

TECHNICAL

ESS Equipment Datasheet 10Te Hydraulic Tensioner



Equipment General Arrangement (GA):

Figures 1 to 6 below detail the GA of the 10Te Hydraulic Tensioner (Fig. 1 to 3) and dedicated HPU (Fig. 4 to 6):

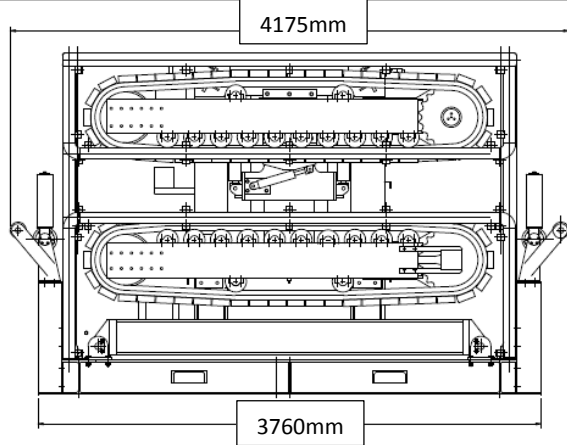


Figure 1: 10Te Tensioner Profile View

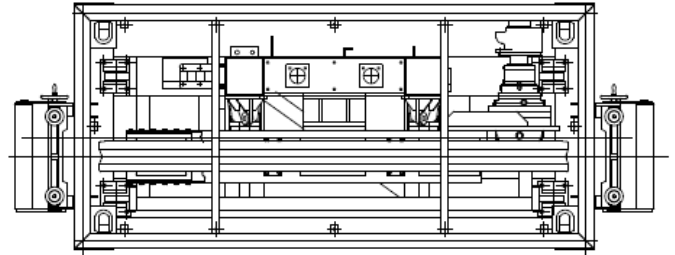


Figure 2: 10Te Tensioner Plan View

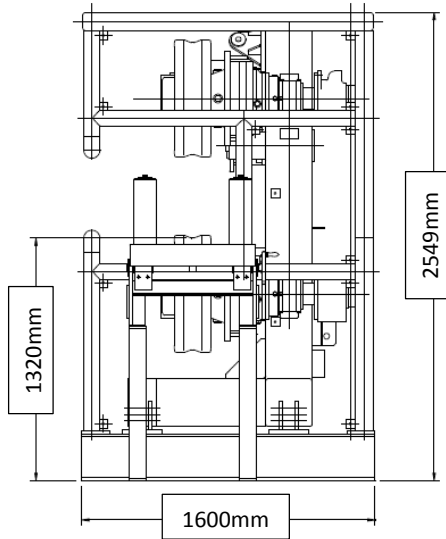


Figure 3: 10Te Tensioner Front View

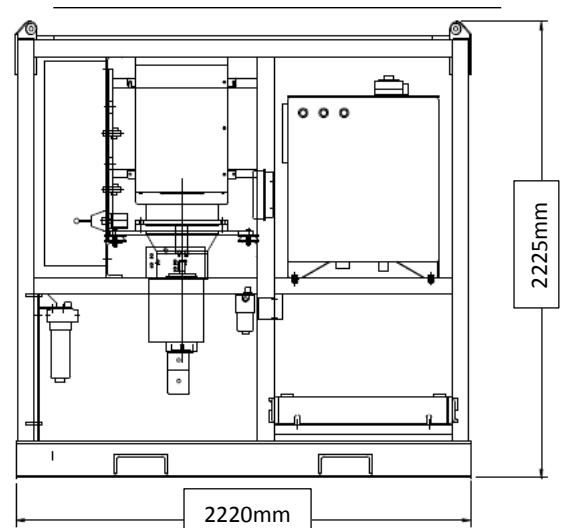


Figure 4: 10Te Tensioner HPU Profile View

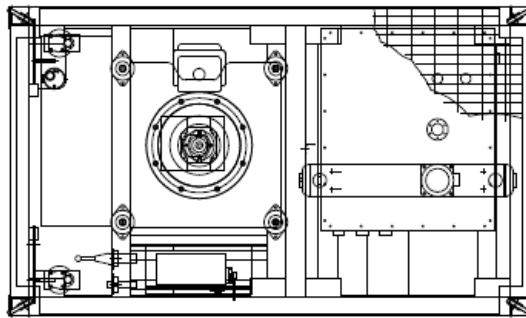


Figure 5: 10Te Tensioner HPU Plan View

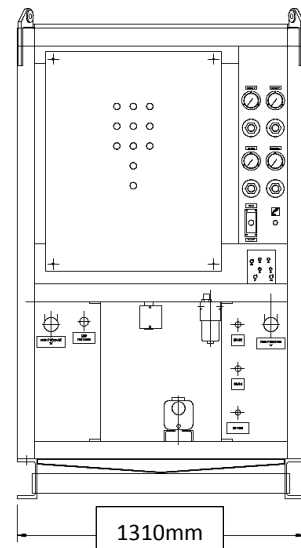


Figure 6: 10Te Tensioner HPU Front View

Equipment Specifications:

Item	Specification	Additional Notes
Model	10Te Bi-Directional Haul	-
Pull Force	10Te Outboard from Idler end	5Te Outboard from Gearbox end
Grip Pressure	20Te per track	-
Lowest Render Setting Line Pull	1.8Te	-
Product Grip Load Max.	11.11Te/m @ 219 bar	-
Coefficient of friction (assumed)	0.25	-
Maximum product speed	1450m/hr @ 60Hz	-
Minimum product speed	100m/hr	-
Height to product underside	1.32m	-
Track opening	0.4m	-
Track Contact Length	1.8m	-
Product Size Range	40mm to 390mm	-
Maximum Operating Pressure	250 bar	-
Required Flow	170L/min	-
Controls	Local and Remote Control Units (RCU)	-
Unit Operations	Independent or paired (Dual Mode)	-
Tensioner Mass	6500kg per tensioner	-
HPU Mass	2500kg per HPU	-

Equipment Description:

10Te Hydraulic Tensioners:

The Caterpillar Tensioner consists of two vertically mounted track carriages with polyurethane 'V' shaped pads. One track is fixed to the sub frame while the other track slides on two steel shafts moved by the grip cylinders and pivots to accommodate for small product diameter variations. The tensioner is mounted to its base frame through load cells and flexible mounts.

Tensioners have the following modes of operation:

- Speed Mode: Pay In/Pay Out with variable speed.
- Tension Pull In: Haul in with variable tension & speed.
- Tension Holdback (Render): Variable tension and speed - lowest render setting line pull = 1.8Te.
- Dual Mode: Two tensioners working in series sharing the load equally – up to 20Te line pull.

Two tensioners available with dedicated individual HPUs.

Electro-hydraulic Power Unit:

The HPU is contained within a steel box space frame. The electrical supply required is: 75kW; 3ph; 415/440V; 50/60Hz. Hydraulic output is 142L/min (50Hz), 170L/min (60Hz) at 210 bar from main transmission pump, and 15.95L/min (50Hz), 19.14L/min (60Hz) at 210bar from grip pump.