

Zetor

FORTERRA HD SERIES



Tractor is Zetor. Since 1946.

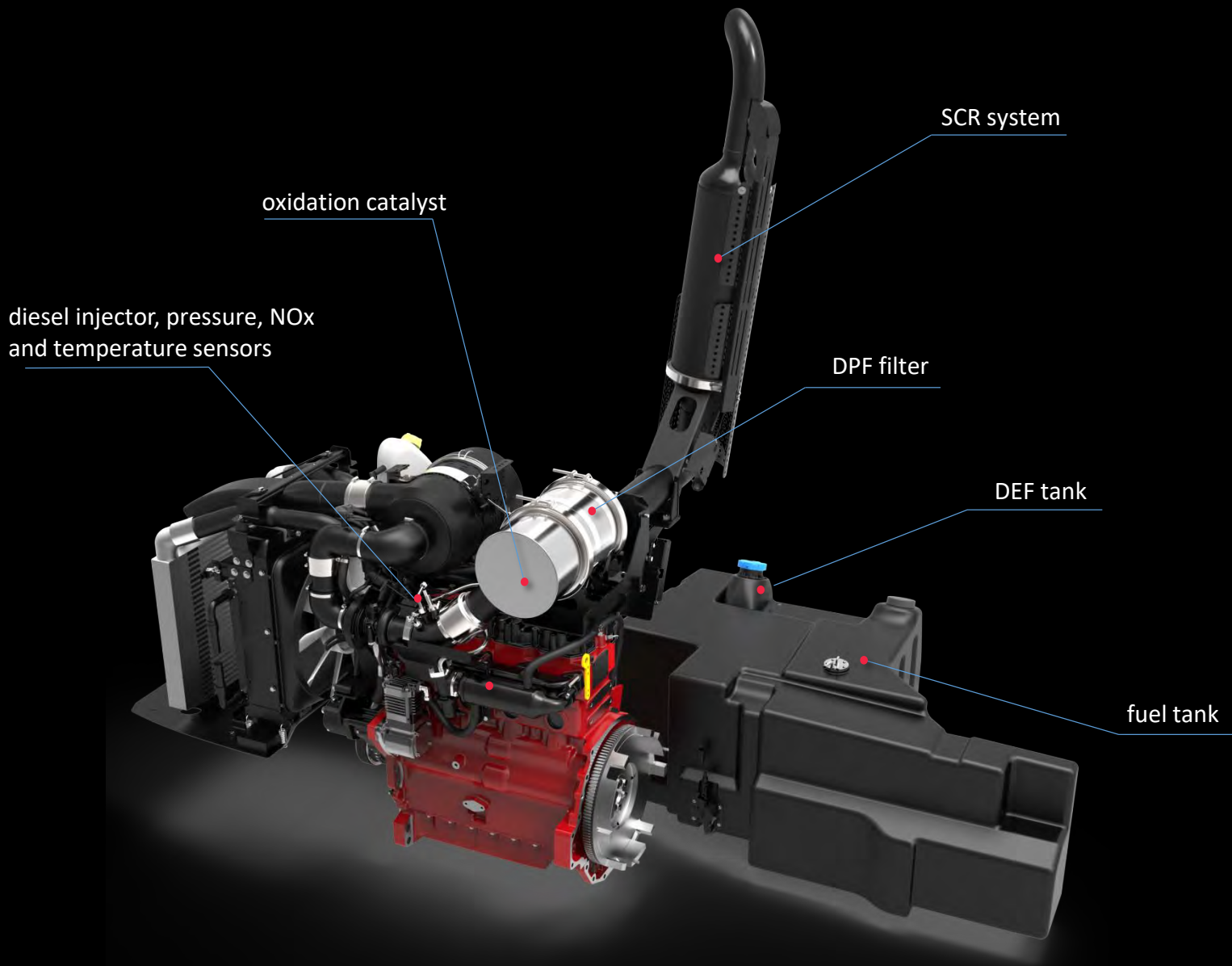




Zetor Manufactured Engines

FORETEERA HD Series T4F Engines are the most advanced four-cylinder series ever built.

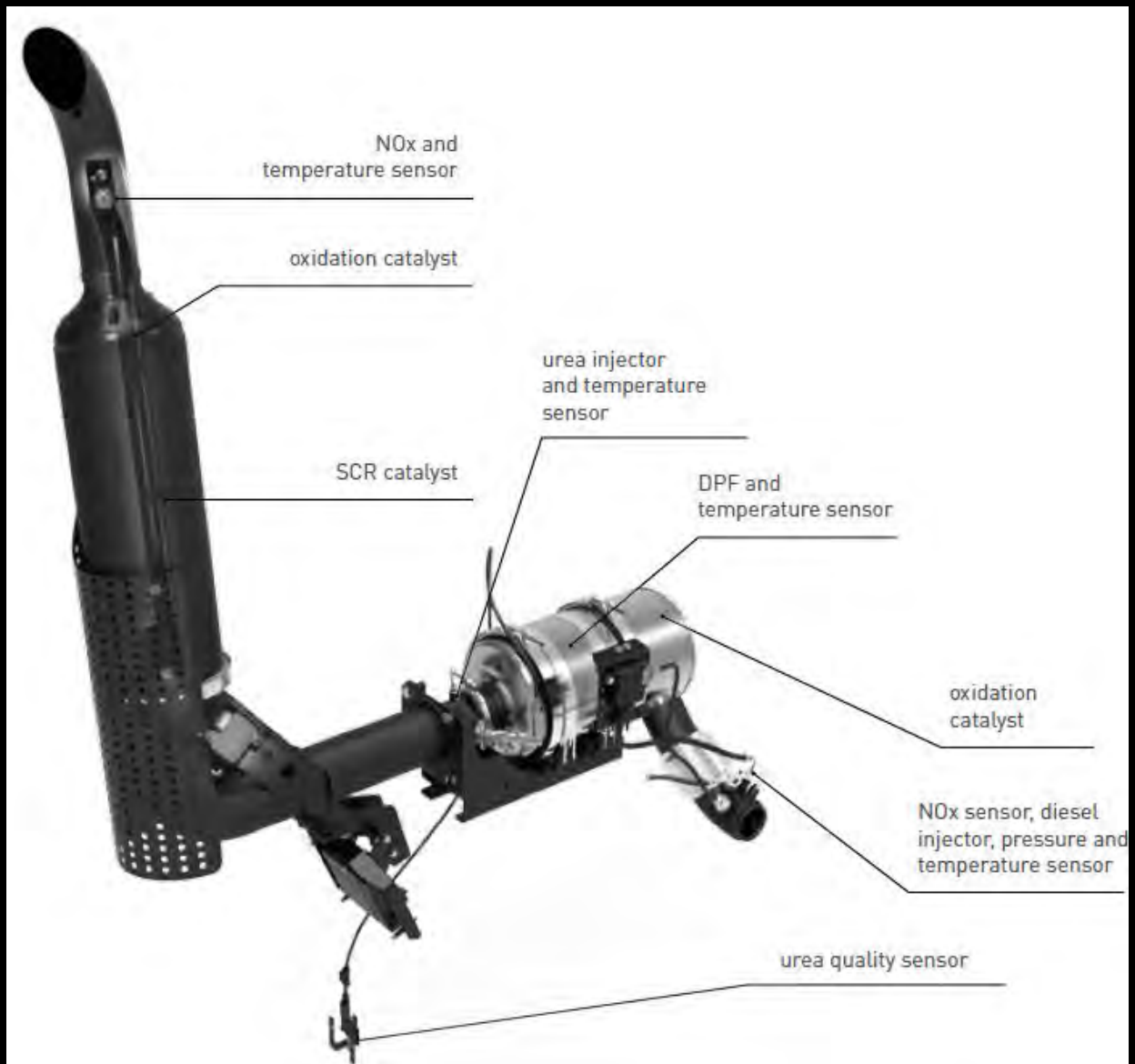
The objective was to introduce a high horsepower tractor with a four cylinder engine offering fuel economy and lower operating costs that no six-cylinder tractor with the same power can match, while at the same time delivering the same durability and reliability that Zetor is known for 74 years running.



New T4F Zetor engines do not use emission sensors, only the aftertreatment , DOC and catalyst have emission control sensors.

The fuel tank and Def urea tank is blended together as shown below.

The DPF filter combined with the muffler is under the hood.



EXHAUST GAS TREATMENT SYSTEM

The system of additional exhaust gas treatment consists of oxidation catalyst, DPF filter, and SCR (selective catalytic reduction) system. It has own control unit.

Oxidation catalyst – is installed before the DPF filter, its function is to reduce toxic CO to CO₂. It also partly reduces hydrocarbons (HC).

DPF – works towards cleaning exhaust gases – catching and burning soot. Modern engines produce soot with particles less than 0.005 mm in size, which are not visible to the eye, they cannot be caught in the upper air passages of humans, and can penetrate as far as the lungs, from where they cannot be removed and permanently act as carcinogens.

T4F engines are equipped with an **ACTIVE DPF** – in the case of regeneration, if the required working temperature is not achieved, the "assisted regeneration" is activated automatically by injecting diesel, via a separate injector, into the exhaust pipe before the oxidation catalyst.



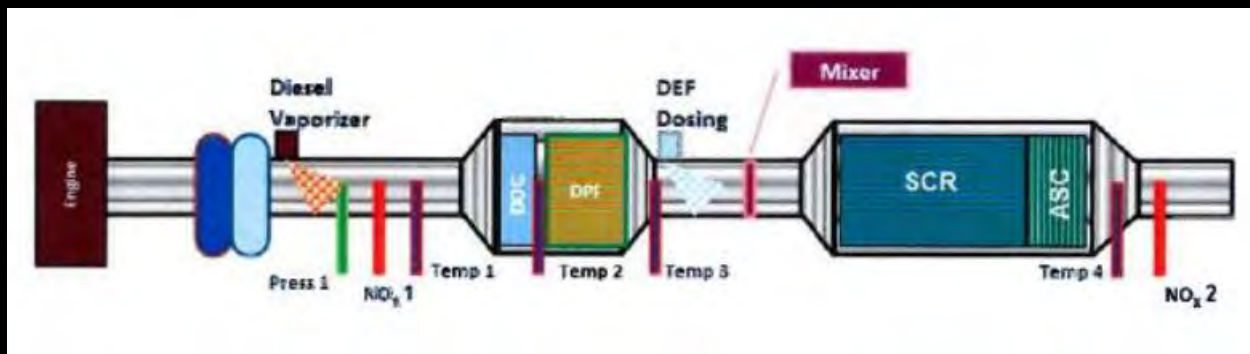
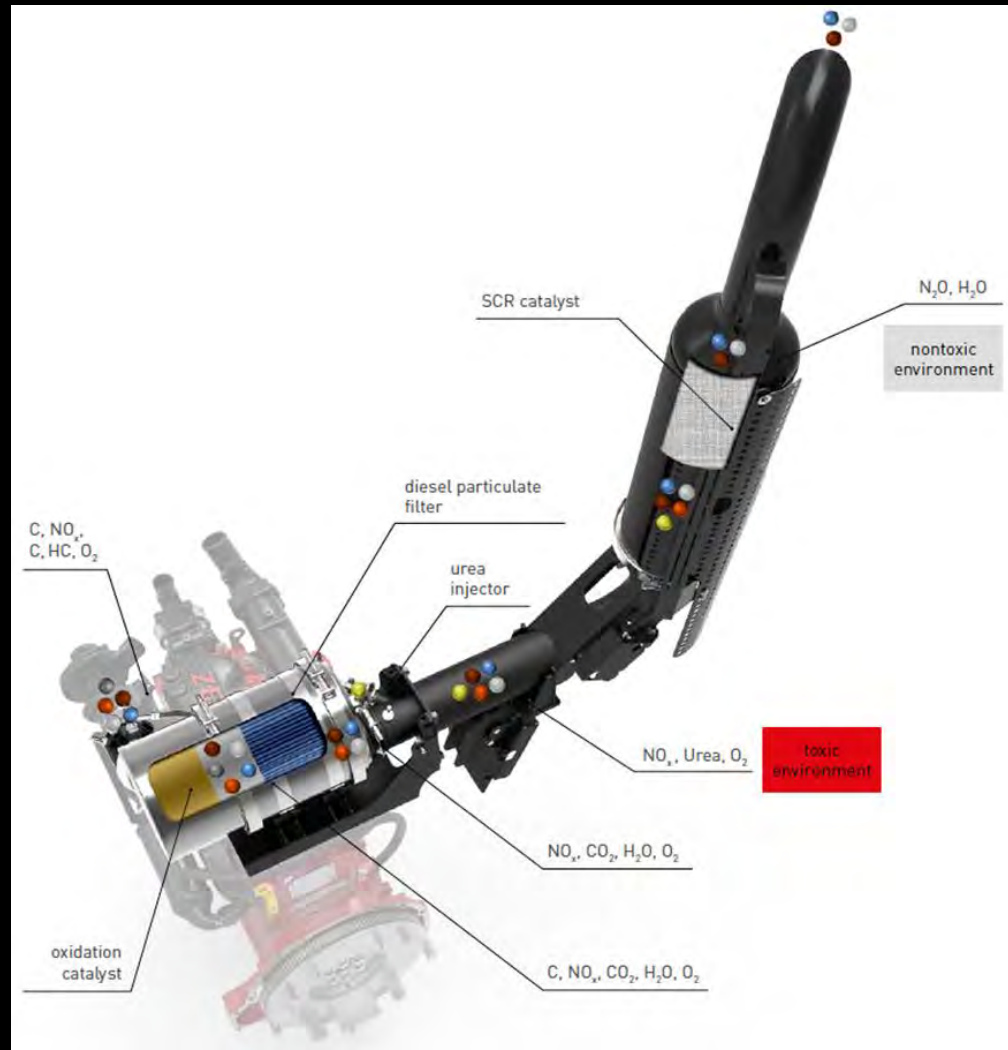
ZETOR ENGINE AFTERTREATMENT

SCR (selective catalytic reduction) designates the technology for cleaning the exhaust gases of combustion-ignition engines using urea.

The reducing agent DEF (urea) is injected into the exhaust pipe after the DPF filter body, then a catalytic reaction takes place in the exhaust system/SCR catalyst.

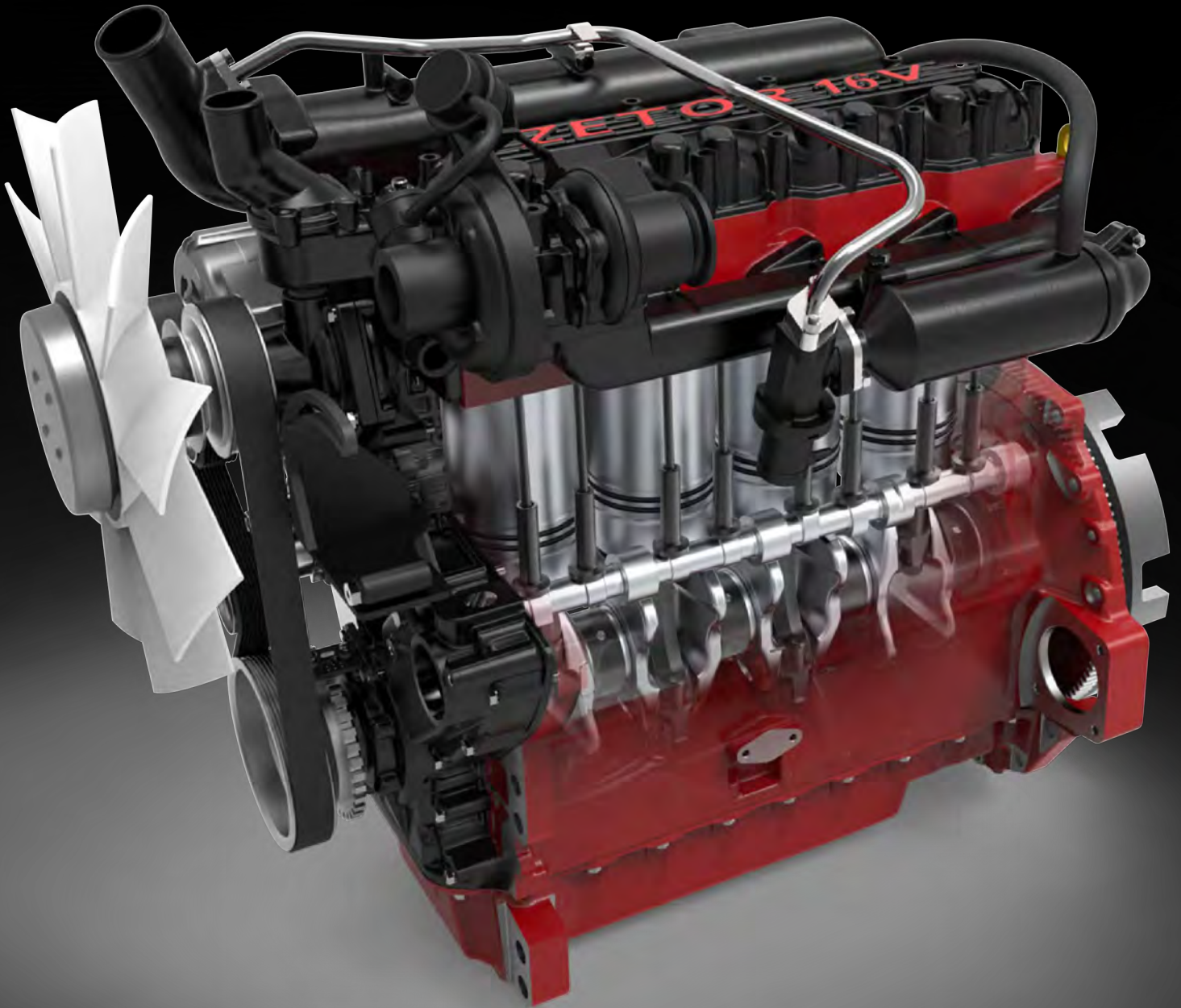
Nitrogen oxides (NOx) change into nitrogen and water.

The injection of DEF (urea) is controlled by the SCR's control unit.



Zetor

Zetor Manufactured Engines



The **FORTERRA HD** Series tractors are equipped with Zetor's top of the line highly popular 4- cylinder Cast Iron block engine with 16-valve technology, twin balancing shafts and wet cylinder liners providing a smooth operating engine.

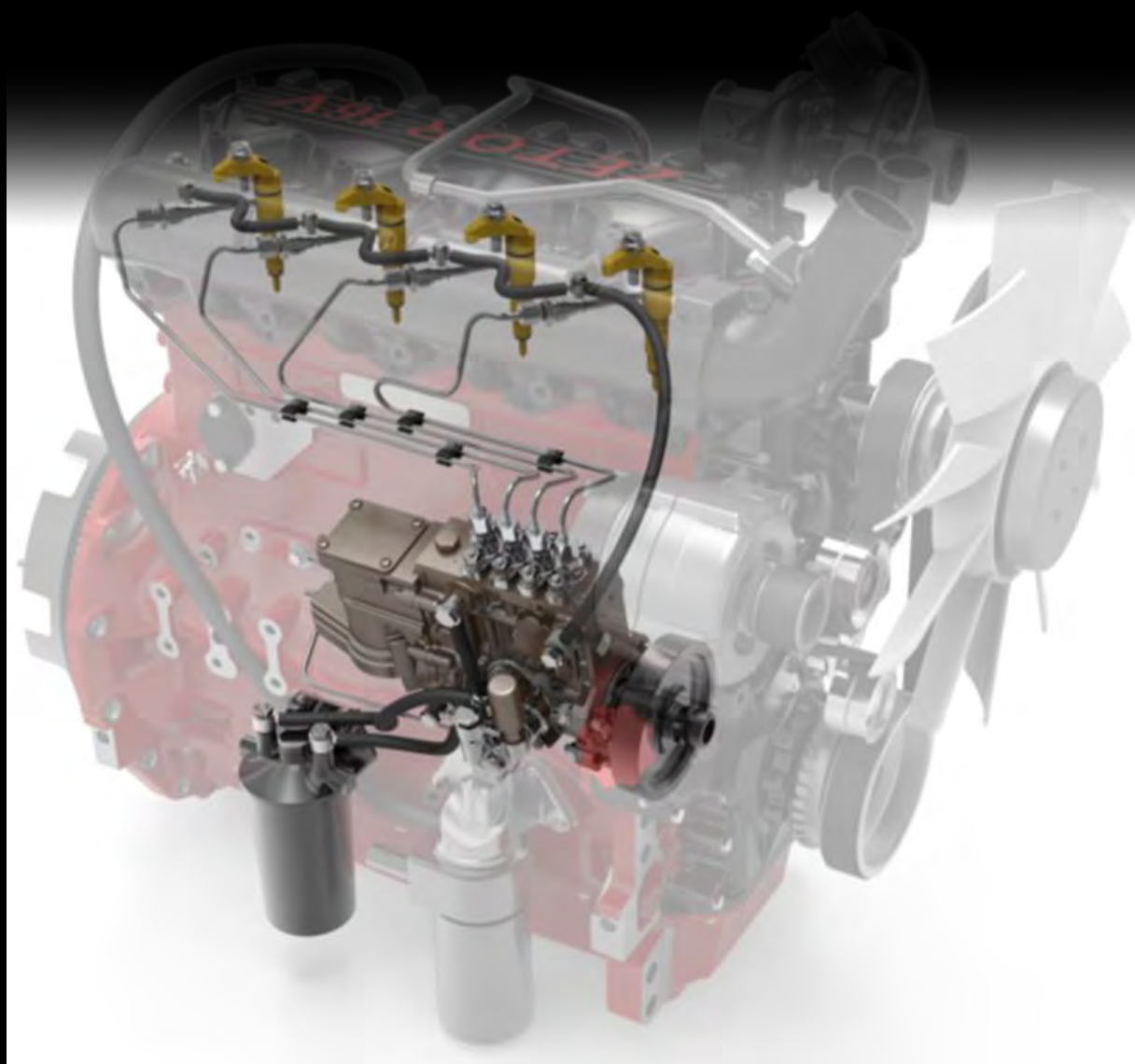


Zetor Fuel System

Zetor is the only manufacturer producing T4F engines without common rail injection system.

T4F is achieved with emission levels of the SCR + DPF + electronic engine regulation with a mechanical injection system and electronic governor.

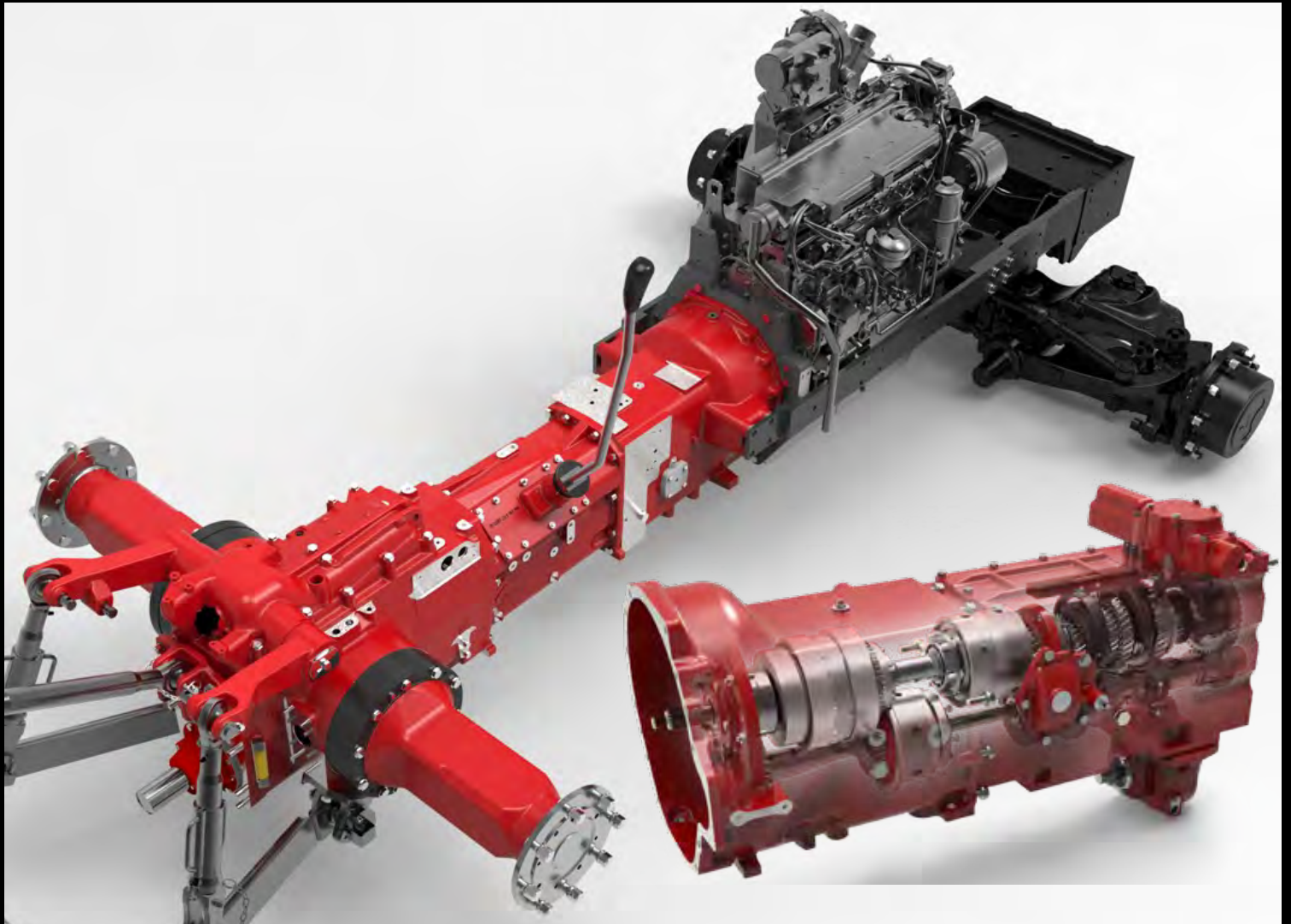
Higher resistance to lower fuel qualities (impurities, sulphur content) together with precise control and improved engine characteristics are all Key over what a High Pressure Common Rail Engine can tolerate.



Injection pump

In-line mechanical injection pump with electronic governor. The conventional mechanical regulator is replaced with an electromagnetic controller.

The system is controlled by an electronic control unit based on the information from the sensors of the crank shaft speed, suction air temperature and pressure, cooling fluid temperature and hand or foot throttle position.



Two transmissions now offered in the **FORTERRA HD** Series tractors are the 30F/30R Semi-Powershift with a hydraulic Power Shuttle reverser and the New Top of the line transmission the New ECO 30F/30R transmission reaching top road speeds of 27 MPH (44 Kph) at only 1740 rpm, which helps reduce fuel consumption by approximately 15 – 20 %, plus reduces engine wear and noise. Top road speed at 2200 rpm is 31 MPH (Kph).

The reliable three-speed Powershift comes from previous generations of the FORTERRA Series that can be controlled either manually or automatically.

Each **HD Model** is equipped with multi-wet brake linings submerged in pressurized oil for long life and maximum stopping power.

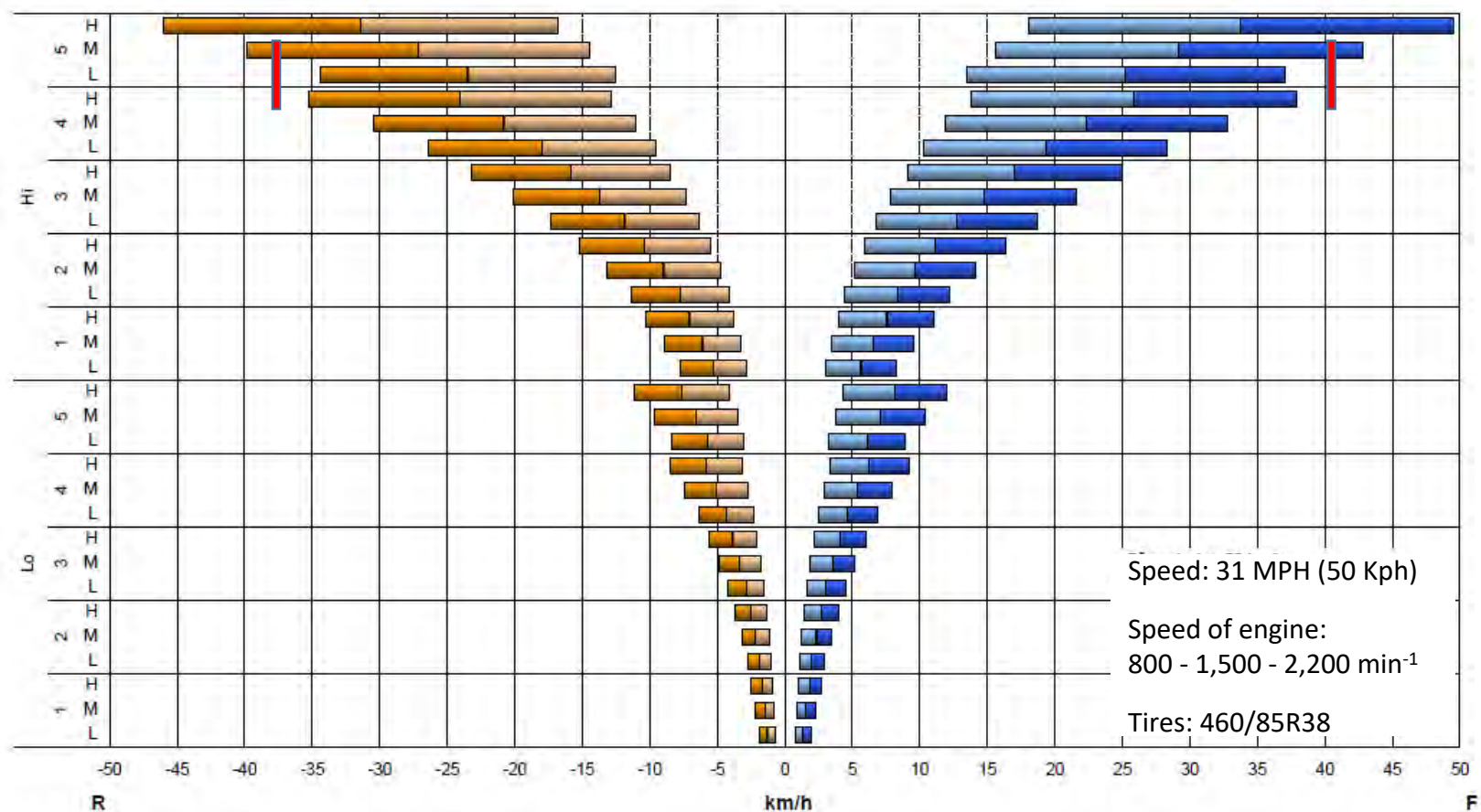
The **FORTERRA HD** Series feature a Premium PTO system with 540/540E/1000 and 1000E speeds. The 1000 shaft is interchangeable without any loss of oil and shipped in the tractor's toolbox inside the Cab. The standard 540E and 1000E PTO speeds combined with the high torque rise of the Zetor engine, allows for significant reduction in fuel usage compared to standard speeds.

PTO and front wheel drive can be controlled automatically depending on the position of the three-point hitch and the front wheel turning angle for automated headland management which is standard equipment.



Zetor ECO Transmission

ZETOR Premium 30F/30R ECO 40 Transmission for Forterra HD Series Transmission Speed Chart





Zetor Premium Axles

The **HD Series** tractors are available with two front axle configurations. The standard conventional front axle is center pivot from the front bolster and solid in design with outboard planetary final drive on all Forterra HD models.

Zetor offers there patented™ suspended center pivot front axle with two individual wish-bone construction half axles with independent hydraulic control cylinders and dampeners that maintains the tractor levelness throughout uneven terrain providing maximum wheel traction and limited slip as well as operator comfort.



Shown in **red color** to illustrate design and lubrication points.



INDEPENDENT WHEEL **SUSPENSION**





Zetor Premium Axles

SUSPENDED FRONT AXLE - FORTERRA HD

The independently spring-suspended axle, type SI, structurally comprises two separate independently suspended half-axes.

The suspension and mounting of both wheels on these half-axes are made using pairs of trapezoidal arms, that is how both wheels are suspended separately, independently of one another.

This system is very close to the automotive suspension of wheels.

ECU controls the suspension.

Independent wheels suspension offers superb driving comfort.

100% pin/multiplate auto differential lock
(non susp. axle too)

Automatic control of 4WD and differential lock according driving speed, front wheel angle and position of rear three point hitch

Affects performance and productivity

Comfortable steering

Allows the use of automatic (HLM) Headland Management System

Considerably more pulling power, less slippage



*Independent suspension of
both wheels (FORTERRA)*

*central axle suspension
(COMPETITORS)*

ALL WITHIN AN ARM'S REACH

Multifunction Command Console on the right side of the operator controls all hydraulic functions, Headland Management and PTO speed selection of the tractor.



1. Switch controls of lights, wipers, rear window defrost, L/R outer heated mirrors.
2. Electronic Joystick control for Front End Loader plus two 3rd & or 4th Function options, or Front 3-Point Hitch option.
3. Rear Hydraulic Remote Valve controls
4. Hand throttle
5. Timed pressure of hydraulic valves
6. Timed hydraulic flow of hydraulic valves
7. PTO Speed Selector for rear PTO
8. Electro-hydraulic control of the rear 3-PH
9. Controls for:
 - PTO on/off
 - Differential locks
 - Height position setting of suspended front axle
 - Powershift (*Torque multiplier*) pre-set settings

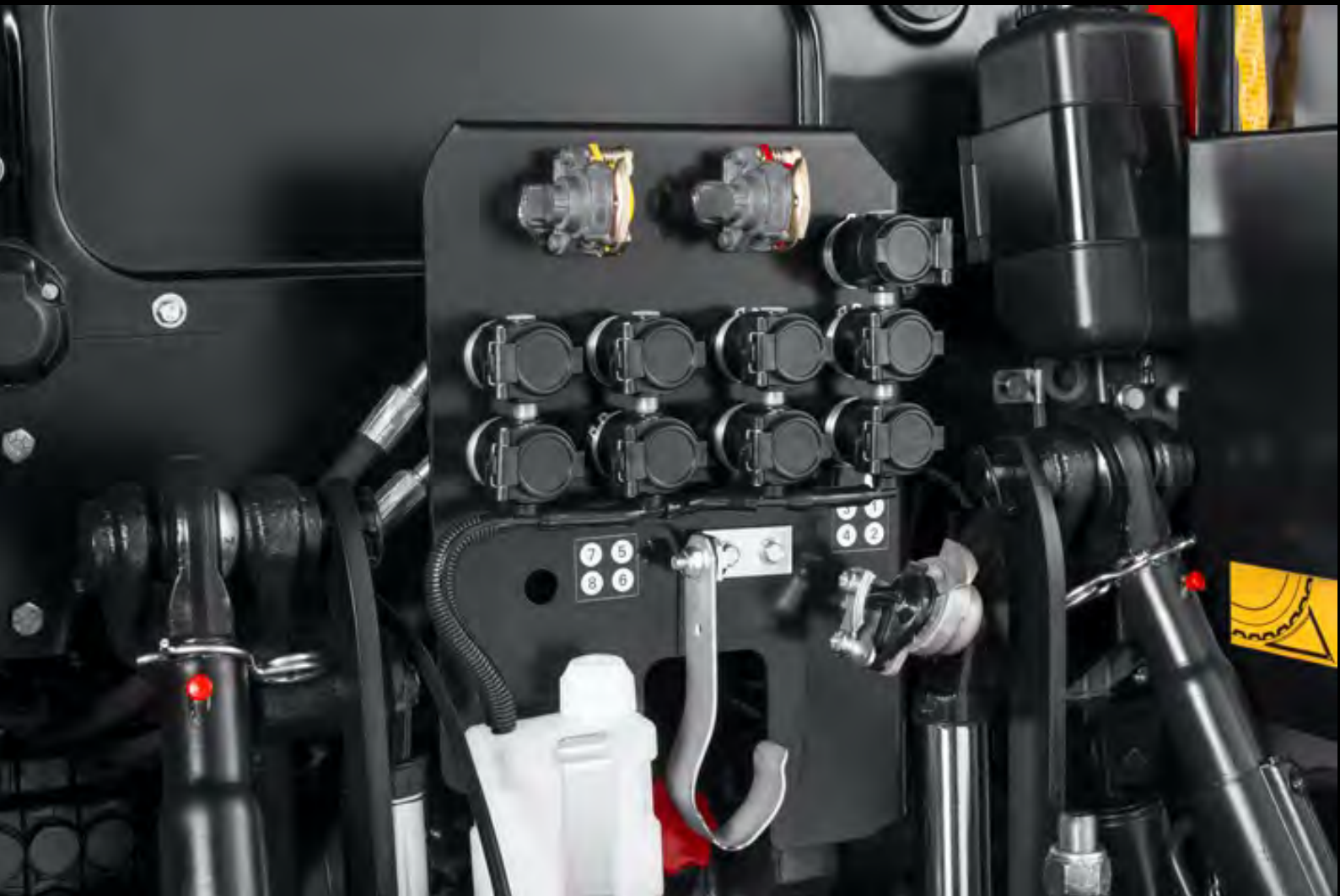


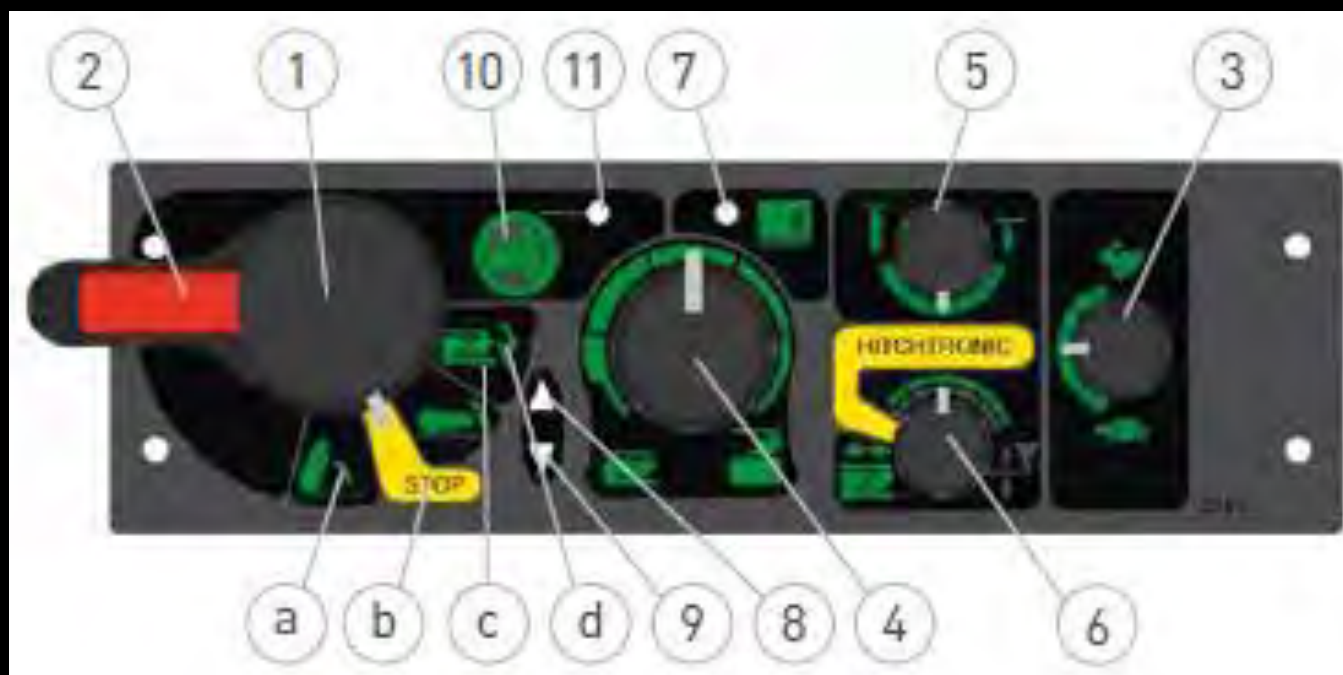
Zetor Premium Hydraulic System

4-Premium 6-way electronic remote valves with timed flow/timed pressure/float/detent/double acting/single acting functions. Each valve is individually controlled by 4-fingertip levers inside the right command control console. An additional zero pressure coupler is included for additional benefits, such as implements that require a case drain dump back to sump without any pressure.

A drip tank comes standard.

A factory installed Electronic Joystick with 2-additional electronic functions is standard equipment.





1. 3-Point Hitch Lift Control Up/Down (4 positions)
 - a. Transport, Lift
 - b. STOP
 - c. Setting, lower (working)
 - d. Free position, quick sinking – automatic lever return to position (c) by spring
2. Blocking (in transport position)
3. Lowering speed
4. 3-Point Hitch Lift position settings
5. 3-Point Hitch Lift Raise position limit
6. Smooth setting (mixing) the power-to-position
7. Indicator light - diagnostics
8. Indicator light - lift
9. Indicator light - lower
10. Oscillation compensator (damping) switch
11. Indicator light - oscillation damping on/Hitchtronic on



Zetor HD 3-Point Hitch System



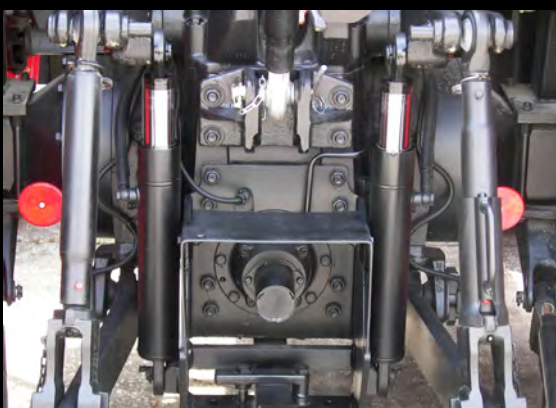
All **HD Models** are equipped with the Bosch electro-hydraulic system with ZETOR HITCHTRONIC™, (ELC) function of the 3-point hitch with lower link electronic draft sensing, position and mix controls with precise measurements.

Both the left and right outer fenders have raise and lower button controls of the 3- point hitch and PTO kill button.

HITCHTRONIC™ by Zetor decreases the fuel consumption by an additional 5 to 7% and automatically regulating the 3-Point Hitch by measuring soil resistance.

Every HD model comes factory equipped with Headland Management (HLM). HLM gives the operator precise control of the 3-Point Hitch with all combinations including stop, go, left/right turning, 4WD activation/deactivation, PTO engaged/disengaged, differential lock engaged/disengaged and in any travel speed. This premium factory feature significantly increases field productivity and maneuverability.

The ZETOR FORTERRA HD Series will lift more weight out of any brand on the market today in it's class. An inner hydraulic piston plus two external auxiliary lift assist cylinders provides the tractor with an impressive 14,400 LBS. of Lift Capacity, 24 inch behind the Hook/Ball Ends. CAT III N/ II, HD Lift Arms and QUICK Hitch Hook Ends are Standard with HD Telescopic and Locking Stabilizers. HD Extendable CAT 2 Link Ball Ends are optional.





Zetor HD Drawbar Pull

A HD swinging drawbar with hammer strap and tow pin comes standard.
Optional hydraulic trailer brakes.
Optional pneumatic over hydraulic trailer brakes.





Zetor Premium Comfort



- Premium Climate Control CAB including AC/Heater/Forced Air front windshield defrost
- Electric rear window defrost
- (HLM) Headland Management
- Right hand console command center
- Stereo ready with speakers and antenna
- Premium Cloth Air-ride suspension seat with swivel/recline/for/aft/rocker control/dual armrest
- Premium cloth folding instructor seat
- Tilt wheel with telescopic steering column
- Locking L/R doors, L/R corner windows and rear window
- Telescopic L/R heated outer mirrors
- F/R Wipers with washer tank
- 4-Fingertip electronic control rear remotes
- Electronic Joystick with 6 functions
- Optional DANFOSS Electronic Loader Control Valve, separate from Rear Remotes
- Windshield sun screen
- Fresh air ventilation
- Retractable seatbelts
- Optional Cab Suspension



Zetor Premium Features



Multiple Wet-disc brakes. 5-disc per rear wheel for maximum stopping power, submerged in oil for long life.

Power Shuttle reverser control.

Enables forward/reverse motion without clutching or stopping tractor.



Zetor manufactured transmissions, multi-wet clutch packs, Powershift (Torque Multiplier).

Helical cut gear sets.

Lubricated by pressurized oil.



Optional Cab Suspension.
Factory or dealer installed.

3-Powershift speeds.
Control buttons on inside of shift knob.

De-Clutch
PowerClutch trigger function on front side of knob.

Enables shifting without clutching tractor.





ZETOR TRACTOR MODEL	HD140	HD150	HD160
ENGINE	ZETOR 4-Cylinder, Water Cooled, 16-Valve, Wet Sleeves, Cast Iron Block Diesel		
Type	Turbocharged air-to-air cooling		
Emissions	DOC catalyst, an active DPF filter and SCR technology urea (DEF) T4F Final, US/CAN EPA Emissions		
Fuel System	ZETOR Inline mechanical injection pump, injectors, interchangeable nozzles & electronic governor		
Displacement cu. In. (L)	254 (4.156)		
Gross Engine Horsepower (kW) @ 2200 rpm	137.8 (102.7)	147.8 (110.2)	159.2 (118.7)
PTO Horsepower (kW) @ 2200 rpm	110 (82)	120 (89.4)	127 (94.7) *
Engine Torque Ft Lbs. (Nm) @ 1480 rpm	411 (557.6)	446 (606.6)	449 (607.1)
Engine % Torque Rise	42	43	32
Fuel Tank Capacity USG (L)	71.3 (270)		
Def Tank Capacity USG (L)	7.4 (28)		
DRIVE TRAIN AND PTO			
Independent Suspended Front Axle	Optional		
Standard Transmission	30F / 30R		
Optional Transmission	ECO, 30F / 30R, Reaches Top Road Speed 27 Mph (44 Kph) @ 1600 rpm		
Transmission Type	Semi-Powershift with Power Shuttle Reverser		
Max. Ground Speed MPH (Kph)	27 (44)		
Clutch	Multi-Wet Clutch Pack		
Rear Brakes	Multi-Wet Disc (5-Disc) per side submerged in oil		
Standard Front Brakes	Dynamic braking through front wheel drive engagement		
Optional Front Brakes	Multi-wet disc, Oil Submerged, Maximum 4-Wheel Hydraulic Disc Brakes		
Emergency Brakes	Standard, Mechanical		
On-board Air Compressor	Standard, (Optional Air hose with tire valve)		
Independent 4-Speed Rear PTO	540/540E/1000/1000E (with interchangeable shaft standard)		
PTO Clutch	Multi-Wet Clutch Pack, (Electro-hydraulic engagement)		
HYDRAULIC SYSTEM	Bosch electro-hydraulics with HITCHTRONIC (ELC), 2 auxiliary lift cylinders, Dual Pumps		
Total Flow GPM (L/pm)	30 (113.5)		
Flow to Remotes GPM (L/pm)	23 (87)		
HD CAT 2 / 3N	Hook Ends		
HD CAT II Extendable Link Ball Ends	Optional		
3-PH Lift Cap @ Hitch Ends Lbs. (kg)	18,739 (8500)		
3-PH Lift Cap. @ 24" behind Hitch Ends Lbs. (kg)	14,600 (6622)		
3-PH Lift Control and Category	CAT III N / CAT II, HITCHTRONIC (ELC) with L/R outer fender controls		
Rear Remote Valves	4-Premium Rear Valves independent of Front-End Loader Controls		
Rear Remote Valve & Loader Joystick Controls	4-Fingertip controls plus Electronic Joystick with 3 rd and 4 th function options		
ALL WEATHER PREMIUM CAB	Climate control with speakers, wiring, antenna, Tit/Telescopic steering		
Cab Suspension	Optional		
AC/Heater/Forced Air Windshield Defrost	Standard		
Rear Window Electric Defrost	Standard		
Operator Seat	Premium Air-ride cloth, recline/swivel/for/aft/rocker/dual armrest/retractable seatbelt		
Instructor Seat	Standard Premium cloth folding with retractable seatbelt		
Steering	Hydrostatic Power Steering with Tilt and Telescopic adjustments		
Entry Doors, Cab Corner Windows	Standard with locking L/R doors and rear window, pop-out L/R corner windows		
Front/Rear Wipers	Standard with washer fluid tank		
Cab B-Post Electrical Controls	Standard, F/R Cab lights, 12V Power Source, F/R Wipers		
Special Addition Cab Interior, Leather Two-tone	Optional brown/tan		
ELECTRICAL	12 Volt, 210 AMP Alternator		
Front / Rear Hood & Cab Lights	6-Front grille headlights, 4-front Cab work lights, 4-rear cab work lights		
Safety Lighting, Signals and Flashers F/R	Standard front/rear flashers, L/R signals, Brake/Tail Lights, SMV Emblem		
Accessories	Beverage holder, toolbox, multiple storage compartments, horn		
DIMENSIONS			
Overall Length with 3-PH in. (mm)	227 (5766)		
Wheelbase in. (mm)	107.1 (2720)		
Height to Top of CAB in. (mm)	114.3 (2903)		
Operating Weight Lbs. (Kg.) STD Axle / Suspended Axle	12,900 (5851) / 13,300 (6032)		
Max Permissible Weight Lbs. (Kg.) STD Axle / Suspended Axle	22,046 (10,000) / 22,443 (10,180)		

*Nominal data is metric. Standard data is converted from metric data. EPA-Rated net-power (+max. Torque) acc. to 40CFR Part 1039 in the same rated engine speed as per 97/68/EC *Manufacture estimate.
480/65R24 Front radials, 520/70R38 Rear radials*



Zetor Systems Front End Loader



FRONT END LOADER MODEL

Lift Cap to full height @ pivot pins Lb. (kg)
Lift Cap to 60 inch (1.5M) 31.5 in. Fwd. Lb. (kg)
Lift Cap to full height 31.5 in. Fwd. Lb. (kg)
Max lift height @ pivot pins in (mm)
Max lift height under attachment in (mm)
Max dump angle, degrees °
Max rollback angle, degrees °
Max rollback force @ 800 mm forward pivot pin Lbs. (Kgf.)
Bucket width in (m)
Optional Bucket width in (m)
Bucket Carrier
Hydraulic 3rd Function
Hydraulic 4th Function
Soft Ride
Electronic Scale
Standard Boom Function Controls
Optional Boom Function Controls
Total loader weight with bucket Lb. (kg)

ZX4.1 MSL HD

4,541 (2060)
4,255 (1,930)
3,792 (1,720)
157.5 (4000)
145.7 (3700)
55
45
6,195 (2810)
93 (2.36)
85 (2.16)
Euro (Global)
Optional
Optional
Optional
Optional
Mechanical Joystick
Factory Electronic Joystick
3,215 (1458)



ZETOR IS YOUR RELIABLE PARTNER

New ideas combined with simplistic and reliable designs coupled with low maintenance cost has earned Zetor tractors respect of commercial operators and farmers in over 130 countries, around the world.

To achieve these high standards, Zetor uses exclusive in-house designs as well as the highest quality of components designed and manufactured in Europe and U.S.A.

Zetor tractors are manufactured and assembled in Brno, Czech, EU in their own manufacturing facility, a country known for its 100+ years tradition of advanced engineering and manufacturing.

Zetor tractors and attachments have been offered in North America through full-service dealerships since the 1960's.

Together, with a network of Full Service Zetor dealers, Zetor is dedicated to deliver parts and service support second to none.

All Zetor tractors carry 24 months of full coverage warranty with multiple optional extended powertrain and hydraulic warranties for all types of applications to fit your budget needs.



Premium Tractors for Professionals
Proven Performance & Endurance
Lower Cost of Ownership

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