

FOR AUSTENITIC DUCTILE IRON CASTING TO ASTM A439 D2

BF Valve Body & Door casting are required to the following specifications:

- a) Material of the casting shall be Austenitic Ductile Iron to ASTM A439 D2.
- b) The requirement of sizes & quantity shall be as following:

SL NO	ITEM DESCRIPTION	QTY (In nos.)	DRAWING NO
1	DIA 1400 BF VALVE BODY	1	19513800098 (REV-00)
2	DIA 1400 BF VALVE DOOR	1	19513800099 (REV-00)
3	DIA 1300 BF VALVE BODY	3	19513800096 (REV-00)
4	DIA 1300 BF VALVE DOOR	3	19513800097 (REV-00)
5	DIA 1000 BF VALVE BODY	3	19513800008 (REV-00)
6	DIA 1000 BF VALVE DOOR	3	19513800009 (REV-01)
7	DIA 900 BF VALVE BODY	3	19513800010 (REV-00)
8	DIA 900 BF VALVE DOOR	3	19513800011 (REV-00)
9	DIA 800 BF VALVE BODY	1	12160112108 (REV-03)
10	DIA 800 BF VALVE DOOR	1	12160112110, VAR - 02 (REV-01)
11	DIA 700 BF VALVE BODY	1	19513800049 (REV-00)
12	DIA 700 BF VALVE DOOR	1	19513800047 (REV-00)
13	DIA 600 BF VALVE BODY	3	12160112097 (REV-01)
14	DIA 600 BF VALVE DOOR	3	12160112098 (REV-01)
15	DIA 500 BF VALVE BODY	19	19513800040 (REV-02)
16	DIA 500 BF VALVE DOOR	19	19513800039 (REV-00)

- c) Condition of Delivery: Casting shall be delivered in heat treated / stresses relieved, **FINISH MACHINED & BODY HYDRO TEST** (as per drg) condition.
- d) The casting shall conform to the technical requirements given in the above mentioned drawings and no deviation on chemical / mechanical properties & dimensions will be allowed.
- e) Casting repair required if any to be done with prior permission from BHEL.
- f) The stress relieving (SR) of the castings shall be carried out as per the procedure given in specification ASTM A439 D2. SR to be carried out in the furnace duly calibrated by NABL approved agency / lab.
- g) Cast heat marks with an identification no. (at places shown in above drawings) shall be provided to trace the melt & the batch of heat treatment.
- h) For spectrometer, authenticated calibrated standards blocks as provided by OEM to be used.

- i) Concentricity checking procedure for trunnion bores to be submitted at contract stage for review & acceptance by BHEL. Non - coaxiality in Trunnion bores to be taken as 0.08 mm in place of 0.03 mm as mentioned in drawings.
- j) The castings shall be free from all the defects (blow holes, cracks, cold shuts, hot tears etc.) & shall withstand the hydrostatic pressure test to be carried out at BHEL works without any leakage/sweating/ failure. If the castings supplied by the vendor is rejected at BHEL works due to casting defects during hydraulic test, same shall be replaced by the vendor free of cost.
- k) Painting after proper surface cleaning (shot / grit / method as suitable) at vendor's works :
One (01) coat of Temporary Rust Preventive (TRP) only.
- l) The following tests shall be carried out on the castings and the test certificates shall be furnished:
- (i) Chemical Analysis Test *
 - (ii) Mechanical Properties Test
 - (iii) Horse Shoe Magnet Test *
 - (iv) DP Test on Machined surfaces * (See note 2)
 - (v) Record of Heat Treatment / Stress Relieving
 - (vi) Visual examination of castings *
 - (vii) Dimensional Record (before & after machining)
- (* Tests shall be witnessed by BHEL)
- m) Inspection Requirement: The castings shall be inspected by BHEL / CUSTOMER at supplier's work at any intermediate stage. Casting will not be accepted without prior inspection as per the Annexure and Drawing at supplier's works.
- n) Packing & Marking: Castings shall be suitably packed to prevent any damage during transit. Machined surfaces shall also be properly protected. Each package or casting shall be properly protected. Each package or casting shall be legibly marked with following information :

BHEL Order No.

Consignment / Identification No.

Supplier's Name

Note : 1) Chemical / Mechanical test to be performed at any NABL / Govt. approved Lab. If to be done inhouse, instrument for testing requires to be with valid calibration record (Calibrated by NABL approved agency). Spectrometer for chemical testing duly calibrated by OEM is also acceptable.

Note : 2) NDT to be carried out by ISNT / ASNT Level - II NDT person only.

Note : 3) Bidder to provide seal & signed copy of QAP, Checklist & spec. Any deviation to above is to be clearly mentioned.