City Bus Axle Systems



Safe Journey by GK





GK Drive Systems (Suzhou) Co., Ltd.

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in 2017, with its headquarters and manufacturing facility based in Suzhou, China. It also maintains offices in Beijing, Shanghai and Hong Kong.

As a dedicated industry player, GK delivers comprehensive axle system solutions specifically tailored for city buses, serving the global public transportation sector.

of the global bus axle industry.

solutions to customers across the globe.

To promote sustainable innovation in the public transportation industry.

To foster the personal and professional growth of our employees.

■ Product advantages

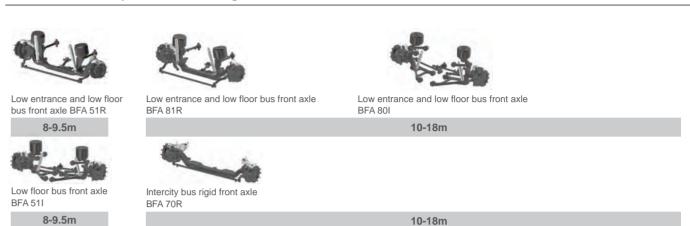
- Thanks to the lifetime maintenance-free hub bearing, no additional re-lubrication is needed during the axle whole life cycle. This significantly reduces operating costs and maintenance time.
- The double reduction system allows to reduce the floor height, a more accessible solution for passengers.
- Lower noise levels are achieved thanks to grinded gears and 100% NVH end of line test.
- GK quality process ensures that every axle we deliver is safe, reliable and quiet during operations.
- High reliability thanks to top brand components.

Maintenance-free hub bearing Second reduction First reduction Driven torque flow

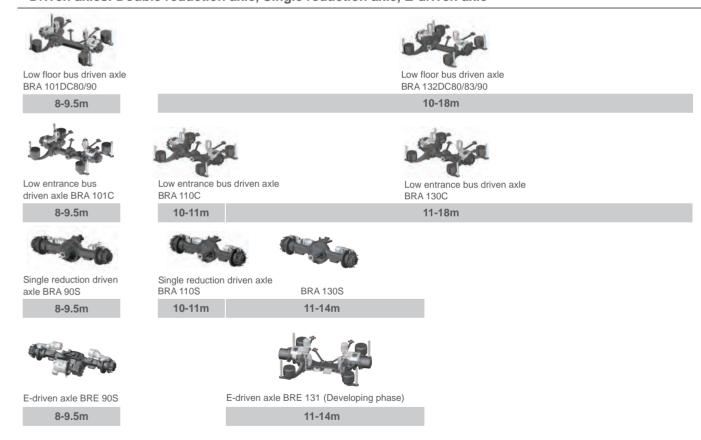
■ Product Portfolio

Products range covers from 8m to 18m low floor, low entrance and intercity buses

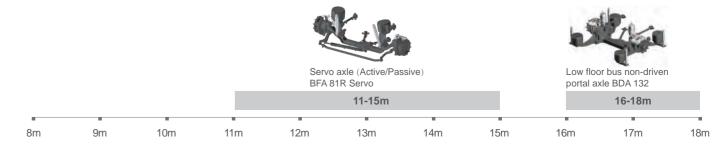
* Front axles: Independent axles, Rigid axles



* Driven axles: Double reduction axle, Single reduction axle, E-driven axle



* Servo axle, Non-driven portal axle





RIGID FRONT AXLE SYSTEM BFA 51R

■ Features

- Deep drop axle beam allows a low floor bus design.
- Suitable for 19.5 " tires and disk brakes.
- Optimized axle weight.
- Available in both left-hand drive (LHD) and right-hand drive (RHD) versions.



INDEPENDENT FRONT AXLE SYSTEM BFA 51I

■ Features

- IFS design improves the comfort for drivers and passengers.
- Higher maneuverability in urban areas.
- Optimized axle weight.
- Available in both left-hand drive (LHD) and right-hand drive (RHD) versions.

■ Specifications

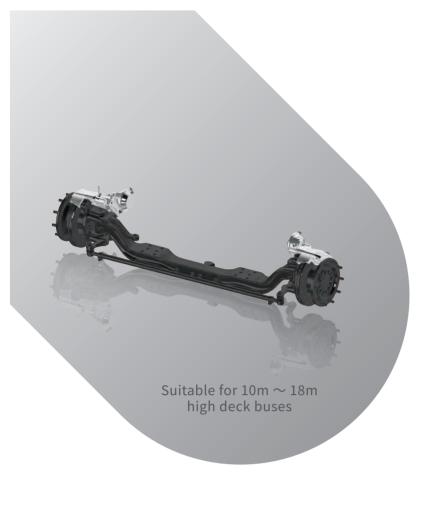
Technical Data	BFA 51R
Bus Width (mm)	2,400~2,500
Max. Axle Load (kg)	5,500
Wheel Travel (mm)	+85/-90
Wheel Cut (Inner/Outer)	50°/ 35°
Tire Size 1)	265/70R 19.5
Rim Size 1)	19.5" x 7.5"
Brake	Disk
Axle Weight (kg) ²⁾	450

■ Specifications

Technical Data	BFA 51I
Bus Width (mm)	2,350~2,500
Max. Axle Load (kg)	5,500
Wheel Travel (mm)	+80/-90
Wheel Cut (Inner/Outer)	53°/ 44°
Tire Size ¹⁾	265/70R 19.5
Rim Size ¹⁾	19.5" x 7.5"
Brake	Disk
Axle Weight (kg) ²⁾	480

Notes: 1) For other specifications, please contact GK. 2) Axle weight includes rods, air bellows and shock absorbers.

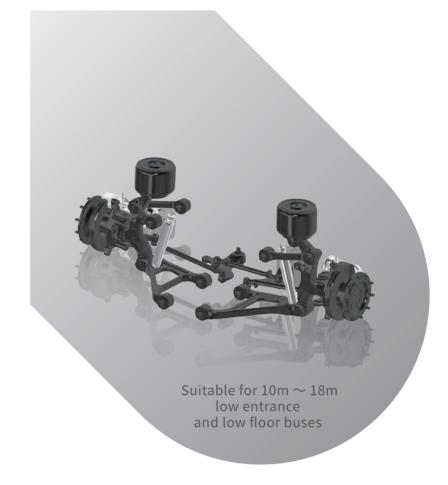
Notes: 1) For other specifications, please contact GK. 2) Axle weight includes steering linkages, air bellows and shock absorbers.



RIGID FRONT AXLE BFA 70R

■ Features

- Especially designed for intercity buses and coaches.
- Optimized axle weight.



INDEPENDENT FRONT AXLE SYSTEM BFA 80I

■ Features

- IFS design improves the comfort for drivers and passengers.
- Higher maneuverability in urban areas.
- Optimized axle weight.
- Available in both left-hand drive (LHD) and right-hand drive (RHD) versions.

■ Specifications

Technical Data	BFA 70R
Bus Width (mm)	2,500~2,550
Max. Axle Load (kg)	7,000
Wheel Cut (Inner/Outer)	47°/36°
Tire Size ¹⁾	275/70R 22.5
Rim Size 1)	22.5" x 8.25"
Brake	Disk
Axle Weight (kg) ²⁾	470

■ Specifications

Technical Data	BFA 80I
Bus Width (mm)	2,500~2,550
Max. Axle Load (kg)	8,000
Wheel Travel (mm)	±90
Wheel Cut (Inner/Outer)	53°/46°
Tire Size ¹⁾	275/70R 22.5
Rim Size ¹⁾	22.5" x 8.25"
Brake	Disk
Axle Weight (kg) ²⁾	580

Notes: 1) For other specifications, please contact GK. 2) Axle weight doesn't include suspension parts.

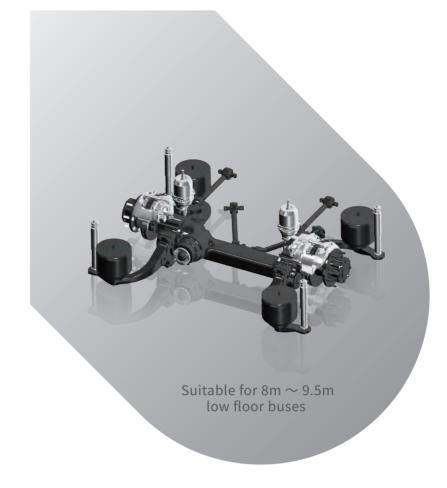
Notes: 1) For other specifications, please contact GK. 2) Axle weight includes steering linkages, air bellows and shock absorbers.



RIGID FRONT AXLE SYSTEM BFA 81R

■ Features

- Deep drop axle beam allows a low floor bus design.
- Optimized axle weight.
- Available in both left-hand drive (LHD) and right-hand drive (RHD) versions.



DRIVEN AXLE SYSTEM BRA 101DC90/80

Features

- Double reduction system.
- Bus aisle width could reach over 580mm.
- Suitable for 19.5" tires and disk brakes.
- Optimized axle weight.
- Grinded high quality gears for achieving lower noise levels.

10

■ Specifications

Technical Data	BFA 81R
Bus Width (mm)	2,500~2,550
Max. Axle Load (kg)	8,000
Wheel Travel (mm)	±80
Wheel Cut (Inner/Outer)	55°/ 40°
Tire Size ¹⁾	275/70R 22.5
Rim Size 1)	22.5" x 8.25"
Brake	Disk
Axle Weight (kg) ²⁾	600

■ Specifications

Technical Data	BRA 101DC90	BRA 101DC80
Bus Width (mm)	2,400~2,500	2,450~2,550
Max. Axle Load (kg)	10,500	10,500
Wheel Travel (mm)	±90	±90
Max. Output Torque (Nm)	34,000	34,000
Ratio ¹⁾	5.77	5.77/9.5
Tire Size ¹⁾	265/70R 19.5	265/70R 19.5
Rim Size ¹⁾	19.5" x 7.5"	19.5" x 7.5"
Brake	Disk	Disk
Axle Weight (kg) ²⁾	850	860

Notes: 1) For other specifications, please contact GK. 2) Axle weight includes rods, air bellows and shock absorbers.

Notes: 1) For other specifications, please contact GK. 2) Axle weight includes oil, rods, suspension arms, air bellows and shock absorbers.



DRIVEN AXLE SYSTEM BRA 90S

■ Features

- Cast iron axle beam improves NVH performance, especially suitable for new energy vehicles.
- Optimized axle weight.
- Grinded high quality hypoid bevel gear set for achieving lower noise levels.



DRIVEN AXLE SYSTEM BRA 110S/BRA 130S

■ Features

- Cast iron axle beam improves NVH performance, especially suitable for new energy vehicles.
- Optimized axle weight.
- Grinded high quality hypoid bevel gear set for achieving lower noise levels.

■ Specifications

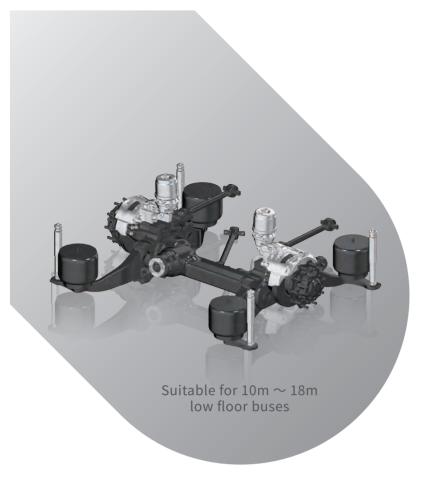
Technical Data	BRA 90S
Bus Width (mm)	2,400~2,500
Max. Axle Load (kg)	9,500
Max. Output Torque (Nm)	27,000
Ratio ¹⁾	6.14
Tire Size 1)	265/70R 19.5 (Twin)
Rim Size ¹⁾	19.5" x 7.5"
Brake	Disk
Axle Weight (kg) ²⁾	550

■ Specifications

Technical Data	BRA 110S	BRA 130S
Bus Width (mm)	2,500~2,550	2,500~2,550
Max. Axle Load (kg)	11,500	13,000
Max. Output Torque (Nm)	36,000	43,000
Ratio ¹⁾	5.13/5.63/6.14	5.13/5.63/6.14
Tire Size ¹⁾	275/70R 22.5 (Twin)	275/70R 22.5 (Twin)
Rim Size ¹⁾	22.5" x 8.25"	22.5" x 8.25"
Brake	Disk	Disk
Axle Weight (kg) ²⁾	695	705

Notes: 1) For other specifications, please contact GK. 2) Axle weight doesn't include suspension parts.

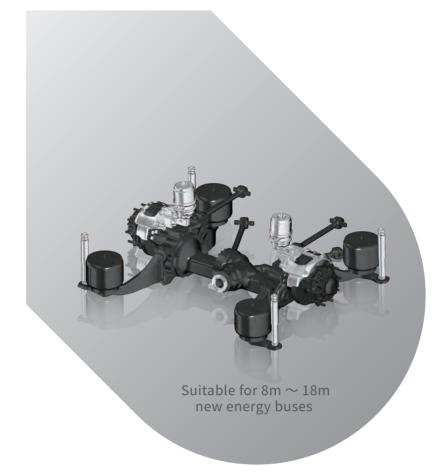
Notes: 1) For other specifications, please contact GK. 2) Axle weight doesn't include suspension parts.



DRIVEN AXLE SYSTEM BRA 132DC80/83/90

Features

- Double reduction system.
- Bus aisle width could reach over 580mm.
- Optimized axle weight.
- Grinded high quality gears for achieving lower noise levels.



DRIVEN AXLE SYSTEM BRA 101C / BRA 110C / BRA 130C

■ Features

- Double reduction system.
- Compact design and center input flange helps to optimize the weight distribution.
- Optimized axle weight.
- Grinded high quality gears for achieving lower noise levels.

■ Specifications

Technical Data	BRA 132DC80	BRA 132DC83/90
Bus Width (mm)	2,500~2,550	2,500~2,550
Max. Axle Load (kg)	13,000	13,000
Wheel Travel (mm)	±90	±90
Max. Output Torque (Nm)	46,000	46,000
Ratio ¹⁾	6.29 / 10.37	6.29
Pinion Input Angle	80°	83°/90°
Tire Size ¹⁾	275/70R 22.5 (Twin)	275/70R 22.5 (Twin)
Rim Size ¹⁾	22.5" x 8.25"	22.5" x 8.25"
Brake	Disk	Disk
Axle Weight (kg) ²⁾	990	985

■ Specifications

Technical Data	BRA 101C	BRA 110C	BRA 130C
Bus Width (mm)	2,400~2,550	2,500~2,550	2,500~2,550
Max. Axle Load (kg)	10,500	11,500	13,000
Wheel Travel (mm)	±90	±90	<u>±</u> 90
Max. Output Torque (Nm)	34,000	41,000	46,000
Ratio ¹⁾	5.77	6.29	6.29
Tire Size ¹⁾	265/70R 19.5	275/70R 22.5 (Twin)	275/70R 22.5 (Twin)
Rim Size ¹⁾	19.5" x 7.5"	22.5" x 8.25"	22.5" x 8.25"
Brake	Disk	Disk	Disk
Axle Weight (kg) ²⁾	870	1,015	1,025

Notes: 1) For other specifications, please contact GK. 2) Axle weight includes oil, rods, suspension arms, air bellows and shock absorbers.

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E-DRIVEN AXLE SYSTEM BRE 90S

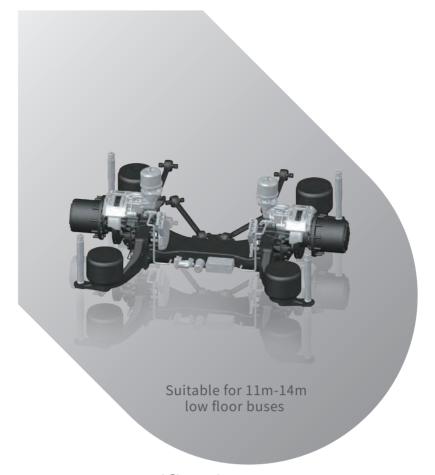
■ Features

- Integrated functions of the electric motor, gearbox, and driven axle.
- Thanks to the compact structural design, the axle's installation dimensions are more suitable for medium - sized buses.
- It has higher efficiency compared with conventional powertrains.
- · Optimized axle weight.

■ Specifications

Technical Data	BRE 90S
Max. Axle Load (kg)	8,500
Motor Peak Torque (kW)	188
Max. Output Torque (Nm)	12,500
Max. Motor Speed (rpm)	11,000
E-motor	Round wire winding PMSM (standard) Hair-pin PMSM (optional)
Ratio	20.128
Input DC Voltage (V)	350~750
IP Protection	IP 68
Tire Size	265/70R 19.5
Cooling Liquid	Water/Glycol
Axle Weight (kg) ¹⁾	640

Notes: 1) Axle weight includes axle and E-motors.



E-DRIVEN AXLE SYSTEM BRE 131

■ Features

- Deep drop E-Driven axle beam is more friendly for a low floor city bus design.
- System package including axle, traction motor, Inverters and control software achieves cost effectiveness and efficiency for vehicle manufacturer.
- "Hair pin PMSM motor + Oil cooling" design to achieve high efficiency and extreme continuous power.

16

• Weight optimized thanks to integrate design and mechanical parts reduction.

■ Specifications

Technical Data	BRE 131
Max. Axle Load (kg)	13,000
Motor Peak Torque (kW)	2 x 120
Max. Output Torque (Nm)	12,200
Max. Motor Speed (rpm)	11,000
E-motor	Hair-pin PMSM
Ratio	25.4
Input DC Voltage (V)	350~750
IP Protection	IP 68
Tire Size	275/70R 22.5
Cooling Liquid	Oil Cooling
Axle Weight (kg) 1)	1,250

Notes: 1) Axle weight includes axle, traction E-motors and inverters.



SERVO AXLE SYSTEM BFA 81R SERVO (ACTIVE/PASSIVE)

■ Features

- Both Active steering Servo axle and Passive steering Servo axle are available from GK.
- Same installation interface of Active steering Servo axle and Passive steering Servo axle, which is friendly to vehicle chassis design and upgrade.
- Active steering Servo axle significantly improves maneuverability of buses.
- Passive steering Servo axle installs
 multifunctional centering cylinder, which is
 friendly for vehicle design and weight
 optimized solution.



NON-DRIVEN PORTAL AXLE SYSTEM BDA 132

■ Features

- Deep drop axle beam allows a low floor articulated bus design.
- Optimized axle weight.

■ Specifications

Technical Data	BFA 81R SERVO (ACTIVE)	BFA 81R SERVO (PASSIVE)
Bus Width (mm)	2,500~2,550	2,500~2,550
Max. Axle Load (kg)	8,000	8,000
Wheel Travel (mm)	±80	±80
Steering Angle (Inner/Outer)	20°/ 18°	14.5°/ 13°
Tire Size ¹⁾	275/70R 22.5 (Single)	275/70R 22.5 (Single)
Rim Size ¹⁾	22.5" x 8.25"	22.5" x 8.25"
Brake	Disk	Disk
Axle Weight (kg) ²⁾	620	620

■ Specifications

Technical Data	BDA 132
Bus Width (mm)	2,500~2,550
Max. Axle Load (kg)	13,000
Wheel Travel (mm)	±90
Tire Size ¹⁾	275/70R 22.5 (Twin)
Rim Size 1)	22.5" x 8.25"
Brake	Disk
Axle Weight (kg) ²⁾	770

Notes: 1) For other specifications, please contact GK. 2) Axle weight includes rods, air bellows and shock absorbers.

Notes: 1) For other specifications, please contact GK. 2) Axle weight includes rods, suspension arms, air bellows and shock absorbers.

