

WU1

AAR (H) TYPE TIGHT LOCK CENTER BUFFER COUPLER

STC/SPJ

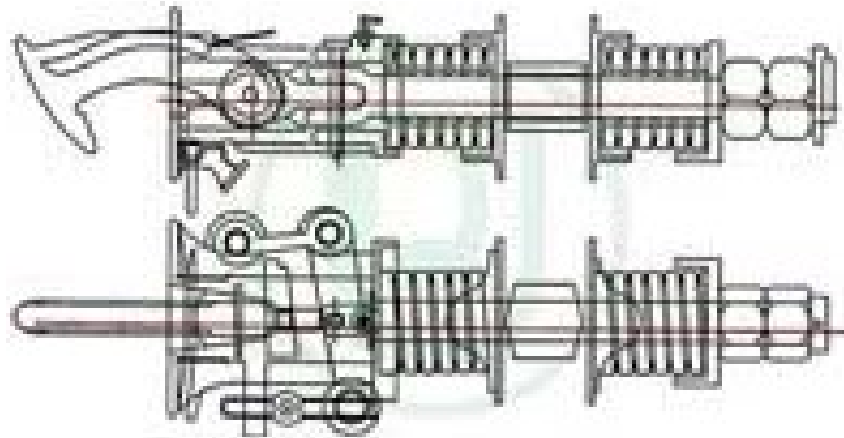
Slide 1

WU1

Windows User, 28-07-2020

TYPE OF COUPLER

- Automatic Buffer Coupler (MG)



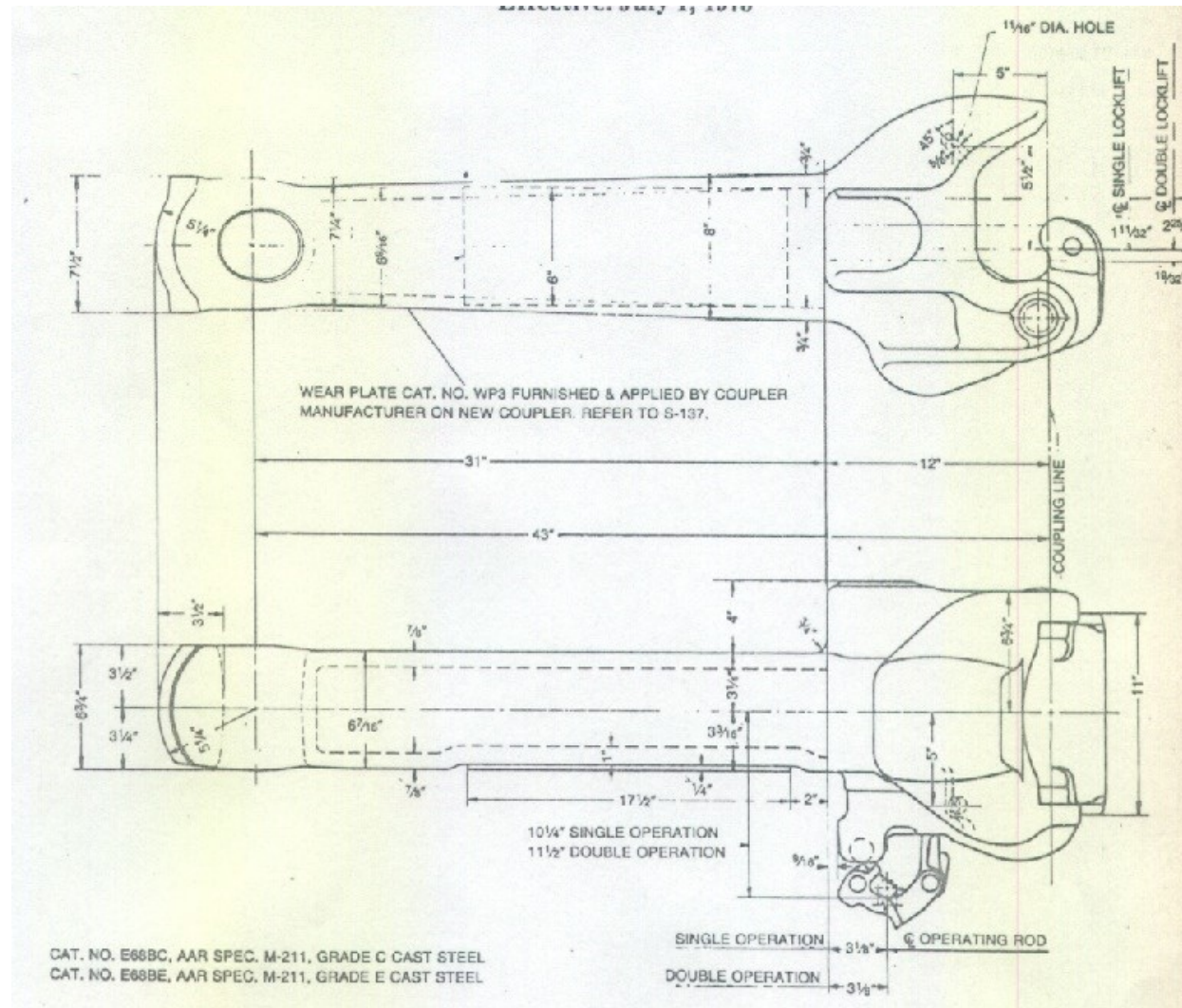
- Screw Coupling



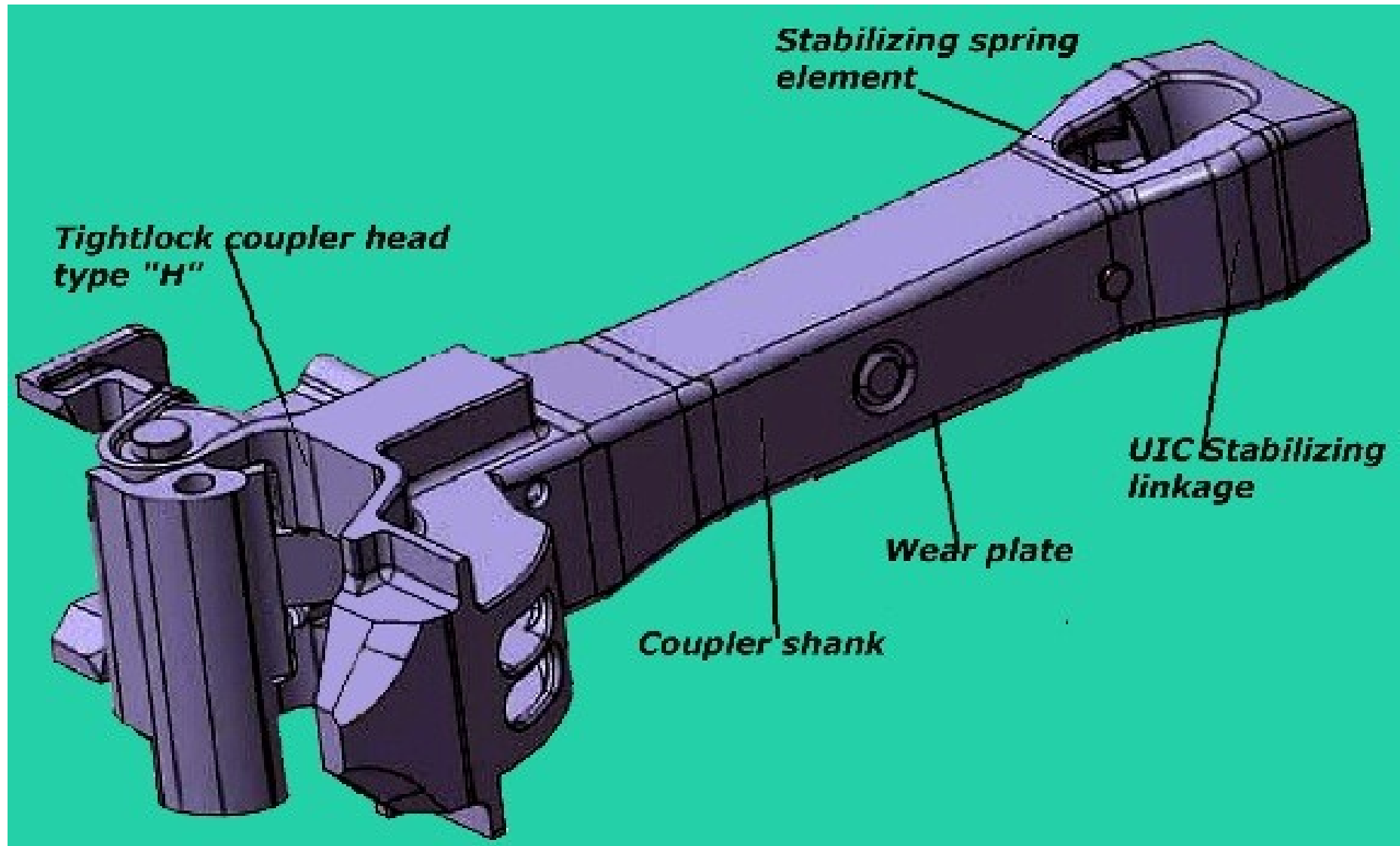
- Transition CBC Coupling



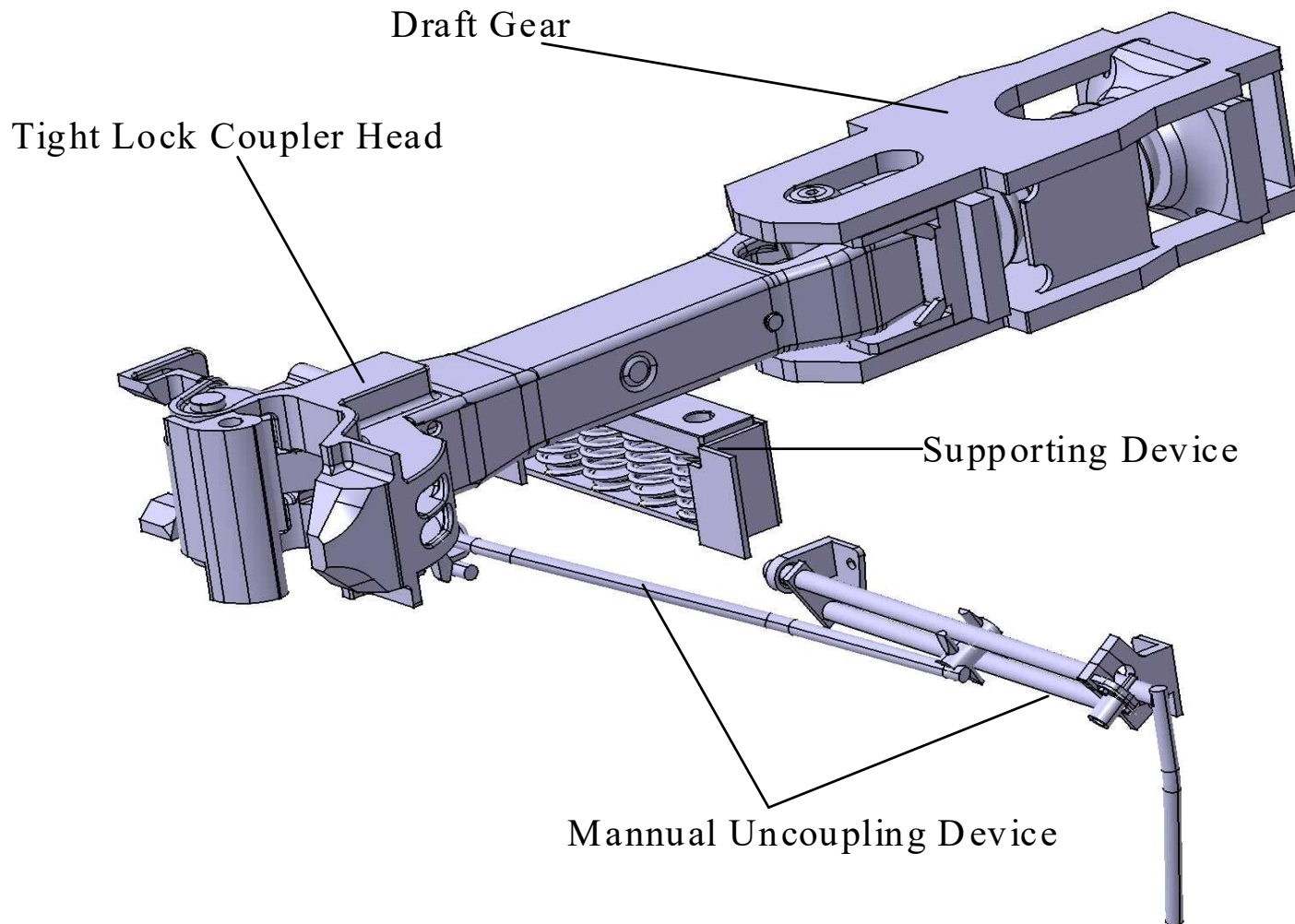
- CBC Coupling

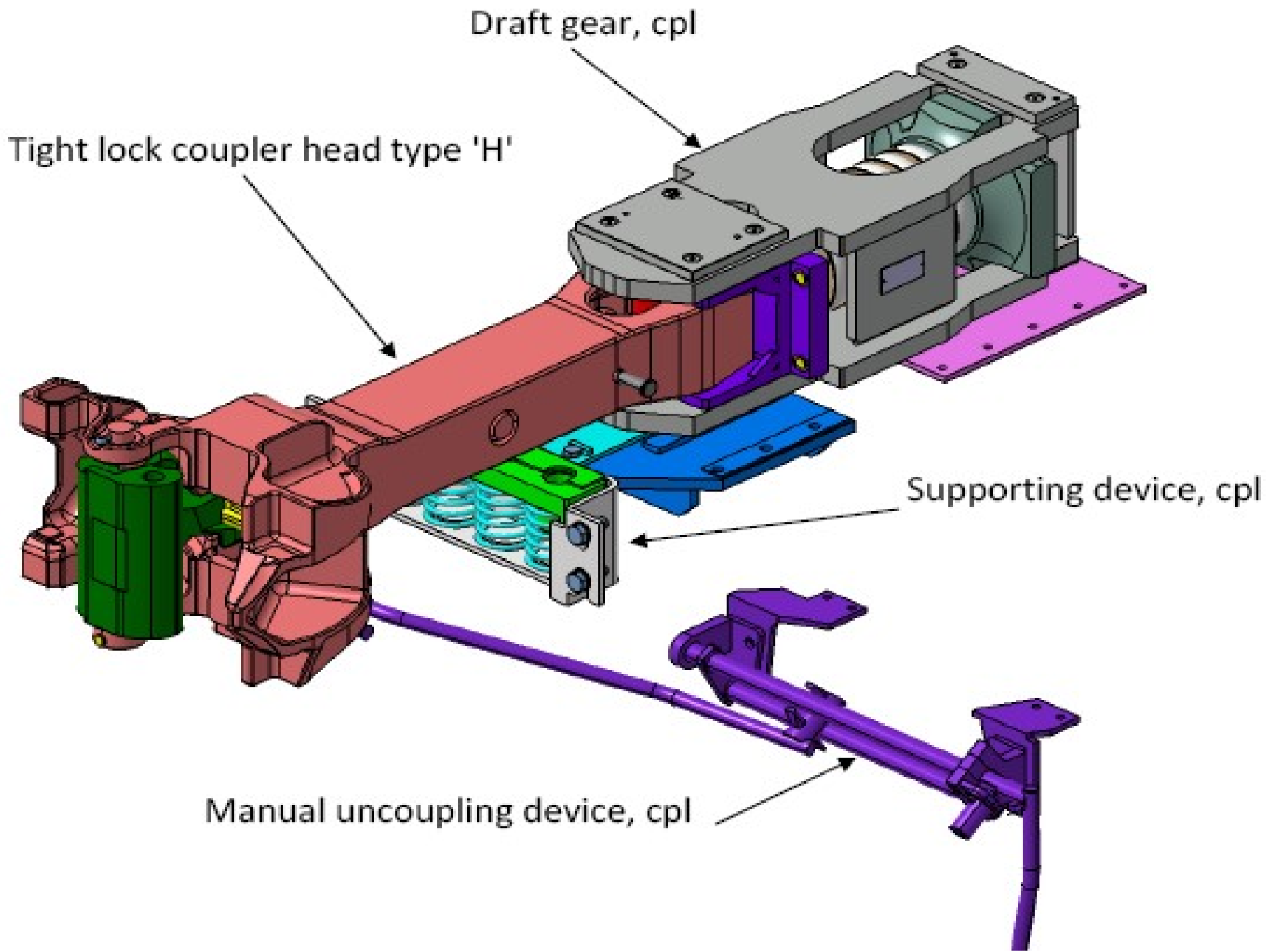


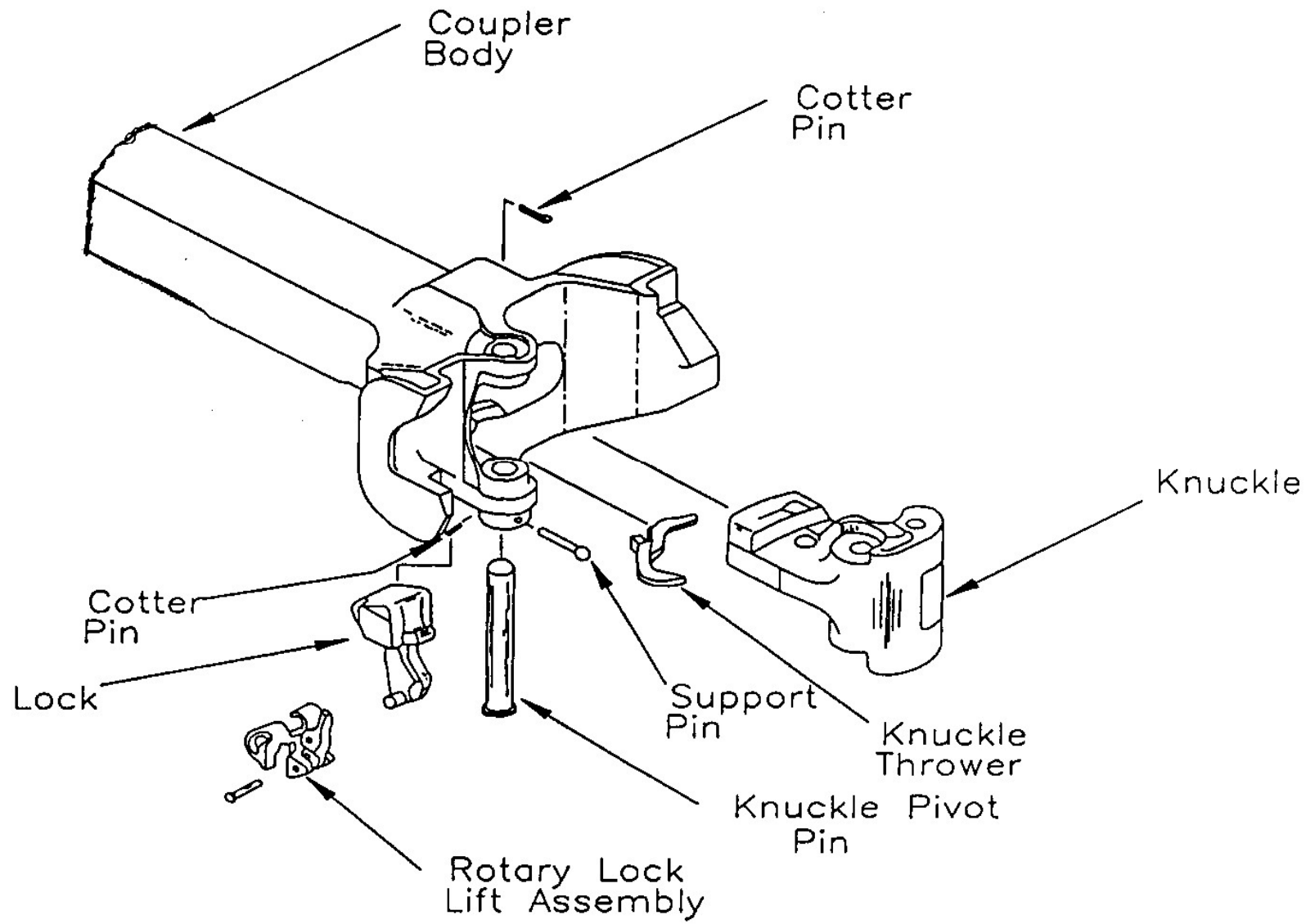
- AAR H Type Coupling

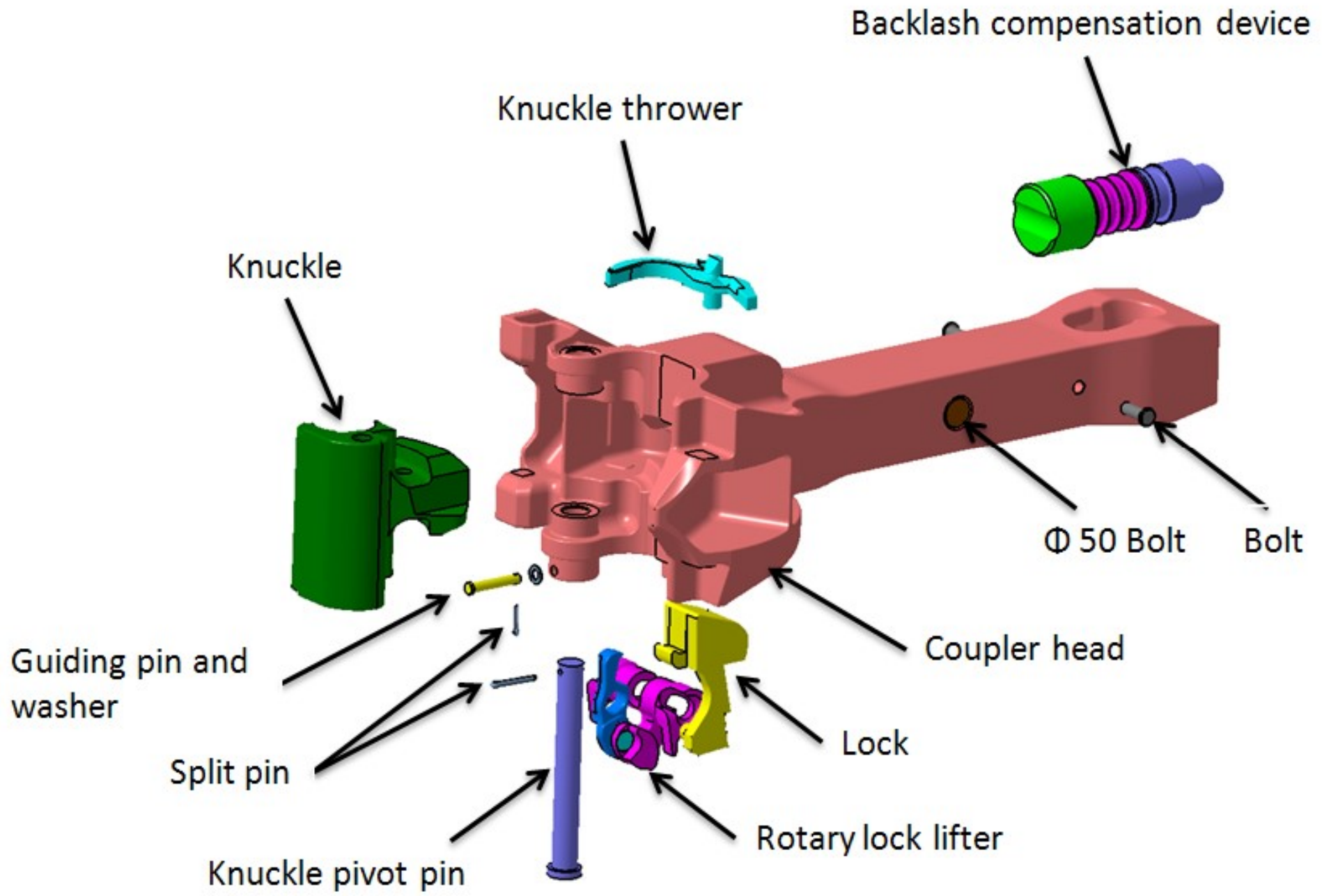


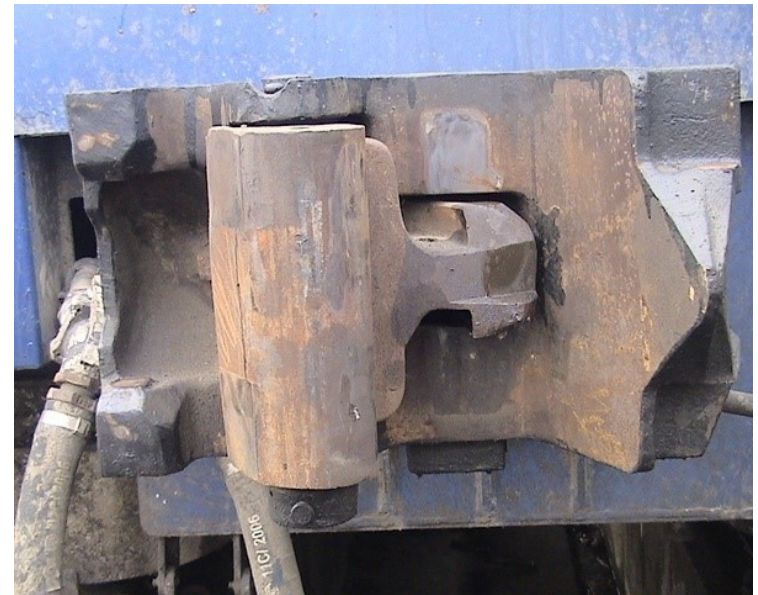
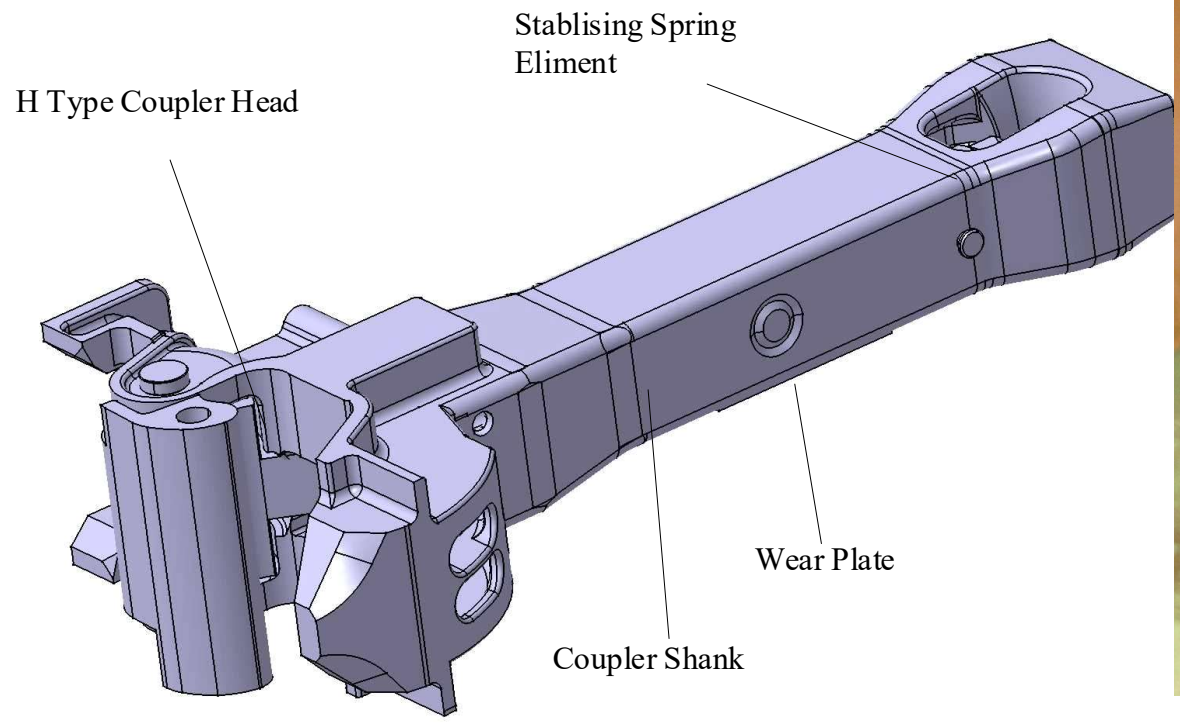
Tight Lock Center Buffer Coupler complete (AARH)

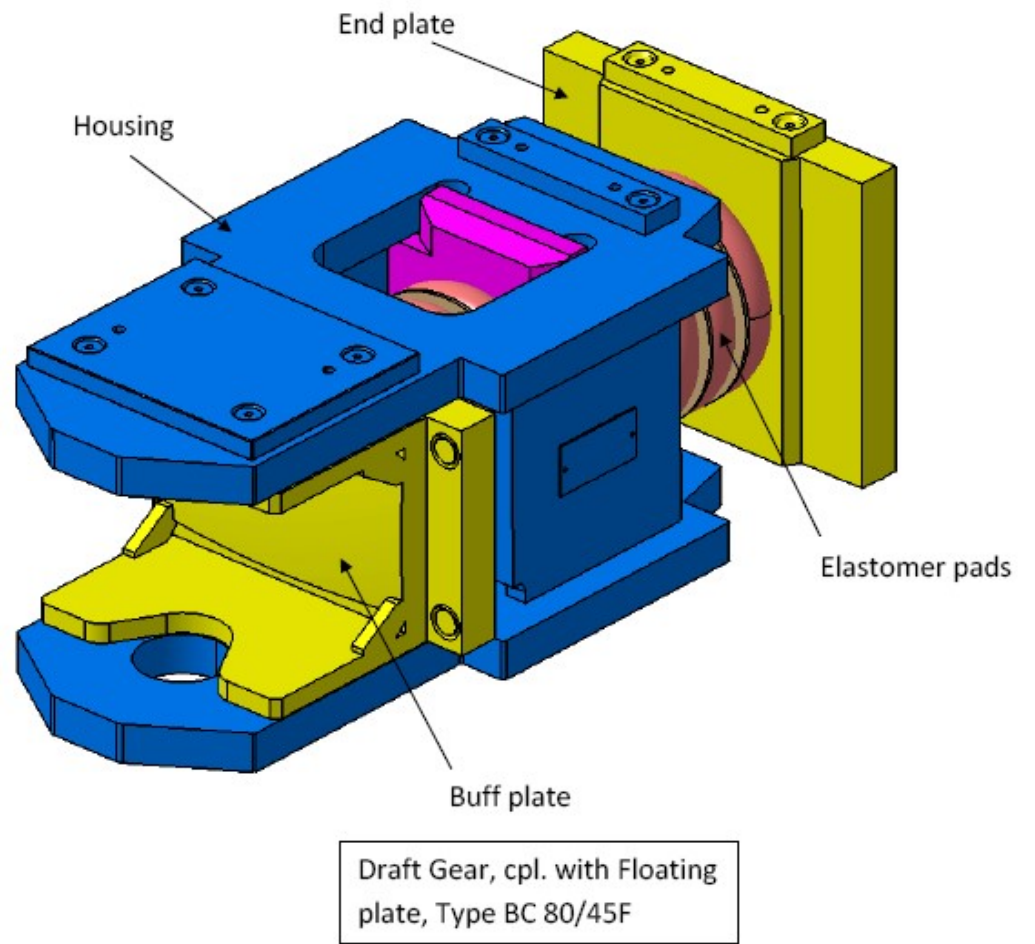
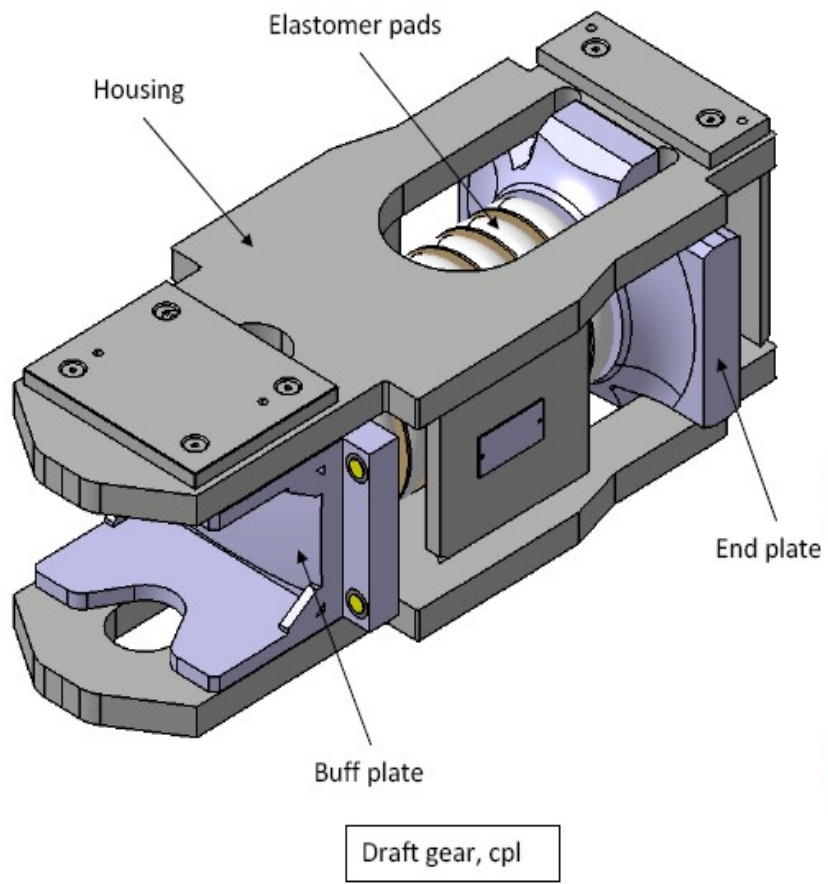




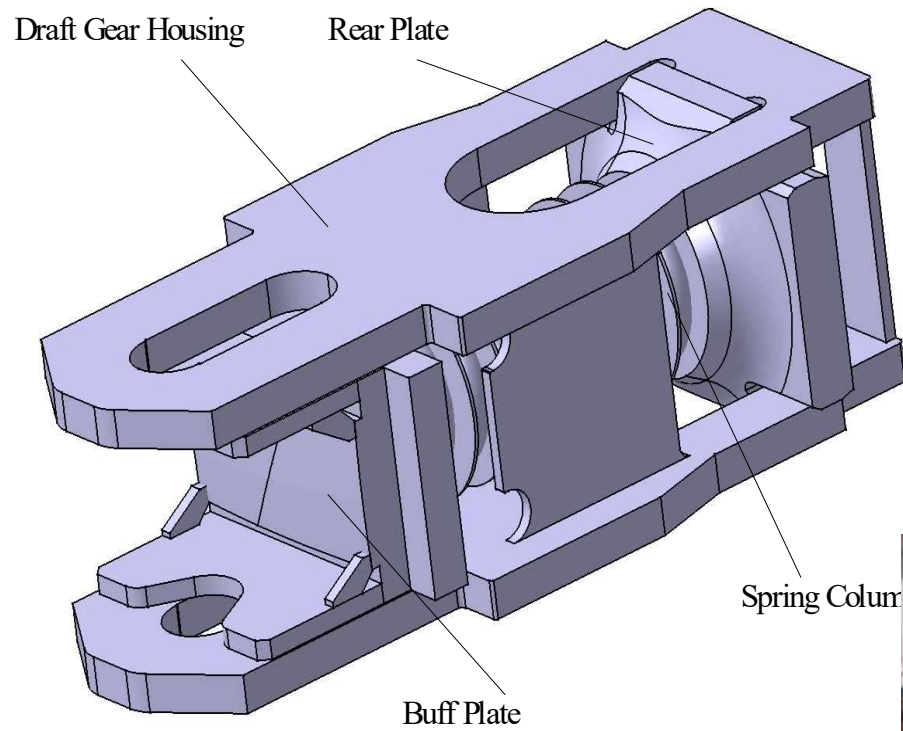






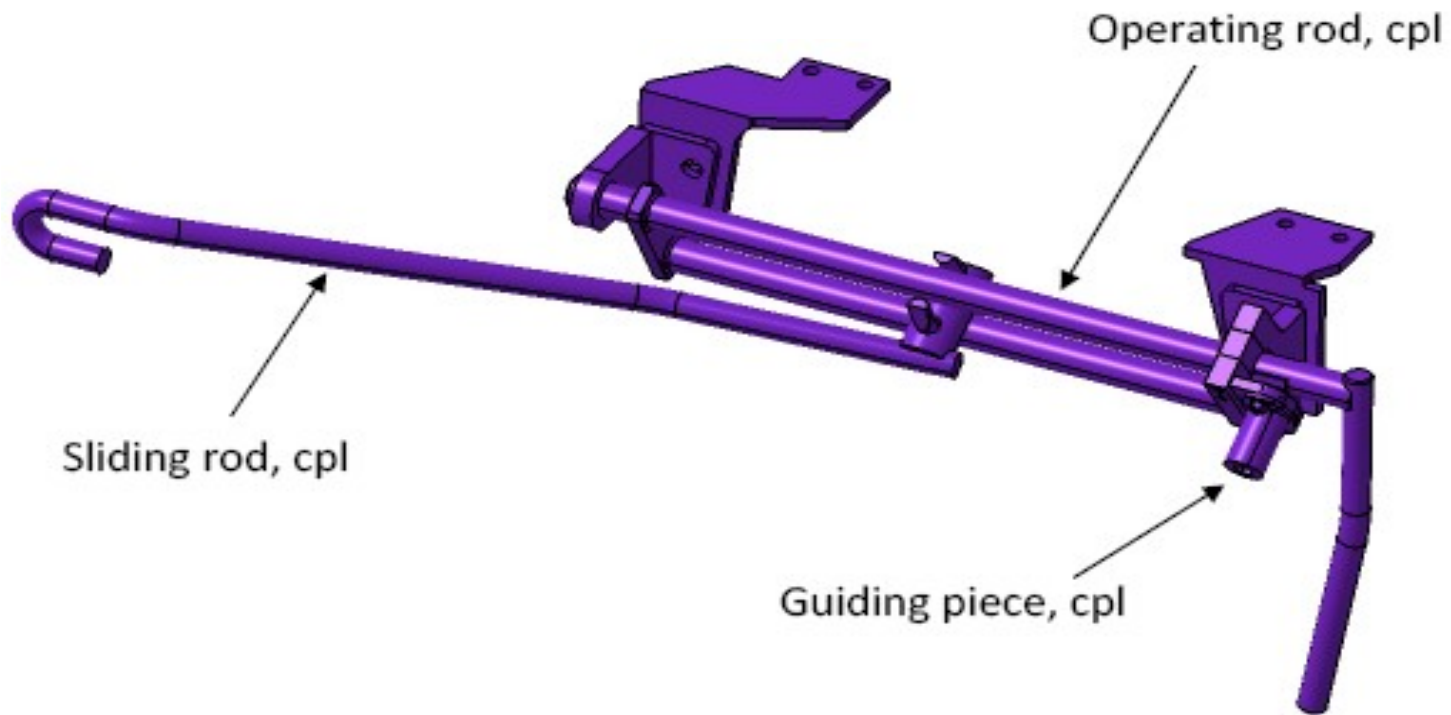
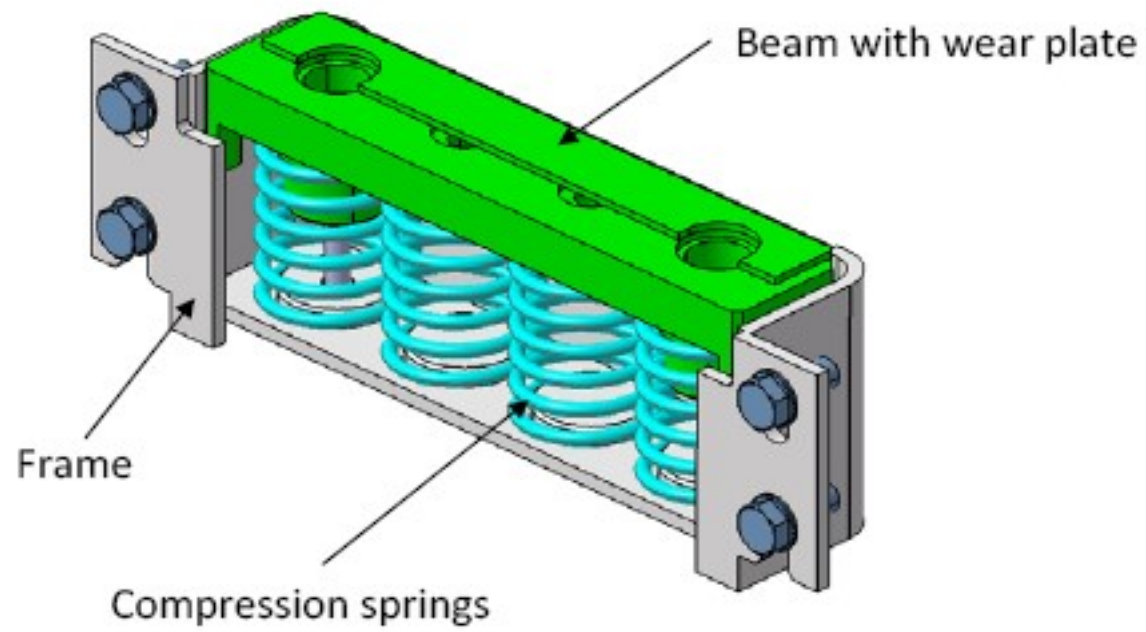


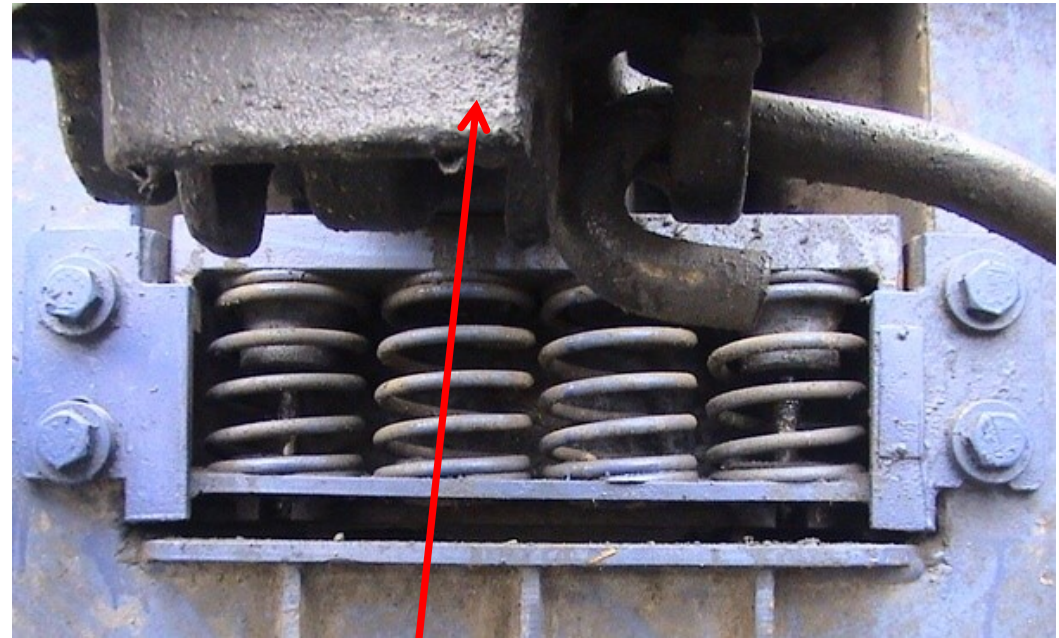
Draft Gear



Double Acting Device for Energy Absorption

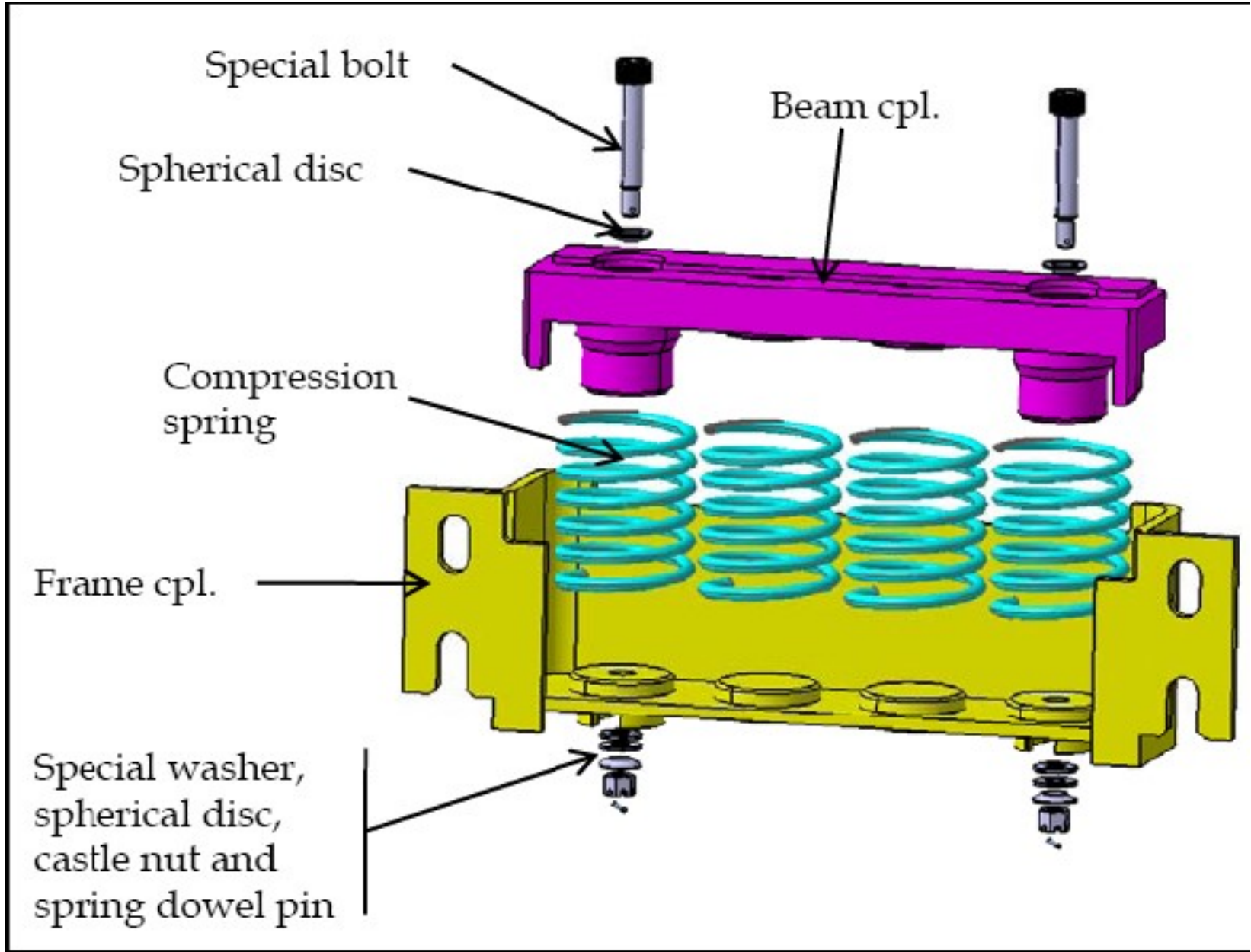
Stroke Tensile- 58 mm
Buffer- 80 mm





Supporting Device

- **Preloaded Compression Spring**
- **Coupler Head rest on supporting device**



Pocket

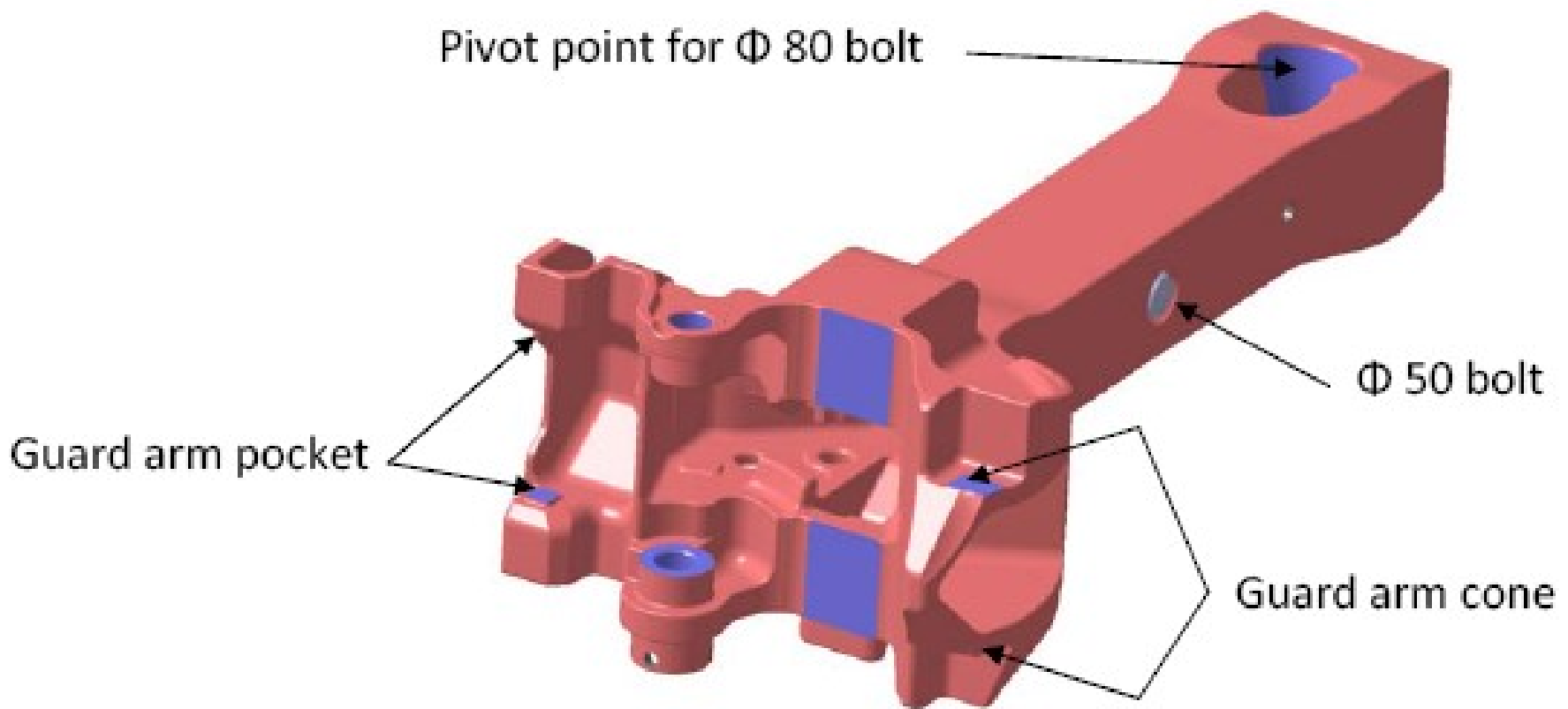


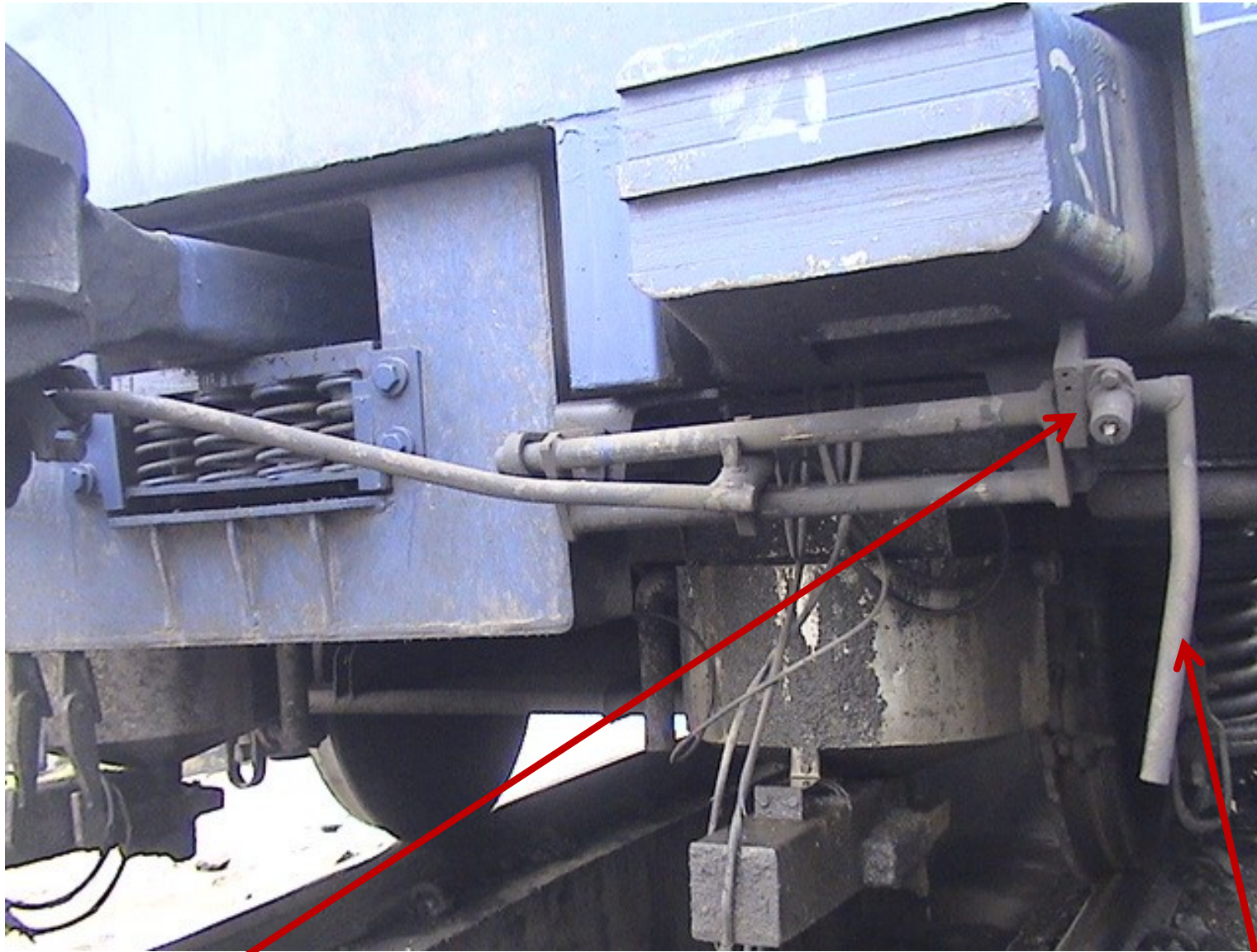
Arm

Gathering Range

Horizontal : +/- 110 m.m.

Vertical : +/- 90 m.m.



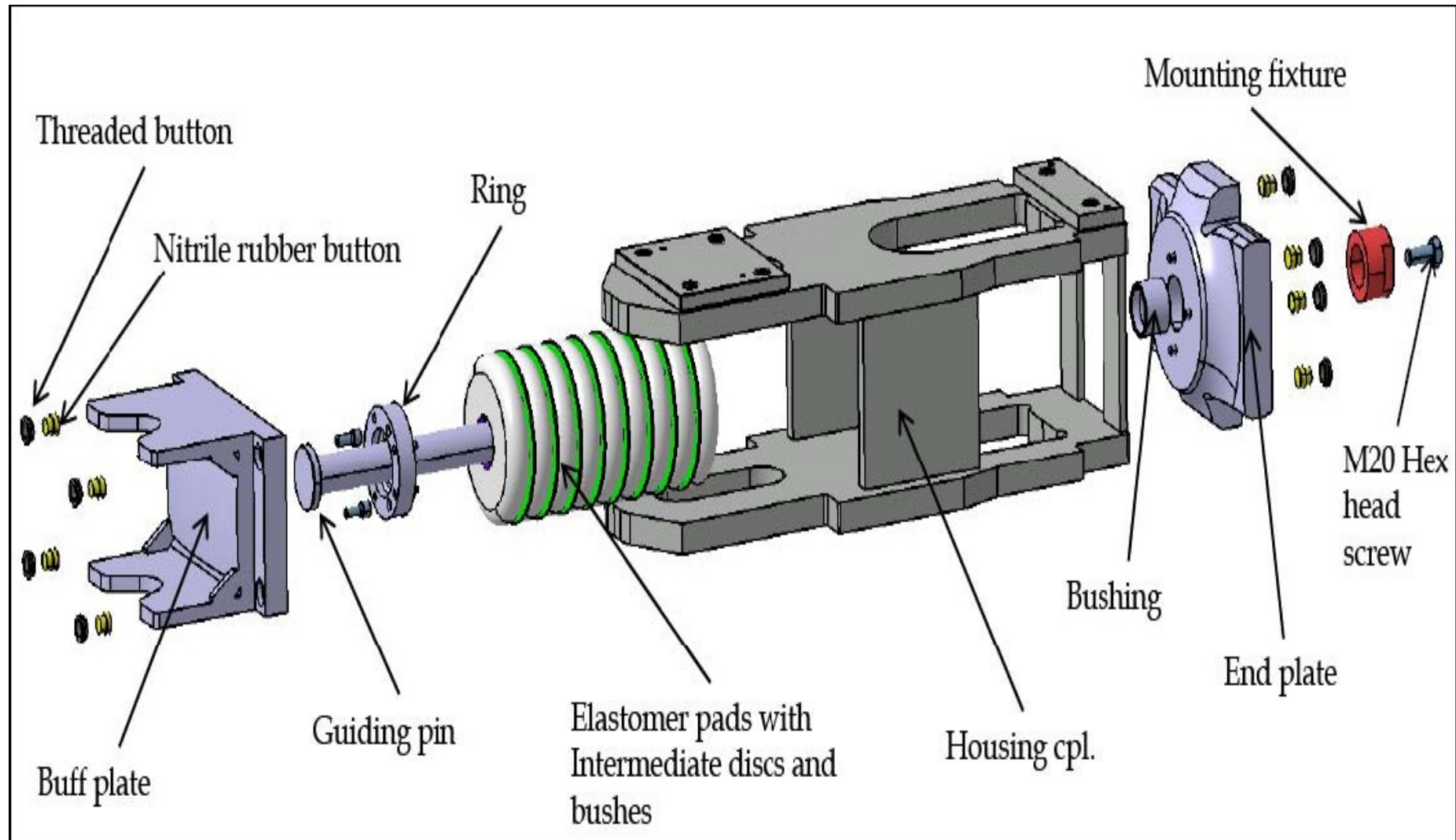


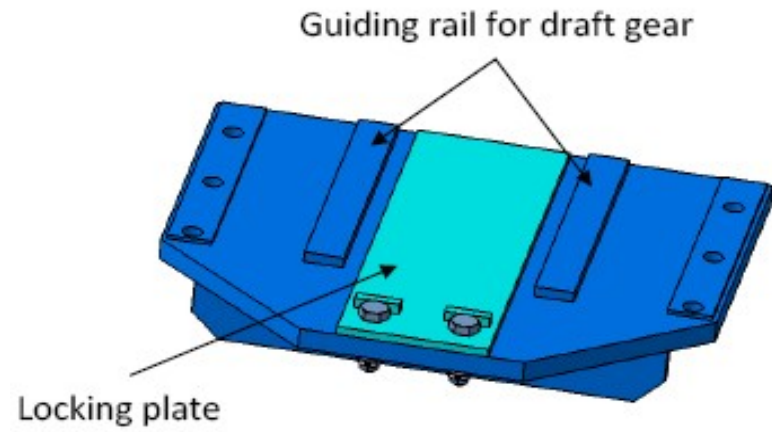
For uncoupling- ~~Unlock Handle, Lift and rotate clockwise.~~



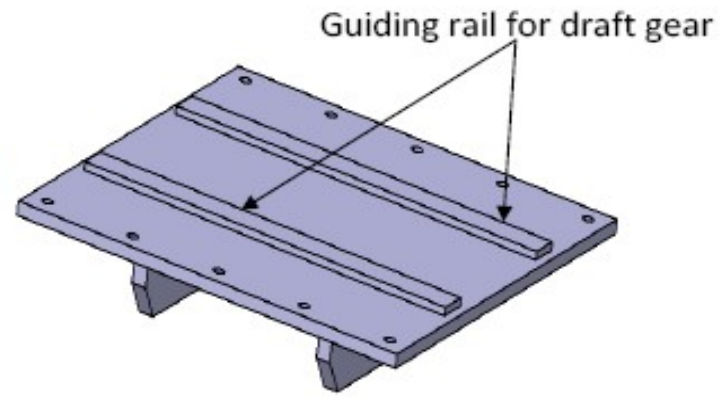
Manual Locking & Unlocking of Coupling Device

Mounting of the draft gear :

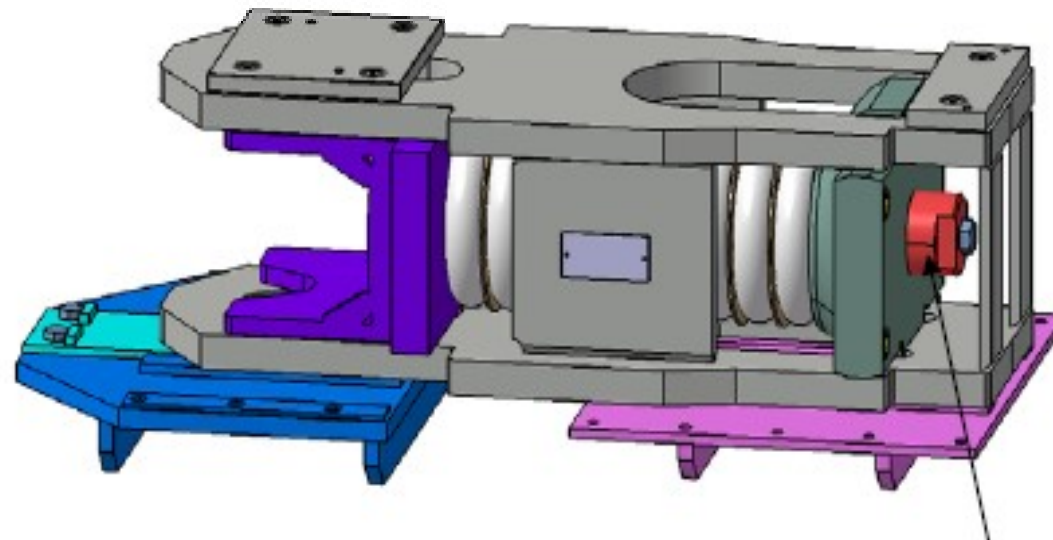




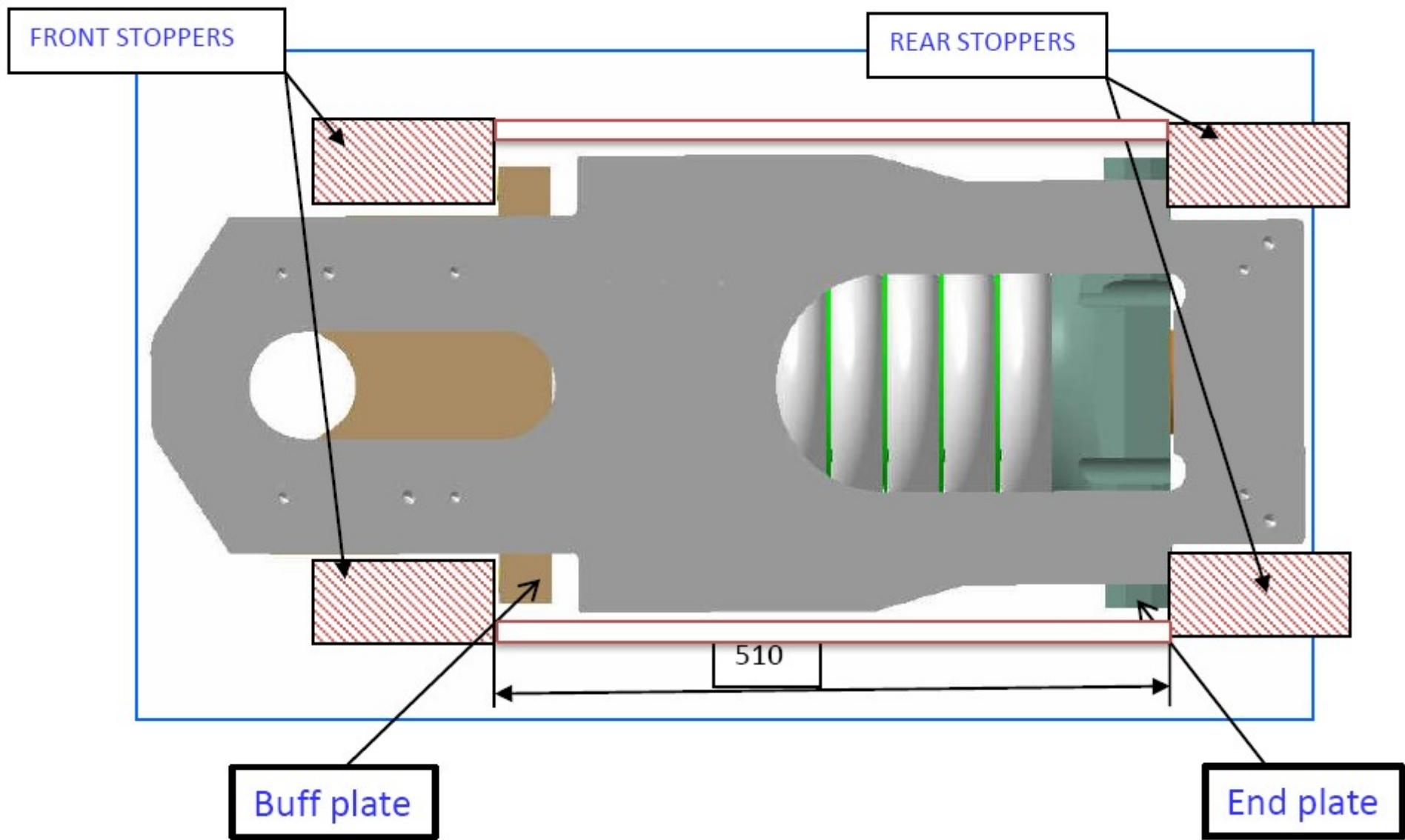
Base plate, cpl



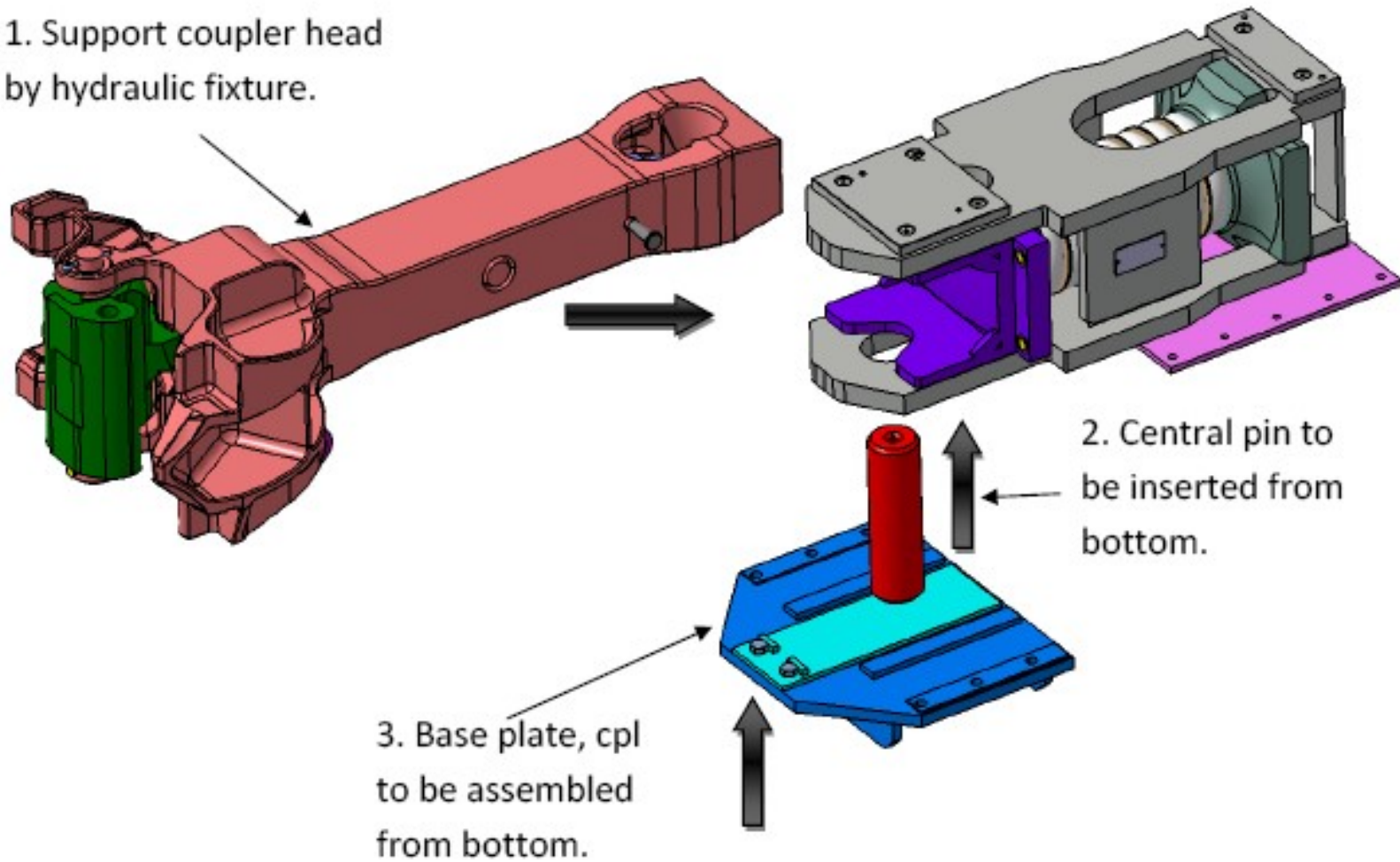
Support plate, cpl



Mounting fixture to be removed after fitment of base plate and support plate.

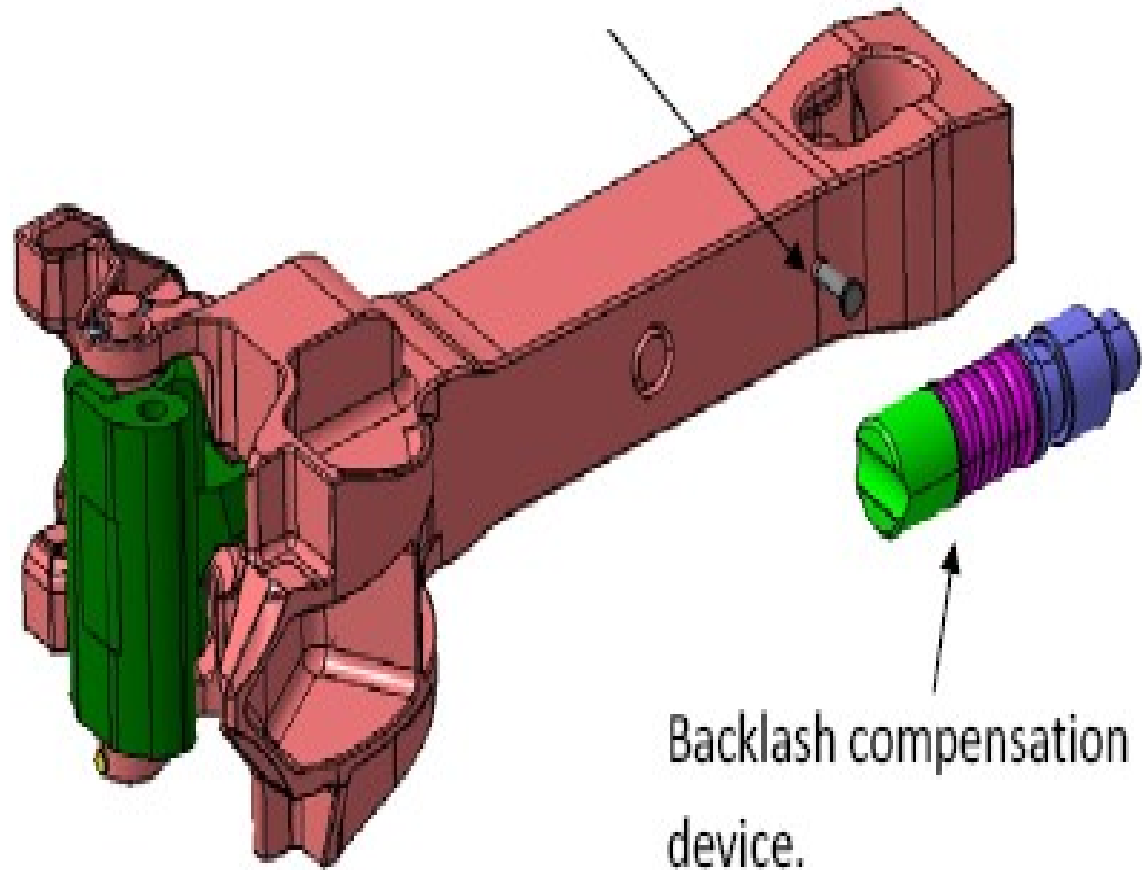


1. Support coupler head by hydraulic fixture.

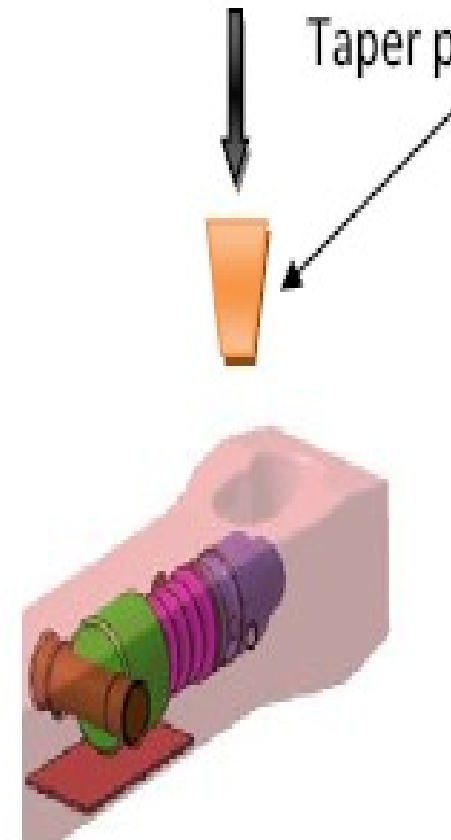


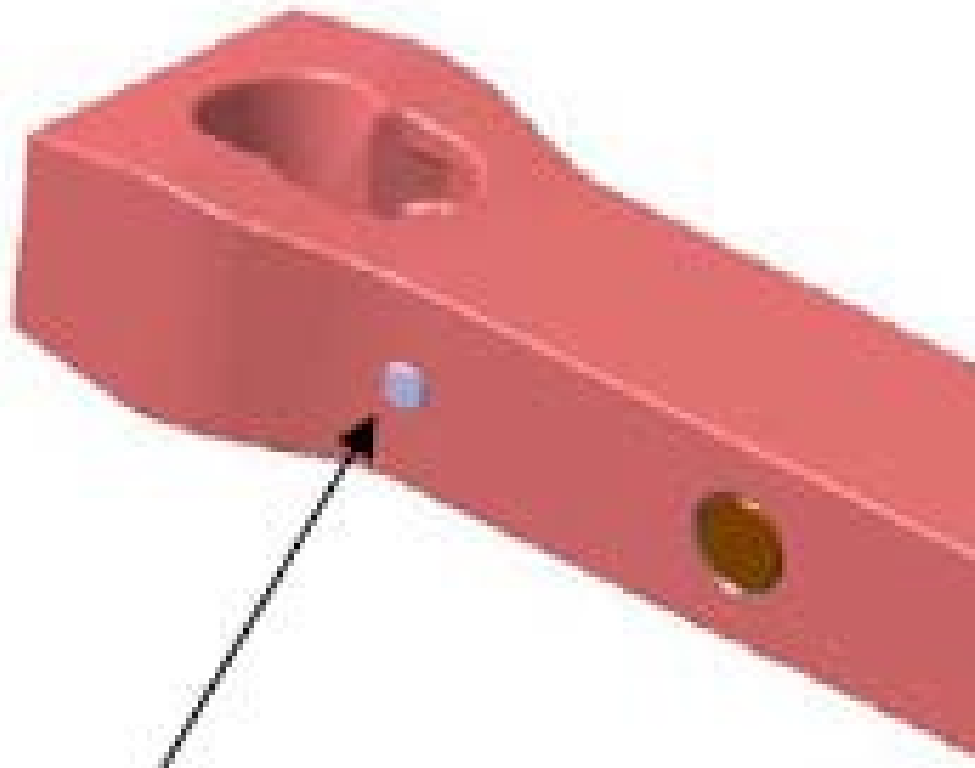
Mounting of the Coupler head

Insert side bolts.

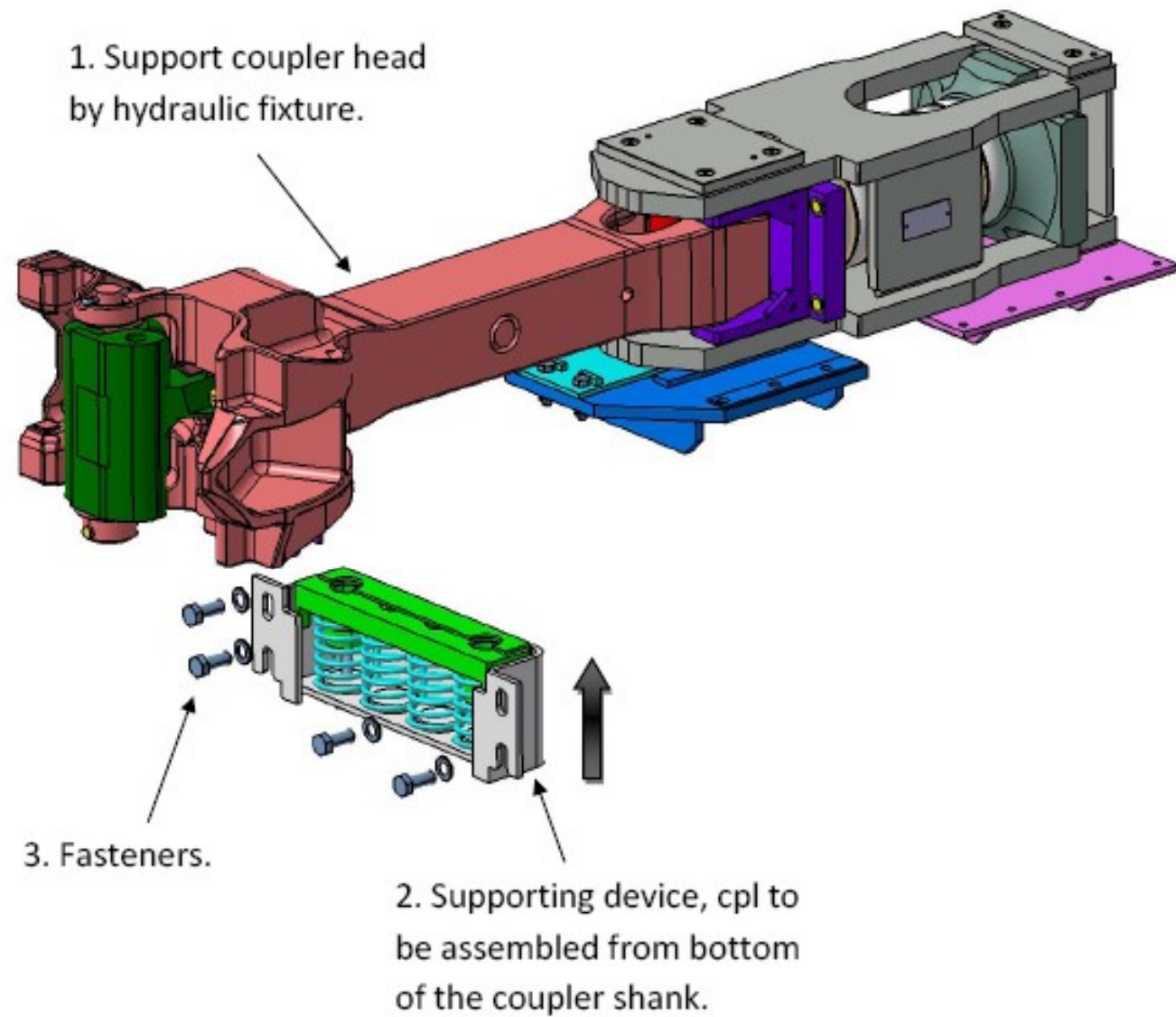


Taper punch.



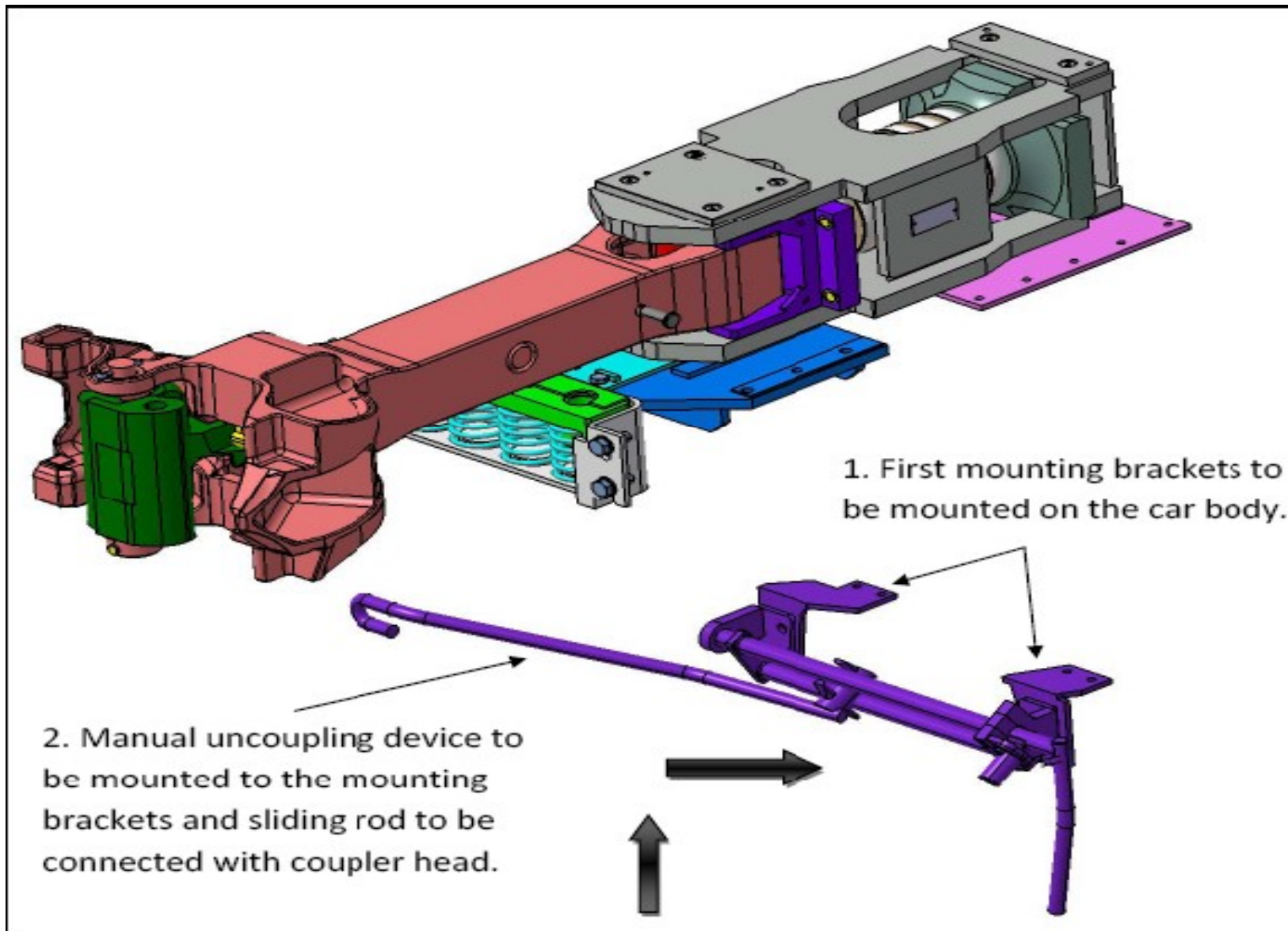


Remove the bolt on both sides of coupler and apply grease to both the holes.

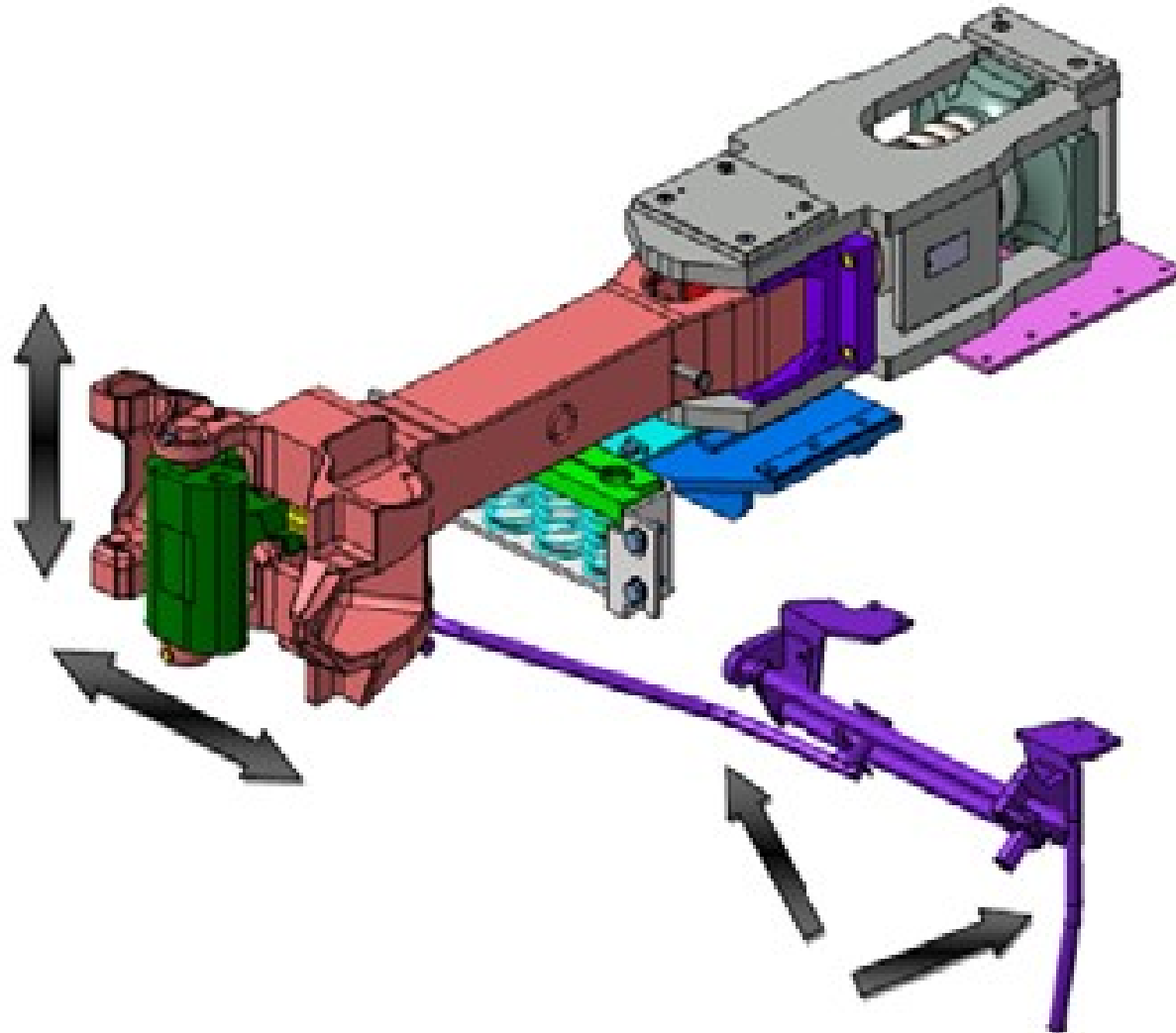


Mounting of the supporting device

Mounting of the manual uncoupling device :

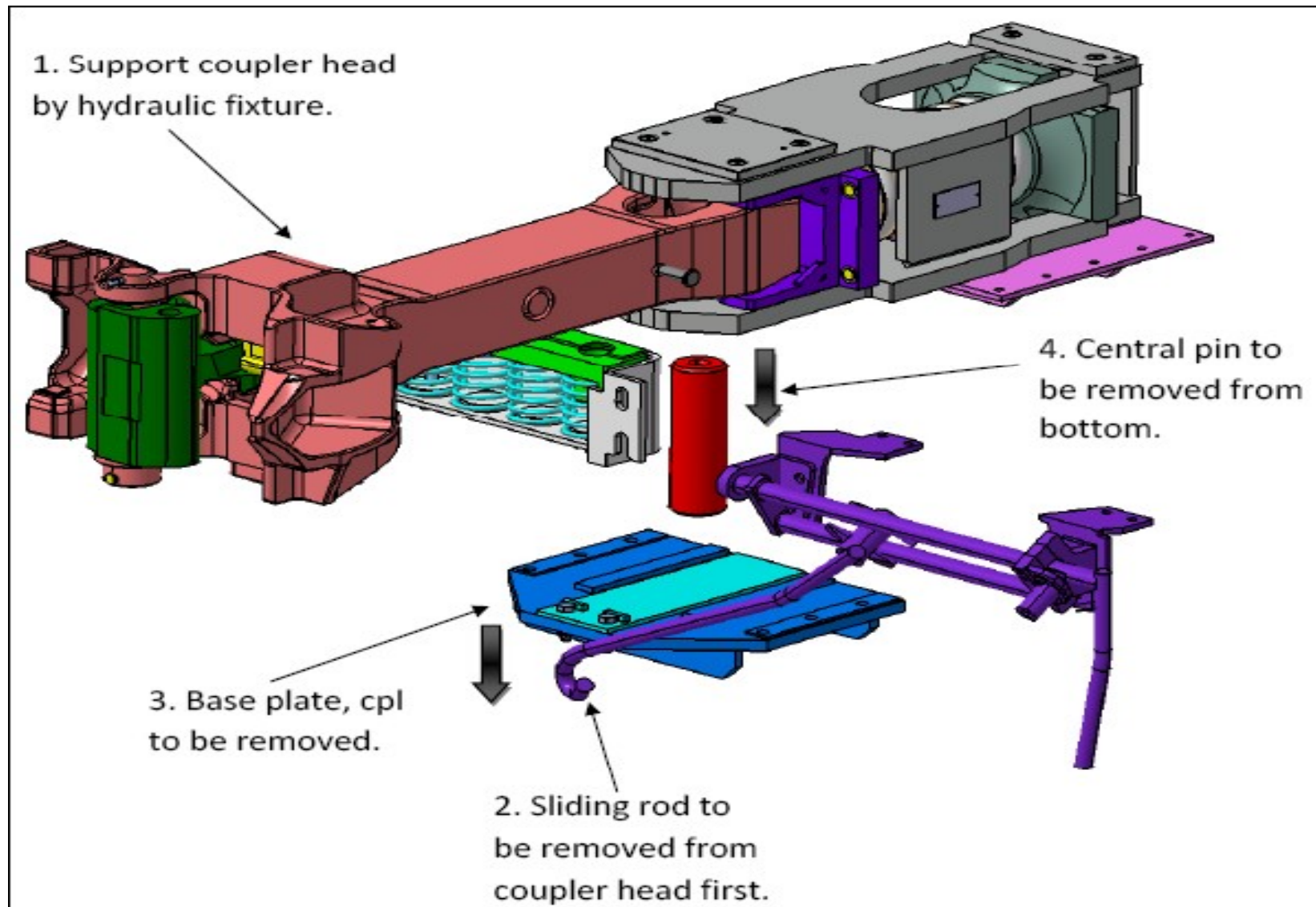


Final check of coupler installation



Dismounting of coupler from coach :

Dismounting coupler head



Identification of Tight Lock Coupling fitted coach

- **Yellow Strip at the end of side panel**
- **Letter 'C' used at the end of coach No.**





प्रवेशा
ENTRY

बिस्तर/सोने के लिये
1-8
TO SEAT / SLEEP

1-8

10214/C

9-16



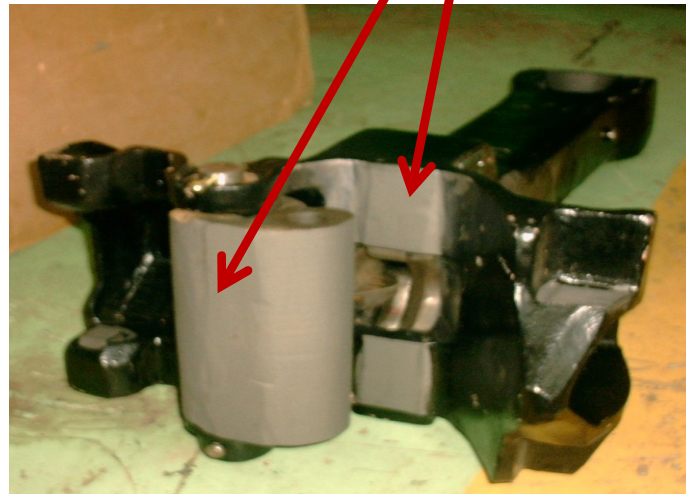
LIFT HERE

भारे

Check before coupling-

Check Point No. 1- No grease or oil used in the surface of coupler.

Check Point No. 2- Machined face of Knuckle and Coupler Head is **parallel**, when knuckle in closed position.



Coupling procedure (coach to coach)

- Bring the vehicles near to each other at a slow speed (approx. 2 - 3 km/h) and stop the vehicles at approximately 1 meter distance of each other.
- Check alignment and position of coupler centres. Couplers must stand within the gathering range.
- If required pull the couplers manually towards each other and make sure that they are in the gathering range.
- Couplings are in open condition.

- Brake should apply in 5 coaches from front.
- Now push the vehicles together slowly (approx. 3 km/h) for coupling the two coaches.
- Check position of tell tale, it should be clear.
- Make sure, that the handle of manual uncoupling device is locked after coupling.
- After coupling reverse the power to pull (snatch) the vehicles apart. This is a typical pull test to reconfirm a positive coupling.

Coupling procedure (coach to loco)

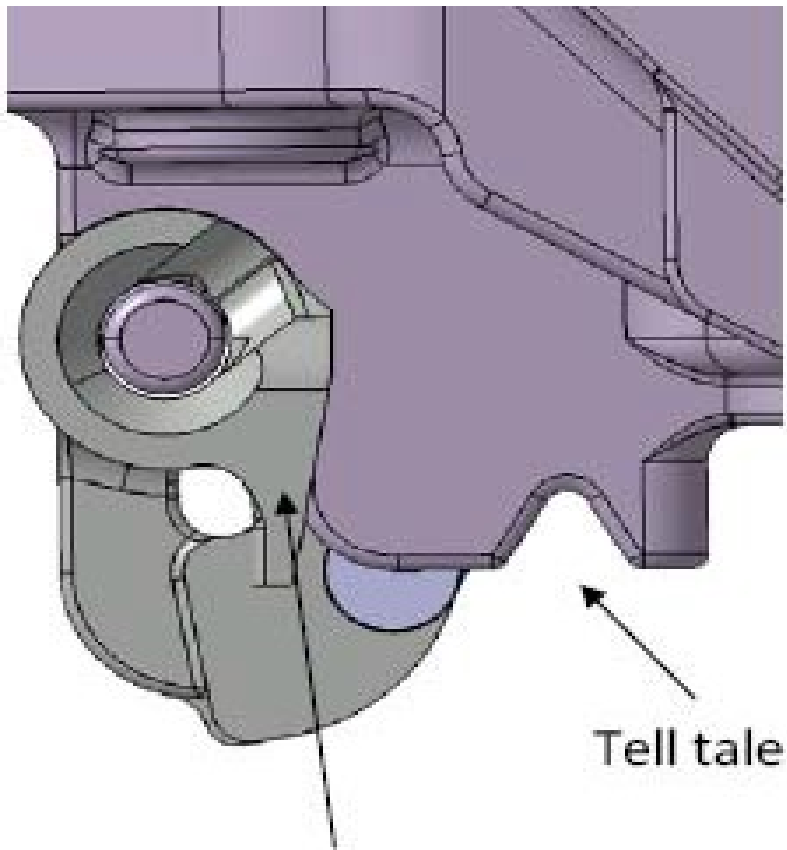
- Brake should apply in 5 coaches from loco side.
- Stop the loco before 20 meter and move slowly towards rake. When 3 meter remain stop the loco.
- Check alignment and position of coupler centres. Couplers must stand within the gathering range.
- If required pull the couplers manually towards each other and make sure that they are in the gathering range.
- Normally coupling of SLR is close position and loco are in open.
- Now push together slowly (approx. 3 km/h) for coupling.
- Check position of tell tale, it should be clear.

- Make sure, that the handle of manual uncoupling device is locked after coupling.
- After coupling reverse the power to pull (snatch) the vehicles apart. This is a typical pull test to reconfirm a positive coupling.
- Pull the rake on 2 notch.
- When loco in pulling position, insert restrictor with shim of sufficient size between gap by C&W staff.
- Ensure the pressure in BP & FP.
- Release the first five coach.

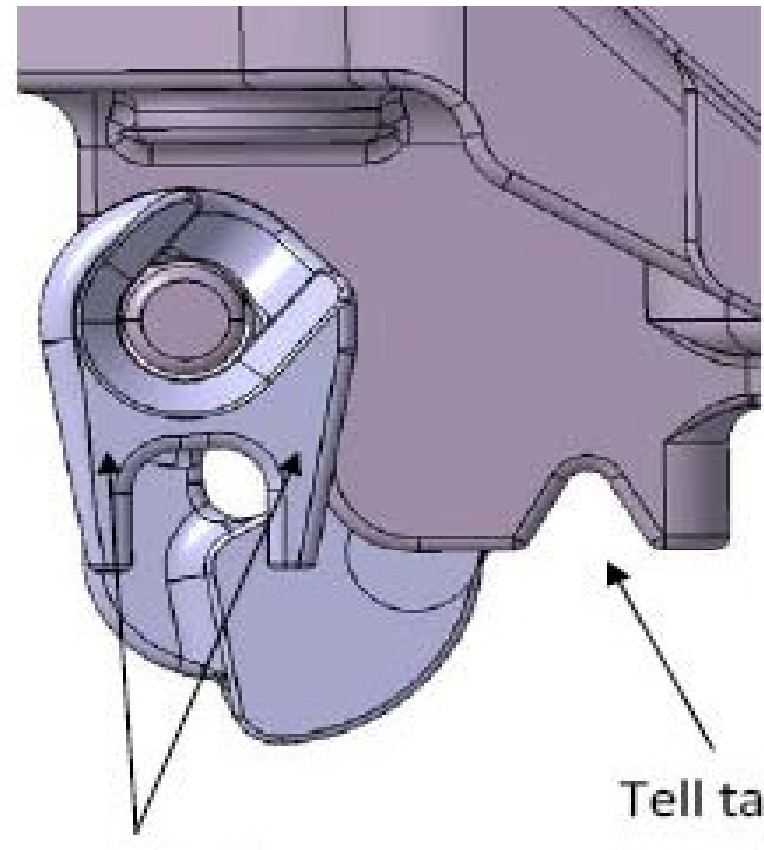
Check Points for proper coupling-

Check Point

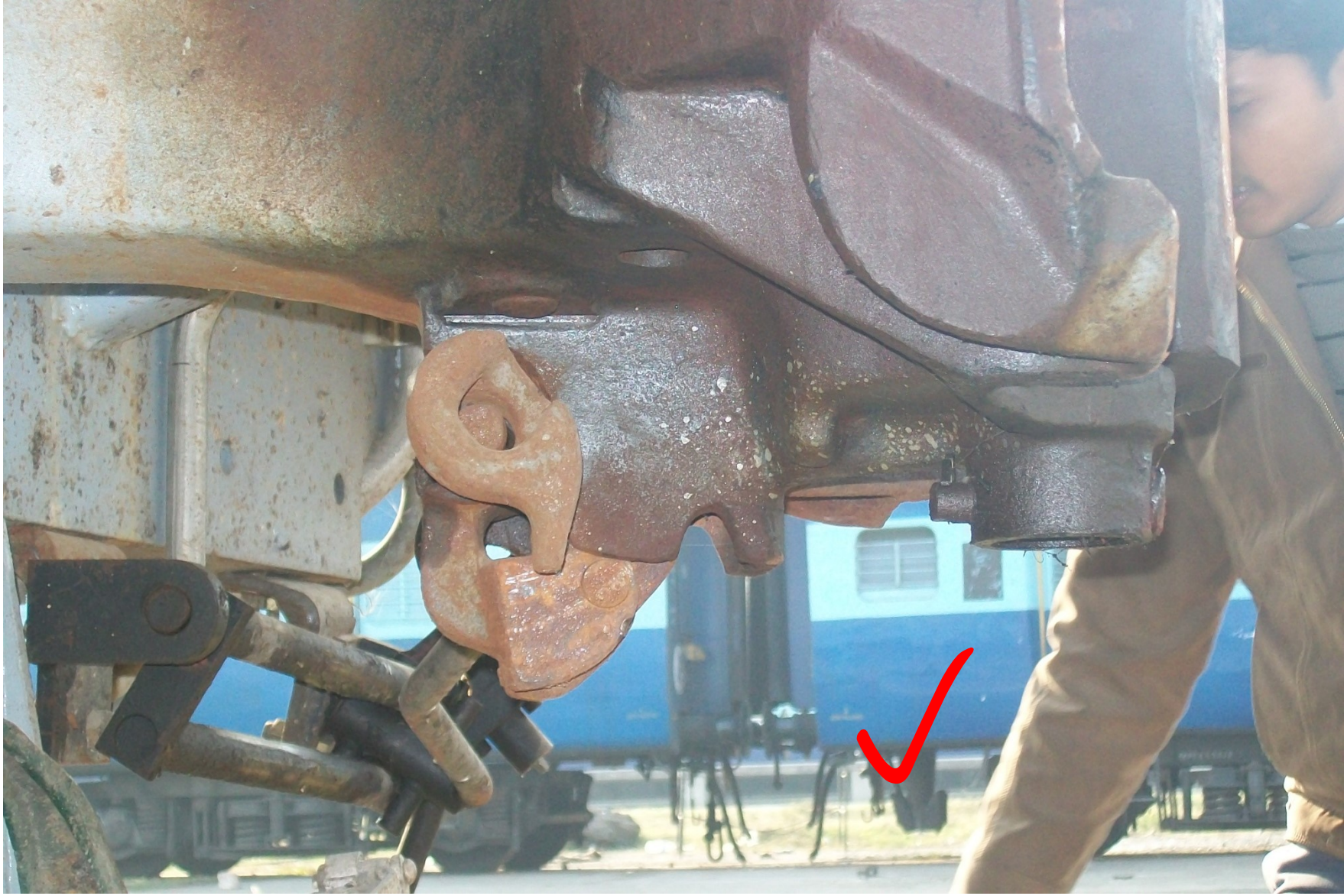
- 1. Check position of tell tale, it should be clear.**
- 2. Rib of rotary lock lifter is vertical.**
- 3. Make sure, that the handle of manual uncoupling device is locked position.**

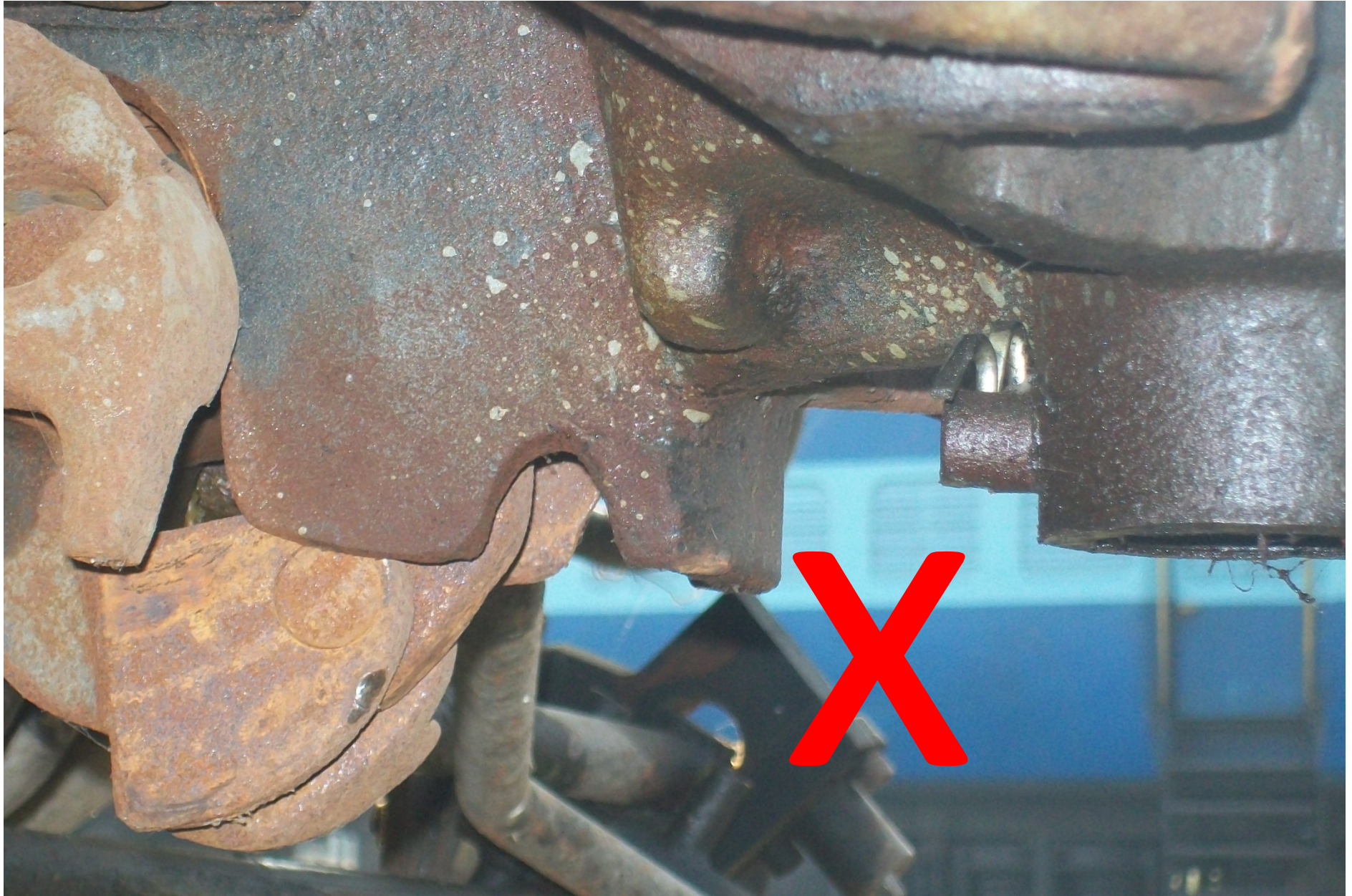


Rotary lock lifter
with single rib.

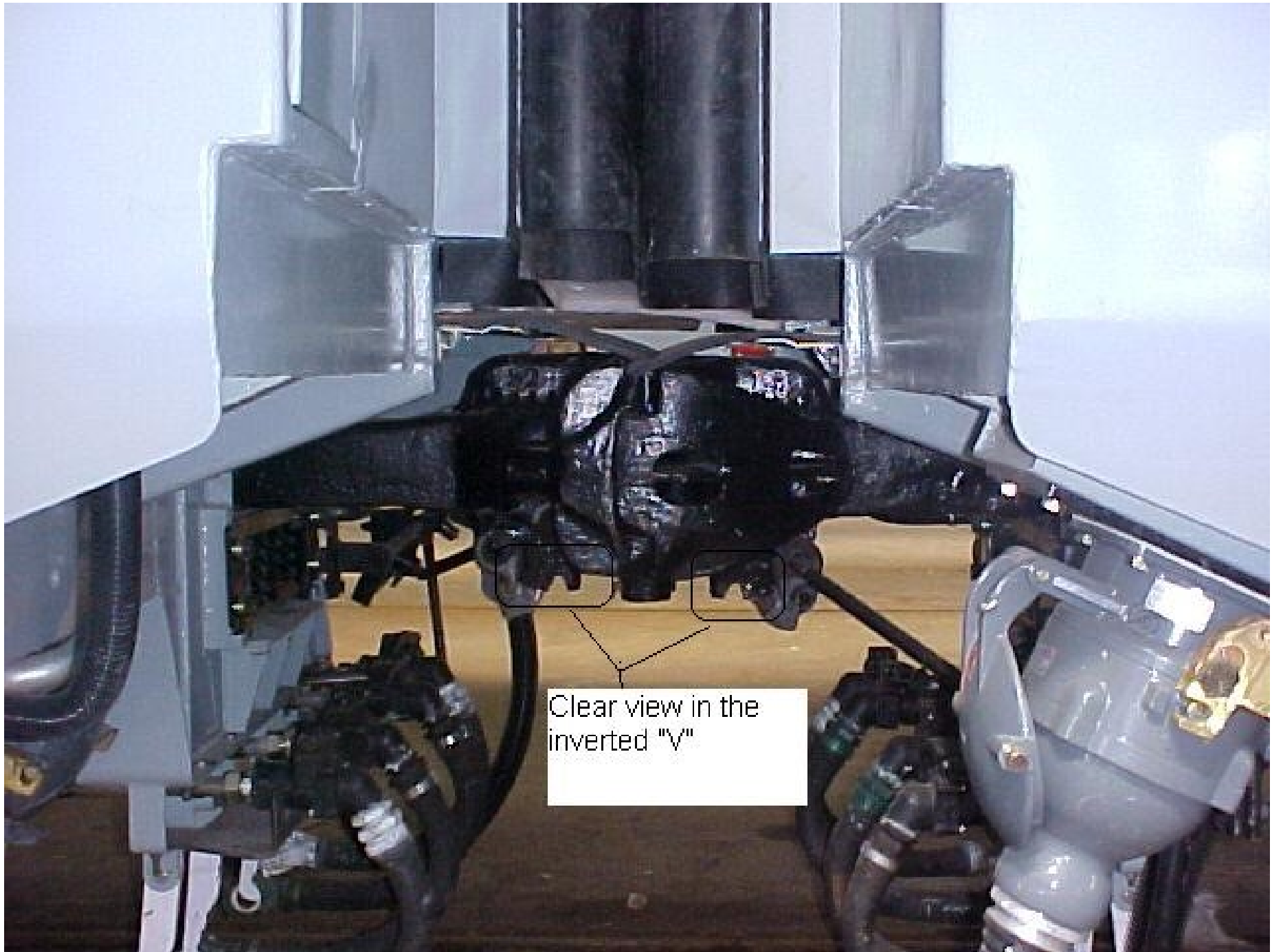


Rotary lock lifter
with double rib.



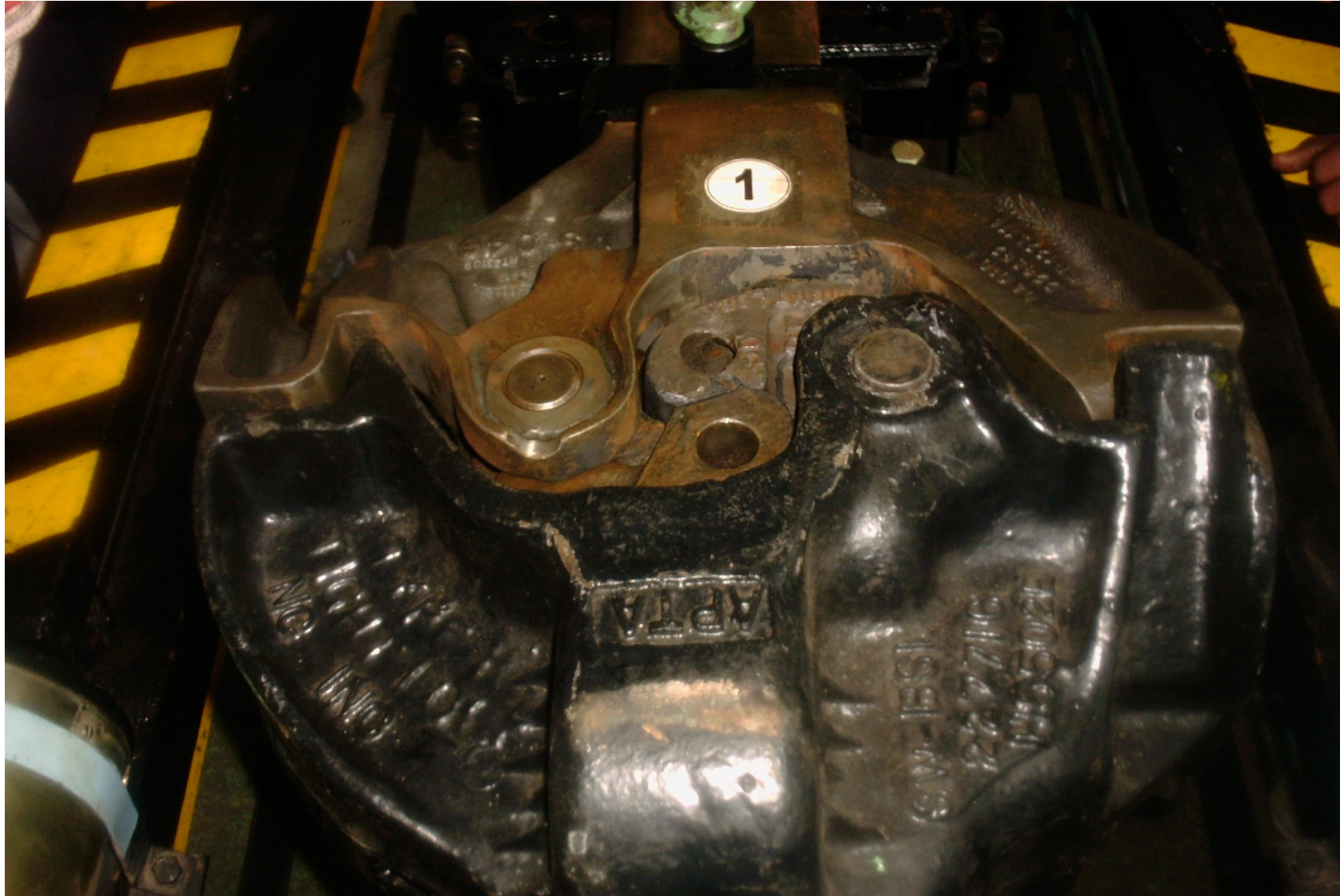






Clear view in the inverted "V"

AAR H type coupler in coupled condition



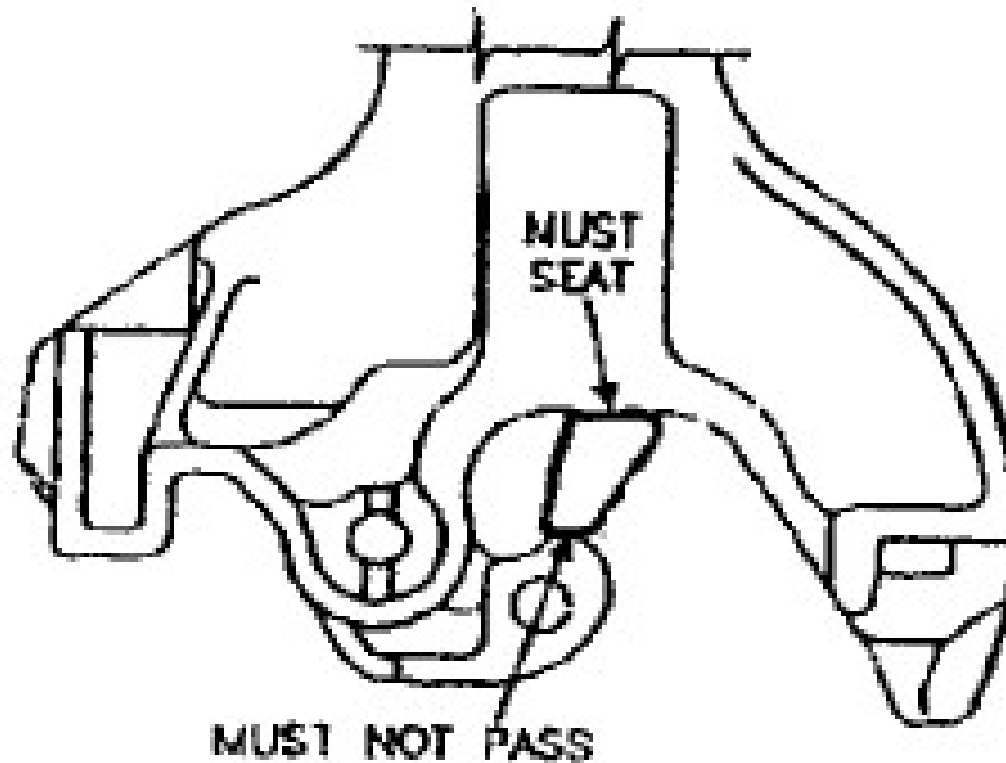
**Restrictor fitted
between Loco &
Coach to restrict
vertical
movement**





Jaw gap test :

We check the contour of the coupler head assembly using “Condemning limit gauge



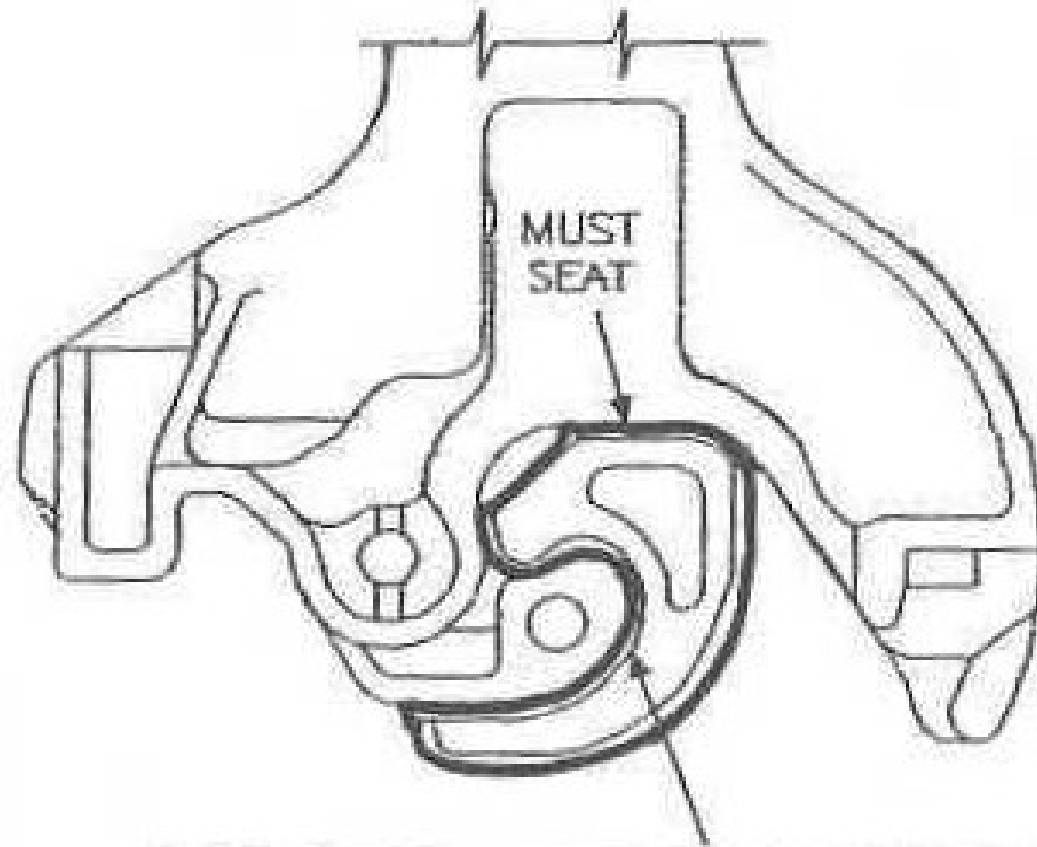
Knuckle contour (profile) check :

Check the contour of the knuckle using the “ **Contour maintenance Gauge** .

Shake the knuckle while passing the gauge.

This is to ensure that slack in the assembly is included in the profile.

If gauge does not pass, Knuckle and coupler head must be checked and replace it or lock to be modified per APTA standards.(American Public Transportation Association)

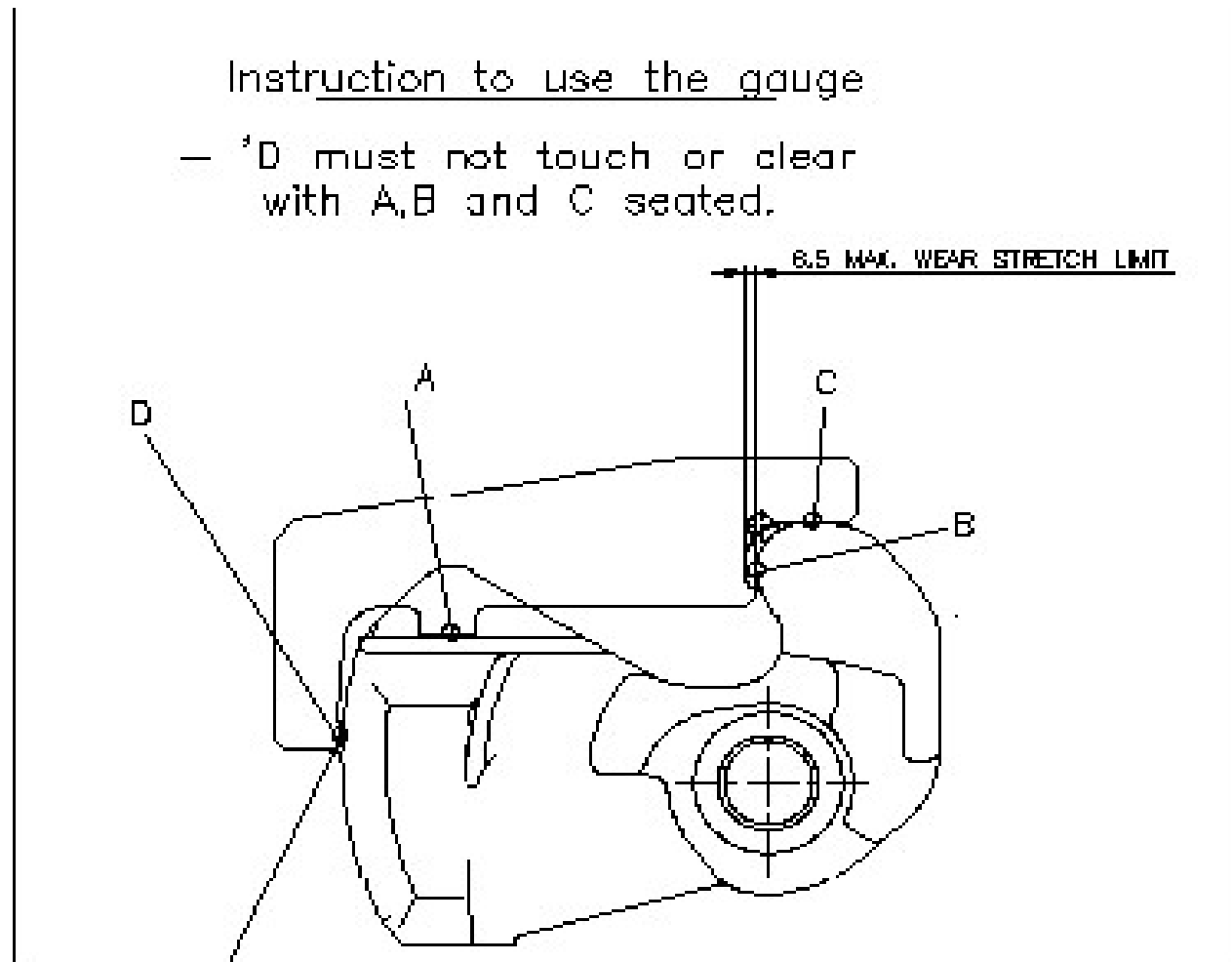


GAGE MUST PASS THROUGH CONTOUR
WITH KNUCKLE FULLY CLOSED AND
LOCKED.

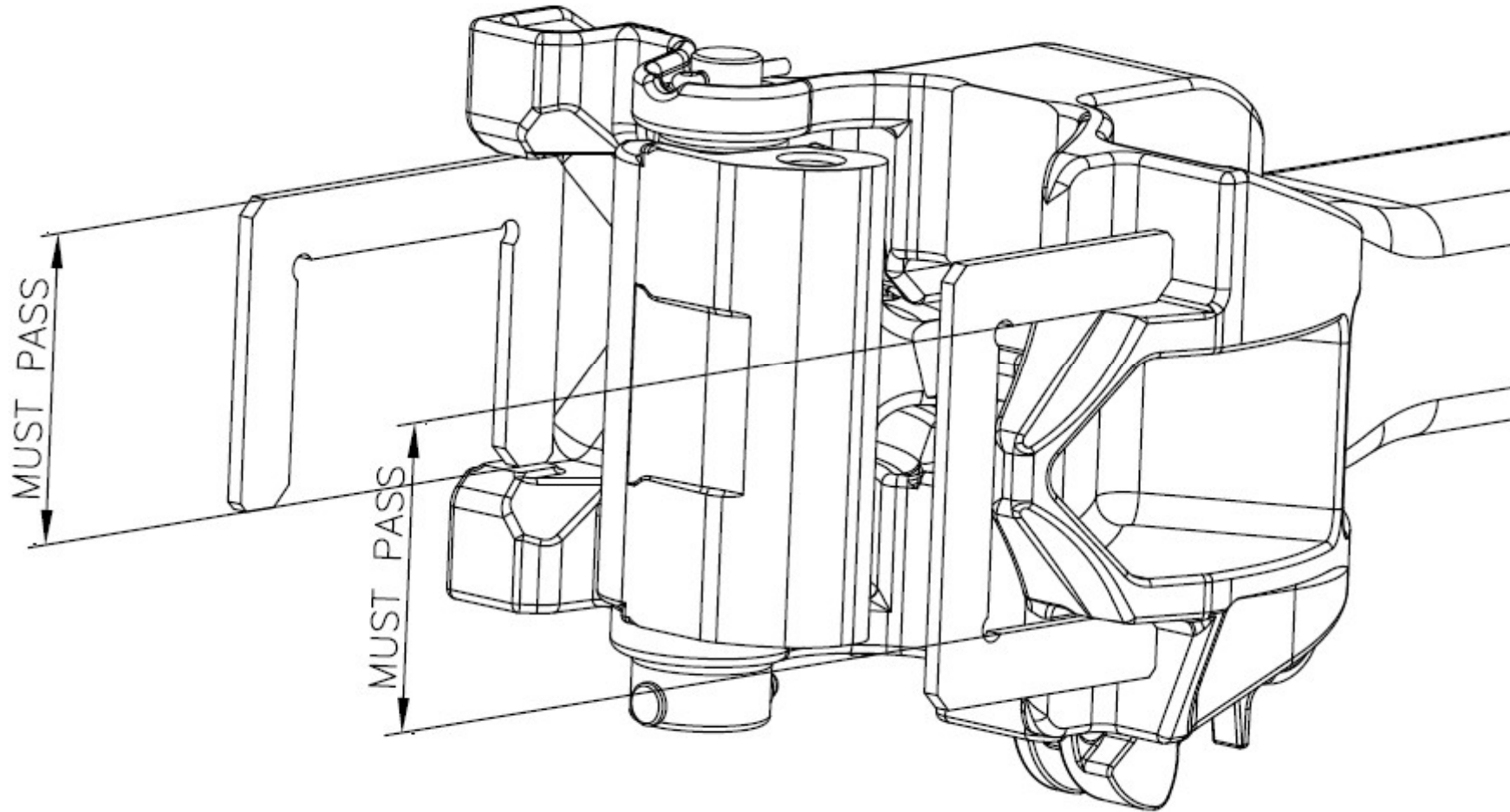
Profile Gauge

Knuckle nose wear and stretch limit gauge

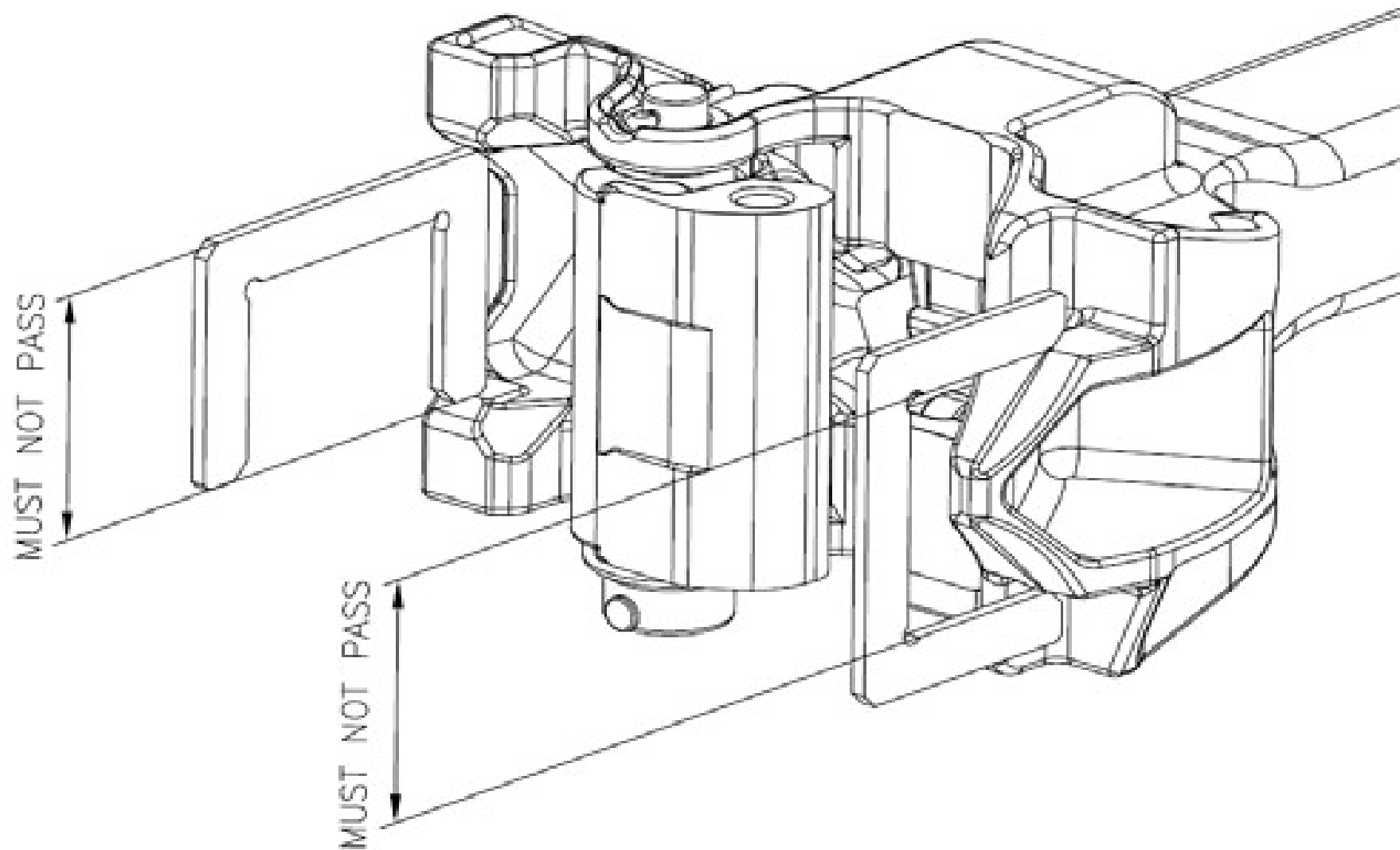
The permitted wear at the nose side is 6.5 mm.



Vertical height aligning wing pocket and guard arm gauge (GO)

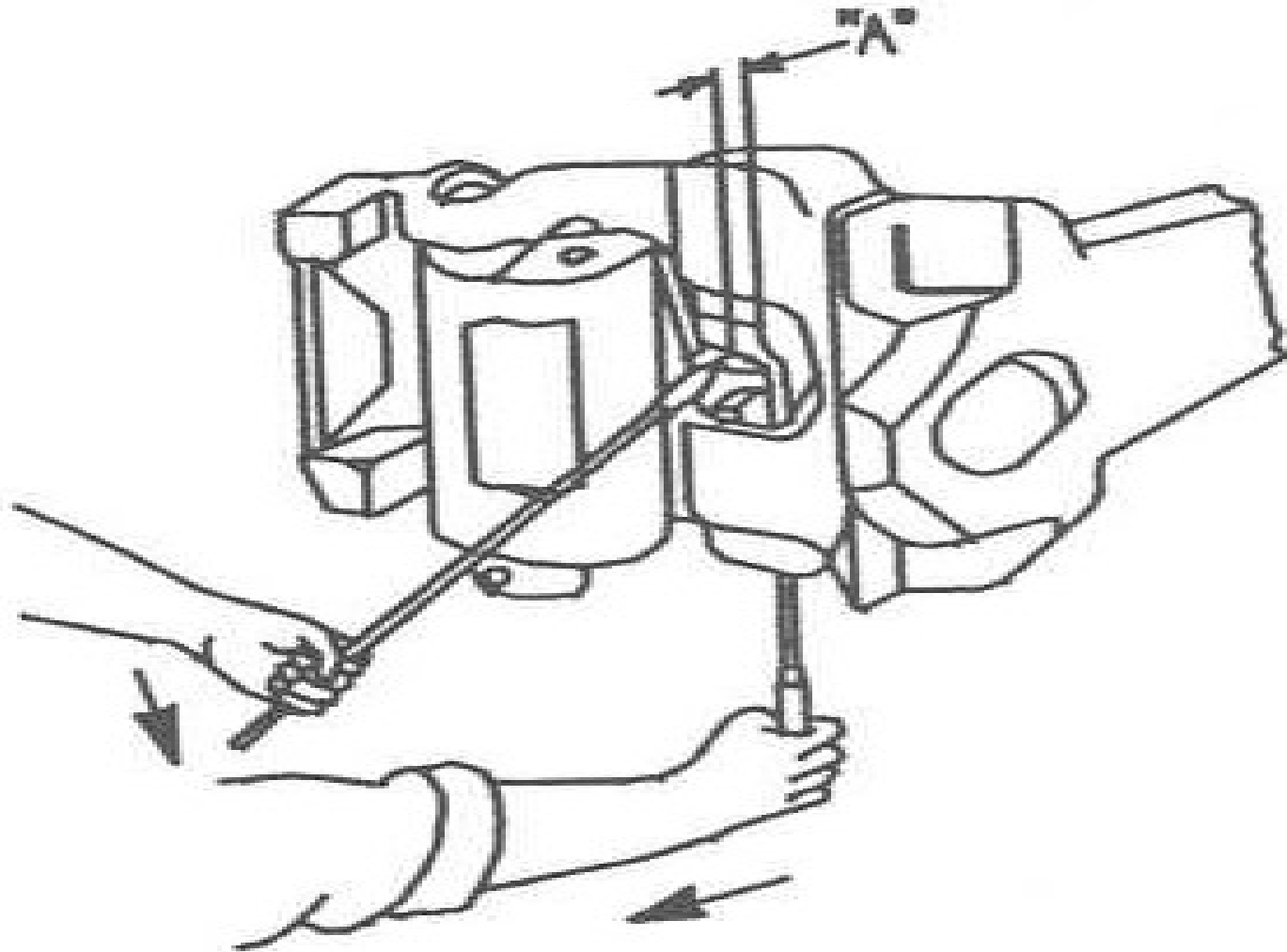


Vertical height condemning limit aligning wing pocket and guard arm gauge (NO GO)

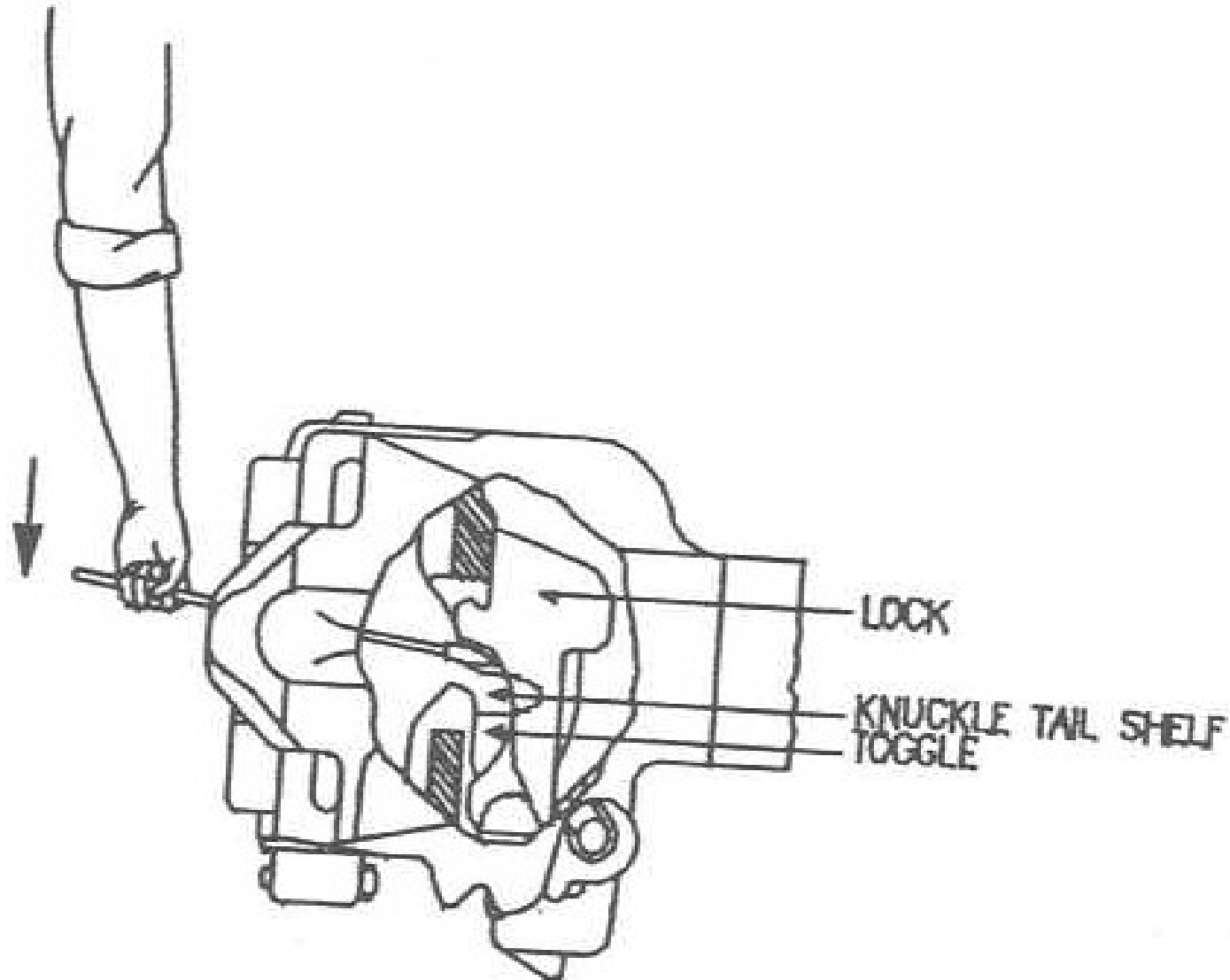


Anti creep check- Determine anti-creep protection and ensure it complies with specifications.

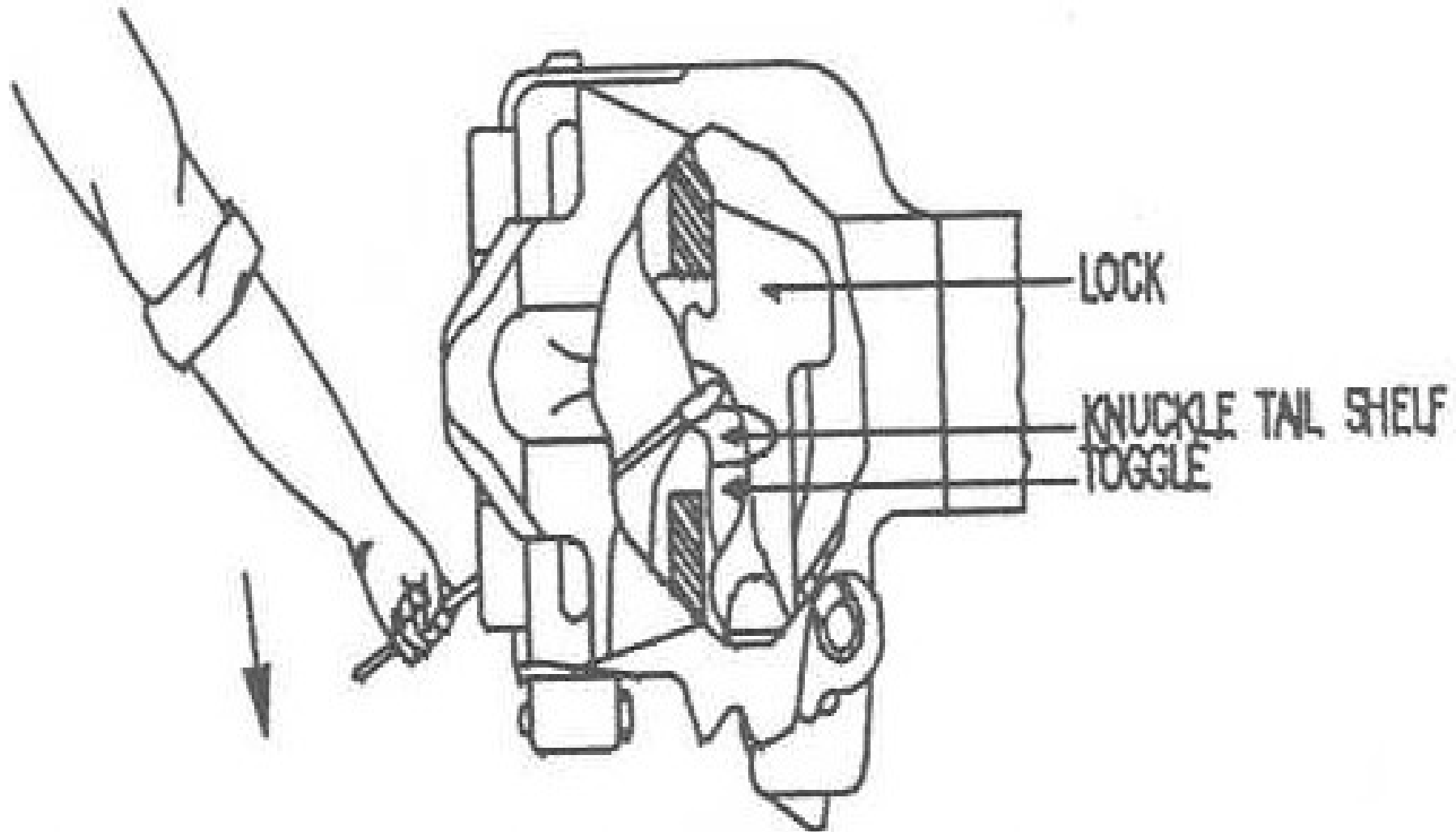
Step 1: Inspection for anti-creep protection is made through the front of the coupler.



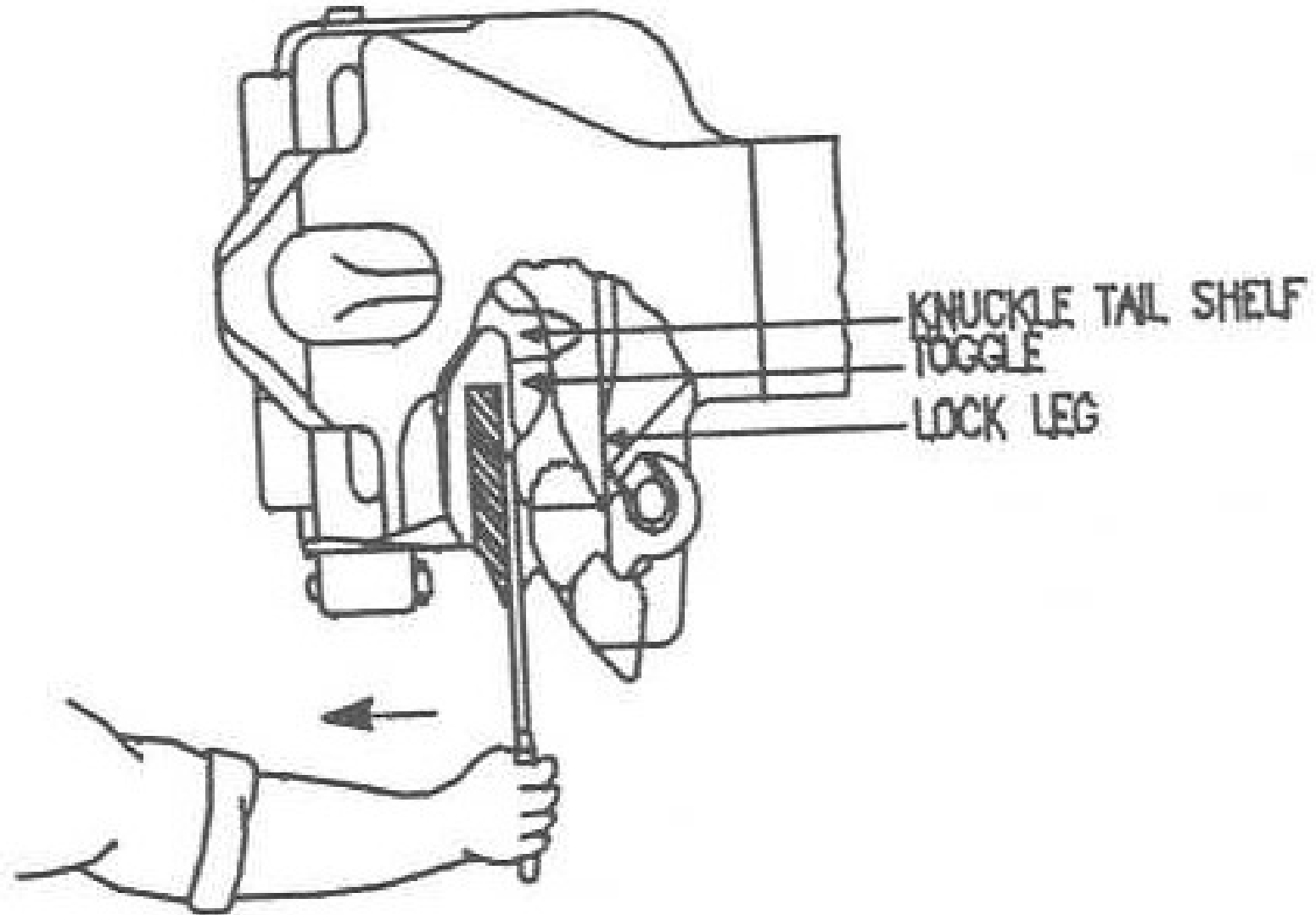
Step 2: With the coupler in the locked position insert a pry bar through the front of the coupler between the knuckle tail shelf and lock, forcing lock upward.



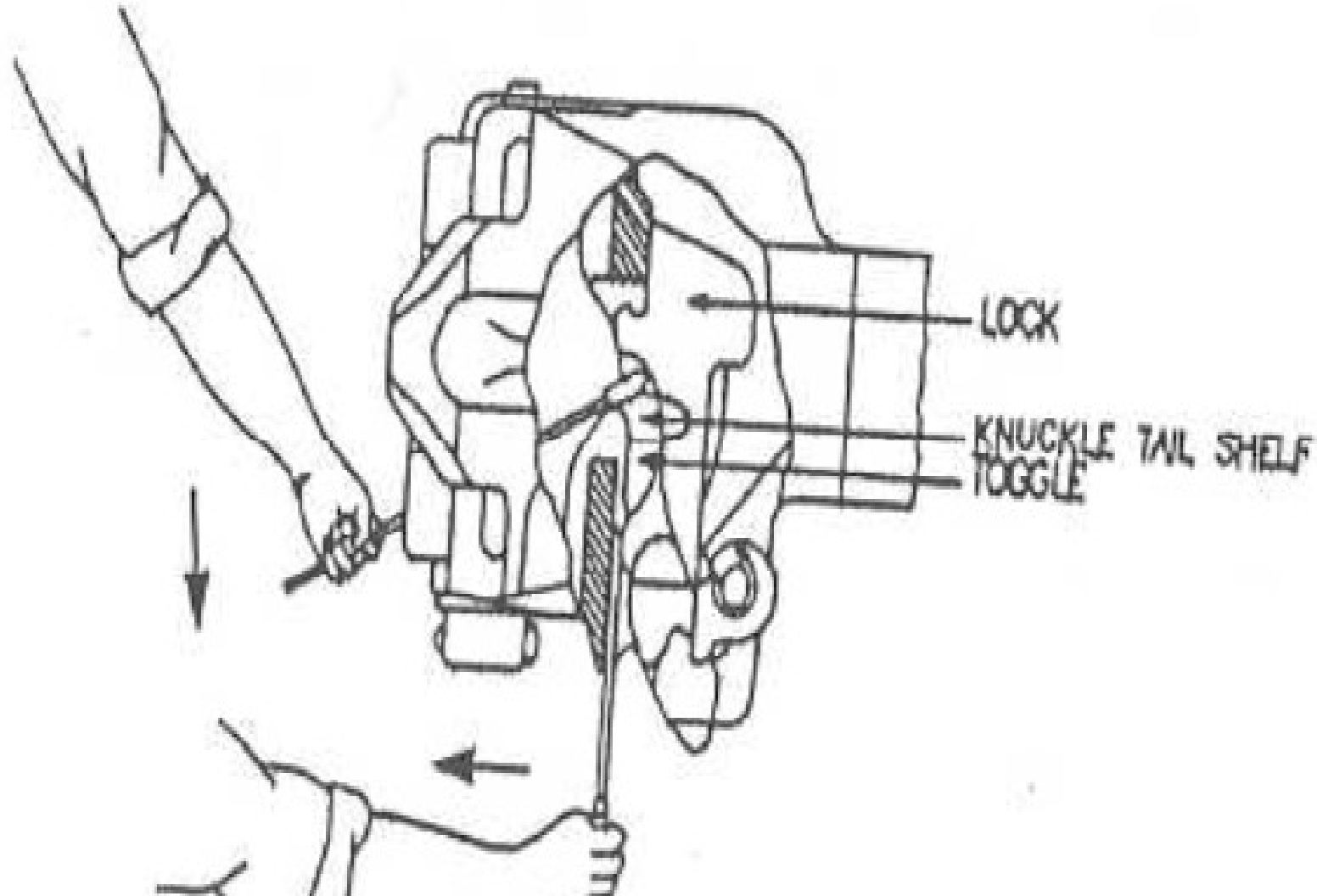
Step 3: Forcing the lock upward as far as it will go engages the top of the toggle with the bottom of the knuckle tail shelf.



Step 4: Insert a pry bar between the leg of the lock and the front of the lock hole. Pull toward the front of the coupler to force the lock leg rearward.



Step 5: If the front edge of the toggle is $1/8''$ or more forward of the rear corner of the knuckle tail shelf the anti-creep is unacceptable, replace lock lift assembly.



Schedule and Maintenance Frequency

S.No.	Position of Coupler	CBC Schedule	LHB Coach	ICF Rajdhani/ Shatabdi	ICF Mail/ Exp.
01.	Coupled (in rake formation)	I	Each Trip	Each Trip	Each Trip
02.	Uncoupled (Single coach)	II	18 months	IOH	“C” schedule or IOH
03.	Dismounted from coach and disassembled	III	6 years	6 years	6 years

Maintenance Schedule and Action

CBC Schedule –I

- Visual inspection of coupler head for damage
- Visual inspection of knuckle for damage.
- Checking of coupler operating mechanism for damage, loose bolts etc.
- Greasing of glide rod of coupler operating mechanism.
- Checking of telltale recess for ensuring proper coupling.

- Inspection of coupler carrier/ supporting device and its springs for cracks and breakage.
- Inspection of loose / broke / missing nuts and bolts of coupler pin support plate and draft gear support plate.

CBC Schedule – II

- All items of Schedule- I
- Inspection of coupler assembly by gauges-
 - ✓ Checking of knuckle contour by contour maintenance gauge
 - ✓ Checking of free slack in the contour by contour condemning limit gauge
 - ✓ Checking of distortion of aligning wing pocket and guard arm by aligning wing limit gauge and guard arm distortion gauge.

- ✓ Checking of vertical height of aligning wing pocket and guard arm by vertical height aligning wing pocket and guard arm gauge.
- ✓ Wear of aligning wing pocket and guard arm to be checked by vertical height condemning limit aligning wing pocket and guard arm gauge.
- ✓ Checking of knuckle nose wear and stretch limit by knuckle nose wear and stretch limit gauge.

- Inspection of anti-creep protection
- Measurement of coupler height 1105 mm from rail level- Reference point – vertical centre of knuckle
- Checking of proper locking
- Cleaning of CBCs
- Checking of functional operation of coupler
- Checking of operation of coupler operating mechanism

CBC Schedule- III

- All items of schedule I & II
- All parts of CBC and allied accessories to be dismantled as per removal procedure and to be cleaned and overhauled as described in maintenance manual,
- Visual inspection be made for cracks, damage, distortions etc.
- Checking wear of toggle, lock lift lever etc.

- Checking of wear of coupler shank wear plate.
- Checking of excessive wear of lock of knuckle, pivot pin of knuckle and knuckle support pin.
- Damage of draft gear rubber pads and its checking for pre- compression value.
- Final assembly be made as per procedure.
- Checking of functional operation of coupler.

THANKS