



DETROIT[®] TANDEM REAR AXLES

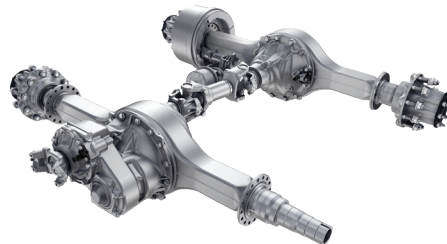
TECHNICAL SPECIFICATIONS

WEIGHT RATINGS **40,000-46,000 lb.**

ADVANCED TECHNOLOGY DELIVERS INNOVATIVE AXLES THAT IMPROVE UPTIME, FUEL EFFICIENCY AND OVERALL COST OF OWNERSHIP.

The Detroit Tandem Rear Axles are All About Efficiency, Reliability, and Durability.

- Modular differential with laser-welded ring gear
- Gear set and carrier optimization for improved powertrain efficiency
- Low-viscosity and friction-optimized oil
- Faster rear axle ratios to support downspeeding
- Up to 0.7% improvement in fuel economy compared to classic Model 4 tandem axles



AXLE LUBRICATION MANAGEMENT (ALM) SYSTEM REDUCES FUEL CONSUMPTION.

Available exclusively on the Freightliner[®] Cascadia[®], this innovation regulates the oil level at the ring gear through the use of a valve integrated into the ring gear cover. This helps reduce the “churning” associated with the ring gear moving through the new lower-viscosity oil. This reduction in parasitic power loss when combined with the other efficiency improvements can add up to a 1.5% improvement in fuel economy over the classic Model 4 tandem axle. ALM was put through the same rigorous testing as all other Detroit products and has successfully met or exceeded all of our design standards. It provides an innovative and durable way of improving efficiency in even the most extreme conditions.

Built for the Bottom Line

The lower engine speeds found on our Detroit engines, coupled with our latest DT12[™] automated manual transmission (AMT), enable the use of today’s fast axle ratios. Our new Detroit axles leverage these benefits by being even more efficient while being able to accommodate tomorrow’s even faster axle ratios. Additionally, heavy-duty yokes and flanges are available to provide optimal drivetrain performance in downspeeding applications. In select DTNA products the innovative ALM system builds even more efficiency gains into the equation.



Hypoid Design Ensures Durability

Our Detroit axles are configured with a hypoid design at the rear axle of the tandem set, where the pinion centerline is below the centerline of the ring gear. This design inherently improves durability (resulting from the dynamics of the tooth contact). In addition to this, the hypoid offset design on our tandem axles also contributes to increased efficiency.

6x2 Single-Drive Tandem Rear Axle

Detroit offers a Model 6 single rear axle as part of a 6x2 configuration that features all of the enhancements available in the Detroit tandem rear axles but, when used in combination with a non-driven tag axle, is nearly 430 lbs. lighter. This Detroit 6x2 configuration is available with optional Axle Lubrication Management (ALM), which can provide up to a 0.75% fuel economy improvement over the classic Detroit 6x2 axle configuration.

Tandem Rear Axle Specifications

	DATA CODE	MODEL CODE	GAWR ¹ (LB / KG)	MAX. GCWR ² (LB / KG)	HOUSING WALL THICKNESS (MM / IN)	MAX. CREEP RATING (LB / KG) ³	RING GEAR SIZE (IN / MM)	OIL CAPACITY (QT / LITERS)	MAXIMUM TORQUE ⁴ (LB-FT/Nm)	AVAILABLE RATIOS BY RELEASE DATE ⁵	ALM
MODEL 4	420-1T8	DA-RT-40.0-4S HH	40,000 / 18,141	130,000 / 58,967 (on-highway) 68,000 / 30,844 (vocational)	9.5 / 0.37 11.0 / 0.43 12.7 / 0.50	48,000 / 21,772 52,000 / 23,587 57,500 / 26,082	15.35 / 390	11.6 / 11.0 (forward axle) 14.8 / 14.0 (second axle)	2.16 ⁵ , 2.28, 2.41, 2.64, 2.85, 3.08, 3.23		
	420-1U2	DA-RT-40.0-4S HH (Intermediate Track)	40,000 / 18,141								2.16 ⁵ , 2.28, 2.41, 2.64, 2.85, 3.08, 3.23
	420-324	DA-RT-40.0-4T HH	40,000 / 18,141					9.5 / 9.0 (forward axle) 8.0 / 7.5 (second axle)	1,850 / 2,508	2.16 ⁵ , 2.28, 2.41, 2.64, 2.85, 3.08, 3.23	Y
	420-325	DA-RT-40.0-4T HH (intermediate track)	40,000 / 18,141					11.6 / 11.0 (forward axle) 14.8 / 14.0 (second axle)	2.16 ⁵ , 2.28, 2.41, 2.85, 3.08, 2.64, 3.23	Y	
	420-1T9	DA-RT-44.0-4S HH	44,000 / 19,955					12.7 / 0.50	57,500 / 25,038	11.6 / 11.0 (forward axle) 14.8 / 14.0 (second axle)	2.41, 2.64, 2.85, 3.08, 3.23
MODEL 6	420-1W0 (single drive) with 443-1T2 (tag)	DA-RS-20.0-6S with DA-RX-20.0-6	40,000 / 18,141	105,000 / 47,627	9.5 / 0.37 (FR drive axle) 11.0 / 0.37 (RR tag axle)	N/A	17.32 / 440	12.0 / 11.0 (forward axle) 0.0 (rear tag axle)	2,050	2.28, 2.41, 2.53, 2.61, 2.73, 3.31, 3.58, 3.91, 4.30, 4.78, 5.22	
	420-1W1 (single drive) with 443-1T2 (tag)	DA-RS-20.0-6T with DA-RX-20.0-6								2.28, 2.41, 2.53, 2.61, 2.73, 2.85	Y

¹Gross Axle Weight Rating

²Gross Combination Weight Rating—dependent on application and selected ratio—may require application approval

³Standard application—may vary with optional equipment

⁴Max engine torque—dependent on application and selected ratio—may require application approval

⁵2.16 rear axle ratio is limited to 80,000 lb. on-highway only

Note: GCWR limits for vocation codes A85-006, A85-009, A85-010, A85-011, A85-012, A85-013: 80,000 lb. / 36,287 kg

Application Guidelines:

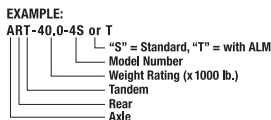
Please contact your component sales representative for details on application guidelines and application approval. Application review and approval is always required if application does not meet criteria listed in table, including the following conditions:

- Tire SLR larger than 19.96" (11R22.5)
- Vehicles equipped with a retarder
- Off-road more than 10%
- Vehicles using pusher/tag axles (creep load)

Application Limitations:

- Available with Spring or AirLiner suspensions only.
 - Available for all vocational codes (A85-XXX), except for military applications (A85-039).
 - 5 miles per hour maximum speed with liftable axles raised.
- This condition should not exceed 5% of the total operating miles of the vehicle.

Understanding a Model Code New Detroit Tandem Axles



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