

Upper Completions

3.500 HW x 1.900 Crest III Packer

Technical Unit: TU1018

REVISION: 2022 Aug
August 9, 2022



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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]	
3-1/2	9.3 – 10.2	2.750	69.85	1.250	31.75	1.900" EU10RD THREAD



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. Slack off weight to close the bypass, set the slips, and pack off the elements. For this size 7,000 lb. should be sufficient.
3. At this time, pressure work can be performed above or below the packer. 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. To move further down, the J-track will have to be re-engaged by rotating 1/2 turn at the packer, 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 LARGE O.D. OF THE MANDREL (6) BELOW THE UPPER THREAD IS A SEAL SURFACE.

1. Assemble balance piston (8) with O-ring (7) installed, into balance piston housing (9) and slide onto upper end of mandrel.
2. Install bypass seal (5) and O-rings (2 & 5) into top sub (1) and screw onto mandrel. Clamp top sub in vise.
3. Install hold down slips (15), with O-rings (16) installed, into holes in the side of hold down receptacle (12). Install hold down springs (14) into grooves in hold down slips and retain with hold down straps (17) and the two strap retainers (13). Screw upper gage (20) onto receptacle and install O-rings (10 & 18) inside.
4. Slide the following items on the top end of packing mandrel (23): element retainer (24), packing elements (21) and element spacers (22).
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 (34) into control body (36) and retain with drag block retainer (33). Screw slip housing (27) onto control body.
7. Slide recovery sleeve (32) through bottom of control body part of the way and install lower slips

(28), with slip springs (29) installed, into slip housing windows. Then push recovery sleeve in to stop.

8. Slide cone (25) into top end of control body and over recovery sleeve, then screw recovery sleeve cap (26) onto recovery sleeve. Tighten this thread now, with one pin inserted through holes in cone and cap, and another through J-slots in control body and holes in recovery sleeve.
9. Slide assembly from step above over lower end of mandrel. Screw cone into element retainer, then bottom sub (38), with O-ring (37) installed, onto bottom end of mandrel.
10. Install all 6 thread lock set screws (3 & 31) in top sub, slip housing and bottom sub; then tighten all threads. To tighten packing mandrel to hold down receptacle, insert pin through holes in element retainer and slots in packing mandrel.

C-4 - Disassembly Procedures

NOTE: The following steps will break packer into sub-assemblies. Refer to assembly instructions to disassemble sub-assemblies, noting the left-hand threads indicated on drawing.

1. With top sub (1) in vise, un-jay packer and slide control body (36) up as far as possible. Remove all 6 thread lock set screws (3 & 31). While backing up on top end of mandrel (6), remove bottom sub (38).
2. Unscrew cone (25) from element retainer (24) 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 mandrel (23), unscrew packing mandrel from hold down receptacle (12). Slide this sub-assembly off bottom end of mandrel and set aside.
4. Break mandrel out of top sub.
5. With piston housing (9) in vise, break off hold down receptacle and slide off bottom end of mandrel. Slide piston housing off top end of mandrel and remove balance piston (8) from inside.

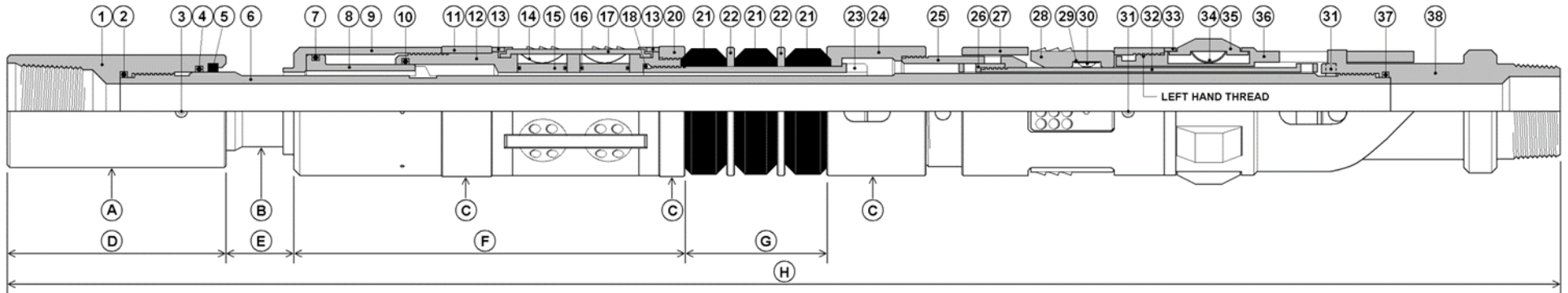
D. STORAGE & HANDLING GUIDELINES

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	40521	TOP SUB	13	2	40230	STRAP RETAINER	26	1	55910	RECOVERY SLEEVE CAP
2	1	19222	O-RING	14	12	50370	HOLD DOWN SPRING	27	1	40180	SLIP HOUSING
3	2	11156C	THREAD LOCK SET SCREW	15	6	50302	HOLD DOWN SLIP	28	4	035PK	LOWER SLIP
4	1	19224	O-RING	16	6	19024	O-RING	29	4	51790	LOWER SLIP SPRING
5	1	609-35-523	BYPASS SEAL	17	3	55850	HOLD DOWN STRAP	30	4	11334C	LOWER SLIP SCREW
6	1	40542	MANDREL	18	1	19032	O-RING	31	4	11144C	THREAD LOCK SET SCREW
7	1	19228	O-RING	20	1	40220	UPPER ELEMENT GAGE	32	1	40190	RECOVERY SLEEVE
8	1	40160	BALANCE PISTON	21	3	603-34-51X *	PACKING ELEMENT	33	1	40560	DRAG BLOCK RETAINER
9	1	40170	BALANCE PISTON HOUSING	22	2	40200	ELEMENT SPACER	34	18	50120	DRAG BLOCK SPRING
10	1	19227	O-RING	23	1	55870	PACKING SLEEVE	35	6	50353	DRAG BLOCK
11	1	40250	TOP SPACER	24	1	40210	ELEMENT RETAINER	36	1	SEE CHART BELOW	CONTROL BODY
12	1	40150	HOLD DOWN RECEPTACLE	25	1	55900	CONE	37	1	19128	O-RING
								38	1	40240	BOTTOM SUB

* Replace the x in part number with 0 for 60 D., 1 for 70 D., 2 for 80 D. or 3 for 90 d.

CONTROL BODY SELECTION CHART	
J-TRACK CONFIGURATION	PART NUMBER
RIGHT HAND MANUAL	40141
LEFT HAND MANUAL	40142
RIGHT HAND AUTOMATIC	40143
LEFT HAND AUTOMATIC	40144

FLUID BYPASS AREA: .341 SQ. IN.
 AFFECTED AREA OF BALANCE PISTON: 1.478 SQ. IN.

DIMENSIONS (IN.)							
A	B	C	D	E*	F	G	H
2.50	1.59	2.75	6.38	2.03	11.69	4.25	46.22

*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	