

DIFF LOCK SPEED LIMIT



[SCOTT WALSHAW](#) 1 posts since Sep 1, 2020

DIFF LOCK SPEED LIMIT Oct 1, 2020 1:33 AM

I HAVE A WESTERN STAR 5700 SER# MP5626 THE DIFF LOCKS ARE KICKING OUT AT 40KM/H I CAN'T FIND ANY SETTINGS OR PARAMETERS TO CHANGE THIS. ANYONE HAVE ANY IDEAS.



[Jon Cecil](#) 846 posts since Nov 25, 2014

Re: DIFF LOCK SPEED LIMIT Oct 1, 2020 3:55 AM

It looks like this might be a safety feature so a driver doesn't destroy their differential. There is a section in the drivers manual that states not to exceed 25 MPH or 40 KPH. Assuming the customer wants it to stay engaged at higher speeds, I don't think it is possible.



[Jesse Gutierrez](#) 431 posts since Mar 5, 2017

Re: DIFF LOCK SPEED LIMIT Oct 3, 2020 3:47 AM

True this might be a grey parameter which cannot be adjusted unless by an engineer . I'm guessing either in the CPC should be able to see it but not adjusted it



[Talbert Simonian](#) 1,786 posts since Nov 21, 2014

Re: DIFF LOCK SPEED LIMIT Oct 3, 2020 7:43 PM

[Jesse Gutierrez](#) is correct it is a parameter controlled function. It would have to be sent to engineering to see if that can be done. They do charge for the changes.



[Scott Trippel](#) 3,958 posts since Dec 13, 2014

Re: DIFF LOCK SPEED LIMIT Oct 5, 2020 1:34 PM

The reason is not to destroy the rear axle. It prevents the loss of steering. When you lock up all 4 or in a tri drive 6 wheels and if they have a lot of grip the truck will under steer or even not steer at all. Yes I have experienced it.

The option the salesperson set to unlock the differential locks is a option set at time of order not a standard feature



[Jon Cecil](#) 846 posts since Nov 25, 2014

Re: DIFF LOCK SPEED LIMIT Oct 5, 2020 2:48 PM

I've seen that happen with an inter axle lock, but not the diff lock.

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[Scott Trippel](#) 3,958 posts since Dec 13, 2014

Re: DIFF LOCK SPEED LIMIT Oct 5, 2020 6:12 PM

Inter axle would not be the issue. If you lock the inter axle and have poor traction one wheel will spin on each axle. The diff lock will lock both wheels on the same axle. If you have a tri-drive especially and have good traction all wheels are locked and it cancels the differential action causing the under steer. If you have ONLY the inter axle locked you will still have differential action on each axle allowing the inside wheels to turn a tighter circle than the outside, and thus no understeer



[Jon Cecil](#) 846 posts since Nov 25, 2014

Re: DIFF LOCK SPEED LIMIT Oct 5, 2020 6:37 PM

I meant I have seen the loss of steering with the inter axle engaged on dry pavement. I think you could still possibly damage the diff if the diff lock is engaged and driving higher vehicle speeds. If tires of different sizes were on opposite ends of the axle, the axle temperature would increase causing premature failure to the bearings.



[Scott Trippel](#) 3,958 posts since Dec 13, 2014

Re: DIFF LOCK SPEED LIMIT Oct 5, 2020 10:03 PM

We have had to weld the IAD log trucks so they do not unlock.

It is common where we are, to run them 100% of the time, it actually prevents a IAD (inter axle differential) spin failure. Meritor is a common axle here and the IAD has a thrust washer that will fail if the IAD is not locked. If an operator is in lots of snow/ice mud like we have here and the IAD has a spin failure they are in a trouble. Now you are correct if: The tires are not the same circumference due to wear it can cause high differential oil temps, can also cause driveline and tire wear.

But you will see in the winter up hear drivers have the IAD locked 100% of the time. Never had a failure that you could say the operator had the IAD locked to much. Lots of spin out failures and lots of shifting the IAD when a wheel is spinning as well.

Different regions operate equipment in different ways.

Lots of or Tri-drive units even have central tire inflation on log trucks and Vac trucks to increase the traction further just to give you an idea the need for traction in our vocational units and why we order our units not to automatically unlock at a set speed limit.



[Jesse Gutierrez](#) 431 posts since Mar 5, 2017

Re: DIFF LOCK SPEED LIMIT Oct 6, 2020 2:17 AM

Awesome to hear how they are used on the east coast , out in Cali unless it's raining or out in the hills or desert sand we don't use diff lock much , but yes normally most damage and wear occurring during locking and unlocking of the diff in a spin out condition



[Scott Trippel](#) 3,958 posts since Dec 13, 2014

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Re: DIFF LOCK SPEED LIMIT Oct 6, 2020 1:43 PM

I am in western Canada Jesse, lol