

PIONEER
OIL TOOLS LIMITED

Sir William Smith Road, Kirkton Industrial Estate,
Arbroath, Angus, Scotland, U.K. DD11 3RD
Tel: +44 (0) 1241 877776. Fax: +44 (0) 1241 871037
E-mail: sales@pioneeroiltools.com
Website: www.pioneeroiltools.com

TYPE STR
CASING SPEAR
For Single Trip Cutting and Recovery

TYPE STR CASING SPEAR



SINGLE TRIP CUTTING AND RETRIEVAL SYSTEM FOR CASING AND SUB-SEA WELLHEADS

With the ever increasing environmental legislation being issued by countries throughout the world, oil companies are having to consider the various implications of well abandonment and the need for correct recovery procedures to ensure that international laws are met by the most cost effective methods. Pioneer Oil Tools Ltd have in their product range a system which meets these requirements.

The PIONEER Single Trip Retrieval System, which basically comprises a rotatable spear, used together with a Pioneer CCH Hydraulic Casing Cutter, has been designed for use both offshore and onshore to effect the speedy removal of Multi-String Casings in one trip.

For Well Abandonment operations, the system can be adapted to cut and remove subsea wellheads, together with guide bases, in a single trip.

This manual deals specifically with the rotatable spear and details of the casing cutter are available in publication CCH.

Animation CD Available On Request.

“QUALITY+ DELIVERY IS OUR PRIORTY”



TYPE STR CASING SPEAR

FEATURES

- Can be dressed in three different configurations :-
 - a) With One Piece Grapple.
 - b) With Segmented Grapple Assembly.
 - c) With special Segment Assembly to latch into sub-sea wellhead landing profile.

- Tension on string while cutting facilitates easy cutting and removal operations.

- Robust construction with *Solid Bronze Thrust Bearings accommodate heavy tension, torsional, and jarring loads.

- Grapple remains stationary when cutting casing.

- Can be dressed to fit any sub-sea wellhead with positive “latching in” to landing profile, avoiding damage to sealing diameters.

- When necessary, can be readily backed off from fish.

* in special applications tapered roller bearings are fitted.

TYPE STR CASING SPEAR



OPERATION

A. FOR CASING REMOVAL

01. Ensure that grapple assembly is in the released position by engaging dogs at top of Grapple Assembly with slots in Lower face of Top Sub. Lower string until the stop ring locates the top of the fish.
02. Rotate string 90° to left and pull to tension the string and set grapple.
03. Commence cutting of casing.
04. When cutting is complete, pick up and pull string.
05. To back off from casing, lower string with slow right hand rotation to engage “J”, and bump down to release Grapple. Continue right hand rotation and pick up string.

B. FOR WELLHEAD REMOVAL

01. Ensure that grapple assembly is in the released position as above and lower string until the stop ring locates on the gasket face of the wellhead. The grapple segments will automatically “latch” into the landing feature of the wellhead.
02. Rotate string 90° to the left and pull to tension the string and set segments.
03. Commence cutting of casing.
04. When cutting is complete, pick up and pull string.
05. To back off from wellhead, lower string with slow right hand rotation to release segments. Continue right hand rotation while picking up string. If wellhead has cam type landing profile, simply release segments and pick up string.



TYPE STR CASING SPEAR

MAINTENANCE

The assembly should be dismantled and thoroughly cleaned after use.

DISMANTLING & REASSEMBLY PROCEDURE

01. Fit lifting protector to top connection and with assembly in a vertical position, clamp assembly at bottom end of mandrel.
02. Remove cotter clamps in Top Sub.
03. Break out Top Sub connection and remove from assembly.
04. Remove Top Thrust Bearing.
05. Fit (2) eyebolts in grapple assembly (STR 1200 only) and with sling, lift and remove from assembly.
NOTE : Eyebolt holes are plugged with set-screws to prevent ingress of debris and must be replaced.
06. Dismantle grapple assembly.
07. Transfer eyebolts (STR 1200 only) to Slip Mandrel and remove.
08. Remove Bottom Thrust Bearing.
09. Thoroughly clean all parts, with particular attention paid to the thrust bearings, ensure that faces are clean, smooth and lubricated.
10. Reassemble tool in reverse order to above.
11. Pump grease into lubricator until it is observed at both thrust bearings.

Tool Kit Supplied With Assembly

- 1 - Box Lifting Protector.
- 2 - Eyebolts. (STR 1200 only)

TYPE STR CASING SPEAR STR 0550



PARTS LIST

BASIC DETAILS

Complete Assembly No. STR 0550

	Part No.	Reqd. Qty.
Top Sub	STR 0551	1
Mandrel	STR 0552	1
Slip Mandrel	STR 0553	1
Radial Bearing	STR 0555	2
Bottom Thrust Bearing	STR 0556	1
Top Thrust Bearing	STR 0557	1
Cotter Lower Clamp	STR 0559	1
Cotter Upper Clamp	STR 0560	1
Lubricator	STR 0561	1
Cap Screw	STR 0562	1

Order Procedure:-

Please indicate following when ordering:-

1. Casing diameter and weight to be recovered.
2. Connections top and bottom.

Example:

Type STR 0550 Casing Spear.

Dressed with Parts to Catch 7" O/D

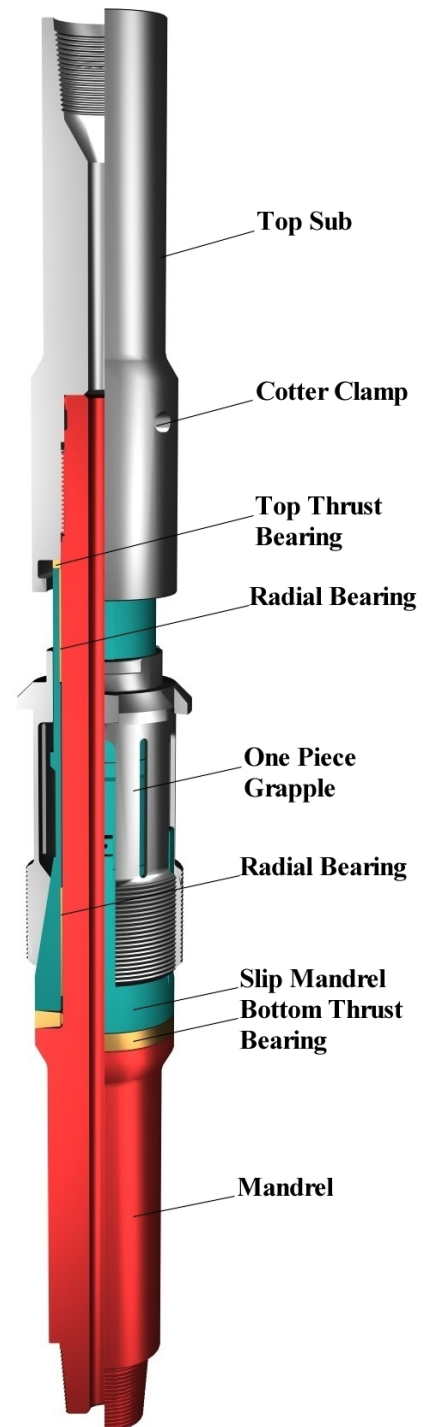
32ppf Casing, 3.1/2" Reg. box up, pin down.

Recommended Spare Parts:

- 2 - Radial Bearing.
- 1 - Bottom Thrust Bearing.
- 1 - Top Thrust Bearing.
- 1 - One Piece Grapple. (standard includes Stop Ring)

DRESSING CHART

Casing Range	6.5/8" – 8.5/8"	
DRESSING PARTS	Part No.	Reqd.
One Piece Grapple	STR 0554	1





TYPE STR CASING SPEAR STR 0800

PARTS LIST

BASIC DETAILS

Complete Assembly No. STR 0800

	Part No.	Reqd. Qty.
Top Sub	STR 0801	1
Mandrel	STR 0802	1
Slip Mandrel	STR 0803	1
Radial Bearing	STR 0805	2
Bottom Thrust Bearing	STR 0806	1
Top Thrust Bearing	STR 0807	1
Cotter Lower Clamp	STR 0809	1
Cotter Upper Clamp	STR 0810	1
Lubricator	STR 0811	1
Cap Screw	STR 0812	1

Order Procedure:-

Please indicate following when ordering:-

1. Casing diameter and weight to be recovered or size and type of wellhead.
2. Connections top and bottom.

Example:

Type STR 0800 Casing Spear.

Dressed with Parts to Catch 9.5/8" O/D

43.5-58.4ppf Casing, 4.1/2" IF box up, pin down.

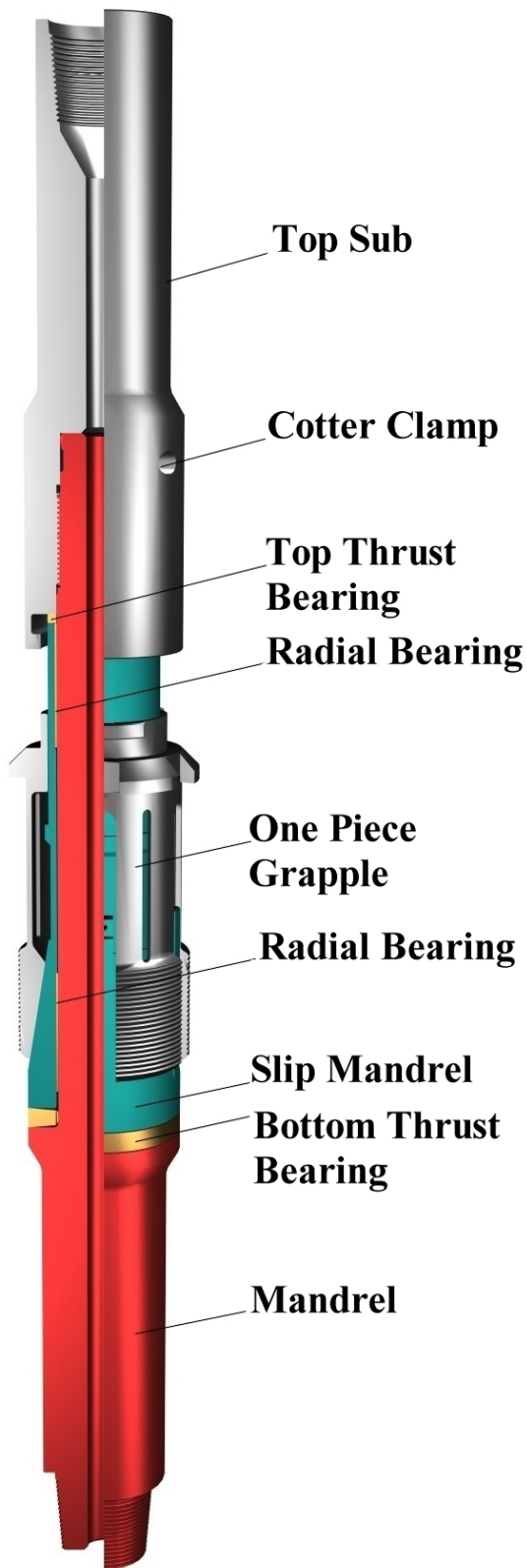
Recommended Spare Parts:

- 2 - Radial Bearing.
- 1 - Bottom Thrust Bearing.
- 1 - Top Thrust Bearing.
- 1 - a) One Piece Grapple or
- b) Set Grapple Segments.
- 1 - Stop Ring.
- 1 set - Segment Retaining Screws.

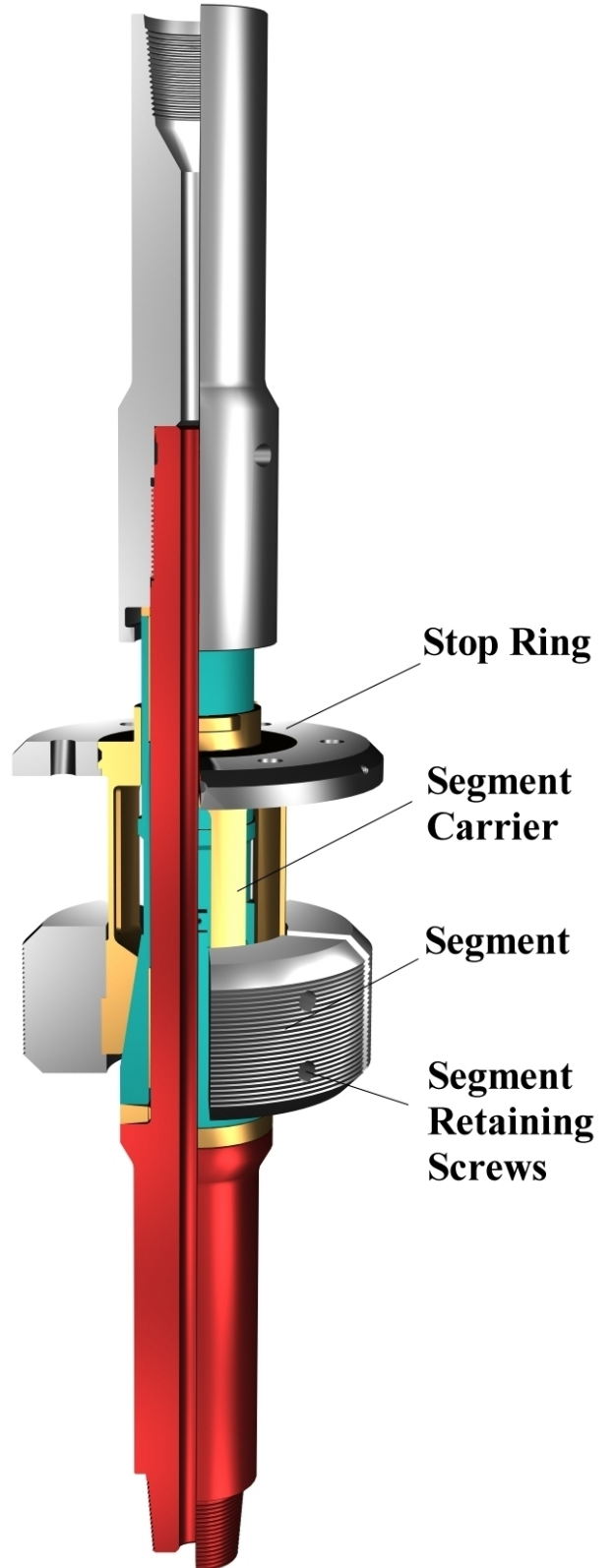
DRESSING CHART

Casing Range	9.5/8" - 11.3/4"		13.3/8" - 18.5/8"	
DRESSING	Part No.	Reqd.	Part No.	Reqd.
One Piece Grapple	STR 0804	1	-----	
Segment Carrier	-----		STR 0815	1
Segment	-----		STR 0818	5
Segment Retaining Screw	-----		STR 0826	10
Stop Ring	-----		STR 0821	1
Stop Ring Retaining Screw	-----		STR 0825	6

TYPE STR CASING SPEAR STR 0800

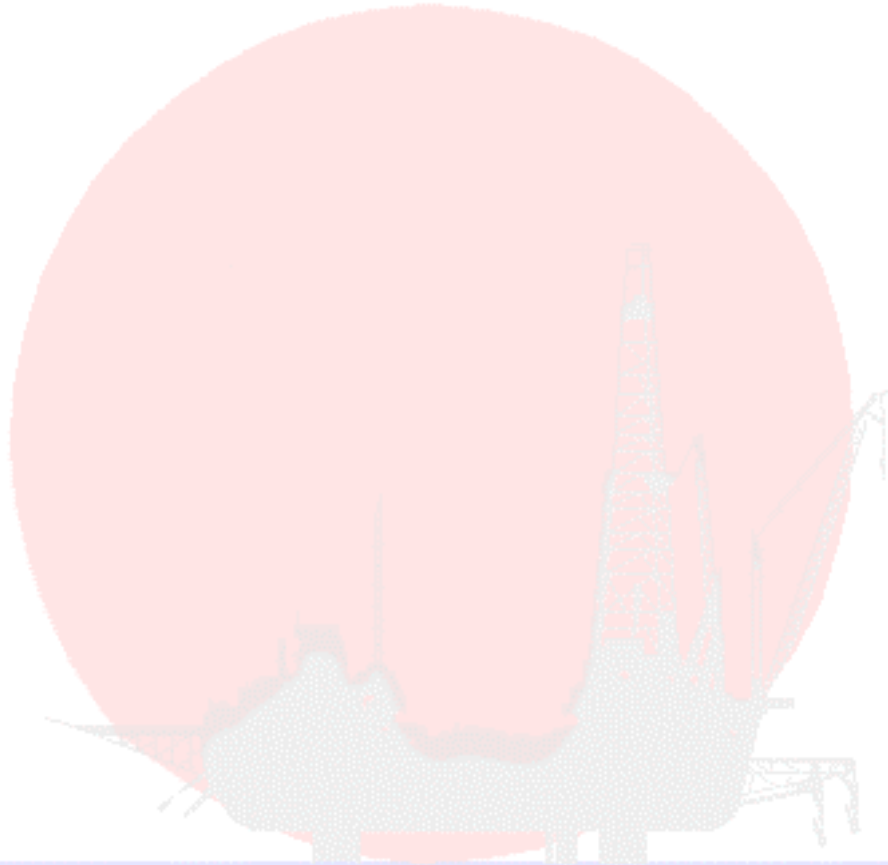


DRESSED FOR 9.5/8" – 11.3/4" CASING



DRESSED FOR 13.3/8" – 18.5/8" CASING

NOTES



PIONEER
OIL TOOLS LIMITED

TYPE STR CASING SPEAR STR 1200



PARTS LIST

BASIC DETAILS

Complete Assembly No. STR 1200

	Part No.	Reqd. Qty.
Top Sub	STR 1201	1
Mandrel	STR 1202	1
Slip Mandrel	STR 1203	1
Body	STR 1204	1
Radial Bearing	STR 1205	2
Bottom Thrust Bearing	STR 1206	1
Top Thrust Bearing	STR 1207	1
Key	STR 1208	1
Cotter Lower Clamp	STR 1209	1
Cotter Upper Clamp	STR 1210	1
Lubricator	STR 1211	2
Cap Screw	STR 1212	1
Key Retainer Screw	STR 1213	4

Order Procedure:-

Please indicate following when ordering:-

1. Casing diameter and weight to be recovered or size, type and manufacture of wellhead.
2. Connections top and bottom.

Example:

Type STR 1200 Casing Spear.
Dressed with Parts to Catch 18.5/8" O/D
87.5ppf Casing, 6.5/8" Reg. box up,
pin down.

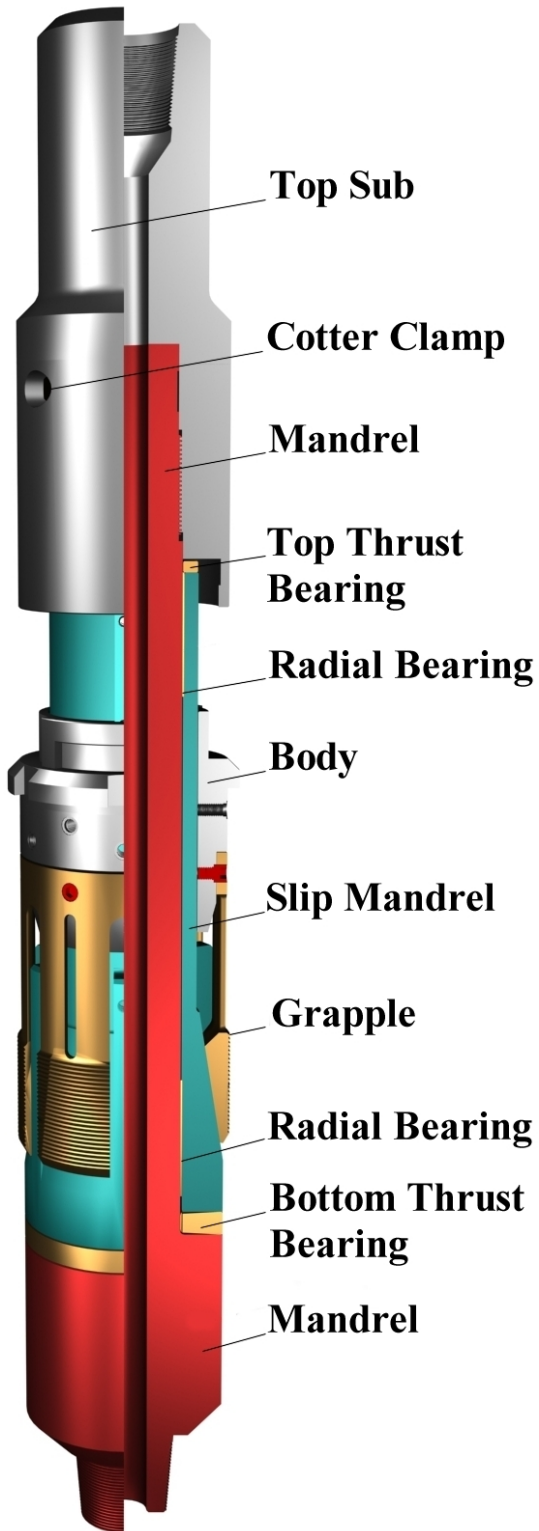
Recommended Spare Parts:

- 2 - Radial Bearing.
- 1 - Bottom Thrust Bearing.
- 1 - Top Thrust Bearing.
- 1 - a) One Piece Grapple or
- b) Set Grapple Segments.
- 1 - Stop Ring
- 1 set - Segment Carrier Retaining Screws.
- 1 set - Segment Retaining Screws.

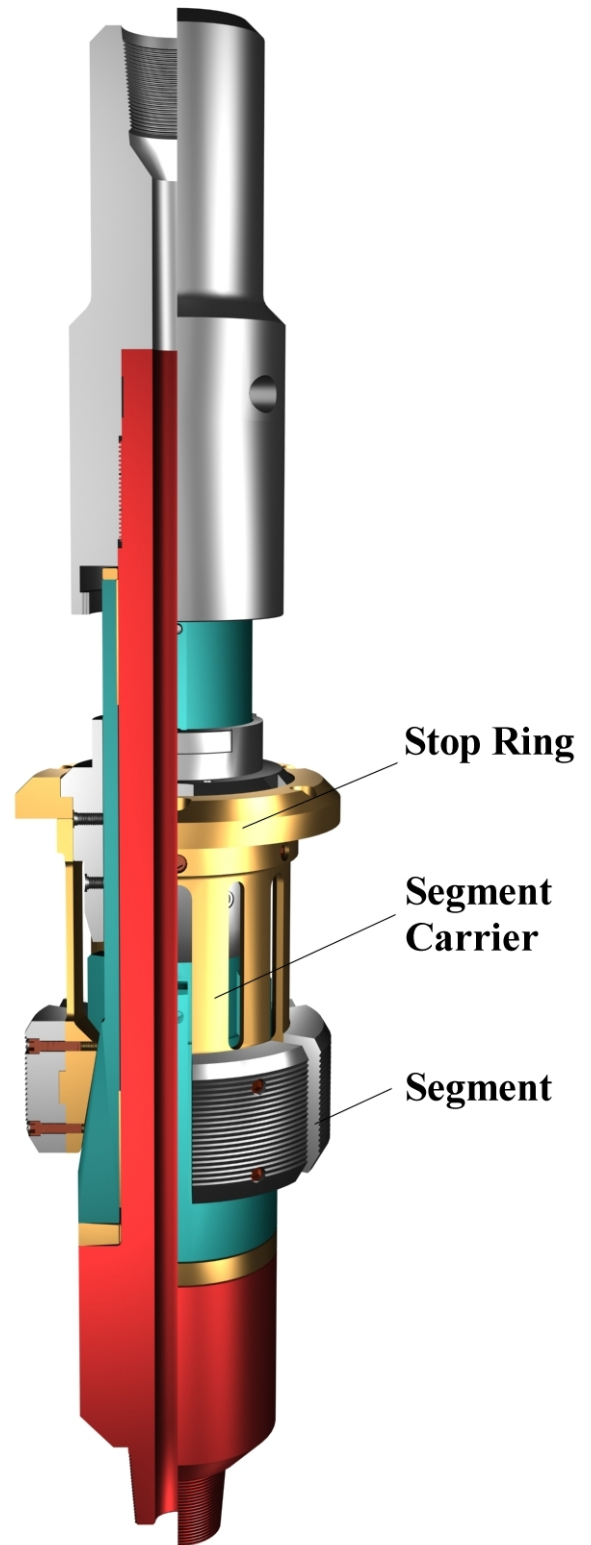
DRESSING CHART

Casing Range	13.3/8" - 13.5/8"		16" - 20"		21.1/2" - 30"		SUB-SEA WELLHEADS	
DRESSING PARTS	Part No.	Reqd.	Part No.	Reqd.	Part No.	Reqd.	Part No.	Reqd.
One Piece Grapple	STR 1214	1	-----		-----		-----	
Grapple Retaining Screw	STR 1224	6	-----		-----		-----	
Segment Carrier	-----		STR 1215	1	STR 1216	1	STR 1217	1
Segment Carrier Retaining Screw	-----		STR 1225	6	STR 1225	6	STR 1225	6
Segment	-----		STR 1218	6	STR 1219	6	STR 1220	6
Segment Retaining Screw	-----		STR 1226	12	STR 1227	24	STR 1225	12
Stop Ring	-----		STR 1221	1	STR 1222	1	STR 1223	1
Stop Ring Retaining Screw	-----		-----		-----		STR 1225	6

TYPE STR CASING SPEAR STR 1200

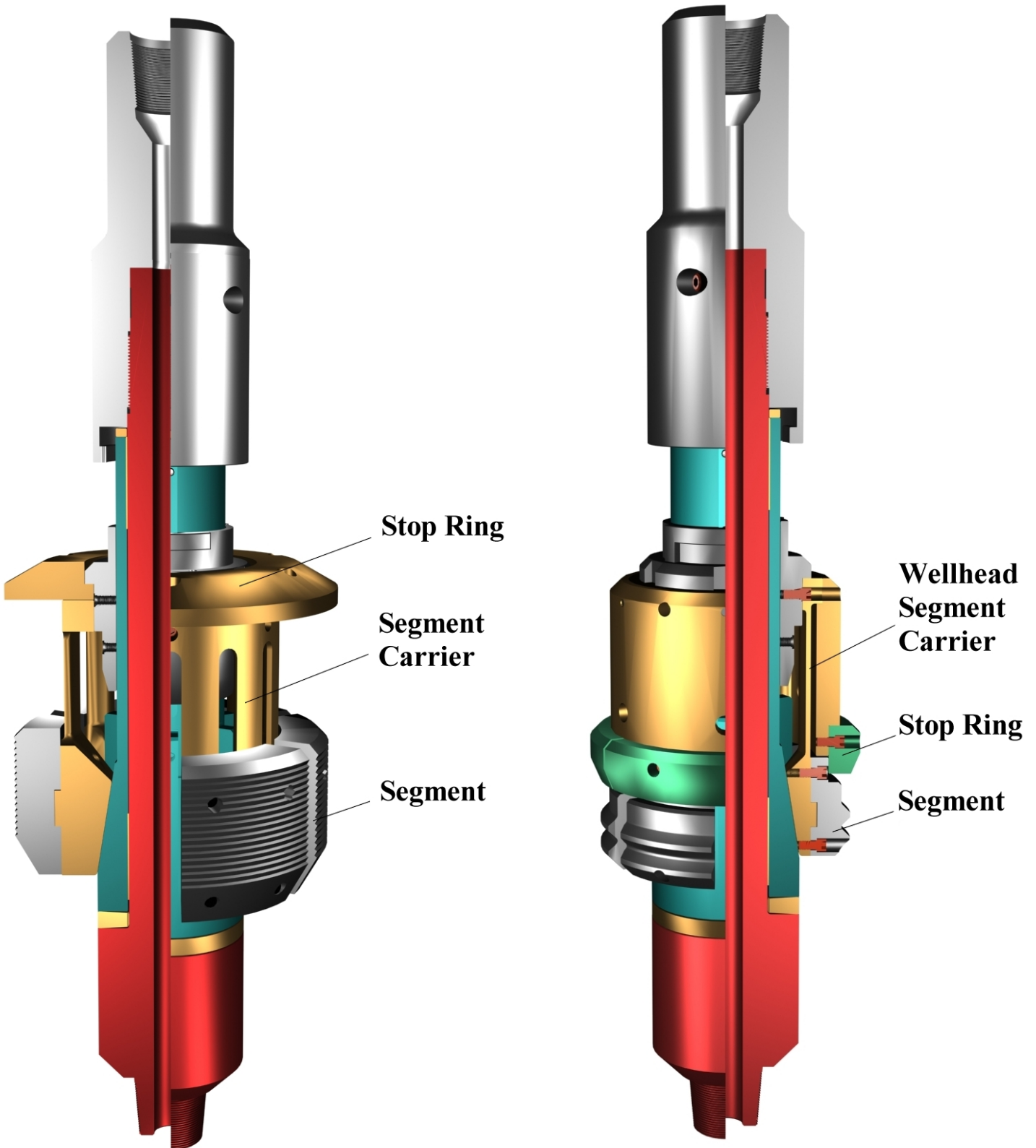


DRESSED FOR 13.3/8" - 13.5/8" CASING



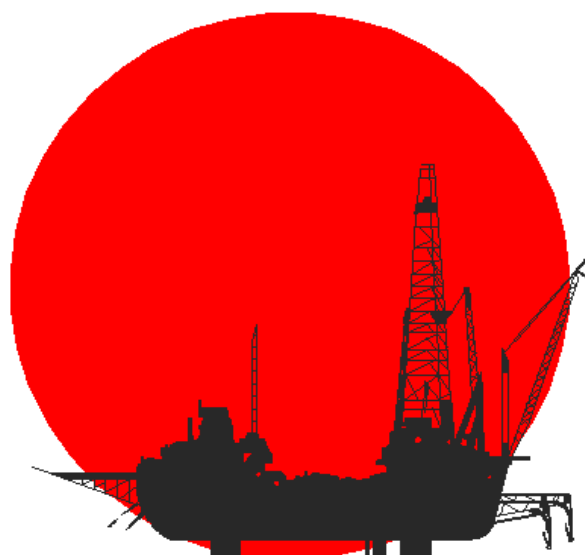
DRESSED FOR 16" - 20" CASING

**TYPE STR CASING SPEAR
STR 1200**



DRESSED FOR 21" - 30" CASING

DRESSED FOR WELLHEAD



PIONEER
OIL TOOLS LIMITED

Sir William Smith Road, Kirkton Industrial Estate,
Arbroath, Angus, Scotland, U.K. DD11 3RD
Tel: +44 (0) 1241 877776. Fax: +44 (0) 1241 871037
E-mail: sales@pioneeroiltools.com
Website: www.pioneeroiltools.com

TYPE STR
CASING SPEAR
For Single Trip Cutting and Recovery