

NMC HAULAGE ROPE CAPPEL

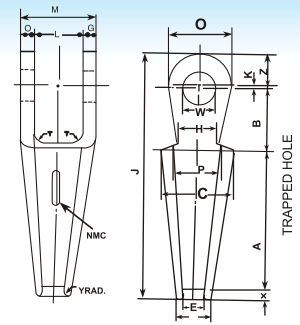
ZINC-CONE TAIL STRAND TYPE

Design :- 'NMC' Haulage Rope Cappel conforms to D.G.M.S. Technical Circular No. 12 of 1976

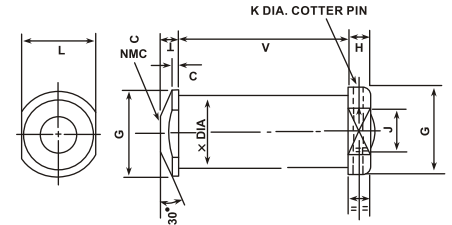
- Material:-
- 1) Sockets & Pins are manufactured from 11 Mn² of IS : 4432-1967 or 20C 15 of IS 5517 : 2004.
 - 2) White Metal : Grade 5 of IS : 25 of 1961
 - 3) Zinc : Not inferior to grade Zn 98 of IS :
 - 4) Nut and Washer – Steel 747 to IS : 1870-1966
 - 5) Tail Strand of rope : Galvanised steel wire stand, type 'B' Galvanising, 6/1 construction, tensile strength of wires between 140 kg/mm² and 150 kg/mm².

Heat-treatment :- Sockets & Pins shall be supplied in Normalised or Normalised and tempered condition.

Marking :- Each Socket shall be marked typically as follows : –
19mm NMC 3T M 2009 (Size x Manufacturer x S.W.L. x Type of Steel x Year of Manufacture)



CAPPEL FOR ZINC CONE



PIN FOR ZINC CONE CAPPEL

Dimensions of Cappel for Zinc Cone & Tail Strand

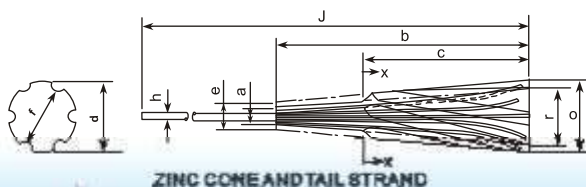
Nominal Dia of Rope	A	B	C	D	E	F	G	H	J	K	L	M	O	T	W	X	Y	Z	Proof Load in Ton
12	114.3	50.8	60.3	28.6	17.5	38.1	11.1	34.9	200.0	1.6	41.3	63.5	50.8	15.9	25.4	7.9	2.4	25.4	3
16	133.3	63.5	69.5	34.9	20.6	44.5	12.7	39.6	239.7	1.6	49.2	74.6	63.5	19.0	31.8	9.5	3.2	31.7	6
19	166.7	69.9	82.6	39.5	23.8	50.8	15.9	45.9	274.6	3.2	55.6	87.3	69.9	19.0	34.9	11.1	3.2	34.9	9
22	190.5	79.4	92.0	44.5	27.0	57.2	17.5	52.3	312.7	3.2	61.9	96.8	79.4	22.2	41.3	12.7	3.2	39.7	12
25	209.6	88.9	101.6	50.8	30.2	63.5	19.0	58.6	346.0	3.2	68.3	106.3	88.9	25.4	44.5	12.7	3.2	44.4	15
29	231.8	101.6	114.3	53.8	33.3	69.9	22.2	63.5	387.4	3.2	76.2	110.6	101.6	25.4	50.8	15.9	4.8	50.8	24

Dimensions of pin for Zinc Cone

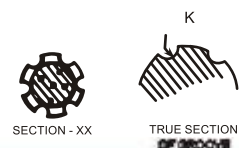
Nominal Dia of Rope	A	B	C	D	E	F	G	H	J
12	2.4	31.7	9.5	15.8	4.7	25.4	6.3	65.8	25.4
16	3.2	39.7	9.5	22.2	4.7	33.3	7.9	76.9	31.7
19	4.7	44.4	9.5	28.5	4.7	38.1	7.9	89.6	34.9
22	4.7	53.9	12.5	34.9	6.3	47.6	9.5	100.0	41.6
25	4.7	57.1	12.5	34.9	6.3	50.8	9.5	109.5	44.5
29	4.7	63.5	15.8	38.1	7.9	55.5	11.1	124.5	50.8

Dimensions of Zinc Cone and Tail Strand units

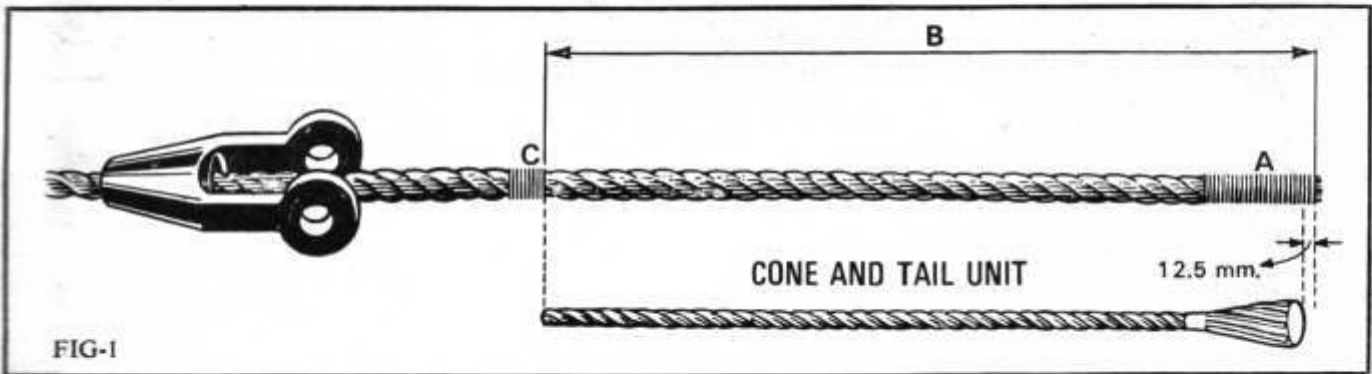
Nominal Dia of Rope	a	b	c	d DIA	e	f	h	j	RAD K
12	7.9	127.0	66.6	34.9	12.3	30.5	4.7	685.8	2.4
16	9.5	142.9	79.0	40.5	14.7	35.3	6.4	685.8	3.2
19	9.5	168.3	85.7	45.2	15.9	38.9	7.1	685.8	3.5
22	11.1	190.5	98.4	50.8	18.7	43.2	8.3	711.2	4.3
25	12.7	209.6	104.8	57.1	21.0	48.8	9.5	812.8	4.7
29	12.7	228.6	117.6	61.1	22.2	51.6	10.3	914.4	5.5



ZINC CONE AND TAIL STRAND



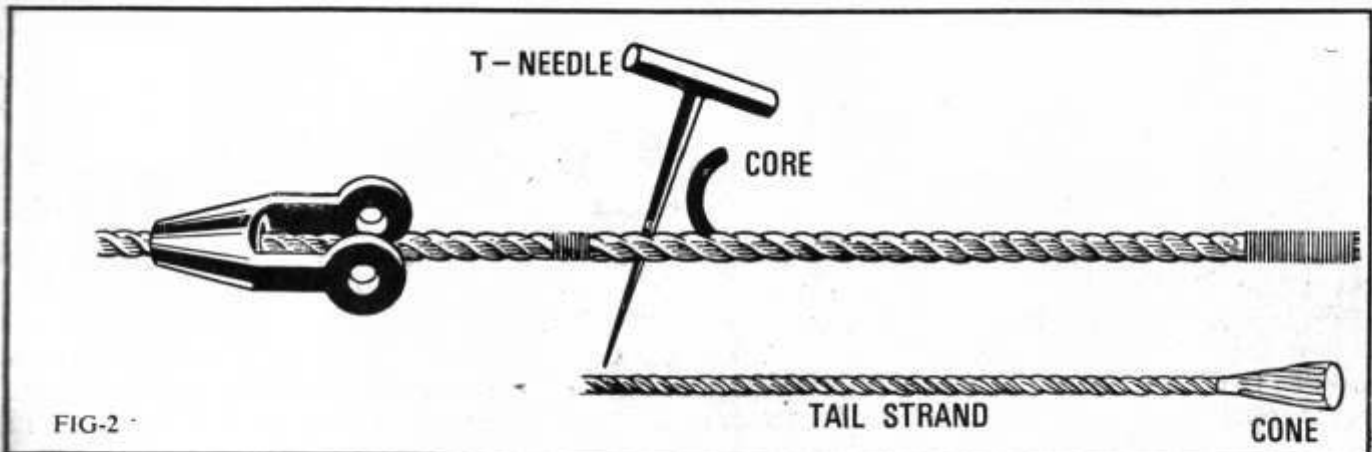
INSTRUCTIONS FOR FITTING TERMINAL WIRE ROPE SOCKETS BY THE CONE AND TAIL METHOD



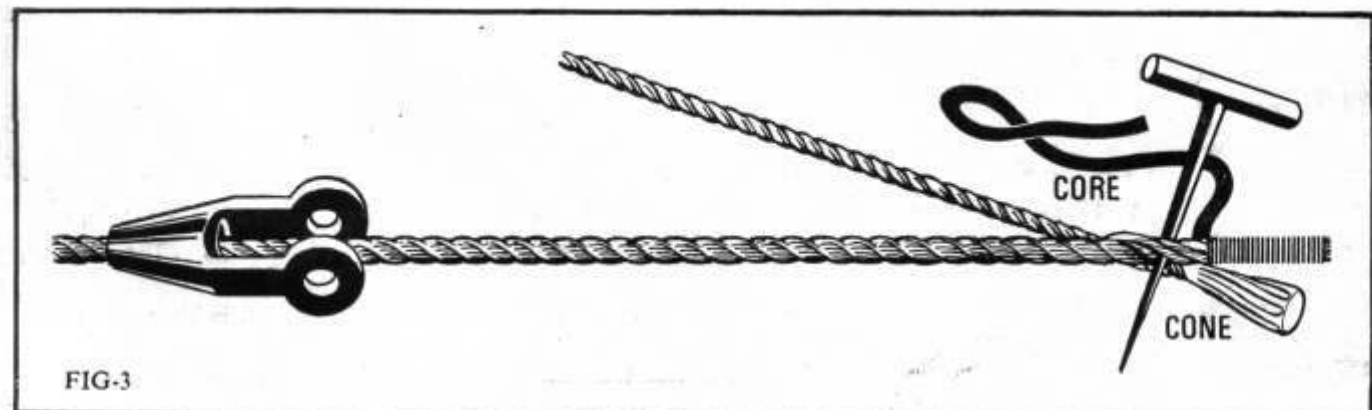
The 'cone and tail' method of 'NMC' sockets can be used only on wire ropes of stranded construction having a hemp core. It is particularly useful for socketing on site as it is simple and no heat is required.

SOCKETING OPERATIONS : Make sure that all the requisite equipment have been brought, including socket and matching cone and tail unit, seizing wire of 1.6 mm and coarse seizing wire.

(1) SEIZING AND CUTTING : If there is a capping already on the rope, or a surplus length of rope is to be cut off seize the rope temporarily before cutting. Fine seizing wire should be used, as the socket has to be threaded over it.



(2) PLACING SOCKET ON ROPE : A length of serving approx, the same length as the cone of the cone and tail unit should be left at the end of the rope ('A' FIG 1). The socket should now be threaded on the rope and pushed along out of the way. Measure from the end of the rope a distance equal to the length of the tail unit plus 12.5 mm ('B' FIG 1). Mark this position ('C' FIG 1) with chalk or a light binding which leaves the above length clear. Near this mark, and at the rope end side of it, insert a T-needle. Lift hemp core out and cut it near the mark (FIG 2).



(3) REMOVAL OF HEMP CORE AND INSERTION OF TAIL

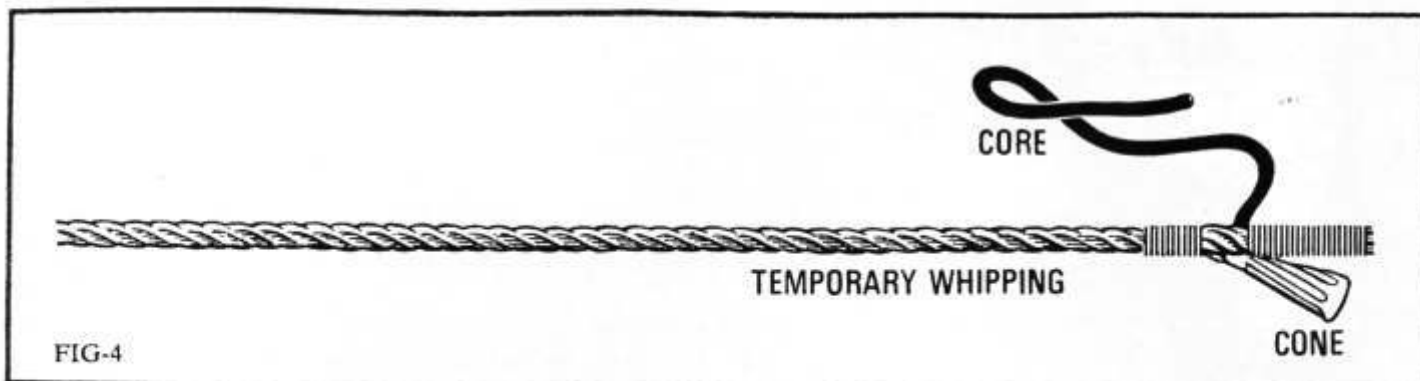
Remove the severed portion of hemp core up to the serving on the end of the rope. This is done by turning the T-needle with the lay of the rope, at the same time pulling out the core.

When the T-needle is close to the serving on the rope end, and the core has been removed to this point, insert tail of unit in the opening made by the T-needle, and behind the needle. Push tail through the rope until the large end of the cone is about 12.5 mm, short of the rope end (FIG 3).

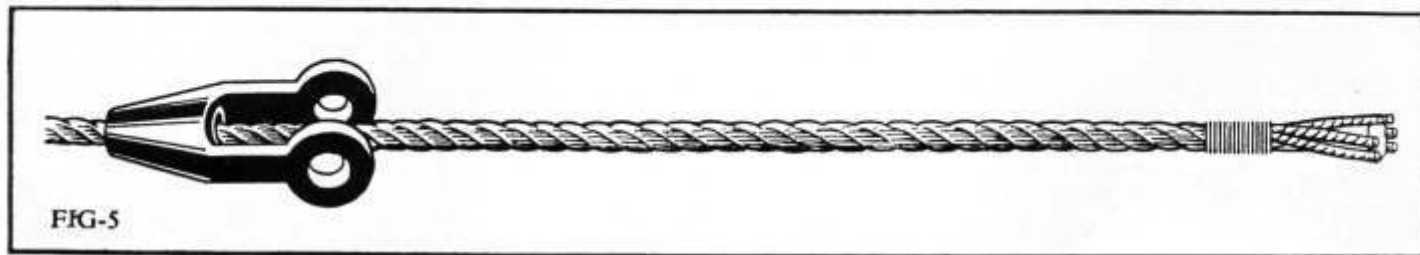
(Note : On no account should the tail of the unit be shortened).

The tail is then laid into the rope centre by working the T-needle away from the rope end (i. e. by turning it in the opposite direction to that for removing the core). When the whole length of the tail has been laid into the rope, make sure that the end of the hemp core of the rope is in contact. Pull back on the partly removed portion of the core and at a position as close as possible to it, and on the side remote from the rope end, fasten a temporary but strong whipping over the rope and emerging unit (FIG 4).

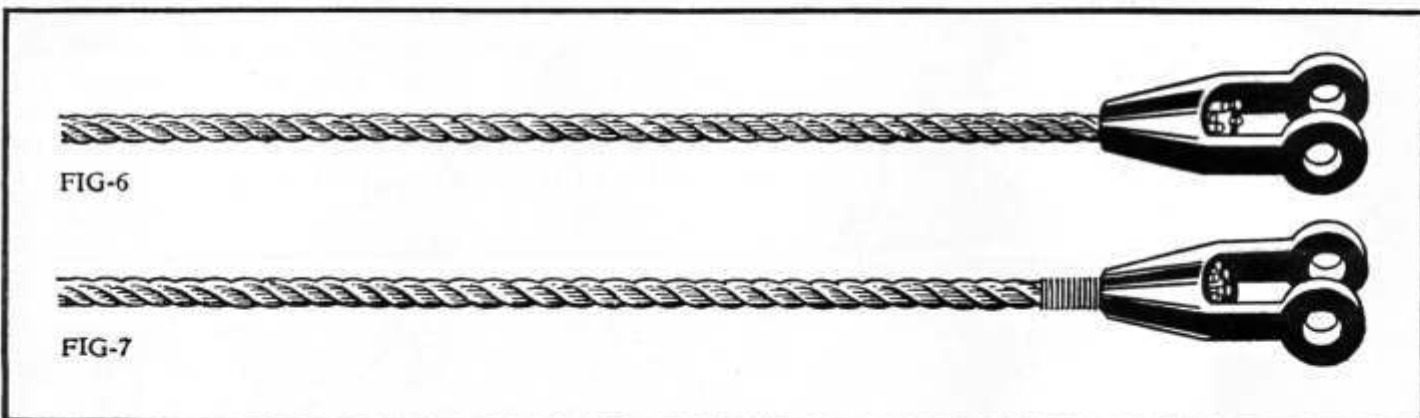
This whipping must be sufficiently strong to prevent unlaying of the rope during the next operation.



(4) INSERTION OF CONE : Remove the original serving from the end of the rope, and pull out the severed hemp core completely. Work the cone of the unit into the centre of the rope, and space the strands of the rope, one in each groove of the core. Bend the strands to follow the spiral of these grooves if necessary. Bind the rope tightly at the small end of the cone, using fine wire of a size which will allow the rope to pass through the small end of the socket. This binding is to prevent unlaying of the rope end (FIG 5). Remove temporary whipping shown in FIG 4.



(5) DRAWING SOCKET INTO POSITION : The socket is now pulled to the end of the rope, the cone being drawn into the barrel of the socket (FIG 6). A load equal, if possible, to the working load should now be applied and the socket will be drawn into its final position. After this assembly load has been applied, or preferably while that load is still on, a tight seizing of soft iron single wire (not strand) must be placed on the rope close up to end touching the mouth of the socket (FIG 7). This is to prevent socket moving on the rope. This seizing should



be in length equal to $1\frac{1}{2}$ rope diameters and the wire used must be of a size sufficient to prevent the socket passing over it. The starting end of this seizing should be anchored under one strand of the rope. The assembly is then complete.

A trial run should now be made after which the capping should be examined, particular attention being given to the coarse seizing at the small end of the socket.

If after a period of service the seizing is no longer in contact with the socket, then it should be replaced.



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