ANNEX 9: EQUIPMENT USED AND EMISSION MEASUREMENTS

1										1			قلاب
4												4	كمبوروسر
8												8	شاكوش
7			4	1								2	١١٠ مولد
21		2	5								7	7	٢٢٠ مولد
11			4	1								6	كمبيوتر لحام
2			2										٢٥٠ اسكويز
16			14	2									١٨٠ اسكويز
3			2	1									ماكينة لحام
3			1	1								1	مقصلة
2												2	دكاك
13		3	6	2								2	٢٤ ستيلسون
13		4	7	1								1	١٨ ستيلسون
10											10		ماكينة قلاوظ
9											9		ماكينة قطعية
32									5		25	2	هيلتى دريل
32			4					1			25	2	منجله
13			4								9		سلم فردتين
18								4			10	4	تست بامب
19			4		1			4			10		مقياس زنبق
260											260		سقالات
45											45		سقالات SP
60			6								54		شنطة تركيبات
16			4				12						شنطة تحويلات
8									8				شنطة مداخن

7	السادات

2			2										سوزوكى
2			2										سنجل
1		1											دبل
2												2	لونج

نموذج قياس الضوضاء

المنطقة : [illegible]   التاريخ ٢٩ / ٢ / ٢٠١٧

م	المكان	سنة الصنع	نتائج القياس (ديسيبل)	الحد القانوني: المعدات المصنعة قبل ٢٠١١	الحد القانوني: المعدات المصنعة بدءا من ٢٠١١	حالة المطابقة	ملاحظات
١ -	مجموعة ٣٠١ محرك [illegible]		٨٦,٨	٩٠	٨٥	مطابق طبقا للمدة المعرضة	
٢ -	مجموعة ٣٠١ محرك [illegible]		٨٥,٥	٩٠	٨٥	مطابق طبقا للمدة المعرضة	
٣ -	مجموعة ٣٠٢ [illegible]		٨٤,٢	٩٠	٨٥	〃 〃 〃	
٤ -	مجموعة ٣٠٢ [illegible]		٨٦,٢	٩٠	٨٥	〃 〃 〃	
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		

الاسم : [illegible]

التوقيع : [illegible]

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نموذج قياس ...

testo 0632.0307

المنطقة ١٠

الأمن الصناعي

المحلة + المنصورة

[illegible]

شركة غاز مصر

نموذج قياس العادم
(المعدات التي تعمل بالديزل)

التاريخ ١٣/ ٣/ ٢٠١٧

المنطقة السادات (شبكات)

م	نوع المعدة	رقم المعدة	سنة الصنع	المكان	نتائج القياس (يتم القياس عند أقصى تعجيل) Bacharach	نتائج القياس Opacity (درجة اعتام %)	الحد المقبول للمعدات ما قبل ٢٠٠٣ طبقا لمتطلبات الشركة Bacharach	الحد المقبول للمعدات ما قبل ٢٠٠٣ Opacity (درجة اعتام %)	الحد المقبول للمعدات بدءا من عام ٢٠٠٣ طبقا لمتطلبات الشركة Bacharach	الحد المقبول للمعدات بدءا من عام ٢٠٠٣ Opacity (درجة اعتام %)	حالة المطابقة	ملاحظات
١	كمبروسر	C 33	غير واضح	السادات	٣	٩,٦	٨	% ٢٥,٦	٧	% ٢٢,٤	مطابق	
							٨	% ٢٥,٦	٧	% ٢٢,٤		
							٨	% ٢٥,٦	٧	% ٢٢,٤		
							٨	% ٢٥,٦	٧	% ٢٢,٤		
							٨	% ٢٥,٦	٧	% ٢٢,٤		
							٨	% ٢٥,٦	٧	% ٢٢,٤		
							٨	% ٢٥,٦	٧	% ٢٢,٤		
							٨	% ٢٥,٦	٧	% ٢٢,٤		
							٨	% ٢٥,٦	٧	% ٢٢,٤		
							٨	% ٢٥,٦	٧	% ٢٢,٤		

- الحد القانوني طبقا لقانون البيئة رقم ٤ لسنة ١٩٩٤م و لائحته التنفيذية الصادرة بقرار رئيس مجلس الوزراء رقم ٣٣٨ لسنة ١٩٩٥م و المعدلة بالقرار رقم ١٠٩٥ لسنة ٢٠١١م هو ٣٠% درجة اعتام للمركبات المصنعة قبل عام ٢٠٠٣ و ٢٥% درجة اعتام للمركبات المصنعة اعتباراً من عام ٢٠٠٣م.
- للتحويل من Bacharach إلى opacity (درجة الإعتام) : ١ Bacharach = ٣,٢ % درجة إعتام

نظراً لأن أعلى قياس متاح للجهاز المستخدم (٩ Bacharach) فإنه تم إعتبار القياس رقم (٨) هو الحد الأعلى للقياس المقبول

الاسم / محمد [illegible]

التوقيع /

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FAX-ALMAZA

sound meter 840029 - sper scientific I. 22731

نموذج قياس الضوضاء

المنطقة : السادات (الموقع)   التاريخ ١٣ / ٣ / ٢٠١٧

م	المكان	سنة الصنع	نتائج القياس (ديسيبل)	الحد القانوني: المعدات المصنعة قبل ٢٠١١	الحد القانوني: المعدات المصنعة بدءً من ٢٠١١	حالة المطابقة	ملاحظات
-	تركيبات السادات	بعد عام	٩٠	٩٠	٨٥	مطابق طبقاً لحد الضوضاء	ماكينة [illegible]
	محمود إبراهيم	٢٠١١	٨٩	٩٠	٨٥		رقم ٤١٣٥٤١٢٦
	فوزي		٨٤	٩٠	٨٥	مطابق طبقاً	مولد رقم ٤١٤٠
			٨٨	٩٠	٨٥	لحد الضوضاء	مولد رقم ٤١٣٩
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		
				٩٠	٨٥		

الاسم :

التوقيع :

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TECHNICAL SPECIFICATION

PE Pipe Cutter 32 mm, 63-125 mm, 180-250 mm and PE Pipe Cutter 315 mm

1. Scope:

1.1 This specification covers the minimum requirements for design, manufacture, inspection, testing, and supply of Pipe cutting tools to be used in natural gas transmission and distribution systems for Egypt Gas Co.

PE Pipe Cutter 32 mm
PE Pipe Cutter 63-125 mm
PE Pipe Cutter 180-250 mm
PE Pipe Cutter 315 mm

2 General

2.1 Pipe cutting tools shall be capable of correct operation at ambient temperatures between −5 °C and 60 °C, with pipes and fitting spigot outlets at extremes of diameter and ovality tolerances specified in GIS/PL2-1, GIS/PL2-2, GIS/PL2-5 and GIS/PL2-8.

2.2 Pipe cutting tools shall be capable of withstanding a single drop test, in accordance with Procedure 1 of BS EN 60068-2-32 from a height of 1 m without subsequent malfunction.

2.3 The supplier shall specify the composition of the component material to be used for any cutting tools and shall demonstrate that it is suitable for the intended application.

2.4 Pipe cutting tools shall be capable of simple and easy operation. Tools and equipment shall not cause damage or cause distortion to the pipes or fittings. Outside diameter/bore dimensions and ovalities shall conform to GIS/PL2-2and GIS/PL2-8.

2.5 Pipe cutting tools should be constructed from corrosion-resistant materials, or be otherwise suitably protected. Particular consideration should be given to shafts and fastenings.

2.6 Pipe cutting tools shall be capable of being installed and operated within trench conditions.

2.7 pipe cutting tools shall be suitable for use with PE pipes SDR 11 and SDR 17.6.

3. Design

3.1 The design of pipe cutting tools shall require only minimum maintenance of cutter blades, and replacement shall be incapable of incorrect positioning.

3.2 Pipe cutting tools shall be capable of being set up and removed in a trench.

3.3 The pipe cutting tool shall not damage or deform the pipe remote from the actual cutting action.

3.4 Test shall be according with GIS/PL2-5.

3.5 PE Pipe Cutter should meet the requirements of GIS / PL2-5.

TECHNICAL SPECIFICATION

Alignment Clamp 250 mm

1. Scope:

1.1This specification covers the minimum requirements for design, manufacture, inspection, testing, and supply of Alignment clamp 250 mm to be used in natural gas transmission and distribution systems for Egypt Gas Co.

2. General

2.1 Alignment clamp used for jointing 250mm electro fusion couplers hinged with pins for ease of pipe positioning in trench

2.2 Alignment clamp 250 mm shall be capable of correct operation at ambient temperatures between −5 °C and 60 °C, with pipes and fitting spigot outlets at extremes of diameter and ovality tolerances specified in GIS/PL2-4, GIS/PL2-8 and GIS/PL2-2.

2.3 Alignment clamp 250 mm shall be capable of withstanding a single drop test, in accordance with Procedure 1 of BS EN 60068-2-32 from a height of 1 m without subsequent malfunction.

2.4 The supplier shall specify the composition of the component material to be used for any Alignment clamp and shall demonstrate that it is suitable for the intended application.

2.5 Alignment clamp 250 mm shall be capable to meet the requirements of GIS/PL2-2, GIS/PL2-4, GIS/PL2-6 and GIS/PL2-8.

2.6 Alignment clamp 250 mm should be constructed from corrosion-resistant materials, or be otherwise suitably protected. Particular consideration should be given to shafts and fastenings.

2.7 Alignment clamp 250 mm shall be capable of being installed and operated within trench conditions.

3. Design

3.1 Alignment clamp shall be designed to stop axial and rotational movement and aid alignment of adjoining pipes during the jointing/cooling process, but shall not preclude free movement of the electro fusion fitting.

3.2 Alignment Clamp should meet the requirements of GIS / PL2-5

3.3 Alignment Clamp with is belt not accepted.

TECHNICAL SPECIFICATION

Multi kit Clamp (90mm-180 mm)

1. Scope:

1.1This specification covers the minimum requirements for design, manufacture, inspection, testing, and supply of Multi kit clamp (90mm-180 mm) to be used in natural gas transmission and distribution systems for Egypt Gas Co.

2. General

2.1 Multi kit clamp (90mm-180 mm) shall be designed to strain the PE pipe from 90 mm to 180 mm prior to carrying out the electro fusion jointing process on PE pipe work in accordance with GIS/PL2-5 with accessories sets (180*125 mm) and (125*90 mm) .

2.2 Multi kit clamp (90mm-180 mm) shall be capable of correct operation at ambient temperatures between −5 °C and 60 °C, with pipes and fitting spigot outlets at extremes of diameter and ovality tolerances specified in GIS/PL2-4, and GIS/PL2-8.

2.3 Multi kit clamp (90mm-180 mm) shall be capable of withstanding a single drop test, in accordance with Procedure 1 of BS EN 60068-2-32 from a height of 1 m without subsequent malfunction.

2.4 The supplier shall specify the composition of the component material to be used for any Multi kit clamp (90mm-180 mm) and shall demonstrate that it is suitable for the intended application...

2.5 Multi kit clamp (90mm-180 mm) shall be capable to meet the requirements of GIS/PL2-2, GIS/PL2-4, GIS/PL2-6 and GIS/PL2-8.

2.6 Multi kit clamp (90mm-180 mm) shall be constructed from corrosion-resistant materials, or be otherwise suitably protected. Particular consideration should be given to shafts and fastenings.

2.7 Multi clamp (90mm-180 mm) shall be capable of being installed and operated within trench conditions

3. Design

3.1 Multi kit clamp (90mm-180 mm) shall be designed to stop axial and rotational movement and aid alignment of adjoining pipes during the jointing/cooling process, but shall not preclude free movement of the electro fusion fitting.

3.2 Multi kit clamp (90mm-180 mm) should meet the requirements of GIS / PL2-5

3.3 Multi kit clamp (90mm-180 mm) Main set shall be metal.

TECHNICAL SPECIFICATION

Window Clamp 63 mm

1. Scope

1.1This specification covers the minimum requirements for design, manufacture, inspection, testing, and supply of Window clamp 63 mm to be used in natural gas transmission and distribution systems for Egypt Gas Co.

2. General

2.1 Window clamp 63 mm used for jointing 63mm electro fusion couplers for ease of pipe positioning in trench

2.2 Window clamp 63 mm shall be capable of correct operation at ambient temperatures between −5 °C and 60 °C, with pipes and fitting spigot outlets at extremes of diameter and ovality tolerances specified in GIS/PL2-4, and GIS/PL2-8.

2.3 Window clamp 63 mm shall be capable of withstanding a single drop test, in accordance with Procedure 1 of BS EN 60068-2-32 from a height of 1 m without subsequent malfunction.

2.4 The supplier shall specify the composition of the component material to be used for any Window clamp 63 mm and shall demonstrate that it is suitable for the intended application.

2.5 Window clamp 63 mm shall be capable to meet the requirements of GIS/PL2-2, GIS/PL2-4, GIS/PL2-6 and GIS/PL2-8.

2.6 Window clamp 63 mm should be constructed from corrosion-resistant materials, or be otherwise suitably protected. Particular consideration should be given to shafts and fastenings.

2.7 Window clamp 63 mm shall be capable of being installed and operated within trench conditions.

3. Design

3.1 Window clamp 63 mm shall be designed to stop axial and rotational movement and aid alignment of adjoining pipes during the jointing/cooling process, but shall not preclude free movement of the electro fusion fitting.

3.2 Window clamp 63 mm should meet the requirements of GIS / PL2-5

3.3 Non metal Window clamp 63 mm is not accepted.

TECHNICAL SPECIFICATION

Strap Loader 63-400

1. Scope

1.1This specification covers the minimum requirements for design, manufacture, inspection, testing, and supply of Strap Loader 63-400 mm to be used in natural gas transmission and distribution systems for Egypt Gas Co.

2. General

2.1 The Strap loader 63- 400 mm is designed for the installation of top loading electro – fusion branch saddles and tapping tees.

2.2 The Strap loader 63-400 mm shall be capable to meet the requirements of GIS/PL2-2, GIS/PL2-4, GIS/PL2-6 and GIS/PL2-8.

2.3 The Strap loader shall be capable of installation and removal in a cross main trench.

2.4 The Strap loader 63-400 mm shall be capable of withstanding a single drop test, in accordance with Procedure 1 of BS EN 60068-2-32 from a height of 1 m without subsequent malfunction.

2.5 The supplier shall specify the composition of the component material to be used for any The Strap loader 63-400 mm and shall demonstrate that it is suitable for the intended application.

2.6 The Strap Loader 63-400 should be constructed from corrosion-resistant materials, or be otherwise suitably protected. Particular consideration should be given to shafts and fastenings.

2.7 The Strap Loader 63-400 mm shall be capable of being installed and operated within trench conditions.

3. Design

3.1 The Strap Loader tool shall be so designed that, when used with either straight pipe or coiled pipe, the load on the fitting shall follow the centre line of the stack, down through the centre line of the pipe, and be not less than 95 % of the indicated value.

3.2 A method of indicating that the correct load is achieved shall be permanently provided on the tool. The application of the correct load shall be easily detected by the operator.

3.3 Any screw action shall not apply a turning motion to the fitting.

3.4 The strap Loader tool shall meet the requirements of GIS/PL2-5

3.5 Strap loading tool shall be suitable for use with PE pipes SDR 11 and SDR 17.6.

TECHNICAL SPECIFICATION

Barometer

1. **Pressure media:** compatible with non. Corrosive gages
2. **Presser Range:** up to 2 bar absolute
3. **Display overload:** instrument capable of nominal 110% full scale (F.S), error code will flash
4. **Resolution:** 0.01 mbar
5. **Temperature range:** operating (-10 °C to 50 °C)
6. **Power supply:**
    - Alkaline **AA** batteries
    - Rechargeable **Ni cad** batteries & external power adaptor / charger
7. **Carrying case**
8. **Operating, calibration & service manuals**
    a. Note: the supplier shall guarantee repair & service for at least (five years) starting from date of supplying
    b. Test certificate
9. **Test certificate**

TECHNICAL SPECIFICATION

Mercury Gauge

1. **Type**: Solid acrylic vertical manometer
2. **Pressure Range**: 0 to 500 mbar
3. **Resolution:** 2 mbar
4. **Scale length:** 510 mm
5. **Width:** 54 mm
6. **Indicating liquid:** metallic mercury
7. **Connector**: 6mm i.d. push on
8. **backing board**
9. **carrying case**
10. **Test certificate**

TECHNICAL SPECIFICATION

BUTT FUSION MACHINES

Item		specification	Units
Input supply	220V Units	195-260	Vac
Diameter range	Gator 250	63~250	mm
	Gator 315	125-315	
	Gator 400	180-400	
SDR range	Typical	7.25, 7.4, 9, 11, 13, 17, 17.6, 26, 32 plus Capability for special SDR	
Operating temperature	Range	0 ~ +45	°C
Storage temperature	Range	-15 ~ +50	°C
Environmental protection		IP54	
Sequence details	Trim	Automatic	
	Check (Slippage)	Automatic	
	Check (Alignment)	Manual visual inspection	
	Bead-up phase	Automatic	
	Soak phase	Automatic	
	Heater removal	Automatic	
	Pressure build-up	Automatic	
	Fusion phase	Automatic	
	Cooling phase	Automatic	
Heater removal time		< 3	Seconds
Database	Capacity	> 600	Records
	Retrieval	Data Socket	
	Lifetime	>10	Years
	Fusion data	Active	
	Traceability	Active	
Printer		Available	
Fast Data Transfer		Available	
Welding standard	Gas BG standard		
	Water standard		

Document Required

- Operating manual
- Full schematic diagrams
- Full circuit and wiring diagrams
- Calibration manual
- Electronic manual describe the operation of each Ic
- Any password needed for every level of encryption required to maintain the machine
- Full list of tools required to maintain and calibrate the machine
  The supplier shall send a confirmation that he will supply any required spare parts during 5 years at least starting from the date of delivery
- The supplier shall send a warranty certificate for each machine
- All document shall be hard and soft copy in English language

Special requirement

Technical and commercial offer shall include

- Spare parts that is sufficient to repair the machine (chassis, trimmer, etc.) for 3 years.
- Complete 3 sets of calibration tools
- Each machine shall be complete with 2 combatable generators

TECHNICAL SPECIFICATION

Electro fusion Control Box

1. SCOPE:

1.1 All control box shall be made in accordance with the British Gas specifications GBE/ECE1 or equivalent, if the control box is made in accordance to another specification. So a copy of this specification shall be sent.

1.2 Control box must be able to joint to all electro fusion fittings approved to British Gas specification PS / PL2 PART 4.

1.3 All documentations shall be in English language.

2. TECHNICAL SPECIFICATIONS:

2.1 **Operating mode:** manual

2.2 **Input voltage:** 230 ± 20% **volts**

50 ±20% **Hz**

2.3 **Output voltage:** 39.5 volts ± *0.5* volts AC RMS

2.4 **Operating Temp.:** 0 °C to *+45°C*

2.5 **Timer range:** >3000 sec

2.6 **Input Protection:** Circuit Breaker

2.7 **Display:** Back-Light LCD

2.8 **Interface Language:** English

2.9 **Input cable length:** 5 meter

2.10 **Output cable length:** 3 meter

2.11 **Degree of protection:** *1P45*

2.12 The control box shall be equipped with Emergency Stop Push Button

2.13 Output power shall be sufficient to fuse all fittings up to 315 mm

3. DESIGNAND CONSTRUCION:

3.1 Control box, frame and associated input & output cables shall not be heavier than 30 kg.

3.2 The control box should be designed to allow ease of operation, calibration and maintenance.

3.3 The control box shall be designed and constructed in such a manner to afford protection against electric shock in accordance with BS *2754.*

3.4 The control box enclosure shall be in accordance with BS 5420 1P54 with the socket - outlet exposed.

3.5 The input cable shall be flexible 3-core with overall screening.

3.6 The input cable / insulation shall be PVC to BS 6746, type Til with a PVC sheath to type TM1 and flexible conductors to BS 6360.

3.7 Input cable shall be permanently attached to the control box.

3.8 The input cable supply source end shall terminate at a 3-pin 220V, 32 A plug.

3.9 The output cable / insulation shall be PVC to BS 6746, type TIl with a PVC sheath to type TM1 and flexible conductors to BS 6360.

3.10 Overload protection shall be fitted to the input side of the control unit in an accessible position.

3.11 The control box shall be designed to operate from a nominal earthed 220V, 50Hz sinusoidal supply.

Special requirement

Technical and commercial offer shall include

4.1) Complete spare parts for repair the control boxes for 3 years

4.2) 3 complete sets of calibration tools

PORTABLE AIR COMPRESSOR SPECIFICATIONS

1) COMPRESSOR:

- Oil injected rotary screw compressor.
- Single–stage.
- Nominal effective working pressure (rated operating Pressure not less than (7 Bar).
- Minimum effective pressure not less than (4Bar).
- Free air delivery not less than 392 cfm
- Cooling and lubricating by injected oil.

2) ENGINE:

Compressor driven by:

- Four stroke diesel engine.
- 4-Cylinders in-line engine.
- Output according to SAEJ 1995 at normal shaft speed 113 BHP.
- Mechanical direct injection fuel system.
- With turbocharger "after/intercooler".
- Fuel consumption at full load not more than 17.5 Kg/hr
- Emission Tier level: Tier2 or Tier3.

3) FRAME AND AXLE:

- Heavy – duty frame prefer galvanize iron sheet
- Provide easy opining and easy access for serviceability and maintenance.

"Prefer separated parts for easy handling during maintenance operations"

- Adjustable drawbar with parking brake and safety chain.

- With lifting eye provide easy and safety hoisting.

4) SAFETY DEVICES:

- All safety devices needed for safe operation like "thermal Shutdown switch, receiver safety valve, low engine oil Pressure, high coolant temperature ….etc".

5) CONTROL PANEL:

- The control panel grouping with "working pressure gauge – compressor outlet tempreture gauge – engine oil pressure indicator - coolant temperature indicator- hour meter – battery charge indicator.

6) GENERAL REQUIRMENTS:

- All technical specifications for all components.
- All drawings, catalogues for operation, maintenance, Spare parts, circuits and diagrams must be supplied in English language.
- Warranty certificate for not less than one year from first operate.
- Training in your premises for ten persons as will as training for operation and maintenance for the com-presser.
- Availability of spare parts.
- After sales service center.
- Must be local agent for compressor.

PORTABLE AIR COMPRESSOR SPECIFICATIONS

1) COMPRESSOR:

- Oil injected rotary screw compressor.
- Single–stage.
- Nominal effective working pressure (rated operating Pressure not less than (14 Bar).
- Minimum effective pressure not less than (4Bar).
- Free air delivery not less than 335 cfm
- Cooling and lubricating by injected oil.

2) ENGINE:

Compressor driven by:

- Four stroke diesel engine.
- 4-Cylinders in-line engine.
- Output according to SAEJ 1995 at normal shaft speed 141 BHP.
- Mechanical direct injection fuel system.
- With turbocharger "after/intercooler".
- Fuel consumption at full load not more than 21.5 Kg/hr
- Emission Tier level: Tier2 or Tier3.

3) FRAME AND AXLE:

- Heavy – duty frame prefer galvanize iron sheet
- Provide easy opining and easy access for serviceability and maintenance.

"Prefer separated parts for easy handling during maintenance operations"

- Adjustable drawbar with parking brake and safety chain.

- With lifting eye provide easy and safety hoisting.

4) SAFETY DEVICES:

- All safety devices needed for safe operation like "thermal Shutdown switch, receiver safety valve, low engine oil Pressure, high coolant temperature ….etc".

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6) GENERAL REQUIRMENTS:

- All technical specifications for all components.
- All drawings, catalogues for operation, maintenance, Spare parts, circuits and diagrams must be supplied in English language.
- Warranty certificate for not less than one year from first operate.
- Training in your premises for ten persons as will as training for operation and maintenance for the com-presser.
- Availability of spare parts.
- After sales service center.
- Must be local agent for compressor.

specifications of rotary hammer

Rated input power	850 W
Dust removal module	TE DRS - Y (optionnal)
Rotation speed gear 1 under no load	700 ~ 800 rpm
Single impact energy	3 ~ 4 J
Weight according to EPTA Procedure 01/2003	4 ~ 5 Kg
Full hammering frequency	not less than 4000 impacts / minute
Working mode	Hammer drilling , Drilling only
Prefer Hammer drilling with active vibration reduction (AVR)	
Quick release chuck	
Warranty	2 years
spare parts & after sales services	Availability of spare parts
	After sales service center
Must be local agent	

specification of combihammer

Rated input power	not less than 1500 w
Dust removal module	TE DRS - Y (optionnal)
Max Rated speed	not less than 300 rpm
Single impact energy	11 ~ 12 J
Weight according to EPTA Procedure 01/2003	not more than 8.3 Kg
Full hammering frequency	not Less than 2700 impacts / minute
Working mode	Hammer drilling , Drilling only , Chisel-ling,Chisel setting
Chiselling function	yes
Chiselling intensity	No chiselling , Corrective chiselling in masonre / brick , Corrective chiselling in concrete , Penetrations / openings in concrete
service indicator	yes
Prefer Hammer drilling with active vibration reduction	
Warranty	2 years
spare parts & after sales services	Availability of spare parts
	After sales service center
Must be local agent	

specification of pipe vice M/C

Pipe Capacity		Weight Kg
Inch	mm	
⅛ - 6	10 - 168	Less than 25

Warranty : NOT LESS ONE YEAR

spare parts & after sales services	Availability of spare parts
	After sales service center
Must be local agent	

specification of bending M/C (Electro-hydraulic)

capacity inch	**pump force KN**	**Motor**	weight kg
3/8 ~ 2	80 ~ 90	220V -- 1.4 kw	100 ~ 110

Tip-up wing benders

Warranty : NOT LESS ONE YEAR

spare parts & after sales services	Availability of spare parts
	After sales service center
Must be local agent	

specification of generator

AC frequency	50 HZ
AC output voltage	220 V
MAX. AC output	5.5 KVA
Rated AC output	5.0 KVA
AVR	with capacitor NOT cartage
DC output	12 V - 8.3 A
Electric starter	yes
starting system	Recoil
operating time at rated	8h
Effictive fuel tank capacity	24 liters
Dimensions (L x W x H)	680**x**530x570 mm
Dry mass	84.0Kg
warranty	Not Less One Year
spare parts & after sales services	Availability of spare parts
	After sales service center
Must be local agent	

specification of Fusion generator

AC frequency	50 HZ
AC output voltage can be selected	110 or 230 V by using external switch
Net power / speed	8 - 9 Kw / 3600 RPM
AVR	with capacitor NOT cartage
Engine type	;
Displacement	389 cm^3
engine oil capacity	1 - 1.5 L
Effictive fuel tank capacity	15 - 20 liters
Dimensions (L x W x H)	380**x**460x450 mm
Dry mass	30 - 32Kg
Electric starter	yes
warranty	Not Less One Year
spare parts & after sales services	Availability of spare parts
	After sales service center
Must be local agent	

specification of threading M/C 1/4"~2"

_ Threading machine for stanless steel and steel gas pipes

_ Threading capacity **¼" ~ 2"**

_ Weigt **not more than 44 Kg**

_ Spindle speed **40 (rpm) (No Load)**

_ Motor **220 Volt 750 WATT 50/60HZ**

_ Dimensions **not more than (L) 550mm x (w) 450 x (H) 350mm**

_ Standard Accessories **Manual Die - Head: 1/2" ~ 2"**

Dies : BE 1/2" ~ 3/4" BE 1"~ 2"

Threading oil White 4L (1Can)

* spare parts & after sales services

- Availability of spare parts
- After sales service center

* Must be local agent

*warranty : Not Less One Year

Technical specification of welding generator

Rated welding output	**600 A , 40 VOLT DC , 40% DUTY CYCLE**
Amperage range	**45 - 600 A**
MAX. Open-circuit voltage DC	**95 V**
Auxiliary power rating	**single-phase , 3 kVA/KW , 25A , 120V AC , 60 Hz**
Engine	**diesel engine air-cooled 40 HP**
Fuel capacity	**23 gal (87 L)**
Sypplier and origin	**Europe - USA - japan**
warranty	**Not Less One Year**

*** Must be local agent for welding generator**

*** spare parts & after sales services**

- Availability of spare parts
- After sales service center