

1 Purpose

To establish procedures of inspection and testing of master link forgings at supplier end.

2 Scope

Covers inspection and testing of master link forgings.

3 Responsibility

(1)The section head of Castings/Forgings Materials group to ensure that the quality plan is sent to all suppliers along with the purchase order.

(2)The suppliers shall ensure that quality plan is followed for testing and inspection of the forgings.

4 Procedure

The quality plan is applicable for master link forgings of equipment mentioned in table 1 . Supplier should carry out inspection and testing of forgings as per Table -2

TABLE -1

SLNo	EQUIPMENT	DESCRIPTION	PART No.
1	BD155	M.LINK RH(B.B)	125CT51802
		M.LINK RH(P.B)	125CT51787
		M.LINK LH(P.B)	125CT51779
		M.LINK LH(B.B)	125CT51795
2	BD355	M.LINK RH(P.B)	130CT51485
		M.LINK LH(P.B)	130CT51493
		M.LINK LH(B.B)	130CT51509
		M.LINK RH(B.B)	130CT51477

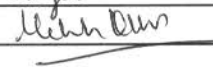
	Name	Signature	Date
Prepared by	RAJENDRA BABU K		
Approved by	MAHESH KULKARNI		29.3.2016


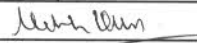
Table -2

SLNO	TEST DESCRIPTION	PERIODICITY OF TESTS
1	Visual inspection	The forgings shall be free from abnormalities such as: pittings, Rust, undercuts, folds and uneven surface / projections shall be checked on 100% of forgings Weld repairs / machining / grinding operations are not allowed.
2	Dimensions	During sample development 100% dimensions as per drawing shall be checked on 5 nos. by layout method. For regular supplies, 2% links to be checked for dimension to ensure flatness at marked area , offset dimn. 3.4mm to be ensured. piercing hole bore diameters to be ensured by using suitable gauge. On re-sinking of die, 5nos. of forging to be ensured for 100% dimensions as per drawing. Dimensional deviation due to die mismatch is not acceptable.
3	Composition	Raw material used for forging to be checked for composition and report to be sent with each consignment.
4	Raw Material	Minimum reduction ratio 6:1 to be ensured in the raw material used for forgings. Reduction Ratio should be indicated in Mill TC. Mill TC should be enclosed with Quality documents for every batch of supplies.
5	Macro etching/ flow lines	Macro etching / Flow lines shall be checked for 1 no. sample during development stage and on change of Raw material source and Report should be sent along with supplies.
6	Inclusion rating	1 no. sample shall be checked for inclusion rating and report to be sent along with each consignment.
7	Grain Size / Hardenability	Grain Size and Hardenability values shall be reported for each supply.
8	Hardness	5% of forgings(subject to a min. of 50nos.) to be checked for hardness for every batch. Hardness to be checked at location mentioned in drawing, by grinding to a depth of 1.5/2mm (to remove the decarburisation layer)
9	Heat treatment details	HT report to be sent along with each consignment.
10	MPI	MPI check for 100% Link forgings shall be carried by Wet-Flourescent method for development & regular supplies.
11	Fatigue Test	Fatigue test specimem to be obtained from area shown in figure-1 in drawing.
12	Idenification / Traceability	The forging shall be marked with vendor code, part no. & sl.no., heat no. & BEML logo
13	Supply Condition	forgings of sample batch and regular supplies to be in un-painted condition with rust preventive applied on all areas.

Sampling Plan:

SI No.	Batch Qty.	Insp. Qty.
1	0-500	5
2	500-1000	10
3	>1000	20

On report of deviations, Inspection will be as per IS-2500

	Name	Signature	Date
Prepared by	RAJENDRA BABU K		
Approved by	MAHESH KULKARNI		29.3.2016