



We believe that
“**Excellence**”
is a journey,
not a destination.”

Shape Business Through Moulding



About Us :

NATRAJ INDUSTRIES is most trusted manufacturer of Plastic Injection Moulding Machines (PIMMs) in India. Established in the year 1976, we have achieved great feats in the field. We are known for our dynamism towards the technological advancements and for the outstanding customer service in the industry. In view of environmental concerns all over world, we continue to use latest technology to ensure our products remain energy efficient.

We have modular product range of various injection moulding machines consisting of ACTIVE, SERVO GREEN, PETLINE, PVC STREAM SERVO, CPVC STREAM SERVO ranging from 750 kn to 5500 kn clamping force, with modular injection Units 170 to 3220 to meet customer's specific needs.

With expertise of more than 40 years in manufacturing of PIMMS, we have always been preachers and executors of MAKE IN INDIA. The SUMITEK NATRAJ brand is synonymous with great RELIABILITY, high PRECISION and QUALITY having applications for automotive engineering, electrical parts, house hold, pharmaceuticals, packaging and beverage industries etc.

Recognized as one of the world's most trusted and innovative manufacturer of plastic injection moulding machines (PIMMs) by providing our customers highest quality products that combine performance and advanced technology with value pricing.

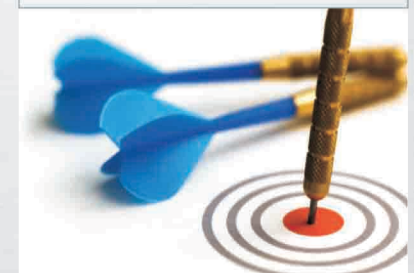
Vision

Continue to offer quality products to meet customers' needs beyond their expectations.



Our Focus

- *Customers' Satisfaction
- *Quality Products
- *Timely Delivery





ACTIVE

Variable Displacement Pump Toggle Type
Injection Moulding Machine - 75 to 550 Tons

- Energy Efficient - Saves 10% to 20%*
- High Productivity
- Accurate and Uniform Performance
- User Friendly Controller
- High Rigidity
- Least Maintenance

AV-170/590



MODEL	UNIT	AV-75	AV-100	AV-130	AV-170	AV-240	AV-320	AV-440	AV-550
Clamping Force	ton	75	100	130	170	240	320	440	550
Clamping Stroke	mm	300	340	370	430	525	650	750	850
Tie-Bar Distance [H x V]	mm	350 x 350	400 x 400	445 x 445	505 x 505	575 x 575	650 x 650	720 x 720	840 x 840
Platen Size [H x V]	mm	520 x 520	610 x 610	675 x 680	775 x 780	850 x 860	950 x 960	1100 x 1130	1220 x 1280
Min.-Max. Mold Thickness	mm	125-350	150-400	150-470	200-550	200-700	200-750	350-800	350-900
Ejector Stroke	mm	100	100	120	140	160	200	205	225
Injection Unit*	—	170	270	410	590	860	1180	2150	3220
Screw Diameter*	mm	32	36	40	45	50	60	70	80
Shot Weight (GPPS)**	gm	130	165	240	330	445	735	1165	1710
Injection Pressure**	bar	1358	1482	1568	1611	1751	1750	1615	1695
Injection Rate**	cc/sec	78	87	102	124	147	277	369	438
Injection Stroke**	mm	170	170	200	220	240	275	320	360
Heater Capacity**	kw	7	10	12	14.2	18.2	22.8	32	40
Oil Tank Capacity	ltr	220	260	330	410	530	630	750	800
Total Connecting Load**	kw	12.5	17.5	23	28	36.7	44.8	69	85
Machine Dimension [L x W x H]**	m	4 x 1.5 x 2	4.5 x 1.5 x 2	5 x 1.6 x 2.1	5.5 x 1.7 x 2.2	6.5 x 1.9 x 2.4	7 x 2.1 x 2.5	8.5 x 2.3 x 2.6	9 x 3 x 2.8
Machine Weight**	ton	3.5	4.5	5.5	7	10	14	21	25

* Injection unit change possible as per requirements. * Actual figures will modify depending on final machine configuration



SERVO GREEN

Servo with Internal Gear Pump Toggle Type injection Moulding Machine - 75 to 550 Tons

- Energy Efficient - Saves 20% to 50%*
(Depending Open Product's Nature)
- High Productivity
- Product Accuracy and Uniformity
- High Rigidity
- Easy Operations
- Unit Energy Cost Analyser

SG-130/410



MODEL	UNIT	SG-75	SG-100	SG - 130	SG - 170	SG - 240	SG - 320	SG - 440	SG - 550
Clamping Force	ton	75	100	130	170	240	320	440	550
Clamping Stroke	mm	300	340	370	430	525	650	750	850
Tie-Bar Distance [H x V]	mm	350 X 350	400 X 400	445 X 445	505 x 505	575 x 575	650 x 650	720 x 720	840 x 840
Platen Size [H x V]	mm	520 X 520	610 X 610	675 X 680	775 x 780	850 x 860	950 x 960	1100 x 1130	1220 x 1280
Min.-Max. Mold Thickness	mm	125-350	150-400	150-470	200-550	200-700	200-750	350-800	350-900
Ejector Stroke	mm	100	100	120	140	160	200	205	225
Injection Unit*	—	170	270	410	590	860	1180	2150	3220
Screw Diameter*	mm	32	36	40	45	50	60	70	80
Shot Weight (GPPS)**	gm	130	165	240	330	445	735	1165	1710
Injection Pressure**	bar	1358	1482	1568	1611	1751	1750	1615	1695
Injection Rate**	cc/sec	81	90	136	165	190	290	400	476
Injection Stroke**	mm	170	170	200	220	240	275	320	360
Heater Capacity**	kw	7	10	12	14.2	18.2	22.8	32	40
Oil Tank Capacity	ltr	220	260	330	410	530	630	750	800
Total Connecting Load**	kw	7~14.5	10~17.5	12~23	14.2~28	18.2~38.2	22.8~47.8	32~72	40~85
Machine Dimension [L x W x H]**	m	4 X 1.5 X 2	4.5 X 1.5 X 2	5 X 1.6 X 2.1	5.5 x 1.7 x 2.2	6.5 x 1.9 x 2.4	7 x 2.1 x 2.5	8.5 x 2.3 x 2.6	9 x 3 x 2.8
Machine Weight**	ton	3.5	4.5	5.5	7	10	14	21	25

■ Injection unit change possible as per requirements. ■ Actual figures will modify depending on final machine configuration



PETLINE

Variable Displacement Pump Toggle Type
Injection Moulding Machine - 75 to 550 Tons

- PET Preform SPM
- High Productivity
- Energy Saver - 10% to 20%
- High Rigidity
- User Friendly Controller

PL-170/1160



MODEL	UNIT	PL-75	PL-100	PL-130	PL-170	PL-240	PL-320	PL-440	PL-550
Clamping Force	ton	75	100	130	170	240	320	440	550
Clamping Stroke	mm	300	340	370	430	525	650	750	850
Tie-Bar Distance [H x V]	mm	350 x 350	400 x 400	445 x 445	505 x 505	575 x 575	650 x 650	720 x 720	840 x 840
Platen Size [H x V]	mm	520 x 520	610 x 610	675 x 680	775 x 780	850 x 860	950 x 960	1100 x 1130	1220 x 1280
Min.-Max. Mold Thickness	mm	125-350	150-400	150-470	200-550	200-700	200-750	350-800	350-900
Ejector Stroke	mm	100	100	120	140	160	200	205	225
Injection Unit*	—	360	550	790	1160	1900	2780	4290	4290
Screw Diameter*	mm	36	40	50	60	70	80	90	100
Shot Weight (Pet)**	gm	200	300	515	800	1245	1895	2700	3360
Injection Pressure**	bar	1482	1568	1305	1215	1286	1236	1339	1085
Injection Rate**	cc/sec	71	82	122	164	243	392	445	684
Injection Stroke**	mm	170	200	220	240	275	320	360	360
Heater Capacity**	kw	7	12	14.2	18.2	22.8	32	40	40
Oil Tank Capacity	ltr	220	260	330	410	530	630	750	800
Total Connecting Load**	kw	12.5	19.5	25.2	40.2	59.2	77	95	95
Machine Dimension [L x W x H]**	m	4 x 1.5 x 2	4.5 x 1.5 x 2	5 x 1.6 x 2.1	5.5 x 1.7 x 2.2	6.5 x 1.9 x 2.4	7 x 2.1 x 2.5	8.5 x 2.3 x 2.6	9 x 3 x 2.8
Machine Weight**	ton	3.5	4.5	5.5	7	10	14	21	25

■ Injection unit change possible as per requirements. ■ Actual figures will modify depending on final machine configuration

PVC STREAM SERVO

Servo with Internal Gear Pump Toggle Type
Injection Moulding Machine - 100 to 550 Tons

- PVC SPM
- Energy Efficient - Saves 20 to 50%*
- High Productivity
- Unit Energy Cost Analyser
- Uniformity and Performance Accuracy
- High Rigidity
- User Friendly Controller

PSS-170/1160



MODEL	UNIT	PSS-100	PSS-130	PSS-170	PSS-240	PSS-320	PSS-440	PSS-550
Clamping Force	ton	100	130	170	240	320	440	550
Clamping Stroke	mm	340	370	430	525	620	750	850
Tie-Bar Distance [H x V]	mm	400 x 400	445 x 445	505 x 505	575 x 575	650 x 650	720 x 720	840 x 840
Platen Size [H x V]	mm	610 x 610	675 x 680	775 x 780	850 x 860	950 x 960	1100 x 1130	1220 x 1280
Min.-Max. Mold Thickness	mm	150-400	150-470	200-550	200-700	200-750	350-800	350-900
Ejector Stroke	mm	100	120	140	160	160	205	225
Injection Unit*	—	550	790	1160	1900	2780	4290	4290
Screw Diameter*	mm	40	50	60	70	80	90	100
Shot Weight (PVC)**	gm	280	485	760	1185	1800	2565	3165
Injection Pressure**	bar	1568	1305	1216	1286	1236	1339	1084
Injection Rate**	cc/sec	106	127	175	251	326	380	595
Injection Stroke**	mm	200	220	240	275	320	360	360
Heater Capacity**	kw	12	14.2	18.2	22.8	32	40	40
Oil Tank Capacity	ltr	260	330	410	530	630	750	800
Total Connecting Load**	kw	12~19.5	14.2~24.2	18.2~33.2	22.8~42.8	32~57	40~80	40~85
Machine Dimension [L x W x H]**	m	4.5 x 1.5 x 2	5 x 1.6 x 2.1	5.5 x 1.7 x 2.2	6.5 x 1.9 x 2.4	7 x 2.1 x 2.5	8.5 x 2.3 x 2.6	9 x 3 x 2.8
Machine Weight**	ton	4.5	5.5	7	10	14	21	25

■ Injection unit change possible as per requirements. ■ Actual figures will modify depending on final machine configuration



CPVC STREAM SERVO

Servo with Internal Gear Pump Toggle Type
Injection Moulding Machine - 100 to 550 Tons

- CPVC SPM
- Highly Energy Efficient - Saves 20 to 50%*
- High Productivity
- Product Accuracy and Uniformity
- High Rigidity
- Easy Operations
- Unit Energy Cost Analyser

CSS-170/1230



MODEL	UNIT	CSS-100	CSS-130	CSS-170	CSS-240	CSS-320	CSS-440	CSS-550
Clamping Force	ton	100	130	170	240	320	440	550
Clamping Stroke	mm	340	370	430	525	650	750	850
Tie-Bar Distance [H x V]	mm	400 x 400	445 x 445	505 x 505	575 x 575	650 x 650	720 x 720	840 x 840
Platen Size [H x V]	mm	610 x 610	675 x 680	775 x 780	850 x 860	950 x 960	1100 x 1130	1220 x 1280
Min.-Max. Mold Thickness	mm	150-400	150-470	200-550	200-700	200-750	350-800	350-900
Ejector Stroke	mm	100	120	140	160	160	205	225
Injection Unit*	—	590	850	1230	2040	2980	4600	4600
Screw Diameter*	mm	40	50	60	70	80	90	100
Shot Weight (CPVC)**	gm	300	520	815	1270	1930	2750	3390
Injection Pressure**	bar	1568	1305	1216	1286	1236	1339	1084
Injection Rate**	cc/sec	106	127	175	251	326	380	595
Injection Stroke**	mm	200	220	240	275	320	360	360
Heater Capacity**	kw	12	14.2	18.2	22.8	32	40	40
Oil Tank Capacity	ltr	260	330	410	530	630	750	800
Total Connecting Load**	kw	12~19.5	14.2~24.2	18.2~33.2	22.8~42.8	32~57	40~80	40~85
Machine Dimension [L x W x H]**	m	4.5 x 1.5 x 2	5 x 1.6 x 2.1	5.5 x 1.7 x 2.2	6.5 x 1.9 x 2.4	7 x 2.1 x 2.5	8.5 x 2.3 x 2.6	9 x 3 x 2.8
Machine Weight**	ton	4.5	5.5	7	10	14	21	25

■ Injection unit change possible as per requirements. ■ Actual figures will modify depending on final machine configuration

PHYSICAL PROPERTIES

MATERIAL	DENSITY gm/cc	PROCESSING TEMPERATURE (C°)	CLARITY T/O/C	kg/cm ² TENSILE STRENGTH AT YIELD	ELONGATION AT BREAK %	SOFTENING TEMPERATURE VICAT 0° C	HEAT DEFLECTION 0° C AT 66 PSI
LDPE	0.92	160-210	Translucent	95	200	85	50
LLDPE	0.92	180-260	Translucent	100	100	80	45
HDPE	0.96	190-280	T-O	250	500	126	75
PP Copolymer	0.90	190-300	T-C	290	500	150	90
PP Homopolymer	0.90	190-300	Translucent	310	200	152	96
PS (GPPS)	1.05	180-220	Clear	420	5	102	85
HIPS	1.05	180-220	T-O	275	45	88	83
ABS	1.05	210-270	Opaque	440	20	95	86
SAN	1.04	220-270	Clear	650	4	107	95
Polycarbonate (PC)	1.2	260-310	Clear	680	150	150	144
Nylon-6	1.13	240-270	T-O	740	40	215	165
Nylon-66	1.13	270-300	T-O	1240	300	245	238
RPVC	1.45	150-210	Clear	440	20	-	76
Acrylics	1.19	200-260	Clear	700	3	89	90
PBT	1.31	220-260	Opaque	530	300	172	155
Polyurethane	1.20	185-240	Clear	520	510	116	-
Acetal	1.41	180-240	Opaque	700	55	-	172
TPE	1.2	180-240	Opaque	310	375	195	111
PET	1.38	260-310	Clear	880	70	110	85

Advantages & Features :

In respect of all Models.



Energy Efficient Servo
Control System (Servo Green)

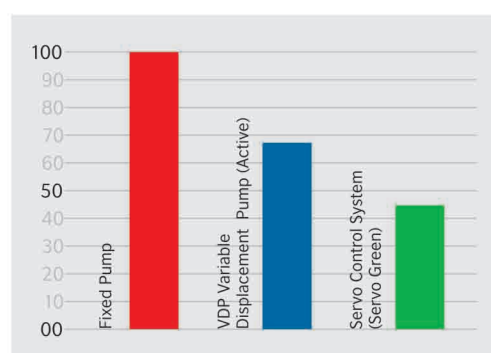


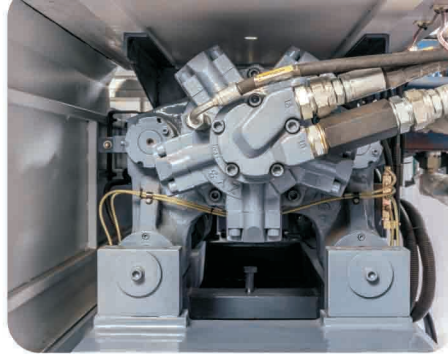
Variable Displacement Pump
(Active)

Hydraulics System

- Energy efficient variable displacement pump and servo control system.
- Digital oil temperature gauge.
- Oil level gauge (low & high).
- Direct reading hydraulic pressure.
- Compact, easily accessible injection and clamping valves to minimize the heat generation.
- Contamination free oil tank with feeler cum-breather.
- Return line filter as standard accessories.
- Alarm / shut down for return filter clogging.
- Alarm / shut down for low oil level. (hydraulic tank)
- Alarm / shut down for low lubrication oil level.
- Provides high safety as main motor shuts down on opening rear gate.
- Hydraulic directional valve on/off indicator connector.

Power Consumption





Clamping Unit

In respect of all Models.

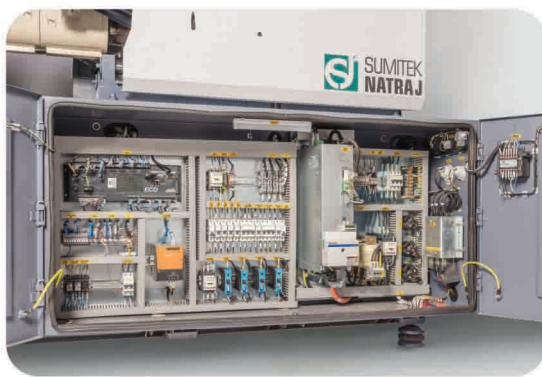
- Heavy duty 5-point double toggle mechanism with large mould opening stroke.
- High wear resistance & high strength gear nut (tie bar nut) gives rigid & positive clamping force.
- High stiffness platen design with large mould mounting area.
- Five stage mould close / open speed (slow-fast slow) & pressure.
- Computer aided design toggle mechanism gives optimal mould closing and opening speed profits.
- Multi stage digital speed and pressure setting to operate the mould.
- Ramping adjustment for accurate position.
- Linear transducer for accurate clamp position.
- Mould protection with repeat again option.
- Travel time display for close & open for producing any item while operations.
- Hard-chrome plated high-tensile steel tie-bars with stress relieve design.
- Auto-mould height adjustment with hydraulic motor.
- Hydraulic ejector with multiple selection. (continuous, shake, hold etc.)
- Auto-lubrication based on shot adjustment (as standard features).
- Linear transducer on ejector cylinder.
- Shaking ejector for multi-cavity mould.
- Less vibrations & jerks due to ramp adjustment.
- Large mould mounting area for producing large articles especially useful for pet preform, pipe fittings etc.
- Platen casting design with finite element analysis for maximum rigidity.
- Hydraulic & electrical safety interlocks during moving platen movements for moulds & operator safety.
- Mould platen with t-slots (130 Tons & above).
- All casting passed through strict ultrasonic test and tensile testing process.
- Separate pressure & speed setting for mould set-up.
- High wear resistant skate-pad for heavy mold loading.
- Long life by providing oil less bushing, with graphite impregnated for toggle mechanism.
- Trouble free precise clamping force for long period through heavy-duty toggle design.
- Transparent vision on both safety doors.
- Extra life to toggle mechanism with provision for top fixed cover which keeps clamping unit dust free.

Injection Unit

In respect of all Models.

- Gas nitride hardened screw and barrel, for wear resistance and long life.
- Screw for homogenous plasticizing with medoc design.
- Screw back pressure with pressure gauge provision.
- High torque hydraulic motor for better plasticization.
- 5-stage injection speed pressure & position control.
- 3-stage injection holding speed pressure & position control.
- Hopper sliding arrangement for material removal.
- Electric shot counter.
- Cold slug Ejection by time.
- Intrusion moulding program.
- Selection of injection time & position both.
- Screw tachometer (Digital RPM).
- Pre-suck back function and after plasticizing suck back.
- Heater failure & thermocouple failure detector.
- High / low temperature alarm. (suitable low-high limit)
- Auto heat start-up.
- Longer life of mould with Twin Cylinder Design & Dual nozzle centering alignment device.
- Linear potentiometer for injection / plasticizing.
- Auto purging facility.
- Ceramic bands heaters for instant heating.
- Barrel heater safety cover.
- Nozzle contact force confirmation with use of pressure switch.
- Temperature Sensor at feed throat to ensure continuous production.





Controls System

In respect of all Models.

- Energy meter. *Condition Apply.
- Multi password facility for operators.
- M.C.C.B. Operating Mechanism.
- SMPS - Switched Mode Power Supply gives Linear power supply.
- Star delta motor starter for (N100 & above).
- Digital setting timers.
- M.C.B. for each heating zone.
- PID temp controller for accurate control.
- Dedicated microprocessor control system with led input / output indicator for simplified checking
- Digital display timer.
- Digital display shot counter.
- MPCB for motor protection.
- Pressure & flow for each function control by Microprocessor.
- Linear scale for injection, clamping & ejector cylinder.
- Value change record page.
- Alarm history page.
- Printer interface with USB port.
- Production / hour in vertical-bar for year.
- In case of short circuit I/O replaceable on board.
- Easy export / import of mould & machine data.
- Press any key for on screen help (related to controller).
- Injection cool prevent time settable.
- Panel cabinet high temperature shut-down.
- Power ON time.
- Extra electric power supply socket for single phase & three phase.
- Hourly energy consumption statics page (Product cost calculator)
- Remote diagnosis by connecting with local PC via Ethernet port for any no. of machine.

Safety Features

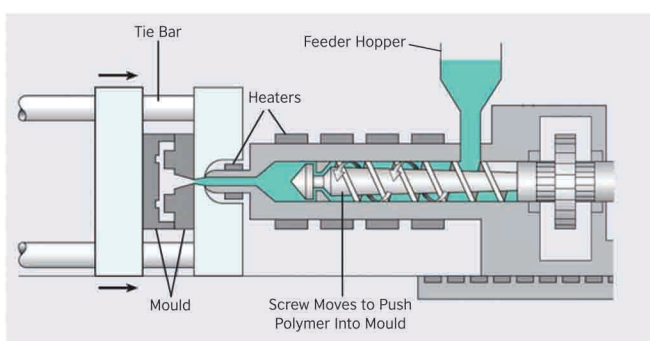
In respect of all Models.

- Hydraulic safety on both front & rear door.
- Electric mould safety.
- Magnetic grills in hopper.
- Provision for M.C.C.B.
- Over load circuit breaker.
- Under voltage-over voltage protection.
- Reverse phase, single phase protection.
- Providing hooks of commensurate size for risk free lifting of machine.

Optional Features

In respect of all Models.

- Bi-metalic screw barrel.
- Digital back pressure.
- Hopper dryer & Hopper loader.
- Hydraulic core-pulling and unscrewing.
- Water flow regulator with temperature gauges.
- Running hour-meter.
- Special PVC screw & high dispersion barrel.
- Mould lifting hanger with pulley.
- Auto-taker (robot) interface.
- Air-ejector.
- Hydraulic oil.
- Accumulator design for thin wall-thickness component.
- Gas injection interface only up to digital output from control.
- Blowers with heaters for processing heat sensitive materials.
- Nozzle shut off provision.
- Hot runner temperature controller .
- Mould clamp & fastener.
- Water manifold with pressure & temperature indicator.
- Extended nozzle with heater.
- Multiline water battery with temperature Indicator guard.
- Close loop valve.
- Ladder for loading material in hopper.
- Ejector in back position confirmation by proximity sensor.
- Remote monitoring .



Photography may show attachments or accessories, which may not be part of the standard scope of supply.

Due to continual improvements with up-gradation of technology specification & components are subject to change without notice.



www.sumiteknatraj.com

Global Presence



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