

### **Annexure-A: Technical Specification for Pneumatic operated Shrinker and Stretcher machine with forming tools**

**Brief Scope:**

Scope involves following:

- Supply of Pneumatic operated Shrinker and Stretcher machine with forming tools as per the Specification in the Table below.
- Demonstration on Operation of Pneumatic operated Shrinker and Stretcher machine and its forming tools at BEML, Mysore.

**Mandatory Requirements:**

- Make and model of Pneumatic operated Shrinker and Stretcher machine with forming tools offered, shall be clearly indicated in the offer.
- Firm shall provide detailed specification of the Pneumatic operated Shrinker and Stretcher machine along with forming tools offered. Where ever numerical values are to be specified, comments like "YES", "COMPLIED", "AGREED" is not acceptable and will be categorically rejected.
- Applicable product catalogue/ technical leaflet of products shall accompany the offer for evaluation purpose.
- Firm shall submit an "Authorization Letter" for representing their principles without which the offer will be summarily disqualified.

**Quantity: 01 set. (Set consists of Pneumatic operated Shrinker and Stretcher machine-1 no and forming tools as mentioned below)**

**Delivery: 08 Weeks - desirable.**

**Final Acceptance:** Inspection and clearance as per technical specifications.

Sl. No.	Equipment	Specifications	Offer from Vendor with Make & Model Details	Remarks
		Make & Model		
		Design: Pneumatic Shrinker and Stretcher machine with forming tools (Details appended below)		
		Technical parameters of Pneumatic Shrinker and Stretcher machine is as follows		
		Throat depth Horizontal : 100mm (Minimum)		
		Throat depth Vertical : 60mm (Minimum)		
		Drive: Pneumatic operated		

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1	<b>Pneumatic operated Shrinker and Stretcher machine details</b>	<b>Machine forming capacity:</b> Steel 400 N/mm <sup>2</sup> - 1.5mm Aluminium 250 N/mm <sup>2</sup> - 2.0mm Stainless steel 600N/mm <sup>2</sup> - 1.0mm The machine shall also be able to form Titanium (800 N/mm <sup>2</sup> )			
		Stroke frequency - SingleStroke			
		Working Strokes / min - 1-20 (approx) or better			
		Press force - 42 kN (approx) or better			
		Input air pressure - Operating air pressure available at BEML is 5 to 6 bar. (Suitable Connector / Regulator to be provided) Note: Suitable air booster unit to be provided by the firm.			
		Net weight - 40 kg (approx)			
		Machine Dimension:			
		Length	700mm (approx)		
		Width	390mm (approx)		
		Height	1175mm (approx)		
		1. Elastic forming shrinking tool Dimension : Ø40mm Weight: 1.5 kg max (approx)			
		2. Elastic forming stretching tool Dimension : Ø40mm Weight: 1.5 kg max (approx)			

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2	Forming tool details	3. Beak Shaped shrinking tool Dimension : Ø40mm Weight: 3 kg max (approx)		
		4. Beak Shaped stretching tool Dimension : Ø40mm Weight: 3 kg max (approx)		
		5. Light metal shrinking tool Dimension : Ø40mm x 70mm Weight: 1.5 kg max (approx)		
		6. Light metal stretching tool Dimension : Ø40mm x 70mm Weight: 1.5 kg max (approx)		
		Note: Forming capacity of the above tools: Steel 400 N/mm <sup>2</sup> - 1.5mm Aluminium 250 N/mm <sup>2</sup> - 2.0mm Stainless steel 600N/mm <sup>2</sup> - 1.0mm The tool shall also be able to form Titanium (800 N/mm <sup>2</sup> )		
3	Scope of Supply of Machine and Forming tools	1. Pneumatic operated Shrinker and Stretcher machine - 01 no 2. Elastic forming shrinking tool - 01 no 3. Elastic forming stretching tool - 01 no 4. Beak Shaped shrinking tool - 01 no 5. Beak Shaped stretching tool - 01 no 6. Light metal shrinking tool - 01 no 7. Light metal stretching tool - 01 no		
4	Acceptable Make/Brand	Eckold make or any equivalent reputed make.		

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5	<b>Installation &amp; Commissioning</b>	1. Installation & Commissioning shall be done by suppliers engineer at BEML, ASMD, Mysore 2. All electrical & Penumatic connections, required for installation of the machine, are to be carried out by the vendor at BEML, ASMD, Mysore 3. Requirement of power, water & Air lines to be specified by the vendor.		
6	<b>Warranty</b>	This comprehensive warranty shall remain valid for 12 months from the date of installation and commissioning.		
7	<b>Training</b>	Firm shall provide training on operating of the machine & maintenance of the machine to BEML personnel.		
8	<b>Manuals</b>	Firm shall provide hardcopies of Manuals-two numbers (At the time of supply of the machine).		
9	<b>Service</b>	Firm shall indicate the name & address of the agency for after sales service facilities available for the machine in India.		