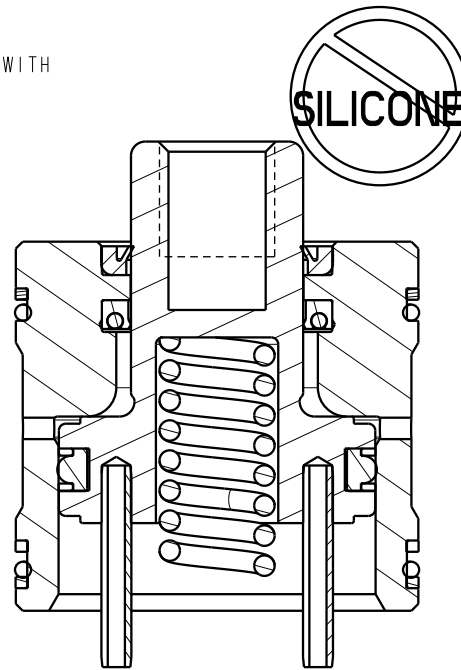
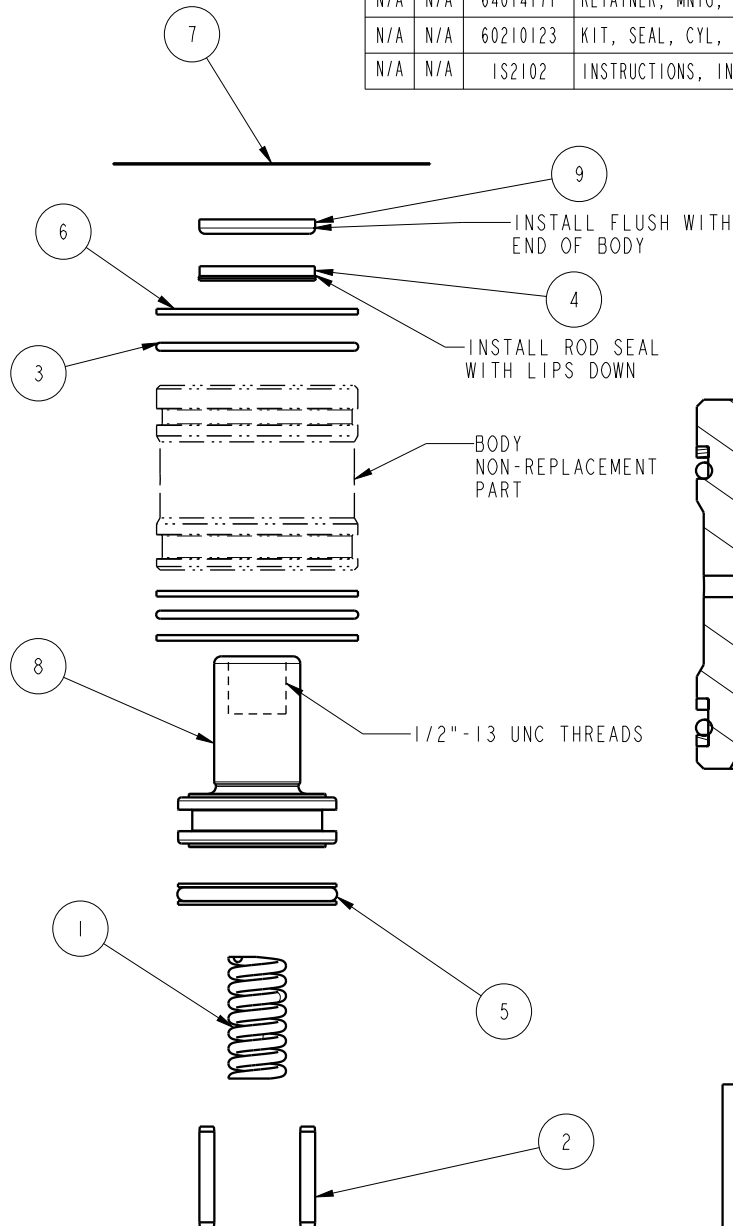


ITEM 1 USED FOR SINGLE ACTING ONLY. IF USING IN SINGLE ACTING CONFIGURATION: RETAINER 64014170 MAY BE USED.

NO	QTY	PART NO	DESCRIPTION	21-4113-11	21-4113-21	STD SEAL KIT
1	1	23355014	SPRING, COMPRESSION	X		
-	1	23355030	SPRING, COMPRESSION		X	
2	2	23520012	PIN, SPRING, SLOTTED, 1/8 X 7/8, SST	X		
-	2	23520016	PIN, SPRING, SLOTTED, 1/8 X 1, SST		X	
3	2	39001021	O-RING, (-030)	X	X	X
4	1	39010021	SEAL, LL, (3/4 X 1/8 X 1/8 X 1)	X	X	X
5	1	39052049	SEAL, T, (1 1/8 X 1/8 X 1 3/8)	X	X	X
6	3	39054021	BU RING, (-030)	X	X	X
7	1	67010153	TAG, INSTALL, CYL, CM, SLIP-IN	X	X	X
8	1	82100213	PLUNGER, CYL, CM, PP, 7400LB	X		
-	1	82100313	PLUNGER, CYL, CM, PP, 7400LB, STROKE .50		X	
9	1	39V10022	WIPER, PRESS-IN, (3/4)	X	X	X
N/A	N/A	64014171	RETAINER, MNTG, CYL, CM, 5200LB	N/A	N/A	
N/A	N/A	60210123	KIT, SEAL, CYL, CM, PULL, 5200LB	N/A	N/A	NOTED
N/A	N/A	IS2102	INSTRUCTIONS, INSTALL, CYL, CM, SLIP-IN	N/A	N/A	N/A

WHEN USED WITH RETAINING RING P/N 64-0141-71 TORQUE 5/16-18 BOLTS TO 20 FT-LBS



LUBRICATE ALL SEALS WITH CLEAN HYDRAULIC OIL PRIOR TO ASSEMBLY
DO NOT USE SILICONE BASED LUBRICANTS

PARTS LIST



VEKTEK, INC.
1334 E. SIXTH AVE. P.O. BOX 625
EMPORIA, KS. 66801 U.S.A.

ASSEMBLIES AFFECTED

21-4113-11
21-4113-21

PARTS LIST, ASSY, CYL, CM, PULL, 5200LB, .375 STROKE

SLIP IN 1/2-13

SIZE
A

PL21104

REV
A

A	5573	RELEASE	BDC	12/6/24
REV	IN ACCORDANCE WITH ECN	EFFECTIVE DATE	REVISED BY	DATE
DRW BY:	BDC	DRAWING STATUS: Released		
DATE:	11/27/24	PRODUCTION APPROVED FOR RELEASED STATUS ONLY		

FORM FEG035_PL_ASIZE, REV. B

SHEET 1 OF 1

CAVITY AND INSTALLATION INSTRUCTIONS

PLEASE READ PRIOR TO OPERATION

Cavity Forming

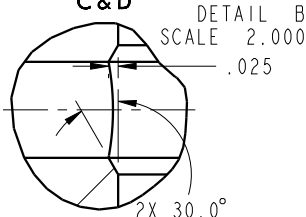
-It is recommended that all cavities be prepared using a ball hone such as a *Flex-Hone™.

This will deburr and round sharp edges to prevent seal damage. The honing prepares cavity for cylinder installation.

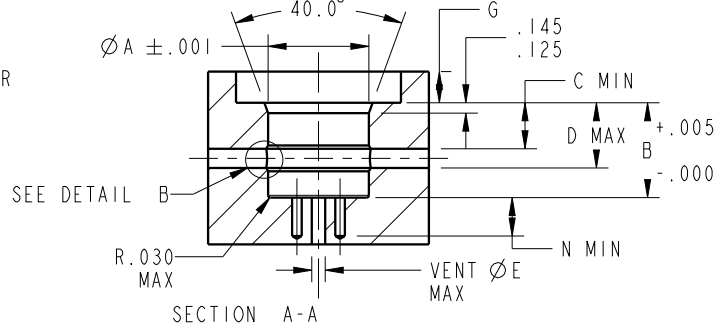
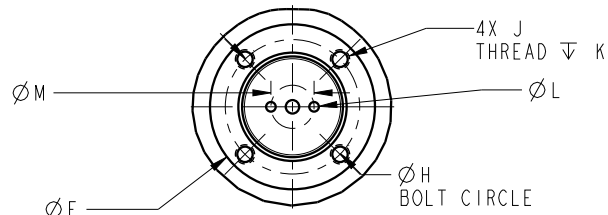
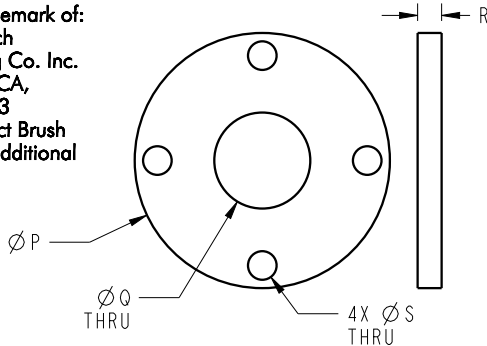
-Intersecting feed holes should be adequately deburred and chamfered to prevent seal damage.

*Flex-hone™ is a registered trademark of: Brush Research Manufacturing Co. Inc. Los Angeles, CA, 323-261-2193 Please Contact Brush Research for additional information.

Preferred Relief Detail
Relief to be within Dimensions C & D



OPTIONAL CYLINDER RETAINING RING



Dimensions

MODEL NO.*	CAP.	A	B	C	D	E	F **	G **	H **	J **	K **	L ***	M ***	N ***	P	Q	R ****	S	BOLT TORQUE	OPTIONAL RETAINING RING
Single Acting (S/A) Cylinders actuated hydraulically in one direction, spring turned																				
21-4106-0X	980	.813	1.120	.44	.72	.16	1.43	.31	1.13	8-32 UNC	.33	.125	.44	.31	1.395	.50	.125	.173	29 IN-LBS	64-0140-80
21-4109-00	2000	1.188	1.120	.44	.72	.18	1.86	.31	1.56	8-32 UNC	.33	.125	.53	.40	1.832	.75	.125	.173	29 IN-LBS	64-0141-10
21-4109-01			1.245		.84															
21-4111-0X	2950	1.313	1.245	.44	.84	.18	2.15	.41	1.75	1/4-20 UNC	.38	.156	.56	.40	2.125	.75	.125	.257	63 IN-LBS	64-0141-30
21-4113-0X	5200	1.751	1.370	.44	.97	.33	2.83	.53	2.31	5/16-18 UNC	.47	.156	.88	.40	2.782	1.00	.187	.328	20 FT-LBS	64-0141-70
21-4116-0X	9000	2.126	1.495	.44	1.09	.35	3.40	.67	2.81	3/8-16 UNC	.50	.281	1.00	.60	3.375	1.12	.250	.391	24 FT-LBS	64-0142-10
21-4121-00	17100	2.876	1.620	.44	1.22	.40	4.59	.90	3.81	1/2-13 UNC	.63	.281	1.57	.60	4.563	1.25	.375	.515	62 FT-LBS	64-0142-80

Double Acting (D/A)

Cylinders actuated hydraulically in both directions

21-4106-11	980	.813	1.342	.44	1.00	.16	1.43	.44	1.13	8-32 UNC	.33	.125	.44	.42	1.395	.50	.250	.173	29 IN-LBS	64-0140-81
21-4106-21			1.592		1.25															
21-4109-11	2000	1.188	1.402	.44	1.00	.18	1.86	.44	1.56	8-32 UNC	.33	.125	.53	.64	1.832	.75	.250	.173	29 IN-LBS	64-0141-11
21-4109-21			1.990		1.58															
21-4111-11	2950	1.313	1.477	.44	1.07	.18	2.15	.54	1.75	1/4-20 UNC	.38	.156	.56	.64	2.125	.75	.250	.257	63 IN-LBS	64-0141-31
21-4111-21			2.050		1.64															
21-4113-11	5200	1.751	1.602	.44	1.20	.33	2.83	.66	2.31	5/16-18 UNC	.47	.156	.88	.64	2.782	1.00	.250	.328	20 FT-LBS	64-0141-71
21-4113-21			2.140		1.74															

*LUBRICATE O-RINGS WITH GREASE PRIOR TO INSTALLATION.

**THIS CAVITY USES THE OPTIONAL RETAINING RING AVAILABLE FROM VEKTEK. THESE FEATURES ARE FOR USE WITH THE RETAINING RING. SEE SHEET 3!

***THESE FEATURES ARE ONLY NEEDED IF ANTI-ROTATION PINS ARE USED. ANTI-ROTATION PINS AND RETURN SPRING ARE INCLUDED WITH THE CYLINDERS.

****THICKER RETAINERS (MODELS ENDING WITH *1) WITH 8 SCREWS ARE REQUIRED FOR DOUBLE ACTING CYLINDERS. DOUBLE ACTING CYLINDERS BEING USED IN SINGLE ACTING APPLICATIONS CAN USE THE SINGLE ACTING RETAINERS (MODELS ENDING WITH *0) AND 4 SCREWS.

INSTALLATION INSTRUCTIONS



VEKTEK, INC.
1334 E. SIXTH AVE. P.O. BOX 625
EMPORIA, KS. 66801 U.S.A.

B	5573	RELEASE	BDC	11/25/24
REV	IN ACCORDANCE WITH ECN	EFFECTIVE DATE	REVISED BY	DATE
DRW BY: DKC	DRAWING STATUS: Released PRODUCTION APPROVED FOR RELEASED STATUS ONLY			
DATE: 9/23/14				

ASSEMBLIES AFFECTED
21-4106-XX 21-4109-XX
21-4111-XX 21-4113-XX
21-4116-XX 21-4121-XX

INSTRUCTIONS, INSTALL, CYL, CM, SLIP-IN
SLIP IN
SIZE A
1S2102
REV B

FORM FEG041-1S.AS1ZE, REV. B

SHEET 1 OF 3

INSTALLATION INSTRUCTIONS CONTINUED

Installation Notes

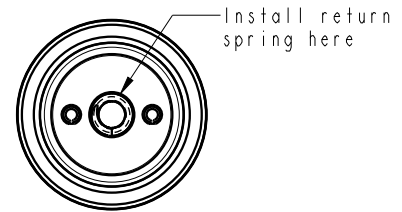
-It is recommended that all cavities be prepared using a ball hone such as dFlex-Hone™. This will deburr and round sharp edges to prevent seal damage and prepare cavity for cylinder installation.

-All seals should be lubricated with a non-silicone grease (recommended) or clean hydraulic oil prior to installation.

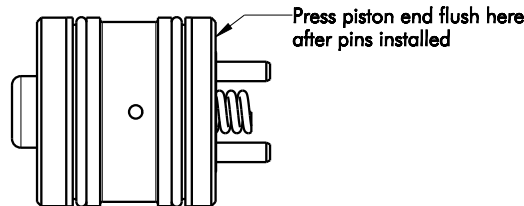
Installation

- Lubricate all seals with non-silicone grease (recommended) or clean hydraulic oil.
- Install return spring in plunger cavity with a small amount of grease to hold it in place during installation. See view below. A table of return spring part numbers is included below.

Cylinder Model No.	Return Spring P/N	Cylinder Model No.	Return Spring P/N	Cylinder Model No.	Return Spring P/N
21-4106-0X	23-3550-11	21-4106-1X	23-3550-11	21-4106-2X	23-3550-28
21-4109-0X	23-3550-12	21-4109-1X	23-3550-12	21-4109-2X	23-3550-29
21-4111-0X	23-3550-12	21-4111-1X	23-3550-12	21-4111-2X	23-3550-29
21-4113-0X	23-3550-14	21-4113-1X	23-3550-14	21-4113-2X	23-3550-30
21-4116-0X	23-3550-15	21-4116-1X	23-3550-31	21-4116-2X	23-3550-31
21-4121-0X	23-3550-16	21-4121-1X	23-3550-32		



- If using anti-rotate pins install a bolt and jam nut in plunger to help align pins. Press the piston end of the plunger even with end of body. See view below.



- Press cylinder into cavity until plunger begins to extend ensuring cylinder goes in evenly to prevent cavity or seal damage.
 - Using the bolt gently turn the plunger while applying slight downward force until plunger begins to retract. This ensures alignment of the anti-rotation pins.
 - Remove bolt and jam nut. Visually inspect spring through threaded hole in plunger to verify return spring is properly positioned.
- Press cylinder body until flush with the start of the cavity. Stop if an increase in resistance is felt.
 - If using the optional retention ring, see chart below for proper torque.

MODEL NO.	RETAINER NO.	BOLT SIZE	TORQUE
21-4106-0X	64-0140-80	8-32 UNC	29 IN-LBS
21-4106-1X	64-0140-81		
21-4106-2X			
21-4109-0X	64-0141-10	8-32 UNC	29 IN-LBS
21-4109-1X	64-0141-11		
21-4109-2X			
21-4111-0X	64-0141-30	1/4-20 UNC	63 IN-LBS
21-4111-1X	64-0141-31		
21-4111-2X			
21-4113-0X	64-0141-70	5/16-18 UNC	20 FT-LBS
21-4113-1X	64-0141-71		
21-4113-2X			
21-4116-0X	64-0142-10	3/8-16 UNC	24 FT-LBS
21-4121-0X	64-0142-80	1/2-13 UNC	62 FT-LBS

INSTALLATION INSTRUCTIONS	 VEKTEK, INC. 1334 E. SIXTH AVE. P.O. BOX 625 EMPORIA, KS. 66801 U.S.A.	
	ASSEMBLIES AFFECTED	INSTRUCTIONS, INSTALL, CYL, CM, SLIP-IN
21-4106-XX 21-4109-XX 21-4111-XX 21-4113-XX 21-4116-XX 21-4121-XX	SLIP IN	SIZE A
FORM FEG041-1S.AS1ZE, REV. B		REV B

B	5573	RELEASE	BDC	11/25/24
REV	IN ACCORDANCE WITH ECN	EFFECTIVE DATE	REVISED BY	DATE
DRW BY: DKC	DRAWING STATUS: Released			
DATE: 9/23/14	PRODUCTION APPROVED FOR RELEASED STATUS ONLY			

SHEET 3 OF 3