

NAUTILUS

BALQON CORPORATION

XE20™

ZERO EMISSION
ELECTRIC TRACTOR

WELCOME TO
A NEW WAY
TO WORK ...



POWER
with Clean Conscience

CLEAN QUIET-SHIFT OF POWER

Nautilus XE20™ is equipped with high efficiency AC induction motor coupled directly to four speed transmission providing highest low end torque in its class. Standard equipped with Balqon Corporations proprietary 240 KW liquid cooled drive technology provides all the **Power** you need to perform your daily job with ease. Advanced control **Q-SHIFT™** technology is tuned to be responsive to varying torque demands provides **Quiet** operation of the electric motor well below all industry standards.

Equipped standard with Lithium Ion batteries, XE20™ provides range of over 94 miles [150km] unloaded and range of 50 miles [80km] loaded on a single charge equal to two shift operation in most container hauling applications.

XE20™

ZERO EMISSION ELECTRIC TRACTOR

PRODUCT FEATURES AND SPECIFICATIONS

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|--------------------|---|
| Performance | Max speed 25mph (40 Km/hr); unloaded grade 10%, loaded 5%; Max GCWR 90,000 lbs; Range unloaded 94 miles (150 Km) fully loaded range 50 miles (80 km.) 6 hour full charge time. |
| Cabin | E-Coat Painted white; Air ride operator seat with lumbar support adjustment; three point seat belt; Safety glass tinted front windshield; Driver side door, rear sliding door; dual headlights and turn signals (DOT); side view mirrors; tilt steering column; four point air ride cabin suspension; two 12Vdc power ports; pantograph windshield wiper system |
| Instrumentation | Dash mounted LCD display and operator information system; intuitive self diagnostic and vehicle status display; battery management system; energy fuel gauge; on-board vehicle data and status storage; backlit switches for night operation; analog fault lights for air pressure, transmission status and brake system; integrated USB data port for data downloads; speedometer; odometer |
| Battery | 140 kWhr Lithium Ion battery pack, 324 Volt; automatic low voltage shutdown during operations; battery management system monitors each battery cell performance; on-board battery energy usage meter and life calculator |
| Charger | 20 KW standard charger, 6-8 hour charge time; 80KW multi-vehicle optional fast charger; 4 charging ports standard; priority smart charge algorithm based on vehicle state of charge; |
| Controller | Proprietary flux vector motor controller 240 KW liquid cooled; integrated CAN BUS and self diagnostic system; solid state switching controls 600 amp rated; independent switching controls for accessory drives, auto shut-off during idling operation; USB or wireless data acquisition ports; regenerative braking |
| Motor | 200 hp. rated 230 volt AC vector duty electric motor connected to flux vector variable frequency controller; full continuous torque at zero speeds; 300% peak load rating; laminated square frame design allows for more hp in smaller frame; 1000:1 constant torque in vector mode; built in thermostats on each phase; connected directly to automatic transmission; low rotor inertia for faster acceleration; fully enclosed zero maintenance |
| Transmission | Rugged duty seamless full power shift, 4 speed fully automatic Allison 3000 RDS transmissions; heavy duty torque converter which reduces shock and strain on drive line components and electric motor; in-line electric motor; electronic CAN Bus shifting controlled by proprietary variable frequency control system |
| Chassis | 134" inches wheelbase; 2.0 million RBM, 50,000 KSI steel, 'C'-reinforced; steel bumper and deck; dual rear brake/tail lights, turn signals, reverse lights; driver side and curb side mounted replaceable battery boxes; fifth wheel 70,000 lb capacity, 16 inch lift (2) 5 inch hydraulic lift cylinders, 15 gallon hydraulic tank with sight glass |
| Drive Axle | Dana S30-590 Rear Drive Axle, Custom ratio, rigid suspension, 16.5 x 7 S-cam drum brakes; 11R22.5 LRG rated rear tires |
| Front Axle | 11R22.5 LRG front tires, 14 Ply rated tubeless type radial, Continental HSR, Dana E-1322-W wide track for max wheel cut; 14700# Rating; 16.5 S-cam drum brakes, integral power steering; front leaf spring suspension with shocks |
| Steering | TRW power steering with mechanical backup; automotive hydraulic pump with automotive heavy duty steering gear box; constant running PTO pump with priority steering backup. |
| Vehicle Dimensions | Overall L X W X H (inches) - 206 X 96 X 135; wheelbase 134"; front wheel overhang 47, rear wheel overhang 25", Front GAWR - 14,600 lbs, Rear GAWR 30,000 lbs, GCW 90,000 lbs. fifth wheel extended 61 inches |



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Our quest for safety and reliability begins with Balqon XE20 durable electric drive system built on Autocar® latest Xspotter® chassis and cabin design. Chassis design that is culmination of years of Autocar's vehicle design knowledge in on-road severe service vocational truck applications is now available in yard tractors. Safety in Yard applications begins with driver visibility, where the Autocar's Xspotter® windshield design provides average of 40% more visibility than in its closest competitors. Every Autocar® cab is e-coated to eliminate cab corrosion in extreme weather conditions. From cab safety and durability to interior ergonomics, cab suspension design, Autocar® leads the way in building long lasting vehicle designs that provide years of service.

Ergonomics that begins with air and noise quality in the cabin provided by zero emission electric drive system of XE20™. The Nautilus Q-Shift controls provides you with the smoothest gear shifts in heavy duty electric vehicles. Q-Shift Can Bus integrated controls communicates seamlessly with Allison Automatic transmissions and provides the incredible power and torque under your control making your daily work shift more enjoyable. While 240 Kw power can help you climb 10% grades with ease we have also equipped our drive system with regenerative braking that provides automatic speed control on your way down while capturing energy back into the batteries. Yet another reason why Balqon XE20™ is in a class of its own when it comes to clean quiet power and energy efficiency.