

# **PIONEER**

## **OIL TOOLS LIMITED**

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### *TYPE 'CCH'*

### *HYDRAULIC*

### *CASING CUTTER*



## TYPE CCH CASING CUTTER

### INTRODUCTION

#### HYDRAULIC CASING CUTTER

The Pioneer CCH Range of Casing Cutters is designed to be tough, reliable and easy to operate whilst giving the operator maximum control over the operation.

The CCH Cutter is hydraulically actuated through an arrangement consisting of Piston and Flotel Assemblies. A drop in pressure created when the cutting knives have reached a pre-set diameter advises the operator that the casing has been cut through.

Various Knife lengths are available depending on the diameter of casing to be cut. Hydraulic pressure is used to activate the three Tungsten Carbide Alloy coated Knives. Single and Multiple strings of casing may be cut.

The Pioneer Hydraulic Casing Cutter may be used below the **Pioneer Single Trip Retrieval System**, details of this system are available in publication STR.

**When time is of the essence, Pioneer delivers**

# TYPE CCH CASING CUTTER



## OPERATION

In order to achieve maximum stability, a suitable Non-rotating Stabilizer/Centralizer should be fitted below the Casing Cutter. The Cutter is attached to the drill string. The Knives should be held in the closed position with wire located and secured in its purpose machined groove in the Body. (This wire breaks on Knife activation). The Cutter is lowered to the required depth, and rotation started. Once rotating, pump pressure is started. The pump pressure acts on the Flotel/Piston pivoting the Knives about the Knife Pins, and into the casing. When the Knives have reached the previously set diameter, the Piston separates from the Flotel (by Flotel movement restriction) causing a sudden pressure drop indicated on the pump pressure gauge, thereby alerting the operator.

## KNIFE SETTING

With Knives selected and assembled, fit Piston Assembly then Flotel Assembly, push down until Knives are extended out to the required diameter. The Flotel Spider (item 33) is then rotated on the Flotel Stem so that it locates on the Shoulder in the Body whilst the Knives are still at the required diameter, the spider is then locked on to the stem with cap screws. (item 37)

**NOTE :** It may be more practicable to fit only one Knife for this operation.



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### MAINTENANCE

After use, the Pioneer CCH Casing Cutter must be thoroughly cleaned and washed to ensure the evacuation of all fragments of debris. The Cutter should be dismantled and examined in detail for signs of wear or damage. If satisfactory, moving parts should be greased and the cutter re-assembled, painted and stored.

### DISMANTLING

Grip Body (item 02) in vice and break out Top Sub (item 01)

Remove Flotel Assembly (item 30A)

Remove Piston Assembly (item 20)

To remove Knives (item 03), first extract Split Cotter Pin (item 05) from Knife Pin (item 04), then knock out Knife Pin to allow removal of Knife.

All Parts should be checked for damage and wear and repaired or replaced as required.

### ASSEMBLY

All moving parts must be greased prior to assembly.

Select 3 Knives appropriate for casing to be cut, set Knives into slots and insert Knife Pins, secure with Split Cotter Pins, check Knives for free movement into the slots. Set Knives as detailed in page 2.

Fit Piston Assembly

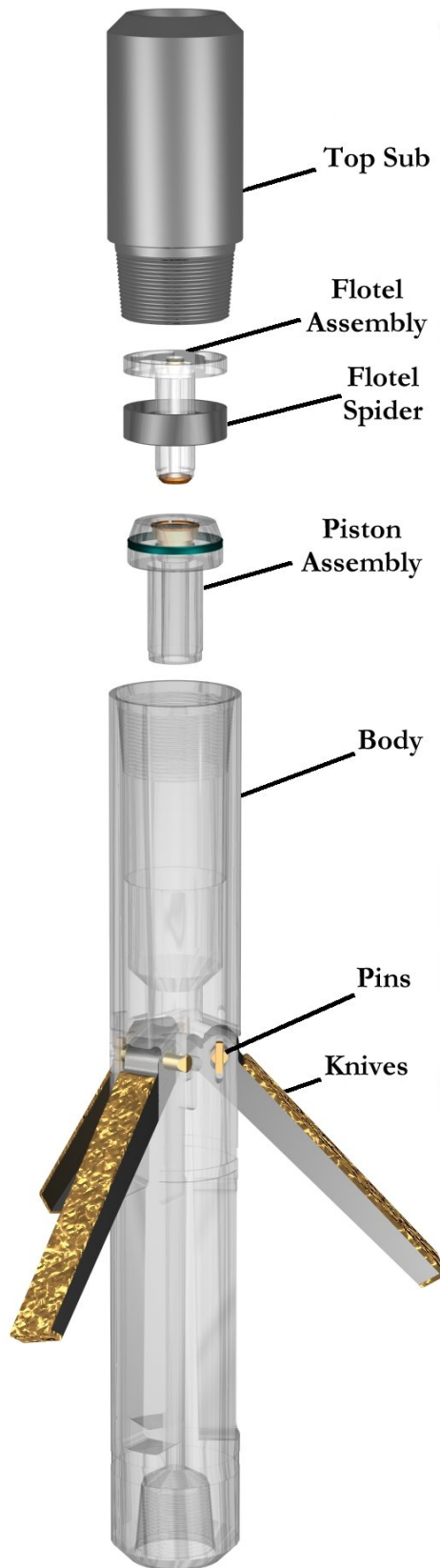
Fit Flotel Assembly

Fit Top Sub and Torque up, gripping Body above the Knives.

Hold Knives in "Closed" position by winding 1/16" Dia. soft iron tying wire around the Body in the groove provided.

**YOUR PIONEER CASING CUTTER IS NOW SET FOR DOWN-HOLE ACTION**

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**CCH Casing Cutter  
Exploded View**



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## PARTS LIST

Basic Details		
Component	Part No	Req. Qty
Top Sub	1	1
Body	2	1
Knife	3	3
Knife Pin	4	3
Split Cotter Pin	5	3
<b>Piston Assembly</b>	20	1
<b>Flotel Assembly</b>	30A	1

Piston assembly		Flotel assembly	
Piston	21	Flotel Stem	31C
Valve Seat Body	22B	Flotel Stem Insert	31B
Valve Seat Insert	22C	Flotel Spider	33
Piston Seal	23	Flotel Choke	34
Circlip	24	Circlip	35
'O' Ring	25	'O' Ring	36
		Skt Hd Cap Screws	37

### Ordering Procedure

Please specify :

- Hydraulic Casing Cutter O.D.
- Top & Bottom Connection
- O.D. and weight of casing, or, if making multiple cuts please advise all Knife lengths to be used.

Pioneer Oil Tools offer a comprehensive range of Fishing & Retrieval Tools, including Hydraulically Set Retrieval Spears to compliment this range of casing cutters, call our sales office to discuss your complete requirements.

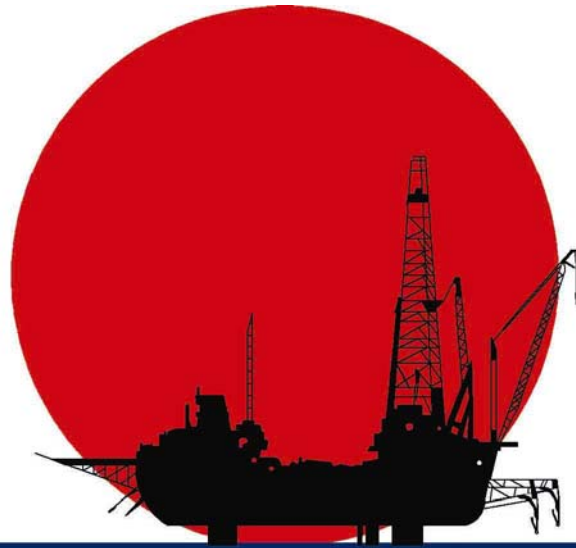
## Pioneer CCH series Hydraulic Casing Cutter — data table

Cutter Assembly	Cutter OD	Cutter Length	Tubing Casing	Knife Part No	Knife Length	Knife Sweep 45°	Knife Sweep Max	Rotary Speed RPM	Orifice pressure differential	Flow Rate GPM
CCH0213	2 1/8"	28.3"	3 1/2"	CCH0213-03	1.31"	3.51"	4.29"	230	547 psi	37.8
			4 1/2"	CCH0213-03A	2.00"	4.41"	5.67"	180	836 psi	46.8
CCH0263	2 5/8"	28.3"	3 1/2"	CCH0263-03	1.50"	4.45"	5.13"	230	510 psi	36.5
			4 1/2"	CCH0263-03A	1.82"	5.01"	5.75"	180	620 psi	40.3
CCH0313	3 1/8"	30.0"	4 1/2"	CCH0313-03	1.58"	4.70"	5.66"	180	457 psi	43.7
			5"	CCH0313-03C	1.79"	5.14"	6.06"	160	517 psi	46.5
			5 1/2"	CCH0313-03A	1.81"	5.07"	6.12"	150	607 psi	50.3
CCH0363	3 5/8"	32.0"	4 1/2"	CCH0363-03	1.58"	5.02"	5.97"	150	361 psi	38.8
			5"	CCH0363-03C	1.79"	5.46"	6.38"	140	409 psi	41.3
			5 1/2"	CCH0363-03A	2.10"	5.95"	7.04"	130	480 psi	44.8
			7"	CCH0363-03B	5.65"	6.66"	8.11"	100	606 psi	50.3
CCH0450	4 1/2"	39.0"	5 1/2"	CCH0450-03-1	1.64"	5.60"	6.35"	150	188 psi	28.0
			6 5/8"	CCH0450-03-2	2.39"	6.66"	7.80"	120	276 psi	33.9
CCH0575	5 3/4"	47.3"	7"	CCH0575-03-4	2.67"	7.73"	9.22"	100	216 psi	30.0
			7 5/8"	CCH0575-03-1	2.93"	8.08"	9.70"	100	237 psi	31.5
			8 5/8"	CCH0575-03-5	3.68"	9.14"	11.15"	100	297 psi	35.2
			9 5/8"	CCH0575-03-3	4.18"	9.85"	12.11"	80	338 psi	37.6
			10 3/4"	CCH0575-03-2	6.18"	12.68"	15.98"	80	500 psi	45.7
			11 3/4"	CCH0575-03-2	6.18"	12.68"	15.98"	70	500 psi	45.7
CCH0825	8 1/4"	71.3"	9 5/8"	CCH0825-03-1	3.84"	11.82"	13.35"	80	74 psi	31.3
			13 3/8"	CCH0825-03-2	5.08"	13.50"	15.85"	60	98 psi	36.0
			20"	CCH0825-03-3	10.07"	20.34"	25.85"	40	195 psi	50.8
			30"	CCH0825-03-4	17.57"	30.47"	40.85"	30	339 psi	67.0
			36"	CCH0825-03-5	23.07"	37.99"	51.85"	25	464 psi	78.4
CCH0838	8 3/8"	71.4"	9 5/8"	CCH0838-03-1	3.84"	11.82"	13.35"	80	74 psi	31.3
			13 3/8"	CCH0838-02-2	5.08"	13.50"	15.85"	60	98 psi	36.0
			20"	CCH0838-03-3	10.07"	20.34"	25.85"	40	195 psi	50.8
			30"	CCH0838-03-4	17.57"	30.47"	40.85"	30	339 psi	67.0
			36"	CCH0838-03-5	23.07"	37.99"	51.85"	25	464 psi	78.4
CCH1188	11 7/8"	83.0	13 3/8"	CCH1188-03-5	5.11"	16.29"	17.97"	60	205 psi	52.1
			20"	CCH1188-03-4	10.00"	23.24"	26.95"	40	401 psi	72.9
			30"	CCH1188-03-3	17.50"	33.60"	40.41"	30	701 psi	96.4
			36"	CCH1188-03-2	23.00"	41.14"	50.23"	25	922 psi	110.5
			42"	CCH1188-03-1	30.25"	51.15"	63.232	20	1212 psi	126.7

Other cutter assemblies available on request. All pioneer CCH knives are dressed with a Tungsten Carbide matrix, unless requested otherwise. Insert equipped knives are available on request.

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