

Date: 16 July 2018

Subject: Clarification on RFQ

To the attention of potential applicants,

Reference is made to the Request for Quotation posted on 8 July 2018 regarding the Procurement of Tools with the deadline of 22 July 2018, in response to the inquiry raised by some of the bidders on coding of the specifications, the specifications are revised as attached to this clarification.

We are looking forward to receiving your proposal by the COB 22 July 2018.



Revised Annex 1 Technical Specifications

Tools

<u>Important Note:</u> The requested tools are required in 15 packs, each pack should include the items included in below items. Please note the quantity of each item to be included in each pack.

	Category	Description	Qty	Picture
1	Tools	Refrigerant recovery unit suitable for the use with A3, A2L and A1 (EN378-1) classified refrigerants, such as R290, R32, R410, R134a and most common other refrigerants (HCFCs and HFCs). Unit supplied with robust housing and equipped with gauges for high and low pressure and refrigerant hoses connections for ¼" SAE. The refrigerant can be recovered from a RAC system in vapour or liquid state. The unit must comprise of a build-in vapour liquefaction heat-exchanger and oil separator. All wirings and functional parts are from high electrical specifications with encapsulated components. Hard wired mains lead with moulded plug. Operational manual in English language must be submitted with the quotation. The unit must be CE certificated. Declaration of conformity must be provided with the quotation. Technical data: Minimum recovery rate 8 kg/h (not push/pull method) Gauges for high- and low pressure Refrigerant connection ports for in- and outlet ¼" SAE Internal refrigerant liquefaction heat- exchanger Internal refrigerant oil separator High- and low- pressure switch (low with overwrite function) Hard wired mains lead minimum length 5 m Power supply 220V / 1Ph / 50Hz Refrigerants A3, A2L, A1 Protection against overpressure	1	Scholds for use other all K. Refigurers.



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2	Tools	Portable air blower with capacity of 700 m³/h. Power consumption 25 Watt, weight 6,5 kg, sound level 68 (dB(A)), housing, motor and accessory ATEX approved.specifications with encapsulated components. Hard wired mains lead with moulded plug and a length of 5m. plug NEMA 5-15 three poles; - Power supply 220V / 1Ph / 50Hz	1	
3	Tools	Combustible Gas detector (Leak finding instrument), sensitive to most common HC gases. Unit shall consist of the combustible gas detector, two D-size batteries and a hard plastic carrying case. Sensitivity of the detector is 5 ppm and with rugged flexible probe; variable audible signal as well as multiple LEDs to indicate leeks; automatic adjustment (zeroing) to combustible gas in leak test area for greater stability; weight 0.7 kg. CE confirmation; intrinsically safe for class I, Division I; Groups A-D; T4 and rated II 3G Ex	1	
3.1	accessory	Sensor tip replacement for each unit of item 3	2	
4	Tools	Sensitivity check device (reference löeak) for electronic gas detectors (leak finding instruments); Refrigerant Propane R290; 5 grams per year flow rate;	2	
5.1	Tools	Oil mist exhaust filter for vacuum pump assembly. Filter to be mounted on the exhaust port of the vacuum pump. Vent line connection on the outlet of the Filter. Oil filtering rate 99,97%	2	
5.2	Accessory	Filter replacement cartridge for oil mist exhaust filter (vacuum pump)	4	
5.3	accessory	Replacement vacuum pump oil; one liter canister; viscosity 46mm²/s; Mineral Oil	2	A SAME
6	Tools	Vent line for evacuation process; PVC hose wire-reinforced; suitable for use with anhydrous ammonia; inner diameter 5/8" (16mm); length 10 m and including two (2) steel clamps with worm drive mechanism, use for item 16	2	



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7	Tools	Handheld precision, quick-response temperature measuring instrument set. Ready to use temperature measuring set with three different type K temperature sensors, suitable for measurements in liquids, air and gases as well as surface. Two plug-in probe inputs, data logger instrument with LCD display; analog output 0-1, freely adjustable, serial interface, min./max. value memory, hold function, correction of measured value for surface measurements (on/off), zeropoint offset. Large plastic case with cut-outs with dimensions about 340 x 275 x 85 mm Scope of supply: - Temperature measuring device -220 to 1750°C - Two wire probes, K type, -60 to 300°C, 1 m length - Immersion probe for gases and liquids, K type, -65 to 550°C, plastic handle - Surface probe, K type, -65 to 550°C, plastic handle - Operating software and update for the measuring instrument - Plastic carrying case with cut-outs - Batteries - Operational manual in English language - CE Certification	1	
8	Tools	Digital four-way manifold gauge for refrigeration and AC applications. RAC refrigerant circuit measurements, analyse and log pressure, temperature, electricity and vacuum measurements and save all measuring data. Technical data: - 999 hours of internal memory - Real time data measurement and graphical editing - Including software presenting the data in an easy-to-understand format - Including 40 most common type refrigerants stored in the meter - Updates for other refrigerants free of charge using the software - Two temperature compensated pressure sensors measure high and low pressure and calculate the temperatures automatically - Three temperature connecting points for connectable temperature sensors: calculate superheat and subcooling simultaneously, measure parallel the surrounding	1	19. 707 -32° 431° 160 mm made



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		temperature		
		- Integrated vacuum measurements		
		- Temperature compensated leak-tightness check function		
		and automatic surrounding pressure compensation		
		Scope of supply includes:		
		- Two clamp temperature sensor		
		- Downloadable PC software		
		- USB cable		
		- Power adaptor		
		- Batteries		
		- Protective carry case		
		- Calibration protocol		
		- CE certification		
		- Operation manual in English language		
		Technical data:		
		- Pressure measuring range 50 bar		
		- Accuracy ±0.5 % fs (±1 Digit)		
		- Resolution 0.01 bar / 0.1 psi		
		- Refrigerant hose connection 3 x 7/16" UNF + 1 x 5/8" UNF		
		- Overload rel. (low/high pressure) 52 bar		
		- Vacuum measuring range -1 to 0 bar		
		- Vacuum resolution 1 hPa / 1 mbar / 500 micron		
8.1	Accessory	Adapter female to male flare; 1/4" female flare SAE x 3/8" male flare SAE	4	



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8.2	Accessory	Electronic refrigerant charging scales, zeroing function, memory and including carrying bag. Measuring weight in kg, lbs and oz. Technical data: - Capacityt: 110 kg (240 lbs) Plattform - Platform diameter 320 mm - Hight 45 mm - Weight 3,8 kg (6.4 lbs.) - Resolution 2g (0.005 lbs) - Accuracy 0,5% of reading - Battery powered - 4 x 1,5V "AAA" alkalines included with the scales - Including thread to mount charging connection with ball valve for disposable 1 Liter refrigerant cans - Charging device for disposable can with ball valve	1	
9	Tools	Vacuum hose 3/8" SAE, 1.5 m long, straight connections	4	
10	Tools	Access Valve with Teflon seal for easy attachment of HC AC units stop valve; efficient tightness and no refrigerant leaks during hose and valve connection (schrader valve); connections 1/4" SAE	4	
11	Accessory	Refrigerant transfer hose 1500 mm long, with ball valve; 1/4" SAE/UNF connections straight x straight with core depressor; including one set spare gaskets and core depressor	3	Q
12	accessory	Refrigerant transfer hose 180 mm long, with ball valve; 1/4" SAE/UNF connections straight x straight with core depressor; including one set spare gaskets and core depressor	3	Q



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13	Tools	Valve core removal tool used to remove a valve core from a 1/4" SAE male flare access fitting. Tool designed for removing and replacing a "Schrader" type core without venting or recovery of refrigerant. All brass construction. Add or remove refrigerant more efficiently and quicker. Better results during evacuation process. All brass construction.	2	
14	Tools	Pressure testing gauge with defined pressure testing sectors sectors for various refrigerants. Class 1.0 gauge with 80mm diameter and positioning indicator and calibration screw. Attached with flexible hose and ball valve about 220mm long and 1/4" SAE/UNF connections.	1	
15	Tools	Recovery cylinder, dual valve; 12 liter refillable; working pressure 47 bar; tested according to DOT-4BA-400 (400 PSI) or ADR P200 (42 bar)	1	
16	Tools	Vacuum pump, two stage, for the use with flammable A3 refrigerants such as R290, R1270 and R600a. Vacuum pump equipped with gas ballast valve and exhaust port with oil-filter connection. Operational manual in English language (Spanish will be an asset) must be submitted with the quotation. The unit must be CE certificated. Declaration of conformity must be provided with the quotation. Technical data: - Swept volume of about 46 L/min - Ultimate vacuum 1x10-2 mbar or better - Power Supply 220V/1Ph/60Hz - Hard wired mains lead minimum length 5 m - Power consumption about 120W - Oil charge about 300 cc - Protection classification IP54 - Hose connection 3/8" and ¼" SAE - Classification according to II3GD nA tD 4T IP55 (zone 2-22 ATEX) - Power supply 220V / 1Ph / 50Hz	1	



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17	Tools	Fin comb, suitable for cleaning and aligning of fins of any type of finned heat exchangers	2	
18	Tools	Flaring tool set universal, iris styled; for open diameter 3/16" to 5/8" (4,7 to 16 mm);	2	
19	PPE	Portable single gas detector as PPE; 0-100% LFL – Propane (C3H8); ATEX II 2G; Ex ia IIC T4 Gb - BASEEFA04ATEX0383; rechargeable lithium-ion- accumulator; calibrated and including charging station (110V/230V)	1	HS PERSONAL PROPERTY OF THE PR
20	Accessory	Gas test kit for portable gas detector; for testing bevor use or calibration. Gas Test Kit Includes - Trigger regulator with 1m gas supply tube, flow cap, magnet and 2m gas vent tube.	1	
20.1	Accessory	Cylinder Calibration Gas with 60 Liter -1.1% Propane C3H8	1	Box Cross or
21	Accessory	Grounding set, wrist strap adjustable and with coil cord. Grounding set to lead away static electricity from the body. Technical data: - Stud 4 mm and 10,3 mm - Elastic coil cord	1	



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21.1	Accessory	Earth bonding plug and boxes for an easy and inexpensive ESD-grounding using the mains earth. Technical data: - 3 x 10,3 mm studs with 1 MOhm resistor	1	Earth Bonomp Point with 1 Magorian resistance For use in ESD Control
21.2	Accessory	Coil cord for connection with earth bonding plug from item xxx Technical data: - Length at a minimum of 1.8 m - With 10.3 mm stud and banana plug	1	
22	Tools	Lockring set starter set, hand assembly tool, Lokprep sealent, assembly jaws 6 to 12 mm, straight connectors 4 each 6 to 12 mm, brass connectors with schräder valve 6, 9, 12 mm	1	



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23	Tools	Digital clamp-om multimeter for commercial electrical trouble schooting. The instrument is designed to verify the presence of load current, AC voltage and continuity of circuits, switches, fuses and contacts. The clamp meter is designed for current measurements up to 400 A in tight cable compartments as well as temperature and capacitance measurement. Device with soft carrying case. Technical Data: DC Voltage 600.0 V Resistance 400.0; 4000; 40000; Ω Continuity Beeper ≤30 Ω Capacitance 100.0; 1000 μF Frequency 5.0 to 500.0 Hz Contact Temperature -10.0 °C to 400.0 °C Mechanical Specifications Size (L x W x H) about 210 x 75 x 35) mm Weight about 290 g Environmental Specifications Operating Temperature -10 °C to +50 °C Over Voltage Category CAT IV 300 V; CAT III 600 V Safety Compliance EN/IEC 61010-1, Pollution Degree 2 EN/IEC 61010-2-032; EN/IEC 61010-031:2002/A1:2008 Complies with CAN/CSA-C22.2 No. 61010-1 IP Rating: IP 30 Per IEC 60529:2001; Non-operating Batteries: 2 AAA, NEDA 24A, IEC LR03	



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24	Tools	Analog voltage tester with solenoid operated voltage indicator (illuminated) suitable for electrical engineering, industrial, maintenance, service (troubleshooting). Voltage of 12 V - 1000 V AC / DC (LED / moving coil) Technical data: - Display levels: 12, 24, 50, 120, 230, 400, 690, 1,000 V AC / DC - Rotating field / phase test (LCD), polarity check (LED) - Direct display without pushbutton operation (high-impedance test) - Load connection via push buttons (low-impedance test) - Deliberate tripping of earth leakage circuit breaker - Vibration in test handle - Protection IP 65 (dust-proof / water jets) - Robust housing design with a rubber grip surface - Tested and approved in accordance with DIN EN 61243-3, VDE 0682-401: 2011-02 - Overvoltage category CAT IV 600 V, 1000 V CAT III - No batteries required - CE certification - Operational manual in English language	1	Todsna Tital	1000 00 00 00 00 00 00 00 00 00 00 00 00



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25	accessory	Crimping plier tool set with cable connector's assortment. Set provided with a solid plastic box; opening mechanism when connected; fast and simple access to content without disconnecting; box with two stackable plastic inserts with 6 trays each for connectors; with an assortment of standard cable connectors. Technical data: - Precise Force crimping plier - Rigid plastic box with two stackable insertions and each with six moulds - Minimum of 25 blade receptacles 6,3x0,8mm²: 0,5-1,0 / 1,5 - 2,5 mm - Minimum of 25 ring terminals with diameter 0,5 - 1,0mm, hole diameter 4 and 5 mm; diameter 1,5 - 2,5 mm, hole diameter 4 + 5 + 6 mm - Minimum of 25 ring terminals with diameter 4 - 6 mm, hole diameter 6 + 8 mm - Minimum of 25 Isolated butt connectors: 0,5 - 1,0 / 1,5 - 2,5 mm - Minimum of 20 Isolated butt connectors 4 - 6 mm	1	
26	Tools	Solenoid Valve Operating Magnet. Service tool is designed to operate electrical solenoid valves manually. With its proven design and opening of 0.75 inch (18 mm), it fits 90 percent of all industry provided solenoid valves. Product details: - Supplied with protective case Pocket sized and easy to use - Permanent magnet moulded in ABS plastic	1	