

steel handling shoe | 2.5t



safety lifting equipment

owners manual
operators instructions
spare parts list
safety precautions
maintenance

Original Instructions
Rev08

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notes



EC Declaration of Conformity

EC Declaration of Conformity according to
EC Machinery Directive 2006/42/EC of the 29th May 2006, Annex IIA.

We hereby declare that the machinery/equipment described below is designed and manufactured to comply with the Essential Health and Safety Requirements of the applicable EC Directive(s) and that the required conformity assessment procedures have been carried out. This declaration ceases to be valid if alterations are made to the machinery/equipment without agreement with Dawson Construction Plant Ltd.

Category: Lifting Equipment
Description: Steel Handling Shoe SWL 2.5 t
Type: 900
Serial number: [Serial Number]

Relevant Regulations:
2006/42/EC Machinery Directive

Applied harmonised standards, in particular:
EN ISO 12100:2010 Safety of machinery

Authorised representative for compiling the technical file:
D. A. Brown - contact details as per below.

**Signature for and on behalf
of Dawson Construction
Plant Limited:**

Name:

Date:

Location:



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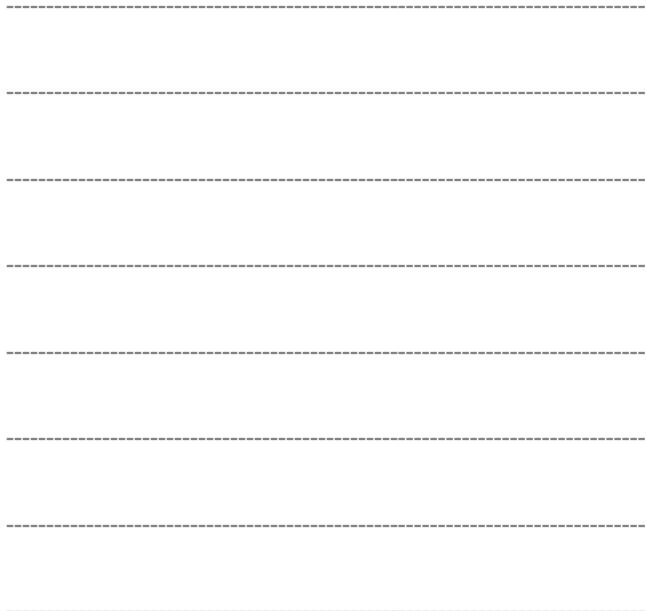


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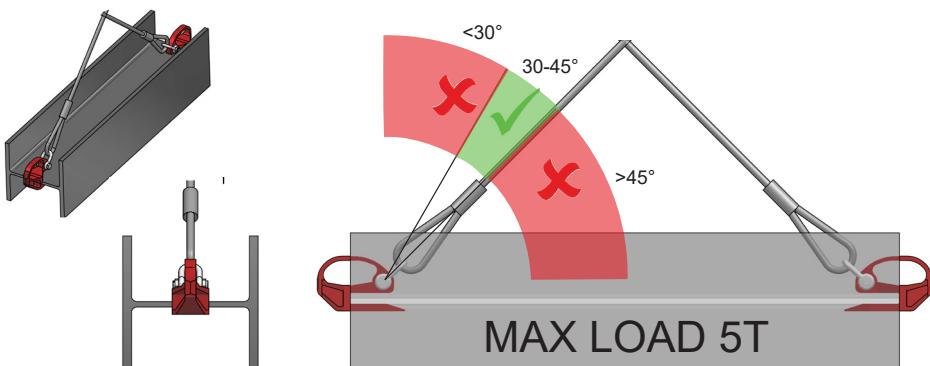
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Under Separate cover:	
· Individual Test Certificate	
· Pre-Despatch Examination Certificate if test certificate is older than 6 months old.	
· E.C. Declaration of Conformity	

safety check list

1. PRE-INSTALLATION CHECKS

Prior to installing a Steel Handling Shoe (SHS), check the following:

- a. Establish the weight of the lift involved and ensure an assembly with the appropriate Working Load Limit (WLL) is being utilised.
- b. The Working Load Limit rating of any Shackle or Shoe is based on a "best condition". For uneven leg loading on slings, dynamic loading during the lift or any other factor that increases component loading, the WLL of the equipment should be de-rated in accordance with instruction from the lift planner.
2. Do not modify the Steel Handling Shoe or any part of the lifting apparatus.
3. The angle between the two legs of the lifting sling, where applicable should not exceed 90°.



Lifting Angle Range: 30-45° (measured from vertical).

Sling legs must be of equal length.

Angles greater than 45° will result in over-loading the equipment.

Min. Sling Leg Length = Pile Length x 0.707

Max. Sling Leg Length = Pile Length x 0.866

Pile Length	Min. Sling Leg Length	Max. Sling Leg Length
5 m	3.6 m	4.3 m
10 m	7.1 m	8.7 m
20 m	14.2 m	17.3 m
30 m	21.2 m	26.0 m

4. Ensure that all appropriate laws, bye-laws and regulations are complied with.
5. Ensure the area of the pile that the Steel Handling Shoe is in contact with is in good condition. i.e. smooth with no obstructions, and the pile is clean of any debris.
6. As with all lifting equipment, the Steel Handling Shoe should be inspected before each lift.



Keep all personnel out of the **danger zones / fall zones** at all times, unless unavoidable.



Do not use shoes in temperatures below **-15 °C (5 °F)**.



Ensure loading & unloading areas are **kept clear** of any obstructions.

design validation

The Dawson Steel Handling Shoes are manufactured from high tensile strength cast steel, grade BT2 to BS 3100.

The SHS's have been designed & tested to 5x WLL. Every SHS is individually & independently proof tested to 2x WLL, and is supplied with a test certificate.

The tests are conducted such that the loads are the same as they would be in service during a worst acceptable case - i.e. with a sling angle of 45° from vertical. The test values are detailed below:

Part Number	WLL	Design test value (5x WLL / cos(45))	Proof test value (2x WLL / cos(45))
900	2.5 t	17.7 t	7.1 t

training

Before allowing operators to use the Steel Handling Shoe, it is important to ensure they have received basic training in lifting and control of heavy loads.

It is strongly recommended that the following areas are included:

1. Basic safety in lifting operations.
2. Supervision during lifting operations.
3. Dangers and mal-practices.

maintenance & storage

The lifting accessory is manufactured from high quality material and designed to offer long service with minimal maintenance.

In order to preserve the product in this state, it is necessary to ensure that it is not mis-used or used for purposes outside its recommended use. The user must carry out regular inspection.

The shoe must be thoroughly examined in accordance with local regulations & jurisdiction. DCP recommend a thorough examination every 6 months.

A competent person should visually inspect the shoe before every single lift. It should be checked for any abnormalities as well as any distortion arising from overload. **If deformed - dispose.** The critical areas to inspect are detailed in Appendix A.

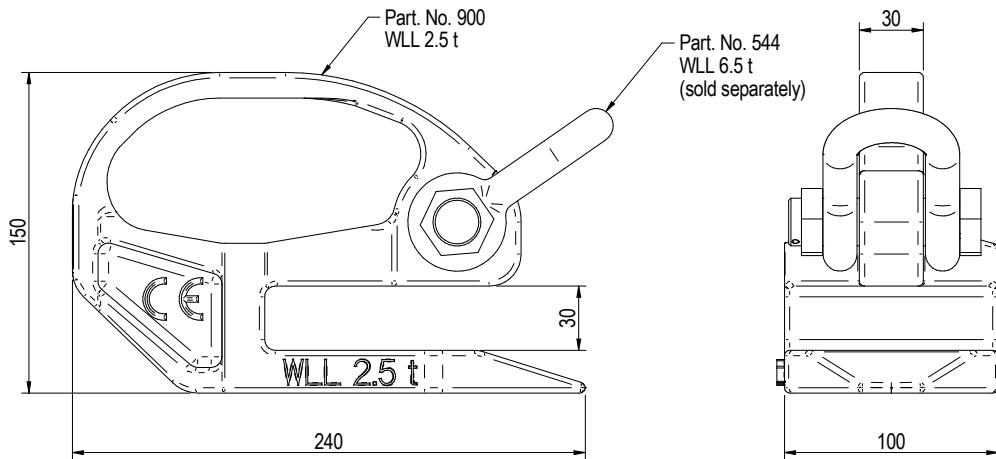
If in any doubt, return the item to the manufacturer immediately for a thorough inspection.

If the Steel Handling Shoe is modified in any way, the test certificate is no longer valid.

Steel Handling Shoes should be safely stored in a dry & secure environment, ensuring they are protected from adverse weather & accidental damage.



weights & dimensions

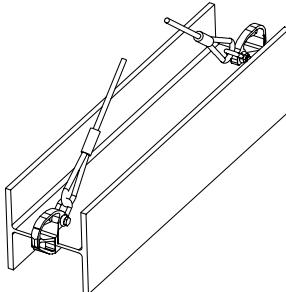


	2.5 t
Part Number	900
Weight of Shoe	6 kg
Combined weight of Shoe & Bow Shackle	7 kg
WLL per pair of Shoes	5 tonnes
WLL per Bow Shackle	6.5 tonnes

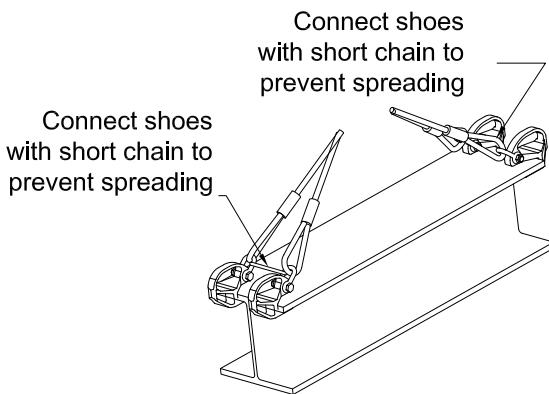
Note: Safety Bow Shackle (part no. 544) sold separately.

examples of correct and incorrect lifting

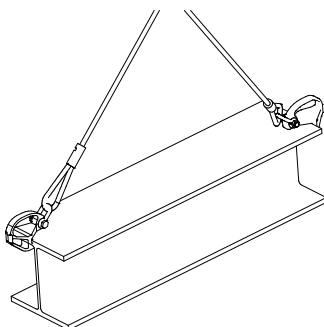
This is the **correct** method for lifting H-section beams with one pair of 900 shoes.



This is the **correct** method for lifting H-section beams with two pairs of 900 shoes. A short chain should also be connected between the pairs of shoes to prevent them from spreading as shown in the diagram below.

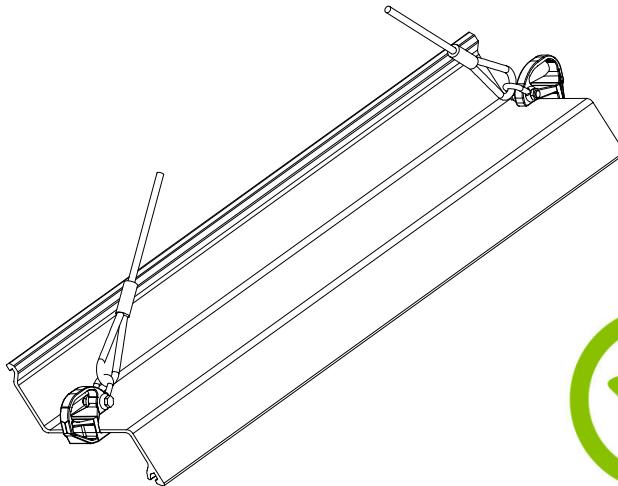


This is the **incorrect** method for lifting H-section beams with one pair of 900 shoes.

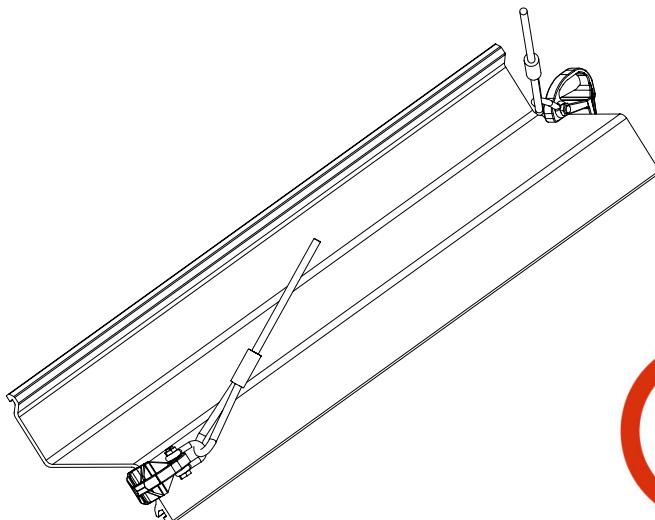


examples of correct and incorrect lifting

This is the **correct** method for lifting a single Z-pile with one pair of 900 shoes.

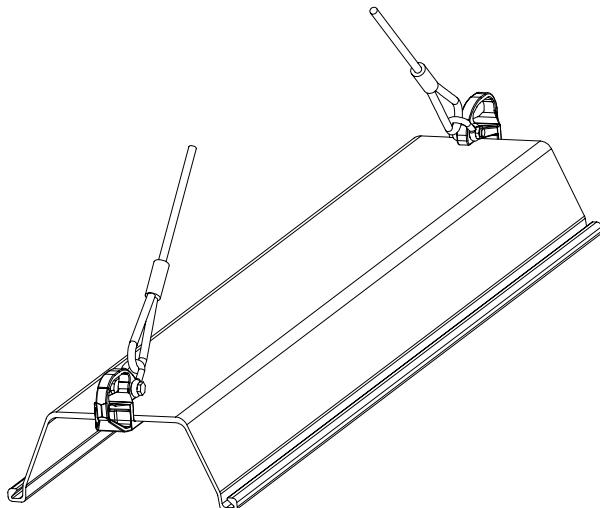


This is the **incorrect** method for lifting a single Z-pile with one pair of 900 shoes.

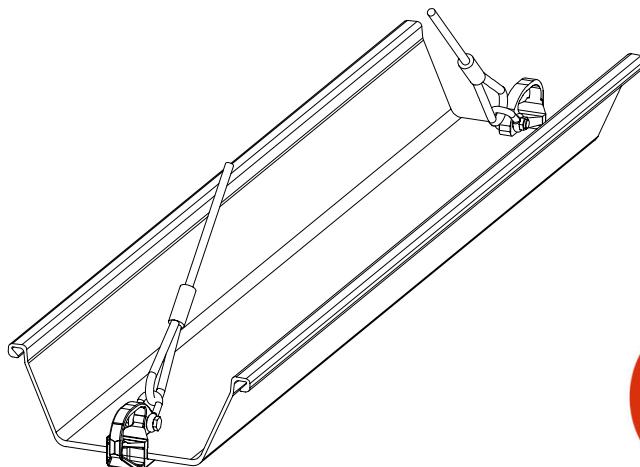


examples of correct and incorrect lifting

This is the **correct** method for lifting a U-pile with one pair of 900 shoes.

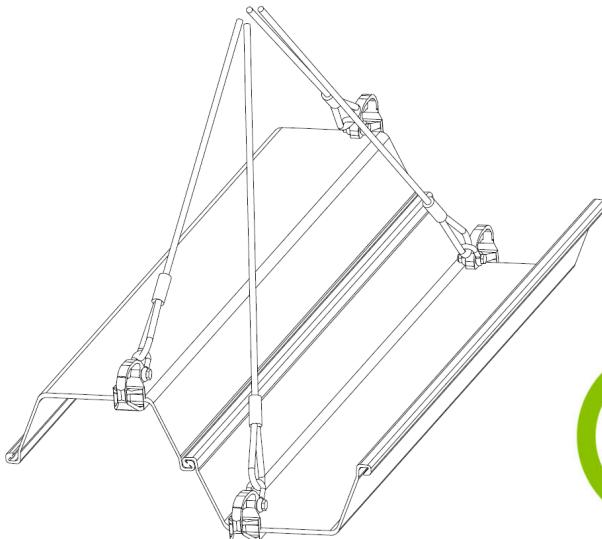


This is the **incorrect** method for lifting a U-pile with one pair of 900 shoes.

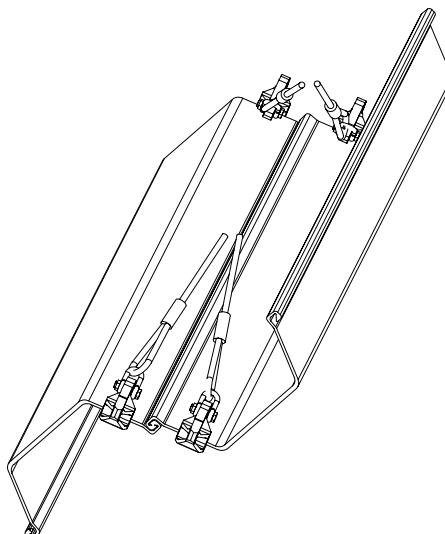


examples of correct and incorrect lifting

This is the **correct** method for lifting a pair of U-piles with two pairs of 900 shoes. Note the pairs of slings are of different lengths to ensure the piles are lifted uniformly.

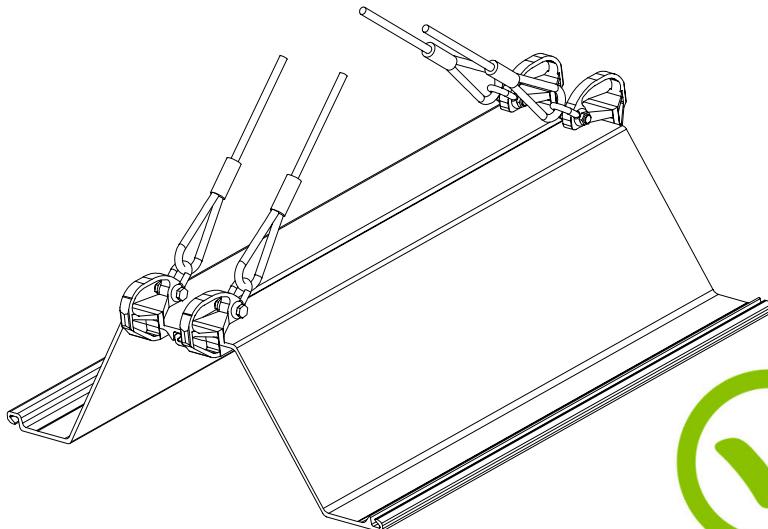


This is the **incorrect** method for lifting a pair of U-piles with two pairs of 900 shoes.

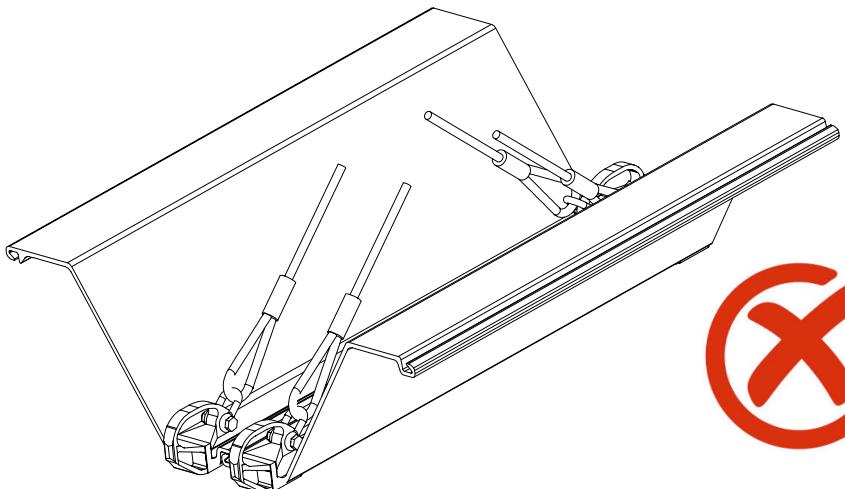


examples of correct and incorrect lifting

This is the **correct** method for lifting a pair of Z-piles with two pairs of 900 shoes.

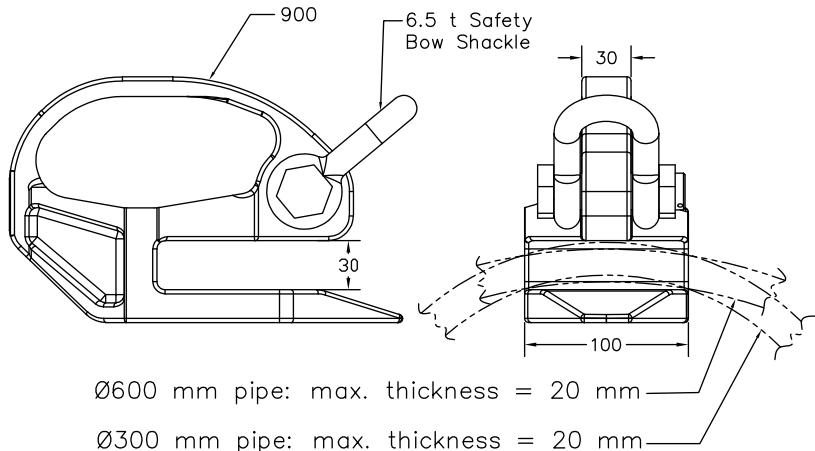


This is the **incorrect** method for lifting a pair of Z-piles with two pairs of 900 shoes.



SHS: pipe handling

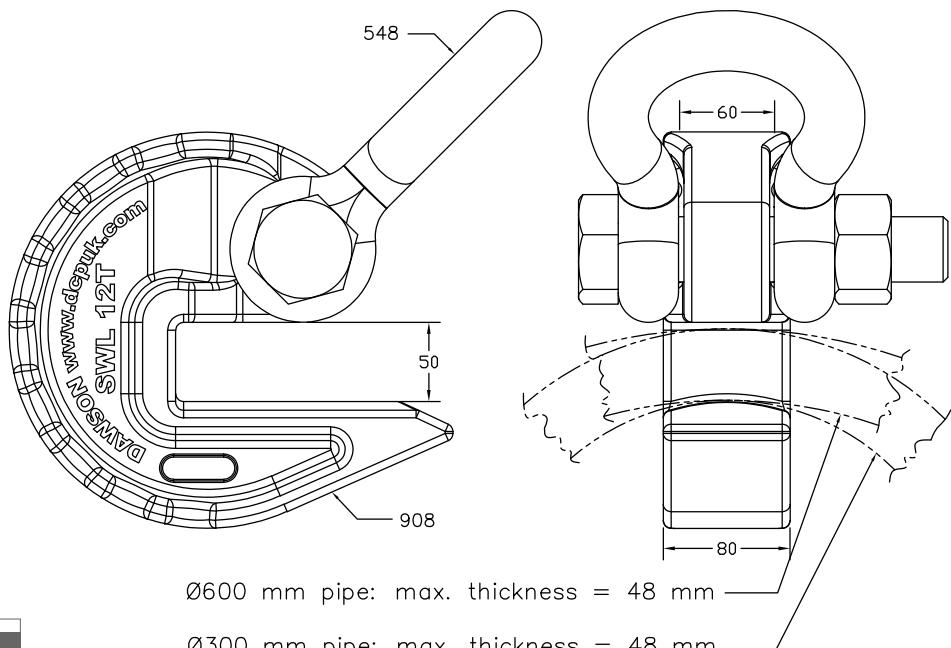
The 900 Steel Handling Shoe can be used for lifting steel pipe, but the size and capacity that can be handled is limited, as shown below:



$\varnothing 600$ mm pipe: max. thickness = 20 mm

$\varnothing 300$ mm pipe: max. thickness = 20 mm

Lifting pipes using Dawson's Pipe Handling Shoes increases the range of steel pipe that can be handled, and also the load capacity:



$\varnothing 600$ mm pipe: max. thickness = 48 mm

$\varnothing 300$ mm pipe: max. thickness = 48 mm

appendix A: critical inspection areas

To inspect the Steel Handling Shoe, the Safety Bow Shackle must first be removed.

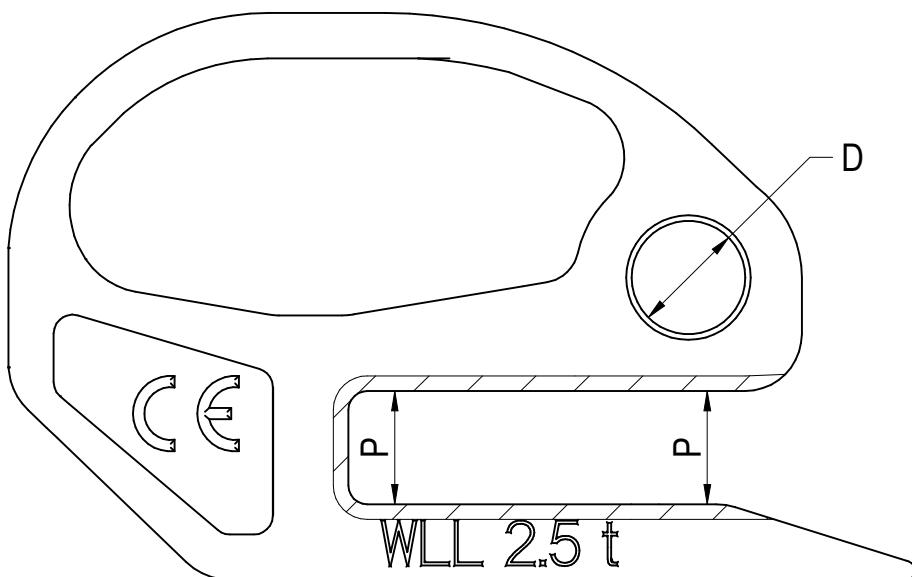
The inspection must be carried out by a suitably competent person.

1. The hatched faces, inside the throat, must be checked for visible cracks. If there are visible cracks, do not use. If in doubt, consult the manufacturer.
2. The diameter marked D must be checked for both visible cracking, and ovality. If there are visible cracks, do not use. If in doubt, consult the manufacturer.

To measure ovality, use calipers to measure & record the maximum and minimum diameters of the bore. The acceptance criteria for ovality is given by the equation below, and must be $\leq 5\%$:

$$\text{Ovality (\%)} = (\text{max. ID} - \text{min. ID}) / 30 \times 100$$

3. The faces dimensioned P must be checked for parallelism. Take two measurements of the throat thickness: one at either end of the throat. The acceptance criteria for throat parallelism is given by $P_{\text{max.}} - P_{\text{min.}}$, and must be $\leq 1.5 \text{ mm}$.





D.C.P. RESERVES THE RIGHT TO DISCONTINUE EQUIPMENT AT ANY TIME, OR CHANGE
SPECIFICATIONS OR DESIGNS WITHOUT NOTICE OR INCURRING OBLIGATIONS

INNOVATIVE PILING EQUIPMENT

HYDRAULIC PILING HAMMERS

EXCAVATOR MOUNTED VIBRATORS

EXCAVATOR MOUNTED DRILLS

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SHEET PILE GUIDE FRAMES

SHEET PILE CAPPING SYSTEMS

CFA CLEANERS

PILE POINTS & SPLICERS

SAFETY HANDLING / LIFTING EQUIPMENT

SHEET PILE THREADERS

CHAIN CLAMPS

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