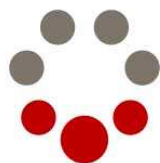


rodaindustria



IBÉRICA S.A.

C/ Paralela Tres

Polígono Industrial A Granxa

36400 **PORRIÑO** (Pontevedra)

Tel.: 34.986.213.083 Fax: 34.986.295.138

e-mail: ventasvig@rodaindustria.com



December 2012

ULTRA-STAR, a low permeation AC hose in a class of its own

Manuli Hydraulics announces the release of a new air conditioning hose named **ULTRA-STAR**.



ULTRA-STAR has been developed specifically to offer the mobile Air Conditioning and Refrigeration markets a compact steel braided all rubber hose that combines excellent flexibility and high kink resistance with a very low permeation rate.

ULTRA-STAR uses an advanced rubber formulation which relies on a molecular barrier within the rubber compound to lower the permeation rate and so by greatly reduce loss of refrigerant.

The **ULTRA-STAR** permeation rate is so low that it falls well inside the SAE permeation specification set for type "C" and "E" hoses. This feature means reduces refrigerant loss over time, making the AC system more environmentally friendly and at the same time reducing the need for frequent refrigerant system top-ups.

The all rubber SAE type "B" design guarantees high flexibility with reduced bend radii, while the integral steel braid reinforcement provides heavy-duty reliability. These features make the **ULTRA-STAR** an ideal hose for bus air conditioning and off-highway air conditioning applications.

ULTRA-STAR is designed and validated for use with refrigerants R134a and HFO-1234yf and is fully compatible with both PAG and POE oils.

ULTRA-STAR will be available to order, starting 2013, in a full range of sizes - from DN 05 to DN 28. The new hose maintains the same internal and external diameters as the RefriSTAR, making **ULTRA-STAR** fully compatible with MANULI's complete range of STAR-FIT and STAR-CRIMP fittings.

REFRIFAST DN10, with OPC fitting: upgrade

please take note about the crimp diameter upgrade which has been carried out on the following assembly type: REFRIFAST DN 10 with OPC fitting.



The upgrade is aimed at improving the assembly operation and improving repeatability. Moreover, we also observed that in very particular situations the tolerance stack-up of components could lead to an over compression of the hose which could, in certain cases, damage the textile reinforcement.

Even though the occurrence of this event is potentially very rare and infrequent, we have preferred to release a new crimp diameter which avoids any possible reoccurrence of this event.

It is important to underline that all assemblies manufactured with the previous crimp specification are fully functional and meet all the necessary assembly requirements.

The new crimp diameter is $16,6\text{mm} \pm 0,1\text{mm}$ (and replaces the old value published in the 2011 wall poster - $16,3\text{mm}$). This new value has been validated in our laboratories (technical report is available upon request) and will be published on the next official release of the MF2000 crimp chart wall poster.

For any questions do not hesitate to contact us.

**INNOVATION BULLETIN
OCTOBER 2012**

New!

ULTRA ❄️[®] **STAR**



ULTRA STAR

Customer added values

Greatly reduces system refrigerant loss over time

- Better for the environment - reduced global warming impact
- AC system performance maintained over time
- Reduced system recharging required - low system maintenance

All Rubber design guarantees high flexibility, while the integral steel braid reinforcement provides heavy-duty durability

- Easy installation
- Increased durability
- Low hose maintenance

New!

rodaindustria IBÉRICA S.A.

ULTRA STAR

Key technical features

- **New Type «B»** high performance rubber compound tube
- R134a Refrigerant Permeation Rate < **5 kg/m²/yr** - Meets same SAE J2064 permeation specification as Type «E» hose
- Homologated for use with new Refrigerant HFO-1234yf
- Reduced bend radii for easy installation
- Durable braided steel inner reinforcement
- Fully compatible with all existing Manuli STAR-FIT and STAR-CRIMP fittings
- Complete range of internal diameters - from DN 05 to DN 28

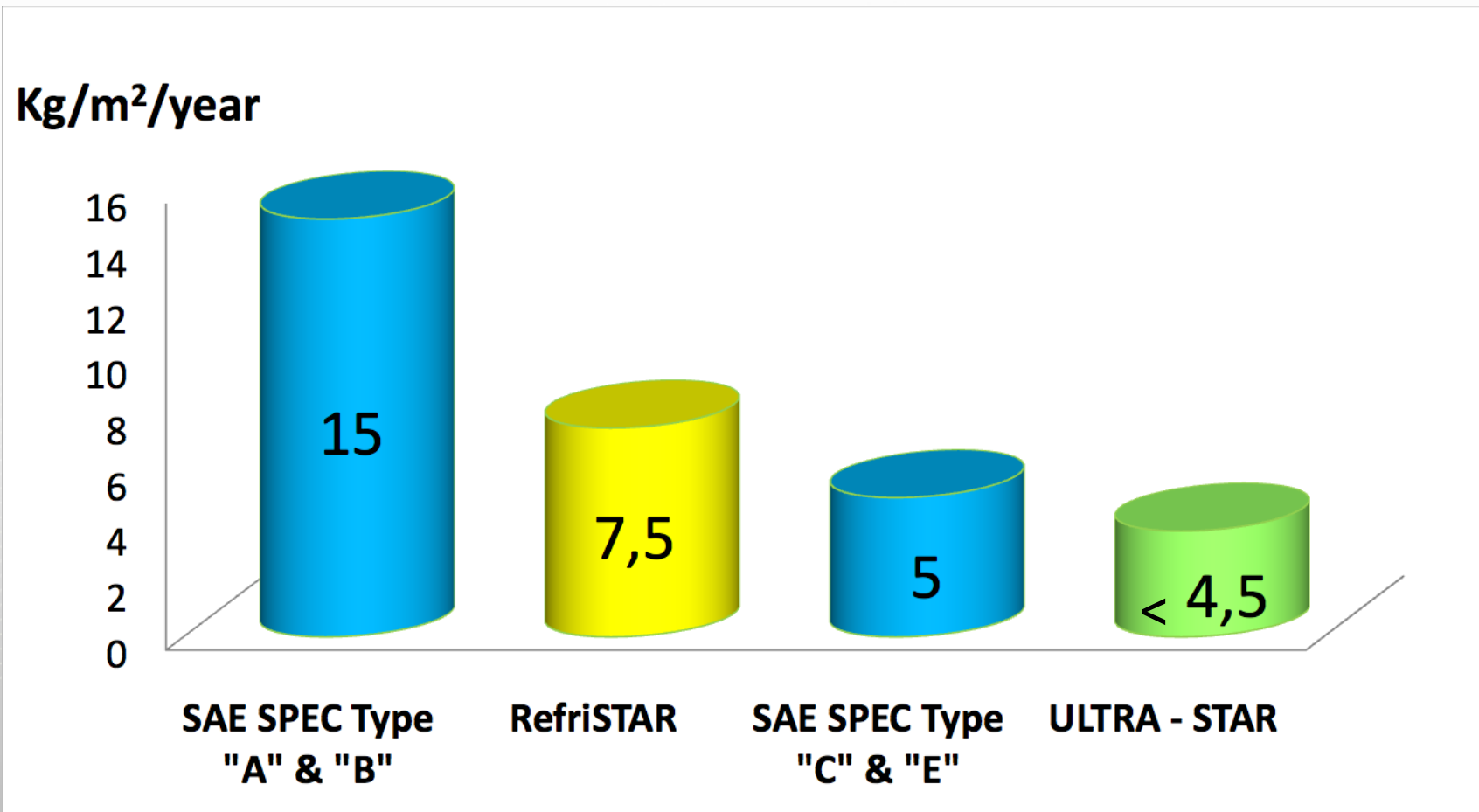
New!

rodaindustria IBÉRICA S.A.



ULTRA STAR

Hose Performance - Permeation to R134a - SAE J2064 test



ULTRA STAR

MANULI TESTING CAPABILITIES

Manuli thoroughly tests and validates in house all mobile air-conditioning products to the SAE J2064 std and is also equipped to test and design products to dedicated OEM requirements.

The following tests are performed in Manuli's state of the art Innovation Centre in Bologna, Italy:

- Material Analysis
- Permeation
- Impulse
- Pressure
- Temperature
- CIT
- AC system Simulation
- System Chemistry
- Vibration
- Durability

New!

rodaindustria IBÉRICA S.A.



Hose	DN	Insert type	Ferrule	DN_Ferrule	Inches	dash	InternalSkive	ExternalSkive	Crimp Diam	Crimp Version	Crimp Type
REFRIFAST	8	OPC	OPC-06	8	5/16"	-6	No internal Skive	No-Skive	14,8	STD	REFRI
REFRIFAST	10	OPC	OPC-08	10	13/32"	-8	No internal Skive	No-Skive	16,6	STD	REFRI
REFRIFAST	13	OPC	OPC-10	13	1/2"	-10	No internal Skive	No-Skive	18,8	STD	REFRI
REFRIFAST	16	OPC	OPC-12	16	5/8"	-12	No internal Skive	No-Skive	21,1	STD	REFRI

Legenda: **xx,x** New value of crimp diameter (optimization)
Date: November 2012

