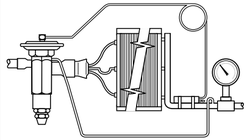
7B

MAXIMUM LOW SIDE TEST PRESSURES PRESIONES DE PRUEBA MÁXIMAS DEL LADO DE BAJA MAXIMALE SAUGSEITIGE PRÜFDRÜCKE PRESSIONS MAXIMALES DE TEST BASSE PRESSION PRESSIONI MASSIME DI PROVA SUL LATO DI BASSA PRESSIONE PRESSÕES MÁXIMAS DE TESTE DO LADO BAIXO 低壓側最大測試壓力 低圧側最大試験圧力 الحد الأقصى لضغوط اختبار الجانب المنخفض		
VALVE TYPE TIPO DE VALVULA VENTILTYP TYPE DE VALVE TIPO DI VALVOLA TIPO DE VÁLVULA 閥門類型 バルブの種類 نوع الصمام	psig	bar
(B)BI, CBBI, (E)BF/SBF, (E)BQ/SBQ, C, EBS, (E)F, EG, (E)MC, FB, G, I, NI, Small O, (E)Q/SQ, (E)R/SR, RC, RI, S, X	450	31
D, P, H, Large O	300	29
A, M, V, W	300	27
BBI, CBBI, (E)BQ/SBQ, Small O, Large O, (E)R/SR, RC	700*	48*

*R-410A only.

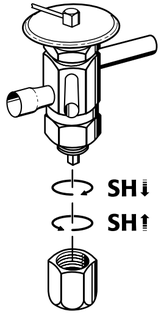
8



REFRIGERANT REFRIGERANTE KÄLTEMITTEL PRODUIT RÉFRIGÉRANT REFRIGERANTE REFRIGERANTE 製冷劑 冷媒 غاز تبريد	THERMOSTATIC CHARGE CARGA TERMOSTATICA FÜHLERFÜLLUNG CHARGE THERMOSTATIQUE CARICA TERMOSTATICA CARGA TERMOSTÁTICA 恒溫充注 感熱チャージ شحن ترموستاتي	MOP - psig PRESION MAXIMA DE OPERACION – psig MOP-psig MOP (PRESSION MAXIMALE DE FONCTIONNEMENT) – en psig PME-psig MOP-psig (ABREVIAÇÃO DE PRESSÃO DE OPERAÇÃO MÁXIMA) 最大工作壓力 (MOP) – psig 最大使用圧力 – psig الحد الأقصى لضغط التشغيل-مقياس الضغط لكل انش مربع	
		FACTORY AIR TEST PRUEBA DE AIRE EN LA FÁBRICA WERKSEITIGE DRUCKLUFTPRÜFUNG TEST AIR USINE TEST DI PRESSIONE AD ARIA COMPRESSA TESTE DE AR DA FÁBRICA 工廠空氣測試 工場エア試験 الاختبار الهوائي بالمصنع	NOMINAL SYSTEM SISTEMA NOMINAL NOMINAL SYSTEM PRESSION NOMINALE IMPIANTO NOMINALE SISTEMA NOMINAL 公稱系統 標準システム الجهاز الاسمي (الاعتيادي)
12, 134a, 401A, 409A	FCP60	60	50
12	FCP	40	30
	FZP	20	12
22, 407A, 407C	VCP100	100	90
	VGA	*	*
	VCP	65	55
22, 407A	VZP40	40	30
404A, 408A, 502	SCP115	115	105
402A, 404A 408A, 502, 507	SCP	75	65
	SZP	45	35
410A	ZGA	*	*
	ZCP180	180	170
	ZCP200	200	190

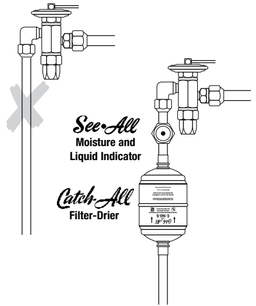
MAXIMUM OPERATING PRESSURE	*Above normal operating conditions.
PRESION MAXIMA DE OPERACION	*Condiciones de operación por encima de lo normal
MAXIMALER BETRIEBSDRUCK	*über normalen Betriebsbedingungen
PRESSION MAXIMALE DE FONCTIONNEMENT	*au-dessus des conditions normales de fonctionnement
PRESSIONE MASSIMA DI ESERCIZIO	*Eccedente le condizioni normali d'esercizio
PRESSÃO DE OPERAÇÃO MÁXIMA	*acima das condições normais de operação
最大工作壓力	*超過正常工作條件
最大使用圧力	*通常の使用状態以上
الحد الأقصى لضغط التشغيل	*فوق ظروف التشغيل العادية

9

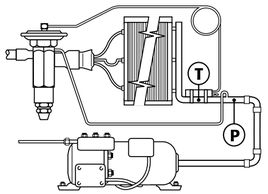


SUPERHEAT	SYSTEM INSURANCE	HOW TO DETERMINE SUPERHEAT
RECALENTAMIENTO	SEGURO DEL SISTEMA	COMO DETERMINAR EL RECALENTAMIENTO
ÜBERHITZUNG	SYSTEMABSICHERUNG	BESTIMMUNG DER ÜBERHITZUNGSTEMPERATUR
SURCHAUFFE	SÉCURITÉ DU SYSTÈME	COMMENT DÉTERMINER LA DE SURCHAUFFE
SURRISCALDAMENTO	PROTEZIONE DELL'IMPIANTO	DETERMINAZIONE DEL SURRISCALDAMENTO
SUPERAQUECIMENTO	SEGURO DO SISTEMA	COMO DETERMINAR O SUPERAQUECIMENTO
過熱	系統安全措施	如何確定過熱
スーパーヒートの調整	システムの保護部品	スーパーヒートの決定方法
تسخين مفرط	تأمين النظام	طريقة تقدير التسخين المفرط

10



11



R-22

1. T = 52°F (11°C)
2. P = 68 psig (4.7 barg) → T_P = 40°F (4°C)
3. T – T_P = T_{SH}
   52°F (11°C) – 40°F (4°C) = 12°F (7K [7°C])

SPORLAN

Thermostatic Expansion Valves

TEV INSTALLATION
INSTALACION DE VALVULAS DE EXPANSION TERMOSTATICA
INSTALLATION DES TEV (THERMOSTATISCHES EXPANSIONSVENTIL)
INSTALLATION DES DÉTENDEURS THERMOSTATIQUES
INSTALLAZIONE DELLE VALVOLE D'ESPANSIONE TERMOSTATICHE
INSTALAÇÃO DAS TEV (VÁLVULAS DE EXPANSÃO TERMOSTÁTICA)
熱力膨脹閥（TEV）的安裝
感熱能張弁(TEV)の取付
تركيب صمامات التمدد الثرموستاتي

REFER TO BULLETIN 10-11 FOR MORE INFORMATION ON THE INSTALLATION AND SERVICING OF THERMOSTATIC EXPANSION VALVES.

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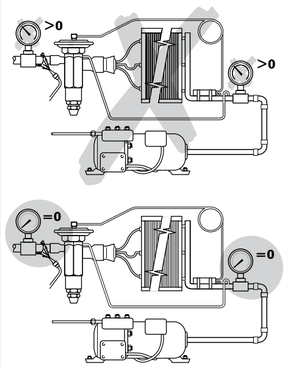
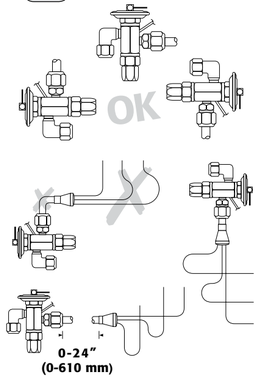
1



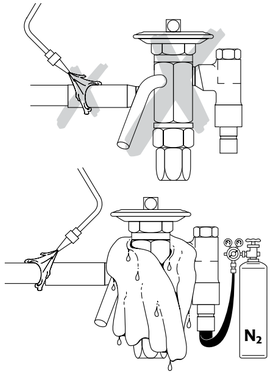
SYSTEM PRESSURES - INSTALLATION OR REMOVAL
PRESIONES DEL SISTEMA – INSTALACIÓN O DESMANTELAMIENTO
SYSTEMDRÜCKE - EIN - ODER AUSBAU
PRESSIONS DU SYSTÈME – INSTALLATION OU SUPPRESSION
PRESSIONI DI IMPIANTO - INSTALLAZIONE O RIMOZIONE
PRESSÕES DO SISTEMA – INSTALAÇÃO OU RETIRADA
系統壓力-設置或卸載
システム圧力　－　取付と取外し
صمامات ضغط النظام - تركيب او إزالة

2



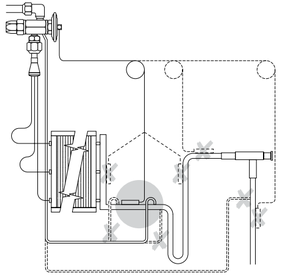
VALVE LOCATION
LUGAR DE LA VALVULA
VENTILPOSITION
EMPLACEMENT DU DETENDEUR
POSIZIONE DELLA VALVOLA
LOCAL DA VÁLVULA
閥門位置
バルブの位置
موضع الصمام

3



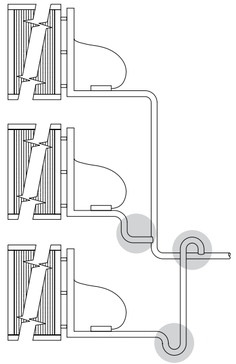
SOLDER TECHNIQUES
TECNICAS DE SOLDADURA
LÖTVERFAHREN
TECHNIQUES DE BRASAGE
TECNICHE DI SALDATURA
TÉCNICAS DE SOLDAGEM
焊接技術
ロウ付け方法
أساليب اللحام التقنية

4



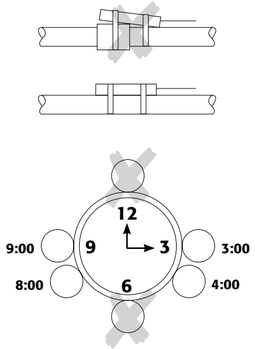
BULB AND EQUALIZER LOCATIONS
LUGAR DEL BULBO Y EQUILIBRADOR
FÜHLER - UND EXTERNER DRUCKAUSGLEICH-MONTAGE
EMPLACEMENTS DES BULBES ET EGALISATIONS EXTERNES
POSIZIONE DEL BULBO E DELL'EQUALIZZATORE
LOCAL DO BULBO E DO EQUALIZADOR
感溫包與平衡器位置
感熱筒と外均接続の位置
مواقع البصلة والموازن

5



MULTIPLE EVAPORATORS
EVAPORADORES MULTIPLES
MEHRERE VERDAMPFER
EVAPORATEURS MULTIPLES
EVAPORATORI MULTIPLI
EVAPORADORES MÚLTIPLOS
多台蒸發器
複数の蒸発器
تبخير متعدد المراحل

6



BULB LOCATION
LOCALIZACION DEL BULBO
FÜHLERPOSITION
EMPLACEMENT DU BULBE
POSIZIONE DEL BULBO
LOCAL DO BULBO
感溫包位置
感熱筒の位置
موقع البصلة

7A

MAXIMUM DEHYDRATION TEMPERATURES
TEMPERATURAS DE DESHIDRATACION MAXIMAS
MAXIMALE TROCKNUNGSTEMPERATUR
TEMPÉRATURES DE DÉSHYDRATATION MAXIMALES
TEMPERATURE MASSIME DI DISIDRATAZIONE
TEMPERATURAS MÁXIMAS DE DESIDRATAÇÃO
最高去濕溫度
最大乾燥温度
الحد الأقصى لدرجات حرارة التجفيف

REFRIGERANT REFRIGERANTE KÄLTEMITTEL RÉFRIGÉRANT REFRIGERANTE REFRIGERANTE 製冷劑 冷媒 **غاز تبريد**	THERMOSTATIC CHARGE CARGA TERMOSTATICA FÜHLERFÜLLUNG CHARGE THERMOSTATIQUE CARICA TERMOSTATICA CARGA TERMOSTÁTICA 恆溫充注 感熱チャージ **شحن ترموستاتي**							
	C		Z		GA		CP, ZP	
	°F	°C	°F	°C	°F	°C	°F	°C
12, 134a, 401A, 409A	190	88	250	121	—	—	250	121
22, 407A, 407C	160	71	185	85	250	121		
402A, 404A, 408A, 502, 507	150	65	170	77	—	—		
717 (Ammonia)	190	88	235	113	—	—	—	—
410A	—	—	—	—	250*	121*	250*	121*

*Bulb temperature cannot exceed 160°F (71°C).

FOR REFRIGERATION and AIR CONDITIONING APPLICATIONS ONLY • SOLAMENTE PARA SISTEMAS DE REFRIGERACION Y AIRE ACONDICIONADO • NUR ZUR VERWENDUNG IN DER KÄLTE- UND KLIMATECHNIK • RÉFRIGÉRATION ET CLIMATISATION UNIQUEMENT • SOLAMENTE PER APPLICAZIONI DI REFRIGERAZIONE E CONDIZIONAMENTO DELL'ARIA • SOMENTE PARA USO EM REFRIGERAÇÃO E AR CONDICIONADO • 僅於冷凍與空調通用 • 冷凍および空調用途のみ • لاستعمالات التبريد وتكييف الهواء فقط