

## Technical Specifications

### All-Electric 55 Frame

21/24/29/34 oz

		English				Metric		
Injection Unit Specifications		A	B	C		A	B	C
Injection Capacity, Max GPPS*	oz	21	29	34	gm	595	822	963
Theoretical Disp	in <sup>3</sup>	37.7	52.6	61.1	cm <sup>3</sup>	618	862	1,001
Injection Performance								
Max Pressure @ Rate		27,500 psi @ 17 in <sup>3</sup> /sec	19,689 psi @ 23 in <sup>3</sup> /sec	16,977 psi @ 27 in <sup>3</sup> /sec		1,897 bar @ 279 cm <sup>3</sup> /sec	1,370 bar @ 377 cm <sup>3</sup> /sec	1,171 bar @ 442 cm <sup>3</sup> /sec
Max Rate @ Pressure		32 in <sup>3</sup> /sec @ 25,903 psi	44 in <sup>3</sup> /sec @ 18,546 psi	51 in <sup>3</sup> /sec @ 15,991 psi		524 cm <sup>3</sup> /sec @ 1,786 bar	721 cm <sup>3</sup> /sec @ 1,279 bar	835 cm <sup>3</sup> /sec @ 1,103 bar
Max Injection Speed	in/sec	8.6	8.6	8.6	mm/sec	218	218	218
Optional Increased Speed *	in/sec	11.7	11.7	11.7	mm/sec	297	297	297
Max Pack Pressure	psi	27,500	23,200	17,000	bar	1,897	1,600	1,172
Max Pull Back Force	lbf	17,000	17,000	17,000	N	75,620	75,260	75,260
Injection Stroke	in	10.24	10.24	10.24	mm	260	260	260
Screw Diameter	in	2.16	2.56	2.76	mm	55	65	70
Extruder L/d Ratio **		23.6	20.0	18.6		23.6	20.0	18.6
Extruder Performance ***	rpm	230						
Barrel Heat								
No. of Pyrometers (barrel/nozzle)		10/1						
Total Heat Capacity	kw	47.3						
Sled Pull in Force	ton	4.1			tonf	3.7		
Clamp Specifications								
Tonnage	ton	440			tonf	400		
Maximum Daylight	in	56.1			mm	1,425		
Max/Min Mold Height	in	29.53/9.84			mm	750/250		
Max Mold Weight	lb	12,400			kg	5,625		
Max Clamp Stroke	in	26.57			mm	675		
Euromap Dry Cycle Time	sec	<2.2						
Platen Size	in	46.26 × 45.27			mm	1175 × 1150		
Tie Bar Spacing	in	33.07 × 33.07			mm	840 × 840		
Tie Rod Diameter	in	5.31			mm	135		
Ejector Stroke	in	7.87			mm	200		
Max Ejector Force**	ton	13			tonf	11.8		
Max Eject Speed**	in/sec	10.4			mm/sec	265		
Machine Specifications****								
Length, see note	in	323			mm	8,204		
Width	in	82.4			mm	2,093		
Height	in	94.7			mm	2,405		
Centerline Height	in	58.0			mm	1,473		
Shipping Weight (machine)	lb	44,000			kg	19,958		
Electrical Specifications***								
Input Power Source 460 VAC ± 10% 3 Ph 60 Hz		Std.						
Power Supply Capacity kVA		59						
Machine Requirements								
Water		6 gpm @ 50psi						
Air		80 psi @ 20 cfm						

\*Note: Increased injection velocity option will improve injection rates

\*\*Note: Increased L/d options available

\*\*\*Note: Increased extruder rpm options available

\*\*\*\*Note: All machine dimensions and specifications are subject to change. Values are for reference only.



## Technical Specifications

### 1650 Hybrid Frame\*

20/24/33 oz

		English				Metric		
Injection Unit Specifications		A`	A	B		A`	A	B
Injection Capacity, Max GPPS*	oz	20	24	33	gm	583	694	946
Theoretical Disp	in <sup>3</sup>	39	47	63	cm <sup>3</sup>	641	763	1,039
Injection Performance								
Max Pressure @ Rate	psi	36,997	31,088	22,838	bar	2,552	2,144	1,575
Max Rate @ Pressure	in <sup>3</sup> /sec	75	90	122	cm <sup>3</sup> /sec	1,235	1,480	2,000
Max Injection Speed	in/sec	20	21	20	mm/sec	508	533	508
Injection Stroke	in	10.60	10.60	10.60	mm	269.24	269.24	269.24
Screw Diameter	in	2.17	2.36	2.76	mm	55	60	70
Extruder L/d Ratio **		25.0						
Extruder Performance ***	rpm	300						
Barrel Heat								
No. of Pyrometers (barrel/nozzle)		5/1						
Total Heat Capacity	kw	29.6-36.9						
Sled Pull in Force	ton	12.8			kN	115		

Clamp Specifications					
Tonnage	ton	440		tonf	400
Maximum Daylight	in	56.1		mm	1,425
Max/Min Mold Height	in	29.53/9.84		mm	750/250
Max Mold Weight	lb	12,400		kg	5,625
Max Clamp Stroke	in	26.57		mm	675
Euromap Dry Cycle Time	sec	<2.2			
Platen Size	in	46.26 × 45.27		mm	1175 × 1150
Tie Bar Spacing	in	33.07 × 33.07		mm	840 × 840
Tie Rod Diameter	in	5.31		mm	135
Ejector Stroke	in	7.87		mm	200
Max Ejector Force****	ton	13		tonf	11.8
Max Eject Speed****	in/sec	10.4		mm/sec	265

Machine Specifications***					
Length, see note	in	323		mm	8,204
Width	in	82.4		mm	2,093
Height	in	94.7		mm	2,405
Centerline Height	in	58.0		mm	1,473
Shipping Weight (machine)	lb	44,000		kg	19,958

Electrical Specifications***			
Input Power Source		Std.	
460 VAC ± 10% 3 Ph 60 Hz			
Power Supply Capacity		59	
kVA			

Machine Requirements			
Water		6 gpm @ 50psi	
Air		80 psi @ 20 cfm	

\*Note: Increased injection velocity option will improve injection rates

\*\*Note: Increased L/D options available

\*\*\*Note: All machine dimensions and specifications are subject to change. Values are for reference only.

\*\*\*\*Note: Increased eject speed and force options available (consult factory)

## Technical Specifications

### I45 Frame

72/96/130 - 70mm

		English			Metric			
<b>Injection Unit Specifications</b>								
Injection Capacity, Max GPPS*	oz	72	96	130	gm	2,041	2,722	3,685
Theoretical Disp	in <sup>3</sup>	134.1	178.6	243.1	cm <sup>3</sup>	2,198	2,927	3,984
Injection Performance								
Max Pressure @ Rate		30,000 psi @ 18.4 in <sup>3</sup> /sec	23,200 psi @ 24.5 in <sup>3</sup> /sec	17,000 psi @ 36.9 in <sup>3</sup> /sec	bar	2,069 bar @ 302 cm <sup>3</sup> /sec	1,600 bar @ 401 cm <sup>3</sup> /sec	1,172 bar @ 605 cm <sup>3</sup> /sec
Max Rate @ Pressure		48.5 in <sup>3</sup> /sec @ 15,200 psi	64.6 in <sup>3</sup> /sec @ 11,440 psi	87.9 in <sup>3</sup> /sec @ 8,400 psi	cm <sup>3</sup> /sec	795 cm <sup>3</sup> /sec @ 1,048 bar	1,059 cm <sup>3</sup> /sec @ 789 bar	1,440 cm <sup>3</sup> /sec @ 580 bar
Max Injection Speed	in/sec	14.75	14.75	14.75	mm/sec	375	375	375
Max Pack Pressure	psi	30,000	23,200	17,000	bar	2,069	1,600	1,172
Max Pull Back Force	lbf	25,000	25,000	25,000	N	111,205	111,205	111,205
Plunger Stroke	in	40.75	40.75	40.75	mm	1,035	1,035	1,035
Plunger Diameter	in	2.04	2.36	2.76	mm	52	60	70
Extruder L/d Ratio - 70mm						30		
Extruder RPM - Low Torque	rpm					265		
Extruder RPM - High Torque	rpm					265		
Barrel Heat								
No. of Pyrometers (barrel/nozzle)						10/1		
Total Heat Capacity	kw					65.26		
Sled Pull in Force	ton		4.1		tonf		3.7	
<b>Clamp Specifications</b>								
Tonnage	ton		440		tonf		400	
Maximum Daylight	in		56.1		mm		1,425	
Max/Min Mold Height	in		29.53/9.84		mm		750/250	
Max Mold Weight	lb		12,400		kg		5,625	
Max Clamp Stroke	in		26.57		mm		675	
Euromap Dry Cycle Time	sec					<2.2		
Platen Size	in		46.26 × 45.27		mm		1175 × 1150	
Tie Bar Spacing	in		33.07 × 33.07		mm		840 × 840	
Tie Rod Diameter	in		5.31		mm		135	
Ejector Stroke	in		7.87		mm		200	
Max Ejector Force**	ton		13		tonf		11.8	
Max Eject Speed**	in/sec		10.4		mm/sec		265	
<b>Machine Specifications***</b>								
Length, see note	in		336		mm		8,535	
Width	in		83.6		mm		2,123	
Height	in		97.6		mm		2,479	
Centerline Height	in		60.9		mm		1,548	
Shipping Weight (machine)	lb		53,200		kg		24,131	
<b>Electrical Specifications****</b>								
Input Power Source 460 VAC ± 10% 3 Ph 60 Hz					Std.			
Power Supply Capacity kVA					104			
<b>Machine Requirements</b>								
Water					6 gpm @ 50psi			
Air					80 psi @ 20 cfm			

\*Note: Other capacities available. Please Consult Factory.

\*\*Note: Higher eject force and speed available. Please Consult Factory.

\*\*\*Note: All machine dimensions and specifications are subject to change. Values are for reference only.



## Technical Specifications

### I44 Frame

50/54/66 - 70mm

		English				Metric		
Injection Unit Specifications		A	B	C		A	B	C
Injection Capacity, Max GPPS*	oz	50	54	66	gm	1,418	1,531	1,871
Theoretical Disp	in <sup>3</sup>	90.7	100.1	122.3	cm <sup>3</sup>	1,486	1,640	2,004
Injection Performance								
Max Pressure @ Rate		30,000 psi @ 34 in <sup>3</sup> /sec	27,500 psi @ 38 in <sup>3</sup> /sec	23,200 psi @ 45 in <sup>3</sup> /sec		2,069 bar @ 557 cm <sup>3</sup> /sec	1,897 bar @ 622 cm <sup>3</sup> /sec	1,600 bar @ 737 cm <sup>3</sup> /sec
Max Rate @ Pressure		68 in <sup>3</sup> /sec @ 22,026 psi	76 in <sup>3</sup> /sec @ 20,191 psi	90 in <sup>3</sup> /sec @ 16,966 psi		1,113 cm <sup>3</sup> /sec @ 1,519 bar	1,245 cm <sup>3</sup> /sec @ 1,392 bar	1,474 cm <sup>3</sup> /sec @ 1,170 bar
Max Injection Speed	in/sec	20.5	20.5	20.5	mm/sec	521	521	521
Max Pack Pressure	psi	27,500	23,200	17,000	bar	1,897	1,600	1,172
Max Pull Back Force	lbf	22,000	22,000	22,000	N	97,860	97,860	97,860
Plunger Stroke	in	27.56	27.56	27.56	mm	700	700	700
Plunger Diameter	in	2.05	2.17	2.36	mm	52	55	60
Extruder L/D Ratio - 70mm					30:1			
Extruder Performance - 70mm	rpm				265			

Barrel Heat								
No. of Pyrometers (barrel/nozzle)					10/1			
Total Heat Capacity	kw				47.3			
Sled Pull in Force	ton	4.1			tonf	3.7		

Clamp Specifications					
Tonnage	ton	440		tonf	400
Maximum Daylight	in	56.1		mm	1,425
Max/Min Mold Height	in	29.53/9.84		mm	750/250
Max Mold Weight	lb	12,400		kg	5,625
Max Clamp Stroke	in	26.57		mm	675
Euromap Dry Cycle Time				<2.2	
Platen Size	in	46.26 × 45.27		mm	1175 × 1150
Tie Bar Spacing	in	33.07 × 33.07		mm	840 × 840
Tie Rod Diameter	in	5.31		mm	135
Ejector Stroke	in	7.87		mm	200
Max Ejector Force**	ton	13		tonf	11.8
Max Eject Speed**	in/sec	10.4		mm/sec	265

Machine Specifications****					
Length, see note	in	336		mm	8,535
Width	in	83.6		mm	2,123
Height	in	97.6		mm	2,479
Centerline Height	in	60.9		mm	1,548
Shipping Weight (machine)	lb	53,200		kg	24,131

Electrical Specifications****			
Input Power Source 460 VAC ± 10% 3 Ph 60 Hz		Std.	
Power Supply Capacity KVA		104	

Machine Requirements			
Water		6 gpm @ 50psi	
Air		80 psi @ 20 cfm	

\*Note: 90 oz shot size with 16,500 psi C barrel is also available on this injection unit frame.

\*\*Note: Increased eject speed and force options available (consult factory)

\*\*\*Note: 120mm extruder also available. Please Consult Factory for details.

\*\*\*\*Note: All machine dimensions and specifications are subject to change. Values are for reference only.

## Technical Specifications

### I78 Hybrid Frame

### 38/44/50 – 70mm

		English				Metric		
<b>Injection Unit Specifications</b>		<b>A</b>	<b>B</b>	<b>C</b>		<b>A</b>	<b>B</b>	<b>C</b>
Injection Capacity, Max GPPS	oz	38	44	50	gm	1,077	1,247	1,417
Theoretical Disp	in <sup>3</sup>	68.9	80.1	91.5	cm <sup>3</sup>	1,129	1,313	1,500
Injection Performance								
Max Pressure	psi	34,800	30,000	27,500	bar	2,400	2,069	1,897
Max Rate	in <sup>3</sup> /sec	153	175	200	cm <sup>3</sup> /sec	2,500	2,868	3,278
Max Injection Speed	in/sec	30	30	30	mm/sec	762	762	762
Max Pack Pressure	psi	27,840	24,000	22,000	bar	1,920	1,655	1,518
Max Pull Back Force	lbf	22,000	22,000	22,000	N	97,860	97,860	97,860
Plunger Stroke	in	13.39	13.39	13.39	mm	340	340	340
Plunger Diameter	in	2.56	2.76	2.95	mm	65	70	75
Extruder L/d Ratio - 70mm*					30			
Extruder RPM - Low Torque	rpm				265			
Barrel Heat								
No. of Pyrometers (barrel/nozzle)					11/1			
Total Heat Capacity	kw				73.4			
Sled Pull in Force	ton	12			tonf	10.8		

<b>Clamp Specifications</b>					
Tonnage	ton	440		tonf	400
Maximum Daylight	in	56.1		mm	1,425
Max/Min Mold Height	in	29.53/9.84		mm	750/250
Max Mold Weight	lb	12,400		kg	5,625
Max Clamp Stroke	in	26.57		mm	675
Euromap Dry Cycle Time				<2.2	
Platen Size	in	46.26 × 45.27		mm	1175 × 1150
Tie Bar Spacing	in	33.07 × 33.07		mm	840 × 840
Tie Rod Diameter	in	5.31		mm	135
Ejector Stroke	in	6.5		mm	165
Max Ejector Force (hyd std) **	ton	13		tonf	11.8
Max Eject Speed**	in/sec	20		mm/sec	510

<b>Machine Specifications***</b>					
Length, see note	in	394.3		mm	10,014
Width	in	84.2		mm	2,138
Height	in	97.6		mm	2,479
Centerline Height	in	60.9		mm	1,548
Shipping Weight (machine)	lb	53,200		kg	24,131
Shipping Weight (power unit)	lb	3,800		kg	1,724

<b>Electrical Specifications***</b>			
Input Power Source 460 VAC ± 10% 3 Ph 60 Hz		Std.	
Power Supply Capacity kVA		143	

<b>Machine Requirements</b>			
Water		15 gpm @ 85 F	
Air		80 psi @ 20 cfm	

\*Note: 120mm 25:1 L/d extruder also available (consult factory)

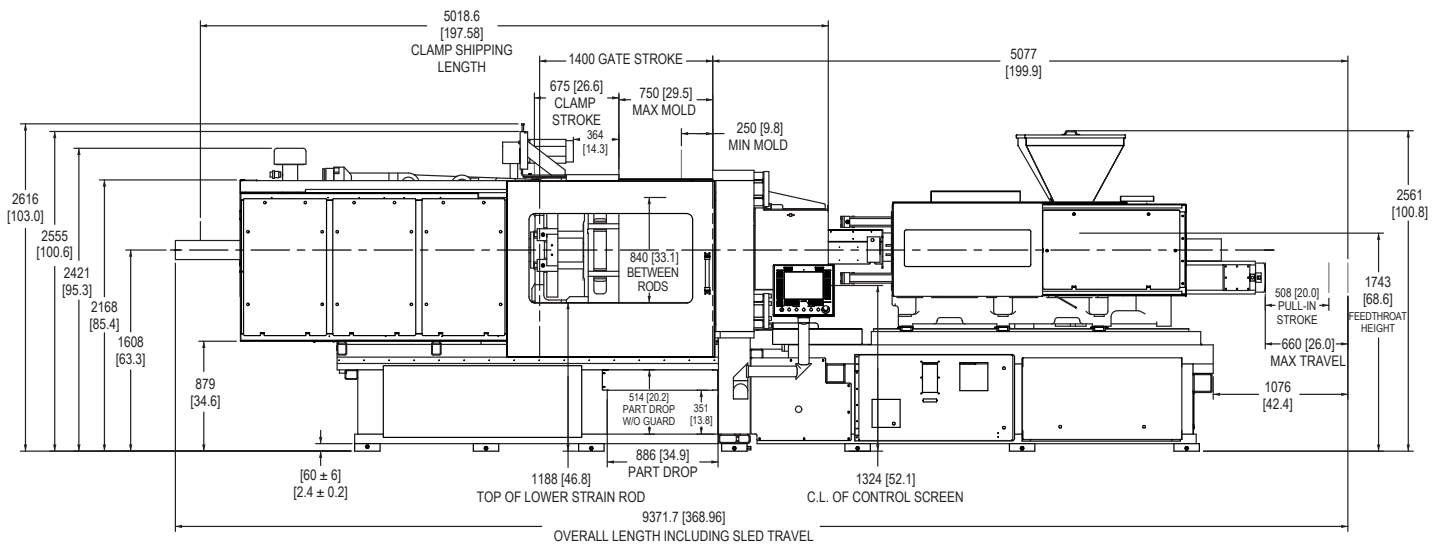
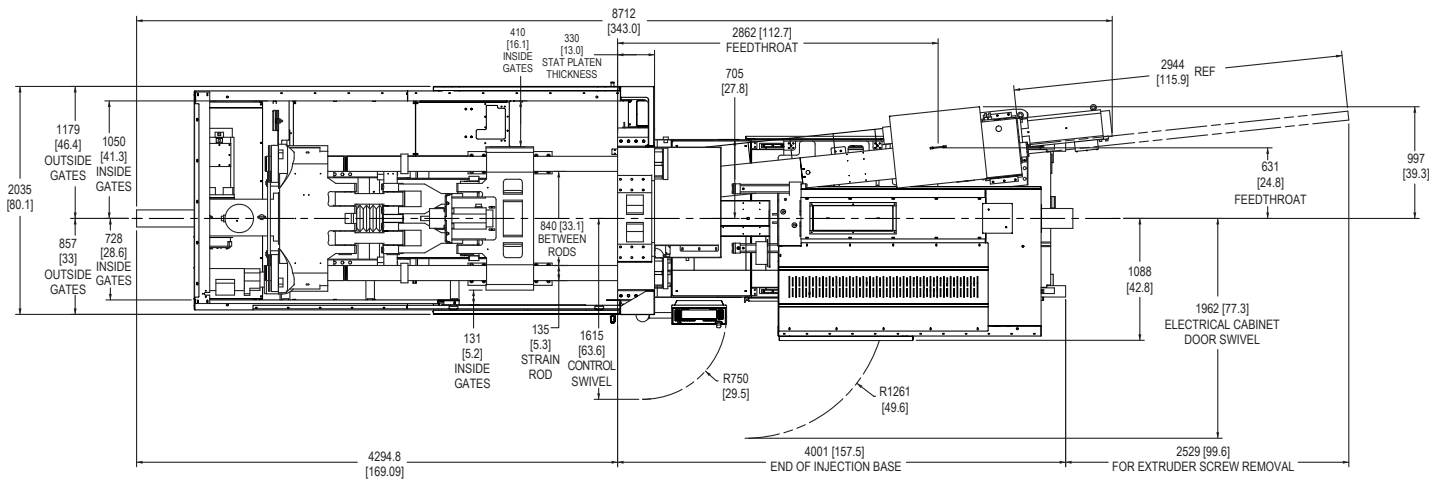
\*\*Note: Higher eject force and speed available (consult factory)

\*\*\*Note: All machine dimensions and specifications are subject to change. Values are for reference only.



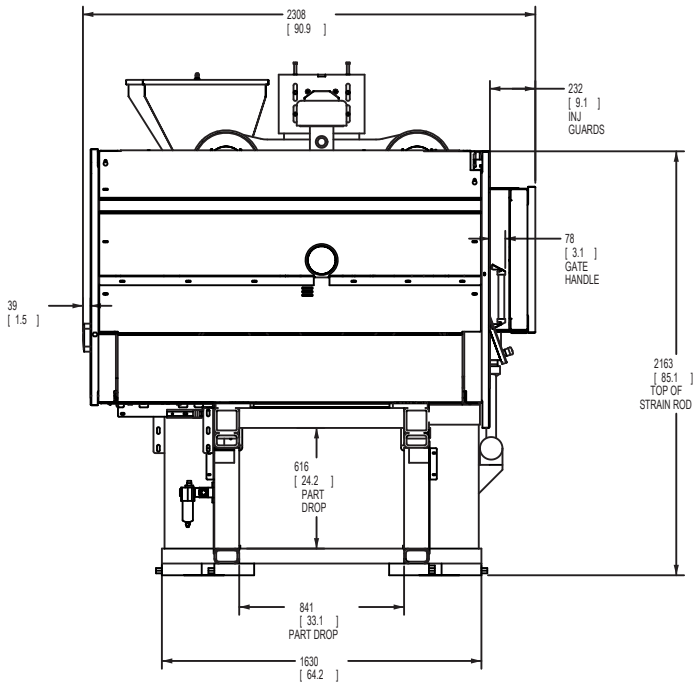
## Templates

Top View

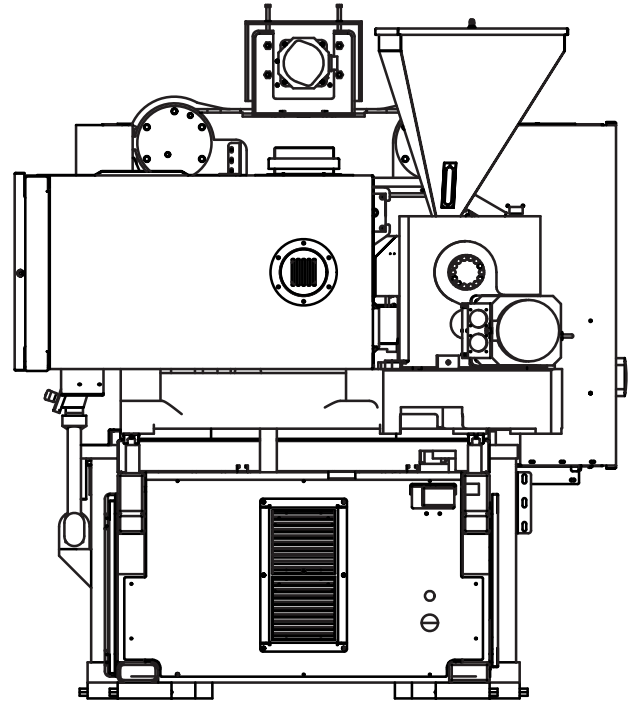


Front View

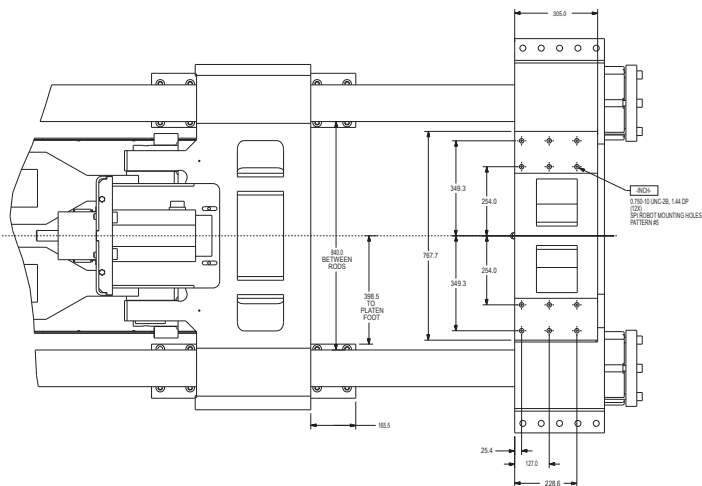
## Templates



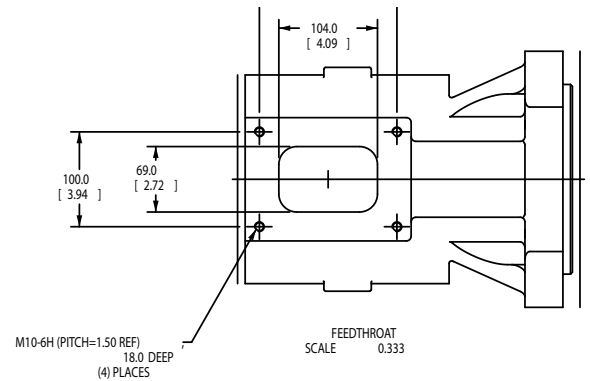
Clamp End



Injection End



Robot Mounting

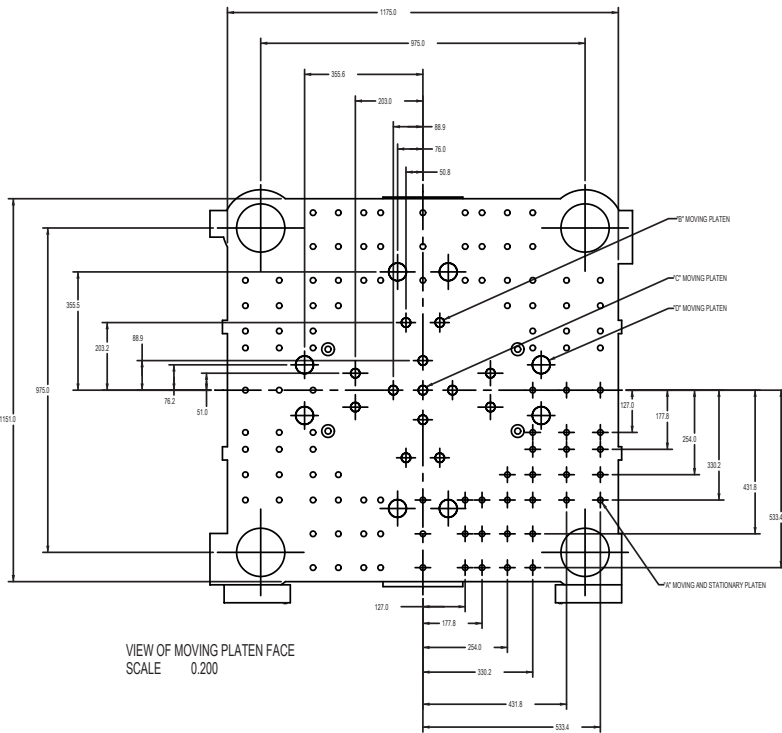


Feed Throat

Feed throat dimensions can change based on injection frame.  
Consult factory for specific details.



## Templates

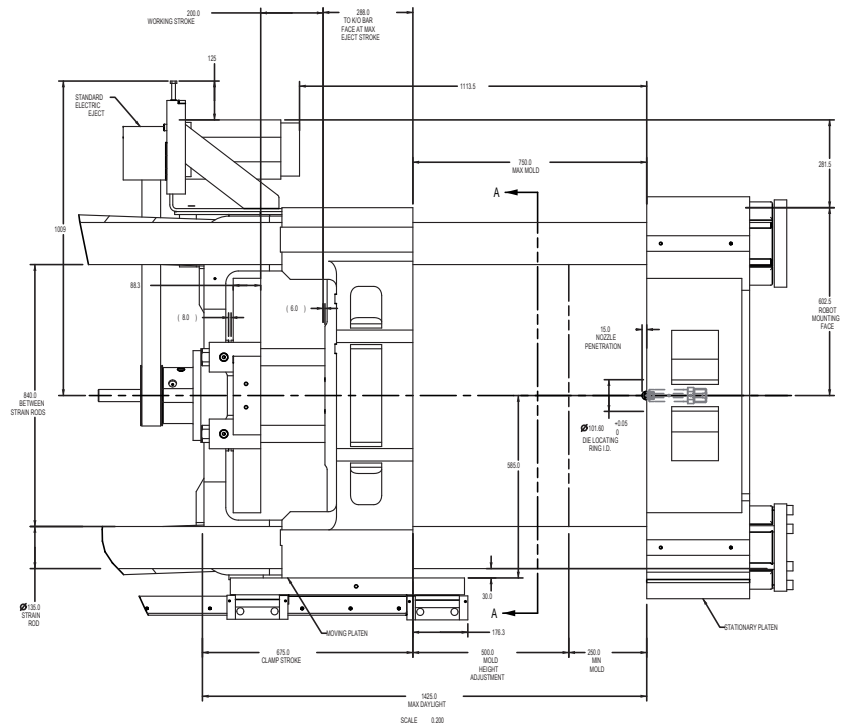


VIEW OF MOVING PLATEN FACE  
SCALE 0.200

### HOLE DESCRIPTION

- "A" Ø0.750-10 UNC-2B, 1.44" DP (108 X) EACH PLATEN
- "B" Ø27.0 THRU (12X)
- CORRESPONDING HOLES IN K/O BAR Ø0.562", THRU
- "C" Ø27.0 THRU (1x)
- CORRESPONDING HOLE IN K/O BAR Ø0.500-13 UNC-2B, THRU
- "D" Ø52.4 THRU (8X)
- CORRESPONDING HOLES IN K/O BAR Ø0.562", THRU

Die Space



Platen Area