.
 Base Limited Warranty Period: Compressor – five (5) years.
 Base Limited Warranty Period: Packaged Unit Heat Exchanger – five (5) years.
 Base Limited Warranty Period: For All Heat Exchangers on All Other Furnaces – twenty (20) years.

Table 1A: Warranty Time Periods for Controls, Zoning Products, Humidifiers, Energy Recovery Ventilators, Air Cleaners and Oil Furnaces (Variable and Non-Variable Speed)

COVERAGE TERMS FOR RESIDENTIAL APPLICATIONS: Pursuant to the Trane U.S., Inc. ("Company") limited warranty terms and conditions, the following Products are covered for the base time periods as stated below ("Base Limited Warranty Period"). If registered, the Base Limited Warranty Periods for certain products will be extended as stated below ("Registered Limited Warranty Period").

CONTROLS: *CONT200,*CONT401,*CONT402,*CONT600,*CONT602,*CONT624

Base Limited Warranty Period: one (1) year
 Registered Limited Warranty Period: five (5) years

CONTROLS: *ZEMT500,*CONT800,*CONT802,*CONT803,*CONT824,*CONT900,*ZONE940,*ZONE950

Base Limited Warranty Period: five (5) years
 Registered Limited Warranty Period: ten (10) years

ZONING PRODUCTS: *ZONE950,*ZONE940,*ZONE930,ZZONEPNLAC52Z,ZZONEEXPAC52Z,ZZSENSAL0400,BAYSEN01ATEMPA,BAY24VRR,ZDAMPDR,ZDAMPSP,ZDAMPBM,ZDAMPRR

Base Limited Warranty Period: five (5) years
 Registered Limited Warranty Period: ten (10) years

HUMIDIFIERS: *HUMD200,*HUMD300,*HUMD500

Base Limited Warranty Period: five (5) years
 Registered Limited Warranty Period: ten (10) years

ENERGY RECOVERY VENTILATOR (ERV): *ERV100,*ERV200 & *ERV300

Base Limited Warranty Period: five (5) years
 Registered Limited Warranty Period: ten (10) years

AIR CLEANERS: TFD & AFD

Base Limited Warranty Period: five (5) years
 Registered Limited Warranty Period: ten (10) years

VARIABLE SPEED OIL FURNACE: *HV-V,*LF-V,*LR-V,*DF-V

Base Limited Warranty Period: Parts- five (5) years, Heat Exchanger - twenty (20) years
 Registered Limited Warranty Period: Parts - ten (10) years, Heat Exchanger - Lifetime

NON-VARIABLE SPEED OIL FURNACE: *HV,*LF,*LR,*DF

Base Limited Warranty Period: Parts- five (5) years, Heat Exchanger - twenty (20) years
 Registered Limited Warranty Period: Parts - ten (10) years, Heat Exchanger - Lifetime

SPECIFIC TERMS FOR COMMERCIAL APPLICATIONS:

Base Limited Warranty Period Applies for all controls, zoning products, humidifiers and ERV's All Oil Furnaces: Parts - one (1) year, Heat Exchanger - twenty (20) years.

(*First digit may be a "T" or an "A")

Table 1B: Warranty Time Periods for Installed Accessories in Air Handlers and Packaged Units

COVERAGE TERMS FOR RESIDENTIAL APPLICATIONS: Pursuant to the Trane U.S., Inc. ("Company") limited warranty terms and conditions, the following Products are covered for the time periods as stated below.

Electric Heaters for Multi-Position Air Handlers

HEATERS, Installed in GAM2, GAM5 GAT2, & TAM4 Air Handlers: BAYEA
 HEATERS, Installed in GAF2 Air Handlers: BAYEC
 Limited Warranty Period: ten (10) years

HEATERS, Installed in TAM7, TAM8 & TAMG Air Handlers: BAYEV
 Limited Warranty Period: ten (10) years

HEATERS, Installed in 4FWCAF, 4FWHA/F Air Handlers: BAYHTR, BAYHTRDS, BAYHTRBK
 Limited Warranty Period: ten (10) years

HEATERS, Installed in TEM Air Handlers: BAYHTR15
 Limited Warranty Period: ten (10) years

HEATERS, Installed in 4TEE & 4TEC Air Handlers: BAYHTR14
 Limited Warranty Period: ten (10) years

Optional Accessories for Multi-Position Air Handlers

UV-C LIGHTS, Installed in GAF2, GAM2, GAM5, GAT2, TAM4, TAM7 & TAM8, TAMG Air Handlers: BAYUVC
 Limited Warranty Period: Ballast - ten (10) years, Bulbs - one (1) year

COMPRESSOR CONTROL MODULE, Installed in TAM8 Air Handlers: BAY24CCVK
 Limited Warranty Period: ten (10) years

Hydronic Heaters for Multi-Position Air Handlers

HOT WATER COIL, Installed in GAM5 Air Handlers: BAYWAAA05, BAYWABB07 or BAYWACC08
 Limited Warranty Period: ten (10) years

HOT WATER COIL, Installed in TAM7 & TAMG Air Handlers: BAYVW & BAYWA
 Limited Warranty Period: ten (10) years

HOT WATER COIL, Installed in TAM8 Air Handlers: BAYVW
 Limited Warranty Period: ten (10) years

Electric Heaters for Packaged Units

HEATERS, Installed in 4TC*3 & 4, 4WC*3, 4 & 6 Packaged Units: BAYHTRV
 Limited Warranty Period: ten (10) years

HEATERS, Installed in 4WHC Packaged Units: BAYHTRC
 Limited Warranty Period: ten (10) years

Optional Accessories for Packaged Units

UV-C LIGHTS, Installed in 4TC*3 & 4, 4WC*3, 4 & 6, 4YC*3, 4 & 6, 4DC*4 & 6 Packaged Units: BAYUVC
 Limited Warranty Period: Ballast - ten (10) years, Bulbs - one (1) year

ECONOMIZERS, Installed in 4TC*3 & 4, 4WC*3, 4 & 6, 4YC*3, 4 & 6, 4DC*4 & 6 Packaged Units: BAYECON
 Limited Warranty Period: ten (10) years

MOTORIZED DAMPER, Installed in 4TC*3 & 4, 4WC*3, 4 & 6, 4YC*3, 4 & 6, 4DC*4 & 6 Packaged Units: BAYDMPR
 Limited Warranty Period: ten (10) years

SPECIFIC TERMS FOR 3-PHASE UNITS

(Models up to 5 Tons in a RESIDENTIAL Application):

3-PHASE OUTDOOR UNITS: 2TTA, 4TTA, 4TWA, 4A7C, 4A6C:

3-PHASE PACKAGED UNITS: 4TCY4, 4TCX3, 4TCC3, 4WCZ6, 4DCZ6, 4WCY4, 4DCY4, 4WCX3, 4WCC3, 4YCZ6, 4YCY4, 4YCX3, 4YCC3

Base Limited Warranty Period:
 Outdoor Coil, Parts – one (1) year, Compressor – five (5) years.
 Registered Limited Warranty Period:
 Compressor, Outdoor Coil, Parts – five (5) years.



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Literature Order Number	26-1000-33	
File No.	26-1000-33	08/13
Supersedes	26-1000-32	11/12
Stocking location		PI

Since Trane has a policy of continuous product improvement, it reserves the right to change design and specifications without notice

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EXHIBIT C



Limited Warranty Registration # [REDACTED]

Congratulations, your Limited Warranty was successfully submitted.

This is important information. Please retain for your records.

Please retain proof of the installation dates for your products (i.e. invoice) to verify the registered warranty for any future claims.

For complete, comprehensive Limited Warranty terms and conditions, please refer to your Limited Warranty in the Use and Care information that accompanied your product, or contact your installing dealer.

During the Registered Limited Warranty period you have the opportunity to purchase a transferability option, which allows your Registered Limited Warranty to be transferred to a subsequent homeowner. The original owner may purchase Transferability during the 60-day Product Registration Period or the subsequent owner may purchase Transferability within the Limited Warranty period, up to ninety (90) days following their purchase of the home.

With the purchase of your equipment, you may be eligible for a labor warranty from your installing dealer. Contact the installing dealer to inquire if your system may qualify for repair labor free of charge.

Name : GAIL DIPPOLITI

Phone Number : [REDACTED]

Email :

Dealer : C&C

Home / Property Owner Address

GAIL DIPPOLITI

[REDACTED]

Equipment Address

GAIL DIPPOLITI

[REDACTED]

Limited Warranty Terms - Transfer Purchased : No

System 1

AC (Model# 4TTR3042D1000AB) (Serial# 14322SC33F)

Functional Parts - 10/09/2024 (Term Length 10 years)

Outdoor Coil - 10/09/2024 (Term Length 10 years)

Compressor - 10/09/2024 (Term Length 10 years)

Coil (Model# 4TXCB042BC3HCBA) (Serial# 14296X9L5G)

Indoor Coil - 10/09/2024 (Term Length 10 years)

Functional Parts - 10/09/2024 (Term Length 10 years)

Furnace (Model# TUH2B080A9V4VBA) (Serial# 14122PFY2G)

Functional Parts - 10/09/2024 (Term Length 10 years)

EXHIBIT D



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American Standard
HEATING & AIR CONDITIONING

General Service Bulletin

MJ-X Oil Additive to Address High Superheat and Low Suction Pressure for TXVs Only (Patent Pending)

Models	Serial
See Page 7, 8 and 9 for model list	13401****F to 14445****F
	13401****H to 14445****H
	13401****L to 14445****L

Bulletin: UN-SVB020G-EN

Date: August 23, 2016

Supersedes UN-SVB020F-EN

WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury. Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, **MUST** follow precautions in this bulletin and on the tags, stickers, and labels, as well as the instructions below:

- Before installing, servicing this unit, technicians **MUST** put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. ALWAYS refer to appropriate MSDS sheets and OSHA guidelines for proper PPE.
- When working with or around hazardous chemicals, ALWAYS refer to the appropriate MSDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations.
- If there is a risk of arc or flash, technicians **MUST** put on all Personal Protective Equipment (PPE) in accordance with NFPA 70E or other country-specific requirements for arc flash protection. **PRIOR** to servicing the unit.

WARNING Indicates a potential or hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION Indicates a potential or hazardous situation which, if not avoided, could result in minor or moderate injury. It may be necessary to take appropriate preventive actions.

NOTICE Indicates a situation that could result in equipment or property damage only, if not avoided.

SAFETY WARNING

Only qualified personnel should install and service this equipment. The installation, servicing, and servicing of heating, ventilating, and air conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

WARNING: HAZARDOUS VOLTAGE - DISCONNECT POWER and DISCHARGE CAPACITORS BEFORE SERVICING

WARNING

This information is intended for use by individuals possessing adequate backgrounds of electrical and mechanical experience. Any attempt to repair a central air conditioning product may result in personal injury and/or property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

WARNING

LIVE ELECTRICAL COMPONENTS!

During installation, testing, servicing, and troubleshooting of this product, it may be necessary to work with live electrical components. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

Introduction

The purpose of this bulletin is to address reports of issues with TXVs used in air handler and furnace coil product lines, predominately found in the 1.5-3.0 ton units; however, it can occasionally occur in larger tonnages. Reported issues include higher than normal superheat and lower than normal suction pressure which have generally appeared at start-up or within a short period of runtime (typically 60-90 days). This is a fix on fail action. This is not a safety issue.



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Discussion

We have inspected numerous valves from the field and a thorough analysis has been conducted. Findings to date show that a majority of the valves contained debris on the push pin and spring. This debris on the push pin and spring may cause the valve to stick.

Action Field

For TXVs that exhibit the low suction pressure (<95 PSIG) and high superheat (> 30° F), an oil additive needs to be installed into the refrigerant system. The addition of this oil additive has been shown to dissolve the debris on the push pin and spring assembly freeing up the movement of the push pin.

Repair and Installation Instructions

Add 4 ounces of MJ-X oil additive (CHM01005) to the refrigerant system while the compressor is running. Follow the steps on page #6 after the MJ-X is added to the system.

Important:

MJ-X oil additive (CHM01005) is an approved oil additive when applied as directed in this service bulletin.

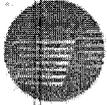
NOTICE:

Compressor Damage!

Do not add more than 4 ounces to one circuit. Adding more additive than recommended will not speed up the process and could result in damage to the compressor.

Note: Oil injection tool is not provided for by this bulletin. Oil injection tool may be purchased through Trane parts.

The following is a general description of how to add MJ-X oil additive (CHM01005) to the refrigerant system using a Yellow Jacket or similar injection tool. If other injection tools are used follow the manufacture's instructions for proper use of the tool.



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After adding MJ-X Oil Additive complete the following steps:

1. Operate the unit in the heating mode.
2. If the outdoor unit is a heat pump, place system in the heating mode of operation for 15 minutes.
3. If the system has a gas furnace, cycle off the air conditioner and cycle on the gas furnace for 15 minutes of run time.
4. If the system is an electric/electric system, cycle off the air conditioning and place the TXV sensing bulb in a bath of hot water for 15 minutes.
5. Place the system back into the cooling mode of operation and allow it to operate for 15 minutes. Note any performance changes.
6. Did the system performance improve to > 95 PSIG Suction Pressure?
7. If yes, the MJ-X oil additive is clearing the restriction. No further work required.
8. If no, repeat steps 1-5
9. Did the system performance improve to Suction Pressure > 95 PSIG?
10. If yes, the MJ-X oil additive is clearing the restriction. No further work required
11. If no, replace the TXV

Note:

It May take up to 48 hours of operation for the system to return to normal operating conditions.

Parts Ordering Information

One bottle of MJ-X Oil Additive (CHM01005) and one label (LBL00427) per affected unit as identified in this bulletin.

Note: Oil injection tool is not provided for in this bulletin. Oil injection tool may be purchased through Global Parts using part number TOL01532.

Parts should be ordered through normal parts channels.

Material Disposition

Discard any parts in accordance with federal, state and local guidelines after it is determined they are no longer needed.



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Alternate Method to Install CHM01005:

1. With the unit operating close the liquid service valve and store the system refrigerant charge in the outdoor unit.
2. When the suction pressure reaches 20 PSIG shut the unit off and close the suction service valve. Do not allow the suction pressure to drop below 20 PSIG.
3. Recover any refrigerant that remains in the external piping system.
4. Pull a vacuum on the external piping to less than 29" mercury or 1000 microns for a period of 10 minutes.
5. Close both the Liquid and Suction gauge valves on the manifold set.
6. Insert the common (center) hose of the manifold set into the bottle of CHM01005. Make sure the hose goes all the way to the bottom of the bottle.
7. Open both the Liquid and Suction gauge valves on the manifold set. (This will draw the CHM01005 not the refrigerant system).
8. Allow all of the CHM01005 to be drawn into the piping system until the vacuum has reached atmospheric pressure. The bottle should be empty.
9. Close both the Liquid and Suction gauge valves on the manifold set.
10. Using dry nitrogen or similar product purge any remaining oil additive that is in the manifold set and hoses into the refrigerant system by pressurizing the external piping system to 25psig.
11. Purge the dry nitrogen to the atmosphere.
12. Pull another vacuum to 500 microns or less.
13. Release the charge that was stored in the outdoor unit to the piping system.
14. Add Label part number LBL00427 to the unit.
15. Follow the steps to on page #6 after adding CHM01005 to the refrigerant system.

Do Not use the unit compressor to draw the CHM01005 additive into the refrigerant system. Using the unit compressor to create a vacuum deep enough to draw the additive in could damage the unit compressor



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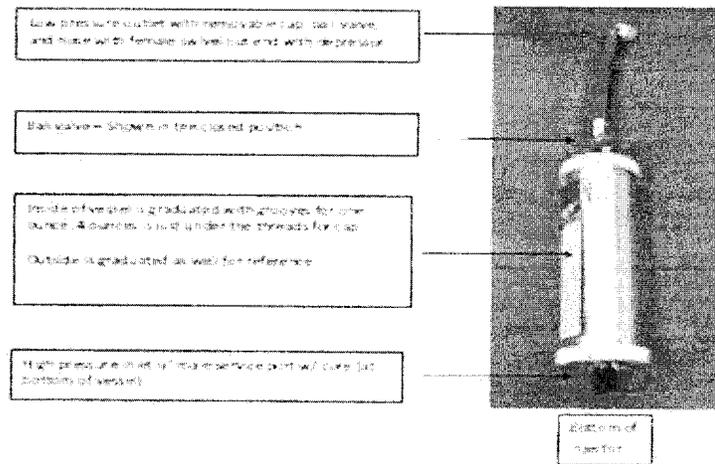
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Description of Yellow Jacket Oil Injector used in this example procedure:

- Part number #69562 4 oz. oil injector (TOL01532)
- Replacement O-ring for cap #69564 (5 pk) (RNG02044)

Note: For purposes of this procedure the top of the injector will be the short process hose and the bottom will be the removable cap with the service port as shown in Figure 1.

Figure 1. Yellow Jacket oil injector



Other equipment required

- MJX oil additive
- Manifold gage set for R-410A
- Safety glasses and gloves
- Clean rag for setting top cap aside

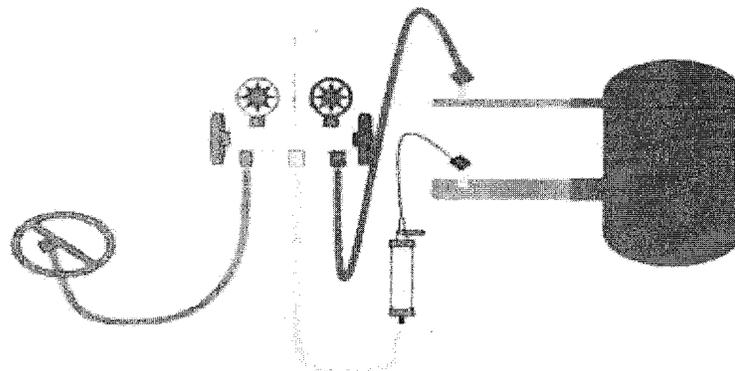
Procedure

CAUTION

Hazardous Pressure!
The following procedure involves working with gas under pressure. Always keep the injector and hose fitting pointed in a safe direction. For Step 13 and Step 20, allow gas to escape at a low rate. Failure to follow instructions could result in minor to moderate injury.

When injecting the oil additive it is necessary to connect the injector to the high side through the pressure gauge, purge the gauge lines and injector, then after the injector is filled with oil additive, purge again. After purging the injector, the injector hose is connected to the suction line for injection into the system. Detailed instructions are listed below.

Figure 2. Connecting the injector to the high side



1. Make sure the evaporator coil is clear of ice. Allow the indoor fan to



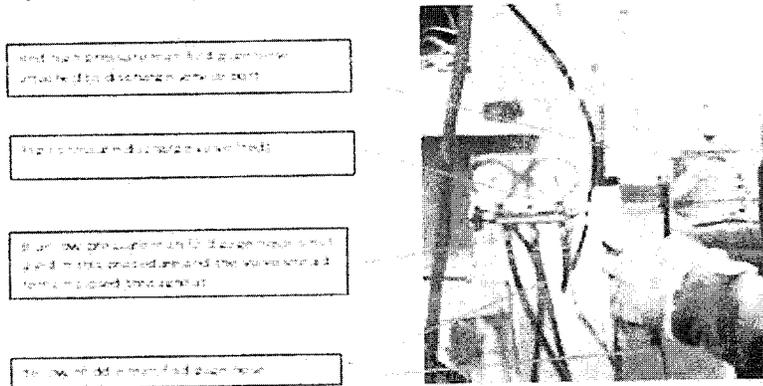
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- run to melt it quicker if necessary but do not run the compressors while ice is present.
2. Allow the circuit in which the oil additive will be injected to run a minimum of 5 minutes. The following procedure must be performed while the compressor is running. The unit does not need to be turned off if it is already operating but it does need to remain running.
3. Verify that both valves of the R-410A manifold gage set are closed.

Figure 3. Set up



1. High pressure manifold discharge valve (red)

2. High pressure discharge valve (red)

3. Ball valve (red)

4. Low middle manifold discharge valve (yellow)

4. Connect the high pressure line (red) to the compressor discharge service port of the circuit that the oil additive will be injected into.
5. Connect the middle manifold hose (yellow) to the bottom (inlet) port of the injector.
6. With the injector upright, remove the cap with the valve and short hose.
7. Slowly and slightly open the manifold gage discharge valve to purge the hoses up to the injector.
8. Pour in the prescribed amount of oil additive using the 1 oz graduations as a guide.

Important: Always remove the cap with the valve and short hose with the valve in the open position. Once the cap is seated hand tight, the valve should then be closed.

9. With the ball valve still open, replace the cap with the ball valve and hose.

Important: Make sure the cap O-ring slides into place (keep ball valve open).

10. When the cap with the ball valve and hose is fully threaded in hand, tight close the ball valve.
11. While keeping the injector upright, slightly and slowly open the manifold gage discharge valve (red hose) to pressurize the gage hoses and the injector.
12. Close the manifold gage discharge valve (red hose).
13. Slightly and slowly open the ball valve to allow a small amount of gas pressure to escape the injector. This effectively purges the hoses and injector of any air. Once any fluid escapes quickly close the ball valve again to seal it.
14. With the ball valve closed connect the hose of the injector to the suction service port of the circuit that the oil additive will be injected into.
15. Turn the injector upside down so that the ball valve and hose are at the bottom, and fully open the ball valve.
16. Open the high pressure discharge valve (red hose) of the manifold gage set slightly for approximately 1 minute. The yellow gage hose should warm up indicating the flow of hot gas.
17. After approximately 1 minute close the high pressure discharge valve (red hose) of the manifold gage set.
18. Once the high pressure discharge valve (red hose) of the manifold gage set is closed wait an additional 1 minute for the injector to equalize with the suction pressure of the unit.
19. Fully close the ball valve of the injector and remove the injector process hose from the suction service port.
20. Open the ball valve slightly to allow it to equalize with the atmosphere.

Note

After injection of CHM01005 is complete
attach label LBL00427 to the unit



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Affected Models Continued

4DCY4036B3075A	4YCC3030C1075A	4WCX3036A1000B	4YCY4036B1075B
4DCY4036C1075A	4YCC3030C1075A	4WCX3036A3000B	4YCY4036B1096B
4DCY4042B1096A	4YCC3036A1064B	4WCX3042B1000A	4YCY4036B3075A
4DCY4048A3096C	4YCC3036A1075B	4WCX3048A1000B	4YCY4036B3096A
4DCY4048B1096B	4YCC3036A1075B	4WCX3060A1000B	4YCY4042B1096B
4DCY4060A3120C	4YCC3036A1096B	4WCX3060A3000B	4YCY4048B1096A
4DCY4060B1120C	4YCC3036A3064B	4WCY4036B3000A	4YCY4048B1096B
4DCZ6036A1075B	4YCC3036A3075B	4WCY4036C1000A	4YCY4048B1120B
4DCZ6036A3075B	4YCC3036A3075B	4WCY4042B1000A	4YCY4048B3096A
4DCZ6036B1075A	4YCC3036A3096B	4WCY4048A3000C	4YCY4048B3120A
4DCZ6036B3075A	4YCC3036A4064B	4WCY4048B1000B	4YCY4060A1120B
4DCZ6048A1096B	4YCC3036A4075B	4WCY4060A3000C	4YCY4060A3120B
4DCZ6048B1096A	4YCC3036A4096B	4WCY4060B1000C	4YCZ6036A1075C
4DCZ6048B3096A	4YCC3042B1096A	4WCZ6036A1000B	4YCZ6036A1096C
4DCZ6060A1120B	4YCC3048A1075B	4WCZ6036A3000B	4YCZ6036A3075C
4DCZ6060A3120B	4YCC3048A1096B	4WCZ6036A4000B	4YCZ6036A3096C
4DCZ6060B1120A	4YCC3048A1120B	4WCZ6036B1000A	4YCZ6036A4075D
4DCZ6060B3120A	4YCC3048A3075B	4WCZ6036B3000A	4YCZ6036A4096D
4TCC3030C1000A	4YCC3048A3096B	4WCZ6036B4000A	4YCY6048A1096C
4TCC3036A1000B	4YCC3048A3120B	4WCZ6048A1000B	4YCY6048A1120C
4TCC3036A3000B	4YCC3048A4075B	4WCZ6048A3000B	4YCY6048A3096C
4TCC3036A4000B	4YCC3048A4096B	4WCZ6048A4000B	4YCY6048A3120C
4TCC3042B1000A	4YCC3048A4120B	4WCZ6048B1000A	4YCY6048A4096D
4TCC3048A1000B	4YCC3060A1096B	4WCZ6048B3000A	4YCY6048A4120D
4TCC3048A3000B	4YCC3060A1120B	4WCZ6048B4000A	4YCY6060A1120C
4TCC3048A4000B	4YCC3060A3096B	4WCZ6060A1000B	4YCY6060A3120B
4TCC3060A1000B	4YCC3060A3120B	4WCZ6060A3000B	4YCY6060A3120C
4TCC3060A3000B	4YCC3060A4096B	4WCZ6060A4000B	4YCY6060A4120D
4TCC3060A4000B	4YCC3060A4120B	4WCZ6060B1000A	4WHC3042A1000A
4TCX3036A1000B	4YCX3030C1075A	4WCZ6060B3000A	4WHC3048A1000A
4TCX3036A3000B	4YCX3030C1075A	4WCZ6060B4000A	4WHC3048A1000A
4TCX3036A4000B	4YCX3036A1064B		4WHC3048A1000B
4TCX3042B1000A	4YCX3036A1075B		4WHC3060A1000A
4TCX3048A1000B	4YCX3036A1075B		4WHC3060A1000A
4TCX3060A1000B	4YCX3036A1096B		4WHC3060A1000B
4TCX3060A3000B	4YCX3036A3075B		
4TCY4036B1000B	4YCX3036A3096B		
4TCY4042B1000B	4YCX3036A4075B		
4TCY4048B1000B	4YCX3042B1096A		
4TCY4060A1000B	4YCX3048A1096B		
4WCC3036A1000B	4YCX3048A1120B		
4WCC3036A3000B	4YCX3060A1096B		
4WCC3036A4000B	4YCX3060A1120B		
4WCC3042B1000A	4YCX3060A3096B		
4WCC3048A1000B	4YCX3060A3120B		
4WCC3048A3000B	4YCX3060A4120B		
4WCC3048A4000B			
4WCC3060A1000B			
4WCC3060A3000B			
4WCC3060A4000B			



TRANE

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Affected Models

4TTB3018A1000A	4TTM3024B1000A	4TWR3018D1000A	4A6H3018D1000A	4A7A6036H1000A
4TTB3018G1000A	4TTM3030B1000A	4TWR3024D1000A	4A6H3024D1000A	4A7A6042H1000A
4TTB3018H1000A	4TTM3042A1000B	4TWR3036C1000A	4A6H3036C1000A	4A7A6048H1000A
4TTB3024A1000A	4TTM3042A1000C	4TWR3042B1000A	4A6H3036C1000A	4A7A6049H1000A
4TTB3024G1000A	4TTM3042A1000D	4TWR3048B1000A	4A6H3042B1000A	4A7A6060H1000A
4TTB3024H1000A	4TTM3048A1000B	4TWR3060B1000A	4A6H3048B1000A	4A7A6061H1000A
4TTB3030A1000A	4TTM3060A1000B	4TWR4036D1000A	4A6H3060B1000A	4A7A6061J1000A
4TTB3030G1000A	4TTX6024G1000B	4TWR4042D1000A	4A6H4036D1000A	4A7A7024A1000A
	4TTX6036H1000A	4TWR4048D1000A	4A6H4036D1000A	4A7A7036A1000A
4TTB3036A1000A	4TTX6042H1000A	4TWR4060D1000A	4A6H4042D1000A	4A7A7048A1000A
4TTB3036A1000A	4TTX6048H1000A	4TWR5042G1000A	4A6H4048D1000A	4A7A7060A1000A
4TTB3042D1000C	4TTX6049H1000A	4TWR5049E1000B	4A6H4060D1000A	
4TTB3042D1000A	4TTX6060H1000A	4TWR5061E1000B	4A6H5042G1000A	
4TTB3048D1000C	4TTX6061H1000A	4TWR6024A1000B	4A6H5049E1000B	
4TTB3060D1000C	4TTX8024A1000A	4TWR7024A1000B	4A6H5061E1000B	
4TTB6036A1000A	4TTX8036A1000A	4TWR7036A1000A	4A6H7024A1000B	
4TTB6042A1000A	4TTX8048A1000A	4TWR7036B1000A	4A6H7024A1000A	
4TTB6048A1000A	4TTX8060A1000A	4TWR7048A1000A	4A6H7036B1000A	
4TTB6049A1000A	4TTA3030AD000A	4TWR7048A1000B	4A6H7036B1C00A	
4TTB6060A1000A	4TTA3036AD000A	4TWR7060A1000A	4A6H7048A1000A	
4TTB6061A1000A	4TTA3036B3000A	4TWR7060A1000B	4A6H7048A1000B	
4TTB6061B1000A		4TWTX5042B1000A	4A6H7060A1000A	
4TTR3018G1000A	4TTA3036B4000A	4TWTX5049E1000B	4A6H7060A1000A	
4TTR3024G1000A	4TTA3042AD000A	4TWTX5061G1000A	4A6H7060A1000B	
4TTR3030G1000A	4TTA3042D3000C	4TWTX6024G1000B	4A7A3018G1000A	
4TTR3036E1000A	4TTA3042D3000A	4TWTX8024A1000A	4A7A3024G1000A	
4TTR3042D1000A	4TTA3042D4000C	4TWTX8036A1000A	4A7A3030G1000A	
4TTR3048D1000A	4TTA3048D3000C	4TWTX8036C1000A	4A7A3036E1000A	
4TTR3060D1000A	4TTA3048D4000C	4TWTX8048A1000A	4A7A3042D1000A	
4TTR4018L1000A	4TTA3060D3000C	4TWTX8060A1000A	4A7A3048D1000A	
4TTR4024L1000A	4TTA3060D4000C	4TWA3036B3000A	4A7A3060D1000A	
4TTR4030L1000A	4TWB3024D1000A	4TWA3036B4000A	4A7A4018L1000A	
4TTR4036L1000A	4TWB3036C1000A	4TWA3042B3000A	4A7A4024L1000A	
4TTR4042L1000A	4TWB3042B1000C	4TWA3042B4000A	4A7A4030L1000A	
4TTR4042L1000A	4TWB4042G1000B	4TWA3048B3000B	4A7A4036L1000A	
4TTR6036B1000A	4TWB3048B1000C	4TWA3048B4000B	4A7A4042L1000A	
4TTR6042B1000A	4TWB3060B1000C	4TWA3060B3000A		
4TTR6048B1000A	4TWB4049E1000C			
4TTR6049B1000A	4TWB4061E1000C			
4TTR6060B1000A				
4TTR6061B1000A				
4TTR6061C1000A				
4TTR7024A1000A				
4TTR7036A1000A				
4TTR7048A1000A				
4TTR7060A1000A				



Affected Models Continued

THC036E1E0A1F0	YHC036E1EHA1HD	YHC036E4ELA1JA	YSC036E1EHA1NO
THC036E1E0A1FD	YHC036E1EHA1J0	YHC036E4ELA1JD	YSC036E1EHA1ND
THC036E1ROA1E0	YHC036E1EHA1JC	YHC036E4EMA1J0	YSC036E1EHA1P0
THC036E3E0A1F0	YHC036E1EMA1J0	YHC036E4EMA1JD	YSC036E1EHA1PC
THC036E3E0A1FC	YHC036E1EMA1JD	YHC036E4RHA1J0	YSC036E1EHA1PD
THC036E3ROA1F0	YHC036E1RHA1H0	YHC036E4RHA1JF	YSC036E1ELA1N0
THC036E3ROA1FA	YHC036E1RLA1J0	YHC036E4RHA1JG	YSC036E1ELA1ND
THC036E3ROA1FD	YHC036E1RLA1JF	YHC036E4RHA1JH	YSC036E1ELA1P0
THC036E4E0A1F0	YHC036E1RLA1JH	YHC036E4RLA1HD	YSC036E1ELA1PD
THC036E4EBA1FD	YHC036E3EHA1J0	YHC036E4RLA1J0	YSC036E1EMA1N0
THC036E4EEA1FD	YHC036E3EHA1JC	YHC036E4RLA1JB	YSC036E1EMA1NC
THC036E4ROA1EB	YHC036E3EHA1JD	YHC036E4RLA1JC	YSC036E1EMA1P0
THC036E4ROA1F0	YHC036E3ELA1J0	YHC036E4RLA1JD	YSC036E1EMA1PA
THC036E4ROA1FD	YHC036E3ELA1JA	YHC036E4RLA1JG	YSC036E1EMA1PB
THC036E4ROA1FK	YHC036E3ELA1JB	YHC036E4RLA1JH	YSC036E1EMA1PC
THC036E4RBA1FD	YHC036E3ELA1JD	YHC036E4RMA1J0	YSC036E1EMA1PD
THC036E4REA1FB	YHC036E3EMA1J0	YHC036E4RMA1JA	YSC036E1EYA1PD
THC036E4REA1FH	YHC036E3EMA1JC	YHC036E4RMA1JD	YSC036E1EZA1P0
THC036E4RGA1FD	YHC036E3EMA1JD	YHC036E4RXA1JD	YSC036E1EZA1PA
TSC036E1E0A1J0	YHC036E3EZA1JD	YHC036E4RYA1JC	YSC036E1RHA1N0
TSC036E1E0A1K0	YHC036E3RHA1J0	YHC036E4RYA1JD	YSC036E1RHA1P0
TSC036E1E0A1KC	YHC036E3RHA1JD	YHC036E4RYA1JF	YSC036E1RHA1PA
TSC036E1E0A1KD	YHC036E3RHA1JF	YHC036E4RYA1JH	YSC036E1RHA1PD
TSC036E1EDA1K0	YHC036E3RHA1JH	YHC036E4RZA1JH	YSC036E1RLA1N0
TSC036E1ROA1J0	YHC036E3RLA1J0		YSC036E1RLA1P0
TSC036E1ROA1K0	YHC036E3RLA1JB		YSC036E1RLA1PD
TSC036E1ROA1KC	YHC036E3RLA1JC		YSC036E1RLA1PF
TSC036E1RDA1K0	YHC036E3RLA1JD		YSC036E1RMA1ND
TSC036E1RDA1KA	YHC036E3RLA1JF		YSC036E1RMA1P0
	YHC036E3RLA1JG		YSC036E1RMA1PD
	YHC036E3RLA1JH		YSC036E1RXA1PD
	YHC036E3RMA1J0		
	YHC036E3RMA1JB		
	YHC036E3RMA1JC		
	YHC036E3RMA1JD		
	YHC036E3RMA1JG		
	YHC036E3RMA1JH		
	YHC036E3RXA1JD		
	YHC036E4EHA1J0		
	YHC036E4EHA1JC		
	YHC036E4EHA1JD		
	YHC036E4ELA1J0		

EXHIBIT E

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Trane Issues Service Bulletin Regarding TXV Failures

Trane has issued a service bulletin regarding TXV failures and appears the solution also includes refrigerant additives. Below is an excerpt from the service bulletin, thanks to [Andrew Singer](#) for contributing:

Introduction

The purpose of this bulletin is to address recent reports of issues with TXVs used in air handler and furnace coil product lines, predominately found in the 1.5-3.0 ton units. Reported issues include higher than normal superheat and lower than normal suction pressure which have generally appeared at start-up or within a short period of runtime (typically 60-90 days). This is a fix on fail action. This is not a safety issue.

Discussion

We have brought back numerous valves from the field and a thorough analysis has been conducted. Findings to date show that a majority of the valves inspected contained debris on the push pin and spring. This debris on the push pin and spring may cause the valve to stick.

Action Field

For TXVs that exhibit the low suction pressure (.95 PSIG) and high superheat (>30 degrees F), an oil additive needs to be installed into the refrigerant system. The addition of this oil additive has been shown to dissolve the debris on the push pin and spring assembly freeing up the movement of the push pin.

Repair and Installation Instructions

Add 4 ounces of MJ-X oil additive (CHMO1005) to the refrigerant system while the compressor is running. Follow the steps on page 5 after the MJ-X is added to the system.

After adding MJ-X Oil Additive complete the following steps:

1. Operate the unit in the heating mode.
2. If the outdoor unit is a heat pump, place system in the heating mode of operation for 15 minutes.
3. If the system has a gas furnace, cycle off the air conditioner and cycle on the gas furnace

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- 3. If the system has a gas furnace, cycle off the air conditioner and cycle on the gas furnace for 15 minutes of run time.
 - 4. If the system is an electric/electric system, cycle off the air conditioning and place the TXV sensing bulb in a bath of hot water for 15 minutes.
 - 5. Place the system back into the cooling mode of operation and allow it to operate for 15 minutes. Note any performance changes.
 - 6. Did the system performance improve to >95 PSIG Suction Pressure?
 - 7. If yes, the MJ-X oil additive is clearing the restriction. No further work required.
 - 8. If no, repeat steps 1-5
- There is also a note that it may take up to 48 hours of operation for the system to return to normal operating conditions.

We expect further investigation into what in the manufacturing process is causing the debris to occur. As it currently stands, a technician should carry this additive on his service vehicle in case he needs it on any and or every installation. Although the solution is simple, it may become burdensome on the contractor by prolonging installations and additional callbacks. If you are wondering if your Trane system is one of the affected, contact Tampa's HVAC experts at Melo Air. We will be able to determine whether or not your system may be susceptible to a TXV failure.

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New Information Regarding Wide Spread TXV Failures

A TXV is a metering device for the refrigerant. It controls how much is fed through the system at a time. Although they are far from uncommon, they are a relatively new technology in air conditioning. Many air conditioning and heating systems today continue to use a fixed orifice or piston as a metering device. Thermal expansion valves can improve a system's efficiency and we rarely don't see them on equipment that is 14 SEER and higher. With the new federal minimum efficiency standards set to take place next year the percentage of HVAC systems that utilize a TXV will increase substantially. One negative of TXV's is they will break more often than a fixed orifice. Recently, there have been widespread failures of expansion valves that have impacted many manufacturers. After a thorough investigation it appears that replacing the TXV will solve the issue. Below is an official statement from Danfoss.

For the past several months, there has been a significant increase in the number of "no cooling" complaints coming from new residential air conditioning and heat pump installations. A system inspection typically shows the unit running with a very high superheat and low suction pressure, leading to the conclusion that the thermal expansion valve (TXV) wasn't functioning properly. Once the TXV was replaced, the system operated fine which seemingly confirmed the TXV was the cause of the problem.

Danfoss has been working with our partners to resolve this issue. After weeks of collaboration and significant hours of lab time, it has become apparent the TXV is not the root cause of this problem. Our chemical and metallurgical experts have determined that a chemical reaction (hydrolysis or polymerization) with organic compounds from the system is the root cause. These newly formed chemicals result in a dark sticky substance adhering to the orifice cone. Once this happens, the orifice gets blocked and system failure occurs.

This conclusion is shared by all our OEM partners as well. In these cases, Danfoss recommends replacing the TXV (like for like) per the system manufacturers instructions. We do not recommend trying to clean the TXV in the field. Field experience shows that after the initial valve is replaced in the system this failure mode rarely re-occurs. Danfoss, together with our OEM partners, has done a thorough review of our factory and manufacturing processes. We can confirm the organic compounds found blocking the

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manufacturing processes. We can confirm the original companies found blocking the valves are not used anywhere in our processes. For this reason we can be certain when we say the Danfoss TR6 valve is not the root cause of the problem. However, it is important that, as an industry, we get this issue behind us. Therefore, Danfoss continues to cooperate with our partners to assist in finding the origin of the root cause that will eliminate the issue going forward and minimize issues in the field.

We will continue to update the industry via our website (www.northamerica.danfoss.com) and direct communications such as this. For more information, please contact your local Danfoss account manager or field system engineer.

Many manufacturers use Danfoss expansion valves, however, we have only seen this issue affecting Frigidaire, Lennox, Maytag and Rheem systems. We can not guarantee your system is not affected if you do not have one of these brands. For more information on air conditioning and heating equipment, contact Tampa area air conditioning experts Melo Air today.

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This Should Be The Last Update On Thermal Expansion Valves

Over the course of the past couple months we have been updating homeowners on the widespread TXV failures that have been happening in the HVAC industry. It appears that manufacturers have determined the cause and solution to the problem. Below is an excerpt from a service bulletin from Rheem.

Details: *Rheem has identified potential root causes of the field reports where the TEV fails to maintain design superheat.*

To recap prior bulletins, as previously reported analysis shows the TEV is not the root cause of this issue. We believe the source of the problem is a chemical substance originating from the compressor.

We have been working with Emerson Climate Technologies to revert back to manufacturing processes in place prior to when the TEV sticking issue started to appear. All residential condensing and package units will be manufactured with compressors utilizing these earlier manufacturing processes no later than September 10th, 2014.

Rheem has aggressively tested system additives to resolve the superheat drift issue. Early tests and field reports have shown favorable results with the Nu-Calgon's AC Re~New additive (Rheem Part number 4057-55). In known superheat drift situations, Rheem suggests the use of this additive will be an effective alternative to replacing the TEV. Note, our testing shows no benefit in using activated charcoal type filter driers with this additive.

No harmful system effects have been observed with this additive, and Rheem continues to work with component manufacturers to assure long term reliability.

At this time, Rheem will support the use of the Nu-Calgon's AC Re~New additive in systems with outdoor unit serial numbers in the date code range of 4013 to 3714 that exhibit superheat drift without voiding the factory warranty. An allowance is available for the addition of AC Re~New additive to systems that exhibit this phenomenon.

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To utilize this program an iWarranty claim may be entered for part number 4057-55 (AC Re~New) with a \$100 labor allowance filed using an indoor unit or packaged unit model and serial number. The outdoor unit model and serial number must be listed in the notes section of the claim. Please reference WCN approval code 2402014 on the claim. This allowance is only allowed on installed units when processed with the AC Re~New claim and is not retroactive. This allowance and program is effective from September 2nd 2014 and will terminate on August 31st 2015. Should replacement of the TEV become necessary due to superheat drift it is covered under our standard labor allowance guidelines. Please continue to use WCN approval code 2112014 for TEV Replacements. Recommended or Required Action: Please report unusual cases to your assigned DTR; include model and serial numbers for both indoor and outdoor units to help identify complete systems.

Thank you for your continued support of Rheem/Ruud products.

In addition to the service bulletin from Rheem, we also received this announcement from Gemaire which is a distributor of their product.

Rheem will provide the approved Nu-Calgon additive and a \$100 labor allowance for the affected units in the serial number ranges from 4013 to 3714. This allowance and program is effective from September 2, 2014 and will terminate on August 31, 2015. The allowance and program does not include any tools and is not retroactive. Although we do not stock a significant amount of the Nu-Calgon additive, we are diligently working with Rheem to obtain an adequate supply, which will be available to you as soon as possible.

So while there may still be some delays due to inventory on the Nu-Calgon additive it appears the solutions are on the way. This [video shows how the Nu-Calgon additive works with your air conditioner](#). If you have any questions about the TXV on your air conditioner or heat pump as to whether or not you will need this additive don't hesitate to contact Melo Air today.

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TXV Failures

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