



LME: 012: C

LOCOMOTIVE ENGINEERING DEPTT.

PURCHASE SPECIFICATION

LME/PUR/318

ISSUE DT: 21.04.2014

REV. NO: 00

REV. DT:

SHEET 1 OF 4

**SPECIFICATION FOR DEVELOPMENT & SUPPLY OF SWAGING FACILITY TO SWAGE DOUBLE FERRULES ON STAINLESS STEEL PIPES FOR ELECTRIC LOCOMOTIVE, DESL & COACHES**

**Enclosures:**

1. CLW spec no. CLW/MS/3/029, M/EL/57/TS.80, CLW/MS/3/053 & M/EL/57/TS.81
2. RDSO spec no. ICF/MD/SPEC 166
3. Fitting drawings.

Rev	Date	Prepared	Rev	Date	Prepared	Rev	Date	Prepared
		Approved			Approved			Approved
		Approved			Approved			Approved

Distribution : Loco Prodn. (001)    Loco PPC (002)    Loco QC (003)    Tech. (004)    CQX (005)

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02/15/14



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1. GENERAL:

This specification covers development & supply of swaging facility to swage double ferrules on stainless steel pipes for Electric Loco, Diesel Electric Shunting Loco (DESL) & coaches.

2. SCOPE OF SUPPLY AND WORK:

- 2.1. Development & Supply of swaging facility for carrying out swaging activity of double ferrule fitting on stainless steel pipes.
- 2.2. Commissioning of facility at shop floor of BHEL Jhansi.
- 2.3. Training of shop personnel at BHEL Jhansi to carry out swaging operation.

3. GENERAL REQUIREMENT:

- 3.1 The facility should be capable of swaging double ferrules on below mentioned stainless steel pipes which are used in various locomotive products:-  
[[SS pipes are as per CLW spec no. CLW/MS/3/029, M/EL/57/TS.80 & RDSO spec no. ICF/MD/SPEC 166 (latest rev). Double ferrule fittings are as per CLW spec no.: CLW/MS/3/053 & M/EL/57/TS.81 (latest rev).]-:

Sl. No.	Description	Material Standard	Grade	Outside Dia.	Wall Thickness
1	Seamless Stainless Steel tube (Annealed)	ASTM_A_269	304/316	38.1 mm (1½")	3.404 mm
2	Seamless Stainless Steel tube (Annealed)	ASTM_A_269	304/316	38.1 mm (1½")	2.769 mm
3	Seamless Stainless Steel tube (Annealed)	ASTM_A_269	304/316	25.4 mm (1")	2.108 mm
4	Seamless Stainless Steel tube (Annealed)	ASTM_A_269	304/316	22 mm	1.5 mm
5	Seamless Stainless Steel tube (Annealed)	ASTM_A_269	304/316	19.05 mm (¾")	1.65 mm
6	Seamless Stainless Steel tube (Annealed)	ASTM_A_269	304/316	15 mm	1.5 mm

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7	Seamless Stainless Steel tube (Annealed)	ASTM_A_269	304/316	12.7 mm (½")	1.245 mm
8	Seamless Stainless Steel tube (Annealed)	ASTM_A_269	304/316	12.7 mm (½")	0.889 mm

- 3.2 Tube cutting tool will be provided by BHEL. However, any other tool, such as tube Deburring tool, for deburring the end of tubes, will be in supplier's scope.
- 3.3 Stainless steel tubes and double ferrule fittings required during demonstration/training will be in BHEL's scope.

4. DESCRIPTION OF WORK:

The work comprises of supply, testing, commissioning and training of swaging facility, along with suitable fixtures and related accessories, for stainless steel seamless pipes and double ferrule fittings conforming to above referred CLW specs with latest amendments. All sub-assemblies shall be suitable for SS pipes of sizes mentioned above of TP-304/316 seamless quality.

5. Testing & Inspection

Testing & Inspection of the swaging activity will be carried out at BHEL Jhansi.

6. Miscellaneous:

- 6.1. The offer shall include the following:
  - 6.1.1. Complete scope of supply.
  - 6.1.2. Technical details and drawings along with maintenance & operation manual and part catalogue of all the items covered under scope of supply.
  - 6.1.3. Clause wise comment on our purchase specification.
- 6.2. Along with the offer, the bidder shall submit a separate (optional) list of spares, along with unit prices, considered necessary for 5 years operation of the swaging facility.

7. Qualifying Criteria:

Vendor should furnish necessary documentary proof like copy of purchase order, against which they have supplied and commissioned quoted facility at ICF/RCF/CLW/Indian Railways workshop. Also furnish us the performance

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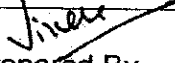
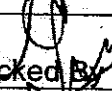
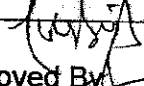
certificate of supplied facility from its user. In the absence of such documentary evidence, offer may be technically rejected.

**8. Guarantee:**

Supplier has to furnish guarantee of swaging facility and related fixtures and accessories for 24 months from date of commissioning.

**9. Payment:**

The payment shall be made based on the work completion certificate as per BHEL standard term & conditions.

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