

# BTPN

## BOGIE PETROL TANK WAGON



## ➤ INTRODUCTION

The design of this wagon has been developed by RDSO and the wagons have been put into service over Indian railways towards the end of 1989.

## ➤ PURPOSE

BTPN Wagons are used for carrying petroleum products like Petrol, Naphtha, Diesel, Kerosene, Black oil and also used for carrying Molasses and Vegetable oil.

# Dimensional Details of BTPN

Sr. No	Description	
1	Length over head stock	11491 mm
2	Length over couplers	12420 mm
3	Barrel Dia (inside)	2850 mm
4	Barrel Length	11458 mm
5	Thickness of barrel plate	8 mm
6	Thickness of dished end	12 mm
7	Axle Load	20.32 t
8	Tare load	27.0 t
9	Pay load	54.28 t
10	Gross load	81.28 t
11	Cubic Capacity (Cu/m)	70.40 cu/m
12	Working pressure of barrel	1.4 kg/cm <sup>2</sup>
13	Test pressure of barrel	2.8 kg/cm <sup>2</sup>

## ➤ STRUCTURAL DETAILS

### ■ UNDERFRAME

The design of the underframe of BTPN wagon is generally similar to that of other IRS wagons except that a pair of saddles is provided on the underframe at each end for mounting the barrel.

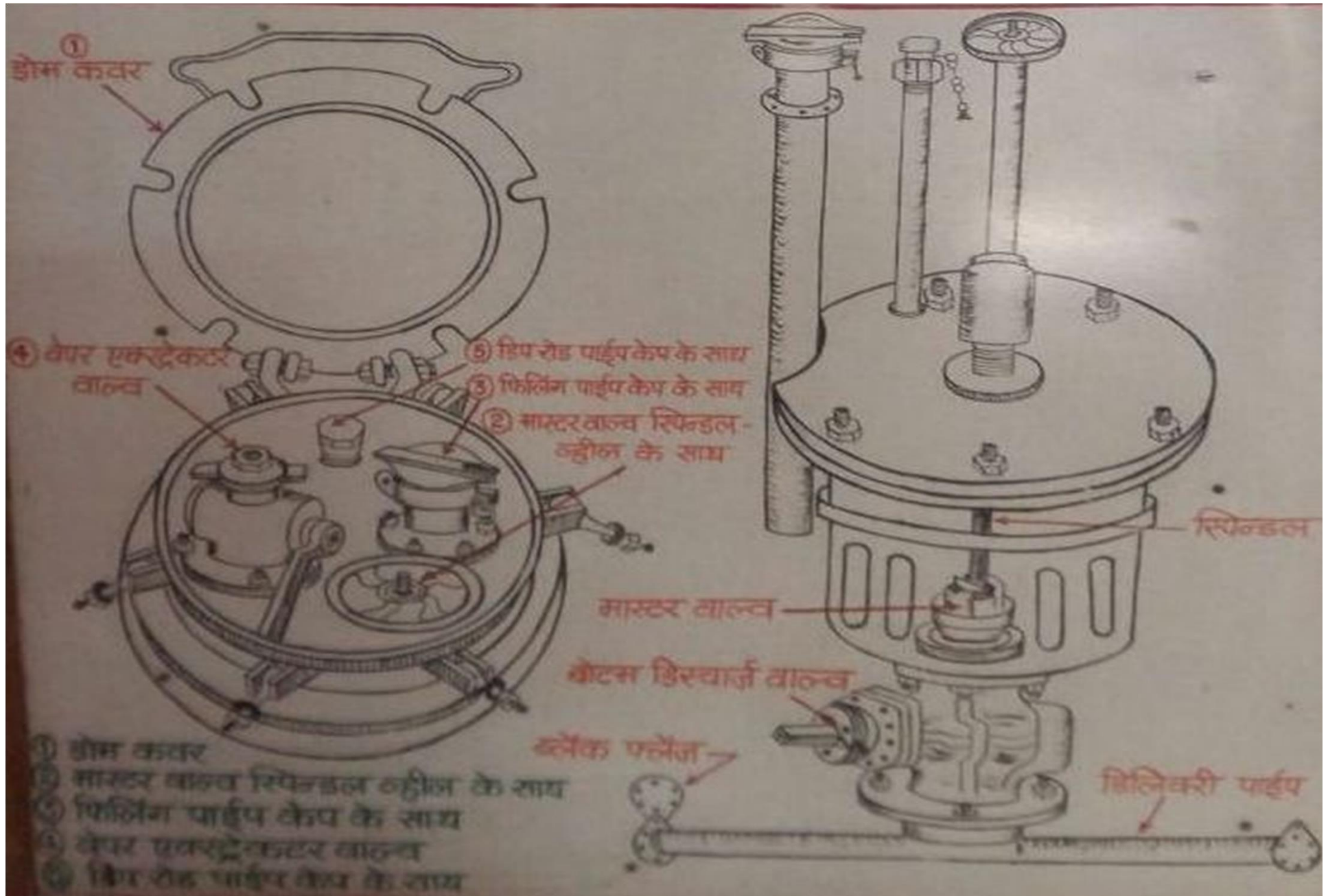
### ■ Barrel and Saddles

The barrel is cylindrical vessel generally fabricated out of low carbon structure steel to IS:2062 Fe 410CuW. The barrel is placed longitudinally on the underframe and secured by means of rivets to the saddle. The saddle is welded on underframe at each end.

## ➤ BARREL FITTING

Different types of barrel fitting are necessary for filling, measuring and decanting various products. Safety fittings are also necessary to release any undue pressure that may be developed during transportation.

# BTPN DOME FITTING OR MASTER VALVE FITTING



## ➤ SAFETY VALVE

It is spring loaded valve which gets lifted when the pressure inside the barrel exceeds certain predetermined value.

The valve is set at a release pressure of 1.4 kg/Sq.Cm. One safety Valve has been provided on the barrel at the top of the center.





## ➤ DIP ROD PIPE WITH PLUG

Dip rod pipe with a plug has been provided to gauge, by the Dip rod, height of the commodity during filling.

## ➤ MASTER VALVE

It is a gravity discharge valve fitted bottom inside of barrel with a hand wheel in the dome for manual operation. A long vertical spindle connects valve with hand wheel. The hand wheel is operated to discharge the contents of the barrel by gravity. The lift of the valve is 35mm.

## ➤ FILLING PIPE

100 mm NB filling pipe has been provided in each dome for connecting inlet hose required during gravity filling of product at loading point. The pipe is provided with cap for closing the pipe after loading.

## ➤ VAPOUR EXTRACTOR COCK

Function of this cock is to extract vapour from the tank during filling. One such cock inside each dome have been provided. Suitable cap has been provided to close the cock after loading.

## ➤ BOTTOM DISCHARGE VALVE

This valve is fitted below the barrel under each Master Valve. This is a tapered lubricated plug valve. The main function of the valve is to control the flow of the content during unloading and also to serve as an additional safety stop in case the Master Valve fails or leaks.

## ➤ STEAM CLEANING OF TANK BARREL

The barrel requiring steam cleaning should be placed as near to the steam supply line as possible and protected against any movement. After removal of manhole cover and other fittings, the barrel shall be left exposed to atmosphere for 24 hrs.

Entry of staff in tank barrel should be strictly prohibited before cleaning and signs with suitable legends displayed at a reasonable distance away from the barrel to be steam cleaned.

In order to clean the barrel thoroughly, steam pipe should be inserted through manhole and steam be injected for 12 hrs.

Remove condensed steam collected in the tank barrel and keep the barrel exposed to atmosphere for another 24 hours.

## ➤ PROCEDURE FOR LOADING/UNLOADING

Before loading the wagon must be certified fit for loading by the TXR. Instructions issued by the Board/Railways from time to time in this regard should be religiously followed.

The wagons to be loaded/unloaded are placed in position preferably under shed and hand brake are applied to prevent any movement.

It should be ensured that points leading to loading/unloading line on which the wagons are to be loaded/unloaded are set and pad locked so as to isolate the line on which the loading/unloading are to be done.

Shunting of wagons are not permitted on the same line when loading/unloading is done.

Throughout the entire period of transfer operation, the wagon must be continuously attended to by the operator.

## ➤ Precaution to be taken at loading points

- Ensure that all tank fittings are in good working condition.
- Ensure that the master valve is fluid tight.
- Ensure that the bottom discharge valve is fully closed and fitted with a blank flange and gasket before commencement.
- Ensure that the vapour extractor cock and vent plug are open before commencement of loading.
- Ensure that loading is done through the filling pipe only.
- Ensure that recommended air space as specified for the particular petroleum product is provided and that payload does not exceed the permissible limit.
- Provide proper sealing when dome cover eye bolt nuts are tightened.
- Make sure that the dome cover is closed after loading.

