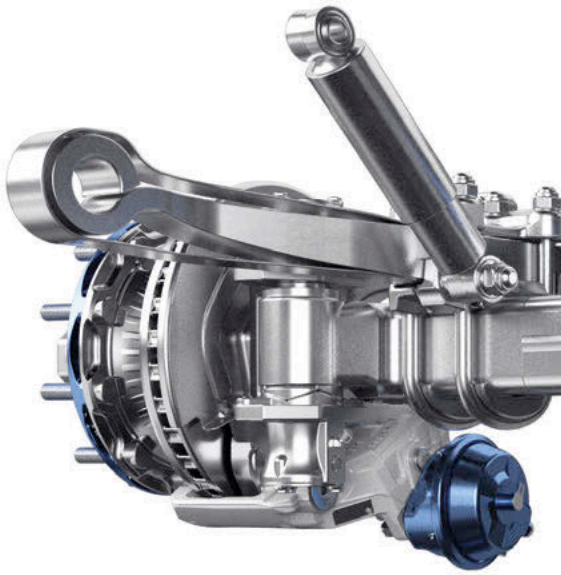


REVERSING AXLE AID

A new system from axle and suspension manufacturer BPW helps drivers carry out difficult and potentially dangerous manoeuvres near the loading bay, reports Lucy Radley

BPW has long been in the business of producing self-steering axles. Until now, these have always been designed to lock straight as soon as the vehicle begins to reverse – indeed, the self-locking mechanism itself is one of the BPW product's unique selling points. Now, BPW has launched a new system to the UK: active reverse control (ARC), pictured.

First shown as a concept at the IAA in 2018, then at Solutrans in France last year, ARC is a plug-and-play electro-hydraulic auxiliary steering system for pre-prepared versions of BPW's existing self-steer axles, which allows them to be controlled in reverse up to 10km/h. As well as increasing manoeuvrability, it is claimed that installing the self-steer system alone could save around 1,000 litres of diesel and four tyres over an average annual mileage of 100,000km, when compared to traditional fixed axles.

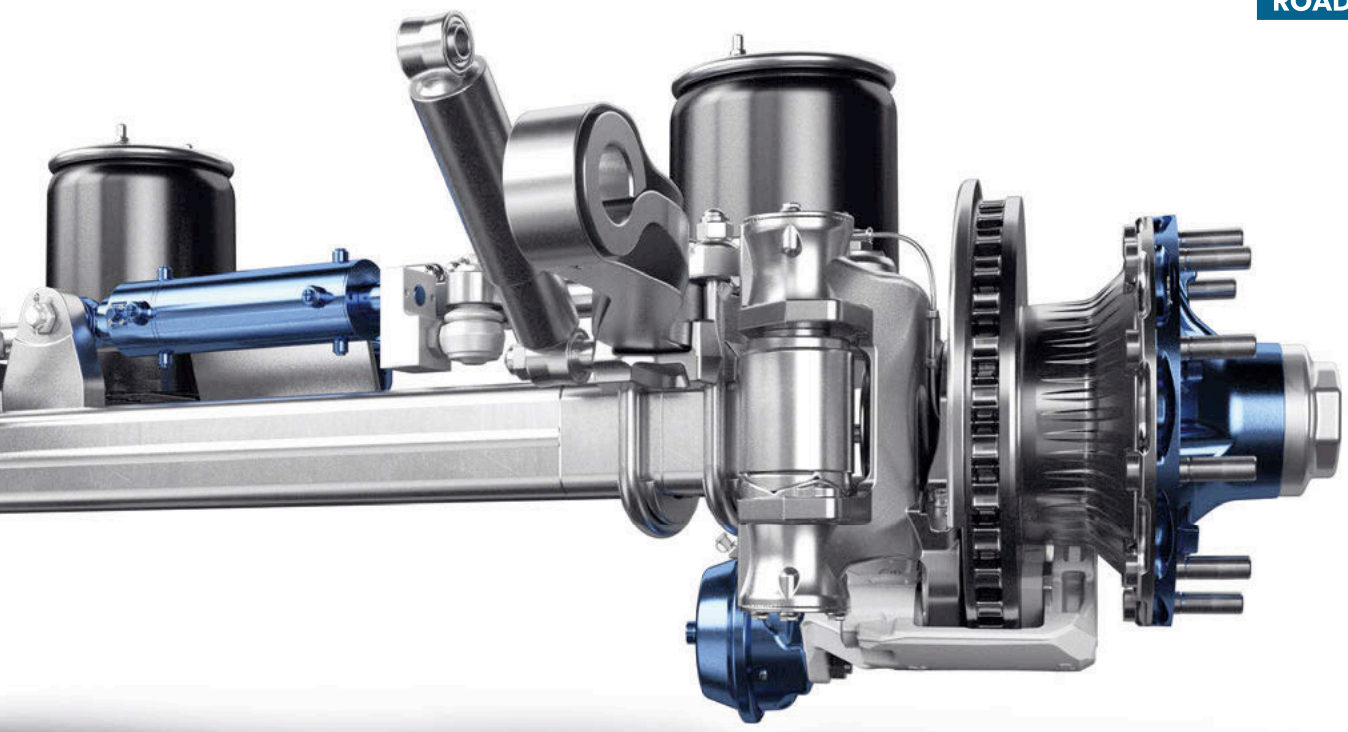
Instead of using an angle sensor in the king-pin, like most electro-hydraulic systems, ARC picks up information from a control unit mounted on the trailer, usually on the chassis beam. The steering system itself consists of an integrated control and hydraulic unit from which lateral acceleration is detected. The power for this is drawn from the truck battery. This is then linked to a BPW LL Series self-steering axle which has been supplied ready-prepared for ARC, with a factory-fitted steering cylinder including a linear position sensor, a speed and direction sensor in the wheel end and a proximity switch on the steering lock unit.

The other key input to the system is the reversing light signal. In order for the steering system to activate, both this and the wheel-end sensors must be detectable to confirm the vehicle is moving sideways. The proximity switch checks whether the locking mechanism on the self-steering axle has been disabled; if not, the ARC system will not activate at all. The steering itself uses a closed-loop hydraulic system – there is no need for the truck to be otherwise hydraulically equipped, and no separate steering system approval is required.

The overall ARC system is relatively light, weighing in at 58kg including the control unit. It can be used to steer up to two axles, although obviously this would be slightly heavier due to the additional equipment involved. The axles can maintain an angle of up to 27°, can carry a load of up to 12 tonnes and can be supplied with air suspension and either disc or drum brakes. ARC can be used independently of the EBS system, and there is also the option to operate the system manually via a radio remote control box.

Asked why the company went for a reverse-only system, rather than full electro-hydraulic steering along the lines of Tridec's EF-S or the VSE system distributed by IMS Group in the UK (*www.is.gd/bobewe*), BPW's sales and marketing director Neill Groves states that the concept was operator-led. "We've found there's a great deal of demand for manoeuvrability in those last few metres when the vehicle is backing on to a loading bay," he explains. "In terms of steering urban trailers this way when travelling in both directions, that may be an iteration going forward, but it's not something we saw as being our first port of call in looking at how to help our customers."

Fully electro-hydraulic systems tend to come with a high up-front cost, so this hybrid approach may well be a more sensible solution for many operators. As well as the plug-and-play installation available in conjunction with pre-prepared LL Series self steering axles, active reverse control is said to be able to be retrofitted to many existing self-steer axles without too much difficulty. Both the pre-prepared axles and ARC itself are available now. TE



RETROFIT ROUND-UP: FIVE NON-CAMERA SYSTEMS TO HELP REVERSE SAFELY

SENTINEL SYSTEMS

This indicator is for rubbish collection vehicles (RCVs), where bin lifts might cause blind spots for drivers, and road sweepers. The Heavy Duty Alerter System uses a radar head to monitor for obstacles or people, and sounds an audible warning in the cab in case it detects one. Another system, the SafetyStop Radar System, offers in-cab warnings as well as automatic brake application for vehicles fitted with EBS or using a Sentinel brake valve. Its sensor range can be adjusted to suit the vehicle application. In addition, both products are also available with an ultrasonic sensor.
www.is.gd/fulumi

AIDE AUTOMOTIVE

The BackStop Trailer & Truck Reversing System activates when the vehicle is put into reverse. It monitors 3m behind the vehicle and automatically engages the brakes when sensors detect a near object. Braking duration can be set between two and 30 seconds. Only once that time has elapsed, and the obstruction cleared away, will the brakes release. The system can be retrofitted to any rigid truck or trailer. Sister product, SonicStop, uses an ultrasonic sensor instead. Both employ lighted indicator stalks that mount to the body. Lights and controls create a simple reversing sequence.
www.is.gd/okohab

TRAFFIC ANGEL

The Trailermate system consists of a sensor array and lights that feed off of power to the reversing lamp. Connected to a waterproof (IP68) control box, three sensors arrayed at the back of the vehicle detect the presence of obstacles. Two LED lamps, positioned toward the rear third of the trailer so that they are visible in the rear-view mirror, indicate what the driver should do. As the driver approaches less than 1.5m from an obstacle such as a loading dock, the white lamp will flash slowly. The flash frequency increases as the distance decreases, until the lamp is continuously lit at 0.3m.
www.is.gd/ixenaw

MAPLE

This reversing sensor kit consists of two or four sensors drawing power from either 12V or 24V DC. The system either mounts under the bumper or under the vehicle. Switching on automatically when the driver puts the vehicle into reverse, the system detects objects up to 1.5m away. At that distance, the system emits an audible intermittent beep. That alarm changes in tone and frequency as the distance from the object reduces. When the obstacle is no farther than 0.45m, the alarm becomes a constant tone. An interlock silences the unit when sidelights are switched on – at nighttime – to reduce noise in built-up areas.
www.is.gd/abupux

DR. AIR BRAKE

The Reverse Smart sensor system consists of a wired sensor and a coloured in-cab display. When it detects an object, it sounds an alarm and indicates its proximity to the vehicle using a coloured light band (the colour temperature heats up from green to red as it approaches). When an imminent collision is detected, brakes are applied in a pulsed manner for three seconds. An integrated throttle control prevents the vehicle working against the brakes. In addition, a manual override button allows reversing into narrow streets and for parking, but it is set to time out after 30 seconds, though that duration can be reprogrammed.
www.is.gd/fokude