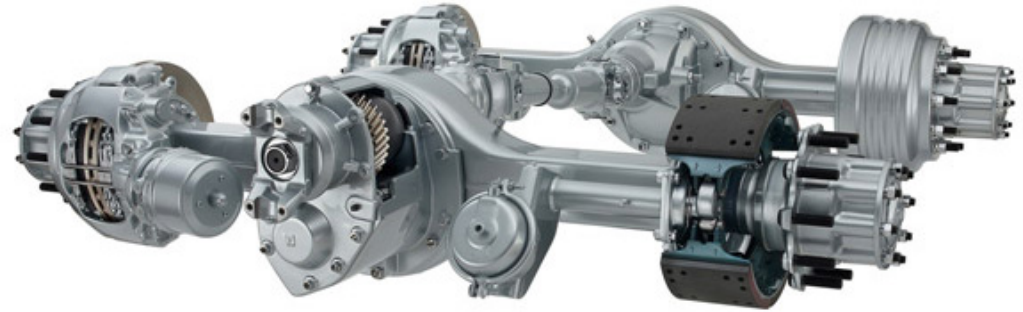


.....Mack Proprietary Axle

Driveline Engineering – Hagerstown, MD



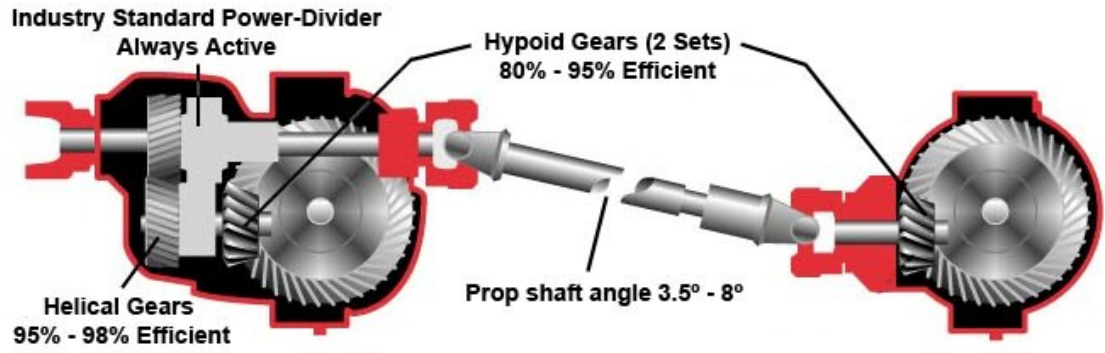
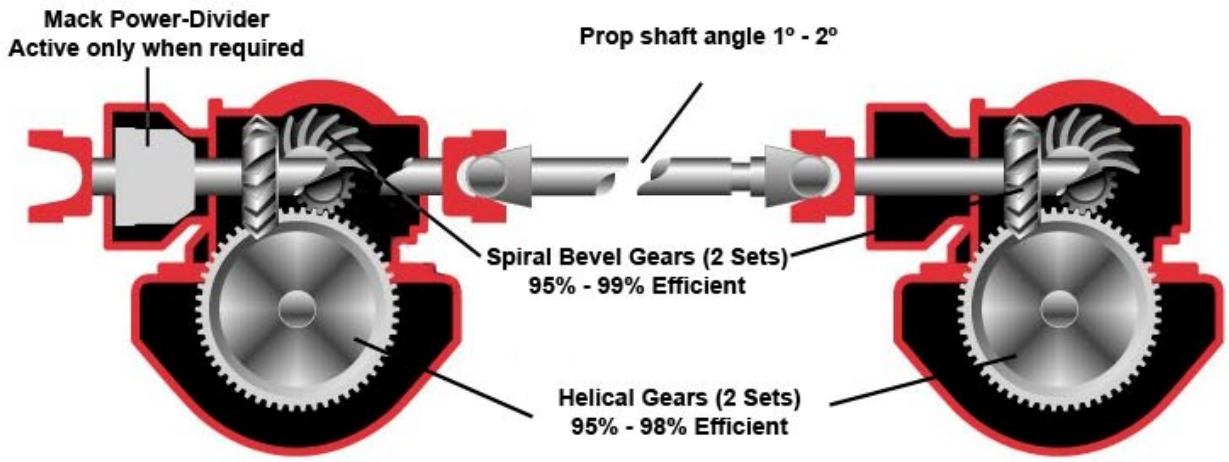
Top Mounted Carrier = More Ground Clearance



Top Mounted Drivehead provides more ground clearance compared to a competitor face-mounted Drivehead.

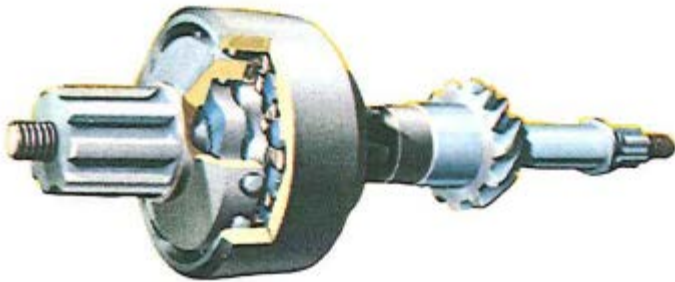


Mack Axle (Bevel/Helical Gear) Efficiency > Industry Std. (Hypoid/Amboid Gear) Efficiency

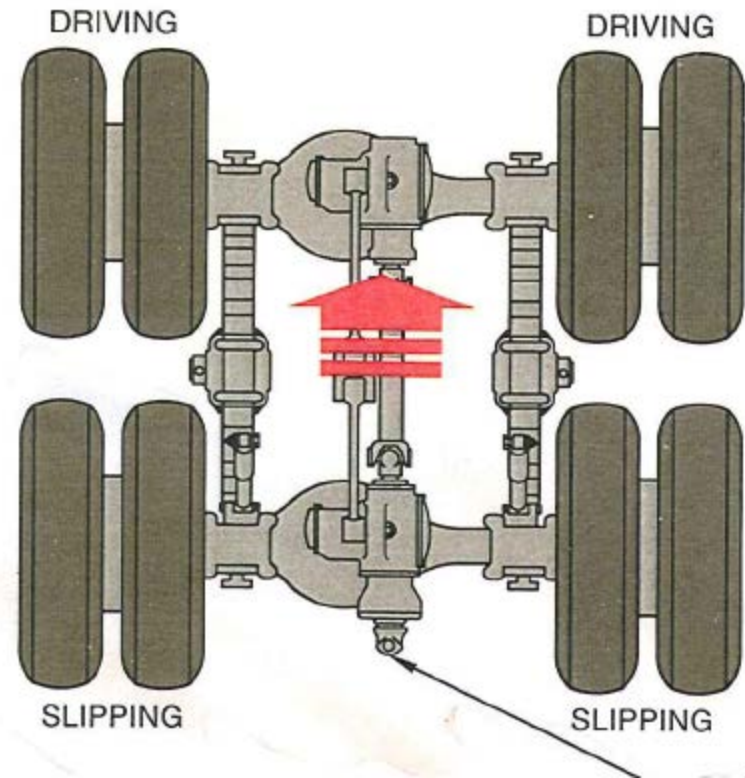


Mack Proprietary Standard Power Divider = Better Vehicle Traction

Mack
power dividers
mean traction



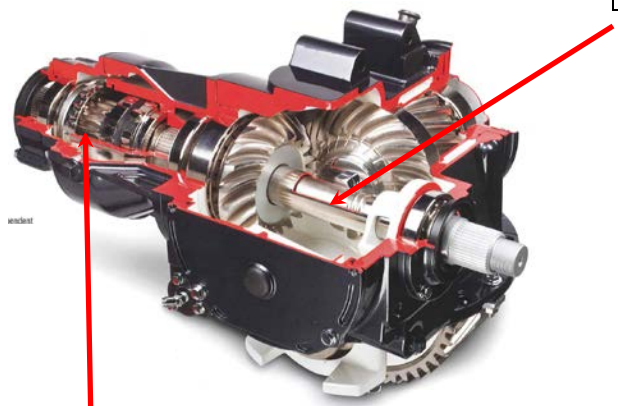
INTER-AXLE
POWER DIVIDER



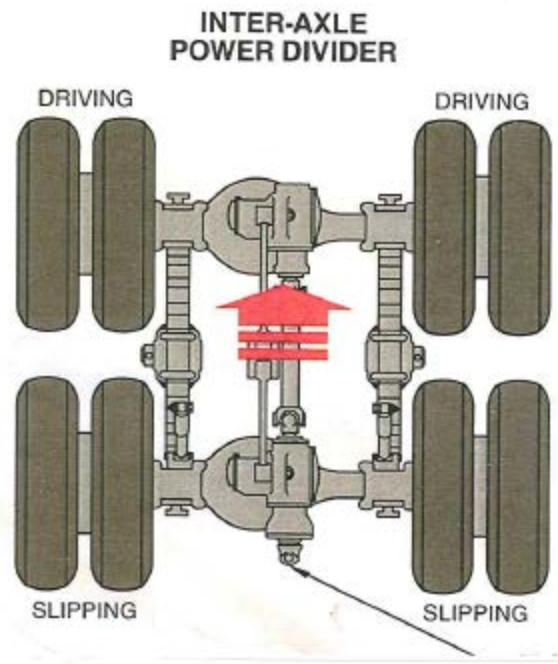
Under minimum traction conditions, the resisting force on the slipping axle is multiplied three fold and applied to the axle that has retained traction, without locking.

What is Power-Divider and Why do you need it?

Thru-shaft

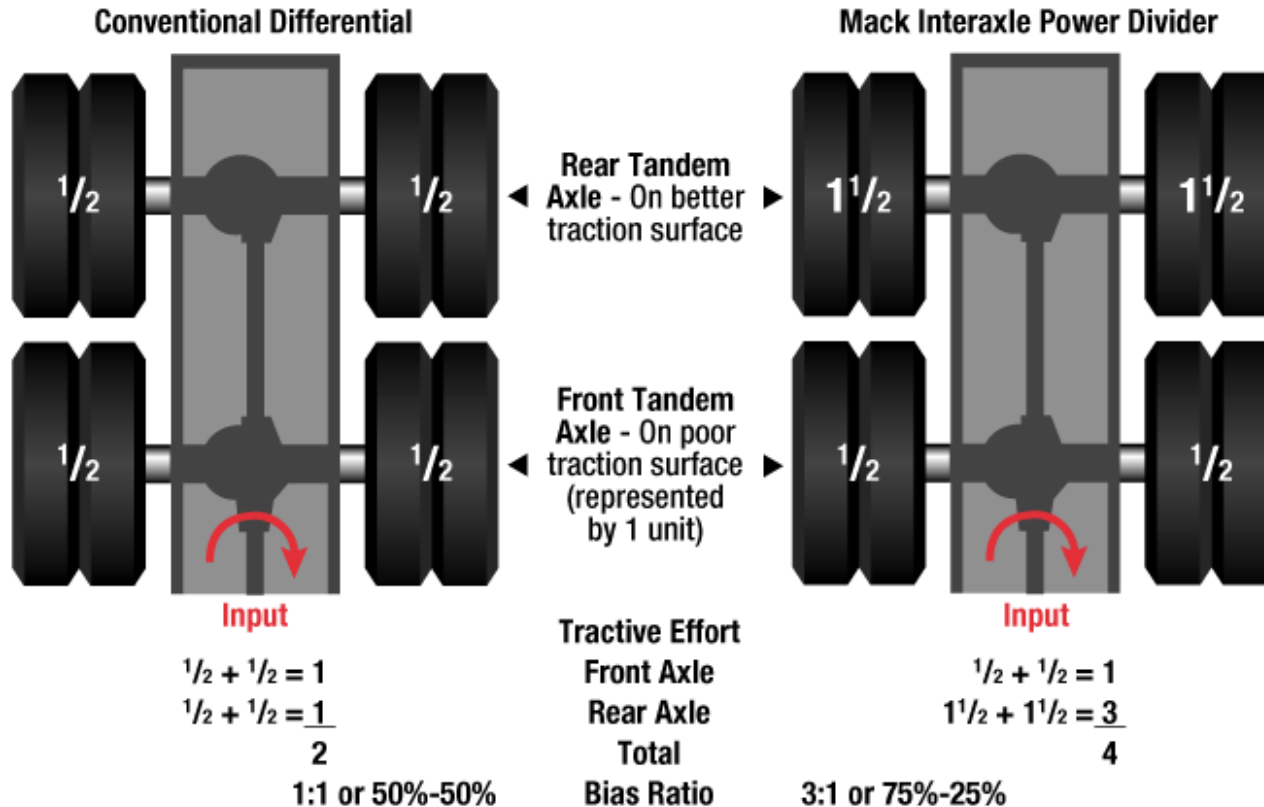


Power-Divider Cage distributes torque between outer-cam & inner-cam using 2-rows of wedges. Outer-cam drives front-axle while inner-cam drives through-shaft which drives power to rear axle



Mack Axle & Carrier Features – *Interaxle Power Divider*

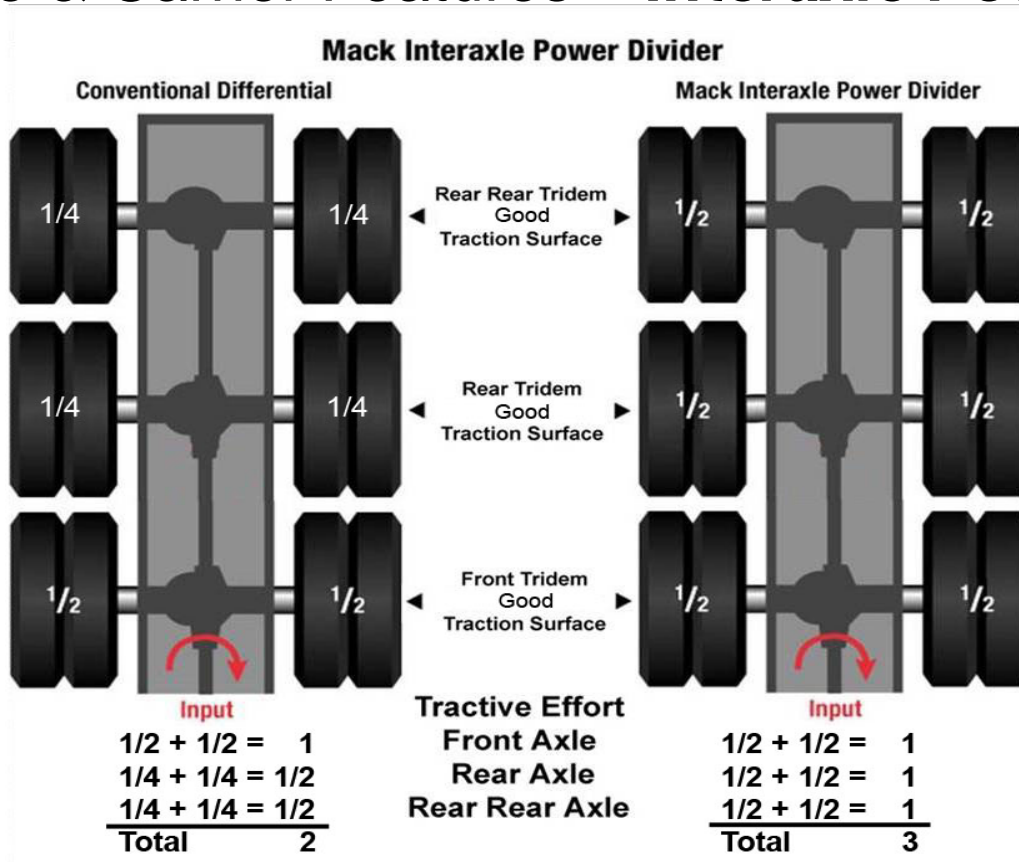
Mack Interaxle Power Divider



The Mack Advantage

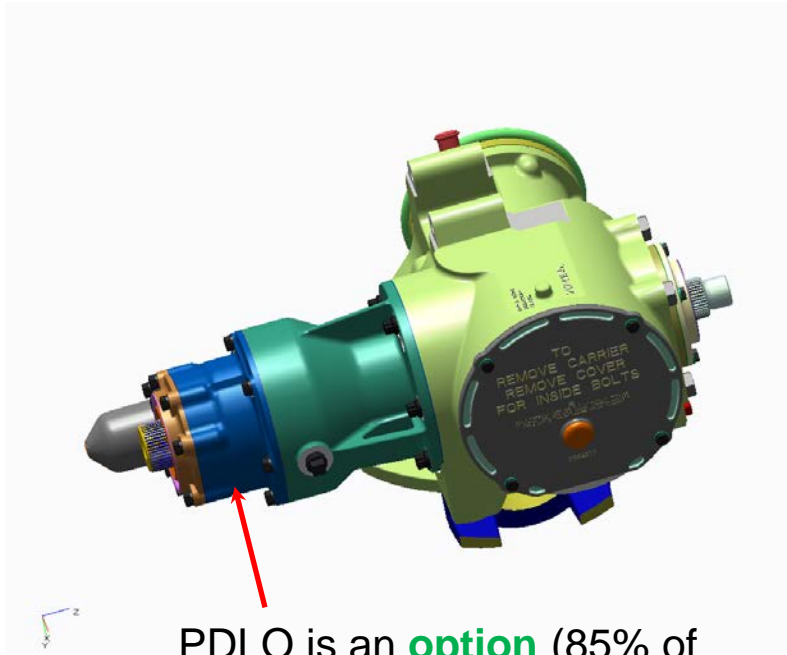
- Mack power-divider uses a CAM mechanism which automatically distributes the torque between slipping and non-slipping axle.
- Competitor axle power-divider uses gear-differential which always splits torque in 50:50 ratio between front and rear axle.

Mack Axle & Carrier Features – *Interaxle Power Divider*



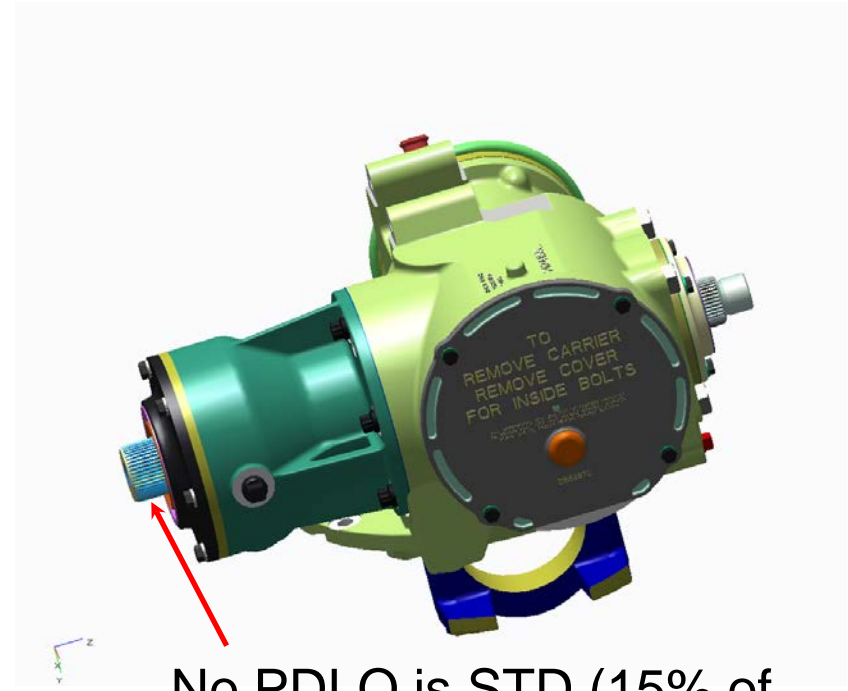
- The Mack Power Divider provides the only tridem capable of a true 1/3rd, 1/3rd, 1/3rd torque split between driven axles (This reduces the tire and road wear on the first drive axle).
- Competitor axle power divider splits torque in 50:25:25 ratio between three drive axles (first axle transfers more torque to the first set of drive wheels causing excessive tire wear and tearing up the road surface).

Mack Inter-Axle Power Divider Lock-out (PDLO)



PDLO is an **option** (85% of customers order this) on Mack axles but **std. feature** on competitor axles

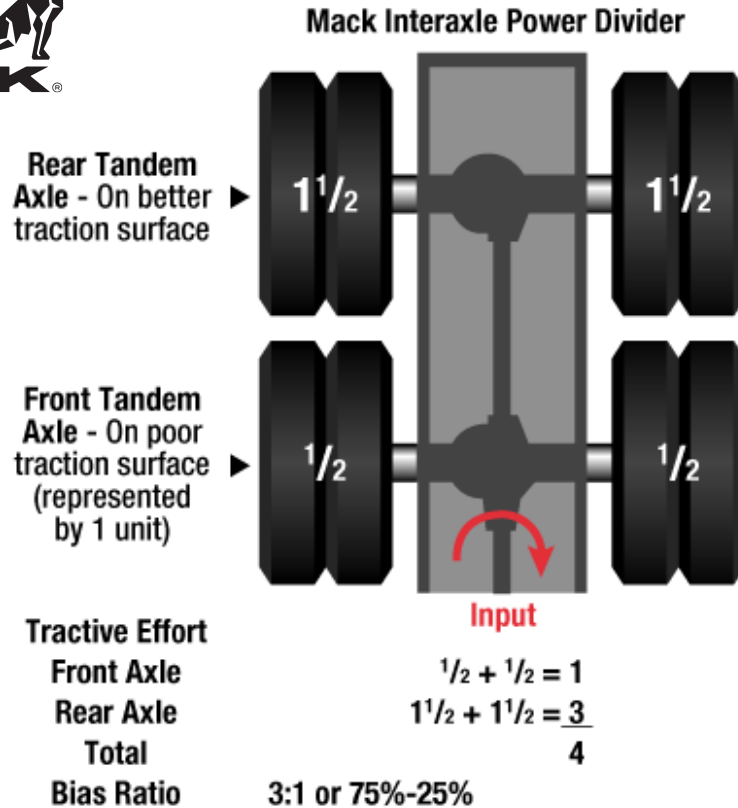
Front Carrier with PDLO (Power Divider Lock-Out) – Available on all Mack front carriers (i.e CRD125, 150, 200 & 95 carriers)



No PDLO is STD (15% of customers order this) on Mack

Front Carrier with OUT PDLO (Power Divider Lock-Out) – Standard on all Mack front carriers

What is Power-Divider Lock-out (PDLO) and Why do you need it?



If front-tandem has zero traction, the CAM mechanism (and/or conventional IAD gear differential in power-divider) distributes 3 x Zero torque (1 x zero torque) to rear axle.

In the process the Power-Divider will burn-out due to excessive differential action.

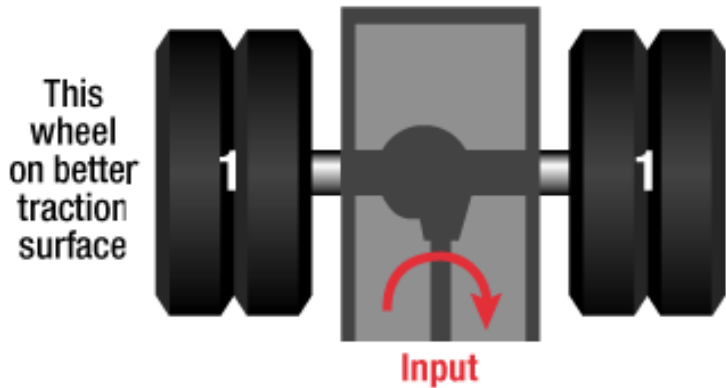
Mack Advantage

PDLO locks the inner & outer-cam preventing differential action and will propel the truck with the help of axle that is on better traction surface.

Mack Axle & Carrier Features – *Inter-Wheel Power Divider (optional feature)*

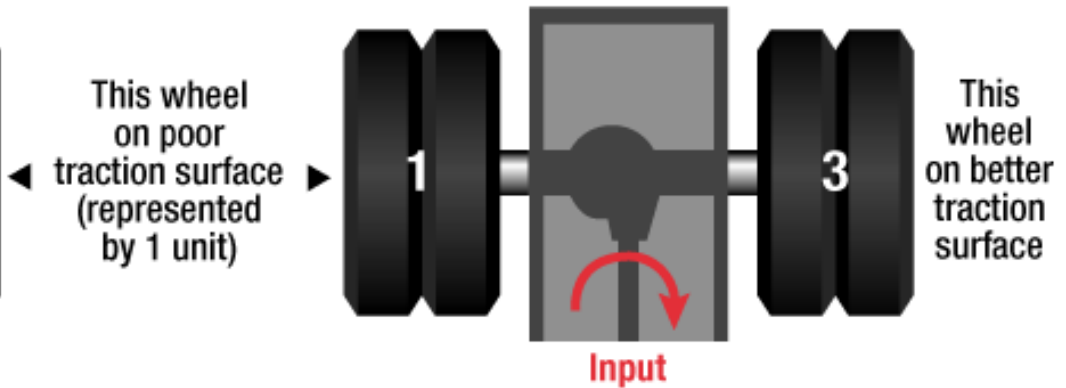
Mack Interwheel Power Divider

Conventional Differential



$1 + 1 = 2$
1:1 or 50%-50%

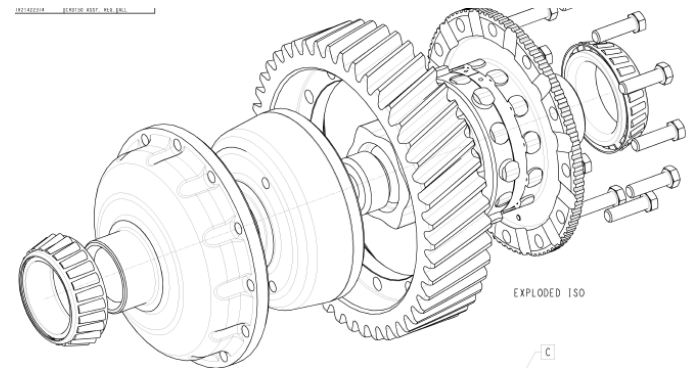
Mack Interwheel Power Divider



Tractive Effort
Bias Ratio

$1 + 3 = 4$

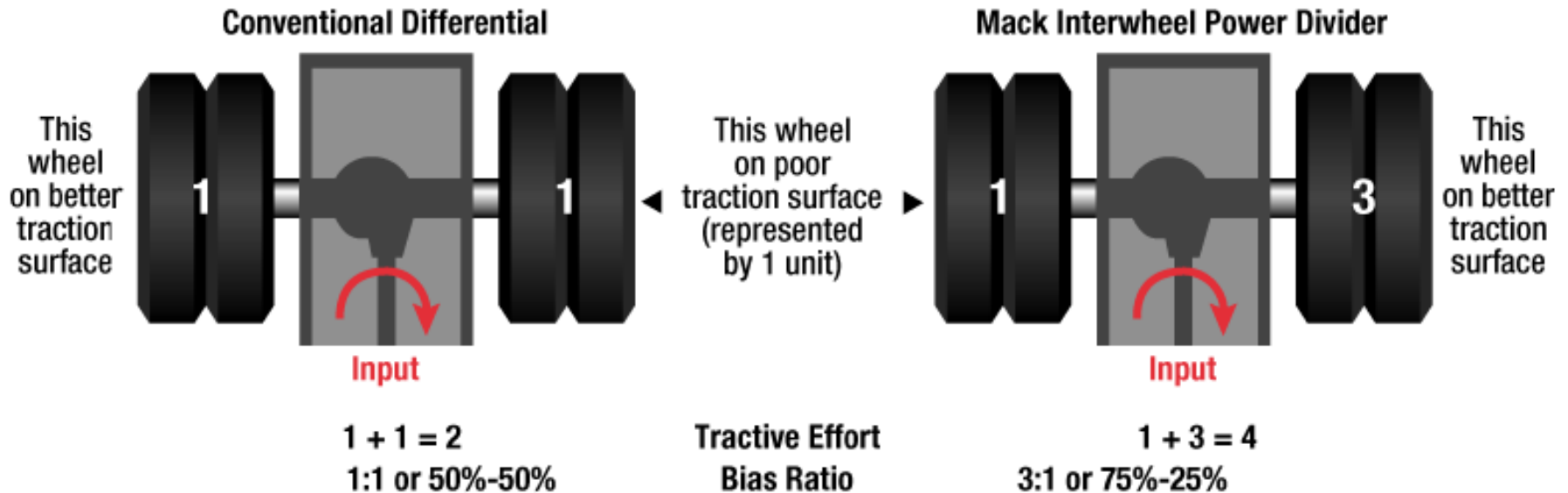
The Mack Advantage



- Mack Unique/Proprietary Inter-Wheel power-divider uses a **CAM** mechanism which automatically (no in-cab switch will need to be engaged as in case with diff. lock option) distributes the torque between slipping and non-slipping wheel.

What is Inter-Wheel Power Divider and who uses it

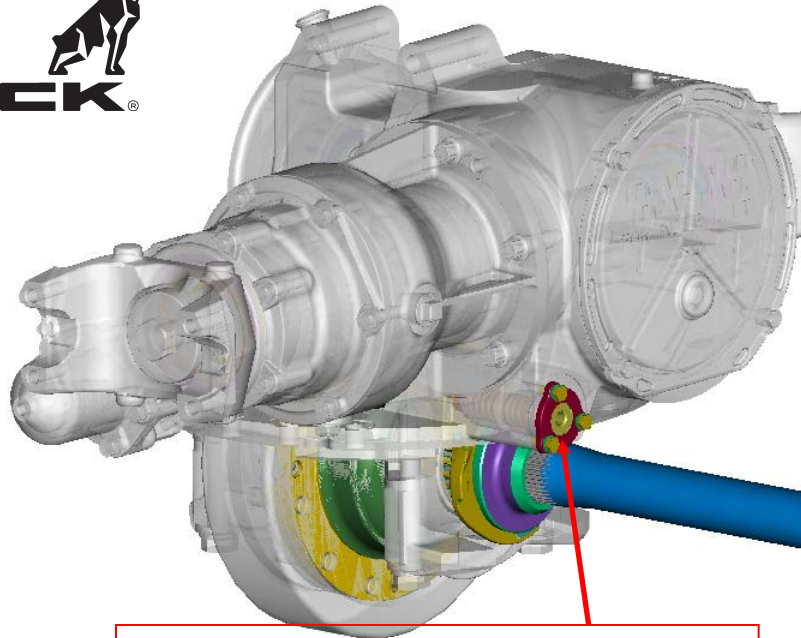
Mack Interwheel Power Divider



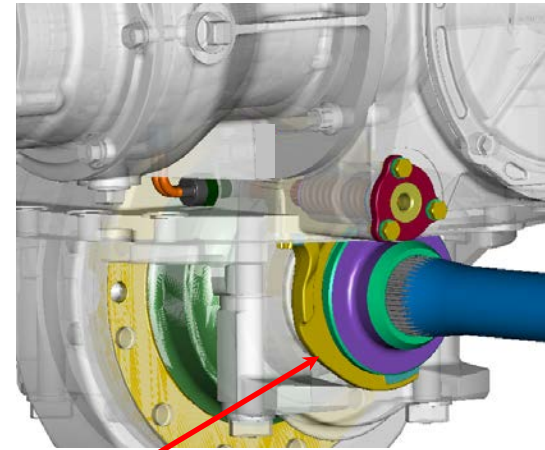
The Mack Advantage

- IWPD automatically distributes torque between slipping and non-slipping wheel.
- Diff. Lock needs to be disengaged once vehicle is on good surface. IWPD eliminates the hassle (some customers like this option).
- IWPD can still work over 25MPH unlike Inter-Wheel Differential Lock (VECU disengages Inter-axle and Inter-wheel diff. lock for safety reasons).
- IWPD Dis-advantage: If one wheel has zero traction then other wheel will see 3 x Zero torque.

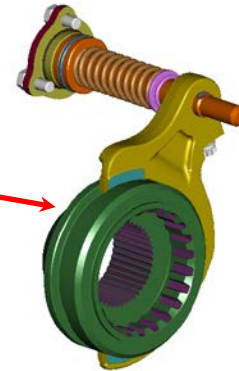
Mack Carrier Front & Rear – Diff. Lock (optional feature)



Air Line connects here for diff. lock actuation



Diff. Lock fork & clutch

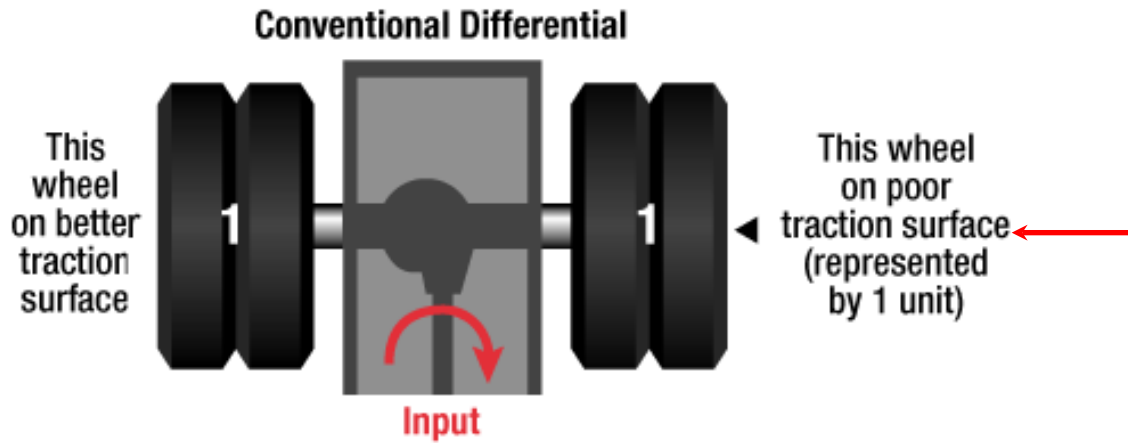


Diff. Lock feature is a option available with CRD 125/126-150/151 ~~to~~ & F1 ~~to~~ F4 carriers.

- Diff. Lock can be chosen on front carrier only, rear carrier only or both front & rear carrier.



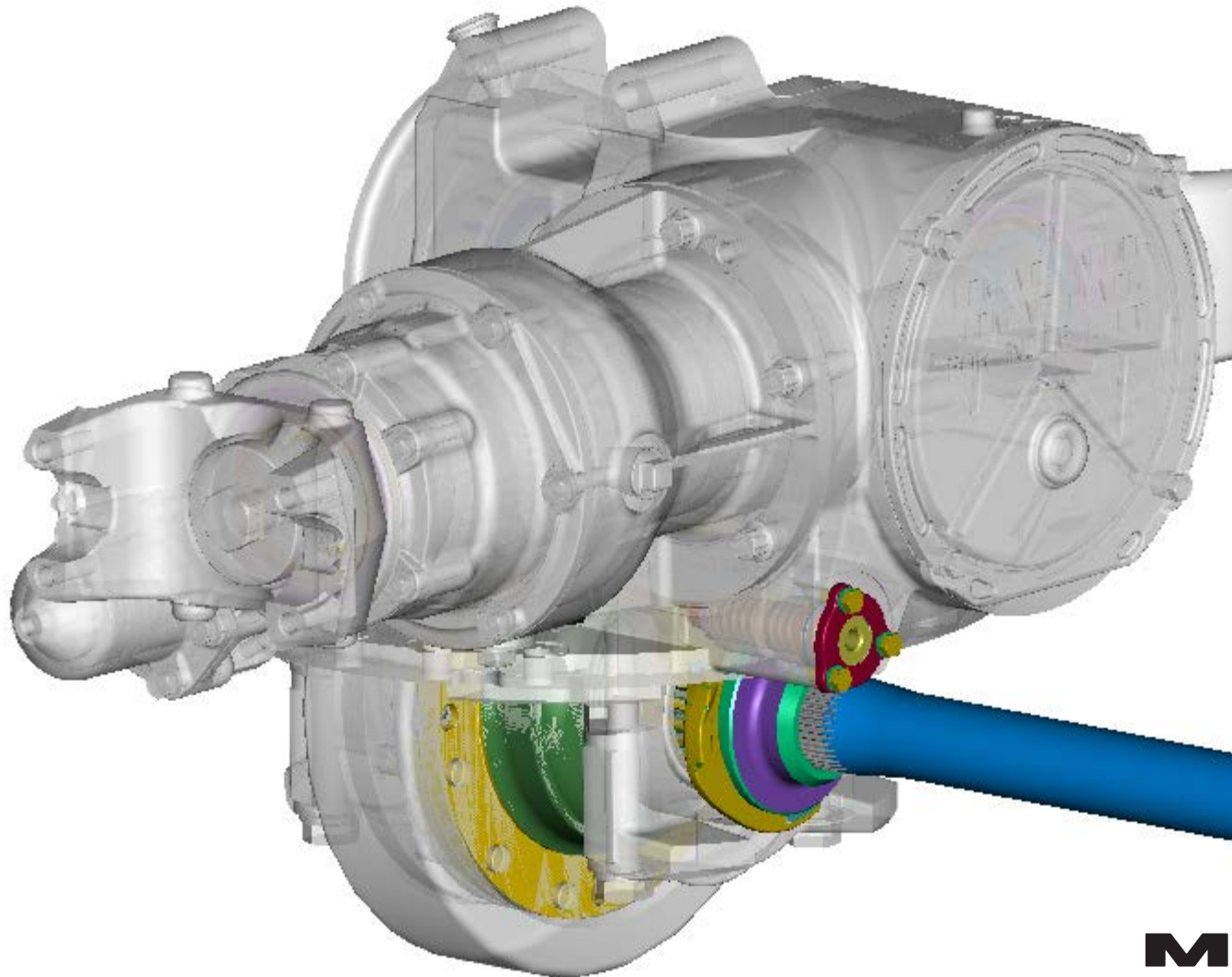
What is Diff. Lock and Why do you need it?



If one of the wheel starts slipping the differential gears will start spinning and excessive differential action will cause burn-out

- Diff. Lock is optional feature on Mack and Competitor axles.
- Diff. Lock is engaged by actuating a switch inside the cab.
- Diff. Lock locks left & right diff. halves preventing differential action and will propel the truck with the help of the wheel that is on better traction surface.
- Diff. Lock should be dis-engaged while on concrete surface or driving over 25MPH. The axle shafts can lock-up if vehicle turns a corner with Diff. Lock engaged.

CRD150-151 INTER-WHEEL DIFFERENTIAL LOCK



THE CRD150-151 INTER-WHEEL DIFFERENTIAL LOCK (DIFF LOCK) FEATURE HAS BEEN INTEGRATED INTO THE MAIN CARRIER HOUSING. THUS, MAINTAINING THE SAME EXTERNAL ENVELOPE AS THE STANDARD CRD150-151 AXLES AND MINIMIZING ANY ADDITIONAL WEIGHT.

