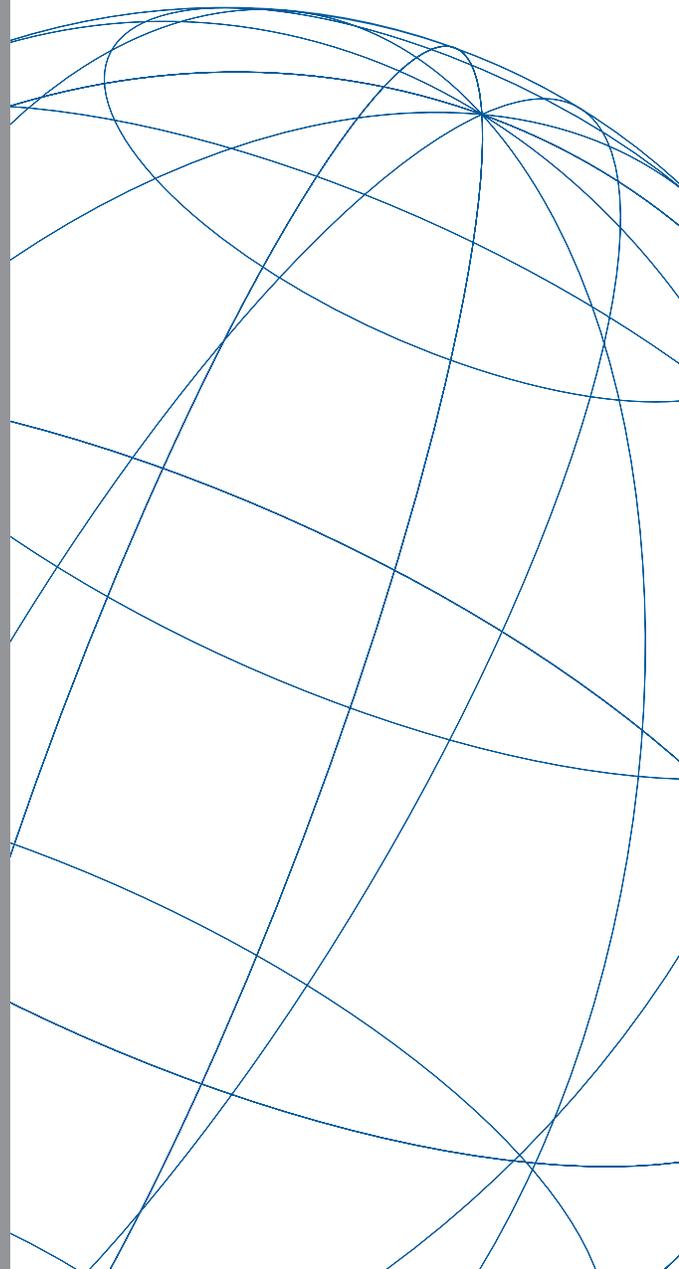
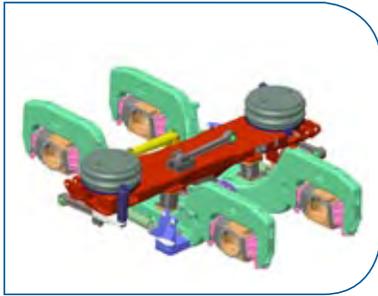


# Transit and Locomotive Truck Designs

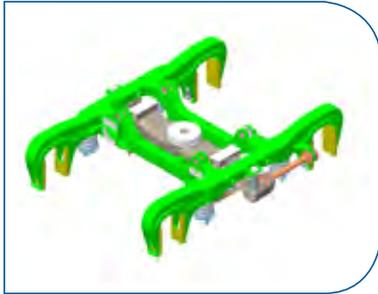


Our Innovation. Your Advantage.





**Bi-Level Truck**



**Gallery Truck**

## A Brief Company History

Bradken Engineered Products Division has a long history in the railroad industry. The original foundry, which was started in 1872, supplied cast iron parts used in steam locomotives during the great westward expansion of the late nineteenth century. In the 1920's the company began manufacturing large cast steel parts such as locomotive truck frames. In the 1960's the company designed several new lines of rapid transit truck assemblies which are still in use in major metropolitan areas throughout North America. In the 1990's, several new designs were acquired to help expand the company's market reach to the international level, and the Engineered Products Division continues to provide innovative cast steel solutions for rapid transit and locomotive truck applications.



**Articulated Truck**

# Transit Designs

**Bradken®** offers several proprietary rapid transit truck designs.

## Bi-Level Truck

The Bi-Level truck is a four wheel inboard bearing, rigid H-frame truck with secondary airsprings and primary chevron springs. Chevron springs are utilized to improve truck stability. The Bi-Level truck uses 33 inch wheels and 6 X 12 inboard bearings supporting the chevron springs. The truck was designed to be simple, reliable and to provide a high level of passenger comfort. The sub-assembled Bi-Level truck is interchangeable between both ends of the car and between cars produced for the same order.

## Gallery Truck

The Gallery Truck is a four wheel, outboard bearing, inside swing hanger, single equalizer, with steel coil primary and secondary suspension. The truck bolster is cast steel with inverted 16" center bearing. The truck frame is cast steel and is equipped for mounting unit tread brakes. The secondary suspension has two vertical dampers. All mechanical interaction between the carbody and truck assemblies is handled at the center bearing and truck bolster interface.

## Articulated Truck

The basic design is powered by an electrified third rail system. It is a four-wheel, inboard journal bearing, cast steel articulated frame truck, designed to use air suspension and direct acting dampers. The truck bolster transmits lateral and longitudinal forces from the truck to the carbody with the vertical loads being transmitted from the carbody to the side bearings on top of the bolster. The sideframe connection to the axles is a wrap-around design, which incorporates special shaped rubber sleeves between the journal bearings and the sideframes. During curve negotiation the truck pivots around the carbody mounted center pin with vertical forces being transmitted directly to the air springs through the loaded side bearing arrangement. The truck is designed to be simple, reliable and to provide a high level of passenger comfort.

Our Innovation. Your Advantage.

# Locomotive Designs

Bradken offers two proprietary locomotive truck designs.

## 5650 Truck

The 5650 Locomotive truck is a bolster-less design that has an overall wheelbase of 134 inches and is equipped with three outboard bearing axles, each powered by a traction motor. The single piece, cast steel truck frame is supported by two sets of double nested coil springs over each bearing housing. Four laminated steel/rubber shear pads, mounted on the truck frame support the locomotive platform. The truck frame mounted center pin transmits tractive/braking forces to the locomotive platform by engaging a center pivot traction pad assembly mounted on the underside of the locomotive. Two lateral dampers are mounted between the truck frame and the locomotive platform and act in the transverse direction, while two rotational dampers can be installed to minimize hunting at high speeds. The 5650 truck has been built in track gauges ranging from 36" (914 mm), 39.38" (1000mm), 42" (1067 mm), 56.50" (1435 mm), 63" (1600 mm), and 69" (1676 mm). The truck has been designed to accept DC traction motors from both GE and EMD. The 5650 truck is also designed to accommodate either single shoe or clasp braking.

## 5076 Hi-Ad Truck

The six-wheel high adhesion locomotive truck is a bolster-less design that is primarily utilized in locomotive applications where axle loads are above 50,000 lbs. The truck assembly has an overall wheelbase of 134 inches and is equipped with three outboard bearing axles, each powered by a traction motor. The single piece, cast steel truck frame is supported by two sets of double nested coil springs over each bearing housing. Four laminated steel/rubber shear pads, mounted on the truck frame support the locomotive platform. The truck frame mounted center pin transmits tractive/braking forces to the locomotive platform by engaging a center pivot traction pad assembly mounted on the underside of the locomotive. Two lateral dampers are mounted between the truck frame and the locomotive platform and act in the transverse direction, while two rotational dampers are utilized to minimize hunting at high speeds.

## Technical Specifications: Truck Designs

	Bi-Level Truck	Gallery Truck	Articulated Truck	5650 Truck	5076 Hi-Ad Truck
Operating Speed	95 mph/ 110 mph	79 mph	80 mph	65 mph	50 mph
Wheelbase	102 inches	102 inches	87 inches	134 inches	134 inches
Supplied Assembly Weight	9,000 lbs	7,000 lbs	4,200 lbs	12,000 lbs	25,850 lbs
Center Plate Loading	82,000 lbs	66,204 lbs	43,251 lbs	N/A	N/A
Maximum Axle Load	N/A	N/A	N/A	50,000 lbs	70,000 lbs
Bearing Size	6.50 x 12 Class "F"	6.50 x 12 Class "F"	6 x 11 Class "E"	6.50 x 12 Class "F"	7.00 Class "GG"
Wheel Diameter	33.00 inches	33.00 inches	28.00 inches	40.00 inches	42.00 inches

5650 Truck



5076 Hi-Ad Truck



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