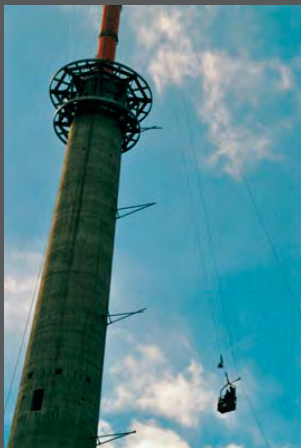




Antenna Construction

Winches for load lifting
and passenger lifting



PULLER FOR LIFTING PASSENGERS

Model: SPW 2,5 - P

- Bull wheel Puller with integrated reel winder switchable between lifting passengers with a maximum pull force of 0,4 or 0,6 to and normal lifting operation with maximum 2,5 to.
- Other pull forces on request
- With registration for lifting passengers
- The machine can be operated either by the operator in the cage/at the tower or by an operator on the ground via 2 radio remote controls
- Double bull wheel drive with a bull wheel diameter of 350 mm
- Reel winder for loading/unloading reels independently
- With automatic and continuously adjustable rope guiding device
- Robust machine suitable for highest reliability of operation, simple operation and minimal maintenance

Data in lifting passenger mode:

- Max. pull force: 400 daN / 600 daN (switchable)
- Speed continuously adjustable: 0 - 30 m/min (limited)

Data in normal lifting mode:

- Max. pull force: 2.500 daN
- Speed continuously adjustable: 0 - 6 Km/h at 2.000 daN: max. 2,1 Km/h

Control of the machine:

- Radio remote control with 2 transmitters; the rope can be indefinitely controlled in/out via a joystick; additional functions: ignition, engine starting and emergency stop
- Emergency operation for controlling the machine by hand
- Control panel with display of the pull force and all instruments to control engine, hydraulic and electrical systems
- Pull force switch off system (inductive system for highest safety of operation)
- Preparation for a quick installation of a pull force recorder

Cover:

- Lockable cover made of thick-walled aluminium sheet; protects the diesel engine, the hydraulic and the electrical systems => increases the reliability of the machine and is noise reducing

Double wheel drive:

- 2 bull wheels with a diameter of 350 mm
- Each with 8 grooves made of hardened steel
- Grooves designed for connectors up to max. Ø 16 mm
- Automatic rope clamping with integrated grounding device => rope anchoring not necessary during change of reels
- Window for an exact rope feed into the bull wheel



Hydraulic drive system:

- In both bull wheels a complete driving unit consisting of planetary gear, brake and hydraulic motor is integrated => fully enclosed and therefore requiring minimal maintenance
- Emergency system for a powerless lowering of the cage when lifting passengers
- 2 emergency multiple-disc brakes, automatically activated
- High quality control technique enables inching even under maximum load
- Highly effective oil cooling system, electrically activated and controlled via thermostat, designed for extreme operating conditions
- Hydraulic hoses and screw connections with a special sealing system for a long service life without leakage
- Hydraulic differential system for the bull wheel drives -> low stress for ropes and planetary gears

Integrated reel winder:

- Hydraulic drive of the reels and the rope guiding device with gear unit and hydraulic motor => fully enclosed => requiring minimal maintenance
- With free wheel device and mechanical disc-brake system for a controlled pull out of the rope
- Reel lifting device for steel reels with Ø 1.100 - 1.400 mm
- Hydraulic lifting and lowering of the reels for loading/unloading
- Automatic rope guiding device; can be continuously adjusted without tools to all rope diameters and different reel widths

Engine:

- Water-cooled diesel engine with 23 kW (31 HP) at 3.000 rpm
- 12 V system with high capacity battery for a safe start even at cold temperatures

Weight and dimensions:

- Weight: approx. 1.950 kg
- Length x width x height: approx. 3.900 x 1.890 x 2.080 mm

PULLER-TENSIONER Model: WB 1200 / 2E

Frame and support:

- Stable steel frame with anchoring eyes
- Central lifting ring for easy loading by crane
- Front support via hydraulic backstay for high stability and fast and easy anchoring ; with integrated eyes for anchoring of ropes
- Back support via 2 hydraulic supporting cylinders

Standard chassis:

- 1 axle chassis with rigid axle
Optional: parking brake, lighting system, mudguards
- Stable towing bar for truck application
(Optional: change coupling for truck and car applications)

Optional chassis:

- 1 axle chassis with spring-mounted axle, overrunning brake system, parking brake, lighting system, mudguards and registration as high-speed trailer up to 80 km/h

Optional equipment:

- Large, lockable tool box
- Grounding plate with holding device
- Noise reduction kit for cover
- Biodegradable hydraulic oil
- Digital meter counter and digital tachometer
- Electronic pull force recorder to document the pull force
- Reels with detachable or non-detachable flange with \varnothing 1.100 or 1.400 mm
- Ropes (steel or synthetic fibre ropes) on request
- Special equipment or special models (with other pull forces) on request



DRUM WINCH Model: ST 80

- Drum winch with a pull force of max. 1 to for various usages (mast equipping, tower erection, antenna construction...)
- Other pull forces / bigger rope drums on request
- Robust machine designed for highest reliability, simple operation and minimal maintenance
- Simple chassis for operation only at construction sites; machine can be tilted by hand to dismount the wheels => simple anchoring of the base frame in the ground
- High quality control technique enables inching even under maximum load

Drum winch technical data:

- Max. pull force (inner rope layer) and max. speed (outer rope layer):
 - Gasoline engine with 5,5 HP: 1.000 daN with 24 m/min
 - Gasoline engine with 11 HP: 1.000 daN with 48 m/min
- Stable rope guiding device with hardened rope rollers
- Large rope drum (=> few rope layers => rope preserving) with stable pressure rollers for fixing the rope
- Max. rope capacity: K=19200 => e.g. 300 m for rope Ø 8 mm

Control of the machine:

- The rope can be indefinitely controlled in/out via a hand lever

Hydraulic driving system:

- A complete driving unit consisting of planetary gear, brake and hydraulic motor is integrated => fully enclosed and therefore requiring minimal maintenance
- With safety disc-brakes automatically activated
- High quality control technique enables inching even under maximum load
- Hydraulic hoses and screw connections with a special sealing system for a long service life without leakage

Engine:

- Honda gasoline engine 4,1 kW (5,5 HP) with hand start
- Optional: gasoline engine with 8,2 kW (11 HP) with electric starter

Weight and dimensions:

- Weight without rope: approx. 155 kg (with 8,2 kW engine approx 170 kg)
- Length x width x height: approx. 1.000 x 1.000 x 850 mm

Frame and support:

- Stable steel frame with anchoring eyes
- Central lifting ring for easy loading by crane



Chassis (optional):

- 1 rigid axle with easily removable towing bar; wheels can also be simply dismantled manually; to be used only at construction sites

Ropes (optional):

- Steel or synthetic fibre ropes on request

Optional equipment:

- Radio remote control
- Cover plane
- Special equipment or special models (with different pull forces) on request



DRUM WINCH

Model: ST 140 / ST 180 / ST 280 (Z 253)

- Drum winch with a pull force of max. 1,6 to (ST140), 2,1 to (ST 180) or 3,4 to (ST 280) for various usages (mast equipping, tower erection, antenna construction...)
- Other pull forces / bigger rope drums on request
- Robust machine designed for highest reliability, simple operation and minimal maintenance
- Simple chassis for operation only at construction sites; machine can be tilted by hand to dismount the wheels => simple anchoring of the base frame in the ground
- High quality control technique enables inching even under maximum load

Drum winch technical data:

- Max. pull force (inner rope layer) and max. speed (outer rope layer)
 - ST 140 => 1.600 daN and 37 m/min
 - ST 180 => 2.100 daN and 28 m/min
 - ST 280 => 3.400 daN and 19 m/min
- Optional with free wheel device to pull out ropes by hand (without engine)
- Stable rope guiding device with hardened rope rollers
- Large rope drum (=> few rope layers => rope preserving) with stable pressure rollers for fixing the rope
- Max. rope capacity: $K=44816$ => e.g. 900 m for rope \varnothing 7 mm or 300 m for rope \varnothing 12 mm

Control of the machine:

- The rope can be indefinitely controlled in/out via a hand lever

Hydraulic driving system:

- A complete driving unit consisting of planetary gear, brake and hydraulic motor is integrated => fully enclosed and therefore requiring minimal maintenance
- With safety disc-brakes automatically activated
- High quality control technique enables inching even under maximum load
- Hydraulic hoses and screw connections with a special sealing system for a long service life without leakage

Engine:

- Honda gasoline engine 8,2 kW (10,9 HP) with hand start
- Optional: gasoline engine with 12,4 kW (16,3 HP), air-cooled diesel engine with 10,5 kW (14,2 HP), water-cooled diesel engine with 10,7 kW (14,5 HP); also with electro starter available

Weight and dimensions:

- Weight: approx. 430 kg (without rope)
- Length x width x height: approx. 1.580 x 1.580 x 1.270 mm



Frame and support:

- Stable steel frame with anchoring eyes
- Central lifting ring for easy loading by crane

Chassis:

- 1 rigid axle with height-adjustable and easily removable towing bar ; wheels can also be simply dismounted manually; to be used only at construction sites

Ropes (optional):

- Steel or synthetic fibre ropes on request

Optional equipment:

- Free wheel device
- Special equipment or special models with different pull forces) on request



DRUM WINCH

Model: ST 110L / ST 140 / ST 180 / ST 280

- Drum winch with a pull force max. 1,4 to (ST 110L), 1,6 to (ST 140), 2,3 to (ST 180) or 3,4 to (ST 280) for various usages (mast equipping, tower erection, antenna construction ...)
- NEW: ST 280 with 2 operation modes => electrically switchable between high pull force (3,4 to and max. 33 m/min) and high rope speed (73 m/min and max. 1,25 to)
- New: ST 110L, weight under 700 kg
- Other pull forces/ bigger rope drums on request
- Stable backstay for fast and safe anchoring
- Robust machine designed for highest reliability, simple operation and minimal maintenance
- Optional operation of the machine via cable or radio remote control from a safe distance => good overview, low noise level and safe position for the operator
- High quality control technique enables inching even under maximum load

Drum winch technical data:

- Max. pull force (inner rope layer) and max. speed (outer rope layer):
 - ST 110L => 1.400 daN and 70 m/min
 - ST 140 => 1.600 daN and 56 m/min
 - ST 180 => 2.300 daN and 42 m/min
 - ST 280 => electrical switchable
 - Stage 1: 3.400 daN and 33 m/min
 - Stage 2: 1.250 daN and 73 m/min
- Optional with free wheel device to pull out ropes by hand (without engine)
- Stable rope guiding device with hardened rope rollers
- Optional with inductive slack-rope safety system (functions only with steel ropes) => prevents rope from getting loose and crossed over
- Large rope drum (=> few rope layers => rope preserving) with stable pressure rollers for fixing the rope
- Max. rope capacity: K=51283 => e.g. 360 m with rope Ø 12 mm or 260 m with rope Ø 14 mm

Control of the machine:

- The rope can be indefinitely controlled in/out via a hand lever
- Optional with cable remote control with a 10 m cable (functions: rope indefinitely controlled in/out; emergency stop)
- Optional with radio remote control (additional functions: ignition; engine starting)
- Control panel with all instruments to control engine, hydraulic and electrical systems
- Optional with automatic speed adjustment (idle/full throttle)



Cover:

- Lockable tarpaulin cover (optional with aluminium sheet) protects the diesel engine, the hydraulic and electrical systems => increases the reliability of the machine and is noise reducing

Hydraulic driving system:

- A complete driving unit consisting of planetary gear, brake and hydraulic motor is integrated => fully enclosed and therefore requiring minimal maintenance
- With automatically activated safety disc-brakes
- High quality control technique enables inching even under maximum load
- Highly effective oil cooling system, electrically activated and controlled via thermostat, designed for extreme operating conditions
- Hydraulic hoses and screw connections with special sealing system for a long service life without leakage

Engine:

- Honda gasoline engine with 13,2 kW (18 HP) and elektro starter
- Optional: Honda gasoline engine with 17,7 kW (24 HP), watercooled diesel engine with 17 kW (23 HP) at 1.950 U/min (Low speed => long service life and low noise level)
- 12 V system with high capacity battery for safe starting also at cold temperatures

Weight and dimensions:

- Weight: approx. 840 kg (without rope)
- Length x width x height: approx. 2.280 x 1.570 x 1.530 mm

PULLER-TENSIONER

Model: WB 1200 / 2E

Frame and support:

- Stable steel frame with anchoring eyes
- Central lifting ring for easy loading by crane
- Back support via mechanical backstay for highest stability and fast and easy anchoring; with integrated eyes for anchoring of ropes
- Front support via stable mechanical parking jack

Standard chassis:

- 1 axle chassis with rigid axle and a non-adjustable height towing bar with ball coupling for car application

Optional chassis:

- 1 axle chassis with spring mounted axle, overrunning brake system, non-adjustable towing bar with ball coupling for car application, parking brake, lighting system, mudguards and registration as high-speed trailer up to 80 km/h
Optional: dismantlable towing bar (can be shipped crosswise on the truck), height adjustable towing bar with change coupling (for car or truck applications)

Ropes (Optional):

- Steel or synthetic fibre ropes on request

Optional equipment:

- Electrical valve and socket in the control panel
=> enables the connection of a cable/radio remote control (manual control remains possible as emergency control)
- Cable remote control
- Radio remote control
- Inductive slack-rope safety system
- Free wheel device
- Lockable cover made of thick-walled aluminium
- Large, lockable tool box
- Spare wheel with lockable holding device (only with aluminium cover)
- Grounding plate with holding device
- Biodegradable hydraulic oil
- Special equipment or special models (for lifting passengers or with different pull forces) on request

