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## **WIRE ROPE CUTTER RCV 190**

**PRODUCT CODE No. 980-230**

## **INSTRUCTIONS FOR INSTALLATION, OPERATION & MAINTENANCE**

*Issue 2 - 17th February 2006*

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## 1. INSTALLATION

- 1.1 Tapped holes, 5/8" UNC, are provided in the tool body, see Fig. 1, which can be used for any attachment necessary to mount the cutter.
- 1.2 Two hydraulic supplies are required, ported as shown in Figs. 1 & 2. The maximum working pressures are shown in *Table 1* and pressure limiting valves should be fitted into the supply to limit the pressures to these levels.

TABLE 1.

Function	Max. Working Pressure		Swept Volume ml.	Port Tapping
	psi	bar		
Main ram working stroke.	10,000	690	5200	3/8" NPT
Main ram return stroke.	10,000*	690*	1390	3/8" NPT
Auxiliary cylinder Out-stroke. (To retract anvil)	2,750	190	100	1/4" NPT
Auxiliary Cylinder In-stroke. (To reset anvil)			60	
			TOTAL	

\* N.B. Actual Pressure Required To Return Ram < 200 P.S.I. (14 bar)

## 2. CUTTING CAPACITY

The cutter is primarily intended for use on wire rope, having a maximum strength of 1880 N/mm<sup>2</sup> and will cut ropes up to 190mm diameter. It may be used on alternative materials, such as electrical power or communication cables, again up to a maximum of 190mm diameter. Where diameters smaller than 190mm are to be cut, an effort should be made to place the material centrally along the anvil to minimise offset loading. Two sets of steel jaw pads (Wear Plates) are supplied, to permit reduction of the jaw width. One pair (20mm thick) for cutting materials up to Ø155, and one pair (8mm thick) for materials in the range 155 to 190 diameter.

If it is required to extend the use of the cutter, for instance to cut solid bar members of steel, please refer to the manufacturer with full details of size and tensile strength. Failure to do so may result in damage to the anvil and blade.

### 3. OPERATION

- 3.1 Prior to use, the auxiliary cylinder outstroke should be operated to withdraw the anvil. This clears access for the cutter to be placed over the wire rope.
- 3.2 Place the cutter over the wire rope. Ensure that the wire rope is as far into the cutter as possible so that the anvil does not foul as it is reset.
- 3.3 Operate the auxiliary in-stroke to position the anvil fully home under the wire rope. Be sure that the auxiliary cylinders are operated to the full extent of their stroke.
- 3.4 Operate the main ram down-stroke to sever the wire rope. When this is done, retract the main ram until it is fully home.
- 3.5 If a further cut is required, the above procedure should be repeated.  
**N.B.** Do not operate the auxiliary cylinders when the main ram is fully extended as this will damage the anvil.

### 4. AFTER USE

When the tool is retrieved, it should be hosed off with clean water, allowed to drain and sprayed externally with a de-watering fluid. Before storage, inspect the general condition of the tool. Attention should be paid to the anvil and blade in particular. The anvil should be clean and free from any damage or bruising on the outside diameter that would prevent it from retracting properly. The blade edge should be smooth and free from any serrations. Note that a slight ripple to the blade edge is acceptable and will not cause problems. Any minor damage or cold welding can be smoothed off with an oil stone if necessary.

### 5. SERVICE

It is unlikely that service would be required on the hydraulic components of the tool under normal circumstances, but a seal spares kit is available if required. The only parts that would need intermittent replacement would be the anvil blade and wear plates, this depending on the frequency of use and materials being cut. These parts can be ordered up on the following spares reference numbers, but in addition please quote the tool serial number.

Seal Kit	Part Number	995 133
Anvil	Part Number	SSC 6500
Blade	Part Number	705 064
Wear Plate	Part Number	765312A – 2 off and 765312B – 2 off
Wear Plate	Part number	765310A – 2 off and 765310B – 2 off

If required, the tool can be returned to the manufacturer at any time for servicing and testing. If servicing is undertaken by the user, see note on proof testing under SAFETY (Section 6).

### 6. SAFETY

Whilst the tool is intended for remote operation sub-sea, there is no reason why it should not be used above surface and be powered by a suitable hand pump.

- 6.1** In all cases, where an operator is present, the safety aspects must be reviewed before cutting operation is commenced.
- 6.2**
- i.* Ensure that the tool, hoses and pump are in good condition and properly connected.
  - ii.* No attempt should be made to cut wire ropes, or other material, that is under tension.
  - iii.* Ensure that the operator is shielded from the cutting blade during the cutting operation. When cutting the very end of a rope, individual cut wires can be expelled from the tool, so ensure that the operator is shielded from these.
- 6.3** If at any time it is necessary to carry out proof tests on the tool, e.g. after service on the hydraulic cylinders, the following applies.
- i.* The proof test pressure is 770 bar for main cylinder cutting stroke and 240 bar for main cylinder return stroke and auxiliary cylinders.
  - ii.* The tool should be guarded during the proof test operation.
  - iii.* The proof pressure should be applied gradually, by means of a hand-pump, until the maximum pressure is reached.

## 7. REPLACEMENT OF ANVIL

Extend the auxiliary cylinders so that the lever arm 765309 exits the guide bush 715365. Loosen the 8 off M6 screws holding pivot pin housings 749045A & B. Also loosen the M6 retaining screw 035073. Withdraw the pivot pin 761267 far enough to release the lever arm. (There is an M6 tapped hole in the end of the pivot pin to assist in this.) The lever arm can be moved upwards to separate it, and the anvil pin 761247, from the anvil SSC6500. The anvil may now be slid out from the guide bush. Re-assembly is the reverse of the above process.

## 8. REPLACEMENT OF CUTTING BLADE

First withdraw the anvil as described in 7 above. Pump out the main ram until the blade retaining pins 030636 can be seen in the opening of the cutter body. The three pins are 1/4" (6.35mm) diameter and they should be knocked out enough to release the blade.

## 9. REMOVAL OF MAIN CYLINDER

If it is necessary to renew the hydraulic seals, the cylinder must be removed from the tool. As an aid to this, 2 off tapped holes are machined in the cylinder end face. These are M8 x 10 deep on 136mm centres. To use these holes first remove the blanking screws, and fasten a piece of 30 x 10 or similar flat bar (x 900 long) centrally to the top of the cylinder, this can be used to loosen or re-tighten the cylinder.

RCV 190 Parts List - Refer To Fig. 2.

<u>PART No.</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>
728 090	Cylinder	1
764 138	Ram	1
SSC 6500	Anvil	1
715 365	Anvil guide bush	1
715 355	Anvil bush	1
715 345	Bush, lever, pivot pin	2
761 247	Pin, sliding anvil	1
749 045A	Pivot pin housing, left hand	1
749 045B	Pivot pin housing, right hand	1
761 267	Pin, pivot, lever	1
079 044	Mounting stud, auxiliary cylinder	2
765 309	Lever	1
761 268	Cylinder rod pin, auxiliary cylinder	2
080 971	Washer, special M6	4
765 310A	Wear Plate A – 20mm thick	2
765 310B	Wear Plate B – 20mm thick	2
765 312A	Wear plate A – 8mm thick (supplied loose)	2
765 312B	Wear plate B – 8mm thick (supplied loose)	2
705 064	Blade	1
025 917	Seal, piston head	1*
025 918	Seal, rod	1*
025 670	Seal, O ring cylinder/body	1*
025 919	Wiper, rod	1*
035 111	Screw, socket cap, M6 x 35 Stainless Steel	4
035 079	Screw, socket cap, M6 x 25 Stainless Steel	16
035 066	Screw, socket cap M6 x 20 Stainless Steel	8
035 113	Screw, socket button head, M6 x 16 Stainless Steel	5
035 073	Screw, socket set, M6 x 10 Stainless Steel	1
035 114	Screw, socket set, M8 x 10, cylinder blanking S St	2
035 130	Screw, c'sunk head M6 x 20 Stainless Steel	20
33-99-1163	Screw, taper pressure plug, 3/8"NPTF	1
030 636	Blade retaining pin Ø1/4" x 2" long stainless steel	3
766 047	Plug, blanking, 1/4" BSP, red polythane	4
766 061	Plug, blanking 3/8" BSP, red polythane	2
982 144	Body	1
982 145	Auxiliary cylinder	2

*N.B Parts marked thus \* are in seal kits.*

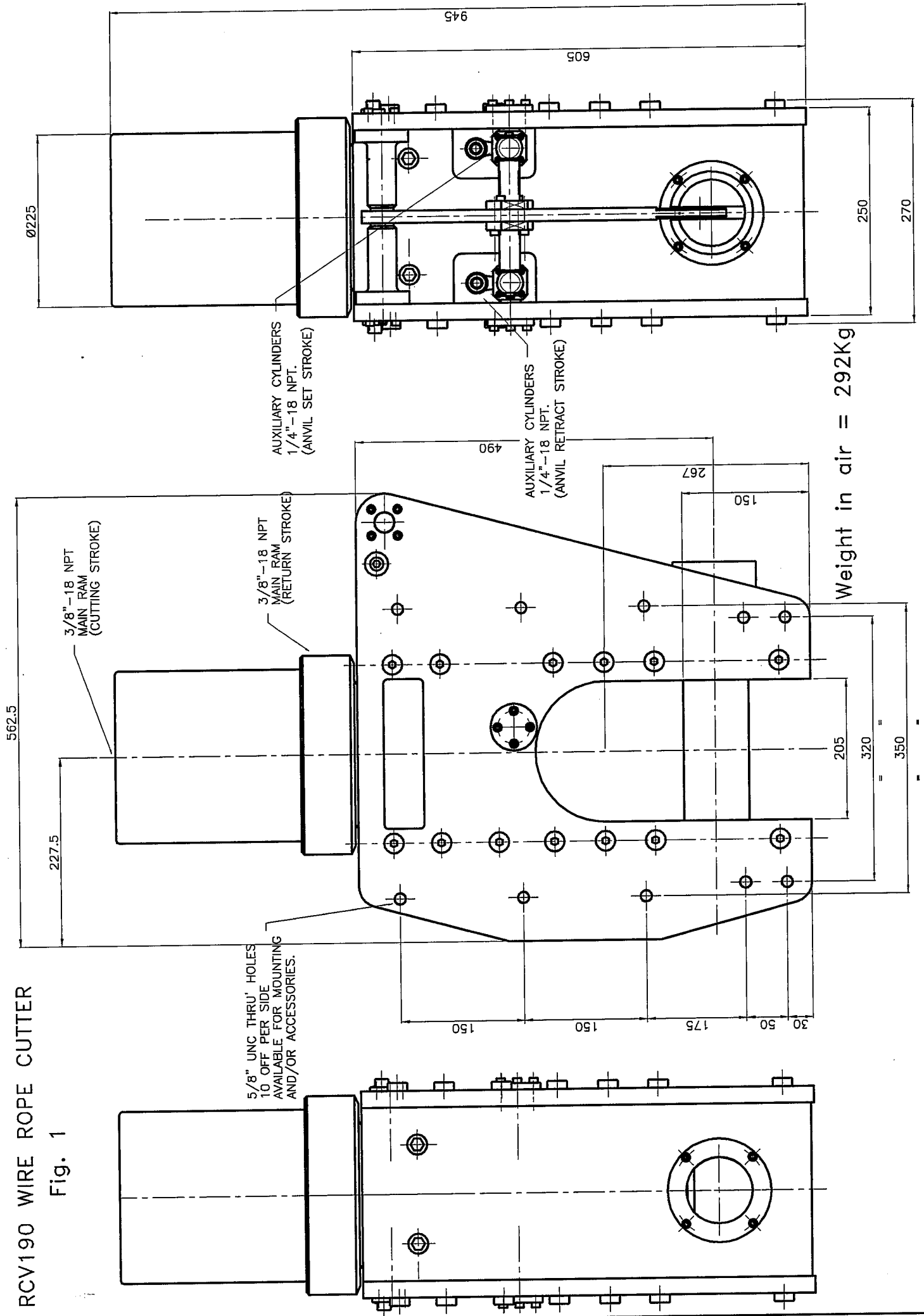
RCV190 - Auxiliary Cylinder Parts List - Refer to Fig. 3.

<u>PART No.</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>
709 087	Piston block	1
728 078	Lever cylinder	1
SSC 6476	End cap	1
764 116	Piston	1
026 701	Pellet, aluminium, 3 Ø	1
025 311	Seal, 'O' ring, end cap	1*
025 569	Scraper, rod	1*
025 801	Seal, piston	1*
025 802	Seal, rod	1*
035 062	Screw, socket set, M4 x 6, piston block	1
035 063	Screw, sock cap, M4 x 30, end caps	4
701 195	Adaptor, 90°, 1/4" NPT male / 1/4" NPT female	1

*N.B Parts marked thus \* are in seal kits.*

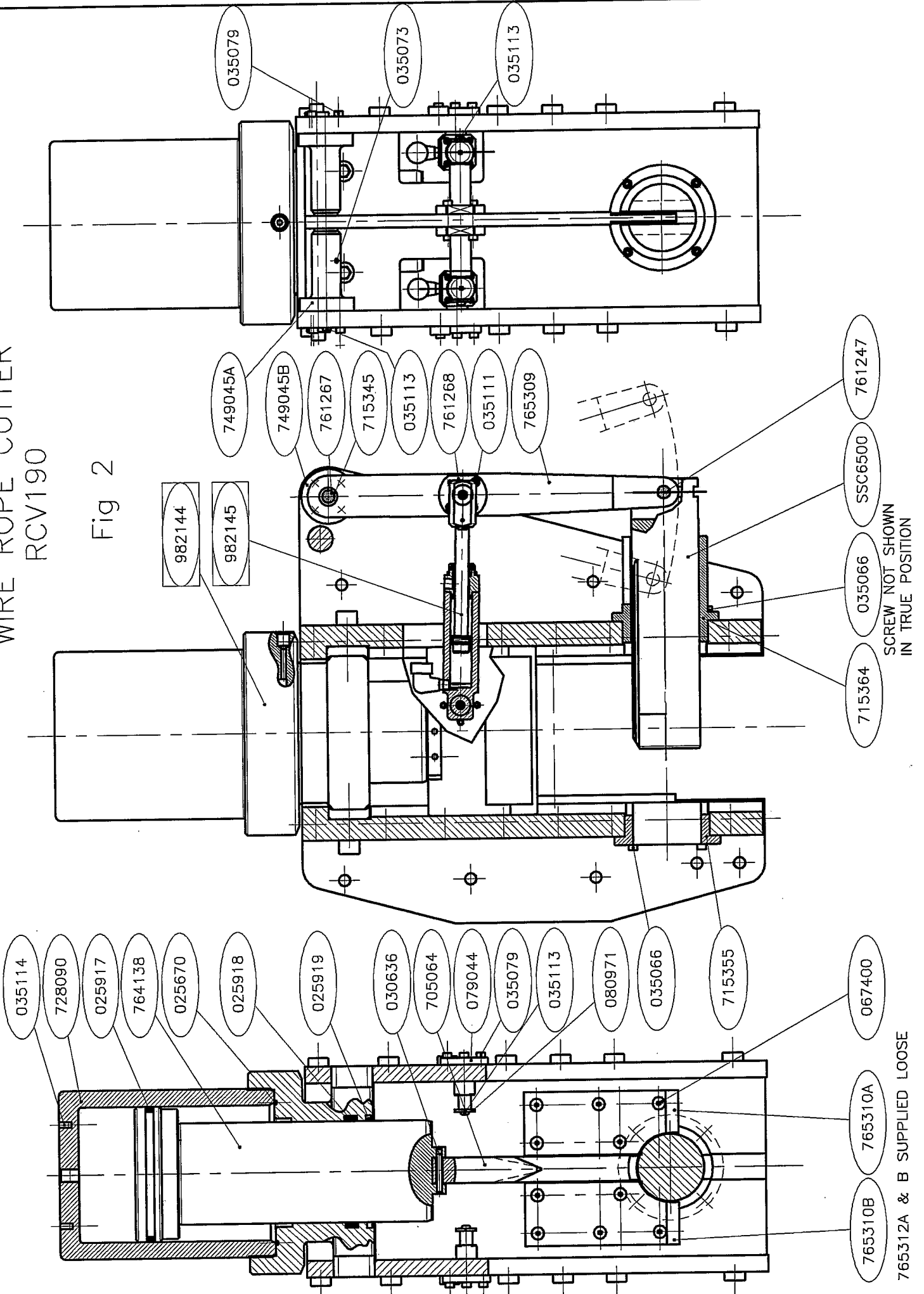
# RCV190 WIRE ROPE CUTTER

Fig. 1



# WIRE ROPE CUTTER RCV190

Fig 2



- 035114
- 728090
- 025917
- 764138
- 025670
- 025918
- 025919
- 030636
- 705064
- 079044
- 035079
- 035113
- 080971
- 035066
- 715355
- 067400
- 765310B
- 765310A

765312A & B SUPPLIED LOOSE

- 982144
- 982145

- 749045A
- 749045B
- 761267
- 715345
- 035113
- 761268
- 035111
- 765309

- 715364
- 035066
- SSC6500
- 761247

SCREW NOT SHOWN  
IN TRUE POSITION

- 035079
- 035073
- 035113

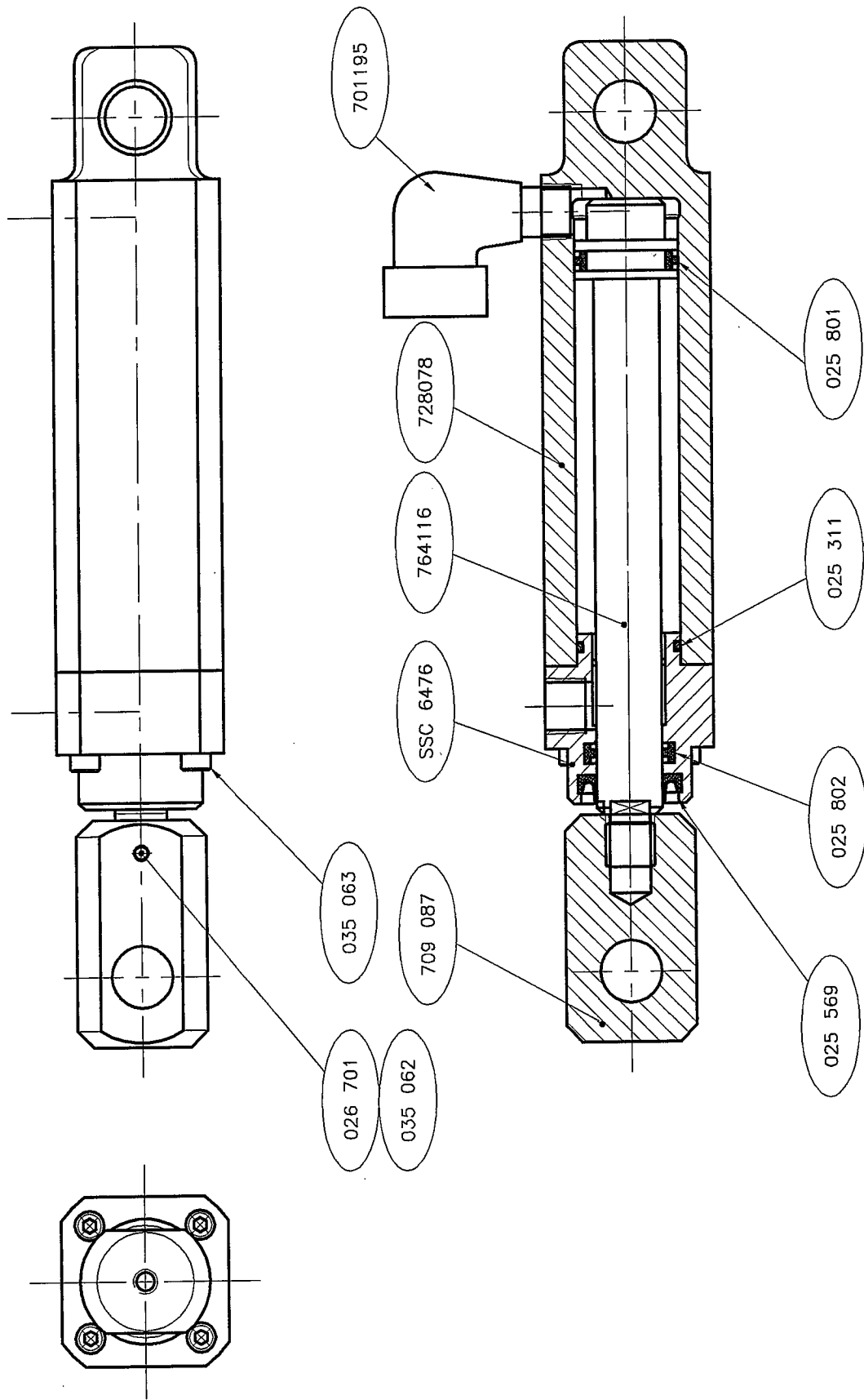


FIG. 3 : AUXILIARY CYLINDER 982145