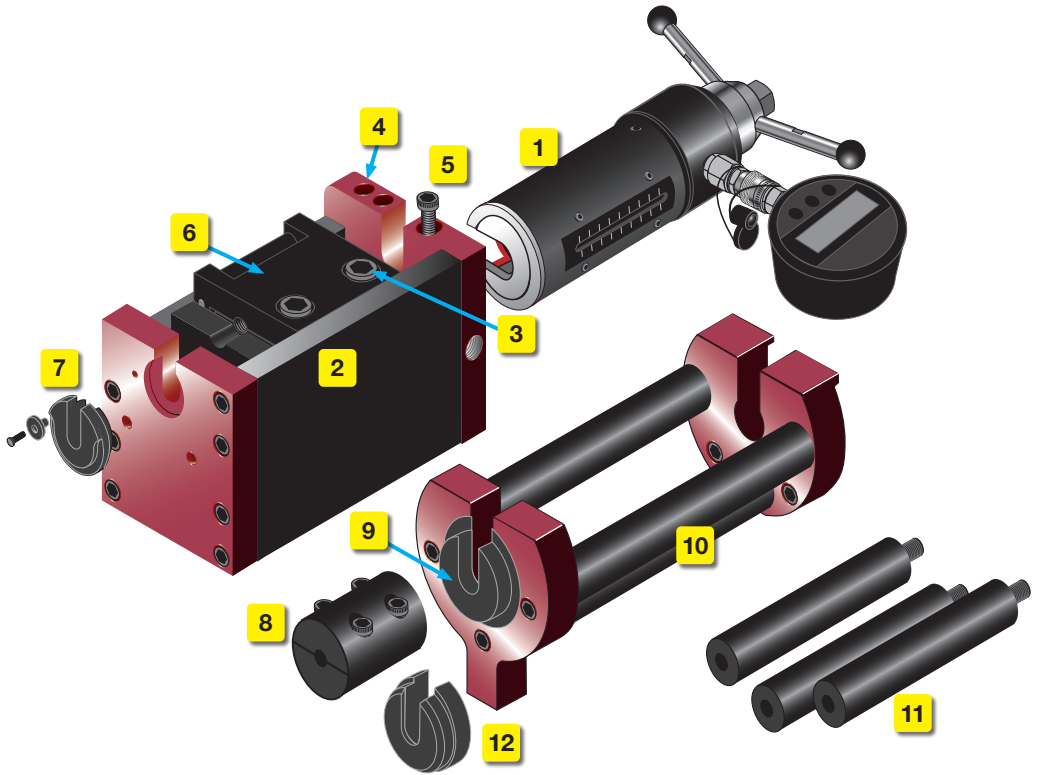




M2000

Safety Lifeline Cable Tester

M2000 Safety Lifeline Cable Tester



Safety Lifeline Tester Parts

1. Hydrajaws M2000 Tester (only supplied in Kit 2)
2. Sliding test frame
3. 2 x M8 cap head screws
4. Holes for storing cap head screws
5. Spare cap head screw
6. 8mm Cable Clamp
7. Knurled Adaptor
8. Barrel clamp 8mm (for use with swage joiner)
9. Extension plate insert
10. Test Frame extension rods
11. Extra extension rods
12. Fork adaptor 12mm

General Description

The Safety Lifeline Tester is a purpose made system for testing 8mm, 10mm, 12mm, 3/8", 1/4", 1/2" cable connections. It consists of a mechanical screw arrangement acting through a hydraulic load cell, which measures the load applied to the cable connection directly.

The cable test frame requires the M2000 tester with minimum 20kN gauge to operate it.

A comprehensive range of accessories is also available, further increasing the scope of possible testing applications.

USE OF THE TESTER AS DIRECTED

The tester is intended for use by skilled personnel with the appropriate training and knowledge of the applicable safety precautions.

SAFETY RULES

- Modification of the tester, or tampering with its parts is not permissible.
- Observe the information printed in the operating instructions applicable to operation care and maintenance.
- The tester and its accessories may present hazards when used incorrectly by untrained personnel or not as directed.
- Use only the genuine Hydrajaws accessories or ancillary equipment listed in the operating instructions.



It is essential that the operating instructions are read before the tester is operated for the first time.

Always keep these operating instructions together with the tester.

Ensure that the operating instructions are with the tester when it is given to other persons.

TECHNICAL SPECIFICATIONS

Load gauges

- Range available: Analogue: 0-25kN/lbf
Digital: 0-25kN
- Accuracy: Analogue to +/-2.0% FSD
Digital to +/-1.5% FSD
- Indication of pull-out load
- Calibration in kN
- Rise and fall output
- Analogue and Digital: peak hold memory
- 12 month gauge test certificate supplied
- (Digital Gauge) Rechargeable Battery (Model: EBL TB9500, 9V PP3)
- Working Temperature:
Digital: -10°C to +50°C

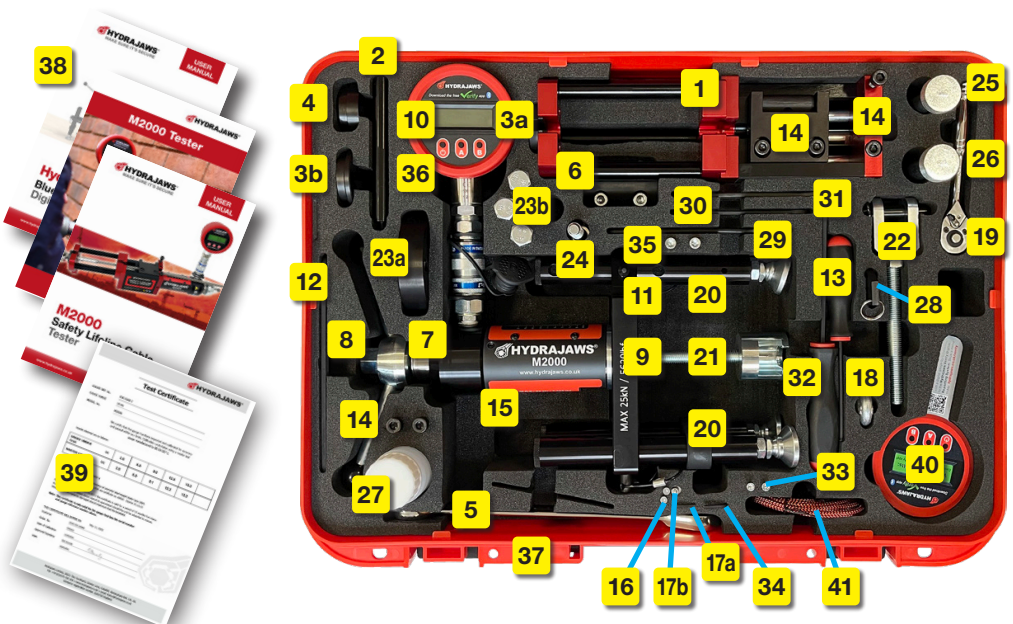
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TESTER AND ACCESSORIES – FULL KIT 2 CONTENTS

1. Test Frame fitted with Extension rods
2. Extra Extension rods
3. Extension plate insert:
 - a. 8mm (fitted) b. 12mm spare
4. Fork Adaptor 12mm
5. 22mm Operating Spanner
6. Barrel Clamp 8mm
7. M2000 Medium Duty Tester with coupler
9. M12 Locking Adaptor (shipped securely in tester jaw)
10. 25kN Dual scale Digital Gauge
11. 2020 Load Spreading Bridge with levels
12. 6mm Long series Hex key
13. 5mm Ball Driver
14. 6 x clamp Screws (4 spare) M8 x 25
15. Knurled Adaptor 8mm (sited securely under the tester body) 10 & 12mm optional
16. Spare Collar Pins
- 17a. 2mm Hex key for pin collar
- 17b. Pin Collar & pin (M3 x 12)
18. M10 x 20 Eye bolt
19. 6mm Ratchet
20. Height-adjust legs with Swivel Feet (3)
21. M12 Bolt Test Adaptor
22. M12 Ringbolt Adaptor Clevis
- 23a. Wall Tie Spacer Bridge
- 23b. with 100mm legs
24. M12 Threaded Stud Adaptor Coupler
25. M16 Threaded Stud Adaptor *
26. M20 Threaded Stud Adaptor *
27. Oil bottle with coupler
28. Piston key
29. 10mm spanner
30. 14mm spanner
31. 17mm spanner
32. 3mm Ball Driver
33. Spare bridge screws
34. 2.5mm Hex key
35. 2 x M6 x 16 zinc plated screws
36. Spare battery (under gauge)
37. Carry Case with foam filler
38. Operating Instructions
39. Calibration Certificate
40. Promotional Card
41. Gauge Recharging Cable

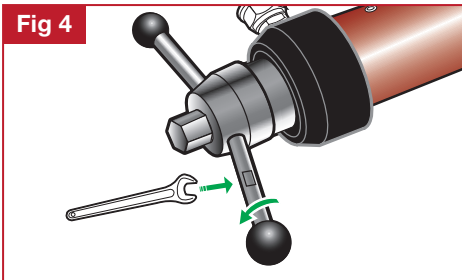
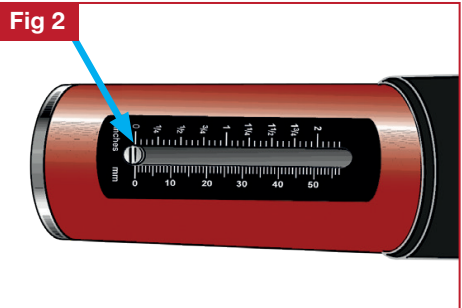
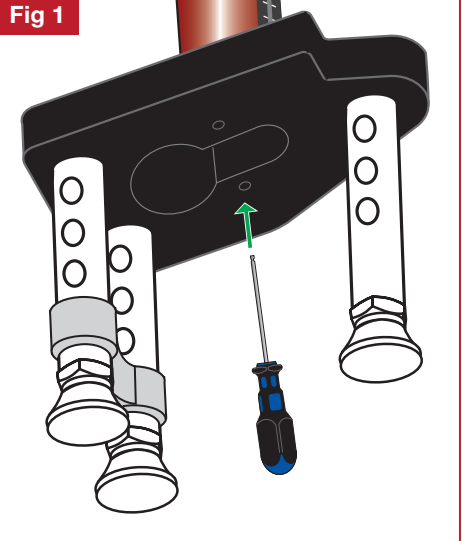
* 3/4" and 5/8" imperial equivalents



1. GENERAL TESTING PROCEDURE – SET UP

SETTING UP THE TESTER

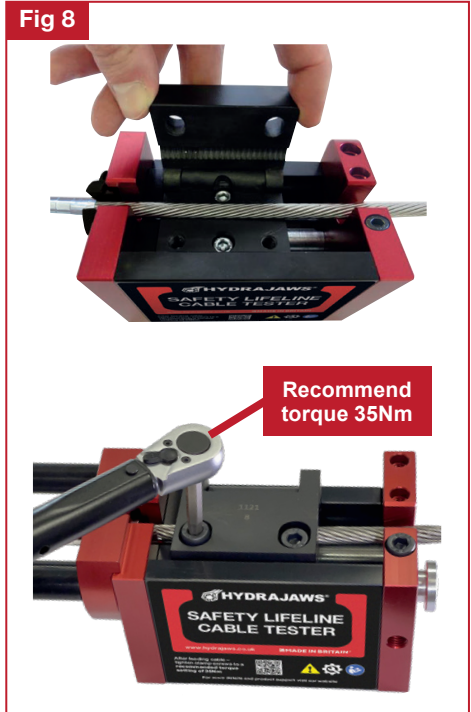
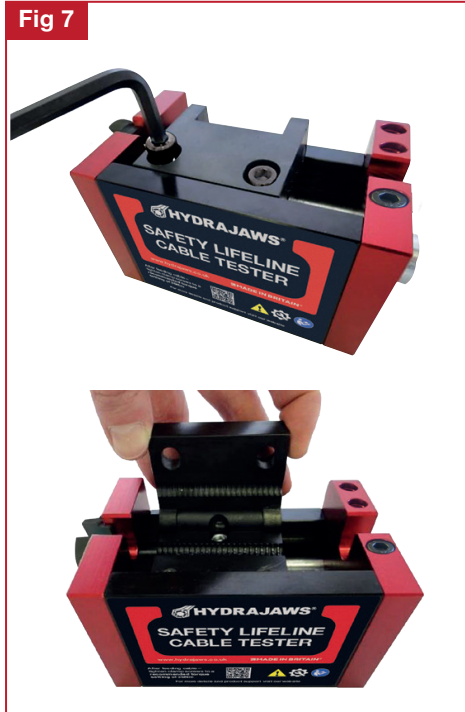
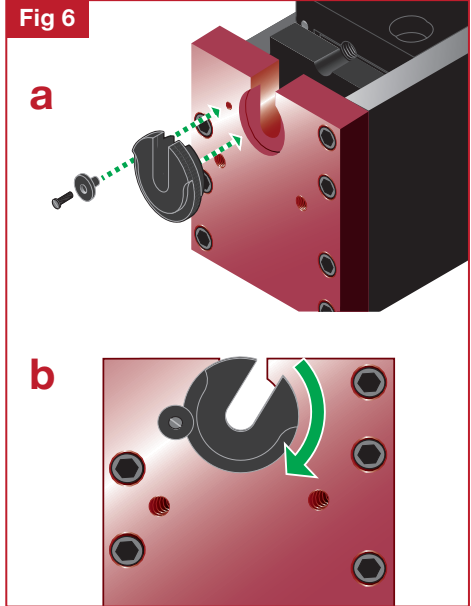
1. Remove the 2020 load spreading bridge with adjustable feet by unscrewing the two M4 cap screws on the underside of the unit (**fig 1**).
2. Make sure that the jaw on the tester is fully closed. Check this by looking at the mm scale on the main body of the tester which should be near the zero indicator (**fig 2**).
3. Remove the M12 round locking adaptor from the inside slot on the bottom of the portable tensioner by first unlocking/slackening the allen screw (**fig 3**).
4. Remove the handles by unscrewing from the base using the 10mm wrench (**fig 4**).
5. Attach the gauge to the M2000 tester by pulling back on the body coupler and clicking into place. Turning the gauge will allow for easy reading (gauge only removable with coupler system fitted) (**fig 5**).



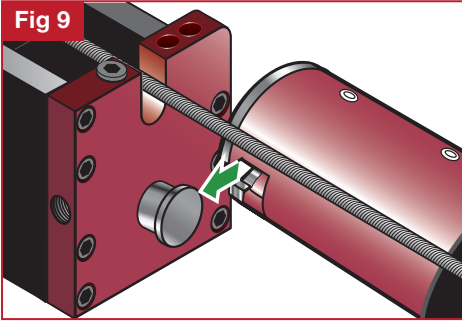
2. TESTING PROCEDURE OF NON “SLIP INDICATOR” SWAGES

1. Place the knurled adaptor into the end of the block and fix with the M3 countersunk screw and collar (fig 6a). Do not over tighten the M3 screw as the knurled adaptor should be free to rotate (fig 6b).
2. With the cable tester clamp side up, remove the two M6 cap head screws. Pull and hinge the clamp open into its vertical position (fig 7).
3. Slide the cable through the slots, close the clamp and replace the two M6 cap head screws and tighten to achieve a **recommended torque setting of 35Nm** (fig 8).

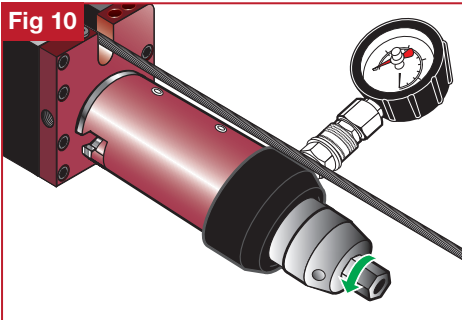
NOTE THE POSITION OF THE CABLE CLAMP



4. The model 2000 tester should be located over the button adaptor on the opposite end to the swage under test (**fig 9**).



5. Turn the operating nut clockwise by hand to apply enough tension to secure tester (**fig 10**).

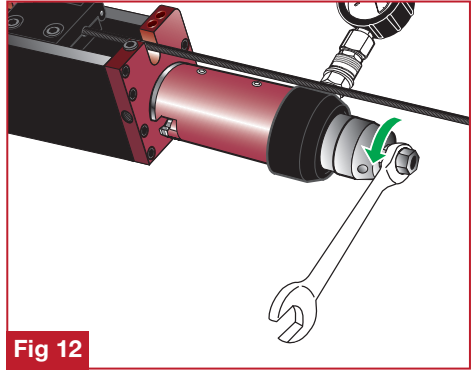


AT THIS STAGE, IF THE DESIRED LOAD IS NOT ACHIEVED RE-TIGHTEN THE CLAMP BOLTS

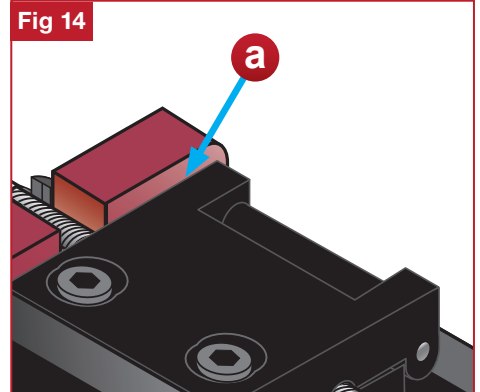
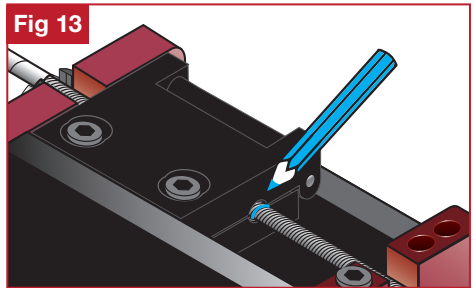
6. On analogue gauge models, check that the red needle is against the stop (0) in line with the black one (**fig 11**).



7. Apply the load to the cable by using the 22mm ratchet spanner in a clockwise motion and progressively increase to the desired load (**fig 12**).

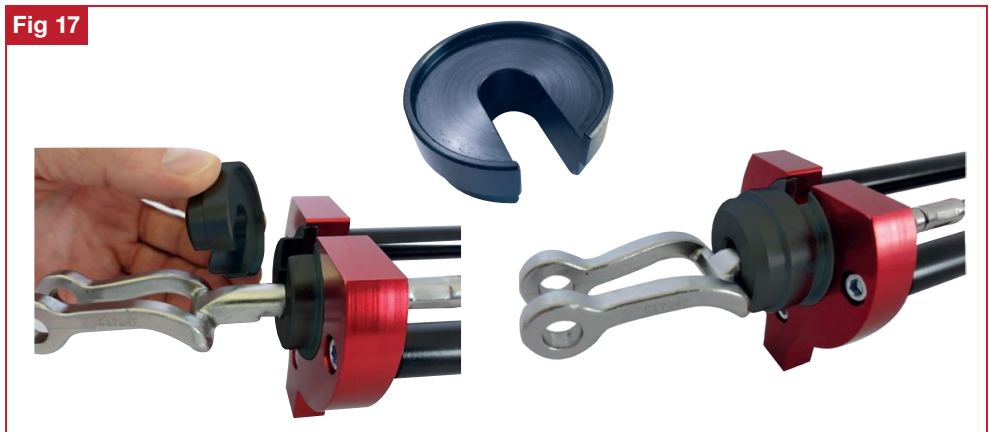
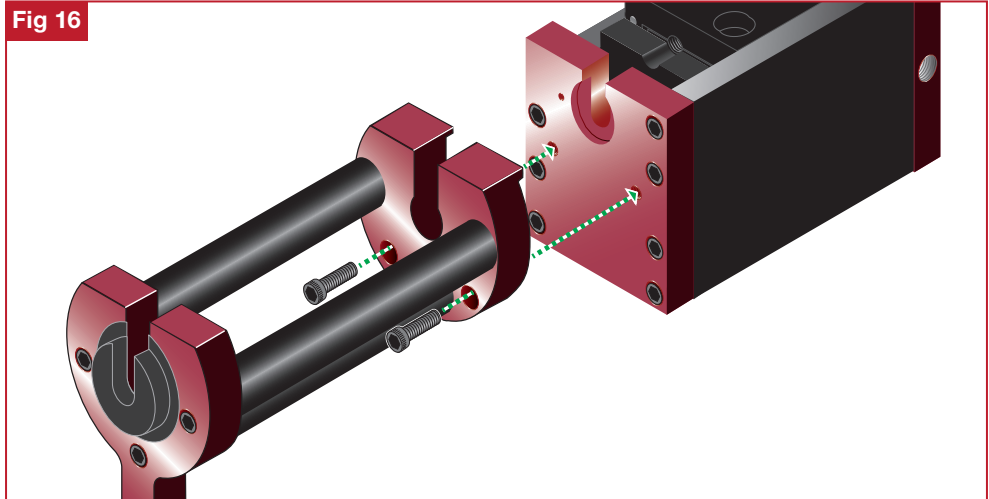
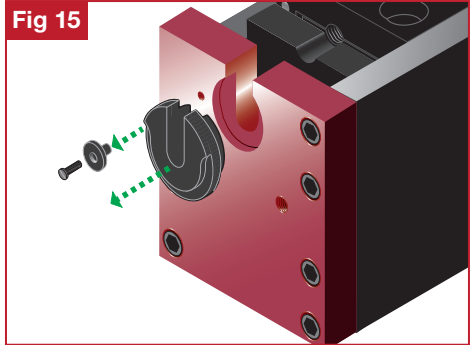


8. It is recommended to mark the cable which will indicate any slip (**fig 13**).
Movement or slip will be indicated by a gap between the clamp and block (**fig 14a**).



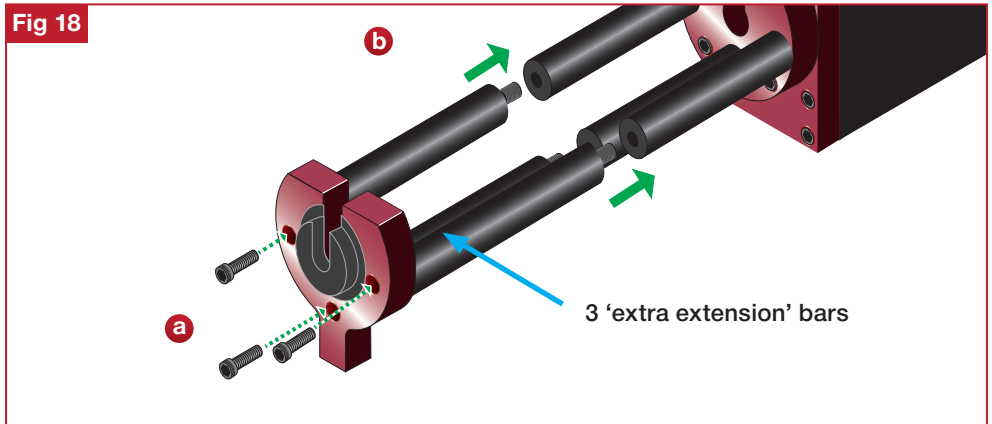
3. FITTING THE EXTENSION BARS

1. Remove the M3 screw and collar and then take off the knurled adaptor (**fig 15**).
2. Hold and line up the extension rod frame and screw in the two M6 cap head screws using the 5mm ball driver (**fig 16**).
3. Set up and clamp the cable either using the supplied fork adaptor or without, this depends on the type of fitting (**fig 17**).



4. FITTING THE 'EXTRA EXTENSION' BARS AND CLAMP

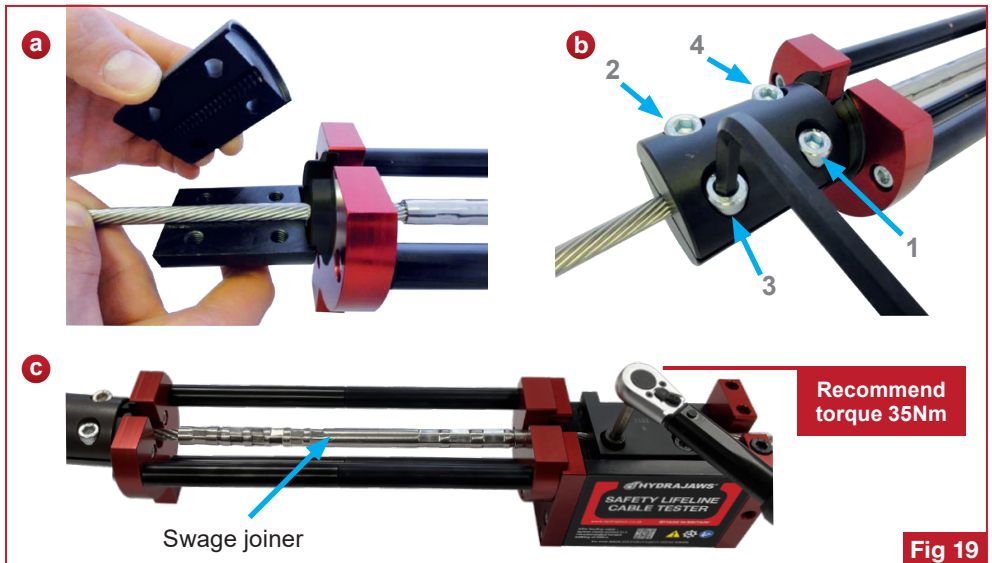
To test a swage joiner, use of the extra cable clamp and the 3 'extra extension' rods is required. To fit the rods, remove the three M6 screws (18a) and thread on each rod until tight (18b). Replace the three M6 screws and tighten (fig 18).



To fit the barrel clamp:

1. Position over cable (fig 19a). (Please note the difference of the ends of the barrel clamp as it is designed to locate slightly over the end block.)
2. Close barrel clamp and screw in the four M8 screws (fig 19b).
(Note: It is recommended to tighten the screws evenly and in the order shown.)

The unit will now fit over the swage joiner (fig 19c) and testing can be started (see section 2).



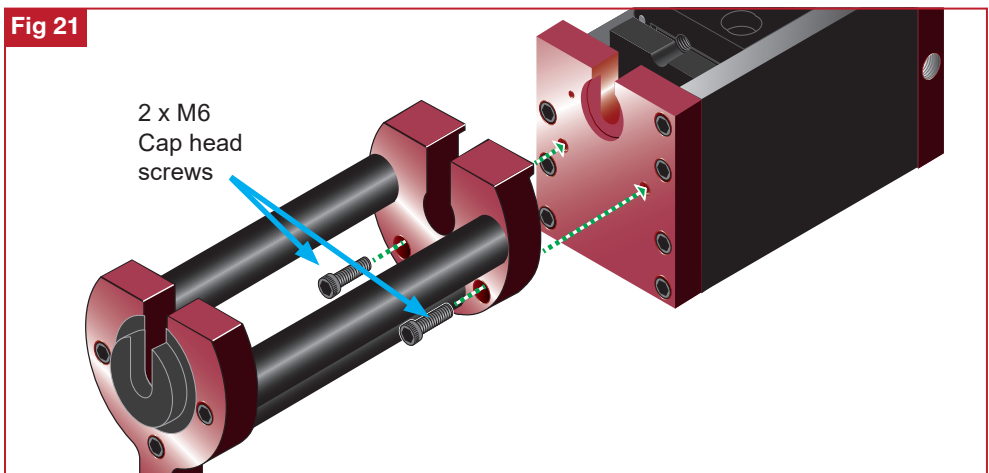
5. REMOVAL/REPLACEMENT OF CABLE ASSEMBLY

The unit is supplied as standard with an 8mm clamp but this can be interchanged with different sizes (10mm, 12mm, 3/8" & 1/4", 1/2") supplied separately.

To remove the cable clamp, unscrew the two M8 cap head screws (fig 20a) and open the top clamp, then remove the two M6 cap head screws (fig 20b) using the 6mm Hex key. Remove the complete clamp assembly. To replace, reverse the procedure, making sure the two M6 cap head screws are tightened to a **recommended torque setting of 35Nm** (See page 6, Fig 8).

Also removal and replacement of the extension plate insert in the end of the extension assembly is required by unscrewing the two M6 cap head screws (fig 21) using the 5mm ball driver. To replace, reverse the procedure and tighten up using the 5mm ball driver (Do not over tighten).

The Knurled adaptor would also be required to be used with the correct sized clamp and extension plate insert supplied with the clamp.



6. GENERAL GUIDELINES FOR TESTING

For systems supplied in kit form with the swage components ready swaged and marked with an “L” the swaged connections between the absorber and termination and cable has been proof loaded to 15kN.

Therefore, the system can be directly installed on to the structure without the need for proof testing onsite provided the maximum predicted end load is no greater than 15kN. If the predicted end load is greater than 15kN then a proof test to the maximum predicted end load shall be carried out as described below.

For systems supplied as individual parts the swage connection will need to be completed on site using the recommended hexagonal dies with a minimum of 3 swage bites. The connection shall be proof tested to the maximum predicated end load before installation of the system. After swaging it is recommended that the across flats dimension is 11.2mm. Any swages greater than 11.2mm must be rejected.

It is recommended that the Hydrajaws test kit is used to perform all proof tests described below.

For swage testing, apply the recommended test load and hold for 3 minutes, checking for any slipping of the cable from the swage. This will be indicated by the gauge not holding load and separation of the swage slip indicator away from the end of the swage termination. If any signs of slippage are detected the swage joint must be rejected and replaced. For end anchors secured using resin/chemically fixed anchor bolts, the fixing shall be subjected to an axial pull tester of 10kN. This load shall be held for 3 minutes. End anchor fixings not sustaining the test load must be rejected and replaced for intermediate anchors using resin/chemically fixed anchor bolt(s), the fixing shall be subjected to an axial pull test of 5kN. This load shall be held for 3 minutes. Intermediate anchors not sustaining the test load must be rejected and replaced.

For mechanically fixed end and intermediate anchors secured to structural steelwork the fixing bolts shall be subjected to a torque check to the recommended values. If tightening torque value is not achieved the fixing bolts should be replaced.

For end anchors secured using expansion anchor bolts the fixing shall be subjected to an axial pull test to 10kN. This load shall be held for 3 minutes. For intermediate anchors secured using expansion anchor bolts the fixing shall be subjected to an axial pull test to 5kN. This load shall be held for 3 minutes.

All single point anchors, push lock safety ring etc should be subjected to an axial pull test of 6kN. This load shall be held for 3 minutes.

7. ASSEMBLY INSTRUCTIONS OF 600MM LOADSPREADING BRIDGE TO M2000 TESTER

For testing of safety lifeline posts at the start, middle or end of cable.

Please note: 600mm bridge not included as standard.

1. Hold the bridge horizontal with the top plate visible (M2000 tester mounting plate).
2. Slide the 3 legs through the blocks with the round foot toward the ground (**fig 22**).
3. Align the holes at the desired height and place the pin through until the ball bearing releases (**fig 23**).
4. To mount the M2000 tester to the bridge remove the existing bridge and make sure the M12 locking adaptor is located in the operating jaw (**fig 24**).
5. Turn the bridge upside down with the round feet in the air.
6. By using the same screws you removed from the other bridge, line up the holes and use the 3mm ball driver. The tester can be attached in-line (**fig 25**) or at 90 degrees (**fig 26**).
7. Use the M12 coupler supplied with the bridge and screw this fully into the locking adaptor. The other end will then accept the M12 Ringbolt Adaptor Clevis (**fig 27**).

Fig 23

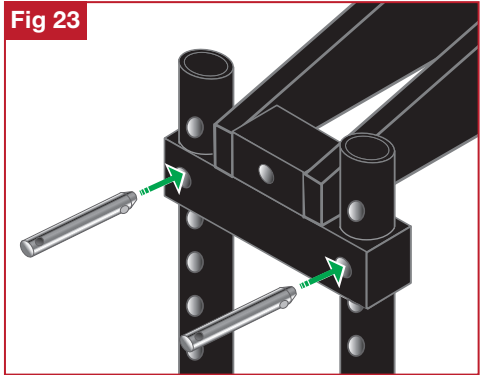


Fig 22

M2000 tester mounting plate

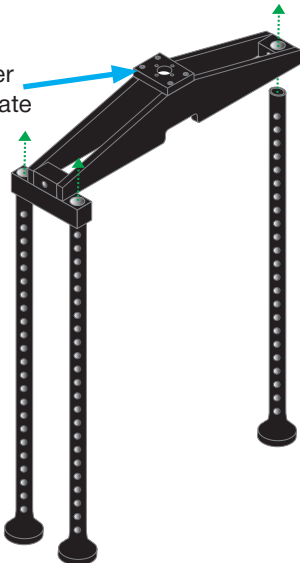


Fig 24

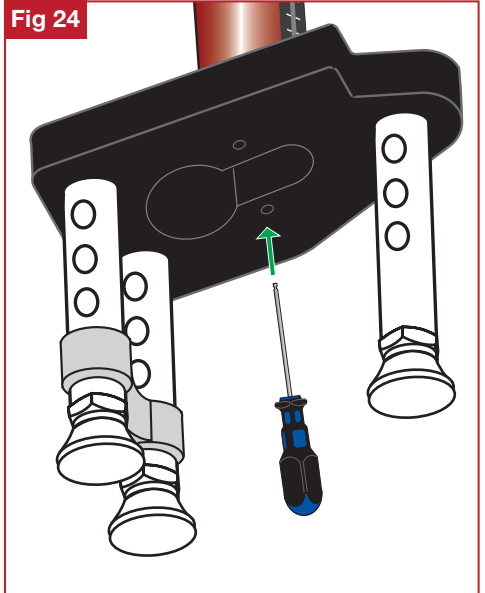


Fig 25

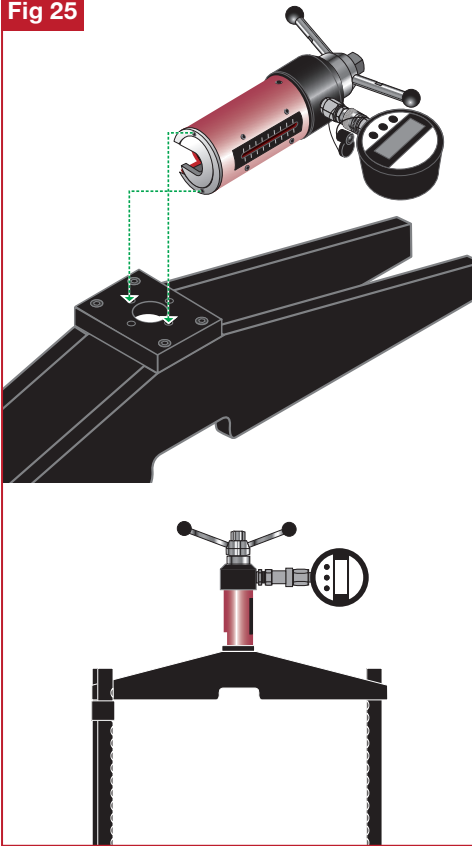


Fig 26

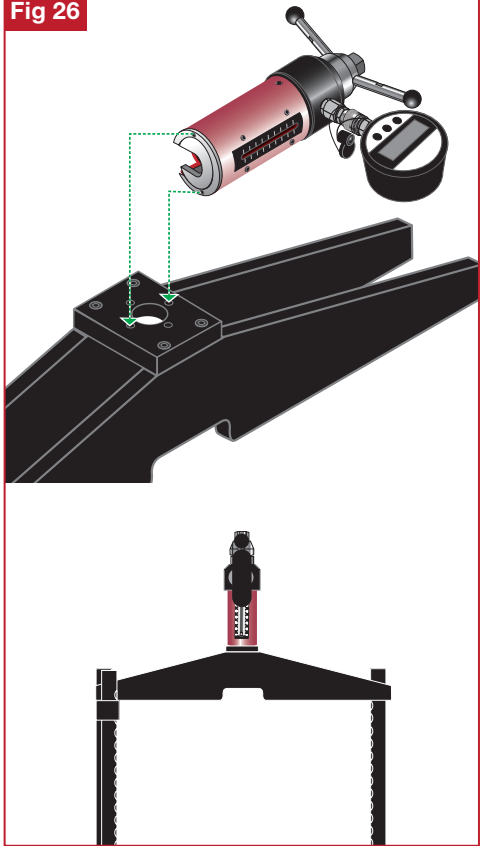
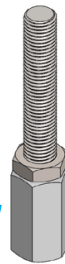


Fig 27



M12 Threaded Stud Adaptor coupler
in between locking adaptor and M12
Ringbolt Adaptor Clevis

8. CARE OF TESTER

8.1 LUBRICATION

Lubrication of rod

This is required periodically depending on usage.

Unscrew and remove operating handle. Take care to avoid moving the washer and bearing below. Grease surfaces and threads before re-assembly (**fig 28**).

Oil refilling

Connecting and disconnecting Gauges from the Tester body will eventually use up the spare oil capacity and will not allow the tester plunger to travel its full stroke or give an accurate reading on the Gauge.

Fig 28

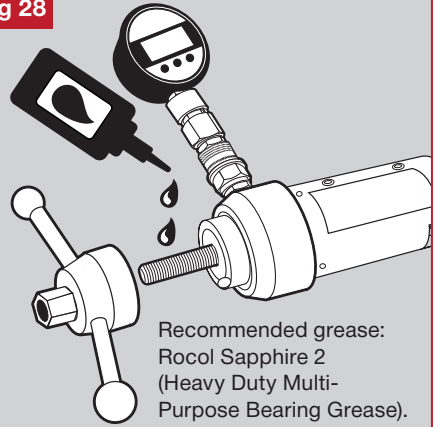
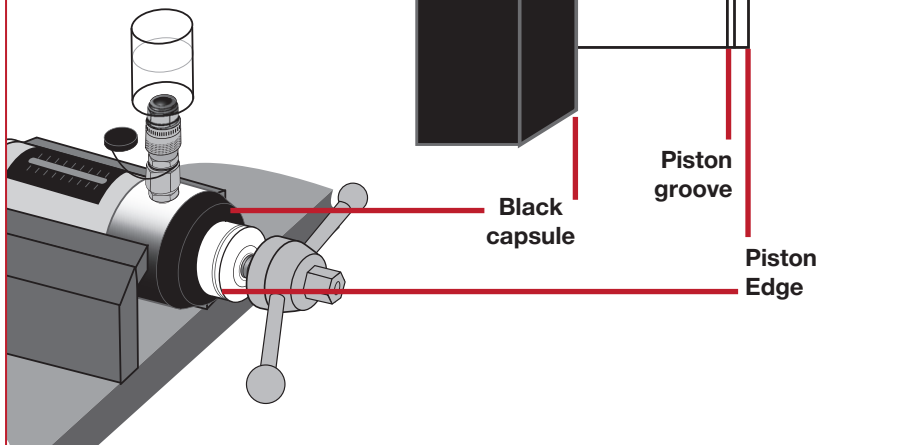


Fig 29

Check the oil level frequently or eventually the plunger will stop at approx. 3mm from the edge and the tester will not function correctly.

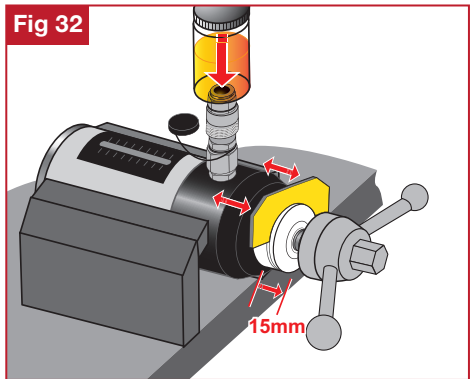
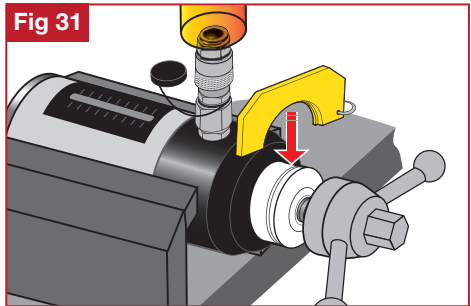
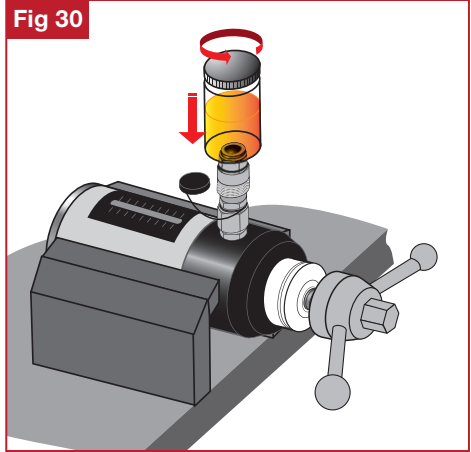
(To refill oil see **8.2 oil refilling instructions**)



8.2 OIL REFILLING INSTRUCTIONS

NOTE: A tester with a fixed gauge cannot be filled with oil by the operator.

1. Remove the bridge and all accessories.
2. Secure the tester (e.g. in a vice or other suitable holding device if on-site) with the coupler in the vertical position.
3. Connect the oil bottle via the quick release coupler.
4. Loosen bottle cap (fig 30).
5. Turn the handle anti-clockwise a few turns then using the piston key provided insert this into the groove on the piston. Ensure the piston key outer slot is nearer the piston body (fig 31).
6. Force any air out of the system by pushing the piston in fully onto the face of the black capsule. Then pull out the piston key and handle away from the capsule. **Ensure not to pull the piston edge out further than 15mm.** This will draw oil from the bottle (fig 32).



Ensure not to pull the piston out further than 15mm.

7. Push the piston back in fully, pull out again and repeat until all the air bubbles are expelled into the bottle. Pull out the piston one more time to 15mm from the face of the capsule to replenish the oil.
8. Remove oil bottle.



Recommended oil:
**Light Mineral DTE Type
VISCOSITY 32**

8.3 CALIBRATION

Your tester is calibrated for one year from date of purchase. After this time, the tester should be returned to Hydrajaws or to one of our official worldwide service agents for calibration.

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HYDRAJAWS AND A FULL RANGE OF
TESTING APPLICATIONS PLEASE VISIT
THE WEBSITE AT:**

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