

# Step by Step Assembly Instructions

## SF10000 NMFA

### Body Assembly

Body, PN 20673 Seat, PN 20275 Seat "O" Ring, Seat BU Ring, Seat Retainer, P/N 20528  
Snap Ring, P/N 71002969 Base Cap, PN 20282 Base Cap "O" Ring, Base Cap BU Ring,  
M8 X 1.25 X 12 Lock Bolt, M8 X 1.25 X 10 Lock Bolt, Lock Plate, P/N 20677 Handle Top, P/N 20693  
M8 X10 SHSS Cup, P/N 71002102 AE Adapter (2 ea.), P/N 20531 "O" Ring for AE Adapter, (2 ea.)



#### STEP 1

Install "O" Ring and BU Ring on 20275 Seat.

ORIENTATION : "O" Ring closest to Small Hole



#### STEP 2

Install Seat in Body.

ORIENTATION : Small Hole faces OUT.

NOTE : Be sure Seat Cavity in Body is clean and free of obstruction for proper Seat placement.



#### STEP 3

Install 20528 Seat Retainer over Seat.

ORIENTATION : Recess in Retainer faces Seat.

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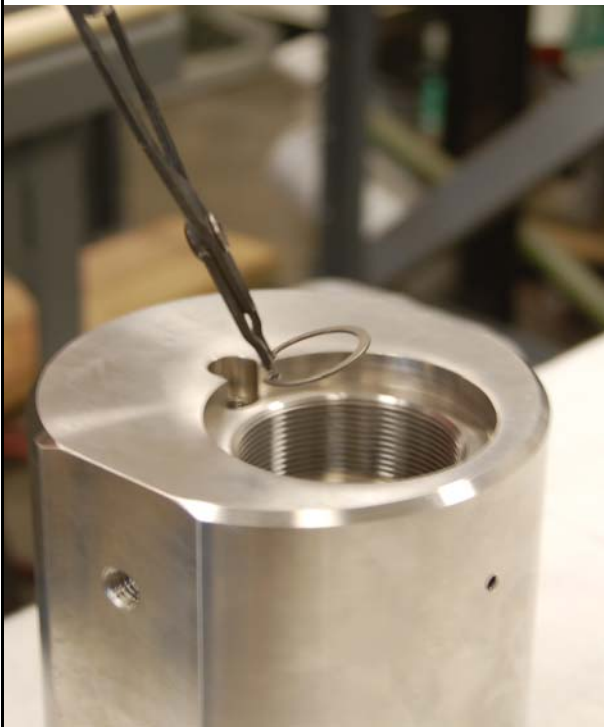
Seat Retainer properly installed



### STEP 4

Install 71002969 Snap Ring to secure 20528 Seat Retainer.

NOTE : When properly positioned, Retainer will be movable under the Snap Ring.



Long Handle Snap Ring Pliers will be needed to install the Snap Ring

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Snap Ring is properly installed.

## Piston Assembly

Piston P/N 20613 Pin Holder, P/N 20639 Pin, P/N 20638 Springs (11 ea.), P/N 71002075 Spacer, P/N 20689 Cup Seal, P/N 71001867, Cup Seal Retainer, P/N 20228 Spiral Ring, P/N 71001945



20613 Piston



### STEP 5

Install 71001867 Cup Seal on 20613 Piston

ORIENTATION : Flat of Seal to Piston - Wire Ring Facing Out

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## Step 6

Install 20288 Retainer over 71001867 Cup Seal

ORIENTATION : Recessed area of Retainer faces to Cup Seal



20288 Retainer installed properly.



## Step 7

Install 71001945 Spiral Ring in 20613 Piston groove next to 20288 Retainer.

# Step by Step Assembly Instructions



Step 8

Install 71002075 Pin Spring in 20613 Piston



STEP 9

Place Pin, P/N 20638 in Pin Holder, P/N 20639

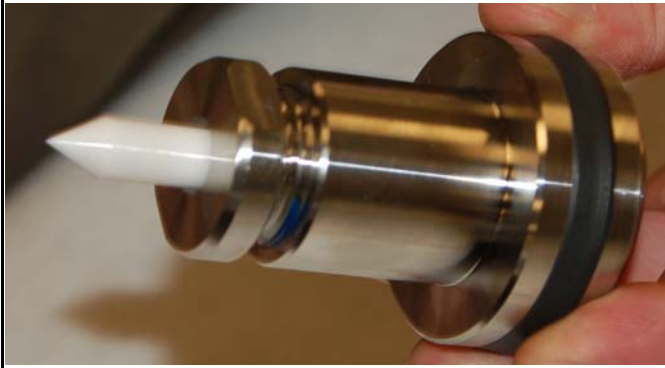


STEP 10

Apply Blue Loctite to 20639 Pin Holder

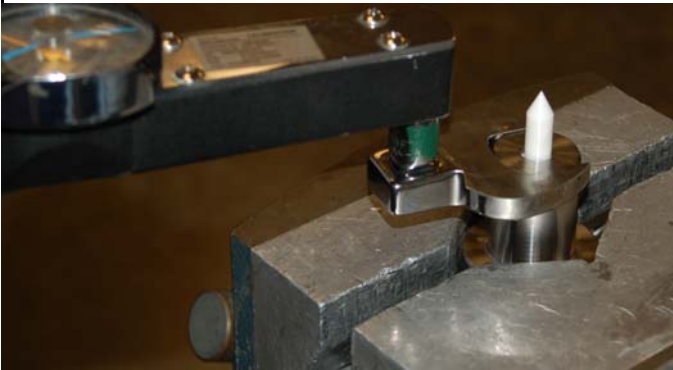


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### STEP 11

Place 20639 Pin Holder in 20613 Piston



### STEP 12

Place Piston Assembly in Aluminum Jaw Vice and Tighten Pin Holder.

Torque to 15 Ft/Lbs

1 1/8" Crows Foot Wrench



### STEP 13

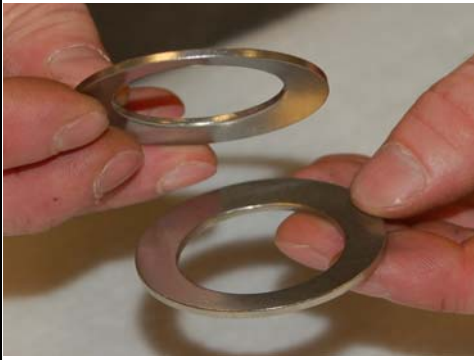
Place 20689 Spacer in Body.

Both Sides have same bevel



20689 Spacer properly placed in Body.

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Belleville Springs. 11 ea. 71001964

ORIENTATION : Each Spring opposes the next one.



Belleville Springs properly stacked



STEP 14

Place 11 ea., Springs, P/N 71001964 in Body.

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### STEP 15

Apply Parker Lube to Cup Seal



### STEP 16

Place Piston Assy. in Body.

ORIENTATION : Cup Seal faces out



Piston Assy. Properly installed in Body.



## Step by Step Assembly Instructions



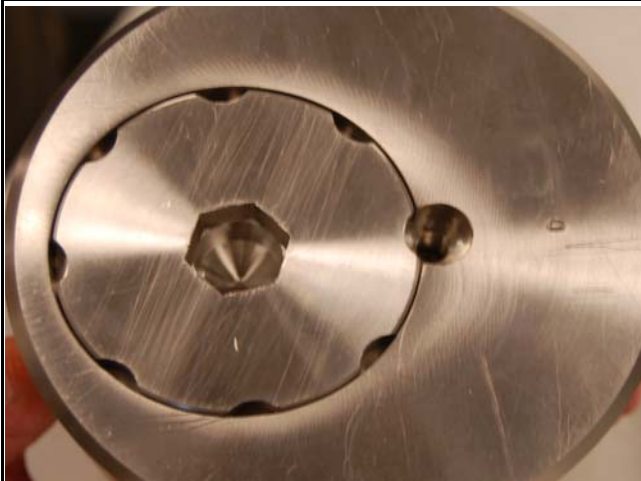
### STEP 17

Place "O" Ring and BU Ring on Base Cap, P/N 20282.

ORIENTATION : BU Ring is closest to Base Cap threads.

### STEP 18

Apply SynLube to Base Cap threads before installing.



### STEP 19

Install Base Cap in Body and tighten firmly.

Position notch in Base Cap for Lock Bolt alignment.



### STEP 20

Install M8 X 1.25 X 12 to Lock Base Cap.

# Step by Step Assembly Instructions

## Needle Stem Assembly

Needle, PN 20674, "O" Rings (2 ea.), BU Rings (2 ea.)

### STEP 21

Install "O" Rings and BU Rings on Needle Stem.

ORIENTATION : "O" Rings closest to point of Needle in both locations.



## Trim Assembly

Trim, P/N 20617, "O" Ring (1 ea.), BU Ring (1 ea.) "O" Ring (1 ea.), BU Ring (1 ea.)



### STEP 22

Install "O" Rings and BU Rings on Trim.

ORIENTATION : "O" Rings closest to small diameter of Trim in both locations.

## Stem Retainer Nut Assembly

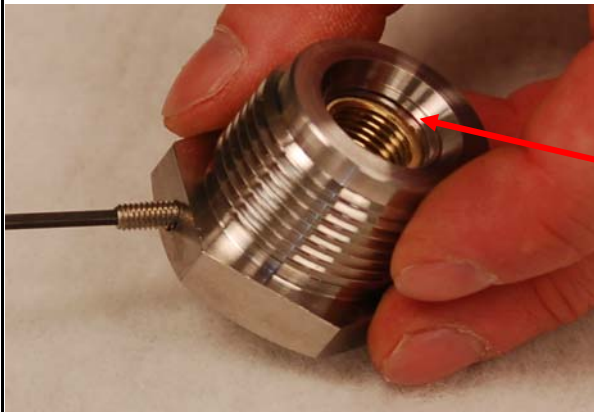
Nut, P/N 20675, Brass Bushing, P/N 20681, SHSS Cup, M4 X 8, P/N 71002100

# Step by Step Assembly Instructions



## STEP 23

Apply Red Loctite to Brass Bushing P/N 20681



## STEP 24

Install Brass Bushing in Retainer Nut

NOTE : Bushing must be Flush with or Below chamfer in Retainer Nut.

## STEP 25

Install M4 X 8 SHSS Cup in Retainer Nut

## STEP 26

Install Needle Stem in Retainer Nut  
Turn Stem into Nut until it Stops.

Apply Parker Lube to "O" Rings.



## Step by Step Assembly Instructions



### STEP 27

Apply Parker Lube to Trim "O" Rings



### STEP 28

Install Trim in Body

# Step by Step Assembly Instructions

STEP 29

Apply SynLube to Retainer Nut threads



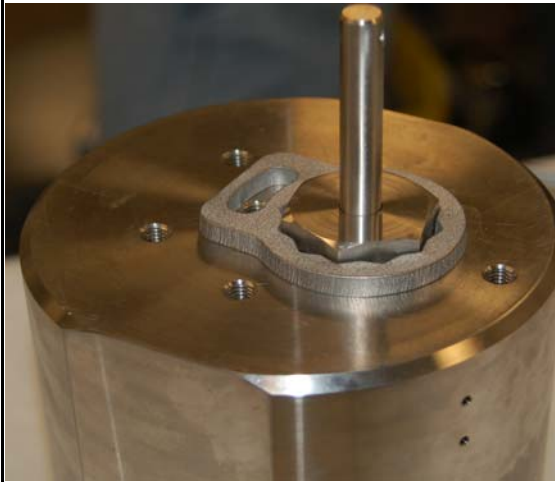
STEP 30

Install Needle and Retainer Nut in Body and tighten Retainer Nut firmly.



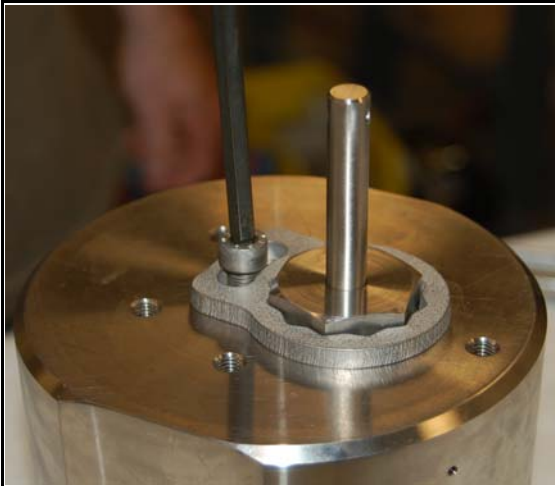


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### STEP 31

Install 20677 Lock Plate over Retainer Nut



### STEP 32

Install M8 X 1.25 X 10 in Body to secure Lock Plate.

# Step by Step Assembly Instructions

## STEP 33

Find the machined flat on the Stem



## STEP 34

Install Handle Top on Needle Stem and secure with M8 X 10 SHSS Cup.

Set Screw must contact machine flat on Stem.



## Step by Step Assembly Instructions



### STEP 35

Install "O" Rings on AE Adapters.



### STEP 36

Apply Synlube to AE Adapter threads and Parker Lube to "O" Rings.



### STEP 37

Install AE Adapter (2 ea.) in Body.

Torque to 120 Ft Lbs.

1 3/4" Crows Foot Wrench

**ASSEMBLY COMPLETED - READY for TESTING**