

Liebherr presents XPower – the new generation of Emission Stage IV / Tier 4f large wheel loaders

- XPower is the new generation of Liebherr's large wheel loaders
- Liebherr XPower power-split drivetrain as standard for maximum performance and fuel efficiency
- All XPower wheel loaders meet the Euro Stage IV / Tier 4f regulations
- The new XPower is characterised by robust design and operator comfort
- The introduction of the XPower wheel loaders is scheduled for the first quarter 2016; introduction in overseas regions is planned for third quarter 2016

Bischofshofen (Austria), 18 November 2015 – Liebherr presents the new generation of XPower large wheel loaders. Liebherr XPower is an integrated, innovative machine concept that sets new standards in terms of fuel efficiency, performance, robust design and comfort. At the heart of the XPower wheel loader is the Euro Stage IV / Tier 4f compliant power-split drivetrain, which Liebherr fits as standard for these machines. This combines hydrostatic drive, which is ideal for material uptake and travelling over short distances, with mechanical drive, the advantages of which come to the fore over long distances and when driving on gradients. The combination of these two drive types in a single wheel loader ensures maximum efficiency and outstanding fuel savings in every situation, enabling operators of the Liebherr XPower wheel loader to reduce their fuel consumption by up to 30 per cent.

At Liebherr's research and development department at its Bischofshofen plant, fuel efficiency, performance, robust design and comfort were the main objectives in the development of the new wheel loader.

Liebherr has subjected this new generation of wheel loaders to the most rigorous programme of testing used to date. The XPower wheel loaders have proved their robustness over a total of more than 65,000 operating hours. The load programme covered everything from conventional reloading to special customer-specific applications. XPower test machines were put to work in various quarries, sawmills, recycling companies and at a composting plant. The wheel loaders tested were also

used to load slag at a steel plant and coal at a harbour. The important main components, such as the power-split transmission and the larger axles, were found to be particularly robust.

Liebherr XPower® driveline: maximum efficiency, whatever the application

The Euro Stage IV / Tier 4f compliant XPower drivetrain delivers performance and efficiency for the new Liebherr large wheel loaders. The drive concept combines a hydrostatic drive with a mechanical drive. The hydrostatic driveline is the most efficient type of drive for loading operations over short distances. The mechanical drive is the most powerful and efficient option for travelling over long distances and driving up gradients.

The power-split transmission of the XPower wheel loaders makes it possible to combine the two types of drive. It is variable and continuously adapts the mixing ratio of the two drive paths automatically. Thanks to the power-split drive, the wheel loader is always optimally powered to ensure maximum productivity, whatever the application. This results in fuel savings of up to 30 per cent in comparison with conventionally-driven wheel loaders.

Liebherr-Werk Bischofshofen GmbH is a development partner for the transmission manufacturer. Liebherr has actively contributed its many years of wheel loader development experience to enable the manufacturer to optimise the power-split transmission to meet the requirements of the new XPower drive system. As Liebherr offers the power-split drivetrain as standard, the designers were able to develop all other components in line with the new drive concept of the XPower wheel loader. The tried and tested Liebherr Power Efficiency system (LPE) plays a key role: it proactively controls all components in real time to achieve maximum possible efficiency. It is this special optimisation that enables the XPower generation to achieve such outstanding fuel savings resulting in considerable operating cost savings for the operator.

Robust design as a guiding principle for product development

Liebherr has made significant investment in the longevity of the new large wheel loaders in a number of ways. The rigorously tested Liebherr XPower drivetrain

represents robust design as it generates its power through the interaction of two different drive paths thereby distributing the load between the two and greatly extending the service life of the components.

Every XPower wheel loader is fitted with stronger axles than the previous machine generation, often being fitted with axles from the next model up in the earlier range. In addition to the axles, Liebherr has reinforced other core components such as the hydraulic cylinders. Liebherr continues to develop and manufacture key components in-house or in partnership with premium manufacturers. This means Liebherr can ensure the consistent high quality of the components used.

The SCR technology, developed for diesel engines by the Liebherr competence centre, is yet another innovative feature of the XPower wheel loaders. This simple, reliable and highly effective emission reduction system has fewer components and auxiliary consumables than conventional diesel particle filter systems. Diesel particle filters and exhaust gas recycling, for example, are no longer required with SCR technology. As SCR technology does not require filter regeneration, high exhaust gas temperatures are avoided, thereby significantly reducing the risk of fire. This improves the system's reliability and increases machine availability. However, Liebherr is still able to supply diesel particle filters for applications where their use is mandatory.

Reinforced lift arm and optimised buckets boost productivity

It is not only Liebherr's XPower drivetrain that boosts efficiency. To improve operational productivity still further, Liebherr has reinforced the lift arm and optimised the lever ratio. The revised Z-bar linkage results in break-out forces that are up to 20 per cent higher than those of previous machine generations.

Liebherr customers can choose between Z-bar linkage and industrial linkage for the XPower L 550, L 556, L 566 and L 580 wheel loaders at no extra cost. Z-bar linkage is ideally suited to conventional wheel loader applications such as extraction. The optional industrial lift arm, also available at no extra cost, is best suited to uses with heavy equipment.

Along with the improvements to the lift arm, Liebherr has also re-engineered the bucket design. The optimised buckets penetrate the material more effectively to facilitate fast and efficient filling and Liebherr has also reinforced the bearings and the bucket structure. The XPower generation can use standard buckets that are between 0.2 and 0.5 cubic metres larger, depending on the model. The standard bucket volume varies between 3.2 cubic metres for the L 550 XPower and 6.0 cubic metres for the L 586 XPower, depending on the machine model. This allows machine operators to move more material with each loading cycle.

Load capacity is increased as a result of the mounting position of the components. Liebherr fits heavy components, such as the engine, right at the back of the machine, which shifts the centre of gravity towards the rear axle and removes the need for additional counterweight. This ideal weight distribution results in high tipping loads and greater handling capacity per hour of operation.

Larger cab, simple maintenance: focus on comfort

A wide access ladder leads to a spacious and comfortable cab. Liebherr developed the cab in close cooperation with wheel loader drivers to achieve the highest standards of comfort with a logically-arranged cab interior that feels spacious and includes handy storage options. Ergonomics have been thought through down to the smallest detail with the displays, operating elements and driver's seat forming a single ergonomic unit that can be adjusted by the driver to suit their individual needs. For example, the driver can select one of three adjustment options on the steering column. The movement-following Liebherr operating lever is integrated into the driver's seat as a standard feature and allows accurate and intuitive control of the working and driving functions. These investments in the comfort of the driver facilitate fatigue-free and focused work.

The cab design provides outstanding visibility. The glass and window areas are larger and extend further downwards than in earlier wheel loader models, improving all-round visibility. The reversing camera, fitted as standard, is integrated into the touch screen display. These measures – in combination with the slimmer design of the customised engine hood – ensure excellent all-round visibility and therefore maximum safety for operator and machine.

The machine operator's daily work is made trouble free thanks to a range of well thought-out features. For instance, the engine hood opens backwards, providing quick access to the engine for maintenance work. A pedestal for comfortable and safe working is integrated into the opened hood. The most important maintenance areas are close to the cab and can be checked with ease. The fuel and urea tank (SCR system) are combined in one place, making refuelling more straightforward. A footboard for the cab makes safe cleaning of the windscreen easier and is also used to hold the driver's door in position.

The radiator is located immediately behind the operator's cab in the cleanest area of the wheel loader. In this position, the cooling system can aspirate air with a low dust content, which ensures consistent and reliable cooling performance. This intelligent design solution also reduces maintenance and increases the service life of the cooling system. Equipment options, such as a reversible fan drive, fluff filter or a coarse-meshed radiator net, protect the cooling system against pollution during particularly dusty operations. This advanced cooling system increases machine availability.

Performance data

	Tipping load (kg)	Bucket content (m ³)	Operating weight (kg)	Engine output (kW/HP)
L 550 XPower	12,200	3.2	17,700	140/191
L 556 XPower	13,700	3.6	18,400	165/224
L 566 XPower	15,900	4.2	23,900	200/272
L 576 XPower	17,600	4.7	25,700	215/292
L 580 XPower	19,200	5.2	27,650	230/313
L 586 XPower	21,600	6.0	32,600	260/354

Image captions

liebherr-l566-xpower-rehandling-material.jpg

The Liebherr L 566 XPower rehandling. With the power-split XPower drivetrain, the wheel loader can handle both short and long distances as well as driving on gradients with maximum efficiency. The high performance of the new machine boosts operational productivity.

liebherr-xpower-wheel-loader-l586.jpg

The L 586 XPower is the largest machine in the new Euro Stage IV / Tier 4f compliant generation of large wheel loaders from Liebherr. The standard version, with an operating weight of 32,600 kg, has a remarkable tipping load of 21,600 kg.

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