

MANHOLE AND METER PIT COVER BOOKLET

This booklet is designed as a reference guide for all Field Operations staff that encounter manhole and meter pit covers in the course of their work. The booklet provides information about the most common covers in use across Thames Water, along with the typical equipment required to handle them and best practice lifting techniques.

Though not a definitive guide identifying every cover you may encounter, every effort has been made to ensure the information included is easy to understand, relevant and enables you as the individual undertaking the task to make an informed assessment of each cover you may lift.

This guide should be used as a supportive reference guide to the Point of Work Risk Assessment (POWRA) information pack. This guide includes the process by which a POWRA shall be conducted and has detailed information in respect of;

- Manual Handling Potential Hazards**
- Generic Control Measures**
- Guidelines to be applied when conducting frequent lifting and lowering operations**

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CARRYING EQUIPMENT

To reduce the strain placed on the body:

- **Only carry essential items and tools with you and limit the weight you are carrying.**
- **When using a rucksack wear it with both straps across your shoulders and preferably a waist strap to maintain its position. Pack the rucksack such that the load is not off centred or uncomfortable.**
- **Take care when picking up or putting down tool bags. Swinging a bag off the shoulder or around the body can put additional strain through the mid-spine from a twisting motion**
- **Avoid heavy lifting while wearing a rucksack or tool bag .**

BEFORE LIFTING A COVER

- Ensure you have the appropriate clothing including your PPE and regularly check that it is good condition.
- Ensure you have the appropriate tools and regularly check your tools are in good condition
- Store tools within easy reach to minimise twisting and stooping when retrieving them.
- Assess the lift and ensure that it is within your capability.
- Consider other persons in the work area will you cause an obstruction?
- Gauge the weight of the cover and minimise the force or effort required to lift the cover by-
 1. Establish which equipment is best suited to the lift e.g. which lifting keys you will need.
 2. Check the condition of the cover, especially the lifting point e.g. is the keyway excessively worn?
 3. Plan how you will move and where you will put the meter cover down. Never prop up a cover, always place it safely on the ground.

Always Check the cover is free to lift and not stuck in its housing prior to lifting



POINT OF WORK RISK ASSESSMENT

Apply the point of work risk assessment process and verify that the conditions you are presented with are adequately understood:

Refer to the POWRA manual for guidance on frequent lifting, application of your training, potential hazard information and recommended control measures

Below is a basic summary particular to individual cover lifts.

1	Assess the situation	Can I get Hurt – How? – What can I do about it?
		How heavy is the cover- What effort is needed to conduct the lift?
		Where is the cover – Is it in a safe location?
		Is the cover free to lift – are the lifting points in good condition?
		Can anybody else get hurt- How? – What can I do about it?
2	Apply control Measures	Is the task one that I can undertake following my RISK ASSESSMENT?
		Do I have the correct tools – are they in good condition?
		Do I have the necessary PPE – is it in good condition?
		Do I need to erect signs and barriers?
3	Conduct the lift safely or - Do not lift the cover	Is the environment in which I am working safe?
		Continue to monitor and review
		Consult your team leader if you have any concerns over the assessment you have made or the application of the control measures.

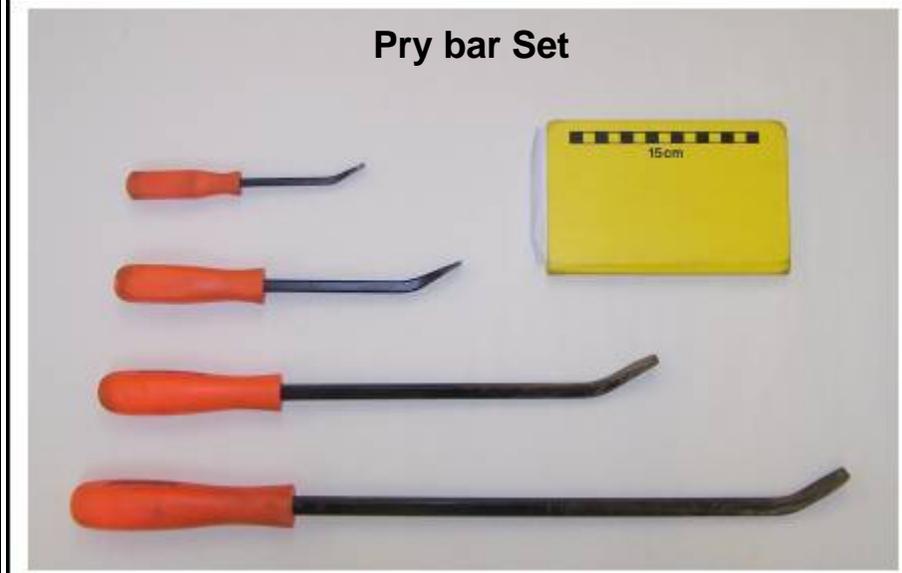
TYPICAL TOOLS



610mm/24" lifting keys

Screwdriver

Pair of gloves



Pry bar Set

Note –

There are a variety of lifting keys of differing lengths and key widths, the above is the most commonly used and ergonomically suited to the average individual.

Always select a lifting key that best fits the keyway and select the length of key that best enables you to lift with the legs and not your back. Too short a key may induce a stooping position; Too long keys may negate your ability to lift with your legs.

Stanton Warrior 150mm 6" lifting key



Pry bar lift

Note – When considering the lifting of covers listed below with a pry bar the weight of the cover is secondary to the technique applied and the force used to remove the cover- this factor becomes more important when conducting multiple lifts.



Tools and PPE

Pry Bar

Gloves

Kneeling mat / Knee protection

When lifting from a kneeling position use a kneepad or kneeling board to reduce strain placed on the knees.

Select a pry bar appropriate to the cover size, always opt for the largest possible to give maximum leverage.

Clear any debris from the meter cover using either the pry bar or a flat headed screwdriver.

Get a firm grip of the pry bar handle.

Remove lid by prising open with pry bar and place safely to one side.

When using the pry bar to lift the lids avoid using a rotating/twisting motion to protect your elbow and wrist. Instead lever the lids with an up/down motion.

After completing the task, replace lid ensuring it is securely inserted.

Throughout the day, alternate your activity by using different positions which are comfortable to you to lift the cover e.g. one knee kneeling (alternate knees); full kneeling (both knees); squatting.

PRY BAR LIFT

ATPLAS

Size:
100mm
diameter



TALBOT

Size:
150 x 150mm



DOUBLE ATPLAS

Size:
250 x 200mm



SAUNDERS

Size:
150mm
diameter



PRY BAR LIFT

ATLANTIC

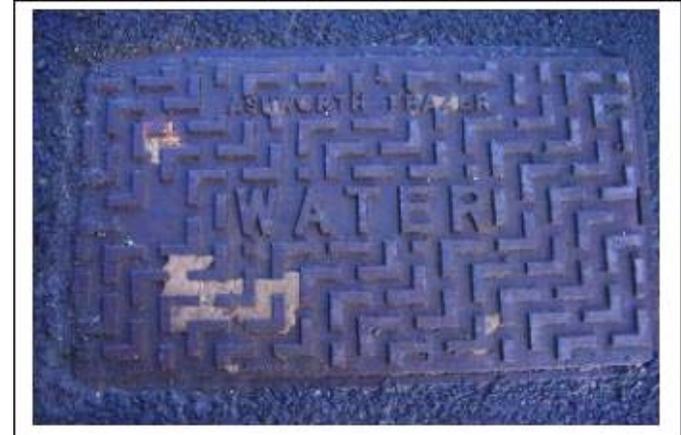
(6 port TALBOT)

Size:
600 x
250mm



ASHWORTH FRAZER

Size:
380 x
280mm



G&C BULLS EYE

Size:
750 x
300mm



G&C BULLS EYE

Size:
100mm
diameter



STANTON WARRIOR

When lifting a Stanton Warrior lid follow the same principles as with a pry bar lift, the Stanton key may be used as an alternative to a large pry bar to remove the cover.



STANTON WARRIOR

Size: 400 x 250mm

27 Kg



COVERS REQUIRING TWO LIFTING KEYS /HOOKS

Inspect the cover for potential wear or damage and clear the debris away from the cover and out of the keyways using a screwdriver. Decide where the cover is to be placed.

Adopt a stable position. Stand directly in front of the cover, with feet about shoulder width apart and if possible place one foot slightly forward of the other.

Insert the correct lifting keys (they should not be loose in the keyway and be fully engaged) and get a firm grip of the handles.

Bend and unlock the knees and tighten the stomach muscles. Initially test that the cover is free in the housing prior to attempting a full lift.

Lift evenly with the legs -- NOT THE BACK and do not yank, snatch or jerk.

Keep the natural curve in the spine. Do not bend the back any further while lifting.

Do not lift a cover by bending and twisting.

Upon completion reverse the procedure to replace the cover. Ensure the cover is securely inserted back into place and seated correctly in its frame.

DO NOT ATTEMPT TO LIFT ANY COVER YOU FEEL YOU CANNOT LIFT SAFELY.

HEAVY COVERS – 2 MAN LIFTS

Two man lifts should follow the same principles as a single person lift, but it is essential that you **plan the lift together and communicate throughout.**

- Ensure there is enough space to manoeuvre as a group.
- Each Person shall;
 1. Check the cover is free to lift and free of any defects that may affect the lift.
 2. Adopt a stable position, stand directly in front of the load, with feet about shoulder width apart.
 3. Insert the lifting keys into their slots and get a firm grip of their handles. Keep close to the load.
 4. Bend and unlock the knees and tighten the stomach muscles.
 5. Lift with the legs -- NOT THE BACK
 6. Keep the natural curve in the spine.
 7. Move the feet. Do not lift a cover by bending and twisting simultaneously, avoid jerky movements.
 8. If necessary conduct the lift in 2 stages to avoid over reaching. Lift the cover from the frame, put it down askew on the frame and then reposition your feet prior to placing the cover in its final location

TWO KEY LIFTS-Covers Weighing less than 25kg

**THOMAS
DUDLEY**

**Size: 400 x
250mm**

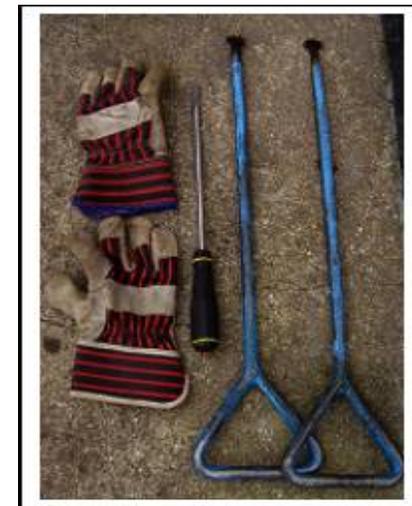
15 kg



**WILDER &
SONS**

**Size: 350 x
250mm**

13 Kg



TWO KEY LIFTS- Covers Weighing less than 25kg

**GALVINISED
LID**

**Size: 600 x
450mm**

11 Kg



**METER
INSPECTION
LID**

**Size: 550 x
400mm**

9 Kg



TWO KEY LIFTS- Covers Weighing less than 25kg

**CLARCON
DOM**

**Size: 500 x
350mm**

9 Kg



**NO
MARKINGS**

**Size: 600 x
450mm**

15 Kg



TWO KEY LIFTS- Covers Weighing less than 25kg

**NO
MARKINGS**

**Size: 600 x
450mm**

14 Kg



M260

**Size: 600 x
450mm**

24 Kg



TWO KEY LIFTS- Covers Weighing less than 25kg

**NO
MARKINGS**

**Size: 600 x
450mm**

14 Kg



**MWB
DOUBLE
COVER**

**Size: 450 X
300mm**

**9 Kg
(per cover)**



TWO KEY LIFTS

**MWB
KENSINGTON
PALACE**

**Size: 900 x
450mm**

22 Kg



TWO HOOK LIFTS

**NO
MARKINGS**

Size: 600 x
450mm



**CONCRETE
INFILL**

Size: 400 x
600mm

25kg+

(n.b. weight is dependant upon thickness and make up of fill individual careful assessment is required)



LIFT AND SLIDE COVERS



Inspect the cover for potential wear or damage.

Clear the debris away from the cover and confirm it is free to lift.

Adopt a stable position. Stand directly in front of the cover, with feet about shoulder width apart and if possible place one foot slightly forward of the other.

Insert the lifting key and get a firm grip of the handle.

Bend and unlock the knees and tighten the stomach muscles.

Lift evenly with the legs NOT THE BACK and do not yank, snatch or jerk

Roll backwards on the balls of your feet transferring the load smoothly from the leading leg to the other.

If necessary put the cover down before taking a further step backwards

Keep the natural curve in the spine. Do not bend the back any further while lifting.

Do not lift a cover by bending and twisting.

DO NOT ATTEMPT TO LIFT ANY COVER YOU FEEL YOU CANNOT LIFT SAFELY.

SINGLE KEY LIFT AND SLIDE

PAM LIFT
AND SLIDE

Size: 900 x
600mm

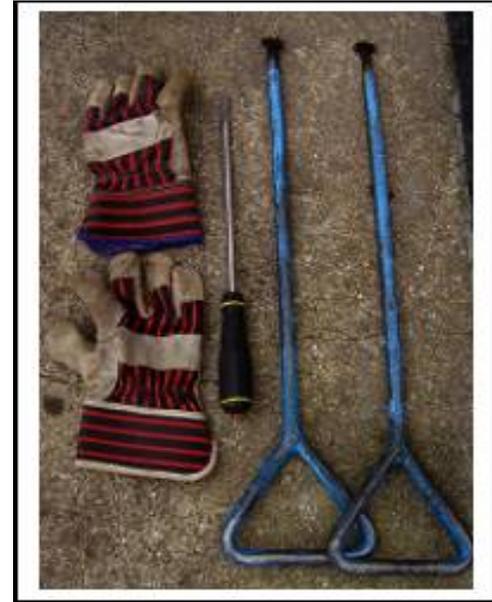
53Kg



STANTON
RAPIDE 50
SLIDEOUT

Size: 450 x
300mm

19Kg



TWO KEY LIFTS-Covers weighing More than 25kg

**STANTON &
STAVELEY
SPLIT
COVER**

**Size: 900 x
600mm**

49Kg



**MA60 SPLIT
LID**
**Size: 600 x
450mm**

38kg



TWO KEY LIFTS-Covers weighing More than 25kg

**STANTON
RAPIDE 75**

**Size: 900 x
600mm**

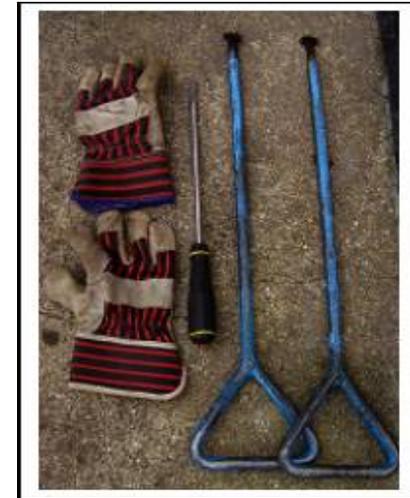
27kg



**BRICKHOUSE
DUDLEY
No:5253**

**Size: 900 x
600mm**

28 Kg



TWO KEY LIFTS- Covers weighing More than 25kg

**Stanton
Trojan 57**

Size 600x600

49kg



**Stanton
Challenger**

Size 620x610

49kg



TWO KEY LIFTS-Covers weighing More than 25kg

PETER SAVAGE

Size: 600 x 450mm

42Kg



CITY OF WESTMINSTER SPILT LID

Size: 600 x 600

50Kg



TWO KEY LIFTS-Covers weighing More than 25kg

**LARGE
GALVANISED
LID**

**Size: 900 x
900mm**

43Kg



NO MARKINGS

**Size: 600 x
400mm**

34Kg



TWO KEY LIFTS Covers weighing More than 25kg

**PETROL
STATION**

**Size: 600 x
450mm**

29 Kg



**M.W.B MESH
TOP COVER**

**Size: 600 x
450mm**

32Kg



Covers weighing More than 25kg

CONCRETE LID

Size: 600 x
400mm

25kg+

(n.b. weight is dependant upon thickness and make up of fill, individual careful assesment is required)



GUEST & CHRIMES

46kg

Size: 500 x
300mm



n.b. This cover has a single lifting point, if you feel able to do so, the lift is best attempted in two stages,

- After clearing the seal and checking it is free to lift, Straddle the cover and holding a single key with both hands lift the cover out of the frame, turn the cover by about 15 degrees and rest it on the frame.
- Reposition the feet and slide the cover clear of the opening

TWO KEY LIFTS Covers weighing More than 25kg

**Stanton
Chieftain**

Size 600x600

50kg



**STANTON
TROJAN 75**

**Size: 600 x
450mm**

34 kg



TWO KEY LIFTS Covers weighing More than 25kg

Stanton Trojan

Size 600x750

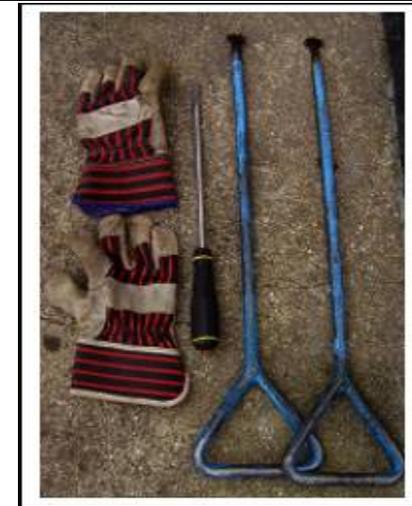
48kg



**BRICKHOUSE
DUCTILE VALIANT**

Size: 900 x 600mm

28 Kg



FOUR KEY LIFTS Covers weighing More than 25kg

**BRIPAVE
(BRICK INFILL)**

**Size: 600 x
450mm**

**44 kg
approx**

(n.b. weight is
dependant upon
bricks used)



CONCRETE LID

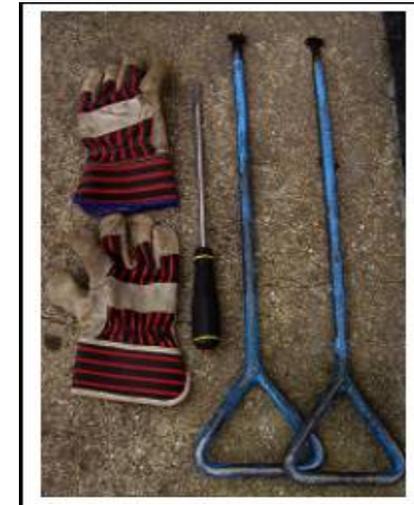
**Size: 600 x
400mm**

25kg+

(n.b. weight is
dependant upon
thickness and make
up of fill individual
careful assessment
is required)



(Per Person)



Secure Covers

Within the business are a number of secure covers, for obvious reasons they are not illustrated and the technique for unlocking is not given.

Without a specific key these covers cannot be opened and lifting should not be attempted. Where encountered your team manager should be contacted for further guidance.

Normal covers may also have been temporarily secured by spot welding or infilling of the lifting points by local authorities, the emergency services or army for public events

To avoid injury emphasis is placed upon checking a cover is free to lift prior to lifting as detailed in earlier sections.

Not illustrated

Techno- Covers –

Note different styles of this type of cover exist with variation around the locking device – it is important to understand the release mechanism for each type of cover .

1) Unlock cover and applying slight downward pressure to the cover release the retaining bolts.



2) Release pressure to top of cover and allow sprung hinge to lift cover.



3) Standing to one side of the cover, hold handle and lift cover to fully engage locking device.

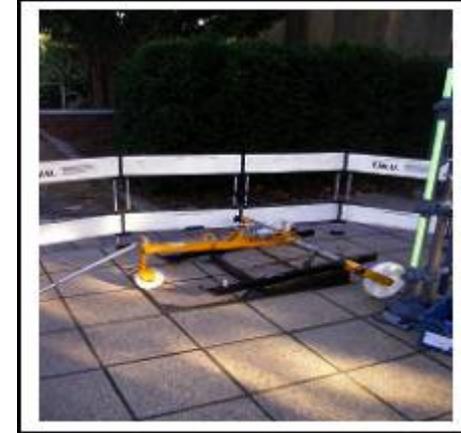


4) To close cover, stand to one side, release locking device and lower until in position 2 (cover supported by sprung hinge), apply pressure to the cover top and engage locking pins, lift locking hasp and refit lock.

MECHANICAL LIFTS – Proteus Lifting device –

e.g.
**NATIONAL
ARCHIVE BRICK
INFILL**

**Size: 600 x
450mm**



The PROTEUS LIFTER is used to lift heavy covers. Under no circumstances should anyone attempt to assemble or use the Proteus lifter without completing the relevant training course
2 persons are required to manhandle and assemble lifting device.



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Cover Type	Wt Kg	Page	Cover Type	Wt Kg	Page
Ashworth Frazer	N/A	9	MWB Double mesh top 600x450	32	27
Atlantic (6 port)	N/A	9	MWB Kensington Palace 900x450	22	18
Atplas	N/A	8	PAM 5474 (lift and slide) 900x600	53	21
Brickhouse Ductile Valiant 900x600	28	30	Peter Savage (split lid) 600x450	42	25
Brickhouse Dudley 5253 900 x 600	28	23	Proteus lifter	---	34
BRIPAVE brick infill	44	31	Saunders	N/A	8
City of Westminster (split lid) 600x600	50	25	Secure Covers	---	32
Clarcon Dom 500x350	9	15	Stanton Trojan 57 600	49	24
Concrete infill 400x600	25+	19	Stanton Challenger 620x610	49	24
Concrete lid 400x600	25+	31	Stanton & Stavely (split lid) 900x600	49	22
Double Atplas	N/A	8	Stanton Rapide 50 Slide out 450x300	19	21
Double Galvanised Lid Petrol Station 600x450	29	27	Stanton Rapide 75 600x900	27	23
Galvanised lid 600x450	11	14	Stanton Trojan 600x750	48	30
Galvanised lid 900x900	43	26	Stanton Trojan 75 600x450	34	29
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Guest & Chrimes Bulls Eye	N/A	9	Stanton Warrior 400x250	27	10
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