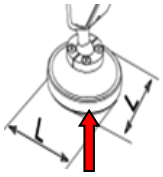
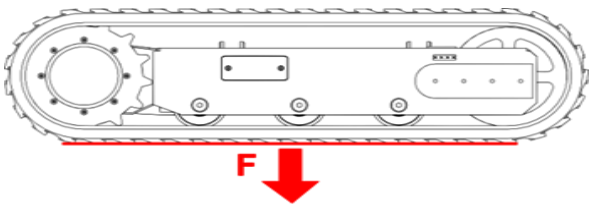
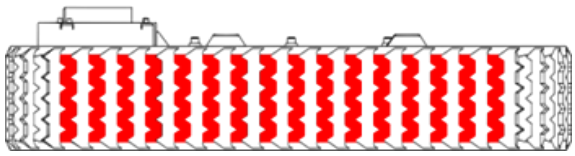
Teupen TL 54 AJ

Pressures and Force: Stable ground

I. Force Impact		
1. Machine Effect on Floor Surface Material - Outriggers		
Maximum Force on Floor Material under single outrigger (fully loaded machine with max basket capacity)	17.3 kN 	3889 lb force
Total area of a single outrigger foot (based on foot diameter of 175mm)	240 cm^{2*}	37.2 sq in
Max. ground pressure (force / area of foot)	72 N/cm^{2*}	104.4 psi
Required synthetic underplate for outrigger (max psi reduced when using underplate)		
40cm x 35cm (15.8x13.8in), 2911 / 0349 65cm x 22cm (25.6x8.6in), 2911 / 0456 70cm x 22cm (27.5x8.6in), 200148	12.3 N/cm^2 12.0 N/cm^2 11.2 N/cm^2 	17.8 psi 17.4 psi 16.2 psi
2. Machine Effect on Floor Surface Material – Tracks		
Max. load under one track (machine weight / 2) (2400kg / 2)	12.2 kN	2742 lb force
Crawler area in contact with surface	600 cm^{2*}	93 sq in
Max. ground pressure	20.3 N/cm^{2*}	29.4 psi





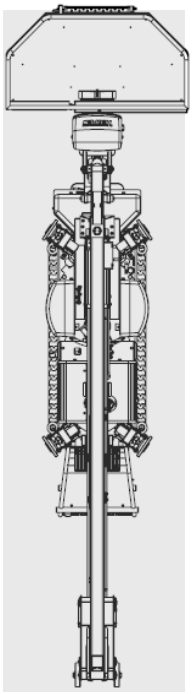
29.4 psi

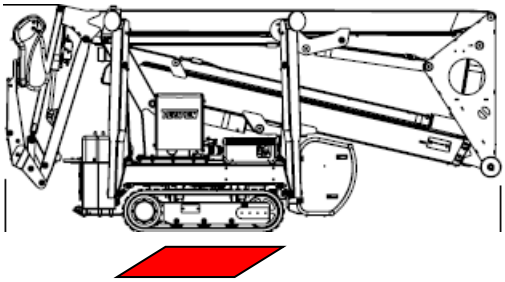
II. Live Load (Weight and Pressure) Impact on Structure

(The Machine Live Load over projected area of machine.)

1. Area load in transport position (Unloaded basket)

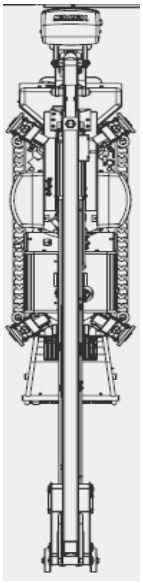
Area in transport position (projected area with basket)	7.3 m²	78.2 sq ft
Area in transport position (projected area without basket)	3.4 m²	36.6 sq ft
Machine loading in transport position	24 kN	5402 lb force
Live Load with basket	3.3 kN/m²	68.9 psf
Live Load without basket	7.0 kN/m²	146.2 psf





Track dimension is 8“ wide x 57“ long
or 456 square inches x 2 = 912 sq in.
912 sq in = 6.33 sq ft
5,401 lbs / 6.33 = 853 psf

This calculation is only for dead load on track surface and not the live load effect over the entire area the machine would operate on.



with Basket
68.9 psf

without Basket
146.2 psf

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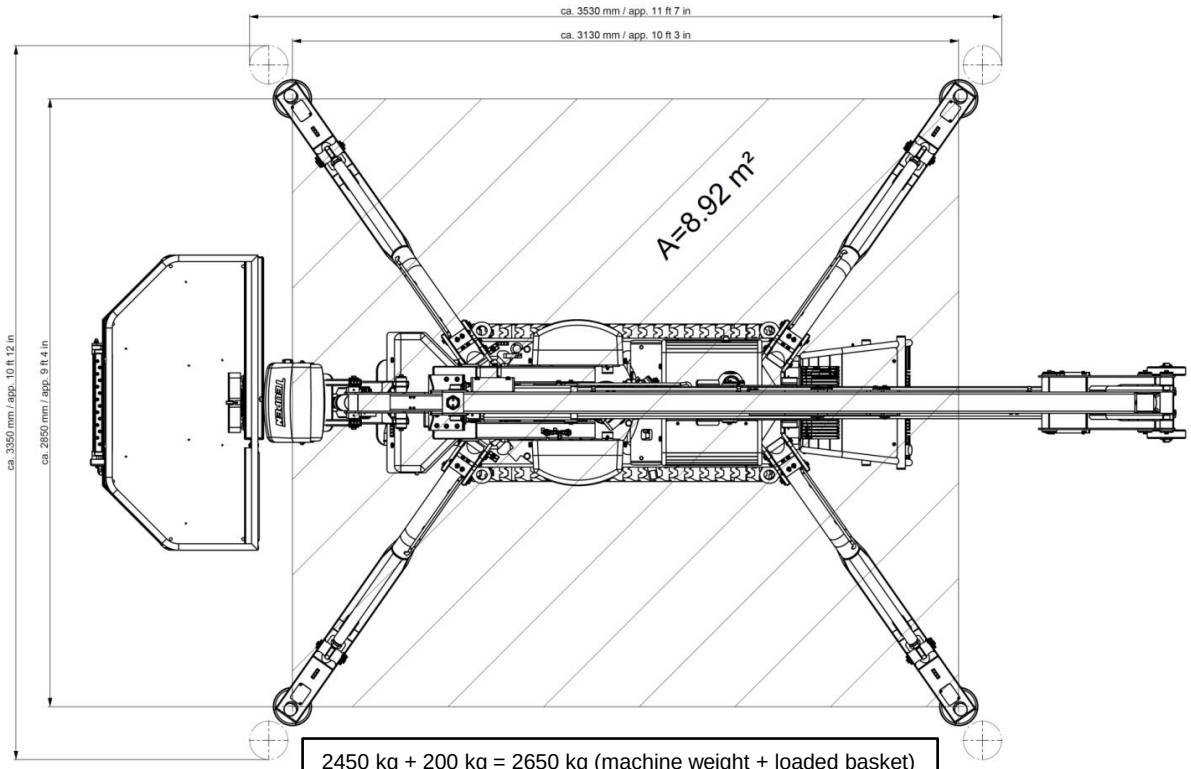
2. Area pressure in working position		
Area in working position	8.92 m²	96 sq ft
Machine loading in working position (with full load in basket)	26 kN	5845 lb force
Area pressure (Live Load)	2.91 kN/m²	60.9 psf



2450 kg + 200 kg = 2650 kg (machine weight + loaded basket)
2650 x 9.81 / 8.92 = 2914.40 or 2.91 kN/m2
5401 lbs + 442 lbs = 5843 lbs 5843 / 96.01 = 60.9 psf

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