

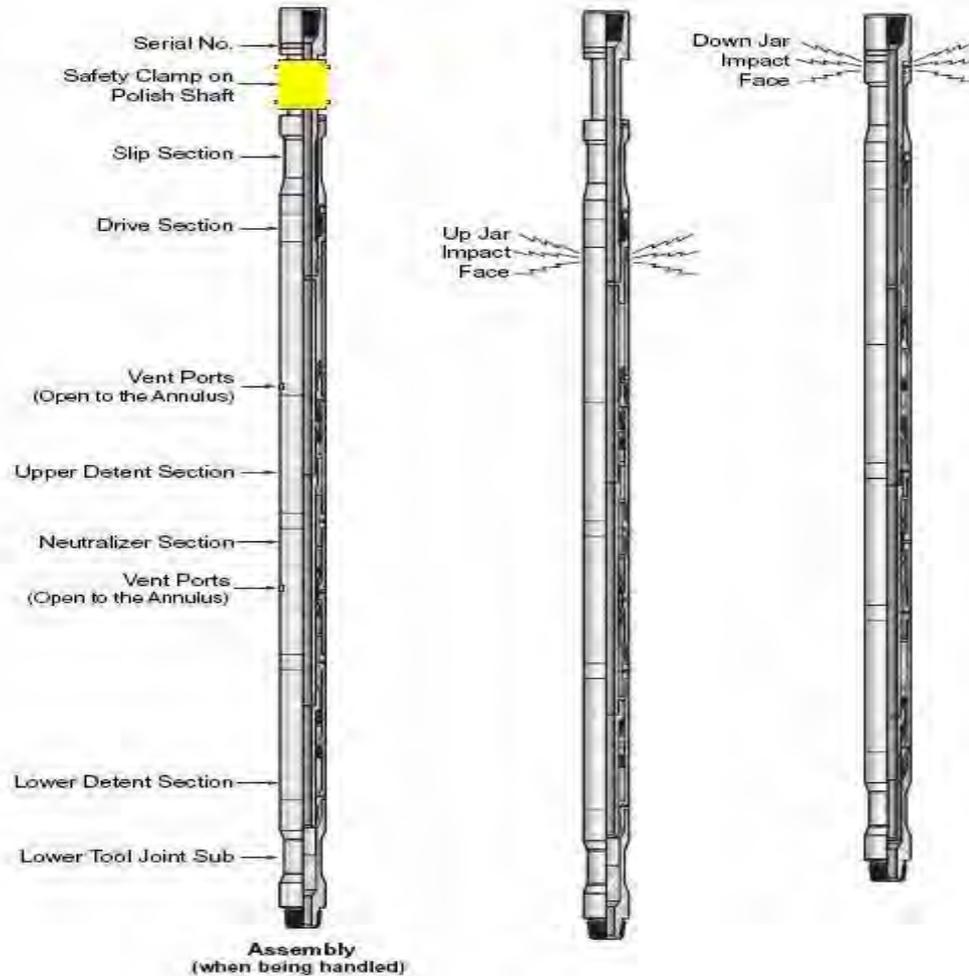


Drilling Products & Services

DROPS Forum

**Double Acting Hydraulic
Drilling Hydra-Jar® tool,
Safety Clamp**

Review April 2010



“Toggle” type Safety Clamp



Shown (left) with bolts correctly engaged

- Ensure threads are clean prior to re-attachment
- Torque retaining bolts to 200 ft/lbs
- Do not over tighten bolts
- Use AF socket size $1 \frac{7}{8}$ ”

“Dog Bone” type Safety Clamp



Shown (left) with bolts correctly engaged

- Ensure threads are clean prior to re-attachment
- Torque retaining bolts to 150 ft/lbs
- Do not over tighten bolts
- Use AF socket size $1 \frac{5}{16}$ ”

Toggle

WARNING

- PLEASE HANDLE THIS SAFETY CLAMP WITH DUE CARE AND ATTENTION.
DO NOT USE DAMAGED CLAMPS.

IMPORTANT

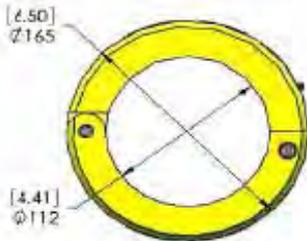
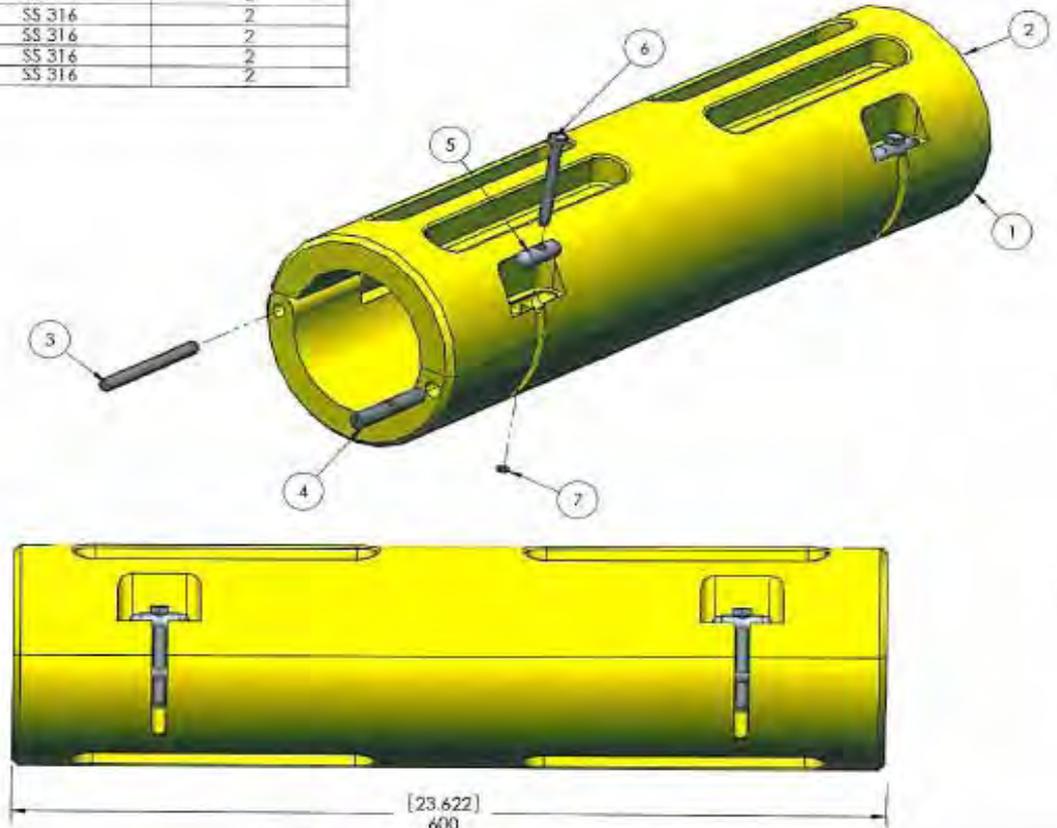
- "TOGGLE" TYPE SAFETY CLAMP
WHEN FITTING THIS TYPE SAFETY CLAMP TO THE HYDRA-JAR[®] TOOL THE RETAINING BOLTS MUST BE TORQUED TO:

200 FT/LBS

USE AF SOCKET SIZE 1⁷/₈"

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	PHC-6544-05-00/QTY.
1	1-6544-05-00	Handling Clamp, Nut Half	SP	1
2	2-6544-05-00	Handling Clamp, Bolt Half	SP	1
3	PO.025-A	M10 x 100mm Solid Hinge Pin	SS 316	2
4	T01002-A	TOGGLE HINGE M8	SS 316	2
5	T01000-A	TOGGLE M8	SS 316	2
6	BO.059-A	HEX HEAD SPECIAL M8 X 70	SS 316	2
7	SWJ001-A	M5 Spring Washer, Open	SS 316	2

UNCONTROLLED



UNCONTROLLED

FOR INFORMATION/QUOTATION PURPOSES ONLY
DO NOT MANUFACTURE

REV	DATE	BY	CHK	APP	DESCRIPTION
1	10/09/15	SM	SM	SM	PHC-6544-05-00

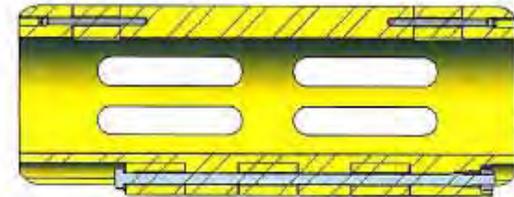
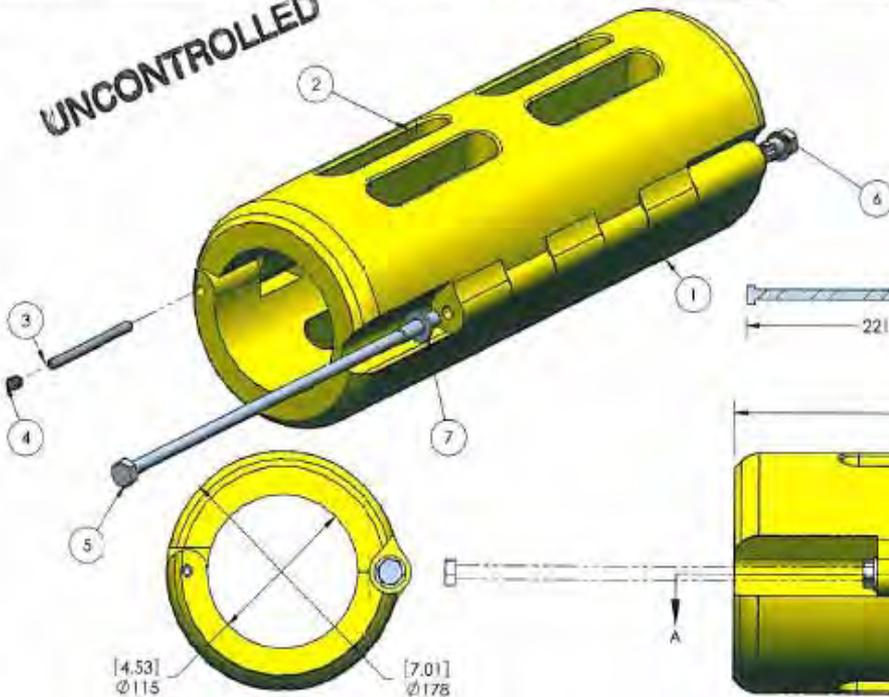
SHEET: 05/00000000000000000000 DRAWING: 05/00000000000000000000 TITLE: PHC-6544-05-00 DATE: 10/09/15 DRAWN BY: SM CHECKED BY: SM APPROVED BY: SM	Description: PHC-6544-05-00 Category: PHC-6544-05-00 Material: SRM 15	Part Number: PHC-6544-05-00 Revision: 1 Quantity: 6.73
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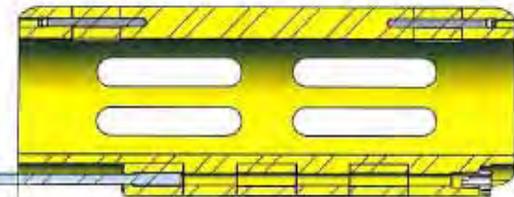


ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	BOLT BACK/ QTY.
1	1-7044-05-00	HANDLING CLAMP, NUT HALF	SP	1
2	2-7044-05-00	HANDLING CLAMP, BOLT HALF	SP	1
3	P01024-A	HINGE, 8 x 100 MM	SS 316	2
4	S01004-A	SHSS, M10 X 10 MM, CUP	SS 316	2
5	B01077-A	HHCS, M12 X 380, RETAINED	SS 316	1
6	I01019	THREADED INSERT, M12, L/H THREAD	SS 316	1
7	W01006	M12 FLAT WASHER	SS 316	1

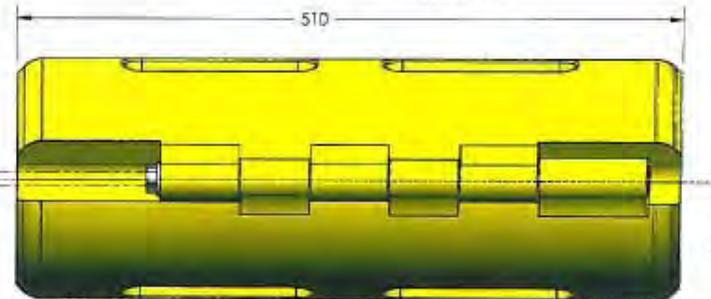
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BOLT ENGAGED
SECTION A-A
SCALE 1:4



BOLT RETRACTED
SECTION A-A
SCALE 1:4



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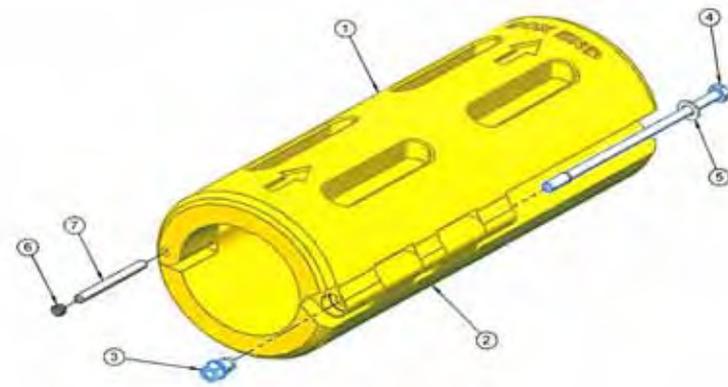
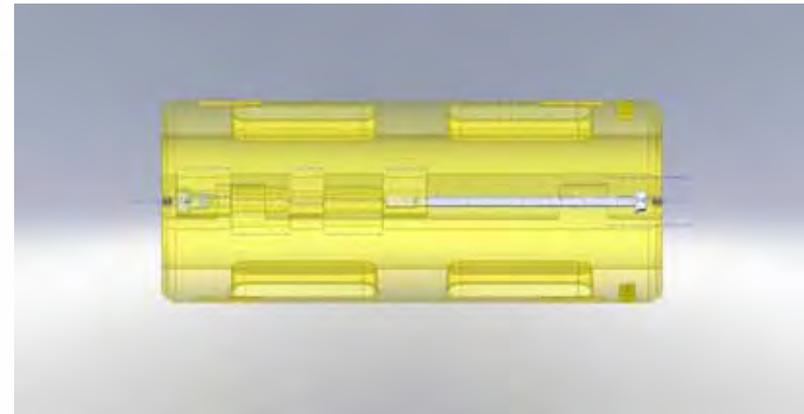
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SEE BOM	SEE BOM	SEE BOM	SEE BOM

7.28 kg

- **Addition of Velcro strapping as secondary safety retention**
- **Directional arrows on body**
- **Blanking of grip slots**
- **Increase of scalloped area around bolt at both ends**



- Pin length shortened to allow the pin to be withdrawn within the length of the clamp
- This enables the clamp to be more rounded and takes away the protrusive overhang of Version 3



Clamp Size	Compressive Load of “Dog Bone” Clamp	Max. Load on Clamp when racked with Qty 2 Drill Collars above Jar
4 ¾”	25,000 lbf	3,000 lbf
6 ½”	35,000 lbf	6,000 lbf
8”	35,000 lbf	9,000 lbf
9 ½”	55,000 lbf	13,200 lbf



- **Compressive Load Test carried out with the plastic clamp fitted to a 6 ½"OD Hydra-Jar in our jar test bed**
- **90,000 lbf applied for 5 minutes with no signs of deformation of the clamp**



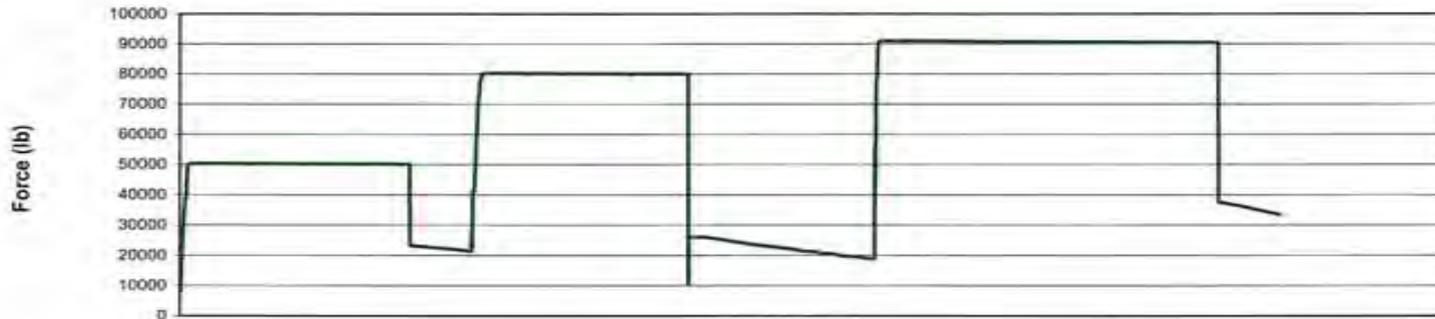
JAR-DAQ Service Report

Operator	IAIN FINCHAM	District	
Serial Number	CLAMP	Tool Size (In)	6.5
Work Order Number		Date	October 30, 2009

PUSH

	Full	Short 1	Short 2	Short 3
Compression (lb)	50230	80022	90640	
Travel (In or mm)	0.00	0.00	0.00	
Time (sec)	180.00	180.00	300.00	

Comments: SAFETY CLAMP COMPRESSION TEST



- After discussions with Shell Well Engineers the concept of the “Clamp Safe” retention jacket was initiated
- The first prototype was manufactured and after inspection and comment by both Shell and Smith, a further “Clamp Safe” retention jacket was made to incorporate modifications requested by both participating parties for trial on Sedco 711.



- On Sedco 711 a 6 ½” Hydra Jar complete with plastic clamp and “Clamp Safe” retention jacket were racked in the derrick on top of 2 x Drill Collars as is the normal practice.
- The assembly was racked in the derrick for 7 days, and was inspected regularly for security and safety.
- This trial proved successful with no issues on either the plastic clamp or the “Clamp Safe” retention jacket.





- Secure Hydra-Jar® tool in zip/slip section
- Place Safety Clamp carefully over reduced diameter mandrel



- Ensure bolt threads are clean prior to attachment
- Ensure bolts are correctly engaged



- Use AF socket size 15/16"
- Torque retaining bolts to 150 ft/lbs
- Do not over tighten bolts



- Securely fit the retention jacket around the safety clamp



- Thread the bungee cord loops through the ringlets and back over the plastic bauble



- Bring securing flap of cover over bauble ties to match Velcro halves together
- Press firmly over length of jacket to secure
- Jar now ready for rack back

Thank You



Any Questions?