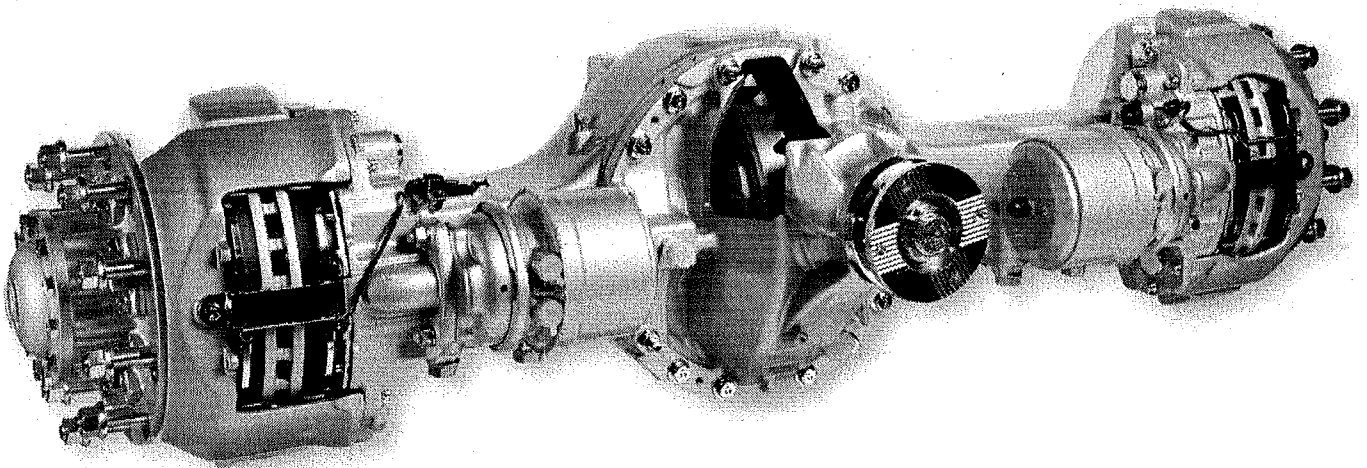


Bus and Coach Single Reduction Solo Drive Axle MC-13-17X



The Meritor® complete transit bus and coach portfolio encloses a wide range of bus and coach drive axles, braking systems, drivelines and ride control products including independent wishbonetype suspension systems. ArvinMeritor also offers electric drive axles for mid- and full-size buses as part of collaborative partnerships. Meritor components provide proven reliability in meeting the extremes of transit operating conditions – from stop-and-go city bus applications to high-speed, long-distance coach operations. All Meritor bus and coach components are backed by the

industry's finest sales, service and support network, including complete aftermarket service with a full inventory of genuine OEM-quality parts.

Since 1909 ArvinMeritor has been leading the axle market with reliable, long-life axles and advanced gearing technology. The company's nearly 100 years of axle-producing experience has led the group to become the world's largest independent manufacturer of heavy-duty truck axles for a vast range of vehicle applications. European production sites are located in Cameri, Italy, St. Priest, France and Lindesberg, Sweden.

MC-13-17X Technical Data

Load Ratings ¹	
Gross Axle Weight (GAW)	11.5 - 13.0 tonnes
Gross Vehicle Weight (GVW)	18.0 - 19.0 tonnes
Gross Combined Weight (GCW)	44.0 tonnes

Dimensional Data	
Ring Gear Pitch Diameter	461 mm
Pinion Stand Out²	381 mm
Pinion Offset³	78 mm
Housing⁴ Spring Seat Section	134 x 117 mm
Housing⁴ Thickness at Spring Seat	13 mm
Spindle Unitized Bearing Bore Dia.	90 mm
Axle Shaft Body Diameter	55.5 mm

Weight Data	
Carrier Ferrous Min⁵	165 kg
Carrier Ferrous Max⁵	170 kg
Carrier Drive Flange	3,5 kg
Housing⁶ with Brake Flange	116 kg
Hubs⁷ (Two Ferrous)	80 kg
Axle Shafts (Two)	50 kg

MC-13-17X Single Reduction Solo Drive Axle

The Meritor[®] single reduction hypoid axle is designed for on-highway applications and represents ArvinMeritor's latest product generation for European bus and coach applications. The MC-13-17X has been developed with quiet ride bevel set to improve noise performance and offers higher efficiency, improved structural rigidity, all at a reduced weight.

The MC-13-17X Axle has the following technical features:

- GAWR: 13 tons
- GCW Rating: 44 tons
- Ratios from 2.64 to 6.17
- Available with cast or stamped housing
- Driver controlled differential lock option

Quiet Ride Ratios
2.64 - 2.85
3.08 - 3.36 - 3.70
4.11 - 4.63
5.29 - 5.63
6.17

- 1 - Capacity ratings vary with application and service. Application must be approved by ArvinMeritor Heavy Vehicle Systems
- 2 - Pinion stand out is to face of pinion nut
- 3 - Without housing offset
- 4 - Stamped steel housing configuration
- 5 - Carrier weights are minimum weights for fast ratios and maximum for slow ratios
- 6 - Housings includes carrier to housing fasteners, bearing lock nuts and washers, excludes spring seats or suspension brackets
- 7 - Hubs includes bearings, seals, seal races, axle shafts to hub fasteners and wheel fixing studs and nuts for steel wheels

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Descriptions and specifications were in effect at the time of publication and are subject to change without notice or liability.

ArvinMeritorTM

Single Reduction Hypoid Drive Axle MS-13-17X

ArvinMeritor stands for

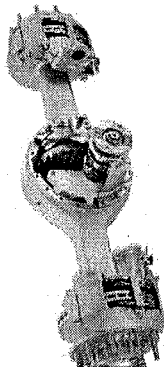
- **Advanced Gear Technologies**
 - Through Surface Hardening
 - Simplified Heat Treatment
 - Higher Throughput
- **New Cutting Methodologies**
 - Higher Capacity, Quieter Gearing
 - Noise Management
- **More Demanding Requirements for Future Bus and Coach Markets**
 - High Speed Gearing
 - Electric Drive Applications
- **High Power Density**
- **Component integration**
 - Optimize System Design
 - Maximize ArvinMeritor Content
 - Use Strength of Meritor Axles and Brakes to Pull Through Other Components

Since 1909 ArvinMeritor has been leading the heavy-duty axle market with reliable, long-life axles and advanced gearing technology. The company's nearly 100 years of axle-producing experience has led the group to become the world's largest independent manufacturer of heavy-duty truck axles for a vast range of vehicle applications, including front axles, single rear, tandem drive, tridem drive and trailer axles.

This complete family of products allows ArvinMeritor to offer the right axle to meet steer, drive and trailer axle requirements of customers in many vocations.

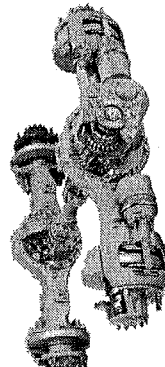
Additionally, all products are backed by industry's finest sales, service and support network.

MS-13-17X Single Reduction Solo Drive Axle



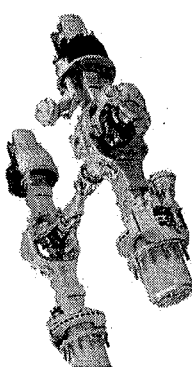
GAWR: 13 tonnes
 GCWR: 44 tonnes
 Ratios from: 2.64 to 6.17
 Available with cast or stamped housing
 Driver controlled differential lock option

F-150 Single Reduction Tandem Drive Axle

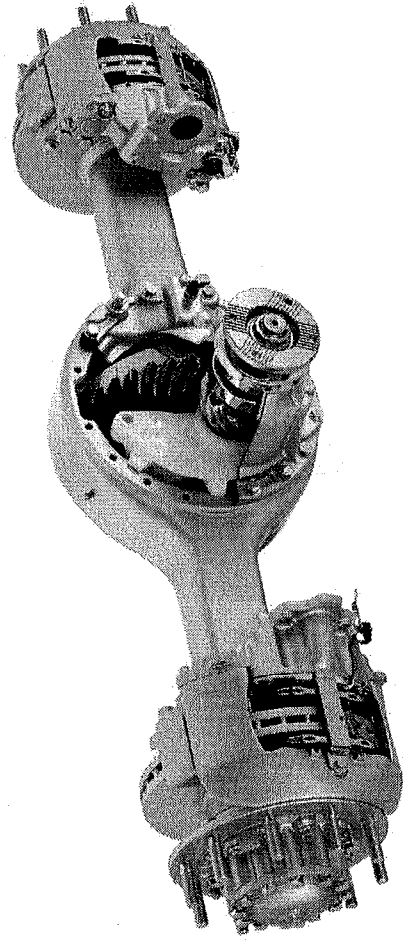


GAWR: 23 tonnes
 GCWR: 70 tonnes
 Driver operated cross-axle differential lock on front and rear axles and inter-axle differential lock
 Fitted with Meritor air disc brakes as standard, other brakes optional
 Available with cast iron or fabricated steel housing
 Ratios from: 2.43 to 6.17

F-32-610 Planetary Hub Reduction Tandem



GAWR: 32 tonnes
 GCWR: 100 tonnes
 Final ratios from: 3.61 to 7.21
 Driver operated cross-axle differential lock on front and rear axles and inter-axle differential lock



The product features GAWR of 13 tonnes, GCW of 44 tonnes and ratios ranging from 2.64 to 6.17. The MS-13-17X is available with cast or stamped housing and with an optional driver controlled differential lock.

The MS-13-17X Single Reduction Hypoid Axle is designed for on-highway applications and represents ArvinMeritor's latest product generation for European line haul operations. In order to meet increasingly demanding specific needs, this new drive axle offers increased capacity, higher efficiency and improved structural rigidity, all at reduced weight.

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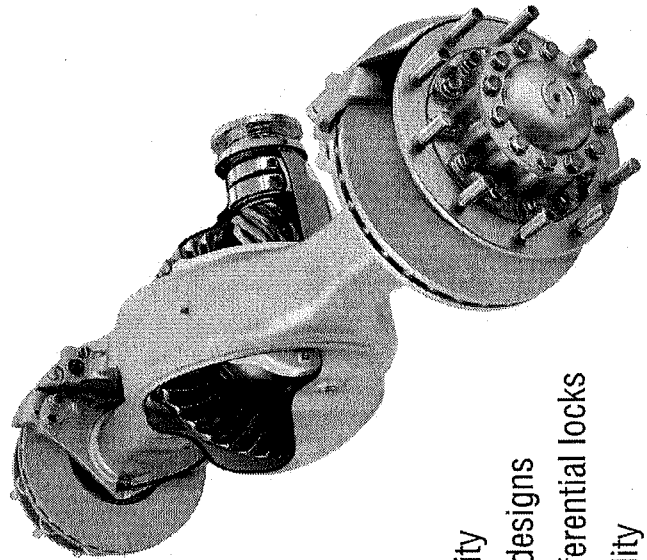
MERITOR
 an ArvinMeritor brand

MS-13-17X Solo Rear Drive Axle

The new Heavy Duty-Line Haul axle has the following technical features:

- High Volume - 145K p.a.
- Longer Life - 1,250,000km
- High Efficiency
- Part Count Reduced - 28% less
- Weight Reduced - 7% less
- Reduced Oil Quantity
- Advanced Manufacturing Technologies
- LBW: Laser Beam Welding
- Advanced Features
 - ECDL: Electronic Controlled Differential Lock
 - ILLC: Intelligent Lube Level Control
 - OQM: Oil Quality Monitoring

Feature	MS-13-17X
Axle Type	Single Reduction
SAW Rating	13T
Ring Gear Diameter	462.0mm
Nominal GCW Rating	44T
Differential Spherical Diam.	174.5mm
Tooth Combination	9 x 14
Housing Box Section	As Required
Standard Fabrication	134.0x117.0mm
Axle Shaft Bore Diameter	55.5mm
Ratio Availability	2.64 - 6.17

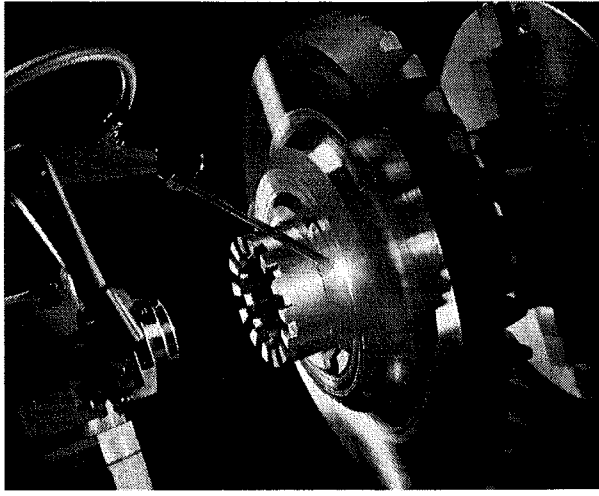


- High efficiency gearing
- High efficiency lubrication
- Integral brake to axle design
- and manufacturing capability
- Wide ratio availability
- Weight optimised designs
- Driver operated differential locks
- Worldwide availability

Laser Welding for Commercial Vehicle Drive Axles

The use of laser welding means that the drive ring and differential case become an extremely stiff unit, thus eliminating fretting and allowing a higher torque capacity. This also ensures that the gears are able to mesh better, resulting in a 30% increase in durability, which was proven on dynamometer tests and field trials.

In the predecessor generation the external ring gear, the differential case, the pinion housing to the carrier casting and the axle housing were joined by a total of 36 screws. (Figure 1 below) Elimination of the screws made it possible to optimise the flange of one half of the differential case as well as to remove the ribs in order to achieve a flat surface. This resulted in a reduction in flow resistance and turbulence in the transmission and therefore in fewer losses due to oil splashing.



The using of laser welding enables the axle carrier now to be 13kg lighter than the predecessor design and to have smaller assembly dimensions.

The lower weight, especially of the rotating parts, results in substantial reductions of fuel consumption.

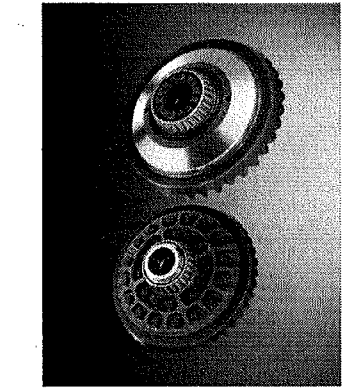


Figure 1: Predecessor design with bolts and screws (left) and new design.

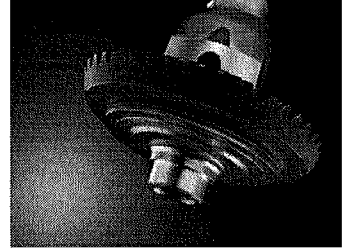


Figure 2: New laser welded design with flat surface.