

Technical Specifications - Tundra Refrigerant Dryers						
Fridge Model	cfm	Conn	Weight Kg	Dimensions H x L x W mm	Power Supply	Refrigerant
Tundra 22	22	3/8"	19	408 x 360 x 408	230 / 1 / 50 - 60	R134A
Tundra 32	32	1/2"	25	445 x 430 x 325	230 / 1 / 50 - 60	R134A
Tundra 45	45	1/2"	26	445 x 430 x 325	230 / 1 / 50 - 60	R134A
Tundra 64	64	1/2"	28	445 x 430 x 325	230 / 1 / 50 - 60	R134A
Tundra 91	91	3/4"	34	395 x 486 x 565	230 / 1 / 50 - 60	R134A
Tundra 115	115	1"	40	395 x 486 x 565	230 / 1 / 50 - 60	R134A
Tundra 175	175	1"	48	614 x 595 x 485	230 / 1 / 50	R407C
Tundra 209	209	1 1/2"	49	614 x 595 x 485	230 / 1 / 50	R407C
Tundra 300	300	1 1/2"	84	967 x 658 x 500	230 / 1 / 50	R407C
Tundra 360	360	1 1/2"	87	967 x 658 x 500	230 / 1 / 50	R407C
Tundra 450	450	1 1/2"	117	1195 x 800 x 520	230 / 1 / 50	R407C
Tundra 595	595	2"	129	1195 x 835 x 520	230 / 1 / 50	R407C
Tundra 765	765	2 1/2"	144	1229 x 835 x 520	400 / 3 / 50	R407C
Tundra 850	850	2 1/2"	234	1539 x 1012 x 806	400 / 3 / 50	R407C
Tundra 1100	1,100	3"	234	1539 x 1012 x 806	400 / 3 / 50	R407C
Tundra 1395	1,395	3"	260	1539 x 1012 x 806	400 / 3 / 50	R407C
Tundra 1530	1,530	3"	351	1539 x 1012 x 806	400 / 3 / 50	R407C



Tundra

Refrigeration Air Dryers

REDUCING YOUR CARBON FOOTPRINT

- VARIABLE SPEED CONTROL
- ENERGY SAVING
- HI-FLO PATENTED HEAT EXCHANGER
- INCREASED RELIABILITY - 2 YEAR WARRANTY
- LOWEST CARBON FOOTPRINT

HIGH PRESSURE AND THERMAL MASS VERSIONS ARE AVAILABLE TO ORDER

Standard Reference Conditions (in accordance to ISO 7183)

Inlet compressed air pressure: 7 barg
 Inlet compressed air temperature: 35°C @ 100% RH
 Ambient air temperature: 25°C
 Minimum pressure dew point (PDP): +3°C Class 4 (ISO 8573-1)

Capacity Correction for Various Operating Pressure

Pressure - barg	4	5	6	7	8	10	12	14	16
Factor (Pc)	0.77	0.86	0.93	1	1.05	1.14	1.21	1.27	1.34

Ambient Temperature - °C	20	25	30	35	40	45	50
Factor (Ac)	0.92	1	0.96	0.90	0.82	0.72	0.60

Inlet Temperature - °C	25	30	35	40	45	50	55	60
Factor (Lc)	1.2	1.12	1	0.83	0.69	0.59	0.50	0.44

Example of dryer selection:

Which dryer is required to handle the following worst-case conditions?

Maximum flow rate of **115cfm**. Lowest operating pressure of 10 barg.
 Maximum ambient air temperature of 35°C, maximum air inlet temperature of 40°C.

Corrected Capacity is:
 Actual Capacity: $(Pc \div Ac \div Lc) = 115 \div 1.14 \div 0.90 \div 0.83 = 135\text{cfm}$

Dryer selection will be Tundra 175 +3°C PDP

General Information

- Operating pressure range 2 to 16 barg.
- Maximum inlet air temperature 60°C
- Ambient Air temperature : 0°C to 50°C
- Constant +3°C dewpoint delivered at all times, unlike thermal dryers.
- High pressure range available with pressure up to 50 barg.
- Dewpoint Indicator as standard, digital on all models.
- Option of Zero Loss or HTD condensate removal.
- High Performance Oil & Particulate Filters to suit dryer range.



Marine Applications

Model No's:
Tundra 22 through to Tundra 115 are available in 60 Hz ex stock for offshore installations

HIGH PERFORMANCE OIL & PARTICULATE FILTERS TO SUIT DRYER RANGE

Filter Housing Data

Technical Specifications - Filter Housings				
Fridge Model	Filter Model	Element Model	Capacity at 7 bar cfm	Port Connection
Tundra 22	HF45	HE45	45	1/2"
Tundra 32	HF65	HE65	65	1/2"
Tundra 45	HF65	HE65	65	1/2"
Tundra 65	HF65	HE65	65	1/2"
Tundra 91	HF100	HE100	100	1"
Tundra 115	HF175	HE175	175	1"
Tundra 175	HF175	HE175	175	1"
Tundra 209	HF300	HE300	300	1 1/2"
Tundra 300	HF300	HE300	300	1 1/2"
Tundra 360	HF385	HE385	385	1 1/2"
Tundra 450	HF475	HE475	475	1 1/2"
Tundra 595	HF765	HE765	765	2"
Tundra 765	HF1030	HE1030	1030	2 1/2"
Tundra 850	HF1030	HE1030	1030	2 1/2"
Tundra 1100	HF1530	HE1530	1530	3"
Tundra 1395	HF1530	HE1530	1530	3"
Tundra 1530	HF1530	HE1530	1530	3"

FILTER GRADES

High Efficiency Pleated Filter Media

GRADE D	Particle Removal down to 3 micron (99.99%)	
GRADE GP	Oil Removal down to 0.5 mg/m @ 20°C & 7 bar. Particle Removal down to 1 micron (99.999%)	
GRADE OR	Oil Removal down to 0.01 mg/m @ 20°C & 7 bar. Particle Removal down to 0.01 micron (99.9999%)	
GRADE AC	Oil Removal down to 0.003 mg/m @ 20°C & 7 bar.	
Differential Pressure Gauge: DP Gauge Optional	All available ex stock, Burton upon Trent	
Replacement Drains: INTD416		
Example of how to order.	Standard Filter	Filter with D/P
1/2" filter housing, 45cfm, micron rating 0.01µm	HF45-OR	HF45-ORD

E.&O.E

INCLUDING PRE AND AFTER FILTERS



NEW ADVANCED, HIGHER FLOW RATE MODELS

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Tundra

Refrigeration Air Dryers

Multi-Function Control Panel

- Which includes:
- High Temperature
- Low Temperature (Anti-Freeze) Probe Failure
- Fan Function - Speed Indication
- Energy Saving Mode
- Alarm History - Last 10
- Diagnostic System
- Remote Alarm Contact



Refrigerant Gas Dryer

New Patented Heat Exchanger

Bespoke High Efficiency Thermal Insulation

Solenoid Drain Controlled via Microprocessor Controller for Optimum Efficiency

Inlet and Outlet Identification to assist installation

Variable Speed Fan

Compressed Air Blue (RAL 5015)

Lockable Power Isolator

Digital Dewpoint Display +3°C

Scroll Refrigerant Compressor

Strong and Compact Cabinet Design

Forklift Access



Tundra Refrigerant Air Dryers

Already established for many years as the UK's Market leading supplier for Refrigerant Air Dryers.

The Tundra range is Hi-line's most energy efficient to date, with a robust and highly reliable build quality.

Minimal energy consumption is crucial in today's competitive environment and the new Tundra dryer from Hi-line will help drive down your energy costs by minimising pressure drop and lowering absorbed power. The Direct Expansion technology offers a constant +3°C dewpoint at all times, unlike chilled mass dryers which can be as high as +10°C during its thermal cycle.

The new improved single cell heat exchanger gives the most efficient transfer of heat at the lowest energy cost. By using proven components within the Tundra refrigerant system reliability is ensured. It also features within that refrigerant system, liquid receivers, line dryers, thermostatic expansion valves and a series of safety features to protect the freon compressor and its components. The Tundra range has been designed to an engineering specification rather than a budget.

Energy Saving Variable Speed Controller

One of the key unique energy saving features of the latest Tundra dryers is the variable speed fan, which is controlled from the microprocessor, multifunctional control panel. By controlling the fan speed on the refrigerant circuit, we have been able to eliminate components like fan pressure switches which often can be the critical components for defects in this type of dryer.

The less moving parts the more reliable we can make the product.

Reliable Design

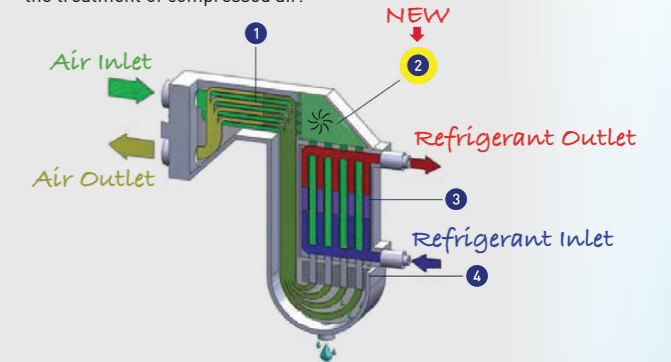
After significant investment all Hi-line Tundra dryers are now built with Scroll refrigerant freon compressors, which offer the lowest possible power consumption and deliver a cost effective, long life performance.

With reliability at the forefront, Tundra offers multiple new design features to ensure constant dewpoint at all load levels and will deliver continuous dry air performance that satisfies ISO 7183 industry standards.

Larger dryers up to 9988 cfm are available on short lead-time, although our standard range as featured here are available ex-stock at our Burton factory for next day delivery.

Hi-flo Heat Exchanger With Larger Ports

The main part of the refrigeration air dryer is the heat exchanger. This compact aluminium module contains the various stages for the treatment of compressed air.



- 1 Air/air heat exchanger** New, is our Hi-Flo larger port, all aluminium heat exchanger module, where the first phase is carried out. In this section the air coming in is pre-cooled and the air going out is post-heated. This allows the reduction of the energy consumption of the chiller circuit and reduces the possibility of condensate forming on the outer surface of the pipe leaving the dryer and the compressed air network.
- 2 Flow mixing chamber** Unlike other exchangers on the market, the module that we have designed has a flow mixing chamber at the outlet of the air/air exchanger. This passage is very important because the air temperatures at the outlet of the air/air exchanger channels are not stable. Mixing enables the air flow to enter the evaporator channels at a uniform temperature, thus allowing optimum exchange.
- 3 Evaporator** The air now pre-cooled in the air/air exchanger and mixed in the mixing chamber enters the evaporator and is cooled to dew point. The heat is transferred to the cooling fluid which evaporates.
- 4 Demister** The air cooled in the evaporator passes through a demister separator which allows the condensate to drain into a large collecting chamber. The geometry of the module and of the demister allows load loss values to be kept low.

Condensate Removal

The microprocessor controller is linked to the condensate removal valve, to ensure minimum loss of compressed air as the condensate is discharged.

This is fully programmable to climatic conditions and for summer/winter seasons.

The Tundra also has the option of our ZLD, Zero Loss Auto drain. All condensate should be treated by a ConSEP Oil/Water separator prior to discharge to a foul drain.

