

# DUCKBILL TREE KIT SPECIFICATION



Registered Office: North House 198 High Street, Tonbridge, Kent, TN9 1BE  
Company Registration No. 04023935, VAT Registered No. 656490607



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# DUCKBILL®

Tree Anchoring Systems

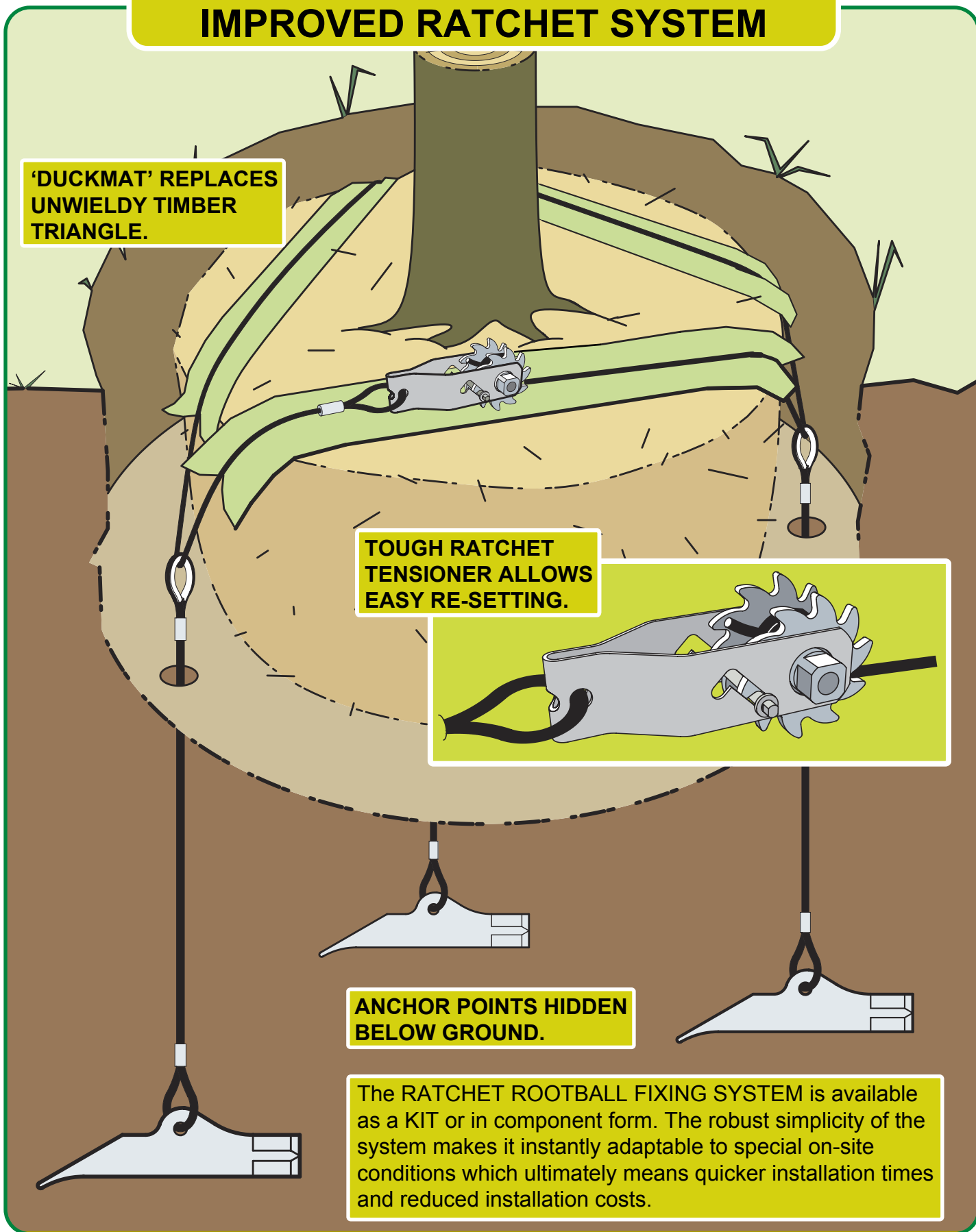
## ROOTBALL FIXING KIT IMPROVED RATCHET SYSTEM

'DUCKMAT' REPLACES  
UNWIELDY TIMBER  
TRIANGLE.

TOUGH RATCHET  
TENSIONER ALLOWS  
EASY RE-SETTING.

ANCHOR POINTS HIDDEN  
BELOW GROUND.

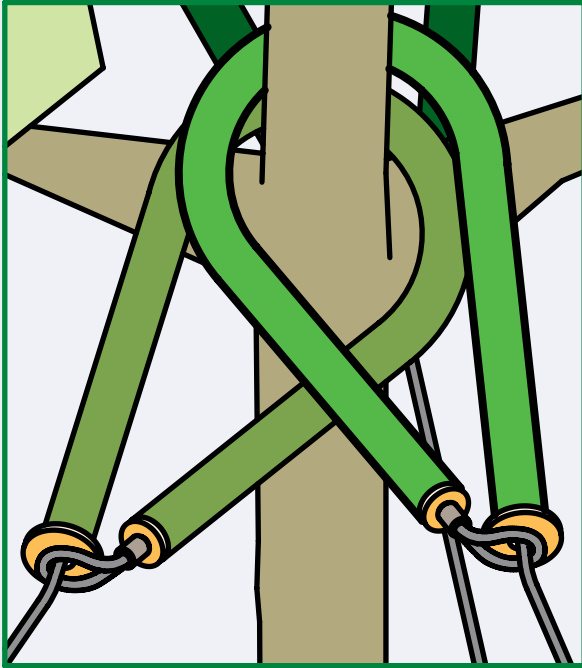
The RATCHET ROOTBALL FIXING SYSTEM is available as a KIT or in component form. The robust simplicity of the system makes it instantly adaptable to special on-site conditions which ultimately means quicker installation times and reduced installation costs.



# DUCKBILL®

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## OVERHEAD GUY KIT IMPROVED RATCHET SYSTEM



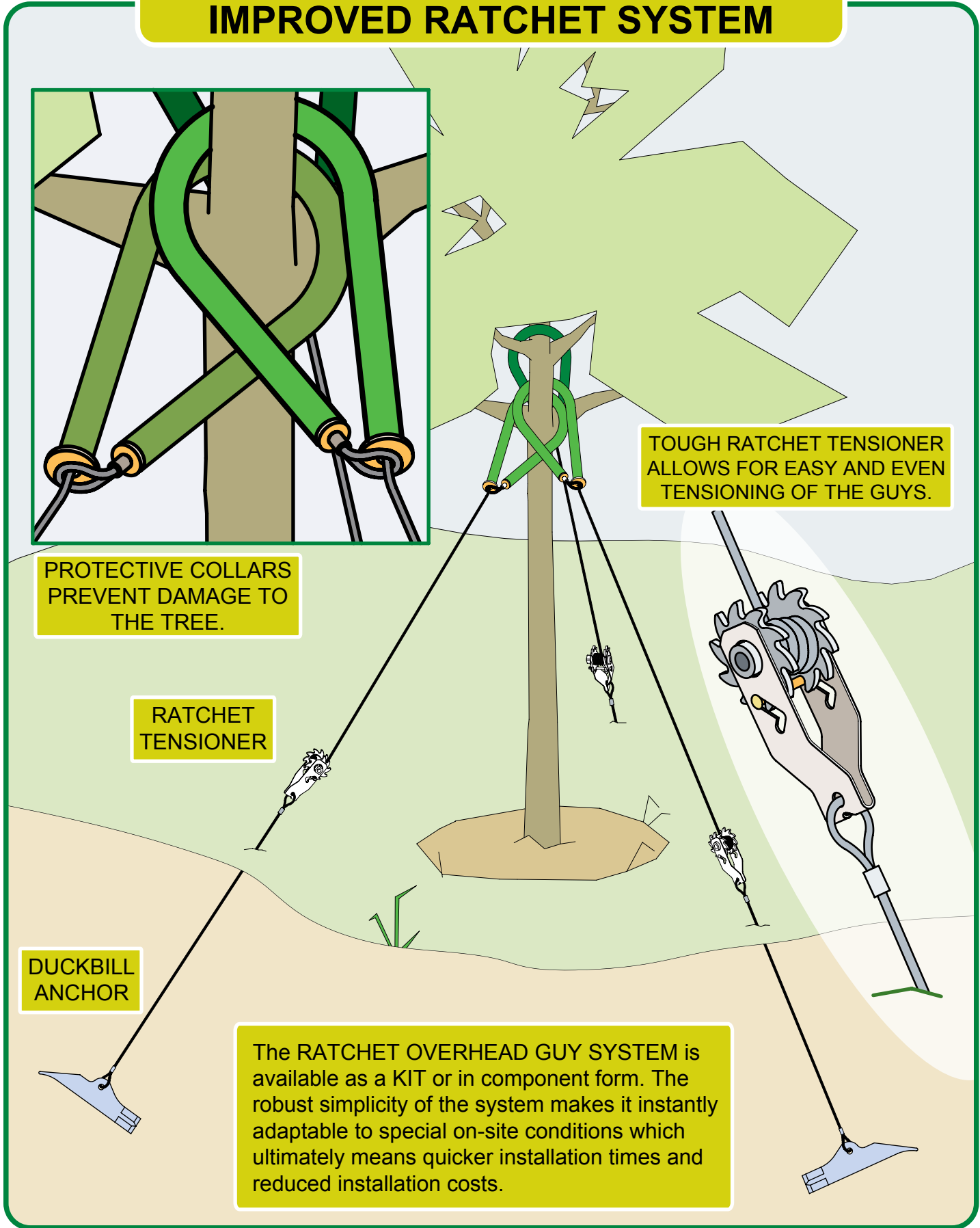
PROTECTIVE COLLARS  
PREVENT DAMAGE TO  
THE TREE.

RATCHET  
TENSIONER

TOUGH RATCHET TENSIONER  
ALLOWS FOR EASY AND EVEN  
TENSIONING OF THE GUYS.

DUCKBILL  
ANCHOR

The RATCHET OVERHEAD GUY SYSTEM is available as a KIT or in component form. The robust simplicity of the system makes it instantly adaptable to special on-site conditions which ultimately means quicker installation times and reduced installation costs.

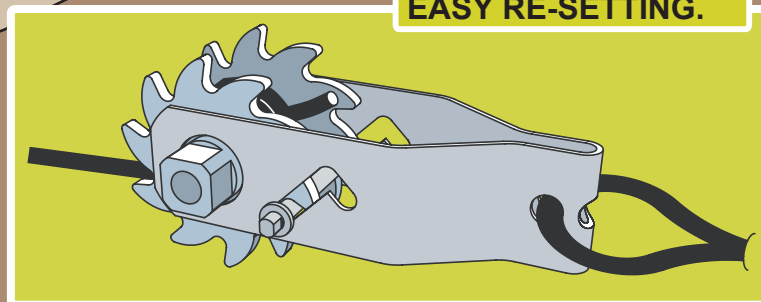
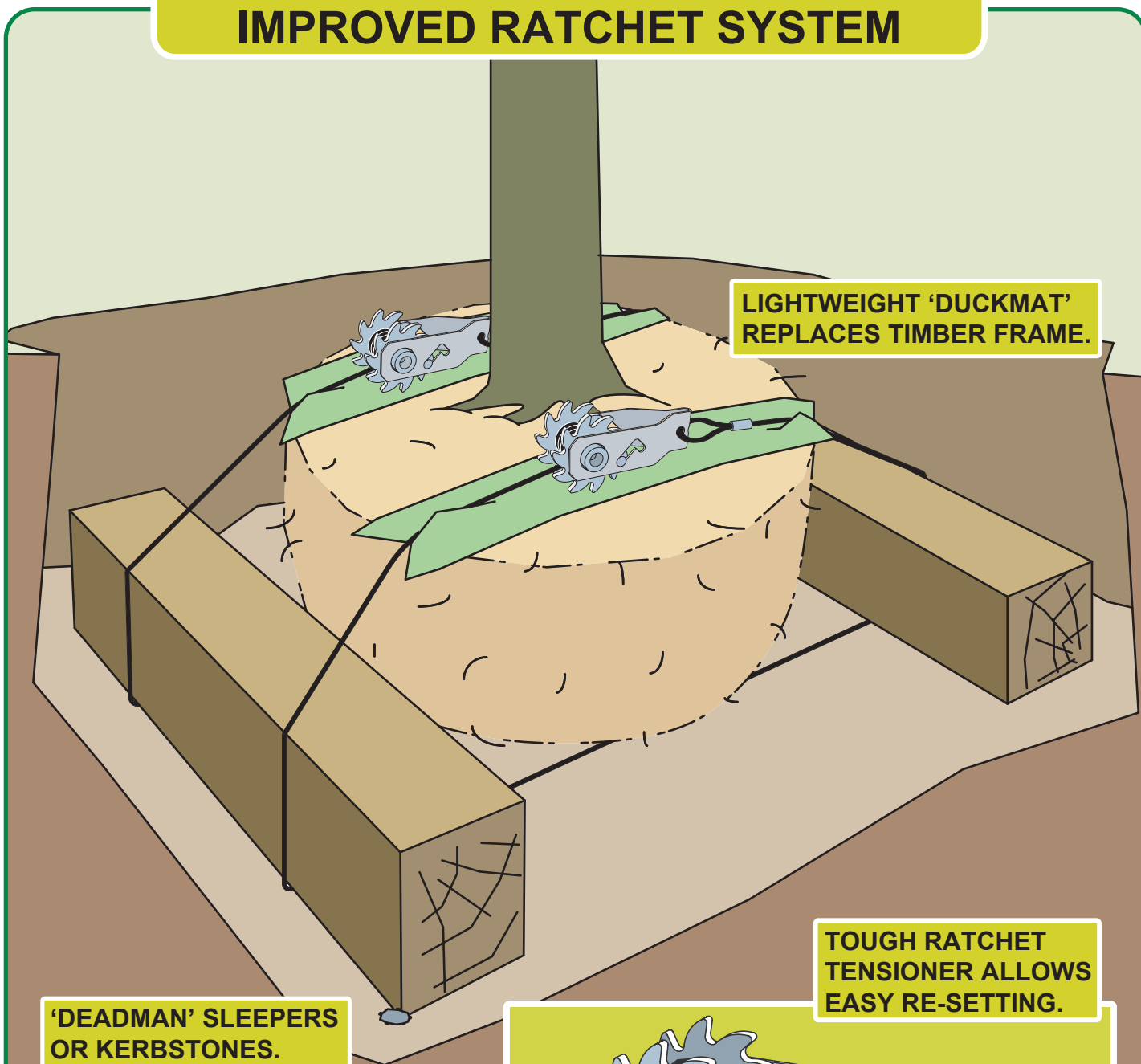




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Tree Anchoring Systems

## 'DEADMAN' FIXING KIT IMPROVED RATCHET SYSTEM



The DEADMAN ROOTBALL FIXING SYSTEM is available as a KIT or in component form. SLEEPERS and KERBSTONES NOT INCLUDED. The robust simplicity of the system makes it instantly adaptable to special on-site conditions which ultimately means quicker installation times and reduced installation costs.

# DUCKBILL®

Tree Anchoring Systems

## ROOTBALL FIXING KIT ROPE & CLEAT SYSTEM

- ✓ NO MOVING PARTS.
- ✓ NO SPECIALIST TENSIONING TOOLS NEEDED.
- ✓ ANCHOR POINTS HIDDEN BELOW GROUND.
- ✓ EASILY RETENSIONED OR DETENSIONED.

'DUCKMAT' STRIPS  
PROTECT ROOTBALL  
UNDER THE ROPE.

PARALLEL  
FIBRE ROPE

TENSIONING  
CLEAT.

3 ANCHOR POINTS  
HIDDEN BELOW GROUND.

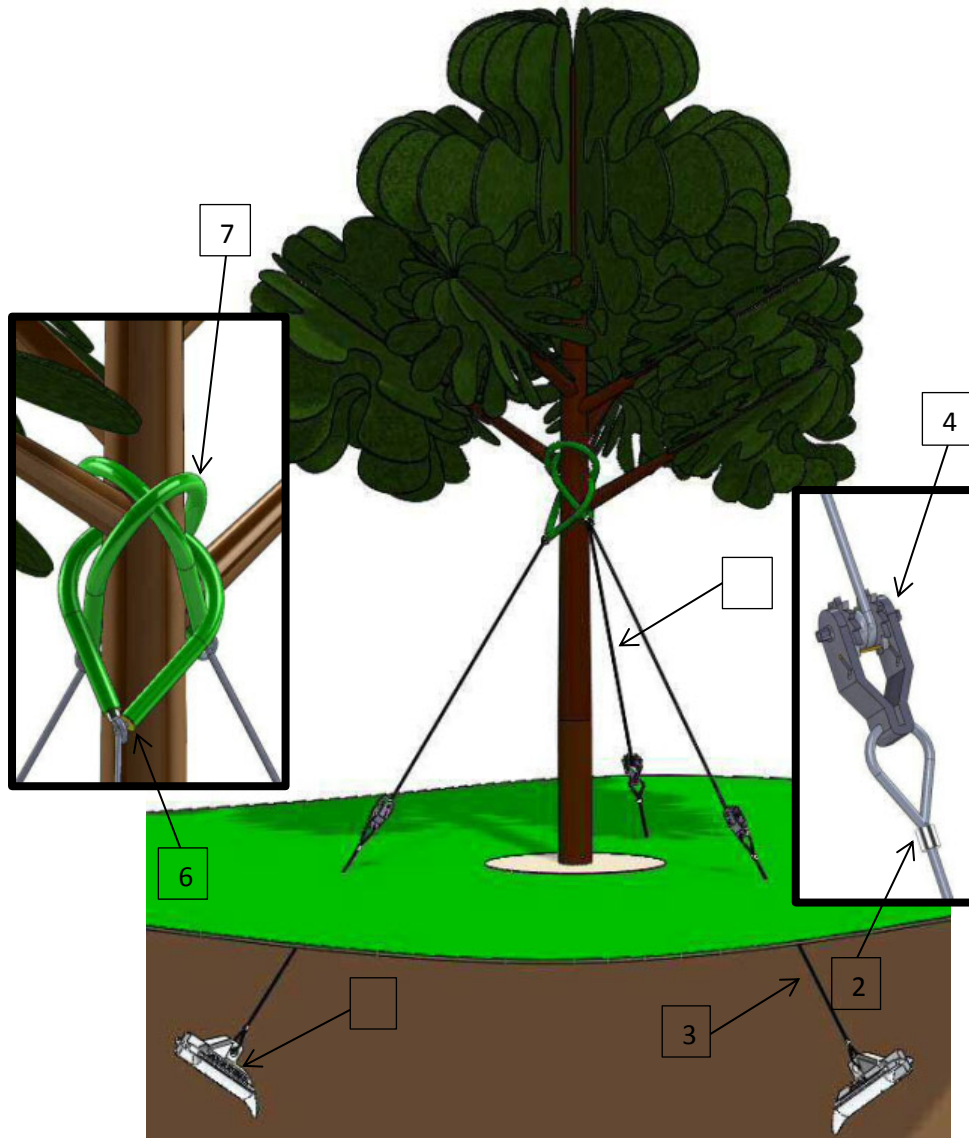
The ROPE & CLEAT ROOTBALL FIXING SYSTEM is available as a KIT or in component form. The robust simplicity of the system makes it instantly adaptable to special on-site conditions which ultimately means quicker installation times and reduced installation costs.



# Overhead Guy Kit



Anchor Systems (Europe) Ltd, Unit 45 Rowfant Business Centre, Rowfant, West Sussex, RH10 4NQ



## OVERHEAD KIT SELECTION GUIDE

Trunk Diameter (cm)	Height (m)	Ground Anchor Kit Ref.
7 - 22	2 - 4.5	DTS-AS-5
22 - 45	4.5 - 7.5	DTS-AS-10
45 - 75	7.5 - 12	DTS-AS-20

## OVERHEAD KIT CONTENTS

DTS-AS-5	3 x Model AS-5 Ground Anchors on 4mm wire, 1.2m long, each with Ratchet Tensioner. 3 x 4mm wire Guys, each 4m long 3 x Tree Collars + 9 Washers. Full instructions.
DTS-AS-10	3 x Model AS-10 Ground Anchors on 6mm wire, 1.5m long, each with Ratchet Tensioner. 3 x 4mm wire Guys, each 5m long 3 x Tree Collars + 9 Washers. Full instructions.
DTS-AS-20	3 x Model AS-20 Ground Anchors on 6mm wire, 1.8m long, each with Ratchet Tensioner. 3 x 6mm wire Guys, each 9m long 3 x Tree Collars + 9 Washers. Full instructions.

## PRODUCT IDENTIFICATION

Item	Description	Quantity
1	Ground Anchor	3
2	Ferrule	9
3	Anchor Wire	3
4	Ratchet Tensioner	3
5	Wire Guy	3
6	Washer	9
7	Tree Collar	3

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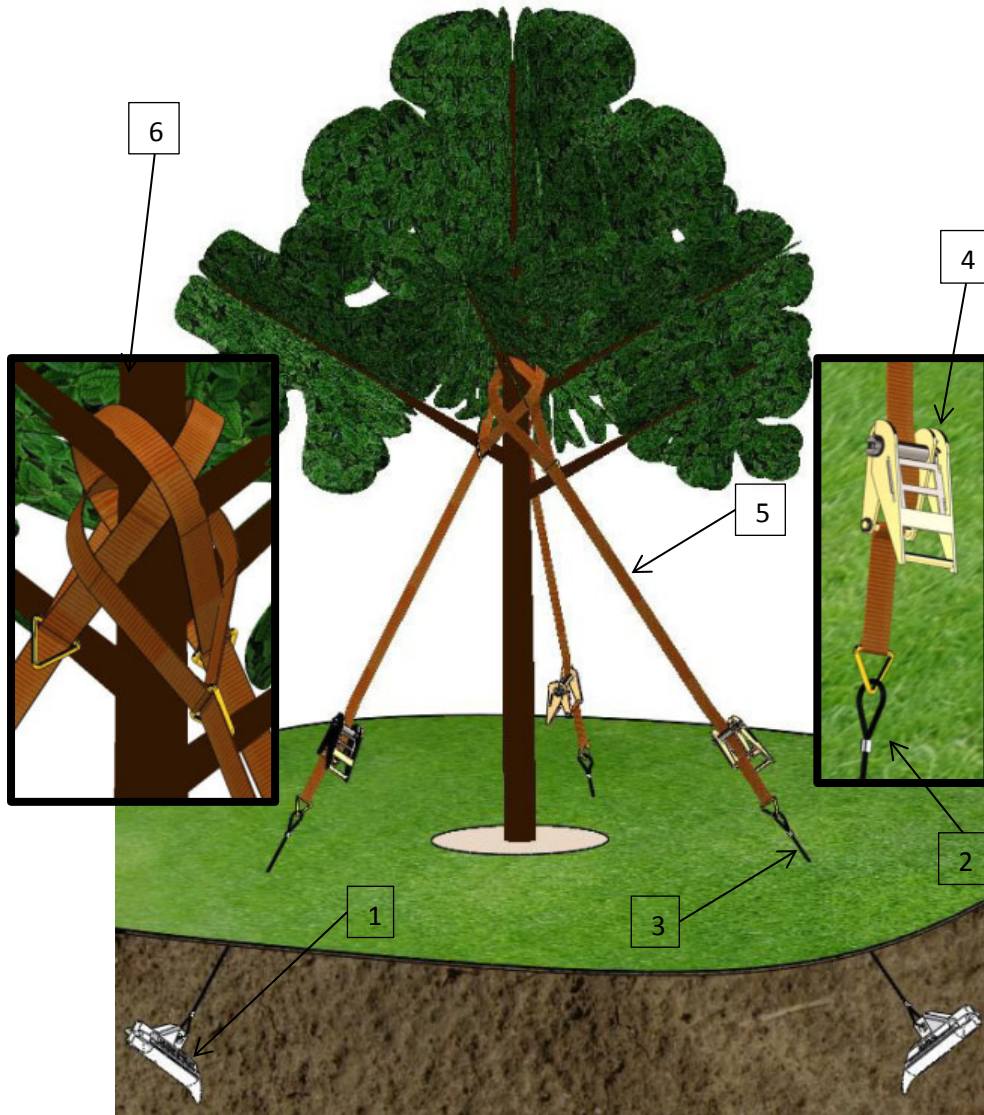
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# Overhead Guy Kit (Nylon Webbing Strap)



Anchor Systems (Europe) Ltd, Unit 45 Rowfant Business Centre, Rowfant, West Sussex, RH10 4NQ



## OVERHEAD KIT SELECTION GUIDE

Trunk Diameter (cm)	Height (m)	Ground Anchor Kit Ref.
7 - 22	2 - 4.5	DTS-AS-5-S
22 - 45	4.5 - 7.5	DTS-AS-10-S
45 - 75	7.5 - 12	DTS-AS-20-S

## OVERHEAD KIT CONTENTS

DTS-AS-5	3 x Model AS-5 Ground Anchors on 4mm wire, 1.2m long, each with Ratchet Tensioner. 3 x Nylon Webbing Straps, each 4m long Full instructions.
DTS-AS-10	3 x Model AS-10 Ground Anchors on 6mm wire, 1.5m long, each with Ratchet Tensioner. 3 x Nylon Webbing Straps, each 5m long Full instructions.
DTS-AS-20	3 x Model AS-20 Ground Anchors on 6mm wire, 1.8m long, each with Ratchet Tensioner. 3 x Nylon Webbing Straps, each 9m long Full instructions.

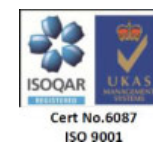
## PRODUCT IDENTIFICATION

Item	Description	Quantity
1	Ground Anchor	3
2	Ferrule	9
3	Anchor Wire	3
4	Ratchet Tensioner	3
5	Webbing Guy Strap	3
6	Webbing Illustration	

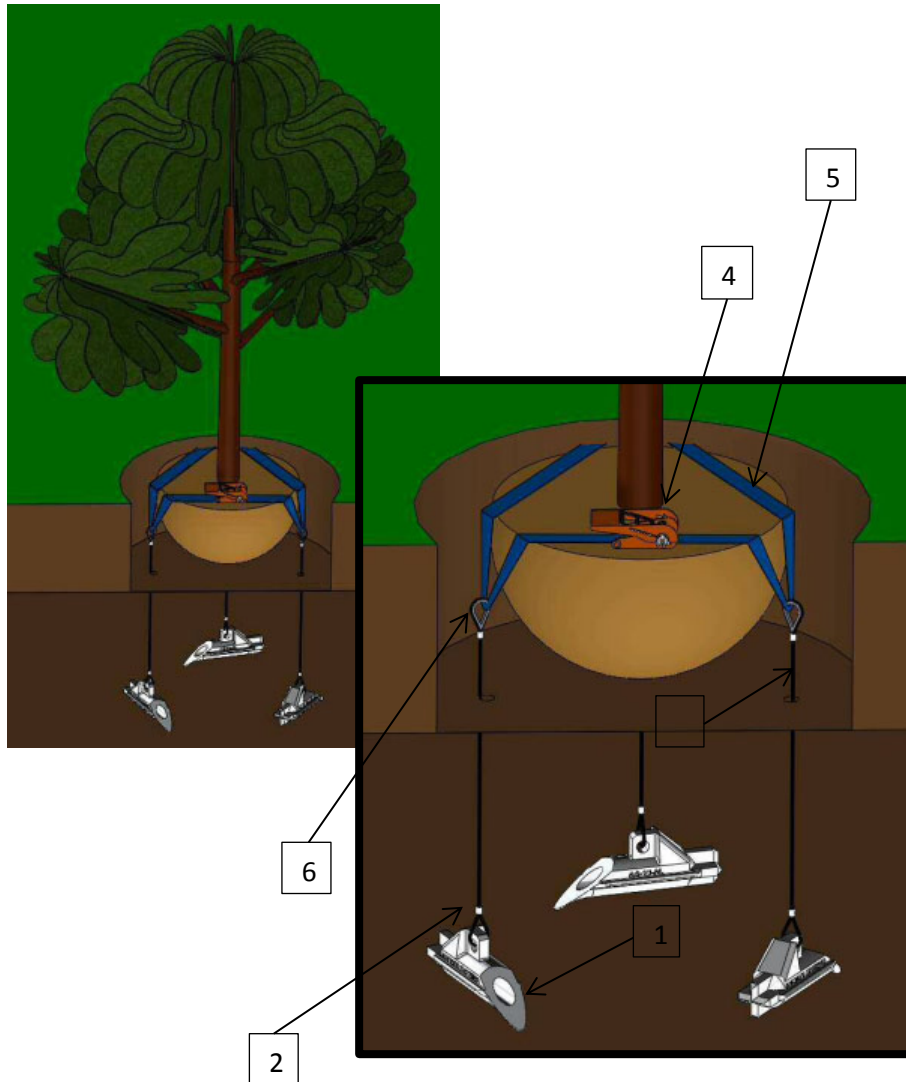
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ROOTBALL FIXING KIT SELECTION GUIDE		
Trunk Diameter (cm)	Height (m)	Ground Anchor Kit Ref.
7 - 22	2 - 4.5	RBK-AS-5-S
22 - 45	4.5 - 7.5	RBK-AS-10-S
45 - 75	7.5 - 12	RBK-AS-20-S

ROOTBALL FIXING KIT CONTENTS	
RBK-AS-5	3 x Model AS-5 Ground Anchors, 4m of 4mm tensioning strap, 1 Ratchet Tensioner and full installation instructions.
RBK-AS-10	3 x Model AS-10 Ground Anchors, 6.5m of 4mm tensioning strap, 1 Ratchet Tensioner and full installation instructions.
RBK-AS-20	3 x Model AS-20 Ground Anchors, 10m of 4mm tensioning strap, 1 Ratchet Tensioner and full installation instructions.

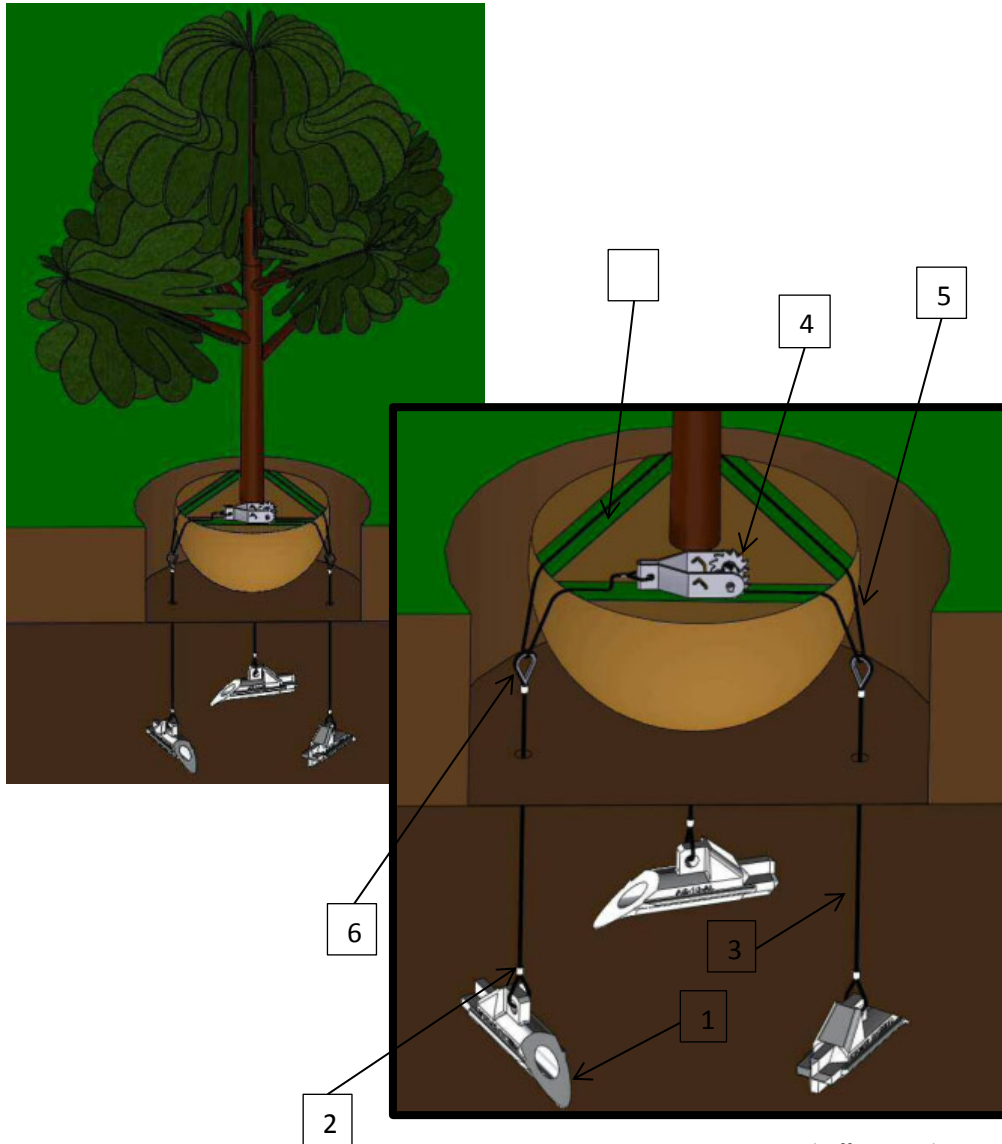
PRODUCT IDENTIFICATION		
Item	Description	Quantity
1	Ground Anchor	3
2	Ferrule	6
3	Anchor Wire	3
4	Ratchet Tensioner	1
5	Tensioning Strap	1
6	Nylon Thimble	3

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# Rootball Fixing Kit



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ROOTBALL FIXING KIT SELECTION GUIDE		
Trunk Diameter (cm)	Height (m)	Ground Anchor Kit Ref.
7 - 22	2 - 4.5	RBK-AS-5
22 - 45	4.5 - 7.5	RBK-AS-10
45 - 75	7.5 - 12	RBK-AS-20

ROOTBALL FIXING KIT CONTENTS	
RBK-AS-5	3 x Model AS-5 Ground Anchors, 4m of 4mm tensioning cable, 1 Ratchet Tensioner and full installation instructions.
RBK-AS-10	3 x Model AS-10 Ground Anchors, 6.5m of 4mm tensioning cable, 1 Ratchet Tensioner and full installation instructions.
RBK-AS-20	3 x Model AS-20 Ground Anchors, 10m of 4mm tensioning cable, 1 Ratchet Tensioner and full installation instructions.

PRODUCT IDENTIFICATION		
Item	Description	Quantity
1	Ground Anchor	3
2	Ferrule	6
3	Anchor Wire	3
4	Ratchet Tensioner	1
5	Tensioning Cable	1
6	Nylon Thimble	3
7	Duckmat	3

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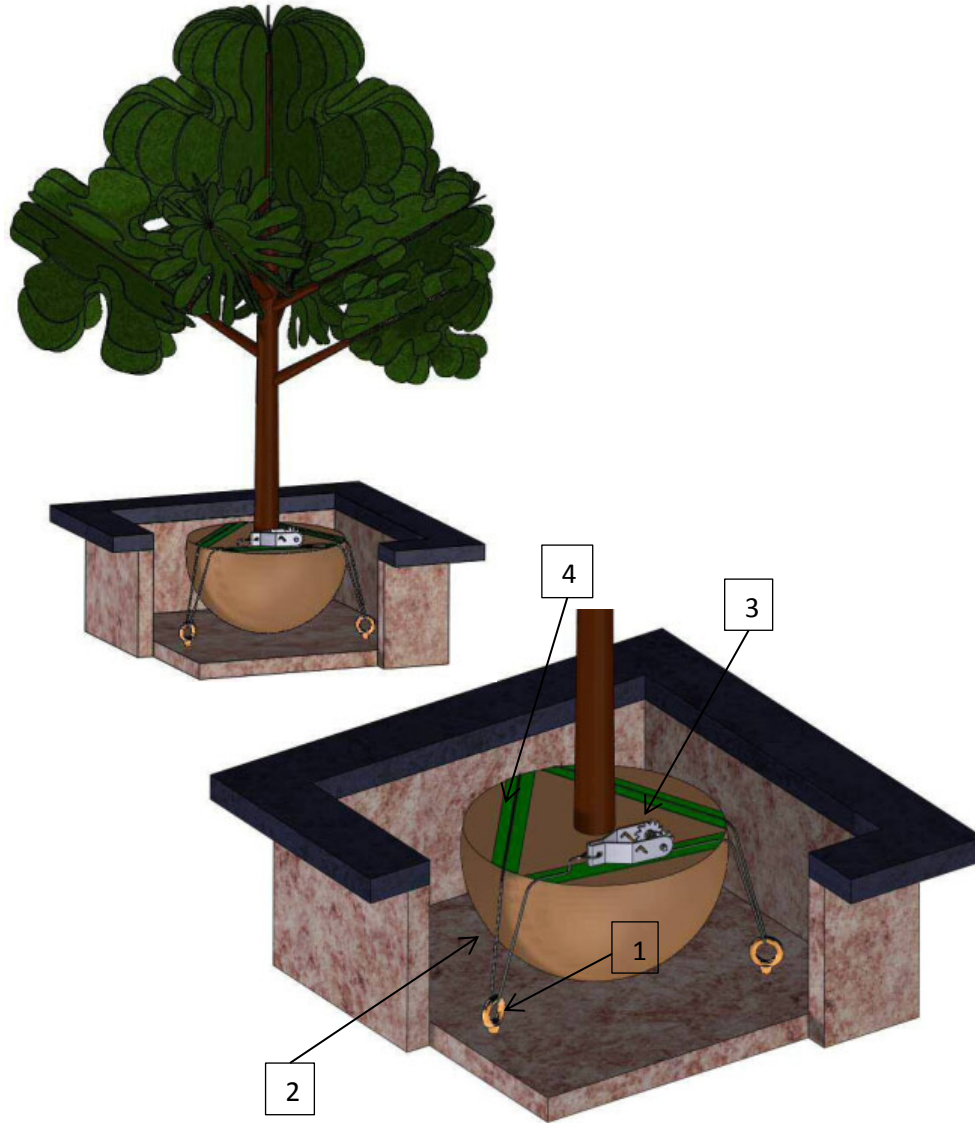




# Containerised Fixing Kit



Anchor Systems (Europe) Ltd, Unit 45 Rowfant Business Centre, Rowfant, West Sussex, RH10 4NQ



## CONTAINERISED FIXING KIT SELECTION GUIDE

Trunk Diameter (cm)	Height (m)	Ground Anchor Kit Ref.
7 - 22	2 - 4.5	CRB-AS-5
22 - 45	4.5 - 7.5	CRB-AS-10

## CONTAINERISED FIXING KIT CONTENTS

RBK-AS-5	3 x Model AS-5 Ground Anchors, 4m of 4mm tensioning cable, 1 Ratchet Tensioner and full installation instructions.
RBK-AS-10	3 x Model AS-10 Ground Anchors, 6.5m of 4mm tensioning cable, 1 Ratchet Tensioner and full installation instructions.

## PRODUCT IDENTIFICATION

Item	Description	Quantity
1	Expanding Eyebolt	3
2	Tensioning Cable	1
3	Ratchet Tensioner	1
4	Duck mat	3

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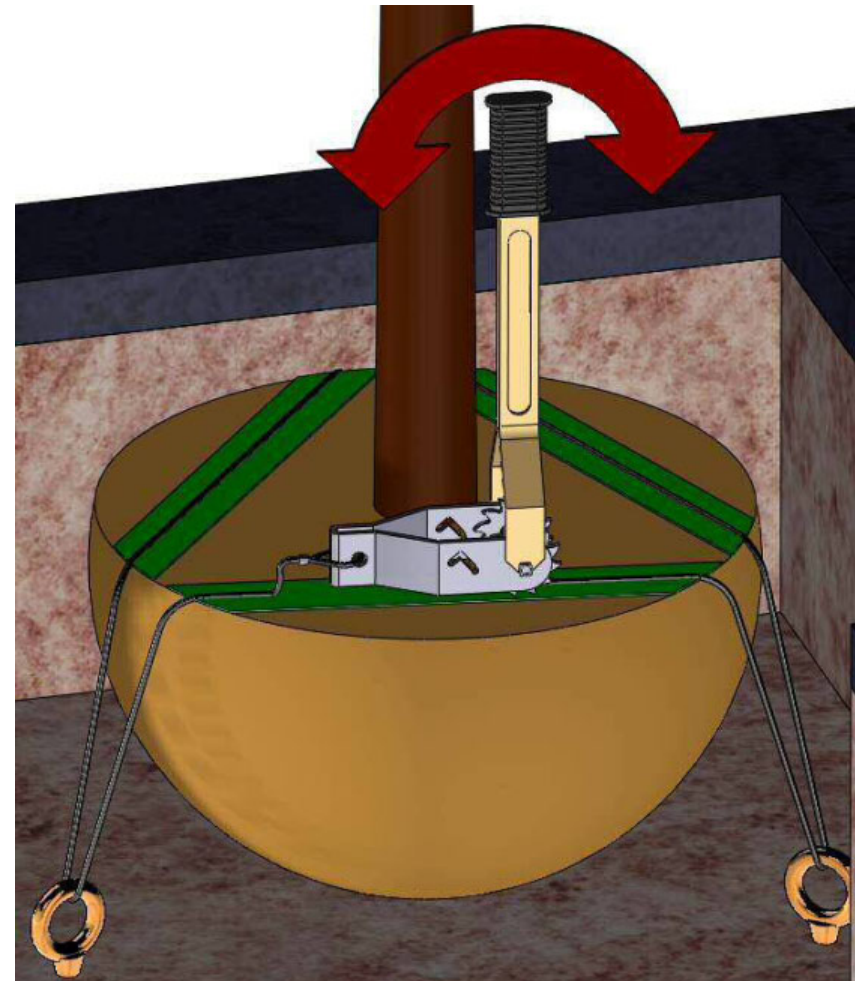
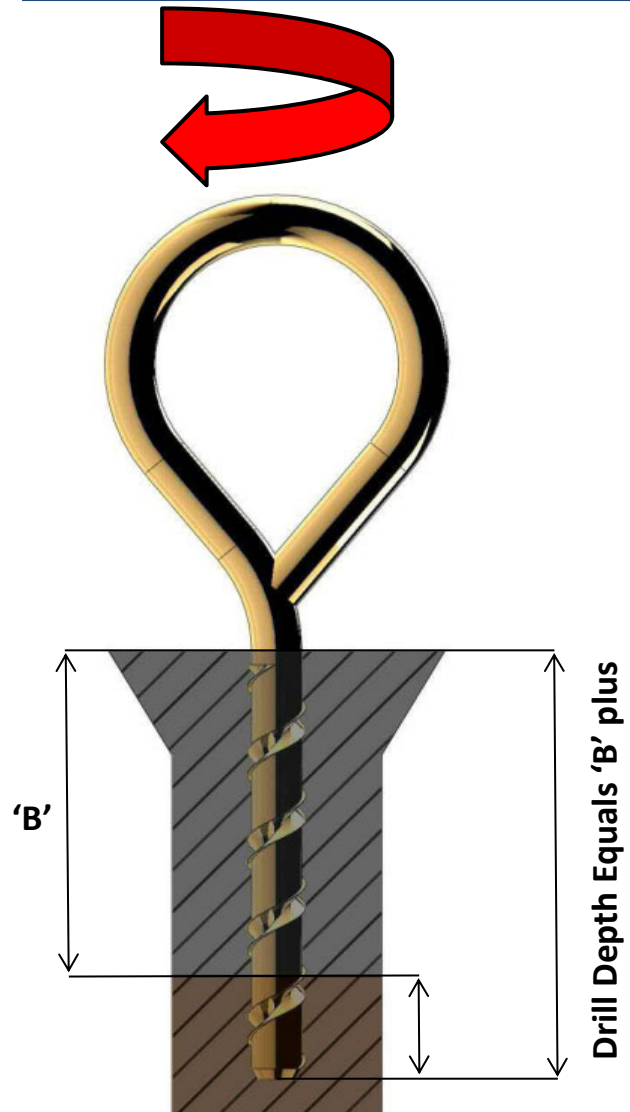
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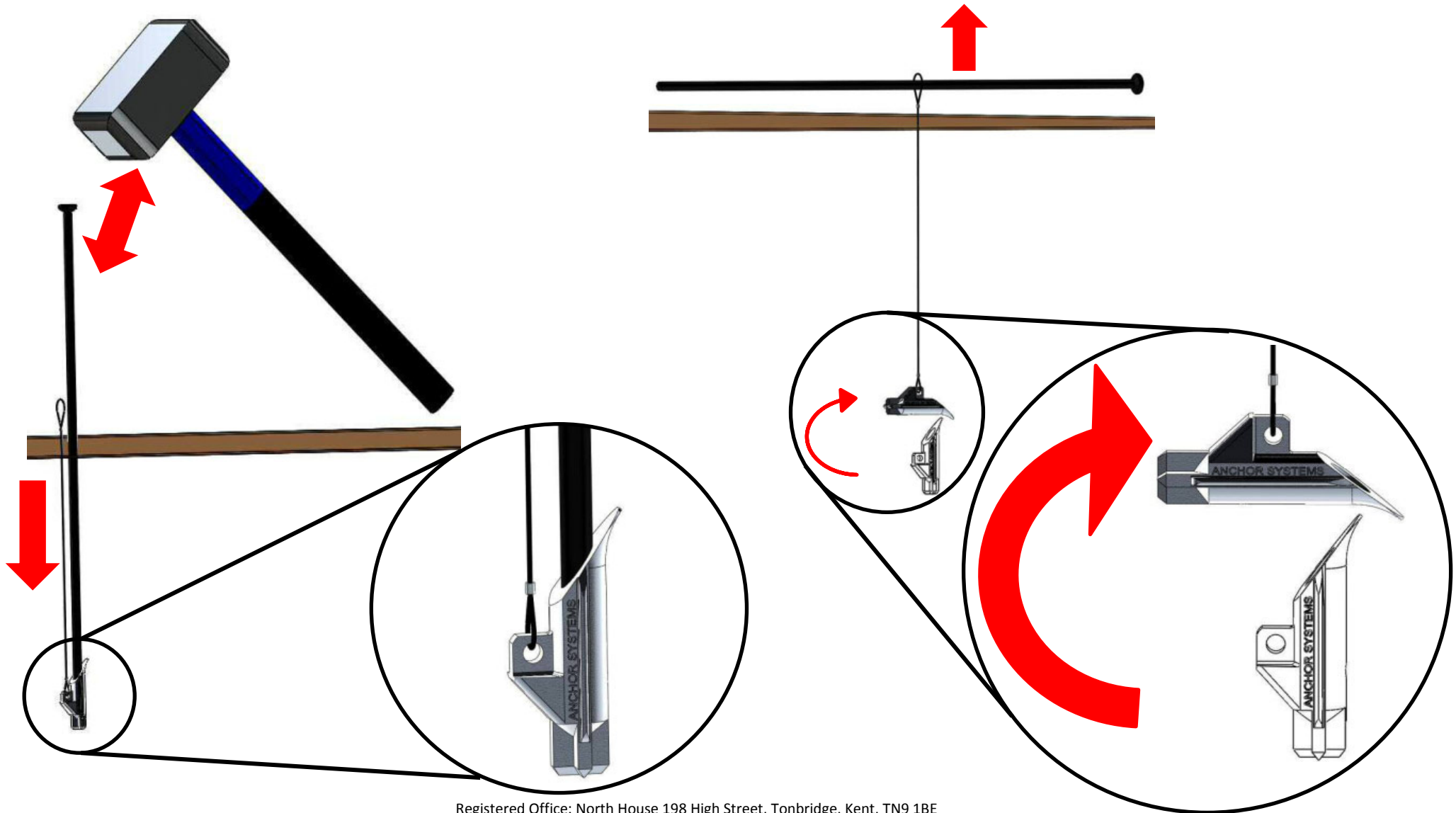




# Rootball Fixing Kit



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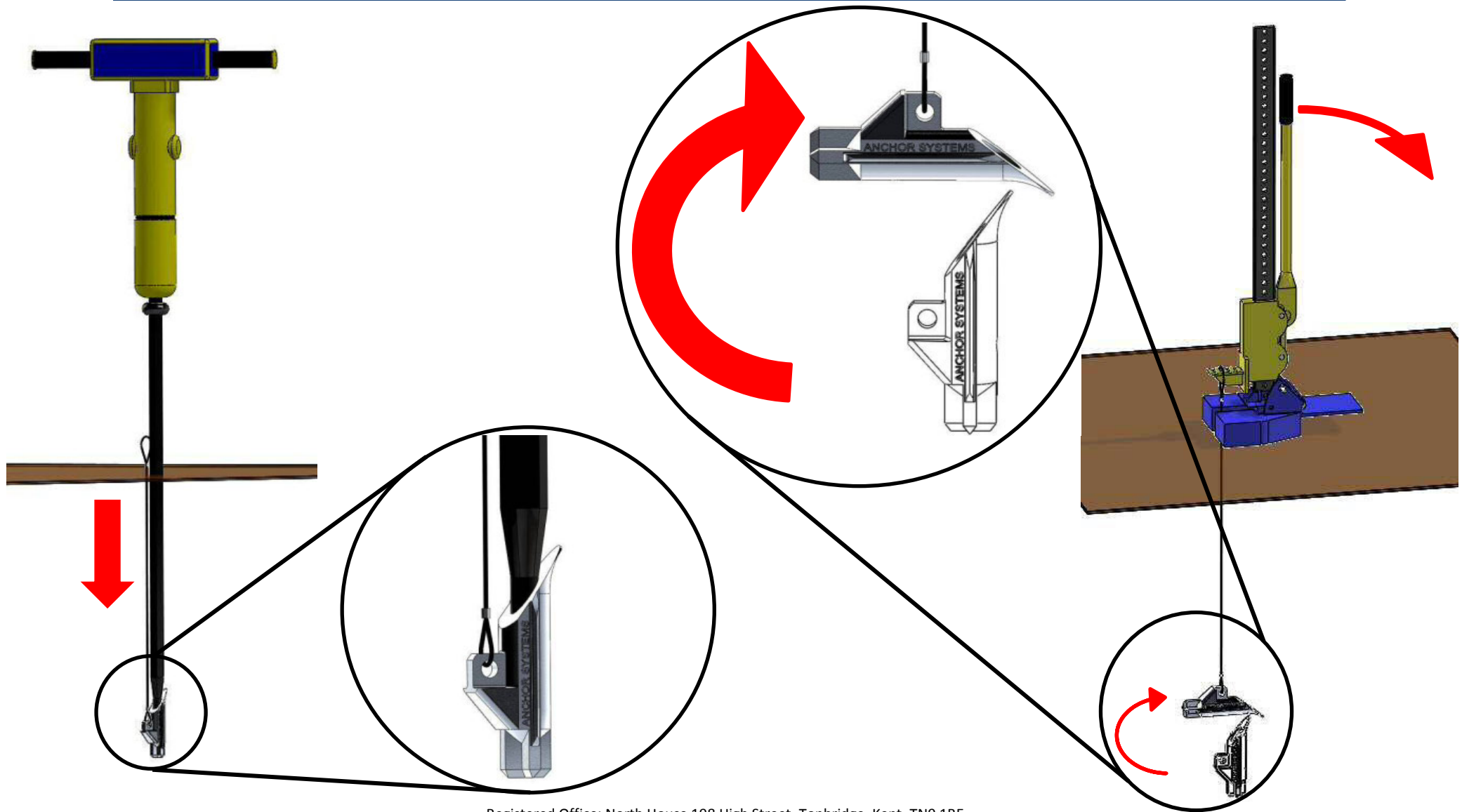
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# Rootball Fixing Kit



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- 1 Dig the tree pit to the required size.
- 2 Drive the 3 anchors into the base of the pit equally spaced around the rootball as shown (Fig.1) until the anchor loops are level with the pit bottom.
- 3 Load lock the Anchors by pulling them vertically upwards (by hand or with recommended equipment) until resistance is felt.
- 4 Lay the 3 strips of Duckmat over the rootball as shown (Fig.1).
- 5 Thread the free end of the Tensioning Cable (which is attached to the Ratchet Tensioner) through the Anchor loops and over the Duckmat in sequence a to f as shown in Fig.3.
- 6 Then pass the free end of the Tensioning Cable through the hole in the Ratchet Wheel (Fig.2).
- 7 Pull most of the slack Tensioning Cable through and cut off the excess.
- 8 With a short tail of Cable (about 30mm) protruding wind the Ratchet Wheel clockwise (with a suitable wrench) to tighten the Tensioning Cable. Tuck the tail of the Cable under the first few windings to prevent it pulling out and to stop it fouling the Ratchet Bar (Fig.4).
- 9 While tensioning check that each leg of the Tensioning Cable is getting tight and that it is centred on the Duckmat strips.
- 10 When you are satisfied that the rootball is well supported and secure lock off the Ratchet Tensioner by ensuring that the Ratchet Bar is in the bottom of it's slot and seated at the root of the Ratchet Wheel teeth.
- 11 Backfill the pit to cover the rootball.
- 12 Remove and dispose of the waste cable.

Fig.1  
Plan view of rootball

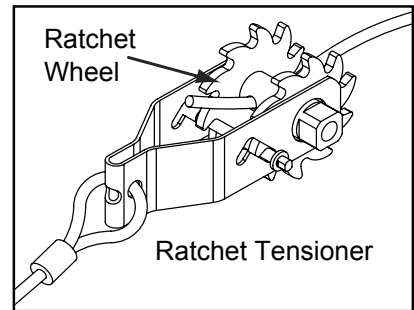
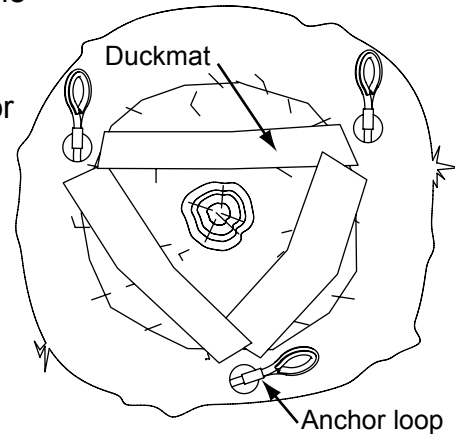


Fig.2 Pass free end of Tensioning Cable through Ratchet Wheel hole.

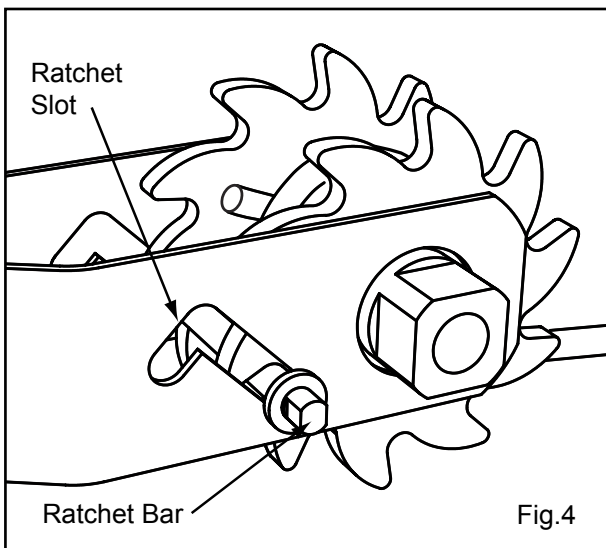


Fig.4

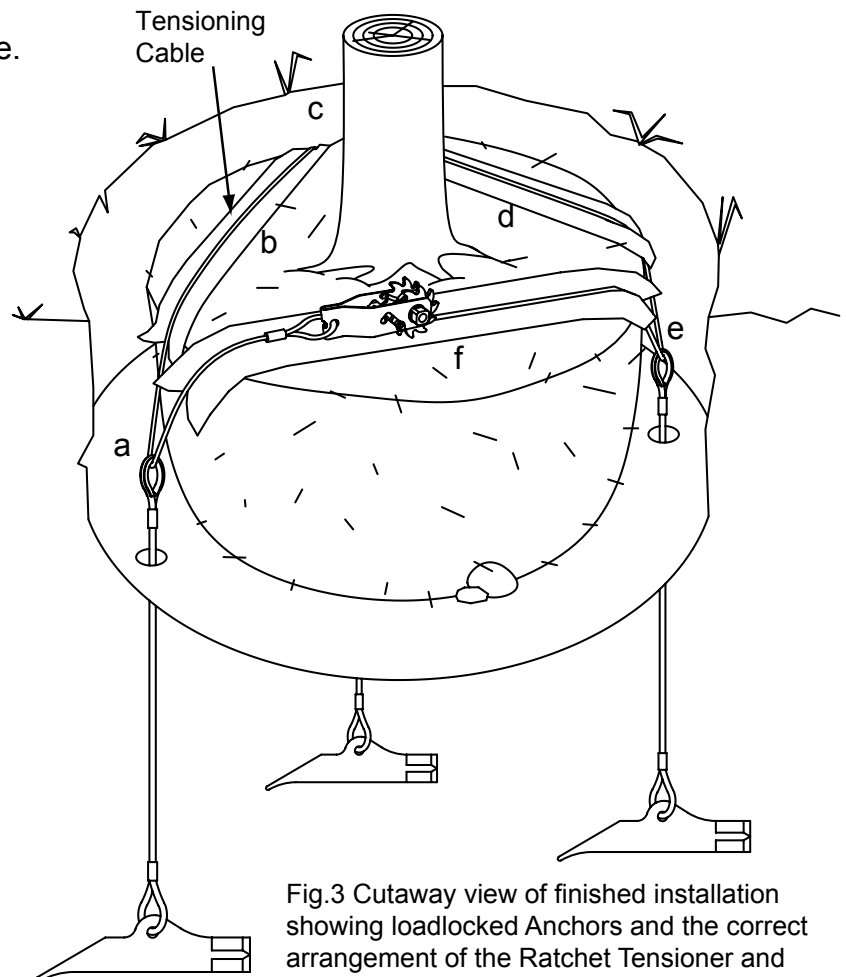
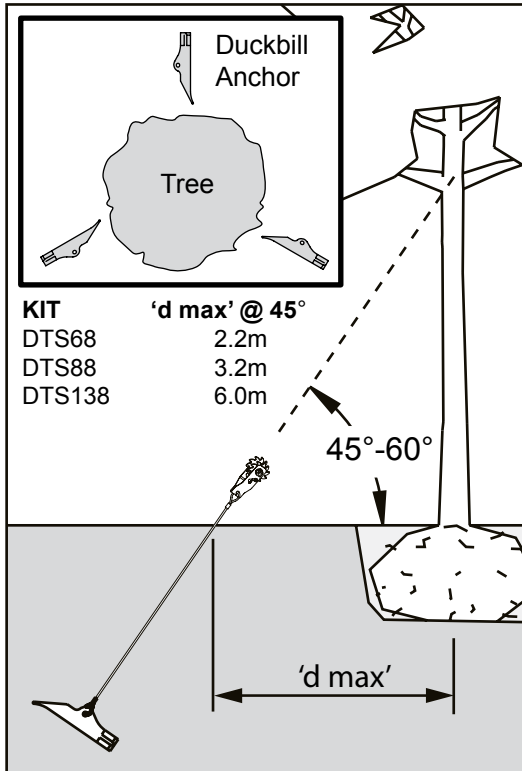
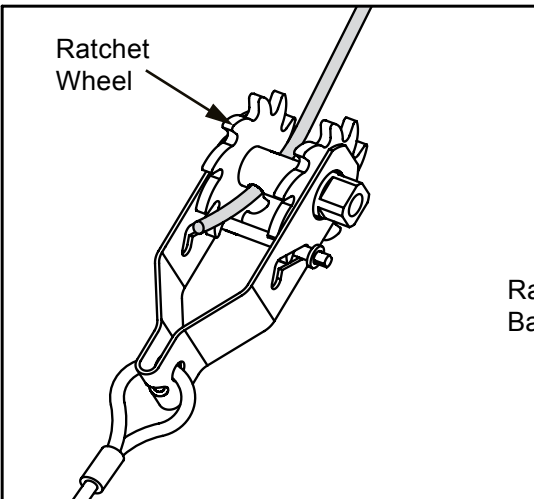


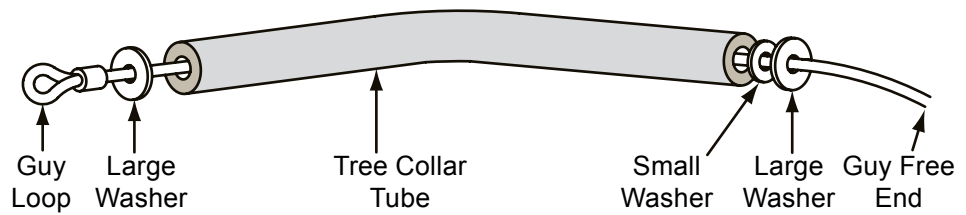
Fig.3 Cutaway view of finished installation showing loadlocked Anchors and the correct arrangement of the Ratchet Tensioner and Tensioning Cable.



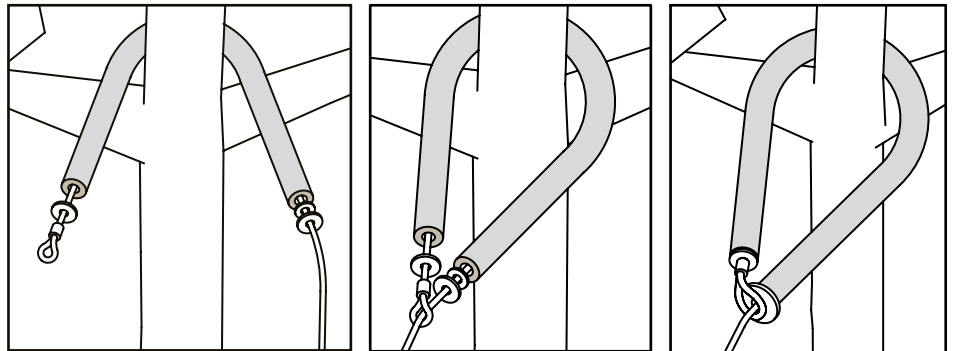
**1.** Drive the Duckbill Anchor into the ground to full depth in 3 positions equally spaced around the tree and at the required angle to the trunk (45°- 60°). Loadlock using the LL-2 loadlocker or other method. ('d max' is for guidance only. Attachment height and Guy length must be considered.)



**6.** Thread the Guy free end through the Ratchet Wheel from front to back as shown. Pull the slack wire through and cut off the excess. With a short tail of Guy wire (about 30mm) protruding wind the Ratchet Wheel clockwise (with a suitable wrench) to tighten the Guy (see step 7 first).



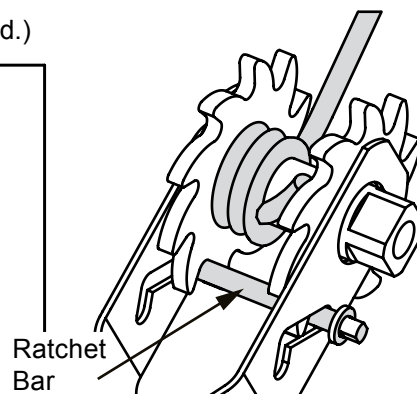
**2.** Thread the Washers and Tree Collar Tube on to the Guy as shown above.



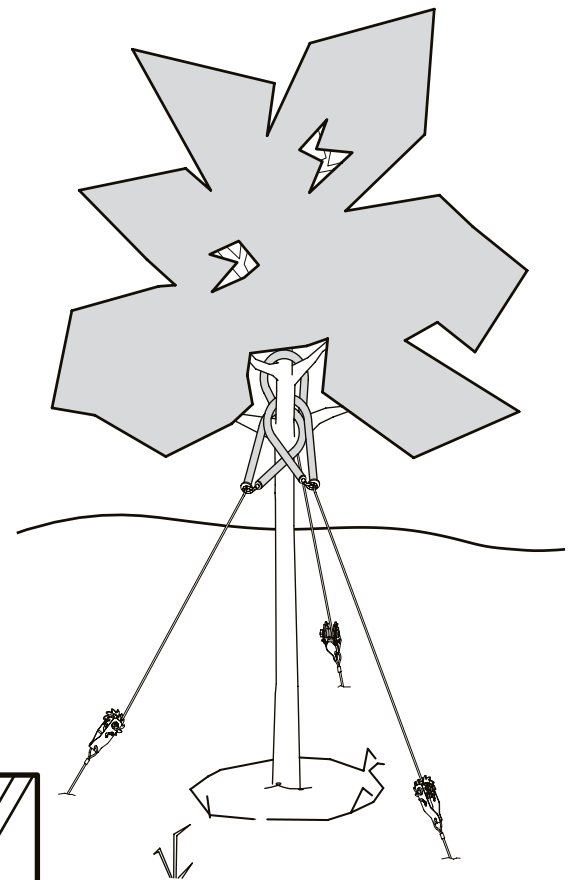
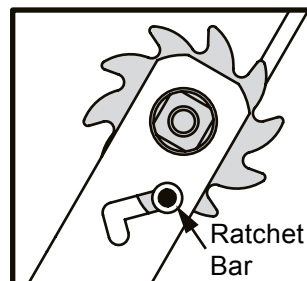
**3.** Pass the Tree Collar Tube around the tree trunk.

**4.** Thread the Guy free end through the Guy loop.

**5.** Pull the Guy to seat the Tree Collar Tube against the Washers.



**7.** Tuck the tail of the Guy under the first few windings to prevent it pulling out and to stop it fouling the Ratchet Bar. Ratchet each Guy a little in turn until all three are equally tight.



**8.** FINALLY check that the Ratchet Bar is fully engaged with the Ratchet Wheel teeth, as shown left, on each Guy to guarantee correct tension is maintained. Remove and dispose of all waste wire.



Wire Strops, Guying Wires and Catenary Wires.

All wire strands is produced in house to any required length complete with swaged loop diameter to 60mm or client requirements.

Where instructed wire lengths will be etched onto the ferrules creating the loops.

We produce wire in 7/19 strand configuration, in galvanised or stainless steel grade 304. Our available diameters are in increments of 1mm from 4mm to 12mm.

All wire has a minimum tensile strength 1770 N/mm<sup>2</sup>; BS 302 1987; BS EN 12385.

- 4mm – 5.95kg per 100m
- 6mm – 13.40kg per 100m
- 8mm – 23.65kg per 100m
- 10mm – 36.96kg per 100m



**ANCHOR SYSTEMS (EUROPE) LTD**

GALVANISED WIRE TECHNICAL DATA						
WIRE DIAMETER (mm)	3	4	6	8	10	12
MINIMUM BREAKING FORCE (kN)	5.29	9.40	21.20	40.30	63.00	90.70
MINIMUM BREAKING FORCE (kg)	540	960	2,160	4,110	6,420	9,250
1770 Tensile Grade; BS302 1987; Construction 7/19						

STAINLESS STEEL WIRE TECHNICAL DATA						
WIRE DIAMETER (mm)	2	4	6	8	10	12
MINIMUM BREAKING FORCE (kN)	2.20	8.89	20.00	35.60	55.60	80.00
MINIMUM BREAKING FORCE (kg)	225	905	2,040	3,630	5,670	8,160
1770 Tensile Grade; BS302 1987; Construction 7/19						



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