

HHT Series :: 4WD

Models :: 435, 485, 535 hp

bühler





A tractor designed for modern farms, the Buhler Versatile High Horsepower Tractor (HHT) Series 4WD was created to respond to growing agricultural operations that have more acres and require more power. Engineered from the ground up using heavy-duty components, the HHT Series 4WD is available with 435, 485 and 535 horsepower. The frame is manufactured from thick steel plate to ensure structural integrity even under extreme conditions. Outboard planetary axles with a new 24 bolt pattern and standard drum duals ensure power is efficiently transferred to the ground. The main bearing at the articulation point is now 60% larger than prior models to enhance reliability.

Engine :: true power and torque

Buhler selected the Cummins QSX during the development of the HHT Series 4WD to optimize the performance of the tractor, shaping power curves and ratings to align with work environment, load factors and operating modes. The result is an efficient and reliable high horsepower tractor that will work hard for years to come.

The HHT Series 4WD is powered by the dependable Cummins QSX 15-litre six-cylinder turbocharged engine. The Cummins QSX engine is Tier 3 compliant and meets the stringent Tier 3 NOx emissions requirements by optimizing the

in-cylinder combustion system and without the need for any additional emissions subsystems. This engine has a proven track record of excellent fuel economy and is approved for B5 biodiesel in a continuing effort to support new fuel initiatives.



Built-in Cummins® reliability

Outboard planetary axles :: designed for more traction



Axles assemblies built to manage power

The tradition of building the most reliable planetary combination in the industry starts with placing the planetary and sun gears towards the outside of the axle. Outboard planetary axles deliver all available horsepower through a large, precision machined floating sun gear. The planetary hubs are suspended on large diameter bearings mounted directly to the axle tubes. The load is supported by the axle assembly and not by the drive train components.

All Buhler Versatile HHT Series 4WD tractors feature reliable heavy-duty final drives that deliver horsepower where it counts, at the drawbar.

Routine Maintenance

The planetary axles remain on the tractor during routine maintenance, limiting downtime. Daily inspections are easy with a quick visual check of the axle oil level indicators.



Transmission :: get the power to the ground

Transmission choices

The transmission is critical in ensuring the developed horsepower is delivered to the ground efficiently and effectively. The HHT Series 4WD offers three transmission combinations to meet the needs of modern farming operations.

Quadshift transmission

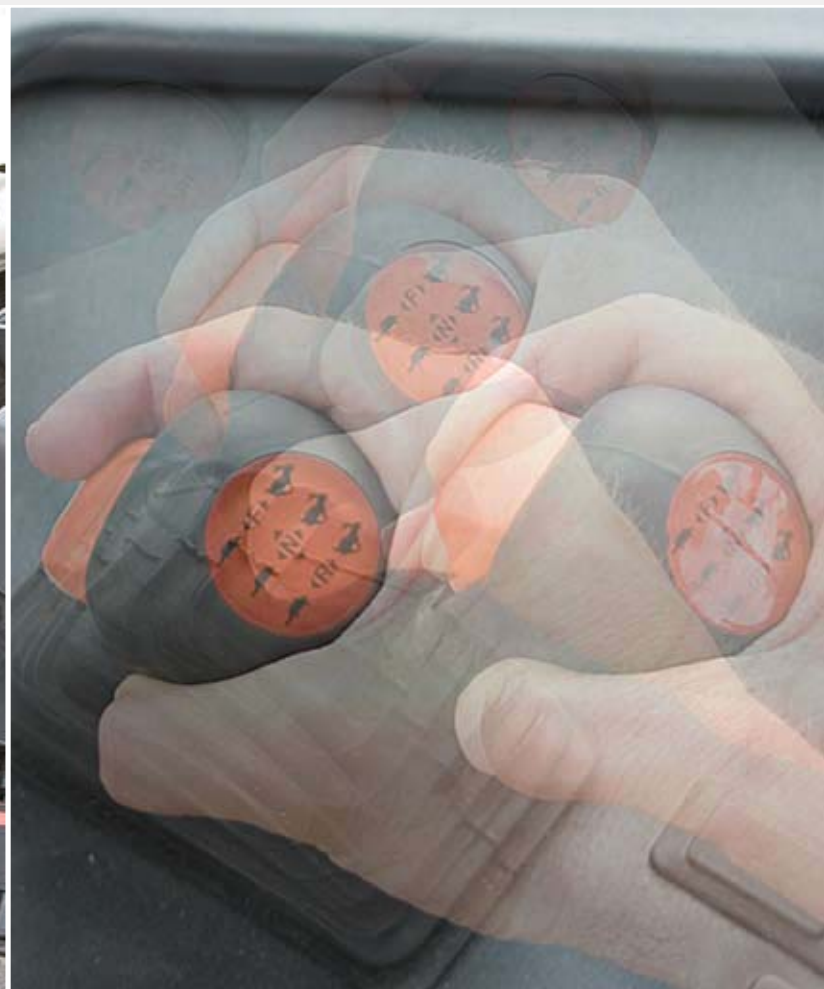
The mechanical 12 x 4 Synchronesh Quadshift transmission features four smooth-shifting fully synchronized gears in each of its three ranges. These gears have closely matched speed increments in the critical band from 3 to 8 mph (4.8 to 12.8 km/h) to provide flexibility for every farming application.

Powershift transmission

The Caterpillar TA22-M4WD Powershift Transmission is available on all HHT Series 4WD models, with 16 forward speeds and four reverse speeds which feature single lever control, clutchless shifting and eight gears in the heart of the critical field working range. The chart shows shifting features at a glance.

POWERSHIFT® FEATURE	DESCRIPTION
Automatic speed matching	Provides automatic gear selection to match engine and ground speed.
Sequential shift	Provides smooth continuous upshifts or down shifts by holding the lever left or right.
Pulse shift	Allows upshifting or downshifting one gear at a time, by tapping the lever left or right.
Pre-select	Pre-select any gear up to 7 th while in neutral. The tractor will start in 3 rd and automatically upshift to the pre-selected gear.
Straight line shuttle shift	Shift from forward to reverse without clutching.

This combination of engine and transmission creates a balanced drive train that effectively delivers power. Major components such as the engine, transmission and axles have been designed so daily service checks and routine maintenance can be performed efficiently.



Interior :: in-cab convenience and comfort



The cab of the HHT Series 4WD has been designed to meet the demands of evolving farming trends. The access steps are recessed in the fuel tank and handrails and door handle are functional and easy to reach. The wider cab offers excellent 360° visibility for fieldwork and maneuvering large modern implements, and there is a clear sightline to the drawbar when attaching equipment. The high resolution electronic display is easy to read and pro-

vides operating data at a glance, and the side console features a convenient fingertip-control throttle. Large controls for the heat and air conditioning are conveniently located to easily manage the cab environment. The result is enhanced comfort to make the long day seem short. The standard cab can be customized with many comfort and convenience options while the Deluxe Cab creates the ultimate in-cab environment. The Deluxe Cab

features a heated, semi-active air-ride suspension seat as well as a secondary training seat. Electronic automatic climate control will maintain the desired cab temperature, and front and rear sunvisors are included. Deluxe external mirrors, front and rear wipers and washers and a monitor mounting bracket with available power complete the Deluxe Cab package. Most of the Deluxe Cab options can be added to the standard cab.

Hydraulics :: meeting the demands of modern equipment

Responsive hydraulics to meet your needs

Modern implements demand more horsepower and hydraulics to operate efficiently and the HHT Series 4WD delivers.

Hydraulic levers are positioned for easy reach. Four dependable, cable control remote hydraulics supplied by the 55 GPM 208-litre Closed Center Load Sensing System handle a variety of applications and have the flexibility to do multiple functions simultaneously. An optional 80 GPM 302-litre Hydraflow® system comes with six or eight remote valves. Monitoring hydraulic operation is easy with color-coded knobs and color-coded remotes. Using lever locks, the mechanical hydraulic levers can be locked in neutral, kept out of the

float position, or held between float and retract for hydraulic motor operation. Easily adjustable flow control knobs for all hydraulic circuits are conveniently located on the side console.

The Closed Center Load Sensing Hydraulic System provides pressure and flow only on demand and avoids parasitic loss. When flow is not required the system goes into low pressure standby to conserve energy. A separate priority steering circuit ensures flow is not cut off by the implement requirements. When not required for steering, the excess flow is redirected to the implement circuit.

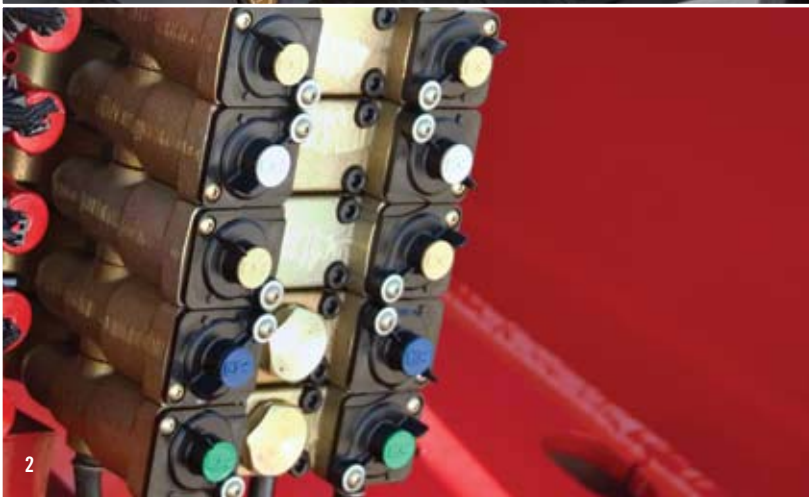
[1] Optional electro-hydraulics feature fingertip controls to manage the raise, lower, float and neutral functions. Each remote has a convenient thumb wheel for precise flow settings and programmable timed self-centering detents.

[2] Located in a comfortable ergonomic position on the right side console, the four hydraulic control levers are color-coded with the couplers. Below

each control lever is a 3-position lever lock that allows for easy setting.

[3] The hydraulic remote couplers at the rear of the tractor are color-coded to match the hydraulic controls inside the cab. Unobstructed access makes it easy to attach implement lines.

[4] Continuously variable rotary control knobs allow smooth and precise setting of the hydraulic flow.



Routine maintenance made easy

There are never enough hours in the day and every minute counts. That's why all Buhler Versatile tractors are designed with easy serviceability in mind. Routine service can extend the life of your tractor, minimize downtime and lower your operating costs. Daily maintenance is made effortless with side shields that open up



Designed for serviceability

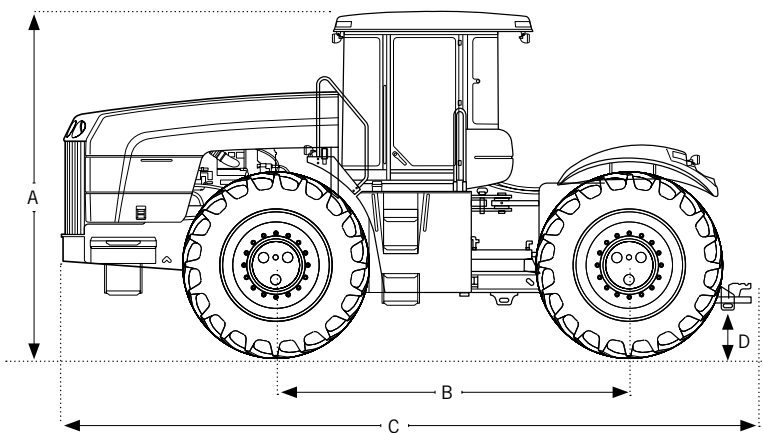
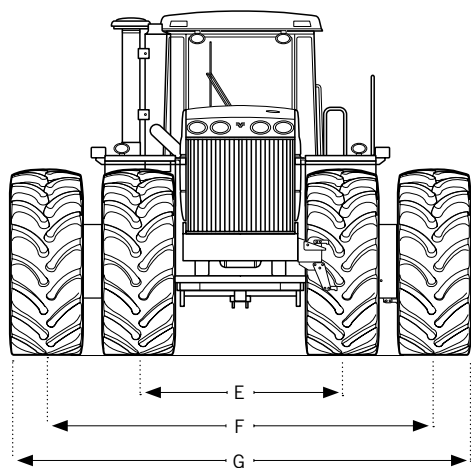
and out of the way to allow access to fill points and dipsticks. Fluid checks are easy with conveniently located sight gauges. A swing-out assembly on the front grille and radiator expose the hydraulic and transmission oil coolers, air conditioning condenser, fuel cooler and charge air cooler for fast cleaning.



Major components such as the engine, transmission and axles can be removed and repaired without splitting the tractor, limiting downtime and expense.



Dimensions & specifications



DIMENSIONS	435	485	535
A. Height, top of exhaust	155.1 in (3940 mm)	155.1 in (3940 mm)	155.1 in (3940 mm)
B. Wheel base	154 in (3930 mm)	154 in (3930 mm)	154 in (3930 mm)
C. Length, no ballast weights	299 in (7630 mm)	299 in (7630 mm)	299 in (7630 mm)
D. Ground clearance, at drawbar	21.9 in (556 mm)	21.9 in (556 mm)	21.9 in (556 mm)
E. Inner-wheel tread width	88.5 in (2250 mm)	88.5 in (2250 mm)	88.5 in (2250 mm)
F. Outer-wheel tread width	157.6 in (4004 mm)	157.6 in (4004 mm)	157.6 in (4004 mm)
G. Overall width, with duals	185.8 in (4720 mm)	185.8 in (4720 mm)	185.8 in (4720 mm)
Base tractor weight	42,000 lbs (19,091 kg)	42,000 lbs (19,091 kg)	42,000 lbs (19,091 kg)

*A base tractor is considered to be with the 12 x 4 Quadshift® III mechanical transmission, with 710/70R42 drum-style duals , a standard drawbar, no fuel, no operator, no special added equipment, and no ballast-dry or liquid.

CAB FEATURES [N/A = Not available, O = Optional]	STD	DLX
Next generation cab with new right swing door and 8" wider interior	•	•
Air-ride suspension swivel seat with full control	•	N/A
Heated, semi-active suspension seat	N/A	•
Training seat	O	•
Manual climate control	•	N/A
Electronic automatic climate control	N/A	•
Front / rear sunvisor	O	•
Monitor mounting bracket with power	O	•
Deluxe exterior mirrors	O	•
Cruise control	•	•
Front wiper and washer	•	•
Rear wiper and washer	O	•

Note: the Deluxe Cab (DLX) is a bundled package. Some DLX features can be ordered as options in the STD pkg.

ELECTRICAL SYSTEM	STD	OPT
Electronic diagnostics package	•	
Batteries, 3 heavy-duty service, 12 volt low maintenance, 950 cold cranking amp	•	
Alternator, heavy-duty service, 12 volt, 130 amp	•	
Halogen work light system, 8 running lights, 2 rear lights, 2 headlights	•	
HID, work light system, 2 front and 2 rear (replaces 4 of the standard halogens)		•
Roof mounted halogen package, 4 lights		•
Trailer brakes	•	
Performance monitor with radar		•
Rotating beacon		•

CAPACITIES	435	485	535
Two fuel tanks (usable capacity)	330 U.S. gal (1249 L)	330 U.S. gal (1249 L)	330 U.S. gal (1249 L)
Engine crankcase	11.6 U.S. gal (44 L)	11.6 U.S. gal (44 L)	11.6 U.S. gal (44 L)
Engine oil filter	1.0 U.S. gal (3.8 L)	1.0 U.S. gal (3.8 L)	1.0 U.S. gal (3.8 L)
Coolant system	22 U.S. gal (83 L)	22 U.S. gal (83 L)	22 U.S. gal (83 L)
Hydraulic reservoir	30 U.S. gal (113.6 L)	30 U.S. gal (113.6 L)	30 U.S. gal (113.6 L)
Syncromesh transmission	10 U.S. gal (37.9 L)	10 U.S. gal (37.9 L)	10 U.S. gal (37.9 L)
12 x 2 Powershift®, transmission	12.5 U.S. gal (47.4 L)	N/A	N/A
16 x 4 Powershift®, transmission	15 U.S. gal (56.8 L)	15 U.S. gal (56.8 L)	15 U.S. gal (56.8 L)
Planetary axle assembly, each (standard)	19.8 U.S. gal (75 L)	19.8 U.S. gal (75 L)	19.8 U.S. gal (75 L)
Refrigerant system	6.35 lbs (2.88 kg)	6.35 lbs (2.88 kg)	6.35 lbs (2.88 kg)
Refrigerant oil capacity	10.1 oz (300 ml)	10.1 oz (300 ml)	10.1 oz (300 ml)
Windshield washer	4 qt (3.8 L)	4 qt (3.8 L)	4 qt (3.8 L)



POWER TRAIN AND STRUCTURE	435	485	535
Engine	Cummins QSX15, six cylinder diesel, electronic fuel injection with cruise control		
Max. power @ 2100 rpm	435 hp (324 kw)	485 hp (362 kw)	535 hp (399 kw)
PTO max. power @ 2100 rpm	375 hp (280 kw)	375 hp (280 kw)	375 hp (280 kw)
Aspiration and filtering system	Turbocharge, charge-air cooled, aspirated precleaner, dual element filter		
Displacement and compression ratio	915 cu. in. (15 L), 17:1		
Bore and stroke	5.39 in (137 mm) x 6.70 in (170 mm)		
Fuel capacity	350 U.S. gal (1325 L), cross pipe dual tank system		
Quadshift transmission	Mechanical 12 x 4 Synchromesh Quadshift transmission		
Powershift transmission	16 x 4 Caterpillar (see below)		
Power Take Off, with electro-hydraulic multi-disc wet clutch (optional)	1000 rpm, output shaft 1.75 in (44.5 mm) with 20 tooth involute spine		
Buhler Versatile axles and outboard planetaries	Standard or heavy-duty	Heavy-duty	Heavy-duty
Locking differential	Optional	N/A	N/A
Brakes	Dual dry caliper		
Draw bar, hitch pin	2 in (51 mm) with automatic drop		
Turning radius	42° with a 33 ft (10 m) turning diameter on 710/70R42 R1 dual tires		
Frame, major components	Rear: 1 - 1 ½ in (25 - 38 mm), Front: ½ - 1 in (13 - 25 mm)		
HYDRAULICS	435	485	535
Standard flow	55 gpm (208 lpm)	55 gpm (208 lpm)	55 gpm (208 lpm)
HydraFlow® (optional)	80 gpm (303 lpm)	80 gpm (303 lpm)	80 gpm (303 lpm)
Hydraulic mechanical remotes	4 sections (6 optional)		
Hydraulic flow controls	4 in cab, [optional motorized 1 + 2 spool]		
Electro-hydraulic remotes (optional)	4, 6 or 8 sections		
Electro-hydraulic flow controls (optional)	Flow control/time detent comes with electro-hydraulic		
†A base tractor is considered to be with the 12 x 4 Quadshift® III mechanical transmission, with 710/70R42 drum-style duals , a standard drawbar, no fuel, no operator, no special added equipment, and no ballast-dry or liquid.			
CATERPILLAR TA22 POWERSHIFT TRANSMISSION (AVAILABLE ON ALL MODELS)			
Gears	16 Forward / 4 Reverse		
Rated input power	525 hp (391 kW)		
Rated input torque	1,313 lbs-ft (1,780 N•m)		
Rated input speed	2,100 rpm		
Maximum input speed	2,300 rpm		
Minimum input speed	1,000 rpm		
Road speed			
Electrical system	12V		
Optional power take off - rated power	375 hp / 373 kW intermittent		
Clutches	Electro-hydraulic, fully-modulated, oil-cooled, multidisc		
Clutch modulation control	Cat® Electronic Clutch Pressure Control (ECPC)		
Approximate dry weight	3,530 lbs (1,605 kg)		

Established in 1933 as an agricultural equipment manufacturer, Standard Gas Engine Works was purchased by John Buhler in 1969. Through steady expansion, new products and acquisitions, the company has experienced steady growth and has evolved into one brand name: Buhler. Over the years, many brands have joined the Buhler family: Farm King, Allied, Inland and Versatile. Buhler maintains several well-stocked parts warehouses and is committed to continuous product improvement and incorporating new value-added features. That tradition of excellence will continue well into the future.



bühler

 **VERSATILE**

1260 Clarence Avenue
Winnipeg, Manitoba :: Canada R3T 1T2
Tel.: 204.661.8711 :: Fax: 204.654.2503
Toll free: 888.524.1003
E-mail: info@buhler.com
www.buhler.com

TSX:BUI

Equipment shown is subject to change without notice.
©2007 Buhler Versatile Inc. Printed in Canada.
Ref: 102007-3000-PG P/N: 89007312