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TL Vertical Slew Assembly Routine Test Procedure

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Rev No.:	Date:	Author:	Description:
-	31/03/2025	Michael Danks	Original issue

Applicable Machines:	Redmond Gary Australia TL MEWP's
Criticality:	Recommended to be performed at each 3-monthly (A1) & 12-monthly (B) inspection
Issue Date:	31 March 2025
Overview:	This procedure outlines the actions required to routine load test the Vertical Slew Assembly (VSA) 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:	• Test weights of 325-440kg (e.g. sand bags or similar)

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 the 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 the 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 as per Table 1 below. Accuracy on weight values to be +/- 5kg.

EWP Model	3-Monthly Service (A1) *Test Weight in kg (100% WLL)*	12-Monthly Service (B) *Test Weight in kg (110% WLL)*
TL14m (325kg WLL)	325	358
TL17m/TL16m (400kg WLL)	400	440

Table 1 - Test Weight Values

1.3.1 **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.

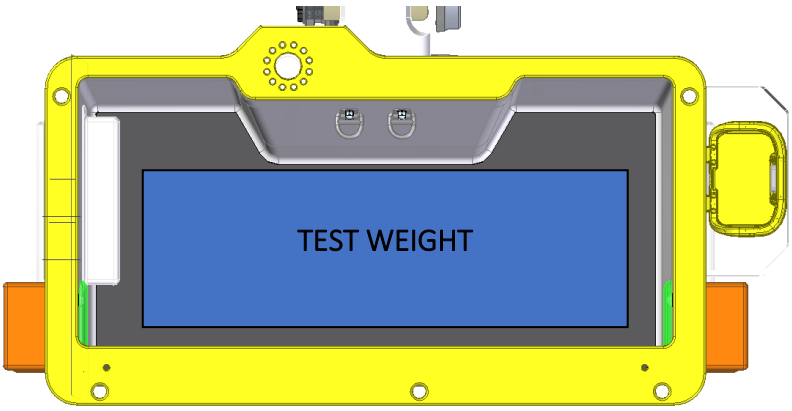


Figure 2 - Test Weight layout

1.3.2 **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 <u>from the bottom floor of the basket</u>.

1.3.2.1 TL17m/TL16m (440kg) = 550mm

1.3.2.2 TL17m/TL16m (400kg) = 500mm

1.3.2.3 TL14m (358kg) = 450mm

1.3.2.4 TL14m (325kg) = 410mm

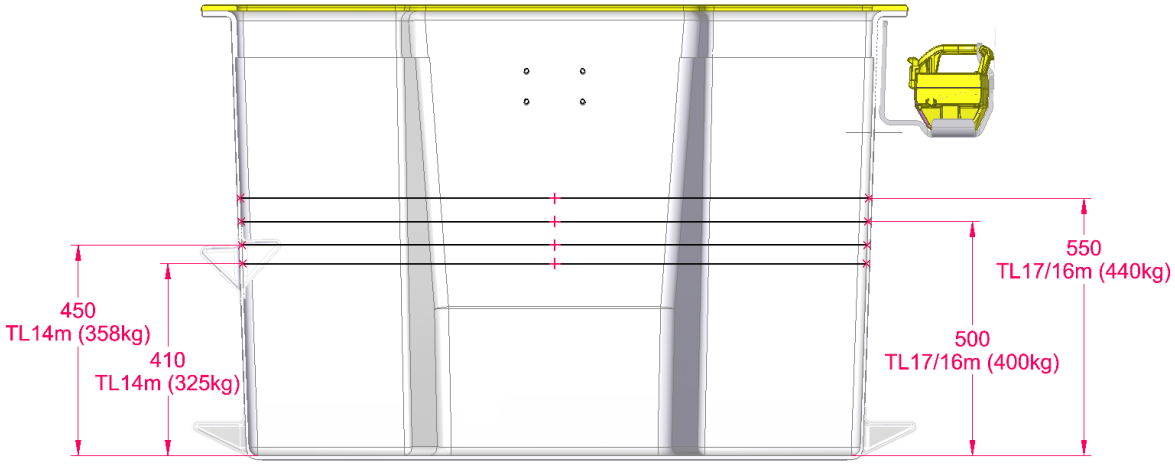


Figure 3 - Weight Water Level

1.3.2.5 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 <u>not</u> 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.

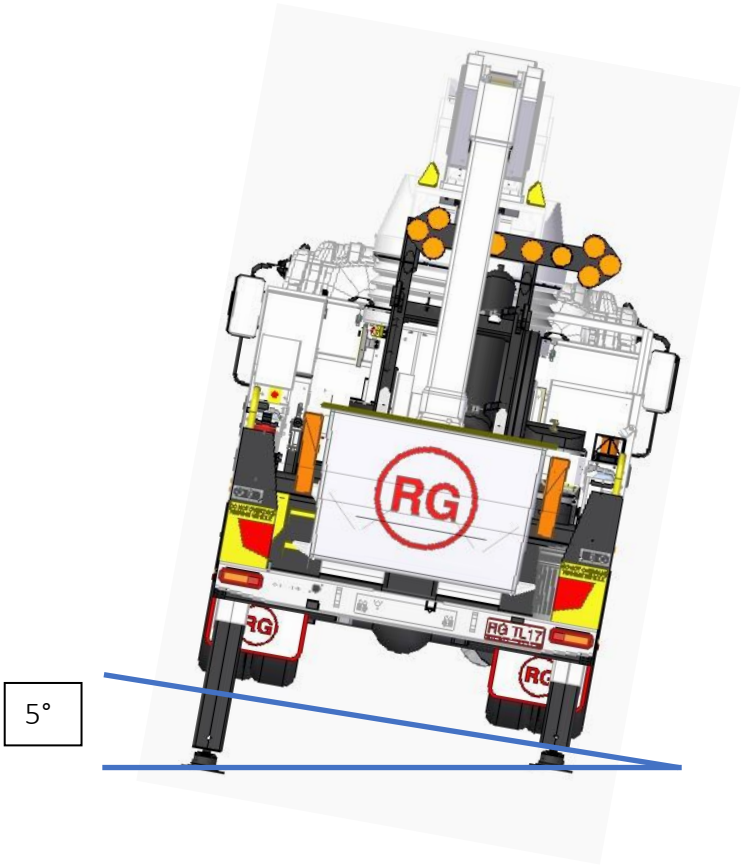


Figure 4 - EWP Set-up

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 **2x** full un-interrupted cycles: i.e. raise from stow position to fully raised, then back down to stow (1x cycle).

1.5.2 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). See Figure 5 below.

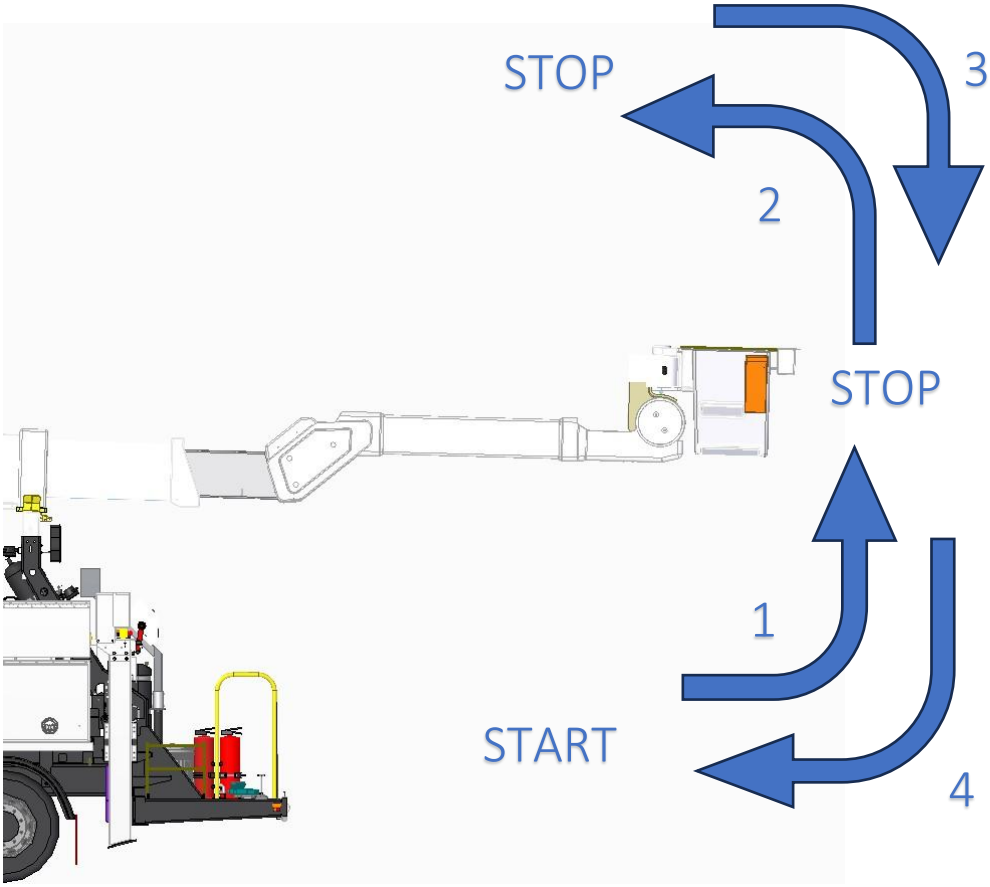


Figure 5 - Half Envelope Motion diagram

PREVENT Motion: 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 unlevel 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 VSA (not a failure).

If a constant audible tone remains on with no functions activated, then the levelling system has triggered its E-STOP outputs and will need to be manually re-levelled using the Emergency controls.

2 Pass Criteria

The purpose of this test is to validate that the basket levelling operates correctly to help assess the risk of the basket performing an uncontrolled motion. An uncontrolled motion is described as a *noticeable* basket tilt movement that was **not** commanded via any operational controls. To pass this test, the basket should:

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

2.1.2 Basket out-of-level does not trigger E-STOP

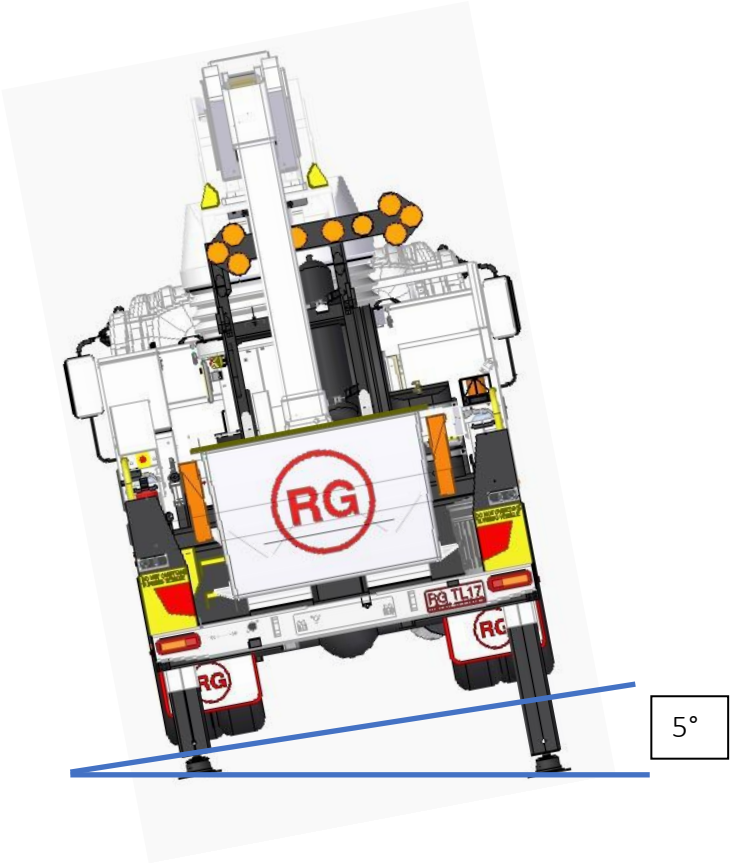
2.1.3 Not exhibit *excessive* or unusual vibration. NOTE: due to the mechanical nature of the VSA, noise is audible when it is in use.

2.2 This criteria can be simply assessed against the following:

During the test:	
The basket levelled correctly at all times AND/OR could always be recovered using the radio remotes	PASS
The basket was able to get over 10° out-of-level which activated an E-STOP. The basket needed to be recovered using the emergency controls	FAIL Provide evidence to RG

Due to the complicated nature associated with the failure criteria, if any EWP is deemed to fail this test, please submit video evidence to Redmond Gary for further assessment before any repairs are carried out. Email: Service@rg.com.au

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



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