



# GVK MARINE SYSTEMS

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

Client : VINPRA ENGINEERING INDIA  
PVT LTD  
Drawing No. : VP/1PC/TEBV/FLG/002  
Test Item : 40 NB Ball valve  
Model No. & S.No. : B12150  
Material : LG4C  
Heat No. : 17723  
:  
Vernier Caliper : 0 to 300 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	150mm	148.82
2	Flange I.D	38.1mm	38.1mm
3	Flang to Flange distance	165mm	164.85
4	Flange thick	16mm	16mm
5	Flange P C D	110 mm	110mm
6	No of holes	4	4
7	Hole DIA	18mm	18mm

**B.V.A. RAVI KUMAR**  
(Test Engineer)  
GVK marine systems





# GVK MARINE SYSTEMS

D.No.39-24-32, Madhavadara, Industrial Estate, Visakhapatnam-530007.

(Specialized in Shock, Noise, Vibration Analysis &  
Measurements and valve testing for Marine Systems)

## FUNCTIONAL CHECKS (HYDRAULIC TEST)

Test conduct Date

Client : VINPRA ENGINEERING INDIA PVT LTD

Drawing No. : VP/1PC/TEBV/FLG/002

Test Item : 40 NB Ball valve

Model No & SI No : B12150

Heat No. : 17723

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

**B.V.A.RAVI KUMAR**  
(Test Engineer)  
GVK marine systems





# GVK MARINE SYSTEMS

D.No.39-24-32, Madhavadara, Industrial Estate, Visakhapatnam-530007.

(Specialized in Shock, Noise, Vibration Analysis & Measurements and valve testing for Marine Systems)

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

Test conduct Date

Client : VINPRA ENGINEERING INDIA PVT LTD

Drawing No. : VP/1PC/TEBV/FLG/002

Test Item : 40 NB Ball valve

Model No & SI No : B12150

Heat No. : 17723

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.

**B.V.A.RAVI KUMAR**  
(Test Engineer)  
GVK marine systems





# GVK MARINE SYSTEMS

D.No.39-24-32, Madhavadara, Industrial Estate, Visakhapatnam-530007.

(Specialized in Shock, Noise, Vibration Analysis & Measurements and valve testing for Marine Systems)

## Initial Torque test& Delay Torque test With loading condition

Test conduct Date 23-09-2021

Client : VINPRA ENGINEERING INDIA PVT LTD

Drawing No. : VP/1PC/TEBV/FLG/002

Test Item : 40 NB Ball valve

Model No. & S.No. : B12150

Material : LG4C

Heat No. : 17723

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

**B.V.A.RAVI KUMAR**  
(Test Engineer)  
GVK marine systems





# GVK MARINE SYSTEMS

D.No.39-24-32, Madhavadara, Industrial Estate, Visakhapatnam-530007.

(Specialized in Shock, Noise, Vibration Analysis & Measurements and valve testing for Marine Systems)

## PNEUMATIC TEST (AIR BUBBLE TEST)

Test conduct Date 24-09-2021

Client : VINPRA ENGINEERING INDIA PVT LTD  
Drawing No. : VP/1PC/TEBV/FLG/002  
Test Item : 40 NB Ball valve  
Model No & SI No : B12150  
Heat No. : 17723  
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

B.V.A.RAVI KUMAR  
(Test Engineer)  
GVK marine systems





# GVK MARINE SYSTEMS

D.No.39-24-32, Madhavadara, Industrial Estate, Visakhapatnam-530007.

(Specialized in Shock, Noise, Vibration Analysis & Measurements and valve testing for Marine Systems)

## INITIAL TORQUE TEST & DELAY TORQUE TEST WITH UN-LOADING CONDITION

Test conduct Date 24-09-2021

Client : VINPRA ENGINEERING INDIA PVT LTD

Drawing No. : VP/1PC/TEBV/FLG/002

Test Item : 40 NB Ball valve

Model No. & S.No. : B12150

Material : LG4C

Heat No. : 17723

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

B.V.A.RAVI KUMAR  
(Test Engineer)  
GVK marine syst





# GVK MARINE SYSTEMS

D.No.39-24-32, Madhavadara, Industrial Estate, Visakhapatnam-530007.

(Specialized in Shock, Noise, Vibration Analysis &  
Measurements and valve testing for Marine Systems)

## Cv – Flow Coefficient & Pressure Drop

Test conduct Date JULY 11<sup>TH</sup> 2023

Client	:	VINPRA ENGINEERING INDIA PVT LTD
Test Item	:	40 NB Ball valve
Drawing No.	:	VP/1PC/TEBV/FLG/001
Model No. & SI.No.	:	B12150
Material	:	LG4C
Heat No.	:	17723
Pressure for valve upstream side	:	4.8 PSI
Pressure for valve downstream side	:	3.6PSI
Pressure Gauge used upstream side	:	0-7-kg/cm <sup>2</sup> .
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 <sup>2</sup> .
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)	:	260 Gpm
Cv flow coefficient	:	229.8
Test Result	:	Satisfactory

  
B.V.A. RAVI KUMAR  
(Test Engineer)  
GVK marine systems



# GVK MARINE SYSTEMS

D.No.39-24-32, Madhavadara, Industrial Estate, Visakhapatnam-530007.

(Specialized in Shock, Noise, Vibration Analysis & Measurements and valve testing for Marine Systems)

## C<sub>v</sub> CALCULATIONS FOR 40NB BUTTERFLY VALVE

$$C_v = Q \sqrt{\frac{sg}{\Delta p}} \quad \dots \quad \dots \quad (1)$$

- 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))

$$\begin{aligned}
 cv &= 252 * 0.912 \\
 &= 229.8
 \end{aligned}$$

Table 1:-C<sub>v</sub> and pressure drop values and CV Values

Type and size of the valve	Cv-flow coefficient asfor the drawing	Cv-flow coefficient as for the experimental	Pressure drop as for the experimental	Flow rate as for the experimental Gpm
40 NB	225	229.53	1.2 PSI	260

**B.V.A. RAVI KUMAR**  
(Test Engineer)  
GVK marine system







# GVK MARINE SYSTEMS

D.No.39-24-32, Madhavadara, Industrial Estate, Visakhapatnam-530007.

(Specialized in Shock, Noise, Vibration Analysis & Measurements and valve testing for Marine Systems)

## Life Cycle test of 25 cycles

Test conduct Date 25-10-2021 to 03-11-2021

Client : VINPRA ENGINEERING INDIA PVT LTD

Drawing No. : VP/1PC/TEBV/FLG/002

Test Item : 40 NB Ball valve

Model No. & S.No. : B12150

Material : LG4C

Heat No. : 17723

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

**B.V.A.RAVI KUMAR**  
(Test Engineer)  
GVK

