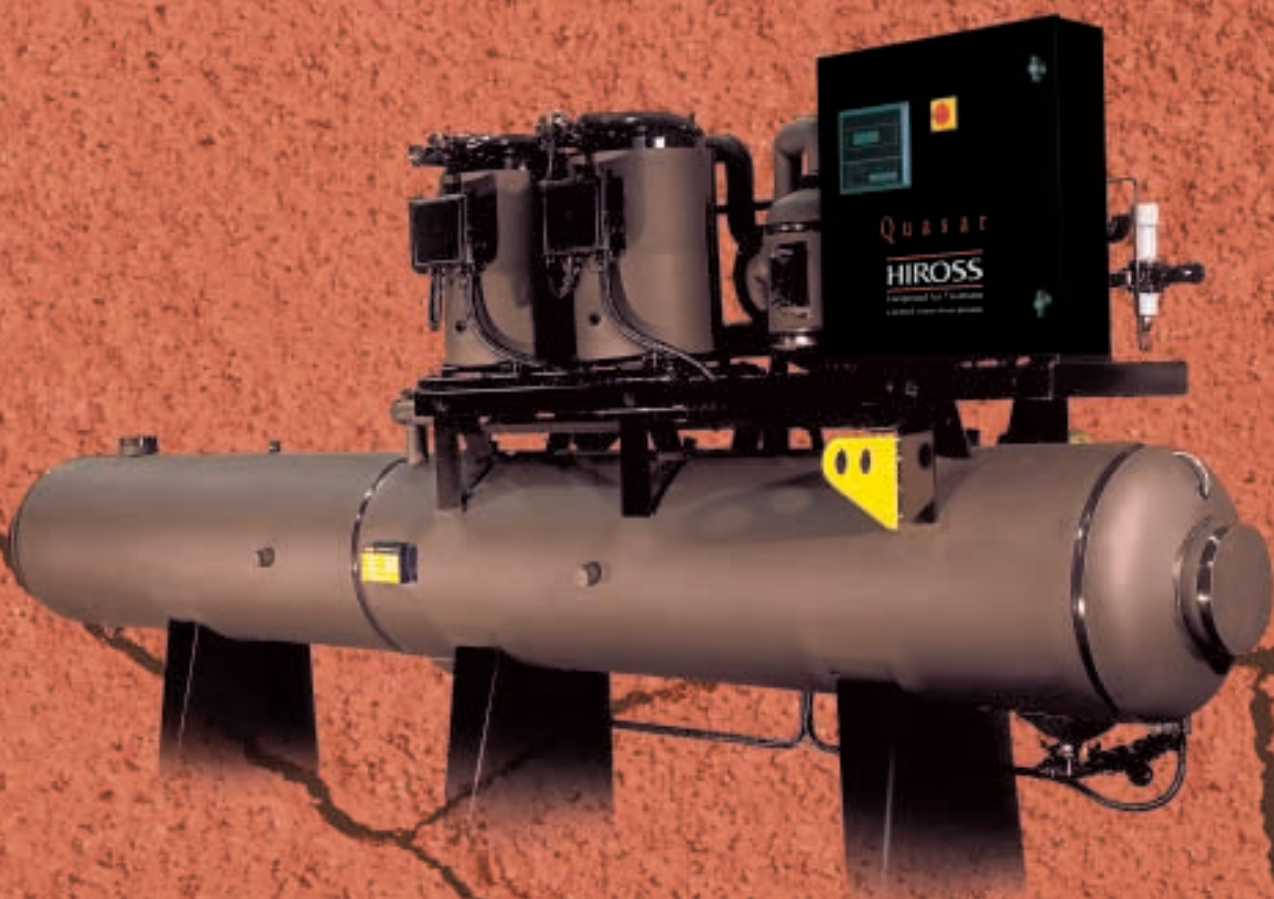


# Quasar

refrigeration dryers



domnick hunter hiross SpA

**HIROSS**

Compressed Air Treatment

# QUASAR: THE TREND SETTER

Large industries vary considerably in nature, but they all share a common feature: they demand absolute reliability, 24 hours a day, 365 days a year. The cost of even a single day of lost production, or the risk of any damage to either the operation process or finished goods, could have extremely costly consequences.

Hiross' Quasar, born from the know-how provided by the world's premium large dryer manufacturer, with nearly 40 years worldwide experience in this sector, has been specifically designed to cater for these stringent needs.

Beyond this Quasar also features numerous novel features offering significant customer benefits. Quasar takes the unique trend setting concepts first introduced on the Hiross Large Expansion Dryer, and redefines them, moving Quasar even further ahead of traditional large refrigeration dryer concepts.

When total reliability and complete satisfaction are top of the list, Quasar is the answer.



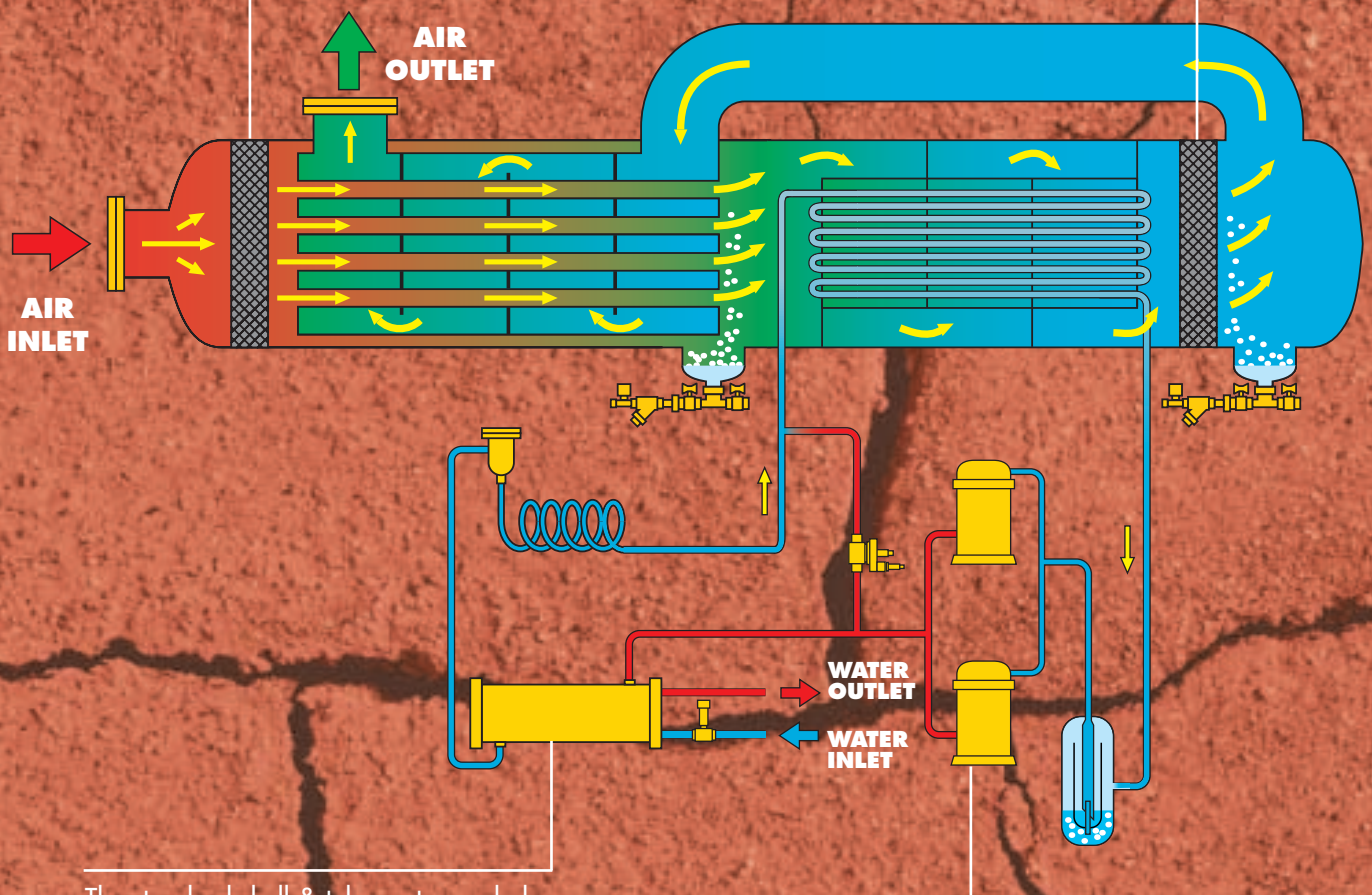
## **BENEFITS**

- advanced technical solutions
- high reliability, low maintenance
- low power consumption
- new definition of environmental friendliness
- stand-by feature

# QUASAR: A LOOK INSIDE

All models feature a low pressure drop pre-filter on the air inlet. This feature keeps the heat-exchanger clean and reduces maintenance requirements.

The oversized demister separator offers an exceptional condensate removal rate with lowest pressure drops. Unlike centrifugal systems, the demister works equally well at partial air flow conditions, ensuring the dew point is maintained under all conditions.



The standard shell-&-tube water-cooled condenser ensures extremely low water side pressure drops and requires minimal maintenance. Air-cooled versions are also available.

Quasar's innovative tandem scroll compressors (standard up to 225 m<sup>3</sup>/min.) offer numerous real customer benefits, including: significantly reduced power consumption; real 50% energy savings at partial load as one compressor switches off (unlike typical solutions); longer compressor life; elimination of the need to pre-heat the dryer; no risk of compressor damage caused by liquid returns; full stand-by facility as one compressor still runs if the other shuts down.

ENVIRONMENTALLY  
FRIENDLY



tandem scroll compressors

Environmentally friendly refrigerant R407C is offered as standard, whilst the direct expansion refrigeration circuit leads to refrigerant charges which are only one tenth of those in traditional dryer designs. The scroll compressors significantly reduce noise levels, to the benefit of factory personnel.

MINIMUM  
OPERATING  
COSTS



shell & tube condenser

The combination of scroll compressors (up to 225 m<sup>3</sup>/min.) and refrigerant R407C significantly reduce power consumptions. Furthermore, the tandem compressor design offers a true 50% energy saving at partial loads, unlike typical solutions. The unique vessel design reduces pressure drops to a minimum, whilst the condenser minimises water pressure drops.

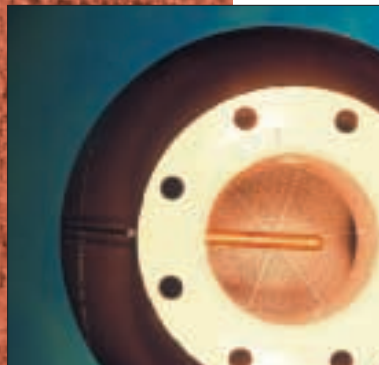
EASY TO  
IMPLEMENT  
AND OPERATE



microprocessor control

Quasar's PED certification conforms to most international norms, whilst a 65°C air inlet temperature limit allows it to be installed virtually anywhere. An air-cooled option caters for locations where no cooling water is available. Quasar offers simple operation: there is no need to pre-heat scroll compressor equipped models and the standard microprocessor is very simple to operate.

LOW  
MAINTENANCE



air inlet pre-filter

Quasar's direct expansion design translates to far lower maintenance needs, as do the standard pre-filter and shell-&-tube condenser. The vessel's high quality materials are specially treated to ensure longevity, whatever the conditions. With scroll equipped models one compressor switches off when it is not needed, ensuring longer compressor life.

OPERATES  
CONTINUOUSLY

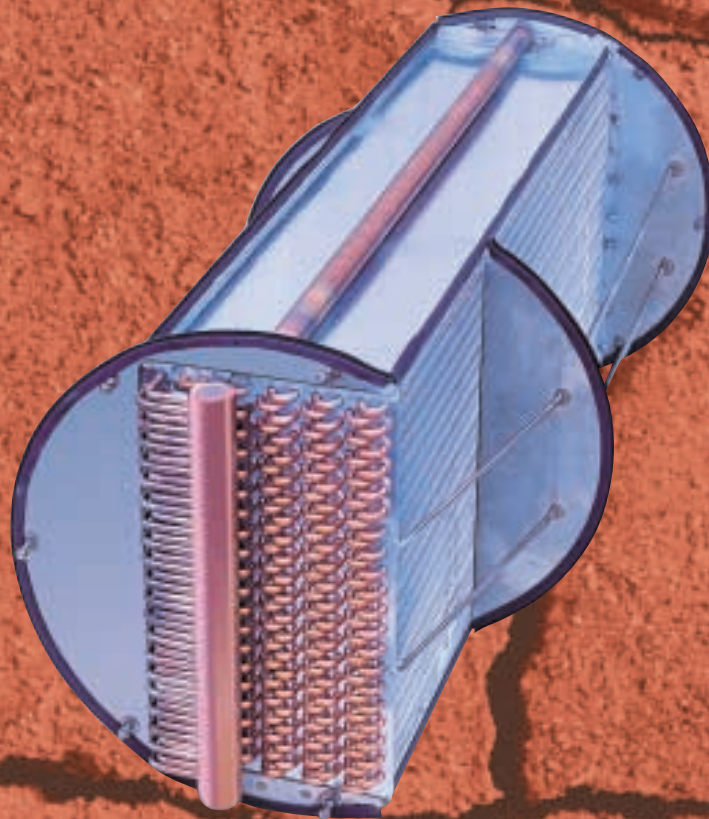


helium leak testing

Scroll compressors are near indestructible, withstand liquid returns and emit very little vibration. And even if, for any reason whatsoever, one scroll compressor is shut down, the second will still be able to offer 50% of the load. The vessel's minimal welds reduce the chance of leakages, and each dryer undergoes sophisticated leak tests during manufacture.

## SOPHISTICATED DESIGN

With the Hiross Quasar sophisticated design solutions lead to real advantages for the user. Quasar's heat exchanger takes the innovative patented design pioneered in Hiross' LED, and takes it one step further. The single vessel configuration is now even more compact, further saving valuable factory space. The notably simplified air circuit reduces the number of welds to a minimum, for improved longevity and reliability. The implementation of quality materials, specifically treated, ensure Quasar withstands even the most rigorous industrial conditions. A combination of top dew point performance levels and minimal air pressure drops are obtained thanks to generous dimensioning, minimal air turns and performance enhancing "trifoglio" tube inserts.



## SOPHISTICATED CONTROL

Quasar features an advanced microprocessor control as standard. The dew point is continuously shown on a backlit digital display.

All functions are fully programmable, giving the user full control over dryer operation. A working hour counter and programmable service interval monitoring facility simplify maintenance scheduling.

A status report lists the 8 most recent occurrences, whilst a secondary report memorises all sensor readings at alarm intervention, for easy fault diagnosis.

The comprehensive set of alarms can be user-programmed, and on intervention they provide easily understandable written text messages. General alarm and unit status volt free contacts are also supplied. The microprocessor display can be installed up to a distance of 60 m from the dryer.

# THE TREND SETTER'S VITAL STATISTICS...

103722 / 06-04 A / 1,000 / R1

MODEL	Air flow		Nominal absorbed power (kW)	Air connections PN/DN	Water connect. BSP(F)	Condenser water flow m <sup>3</sup> /h	Dimensions (mm)			Weight (kg)
	m <sup>3</sup> /min.	cfm					A	B	C	

## WATER-COOLED MODELS

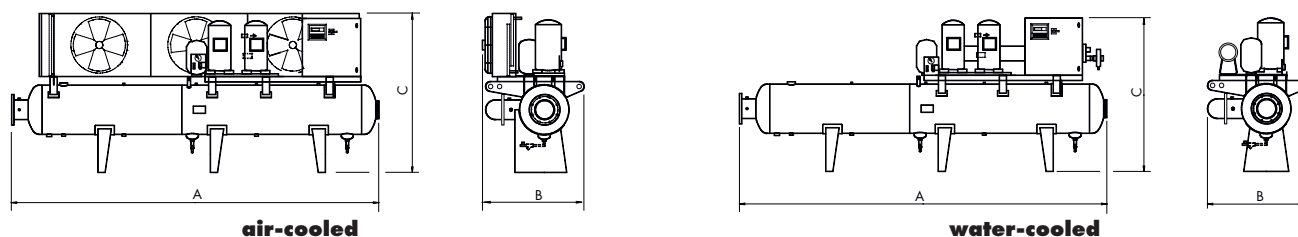
QSR130	130	4591	12,5	10/150	1"	4,3	4050	755	1670	750
QSR170	170	6004	16,0	10/200	1 1/2"	6,6	4135	927	1710	1200
QSR225	225	7946	21,9	10/200	1 1/2"	8,6	4180	1120	1750	1350
QSR280	280	9888	28,2	10/250	1 1/2"	10,5	5125	1190	1840	1450
QSR350	350	12361	33,1	10/300	1 1/2"	13,4	5135	1240	1915	1620

## AIR-COOLED MODELS

QSR130	130	4591	12,3	10/150	-	-	4050	960	1740	780
QSR170	170	6004	16,2	10/200	-	-	4135	1150	2150	1290
QSR225	225	7946	22,3	10/200	-	-	4180	1150	2150	1380

Performances refer to air suction of FAD 20°C, 1 bar A and the following operating conditions: air suction 25°C/60%RH, 7 bar g working pressure, 3°C pressure dew point, 35°C compressed air inlet temperature, either 25°C condenser water inlet temperature with 40°C condensing temperature (water-cooled models) or 25°C cooling air temperature (air-cooled models). All indicated data refers to DIN ISO 7183.

All models supplied with refrigerant R407C and for operation up to 10 bar g. 50 Hz models supplied with 400V /3Ph /50Hz power supply. 60 Hz models also available.



## Air flow correction factors for differing working conditions

A) working pressure barg correction factor	3	4	5	6	7	8	9	10
	<b>0,64</b>	<b>0,76</b>	<b>0,86</b>	<b>0,94</b>	<b>1</b>	<b>1,06</b>	<b>1,10</b>	<b>1,13</b>
B) inlet temperature °C correction factor	30	35	40	45	50	55	60	65
	<b>1,20</b>	<b>1</b>	<b>0,82</b>	<b>0,68</b>	<b>0,56</b>	<b>0,46</b>	<b>0,44</b>	<b>0,42</b>
D) ambient temperature °C correction factor (air-cooled models only)	20	25	30	35	40	45		
	<b>1,02</b>	<b>1</b>	<b>0,98</b>	<b>0,93</b>	<b>0,87</b>	<b>0,80</b>		
C) pressure dew point °C correction factor	3		5		7			
	<b>1</b>		<b>1,14</b>		<b>1,19</b>			

To obtain the required air flow multiply the air flow by the above correction factors (ie. Air flow x A x B x C). Quasar can operate upto ambient temperatures of 50°C and inlet temperatures of 65°C. The above correction factors are approximative; for a precise selection always refer to the software selection program.



The Quality and Environment Management Systems of domnick hunter hiross S.p.A. have been approved by Lloyd's Register Quality Assurance to the following Quality and Environment Management System standards: ISO9001:2000 (Certificate LRC160001) and ISO14001:1996 (Certificate LRC160001/14).

Data contained in this publication is to be considered as indicative only. The manufacturer reserves the right to modify data without prior notice.

The Hiross product range: Aftercoolers, Separators, Filters, Refrigeration Dryers, Adsorption Dryers, Condensate Drains, Oil/Water Separators, Water Chillers, Dry Coolers.



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