



LME:012: C

LOCOMOTIVE ENGINEERING DEPTT.

PURCHASE SPECIFICATION

LME/ PUR/ 238

ISSUE DT:15.12.2010

REV.NO.- 00

REV. DT:

SHEET 1 OF 3

SUBJECT:

PURCHASE SPECIFICATION FOR AUTOMATION OF SHELL ASSEMBLY OF WAG-7 LOCOMOTIVE

Enclosures:

Rev	Date	Prepared	Rev	Date	Prepared	Rev	Date	Prepared
		Approved			Approved			Approved
Rev	Date	Prepared	Rev	Date	Prepared	Rev	Date	Prepared
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1.GENERAL:

We are manufacturing WAG-7 locomotives for Indian Railways. To increase our production capacity to produce 75 locomotives per annum automation of shell manufacturing is required to be done. To achieve the automation of shell fabrication, this specification covers the requirement of design, manufacture, supply, erection, commissioning and validation of jigs, fixtures, tooling and their layout plan etc. The objectives to be achieved by the automation of shell assembly is as below:

- To achieve repeatability through maximum use of jigs & fixtures as contemporary facilities/ manufacturing automation.
- Cycle time reduction to improve overall delivery cycle.
- Cut down on inventory cost, rework, rejection and cutting down inspection stages and hence inspection time.
- Lesser loading and unloading time on fixture.

The shell assembly, for which fabrication automation is to be done, consists of many parts as detailed in table below.

S.No.	Description	Drawing No.
a	Shell Assembly	17191005000
b	Under frame arrangement at end-1 & 2	06/1/31/100
c	Under frame arrangement at centre	06/1/31/101
d	Section and details of underframe	06/1/31/102
e	End Structure	06/1/31/135
f	Side Wall Panelling Assembly	0 719 44 05 000
g	Louvre Frame Assembly	1 719 45 05 000
h	Cabin Outer Panelling	06/1/35/87
i	Cabin Structure Assembly	06/1/35/91
j	Roof Arrangement over brake resistor	06/1/47/35
k	Roof Arrangement over Transformer-section details	06/1/47/36
l	Roof Arrangement at cab-1 end	06/1/47/37
m	Roof Arrangement over Transformer	06/1/47/38
n	Roof Arrangement at cab-2 end	06/1/47/39
o	Mounting of equipments on underframe at the end-1	06/1/32/30
p	Mounting of equipments on underframe at centre	06/1/32/31
q	Mounting of equipments on underframe at the end-2	06/1/32/32
r	Section and details of Mounting of equipments	06/1/32/33
s	Air duct Arrangement at cab-1 end	06/1/54/1- sheet-1
t	Air duct Arrangement at cab-2 end	06/1/54/1- sheet-2

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2. Scope of Work for supplier

- a) Design suitable set of jigs and fixtures for different parts of the shell assembly. Layout drawing no.-JHS/LOC50-75/001 having details of the area allocated is enclosed herewith.
- b) To manufacture the designed jigs and fixtures and supply.
- c) To prepare master layout and line layout for the jigs, fixtures, tools to be erected in the area allocated.
- d) To define the welding sequence to be followed for different parts of WAG-7 loco shell in the proposed layout.
- e) To automate the shell manufacturing to maximum extent.
- f) Erection of the jigs, fixtures & tools in the allocated area.
- g) Proving of the facilities provided by supplier to get the desired output i.e; 7 shells per month. The work shall not be declared complete unless practical output 7 shells per month is proved by the party.
- h) To provide training to the users of the facility. Manuals shall also be made available to BHEL. Till the facility is proved Party shall be required to give training and supervision to the work being executed.

3. Details to be submitted

- i.) Party shall be required to submit QA plan along with the drawings of all designed jigs and fixture to BHEL for purpose of inspection. These documents are required to be submitted by party within 2 month of placement of order.
- ii.) Project schedule to be furnished by Party with offer.
- iii.) Details of similar projects done by party earlier, to be submitted with offer.
- iv.) Recommendation for details of infrastructure required by supplier from BHEL. (to be furnished within 2 months of placement of order.

3. Delivery

The delivery issue shall be decided after detailed discussion with successful vendor.

4. Erection, commissioning & proving

The erection of the jigs, fixtures & tooling shall be in scope of the party but all the necessary infrastructure facilities shall be made available to them by BHEL. Proving the facilities provided by party shall be considered established only when desired output i.e; 7 shells per month is achieved.

The final clearance to all the parts and assembly manufactured out of the newly designed facility shall be accepted only after final acceptance from RDSO. Till the final RDSO inspection is cleared no acceptance will be given to the project.

Prepared by :

Checked by :

Approved by :