Wire Rope Grips

Full details and safety information about our range of Wire Rope Grips.

APPLICATIONS

Wire rope grips are used on wire rope eye-loop connections or complete loops, end-to-end connections where socketing or splicing is not feasible or when a temporary joint is required.

RANGE

George Taylor offers a wide range of wire rope grips, specifically standardised models such as EN13411-5, US Federal Specification wire rope grips and DIN wire rope grips.

DESIGN

The GT wire rope grips are drop forged and have a bridge with grooves to fasten the wire rope properly in the clip; the DIN wire rope grips have a malleable base, without grooves.

FINISH

The finish is either electro-galvanised or hot dipped galvanised, unless otherwise specified.

CERTIFICATION

Upon request, all wire rope grips can be supplied with a works certificate.

INSTRUCTIONS FOR USE

Wire rope grips should be inspected before use to ensure that:

- all markings are legible;
- the wire rope clip is free from nicks, gouges and cracks;
- a wire rope clip with the correct dimension has been selected;

- never repair or reshape a wire rope clip by welding, heating or bending as this may affect the performance.

The wire rope clip should be fitted to the wire rope as shown in the figures.
The bridge of the wire rope clip should always be placed on the load bearing part of the rope. The U-bolt of the clip should be placed on the rope tail, also known as the dead end of the rope.

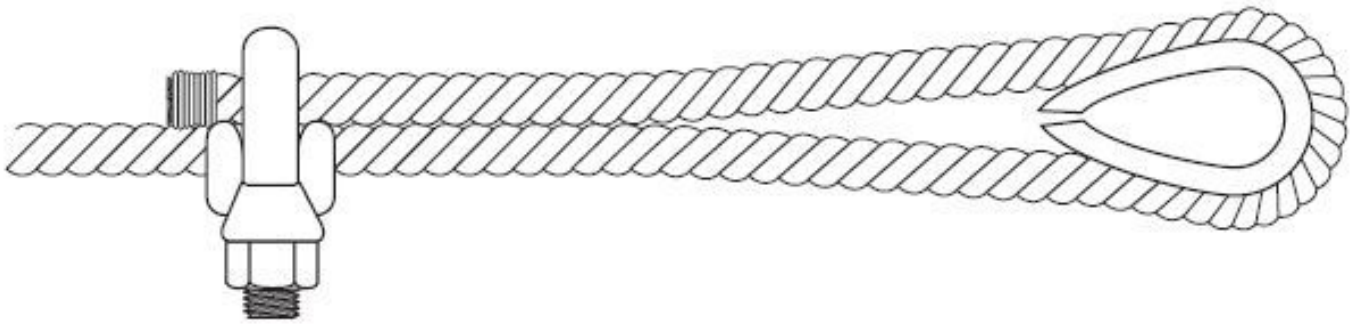

Figure 1

Turn back enough wire rope length so that the required minimum number of grips can be installed according to the instructions below.
The first clip must be placed one bridge width from the turned back rope tail or dead end of the rope, according to figure 1. Tighten the nuts to the specified torque.

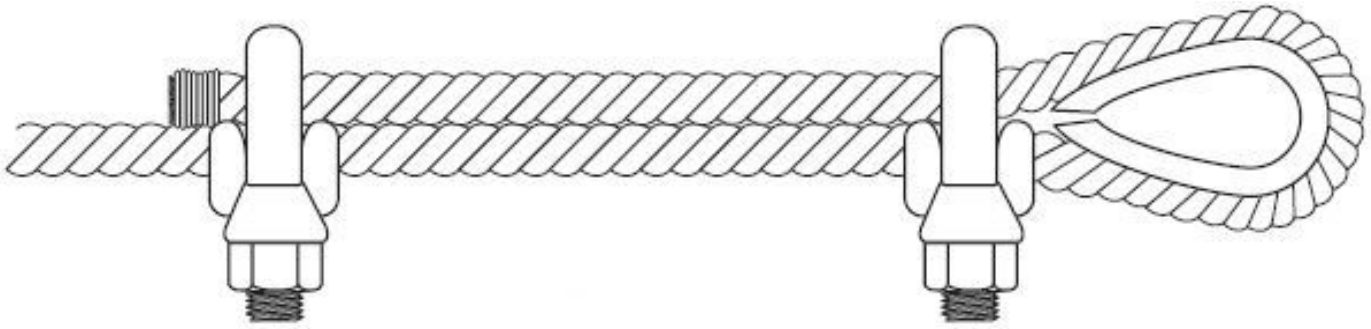

Figure 2

The following grips should be placed on the wire rope between the first & second clip in such a way that they are separated by at least 1½ times the clip-width with a maximum of 3 times the clip-width, according to figure 3.

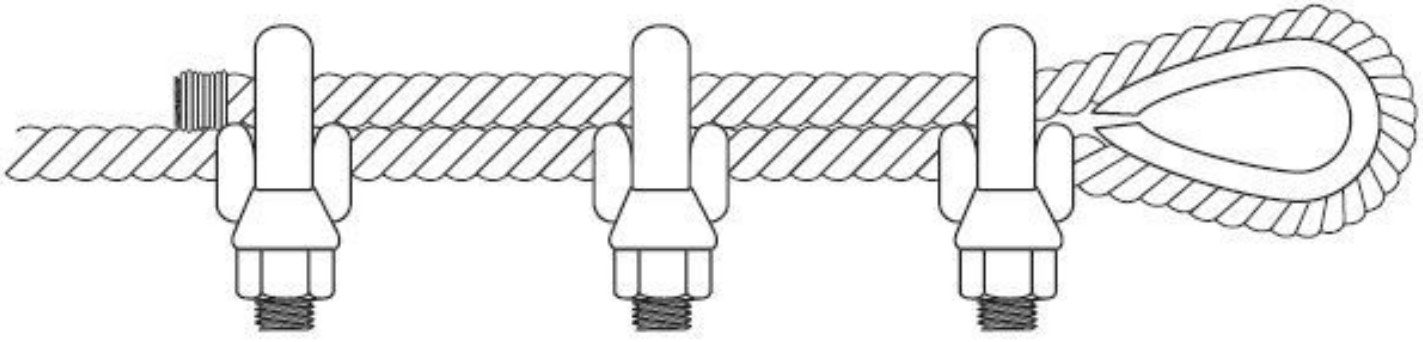

Figure 3

Apply light tension on the rope and tighten all nuts evenly, alternating until reaching the specified torque.

During assembly and before the rope is taken into service, the nuts must be tightened once again to the prescribed torque. After the load is applied for the first time, the torque value must be checked again and corrected if necessary. Periodically re-tightening of the nuts must be done at 10.000 cycles (heavy usage), 20.000 cycles (moderate usage) or 50.000 cycles (light usage). If cycles are unknown, a fixed time period could be used, e.g. every 3 months, 6 months, annually.

The torque values and the minimum number of grips to be applied, in relation to the rope size, are given in the following tables:

Table 1

Wire rope grips generally to EN 13411-5 Type B, required number and torque value

diameter wire rope	diameter wire rope	min. no of grips required	length of rope to turn back	torque value	torque value
inches	mm		mm	Nm	Ft.Lbs
1/8	3-4	2	85	6.1	4.5
3/16	5	2	95	10.2	7.5
1/4	6-7	2	120	20.3	15
5/16	8	3	133	40.7	30
3/8	9-10	3	165	61	45
7/16	11-12	3	178	88	65
1/2	13	3	292	88	65
9/16	14-15	3	305	129	95
5/8	16	3	305	129	95
3/4	18-20	4	460	176	130
7/8	22	4	480	305	225
1	24-25	5	660	305	225
1 1/8	28-30	6	860	305	225
1 1/4	32-34	7	1120	488	360
1 3/8	36	7	1120	488	360
1 1/2	38-40	8	1370	488	360
1 5/8	41-42	8	1470	583	430
1 3/4	44-46	8	1550	800	590
2	48-52	8	1800	1017	750
2 1/4	56-58	8	1850	1017	750
2 1/2	62-65	9	2130	1017	750
2 3/4	68-72	10	2540	1017	750
3	75-78	10	2690	1627	1200

Table 2
Wire rope grips generally to EN 13411-5 Type A, required number and torque value

Diameter Wire Rope	Min. no of grips required	Torque value	Torque value
mm		mm	Ft. Lbs
5	3	2	1.5
6.5	3	3.5	2.6
8	4	7	4.4
10	4	9	6.6
12	4	20	14.8
13	4	33	24.3
14	4	33	24.3
16	4	49	36
19	5	68	50
22	5	107	79
26	5	147	108
30	6	212	156
34	6	296	218
40	6	363	268

The efficiency of a wire rope termination made with wire rope grips will depend on the correct placement on the ropes and on the care and skill of the fitting and tightening of the grips. With inadequately tightened nuts or with an insufficient number of wire rope grips the rope end may slide through the grips at a very early stage in loading.

A number of factors can adversely affect the tightness of the grips on ropes, such as:

- the nut may be tight on the thread, yet not tight against the bridge;
- contamination of the thread by dirt, oil or corrosion products, which may prevent the correct tightening of the nut.

Forged wire rope grips provide greater bearing surface and more consistent strength than malleable cast iron grips. Suitable use of wire rope grips to EN13411-5 standards include suspending static loads and single use lifting operations which have been assessed by a competent person taking into account appropriate safety factors.

Wire rope grips should not be used on the following applications:

- hoist ropes in mines;
- rope drives for cranes in steel works and rolling mills;
- permanent fastening of ropes in other rope drives;
- rope terminations for load suspension devices in the operation of lifting appliances except in the case of lifting tackles where these are produced for a special application and are not reused.

INSPECTION

It is required that the products are regularly inspected and that the inspection should take place in accordance with the safety standards given in the country of use. This is required because the products in use may be affected by wear, misuse, overloading etc. with a consequence of deformation and alteration of the material structure.

Inspection should take place at least every six months and even more frequently when the products are used in severe operating conditions.