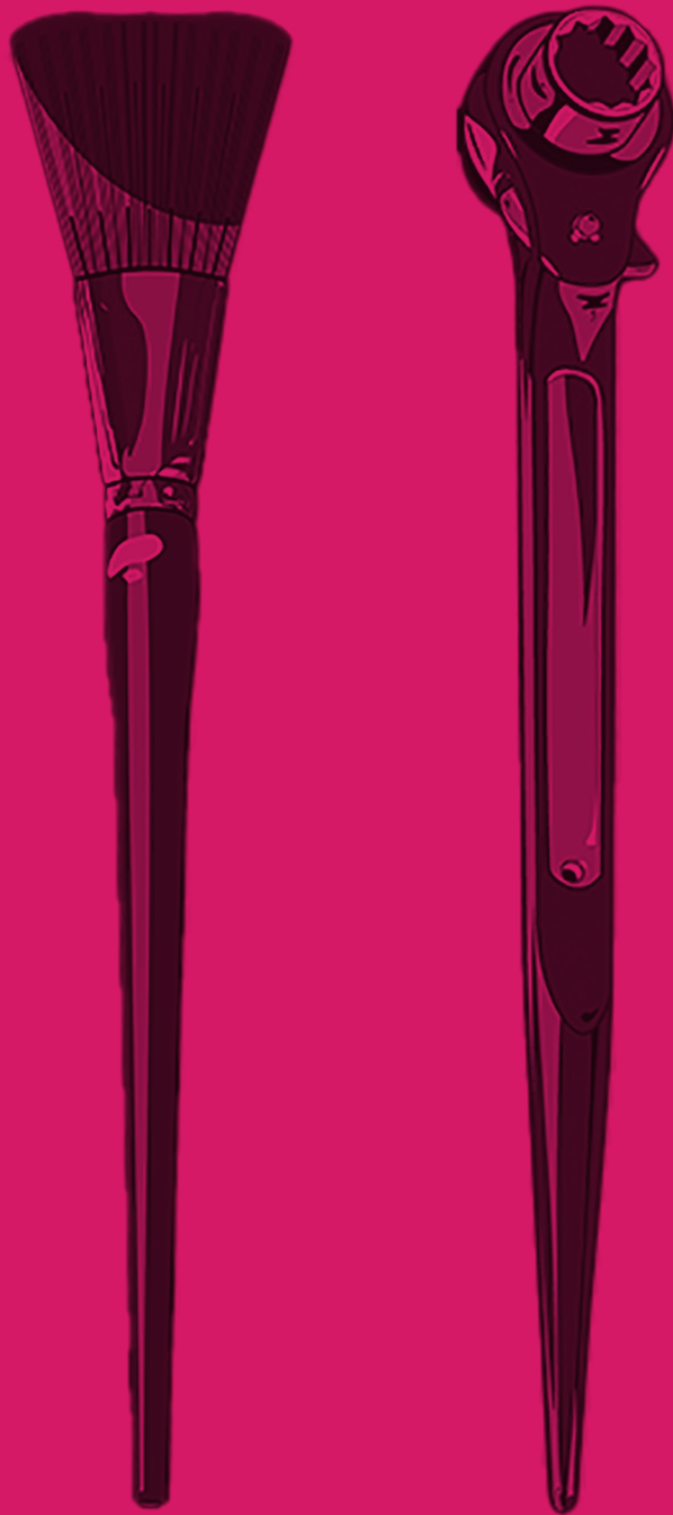


# Scenic Ironmongery



# FLINTS

*The one-stop-shop that delivers to your door*

## Lifting Introduction

Barry Hudson, our long-time Technical Sales Director, retired in 2023. Despite this, we thought his responses to his "FAQs" were useful and are re-printed below. The good news is that Barry's lovely, young assistant Ben Austin is now our Rigging Manager and available to deal with any rigging questions you may have.



"I have often been asked by people  
'What is a lifting accessory?' or  
'What is a lifting operation?'.

According to the Lifting Operations and Lifting Equipment Regulations 1998 [LOLER], an "accessory for lifting" is work equipment for attaching loads to machinery for lifting.

To further simplify this statement, one of the instructors at the Lifting Equipment Engineers Association [LEEAA] suggested that it can be looked at it in this way: If you have a crane – the lifting machine in this scenario – then anything used below the hook used to attach the load to it, is a lifting accessory. So examples are shackles, turnbuckles, round slings, chain slings and wire rope slings to name but a few. In most theatre settings the "hook" is a flying bar, so everything below it is a "lifting accessory" and everything above it is a component of the "lifting machine".

A lifting operation is defined in the LOLER regulation as an operation concerned with the lifting or lowering of a load. It is therefore dynamic, as opposed to "suspension" which is static and outside the scope of LOLER.



Our special  
hook symbol

Within this catalogue we have added a hook symbol next to the products that can be used for lifting operations. These products will be supplied with instructions for use and either a Declaration of Conformity or a Report of Thorough Examination For New Products. Which certification is supplied is dependant on whether Flints hold the Technical File for the product. The Technical File contains the original

specifications of the product and so we would typically only hold it for our own products.

There are many other products in the following sections of the catalogue that can be used for suspending loads that are not subject to dynamic movement. These products will show a minimum breaking load [MBL] or minimum recommended load [MRL], but do not require certification.

The LEEAA Code of Practice for the Safe Use of Lifting Equipment [COPSULE] states that lifting accessories should be specified by [although not necessarily actually ordered by] the "competent person" in charge of the lifting operation, which is the term used to describe a person with the necessary practical and theoretical knowledge, experience, training, skill, and ability to perform the specific duty. There could be several competent persons with specific duties relating to lifting items.

With our experienced and knowledgeable staff, we search for quality products to suit your needs and budgets. We are continually monitoring new products that come onto the market, so you can have faith that we will be providing quality equipment suited to your requirements.

We also have a strong splicing team at Flints, and can help you with everything from 3 or 4 strand fibre rope, to braided ropes, or even modern ropes such as Dyneema Pro.

## A brief introduction to UKCA Marking



### What happened to the UKCA mark?

Returning readers will remember that we introduced the UKCA mark in the last edition of the catalogue.

The UKCA mark, or the UK Conformity Assessed mark to give it its' full title, was intended to allow England, Scotland and Wales to diverge from European standards indicated by the CE (Conformité Européenne) mark, post-Brexit. At the time of the publication of the last catalogue, the UKCA mark was due to come into force on the 1st January 2022 with the use of the CE mark phasing out in Great Britain over the following year, Northern Ireland having a separate regulatory regime which continued to recognise CE marks alongside its' own marking system.

To begin with the UKCA mark indicated compliance with the same European Norms ("EN number") as the CE mark and so Flints, along with many UK companies, decided to show both marks on our products so that we could continue to offer those products to customers at home and abroad. We would have had to revise this policy in the event that UK regulations diverged from European ones.

Under pressure from industry and regulators, the UK government delayed the introduction of the UKCA scheme several times before postponing it indefinitely in August 2023, which is the situation as it currently stands. However, the UKCA mark will be with us for some time yet. Many of our own products that carry the CE mark are lifting products. Lifting regulations stipulate that marking indicating compliance with standards must be indelibly stamped onto a product rather than just using a label. We re-drew all of our lifting products to show that stamping and so we will be showing the old UKCA mark until such time as we re-draw the product.

Ultimately, the purpose of these markings, whether they are CE or UKCA, is to give end users a guarantee that a product reaches the necessary quality standards for it to fulfil its' designed function. Flints work hard to ensure that the products shown on the following pages do exactly that.

If you come across a new product you think we should stock, do let us know! You can scan this qr code to visit our handy form to register any new ideas:



Scenery Fittings

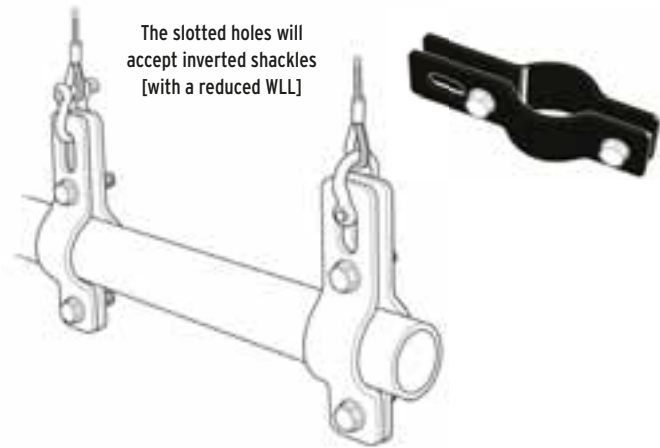
Many of our scenery fittings are designed to be fixed to timber scenery. Often the weakest point will be the timber structure itself. Particular care should be paid to the joints supporting the bottom rails on flats. If in doubt, rails should be reinforced with stout plywood glued and screwed across the rail and stile. The scenery fittings which are suitable for lifting are shown with the "hook" symbol. We now state the loads as "Working Load Limits" rather than "Safe Working Loads". A WLL is the maximum permissible design load. Often it will be the same as the "Safe Working Load" but the SWL could be less if, for instance, a load was going to be applied at an angle, then the competent person may decide to state a SWL less than the WLL [but never higher]. The SWL should then be clearly displayed. The design calculations, which were carried out in accordance with British Standards, are being upgraded to the appropriate Eurocode References where necessary. These lifting fittings are CE marked, batch-tested, and they are marked with the Batch Identifier and the Working Load Limit. They are supplied with an EC Declaration of Conformity and instructions. We have introduced oval rings to our Hanging Clamps, Ring Plates and Ceiling Plates in accordance with BS 7906-1:2005. The Ring Plate with a round ring is still available for general use but we advise clients to use the oval ring version for lifting purposes. All the scenery fittings have been designed for use with traditionally built scenery in a typical indoor theatre environment. They must be fitted by a competent person in accordance with the instructions supplied. The instructions can also be downloaded from our website.

It is beyond the scope of this catalogue to cover every aspect of the safety of lifting equipment so it is important that the person specifying lifting equipment is competent to do so.

SCENERY LIFTING FITTINGS

Hanging Clamps with Slotted Holes

Used to secure flying wires or hemp lines to flying bars so that the lines cannot slide along the bar. They can also be used inverted as a fixing point on flying bars for small pulleys etc. Our hanging clamps have all the sharp corners removed so they are less likely to catch on cloths and gauzes and the smart black appearance makes front of house rigs less unsightly. When touring, lines can be quickly refixed in the same place without needing unsightly tape marks. If flying heavy loads always use the hanging clamp with a certified shackle. The SWL may be affected by the rating of the shackle. The standard Hanging Clamp fits bars from 48 to 51 mm OD. The large version fits 60.3 mm OD gas barrel. The finish is black powder coated. The top hole is slotted so shackles can be used inverted but with a reduced WLL. The slot for the shackle is 13.5 mm wide and 30.5 mm long. They are designed to be used with 1.5 t Crosby or Green Pin Bow Shackles [pages 200 and 201]. Size: 180 x 40 x 65 mm. Fixings supplied: 2 off M10 x 40 HT bolts with Nyloks and washers [max torque 3.5 Nm]. For diverting flying wires along the bar see facing page. Weights: standard 648 g, large 672 g. The direction of pull should be either in-line or diverted along the bar. If the bar does not rotate to the direction of the pull then the WLL would reduce to 47 kg. Supplied instructions must be adhered to including bolt tightening torques.



SAFETY	Working Load Limits		
	FHS002HCS	with shackle pin in slot	550kg
	FHS002LHCS	with shackle pin in slot	550kg
	FHS002HCS	with shackle body in slot	50kg
	FHS002LHCS	with shackle body in slot	50kg

code	description	price	50+
FHS002HCS	Without ring	£8.95	£8.05
FHS002LHCS	Large size for 60.3 mm Ø tube [no ring]	£8.95	£8.05

Hanging Clamps

These fittings are used to secure hemp lines directly to flying bars so that the line cannot slide along the bar. The old round ring has been replaced with an oval one in accordance with BS 7906-1:2005. Fits bars from 48 to 51 mm OD. Fixings supplied: 2 off M10 x 40 HT bolts with Nyloks and washers [max torque 3.5 Nm]. Weight: 770 g. Follow supplied instructions including tightening torques.



SAFETY	Working Load Limits	
	FHS002HCO	50kg

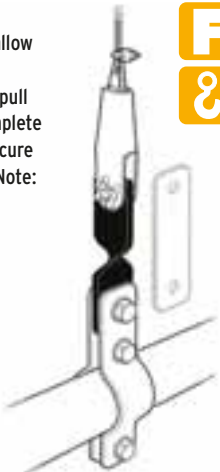
code	description	price	50+
FHS002HCO	With oval ring	£10.80	£9.70

Toggles for Hanging Clamps

These fittings can be used with the Hanging Clamps to allow the simple fitting of a wedge socket. The twisted toggle enables the wedge socket to align with the direction of pull when raising flats from lying on the stage. Supplied complete with a M12 x 40 HT bolt, two washers and a Nylok [to secure to the hanging clamp]. 8 mm thick with 13 mm Ø holes. Note: Not suitable for 2 - 3 mm wedge sockets.



SAFETY	Working Load Limits	
	FHS002TK	550kg
	FHS002TFK	550kg



code	description	price
FHS002TK	Twisted [shown black]	£8.85
FHS002TFK	Flat [shown in outline]	£8.85

Always use a torque wrench when securing hanging clamps [page 195].

# SCENERY FITTINGS

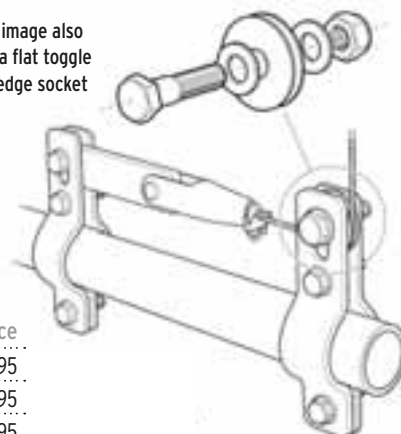
## Bar Divertors

To maximise flying heights, wire ropes can be diverted around these Nylon sheaves and along the flying bar. The bar can be levelled either by moving the anchor hanging iron or by means of a rigging screw parallel to the bar. We now stock three sizes of bar divertors. They are all supplied complete with M12 x 40 mm high-tensile bolt, two Form A steel washers and a Nylok nut. The 8 mm version is only suitable for use with the Large Hanging Clamp on 60.3 mm Ø tube. The 5 and 6 mm versions are suitable for 50.8 mm Ø tube or they can be used with the supplied nylon spacers on 48.3 mm or 60.3 mm tubes. Weight: 92 g.

\*when used with supplied with nylon spacers.



Note: image also shows a flat toggle and wedge socket



### SAFETY

#### Working Load Limits

FHS002HCO 50kg

code	description	thickness	diameter	suits bar 1 Ø	suits bar 2 Ø	suits bar 3 Ø	price
FHS002ESK	For 5 mm wire	6.4mm	40.58mm	48.3mm*	50.8mm	60.3mm*	£8.95
FHS002SK	For 6 mm wire	6.4mm	42.33mm	48.3mm*	50.8mm	60.3mm*	£8.95
FHS002SLK	For 8 mm wire	6.4mm	43mm	60.3mm			£8.95

## Flying Irons

Used for flying heavy scenery when a hanging iron cannot be deployed. The ring is welded inside the fold for extra strength. This fitting must be bolted through the flat. To achieve WLL the timber should be 25 mm thick and at least 300 mm long. Size: 370 x 30 x 22 mm. Fixings needed: 3 off 6 mm csk machine screws and tee nuts. Black powder coated. A self-colour version is available for those preferring to weld the fitting in position.

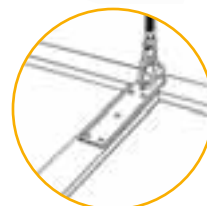


SAFETY	Working Load Limits	
	FHS012	200kg
	FHS012L	200kg

code	description	price
FHS012	Unlipped	£18.50
FHS012L	Lipped	£18.50
FHS012SC	Unlipped self colour	£17.70

## Ceiling Plate [with Oval Ring]

Used to join the rails to the stiles on rollup ceiling flats. The fitting should be machine screwed to the rail so that the 11 mm drilled hole falls on the centre line of the stile [as shown in the detail]. A boss plate should be routed in flush under the hole so the flat can be quickly assembled using M10 thumbscrews [page 285]. By using this method the cloth can be rolled around the stiles which will have no protruding obstructions to cause damage. Flats can be constructed in this manner far larger than Paul Mathew's biggest trailer. These fittings are fitted with oval rings in accordance with BS 7906-1:2005. Also available without rings. Black powder coated. Size: 230 x 60 x 75 mm [with oval ring at right angles]. Fixings needed: 5 off 5 mm csk machine screws and T-Nuts.



SAFETY	Working Load Limits	
	50kg	

code	description	price	50+
FHS0090	Without ring	£7.85	£7.05

## Ring Plate with Oval Ring

This ring plate is fitted with a stronger oval ring [stronger than the round type] in accordance with BS 7906-1:2005. A useful multipurpose fitting suitable for flying lightweight items. Can also be used as a grummet when flying with hems attached directly to hanging irons [above]. Ring plates are often fixed to the top rail of large masking flats to enable a temporary rope from the fly floor to be attached to the top of the flat to assist walking the flats up. Designed to fit nominal 3" timber as shown. Black powder coated. Size: 68 x 45 x 75 mm depth from flat [with ring at right angles as shown]. Fixings needed: 4 off M5 csk machine screws and T-Nuts. See standard Ring Plates [next page].



SAFETY	Working Load Limits	
	50kg	

code	price	50+
FHS017HD	£6.50	£5.85

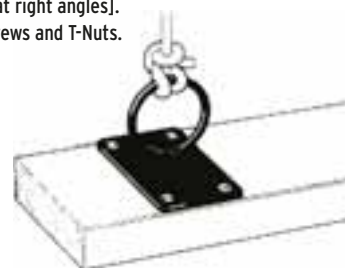
## RING PLATES - NOT FOR LIFTING

### Ring Plate

A very popular multi-purpose fitting suitable for a wide variety of uses. For flying lightweight items We also have available a ring plate with a stronger oval ring in accordance with BS 7906-1:2005 [see previous page] that is suitable for Lifting purposes. Ring plates are often fixed to the top rail of masking flats to enable a temporary rope from the fly floor to be attached to the top of the flat to assist walking the flats up.

Designed to fit nominal 3" timber as shown. Black powder coated. Size: 68 x 45 x 60 mm depth from flat [with ring at right angles].

Fixings needed: 4 off M5 csk machine screws and T-Nuts.



code	weight	price	100+
FHS017	102g	£3.00	£2.70



## D-Ring and Keeper

For flying lightweight scenery when the direction of pull can be variable. We now only sell the stamped keeper and d-ring as part of a kit, but an unmarked non-lifting version of the keeper is now available to be used as a heavy-duty grummet. Size: 120 x 28 mm. Fixings needed: 4 off 5 mm csk machine screws.

SAFETY	Working Load Limits	
	FHS002HCO	50kg

code	description	price	20+
FHS092K	D-Ring and Keeper	£6.50	£5.85
code	description	price	100+
FHS092G	Heavy Duty Grummet [non lifting]	£3.50	£3.15



## Hanging Irons

This traditional fitting is used to secure lines to the bottom rail of flats. The rounded internal surface of the ring allows rope to be tied directly to the fitting, or wires can be secured with a 1.5 t bow shackle as shown [page 200]. This fitting must be bolted to the flat. The holes are designed to align with 75 x 25 mm nominal timber. It has a lip to hook under the rail and the eyes can face in or out. The finish is black powder coated. Size: 140 x 50 x 35 mm. Fixings needed: 2 off 5 mm csk machine screws and T-Nuts.

SAFETY	Working Load Limits	
	FHS013	100kg
	FHS013R	100kg



code	description	price
FHS013	Eye out [standard]	£13.50
FHS013R	Eye in	£13.50



## Top Batten Clip

This clever fitting allows cloths to be rolled-up and shortened without resorting to the bad habit of cutting slots through the canvas for the flying wires [Argh!]. An absolute must for touring companies and can be of help to painters needing to reduce the cloth size to fit paint frames. Black powder coat finish. Use one clip for every 2 m of batten. Size: 170 x 25 x 78 mm.

SAFETY	Working Load Limits	
	50kg	

code	weight	price	20+
FHS001	426g	£6.30	£5.67



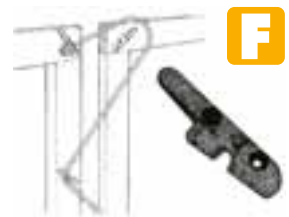
## THROW LINE AND CLEATING GEAR

### Clummet®

This popular cast-alloy fitting was designed by Flints to replace the old throw line cleat. Its smooth shape makes throwing lines easier and the bridge allows the sash to be tied off without requiring a separate grummet. By using a Clummet® on both flats the line can be quickly swapped for left-handed throwers. They should be fixed at a 30° - 40° angle near the top of the flat. On tall flats, extra Clummetts® should be positioned at equal intervals along the stile to draw the middles together. Traditionally, No.6 jute sash has been used for throwlines but 8 mm matt black polyester is now a more popular and stronger choice. These cords can be found on pages 220 and 222. Size: 85 x 12 x 22 mm. Fixings needed: 2 off No.8 csk wood screws. Weight: 68 g.

Clummetts® can also be used to tidy up ropes and extension leads by using the following method: Trap a loop of cord under the bridge, draw it through the coil of rope to be hung up and then hook the loop over the cleat. We now also stock ready-made 450 mm EWL loops in 8 mm braided cord. Halls No.6 Cleats are no longer made.

code	description	price	100+
FHS006	Clummet	£3.95	£3.55
FHS006LOOP	Loop	£3.62	



## LUG PLATE - NOT FOR LIFTING

### Lug Plate

Essentially a ring plate with the ring cut off, use with Shackle or Quick Link of your choice. We've introduced this after a customer query for such a fitting to be used with chain and thought it had legs! The Lug plate has the security 4 x fixing holes and a snug 18 mm lug/eye that can be fitted with a most of our Quick Link/Shackles.

Internal Eye (Width): 18 mm, Internal Eye (Height): 18 mm, Staple Thickness: 6 mm, Hole centres: 50 x 27 mm, Fixings Required: 4 x 5 mm CSK Machine Screws



code	price
FHS061	£2.95
FHS061SC	£2.75



### Tie Off Cleat

Used for securing the sash when line and cleating flats. The cleat grips the sash against the timber. They should be fixed 700 mm from the ground so they are both comfortable to tie off and also so the sash does not become a trip hazard by trailing on the ground when the flats are run. Made from cast iron and painted black. Size: 75 x 30 x 9 mm from flat. Fixings needed: 2 off No.8 [4 mm] csk wood screws.

code	price	100+
FHS007	£3.40	£3.05



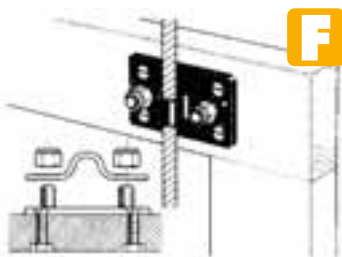
# SCENERY FITTINGS

## GRUMMETS

Grummets are only under significant load while flats are being initially raised into position. The Open Grummet is not designed to be used on the top rail of flats but purely as a wire guide on the intermediate shoe rails, therefore it should never be subjected to high loads. Grummets should not be used for lifting. WLL's given are for guidance purposes only.

### Two-part Grummet

Designed by Flints with safety in mind. They are design checked and batch-tested. The loose part is secured with two M8 Nyloks [supplied] to our standard backplate. Black powder coated. Design right applies. Size: 68 x 45 x 20 mm. Fixings needed: 4 off 5 mm csk machine screws and T-Nuts.



### Opera House Grummet

Flints makes these fittings for the Royal Opera House. They allow the ferrules on made-up wire ropes to pass through the 17 x 45 mm slot. They are quicker to use than the Two-part Grummet and considerably stronger than Open Grummets. Black powder coated finish. Fixings needed: 4 off 5 mm csk machine screws and T-Nuts. Now available as self-colour for welding to steel frames.



SAFETY	Working Load Limits
	100kg

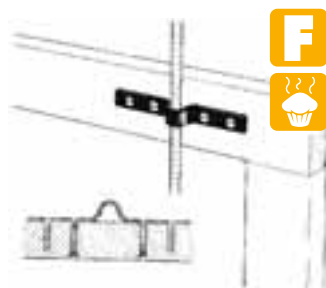
SAFETY	Working Load Limits
	FHS002HCO 50kg

code	price	50+
FHS041	£3.50	£3.15

code	description	price	100+
FHS010MP	Black Finish	£3.25	£2.90
FHS010MPC	Self-colour	£2.95	£2.65

### Grummet

A conventional grummet for securing flying wires to the top of flats. This cheap strong fitting should always be fixed with two machine screws and two wood screws. The grummet can be subjected to significant loads during the initial raising of the flats. Once raised, virtually all the strain will be transferred to the bottom rail. The finish is black powder coated. Size: 95 x 16 x 15 mm. Fixings needed: 2 off No.8 or No.10 [4 or 5 mm] csk wood screws, 2 off 5 mm csk machine screws and tee nuts. As usual, during our testing we find the wood breaks well before the grummet is affected. Now available as self-colour for welding to steel frames.



### Wire Saver Grummet

When raising a piece of flattage from a horizontal position to vertical you can put enormous pressure on the wire rope if it sits on a sharp edge, which could damage your wire. With this simple fitting, the wire sits on a 90° curve cushioning any stress point.

This new fitting was invented by Steve Macluskie, Lecturer at Royal Conservatoire Scotland, specialising in Technical Stage Management. We were so impressed by the simplicity of this fitting and it makes a perfect addition to our own range of in house developed scenery fittings.

Steve initially submitted his idea for the fitting to the ABTT Virtual Ideas Platform who help people with innovative ideas/solutions to collaborate with industry partners to help develop their ideas. We at Flints have a long established supply chain of creating bespoke scenery ironmongery so we were the perfect fit! Fitting Width: 85 mm, Overall Height: 54 mm, Fitting Depth (including curve): 40 mm, Wire Recess Width: 45 mm, Wire Recess Depth: 18 mm, Hole Centres: 67 x 27 mm, Fixings Required: 4 x 5 mm CSK Machine Screws



SAFETY	Working Load Limits
	FHS002HCO 50kg

code	description	price	100+
FHS010	Black Finish	£2.00	£1.80
FHS010SC	Self-colour	£1.80	£1.60

### Open Grummet

This fitting was designed by us to overcome the problem of flying wires becoming trapped behind grummets on touring sets. The wire is simply twisted at right angles and pulled free. The fitting uses our standard plate size [68 x 45 mm] and should be used in the intermediate positions on flown pieces with the stronger Two Part or Opera House Grummets being used at the head of the flat. The finish is black powder coated. Fixings needed: 4 off 5 mm csk machine screws and T-Nuts.



SAFETY	Working Load Limits
	50kg

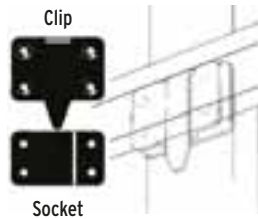
code	price	100+
FHS060SM	£3.50	£3.15
FHS060SMSC	£3.00	£2.70

code	price	100+
FHS011	£3.25	£2.90

## PELMET CLIPS AND SOCKETS

### Pelmet Clip and Socket

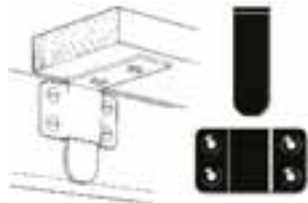
A useful pair of fittings for stiffening battens, hanging heavy picture frames, securing panels as well as fitting pelmets. The backing plate is our standard size so, if required, it can be routed in flush using a boss plate jig. The finish is black powder coated. Clip size: 68 x 65 x 13 mm. Socket: 68 x 40 x 10 mm. Fixings needed: 4 off No.8 or No.10 [4, 4.5 or 5 mm] csk wood screws for each part. Now available as self-colour for welding to steel frames.



code	description	price	100+
FHS003	Clip Black Finish	£2.95	£2.65
FHS003SC	Clip Self-colour	£2.85	£2.55
FHS004	Pelmet Socket	£2.75	£2.45
FHS004SC	Socket Self-colour	£2.65	£2.35

### Pelmet Iron

An alternative to the Pelmet Clip and better suited for fitting shelves to flats. The fit is loose enough to allow the shelf to be quickly removed without jamming. Also widely used for fitting on-edge stiffening battens. Black powder coated. Size: 80 x 25 x 52 mm. Fixings needed: 2 off No.8 or No.10 [4, 4.5 or 5 mm] csk wood screws.



code	description	price	100+
FHS005	Pelmet Iron	£2.25	£2.00
FHS004	Pelmet Socket	£2.75	£2.45

### Button Pelmet Clip and Socket

Made by Flints under licence to Triple E who designed this clever plate several years ago. Triple E kindly asked for their commission to be donated straight to The Theatrical Guild. The Button Clip allows easy location into the socket at any angle and is not prone to damage during transport. This fitting is a good choice for quick scene change items because of its ease of location. Button size: 68 x 45 x 11 mm. Clip size: 68 x 45 x 13 mm. Fixings needed: 4 off No.8 or No.10 [4, 4.5 or 5 mm] csk wood screws for each part. Now available as self-colour for welding to steel frames.



code	description	price	100+
FHS046	Clip Black Finish	£3.50	£3.15
FHS046SC	Clip Self-colour	£3.30	£2.95
FHS047	Socket Black Finish	£3.25	£2.90
FHS047SC	Socket Self-colour	£3.00	£2.70

### Flush Mounts

These small flush mounts are ideal for light panels. They are sold as a pair [i.e. two pieces]. Use screws no bigger than No4 [3 mm] or the heads will not clear. Projection: 3.5mm. Zinc-plated. See also page 169 for Pelmet Clips.



code	description	length	width	set	50+ sets
TOLMFM	Regular	44mm	38mm	£2.30	£2.07
TOLMFMS	Small	40mm	15mm	£0.89	£0.80

### Extension Iron and Long Socket

These Extension Irons are particularly useful for joining small extension flats to the main flat. By extending or reducing the height of masking flats, scenery can be made to fit a wide variety of touring venues allowing tall flats to be reduced in height to fit under fly floors or even into short vans. The socket is gently dovetailed to ensure an easy location yet a snug fit. Sizes: Iron length x width 300 x 25 mm, Socket length x width 153 x 66 mm. Fixings needed: Iron - 3 off No.10 [5 mm] csk wood screws, Long Socket - 6 off No.8 [4 mm] csk wood screws.



code	description	price
FHS048	Extension Iron	£3.98
FHS049	Long Socket	£3.50

### Rostra Dogs

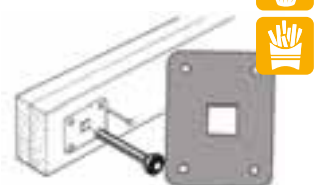
These clips can be used to speed up set changes by avoiding the need to bolt up folding gate rostra. They clip neatly around 3" x 1" [75 x 25 mm] or 3" x 1 1/4" [75 x 32 mm] PAR timber. They can also be used to secure rostra with fixed tops when the lack of access to the underside prevents bolts from being used. The finish is black powder coated. Sizes: 30 x 45 mm with a 41 mm gap for 1" [25 mm] nominal timber, 30 x 45 mm with a 57 mm gap for 1 1/4" [32 mm] nominal timber.



code	gap size	price	100+
FHS030	41mm	£2.50	£2.25
FHS031	57mm	£2.50	£2.25

### Bolt Plate

A slim steel plate which can be nailed into place to stop the square heads of M10 coach bolts wearing into the timber [page 284]. Now with rounded corners. Supplied self colour. Size: 50 x 38 x 22 gauge. Fixings needed: 4 off 2 mm wire or annular nails. Weight: 12 g. See also Spikey Washer [page 283].



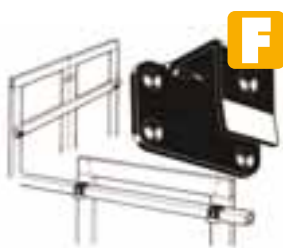
code	price	100+	1000+
FHS033	£0.28	£0.18	£0.14

# SCENERY FITTINGS

## FLATTAGE CLIPS AND FLUSHING PLATES

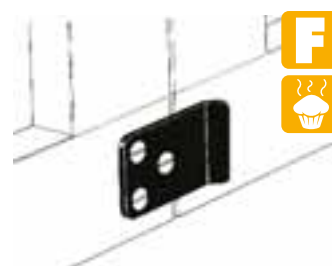
### Flattage Clips

Simple but endlessly useful. Our standard backplate is supplied with three sizes of protruding hooks. They are ideal for securing timber flats to steel trucks and can be used with the hook-up to provide a location for stiffening battens. A countersunk hole in the hook allows the battens to be fixed in place on flown pieces. Black powder coated finish. Fixings needed: 4 off 5 mm csk machine screws. Base plate size: 68 x 45 mm.



### Jointing Plates

A plain, drilled plate designed to be used as a flushing plate for line and cleated flats but often used as a door stop. The end of the plate is available either slightly folded, to help location, or flat. Black powder coated. Size: 68 x 45 x 6 mm. Fixings needed: 3 off No.8 or No.10 [4, 4.5 or 5 mm] csk woodscrews.



code	gap size	price	50+
FHS027	27mm	£4.25	£3.80
FHS028	30mm	£4.25	£3.80
FHS029	42mm	£4.25	£3.80

code	description	price	100+
FHS008	Folded	£2.25	£2.00
FHS008F	Flat	£2.25	£2.00

## PANEL HANGER

### Panel Hanger

These useful fittings can be used to quickly hang panels or flattage from scaffolding or trussing without the need for cables. For static displays, the panel simply hooks over the bar. There is an M10 threaded insert provided to enable an optional wing bolt to be tightened against the bar to prevent the panel from being accidentally dislodged. Very useful for touring display panels, exhibition stands and fast scenery changes. Black powder coated. Size: 300 x 50 x 65 mm deep [to fit tube up to 52 mm diameter]. Fixings needed: 4 off 5 mm csk machine screws and tee nuts.

code	description	price	100+
FHS050	Panel Hanger	£5.75	-
FIX3053	Wing Bolt	£0.57	£0.51

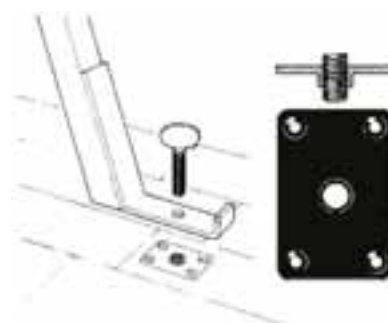


## BOSS, STUD AND PEG PLATES

### Boss Plates

This fitting has hundreds of uses but was primarily designed as a flush stage fixing for stage braces. It uses our standard backing plate and has a threaded insert to take M10 bolts or thumb screws. We also make a Reverse Countersunk Boss Plate [FHS014FM] which is designed to fix to the underside of rostra tops so that the strain pulls against the top. Black powder coated. Size: 68 x 45 x 3 mm [10 mm to base of boss]. Fixings needed: 4 off No.8 or No.10 [4, 4.5 or 5 mm] csk screws.

code	description	price	100+
FHS014	Boss Plate	£2.95	£2.65
FHS014M	Reverse countersunk	£2.95	-
FHS099	Self Colour Blank Back Plate	£1.65	-



### Round Boss Plate

This product was suggested to us by Alan Cohen and we agreed that it would be very useful to speed up setting boss plates on stage. A 51 mm hole saw will neatly cut through the usual hardboard stage cladding. The hardboard can be discarded and the plate set in the hole. The finish is black powder coated. Size: 50 mm diameter x 3 mm thick [10 mm to base of boss]. Fixings needed: Three No.8 or No.10 [4, 4.5 or 5 mm] csk wood screws. Weight: 52 g.

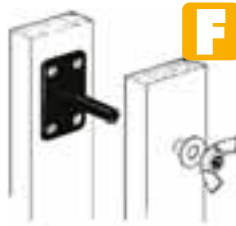
code	description	price	100+
FHS014AC	Round Boss Plate	£2.95	£2.65
TOLHS51N	Starret Fast Cut Holesaw 51 mm	£16.57	-
TOL1968	A10 Arbor with drill to suit 32 - 152 mm hole saws	£22.68	-





## Stud Plate

Simply a M10 threaded stud fixed to our standard plate. The stud plate solves a multitude of problems especially when access to the rear of flats is awkward. Essential on any fit-up. Black powder coated. Size: 68 x 45 x 50 mm depth from flat. Fixings needed: 4 off No.8 or No.10 [4, 4.5 or 5 mm] csk wood screws.



code	price	100+
FHS015	£3.25	£2.90

## Peg Plate

Similar to the stud plate but with the stud welded to the side of the fitting. If the boss plate and the stud plate will not solve your fixing problem then this one probably will. The finish is black powder coated. Stud length: 50 mm. Size: 115 x 45 x 10 mm depth from flat. Fixings needed: 3 off No.8 or No.10 [4, 4.5 or 5 mm] csk wood screws.



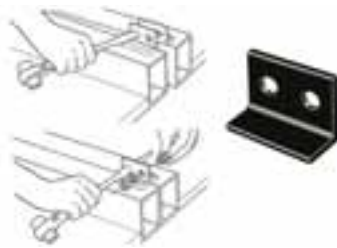
code	price	100+
FHS016	£2.75	£2.45

## FITTINGS FOR STEELWORK

### Podgalug®

Designed and patented for use with the ratchet podger. Podgalugs® are drilled with two holes, one for the podger to align the lug and the other for the bolt. Using these twin hole lugs will not only dramatically speed up fit-up times but will free up your engineers from lug making when they could be more usefully deployed on other tasks. Supplied self-colour ready to weld. The holes are 12 mm diameter designed for use with 10 mm bolts. They are positioned 22 mm out from the inner flange to provide good clearance for ratchet podgers. They conform to the Royal Opera House Podger Clearance specifications [honest – they exist!]. 'Podgalug®' is a registered Trade Mark of Flints. Podgalugs® are fully covered by Patent No. GB2331343 and are only available from Flint Hire and Supply Ltd.

For our comprehensive range of podgers why not visit Podgertropolis [page 338].



code	length	size	price	10+	100+	1000+
FHS043	60mm	40 x 40 x 5mm	£1.15	£1.00	£0.95	£0.90
FHS044	60mm	40 x 25 x 4mm	£1.05	£0.95	£0.90	£0.85

### Drop-in Clip

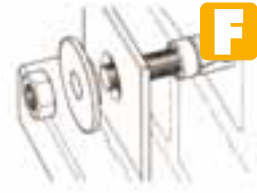
Folded and stamped from one piece of steel, the drop-in clip is supplied unpainted ready for welding in place. The slot is designed to accept 50 x 25 steel tube with a 10 mm diameter rod being fitted 20 mm in from the end. It will be found that the rod can easily be welded on the inside of the tube. The drop-in bar floor is a strong construction which can be set and struck at great speed. Now with rounded off corners on the receiving end. Size: 40 x 35 x 42 mm. Fixings needed: weld in place.



code	price	100+
FHS032	£1.95	£1.75

## Top Hat

A simple device to make fixing steelwork to walls much easier. To use, weld one of our Top Hat Lugs – which are pre drilled with a 25 mm diameter hole – to your steel frame. The large diameter hole allows you to drill straight into the wall with a masonry bit and insert the expanding fixing without having to move the heavy steelwork away. Place a top hat over the protruding stud and it will locate in the large hole. Tighten the nut onto the top hat and your steelwork is held in place. Overall diameter: 38 mm, Hole diameter: 13 mm, Flange diameter: 24 mm, Overall thickness: 7 mm, Lug size: 50 x 50 x 6 mm with a centred 25 mm Ø hole

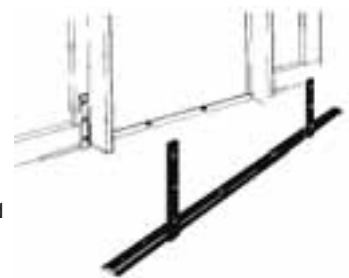


code	description	price	100+
FHS039	Top Hat	£2.25	£2.00
FHS039L	Top Hat Lug	£1.50	£1.35

## SILL AND REVEAL IRONS

### Sill Iron

Used to provide strength to door flats. They are made-up to suit your requirements, from a flat steel bar with a rounded top section. They should be ordered by stating the distance between the lugs. On a 3 x 1" timber flat with a reveal around the door this is generally the door opening plus 45 mm. The sill iron is drilled and countersunk in two places to screw downwards into the floor for standing sets and is also drilled to screw upwards into the bottom rail to give the flat stiffness. The iron will protrude beyond the lugs by 120 mm unless stated otherwise. Supplied painted black. Size: Stated width between lugs plus 290 x 200 mm height. Fixings needed: No.10 [5 mm] csk screws or M5 csk machine screws.



code	description	price
FHS034	Up to 1 m	£98.00
FHS03XM	Per extra 300 mm	£35.00

### Reveal Iron

Like the Sill Iron the reveal iron is used to provide strength to a doorway but this time the lugs are at right angles to the sill and are bolted through the door reveal. They are made to order and the measurement we require is the distance across the outside of the reveal. On wide reveals of heavy flats we recommend the use of two per doorway. Supplied painted black. Size: Stated width between lugs plus 8 x 200 mm height. Fixings needed: No.10 [5 mm] csk screws or M5 csk machine screws.



code	description	price
FHS035	Up to 1 m	£98.00
FHS03XM	Per extra 300 mm	£35.00

# STAGE BRACES & WEIGHTS

## STAGE & WALL BRACES

### Stage Braces

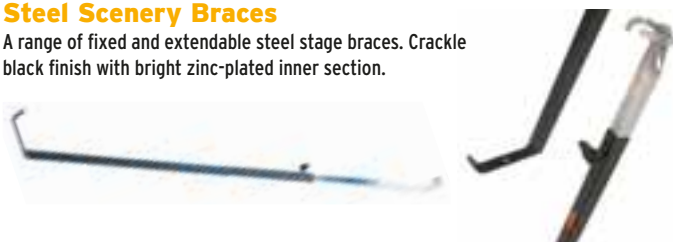
Extendable braces like these are used to support lightweight scenery. They are secured to the flats with a screw eye which locates with the hooks on the brace. The foot is designed to marry with our stage weight but it is also drilled for use with either Stage Screws or Stage Bolts into Boss Plates [page 170]. Made from tulipwood with bright zinc-plated fittings. We also include a small brace, useful for ground rows. Special sizes can be made to order. Fixings needed: 55 mm screw eyes [see below].



code	description	closed length	open length	price	10+
FHS018GRK		760mm	1mm	£37.38	£33.64
FHS018K		1.2m	2mm	£43.73	£39.36
FHS019K		1.7m	3mm	£49.78	£44.80
FHS020K		2.2m	4mm	£52.03	£46.83
FHS702	Spare Cowhorns			£6.60	

### Steel Scenery Braces

A range of fixed and extendable steel stage braces. Crackle black finish with bright zinc-plated inner section.



code	length	price	10+	
DOUT60600	2m	£45.25	£40.73	
code	closed length	open length	price	10+
DOUT60000	1m	2m	£74.60	£66.82
DOUT60100	1.5m	3m	£85.30	£76.40
DOUT60200	2m	4m	£95.97	£85.95

### Wall Braces

Similar to a Stage Brace but with an end fitting which will locate with a drilled angle iron mounted on studio walls. This enables the studio floor space to be kept clear whilst holding the flats solidly in place.



code	closed length	open length	price
FHS021K	1.2m	2m	£38.81
FHS022K	1.7m	3m	£44.14

## BRACE ACCESSORIES

### Stage Screws and Stage Bolts

The Stage Screw will drive easily into timber floors to secure stage braces in place without the need for weights. The Stage Bolt serves the same purpose but is used in conjunction with a Boss Plate [see page 170].



code	description	price	20+
FHS024	Stage Screw	£4.35	£3.90
FHS025	Stage Bolt	£2.85	£2.55

### Screw Eye

The most popular way of attaching stage braces to flats. The 55 mm x 12 g size is the best size for this purpose. A full range of screw eyes are available [page 280].

NB: Brace Eyes are no longer made.



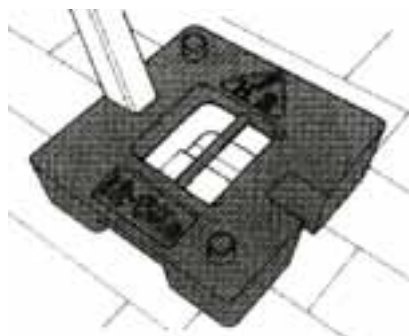
code	description	size	size	price	100+
FIX3161	Screw Eye	55mm	55mm	£0.29	£0.26

## STAGE WEIGHTS

### Stage Weights

Flints famous 12.5 kg\* Stage Weights are made of cast iron with a malleable iron carrying handle. Why 12.5kg? Many years ago stage weights were typically 15 kg, but modern manual handling practice is to limit loads to 25 kg, hence a 12.5 kg stage weight in each hand. They stack easily on their location lugs and have slots which let them sit safely on Stage Braces and French Braces.

The central area is hollowed right through so they cannot be used as ashtrays [nostalgia] or nail stores! The top edge has deliberately not been rounded over so it remains useful for cutting sash or wire with a hammer. Flints holds massive stocks of Stage Weights both for hire and sale. We can customise Stage Weights with your logo for orders of fifty plus. \*Weights can vary plus or minus 5%. Design right applies. Standard weights are supplied painted black but custom weights are self-colour. Size: 211 x 211 x 60 mm. The big question is "Where do they all end up?"



code	description	weight	price	10+	76+
FHS023	Stage Weight	12.5kg [+/-5%]	£38.50	£36.50	£34.50
FHS023L	Custom Logo Weight		P.O.A.	[50+ minimum order only]	

## TV Pattern Weights

Similar to our standard Stage Weight but with the addition of a 29 mm receiver with locking-off wing bolt. Supplied painted black. \*Weights can vary plus or minus 5%. Stage weights do not qualify for free delivery.



code	weight	price	10+	80+
FHS023TV	12.5kg [+/-5%]	£57.35	£51.62	£48.75

## Counterweights

Our 10kg\* Counterweight has two large holes with rounded entries to allow ropes or karabiners to pass through for hauling to the fly floor. Supplied self-colour. Delivery charged at cost. \*Weights can vary plus or minus 5%. Prices are for each weight. Size: 325 x 153 x 42 mm [Lug width: 60 mm].



code	weight	price	10+	50+
FHS109	10kg [+/-5%]	£39.90	£33.55	£31.50

## WEIGHT SKATE

### Weight Skate XL

Flints is synonymous with Stage Weights but we haven't ever stocked anything to help you move them around... but now we have the Weight Skate; designed to carry up to 24 stage weights with a welded steel frame that weights neatly stack into. Think of this like a very fancy and much safer dolly. The frame extends on two sides for you to have a two handed grip whilst manoeuvring. Great for moving weights around but also a compact weight storage frame with heavy duty braking castors and a black finish, so can be discretely stowed away backstage. The Weight Skate can also be customised with your own logo if you wish, please get in touch with us for a quote!

Specification: Dimensions: 53cm (W) x 52cm (H) x 54cm (D)



code	description	width	height	depth	price
FHS023WSXL	Weight Skate XL	53cm	52cm	54cm	£400.00
FHS023WSXLK	Weight Skate XL + 20 Stage Weights	53cm	52cm	54cm	£995.00

## SANDBAGS

### Sandbags

Made from heavy canvas with strong webbing which secures the 70 mm diameter galvanised ring. They are sold empty or filled and are fitted with a heavy-duty zip and velcroed webbing to save having to sew them up after filling. We also have a black version. Sandbags are the preferred weight for the retrieval of otherwise unloaded hemp lines from the grid but obviously they have many other uses.

SPECIFICATION: Size: 300 x 200 x 70 mm [thickness when filled]. Approximate weight when filled: 3.5 kg [+/-5%]. See also Hessian Sandbags for filling on page 108.



code	description	price	10+
FHS026	Unfilled plains canvas	£9.19	£7.88
FHS026B	Unfilled black canvas	£9.66	£8.40
FHS026FK	Filled plain canvas	£10.90	£9.80
FHS026BFK	Filled black canvas	£10.90	£9.80

### Heavy Black Water Resistant Weight Bag

These black bags have a watertight screw top 3.5 L container inside them and a drawstring top. They can be filled with water, sand [or marble dust], steel shot or lead shot giving a variety of weights up to a maximum of 25 kg. When used with water they can be toured empty and filled at each venue with a measured amount of water to give your desired weight. The Weight Bag is supplied unfilled. For Marble Dust, steel shot, and lead shot see alongside [ ]. This new version of the Weight Bag includes an outer sleeve which protects the straps from wear and is fully rated to the working load limit of 25 kg with the certificate of conformity included.



code	capacity	price
FHSHWB	25kg	£96.66

### Pipe Sling Weight Bag

These sand bags are manufactured from heavy duty water repellent black Cordura. They are double seamed with zipped openings for easy filling. Supplied empty.



code	capacity	price
DOUG3301	16kg	£53.67

### Small Tubular Weight Bag

These neat small steel shot bags have a variety of uses and are often preferable to using solid sash weights which can be noisy or cause injury. Fitted with a 25 mm diameter ring at the top. Weights can vary plus or minus 5%. Size: 150 x 50 mm [when flat].



code	weight	price
FHS026T	500g [+/-5%]	£12.95



# STAGE BRACES & WEIGHTS / CLEATS

## Sausage Weight Bags

Can be used to weigh down the base of cloths and prevent light leaks. The bags with delta rings can be used to help ropes fly-in or for quiet sash window counterweights. We now fill these bags with steel shot to avoid unnecessary handling of lead by our staff. They are slightly lighter than the old ones but still really heavy!



code	description	Colour	weight	length	price
FHSROH5	Plain	White	3kg	500mm	£27.70
FHSSWB5	Delta rings each end	Black	3kg	500mm	£32.58
FHSSWB1	Delta rings each end	Black	6kg	1m	£53.70

## WEIGHT FILLING OPTIONS

### Lead

We are keen to avoid our staff being exposed to lead so we now use steel shot whenever possible. The steel shot we supply is of excellent quality and is only a little lighter than the lead shot. We still sell lead shot but only in sealed units.

### Lead Shot

For filling very heavyweight bags. The density of solid lead is 11,340 kg/m<sup>3</sup>. A one litre paint kettle filled with lead shot would weigh 7.95 kg.



code	weight	price
FHS026LS	5kg	£35.00

### Steel Shot

For filling heavyweight bags. The density of solid steel is 7,850 kg/m<sup>3</sup>. A one litre paint kettle filled with steel shot would weigh 5.6 kg.



code	weight	price
FHS026SS	5kg	£28.56

### Marble Dust

We use Marble Dust to fill our sand bags as it is clean and supplied very dry. The density of solid marble is 2,563 kg/m<sup>3</sup>. A one litre paint kettle filled with marble dust would weigh 1.92 kg. We no longer sell Marble Dust by the kilo and instead get them pre bagged into handy 4 kg bags. We took this decision to minimise airborne dust in the warehouse which is not only a health hazard but also means we have to tickle everything with a feather duster before we send it out! Grain size: 300 - 710 micron.



code	weight	price
PAT8674 <b>NEW</b>	4kg	£4.50
PAT867B	25kg	£22.62

## CLEATS

Cleats should be fitted at a slight angle to the direction of the pull of the rope. The rope should make one full turn around the main body of the cleat before crossing over the arms three or four times. The final locking hitch should only be done when there is no load on the rope or it will become jammed.

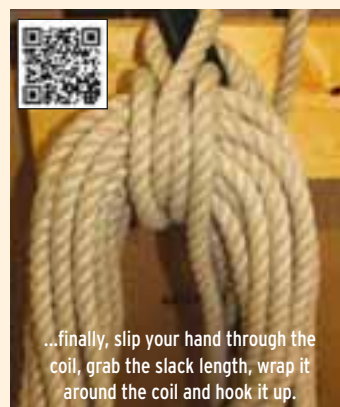
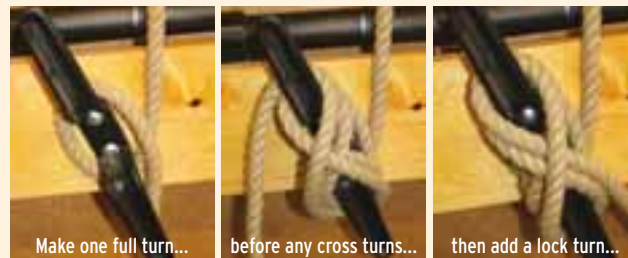
### Flyrail Cleats [Cast Iron and Alloy]

Specialist fittings intended for tying-off manila and polyester ropes. These fittings should be securely bolted to a fly rail or wall and are intended to take the heavy loads associated with hand-hauled flying. To keep the fly floor clear of lines try to choose the largest cleat possible so the excess line can be neatly stored on the cleat. Fixings: M10 bolts or coach screws.



code	Material	length	price
WIR454	Cast Iron	225mm	£17.33
WIR455	Cast Iron	300mm	£17.75
WIR455A	Aluminium	285mm	£25.09
WIR456A	Aluminium	375mm	£33.47
WIR456	Cast Iron	375mm	£21.75
WIR457	Cast Iron	450mm	£29.00
WIR457A	Aluminium	450mm	£58.57

### Tying ropes to cleats



If the cleats are very large it may be possible to just hook any excess rope over the cleat. Normally this is not possible and another method is needed. Coil up the excess rope working away from the cleat but leave about 1 m slack between the cleat and the start of your coil. Working outwards towards the loose end allows any twist to escape. Finally, pass your hand through the coil and pull the slack through, wrap it around the coil, twist it then place the loop over the cleat so it holds up the coil.

For the demo video visit our YouTube channel [www.youtube.com/flintstheatre](https://www.youtube.com/flintstheatre).

**There may be times when a Rope Clutch or Rope Lock [page 240] or the lovely Tibloc Ascender [page 359] might be more appropriate for your job.**



## Nylon Black Cleats

A range of very strong but light marine nylon cleats offering excellent value. The bitter end can be tied between the cleat's legs.



code	length	fastening ø	price
BAR250	75mm	3mm	£2.90
BAR251	100mm	4mm	£3.90
BAR252	125mm	4mm	£6.80
BAR253	170mm	5mm	£8.88
BAR254	210mm	6mm	£12.90
BAR255	245mm	8mm	£23.10

## Cleat Hooks [Galvanised]

A commercial quality fitting with two arms, around which sash cord or similar can be tied off temporarily. These cleats will fracture if the fixings are overtightened or if the arm is hit. We recommend them only for light items such as blinds. For heavier items needing small cleats choose the strong nylon cleats listed above.



code	length	price
WIR450	75mm	£1.35
WIR451	100mm	£1.47
WIR452	125mm	£2.59
WIR453	150mm	£2.50

## Small Brass Cleat

Economically-priced smart cleat measuring 75 mm overall. Useful for nylon blind cords, flag halyards etc. Includes two brass 19 mm screws.



code	length	price
WIR449	75mm	£2.15

## CAM AND JAMMING CLEATS

### Cam Cleat

These cam cleats take ropes from 6 to 12 mm Ø. The tooth design causes minimum rope wear. The rope can be pulled easily through the cams in one direction only. They are fitted with a removable stainless wire fairlead.



code	weight	fastening ø	holding power	price
BAR721	46g	5mm	230kg	£24.49

### Nite Ize Cam Jam

No good at knots? Knot to worry, thread your rope through the cam and it will lock off the rope for you, then lift the cam to release. Great for tensioning smaller diameter ropes/cords with a durable aluminium snap hook for ease of use. See also the knot books on page 402. Comes in 2 sizes to accept ropes from 2 to 5 mm (Max Load: 127 kg) or 3 to 9 mm (Max Load 227 kg)



code	rope diameter	price
SAFNCJSA01R3	2-5mm	£8.50
SAFNCJLA01R3	3-9mm	£11.62

### Nylon Tubular Cleats

A handy small tubular cleat to guide and lock small cords. The cord is quickly and effectively locked by pulling it into the V shaped jaw. Suitable for relatively light applications only.

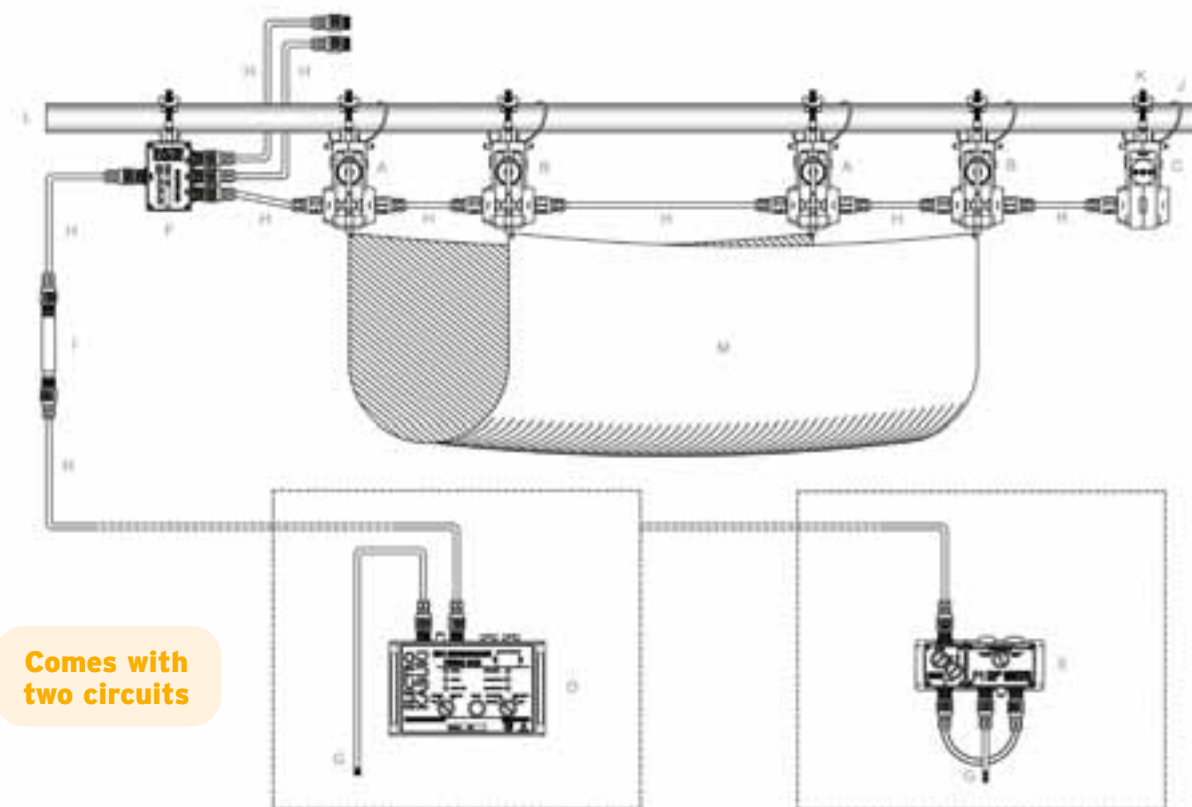


code	length	fastening ø	max line ø	bore	price
BAR401NY	55mm	4mm	6mm	8mm	£2.21
BAR402NY	80mm	6mm	10mm	13mm	£3.14

## Electro Kabuki

The EK2 is the latest development of the highly successful Electro Kabuki system. At the heart of each unit is a powerful and dependable magnet which holds a pivoting hook. That's where you hang your load – whether it's for a curtain release, car reveal or a special effect drop. The system has now progressed into being a two-circuit system capable of "Flop and Drops". Typically, a "Flop and Drop" may be a flag or banner which firstly drops into view and then drops to the floor at the end of the scene. For maximum versatility the new firing boxes allow you to select either Circuit 1 or 2 or both. Furthermore, you can now choose between a Standard Firing Box or the DMX version. By using the DMX firing box you will also maximise the feedback information you gain from the LED status Indicators. On page 179 we have also included some useful Holding Magnets and a small Shot Bolt. Flints can also supply heavy-duty shot bolts and rotary solenoids. For projects outside the UK other voltages can be supplied.

## FLOP AND DROP BASIC LAYOUT



**Comes with  
two circuits**

### How it works

The basic system really could not be simpler! Each Electro Kabuki unit has a socket on each side. One is coloured blue and the other is coloured white. Each cable has a plug on each end. Yes, you've guessed, one is white and one is blue. Do I need to go any further?! Wiring up really is that simple.

- Just purchase a firing box and a "Power-In" cable – this cable has one end plain for you to attach your preferred plug type
- Purchase as many Electro Kabuki units as you need to perform your drop. Spacing for drapes is generally 1.0 – 1.5 m. They can be selected with clamps so the units can be attached directly to flying bars
- The DMX firing box requires an end of line unit for each branch
- Purchase a long Link Cable to reach from the control box to the first unit
- Purchase enough short Link Cables to join up all the other units
- Plug the system in
- Select Circuit 1, Circuit 2 or both
- Check continuity
- Press the fire button

### "Flop and Drop" Arrangement

If you require a "Flop and Drop" you will need to buy Electro Kabukis with two different circuits. Just select the desired circuit on the firing box for each part of the drop. Don't worry if you want to use them all together at another date. You can just select "Both" on the firing box. No extra cabling is required, all the cables can operate two circuits. Rather than positioning the units side by side, as shown in the diagram, you can also use the new "Back to Back" Bracket [see next page].

### Key to parts

- A** EK2 Electro Kabuki Circuit 1
- B** EK2 Electro Kabuki Circuit 2
- C** End of Line Indicator
- D** Sensing/DMX Firing Box
- E** Basic Firing Box
- F** Splitter Box [optional]
- G** Power In Cable
- H** Link Cable [various lengths]
- I** Cable Connector
- J** Safety Bond [a soft loop formed in 3 mm Ø wire will pass through the hole]
- K** Clamp for 42 – 52 mm tube
- L** Scaffold Tube [page 248], Truss Chord or Flying Bar
- M** "Flop and Drop" Cloth [special item made to order]

### Safety Information

The function of the EK2 Electro Kabuki System is to suspend a load and release it on command from a remote location. Although the equipment is highly reliable it must be remembered that NO SYSTEM IS 100% RELIABLE. The Electro Kabuki must therefore not be used in an application where untimely release of the load might cause injury, death or damage to property. Each mechanism is supplied with an instruction sheet. A full manual is available to download from the downloads section of our website – [www.flints.co.uk](http://www.flints.co.uk). It is the user's responsibility to read and understand the manual before using the system. It is important that the person specifying and operating suspension equipment is competent to do so.

## EK2 ELECTRO KABUKI LOAD RELEASE MECHANISM

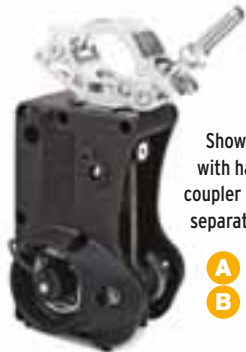
## EK2 Electro Kabuki Units

This award-winning design will reliably release weights of up to 50 kg. It can be used to drop items such as backdrops, dummies or cables on cue from a remote position. The load can be released as a vertical drop or at angles up to horizontal. The item is attached to a hook arm which pivots free when the magnet is energised. A clever spring is incorporated to throw the arm clear of the magnet when light loads are used, for example, with balloon drops. The latest models have a rubber sound dampening pad so the operation is virtually silent. A safety catch is incorporated so that the mechanism can be tested prior to the show without releasing the load. The catch should be locked on until it is safe to operate. The Electro Kabuki can be easily daisy-chained. The body has a thread at the top and at the back to take M12 bolts [max depth 20 mm]. Manfrotto half couplers can be attached to make a quick fixing to scaffold tubes.

- ✓ Now available in two circuits
- ✓ Sound dampened
- ✓ Now fitted with blue LED status lamp
- ✓ Built-in safety catch
- ✓ Also available in 110 V AC version [plus other voltages for work outside UK]
- ✓ No wiring necessary – just order ready-made cables!
- ✓ Continuous program of improvements – visit [flints.co.uk](http://flints.co.uk) for the latest details

Supplied with detailed instructions.

SPECIFICATION: Fitted with weatherproof AMP CPC Series 1 connectors. Power consumption: 6.6 W [at 20°C magnet coil temperature]. For a full range of Safety Bonds see page 216.



Shown with half coupler sold separately



## SAFETY

Breaking Load	Safety Factor	SWL
FHS002HCS	with shackle pin in slot	550kg

code	description	Type	price
SOLEK2P230C1	For 230 V AC supply	Channel 1	£335.00
SOLEK2P230C2	For 230 V AC supply	Channel 2	£335.00
SOLEK2P110C1	For 110 V AC supply	Channel 1	£335.00
SOLEK2P110C2	For 110 V AC supply	Channel 2	£335.00
<b>K</b> SOLEKMF300	Manfrotto half coupler 300 kg + bolt		£23.41
<b>N</b> SOLEKBTB	Back-to-back bracket [includes coupler]		£38.75
SOLEKFC15	Flight case for up to 15 units		£1,150.00

## General Solenoid Care

- ✓ Keep the matching surfaces spotlessly clean. Even a small iron filing stuck to the magnet will dramatically reduce performance. Try to appoint one person to take charge of re-setting.
- ✓ As these units are impulse rated they should not be energised for longer than 15 seconds. If they remain energised they will heat up and require a slightly different voltage to release.
- ✓ If you are bolting directly to the Electro Kabuki via the M12 threaded inserts please make sure the bolt length is correct. Using a bolt which is too long could damage the unit.
- ✓ A cable securing clip is provided on the new units but please don't yank or carry the units by swinging them from the cables!

## EK2 SENSING/DMX FIRING BOX

## EK2 Sensing/DMX Firing Box

This is the very latest design of control box which now serves five purposes.

- ✓ Checks the status of the system prior to firing [i.e. the position of the safety catches on the mechanisms and the continuity of the cabling circuit]
- ✓ Houses a push button for local firing of the units
- ✓ Controls which units are fired when the push button is used [i.e. Circuit 1, Circuit 2 or both]
- ✓ Houses DMX circuitry for remote firing of the units
- ✓ Capable of firing up to 200 Electro Kabuki 230 V AC units, or 75 Electro Kabuki 110 V AC units

✗ Not weatherproof

Supplied with detailed instructions.

SPECIFICATION: Fitted with colour-coded AMP CPC Series 1 connectors. Fuse rating: 8 A. The power cable is listed below and the other cables are listed in the wiring section opposite. Weight: 2.65 kg.

Compatible with previous EK Kabuki models



code	description	price
SOLAF2	EK2 Sensing/DMX Firing Box	£1,980.00
SOLB2A	Power in supply 2m cable [AMP to bare]	£30.00

## BASIC FIRING UNIT

## Basic Firing Unit

This basic unit now allows the operator to select Circuit 1, Circuit 2 or both but does not house DMX or sensing circuitry. Supplied with: detailed instructions.

SPECIFICATION: Fitted with weatherproof colour-coded AMP CPC Series 1 connectors, two fuse holders [one spare fuse] and a LED light to show when the system is armed. Weight: 1.5 kg.



code	description	price
SOLAF3	Firing Unit 110/230 V	£540.00
SOLB2A	Power in supply 2m cable [AMP to bare]	£30.00

## SPLITTER BOX

## Splitter Box

Although the Electro Kabuki mechanisms can be easily daisy-chained, there are still times when a splitter box can be useful. If you have three drops in different locations in a grid, or a high ceiling, a single cable can be run to a splitter box and then sent in three directions to the mechanisms.

SPECIFICATION: Fitted with an M12 threaded insert for easy connection to hook clamps or half couplers. Weight: 0.97 kg.



code	description	price
SOLEKASP3	Three-way splitter	£175.00
<b>K</b> SOLEKMF300	Manfrotto half coupler 300 kg + bolt	£23.41

## END OF LINE UNIT

### End of Line Unit

This unit forms part of the circuitry which proves electrical continuity in the cabling visible from the stage level. Only used in conjunction with the Sensing/DMX Firing Unit. The unit has three switches, all of which should be on for a single chain of Kabukis. Individual switches should be used when two or three chains of Kabukis are used in conjunction with the splitter box. A green LED on the unit indicates the cables are correctly connected.



code	price
SOLAEOLI	£244.00

## WIRING OPTIONS & ACCESSORIES

### Wiring Options

Wiring up the Electro Kabuki mechanisms couldn't be simpler. The supply end of each cable is pre-fitted with a blue male [pin] connector and the load end is fitted with a white female connector [socket]. The mechanisms and the firing box are colour coded to match. The AMP connectors used on the cables are weatherproof to IP65. All you need to do is choose the length of cable you need between the firing box and the mechanisms and also the distance between the mechanisms. Special lengths can also be made up but they are slightly more expensive. Please note that it is not possible to join the cables together without a connector (SOLA1C).

✓ Quick ✓ No specialist skills required

Wiring to plugs type SOL01DC and SOL02AC is as follows: earth on earth, live on terminal No.1, neutral on terminal No.2.



code	standard cable lengths	price
SOLB2A	Power in supply 2m cable [AMP to bare]	£30.00
SOLA05A	0.5m Cable	£41.00
SOLA2A	2m Cable	£45.00
SOLA5A	5m Cable	£58.00
SOLA10A	10m Cable	£74.00
SOLA20A	20m Cable	£106.00
SOLA30A	30m Cable	£140.00
SOLA1C	Connector	£36.00
code	non-standard cable lengths	price
SOLAMPSF	Power-in blue AMP connector [fitted to your cable]	£11.30
SOLAMPPF	Power-out white AMP connector [fitted to your cable] SOLAMPPF	£11.30
SOLCABLE	4 x 1.5 mm <sup>2</sup> black cable [price per metre]	£2.00
code	spares and accessories for solenoids	price
SOLCRINGS10	Spare coupling rings and fitting tube [pack of 10]	£38.00
SOLCCAPS10	Spare connector caps [pack of 10]	£52.00
SOLCBOLTS10	Clamp bolts [pack of 10] and Allen key	£17.00
SOLSRC20	Strain relief clips [pack of 20]	£16.00
SOLDRVEL1	D-Rings [pack of 10] and velcro [2 m]	£17.50
SOLF18A	24 V DC 8 A fuses for firing unit [pack of 10]	£16.00
SOL01DC	Spare plug for 24 V DC supply	£3.85
SOL02AC	Spare rectifying plug for 240 V supply	£22.81

## EK2 STARTER KITS

### EK2 Electro Kabuki Starter Kits

Electro Kabuki have put together these Starter Kits to give newcomers to the art of the reveal everything they need. Very popular among small companies and those wanting to try the system before making a bigger commitment, although don't forget Flints hire a slightly older version of the system (see page 404). The kits have two EK2 circuit 1 units and two EK2 circuit 2 units so you can stage simple drops or impressive "flop and drops". They come in both a 230 V and a 110 V version. Please note: Electro Kabuki restricts the supply to one Starter Kit per end user company.

#### Mechanisms and Clamps

2 x EK2 Unit, circuit 1, [no clamp]. Weight: 1.40 kg each, 2.8 kg total  
2 x EK2 Unit, circuit 2, [no clamp]. Weight: 1.40 kg each, 2.8 kg total  
4 x Manfrotto half coupler + bolt [loose]. Weight: 0.25 kg each, 1.0 kg total

#### Control

1 x Basic A-F3Firing Box, 110/230 V. Weight: 1.55 kg, 1.60 kg total

#### Standard Cables and Accessories

1 x Power Cable. Weight: 0.35 kg each, 0.4 kg total  
3 x 2 m Link Cable. Weight: 0.35 kg each, 1.1 kg total  
1 x 20 m Link Cable. Weight: 3.15 kg each, 3.2 kg total

#### Shipping details

Total net shipping weight: 12.70 kg  
Total gross shipping weight: 14.00 kg



code	volts	price	Tradeline
SOLA0900145	230V	£3,401.70	£3,401.70
SOLA0900146	110V	£3,401.70	£3,401.70

### Design Tips when using Holding Magnets

It is very difficult to pull an armature plate directly off a holding magnet. Well, we certainly can't. However, it is possible to slide the plate off by pushing hard with your thumbs – this is getting very technical. If possible try to design your mechanism so that the plate cannot slide off. Hinged lids work very well as the plate will need a direct pull. Incorporate a small spring if the door is very light. If you want to drop a picture from the wall consider placing a small lip under the picture so it has to fall forwards. Always ensure the plate and the solenoid make 100% contact, it is normal to allow the plate to move slightly to avoid any forced misalignment. Finally, keep the magnet faces spotlessly clean.



## HOLDING MAGNET

### Holding Magnet

This is a 35 mm diameter magnet which when energised releases its load. The applications are numerous – it could secure the lid to a drop box, release a light cloth, or make a picture fall from a wall. We recommend using our 40 mm diameter holding plate [armature]. A rubber grommet is supplied to allow some movement to ensure complete contact with both faces. If you want to release very light loads ensure that the voltage is accurately delivered to avoid residual magnetism. Adding extra weight or spring loading doors can be helpful design tips. Our holding magnets are supplied with a plug and socket connector with PG11 glands ready to take your cable. [See previous page for design tips when using magnets]



SPECIFICATION: Wiring information: earth on earth, live on terminal No.1, neutral on terminal No.2. Size: 50 mm long x 35 mm Ø. Fixings: One off 5 mm machine screw. Weight: 350 g Power Consumption: 8 W NB: As these units are impulse rated they should not be energised for longer than 15 seconds – our firing boxes are fitted with a momentary switch to avoid this happening. If using the firing box you will need to order a power feed cable [SOLB2A] and a length of cable [SOLCABLE] fitted with a white AMP connector [SOLAMPP]. You will need to connect the cable to the holding magnet. Wiring to plugs type SOL01DC and SOL02AC is as follows: Earth on earth, live on terminal No.1, neutral on terminal No.2.

code	description	price
SOL035	With plug for 24 V DC supply [excl. holding plate]	£150.00
SOL035AC	With plug for 230 V AC supply [excl. holding plate]	£172.43
SOL01DC	Spare plug for 24 V DC supply	£3.85
SOL02AC	Spare rectifying plug for 240 V supply	£22.81

## ARMATURE PLATES

### Armature Plate

These plates are surface ground electro nickel-plated and are the correct thickness for maximum performance from your solenoid.

SPECIFICATION: Size: 40 mm Ø x 6 mm thick supplied with 4 mm csk shoulder screw and rubber grommet with 6 mm of exposed thread. Weight: 50 g.



code	price
SOL40ARM	£18.13

## SMALL SHOT BOLT

### Small Shot Bolt

This device is ideal for light-duty safety catches on safety cages and lift access gates. They spring to lock and energise to release. It can also be used to drop light loads. It has a 10 mm stroke on its 8 mm diameter bolt and is supplied with flying leads. The unit is secured by its neck through a 16 mm hole with the nut provided. The reverse end of the stainless steel bolt is tapped to take a 3 mm bolt which could be used as an emergency release in the event of a power failure. The bolt slides on long life PTFE bearings. These solenoids are not suitable for heavy side loads. Please ask for details about heavy-duty solenoids. SPECIFICATION: These units are continuously rated for 24 V DC. You will need to provide a 24 V DC supply. Size: 40 mm Ø x 60 mm plus 12 mm long threaded neck [M16]. Weight: 460 g. Power consumption: 14 W



code	price
SOL40SHOT	£128.20

## TRUCK WINCHES

### Truck Winch

Designed for moving medium to heavy-weight stage trucks. The winch drum is capable of 25 m of travel. There is a choice of handle positions providing a 1:1 or 1:3 ratio. The lower sheaves are adjustable to maintain cable tension. It can be operated by one or two crew. Fitted with a simple but effective pin brake. The winch is supplied with a trip meter for the accurate positioning of trucks even in blackouts. The finish is black powder coated. Additional handles are also available for dual operation. SPECIFICATION: WxH 550 x 1,090 mm. Cable: 5 mm. Fixings: 6 off M10 bolts or coach screws.



code	description	price
FHS510T	Truck Winch + One handle + Trip meter [25 m travel]	£3,750.00
FHS505	Extra Handle for all winches	£217.00

### Winch Meter

This unit shows 0 – 999999 on 10:1 ratio They are used on our truck winches but they can be used for other applications. Axle: Ø 6 mm.



code	description	price
FHS5011	Type CRSRLCB10:1J2010	£130.30

## LOW LEVEL RETURN PULLEY

### Low Level Return Pulley

A 230 mm diameter aluminium sheave grooved to take 6 mm wire rope mounted in between two 300 mm square plates so that the overall thickness is just 18 mm. Fitted with an Oilite bush bearing and nylon side washers. These pulleys were designed by Flints to act as return pulleys for our truck winches and can be mounted within the thickness of a 19 mm ply floor. Fixings: four M10 coach screws which are accessed through large diameter holes in the top plate but are hidden within the 18 mm depth when tightened down.

SPECIFICATION: Sheave Ø: 230 mm. Thickness: 18 mm. Max wire rope Ø: 6 mm.



code	description	weight	price
FHS503	Whole assembly	4.9kg	£111.50
FHS504	Sheave only	868g	£44.65