

SPOILT FOR CHOICE

As Volvo continues to refine its construction and severe-duty trucks, Brian Weatherley travels to Gothenburg to try its latest developments

Attending Volvo's recent construction and severe-duty trucks event at the Swedish manufacturer's Gothenburg demo centre, it was hard not to think of former prime minister Harold Macmillan's famous remark: "Most of our people have never had it so good." Certainly, Volvo's construction customers have never had so many choices when it comes to specifying their next multi-wheeler or heavy-haulage tractor.

The big news for STGO operators is the launch of I-Shift with crawler gears, which gives Volvo's FH16-750 flagship heavy-haulage tractor the ability to start

and haul gross combination weights up to 325 tonnes, well above the previous 125-tonne gcw UK rating for the 12-speed auto. What's more, the extra gears on the I-Shift's input and idler shafts add just 48kg, and increase its overall length by only 120mm.

Depending on application, I-Shift can be ordered with one or two deep forward crawler gears providing a 19:1 ratio in low crawler on the direct-top version (17:1 on overdrive) and a 32:1 ratio with the ultra-low crawler on both. Reversing ratio is 37:1. Such deep ratios enable ultra-low speeds of 0.5-2km/h, giving excellent control when manoeuvring in tight spots. Even

more noteworthy is the fact that the standard I-Shift clutch is retained.

For those FH chassis with I-Shift and crawler gears operating above 74 tonnes gcw, Volvo has also developed a new prop shaft with an increased 33,000Nm capacity. Price for I-Shift with one crawler gear is £3,200 and £4,800

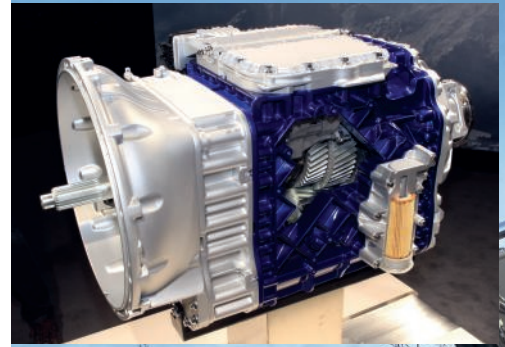
with two. I-Shift with crawler gears is also available on FM, FMX and FH models with 13-litre engines.

While I recently witnessed I-Shift with crawler gears first-hand during the spectacular 750-tonne truck pull staged by Volvo (*Transport Engineer*, May 2016, page 5), this was my first time in the driving seat. Easily restarting on a 12% gradient with a low-loader combination of 'only' 80 tonnes gcw, I was able to climb at a steady walking pace with the FH16-750's engine revs set via cruise control at just 600 rpm.

CRAWL FIRST

On the 16% downslope I then repeated the exercise, reversing from standstill. On neither occasion was there any hint of stress or strain on either truck or drivetrain. The low-speed control of an FH16-750 with I-Shift and crawler gears is remarkable.

Meanwhile, unveiled last September, Volvo's tandem axle lift option allows you to disengage the second driven axle on a 6x4 tractor or 6x4/8x4 rigid and raise it by 140mm. By replacing the inter-axle differential on the first driven axle with a dog clutch, drive to the second axle can be disconnected. Benefits include tighter turning circles (by one metre), reduced tyre wear and





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speeds, without having to constantly fight the steering wheel – or try to keep a foot on the throttle-pedal.

The front bogie loading capacity on FMX 8x4 rigids with steel sprung steer axles has also been updated from 18 to 20 tonnes, thanks to stronger leaves and 365/85 tyres. Front air suspension is optional on dual front-axle models, while operators preferring drum brakes on a multi-wheeler can now specify them with EBS on selected FMX chassis at no additional cost. With EBS drums, buyers gain Hill Start Aid and the option of VDS – though not on chassis with driven front axles.

For severe off-road site work, Volvo’s Automatic Traction Control is standard on its 4x4, 6x6, 8x6 and the latest 10x6 FMX models with a driven front axle. When ATC detects rear wheel slippage, drive is automatically supplied to the front axle via a dog clutch, transfer box and prop shaft, ensuring extra traction. ATC remains active until the driver releases the throttle pedal.

This system has already been used on Volvo construction equipment where it’s proven to be reliable and effective. Drive transfer takes around half a second. By disengaging drive to the front axle on roads, fuel savings of up to 2% can be achieved. Although designed to operate automatically, it can be activated manually, too. Meanwhile, driven front axle chassis gain the option of four bags per axle rear air suspension, with up to 300mm ground clearance.

Last but not least, I drove the latest FL 4x4 with increased ground clearance of 330mm at the front and 320mm at the rear. The permanent all-wheel drive FL (which includes 12-, 14- and 16-tonne models) comes with a slick six-speed Allison auto and two-speed transfer box. On the rough stuff the little FL-280 4x4 proved a competent, sure-footed performer, especially when climbing loosely gravelled steep slopes. **TE**

significant fuel savings of up to 4%.

Raising the second axle also aids traction off-road. However, the tandem bogie’s load capacity remains unchanged. When the first drive axle’s load limit is reached, the second automatically lowers and drive engages. When running empty or part-laden, the second axle can be raised via a dashboard switch. It takes around 15 seconds and can be accomplished on the move. Weight penalty is just 40kg.

At the Volvo test track, I experienced the improved manoeuvrability of an FH-500 artic fitted with the tandem lift bogie. Steering on full lock with the second drive axle first lowered and then raised, the reduced drag and tyre scrub could clearly be felt and seen. Though Finnish niche truck maker Sisu has a similar option, Volvo says it’s the first volume manufacturer to offer a lifting drive axle on a tandem bogie. UK list price is £2,735.

As part of its ongoing upgrade, FH construction trucks also gain a heavy-duty 3mm steel three-piece front bumper. Moved forward 132mm, it protects vulnerable components in the event of a minor front-end shunt. Developed from the FMX, the new bumper also offers an improved approach angle and includes a 36-tonne

capacity towing eye. A new low-height (by 190mm) FH cab option is also available. Developed primarily for mining applications, this can also be specified for car transporters or chassis with overhead cranes.

TIP AND MIX

What about tipper and mixer operators? Well these gain more options with the latest FMX. The most obvious, and arguably attractive, is VDS (Volvo Dynamic Steering) on four-axle rigids with twin-steer front axles (£2,350).

VDS features an auxiliary electric motor in the hydraulic power steering pack, which significantly reduces steering effort and helps isolate the wheel from road surface imperfections and kick-back. It also automatically returns the wheel to straight ahead after reaching full-lock. While I would question the need for VDS on road-going chassis (Volvo’s standard steering is already good) its value off-road is unquestionable.

Driving a VDS-equipped FMX-500 eight-legger on a demanding off-road circuit, I soon appreciated its fingertip lightness and ability to block road shock. Used in conjunction with cruise control, it allows a driver to comfortably negotiate very rough terrain at slow