ARBIL

LIFTING, JACKING & MATERIALS HANDLING

HIRE GUIDE

Why Arbil?

In this, the latest edition of our Hire Guide, we've tried to provide a flavour of what makes Arbil different.
If you're looking to hire a regular off-the-shelf chain hoist, Genie or Tirfor then you've come to the right place and if required, in large quantities too, from a fleet that has been expanding and developing for over 50 years.
But we also know from experience that many clients require help for the awkward or more complex jobs too, and whether we provide that in the form of technical advice and know how or in the provision of more specialised kit, we have a long history of listening carefully, identifying the key challenges and finding a solution.

Arbil in Action

Throughout the guide are a selection of case studies that give an insight into some of the more unusual jobs we get called in to assist with. Over the years, the provision of both equipment and personnel to lift, slide or weigh bridges and other heavy or intricate structures has left a substantial legacy in the form of the high capacity and often very unusual fleet we have today.

Group Activities

We also highlight other differentiating aspects of our business – Sales and Service are both every bit as important to our offering as Hire; they are each vital aspects of the package we provide, ensuring that you always get value for money, whether you hire, buy or have your own product serviced, tested or calibrated. Many of our clients require all three services. Our Engineering and Design capability further underpins our portfolio by providing the in-house expertise to manufacture the special (and often custom-made) fabrications and componentry that many jobs require.

We hope this guide will provide much of what you are looking for, but please let us know how we might serve you better still, as our fleet continues to adapt to the new requirements and demands of today and tomorrow.

SAFETY SYMBOLS


Ear Defenders


Eye Protection


Dust Mask


Safety Helmet


Protective Gloves


Protective Boots


Vertical Lifts only

Use at any Angle for Pulling or Lifting


Ensure Electrical Supply is Compatible


Ensure Load is Balanced and Stable


Ensure Safety Catches are Engaged

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Sales

Purchase or hire? Our large warehousing facilities and substantial buying power means that you can take advantage of competitive pricing and excellent product availability – whichever decision you make.

Our long-standing trading partnerships with the UK's leading lifting gear manufacturers makes Arbil the ideal source for all your lifting, jacking, winching and materials handling requirements.

And we manufacture too:

Wire rope slings and assemblies | Special chain assemblies | Nu-Mesh belt slings | Beams | A-frames and gantries | Lifting components | Jacking stools | Zwicky jacks

Email: sales@arbil.co.uk

Service & Testing

Comprehensive service and test facilities ensure a fast turnaround:

De-greasing tanks | Metal laundry systems | Chain polishing boxes | Horizontal test rigs up to 100 tonnes | Vertical test rigs | Hydraulic jack testers up to 1000 tonnes | Pump and hose testing | Dynamometer calibration facilities | Test weights | NDT | On-site testing and inspection

Accreditations include: Enerpac, Tangye, Tirfor, Yale and Crosby. Arbil also holds accreditation status to repair and calibrate Dillon and Tractel load measurement devices.

Email: service@arbil.co.uk

Engineering

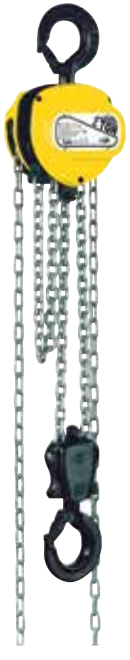
Using SolidWorks software, Arbil Engineering can handle the more unusual aspects of lifting applications, providing detailed design proposals and drawings of both standard and bespoke steel fabrications in a variety of material specifications and finishes, including:

Jacking stools and brackets | Lifting cradles and beams | A-Frames and gantries | Lifting hooks | Shackles and components

Email: engineering@arbil.co.uk

SECTION 1: Hoists, Beams & Gantries

Hand Chain Hoists & Lever Hoists



Hand Chain Hoists

- Standard heights of lift include: 3m, 6m, 9m, 12m, 15m and 18m
- Larger capacities available on request
- Note: weights and hook to hook dimensions are approximate. Where these are critical, please contact Arbil's technical team

Fleet Code	Capacity	Number of Falls	Closed Height Hook to Hook	Weight	
				3m Lift	Extra/m Lift
CB 00	0.5t	1	280mm	11kg	1.4kg
CB 01	1t	1	320mm	14kg	1.8kg
CB 02	2t	1	415mm	28kg	3.5kg
CB 03	3t	2	580mm	32kg	3.6kg
CB 05	5t	3	610mm	46kg	5.7kg
CB 10	10t	4	970mm	102kg	10.1kg
CB 15	15t	6	1050mm	198kg	15.8kg
CB 20	20t	8	1200mm	215kg	20.2kg
CB 30	30t	12	1660mm	545kg	30.1kg

For the full range of beam clamps and trolleys, please refer to pages 10 & 11

Lever Hoists - Link Chain

- Roller chain models also available
- Longer lengths of lift are available on request
- Can be used for lifting, pulling, lashing or tensioning
- Sub-sea models also available

Fleet Code	Capacity	Number of Falls	Lift	Closed Height Hook to Hook	Weight
LH 01	0.75t	1	1.5m	310mm	8kg
LH 02	1.5t	1	1.5m	376mm	16kg
LH 03	3t	2	1.5m	389mm	22kg
LH 06	6t	3	1.5m	532mm	45kg
LH 09	9t	3	1.5m	800mm	45kg
LH 10*	10t	3	1.5m	563mm	50kg

** Fitted with adjustable shortening clutch*

Electric Chain Hoists

Help us to help you...

How to specify your Electric Chain Hoist

- What lifting capacity do you require?
- What height of lift do you require?
- What voltage do you require – 110V, 240V or 415V?
- Duty Rating? (Normally rated at 25%, technical staff can advise on higher duties)
- Is the hoist for above or below ground use? Please speak to the Arbil technical team for further advice
- What length of pendant control is required?

- Heavy duty motor
- Emergency stop button
- Standard heights of lift include: 3m, 6m, 9m, 12m, 15m and 18m. Longer heights of lift are also available
- Note: Hoisting speed information is as a guide only
- Smooth running oil lubricated planetary gearbox provides low overall height
- Case hardened, zinc plated chain
- Adjustable brake

Fleet Code	Capacity	Power Supply	Hoisting Speed
EH 0025	0.25t	110V/Single Phase	8m/min
EH 005	0.5t	110V/Single Phase	8m/min
EH 001	1t	110V/Single Phase	4m/min
EH 002	2t	110V/Single Phase	2m/min
EH 005	0.5t	240V/Single Phase	8m/min
EH 01	1t	415V/3 Phase	8m/min
EH 02	2t	415V/3 Phase	4m/min
EH 2.5	2.5t	415V/3 Phase	4m/min
EH 05	5t	415V/3 Phase	2.8m/min

Beam trolleys also available on pages 10 & 11

Air Chain Hoists

Help us to help you...

How to specify an Air Chain Hoist

- WLL – What capacity do you require?
- Height of Lift? (Variable heights available to suit most customers needs)
- Is the hoist for above or below ground use? Certain applications have material construction constraints. Please speak to the Arbil technical team for further advice
- What length of pendant control is required?

- Standard heights of lift include: 3m, 6m, 9m, 12m, 15m & 18m
- All performance figures are rated at 90psi pressure with a pull chain control fitted as standard
- 100% duty rating
- Complete with in-line lubrication
- Can be supplied with an air compressor on request

Fleet Code	Capacity	No. of Falls	Hook to Hook	Cubic Feet per/min	Hoisting Speed	Weight
AH 00	0.5t	1	450mm	78ft	17m/min	20kg
AH 01	1t	2	460mm	78ft	9.0m/min	26kg
AH 15	1.5t	1	470mm	78ft	4.9m/min	37kg
AH02	2t	2	585mm	78ft	4.0m/min	55kg
AH03	3t	2	635mm	78ft	2.4m/min	57kg
AH 06	6t	4	920mm	120ft	1.0m/min	111kg

The capacities shown are the most popular, but the range goes up to 100 tonnes

Push or power travel trolleys are also available

Builders Hoists

Minifor Portable Hoists

A lightweight range of 110v portable power hoists. The Minifor range consists of a self-gripping system which provides a grip on the wire rope proportional to the load, ensuring that the wire rope is perfectly aligned to the pulley system.

- Unlimited length of wire rope (subject to duty rating of motor – standard rating 60%)
- Lightweight, easy to handle
- Fast installation
- Length of cables:
  Control cable 2.5m. (10m option also available)
  Power supply 1.5m
- Safety factor 5:1
- Wire rope conversion kit available which doubles the SWL of the hoist

Fleet Code	Capacity	Hoisting Speed	Power Supply	Hook to Hook	Weight
MR 30	300kg	5m/min	110v	690mm	21.4kg
MR 50	500kg	7m/min	110v	690mm	28.0kg

Hook to hook dimension includes lower limit operating lever

Imer Scaffold Jib Hoists

Capacity: 200kg, including at the full extension of the extendable bracket.

Working Height: 30m

Hoisting Speed: 19m/min

Self-braking motor: Fitted with magnetic self-braking motor.

Top limit switch

Extendable Bracket: The SH225 is equipped with an extendable bracket which assists in the handling of bulky loads, reducing the risk of the load striking against the structure.

Quiet Operation: Rated at 70dB(A)

Fleet Code	Capacity	Hoisting Speed	Power Supply	Lift Height	Weight
SH 225	200kg	19m/min	110v	30m	45kg

Scaffolders' accessories include: Gin Blocks, Scaffold Lashings, Scaffold Buckets and Fall Arrest Equipment

Beam Clamps & Trolleys

Adjustable Beam Clamps

- Clamps are easily adjustable by means of a screw adjuster

Fleet Code	Capacity	Suits Flange Width	Headroom*	Weight
GC 01	1t	75-230mm	150mm	3.8kg
GC 02	2t	75-190mm	120mm	2kg
GC 03	3t	75-190mm	150mm	5kg
GC 04	4t	150-250mm	200mm	8kg
GC 05	5t	150-305mm	250mm	17kg
GC 06	6t	200-455mm	400mm	35kg
GC 10	10t	200-455mm	563mm	55kg
GC 15	15t	200-455mm	616mm	59kg

Please advise flange size of beam when ordering

*Headroom will vary dependent on flange width

Beam Trolleys

- Quick fitting with no bolting required
- Can be attached to a runway or RSJ

Fleet Code	Capacity	Suits Flange Width	Headroom	Hook Ring Dia	Weight
ST 01	1t	76-152mm	98mm	38mm	6kg
ST 01L	1t	102-203mm	98mm	38mm	6.5kg
ST 03	3t	76-152mm	121mm	67mm	12kg
ST 03L	3t	102-203mm	121mm	67mm	15kg
ST 05	5t	102-254mm	162mm	89mm	31kg

Beam Clamps & Trolleys

Push Travel Trolleys

- Adjustable with either a screw adjuster or spacers
- Designed to easily accommodate hook suspension chain hoists

Whilst every care has been taken to ensure dimensions are accurate, for applications where dimensions are critical, please speak to a member of Arbil's technical team.

Fleet Code	Capacity	Suits Flange Width	Headroom	Weight
PT 00	0.5t	75mm - 200mm	89mm	8kg
PT 01	1t	75mm - 200mm	93mm	11kg
PT 02	2t	100mm - 200mm	140mm	19kg
PT 03	3t	100mm - 315mm	175mm	27kg

Adjustable Geared Travel Beam Trolleys

- To improve control, particularly where heavy loads are involved
- Varying length of hand chain available to suit the application

Fleet Code	Capacity	Suits Flange Width	Headroom*	Weight
GT 03	3t	100mm - 150mm	175mm	33kg
GT 05	5t	125mm - 315mm	197mm	56kg
GT 06	6t	135mm - 315mm	205mm	51kg
GT 08	8t	150mm - 230mm	225mm	107kg
GT 10	10t	150mm - 230mm	160mm	117kg
GT 10L	10t	150mm - 315mm	155mm	117kg
GT 15	15t	175mm - 315mm	205mm	125kg

*The headroom dimension may vary between models. Check when this dimension is critical


SWL 1.25 TONNE
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No
SWL

Lifting & Spreader Beams

Fleet Options: Design and Build

Arbil's hire fleet of fixed and adjustable lifting and spreader beams are being constantly augmented with new configurations and designs – see panel right. These beams, in combination with our fleet of modular beams, provide an unrivalled choice to clients who know that they can rely on a truly dedicated engineering division to provide a solution, whatever the challenge.

Arbil Beam Offering

Lifting Beams

Designed with a central suspension point to be attached via a crane hook or shackle. The load attachment points are the part of the beam to which the load is attached.

- **Standard Lifting Beam** - 1 fixed suspension point and 2 fixed loading points
- **Multiple Lifting Beam** - more than 2 fixed loading points
- **Adjustable Lifting Beam** - 2 adjustable loading points allowing lifting of variable sized objects
- **H-Frame Lifting Beam** - 4 loading points
- **H-Frame Adjustable Lifting Beam** - 4 adjustable loading points allowing lifting of variable sized objects
- **Crucible Lifting Beam** - 4 loading points

Spreader Beams

Designed with twin suspension points for attachment to a crane hook via a 2 leg chain sling. The load attachment points are directly in line with the suspension points at the end of the beam.

- **Standard Spreader Beam** - 2 fixed suspension and 2 loading points
- **Adjustable Spreader Beam** - Twin adjustable suspension and load points know as banana plates
- **Rectangular Lifting Frame** - 4 point suspension and load points set at each corner. Suspension via 4 leg chain sling
- **Combination Lifting/Spreader Beam** - Twin suspension points in-board of the loading points
- **H-Frame Spreader Beam** - Twin suspension points with 4 load points at the ends of the cross beams

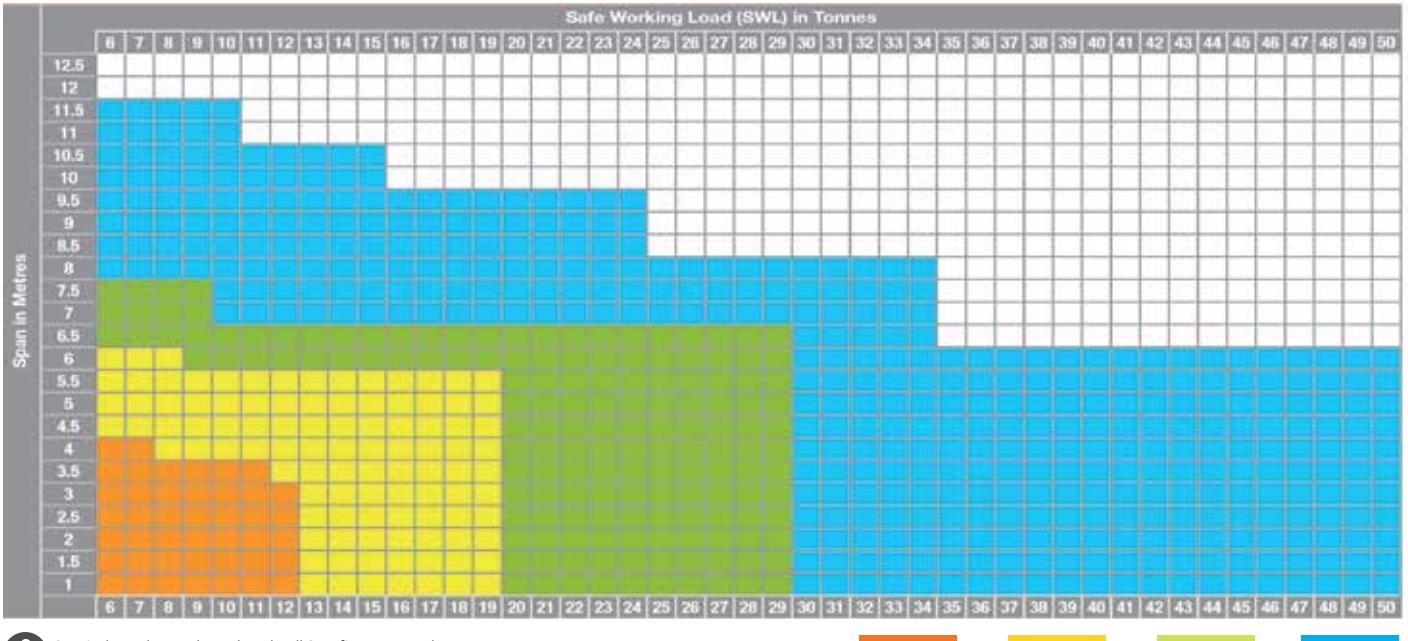
Modular Spreader Beams

Modular Spreader Beams provide the ideal solution for many lifting beam requirements. Versatile and cost effective, the modular configurations and interchangeable components enable modular spreaders to be used in a multitude of applications.

Image below shows square section, Arbil's substantial fleet also includes round section.

- Versatile and portable
- Available in lengths up to 11.5m
- Capacities up to 200t available

Modular Beam Selection Chart



SWL is dependant on beam length. All SWL figures quoted are based on a base sling angle of 45°

Maximum number of struts per assembled spreader: 7

12t Series **20t Series** **30t Series** **50t Series**

Portable Aluminium Gantries

Lightweight Aluminium Gantries

These ultra lightweight gantries are highly portable and adjustable by both height and width.

Beam lengths include: 2.5m, 3m, 3.92m, 4.57m, 5.5m, 6m, 8.4m and 9m.

Rapid Assembly:

A-Frame legs fold flat for more compact storage and transportation Systems fold down on a few bolts for flat-pack storage and easy transport.

Each gantry system comprises:

- 2 x A-Frames (with adjustable uprights)
- 1 x Trolley - ultra-safe captive as standard
- 1 x Beam. Lengths up to 9000mm (WLL dependent)
- 360 degree swivel, lockable castor wheels

Selection Guide...

Step 1: Select the WLL you require

Step 2: Select A-Frame size for overall height and height of lift: small, medium, intermediate or tall

Step 3: Select beam length* for overall length and operating span. Lengths Available: 2.5m, 3m, 3.92m, 4.57m, 5.5m, 6m, 8.4m and 9m

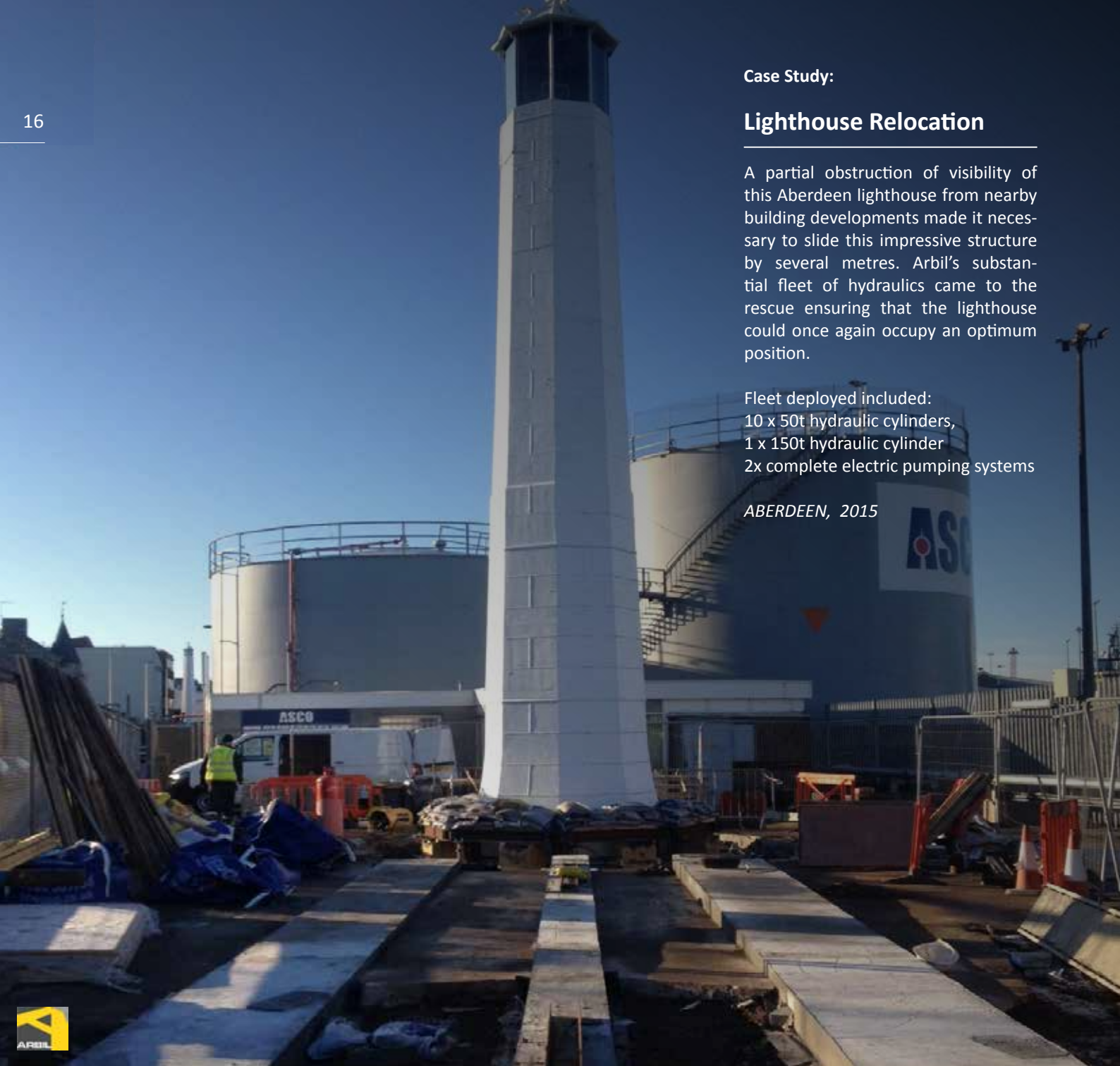
Step 4: Select trolley type - most fitted with standard push travel

Step 5: Select accessories: hoist, slings etc.

Porta-Gantry Specification:

Fleet Code	Capacity	Classification	Adjustable Height to Lifting Eye	Height Increments	Max Height to Top of Beam	Span Dimensions	A-Frame Width
LAG 01S	1t	Small	1605 - 2355mm	5 x 150mm	2675mm	Various*	1212mm
LAG 01M	1t	Medium	2101 - 2851mm	5 x 150mm	3171mm	Various*	1429mm
LAG 02I	2t	Intermediate	2188 - 3188mm	5 x 200mm	3499mm	Various*	1726mm
LAG 03T	3t	Tall	2879 - 4079mm	6 x 200mm	4399mm	Various*	2011mm
LAG 05I	5t	Intermediate	2181 - 3181mm	5 x 200mm	3592mm	Various*	1736mm
LAG 05T	5t	Tall	2489 - 4049mm	6 x 200mm	4487mm	Various*	2021mm

*Span Dimensions dependent on selected beam length.
Beam lengths include: 2.5m, 3m, 3.92m, 4.57m, 5.5m, 6m, 8.4m and 9m



Case Study:

Lighthouse Relocation

A partial obstruction of visibility of this Aberdeen lighthouse from nearby building developments made it necessary to slide this impressive structure by several metres. Arbil's substantial fleet of hydraulics came to the rescue ensuring that the lighthouse could once again occupy an optimum position.

Fleet deployed included:
10 x 50t hydraulic cylinders,
1 x 150t hydraulic cylinder
2x complete electric pumping systems

ABERDEEN, 2015

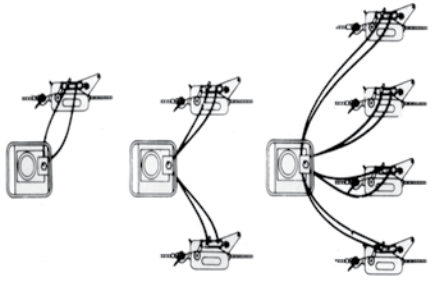
SECTION 2: Winching

Tirfor Lifting & Pulling Machines

Tirfor Winches – Manual

- Versatile – can be used for lifting, pulling or tensioning in any direction and at any angle
- Portable units with excellent strength to weight ratios
- Unlimited pulling length and/or lifting height is achieved because the rope passes through the winch rather than wrapping round a drum. This feature makes Tirfor winches even more versatile
- Lifting and winching capacities can be increased by the use of multi-sheave blocks, although these do have the effect of reducing winching speed. *For further details - see page 21.*

Lifting Capacity	Pulling Capacity	Machines			Wire Ropes				
		Fleet Code	Rope Travel Per Stroke	Machine Weight	Fleet Code	Rope Dia.	Rope Weight		
							10m	20m	30m
800kg	1200kg	TM 08	40mm	6.6kg	TR 08	8.2mm	3.5kg	7kg	10.5kg
1600kg	2500kg	TM 16	42mm	18kg	TR 16	11.3mm	6.25kg	12.5kg	18.75kg
3000kg	5000kg	TM 30	23mm	27kg	TR 30	16.3mm	13kg	26kg	39kg



Tirfor Winches – Hydraulically Powered

When the winching operation is over a long distance, or becomes labour intensive and slow through the use of multi-sheave blocks, then the use of hydraulically operated Tirfors should be considered. In particular, hydraulic Tirfors are especially effective when precise control is needed simultaneously over more than one unit.

Each unit is powered by a self-reciprocating hydraulic ram

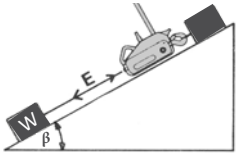
- Power packs are available either electrically (415 Volt) or petrol driven
- Labour efficient
- Simultaneous multi-unit operation

Fleet Code	Capacity per Machine	Rope Travel Speed - Metres Per Minute			Weight per Machine
		1 Machine	2 Machines	4 Machines	
TM 16 H	1600kg	2m	1.5m	0.75m	28kg
TM 32 H	3200kg	0.95m	0.47m	0.24m	54kg

Hydraulic supply options for 1, 2 or 4 winch units, available with either standard or high speed power packs.

Winching Theory

On a slope: E = W (μcosβ + sinβ)



Horizontally: E = μW

Where:

E is the effort required to pull a load lying on the ground

W is the weight of the load

μ is the friction between load and ground which depends upon the area of contact of the load with the ground and the nature of the ground (presence of wheels, rollers, sand, mud, concrete etc.)

β is the angle of the slope

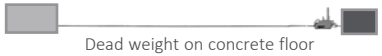
Coefficients of Friction:

The value of μ, the coefficient of friction, must be known or estimated. Typical values are:

- Steel on steel 0.4-0.6
- Wood on stone 0.4
- Continuously lubricated surface 0.15
- Leather on metal 0.6
- Iron on stone 0.3-0.7
- Load on wheels 0.02-0.05

Approximate loads which have been moved by a 1600kg Tirfor under tests

3t



Dead weight on concrete floor

40t

Rollers on well greased skids

100t

Good rolling stock

Calculation of Pulling Effort Required

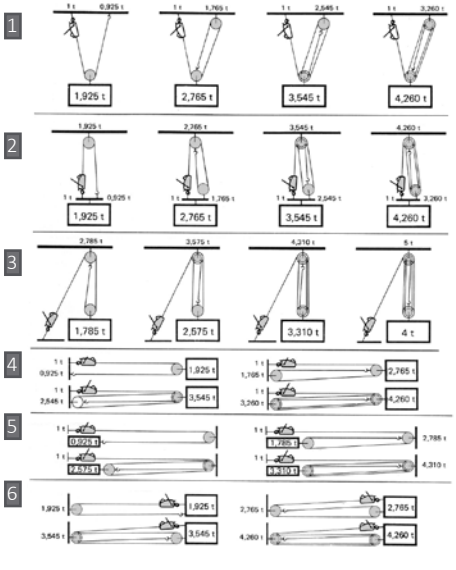
Winching requirements are usually quite different from those of lifting, since in general, the necessary pulling effort required of any given winch represents only a proportion of the actual weight of the load.

The effort required will depend upon 2 basic factors: the coefficient of friction between the load and the ground, and the angle of the slope

For example, a winch capable of exerting a pulling force of 1 tonne might be capable of pulling only 2 tonnes of dead weight on a concrete floor, but of pulling up to 50 tonnes of good rolling stock, such is the difference in the two coefficients of friction.

Furthermore, the greater the angle of slope the greater the effort required.

A further factor is the number of layers of rope on the winch. The more layers of rope, the lower the winch's pulling capacity. (Not applicable to Tirfors)



Example 1 - Lifting Application
The Tirfor machine is anchored above the load

Example 2 - Lifting Application
The Tirfor machine is anchored to the load

Example 3 - Lifting Application
The Tirfor machine is anchored at ground level

Example 4 - Pulling Application
The Tirfor machine is attached to a fixed, secure anchor point

Example 5 - Pulling Application
The Tirfor machine is attached to a fixed, secure anchor point

Example 6 - Pulling Application
The Tirfor machine is attached to the load

Increases in Lifting and Pulling Power

In many applications, an increase in the lifting and pulling power of a winch is required.

The simplest method of achieving this is through the use of sheave blocks and most commonly, the snatch block, acquiring its name because its hinged fitting allows quick insertion of the rope, i.e. it "snatches" the rope.

At best, a single snatch block will effectively double the lifting and pulling power of the winch and by reeving up further, with the use of multi-sheave blocks, even greater increases can be achieved.

It should be noted that the use of snatch blocks or multi-sheave blocks will reduce the speed at which the load moves. In such circumstances, powered winches such as hydraulically powered Tirfors are often chosen to increase speed.

Power Operated Winches

Help us to help you...

To determine the correct winch for your application please answer:

- What is the required line pull?
- What is the required line speed?
- What is the required wire rope length?
- Will the winch be used for lifting and lowering or for pulling applications only?
- How will the winch be anchored?
- Are any accessories required to increase the capacity or versatility of the winch?

Powered Winches Overview

For longer length wire rope application, higher capacity and faster winching, Arbil provides a comprehensive range of powered winches up to 20,000lbs (9071kg) capacity and beyond.

Line Pull and Line Speed:

When selecting a winch it is important to note that line pull and line speed vary according to how much wire rope is on the drum.

Please note that the first wrap, or first layer of rope on the drum delivers the slowest speed, but the maximum line pull. Conversely, a full drum delivers the maximum line speed with the minimum line pull.

Did you know?

Arbil is the exclusive and official UK and Ireland importer of WARN winches and accessories, used both in off-roading and heavy duty commercial applications. For more information, please request our latest WARN Application Guide.

Air Winches

- Line pull availability up to 20,000lbs (9071kg)
- Speeds of up to 38m/min
- Automatic and manual brake options
- Rope lengths up to 435m

Fleet Code	Line Pull		Brake Type	Speed	Rope Capacity	Rope Dia	Weight
AW 020M(S)	2000lbs	907kg	Manual	34m/min	200m	10mm	222kg
AW 020M(L)	2000lbs	907kg	Manual	34m/min	440m	10mm	255kg
AW 040M(S)	4000lbs	1814kg	Manual	38m/min	210m	13mm	386kg
AW 040M(L)	4000lbs	1814kg	Manual	38m/min	435m	13mm	426kg
AW 065A	6500lbs	2948kg	Automatic	10m/min	300m	16mm	690kg

The volume of air required varies for each winch. Technical staff will advise of CFM (cubic feet per minute) ratings. Rope speeds are given at mid-drum rating.

Did you know?

Arbil manufactures winch ropes in-house and slings from small diameter, galvanised or stainless steel rigging assemblies up to large heavy-duty multi-leg slings. *Turn to page 26 for more details.*

Wire Rope Sheave Blocks

Snatch Blocks for Wire Rope – Standard Duty

- Increase lifting or pulling capacity - please refer to page 19 for technical information on how to increase line pull. Can also be utilised to alter the direction of pull
- Standard Duty Snatch Blocks are available with a choice of a swivel hook with safety catch or swivel shackle - please specify on enquiry

Fleet Code	Capacity	Rope Dia Range	Sheave Dia	Weight
LWB 200	2t	7 - 9mm	76mm	3kg
LWB 400	4t	10 - 12 mm	115mm	5kg
LWB 800	8t	20 - 22mm	125mm	10kg
LWB 800	8t	20 - 22mm	203mm	15kg

Snatch Blocks for Wire Rope – Heavy Duty

- Increase lifting or pulling capacity - please refer to page 19 for technical information on how to increase line pull. Can also be utilised to alter the direction of pull
- Traditionally fitted with a swivel oval eye head, Heavy Duty Snatch Blocks are also available with a choice of a swivel hook with safety catch or swivel shackle. Please specify on enquiry.

Did you know?

Arbil stocks the full range of Crosby products including the McKissick range of snatch blocks such as the 419 block complete with swivel shackle and roller bearing.

Fleet Code	Capacity	Rope Dia	Sheave Dia	Weight
SB 011	1.5t	11mm	150mm	6.7kg
SB 021	2t	20mm	200mm	13kg
SB 031	3t	20mm	250mm	22kg
SB 051	5t	24mm	300mm	43kg
SB 101	10t	28mm	350mm	43kg
SB 151	15t	32mm	400mm	68kg
SB 201	20t	32mm	450mm	75kg

Cable Handling

Cable Reel Jacks – Hydraulic Heavy Duty

Highly Versatile: Multiple spindle positions

Simple to Operate: Hydraulic rams allow the easy lifting of the cable reel

Fleet Code	Cap/Pair	Reel Dia Range	Overall Height	Hydraulic Lift	Weight Per Pair
CJX 03	3t	600 - 1800mm	1450mm	125mm	90kg
CJX 06	6t	760 - 2700mm	1700mm	140mm	150kg
CJX 10	10t	900 -3350mm	1970mm	147mm	200kg

For Mechanical Cable Reel Jacks turn to page 45

Cable Roller

Corner Roller

Cable Rollers/Skids

Cable Rollers

A simple to use system that protects cables and aids positioning. Supplied with zinc plated finish

Corner Rollers

These rollers can be used vertically or on their side to guide cables around corners. Supplied with zinc plated finish

Fleet Code	Type	Dimensions	Max Cable Dia	Weight
CAB 150	Cable Roller	590 x 225 x 195mm	150mm	4.5kg
CORN 150	Corner Roller	610 x 310 x 330mm	150mm	18.2kg

Cable Pulling Winches

A versatile and portable 110v winch for a variety of cable pulling jobs, with twin pulling capacities.

- Forward and reverse mode
- Overload protection system
- Dual speed

Fleet Code	Capacity		Pull Speed		Weight
	Small Drum	Large Drum	Small Drum	Large Drum	
CPW 01	1.5t	2.5t	2.5m/min	4.0m/min	79kg

See page 45 for details on Cable Reel Jacks

SECTION 3: Slings & Loose Lifting Gear

Alloy Chain Slings

Alloy Chain Slings

- 3m, 6m and 9m lengths available for hire. Longer lengths available upon request
- Capacity ratings for multi-leg slings are for 0-90° angles
- Where applicable, slings are generally fitted with shortening clutches to allow individual leg length adjustment - crucial in low headroom application or when lifting irregular shaped loads

Chain Dia	Single Leg/Collar Sling		Double Leg Sling		Four Leg Sling	
	Fleet Code	Capacity	Fleet Code	Capacity at 0-90	Fleet Code	Capacity at 0-90
7mm	CS 071	1.5t	CS 072	2.12t	CS 074	3.15t
10mm	CS 101	3.15t	CS 102	4.25t	CS 104	6.7t
13mm	CS 131	5.3t	CS 132	7.5t	CS 134	11.2t
16mm	CS 161	8t	CS 162	11.2t	CS 164	17t
19mm	CS 191	11.2t	CS 192	16.t	CS 194	23.6t
23mm	CS 231	16t	CS 232	23.6t	CS 234	35.5t
26mm	CS 261	21.2t	CS 262	30t	CS 264	45t
32mm	CS 321	31.5t	CS 322	45t	CS 324	67t

The Kuplex range includes a variety of special end fittings including drum hooks, foundry hooks, grab hooks and pipe hooks. Additional fittings often used in assemblies include turnbuckles and shackles.

From Arbil's various locations, both Grade 8 and 10 are stocked in large quantities, as is the new range of Crosby Platinum - a premium sling system at an attractive price point.

Grade 10 components available on request.

Did you know?

Arbil's Sales Division offers a comprehensive range of skip components, top suspension plates and single and double keep plates.

Standard Sling Configurations

Illustrations below show standard sling configurations. Many other variations are available with alternative end fittings, including: 'C' hooks, safety hooks and shackles. Three leg slings also available.

Although Arbil's slings are generally fitted with shortening clutches, the illustrations below are shown without.

Sling Geometry & Working Load Limits

Sling Geometry

Working Load limits (WLL) listed are the maximum weights which the slings are designed to sustain in service.

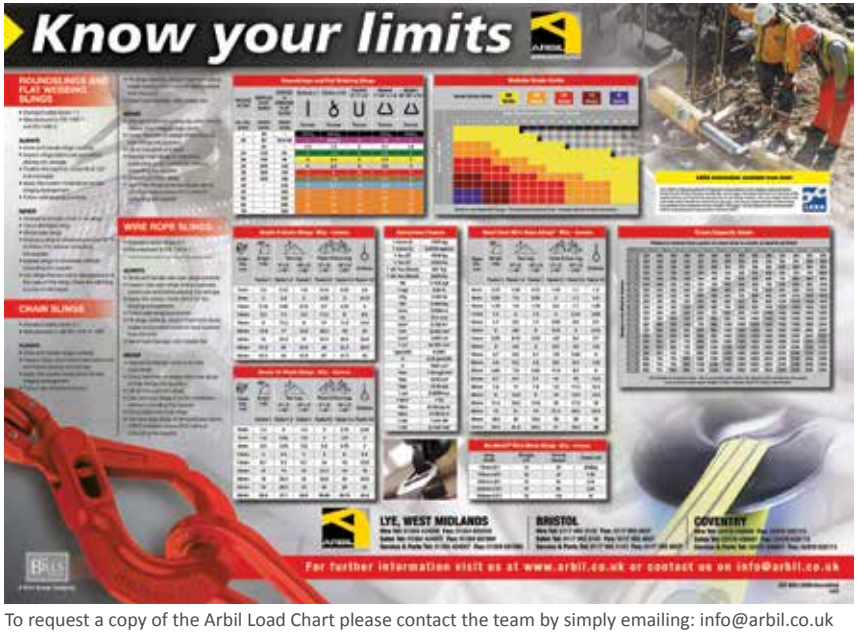
The load imposed on a sling leg increases as the angle of the leg from vertical increases. Account is taken of this fact when calculating working load limits.

For example, a 10mm two-leg sling to be used at an angle of 45° from the vertical (i.e. 90° between the legs) will have a WLL 1.4 times that of a 10mm single leg sling when used vertically and not 2 times the single leg. That same working load limit applies to all angles from 0° - 45°.

Where there is likely to be a need to use a sling at an angle greater than 45° from the vertical, a reduced safety factor is employed. This factor will apply at all angles from 45° - 60° from the vertical.

It is important to note that when slings are used in choke hitch the WLL is reduced by 20%.

All Slings conform to BS EN 818-4: 1997 With a safety factor of 4:1.



To request a copy of the Arbil Load Chart please contact the team by simply emailing: info@arbil.co.uk

Grade 8 Working Load Limits – Tonnes

Chain Dia	Chain Type	Single Leg	Two Leg		Three & Four Leg Endless		Endless
			0° < ß ≤ 45°	45° < ß ≤ 60°	0° < ß ≤ 45°	45° < ß ≤ 60°	
		Factor 1	Factor 1.4	Factor 1	Factor 2.1	Factor 1.5	Factor 1.6
7mm	Grade 8	1.5t	2.12t	1.5t	3.15t	2.24t	2.5t
10mm	Grade 8	3.15t	4.25t	3.15t	6.7t	4.75t	5t
13mm	Grade 8	5.3t	7.5t	5.3t	11.2t	8t	8.5t
16mm	Grade 8	8t	11.2t	8t	17t	11.8t	12.5t
19mm	Grade 8	11.2t	16t	11.2t	23.6t	17t	18t
23mm	Grade 8	16t	23.6t	16t	35.5t	25t	26.5t
26mm	Grade 8	21.2t	30t	21.2t	45t	31.5t	33.5t
32mm	Grade 8	31.5t	45t	31.5t	67t	47.5t	50t

Wire Rope Slings

In-house Manufacturing

Arbil's hire fleet contains an extensive range of wire rope slings to suit the vast majority of requirements.

All wire rope slings and assemblies are manufactured at Arbil's in-house facility in Stourbridge.

This means Arbil can meet any wire rope requirement and provide anything from standard strops and slings to crane and winch ropes. Bespoke assemblies can also be produced and made available for hire including multi-leg assemblies and specialist configurations.

Available options include:-

- Rope diameters 3mm - 102mm
- Small cord constructions: 1 x 19, 6 x 7, 7 x 7, 6 x 19, 7 x 19
- General engineering rope constructions: 6 x 19, 6 x 36, 6 x 41. Also available with IWRC
- Fibre core/independent wire rope core (IWRC)
- Black, galvanised and stainless steel
- PVC covered
- Spelter socketing
- Swaged end terminals
- Rigging hardware includes hooks, turnbuckles, rings and shackles in either zinc plated finish or stainless steel

Did you know?

Arbil manufactures its own brand of wire mesh belt slings - Nu-Mesh®. Produced at its Stourbridge facility, the slings are available in 5 sizes from 1 to 5t with either standard or reevable end fittings.

Effective Working Length

Standard Wire Rope Slings

- Stoksling range available off-the-shelf in 6 standard lengths: 2, 2.5, 3, 3.5, 4.5 and 6m, all supplied with standard soft eyes
- Larger diameters and lengths are also available, please specify your requirements
- Multi-leg slings also available
- Fibre rope slings are also manufactured in staplespun, yarn polypropylene, nylon and sisal

Standard soft eye option shown. Thimble eye or reeving thimble eye options available

Fleet Code	Capacity	Rope Ø	Eye Length	Eye Width
WS 01	1t	10mm	200mm	100mm
WS 02	2t	13mm	230mm	115mm
WS 03	3t	16mm	250mm	125mm
WS 04	4t	19mm	300mm	150mm
WS 05	5t	22mm	300mm	150mm
WS 08	8t	26mm	360mm	180mm
WS 10	10t	28mm	400mm	200mm
WS 15	15t	35mm	600mm	300mm
WS 20	20t	40mm	600mm	300mm
WS 25	25t	44mm	630mm	315mm
WS 30	30t	48mm	660mm	330mm

Endless Round Slings

Available up to 100t lifting capacity.

The polyester hank is protected by a 100% polyester tubular sleeve, which protects and consolidates the polyester core.

- High strength to weight ratio
- Wide choice of lifting modes
- Soft outer sleeve is kind to the load
- Anti-cut and anti-abrasion protection available
- Conforms to BS EN 1492-2
- Standard safety factor 7:1
- All slings colour coded to indicate capacity
- Usable temperature range of: -40°c to +100°c

Maximum Working Load Limits – Endless Round Slings

Capacity	Colour Code	Straight Lift 0° Factor x 1	Choke Lift Factor x 0.8	Parallel to 7° Factor x 2	7° - 45° Factor 1.4	45° - 60° Factor x 1
1000kg	Violet	1000kg	800kg	2000kg	1400kg	1000kg
2000kg	Green	2000kg	1600kg	4000kg	2800kg	2000kg
3000kg	Yellow	3000kg	2400kg	6000kg	4200kg	3000kg
4000kg	Grey	4000kg	3200kg	8000kg	5600kg	4000kg
5000kg	Red	5000kg	4000kg	10000kg	7000kg	5000kg
6000kg	Brown	6000kg	4800kg	12000kg	8400kg	6000kg
8000kg	Blue	8000kg	6400kg	16000kg	11200kg	8000kg
10000kg	Orange	10000kg	8000kg	20000kg	14000kg	10000kg
12000kg	Orange	12000kg	9600kg	24000kg	16800kg	12000kg
15000kg	Orange	15000kg	12000kg	30000kg	21000kg	15000kg
20000kg	Orange	20000kg	16000kg	40000kg	28000kg	20000kg
30000kg	Orange	30000kg	24000kg	60000kg	42000kg	30000kg

Wear Sleeves & Definitions:

Fig.1 Standard Sling

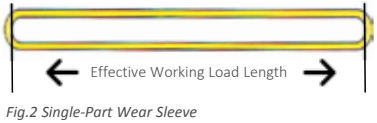


Fig.2 Single-Part Wear Sleeve

Fig.3 Double-Part Wear Sleeve

Help us to help you...

Arbil can supply slings to meet precise needs. In order to ensure accurate interpretation of requirements, the following information should be provided.

Working Load Limit Required - Determine weight, lifting conditions and any angles involved.

Circumference Required - Round Slings are always specified by circumference, which is 2 x Effective Working Length (EWL), as defined by the arrows in Fig. 1

Wear Sleeves - Are wear sleeves needed to provide extra protection against sharp edges? Please speak to technical staff for more details.

Flat Webbing Slings (Strops)

Key Features:

Flat webbing slings, or strops as they are often known, are available up to 30t lifting capacity·

- High strength to weight ratio
- Wide choice of lifting modes
- Anti-cut and anti-abrasion protection available
- Conforms to BS EN 1492-1
- Standard safety factor 7:1
- All slings colour coded to indicate capacity
- Usable temperature range of:-40°c to +100°c

Did you know?

Arbil stocks a full range of cargo restraints and load control products. Textile products include: ratchet lashings, tarpaulins, skip nets and lorry nets. Other cargo control hardware includes: load binders, chains, anchor fittings, skip chains and keep plates.

Maximum Working Load Limits - Flat Belt Webbing Slings

Capacity	Colour Code	Straight Lift 0° Factor x 1	Choke Lift Factor x 0.8	Parallel to 7° Factor x 2	7° - 45° Factor 1.4	45° - 60° Factor x 1
500kg	Black	500kg	400kg	1000kg	700kg	500kg
1000kg	Violet	1000kg	800kg	2000kg	1400kg	1000kg
1500kg	White	1500kg	1200kg	3000kg	2100kg	1500kg
2000kg	Green	2000kg	1600kg	4000kg	2800kg	2000kg
2500kg	Black	2500kg	2000kg	5000kg	3500kg	2500kg
3000kg	Yellow	3000kg	2400kg	6000kg	4200kg	3000kg
4000kg	Grey	4000kg	3200kg	8000kg	5600kg	4000kg
5000kg	Red	5000kg	4000kg	10000kg	7000kg	5000kg
6000kg	Brown	6000kg	4800kg	12000kg	8400kg	6000kg
8000kg	Blue	8000kg	6400kg	16000kg	11200kg	8000kg
1000kg	Orange	10000kg	8000kg	20000kg	14000kg	10000kg

Alloy Shackles

Key Features:

Available in standard options of: Screw Pin Dee and Screw Pin Bow. Shackles fitted with bolt and nut are also available.

- Body and pin fabricated from grade 6, quenched and tempered high tensile steel
- Factor of safety 6:1
- Tested and certified
- Shackles up to 1200t capacity available
- Wide body sling 'saver' shackles available from 75t through to 1200t capacity
- Arbil Sales Division stocks a complete range of crane aids and rigging components in a variety of materials: high tensile, alloy and stainless steel such as wire rope, chain, links, turnbuckles, hooks, swivels and other components

Did you know?

Arbil's Sales Division stocks the complete range of Crosby and Green Pin shackles and rigging components.

To receive the latest copies of the catalogues please contact: sales@arbil.co.uk

Crosby® GP GreenPin

WLL	Body Dia x Pin Dia	Body Dia x Pin Dia	Inside Width	Dee Type		Bow Type		Bow Width
				Fleet Code	Inside Length	Fleet Code	Inside Length	
2t	1/2" x 5/8''	13mm x 16mm	21mm	DS 02A	43mm	BS 02A	51mm	32mm
3.25t	5/8" x 3/4''	16mm x 19mm	27mm	DS 03A	51mm	BS 03A	64mm	43mm
4.75t	3/4" x 7/8''	19mm x 22mm	32mm	DS 05A	59mm	BS 05A	76mm	51mm
6.5t	7/8" x 1''	22mm x 26mm	37mm	DS 07A	73mm	BS 07A	83mm	58mm
8.5t	1" x 1 1/8''	26mm x 29mm	43mm	DS 09A	85mm	BS 09A	95mm	68mm
9.5t	1 1/8" x 1 1/4''	29mm x 32mm	46mm	DS 10A	90mm	BS 10A	108mm	75mm
12t	1 1/4" x 1 3/8''	32mm x 35mm	52mm	DS 12A	94mm	BS 12A	115mm	83mm
13.5t	1 3/8" x 1 1/2''	35mm x 39mm	57mm	DS 14A	115mm	BS 14A	133mm	92mm
17t	1 1/2" x 1 5/8''	39mm x 42mm	61mm	DS 17A	127mm	BS 17A	146mm	99mm
25t	1 3/4" x 2''	44mm x 51mm	73mm	DS 25A	149mm	BS 25A	178mm	126mm
35t	2" x 2 1/4''	51mm x 57mm	83mm	DS 35A	171mm	BS 35A	197mm	138mm
55t	2 1/2" x 2 3/4''	63mm x 70mm	105mm	DS 55A	203mm	BS 55A	260mm	180mm
85t	3" x 3 3/16''	76mm x 81mm	127mm	DS 85A	230mm	BS 85A	330mm	190mm
120t	3 1/2" x 3 3/4''	88mm x 95mm	146mm	DS 120A	267mm	BS 120A	381mm	238mm

Piling Clamps & Ratchet Release Shackles

Pile Pitching Clamps

Pile Pitching Clamps are designed for pitching sheet steel piling. A 6 metre rope is fitted as standard for easy release from ground level or a safe distance.

- Fast release compared to standard shackles
- Increased safety via remote operation
- Can be supplied with shackles attached on request

Did you know?

Arbil manufactures a range of automatic lifting clamps complete with auto-indexing pin to allow remote operation. Supplied in ZP or painted finish. *For more information turn to page 74, which shows Arbil's rail version.*

Fleet Code	Capacity	Slot Width	Pin Dia	Weight
LCP 02	2t	20mm	25mm	19kg
LCP 03	3t	26mm	30mm	23kg
LCP 05	5t	35mm	30mm	30kg

These units are NOT designed for extracting driven piles and should not be used for this purpose under any circumstance

Ratchet Release Shackles

Ratchet release shackle are designed to enable steel, timber or concrete elements to be lifted into position, at almost any height above ground level and for the shackle to be disconnected safely and efficiently from a remote position.

- **Fast Hook Up** – Shackles straight onto holes or lugs provided
- **Fast Release** – Approximately 15 seconds
- **Positive Release** – The threaded pin withdrawal is positive and safe
- **Super Safe** – Ratchet mechanism ensures a failsafe mode, meaning release action cannot be triggered accidentally

Fleet Code	Capacity	Slot Width	Pin Dia	Weight
RS 419	3.5t	30mm	20mm	19kg
RS 514	5t	30mm	24mm	14kg
RS 519	5t	30mm	24mm	19kg
RS 1014	10t	30mm	35mm	14kg

Universal Lifting Eyes

When used in conjunction with the lifting and jointing sling, universal lifting eyes give a safe and secure horizontal lift.

- Increase pipe handling, laying speed and efficiency
- Cannot disengage under load

Fleet Code	Capacity	Lifting Group
ULE 1	1.3t	1 / 1.3
ULE 2	2.5t	1.5 / 2.5
ULE 5	5t	3 / 5
ULE 10	10t	6 / 10
ULE 20	20t	12 / 20

SECTION 4: Materials Handling

Genie Superlifts

Key Features:

Genie Superlifts take heavy loads up to heights of 26ft/7.9m. Ideal for installing or servicing sheet metal air ducts, air conditioners, construction framework, transformers and many other items.

- Available in 5, 10, 15, 20 and 25ft heights
- Field-proven durability and dependability
- Welded steel base for extra support
- Stabilisers standard on 20 and 25ft models
- Standard fork attachments are ideal for general purpose application, however, a full range of specialised attachments are also available, *see page 33*
- Standard fork attachments are invertible which adds an additional 20”/500mm of lifting height
- Two speed hand winch
- Fits through standard single doorway

The manually operated winch incorporates a silent ratchet system. The two speed option allows you to shift gears swiftly with the constant mesh arrangement.

Fleet Code	Model Size		Capacity @ 457mm Load Centre	Working Height Forks Down	Working Height Forks Up	Fork Dimensions Length x Width	Net Weight Standard Base
SL 10	10ft	3.05m	454kg	3m	3.5m	700mm x 600mm	118kg
SL 15	15ft	4.57m	363kg	4.5m	5m	700mm x 600mm	144kg
SL 20	20ft	6.1m	363kg	6m	6.5m	700mm x 600mm	184kg
SL 25	25ft	7.6m	295kg	7.4m	7.9m	700mm x 600mm	204kg

*Capacity listed is with a 300mm load centre.

Genie Accessories

A range of useful accessories to suit Genie Superlift models that further increase the capability of this versatile lift.

Suitable for the following models: SL10, SL15, SL20, SL25.

- Ideal for a wide variety of tasks
- Lightweight durable aluminium construction
- Compact and very manoeuvrable
- Easy to operate hand winch as standard
- Optional electric winch
- Optional ladder
- Optional boom to turn the Genie Lift into a vertical crane or hoist capable of lifting 95 to 227kg

Boom - Converts the Superlift into a vertical crane or hoist - variable length from 46cm to 107cm

Load Plate - Fits over the forks to provide a flat surface for use when loading or unloading heavy objects

Fork Extensions - Aluminium Sleeves that extend the standard forks

Pipe Cradle - Holds pipework up to 760mm securely in place

Model	Fleet Code	L X W X D	Max Working Height				Weight
			SL10	SL15	SL20	SL25	
Boom	SLB 1025	46-107 x 4 x 16.5cm	3.28m	4.76m	6.25m	7.42m	18kg
Load Plate	SLLP 1025	70 x 60 x 6cm	3.49m*	4.98m*	6.46m*	7.94m*	14kg
Fork Extension	SLFE 1025	64 x 5 x 8cm	3.49m*	4.98m*	6.46m*	7.94m*	2kg
Pipe Cradle	SLPC 1025	70 x 62 x 15.2cm	3.49m*	4.98m*	6.46m*	7.94m*	4.5kg

*When used with forks inverted

Floor Cranes

Folding Floor Cranes

A versatile hydraulic crane that is rapidly set up and easily folded making it highly transportable and compact.

- Easy operation
- SWL up to 2t
- Robust hollow steel box section construction
- Safety relief valve to prevent overloading

Fleet Code	Max Capacity	Max Height Hook to ground	Overall Base Length	Max Width Between Legs	Weight
FFC 2000	2000kg	2750mm	1870mm	960mm	210kg

Counter Balanced Floor Cranes

A highly manoeuvrable floor crane that enables positioning of the lifting beam over the load without the need to have the trolley beneath it.

- Ideal when there is an outreach requirement.
- Easily operated hydraulic crane
- Ideal for working right up to platforms or over pits and ledges
- Robust hollow steel box section construction
- Safety relief valve to prevent overloading

Did you know?

Arbil's dedicated Service Division includes a number of bespoke testing facilities for the servicing of floor cranes, trolley jacks, bottle jacks and other automotive/workshop tools and equipment.

Fleet Code	Max Capacity	Max Height Hook to Ground	Overall Base Length	Weight
CBC 250	250kg	2560mm	990mm	540kg

Counter balance weights are not included but are available as additional products for hire

200kg counterweight required for max SWL. This can be achieved with 10x 20kg test weights

Skoots & Bumpa Lifts

Skoots Moving Systems

Designed for areas where heavy moving equipment cannot physically go.

Skoots are a portable lightweight moving system which hydraulically lifts loads on to castors, allowing movement in any direction. The use of Skoots results in shorter working times and limits manpower use.

- Moves loads in any direction
- Revolves 360° turning within its own length
- No danger of slippage
- Hydraulic lift and controlled lowering for precision positioning
- Straight line movement control and four way directional locking

Fleet Code	Load Capacity (per pair)	Height	Width	Toe Plate Size	Max Lift	Weight
SK 2000	2000kg	1240mm	510mm	380 x 120mm	400mm	97kg

Bumpa Lifts - 110v

3 storey lift loading system designed for fast erection. Ideal for use in construction and civil engineering.

- Capacity to clear a pallet of concrete blocks in under a minute
- Up and running in under 4 minutes
- Lightweight and easily moved, allowing repositioning in seconds
- Self contained with proven reliability
- Power source: 110v

Fleet Code	Load Capacity	Length	Maximum Angle	Weight
BH 001	80kg	8m	65 Degrees	98kg
BH 002	80kg	10m	65 Degrees	119kg

Machine Skates & Moving Systems

Caterpillar Skates

- Robust construction - designed for use on poor floor surfaces
- Available as standard caterpillar skates, or with turntables and equalisers
- Up to 300t capacity
- *For Arbil's complete range of jacking systems turn to pages 41-62*

Help us to help you...

Please Specify:

- Maximum weight of load to be moved
- Type and quality of floor surface
- Turntables and equalisers required

Skates				Turntables / Equalisers			
Fleet Code	Capacity (set of 4)	Height	Weight (Per set)	Turntable Fleet Code	Equaliser Fleet Code	Height	Weight
MS 15	15t	60mm	16.4kg	MT 15	ME 15	24mm	1.70kg
MS 40	40t	90mm	49kg	MT 40	ME 40	38mm	6.2kg
MS 80	80t	133mm	108kg	MT 80	ME 80	48mm	11.7kg
MS 300	300t	165mm	250kg	MT 300	ME 300	66mm	62.5kg

Always remember to add the height of either the turntables or equalisers to the height of the skates to arrive at the overall height

Steerman Load Moving Systems

Special composite wheels are ideally suited for use on modern industrial flooring. Hard enough to give low rolling resistance yet designed to protect expensive coated surfaces.

Unique 3-point loading systems ensures a safe and stable configuration, eliminating the risk of one skate rolling out.

Fleet Code	Capacity	Wheel (Qty x mm)	Turntable	Loading Height	Rear Width	Rear Load Area	Weight
NMS 06	6t	16 x 82mm	162mm	102mm	252 - 1200mm	180 x 126mm	40kg
NMS 12	12t	16 x 82mm	180mm	102mm	252 - 1200mm	180 x 126mm	55kg
NMS 15	15t	32 x 82mm	180mm	102mm	480 - 1500mm	240 x 176mm	76kg
NMS 20	20t	32 x 82mm	180mm	102mm	480 - 1500mm	240 x 176mm	76kg
NMS 30	30t	48 x 82mm	180mm	110mm	720 - 1500mm	360 x 176mm	136kg
NMS 60	60t	48 x 115mm	350mm	170mm	800 - 2000mm	400 x 300mm	302kg
NMS 80	80t	48 x 150mm	425mm	210mm	990 - 2000mm	495 x 380mm	525kg
NMS 100	100t	48 x 150mm	425mm	210mm	990 - 2000mm	495 x 380mm	525kg

Pallet, Moving Trucks & Crane Forks

Pallet Trucks

A range of three models of pump-up truck, to move or shift all standard sizes of pallet.

Fleet Code	Capacity	Closed Height	Fork Dimensions	
PT 203	2.0t	80mm	50.8cm x 92cm	20” x 36”
PT 204	2.5t	80mm	50.8cm x 107cm	20” x 42”
PT 274	2.5t	80mm	68.6cm x 107cm	27” x 42”

Pallet trucks with built in load weighing devices are also available, please ask for details

Turntable Trucks

Constructed from steel with a timber deck. Wheels are 355mm diameter with steel centres and rubber tyres.

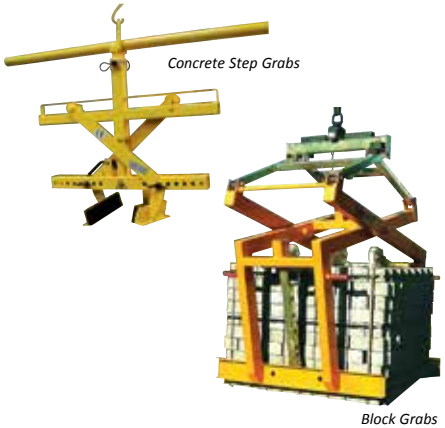
Fleet Code	SWL	Deck Dimensions	Weight
SB 01	1t	1525mm x 760mm	80kg
SB 02	2t	1200mm x 600mm	80kg

Crane Forks

- Safety factor 4:1
- Easily adjustable tines for all pallet sizes
- When used to transport rings or coils, the forks can simply be pushed together
- Optional crane fork safety nets available

Fleet Code	SWL	Weight
TKG 02	2t	220kg

Grabs & Magnets



Concrete Step Grabs

Block Grabs

Concrete Step & Block Grabs

Concrete step grabs

Available in 2 models: 250kg & 500kg capacity. The grabs are used for lifting steps, kerb stones, L-stones etc.

Block grabs

Enable transportation of un-palletised bricks, blocks and general building materials.

Fleet Code	Capacity	Type	Opening Width	Inside Height	Gripper Length	Weight
TSV 250	250kg	Step Grab	70 - 500mm	125mm	200mm	18kg
TSZ 500	500kg	Step Grab	50 - 600mm	185mm	350mm	29kg
BG 01	1800kg	Block Grab	400 - 1100mm	800mm	1200mm	200kg

Ferrous Magnets

Designed for the easy lifting and movement of ferrous materials, in a wide range of industrial jobs and applications, these permanent magnets require no power supply.

Easily operated by a simple lever, the magnets feature a safety lock mechanism to prevent accidental release.

Fleet Code	Flat Section		Round Section		Weight
	SWL	Min Thickness	SWL	Max Diameter	
UL 0125	125kg	15mm	50kg	300mm	4kg
UL 0250	250kg	20mm	100kg	300mm	6kg
UL 0500	500kg	25mm	200kg	400mm	16kg
UL 1000	1000kg	40mm	400kg	450mm	36kg
UL 2000	2000kg	55mm	800kg	600mm	91kg

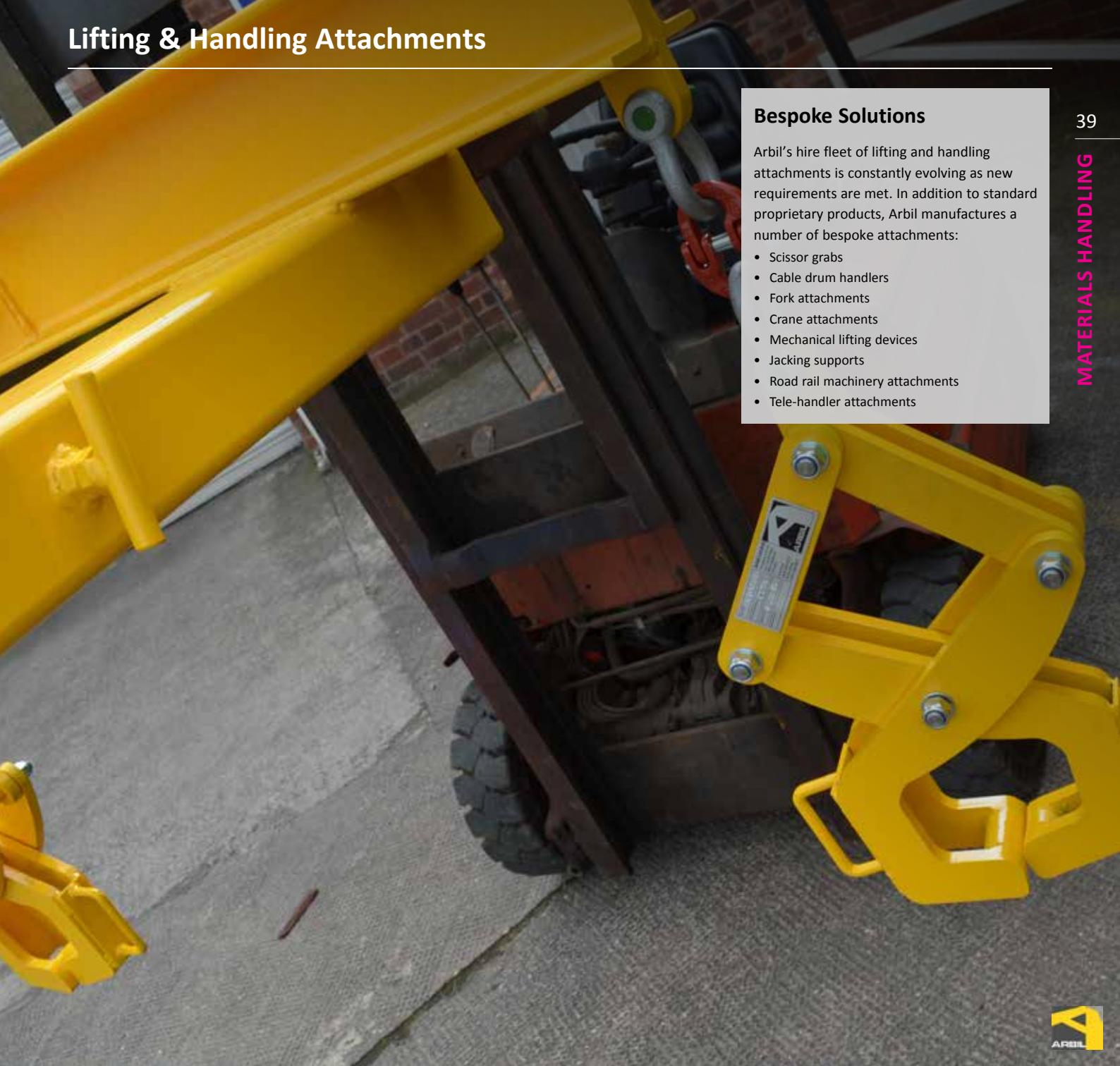
Hydraulic Manhole Cover Lifters

This heavy duty, portable unit is universally suitable to lift and move away all common sizes of cover.

- High breakout force up to 1500kg
- Can be dismantled in seconds

Fleet Code	Max Wheel Span	Hook Centres	Lifting Height	Capacity	Weight
SDH H15	1050mm	260 - 950mm	310mm	1500kg	36kg

Lifting & Handling Attachments



Bespoke Solutions

Arbil's hire fleet of lifting and handling attachments is constantly evolving as new requirements are met. In addition to standard proprietary products, Arbil manufactures a number of bespoke attachments:

- Scissor grabs
- Cable drum handlers
- Fork attachments
- Crane attachments
- Mechanical lifting devices
- Jacking supports
- Road rail machinery attachments
- Tele-handler attachments

Case Study:

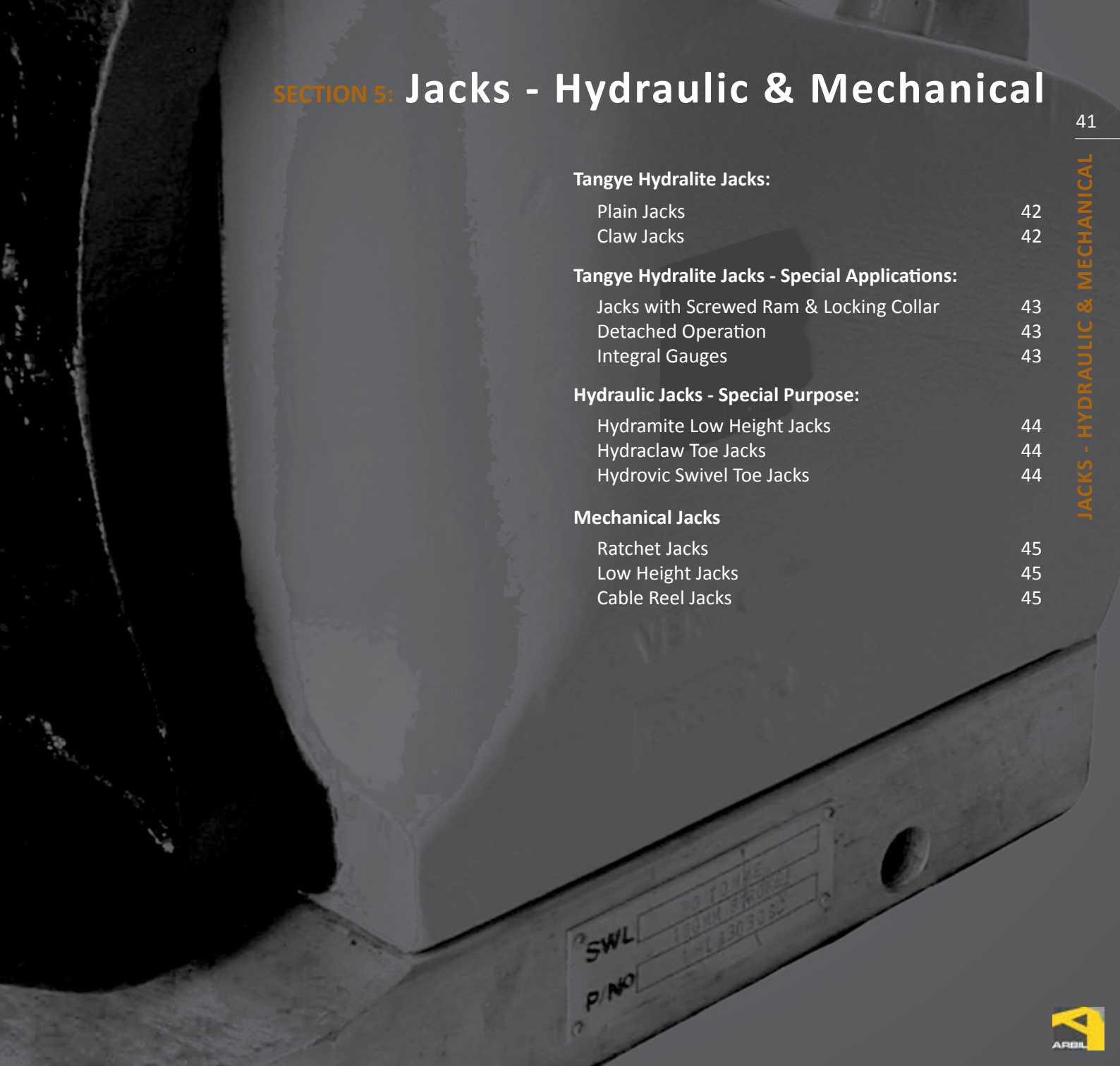
The Mary Rose

Arbil's involvement in the raising of Henry VIII's famous flagship, the Mary Rose, was two-fold.

Firstly, in 1982, some 437 years after she sank, Arbil were called in to establish the weight and precise centre of gravity of the giant lifting cradle.

Later, in 1985, Arbil helped rotate the hull to the even keel we see today using 24 x 30t RLC 302 Enerpac cylinders powered by an Enerpac air pump and no less than 470 metres of hydraulic hose.

MARY ROSE MUSEUM, PORTSMOUTH



SECTION 5: Jacks - Hydraulic & Mechanical

Tangye Hydralite Jacks - Plain & Claw Type

Plain Jacks

- Utilises a plain ram to raise or push the load
- High pressure relief valve provides overload protection
- Fail-safe positive mechanism prevents over-stroking of ram
- 100t model fitted with integral two-speed pump
- Available in detached mode to allow remote operation and use in multi-point jacking systems
- Plain jacks are available with or without an extended base. *Illustration shows extended base*

Fleet Code	Capacity	Closed Height	Stroke	Weight
HL 620	20t	263mm	152mm	11kg
HL 1220	20t	438mm	305mm	17kg
HL 630	30t	263mm	152mm	16kg
HL 1230	30t	451mm	305mm	24kg
HL 660	60t	893mm	152mm	28kg
HL 1260	60t	500mm	305mm	44kg
HL 6100	100t	317mm	152mm	54kg

Claw Jacks with Extended Base

- Claw Jacks are fitted with an extended base and facilitate jacking from low access points
- Toe capacity is 40% of head capacity
- High pressure relief valve provides overload protection
- Fail-safe positive mechanism prevents over stroking of ram
- Available in detached mode to allow remote operation and use in multi-point jacking systems

Fleet Code	Capacity	Capacity of Toe	Closed Height	Stroke	Weight
HL 620C	20t	8t	276mm	152mm	15kg
HL 1220C	20t	8t	452mm	305mm	23kg
HL 630C	30t	12t	181mm	152mm	21kg
HL 1230C	30t	12t	470mm	305mm	31kg
HL 660C	60t	24t	327mm	152mm	43kg
HL 1260C	60t	24t	533mm	305mm	65kg

All jacks used with a claw must be fitted with an extended base. (Toe capacity = 40% of head capacity)

Tangye Hydralite Jacks - Screwed Ram & Special Applications

Jacks with Screwed Ram & Locking Collar

- High pressure relief valve provides overload protection
- Fail-safe positive mechanism prevents over stroking of ram
- Available in detached mode to allow remote operation and use in multi-point jacking systems

Fleet Code	Capacity	Closed Height	Stroke	Weight
HL 620SR	20t	289mm	152mm	12kg
HL 1220SR	20t	464mm	305mm	18kg
HL 630SR	30t	292mm	152mm	16kg
HL 1230SR	30	479mm	305mm	24kg
HL 660SR	60t	536mm	305mm	47kg

Screwed Ram and Locking Collar Jacks should be selected when loads are to be sustained for a significant time. No need to rely on hydraulic fluid pressure.

Detached Operation

The Hydralite range of jacks have a detached mode capability allowing them to be connected via a hose to a separate pump and used remotely in a cylinder-type operation.

Detached mode also allows multiples to be operated from a single power source.

When used remotely it is strongly advised that a jack with a screwed ram and locking collar is employed where loads are to be sustained for any length of time.

See pages 60 and 61 for Jacking Systems and Design Set Up and page 55 for Hydraulic Accessories that help you get the most out of your jacking system.

Did you know?

Arbil is the OEM of the Zwicky™ range of hydraulic track jacks. Made in the UK and sold across the globe, Zwicky™ illustrates Arbil's ongoing commitment to excellence in the field of hydraulics.

zwicky TRACK TOOLS

Incorporating Integral Gauge

Gauges reading tonnes loaded on the ram can be fitted to the Hydralite range. It is then possible to assess the load applied to the jack during operation. Jacks are thereby also able to be used as a weighing device.

On the 100t HL6100 model the gauge is fitted directly to the integral Hydrapak pump

Hydraulic Jacks - Special Purpose

Tangye Hydramite Low Height Jacks

- Safe-ram trip limits stroke. Pressure relief valve prevents overloading
- Compact – small enough to fit in most tool boxes
- Operates in any orientation. Swivel head accommodates small degrees of mis-alignment

Fleet Code	Capacity	Stroke	Closed Height	Weight
HM 06	6.5t	82mm	129mm	4kg

Tangye Hydraclaw Toe Jacks

- 5t capacity on head or toe
- Fast operation – 10mm lift per stroke
- Versatile – horizontal or vertical operation
- Positive stop feature prevents over-stroking, pressure relief valve prevents overloading
- Low clearance – 41mm on the toe

Fleet Code	Capacity	Stroke	Toe Height	Head Height	Weight
HC 05	5t	178mm	41mm	330mm	17kg

Hydrovic 360° Swivel Toe Jacks

- 360° Rotation of the toe through the body allows access to confined areas
- Equal capacity on head and toe
- Pressure relief valve prevents overloading
- Leakage-free patented process
- Very low toe height (25mm)
- Horizontal or vertical position
- Instantaneous stop mechanism
- 25t model also available

Fleet Code	Capacity	Stroke	Closed Height		Weight
			On Toe	On Head	
HV 05	5t	206mm	25mm	368mm	20kg
HV 10	10t	233mm	25mm	413mm	29kg

Mechanical Jacks

Ratchet Jacks

These mechanical jacks utilise the lever and fulcrum principle to lift and lower the load. The downward stroke of the lever raises the rack one notch.

A pawl then slips into place to hold the load while the lever is raised to jack further.

Fleet Code	Capacity	Stroke	Closed Height		Weight
			Head	Toe	
RJ 05	5t	241mm	406mm	38mm	15.5kg
RJ 10	10t	305mm	559mm	64mm	29.6kg
RJ 15	15t	292mm	559mm	64mm	37.5kg
RJ 20	20t	547mm	711mm	64mm	47kg

Low Height Jacks

These unique wedge-operation jacks are used for supporting structures, under-pinning buildings, re-aligning bridge beams, levelling structural steelwork and shoring. The jacks are operated by a powered wrench which activates the screw wedge action.

Fleet Code	Capacity	Stroke	Closed Height	Dimensions
LHJ 075	75t	20mm	80mm	150mm x 200mm

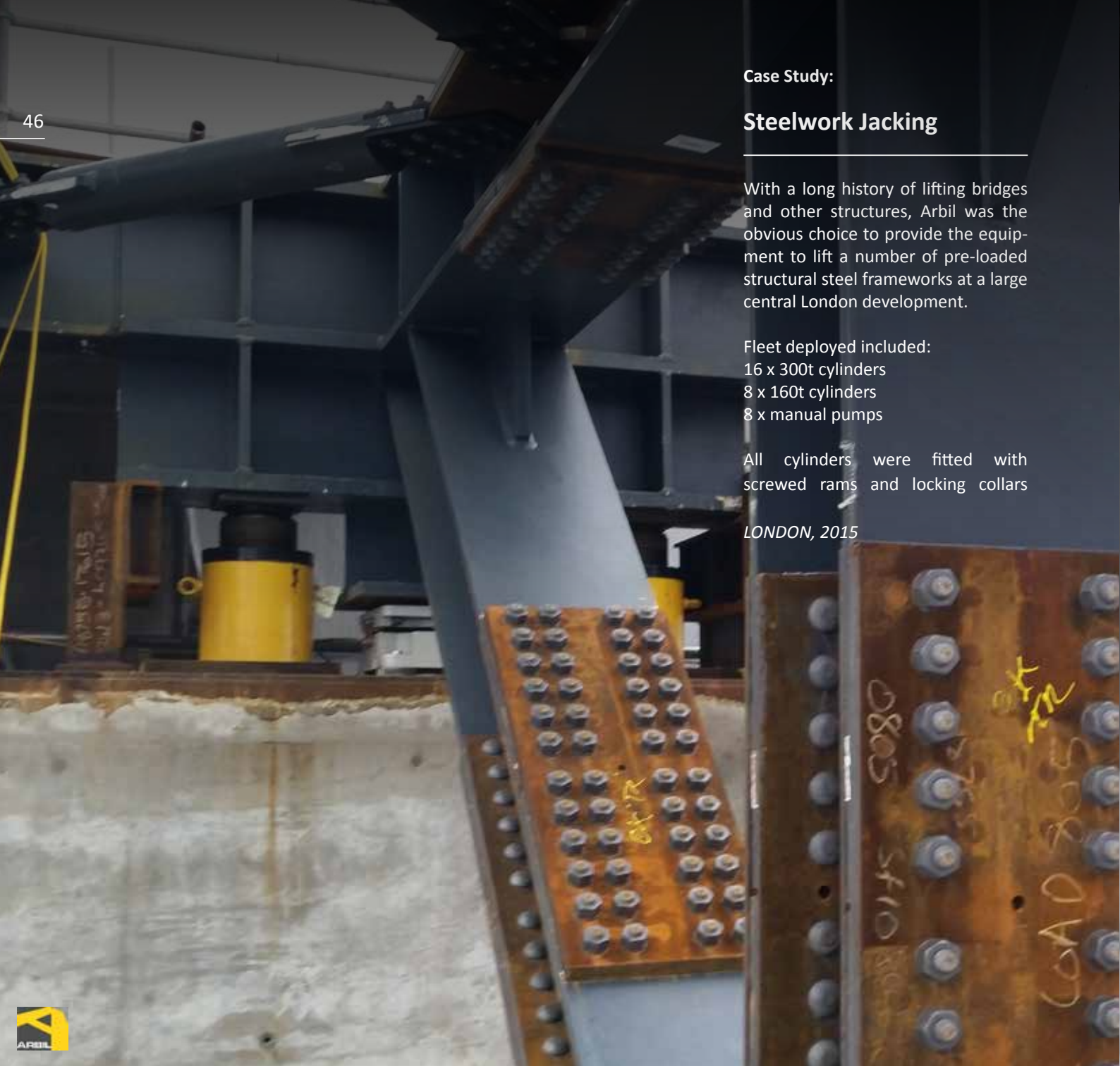
Cable Reel Jacks

Working in pairs, heavy duty cable reel jacks have 3 hook positions per jack, one top position and two side positions.

Fleet Code	Capacity Per Pair		Stroke	Top Hook Height	Reel Dia Range	Spindle Dia		Weight Per Pair
	Side Hooks	Top Hooks				Side Hooks	Top Hooks	
CJ 05	5t	10t	254mm	533mm	508mm -1524mm	50mm	63mm	26.7kg

Please note that the side hooks are only rated at 50% of the top hook capacity

See page 22 for details on cable pulling winches and hydraulic cable reel jacks



Case Study:

Steelwork Jacking

With a long history of lifting bridges and other structures, Arbil was the obvious choice to provide the equipment to lift a number of pre-loaded structural steel frameworks at a large central London development.

Fleet deployed included:
16 x 300t cylinders
8 x 160t cylinders
8 x manual pumps

All cylinders were fitted with screwed rams and locking collars

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SECTION 6: Hydraulic Pumps & Cylinders

Manually Operated Pumps

Enerpac P80


Tangye Hydrapak

Manual Pumps

Two-speed pumps provide fast delivery of oil until load contact is made, when the larger of the two pistons cuts out to allow high pressure operation. *Please note: P39 pump is single speed.*

- Oil delivery figures are given per stroke
- All pumps are fitted with a 3m hose and pressure gauge as standard. Longer lengths of hose are available on request.
- Max Pressure: 700bar/10,000psi
- Compact and portable
- Pressure relief valve to prevent overloading

Fleet Code	Type	Reservoir Capacity	For Use With Cylinder Type	Speed	Oil Displacement Per Stroke cm^3		Weight
					1st Stage	2nd Stage	
HP 39	Enerpac P39	0.65 litre	Single Acting	Single	-	2.62	5.9kg
HP 80	Enerpac P80	2.2 litre	Single Acting	Twin	16.22	2.46	10.9kg
HP 84	Enerpac P84	2.2 litre	Double Acting	Twin	16.22	2.46	13.2kg
HP 462	Enerpac P462	7.4 litre	Single Acting	Twin	126.2	4.75	27.7kg
HP 464	Enerpac P464	7.4 litre	Double Acting	Twin	126.2	4.75	27.7kg
HP 700	Tangye Hydrapak	4.5 - 18L	Single Acting	Twin	50.8	3.62	4.5kg

Water Test Pumps

- Utilises a Tangye Hydrapak pump
- Up to 9 litre capacity (dependent on application)
- Pressure relief valve to prevent overloading

Fleet Code	Reservoir Capacity	Operation	Pressure		Oil Displacement Per Stroke cm^3	
			1st Stage	2nd Stage	1st Stage	2nd Stage
WP 110	9 litre	2 Speed	52 bar	110 bar	50.8	22.61
WP 310	9 litre	2 Speed	52 bar	310 bar	50.8	8.13
WP 700	9 litre	2 Speed	52 bar	700 bar	50.8	3.62

Power Operated Pumps

Petrol/Diesel Pumps - For Single & Double Acting Cylinders

Powered pumps increase the production potential for repetitive tooling applications including bending, straightening and forming. With a maximum operating pressure of 700bar/10000psi, these pumps are ideal where multi-cylinder systems are in operation, or where a large volume of oil is required for use with long stroke heavy duty cylinders.

- Reservoir capacity up to 68 litres

Fleet Code	Type	Reservoir Capacity	Speed	Pressure	Oil Delivery		Weight
					1st Stage	2nd Stage	
PP 20	Petrol	20 litre	Twin	700 bar	9 L/min	1 L/min	50kg
DP 40	Diesel	40 litre	Single	700 bar	-	2.25 L/min	300kg
PP 68	Petrol	68 litre	Twin	700 bar	12.9 L/min	5.70 L/min	400kg

Electric Pumps - For Single & Double Acting Cylinders

- Available in single and 3 phase models
- Reservoir capacity up to 50 litres
- For use with single and double acting cylinders

Fleet Code	Voltage/ Phase	Reservoir Capacity	Speed	Pressure		Oil Delivery		Weight
				1st Stage	2nd Stage	1st Stage	2nd Stage	
EP 02S	110V/Single	2 litre	Twin	14 bar	700 bar	3.2 L/min	0.328 L/min	12kg
EP 20S	110V/Single	20 litre	Twin	35 bar	700 bar	9.0 L/min	0.8 L/min	45kg
EP 35T	440V / 3	35 litre	Twin	35 bar	700 bar	4.0 L/min	0.18 L/min	100kg
EP 37T	440V / 3	37 litre	Twin	35 bar	700 bar	7.0 L/min	0.8 L/min	122kg
EP 40T	440V / 3	40 litre	Twin	35 bar	700 bar	9.0 L/min	1.0 L/min	130kg
EP 50T	440V / 3	50 litre	Single	-	700 bar	-	2.3-2.7 L/min	150kg

Air Pumps - For Single Acting Cylinders

Fleet Code	Reservoir Capacity	Pressure		Oil Delivery		Weight
		1st Stage	2nd Stage	1st Stage	2nd Stage	
AP 20	20 litre	-	700 bar	-	1.1 L/min	22kg
AP 40T	40 litre	-	700 bar	-	2.0 L/min	38kg

General Purpose Cylinders

Single Acting - Standard Duty

Standard duty single-acting cylinders are available in a wide range of tonnages and strokes, with spring return, collar, plunger threads and base mounting holes.

Fleet Code	Capacity	Closed Height	Stroke	Ext Height	Ram Dia	Cyl Dia	Oil Capacity	Weight
GP 035	3.5t	234mm	127mm	361mm	25.4mm	38mm	0.06 litre	1.8kg
GP 075	7t	124mm	57mm	181mm	35mm	57mm	0.07 litre	2kg
GP 102	10t	121mm	54mm	175mm	38mm	57mm	0.06 litre	2kg
GP 106	10t	247mm	155mm	402mm	38mm	57mm	0.2 litre	5kg
GP 1010	10t	349mm	255mm	604mm	38mm	57mm	0.3 litre	6kg
GP 202	20t	140mm	50mm	190mm	50mm	90mm	0.1 litre	4kg
GP 204	20t	190mm	100mm	290mm	50mm	90mm	0.2 litre	6kg
GP 236	23t	273mm	155mm	428mm	57mm	85mm	0.4 litre	10kg
GP 2310	23t	375mm	260mm	635mm	57mm	85mm	0.6 litre	14kg
GP 2314	23t	476mm	360mm	836mm	57mm	85mm	0.9 litre	18kg
GP 302	30t	178mm	60mm	238mm	63mm	114mm	0.2 litre	10kg
GP 603	60t	235mm	75mm	310mm	92mm	159mm	0.5 litre	27kg
GP 907	90t	359mm	165mm	524mm	105mm	175mm	1.8 litre	41kg
GP 9013	90t	430mm	330mm	760mm	110mm	155mm	2.4 litre	37kg

Single Acting - Heavy Duty

Heavy duty single-acting cylinders are available in a wide range of tonnages and strokes and incorporate integral stop rings to protect against piston blow-out.

Fleet Code	Capacity	Closed Height	Stroke	Ext Height	Ram Dia	Cyl Dia	Oil Capacity	Weight
HD 101	10t	88mm	38mm	126mm	38mm	70mm	0.05 litre	2.6kg
HD 202	20t	98mm	44mm	142mm	51mm	92mm	0.11 litre	4.7kg
HD 302	30t	117mm	62mm	179mm	51mm	101mm	0.25 litre	6.5kg
HD 502	50t	124mm	60mm	184mm	57mm	127mm	0.3 litre	10kg
HD 506	50t	280mm	150mm	430mm	84mm	130mm	0.8 litre	24g
HD 902	90t	141mm	55mm	196mm	86mm	165mm	0.65 litre	21kg
HD 1002	100t	170mm	50mm	220mm	100mm	190mm	0.5 litre	28kg
HD 1004	100t	220mm	100mm	320mm	140mm	200mm	1.5 litre	32kg
HD 1006	100t	330mm	150mm	480mm	80mm	200mm	1.8 litre	25kg
HD 1404	140t	220mm	100mm	320mm	130mm	225mm	1.5 litre	55kg
HD 2004	200t	260mm	95mm	355mm	200mm	280mm	3 litre	125kg
HD 2007	200t	470mm	175mm	645mm	210mm	280mm	6 litre	220kg
HD 2506	250t	293mm	150mm	443mm	216mm	275mm	5.5 litre	135kg
HD 3006	300t	340mm	150mm	490mm	250mm	355mm	7.4 litre	210kg
HD 4005	400t	420mm	125mm	545mm	290mm	420mm	8.6 litre	230kg
HD 5006	500t	410mm	150mm	560mm	330mm	455mm	13 litre	525kg
HD 7506	750t	435mm	150mm	585mm	400mm	560mm	19 litre	750kg
HD 10006	1000t	455mm	150mm	605mm	455mm	630mm	25 litre	1070kg

General Purpose Cylinders

Single Acting - Low Height 'Pad Jacks'

Designed for use in confined areas. Compact dimensions, high tonnage capacities and fast return cycles make these cylinders the ideal solution for short stroke lifting, aligning and adjusting applications in construction, shipyard, offshore, fabrication and machine assembly operations.

Fleet Code	Capacity	Closed Height	Stroke	Ext Height	Ram Dia	Cyl Dia	Oil Cap	Weight
LH 05	5t	32mm	6mm	38mm	25mm	59mm	0.004 litre	0.5kg
LH 10	10t	43mm	11mm	54mm	38mm	83mm	0.018 litre	2kg
LH 20	20t	53mm	11mm	64mm	51mm	102mm	0.032 litre	3kg
LH 30	30t	59mm	12mm	71mm	51mm	114mm	0.055 litre	4kg
LH 50	50t	67mm	16mm	83mm	57mm	140mm	0.099 litre	7kg
LH 75	75t	79mm	16mm	95mm	83mm	165mm	0.164 litre	11kg
LH 90	90t	86mm	16mm	102mm	76mm	178mm	0.203 litre	14kg
LH 140	140t	100mm	14mm	114mm	114mm	216mm	0.317 litre	26kg

Certain low height cylinders are also available with screwed ram and locking collar

Double Acting - Heavy Duty

Hydraulic return facilitates a fast and controlled descent of the load. This is particularly advantageous for jacking and padding multiple lift operations where sustained optimum control of the load is required.

Fleet Code	Capacity	Closed Height	Stroke	Ext Height	Ram Dia	Cyl Dia	Oil Cap	Weight
DA 1012	10t	425mm	305mm	730mm	35mm	73mm	0.442 litre	20kg
DA 2536	25t	1230mm	915mm	2145mm	100mm	150mm	0.78 litre	165kg
DA 306	30t	320mm	150mm	470mm	55mm	110mm	0.663 litre	25kg
DA 506	50t	332mm	155mm	487mm	79mm	127mm	1.063 litre	30kg
DA 508	50t	450mm	200mm	650mm	80mm	140mm	1.417 litre	50kg
DA 906	90t	365mm	150mm	515mm	95mm	175mm	2.238 litre	70kg
DA 1006	100t	410mm	150mm	560mm	100mm	200mm	2.147 litre	85kg
DA 10024	100t	930mm	600mm	1530mm	150mm	200mm	17.385 litre	185kg
DA 1502	150t	185mm	50mm	253mm	114mm	203mm	1.135 litre	42kg
DA 2006	200t	310mm	150mm	460mm	100mm	235mm	4.332 litre	92kg
DA 30012	300t	530mm	300mm	830mm	160mm	275mm	13.947 litre	200kg
DA 75020	750t	960mm	500mm	1460mm	400mm	540mm	60.556 litre	1545kg

Special Purpose Cylinders

Single-Acting Cylinders with Screwed Ram & Locking Collar

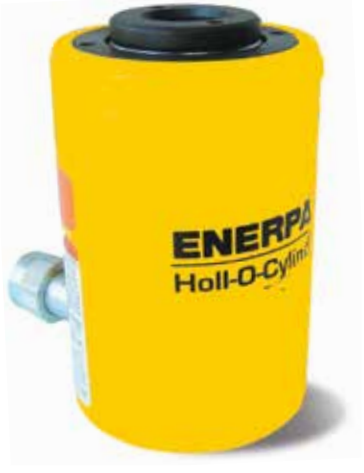
Where positive load holding is required, cylinders fitted with a screwed ram and locking collar are recommended. These cylinders are the usual choice for on-site jacking, foundation and bridge construction support, heavy equipment maintenance and civil engineering. The use of tilting heads is also often recommended.

The locking collar screws down on the heavy duty acme thread against the cylinder head preventing the load from lowering, even if hydraulic pressure is lost

Please see page 43 for Arbil's range of Tangye jacks which are available in "detached" cylinder type mode

Fleet Code	Cap	Closed Height	Stroke	Extended Height	Ram Dia	Cyl Dia	Oil Capacity	Weight
SR 104	10t	170mm	100mm	270mm	35mm	66mm	0.3 litre	2kg
SR 1512	15t	490mm	300mm	790mm	75mm	115mm	1.3 litre	15kg
SR 202	20t	170mm	50mm	220mm	60mm	90mm	0.15 litre	6kg
SR 304	30t	280mm	100mm	380mm	75mm	115mm	0.45 litre	14kg
SR 306	30t	320mm	150mm	470mm	75mm	115mm	0.67 litre	17kg
SR 404	40t	220mm	100mm	320mm	95mm	125mm	0.7 litre	20kg
SR 502	50t	220mm	50mm	270mm	110mm	158mm	0.5 litre	23kg
SR 506	50t	265mm	150mm	415mm	95mm	125mm	1.2 litre	24kg
SR 508	50t	320mm	200mm	520mm	95mm	125mm	1.5 litre	30kg
SR 5010	50t	365mm	250mm	615mm	95mm	125mm	2.0 litre	36kg
SR 550	55t	90mm	6mm	96mm	100mm	140mm	0.05 litre	10kg
SR 552	55t	145mm	40mm	185mm	100mm	140mm	0.32 litre	17kg
SR 553	55t	165mm	65mm	230mm	100mm	140mm	0.51 litre	18kg
SR 602	60t	200mm	50mm	250mm	130mm	170mm	0.7 litre	20kg
SR 754	75t	245mm	100mm	345mm	120mm	160mm	1.2 litre	25kg
SR 1000	100t	110mm	10mm	120mm	130mm	185mm	0.15 litre	30kg
SR 1001	100t	137mm	50mm	187mm	135mm	185mm	0.43 litre	24kg
SR 1004	100t	255mm	100mm	355mm	135mm	185mm	1.5 litre	50kg
SR 1006	100t	290mm	150mm	440mm	130mm	165mm	2.2 litre	48kg
SR 10010	100t	390mm	250mm	640mm	130mm	165mm	3.6 litre	65kg
SR 1404	140t	285mm	100mm	385mm	130mm	220mm	1.3 litre	65kg
SR 1504	150t	285mm	100mm	385mm	150mm	220mm	1.8 litre	66kg
SR 1604	160t	340mm	100mm	440mm	150mm	250mm	3 litre	120kg
SR 1755	175t	310mm	100mm	410mm	190mm	250mm	3 litre	110kg
SR 2004	200t	350mm	95mm	445mm	200mm	280mm	3 litre	156kg
SR 2007	200t	470mm	175mm	645mm	200mm	290mm	5.5 litre	220kg
SR 2504	250t	300mm	100mm	400mm	220mm	280mm	3.8 litre	130kg
SR 2506	250t	350mm	150mm	500mm	216mm	275mm	5.5 litre	159kg
SR 3003	250t	290mm	75mm	365mm	240mm	330mm	3.4 litre	185kg
SR 3006	300t	410mm	150mm	560mm	230mm	330mm	6.3 litre	250kg
SR 3006	300t	425mm	150mm	575mm	260mm	350mm	8 litre	318kg
SR 3152	315t	230mm	50mm	80mm	240mm	294mm	2.7 litre	110kg
SR 4005	400t	480mm	125mm	605mm	290mm	420mm	8.3 litre	500kg
SR 4005	400t	530mm	125mm	655mm	290mm	420mm	8.3 litre	560kg
SR 5006	500t	510mm	150mm	660mm	325mm	460mm	12.5 litre	640kg

Special Purpose Cylinders



Hollow Cylinders Push – Pull type (Single Acting)

Highly versatile cylinders employed in both pushing and pulling applications. In pulling mode, the cylinder's hollow ram can accommodate a steel rod through its length allowing it to travel through the cylinder as the ram moves.

Fleet Code	Cap	Closed Height	Stroke	Ext Height	Ram Dia	Cyl Dia	Oil Capacity	Hole Dia	Weight
HC 120	12t	55mm	8mm	63mm	39mm	70mm	0.02 litre	19mm	1.5kg
HC 122	12t	120mm	42mm	162mm	35mm	69mm	0.75 litre	19mm	2.8kg
HC 202	20t	162mm	50mm	212mm	55mm	95mm	0.75 litre	19mm	5kg
HC 202	20t	121mm	50mm	171mm	35mm	69mm	0.75 litre	19mm	3kg
HC 302	30t	178mm	60mm	238mm	63mm	114mm	0.3 litre	33mm	9kg
HC 3010	30t	430mm	257mm	687mm	60mm	114mm	1.2 litre	33mm	28kg
HC 406	40t	390mm	150mm	540mm	65mm	140mm	1.2 litre	38mm	30kg
HC 603	60t	235mm	75mm	310mm	90mm	159mm	1.0 litre	54mm	25kg
HC 903	90t	256mm	75mm	331mm	125mm	230mm	1.1 litre	76mm	54kg
HC 10010*	100t	500mm	257mm	757mm	140mm	220mm	3.6 litre	80mm	100kg
HC 10020*	100t	750mm	500mm	1250mm	150mm	250mm	7.2 litre	80mm	215kg
HC 1508*	150t	503mm	200mm	703mm	170mm	270mm	4.3 litre	102mm	170kg

*Denotes Double-Acting Cylinder

Pull Cylinders

Used singularly or in parallel operation of multiple units in a horizontal, vertical or overhead position. Applications include enabling heavy steel plates and sub assemblies to be drawn together with precision prior to welding.

Fleet Code	Capacity	Closed Length	Stroke	Extended Length	Ram Dia	Cyl Dia	Oil Capacity	Weight
PC 05	5t	302mm	140mm	442mm	40mm	57mm	1 litre	4.3kg
PC 10	10t	570mm	151mm	721mm	46mm	85mm	2.2 litre	12kg
PC 15	15t	1560mm	915mm	2475mm	100mm	150mm	7.1 litre	180kg
PC 50	50t	800mm	150mm	950mm	50mm	140mm	1 litre	54kg

Spread Cylinders & Air Bags

Spread Cylinders

Low tip clearance, with maximum tip opening, makes these hydraulic spread cylinders versatile tools for a wide range of spreading applications.

Jaws are spring-loaded and close automatically when the pump valve is open.

- Single-acting, spring return
- Low tip clearance: 10mm
- Large stroke: 85mm

Fleet Code	Max Capacity	Tip Clearance	Stroke	Ext Height	Weight
SC 1	1t	10mm	85mm	94mm	2.3kg
SC 10	10t	10mm	85mm	94mm	2.3kg

Hydraulic Flange Spreaders - FS Series

- Lightweight, ergonomic design for ease of use
- Adjustable jaw widths from 70mm to 216mm for a wide range of applications
- Single-acting, spring return RC-Series cylinders for fast trouble-free operation

Capacity	Max Flange Thickness	Stud Size	Standard Wedge	Stroke	Oil Capacity
10t	2mm x 92mm	31 - 41mm	3 - 28mm	54mm	79cm^3

Air Bags

A range of strong, re-enforced neoprene pads that are used in a wide range of applications in lifting, shifting and moving.

The textured surface assists with secure lifting.

Comes supplied with either a single or 2 way manifold control and pressure gauge.

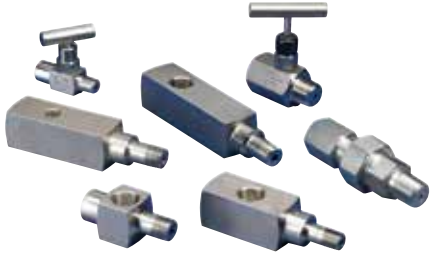
- Up to 4 bags can be operated simultaneously
- Standard hose length 8m (other lengths available)

Fleet Code	Size	Max Lift Generated	Height Deflated	Height Inflated	Weight
ALB 20	510mm x 510mm	20t	25mm	280mm	7.3kg
ALB 40	714mm x 714mm	40t	25mm	375mm	15.3kg

Hydraulic Accessories

Gauge Adaptors & Accessories

There are numerous models of gauge adaptor that allow easy mounting of a pressure gauge onto your system. In addition, there are 2 models of needle valve for isolating or shutting off the gauge from the system when necessary.



Manifolds

These units allow a single pump to operate multiple cylinders. Each manifold is fitted with shut-off valves and is available in 2, 3, 4, 6, 8 and 12 way configurations.

Pressure & Flow Control Valves

A large range of needle, snubber, auto-damper, check and pilot operated valves are available to customise your hydraulic system.

All valves have NPTF porting to insure against leakage.

Multi-Directional Control Valves

Usually pump mounted, these valves allow centralised, positive load control over either single or double-acting cylinders. Available as either 2 way, 3 way or 4 way configurations.

High Pressure Hoses

Available in standard lengths of 2m, 3m, 6m, 8m, 10m, 15m and 30m. Longer lengths are available upon request.

Pressure Gauges

Calibrated in tonnes, bar or both, our large range of hydraulic pressure gauges give a clear and accurate reading for the user.

All pressure sensing parts are sealed and dampened by glycerine for long life. All ports include a safety blow-out disc and pressure equalling membrane.

For high cycle applications, Arbil recommends that gauge snubbers or needle valves are incorporated into the system.

Arbil's technical team will be happy to advise on the most suitable gauge and required accessories for any particular application.

Arbil has a comprehensive repair and calibration facility for gauges.

Hydraulic Puller Kits

Grip Puller Kits

Each kit comprises of a hydraulic cylinder, pump, gauge and hose, together with a range of double and triple cross-heads, adjusting rods and accessories.

- Recommended for removing and installing gears, bearings, pulleys and similar parts
- Each kit can be used in either double or triple grip arm arrangements

Fleet Code	Capacity	Triple Set		Double Set	
		Spread	Reach	Spread	Reach
GPK 05	5t	249mm	252mm	249mm	252mm
GPK 08	8t	254mm	254mm	254mm	178mm
GPK 20	20t	500mm	300mm	400mm	300mm
GPK 30	30t	800mm	400mm	600mm	400mm
GPK 60	60t	1100mm	700mm	900mm	700mm

If a double cross-head with grip arms is used, loads should not exceed two thirds of the rated puller set capacity

Multi-Purpose Puller Kits

More versatile than the grip puller kits, these sets include bearing pulling attachments which are designed to fit behind closely mated parts, while the bearing cup pulling arrangement serves to pull bearings from the inside. Full dimensions available upon request.

Fleet Code	Capacity	Triple Set		Double Set	
		Spread	Reach	Spread	Reach
MPK 08	8t	254mm	254mm	255mm	178mm
MPK 20	20t	500mm	300mm	400mm	300mm
MPK 30	30t	800mm	400mm	600mm	400mm

Dimensions may vary between models, always check with Arbil's technical staff if these are critical

If a double cross-head with grip arms is used, loads should not exceed two thirds of the rated puller set capacity

Torque Wrenches & Pumps

Enerpac Bolting Tools

Enerpac's bolting solutions cater to the complete bolting workflow, ensuring joint integrity in a variety of applications. Designed to fasten bolts to a specified torque, Enerpac hydraulic torque wrenches provide the perfect solution for heavy industrial bolting applications, making it possible to torque large assemblies in power generation, renewable energy, oil and gas, rail infrastructure and engineering.

Joint Assembly

From simple pipe alignment to complex joint positioning of large structural assemblies, Enerpac's comprehensive line of joint assembly products range from hydraulic and mechanical alignment tools to PLC-controlled multi-point positioning systems.

Controlled Tightening

From mechanical torque multipliers to hydraulically driven square drive wrenches and from low profile torque wrenches to inter-connectable bolt tensioning tools, Enerpac provide the products required to achieve accurate and simultaneous tightening of multiple bolts.

Pump Options

Arbil provide a range of pumps to suit bolting applications: manual, electric or air.

Hydraulic Theory & Cylinder Selection

The Power of Hydraulics

Arbil's vast range of hydraulic cylinders (5-1000t capacity per unit) combine with an infinitely variable network of hoses, valves and manifolds to produce an unrivalled choice of jacking systems.

Whether it be a simple manually operated pump and cylinder set, or a fully synchronised multi-point jacking system, Arbil has the equipment and technical know how to provide the solution.

Hydraulic systems are not limited to simply pushing or pulling a given load, they provide the power source for a wide variety of special applications, such as the weighing of super structures, bridge sliding, gear and bearing removal, joint assembly, controlled tightening and nut splitting.

Please note that Arbil's range of Tangye Hydralite Jacks featured on pages 42-43 can be modified into detached operation mode and used remotely in the same way as cylinders.

Selecting a Cylinder

The following points need to be taken into consideration when selecting a cylinder:

- **Cylinder operation:** Single-acting (push) or double-acting (push/pull)
- **Ram type:** Solid ram or hollow ram?
- **Lifting capacity:** Or force required. Note that the best working practice encourages using only 80% of ratings
- **Number of lifting points:** How many are required as dictated by the method statement?
- **Travel distance:** How far will the load be required to travel?
- **Positive load holding:** Can be provided via check valves or screwed rams and locking collars
- **Available gap:** To accommodate each cylinder
- **Oil capacity:** To ensure that the pump selected is adequate
- **Accessories:** To ensure that the jacking operation is as safe and effective as possible, consideration should be given to the addition of accessories including: packers and jacking stools, swivel heads, cylinder base plates and traversing bases

1. Cylinder Operation

Single-Acting Cylinders
In a single-acting cylinder, the advance stroke is powered hydraulically and the ram retracts either by an internal spring, gravity or external pressure on the ram.

Double-Acting Cylinders
In a double-acting cylinder, both advance and retract stroke are powered hydraulically, although the retract stroke has approximately half the force of the advance stroke because of the smaller ram effective area. Such cylinders are used for pulling and pushing loads and to provide a controlled retract stroke in order to lower high tonnage loads safely.

2. Ram types

Solid Ram
The top end of the ram has a grooved or smooth heat treated saddle to support the load. The cylinders can be single or double-acting. Most rams have internal threads for connecting saddles or a variety of other attachments.

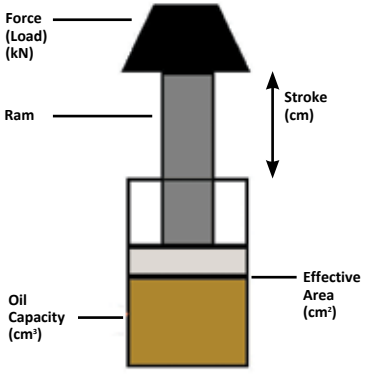
Hollow Ram
As the name implies, the ram in these single or double-acting cylinders is hollow. Rods, which can be attached to the ram, pass through the middle. A load fixed to these rods is then pushed or pulled by the action of the ram.

3. Calculating the Lifting Force

The lifting force expressed in (kN) is calculated by multiplying the cylinder effective area (cm^2) by the hydraulic working pressure (bar).

4. Calculating the Cylinder Oil Capacity

The cylinder oil capacity (cm^3) is calculated by multiplying the cylinder effective area (cm^2) by the cylinder stroke (cm), and is necessary to determine the required useable oil capacity of the pump. Where multiple cylinders are required; the cylinder oil capacity (cm^3) should be multiplied by the number of cylinders (N) to give the minimum useable oil capacity (cm^3) required of the pump.



Pump Selection & Completing the System

Selecting a Pump

Pump selection can be made simpler when the following points are taken into consideration:

1. Available Power Supply

Pumps can be operated:

- Manually
- By electric motor
- By compressed air
- By petrol/diesel engine

2. Pump Oil Capacity

A pump must provide enough oil to lift all the cylinders in the system plus a certain reserve to keep the pump operating when the cylinders have been extended and to keep hoses, valves and components filled.

To determine if the pump's oil capacity is adequate, add up the maximum capacity of all cylinders in the system. Then compare this figure with the usable oil capacity of the pump.

3. How fast can the load be lifted?

For a given cylinder capacity, the ram lifting speed is in direct proportion to the power and oil flow of the pump.

The faster the pump forces the oil to flow into the cylinder, the faster the cylinder ram travels.

Ram lifting speed will also be directly affected by the number of cylinders being operated simultaneously by a single pump. The more cylinders, the slower the speed.

4. System Pressure

Pressure in the system can be controlled by manually setting the pump's adjustable pressure relief valve. Pressure can be adjusted to any level up to a maximum, which, for most pumps, is 700 bar/10,000 psi. This maximum pressure limit not only protects the operator but prevents damage to the equipment.

How to complete the system

After the cylinder and pump have been selected, the following components are required to complete the hydraulic system.

- **Hydraulic hoses** to connect the hydraulic components
- **Couplers** for easy and fast connection without losing oil
- **Valves** to control and regulate the flow or direction of oil
- **Manifolds** to operate more than one cylinder with only one pumping unit
- **Gauges** for visual reading of pressure generated by the pump, and force generated by the cylinders
- **Dust caps** to protect couplers when not in use

Arbil's technical advisors are always available to help with pump selection if required

When used correctly, hydraulic power is one of the safest methods of applying force to your work. Outlined in this section are some basic recommendations and guidelines. In addition, it is worth noting that the capacities and stroke dimensions detailed above should be treated as maximum safe limits. Best working practice encourages using only 80% of these ratings.

Where dimensions are critical, please contact Arbil's technical team for precise details.

Conversion Factors

All capacities and measurements throughout this brochure are expressed in uniform values. The conversion chart below provides helpful information for translation into equivalent systems.

1 bar	= 1.019 kgf/cm²
	= 10 N/cm²
	= 14.50 psi
1 psi	= 0.069 bar
1 tonne	= 1000 Kg
1 N	= 0.102 kgf
1 kN	= 1000 N
1 kgf	= 9.81 N
1 N/m²	= 1 Pa
1 mm	= 0.039 in
1 in	= 25.4 mm
1 cm²	= 0.155 in²
1 in²	= 6.452 cm²
1 cm³	= 0.061 in³
1 in³	= 16.387cm³
1 gal (UK)	= 4.546 L
1 L	= 0.22 gal (UK)
1 L	= 1000 cm³
1 Kg	= 2.204 lb
1 lb	= 0.454 Kg
1 kW	= 1.341 HP
1 HP	= 0.746 kW
1 Nm	= 0.102 kgfm

Hydraulic Components & Basic System Set-ups

1. **Cylinder** - to apply the hydraulic force.
2. **Cylinder Base Plate** - for applications where additional cylinder stability is required or preferred.
3. **Pump** - provides hydraulic flow.
4. **Hose** - transports hydraulic fluid.
5. **Male Coupler** - for quick connection of the hose to system components.
6. **Female Coupler** - for quick connection of the system components.
7. **Gauge** - to monitor pressure of the hydraulic circuit.
8. **Gauge Adaptor** - for quick and easy gauge installation.
9. **Swivel Connector** - allows proper alignment of valves and/or gauges. Used when units being connected cannot be rotated.
10. **Auto-Damper Valve** - to protect gauge from damage due to sudden pressure pulses in the system. Needs no adjustment and allows correct positioning of gauge prior to tightening.
11. **4-Way Directional Control Valve** - controls the direction of hydraulic fluid in a double-acting system.
12. **3-Way Directional Control Valve** - controls the direction of hydraulic fluid in a single-acting system.
13. **Safety Holding Valve** - controls load descent in lifting applications.
14. **Manifold** - allows distribution of hydraulic fluid from one power source to several cylinders.
15. **Needle Valve** - regulates the flow of hydraulic fluid to or from the cylinders.

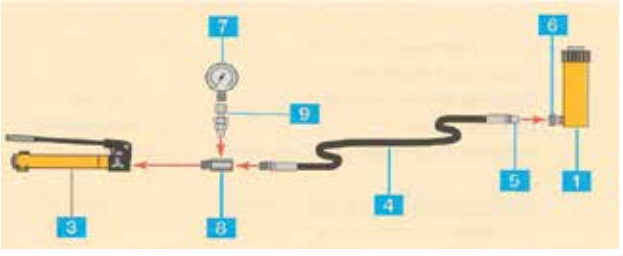


Figure 1
Single-acting cylinder

As used in a press for example, the hand pump offers controlled cylinder advance. However, many strokes of the handle may be required in longer stroke applications or when the cylinder capacity is 25t or above.

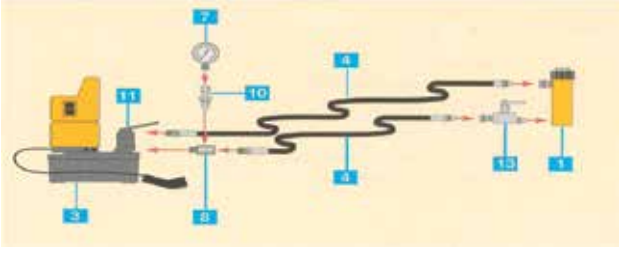


Figure 2
Double-acting cylinder

Used for lifting applications where a slow controlled descent of the load must be maintained. Illustration shows power pack with 4-way valve, double-acting cylinder, and safety holding valve to control load descent.

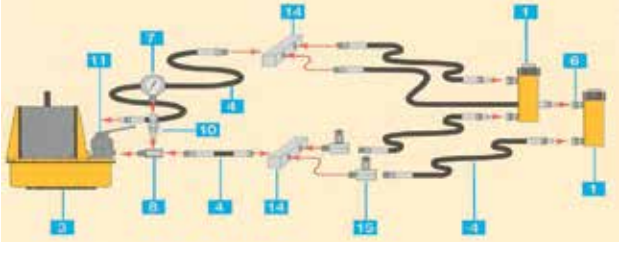


Figure 3
Double-acting cylinders:

Commonly used in push/pull applications, this example shows a powered pump f/w 4-way directional control valves and 2 x 2-way manifolds providing excellent control over two double-acting cylinders.

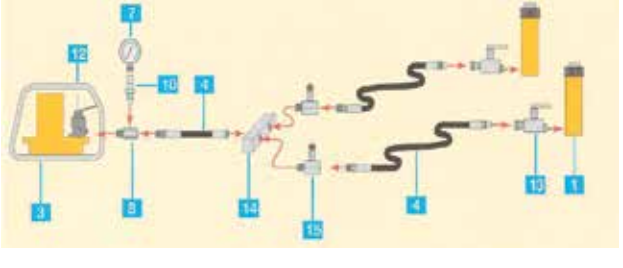


Figure 4
Two-point lifting set-up:

Illustration shows two single-acting cylinders utilising 2 x safety holding valves which control load decent.

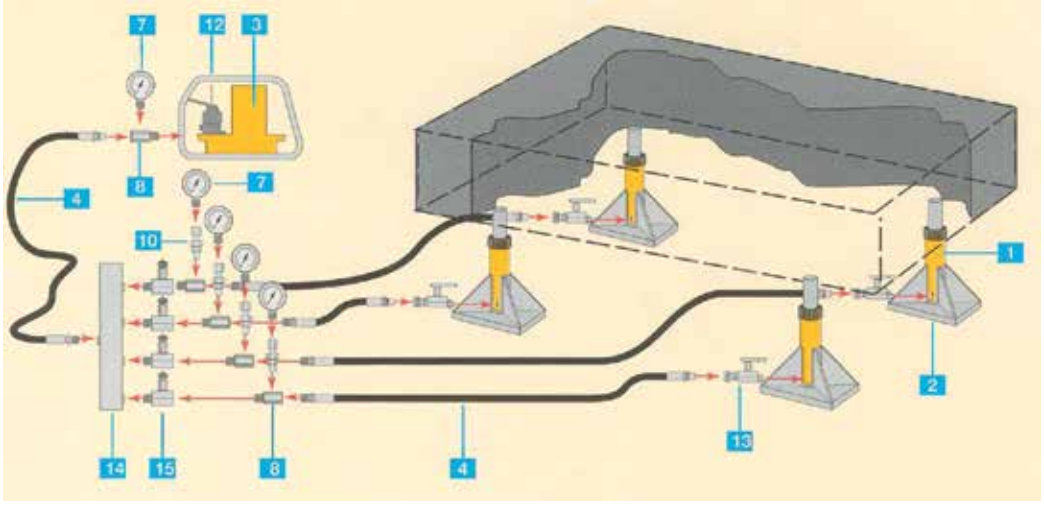


Figure 5
Four point lifting set-up

Using single-acting cylinders and directional control valves, this application also uses safety holding valves to control load decent. Cylinder base plates are also fitted to provide extra stability.

Did you Know?

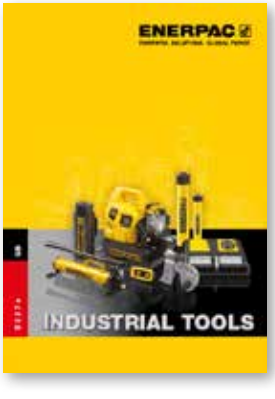
Arbil is a long-standing authorised Enerpac service centre. With a dedicated service shop at each location, equipped with a comprehensive range of testing and calibration facilities, Arbil is ideally placed to handle any hydraulic servicing requirement.

Authorised
ENERPAC
Service Centre

Enerpac Catalogue

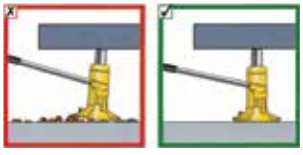
For more information on the hydraulic equipment available for sale or hire, please ask the Arbil team for the latest addition of the Enerpac Catalogue. This comprehensive catalogue provides detailed dimensional information, on safe use, selection criteria, hydraulic theory and performance charts.

Numerous case studies are included demonstrating the versatility of the Enerpac range.

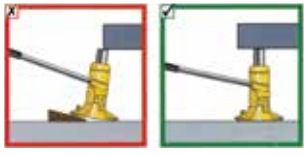


Hydraulics - Safety Guidelines

Jacks



Provide a level and solid support for the entire jack base area.

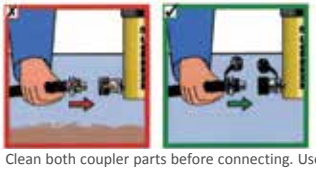


The entire jack saddle must be in contact with the load. Movement of the load should be in the same direction as jack plunger.

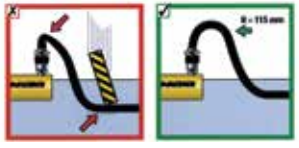
Never place any part of your body under a live load. Ensure the load is on a solid support before venturing under.

Remove the jack handle when it is not being used.

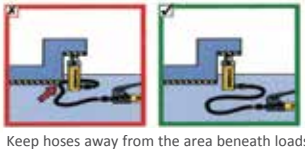
Hoses & Couplers



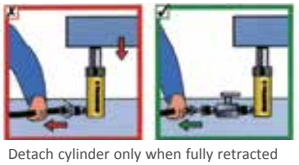
Clean both coupler parts before connecting. Use dust caps when coupler parts are not connected.



Don't kink hoses. Bending radius should be at least 115mm. Don't drive over or drop heavy objects on hoses.



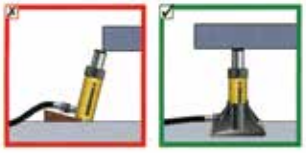
Keep hoses away from the area beneath loads.



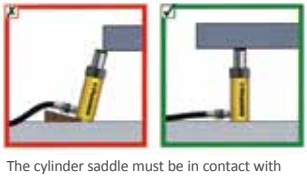
Detach cylinder only when fully retracted or use shut-off / safety valves to lock-in cylinder pressure.

Don't lift hydraulic equipment by the hoses.

Cylinders



Provide a solid support for the entire cylinder base area. Use cylinder base attachment for more stability.



The cylinder saddle must be in contact with the load. Movement of the cylinder must be parallel with the movement of the load.

Do not use cylinder without a saddle. This will cause the ram to 'mushroom'. Saddles distribute load evenly on the ram.

Never place any part of your body under the load. Load must be on cribbing before venturing under.

Always protect cylinder threads for use with attachments.

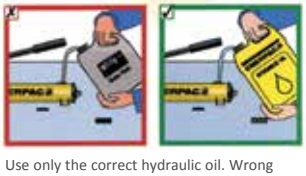
Keep hydraulic equipment away from open fire and temperatures above 65°C (150°F)

Pumps

Don't use handle extenders. Hand pumps should be easy to operate when used correctly.

Close release valve finger tight. Using force will ruin the valve.

Fill pump only to recommended level.
Fill only when connected cylinder is fully retracted.



Use only the correct hydraulic oil. Wrong fluids can destroy seals and pump as well as voiding a warranty.

When used correctly, hydraulic power is one of the safest methods of applying force to your work. Outlined above are some basic manufacturers' guidelines and a series of simple Do's and Don'ts. In addition, it is worth noting that each rating of load and stroke outlined for the products within this section are maximum safe limits. Best working practice encourages using only 80% of these ratings.

SECTION 7: Load Measurement

Load Measurement: Tension

Tension Load Links

Arbil's large fleet of tension load cells and load links range from 2 tonne capacity through to 100 tonne capacity and are ideal for weighing and safe load indication during lifting or pulling operations.

The below range of LLC codes are complete with cable readouts (seperate device) and LLB devices have a built in readout.

Did you know?

Arbil is an authorised service and calibration centre for both Tractel and Dillon (part of Avery Weigh-Tronix.) Arbil holds an exclusive load cell calibration centre status for Tractel and is the original authorised service and calibration centre for Dillon.

Fleet Code	Capacity	Reading Increments	Test Load	Height of Digits	Bearing to Bearing	Shackle to Suit	Weight
LLC 02	2t	1kg	4t	14mm	166mm	6.5t	2.5kg
LLB 02	2t	1kg	4t	14mm	166mm	6.5t	2.5kg
LLC 05	5t	10kg	10t	14mm	166mm	6.5t	2.5kg
LLB 05	5t	10kg	10t	14mm	166mm	6.5t	2.5kg
LLC 10	10t	10kg	20t	14mm	176mm	12t	3kg
LLB 10	10t	10kg	20t	14mm	176mm	12t	3kg
LLC 20	20t	10kg	20t	14mm	220mm	25t	6kg
LLC 35	35t	100kg	70t	14mm	254mm	35t	11.5kg
LLB 35	35t	100kg	80t	14mm	230mm	35t	11.5kg
LLC 50	50t	100kg	100t	14mm	325mm	55t	14kg
LLC 100	100t*	100kg	100t	14mm	370mm	85t	20kg

*Note: 100t capacity load link is only compatible with an 85t shackle - therefore downgrading the overall capacity to 85t not 100t.

Arbil's Applied Force and Measurement team are able to provide a complete repair and calibration service

For further information on the shackles required for your Tension Load Cells please refer to page 29

20t Alloy Load Shackles are also available as an alternative to Tension Load Links - Speak to a member of the technical team for further details.

Readouts

Readouts are available in built in, cable and radio versions.

- Automatic zero when switched on
- Choice of unit display measurements, including: kg, t, ton, lbs, daN and kN
- Battery Life: 350 hours
- Accuracy: up to +/- 0.1% of capacity
- Safety coefficient: 4

Load Measurement: Dillon Quick Check

Dillon Quick-Check

The Dillon Quick-Check Tension Meter quickly and effectively measures tension in cable guardrails, guy lines and overhead wires. It installs, measures and removes in seconds.

The digital load cell is highly accurate and requires no lookup or conversion tables.

- Time saving check tensioning mode
- Portable and rugged - designed for outdoor use
- Built-in averaging saves time and eliminates errors
- Factory calibrated for up to 15 unique wire sizes and types

The Quick-Check can be employed in many industries to ensure proper tensioning.

Typical applications include:

- Tower and stack guy wires
- Pretensioned cable barriers
- Bridges
- Elevators
- Winch ropes
- Overhead electric transit wires
- Fall arrest systems
- Aircraft cables
- Zip lines

Key Features:

Tension Capacity: 1000kg/10kN/2,000lb
4500kg/45kN/10,000lb

Wire sizes: 5mm - 26mm

Accuracy: +/- 3% instrument capacity (calibrated to specific wire size and type)

Display: Dot-graphic LCD display supports full text and 26mm (1 inch) high digits

Sheave range: Set accommodates requested wire size. Multiple sheave sets may be used to accommodate

Operating range: -20°C to +60°C (-4°F to +140°F)

Units of measure: Kilogram force, Newtons, Pound-Force

Size: 25 x 59 x 8cm (10 x 23 x 3'')

Fleet Code	Max Capacity	Weight
DWRTM/2	1000kg	5kg
DWRTM/1	4500kg	5kg

Sheave range is configured to customer requirements

Multiple sheaves can be supplied for customers who require more than one sheave range

Load Measurement: Compression

Compression Load Cells

Arbil's comprehensive range of high specification compression load cells can be used singularly, for testing or calibration services, or in groups for weighing operations.

The load data can be viewed on digital display systems for either single or multiple cells.

These display systems, which are available with single-way hand held or four-way desktop readouts, are either mains or battery powered and suitable for both on-site and workshop use.

All of the compression load cells within the range have the accuracy of ± 0.5%.

4-way and 5-way readout units are available from Arbil. Speak to a member of the technical team for further details.

Load Plattens

On-site, or where a level surface cannot be guaranteed, plattens are recommended to ensure that greater accuracy is achieved. Each platten has a slightly domed head and a precision machined saddle that sits within the load cell.

This arrangement ensures that the load cannot slip, thus increasing safety and further improving the accuracy of data.

Fleet Code	Capacity		Height	Height with Plattens	Dia	Load Area Dia
	t	kN				
CLC 10	10t	100kN	45mm	75mm	180mm	65mm
CLC 12*	12t	120kN	160mm	180mm	170mm	100mm x 200mm
CLC 25S	25t	250kN	50mm	75mm	90mm	40mm
CLC 25	25t	250kN	100mm	125mm	90mm	40mm
CLC 50S	50t	500kN	50mm	75mm	90mm	40mm
CLC 50	50t	500kN	100mm	125mm	90mm	40mm
CLC 100	100t	1000kN	100mm	150mm	120mm	80mm
CLC 150	150t	1500kN	150mm	190mm	125mm	60mm
CLC 200	200t	2000kN	150mm	190mm	125mm	60mm
CLC 300A	300t	3000kN	200mm	240mm	200mm	170mm
CLC 300B	300t	3000kN	115mm	185mm	300mm	160mm
CLC 500	500t	5000kN	115mm	185mm	320mm	180mm
CLC 750	750t	7500kN	115mm	185mm	320mm	210mm
CLC 850	850t	8500kN	115mm	185mm	320mm	210mm
CLC 1000	1000t	10000kN	115mm	215mm	350mm	220mm

*only available with plates

Weigh Pads & Potentiometers

Compression Weigh Pads

These battery, or mains operated “drive-on” “drive-off” load pads, are a simple method of checking the weight of a vehicle.

Each pad has a capacity of 10t and it is recommended they are used in pairs, weighing each axle of the vehicle in turn. The readout which can be illuminated is available in either kgs or lbs and has a load holding facility.

Fleet Code	Capacity	Accuracy
PW 10	10t	10kgs/22lbs

Potentiometers

Potentiometers combined with digital readout systems allow safe, remote measurement of movement.

Several units can be linked to a single display to enable continuous monitoring of different positions.

Both models are spring return.

Fleet Code	Range	Resolution
SRP 02	0-75mm	0.01mm
SRP 03	0-150mm	0.01mm

Pressure Transducers

Pressure transducers allow remote monitoring of hydraulic pressure when the use of a standard pressure gauge would be difficult or hazardous.

Using its own calibration facilities, Arbil can combine hydraulic cylinders with transducers and digital readouts to give accurate load monitoring during lifting or testing operations.

Fleet Code	Range (psi)	Accuracy (%)
PT 01	0 - 10,000	±0.5

240v power supply required

Dial Gauges

Dial gauges allow accurate monitoring of movement during operations such as bridge deck jacking and proof testing.

Dial gauges are available with an optional magnetised base.

Fleet Code	Type	Range	Resolution
DG 01	Spring Return	0mm - 50mm	0.01mm

Test Weights & Cradles

Hand Test Weights - 20kg

Fleet Code: HTW 20

A system of portable 20kg test weights suitable for a wide variety of applications, ideal for:

- Floor Loading in lift testing
- Hanging load testing
- Suspension beam testing

Block Weights

Fleet Code: BW Series

- Available in 100kg, 200kg, 250kg, 500kg, 1000kg and 2000kg options
- 1000kg model illustrated
- Complies with OILM R111 2004(E)
- Used to load test cranes, weigh bridges, and lifts

Kentledge Weights

Fleet Code: KW 01

A system of large weights used for load testing piled foundations. Made up of 2.5t of cubed concrete with built in lifting attachments.

Slab Test Weights

Fleet Code: ATPT Series

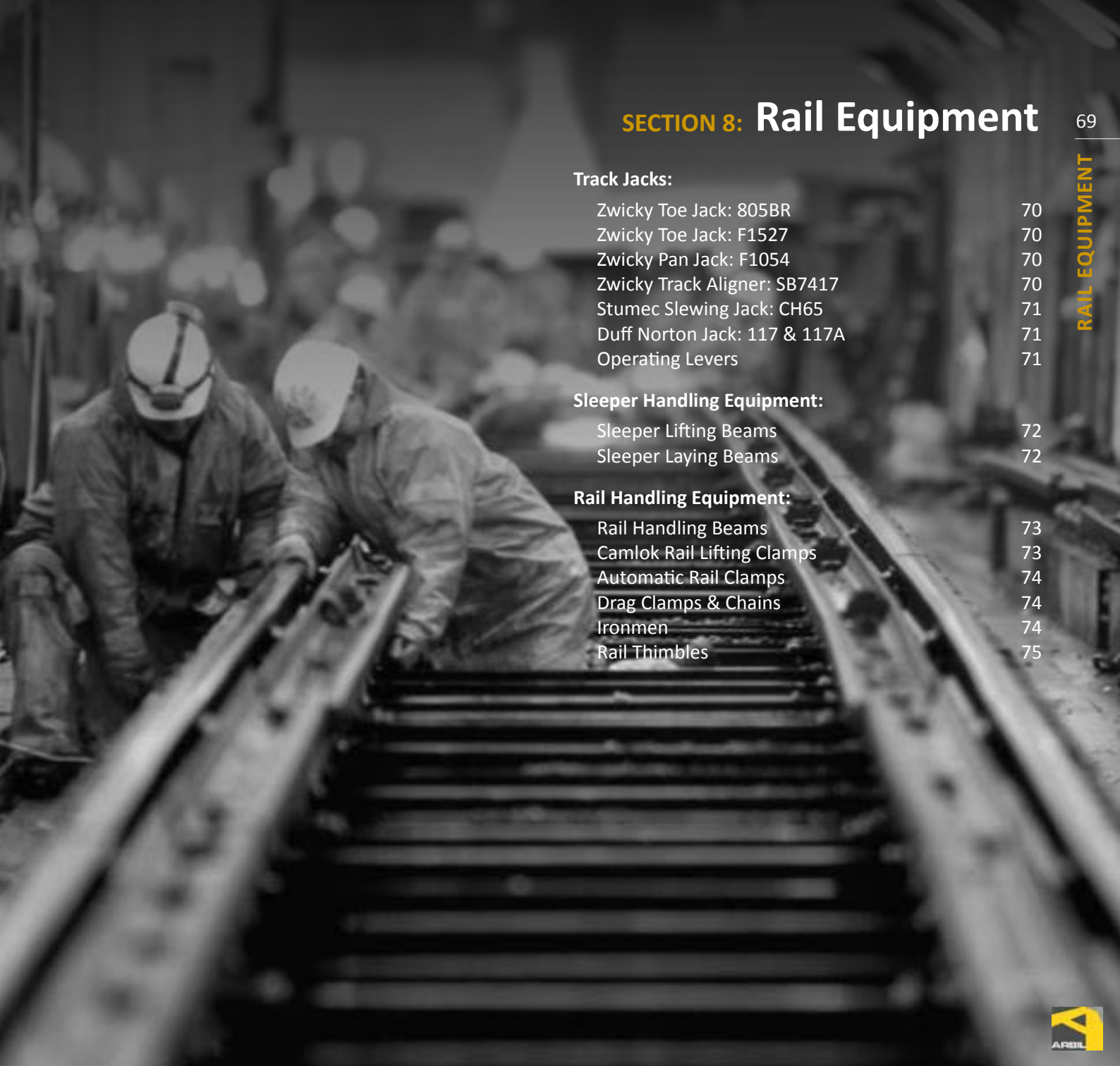
A series of test weights for higher capacity testing. These cast steel weights are available in 0.5, 1, 2 and 4t capacities.

Test Weight Cradles

Fleet Code: TWC Series

- Available in 1t - 200t capacities
- Arbil's extensive range of test weight cradles are available with wire rope slings and shackles as required, *please refer to pages 23-30 for further details*

Test Weight Baskets are also available to provide a secure method of transporting hand test weights. Speak to Arbil's technical team for further details.



SECTION 8: Rail Equipment

Track Jacks - Zwicky

Zwicky Toe Jacks Type B – Model 805BR

The 805BR comes fitted with an overload safety valve. The jack is obstructionless for rails of 42kg/m and over and can be placed under the rail without removal of ballast.

Fleet Code	SWL		Closed Height		Toe to Head	Lifting Stroke	Weight inc Std Lever
	Head	Toe	Head	Toe			
RB/BR/037	8t	5t	235mm	95mm	140mm	90mm	21.7kg

Zwicky Toe Jacks Type C – Model F1527

The F1527 is supplied with an overload safety valve. Designed for use on switches and crossings, this heavy duty jack is obstructionless for rails 42kg/m and over.

Fleet Code	SWL		Closed Height		Toe to Head	Lifting Stroke	Weight inc Std Lever
	Head	Toe	Head	Toe			
RB/BR/038	20t	15t	343mm	191mm	152mm	110mm	39.2kg

Zwicky Pan Jacks Type D – Model F1054

The F1054 is obstructionless and is designed to be placed under the rail without removal of ballast. Despite a height of just 95mm, it has 101mm of lift thanks to its telescopic hydraulic ram.

Fleet Code	SWL	Closed Height	Extended Height	Lifting Stroke	Weight inc Std Lever
RB/BR/039	10t	95mm	196mm	101mm	19.7kg

Zwicky Track Aligners Type J – Model SB7417

The SB7417 is an obstructionless hydraulic jack designed for the aligning and slewing of track, points and crossings.

Fleet Code	SWL	Lifting Stroke	Weight inc Std Lever
RB/BR/045	8t	152mm	27.4kg

Track Jacks - Slewing & Mechanical Trip

Stumec Slewing Jacks Type H – Model CH65

This versatile jack is designed, (by means of a removable slewing shoe) for slewing, aligning and lifting railway tracks, points and crossings. The jack is obstructionless to prevent traffic interruption. Will slew up to 50mm and is fitted with an overload safety valve.

Fleet Code	SWL		Lift on Shoe	Lift per pump stroke	Weight inc Std Lever
	Shoe	Head			
RB/BR/044	5t	7t	160mm	4mm on shoe	30.2kg

Duff Norton Trip Jacks Type F - Models 117 & 117A

The Duff Norton steel bodied jack is of the suspended pawl type, eliminating the need for a separate tripping device. The upper (holding) pawl has a spring attached which automatically forces it into position. The lower (lifting) pawl is then free for tripping.

The aluminium lightweight version of the 117 steel jack, shares the same dimensions, but has a de-rated safe working load of 7.5t on the head.

Simplex A17 Jacks: also available for sale.

Fleet Code	Model	Type	SWL		Weight inc Std Lever
			Head	Toe	
RB/BR/041B	117	Steel	15t	7.5t	32.4kg
RB/BR/041A	117A	Aluminium	7.5t	7.5t	24.2kg

Operating Levers

Fleet Code	Suits Jack Type	Material	Type	Weight
RB/BR/054	B, C, D, J	Steel, Zinc Plated	Standard	3.2kg
RB/BR/055	B, C, D, J	Fibre Glass/Steel	Insulated	2.5kg
RR/BR/056	H	Steel, Zinc Plated	Standard	2.2kg
RB/BR/057	F	Ash	Standard	1.7kg
RB/BR/058	F	Fibre Glass/Aluminium	Insulated	3kg

Sleeper Handling Equipment

Image shows dropper chains terminating in e-clip sleeper hooks.

Sleeper Hook - E-Clip

Lift Plate - Fastclip

Sleeper Lifting Beams

Sleeper lifting beams are available in various configurations with either fixed or adjustable centres, allowing for differing sleeper spacings.

Dependent upon the type of beam, a wide variety of dropper chain configurations and end fittings are available. The most popular choice of end fitting for dropper chains is the Arbil manufactured sleeper lifting hook (RB/BR/007) and the Fastclip lifting plate. (RB/BR/080)

Other end fittings included Mills Clips, SHC Bullhead Stirrups, Sleeper Lifters and Vossloh.

Fleet Code	No. of Sleepers	Sleeper Centres
5LIFT 653	5	653mm
5LIFT 700	5	700mm
7LIFT 610	7	610mm
7LIFT 653	7	653mm
7LIFT 700	7	700mm
8LIFT 653	8	653mm
8LIFT 700	8	700mm

Did you know?

Arbil's Cradley Heath facility manufacturers a diverse range of special beams for handling multiple sleepers.

The image to the left showcases a 30 sleeper, 18.3m sleeper loading beam, rigged with RB/BR/007 sleeper lifting hooks for e-clip sleepers.

Image shows dropper chains terminating in Fastclip hooks

Sleeper Laying Beams

Arbil's standard range of sleeper lifting beams with an odd number of droppers, (3, 5 or 7) are configured for sleeper laying utilising alternate dropper chain assemblies.

When hiring beams for laying purposes, please advise Arbil of spacing requirements. Should there be multiple spacing requirements, Arbil has developed adjustable beams. Please call to discuss specific needs.

All Lifting and Laying Beams are fitted with a centre lifting eye and top double leg chain sling as standard. Steering eyes can be fitted to the end of each beam if required.

Fleet Code	No. of Sleepers (Laying)	Sleeper Centres
3LAY 653	3	653mm
4LAY 700	4	700mm
7LAY 610	7	610mm
7LAY 653	7	653mm
7LAY 700	7	700mm
8LAY 653	8	653mm

Rail Handling Equipment

Rail Handling Beams

Rail handling beams are available for handling 30, 45 and 60ft long rail sections.

These beams can be fitted with the various types of rail clamps detailed in this section, or can be used with webbing slings.

All beams are manufactured with a centre lifting eye as standard.

In addition to this, beams are also fitted with lifting lugs at each end for use with a double leg sling.

Fleet Code	Capacity	Type	Beam Length	Rail Length	Weight
RB/BR/211	1.5t	Fixed Lifting Beam	4.0m	Up to 30ft/9.15m	200kg
RB/BR/210	1.5t	Fixed Lifting Beam	7.5m	Up to 60ft/18.3m	370kg

Camlok Rail Lifting Clamps – Type CR

These clamps are designed to lift most sizes of rail now in use in the UK. The clamp is either fitted with a hook ring for direct connection to the crane, or with a plate link for fitment with a short chain assembly.

This Kuplex assembly generally consists of a KSS10N egg link, 7 links of chain and a KDN10N narrow jaw shackle.

As standard suit Bullhead, Flat Bottom and Conductor Rail. Specials can also be catered for on request.

For details on Arbil's Automatic Rail Clamps, turn to page 74.

Fleet Code	Model	Capacity	Weight
RB/BR/300	CR 1000	1000kg	13kg

When using more than one clamp to lift the same load make sure that the load is always balanced

Used for lifting not dragging

Bag Lifting Beams

Ideal for lifting bags of ballast.

Fleet Code	Capacity	Hook Type	Weight
LB-1T	1t	Welded Hooks	28kg
LB-1TS	1t	Swivel Hooks	28kg
LB-2T	2t	Welded Hooks	33kg
LB-2TS	2t	Swivel Hooks	33kg

Rail Handling Equipment

Image shows Electro-galvanised zinc plated versions

Automatic Rail Clamps

These clamps feature a fail-safe auto-indexing pin manufactured from high tensile hardened steel, that forms the operational heart of the clamp. Its design allows the operator to open and close the clamp remotely and automatically, providing both safe and efficient loading and handling of rail. The clamps additionally feature a wide capacity top eye enabling the clamp to locate directly onto the crane hook.

Bespoke Adaptations and Modifications

- Additional slam fingers for heavy usage applications
- Extended jaw guide plates for multiple rail loading applications
- Incorporation into standard and bespoke rail beams (including rail crane beams)
- Rail profile specific jaw modifications
- Electro-galvanised zinc plated finish for use in harsh environments

Fleet Code	Capacity	Weight
RB/BR/017	1000kg	9kg
RB/BR/018	2000kg	9kg
RB/BR/019	3000kg	30kg

Drag Clamps & Chains

The 12t drag clamp is for fitting over the head of the rail and is a means of dragging or pulling long lengths of welded rail.

The clamp is suitable for 113A and UIC60 rails.

Drag clamps are used with various configurations of tow chains and ropes. The most popular is a 4m long, 16mm Grade 10, single leg chain.

Fleet Code	Capacity	Weight
RB/BR/097	12t	22kg

Ironmen

Ironmen are designed for lifting and transposing rail. They can be used singularly but are generally used in pairs, for the lifting and transporting of rail lengths, or parts of points and crossings from one location to another.

Ironmen can also be used to transpose rail from one side of the track to the other.

Suits a wide variety of rail profiles. Can also be used underground when fitted with insulated wheels. (Model provided upon request)

The standard model is fitted with a 1.5t Yale D85 Pul-Lift and a CR1000 Camlok rail clamp.

Each unit requires two persons for assembly and is easily dismantled for storage and transportation.

Fleet Code	Capacity (per pair)	Weight
RB/BR/089	1.5t	153kg*

*Product weight includes Pul-Lift & Camlok rail clamp

Rail Handling Equipment

Rail Thimbles

Arbil's original Rail Thimble was designed in conjunction with British Rail.

The latest version suits 113A, UIC60 and Bullhead rail sections and is used extensively with road rail machines and long welded rail trains.

- Working load limit 3t on lifting points of vertical roller pins
- All units fully tested and certified
- All wearing parts fully heat treated
- Improved design of tapered roller pins for ease of replacement
- Hydraulic cylinder fitted as standard with safety valve in case of hose failure
- Fits 113A and UIC60 rail sections
- Interchangeable between 113A and UIC60 rail by means of adjusting vertical rollers
- Hydraulic models suitable for the majority of hydraulic systems on road rail machines
- All moving parts have lubrication points
- Additional features available to suit customers requirements.

Thompson Rail Thimbles: Also available

Further Rail Products Available From Arbil

Track Tools

- Concrete and Timber Sleeper Nips
- Rail and Sleeper Tongs
- Point and Pad Scrappers
- De-Clipping Bars
- Rail Turning Bars
- Ballast Shovels and Forks
- Keying and Sledge Hammers
- Emergency G-Clamps
- Pansetters and Panpullers
- Fastclip, Sleeper Lifters, Installers and Extractors
- De-stressing Rollers and Side Rollers

Overhead Line Equipment

- Bowthorpe Clamps and Wedges
- Bowthorpe Pulling Slings
- Height and Stagger Gauges
- Tension Dynamometers
- Dillon Quick-Check
- Lever Hoists and Tirfor Winches
- Contact Wire Straighteners
- Safety Harnesses and Lanyards
- Rescue Poles and Equipment
- Cable Drum Jacks
- Cable Rollers

Fleet Code	Eye Type	Capacity	Operation	Weight
RB/BR/51B	Fixed Eye	3000kg	Hydraulic	118kg

Case Study:

Titanic Anchor Display

In 2002, Arbil's engineering skills were highlighted once again when a bespoke jacking support and display stand were designed and built to support a freshly manufactured replica Titanic anchor.

Used as part of planned centenary re-enactments, the anchor and stand still sit proudly at the Black Country Museum.

NETHERTON, BLACK COUNTRY, 2002

SECTION 10: Fall Arrest & Safety

Safety Harnesses

Single Point Harnesses

A full body harness complete with a Dorsal (Rear 'D') attachment point. Suitable for general work application where there is a risk of falling.

- Conforms to: BS EN 361

Fleet Code	Size	Chest Size	Max Recommended User Weight
AB 10	STD	36" - 48"	150kg (23 stone)
AB 10	XL	48" - 68"	150kg (23 stone)

Standard Two Point Harness Shown

Two Point Harnesses

A full body harness with two attachment points. Suitable for fall arrest; with the chest points also used for evacuation, industrial abseiling or attachment to a vertical rail or rope system.

The standard versions attachment points are both Dorsal ('D') attachment points.

The soft loop harness versions front attachment point is made of soft loops linked by a karabiner, rather than a Dorsal attachment point. The rear attachment is Dorsal.

- Conforms to: BS EN 361 (Standard and Soft Loop)
- Conforms to: BS EN 1497 (Soft Loop Only)

Fleet Code	Type	Size	Chest Size	Max Recommended User Weight
AB 20	Standard Two Point Harness	STD	36" - 48"	150kg (23 stone)
AB 20	Standard Two Point Harness	XL	48" - 68"	150kg (23 stone)
AB 20SL	Soft Loop Two Point Harness	STD	36" - 48"	150kg (23 stone)
AB 20SL	Soft Loop Two Point Harness	XL	48" - 68"	150kg (23 stone)

Rescue/Confined Space Harnesses

A full body harness with three attachment points. Features a Dorsal (rear) and a chest attachment point which are both suitable for fall arrest. Also features an extended attachment point, which maintains the user at a near vertical suspension when being lifted or lowered in a work or rescue situation with limited access.

- Conforms to: BS EN 361
- Conforms to: BS EN 1497

Fleet Code	Size	Chest Size	Max Recommended User Weight
ABRES	STD	36" - 51"	150kg (23 stone)
ABRES	XL	52" - 60"	150kg (23 stone)

Lanyards & Lifeline Systems

Restraint Lanyards

Designed to restrict the users' movements to prevent access to an area where a fall may occur. These lanyards are available in a full range of lengths and connectors.

As standard, each lanyard comes complete with karabiners at each end.

Conforms to: BS EN 358

Connector Options:
- Soft Loop
- Snap Scaffold Hooks
- Pear Shaped Scaffold Hooks
- Delta Mallion

Fleet Code	Length	Max Recommended User Weight
ABRST 30	30cm	150kg (23 stone)
ABRST 50	50cm	150kg (23 stone)
ABRST 100	100cm	150kg (23 stone)
ABRST 150	150cm	150kg (23 stone)
ABRST 200	200cm	150kg (23 stone)
ABRST ADJ	Adjustable (1.25m - 1.75m)	150kg (23 stone)

Shock Absorbing Lanyards

Designed for fall protection. Complete with an integral shock absorber, in the event of a fall these lanyards minimises the force exerted on the user.

Conforms to: BS EN 358 & BS EN 355

Connector Options:
- Soft Loop
- Snap Scaffold Hooks
- Pear Shaped Scaffold Hooks
- Delta Mallion

Fleet Code	Type	Length	Max Recommended User Weight
ABL 20	Single	200cm	150kg (23 stone)
ABLTW 15	Twin	150cm	150kg (23 stone)

Temporary Horizontal Lifeline Kits

Fleet Code: ABTL20

This flexible fall arrest system can be installed simply and quickly and is ideal for temporary work at height.

The adjustable horizontal lifeline may be used in two ways to secure a person to a structure of 15kN SWL. It may be attached directly to a structure via a fixed anchorage at both ends. Alternatively, the user may choose to wrap an anchorage strop about the structure using a 30kN karabiner.

Please note: Maximum 2 users per system.

Each Kit Contains:
- 1 x 20m Horizontal Lifeline Webbing
- 1 x Tensioner
- 1 x Carry Bag
- 2 x 1m Anchor Strops

Rollclamp Anchors & Tripods

Rollclamp Sliding Anchors

The rollclamp is a movable anchor that attaches to the upper or lower flange of a steel beam and travels along the beam on nylon rollers enabling the user to move freely.

Fleet Code	Beam Flange Width		Max Flange Thickness
	Minimum	Maximum	
RC 45	100mm	380mm	45mm
RC 100	100mm	640mm	100mm

Two-person Tripods

One worker can carry and erect the sturdy but lightweight aluminium alloy tripod. For tripod stability, the tripod legs may be individually adjusted. Features a total of 6 anchor points.

The 3 overhead pulleys hold up to 11mm rope. The extra anchor points may be used with pulleys for a double roped rescuer, back-up system, airlines, communication lines, medical kits, tool kits etc.

Featured Attachment Points:

- 3 Overhead Pulleys
- 3 Fixed Eyebolts

Fleet Code	SWL	Max Height	Closed Height	Max Base	Min Base	Weight
TO3	250kg	240cm	140cm	170cm	110cm	19.4kg

Rescue Tripods

Designed for 2 people, these tripods have 3 overhead pulleys which hold up to 11mm rope. The extra swivel anchor points allow a rescuer to double rope and may be used with pulleys for airlines, communication lines, medical kits, tool kits etc.

Mechanical Prusik and automatic relay devices may also be attached to the eyebolts.

For tripod stability, the tripod legs may be individually adjusted.

For extra stability, wire rope lanyards may be attached to the feet and pinned to the floor; anchor lines may be attached to the eye bolts on the tripod head.

The height of the tripod enables a casualty on a stretcher raised vertically to be lifted clear of the entrance.

Conforms to: BS EN 795 Type B

Fleet Code	SWL	Max Height	Closed Height	Max Base	Min Base	Weight
RT3	250kg	260cm	200cm	200cm	130cm	21.5kg

Fall Arrest Devices

Mini Blocks

This is a small lightweight, retractable fall arrest device that provides maximum mobility. The mini block is easily carried around by the user and can be located at the most appropriate anchorage.

- 45mm x 2.4m webbing
- Shock absorber in webbing

Fleet Code	Webbing Dims	Weight
R0 2	45mm x 2.4m	0.7kg

Fall Arrest Blocks

Available in 10, 20 and 30m length options, this range of fall arrest blocks provide total protection when working at height. With twin inertia and speed activated brake pawls these blocks react effectively even when used horizontally.

- Durable Construction
- Supplied with load indicating karabiner on the rope

Fleet Code	Length	Weight
FA 10	10m	6.5kg
FA 20	20m	11kg
FA 30	30m	15.5kg

Retrieval Blocks

A recovery fall arrest block that has all the features of a standard fall arrest device, but also incorporates an integral winch mechanism that allows the raising and lowering of a worker in an emergency.

Can be used for access and egress from a confined space. Includes 5mm galvanised wire rope, 15 metre length.

Fleet Code	Wire Rope Dims	Weight
FAR 15	5mm x 15m	10kg

Man-riding Winches

Two speed winch, designed specifically for confined space entry / retrieval. Man rated for lowering, raising or supporting personnel. Fitted with 30m (100ft) wire rope.

The load can only be moved if the handle is turned.

Features a friction brake of 10lb (4.5kg). Inertia brake backs up the triple redundant braking mechanism.

Mounting brackets are available to mount onto the tripod or davit.

Fleet Code	Max User Weight	Weight
FA 18561	204kg (32 Stone)	15kg

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Note: Although every care has been taken to ensure technical data accuracy, the information provided is only a guide. For confirmed specification details please speak to a member of the hire team.

It is the hirer's responsibility to ensure the correct usage practices are undertaken and the appropriate PPE used. Full Terms & Conditions available upon request. E&OE.

Case Study:

Spitfire Decent

When Kelvingrove Museum needed to lower their suspended Spitfire LA198 for its 10 year maintenance and conservation checks, Arbil was called upon to provide a number of heavy duty Tirfor machines, ropes, slings and associated loose gear to help lifting and maintenance experts safely manage the aircraft's decent – at a somewhat slower speed than it was accustomed to in its heyday.

Kelvingrove, 2015

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