MacroPower 400 – 2000 t

The compact large machine

world of innovation

POWERFUL – COMPACT – UNIVERSAL
The benchmark for large machines

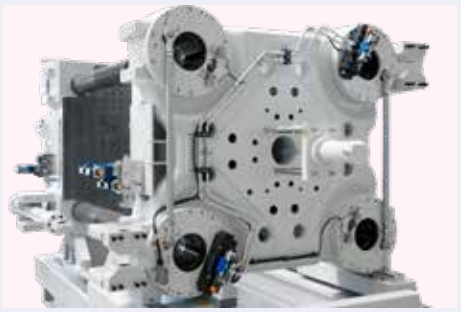
The advantages

» 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.

CLAMPING UNIT
High functionality with ample mold space

» **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

» **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.

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.

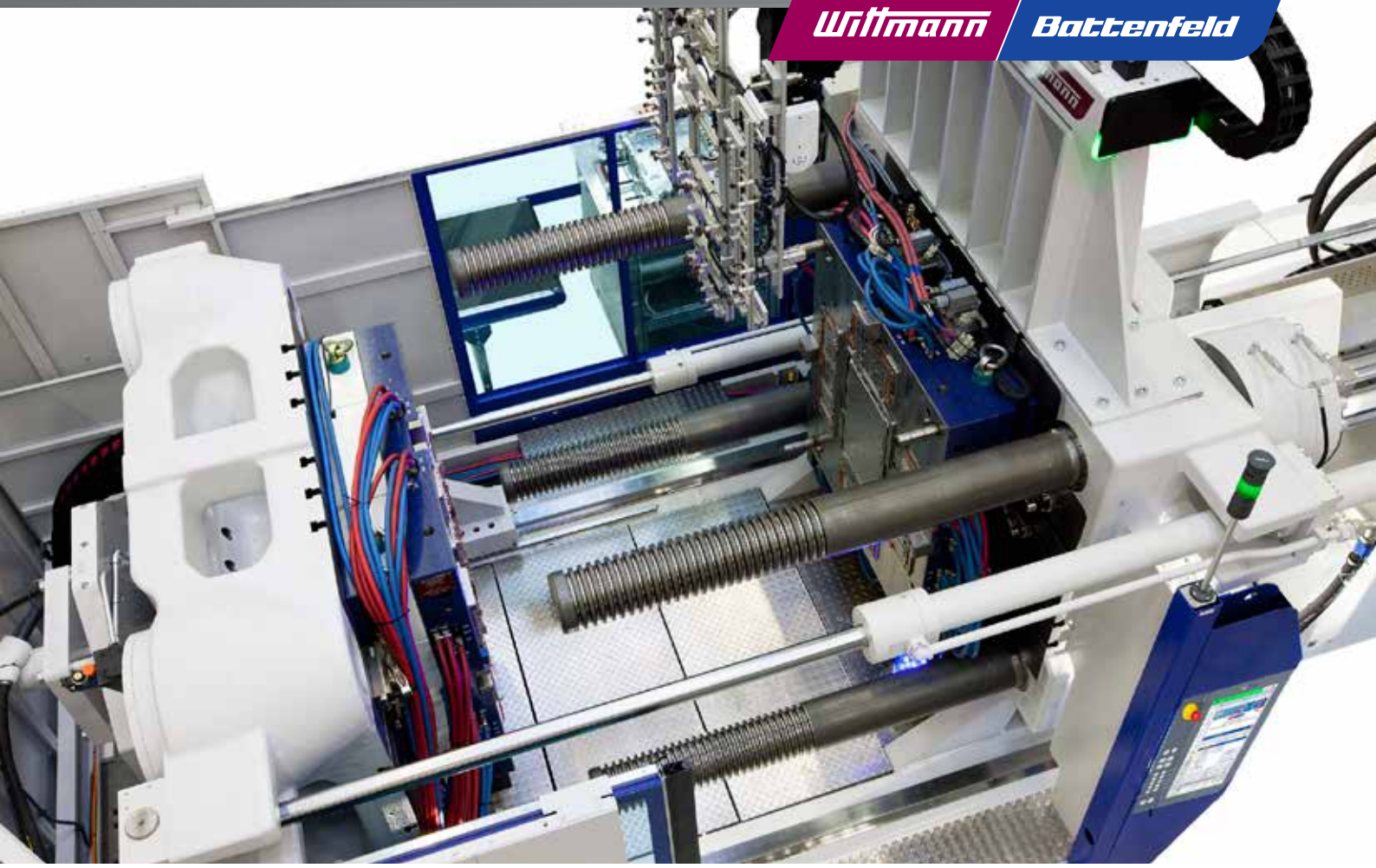
Hydraulic system extension levels for parallel functions

- » 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.

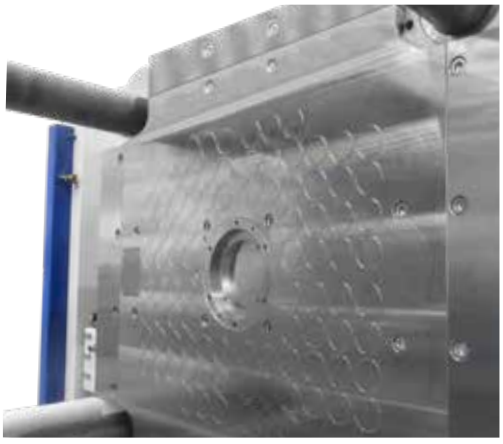
***MacroPower* automation options:**

» **"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

The process in constant view

» ***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.

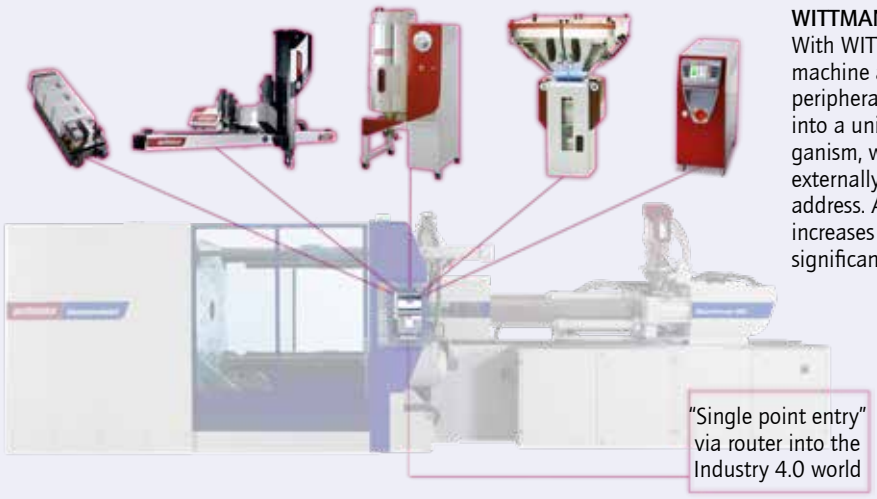
Connection of peripherals via WITTMANN 4.0

» **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

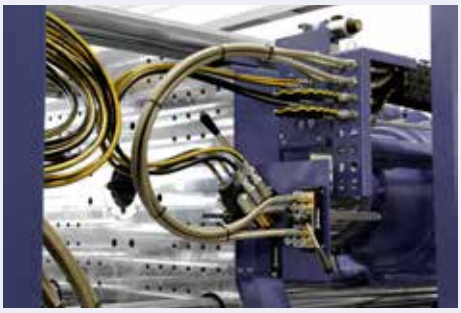
» **WITTMANN TEMPRO plus D temperature controllers**
- Setting and control of temperatures via the machine's control system possible
- All functions can be operated either on the unit or via the machine's control system

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.

OPTIONS
Modular and flexible



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.

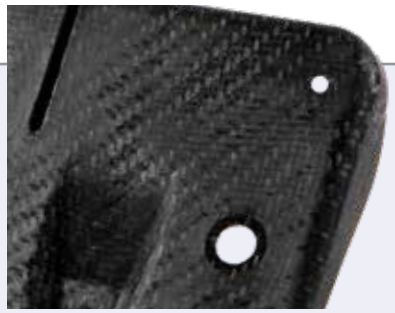
» **Servo-electric plasticizing**
As an alternative to screw rotation by a hydro motor, an optional direct drive with a servomotor can be supplied. It reduces energy consumption and offers additional facilities for parallel operation of the clamping and plasticizing units.

» **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.

APPLICATION TECHNOLOGY
Outstanding competence



» **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 (cm^3) 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

DATA *MacroPower* 400/450

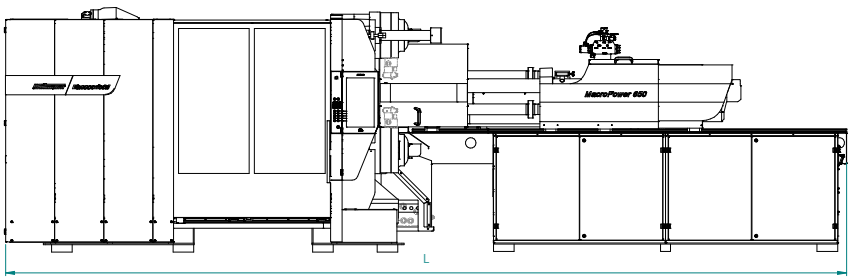
Clamping unit		***MacroPower* 400**			***MacroPower* 450**						
Clamping force	kN	4005			4500						
Distance between tie bars	mm x mm	900 x 750									
Mold height (min.)	mm	400									
Mold height (max.)	mm	850									
Opening stroke/opening force	mm/kN	1050/162									
Maximum daylight	mm	1450									
Ejector stroke/ejector force	mm/kN	250/81									
Dry cycle time[1]	s – mm	2.7 – 525			2.7 – 525			2.7 – 525			2.7 – 525

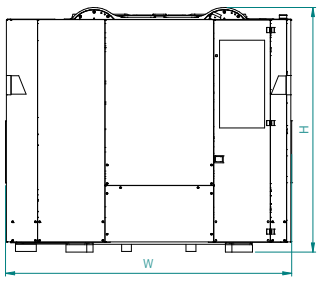
Injection unit		**1330**			**2250**			**3400**			**5100**		
Screw diameter	mm	50	55	65	55	65	75	65	75	85	75	85	95
Screw stroke	mm	250	275	275	275	325	325	325	375	375	375	425	425
Screw L/D ratio		22			22			22			22		
Theoretical shot volume	cm^3	491	653	913	653	1078	1436	1078	1657	2128	1657	2412	3012
Specific injection pressure	bar	2470	2041	1461	2500	2070	1555	2500	2022	1574	2500	2110	1689
Max. screw speed	min^{-1}	318			255			221			186		
Max. plasticizing rate (PS)[2]	g/s	48	60	71	48	71	108	62	94	131	79	112	144
Max. screw torque	Nm	1940			2500	2625	2625	3000	3780	3780	4000	6300	6300
Nozzle stroke/contact force	mm/kN	600/100			850/129			850/129			950/129		
Injection rate into air	cm^3/s	283	343	479	242	338	450	325	433	556	452	581	725
Injection rate into air with twin pump (option)	cm^3/s	354	429	599	303	423	563	455	606	778	517	663	829
Injection rate into air with hydraulic accumulator (option)	cm^3/s	567	686	958	726	1014	1351	1040	1385	1779	1291	1659	2072
Barrel heating power	kW	21.9	24.2	27.0	22.7	26.4	32.7	26.4	32.7	37.3	32.7	37.3	41.9
Number of heating zones		5			6			6			6	6	7
Energy efficiency class[3] standard/servo		3/5+	4/6+	6/7+	4/6+	6/7+	7/8+	5/7+	6/8+	7/8+	5/7+	6/8+	7/8+

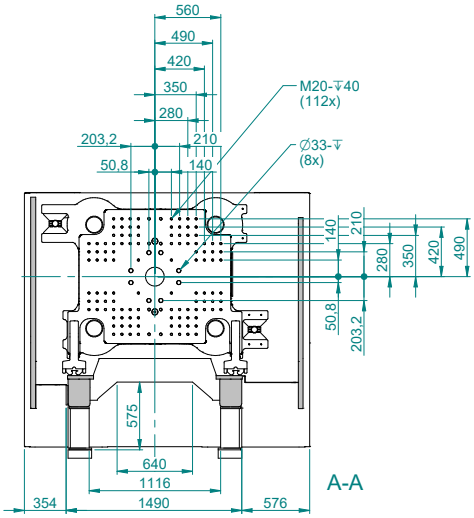
Drive					
Drive power	kW	45	45	55	75
Oil tank volume	l	800	800	800	1100
Electrical power supply without/with Europackage	kVA	86/115	88/117	106/135	136/165
Emission sound pressure level[4] standard/servo	dB(A)	72/70	72/70	72/70	72/70

Weights, dimensions					
Net weight clamping unit	kg	12000		12500	
Net weight (exclusive oil) injection unit	kg	7000	7500	7500	9000
Length x width x height[5]	m	6.8 x 2.5 x 2.5	6.8 x 2.5 x 2.5	7.1 x 2.5 x 2.5	7.6 x 2.5 x 2.5
Max. mold weight[6]	kg	6500			
Min. mold dimension	mm x mm	500 x 500			

1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen



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M20-↧40
(112x)
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354
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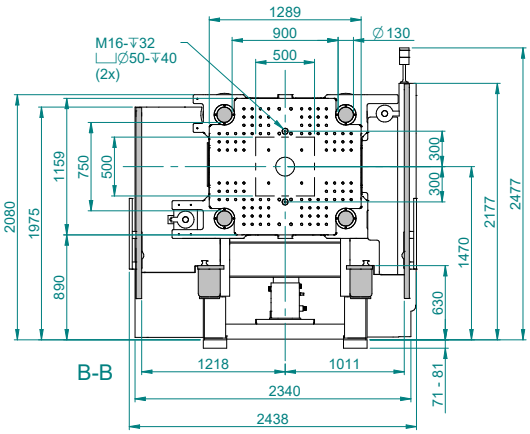
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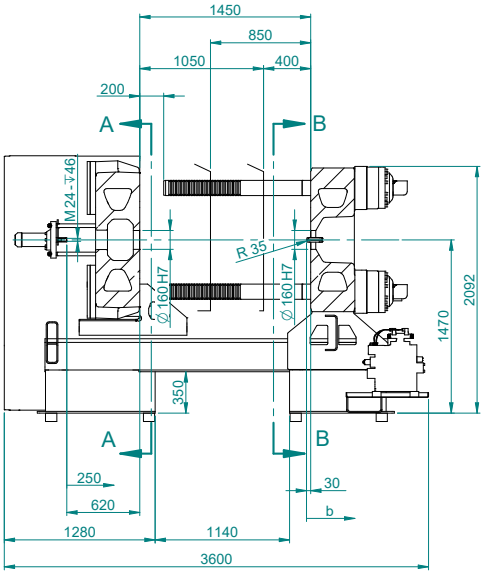
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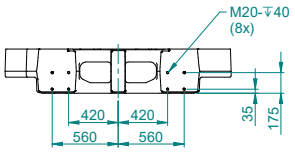

M20-↧40
(8x)
420
420
560
560
35
175

DATA *MacroPower* XL 450

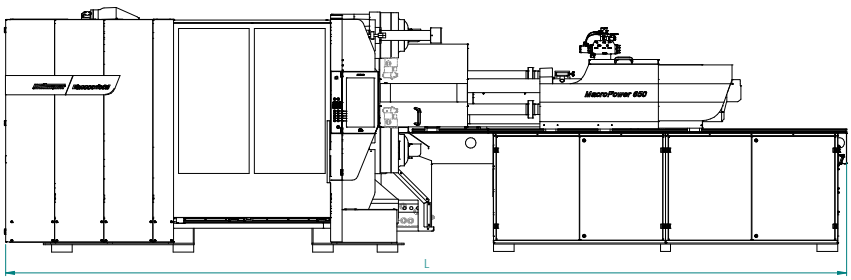
Clamping unit		***MacroPower* XL 450**				
Clamping force	kN	4500				
Distance between tie bars	mm x mm	1010 x 860				
Mold height (min.)	mm	450				
Mold height (max.)	mm	900				
Opening stroke/opening force	mm/kN	1200/211				
Maximum daylight	mm	1650				
Ejector stroke/ejector force	mm/kN	250/81				
Dry cycle time[1]	s – mm	3.2 – 595	3.0 – 595	3.0 – 595	3.0 – 595	3.0 – 595

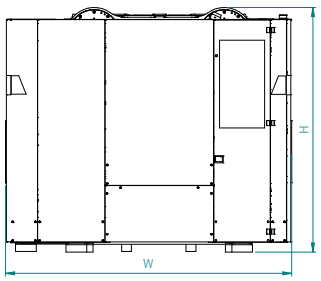
Injection unit		**1330**			**2250**			**3400**			**5100**			**8800**		
Screw diameter	mm	50	55	65	55	65	75	65	75	85	75	85	95	95	105	120
Screw stroke	mm	250	275	275	275	325	325	325	375	375	375	425	425	475	525	525
Screw L/D ratio		22			22			22			22			22		
Theoretical shot volume	cm^3	491	653	913	653	1078	1436	1078	1657	2128	1657	2412	3012	3367	4545	5937
Specific injection pressure	bar	2470	2041	1461	2500	2070	1555	2500	2022	1574	2500	2110	1689	2359	1931	1479
Max. screw speed	min^{-1}	318			318			221			186			159	159	149
Max. plasticizing rate (PS)[2]	g/s	48	60	71	59	88	133	62	94	131	79	112	144	123	144	194
Max. screw torque	Nm	1940			2500	2625	2625	3000	3780	3780	4000	6300	6300	8400	8400	9200
Nozzle stroke/contact force	mm/kN	600/100			850/129			850/129			950/129			950/129		
Injection rate into air	cm^3/s	283	343	479	303	423	563	325	433	556	452	581	725	593	725	947
Injection rate into air with twin pump (option)	cm^3/s	354	429	599	424	592	788	455	606	778	517	663	829	742	906	1183
Injection rate into air with hydraulic accumulator (option)	cm^3/s	567	686	958	726	1014	1351	1040	1385	1779	1291	1659	2072	1483	1812	2367
Barrel heating power	kW	21.9	24.2	27.0	22.7	26.4	32.7	26.4	32.7	37.3	32.7	37.3	41.9	49.7	53.9	62.4
Number of heating zones		5			6			6			6	6	7	7		
Energy efficiency class[3] standard/servo		3/4+	4/5+	5/7+	3/5+	5/6+	6/8+	4/6+	6/7+	7/8+	5/7+	6/7+	7/8+	6/8+	7/8+	8/9+

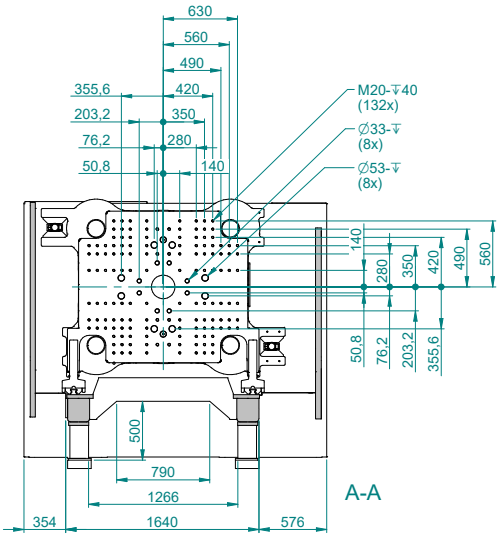
Drive						
Drive power	kW	45	55	55	75	90
Oil tank volume	l	800	800	800	1100	1100
Electrical power supply without/with Europackage	kVA	86/115	106/135	106/135	136/165	175/204
Emission sound pressure level[4] standard/servo	dB(A)	72/70	72/70	72/70	72/70	72/70

Weights, dimensions						
Net weight clamping unit	kg	14500				
Net weight (exclusive oil) injection unit	kg	7000	7500	7500	9000	11500
Length x width x height[5]	m	7.1 x 2.6 x 2.5	7.1 x 2.6 x 2.5	7.4 x 2.6 x 2.5	7.9 x 2.6 x 2.5	8.8 x 2.6 x 2.5
Max. mold weight[6]	kg	8000				
Min. mold dimension	mm x mm	500 x 500				

1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen



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76,2
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(132x)
∅33-↧
(8x)
∅53-↧
(8x)
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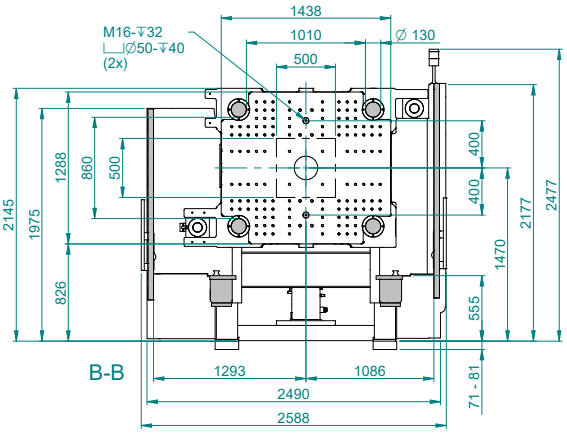
354
1640
576
A-A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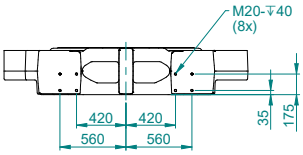
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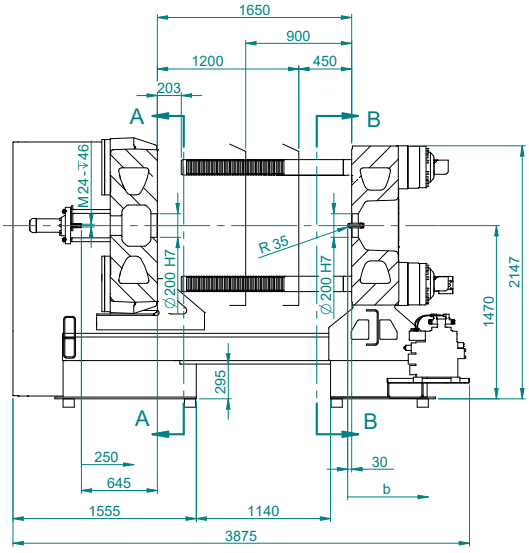
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900
1200
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203
A
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M24-↧46
R 35
∅200 H7
∅200 H7
1470
2147
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A
B
250
645
30
b
1555
1140
3875

DATA *MacroPower* 500/550

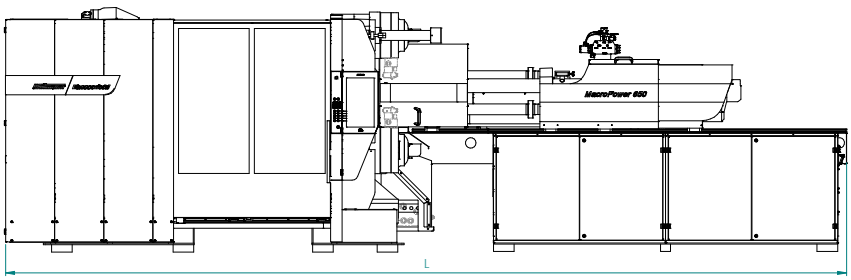
Clamping unit		***MacroPower* 500**						***MacroPower* 550**					
Clamping force	kN	5000						5500					
Distance between tie bars	mm x mm	1000 x 850											
Mold height (min.)	mm	450											
Mold height (max.)	mm	900											
Opening stroke/opening force	mm/kN	1200/211											
Maximum daylight	mm	1650											
Ejector stroke/ejector force	mm/kN	250/81											
Dry cycle time[1]	s – mm	3.2 – 595			3.0 – 595			3.0 – 595			3.0 – 595			3.0 – 595		

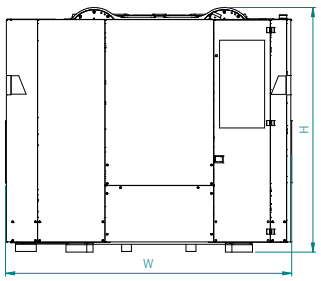
Injection unit		**1330**			**2250**			**3400**			**5100**			**8800**		
Screw diameter	mm	50	55	65	55	65	75	65	75	85	75	85	95	95	105	120
Screw stroke	mm	250	275	275	275	325	325	325	375	375	375	425	425	475	525	525
Screw L/D ratio		22			22			22			22			22		
Theoretical shot volume	cm^3	491	653	913	653	1078	1436	1078	1657	2128	1657	2412	3012	3367	4545	5937
Specific injection pressure	bar	2470	2041	1461	2500	2070	1555	2500	2022	1574	2500	2110	1689	2359	1931	1479
Max. screw speed	min^{-1}	318			318			221			186			159	159	149
Max. plasticizing rate (PS)[2]	g/s	48	60	71	59	88	133	62	94	131	79	112	144	123	144	194
Max. screw torque	Nm	1940			2500	2625	2625	3000	3780	3780	4000	6300	6300	8400	8400	9200
Nozzle stroke/contact force	mm/kN	600/100			850/129			850/129			950/129			950/129		
Injection rate into air	cm^3/s	283	343	479	303	423	563	325	433	556	452	581	725	593	725	947
Injection rate into air with twin pump (option)	cm^3/s	368	446	623	424	592	788	455	606	778	517	663	829	742	906	1183
Injection rate into air with hydraulic accumulator (option)	cm^3/s	567	686	958	726	1014	1351	1040	1385	1779	1291	1659	2072	1483	1812	2367
Barrel heating power	kW	21.9	24.2	27.0	22.7	26.4	32.7	26.4	32.7	37.3	32.7	37.3	41.9	49.7	53.9	62.4
Number of heating zones		5			6			6			6	6	7	7		
Energy efficiency class[3] standard/servo		3/4+	4/5+	5/7+	3/5+	5/6+	6/8+	5/6+	6/7+	7/8+	5/7+	6/7+	7/8+	6/8+	7/8+	8/9+

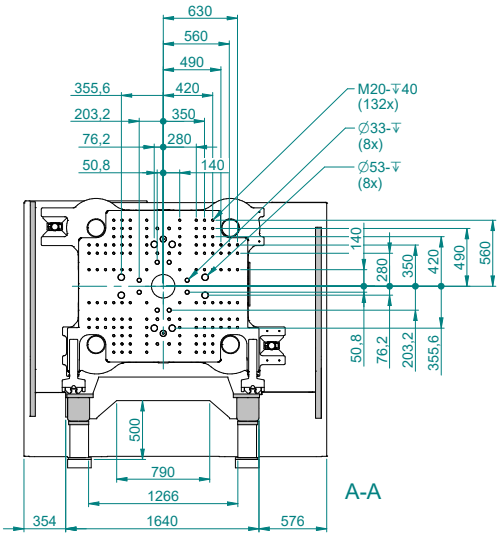
Drive						
Drive power	kW	45	55	55	75	90
Oil tank volume	l	800	800	800	1100	1100
Electrical power supply without/with Europackage	kVA	78/107	106/135	106/135	136/165	175/204
Emission sound pressure level[4] standard/servo	dB(A)	72/70	72/70	72/70	72/70	72/70

Weights, dimensions						
Net weight clamping unit	kg	14500			15000	
Net weight (exclusive oil) injection unit	kg	7000	7500	7500	9000	11500
Length x width x height[5]	m	7.1 x 2.6 x 2.5	7.1 x 2.6 x 2.5	7.4 x 2.6 x 2.5	7.9 x 2.6 x 2.5	8.8 x 2.6 x 2.5
Max. mold weight[6]	kg	8000				
Min. mold dimension	mm x mm	600 x 600				

1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen



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355,6
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203,2
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76,2
280
50,8
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M20-↧40
(132x)
∅33-↧
(8x)
∅53-↧
(8x)
140
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76,2
203,2
355,6
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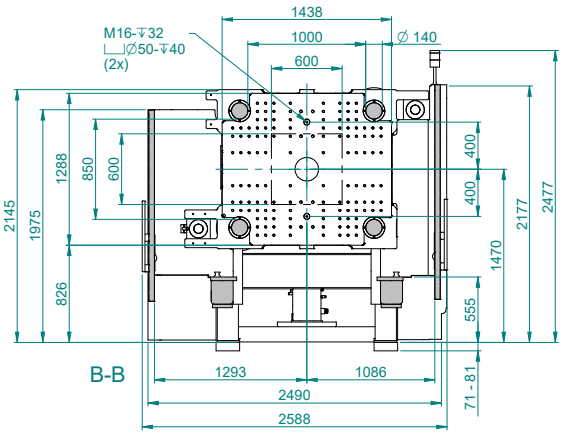
A-A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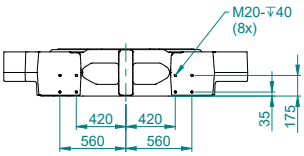
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(8x)
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35
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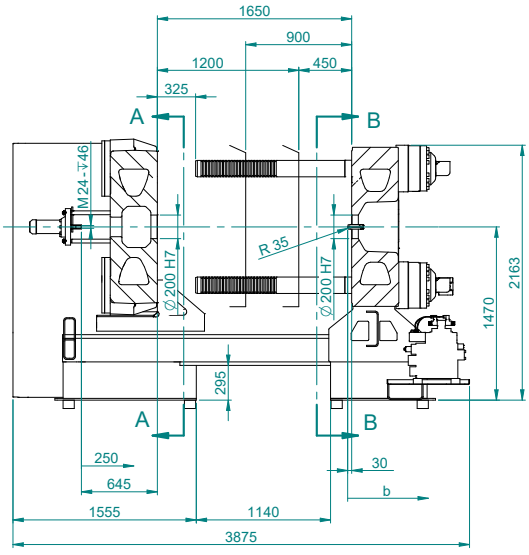
1650
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325
A
B
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R 35
∅ 200 H7
∅ 200 H7
2163
1470
295
A
B
250
645
30
b
1555
1140
3875

DATA *MacroPower* XL 550

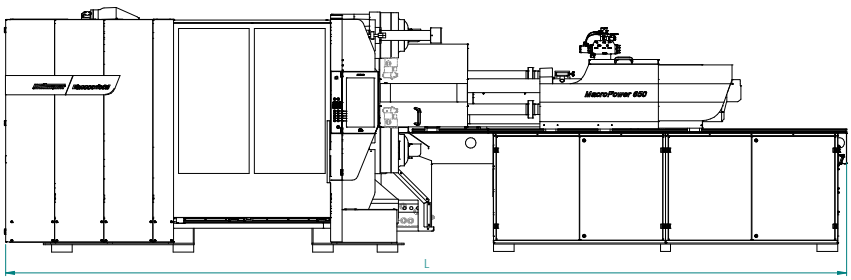
Clamping unit		***MacroPower* XL 550**			
Clamping force	kN	5500			
Distance between tie bars	mm x mm	1120 x 970			
Mold height (min.)	mm	450			
Mold height (max.)	mm	950			
Opening stroke/opening force	mm/kN	1400/211			
Maximum daylight	mm	1850			
Ejector stroke/ejector force	mm/kN	250/81			
Dry cycle time[1]	s – mm	3.3 – 665	3.3 – 665	3.3 – 665	3.3 – 665

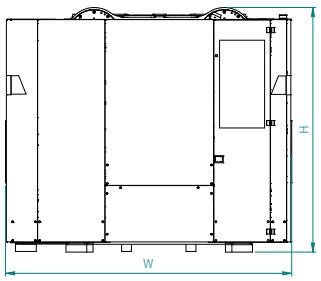
Injection unit		**2250**			**3400**			**5100**			**8800**		
Screw diameter	mm	55	65	75	65	75	85	75	85	95	95	105	120
Screw stroke	mm	275	325	325	325	375	375	375	425	425	475	525	525
Screw L/D ratio		22			22			22			22		
Theoretical shot volume	cm^3	653	1078	1436	1078	1657	2128	1657	2412	3012	3367	4545	5937
Specific injection pressure	bar	2500	2070	1555	2500	2022	1574	2500	2110	1689	2359	1931	1479
Max. screw speed	min^{-1}	318			221			186			159	159	149
Max. plasticizing rate (PS)[2]	g/s	59	88	133	62	94	131	79	112	144	123	144	194
Max. screw torque	Nm	2500	2625	2625	3000	3780	3780	4000	6300	6300	8400	8400	9200
Nozzle stroke/contact force	mm/kN	850/129			850/129			950/129			950/129		
Injection rate into air	cm^3/s	303	423	563	325	433	556	452	581	725	593	725	947
Injection rate into air with twin pump (option)	cm^3/s	424	592	788	455	606	778	517	663	829	742	906	1183
Injection rate into air with hydraulic accumulator (option)	cm^3/s	726	1014	1351	1040	1385	1779	1291	1659	2072	1483	1812	2367
Barrel heating power	kW	22.7	26.4	32.7	26.4	32.7	37.3	32.7	37.3	41.9	49.7	53.9	62.4
Number of heating zones		6			6			6	6	7	7		
Energy efficiency class[3] standard/servo		3/5+	5/6+	6/8+	4/6+	6/7+	7/8+	5/7+	6/7+	7/8+	6/8+	7/8+	8/9+

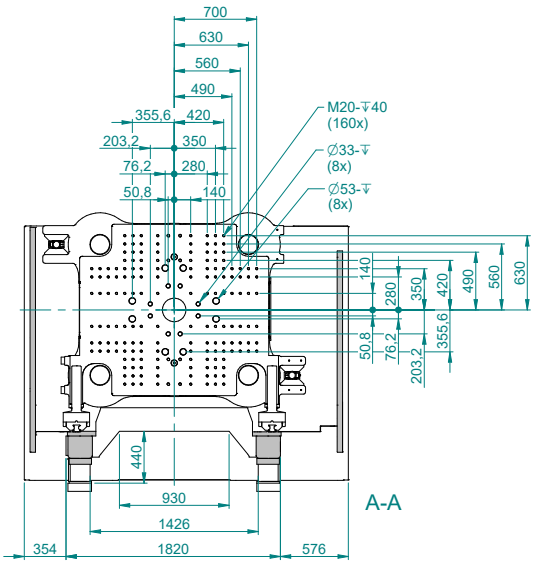
Drive					
Drive power	kW	55	55	75	90
Oil tank volume	l	800	800	1100	1100
Electrical power supply without/with Europackage	kVA	106/135	106/135	136/165	175/204
Emission sound pressure level[4] standard/servo	dB(A)	72/70	72/70	72/70	72/70

Weights, dimensions					
Net weight clamping unit	kg	19500			
Net weight (exclusive oil) injection unit	kg	7500	7500	9000	11500
Length x width x height[5]	m	7.4 x 2.8 x 2.5	7.7 x 2.8 x 2.5	8.2 x 2.8 x 2.5	9.1 x 2.8 x 2.5
Max. mold weight[6]	kg	10000			
Min. mold dimension	mm x mm	550 x 550			

1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen



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420
203,2
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76,2
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50,8
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(160x)
∅33-↧
(8x)
∅53-↧
(8x)
140
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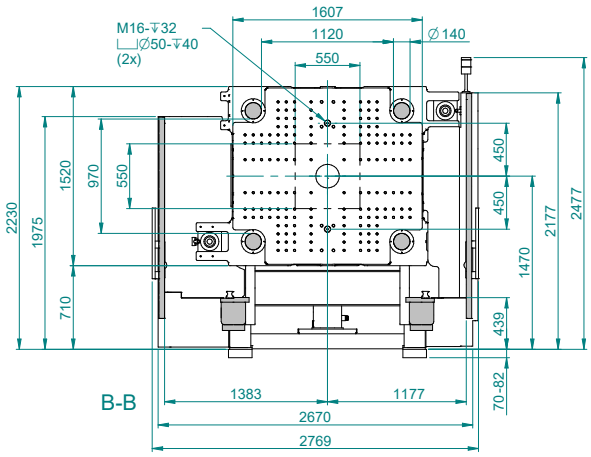
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1177
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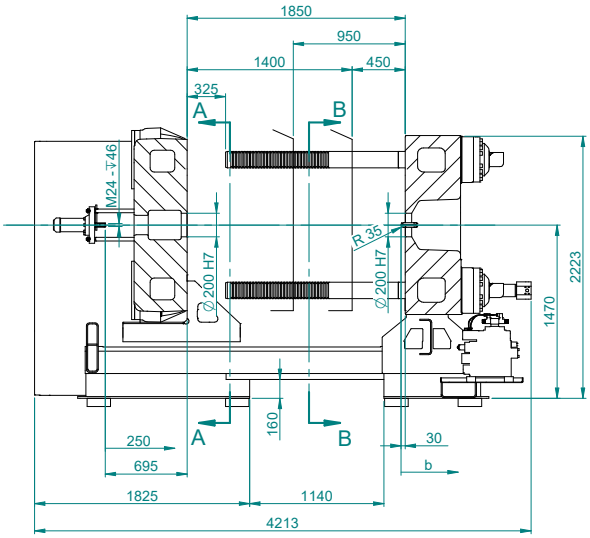
2769
B-B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1400
450
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B
M24 -↧46
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695
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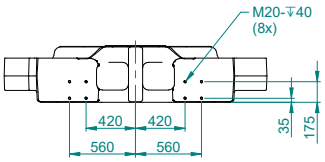
4213
30
b


M20-↧40
(8x)
420
420
560
560
35
175

DATA *MacroPower* 650/700

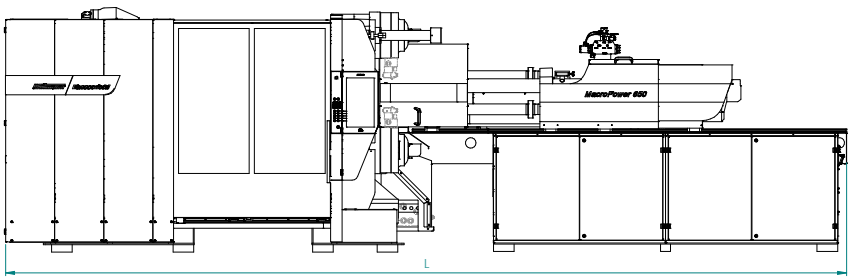
Clamping unit		*MacroPower* **650**			*MacroPower* **700**		
Clamping force	kN	6500			7000		
Distance between tie bars	mm x mm	1100 x 950					
Mold height (min.)	mm	450					
Mold height (max.)	mm	950					
Opening stroke/opening force	mm/kN	1400/211					
Maximum daylight	mm	1850					
Ejector stroke/ejector force	mm/kN	250/81					
Dry cycle time[1]	s – mm	3.3 – 665			3.3 – 665		

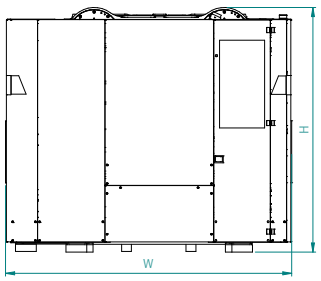
Injection unit		**2250**			**3400**			**5100**			**8800**		
Screw diameter	mm	55	65	75	65	75	85	75	85	95	95	105	120
Screw stroke	mm	275	325	325	325	375	375	375	425	425	475	525	525
Screw L/D ratio		22			22			22			22		
Theoretical shot volume	cm^3	653	1078	1436	1078	1657	2128	1657	2412	3012	3367	4545	5937
Specific injection pressure	bar	2500	2070	1555	2500	2022	1574	2500	2110	1689	2359	1931	1479
Max. screw speed	min^{-1}	318			221			186			159	159	149
Max. plasticizing rate (PS)[2]	g/s	59	88	133	62	94	131	79	112	144	123	144	194
Max. screw torque	Nm	2500	2625	2625	3000	3780	3780	4000	6300	6300	8400	8400	9200
Nozzle stroke/contact force	mm/kN	850/129			850/129			950/129			950/129		
Injection rate into air	cm^3/s	303	423	563	325	433	556	452	581	725	593	725	947
Injection rate into air with twin pump (option)	cm^3/s	424	592	788	455	606	778	517	663	829	742	906	1183
Injection rate into air with hydraulic accumulator (option)	cm^3/s	726	1014	1351	1040	1385	1779	1291	1659	2072	1483	1812	2367
Barrel heating power	kW	22.7	26.4	32.7	26.4	32.7	37.3	32.7	37.3	41.9	49.7	53.9	62.4
Number of heating zones		6			6			6	6	7	7		
Energy efficiency class[3] standard/servo		3/5+	5/6+	6/8+	4/6+	6/7+	7/8+	5/7+	6/7+	7/8+	6/8+	7/8+	8/9+

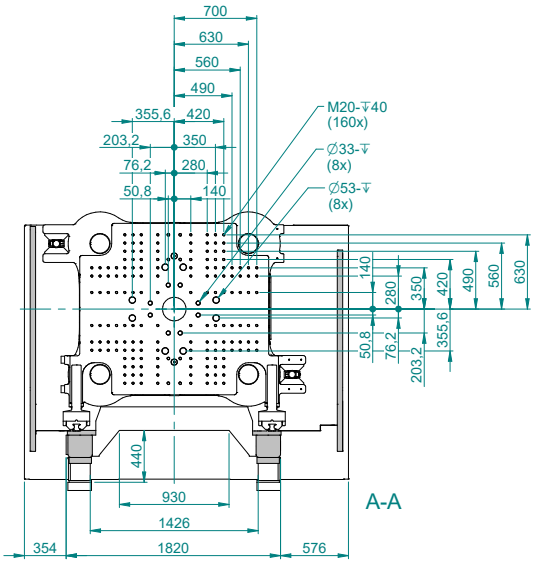
Drive					
Drive power	kW	55	55	75	90
Oil tank volume	l	800	800	1100	1100
Electrical power supply without/with Europackage	kVA	106/135	106/135	136/165	175/204
Emission sound pressure level[4] standard/servo	dB(A)	72/70	72/70	72/70	72/70

Weights, dimensions					
Net weight clamping unit	kg	18000		19500	
Net weight (exclusive oil) injection unit	kg	7500	7500	9000	11500
Length x width x height[5]	m	7.4 x 2.8 x 2.5	7.7 x 2.8 x 2.5	8.2 x 2.8 x 2.5	9.1 x 2.8 x 2.5
Max. mold weight[6]	kg	10000			
Min. mold dimension	mm x mm	700 x 700			

1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen



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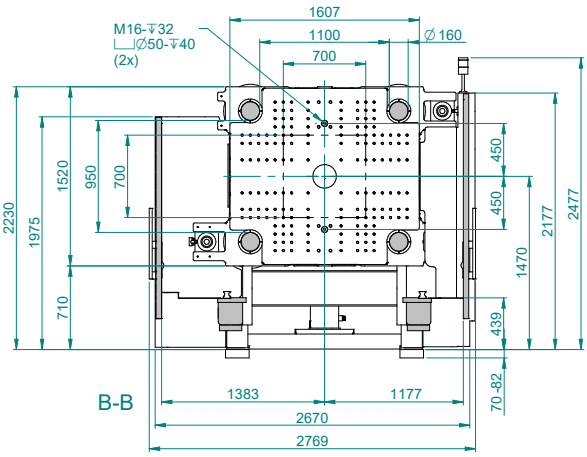
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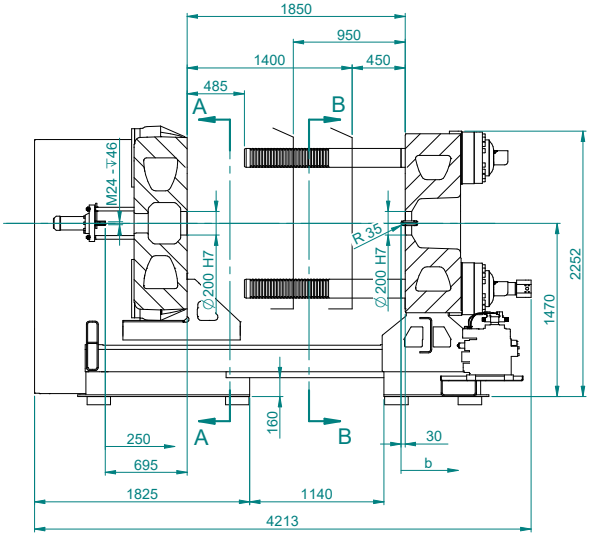
700
M16-↧32
⌴∅50-↧40
(2x)
∅160
2230
1975
1520
950
700
710
450
450
439
2177
2477
1470
70-82
1383
1177
2670
2769
B-B


1850
950
1400
450
485
A
B
M24 -↧46
∅200 H7
R 35
∅200 H7
2252
1470
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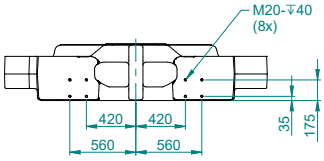
B
160
250
695
30
b
1825
1140
4213


M20-↧40
(8x)
420
420
560
560
35
175

DATA *MacroPower* XL 700

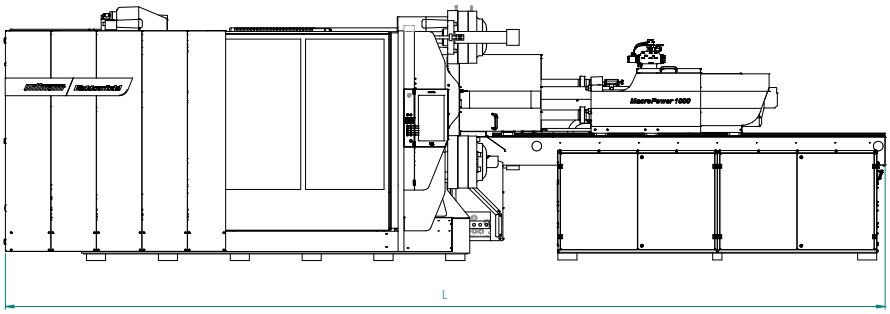
Clamping unit		***MacroPower* XL 700**				
Clamping force	kN	7000				
Distance between tie bars	mm x mm	1215 x 1015				
Mold height (min.)	mm	500				
Mold height (max.)	mm	1000				
Opening stroke/opening force	mm/kN	1600/330				
Maximum daylight	mm	2100				
Ejector stroke/ejector force	mm/kN	300/165				
Dry cycle time[1]	s – mm	3.6 – 700	3.6 – 700	3.6 – 700	3.6 – 700	3.6 – 700

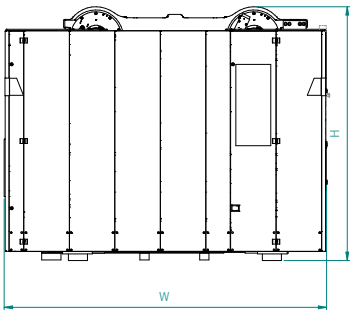
Injection unit		**2250**			**3400**			**5100**			**8800**			**12800**		
Screw diameter	mm	55	65	75	65	75	85	75	85	95	95	105	120	105	120	135
Screw stroke	mm	275	325	325	325	375	375	375	425	425	475	525	525	525	600	600
Screw L/D ratio		22			22			22			22			22		
Theoretical shot volume	cm^3	653	1078	1436	1078	1657	2128	1657	2412	3012	3367	4545	5937	4545	6786	8588
Specific injection pressure	bar	2500	2070	1555	2500	2022	1574	2500	2110	1689	2359	1931	1479	2240	1878	1484
Max. screw speed	min^{-1}	446			309			186			159	159	149	143	143	127
Max. plasticizing rate (PS)[2]	g/s	79	112	175	86	131	183	79	112	144	123	144	194	160	187	210
Max. screw torque	Nm	2500	2625	2625	3000	3780	3780	4000	6300	6300	8400	8400	9200	11500	11500	12500
Nozzle stroke/contact force	mm/kN	850/129			850/129			950/129			950/129			950/141		
Injection rate into air	cm^3/s	424	592	788	455	606	778	452	581	725	593	725	947	703	918	1162
Injection rate into air with twin pump (option)	cm^3/s	484	676	900	520	693	890	517	663	829	742	906	1183	859	1122	1421
Injection rate into air with hydraulic accumulator (option)	cm^3/s	726	1014	1351	1040	1385	1779	1291	1659	2072	1483	1812	2367	1563	2041	2583
Barrel heating power	kW	22.7	26.4	32.7	26.4	32.7	37.3	32.7	37.3	41.9	49.7	53.9	62.4	68	81	88
Number of heating zones		6			6			6	6	7	7			7		
Energy efficiency class[3] standard/servo		2/4+	4/5+	5/7+	3/5+	5/6+	6/7+	5/6+	5/7+	6/8+	6/7+	7/8+	8/8+	6/7+	7/8+	8/9+

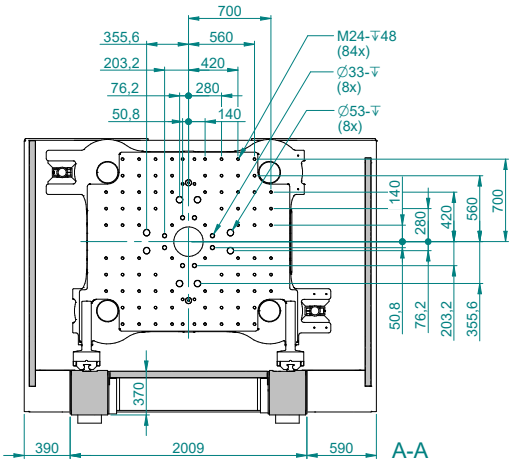
Drive						
Drive power	kW	75	75	75	90	110
Oil tank volume	l	1100	1100	1100	1100	1100
Electrical power supply without/with Europackage	kVA	130/160	130/160	136/165	175/204	222/251
Emission sound pressure level[4] standard/servo	dB(A)	72/70	72/70	72/70	72/70	72/70

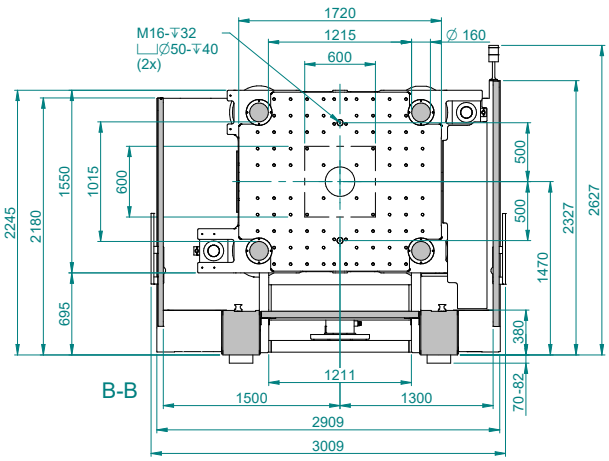
Weights, dimensions						
Net weight clamping unit	kg	24500				
Net weight (exclusive oil) injection unit	kg	8500	8500	9000	11500	15000
Length x width x height[5]	m	8.7 x 3.0 x 2.7	8.7 x 3.0 x 2.7	8.7 x 3.0 x 2.7	9.6 x 3.0 x 2.7	10.5 x 3.0 x 2.7
Max. mold weight[6]	kg	12000				
Min. mold dimension	mm x mm	600 x 600				

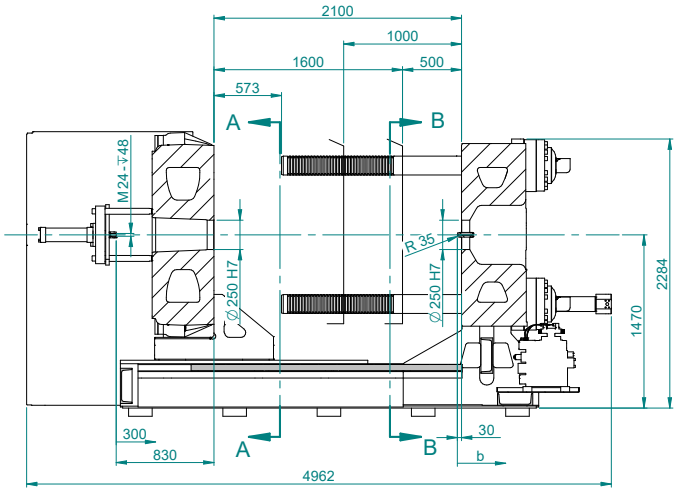
1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen

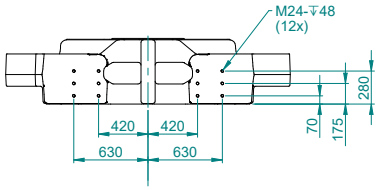





700
355,6
560
203,2
420
76,2
280
50,8
140
M24-↧48
(84x)
∅33-↧
(8x)
∅53-↧
(8x)
140
280
420
560
700
50,8
76,2
203,2
355,6
370
390
2009
590
A-A


1720
1215
600
M16-↧32
⌴∅50-↧40
(2x)
∅ 160
2245
2180
1550
1015
600
695
500
500
1470
380
2327
2627
1211
1500
1300
70-82
2909
3009
B-B


2100
1000
1600
500
573
A
B
M24-↧48
R 35
∅250 H7
∅250 H7
2284
1470
300
830
A
B
30
b
4962


M24-↧48
(12x)
280
70
175
420
420
630
630

DATA *MacroPower* 850/900

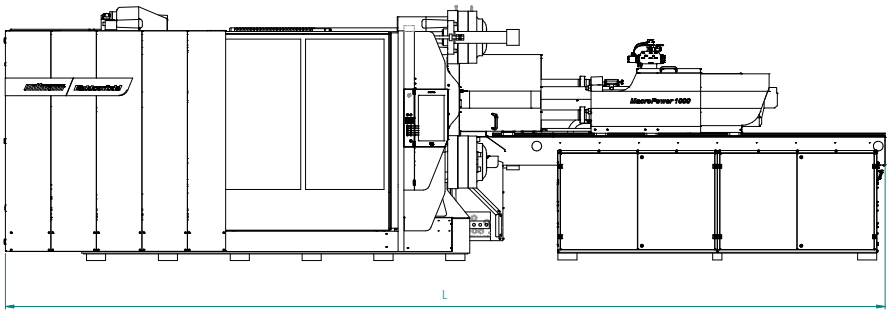
Clamping unit		***MacroPower* 850**	***MacroPower* 900**
Clamping force	kN	8542	9000
Distance between tie bars	mm x mm	1200 x 1000	
Mold height (min.)	mm	500	
Mold height (max.)	mm	1000	
Opening stroke/opening force	mm/kN	1600/330	
Maximum daylight	mm	2100	
Ejector stroke/ejector force	mm/kN	300/165	
Dry cycle time[1]	s – mm	3.6 – 700	3.6 – 700	3.6 – 700	3.6 – 700	3.6 – 700

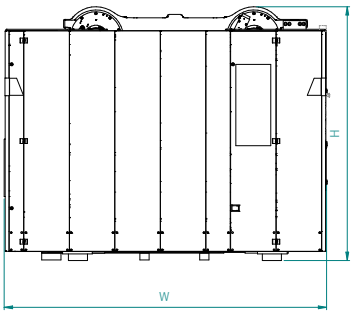
Injection unit		**2250**			**3400**			**5100**			**8800**			**12800**		
Screw diameter	mm	55	65	75	65	75	85	75	85	95	95	105	120	105	120	135
Screw stroke	mm	275	325	325	325	375	375	375	425	425	475	525	525	525	600	600
Screw L/D ratio		22			22			22			22			22		
Theoretical shot volume	cm^3	653	1078	1436	1078	1657	2128	1657	2412	3012	3367	4545	5937	4545	6786	8588
Specific injection pressure	bar	2500	2070	1555	2500	2022	1574	2500	2110	1689	2359	1931	1479	2240	1878	1484
Max. screw speed	min^{-1}	446			309			186			159	159	149	143	143	127
Max. plasticizing rate (PS)[2]	g/s	79	112	175	86	131	183	79	112	144	123	144	194	160	187	210
Max. screw torque	Nm	2500	2625	2625	3000	3780	3780	4000	6300	6300	8400	8400	9200	11500	11500	12500
Nozzle stroke/contact force	mm/kN	850/129			850/129			950/129			950/129			950/141		
Injection rate into air	cm^3/s	424	592	788	455	606	778	452	581	725	593	725	947	703	918	1162
Injection rate into air with twin pump (option)	cm^3/s	484	676	900	520	693	890	517	663	829	742	906	1183	859	1122	1421
Injection rate into air with hydraulic accumulator (option)	cm^3/s	726	1014	1351	1040	1385	1779	1291	1659	2072	1483	1812	2367	1563	2041	2583
Barrel heating power	kW	22.7	26.4	32.7	26.4	32.7	37.3	32.7	37.3	41.9	49.7	53.9	62.4	68	81	88
Number of heating zones		6			6			6	6	7	7			7		
Energy efficiency class[3] standard/servo		2/4+	3/5+	5/7+	3/5+	5/6+	6/7+	4/6+	5/7+	6/8+	6/7+	7/8+	8/8+	6/7+	7/8+	8/9+

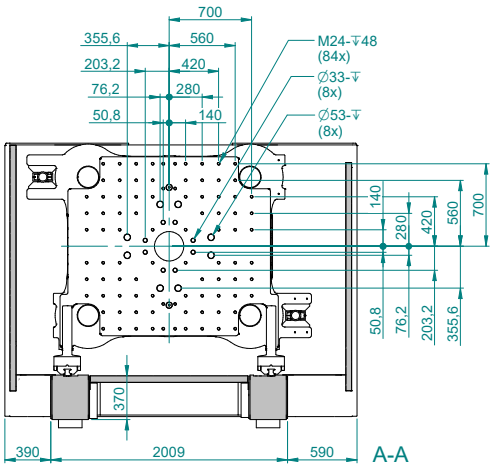
Drive						
Drive power	kW	75	75	75	90	110
Oil tank volume	l	1100	1100	1100	1100	1100
Electrical power supply without/with Europackage	kVA	130/160	130/160	136/165	175/204	222/251
Emission sound pressure level[4] standard/servo	dB(A)	72/70	72/70	72/70	72/70	72/70

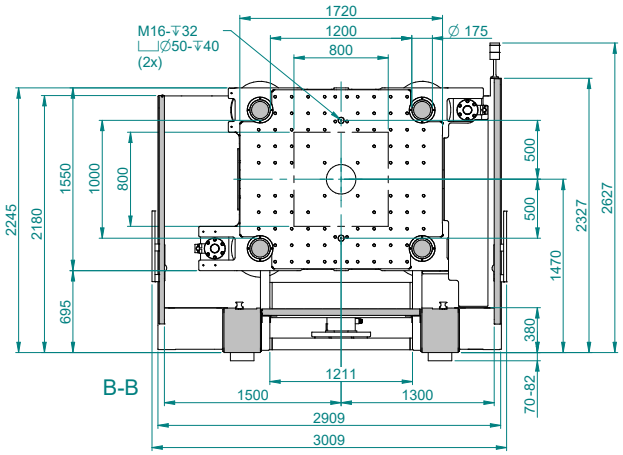
Weights, dimensions						
Net weight clamping unit	kg	24500			26500	
Net weight (exclusive oil) injection unit	kg	8500	8500	9000	11500	15000
Length x width x height[5]	m	8.7 x 3.0 x 2.7	8.7 x 3.0 x 2.7	8.7 x 3.0 x 2.7	9.6 x 3.0 x 2.7	10.5 x 3.0 x 2.7
Max. mold weight[6]	kg	12000				
Min. mold dimension	mm x mm	800 x 800				

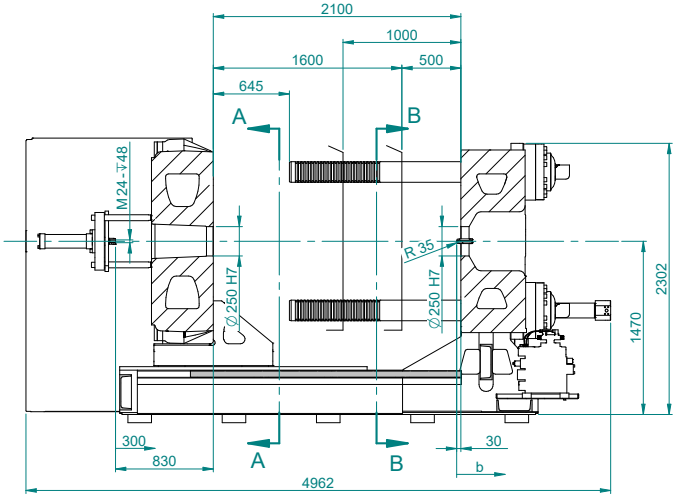
1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen

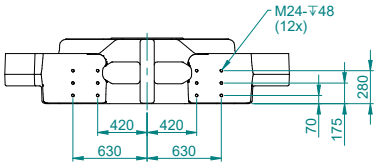





700
355,6
560
203,2
420
76,2
280
50,8
140
M24-↧48
(84x)
∅33-↧
(8x)
∅53-↧
(8x)
140
280
420
560
700
50,8
76,2
203,2
355,6
370
390
2009
590
A-A


1720
1200
800
M16-↧32
⌴∅50-↧40
(2x)
∅ 175
2245
2180
1550
1000
800
695
500
500
1470
2327
2627
380
70-82
1211
1500
1300
2909
3009
B-B


2100
1000
1600
500
645
A
B
M24-↧48
∅ 250 H7
R 35
∅ 250 H7
2302
1470
300
830
A
B
30
b
4962


M24-↧48
(12x)
280
70
175
420
420
630
630

DATA *MacroPower* XL 900

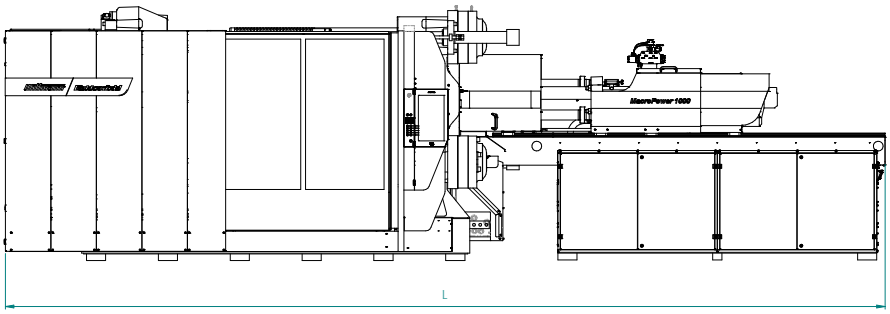
Clamping unit		***MacroPower* XL 900**				
Clamping force	kN	9000				
Distance between tie bars	mm x mm	1475 x 1125				
Mold height (min.)	mm	600				
Mold height (max.)	mm	1200				
Opening stroke/opening force	mm/kN	1800/330				
Maximum daylight	mm	2400				
Ejector stroke/ejector force	mm/kN	300/165				
Dry cycle time[1]	s – mm	4.0 – 770	4.0 – 770	4.0 – 770	4.0 – 770	4.0 – 770

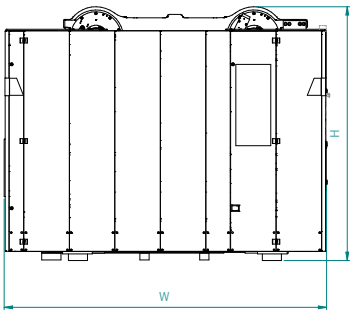
Injection unit		**3400**			**5100**			**8800**			**12800**			**16800**		
Screw diameter	mm	65	75	85	75	85	95	95	105	120	105	120	135	120	135	150
Screw stroke	mm	325	375	375	375	425	425	475	525	525	525	600	600	600	675	675
Screw L/D ratio		22			22			22			22			22		
Theoretical shot volume	cm^3	1078	1657	2128	1657	2412	3012	3367	4545	5937	4545	6786	8588	6786	9662	11928
Specific injection pressure	bar	2500	2022	1574	2500	2110	1689	2359	1931	1479	2240	1878	1484	2203	1741	1410
Max. screw speed	min^{-1}	309			212			159	159	149	143	143	127	125		
Max. plasticizing rate (PS)[2]	g/s	86	131	183	90	127	164	123	144	194	160	187	210	170	210	260
Max. screw torque	Nm	3000	3780	3780	4000	6300	6300	8400	8400	9200	11500	11500	12500	15750		
Nozzle stroke/contact force	mm/kN	850/129			950/129			950/129			950/141			1000/180		
Injection rate into air	cm^3/s	455	606	778	517	663	829	593	725	947	703	918	1162	936	1185	1463
Injection rate into air with twin pump (option)	cm^3/s	520	693	890	646	829	1036	742	906	1183	859	1122	1421	1106	1400	1729
Injection rate into air with hydraulic accumulator (option)	cm^3/s	1040	1385	1779	1291	1659	2072	1483	1812	2367	1563	2041	2583	1702	2154	2660
Barrel heating power	kW	26.4	32.7	37.3	32.7	37.3	41.9	49.7	53.9	62.4	68	81	88	87	100	110
Number of heating zones		6			6	6	7	7			7			7		
Energy efficiency class[3] standard/servo		3/5+	5/6+	6/7+	4/6+	5/7+	6/7+	6/7+	7/8+	8/8+	6/7+	7/8+	8/9+	7/8+	7/8+	8/9+

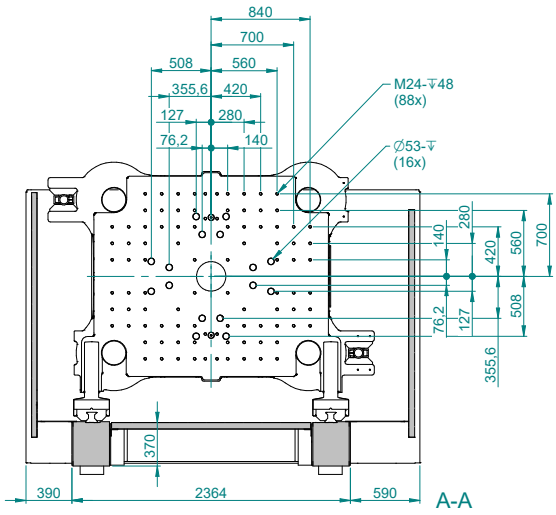
Drive						
Drive power	kW	75	90	90	110	90 + 45
Oil tank volume	l	1100	1100	1100	1100	1600
Electrical power supply without/with Europackage	kVA	130/160	158/188	179/209	222/251	269/299
Emission sound pressure level[4] standard/servo	dB(A)	72/70	72/70	72/70	72/70	74/72

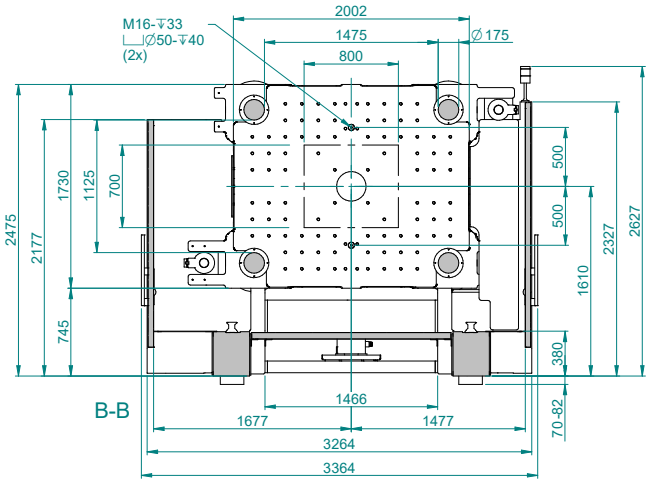
Weights, dimensions						
Net weight clamping unit	kg	37000				
Net weight (exclusive oil) injection unit	kg	9000	9500	11500	15000	20000
Length x width x height[5]	m	9.2 x 3.4 x 2.7	9.2 x 3.4 x 2.7	10.1 x 3.4 x 2.7	11 x 3.4 x 2.7	11.7 x 3.4 x 2.7
Max. mold weight[6]	kg	19000				
Min. mold dimension	mm x mm	800 x 700				

1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen






840
700
508
560
355,6
420
127
280
76,2
140
M24-↧48
(88x)
∅53-↧
(16x)
140
280
420
560
700
76,2
127
508
355,6
370
390
2364
590
A-A


M16-↧33
⌴∅50-↧40
(2x)
2002
1475
800
∅175
2475
2177
1730
1125
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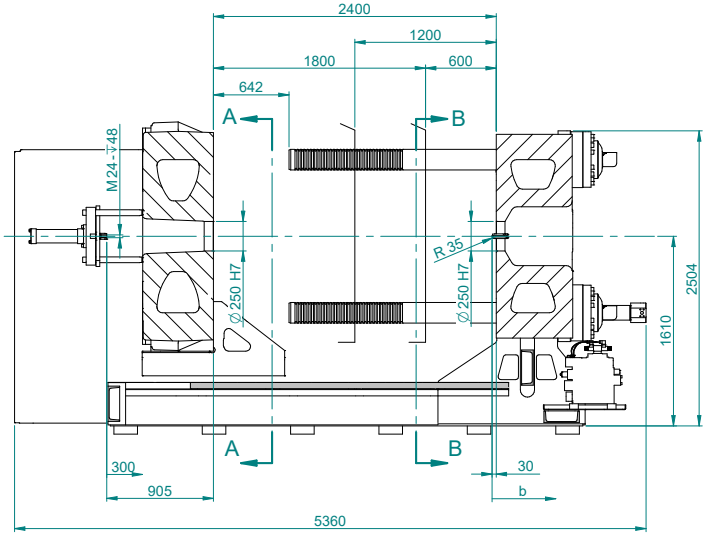
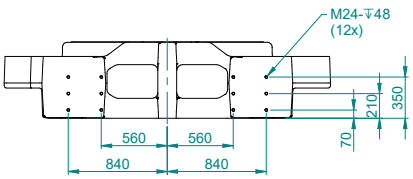
70-82
1466
1677
1477
3264
3364
B-B


2400
1200
1800
600
642
A
B
M24-↧48
∅250 H7
R35
∅250 H7
2504
1610
A
B
300
905
30
b
5360


M24-↧48
(12x)
210
350
70
560
560
840
840

DATA *MacroPower* 1000/1100

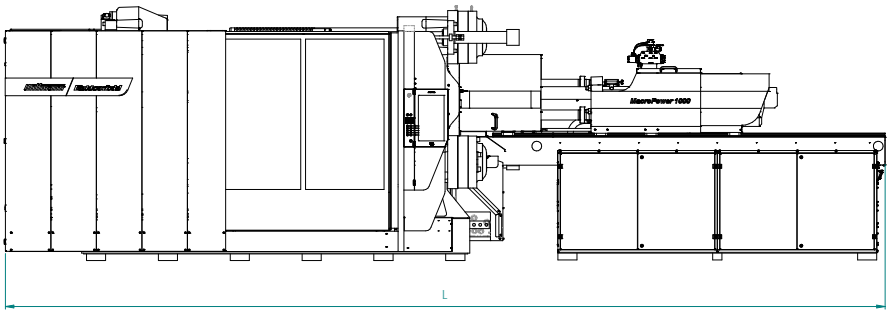
Clamping unit		***MacroPower* 1000**						***MacroPower* 1100**					
Clamping force	kN	10060						11000					
Distance between tie bars	mm x mm	1450 x 1100											
Mold height (min.)	mm	600											
Mold height (max.)	mm	1200											
Opening stroke/opening force	mm/kN	1800/330											
Maximum daylight	mm	2400											
Ejector stroke/ejector force	mm/kN	300/165											
Dry cycle time[1]	s – mm	4.0 – 770			4.0 – 770			4.0 – 770			4.0 – 770			4.0 – 770		

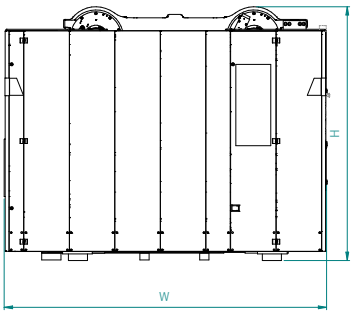
Injection unit		**3400**			**5100**			**8800**			**12800**			**16800**		
Screw diameter	mm	65	75	85	75	85	95	95	105	120	105	120	135	120	135	150
Screw stroke	mm	325	375	375	375	425	425	475	525	525	525	600	600	600	675	675
Screw L/D ratio		22			22			22			22			22		
Theoretical shot volume	cm^3	1078	1657	2128	1657	2412	3012	3367	4545	5937	4545	6786	8588	6786	9662	11928
Specific injection pressure	bar	2500	2022	1574	2500	2110	1689	2359	1932	1479	2240	1878	1484	2203	1741	1410
Max. screw speed	min^{-1}	309			212			159	159	149	143	143	127	125		
Max. plasticizing rate (PS)[2]	g/s	86	131	183	90	127	164	123	144	194	160	187	210	170	210	260
Max. screw torque	Nm	3000	3780	3780	4000	6300	6300	8400	8400	9200	11500	11500	12500	15750		
Nozzle stroke/contact force	mm/kN	850/129			950/129			950/129			950/141			1000/180		
Injection rate into air	cm^3/s	455	606	778	517	663	829	593	725	947	703	918	1162	936	1185	1463
Injection rate into air with twin pump (option)	cm^3/s	520	693	890	646	829	1036	742	936	1183	859	1122	1421	1106	1400	1729
Injection rate into air with hydraulic accumulator (option)	cm^3/s	1040	1385	1779	1291	1659	2072	1483	1812	2367	1563	2041	2583	1702	2154	2660
Barrel heating power	kW	26.4	32.7	37.3	32.7	37.3	41.9	49.7	53.9	62.4	68	81	88	87	100	110
Number of heating zones		6			6	6	7	7			7			7		
Energy efficiency class[3] standard/servo		3/5+	5/6+	6/7+	4/6+	5/7+	6/7+	6/7+	7/8+	8/8+	6/7+	7/8+	8/9+	7/8+	7/8+	8/9+

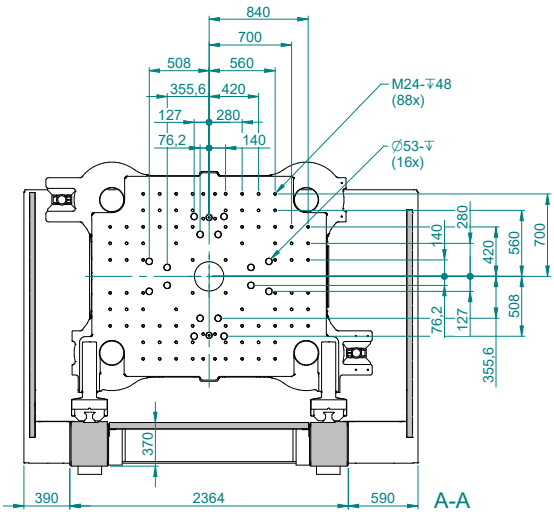
Drive						
Drive power	kW	75	90	90	110	90 + 45
Oil tank volume	l	1100	1100	1100	1100	1600
Electrical power supply without/with Europackage	kVA	130/160	158/188	179/209	222/251	269/299
Emission sound pressure level[4] standard/servo	dB(A)	72/70	72/70	72/70	72/70	74/72

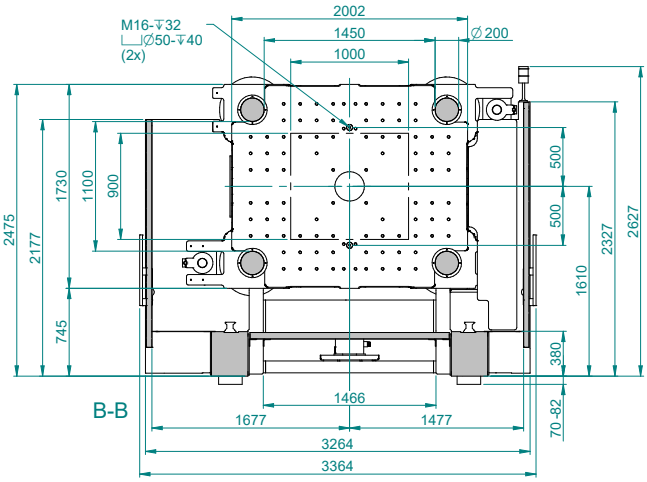
Weights, dimensions						
Net weight clamping unit	kg	37000			39000	
Net weight (exclusive oil) injection unit	kg	9000	9500	11500	15000	20000
Length x width x height[5]	m	9.2 x 3.4 x 2.7	9.2 x 3.4 x 2.7	10.1 x 3.4 x 2.7	10.6 x 3.4 x 2.7	11.8 x 3.4 x 2.7
Max. mold weight[6]	kg	19000				
Min. mold dimension	mm x mm	1000 x 900				

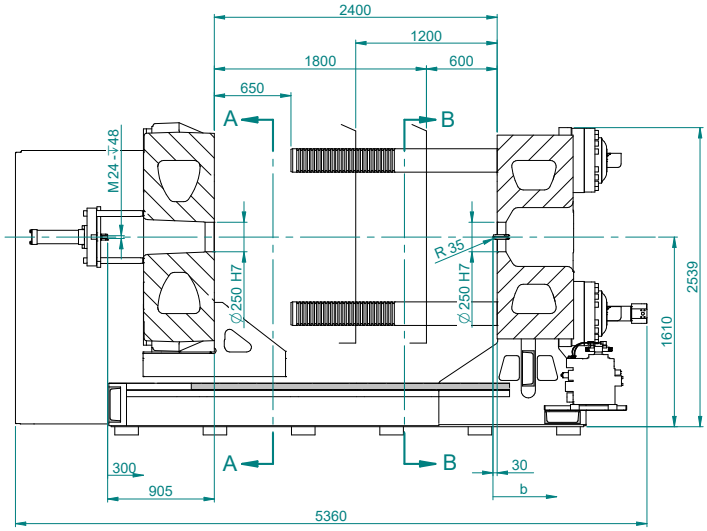
1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen

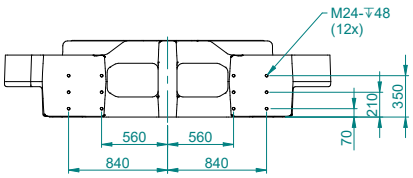





840
700
508
560
355,6
420
127
280
76,2
140
M24-↧48
(88x)
∅53-↧
(16x)
280
140
420
560
700
76,2
127
508
355,6
370
390
2364
590
A-A


M16-↧32
⌴∅50-↧40
(2x)
2002
1450
1000
∅200
2475
2177
1730
1100
900
745
500
500
2327
2627
1610
380
70-82
1466
1677
1477
3264
3364
B-B


2400
1200
1800
600
650
A
B
M24-↧48
R 35
∅250 H7
∅250 H7
2539
1610
A
B
300
905
30
b
5360


M24-↧48
(12x)
350
210
70
560
560
840
840

DATA *MacroPower* XL 1100

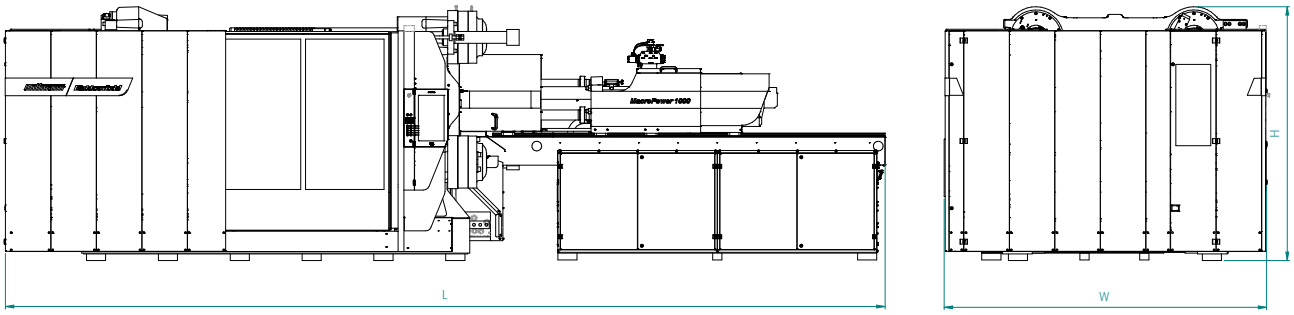
Clamping unit		***MacroPower* XL 1100**																	
Clamping force	kN	11000																	
Distance betw. tie bars	mm x mm	1645 x 1295																	
Mold height (min.)	mm	700																	
Mold height (max.)	mm	1400																	
Opening stroke/force	mm/kN	2200/475																	
Maximum daylight	mm	2900																	
Ejector stroke/ejector force	mm/kN	300/200																	
Dry cycle time[1]	s – mm	4.5 – 875			4.5 – 875			4.3 – 875			4.3 – 875			4.3 – 875			4.3 – 875		

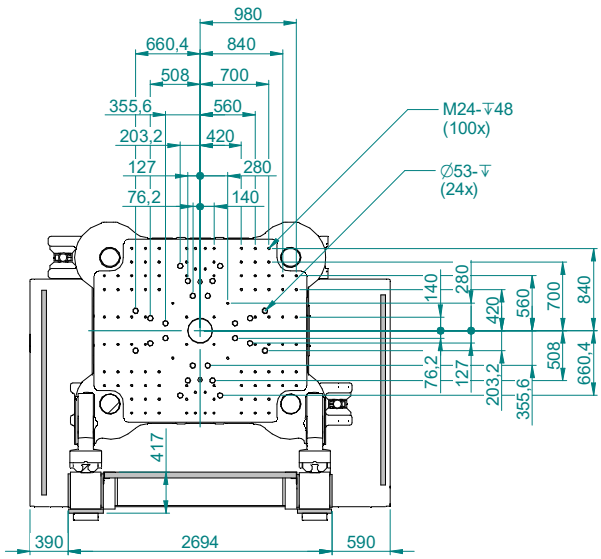
Injection unit		**5100**			**8800**			**12800**			**16800**			**19000**			**23300**		
Screw diameter	mm	75	85	95	95	105	120	105	120	135	120	135	150	135	150	165	135	150	165
Screw stroke	mm	375	425	425	475	525	525	525	600	600	600	675	675	675			675	750	775
Screw L/D ratio		22			22			22			22			22			22		
Theoretical shot volume	cm^3	1657	2412	3012	3367	4545	5937	4545	6786	8588	6786	9662	11928	9662	11928	14433	9662	13253	16571
Specific injection pressure	bar	2500	2110	1689	2359	1931	1479	2240	1878	1484	2203	1741	1410	1934	1567	1295	1981	1707	1410
Max. screw speed	min^{-1}	212			159	159	149	143	143	127	125			125	125	97	125	125	97
Max. plasticizing rate (PS)[2]	g/s	90	127	164	123	144	194	160	187	210	170	210	260	210	260	260	210	260	260
Max. screw torque	Nm	4000	6300	6300	8400	8400	9200	11500	11500	12500	15750			17500	17500	22500	17500	17500	22500
Nozzle stroke/force	mm/kN	950/129			950/129			950/141			1000/ 180			1000/200			1000/200		
Injection rate into air	cm^3/s	517	663	829	593	725	947	703	918	1162	936	1185	1463	1293	1596	1931	1187	1465	1772
Injection rate into air with twin pump (option)	cm^3/s	646	829	1036	742	906	1183	859	1122	1421	1106	1400	1729	1508	1862	2253	1384	1709	2068
Injection rate into air with hydr. accu. (option)	cm^3/s	1291	1659	2072	1483	1812	2367	1563	2041	2583	1702	2154	2660	2154	2660	3218	1978	2441	2954
Barrel heating power	kW	32.7	37.3	41.9	49.7	53.9	62.4	68	81	88	87	100	110	100	110	120	100	110	120
Numer of heating zones		6	6	7	7			7			7			7	7	8	7	7	8
Energy efficiency class[3] standard/servo		4/5+	5/6+	6/7+	5/7+	7/8+	7/8+	6/7+	7/8+	8/9+	6/7+	7/8+	8/9+	7/8+	7/8+	8/9+	7/8+	8/9+	8/9+

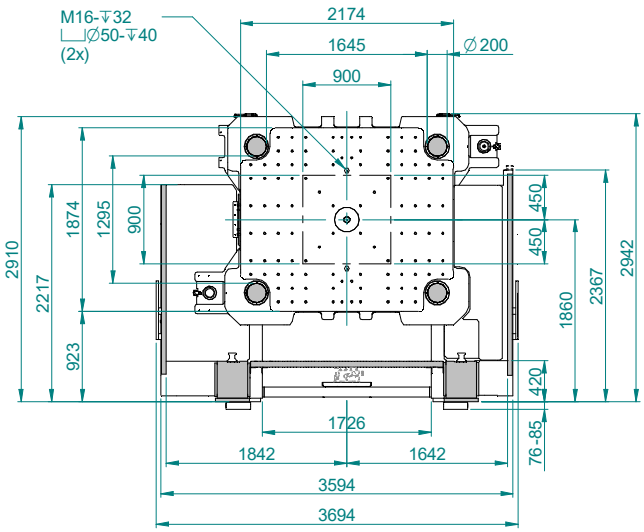
Drive							
Drive power	kW	90	90	110	90 + 45	110 + 55	110 + 55
Oil tank volume	l	1100	1100	1100	1600	1600	1600
Electrical power supply without/with Europackage	kVA	158/188	179/209	269/299	290/320	320/350	320/350
Emission sound pressure level[4] – standard/servo	dB(A)	72/70	72/70	72/70	74/72	74/72	74/72

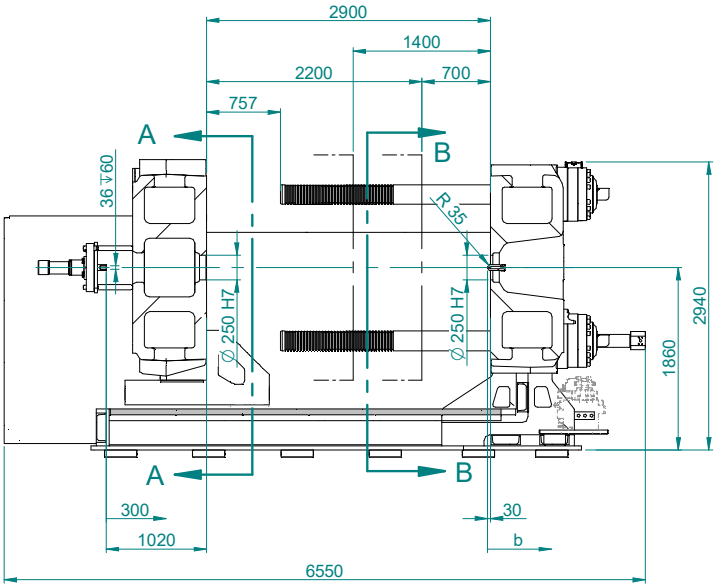
Weights, dimensions							
Net weight clamping unit	kg	53000					
Net weight (exclusive oil) injection unit	kg	9500	11500	15000	20000	21000	21500
Length x width x height[5]	m	10.2 x 3.7 x 3.0	11.1 x 3.7 x 3.0	11.6 x 3.7 x 3.0	12.8 x 3.7 x 3.0	13 x 3.7 x 3.0	13.1 x 3.7 x 3.0
Max. mold weight[6]	kg	30000					
Min. mold dimension	mm x mm	900 x 900					

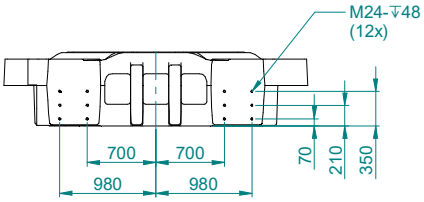
1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen




980
660,4
840
508
700
355,6
560
203,2
420
127
280
76,2
140
M24-↧48
(100x)
∅53-↧
(24x)
140
280
420
560
700
840
76,2
127
203,2
355,6
508
660,4
417
390
2694
590


M16-↧32
⌴∅50-↧40
(2x)
2174
1645
∅200
900
2910
1874
1295
900
2217
923
450
450
420
2942
2367
1860
1726
1842
1642
76-85
3594
3694


2900
1400
2200
700
757
A
B
36 ↧60
R 35
∅ 250 H7
∅ 250 H7
2940
1860
A
B
300
1020
30
b
6550


M24-↧48
(12x)
700
700
980
980
70
210
350

DATA *MacroPower* 1300/1500

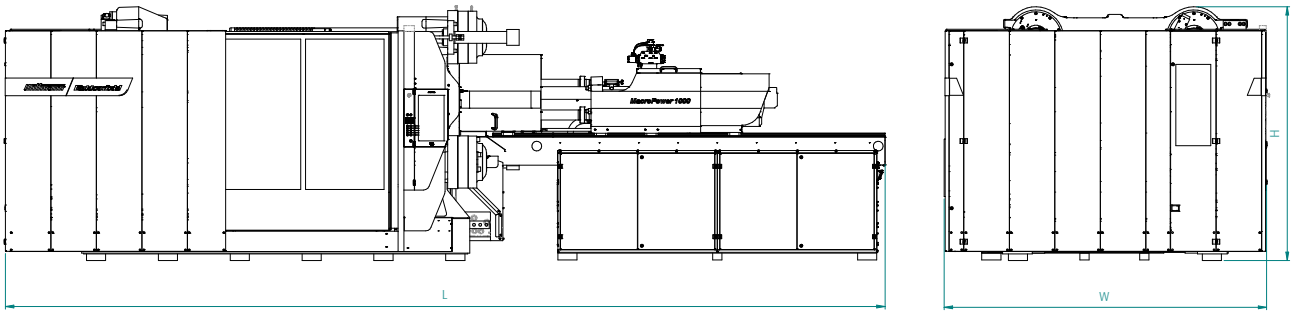
Clamping unit		***MacroPower* 1300**			***MacroPower* 1500**		
Clamping force	kN	13350			15125		
Distance betw. tie bars	mm x mm	1600 x 1250					
Mold height (min.)	mm	700					
Mold height (max.)	mm	1400					
Opening stroke/force	mm/kN	2200/475			2400/475		
Maximum daylight	mm	2900			3100		
Ejector stroke/ejector force	mm/kN	300/200					
Dry cycle time[1]	s – mm	4.5 – 875	4.5 – 875	4.3 – 875	4.3 – 875	4.3 – 875	4.3 – 875

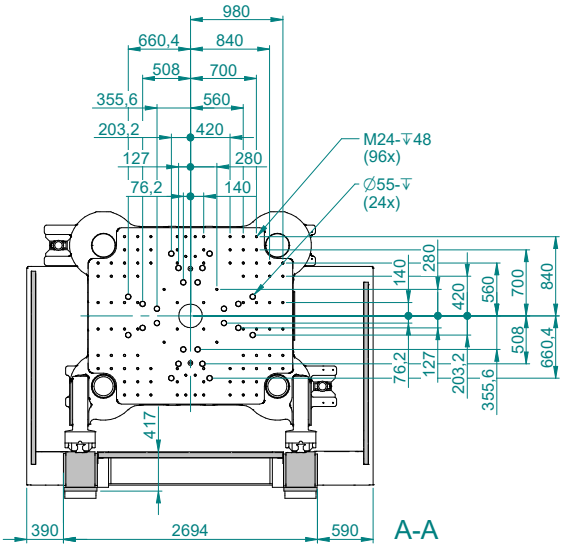
Injection unit		**5100**			**8800**			**12800**			**16800**			**19000**			**23300**		
Screw diameter	mm	75	85	95	95	105	120	105	120	135	120	135	150	135	150	165	135	150	165
Screw stroke	mm	375	425	425	475	525	525	525	600	600	600	675	675		675		675	750	775
Screw L/D ratio			22			22			22			22			22			22	
Theoretical shot volume	cm^3	1657	2412	3012	3367	4545	5937	4545	6786	8588	6786	9662	11928	9662	11928	14433	9662	13253	16571
Specific injection pressure	bar	2500	2110	1689	2359	1931	1479	2240	1878	1484	2203	1741	1410	1934	1567	1295	1981	1707	1410
Max. screw speed	min^{-1}		212		159	159	149	143	143	127		125		125	125	97	125	125	97
Max. plasticizing rate (PS)[2]	g/s	90	127	164	123	144	194	160	187	210	170	210	260	210	260	260	210	260	260
Max. screw torque	Nm	4000	6300	6300	8400	8400	9200	11500	11500	12500		15750		17500	17500	22500	17500	17500	22500
Nozzle stroke/force	mm/kN	950/129			950/129			950/141			1000/180			1000/200			1000/200		
Injection rate into air	cm^3/s	517	663	829	593	725	947	703	918	1162	936	1185	1463	1293	1596	1931	1187	1465	1772
Injection rate into air with twin pump (option)	cm^3/s	646	829	1036	742	906	1183	859	1122	1421	1106	1400	1729	1508	1862	2253	1384	1709	2068
Injection rate into air with hydr. accu. (option)	cm^3/s	1291	1659	2072	1483	1812	2367	1563	2041	2583	1702	2154	2660	2154	2660	3218	1978	2441	2954
Barrel heating power	kW	32.7	37.3	41.9	49.7	53.9	62.4	68	81	88	87	100	110	100	110	120	100	110	120
Number of heating zones		6	6	7		7			7			7		7	7	8	7	7	8
Energy efficiency class[3] standard/servo		4/5+	5/6+	6/7+	5/7+	7/8+	7/8+	6/7+	7/8+	8/9+	6/7+	7/8+	8/9+	7/8+	7/8+	8/9+	7/8+	8/9+	8/9+

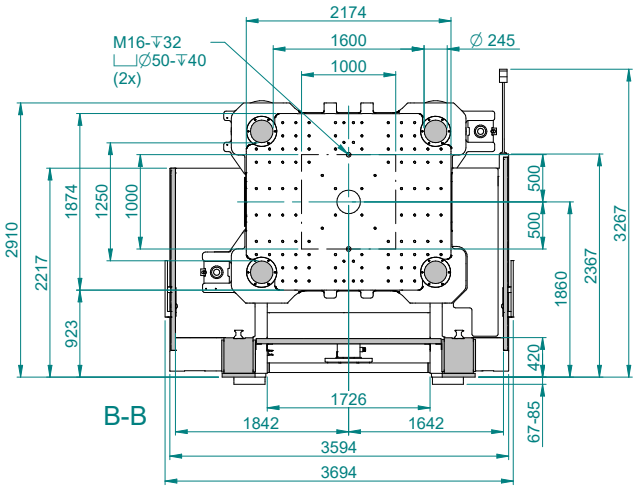
Drive							
Drive power	kW	90	90	110	90 + 45	110 + 55	110 + 55
Oil tank volume	l	1100	1100	1100	1600	1600	1600
Electrical power supply without/with Europackage	kVA	158/188	179/209	269/299	290/320	320/350	320/350
Emission sound pressure level[4] – standard/servo	dB(A)	72/70	72/70	72/70	74/72	74/72	74/72

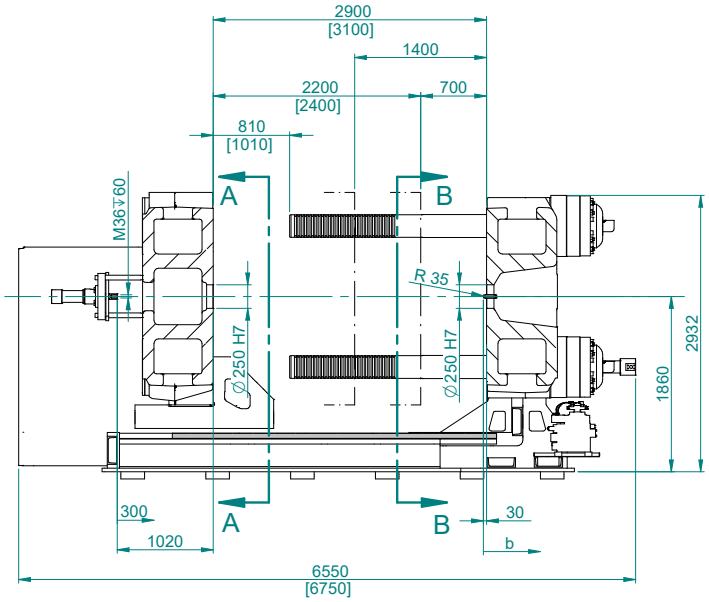
Weights, dimensions							
Net weight clamping unit	kg	53000			55000		
Net weight (exclusive oil) injection unit	kg	9500	11500	15000	20000	21000	21500
Length x width x height[5]	m	10.2 x 3.7 x 3.0	11.1 x 3.7 x 3.0	11.6 x 3.7 x 3.0	12.8 x 3.7 x 3.0	13 x 3.7 x 3.0	13.1 x 3.7 x 3.0
Max. mold weight[6]	kg	30000					
Min. mold dimension	mm x mm	1000 x 1000					

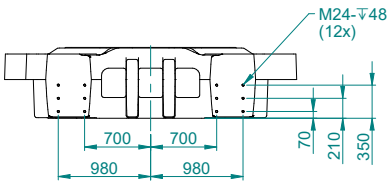
1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen











[Dimensions] *MacroPower* 1500

DATA *MacroPower* 1600

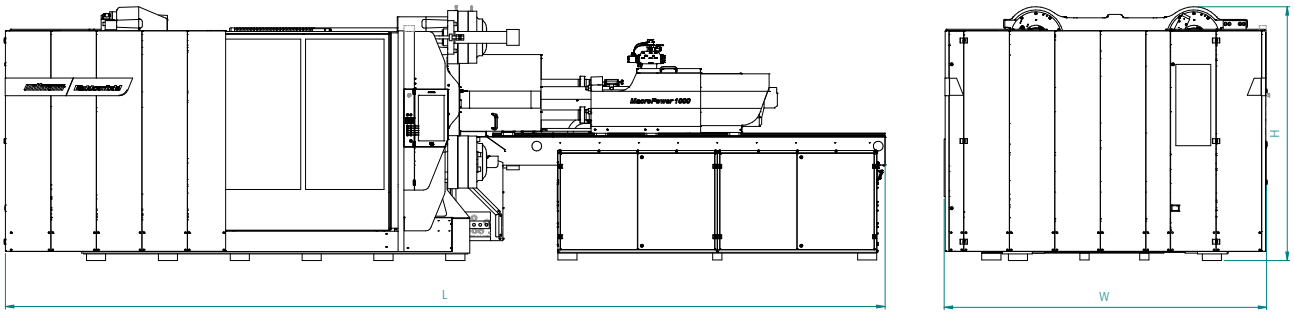
Clamping unit		***MacroPower* 1600**					
Clamping force	kN	16020					
Distance betw. tie bars	mm x mm	1600 x 1250					
Mold height (min.)	mm	800					
Mold height (max.)	mm	1500					
Opening stroke/force	mm/kN	2400/475					
Maximum daylight	mm	3200					
Ejector stroke/ejector force	mm/kN	300/200					
Dry cycle time[1]	s – mm	4.5 – 875	4.5 – 875	4.3 – 875	4.3 – 875	4.3 – 875	4.3 – 875

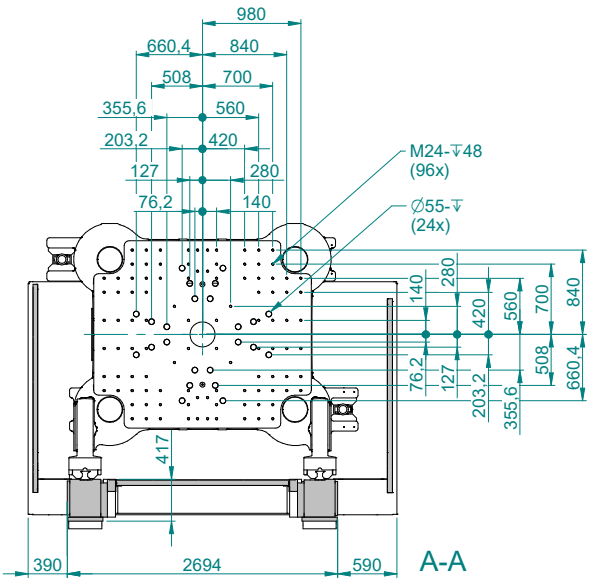
Injection unit		**5100**			**8800**			**12800**			**16800**			**19000**			**23300**		
Screw diameter	mm	75	85	95	95	105	120	105	120	135	120	135	150	135	150	165	135	150	165
Screw stroke	mm	375	425	425	475	525	525	525	600	600	600	675	675		675		675	750	775
Screw L/D ratio			22			22			22			22			22			22	
Theoretical shot volume	cm^3	1657	2412	3012	3367	4545	5937	4545	6786	8588	6786	9662	11928	9662	11928	14433	9662	13253	16571
Specific injection pressure	bar	2500	2110	1689	2359	1931	1479	2240	1878	1484	2203	1741	1410	1934	1567	1295	1981	1707	1410
Max. screw speed	min^{-1}		212		159	159	149	143	143	127		125		125	125	97	125	125	97
Max. plasticizing rate (PS)[2]	g/s	90	127	164	123	144	194	160	187	210	170	210	260	210	260	260	210	260	260
Max. screw torque	Nm	4000	6300	6300	8400	8400	9200	11500	11500	12500		15750		17500	17500	22500	17500	17500	22500
Nozzle stroke/force	mm/kN	950/129			950/129			950/141			1000/180			1000/200			1000/200		
Injection rate into air	cm^3/s	517	663	829	593	725	947	703	918	1162	936	1185	1463	1293	1596	1931	1187	1465	1772
Injection rate into air with twin pump (option)	cm^3/s	646	829	1036	742	906	1183	859	1122	1421	1106	1400	1729	1508	1862	2253	1384	1709	2068
Injection rate into air with hydr. accu. (option)	cm^3/s	1291	1659	2072	1483	1812	2367	1563	2041	2583	1702	2154	2660	2154	2660	3218	1978	2441	2954
Barrel heating power	kW	32.7	37.3	41.9	49.7	53.9	62.4	68	81	88	87	100	110	100	110	120	100	110	120
Number of heating zones		6	6	7		7			7			7		7	7	8	7	7	8
Energy efficiency class[3] standard/servo		4/5+	5/6+	6/7+	5/7+	7/8+	7/8+	6/7+	7/8+	8/9*	6/7+	7/8+	8/9+	7/8+	7/8+	8/9+	7/8+	8/9+	8/9+

Drive							
Drive power	kW	90	90	110	90 + 45	110 + 55	110 + 55
Oil tank volume	l	1100	1100	1100	1600	1600	1600
Electrical power supply without/with Europackage	kVA	158/188	179/209	269/299	290/320	320/350	320/350
Emission sound pressure level[4] – standard/servo	dB(A)	72/70	72/70	72/70	74/72	74/72	74/72

Weights, dimensions							
Net weight clamping unit	kg	60000					
Net weight (exclusive oil) injection unit	kg	9500	11500	15000	20000	21000	21500
Length x width x height[5]	m	10.6 x 3.7 x 3.0	11.5 x 3.7 x 3.0	12 x 3.7 x 3.0	13.2 x 3.7 x 3.0	13.4 x 3.7 x 3.0	13.5 x 3.7 x 3.0
Max. mold weight[6]	kg	30000					
Min. mold dimension	mm x mm	1000 x 1000					

1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen

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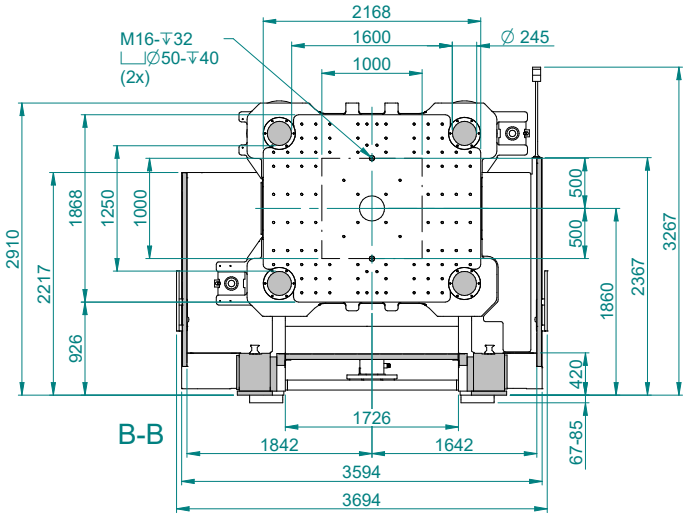
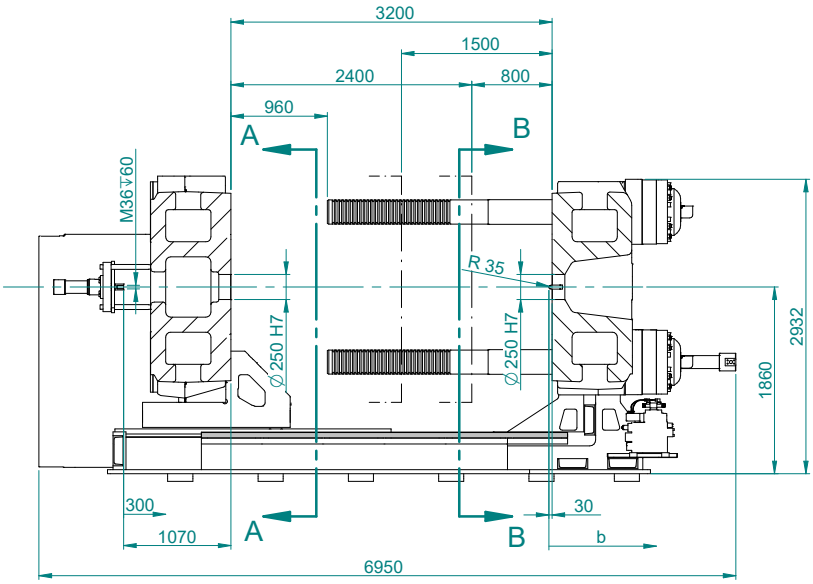
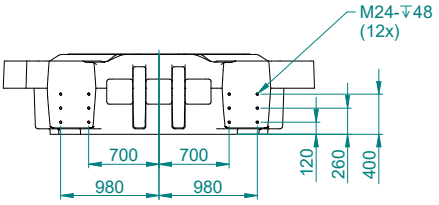
660,4
840
508
700
355,6
560
203,2
420
127
280
76,2
140
M24-↧48
(96x)
∅55-↧
(24x)
140
280
420
560
700
840
76,2
127
203,2
355,6
508
660,4
417
390
2694
590
A-A


2168
1600
1000
M16-↧32
⌴∅50-↧40
(2x)
∅ 245
2910
2217
1868
1250
1000
926
500
500
420
1860
2367
3267
1726
1842
1642
3594
3694
67-85
B-B


3200
1500
2400
800
960
A
B
M36↧60
R 35
∅250 H7
∅250 H7
2932
1860
300
1070
A
B
30
b
6950


M24-↧48
(12x)
700
700
980
980
120
260
400

DATA *MacroPower* XL 1600

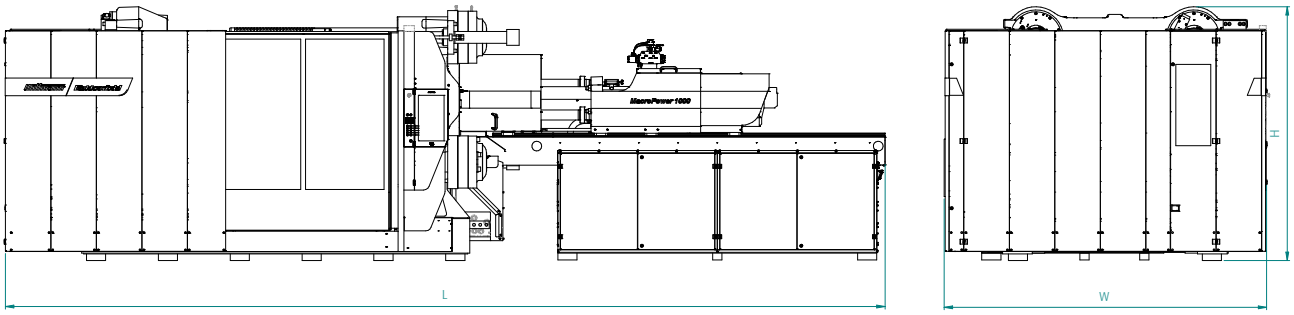
Clamping unit		***MacroPower* XL 1600**																	
Clamping force	kN	16020																	
Distance betw. tie bars	mm x mm	1880 x 1630																	
Mold height (min.)	mm	800																	
Mold height (max.)	mm	1600																	
Opening stroke/force	mm/kN	2600/614																	
Maximum daylight	mm	3400																	
Ejector stroke/ejector force	mm/kN	300/200																	
Dry cycle time[1]	s – mm	5.5 – 1120			5.5 – 1120			5.5 – 1120			5.5 – 1120			5.5 – 1120			5.5 – 1120		

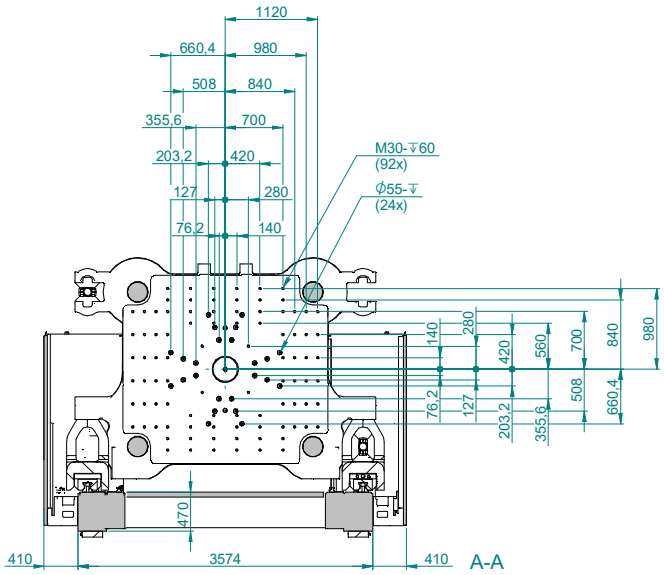
Injection unit		**8800**			**12800**			**16800**			**19000**			**23300**			**33000**		
Screw diameter	mm	95	105	120	105	120	135	120	135	150	135	150	165	135	150	165	150	165	180
Screw stroke	mm	475	525	525	525	600	600	600	675	675	675			675	750	775	750	825	875
Screw L/D ratio		22			22			22			22			22			22		
Theoretical shot volume	cm^3	3367	4545	5937	4545	6786	8588	6786	9662	11928	9662	11928	14433	9662	13253	16571	13253	17640	22266
Specific injection pressure	bar	2359	1931	1479	2240	1878	1484	2203	1741	1410	1934	1567	1295	1981	1707	1410	2006	1749	1469
Max. screw speed	min^{-1}	159	159	149	143	143	127	125			125	125	97	125	125	97	96	96	80
Max. plasticizing rate (PS)[2]	g/s	123	144	194	160	187	210	170	210	260	210	260	260	210	260	260	210	260	260
Max. screw torque	Nm	8400	8400	9200	11500	11500	12500	15750			17500	17500	22500	17500	17500	22500	25000	25000	30000
Nozzle stroke/force	mm/kN	950/129			950/141			1000/180			1000/200			1000/200			1000/200		
Injection rate into air	cm^3/s	816	997	1302	859	1122	1421	1021	1293	1596	1293	1596	1931	1187	1465	1772	1416	1714	2039
Injection rate into air with twin pump (option)	cm^3/s	964	1178	1538	1016	1327	1679	1191	1508	1862	1508	1862	2253	1384	1709	2068	–	–	–
Injection rate into air with hydr. accu. (option)	cm^3/s	1483	1812	2367	1563	2041	2583	1702	2154	2660	2154	2660	3218	1978	2441	2954	3289	3980	4737
Barrel heating power	kW	49.7	53.9	62.4	68	81	88	87	100	110	100	110	120	100	110	120	115	125	140
Number of heating zones		7			7			7			7	7	8	7	7	8	7	8	8
Energy efficiency class[3] standard/servo		5/6+	6/7+	7/8+	6/7+	7/8+	7/8+	6/7+	7/8+	8/9+	7/8+	7/8+	8/9+	7/8+	8/9+	8/9+	7/8+	8/9+	8/9+

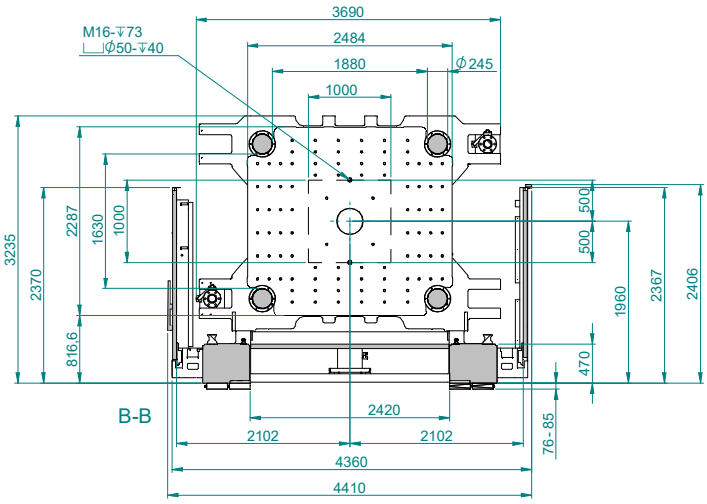
Drive							
Drive power	kW	132 + 45	132 + 45	132 + 45	132 + 45	132 + 45	132 + 75
Oil tank volume	l	2000	2000	2000	2000	2000	2000
Electrical power supply without/with Europackage	kVA	310/340	330/360	350/380	350/380	350/380	380/410
Emission sound pressure level[4] – standard/servo	dB(A)	74/72	74/72	74/72	74/72	74/72	74/72

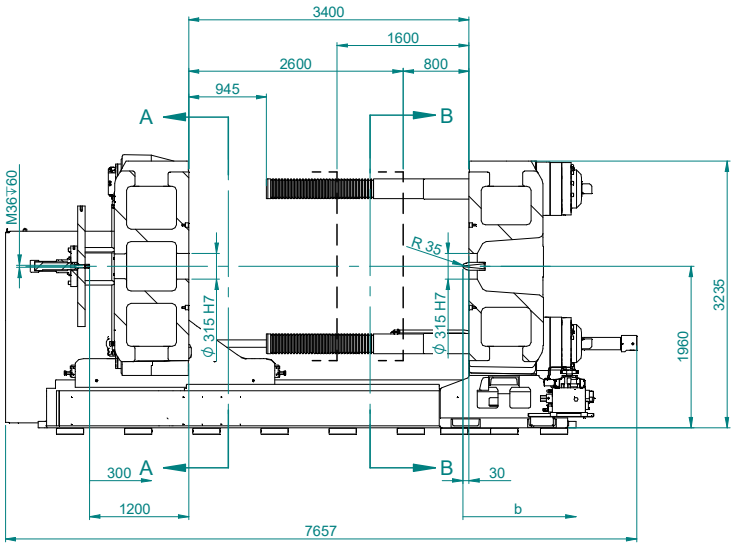
Weights, dimensions							
Net weight clamping unit	kg	90000					
Net weight (exclusive oil) injection unit	kg	15000	18000	21000	22000	22500	30000
Length x width x height[5]	m	12.8 x 4.4 x 3.3	12.8 x 4.4 x 3.3	13.9 x 4.4 x 3.3	14.1 x 4.4 x 3.3	14.2 x 4.4 x 3.3	14.8 x 4.4 x 3.3
Max. mold weight[6]	kg	45000					
Min. mold dimension	mm x mm	1000 x 1000					

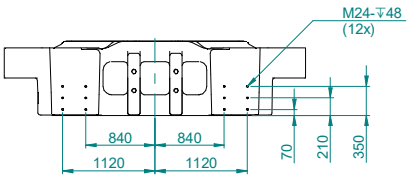
1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen




1120
660,4
980
508
840
355,6
700
203,2
420
127
280
76,2
140
M30-↧60
(92x)
⌀55-↧
(24x)
140
280
420
560
700
840
980
76,2
127
203,2
355,6
508
660,4
470
410
3574
410
A-A


3690
2484
1880
1000
M16-↧73
⌴⌀50-↧40
⌀245
3235
2370
2287
1630
1000
816,6
500
500
1960
2367
2406
470
B-B
2420
2102
2102
76-85
4360
4410


3400
1600
2600
800
945
A
B
M36↧60
R 35
⌀ 315 H7
⌀ 315 H7
3235
1960
300
A
B
30
1200
b
7657


M24-↧48
(12x)
840
840
1120
1120
70
210
350

DATA *MacroPower* 1800/2000

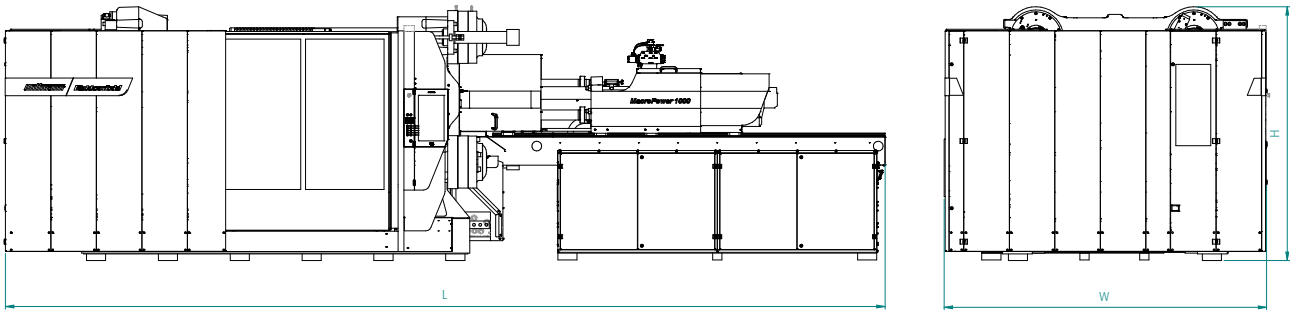
Clamping unit		***MacroPower* 1800**						***MacroPower* 2000**					
Clamping force	kN	18000						20025					
Distance betw. tie bars	mm x mm	1850 x 1600											
Mold height (min.)	mm	800											
Mold height (max.)	mm	1600						1800					
Opening stroke/force	mm/kN	2600/614						2800/614					
Maximum daylight	mm	3400						3600					
Ejector stroke/ejector force	mm/kN	300/200											
Dry cycle time[1]	s – mm	5.5 – 1120			5.5 – 1120			5.5 – 1120			5.5 – 1120			5.5 – 1120			5.5 – 1120		

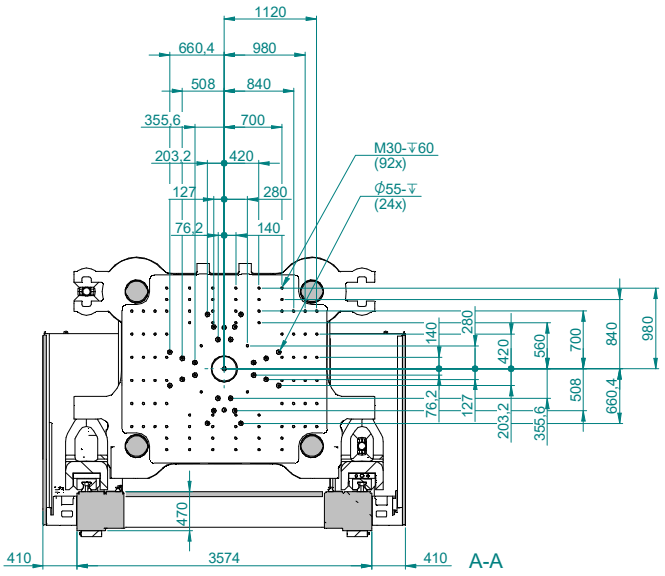
Injection unit		**8800**			**12800**			**16800**			**19000**			**23300**			**33000**		
Screw diameter	mm	95	105	120	105	120	135	120	135	150	135	150	165	135	150	165	150	165	180
Screw stroke	mm	475	525	525	525	600	600	600	675	675	675			675	750	775	750	825	875
Screw L/D ratio		22			22			22			22			22			22		
Theoretical shot volume	cm^3	3367	4545	5937	4545	6786	8588	6786	9662	11928	9662	11928	14433	9662	13253	16571	13253	17640	22266
Specific injection pressure	bar	2359	1931	1479	2240	1878	1484	2203	1741	1410	1934	1567	1295	1981	1707	1410	2006	1749	1469
Max. screw speed	min^{-1}	159	159	149	143	143	127	125			125	125	97	125	125	97	96	96	80
Max. plasticizing rate (PS)[2]	g/s	123	144	194	160	187	210	170	210	260	210	260	260	210	260	260	210	260	260
Max. screw torque	Nm	8400	8400	9200	11500	11500	12500	15750			17500	17500	22500	17500	17500	22500	25000	25000	30000
Nozzle stroke/force	mm/kN	950/129			950/141			1000/180			1000/200			1000/200			1000/200		
Injection rate into air	cm^3/s	816	997	1302	859	1122	1421	1021	1293	1596	1293	1596	1931	1187	1465	1772	1416	1714	2039
Injection rate into air with twin pump (option)	cm^3/s	964	1178	1538	1016	1327	1679	1191	1508	1862	1508	1862	2253	1384	1709	2068	–	–	–
Injection rate into air with hydr. accu. (option)	cm^3/s	1483	1812	2367	1563	2041	2583	1702	2154	2660	2154	2660	3218	1978	2441	2954	3289	3980	4737
Barrel heating power	kW	49.7	53.9	62.4	68	81	88	87	100	110	100	110	120	100	110	120	115	125	140
Number of heating zones		7			7			7			7	7	8	7	7	8	7	8	8
Energy efficiency class[3] standard/servo		5/6+	6/7+	7/8+	6/7+	7/8+	7/8+	6/7+	7/8+	8/9+	7/8+	7/8+	8/9+	7/8+	8/9+	8/9+	7/8+	8/9+	8/9+

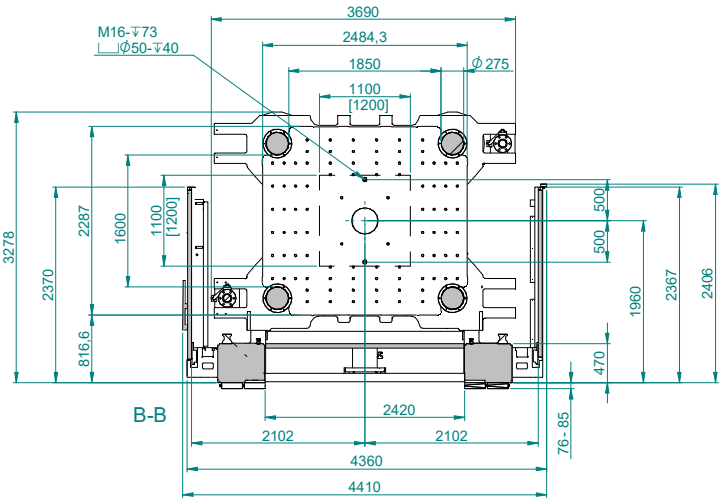
Drive							
Drive power	kW	132 + 45	132 + 45	132 + 45	132 + 45	132 + 45	132 + 75
Oil tank volume	l	2000	2000	2000	2000	2000	2000
Electrical power supply without/with Europackage	kVA	310/340	330/360	350/380	350/380	350/380	380/410
Emission sound pressure level[4] – standard/servo	dB(A)	74/72	74/72	74/72	74/72	74/72	74/72

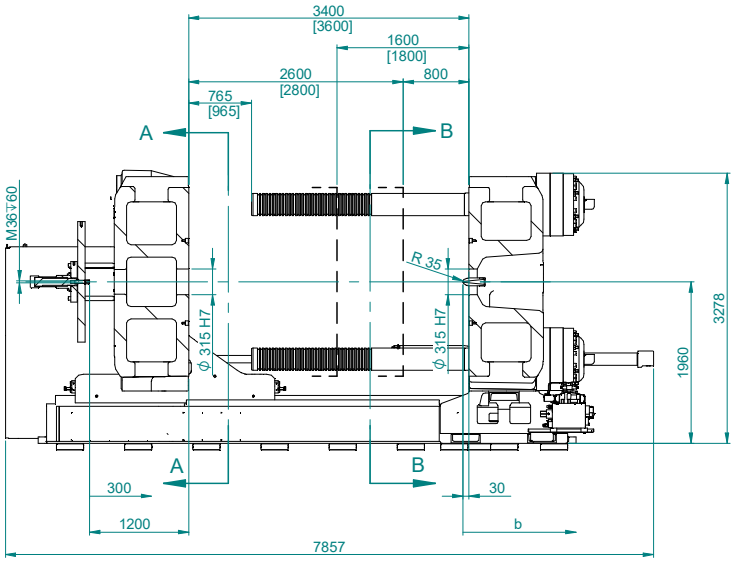
Weights, dimensions							
Net weight clamping unit	kg	90000			91000		
Net weight (exclusive oil) injection unit	kg	15000	18000	21000	22000	22500	30000
Length x width x height[5]	m	12.8 x 4.4 x 3.3	12.8 x 4.4 x 3.3	13.9 x 4.4 x 3.3	14.1 x 4.4 x 3.3	14.2 x 4.4 x 3.3	14.8 x 4.4 x 3.3
Max. mold weight[6]	kg	45000					
Min. mold dimension	mm x mm	1100 x 1100			1200 x 1200		

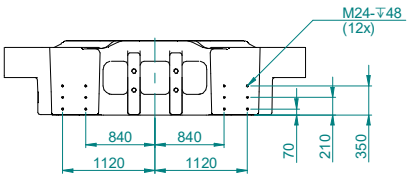
1) theoretical according to EUROMAP 6 2) according to WITTMANN BATTENFELD norm
3) calculated according to EUROMAP 60.1 (Cycle I) 4) according to ÖNORM EN 201:2010 annex K
5) length with medium screw diameter in rearmost operating position 6) max. 2/3 on clamping platen











[Dimensions] *MacroPower* 2000

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 x W	Tf = Wf x max. mold h./4
Tm = Ws x max. mold h./3	Wc = 2/5 x W
Wf = 1/2 x 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.

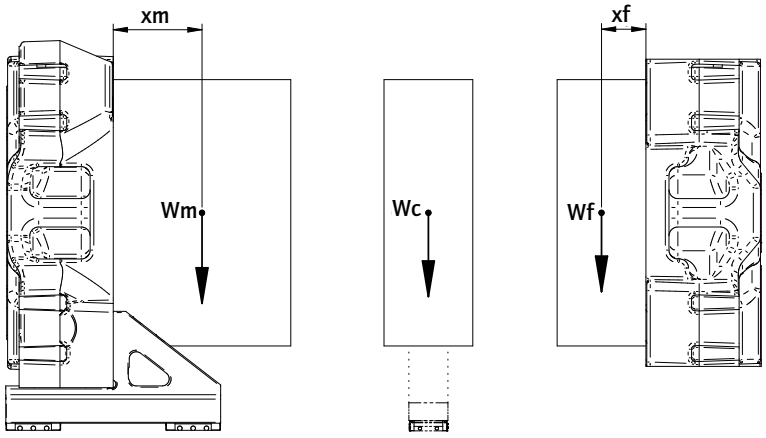
MacroPower 850 t clamping force
Mold weight W = 11 t

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

» **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.

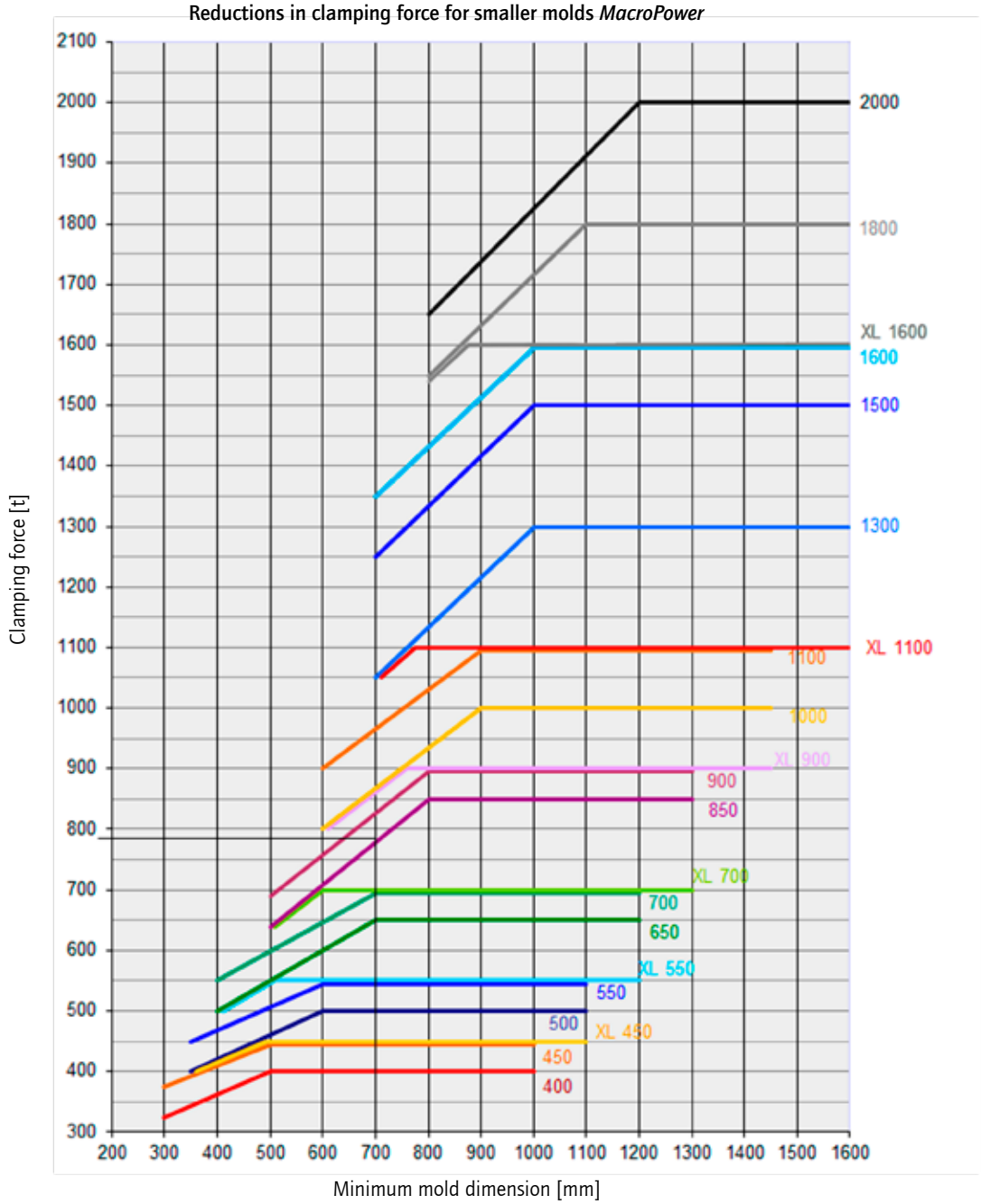
» **Example of clamping force reduction (chart)**
MacroPower 850 t clamping force, mold dimensions 700 mm x 800 mm (smaller dimension is relevant). A mold dimension of 700 mm leads to a reduced maximum clamping force of 780 t.

» **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*



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

NOTES

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