

METHOD STATEMENT & SPECIFICATIONS

MS 04 Bridle-less fixed point system

INSTALLATION:

Pulleys are hung as tightly as possible using roundslings and 2 tonne bow shackles in conjunction with a wire rope safety bond (strop). Shackles are moused to eliminate the possibility of pins working loose over time.

This type of system can be installed on a truss or flying bar, direct to the grid or other suitable load bearing structure. Bars or trusses rigged at floor level are flown out to dead height and securely tied off. In the case of counterweighted theatre flying bars the counterweight cradle is also fastened down.

LIFT SYSTEM:

The lift system consists of either a single or a pair of 3mm, 6x19 FC wire ropes, depending on the type of harness to be used. They run from a gin block assembly through pulleys sited above the operating position and performance area where they are attached directly to the harness. One end of the gin block pulling rope is anchored to a secure fixing point in the stage or weights equivalent to the anticipated maximum load. The other end is attached to a return line enabling the harness connection points to be lowered in with only a minimal load on them i.e. sandbag.

The system incorporates a 2:1 mechanical advantage to the operator. If additional assistance is required to achieve a smooth or faster lift, counterweighting can be added to the gin block assembly.

TERMINATIONS:

Terminations - eyes - are formed in stranded ropes using standard splicing techniques. Kernmantle ropes are finished with a figure eight knot. Terminations to wire rope are made by crimping a ferrule with a hydraulic bench press or on-site, using the Nicopress system.

TESTING:

All systems are proof loaded to a minimum of 1.5 times the anticipated maximum load, prior to first use by the performer.

COMPONENT	TYPE/SIZE	M.B.L.	S.W.L.	W.L.L.	SOURCE
Pulling rope	20mm / 16 plait polyester	6000 Kgs.			Flints
Return line	10mm low stretch kernmantle	2500 Kgs.			Flints/Liros
Wire rope	4mm 6 x 19 FC galvanised	890 Kgs.			Ormiston
Wire rope	3mm 6 x 19 FC galvanised	500 Kgs.			Ormiston
Wire rope	3mm 7 x 19 IWRC black	540 Kgs.			Flints
Gin block	Standard		250 Kgs.		KAFX
Roundsling	2 tonne / 1 meter black		2.0 tonne		Flints
Roundsling	2 tonne / 2 meter black		2.0 tonne		Flints
Pulleys	75mm sheave	3720 Kgs.			S.A.S.
Wire rope strops	4mm galvanised wire rope	890 Kgs.			KAFX/Ormiston
Shackles	Bow			2.0t (Tonne)	Crosby
Shackles	Bow			0.5t (Tonne)	Crosby
Shackles	Bow			0.75t (Tonne)	Crosby
Shackles	Bow			1.0t (Tonne)	Crosby
Carabiner	Steel oval screwgate	22 kN.			Lyon
Carabiner	Alloy screwgate	23 kN.			Wild Country
Swivel	Petzl P58S	23 kN.			Petzl
Swivel	Katimex	1021 Kgs.			Katimex
Rope link	Pear pattern Maillon Rapide			880 Kgs.	Lyon
Harness connector	Oval pattern Maillon Rapide			160 Kgs.	Lyon
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Our own destructive testing reports show that in practice the actual strength of components often far exceeds the quoted figures. Figures quoted are direct from manufactuers and suppliers, therefore they appear in various formats: Calculations are best based on the minimum breaking load (M.B.L.) as different manufacturers can use various safety factors - ranging between 2.4:1 and 12:1 - to determine the safe working loads (S.W.L.) of their products.

Pounds (Lbs.)1 lb / 16 ounces ~ 0.454 Kg. / 454 gramsM.B.L.Minimum breaking loadKilograms (Kgs.) $1 Kg \sim 2.204$ lbs.W.L.L.Working load limitKilonewton (kN) $1 kN \sim 102$ Kgs. forceS.W.L.Safe working loadU.S. (short) Ton2000 lbs. ~ 907 Kqs.

U.K. Ton 2240 lbs. ~ 907 kgs. 2240 lbs ~ 1016 kgs. Metric Tonne 2204lbs. ~ 1000 kgs.

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