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# MEET THE TRENCH CONTROL TEAM

## TRENCH CONTROL TEAM



**Colm O Raghallaigh. MBS, M.Sc.**

Colm has been our Managing Director since joining TCL in 2001 from the Smurfit Group. As well as managing all aspects of commercial operations in TCL, he is also responsible for our sister companies, Shorcontrol Safety in Naas, and Citrus Training in Northampton.



**Michael Darcy B.Sc., (Hons) Q.S.**

Having joined the company directly from college, Michael handles all aspects of pricing and contract negotiation for the piling division.



**Pamela Dunne BBS (Mgt)**

Pamela has been with TCL for over 20 years and is responsible the company's commercial operations, and in particular for our contracting department and hire desk.

# MEET THE TRENCH CONTROL TEAM



**Anthony O'Brien B.Eng(Hons) CEng MIEI MICE**

Anthony joined us with significant experience in Geotechnical design gained in numerous projects in Ireland, Europe and the Middle East. As our Senior Geotechnical engineer, he is responsible for all design work.



**Stuart Coulter**

Stuart has been with the company for over 15 years and has gained experience at all levels in the company as Contracts Manager, he looks after the management of our on site operations.



**Mark Cliffe B.Eng MIEI**

Having worked for a number of years as an on site civil engineer, Mark brings a wealth of hands on experience in both design and practical application.



**Paul Jenkinson**

Paul is responsible to manage our Northern Ireland depot based in Lisburn as well as our UK operation. He is experienced in both the contracting and hire aspects of the business.



**Channine Brady**

Channine joined the company in 2006, and has worked as a key person on the hire desk since that time. Her knowledge of the range of products is extensive.



**Mark Kenny B.Eng.**

Mark is an experienced Electrical Engineer having spent a number of years working with The Design Partnership on projects in the Leinster area. Prior to joining Trench Control, he worked as a Technical Sales representative with The Richmond Partnership. Mark brings great experience and ability to our team.

# SHEET PILING & ANCHORING

## Leader Rigs

The ABI mobilram system is suitable for most of your piling requirements. These leader rigs are now available from Trench Control with full design and installation back-up.

The 14/17 with a 925KN variable moment hammer will meet a wide range of piling needs as well as offering an option for concrete piling and augering. The 12/15 rig offers the flexibility to drive smaller sheets with more compacting.

- *Quick and efficient sheet pile installation*
- *High frequency and low noise and vibration emissions*
- *Silent piling and augering*
- *560hp Sennebogen carrier*
- *One stop shop for design solutions*

HAMMER	14/17	12/15
Centrifugal Force	925KN	700KN
Static Moment	0 to 16 kgm	10kg
Dynamic Weight	2350kg	1720kg
Total Weight	3770kg	2220kg
Clamping Force	1120KN	960KN
Length	2670mm	2400mm
Width	600mm	580mm

HAMMER	14/17	12/15
Depth	1190mm	1800mm

LEADER RIG	14/17	12/15
Usable Length	17.0m	12.0m
Width	5.0m	3.2m
Length	11.5m	10.3m
Height	3.4m	3.3m
Transportation Weight	55.0 Tonnes	45.0 Tonnes



# PILING & ANCHORING

## Cased Dual Rotary CFA Rig

We offer concrete piling using ABI's double rotary head auger system that enables us to pile within 50 mm of a wall. The system is known as VDW (Vor Der Wand = in front of wall).

This is achieved through the use of a specialist ABI Leader rig that allows the steel casing to pile in line with the hydraulic motor thereby no loss of space exists between the pile and the boundary wall.

This technology facilitates a high quality finish on pile walls, as the steel casing leaves a clean, smooth pile and ensures that when driving secant piles, maximum efficiency is achieved as the finished pile is more accurate in its vertical direction and distance from adjacent piles.

### Advantages:

- *Vibration Free*
- *Low Noise*
- *Economic – no loss of ground space*

Technical Data	Unit	VDW 6240
<b>Gear box 1</b>		
Revolutions max.	per minute	66
Torque	daNm	3100
Hydraulic flow rate	l/min	400
<b>Gear box 2</b>		
Revolutions max.	per minute	48
Torque	daNm	2100
Hydraulic flow rate	l/min	200
Nominal Oil Pressure	MPa	32
Total transport weight	kg	4505
Octagon connection	mm	SW 150
Flushing head diameter	mm	DN 100

Dimensions VDW		
Height	mm	3375
Width	mm	1385
Depth	mm	1085
Dimensions Leader Rig		
Rig Usable Height	m	15
Width	m	4
Length	m	11.5
Height	m	3.4
Transportation Weight	Tonne	70



## Anchoring/Soil Nailing

Trench Control provides an excavator mounted Klemm Type 140 anchor rig. This allows the installation of concrete grouted ground support anchors at any angle between the horizontal and vertical plane.



This mast attachment can be used with any Hydraulic excavator with a minimum weight of 15 tons. Its standard clamping device is designed for drilling diameters up to max. 133mm.

Drilling functions can be controlled from a portable remote control and the drill mast can be adjusted from the cabin of the excavator.

Drill Mast	Type 140	
Overall Length	mm	6200
Feed Length	mm	4500
Chain Tensile Force	kN	200
Feed Speed	m/min	13
Retraction Speed	m/min	13
Fast Feed Rate	m/min	40
On-board voltage	V	24
Mobile Carrier	Ca.	15 ton

# HAMMERS

## BSP SL30DA Hydraulic Piling Hammer

Designed for driving sheet piles and small bearing piles of concrete, steel or timber. The SL30DA is available with legs and inserts for use freely suspended or with backguides for operating from a piling mast.

Specifications	SL30da
Dropweight mass	2,500kg
Maximum energy	30 kJ
Blow rate @ maximum energy (per min)	84
Equivalent SA stroke	0.1m to 1.25m
Hydraulic supply	130 L/min
Hydraulic pressure	220 bar
Hammer length (with legs)	4.575m
Hammer width	0.915m
Hammer weight	5,400 kg



## Excavator Mounted Hammer

**Muller MS-3 HFB** High frequency excavator mounted variable vibrator

**Muller MS-4 HFB** High frequency excavator mounted variable vibrator

**Muller MS-6 HFB** High frequency excavator mounted variable vibrator

These hammers can be modified to allow for foot operated control through the rock breaker circuit which enables a hammer/bucket change over in 5 minutes. This rapid change over time has significant advantages where a frequent drive & excavate sequence is used by the contractor.

### Performance Vibrator:-

- It adapts exactly to the capacity of your excavator.
- Its oscillation characteristics enable fast operation progress in workable soil.
- Whose numbers features ensure a high safety level during operation.
- Whose emission of noise and vibration is low and environmentally beneficial.
- Whose small height enables you to drive 6 metre long piles.
- Whose slim waist makes application close to existing construction feasible.

SPECIFICATIONS		MS 3	MS4	MS6
Centrifugal force (max)	kN	304	378	464
Eccentric moment (max)	Nm	30	42	65
Oscillation Frequency (max)	Hz	500	475	425
Pulling force (max)	kN	60	120	120
Operating pressure	bar	350	350	350
Hydraulic oil flow (max)	l/min	120	171	204
Output at vibrator (max)	kW	70	100	119
Weight incl. clamp (dyn.)	kg	585	940	950
Weight incl. clamp (total)	kg	830	1230	1240
Height excl. clamp	mm	739	787	787
Waistline	mm	260	340	340
Length	mm	1153	1216	1216

Clamp		MS-3	MS-4	MS-6
Model	MS-U	40	60	60
Clamp force (max)	kN	370	600	600
Clamp pressure (max)	bar	300	300	300
Weight	kg	190	260	260



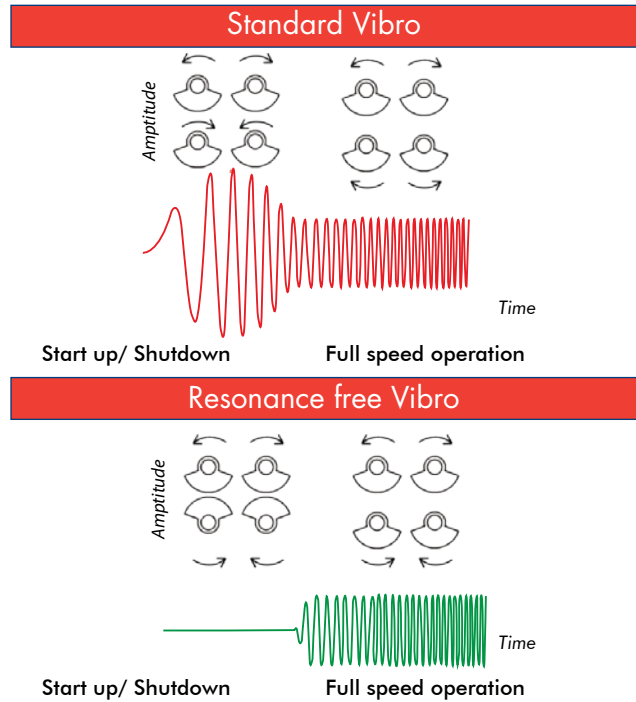
# HAMMERS

## Movax – Modular side-grip pile driver.

The SG- 60V Movax offers a wide range of applications in all fields of civil engineering, general construction and railway construction. Combined with a suitable excavator, the Movax provides an excellent pile-driving machine with flexibility to drive in a range of conditions.

Resonance free start up and shut down means that the SG-60V is the right choice when operating in urban areas, or in many sensitive locations. In addition to safer vibration the SG – 60 also causes less noise, and can be faster and more comfortable to use.

SG-60v	
Weight without adapter (kg)	2680
Height (mm)	2468
Depth (mm)	1383
Width (mm)	1192
Excavator class (ton)	28-38
Engine power min (kw)	134
Max return pressure (bar)	5
Pressure setting (bar)	350
Frequency max (1/min)	2500-3000
Centrifugal force (kN)	600
Suitable piles	
Width (mm)	400 - 1200mm
Depth (mm)	265
Pile length/weight	6m/2000kg 12m/1400kg



# HAMMERS

## Vibrating Hammers

**ICE 7RF Resonance - Free Vibrating Hammer**

**ICE 223 High Frequency Vibrator**

**ICE 418 Standard Frequency Vibrator**

**PVE 25M Standard Frequency Vibrator**

The ICE 7RF are Resonance Free Hammers which have the advantage of high frequency technology, but on top of this the eccentric moment can be adjusted from 0 to 100% (via remote control). Any harmful resonance of the soil is avoided as the frequency of the hammer passes the threshold of the soils inherent frequency is avoided. Furthermore smaller amplitudes result in far lower noise levels.

The ICE 223 is a vibrating hammer. In this casing an even number of eccentric weights rotate at high speed. The frequency is equal to the rotational speed of the eccentric weights. The vibrations thus generated are transmitted to the object to be driven via a clamp.

The ICE 418 is a normal frequency hammer. This system combines solid construction with maximum amplitude and considerable centrifugal force.

While this is a relatively low output machine (centrifugal force 14.5 tons) its large amplitude is an important factor in driving heavy or long sections.

The PVE is a standard frequency vibrator used to drive large pile sections, heavy tubes and box piles. It may be useful in stiffer ground conditions.

Specifications		ICE 7RF	ICE223	ICE 418	PVE
Eccentric moment	kgm	0-7	23	4	25
Centrifugal force (max)	kN	410	670	145	870
Frequency (max)	rpm	2300	2300	1800	1700
Static line pull (max)	kN	120	240	120	400
Hydraulic power (max)	kW/ HP	104/ 142	184/ 250	42/ 57	
Operating pressure (max)	bar	340	340	250	320
Oil Flow (max)	l/min	185	325	100	
Amplitude excl. clamp (max)	mm	18	19	13	19
Amplitude inc. clamp (max)	mm	13	12	10	
Weight excl. clamp (dynamic)	kg	800	1200	610	5000
Weight inc. clamp (dynamic)	kg	1050	1920	810	5730
Weight inc. clamp (total)	kg	1575	2650	1150	6000
Transport weight	kg	1800	3000	1300	7000

Clamp		ICE 7RF	ICE223	ICE 418	PVE
Model	TU	50	75	35	PVE 110T
Weight	kg	250	720	200	750
Clamp Pressure	Bar	300	300	205	300
<b>Power pack</b>					
Model	ICE	180	300	70	480
Weight	kg	3300	4700	2100	5500
Power	kW/ HP	154/ 209	220/ 300	50/ 68	294/ 400



# HAMMERS

## Resonance - Free Variable Vibrator

**Muller MS-10 HFV - Resonance - Free Variable Vibrator**

**Muller MS-16 HFV - Resonance - Free Variable Vibrator**

With the MS-10 and MS-16 we have the latest developments and technology that comes with variable hammers.

The major innovation is the stepless adjustment of the eccentric weight during operation.

You are now able to set the vibrator to its required working frequency without generating any unnecessary vibrations. In this way you are avoiding an excitation of the soil within its natural frequency hence the critical starting peaks

which cause extensions of the oscillations are eliminated.

The reasons for changing these technical limiting values during driving operations are:-

Environmental Conditions: Care has to be taken in relation to sensitive neighbouring buildings by keeping the peak vibration levels as low as possible i.e High frequency low amplitude.

Working where there are no restrictions enables you to obtain max driving and extraction rates by using a high amplitude, high centrifugal force mode of operation.

With the MS-16 We can adopt the vibro head to a double clamp system which enables the operator to drive and extract steel tubes.



Clamp		MS-10	MS-16
Model	MS-U	72	120
Clamp force (max)	kN	720	1200
Clamp pressure (max)	bar	380	380
Weight	kg	260	580
Tube Clamp avail. 300mm-1200mm			

Specifications		MS-10	MS-16
Centrifugal force	kN	610	968
Eccentric moment	Nm	0-10	0-16
Oscillation Frequency (max)	Hz	39.3	39.2
Speed (max)	rpm	2358	2319
Amplitude (S=2s)	mm	11.8	14
Pulling force (max)	kN	180	300
Hydraulic oil flow (max)	l/min	251/345	504
Operating pressure (max)	bar	350	350
Weight excl. clamp (dyn.)	kg	1700	2600
Weight excl. Clamp (total)	kg	2300	3500
Weight of hammer (total)	kg	4200	5600
Weight of power packs	kg	5200	6300
Waistline	mm	330	317
Height	mm	1530	2010
Length	mm	1635	2010

## Design Department

At Trench Control we favour a collaborative approach of working with our clients to develop buildable solutions which are appropriate for the project requirements. Our design department follows this ethos also and aims to complement and enhance Trench Control's contracting and hire services with unique in-house design expertise.

The design department also provides independent consulting services in the fields of geotechnical engineering and temporary works design.

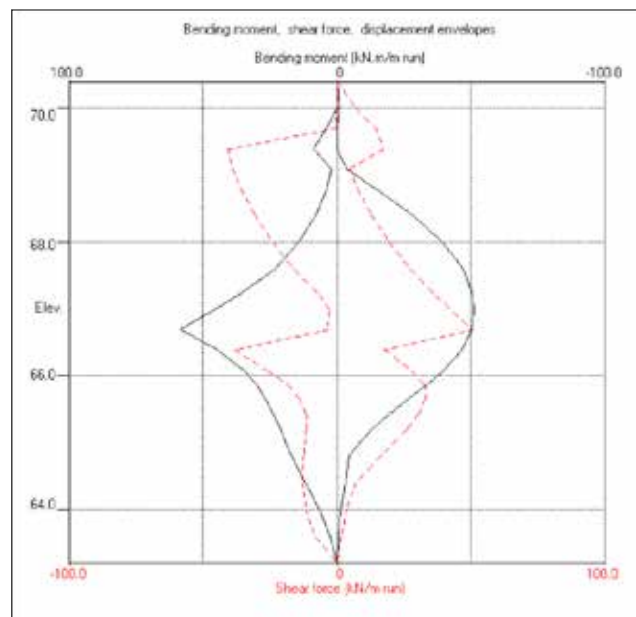
The design department works in a variety of market sectors mainly focusing on civil engineering, temporary works and geotechnical design. All members of staff are enthusiastic about engineering and passionate about delivering good quality practical solutions.

## Geotechnical Engineering

Trench Control's in-house design department offers a broad range of geotechnical consulting services both as part of the contracting / hire arm of the company and for separate design commissions.

Our ethos is to produce imaginative, safe and cost effective solutions and advice encompassing a broad range of areas including:

- *Geotechnical interpretation and reporting*
- *Desk studies*
- *Deep and shallow foundation design*
- *Slope stability*
- *Soil nailing / anchoring / rock bolting*
- *Dewatering advice*
- *Earthworks design / advice*
- *Soft ground engineering*
- *Basement shoring*
- *Excavation shoring*
- *Site investigation advice and design*



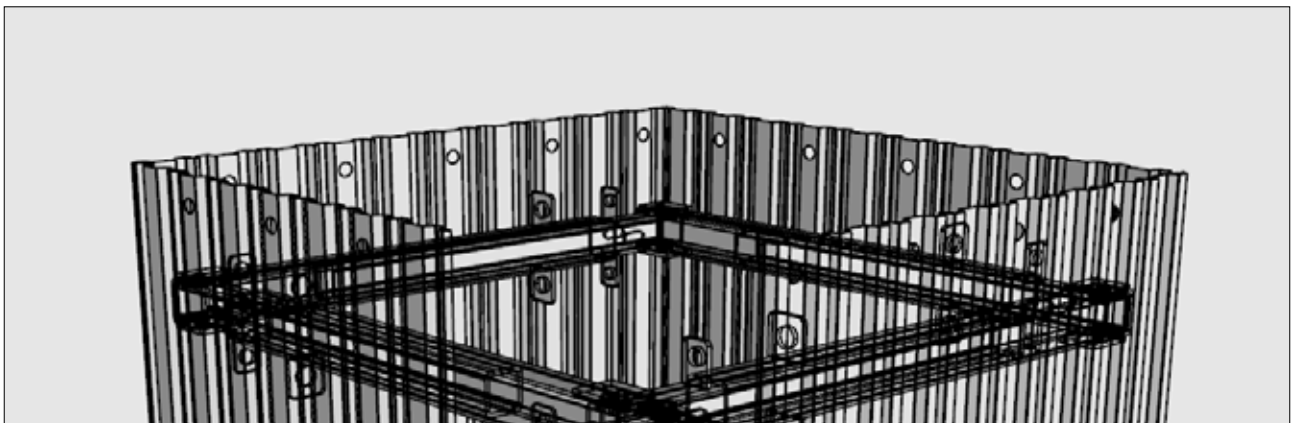
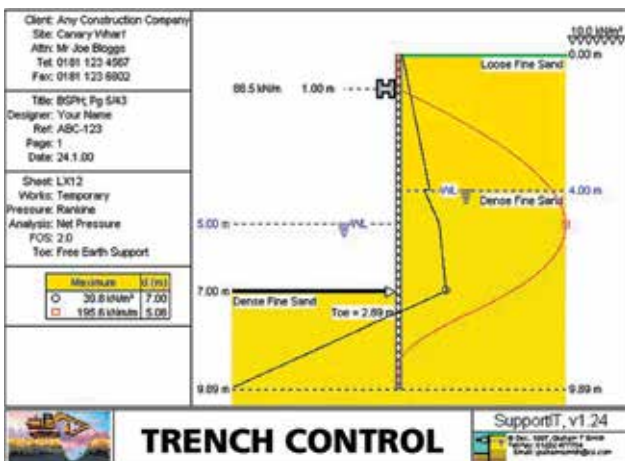
# DESIGN

## Temporary Works

Our in-house design department offers a temporary works design service which both compliments and enhances Trench Control's traditional offering. We also carry out design commissions separate to our contracting / hire arm. These services include:

- *Needling*
- *Propping*
- *Tower crane foundations*
- *Temporary working / access platforms*

Our design department provides a hands-on approach to problem assessment and welcomes early involvement in projects. We carry our own professional indemnity insurance and we also provide very competitive rates and bespoke fee structures for tendering and contract work. We aim to provide concise and clearly presented drawings and submissions based on our core principles of producing imaginative, safe and cost effective solutions and advice.



# PILE BREAKERS

## Concrete Pile Breakers

**TAETS Hydraulic Pile Breakers** for round and square concrete piles

**Efficient and time saving system** for the topping of concrete piles

- *Avoids the risks hand/arm vibration - white finger syndrome*
- *Powered from hydraulics on excavator*
- *Our technician will deliver & fit to excavator*
- *Easy to operate*
- *The reinforcement remains intact*
- *No cracks below cut-off level*
- *No noise, no vibration*
- *The breaking process is many times faster than conventional breaking and is fully controlled throughout the operation*
- *Modular system for round piles is easy to adjust to different pile sizes on site and half-links are available for accurate adjustment*
- *Specials can be supplied for non standard piles*
- *Power pack can be supplied if required*

SPECIFICATIONS	SQUARE	TYPE 3
Pile range	mm	180-280
Number of re-bars	4	
Cut-off level	mm	65
Hydraulic flow (min)	l/min	12
Pressure (max)	bar	300
Excavator size	TN	7
Weight	kg	500

SPECIFICATIONS	SQUARE	TYPE 3.5
Pile range	mm	180-320
Number of re-bars	4	
Cut-off level	mm	70
Hydraulic flow (min)	l/min	12
Pressure (max)	bar	300
Excavator size	TN	10
Weight	kg	480

SPECIFICATIONS	ROUND	TYPE 314
Pile range	450 mm	1200mm
Hydraulic flow per link (min)	l/min	10
Pressure (max)	bar	300
Excavator size	Tons	12-20 capacity
Weight per link	kg	174



# TRENCH BOXES

## Trench Boxes

Trench boxes are simple modular units which can be easily and quickly installed by an excavator to provide strong, reliable shoring for most ground conditions whilst giving full protection for operatives in every stage of installation and removal.

### Backhoe/Micro Trench Box

- Handled by small excavator
- 0.8m clearance beneath strut
- Strong, lightweight units
- Suitable for installation of domestic services

### Mini Trench Box

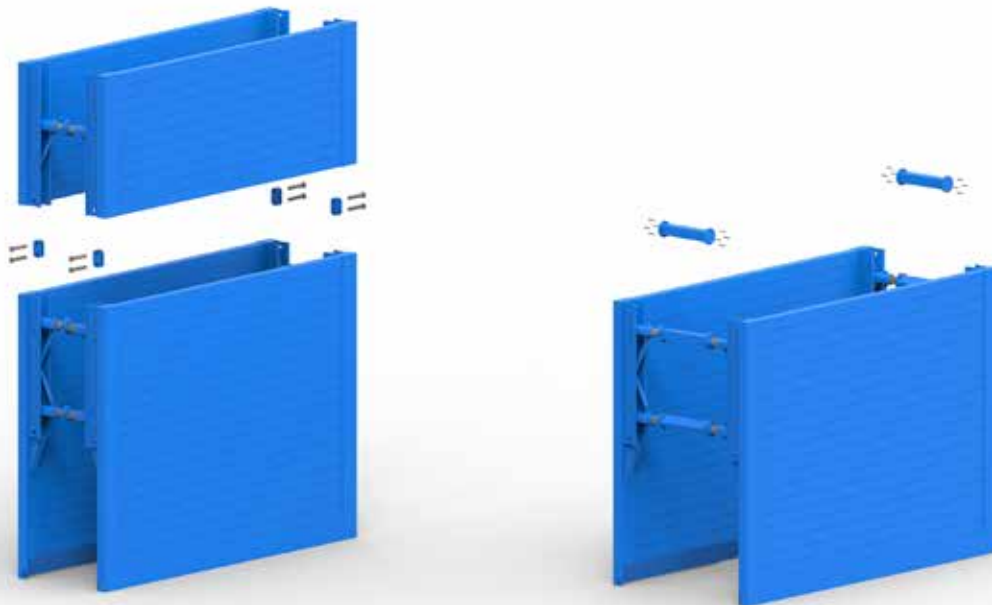
- Handled by small excavators
- 1.18 Clearance beneath lower strut
- Strong, lightweight units

### Standard Trench box

- Trench depths up to 6.0m
- Larger internal working area
- Clearance of 1.45m beneath strut

### Magnum Trench Box

- Easier installation of large diameter pipes / culverts
- Greater clearance of 2.45m beneath lower strut



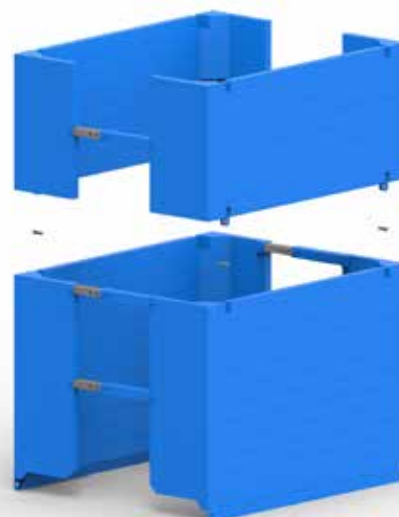
TRENCH BOXES										
	Length (m)	Height (m)	Weight (kg)	Min width (mm) Trench	Max without bars (mm)	Max. with bars (m)	Clearance Beneath Bottom Strut (m)	Distance Between Struts (mm)	Max S. W. L. (kN/m <sup>2</sup> )	Panel Thickness (mm)
Backhoe Base	3.00	1.6	732	650	1.03		0.8	2500	17.5	60
Mini Base	3.0	1.95	1075	800	1.1	4.5	1.16	2550	17.5	80
Mini Top	3.0	0.96	713	800	1.1	4.5		2550	17.5	80
Standard Base	3.4	2.6	1850	940	1.2	4.5	1.45	2950	34.1	90
Standard Top	3.4	1.32	1253	940	1.2	4.5		2950	34.1	90
Magnum Base	3.4	4.0	3135	1050	1.49	4.5	2.45	2950	34.1	90
Magnum Top	3.4	1.32	1253	945	1.49	4.5		2950	34.1	90

# MANHOLE & DRAG BOXES

## Manhole Box

- Rapid construction of manholes
- Suitable for depths of up to 6000mm
- For manhole excavations where crossing services are not encountered
- Wider trench widths accommodated using spacer extensions
- 1500mm clearance under bottom strut
- Various sizes available
- Internal width 1.7m - 2m without using extensions bars

Manhole Box				
Base Length	2.5m	3.0m	3.5m	4.0m
Weight (kg)	2050	2350	2600	3000
Height (mm)	2600	2600	2600	2600
Internal Length (mm)	2200	2700	3200	3700
Internal Width	2000	2000	2000	2000
Additional Width by adding .5m or 1.0m Extension Arms				
Max S.W.L. (kN/m)	34.1	34.1	34.1	34.1
Top				
Weight (kg)	1300	1450	1580	1750
Height (mm)	1500	1500	1500	1500
Manhole ring (size)	1050	1350	1800	2100
	1200	1500	2100	2400
	1350	1800		2700
Clearance beneath bottom strut	1.5m	1.5m	1.5m	1.5m
Distance between struts (mm)	2280	2780	3280	3780



## Drag Boxes

Drag boxes are large protective shields which allow operatives to lay pipes within their confines in safety. As an excavation progresses, the drag box is pulled along the trench line by the excavator to allow a continuous pipelaying operation to proceed. Drag boxes are best suited to open field situations with reasonable ground conditions and where there is no requirement for active support of trench sites.



DRAG BOXES					
Length	Height	Min. Width	Max. Width	Max. Weight	Max rear Understrut Clearance
4m	2.6m	650mm	4.95m	1750kg	1150mm
5.1m	2.4m	650mm	4.95m	3020kg	1372mm
6m	2.8m	650mm	4.95m	5300kg	1425mm
7.5m	2m	650mm	4.95m	3850kg	1496mm
7.5m	2.4m	650mm	4.95m	4550kg	1500mm
TOP UNIT					
5.1m	1.8m	650mm	4.95m	2370kg	1072mm

- Allows continuous pipelaying
- Additional top extensions supplied
- Designed to customer needs
- Supplied with fixed width struts
- Needs to be lifted clear to avoid crossing services

# TRENCH SHEET / SHEET PILES

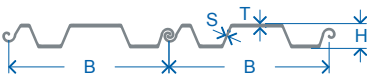
## Trench Sheets / Sheet Piles

Trench Control offers a full range of trench sheets, from light weight lapped sheets to heavy duty interlocking systems. Wall thickness varies from 4mm to 8mm and high strength sections from grade Domex 490 to Domex 690 are available. Full repressing service available for all our sheets from our own in house 100 ton press facility.

### MULTISHEET



### MULTILOCK



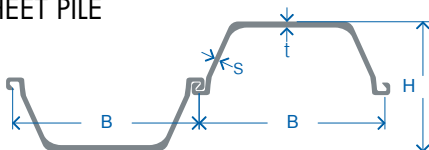
### TRENCH SHEETS

	Effective Width	Steel Thickness	Depth of Section	Wt./Lin. metre	Wt./sq. metre	Section Modulus	Steel Grade	Allowable Bending Moment
Shorco 500/6	500mm	6mm	52mm	28.5kg	57.0kg	97cm <sup>3</sup> /m	50B	22.3kNm
Pal 30/40	692mm	4mm	90mm	25.8kg	39.2kg	147cm <sup>3</sup> /m	355	30kNm
Multisheet 500/4	500mm	4mm	75mm	21.1kg	44.0kg	125.8cm <sup>3</sup> /m	Domex 490	40kNm
Multi-sheet 500/6	500mm	6mm	75mm	31.6kg	64.8kg	178.2cm <sup>3</sup> /m	Domex 490	66kNm
Multi-lock 500/4	500mm	4mm	75mm	24.3kg	46.7kg	118.3cm <sup>3</sup> /m	Domex 690	55kNm
KD600/8	600mm	8mm	80mm	50.0kg	83kg	242cm <sup>3</sup> /m	S275JR	44.4kNm

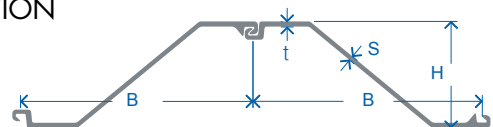
### LX AND LARSEN PILES

	b mm	h mm	d mm	t mm	Mass per lin. metre (kg)	Kg/m <sup>2</sup> of wall	Combined Moment of Inertia cm <sup>4</sup> /m	Section Modulus cm <sup>3</sup> /m
LX12	600	310	9.7	8.2	63.9	106.4	18723	1208
LX16	600	380	10.5	9	74.1	123.5	31175	1641
LX20	600	430	12.5	9	83.2	138.6	43478	2022
LX25	600	450	15.8	9.2	94	156.7	56824	2525
LX32	600	450	21.5	9.8	113.9	189.8	72028	3201
L601	600	310	7.5	6.4	46.3	77	11520	745
L602	600	310	8.2	8	53.4	89	12870	830
L603	600	310	9.7	8.2	64.8	108	18600	1200
L604	600	380	10.5	9	74.5	124	30710	1620
L605	600	420	12.5	9	83.5	139	42370	2020
L606	600	435	15.6	9.2	94.4	157	54370	2500
L606K	600	435	15.6	10	97.5	162	55240	2540
L607	600	435	21.5	9.8	114.25	191	69600	3200

### LARSEN SHEET PILE



### Z SECTION



### Z SECTIONS & U SECTIONS

Z Sections	Width pair 2b (mm)	Depth wall h (mm)	Thickness		Sectional area cm <sup>2</sup> /m	Mass (per metre)		Moment of inertia cm <sup>4</sup> /m	Elastic section modulus cm <sup>3</sup> /m
			t	s		Pair	wall		
AZ 12-770	1540	344	8.5	8.5	120	145.2	94.3	21430	1245
AZ 18-700	1400	420	9.0	9.0	139	153.0	109.3	37800	1800
AZ 26-700	1400	460	12.2	12.2	187	205.7	146.9	59720	2600
AU 16	750	411	11.5	9.3	147	86.3	115.0	32850	1600
AU 20	750	444	12.0	10.0	165	96.9	129.2	44440	2000
PU 18(-1)	600	430	10.2	8.4	154	72.6	121.0	35950	1670
PU 22 (-1)	600	450	11.1	9.0	174	81.9	136.5	46380	2060
PU 22(+1)	600	450	13.1	10.0	192	90.4	150.7	52510	2335
PU 28(-1)	600	452	14.2	9.7	207	97.4	162.3	60580	2680

# FRAMES

## Trench Pitching Frame

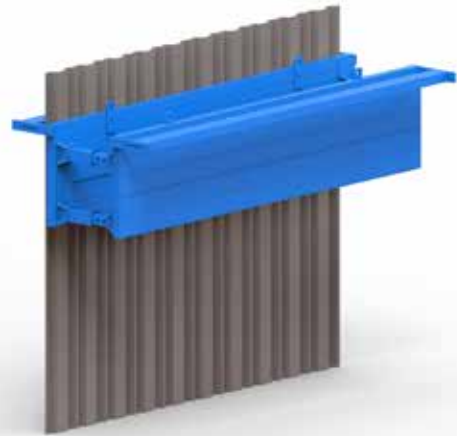
Trench pitching frames provide a quick method of accurately and safely locating light piles or trench sheets during the early stages of an excavation. The very narrow width of the frame, which also constitutes the top waling frame, ensures that the excavation width can be kept to a minimum.

- *Locates light piles or sheets accurately and safely*
- *Constitutes top waling frame*
- *Used with steel or Aluminium walers*

Length of frame	4.9m
Length of digging bay	4.4m
Depth of frame	0.92m
Width adjustable from	0.8-4.0m
Thickness of frame material	116mm
Width of pitching guide (adjustable)	Up to 200mm
Max SWL bottom waler	38kN/m
Weight	2200kg

*N.B. Trench widths below 1.2m can be obtained by removing 1/2 of the adjustable strut. To increase the width above 1650mm, extension bars must be added. Each extension bar is 550mm long and can be fitted singularly or in multiples to each spindle.*

Can be supplied to facilitate pitching and driving of heavy section sheet piles i.e. Larsen LX range or 600 series.



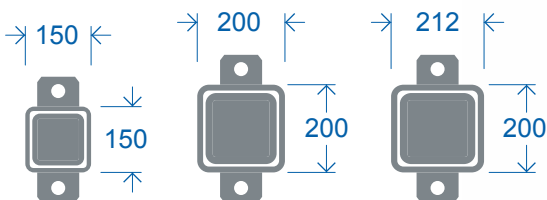
## Light Duty Manhole Frame

The manhole frame is a fully adjustable steel hydraulic frame utilising four hydraulic cylinders encased in a steel square section telescoping frame for the shoring of manholes and shafts. The unit is designed to be used with trench sheets and will give uninterrupted access to the excavation. Each cylinder operates independently but by using four-way hydraulic hose to connect all cylinders to the hand pump, they can all be extended simultaneously allowing an operative to effectively shore a manhole without having to enter an unshored excavation.

- *Suitable for oblong and square excavations*
- *Legs are interchangeable*
- *Uninterrupted access*
- *Shore without entering excavation*

MODEL	Excavation size		Total weight Per frame (kg)	Max SWL At max. ext. (kN/m)
	Min (mm)	Max (mm)		
A	1900	2750	370	40
B	2400	3200	450	36
C	3100	4500	1120	26.7
D	4600	6000	2500	25
HDA	2000	2900	680	68

Cross Section Detail of Light Frames (Dims mm)



A,B Frame

HDA,C Frame

D Frame



# FRAMES

## Heavy Duty Manhole Frame

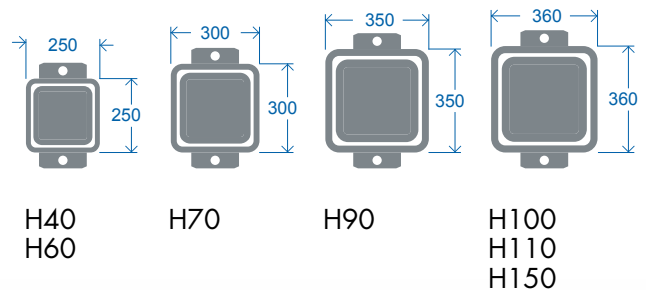
The heavy duty manhole frame is designed for use in excavations up to 15 metres length. It can also be used in conjunction with the light duty manhole frame for installations where the excavation sizes can be up to 15 metres long, but minimal width. Adjustment is achieved by a 1 metre stroke double-acting hydraulic cylinder which also gives hydraulic retraction of the manhole shore frame to facilitate ease of removal.



TYPE					
	Excavation size		Total weight	Max SWL	Max SWL
	Min (mm)	Max (mm)	Per leg (kg)	At min ext. (kN/m)	At max ext. (kN/m)
				ext. (kN/m)	ext. (kN/m)
H40	3010	4010	490	108	76
H60	4000	6000	800	95	41
H75	5500	7500	1270	70	37
H85	5300	8300	1300	60	35
H90	7000	9000	1550	60	35
H100	7800	9800		35	36
H110	9000	11000	2710	55	36
H150	13000	15000	4100	33	23

N.B. Excavation sizes may vary when frame leg combinations are different.

CROSS SECTION DETAILS HEAVY OF FRAME



## High Load Manhole Frames - 400 Series

This is a two component system comprising of a double acting ram with 6 extension leg sizes, allowing excavations of up to 30 metres in length to be supported with less deflection than comparable systems. The ram has 1 metre of mechanical and 1m of hydraulic adjustment.

For Large Frames over 20m please contact our design office for a design.

- *high load capacity - less frames required than standard systems*
- *modular system - easy to transport and assemble on-site*



- *less deflection - smaller excavations, easier installation*
- *less backfill - reduced labour, materials & transportation costs*
- *Two way hydraulic pump available for fast efficient extension and retraction of frames*

MODEL	407	409	411	413	415	417	420	425
Length (m)	Min	5.2	7.2	9.2	11.2	13.2	15.2	18
	Max	7.2	9.2	11.2	13.2	15.2	17.2	20
Weight (kg)	Ram & Leg	2481	2946	3433	3929	4508	5254	5926
SWL at Max Ext kN/m		104	77	56	40	31	25	*
								*

Note: \*Refer to TCL design department

# WALERS

## Aluminium Waler

Horizontal aluminium hydraulic shoring frames, for use with trench sheets where closed or intermittent sheeting is required. This system is extremely versatile and most suitable for urban areas where there are many services crossing the line of an excavation. The frames are installed from outside the excavation ensuring that operatives work in total safety and do not at any time have to enter an unshored area. The aluminium hydraulic cylinders are pressurised with a water-based mixture using a reliable hand pump.

	3.0m	4.0m	5.0m
Rail Length (m)	3.0	4.0m	5.0m
No. of Hydraulic Cylinders	2	2	2 or 3
Minimum External Width (mm)	550	550	550
Maximum External Width (mm)	4000	4000	4000
Typical Weight (kg)	80	100	135
Clearance Between Cylinders	2300	3300	2100
Beam Width (mm)	100	100	100



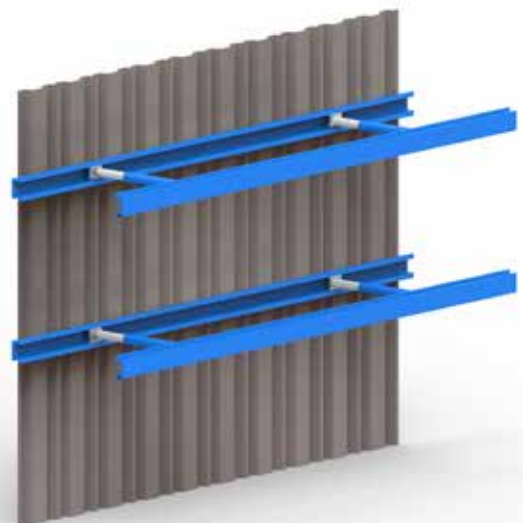
## Steel Waler

Steel waler frames are more suitable for very deep excavations, or where there are heavy ground loadings and a large access bay is required. Normally only two cylinders are used in the waling frame, and their position can be altered to suit access required and the ground load anticipated. The rails are only 100mm wide, enabling the excavation width to be kept to a minimum and limit the amount of backfill material required.

- *Used in heavier ground*
- *Minimal excavation width*
- *Large access bay*

### Safe Working Loads For Waler Cylinders

Steel Water	5m	6m
Rail Length (m)	5.0	6.0
No. Hydraulic Cylinders	2	2
Max. Ext. Width (mm)	780	780
Min. Ext. Width (mm)	4500	4500
Weight (kg) Min Width	472	540
Clearance between cylinders (mm)	4600	5600
Beam Width (mm)	100	100
Ideal for use where services & utilities exist		



## Verti-Shore

Verti-shore is a lightweight compact vertical shoring unit designed for use in ground conditions which do not require close sheeting.

These units are easily transported and can be quickly installed by one man from outside the excavation within seconds of the trench being dug. The interconnected aluminium hydraulic cylinders are pressurised with water and oil mixture by a single reliable hand pump.

Height (m)	Width (mm) Min	Width (mm) Max	Weight Per unit (kg)	Clearance Beneath bottom cylinder (mm)	Max SWL (kN/m)
0.6	450	680	11	260	60
(1cyl)	550	880	12		
	650	1080	13		
	1000	1600	15		
1.5	450	680	25	570	20
(2cyls)	550	880	27		
	650	1080	28		
	1000	1600	33		
2.1	450	680	32	570	20
(2cyls)	550	880	34		
	650	1080	35		
	1000	1600	40		

NB. The cantilever effect of the shore rail is the limiting factor on uniformly distributed load ratings. Safe working loads of individual cylinders is 80kN



## Grave Shore / Emergency Shore

The grave or emergency shore unit utilises strong yet lightweight aluminium hydraulic cylinders for the shoring of graves and small excavations. The unit is operated by a hydraulic hand pump using a water-based oil mixture and provides a complete shoring unit which is simple to install and extract. It is easily transportable, yet combines its lightweight simplicity with durability and efficiency of operation.

- Strong lightweight construction
- One lift installation / extraction
- No need for operatives to enter unsupported excavation
- Large range of sizes

Special sizes available to order. Other cylinder sizes are available to order. Coffin and tapered units complete with cylinders are also available.

GRAVE SHORE		
Height	370mm	600mm
Length	2.14m/2.28m	2.14m/2.28m
Width 1	500-750mm	500-750mm
Width 2	620-950mm	620-950mm
Clearance between cylinders	1940/2080mm	1940/2080mm
Max. Permissible bending moment	3kNm/panel	5kNm/panel
Total weight width 1	48kg	70kg
Total weight width 2	50kg	72kg



# STRUTS/PROPS

## JC40 Mechanical Bracing Struts

The safe axial strut load with an allowance of 5kN included for accidental loading.



JC40 MECHANICAL BRACING STRUTS					
Code No: Shaft brace	Code No: Tank brace	Overall Strut Length (mm)	Overall Strut Length max (mm)	Weight (kg)	Safe Axial Load (kN)
SJC - 00	MWS- 00	490	710	73	300
SJC - 01	MWS- 01	710	1150	84	300
SJC - 02	MWS- 02	1110	1550	109	300
SJC - 03	MWS- 03	1510	1950	124	300
SJC - 04	MWS- 04	1910	2350	145	300
SJC - 05	MWS- 05	2310	2750	160	300
SJC - 06	MWS- 06	2710	3150	180	300
SJC - 07	MWS- 07	3110	3550	195	300
SJC - 08	MWS- 08	3510	3950	216	250

## Trench Props

- *Labour costs drastically reduced: no cutting, wedging and nailing of timber strutting.*
- *Easy to handle, positioned by one man in seconds.*
- *Compact design saves transport costs and storage space.*
- *All steel construction ensures longest life: no loose parts.*
- *Designed and constructed to ensure safety and dependability under all conditions.*

TRENCH PROPS			
Sizes	Closed (M)	Extended (M)	Weight (KG)
0	1.04	1.83	12
1	1.75	3.12	18
2	1.98	3.35	20
3	2.59	3.96	24
4	3.2	4.88	26
5	3.65	6.1	34.5

## Trench Struts

**Completely adjustable for height.**

- *Extremely robust, easy to handle, compact to store.*
- *Quickly and simply erected, no tools necessary.*
- *Headplates suit modern formwork systems for slab construction.*

TRENCH STRUTS			
Sizes	Closed (m)	Extended (m)	Weight (kg)
0	0.32	0.47	4
1	0.48	0.71	6.8
2	0.71	1.12	9.1
3	1.02	1.73	11.8



# STOPPERS

## Expanding Pipe Stoppers

- Designed to air test drainage pipes to 0.01 bar
- Manufactured to exact pipe sizes

Nominal Size (mm)	Outlet (mm)	Nominal Weight (kg)
<b>Aluminium</b>		
100	12.5	0.35
150	12.5	0.70
200	25	1.4
225	25	2.0
250	25	2.2
300	25	3.5
350	25	4.3
375	25	4.5
400	25	6.0
450	25	7.4
500	50	14.0
525	50	16.0
600	50	20.0
<b>Steel</b>		
675	50	18.44
750	50	25.09
800	50	28.9
825	50	30.12
900	50	35.08



## Milltest Inflatable Pipe Stoppers

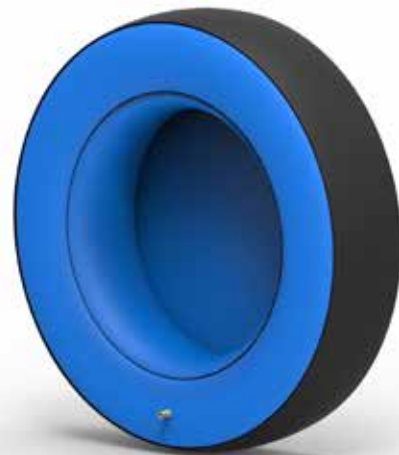
An inflatable ring with a central membrane, for air testing drainage pipes to a standard air test of 100mm of water over air. Light and easily transportable. They can be passed swiftly through restricted openings when collapsed.

Each stopper is designed to fit exact pipe size and is suitable for one size pipe only. Inflation is either by hand pump or compressor and adapter, fitted with a pressure regulator to avoid over-inflation.

### STANDARD STOPPERS

available for the following pipe sizes (mm)

- 300      • 350      • 375      • 400      • 450
- 500      • 525      • 550      • 600      • 650
- 675      • 700      • 725      • 750      • 800
- 825      • 900      • 975      • 1000      • 1050
- 1125      • 1200      • 1350           • 1500
- 1650      • 1700      • 1800



# STOPPERS

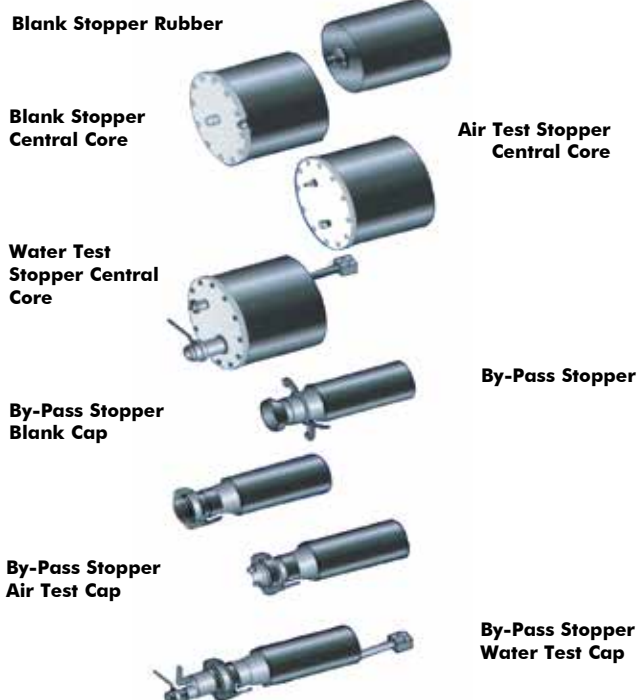
*Special stoppers can be made upon request.*

## Vetter Inflatable Pipe Stoppers

The Vetter stopper is a durable expandable pipe stopper which will withstand a maximum back pressure of 0.5 bar or 5 mtr head of water. The maximum inflation pressure is 1.5 bar (21psi). Inflation is by foolproof safety controller which is fitted with pre-set and sealed pressure regulating valves, preventing over inflation, and allowing remote operation. Air can be supplied from a hand pump, site compressor or compressed air cylinders. Vettters are available as blank plugs or bypass stoppers. Stoppers should be suitably mechanically braced to sustain the anticipated pipeline pressure load.

**Blank plugs:** The large sealing range of the stoppers and the ability to inflate remotely make it easy to seal flowing pipes quickly and reliably when adequately braced.

**By-Pass stoppers:** These BP type hollow core stoppers are suitable for many different applications including water testing, over



pumping, flow by-passing a leak location, when the relevant connector/fitting is attached.

### Vetter Inflatable Stoppers

#### BLANK

Product	Part No	Pipe Diameter mm	Diameter Approx. mm	Cylinder Length mm	Total Length mm	Weight kg
RDK 2.5/4	1440000101	25-40	21	115	175	0.15
RDK 4/7	1440000201	40-70	37	155	215	0.20
RDK 7/15	1440000301	70-150	68	300	345	0.50
RDK 10/20	1440000700	100-200	90	510	555	1.20
RDK 15/30	1440000601	150-300	145	460	505	1.90
RDK 20/40	1440020100	200-400	195	650	700	2.80
RDK 20/50	1440016700	200-500	195	750	795	5.00
RDK 30/60	1440000801	300-600	295	735	780	7.00
RDK 50/80	1440020000	500-800	450	1110	1155	17.00
RDK 60/100	1440011900	600-1000	580	1320	1365	25.00
RDK 50/100	1480000801	500-1000	450	1110	1155	17.00
RDK 60/120	1480001901	600-1200	580	1320	1365	25.00
RDK 80/140	1480006000	800-1400	785	1810	1855	41.00
RDK 140/170	1400000300	1400-1700	1350	1900	2150	55.00

# STOPPERS

## Vetter Inflatable Stoppers

### BLANK

RDK 170/200	1400000100	1700-2000	1620	1900	2300	59.00
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### TEST

Product	Part No	Pipe Diameter mm	Diameter Approx. mm	Cylinder Length mm	Total Length mm	Weight kg	Opening
PDK 4/7	1441000701	40-70	37	155	250	0.4	1 x 1/2"
PDK 7/15	1441001201	70-150	68	300	395	1.7	1 x 1/2"
PDK 10/20	1441018501	100-200	90	510	555	2.8	1 x 1"
PDK 15/30	1441022700	150-300	145	460	505	5.8	2 x 1/2"
PDK 15/30	1441022800	150-300	145	460	505	5.8	1 x 2"
PDK 20/40	1441040300	200-400	195	650	685	8	2 x 1"
PDK 20/40	1441018600	200-400	195	650	685	8	1 x 2"
PDK 20/50	1441031100	200-500	195	750	795	9	2 x 1"
PDK 20/50	1441031200	200-500	195	750	795	7	1 x 2"
PDK 30/60	1441023100	300-600	295	735	815	12	2 x 1"
PDK 30/60	1441018701	300-600	295	735	815	11	1 x 2"
PDK 50/80	1441003900	500-800	450	1110	1155	27	1 x 2"
PDK 50/80	1441003800	500-800	450	1110	1155	36	2 x 2"
PDK 60/100	1441023200	600-1000	580	1320	1365	33.5	1 x 2"
PDK 60/100	1441023300	600-1000	580	1320	1365	42	2 x 2"
PDK 50/100	1481003501	500-1000	450	1110	1155	27	1 x 2"
PDK 50/100	1481023800	500-1000	450	1110	1155	36	2 x 2"
PDK 60/120	1481009501	600-1200	580	1320	1365	33.5	1 x 2"
PDK 60/120	1481009301	600-1200	580	1320	1365	42	2 x 2"
PDK 80/140	1481024000	800-1400	785	1810	1855	55	1 x 2"
PDK 80/140	1481023900	800-1400	785	1810	1855	69	2 x 2"
PDK 140/170	1401000400	1400-1700	1350	1900	2150	62.5	1 x 2"
PDK 140/170	1401000300	1400-1700	1350	1900	2150	70	2 x 2"
PDK 170/200	1401000700	1700-2000	1620	1900	2300	64.5	1 x 2"
PDK 170/200	1401000600	1700-2000	1620	1900	2300	70	2 x 2"

### BY-PASS

Product	Part No	Pipe Diameter mm	Diameter Approx. mm	Cylinder Length mm	Total Length mm	Weight kg	Opening
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# STOPPERS

BY-PASS							
PDK 10/20	1481004401	100-200	97	485	545	2.2	1 x 2 1/2"
PDK 20/50	1481005001	200-500	195	550	610	7	1 x 4"
PDK 50/80	1481006900	500-800	450	565	580	32	1 x 4"
PDK 50/120	1481008000	500-1200	450	920	935	42.5	1 x 4"

## Vepro Inflatable Pipe Stoppers

The Vepro stopper is a durable expandable pipe stopper which will withstand a maximum back pressure of 0.5 bar or 5mtr head of water when suitably braced. For sealing and testing applications the Vepro can be inflated to a maximum working pressure of 1.5bar.

Air is supplied for inflation from a hand pump, compressor or compressed air cylinder. The stoppers are made from oil and acid resistant rubber to protect against aggressive fluids, and are available as blank or test plugs.

VEPRO INFLATABLE STOPPERS						
Blank						
Product	Part No	Pipe Diameter mm	Diameter Approx. mm	Cylinder Length mm	Total Length mm	Weight kg
MDK 25-40	1440000101	25-40	21	115	175	0.20
MDK 40-70	1440000201	40-70	37	155	215	0.20
MDK 70-150	1440000301	70-150	68	300	450	0.50
MDK 150-300	1440000601	150-300	145	460	505	1.70
MDK 300-600	1440000801	300-600	295	735	780	7.40
MDK 500-800	1440020000	500-800	450	1110	1155	17.60
MDK 600-1200	1480001901	600-1200	580	1320	1365	27.00
MDK 800-1400	1480006000	800-1400	785	1810	1860	55.00
MDK 1400-1700	1400000300	1400-1700	1350	1900	2150	55.00
MDK 1700-2000	1400000100	1700-2000	1620	1900	2300	59.00

BY-PASS							
Product	Part No	Pipe Diameter mm	Diameter Approx. mm	Cylinder Length mm	Total Length mm	Weight kg	Thread
PDK 70-150	8221000900	100-200	97	485	545	2.2	1 x 2 1/2"
PDK 150-300 By Pass	8221001100/8221001900	200-500	195	550	610	7	1 x 4"
PDK 300-600 By Pass	8221002400/8221003200	500-800	450	565	580	32	1 x 4"
PDK 500-1200	1481008000	500-1200	450	920	935	42.5	1 x 4"



# STOPPERS

## Sava Inflatable Plugy / Plugsy Pipe Stoppers

Sava Plugy stoppers are useful for sealing pipes and round gutters; while Sava Plugsy stoppers can be used for by-pass flowing, blocking, pumping and testing for free flowing or pipe leakage. Stoppers are available in a range of sizes, and come with a standard inflation valve. Plugy and Plugsy stoppers are designed to withstand a maximum back pressure of 0.5 bar, or 5mtr head of water when suitably braced. They can be inflated to a maximum working pressure of 1.5 bar.

- *Sava stoppers are made from durable SBR rubber to protect against aggressive fluids and assure low wear.*
- *SBR rubber provides adaptability and prevents slippage*
- *Lightweight efficient design of PLUGY and PLUGSY stoppers ensures quick and simple installation.*
- *Inflation valves can be easily exchanged, avoiding replacement of entire plug.*



TYPE		SPECIFICATIONS		DEFLATED PLUG			
Plugy	PLUGSY	Diameter Min (mm)	Diameter Max (mm)	Operating pressure (bar/psi)	By-pass Plugsy	Plug diameter (mm)	Plug length (mm)
Z2/3		50	75	2,5/36	43	45	110
Z3/4	S3/4	75	100	2,5/36	R1/2	70	130
Z4/6	S4/6	100	150	2,5/36	R1/2	85	195
Z6/8	S6/8	150	200	2,5/36	R2	142	250

# STOPPERS

## Sava Inflatable Blank/Bypass Pipe Stoppers

Sava Blank stoppers are useful for sealing pipes and round gutters; while Sava Bypass / Test stoppers can be used for by-pass flowing, blocking, pumping and testing for free flowing or pipe leakage. Stoppers are available in a range of sizes, and come with a standard inflation valve. Blank and Bypass / Test stoppers are designed to withstand a maximum back pressure of 0.5 bar, or 5mtr head of water when suitably braced. They can be inflated to a maximum working pressure of 1.5 bar.

### BLANK

1. Air inlet
2. Handling device
3. Warning label
4. Rubber cylinder



### BYPASS / TEST

1. Air inlet
2. Handling device
3. Warning label
4. Rubber Cylinder
5. Flow-thru tube with threads both side

### PLUGGY – BLOCKING PLUG TECHNICAL DATA

Part Number	Nominal Size EU	Size Usage Range		Deflated Plug		Product weight kg	Eye Bolt M Thread	Inflate Valve
		Min dia mm	Max dia mm	Dia mm	Dia mm			Thread Sz
519423	40-70	40	70	35	195	0.3	6	R ¼"
519424	70-150	70	150	68	335	0.6	6	R ¼"
60417	100-200	100	200	92	535	1.1	6	R ¼"
526850	150-200	150	200	142	385	1.8	8	R ¼"
60418	150-300	150	300	142	575	1.9	8	R ¼"
60419	200-400	200	400	192	635	3.0	8	R ¼"
60599	300-525	300	525	272	675	6.0	8	R ¼"
60422	350-600	350	600	322	865	8.4	10	R ¼"
60606	375-750	375	750	342	1085	10.9	10	R ¼"
60453	500-800	500	800	472	1185	17.3	10	R ¼"
60425	500-1000	500	1000	472	1185	17.3	10	R ¼"
523941	600-1200	600	1200	574	1500	39.0	10	2x3/8"
78959	750-1500	750	1500	600	2300	65.0	10	2 XR1/4"
535881	800-1800	800	1800	600	2960	105	10	2XR1/4"

### PLUGSY – BYPASS PLUG TECHNICAL DATA

Part Number	Nominal Size EU	Size Usage Range		Deflated Plug		Product weight kg	Eye Bolt M Thread	Inflate Valve	Bypass diameter
		Min dia mm	Max dia mm	Dia mm	Dia mm			Thread Sz	
526849	70-150	70	150	68	350	1.7	6	R1/4"	1/2"
60429	100-200	100	200	92	550	2.6	6	R1/4"	1"
526851	150-200	150	200	142	420	3.2	8	R 1/4"	1"
60432	150-300	150	300	142	590	4.4	8	R 1/4"	1"
60434	200-400	200	400	192	635	6.3	8	R 1/4	2"
60630	300-525	300	525	272	675	11.9	8	R 1/4"	2"
60440	350-600	350	600	322	865	16.6	10	R 1/4"	2"
60632	375-750	375	750	342	1085	19.7	10	R 1/4"	2"
60454	500-800	500	800	472	1185	31.3	10	R 1/4"	2"
60442	500-1000	500	1000	472	1185	31.3	10	R 1/4"	2"
523942	600-1200	600	1200	574	1500	46.0	10	2xR 3/8"	4'
78960	750-1500	750	1500	600	2300	75.0	10	2 x R 1/4"	4"
535882	800-1800	800	1800	600	2960	117	10	2xR 1/4"	4"

# STOPPERS

## Sava MAXIPLUG Pipe Stoppers

Sava Blank Maxiplugins are useful for sealing pipes and round gutters while Sava Bypass / Test Maxiplugins can be used for by-pass flowing, blocking, pumping and testing for free flowing or pipe leakage. Stoppers are available in a range of sizes, and come with a standard inflation valve. Blank and Bypass/ Test Maxiplugins are designed to withstand a maximum back pressure of 0.4 bar or 4mtr head of water when suitably braced. They can be inflated to a maximum working pressure of 0.5 bar.

### BLANK MAXIPLUG

- 1 Rubber inflatable pillow
- 2 Air inlet
- 3 Pulling straps

### BYPASS / TEST MAXIPLUG

- 1 Rubber inflatable pillow
- 2 Air inlets
- 3 Pulling device
- 4 Flow-thru hose



- Sava Maxiplugins are made from durable SBR rubber to assure low wear.
- SBR rubber provides adaptability and prevents slippage when suitably braced.
- Lightweight efficient design of Sava Blank and Bypass / Test Maxiplugins ensures quick and simple installation
- Inflation valves can be easily exchanged avoiding replacement of entire plug.

PLUGY – BLOCKING PLUG TECHNICAL DATA												
Part Number	Nominal Size EU	Size Usage Range		Required Inflation Pressure	Maximum Allowable Back Pressure		Deflated Plug			Product Weight	Eye Bolt M Thread	Inflation Valve Thread Size
		Min dia mm	Max dia mm	bar	Air Pressure	Water Head	Diameter	Width	Length			
					bar	m	mm	mm	mm			
529411	600-1000	600	1000	0.5	0.7	7	580	910	2100	18	NA	2xR ½"
529412	800-1200	800	1200	0.5	0.6	6	780	1230	2500	29	NA	2xR ½"
529413	1200-1600	1200	1600	0.5	0.5	5	1170	1830	3200	51	NA	2xR ½"
529414	1600-2000	1600	2000	0.5	0.4	4	1560	2450	4000	86	NA	2xR ½"
529491	1900-2200	1900	2200	0.5	0.3	3	1850	2910	4800	100	NA	2xR ½"

PLUGSY – BYPASS PLUG TECHNICAL DATA													
Part Number	Nominal Size EU	Size Usage Range		Required Inflation Pressure	Maximum Allowable Back Pressure		Deflated Plug			Product Weight	Eye Bolt M Thread	Inflation Valve Thread Size	Bypass Diameter (female)
		Min dia mm	Max dia mm		bar	Air Pressure bar	Water Head m	Diameter mm	Width mm				
				kg									
529415	600-1000	600	1000	0.5	0.7	7	590	920	1900	23	NA	2xR ½"	2"
529416	800-1200	800	1200	0.5	0.6	6	790	1250	2300	34	NA	2xR ½"	2"
529417	1200-1600	1200	1600	0.5	0.5	5	1190	1870	2850	57	NA	2xR ½"	2"
529418	1600-2000	1600	2000	0.5	0.4	4	1590	2500	3700	92	NA	2xR ½"	2"
529492	1900-2200	1900	2200	0.5	0.3	3	1850	2910	4800	100	NA	2xR ½"	2"

# STOPPERS

## Cherne Stoppers

American pneumatic plugs manufactured from kevlar reinforced natural rubber. Should be suitably braced.

TEST BALLS											
		Size Usage Range		Maximum Allowable Back Pressure							
Part Number	Nominal Size	Minimum Diameter	Maximum Diameter	Air Pressure PST	Head Pressure	Required Inflation Pressure	Product Weight	Deflated Length	Deflated Diameter Thread Size	Inflation Valve	By Pass Size
i-series™ Test-Ball ® Plugs											
395088	4" - 8" (100-200 mm)	3.6" (92 mm)	8.25" (210 mm)	13 (0,9 bar)	30 (9.1 M)	30 (2,1 bar)	2.5 lbs (1.13 kg)	20.6" (469 mm)	3.5" (70 mm)	1/4" removable	N/A
395128	6" - 12" (150-300 mm)	5.5" (140 mm)	12.25" (310 mm)	13 (0,9 bar)	30 (9.1 M)	30 (2,1 bar)	5.3 lbs (2.4 kg)	26.25" (667 mm)	5.25" (133 mm)	1/4" removable	N/A
395168	8" - 16" (200-400 mm)	7.5" (186 mm)	16.25" (413 mm)	13 (0,9 bar)	30 (9.1 M)	30 (2,1 bar)	14.5 lbs (6.5 kg)	29.5" (750 mm)	7.25" (184 mm)	1/4" removable	N/A
395248	12" - 24" (300-600 mm)	11" (279 mm)	24.25" (616 mm)	13 (0,9 bar)	30 (9.1 M)	30 (2,1 bar)	28 lbs (12.7 kg)	39.5" (1003 mm)	10.75" (273 mm)	1/4" removable	N/A
395488**	24" - 48" (600-1200 mm)	20.5" (521 mm)	50" (1270 mm)	6 (0,41 bar)	14 (4.3 M)	22 (2,5 bar)	125 lbs (57 kg)	74.5" (1892 mm)	20" (508 mm)	1/4"&1/2" removable	N/A
375608**	30" - 60" (700-1500 mm)	26.5" (675 mm)	60.5" (1537 mm)	6 (0,41 bar)	14 (4.3 M)	22 (2,5 bar)	210 lbs (95.4 kg)	102" (2591 mm)	26" (661 mm)	1/2"&1/2" removable	N/A
375728**	48" - 72" (1200-1800 mm)	44" (1118 mm)	72.25" (1835 mm)	6 (0,41 bar)	14 (4.3 M)	12 (0,83 bar)	290 lbs (132 kg)	100" (2540 mm)	43" (1092 mm)	1/2"&1/2" removable	N/A
375968**	54" - 96" (1400-2400 mm)	54" (1400 mm)	96.25" (2450 mm)	6 (0,41 bar)	14 (4.3 M)	11 (0,75 bar)	500 lbs (228 kg)	128" (3200 mm)	50" (1270 mm)	1/2"&1/2" removable	N/A
Shorter Length i-series™ Test-Ball® Plugs											
385168	8" - 16" (200-400 mm)	7.5" (186 mm)	16.25" (413 mm)	7.5 (0,5 bar)	16.75 (5.1 M)	30 (2,1 bar)	11lbs (5 kg)	23" (585 mm)	7.25" (184 mm)	1/4" removable	N/A
385248	12" - 24" (300-600 mm)	11" (279 mm)	24.25" (616 mm)	7.5 (0,5 bar)	16.75 (5.1 M)	30 (2,1 bar)	24 lbs (11 kg)	33" (839 mm)	10.75" (273 mm)	1/4" removable	N/A



# STOPPERS

MUNI BALLS											
		Size Usage Range		Maximum Allowable Back Pressure							
Part Number	Nominal Size	Minimum Diameter	Maximum Diameter	Air Pressure PSI	Head Pressure	Required Inflation	Product Weight	Deflated Length	Deflated Diameter Thread Size	Inflation Valve	By Pass Diameter
i-series™ Muni-Ball ® Plugs											
355088	4" - 8" (100-200 mm)	3.75" (95 mm)	8.25" (210 mm)	13 (0,9 bar)	30 (9.1 M)	30 (2,1 bar)	5.9 lbs (2.7 kg)	22" (559 mm)	3.65" (93 mm)	1/4" removable	3/4"
355128	6" - 12" (150-300 mm)	5.5" (140 mm)	12.25" (310 mm)	13 (0,9 bar)	30 (9.1 M)	30 (2,1 bar)	8.6 lbs (3.9 kg)	26.25" (667 mm)	5.25" (133 mm)	1/4" removable	1"
355168	8" - 16" (200-400 mm)	7.7" (196 mm)	16.25" (413 mm)	13 (0,9 bar)	30 (9.1 M)	30 (2,1 bar)	23 lbs (10.5 kg)	32" (813 mm)	7.6" (194 mm)	1/4" removable	2"
355248	12" - 24" (300-600 mm)	11.25" (286 mm)	24.25" (616 mm)	13 (0,9 bar)	30 (9.1 M)	30 (2,1 bar)	41 lbs (18.6 kg)	40" (1016 mm)	11.1" (282 mm)	1/4" removable	2"
355488**	24" - 48" (600-1200 mm)	20.5" (521 mm)	50" (1270 mm)	6 (0,41 bar)	14 (4.3 M)	22 (1,5 bar)	165 lbs (75 kg)	76" (1930 mm)	20" (508 mm)	1/2" removable	4"
365608**	30" - 60" (700-1500 mm)	26.5" (675 mm)	60.5" (1537 mm)	6 (0,41 bar)	14 (4.3 M)	22 (1,5 bar)	210 lbs (95.4 kg)	102" (2590.5 mm)	26" (661 mm)	1/2" removable	4"
365728**	48" - 72" (1200-1800 mm)	44" (1118 mm)	72.25" (1835 mm)	6 (0,41 bar)	14 (4.3 M)	12 (0,83 bar)	310 lbs (141 kg)	100" (2540 mm)	43" (1092 mm)	1/2"&1/2" removable	4"
365968**	54" - 96" (1400-2400 mm)	54" (1400 mm)	96.25" (2450 mm)	6 (0,41 bar)	14 (4.3 M)	11 (0,75 bar)	500 lbs (228 kg)	128" (3200 mm)	50" (1270 mm)	1/2"&1/2" removable	4"



# ANCILLARIES

## Steel Manhole Shutter

TCL steel manhole shutters are designed to form a 150mm thick concrete surround to circular pre-cast manhole rings. Manufactured from 2 mm flexible mild steel & normally supplied in 1800mm high units. Panels are designed in modular form and thus enabling concrete surround to be poured for manhole rings from 900 mm - 2700 mm internal diameter. Panels are jointed by the well proven key and locking wedge system. Polypropylene Manhole shutters can be supplied on request.

Custom manhole shutters of any size and concrete thickness can be catered for.

STEEL MANHOLE SHUTTER				
Internal Ring	Large A	Medium B	Small C	D
900mm	3		1	1
1050mm	3	1	2	
1200mm	4	-	1	
1350mm	4	2		
1500mm	5		1	
1800mm	6			
2100mm	6	2		
2400mm	7			
2700mm	8			1



## Safeguard

The Safeguard solution will protect open trench excavations. This modular system attaches to the Trench Box or Sheet Piles to provide edge protection and secures the excavation. Please ask a member of the team for details.



# ANCILLARIES

## Road Plates

Suitable for vehicular traffic over trenches etc. Supplied with lifting and pinning holes. Available either in plain finish or armour clad non-slip surface

ROAD PLATES	
Size (mm)	Weight (kg)
2500 x 1250 x 25mm	614
3000 x 1500 x 25mm	884



## Access Platform

The Access Platform is a compact temporary ladder access system for use in deep excavations.

The hoop ladder can be extended to suit various depths.

The clamping system can accommodate steel piles & trench sheets.





### **TRENCH CONTROL**

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## WHY USE TRENCH CONTROL

We strive to provide the widest range of ground support products available and we have the capacity to supply all your requirements from a single source. With depots nationwide we provide the best distribution network of any supplier.

Since our foundation in 1980, Trench Control has been a leader in the field of excavation support equipment. Since that time we have expanded our range of products and services greatly, to offer what we believe to be a comprehensive package of ground support solutions to the construction industry.

Trench Control have developed a number of different solutions including:

- Ground Support Hire Equipment - with onsite mechanical fitters
- Sheet Piling - with 1000 tonnes of steel in stock
- Concrete CFA Piling - to within 50mm of a boundary wall
- Pile Breaking - Both hire and contracting
- Anchoring - Utilizing both hollow bar and solid bar
- Flood Protection Solutions

Our team is built around a solid base of engineering experience. With Chartered Civil Engineers, who have a wealth of experience in their field, we can justifiably claim to have the solution to your ground support problem.

Our engineering team is also supported by on site personnel that will ensure your piling requirements are met to programme and budget.

We look forward to being of assistance and as Managing Director of Trench Control I welcome your thoughts and comments on how we can continue to be your supplier of choice.



Regards,

Colm O'Raghallaigh

Managing Director

[colm@trenchcontrol.ie](mailto:colm@trenchcontrol.ie)



## Safety Training, Occupational Hygiene & Safety Equipment

Inspiring a Safe Working Culture



### Safety Training

Construction Safety Training  
(Safe Pass & CSCS Courses)

Basic Employee Health & Safety  
Training

Specialised Safety Training (Confined  
Space, Abrasive Wheels, MEWP)

"Upskill" Training (Instructor Courses,  
Diplomas, Noise Monitoring)



### Occupational Hygiene & Environmental Services

Occupational Noise Monitoring

Environmental Noise Monitoring

Monitoring for Hazardous Substances

Dust, Gases, Vapours & Bioaerosol  
Monitoring

Vibration Monitoring (Human Exposure  
& Building)

Thermal Environment Surveys

Non-Ionising Radiation

Radon Monitoring

Workplace Lighting Surveys

Face Fit Testing

Ergonomic Assessments



### Safety Equipment (For sale or hire)

Confined Space Equipment

Working at Heights Equipment

Portable Gas Detection

Fixed Gas Systems

Rescue Equipment

Noise & Vibration Equipment

Cable Locators



### Service & Calibration Services

Gas Detection Calibration

Working at Height Inspections

Tripod & Winch Inspections

Life Jacket Inspections

Breathing Apparatus Service & Refills

Surveying Equipment

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