

## VISUAL IDENTIFICATION OF DRAGGING OR OVERHEATING BRAKES



Manually Identifying sticking brake hubs is labour-intensive and not always conclusive. Browning of the perimeter of the REDCAT® indicator can indicate increased hub temperatures due to sticking brakes, brake overuse (driver error) or brake system failures and may require investigation.

For some heavy vehicles such as waste and emergency services, high brake temperatures may be normal. To support these industries, REDCAT also manufacture high-temperature wheel nut indicators.

### BEST SAFETY PRACTICES

REDCAT® advise that it is critical to remove any wheel safety products whilst performing wheel nut torque checks. Performing retorquing with indicators installed may cause insufficient engagement of the socket, causing sudden detachment of torque wrench or lug wrench resulting in possible injury. This is exacerbated by introducing extension bars primarily on dual rear wheels. For removal of REDCAT® indicators, please refer to the final step for each product in this installation guide.

### DISCLAIMER

The use of REDCAT® indicators assists in the pre-emptive identification of loosening wheels, they are not intended to replace or compromise recommended vehicle, wheel or hub manufacturer's maintenance procedures, or operator maintenance structures. REDCAT® indicator/retainers provide an increased safety window to allow for identification and resolution of pending wheel detachment or damage, REDCAT® do not take responsibility for incorrect use or failure to adhere to advised manufacturers or operators' maintenance procedures. Indicator retainers will not restrain a loose wheel indefinitely. Standard operator awareness of excessive wheel vibration, wobble or noise is still required to be acted upon. Overlooked or compromised inspections and/or interventions can ultimately result in wheel failure and or detachment.



## REDCAT® INSTALLATION GUIDE

Wheel Safety Made Easy, Fast & Simple



**TRUE WHEEL SAFETY  
BEGINS WITH REDCAT®**

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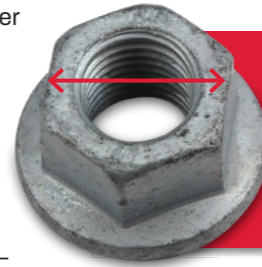


## PRE-INSTALLATION GUIDELINES

### INSPECTING WHEEL NUT CONDITION, DETERMINING SIZING, MANUFACTURER SPECIFICATIONS, RECORDING REFITS, STAFF KNOWLEDGE.

Regardless of the type of wheel nut indicator or link indicator/retainer you are installing, these steps are essential for ensuring the safe and effective function of REDCAT® wheel safety products.

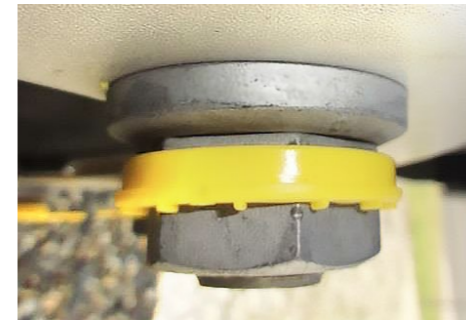
1. Check nuts, studs, rims and threads for damage as per manufacturers' recommendations.
2. Ensure hub and rim mating surfaces are clean and free from dirt, rust or paint.
3. Torque nuts to the manufacturer's specification
4. Determine the size required wheel nut indicator by measuring across the flat (A/F) size of the wheel nut – a well-fitting socket, spanner, or vernier calliper helps to identify the wheel nut size.
5. Ensure staff understand the fundamental function of wheel nut indicators, how to conduct visual inspections and what actions to take if wheel loosening is detected.



**TIP:**  
To determine the correct indicator sizing, manually measure nut size across the flats (A/F) with a socket, spanner or vernier calliper.

#### NOTE:

To aid efficiency, documentation and continuity, it is recommended that wheel nut indicators and retainers are fit during scheduled maintenance workshop visits.



#### NOTE:

As a guide, REDCAT® recommends point-to-point for 10 stud 335 and 285mm PCD rims. Ensure the REDCAT® indicator has room to move and, importantly, is not aligned against the rim or hub.

3. Easy-to-install, REDCAT® wheel nut indicators are simply hand-pushed over the nut with the raised collar facing outwards and indicator size visible. Ensure that they follow the determined pattern. Each wheel nut indicator should fit firmly and securely over each wheel nut without any degree of movement.

#### FOR REMOVAL:

Simply grip the indicator by hand and pull it to remove each indicator from the wheel nut.

## INSTALLING REDCAT® LINK INDICATOR / RETAINER RINGS



1. Refer to PRE-INSTALLATION GUIDELINES
2. REDCAT® link indicator/retainer rings feature a single-piece pre-angled design that is made to be pushed over five stud wheel assemblies, retaining its premanufactured pattern. Each wheel nut indicator should fit firmly and securely over each wheel nut without any degree of movement.

#### FOR REMOVAL:

Simply grip using two hands and pull to remove the indicator from each wheel nut.

#### TIP:

Perform 50km wheel nut retorquing if applicable. Redcat recommends fitting red coloured indicators to identify wheel's that require retorquing. Retorquing may be incorporated into the fleet maintenance procedure and/or routine safety checks. To identify refitted wheel nuts, best practice maintenance procedures should be updated with an in-cab warning hanger or warning sticker and/or entered into the safety check records.

## INSTALLING REDCAT® LINK INDICATOR / RETAINERS

### INCLUDING EXTENDED LINK INDICATORS / RETAINERS



1. Refer to PRE-INSTALLATION GUIDELINES
2. REDCAT® link indicator/retainers feature a pre-angled design for easy multi-PCD installation. To install, simply push the link indicator over the nut to retain its premanufactured point-to-point pattern. Ensure the indicator is installed with the correct side facing outward, which displays the indicator size. Each wheel nut indicator should fit firmly and securely over each wheel nut without any degree of movement.

#### FOR REMOVAL:

Simply grip each link indicator using two hands and pull it to remove each indicator from the wheel nut.

## INSTALLING REDCAT® STANDARD WHEEL NUT INDICATORS

### INCLUDING EXTENDED WHEEL NUT INDICATORS AND CAP-TYPE INDICATORS



1. Refer to PRE-INSTALLATION GUIDELINES
2. Determine and select the preferred pattern for the wheel nut indicators to be fitted. Standard Wheel Nut Indicators, Extended and Cap-type Indicators may be installed either point to point, direction of rotation, outward pointing or inward pointing.

Regardless of preference, the pattern may be dictated by the PCD or hub configuration, so it is advised to conduct a trial pattern to see what fits best.

## LOOSE WHEEL IDENTIFICATION

REDCAT® wheel nut indicators and link indicators/retainers complement the manufacturer's recommended torque checks by providing a simple visual indication of loosening wheels during a quick daily walk around the vehicle.

REDCAT® wheel nut indicators and retainers offer a straightforward visual inspection method to detect loose wheel nuts. When the wheel nuts are properly torqued to specs, standard or linked wheel nut indicator retainers are affixed to the wheel nuts in a uniform pattern.

If a wheel nut becomes loose, the pattern of links or indicators will lose its pattern sequence. The driver can quickly notice this during their inspection and must ensure the wheel receives the attention it demands.

Daily pre-start safety inspections should include the checking of all wheel safety indicators for misalignment and damage. During inspection, check for missing indicators, which may mean broken studs or stripped studs/nuts. Also, check for fret marks and or rust between the nut and rim and browning of the pointer, primarily at the nut interface.

Any discrepancies require investigation and recording for prompt maintenance. Damaged indicators should be replaced. Remember, without timely identification and intervention, loose wheel assemblies will ultimately fail regardless of nut restraint.

