

|   |          |                                                                                           |                                                                                              |                 |
|---|----------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------|
| 2 | Form No: | <br>PE&SD | <b>BHARAT HEAVY ELECTRICALS LIMITED</b><br><b>PROJECT ENGINEERING &amp; SYSTEMS DIVISION</b> | <b>PY 52266</b> |
|   |          |                                                                                           | <b>PURCHASE SPECIFICATION</b>                                                                | Rev. No. 00     |
|   |          |                                                                                           | <b>DUAL PLATE CHECK VALVE,<br/>CARBON STEEL CLASS ASME 300</b>                               | Page 1 of 3     |

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## DUAL PLATE CHECK VALVE, CARBON STEEL CLASS ASME 300 (GAS SERVICE)

### 1.0 GENERAL

- 1.1 Scope: This standard specifies the requirements of Cast Dual plate check valves, Carbon Steel body material, pressure class ASME 300, with flanged end connections.
- 1.2 This standard shall be supplemented by AA0851403 for technical delivery conditions.
- 1.3 Application: These valves shall be suitable for GAS service.

### 2.0 DESIGNATION:

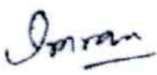
Dual plate check valve of CS body material, 24" size, 300#, double flanged, flat face shall be indicated as: **DPCV CS 24" CL300 FL FF**

Dual plate check valve of CS body material, 24" size, 300#, wafer type, flat face shall be indicated as: **DPCV CS 24" CL300 WAF FF**

Dual plate check valve of CS body material, 24" size, 300#, wafer lug type, flat face shall be indicated as: **DPCV CS 24" CL300 WAF-LUG FF**

### 3.0 TECHNICAL REQUIREMENTS:

| CL         | REQUIREMENTS                                                                    | COMPLIANCE                                                                                     |
|------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>3.1</b> |                                                                                 |                                                                                                |
| 3.1.1      | Pressure temperature ratings                                                    | As per ASME B16.34                                                                             |
| <b>3.2</b> | <b>Materials:</b>                                                               |                                                                                                |
| 3.2.1      | Valve Body                                                                      | ASTM A216 Gr WCB                                                                               |
| 3.2.2      | Plate / Disc                                                                    | 13% Cr SS, AISI 410                                                                            |
| 3.2.3      | Seat                                                                            | Buna-N / EPDM                                                                                  |
| 3.2.4      | Spring                                                                          | SS 316                                                                                         |
| 3.2.5      | Internals                                                                       | SS 316                                                                                         |
| 3.2.6      | Other parts                                                                     | Manufacturing standard                                                                         |
| 3.2.7      | Gasket                                                                          | Non Asbestos material                                                                          |
| <b>3.3</b> | Construction & Design std                                                       | API 594                                                                                        |
| <b>3.4</b> | <b>End Connections:</b><br><b><u>Shall be as indicated in variant table</u></b> |                                                                                                |
| 3.4.1      | WAFER/WAFERLUG/DOUBLE FLANGED                                                   | For NPS ≤ 24" flanged ends as per ASME B 16.5                                                  |
| 3.4.2      | Flat face(FF)/ Raised Face (RF)                                                 | For NPS > 24" flanged ends as per ASME B 16.47 / AWWAC207 CL D (as indicated in variant table) |
| <b>3.5</b> | Face to Face and end to end dimensions                                          | API 594                                                                                        |

|           |                                                                                                  |                                                                                              |                                                                                                  |                                                                                                     |          |
|-----------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------|
| Refer Doc | <b>LAYOUTS &amp; PIPING ENGINEERING</b><br><br><b>PROJECT ENGINEERING &amp; SYSTEMS DIVISION</b> | PREPARED                                                                                     | CHECKED                                                                                          | APPROVED                                                                                            | DATE     |
|           |                                                                                                  | <br>IMRAN | <br>G KALYAN | <br>G SRIKANTH | 31.01.19 |

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|            |                                             |            |
|------------|---------------------------------------------|------------|
| <b>3.6</b> | Testing Standard                            | API 598    |
| 3.6.1      | Hydraulic Testing Pressure (as per API 598) | 1125 psig  |
| 3.6.2      | Pneumatic Testing Pressure (as per API 598) | 813.6 psig |

#### 4.0 PAINTING:

Painting shall be strictly as per project specific painting specification provided along with inquiry, unless otherwise indicated in the inquiry.

In case of non-availability of project specific painting specification, the painting and marking shall be as per Technical delivery conditions for valves - **AA0851403**

#### 5.0 TECHNICAL DELIVERY CONDITIONS:

All other requirements including testing not mentioned in this specification shall be as per BHEL corporate standard "Technical delivery conditions for valves - **AA0851403**"

#### 6.0 DOCUMENTATION:

##### 6.1 Along with the offer:

One copy each of the following documents shall be submitted along with offer:

- i. G.A. Drawings / leaflets / catalogues for the offered item with binding dimensions, material specification details, weight etc.
- ii. GA drawing shall indicate all the relevant details including:
  - a) Check valve diameter in meters
  - b) Flap/plate weight in Kgf (mass \* g)
  - c) Distance from Hinge to each flap/plate center in meters
  - d) Distance of Centre of Pressure from Hinge in meters
  - e) Spring stiffness in Newton.m/rad
  - f) Coefficient of Restitution between flap/plate material and the valve seat material
- iii. **Signed and stamped copies of this specification accepting the scope of supply as indicated in the specification.**

##### 6.2 After placement of order:

Four copies each of the following documents shall be submitted for approval  
 G.A. Drawings for the offered item with binding dimensions, material specification details, tests to be conducted, weight etc.

##### Schedule for document submissions:

| S.no | Description                        | Schedule                          |
|------|------------------------------------|-----------------------------------|
| 1    | Submission of GA drawing by vendor | 7 days from the date of P.O.      |
| 2    | Approval GA drawing by BHEL        | 14 days from drawing submission * |

\* The GA drawing submitted by vendor shall be strictly in compliance to all applicable standards and specification. The approval of GA drawing in no way absolves the supplier from meeting this specification requirement.

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**VARIANT TABLE:**

| Var No | Size | End conn | Counter flanges         | Item Description        | Material Code |
|--------|------|----------|-------------------------|-------------------------|---------------|
| 01     | 24"  | FL-RF    | A105,CL 300, RF/125AARH | DPCV CS 24" CL300 FL RF | PY9752266010  |
| 02     | 8"   | FL-RF    | A105,CL 300, RF/125AARH | DPCV CS 8" CL300 FL RF  | PY9752266029  |

**RECORD OF REVISIONS:**

| Rev No | Date     | Revision Detail | Revised by | Approved by |
|--------|----------|-----------------|------------|-------------|
| 00     | 31.01.19 | FIRST ISSUE     | IMRAN      | GS          |