

Instruction Manual & Spare Part List



UNITOR UNI RX-1A Refrigerant Leak Detector

THIS MODEL IS:
DESIGN CERTIFIED BY
MET LABORATORIES, INC. TO MEET
SAE J1627 FOR R134a, R12 AND R22.



TABLE OF CONTENTS



General Description2

Features2

Parts & Controls3

Getting Started.....3

 Installing Batteries3

Operating Features4

 Constant Power Indication4

 Automatic Circuit/Reset4

 Sensitivity Adjustment.....4

Operating Instructions5

Operating Tips5

Applications7

Maintenance7

Replacement Parts8

Specifications9

Warranty9

GENERAL INFORMATION



The UNIRX-1A refrigerant leak detector is the culmination of over 30 years of Leak Detector manufacturing experience. UNITOR is proud to present these tools into which we have incorporated all of our experience, and years of customer feedback, in the hope of providing our valued customers with the best of everything; price, performance and reliability.

An advanced micro-processor is at the heart of each unit. It permits more advanced management of the circuitry and sensing tip signal than ever before possible. Additionally, the number of components used in the circuit is reduced 50%, increasing reliability and efficiency. The micro-processor monitors the sensing tip and battery voltage levels 4000 times per second, compensating for even the most minor fluctuations in signal. This translates into a stable and dependable tool in almost any environment.

Convenience features have been added to enhance usability. A revolutionary new case design gives the user grip and control, and places the visual indicators in direct sight during use.

Please take a few moments to read through the following pages, in order to understand and benefit from all the capabilities of your new RX-1A. We trust that you will be 100% satisfied with your new purchase.

FEATURES



- Microprocessor controlled circuit with Advanced Digital Signal Processing
- Six segment visual leak size indicator
- True mechanical pump provides positive airflow through sensing tip
- High and Low sensitivity levels
- One touch reset
- Tactile keypad controls
- Real time sensitivity adjustment
- Detect ALL Halogenated refrigerants
- Certified to SAE J1627 for R12, R22 & R134a
- Variable frequency audible alarm
- Constant Power Indication
- Cordless and portable, operate on 2 C-cell batteries
- 14" (35.5cm) flexible stainless probe
- Spare sensing tip included
- CE Approved
- Carrying case included, optional holster and reference leak source
- Two Year Warranty

PARTS & CONTROLS



- 1 Sensing Tip
- 2 Tip Protector
- 3 Flexible Probe
- 4 Constant Power Indicator
- 5 Power On/Off
- 6 LED Leak Indicators
- 7 Reset Button
- 8 High Sensitivity
- 9 Low Sensitivity

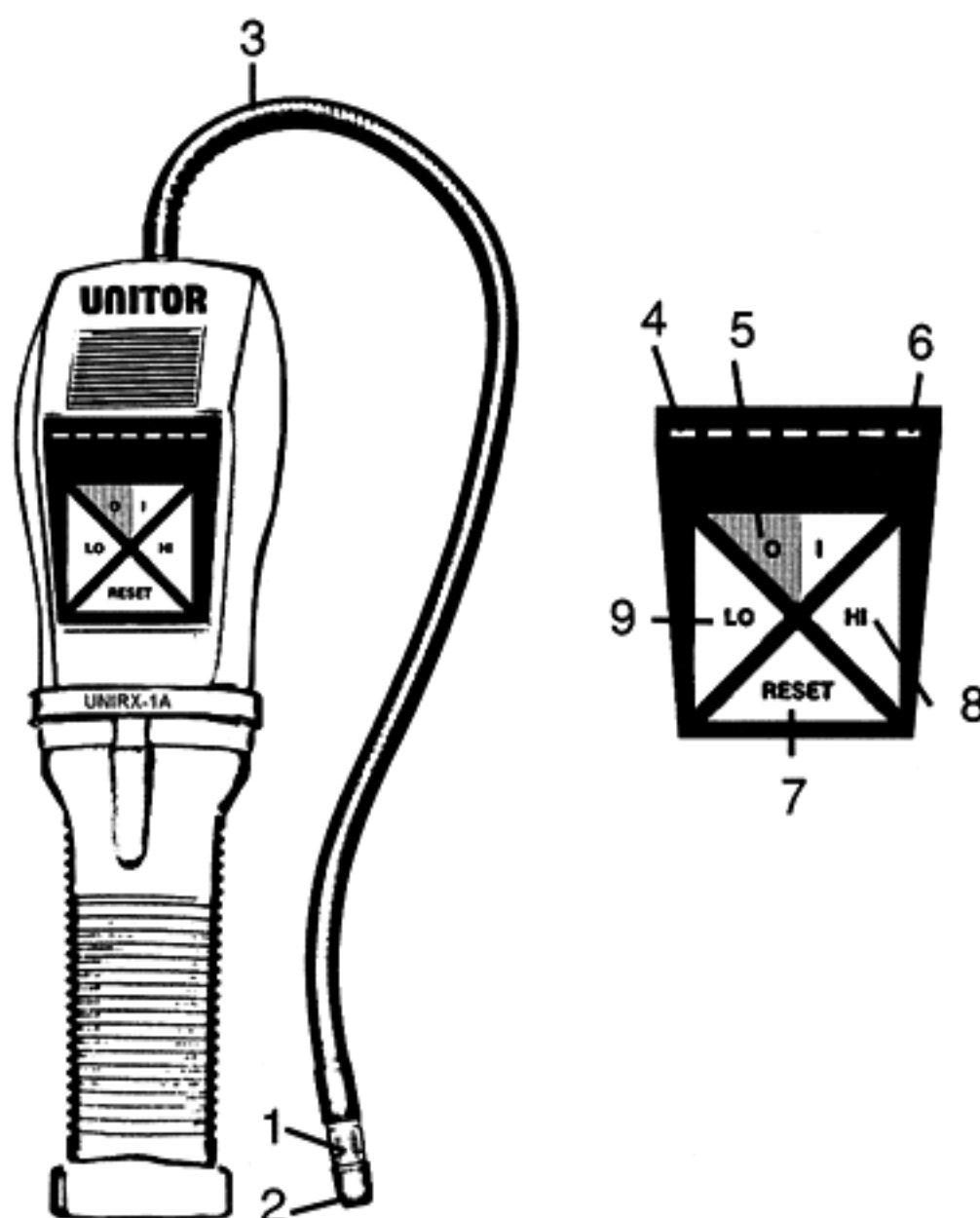
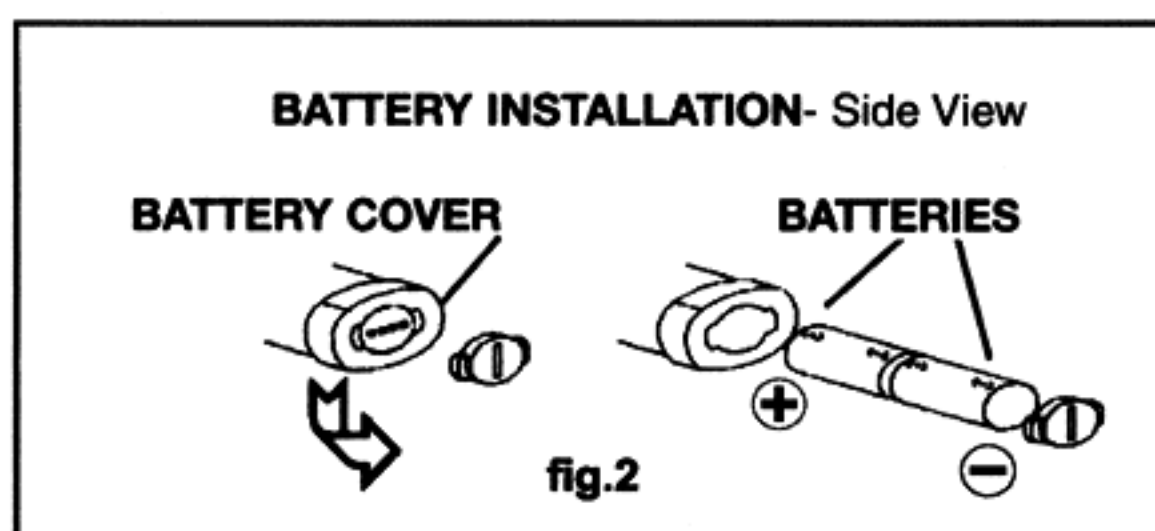


Fig.1



GETTING STARTED



Installing Batteries

Remove the battery compartment door located on the bottom of the instrument as shown above. Install batteries, Positive Polarity inwards (towards the unit). (See figure 2).

OPERATING FEATURES



Constant Power Indication

The Constant Power indicator allows the user to see the battery level at all times. The first LED (leftmost) in the bargraph will remain on whenever the unit is powered on. If the LED is dim, or is not lit, this is an indication that the batteries should be replaced.

Automatic Circuit/Reset Feature

The detector features an Automatic circuit that sets the unit to ignore ambient concentrations of refrigerant. Additionally features a Reset function key for convenience.

- Automatic Circuit - Upon initial power on, the unit automatically sets itself to ignore the level of refrigerant present at the tip. Only a level, or concentration, greater than this will cause an alarm.

CAUTION: Be aware that this feature will cause the unit to ignore any refrigerant present at turn on. In other words, with the unit off if you place the tip up to a known leak and switch the unit on, no leak will be indicated!

- Reset Feature - Resetting the unit during operation performs a similar function, it programs the circuit to ignore the level of refrigerant present at the tip. This allows the user to 'home-in' on the source of the leak (higher concentration). Similarly, the unit can be moved to fresh air and reset for maximum sensitivity. Resetting the unit with no refrigerant present (fresh air) causes any level above zero to be detected.

To Reset the unit:

Press the RESET key. Whenever the unit is reset, all LED's will light for 1 second. This provides a visual confirmation of the reset action.

Sensitivity Adjustment

The UNIRX-1A provides two levels of sensitivity. The base beeping tone is an indication of sensitivity level; the quicker beep rate indicates a higher level. When the unit is switched on, it is set to the high sensitivity position.

1. To change the sensitivity, press the LO key. When the key is pressed, the visual display will momentarily show the four left LED's red. The base beep rate will slow, indicating Low Sensitivity level.
2. To switch back to High Sensitivity, press the HI key. The three right LED's will light momentarily, and the base beep rate quickens.

OPERATING INSTRUCTIONS



1. Switch the unit on
Press the "I/O" (Red and Green) key. All LED's will light for two seconds as the unit performs a self check.
2. The unit will begin beeping at a steady rate.
3. Verify the battery level by observing the constant power indicator (see above).
4. Begin searching for leaks. When refrigerant is detected, the audible tone will change to a 'siren' type sound, distinctly different from the base beep rate. Additionally, the visual indicators will light progressively as described in the Alarm Indications section.
5. Sensitivity can be adjusted at any time during operation by using the HI or LO keys.
6. If a full alarm occurs before the leak is pinpointed, RESET the unit as described above, to reset the circuit to a zero reference.

OPERATING TIPS



The following section includes several general operating tips, and the SAE J1628 recommended procedure for leak detection.

1. In areas that are heavily contaminated with gas, the unit may be reset to block out ambient concentrations of gas. The probe should not be moved while the unit is being reset. The unit can be reset as many times as needed.
2. In windy areas, even a large leak can be difficult to find. Under these conditions, it is best to shield the potential leak area.
3. Be aware that the detector may alarm if the sensing tip comes in contact with moisture and/or solvents. Therefore, avoid contact with these when leak checking.

SAE J1628 Recommended Procedure

NOTE: On Automotive A/C Systems, test with the engine not in operation.

1. The air conditioning or refrigeration system should be charged with sufficient refrigerant to have a gauge pressure of at least 340 kPa (50 psi) when not in operation. At temperatures below 15° C (59° F) leaks may not be measurable, since this pressure may not be reached.
2. Take care not to contaminate the detector probe tip if the part being tested is contaminated. If the part is particularly dirty, or condensate (moisture) is present it should be wiped off with a dry shop towel or blown off with shop air. No cleaners or solvents should be used, since the detector may be sensitive to their ingredients.
3. Visually trace the entire refrigerant system, and look for signs of air conditioning lubricant leakage, damage, and corrosion on all lines, hoses, and components. Each questionable area should be carefully checked with the detector probe, as well as all fittings, hose to line couplings, refrigerant controls, service ports with caps in place, brazed or welded areas, and areas around attachment points and hold-downs on lines and components.

OPERATING TIPS



4. Always follow the refrigerant system around in a continuous path so that no areas of potential leaks are missed. If a leak is found, always continue to test the remainder of the system.
5. At each area checked, the probe should be moved around the location, at a rate no more than 25 to 50 mm/second (1-2 in/second), and no more than 5 mm (1/4 in) from the surface, completely around the position. Slower and closer movement of the probe greatly improves the likelihood of finding a leak (see Fig. 3, below). Any increase in beep rate is indicative of a leak.

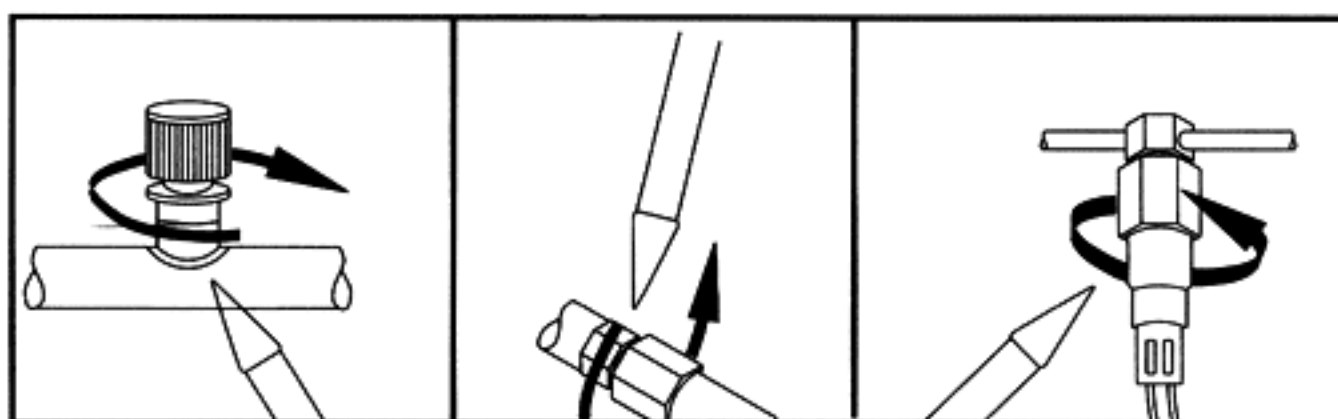


Fig. 3

6. An apparent leak shall be verified at least once as follows:
 - a) Blow shop air into the area of the suspected leak, if necessary, and repeat the check of the area. In cases of very large leaks, blowing out the area with shop air often helps locate the exact position of the leak.
 - b) First move the probe to fresh air and reset. Then hold the probe tip as close as possible to the indicated leak source and slowly move around it until the leak is confirmed.

Automotive A/C Systems only -

7. Leak testing of the evaporator core while in the air conditioning module shall be accomplished by turning the air conditioning blower on high for a period of 15 seconds minimum, shutting it off, then waiting for the refrigerant to accumulate in the case for 10 minutes.

After such time, insert the leak detector probe into the blower resistor block or condensate drain hole, if no water is present, or into the closest opening in the heating/ventilation/air conditioning case to the evaporator, such as the heater duct or a vent duct. If the detector alarms, a leak apparently has been found.

All Systems -

8. Following any service to the refrigerant system and any other service which disturbs the refrigerant system, a leak test of the repair and of the service ports of the refrigerant system should be done.

APPLICATIONS



The Leak Detector covered by this manual may be used to:

- Detect refrigerant gas leaks in Air Conditioning or Refrigeration systems and storage/recover containers. These detectors will respond to ALL halogenated (contains Chlorine or Fluorine) refrigerants. This includes, but is not limited to:
 - CFCs e.g. R12,R11,R500,R503 etc...
 - HCFCs e.g. R22,R123,R124,R502 etc...
 - HFCs e.g. R134a, R404a, R125 etc...
 - Blends such as AZ-50, HP62, MP39, R410a etc...
- Detect Ethylene Oxide gas leaks in hospital sterilizing equipment (detects halogenated propellant)
- Detect SF-6 in high voltage circuit breakers
- Detect most gases that contain Chlorine, Fluorine and Bromine (halogen gases)
- Detect cleaning agents used in dry cleaning applications such as perchloroethylene.
- Detect Halon gases in fire extinguishing systems

MAINTENANCE



Proper maintenance of your Leak Detector is very important. Carefully following the instructions, outlined below, will reduce performance problems and increase the life expectancy of the unit.

WARNING: TURN UNIT OFF BEFORE REPLACING THE SENSING TIP. FAILURE TO DO SO MAY RESULT IN A MILD ELECTRICAL SHOCK!

Keep the sensing tip clean: Prevent dust, moisture and grease build-up by utilizing the provided tip protector. Never use the unit without the protector in place.

Before using the unit always inspect the tip and protector to see that they are free of dirt and/or grease. To clean:

1. Remove protector by grasping and pulling off tip.
2. Clean protector with shop towel and/or compressed air.
3. If the tip itself is dirty it can be cleaned by immersing in a mild solvent, such as alcohol, for a few seconds, and then using compressed air and/or a shop towel to clean.

NOTE: Never use solvents such as gasoline, turpentine, mineral spirits, etc... as these will leave a detectable residue and desensitize your unit.

Sensing tip replacement: The tip will eventually wear out and require replacement. It is difficult to predict exactly when this will occur since tip longevity is directly related to the conditions and frequency of use. The tip should be replaced whenever the alarm sounds or becomes erratic, in a clean, pure, air environment.

MAINTENANCE



To replace the tip:

- 1. Make sure the unit is OFF.
- 2. Remove the old tip by unscrewing counter-clockwise.
- 3. Use the supplied replacement tip, located in the carrying case. Replace by screwing on clockwise.

REPLACEMENT PARTS



Standard Equipment

Your Refrigerant Leak Detector comes equipped with one Carrying Case, one Owner's Manual, and one replacement Sensing Tip.

To purchase replacement parts for you leak detector please contact your local distributor. To ensure that you obtain the correct parts it is best to reference the part number when placing your order.

Replacement Parts

Part #	Part Description
XP-2	Maintenance Kit 3 Sensing Tips 3 Tip Protectors

SPECIFICATIONS



Power Supply:	3V DC; two "C" cell Alkaline batteries
Maximum Sensitivity:	Per SAE J1627 Rating Criteria Certified @ 0.5 oz/yr. (14gr/yr)
Ultimate sensitivity:	less than 0.25 oz/yr (7 gr/yr) for all Halogen based refrigerants
Sensing Tip Life:	Approximately 20 hours
Operating Temperature:	30° -125° F (0° to 52° C)
Battery Life:	Approximately 30 hours normal use
Duty Cycle:	Continuous, no limitation
Response Time:	Instantaneous
Reset Time:	One second
Warm-Up Time:	Approximately 2 Seconds
Unit Weight:	1.2 pounds (560 grams) (with batteries)
Unit Dimensions:	9" x 2.5" x 2.5" (22.9cm x 6.5cm x 6.5cm)
Probe Cord Length:	14" (35.5 cm)

WARRANTY & REPAIR



This instrument has been designed and manufactured to provide unlimited service. Should the unit be inoperative, after performing the recommended maintenance, a no-charge repair or replacement will be made to the original purchaser if the claim is made within TWO years from the date of purchase. This warranty applies to all repairable instruments that have not been tampered with or damaged through improper use. This warranty does not cover batteries, sensing tips, tip protectors, or any other materials that wear out during normal operation of the instrument.

Before returning your instrument for repair please make sure that you have carefully reviewed the Unit Maintenance section of this manual to determine if the problem can be easily repaired. Make sure that you have either replaced or cleaned the sensing tip and tip protector and that the batteries are working properly BEFORE returning the unit. If the instrument still fails to work properly please call your local distributor.

Instruction manual & spare part list

Fraser/surrey Gaspe Gros Caouna Halifax Hamilton Harbour Grace H Westminster Bc Pictou/halifax Pointe Aux Pic.quebec Port Alfred Port C Port Of Quebec Port Weller Powell River Prince Rupert Roberts Bank Sa halifax Squamish St. Catherines St.john's, Nfld St.romuald Stephens alleyfield Vancouver Victoria Weymouth Windsor Yarmouth Ancud / Lanco Antofagasta Arica Caldera Concepcion Bay Cagman Coronel Corral Huasco Las Ventanas Lirquen Lota Penco Puerto Montt Puerto Williams Punta Arenas Quintero San Antonio San Vicente Talcahuano Tocopilla Valparaiso Antilla Bahia Honda Banes Baracoa Cabanas Caibarien Cardenas Casilda Ceiba Hueca Cienfuegos Guantanamo Guayabal Havana Isabel De Sagua Manati Mariel Media Luna Moa Nicaro Niquero Nuevitas Pilon Puerto Padre Santiago De Cuba Sigloo **Genoa** Finn Tanamo Tunas De Zaza Vita Balao Esmeraldas Guayaquil La Libertad Manta Puerto Bolivar Freeport/bahamas Guam Mahdia Acapulco Campeche Ciudad Del Carmen Coatzacoalcos Cozumel Dos Bocas Ensenada Guaymas La Paz Lazaro Cardenas Mazatlan Progreso Puerto Vallarta Salina Cruz Tampico Topolobampo Tuxpan Vera Cruz Bonaire Bullen Bay Curacao Aguadulce Almirante Armuelles Bahia Las Minas Balboa Cristobal Manzanillo Int.term. Vacamonte Callao Chimbote Ilo Matarani Paita Pisco Guayama Guayanilla Mayaguez Ponce San Juan Yabucoa St. Vincent Chaguaramas La Brea Point Fortin Point Lisas Pointe-a-pierre Port Of Spain Tembladora Aberdeen,wa Alameda Albany,n.y. Alexandria, Va Algiers Point Amelia Anacortes, Wa Anchorage,ak Annapolis,md Antioch Aransas Pass Tx Astoria, Or Baltimore Baton Rouge Bayonne Baytown Beaumont Bellingham, Ma Bellingham, Wa Benicia, Ca Boston, Ma Bridgeport Bridgeport, Conn Brooklyn, Ny Brownsville Tx Brunswick Brunswick, Ga ucksport,me Buras Camden (e Chester Chicago Claymont Convent Coos Bay, Or Corpus Chr.tx Croc sonville Dutch Harbor, Ak Eastport, Me Eureka Everett, Wa Fairless Hills eismar Georgetown, Sc Gloucester, NJ Good Hope Gramercy Grand Isle Grays Harbour Gretna Guilport, ms Harvey Honolulu, Hawaii Hoquiam, Wa Houma Jacksonville Kalama Kalama, Wa Kenai Key West Lake Charles La Long Beach Long Island, Ny Longview, Wa Loop Terminal Los Angeles Manchester, Wa Manhattan, Ny Marcus Hook, Pa Martinez Miami Mobile Morehead City Morehead City, Nc Morgan City Morrisville, Pa Myrtle Grove Naples Nederland Tx New Haven, Conn New Iberia New London New Orleans New York Newington, Nh Newport News, Va Newport, Or Newport, Ri Nikiski Norco Norfolk Oakland Olympia, Wa Orange, **Rotterdam** Tx Palm Beach Panama City, Fl Pasadena Pascagoula, Ms Paulsboro, Nj Pennsauken, Nj Pensacola, Fl Petaluma Philadelphia Piney Point, Md Pittsburg Plaquemine Point Comfort Tx Port Allen Port Angeles, Wa Port Arthur Tx Port Canaveral Port Everglades Port Hueneme Port Isabel Tx Port Manatee, Fl Port Neches Tx Port Royal, Sc Port St. Joe, Fl Port Townsend, Wa Portland, Me Portland, Or Portsmouth Portsmouth, Nh Providence, Ri Queens, Ny Redwood City Reserve Revere, Ma Richmond Richmond, Va Sacramento Salem Salem, Ma San Diego San Francisco Sandwich, Ma Savannah Seaport, Me Seattle Seward Sparrows Point St.petersburg, Fl St.rose Staten Island, Ny Stockton Tacoma, Wa Tampa Texas City The Bronx, Ny The Loop Valdez Vancouver, Wa Venice West Palm Beach Westville, Nj Wilmington, Ca Wilmington, De **Houston** Wilmington,nc Yonkers, Ny Yorktown, Va Fray Bentos Jose Ignacio Montevideo Nueva Palmira Amuay Bay Bajo Grande Cumarebo El Palito El Tablazo Guanta Guaranao Jose Bay La Guaira La Salina Maracaibo Pertigalete Puerto Cabello Puerto La Cruz Puerto Miranda Puerto Ordaz Punta Cardon Punta De Palmas Punto Fijo San Lorenzo, Vz St.croix Aeroskobing Assens Bagenkop Bogense Copenhagen Ebeltoft Enstedvaerket Havn Esbjerg Fakse Ladeplads Havn Fredericia Frederiksund Frederiksvaerk Fredrikshavn Faaborg Gedser Great Belt Grenaa Graasten Gulfhavn Haderslev Halsskov Hanstholm Helsingor Hirtshals Hobro Holbaek Horsens Kalundborg Kertminde Koge Kolding Korsor Lemvig Mariager Marstal **Oslo** Middlefart Naestved Nakskov Nyborg Nykobing Falster Nykobing Mors Nykobing Skjaelland Odense Orehoved Falster Randers Ronne Rudkobing Sakskobing Skaelskor Skaerbaek Skagen Skive Sonderborg Stege Stigsnaesvaerkets Havn Svendborg Studstrupvaerkets Havn Thisted Thorshavn Vejle Vordingborg Aabenraa Aalborg Aarhus Kunda Loksa Muuga Paldiski Paljassaare Parnu Tallinn Dalsbruk Hamina/fr.havn Hanko/hangoe Helsinki Ingaa/inkoo Jakobstad Kalajoki Kantvik Kaskinen/kasko Kemi Kemio Korkkola/karleby Kotka Koverhar Kristinestad Lappvik Lovisa Mariehamn Merikarvia Nystad Naantali Oulu Pargas Pori Porvoo/borgaa Rauma Raahe/brahestad Skoeldvik Tammisaari Teijo Tolkis Torneaa Turku Valkom/valko Vaasa Akureyri Isafjordur Reykjavik Arklow Aghinish Bantry Cork Drogheda Dublin Dun Laoghaire Dundalk Foynes Galway Limerick Moneypoint Ringaskiddy Tarbert Waterford Liepaja Mersrags Riga Roja Salacgriva Skulte Ventspils Butinge Klaipeda Agnefest Alta **Piraeus** Arendal Asker Askoy Aukra Aure Averoe Bergen Berlevaag Bodoe Boemlo Brattvag Breivika Brevik Baatsfjord Dirdal Drammen Dusavik Egersund Eide Elnesvaagen Eydehavn Fagerstrand Farsund Finnsnes Flekkefjord Flore Flaam Fosnavaag Fraena Fredrikstad Frei Gamvik **Genoa** Geiranger Gjemnes Glomfjord Gravdal Grimstad Gudvangen Halden Halsaa Hammerfest Harstad Haugesund Hellesylt Heroeya Hjelmeland Hoeyanger Holla Holmestrand Hommelvik Honningsvaag Horten Husnes Jelsa Jessheim Joerpeland Joessinghamn Kambo Karmoey Kirkenes **Singapore** Krageroe Kristiansand Kristiansund Kvinesdal Kyrksaeterora Kaarsto Larvik Leknes Lillesand Lyngdal Mandal Mehavn Mo I Rana Molde Mongstad Mosjoen Moss Muruvik Maaloey Namsos Narvik Nasset Odda Oelen Oersta Orkanger Porsgrunn Rafnes Randaberg Raubergvika Risoer Sandefjord Sandnes Sandnessjoen Sarpsborg Sauda Skien Skjerveoy Slagen Slagentangen Smoela Soevik Sola Sorreisa Sortland Stavanger Stord Sture Sunndalsoera **Dubai** Surnadal Svelgen Svolvaer Tananger Tau Thamshamn Tingvoll Tjeldbergodden Toensberg Tofte Tomrefjord Tromsø Trondheim Tustna Tvedestrand Tyssedal Tysvaer Ulsteinvik Vadsoe Vardoe Verdal Vik Volda Aagotnes Aaheim Aalesund Aalvik Aardal i Ryfylke Aardalstangen Gdansk Gdynia Kolobrzeg Police Swinoujscie Szczecin Arkangelsk Baltiysk De Kastri Kaliningrad Kandalaksha Kavkaz Kronshtadt Lomonosov Murmansk Nakhodka Novorossiysk Primorsk Sakhalin Sakhalin Severomorsk St. Petersburg Svetlyi Taman Temruk Temryuk Tuapse Vladivostok Vostochniy, Port Vostochnyi Vyborg Bohus Brofjorden Falkenberg Gavle Gothenburg Hallstavik Halmstad Helsingborg Hoganas Holmsund Hudiksvall Iggesund Kalmar Karlshamn Karlskrona Karlstad Koeping Landskrona Lidkoping Lilla Edet Luleaa Lysekil Malmoe Mariestad Marstrand Munkedal Norrkoeping Norrsundet Norrtalje Nynashamn **Rotterdam** Ornskoldsvik Oskarshamn Oxelosund Pitea **Shanghai** Simrishamn Skarhamn Skelleftehamn Skutskar Slite Soderhamn Sodertalje Solvesborg Stenungsund Stockholm Stromstad Sundsvall Surte Trelleborg Uddevalla Umeaa Varberg Vastervik Vasteraas Visby Wallhamn Ystad Aberdeen Appledore Arbroath Ardersier Ardrross Avonmouth Ayr Ballycastle Banff Barking Barnstaple Barrow In Furness Barry Barton On Humber Belfast Berwick Upon Tweed Billingham Birkenhead Blyth Boston Bowling Braefoot Bay Bridgend Bridlington Bridport Bristol Briton Ferry Brixham Bromborough Buckie Burntisland Burton Upon Stather

We service your needs in 2 200 ports...