Upper Completions

4.000 x 2.375 Crest III Packer

Technical Unit: TU1010

REVISION: 2022 Aug
August 9, 2022

Table of Contents

A. INTRODUCTION

The Crest III Packer is a weight set service packer for high pressure remedial work such as acidizing, fracturing, and squeeze cementing. It sets with minimal tubing manipulation and will withstand differential pressure from above or below.

A large integral fluid bypass allows the packer to be run quickly with minimal chance of swabbing off packing elements or dulling hold down slips. No rotation is required to retrieve the tool, and it equalizes via the fluid bypass with the first upward movement.

When set, a balance piston is actuated as pressure increases, exerting downward force on the inner mandrel, thus ensuring the integral fluid bypass is not pumped open.
Standard equipment includes carbide tipped hold down slips, lower slips and drag blocks.

FEATURES

- High pressure service grade packer
- Large integral fluid bypass
- Straight pull to release

J-SLOT CONFIGURATIONS

- Right Hand Auto
- Left Hand Auto
- Right Hand Manual
- Left Hand Manual

B. SPECIFICATIONS

DIMENSIONAL SPECIFICATION						
CASING		TOOL				
SIZE	WEIGHT	MAX OD		MIN ID		CONNECTIONS
[in]	[#]	[in]	[mm]	[in]	[mm]	
4	9.5 – 11.6	3.281	83.34	1.500	38.10	2-3/8 EUE 8 Rd Box x Pin

C. OPERATIONAL PROCEDURES

C-1 – Setting Procedures

1. Run packer to setting depth. The fluid bypass will remain open while running, to minimize swabbing of packing elements or dulling of hold down slips.
2. Pick up tubing and rotate (right or left hand, depending on J-slots) 1/2 turn at the packer.
3. Slack off weight to close the bypass, set the slips, and pack off the elements. For this size, 8,000 lb. should be sufficient.
4. At this time, pressure work can be performed above or below the packer.
5. Tubing pressure will activate the hold down slips to prevent upward movement, and the balance piston will hold the mandrel down and the bypass closed.

C-2 – Releasing Procedures

1. To release the crest packer, simply pick up the tubing string slowly. The bypass will open immediately, causing the tubing and annulus pressures to begin to equalize, and releasing the hold down slips.
2. The packer can now be pulled from the well or re-set in another location. With automatic J-slots, the packer can now be moved downhole. With manual J-slots, the packer will have to be re-engaged by rotating 1/2 turn in the opposite direction from that used to set the tool.

C-3 - Assembly Procedures

The following instructions do not list steps that are obvious to a trained tool hand, such as application of grease or being careful with seal surfaces.

CAUTION: THE TOP END OF THE MANDREL (4) MUST BE FILED SMOOTH ABOVE THE SPLIT RING GROOVE BEFORE BEGINNING.

THE SHORT LENGTH BELOW THE GROOVE IS A SEAL SURFACE.

THIS SIZE CREST PACKER HAS NO LEFT-HAND THREADS.

THE RECOVERY SLEEVE CLAP ON THIS SIZE SCREWS ONTO THE BOTTOM END OF THE RECOVERY SLEEVE.

1. Assemble balance piston (11) with O-ring (10) installed, into balance piston housing (12) and slide onto upper end of mandrel (4).
2. Install bypass seal (9) and O-ring (7) into seal retainer (8), slide onto mandrel just beyond groove at top end, then install split ring (6) into groove and screw seal retainer cap (5) onto seal retainer. Screw top (1), with O-ring (2) onto mandrel and clamp in vise.
3. Install hold down slips (18), with O-rings (19) installed, into holes in the side of hold down receptacle (15). Install hold down springs (17) into counterbores in hold down slips and retain with hold down straps (20) and strap retainers (16). Screw upper element gage (22) onto receptacle and install O-rings (13 & 21) inside.
4. Slide the following items on the top end of packing mandrel (26): element retainer (25), packing elements (23) and element spacers (24).

5. Screw element assembly from step above into bottom end of hold down receptacle, then slide this assembly onto lower end of mandrel and screw into balance piston housing.

CAUTION: BE CAREFUL TO TIGHTEN THIS THREAD WITH THE BALANCE PISTON HOUSING IN VISE, NOT THE MANDREL.

6. Assemble drag blocks (35) and drag block springs (36) into control body (37) and retain with drag block retainer (34). Screw slip housing (29) onto control body.
7. Install lower slips (30), with slip springs (31) installed, into slip housing. Slide recovery sleeve (28) through upper end of cone (27), then through slip housing and control body.
8. Screw recovery sleeve cap (38) onto lower end of recovery sleeve. Tighten this thread now, with one pin inserted through holes in cone and sleeve, and another through j-slots and notches in cap.
9. Slide sub-assembly from step above over mandrel and screw cone into element retainer. Then screw bottom sub (40) onto bottom end of mandrel.
10. Tighten all threads and install 8 thread lock set screws (3 and 33) in top sub, slip housing and bottom sub. To tighten packing sleeve to hold down receptacle, insert pin through holes in element retainer and packing sleeve.

C-4 - Disassembly Procedures

NOTE: The following steps will break packer into sub-assemblies. Refer to assembly instructions to disassemble sub-assemblies. This size Crest Packer has no left-hand threads.

1. With top sub (1) in vise, un-jay packer and slide control body (37) up as far as possible. Remove all 8 thread lock set screws (3 & 33). While backing up on top end of mandrel (4), remove bottom sub (40).
2. Unscrew cone (27) from element retainer (25) and slide the slip/drag block sub-assembly off bottom of mandrel and set aside.
3. With pin through holes in element retainer and packing sleeve (26), unscrew packing sleeve from hold down receptacle (15). Slide this sub-assembly of bottom end of mandrel and set aside.
4. Break mandrel out of top sub, then unscrew seal retainer cap (5) from seal retainer (8) and remove these parts and split ring (6).
5. With balance piston housing (12) in vise, break off hold down receptacle and slide off bottom end of mandrel. Slide balance piston housing off top end of mandrel and remove balance piston (11) from inside.

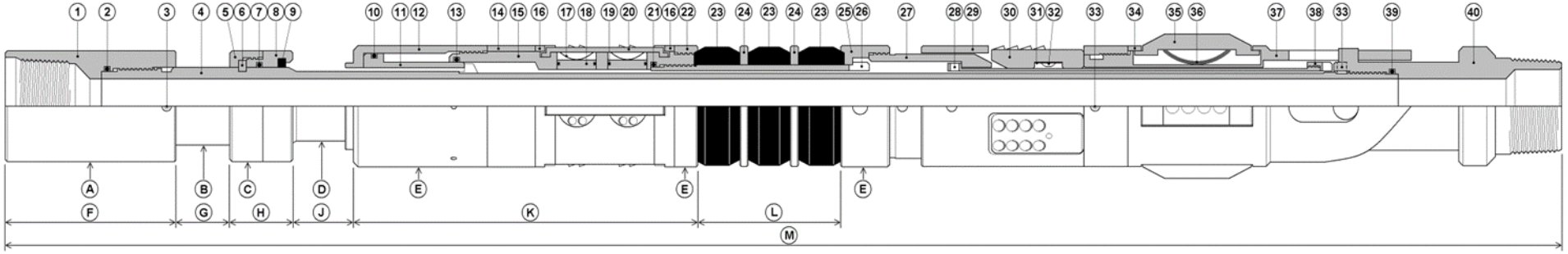
D. STORAGE & HANDLING GUIDELINES

All Upper Completions products from Innovex should at all times be stored in a manner which prevents exposure to natural elements: wind, water, excessive temperatures (hot or cold), and stored in a clean environment to prevent contamination by elements which might adversely affect proper function (i.e. sand, loose soil, dust).

- Storage temperature should remain below 80°F for any packers with elastomeric components (O-rings, packing elements, etc.) installed.
- Storage location for any packers with elastomeric components installed should have no direct exposure to sunlight. Packing elements should be shielded from ultraviolet light by covering in a protective material.
- Store in a dry area, no rain, seawater, or condensation.

Prior to storage, the packer should be assembled with internal thread connections made-up hand tight. Handle and store the tool in the running position with the lugs in the appropriate j-slot section which prevents undesired compression and deformation of packing elements. Store the tool in a manner which prevents undesired stresses on dynamic components such as Slips, Drag Block, and Sleeves.

E. DIMENSIONAL DATA & BILL OF MATERIALS



PART NUMBERS											
KEY #	QTY	PART #	NAME	KEY#	QTY	PART #	NAME	KEY#	QTY	PART#	NAME
1	1	44250	TOP SUB	14	1	40480	TOP SPACER	27	1	40380	CONE
2	1	19225	O-RING	15	1	40340	HOLD DOWN RECEPTACLE	28	1	40430	RECOVERY SLEEVE
3	3	11158C	THREAD LOCK SCREW	16	2	40360	STRAP RETAINER	29	1	40350	SLIP HOUSING
4	1	44235	MANDREL	17	16	50370	HOLD DOWN SPRING	30	3	045PK	LOWER SLIP
5	1	44220	SEAL RETAINER CAP	18	8	50303	HOLD DOWN SLIP	31	3	50725	LOWER SLIP SPRING
6	1	44200	SPLIT RING	19	8	19120	O-RING	32	3	11336C	SLIP SPRING SCREW
7	1	17227	O-RING	20	4	40450	HOLD DOWN STRAP	33	5	11155C	THREAD LOCK SET SCREW
8	1	44210	SEAL RETAINER	21	1	19227	O-RING	34	1	40390	DRAG BLOCK RETAINER
9	1	609-40-523	BYPASS SEAL	22	1	40400	UPPER ELEMENT GAGE	35	4	50450	DRAG BLOCK
10	1	19231	O-RING	23	3	602-40-51X *	PACKING ELEMENT	36	16	50100	DRAG BLOCK SPRING
11	1	40490	BALANCE PISTON	24	2	40420	ELEMENT SPACER	37	1	SEE CHART	CONTROL BODY
12	1	40500	BALANCE PISTON HOUSING	25	1	44240	ELEMENT RETAINER	38	1	40440	RECOVERY SLEEVE CAP
13	1	19229	O-RING	26	1	40460	PACKING SLEEVE	39	1	19224	O-RING
* REPLACE THE X IN PART NUMBER WITH DUROMETER: 0 FOR 60, 1 FOR 70, 2 FOR 80, OR 3 FOR 90.								40	1	43831	BOTTOM SUB

CONTROL BODY SELECTION CHART	
J-SLOT CONFIGURATION	**PART NUMBER**
RIGHT HAND MANUAL	40372
LEFT HAND MANUAL	40374
RIGHT HAND AUTO	40373
LEFT HAND AUTO	40371

FLUID BYPASS AREA: .650 SQ. IN.
AFFECTED AREA OF BALANCE PISTON: 1.968 SQ. IN.

DIMENSIONS (IN.)											
A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**J ***	**K**	**L**	**M**
3.00	2.09	3.00	1.88	3.281	6.44	2.06	2.25	2.31	13.00	5.41	58.88

* WITH PACKER IN POSITION SHOWN

F. REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	CHECKED BY
		NEW RELEASE		
08/09/2022	2022 Aug	Updated Format	N. Alexander	