

## **ZF HC 85 – compact, continuously variable, fast**

- **New hydrostatic drive HC 85 allows speeds up to 50 km/h**
- **Compact and modular design for variable CVT operation**

**ZF presents new, continuously variable hydrostatic transmission for compact machinery at the Munich Bauma.**

**The 2HC 85 transmission system with integrated actuators and sensors for construction machinery up to 10 tons allows continuously variable vehicle speeds up to 50 km/h and does not require any additional shifting devices. 2 crankshaft radial piston motors are an integral part of the drive unit. (fig. 3)**

Compact off-road machinery is used where the large machine has no access or is overdimensioned. Apart from the amount of load, however, the requirements on the vehicle are similar. In addition to the known requirements of the market for more compact drive systems with reduced noise level, there is an ever increasing demand for reduced fuel consumption. At the same time, however, the vehicle speed shall be increased. The new HC 85 hydrostatic drive meets these market requirements.

Highly precise maneuvering when loading and unloading plays a key role in any off-road machinery application. This is possible at full traction throughout the entire speed range thanks to the hydrostatic 2HC 85 drive. The whole accelerator pedal play can be used for exactly positioning the vehicle by selecting the desired driving range.

### **2HC 85 features:**

- Hydrostatic transmission for vehicles up to 10 tons
- Equipped with 2 crankshaft radial piston motors ensuring increased efficiency and reduced fuel consumption

### **Advantages:**

- Vehicle speeds up to **50 km/h**
- Increased riding comfort, continuously variable without gear shifts

- No tractive effort interruption, resulting in higher work output
- The electronically controlled driveline management provides a low start-up speed; the load sensing control ensures optimized diesel speed even under load.
- Enhanced efficiency and reduced fuel consumption levels by crankshaft radial piston motors
- Noise reduction by lower hydrostatic motor speeds
- Increased degree of freedom regarding vehicle construction thanks to a very compact design
- The integration of hydrostatic motors into the transmission system reduces the number of external hose pipes and valves, leading to a reduction of interfaces to the vehicle.
- One-source supply of complete driveline:  
Transmission, axles and driveline control.

### **Integrated crankshaft radial piston motors**

ZF installs crankshaft radial piston motors, compared to other hydrostatic driveline solutions with bent-axis axial piston motors. With the crankshaft radial piston motor design there are less leakages thanks to piston seals. The pistons are guided in pivoted cylinders and therefore are not subject to transverse forces.

Following are the essential features of this crankshaft radial piston motor:

- Wide range of displacement variation
- Variable displacement down to 0 ccm/rev., integrated into the crankshaft
- Speeds up to **2,500 rpm** combined with high pressure
- High starting torque
- High efficiency
- Low noise level



Picture caption:

3.) ZF 2HC 85 for Compact Loaders

Picture: ZF

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The ZF Division Off-Road Driveline Technology and Axle Systems specializes in the development and production of transmissions and axles for agricultural and construction machines as well as axle systems for buses and trucks. With 7,000 employees the division generated a preliminary turnover of 1.1 billion euros in 2009.

ZF is one of the world's leading automotive industry suppliers specializing in driveline and chassis technologies. With a workforce of 59,900 employees, the company operates 125 plants in 26 countries. ZF Group revenues in 2009 a preliminary turnover of €9.3 billion. ZF ranks as one of the top-10 automotive industry suppliers worldwide.

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