# **Massey 3000-Series Tractors New From Ground Up**

DES MOINES, Iowa - With cylinder AT4.236 engine. virtually every component totally new or re-engineered, the M-F 3000 Series tractors are brand new 'clean sheet'' designs without any compromises.

"Autotronic" models will have the automated controls package as standard. "Datatronic" models share the same automated systems but with additional systems that provide automatic wheelslip control and a wide range of information about the tractor's performance, which the driver can use to adjust his operating techniques to maximize efficiency.

Basic models share all the other leading features of the "Datatronic" and "Autotronic" machines, including fullysynchronized 16-speed transmissions and electronicallycontrolled three-point linkages.

#### 600 Series Replaced

The new 3000 Series machines, replacing the existing four-model M-F 600 Series range, include: M-F 3050 - 60 PTO hp; M-F 3060 - 68 PTO hp; M-F 3070 - 80 PTO hp; and M-F 3090 - 95 PTO hp.

All are offered with two or fourwheel drive, and cabs have noise levels well down in the mid-70's dBA range.

#### Engines

Familiar and well-proven Perkins diesel engines provide the heart of the 3000 Series tractors. Matched with entirely new drivelines, power losses have been dramatically reduced to give direct power increases at the wheels and PTO.

The six-cylinder machine, the MF 3090, has the Perkins A6.3544 naturally-shaped engine, of which more than one million in various versions are already in use worldwide.

The four-cylinder Perkins A4.236 and A4.248 naturally-aspirated engines are used in the M-F 3050 and 3060 respectively, while the 3070 has a turbocharged four-

The M-F 3070's turbocharged engine incorporates Perkins' unique "wastegate" design. This

ensures a high boost at low engine RPM for improved low-speed torque. At high engine speed excess boost pressure is dumped via a valve.

#### Transmissions

hydraulically-actuated The clutches are self-adjusting and require no maintenance. The same basic 13-inch unit is used across the range with variations in spring loadings and friction plate material to match the different engine outputs.

Operated by two "H" gate levers, the transmission is fullysynchronized and provides 16 forward and 16 reverse speeds. An optional speed-shift can be added to increase the number of forward and reverse speeds to 32. For special applications, a creeper unit can also be installed that will increase the number of slower speeds available.

The optional Speed-shift, hydraulically operated by a pushbutton, provides an instant down change without declutching that increases pulling power by 26 percent to maintain work output in the toughest conditions.

The creeper gearbox option will provide an additional range of slow speeds as low as 0.3 mph.

Power Take-Off The standard PTO is a 540 or 1000 RPM, provided by in-terchangeable shafts. The 540 or 1000 RPM output is almost exactly at the same engine speeds (1997 RPM for 540 and 2000 RPM for 1000). This provides the flexibility for PTO operations of a useful range of engine torque back-up to maintain output if loads increase, as well as the opportunity to increase engine speeds to drive machines faster if needed.

The driveshaft to the PTO gears employs a "straight through"

design, which reduces the number of components. This, combined with locating the pressure lubricated clutch well above the oil level in the transmission housing to reduce oil drag within the clutch, largely accounts for the increase in power available through the transmission to the wheels and PTO.

#### Two or Four-Wheel Drive

With turning angles of 55 degrees on two-wheel drive models and 50 degrees on four-wheel drive machines, maneuverability of the M-F 3000 Series tractors is excellent for tight turns in the field or working in confined spaces. The axles can oscillate through 22 degrees for good ground contact over undulating surfaces.

Both two and four-wheel drive use the same front axle pivot bearings and support casting, with the pivot bearings widely spaced to minimize stress in the axle beam.

Drive to the front wheels is transmitted via a central shaft, and engaged by push-button. The front four-wheel drive axle is Massey-Ferguson's new open design constant velocity joint, which prevents the blockages that can occur with closed designs. Final reduction gears and halfshafts are fully-sealed against water, dust and mud. It is fitted with the M-F front differential operates which lock, automatically.

**Easy Serviceability** 

The routine oil and filter changing and cleaning intervals are 250 hours for engines and 1000 hours for transmissions.

Upper and lower panels on both sides of the hood are easily removed for complete access to the engine area.

The transmission oil filter is externally-mounted at the side of the center housing. The engine oil



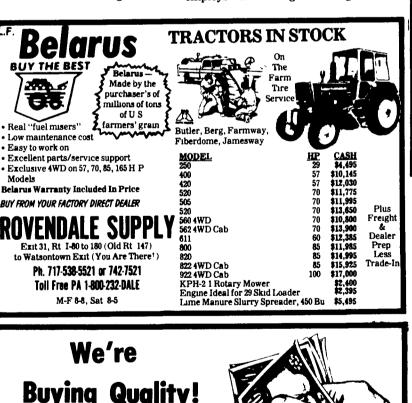
New M-F 3090 tractor has 95 PTO hp. All 3000-Series units have 16-speed transmissions, speed-shift and electronically controlled three-point linkages.

filter and fuel filters are also instantly accessible.

Batteries are maintenance-free. Brakes, including the parking brake, and the transmission clutch

are self-adjusting. Oil in the braking system is automatically maintained at the correct level by the hydraulic system.







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