

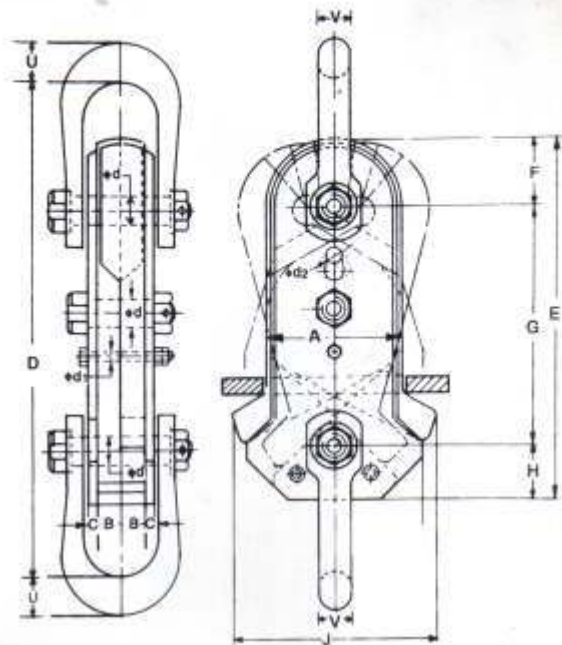
# NMC SAFETY HOOK

'NMC' Safety Hook operates and detaches the Cage or skips from the winding rope in the event of an overwind.

**Material :** All Steel components of Safety Hooks are manufactured from 11 Mn2 of IS : 4432-1967 or 20c15 IS : 5571-2009

**Heat Treatment :** Safety Hook is supplied after hardening and tempering.

**Testing :** Safety Hook shall be subject to PL and NDT by DGMS approved Test House/CMRI.



## HEAT TREATMENT

Designation of steel	Hardening Temperature	Tempering Temperature
11 Mn2	870-910°C	550-660°C
20 Mn2	860-900°C	550-660°C

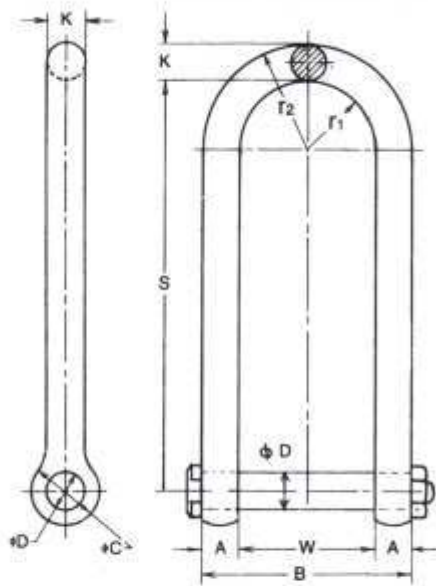
## ANALYSIS %

Carbon	Silica	Manganese
.16 Max.	.15 to .35	1.3 to 1.7
.16 to .24	.15 to .35	1.3 to 1.7

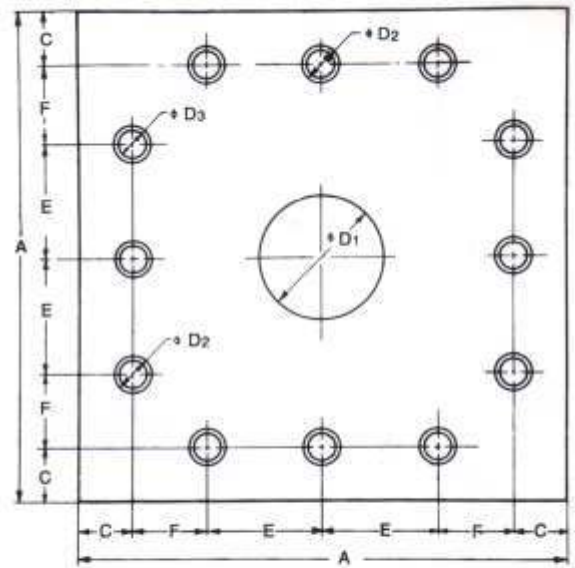
## DIMENSIONS FOR SAFETY HOOK (IN mm)

SWL	Hook Width	Thickness		Pin $\phi$	Distance between inside of Upper & Lower Shackle	Overall length	Distance between Safety Hook Top to Shackle Pin Centre	Distance Bet. two Shackle Pin Centre	Distance bet. S. H. Bottom to Shackle Pin Centre	Overall width across wings	Shackle Section Dimension		approx weight with shackles
		Inner plate	Outer Plate								U	V	
kN	A	B	C	d	D	E	F	G	H	J	U	V	Kg
50	152	22	14	40	664	506	88	340	76	270	42	38	50
*80	178	25	14	46	708	556	100	380	76	302	48	41	70
*100	203	32	16	52	829	638	114	435	89	343	57	48	110
120	254	33.5	19	60	881	659	127	430	102	388	60	57	150

★ D.G.M.S. Approval No. MECH (HQ) APP/CSG/SH/NMC/1/84/115



**DIMENSIONS FOR LIFTING SHACKLE & PIN**



**DIMENSIONS FOR CATCH PLATE**

SWL kN	A	B	ϕC	Pin ϕD	ϕK	r <sub>1</sub>	r <sub>2</sub>	S	W	Wt. with Pin	SWL kN	A	C	ϕD <sub>1</sub> +1.0 +1.5	ϕD <sub>2</sub> /D <sub>3</sub>	E	Thick T	F	Weight of Catch Plate Kg
50	20	114	40	20	20	37	57	215	74	2 Kg									
80	24	130	48	24	24	41	65	255	82	3.6Kg	80	610	51	181	30/27	146	25	108	67
100	28	152	56	28	28	48	76	295	96	4.5Kg	100	610	51	207	30/27	146	25	108	66
120	30	165	80	30	32	53	85	275	106	5.5Kg	120	720	50	258	33/30	222	32	108	116

**NOTES ON SAFETY HOOK**

**Inspection :** Coal Mines Regulation 1957 No. 81 (2) (a) requires inspection of all parts of Suspension Gear every six months and if necessary at shorter interval.

**MAINTENANCE :**

1. Check all nuts and split pins for wear and slackness. Renew split pins at regular intervals.
2. Check outer plates for wear and cracks around shackle eye positions. Do not weld up.
3. Check the copper pin for wear and partial shear which may be due to wear and slackness in platework and Pivot pin. Pivot pin must be good fit in platework.
4. Check all plates for flatness by means of straight edge.
5. Ensure that hooks are always well lubricated and as clean as possible. Avoid excessive accumulation of grease and coal dust. Ensure that the locking bolt slot is free from grease and other matter which may hinder the action of the bolt in an overwind.
6. Ensure that the Lifting shackle (for release of hook after overwind) is maintained in a clean and corrosion-free condition. Ensure that it is the correct one for the hooks in use, and always ensure that several persons are certain where the shackle is located.

**PRECAUTION :**

1. Ensure that the catch plate position is such that sufficient clearance exists to allow complete detachment of the hook before the cappel makes contact with the sheave in an overwind.
2. Ensure that adequate clearance exists between catch plate hole and all attachments including rope cappel so that unrestricted passage through the catch plate is possible.
3. In the event of debris falling down the shaft, check the hook and other attachments for damage or partial detachment.

05/7/95 R.E