

# Technical Specification of HAND HELD AIR PLASMA CUTTING MACHINE ( PUR/656/Admac/08/2018-19)

## **CSIR- CMERI Requirement:**

The Plasma Cutting System must be of IGBT inverter based power source. Capable of Operating in both Single & Three Phase Input Power Supply. It should be able to cut 15mm thickness in both Single & Three Phase Input Supply. Hand Held cutting Torch must have facility to accommodate intermediate Interchangeable Torch Extension Cables up to 15 Mtr.

**DOCUMENTARY EVIDENCE OF SUPPLY OF SAME SYSTEM TO GOVT. ORGANISATIONS/UNDERTAKINGS MUST BE ACCOMPANIED WITH THE OFFER; otherwise the offer will be Rejected.**

### **1) Equipment Capacity:**

The Air Plasma should be at least capable to cut following plates/sections

- a) Carbon steel, including high strength steel
- i) Finish cut = 20mm
- ii) Max cut/severance cut= 30mm
- iii) Pierce Rating =15 mm
- b) Stainless Steel=16 mm (Max Cut)
- c) Aluminium= 12 mm (Max Cut)

### **2. Technical Specification:**

- Input power : **415V ±10%, 3 Phase, 50/60 Hz & 220 ±10, 1 Phase, 50/60 Hz**
- Output Current : 80 Amps Controllable
- Duty Cycle : 80Amps.
- OCV : less than 320V
- Input power : 15kVAappx (@ 3Ph. 400VAC)
- Insulation : H class
- Protection : IP23
- Weight : Less than 30Kg
- Free from any HF sound generation & no interference to adjacent other m/c
- Auto Pilot restart feature : For instant re-ignition of pilot arc
- Safety features: All safety features considering hazards to operator and machine must be incorporated, inclusive of over & under current protection
- Error Indication: The equipment should incorporate Error indication in case of mal-function / wrong operation / low air pressure / Phase failure / over temperature

### **3) Torch: For hand Operation**

- Hand operated air cooled torch with lead length of 6m (min).
- Control: By hand torch switch, with provision of trigger lock feature to prevent unwarranted ignition of machine and reduce hand fatigue during long cutting operations.

CSIR-CMERI

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<ul style="list-style-type: none"> <li>• Contact cutting facility by touching down and dragging.</li> <li>• Connection with power source through one connector only (Power, control &amp; air)</li> </ul>	<p><b>4) Intermediate Interchangeable Torch Extension Cables must be offered with the system to get 15 Mtr. Length. ( Like 6 Mtr + 9 Mtr or Suitable Intermediates)</b></p>
<p><b>5) Adequate safety and protection features are to be incorporated in the machine like.</b></p> <ul style="list-style-type: none"> <li>• Plasma arc should not start in case any consumable part is missing or not fitted properly.</li> <li>• Machine should not work if air pressure is not adequate.</li> <li>• Machine should be protected from Phase Failure</li> <li>• Machine should have error indication system for any mal-function detection</li> </ul>	<p><b>6) Power Cable &amp; Ground cable:</b>  <b>(a) Length:</b> (a) Power cable: 3m (b) ground cable: 5m  <b>(b) Core material:</b> Cu</p>
<p><b>7) Essential Consumable spares and accessories to be supplied System</b></p> <p>Torch tip :</p> <ul style="list-style-type: none"> <li>(i) 40 A (for low thickness cutting) 20 nos. for drag &amp; 20 Nos. For cutting</li> <li>(ii) 60A :20 Nos.</li> <li>(iii) 80A- 20 nos.</li> <li>(iv) Electrode: 20 nos.</li> <li>(v) Shield cap : 10 nos.</li> </ul>	<p><b>8) General requirement:</b></p> <ul style="list-style-type: none"> <li>(i) The Power source should be guaranteed for 03 years and torches for 01 year from the date of commissioning at CMERI.</li> <li>(ii) Supplier should have facilities to undertake AMC on expiry of guarantee period through separate order. Support and service undertaking for at least next 10 years to be assured by OEM.</li> <li>(iii) Documentation: Two Sets of Operation &amp; Maintenance Manual</li> <li>(iv) Free Installation and commissioning</li> </ul>

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