

TRAIN PARTING FREIGHT STOCK

STC/SPJ

TRAIN PARTING

Train parting is unforeseen division of a train into two or more portions while the train is on run or just about to move. Train Parting is a common unusual occurrence affecting train movement adversely. Freight train operation by crew and maintenance of wagons are the two major activities involved in train parting.

TYPES OF TRAIN PARTING

1. **Vertical Parting:-** Vertical parting takes place due to excessive CBC height variation. The main reasons for variation in CBC height are;
 - a. Loose/ low rail joints
 - b. Mud pumping under the rail joints
 - c. CBC drooping– excessive wear and tear of coupler shanks and striker casting/ bearing piece.
 - d. Excessive over loading in the wagons.

2. Horizontal Parting :- Horizontal train parting takes place due to following reasons:

- a. Uncoupling of CBC.
- b. Breakage/ wear of CBC components due to inherent defects.
- c. Failure of draft gear.
- d. Bad engineman ship

COMMON CAUSES OF TRAIN PARTING

- i. **Lock not properly engaged** – In most of the cases, the lock does not drop down to the full locked position inside the coupler head. This may result in slipping up of the lock during run causing uncoupling.
- ii. **Ineffective anti-creep device** – Lock may slip up due to jerking and jolting during run if the anti creep feature is not effective.

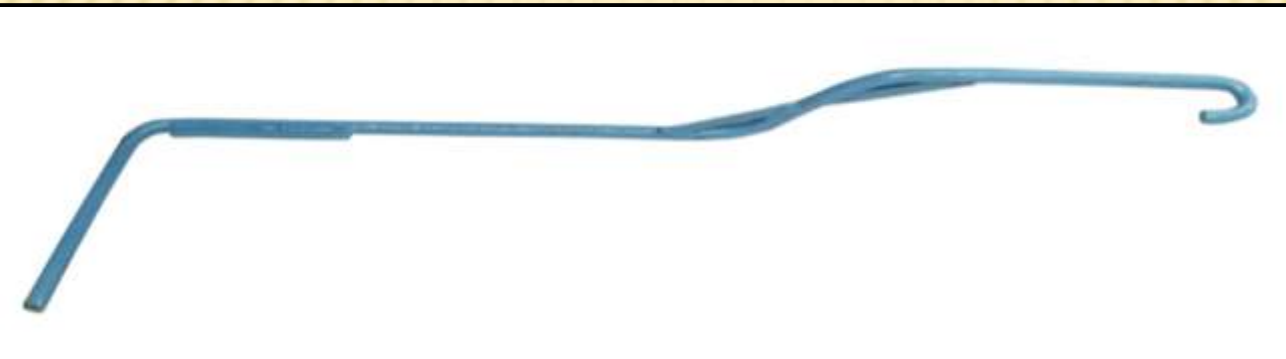
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- iii. **Operating handle dropping on run** - This is caused by breakage of supporting bracket resulting in operating handle falling down on run and hitting the ballast. This tends to turn the handle leading to lifting of the lock piece and uncoupling.
 - iv. **Excessive play between anti-rotation lug and bearing piece slot** : Due to excessive play between anti-rotation lug and bearing piece slot, operating handle can operate on run due to jerks and can cause uncoupling. Anti rotation lug is made out of square cross section MS bar with standard dimensions of 16 mm x 16 mm and slot width in bearing piece of 17.5 mm.

- v. **Unauthorized tempering with operating handle –**
This is believed to be a common incidence by many Railways. Since, uncoupling lever is situated alongside the wagon and is easily accessible, it is easily prone to unauthorized and mischievous manipulation.
- vi. **Uncoupling due to vertical slipping out of knuckle -**
This may occur due to abnormal relative vertical movement between the two coupler heads causing slippage of one knuckle out of the other. This situation is very unlikely to arise but there may be a possibility in the event of combination of number of adverse factors like maximum difference in coupler heights & unevenness on rail joints.

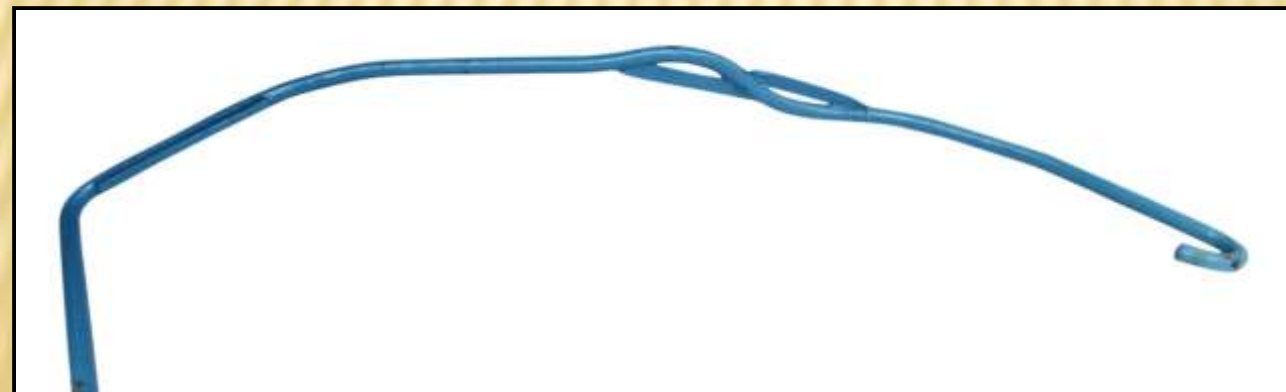
PREVENTING CBC UNCOUPLING IN FREIGHT STOCK DURING MAINTENANCE

1. Operating Handle :

- i. The correct geometry of the operating handle is very essential. The operating handle should not be bent.



Standard operating handle



Bent operating handle

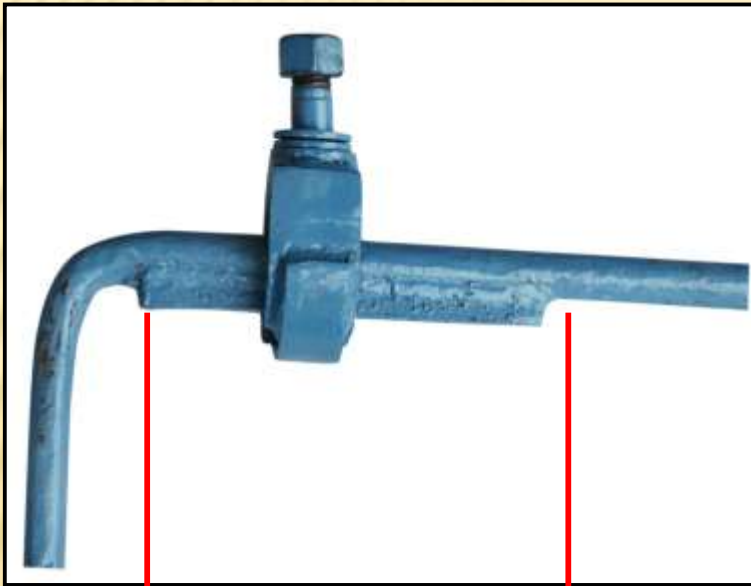
(ii) The length of the operating handle are different for different types of wagons. The length of the operating handle wagon wise are given as under.

S.N o.	Type of wagon	Standard length in MM
1	BOXN/BCN	1414
2	BLCA/BLCB	1063
3.	BTPN	1414
4	BVZI	1414
5	BVZC	1450

2. Anti Rotation Lug:

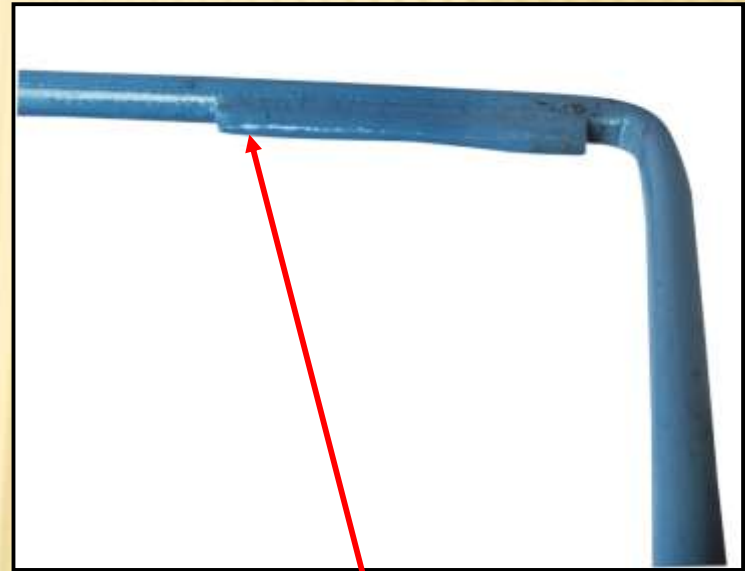
- (i) There should be no excessive wear in **Anti rotation lug**. The lug length and all the dimensions of the lugs are very important as there should not be any excessive play between the bearing piece and anti rotation lug. The standard section of the anti rotation lug is **16 mm x 16 mm**.
- (ii) The circular section on anti rotation lug should not be permitted at all.

Photograph of new rotation lug



210 mm

Photograph of circular section of rotation lug

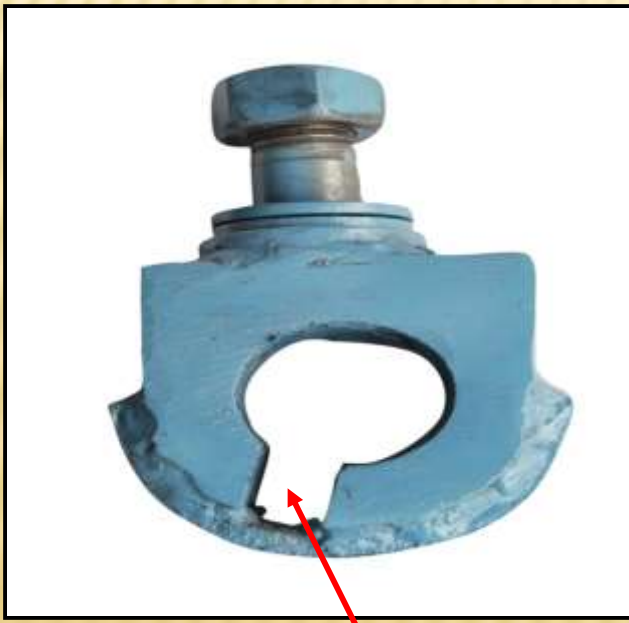


Circular section of Anti Rotation lug

3. Bearing Piece Slot:

- (i) There should not be any excessive wear in the **bearing piece slot**. The standard width of the slot is 17.5 mm.
- (ii) The bearing piece pin should be properly welded to hanger bracket.

Standard slot width



Standard width 17.5 mm

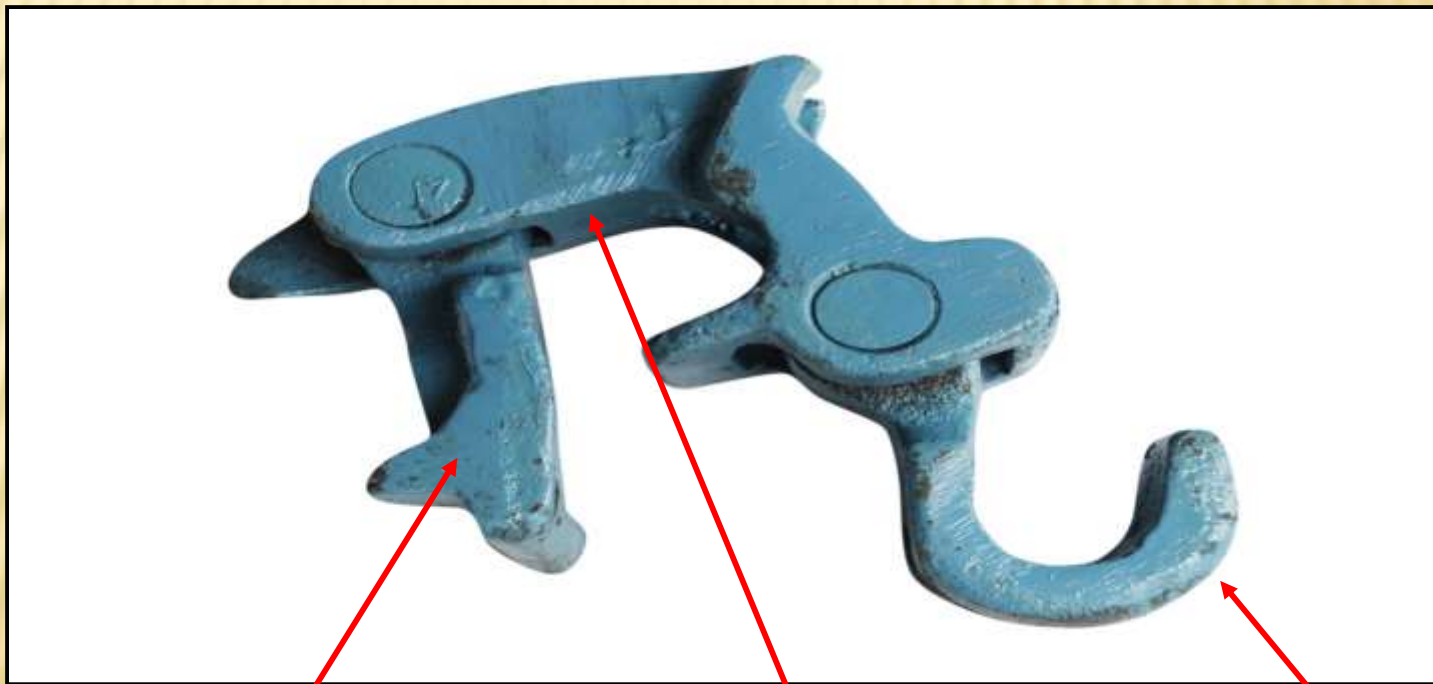
Worn out slot width



Worn out slot width

4. Articulated Lock Lift Assembly:

- i. The components of Lock Lift Assembly such as **toggle**, **lever connector** and **lever hook** should be properly riveted.



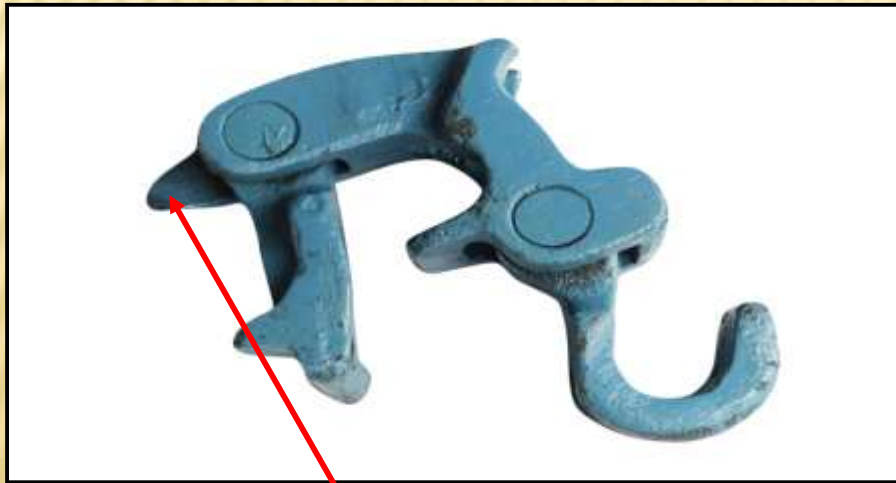
Toggle

Lever connector

Lever hook

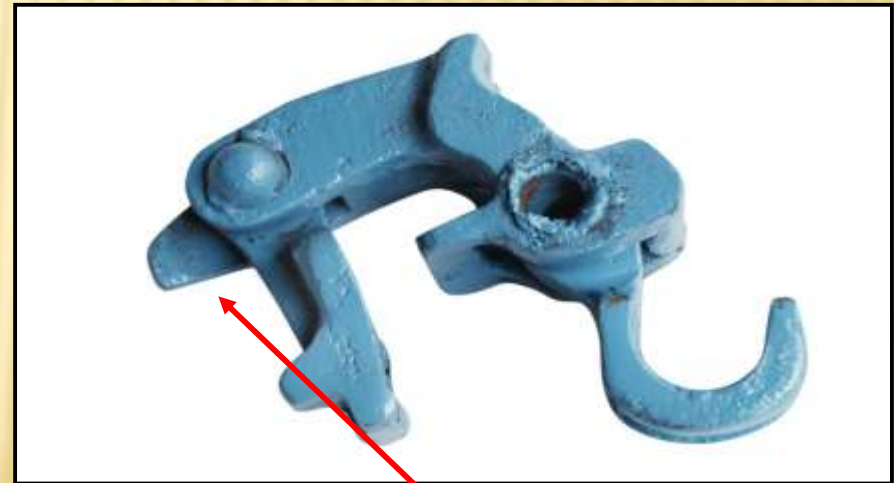
(ii) Ensure that anti creep lug of the lever connector is not excessively worn out. There is no gauge specified for measuring the wear. However it should be checked with worn sample which can serve as a comparator.

Auxiliary anti creep lug



Anti creep lug

Worn out sample of anti creep



Worn out Anti creep lug

(iii) The distance between the bottom of the CBC head and auxiliary anti creep lug should not be excessive. The standard distance is not less than 19 mm.

Distance between the bottom of the CBC head and auxiliary anti creep lug



19 mm

5. Knuckles

Ensure that the knuckles are not excessively worn out. The knuckle should be checked with contour gauge No.3. There is no gauge specified for measuring the surface wear in the location of CBC Lock seating area. The standard width at the tip is 18 mm. If the wear is more than 8.5 mm, knuckle should be rejected. The knuckle pin should be secured properly from both top and bottom by welding APD.

Standard width 18MM & wear limit 8.5 mm at tip



Nose of knuckle 18 mm when new

Use of knuckle stretch gauge



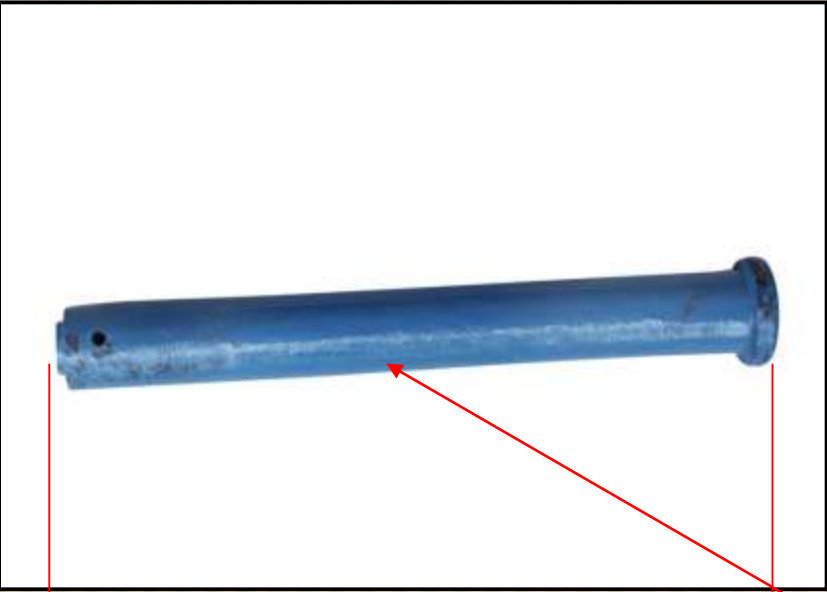
Knuckle Nose Wear –
Limit: 9.5 mm for Replacement

correctly secured knuckle pin



Knuckle pin
secured correctly

Knuckle pin should be standard and straight



Non-standard and bent knuckle pin



342 mm

Dia 41.28 mm

6. CBC Lock

Most of the uncoupling cases are taking place because of the worn out lock piece. The wears are taking place on the side walls, matting walls of the coupler body and bottom surface matting with the knuckles. The checking of the wears should be done with standard gauge. However, worn out lock should be kept as a comparator for ready reference for rejecting the material.

new knuckle face & lock piece



Gauging of knuckle face with the help of Gauge



7. Coupler Body

(i) The Guard arm expansion should be checked with contour gauge (Go-No-go gauge).

Correct method of gauging



Wrong practice of gauging



(ii).The condition of the shank wear plate should be checked. The wear should not be more than 5 mm., new thickness is 6 mm.

new shank wear plate

Condemning limit of shank wear plate



(iii) Variation between the CBC heights of adjacent wagons should be within the permissible limit of 75 mm.

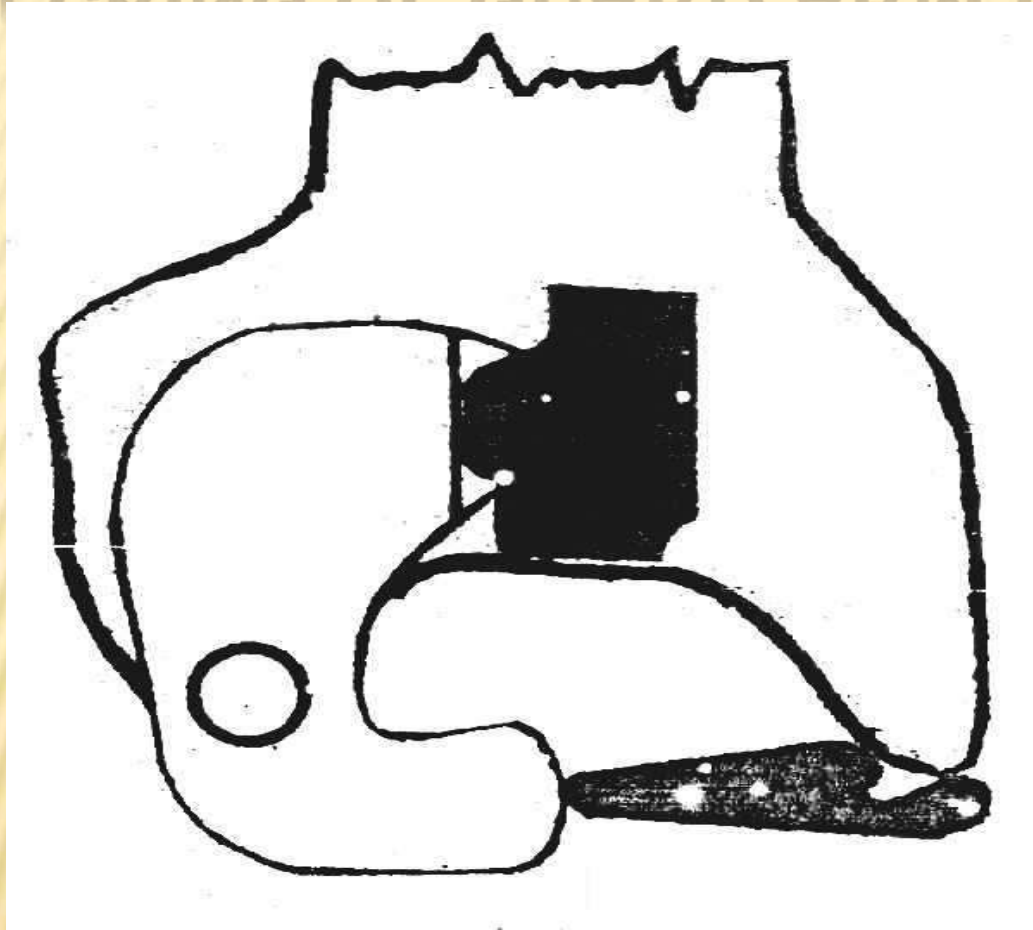


CBC height
variation not more
than 75 mm

MEASURING GAUGES & THEIR APPLICATIONS:

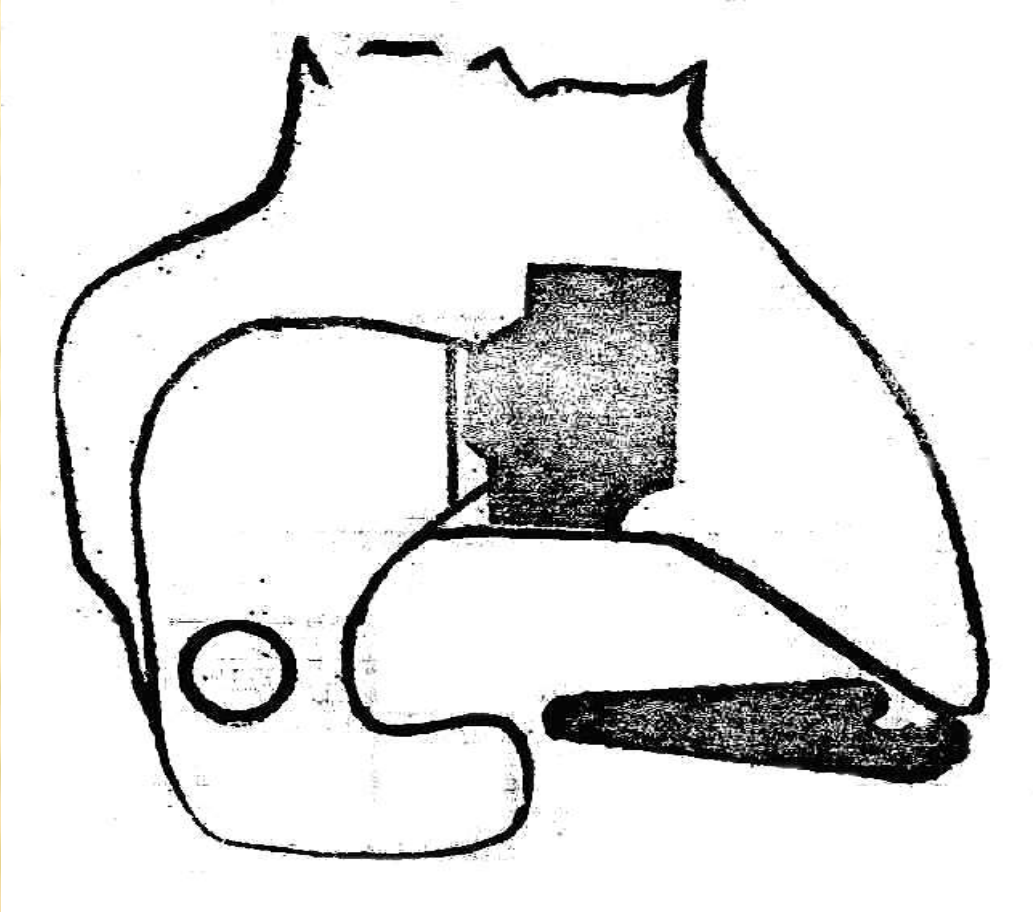
Reduction in train parting cases by adopting good maintenance practices by C&W supervisors and Technicians while examining the wagons in the yards, during routine overhauling of wagons in depots and during periodical overhauling of wagons in workshops. The adequate material input and proper measurement and gauging of worn out/defective components of CBC during ROH and POH are very important for reducing the parting cases.

CHECKING OF GUARD ARM EXPANSION



GAUGE NO. 1

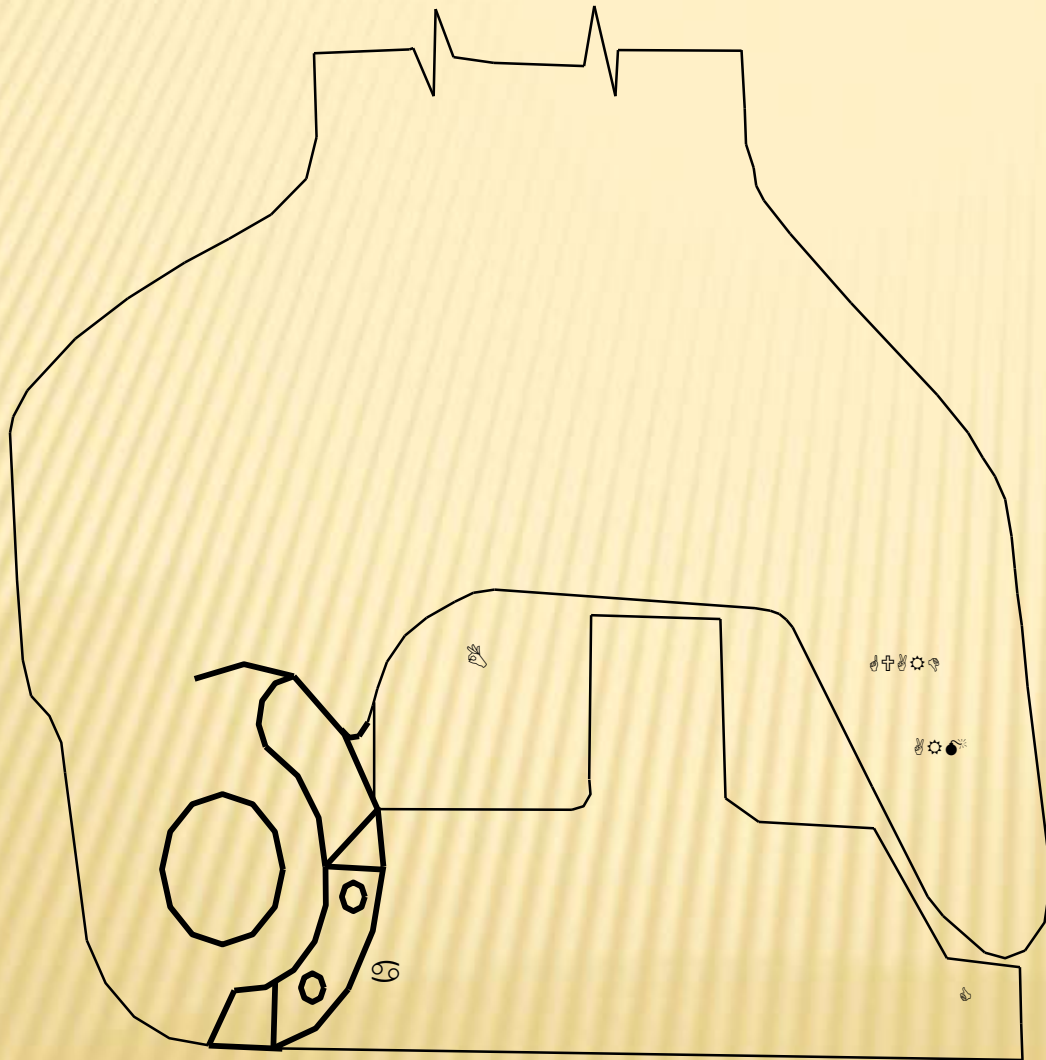
- Apply the gauge no. 1.
- If gauge no. 1 passes, renew
 - 1) Knuckle
 - 2) Knuckle pin
 - 3) Lock



GAUGE NO. 2

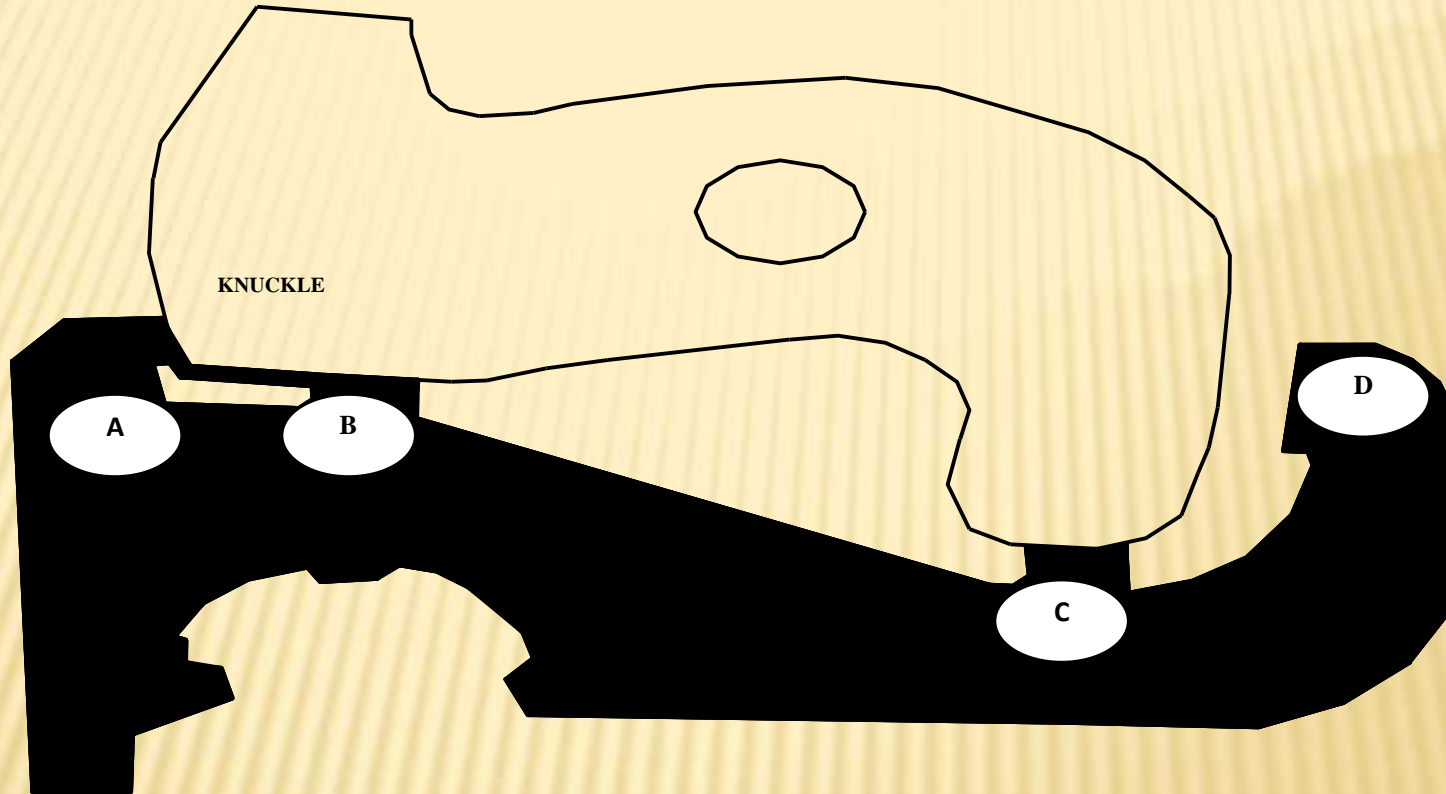
- After replacing the above, if gauge no. 2 passes, renew the coupler body.
- Reason - Guard arm expanded.**

CHECKING OF GUARD ARM DISTORTION

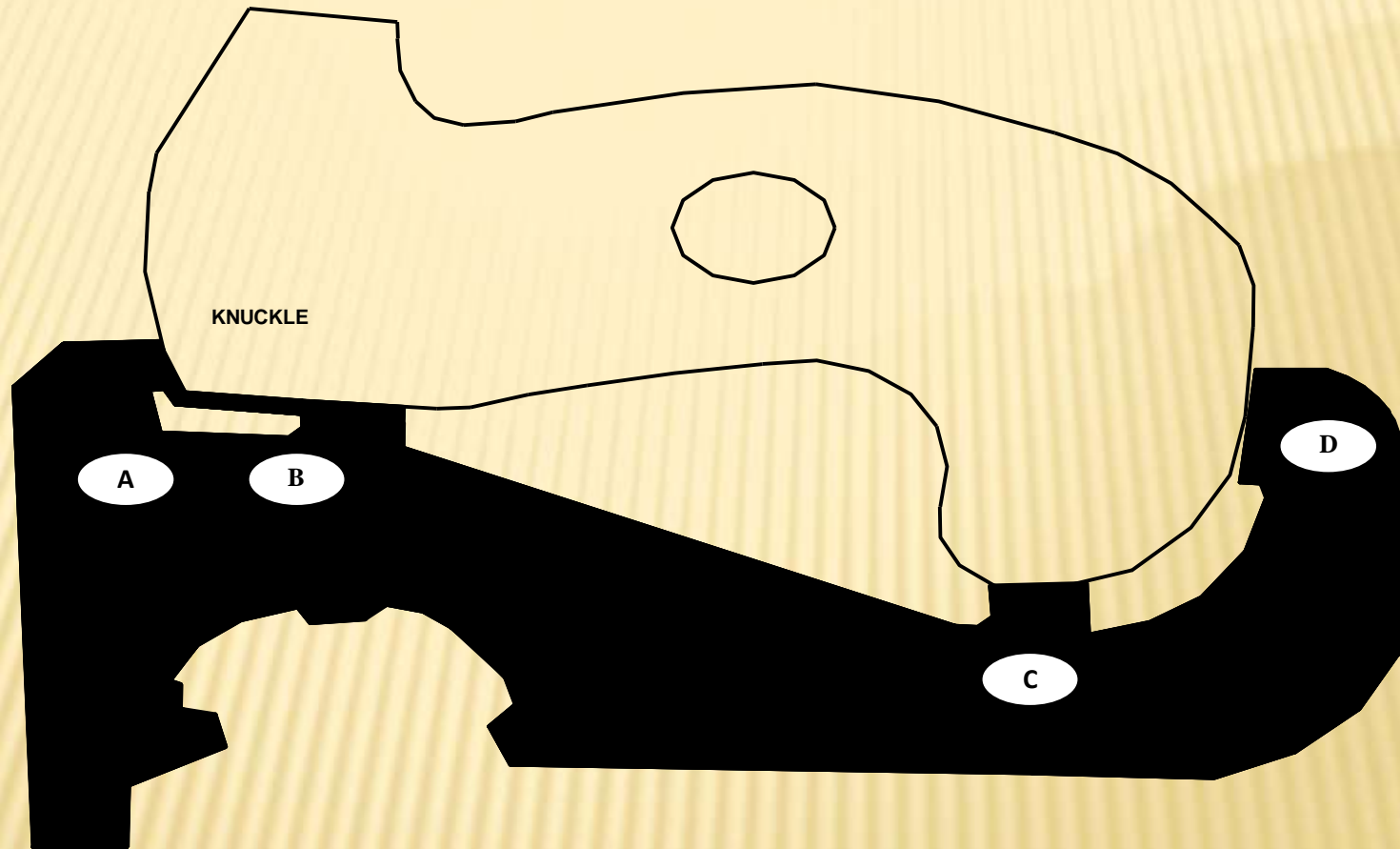


- Apply the gauge no. 3. When 'A' is in contact, if 'B' or 'C' touches, renew the coupler body.
- Reason : Guard arm distorted.**
- Note: If guard arm distortion is more than 4.8 mm, it should be closed into normal.

CHECKING OF STRETCHED KNUCKLE

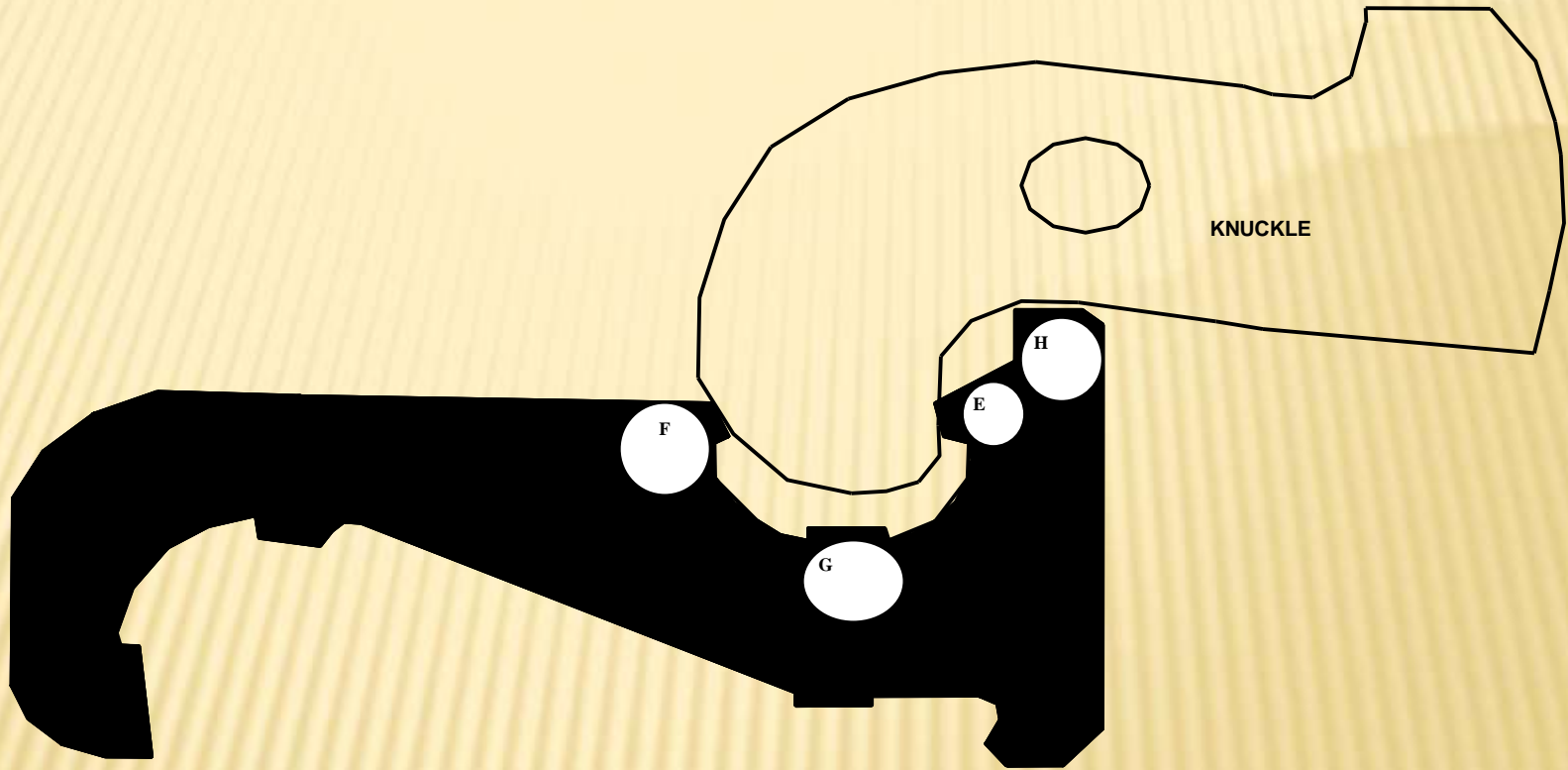


- Apply the gauge no. 4.
- When A,B,C are in contact, there must be a clear gap at 'D'

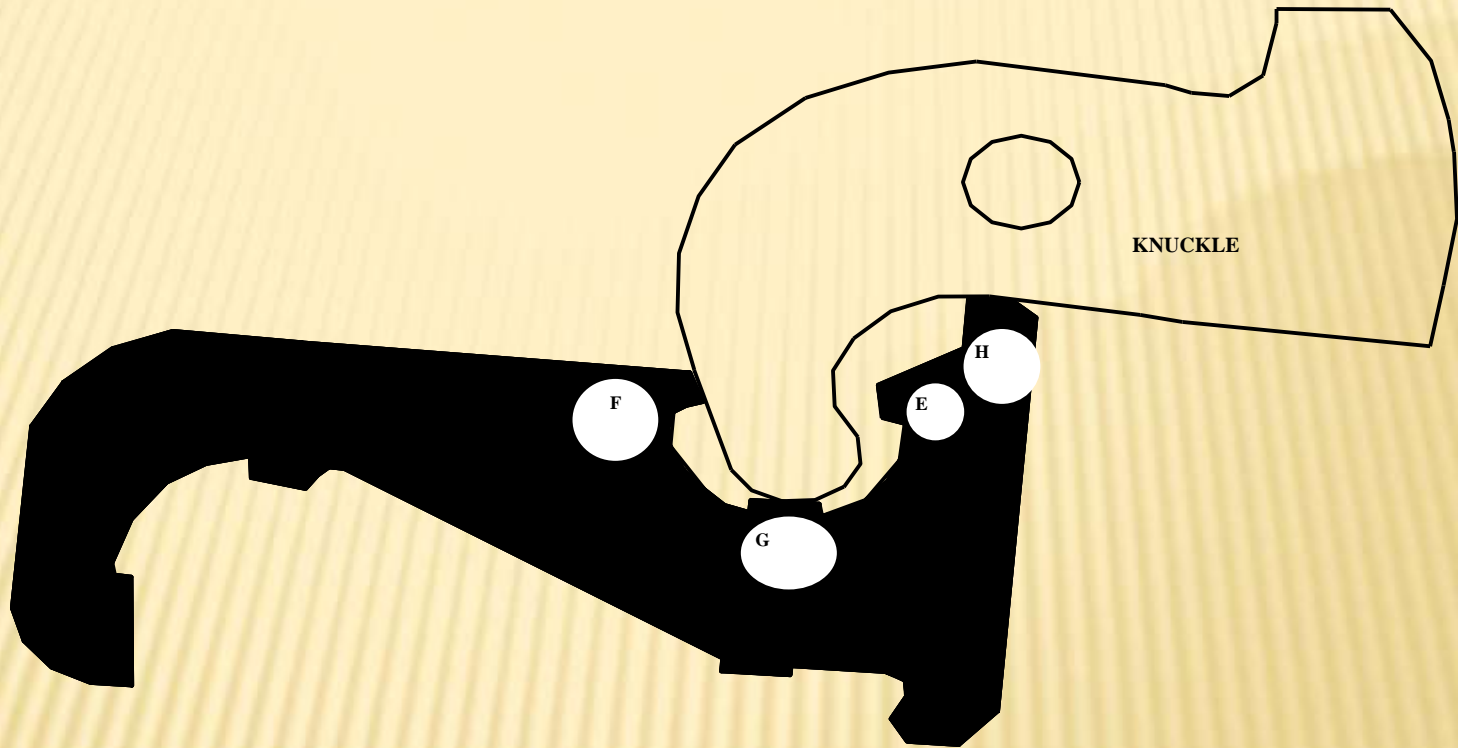


- If 'D' touches, renew the knuckle.
- **Reason – Knuckle is stretched.**

CHECKING THE KNUCKLE NOSE WEAR

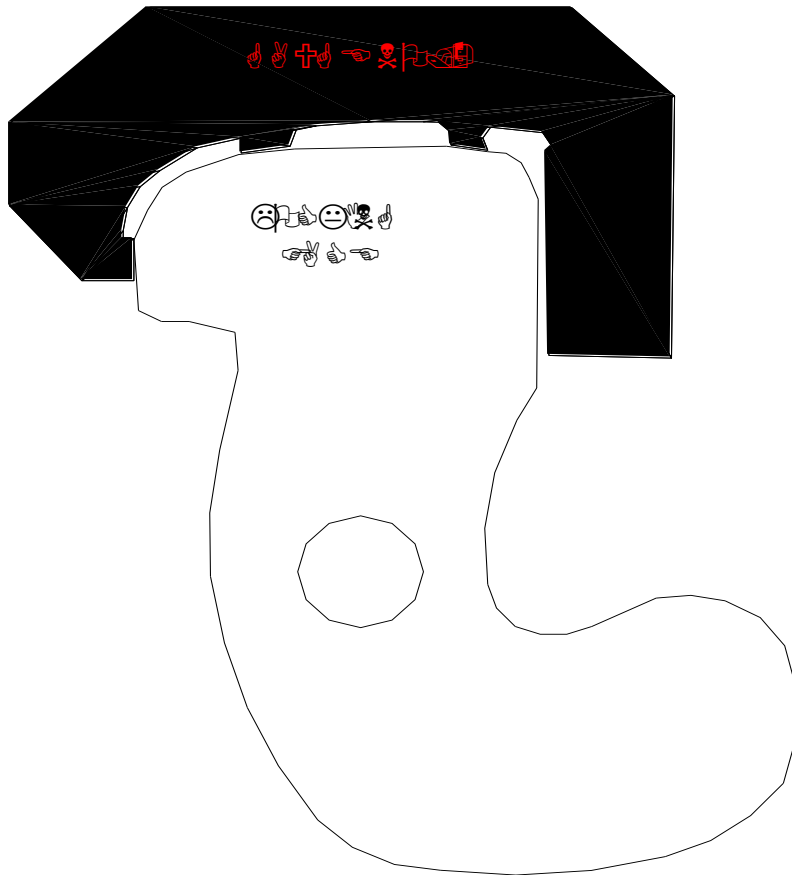


- Apply the gauge no. 4 (alliance-II) as shown above.
- When E, F, G are in contact, 'E' must not pass.



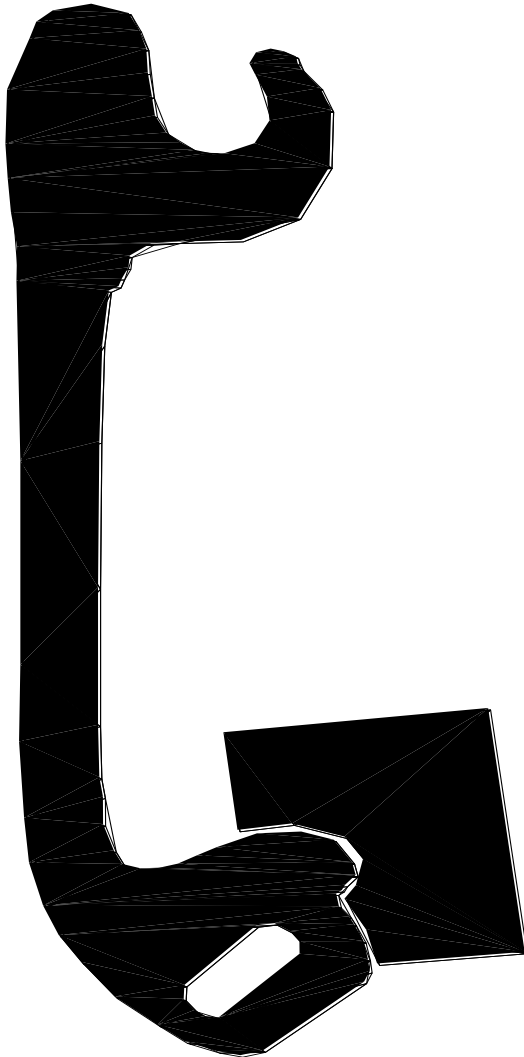
- If 'E' passes, renew the knuckle.
- **Reason – Excessive knuckle nose wear.**

CHECKING THE KNUCKLE LOCKING FACE



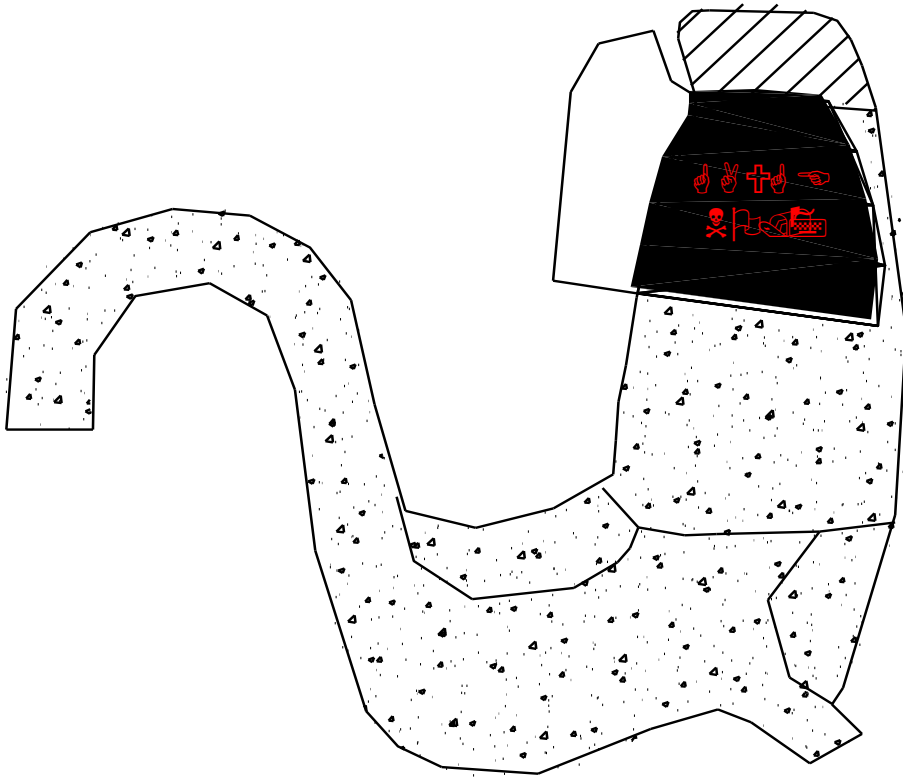
- Apply the gauge no. 5.
- The gauge must not pass through vertically.
- If passes, renew the knuckle .
- Reason : Excessive wear at locking face of the Knuckle.**

CHECKING OF ANTI-CREEP LEDGE OF BOTTOM LIFTER



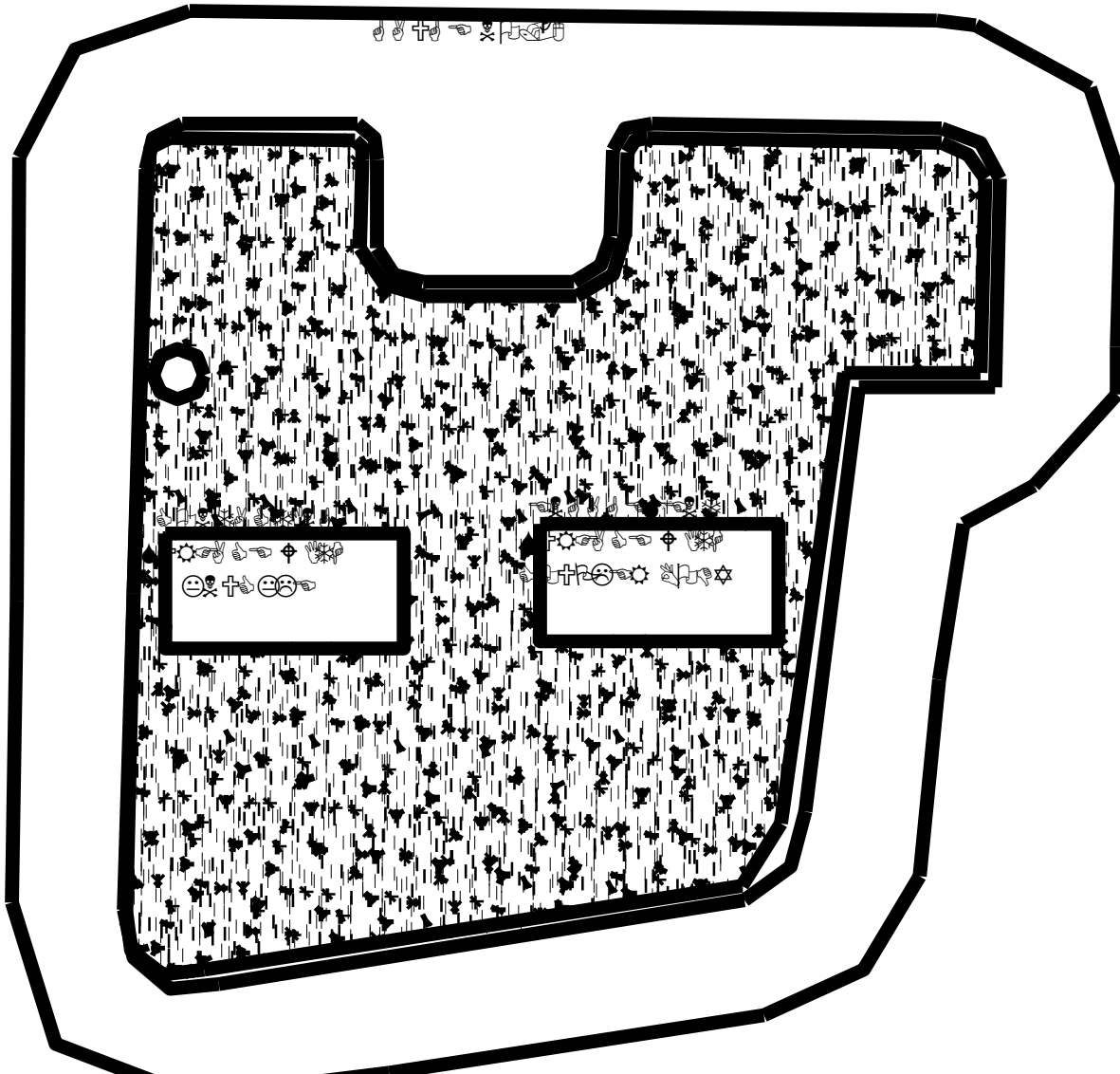
- Apply the gauge no. 6.
- There should not be any clearance between gauge and bottom lifter.
- If there is a gap, renew the bottom lifter.
- Reason : Ineffective anti -creep**

CHECKING OF ANTI-CREEP LUG OF ROTARY LEVER



- Apply the gauge no. 7.
- If gauge is not mating properly with the anti – creep lug (bridge) of rotary lever , renew the rotary lever.
- Reason : Ineffective anti -creep**

CHECKING OF LOCK WEAR



- Apply the gauge no. 8 as shown above.
- When the surface 'A' is in contact, if the gap is more than 3.2 mm at 'B' , renew the lock.
- Reason : There is a combined wear of lock at knuckle contacting surface & engagement surface with coupler body.

STANDARD DIMENSIONS FOR CBC ITEMS OF WAGONS

Sr. No.	Description	Standard limit	Condemning / Rejection limit	Reference for Std. Drg.	Reference for Cond.
1	Height of knuckle pin	342 mm	N/R	Drg. No. 62724	-
2	Knuckle pin dia.	41.28 mm	38 mm	Drg. No. 62724	G-76, Appendix- 9, Sr. no. 3
3	Knuckle pin securing hole size	7 mm	6 mm	Drg. No. 62724	-
4	Distance between knuckle nose and Guard arm face – with gauge no.1 with gauge no.2	135 mm 130 mm	138 mm 133 mm	G-76, Appendix- 3A. G-76, Appendix- 3B.	- -
5	Shank wear limit (Shank depth 171 mm new)	6.5 mm	164.5 mm	WMM, page no. 14 of 46, Ch.-9	WMM, page no. 14 of 46, Ch.-9

Sr. No.	Description	Standard limit	Condemning / Rejection limit	Reference for Std. Drg.	Reference for Cond.
6	Shank plate	152x210x6 mm (6 mm thick)	5mm. thickness	Drg. No. 62724	G-76, Appendix- 9, Sr. no. 2
7	Knuckle expansion	292.47 mm	304.63 mm		
8	Knuckle original	286.34 mm	N/R		
9	Knuckle height	279.4 mm	N/R	Drg. No. 62724	-
10	Knuckle thickness	25.45 mm	15.95 mm		
11	Knuckle nose wear	18 mm	9.5 mm		G-76, Appendix- 9, Sr. no. 1
12	Knuckle pin washer outer dia.	51 mm	N/R	Drg. No. 62724	

Sr. No.	Description	Standard limit	Condemning / Rejection limit	Reference for Std. Drg.	Reference for Cond.
13	Knuckle pin washer thickness	5 mm	N/R	Drg. No. 62724	
14	Yoke pin height	315 mm	310 mm	Drg. No. 62724	-
15	Yoke pin Dia	88.9 mm	85.9 mm	Drg. No. 62724	WMM, page no. 16 of 46, Ch.-9
16	Yoke pin hole	Dia- 95.25 mm	98.25 mm	Drg. No. 62724	WMM, page no. 16 of 46, Ch.-9
17	Anti rotation lug	16x 16x210 mm	13 mm	Drg. No.	-
18	Bearing piece bolt dia	25 mm	27.5 mm	G-76, Appendix- 8 B	-

Sr. No.	Description	Standard limit	Condemning / Rejection limit	Reference for Std. Drg.	Reference for Cond.
19	Bearing piece slot	17.5 mm	19.5 mm	Drg. No. WD-00046-S-01	-
20	Operating rod dia	25 mm	N/R	Drg. No. WD-00046-S-01	-
21	Operating rod length	1414 mm	N/R	Drg. No. WD-00046-S-01	-
22	Bent portion of operating handle	400 mm.	N/R		-
23	Lock lift rivet length	49 mm	N/R	Drg. No. 62724	-
24	Lock lift rivet dia.	17.5 mm	18.5 mm	Drg. No. 62724	-

Sr. No.	Description	Standard limit	Condemning / Rejection limit	Reference for Std. Drg.	Reference for Cond.
25	Lock lift lever rivet length	76 mm	N/R	Drg. No. 62724	-
26	Lock lift lever rivet dia.	8 mm	7 mm	Drg. No. 62724	-
27	Knuckle Yield strength	180 tonnes	N/R	WMM, page no. 19 of 46, Ch.-9	-
28	Coupler body Yield strength	205 tonnes	N/R	WMM, page no. 19 of 46, Ch.-9	-
29	Distance between coupler body head & striker casting	108 mm	133 mm	G-76 manual 10.1	

ATTENTION DURING TRAIN EXAMINATION, ROH & POH

1. Attention during Yard Examination:

- i. The operating handle should not be bent and should be properly held in the bearing piece.
- ii. Ensure the correct geometry of operating handle.
- iii. Ensure that there is no excessive wear in anti rotating lug, the standard section of anti rotation lug is 16 mm x 16 mm. Anti rotation lug should not be round.
- iv. Ensure that there is no excessive wear in the slot provided in bearing piece. The standard width of slot is 17.5 mm.
- v. There should be no excessive play between anti rotation lug and slot provided in bearing piece.

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- vi. Ensure that the bearing piece pin is properly welded to hanger bracket.
 - vii. Ensure that the hook end of operating handle is properly engaged with lock lift lever connector.
 - viii. Ensure that all the components of lock lift assembly such as toggle lever connector and lever hook are properly riveted.
 - ix. Ensure that anti creep lug of lever connector is not excessively worn out.
 - x. Ensure that the distance between the bottom of CBC head and anti creep lug is not excessive (should not be more than 1”).

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- xi. Ensure that the variation between the CBC heights of adjacent wagons is within the permissible limit of 75 mm.
 - xii. Ensure that knuckles are good, pin is standard and properly secured.
 - xiii. Ensure that the CBC projection is within permissible limits of $108 + 25$ mm.
 - xiv. Ensure that proper additional operating handle safety bracket is properly welded.
 - xv. Ensure that auxiliary anti-creep lug was not excessively worn out at tip.
 - xvi. Check condition of yoke pin support plate and condition of rivets.

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- xvii. Check coupler head, knuckle for cracks.
 - xviii. Check yoke pin support plate is loose.
 - xix. Check broken yoke.
 - xx. Don't allow jammed pistons or brake binding, attend it before dispatch.
 - xxi. Do ensure that the hand brakes are released.
 - xxii. Check for cracks on the coupler body and knuckle.
 - xxiii. Don't allow excess wear on the knuckle.
 - xxiv. Don't lubricate or paint any of the CBC components.
 - xxv. Check the rear stopper for damages.
 - xxvi. Check for damages of draft gear.

2. Attention during ROH

Freight stocks are generally subjected to routine overhauling “ROH” after an interval of 18 months. Various worn out CBC parts are to be replaced during ROH. Following areas needs to be looked into during ROH :

- i. Check CBC contour condition by using gauge No.1 & 2 and follow the procedure for changing the defective parts as per technical leaflet G.76.
- ii. Check knuckle stretch and nose wear by using gauge no.3 and replace the parts if necessary.

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- iii. Check the condition of shank wear plate, if the wear is more 5 mm replace the same and use M5 class of electrode only for welding.
 - iv. Check the condition of CBC draft gear, yoke lock, back and front stopper rivets, yoke pin support plate rivets, striker casting wear plates.
 - v. Ensure correct CBC heights
 - vi. Check the condition of knuckle pin, lock lift assembly, knuckle thrower etc.
 - vii. None of the Coupler components shall be lubricated.
 - viii. Do check the coupling for damages and replace if required.

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- ix. Do ensure the draw bar projection is within limits, and draw bar springs are tight.
 - x. Provide all the components of the lock lifting assembly.
 - xi. Check for damaged or bent operating lever, rectify it.
 - xii. Check the anti creep mechanism, attend it if required.
 - xiii. Check the shank and striker casting wearing plates, if worn-out.

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- xiv. Check the front and rear stoppers.
 - xv. Check for damaged draft gear.
 - xvi. Check the yoke for excess wear or breakage.
 - xvii. Don't allow excess free slack, attend properly.
 - xviii. Test the cylinders, attend, if jammed.
 - xix. Weld properly the bearing piece safety strap.
 - xx. Check the securing of the bearing piece and rivets of the brackets.
 - xxi. Don't use improper locks for CBCs, use the correct one.

POOR ENGINEMAN SHIP

Reasons of Breakage of coupling or uncoupling due to Jerk/excessive tractive effort

- The main reason for breakage of coupling is jerk due to excessive tractive effort, Pulling forces & pushing forces.
- The reasons of jerk are spring slack & free slack. Spring slack is occurs due to compression of Draft gear at the time of braking. The limit of maximum spring slack is 5", the free slack occurs due to excessive gap between couplers which is approx. 1".

The jerk is developed -

- i. By drivers during run due to improper driving technique
- ii. Due to defect in loco such as wheel slip, Power Ground earth fault or shutting down of engine due to other reasons.
- iii. Application of Brake by banker pilot or by Guard during running.

Reasons of Generation of Jerk by Loco Pilot :

- i. Sudden opening of Throttle notches.
- ii. Emergency Braking
- iii. Traction Power Cutting off
- iv. Faulty train operation on Gradient

MEASURES TO AVOID TRAIN PARTING

The Loco Pilots have an important role to play in preventing the train parting cases. Good driving skill is very important. Some of the guidelines useful for drivers are given as under :

- It is observed that additional shock load comes on the coupler when drivers apply traction before full release of brakes
- ***Starting of goods train after stopping***-wait for minimum 3 minutes in case of air brake train to release the brakes.
- Avoid jerky movement during starting and stopping train

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- While attaching the loco on to the formation, attach with a little bump and push the formation back by about two meters to ensure that partially lifted locks drop into position. Then, pull the train ahead by half-a-wagon length, to identify the CBCs which are not locked. In the process, fouling mark should not be infringed.

- While starting a train, the notching up shall be gradual as to have smooth run out and thereby avoid the shock loading of CBCs.
- At enroute stations , LC gates, signals etc when the train is stopped for longer time the driver shall push back the train about two meters to ensure proper locking of CBCs which, might have been meddled with by trespassers/miscreants.

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- While negotiating gradients, camel humps, maintain uniform speed, till the train passes the section.
 - Before negotiating and ascending or descending gradients, attain the critical speed necessary to negotiate the section, so that uniform speed can be maintained while passing over the graded section

- After application of brake, sufficient time shall be given for the release of brakes on the entire formation, before accelerating.
- When continuous wheel slip is experienced, reduce the speed of the train, to avoid shock loading of CBCs.
- There shall be proper co-ordination between the leading driver and banker driver while negotiating the up-gradient in ghat section.

MEASURES TO AVOID JERKS :

(A) *At Level :*

- i. Ensure that all couplings are correctly fitted. For this, Push the train back for about $\frac{1}{2}$ wagon length so that all the couplings are coupled properly.
- ii. Ensure that brakes of the train are fully released, for ensuring this, time should be given for releasing the brakes. Sufficient B.P. pressure should be ensured and air flow indicator should be at constant position.
- iii. Release the loco brakes after waiting for 10 seconds after opening of throttle.

(B) Up gradient :

- i. Release the train brakes before opening the throttle
- ii. Open 2-3 notches by throttle
- iii. Release Loco brakes
- iv. On starting of train, open the throttle notch by notch precisely by keeping eye on needle of load meter.
- v. Reduce the throttle notches in case of wheel slipping.
- vi. If Banker engine is attached, driver of Banker engine should first open notches.

(C) Down Gradient :

- i. Release Loco Brakes
- ii. Allow train to move forward and attain the desired speed
- iii. Use dynamic Brakes if required

(D) On Sag :

- i. Open the notches
- ii. Release the loco Brakes and open 1-2 Notches
- iii. When the full train comes in a stretch, advance the notches, one by one by observing load meter.

(E) Undueling Gradient :

- i. Open 1st Notch
- ii. Release the Loco Brakes
- iii. When train started, open second notch and when meter is stabilized, open the notches as desired.

(F) On Hump :

- i. Release train Brakes before opening of throttle
- ii. Open 2-3 Notches by throttle

- iii. Release Loco Brakes
- iv. On starting of train, open the throttle precisely notch by notch observing needle of the load meter
- v. Reduce throttle notches when wheel slip experienced
- vi. In case of banker engine, the banker driver should first open the notches

(G) On Run of Train :

- i. Open notches one by one
- ii. To control the speed of the train by dynamic brake, apply air brake in train by A-9 for bunching the load.
- iii. During Dynamic braking advance selector slowly and releasing should also be ensured slowly
- iv. Reduce the notches on up gradient during wheel slip
- v. Sufficient releasing time must be ensured for full releasing of the load after application of brakes. Advance the throttle for increasing the speed only after full releasing of load

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- vi. Do not use loco brakes in running train
 - vii. Keep watch over the Air flow indicator during running
 - viii. Do not apply brakes suddenly
 - ix. Do not open notches suddenly
 - x. Keep contact with Guard/banker Pilot on walkie talkie
 - xi. Running of train should be ensured properly on Gradients
 - xii. Do not use Loco brake in conjunction braking as far as possible during first brake application

(H) At the time of Application of brake in train :

- i. Apply brakes properly
- ii. After Dynamic braking, notches should be taken after suitable gap
- iii. After stopping the train, B.P. Pressure recreation must be ensured.
- iv. On up gradient, try to stop the train on some notches and after stopping of train apply loco brakes.
- v. Apply loco brakes after stopping the train

CHECK LIST FOR JOINT INVESTIGATION REPORT OF TRAIN PARTING

General particulars:

Date		Km No.	
Division		Section blocked	
Time		Signal aspect	
Section		Curvature	
Gradient		Weather condition	
C/Order		Kms of caution Order:	

Train Particulars:

Train No.		Loco (s) No	
Load / Tonnes-		Homing Shed of loco	
Commodity		Loading station	
Last Exam. Station		BPC Date / %	
Rly / Divn. -		BPC No	
CC /Pm /End to end		Air/Vacuum brake	

Driver's particulars / (Train Engine & Banker)

Driver's Name		HQ	
Qualification		Safety Category	
Date of Appointment		Nominated LI	
Guard's Name		HQ	

Affected & Adjacent Wagon's Particulars

Sr. No.	Wagon No.	Class	Rly	R / Date	POH	ROH	Position from Loco
1							
2							

Screw coupling / CBC (Alliance II / AAR-HT):

Bearing: 16T RB / 20T RB / 20.3 T CTRB:

Whether empty / loaded

CHECKLIST FOR AFFECTED WAGONS

CBC & Knuckles – HT/NHT Stamping Particulars –

- Knuckle broken –
- CBC -crack any location –
- Zone of breakage (A / B / C / D) –
- Structure of broken surface (uniform / coarse) –
- Any mark of Blow Hole -
- Origin of breakage (External / Internal / dent or hit mark) -
- Nature of breakage (Fresh or partially fresh) –
- Approximate % age of crack (Fresh/old/any hair crack existing previously) –

-
- Any foreign material inside casting (stone / hard material, etc.)
 - Any other casting defect (Core sand deposit / uneven hard surface) –
 - Knuckle is reclaimed by welding (Yes / No)
 - CBC lock broken, fresh / Old with % -
 - Any manufacturing defects on CBC lock (crack / unusual metal projections, etc)

Draft & Assembly

- Type of draft gear – (RF 361 / SL – 76 / MK-50 / HR-40)
- Draft gear condition (dislocated / tilted / stiff)
- Front end follower (intact with rivet / worn out)-
- Yoke pin (badly embedded in the yoke pin support plate) -
- Yoke pin support plate (intact with sound rivet) -
- Any other defect noticed –

OPERATIONAL ASPECTS

- Statement of train drivers obtained or not -
- Statement of Banker's drivers obtained -
- Conclusions from statement of the drivers -
- Statement of Guard obtained or not
- Is there any empty wagon between two loaded wagons?
- Fluctuation of OHE voltage -

- Tripping of DJ- as per driver statement & speedometer floppy- Operation of dynamic braking, effectiveness of brake system from locomotive to the load – as per Dr's statement –
- Any evidences of wheel slipping , brake binding of the rake as per Dr & Gd statement –
- Signal aspect(Raised up on approach/given on approach) –

LOCO PARTICULARS:

- Dynamic Brakes : Working/Not working :
- Air Flow Indicator: Working/Not working :
- Notches –
- BP Pressure (Engine & Brake van) –
- MR Pressure –
- Flasher light (Wkg / Not working) –
- Speedometer (Wkg / Not working) –
- Release time after dropping 1 kg/cm^2 of BP pressure
- Jerk while starting–
- Conjunction braking (Working / Not working) –

TRACK PARTICULARS: -

- a. Level
- b. Rising
- c. Falling
- d. Curve right / left
- e. Straight
- f. Banner flag on track
- g. Uneven rail joints
- h. Cross over turn out
- i. Camel hump
- j. Vertical curve

TIME PARTICULARS:-

Time left from station ----- at-----hrs.

Time arrival next station -----at -----hrs.

Running time of section –

Total section blocked –

NATURE OF OCCURRENCE –

- a. While notching up
- b. While notching down
- c. During normal run
- d. Coasting
- e. While starting after stopping
- f. While controlling
- g. While observing caution order at km no.-----
- h. Signal on approach
- i. Running at the time of starting
- j. Brake binding -on wagon no _____ ,position from engine
- k. Gap between two portions _____mtrs (i) While entering loop line.

Speed of train at the time of incidence - _____kmph

Date of investigation:

Investigation:

Findings/Conclusion:

Responsibility:

Signature -

Name -

Designation -

Signature -

Name -

Designation -

Signature -

Name -

Designation -

THANKS