

The equipment features are valid for the following machines:

Tie-barless machines:

ES 330 / 50 HL
 ES 330 / 60 HL
 ES 330 / 75 HL (VICTORY)
 ES 330 / 80 HL
 ES 330 / 90 HL
 ES 330 / 110 HL (VICTORY)
 ES 330 / 125 HL (VICTORY)
 ES 330 / 130 HL VICTORY
 ES 330 / 155 HL VICTORY

STANDARD EQUIPMENT

- 10--stage injection speed
- 10--stage holding pressure profile
- 5--stage screw speed
- 5--stage back pressure profile
- Display of the screw speed
- Injection time monitoring
- Automatic cushion monitoring
- Holding pressure switchover as a function of time, stroke, hydraulic pressure with switchover point display
- Increased injection pressure can be switched over
- Contact pressure relief
- Swivel-type injection unit
- Wear resistant bimetallic cylinder (for VICTORY optional)
- Manual high speed changeability of the material cylinder
- Ceramic heater bands
- Direct drive of the screw with hydraulic motor

Control system and electric system

- Microcomputer EC 100 closed loop controlled with integrated diskette drive
- TFT colour flat display incl. MICROGRAPH PLUS / MICROPLAST
- LCD flat display monochrome (for VICTORY)
- All functions on the injection unit closed loop controlled
- Patented linearization program
- Monitoring of process-critical functions with alarm message
- Graphic cycle time analysis with part-time monitoring
- Self-optimizing temperature control circuits
- Regulator and emergency service for temperature control circuits
- Automatic heating-up with start-up safety
- Automatic temperature reduction program
- Screen text in all languages (Latin characters)
- Malfunction message record
- QUICK SETUP with action display
- Graphic-supported set value setting
- Info package (help package, 2nd language, storage of data sets on CPU) (for VICTORY optional)
- Week switch clock for heating on/off motor off
- Access management system via password input
- Connection for PC keyboard and printer (V24)

Machine safety

- European C standard EN201/1997

SPECIAL EQUIPMENT

- Increased torque of the screw
- Thermoset equipment
- Elastomer equipment
- PVC equipment
- GASMELT equipment
- Multi-component and multi-colour equipment *
- POWERMELT heavy duty screws
- Extremely wear resistant and corrosion resistant plasticizing units
- Needle shut-off nozzle spring actuated
- Pneumatic shut-off nozzle
- Insulating mats for heater bands
- Servo valve closed loop control for injection speed, holding pressure and back pressure
- Holding pressure switchover as a function of mould cavity pressure with charge amplifier

Control system and electric system

- Microcomputer CC 100 closed loop controlled incl. MICROGRAPH PLUS and QDP / CPC*
- TFT colour flat display (for VICTORY)
- MICROGRAPH / MICROPLAST (for VICTORY)
- MICROFLOW
- MICROTHERM
- Quality documentation package QDP incl. process data monitoring CPC (standard at CC100)
- Quality data statistics QDS
- Absolute value input
- Program cycle sequence freely programmable in 36 program steps
- AUTOPROTECT, self-learning precision mould protection
- Energy measurement + analysis
- Week switch clock for peripheral equipment and motor ON/OFF
- Network interface for central computer / teleservice
- Interface for handling system (Euromap 12)
- Interface (EUROMAP 17) for temperature control units, hot runner controller and conveying unit
- ENGEL Monitoring System (EMS)
- Injection-compression
- Printer, PC input keyboard
- Access authorization system with magnetic card
- Program package Expert Control
- Program automatic cylinder cleaning
- Manual control device for machine functions
- Start-up circuit with automatic switchover from start-up to production parameters
- Control circuits for mould heating
- additional electric connections (2-pole / 3-phase), switchable alternatively
- Interface for conveyor-belt
- Acoustic warning signal

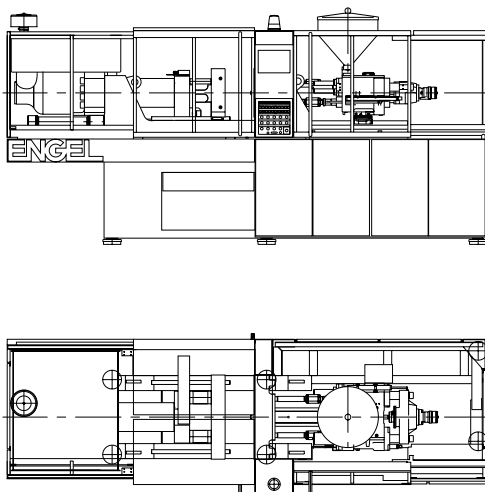
Automation modules

- Automatic feed units

* for VICTORY not available

INTERNATIONAL SIZE DESIGNATION ¹		330/...					
		Standard			N execution		
Screw diameter	mm	30	35	40	30	35	40
Plasticizing stroke	mm		160			160	
Max. stroke volume	cm ³	113	154	201	113	154	201
Screw speed	min ⁻¹	400	400	320	440	440	350
Screw length	L/D	23,6	20	17,5	23,6	20	17,5
Plasticizing capacity	g/sec	14	21	25	15,4	23,	27,3
Screw length barrier	L/D	23,6	20	-	23,6	20	-
Plasticizing capacity barrier screw	g/sec	21	26	-	23	28,6	-
Injection rate	cm ³ /sec	80/111	109/152	143/198	111	152	198
Injection rate injection pressure increased	cm ³ /sec	59/83	80/112	105/146	83	112	146
Spec. injection pressure	bar	2180	1600	1230	2180	1600	1230
Spec. injection pressure increased	bar	2400	2180	1670	2400	2180	1670
Nozzle stroke	mm		250			250	
Nozzle contact force	kN		47			47	
Heating capacity	kW		9,2			9,2	
Number of the heating zones incl. nozzle			4			4	
Pump drive power	kW		15/22			18,5/22	
Hopper contents	l		52			52	

- (1) Working capacity injection unit-clamping force in Mp
- (2) Values for polystyrene (MVR 200/5=10 cm³ /10 min according to ENGEL works standard ETR 10100)
- (3) Values for HDPE (MVR 190/2,16=5 cm³ /10 min)
- (4) Dependent on pump drive power



sp330

Possible combinations of the injection unit

Machine designation	Oil filling [l]	Pump capacity [kW]		Connected load / current [kW / A]	
		Standard	N execution	Standard	N execution
ES 330 / 50, 60 HL	140	15/18,5		25/45	28/51
ES 330 / 75 HL (VICTORY)	140	15/18,5		25/45	28/51
ES 330 / 80, 90 HL	260	15/18,5		25/45	28/51
ES 330 / 110 HL (VICTORY)	260	15/18,5		25/45	28/51
ES 330 / 125 HL (VICTORY)	460	22/22		33/58	33/58
ES 330 / 130, 155 VICTORY	450	22/22		33/58	33/58