



Organisation Chain :	Council of Scientific and Industrial Research CSIO Chandigarh Purchase-CSIO-CSIR
Tender ID :	2020_CSIR_563748_1
Tender Ref No :	CSIO/3(9)2020-Pur
Tender Title :	CSIO/3(9)2020-Pur
Corrigendum Type :	Other

Corrigendum Document Details

Corr.No.	Corrigendum Title	Corrigendum Description	Published Date	Document Name	Doc Size(in KB)
1	Change in specifications for procurement of Dynamic/Fatigue Testing Machine	Change in specification for Procurement of Dynamic/Fatigue Testing Machine against Tender No. CSIO/3(9)/2020-Pur	30-Oct-2020 04:17 PM	Corrigendum3(9)2020.pdf	1439.58



सीएसआईआर – केन्द्रीय वैज्ञानिक उपकरण संगठन

(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद)

सैक्टर-30 सी, चण्डीगढ़ (भारत)

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(Council of Scientific & Industrial Research)

Sector 30-C, Chandigarh (India)

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No. CSIO/3(9)2020-Pur

October 30, 2020

CORRIGENDUM

Subject:- Final specifications after Pre-bid Conference held on 28.10.2020 for procurement of **Dynamic/Fatigue Testing Machine**

Ref: 1) Our Notice Inviting Tender of even number dated August 21, 2020
2) Tender ID No. 2020_CSIR_563748_1 dated 12.10.2020

The final specifications after Pre-bid conference held on 28.10.2020 against our E-Publish Tender ID No. 2020_CSIR_563748_1 dated 12.10.2020 for procurement of Dynamic/Fatigue Testing Machine are enclosed with the request to the prospective bidders that they may submit their offer in Two bid (I.e. Technical & Commercial) **as per enclosed revised/final specifications:-**

The last date for submission & opening will remain the same i.e:-

Date & time for submission of tender:- 17.11.2020 upto 3.00 P.M.
Date & time for opening of tender:- 18.11.2020 at 3.30 P.M.

Other terms & conditions and specifications will remain the same.

Encl: Revised Specifications

(Mohinder Kumar)

Controller of Stores & Purchase

On behalf of Council of Scientific & Industrial Research

Final Technical Specification of Dynamic/Fatigue Testing Machine

Sl.No.	Technical Specification
	Item: SERVO HYDRAULIC Fatigue TESTING MACHINE 25 KN
	Purpose: Research & Development for a) Orthopedic Implants b) Material testing
	SCOPE OF WORK: -To supply, install, commission the machine at iARM Lab at CSIO, -To prove performance of the machine - To provide training to CSIO staff for minimum 3 days, for the routine operations and maintenance of the machine.
	TECHNICAL SPECIFICATIONS OF THE MACHINE:
1	The machine must be suitable for multi-function test like tensile, fatigue, compression, bend, fracture mechanics etc.
2	CALIBRATION: The machine has to be pre-calibrated for the scope of Testing performance
	Basic Load Frame
3	Axial Servo Hydraulic two-column Load frame.
4	Maximum Fatigue-rated Capacity: $\pm 25\text{kN}$
7	minimum frame stiffness of min. 300kN/mm at 500 mm or higher height
5	Hydraulic Lift and Hydraulic Clamp for Crosshead
6	Vertical test space without toolings and load cell : 750 mm or greater
7	Width between columns: 420mm or greater
	ACTUATOR
8	stroke 100 mm
9	Hydraulic Power pack with the noise level less than 63 dB
10	The machine must have display for oil temperature and oil pressure and must Include Protection device for oil temperature, oil pressure, oil level, oil filter condition and motor temperature with automatic shutdown in case of high temperature or low oil level
	Load Cell
11	Load Cell $\pm 25\text{kN}$
12	Calibration class 1 or better

	Electronic Controller :
13	Signal processing, PID control, adaptive set value, limit and event detectors
14	The machine must have a display hand controller for coarse actuator position and a thumbwheel for fine actuator positioning.
15	The machine controller must have provision to connect displacement transducer, extensometer for future upgradations
16	The Servo hydraulic test system shall be controlled by a fully digital, closed-loop control system. The system must be capable of controlling the actuator in position, load, and strain modes
17	The controller should have internal waveform generator, shall have the capability to generate sine, square, trapezoid and ramp.
18	Servo valve control parameters must be provided for automatic control for low and high-pressure modes
19	The controller must have a facility for limiting the load applied during specimen set-up. The load threshold must be user adjustable.
20	The controller must have a minimum of two limit detectors per connected transducer
21	The controller must feature a high-speed, industry standard Ethernet computer interface, capable of handling all control signals and data acquisition.
22	The controller must feature alarm system for detecting any loss of communication with the computer.
	SOFTWARE:
	Software for Fatigue testing :
23	<ul style="list-style-type: none"> - software for ASTM F2077, F2267, ISO 7206-4, ISO 7206-6, ISO 7206-8 and ASTM F2068 - also possible ISO 7206-10 -fatigue tests on hip balls and stems up to 14 kN - for cyclic fatigue tests of knee joint implants according ASTM F 1800 - universal fatigue tests up to +/- 25 kN with fatigue grips - with Fracture mechanics specimens testing as per ASTM E 399 and ASTM E 647
	Software for Static testing :
24	Preparation of test (e.g. Tensile tests, Compression tests, Cycling tests, relaxation tests, as per international standards etc.)
25	Possibility of modifying the test program as per their own test requirement

26	Values of load parameters in user opted unit (kgf, N etc.) User defined report generation format, Facility to store & export results in various format like word, excel, PDF
27	Software with academic modules for virtual learning option should be offered.
ACCESSORIES TO BE SUPPLIED ALONG WITH MACHINE	
28	Compression test kit :25kN Diameter :100 mm
29	Static and fatigue Universal Grips: for flat and round specimen for static and dynamic application for full capacity i.e 25KN Grips covering range of 0-20 mm or higher for flat specimen Grips covering range of 4-10 mm or higher for round specimen
30	Compression and shear test device for intervertebral disc prosthesis according to ASTM F 2077
31	Test Fixture for hip endoprosthesis stem: - For endurance tests in compliance with ISO 7206-4 and ISO 7206-6, Including device for angle adjustment tool for the mechanical boundary conditions
32	Test Fixture for cyclic fatigue tests of knee joint implants according ASTM F 1800, Complete fulfillment of the ASTM F 1800 and ISO 14879 standards
33	Chiller for hydraulic power unit
34	PC and color laser printer compatible for machine operation should be supplied. The computer minimum specifications are: Windows 10 64 bit software Intel core i5 processor, 2.2 GHz or better processor DVD Drive,8 Gb RAM,250 GB SSD Hard Disk
GENERIC CONDITION	
35	The firm can be asked for demonstration of the machine either physically mode or electronic mode, if required.
36	Details of users of Similar type of systems in Academia, R&D institution and industries along with contact details to be shared.
37	Supplier must have well qualified service engineer in India
38	The Machine should be a standard product of the principal manufacturer

39	The cost of accessories/fixtures and main machine has to be given individually
40	The required accessories/fixture may decrease also while placing the order
41	Warranty: 1 year