

Address: 83 High Street,

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TIMESHEE	I REPORT								
CUSTOMER NAME		SITE CONTACT (OPERAT	SITE CONTACT (OPERATOR RESPONSIBLE FOR F-GAS COMPLIANCE)						
MAINTENANCE SOLUT	TIONS	ROB NORMA	SINEERING MANAGER	08427					
SITE NAME & ADDRESS ((PLANT OWNER F-GAS)	ENGINEER	STEVE ORLANDO		CLIENT ASSET NUMBER				
HEMEL ONE, BOUNDA	RY WAY, HEMEL HEMPSTEAD, HERTFORDSHIRE. HP2 7YU	MATE	D. HICKEY C.ORLANDO	00927					
REASON FOR VISIT Q	QUOTED REPAIRS - SYSTEM 1	MANUFACTURER	DELONGHI	MODEL	FE/SRAT/B 2404				
JOB NUMBER J/	/N:2172. O/N:PO18166	SERIAL No.	A898202034/B	YEAR INSTALLED	01/01/2000				
PLANT LOCATION R	OOF CHILLER PLANT AREA	REFIGERANT TYPE	R407C	TOTAL REF. CHARGE	200.0 KG				
PLANT REFERENCE B	BASE BUILD CHILLER 1 (927)	REFRIGERANT GWP	1774	IND. REF SYS. CHARGE	50+50+50+50 KG				
LOADS SERVED B	BASE BUILD COMFORT COOLING LOADS	EQUIV. TONNES CO2E	354.8	FGAS LEAK CHECK FREQ.	HALF YEARLY				
WORK CARRIED OUT:		•							
ATTENDED SITE RECOVERED REFRIGERANT FOR RE-USE, DOCUMENTED IN F-GAS LOG; ATTACHED.									
INSTALLED SUPPORTI	ING UNISTRUT FOR THE RELOCATION OF THE PRV VALVE FROM BENEATH	THE COMPRESSOR LOC	ATION TO THE DISCHARGE LINE	E ENTERING THE CONDENS	SER. REMOVED				
OLD PRV AND BLANKE	ED WITH 1/2 PLUG. INSTALLED REMOTE PIPEWORK AND INSTALLED SINGL	E PORT PRV WITH LOC	KABLE ISOLATION VALVE. REMO	OVED DRIER CORES AND F	REPLACED				
SIGHT GLASS ASSEME	BLY. REPLACED DRIER CORES AND RE-ASSEMBLED. REPLACED CONTROL L	INE FROM SUCTION LI	NE TO EXTERNALLY EQUALIZED	TX VALVE PORT.					
CARRIED OUT INITIAL	L LEAK TEST, SYSTEM FAILED DUE TO RUSTED FLANGE PLATE ON EXPAND	ED LIQUID LINE. GOT F	REPLACEMENT PLATE MANUFACT	URED BY LOCAL TOOL-MA	KER.				
INSTALLED REPLACEM	MENT FLANGE PLATE . CARRIED OUT 24 HOUR PRESSURE TEST ALL OK. PU	T SYSTEM ON EVACUAT	TON OVERNIGHT. CARRIED OUT	FULL VACUUM RISE TEST	, NO				
NO DISCERNIBLE LOS	SS IN VACUUM. CHARGED SYSTEM WITH RECOVERED REFRIGERANT, CHAR	GED TO LIQUID LINE S	SUBCOOLING. ONLY 46KG OF TH	IE 50KG NAMEPLATE REQU	IRED.				
TEST RUN AND RE-CO	OMMISSIONED ALL OK.								
CARRIED OUT RUST T	REATMENT TO DRIER CAN AND ASSOCIATED FIXINGS. REMOVED CONDEN	ISER HX MESH & CHEM	ICALLY / DEEP CLEANED CONDE	NSER. LEFT MESH OFF.					

LEFT	RUNNING AND AVAILABLE	

ENGINEERS TIME ON SITE & TRAVEL					AVEL			MATERIALS USED			
DAY	DATE	START	FINISH	TRAVEL	TOTAL	COMPLETE Y/N	MILEAGE	No. ENG	QUANTITY	DESCRIPTION	
MON	01/07/2019					N		2	1	CASTEL LOCKABLE ISOLATION VALVE & PRV	
TUES									1	BRAZING CONSUMABLES + 1 FLANGE ASSEMBLY	
WED	05/06/2019					N		2	1	UNISTRUT & COPPER CONSUMABLES	
THUR	27/06/2019					N		2	1	10MM BOLTS, NUTS & CONSUMABLES	
FRI	28/06/2019					N		2	1	LARGE RECEIVER & 2 OFN NITROGEN	
SAT									3	DRIER CORES & SIGHT GLASS	
SUN									1	PAINT & RUST PREP. CONSUMABLES	

CUSTOMER TO SIGN FOR ENGINEERS TIME ON SITE

ENGINEER SIGNATURE:	M Sallon	CUSTOMERS SIGNATURE:								
F-GAS QUALIFICATION:	C&G 2079 PART 1	CUSTOMER NAME:	ROB NORMAN							
SIGNATURE DATE:	01/07/2019	CUSTOMERS JOB TITLE:	ENGINEERING MANAGER							
DDITIONAL WORKS RECOMM	ODITIONAL WORKS RECOMMENDED / REQUIRED:									

ISO9001:2008. CUSTOMER SATISFACTION:		1 = UNSATISFIED $2 = BELOW AVERAGE$ $3 = MET EXPECTATION$ $4 = ABOVE AVERAGE$ $5 = EXCELLENT$
CUSTOMED COMMENTS ABOUT DEDECORMANCE ON THIS TOR / CO	ONTDACT:	



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SYSTEM TEST CERTIFICATES

CUSTOMER NAME		SITE CONTACT (OPERATOR R	SHEET NUMBER		
MAINTENANCE SOL	UTIONS	ROB NORM	AN -	ENGINEERING MANAGER	08427
SITE NAME & ADDRESS		ENGINEER	STEVE ORLANDO		CLIENT ASSET NUMBER
HEMEL ONE, BOUNI	DARY WAY, HEMEL HEMPSTEAD, HERTFORDSHIRE. HP2 7YU	F-GAS QUALIFICATION	C&G 2079 PART 1		00927
REASON FOR VISIT	QUOTED REPAIRS - SYSTEM 1	MANUFACTURER	DELONGHI	MODEL	FE/SRAT/B 2404
JOB NUMBER	J/N:2172. O/N:PO18166	SERIAL No.	A898202034/B	YEAR INSTALLED	01/01/2000
PLANT LOCATION	ROOF CHILLER PLANT AREA	REFRIGERANT TYPE	R407C	QUANTITY (KG)	200.0 KG
PLANT REFERENCE	BASE BUILD CHILLER 1 (927)	CLG LOAD SERVED	BASE BUILD COMFORT COOLIN	G LOADS	

LANT LOCATION LANT REFERENCE	ROOF CHILLER PLANT AREA BASE BUILD CHILLER 1 (927)			GERANT TYPE OAD SERVED	R407C	FORT COOLING LO	QUANTITY (KG)	200.0 KG	
LANT KEI EKENCE	DASE BOILD CHILLER I (927)		CLG	OAD SERVED	BASE BUILD COM	TORT COOLING LO	AU3		
		STRE	ENGTH	TEST	CERTI	FICATE	=		
START C	OF STRENGTH TEST								
DA	ATE	TIME		PRESSURE		MOP			
THE AE	BOVE SYSTEM / COMPO						LIED AT 1.5 TIMES	5 MOP (MAXIM	1UM
							0.		
		all							
	ENGINEERS SIGNATURE		Morris	CUSTOM	FRS SIGNATURF				
	F-GAS QUALIFICATION	C&G 2079 P	ART 1		PRINT NAME		ROB NORMAN		
	SIGNATURE DATE	01/07/20	19	CUSTO	MERS JOB TITLE		ENGINEERING MANAGER		
		<u>PRES</u>	<u>SSURE</u>	<u>TEST</u>	CERTI	<u>FICATE</u>	_ _		
		TIME	15:30	PRESSURE	10.1 BarG	AMBIENT	19.7 Deg C		
		TIME GEN PRESSURE FIG	15:00 URE	PRESSURE	10.1 BarG	AMBIENT	18.9 Deg C		
CALCULAT	ED CORRECTED END PRESSURE USING	3 START PRESSURE ANI	O START AMBIENT TEN	1PERATURE RELAT!	IVE WITH FINISH AMBI	ENT TEMP.	10.1 BarG		
THE ABOVI	E SYSTEM HAD A WITN				· ·		MAINTAINED FOR	THE PERIOD S	STATE
							0		
		TINSTRUMENT	SERIAL: URAC-045	. CERTIFICATE	NO. CM254088. NE	EXT DUE 17/01/202	0.		
	ENGINEERS SIGNATURE	R MUX	Alber	CUSTOM	ERS SIGNATURE				
	F-GAS QUALIFICATION	C&G 2079 P/	ART 1		PRINT NAME		ROB NORMAN		
	SIGNATURE DATE	01/07/20	19	CUSTO	MERS JOB TITLE		ENGINEERING MANAGER		_
STRENGTH TEST CERTIFICATE START OF STRENGTH TEST DATE THE PRESSURE THE ABOVE SYSTEM / COMPONENT HAD A WITNESSED OFN NITROGEN STRENGTH TEST APPLIED AT 1.5 TIMES MOP (MAXIMUM OPERATING PRESSURE), MAINTAINED FOR 30 SECONDS. INSTRUMENT USED: TIT HIGH SIDE GAUST. CALIBRATED: 16/01/2019. INSTRUMENT SERIAL: ORAC-147. CERTIFICATE No. CR0546079. NEXT DUE 16/01/2020. ENGINEERS SIGNATURE PRESSURE TEST CASE 27(65/2019 THE 15:20 PRESSURE TEST CERTIFICATE START OF PRESSURE TEST THE 27(65/2019 THE 15:30 PRESSURE 10.1 BairC ANDERS 10.1 BairC ANDERS 11.5 PAG C TEMPERATURE COMPENSATED NITROGEN PRESSURE FIGURE CALCIDATED COMPENSATED NITROGEN PRESSURE FIGURE CALCIDATED COMPENSATED NITROGEN PRESSURE AND START AMBIENT THERRATURE PREATURE VITED PRINSE AMBIENT THRO. 16.1 RE-27 INSTRUMENT SERIAL: ORAC-045. CERTIFICATE No. CM254088. NEXT DUE 17/01/2020. ENGINEERS SCOMATURE PAGE QUALIFICATION LOS NORMAL LOS NEXT DUE 17/01/2020. ENGINEERS SCOMATURE PAGE QUALIFICATION LOS NORMAL DATE NORMAL DEPORT THROUGH PRESSURE TEST APPLIED, WHICH WAS MAINTAINED FOR THE PERIOD STATE ABOVE SYSTEM HAD A WITNESSED OFN NITROGEN PRESSURE TEST APPLIED, WHICH WAS MAINTAINED FOR THE PERIOD STATE ABOVE AND HAS BEEN PROVED TO REMAIN LEAK TIGHT INSTRUMENT SERIAL: ORAC-045. CERTIFICATE No. CM254088. NEXT DUE 17/01/2020.									
		<u>VAC</u>	CUUM 1	EST (CERTIF	<u>ICATE</u>			
START (OF VACUUM TEST								
		TIME	08:00		\	VACUUM	0.9 mBar		
DA	TE01/07/2019	TIME	12:00		\	VACUUM	1.2 mBar		
THE ABO	VE SYSTEM HAD A WIT						FOR A PERIOD OF	2 HOURS WIT	THOUT
		II	NSTRUMENT USED:	TESTO. 290678	2 CALIBRATED: 08/0	01/2019.			
		INSTRUMENT	T SERIAL: ORAC-16	9. CERTIFICATE	No. 22733149. NEX	KT DUE 08/01/2020			
	ENGINEERS SIGNATURE	R MWK	Alban	CUSTOM	ERS SIGNATURE				
	F-GAS QUALIFICATION			_	PRINT NAME		ROB NORMAN		

ENGINEERING MANAGER

SIGNATURE DATE 01/07/2019 CUSTOMERS JOB TITLE



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F-GAS & BOTTLE LOG

CUSTOMER NAME			SITE CONTACT (OPERATOR RESPONSIBLE FOR F-GAS COMPLIANCE) SHEET NUMBER									
MAINTENANC	E SOLUTIONS		rob norman - engineering manager 08427									
SITE NAME & ADD	RESS (PLANT OWNER F-GAS	5)				ENGINEER STEVE ORLANDO CLIENT ASSET NUMBER						
HEMEL ONE,	BOUNDARY WAY, HEN	MEL HEMPSTEAD,	HERTFORDSHIRE.	HP2 7YU		QUALIFICATION C&G 2079 PART 1					00927	
MANUFACTURER	MODEL		SERIAL	DATE	INSTALLED	PLANT REFERENCE						
DELONGHI	FE/SRAT/B	2404	A898202034/B	01/0	01/2000	BASE BUILD CHILLER 1 (927)						
REFRIG TYPE	TOT. REFRIG CHRG.	INDIVIDUAL SYS. REF.		REFRIG GWP	EQUIV. TONNES CO2e		-	S LOAD SERVED				
R407C	200.0 KG	50+50+50+50 K		1774		HALF YEARLY BASE BUILD COMFORT COOLING			COOLING LOVI	ns		
	200.0 KG	30 1 30 1 30 1 30 K							COOLING LOAD			
		1		VIRGIN	REFRIGERAN	I BOITLE	LOG (KG	i)				
DATE RECEIVED	DELIVERY NOTE NUMBER	BOTTLE NUMBER	SUPPLIER	REFRIGERANT	BOTTLE TYPE	GROSS WEIGHT	TARE WEIGH	HT NET WEIGHT	NET USED	DATE RETURNED	RETURNS NOTE NUMBER	
				DI	ECOVEDY BOT	TIELOC (I	VC)					
				Kı	ECOVERY BOT	TLE LOG (F	KG)					
DATE RECEIVED	DELIVERY NOTE NUMBER	BOTTLE NUMBER	SUPPLIER	REFRIGERANT	RECOVERY TYPE	TARE WEIGHT	RECOVERED I	NET RECOVERED USED	GROSS WEIGHT	DATE RETURNED	WASTE TRANSFER NOTE	
03/06/2019	83865273	937	D&W	R407C	RECEIVER	24.1 KG	22.5 KG	G 22.5 KG				
15/03/2019	83828658	19627	D&W	R407C	RECEIVER	28.6 KG	5.0 KG					
03/06/2019	83865273	23559	D&W	R407C	RECEIVER	27.3 KG	9.5 KG	9.5 KG				
03/06/2019	83865273	LM01728	WOLSESLEY	R407C	RECEIVER	30.8 KG	9.0 KG	9.0 KG				
				F-GAS	REFRIGERAT	TON LOG R	RECORD					
REFRIGERANT	T ADDITIONS											
DATE	ENGINEER	AMOL	JNT ADDED (KG)			REASON FOR ADDITION						
01/07/2019	STEVE ORLAND	00	22.5 KG		S	SYS1 - RETURNED RECOVERED CHARGE AFTER COMPLETION OF WORKS						
01/07/2019	STEVE ORLAND	00	23.5 KG		SYS1	L - TOPPED UP C	CHARGE FRO	M TRIMMED CHARG	ES FROM OTHER	R SYSTEMS		
REFRIGERANT	Γ REMOVALS											
DATE	ENGINEER	NOMA	NT REMOVED (KG)				RE	EASON FOR REMOVAL				
05/06/2019	STEVE ORLAND	00	22.5 KG			SYS1	- REMOVED	REFRIGERANT FOR	PRV WORKS			
REFRIGERANT	Γ LEAK TEST											
DATE	ENGINEER	Т	EST RESULT				FOLLO	W UP ACTIONS REQUIRED				
01/07/2019	STEVE ORLAND	00	PASS			SYS1 - CAR	RIED OUT F	ULL PRESSURE & VA	CUUM RISE TES	ST		
01/07/2019	STEVE ORLAND	00	PASS		SYS1 - 0	CARRIED ELECT	RONIC REFR	RIGERANT LEAK TES	Γ ON COMPLETI	ON OF WORKS		
FOLLOW UP ACT	TIONS											
DATE	ENGINEER	RELA	TED TO TEST ON					ACTIONS TAKEN				
TESTING AUT	OMATIC LEAK DETECT	ION SYSTEM (IF F	ITTED)									
DATE	ENGINEER		EST RESULT					COMMENTS				
J.((L	L.VOINLLIN											
	1											



Address:

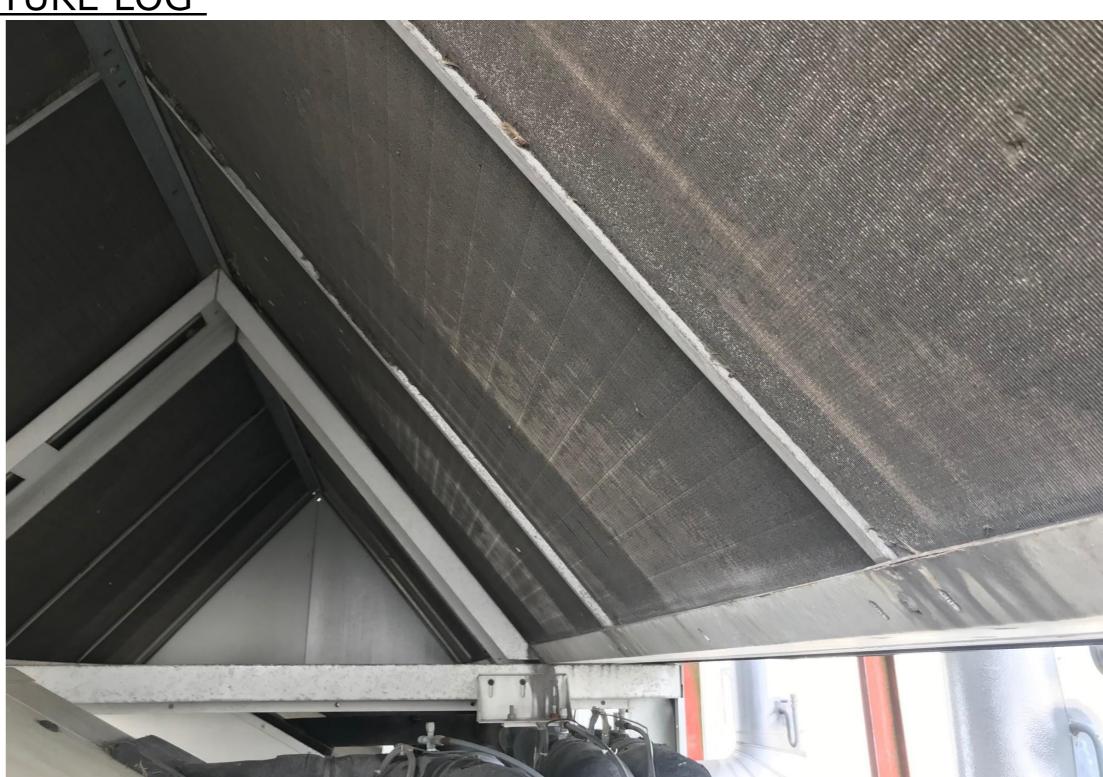
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LOG - SITE PICTURES

CUSTOMER NAME	SITE CONTACT (OPER	RATOR RESPONSIBLE FOR F-GAS COMPLIAN	CE)	SHEET NUMBER	
MAINTENANCE SOLUTIONS	ROB NORN	1AN - ENGINEE	RING MANAGER		08427
SITE NAME & ADDRESS	ENGINEER	STEVE ORLANDO		CLIENT ASSET NUMBER	
HEMEL ONE, BOUNDARY WAY, HEMEL HEMPSTEAD, HERTFORDSHIRE. HP2 7YU	F-GAS QUALIFICATIO	NC&G 2079 PART 1			00927
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PLANT LOCATION ROOF CHILLER PLANT AREA	REFRIGERANT TYPE	R407C	QUANTITY (KG)	200.0 KG	
PLANT REFERENCE BASE BUILD CHILLER 1 (927)	CLG LOAD SERVED	BASE BUILD COMFORT COOLING LC	ADS		

SITE PICTURE LOG















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3 - SITE PICTURES	
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CUSTOMER NAME	SITE CONTACT (OPER	RATOR RESPONSIBLE FOR F-GAS COMPLIANC	E)	SHEET NUMBER	
MAINTENANCE SOLUTIONS	ROB NORN	MAN - ENGINEER	ING MANAGER		08427
SITE NAME & ADDRESS	ENGINEER	STEVE ORLANDO		CLIENT ASSET NUMBER	
HEMEL ONE, BOUNDARY WAY, HEMEL HEMPSTEAD, HERTFORDSHIRE. HP2 7YU	F-GAS QUALIFICATIC	ON C&G 2079 PART 1			00927
REASON FOR VISIT QUOTED REPAIRS - SYSTEM 1	MANUFACTURER	DELONGHI	MODEL	FE/SRAT/B 2404	
JOB NUMBER J/N:2172. O/N:PO18166	SERIAL No.	A898202034/B	YEAR INSTALLED	01/01/2000	
PLANT LOCATION ROOF CHILLER PLANT AREA	REFRIGERANT TYPE	R407C	QUANTITY (KG)	200.0 KG	
PLANT REFERENCE BASE BUILD CHILLER 1 (927)	CLG LOAD SERVED	BASE BUILD COMFORT COOLING LOA	DS		

SITE PICTURE LOG

