# OPERATION & SERVICE MANUAL


## Model: 17-7503C7000
## Mobile Air Conditioner
## 230 VAC – 1 Phase – 60 Hz

09/2023 – Rev. 08

**For Spare Parts, Operations & Service Manuals or Service Needs**
**Scan the QR code or visit Tronair.com/aftermarket**

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| REVISION | DATE | TEXT AFFECTED |
|---|---|---|
| 03 | 03/2006 | Major Revision |
| 04 | 06/2006 | Added Appendix III |
| 05 | 04/2007 | Modified 3.1, 6.2, and Parts Lists |
| 06 | 12/2007 | Removed Electrical Schematic |
| 07 | 10/2009 | Modified 1.0 Description, 2.1 Usage, 3.2 Ratings, 3.3 Electrical Data, 5.3 Check For Refrigerant Leaks, 7.5 Refrigerant Charge and Appendix I, Removed 7.6 Package Service Training |
| 08 | 09/2023 | Major revision |

## TABLE OF CONTENTS

**PAGE**

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## 1.0 PRODUCT INFORMATION

### 1.1 DESCRIPTION

The Tronair Model 17-7503C7000 Mobile Air Conditioner is a complete portable aircraft ground cooling unit designed for corporate aviation departments, FBO's, and regional/commuter airlines.

The Mobile Air Conditioner provides pre-cooling prior to passenger arrival, as well as during ramp maintenance work.

The 4 ton air conditioner provides cool air using R-410A, environmentally "safe", refrigerant *(Reference Appendix I SDS)* when plugged into 1 phase, 60 Hz, 230 power source.

### 1.2 MODEL & SERIAL NUMBER

Reference nameplate on unit

### 1.3 MANUFACTURER

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## 2.0 USAGE AND SAFETY INFORMATION

### 2.1 USAGE

The Tronair Model 17-7503C7000 Mobile Air Conditioner provides 45,000 Btu/hr of cool air at 1,200-2,000 cfm for aircraft cabin comfort.

### 2.2 SAFETY PRECAUTIONS

To ensure safe operations please read the following statements and understand their meaning. Also refer to your equipment manufacturer's manual for other important safety information. This manual contains safety precautions which are explained below. Please read carefully.

**WARNING!**
Warning is used to indicate the presence of a hazard that can cause ***severe personal injury, death, and/or substantial property damage*** if the Warning Notice is ignored.

**CAUTION!**
Caution is used to indicate the presence of a hazard, which will or can cause ***minor personal injury or property damage*** is the Caution Notice is ignored.

**Accidental Starts!** Before servicing the equipment, always disconnect the power cord to prevent the air conditioner from starting accidentally. Ground leads to prevent sparks that could cause fires.

**Rotating Parts!** Keep hands, feet, hair, and clothing away from all moving parts to prevent injury. Never operate the air conditioner with covers, shrouds, or guards removed.

**Hot Parts!** Components can get extremely hot from operation. To prevent severe burns, do not touch these areas while the air conditioner is running or immediately after it is turned off. Never operate the air conditioner with heat shields or guards removed.

**Electrical Shock!** Never touch electrical wires or components while the air conditioner is running. They can be sources of electrical shock.

Do not operate air conditioner with cabinet panels removed.

2.3 SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform the basic maintenance functions of cleaning coils and filters and replacing filters. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit, and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for unbrazing operations. Have fire extinguisher available for all brazing operations.

**WARNING!**

**Air conditioner unit must be on a level surface or it may not operate correctly.**

**Before performing service or maintenance operations on unit, turn off main power switch to unit.**

**Electrical shock could cause personal injury.**

## 3.0 TRAINING

3.1 TRAINING REQUIREMENTS

The employer of the operator is responsible for providing a training program sufficient for the safe operation of the unit.

3.2 TRAINING PROGRAM

The employer provided operator training program should cover safety procedures concerning use of the unit in and around the intended aircraft at the intended aircraft servicing location.

3.3 OPERATOR TRAINING

The operator training should provide the required training for safe operation of the unit.

**NOTE: Maintenance and Trouble Shooting are to be performed by a skilled and trained technician.**

## 4.0 FEATURES, BENEFITS AND RATINGS

Every compact one-piece unit arrives fully assembled, charged, tested and ready to run.

### 4.1 FEATURES/BENEFITS

- **Durable, Dependable Construction** – Designed for durability in any climate, the weather-resistant cabinets are constructed of galvanized steel, bonderized, and all exterior panels are coated with a pre painted baked enamel finish. The paint finish is non-chalking, and is capable of withstanding ASTM B117 500-hour Salt Spray Test. All internal cabinet panels are primed, permitting longer life and a more attractive appearance for the entire unit. Totally enclosed condenser-fan motor and permanently lubricated bearings provide additional unit dependability.
- **Proven Compressor Reliability** – Design techniques feature computer-programmed balance between compressor, condenser and evaporator. Carrier-specified hermetic compressors are equipped with compressor over current and over temperature protection to ensure durability.
- **Extra Receptacles** – An external, covered 115 volt Ground Fault Interrupt (GFI) receptacle is provided as a convenient power source for drills, lights, refrigerant recovery units, or other electrical service tools. Simply connect the outlet to a field-supplied and properly fused branch circuit power supply.
- Pre-coated aluminum fin coil
- High pressure switch
- Loss of charge/low pressure switch
- Freeze protection switch
- Non-corrosive, sloped condensate drain pan, meets ASHRAE 62-89 (IAQ)
- Two inch (2") return-air filters
- Includes exclusive Acutrol™ metering device to precisely control refrigerant flow (preventing slugging and flood-back) while maintaining optimum unit performance.
- The wheels lock with the towbar in the upright and locking position.
- 12 inch diameter 25 ft long blower hose (with storage compartment), connects quickly and easily to the air conditioning unit. The hose will not fully inflate during the cooling or heating process.
- Unit is designed to cool and/or heat an aircraft through a window or door opening.

### 4.2 RATINGS

**Air Conditioning and Refrigeration Institute (ARI) Capacity Ratings**

| Nominal Tons | Standard CFM | Net Cooling Capacity (Btuh) | Total kW | SEER | Sound Rating (db) |
|---|---|---|---|---|---|
| 4 | 1200-2000 | 45,000 | 4.0 | 13.0 | 85 |

**LEGEND**

**db** – decibles, Sound Levels
**Btuh** – British Thermo unit/hour
**kW** – Kilowatt
**SEER** – Seasonal Energy Efficiency Ratio.

NOTES:

1. Rated in accordance with ARI Standards 210/240-06 or 360/360-04.
2. Ratings are net values, reflecting the effects of circulating fan heat.

### 4.3 ELECTRICAL DATA

**ELECTRICAL DATA**

| Nominal V-PH-Hz | Voltage Range | | Compr (each) | | OFM | | | IFM | Power Supply | | Disconnect Size | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min | Max | RLA | LRA | Quantity | Hp | FLA | FLA | MCA | MOCP †† | FLA | LRA |
| 230-1-60 | 187 | 253 | 21.8 | 117 | 1 | 1/4 | 1.5 | 4.9 | 33.7 | 50 | 32 | 133 |

**LEGEND**

**IFM** – Indoor (Evaporator) Fan Motor
**RLA** – Rated Load Amps
**FLA** – Full Load Amps
**MOCP** – Maximum Overcurrent Protection
**OFM** – Outdoor (Condenser) Fan Motor
**LRA** – Locked Rotor Amps
**MCA** – Minimum Circuit Amps
**††** – Fuse or HACR Circuit Breaker

4.4 COMPONENT LOCATION

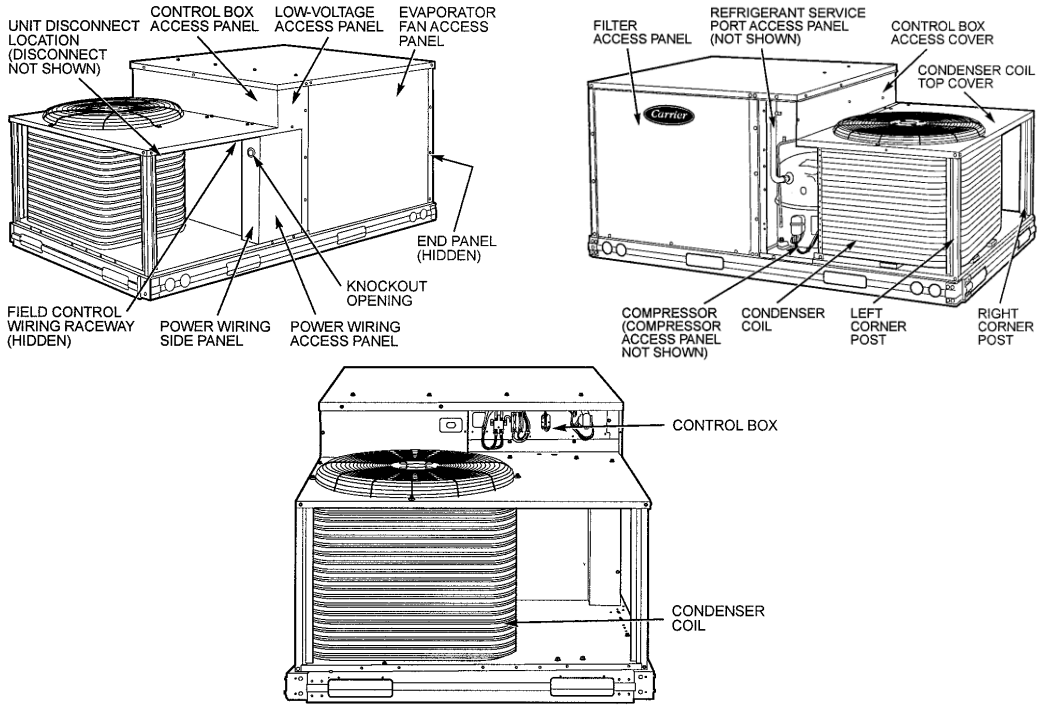


**FIGURE 1 – Typical Component Location**

4.5 TRAILER

- Welded steel frame construction
- Tapered roller bearings; may be re-lubricated, sealed
- Wheel.....4 hole, 4 inch bolt circle
- Tires .....Size – 4.80 x 8 inch diameter ..... Pressure – 50 psi (Rear)
  Size – 4 x 12.6 inch diameter ..... Pressure – 85 psi (Front)

## 5.0 ELECTRICAL CONNECTIONS

**CAUTION!**

**Voltage to compressor terminals during operation must be within voltage range indicated on unit nameplate.**

**NOTE: In compliance with NEC requirements for multi-motor and combination load equipment (refer to NEC Articles 430 and 440), the over current protective device for the unit shall be fuse or HACR breaker. See section 3.3 Electrical Data for size.**

**WARNING!**

**Unit cabinet must have an uninterrupted, unbroken electrical ground to minimize the possibility of personal injury if an electrical fault should occur.**

**This ground consists of an electrical wire connected to unit ground lug in control compartment when installed in accordance with NEC (National Electrical Code), ANSI (American National Standards Institute)/NFPA (National Fire Protection Association), latest edition (in Canada, Canadian Electrical Code CSA [Canadian Standards Association] C22. 1) and local electrical codes.**

**Failure to follow this warning could result in the installer being liable for personal injury of others.**

### 5.1 ON/OFF (DISCONNECT) SWITCH LOCATION

The On/Off switch (Disconnect) is mounted on the unit under the top panel and behind the condenser coil. ***Reference Figure 1 – and Figure 2***.

This factory-installed, internally-mounted, NEC (National Electrical Code) and UL (Underwriters' Laboratories) approved non-fused On/Off switch (Disconnect) provides unit power shutoff.

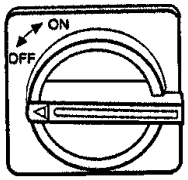


**FIGURE 2**
**Unit Mounted Disconnect Switch**

## 6.0 PRE START-UP

### 6.1 PRIOR TO OPERATION

Prior to operating the Mobile Air Conditioner, the user should become familiar with the owner's operating manual.

**CAUTION!**

1. **Do not jumper any safety devices when operating the unit.**
2. **Do not operate the compressor when the outdoor temperature is below 40° F (4° C) unless accessory low-temperature kit is installed.**
3. **Do not rapid-cycle the compressor. Allow five (5) minutes between "On" cycles to prevent compressor damage.**

**WARNING!**

1. **Failure to observe the following warnings could result in serious personal injury:**
2. **Follow recognized safety practices and wear protective goggles when checking or servicing refrigerant system. Reference Appendix I – SDS.**
3. **Do not operate compressor or provide any electric power to unit unless compressor terminal cover is in place and secured.**
4. **Do not remove compressor terminal cover until all electrical sources are disconnected.**
5. **Relieve all pressure from both high and low pressure sides of the system before touching or disturbing anything inside terminal box if refrigerant leak is suspected around compressor terminals. Use accepted methods to recover refrigerant. Reference Appendix I – SDS.**
6. **Never attempt to repair soldered connection while refrigerant system is under pressure.**
7. **Do not use torch to remove any component. System contains oil and refrigerant under pressure. To remove a component, wear protective goggles and proceed as follows:**
8. **Shut off electrical power to unit.**
9. **Relieve all pressure from system using both high and low pressure ports. Use accepted methods to recover refrigerant. Reference Appendix I – SDS.**
10. **Cut component connecting tubing with tubing cutter and remove component from unit.**
11. **Carefully unsweat remaining tubing stubs when necessary. Oil can ignite when exposed to torch flame.**

## 6.2 GENERAL INSPECTION

1. Remove all access panels.
2. Read and follow instructions on all WARNING, CAUTION, and INFORMATION labels attached to and/or shipped with unit.
3. Make the following inspections:
   a. Inspect for shipping and handling damages such as broken lines, loose parts, disconnected wires, etc.
   b. Inspect for oil at all refrigerant tubing connections and on unit base. Detecting oil generally indicates a refrigerant leak. Leak-test all refrigerant tubing connections using electronic leak detector or liquid-soap solution. If a refrigerant leak is detected, see section 5.3 Check for Refrigerant Leaks.
   c. Inspect all field and factory wiring connections. Be sure that connections are completed and tight.
   d. Inspect coil fins. If damaged during shipping and handling, carefully straighten fins with a fin comb.
4. Verify the following conditions:
   a. Make sure that condenser-fan blade is correctly positioned in fan orifice. Leading edge of blade should be two inches (2 inch/51 mm) from condenser inlet grille and one-half inch (½ in/13mm) from fan deck.
   b. Make sure that air filter(s) is in place.
   c. Make sure that condensate drain pan and trap are filled with water to ensure proper drainage.
   d. Make sure that all tools and miscellaneous loose parts have been removed.

## 6.3 CHECK FOR REFRIGERANT LEAKS

Locate and repair refrigerant leaks and charge the unit as follows:

1. Using both high-pressure and low-pressure ports, locate leaks and recover remaining refrigerant to relieve system pressure.
2. Repair leak following accepted practices.
3. Check system for leaks using an approved method.
4. Evacuate refrigerant system and recover refrigerant if no additional leaks are found.
5. Charge unit with R-410A refrigerant, using a volumetric-charging cylinder or accurate scale. *Refer to unit rating plate for required charge.* Be sure to add extra refrigerant to compensate for internal volume of filter drier.

## 6.4 CHECK COOLING EFFECTS

Plug in unit. Turn On/Off switch to "On" position. Fan should be on and blowing correctly. After approximately 30 seconds, condenser should "kick on". Observe that compressor, condenser fan, and evaporator blower motors start. Observe that cooling cycle shuts down when control setting is satisfied.

## 7.0 OPERATION

### 7.1 OPERATING INSTRUCTIONS

Operate the Mobile Air Conditioner in accordance with the operating instructions provided on the instrument panel. ***Reference Figure 4*** below.

A description of each step of the STARTING and SHUTOFF sequence is given, along with a brief discussion of what is to be expected.

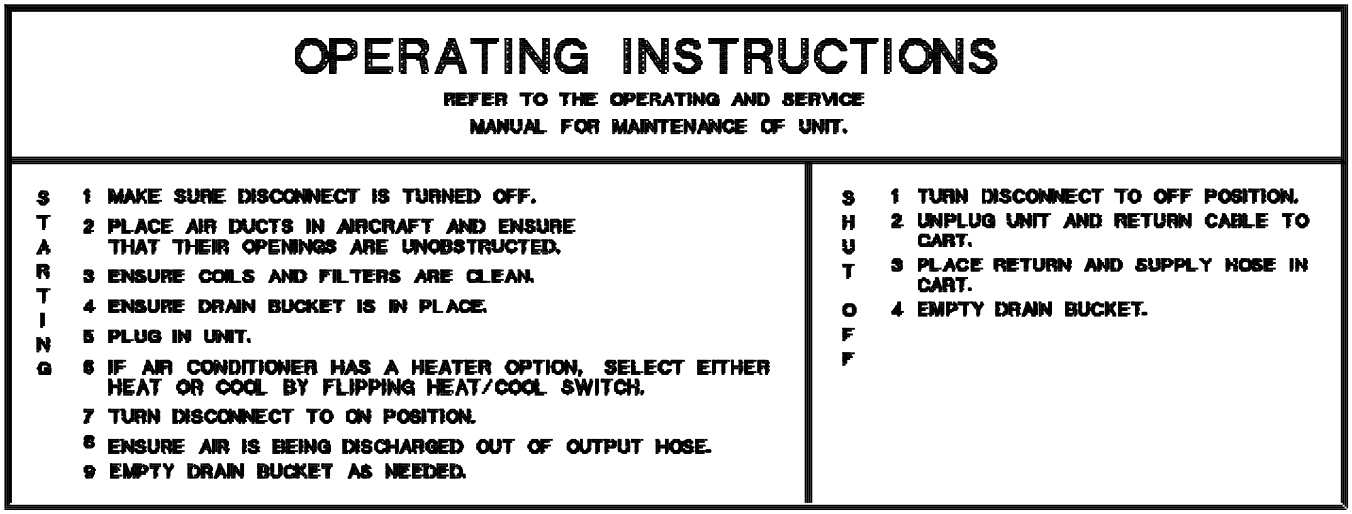


**FIGURE 4 – Operating Instructions Label**

### 7.2 STARTING MOBILE AIR CONDITIONER

1. Ensure On/Off switch (Disconnect) is turned to "Off" position. The On/Off (Disconnect) switch is "Off" when turned counter-clockwise. ***Reference Figure 2.***

**WARNING!**

**Until ready for use, always leave this switch in the "Off" position.**

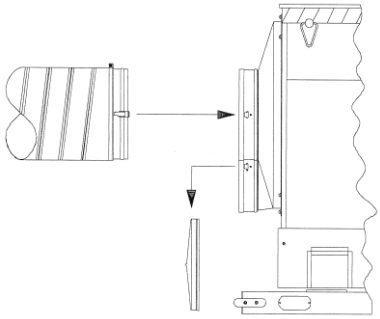

**FIGURE 6**

2. Place air duct in aircraft and ensure that the opening is unobstructed. Remove yellow output air duct from their storage compartment located under the unit. Remove yellow dust caps from the input and output duct openings located on the back of the air conditioner and place in the storage compartments. Attach yellow output air duct to the air conditioner via the duct openings located on the back of the air conditioner. ***See Figure 6.*** Place other end of yellow duct into the aircraft.
3. Ensure coils and filters are clean. Refer to section 7.1 Cleaning starting in this manual.
4. Ensure drain bucket is in place. The Mobile Air Conditioner does not have a factory supplied drain bucket. Depending on your usage, a drain bucket or any condensate collector device may not be needed. Below are two suggestions you may utilize if you do not want the condensation to collect on the floor/ramp:
   a. Purchase a bucket with a lid on it and the lid has at least a 13/16 inch diameter hole. The hole in the bucket will receive the 3/4 inch diameter yellow condensate hose coming out of the Mobile Air Conditioner.
   b. Buy a ½ inch diameter male garden hose coupler and attach it to the end of the ¾ inch diameter yellow condensate hose coming out of the Mobile Air Conditioner. Also, purchase any length garden hose to attach to the ½ inch diameter garden hose coupler. By doing the above, you will be able to direct the condensate to any location.

**WARNING!**

**The end of the garden hose can not be higher than the condensate trap located under the air conditioning unit. Damage to equipment and/or electrical shock may occur.**

7.2 STARTING MOBILE AIR CONDITIONER *(continued)*

5. Plug in unit. The Mobile Air Conditioner does not come factory supplied with a plug. Purchase a plug according to your receptacle. See section 4.0 Electrical Connections for important instructions concerning electrical connections.
6. This unit is not equipped with a heater option. Go to step 7.
7. Turn On/Off switch (Disconnect) to "On" position. Turn On/Off switch (Disconnect) to "On" position by turning clockwise. See ***Figure 2***.
8. Check supply air duct to ensure cool air is being discharged when condenser is on. When unit is turned "On", the evaporator blower fan located inside the fan access panel (***Reference Figure 1***) begins rotating. After approximately 30 seconds, the compressor and condenser fan "kicks on".

**NOTE: If the unit has been sitting for a extended amount of time without use and/or after considerable moving of unit (especially during shipping), the first 30 second delay may be as long as five (5) minutes due to removal of excessive pressure build-up against the head of the compressor.**

   a. These two items will continue to function until a temperature of 55° F is reached inside the air conditioner unit.

**NOTE: If a temperature of less than 50° F is obtained, the freeze protection switch will open and the air conditioner unit will not function until the freeze protection switch is reset.**

   b. When a temperature of approximately 60° F is reached, the compressor and condenser fan will cycle back on. At no time will the evaporator blower fan ceases to operate as long as the On/Off (Disconnect) switch is in the "On" position.

9. Empty drain bucket as needed to keep condensate from collecting on the floor/ramp.

7.3 SHUT OFF MOBILE AIR CONDITIONER

1. Turn Disconnect to "Off" position. The On/Off (Disconnect) switch is "Off" when turned counter-clockwise. ***Reference Figure 2.***
2. Place return and supply hose in cart.
3. Unplug unit and return cable to cart. The cable hanger is located on the side of the unit. Ensure the cable does not touch the ground.
4. Empty drain bucket.

## 8.0 MAINTENANCE AND SERVICE

**CAUTION!**

**When servicing unit, shut off all electrical power to unit to avoid shock hazard or injury from rotating parts.**

### 8.1 CLEANING

Inspect unit interior at the beginning of each heating and cooling season or as operating conditions require.

Evaporator Coil – Inspect and clean coil prior to each heating and cooling season, and as required by location.

1. Turn unit power off.
2. Slide filters (located in the hinged access panel) out of unit. Replace if dirty. ***See Figure 6.***

**NOTE: This panel permits quick and simple filter access and prevents panels from being dropped.**

3. Clean coil using a commercial coil cleaner or dishwasher detergent in a pressurized spray canister. Wash both sides of coil and flush with clean water. For best results, back flush toward return-air section to remove foreign material.
4. Flush condensate pan.
5. Reinstall filters.
6. Reconnect wiring.
7. Close filter-hinged access panel.

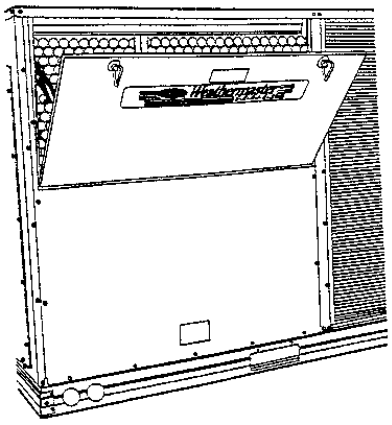

**FIGURE 6**
**Filter Hinged Access Panel**

**Condenser Coil** – Inspect coil monthly. Clean condenser coil annually, and as required by location and outdoor air conditions.

**One-Row Coils** – To access one-row coils, remove screws securing condenser-fan grille to condenser coil top cover. Place grille on top of condenser coil top cover as shown in ***Figure 7***. It is not necessary to remove the top cover.

Use a water hose or other suitable equipment to remove dirt and debris. Clean the outer surfaces with a stiff brush in the normal manner.

Reverse the procedure outlined above to reinstall the condenser-fan grille and condenser fan top cover.

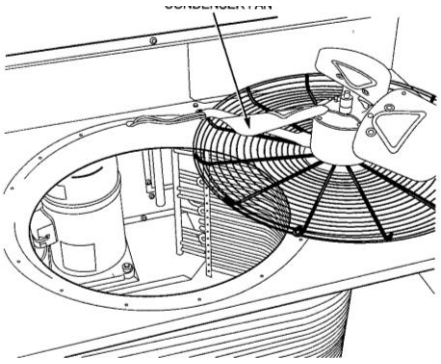

**FIGURE 7**
**Condenser Coil Cleaning**

**Condensate Drain** – Check and clean each year at start of cooling season. In winter, keep drain dry or protect against freeze-up. Condensate drain and tray are located on the bottom of the air conditioner.

**Filters** – Clean or replace at start of each heating and cooling season, or more often if operating conditions require it. Replacement filters must be same dimensions as original filters.

### 8.2 LUBRICATION

**Compressors** – Each compressor is charged with the correct amount of oil at the factory.

**Fan-Motor Bearings** – Fan-motor bearings are of the permanently lubricated type. No further lubrication is required. No lubrication of condenser or evaporator-fan motors is required.

### 8.3 CONDENSER-FAN ADJUSTMENT

1. Shut off unit power supply, tag and disconnect.
2. Remove condenser-fan assembly (grille, motor cover, and fan).
3. Loosen fan hub setscrews.
4. Adjust fan height as shown in ***Figure 8.***
5. Tighten setscrews.
6. Replace condenser-fan assembly.

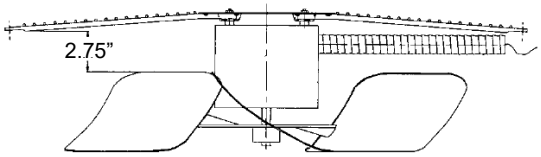


**FIGURE 8**
**Condenser Fan Adjustment**

### 8.4 CONDENSER COIL GRILLE

Condenser coil grille is shipped factory installed. No adjustments are required.

## 8.5 REFRIGERANT CHARGE

Amount of refrigerant charge is listed on unit nameplate. Refer to Carrier Charging, Recovery, Recycling, and Reclamation training manual and the following procedures.

- Unit panels must be in place when unit is operating during charging procedure.
- **No Charge** – Use standard evacuating techniques. After evacuating system, weigh in the specified amount of refrigerant.
- **Low Charge Cooling** – Vary refrigerant until the conditions of the cooling chart in manual are met. Note the charging chart is different from type normally used. Chart is based on charging the units to the correct superheat for the various operating conditions. Accurate pressure gage and temperature sensing device are required. Connect the pressure gage to the service port on the suction line. Mount the temperature sensing device on the suction line and insulate it so that outdoor ambient temperature does not affect the reading. Indoor-air cfm must be within the normal operating range of the unit.

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**To Use Cooling Charging Chart:**

Take the outdoor ambient temperature and read the suction pressure gage. Refer to chart to determine what suction temperature should be. If suction temperature is high, add refrigerant. If suction temperature is low, carefully reclaim some of the charge. Recheck the suction pressure as charge is adjusted.

## 9.0 TROUBLESHOOTING

Refer to Troubleshooting Tables and ***Figure 8*** on previous page for additional information.

| TABLE - COOLING SERVICE ANALYSIS | | |
|---|---|---|
| **Problem** | **Cause** | **Remedy** |
| Compressor and condenser fan will not start. | Power failure | Call Power Company |
| | Fuse blown or circuit breaker tripped | Replace fuse or reset circuit breaker |
| | Defective thermostat, contactor, transformer, or control relay | Replace component. |
| | Insufficient line voltage | Determine cause and correct. |
| | Incorrect or faulty wiring | Check wiring diagram and rewire correctly |
| | Thermostat setting too high | Lower thermostat setting below room temperature |
| Compressor will not start but condenser fan runs. | Faulty wiring or loose connections in compressor circuit | Check wiring and repair or replace |
| | Compressor motor burned out, seized, or internal overload open | Determine cause. Replace compressor |
| | Defective run/start capacitor, overload, start relay | Determine cause and replace |
| | One leg of three-phase power dead | Replace fuse or reset circuit breaker |
| Compressor cycles (other than normally satisfying thermostat) | Refrigerant overcharge or undercharge | Recover refrigerant, evacuate system, and recharge to nameplate |
| | Defective compressor | Replace and determine cause |
| | Insufficient line voltage. | Determine cause and correct |
| | Blocked condenser | Determine cause and correct |
| | Defective run/start capacitor, overload, or start relay | Determine cause and replace |
| | Defective thermostat | Replace thermostat |
| | Faulty condenser-fan motor or capacitor | Replace |
| | Restriction in refrigerant system | Locate restriction and remove |
| Compressor operates continuously | Dirty air filter | Replace filter |
| | Unit undersized for load | Decrease load or increase unit size |
| | Thermostat set too low | Reset thermostat |
| | Low refrigerant charge | Locate leak; repair and recharge |
| | Leaking valves in compressor | Replace compressor |
| | Air in system | Recover refrigerant, evacuate system, and recharge |
| | Condenser coil dirty or restricted | Clean coil or remove restriction |
| Excessive head pressure | Dirty air filter. | Replace filter |
| | Dirty condenser coil | Clean coil |
| | Refrigerant overcharged | Recover excess refrigerant |
| | Air in system | Recover refrigerant, evacuate system, and recharge |
| | Condenser air restricted or air short-cycling | Determine cause and correct |

## 9.0 TROUBLESHOOTING *(continued)*

Refer to Troubleshooting Tables and ***Figure 8*** – Page 9 for additional information.

| TABLE - COOLING SERVICE ANALYSIS | | |
|---|---|---|
| **Problem** | **Cause** | **Remedy** |
| Head pressure too low | Low refrigerant charge | Check for leaks; repair and recharge |
| | Compressor valves leaking | Replace compressor |
| | Restriction in liquid tube | Remove restriction |
| Excessive suction pressure | High head load | Check for source and eliminate |
| | Compressor valves leaking | Replace compressor |
| | Refrigerant overcharged | Recover excess refrigerant |
| Suction pressure too low | Dirty air filter | Replace filter |
| | Low refrigerant charge | Check for leaks; repair and recharge |
| | Metering device or low-side restricted | Remove source of restriction |
| | Insufficient evaporator airflow | Increase air quantity. Check filter and replace if necessary |
| | Temperature too low in conditioned area | Reset thermostat |
| | Outdoor ambient below 25° F | Install low-ambient kit |

## 10.0 PROVISION OF SPARES

10.1 SOURCE OF SPARE PARTS

Spare parts may be obtained from the manufacturer:

***TRONAIR***, Inc.
1 Air Cargo Pkwy East
Swanton, Ohio 43558 USA

Telephone: (419) 866-6301 or 800-426-6301
Fax: (419) 867-0634
E-mail: sales@tronair.com
Website: www.tronair.com

For Spare Parts, Operations & Service Manuals or Service Needs:
Scan the QR code or visit Tronair.com/aftermarket

## 11.0 IN SERVICE SUPPORT

Contact Tronair, Inc. for technical services and information. See Section 1.3 – Manufacturer.

## 12.0 GUARANTEES/LIMITATION OF LIABILITY

Tronair products are warranted to be free of manufacturing or material defects for a period of one year after shipment to the original customer. This is solely limited to the repair or replacement of defective components. This warranty does not cover the following items:

a) Parts required for normal maintenance
b) Parts covered by a component manufacturers warranty
c) Replacement parts have a 90-day warranty from date of shipment

If you have a problem that may require service, contact Tronair immediately. Do not attempt to repair or disassemble a product without first contacting Tronair, any action may affect warranty coverage. When you contact Tronair be prepared to provide the following information:

a) Product Model Number
b) Product Serial Number
c) Description of the problem

If warranty coverage is approved, either replacement parts will be sent or the product will have to be returned to Tronair for repairs. If the product is to be returned, a Return Material Authorization (RMA) number will be issued for reference purposes on any shipping documents. Failure to obtain a RMA in advance of returning an item will result in a service fee. A decision on the extent of warranty coverage on returned products is reserved pending inspection at Tronair. Any shipments to Tronair must be shipped freight prepaid. Freight costs on shipments to customers will be paid by Tronair on any warranty claims only. Any unauthorized modification of the Tronair products or use of the Tronair products in violation of cautions and warnings in any manual (including updates) or safety bulletins published or delivered by Tronair will immediately void any warranty, express or implied.

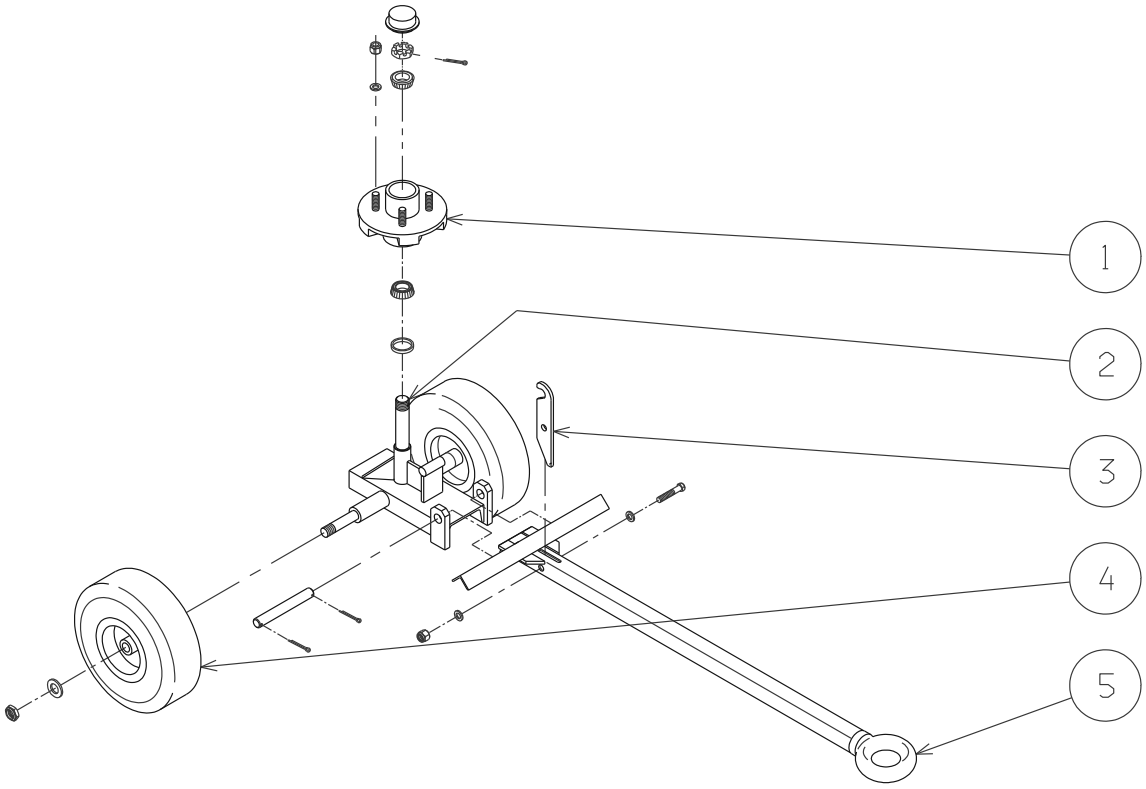
The obligations of Tronair expressly stated herein are in lieu of all other warranties or conditions expressed or implied. **Any unauthorized modification of the Tronair products or use of the Tronair products in violations of cautions and warnings in any manual (including updates) or safety bulletins published or delivered by Tronair will immediately *void any warranty, express or implied* and Tronair *disclaims any and all liability for injury (WITHOUT LIMITATION and including DEATH), loss or damage arising from or relating to such misuse*.**

## 13.0 APPENDICIES

APPENDIX I SDS - R-410A Refrigerant

# Parts List

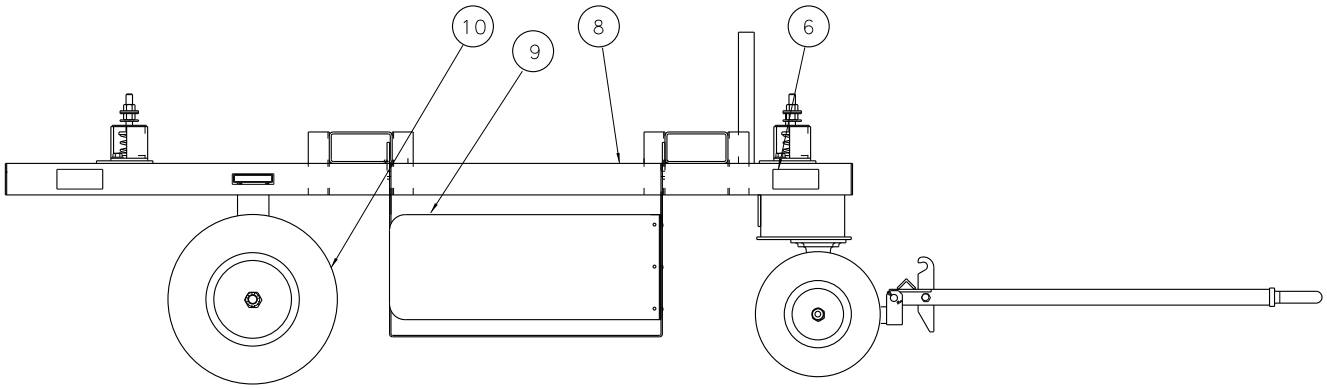
**When ordering replacement parts/kits, please specify model, serial number and color of your unit.**

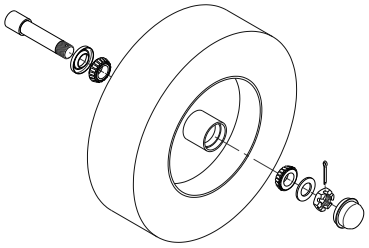



| Item | Part Number | Description | Qty |
|---|---|---|---|
| 1 | H-1335 | HUB | 1 |
| 2 | Z-2449-01 | WELDMENT, STEERING AXLE | 1 |
| 3 | **K-1320** | **KIT, LEVER**; *CONSISTS OF:* | |
| | G-1100-109522 | BOLT, HEX HEAD, GRADE 5, 1/2-20 X 2-1/4" LONG | 1 |
| | G-1202-1090N | STOPNUT 1/2-20 ELASTIC | 1 |
| | G-1250-1090N | FLATWASHER, 1/2 NARROW | 2 |
| | J-1626 | LEVER | 1 |
| 4 | **K-2084** | **KIT, WHEEL (SINGLE);** *consists of:* | |
| | G-1203-1115 | STOPNUT, 3/4-16 ELASTIC | 1 |
| | U-1041 | WHEEL, PNEUMATIC TIRE | 1 |
| 5 | **K-3361** | **KIT, TONGUE;** *consists of:* | |
| | G-1301-03 | PIN, COTTER (1/8" DIAMETER X 1-1/2" LONG) | 2 |
| | R-1122 | PIN | 1 |
| | Z-4838-01 | WELDMENT, TONGUE | 1 |

# Parts List

**When ordering replacement parts/kits, please specify model, serial number and color of your unit.**



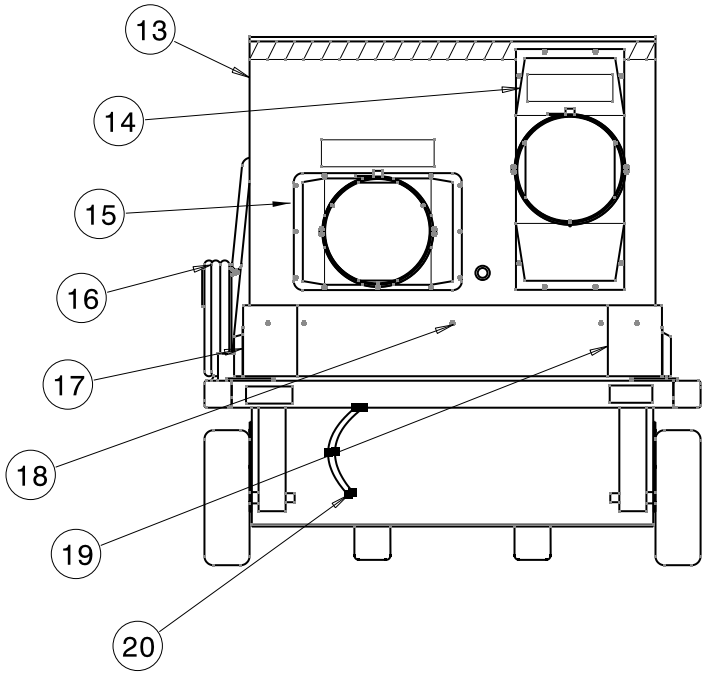



ITEM 10 DETAIL

| Item | Part Number | Description | Qty |
|---|---|---|---|
| 8 | Z-4734-01 | WELDMENT, FRAME | 1 |
| 10 | Z-1217 | ASSEMBLY, WHEEL, TIRE & BEARING | 1 |
| 6 | **K-3344** | **KIT, ISOLATOR;** *consists of:* | |
| | G-1100-109514 | BOLT, HEX HEAD, GRADE 5, 1/2-20 X 1-1/2" LONG | 2 |
| | G-1202-1090N | STOPNUT 1/2-20 ELASTIC | 4 |
| | G-1250-1090N | FLATWASHER, 1/2 NARROW | 2 |
| | H-2396 | ISOLATOR | 1 |
| 9 | **K-4120** | **KIT, VENT HOSE HOLDER** | **1** |

# Parts List

**When ordering replacement parts/kits, please specify model, serial number and color of your unit.**




| Item | Part Number | Description | Qty |
|---|---|---|---|
| 13 | H-5170 | AIR CONDITIONER | 1 |
| 14 | Z-6592 | ASSEMBLY, CLAMP | 1 |
| 15 | Z-6591 | ASSEMBLY, CLAMP | 1 |
| 20 | Z-4733 | ASSEMBLY, DRAIN | 1 |
| N/S | H-303 | HOSE, INSULATED VENT | 1 |
| N/S | H-2459 | FILTER, AIR CONDITIONER (16" X 25" X 2") | 1 |
| 16 | **K-3348** | **KIT, ELECTRICAL CABLE;** *consists of:* | |
| | EC-1176-04 | LOCKNUT, CONDUIT | 1 |
| | EC-1433-21 | CONNECTOR, STRAIN RELIEF | 1 |
| | EC-1507-02*0600 | CABLE, TYPE 50 ELECTRICAL 600 V, 50 FT LONG | 1 |
| | G-1159-105010 | SCREW, ROUND HEAD CROSS RECESS MACHINE | |
| | | 1/4-20 X 1" LONG | 1 |
| | G-1202-1050 | STOPNUT, 1/4-20 ELASTIC | 1 |
| | G-1250-1050N | FLATWASHER, 1/4 NARROW | 2 |
| | H-1721-10 | CLAMP, ELECTRICAL | 1 |
| 17 | **K-3349** | **KIT, RIGHT HAND SHROUD;** *consists of:* | |
| | G-1189 | SCREW, HEX WASHER HEAD, #10 X 3/4" LONG | 7 |
| | S-1666-01 | SHROUD | 1 |
| | S-1667-01 | SHROUD | 1 |
| 18 | **K-3351** | **KIT, FRONT OR BACK SHROUD;** *consists of:* | |
| | G-1189 | SCREW, HEX WASHER HEAD, #10 X 3/4" LONG | 3 |
| | S-1663-01 | SHROUD | 1 |
| 19 | **K-3350** | **KIT, LEFT HAND SHROUD;** *consists of:* | |
| | G-1189 | SCREW, HEX WASHER HEAD, #10 X 3/4" LONG | 7 |
| | S-1664-01 | SHROUD | 1 |
| | S-1665-01 | SHROUD | 1 |

TRONAIR®

# APPENDIX I

# SDS (R-410A Refrigerant)

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

| | | |
|---|---|---|
| Product name | : | Genetron® 410A |
| MSDS Number | : | 000000009881 |
| Product Use Description | : | Refrigerant |
| Manufacturer or supplier's details | : | Honeywell International Inc.<br>101 Columbia Road<br>Morristown, NJ 07962-1057 |
| For more information call | : | 800-522-8001<br>+1-973-455-6300<br>(Monday-Friday, 9:00am-5:00pm) |
| **In case of emergency call** | : | **Medical: 1-800-498-5701 or +1-303-389-1414** |
| | : | **Transportation (CHEMTREC): 1-800-424-9300 or +1-703-527-3887** |
| | : | |
| | : | (24 hours/day, 7 days/week) |

## SECTION 2. HAZARDS IDENTIFICATION

**Emergency Overview**

| | | |
|---|---|---|
| Form | : | Liquefied gas |
| Color | : | colourless |
| Odor | : | weak |

**Classification of the substance or mixture**

| | | |
|---|---|---|
| Classification of the substance or mixture | : | Gases under pressure, Liquefied gas<br>Simple Asphyxiant |

**GHS Label elements, including precautionary statements**

Symbol(s) :

Signal word : Warning

Hazard statements : Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary statements : **Prevention:**
Use personal protective equipment as required.

**Storage:**
Protect from sunlight. Store in a well-ventilated place.

Hazards not otherwise classified : May cause eye and skin irritation.
May cause frostbite.
May cause cardiac arrhythmia.

**Carcinogenicity**

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture

| Chemical Name | CAS-No. | Concentration |
|---|---|---|
| Pentafluoroethane | 354-33-6 | 50.00 % |
| Difluoromethane | 75-10-5 | 50.00 % |

## SECTION 4. FIRST AID MEASURES

| | | |
|---|---|---|
| Inhalation | : | Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. Use oxygen as required, provided a qualified operator is present. Call a physician. Do not give drugs from adrenaline-ephedrine group. |
| Skin contact | : | After contact with skin, wash immediately with plenty of water. If there is evidence of frostbite, bathe (do not rub) with lukewarm (not hot) water. If water is not available, cover with a clean, soft cloth or similar covering. If symptoms persist, call a physician. |
| Eye contact | : | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In case of frostbite water should be lukewarm, not hot. If symptoms persist, call a physician. |
| Ingestion | : | Unlikely route of exposure. As this product is a gas, refer to the inhalation section. Do not induce vomiting without medical advice. Call a physician immediately. |

**Notes to physician**

| | | |
|---|---|---|
| Treatment | : | Because of the possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution and only in situations of emergency life support. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions. Treat frost-bitten areas as needed. |

## SECTION 5. FIREFIGHTING MEASURES

| | | |
|---|---|---|
| Suitable extinguishing media | : | The product is not flammable.<br>Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.<br>Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Specific hazards during firefighting | : | Contents under pressure.<br>This product is not flammable at ambient temperatures and atmospheric pressure.<br>However, this material can ignite when mixed with air under pressure and exposed to strong ignition sources.<br>Container may rupture on heating.<br>Cool closed containers exposed to fire with water spray. |

Do not allow run-off from fire fighting to enter drains or water courses.
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
In case of fire hazardous decomposition products may be produced such as:
Hydrogen halides
Hydrogen fluoride
Carbon monoxide
Carbon dioxide (CO2)
Carbonyl halides

Special protective equipment for firefighters : In the event of fire and/or explosion do not breathe fumes.
Wear self-contained breathing apparatus and protective suit.
No unprotected exposed skin areas.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Immediately evacuate personnel to safe areas.
Keep people away from and upwind of spill/leak.
Wear personal protective equipment. Unprotected persons must be kept away.
Remove all sources of ignition.
Avoid skin contact with leaking liquid (danger of frostbite).
Ventilate the area.
After release, disperses into the air.
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Avoid accumulation of vapours in low areas.
Unprotected personnel should not return until air has been tested and determined safe.
Ensure that the oxygen content is >= 19.5%.

Environmental precautions : Prevent further leakage or spillage if safe to do so.
The product evapourates readily.

Methods for cleaning up : Ventilate the area.

## SECTION 7. HANDLING AND STORAGE

### Handling

| | | |
|---|---|---|
| Handling | : | Handle with care.<br>Avoid inhalation of vapour or mist.<br>Do not get in eyes, on skin, or on clothing.<br>Wear personal protective equipment.<br>Use only in well-ventilated areas.<br>Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50 °C.<br>Follow all standard safety precautions for handling and use of compressed gas cylinders.<br>Use authorized cylinders only.<br>Protect cylinders from physical damage.<br>Do not puncture or drop cylinders, expose them to open flame or excessive heat.<br>Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material.<br>Do not remove screw cap until immediately ready for use.<br>Always replace cap after use. |
| Advice on protection against fire and explosion | : | The product is not flammable.<br>Can form a combustible mixture with air at pressures above atmospheric pressure. |

### Storage

| | | |
|---|---|---|
| Requirements for storage areas and containers | : | Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use.<br>Keep containers tightly closed in a dry, cool and well-ventilated place.<br>Storage rooms must be properly ventilated.<br>Ensure adequate ventilation, especially in confined areas.<br>Protect cylinders from physical damage.<br>Store away from incompatible substances. |

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | |
|---|---|---|
| Protective measures | : | Do not breathe vapour. |

| | | |
|---|---|---|
| | | Avoid contact with skin, eyes and clothing.<br>Ensure that eyewash stations and safety showers are close to the workstation location. |
| Engineering measures | : | General room ventilation is adequate for storage and handling.<br>Perform filling operations only at stations with exhaust ventilation facilities. |
| Eye protection | : | Wear as appropriate:<br>Safety glasses with side-shields<br>If splashes are likely to occur, wear:<br>Goggles or face shield, giving complete protection to eyes |
| Hand protection | : | Leather gloves<br>In case of contact through splashing:<br>Protective gloves<br>Neoprene gloves<br>Polyvinyl alcohol or nitrile- butyl-rubber gloves |
| Skin and body protection | : | Avoid skin contact with leaking liquid (danger of frostbite).<br>Wear cold insulating gloves/ face shield/ eye protection. |
| Respiratory protection | : | In case of insufficient ventilation, wear suitable respiratory equipment.<br>Wear a positive-pressure supplied-air respirator.<br>Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.<br>For rescue and maintenance work in storage tanks use self-contained breathing apparatus. |
| Hygiene measures | : | Handle in accordance with good industrial hygiene and safety practice.<br>Ensure adequate ventilation, especially in confined areas.<br>Avoid contact with skin, eyes and clothing.<br>Remove and wash contaminated clothing before re-use.<br>Keep working clothes separately. |
| Hygiene measures | : | Handle in accordance with good industrial hygiene and safety practice.<br>Ensure adequate ventilation, especially in confined areas.<br>When using do not eat, drink or smoke.<br>Remove and wash contaminated clothing before re-use.<br>Keep working clothes separately.<br>Do not breathe vapour.<br>Avoid contact with skin, eyes and clothing. |

**Exposure Guidelines**

| Components | CAS-No. | Value | Control parameters | Update | Basis |
|---|---|---|---|---|---|
| Difluoromethane | 75-10-5 | TWA : time weighted average | 2,200 mg/m3 (1,000 ppm) | 2007 | WEEL:US. AIHA Workplace Environmental Exposure Level (WEEL) Guides |
| Difluoromethane | 75-10-5 | TWA : time weighted average | (1,000 ppm) | 1994 | Honeywell:Limit established by Honeywell International Inc. |
| Pentafluoroethane | 354-33-6 | TWA : time weighted average | 4,900 mg/m3 (1,000 ppm) | 2007 | WEEL:US. AIHA Workplace Environmental Exposure Level (WEEL) Guides |
| Pentafluoroethane | 354-33-6 | TWA : time weighted average | (1,000 ppm) | | Honeywell:Limit established by Honeywell International Inc. |

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Physical state | : | Liquefied gas |
| Color | : | colourless |
| Odor | : | weak |
| pH | : | Note: neutral |
| Melting point/freezing point | : | Note: not determined |

| | | |
|---|---|---|
| Boiling point/boiling range | : | -48.5 °C |
| Flash point | : | Note: not applicable |
| Evaporation rate | : | > 1<br>Method: Compared to CCl4. |
| lower flammability limit | : | Note: None |
| upper flammability limit | : | Note: None |
| Vapor pressure | : | 14,844 hPa<br>at 21.1 °C(70.0 °F)<br>33,798 hPa<br>at 54.4 °C(129.9 °F) |
| Vapor density | : | 3 Note: (Air = 1.0) |
| Density | : | 1.08 g/cm3 at 21.1 °C |
| Water solubility | : | Note: no data available |
| Partition coefficient: n-octanol/water | : | log Pow: 1.48<br>Test substance: Ethane, pentafluoro- (HFC-125)<br><br>log Pow: 0.21<br>Test substance: Difluoromethane (HFC-32) |
| Ignition temperature | : | > 750 °C |
| Decomposition temperature | : | > 250 °C |

| | | |
|---|---|---|
| Global warming potential (GWP) | : | 1,975 |
| Ozone depletion potential (ODP) | : | 0 |

## SECTION 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Chemical stability | : | Stable under normal conditions. |
| Possibility of hazardous reactions | : | Hazardous polymerisation does not occur. |
| Conditions to avoid | : | Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50 °C.<br>Decomposes under high temperature.<br>Some risk may be expected of corrosive and toxic decomposition products.<br>Can form a combustible mixture with air at pressures above atmospheric pressure.<br>Do not mix with oxygen or air above atmospheric pressure. |
| Incompatible materials to avoid | : | Finely divided aluminium<br>Potassium<br>Calcium<br>Powdered metals<br>Aluminium<br>Magnesium<br>Zinc |
| Hazardous decomposition products | : | In case of fire hazardous decomposition products may be produced such as:<br>Hydrogen fluoride<br>Carbonyl halides<br>Carbon monoxide<br>Carbon dioxide (CO2) |

## SECTION 11. TOXICOLOGICAL INFORMATION

| | | |
|---|---|---|
| Acute inhalation toxicity<br>Pentafluoroethane | : | > 769000 ppm<br>Exposure time: 4 h |

Species: rat

Difluoromethane : LC50: > 520000 ppm
Exposure time: 4 h
Species: rat

Sensitisation
Pentafluoroethane : Cardiac sensitization
Species: dogs
Note: No-observed-effect level
75 000 ppm
Lowest observable effect level
100 000 ppm

Difluoromethane : Cardiac sensitization
Species: dogs
Note: No-observed-effect level
>350 000 ppm

Repeated dose toxicity
Pentafluoroethane : Species: rat
Application Route: Inhalation
Exposure time: (4 Weeks)
NOEL: 50000 ppm
Subchronic toxicity

Difluoromethane : Species: rat
Application Route: Inhalation
Exposure time: (90 d)
NOEL: 50000 ppm
Subchronic toxicity

Genotoxicity in vitro
Pentafluoroethane : Test Method: Ames test
Result: negative

Difluoromethane : Test Method: Ames test
Result: negative

: Cell type: Human lymphocytes
Result: negative

: Cell type: Chinese Hamster Ovary Cells
Result: negative

: Cell type: Human lymphocytes
Result: negative
Method: Mutagenicity (in vitro mammalian cytogenetic test)

: Test Method: Chromosome aberration test in vitro
Result: negative

Genotoxicity in vivo

Difluoromethane : Species: mouse
Cell type: Bone marrow
Method: Mutagenicity (micronucleus test)
Result: negative

Teratogenicity

Pentafluoroethane : Species: rabbit
Application Route: Inhalation exposure
NOAEL,Teratog: 50,000 ppm
NOAEL,Maternal: 50,000 ppm
Note: Did not show teratogenic effects in animal experiments.

Species: rat
Application Route: Inhalation exposure
NOAEL,Teratog: 50,000 ppm
NOAEL,Maternal: 50,000 ppm
Note: Did not show teratogenic effects in animal experiments.

Difluoromethane : Species: rat
Dose: NOEL - 50,000 ppm
Note: Did not show teratogenic effects in animal experiments.

Species: rabbit
Dose: NOEL - 50,000 ppm
Note: Did not show teratogenic effects in animal experiments.

Further information : Acute toxicity Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing. Rapid evapouration of the liquid may cause frostbite. May cause

cardiac arrhythmia.

## SECTION 12. ECOLOGICAL INFORMATION

Biodegradability

Pentafluoroethane : Result: Not readily biodegradable.
Value: 5 %
Method: OECD 301 D

Difluoromethane : Note: Minimal

**Further information on ecology**

Additional ecological information : This product is subject to U.S. Environmental Protection Agency Clean Air Act Regulations at 40 CFR Part 82. This product contains greenhouse gases which may contribute to global warming. Do NOT vent to the atmosphere. To comply with provisions of the U.S. Clean Air Act, any residual must be recovered.

## SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

Note : This product is subject to U.S. Environmental Protection Agency Clean Air Act Regulations Section 608 in 40 CFR Part 82 regarding refrigerant recycling.

## SECTION 14. TRANSPORT INFORMATION

**DOT**

UN/ID No. : UN 3163

Proper shipping name : LIQUEFIED GAS, N.O.S.
(Pentafluoroethane, Difluoromethane)

| | | | |
|---|---|---|---|
| | Class | | 2.2 |
| | Packing group | | |
| | Hazard Labels | | 2.2 |
| **IATA** | UN/ID No. | : | UN 3163 |
| | Description of the goods | : | LIQUEFIED GAS, N.O.S. (Pentafluoroethane, Difluoromethane) |
| | Class | : | 2.2 |
| | Hazard Labels | : | 2.2 |
| | Packing instruction (cargo aircraft) | : | 200 |
| | Packing instruction (passenger aircraft) | : | 200 |
| **IMDG** | UN/ID No. | : | UN 3163 |
| | Description of the goods | : | LIQUEFIED GAS, N.O.S. (PENTAFLUOROETHANE, DIFLUOROMETHANE) |
| | Class | : | 2.2 |
| | Hazard Labels | : | 2.2 |
| | EmS Number | : | F-C, S-V |
| | Marine pollutant | : | no |

## SECTION 15. REGULATORY INFORMATION

**Inventories**

| | | |
|---|---|---|
| US. Toxic Substances Control Act | : | On TSCA Inventory |
| Australia. Industrial Chemical (Notification and Assessment) Act | : | On the inventory, or in compliance with the inventory |
| Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) | : | All components of this product are on the Canadian DSL. |
| Japan. Kashin-Hou Law List | : | On the inventory, or in compliance with the inventory |

| | | |
|---|---|---|
| Korea. Toxic Chemical Control Law (TCCL) List | : | On the inventory, or in compliance with the inventory |
| Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act | : | On the inventory, or in compliance with the inventory |
| China. Inventory of Existing Chemical Substances | : | On the inventory, or in compliance with the inventory |
| NZIOC - New Zealand | : | On the inventory, or in compliance with the inventory |

**National regulatory information**

| | | |
|---|---|---|
| **SARA 302 Components** | : | SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. |
| **SARA 313 Components** | : | SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313. |
| **SARA 311/312 Hazards** | : | Acute Health Hazard<br>Sudden Release of Pressure Hazard |
| **California Prop. 65** | : | WARNING! This product contains a chemical known to the State of California to cause cancer.<br>Dichloromethane 75-09-2 |

| | | | |
|---|---|---|---|
| **Massachusetts RTK** | : | Dichloromethane | 75-09-2 |
| **New Jersey RTK** | : | Difluoromethane | 75-10-5 |
| **Pennsylvania RTK** | : | Difluoromethane | 75-10-5 |
| **WHMIS Classification** | : | A: Compressed Gas | |

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

**Global warming potential** : 1,975

**Ozone depletion potential (ODP)** : 0

## SECTION 16. OTHER INFORMATION

| | | HMIS III | NFPA |
|---|---|---|---|
| Health hazard | : | 1 | 2 |
| Flammability | : | 1 | 1 |
| Physical Hazard | : | 0 | |
| Instability | : | | 0 |

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

**Further information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.
Previous Issue Date: 09/11/2013
Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group