

• Computer optimized 5-point twin toggle system, for fast, smooth platen movement and even distribution of clamp force	√	√
• Moving platen supported on the machine bed by anti-friction roller bearings.	√	√
• Mould opening and ejector forward with safety guard open/closed position.	√	√
• Mould mounting dimensions as per Euromap – Threaded holes upto 300T and T-slot from 350T (with ejector holes on Moving platen for Euromap/JIS)	√	√
• Add-on T-slot plates upto 150T, Integral T slot 180 T to 300T	•	•
• Mould Moulding dimensions as per DIN/SPI standard.	•	•
• Drill hole pattern for robot/sprue picker	√	√
• Rear Safety guard suitable for robot/spru picker	NEC	NEC
• Hard chrome plated tie bars	√	√
• Toggle bearings oil/grease lubricated : lubrication signals computer optimized under adaptive control.	√	√
• Motorized mould height adjustment through sun & planetary gear mechanism	√	√
• Consistent mould open stop position using stroke adjustment mechanism in cylinder set manually	NA	NA
• Closed loop clam force control on control panel with indication and correction every cycle, settable	√	√
• Closing and opening speeds independently set: each programmable in 3 stage	√	√
• Regenerative circuit in mould closing for higher speeds	√	√
• Low pressure mould safety, settable	√	√
• Mould protection with stroke dependent change over with time monitoring and repeat of a clamping cycle aborted in the protected range.	√	√
• Central hydraulic ejector with multiple stroke features and fast coupling; pressure and speed independently set in both directions, ejector speed programmable in 2 stages.	√	√
• Mould cooling water switch off in case of interruption of cycle, with settable timer.	√	√
• Water battery-4 fold upto 250T; 6 fold above 250T	√	√
• Hydraulic ejector parallel to mould movement with speed and pressure manually adjustable.	•	•
• Short and long stroke ejector, freely programmable	NA	√
• Multi point ejector plate as per Euromap	√	√
• Multitpoint ejector plate as per JIS	•	•
• Water battery-6/8/12 fold	•	•
• 1,2,3 or 4 pneumatic valves (5/2 type) freely programmable	Upto 3 •	•
• Core pulling control for 1,2,3 or 4 hydraulic/pneumatic cores independently programmable for sequential operation or parallel operation.	• (upto 2,3 for 450T and above)	•
• Hydraulic ejector/core parallel to mould opening with independent control of speed and pressure and pressure though proportional valve; ejector and core with serial movement to each other	NA	NA
• Good/bad parts selector, via continuous process control.	•	•
• Automatic mould height adjustable through Liner pot	•	•
• Foolproof hydraulic and electrical inter locks for safety gates	√	√
• Stainless Steel Discharge chute upto 250 T	√	√

• Computer optimized 5-point twin toggle system, for fast, smooth platen movement and even distribution of clamp force	√	√
• Elevated base for clean room	•	•
• Additional 4/6/8/10/12 water manifold with Original Italy make ballvalve control with Stainless steel SS304	•	•
• Pneumatic operated safety door	NA upto 350 std from 450	NA upto 350 std from 450
• Central Ejector rod (as per m/c manual)	•	•
• Connections for 2 core pull controls at fixed platen	•	•
• Nonreturn valve of ejector (for moulds with spring loaded ejectors)	•	•
• Multipoint Ejector Rods (M12 Internal threads on one end)	•	•
Injection Unit		
• Injection unit with torque-free nozzle contact with 2 cylinder	√ Except 1400 and 2350)	√ Except 1400 and 2350)
• Injection unit speed of nozzle advance and retraction programmable in 2 stages	√	√
• Nozzle contact pressure programmable	NA	NA
• Injection speed, follow up pressure and screw sped controlled by fast response DEF pump	√	√
• Direct screw drive by hydraulic motor 1 for high speed	ALT	ALT
• Hydraulic motor II high torque	√	√
• Screw cylinder fitted with universal thermoplastics nitrided screw and nitrided cylinder : non-return valve and cylinder closure assembly with SVO open nozzle.	√	√
• Screw cylinder suitable for upto injection units: L/D ration 20:1 for all diameters	√	√
• Fast cylinder change with central connectors for heating system and thermocouples and with automatic cylinder identification (from430IU)	NA	NA
• Ceramic cylinder heatings bands	√	√
• PID controlled barrel heater bands	√	√
• 5 self-optimizing temperature control circuits for the cylinder and nozzle heating system with adjustable tolerance monitoring of deviation from set point and thermocouple break resistance; operating range up to 400°C	√	√
• 4/5 temperature circuits for cylinder heating with monitoring of deviation and thermocouple status	√	√
• Temperature of the screw cylinder feed zone adjustable		
• Injection speed profile programmable in * position dependent interpolation stages	√ 6	√ 10
• Follow up pressure profile programmable in * time dependent interpolation stages	√ 6	√ 10
• Follow up pressure switching activated as a function of position, time or hydraulic pressure	√	√
• Screw speed and back pressure control, profile programmable in * position dependent interpolation steps.	√ 2	√ 6
• Screw speed input in *	%age	Rpm, mm/s
• Injection speed input in *	Mm/s	Mm/s, cc/s
• Monitoring of melt cushion during the follow up pressure phase	√	√

• Computer optimized 5-point twin toggle system, for fast, smooth platen movement and even distribution of clamp force	√	√
• Hydraulic screw retraction after follow up pressure phase and or after plasticizing process programmable dependent on position, to prevent melt drooling	√	√
• Delay feature for commencement of plasticizing and nozzle retraction	√	√
• Screw rotation lock engaged unit cylinder reach set temperature	√	√
• Reduction in cylinder temperature to a present value during machine idle time	√	√
• Nozzle guard with electrical interlock for operator safety	√	√
• Intrusion and cold slug removal	√	√
• Stainless steel hopper	√	√
• Extend nozzle with heater band	•	•
• Hydraulically operated shut off nozzle (SVH)	•	•
• Electrical screw drive for parallel plasticizing (from IU 840 – 10500)	NA	NA
• Sprue bush temperature control	•	•
• Special Barrier screw for better homogenization and plasticizing rats from screw dia 30	•	•
• Wear resistant through hardened screw and bimetallic barrel for abrasive materials.	•	•
• Proven screw Geometry for high plasticizing capacities with excellent melt homogeneity.	√	√
• Thermoset package and sequences dia 30 to 50	•	•
• CPVC/RPVC/PET package	•	•
• 25 L/D scre (for A and B)	•	•
• Hard chrome plated screw	•	•
• Melt filter nozzle from screw dia 30	•	•
• Dosing delay timer	√	√
• Cold start protection for screw	√	√
• Nozzle contact force setting through control panel with residual nozzle contact force	NA	NA
• Fast injection with accumulator, programmable (from 150T onwards)	NA	NA
• Melt temperature measuring (SVO)	•	•
• Injection closed loop with servo valve	NA	NA
Hydraulics		
• Pump unit 1 with energy saving SYDFEE regulated pump	√	√
• Variable displacement pump for energy conservation	NA	NA
• Low noise drive with quiet pumps sound insulating enclosure for hydraulics	√	√
• Pressure and flow rates, closed loop, controlled by fast responding DFE regulated pump.	√	√
• All manifold blocks & valves mounted close to the actuators for faster response	√	√
• Oil tank with large opening for cleaning	√	√
• Pre heating circuit of hydarulical	√	√
• Oil temperature regulated with temperature identification	√	√
• Connectors for external oil filtration during production (bye pass filtration)	√	√
• Automatic monitoring of oil filter clogging with advance warning and read out	√	√

• Computer optimized 5-point twin toggle system, for fast, smooth platen movement and even distribution of clamp force	√	√
• Pump unit switched off if minimum oil level is reached or if the oil filter is 100% blocked	√	√
• Production stopped if oil temperature exceeds maximum value	√	√
• High pressure filter with clogging indication	√	√
• External oil cooler	√	√
• Digital principle of control for speed and pressure for consistent and reliable performance	NA	NA
• Fast responding and non-aging cartridge logic elements	√	√
• Fast responding hydraulic door safety interlock	√	√
• Energy saving pump switch off feature in cast of idle running.	√	√
Controls		
• Intelligent operator terminal with large multi colour LCD display and alpha numeric key board (10.5")	√	√
• Easy setting of parameters through graphics using mouse wheel	NA	√
• 3.5" disc drive for loading Ergocontrol and PLC software and also for storing machine setting data.	NA	√
• CAN bus as field bus linking the Ergocontrol and machine controllers	NA	√
• Position measuring system for moving platen, ejector, and screw travel	√	√
• Setpoint input on the Ergocontrol in physical values (bar, cc, mm/sec, screw rpm) or speeds for mould, ejector, core puller and nozzle as a percentage of maximum value.	NA	√
• Graphics supported input of set point profiles for injection speed, Follow up pressure, back pressure and screw speed as an alternative to entry of numerical values.	NA	√
• 2 screens free for entry of general data (set up information)	√	√
• Continuous Process control via monitoring of important process parameters with selectable tolerance band	√	√
• Moulding counter preselection with automatic switch off feature	√	√
• Shift and batch production counters with rejection monitoring	√	√
• Fault diagnostics in the event of machine malfunction or operator error with plain text message and recording of source of error	√	√
• Automatic switch off mould cooling in the event of fault in the cycle	√	√
• Printer interface (centronics) through parallel port	√	√
• PDS Process data acquisition PDE with statistics and graphics	1024 cycles 9 parameters	100 cycles 20 parameters
• Measurement of cycle, injection, plasticizing and mould protection times	√	√
• Regulated power supply 24V DC for controls and actuators	√	√
• Set of electrical outlet- Single/E (1 x 10A) & 3/E (1 x 16A)	√	√
• Socket for printer	√	√
• Multi level password for pretending tampering of parameters	√	√
• Smart card reader for pretending tampering of parameters	NA	√
• Flash lamp/Acoustics alarm	√	√
• Hot runner controlled integrated (upto 16 zones)	NA	•
• Flexible motion sequences for cores and ejectors	NA	•
• Digital setting of all times, setting range in seconds	0.1 to	0.1 to

• Computer optimized 5-point twin toggle system, for fast, smooth platen movement and even distribution of clamp force	√	√
	999	999
• Function wise layout of pages (screens) and ergonomical display of various process parameters/data in clear text	√	√
• Heater current display device (upto IU 900 only)	√	•
• PID control loops and semiconductor relays for cylinder heating system	√	NA
• Self Optimizing PID control loops and semiconductor relays for cylinder heating system	NA	√
• Main voltage 415V/3ph/50Hz, control voltage 24VDC/220V	√	√
• Internal storage of upto 60 mould set programmers	√	•
• Injection speed settable in mm/sec and pressure settable in bar	√	√
• Injection speed settable in 63 steps and pressure settable in 127 steps	NA	NA
• PC connectivity for additional storage of mould catalogue	•	NA
• Switch on programmable for oil preheating and cylinder heating	•	•
• Energy indication on operator panel	•	•
• SPC and CPk with graphical display	•	•
• Machine troubleshooting module indicating clear direction to resolve problems	•	•
• Hot runner shut off device (pneumatic/hydraulic)	•	•
• Remote access of control pages	•	NA
• Down time log	•	•
• Strat up module for automatic selection of process parameters (Ergostart)	•	•
• Insulated heater bands	•	•
• Auto switch off programme-purging w/o hopper shut off	•	•
• Language options	•	•
• Programmable automatic switch-off matrix	•	•
• Networking of machine	•	NA
General		
• Guarded machine enclosure with space for protruding moulds and peripheral connections	√	√
• One piece machine bed (upto 50)	√	√
• Safety equipments as per EN201	√	√
• Flexible machine support with anti vibration mounts	√	√
• Total preventive maintenance	•	•
• Three way access for easy part removal	NA	NA
• Complete cove on the injection unit front side	NA	NA
• Mould clamps-8 numbers	•	•
• Separate oil filter for fine straining (Bypass filtration); integrated in the machine	•	•
• Three colour lamp (only in LNC)	•	NA
Functions/Interfaces		
• Single phase preventor	•	•
• Connection for additional heater band – only plug will be with the machine	•	•
• 2 pole signal interface in accordance with VDMA for robots/sprue picker (E12)	•	•
• Euromap 67 interface	NA	NA

• Computer optimized 5-point twin toggle system, for fast, smooth platen movement and even distribution of clamp force	√	√
• Rotating core interface	•	•
• Mould protection by monitoring ejector back sensing using limit switch (*1 no.) in mould)	•	•
• Interface for ejector limit switch (2 nos) in the mould	•	•
• Sensor interface for monitoring drop of mountings with photocell option	•	•
• Free programmable I/O's (Max. 21/O-LNC5, 61/O-Ergo)	•	•
• 3 Stage start up programme	•	•
• Automatic Printer Programme	•	•
• Thermal printer	NA	•
• Interface for indexing conveyor/floating contact	•	•
• Blending unit interface	•	•
• Chiller/peripheral fault interface	•	•
• Amendment report log	•	•
• Interface with gas assisted moulding	•	•
• Interface for quick mould change	•	•
• Interface for cavity pressure sensor-upto 2 channels	NA	•
• Interface for add.nozzle heater band (plug only)	•	•
• Interface for slide core safety control	NA	•
• Interface upto temperature control units, point controller-Outputs for heating and cooling	NA	NA
• CAN interface for temperature control device-upto 2 circuits	NA	NA
• Interface mould temperature display on IBED; upto 2 – mould circuits	NA	NA
• Thermal printer integrated in Ergocontrol	NA	•
• TPM programme	√	√
• Help Menu	√	√
• Process data storage (on floppy in ergocontrol/download in excel format in LNC)	•	•
• Flexible motion sequence – CU-IU (core and ejector movement, IU)	NA	NA
• Inert loading sequence	•	NA
• Process troubleshooting (Ergoexpert)	•	•
• Injection compression sequence	•	•
• Breathing sequence	•	•
- Standard NA – Not Available Alternative Equipment	• - Option NEC – NO extra Cost, ALT-	