Cable Grip Fitting Procedure – General

1. Ensure the grip is labelled for the correct diameter range and working load limit. (unless otherwise labelled, WLL is one third of the UTS).

2. Always inspect the grip for broken strands or signs of wear. A damaged grip should never be used. The following would be considered defective:

a. Stretched wire;

b. Wire affected by heat, rust, crushing, acid attack;

c. Illegible labelling;

d. Bird-caging of the wires;

e. More than 10% of the strands broken within a length of 8 times the diameter of the wire rope;

f. Any fully broken wire rope.

3. Prepare the end of the cable by ensuring there are no sharp protruding edges. Where practicable, always chamfer the corners of any cable or conductor. At a minimum, file down any sharp protrusions and cover the end of the cable in a heavy duty tape. The end of the cable is where the cable grip is most vulnerable, it is imperative that this location is maintained.

4. Ensure the length of cable to be gripped is clean and dry.

5. If needed, open the mouth of the cable grip by manipulating the bent wires at the mouth and peeling them back. This will allow easier fitting, as the mouth may have become closed over in transit and storage.

6. Ease the mouth over the end of the cable and slide the grip down till the end of the cable is firmly into the shoulder of the grip. Always utilise the entire gripping length of the grip.

7. Ease out any bubbles, slack or loose spots on the grip towards the mouth by running your hands down from the shoulder to the mouth.

8. Always bind the mouth end of the grip securely with tie wire or nylon rope. This provides security against accidental release from circumstances such as the haul being reversed.

9. Always tape down the mouth of the grip with PVC or similar heavy duty tape to provide a smooth transition from grip to cable.

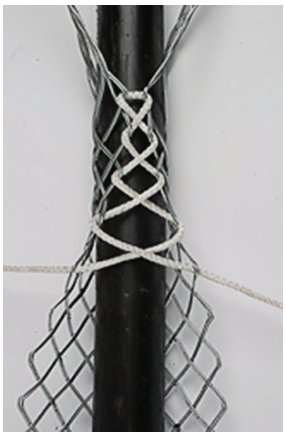
10. NCG recommends a minimum safety factor of 3:1 for "general" hauling applications. However, each hauling application should be evaluated on its own merits.

11. Always check the cable grip intermittently for slippage, during the haul. Always retire a slipping grip and contact NCG immediately.

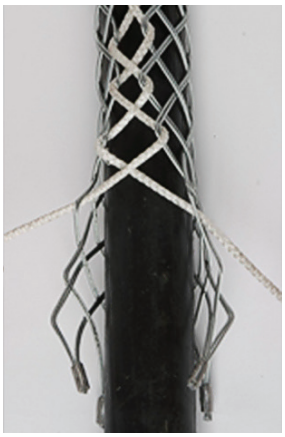
12. Never leave a hauling grip at tension and unattended for extended periods of time. Some grips (such as offset eyes) are useful as permanent load restraint devices, but cable grips are not to be used as permanent terminations.

13. NCG cable grips are not lifting devices.

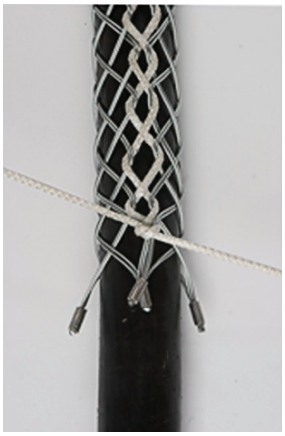
LACE-UP FITTING PROCEDURE



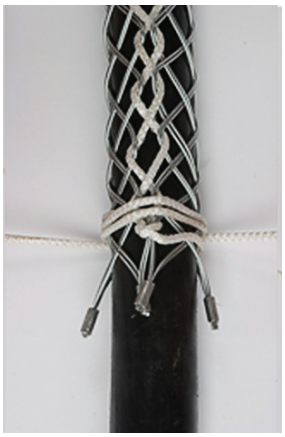
1. Position the grip in the desired location on the cable and begin lacing from the lead or anchoring end of the grip (the end with the eye). Thread the lace through the first two loops and pull through until the lace is centred at this point.



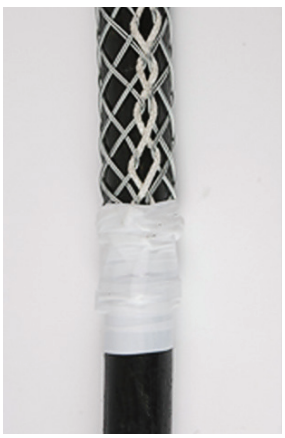
2. Lace as you would your shoe; crossing the lacings before lacing the next two horizontally opposed loops.



3. At the end of the grip tie an overhand knot.



4. Wrap the remaining lace tightly around the end of the grip and secure with an overhand knot. This provides added security from accidental release.



5. Always tape down the mouth of the grip with PVC or similar heavy duty tape to provide a smooth transition from grip to cable.

Fitting Procedure for LV and HV grips

Grip Selection

1. Ensure the grip is correctly labelled for the exact conductor to be hauled. For example, a grip stamped LV495 on the ferrule is suitable for 4x95mm^2 Aerial Bundled Conductor only.

2. Do not use the colour of the grip for identification.

Grip Inspection

1. Select a work area which is clean, well lit and has somewhere to lay the grip out flat.

2. Do not use the colour of the grip for identification.

3. Look for dirt / contamination on the grip. If dirty (e.g soil or mud) wash off with plain water and dry. If contaminated by something other than dirt it is advised to remove the grip from service and replace. Some types of contamination (e.g oil) can affect the material integrity. The extent to which the grip material has been affected can never be determined by sight.

4. Start at the eye, look for broken or abraded strands. If none found move to step 5. If one or more broken or badly abraded/frayed strands are found then replace the grip.

5. Starting at the eye look for kinked or pulled strands. This would indicate the grip may have been fouled on a roller and would indicate possible overloading at these points. If none found move to step 6. Replace the grip if severely kinked or pulled strands are found.

6. Check the colour, nylon should be a clear or coloured transparent colour, replace the grip if the colour has changed to a milky opaque.

7. Examine the grip for "elasticity". Manipulate the grip, it must feel "springy" soft. It is advisable, where possible, to have a new grip on hand to use as a benchmark for examination. Replace the grip if the material feels hard and rigid.

Gable Preparation

1. Ensure that for at least the length of the grip, the cable is clean and free from any contaminants.

2. Chamfer the sharp edges of the conductor.

3. Bind the end of the cable with cloth tape, electrical tape or similar for 100mm.

Fitting Procedure

1. When you unpack your grip the mouth end may be closed over, to open the mouth simply manipulate the bent or terminated strands at the end of the grip, peeling them outward and back toward the body of the grip to create an open mouth.

2. Work the grip onto the cable until the end of the cable abuts into the shoulder of the grip. The entire effective grip length should be on the cable.

3 Smooth out any bubbles in the grip by moving your hand over the grip from the eye end to the mouth end, working out any bumps and ensuring the grip has the maximum amount of contact possible with the cable.
Do this repeatedly until the grip is tight on the cable.

4 Bind the mouth end of the grip with heavy duty wide electrical tape or similar. Tape the mouth end tightly, putting pressure on the diamonds in the first or second rows from the end. This will help to anchor the grip and maintain its fitted position on the cable.

5 Continue to run the tape over the mouth end and onto the cable, taping tightly and ensuring adhesion of the tape to the cable. Tape for at least 100mm onto the cable, and then back onto the grip. This will contribute to anchoring, and will provide a smooth transition from cable to grip, reducing the chance of accidental grip release.

Hauling

1 Do not haul at a tension greater than one third of the rated breaking strength of the grip, apply the tension smoothly.

2 Check the grip regularly during the haul for damage and slip, particularly when tension has been fluctuating greatly. Where possible, it is strongly advised to closely watch the grip during the haul.

3 When removing the grip, take care not to damage the strands when removing the binding tape.

4 After use, store the grip in a clean environment away from direct sunlight.

FITTING PROCEDURE
OPEN BOTH ENDS (OBE)
Cable grip

Precautions

1. Always inspect the grip for signs of wear or damage, discard a damaged grip.
2. Ensure the cable diameter is within the limits of the OBE grip as listed on the packaging.
3. Ensure the ends of the cables are free from sharp protruding edges, file back all sharp edges.
4. Cover ends with electrical tape or similar to aid in fitting.
5. If the end of the OBE grip has closed over, manipulate the end by peeling the bent wires back towards the body of the grip. This will expand the opening.

Fitting procedure

1. Insert the cables into either mouth end of the OBE grip until they reach each other in the precise centre of the grip.
2. Anchor one end with seizing wire or similar.
3. Ease out any bubbles towards the free end by running your hand down the length of the grip.
4. Ensure there is maximum contact between the grip and the cable.
5. Seize the other end of the grip with tie wire or similar.
6. To guard against accidental release and to ensure a smooth transition from grip to cable, cover any seizing wire with heavy duty tape.

Inspection

1. Regularly inspect grips for signs of:

a. Bird caging of the wires.
b. Heat damage.
c. Rust.
d. Broken strand(s).
e. Permanent bubbles or disfigured strands.

2. **Always discard a damaged grip**

Hose Restraint Fitting Procedure

1. Ensure the restraint is labelled for the correct diameter range.

2. Always inspect the restraint for broken strands or signs of wear. A damaged restraint should never be used. The following would be considered defective:
   a. Stretched wire;
   b. Wire affected by heat, rust, crushing, acid attack;
   c. Illegible labelling;
   d. Bird-caging of the wires;
   e. More than 10% of the strands broken within a length of 8 times the diameter of the wire rope;
   f. Any fully broken wire rope.

3. Ensure the hose is clean.

4. Slide the restraint down the length of the hose until the last rows of plaited wire are past the coupling and the eyes have enough length to reach the anchoring eye bolts.

5. Run your hands down the restraint from the coupling end to the tail to smooth out any bubbles in the weave.

6. Attach the hose as required.

7. Anchor the hose restraint at the eyes to two horizontally opposed shackle points. If only one shackle point is available due to spatial limitations, an "Offset Eye" hose restraint can be used.

8. Always use shackles with a minimum breaking load greater than half the total breaking strength (UTS) of the hose restraint.

9. The hose restraint must be bound at the tail end with tie wire, cable tie, hose clamp (or similar), for security against accidental release.

10. In the case of double ended hose restraints, ensure that the plaited length of the hose restraint is not longer than the length of the hose between the couplings, when fitted to the hose. Only use a double ended hose restraint on the specific hose length and diameter it is labelled for.

11. Slight slack in the legs is preferred. This will allow a small travel distance for the coupling in disconnection and greatly reduce the load applied to the hose restraint. A travel distance of up to 40mm is recommended.

12. Check fitted hose restraints regularly for damage and wear, always replace damaged hose restraints.