

# RS-44 (R424A)

**R22 ZERO ODP DROP-IN REPLACEMENT**

**COMPATIBLE WITH MINERAL OIL**

**MALAYSIA**



**Dunham Bush air conditioning unit at ISO 1400 registered company Iriichi, Malaysia, converted from R22 to RS-44. Mr Arumgam, Production Manager, (third from left) said: “We are very happy with RS-44 & plan to change all our systems to RS-44”**

**\* NO CHANGE OF OIL**

**\*COMPATIBLE WITH TRADITIONAL & NEW SYNTHETIC LUBRICANTS**

**\*SIMPLE & LOW COST CHANGEOVER FROM R22**





## Case Study RS 44 (R424A) retrofit

**Company Name : Iriichi**  
**Location : Prai Free Trade Zone,**  
**Penang, Malaysia**

Iriichi (M) Sdn Bhd is an electronics company located in Prai Free Trade Zone, Penang, Malaysia. & has been accredited to ISO 14001 company since 1998.. As part of maintaining ISO registration, Iriichi has a need to phase out CFCs & HCFCs as part of a continuous improvement process.

Irene Sim Ai Ling from Mox Gases, which supplies RS-44 in Malaysia, met with representatives from the company and, after due consideration, RS-44 was selected as the drop in replacement to be evaluated in place of HCFC 22.

Date of trial : 3<sup>rd</sup> & 4<sup>th</sup> June 2004  
 Location : Prai Industrial Estate Phase 1  
 Engineers from Iriichi : Mr Arumugam ,  
 Iriichi's contractor- Extechpro : Mr Azahar , Mr Faizul & Mr Helmi  
 System Specifications available :  
 Model: Dunham Bush ADK510 Quad comps  
 Compressor/HP : Original - Techumseh AN144UT-031-A4  
 Replacements : Copeland QR 12 M1-TFD - 501 ( 90 HP nominal)  
 Amount of original refrigerant charge : no indication  
 Recommended amount By manufacturer : no indication  
 Modifications of system : Techumseh AN144UT-031-A4 compressors originally – Copeland compressors are used as replacements  
 Type of oil used : Copeland White Oil – AB family  
 Leak test performed : prior to retrofit drier change & nitrogen pressurization & leak detection carried out.

The Unitary package had 4 individual compressors circuits. Circuit number 2 was selected to be retrofitted to RS-44. The system was topped up with 4.32kg of R22 to take it to 100% before the first round of readings were taken, and seemed to be operating at normal conditions.

		DAY 1	
		R22	RS-44
Parameters	Units		
Suction Pressure	Psig	76	58
Discharge Pressure	Psig	310	260
Suction Temperature	°C	7.2	3.0
Discharge Temperature	°C	57.2	52.0
Suction Pipe Temperature	°C	16.1	8.9
Discharge Pipe Temperature	°C	65	69.4
Supply Air Temperature	°C	27.6	26
Room Temperature	°C	26.8	25
Ambient Temperature	°C	30.9	30.5
Compressor Running Amps	Amp	15.5	13.8

When circuit 2 had been converted to using RS-44, the system seemed to operate as well as when on R22.