

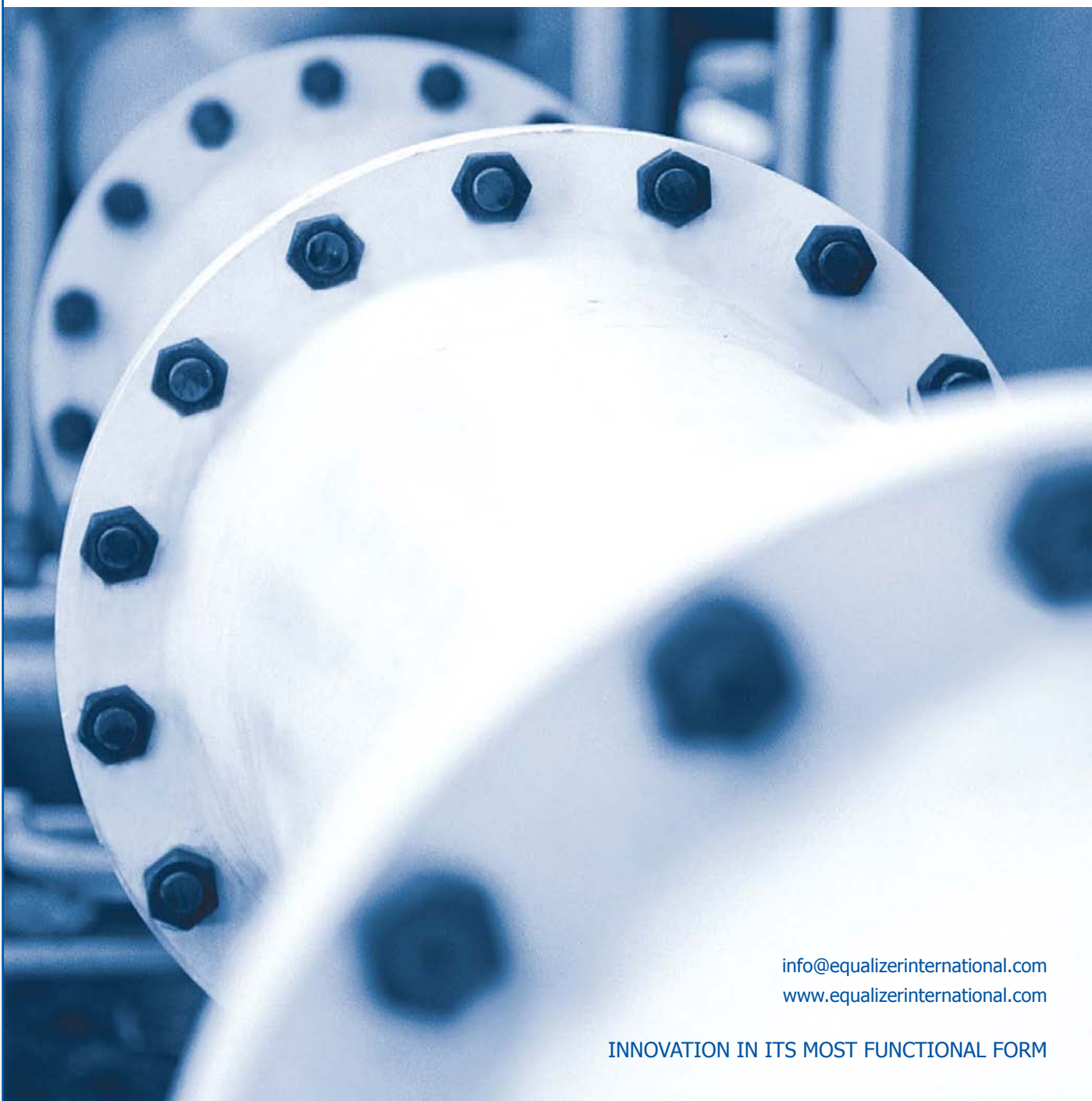
# VLW18TE, VLW18TI

## HYDRAULIC VERTICAL LIFTING WEDGES

Operator Instruction Manual



**EQUALIZER**<sup>™</sup>  
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INNOVATION IN ITS MOST FUNCTIONAL FORM



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## 1. INTRODUCTION

The Equalizer VLW18TE/TI Hydraulic Vertical Lifting Wedge is an aid for assisting with the lifting and installation of plant and heavy equipment.

- **Access gap required:** 9.5 mm (0.37")
- **Lifting force:** 10,000 psi (700 bar) = 18 T (180 kN)

## 2. SAFETY INFORMATION

**The operator MUST read this manual prior to using the tools.**

**Failure to comply with the following cautions and warnings could cause equipment damage and personal injury; read the manual fully!**

Read all the following instructions, warnings and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation.

Equalizer International Ltd cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Contact Equalizer International Ltd when in doubt as to the safety precautions and applications. To protect your warranty, use only good quality hydraulic oil of the grade 32cSt.

Only people competent in the use of hydraulic equipment should use these tools.

In all installations the site safety requirements must be adhered to. ALSO the safety of the operator, and when present, any assisting personnel, is of paramount importance along with the safety of others including, when present, the general public.

These instructions are only to cover the safe operation of THE EQUALIZER VLW18TE/TI HYDRAULIC VERTICAL LIFTING WEDGE during normal maintenance/installation operations. All other safety aspects must be controlled by the operation supervisor.

A **CAUTION** is used to indicate correct operating or maintenance procedures and practices to prevent damage to, or destruction of equipment or other property.

A **WARNING** indicates a potential danger that requires correct procedures or practices to avoid personal injury.

A **DANGER** is only used when your action or lack of action may cause serious injury or even death.



**IMPORTANT:** Operator must be competent in the use of hydraulic equipment. The operator must have read and understood all instructions, safety issues, cautions and warnings before starting to operate the Equalizer equipment.



**WARNING:** Immediately replace worn or damaged parts with genuine Equalizer parts. Equalizer parts are designed to fit properly and withstand rated loads. For repair or maintenance service contact your Equalizer distributor or service centre.



**WARNING:** To avoid personal injury and possible equipment damage, make sure all hydraulic components are rated to a safe working pressure of 700 bar (10,000 psi)



**DANGER:** To avoid personal injury keep hands and feet away from the tool and workpiece during operation.



**WARNING:** Do not overload equipment. Overloading causes equipment failure and possible personal injury.



**WARNING:** Always wear suitable clothing and Personal Protective Equipment (PPE).

The risk of overloading can be avoided by using the Equalizer Hand Pump, which has its safety valve set to 700 bar by the factory. If alternative pumps are used, ensure they are rated at a safe working pressure of 700 bar (10,000 psi).



**DANGER:** Do not handle pressurised hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, seek medical attention immediately.



**CAUTION:** Make sure that all system components are protected from external sources of damage, such as excessive heat, flame, moving machine parts, sharp edges and corrosive chemicals.



**WARNING:** Never pressurize unconnected couplers. Only use hydraulic equipment in a connected system.



**CAUTION:** Avoid sharp bends and kinks that will cause severe back-up pressure in hoses. Bends and kinks lead to premature hose failure. Do not drop heavy objects onto hoses. A sharp impact may cause internal damage to hose wire strands; applying pressure to a damaged hose may cause it to rupture. Do not place heavy weights on the hoses, or allow vehicles to roll over the hoses; crush damage will lead to premature hose failure.



**IMPORTANT:** Do not lift hydraulic equipment by the hoses or couplers. Use the carrying handle or other means of safe transport.

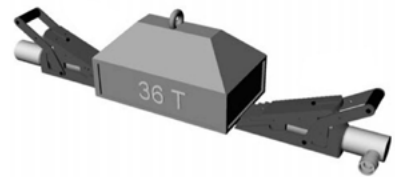


**CAUTION:** Do not operate the equipment without lubricating all moving parts as in sections 4.5 & 5.5. Use only high pressure molybdenum disulphide grease.

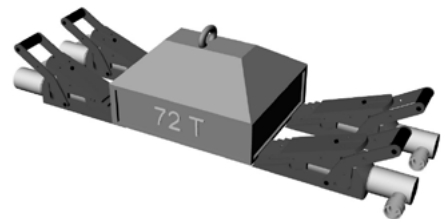
### 3. TECHNICAL DATA

The EQUALIZER VLW18TE and VLW18TI hydraulic vertical lifting wedges will generate 18 Tons (180 kN) lifting force from 10,000 psi (700 bar) of hydraulic pressure. The tools require a minimum access gap of 9.5 mm (0.37") on the first step and will lift vertically.

Using two VLW18TE/TI wedges will allow a lift of 36 Tons



Using four VLW18TE/TI wedges will allow a lift of 72 Tons



## 4. VLW18TE HYDRAULIC VERTICAL LIFTING WEDGE

### 4.1 KIT COMPONENTS/KIT OPTIONS

#### MINI KIT COMPONENTS

- 1 x VLW18TE Wedgehead
  - 1 x 10,000 psi (700 bar) Hydraulic Cylinder
  - 1 x Safety Block
  - 1 x Stepped Block
  - 1 x Instruction Manual
  - 1 x Hex Key
  - 1 x Countersunk Screw
  - 1 x Cardboard Packaging
- Product Code: VLW18TEMIN



#### STANDARD KIT COMPONENTS

- 1 x VLW18TE Wedgehead
  - 1 x 10,000 psi (700 bar) Hydraulic Hose, 2 m (78.75")
  - 1 x 10,000 psi (700 bar) Hydraulic Cylinder
  - 1 x 10,000 psi (700 bar)
  - HP350S Sealed Hand Pump with Gauge
  - 1 x Safety Block
  - 1 x Stepped Block
  - 1 x Hex Key
  - 1 x Countersunk Screw
  - 1 x Instruction Manual
  - 1 x Carry-Case
- Product Code: VLW18TESTDSPB



#### MAXI KIT COMPONENTS

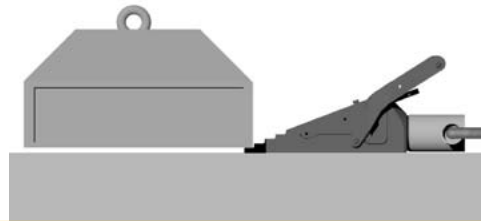
- 2 x VLW18TE Wedgeheads
  - 2 x 10,000 psi (700 bar) Hydraulic Hoses, 2 m (78.75")
  - 2 x 10,000 psi (700 bar) Hydraulic Cylinders
  - 1 x 10,000 psi (700 bar)
  - HP350D Sealed Hand Pump with Gauges
  - 2 x Safety Blocks
  - 2 x Stepped Blocks
  - 2 x Hex Key
  - 2 x Countersunk Screw
  - 1 x Instruction Manual
  - 1 x Carry-Case
- Product Code: VLW18TEMAXSPB



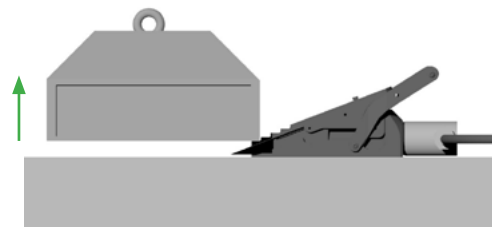


## 4.2. HOW THE VLW18TE WORKS

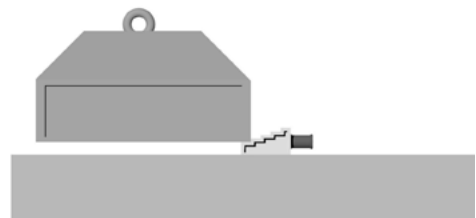
- 1.** The hydraulic hose and hand pump are attached to the tool and the tool is inserted into the access gap



- 2.** The hand pump is primed which powers the hydraulics that lift the load



- 3.** The load is secured using the safety block



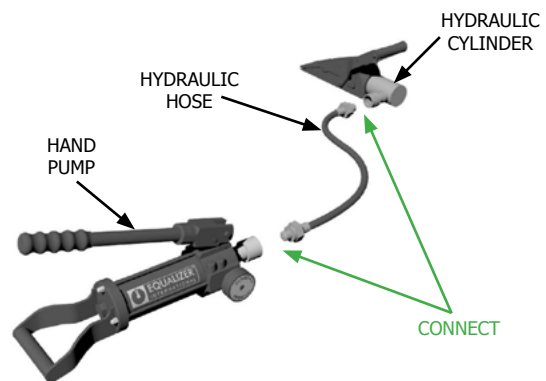




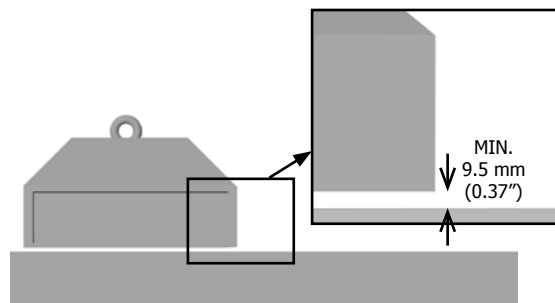
### 4.3 STANDARD INSTALLATION AND OPERATION

The operation procedure is exactly the same for both the VLW18TE Mini and Standard Kits. The VLW18TE Mini Kit does not contain either a 10,000 psi (700 bar) hydraulic hand pump or a 10,000 psi (700 bar) hydraulic hose. These items will come from the user's inventory.

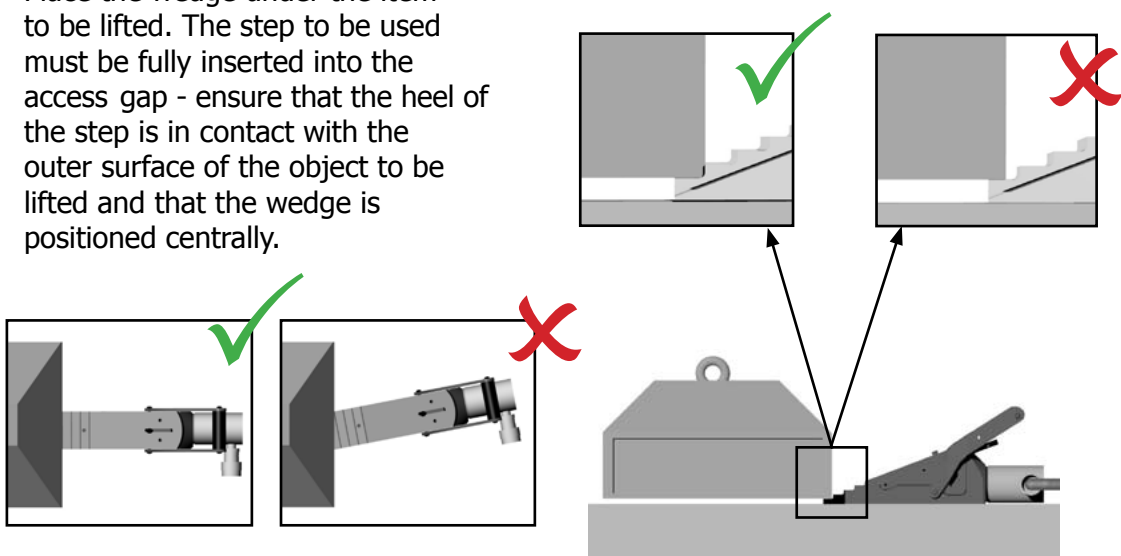
1. Assemble the kit by connecting one end of the hydraulic hose to the hand pump, and the other end to the hydraulic cylinder.



2. Ensure the access gap under the item to be lifted measures 9.5 mm (0.37") or greater.

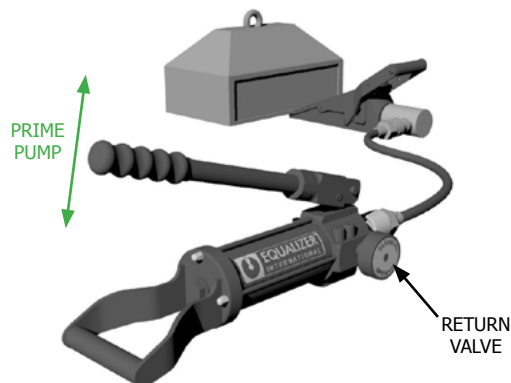


3. Place the wedge under the item to be lifted. The step to be used must be fully inserted into the access gap - ensure that the heel of the step is in contact with the outer surface of the object to be lifted and that the wedge is positioned centrally.

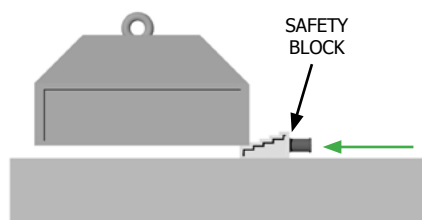


4. Close the return valve on the hand pump (by turning clockwise) and advance the wedge by priming the pump.

N.B. The HP350S Hand Pump has a self contained non-vented oil system. This means that the pump will function without the need for an air vent to be opened. This allows the pump to be used vertically, horizontally or upside down should the situation require. Having no open vent eliminates the risk of hydraulic oil spillage during use.



5. Once the item has been lifted to the desired height, or to the maximum height on the step used, the safety block should be inserted into the gap. Secure the load by releasing the pressure onto the block.



6. If required, the wedge should then be re-inserted on the next step and steps 3 - 5 repeated to lift the item further.



Never place fingers under an item being lifted.

Always ensure that both the wedge and the safety block are inserted under the item until the heel of the step is in contact with the side of the item to be lifted and the step is positioned centrally (see Installation and Operation step 3)



Care should be taken not to drop any of the component parts when removing them from the lifted load. This action will prevent injuries to either the operator's lower limbs, or to passers by.

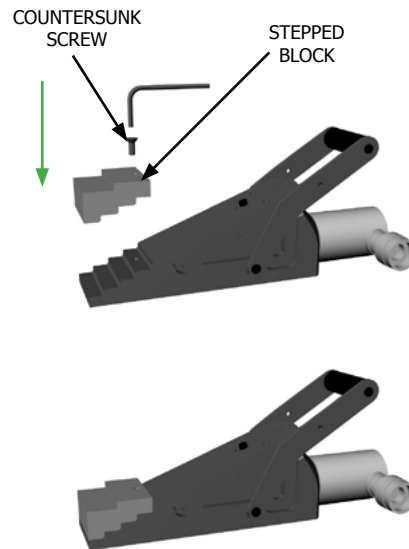


## 4.4 USING THE STEPPED BLOCK ACCESSORY

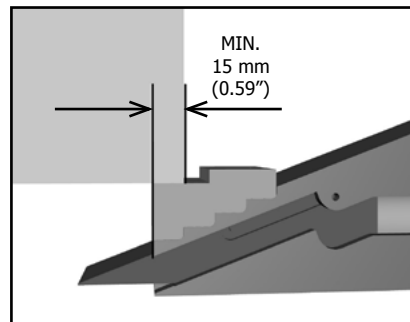
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The Equalizer Stepped Block enables the VLW18TE Hydraulic Vertical Lifting Wedge to be used to lift an item with a larger gap, and will lift the item further with less penetration

- 1.** Attach the stepped block to the tool using the M6 countersunk screw



- 2.** Insert the tool under the item to be lifted. Ensure there is a minimum hold of 15 mm (0.59") and that the full width of the block is used



## 4.5 EXAMINATION, MAINTENANCE AND STORAGE

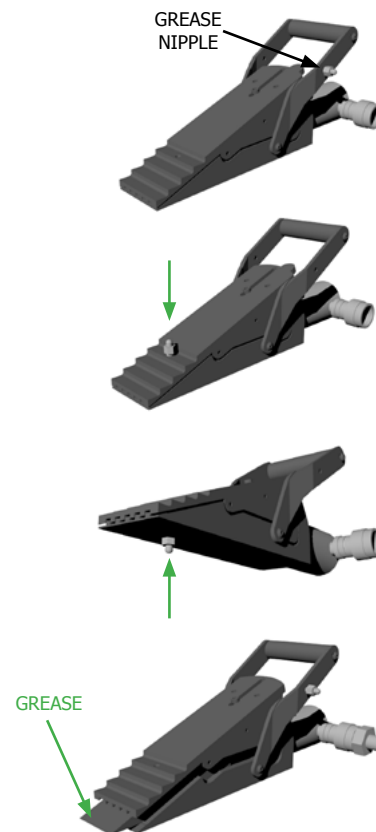
- On return from each job and before allocation against subsequent work the completeness of the Equalizer VLW18TE kit must be established and items examined to ensure that they are serviceable.
- Any missing or damaged items are to be replaced as soon as possible and prior to the tool being used again.
- Store the tool in a cool dry place and ensure all machined surfaces are greased
- Grease all moving parts each and every time the tool is used:

### Greasing the wedge:

- Remove the grease nipple from the handle of the tool
- Screw the grease nipple into the jaw, attach the grease gun and squeeze grease into the wedge
- Screw the grease nipple into the base of the tool, attach the grease gun and squeeze grease into the wedge

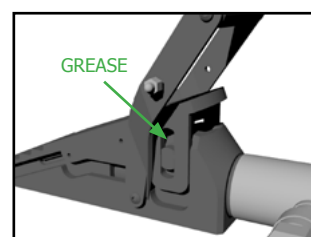
OR

- Connect the hose to the wedge and advance the wedge forward, smear grease onto the surfaces of the wedge



### Greasing the slide pins:

- Simply smear some grease into the slots. Also ensure the slide pins are free from grit.

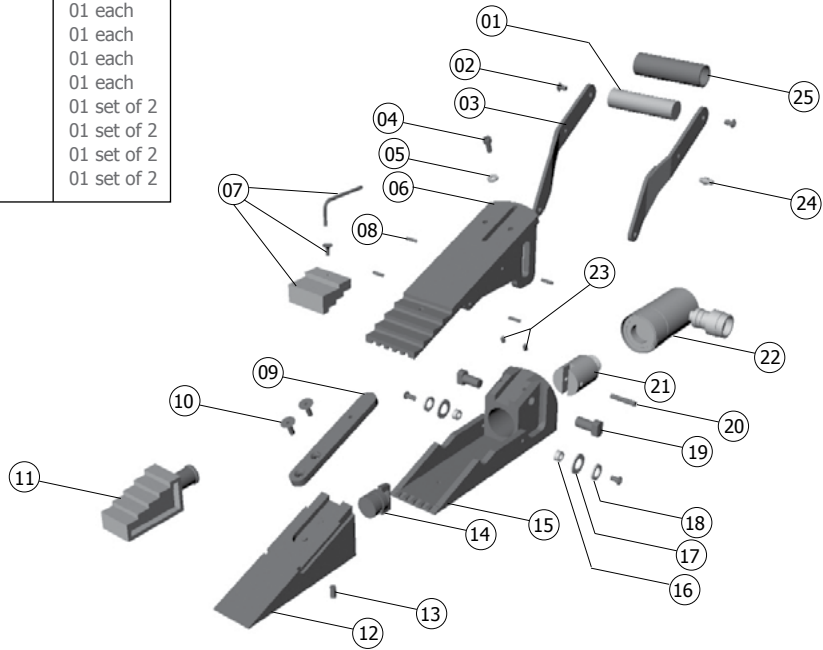


## 4.6 PARTS LISTS

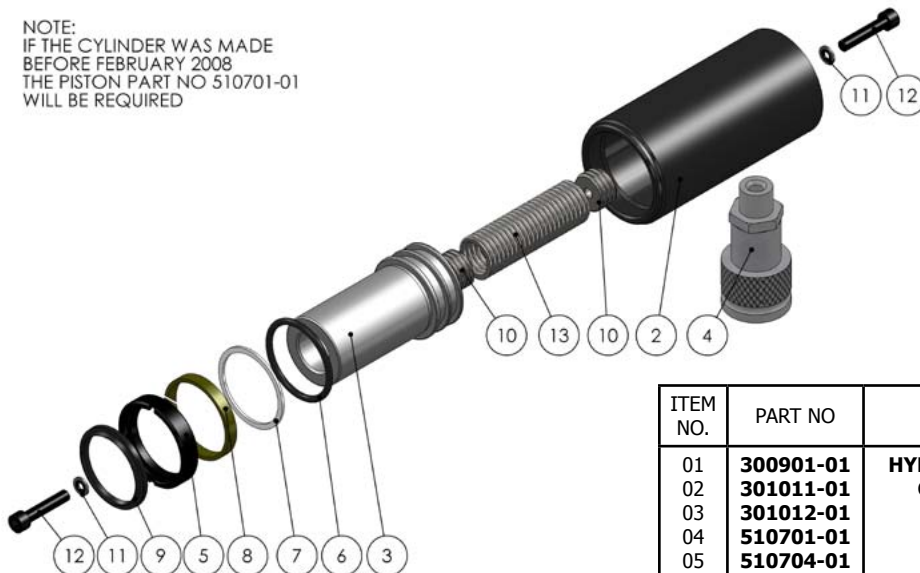
### VLW18TE TOOL

ITEM	PART No.	DESCRIPTION	QUANTITY
01	501301-01	HANDLE BAR	01 each
02	402902-04	SCREW FOR HANDLE	01 set of 4
03	501001-02	SIDE PLATES FOR HANDLE	01 set of 2
04	402701-01	SCREW FOR TAIL	01 each
05	501601-01	WASHER FOR TAIL	01 each
06	500201-01	TOP PLATE	01 each
07	501901-01	STEPPED BLOCK (KIT)	01 kit
08	301201-04	ROLL PINS	01 set of 4
09	502001-01	TAIL	01 each
10	501501-02	SCREWS FOR TAIL	01 set of 2
11	501401-01	SAFETY BLOCK	01 each
12	500302-01	WEDGE	01 each
13	301301-01	GRUB SCREW	01 each
14	503201-01	SLOT PLUG	01 each
15	500102-01	MAIN BODY	01 each
16	503501-02	SPACER	01 set of 2
17	503301-02	WASHER 10 mm ID	01 set of 2
18	503401-02	WASHER 6 mm ID	01 set of 2
19	500401-02	SLIDE PINS	01 set of 2

ITEM	PART No.	DESCRIPTION	QUANTITY
20	502301-01	M6 x 35mm GRUB SCREW	01 each
21	500503-01	PUSH PIN MK III	01 each
22	301002-01	HYDRAULIC CYLINDER	01 each
23	300401-02	GRUB SCREW FOR SLIDE PINS	01 set of 2
24	310601-01	GREASE NIPPLE	01 each
25	201201-01	RUBBER SLEEVE	01 each
26	301403-01	CYLINDER REPAIR KIT (Not Illustrated)	01 kit



NOTE:  
IF THE CYLINDER WAS MADE  
BEFORE FEBRUARY 2008  
THE PISTON PART NO 510701-01  
WILL BE REQUIRED



ITEM NO.	PART NO	DESCRIPTION	QTY.
01	<b>300901-01</b>	<b>HYDRAULIC COUPLER</b>	01
02	<b>301011-01</b>	<b>CYLINDER BASE</b>	01
03	<b>301012-01</b>	<b>SPRING</b>	01
04	<b>510701-01</b>	<b>PISTON ROD</b>	01
05	<b>510704-01</b>	<b>SPRING LOCK</b>	02
06	<b>510707-01</b>	<b>SCREW</b>	02
07	<b>510709-01</b>	<b>FASTEN NUT</b>	01
08	<b>301403-01</b>	<b>SERVICE KIT</b>	01
09		O-RING	01
10		BACK-UP RING	01
11		GASKET SEAL	02
12		SPLIT RING	01
13		WIPER	01

## HP350S HUDRAULIC SINGLE PORT SEALED HAND PUMP

ITEM	PART No.	DESCRIPTION	KIT QUANTITY	PUMP QUANTITY
01	710101-01	<b>PUMP HOUSING</b>		01
02	715100-01	<b>SERVICE KIT A:</b>		
		- OIL FILTER	01	01
03		- O-RING	01	01
04		- RESERVOIR BLADDER	01	01
05		- REFILLING PLUG	01	01
06	710601-01	<b>RESERVOIR</b>		01
07	725200-01	<b>SERVICE KIT B:</b>		
		- TAIL BASE	01	01
08		- SCREW	04	04
09		- SPRING WASHER	04	04
10		- NUT	04	04
11	715300-01	<b>SERVICE KIT C:</b>		
		- O-RING	01	01
12		- BACK-UP RING	01	01
13		- PUMP PISTON	01	01
14		- SNAP RING	01	01
15		- O-RING	01	01
16		- BACK-UP RING	01	01
17		- PUMP PISTON	01	01
18	715400-01	<b>SERVICE KIT D:</b>		
		- HANDLE	01	01
19		- YOKE	01	01
20		- PISTON PIN	01	01
21		- YOKE PIN	01	01
22		- RETAINING RING	01	01
23		- HANDLE GRIP	01	01
24		- SCREW	01	01
25	715500-01	<b>SERVICE KIT E:</b>		
		- YOKE BASE	01	01
26		- SPRING PIN	01	01
27	715600-01	<b>SERVICE KIT F:</b>		
		- RELEASE VALVE	01	01
28		- SCREW	01	01
29		- WASHER	01	01
30		- SEAL	01	01
31		- RELEASE KNOB	01	01
32		- COUPLERS	01	01
33		- CHECK BALL	01	01
34	715700-01	<b>SERVICE KIT G:</b>		
		- SPRING	02	02
35		- STEEL BALL	02	02
36		- OUTLET BALL SPRING	02	02
37		- COPPER WASHER	02	02
38		- VALVE COVER SCREW	02	02
39		- STEEL BALL	02	02

ITEM	PART No.	DESCRIPTION	KIT QUANTITY	PUMP QUANTITY
40	715800-01	<b>SERVICE KIT H:</b>		
		- STEEL BALL	01	01
41		- SPRING END CAP	01	01
42		- L.P. SPRING	01	01
43		- O-RING	02	02
44		- OVERLOAD COVER	01	01
45		- SCREW	02	02
46		- CAP	01	01
47		- OVERLOAD COVER	01	01
48		- SCREW	01	01
49		- CONE SEATO	1	01
		- CONE	01	01
		- LONG SEPARATOR	01	01
		- SPRING	01	01
50	715900-01	<b>SERVICE KIT I:</b>		
		- BASE PLATE	01	01
51		- SCREW	02	02
52	716100-01	<b>SERVICE KIT K:</b>		
		- SCREW	04	03
53		- SCREW	01	01
24		- SCREW	01	01
33		- CHECK BALL	04	03
54	716200-01	<b>SERVICE KIT L:</b>		
		- GAUGE COUPLER	01	01
55		- MALE	01	01
		- GAUGE	01	01
56	716300-01	<b>SERVICE KIT M:</b>		
		- GAUGE COUPLER	01	01
		- FEMALE	01	01
57		- COUPLER	01	01
58		- GAUGE PORT	01	01
		- ADAPTOR	01	01



## 4.7 WEIGHTS AND DIMENSIONS

### WEIGHTS

VLW18TE Wedge with Hydraulic Cylinder  
Carry-Case

= 8.5 kg (18.7 lbs)  
= 6 kg (13.2 lbs)

GROSS MINI KIT WEIGHT

= 9.8 kg (21.5 lbs)

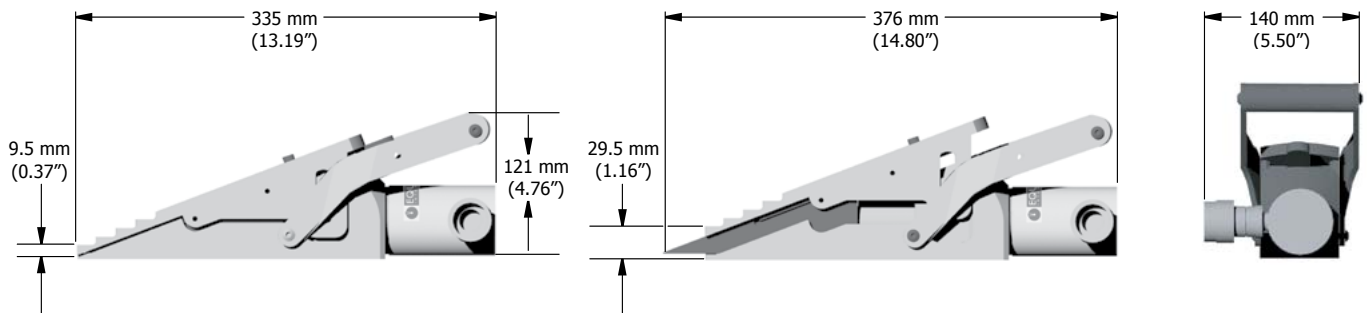
GROSS STANDARD KIT WEIGHT

= 21.5 kg (47.4 lbs)

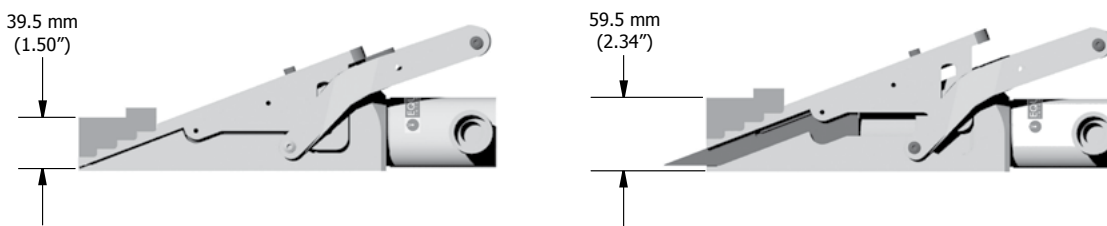
GROSS MAXI KIT WEIGHT

= 33 kg (72.8 lbs)

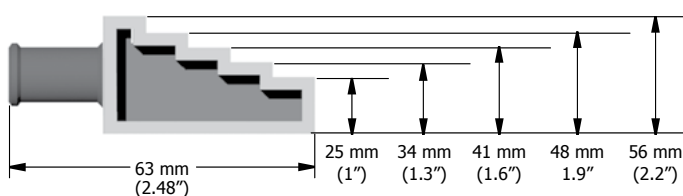
### MINIMUM EXTENSION



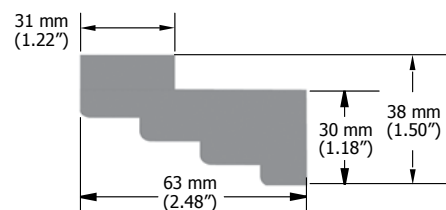
### MAXIMUM EXTENSION (USING STEPPED BLOCK)



### SAFETY BLOCK



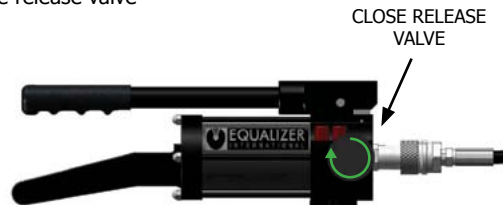
### STEPPED BLOCK



## 4.8 TROUBLESHOOTING

**Problem:** Hoses are connected but the tool does not advance. The pressure on the pump handle is minimal.

- ↳ The release valve is in the retract (open) position      → Close the release valve



**Problem:** Hoses are connected and the pump quickly reaches maximum pressure but the tool has not advanced

- ↳ One or more of the connectors are not fully tightened and the hydraulic oil cannot pass through from the pump to the cylinder      → Check all connectors are fully tightened and the release valve is in the fully closed position

**Problem:** Hoses are connected and the tool advances with maximum pressure on the pump handle but the load will not lift

- ↳ The pressure required to lift the load is greater than that of the tools you are using      → Add another tool and try again

**Problem:** Hoses are connected and the tool advances but there is minimal pressure on the pump handle and the handle is rising back of its own accord

- ↳ There is dirt or a damaged valve seat within the pump unit      → The pump should be sent to an authorised Equalizer distributor for repair



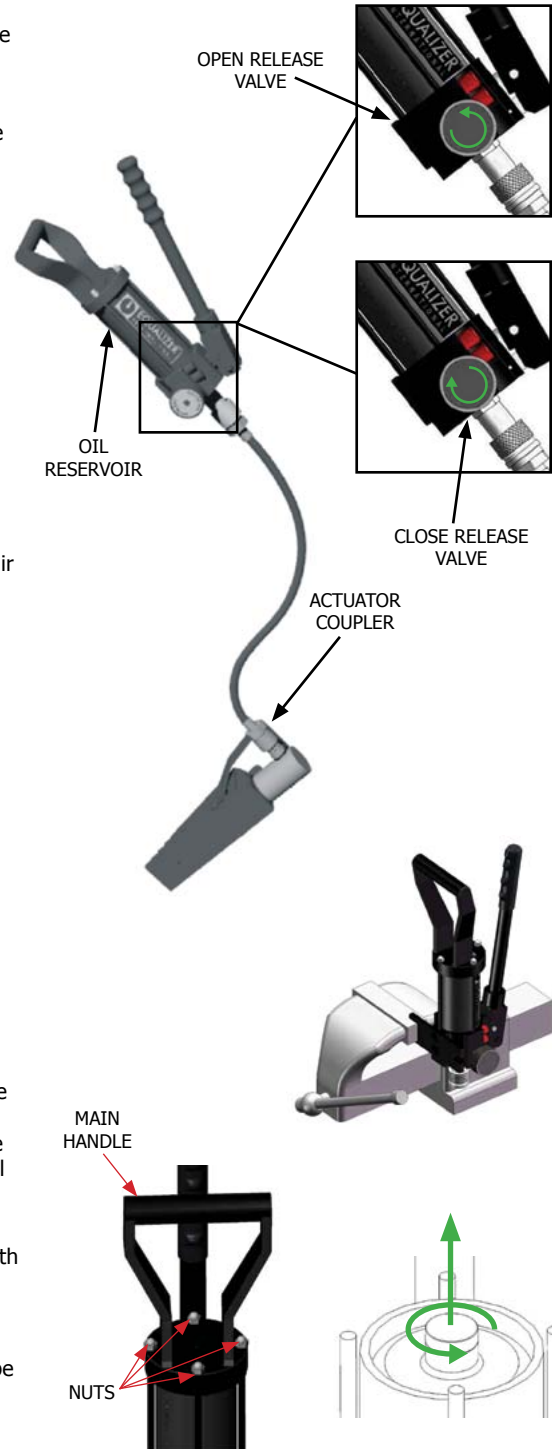


**Problem: The wedge is advancing but does not reach full pressure**

→ Air could be present in the hydraulic system

→ Use the airlock removal procedure as follows:

1. Connect the hand pump to the tool with the hydraulic hose
2. Close the release valve on the pump, and prime the pump until the hydraulic cylinder is fully extended and a small pressure is achieved
3. With the hand pump held above the tool and the tool in an upright position, open the release valve causing any air that is within the system to be forced up through the pump and vented into the oil reservoir
4. Repeat steps 1 - 3 three or four times to ensure that all air is removed from the system and the tool will reach full working pressure
5. Disconnect the hand pump from the hydraulic hose, grip the baseplate of the hand pump body in a vice with the pump body vertical and the main handle at the top
6. Remove the four nuts holding the main handle and lift off
7. Grip the refilling plug with pliers and extract it by pulling and twisting simultaneously. Ensure the reservoir body is held down when removing the refilling plug as pulling up on the reservoir body will release the bladder within, and oil will spill out.
8. Fill the reservoir to the top with a good quality hydraulic oil of the grade 32 cSt
9. Reinsert the refilling plug, wipe away any oil, and reassemble by reversing the disassembly process



## 5. VLW18TI INTEGRAL HYDRAULIC VERTICAL LIFTING WEDGE

### 5.1 KIT COMPONENTS

- 1 x VLW18TI Wedgehead
- 1 x 10,000 psi (700 bar) Integral Hydraulic Pump/Cylinder
- 1 x Safety Block
- 1 x Stepped Block
- 1 x Hex Key
- 1 x Countersunk Screw
- 1 x Instruction Manual
- 1 x Carry-Case

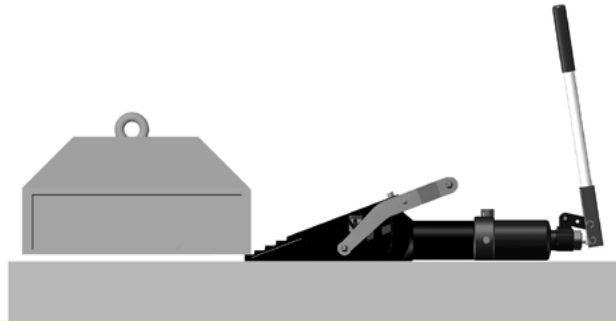
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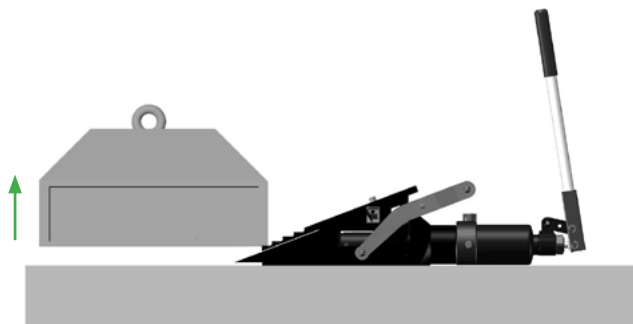


## 5.2 HOW THE VLW18TI WORKS

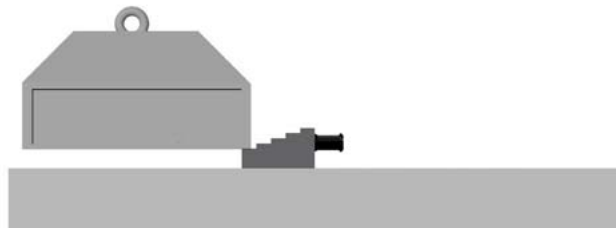
- 1.** The tool is inserted into the access gap



- 2.** The pump is primed which powers the hydraulics that lift the load



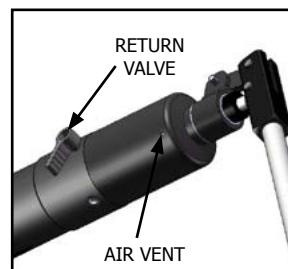
- 3.** The load is secured using the safety block



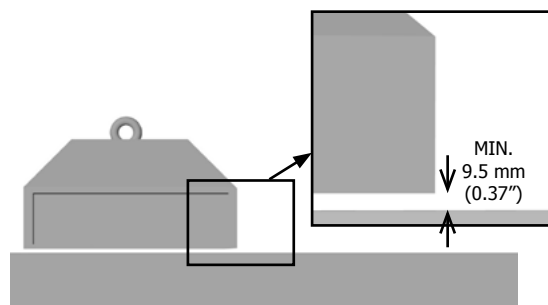
## 5.3 STANDARD INSTALLATION AND OPERATION

1. Before installing the wedge, ensure that it is fully retracted and tighten the return valve in a clockwise direction to the closed position.

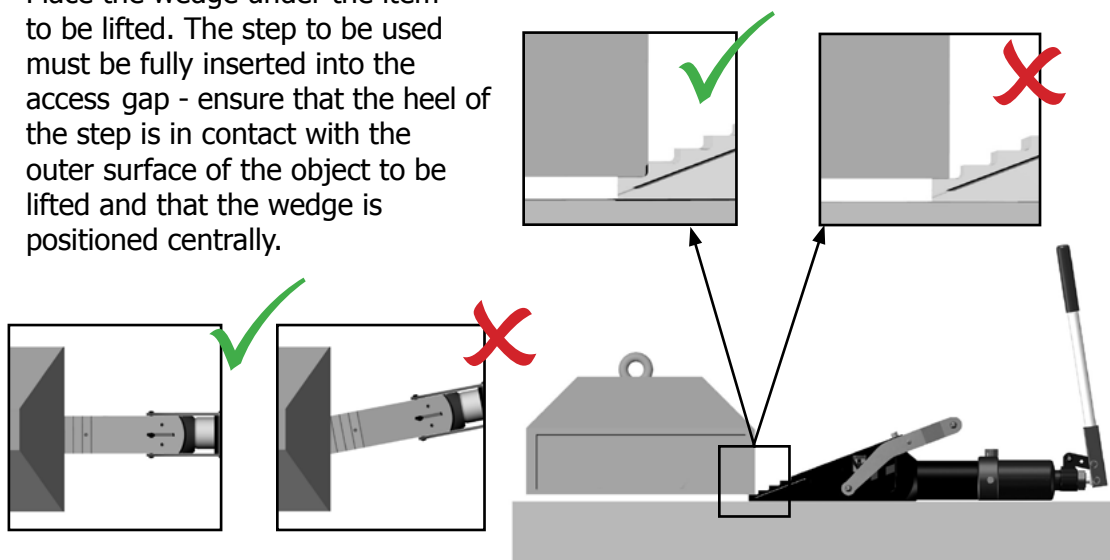
Also ensure the air vent is not obstructed in any way as this will result in a vacuum within the system and the wedge will not advance.



2. Ensure the access gap under the item to be lifted measures 9.5 mm (0.37") or greater.

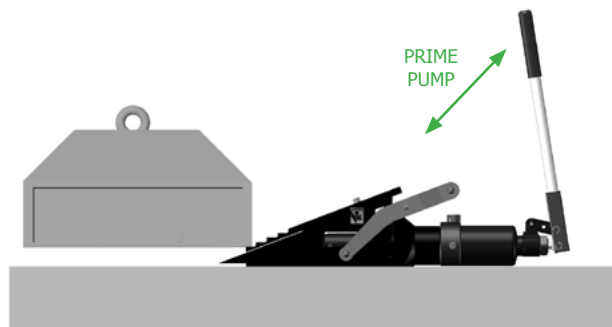


3. Place the wedge under the item to be lifted. The step to be used must be fully inserted into the access gap - ensure that the heel of the step is in contact with the outer surface of the object to be lifted and that the wedge is positioned centrally.

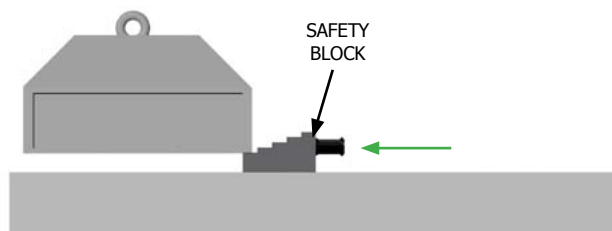




- 4.** Advance the wedge by priming the pump.



- 5.** Once the item has been lifted to the desired height, or to the maximum height on the step used, the safety block should be inserted into the gap. Secure the load by releasing the pressure onto the block.



- 6.** If required, the wedge should then be re-inserted on the next step and steps 3 - 5 repeated to lift the item further.



Never place fingers under an item being lifted.

Always ensure that both the wedge and the safety block are inserted under the item until the heel of the step is in contact with the side of the item to be lifted and the step is positioned centrally (see Installation and Operation step 3)



Care should be taken not to drop any of the component parts when removing them from the lifted load. This action will prevent injuries to either the operator's lower limbs, or to passers by.

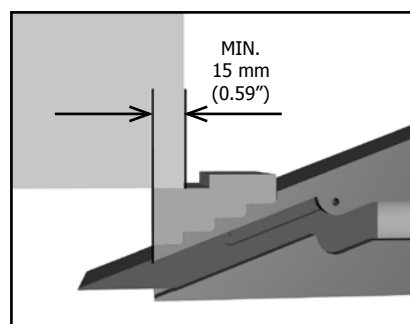
## 5.4 USING THE STEPPED BLOCK ACCESSORY

The Equalizer Stepped Block enables the VLW18TI Integral Hydraulic Vertical Lifting Wedge to be used to lift an item with a larger gap, and will lift the item further with less penetration

1. Attach the stepped block to the tool using the M6 countersunk screw



2. Insert the tool under the item to be lifted. Ensure there is a minimum hold of 15 mm (0.59") and that the full width of the block is used



## 5.5 EXAMINATION, MAINTENANCE AND STORAGE

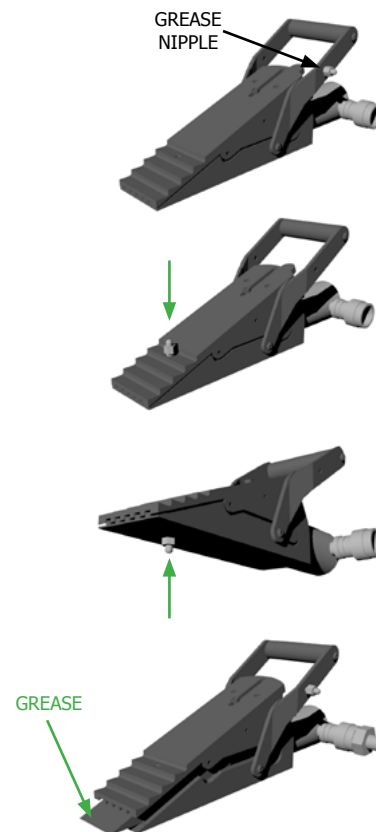
- On return from each job and before allocation against subsequent work the completeness of the Equalizer VLW18TI kit must be established and items examined to ensure that they are serviceable.
- Any missing or damaged items are to be replaced as soon as possible and prior to the tool being used again.
- Store the tool in a cool dry place and ensure all machined surfaces are greased
- Grease all moving parts each and every time the tool is used:

### Greasing the wedge:

- Remove the grease nipple from the handle of the tool
- Screw the grease nipple into the jaw, attach the grease gun and squeeze grease into the wedge
- Screw the grease nipple into the base of the tool, attach the grease gun and squeeze grease into the wedge

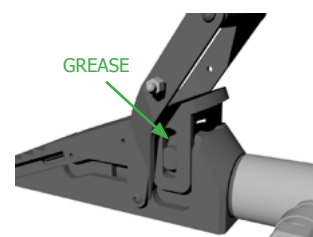
OR

- Advance the wedge forward, smear grease onto the surfaces of the wedge



### Greasing the slide pins:

- Simply smear some grease into the slots. Also ensure the slide pins are free from grit.

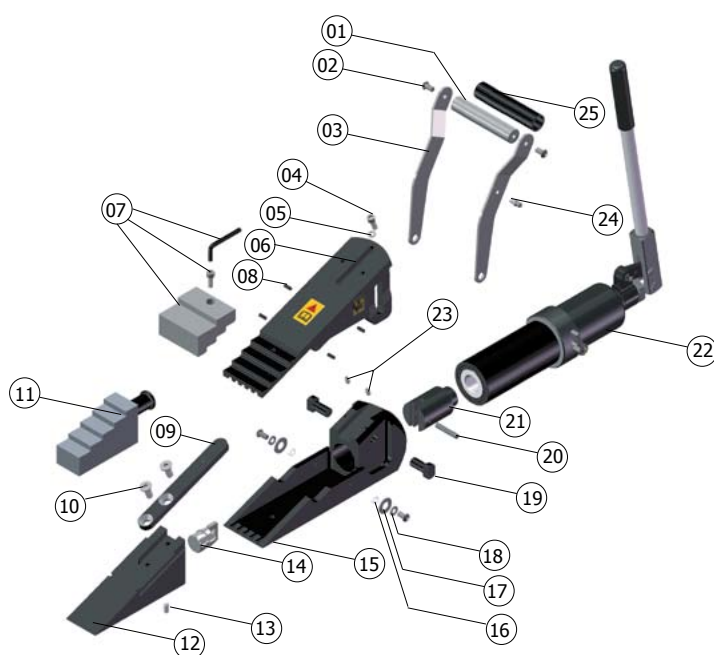


## 5.6 PARTS LISTS

### VLW18TI TOOL

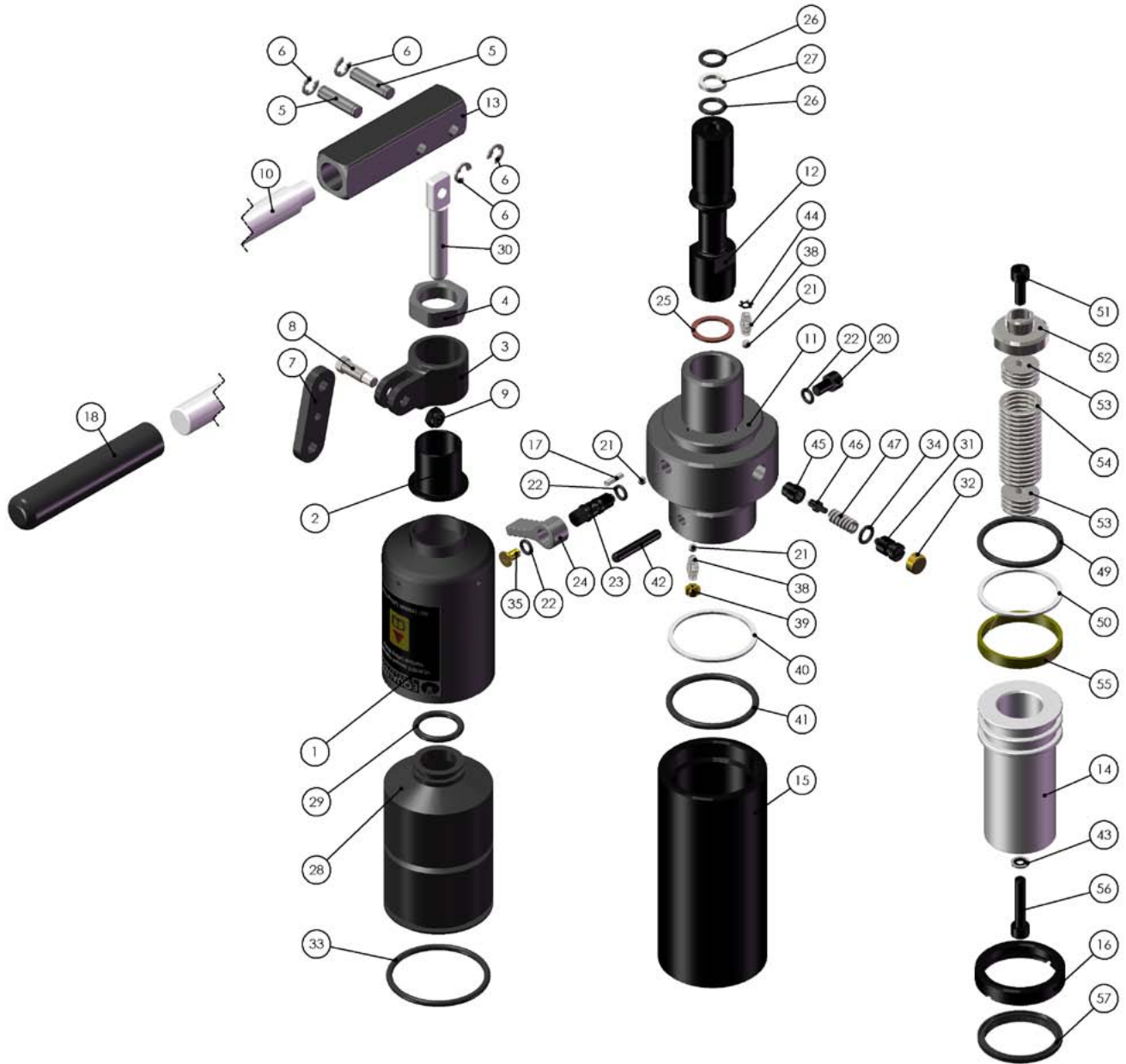
ITEM	PART No.	DESCRIPTION	QUANTITY
01	501301-01	HANDLE BAR	01 each
02	402902-04	SCREW FOR HANDLE	01 set of 4
03	501001-02	SIDE PLATES FOR HANDLE	01 set of 2
04	402701-01	SCREW FOR TAIL	01 each
05	501601-01	WASHER FOR TAIL	01 each
06	500201-01	TOP PLATE	01 each
07	501901-01	STEPPED BLOCK (KIT)	01 kit
08	301201-04	ROLL PINS	01 set of 4
09	502001-01	TAIL	01 each
10	501501-02	SCREWS FOR TAIL	01 set of 2
11	501401-01	SAFETY BLOCK	01 each
12	500302-01	WEDGE	01 each
13	301301-01	GRUB SCREW	01 each
14	503201-01	SLOT PLUG	01 each
15	500102.01	MAIN BODY	01 each
16	503501-02	SPACER	01 set of 2
17	503301-02	WASHER 10 mm ID	01 set of 2
18	503401-02	WASHER 6 mm ID	01 set of 2
19	500401-02	SLIDE PINS	01 set of 2

ITEM	PART No.	DESCRIPTION	QUANTITY
20	502301-01	M6 x 35mm GRUB SCREW	01 each
21	500503-01	PUSH PIN MK III	01 each
22	510700-01	PUMP MODEL PM1004UK	01 each
23	300401-02	GRUB SCREW FOR SLIDE PINS	01 set of 2
24	310601-01	GREASE NIPPLE	01 each
25	201201-01	RUBBER SLEEVE	01 each
26	375001-01	HYDRAULIC REPAIR KIT (Not Illustrated)	01 kit





INTEGRAL HYDRAULIC PUMP/CYLINDER serial no: 11187 onwards



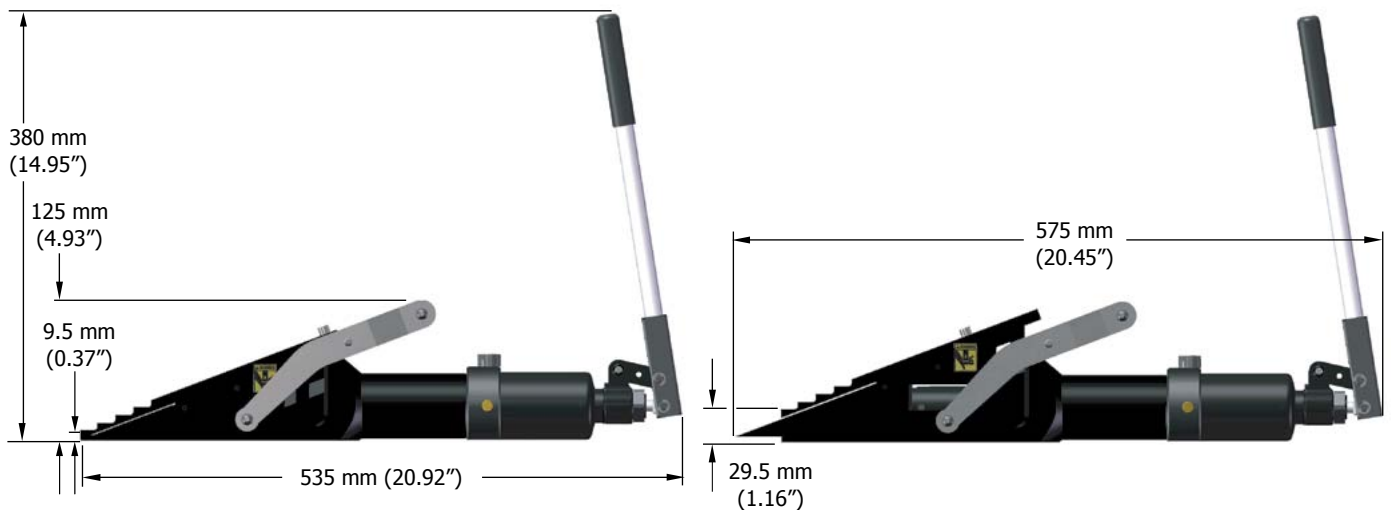
ITEM NO.	PART NO	DESCRIPTION	QTY.	ITEM NO.	PART NO	DESCRIPTION	QTY.	ITEM NO.	PART NO	DESCRIPTION	QTY.
01	372301-01	BLADDER HOUSING	01	19	375010-01	SERVICE KIT A	01	36	375020-01	SERVICE KIT C	01
02	342401-01	PISTON HOUSING CAP	01	20		OIL FILL SCREW	01	21		STEEL BALL	02
03	372501-01	SWIVEL CLEVIS	01	21		STEEL BALL	01	38		SPRING	02
04	372601-01	RETAINING NUT	01	22		O-RING	03	39		SCREW	01
05	372901-01	CLEVIS PIN	02	23		RELIEF VALVE SCREW	01	40		BACK-UP RING	01
06	373001-01	RETAINING RING	04	24		RELIEF VALVE KNOB	01	41		O-RING	01
07	373101-01	LINK CONNECTOR	01	25		WASHER	01	42		PIN	01
08	373201-01	CLEVIS SCREW	01	26		O-RING	02	43		GASKET SEAL	01
09	373301-01	ANTI-LOOSEN NUT	01	27		BACK UP RING	01	44		SPRING LOCK	01
10	373401-01	HANDLE ROD	01	28		RESERVOIR BLADDER	01	45		CONE SEAT	01
11	375101-01	CYLINDER BASE	01	29		O-RING	01	46		CONE	01
12	376901-01	PUMP PISTON HOUSING	01	30		PUMP PISTON ROD	01	47		LONG SEPARATOR SPRING	01
13	377101-01	HANDLE CLEVIS	01	31		OVERLOAD COVER SCREW	01	48	510700-01	SERVICE KIT D	01
14	510701-01	PISTON ROD	01	32		CAP	01	49		O-RING	01
15	510708-01	PULLER BODY	01	33		O-RING	01	50		BACK-UP RING	01
16	510709-01	FASTEN NUT	01	34		O-RING	01	51		SCREW	01
17	510712-01	ROLL PIN	01	35		FIXING SCREW	01	52		STOP COLLAR	01
18	510713-01	HANDLE GRIP	01					53		SPRING CLOCK	01
								54		SPRING	01
								55		SPLIT RING	01
								56		SCREW	01
								57		WIPER	01

## 5.7 WEIGHTS AND DIMENSIONS

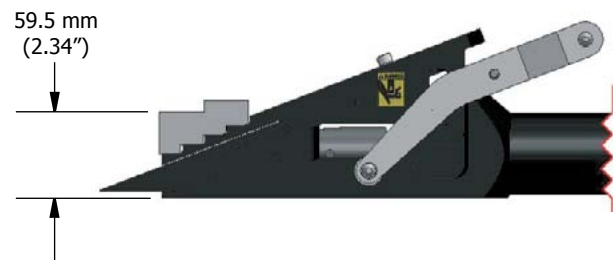
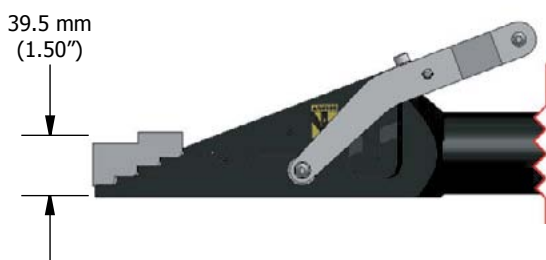
### WEIGHTS

VLW18TI Wedge	= 10 kg (22 lbs)
Carry-Case	= 2.5 kg (5.5 lbs)
<b>GROSS KIT WEIGHT</b>	<b>= 13.5 kg (29.8 lbs)</b>

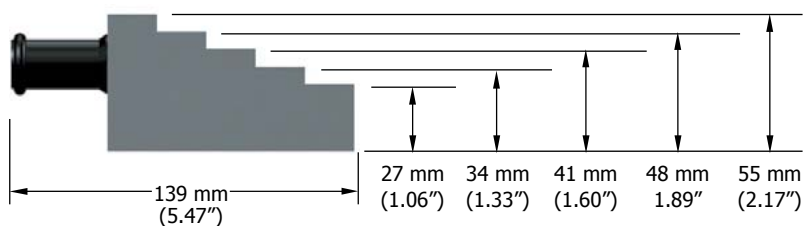
### MINIMUM EXTENSION



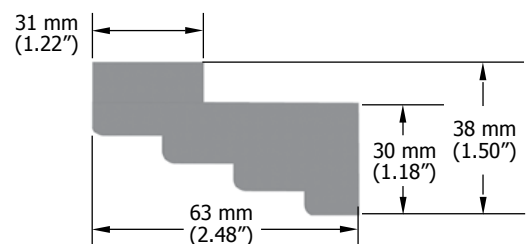
### MAXIMUM EXTENSION (USING STEPPED BLOCK)



### SAFETY BLOCK



### STEPPED BLOCK



## 5.8 TROUBLESHOOTING

### Problem: Wedge advances 50% and then stops functioning

- ↪ A sticker has been placed over the air vent      ↪ Remove sticker
- ↪ The operator is covering the air vent with his finger while operating the pump      ↪ One hand should be on the handle of the tool while the other hand operates the pump handle
- ↪ The air vent has become blocked with dirt      ↪ Carefully unblock the air vent using a small blunt object

### Problem: No wedge movement

- ↪ Air lock within system      ↪ Open release valve and prime pump to circulate oil around the system
- ↪ Insufficient oil      ↪ Refill with clean oil and bleed system
- ↪ Release valve open      ↪ Close release valve
- ↪ Air accumulates around pump inlet when used upside down      ↪ Bleed out air from reservoir. Look for any oil leaks on reservoir which may indicate a perished bladder. Refer to an approved Equalizer distributor for further instructions.
- ↪ Inlet check or intermediate valve ball stuck      ↪ Dismantle check valve, free and clean balls. Refer to an approved Equalizer distributor for further instructions.

### Problem: Wedge moves but under load feels as if it is not reaching full pressure

- ↪ Intermediate valve not seating / relief valve leaking      ↪ Check ball for dirt then re-seat using a hammer and punch. Refer to an approved Equalizer distributor for further instructions.

### Problem: Pressure leaks away, handle rises of its own accord

- ↪ Outlet check valve leaking      ↪ Check ball for dirt then re-seat using a hammer and punch. Refer to an approved Equalizer distributor for further instructions.

### Problem: Pressure leaks away, handle remains static

- ↪ Release valve leaking      ↪ Release lever may not be tight enough. Refer to an approved Equalizer distributor for further instructions.
- ↪ Piston seal leaking      ↪ Look for oil leaking from cylinder bearing. Refer to an approved Equalizer distributor for further instructions.
- ↪ Leaks on cylinder or pump body      ↪ Check blanking plugs for leaks, tighten. Refer to an approved Equalizer distributor for further instructions.

### Problem: Spongy action

- ↪ Air in system      ↪ Bleed system. Refer to an approved Equalizer distributor for further instructions.