

RT SCISSORS

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The popularity of Rough Terrain scissors is growing.

Leigh Sparrow, UpRight Vice-President International, examines what makes a good RT scissor.



The new XRT27E (10.2m/33 ft working height) and XRT33E (11.8m/39 ft working height) are electric scissors with very powerful off-slab capabilities for work on ground conditions which would defy the conventional electric slab scissor and many 4x2 diesel scissors

A true RT scissor should have sufficient power to cope with grades in the 35% to 40% range. It should have high flotation lugged tyres and as even an axle weight distribution as possible. All but the shortest machines should have an oscillating axle to help keep all four wheels on the ground. The scissor stack needs to be designed to cope with the substantial impact and dynamic forces when moving over rough ground or travelling at high speeds in the closed position.

For the two machines in our XRT range, the XRT27 and XRT33, we decided upon a standard-sized platform, 1.5m/4.92 ft wide, (and when fully extended) 3.34m/10.96 ft long. Comparing the XRT27 with the equivalent X26, the new platform is 28% wider and 6% longer than the original 1.17m/3.84ft wide, 3.13m/10.27 ft long structure. When UpRight designed the XRT range, it would have been easy to assume that the slab X-Series

(UpRight's industrial range of compact heavy duty scissors with 10.2m/33 ft and 12.1m/39 ft working heights) scissor linkage would be suitable for the XRT chassis. But for all the reasons above, we did not! An intensive development and testing process was undertaken before



The Speed Level system is available on the SL30

the stack was cleared for use with the larger platform on uneven ground. Too often manufacturers underestimate the complexities of scissor design and durability. The technology looks simple, yet over the past 10 years at least four major companies have had to recall all of their scissor stacks. In one case, problems with scissor bearings nearly sent the company concerned into liquidation.

Levelling ability

Levelling is another important consideration as accepted systems vary in different countries. In the USA and UK, most large RT scissors are sold without outriggers. In Continental Europe, buyers would not even consider purchasing a long chassis RT scissor if it did not have the ability to level itself, usually with outriggers. In terms of levelling technology, UpRight offers its patented Speed Level system, available on SL26 (10m/32.25 ft w/h) and SL30 (11m/35.53 ft w/h) Sigma lifts. This gives powered levelling on inclines of 13+ degrees from controls on the platform, for productivity advantages over time-consuming outriggers. Heavy duty Sigma type linkage on the Speed Level is attached to the chassis via a massive bi-directional gimble or pivot, with two large cylinders holding the linkage in place. These can be adjusted from the platform to level fore and aft and side to side. Only when the operator has levelled the platform, may it be lifted.

Cross-over machine

The Speed Level demonstrates the growing need for platform versatility. To fulfil the user's desire for greater productivity and the rental company's pursuit of maximum utilisation, the tra-

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ditional breeds of scissor (Rough Terrain/off-slab/on-slab) are being asked to make the cross-over to applications outside their usual work domain.

UpRight's XRT27 (10.2m/33ft working height) and XRT33 (12.1m/39ft working height) are internal combustion scissors with a rugged Rough Terrain specification and 4WD. From one platform, users can tackle internal work right up to ceiling height on service ducting, insulation panels and air conditioning, then comfortably manoeuvre on rough terrain for a whole range of exterior tasks..

To begin with, the 'real' or effective ground clearance (178mm/7 ins) is high for a machine of this size, and the bottom of the machine is flat with few protrusions. This prevents one of the major problems when crossing rough terrain: grounding. Once a machine has become stranded on a hump, or the wheels have sunk sufficiently into ruts for the underside to make ground contact, one or more wheels lose traction and there is a high risk of the machine become immobile and having to be towed out.

Related is the front and rear overhang. Any part of the chassis that extends beyond the front or rear wheels can reduce the slope that the machine can tackle, even if it has sufficient power to climb the gradient. When driving toward the slope, a forward projection can make contact with the ground surface of the slope before the wheels move off the level surface. This restricts the angle the machine can climb, known as the "approach angle". Similarly, once all 4 wheels are on the slope, a rearward projection can make contact with the level ground at the transition. On the XRT and other well-designed RT scissors, the machine has "a wheel at each corner" so that no part of the chassis extends in front or behind of the wheels, eliminating this problem. ♦

A true RT scissor should have sufficient power to cope with grades in the 35% to 40% range - pictured is the XRT33

