

Machines that WIN your trust



NEW FACE OF EFFICIENCY



100T to 350T

WINFIT Series Toggle Injection Moulding Machines



WINDSOR MACHINES LIMITED

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WINDSOR

Welcome to the new Windsor. A Windsor where values are driven by happy customers and growth is recorded in satisfied smiles. After we led the industry for five decades, with our latest technologies and highly reliable products, the coming years will see a new-age Windsor.

As we complete 50 years of a journey of your trust, the new Windsor accumulates from its vast experience, the best practices that led to higher levels of customer satisfaction and loyalty. Blending in all such inputs, we came out with a “WIN WIN” strategy, where a value is created for each interacting partner of Windsor.

Experience with Windsor a new age of excellence in partnered ecosystem, where we begin a new era of progress, customer satisfaction, technology and above all, winning together.

Windsor’s long term experience in extrusion machinery production is evident through a range of successful series of machineries, the latest of which (the third generation models) commands high repute across the globe.

Serving a wide scope of purpose, a Windsor trademark guarantees quality to your end customers. Be it the flexible packaging segment or agricultural film segment, Windsor offers a value in the form of reliability and optimum quality standards. Thus, our value addition – reliability for your business.



Injection Moulding Machinery Division, Chhatral, Gujarat



Injection Moulding Machinery Division, Brescia, Italy



Extrusion Machinery Division, Ahmedabad, Gujarat

ADVANTAGE WINFIT

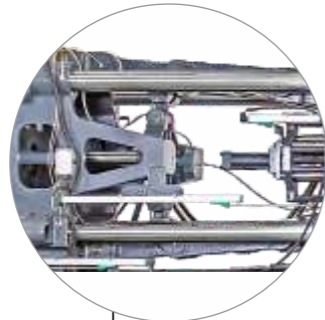
- Fast, Smooth, Reliable and Repeatable
- Enhanced Machine Specifications
- Flexibility in Offerings
- Special Screws for Superior Melt Quality
- Force Transmission toward Mould Center
- Low Energy Consumption
- High Uptime
- Low Noise and Vibration
- Short Dry Cycle Times
- Low Maintenance Cost
- Larger Mould Mounting Space
- Open Base Structure
- High Process Reliability

APPLICATIONS



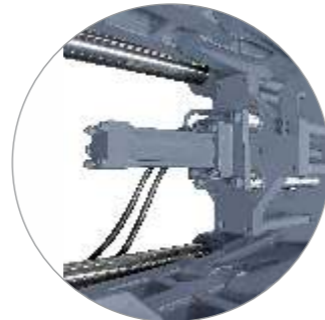
MACHINE OFFERING MATRIX

Injection Units	200			300			430			640			950			1560			2275			3700		
Screw Dia.	28	32	36	32	36	40	36	40	45	40	45	50	45	50	60	50	60	70	60	70	80	70	80	90
WINFIT 75																								
WINFIT 100																								
WINFIT 130																								
WINFIT 150																								
WINFIT 180																								
WINFIT 230																								
WINFIT 280																								
WINFIT 350																								



Next-gen Toggle System

- Five point twin toggle system
- Fast cycling & precise mould safety
- Clamp force application towards center
- Enhanced clamp specifications
- Platens with Euromap standard



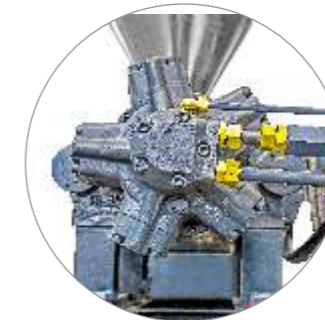
Multi Stage Ejection

- Smooth & fast action
- Proper force distribution
- Multiple ejector pins
- Easy accessibility



Pilloball Joint & Nozzle Guard

- Compact and self-aligned
- Superior anti-wear and anti-corrosion properties
- Ease of maintenance
- Easy movement
- Anti-wear Nylon rollers



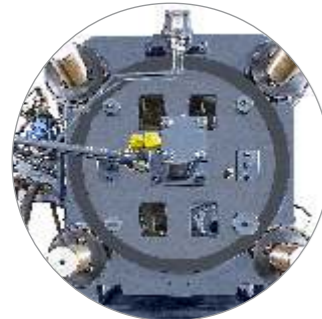
Radial Piston Hydro Motor

- High mechanical and volumetric efficiency
- Reduced energy demand for plasticizing
- Low noise



Linear Guides

- High position accuracy and repeatability
- Low frictional resistance
- Smooth linear motion
- High injection efficiency
- Better injection power
- Better cylinder alignment



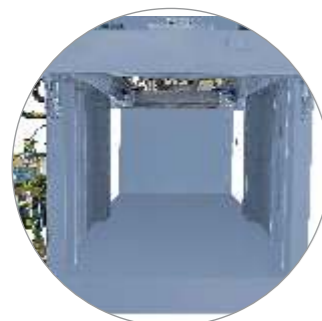
Sun-Planet Gear Mechanism

- High rigidity and longer life
- Precise mould height adjustment & accurate tonnage setting



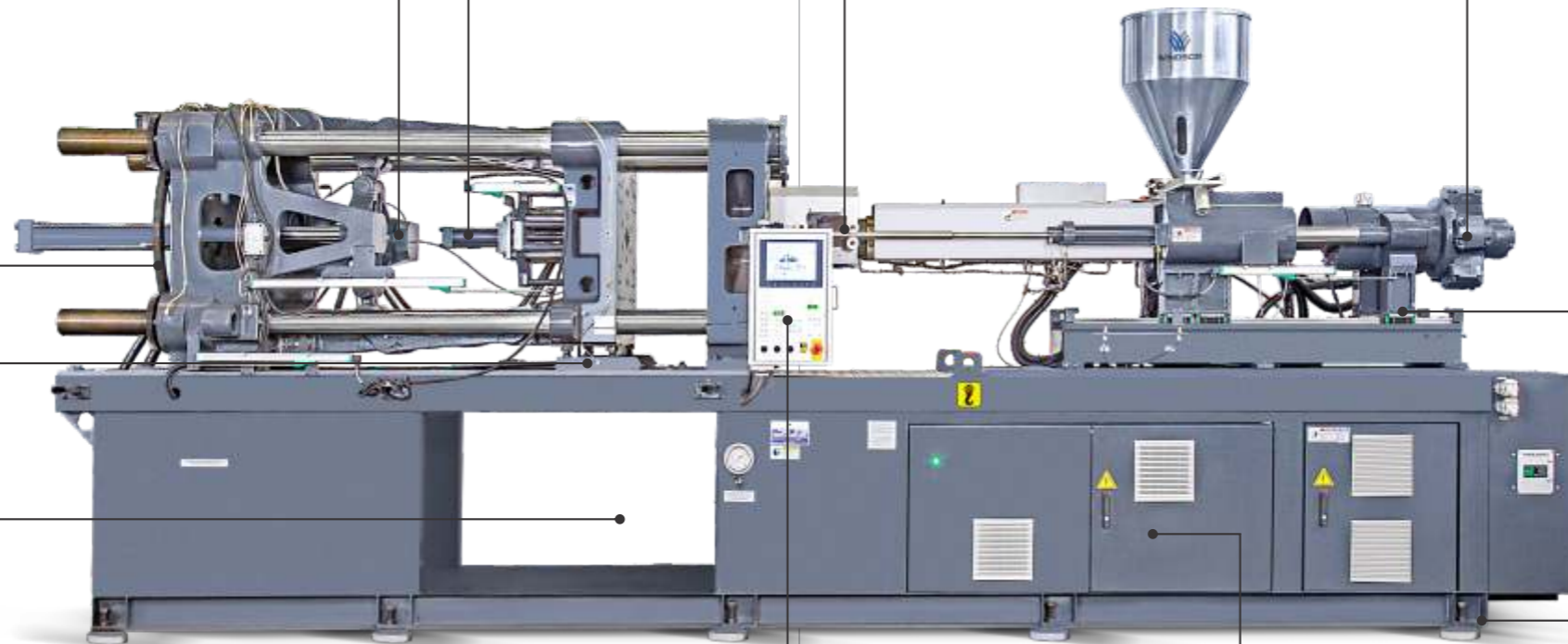
Wide Skates

- Larger mould weight carrying capacity
- Lesser platen deflection
- Better Tie-bar life
- Anti-wear Bronze material



Easy access for part removal

- Rigid and open construction of machine frame enables part removal in 3 directions
- Easy access for downstream equipments



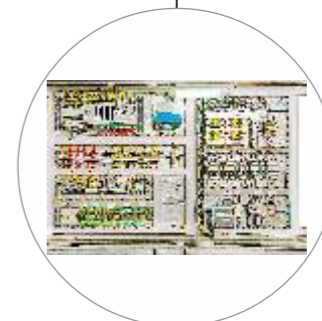
Advanced Control System

- 10.4" TFT colour display
- I/O exchange provision
- Graphical presentation of important functions
- Automatic calibration of sensors and valves
- SPC functions
- Quality data logging
- 500 mould data storage
- USB connection for printer, modem, USB stick etc.



Anti-Vibration Pads

- Minimum vibrations
- Precise & fast leveling
- Higher leveling adjustment
- No civil foundation required



Electric Panel

- Well-structured electrical components and wiring
- Separate and spacious power & control wiring
- Ease in maintenance



- Injection Manifold Placement**
- Closer to actuators
 - Fast response
 - Lesser piping and hydraulic losses



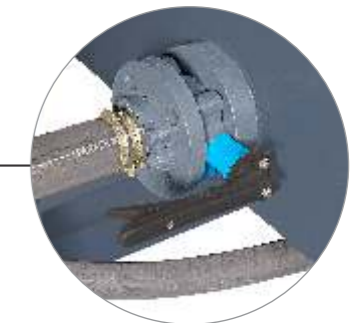
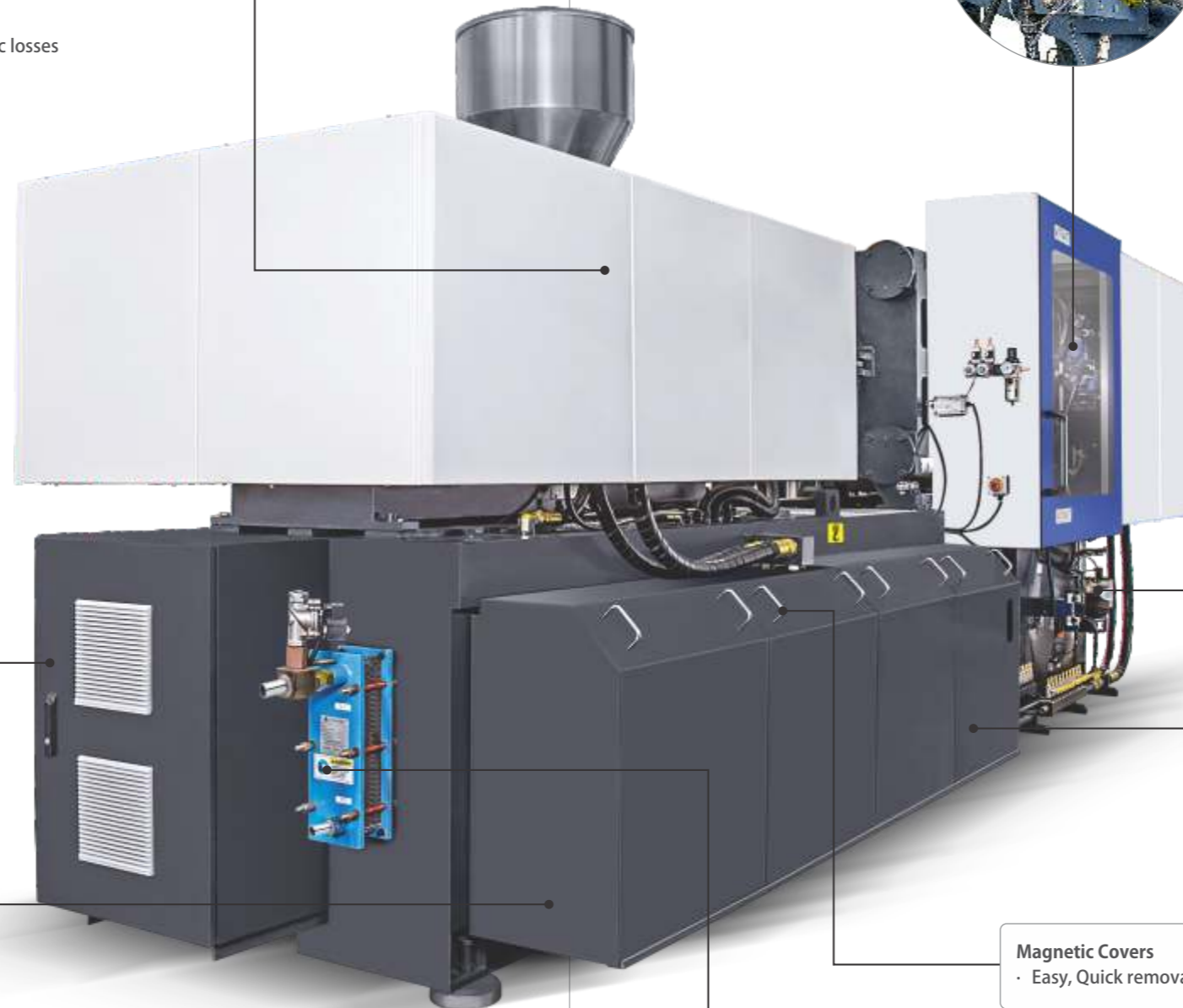
- Clamping Hydraulic Manifold Placement**
- Closer to actuators
 - Fast response
 - Lesser piping and hydraulic losses



- Servo Drive**
- Exceptional power saving
 - Precise and fast response
 - Outstanding consistency and repeatability



- Automatic Grease Lubrication**
- Ensures uninterrupted and optimal lubrication
 - Increases life of toggle system
 - Progressive lubrication system

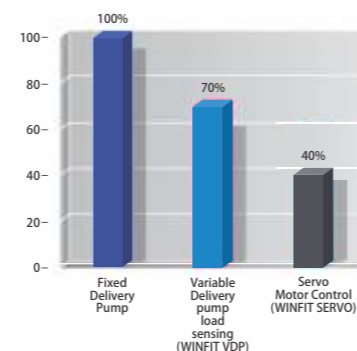


- Butterfly Valve**
- Compact design
 - Less maintenance time

- Magnetic Covers**
- Easy, Quick removal and mounting



- Servo Motor**
- Exceptional power saving
 - Precise and fast response
 - Outstanding consistency and repeatability
 - Closed loop system
 - High power density
 - Lower oil heat generation
 - Enhanced oil life
 - Low noise level



ENERGY CONSUMPTION COMPARISON

- Plate type Heat Exchanger**
- Compact design and lighter in weight
 - Increased cooling efficiency
 - High heat recovery
 - Low fouling
 - Easy maintenance

SPECIFICATIONS - WINFIT RPVC SERVO/VPD

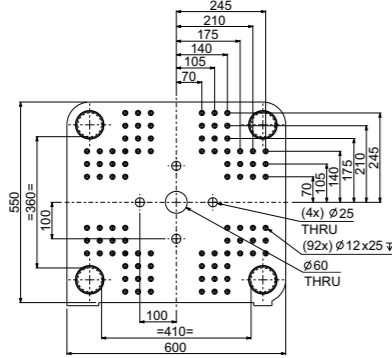
PARAMETERS	UNIT	WINFIT 100R	WINFIT 100 R	WINFIT 130 R	WINFIT 130 R	WINFIT 150 R	WINFIT 150 R	WINFIT 180 R	WINFIT 180 R	WINFIT 200 R	WINFIT 200 R	WINFIT 230R	WINFIT 230R	WINFIT 280R	WINFIT 350 R	WINFIT 350 R
Injection Unit		430	640	640	950	950	950	950	950	950	950	1560	2275	2275	2275	3700
Screw Diameter	mm	45	50	50	60	60	65	60	65	60	65	70	80	80	80	90
Injection Pressure	bar	1481	1555	1555	1500	1500	1285	1500	1285	1500	1285	1446	1406	1406	1406	1452
Stroke Volume	cc	286	412	412	679	679	808	679	808	679	808	1078	1608	1608	1608	2545
Screw stroke	mm	180	210	210	240	240	240	240	240	240	240	280	320	320	320	400
Max Injection Weight (Rpvc)	gm	342	494	494	814	814	955	814	955	814	955	1270	1897	1897	1897	3054
Injection Rate	cc/s	158	160	160	330	330	350	330	350	330	350	275	495	495	495	498
Plasticizing Rate (Rpvc)	gm/s	20	25	25	35	35	40	35	40	35	40	45	55	55	55	70
L / D Ratio		20	20	20	20	20	19	20	19	20	19	20	20	20	20	20
Heating Capacity	kw	10	10	10	15	15	15	15	15	15	15	25	27	27	27	37
No. of heating zones	no.	5	5	5	5	5	5	5	5	5	5	5	6	6	6	7
Nozzle protrusion	mm	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Nozzle contact force	kn	28	28	28	50	50	50	50	50	50	50	60	60	60	60	150
Closing Force	ton	100	100	130	130	150	150	180	180	180	180	230	230	280	350	350
Mould Opening Stroke	mm	350	350	400	400	450	450	460	460	460	460	550	550	650	700	700
Mould Height (Min-Max)	mm	150 ~ 500	150 ~ 500	200 ~ 500	200 ~ 500	200 ~ 550	200 ~ 550	200 ~ 600	200 ~ 600	200 ~ 600	200 ~ 600	250 ~ 650	250 ~ 650	300 ~ 750	300 ~ 800	300 ~ 800
Distance Between Platens (Max)	mm	850	850	900	900	1000	1000	1060	1060	1060	1060	1200	1200	1400	1500	1500
Distance Between Tie-bar (HxV)	mm	460 x 420	460 x 420	510 x 510	510 x 510	520 x 520	520 x 520	570 x 510	570 x 510	570 x 510	570 x 510	630 x 630	630 x 630	730 X 660	810 X 730	810 X 730
Clamping Platens (HxV)	mm	670 x 630	670 x 630	740 x 740	740 x 740	750 x 730	750 x 730	825 x 730	825 x 730	825 x 730	825 x 730	925 x 885	925 x 885	1035 X 950	1150 X 1070	1150 X 1070
Ejector Force	kN	35	35	50	50	50	50	50	50	50	50	80	80	80	80	80
Ejector Stroke	mm	130	130	160	160	160	160	160	160	160	160	200	200	200	200	200
Pump Drive	kW	11.4/11	11.4/15	11.4/15	11.4/18.5	11.4/18.5	13.2/18.5	11.4/18.5	13.2/18.5	11.4/18.5	13.2/18.5	13.2/22	15/30	15/30	15/30	17/45
Overall dimensions (L x W X H)	mm	4860 x 1650 x 2300	4860 x 1650 x 2300	5410 x 1700 x 2390	5410 x 1700 x 2390	5600 x 1700 x 2390	5840 x 1790 x 2390	5840 x 1790 x 2390	5840 x 1790 x 2390	5840 x 1790 x 2390	5840 x 1790 x 2390	6600 x 1900 x 2600	6700 x 1900 x 2600	7590 x 2010 x 2770	8000 x 2200 x 2800	8000 x 2200 x 2800
Total Connected Load	kW	21.4/21	21.4/25	21.4/25	27.4	27.4/33.5	28.2/33.5	27.4/33.5	28.2/33.5	27.4/33.5	28.2/33.5	37.7/47	46.3/57	46.3/57	46.3/57	54.0/82
Oil tank capacity	lit	200	200	275	275	275	360	360	360	360	360	500	500	500	500	500
Hopper capacity	lit	60	60	60	60	60	60	60	60	60	60	120	120	120	120	120
Machine weight	ton	4.4	4.7	5.6	6	6.5	6.5	7	7	7	7	9	10	12	12	12

SPECIFICATIONS - WINFIT CPVC SERVO/VPD

PARAMETERS	UNIT	WINFIT 100C	WINFIT 100 C	WINFIT 130 C	WINFIT 130 C	WINFIT 150 C	WINFIT 150 C	WINFIT 180 C	WINFIT 180 C	WINFIT 200 C	WINFIT 200 C	WINFIT 230C	WINFIT 230C	WINFIT 280C	WINFIT 350 C	WINFIT 350 C
Injection Unit		430	640	640	950	950	950	950	950	950	950	1560	2275	2275	2275	3700
Screw Diameter	mm	45	50	50	60	60	65	60	65	60	65	70	80	80	80	90
Injection Pressure	bar	1481	1555	1555	1500	1500	1285	1500	1285	1500	1285	1446	1406	1406	1406	1452
Stroke Volume	cc	286	412	412	679	679	808	679	808	679	808	1078	1608	1608	1608	2545
Screw stroke	mm	180	210	210	240	240	240	240	240	240	240	280	320	320	320	400
Max Injection Weight (Cpvc)	gm	372	536	536	883	883	1050	883	1050	883	1050	1401	2090	2090	2090	3309
Injection Rate	cc/s	152	160	160	260	260	308	260	308	260	308	510	442	442	442	720
Plasticizing Rate (Cpvc)	gm/s	20	25	25	35	35	40	35	40	35	40	45	55	55	55	70
L / D Ratio		20	20	20	20	20	19	20	19	20	19	20	20	20	20	20
Heating Capacity	kw	10	10	10	15	15	15	15	15	15	15	25	27	27	27	37
No. of heating zones	no.	5	5	5	5	5	5	5	5	5	5	5	6	6	6	7
Nozzle protrusion	mm	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Nozzle contact force	kn	28	28	28	50	50	50	50	50	50	50	60	60	60	60	150
Closing Force	ton	100	100	130	130	150	150	180	180	200	200	230	230	280	350	350
Mould Opening Stroke	mm	350	350	400	400	450	450	460	460	460	460	550	550	650	700	700
Mould Height (Min-Max)	mm	150 ~ 500	150 ~ 500	200 ~ 500	200 ~ 500	200 ~ 550	200 ~ 550	200 ~ 600	200 ~ 600	200 ~ 600	200 ~ 600	250 ~ 650	250 ~ 650	300 ~ 750	300 ~ 800	300 ~ 800
Distance Between Platens (Max)	mm	850	850	900	900	1000	1000	1060	1060	1060	1060	1200	1200	1400	1500	1500
Distance Between Tie-bar (HxV)	mm	460 x 420	460 x 420	510 x 510	510 x 510	520 x 520	520 x 520	570 x 510	570 x 510	570 x 510	570 x 510	630 x 630	630 x 630	730 X 660	810 X 730	810 X 730
Clamping Platens (HxV)	mm	670 x 630	670 x 630	740 x 740	740 x 740	750 x 730	750 x 730	825 x 730	825 x 730	825 x 730	825 x 730	925 x 885	925 x 885	1035 X 950	1150 X 1070	1150 X 1070
Ejector Force	kN	35	35	50	50	50	50	50	50	50	50	80	80	80	80	80
Ejector Stroke	mm	130	130	160	160	160	160	160	160	160	160	200	200	200	200	200
Pump Drive	kW	11.4/11	11.4/15	11.4/15	11.4/18.5	11.4/18.5	11.4/18.5	11.4/18.5	13.2/18.5	11.4/18.5	13.2/18.5	15/22	15/30	15/30	15/30	17/45
Overall dimensions (L x W X H)	mm	4860 x 1650 x 2300	4860 x 1650 x 2300	5410 x 1700 x 2390	5410 x 1700 x 2390	5600 x 1700 x 2390	5600 x 1700 x 2390	5840 x 1790 x 2390	5840 x 1790 x 2390	5840 x 1790 x 2390	5840 x 1790 x 2390	6600 x 1900 x 2600	6700 x 1900 x 2600	7590 x 2010 x 2770	8000 x 2200 x 2800	8000 x 2200 x 2800
Total Connected Load	kW	21.4/21	21.4/25	21.4/25	26.4	26.4/33.5	26.4/33.5	26.4/33.5	26.4/33.5	26.4/33.5	26.4/33.5	40.0/47	46.3/57	46.3/57	46.3/57	46.3/82
Oil tank capacity	lit	200	200	275	275	275	275	360	360	360	360	500	500	500	500	500
Hopper capacity	lit	60	60	60	60	60	60	60	60	60	60	120	120	120	120	120
Machine weight	ton	4.4	4.7	5.6	6	6.5	6.5	7	7	7	7	9	10	12	12	12

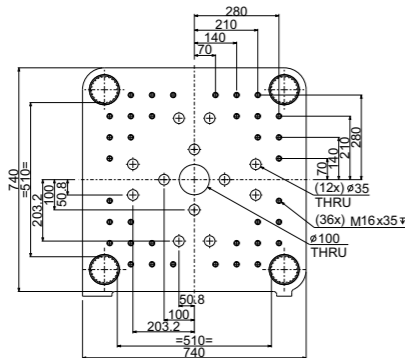
PLATEN DETAILS

WINFIT 75 Moving Platen



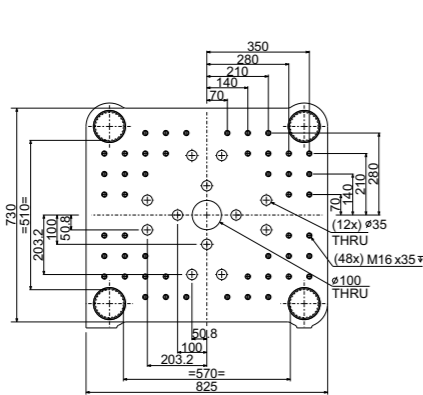
STATIONARY PLATEN: LOCATING RING \varnothing 125 (+0.04/0.0)

WINFIT 130 Moving Platen



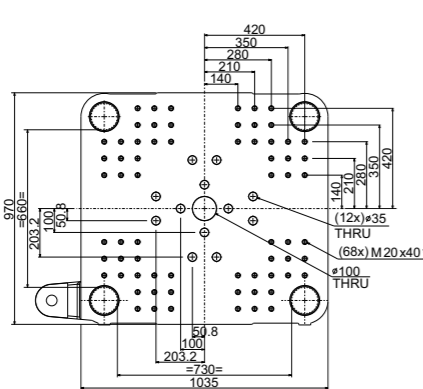
STATIONARY PLATEN: LOCATING RING \varnothing 160 (+0.04/0.0)

WINFIT 180 Moving Platen



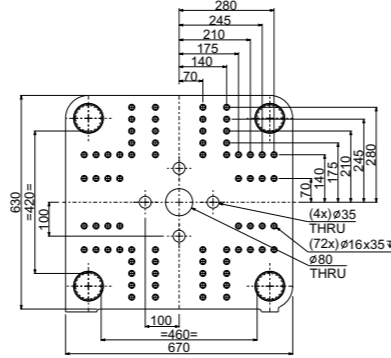
STATIONARY PLATEN: LOCATING RING \varnothing 160 (+0.04/0.0)

WINFIT 280 Moving Platen



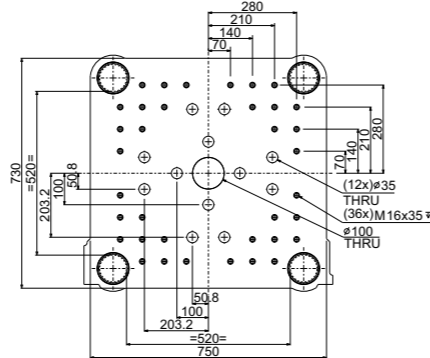
STATIONARY PLATEN: LOCATING RING \varnothing 160 (+0.04/0.0)

WINFIT 100 Moving Platen



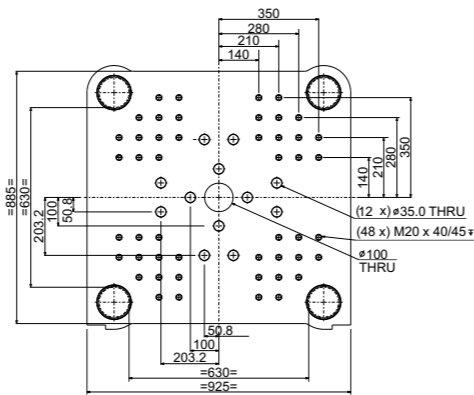
STATIONARY PLATEN: LOCATING RING \varnothing 125 (+0.04/0.0)

WINFIT 150 Moving Platen



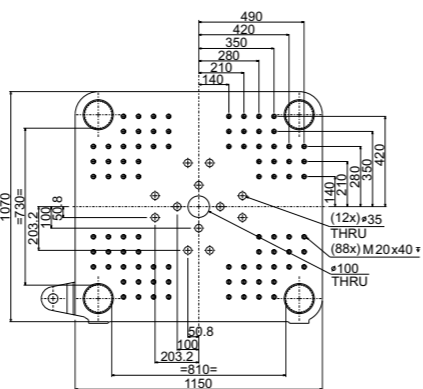
STATIONARY PLATEN: LOCATING RING \varnothing 160 (+0.04/0.0)

WINFIT 230 Moving Platen



STATIONARY PLATEN: LOCATING RING \varnothing 160 (+0.04/0.0)

WINFIT 350 Moving Platen



STATIONARY PLATEN: LOCATING RING \varnothing 160 (+0.04/0.0)

WINFIT FEATURES

CLAMPING UNIT

- Robust and reliable five point double toggle mechanism
- Electrical and hydraulic safety interlocks in mould platen movements
- Multi stage mould open/close pressure and speed control (8 stage-close, 8 stage-open)
- Precise speed and pressure control for mould safety
- Automatic mould height and tonnage adjustment
- 3 stage, multifunction hydraulic ejection control with pulsating strokes
- Multipoint ejector system (Center pin + 4 no side pins)
- Tapped holes for take-out Robot

OPTIONAL FEATURES

- Mould plates with T-slot
- Air ejection with FRL unit
- Core unscrew up to hydraulic manifold

- Graphite impregnated bushes for toggle joints to reduce wear and tear
- End platen with wear resistant Teflon plate
- Adjustable moving platen support
- Automatic grease lubrication for toggle system
- Anti vibration pads
- Tool kit with tool box
- Double block core pulling

- Ejector back confirmation by proximity switch
- Mechanical safety drop bar
- Product chute

INJECTION UNIT

- Twin cylinder balanced injection system
- Special screw for better melt quality and low temperature plasticizing
- Radial piston hydro motor for plasticizing
- 10 stage injection with pressure/speed/position control
- 5 stage holding phase with pressure/speed/position control
- 3 stage plasticizing with pressure/speed/position control
- Time or position based switch over from injection to hold

OPTIONAL FEATURES

- Bi-metallic screw barrel

- Plasticizing cold start prevention function
- Inbuilt PID temperature control
- PID control for nozzle heater
- Feed throat temperature control
- Heater current display and failure detection
- Rolling purge cover with electrical interlock

- Parallel plasticizing with Electric Screw Drive

HYDRAULICS

- High quality servo motor and gear pump
- Suction filter for enhanced pump life
- High quality butterfly valve in pump suction line
- Oil preheating
- Return line oil filter with clogging alarm

- Proportional valve for mould open/close movement
- Plate type oil cooler
- Hydraulic manifolds and valves closer to actuators for fast response
- Solenoid valves with LED indication
- Open base structure with magnetic covers for ease in maintenance

OPTIONAL FEATURES

- Variable delivery pump with induction motor

- PID control for oil cooling

CONTROL SYSTEM

- 10.4" TFT colour flat screen
- Operator friendly screens with direct access
- Home page with important parameter display
- All parameter min/max limit display
- On screen parameter help menu
- Indication of actual operating values
- Machine cycle timing details in a single screen
- Tonnage display on screen
- Energy display on screen
- Easy diagnosis by I/O error indication
- I/O exchange provision
- Analog input/output monitoring in volts
- Thermocouple failure detection
- Short circuit proof SSR control circuit for heater bands
- Selectable barrel standby temperature
- Maintenance schedules on screen

- Access protection via four level password system
- Parts counter with good/bad parts evaluation
- SPC data monitor and control by warning and error action
- CP/CPK display
- 500 mould data storage
- Process data protocol of 10 nos. various critical parameters for last 200 machine cycles
- Process data monitoring for last 200 cycles with min; max and average value display
- Alarm log and value change log for last 200 events with provision to copy to pen drive
- Hourly, daily and monthly production counter monitoring
- Provision of single phase preventer/Under voltage/Over voltage
- Free core movement
- Smart input/output provision
- Remote monitoring

OPTIONAL FEATURES

- Electrical UPS for MMI
- Electronic eye provision for single cavity
- Energy meter (VDP machine)
- Hot runner temperature controller with no. of zones & wattage capacity

- (stand alone or inbuilt)
- Robot interface up to input/output (Euomap 12/67)
- Mould gate valve function with time/position base