

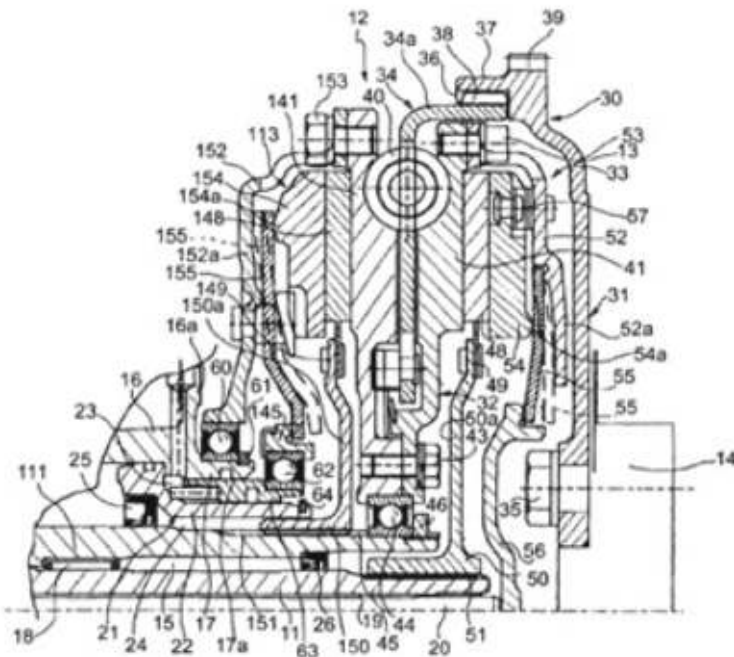


*Development IS PROCEEDING at the Orbassano (Turin) based Fiat Research Centre on new six- and seven-speed double clutch transmissions*

Development is underway at the Orbassano (Turin) based Fiat Research Centre on new six- and seven-speed double clutch transmissions, which are set for application on vehicles within the Fiat Auto and Ferrari ranges' as soon as 2010. Although direct shift gearboxes have been offered by Volkswagen and Audi since mid-2003, the principle behind the system dates back to the 1930's, when French engineer Adolphe Kégresse devised a double clutch transmission for application on the Citroen Traction Avant.

In a nut shell, the idea behind double clutch transmissions is to provide for a system which avoids interruption of tractive power during gearshifts. Two clutches are arranged upstream of the gearbox, and are connected by concentric shafts to conventional synchro shift slider-sleeve units. For example, the hollow outer shaft could drive the slider-sleeves of the even ratios, (2nd, 4th, 6th) whilst the inner shaft drives the slider-sleeves of the odd ratios (1st, 3rd, 5th). This arrangement typically allows for the pre-selection of gears whilst the engine is in traction, with the eventual shift being carried out under load, by disengaging a clutch while simultaneously engaging the other. Ideally the double clutch layout is used in combination with automatic or sequential gearboxes.

The Fiat double clutch transmission is being engineered to ensure maximum comfort, arranged in such a manner that the clutch-actuating forces are not discharged onto the crankshaft of the engine, and do not therefore represent a potential critical factor for the axial supports of the engine. In addition, the Fiat system can operate in spite of misalignments and eccentricities between the crankshaft and the gearbox input shafts. Furthermore the Fiat double clutch gearbox includes a clutch unit designed to filter out the torsional and axial oscillations of the crankshaft, thus providing for optimal comfort as well as increased reliability due to reduced gearbox wear.



The main advantage of the Fiat double clutch transmission is that the crankshaft, and consequently also its axial supports (usually friction bearings), are not loaded axially during the actuation (disengagement/engagement) of the clutches. This characteristic allows for an increase in the axial loads required to actuate the clutches without thereby increasing the stresses on the axial bearings of the crankshaft. It is also possible to reduce the lever arms of the disc which bring about the disengagement/engagement of the clutches, with a consequent reduction in the actuation travel required. In addition, the new gearbox has a simple architecture which is been designed with space saving and low

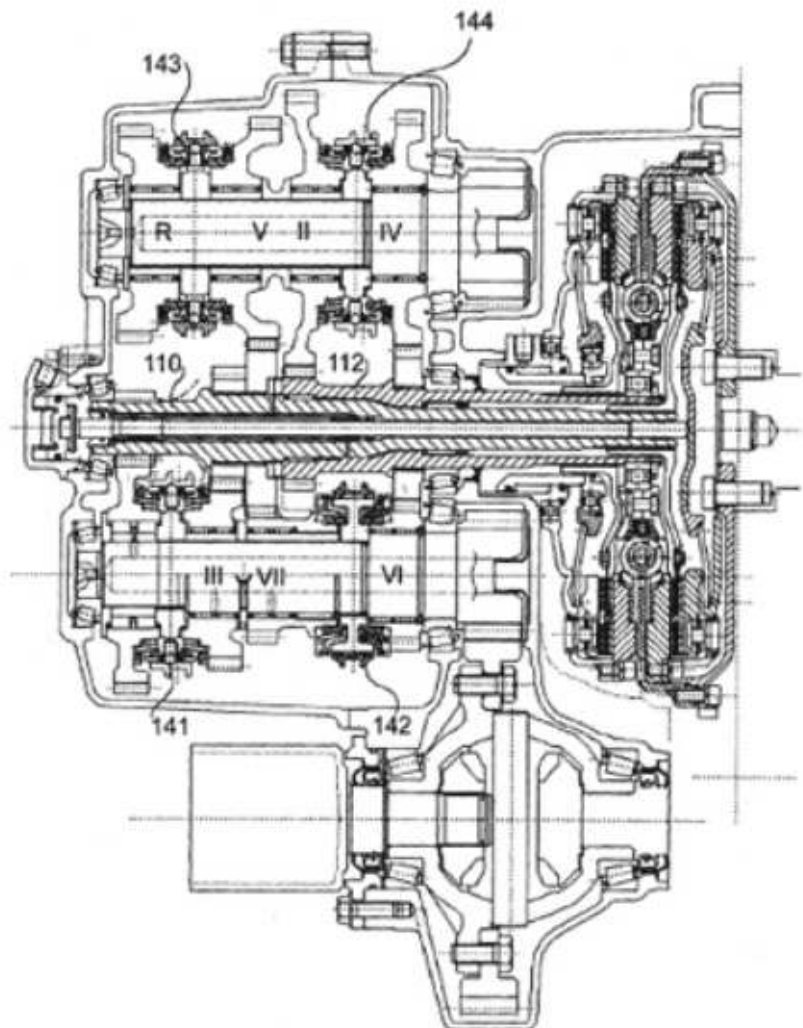
manufacturing costs in mind.

Engineers at CRF are working on a servo-assisted control system of the electro-hydraulic type, particularly for six- and seven- speed double clutch gearboxes. One of the main advantages of the electro-hydraulic control system is the small number of components and therefore low relative cost. In addition the system allows the gearbox to perform the greatest possible number of multiple gear changes in "power shift" mode directly (that is non-sequentially) available from the gearbox architecture (for example during the following downshift manoeuvres, from 7th to 4th or 2nd, from 6th to 3rd or 1st, from 5th to 2nd and from 4th to 1st).

The system is also easily adaptable to different gearbox versions in such a way as to allow a further reduction in the costs of production.

Future vehicles with longitudinal engines, particularly belonging to the long-term Alfa Romeo-Maserati joint architecture programme, such as the Alfa Romeo 169, as well as new Ferrari models will likely be the first to be fitted with the Fiat double clutch transmissions.

by Paddy Granger





***First shakedown test for the new Ducati Desmosedici GP7, fitted with a new 800cc engine in compliance with 2007 MotoGP regulations***

Ducati Corse Factory test-rider Vittoriano Guareschi has carried out the first shakedown test of the Ducati Desmosedici GP7 motorbike, fitted with a new 800cc engine in compliance with new MotoGP regulations that come into force next year. Alongside the development work being carried out by Loris Capirossi and Sete Gibernau for the 2006 MotoGP championship, the Desmosedici GP7 machine that will form the basis for the Italian manufacturer's challenge for the 2007 season, had its first shakedown test yesterday at Mugello.

Guareschi, who has steadfastly carried out this testing role since 2002, took to the track yesterday with the new 800cc powered prototype machine, marking the start of the first track test of the Desmosedici GP7 that will continue through until Thursday. The scene for the shakedown test was Ducati's 'home' circuit of Mugello, which was the venue for the debut of the first version of the Desmosedici way back on August 1, 2002.

Filippo Preziosi (Ducati Corse Technical Director)

"Today the new 800cc engine finally moved from the dyno to the track and we are quite satisfied with this debut. We started off by running a check on all the components of the new bike and over the next two days, if we don't encounter any particular problems, we will move on to phase two and begin the first set-up work.

"Today is certainly very important, but it is just the start of a long path that we know lies ahead of us. A special thanks goes out to all the guys in Ducati Corse who have worked hard over the past few months to get the bike, with which we will race in next year's championship, out onto the track today, as well as all of our suppliers and technical sponsors, above all Shell Advance, who with their technology, experience and availability are making a decisive contribution to our project."

Vittoriano Guareschi (Ducati Corse official test-rider)

"I have to admit that the first lap with the GP7 was really exciting. I am used to testing new solutions on our bikes, but this was different to the others: it is a totally new machine, and so it's even more exciting than usual. It seems just like yesterday that we were testing the Desmosedici GP3 here at Mugello for the first time, but four years have gone by! Today we made another important step forward in the MotoGP project: it is as if our family has given birth to a second 'baby' and the first noises it has made are not bad at all!"

South African Prices:

ALFA ROMEO 159

1.9 JTS (120Kw) 6-Speed Manual R235,000.00

2.2 JTS (145 Kw) 6-Speed Manual R255,000.00

302 4x4 (190Kw) 6 Speed Manual R350,000.00

2.4JTD Diesel (155Kw) 6-Speed Automatic R290,000.00

These are indicative prices, the 159 should be out at the end of May 2006.



BRERA COUPE

2.2JTS (145Kw) 6 Speed Manual R285,000.00

3.2 4x4 (190Kw) 6-speed Manual R350,000.00

SPIDER

2.2JTS (145Kw) 6 Speed Manual R295,000.00

3.2 4x4 (190Kw) 6-speed Manual R360,000.00

Available in about October.

Compliments of:

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