

SOLENOIDS

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

Holding Magnet	code	Tradeline
With plug for 24 V DC supply [excl. holding plate]	SOL035	£138.10
With plug for 230 V AC supply [excl. holding plate]	SOL035AC	£146.75
Spare plug for 24 V DC supply	SOL01DC	£3.85
Spare rectifying plug for 240 V supply	SOL02AC	£16.75

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.

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.

Armature Plate	code	Tradeline
	SOL40ARM	£13.00

SMALL SHOT BOLT



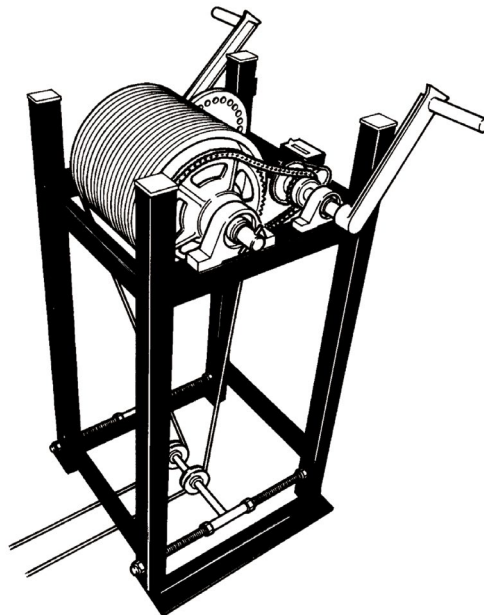
Small Shot Bolt This device is ideal for light-duty safety catches on safety cages and lift access gates. They spring to lock and energise to release. It can also be used to drop light loads. It has a 10 mm stroke on its 8 mm diameter

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

Small Shot Bolt	code	Tradeline
	SOL40SHOT	£97.65

TRUCK WINCHES

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. Truck winch handles are also sold separately.

SPECIFICATION: WxH 550 x 1,090 mm. Cable: 5 mm. Fixings: 6 off M10 bolts or coach screws.

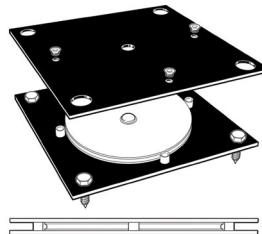
Truck Winch	code	Tradeline
Truck Winch + One handle + Trip meter [25 m travel]	FHS510T	£3,750.00
Extra Handle for all winches	FHS505	£217.00



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.

Winch Meter	code	price
Type CRSRLCB10:1J2010	FHS501I	£120.70

LOW LEVEL RETURN PULLEY



Low Level Return Pulley A 230 mm Ø aluminium sheave for 6 mm wire rope mounted between two 300 mm square plates so that the overall thickness is just 19 mm! Fitted with an Oilite bush bearing and nylon side washers. These pulleys are designed to act as return pulleys for our truck

winches and can be mounted within the thickness of a 19 mm ply floor. Fixings needed are four M10 coach screws which are accessed through large diameter holes in the top plate but are hidden within the 19 mm depth when tightened down.

Low Level Return Pulley	code	price
Whole assembly	FHS503	£111.50
Sheave only	FHS504	£44.65

WINCHES & LIFTING GEAR

CHAIN HOISTS



Tralift Chain Hoists A hoist that's hand-operated and triple-spur geared, with an automatic brake with double pawls. All steel construction, with steel alloy chains, and high carbon hooks. Simple to install and use. Prices include both the lifting chain and hand chain. The hand chain is one metre shorter than the height of lift.

Black! With a 12 m lift

We also stock a 1t black unit with a 12 m lift. For Chain Buckets see page 328.

LEVER HOISTS



Bravo™ Lever Hoists Ideal for lifting, pulling, positioning, and adjusting heavy weights. Available in sizes from 250 kg up to 6,000 kg. Please phone for details of the larger sizes.

- ✓ Robust design
- ✓ Adjustable lift
- ✓ Can be used in any position
- ✓ Rotates around 360° on swivel hooks
- ✓ hooks with overload indicators
- ✓ Automatic brake with double pawls
- ✓ Self-lubricating chain to EN 818
- ✓ Standard lifting heights can be increased to 6 m as an option

Tralift Chain Hoists		code	list	price
model	WLL lifting height chain falls			
272999	1t 3 m 1	LIF272999	£208.00	£149.76
273269	1t 6 m 1	LIF273269	£220.00	£158.40
280629	1t 9 m 1	LIF280629	£333.00	£239.76
106399 black	1t 12 m 1	LIF106399	£416.00	£295.00
245339	2t 3 m 2	LIF245339	£297.00	£213.84
245519	2t 6 m 2	LIF245519	£408.00	£293.76
250369	2t 9 m 2	LIF250369	£531.00	£382.32

Bravo Lever Hoists		code	list	price
model	WLL lifting height chain falls/type			
35919	250 kg 1.5 m 1 [4 x 12]	LIF35919	£112.00	£80.64
245649	500 kg 1.5 m 1 [5 x 15]	LIF245649	£157.00	£113.04
245659	750 kg 1.5 m 1 [6 x 18]	LIF245659	£219.00	£157.68
245679	1,500 kg 1.5 m 1 [7 x 21]	LIF245679	£282.00	£203.04

TRADELINE

Buy 2+= less 25% off list

Other ratings and lifting heights are available. Please ask for details.

TIRFORS®



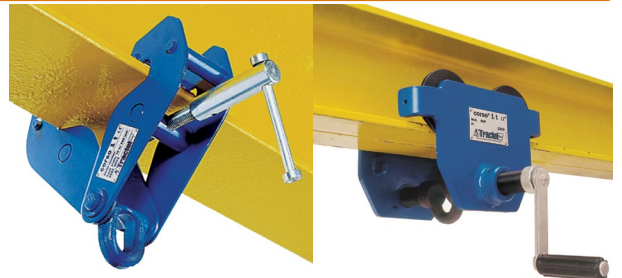
Tirfor® machines are portable manual hoists used with Maxiflex wire rope. They can be used to lift, pull, and position loads over great distances determined by the wire rope length. They are the ideal solution for precise location of heavy loads or the setting up of tension wires.

- ✓ No limitation in terms of wire length
- ✓ Manageable, lightweight, robust, powerful
- ✓ Increase load capacity with deflection sheaves
- ✓ Overload protection
- ✓ Precise load placement within millimetres. The wires are supplied separately and are fitted with a safety hook on one end. Flints can supply all Tirfor® equipment, please phone our Rigging Manager.

Tirfor®		code	list	Tradeline
Model	WLL wire rope Ø weight			
Tirfor® 508D	800 kg 8.3 mm 6.6 kg	WIRT508D	£650.00	£606.52

Maxiflex Wire Ropes		code	Tradeline
To suit Tirfor® 508D	length		
	10 m	WIRT50010	£149.00
	15 m	WIRT50015	£183.00
	20 m	WIRT50020	£232.00
	30 m	WIRT50030	£302.00
	40 m	WIRT50040	£380.00

BEAM CLAMPS AND PUSH TROLLEYS



Beam Clamps and Push Trolleys Beam clamps are ideal for securing chain hoists to a wide range of beams [other sizes available, please phone for details]. Push trolleys are fitted with steel wheels with bearings. Longer traverse bars are available to fit wider beams.

Beam Clamps and Push Trolleys		code	list	price
type	model WLL weight beam widths			
Clamp	LT-1B 1,000 kg 4.8 kg 75 - 230 mm	LIFLT1B	£108.00	£77.76
Clamp	LT-2B 2,000 kg 5.6 kg 75 - 230 mm	LIFLT2B	£126.00	£90.72
Trolley	500 500 kg 8.5 kg 50 - 220 mm	LIF23309	£138.00	£99.36
Trolley	1000 1,000 kg 10.5 kg 58 - 220 mm	LIF23319	£174.00	£125.28
Trolley	2000 2,000 kg 18 kg 66 - 220 mm	LIF23329	£267.00	£192.24

Choosing a hand winch

Hand winches are economical to purchase and very reliable. Some of the winches that we list in this catalogue are quiet in operation but others will make a slight clicking noise. Apart from the truck winches [featured on page 159, and the Line Driver which is not self-sustaining in the "Down" mode] they are all self-sustaining so if the handle slips from your hand they will hold the load. When choosing a winch try to choose one with plenty of spare capacity. As a rule of thumb, the working load should be reduced by 10% for each extra layer of rope on the drum so if you are lifting weights near the winch load capacity try to keep the wire to a single layer. There should always remain three full turns of wire on the drum in its maximum out dead [see also "Attaching wire to a plain drum winch" on page 162]. Please be aware that the speed of hand winches may make them an unsuitable choice for items which need to move in front of an audience – or to put it another way – they can be very slow.

SMALL HAND WINCHES AND LINE DRIVERS



SG Hand Winch [125 kg] This small aluminium spur gear hand winch is suited for scenic applications such as raising shutters or small drawbridges. Also handy for stowing light but bulky items in roof voids. They are silent in operation and have a self-locking spring operated load pressure brake. The handle is removable. Size 130 x 130 x 116 mm out [270 mm with the handle in place]. Other sizes are available, please phone our Rigging Manager for more details.

SG Hand Winch 125 kg

Working Load Limit [1st layer]	125 kg	[last layer]	125 kg
Wire rope size	3 mm	Capacity 1st layer	2 m
Total Capacity	20 m	Lift per crank	135 mm
Effort on crank	12 kg	Weight	3 kg

A full data sheet with dimensioned technical drawings can be downloaded from flints.co.uk

SG Hand Winch 125 kg

code	Tradeline
LIF0271008	£529.85



Line Driver This neat and very well designed unit will drive 10 mm braided ropes in either direction. It can be used to raise and lower shutters and heavy blinds. Its smart appearance and compact size allow it to be used in public environments such as auditoriums and schools. This winch does make a soft clicking noise when

being used. Constructed of black anodized aluminium and 316-grade stainless steel. Tip: Please ensure the top fixing bolt does not expose any sharp threads to the rope. This winch is not self-sustaining when moved to the "Down" mode. Suitable for light loads only. 8:1 ratio. Length: 128 mm. Width: 90 mm. Height: 58 mm. Fixings: 3 off 8 mm Ø.

Line Driver

code	Tradeline
Driver	PUL240010
Winch handle 250 mm Aluminium	PUL2021
	£410.00
	£72.70



GO-CS Hand Winches

[100 kg or 200 kg] A range of worm geared small winches which can be base- or wall-mounted. Ideal for short movement strokes such as ramps and draw bridges.

Compact, self-sustaining and quiet in operation with no brake ratchets. Meets the requirements of BS EN 13157.

Both winches are 109 mm high x 91 mm wide x 100 mm out [251 mm with shaft and handle in place]. Weight: 1.8 kg.

GO-CS Hand Winches	GOCS100	GOCS200
Working Load Limit [1st layer]	100 kg	200 kg
Working Load Limit [Last layer]	80 kg	100 kg
Wire rope size	3 mm	3 or 4 mm
Total Wire Capacity	9 m	4 or 2 m
Lift per crank	13 mm	7 mm
Effort on crank	6 kg	6 kg
Min load for brake to function	10 kg	10 kg

A full data sheet with dimensioned technical drawings can be downloaded from flints.co.uk

GO-CS Hand Winches	WLL	code	Tradeline
GOCS100	100 kg	LIFGOCS100	£91.98
GOCS200	200 kg	LIFGOCS200	£99.98

A version that uses 20 mm wide webbing is also available. Please phone our Rigging Manager for more details.

Don't forget that most orders over a value of £50 get economy delivery free of charge! Most orders over a value of £325.00 go carriage free with next day delivery!

Can't find what you want?

There is almost certainly a winch available to suit your needs, we just don't have the space to list them all here. Flints can supply Loadstars, Tiraks, Pilewinds, capstans and multiple-wire grooved drums. If we can't supply what you need we can probably advise on a company that can. Why not tap into our knowledge and give us a ring?

MEDIUM TO HEAVY-DUTY WINCHES



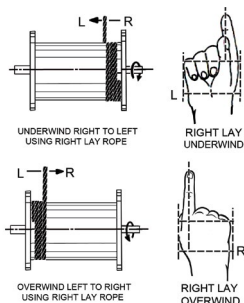
K-WB Hand Winches [250 kg - 750 kg] A worm gear winch of cast iron construction with the gears enclosed in an oil bath for smooth operation. It will make a clicking noise when hauling but is silent lowering. Features a self-locking friction type brake, hardened worm shaft, and adjustable crank radius. A good choice for flying bars which need occasional access for maintenance but it is normally too slow for use during performance. For transport reasons these winches are supplied dry. You will need SAE80 oil to fill the oil bath. Also available with grooved or multi-compartment drums, please phone our Rigging Manager for more details. Complies with BS EN 13157.

K-WB Hand Winches	250 kg	500 kg	750 kg
Lifting capacity [1st layer]	250 kg	500 kg	750 kg
Lifting capacity [final layer]	210 kg	425 kg	624 kg
Rope diameter	5 mm	6 mm	8 mm
1st layer rope capacity	4.8 m	7.9 m	9.2 m
Total capacity	11.3 m	29.1 m	49 m
Number of layers	2	3	4
Ratio	16:1	16:1	25:1
Lift per crank turn	20 mm	26 mm	20 mm
Effort on crank	9.2 kg	14.5 kg	16 kg
Weight	12.5 kg	21 kg	42 kg

K-WB Hand Winches	code	Tradeline
250 kg	LIF02422004	£388.50
500 kg	LIF0243000	£577.50
750 kg	LIF0244007	£871.50

Attaching wire to a plain drum winch

Most wire ropes [all the ropes we sell] are right-hand lay. The rope certificate may just use the abbreviation RHRL [right-hand regular lay]. If the RHRL wire is to be fed down the back of the drum [under wind] then it should be attached on the right-hand side so it works across towards the left hand side. If the RHRL wire needs to be fed down the front of the drum then it should be attached on the left-hand side and feeds towards the right. Always ensure that at least three full turns of wire remain on the drum at all times.



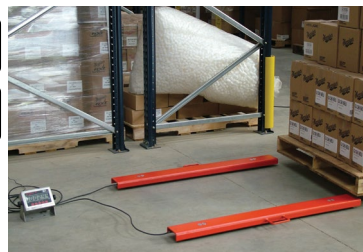
Swivel Clews are used to convert one wire from a winch or cradle to several drops for hauling bars. Swivel clews can occasionally tend to twist under load despite the swivel fitting. Flints is able to arrange for guide tubes or track runners to be fitted to the clew to help prevent this. Please ask for details. Spot the "deliberate" mistake in the picture*. See also Delta Rings on page 191.
*Refer to page 174 regarding "dead horses"

Swivel Clews	code	price	code	price
type	500 kg		1,000 kg	
Three-Way Swivel	LIFT41300	£51.30	LIFT41600	£74.60
Four-Way Swivel	LIFT41400	£53.50	LIFT41700	£78.69
Five-Way Swivel	LIFT41500	£55.88	-	-

A Note on Newtons

Technically a newton is the SI unit of force [symbol: N]. It is defined as the amount of force required to accelerate a mass of one kilogram at a rate of one metre per second squared. The newton is also the unit of weight. A mass of one kilogram near the earth's surface has a weight of approximately 9.81 newtons. One newton has the mass of a small apple! Throughout this catalogue reference is made to "kN" or kiloNewtons. To convert kN to kgf [kilogram-force] firstly multiply by 1,000 to get newtons then divide by 9.81. Therefore a sling tested to 25 kN could be converted to kgf by the following method: 25 x 1,000 = 25,000. Then divide by 9.81 = 2,548 kgf.

WEIGHING BEAMS



Load Beams It is now a prerequisite to mark the weight of scenery before it is flown. These beam scales are ideal for weighing large pieces of scenery up to 2 t. The beams are 1.2 m long and supplied with 4 m long cables to a remote digital indicator unit. Free UK mainland delivery. For hire details go to page 379.

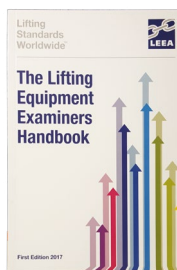
Load Beams	code	Tradeline
	WB2000KG	£649.00

LOAD CELLS



Sadly, none of you seemed to want to buy Load Cells, and as we hadn't sold one in over 10 years, the marketing team were forced to discontinue them. Must be because you can Hire them from us so easily! Our hire unit is model LLX 2.5 and is supplied with a copy of the current calibration certificate. See page 379 for hire details.

LIFTING ENGINEER'S HANDBOOK



The Lifting Engineer's Handbook & Quick Reference Guide [LEEA] A pocket reference and working tool for competent engineers or riggers to carry around for immediate use when required. Covers technical data and legislation concerning lifting equipment. Updated Version for 2017. Also available is the Lifting Equipment Examiners Quick Reference Guide. A pocket sized flip book designed for use on site. Barry thinks it is brilliant!

The Lifting Engineer's Handbook	code	price
	BKSLEHN	£7.50
Quick Reference Guide	BKSLEEQRG	£7.50

Check out some of our other useful books from page 374. Especially the Flints Pocket Ref!