SINGLE-STAGE ISBM / FOUR STATIONS

5 Gallon Water Bottle Making Machine

Injection Stretch Blow Molding Machine

Integrated bottle production for PC and Tritan.



BOTTLE EXAMPLES



5 Gallon 3 Gallon

4	400 kN	20 L
Process stations	Injection clamping force	Max. bottle volume

01 / ENGINEERING

Four stations. One integrated process.

01	02	03	04
Preform injection	**Conditioning**	**Stretch blowing**	**Ejection**
Form the preform.	Condition the preform.	Stretch and blow.	Release the bottle.

Machine configuration

01 Servo pump system

Three servo pump systems. Listed combinations: Inovance motors and controllers with Sumitomo pumps, or WEICHI motors with OFITE pumps.

02 Rotary indexing

Yaskawa, Inovance or WEICHI servo motor options, with a TSUNTIEN reducer for the rotary table.

03 Blow mold clamping

Hydraulic cylinder clamping, or an optional dual-servo clamping system with high-pressure compensation.

04 PLC & temperature control

Inovance or MiRLE PLC. Temperature control through an integrated control box or the optional built-in system.

05 Injection & heating

Single-cylinder injection unit. Hydraulic or servo-driven plasticizing motor. Nano far-infrared heating rings rated at 15 kW.

06 Hydraulics & pneumatics

Parker high-pressure valves, YUKEN hydraulic control valves and Airtac cylinders. Hydraulic tubing uses material imported from Italy.

Component brands and drive options depend on the selected configuration.

02 / MACHINE DATA

Technical specifications

650-V4 | Four-station system | PC and Tritan

Screw configurations

Parameter	Option 1	Option 2	Option 3
Screw diameter (mm)	50	55	60
Theoretical injection volume (cm³)	350	450	600
Screw speed (r/min)	220	220	220

Machine ratings

Parameter	Unit	Value
Injection clamping force	kN	400
Blow clamping force, single side	kN	400
Theoretical injection weight	g	480
Motor power	kW	75.7
Heating power	kW	15
Total machine power	kW	90.7
Oil tank capacity	L	600
Supply voltage	V	370-400
Machine dimensions (L × W × H)	mm	6100 × 2600 × 4000
Machine weight	t	28

Air & cooling requirements

Parameter	Unit	Value
Blow molding air pressure	MPa	2.0-3.5
Cooling water pressure	MPa	0.4-0.6
Oil cooler water pressure	MPa	0.3-0.4
Oil cooler water temperature	°C	20-25

The 60 mm screw is listed as optional in the machine parameter specification.

03 / CONFIGURATION SUPPLEMENT

Equipment configuration

Mechanical, process and utility parameters from the supplied configuration sheet.

Mechanical & process parameters

Parameter	Specification
Screw diameter	**75 mm**
Screw length-to-diameter ratio	**18:1**
Screw speed	**100 r/min**
Plasticizing capacity	**1.95 (unit not specified)**
Barrel heating zones	**5**
Barrel heating power	**28.8 kW**
Effective platen size (W × H)	**800 × 620 mm**
Platen spacing	**170 + 240 mm**
Clamping force	**420 T (source notation)**

Power & utilities

Parameter	Specification
Servo power	**MODROL, 3 × 55 kW**
Air supply working pressure	**0.8-1.0 MPa**
Air consumption	**1.5 m³/min**
Water supply pressure	**0.3 MPa**
Total rated power	**180 kW**
Average power consumption	**Main: 29 kW; auxiliary: 27 kW**

Configuration confirmation: The supplied sheet does not identify a machine model. Its parameters differ from the catalog data on page 3 and have not replaced those values. Confirm applicability to 650-V4. The unit for plasticizing capacity and the clamping-force notation also require confirmation.

03 / CONFIGURATION SUPPLEMENT CONTINUED

Component configuration

Brands, models and component ratings from the supplied configuration sheet.

Hydraulic & drive components

Component	Brand / specification
Hydraulic oil pumps	**Sumitomo, 125 cc × 3**
Hydraulic valves	**YUKEN**
Servo motors	**MODROL, 3 × 47.2 kW**
Plasticizing motor	**YMP16-1800**
Hydraulic pressure control	**YUKEN**
Seals	**SKF / NOK**

Electrical & control components

Component	Brand / specification
PLC	**OMRON**
Contactors	**Schneider Electric**
Relays	**OMRON**
Switching power supply	**MEAN WELL**
Proximity switches	**OMRON**
Linear position transducer	**GEFAN PK-M-300**
Circuit breakers	**Schneider Electric**
Touchscreen HMI	**WEINVIEW**

Pneumatic components

Component	Brand / specification
Pneumatic components	**SMC / AirTAC**
Air cylinders	**SMC / Chinese-made**
Solenoid valves and filters	**AirTAC**

GEFAN PK-M-300 is reproduced as listed in the supplied sheet.

04 / ENERGY SUPPLEMENT

Energy consumption

Installed loads and average-use figures from the supplied energy sheet. Blank source entries are shown as "Not stated".

Equipment	Installed load	Specification	Average use*
1. Main blow molding machine	Main pump motors: 3 × 47.2 kW Cooling pump: 2.2 kW Heating: 32 kW	Instantaneous operating current: approx. 120 A	Approx. 28 kW/h*
2. Mold temperature controller (dual pump)	Oil pump motors: 2 × 4 kW Heaters: 2 × 9 kW	Not stated	Approx. 6.5 kW/h*
3. Large hopper dryer	22 kW	500 kg	Approx. 12 kW/h*
4. Small hopper dryer	3.2 kW	25 kg	Not stated
5. Material loader	3 kW	4P; one unit serves two loading points	Not stated
6. Air supply (customer supplied)	Approx. 11 kW for one machine; size to plant air demand	Rated pressure: 0.7-1.0 MPa Air use: approx. 1.5 m³/min	Not stated
7. Water supply (customer supplied)	Approx. 4 kW for one machine; size to plant water demand	Water pressure: 0.3 MPa Cooling water: 240 L/min	Not stated

Totals stated in the energy sheet

Item	Stated total
Installed load	**Approx. 207 kW**
Average power consumption	**Approx. 56 kW**

* Source notation retained. The average-use units and the installed-load total require confirmation; see page 7.

04 / ENERGY SUPPLEMENT CONTINUED

Utilities & installation

Wiring and installation data from the supplied energy sheet.

Main-machine installation requirements

Item	Specification
Circuit breaker (customer supplied)	**4-pole, 250 A**
Supply cable (customer supplied)	**3 × 50 + 16 mm²**
Earth conductor (customer supplied)	**16 mm²**
Machine dimensions (L × W × H)	**7450 × 2700 × 3940 mm**
Main-machine weight	**22 t**

Technical confirmation notes

01 Match the machine configuration

The new sheets do not identify a machine model. Differences from page 3 include a 75 mm screw rather than 50/55/60 mm, 180 kW rated power rather than 90.7 kW, and a 22 t machine weight rather than 28 t. Dimensions, clamping-force entries and control components also differ.

02 Reconcile the installed-load total

The energy sheet states approximately 207 kW. Adding every listed load, including the customer-supplied air and water systems, gives 245 kW: 175.8 + 26 + 22 + 3.2 + 3 + 11 + 4. Confirm the included equipment and the intended total.

03 Confirm average-use units and operating basis

The 28, 6.5 and 12 average-use entries are printed as kW/h in the source, while its total is 56 kW. The unit notation is retained without conversion. Confirm whether the figures represent average power or energy for a specified period, and confirm the operating conditions.

05 / APPLICATION PLANNING

Plan your bottle project

Bottle dimensions by product quantity

Product quantity (pcs)	1	2	3	4
Bottle body diameter (mm)	280	235 (280)	230	180
Bottle height (mm)	510	510	510	510
Neck diameter (mm)	140	120	90	84
Max. bottle volume (L)	20	20	12	5 (7)
Max. bottle weight (g)	900	460	310	230

Confirm bottle and mold suitability, including the applicable conditions for values shown in parentheses.

Machine strokes

Movement	Stroke (mm)
Upper mold	1070
Lower mold	550
Conditioning core	300
Conditioning barrel	300
Take-out	300
Blow core	300
Blow mold	175 + 175

Discuss your bottle project.

Send your bottle drawing, resin, volume, weight and required output.

info@isbmmachine.net

isbmmachine.net

Video: https://youtu.be/FoB60tXwNEI