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## SERVICE BULLETIN

### RG Cable Puller Cutter Trailer – Cable Recommendation

**Doc. No.:** 601066-02

**Date:** 01/03/2023

Rev No.:	Date:	Author:	Description:
-	01/03/2023	M. Danks	Original issue

<b>Applicable Vehicles:</b>	Redmond Gary Australia – Cable Puller Cutter Trailers – SN’s 11556, 11557, 11558, 11559, 11560, 11561, 11562, 11563
<b>Criticality:</b>	Highly recommended operational guidelines to be implemented immediately to reduce the risk of damaging the machine
<b>Issue Date:</b>	24 February 2023
<b>Overview:</b>	This bulletin identifies recommended cable sheath types that can be cut with the machine

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

<b>Parts &amp; Equipment Required:</b>	N/A
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*Please read and understand the following instructions prior to start work.*

## **1 Introduction**

Redmond Gary Australia has designed and sold 8x Cable Puller Cutter Trailers between late 2022 and early 2023. The purpose of these machines is to retrieve cable from underground pits and cut the cables into manageable pieces to be scrapped. The RG design utilises a scissor-action cutter; this cutter is not produced by RG but is made by an Italian company called CEMBRE. The cutter is actuated by a single-acting hydraulic cylinder and it retracted by a heavy internal spring. The cutting force available to shear the cable is proportional to the hydraulic pressure applied to the cylinder.

The design specification of the machine was created and approved by Telstra; initial specification information included estimated trailer weights, cable speed and max push force. Throughout various stages of the project, Telstra supplied RG with cable samples of various diameters and lengths to conduct operational testing. All supplied cable were of the same sheath type, i.e., Plastic/Polyethylene sheath with moisture barrier (Sheath Code 70). Initial cutting tests were performed in-house in order to determine the power requirement to successfully cut a piece of ~80mm diameter sample using the CEMBRE cutter. The test results indicated that the standard cable pusher power unit could produce enough hydraulic pressure to successfully cut the supplied cable (~130 bar); this created the system parameters for the concept machine.

Upon final commissioning of the trailers, RG performed some in-field testing at Brown's Plains, QLD and was able to return with a large amount of un-cut cable for further testing. After commissioning, each machine operated successfully.

## **2 In-Service Feedback**

Since the cable puller cutter trailers have been operating in the field, RG received feedback regarding some operational issues; items such as the clevis block and associated pins were noted as designed improvements and fixed under warranty. Further to this, operators notified us that on many occasions, the cutter has taken multiple attempts to perform a single cut through a piece of cable. On these occasions, the cable yield rate is much lower and also the wear and tear on the machine is much higher.

Initially puzzled on the cause of this, back and forth communication with operators finally highlighted that the cable causing the cutting issues was in fact different to the cable that was used to scope and test the machines. The problematic cable seems to be Lead-sheathed. This cable is heavier, stiffer and more difficult to cut (Sheath Code 11-14).

It is RG's understanding, that our machine cannot produce enough pressure to cut through certain sizes of the Lead-sheathed cable. In addition to this, we have had feedback that attempting to cut this cable will damage the RG machine.

## **3 Recommendation**

As the CEMBRE cutters are of the scissor-type design, the cable must be pulled towards the cutter body when the blades close. We have measured the required cable displacement to be ~60mm; this is explained in the Operators Manual of the machine. If the cable is too stiff, instead of bending the cable towards the cutter, the cutter is actually being pulled forward out of its mount; this will cause significant damage and down-time for the machine.

Therefore, RG recommends that the cable puller cutter trailers can be used to cut Plastic/Polyethylene sheathed cable up to ~80mm in diameter and cut Lead-sheathed cable only up to a maximum diameter of 50mm. This is only a guideline, as the efficiency of a cut is affected by a number of factors including; the condition of the blade, the cleanliness of the

cable, the condition and set-up of the machine etc. So, if the cutter requires more than two attempts to cut through a piece of cable, RG recommends not to use the CEMBRE cutter mounted to the machine.

With correct machine set-up; the cable puller cutter trailers can still be used to pull the Lead-sheathed cable out from the pits, as long as the line-pull requirements are within the specification of the cable pusher. It is important to highlight that Lead-sheathed cables are much stiffer than Plastic/Polyethylene-sheathed cables; this means more attention needs to be paid to the set-up of the cable pusher. It is very important that the cable pusher is positioned away from the pit to ensure that the angle of the cable aligns with the cable pusher. Any sharp change of direction will require extra force to be applied by the pusher (needed to deform the lead jacketing), which will reduce the effective pulling force available by the pusher.

#### 4 Armoured Cables

Apart from Plastic/Polyethylene-sheathed and Lead-sheathed cables, there also exists Armoured cables (Sheath Codes LW, HW, ST). Armoured cables should never be cut as they contain a steel layer which makes them extremely difficult to cut and will almost certainly damage the machine.



Figure 1 - Example of Plastic/Polyethylene Sheathed Cable

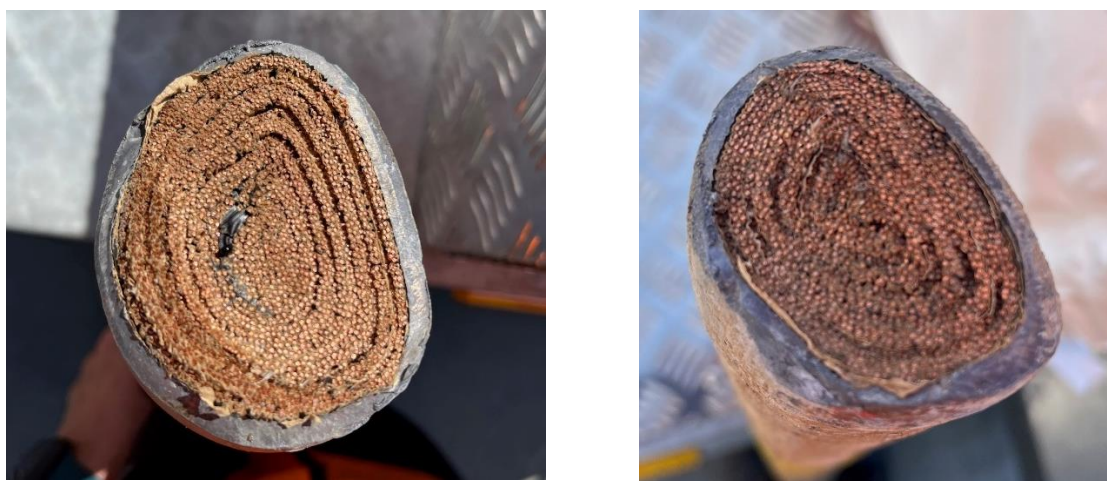


Figure 2 - Example of Lead Sheathed Cable

**Please contact Redmond Gary if you are unsure on any instruction.**