FORD

Service Manual

Ultra-Command™ Powershift Transmission 8630, 8730, 8830

40863030

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PART 5

TRANSMISSION SYSTEMS

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Chapter 5

ULTRA–COMMAND™ POWERSHIFT TRANSMISSION FORD 8630, 8730 and 8830

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A. TRANSMISSION – DESCRIPTION AND OPERATION

The ULTRA–COMMAND™ Powershift Transmission is an 18 forward speed and 9 reverse speed hydro–mechanical transmission with electronic management. The term "powershift" refers to the feature of the transmission that allows gear changing, or shifting, to be performed without interruption of the power delivery to the wheels.

Eighteen forward speeds are achieved by using a constant mesh system of high quality carburized straight cut gears. Power flow selection is made possible by multi–plate wet clutches engaged hydraulically using an electronic control system. Figure 1 shows a cut–away view of the mechanical aspect of the transmission.

Transmission Housing

With reference to Figure 1, the housing is cast in three major parts, a front housing, a centre section and a rear housing. Access to the internal components is only possible by separating the rear housing from the centre section, and then removing the centre section from the front housing. The transmission must be completely removed from the tractor for all disassembly procedures involving the internal components.

The front housing contains the primary speed components that provide the first 9 speeds in their initial stages. In addition, it provides support on its forward face for the front bearings of these components. The centre section provides support for the rear bearings of these components and has attached to it the main hydraulic control valve housing. This centre section also acts as the oil circuit distributor. All circuits are drilled and routed to the various components through this item. Additionally, the forward bearings of the components in the rear housing are supported by this centre section. The rear

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