

# TRONIC



PM Synchronous  
circulator pump  
for heating systems

A universal product

Easy to install  
1-6 meters total head



**SAVINGS**  
Up to 80% less than  
traditional pumps



**TECHNOLOGY**  
Best available  
technology - PM Motor



**ENVIRONMENT**  
protection



**INVERTER**  
technology

**Askoll**  
Il futuro dell'innovazione

# Askoll Tronic

One for all

Askoll aims at improving quality of life considerably through the creation of increasingly innovative products that respect the environment and provide significant energy savings in addition to better performance. Innovation applied to the heating field has resulted in a unique product and a true turning point in circulation pumps for domestic and residential use: **Askoll Tronic**.

**Askoll Tronic** provides formidable advantages:

1. UNIVERSAL PRODUCT
2. ENERGY SAVINGS
3. IDEAL PERFORMANCE
4. RELIABILITY
5. EASE OF INSTALLATION AND REGULATION

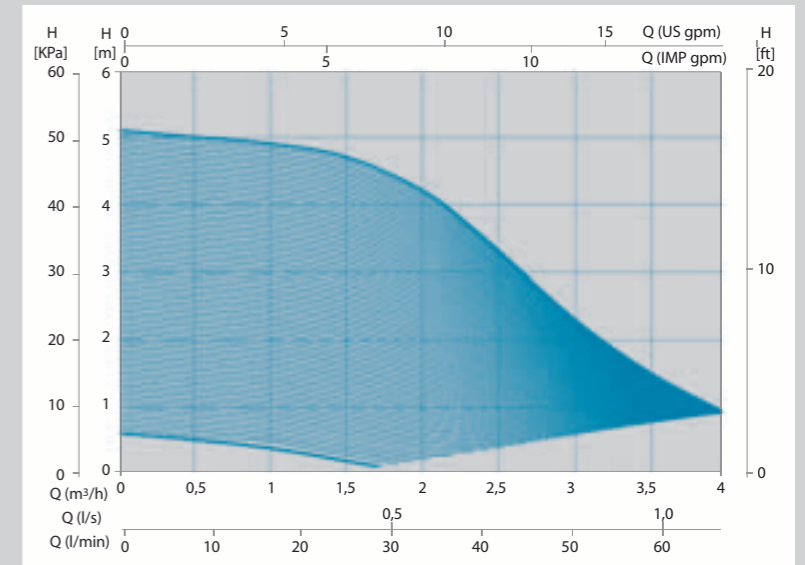


## 1. UNIVERSAL PRODUCT: one for all

**Askoll introduces a new standard for circulation pumps: Askoll Tronic, a single circulator to cover the entire operating field from 1 m to 6 m total head.**

- Maximum easiness in identifying the most suitable circulator for each individual installation.
- No possibility to commit installation errors.
- No subsequent lost time for the installer.

One for all! **Askoll Tronic** is characterized by an "infinite" number of operating curves to satisfy every installation need (from a simple monotube to more modern and sophisticated systems) always providing optimal performance: a single pump replaces entire ranges of traditional circulators.



## 2. ENERGY SAVINGS: up to 80% less

**Askoll Tronic** CLASSE A for energy consumption! Energy consumption has never been this low: **great power in just 6 W.**

**Askoll Tronic** is a highly energy-efficient variable-speed pump: in fact, at equal hydraulic performance it absorbs less electricity up to peaks of 80%, compared to both traditional three-speed pumps and more advanced electronic circulators.

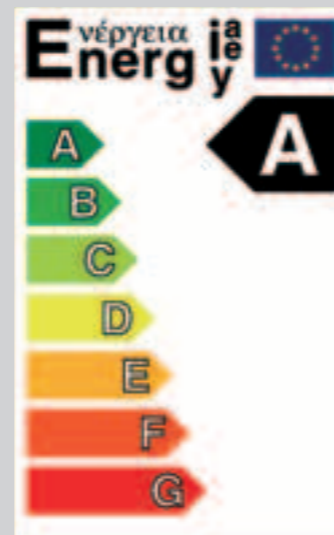
Calculation of annual average consumption (kWh) of **Tronic** pump

| Energy Labelling load profile     |               | Tronic          |                |                |
|-----------------------------------|---------------|-----------------|----------------|----------------|
| Time (%)                          | Flow rate (%) | Flow rate (l/h) | Total head (m) | P absorbed (W) |
| 44.0%                             | 25%           | 625             | 5.1            | 32             |
| 35.0%                             | 50%           | 1250            | 4.9            | 46             |
| 15.0%                             | 75%           | 1875            | 4.3            | 56             |
| 6.0%                              | 100%          | 2500            | 3.1            | 59             |
| Annual average consumption in kWh |               |                 |                | <b>254 kWh</b> |

The calculation of annual average consumption of the pump refers to the load profile set by the commitment on energy labelling of circulation pumps considering a maximum flow rate of 2,500 l/h and an operating period of 6,000 hours.

This translates into exceptional energy savings, **over 250 kWh** per year: in fact, a circulation pump is estimated to operate for about 6,000 hours a year. In addition to protecting the environment, there are obvious economic advantages from using a **Askoll Tronic** pump.

**EXTRAORDINARY ENERGY EFFICIENCY MEANS LOWER ANNUAL OPERATING COST: UP TO 80% LESS THAN TRADITIONAL PUMPS!**

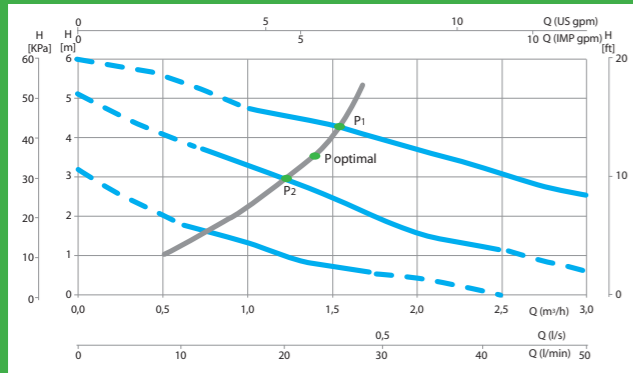


### 3. IDEAL PERFORMANCE

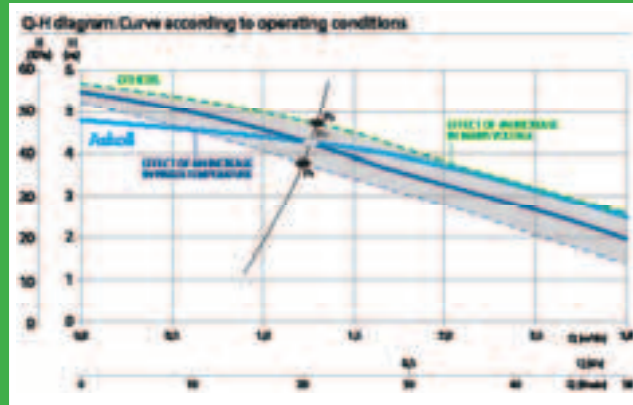
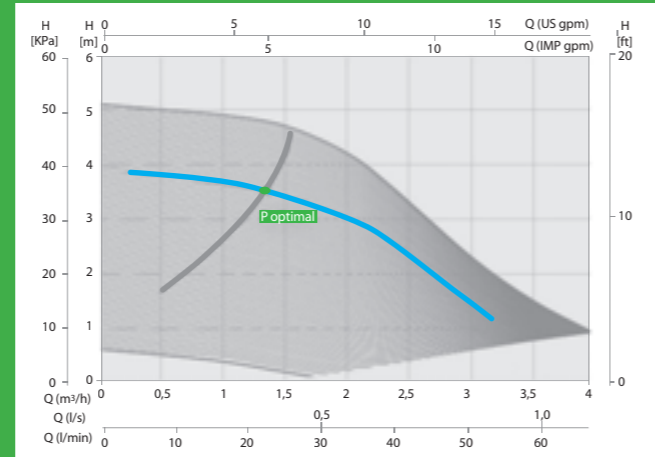
An infinite number of stable operating curves, with constant pressure in the working field.

#### OPTIMAL HEAT AND NOISE CONDITIONS

**Askoll Tronic** is the ideal solution for every domestic and residential heating system. When a traditional three-speed circulator is installed, it is not always possible to run the pump at the optimal system working point (the pump will run at either point P<sub>1</sub> or point P<sub>2</sub>, depending on the regulation).

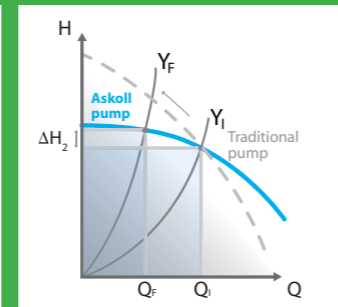
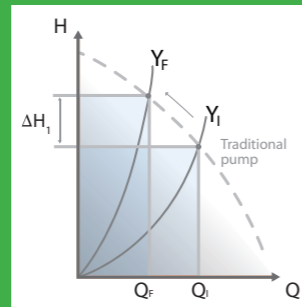


The advantage of an infinite operating curve is obvious: it is possible to select the exact working point over the entire field of use, in every case.



Moreover, the performance of **Askoll Tronic** pumps are very stable: the curve selected does not suffer any translation: it doesn't vary with the temperature of the liquid pumped or with changes in other operating conditions. It is possible to determine the optimal working point with certainty, confident that this will not vary until the system's pressure drops are changed.

The performance curve is substantially flat for low flow rates, in addition: **problems of system noise are sharply reduced**. **Askoll Tronic** pumps - blue curve - do not have the unacceptable increase in differential pressure of traditional pumps (the value of  $\Delta H_2$  is more or less negligible compared to  $\Delta H_1$ ) with the advantage of a quieter system.



### 4. RELIABILITY: no more rotor locking

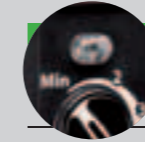


**Askoll Tronic** integrates special techniques designed to limit pump locking problems: the patented "square chamber" eliminates the possibility of operation interruption since impurities inside the rotor chamber find a preferential accumulation area in special cavities in the chamber itself.

Advanced electronic devices detect any rotation difficulty and, if necessary, repeatedly start the motor to always guarantee correct start-up.

### 5. EASE OF INSTALLATION AND REGULATION

**Askoll Tronic** is equipped with a special cable gland: just connect the two conductors to the terminal board and connect the latter to the compartment provided on the connection interface box. **The maximum speed and simplicity. There is absolutely no need to open the box.**



#### REAL TIME DIAGNOSTICS

It's possible to easily and immediately control the circulator moment by moment. **The operation indicator (LED) continuously conveys information on the state of the pump.**



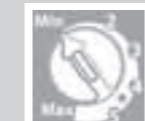
**Blinking GREEN LIGHT:** after changing the pump setting, the indicator blinks for few seconds. The LED shows an adjustment of the working point.

**GREEN LIGHT:** the pump is running correctly

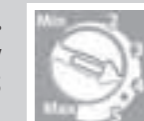
**RED LIGHT:** possible fault (e.g. pump jammed)



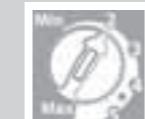
The regulation of the pump is very simple and intuitive as well: the desired operating curve is selected by turning the regulator with a screw driver.



**The pump works with minimum performance.** The maximum head is about 0.6 m with a flow rate of 0 l/h, while the total head is about 0.5 m with a flow rate of 1.000 l/h.



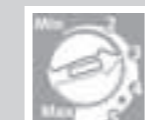
**Pump performances are equivalent to the performance of a traditional pump with a maximum head of 4 m.** The total head is about 3 m with a flow rate of 1.000 l/h.



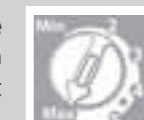
**Pump performances are equivalent to the performance of a traditional pump with a maximum head of 2 m.** The total head is about 1 m with a flow rate of 1.000 l/h.



**Pump performances are equivalent to the performance of a traditional pump with a maximum head of 5 m.** The total head is about 4 m with a flow rate of 1.000 l/h.



**Pump performances are equivalent to the performance of a traditional pump with a maximum head of 3 m.** The total head is about 2 m with a flow rate of 1.000 l/h.



**The pump works with maximum performance. Pump performances are equivalent to the performance of a traditional pump with a maximum head of 6 m.** The total head is about 5 m with a flow rate of 1.000 l/h.

#### APPLICATIONS

**Askoll Tronic** circulation pumps are innovative synchronous technology ones, designed and manufactured for use in heating and circulation plants, both in domestic and commercial buildings.

#### CONSTRUCTION CHARACTERISTICS

**Askoll Tronic** is a wet rotor pump driven by a synchronous motor controlled by an on-board INVERTER.

#### MOTOR TECHNICAL DATA

PERMANENT MAGNET SYNCHRONOUS MOTOR CONTROLLED BY AN ON-BOARD INVERTER

|                             |   |
|-----------------------------|---|
| Mains voltage and frequency | 1 X 230 V ( -10%; +6%) - 50 Hz  |
| Insulation class            | H   |
| Enclosure class             | IP 44   |
| Appliance class             | II  |
| Overload protection         | Automatic protection with electronic rotor release;<br>Protection through thermal protector |

The pump does not require any external protection of the motor.

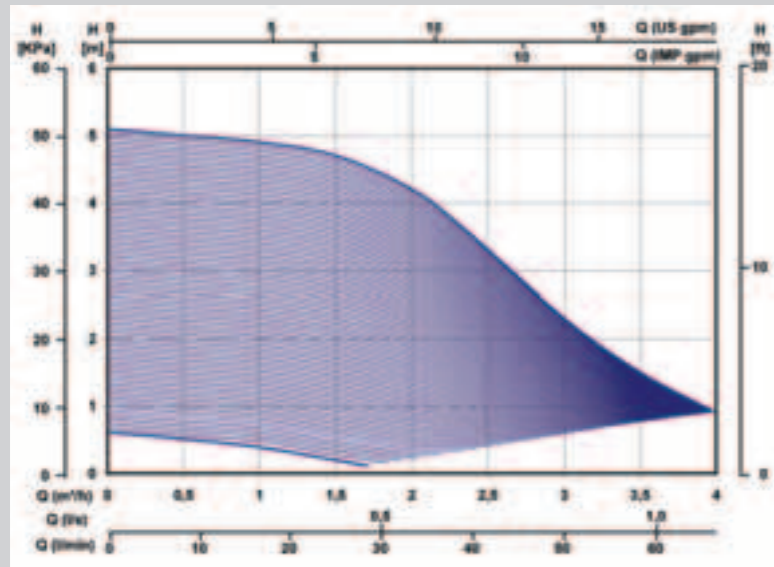
## PUMP TECHNICAL DATA

|   |   |
|---|---|
| Allowed temperature field                 | from +2°C to +95°C  |
| Ambient temperature                       | from +2°C to +40°C  |
| Max. operating pressure                   | 6 bar   |
| Storage conditions                        | from -20°C to +70°C with R.H.= 95% at 40°C                        |
| Sound pressure level                      | < 43 dB(A)  |
| Minimum suction pressure                  | 0.5 bar with a temperature of +95°C                               |
| Maximum glycol percentage                 | 40%   |
| Constructed in accordance with directives | EN 61000 - 3 - 2 / EN 61000 - 3 - 3 / EN 55014 - 1 / EN 55014 - 2 |

## LIQUIDS PUMPED

Askoll Tronic circulation pumps have been designed to pump clean liquids that do not attack their materials and are free of solid particles that could obstruct their moving parts. They must not be used to pump inflammable and/or explosive liquids.

## > Tronic pump models 25-60 / 32-60



The curves refer to a liquid temperature of 80 °C and a water density  $\rho = 1000 \text{ kg/m}^3$ .

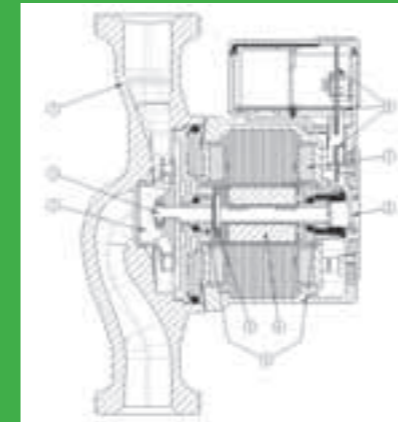
### Explanation of the coding

|  |               |     |     |     |    |     |      |     |     |
|--|---------------|-----|-----|-----|----|-----|------|-----|-----|
| Example  | <b>Tronic</b> | (C) | (B) | (A) | 25 | -60 | /180 | (F) | (D) |
| Model  |               |     |     |     |    |     |      |     |     |
| Hydraulic housing in COMPOSITE MATERIAL                |               |     |     |     |    |     |      |     |     |
| Hydraulic housing in BRONZE                            |               |     |     |     |    |     |      |     |     |
| Hydraulic housing with air-vent                        |               |     |     |     |    |     |      |     |     |
| Rated diameters [DN] of the intake and output openings |               |     |     |     |    |     |      |     |     |
| Maximum head   |               |     |     |     |    |     |      |     |     |
| Center-to-center distance sizes                        |               |     |     |     |    |     |      |     |     |
| Flanged pump   |               |     |     |     |    |     |      |     |     |
| Twin pump  |               |     |     |     |    |     |      |     |     |

1~50 Hz

| V   | TYPE   |        |        |        | 230V<br>A | P <sub>ass</sub><br>W | Q | m³/h |     |      |      |      |      |      |
|-----|--------|--------|--------|--------|-----------|-----------------------|---|------|-----|------|------|------|------|------|
|     | 25-60  | Tronic | 32-60  | Tronic |           |                       |   | 0    | 0,5 | 1,0  | 1,5  | 2,0  | 2,5  | 3,0  |
| max | Tronic | 25-60  | Tronic | 32-60  | 0.52      | 62                    | H | 0    | 8,3 | 16,6 | 25,0 | 33,3 | 41,6 | 50,0 |
| min | Tronic | 25-60  | Tronic | 32-60  | 0.06      | 6                     | H | 5,1  | 0,5 | 4,9  | 4,7  | 4,2  | 3,4  | 2,3  |
|     |        |        |        |        |           |                       |   | 0,6  | 0,5 | 0,4  | 0,2  | 0    | ---  | ---  |

## > Installation



### MATERIALS

| COMPONENT       | POS. | MATERIAL                        |
|-----------------|------|---------------------------------|
| Pump housing    | 1    | Cast iron GJL 200 EN 1561       |
| Impeller        | 2    | Composite                       |
| Shaft           | 3    | Stainless steel                 |
| Bearings        | 4    | Graphite                        |
| Thrust bearing  | 5    | Ceramic                         |
| Rotor           | 6    | Hard ferrite (Permanent Magnet) |
| Winding         | 7    | Copper wire                     |
| Electronic card | 8    | ---                             |
| Plug 9          |      | Composite                       |
| Gasket          | ---  | EPDM                            |

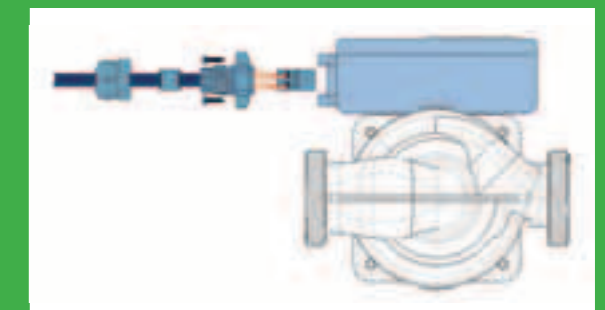
Askoll Tronic pumps have to be always installed with the motor shaft horizontal.



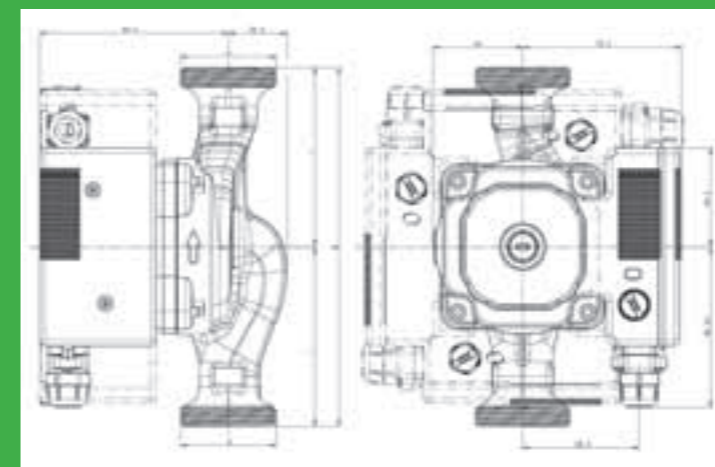
Make sure that the pressure at the pump's intake is at least equal to the minimum value required. It is recommended not to start the pump before having filled and drained the hydraulic circuit. It is possible to drain the rotor by removing the drain plug on the motor. Possible connections box positions:



The special cable gland allows a fast electrical connection: connect the two (orange) conductors to the terminal board and insert the connector in the compartment on the connection box.



## > Dimensions



| TYPE                 | A [DN]  | B [mm] | Net weight [kg] |
|----------------------|---------|--------|-----------------|
| Tronic 25 - 60 / 130 | G 1 1/2 | 130    | 2,16            |
| Tronic 25 - 60 / 180 | G 1 1/2 | 180    | 2,30            |
| Tronic 32 - 60 / 180 | G 2     | 180    | 2,44            |

# Askoll

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**Askoll**, founded in 1978 with its headquarters in Dueville (Vicenza), is a leading manufacturer of pumps and synchronous electric motors. Synchronous technology is the common thread that unites the three core businesses of Askoll: it was initially applied in the field of aquariology in the production of pumps; this business has gradually expanded and now includes the design and development of aquariums, filters and accessories for aquariums and ponds.

The applications of such technology were then transferred to the field of household appliances, mainly washing machines and dishwashers, and to that of heating. This technology allows the industry to ensure a significant reduction in costs, simplifying installation and maintenance activities and it provides significant energy savings, which can exceed 50% compared to conventional electric motors. For the same power of the motor it also allows to produce smaller engines and thus save on raw materials such as iron and copper.

Nowadays in the world, 98% of washing machines and dishwashers use synchronous technology pumps.

A winning intuition was then transformed into the key to the success of this Veneto Region company that has experience on synchronous pumps, its technologies, a know-how unique in the world, and an annual production of 50 million pumps and motors sold throughout the world.

Today Askoll is an international group of 11 business units with facilities in Italy, Brazil, Mexico, Slovakia, Romania and China, with trade representatives in the United States and South Korea. Its Center for Research & Development, within the company, boasts a portfolio of over 500 patents and collaborates with leading European universities.

Askoll develops a turnover of over 400 million Euro, to which contribute more than 2,800 employees, and it delivers its products in over 20 countries.

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