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**WORKSHOP FILE 13**

## PRECISE FRAME MEASUREMENT

M.a.x. is a new microprocessor controlled optical-electronic system for motorcycle chassis measurement. It consists of a measuring bracket with two electronic measuring cameras, a 'target' bracket with infrared illuminated targets and an integrated microprocessor. The controlling and measuring software program, which runs on a portable laptop computer supplied with the system, includes the motorcycle manufacturers reference data.

The measuring cameras assess the position of the targets at the front of the bike (the same principle used by satellites when surveying the earth's surface). Several measurements at different positions along the handlebar then enable the microprocessor to calculate the exact steering head axis without any need to dismantle the front of the bike. An adapted laser for minor jobs such as the measuring of the rear frame and the swingarm, completes the system. The display on the laptop guides the user through the mounting of the gauge and the complete measuring procedure. The final read-outs from the analysis make it easy to compare the results with the reference data.

Apart from its ease of use and constant guidance from the laptop display, the great advantage of M.a.x. is that, for the first time, it allows the measuring of frames, without removing many parts - on most bikes, only the fuel tank has to be removed. Advanced computerisation also minimises the possibility of error. Not only does this ensure speed and precision checking of customer's bikes, but it also gives added confidence when selling crash-repaired or second-hand machines. It is also currently the only machine on the market capable of checking the new generation of chassis on bikes such as BMW's R1100 and Yamaha's GTS1000.

For its complexity, M.a.x. offers a simple, economical advantage to both workshops and specialists - quick, precise checking! The IDN team were lucky enough to have a chance to evaluate the system at last year's Internot show. To see it for yourself, contact Bernd Scheibner at:

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