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D.No.39-24-32, Madhavadara, Industrial Estate, Visakhapatnam-530007.
(Specialized in Shock, Noise, Vibration Analysis &
Measurements and valve testing for Marine Systems)

VISUAL AND DIMENSIONS TEST REPORT

Test conduct Date JULY 10TH 2023

Client : **VINPRA ENGINEERING INDIA**

Drawing No. : **VP/1PC/TEBV/FLG/001**

Test Item : **65 NB Ball valve**

Model No. & S.No. : **B12179**

Material : **LG4C**

Heat No. : **13723 :**

Vernier Caliper : **0 tov300 mm**

Date of Calibrated : **17.10.2022**

Due date of calibration : **16.10.2023**

S.no	Parameter	Specification dimensions	Observed dimensions
1	Flange O.D	185mm	184.44
2	Flange I.D	63.5mm	63.46
3	Flang to Flange distance	190mm	188.2mm
4	Flange thick	17mm	17mm
5	Flange P C D	165 mm	165mm
6	No of holes	4	4
7	Hole DIA	18mm	18mm

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FUNCTIONAL CHECKS (HYDRAULIC TEST)

Test conduct Date JULY 10TH 2023

Client	:	**VINPRA ENGINEERING INDIA**
Drawing No.	:	**VP/1PC/TEBV/FLG/001**
Test Item	:	**65 NB Ball valve**
Model No & Sl No	:	**B12179**
Heat No.	:	**13723**
Test Pressure for Hydraulic Body	:	**15 bar**
Test for time duration	:	**10 Min.**
Pressure Gauge used	:	**0-21 Bar [Make WIKA]**
Pressure Gauge Cert No.	:	**PG 106 Date Of Calibrated 24-10-2022**
Due Date	:	**23-10-2023**
Test Result	:	**No leakage found during Hydraulic Body Test & found Satisfactory.**

Note: AS PER BS 6755-PART RATE A

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Static pressure Test (Body Assembly Test & Seat Leak test)

Test conduct Date JULY 10TH 2023

Client	:	**VINPRA ENGINEERING INDIA**
Drawing No.	:	**VP/1PC/TEBV/FLG/001**
Test Item	:	**65 NB Ball valve**
Model No & Sl No	:	**B12179**
Heat No.	:	**13723**
Body Assembly Test Pressure:		**15 bar for 10 Min**
Seat Leak Test	:	**11 bar for 10 Min**
Test for time duration	:	**10 Min**
Pressure Gauge used	:	**0-21 Bar [Make WIKA]**
Pressure Gauge Cert No.	:	**PG 106 Date Of Calibrated 24-10-2022**
Due Date	:	**23-10-2023**
Test Result	:	No **leakage found during Hydraulic Body Test, seat leak test and found Satisfactory.**

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Initial Torque test& Delay Torque test
With loading condition

Test conduct Date JULY 10TH 2023

Client	:	**VINPRA ENGINEERING INDIA**
Drawing No.	:	**VP/1PC/TEBV/FLG/001**
Test Item	:	**65 NB Ball valve**
Model No. & S.No.	:	**B12179**
Material	:	**LG4C**
Heat No.	:	**13723**
Testing pressure	:	**10 bar**
Initial Torque test before Life cycle test	:	**Initial torque 42 NM: (close to open the valve)**
Delay torque	:	**6sec (valve closing time 31sec&valve opening time25sec)**
Torque wrench used	:	**GTW-5, Serial No.16F-126, Make Grip Hold**
Torque wrench. & DT	:	**12-11-2022**
Due Date	:	**11-11-2023**

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PNEUMATIC TEST
(AIR BUBBLE TEST)

Test conduct Date JULY 10TH 2023

Client	:	**VINPRA ENGINEERING INDIA**
Drawing No.	:	**VP/1PC/TEBV/FLG/001**
Test Item	:	**65 NB Ball valve**
Model No & Sl No	:	**B12179**
Heat No.	:	**13723**
Pneumatic Pressure Test	:	**07 bar**
Test for time duration	:	**10 Min.**
Pressure Gauge used	:	**0-21 Bar [Make WIKA]**
Pressure Gauge Cert No.	:	**PG 106 Date Of Calibrated 24-10-2022**
Due Date	:	**23-10-2023**
Test Result	:	**No leakage found during Pneumatic Test& found Satisfactory**

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INITIAL TORQUE TEST& DELAY TORQUTEST WITH UN- LOADING CONDITION

Test conduct Date JULY 10TH 2023

Client	:	**VINPRA ENGINEERING INDIA**
Drawing No.	:	**VP/1PC/TEBV/FLG/001**
Test Item	:	**65 NB Ball valve**
Model No. & S.No.	:	**B12179**
Material	:	**LG4C**
Heat No.	:	**13723**
Drawing No.	:	**Mv-001-000-000-000 REV02**
Initial Torque test before Life cycle test	:	**Initial torque 32NM: (close to open the valve)**
Delay torque	:	**3 sec (valve closing time 21sec & valve opening time 18sec)**
Torque wrench used	:	**GTW-5, Serial No.16F-126, Make Grip Hold**
Torque wrench. & DT	:	**12-11-2022**
Due Date	:	**11-11-2023**

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Cv – Flow Coefficient &Pressure Drop

Test conduct Date JULY 11TH 2023

Client	:	**VINPRA ENGINEERING INDIA**
Test Item	:	**65 NB Ball valve**
Drawing No.	:	**VP/1PC/TEBV/FLG/001**
Model No. & Sl.No.	:	**B12179**
Material	:	**LG4C**
Heat No.	:	**13723**
Pressure for valve upstream side	:	**6 PSI**
Pressure for valve downstream side	:	**4.8psI**
Pressure Gauge used upstream side	:	**0-7-kg/cm$^{2.}$**
Pressure Gauge Cert No. & DT	:	**PG-105 Date of Calibrated 10-09-2022**
Due Date	:	**09-09-2023**
Pressure Gauge used downstream side	:	**0-7kg/cm^{2}.**
Pressure Gauge Cert No. & DT	:	**PG 106 Date of Calibrated 10-08-2022**
Due Date	:	**09-09-2023**
Pressure drop	:	**1.2 psi**
Type of Flow meter	:	**ultrasonic**
Model number	:	**UFM 6720**
Calibrated range	:	**4500gpm**
Date of calibration	:	**18-11-2022**
Next calibration date	:	**19-11-2023**
Flow rate (Q)	:	**752 Gpm**
Cv flow coefficient	:	**717**
Test Result	:	**Satisfactory**

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C_V CALCULATIONS FOR 65 NB BUTTERFLY VALVE

$$C_V = Q\sqrt{\frac{sg}{\Delta p}} \quad \ldots \quad \ldots \quad (1)$$

CV	=	flow coefficient
q	=	Flow Rate gpm
sg	=	Density of fluid (water sg = 1)
Δp	=	Pressure drop in bar (P1 – P2)
P1	=	Upstream pressure
P2	=	Down Stream pressure

By the experimental values

q	=	260gpm
P1	=	6psi
P2	=	4.8psi
Δp	=	1.2 psi

Above values is substituent in equation (from (1))

cv	=	752* 0.953
	=	717
	=	717

Table 1:-C_v and pressure drop values and CV Values

Type and size of the valve	Cv-flow coefficient as for the drawing	Cv-flow coefficient as for the experimental	Pressure drop as for the experimental	Flow rate as for the experimental Gpm
40 NB	710	717	1.2 PSI	752

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25 Cycle TEST REPORT

Test conduct Date JULY 11TH 2023

Client	:	VINPRA ENGINEERING INDIA
Drawing No.	:	VP/1PC/TEBV/FLG/001
Test Item	:	65 NB Ball valve
Model No. & S.No.	:	B12179
Material	:	LG4C
Heat No.	:	13723
Test Pressure for valve side	:	10 bar (W.P)
Pressure Gauge used	:	0-70 Bar Make WIKA
Pressure Gauge Cert No. & DT	:	PG 104Date Of Calibrated 20-10-22
Due Date	:	19-10-2023

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Anti-static test

Test conduct Date JULY 11TH 2023

Client	:	**VINPRA ENGINEERING INDIA**
Drawing No.	:	**VP/1PC/TEBV/FLG/001**
Test Item	:	**65 NB Ball valve**
Model No. & S.No.	:	**B12179**
Material	:	**LG4C**
Heat No.	:	**13723**
NAME	:	**DIGITAL MULTI METER**
Make	:	**FLUKE**
Model	:	**FLUKE 101600V CAT III**
Serial no	:	**50230973WS**
Date of calibrated	:	**10/11/2023**
Electrical resistance measured	:	**0.2 ohm**

Note:

As for the Standard the electrical resistance between the ball/disc and the valve body &between thestem/shaft and the valve body shall be measured using a DC power source not exceeding 12V.the resistance shall be measured on dry valves before pressure testing and shall not exceed 10ohm.

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