



Bonfiglioli

Mobile

Electric Solutions
for Material Handling



Bonfiglioli

power, control and green solutions

Electric Solutions for **Material Handling**



Material handling operations are needed to become faster and faster, more and more efficient, more and more precise.

Moving goods is becoming a strategic task to increase productivity in all production, logistic and shipment processes.

As a consequence a new generation material handling machinery capable to optimize the Total

Cost of Ownership while increasing productivity is requested more and more. Electric vehicles used in this area (**counterbalanced forklifts, side loaders, articulated forklifts, etc.**) can efficiently respond to the needs of flexibility, precision, lower operating costs (fuel, maintenance, etc.) and of an emission-free workplace (safer for workers and customers).

600F series

Electric powertrains for material handling trucks

Bonfiglioli supplies high efficiency, low noise planetary axles and drives with integrated, high performance electric motors and low maintenance braking systems for Class 1 material handling vehicles. Typical applications include 3 and 4 wheel counterbalance lift trucks and ground support equipment. Bonfiglioli electric powertrains are fully tested in the factory and guarantee reduced energy consumption. This, in turn, means longer battery operating times, extended service intervals and a lower total cost of ownership. Bonfiglioli's 600F Series drives are complemented by a range of idle steering systems based on axles or steering units, depending on the number of wheels on the vehicle.



Type	Lift capacity [kg]
601F	2000
602F	3500
603F	5000

Type	Max deliverable torque [Nm]
601F	3000
602F	5500
603F	7000

Type	Max input speed [min ⁻¹]	Rated motor power [kW, S2-60']	Typical wheel size [inches]
601F	5500	2x4.5	18
602F	5500	18	23
603F	4500	26	28

Application

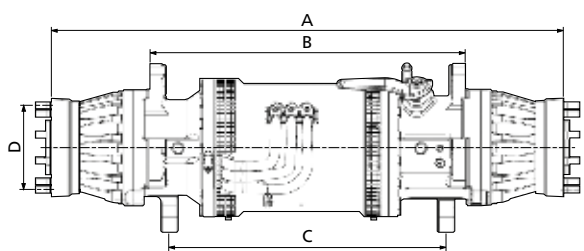
- Material handling vehicles (CB forklifts, articulated forklifts, airport equipment)
- Indoor and outdoor use
- CB trucks with lift capacity from 1.6 to 5.0 tons
- GSE vehicles with draw bar pull from 6000 to 25000 kgf
- Vehicle speeds up to 20 km/h

Standard features

- Dual planetary gearbox
- Optimised gear design for maximum efficiency and minimum noise
- Wet disc service brake with low displacement actuation
- Parking brake with mechanical lever actuation
- Integrated, customised mast support
- Integrated AC traction motor in IP20 or IP43 protection ratings
- Integrated, high accuracy, silicon based, KTY temperature sensor
- Integrated, high resolution, Hall effect speed sensor

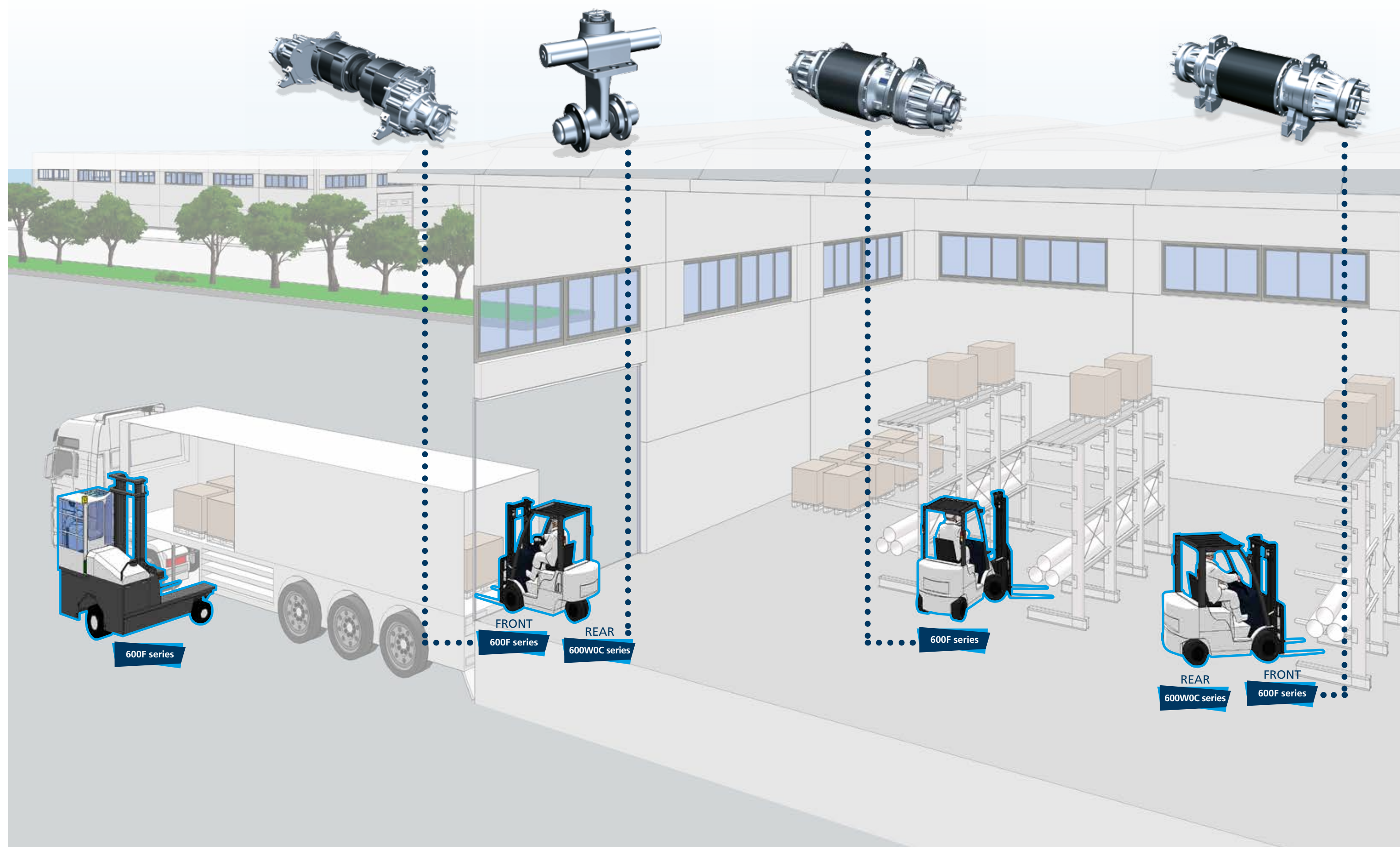
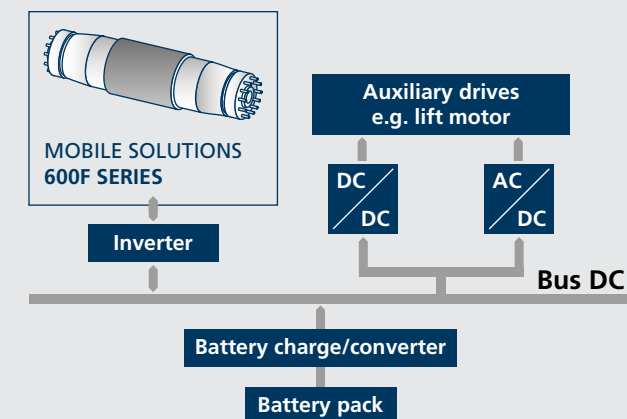
Optional features available on request

- Spring applied hydraulic release parking brake
- Mechanical disengagement for towing, with no need to remove the wheel and without oil drop



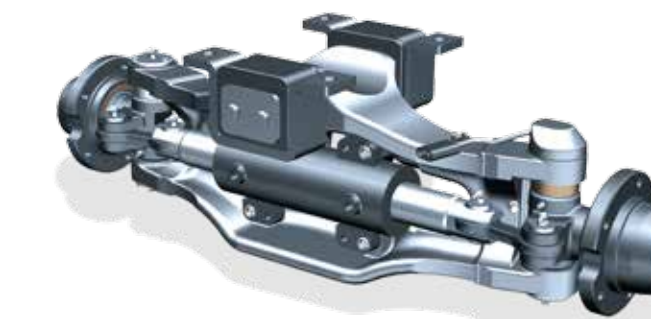
Type	A Flange to flange [mm]	B Frame mounting [mm]	C Mast mounting [mm]	D Wheel stud PCD [mm]
601F	1015	610	630	120
602F	1090	640	600	170
603F	1150	670	620	225

Functional diagram



600W0C series

Idle steering systems for material handling trucks



Application

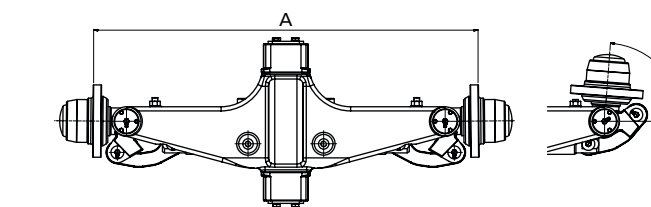
- Material handling vehicles (forklifts)
- Indoor and outdoor use
- Counterbalanced trucks with lift capacity from 1.0 to 3.5 tons

Standard features

- Steering by means of hydraulics
- Optimised design for steering angle

Optional features available on request

- Anti-vibration parts
- Potentiometer for steering angle



Type	A Flange distance [mm]	B Max steering angle [deg]
601W0C	175	85
602W0C	830	95
603W0C	930	85

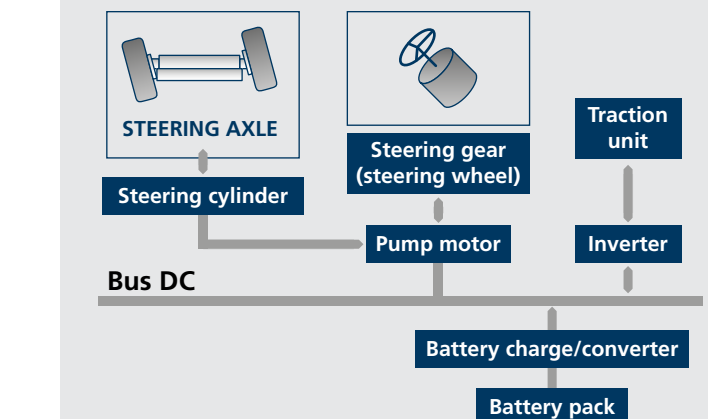
Bonfiglioli has been building idle steering systems for material handling vehicles since decades. These solutions are typically applied in the rear part of 3- and 4-wheel counterbalanced forklifts. They can be axles or steering units for twin wheels. Depending on the steering unit model, anti-vibration parts can be included and they serve as support for fixing brackets. The steering is realized by means of hydraulics that guarantees a high steering angle, in order to minimize the steering radius of the vehicle and allow the truck to move easily inside narrow aisles.

Depending on customer requests, it is possible to customize main dimensions and other characteristics of the units, like the presence of a potentiometer to read out the steering angle.

Type	CB Truck Lift capacity [kg]
601W0C	2000
602W0C	3000
603W0C	3500

Type	Number of wheels
601W0C	3
602W0C	4
603W0C	4

Functional diagram





Bonfiglioli has been designing and developing innovative and reliable power transmission and control solutions for industry, mobile machinery and renewable energy applications since 1956.

HEADQUARTERS

Bonfiglioli Riduttori S.p.A.
Via Giovanni XXIII, 7/A
40012 Lippo di Calderara di Reno
Bologna (Italy)

tel: +39 051 647 3111
fax: +39 051 647 3126
bonfiglioli@bonfiglioli.com
www.bonfiglioli.com



TR_DEP_MHDL_STD_ENG_R00_0