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**SOFT LINE CUTTER SL55**

**PRODUCT CODE No. 980504**

**INSTRUCTIONS FOR INSTALLATION,  
OPERATION & MAINTENANCE**

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## **DESCRIPTION**

The SL55 Softline cutter is a double acting tool suitable for cutting softlines and ropes up to 55mm (2.165") in diameter. It requires a dual line hydraulic supply for operation and is suitable for use subsea.

### **1 SAFETY**

Before operation, read and understand this operations manual.

Ensure that the tool and all its associated equipment, including any attached lifting equipment and pipework are in good condition.

Before operating the tool hydraulically, ensure that a return hydraulic line is fitted as well as the pressure line. This is to prevent fluid locks and the possibility of generating very high pressures within the system.

Ensure that suitable pressure regulation equipment is used and that the unit is not subjected to pressures higher than those stated in section 3.

If an operator is adjacent to the tool during trials or other tests, ensure that moving parts are shielded to prevent entrapment. Appropriate personal safety equipment should be worn (e.g. Safety glasses, Helmet & Gloves as a minimum)

If the item to be cut is under tension, a risk assessment must be carried out by a competent person with emphasis on the possible recoil of the severed ends.

If in doubt please contact the manufacturer (Allspeeds Ltd) or an authorized distributor for assistance.

**CAUTION** - Any modification made to this tool will invalidate the warranty and may lead to equipment failure or personal injury.

## **INSPECT THE TOOL BEFORE USE**

With the cutter isolated from the hydraulic supply, check the condition of the blade edge. If the blade is damaged or blunt replace with a fresh blade before cutting. This procedure is as described in section 6. Ensure that care is taken when checking the blade as the edge is sharp.

Check the condition of the anvil. It is normal that the anvil will show an indent where the blade is pressed down into it. It is designed to withstand multiple cuts, but any excessively damaged anvil should be replaced. This procedure is as described in section 6.

Ensure that all retaining bolts are tight.

**IMPORTANT:** Please note the blade material. Your SL-55 is fitted with a stainless steel blade (705066S). It is suitable for use subsea for a period of up to 14 days.

If in doubt please contact the manufacturer (Allspeeds Ltd) or an authorized distributor for assistance.

**CAUTION - USE OF BLADES & PARTS NOT APPROVED BY WEBTOOL MAY RESULT IN TOOL FAILURE AND CONSEQUENTIAL DAMAGE.**

**CUTTING CAPACITY**

The SL55 cutter is designed to cut softlines up to a diameter of 55mm (2.165”). This tool is for cutting softlines only and MUST NOT be used to cut wire rope. Cutting unsuitable materials can result in damage to the tool and/or blade.

**2 INSTALLATION**

**HYDRAULIC CONNECTIONS**

Two ports are provided in the tool, one in the end of the cylinder for the cutting stroke, (herein referred to as the power port) and one in the housing block for the return stroke (herein referred to as the return port). Both ports are tapped 1/4” BSPP.

Note that item 23 (see Figure 7 & Table 2) is a fixed plug. Removal of this item will result in a breakdown of the ‘Return’ hydraulic circuit. No attempt to remove this plug from the housing should be made.

Most ropes can be cut with a nominal input pressure of 210 bar (3046 PSI).

The maximum input pressure to the return port is 210 bar (3046 PSI)

**CAUTION - DO NOT EXCEED THE MAXIMUM STATED PRESSURES AS THIS MAY LEAD TO DAMAGE TO THE TOOL AND LOSS OF HYDRAULIC OIL. IT IS ADVISED THAT ANY HYDRAULIC CIRCUIT THAT THIS TOOL IS ATTACHED TO CONTAINS SUITABLE PRESSURE LIMITING EQUIPMENT.**

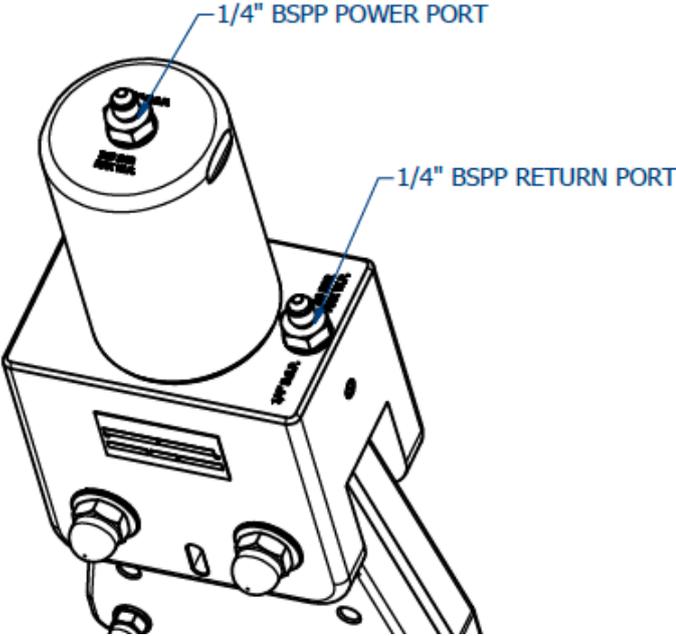


Fig 1 – Hydraulic connection points.

**LIFTING AND MOUNTING POINTS**

The cutter has 2 off holes, tapped M10x1.5, through on each side plate. These holes are for the attachment of lifting and mounting equipment or buoyancy (not supplied as standard).

The weight of this tool (not including oil) is approximately 9.55kg in air. The weight in water (not including oil) is approximately 6.57kg. Ensure that any attached lifting equipment is capable of lifting the weight of this tool with a suitable safety margin



Fig 2 – Mount points.

## SEQUENCE OF OPERATION

IMPORTANT – Before deployment, function test the tool and ensure that all operators are familiar with this procedure. ROV observation of the tool should be maintained at all times during operation.

### DEPLOYMENT

1. Manoeuvre the cutter around the rope to be cut so that the rope sits fully in the jaw of the tool, against the anvil as shown below.



Figure 3 – Rope correctly positioned

2. Operate the hydraulic supply to the power port to drive the blade downwards through the rope.
3. Once the rope is fully cut, retract the blade by pressurising the return port.

## TROUBLESHOOTING

If the rope does not cut through completely on the first attempt, cycle the blade by retracting it slightly and then attempting the cut again.

If the rope does not completely cut after multiple cycles of the blade, check the input pressure to the main input of the cylinder. This can be a maximum of 210 bar (3046 PSI)

If the rope to be cut is still not severed after multiple cycles and at pressure of 210 bar, return the tool to the surface for inspection of the blade and anvil as described in section 6. Replace if necessary.

**IMPORTANT NOTE - ENSURE THAT THE BLADE IS RETRACTED AND THAT ALL PRESSURE TO THE CUTTER IS RELIEVED AS IT IS RAISED TO THE SURFACE. FAILURE TO DO THIS CAN LEAD TO A DANGEROUS BUILD UP OF PRESSURE IN THE CYLINDER.**

### 3 AFTER USE

If the tool has been used in a marine environment it should be hosed down with clean water, allowed to drain and sprayed with a de-watering fluid. Before storage, inspect the general condition of the tool and repair any damage. Pay particular attention to the blade and anvil as described in section 6.

**IMPORTANT – DO NOT STORE THE TOOL WITH A COMPLETELY SEALED CYLINDER AS PRESSURE MAY BUILD UP DUE TO TEMPERATURE CHANGES**

### 4 SERVICE

**CAUTION – ENSURE THAT THERE IS NO HYDRAULIC PRESSURE IN THE CYLINDER BEFORE PERFORMING ANY SERVICE OR MAINTENANCE PROCEDURES ON THIS CUTTER**

It is unlikely that service should be required on the hydraulic components of the tool under normal circumstances; however spare seal kits are available if required.

It is normal to have to replace the blade and anvil during the life of the tool, depending on the frequency of use and the materials being cut.

It is advised to keep stock of the following spares at all times

<b>Description</b>	<b>Part Number</b>
Seal Kit	995162
Blade	705066S
Anvil	761313
Retaining Pin	029416

Table 1 – Recommended spares

If required, the tool can be returned to the manufacturer Allspeeds Ltd for servicing and testing.

## INSPECTING THE BLADE

With the cutter isolated from the hydraulic supply, check the condition of the blade edge. If the blade is damaged or blunt replace with a fresh blade before cutting as described below. Ensure that care is taken when checking the blade as the edge is sharp.

## BLADE REPLACEMENT PROCEDURE

Ensure the blade is fully retracted and then disconnect the tool from the hydraulic supply. The retaining pin must be visible through the slot in the housing.

Unscrew the two M12 domed nuts at the top end and pull out the bolts (with the remaining M12 nuts still attached). Knock the retaining pin out. This disconnects the blade from the piston. Remove the side plate assembly from the housing assembly downwards, away from the cylinder. Unscrew the four M8 domed nuts and lift the top side plate. The blade will then be free to remove.

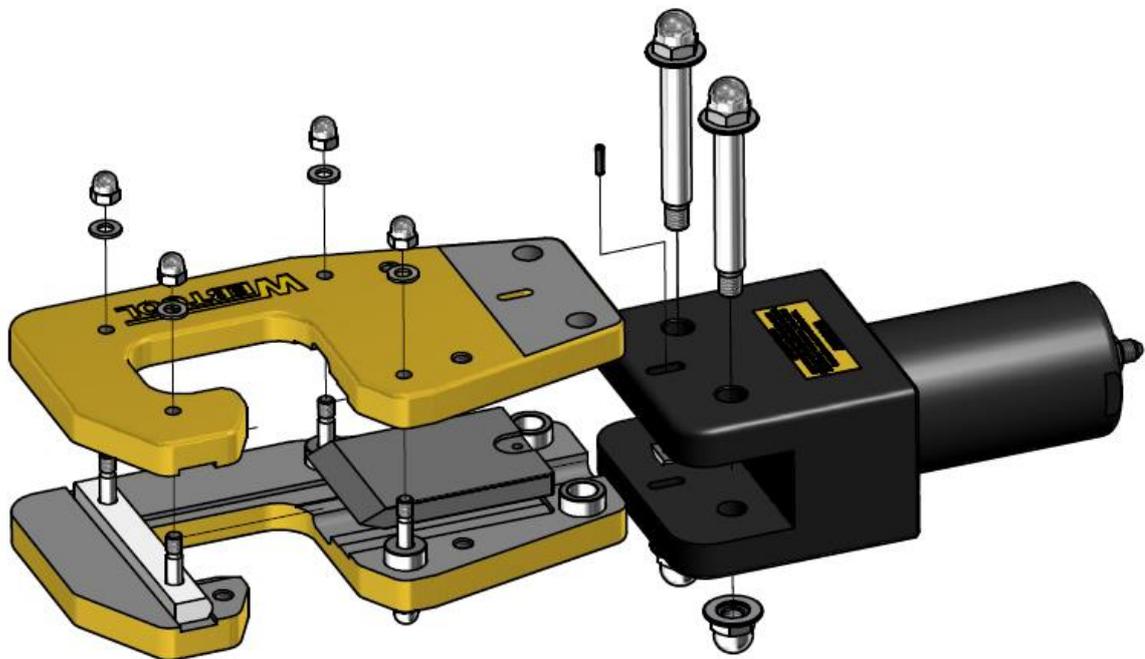


Figure 4 – Removing the blade

Remove the blade and replace with a new one.  
Visually inspect all components before reassembling.

Reassembly is the reverse of disassembly. Ensure that the retaining pin is driven into the piston and blade correctly and does not stand proud of the outer diameter of the piston.

After reassembly, function test the tool by connecting it to a hydraulic supply and cycling the blade up and down.

**CAUTION – ENSURE THAT ALL PERSONNEL ARE KEPT AT A SAFE DISTANCE FROM THE TOOL DURING FUNCTION TESTING**

### **INSPECTING THE ANVIL**

Check the condition of the anvil. It is normal that the anvil will show an indent where the blade is pressed down into it and can withstand multiple cuts, but any excessively damaged anvil should be replaced as described below.

### **REPLACING THE ANVIL**

Ensure that the blade is NOT in contact with the anvil before carrying out this procedure, and that the tool is disconnected from the hydraulic supply.

To replace, remove the two nuts and screws and slide out the anvil. Ensure the nuts are tightened when the new anvil has been replaced.

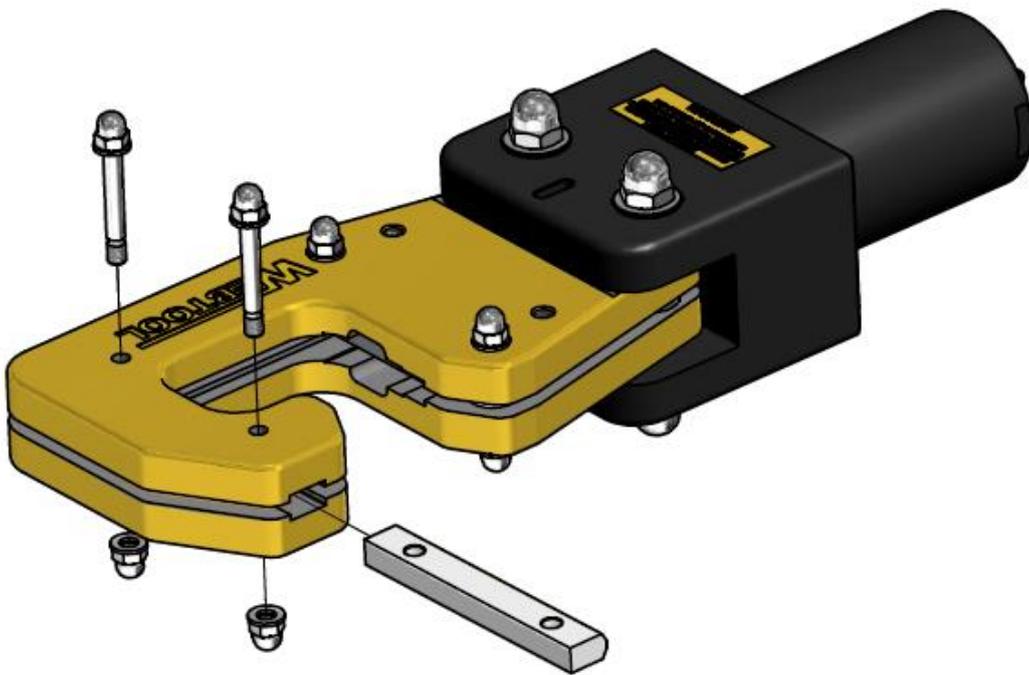


Fig 5 – Removing the anvil

## REPLACING THE SEALS

Ensure that the blade is NOT in contact with the anvil before carrying out this procedure, and that the tool is disconnected from the hydraulic supply.

Remove the six nuts holding the two side plates together. Knock the retaining pin out. This disconnects the blade from the piston (see blade replacement procedure). The piston/cylinder assembly will now pull free of the side plate assembly.

Remove the coupling, if present. Unscrew the cylinder from the housing block using the flats at the top. The piston can now be removed from the cylinder. The piston seal is now accessible. The rod seals and the wiper seal are housed in the bearing ring, inside the adaptor block. Note orientation of the rod seals in Figure 7 – “DETAIL A”

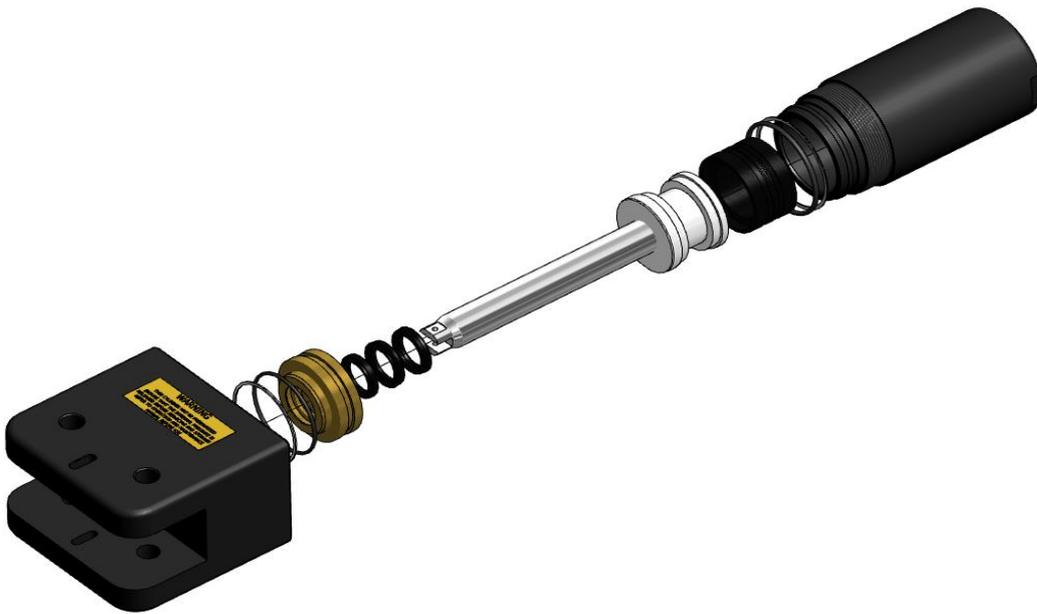


Fig 6 – Removal of seals

## 5 CYLINDER PROOF TESTING

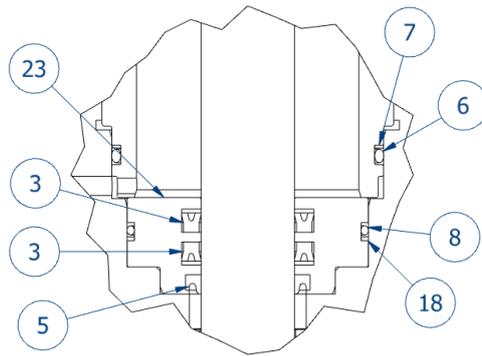
If at any time it is necessary to carry out proof tests on the tool, e.g. after service on the hydraulic cylinder, the following procedure should be applied.

### **CAUTION – ENSURE THAT ALL PERSONNEL ARE KEPT AT A SAFE DISTANCE FROM THE TOOL DURING PROOF TESTING**

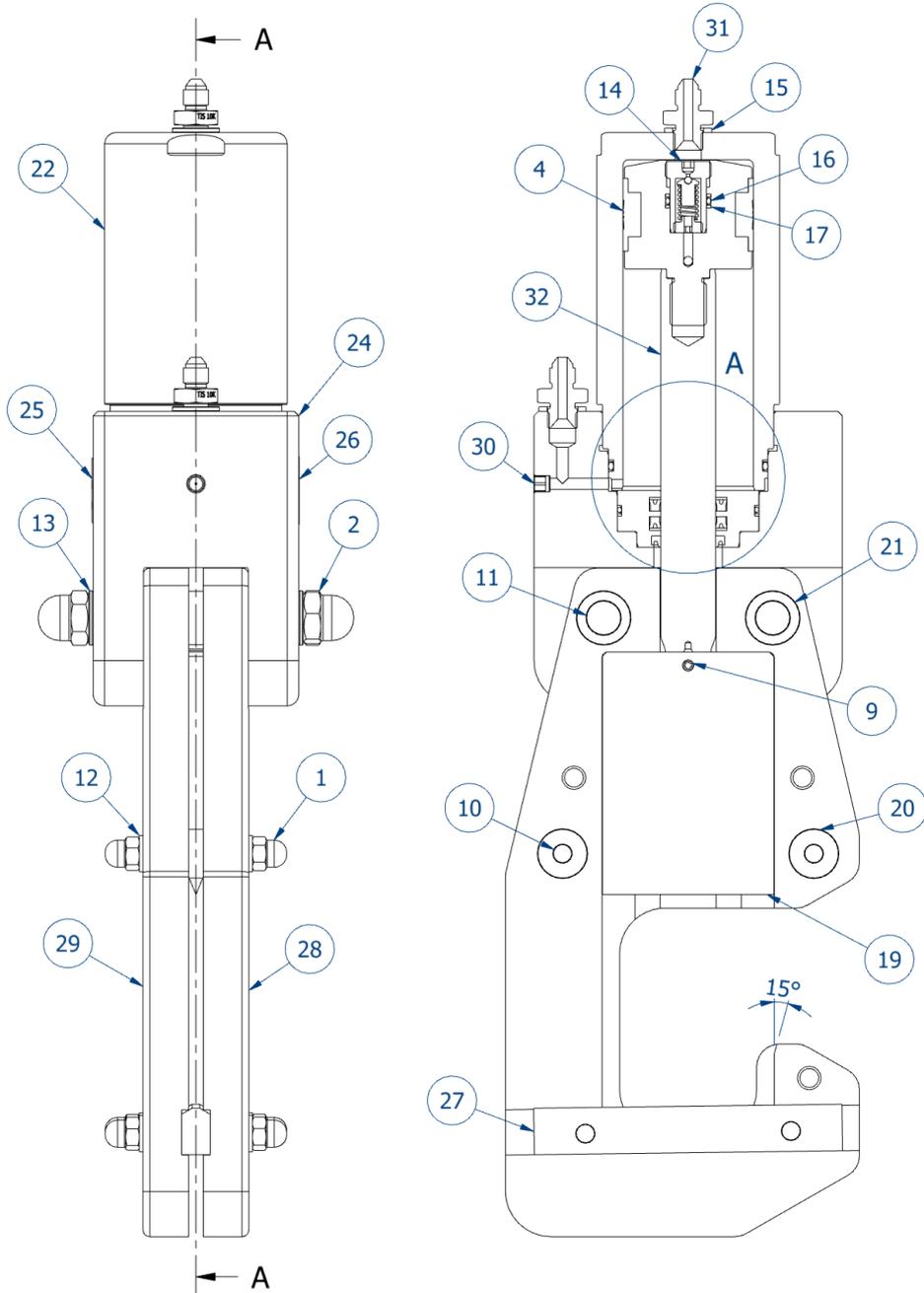
- 5.1 A return line as well as a pressure line must be connected at all times, and the tool must be guarded during the test operation.
- 5.2 The proof test pressure should not exceed 125% of the working pressure:
  - $210 \times 1.25 = 263$  bar for the power port
  - $210 \times 1.25 = 263$  bar for the return port
- 5.3 The proof test pressure should be applied gradually by means of a handpump, until the maximum test pressure is reached.



Figure 7 – Parts List Identifier

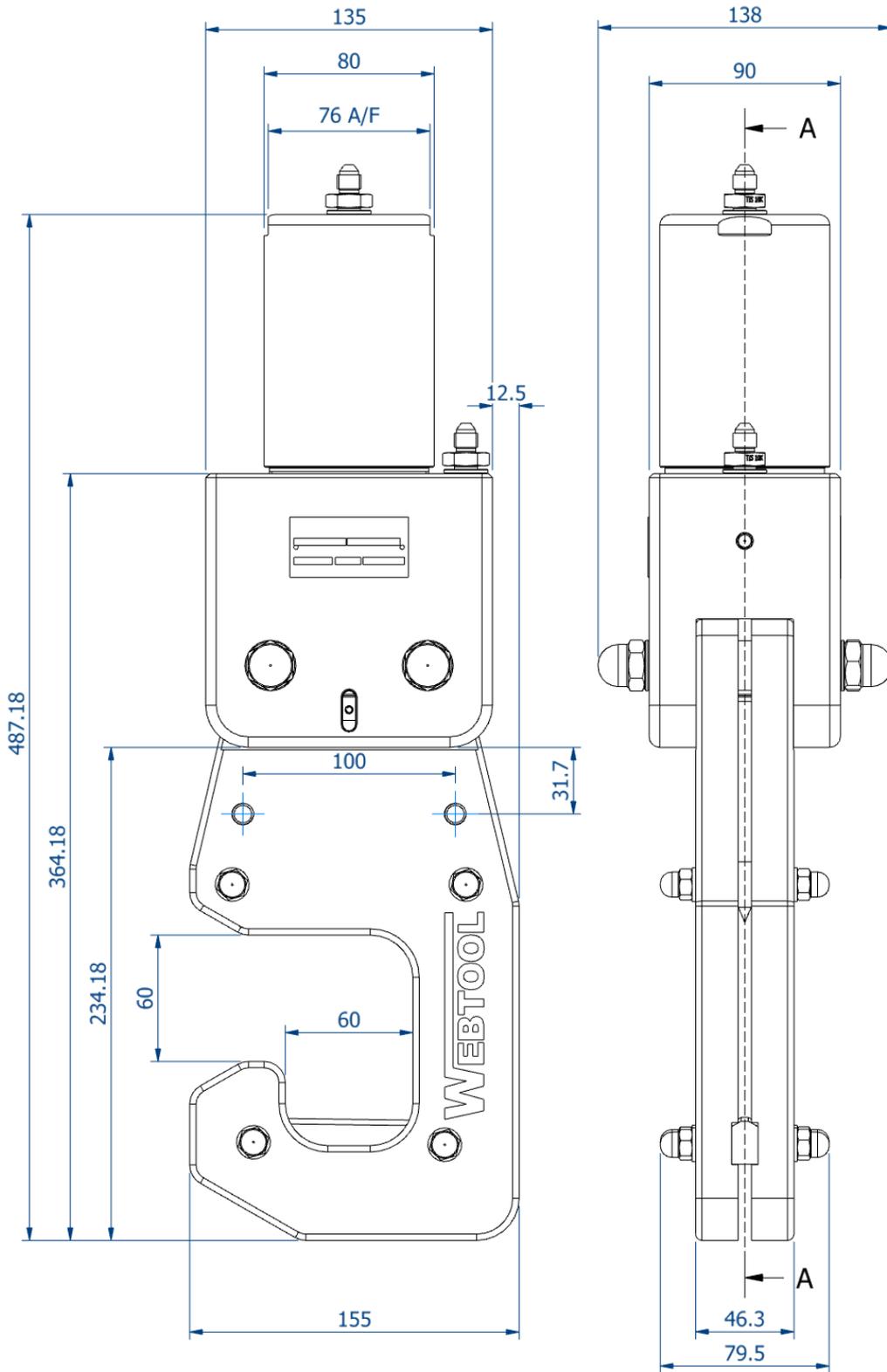


DETAIL A



SECTION A-A

Figure 8 – Overall dimensions



PARTS LIST				
ITEM	QTY	PART NUMBER	DESCRIPTION	
	1	8	020113	M8 DOMED NUT
	2	4	020114	M12 DOMED NUT
#	3	2	025942	ROD SEAL
#	4	1	025943	PISTON SEAL
#	5	1	025944	WIPER SEAL - 24mm
#	6	1	025945	O RING - BS1806-145
#	7	1	025946	BACKUP RING - 65 X 69.85
#	8	1	025947	O-RING BS4518-0576-24
	9	1	029416	BLADE PIN
	10	4	035151	M8 DOWEL BOLT
	11	2	035152	M12 DOWEL BOLT
	12	8	080614	STAINLESS WASHER - M8
	13	4	080988	STAINLESS WASHER - M12
	14	1	1155004	RELIEF VALVE ASSEMBLY
#	15	2	32-07-0035	BONDED DOWTY SEAL
#	16	1	32-60-2413	RELIEF VALVE O-RING
#	17	2	32-61-2413	RELIEF VALVE A/E RING
#	18	1	32-61-2432	BACKUP RING - 58.3 X 62
	19	1	705066S	BLADE
	20	2	715380	BOTTOM SPACER BUSH
	21	2	715381	TOP SPACER BUSH
	22	1	728118	CYLINDER
	23	1	749055	BEARING RING
	24	1	749056	CYLINDER HOUSING
	25	1	752342	NAME PLATE
	26	1	752573	PRESSURE WARNING LABEL
	27	1	761313	ANVIL
	28	1	765340A	SIDE PLATE A
	29	1	765340B	SIDE PLATE B
	30	1	766092	LEE PLUG - PLGA2810020A
	31	2	791157	1/4" BSPP TO JIC 4 STRAIGHT ADAPTOR
	32	1	982154	PISTON ASSEMBLY

# = Seal Kit Components (995162)

Table 2 – SL55 Parts list

# WEBTOOL<sup>TM</sup>

## CUTTING EDGE TECHNOLOGY

Webtool specialises in engineering powerful hydraulic tools for cutting and gripping rope, cable and umbilicals. Models designed for use in subsea environments by ROV's, and surface applications in hostile environments, including:

- Wire rope cutters (WCS and WCOS) – capable of cutting steel wire rope up to 75mm diameter
- Wire Rope Cutters (RCV) – capable of cutting steel wire rope up to 190mm diameter
- Cable Cutters (HCV) – capable of cutting cable, umbilical and armoured flexible pipe lines up to 330mm diameter
- Softline Cutters (SL) – capable of cutting fibre ropes in various sizes
- Wire Rope/Cable Grippers
- Wire Rope Clamps
- Automatic Shackles

### Application specific solutions

Our in house design and manufacturing capability means we can quickly and efficiently develop a solution to suit your particular application. Contact our engineering department to discuss how we can help.

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