

# 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



NEW MODELS FOR 2018



# 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 for 2018

Bespoke High Efficiency Thermal Insulation

Inlet and Outlet Identification to assist Installation

Solenoid Drain Controlled via Microprocessor Controller for Optimum Efficiency

Variable Speed Fan

Compressed Air Blue (RAL 5015)

Lockable Power Isolator

Scroll Refrigerant Compressor

Digital Dewpoint Display

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 2018 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

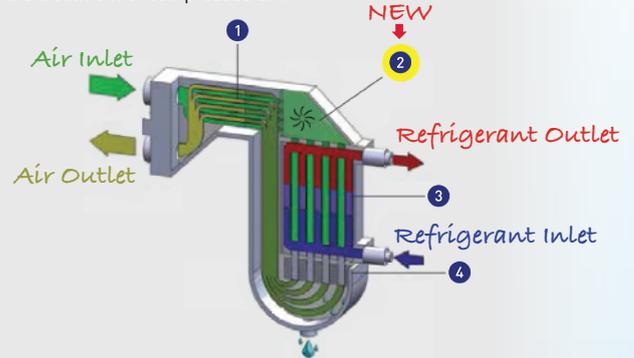
After significant investment all Hi-line Tundra dryers are now built with Scroll refrigerant freon compressors, which offer the lowest possible power consumption and deliver a cost effective, long life performance.

With reliability at the forefront, Tundra 2018 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 for 2018 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 2018 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.



Technical Specifications - Tundra Refrigerant Air Dryers							
Fridge Model	cfm	Conn	Weight Kg	Dimensions WxLxHmm	Power Supply	Refrigerant	
Tundra 22	22	½"	19	408x360x305	230 / 1 / 50	230 / 1 / 60	R134A
Tundra 32	32	½"	25	445x430x325	230 / 1 / 50	230 / 1 / 60	R134A
Tundra 45	45	½"	26	445x430x325	230 / 1 / 50	230 / 1 / 60	R134A
Tundra 64	64	½"	28	445x430x325	230 / 1 / 50	230 / 1 / 60	R134A
Tundra 91	91	1"	34	565x486x395	230 / 1 / 50	230 / 1 / 60	R134A
Tundra 115	115	1"	40	565x486x395	230 / 1 / 50	230 / 1 / 60	R134A
Tundra 175	175	1½"	48	602x595x485	230 / 1 / 50		R407C
Tundra 209	209	1½"	49	602x595x485	230 / 1 / 50		R407C
Tundra 300	300	1½"	85	980x718x500	230 / 1 / 50		R407C
Tundra 405	405	1½"	143	1360x779x720	230 / 1 / 50		R407C
Tundra 470	470	1½"	164	1360x780x750	400 / 3 / 50		R407C
Tundra 620	620	2"	168	1360x779x720	400 / 3 / 50		R407C
Tundra 850	850	2½"	234	1539x1012x806	400 / 3 / 50		R407C
Tundra 1100	1,100	3"	234	1539x1012x806	400 / 3 / 50		R407C
Tundra 1395	1,395	3"	260	1539x1012x806	400 / 3 / 50		R407C
Tundra 1700	1,700	DN100	351	1555x1390x905	400 / 3 / 50		R407C

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

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

Inlet Temperature - °C Factor (Lc)	25	30	35	40	45	50	55	60
	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**



All specifications and details are subject to change without prior notice.



## HIGH PERFORMANCE OIL & PARTICULATE FILTERS TO SUIT DRYER RANGE

### Filter Housing Data

Technical Specifications - Filter Housings			
Port Connection	Capacity at 7 bar Nm3/h (cfm)	Filter Model	Filter Model
¼"	34 (20)	HF20	HE20-N
¼"	37 (22)	HF22	HE22-N
½"	42 (25)	HF25	HE25-N
½"	61 (36)	HF36	HE36-N
½"	85 (50)	HF50	HE50-N
½"	122 (72)	HF72	HE72-N
¾"	122 (72)	HF75	HE72-N
1"	204 (120)	HF120	HE120-N
1½"	357 (210)	HF210	HE210-N
1½"	544 (320)	HF320	HE320-N
1½"	850 (500)	HF500	HE500-N
2"	1070 (630)	HF630	HE630-N
2½"	1444 (850)	HF850	HE850-N
3"	2379 (1400)	HF1400	HE1400-N
3"	2888 (1700)	HF1700	HE1700-N

Where N is either 2,3,4 or 5 depending on grade required

### FILTER GRADES

High Efficiency Pleated Filter Media

GRADE 2	Particle Removal down to 3 micron (99.99%)	
GRADE 3	Oil Removal down to 0.5 mg/m @ 20°C & 7 bar. Particle Removal down to 1 micron (99.999%)	
GRADE 4	Oil Removal down to 0.01 mg/m @ 20°C & 7 bar. Particle Removal down to 0.01 micron (99.9999%)	
GRADE 5	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
½" Filter housing, 50cfm. Micron rating 0.01mu	HF50-4	HF50-4D

E.&O.E - All filter elements have robust polished Aluminium end caps (NO PLASTIC !!)

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