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TL Basket Levelling Drive Operator Testing Procedure

Doc. No.: 601108-02

Rev No.:	Date:	Author:	Description:
-	01/03/2025	Michael Danks	Original issue
1	02/03/2025	Michael Danks	Added: 1) Test weight information for TL14m 2) Note to test in FAST mode 3) 30 minute break between dynamics tests 4) Instruction to monitor drive temperature 5) Recommendation to re-grease drive after test Also: 6) Reduced number of full fly cycles from 5 to 4 7) Improved wording on items 1.4.3 & 1.4.4
2	04/03/2025	Michael Danks	Added: 1) Item 1.2: To ensure drive is greased prior to test 2) Note to explain Prevent motion constitutes normal operation (not a failure) in Section 1.5 3) Changed wording in Section 1.6 to focus on failures via uncontrolled movements as opposed to normal EWP functionality

Applicable Machines:	Redmond Gary Australia TL MEWP's
Criticality:	Highly recommended to be performed at the next quarterly inspection
Issue Date:	01 March 2025
Overview:	This procedure outlines the actions required to load test the basket levelling drive to validate its mechanical condition

Ensure all of this work is carried out in a safe working environment. All work is to be carried out by a competent tradesperson.

Parts & Equipment Required:	<ul style="list-style-type: none"> • Test weights of 406-500kg (e.g. sand bags or similar)
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Please read and understand the following instructions prior to starting work.

1 Procedure

- 1.1 Set-up the EWP for normal operation: Manoeuvre the basket so it is positioned behind the basket rest, i.e. extend boom outwards so the basket is clear of the rest and then lower the boom back into the boom rest. Only extend the boom out as far as necessary. Fully lower the fly boom to replicate stowed position.



Figure 1 - Fly and Basket Set-up

- 1.2 Ensure the levelling drive is correctly greased (prefer to Lubrication Chart)
- 1.3 Place the nominated test weight in the basket for **1.25x Overload**:
 - 1.3.1.1 TL17m/TL16m = 500kg (+/- 5kg)
 - 1.3.1.2 TL14m = 406kg (+/- 5 kg)
- 1.3.2 **Recommended method:** Use physical weights such as 20kg bags of sand / concrete and place them evenly on the floor of the basket until the test weight is reached.

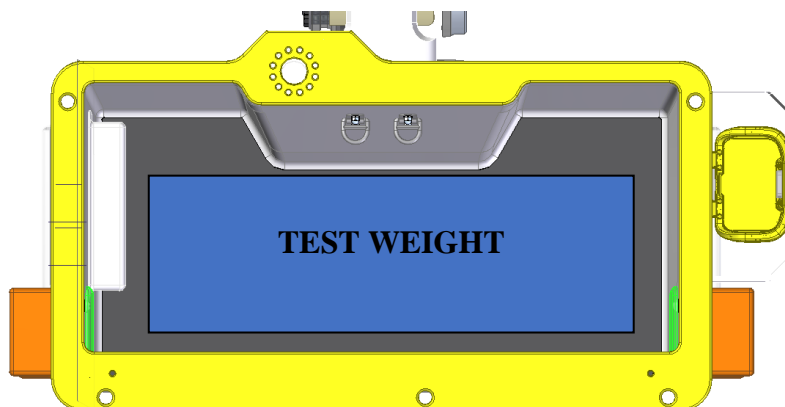


Figure 2 - Test Weight layout

1.3.3 **Less preferred method:** If physical weights are not available the basket can be filled with water to replicate the weight. Ensure the basket is **empty and completely level** and fill with water to the nominated height from the bottom floor of the basket.

1.3.3.1 TL17m/TL16m (500kg) = 625mm

1.3.3.2 TL14m (406kg) = 510mm

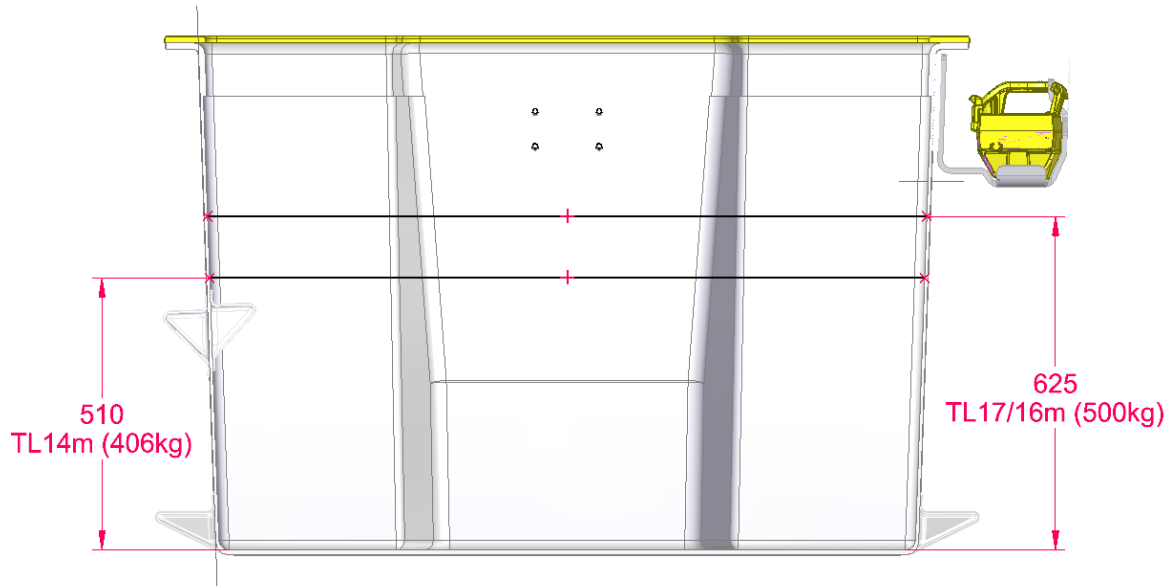


Figure 3 - Weight Water Level

1.3.3.3 NOTE: (1) when finished, use a pump to remove the water, do not tilt the basket to empty (2) filling the basket with water is not the preferred test weight option as this will submerge the internal basket step which could lead to moisture ingress (problematic during electrical testing).

IMPORTANT: Do not operate - extend or retract functions while test weights are fitted

- 1.4 Further raise one side of jack legs to tilt the EWP 5° sideways. Use the level gauges on the rear jack legs.

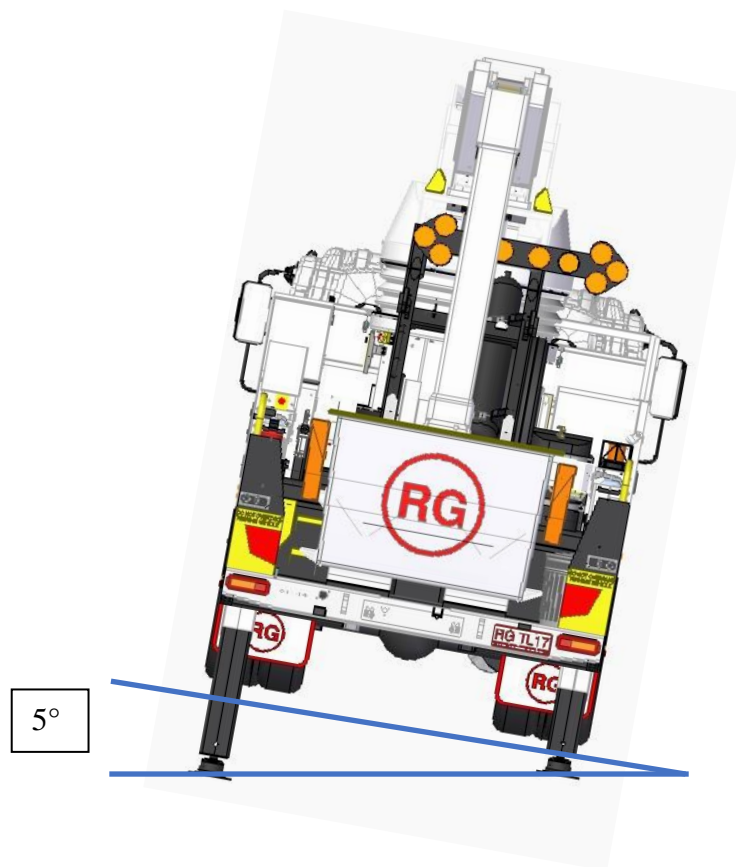


Figure 4 - EWP Set-up

- 1.5 Use the radio controls to cycle the fly boom as per the scenarios given below. Perform the test in FAST mode:
- 1.5.1 4x full un-interrupted cycles: i.e. raise from stow position to fully raised, then back down to stow (1x cycle).
 - 1.5.2 **Leave the EWP for a minimum of 30 minutes** to allow the levelling drive and hydraulic system to cool. Such high intensity operation with overload will produce excessive heat and could cause the system to under-perform. The temperature of the levelling drive should be monitored during testing and should not be allowed to exceed 80°C; if necessary, pause the test to allow to cool.
 - 1.5.3 Half Envelope motions – *Smooth* stop: i.e. raise from stow position to halfway (fly boom horizontal) stopping smoothly (motion 1). Then continue raising until fully raised (motion 2). Lower from fully raised to horizontal and stop smoothly (motion 3). Finally, lower from horizontal to stow (motion 4).
 - 1.5.4 Half Envelope motions – *Sudden* stop: i.e. raise from stow position to halfway (fly boom horizontal) stopping suddenly (motion 1). Then continue raising until fully raised (motion 2). Lower from fully raised to horizontal and stop suddenly (motion 3). Finally, lower from horizontal to stow (motion 4).

IMPORTANT: If the fly boom moves too quickly for the levelling system, a situation may occur where the safety system executes a PREVENT MOTION. This is where the safety system senses the basket becoming un-level and therefore stops the current operator function; this is indicated by a constant audible tone when functions are held on. If this happens, release all functions – the audible tone will turn off - and then hold the deadman button and the basket should then self-level. This occurs when the basket is over its allowable 5° out-of-level, but less than 10°. If a PREVENT MOTION occurs, continue the test as this is a normal machine function and does not indicate anything is wrong with the leveling drive (not a failure).

If a constant audible tone remains on with no functions activated, then the levelling system has triggered its STOP outputs and will need to be manually re-levelled using the Emergency controls. This is only considered a failure if the basket becomes out-of-level via an uncontrolled movement.

1.6 To pass the test, the basket should:

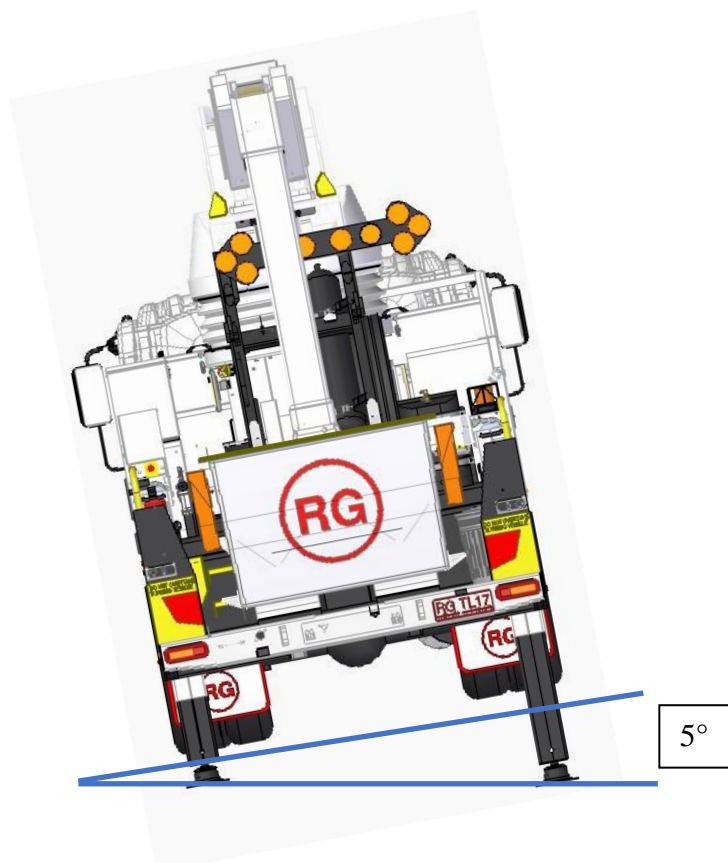
1.6.1 Safely and correctly level at all times (i.e. remain within 5° allowance, PREVENT MOTION's are allowed)

1.6.2 Not trigger any faults via an uncontrolled movement

1.6.3 Not exhibit *excessive* or unusual noise

1.7 If the basket does trigger the out-of-level fault by an uncontrolled movement, immediately tag the truck out of service and contact Redmond Gary.

1.8 Repeat the entire test with the EWP tilted 5° in the other direction (i.e. using the jack legs)



- 1.9 Once the test is completed, re-grease the levelling slew drive as per the supplied Lubrication Chart.

Please contact Redmond Gary Australia if you are unsure of any instruction