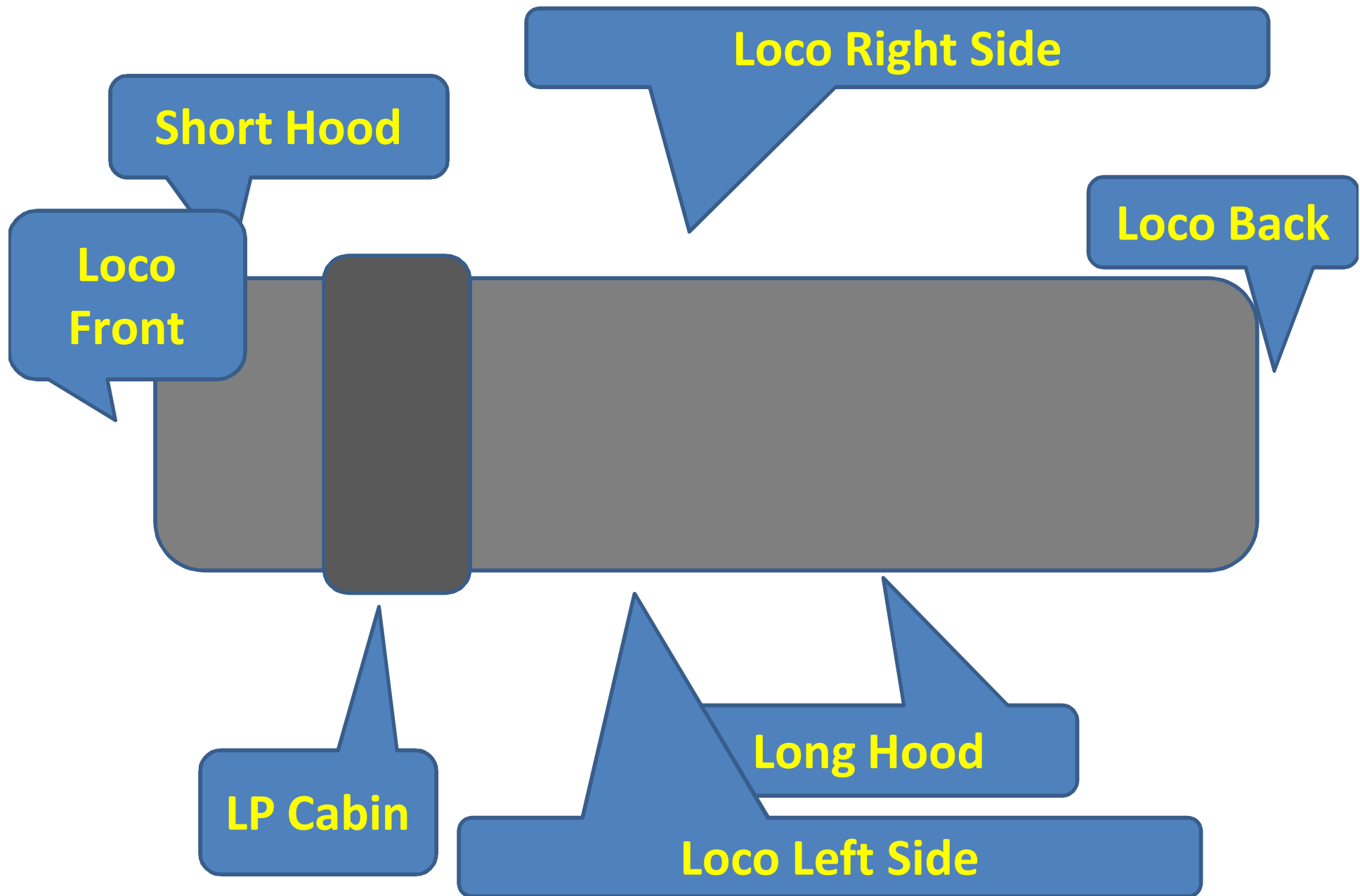
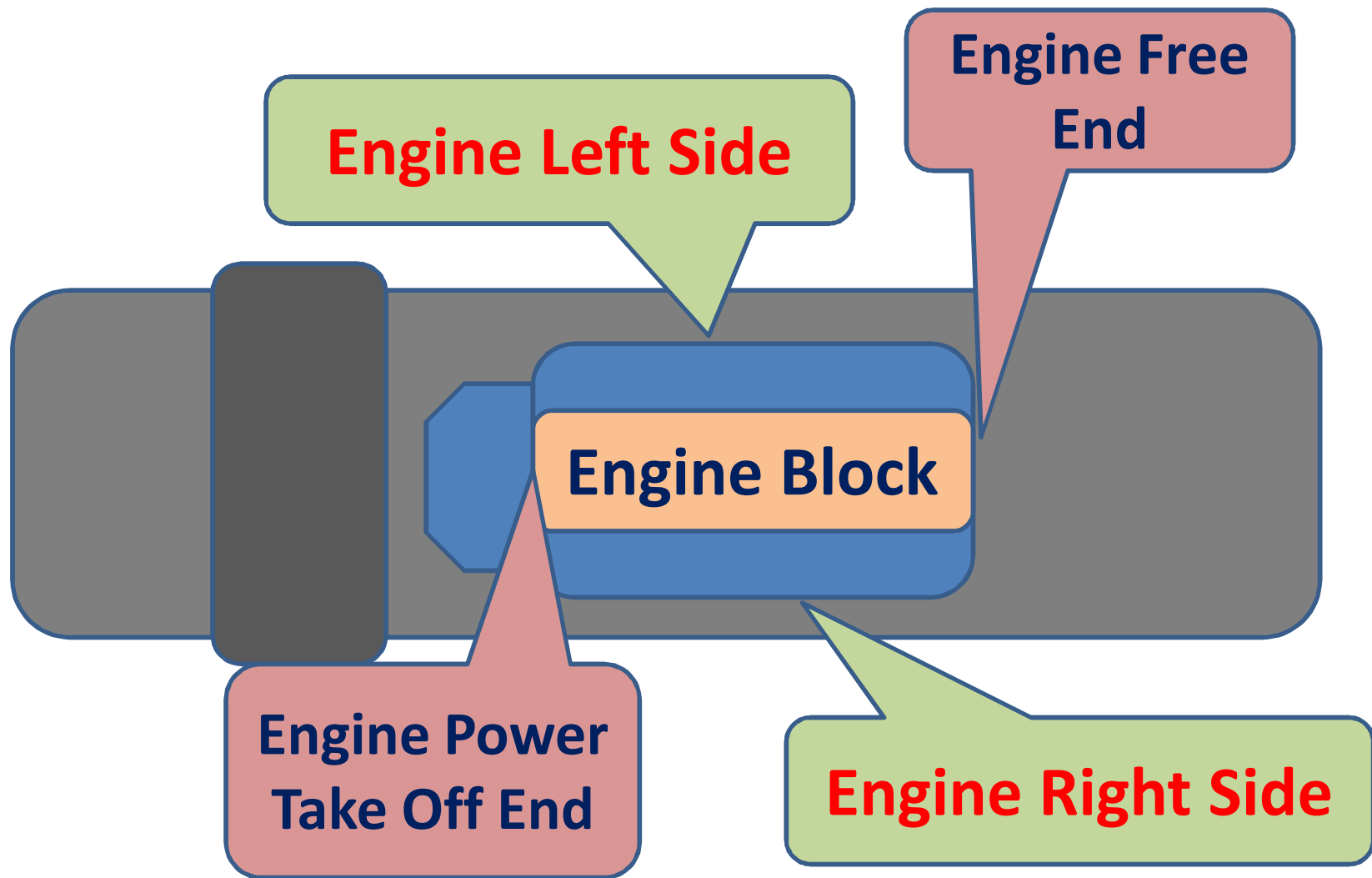
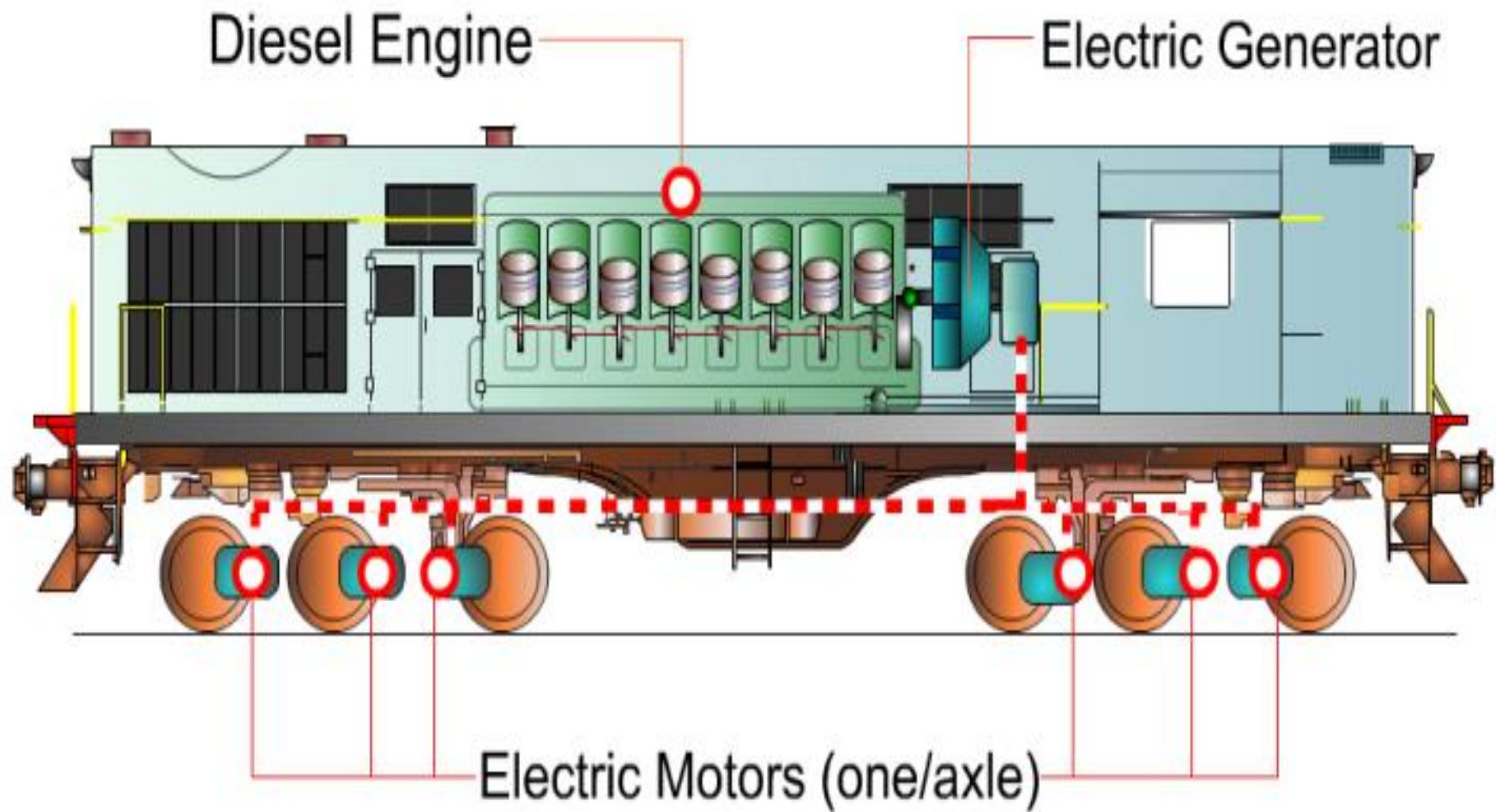


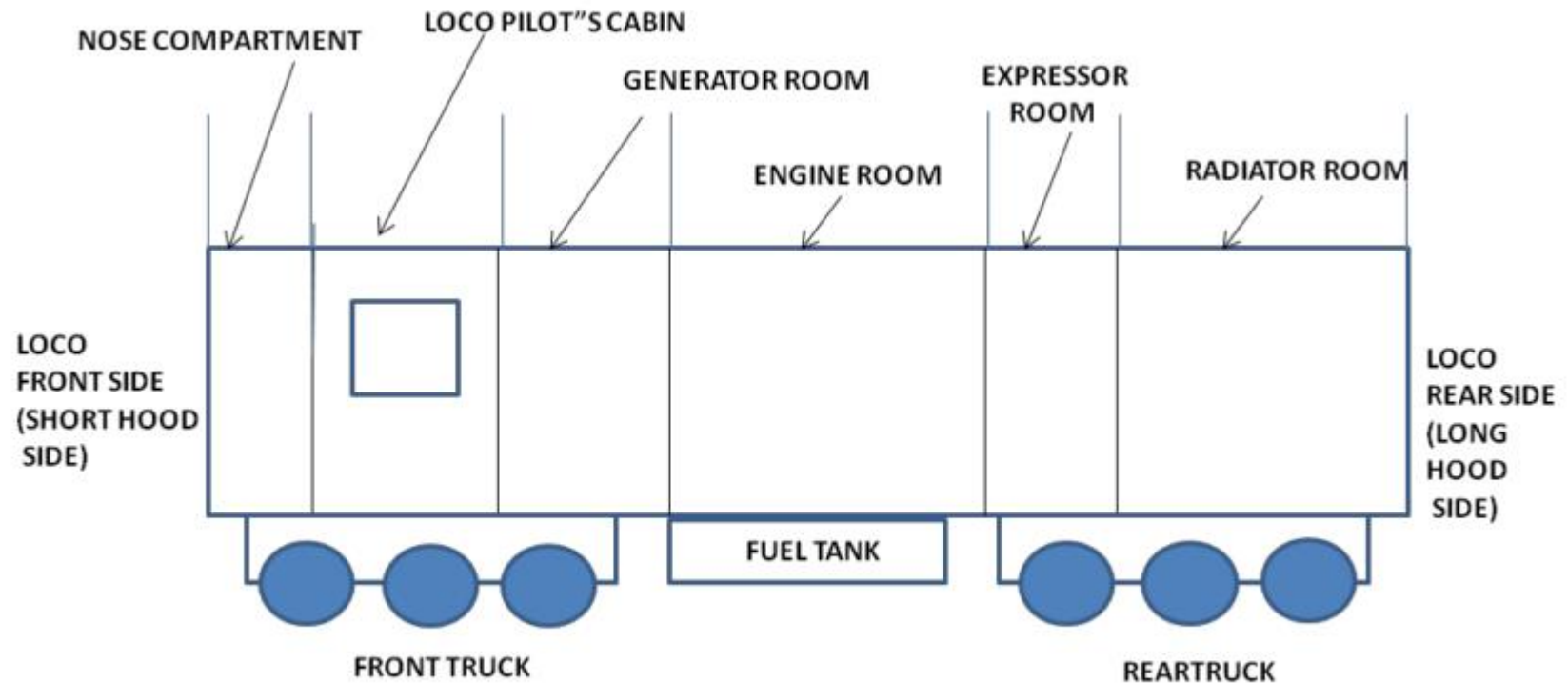
ALCO Locomotive











VARIOUS COMPARTMENTS OF THE LOCOMOTIVE

Axle & Traction Motor Counting from Short Hood to Long Hood

Wheels Counting from Short Hood end
Left side of Loco L1 to L6 &
Right Side of Loco R1 to R6

Tri Mount Bogie

Provided in WDM2 & WDM3A Locos.

Consists of 1 Center pivot and 2 Side Bearers –
All oil lubricated Type.

Both Center pivots share 60 % load.

All Side Bearers share 40 % load.

Chassis / Super Structure

Side Load Pads

Bogies

**Helical Coil Springs &
Vertical Dampers**

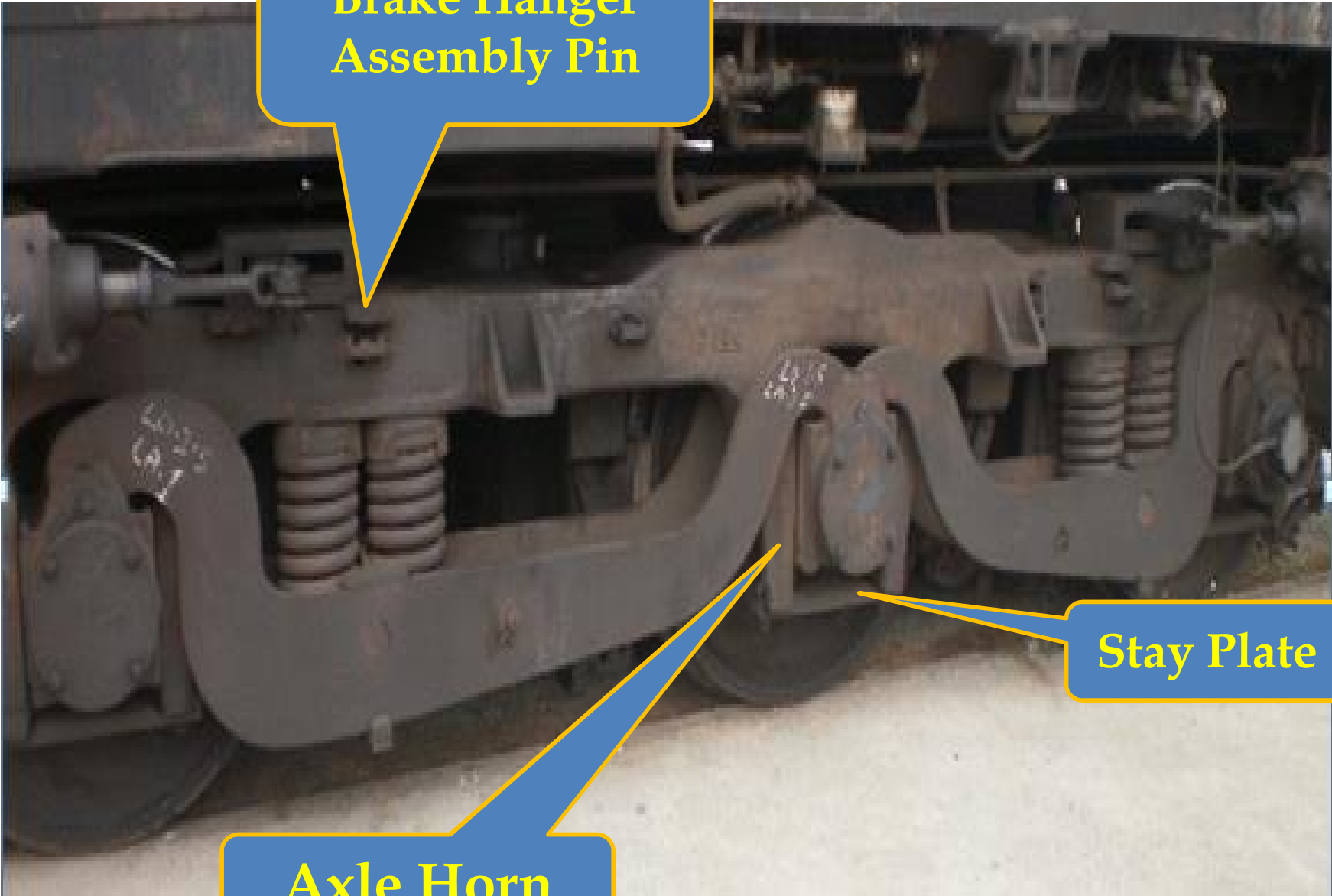
**Equalizing /
Compensating Beams**

Axle Box

Axles & Wheels

Rails



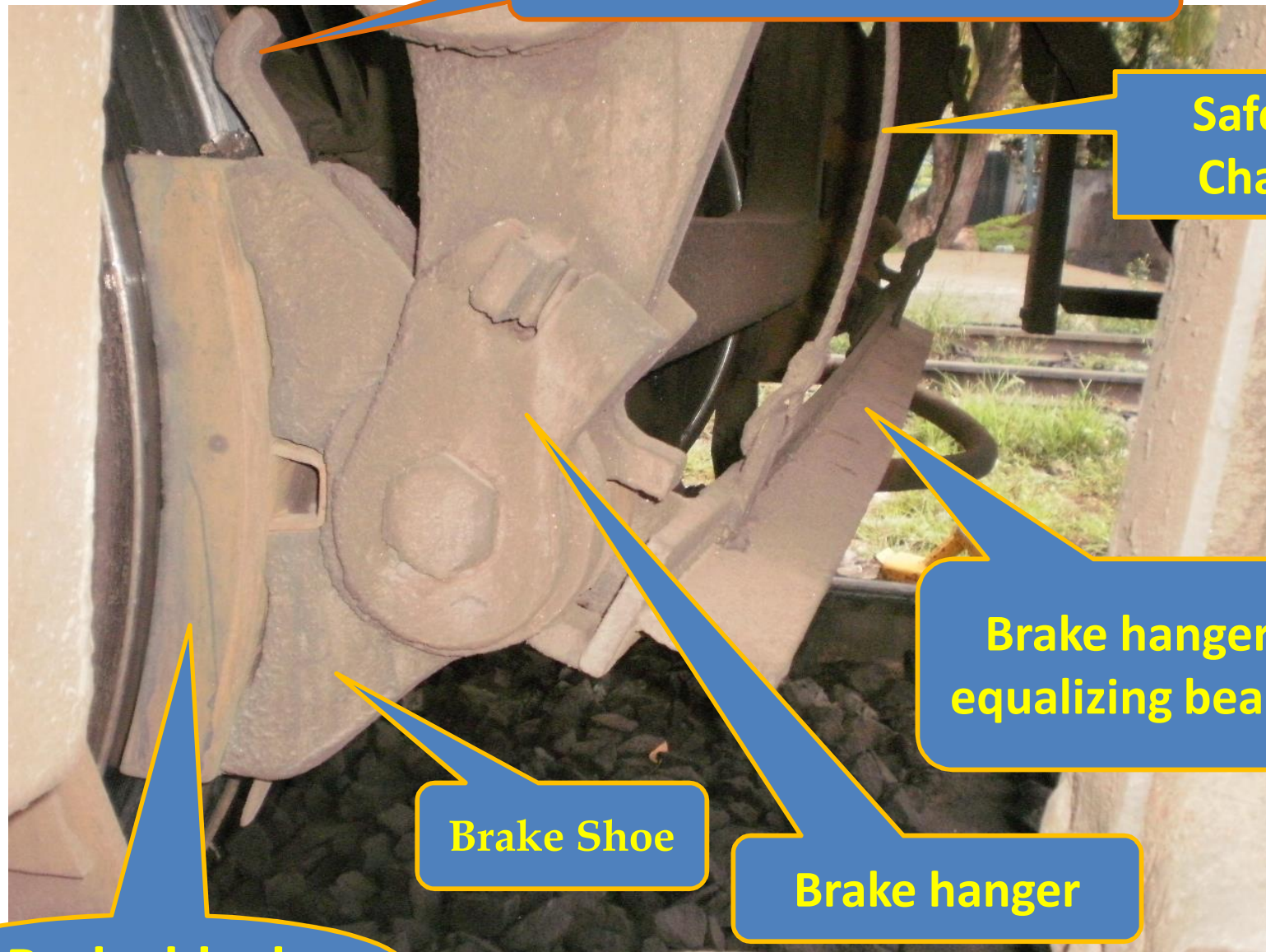


**Brake Hanger
Assembly Pin**

The image shows a close-up of a railway axle assembly. A blue callout box with a yellow border points to a small pin on the top of the axle. Another blue callout box with a yellow border points to a curved metal horn on the side of the axle. A third blue callout box with a yellow border points to a flat metal plate on the side of the axle. The axle is made of dark metal and has several coiled springs attached to it. The background is dark and indistinct.

Axle Horn

Stay Plate



Brake block cotter

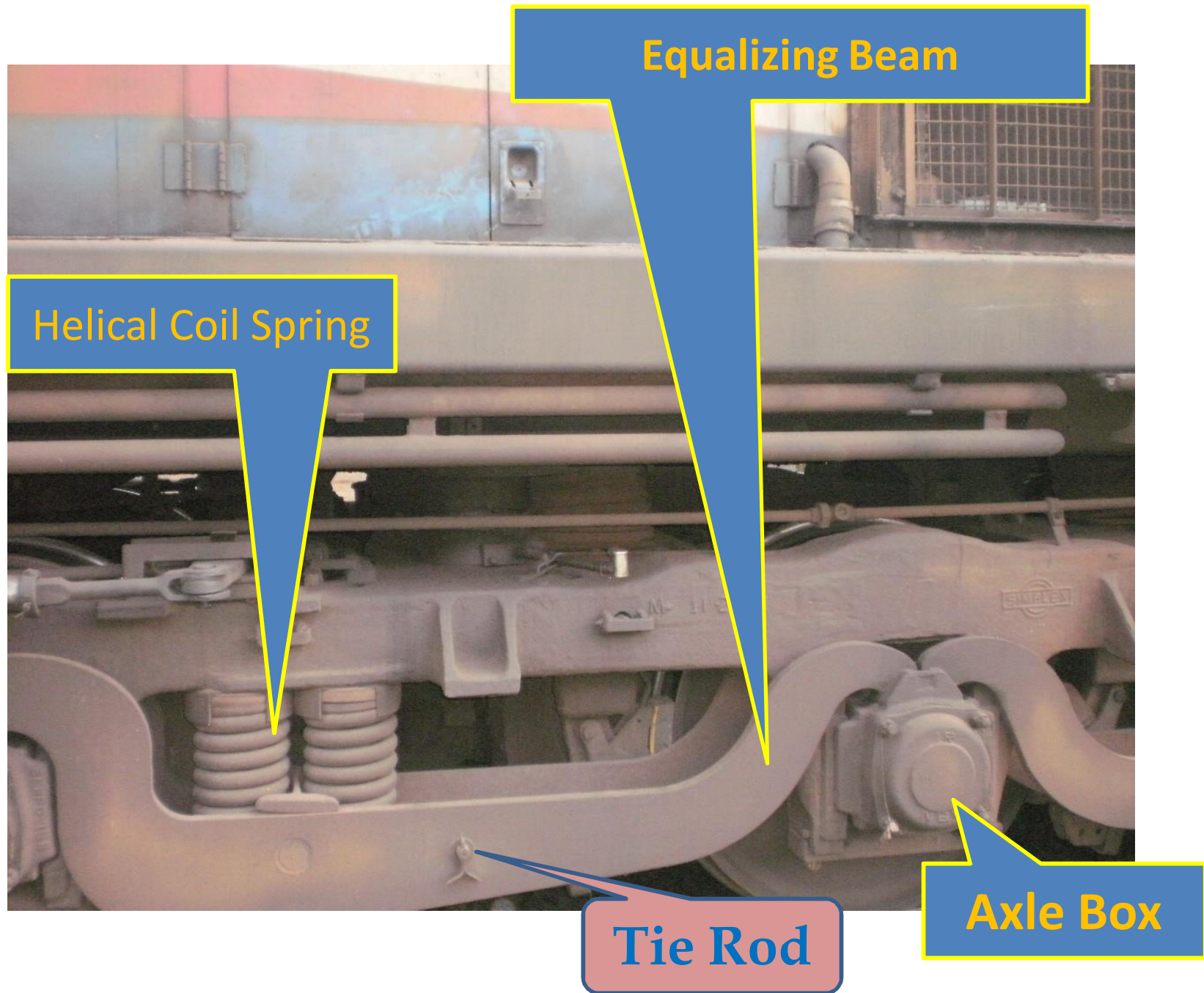
**Safety
Chain**

**Brake hanger
equalizing beam**

Brake Shoe

Brake hanger

Brake block



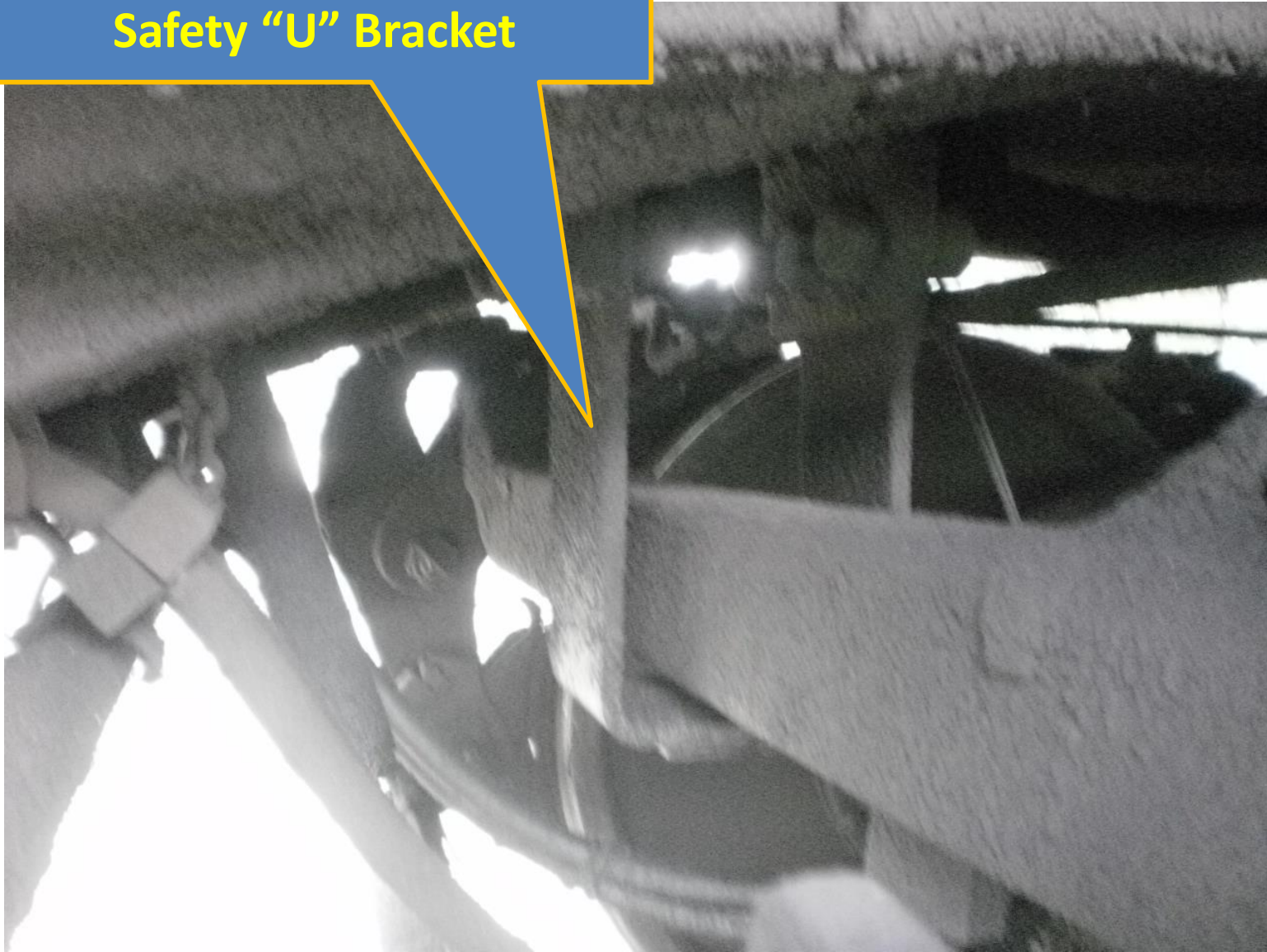
Equalizing Beam

Helical Coil Spring

Tie Rod

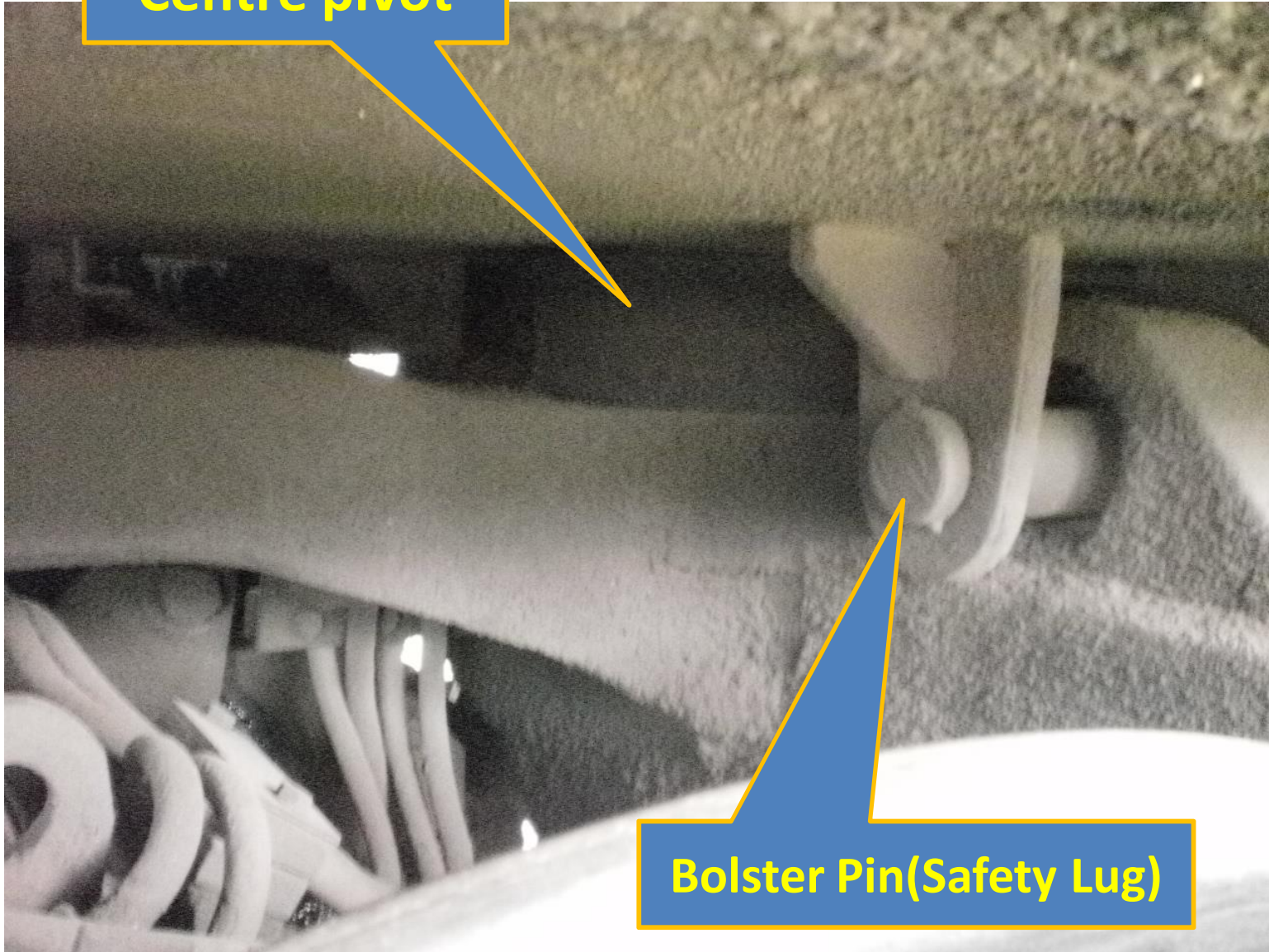
Axle Box

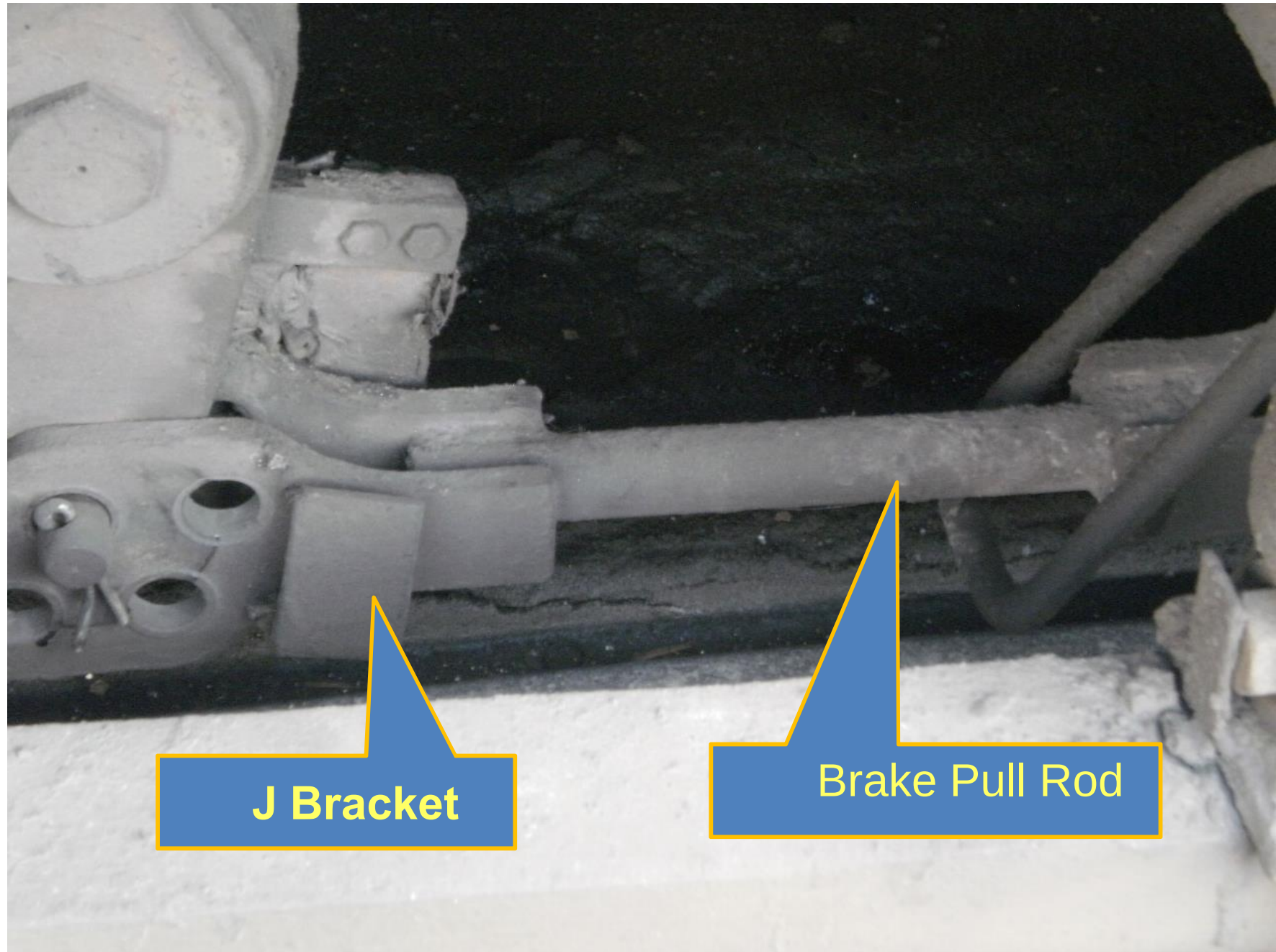
Safety “U” Bracket



Centre pivot

Bolster Pin(Safety Lug)

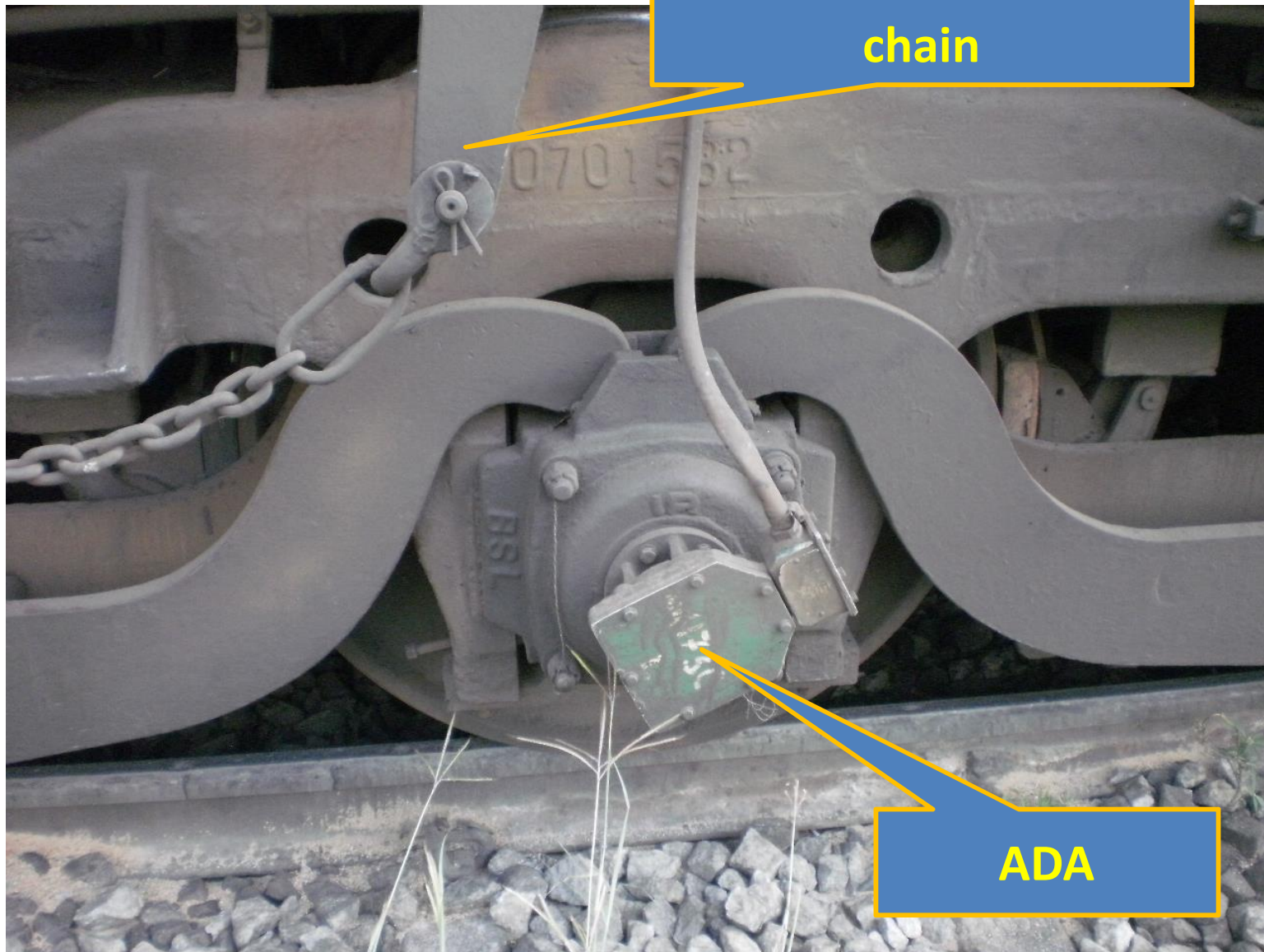




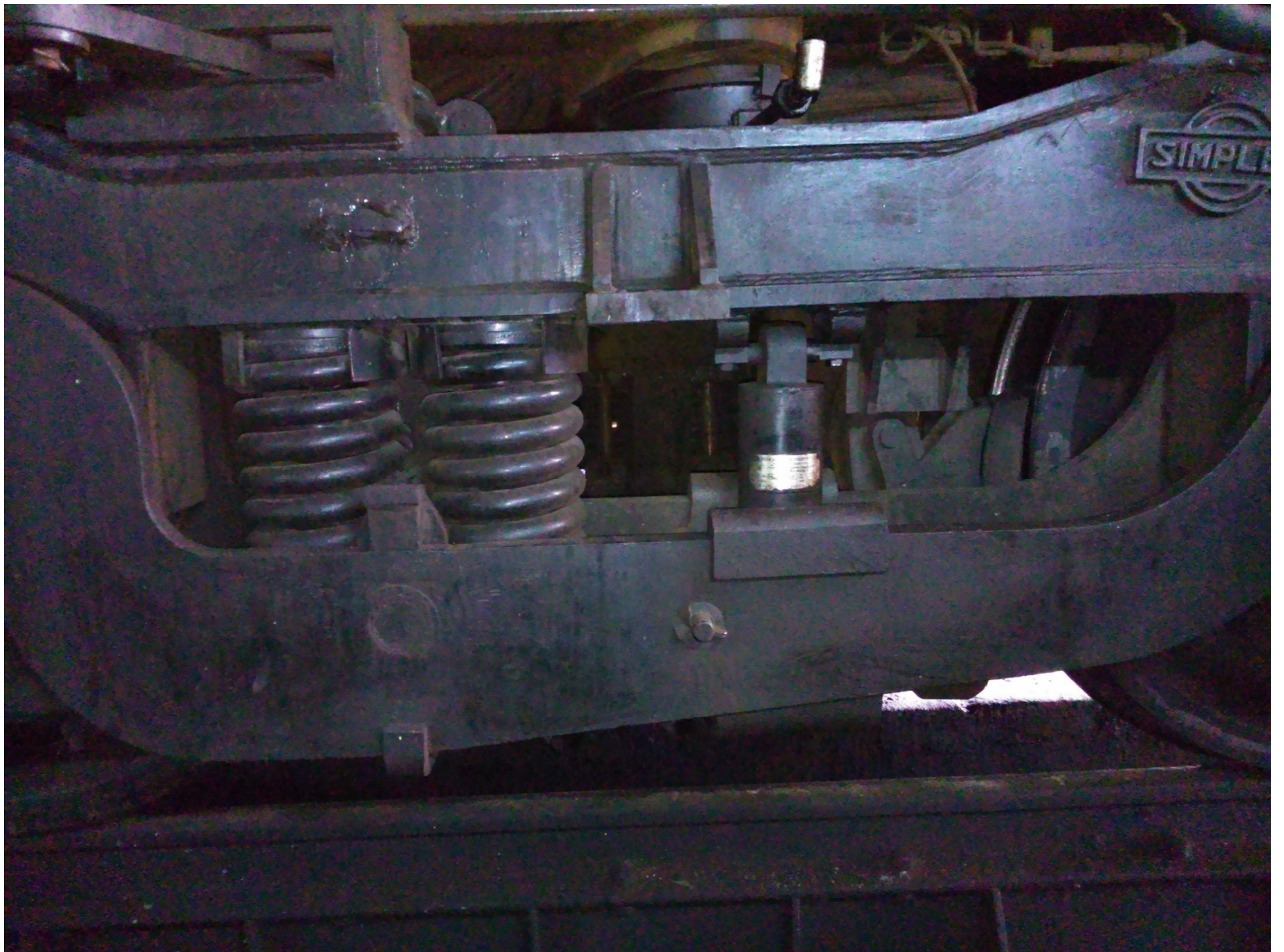
J Bracket

Brake Pull Rod

**Hand Brake Link with
chain**



ADA







Safety Bracket For Main Reservoir



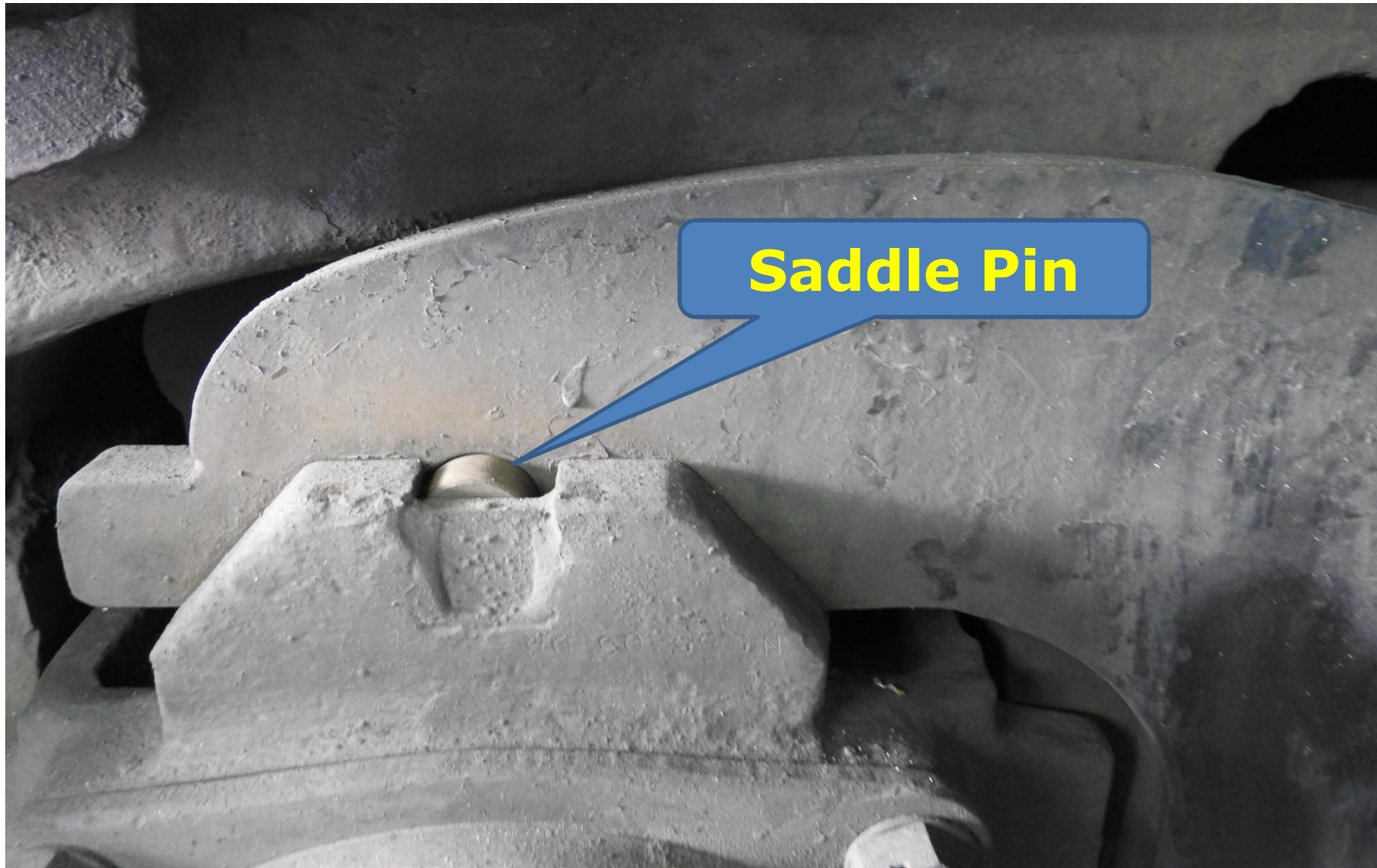
Snubber Assembly

Consists of three metal plate kept separated by spring

Provided in the left side helical coil springs

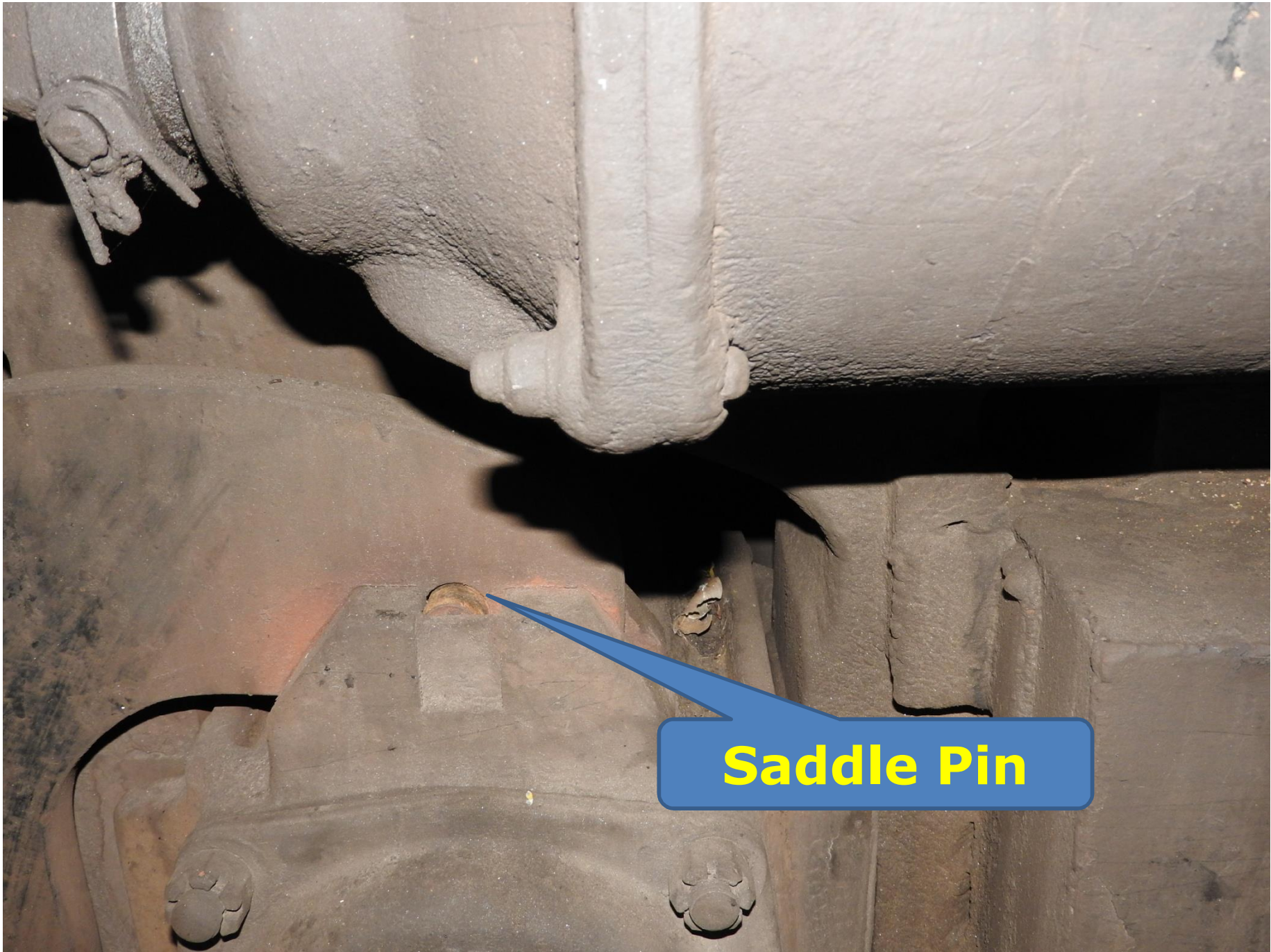






Saddle Pins are provided on Axles 1, 3, 4 & 6



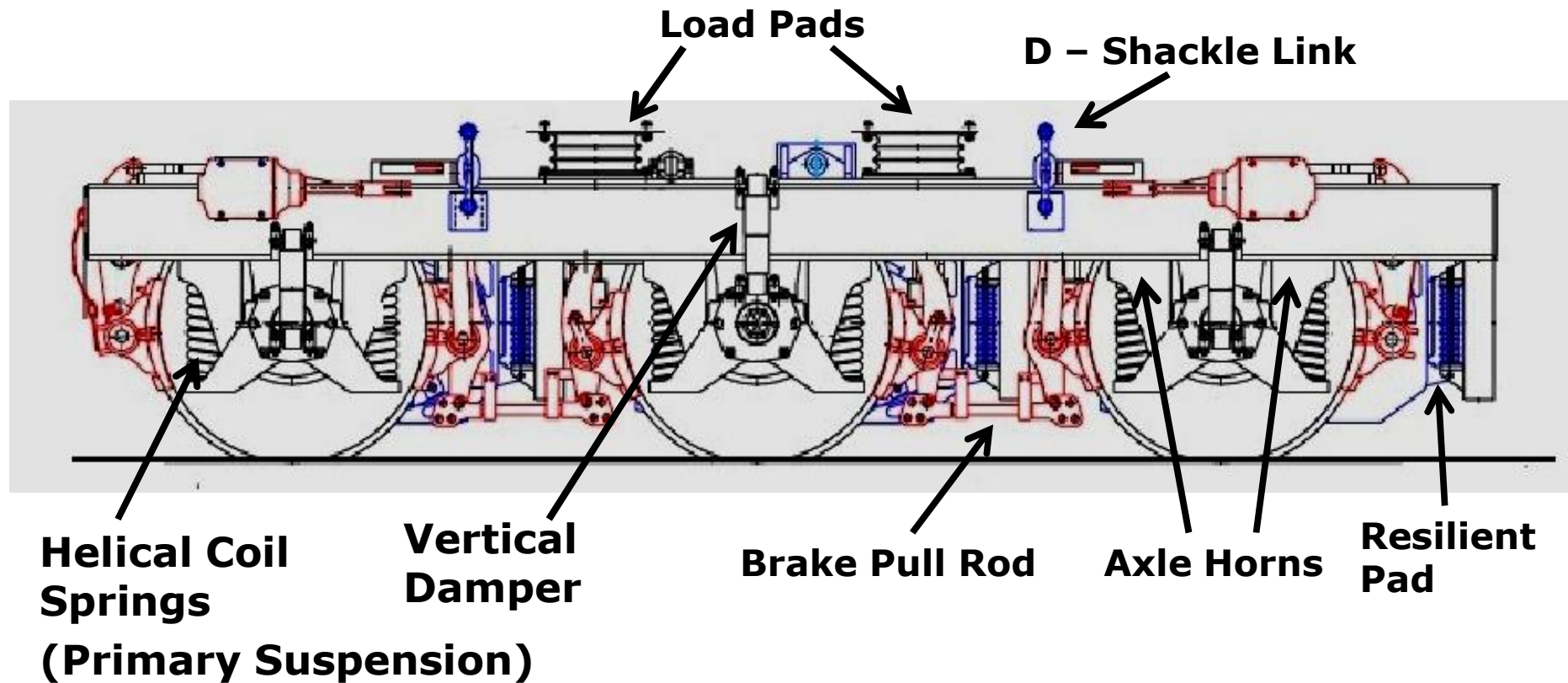


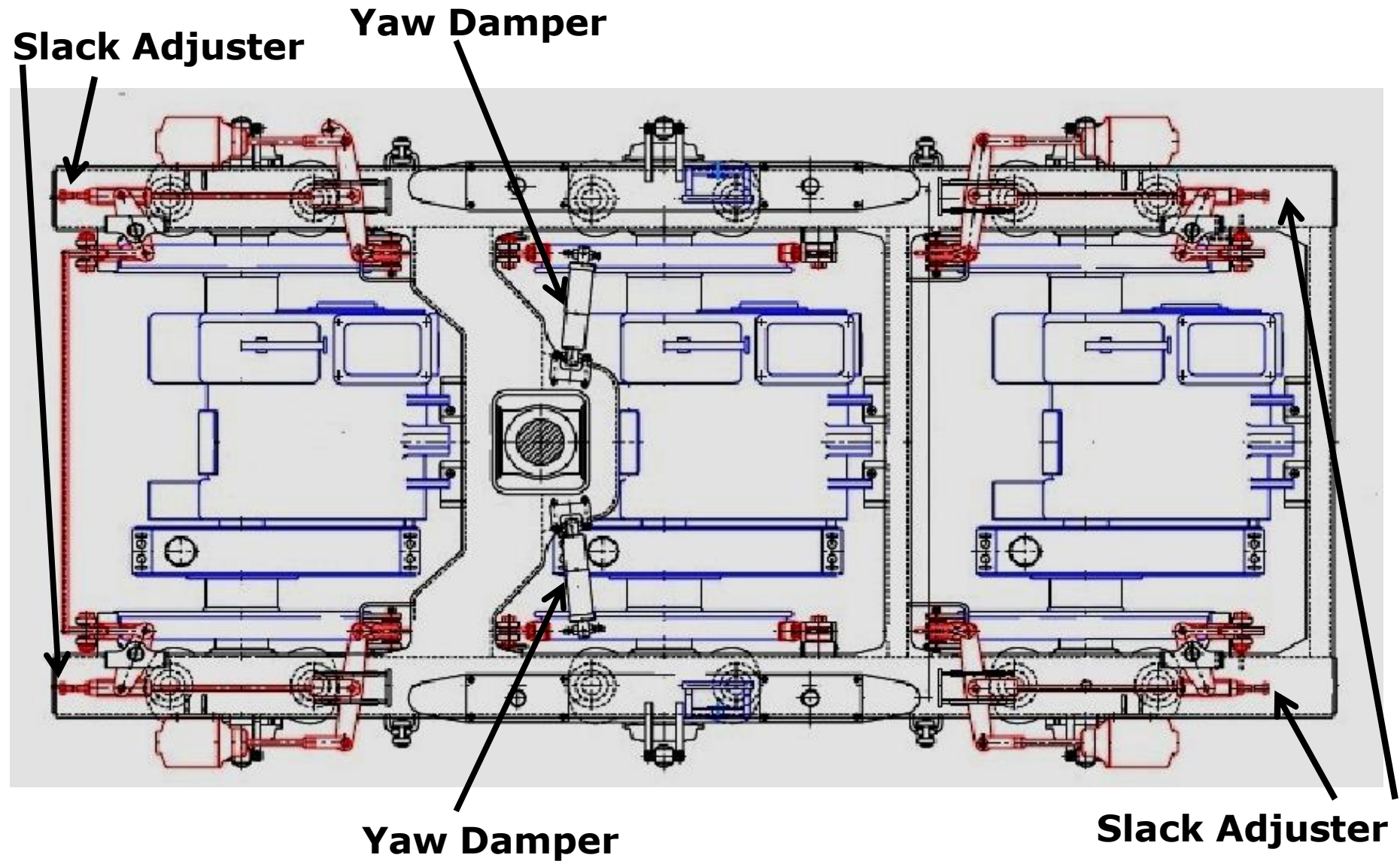
Saddle Pin



Fabricated Bogie

(Secondary Suspension)





Fabricated Bogie

Provided in WDM3D & WDG3A Locos

Consists of 1 Center Pivot – Floating or Dry type and 4 Rubber side load pads

Center pivot transfers Tractive and Braking Force

Total Loco Weight shared by both Bogies

Side Load pads near center pivots share 60 % load

Remaining load pads share 40 % load

Shock absorbers are provided to absorb vertical and horizontal oscillations (Vertical / yaw dampers)



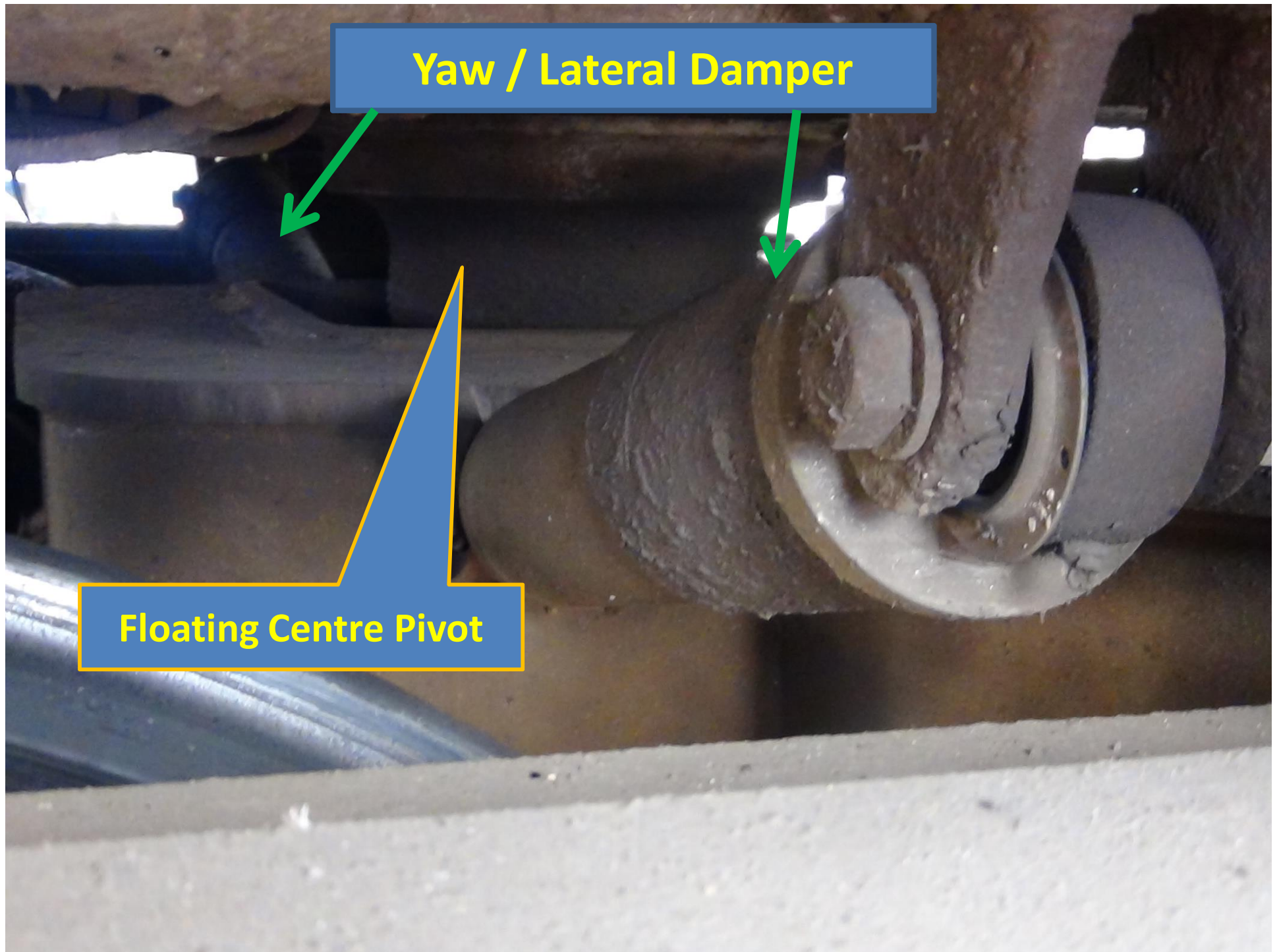
**Sandwich Rubber
Pad**

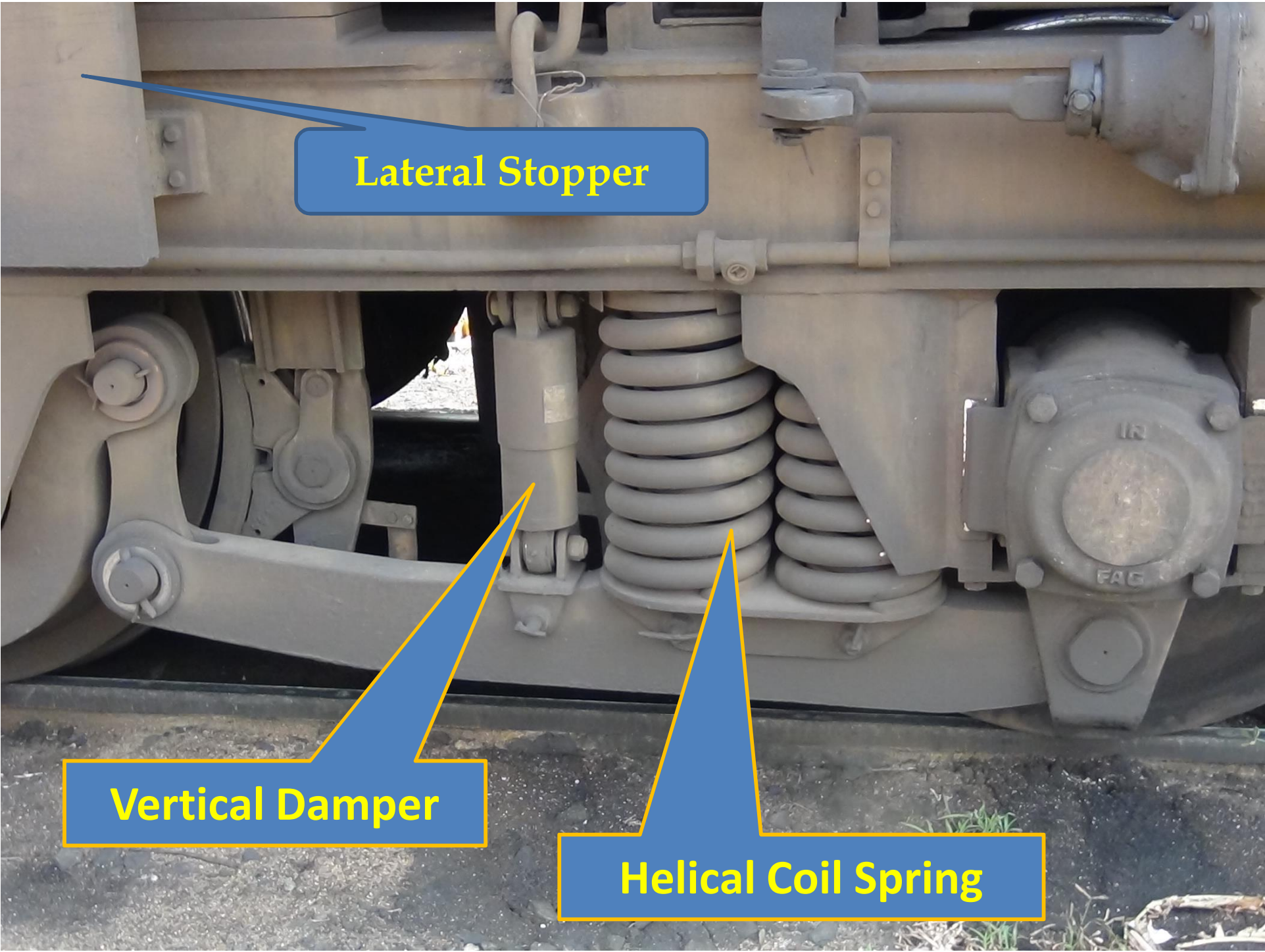


**Rubber Pad Seating
Base**

Yaw / Lateral Damper

Floating Centre Pivot

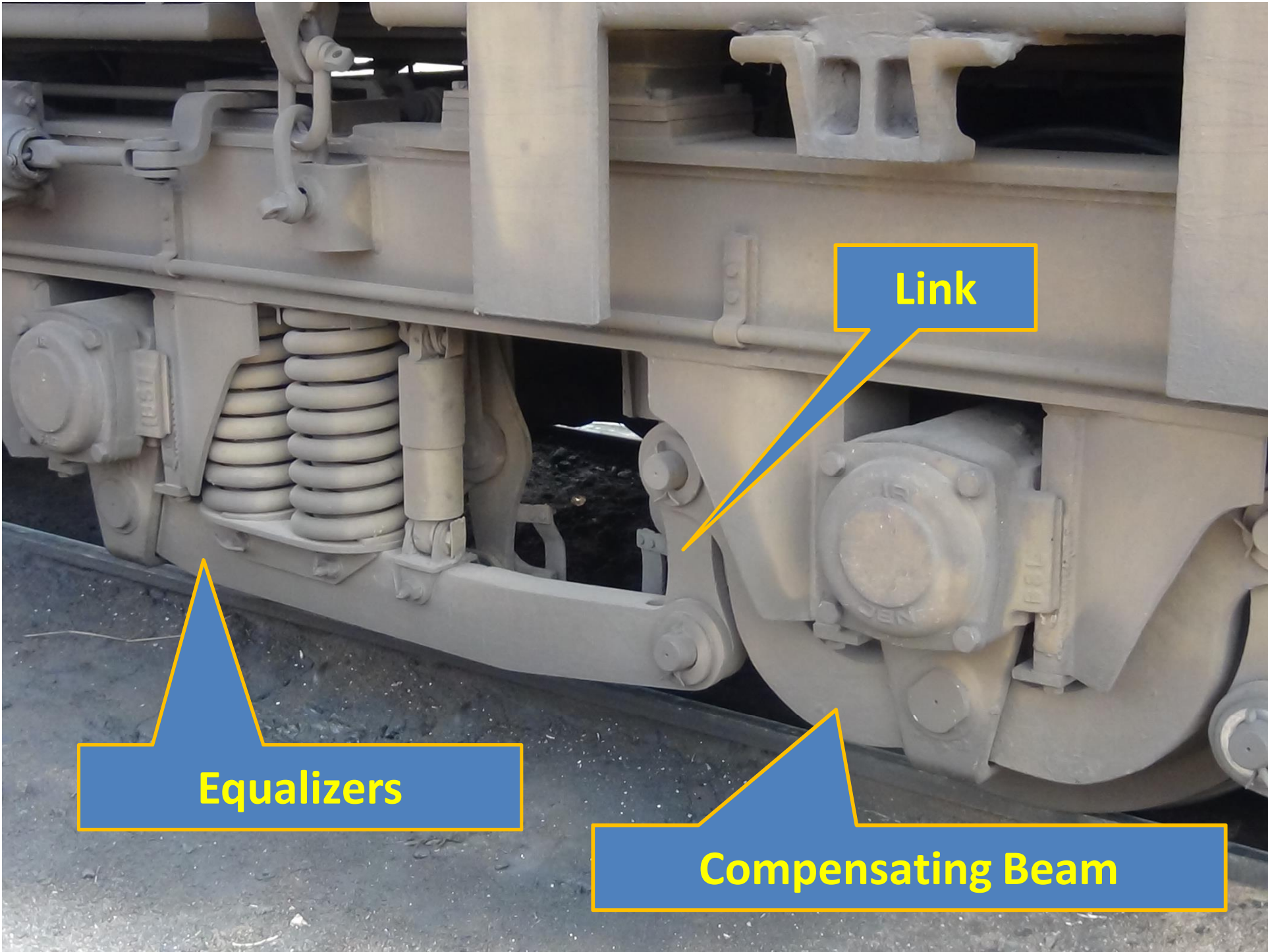




Lateral Stopper

Vertical Damper

Helical Coil Spring

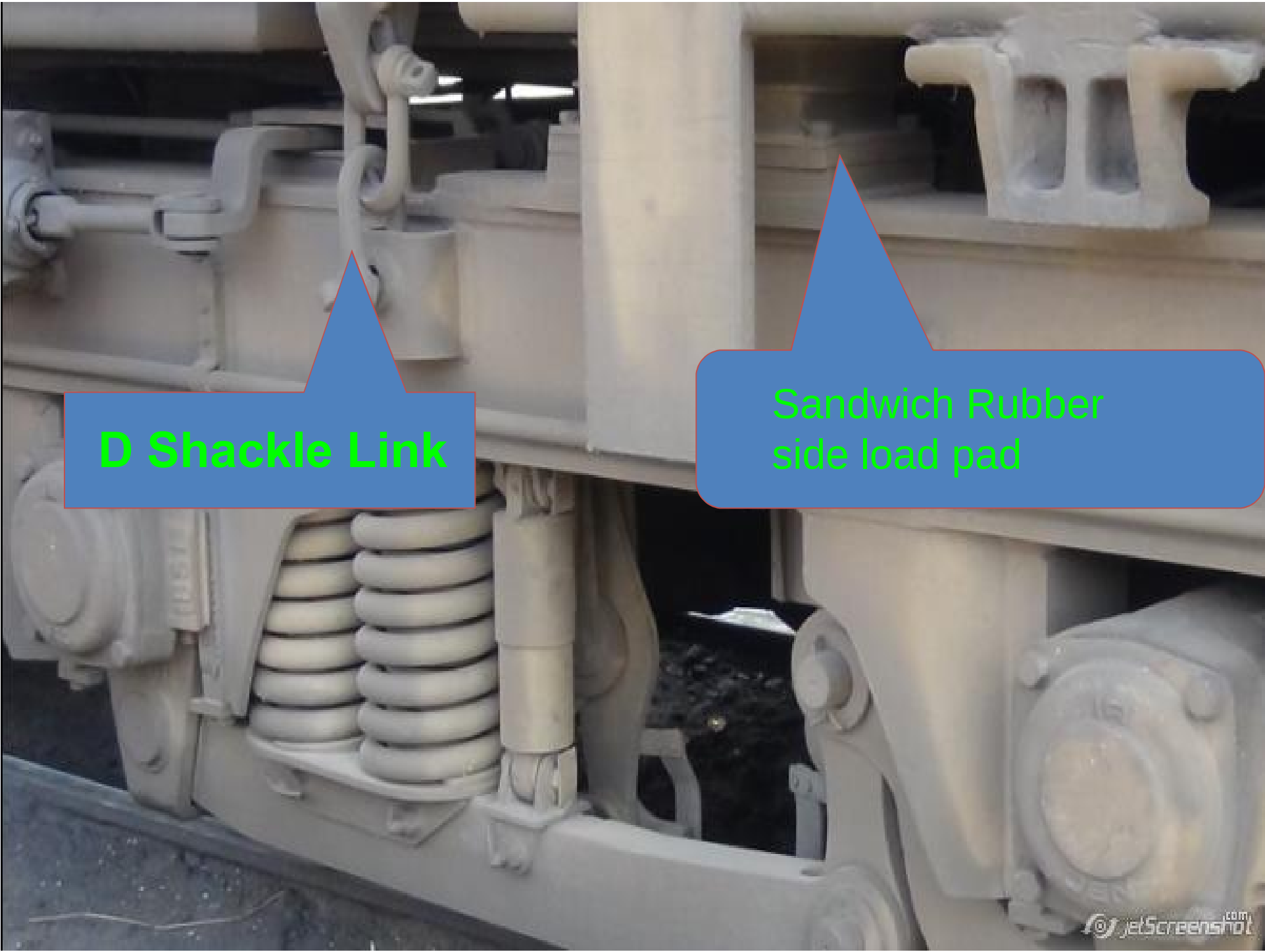


This image shows a close-up of the suspension system of a railway bogie. The components are made of heavy-duty metal and are mounted on a set of rails. The 'Link' is a horizontal bar that connects the two sides of the bogie. The 'Equalizers' are a set of coiled springs that help to balance the load between the two wheels. The 'Compensating Beam' is a horizontal bar that helps to maintain the correct track alignment. The labels are in blue boxes with yellow text and yellow arrows pointing to the respective parts.

Link

Equalizers

Compensating Beam



The image shows a close-up of a mechanical assembly, likely part of a vehicle's suspension or steering system. Two blue callout boxes with red outlines point to specific components. The first box, on the left, points to a D-shaped shackle link. The second box, on the right, points to a sandwich rubber side load pad. The background shows various metal parts, including a coil spring and a shock absorber.

D Shackle Link

**Sandwich Rubber
side load pad**



Traction Motors in ALCO Locos

Having 4 Ends

Nose End

Axle End

Commutator End

Gear case End

Axle Hung Nose Suspended

Hung on the Axle with Axle Linings & Caps
Lubricated by Wick Pad Assembly (Old Locos)

or

Hung on the Axle provided with Roller Bearings

and

Suspended with Resilient Pads on the Bogie Frame

Commutator End

Inspection cover is also provided at this end

Air bellow is provided at this end to supply cool air from FTTM / RTTM for cooling

Provided with a gear in micro processor locos

TM Speed sensor is placed above this gear to transmit the speed signals to Mcp

Gear case End

Provided with Pinion gear on TM rotor shaft

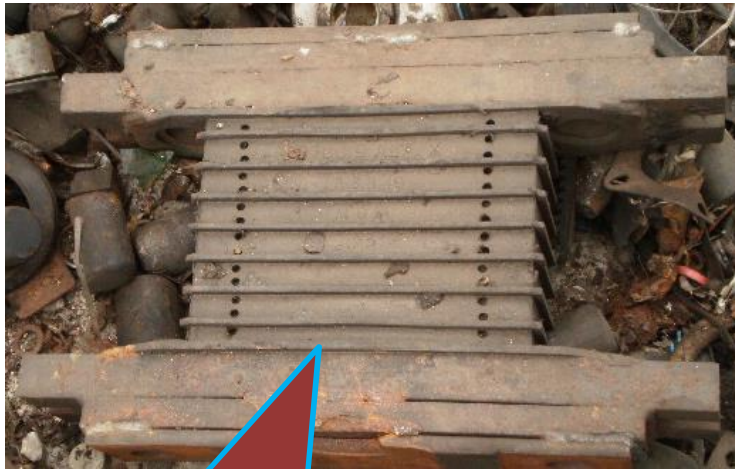
Pinion Gear Meshes with Bull Gear provided on the Axle

Gears are provided with gear case cover (2 Part)
Top & Bottom cover fitted with "C" clamp with bolts

Gear case covers are fitted with TM by 3 horizontal bolts

Lubrication by Cardium Compound

Traction Motor Nose End



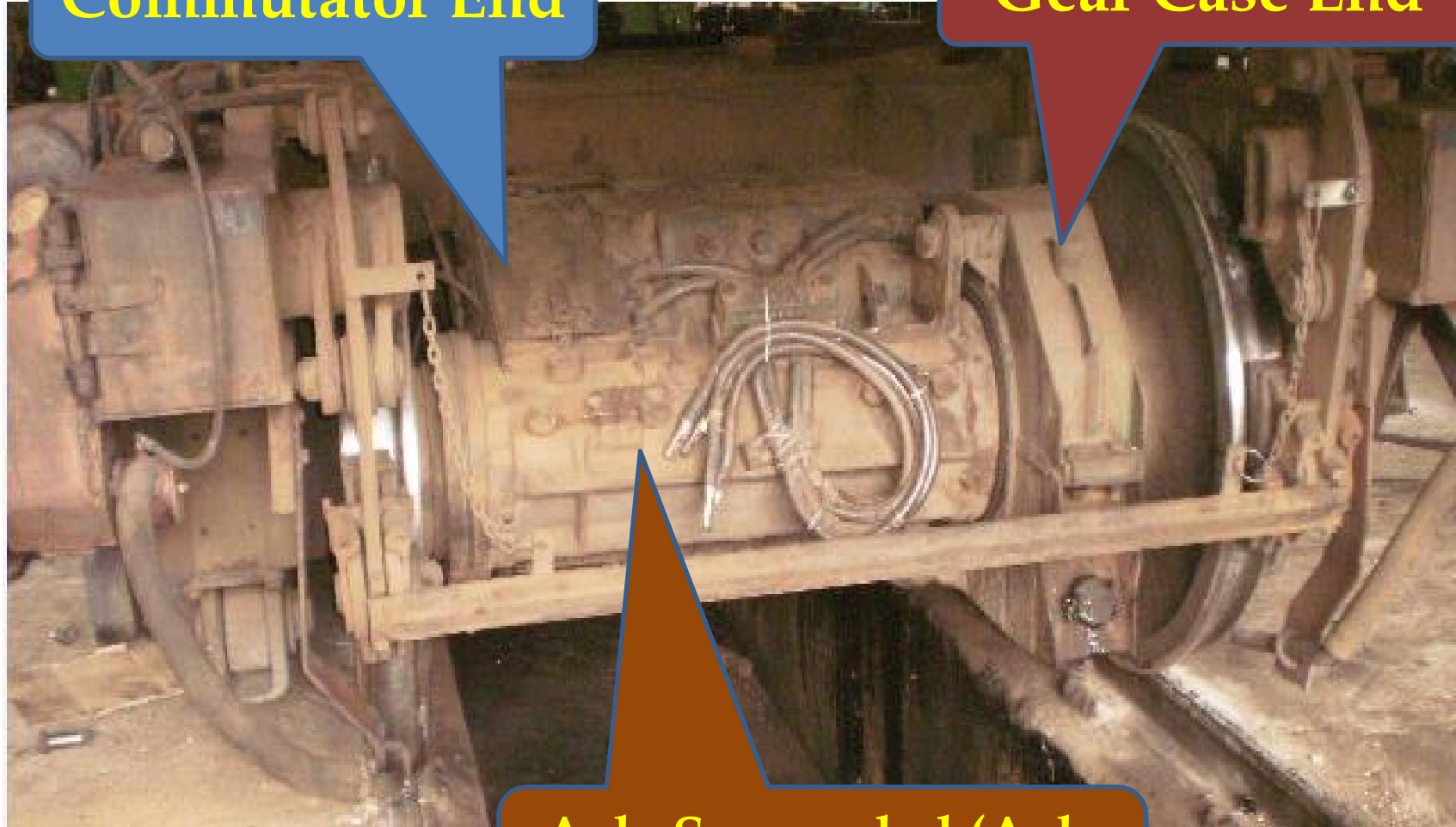
Resilient Pad





Commutator End

Gear Case End



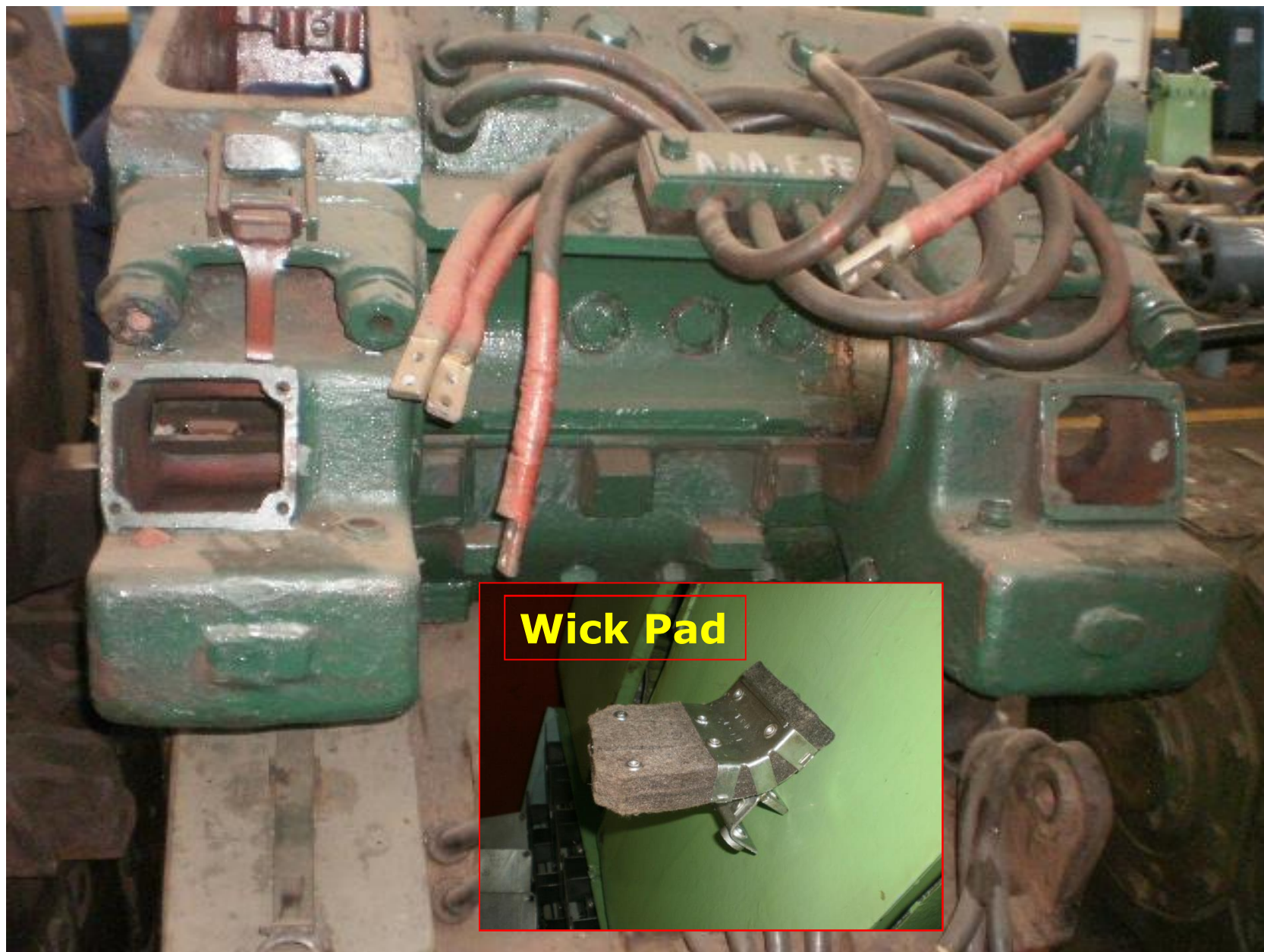
**Axle Suspended (Axle
End)**



**Gear case
End**

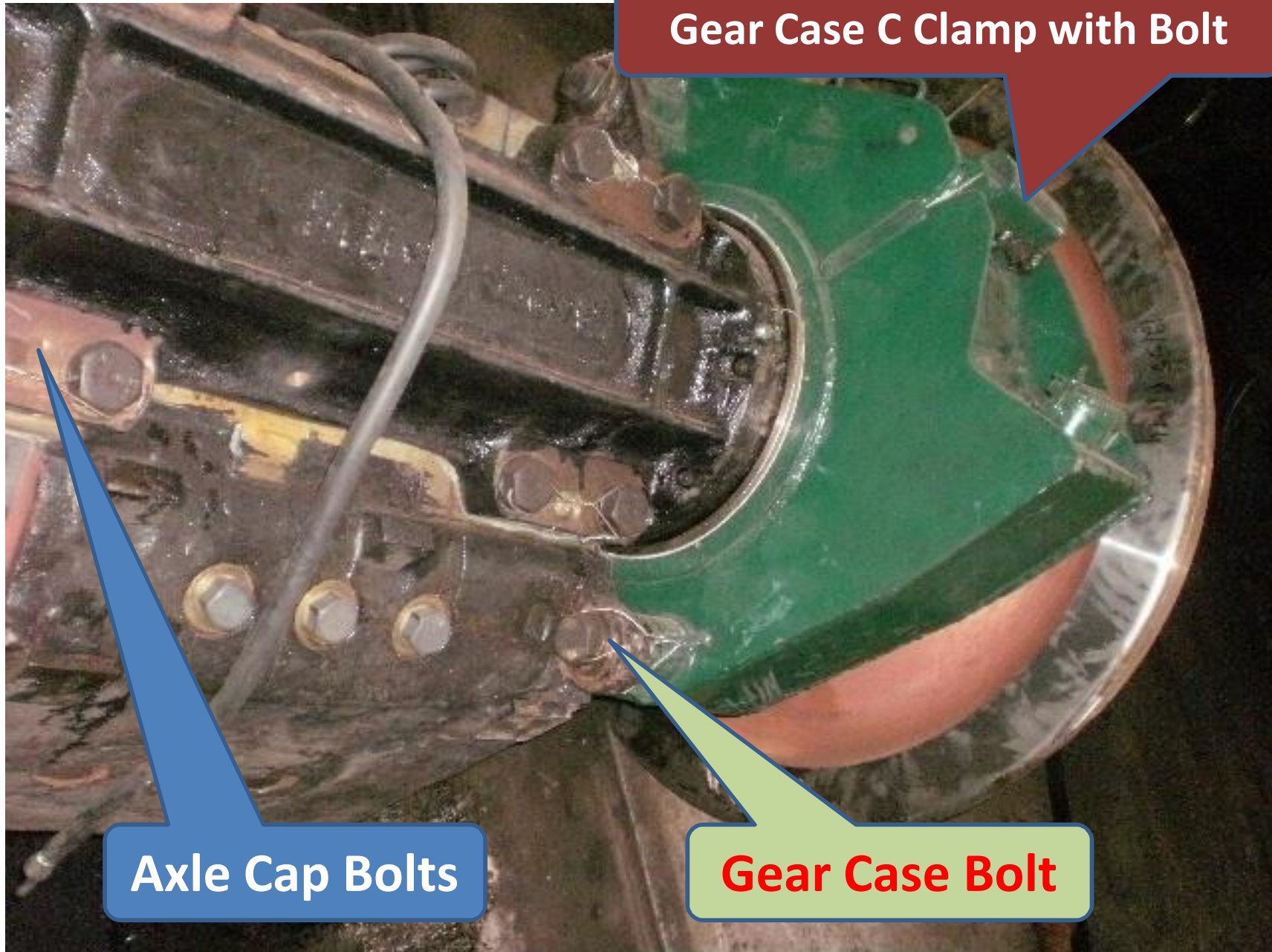
Commutator End





Wick Pad





Gear Case C Clamp with Bolt

Axle Cap Bolts

Gear Case Bolt

Traction Motor Arrangement Based on Gear case end

From Axle 1 to Axle 6

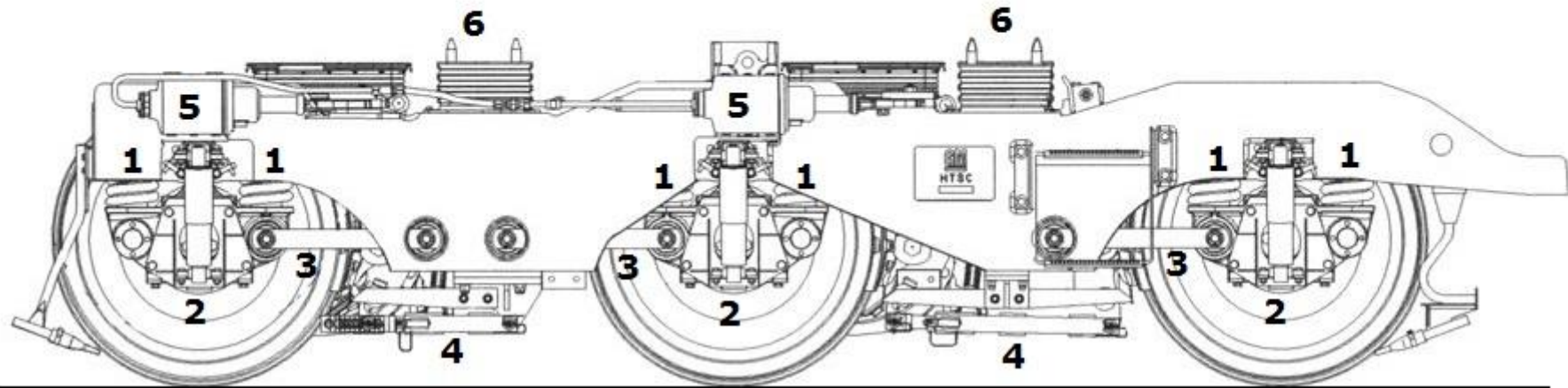
Tri mount Bogie : LLR – LRR

Fabricated Bogie : LLL – RRR or Uni Directional

HHP Locomotive



HTSC Bogie



- 1 - Helical coil springs (Primary Suspension)**
- 2 - Vertical Dampers (Primary Suspension) with top & bottom Brackets**
- 3 - Traction Rods**
- 4 - Slack Adjusters**
- 5 - Brake Cylinders**
- 6 - Load Pads**

TM is secured with Bogie through Nose Link / Dog Bone Link

Yaw Dampers are provided for reducing Horizontal Oscillations

Uni Directional TM Arrangement







Traction Motor Arrangement Based on Gear case end

From Axle 1 to Axle 6

HTSC Bogie : LLL – RRR or Uni Directional

Bo1 – 1Bo Arrangement

(Axle 1, 2, 5 & 6 – TMs provided)

(Axle 3 & 4 Without TMs)

Co – Co Arrangement

All Axles are provided with TMs