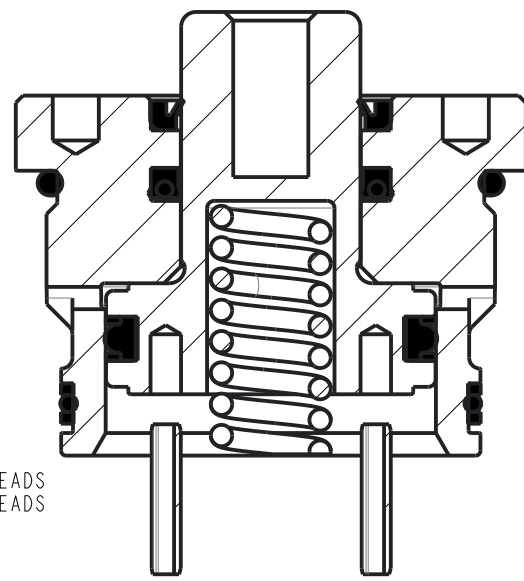
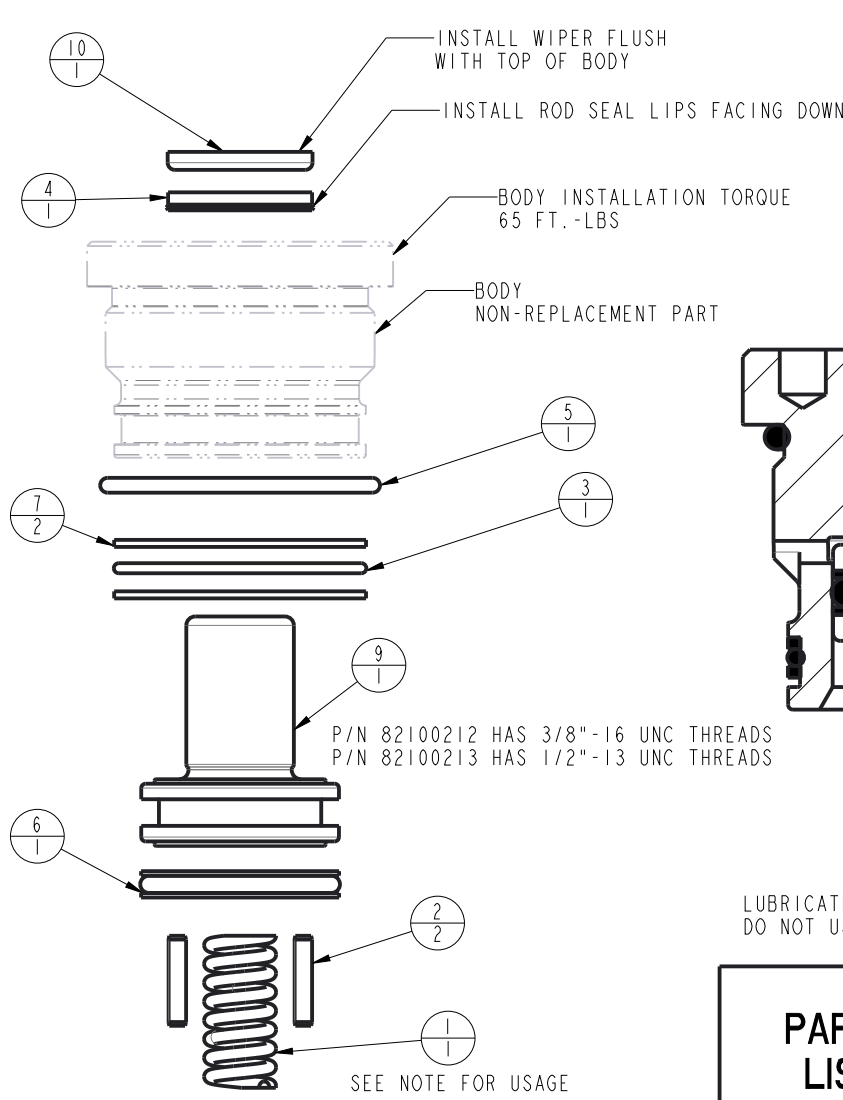



NO	QTY	PART NO	DESCRIPTION	21-0213-00	21-0213-01	STD SEAL KIT
1	1	23355014	SPRING, COMPRESSION	X	X	
2	2	23520004	PIN, SPRING, SLOTTED, 1/8 X 5/8, SST	X	X	
3	1	39001021	O-RING, (-030)	X	X	X
4	1	39010021	SEAL, LL, (3/4 X 1/8 X 1/8 X 1)	X	X	X
5	1	39051127	O-RING, (-132)	X	X	X
6	1	39052049	SEAL, T, (1 1/8 X 1/8 X 1 3/8)	X	X	X
7	2	39054021	BU RING, (-030)	X	X	X
8	1	67010154	TAG, INSTALL, CYL, CM, THREAD-IN			X
9	1	82100212	PLUNGER, CYL, CM, PP, 7400LB	X		
-	1	82100213	PLUNGER, CYL, CM, PP, 7400LB		X	
10	1	39V10022	WIPER, PRESS-IN, (3/4)	X	X	X
N/A	N/A	60210206	KIT, SEAL, CYL, CM, PP, 7400LB	N/A	N/A	NOTED
N/A	N/A	IS2101	INSTRUCTION, INSTALL, CYL, CM, THREADED	N/A	N/A	N/A

NOTE: ITEM 1 ONLY USED FOR SINGLE ACTING OPERATION



LUBRICATE ALL SEAL WITH CLEAN HYDRAULIC OIL. DO NOT USE SILICONE BASED LUBRICANTS

PARTS LIST	 VEKTEK VEKTEK, INC. 1334 E. SIXTH AVE. P.O. BOX 625 EMPORIA, KS. 66801 U.S.A.	
	ASSEMBLIES AFFECTED 21021300 21021301	PARTS LIST, CYL, CM, PP, 7400LB THREAD IN SIZE A PL2184
REV A DATE: 9/25/14 DRAWING STATUS: Released PRODUCTION APPROVED FOR RELEASED STATUS ONLY		REV A SHEET 1 OF 1

A	2753	RELEASE	DKC	10/16/14
REV	IN ACCORDANCE WITH ECN	EFFECTIVE DATE	REVISED BY	DATE

CAVITY AND INSTALLATION INSTRUCTIONS

PLEASE READ PRIOR TO OPERATION

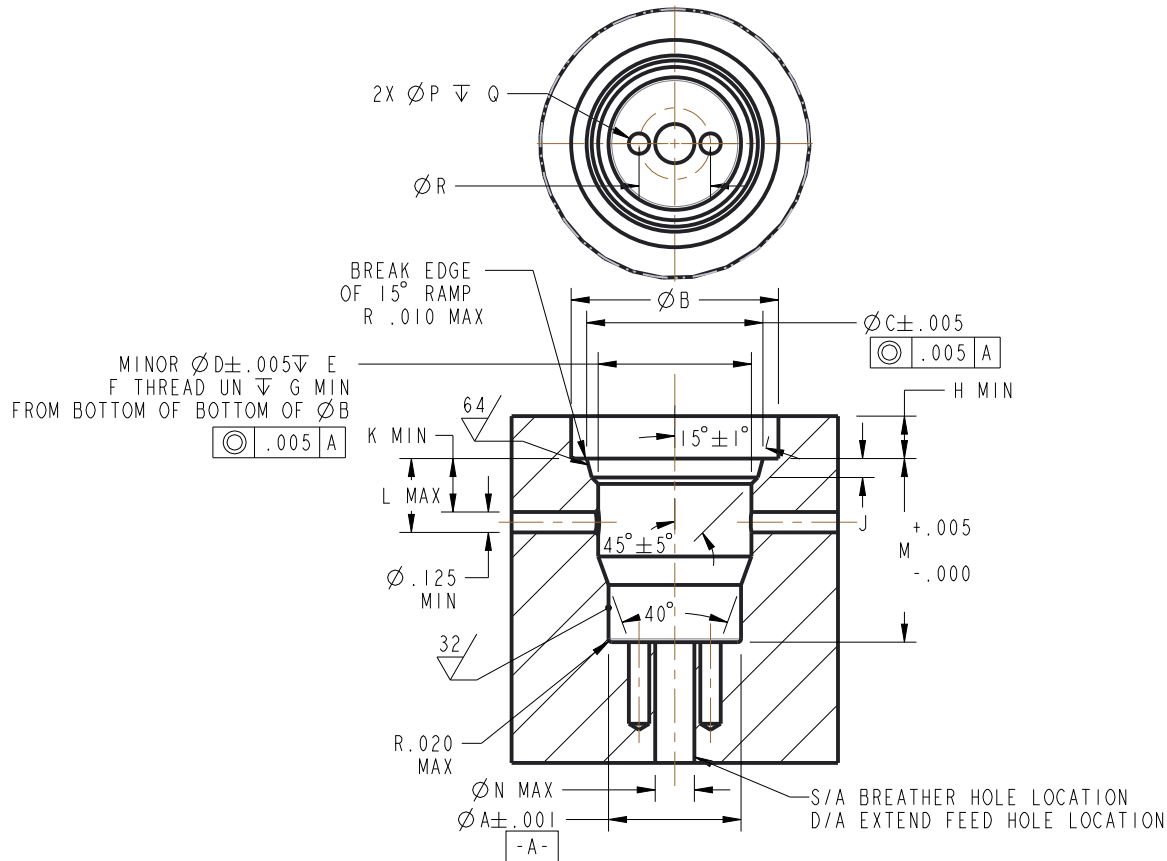
Cavity Forming

-The 15° and 45° angle at the top of the cavity can be formed with a SAE 12 reduced spot face diameter tool. (Except the cavity for 21-0206-00/21-0206-01)

-It is recommended that all cavities be prepared using a ball hone such as a *Flex-Hone™. This prepares the cavity for installation by deburring and rounding sharp edges to prevent seal damage.

-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.



MODEL NO.	CAPACITY	A	B	C	D	E	F	G	H	J	K	L	M	N*	P**	Q**	R**
21-0206-XX	1500	.813	1.27	1.080	.939	.60	1-16	.45	.26	.116	.39	.75	1.130	.16	.125	.625	.44
21-0209-XX	2900	1.188	1.65	1.393	1.252	.68	1 5/16-16	.50	.26	.116	.39	.75	1.130	.18	.125	.625	.53
21-0210-XX	3900	1.313	1.77	1.580	1.439	.67	1 1/2-16	.53	.32	.116	.46	.81	1.192	.18	.156	.625	.56
21-0213-XX	7400	1.751	2.15	1.955	1.814	.75	1 7/8-16	.59	.32	.116	.46	.81	1.192	.33	.156	.625	.88
21-0216-XX	12000	2.126	2.64	2.455	2.314	.70	2 3/8-16	.59	.45	.116	.45	.93	1.318	.35	.280	.625	1.00
21-0221-00	22000	2.876	3.39	3.205	3.065	.88	3 1/8-16	.72	.45	.116	.58	1.31	1.693	.40	.280	.625	1.57

*N IS INTENDED FOR S/A CYLINDER ONLY TO PREVENT INTERFERENCE WITH RETURN SPRING. FOR D/A OPERATION THE FEED CAN BE POSITIONED ANYWHERE IN THE BOTTOM OF THE CAVITY.

**FEATURES USED ONLY IF ANTI-ROTATE PINS ARE INSTALLED. ANTI-ROTATE PINS AND RETURN SPRINGS INCLUDED WITH CYLINDERS.

INSTALLATION INSTRUCTIONS



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

ASSEMBLIES AFFECTED

21-0206-XX 21-0209-XX
21-0210-XX 21-0213-XX
21-0216-XX 21-0221-00

INSTRUCTIONS, INSTALL, CYL, CH, THREADED

THREAD IN

SIZE
A

IS2101

REV
A

A	2753	RELEASE	DKC	10/1/14
REV	IN ACCORDANCE WITH ECN	EFFECTIVE DATE	REVISED BY	DATE
DRW BY:	DKC	DRAWING STATUS: Released		
DATE:	3/10/14	PRODUCTION APPROVED FOR RELEASED STATUS ONLY		

INSTALLATION INSTRUCTIONS CONTINUED

Anti-Rotation Pins- Optional

-Anti-Rotation Pins are included with all cylinders

-Anti-Rotation Pins are only to resist normal rotational force from cylinder actuation. The pins are not intended to resist torque from other applications.

-The use of anti-rotation pins are not required.

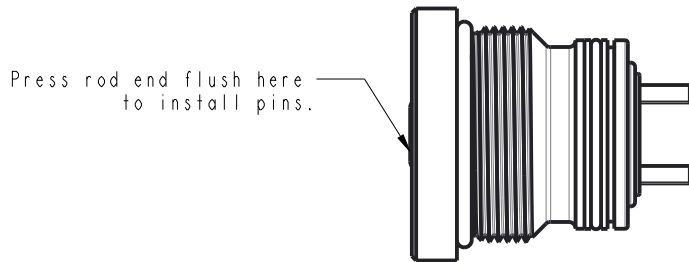
-Anti-Rotation Pins (included with each device) have sufficient length to fully engage in plunger as well as engage in the fixture greater than the total plunger stroke.

- Replacement anti-rotation pin part numbers are below for each size of cylinder.

MODEL NO.	PIN NO.
21-0206-XX	81-5905-09
21-0209-XX	23-5200-03
21-0210-XX	23-5200-04
21-0213-XX	23-5200-04
21-0216-XX	23-5200-05
21-0221-00	23-5200-05

Installation of Anti-Rotation Pins- Optional

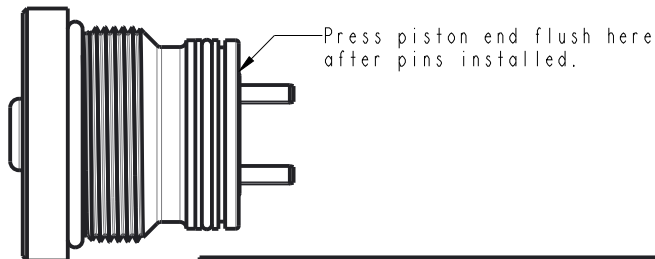
1. Press rod end of plunger flush with the end of the cylinder body. See view below. Care must be taken not to push the rod out of the rod seal. Piston seal may be exposed in certain cylinder models.



2. Press in the pins provided. Ensure pins start straight and are fully seated in the plunger. (An increase in resistance will be felt when pin is fully seated.)

NOTE: If piston seal was exposed during anti-rotation pin installation. Lubricate seal with non-silicone grease or clean hydraulic oil prior to reinstallation.

3. With both pins installed, carefully press piston end of the plunger flush with end of body. See view below.



4. Cylinder is ready for installation into fixture.

INSTALLATION INSTRUCTIONS



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

A	2753	RELEASE	DKC	10/1/14
REV	IN ACCORDANCE WITH ECN	EFFECTIVE DATE	REVISED BY	DATE
DRW BY:	DKC	DRAWING STATUS: Released		
DATE:	3/10/14	PRODUCTION APPROVED FOR RELEASED STATUS ONLY		

ASSEMBLIES AFFECTED
21-0206-XX 21-0209-XX
21-0210-XX 21-0213-XX
21-0216-XX 21-0221-00

INSTRUCTIONS, INSTALL, CYL, CM, THREADED	
THREAD IN	
SIZE	IS2101
REV	A

FORM FEG041-IS.AS1ZE, REV. B

SHEET 2 OF 3

1 2

INSTALLATION INSTRUCTIONS CONTINUED

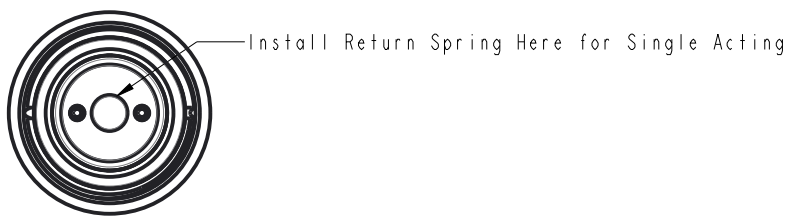
Installation Notes

- It is recommended that all cavities be prepared using a ball hone such as a *Flex-Hone™. This will prepare cavity for installation by deburring and rounding sharp edges to prevent seal damage.
- All seals should be lubricated with a non-silicone grease (recommended) or clean hydraulic oil prior to installation.
- Cylinder body threads should be lubricated prior to installation to permit proper torquing.
- For single acting operation of thread-in 21-02XX-XX cylinder, the included return spring is required. Refer to chart below for replacement return spring number.

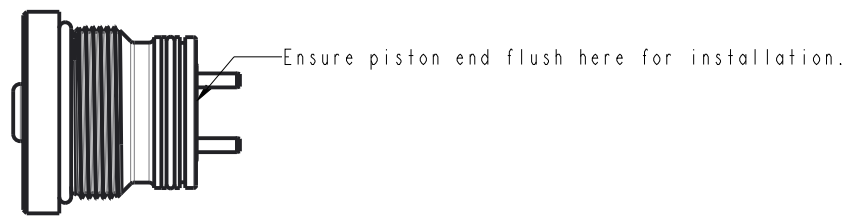
MODEL NO.	SPRING NO.
21-0206-XX	23-3550-11
21-0209-XX	23-3550-12
21-0210-XX	23-3550-12
21-0213-XX	23-3550-14
21-0216-XX	23-3550-15
21-0221-00	23-3550-16

Installation

1. Lubricate all seals with non-silicone grease (recommended) or clean hydraulic oil.
2. If using cylinder as single acting, install included return spring in plunger cavity with a small amount of grease to hold it in place during installation. For double acting systems, no spring is necessary.




3. If using anti-rotate pins, ensure the piston end of plunger is flush with the open end of the body or slightly below. Piston seal should not be exposed. See view below.
 - a. Insert cylinder in to cavity. Apply slight downward pressure while rotating cylinder. This motion will align pins and start threads.



4. Torque cylinder using specifications below.

MODEL NO.	TORQUE (FT-LBS)
21-0206-XX	25
21-0209-XX	35
21-0210-XX	60
21-0213-XX	65
21-0216-XX	160
21-0221-00	200

INSTALLATION INSTRUCTIONS	 <p>VEKTEK, INC. 1334 E. SIXTH AVE. P.O. BOX 625 EMPORIA, KS. 66801 U.S.A.</p>
ASSEMBLIES AFFECTED	INSTRUCTIONS, INSTALL, CYL, CH, THREADED
21-0206-XX 21-0209-XX 21-0210-XX 21-0213-XX 21-0216-XX 21-0221-00	THREAD IN
SIZE A	<div style="font-size: 2em; font-weight: bold;">IS2101</div>
	REV A

A	2753	RELEASE	DKC	10/1/14
REV	IN ACCORDANCE WITH ECN	EFFECTIVE DATE	REVISED BY	DATE
DRW BY:	DKC	DRAWING STATUS: Released		
DATE:	3/10/14	PRODUCTION APPROVED FOR RELEASED STATUS ONLY		

SHEET 3 OF 3