GENERAL DESCRIPTION and OPERATING INSTRUCTIONS

for

MODEL NO. T350B-1H-DP TENSIONER

1.0 GENERAL DESCRIPTION:

The Model T350B-1H-DP Single Conductor, Hydraulic Bullwheel Tensioner is used in tension stringing a single conductor on a long span installation.

2.0 Tensioning:

The braking torque for both bullwheels is supplied by high-torque low-speed hydraulic motors. The hydraulic oil is forced through a relief valve then passes through an oil-to-air fan-cooled heat exchanger to dissipate the heat generated. The conductor tension is adjustable through one control mounted on the control console.

3.0 Components:

3.1) Frame:

The skid frame is welded from structural steel and is designed to be transported to the job site, unloaded, anchored and operated directly from the ground.

3.2) Bullwheels:

Welded steel construction, 72 inch (183 cm) pitch diameter bullwheels with bolt-on neoprene segments, with eight (8) grooves having a radius at the bottom of the groove suitable for conductors up to and including 1.875 inch (47.6 mm) diameter. The elastomer lining gives maximum protection to the conductor and segments can easily be removed or repositioned to compensate for wear. The bullwheels are tandem-mounted offset a half of a groove for correct reeving of the conductor.

3.3) Tail Line Fairlead:

The sheave-type fairlead guides the conductor from the reel payout machine to the bullwheels. The sheave and polyurethane rollers are mounted on anti-friction bearings and are designed to provide maximum conductor protection.

3.4) Shafts:

Shafting is alloy steel.

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GENERAL DESCRIPTION CONTINUED:

3.0 Components Continued:

3.5) Bearings:

Precision anti-friction bearings are used throughout.

3.6) Power Units:

A 50 horsepower class DEUTZ Diesel engine drives the hydraulic system, the "make-up" pump and the fan for the heat exchanger. The electrical system is 12 volt with a heavy duty battery and alternator. An air compressor is included for let-off stand brake operation.

3.7) Control Panel:

The control panel is positioned for maximum operation convenience. It includes engine throttle and stop controls, tension control with tension gauge calibrated in pounds and kilograms and brake control.

3.8) Air Supply and Controls:

Air supply and brake pressure control for a reel stand which would normally be located at a distance of approximately 60 feet (18.3 m) maximum from the rear of the tensioner include the following items:

a) engine driven air compressor
b) air tank
c) regulator with air gauge at the control panel (an air line from the regulator is equipped with a quick disconnect coupling)
d) single air hose to supply air power to let-off reel stand equipment (the hose is 80 feet (25 m) long with a male quick disconnect coupling)

3.9) Drive System:

The tensioner hydraulic circuit permits forward (drive) or pull-back (reverse) driving. The system is capable of driving in either direction against a maximum tension of 35,000 pounds (15,876 kg.) per conductor at a maximum speed of 28 feet per minute (8.6 m/min.).

FORWARD (Drive): is used for threading the conductor through the bullwheels using a lead rope.

PULL-BACK (Reverse): can be used to pull the conductor back from an obstruction.

GENERAL DESCRIPTION and OPERATING INSTRUCTIONS

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GENERAL DESCRIPTION CONTINUED:

3.0 Components Continued:

3.10) Heat Exchanger:

An oil-to-air heat exchanger is supplied with sufficient heat-dissipating capacity to maintain the oil temperature within acceptable limits. A hydraulic motor-driven fan moves cooling air through the exchanger to the outside of the tensioner.

3.11) Holding Brakes:

Spring-applied and oil pressure-released holding brakes are mounted on mounted on each of the bullwheels. They are designed to hold up to 35,000 pounds (15,876 kg.) tension in the conductor.

4.0 Finish:

All steel structural components are sandblasted and/or acid washed, given one coat of primer and two coats of Timberland Equipment orange colour.

5.0 Unit Dimensions:

Length:	217 inches (552 cm)
Width:	84 inches (213 cm)
Height:	118 inches (299 cm)
Weight:	25,000 pounds (11,340 kg.) estimated

6.0 Optional Equipment:

1) Tower Line Fairlead:

A sheave, complete with guides, is mounted at the front of the tensioner and supports the conductors after being threaded through the bullwheels.

GENERAL DESCRIPTION and OPERATING INSTRUCTIONS

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MODEL NO. T350B-1H-DP TENSIONER

GENERAL DESCRIPTION CONTINUED:

7.0 Rating:

7.1 Tensioning

25,000 pounds (11,340 kg.) at 2.63 miles per hour (4.2 km/hr)

33,000 pounds (14,969 kg.) at 2.0 miles per hour (3.2 km/hr)

35,000 pounds (15,876 kg.) at 1.88 miles per hour (3.0 km/hr)

CAUTION: These ratings are maximum and must not be exceeded.

Performance based on operation with suitable conductor let-off stand providing 1,000 pounds (454 kg.) tail line tension up to maximum linespeed.

7.2 Forward (Drive) or Pull-Back (Reverse)

Maximum of 35,000 pounds (15,876 kg.) at a maximum speed of 28 feet per minute (8.6 meters/minute).

8.0 OPERATING INSTRUCTIONS:

8.1 Machine Set-Up:

Alignment - Align tower fairlead with the first traveller on tower a minimum of 300 feet from the base of the tower. (Control Console to be nearer let-off stand.)

Anchoring - Tensioner must be tied down securely as illustrated in the anchoring instructions.

8.2 Machine Start-Up:

Power Unit - Ensure MODULE CONTROL is in TENSION position and MASTER BRAKE CONTROL is in the ON position.
- Start engine with ignition key and engine throttle.

NOTE: For cold starting procedure refer to engine manual.

GENERAL DESCRIPTION and OPERATING INSTRUCTIONS

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MODEL NO. T350B-1H-DP TENSIONER

OPERATING INSTRUCTIONS CONTINUED:

8.2 Machine Start-Up Continued:

Warming Hydraulic Fluid - Ensure MASTER BRAKE CONTROL is in the ON position.
- Shift MODULE CONTROL to PULL-BACK position.
- Increase engine speed to 2000 rpm.
- Turn-in TENSION CONTROL until linepull is approximately 1000 pounds reading on tension gauge.

CAUTION: If bullwheels start to turn, lower pressure setting.

- Allow reservoir and coolers to reach 100°F. (38°C.) before tensioning.

8.3 Driving - CAUTION: Do Not Drive FORWARD with Conductors Under Tension - see Tensioning Instructions, Page S-20340-5.

- FORWARD (Drive) - Shift MODULE CONTROL to drive FORWARD.
  - Shift MASTER BRAKE CONTROL to OFF position (to release brakes).
  - Driving speed is controlled by engine speed.

- PULL-BACK (Reverse) - Turn TENSION CONTROL in fully.
  - Shift MODULE CONTROL to PULL-BACK position.
  - Reverse speed is controlled by engine speed.

CAUTION: Ensure engine speed is sufficient for linepull. (Approximately 1500 to 2000 rpm.)

NOTE: Releasing brakes is not necessary in PULL-BACK position.

CAUTION: Ensure conductor is being wound back onto let-off stand when pulling back.

8.4 Tensioning - Ensure MODULE CONTROL is in TENSION position.
- Set engine to 1000 rpm idle.

CAUTION: CHARGE PRESSURE gauge must not be less than 125 psi.

- Adjust LET-OFF AIR CONTROL to sufficient air pressure to provide approximately 1000 pounds (454 kg.) tail tension.
- Turn TENSION CONTROL in fully.
- Shift MASTER BRAKE CONTROL to OFF position.
- Instruct Puller to start pulling.

NOTE: Conductors will move forward slightly as the load transfers from the brakes to the hydraulic system.

- Turn out TENSION CONTROL until desired linepull on gauge is reached and conductors begin to pay out.

CAUTION: Cooler fans will automatically engage at 125°F. (52°C.). An override FAN CONTROL lever is provided.

OPERATING INSTRUCTIONS CONTINUED:

8.5 Overheating:

NOTE: Cooler temperature not to exceed 180°F. (82°C.).

- If cooler temperature reading on gauge exceeds 180°F. (82°C.), reduce linespeed.

8.6 Machine Stop:

Stop Engine - Pull engine stop knob until engine stops. Turn key to OFF position.

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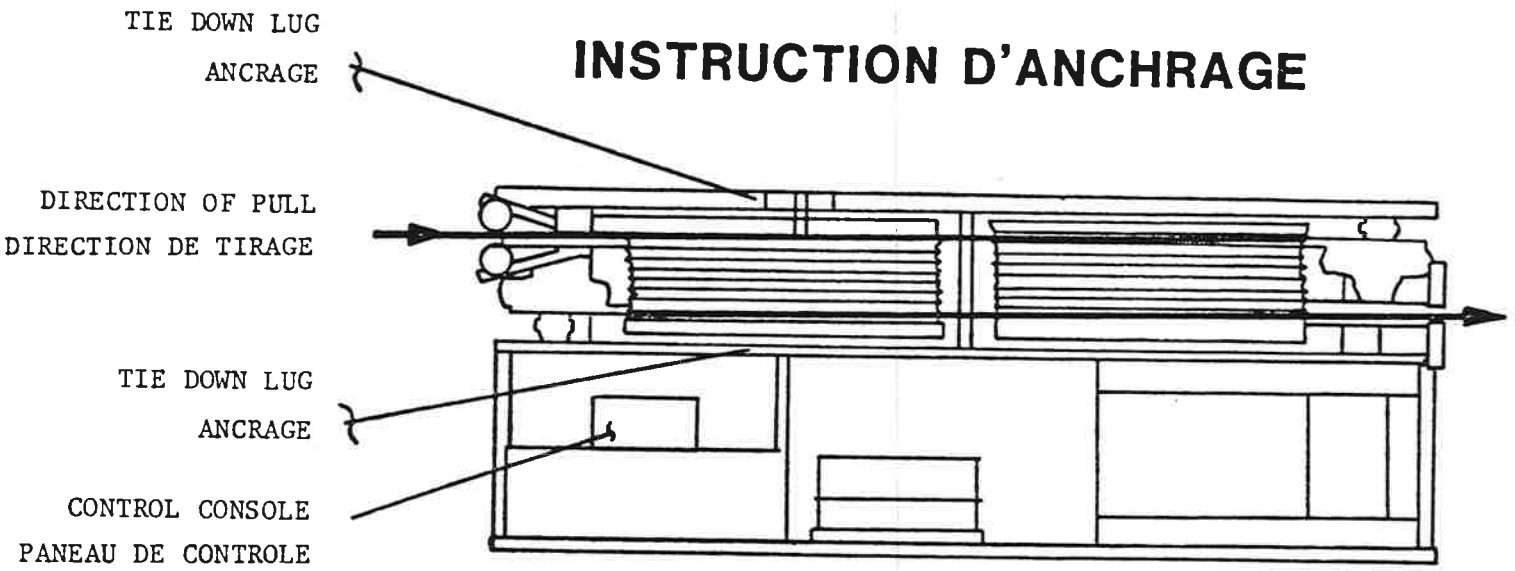
ANCHORING INSTRUCTIONS

INSTRUCTION D'ANCHRAGE



ANCHOR MACHINE SECURELY AS SHOWN BEFORE PULLING.
MINIMUM 35,000 LB. (15,876 kg.) PER ANCHORING SYSTEM STRENGTH FOR A SAFE WORKING LOAD.

ANCRER LA MACHINE COMME IL FAUT, COMME MONTRER, AVANT DE TIRRER.
MINIMUM 35,000 LB. (15,876 kg.) POUR CHAQUE FORCE DE SYSTEM D'ANCHRAGE POUR CHARGE DE TRAVAIL SAUF.