WEBTOOL™
HYDRAULIC CUTTERS & SYSTEMS

allspeeds

# Instruction Manual

for

Allspeeds Ltd.

Royal Works, Atlas Street
Clayton Le Moors, Lancashire, UK.
BB5 5LW

## RCV155

## Allspeeds Product Code 980218

Allspeeds Document Revision 7 issue 3

Date: 31/10/24

Original instructions

## Table of Contents

## 1 Important Notice – Read Before Use

**Do not operate the blade unless the anvil is fully closed.**

**Ensure that the auxiliary cylinders are pressurised (200 bar) to keep the anvil closed throughout the cut cycle.**

**Read, understand and follow the instructions within the operating manual before deploying or operating the RCV155 cutter.**

**Failing to follow the instructions and operating the cutter with a partially closed anvil will result in serious damage to the RCV155.**

**IF IN DOUBT, ASK!**

**See section 9 for more details**

## 2 Introduction

This manual covers the installation, operation and maintenance of a RCV155 as Allspeeds part number 980218.

This is a double acting, hydraulically operated tool suitable for cutting steel wire rope and alternative materials, such as electrical power or communication cables up to 155mm (6.1”) in diameter. It requires two separate dual line hydraulic supply (feed and return) for the main cutter activation and the hydraulically operated anvil.

# 3 Technical Data

RCV155 (part number 980218)

## 3.1 Physical

| | |
|---|---|
| Weight of RCV155 in air | 243 kg (excluding hydraulic fluid and hoses) |
| Weight of RCV155 in water | 211 kg (excluding hydraulic fluid and hoses) |
| Overall Dimensions | 500mm (592mm) x 278mm x 890mm |

## 3.2 Hydraulic Requirements

### 3.2.1 Main Cutter Cylinder

| | |
|---|---|
| Cylinder Type | Double acting (feed and return ports) |
| Maximum Operating Pressure | 690 Bar (10,000 PSI) |
| Swept Volume Cut Stroke | 3.7 Litre |
| Swept Volume Return Stroke | 1.6 Litre |

### 3.2.2 Anvil Auxiliary Cylinders

| | |
|---|---|
| Cylinder Type | Double acting (feed and return ports) |
| Maximum Operating Pressure | 210 Bar (3,000 PSI) |
| Swept Volume Anvil In | 0.08 Litre |
| Swept Volume Anvil Out | 0.06 Litre |

**IMPORTANT** – The maximum operating pressure stated above should not be exceeded during use of this tool. Ensure that all fittings and hoses used are suitable for use at this pressure and rated accordingly.

This RCV155 is compatible with the following hydraulic fluids:

Good quality hydraulic oil (e.g. Shell Tellus 32, 68 or similar)

Water glycol (e.g. Castrol Transaqua HT2).

Please note that whilst compatible, the use of water glycol fluids may reduce system life.

Ensure that the fluid used is cleaned to NAS Class 6 or better.

## 3.3 Environmental Considerations

This cutter should not be operated outside of the recommended temperature range of -5°C to +60°C.

This cutter is suitable for use subsea but should be regularly checked, cleaned and dewatered using a suitable dewatering spray.

## 3.4 Dimensions

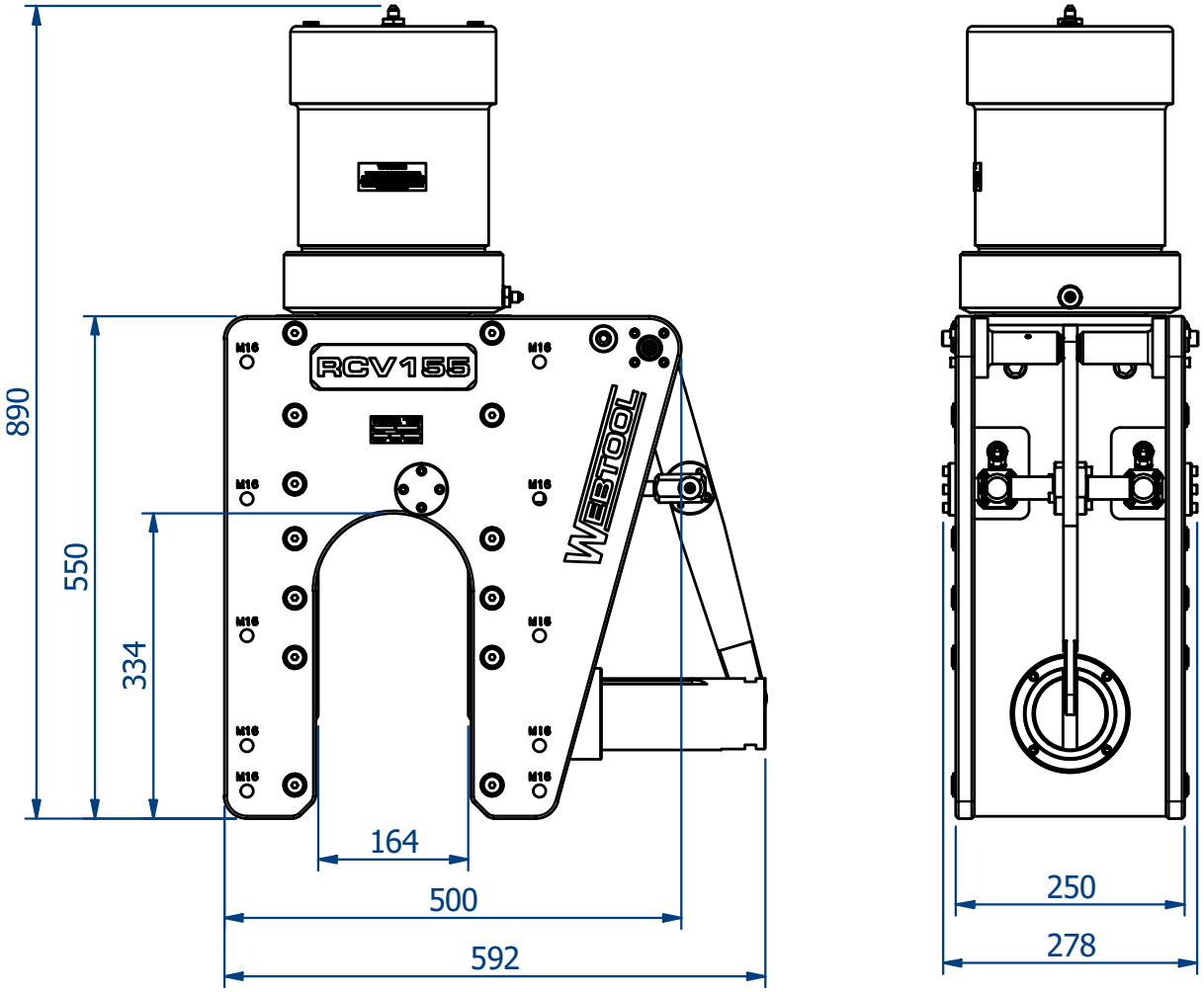



Figure 1 – Overall dimensions

## 4 CE Declaration of conformity

| | | |
|---|---|---|
| CE | **DECLARATION OF CONFORMITY** | |
| **Company name:** | Allspeeds Ltd | |
| **Company address:** | Royal Works, Atlas Street, Clayton le Moors, Accrington, Lancashire BB55LW, UK | |
| **Machinery covered by this declaration:** | **Description:** | RCV155 |
| | **Model:** | 980218 |
| | **Type:** | Rev 7 |
| **The machinery conforms to the requirements of the Machinery Directive 2006/42/EC.** | | |
| **The machinery also conforms to the following Directives:** | n/a | |
| **The following standards have been applied:** | n/a | |
| The technical documentation is compiled in accordance with part A of Annex VII of the Machinery Directive 2006/42/EC | | |
| **Person authorised to compile the relevant technical documentation (based in the European Community):** | **Name:** | Authorised Rep Compliance LTD |
| | **Address:** | 71 Baggot Steet Lower, Dublin, D02 P593, Ireland |
| The relevant authorised person undertakes to transmit, in response to a reasoned request by the national authorities, relevant information on the machinery. This information will be transmitted by: (email, post) | | |
| **Person authorised to make this declaration:** | **Name:** | Rory McGarry |
| | **Position in company:** | Technical Director |
| | **Signature :** | R.McGarry |
| | **Place of Declaration:** | Accrington, Lancashire, UK |
| | **Date of Declaration:** | 19/08/24 |

## 5 UKCA Declaration of Conformity

| UKCA | DECLARATION OF CONFORMITY | |
|---|---|---|
| **Company name:** | Allspeeds Ltd | |
| **Company address:** | Royal Works, Atlas Street, Clayton le Moors, Accrington, Lancashire BB55LW, UK | |
| **Machinery covered by this declaration:** | **Description:** | RCV155 |
| | **Model:** | 980218 |
| | **Type:** | Rev 7 |
| **The machinery conforms to the following essential requirements of the Machinery Directive 2006/42/EC:** | | |
| **The machinery also conforms to the following Directives:** | n/a | |
| **The following standards have been applied:** | n/a | |
| **This machinery must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the machinery directive** | | |
| The technical documentation is compiled in accordance with part A of Annex VII of the Machinery Directive 2006/42/EC | | |
| **Person authorised to compile the relevant technical documentation (based in the European Community):** | **Name:** | Chris Bond |
| | **Address:** | Royal Works, Atlas Street, Clayton le Moors, Accrington, Lancashire BB55LW, UK |
| The relevant authorised person undertakes to transmit, in response to a reasoned request by the national authorities, relevant information on the machinery. This information will be transmitted by: (email, post) | | |
| **Person authorised to make this declaration:** | **Name:** | Rory McGarry |
| | **Position in company:** | Technical Director |
| | **Signature :** |  |
| | **Place of Declaration:** | Accrington, Lancashire, UK |

# 6 General Safety Rules

## 6.1 Warnings

These warning are provided to improve safety and should be carefully read before installing, using or maintaining the equipment.

## 6.2 Important Information

It is vital that these instructions are available to the equipment users. It is also important that they are retained with the equipment if it is sold or transferred to another user.

## 6.3 Safety for Operation

**IMPORTANT - This is an inherently dangerous piece of cutting equipment and is supplied without guarding. It is vital that the installer and end user perform a risk assessment and implement any safety features that they deem necessary and enforce a safe system of work before use.**

To prevent the risk of injury, the cutter should only be used by fully trained and competent operators.

- Make sure that all safety devices are in place and functioning correctly
- Make sure the working area is free of any obstructions
- Check that all hydraulic hoses are in good condition
- Ensure that all operators are clear of the area before cutting commences

Recommended PPE for operation and maintenance includes safety shoes, safety glasses, ear defenders and gloves.

**IMPORTANT** - If the item being cut is under tension there is the risk of it recoiling when severed. Ensure that all operators are out of the immediate area before operation.

Any spilt oil or trailing hoses may create a slipping or tripping hazard. Care must be taken around the work area. Energised hoses may move about during operation and should be fitted with whip-check devices to contain them in case of a burst.

## 6.4 Safety for Maintenance

Repairs carried out by untrained or unauthorised personnel may result in personal injury or serious malfunction of the tool.

Ensure that the cutter is isolated from and free of hydraulic pressure before any maintenance is carried out.

## 6.5 Warning Symbols

| | |
|---|---|
|  | General hazard. Hydraulic cutting tool with inherently dangerous moving parts. Please read and understand this manual to avoid the risk of injury. |
|  | Cut or severing hazard due to the cutting blade. |

# 7 Installation

## 7.1 Mounting Holes

The cutter body contains a number of mounting holes, as shown on the drawing below:

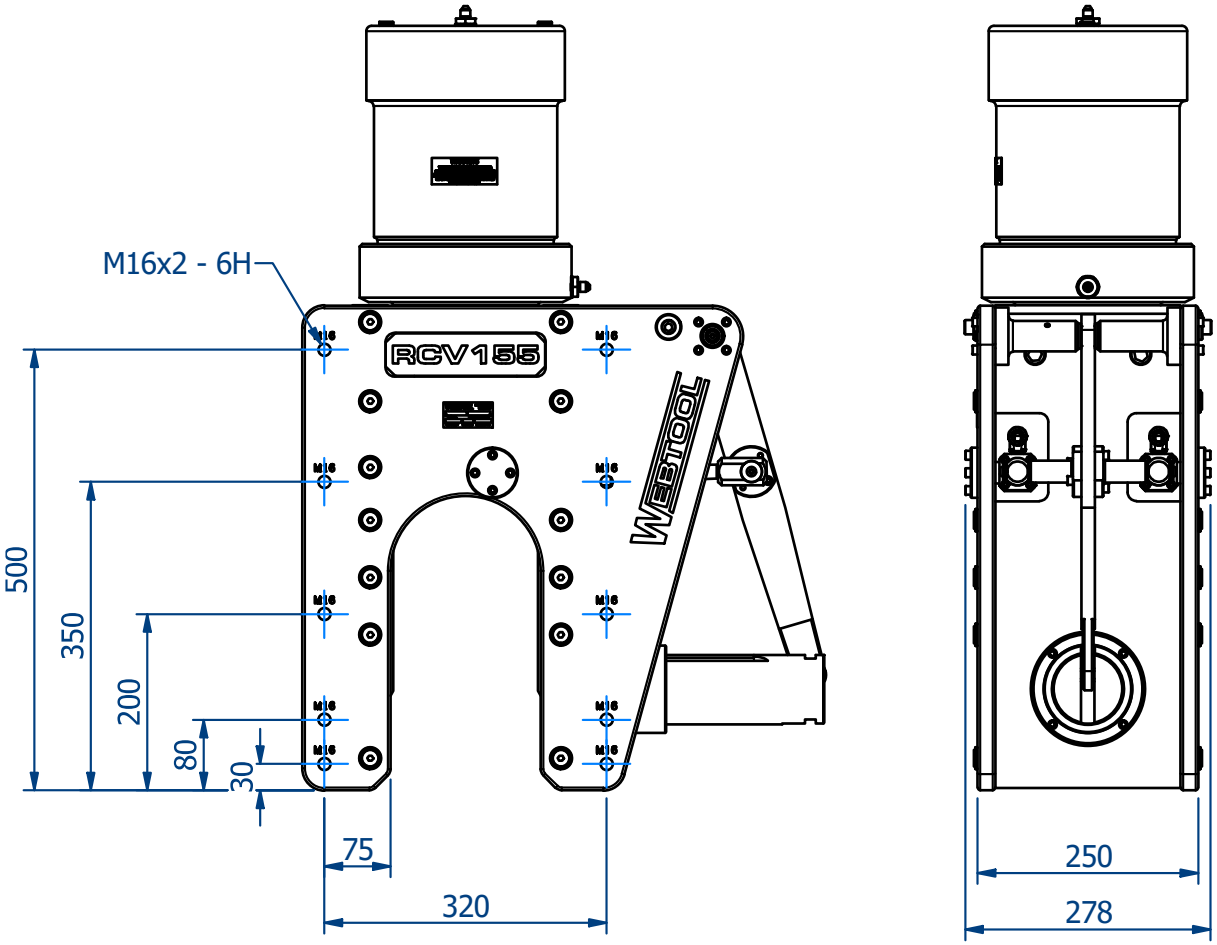



Figure 2 – Mounting holes

Ensure that the tool is securely mounted at multiple points and that mounting method is robust enough to support the tool. Consult tool mass in section 3.1 when considering mounting possibilities.

# 8 Hydraulic Connections

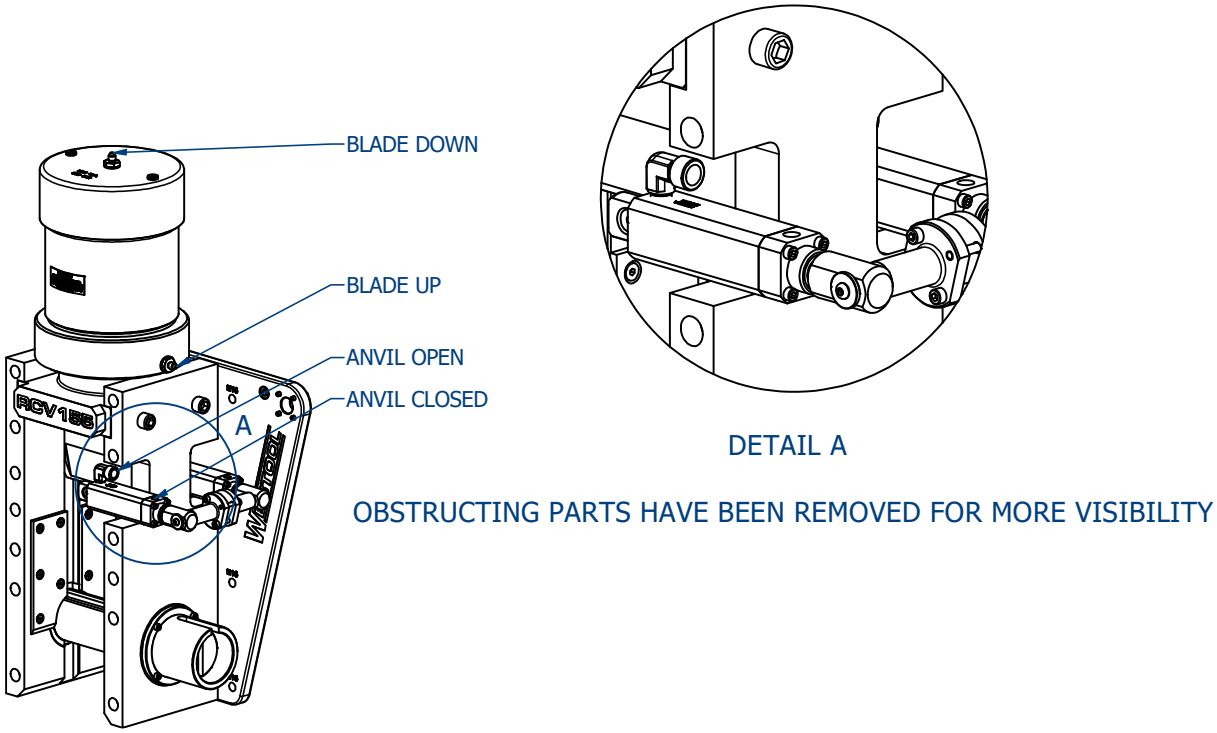



Figure 3 – Hydraulic ports

It is the responsibility of the end user to ensure that a suitable hydraulic supply is installed. It is recommended that a relief valve should also be incorporated in the return line to prevent excessively high pressures in the annular side of the hydraulic cylinders should the return to tank become blocked for any reason.

# 9 Operating Instructions

## 9.1 Before Use

With the hydraulic supply isolated, check the following parts of the cutter:

| Item | Procedure |
|---|---|
| Check the condition of the anvil | As described in section 10.3 |
| Check the condition of the blade | As described in section 10.4 |

Before use of the tool, ensure that all operators are at a safe distance from the cutter and that any guarding or safety features are installed and operational.

Check that the hydraulic supply is set to an appropriate level for operation as stated in section 3.2.

## 9.2 Deploying the Tool

Begin the operation with the anvil fully retracted. To achieve this, pressurise the ‘Anvil Out’ port on the RCV155.

Place the cutter over the workpiece. Ensure that the workpiece is fully inserted into the mouth of the tool so that there is no risk of the anvil fouling against it as it is closed.

Close the anvil over the workpiece by pressurising the ‘Anvil In’ port on the RCV155. Ensure that the ‘Anvil Out’ port is open to tank.

Fully inspect the tool to ensure the anvil is fully closed before continuing.

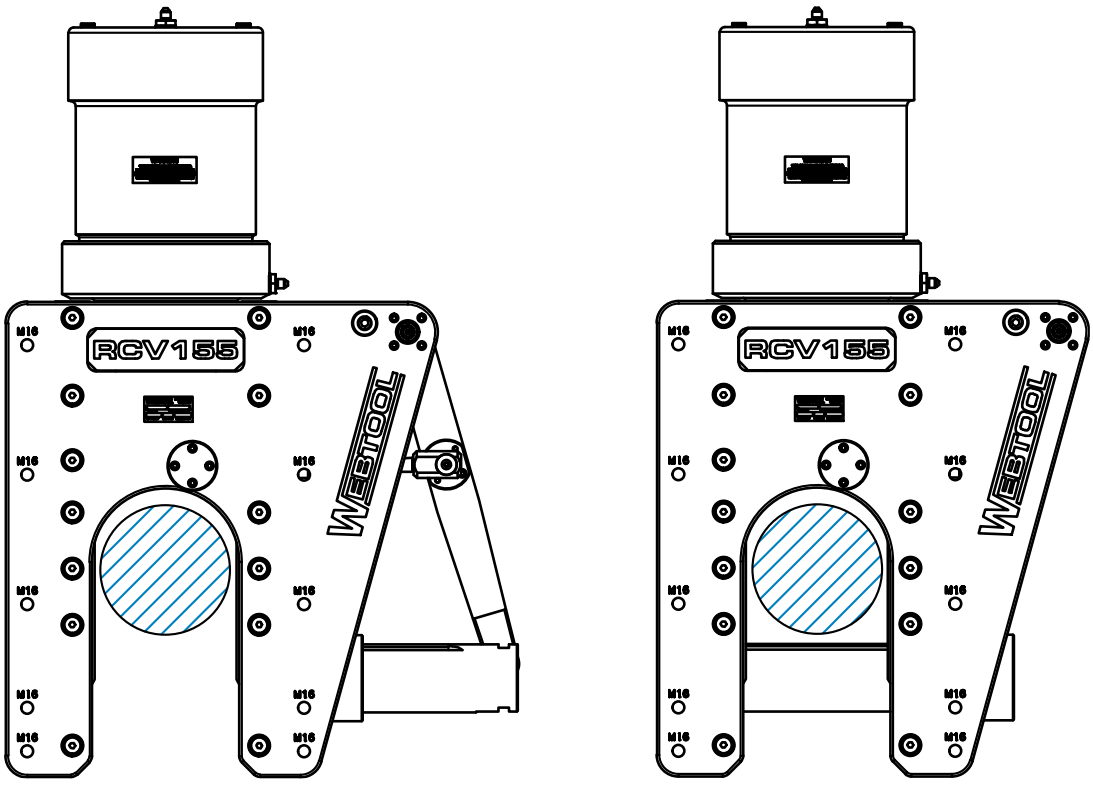



Figure 4 – Rope position

## 9.3 Pre-Cut Check

**IMPORTANT -** Ensure that the anvil is fully closed before performing a cutting operation.

**IMPORTANT -** Maintain pressure on the auxiliary anvil instroke to keep the anvil closed throughout the cut cycle.

**DO NOT OPERATE THE MAIN RAM IF THE ANVIL IS NOT FULLY CLOSED AND PRESSURISED**

## 9.4 Extend the Blade (Cut Cycle)

To extend the blade, pressurise the 'Blade Down' port on the RCV155 whilst ensuring that the 'Blade Up' port is open to tank. Do not exceed the maximum operating pressure. Continue to apply pressure until the cut is complete.

**IMPORTANT –** Do not attempt to open the anvil without first retracting the main ram.

## 9.5 Retract the Blade (Return Cycle)

To retract the blade, pressurise the 'Blade Up' port on RCV155 whilst ensuring that the 'Blade Down' port is open to tank. Do not exceed the maximum operating pressure.

# 10 Maintenance

It is unlikely that service would be required on the hydraulic piston of the tool under normal circumstances, but a seal spares kit is available (995284) and it is recommended to stock this at all times.

The only parts that would need intermittent replacement would be the anvil and blade depending on the frequency of use, materials being cut and the corrosive conditions present during operation.

**IMPORTANT -** Replacement parts must always be sourced from Allspeeds Ltd. The use of unofficial components will invalidate the warranty and may lead to tool damage or system failure.

## 10.1 Maintenance Notes

**IMPORTANT** – This cutter should only be serviced by qualified personnel. If in any doubt please contact Allspeeds Ltd or a distributor.

Most maintenance task can be carried out with standard tools.

All servicing operations should be carried out in a clean environment to prevent contamination of the oil and mating components.

Care should be taken with all mating areas, including threads and sealing faces, as any damage or abrasive contamination could cause galling or seizing on re-assembly. Please note a suitable anti-galling paste should be used (we recommend Swagelok Silver Goop) on all stainless steel threads.

The cylinder (728081) is a pressure vessel and should not be drilled, machined, mutilated or damaged in any way for mounting purposes or to assist in its removal for servicing, any warranty could be invalidated by such actions.

The use of a Stilson wrench to remove the cylinder is not recommended as damage will occur.

Before carrying out any maintenance tasks ensure that the equipment is fully isolated and that there is no residual pressure in the system.

## 10.2 Maintenance Schedule

This tool requires the following operations or service tasks to be completed as listed:

| Task | See section | Frequency |
|---|---|---|
| Visual inspection of blade and anvil | 10.3, 10.4 | 14 days or after cut, whichever is soonest. |
| Function test (extend and retract ram) | 9.4, 9.5 | 14 days if unused |
| Clean and dewater | | 7 days |
| Replace blade | 10.4 | As required |
| Replace anvil | 10.3 | As required |
| Replace seals | 10.5 | 12 months |

Table 1 – Maintenance schedule

## 10.3 Remove & Replace Anvil

**IMPORTANT** – The anvil may have sharp edges and imbedded material left behind from cutting operations. Wear suitable gloves when handling the anvil.

**IMPORTANT** – Ensure that the hydraulic supply is isolated before proceeding.

**IMPORTANT -** Replacement parts must always be sourced from Allspeeds Ltd. The use of unofficial components will invalidate the warranty and may lead to tool damage or system failure.

The anvil will show an indent where the blade contacts it during a cut, but can be reused. Any excessively damaged or worn anvil should be replaced as described below.

Ensure that the blade is retracted before removing the anvil. This is as described in section 9.5.

With the anvil open or closed, remove one off screw (035113) and then remove reaction pin (761267). The anvil arm should now be free to move vertically.

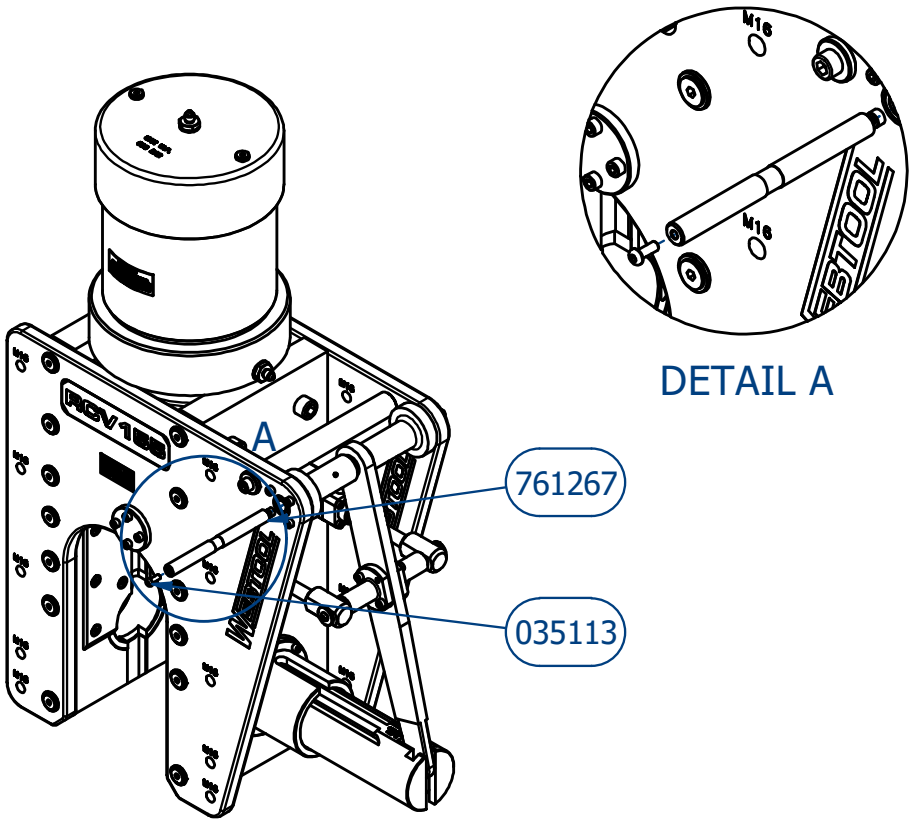
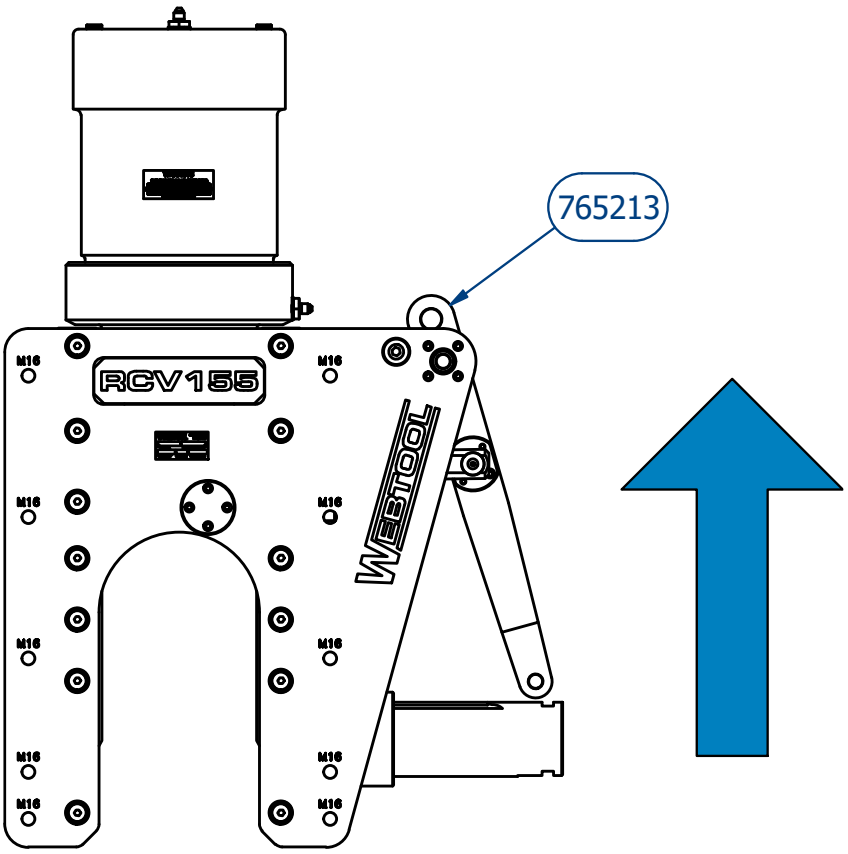



Figure 5 – Anvil removal step 1




RAISE PART NO 765213 UNTIL ENOUGH CLEARANCE FOR ANVIL TO BE REMOVED

Figure 6 – Anvil removal step 2

**IMPORTANT** – Mass of anvil (SSC6491) is 12.1kg. Ensure a safe system of work at all times.

Slide the anvil (SSC6491) out of the cutter.

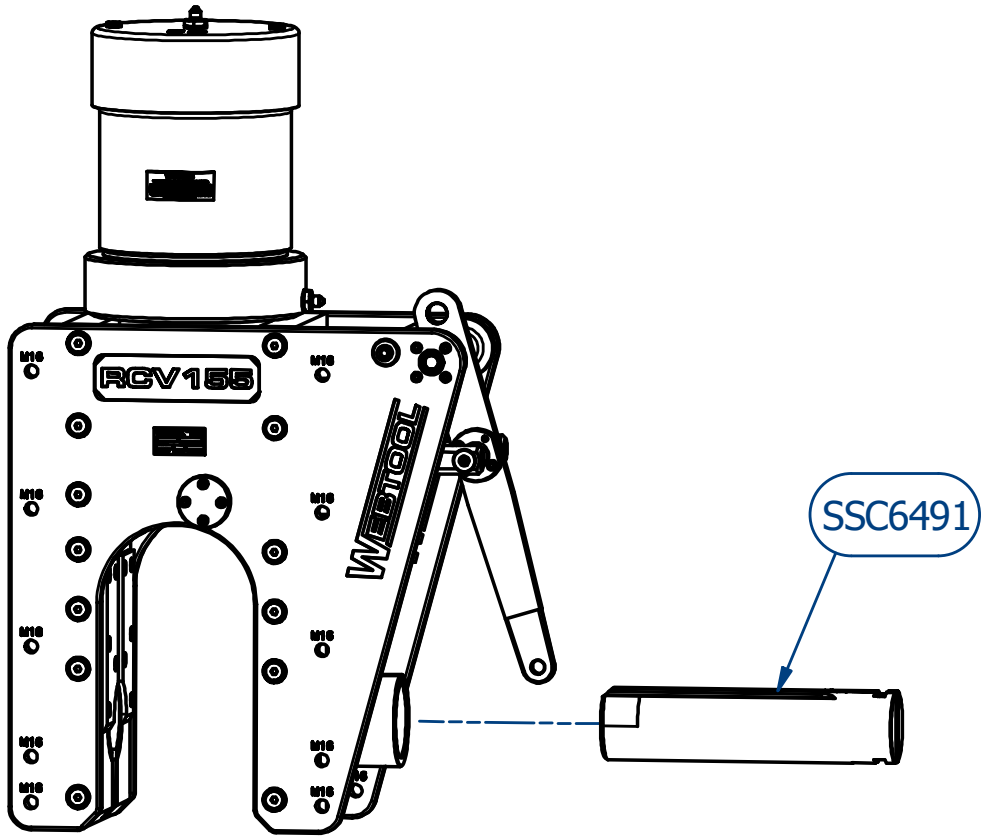



Figure 7 – Anvil removal step 3

Anvil replacement is the reverse of the disassembly procedure.

## 10.4 Remove & Replace Blade

Begin with the anvil fully removed as described in section 10.3.

**IMPORTANT** - The cutting edge may be sharp following tool operation, extreme caution and care should be taken when checking it. Wear suitable gloves when handling the blade.

**IMPORTANT** - Ensure that the hydraulic supply is isolated before proceeding.

**IMPORTANT -** Replacement parts must always be sourced from Allspeeds Ltd. The use of unofficial components will invalidate the warranty and may lead to tool damage or system failure.

The blade edge should be regularly checked to ensure that it is in good condition. This would be a consistent blade edge with no chips or deformations noted along the entire cutting edge.

For safety we recommend that this operation is performed with the tool led down.

Begin the anvil pumped out to its full extent or with it fully removed as described in section 9.3. The Main ram should be in the fully extended position.

Remove the 3 off blade pins (030636). If the blade is fully extended then the pins should be clearly visible at the top of the blade.

**IMPORTANT** – Mass of blade (705054C) is 5.02kg. Ensure a safe system of work at all times.

Once blade pins are removed the blade is free to slide in the tool, care must be taken to prevent the blade from falling or causing injury to operator.

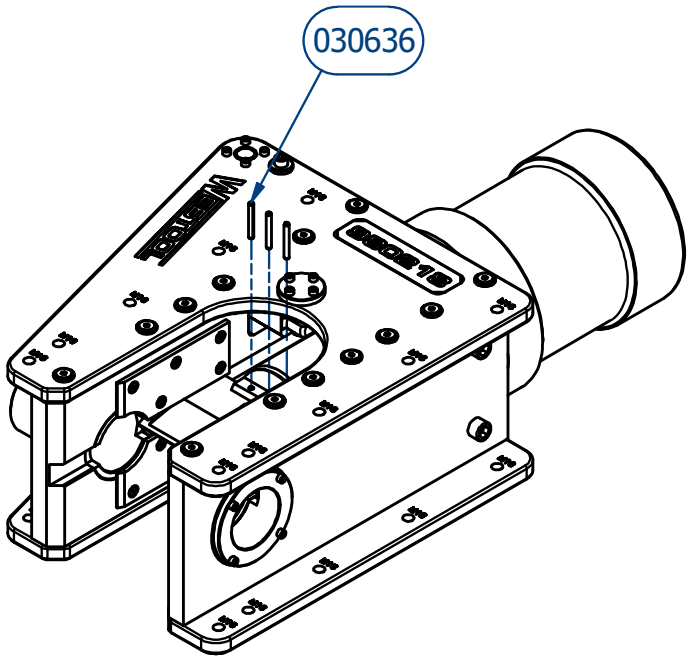



Figure 8 – Blade pins removal

The blade can now be slid out of the cutter body.

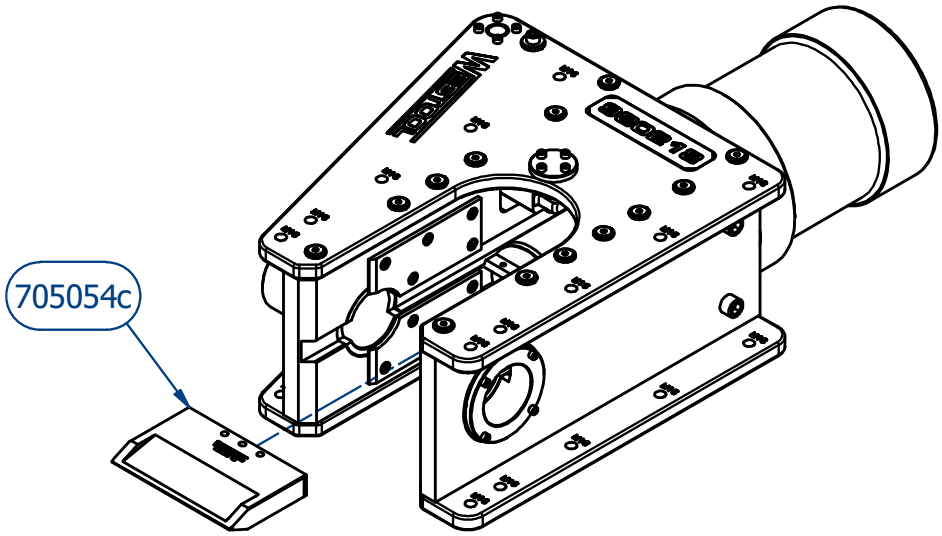



Figure 9 – Blade removal

Blade replacement is the reverse of the disassembly procedure.

## 10.5 Seal Detail

**IMPORTANT** – Ensure that the hydraulic supply is isolated before proceeding.

**IMPORTANT -** Replacement parts must always be sourced from Allspeeds Ltd. The use of unofficial components will invalidate the warranty and may lead to tool damage or system failure.

**IMPORTANT** – Changing the seals will likely result in oil spills. Hydraulic oil spills present slip hazards. Ensure a safe system of work at all times.

If it is necessary to inspect or renew the hydraulic seals, the cylinder must be removed from the tool. As an aid to this, 2 off tapped holes are provided in the cylinder end face. These are 2 off M8 x 10mm spaced 180mm apart. Never use Stilsons or pipe clamps on the cylinder as damage may occur. If in doubt contact Allspeeds for advice.

A cylinder assembly tool is available if required from Allspeeds (SK43377A).

Begin operation with the blade removed. See section 10.4 for this procedure.

Firstly, remove the coupling, hose and blanking plugs (035257) from the top of the tool and attach the cylinder assembly tool (SK4377A). This can be used to loosen or re-tighten the cylinder.

**IMPORTANT** – Mass of Cylinder (728081) is 40.39 kg and Ram (764119) is 22.34 kg. Ensure a safe system of work at all times.

Unscrew the cylinder and remove from the assembly. Use M8 holes to facilitate safe lifting. Care should be taken as any contained oil within the cylinder will now be free to spill in the work area. The cylinder will come free but seal stiction may mean that the ram comes also. If this happens, carefully lay the cylinder assembly down in a safe location, connect a handpump or other hydraulic supply to the cylinder and pump the ram out of the cylinder. Again, care should be taken as any contained oil within the cylinder will now be free to spill in the work area.

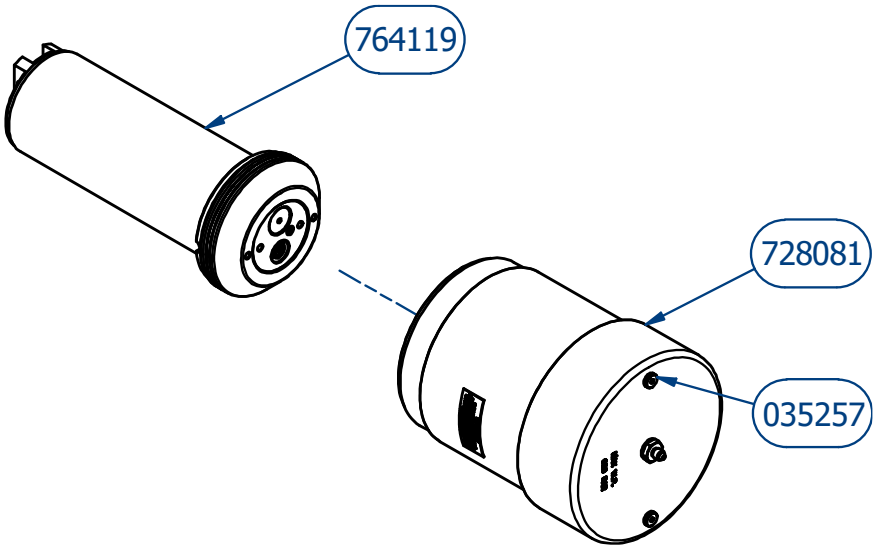



Figure 10 – Cylinder removal

The ram has been fitted with a relief valve plug assembly (991015), this also contains seals, to remove this, locate off the two off M8 x 12mm deep holes and unscrew the plug. The two relief valves have been carefully set to blow off at a set pressure and care should be taken not to disturb the settings during removal.

With these parts now separate all main seals can be accessed and replaced.

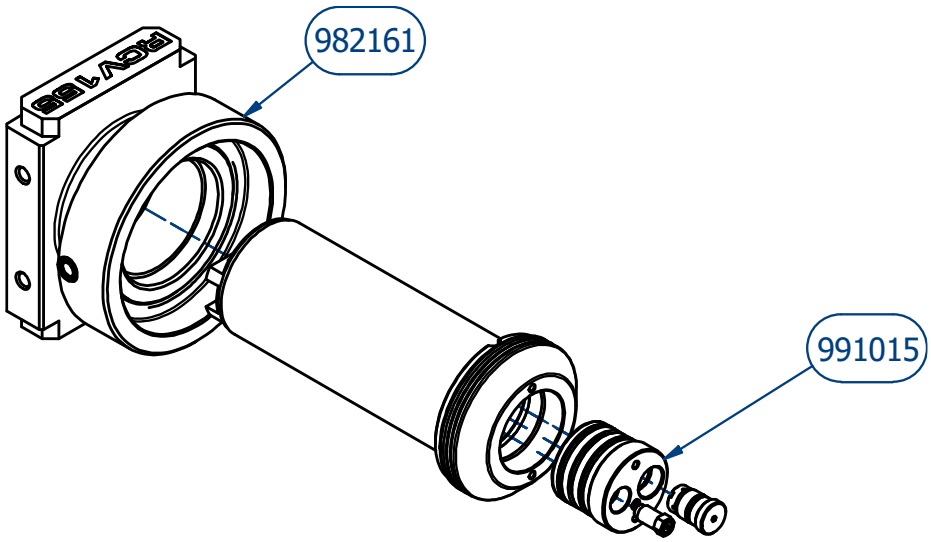
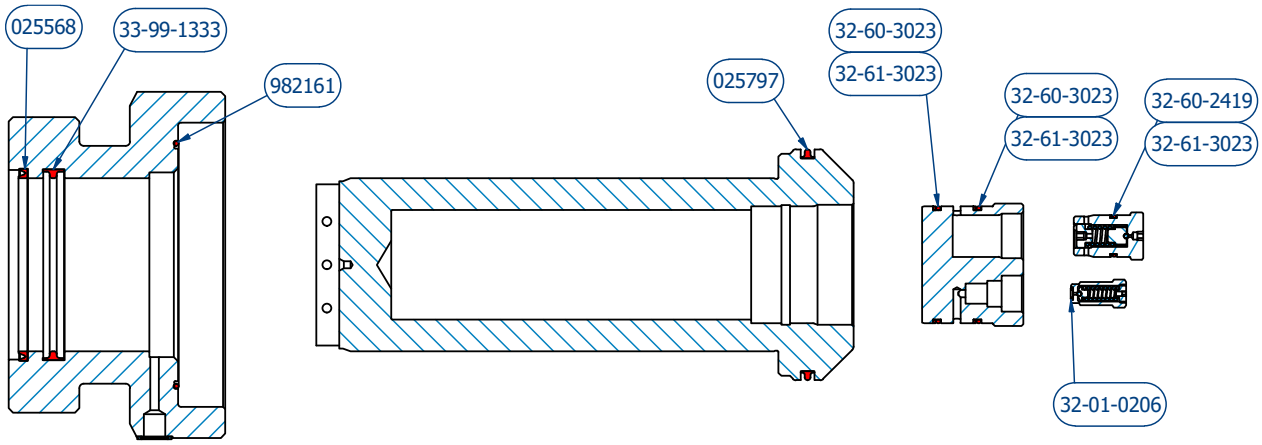



Figure 11 – Seal access




SECTION A-A

Figure 12 – Main seal assembly

# 11 Parts List

The cutter comprises the following components:

| Part Number | Description | Qty |
|---|---|---|
| 764119 | RCV155 RAM | 764119 |
| 728081 | RCV155 CYLINDER | 728081 |
| 765231A | RCV155 WEAR PLATE | 765231A |
| 765231B | RCV155 WEAR PLATE | 765231B |
| 715355 | RCV155 ANVIL GUIDE | 715355 |
| 749045A | PIVOT PIN HOUSING | 749045A |
| 749045B | PIVOT PIN HOUSING | 749045B |
| 035079 | SOCKET HEAD CAP SCREW | 035079 |
| 035066 | SOCKET HEAD CAP SCREW | 035066 |
| 765213 | RCV155 ANVIL LEVER | 765213 |
| 715345 | PIVOT PIN LEVER BUSH | 715345 |
| 761267 | LEVER PIVOT PIN | 761267 |
| 761268 | AUXILIARY CYLINDER PIVOT PIN | 761268 |
| 035111 | SOCKET HEAD CAP SCREW | 035111 |
| 079044 | MOUNTING STUD AUX CYLINDER | 079044 |
| 080971 | WASHER M6 | 080971 |
| 035113 | SOCKET BUTTON HEAD SCREW | 035113 |
| 715354 | RCV155 ANVIL GUIDE BUSH | 715354 |
| 761247 | ANVIL PIN | 761247 |
| SSC6491 | RCV155 ANVIL | SSC6491 |
| SSC6476 | AUXILIARY CYLINDER END CAP | SSC6476 |
| 728078 | AUXILIARY CYLINDER | 728078 |
| 764116 | AUXILIARY PISTON HCV155/RCV155/RCV190 | 764116 |
| 025801 | ANVIL PISTON SEAL | 025801 |
| 025311 | SMALL O RING SEAL | 025311 |
| 025569 | SMALL WIPER SEAL | 025569 |
| 025802 | ANVIL ROD SEAL | 025802 |
| 709062 | AUXILIARY CYLINDER RAM HEAD | 709062 |
| 035067 | SOCKET HEAD CAP SCREW | 035067 |
| 701195 | 90 DEGREE ELBOW | 701195 |
| 043206 | SET SCREW | 043206 |
| 026701 | PELLET | 026701 |
| 030636 | PIN SPRING | 030636 |
| 025797 | RAM SEAL | 025797 |
| 33-99-1333 | ROD SEAL | 33-99-1333 |
| 025668 | O RING FACE SEAL | 025668 |
| 025568 | WIPER SEAL | 025568 |
| 705054c | RCV155 BLADE | 705054c |
| 035130 | COUNTERSUNK SOCKET HEAD SCREW | 035130 |
| 991015 | RELIEF VALVE KIT | 991015 |
| 752342 | WEBTOOL NAMEPLATE | 752342 |
| 752573 R104 | PRESSURE WARNING LABEL | 752573 |
| 082224 | BONDED SEAL | 082224 |
| 035257 | DOWTY SEAL THREAD PLUG | 035257 |
| 982161 | RCV155 BODY ASSEMBLY | 982161 |

| | | |
|---|---|---|
| 035073 | SET SCREW CUP POINT | 035073 |
| 791180 | MM FITTING 3/8" BSP TO 7/16" JIC | 791180 |
| 082218 | BONDED SEAL | 082218 |

Table 2 – Parts list

## 12 Decommissioning

Major components are made from the following recyclable materials:

| Description | Material |
|---|---|
| Body | Alloy steel |
| Cylinder | Alloy Steel |
| Ram | Alloy steel |
| Anvil | Stainless bronze |
| Blade | Tool steel |
| Guide Bush | Aluminium bronze |

Table 3 – Decommissioning

Remaining components should be disposed of in accordance with local current regulations.

Hydraulic fluid should be drained into a suitable container and disposed of in accordance with current local regulations.

## Also available from Allspeeds

## HTP - Hydrostatic Test Pump


- Hydrostatic test pump complete with tank, skid, handle & gauge
- Available in a range of pressures up to 1000 bar (14,500 psi)
- Relief valve fitted as standard
- Compatible with a range of fluid media
- Robust design
- Up to 1000 Bar working pressure
- High and low pressure stages with manual change
- Ideal for testing Webtool™ and other hydraulic products

## HP690A – Hydraulic Intensifier


- The HP690 features a unique integrated safety circuit that automatically bleeds excess pressure caused by surfacing or temperature variation back to tank
- Compatible with 2 port hotstabs. No additional drain port is required
- Fitted with industry standard MiniBOOSTER™ intensifier
- All fittings rated to 690 bar (10,000 psi)
- Suitable for use at any water depth
- Compact unit – Fits into limited ROV payload space
- Aluminium and stainless steel construction – Corrosion resistant
- Robust Design – Pressure gauges are recessed into the body
- Dual pressure gauges –Input and output pressures can be accurately monitored

## CUTTING EDGE TECHNOLOGY

Webtool specialises in engineering powerful hydraulic tools for demanding environments and applications.

Our standard range of cutting, gripping and lifting tools for rope, cable and umbilical includes:

- Steel wire rope cutters up to 190mm diameter
- Cable, umbilical and flexible riser cutters up to 270mm diameter
- Softline cutters up to 165mm diameter
- Cable grippers up to 200mm diameter with 20 tonne lift capacity
- Emergency disconnection systems for both topside and subsea applications
- Long term subsea tools for deployment by R-ROV systems

## APPLICATION SPECIFIC SOLUTIONS

Our experienced, in house design and manufacturing team can quickly and efficiently develop a solution to suit your particular application. Contact us to discuss how we can help.

Allspeeds Ltd
Royal Works, Atlas Street
Clayton-Le-Moors, Accrington
Lancashire, BB5 5LW
United Kingdom

T: +44 (0)1254 615100 F: +44 (0)1254 615199

E: info@allspeeds.co.uk W: www.allspeeds.co.uk