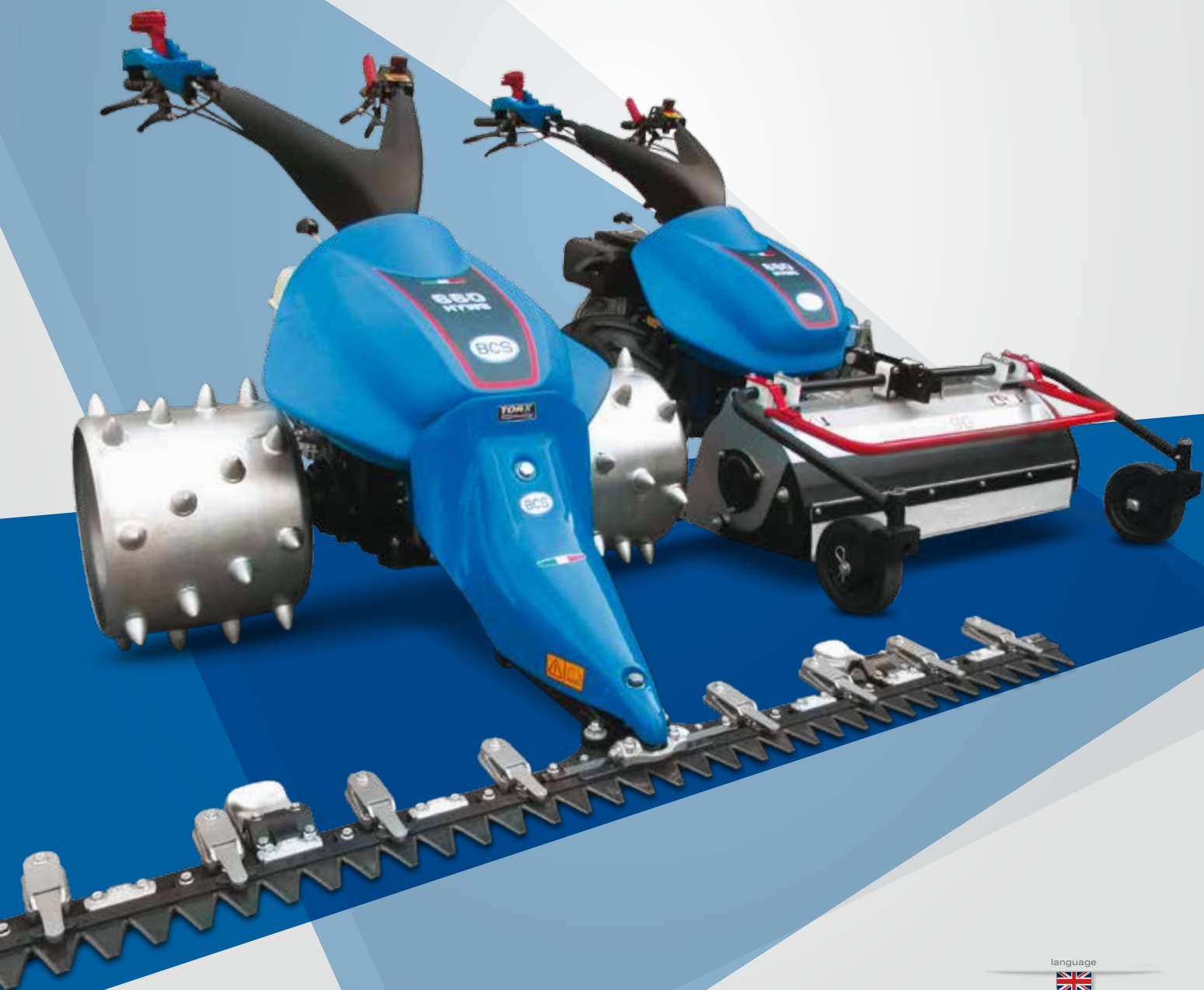




660 HY WS
PowerSafe®





BCS SYNONYMOUS WITH SINGLE-AXLE

BCS was founded in 1943 and since then has been designing and manufacturing high quality single-axle machines, in its factory in Abbiategrasso (Milan), which have made it famous worldwide. From the technology and experience gained over many years of study and hard work, the 660 HY WS PowerSafe® multi-purpose motor mower with hydrostatic drive and assisted hydraulically controlled steering was invented.

The 660 HY WS PowerSafe® is the only hydrostatic motor mower in the world to be equipped with a patented PowerSafe® clutch with multiple steel discs in oil bath. The ergonomics of the easily operated levers together with the high drive and braking capability ensure easy manoeuvrability and a total and safe control of the machine, even in the toughest and steepest conditions.

The front PTO with quick hitch allows an unlimited series of attachments to be fitted, such as cutter bars, heavy-duty mowers, lawn mowers and generally speaking all the attachments used for alpine haymaking, for greens maintenance and for uses in municipalities.

STRONG POINTS

- Patented PowerSafe® **HYDRAULIC CLUTCH**.
- **HYDROSTATIC TRANSMISSION** that can be adjusted continuously with 2 speed ranges.
- **SPEED AND DIRECTION** of the machine controlled by a single lever or by an ergonomic knob.
- **AUTOMATIC PARKING BRAKE** (Auto-hold) with manual release mechanism for forced manoeuvres.
- **PROFESSIONAL ENGINES** prepared for use on steep slopes.
- **FINAL CASCADE REDUCTION UNITS** with gears in oil bath.
- **STEERING SYSTEM** with brake-clutch mechanisms with multiple steel discs in oil bath on both wheels.
- **HANDLEBARS** mounted on silent blocks to dampen vibrations.
- Integrated **QUICK HITCH** for the attachments.





HYDROSTATIC TRANSMISSION

TRANSMISSION AT POWER TAKE-OFF is mechanical by means of gears in an oil bath. PTO with mechanical release in oil bath with independent transmission control.

The patented PowerSafe® hydraulic clutch with multiple steel discs in oil bath is connected directly to the engine.

The oil pump of the clutch, which is integrated and directly controlled by the engine shaft, has a built-in automatic brake that immediately stops the machine and attachment when the handlebars are released.

TRANSMISSION FROM THE GEARBOX MAIN SHAFT TO THE HYDROSTATIC UNIT PUMP is by means of cylindrical gears in oil bath with helical teeth.

The hydraulic discharge circuit from the hydrostatic unit is positioned at the farthest point from the intake and is equipped with a heat exchanger that normalises the temperature of the transmission oil.

An axial-centrifugal fan stabilises the temperature of the hydrostatic unit.



TRANSMISSION FROM THE HYDROSTATIC MOTOR TO THE GEARBOX means of cylindrical gears in oil bath with helical teeth.

The hydraulic discharge circuit from the hydrostatic unit is positioned at the farthest point from the intake and is equipped with a heat exchanger that normalises the temperature of the transmission oil.

An axial-centrifugal fan stabilises the temperature of the hydrostatic unit.

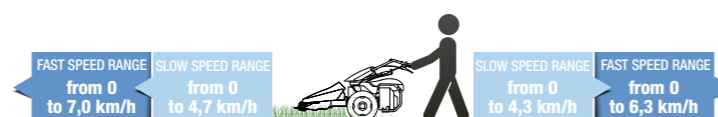
THE AUTOMATIC PARKING BRAKE (AUTO-HOLD) locks the machine in position at the grip limit even with the engine switched off, while a manual release mechanism protected by a safety lock to prevent accidental triggering allows forced manoeuvres to be carried out.

≈ Bearing transmission made of die-cast light alloy to make the machine easy to manoeuvre.

≈ Front cover housing the PTO made of cast iron to increase reliability and durability.

≈ Side flanges for connecting the wheel axle made of cast iron to increase the grip during heavy duty conditions.

≈ Side reinforcement walls in steel that connect the cast iron parts to increase structural strength.



Graph of the speeds with engine at 3600 rpm and 5.0-10 wheels





DIRECTION CONTROL

The **"EasyGrip"** lever control guarantees a high operating comfort especially for those operations requiring frequent direction reverse, such as greens maintenance and typical uses in municipalities.

The **"EasyRider"** direction control by rotating knob, motorcyclist type, allows the operator to control the direction holding the handlebar with the right hand.

This allows to better control the unit in deep slopes, such as cutting on hilly grounds. The knob rotates on ball bearings to reduce driving friction.



For both direction controls, a notch sector allows the operator to easily and repeatedly fix the position of the lever or of the knob. A central area without notches lets the lever or the knob to be positioned as desired, so that the machine can operate at a very slow speed.



STEERING SYSTEM

The 660 HY WS PowerSafe® is equipped with brake-clutch steering mechanisms with multiple steel discs in oil bath on both wheels, housed in closed cases on the axles.

This original mechanism gives the machine excellent and practical usage: maximum comfort, easy handling and perfect control in complete safety.

Closure of the steering brake that precedes opening of the corresponding clutch makes it impossible to lose control of the machine when working on steep slopes.

The lever-operated steering controls, situated on either side of the handlebar grips, are hydraulically-operated. The handlebars, adjustable in height and sideways, are mounted on silent blocks to dampen vibrations and ensure maximum comfort.

ENGINE

Performance and reliability are guaranteed by the use of endothermic gasoline and diesel engines, which are specific for use in areas with steep slopes and have a high torque reserve and reduced consumption.

The engines fitted include a Honda GX390 Alps 11.7 HP petrol engine, a Briggs&Stratton Vanguard 16 HP two-cylinder petrol engine and a Yanmar LN100 10 HP diesel engine.



Engine	Fuel	Starter	Power kW/hp
Honda GX390 Alps	Gasoline	Recoil	8,7 / 11,7
Briggs & Stratton Vanguard	Gasoline	Recoil	11,9 / 16
Yanmar LN100	Diesel	Recoil	7,5 / 10

Honda Alps engines have innovative technical features for working with the utmost regularity on slopes that exceed 35°.

≈ A special one-way valve built into the cylinder head improves oil flow, thus ensuring excellent engine lubrication even when used on a slope.

≈ The fuel pump is positioned so that it cannot be accidentally damaged; this ensures a good flow of fuel.

≈ A level indicator in the fuel tank hole indicates the maximum fuel level, thereby preventing an excessive amount from being poured in and guaranteeing safety of the engine in any condition.



POWERED by
HONDA

ATTACHMENTS

The multifunctional and innovative features of the 660 HY WS PowerSafe® are enhanced by a complete set of Top Quality attachments designed and manufactured by BCS for the many uses for which this machine was created. In addition to its classic use as a mower for sloping areas, the 660 HY WS PowerSafe® can also be used for greens maintenance and in municipalities.



CUTTING AND MAINTENANCE OF FINE OR UNCULTIVATED GREEN AREAS

CUTTER BARS: versions available are Laser, Middle cut fingers or with double alternate movement Duplex and Dual Laser Elasto type with cutting widths up to 210 cm. The transmissions which drive the cutter bars are maintenance-free, oil bath ones.

HEAVY DUTY MOWERS/FLAIL MOWERS: single-blade with 80 cm cutting width.

BLADERUNNER/ROLLERBLADE HEAVY DUTY MOWER: single-rotor with mobile blades, available with cutting widths up to 110 cm.

LAWN MOWER: with or without collection, available with cutting widths up to 100 cm.

SWEEPER: adjustable directly from the operator's seat, available with working widths up to 100 cm.



WINTER MAINTENANCE

TWO-STAGE TURBINE SNOW THROWER: available with working widths up to 90 cm.

SNOW BLADE: adjustable directly from the operator's seat, available with working widths up to 100 cm.

SNOW BRUSH: adjustable directly from the operator's seat, available with working widths up to 100 cm.



WHEELS/TRACKS

RUBBER WHEELS: 5.0-10 (twin kit also available), 21x11.00-8 Terra Tyre, 20x8.00-10 Lug Tyre, 20x8.00-10 Garden, 23x8.50-12 (twin kit also available).

STEEL WHEELS: "Super bite" steel cage to be combined with rubber wheels 5.0-10, steep slope traction wheels 3x300 and 4x400.

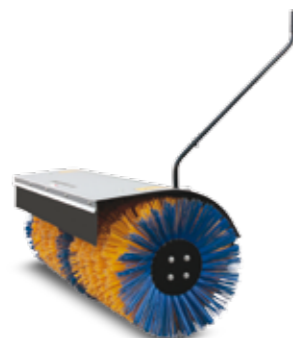
TRACKS: in rubber.



TWO-STAGE TURBINE SNOW THROWER



SNOW BLADE



SWEEPER



LAWN MOWER



BLADERUNNER



ROLLERBLADE



CUTTER BARS



HEAVY DUTY MOWERS



TECHNICAL FEATURES

	660 HY WS POWERSAFE®		
ENGINE	Honda	Briggs&Statton	Yanmar
MODEL	GX390 Alps	Vanguard	LN100
FUEL	Gasoline	Gasoline	Diesel
STARTER	Recoil	Recoil	Recoil
POWER (KW/HP)	8.7 / 11.7	11.9 / 16	7.5 / 10
COOLING	Air	Air	Air
FORWARD MOTION TRANSMISSION	Hydrostatic with two speed ranges selected with a mechanical control. Hydrostatic pump maximum rated speed: 3000 rpm with engine at 3600 rpm.		
	Small hydrostatic pump-engine unit in light alloy with high pressure circuit which is separate with respect to the circuit for the PowerSafe clutch and axial-centrifugal cooling fan.		
	Hydraulic intake circuit with larger filter with replaceable spin-on cartridge.		
	Transmission from the gearbox main shaft to the hydrostatic unit pump by means of cylindrical gears in oil bath with helical teeth.		
	Transmission from the hydrostatic motor to the gearbox by means of cylindrical gears in oil bath with straight teeth.		
FORWARD MOTION COMMAND	Automatic parking brake (Auto-hold). Manual release mechanism protected by a safety lock to prevent accidental triggering allows forced manoeuvres to be carried out.		
	With "EasyGrip" lever or motorcyclist "EasyRider" rotating knob, both with central stop position and Bowden cables.		
SPEED	Forward: slow speed range from 0 to 4.7 km/h - fast speed range from 0 to 7.0 km/h. Reverse: slow speed range from 0 to 4.3 km/h - fast speed range from 0 to 6.3 km/h.		
TRANSMISSION AT POWER TAKE-OFF	Mechanics with gears in oil bath. Power Take-Off with mechanical release in oil bath with independent transmission control.		
	Quick hitch for three-teeth attachments (patented), including cast iron bush built into the front cover.		
PTO	At 990 rpm with mechanical release in oil bath and independent transmission control.		
CLUTCH	PowerSafe with multiple steel discs in oil bath and hydraulic drive. Connected directly to the engine.		
	Integrated oil pump controlled directly by the engine shaft, built-in automatic brake with dual control.		
AXLES	Brake-clutch steering mechanisms with multiple steel discs in oil bath housed in closed cases on both wheels. Final cascade reduction units with cylindrical gears in oil bath.		
STEERING CONTROLS	Levers situated on either side of the handlebar grips operated by hydraulic distributors via Bowden cables. Right steering control is replicated on the left handlebar.		
HANDLEBARS	Adjustable in height and sideways mounted on silent blocks.		
SAFETY DEVICES	In compliance with EC regulations.		
WHEELS/TRACKS	In rubber: 5.0-10, 21x11.00-8 Terra Tyre, 20x8.00-10 Lug Tyre and Garden, 23x8.50-12. In steel: "Super bite" steel cage, steep slope traction wheels 3x300 and 4x400. Rubber tracks.		
WEIGHT	With GX390 Alps engine, 5.0-10 wheels, transmissions in oil bath and 135 cm cutter bar: 220 kg.		



THE SERVICES



SPARE PARTS

A complete range of original spare parts, guaranteed directly by the manufacturer.



ASSISTANCE

A team of specialists, well prepared and available to assure an efficient and resolving service.



WARRANTY

A precise certainty for the customer's satisfaction:
2-year warranty included in the price.



LUBRICANTS

We recommend to use the original PowerLube lubricants.



M A D E I N I T A L Y

BCS S.p.A.

Viale Mazzini, 161
20081 Abbiategrasso (Milano)
Tel. +39 02 94821
Fax +39 02 94960800
info@bcs-ferrari.it

www.bcsagri.it

