

Electric Turret Truck

WD 13 ac~system

WD 15 ac~system

- ✦ Rotating Operators Compartment
- ✦ AC ~ technology provides 25% improved performance with decreased levels of maintenance.
- ✦ Leading edge technology provides for a 25% reduction in energy consumption.
- ✦ 30% of spent energy is recovered with regenerative braking & lowering
- ✦ Safety and optimum flexibility afforded with the use of CAN-Bus technology



Rotating drivers compartment; operated electrically by the driver; the seat and controls including pedals, rotate up to a 30° angle in the load direction and a 10° angle in the traction (reverse) direction. This feature maximizes the operators field of vision without placing a strain on the drivers back and neck. The vehicle offers exceptional visibility between the widely placed mast channels to the load and path beyond in the forward direction, and unhindered view of the rear vehicle path in reverse. The operator is offered an immediate view of the intersecting aisle, when leaving the narrow aisle in reverse

Orientation of the main components; the operator is given access to all components with minimal movement. The pilot control center includes: main lift, directional travel selection, compartment rotation, load shift & rotation, horn, and arm rest. The operator controls all facets of the vehicle safely and efficiently without grabbing for awkwardly designed handles or levers.

Electronic servo steering control; is responsible for fly by wire control of the steered wheel. The small steering wheel and knob make maneuvering this compact turret truck in tight quarters effortless.

Automotive style pedal; intuitive design adds safety without initial operational learning curve - due to compatibility of the automotive style operation.

Weight balanced floating comfort seat – air flow fabric covered seat with arm rests, adjustable backrest with horizontal and weight adjustable base for optimum back and spine support.

Drivers compartment – oversize compartment to accommodate the most demanding operators, designed with safety and comfort in mind, complete with overhead guard and deadman travel interlocks.

Wrap around control panel; provides optimal work environment. Containing all controls and instruments in a desk like orientation. The ergonomically designed compartment incorporates the latest in psychological work space design. The console is easily adjusted in height and distance from the driver.

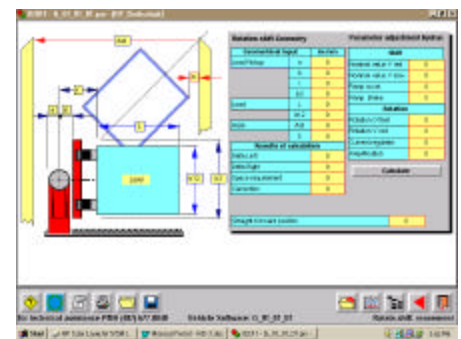
Integrated informational center; displays all pertinent vehicle information such as: steered wheel position, fork height elevation, graphic display of fork movement up / down / traverse / rotation, hours of operation / time of day, battery capacity, guidance status and of course error conditions.



Natural thumb movement - controls all hydraulic functions; effortless and tireless operation of hydraulic functions. The ergonomic grip eliminates stress to wrist and arm by utilizing the operators natural thumb movement to precisely control forks / load in an immediate responsive manner.



Automatic height selector; for fast accurate and smooth load handling including pickup or deposit of the load within the rack. The integrated height selector makes every operator a safe and efficient load handler. 9 preset and variable control methods allow stacking in multiple (8) zones with up to 64 different heights in each zone. Maximum fork height deviation (tolerance) of 5mm is obtained by automatically adjusting for outside influencing factors such as cold hydraulic fluid, variable load weights etc. This feature reduces the individual load cycle time, operators are able to concentrate on horizontal positioning (aided by light optical laser pointers), inventory control and the vehicles path by simply supervising the vehicles fork movement.



Automatic single touch rotation intelligence; the WD has sophisticated parameter and control adjustments, to aid the driver in all judgement control operations. The above snap shot of the vehicles control program shows the teach-in method that allows the onboard computers to rotate the load within the narrow aisle at the touch of a button.



Vehicles operating on wire guidance have the benefit of remaining on track because of uniform load wheel braking.

Smooth programmable hydraulic start / stop ramps for controlled load movement in all axis.

End dampening of mast channel transition (lift & lower) – load insertion & retrieval, even lowering the forks to the floor – completely programmable.

Parameter Control Management for complete vehicle configuration – diagnostics – statistical analysis

by your local authorized Steinbock service department. Easy connection via Lap Top or remote telephone modem, provides a method to modify existing operational parameters – simulate changes – and alter parameters that control lift / lowering – drive speeds / acceleration / deceleration – end dampening conditions and speeds.

In-depth remote vehicle diagnostics covers virtually all components as well as driver controls, battery condition, error history – online computer oscilloscope for electronic components.

CAN-Bus sensor technology – continuous sensor status monitoring – guarantees a maximum of safety and control. Computer recognition of sensor input occurs according to priorities attached to the sensor. Tried and true performance tested, in the automotive industry – the CAN-Bus system minimizes electrical wiring (60% less cabling) and eliminates switches which previously required attention or adjustment.

Reduced programmed maintenance by 20% – due to the dramatic reduction of electrical components and maintenance free ac- motor technology. Motors operate without carbon brushes and contactors, hydraulic system without proportional valves. Mechanics don't have to check your motor brushes – clean your vehicle of carbon dust buildup (normally found on electric vehicle motors) – check or replace worn contact tips – because these don't exist. Hydraulic valves are not required because the ac- pump regulation provides only the necessary amount of fluid and pressure to the end component.

Optimum service access to all components – even in narrow aisles situations, the WD can be serviced – components are arranged to offer maintenance access via the single rear compartment door.

Complete remote factory diagnostics preformed by PMH & Steinbock. Factory technicians at your finger tips – support your locally trained mechanics – simply connect your vehicle via standard telephone modem or ISDN line and the factory is at your call. Service like never before.

25% more productivity with ac- technology;

Increased drive and lift speeds are benefited with top notch acceleration previously not obtainable on narrow aisle vehicles; extremely quiet to operate - surpasses all noise level recommendations

25% less energy consumption per work cycle;

due to the efficient operation of the ac- motors and the vehicles hydraulic system. Hydraulic oil flow is regulated by the rpm of the pump motor – NO flow control valves – NO wasted heat build up – LESS moving parts for maintenance. Consistently cooler oil temperatures even by higher lift and lowering speeds.

72 Volt Performance electric system driven by MOSFET ac- technology smooth starts of every vehicle movement enabled by accurate control of the motors rpm. Extended component life, is a product of decreased operational temperatures with current reduction and lower voltage requirements. Higher performance levels are obtained with less energy consumption – increasing the shift life of the battery.

Regenerative lowering returns up to 30% of the energy consumption

to provide increased work cycles or extended battery shift life. Systems may be suited for smaller batteries – decreasing initial capitol investment, shorter charging times reduce operational cost of the electrical consumption.

Lift Mast incorporates deep insertion of the double T-profile mast channels

for the best possible torsion and side sway stability. The consequence suits this vehicle to driverless automation – standard vehicle incorporates integrated height selector with auto load unload feature.

Multi-faceted braking system

- features three independent brake systems with stepless deceleration based on lift height and drive speed of the vehicle. The independent systems assure positive smooth braking under all conditions. Non – wearing regenerative brake with energy recovery acts on the drive motor. Hydraulically applied expanding shoe brake on the load wheels and electric/spring activated disc brake on the drive motor is also applied automatically as a parking brake. All systems act in conjunction with each other if released by an e-stop condition.



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