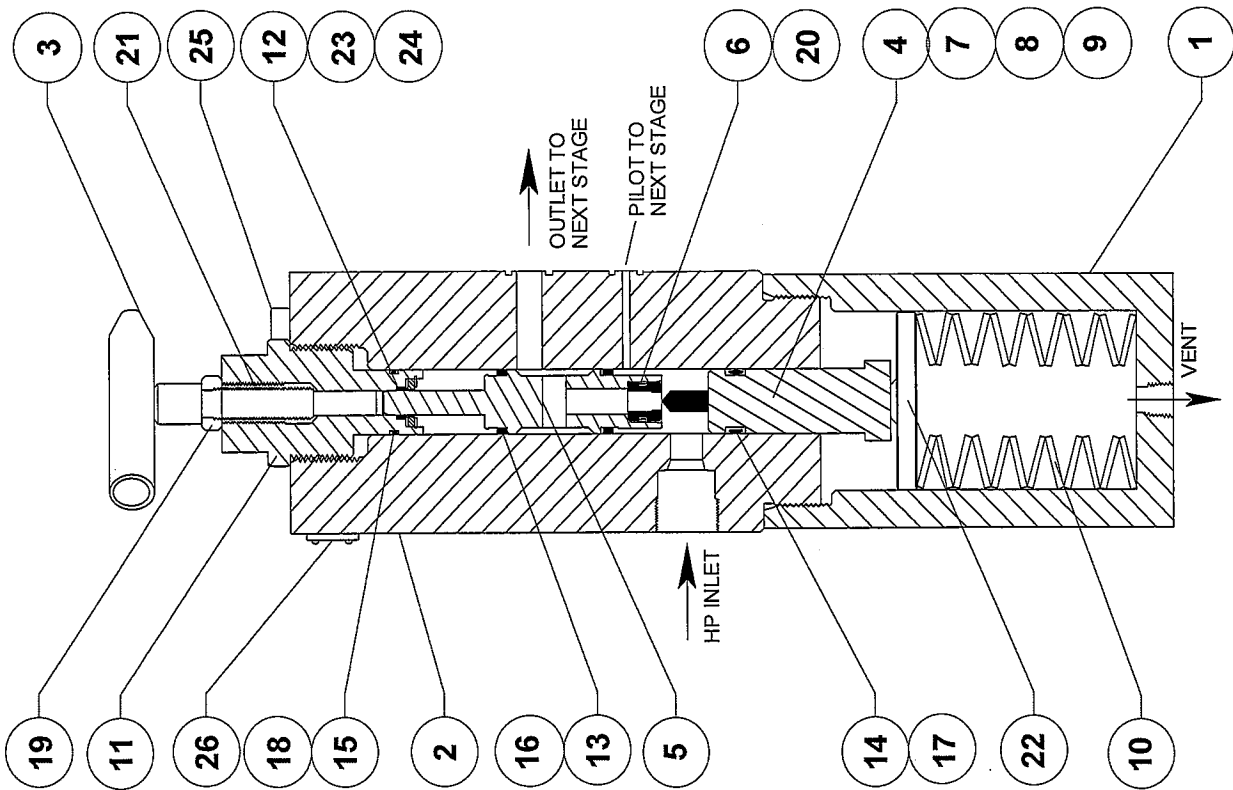


MATERIAL LIST - SkoFlo Valve
BPR MF PRIMARY STAGE

ITEM QTY	PART NO.	DESCRIPTION	MATERIALS
1	BPR15000MFB-P-1	BASE CAP	NITRONIC 60 SS
2	BPR15000MFB-P-2	BODY	NITRONIC 60 SS
3	BPR15000MFB-P-3	ADJUSTMENT HANDLE	N 60/316L/304 SS / NI-BRONZE
4	BPR15000MFB-P-4	PISTON	NITRONIC 60 SS
5	BPR15000MFB-P-5	SEAT HOLDER	NITRONIC 60 SS
6	BPR15000MFB-P-6	SEAT	CERAMIC
7	BPR15000MFB-P-7	PIN HOLDER	NITRONIC 60 SS
8	BPR15000MFB-P-8	PIN	CERAMIC
9	BPR15000MFA-9	PIN SPRING	316 SS
10	BPR15000MFB-P-10	PISTON SPRINGS	17-7 SS
11	BPR15000MFB-P-35	STEM CAP	NITRONIC 60 SS
12	BPR15000MFB-P-11	CUP SEAL (ATM)	TEFLON/ GRAPHITE/ 316 SS
13	BPR15000MFB-P-12	CUP SEAL (SEAT HOLDER)	TEFLON/ GRAPHITE/ 316 SS
14	BPR15000MFB-P-13	CUP SEAL (PISTON)	TEFLON/ GRAPHITE/ 316 SS
15	BPR15000MFB-P-14	O-RING (STEM CAP)	EPDM
16	BPR15000MFB-P-27	BACK UP RING FOR ITEM 13	PEAK
17	BPR15000MFB-P-28	BACK UP RING FOR ITEM 14	PEAK
18	BPR15000MFB-P-29	BACK UP RING FOR ITEM 15	PEAK
19	SF5000C-17	LOCK NUT (HANDLE)	316 SS
20	BPR15000MFB-P-24	O-RING (SEAT)	EPDM
21	BPR15000MFB-P-19	HANDLE BUSHING	NI-BRONZE
22	BPR15000MFB-P-31	SPRING WASHER	NITRONIC 60 SS
23	BPR15000MFB-P-32	STEM SEAL RETAINER	NITRONIC 60 SS
24	BPR15000MFB-P-33	RETAINING RING	316 SS
25	BPR15000MFB-P-34	STEM CAP LOCK SCREW	316 SS
26	SF10000-25	NAMEPLATE	302 SS







NOTE: SEE DWG SF-0577 FOR ENTIRE ASSEMBLY

SkoFlo Valve Model BPR MF		SkoFlo INDUSTRIES INC. Woodbury, VA	
SCALE: NONE	APPROVED BY:	DRAWN BY: FJG	REV
DATE: 10/1/01		REVISED: 3/1/04	
BPR MF BACK PRESSURE REGULATOR ASSEMBLY SECTION / PARTS LIST PRIMARY STAGE		DRAWING NUMBER	A
		SF-0578	

BPR MF Series Primary Stage Assembly Instruction

Piston Assembly	
	<p>Piston PN 21911, Item #4</p> <p>Pin Holder, PN 20312, Item #7</p> <p>Pin, PN 20544, Item #8</p> <p>Spring, PN 71002073, Item #9</p> <p>Cup Seal, PN 71001864, Item #14</p> <p>Back Up Ring, 71001881, Item #17</p>
	<p>Step 1</p> <p>Place Back Up Ring, Item #17 Onto Piston Body</p>
	<p>Place Cup Seal, Item #14 Onto Piston</p> <p>CAUTION: Cup Seal Spring Should Be Visible and; Opposite of Back Up Ring</p> <p>See Next Photo</p>
	<p>CHECK STEP:</p> <p>Spring In Cup Seal Shall Be Visible As Shown</p>





BPR MF Series Primary Stage Assembly Instruction

	<p>Place Spring, Item #9 Into Piston Body As Shown.</p>
	<p>Insert Pin, Item #8 into Pin Holder, Item #7 As Shown</p>
	<p>Mated Pin and Pin Holder</p>
	<p>Apply BLUE Loctite To OD of Pin Holder Threads</p>

BPR MF Series Primary Stage Assembly Instruction

<p>Quality Check</p> 	<p>Thread Pin Holder With Pin Into Piston Body As Shown.</p>
	<p>Hold Piston securely in aluminum vice.</p> <p>Torque to 40 Ft-Lbs</p> <p>Record Torque onto Shop Traveler</p>
<p>Seat Holder Assembly</p>	
	<p>Seat Holder PN 20539, Item #5</p> <p>Seat PN 20275, Item #6</p> <p>Seat Holder O-Ring, Item #20</p> <p>Seat BU Ring, Item #28</p> <p>Seat Holder BU Ring, Item #16</p> <p>Cup Seals, Item #13</p>
	<p>Place O-Ring, Item #20 Into Groove of Ceramic Seat As Shown.</p> <p>CAUTION: O-RING MUST BE PLACED ON THE SMALL ID DIAMETER SIDE OF THE SEAT</p>

BPR MF Series Primary Stage Assembly Instruction

	<p>Place Back Up Ring, Item #28 Into Groove of Ceramic Seat As Shown.</p>
	<p>Place One Each Back Up Ring, Item #16 Onto Seat Holder, Item #5 as Shown.</p>
	<p>Place Cup Seal, Item #13 Onto Seat Holder As Shown.</p>
<p>Quality Check</p>	<p>CHECK STEP: Spring In Cup Seal Shall Be Visible As Shown</p>
	

BPR MF Series Primary Stage Assembly Instruction

	<p>Rotate Seat Holder Around and Place Back Up Ring, Item #16 Onto Opposite End as Shown Pressing Up Against Shoulder.</p>
	<p>Place Cup Sea, Item #13 Onto Seat Holder As Shown.</p>
<p>Quality Check</p>	<p>CHECK STEP:</p> <p>Spring In Cup Seals Shall Be Visible As Shown</p>
	<p>Apply Parker Lube To O-Ring and Back Up Ring Before Installing Into Seat Holder</p>




BPR MF Series Primary Stage Assembly Instruction

	<p>Press Seat Into Seat Holder With Large Diameter in Seat Holder Entering Seat Holder First.</p> <p>Backup Ring Needs To be Toward The Large Diameter Side of The Seat.</p> <p>CAUTION: SEAT HAS ORIENTATION</p>
	<p>Press Seat Assembly Into Seat Holder Until End is Flush As Shown</p> <p>Seat Holder Must Bottom Out in Body.</p> <p>CAUTION: SEAT HAS ORIENTATION WITH <i>SMALL DIA HOLE</i> VISIBLE to TECHNICIAN</p>
<p>Primary Stage Top Cap Assembly</p>	
	<p>Install Brass Bushing PN 20566, Item #21 Into Stem Nut PN 20565. Item #11</p>
	<p>Apply Red 271 Loctite To Threads of Brass Bushing.</p>

BPR MF Series Primary Stage Assembly Instruction

	<p>Bushing Needs To Be Flush With Top of Stem Nut</p>
	<p>Flip Stem Nut to Opposite Side and Install Back Up Ring, Item #27</p> <p>Press Back Up Ring Into Bore In Stem Nut</p> <p>Backup Ring Must Bottom Out in Bore</p>
<p>CAUTION</p> 	<p>Press Cup Seal, Item #12 Into Bore In Stem Nut</p> <p>Cup Seal Must Bottom Out on Back Up Ring</p> <p>CAUTION: Cup Seal Has Orientation Spring Faces Technician</p>
<p>Quality Check</p> 	<p>QUALITY CHECK</p> <p>Ensure Spring In Cup Seal Is Facing the Technician.</p>


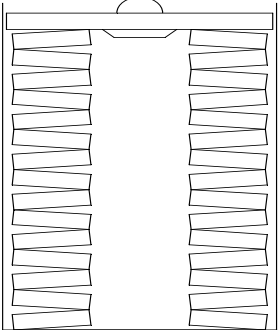


BPR MF Series Primary Stage Assembly Instruction

<p>CAUTION - ORIENTATION</p> 	<p>Place Seal Retainer PN 20567, Item #23 Over Cup Seal In Stem Nut.</p> <p>CAUTION - This Part Has Orientation Collar of Seal Retainer Must Face Cup Seal</p>
	<p>Seal Retainer Installed</p> <p>Flush side faces Technician</p>
	<p>Install "C" Clip, Item #24 Over Retainer</p>
	<p>C Clip Must Fit Into Groove of Stem Nut and Secure the Cup Seal Retainer</p>





BPR MF Series Primary Stage Assembly Instruction

	<p>Install O-Ring, Item #15 In Groove On Stem Nut</p> <p>O-Ring Must Be On the Opposite Side of The Threads</p>
	<p>Place O-Ring, Item #15 As Shown</p>
<p>Quality Check</p>	<p>Backup Ring, Item #18 Needs to be Toward The Threads With It's Contour Gland Facing the O-Ring</p> <p>Orientation: BU Ring Contour Gland Mates to O-Ring</p>
	<p>O-Ring and Backup Ring Shall Be Installed As Shown.</p>
	
<p>Spring Cap Assembly</p>	




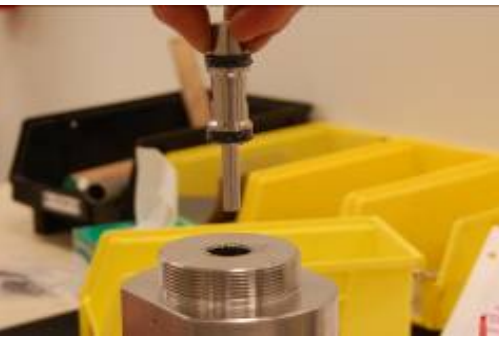
BPR MF Series Primary Stage Assembly Instruction

	<p>Spring Cap PN 20536, Item #1</p> <p>Spring Spacer PN 20762, Item #22</p> <p>1/2 Dia Grade 10 Ball PN 71001971</p> <p>Belleville Spring Washers PN 71001967, Item #10</p>
	<p>Stack 15 each 2.750 X 1.062 X .238 Spring Washers As Shown, They Oppose each other.</p>
	<p>Place Spring Washers Over T Handle Wrench To Aid In Placing Spring Washers Into Spring Cap</p>
	<p>Place Spring Washers PN 71001967 Into Spring Cap PN 20536 As Shown.</p> <p>CAUTION: Springs Have Orientation SEE SPRING WASHER STACK DIAGRAM</p>





BPR MF Series Primary Stage Assembly Instruction

	<p>Spring Washers Fit Into Spring Cap As Shown.</p>
	<p>Locate Spring Spacer, PN 20762, Item #22</p> <p>Place on top of Spring Stack with nipple facing springs.</p>
	<p>Apply Anti Seize Onto Divot for 1/2" Diameter Spherical Ball</p> <p>Spherical Radius Must Face Technician</p>
	<p>Locate 1/2" Diameter Spherical Ball</p>


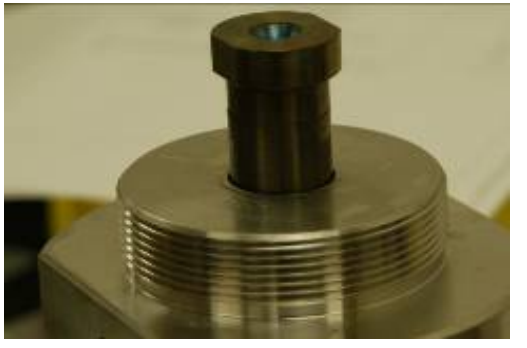

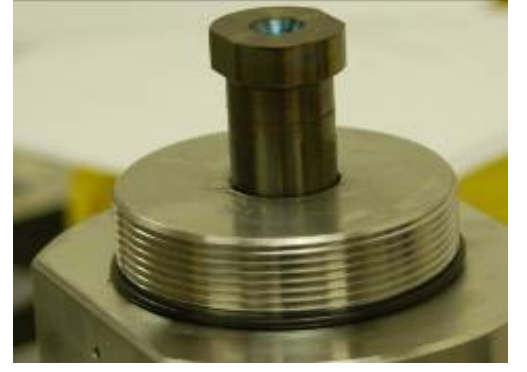
BPR MF Series Primary Stage Assembly Instruction

	<p>Place 1/2" Diameter Spherical Ball Onto Spring Spacer.</p>
<p>Final Assembly - Primary Stage</p>	
	<p>Prepare To Install Seat Holder Sub Assembly</p> <p>Apply Parker Lube Primary Stage Body Near Chamfer</p>
	<p>Apply Parker Lube To Cup Seals On Seat Holder</p>
	<p>Insert Seat Holder Sub Assembly</p> <p>CAUTION: Be Careful Not to Cut or Tear Cup Seals</p>





BPR MF Series Primary Stage Assembly Instruction

	<p>Press Seat Holder Assembly Into Valve Body As Shown.</p>
	<p>Continue Pressing Seat Holder Into Primary Stage Body, Use Tool To Press Into Place</p>
	<p>Press Seat Holder Assembly Down Into Bore Until Seat Holder Bottoms Out</p>
	<p>Seat Holder Bottomed Out In Bore</p>

BPR MF Series Primary Stage Assembly Instruction

	<p>Install Piston Sub Assembly</p> <p>Apply Parker Lube to Piston Sub Assembly Cup Seal</p>
	<p>Press Piston Into Body As Shown</p>
	<p>Locate O-Ring, Item #31</p>
	<p>Place O-Ring Onto Valve Body As Shown</p>

BPR MF Series Primary Stage Assembly Instruction

	<p>Install Spring Cap Sub Assembly</p> <p>Prep Threads With Anti Seize</p>
	<p>Install Spring Cap Sub Assembly By Aligning Divot on Piston On Primary Stage Body to 1/2" Dia Spherical Ball on Spring Cap Assembly</p> <p>Hand Tighten Spring Cap Until It Contacts Primary Stage Body</p>
	<p>Spring Cap and Primary Stage Body Making Contact</p>
	<p>Apply Parker Lube To O-Ring and Back Up O-Ring On Stem Nut As Shown</p> <p>Apply Never Seize To OD Threads</p>

BPR MF Series Primary Stage Assembly Instruction

	<p>Thread TOP Cap Into Valve Body As Shown</p> <p>Tighten Nut Until It Contact the Body, Then Back Out to Align Nut With Nearest Relief on Nut With Screw Hole On Body</p>
	<p>Apply Never Seize to Threads.</p> <p>Install M8 X 10 SHCS Lock Screw In Body.</p> <p>Tighten to 10 Ft-Lbs and Record on Traveler.</p>
	<p>Apply Anti Seize To Stem Handle Threads</p>
	<p>Install Stem Handle Sub Assembly</p>
	<p>PRIMARY BODY is NOW READY FOR FINAL ASSEMBLY.</p>