

DIFFERENT TYPES OF BOGIES USED ON WAGONS

Bogie (trolley):

This term is used for the assembly comprising the structure including the side frame, bolster, centre pivot and side bearers, suspension components, wheels and axles etc., which support the wagon body at each end. The following main types of bogie trucks are in service: -

Fabricated UIC (BOX type) bogie.

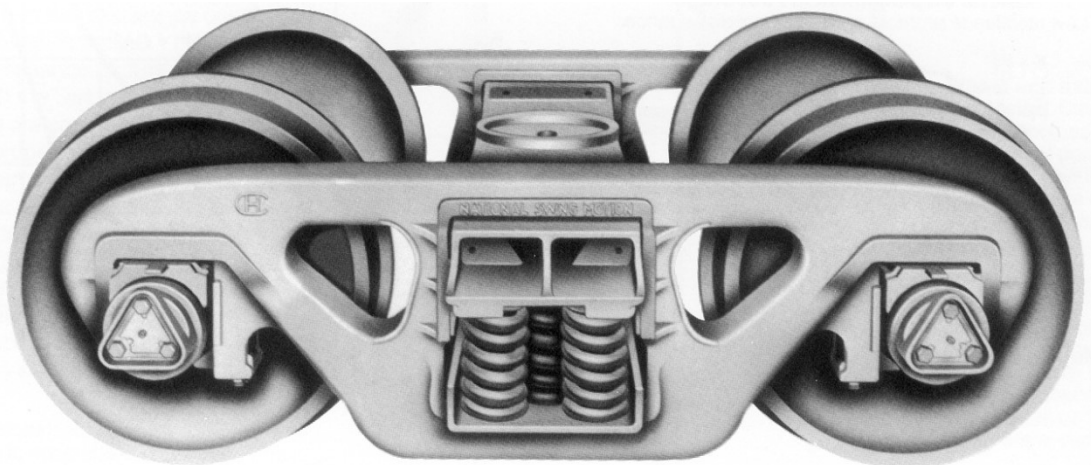
This bogie has a completely fabricated structure with laminated bearing spring suspension and long shackles at the primary stage (i.e., directly over the axle boxes). The transom structure, which has a spherical centre pivot, is fabricated integrally with the two bogie sole plates on either side. The bogie has clearance type side bearers and cylindrical roller bearing axle boxes.

Six-wheeled cast steel bogie: -

This steel bogie comprises of four cast steel side frames (two on either side) on which load is transferred by means of floating crossed bolsters resting on nests of helical springs. Over the crossed bolsters, rests the longitudinal bolster, which has the centre pivot. The corresponding side frames are joined together by means of spring planks in the same manner as the four-wheeler cast steel bogies.

Casnub Bogie:

Today in Indian Railways almost all Air brake goods stocks are fitted with Casnub bogies. The Cast steel CASNUB bogie comprises of two cast steel side frames and a floating bolster (cast steel). The bolster is supported on the side frame through two nests of spring, which also incorporates a load proportional friction damping. The side frames are connected by a fabricated mild steel spring plank to maintain the bogie squareness. The various bogie versions developed are as under:



(i) CASNUB -22W

(iv) CASNUB -22NL

(vii) CASNUB -22HS

(ii) CASNUB -22W (Retrofitted)

(v) CASNUB -22NLB

(viii) CASNUB -22NLC

(iii) CASNUB -22W(M)

(vi) CASNUB NLM

The salient feature of each version is given below:

(i) **Casnub 22W**: (a) IRS type centre pivot. (b) Roller type side bearer. (c) Sliding type brake beam. (d) Wide jaw adapter. (e) Cartridge bearing.

(ii) **Casnub 22W (Retrofitted)**: (a) Modified Wide jaw adapter. (b) Elastomeric pad, (c) Constant contact type metal bonded rubber pad side bearer. (d) Lower diameter wheel sets.

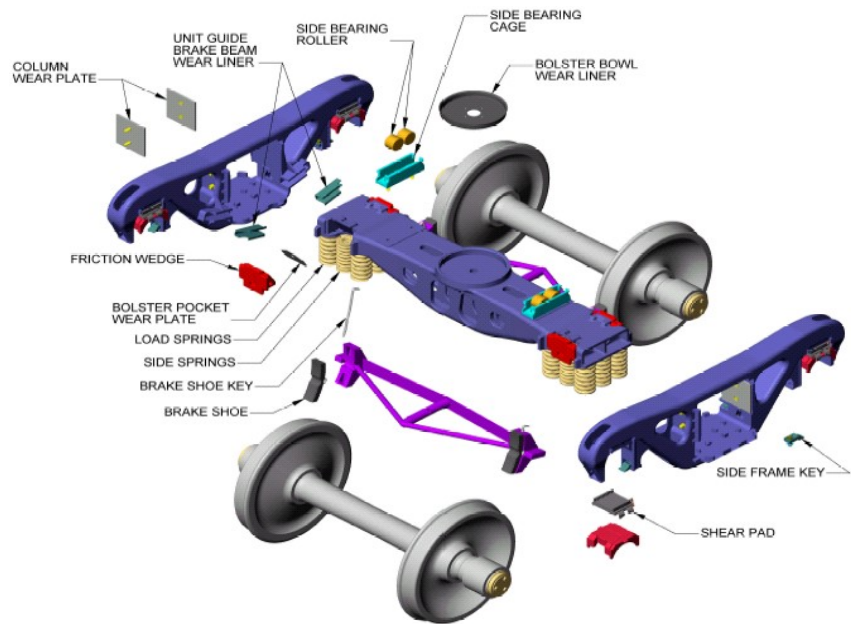
(iii) **Casnub 22 W (M)**: (a) UIC type spherical centre pivot. (b) Constant contact rubber bonded side bearer. (c) Suspended type brake beam, (d) Wide jaw Adapter. (e) Elastomeric Pad. (f) Cartridge bearing.

(iv) **Casnub 22NL, 22 NLB**: (a) UIC type spherical centre pivot. (b) Constant contact side bearer (c) Sliding type brake beam. (d) Narrow Jaw Adapter. (e) Elastomeric Pad. (f) Cartridge bearing,

(v) **Casnub 22HS**: (a) UIC type spherical centre pivot/ Flat centre pivot.(b) Constant contact side bearer (c) Sliding type brake beam. (d) Narrow Jaw Adapter. (e) Elastomeric Pad. (f) Cartridge bearing. (g) Two stage suspension is softer in tare and stiffer in gross. (h) Higher lateral clearance between frames and bolster.

(vi) **Casnub 22 HS Mod1/Mod II**: (a) flat centre pivot. (b) Constant contact side bearer (c) Sliding type brake beam. (d) Narrow jaw adapter. (e) Elastomeric Pad. (f) Cartridge bearing. (g) Higher lateral clearance between frames and bolster.

(vii) **CASNUB 22 NLC (25 t axle load)**: Same as CASNUB 22 NLB, except modification in suspension.



The CASNUB bogie assembly consists of the following components:

- Wheel set with Cartridge Bearing
- Adapter, retainer bolt & side frame key assembly
- Side frames with friction plates
- Bolster with wear liners
- Spring plank, fit bolts & rivets
- Load bearing springs and snubber springs
- Friction shoe wedges

- Centre pivot arrangement comprising of Centre pivot top, Centre pivot Bottom, Centre pivot pin, Centre pivot retainer & locking arrangement
- Side Bearers
- Elastomeric Pad
- Bogie Brake Gear
- Brake Beam

The salient features of the Casnub bogies are as follows:

Sr. No	Features	Description
1.	Gauge	1676 mm
2.	Axle load	20.3 t, However all bogies can be upgraded up to 22.9 t.
3.	Wheel diameter	1000 mm (New) 956 mm (New) CASNUB 22 W(R)
4.	Wheel base	2000 mm
5.	Type of Bearing	Standard AAR type Catridge Tapered Roller Bearing
6.	Distance between journal centres	2260 mm
7.	Distance between Side bearers	1474 mm
8.	Type of side bearers	<p>CASNUB 22W Roller Type (Clearance Type) Retrofitted CASNUB 22W, CASNUB 22W(M), 22NL, 22NLB</p> <p>Constant contact type (Metal bonded rubber pad, housed inside side bearer housing) CASNUB 22HS Spring loaded constant contact type side bearer.</p> <p>Now both in NL, NLB and 22HS PU pad are used</p>
9.	Type of pivot	<p>CASNUB 22W IRS Type TOP Pivot-RDSO Drg. No. W/BE-601 Bottom Pivot – RDSO Drg. No. W/BE-602 or similar mating profile integrally cast with bolster. CASNUB 22W(M), 22NL, 22NLB, 22 HS Spherical Type RDSO Drg. No. WD-85079-S/2</p>
10.	Anti rotation features	Anti rotation lugs have been provided between bogie bolster and side frame

11.	Type of brake beam	CASNUB 22W, 22NL, 22NLB, 22 HS : Unit type fabricated brake beam supported and guided in the brake beam pockets. CASNUB 22W(M) : Unit Type Cast Steel brake Beam suspended by hangers from side frame brackets.
12.	Suspension details	Long travel helical spring
13.	Elastomeric pads	On all types of bogies except CASNUB 22 W.