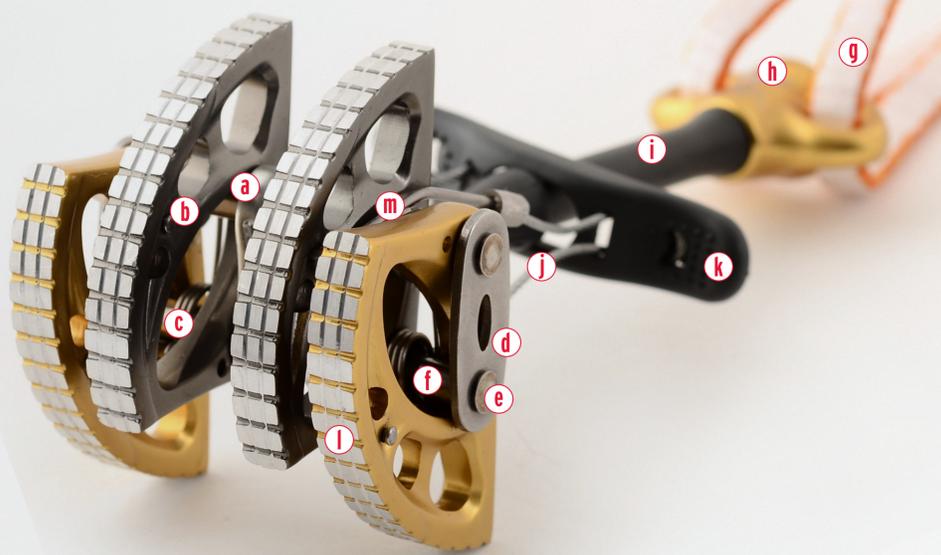


CLEANING, INSPECTION & MAINTENANCE OF DMM CAMS

Cams are no different to any other technical item of climbing equipment in that their performance and life-span will benefit from regular loving care and attention.



- a** AXLE BOSS
- b** RIVET HEAD
- c** SPRING
- d** SIDE PLATE
- e** TERMINATING RIVETS
- f** AXLE
- g** EXTENDABLE SLING
- h** THUMB PRESS
- i** STEM
- j** TRIGGER CABLE
- k** TRIGGER
- l** CAM LOBE
- m** TRIGGER WIRE



A CLEANING & LUBRICATING

It's always worth cleaning and lubricating your cams before a thorough inspection as dirt and grime may hide possible visible faults. A clean, lubricated cam will hopefully meet the tactile requirements of the trigger/cam action test.

If your cams are seized, apply a penetrating oil as described in step 4 below, leave overnight and then check for free cam movement before commencing the cleaning procedure. This process may need repeating to ensure a fully smooth action.

- 1) Rinse the head of the cam in clean warm water (max. 50°C) mixed with mild detergent (diluted as for washing dishes). Submerge the cam head in the water while retracting and expanding the lobes.
- 2) Gently clean any dirt from the metal part of the cam, particularly around the lobes, springs and axles, using a toothbrush. Remember that the lobes can slide on the axle, so you can move them around and get access to any grime. Take care not to dislodge the retraction springs from the cam lobes.

3) Thoroughly rinse with fresh water. It is at this point where your cams should start to feel smooth/non-gritty. If they still feel gritty/rough actioned, go back to step 1 and start the cleaning process again. Using a clean dry rag carefully dry off excess water. Allow your cams to thoroughly dry away from direct heat before lubrication. You can place your cams on some clean newspaper or cardboard to do this.

4) Whilst opening and closing the cam lobes, lubricate the cam axle where it passes through the lobes, namely; i) on the cam springs ii) between the side plate and the lobe and iii) between the lobe and axle boss. Use Henkel Superlube, 3-in-1, Duck Oil or other suitable lubricating oil (do not use graphite or lubricating oils that contain degreasing agents such as WD40). It is important to operate the cam until the lubricant has penetrated along the axle and into the cams. For heavily soiled/seized cams it may require more than one application of lubricant or further cleaning/lubrication. Use an accurate lube dispenser to ensure that all moving parts are thoroughly lubricated and the camming device has a smooth action. Take care not to get any lubricant on the sling. The thumb press and sling can be wrapped in a plastic bag to prevent this.

5) Wipe off any excess with a clean rag or paper towel.

YOU WILL NEED

- > Clean lint free absorbent rags
- > Clean, warm water of domestic supply quality, 50°C max. (take suitable precautions when using hot water)
- > Mild detergent (such as washing up liquid)
- > Toothbrush
- > Newspaper/cardboard
- > A suitable lubricant (Henkel Superlube, 3-in-1 oil or Duck Oil)

FURTHER CLEANING CONSIDERATIONS:

Sea-cliff environments and salt water are particularly harsh on climbing gear, which can rapidly degrade if not properly maintained after exposure to these elements. We recommend cleaning and lubricating your cams after every use on sea-cliffs to keep them in good working order.

Your cams are now ready for inspection.

B CAM INSPECTION

1 ESTABLISH AGE

- > Use the individual serial number on the cam's body to determine the age of the unit. The first two numbers refer to the year. If it has either letters or fewer than nine numbers then check with DMM.
- > Whilst the maximum lifespan of metal products have no defined time limit (continued use is subject to satisfactory user inspection), the textile sling has a maximum lifespan of 10 years from date of manufacture (subject to satisfactory user inspection). Establish age of the sewn sling using the sling's serial number as above. The sling can only be replaced if the cam passes inspection.

2 CAM FUNCTION (also before each use)

- > Ensure the cam operates smoothly throughout its complete range of movement by slowly pulling and releasing the trigger. Feel for any irregular spring tensions or poor action.
- > Ensure that when the trigger is released from any position all cam lobes return to their fully expanded position with a 'snap'.
- > Cleaning and lubrication may remedy poor action.

3 CAM LOBES

- > Check that the lobes are straight (looking along their length), with no deformation.
- > Check for any sharp edges that may damage textiles or affect holding power in placements (these could be caused by impacts, holding big falls or excessive wear).
- > Check for any gouges or significant flat spots on the curve of the cam contact surface, these 'witness marks' may be indicative of a high impact fall and affect the holding power of the cam.
- > Check for any corrosion - in aggressive environments like sea-cliff climbing, aluminium can be susceptible to corrosion if not cleaned and maintained properly.

4 AXLES & SIDE PLATES/TERMINATIONS

- > Check that the axles are straight (bent axles are indicative of heavy loading and will hamper good cam function).
- > Check that the side plates on Dragons are free from deformation/cracks/sharp edges.
- > Check that the terminating rivets are secure.
- > Check for any corrosion.

5 CAM LOBES ON AXLES

- > Check for excessive play between the cam lobes and their axle. There will be some play as this is required for the smooth action of a cam, but excessive movement may be indicative of high wear/high impacts causing the holes through the cam lobes to be enlarged/deformed. Checking against a new cam of the same model is the best guide.

6 TRIGGER & TRIGGER WIRES

- Whilst not strength related these are essential for placing the cam.
- > Check that the trigger wire cable is still securely attached to the trigger.
 - > Check that the trigger is free from any cracks/breakages.
 - > Check the trigger wire cable is running 'straight' and is free from any fraying or cuts, and has no permanent deformation or bending that is detrimental to smooth trigger operation.
 - > Check the swage between the trigger wire cable and the trigger wire for any damage, deformation, or sharp edges.
 - > Check the trigger wire for any distortion. All trigger wires should look similar. When the trigger is actioned the lobes should retract at the same rate.
 - > Abnormal bends/kinks in the trigger wire can be gently straightened by hand, but be aware that bending them multiple times will weaken the component over time.
 - > Check that the trigger wire is securely attached through the cam lobe, and that the rivet head is secure.
 - > Check for any corrosion.

7 STEM

- > Check that the stem has no sharp bends, or permanent deformations (some slight gentle, bending/curvature of the stem is acceptable).
- > Check that when the trigger is pulled, it doesn't bind/hang-up on the stem.
- > Check that the Zytel covers are present and that the central joint is intact.
- > Inspect the junction of the wire stem where the wire cable meets the head unit. To do this pull the Zytel cover towards the thumb press, look in the gap formed and ensure that the wire stem has no broken strands/cuts/damage present (check all around the stem).
- > At the other end of the stem is the thumb press termination which houses the extendable 8 mm Dynatec sling. Check this for any damage or deformation and especially sharp edges that may damage textile components.

8 EXTENDABLE SLING

- > Check that all bar tacks are present, and that all the stitching threads are unbroken and in good condition.
- > Check that the webbing around the bar tack stitching area is undamaged and free from cuts, frays or heavy abrasion.
- > Starting at one end of the shrink wrap, feed the sling between fingers and thumbs slowly, and carefully examine overlapping 2-3 cm blocks on both sides of the tape and its edges. Check for any cuts, fraying, excessive abrasion, furring, loose threads, UV degradation (colour fading), heavy soiling or heat damage (i.e. singed fibres, hard spots).
- > Make sure to pull the section of webbing out of the thumb press so you don't miss anything.

If your cam has passed steps 2 to 8 but the sling fails its examination, we can replace it. You can find details of this service on the 'Returns, Servicing and Repairs' page of our website.

YOU WILL NEED

- > A copy of the DMM cam user instructions is useful (www.dmmclimbing.com/instructions/CammingDevices.pdf)
- > Good lighting

IMPORTANT NOTE: If you are in any doubt about the safe condition of your cam do not use it. Either contact DMM for further information or replace the unit. We offer full servicing for our cams: this includes inspection, cleaning and lubrication, new trigger wires, and re-slinging. Details at www.dmmclimbing.com/about/servicing-repairs/