

### 1.0 Order Information

#### (Customer Specified Requirements)

Sr. No.	: 19BFVI 001P	TAG No: -
Project name	: Prototype Butterfly Valve	
Work Order	: 2L19-002(PRO)	

### 2.0 General

Valve Type	: Category A (Concentric Disc & Seat Configuration)	
Valve Location & Function	: NA	
Size	: DN 150 (NPS 6)	
End Connections	: <input type="radio"/> 125# <input checked="" type="radio"/> 150# <input type="radio"/> 300# <input type="radio"/> 600#	
Dead-end Service	: Not Applicable For Dead End Service	

### 3.0 Requirement Provided From External Sources:

API 609, 8<sup>th</sup> Edition Feb 2016, Errata April 2017, ASME B16.5-2017, ASME B16.34-2017, ANSI/MSS SP-25-2018, MSS SP-91-2009, ASME BPVC SEC II-PART D-2013, ASME SEC VIII DIV 1-2013.

### 4.0 Environment & Operational Condition:

- Sour Service : No
- Normal Service : Yes
- Gas / Petroleum Service : Yes
- Corrosive Environment : Yes

### 5.0 Methodology, assumption & Formula Documentation:

- API 609, 8<sup>th</sup> Edition Feb 2016, Errata April 2017
- ASME Section VIII, DIV 1 -2013.
- ASME BPVC SEC II-PART D-2013.
- ASME B16.34-2017
- Crane Nuclear Technical paper.

### 6.0 Historical Performance & Other Information derived from previous similar design:

(NIL)

## 7.0 Legal Requirement:

- API 609, 8<sup>th</sup> Edition Feb 2016, Errata April 2017
- As Per List Of Statutory & Regulatory Requirements 2L/MGMT/18, Rev-00.

## 8.0 Result of Risk Assessment -

As Per Risk Assessment & Mitigation 2L-MGMT-21, Rev-00 (Design)

## 9.0 Design(Technical & Functional Requirement)

Design Standard	: API 609, 8 <sup>th</sup> Edition Feb 2016, Errata April 2017
Minimum Bore	: Valve Bore Diameter will be selected, on the basis of Calculations Performed in format No. 2L-D&D-03, Rev-01. i.e In API 609 Table D.2, ASME B36.10M - Table 1.
Pressure Class	: De-Rated Valve @ Pressure 10 Bar
If Cat A, mention the CWP	: 10 Bar @ -20°C to 38°C (As per ISO 5208-2015, Clause 2.9)
Maximum Operating Pressure @ Minimum Operating Temperature	: 10 Bar @ -20°C to 38°C
Maximum Operating Pressure @ Maximum Operating Temperature	: 8 Bar @ 120 °C
Liquid or Gas Service	: Petroleum
Unidirectional or Bi directional design	: Bi-directional
NACE MR0175 / NACE MR0103 / ISO 15156 Compliance	: Not Applicable
Other Specific Requirements	: Not Applicable
Body	: ASTM A216 Gr.WCB
Trim	: ASTM A479 TP 304
Seat	: EPDM
Shaft diameter	: Shaft Diameter Will Be Selected, on the Basis of Calculations Performed in Format No. 2L-D&D-03, Rev-01.
Face-to-Face Dimension	: 56mm, As Per Table 2 of API 609, 8 <sup>th</sup> Edition Feb 2016, Errata April 2017.
Fire safe design and design specification	: NA
Pressure relief: if pressure relief devices are required, are there special requirements for these devices?	: NA
Drain connections: Any requirements?	: NA
Bypass connections: Any requirements?	: NA

**10. Material**

Body : ASTM A216 Gr.WCB

Shaft : ASTM A479 TP 304

Trim : ASTM A479 TP 304

Bolting : NA

**11. Testing**

Testing Specification : API 598 10th edition, Oct -2016

Any other special test required : No

Electrical Continuity Type Testing : Yes

**12. N.D.E Requirements**

Radiographic Testing : No

Ultrasonic Testing : No

Magnetic Particle Testing : No

Penetrant Testing : No

PMI : No

**13. Operation**

Direction of Closing : Clockwise

Operation : Gear Operated

Is gearbox with hand-wheel required? If so, give details : Yes, The hand wheel diameter Will be Selected On the basis of Calculated Valve Torque & Gear box input Torque (2L-D&D-03,Rev-01), in Accordance With Suppliers Catalogue

Any other special required? : No

Wrench required? : NA

Locking device required? : Yes

Locking device type : Locking at Open & Close positions.

**14. Other Requirements**

Supplementary documentation requirements? : No

Legal & Other Applicable Requirements : Refer List Of Legal Requirements 2L-MGMT-18, Rev-00.

Third-party witness of processes/testing : No

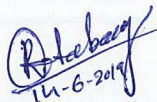
Painting or coating required? : This is Prototype Valve; So No Painting is required at present.

Marking Requirements : Name plate is only designed. As Per QMS Procedure No.2L-QMS-PRO-35, Rev-00.

NOTE: For undated references of standards, the latest edition of the standard shall apply (Including Amendment)

Prepared By: 1<sup>st</sup>Design Engineer

Signature

  
14-6-2019

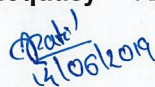
Name : Raghunath K

Designation : Design Engineer

Design Input reviewed for adequacy by 2<sup>nd</sup>Design Engineer

Found Adequacy ☒ YES / NO

Signature

  
14/06/2019

Name : Aditya P

Designation : Design Engineer