Technical Service Bulletin # **99-19-6** Date: **990920**

A/C - Identification of Non Approved Refrigerants

Article No.
99-19-6

09/20/99

^ AIR CONDITIONING - IDENTIFICATION OF NON-FORD APPROVED REFRIGERANTS

^ AIR CONDITIONING - PURGING AIR FROM SYSTEM

FORD:
1985-1986 LTD
1985-1988 EXP
1985-1994 TEMPO
1985-1997 THUNDERBIRD
1985-2000 CROWN VICTORIA, ESCORT, MUSTANG
1986-2000 TAURUS
1988-1993 FESTIVA
1989-1997 PROBE
1994-1997 ASPIRE
1995-2000 CONTOUR
2000 FOCUS
1985-1990 BRONCO II
1985-1996 BRONCO
1985-1997 F-250 HD, F-350
1985-2000 ECONOLINE, F-150, F-250 LD, RANGER
1986-1997 AEROSTAR
1988-1997 F SUPER DUTY
1991-2000 EXPLORER
1995-2000 WINDSTAR
1997-2000 EXPEDITION
1999-2000 SUPER DUTY F SERIES
1985-1991 CL-CLT-9000 SERIES
1985-1999 L SERIES
1985-2000 F & B SERIES
1986-1998 CARGO SERIES
1997-1998 AEROMAX, LOUISVILLE

LINCOLN:
1985-1992 MARK VII
1985-2000 CONTINENTAL, TOWN CAR
1993-1998 MARK VIII
2000 LS
1998-2000 NAVIGATOR

MERCURY:
1985-1986 MARQUIS
1985-1987 LYNX
1985-1994 TOPAZ
1985-1997 COUGAR
1985-2000 GRAND MARQUIS
1986-2000 SABLE
1987-1989 TRACER
1991-1994 CAPRI
1991-2000 TRACER
1995-2000 MYSTIQUE
1999-2000 COUGAR
1993-2000 VILLAGER
1997-2000 MOUNTAINEER

MERKUR:
1985-1989 XR4TI
1988-1989 SCORPIO

This TSB article is being republished in its entirety to add model year vehicles

ISSUE
A number of non-approved/alternate refrigerants have entered the marketplace and are being advertised as "drop-in replacements" for R-12 and R-134a. The use of non-approved refrigerants such as R-22, hydrocarbons, and other refrigerant blends could cause safety, durability, and performance concerns if they are installed in Ford A/C systems. Identification of the type of refrigerant contained in vehicle A/C systems, before servicing, is necessary to prevent dealer service equipment and refrigerant supplies from being contaminated with non-approved refrigerants.

ACTION
Refrigerant identification must be performed prior to recovering the refrigerant into a recovery machine to prevent cross-contamination of the recovery machine and other A/C systems being serviced with that recovery machine. Refer to the following text.

OTHER APPLICABLE ARTICLES: 94-14-3, 95-18-4

SUPERSEDES: 98-12-8

WARRANTY STATUS: Eligible Under The Provisions Of Bumper To Bumper Warranty Coverage For 1993-2000 Model Year Vehicles, Basic Warranty Coverage For All Other Model Year Vehicles

OPERATION	DESCRIPTION	TIME
991906A	Test A/C System For Contaminated Refrigerant	0.3 Hr.

DEALER CODING

BASIC PART NO.	CONDITION CODE
R-12	49

OASIS CODES: 208000, 208999

A/C Refrigerant Analyzer Function

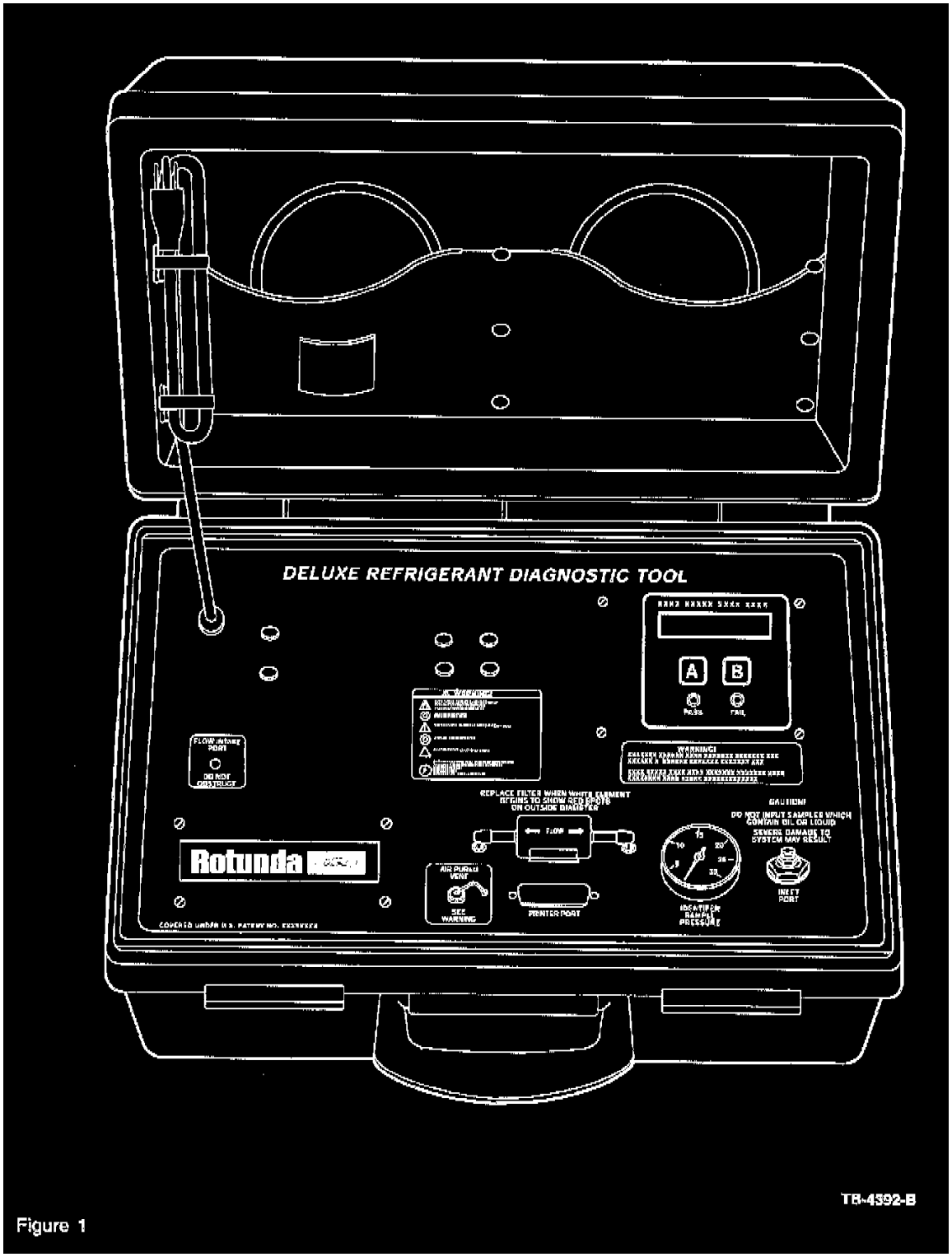

Figure 1

Ford Motor Company has approved the Rotunda Deluxe A/C Refrigerant Analyzer (198-00003) for use on Ford and Lincoln-Mercury vehicles (Figure 1). The analyzer provides the technician with a quick and easy way to identify the type and percentage of refrigerant (R-134a, R-12, R-22, or flammable hydrocarbon). The analyzer can also provide the percentage of air in the A/C system and automatically purge air from the system.

The A/C Refrigerant Analyzer is designed to identify vapor gas samples taken directly from automotive air conditioning systems or refrigerant storage cylinders. Refrigerant vapor passes through the multiple sensor Non-Dispersive Infra-Red (NDIR) sensing unit. The microprocessor calculates each refrigerant type and purity percentage which is displayed on the analyzer's Liquid Crystal Display (LCD).

The analyzer identifies the purity percentage of R-134a, R-12, R-22, hydrocarbon; and air in the sample. If the purity percentage of the R-134a or R-12 is 98% or greater by weight, a green "PASS" Light Emitting Diode (LED) will light. If refrigerants R-134a or R-12 do not meet 98% purity levels, the red "FAIL" LED will light. Levels of R-22 and flammable hydrocarbons above 2% will light the red "FAIL" light. If a hydrocarbon is detected above 5%, both the "FAIL" light and "HYDROCARBON" light will illuminate and a horn will sound alerting the user of potential hazards.

The percent of air contained in the sample will be displayed if the R-134a or R-12 content is 98% or above. The analyzer eliminates the effect of air

when determining the refrigerant sample content because air is not considered a contaminant although air can affect A/C system performance. Air will automatically be purged until a pure refrigerant with a less than 2% by weight air measurement is reached.

Recovery of Contaminated Refrigerant

If contaminated refrigerant is detected, DO NOT recover the refrigerant into your R-134a or R-12 recovery/recycling equipment. Take the following actions:

1. Repeat the test to verify contaminated refrigerant is present.

2. Advise the customer of the contaminated A/C system and any additional cost to repair the system. The customer may wish to return to the service facility which performed the last A/C service.

3. Recover the contaminated refrigerant using suitable recovery-only equipment designed for capturing and storing contaminated refrigerant. This equipment must only be used to recover contaminated refrigerant to prevent the spread to other vehicles. As an alternative, contact an A/C service facility in your area which has the proper equipment for refrigerant recovery.

Repairing A Contaminated A/C System

Once the contaminated refrigerant is removed from the system it will be necessary to repair the system. Ford recommends that you do the following to be sure a quality repair is made:

1. Determine the cause of the failure.

2. Determine which parts will need to be replaced.

3. Flush the heat exchangers to remove any oil that may be degraded due to the contaminated refrigerant.

4. Install a new suction/accumulator.

5. Properly oil match the system to verify that the correct amount of clean refrigerant oil is present in the system.

6. Evacuate the system for 45 minutes.

7. Recharge the system, verify proper operation, and leak test.

Disposal of Contaminated Refrigerant

Disposal of contaminated refrigerant is a new process to the automotive industry Listed below are companies that will assist with disposal of contaminated refrigerant. Ford Motor Company has not evaluated the processes of the listed refrigerant disposal companies and is not endorsing or promoting their companies Business transactions are between the dealership and disposal companies. Disposal costs will vary between $3.00 and $5.00 per pound, plus the cost of round trip cylinder shipping.

^ Omega Refrigerant Reclamation

^ 5263 North Fourth St.

^ Irwindale, CA 91706

^ (310) 698-0991 FAX: (310) 696-7908

^ Full Cycle Global

^ 2966 Wireton

^ Blue Island, IL 60406

^ (708) 388-8551 FAX: (708) 399-6550

^ U.S. Refrigerant Reclaim, Inc.

^ 12420 North Green River Road

^ Evansville, IN 47711

^ (800) 207-5931 FAX: (812) 867-1463

^ Full Cycle Global

^ 343 South Airline Highway

^ Gonzales, LA 70737

^ (504) 644-5333 FAX: (504) 644-1609

^ CFC Reclamation

^ 1321 Swift North

^ Kansas City, MO 64116

^ (816) 471-2511

^ Full Cycle Global

^ 550 James St.

^ Lakewood, NJ 08701

^ (908) 370-3400 FAX: (908) 370-3088

^ National Refrigerants, Inc.

^ 11401 Roosevelt Blvd.

^ Philadelphia, PA 19154

^ (215) 698-6620 FAX: (215) 602-8205

^ Gartech Refrigerant Reclamation

^ 2002 Platinum

^ Garland, TX 75042

^ (214) 272-4070 FAX: (214) 272-6548

^ Refrigerant Reclaim Services

^ 121 S. Norwood Dr.

^ Hurst, TX 76053-7807

^ (817) 282-0022 FAX: (800) 831-6182

^ Full Cycle Global

^ 2055 Silber, Suite 109

^ Houston, TX 77055

^ (713) 681-7370 FAX: (713) 681-9947

^ Refrigerant Reclaim, Inc.

^ 122 Old Stage Coach Road

^ Dumfries, VA 22026

^ (800) 238-5902 FAX: (703) 441-0393