SVG Valve Gate Installation Guide

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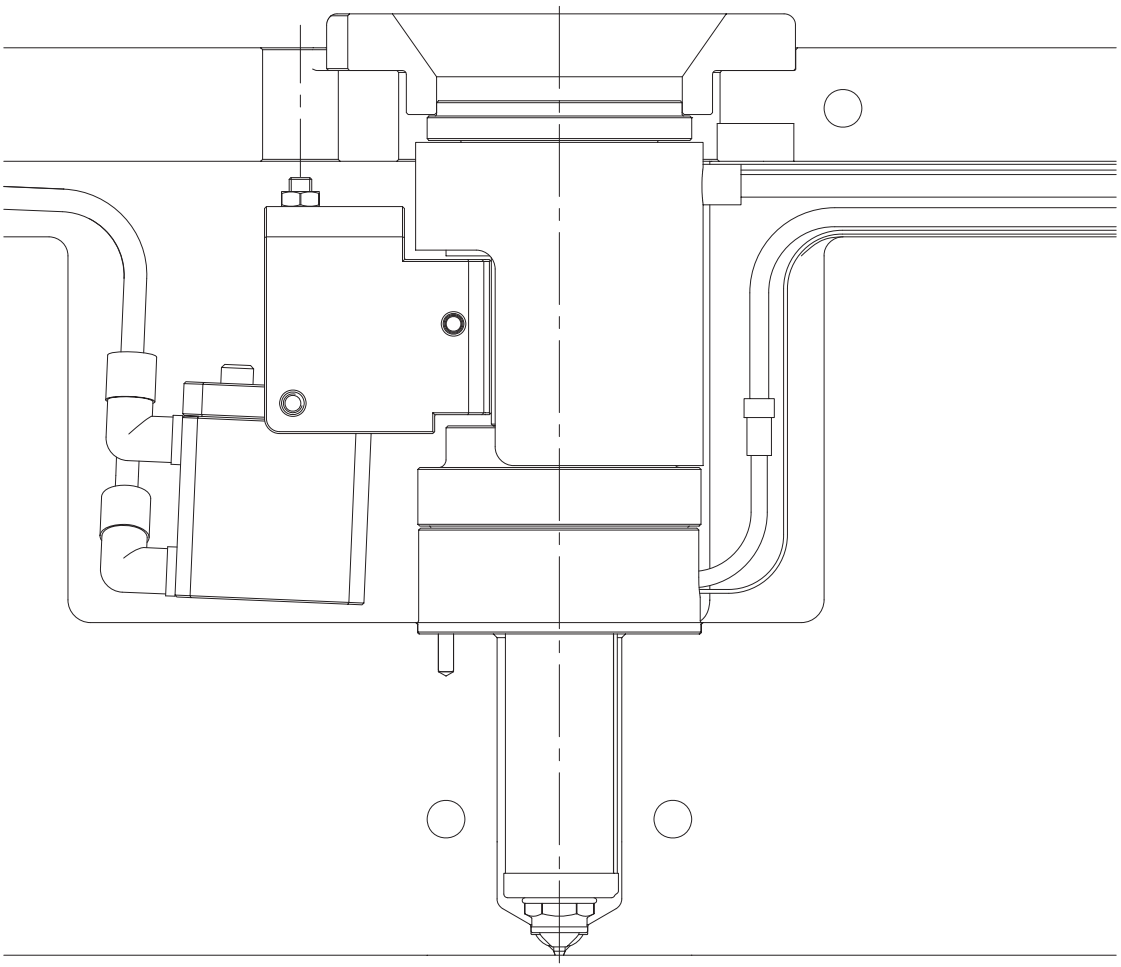
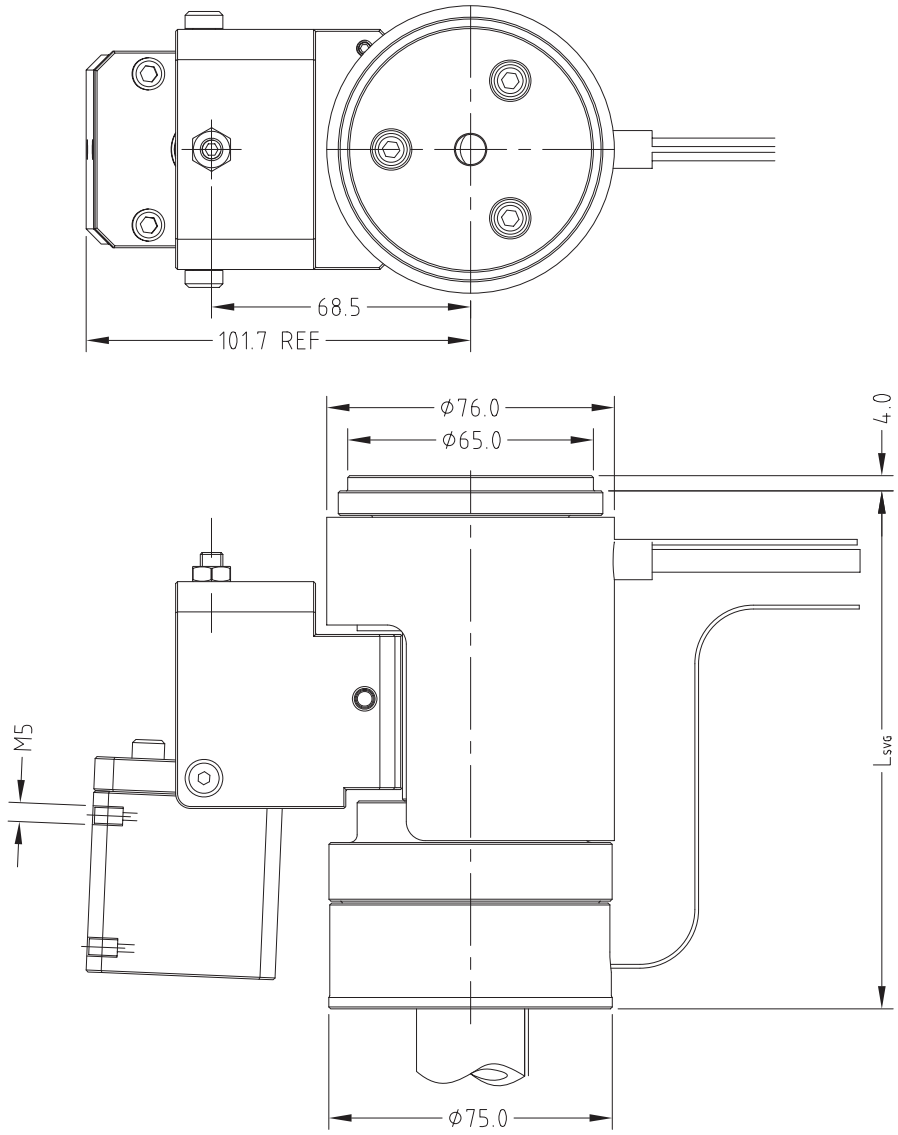
IMPORTANT!!

High temperature (ºC) air fittings and line must be used on this nozzle.
The cylinder should be in the closed position at all times except during injection and packing.
Air quality: Filtered to 40 µM & lubricated
Maximum air: pressure 10 Bar



Key Features

- Suitable for most materials - temperature control in gate area is critical for gate quality
- Tapered or plunger type shut off pin
- Ø2.5mm to Ø5.0mm pin
- Air Actuated
- Compatible with BX 16, 19 and 27 series nozzles



Nozzle Compatibility					
Description	Nozzle	Tip	Nozzle Length	Supplied Pin Size (D x L)	L_{SVG}
SVG33 - 2.5 x 250	BX16	OV / TV	55 - 145	2.5 x 250	134
SVG33 - 3.0 x 250	BX19	OV / TV	55 - 145	3.0 x 250	137
SVG33 - 5.0 x 350	BX27	OV / TV	75 - 175	5.0 x 350	142

→ Refer to Pg. SVG-6 **Pin Details** section to calculate required pin length

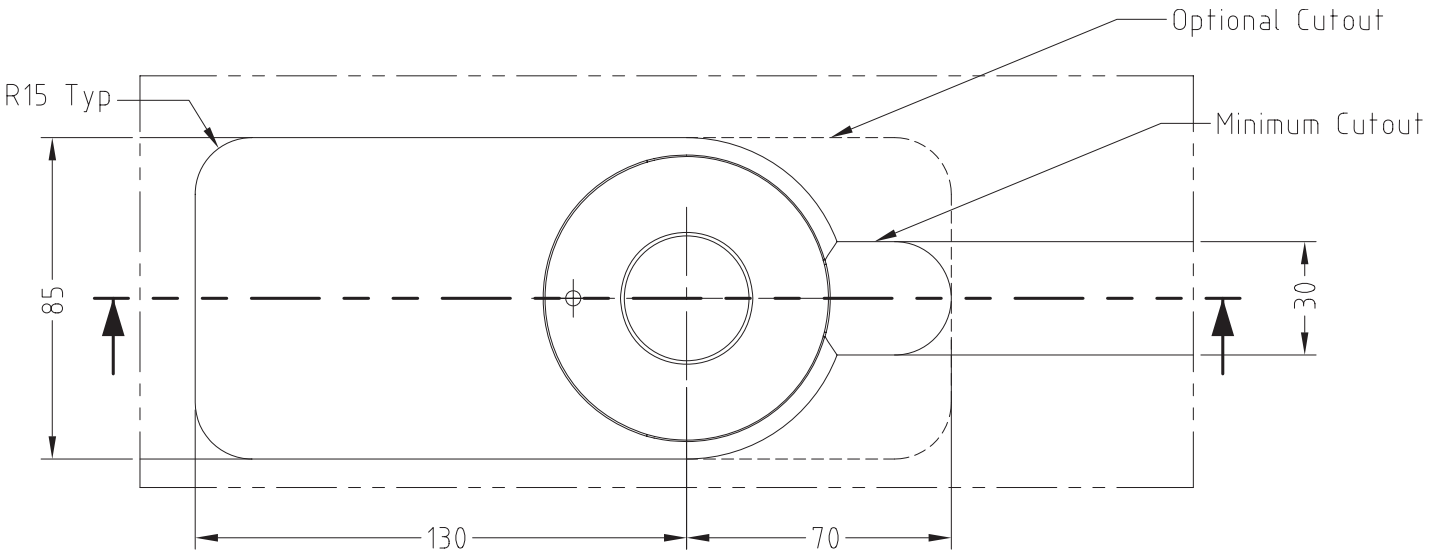
Product Codes		
Description	Fully Assembled	Semi Assembled
SVG33 - 2.5 x 250	91-120-116	91-120-016
SVG33 - 3.0 x 250	91-120-119	91-120-019
SVG33 - 5.0 x 350	91-120-127	91-120-027

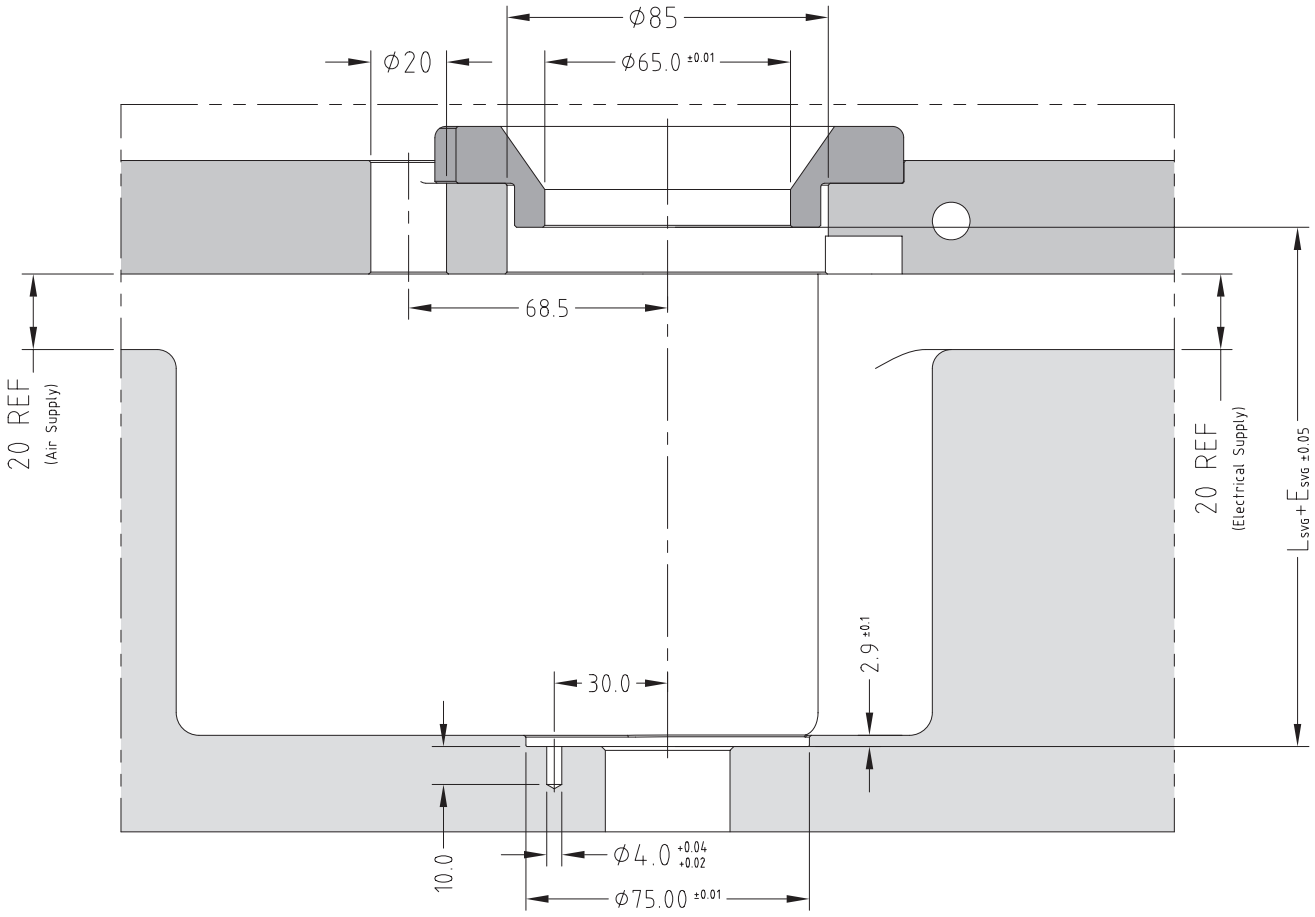
The SVG is available in two formats:

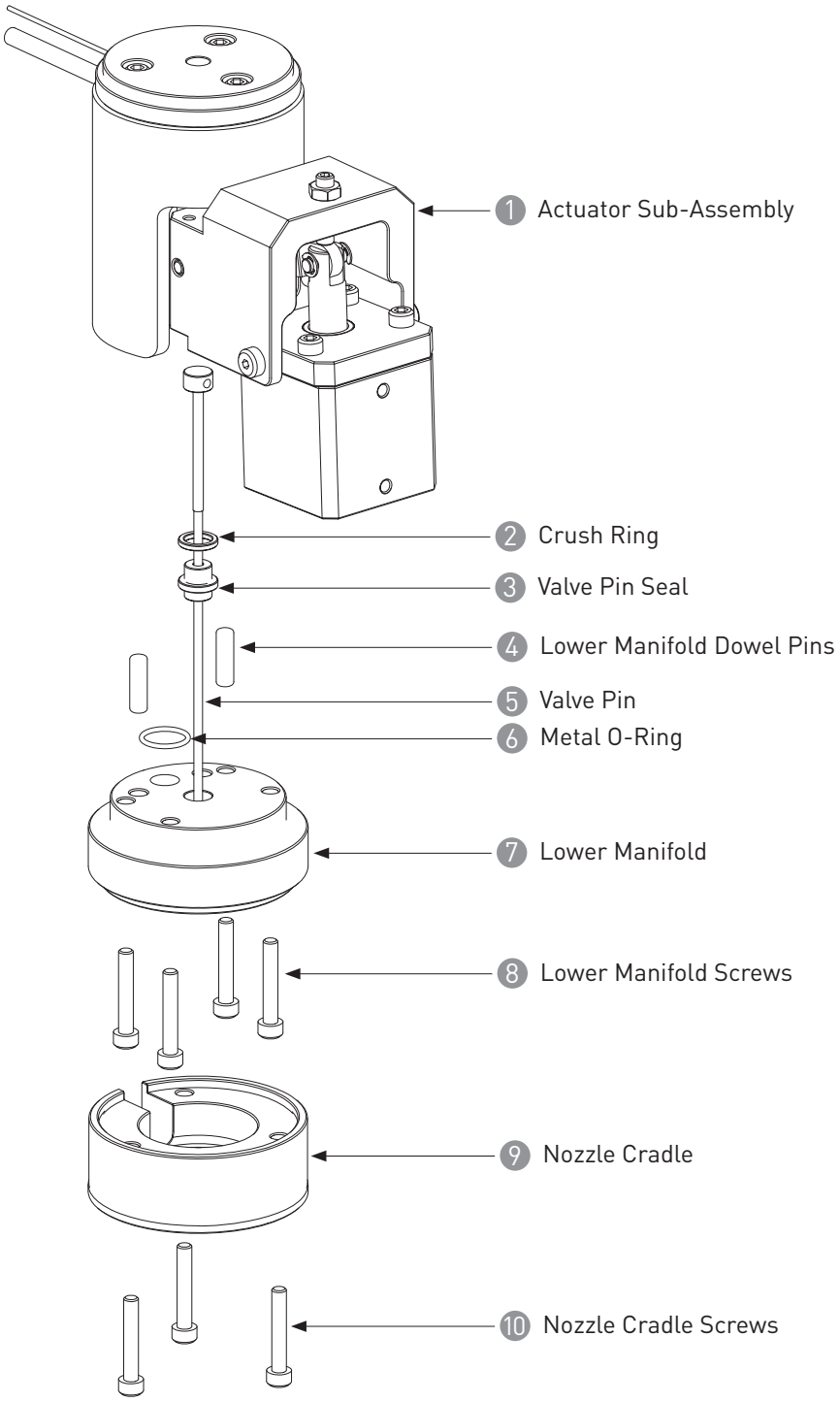
1. **Fully assembled:**
   i. Product is supplied ready to install
   ii. Nozzle **code** must be specified with placing order
2. **Semi Assembled:**
   i. Semi assembled kit set requiring pin to be cut to length and final assembly with nozzle
   ii. Nozzle **size** must be specified when placing order

$E_{SVG} = L_{SVG} \times 0.0000132 \times (\text{nozzle temp. } ^oC - \text{mould temp. } ^oC)$

→ Refer to Pg. SVG-3 for dimension L_{SVG}







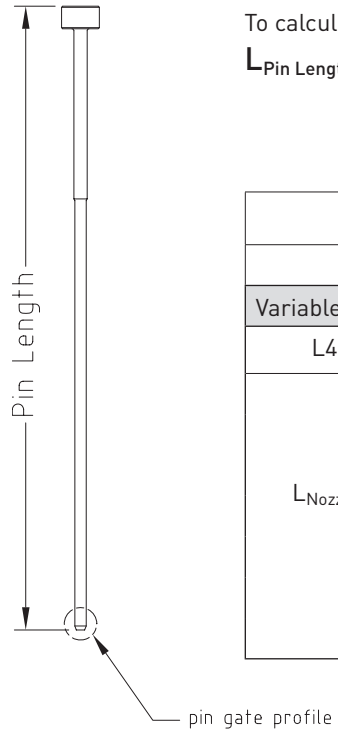
SVG Valve Pin Lengths

ONE

To cut the pin to length you must have the following information:

1. The Nozzle size, (e.g. BXOVBN19075G1)
2. The gate style required e.g. taper or parallel

TWO



To calculate final pin length use the following equation:

$$L_{Pin\ Length} = 55 + L4 + L_{Nozzle}$$

L4 and L_{Nozzle} Values			
	Nozzle Series		
Variable	16	19	27
L4	12	15	20
L_{Nozzle}	55	55	—
	65	65	—
	75	75	75
	95	95	95
	115	115	115
	145	145	145
	—	—	175

EXAMPLE

Example Calculation

Predefined Information: Nozzle size = BXOVBN19075G1

Variable Values: L4 = 15; L = 75

Equation: $L_{Pin\ Length} = 55 + L4 + L_{Nozzle}$

$L_{Pin\ Length} = 55 + 15 + 75$

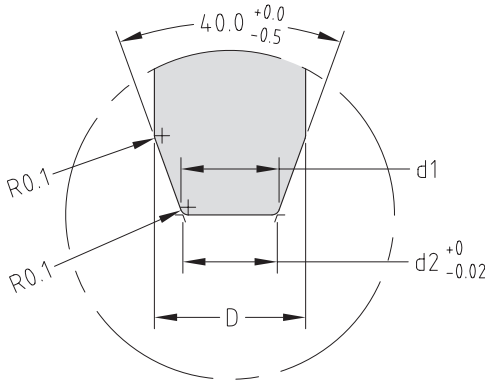
$L_{Pin\ Length} = 145mm$

SVG pin length tolerance is not critical but can be considered as ±0.1mm.

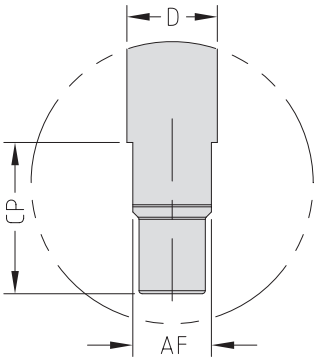
Pin Gate Profile Customisation

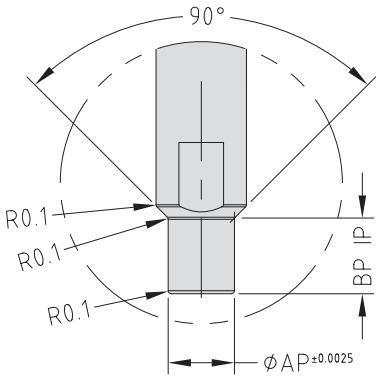
The pin must be ground to the gate profile prior to installation. Pin gate profile customisation is required to prevent damage to the leading edge and subsequent flashing around the gate. Correct pin profiles will form a 0.1mm deep dimple on the moulded part. Typical bush and sprue nuts are supplied with a standarised taper gate profile. Prior to customisation check and confirm the pin gate profile has been supplied to the standard taper gate profile dimensions.

SVG Standard Taper Pin Profiles					
Code	Actuator	Nozzle	D	d1	d2 (IP)
91-120-116	SVG33	BX16	2.5	1.8	1.75
91-120-119	SVG33	BX19	3.0	2.2	2.15
91-120-127	SVG33	BX27	5.0	3.5	3.45



SVG Standard Parallel Pin Profiles							
Code	Actuator	Nozzle	A	AP	BP	AF	CP
91-120-116	SVG33	BX16	2.5	1.792	2.0	2.1	5
91-120-119	SVG33	BX19	3.0	2.192	2.0	2.6	5
91-120-127	SVG33	BX27	5.0	3.492	2.5	4.4	8





Assembling Nozzle to Actuator Sub-Assembly

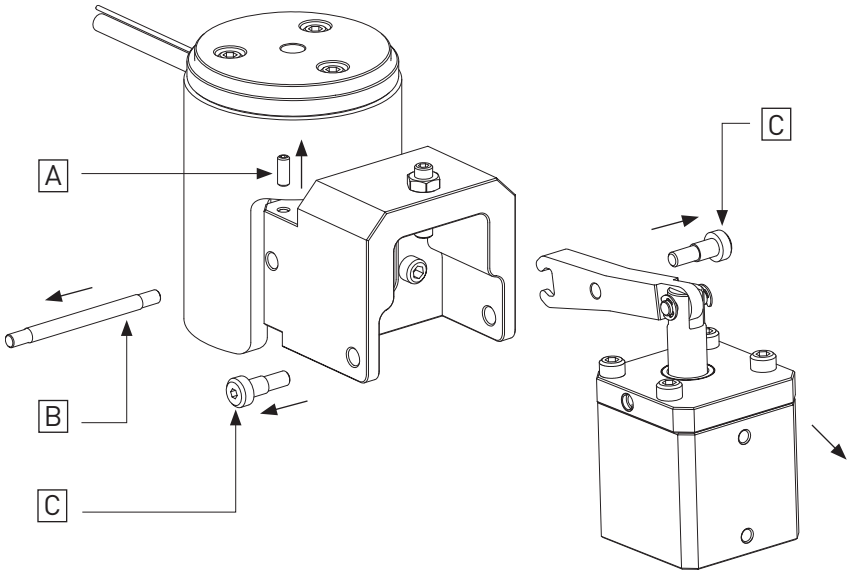
INSTALLATION

ONE

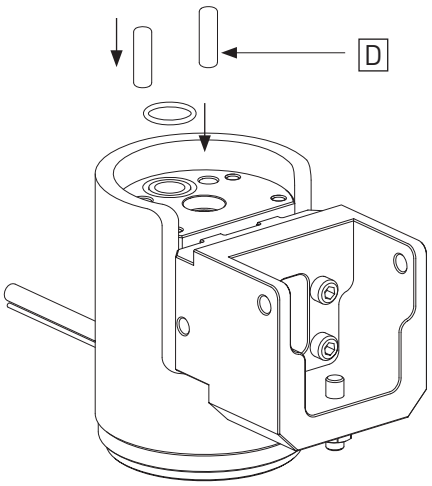
Ensure valve pin is cut to correct length and all mating surfaces are clean.

TWO

Loosen [A] **Lever Pivot Pin Locking Screw** and remove [B] **Lever Pivot Pin**, [C] **Cylinder Pivot Screws** and remove cylinder assembly from the (1) **Actuator sub-Assembly**.

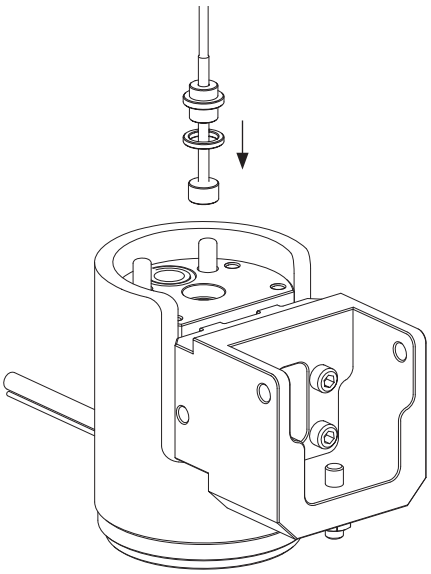


THREE



Fit Ø6x20 [D] **Dowel Pins** and (5) **Metal O-Ring** to top manifold plate.

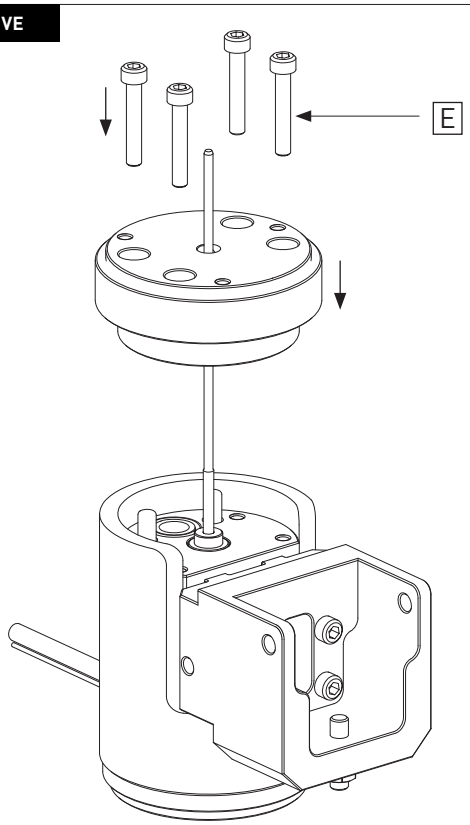
FOUR



Fit (5) **Valve Pin,** (4) **Valve Pin Seal** and (3) **Crush Ring** to the top manifold assembly, ensuring the crush ring is located between the pin seal and the top manifold.

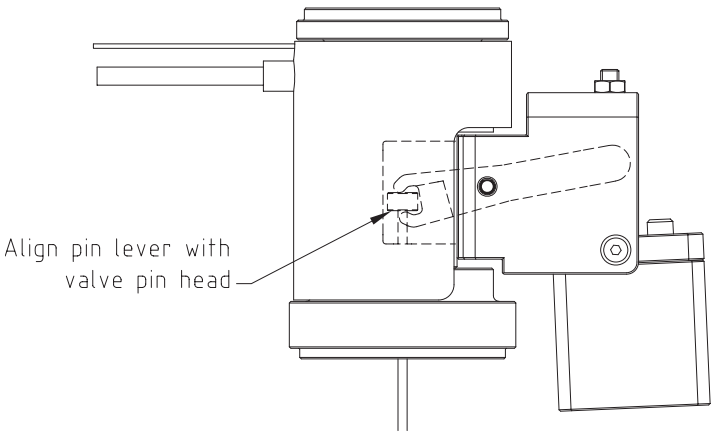
INSTALLATION CONT.....

FIVE



Fit the 6 **Lower Manifold** plate to the top manifold plate assembly and fasten with E **M5x30 Cap Screws**, tighten to 9 Nm.

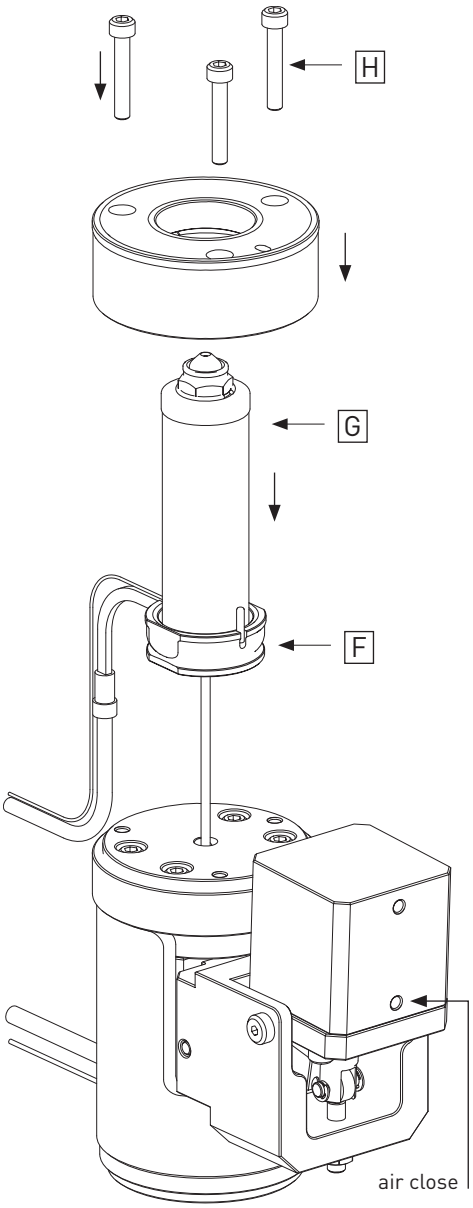
SIX



Fit cylinder assembly to cylinder bracket taking care to align pin lever with valve pin head, and fit lever pivot pin and cylinder pivot screws.

→ Refer Pg.SVG-10 if a valve pin alignment dowel is required.

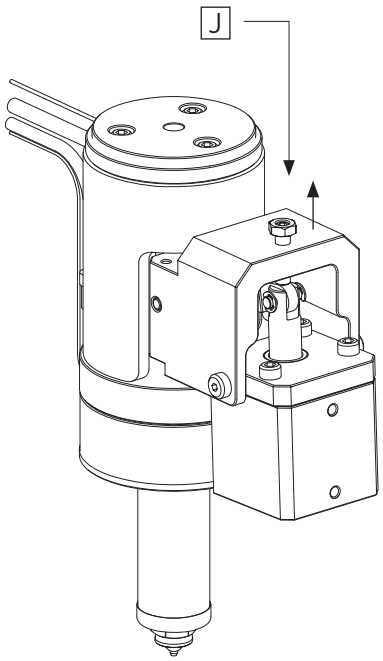
SEVEN



Fit F **BX Dowel Pin** and G **BX Nozzle Assembly** to the nozzle cradle and fit to the actuator assembly, and fasten with H **M5x30 Cap Screws**, tighten to 9 Nm.

Pin Adjustment

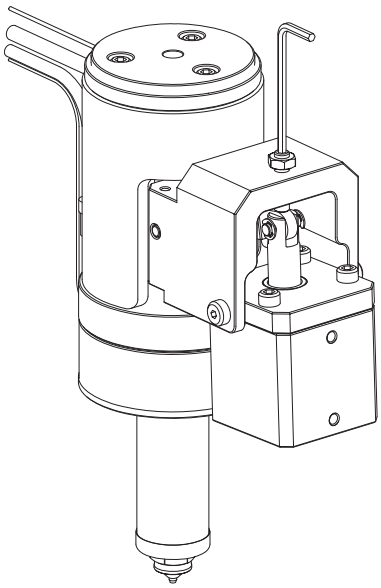
ONE



Ensure air supply is connected to the pin close supply.

Loosen adjustment J **Screw Lock Nut**.

TWO



Ensure the closing air supply is on. Use a hex key in the pin stop screw to adjust the pin to the correct position.

a. For adjusting a new installation:

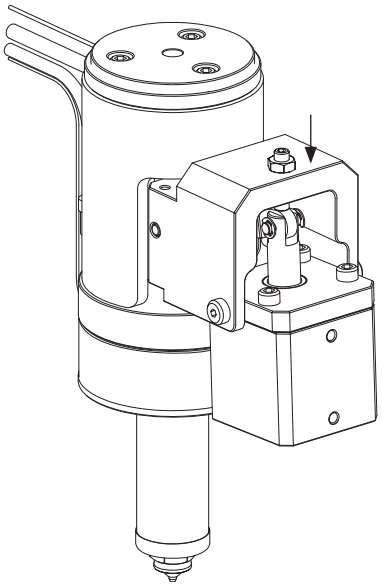
i. While cold set the pin position using a depth micrometer to 'E' back from the cavity. → Refer Pg.SVG-6.

b. For adjusting an existing installation:

i. Heat nozzle and SVG actuator to processing temp.

ii. Adjust the valve pin forward until the pin stops in the gate and then back the pin off by 1/8 of a turn of the stop screw.

THREE



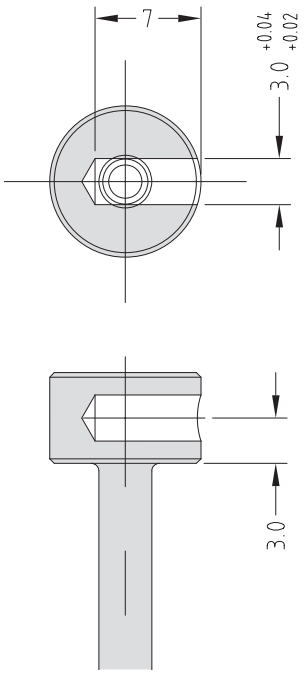
Tighten the adjustment screw lock nut.

Pin adjustment is complete.

Pin Alignment

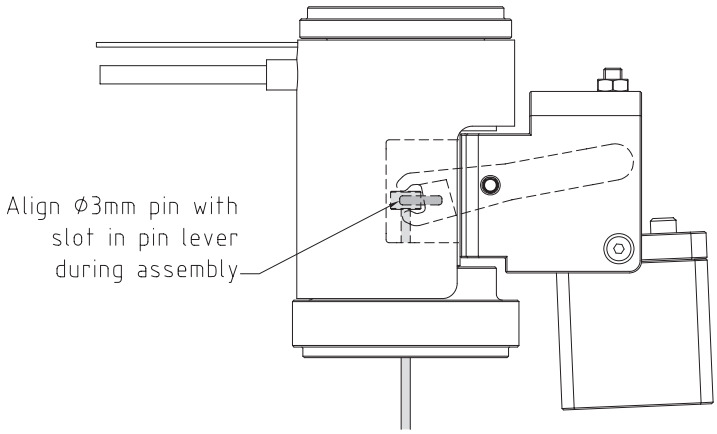
The following steps demonstrate how the SVG is able to be easily modified to stop the pin rotating during use.

ONE



Drill a dowel hole in the head of the valve pin.

TWO



At STEP SIX of **Assembling the nozzle to actuator sub-assembly** fit a Ø3 x14mm dowel pin in the dowel hole. Fit the actuator cylinder assembly taking care to guide the dowel pin into the corresponding slot in the pin lever.

THREE

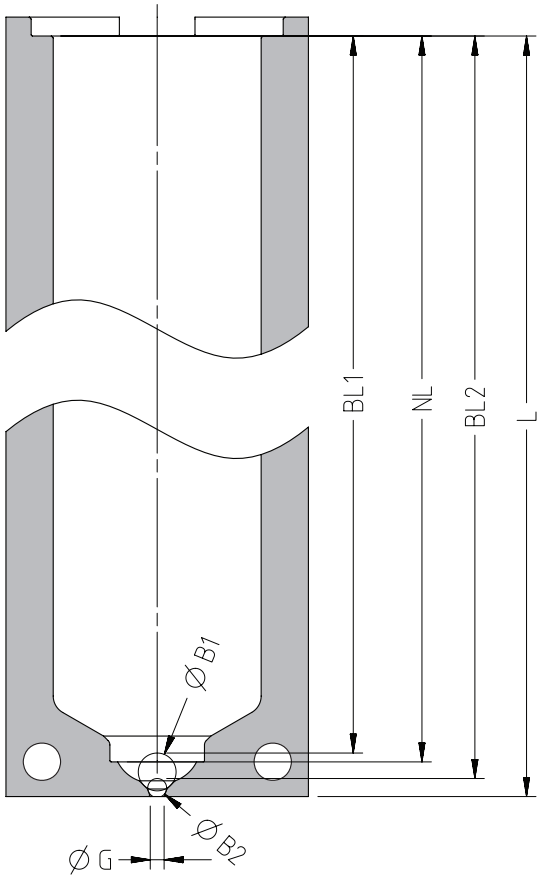
Go to STEP SEVEN of **Assembling the Nozzle to Actuator Sub-Assembly** section and follow the remaining steps to assemble the nozzle and actuator.

Valve Gate Nozzle Pre-Installation Checksheet

Project Details	
Distributor Name:	
Customer Name:	
Customer Reference #:	
Mastip Reference #:	
Date:	

Additional Information	
Material:	
Planned Nozzle Temp.:	
Planned Mould Temp.:	

Nozzle Specifications



Cavity Dimensions					
Nozzle #	BL1	NL	BL2	L	G
1					

Ball Diameter (ØB)		
Nozzle	ØB1	ØB2
MX/BX13	Ø3.00	Ø2.00
MX/BX16	Ø6.00	Ø2.00
MX/BX19	Ø6.00	Ø3.00
BX/SX27	Ø8.00	Ø5.00

Mastip Head Office New Zealand

558 Rosebank Road
Avondale, PO Box 90-651
Auckland, New Zealand
Phone: +64 9 970 2100
Fax: +64 9 970 2070
Email: mastip@mastip.com

Mastip Regional Office Europe

Phone: +33 4 724 72 800
Fax: +33 4 724 72 801
Email: europe@mastip.com

Mastip Regional Office China

Phone: +86 21 644 77838
Fax: +86 21 644 77828
Email: china@mastip.com

Mastip Regional Office North America

Phone: +1 262 644 9400
Fax: +1 262 644 9402
Email: northamerica@mastip.com

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