MacroPower 400 – 2000 t
The compact large machine

world of innovation

POWERFUL – COMPACT – UNIVERSAL
The benchmark for large machines

The advantages

» Small footprint through compact design

» Generously dimensioned 4 tie-bar/2 platen clamping system

» Long-stroke system to "release" the tie-bars facilitates lateral insertion of large molds

» Minimal dry cycle time through synchronized closing of the tie-bar nuts

» Smooth-running platen movements and sensitive mold protection thanks to linear guides

» Enhanced user-friendliness with new UNILOG B8 control system including integrated assistance systems

» Fast through parallel operation of ejector and core pull with platen movement

» Powerful injection unit with servo valve control

» With WITTMANN 4.0 central operation of machine and peripherals via B8 monitor screen

» Positioning of hydraulic system and electric modules for easy servicing

» Attractive price/size ratio

The machine series

MacroPower standard: 21 clamping force sizes from 400 to 2000 t

MacroPower COMBIMOULD: for multi-component injection molding – from 400 to 2000 t

MacroPower
The system highlights

» **Parallel movements are standard, "Drive-on-Demand" is an option**
All standard *MacroPower* machines are driven via a modular twin-pump hydraulic system with electrically adjustable delivery pumps. Parallel movements for core pull and ejector are standard. Additional pump stages (optional) increase the number and performance of parallel movements. To optimize energy efficiency, the drive can be powered by an (optional) "Drive-on-Demand" servo motor instead of its standard asynchronous motor.

» **Precise and powerful screw drive**
All *MacroPower* injection units come with hydraulic drive systems as standard. Servo drives for dosing are available as an option. Injection and holding pressure are controlled via a servo valve. Thanks to the system-specific low height of the machine, access to the barrel unit and nozzle for cleaning is easy.

» **Clamping system – generously dimensioned**
The *MacroPower* clamping system is a 4 tie-bar/ 2 platen system with generously dimensioned mold mounting platens. All four tie-bars each come with a pressure cushion unit and are anchored in the fixed platen of the machine. The tie-bars are position-monitored and guarantee optimal platen parallelism.

» **QUICKLOCK® clamping system – synchronous, fast**
The power transmission between the fixed and the moving system platen is effected by positive locking via the tie-bars, which are gripped by toothed segment half shells in the moving platen. Short locking times are achieved by synchronized movements of all nuts. Long-stroke cylinders move the platen, which is guided on linear bearings. The pressure cushions serve to build up the clamping force.

» **Insertion of the mold made easy**
The *MacroPower* clamping system provides a large gap between the ends of the tie-bars and the moving platen, thanks to its standard large platen stroke and the relatively short length of the tie-bars. This allows for lateral insertion and fastening of the molds from the rear of the machine using a crane.

» **Large and flexible**
The extensive *MacroPower* system construction kit offers a wide range of combination options from numerous clamping force variants with matching distances between tie-bars, in both standard and XL versions.

» **Sensitive and precise**
In the *MacroPower* clamping system, the tie-bars are only used for the force transmission between the mold platens. The moving platen is mounted on a carriage, which travels on high-precision linear bearings along the machine frame. The minimal rolling friction in the linear bearings is the prerequisite for highly sensitive mold protection and high cleanless.

» **Fast and synchronized**
The QUICKLOCK® locking system between the tie-bars and the moving platen consists of four synchronized tooth segment nuts, which are integrated in the moving platen to minimize the machine's footprint.

» **Compact design for minimal footprint**
The integrated tie-bar nuts and short tie-bars offer two advantages: short footprint and simultaneously free space for lateral mold insertion.

» **Symmetrical and powerful**
The moving platen is driven by two diagonally positioned traveling cylinders designed for high speed. The traveling drive in combination with a hydraulic differential gear system provides the basic conditions for high speed, precision in movements and power.

INJECTION UNIT
Servo-controlled and precise

wittmann / Battenfeld

» **Everything to ensure series consistency**
  - All screws come with a 22:1 L/D ratio.
  - Direct drive via slow-running hydro motor (servo motor available as an option)
  - Maximum repeatability through servo valve control for injection and holding pressure
  - Moment-free nozzle contact through axial positioning of the traveling cylinders
  - Wide range of suitable screws and barrels for various process technologies available
  - WITTMANN BATTENFELD HiQ software modules (optional) offer extensive facilities for compensating environmental factors such as fluctuations in temperature, moisture, regrind or masterbatch content.

» **Extremely easy operation and flexibility**
  - Free access to the injection unit for easy material feeding, machine setting and servicing
  - Maximum maintenance-friendliness thanks to compact design and free accessibility

Anti-wear options
In addition to the premium-quality standard equipment, an extensive range of options is available to provide extra anti-wear and/or anti-corrosion protection. Predefined option packages and a selection matrix facilitate the selection of the right plasticizing unit.

MacroPower 850

DRIVE TECHNOLOGY
Energy efficient and modular

Fast-responding, precise, efficient
The hydraulic system comes in a modular design, with up to four electrically adjustable delivery pumps combined with one or two asynchronous three-phase motors. Positioning of the hydraulic blocks close to the consumers reduces line loss and improves the control function. Monitored shut-off valves are installed in the suction pipes to ensure operational safety.

Hydraulic system extension levels for parallel functions
» H1/S1:   twin pump system
            for parallel movements of ejector and core pull
» H2/S2:   twin pump system with increased drive performance (optional) for parallel
            movements of ejector and core pull plus faster injection
» H3/S3:   twin pump system with increased drive performance (optional) for several
            parallel functions
» H4/S4:   twin pump system with increased drive performance (optional)
            for parallel movements of ejector and core pull and high-speed injection with an
            accumulator for short cycle times

H version: drive via asynchronous three-phase motor with constant speed
S version: drive via servo motor with variable speed and electrically adjustable delivery pumps (option)

High-end hydraulics – "Drive-on-Demand" (S version)
A "Drive-on-Demand" system to cut energy consumption is available as an option. Here, a water-cooled, speed-controlled servo motor is combined with an electrically adjustable pump as an alternative to the asynchronous three-phase motor. The advantage of this combination is that the hydraulic system is kept within the range of the system's optimal degree of efficiency, by adjustment of both the motor speed and the pump's displacement volume. In this way, energy savings of up to 35 % and an up to 20 % reduction in idle power can be achieved, depending on the application, and sound emission can be reduced as well.
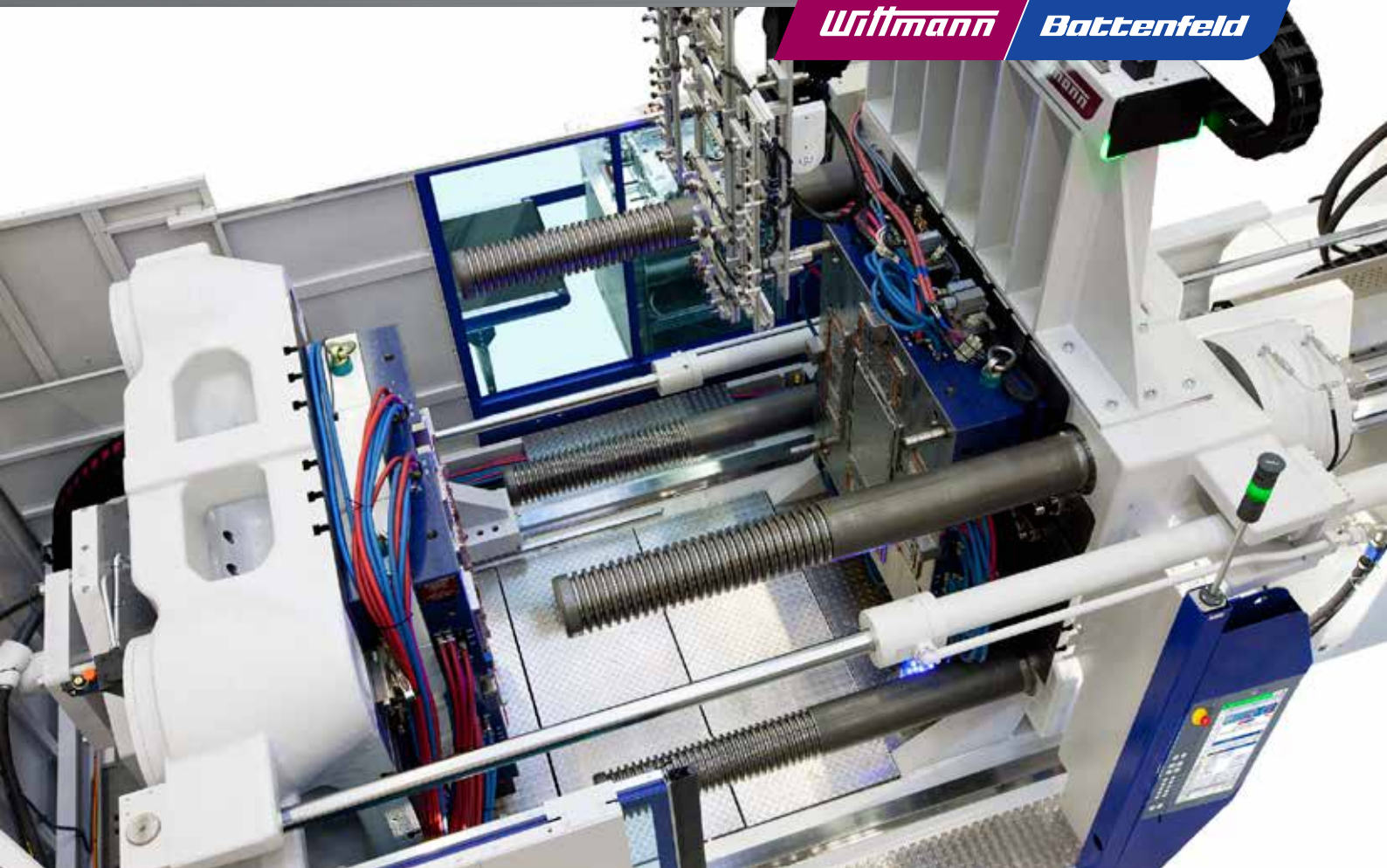
PRODUCTION CELL
Customized configuration

WITTMANN BATTENFELD injection molding machines come with a flexibly adjustable basic modular design. From this basis, the machine can be extended with a wide range of automation equipment into a production cell. This includes primarily devices for fast mold change, fast coupling of complex media connections and the automation of finished parts handling.

MacroPower automation options:

» **"Handling robot automation module"** with linear or articulated arm robot and logistics peripherals

» **Mold clamping systems**
Both hydraulic and magnetic clamping systems are available including all safety monitoring features, if required combined with roller conveyor units for lateral mold transfer.

» **Automatic mold change system** as fixed carriage and pre-heating station or as a flexibly movable carriage system with docking interface

» **Combination with WITTMANN peripheral units via WITTMANN 4.0**
Temperature control or cooling, material feeding, coloring and drying
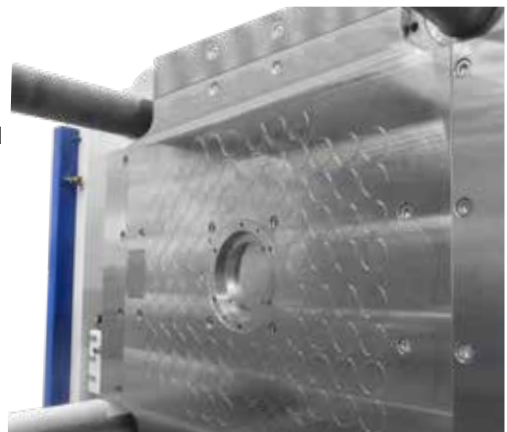
UNILOG B8
Complex matters simplified

The new UNILOG B8 machine control system is the WITTMANN BATTENFELD solution to facilitate the operation of complex processes for human operators. For this purpose, the integrated industrial PC has been equipped with an enlarged intuitive touch screen operator terminal. The visualization screen is the interface to the new Windows® 10 IoT operating system, which offers extensive process control functions. Next to the pivotable monitor screen, a connected panel/handset is mounted on the machine's central console.

UNILOG B8
Highlights

» **Operating logic**
  with a high degree of self-explanation, similar to modern communication devices

» **2 major operating principles**
  – Operating/movement functions via tactile keys
  – Process functions on touch screen (access via RFID, key card or key ring)

» **Process visualization**
  via 21.5" touch screen display (full HD), pivoting laterally

» **New screen functions**
  – Uniform layout for all WITTMANN units
  – Recognition of gestures (wiping and zooming by finger movements)
  – Container function – split screen for sub-functions and programs

» **Status visualization**
  uniform signaling system across the entire WITTMANN Group
  – Headline on the screen with colored status bars and pop-up menus
  – ambiLED display on machine

» **Operator assistance**
  – *QuickSetup*: process parameter setting assistant using an integrated material database and a simple query system to retrieve molded part data with machine settings pre-selection
 – Extensive help library integrated

» **SmartEdit**

SmartEdit is a visual, icon-based cycle sequence programming facility, which enables direct addition of special functions (core pulls, air valves, etc.) based on a standard process via touch operation on the control system's monitor. In this way, a total user-defined sequence can be compiled from a sequence menu. This machine cycle, visualized either horizontally or vertically, can be adjusted simply and flexibly to the process requirements by finger touch with "drag & drop" movements.

The advantages
- Icon visualization ensures clarity.
- Clear events sequence through node diagram
- Alterations without consequences through "dry test runs"
- Theoretical process sequence can be quickly implemented in practice.
- Automatic calculation of the automation sequence based on the actual set-up data set without machine movements

» **SmartScreen**
- Partitioning of screen displays to visualize and operate two different functions simultaneously (e.g. machines and peripherals)
- Uniform design of the screen pages within the WITTMANN Group
- Max. 3 containers can be addressed simultaneously for the *SmartScreen* function.
- Adjustments of set values can be effected directly in the set value profile.
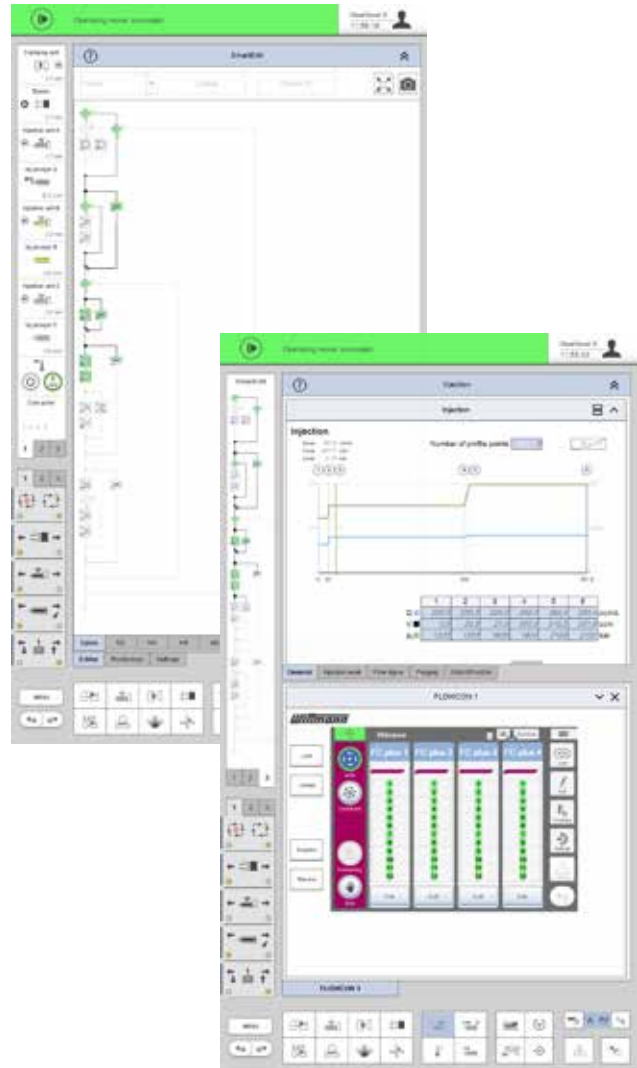
Remote communication
» **QuickLook**
Production status check via smartphone – simple and comfortable:
- Production data and statuses of all essential units in a production cell
- Complete overview of the most important production parameters
- Access to production data, error signals and user-defined data
- Facilities for grouping of units and sorting according to status available

» **Global online service network**
- Web-Service 24/7: direct Internet connection to WITTMANN BATTENFELD service
- Web training: efficient staff training by means of the virtual training center

WITTMANN 4.0
Communication in and with production cells

With its communication standard WITTMANN 4.0, the WITTMANN Group offers a uniform data transfer platform between injection molding machines and auxiliaries from WITTMANN. For an appliance exchange, the correct operating software is loaded automatically via an update function according to the "Plug & Produce" principle.

Connection of peripherals via WITTMANN 4.0

» **WITTMANN FLOWCON plus water flow regulator, GRAVIMAX blenders and ATON dryers**
  – Units directly addressed and controlled via the machine's control system
  – Joint saving of data in the production cell, the machine and in the network via MES

» **WITTMANN robots with R9 control system**
  – Operation of robots via the machine's monitor screen
  – High-speed communication between machine and robot to synchronize movements
  – Important machine movements can be set via the R9 robot control system

» **WITTMANN TEMPRO plus D temperature controllers**
  – Setting and control of temperatures via the machine's control system possible
  – All functions can be operated either on the unit or via the machine's control system

Integration in MES system
The integration of machines and complete production cells in an MES system is a prerequisite for an efficient and transparent production facility according to the Industry 4.0 concept.
Depending on the customer's requirements, small and medium-sized companies will be offered a compact MES solution based on TEMI+. For large-scale and globally active companies, our cooperation partner is MPDV Microlab GmbH, a leading MES service provider. With the Windows® 10 IoT operating system it is also possible to have selected status information from all connected machines on the production floor shown under *SmartMonitoring* on the display screen of every machine.
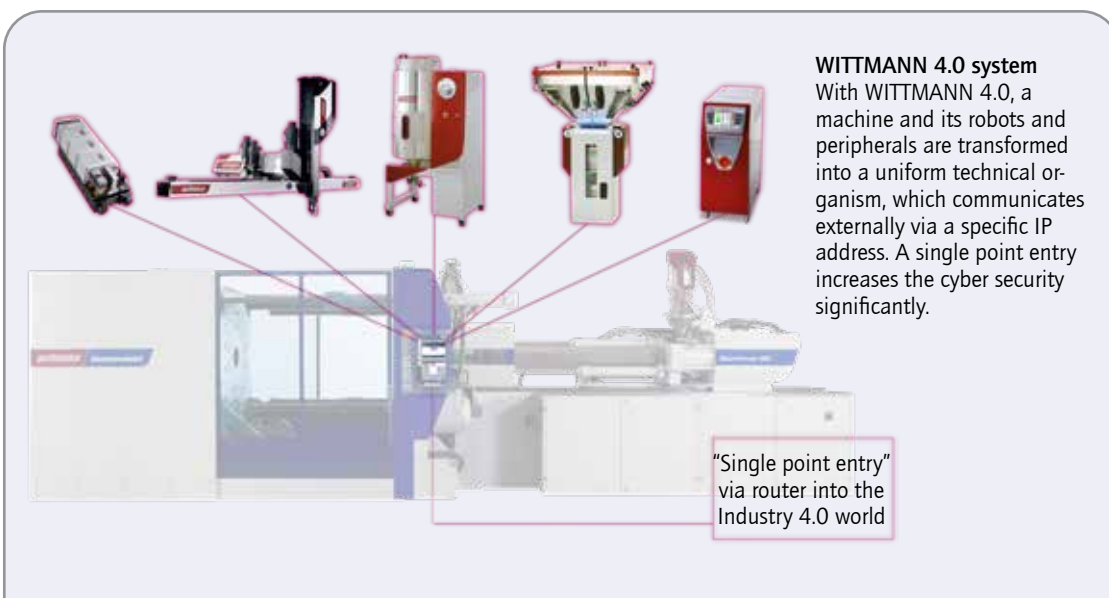
WITTMANN 4.0 system
With WITTMANN 4.0, a machine and its robots and peripherals are transformed into a uniform technical organism, which communicates externally via a specific IP address. A single point entry increases the cyber security significantly.

"Single point entry" via router into the Industry 4.0 world

MacroPower
The optional highlights

» **Tie-bar removal device**
If the standard platen stroke to release the tie-bars is not sufficient for a mold change, a hydro-mechanical tie-bar removal device integrated in the pressure cushion is available as an option. Removing and pushing back the tie-bars are fully automatic processes taking no more than a few minutes.

» **Servo-electric plasticizing**
As an alternative to screw rotation by a hydro motor, an optional direct drive with a servomotor can be supplied. It reduces energy consumption and offers additional facilities for parallel operation of the clamping and plasticizing units.

» **Free space for conveyor belt in the small sizes of large machines as standard**
In the machines from 400 to 700 t clamping force, the machine frame comes prepared for the installation of a conveyor belt inside the frame for longitudinal transport of molded parts. An optional elevation of the frame to accommodate a conveyor belt for parts transport to the side can also be supplied.

» **Fast media coupling**
In addition to the ergonomically positioned standard connection points for cooling water, air and core pull hydraulics, optional fast coupling units can be installed (individual or system plates), which also accommodate the power connections for the hot runner heating circuits, temperature and pressure sensors and coding signals. The degree of automation can be further increased by adding a quick mold clamping system.

» **WITTMANN peripherals**
The comprehensive range of WITTMANN peripherals offers appropriate solutions for all secondary processes of injection molding, including parts handling, material feeding and drying, sprue recycling, mold cooling and temperature control. Via the optional WITTMANN 4.0 integration package, all additional appliances can be integrated into the injection molding machine's program sequence according to the "Plug & Produce" principle.
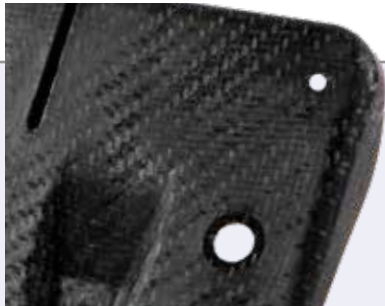
» **Lightweight construction**
MacroPower machines and WITTMANN handling technology including automation expertise offer ideal conditions for making large composite parts from flat fiber materials and injection-molded carrier structures.

» **CELLMOULD® – structured foam technology**
The production of structured foam parts through targeted blending of pressurized nitrogen or carbon dioxide into the plastic melt prior to injection into the mold has been a WITTMANN BATTENFELD core competence based on in-house R & D for more than 30 years.

» **AIRMOULD® – gas injection process**
AIRMOULD® is the gas-assisted injection molding process developed by WITTMANN BATTENFELD. Its two variants are the AIRMOULD® internal gas pressure process and the AIRMOULD® CONTOUR external gas pressure process.

Photo: Haidlmair GmbH

» **COMBIMOULD**
When two or more plastic materials in different colors or plastic materials with different attributes need to be combined into one component, the *MacroPower* machines can be equipped with additional injection units in V, L, S or HH configuration and rotary tables with servo drives.

TECHNICAL DATA
MacroPower

COMBINATIONS OF CLAMPING UNITS/INJECTION UNITS										
Clamping unit	Injection unit									
t	1330	2250	3400	5100	8800	12800	16800	19000	23300	33000
400	•	•	•	•						
450	•	•	•	•						
XL 450	•	•	•	•	•					
500	•	•	•	•	•					
550	•	•	•	•	•					
XL 550		•	•	•	•					
650		•	•	•	•					
700		•	•	•	•					
XL 700		•	•	•	•	•				
850		•	•	•	•	•				
900		•	•	•	•	•				
XL 900			•	•	•	•	•			
1000			•	•	•	•	•			
1100			•	•	•	•	•			
XL 1100				•	•	•	•	•	•	
1300				•	•	•	•	•	•	
1500				•	•	•	•	•	•	
1600				•	•	•	•	•	•	
XL 1600					•	•	•	•	•	•
1800					•	•	•	•	•	•
2000					•	•	•	•	•	•

Material	Factor
ABS	0.88
CA	1.02
CAB	0.97
PA	0.91
PC	0.97
PE	0.71
PMMA	0.94
POM	1.15
PP	0.73

The maximum shotweights (g) are calculated by multiplying the theoretical shot volume (cm³) by the above factor.

Material	Factor
PP + 20 % Talc	0.85
PP + 40 % Talc	0.98
PP + 20 % GF	0.85
PS	0.91
PVC hard	1.12
PVC soft	1.02
SAN	0.88
SB	0.88
PF	1.3
UP	1.6

Dark grey boxes = thermosets

MOLD DIMENSIONS

» **Overview mold weights**
The *MacroPower* series is laid out for the following maximum mold weights and/or mold torques. If the maximum weight or maximum torque is exceeded, an additional mold support will be necessary. Whenever the values are exceeded, WITTMANN BATTENFELD must be consulted.

$$Wm = 2/3 \times W$$
$$Tm = Ws \times \text{max. mold h.}/3$$
$$Wf = 1/2 \times W$$
$$Tf = Wf \times \text{max. mold h.}/4$$
$$Wc = 2/5 \times W$$
$$Wmax. = W + Wc$$

Clamping Unit	Machine		Moveable platen		Fixed platen		Center platen	
	max. mold weight	max. mold height	max. weight	max. torque	max. weight	max. torque	max. weight	max. total weight
	W (t)	(mm)	Wm (t)	Tm (tm)	Wf (t)	Tf (tm)	Wc (t)	Wmax (t)
400, 450	6.5	850	4.3	1.2	3.3	0.7	2.6	9.1
XL 450, 500, 550	8	900	5.3	1.6	4.0	0.9	3.2	11.2
XL 550, 650, 700	10	950	6.7	2.1	5.0	1.2	4.0	14.0
XL 700, 850, 900	12	1000	**8.0**	**2.7**	**6.0**	**1.5**	4.8	16.8
XL 900, 1000, 1100	19	1200	12.7	5.1	9.5	2.9	7.6	26.6
XL 1100, 1300, 1500, 1600	30	1400	20.0	9.3	15.0	5.3	12.0	42.0
XL 1600, 1800, 2000	45	1600	30.0	16.0	22.5	9.0	18.0	63.0

» **Mold torque calculation examples**

MacroPower 850 t clamping force
Mold weight W = 11 t

Mold weight clamping side Wm = 7 t
Distance to center of gravity xm = 0.3 m

Mold weight on fixed platen side Wf = 4 t
Distance to center of gravity xf = 0.2 m

Tm = 7 t x 0.3 m = **2.1 tm**
Tf = 4 t x 0.2 m = 0.8 tm

All values within specifications, no additional support required.
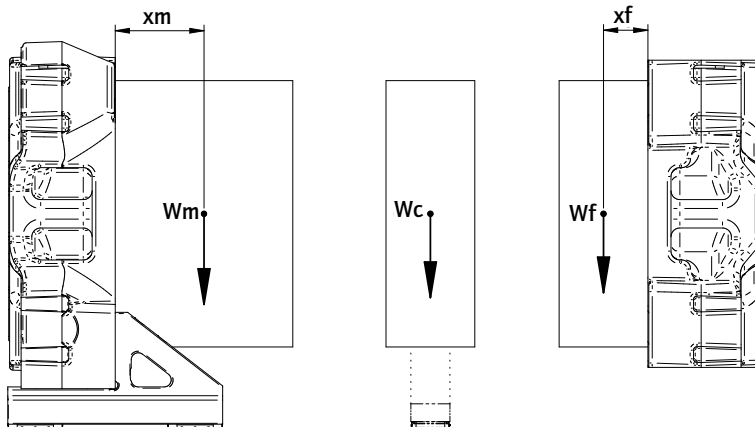
MacroPower 850 t clamping force
Mold weight W = 11 t

Mold weight clamping side Wm = 8 t
Distance to center of gravity xm = 0.4 m

Mold weight on fixed platen side Wf = 3 t
Distance to center of gravity xf = 0.2 m

Tm = 8 t x 0.4 m = **3.2 tm**
Tf = 3 t x 0.2 m = 0.6 tm

Value Tm exceeds specification, additional support required.

» **Reductions in clamping force for smaller molds**
The *MacroPower* machine series is laid out for minimum mold dimensions as indicated in the technical specifications. Down to the minimum mold size specified, the machine's clamping force can be fully utilized. When smaller molds are used, the clamping force must be reduced, depending on the mold dimensions, according to the overview below. The mold size used must not fall below the minimum mold dimensions specified in the chart.

» **Example of clamping force reduction (chart)**
MacroPower 850 t clamping force, mold dimensions 700 mm x 800 mm (smaller dimension is relevant). A mold dimension of 700 mm leads to a reduced maximum clamping force of 780 t.

» **Mold parallelism**
The *MacroPower* is equipped with high-precision linear guides on the moving platen and therefore guided with extreme accuracy and parallelism across the entire stroke.

Its platen parallelism is within half of EUROMAP 9 tolerance. For correct operation, the maximum parallelism of 0.2 mm with minimum mold dimensions must not be exceeded.

PLEASE NOTE:
The molds must be inserted symmetrically to both axes of the clamping platens!

Reductions in clamping force for smaller molds *MacroPower*

Clamping force [t]

Minimum mold dimension [mm]
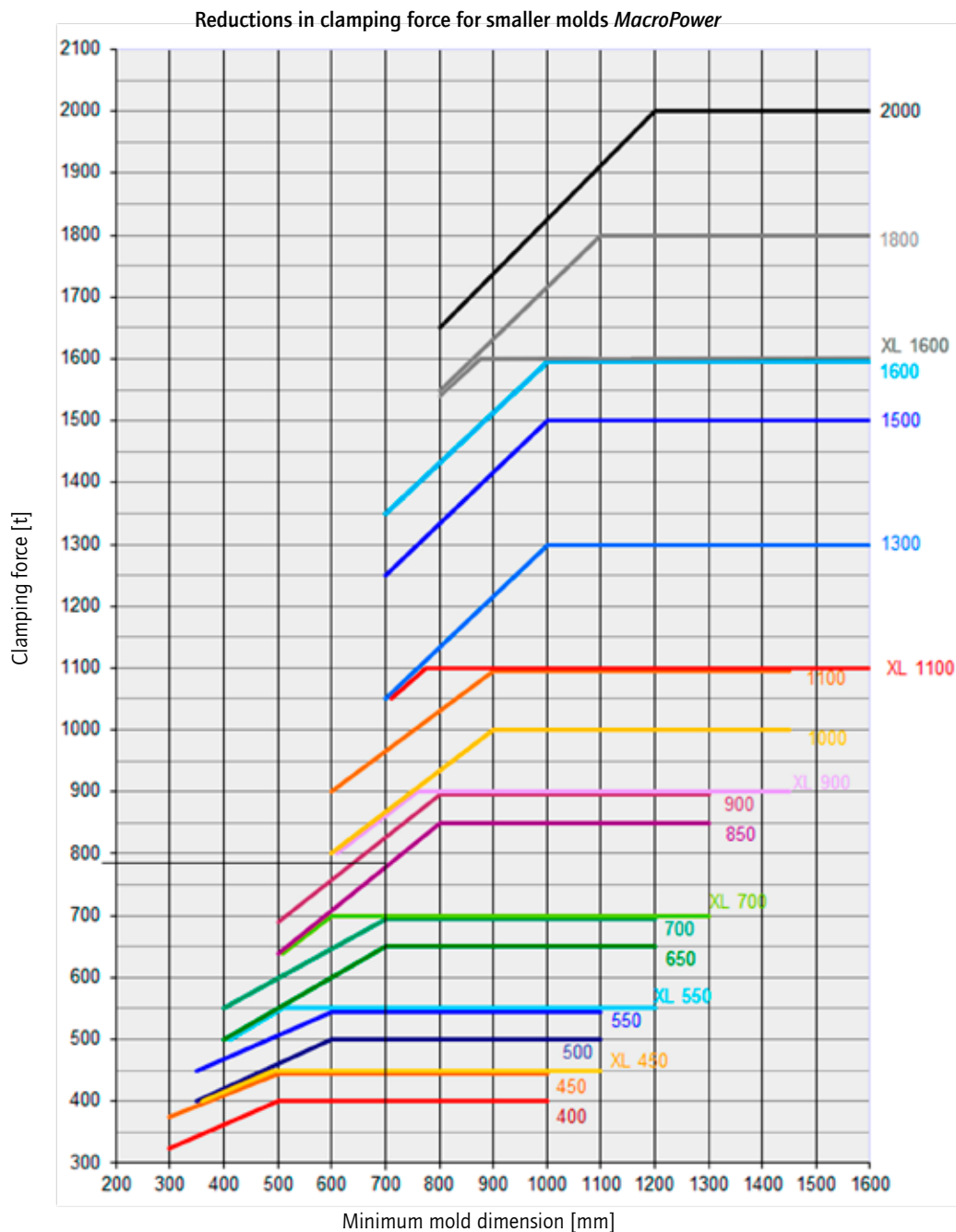
STANDARD

Base machine

Paint RAL 7047 tele grey 4/RAL 5002 ultramarine blue

Two-piece machine frame, clamping unit/injection unit

Built-in control cabinet

Hydraulics

Hydraulic unit with variable pressure and speed axial piston pump

Core pull movement and parallel ejection with double pump

Bypass oil filtration by fine flow filter with electrical clogging indicator

Oil level indicator with alarm

Closed loop oil temperature control with oil pre-heating

Oil temperature monitoring

Lock-up valve with supervision for suction pipe

Oil tank with connections for external oil filtration

Hydraulic pressure displayed

Clamping unit

Clamping force adjustable via touchscreen

Closing and opening speed adjustable

Closing and opening force adjustable

Mold safety program

Moving platen supported by positioned linear guides

Platen drillings and register rings according to EUROMAP

Fixing holes for robot on top of the fixed platen as per EUROMAP 18

Central hydraulic multi-stroke ejector, adjustable

Scanner in the mold area for protection against unauthorized access (from *MacroPower* XL 700)

Injection unit

Closed loop controlled injection

Screw L/D = 22 with check valve, wear and corrosions resistant screw and barrel AK+

Thermocouple failure monitor

Maximum temperature supervision

Defined nozzle carriage pressure

Plug-in ceramic heater bands

Temperature control of feed throat integrated

Open nozzle

Purge guard electrically monitored

Slide device without material hopper, prepared for WITTMANN material feeder

Linear bearings for the injection unit

Selectable barrel stand-by temperature

Decompression before and/or after metering

Physical units like bar, ccm, mm/s, etc.

Screw protection

Peripheral screw speed indication

Linear interpolation of holding pressure set values

Bar chart for barrel temperature with set value and actual value display

Selectable injection pressure limitation

Changeover from injection to holding pressure depending on stroke, time and pressure

Safety gate

Monitored safety gate electrically controlled according to CE on front and rear side

Maintenance-free safety gate locked by electromagnet

Safety gate free for mold change and handling by robot

Safety gate rear side lowered at the top of the upper tie-bar

Safety gate rear side to be opened to max. daylight for easy mold change, from size 850 t

Electrics

Operating voltage 230/400 V-3PH, 50 Hz

ambiLED status indicator

Fuse protection for sockets

Non-contact stroke transducers

USB 1 x operating units

1 Ethernet interface (switch cabinet)

Printer via USB connection or network

Control system

Control system UNILOG B8 – 21,5" multi-touch screen (full HD)

Control panel with selectable haptic keys

Clamp force display and supervision

Software for operating hours counter

Closing/Opening – 5 profile steps

Ejection forward/back – 3 profile steps

Nozzle forward/back – 3 profile steps

Injection/Holding pressure – 10 profile steps

Screw speed/Back pressure – 6 profile steps

Parts counter with good/bad part evaluation

Purging program through open mold

Stroke zero offset settings

Start-up program

Switchover to holding pressure MASTER/SLAVE by injection time, screw stroke/injection volume and injection pressure

Self-teaching temperature controller

Display of temperature inside electrical cabinet

Seven-day timer

Access authorization via USB interface, password system and RFID authorization system

Freely configurable status bar

Physical, process-related units

Automatic dimming

Logbook with filter function

User programming system (APS)

Userpage

Note pad function

Cycle time analysis

Hardcopy function

Internal data storage via USB connection or network

Online language selection

Online selection of imperial or metric units

Operator manual incl. hydr., mech. and electr. schedules online

Time Monitoring

BASIC Quality Monitoring (1 freely configurable network connection, quality table with 1000 storage depth, events protocol (logbook) for 1000 events, actual value graphics with 5 curves, 1 envelope curves monitoring)

Injection integral supervision

Metering integral supervision

Alarm message via e-mail

SmartEdit – sequence editor

QuickSetup – assistance program for initial parameter setting

OPTIONS

Base machine
Non-standard mold height/opening stroke
Mounting of fast-stroking cylinder exchanged diagonally
Machine frame increased

Hydraulics
Speed controlled servomotor for hydraulic pump to increase the energy efficiency
Hydraulic accumulator for fast injection incl. loading pump
Fast injection with double pump
Injection parallel to clamp force build-up
Hydraulic core pulls. Limit switch function according to EUROMAP 13. Pressure and speeds adjustable
Core pull pressure release
Pneumatic core pull
Hydraulic manifold for Mouldmaster nozzle (controlling 1 nozzle or more, parallelly or sequentially, in the mold)
Pneumatic manifold for Mouldmaster nozzle (controlling 1 nozzle or more, parallelly or sequentially, in the mold)
Ejector pressure/speed controlled by P/Q servo valve
Extra large oil cooler
Filter in water inlet of oil cooler
Adapter with ball valve on the oil tank for oil maintenance

Clamping unit
Support for middle plate or heavy molds
T-slots in mold platens
SPI bolt pattern
Ejector cross in clamping platen as per EUROMAP/SPI
Maximum ejector force increased
Ejector platen safety device
Hydromechanical mold safety mechanism
Air valve, action initiated (ON) and timer (OFF)
Tie-bar retract device for upper tie-bar
Quick mold clamping system electromagnet. or hydr.

Injection unit
Grooves in the feeding zone of barrel for improved feeding
High revolution hydraulic screw drive motor
High torque screw motor in lieu of standard
High temperature heaterbands (max. 450 °C)
Barrel insulation (standard up from injection unit 12800)
Screw drive by a.c. servomotor for parallel plasticizing
Ball type screw tip
Check valve with carbide insert
Needle type shut-off nozzle operated with spring, pneumatically or hydraulically
Pneumatic cross-bolt type shut-off nozzle
Melt temperature sensor in cylinder head (up to injection unit 8800)
Pressure transducer for melt pressure switch over
Open AIRMOULD® nozzle, pressure controlled
Wear resistant screw and barrel AKPA for polyamide
Corrosion resistant screw and barrel AKCN in chrome nitride or AKTN titan nitride
High wear and corrosion resistant screw and barrel AK ++
Screw with mixing section or barrier section
Injection unit equipped for rigid PVC
Injection unit equipped for CELLMOULD®
Slide device with spindle/crank handle adjustment (standard up from injection unit 12800)
Material hopper volume 60 liters
Hopper magnet
Access to material hopper via ladder and platform

Safety gate
Front side gate safety system for manual part removal
Electric safety gate at the operator side, standard from size 1000 t
Safety gate clearance operator side/rear side extended

Cooling and conditioning
Flow controller with temperature gauges
Shut-off valve for cooling water battery
Blow out valve for cooling water battery
Distributor of cooling circuits on the fixed platen and the moving platen
Cooling water flow rate integrated into control system via FLOWCON plus

Electrics
Temperature control zone for hot runner
Special voltage
Control cabinet cooler
Additional sockets
Emergency stop button on rear side
Signal tower with acustic element
Temperature control interface digital, serial 20 mA TTY protocol
CAN-Bus-interface for mold conditioner as per EUROMAP 66-2
Interface for BFMOLD® via CAN BUS for WITTMANN D series
Interface for AIRMOULD® mobile
Interface for robots as per EUROMAP 67
Interface for conveyor belt
Interface for dosing pump
RJG eDart interface
Master interface for danger zone boundary (DZB)
Interface for full integration of robot incl. Ethernet switch
Host computer interface/PDA (EUROMAP 63/EUROMAP 77)
Relays contact parallel to plasticizing
Machine fault (potential-free contact)
BNC connectors for injection process analysis
Interface for vacuum pump

Control system
Energy consumption analysis
Integrated Tandemmould
Switch over to holding pressure by cavity pressure
Switch over to holding pressure by external signal
Injection compression program/venting program
Melt cushion control
Second injection data setting for automatic start up
User specific programable set value limits
Web and remote service
HiQ Cushion® – melt cushion control
HiQ Flow® – injection integral control
HiQ Melt – monitoring of material quality

EXPERT Quality Monitoring (4 freely configurable network connections, quality table with 10000 storage depth, events protocol (logbook) for 10000 events, actual value graphic with 16 curves, 4 envelope curves monitoring, SPC charts, trend diagrams)

Additional equipment
Lighting in mold space
Europackage
Inline thermography
Webcam
Special paint and/or touch-up paint
Tool kit
Levelling pads
Additional manual on USB flash drive

WITTMANN BATTENFELD GmbH

Wiener Neustädter Strasse 81

2542 Kottingbrunn | Austria

Tel.: +43 2252 404-0

info@wittmann-group.com

www.wittmann-group.com