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Award

Replacement Cylindrical Grinding Machine

National Physical Laboratory

F15: Voluntary ex ante transparency notice

Notice identifier: 2024/S 000-031909
Procurement identifier (OCID): ocds-h6vhtk-04a5f4
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Section I: Contracting authority/entity

I.1) Name and addresses

National Physical Laboratory

Hampton Road

Teddington

TW11 0LW

Email

gary.phillips@npl.co.uk

Telephone

+44 2089773222

Country

United Kingdom

Region code

UK - United Kingdom

Internet address(es)

Main address

www.npl.co.uk

I.4) Type of the contracting authority

Body governed by public law

I.5) Main activity

Other activity

Research

Section II: Object

II.1) Scope of the procurement

II.1.1) Title

Replacement Cylindrical Grinding Machine

Reference number

103758

II.1.2) Main CPV code

- 38000000 - Laboratory, optical and precision equipments (excl. glasses)

II.1.3) Type of contract

Supplies

II.1.4) Short description

A high precision universal cylindrical grinding machine for internal and external grinding operations, with centre height of 125mm and 650mm distance between centres

II.1.6) Information about lots

This contract is divided into lots: No

II.1.7) Total value of the procurement (excluding VAT)

Value excluding VAT: 449,710 CHF

II.2) Description

II.2.3) Place of performance

NUTS codes

- UK - United Kingdom

Main site or place of performance

Teddington

II.2.4) Description of the procurement

A high precision universal cylindrical grinding machine for internal and external grinding operations, with centre height of 125mm and 650mm distance between centres

• The universal grinding machine must be capable of performing both external and internal grinding operations. The machine must have a distance between centres of at least 650mm, and must have a centre height of at least 125mm with capacity to take workpieces up to 130Kg.

• The machine must be capable roundness accuracy with live spindle grinding of 0.0003mm, or better.

• The machine must be capable of grinding straightness at 0.0025mm over 600mm or better.

• The machine must be provided with an internal grinding spindle (or spindles) for bore diameter 6-80mm (minimum range)

• All measuring scales and graduations must be metric units. Digital measuring scales must be included in addition to analogue scales.

• Workpiece table must swivel, and must provide micrometer controlled fine taper adjustment.

• The workhead must accommodate a No 3 Morse taper holder and be able to grind between fixed centres as well as rotating centres. A universal work head with 0-90 degree swivel adjustment, must provide infinitely variable speed control.

• The wheelhead must swivel with adjustment range of 0 to 180 degrees and have an external grinding wheel of minimum of 300mm diameter, the external grinding wheel spindle motor power must be at least 7.5kW, with grinding spindle must have speed adjustment, of infinitely variable type over a minimum adjustment range of 50-100%. The wheelhead infeed must provide, in addition to powered feed, manual handwheel adjustment over the full range of stroke.

• The wheelhead infeed must provide speed adjustment functionality;

• Adjustable working infeed speed (minimum range 0.012-5mm/min)

• Incremental infeed, adjustable increment, (minimum range 0.001-0.05mm)

• Adjustable spark-out time (minimum range 0-5s)

• Rapid approach

• The longitudinal axis travel range is to overrun the maximum centre distance before motion is limited by end of travel stops.

• The longitudinal axis feed speed is to be adjustable with minimum range of 50-4000mm/min.

• The longitudinal axis travel dwell at stroke reversal is to be adjustable.

• The machine must have electronic contact detection.

• The machine must be supplied with a tail stock equipped with adjustable barrel travel, with fine adjustment for cylindricity correction and fine adjustment of centre pressure, and able to accommodate a No 3 Morse taper holder.

• The machine is to be supplied with all necessary wheel guards and any other guards required as per Machinery Directive 2006/42/EC and Supply of Machinery (safety) Regulations 2008.

• The machine must be provided with task lighting and for both internal and external grinding

• The machine must be supplied with a coolant system for use with emulsion liquids.

• The coolant system must be provided with a paper band filtering system on the return to the coolant tank, which will be suitable for work with composites in addition to routine engineering materials.

• The machine must have through work-head coolant supply for internal grinding.

• The machine must work on UK specification electrical power supplies, 3 phase 415V and/or 240V

• The machine must be provided with task lighting and for both internal and external grinding

• The machine must be compliant with applicable UK regulations and supplied with CE/UKCA DoC for regulatory compliance.

• The machine must be supplied with test certificates of machine geometry and calibration certificate.

• The machine must be supplied with documentation in English:

• Electrical schematics of machine control.

• Hydraulic schematics

• Pneumatic schematics.

• Coolant system schematics

• The machine must be supplied with the following documentation in English:

• Operators' manual

• User manual

• Servicing and Maintenance manual

• Operating tools specific to the machine must be provided, and include;

• Extraction tool for wheel adaptor.

• Wheel balancing arbour to fit wheel adaptors

• Facility for wheel balancing and static balancing of grinding wheels up to 400mm dia is to be included.

• Machine must be supplied with all necessary supporting systems as required for correct operation and functioning of the machine, hydraulic, pneumatic, electrical, machine cooling, coolant supply etc.

• Workholding – a range of work mounting, holding and setting-up tooling to provide a flexible machining capability is required and typically include;

• 3 jaw self-centring chuck for work up to 160mm (spiral chuck).

• 4 jaw adjustable chuck for work up to 160mm

• 120mm magnetic chuck

• 200-250mm magnetic chuck

• Face plate 200mm (approximate size) face plate with T grooves and slotted holes

• Two point steady(ies) (5mm upwards)

• A comprehensive set of Internal grinding quills are to be included to provide flexibility in machining a range of component internal geometries with varied aspect ratios. And shall include an internal grinding collet chuck for small diameter wheels (complete with 3mm and 6mm collet and face grinding quill.

• Wheel dressing, the range of component geometries and materials will be varied, to provide flexibility in wheel dressing and in process re-dressing a range of dressing options should be provided, typically include;

• Tailstock mounted wheel dressing attachment. (With dressing diamond to suit).

• Hinged dressing attachment (table mounted).

• Radius dressing attachment for external/ internal rads.

• A dressing attachment for CBN (and diamond) wheels.

• A single point (chisel) dressing diamond. (For large concave rads)

• A needle file point dressing diamond (18-20mm) (for concave dressing).

• Wheel balancing, the machine is to provide dynamic balancing capabilities for in-situ mounted grinding wheels.

II.2.11) Information about options

Options: No

II.2.13) Information about European Union Funds

The procurement is related to a project and/or programme financed by European Union funds: No

Section IV. Procedure

IV.1) Description

IV.1.1) Type of procedure

Negotiated without a prior call for competition

- The products involved are manufactured purely for the purpose of research, experiment, study or development
- The works, supplies or services can be provided only by a particular economic operator for the following reason:
    - absence of competition for technical reasons

Explanation:

NPL requires a universal cylindrical grinding machine that is suited to the wide-ranging geometries of components to be manufactured, in a large variety of engineering materials and appropriate for efficient use in producing bespoke parts as one-offs or in very low batch quantities. In addition to a high level of flexibility in accommodating part geometries, materials and manufacturing strategies the machine must be capable of high roundness accuracy with live spindle grinding of better than 0.0003mm and grinding straightness of 0.0025 over the 650mm stoke (or better).

This supplier, Fritz Studer AG, provides published data for performance that meet the required accuracy levels with a machine fully appropriate for the bespoke one-off nature of work to be undertaken, in an non-CNC machine format. Manufacturers of quality cylindrical grinding machines have changed their offerings to mainly full CNC machines, the full CNC machine style does not meet our needs for flexibility and efficient production of one off components.

IV.1.8) Information about the Government Procurement Agreement (GPA)

The procurement is covered by the Government Procurement Agreement: Yes

Section V. Award of contract/concession

Title

Cylindrical Grinding Machine

A contract/lot is awarded: Yes

V.2) Award of contract/concession

V.2.1) Date of conclusion of the contract

4 October 2024

V.2.2) Information about tenders

The contract has been awarded to a group of economic operators: No

V.2.3) Name and address of the contractor/concessionaire

Advanced Grinding Supplies Ltd (Agent for Fitz Studer AG)

Unit 16 Stanley Court, Edison Close, Waterwells Business Park.

Gloucester

GL2 2AE

Email

info@adgrind.com

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor/concessionaire is an SME

No

V.2.4) Information on value of contract/lot/concession (excluding VAT)

Total value of the contract/lot/concession: 449,710 CHF

V.2.5) Information about subcontracting

The contract/lot/concession is likely to be subcontracted

Section VI. Complementary information

VI.4) Procedures for review

VI.4.1) Review body

NPL Management Limited

Teddington

Country

United Kingdom