

TENDER DOCUMENTATION FOR A TECHNOLOGY SUPPLIER

Invitation to tender for a supply of "Autoclave for composites"
for the project 2.2 RV03/3634 "Technology of carbon fiber production for MSR Engines"

1. CONTRACTING AUTHORITY

MSR Engines s.r.o.
Krásného 3857/7
63600
Brno

IČO 26968215, DIČ CZ26968215

Email: projekty@msrengines.eu

The competitors are expected to study the instruction, the contract law and specification included in this documentation and shall abide. If the proposal is not submitted before the end of the time limit or does not meet all the requirements, it will be refused.

In case a clarification is necessary, it is possible for the submitters to contact the Contracting Authority via the e-mail projekty@msrengines.eu.

2. DESCRIPTION OF TECHNOLOGY

The contract is the supply of Autoclave with minimal specifications:

- Minimal internal length 2000 mm
- Minimal internal diameter 1000 mm
- Internal volume – at least 2,1 m³
- Maximum working pressure – at least 10 Bar
- Maximum working temperature – at least 200 C
- Heat system – electric max 35 Kw°
- Pressurizing fluid – air
- Vacuum tank of about 100lt
- Rotary vane Compressor (max. operating pressure - 10bar, max. capacity of air - 1,5 m³/min, sound pressure level - max 70dB, receiver tank 270 l)
- Heating/cooling gradient – min 2 C/min
- Depressurizing time – max. 20 min
- Cooling water battery – min 28000 Kcal/h
- Complete Water cooling system with tank or cooling tower - stainless steel piping required.
- Capacity of motor fan 1.300 m/h
- Automatic vacuum connections with vacuum meter and three way valve 10 N
- Vacuum pump with tank – min. capacity 65 m³/h with tank - 2pcs
- Internal temperature control probe - min 2 N
- Temperature control probe for piece J type - min 8N
- Thermocouple type J male connector, length 2m, TIG welded hot junction, max use temperature 230°C - 20pcs
- Loading and unloading trolley
- Table for mold preparation dimension min 1950l x 750w x 950h mm, wheels with manual break, loading capacity min 200 Kg, table top from durable plastic - 2pcs
- Table for mold preparation dimension min 1000l x 750w x 950h mm, wheels with manual break, loading capacity min 200 Kg, table top from durable plastic - 2pcs
- Control system with PLC
- Opening door system

- Internal and external covering from stainless steel and insulation - max allowed temperature on external side is 51°C after 5 hourly dwell time on maximum working autoclave temperature
- Air discharge silencer
- Electrical power system: AC 3x 400V, 50 Hz
- The delivery includes installation and the connection material up to length 15m.

Materials used for vacuum system and individual components must resist to supposed autoclave working environment (full vessel pressure), must not corrode or degrade and must not be the cause of regulation or control elements failure.

Threaded joints must be tight and its sealing has to bear up to temperature of 250°C in the long term mean.

The autoclave pressure vessel must contain manometer indicating internal overpressure in connected pressure space.

Two complete sets of autoclave service and maintenance documentation shall be supplied in Czech and/or English language unless stated otherwise by contract.

Autoclave control is realized through software, which allows:

- Calibration of thermal probes
- Visualizing values of temperature, vacuum, pressure and other parameters
- Visualization of the cycle for each variable
- Automatically controls vacuum, pressurization and depressurization and temperature in the autoclave
- Save and load option
- Manual control of vacuum and pressure valves
- Monitoring and alarm for vacuum and pressure valves
- The possibility to control the temperature of the autoclave according to individual temperature probes
- Management on the coldest piece.
- Storing the history of each cycle
- English and/or Czech menu

The equipment must conform to these standards, or their updates:

- Autoclave Safety Requirements/Recommendation, TEC 2001
- European Pressure Equipment European Directive (PED) (97/23/EC)
- ČSN690010 - 7.1 Compressive vessel stationary; Building and first compressive test
- ČSN 690012 Operation of stable pressure vessels
- EN ISO 13732-1 Ergonomy of the thermal environment - Methods for the assessment of human responses to contact with surfaces-Part 1:Hot surfaces

The supplier is obliged to perform pressure tests according to valid ČSN and EN standards if so required after installation on site.

General autoclave and installations arrangement, pressure vessel drawings, and schematic layout of pressure, vacuum, cooling and heating systems shall be provided for MSR Engines approval.

Before the autoclave installation MSR Engines must approve the autoclave documentation including cooling piping etc. and no changes can be realized without consent and written approval by MSR Engines.

Part of the delivery is training for control optimizing cycle autoclave test cycle with minimum duration of 5 days, including:

- Training for the manufacture of prepreg carbon composites
- Training will include
- Manufacture of molds for use in autoclave prepreg materials

- Optimization of cutting material
- Material manufacturing to make molds for vacuum preparation
- Autoclave cure cycle
- Modification parts.
- The training aims to produce two distinct parts production MSR Engines .

Schedule of the training must be consulted in advance with MSR Engines

Material for training:

Carbon prepreps:

- Deltapreg GG245T - DT121H - roll 50m – 42 or equivalent
- Deltapreg GG380T(T700)- DT121H – 40 - roll 50m or equivalent
- Deltapreg GG630T - DT121H - 37 - 50m or equivalent
- Deltapreg GG800T - DT121H - 40 - 50m or equivalent
- Deltapreg GG450X - DT121H - 33m or equivalent
- Deltapreg GG600X - DT121H - 25m or equivalent

- Epoxy low temperature tooling carbon prepreg - 12K, 640 g/m², service temperature after post cure min180°C, length 20m

- Vacuum bag connector - aluminium or steel material, temperature resistant to 230°C including high temperature silicone seal, twisted or screw lock - 10pcs
- Vacuum quick disconnects with two ways shut off fittings, holds vacuum during unconnecting. Temperature resistant up to 230°C, threaded connection to hose/bag connector - 30pcs
- Vacuum hose with threaded ends or with male quick connector, internal diameter cca 3/8 inch, temperature resistant to 230°C, pressure resistant up to 10 bar. Outer protection of rubber. Lengths:
 - 2m - 3pcs
 - 1,5m - 3pcs
 - 1m - 3pcs
- Vacuum gauge - bar units, Range 0-(-1) bar, screwed connections, graduation -0,02 bar - 5pcs
- Silicone vacuum tube - translucent, inner diameter 8mm, outside 14mm - 10m
- Bagging film - heat resistant up to 190°C, min 375% elongation at break, width 1100 mm - 1300 mm, roll min 200m.
- Release films - heat resistant up to 190°C, elongation at break min 200%, width 1100 mm - 1300 mm, perforated - 0,4mm max hole diameter, Distance between the holes: approx. 12 mm
- Release films - heat resistant up to 190°C, elongation at break min 200%, width 1100 mm - 1300 mm,
- Pressure sensitive tape - heat resistant up to 190°C, width 2,5cm, length min 50m
- Peel ply fabric - heat resistant up to 190°C , width 1100 mm - 1300 mm, min length - 100 m.
- Breather fabric - non-woven, polyester material, heat resistant up to 190°C, width 1100 mm - 1300 mm, min length - 100 m, weight approx 150g/m², length min 100m
- Vacuum bag sealant tape - heat resistant up to 190°C, seal metal and carbon or gel-coat moulds. Width min 3x12 mm , total length of rolls - 150m
- Rubber plates for pressure intensification - uncured, thickness 1,5 mm, length 15m.
- Release agent liquid - thermal stability min 250°C, gloss finish reflection, cure in room temperature, Frekote 700-NC or equivalent
- Mold release sealer - clear color and thermal stability min 250°C, Frekote B-15 or equivalent

All accessories must be compatible with Epoxy resin prepreg system and autoclave fitting connection (threads, connectors, etc.) or must be delivered with reducer.

If this tender documentation or its annexes contain requirements or references to business firms, designations or names and surnames, specific identification of goods and services that apply to a particular person, or its organizational branch, patents, utility models, industrial designs, trademarks or designations of origin, etc. its allowed in such a case to use other equivalent solutions, provided that the product offered fully meets the requirements of the customer to the desired parameters and necessary quality of such product mentioned above.

3. PLACE OF PERFORMANCE ORDERS

Place of performance of the contract will be on the premises of the contracting authority in Brno:

MSR Engines s.r.o., Kasárna Černá Pole 21 – budova 22, ulice Mathonova, Brno – Česká Republika

Contract includes the delivery and installation in the premises of the contracting authority. The Contractor is responsible for achieving the required parameters within a trial run - a condition of payment.

4. TIME AND PLACE OF ADMINISTRATION OFFERS

Offer may be made in Czech and English language, including labelling of the envelope. The applicable law is the Czech Republic.

The deadline for submitting tenders is **1.6.2015 at 12.00** hours (to deliver offer to the hands of contractor). Address for offer delivery:

MSR Engines Ltd., Krásného 3857/7 63600, Brno, Czech Republic

Or place of performance

MSR Engines s.r.o., Kasárna Černá Pole 21 – budova 22, ulice Mathonova, Brno – Česká Republika

The envelope must be marked in the upper left corner of the slogan "Project OPPI - DO NOT OPEN". The envelope must bear the applicants stamp and designated full name and address of the applicant, who submits an offer. Offer has to be delivered in at least one copy, where all sheets must be numbered and firmly attached.

5. REALISATION CONDITIONS

Any natural or legal person may make the offer. A legal or natural person can not awarded the contract if:

- a) Is not authorized to do business under national law;
- b) Their company is in bankruptcy or liquidation, entered into an arrangement with creditors, have suspended business activity, is the subject of judicial or other proceedings concerning those matters, or is in any analogous situation arising from a similar procedure provided for in national legislation or regulations;
- c) Has been convicted of an offense concerning his professional activities;
- d) Has been guilty of grave professional misconduct proven by any contracting authority can justify;
- e) Not fulfilling financial obligations relating to the payment of social security contributions or taxes arising under the laws of the country in which it conducts business, or the laws of the land the contracting authority or the country in which the contract will be implemented;
- f) Has been convicted for fraud, corruption, involvement in a criminal organization or any other illegal activity detrimental to the commercial interests of the European Communities;
- g) A serious breach of contract or failed to comply with contractual provisions under another procedure for the award of the contract or grant award procedure financed by the Community budget.

Candidates for tenderers can prove that the conditions in paper documents or an affidavit attesting that do not fall into any of the categories above. Documents, or affidavit must be included in the offer (draft affidavit is annex 1 of the tender documentation).

Those interested in the offer also accept a contract with the contractor, including the warranty period and payment terms (draft contract is annex 2 of the tender documentation). Signed contract must be included in the offer. Tender documentation and draft contract sets minimum conditions - the applicant can be adjusted while maintaining these essential requirements:

- Warranty Period will be set at min. 12 months;
- Maximum service reaction time is 72 hours from reporting.

6. PRICE

The price offer shall include:

- a) The total price excl. VAT

The payment is accepted in CZK, euros or other currencies.

7. PAYMENT CONDITIONS

Offer price will be compared by converting according to the official exchange rate at the date of assessment procedures - can therefore be stated in CZK, EUR, and other currencies in the total price without VAT. Prices must include all taxes or duties.

After a mutual agreement the Contracting Authority can accept other goods than that offered in a offer, if the goods exhibit higher qualitative parameters. Payment of claims will be made in the Czech currency, or other currency based on accounting/tax documents issued with maturity of 60 days after receipt of delivery free of defects.

The contact person must sign delivery note.

7.1. PENALTY:

- a. The candidate must accept the Contracting Authority's right for a contractual penalty of 0.1% of the price of the goods being supplied in the case of a delay of delivering or removing the deficiencies in the warranty period or failing to be able to temporarily provide the Contracting Authority with an alternative equipment of a comparable quality. This does not affect the right for claiming the compensation.
- b. The candidate must accept the Contracting Authority's right for a contractual penalty of 0.2% of the price of the goods for every additional day of delay started when delivering the goods. This does not affect the right for claiming the compensation.
- c. The candidate must accept the Contracting Authority's right for damages up to the amount of lost subsidies in the event of late delivery of the technology (after 30.8.2015), or other failures posing a threat to the fulfillment of conditions for granting subsidies.

8. OTHER CONDITIONS

The Contracting Authority shall agree with the submitter on the text of the contract and the winner is obliged to cooperate so as the contract can be signed as soon as possible after notifying the winner, not later than 15 days after this.

If the winner refuses to sign the contract with the Contracting Authority, the Contracting Authority can sign the contract with the submitter placed after the winner. The submitter shall be bound by its offer for the time of 1 month after the last day of the time limit of the tender.

The submitter must also present the documentation proving its ability to realize the commission (a certificate of incorporation or other certificate of its legal subjectivity, trade authorization or an affidavit).

The Contracting Authority requires the supplier to keep the documentation of the realization for 10 years after realizing the commission.

The supplier must allow people entitled to inspection of the project funding the commission inspect the documents relevant to the commission, in time limit of up to 10 years after finishing the commission.

The Contracting Authority reserves the right to cancel the tender without giving any reason.

The submissions presented will not be returned.

9. CONTRACT AWARD CRITERIA

Formal contract award criteria:

1. The offer was delivered to the Contracting Authority in specified time and way: YES - NO
2. The offer meets the technical parameters stated in Clause 2: YES - NO



If a supplier does not meet any of the requirements stated above, it is automatically disqualified.

Content criteria of the offer:

1. Offered price (the comparing is done using the price excluding VAT)

10. INVITATION PUBLIC INFORMATION

The invitation public information will be presented on the pages of the Official Business Journal.

11. OTHER PROVISIONS

The Contracting Authority reserves the right to not proclaim any offer to be the winning one.

The Contracting Authority acts upon the conditions of the grant provider. For details, see <http://www.czechinvest.org> (Rules for selection of suppliers Ref: 10596/11/08100), the Company declares that this tender is not awarded by tender under the Act No.137/2006 Coll. on public procurement, public tender or a public promise. The Company reserves the right to cancel the tender, in the cases referred to in § 84 of the Act No.137/2006 Coll., On public procurement. According to § 2e Act No. 320/2001 Coll., On financial control in public administration, the selected contractor is obliged to cooperate in the exercise of financial control.

In Brno 27.4.2015

Martin Šula, MSR Engines s.r.o.