WIRE ROPE CUTTER

TYPE RCV115

P/N 980290

INSTRUCTIONS, OPERATION & MAINTENANCE MANUAL

Issue Date 05 April 2005

WIRE ROPE CUTTER – TYPE RCV115

Installation:

Eight tapped holes are provided in the tool body, as shown in Fig 1, which can be used for any attachment necessary to mount the cutter.

Two hydraulic supplies are required, ported as shown in Fig 2. The maximum working pressures are shown in Table 1 below and pressure limiting valves should be incorporated into the supply sources to limit the pressures to the stated levels.

Table 1:

Function	Maximum Working Pressure		Swept Volume	Port Tapping
	PSI	BAR	ML	NPT
Main Ram Closing Stroke	10000	690	2125	3/8”
Main Ram Return Stroke	10000*	690*	810	3/8”
Auxiliary Cylinder Out Stroke (To Retract The Anvil)	2750	190	100	1/4”
Auxiliary Cylinder In Stroke (To Reset The Anvil	2750	190	60	1/4”

***NB. Actual pressure required to return the main ram < 200 PSI**

Cutting Capacity:

The cutter is primarily intended for use on wire rope having an ultimate tensile strength of 1770 N/mm^2 (180 Grade) and will cut wire ropes upto a maximum 115mm (4-1/2”) diameter.

Attempts to cut wire rope of greater tensile strength may damage the blade or reduce its operating life.

It may also be used on alternative materials, such as electrical power cables, electical communications cables, hydraulic umbilicals or a combination of these, again upto a maximum 115mm (4-1/2”) diameter.

Where diamaters smaller than 115mm (4-1/2”) are to be cut, every effort should be made to place the material to be cut centrally along the anvil to minimise offset loadings.

If the cutter is required to cut solid bar members of steel or steel tubing, please refer to the manufacturer first with full details of size, material and tensile strength, failure to do so may result in damage to the blade and anvil.

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Operation:

Prior to use the auxiliary cylinder out stroke should be operated to withdraw the anvil, this clears access for the cutter to be placed over the wire rope.

Place the cutter over the wire rope. Ensure the wire rope is as far into the cutter as possible so that the anvil does not foul as it is reset.

Operate the auxiliary cylinder 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.

Operate the main ram down stroke to sever the wire rope, when the cut is complete; retract the main ram until it is fully home.

If further cuts are required, the above procedure should be repeated.

NB. Do not operate the auxiliary cylinders when the main ram is fully extended since this would damage the anvil.

After Use Care:

When the cutter is retrieved, it should be hosed off with clean fresh water, allowed to drain and sprayed externally with a de-watering fluid.

Before storage, inspect the general condition of the cutter paying particular attention to the anvil and blade. The anvil should be clean and free from any damage or bruising on the outside diameter, which would prevent it from retracting properly, the blade edge should be smooth and free from any serrations, a slight ripple to the blade edge is acceptable and will not cause any problems. Any minor damage can be smoothed off with an oilstone if necessary.

General Maintanence & Service:

Since the cutters are manufactured with care from high quality materials, little maintenance is necessary, other than to keep the tool clean and free from debris.
It is unlikely that any service would be required on the hydraulic components of the cutter under normal circumstances but a seal kit is available if required. The only other parts that would require intermittent replacement, depending on the frequency of use and materials being cut, would be the anvil and blade.
All spares can be ordered using the following part numbers.

Anvil P/N SSC6475 Blade P/N 705036 Seal Kit P/N 995290

If required, the cutter can be returned to the manufacturer/supplier at any time for servicing and testing. If the user undertakes servicing, please refer to the paragraph on Proof Testing under the section **Safety** below.

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Safety General:

Whilst the cutter is intended for remote operation subsea, there is no reason why it should not be used on surface and be operated using a suitable hand pump.

In all cases where an operator is present, the safety aspects must be reviewed before any cutting operations commence.

Ensure that the cutter, hoses and pressure source are in good condition, all rated to the maximum working pressure of the cutter and all connected correctly.

No attempt should be made to cut wire ropes or other material, which is under tension.

Ensure the operator is shielded from the cutting blade during the cutting operation. When cutting near the very end of the wire rope, individual strands of cut wire may be expelled from the cutter at force, so ensure the operator is shielded from these also.

Safety Proof Testing:

If at any time it is necessary to carry out proof tests on the cutter, e.g. after service on the hydraulic cylinder the following applies.

The maximum proof test pressure is 770 BAR (11165 PSI) for the main cylinder cutting stroke and 240 BAR (3480 PSI) for the main cylinder return stroke and the auxiliary cylinders.

The cutter must be guarded during the proof testing operation.

The proof pressure must be applied gradually, by means of a hand pump, until the maximum pressure is reached.

Anvil & Blade Renewal: (Numbers in brackets refer to Table 2 and Figure 2)

To change the anvil or blade the following procedure should be adopted.

Disconnect the anvil (SSC6475) from the anvil bracket (765172) by removing the spring pin (030820). The anvil should be passed through the body and removed.

To remove the blade (705036), pump out the main ram (764098) until the two 1/4” diameter blade-retaining pins (030636) can be seen. Remove the pins using a pin punch and slide the blade out of the cutter.

To replace the anvil or blade, reverse the above operations.

NB. The blade may be removed without removing the anvil, operate the auxiliary cylinders out-stroke to full limit, thus allowing the blade to slide out of the cutter.

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Table 2: RCV115 Parts List – Refer to Fig 2

Part No.	DESCRIPTION	QTY
709047	Sliding Block	2
715328	Anvil Guide Bush	1
715329	Anvil Bush	1
728060	Cylinder Barrel	1
761227	Pivot Pin, Auxiliary Cylinder	2
761228	Pivot Pin, Lever Frame	1
764098	Main Ram	1
765171	Blade Guide Plate	2
765172	Anvil Bracket	1
774301	Ram Bearing Ring	1
SSC6475	Anvil	1
035082	Sliding Block Screw	2
079041	Mounting Stud	2
080956	Washer, Sliding Block	2
080971	Washer, Auxiliary Cylinder	2
32-99-1325	Rod Seal	1*
32-16-1110	Rod Wiper	1*
32-60-5723	O-Ring	1*
32-61-5723	A.E. Ring	1*
32-60-5725	Piston Seal	1*
030636	Spring Pin, Blade	2
030820	Spring Pin, Anvil	1
035079	Screw, Anvil Bush	10
035081	Screw, Main Cylinder	2
035080	Screw, Guide Plate Support	8
035084	Screw, Lever Frame Pivot Pin	2
035085	Screw, Guide Plate Fixing	16
035086	Screw, Lower Guide Plate Fixing	4
705036	Blade	1
752342	Nameplate	1
752560	Label	1
1 240 010	Bush	2
766047	Blanking Plug	4
766061	Blanking Plug	2
982115	Body	1
982116	Auxiliary Cylinder	2
993012	Lever Frame	1

NB. Parts marked * are contained in the seal kit P/N 995290.

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Table 3: RCV115 Auxiliary Cylinder Parts List – Refer to Fig 3

Part No.	DESCRIPTION	QTY
728061	Cylinder Barrel	1
764099	Piston	1
SSC6476	End cap	1
742014	Piston Fork	1
025311	O-Ring	1*
025569	Rod Scraper	1*
025801	Piston Seal	1*
025802	Rod Seal	1*
035074	Screw, Piston Fork	1
035063	Screw, End Cap Fixing	4

NB. Parts marked * are contained in the seal kit P/N 995290.

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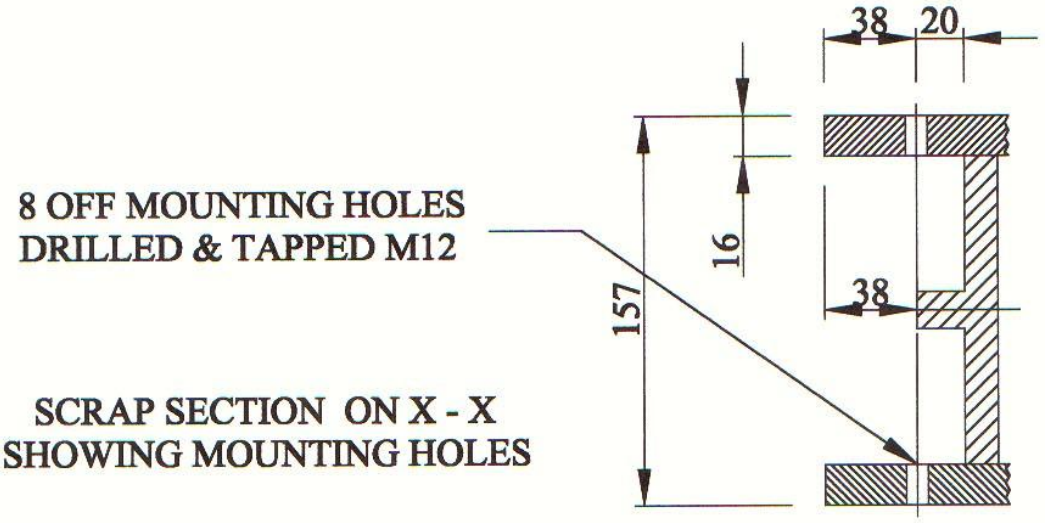
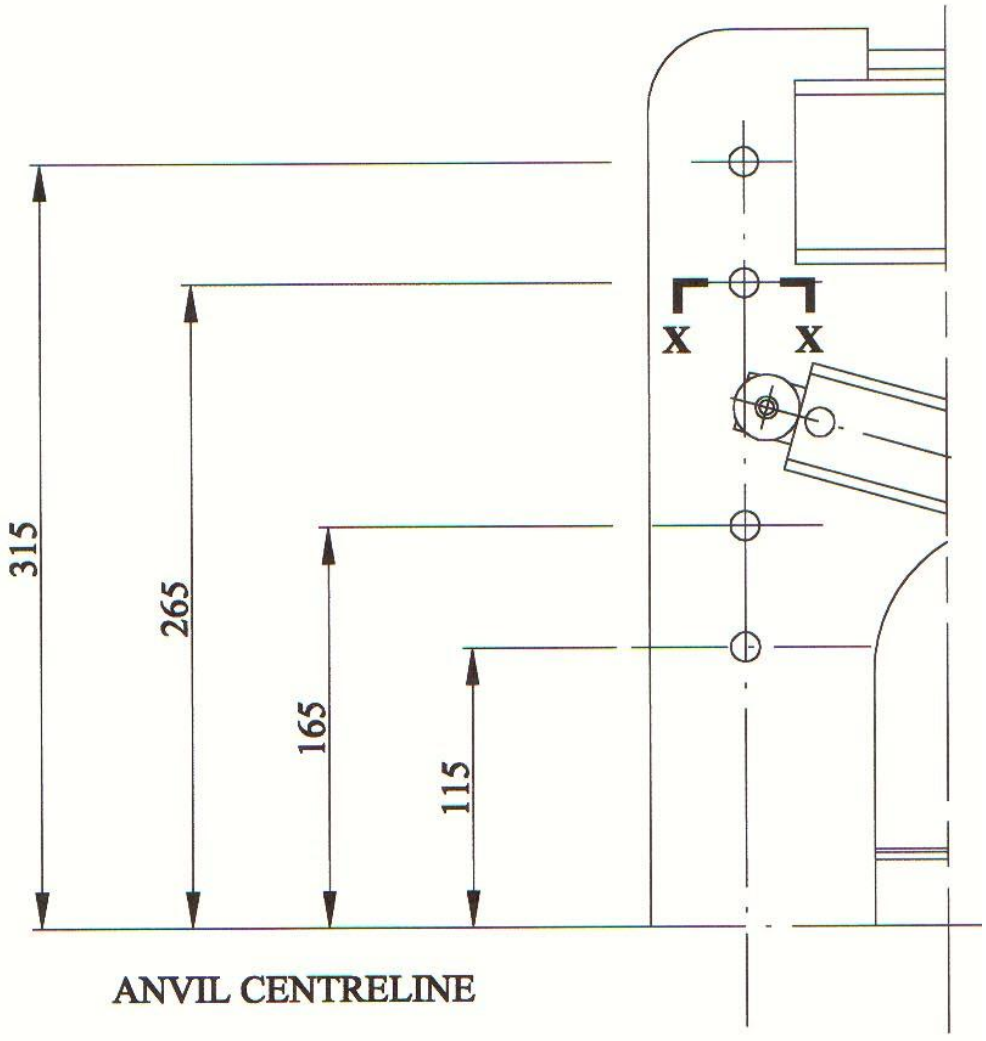
FIG. 1





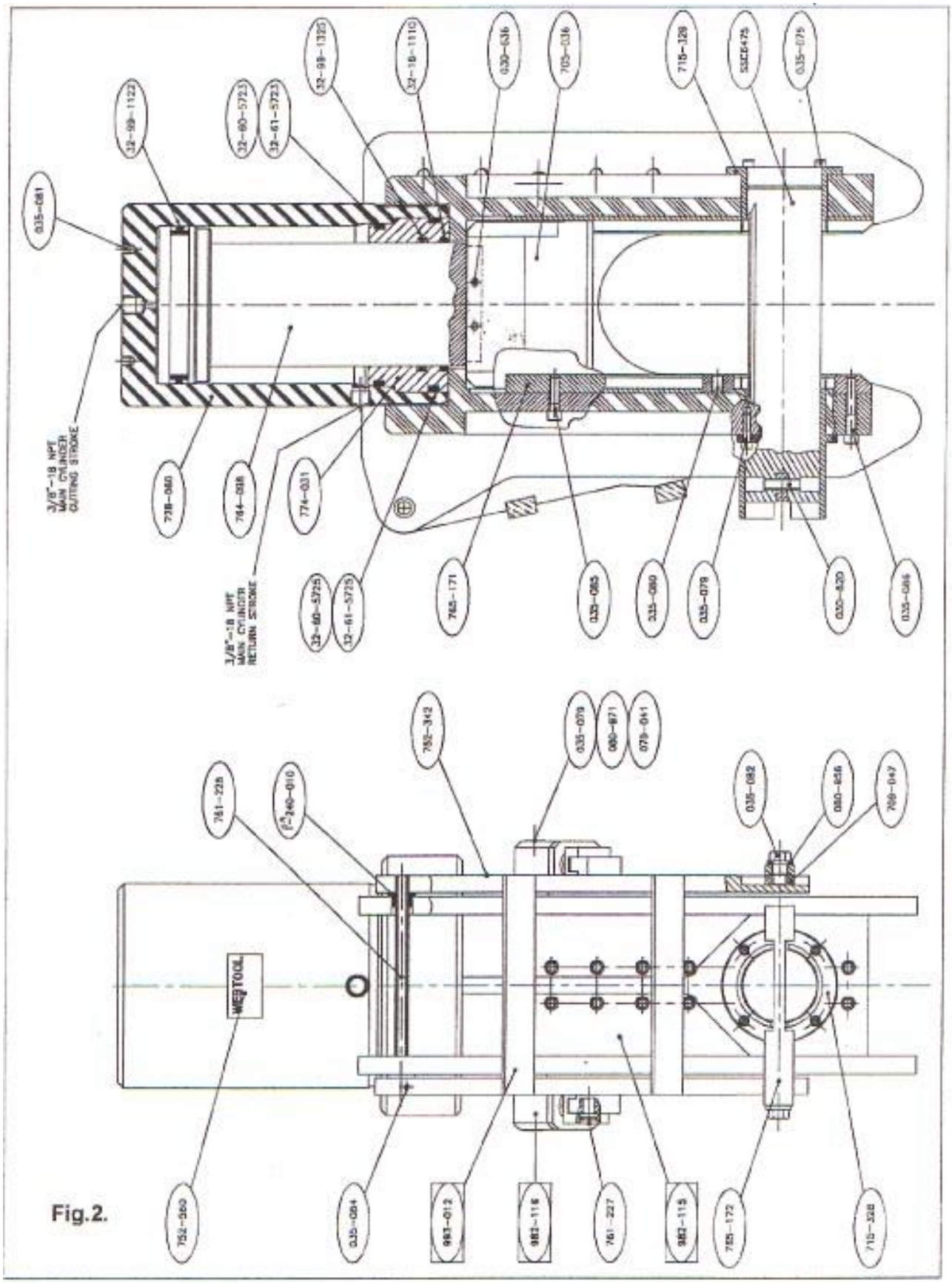

3/8"-18 NPT
MAIN CYLINDER
CUTTING STROKE
3/8"-18 NPT
MAIN CYLINDER
RETURN STROKE
WEBTOOL

Fig.2.

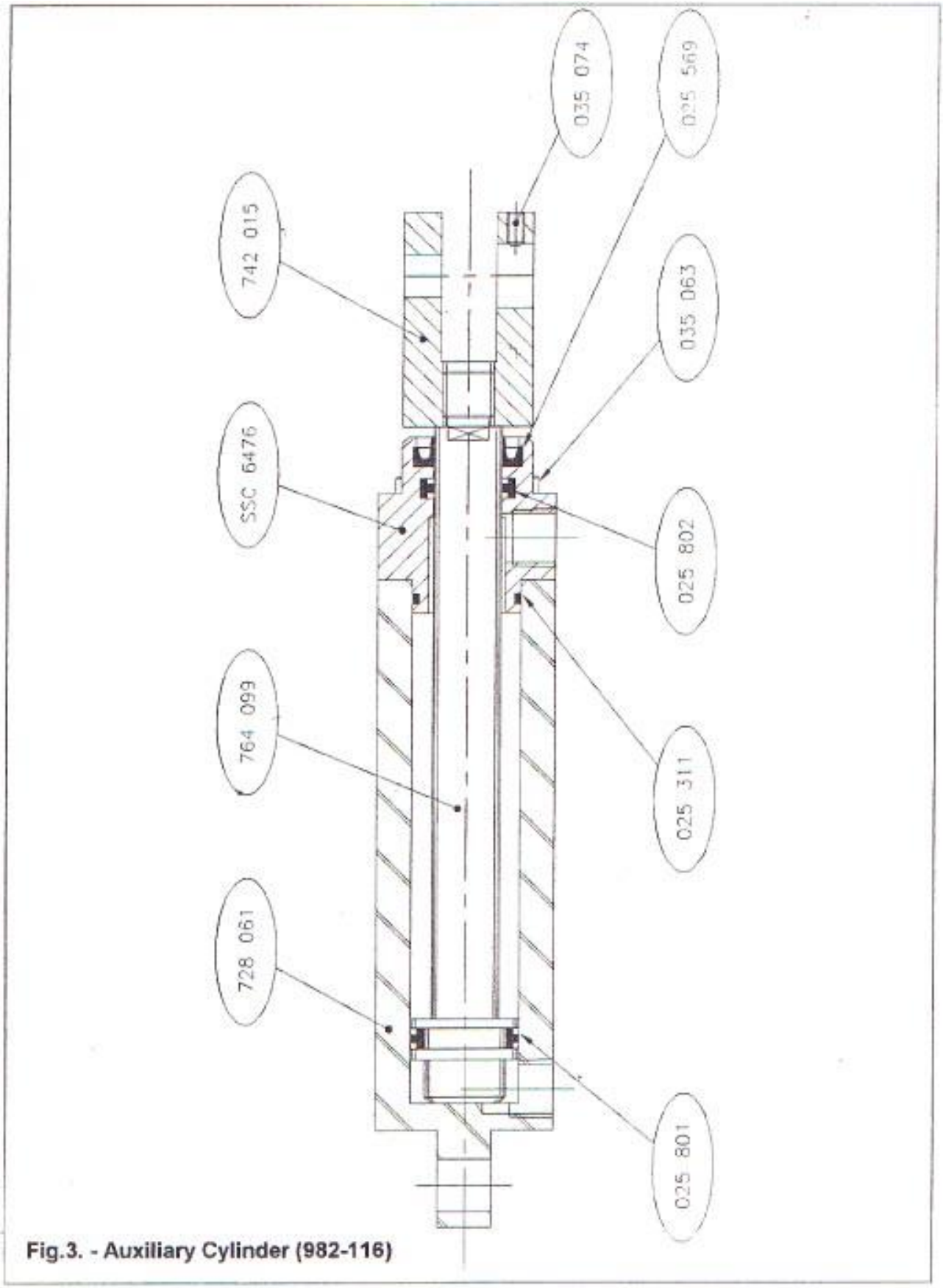
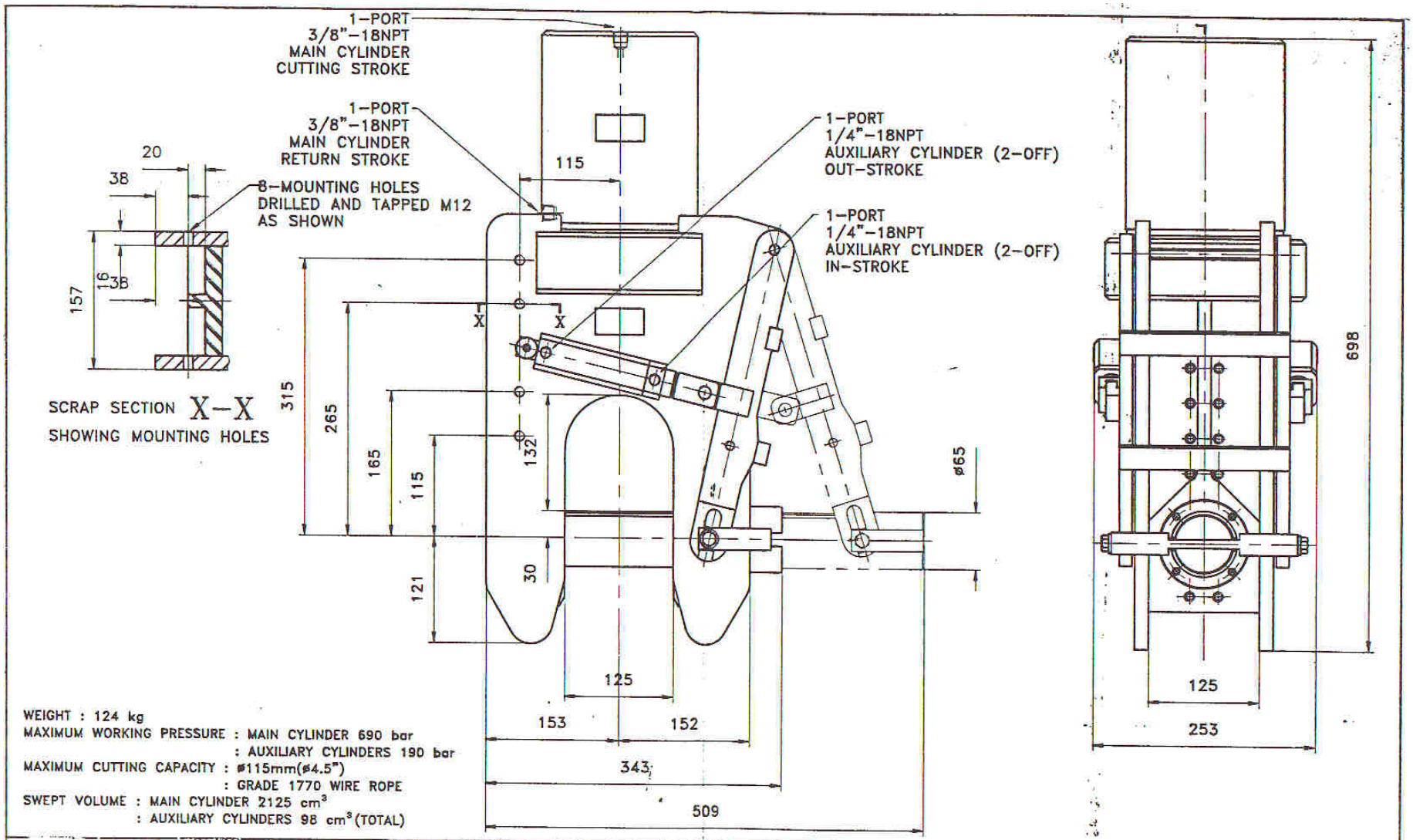


Fig.3. - Auxiliary Cylinder (982-116)



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MATL.	--
GRADE	--
SPEC.	--
H/T.	--

EXCEPT WHEN STATED
DIMS ARE mm
TOLS ARE ±1mm

TITLE	RCVII5 WIRE ROPE CUTTER GENERAL ASSEMBLY
DRAWN	P.FENTON
APPROVED	R.P. SLEIGH
DATE	6-7-94
SCALE	NTS
SHEET	1 OF 1
DRG.No.	RCV 6478