

Askoll

HIGH EFFICIENCY CIRCULATORS



CATALOGUE **EN**

easyuse  greatperformance



SAVINGS

Up to 80% less than traditional pumps



TECHNOLOGY

Best available technology - PM Motor



ENVIRONMENT

protection



INVERTER TECH

Best performance with high flexibility

Innovation and the environment unite

Askoll circulators are the result of both the commitment to continuously improve product **performance** and faith in innovation propelled by investment in research & development, day in and day out.

The internationally recognized Askoll laboratories are advanced research centers specialized in synchronous motor technology and work together with Europe's top universities.

Our products are used for three different applications:

HEATING SYSTEMS to reduce energy consumption by up to 80%

DOMESTIC HOT WATER to ensure maximum comfort in recirculation of sanitary water

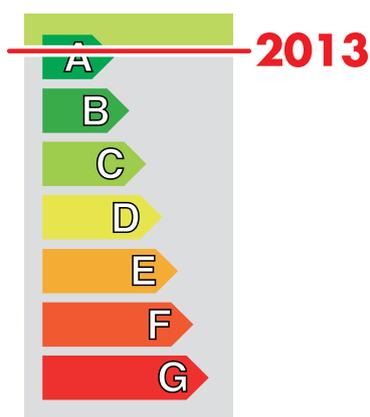
SOLAR THERMAL SYSTEMS to take advantage of every single kWh of energy captured by panels

ErP READY

All Askoll circulators meet the requirements of the ErP directive in force as of January 1, 2013, which calls for a drastic reduction of energy consumption of circulators.

The world of heating took part in a "green revolution": energy classes are disappeared to make space only to energy efficiency.

The EEI is the reference measurement that indicates the energy consumption and cannot exceed the limit value of 0,27: only a small number of the old Class A circulators fall within this threshold. Askoll is one of them!



As a matter of fact, Commission Regulations (EC) no. 641/2009 e no. 622/2012 impose the sale of only those products with high efficiency and low power consumption. The eco-design criteria are an integral part of the declaration of conformity (CE marking), which is a necessary requirement for a product to be sold in the European Union. A large part of old Class A circulators have been banned from the European market as of January 1, 2013.

Askoll circulators are compliant to the European legislation.

This is because Askoll's mission is not to adapt to expectations, but rather to overcome them.



When you see the logo ErP Ready on the boxes of our products you can rest assured that you are getting the maximum efficiency and the greatest performance.





HEATING

Heating bills are one of the most expensive expenditure: 80% of the annual household energy consumption is primarily due to heating living spaces, followed by domestic water heating. A heavy burden, which on a national level represents one fifth of the country's energy consumption!

In this context it is crucial to **"think greener"**: in order to contain costs and to reduce the quantity of harmful emissions released into the atmosphere, it is extremely important that high efficiency systems are installed in houses so as to cut down on unnecessary consumption.

Askoll circulators are designed with innovative technology which, compared to conventional circulators, are able to **reduce power consumption up to 80%** and optimize system performance by promptly responding to its demands, thus preventing unnecessary waste.

...Quite a savings when you consider that over 100 million circulators, which consume over **50 TWh** of electric energy each year, are currently installed in European homes for heating purposes.

If Askoll circulators were to become the standard for pumps that are already installed, the savings would amount to more than 60% of the electricity currently used in Europe, which adds up to more than **30 TWh** per year.

30 TWh is equivalent to the annual consumption of 10 million Italian families.



ENERGY SAVING

The **Askoll Energy Saving** circulator is a wet rotor type, driven by a permanent magnets synchronous motor (PM motor) controlled by an on board inverter. **Askoll Energy Saving** provides excellent benefits:

1. ENERGY SAVING

3. IDEAL PERFORMANCE

2. COMPACT DESIGN

4. EASY INSTALLATION AND ADJUSTMENT



SAVINGS

Up to 80% less than traditional pumps



TECHNOLOGY

Best available technology - PM Motor



ENVIRONMENT

protection



INVERTER TECH

Best performance with high flexibility



HiEff HIGH EFFICIENCY



1. ENERGY SAVING

EXTRA-ORDINARY ENERGY EFFICIENCY

Askoll Energy Saving is a variable speed circulator characterized by a higher energy efficiency. Compared with traditional circulators with equivalent performance place on the market before January 1, 2013, **it consumes up to 80% less electricity:** it ensures thus respect for the environment and more savings for families.

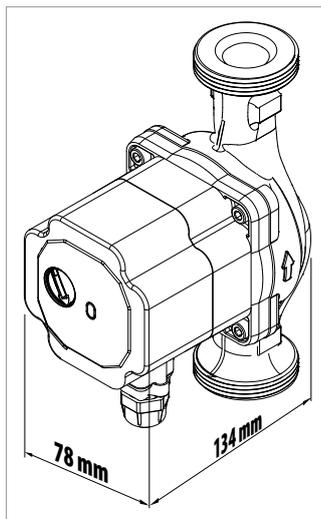
Askoll Energy Saving already meets the provisions of Regulations no. 641/2009 and no. 622/2012 of the European Commission (EuP and ErP Directives) requiring a drastic reduction of energy consumption of circulators from January 1, 2013.

Considering the circulators of Class A, only the most efficient ones can be marketed (those with Energy Efficiency Index $EI \leq 0,27$): **Askoll Energy Saving** hits this target.

The economic benefits are clear: if **Askoll Energy Saving** becomes the standard for circulators installed (there are over 100 million in Europe), it would be possible to save more than 60% of the electricity being used. **This corresponds to more than 30TWh a year!** 30TWh is the energy required to illuminate some 6 million football matches at Stadio Olimpico in Rome.

2. COMPACT DESIGN

THE SMALLEST OF ITS CLASS



Compared to the models currently on the market with equivalent performances, **Askoll Energy Saving** is the most compact circulator available on the market. **It ensures maximum power in a minimum size.** It can be installed in any heating system and is valuable when the available spaces are reduced.

3. IDEAL PERFORMANCE

Askoll Energy Saving ideally meets the requirements of any heating system in any domestic and residential area. As a matter of fact, the circulator is equipped with electronic controls allowing to set advanced features.

PROGRAM P ($\Delta p-v$) - PROPORTIONAL CURVE (luminous indication: green light)

The innovative electronics of the circulator, developed in Askoll laboratories, proportionally reduces the pressure level (head) according to the reduction of the heat request by the system (reduced flow).

Thanks to this feature, the power consumption of **Askoll Energy Saving** is even smaller: the energy (power) used by the circulator decreases according to the pressure and flow level. With this setting, **Askoll Energy Saving** ensures optimal performance in the majority of heating

systems, making it particularly suitable in single pipe and two pipe installations.

Askoll Energy Saving works well and silently. With the reduction in the head, it eliminates the possibility of annoying noise due to water flow into the pipes, valves and radiators. **Optimal heat and noise conditions.**

PROGRAMS C3 and C4 ($\Delta p-c$) - CONSTANT CURVE (luminous indication: white or orange light)

The circulator maintains a constant pressure level (head) upon the decreasing demand for heat from the system (reduced flow rate). With these settings, **Askoll Energy Saving** is suitable for all underfloor heating systems, where all circuits must be balanced for the same drop in the head.

MIN-MAX PROGRAM (luminous indication: blue light)

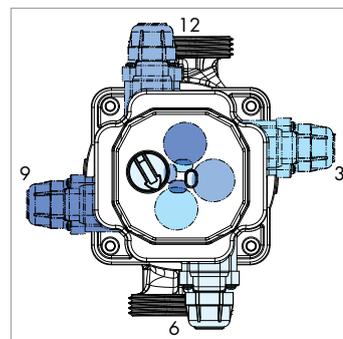
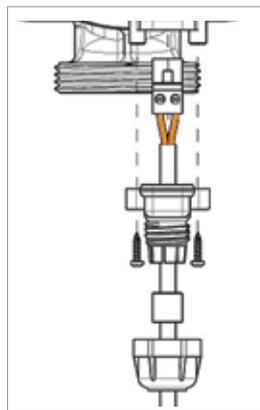
Askoll Energy Saving features adjustable operating curves by positioning the regulator at any point between the Min and Max positions; as a result it is possible to meet any installation requirements (from the single pipe, to the most modern and sophisticated systems) and ensure optimum performance.

Installing a traditional three-speed circulator is not always possible to operate the circulator at the optimum working point of the system. Being able to gradually adjust the speed, it is possible to select the exact working point across the range.

The **Askoll Energy Saving** circulator allows to cover the entire operating range from 1.5 m to 6 m of head.

Askoll Energy Saving replaces entire ranges of traditional circulators: the warehouse management becomes much easier.

4. EASY INSTALLATION AND ADJUSTMENT



- **Ready answer:** maximum ease in selecting the best suited circulator to the single installation.
- **Easy installation**
- **Fast intervention**
- **4 possible positions of the connection box**

Askoll Energy Saving circulators are equipped with a special cable gland: just plug the two wires to the terminal board and connect the same with the suitable joint placed on the motor: very fast.

The adjustment of **Askoll Energy Saving** circulators is simple and intuitive: simply turn the regulator to select the desired operating curve.

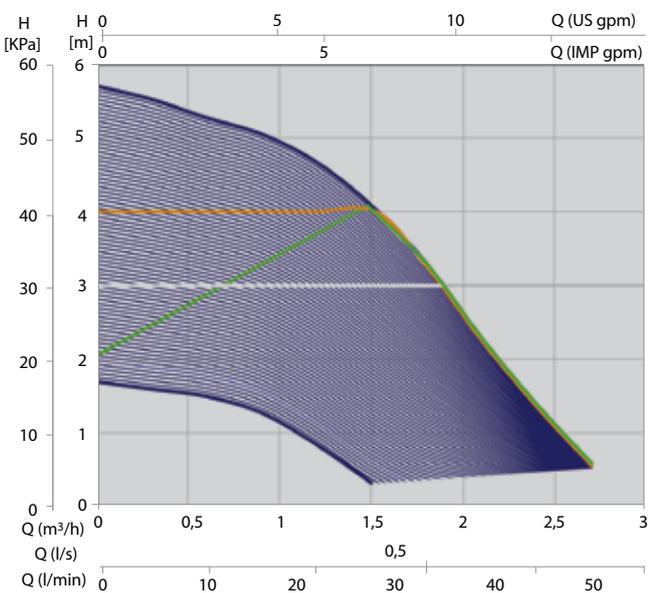
ENERGY SAVING

Real time diagnostics: immediate check at all times.

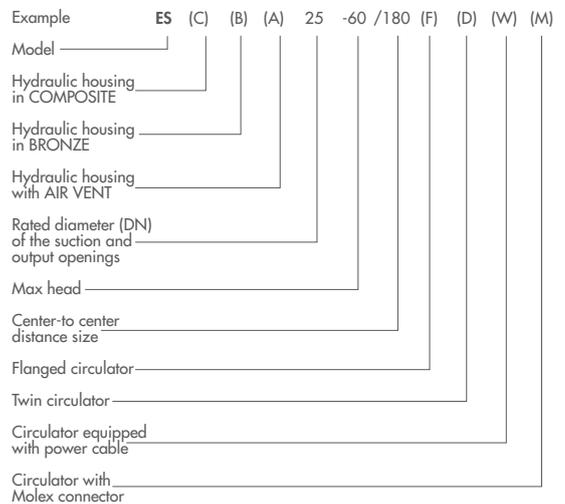
| Program | Light | Program | Light | Red light |
|------------------------------|------------------|------------------------------|-----------------|--|
| Program P (Δp-v) | Green light | Program C3 (Δp-c) - H=3m | White light | WARNING! The circulator is blocked, but is still power supplied. |
| Program C4 (Δp-c) - H=4m | Orange light | Program Min-Max | Blue light | |

A warning light provides information about the operation status of the circulator, with different colors.

> ENERGY SAVING MODELS



Model description



| TYPE | Progr: | 230 V A | P abs W | Q | Q | | | | | | | |
|----------|--------------------|------------|------------|---|------|------|------|------|------|------|------|------|
| | | | | | m³/h | 0,0 | 0,5 | 1,0 | 1,5 | 2,0 | 2,5 | 2,7 |
| ES 15-60 | Max | 0,40 | 53 | H | m | 0,0 | 8,3 | 16,6 | 25,0 | 33,3 | 41,6 | 45,0 |
| | Min | 0,08 | 8,4 | | | 5,70 | 5,40 | 4,90 | 4,10 | 2,70 | 1,30 | 0,60 |
| ES 25-60 | P (Δp-v) | 0,40 | 53 | | | 1,70 | 1,50 | 1,20 | 0,30 | - | - | - |
| | | | | | | 2,10 | 2,80 | 3,40 | 4,10 | 2,70 | 1,30 | 0,60 |
| ES 32-60 | C3 (Δp-c) - H = 3m | 0,40 | 53 | | | 3,00 | 3,00 | 3,00 | 3,00 | 2,70 | 1,30 | 0,60 |
| | | | | | | 4,00 | 4,00 | 4,00 | 4,00 | 2,70 | 1,30 | 0,60 |

APPLICATIONS

Askoll Energy Saving models are innovative circulators with synchronous technology, designed and manufactured especially for their application in **heating and circulation plants, in domestic and commercial buildings.**

FEATURES

Askoll Energy Saving circulators are of a **wet rotor** type, driven by a synchronous motor controlled by an on board inverter.

MOTOR TECHNICAL DATA

Permanent Magnet synchronous motor controlled by INVERTER

| | |
|---------------------------|---|
| Power supply | 1 x 230 V (-10% + 6%) - 50 Hz |
| Insulation class | H |
| Protection class | IP 44 |
| Appliance class | II |
| Overload protection | Automatic, with electronic release function of the rotor; Protection with thermal protection |
| External motor protection | Not required |

PUMP TECHNICAL DATA

| | |
|--|---|
| Allowed temperature field* | from +2° C to +95° C |
| Ambient temperature | from +0° C to +40° C |
| Maximum operating pressure | 0.6 MPa - 6 bar |
| Storage conditions | -20° C to +70° C with RH 95% at 40° C |
| Sound pressure level | <43 dB (A) |
| Maximum percentage of glycol | 40% |
| The construction complies with ECM regulations | EN 61000 - 3 -2 / EN 61000 - 3 -3 / EN 55014 - 1 / EN 55014 - 2 |
| EEL | ≤0,27 - Part 2** |

The pump housing is cathaphoresis treated and resistant to corrosion caused by the formation of condensation.

* To avoid condensation in the motor and the electronics the temperature of the pumped liquid must always be greater than the ambient temperature.

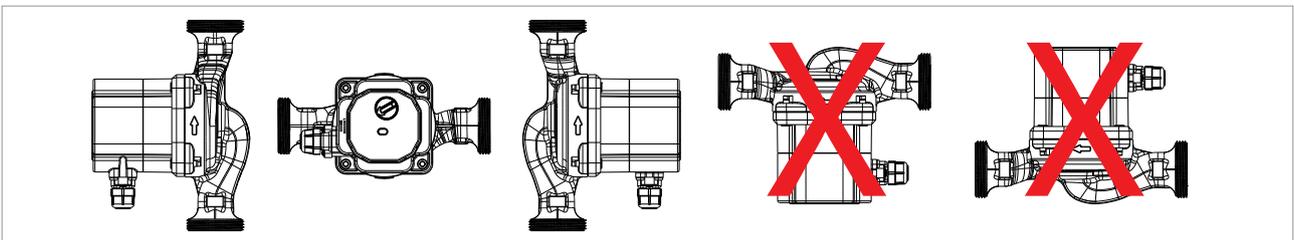
** The benchmark for most efficient circulators is EEL ≤ 0,20.

PUMPED LIQUIDS

Askoll Energy Saving circulators are designed for pumping clean liquids, non-aggressive for the constituent materials and free of solid particles that might damage the constituent bodies. **They should not be used for pumping flammable liquids and/or explosives.**

> INSTALLATION

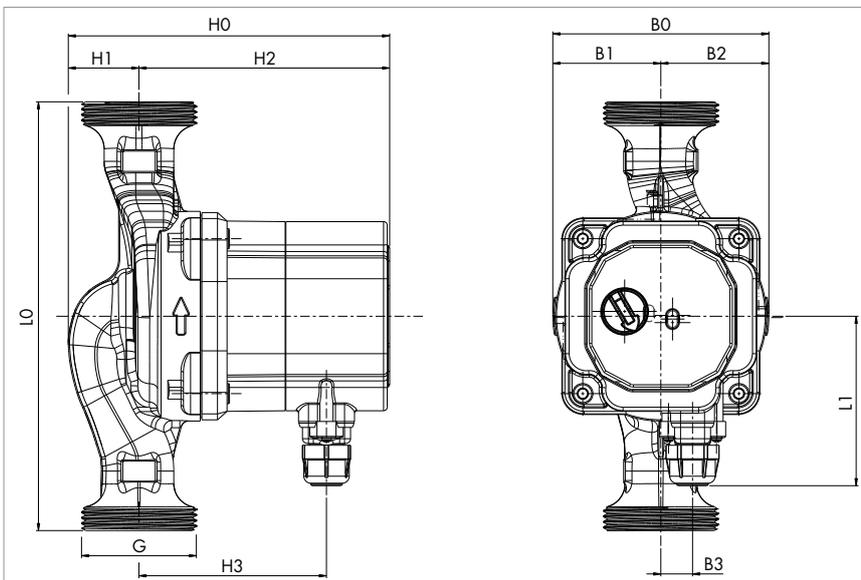
Askoll Energy Saving circulators have to be installed always with the motor shaft horizontal.



Ensure that the pressure at the inlet of the circulator is at least equal to the minimum value required.

You should not start the circulator before you fill and bleed the hydraulic system.

> DIMENSIONS, WEIGHTS



| TYPE | THREAD | PUMP DIMENSIONS | | | | | | | | | | SHIP. VOL. | WEIGHT ABOUT | |
|----------------|---------|-----------------|----|----|----|----|----|------|----|-----|----|------------|-------------------|------|
| | | G | L0 | L1 | B0 | B1 | B2 | B3 | H0 | H1 | H2 | | | H3 |
| | | | | | | | | | | | | | - | - |
| | | | | | | | | [mm] | | | | | [m ³] | [kg] |
| ES 15 - 60/130 | G 1 | 130 | 71 | 90 | 45 | 45 | 13 | 134 | 30 | 104 | 78 | 0,0036 | 1,67 | |
| ES 25 - 60/130 | G 1 1/2 | 130 | 71 | 90 | 45 | 45 | 13 | 134 | 30 | 104 | 78 | 0,0036 | 1,81 | |
| ES 25 - 60/180 | G 1 1/2 | 180 | 71 | 90 | 45 | 45 | 13 | 134 | 30 | 104 | 78 | 0,0036 | 1,96 | |
| ES 32 - 60/180 | G 2 | 180 | 71 | 90 | 45 | 45 | 13 | 134 | 30 | 104 | 78 | 0,0036 | 2,10 | |

> IT MEETS THE REQUIREMENTS OF DIFFERENT SYSTEMS

The **Askoll Energy Saving** circulator allows to cover the entire operating range from 1.5 m to 6 m of head. **Askoll Energy Saving** replaces entire ranges of traditional circulators.

REPLACEMENT LIST

List of circulators that could be replaced by **Askoll Energy Saving**.



| BRAND | MODEL |
|----------|-----------------|
| Grundfos | Alpha 2L 15-40 |
| Grundfos | Alpha 2L 25-40 |
| Grundfos | Alpha 2L 32-40 |
| Grundfos | Alpha 2L 25-60 |
| Grundfos | Alpha 2L 32-60 |
| Grundfos | Alpha 15-40 |
| Grundfos | Alpha 25-40 |
| Grundfos | Alpha 32-40 |
| Grundfos | Alpha 25-60 |
| Grundfos | Alpha 32-60 |
| Grundfos | Alpha+ 15-40 |
| Grundfos | Alpha+ 25-40 |
| Grundfos | Alpha+ 32-40 |
| Grundfos | Alpha+ 25-60 |
| Grundfos | Alpha+ 32-60 |
| Grundfos | Alpha Pro 15-40 |
| Grundfos | Alpha Pro 25-40 |
| Grundfos | Alpha Pro 32-40 |
| Grundfos | Alpha Pro 25-60 |
| Grundfos | Alpha Pro 32-60 |
| Grundfos | UPE 25-25 |
| Grundfos | UPE 25-40 |
| Grundfos | UPE 25-45 |
| Grundfos | UPE 25-60 |
| Grundfos | UPE 32-25 |
| Grundfos | UPE 32-40 |
| Grundfos | UPE 32-45 |
| Grundfos | UPE 32-60 |
| Grundfos | UPS 15-50 |
| Grundfos | UPS 15-60 |
| Grundfos | UPS 25-20 |
| Grundfos | UPS 25-25 |
| Grundfos | UPS 25-30 |
| Grundfos | UPS 25-40 |
| Grundfos | UPS 25-50 |
| Grundfos | UPS 25-60 |
| Grundfos | UPS 32-20 |
| Grundfos | UPS 32-25 |

| BRAND | MODEL |
|----------|---------------------|
| Grundfos | UPS 32-30 |
| Grundfos | UPS 32-40 |
| Grundfos | UPS 32-50 |
| Grundfos | UPS 32-60 |
| Wilco | Stratos Pico 15/1-4 |
| Wilco | Stratos Pico 15/1-6 |
| Wilco | Stratos Pico 25/1-4 |
| Wilco | Stratos Pico 25/1-6 |
| Wilco | Stratos Pico 30/1-4 |
| Wilco | Stratos Pico 30/1-6 |
| Wilco | Stratos Eco 25/1-3 |
| Wilco | Stratos Eco 25/1-5 |
| Wilco | Stratos Eco 30/1-3 |
| Wilco | Stratos Eco 30/1-5 |
| Wilco | Smart A 25/4 |
| Wilco | Smart B 25/6 |
| Wilco | Star RS 15/4 |
| Wilco | Star RS 15/6 |
| Wilco | Star RS 25/2 |
| Wilco | Star RS 25/4 |
| Wilco | Star RS 25/6 |
| Wilco | Star RS 30/2 |
| Wilco | Star RS 30/4 |
| Wilco | Star RS 30/6 |
| Wilco | Sta-E 15/1-3 |
| Wilco | Star-E 15/1-5 |
| Wilco | Star-E 20/1-3 |
| Wilco | Star-E 20/1-5 |
| KSB | RIO C 15-60 |
| KSB | RIO C 25-40 |
| KSB | RIO C 25-60 |
| KSB | RIO C 32-40 |
| KSB | RIO C 30-60 |
| KSB | RIOTronic ECO 25-40 |
| KSB | RIOTronic ECO 25-60 |
| KSB | RIOTronic ECO 30-40 |
| KSB | RIOTronic ECO 30-60 |
| DAB | AC35 |

| BRAND | MODEL | BRAND | MODEL |
|---------|-----------------|--------|------------|
| DAB | AC55 | BIRAL | MX 10-2 |
| DAB | EVOTRON 40 | BIRAL | MX12 |
| DAB | EVOTRON 60 | BIRAL | MX12-2 |
| DAB | VA 25 | BIRAL | MC 10 |
| DAB | VA 35 | BIRAL | MC 12 |
| DAB | VA 55 | BIRAL | ME 12 |
| DAB | VA 65 | BIRAL | ME 12-2 |
| DAB | VEA 35 | BIRAL | ME 13 |
| DAB | VEA 55 | BIRAL | ME 13-2 |
| LAING | Ecocirc Vario 4 | LOWARA | TLC 15-2.5 |
| LAING | Ecocirc Vario 6 | LOWARA | TLC 25-2.5 |
| LAING | Ecocirc Auto 4 | LOWARA | TLC 32-3.2 |
| LAING | Ecocirc Auto 6 | LOWARA | TLC 15-4 |
| SALMSON | Sirix Jr 30 | LOWARA | TLC 25-4 |
| SALMSON | Sirix Jr 50 | LOWARA | TLC 32-4 |
| SALMSON | NXL- NYL 13-25 | LOWARA | TLC 15-5 |
| SALMSON | NXL 13-32 | LOWARA | TLC 25-5 |
| SALMSON | NYL- 13-15 | LOWARA | TLC 32-5 |
| SALMSON | NXL- NYL 33-25 | LOWARA | TLC 15-6 |
| SALMSON | NXL- 33-32 | LOWARA | TLC 25-6 |
| SALMSON | NYL 33-15 | LOWARA | TLC 32-6 |
| SALMSON | NYL 33-20 | LOWARA | EA 15-4 |
| SALMSON | NXL-NYL 53-25 | LOWARA | EA 15-6 |
| SALMSON | NXL 53-32 | LOWARA | EA 25-4 |
| SALMSON | NYL 53-15 | LOWARA | EA 25-6 |
| BIRAL | AX12 | LOWARA | EA 32-4 |
| BIRAL | AX12-2 | LOWARA | EA 32-6 |
| BIRAL | AX13 | LOWARA | EV 15-4 |
| BIRAL | A 12 | LOWARA | EV 15-6 |
| BIRAL | A 12-2 | LOWARA | EV 25-4 |
| BIRAL | A 13 | LOWARA | EV 25-6 |
| BIRAL | A 13-2 | LOWARA | EV 32-4 |
| BIRAL | A 14 | LOWARA | EV 32-6 |
| BIRAL | MX1 | | |

NB: Circulators, even if they are interchangeable, do not necessarily have the same performance and/or construction features. Check the consistency of the pump body size (center-to-center distance), inlet and outlet diameter, power supply (three phase / single phase), maximum operating pressure and relation between circulator and system curves.

■ **On the installer's side:**

Choosing the right model to install becomes extremely easy.

■ **On the distributor's side:**

Stock management becomes easy, convenient and inexpensive.

For further information see: www.askoll.com





DOMESTIC HOT WATER

The hot water that we use every day for taking a shower and washing dishes is generally produced using electricity. The transformation of electricity into thermal energy involves the loss of a great quantity of energy and weighs heavily on both the environment and the wallet.

Just think - the cost of domestic hot water accounts **for up to 40%** of total household energy costs. For a family of four, this costs about 400 Euro a year, not to mention the two tons of carbon dioxide released in the atmosphere.

Consumption can be reduced in part by using an efficient circulator: how many times, for example, have you turned on the cold water and simply let it run because you have to wait for it to get hot?

An optimum circulator can adjust its activity based on the system demand. **Askoll circulator models not only provide flexibility and adaptability, but also consume up to 80% less compared with conventional circulators.**

Their intelligent electronic system delivers hot water immediately after you turn on the faucet: and this prevents wasting cold water and energy loss while heating water as well as ensuring comfort. For technology that is in tune with humankind, the community, and the planet.

Askoll E-Pure is a circulator for domestic hot water. It is driven by a permanent magnet synchronous motor controlled by an embedded on board inverter. Its benefits are extraordinary:

1. **MAXIMUM ENERGY EFFICIENCY**
2. **A SINGLE MODEL FOR "INFINITE" INSTALLATIONS**
3. **EASY INSTALLATION**

-  **SAVINGS**
Up to 80% less than traditional pumps
-  **TECHNOLOGY**
Best available technology - PM Motor
-  **ENVIRONMENT**
protection
-  **INVERTER TECH**
Best performance with high flexibility



The hydraulic group of Askoll E-Pure circulators is validated by the following European organizations and institutes:

- TIFQ (IT)
- KTW (DE)
- DVGW W270 (DE)
- ACS (FR)
- WRAS (GB)

The products meet the requirements of the laws, laying down rules concerning technical equipment for the treatment of domestic hot water. Installation, maintenance or repair of the circulators must be performed by authorized persons and is not allowed the use of accessories and spare parts that are not original. Inappropriate and/or different uses from those indicated in the instructions manual are not allowed, if not previously agreed in writing by Askoll.

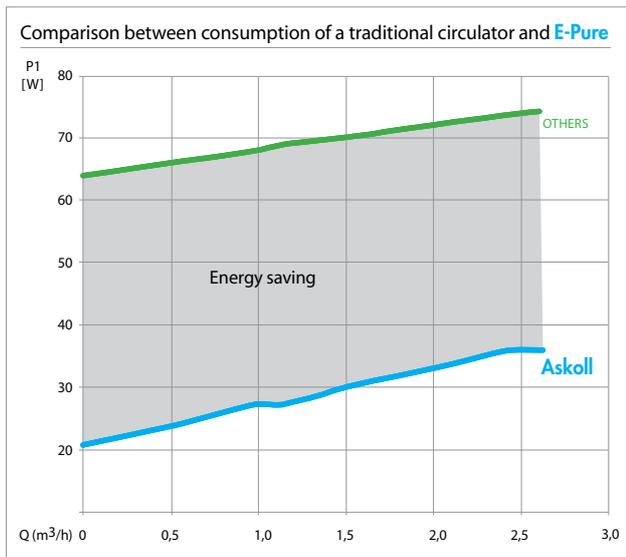


1. MAXIMUM ENERGY EFFICIENCY MORE SAVINGS FOR FAMILIES

The **Askoll E-Pure** technology is the most advanced manufacturing solution available on the market. The majority of the circulators for domestic hot water currently on the market are of traditional asynchronous type and, often, with single speed.

Askoll E-Pure works with a permanent magnet synchronous motor with adjustable work speeds according to the actual needs of each installation.

It consumes up to 80% less electricity than traditional circulators with equivalent performance.



Should every family have Askoll components be installed in their (recirculation, heating) systems and also in the washing machine and dishwasher, **it would be possible to reduce energy user's costs by 20%**, thus saving economic and environmental resources and, at the same time, attaining **ideal comfort levels in their living spaces.**

■ On the environment's side:

Askoll is committed to designing an innovative, top rate and environmentally friendly product.

Despite recirculation pumps for domestic hot water are excluded from the voluntary agreement concerning energy labelling, Askoll has been committed to achieving the highest energy efficiency standards, thus contributing to safeguarding the planet's resources.

■ On the families' side:

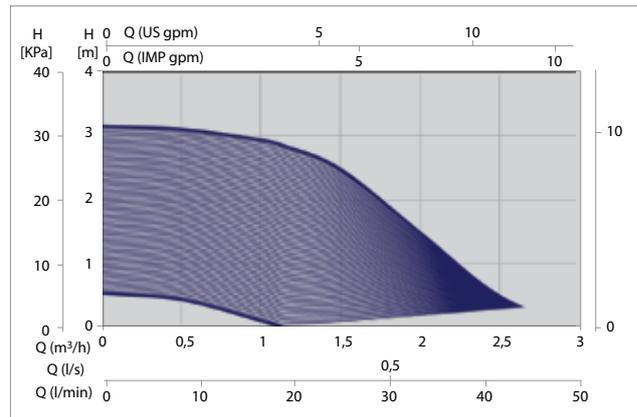
The use of **Askoll E-Pure** allows cutting significantly the electricity bill costs. Motor technology offering very high efficiency allows saving the power equivalent to the consumption of almost two months of use: **an economic benefit that can be actually perceived!**

2. A SINGLE MODEL FOR "INFINITE" INSTALLATIONS WITH THE SAME TERRIFIC EFFICIENCY IT MEETS THE REQUIREMENTS OF DIFFERENT SYSTEMS

Askoll E-Pure is "universal": a single model replaces up to 5 models offered by other manufacturers.

It covers over 80% of installations for the recirculation of domestic hot water and it can be used in any domestic environment, from the apartment to the single and two-family house.

It shows maximum performance equivalent to 4 m head and flow rates up to 2.5 m³/h.



■ On the installer's side:

Choosing the right model to install becomes extremely easy.

■ On the distributor's side:

Stock management becomes easy, convenient and inexpensive.

3. EASY INSTALLATION AND SETTING RAPID AND PERFECT INTERVENTIONS

The special cable pland with which Askoll has equipped this circulator ensures maximum intervention speed. Just connect the two conductors to the terminal board and then connect this latter to the connector on the motor: very fast!

■ On the installer's side:

The setting of **Askoll E-Pure** is simple and intuitive. Simply turn the controller to select the desired operating curve and achieve ideal performance.

Single speed circulators often do not allow to operate in the best conditions for the system. The smart electronics of **Askoll E-Pure** allows to vary the speed gradually and to adapt circulator performance to the features of each individual system. Each installation is a success: easy!

■ **Real time diagnostics:** immediate check at all times.



The operation indicator (LED) provides information about the status of the circulator.



Flashing GREEN LIGHT:

as a result of a setting change, the operation indicator flashes briefly. The LED indicates that the circulator is modulating its performance.



GREEN LIGHT:

indicates a proper operation of the circulator.



RED LIGHT:

the circulator is blocked.

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



The circulator attains minimum performance level. The circulator produces a maximum head of 0.6 m with a flow rate of 0 l/h and a head of about 0.2 m with a flow rate of 1,000 l/h.



Circulator performance is equivalent to a circulator with a maximum head of 2 m. The circulator produces a head of about 1.7 m with a flow rate of 1,000 l/h.



Circulator performance is equivalent to a circulator with a maximum head of 1 m. The circulator produces a head of about 0.6 m with a flow rate of 1,000 l/h.



The circulator attains maximum performance. The circulator produces a head of about 3 m with a flow rate of 1,000 l/h.

APPLICATIONS

Askoll E-Pure models are innovative synchronous technology circulators designed and manufactured specifically for the circulation of domestic hot water, or liquids in the food industry. **This circulator is suitable for drinking water only.**

MANUFACTURING FEATURES

Askoll E-Pure circulators are wet rotor type, driven by a permanent magnet synchronous motor controlled by an on board INVERTER.

MOTOR TECHNICAL DATA

Permanent magnet synchronous motor controlled by INVERTER

| | |
|---------------------------|--|
| Power supply | 1 X 230 V (-10%; + 6%) - 50 Hz |
| Protection class | IP 44 |
| Device class | II |
| Overload protection | Automatic, with rotor electronic release function; Protection by means of thermal protector |
| External motor protection | Not required |

PUMP TECHNICAL DATA

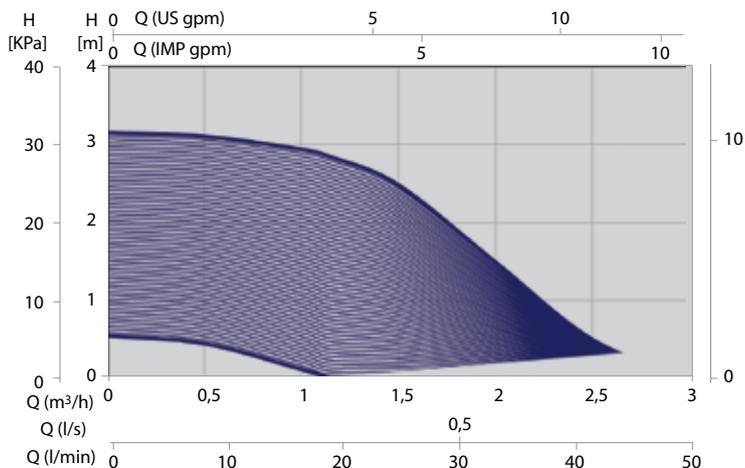
| | |
|---|---|
| Liquid temperature* | +2°C to +95°C |
| Ambient temperature | +0°C to +40°C |
| Maximum operating pressure | 1.0 MPa - 10 bar |
| Storage conditions | -20°C to +70°C with R.H. of 95% at 40°C |
| Sound pressure level | < 43 dB(A) |
| Maximum percentage of glycol | 40% |
| Construction complies with EMC directives | EN 61000 - 3 - 2 / EN 61000 - 3 - 3 / EN 55014 - 1 / EN 55014 - 2 |

* To avoid condensation in the motor and the electronics the temperature of the pumped liquid must always be greater than the ambient temperature.

PUMPED LIQUIDS

Askoll E-Pure circulators are designed for pumping clean liquids, non-aggressive for the constituent materials and free of solid particles that may affect the constituent parts. **They shall not be used for pumping flammable and/or explosive liquids.**

> ASKOLL E-PURE MODELS



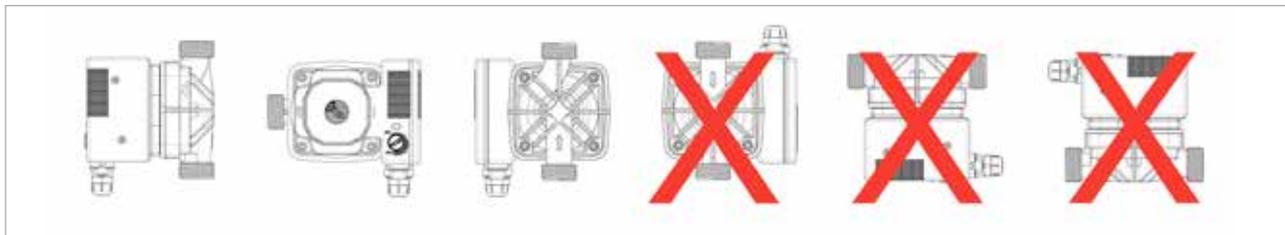
Model description

| | | | | | | | | | | | |
|--|----|-----|-----|-----|----|-----|------|-----|-----|-----|-----|
| Example | EP | (C) | (B) | (A) | 15 | -40 | /130 | (F) | (D) | (W) | (M) |
| Model | | | | | | | | | | | |
| Hydraulic housing in COMPOSITE | | | | | | | | | | | |
| Hydraulic housing in BRONZE | | | | | | | | | | | |
| Hydraulic housing with AIR VENT | | | | | | | | | | | |
| Rated diameter (DN) of the suction and output openings | | | | | | | | | | | |
| Max head | | | | | | | | | | | |
| Center-to-center distance size | | | | | | | | | | | |
| Flanged circulator | | | | | | | | | | | |
| Twin circulator | | | | | | | | | | | |
| Circulator equipped with power cable | | | | | | | | | | | |
| Circulator with Molex connector | | | | | | | | | | | |

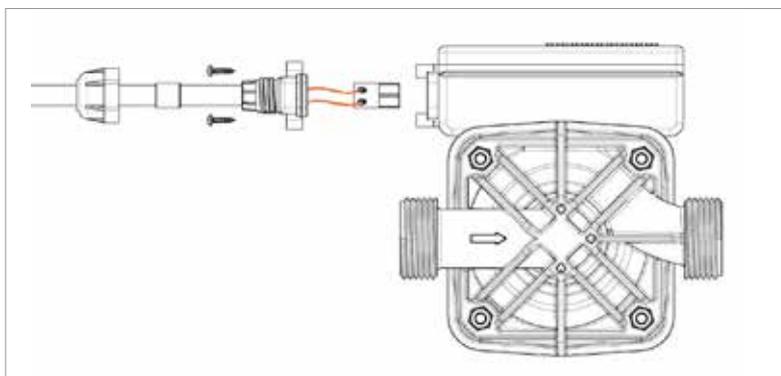
| V | TYPE | 230V A | P ₁ W | Flow rate (Q) | | | | | | |
|-----|------------|-----------|---------------------|---------------|-----|-----|------|------|------|------|
| | | | | m³/h | 0 | 0,5 | 1,0 | 1,5 | 2,0 | 2,5 |
| max | EP C 10-40 | 0.41 | 48 | l/min | 0 | 8,3 | 16,6 | 25,0 | 33,3 | 41,6 |
| min | EP C 15-40 | 0.08 | 8 | m | 3,2 | 3,1 | 2,9 | 2,5 | 1,5 | 0,5 |
| | | | | | 0,6 | 0,5 | 0,1 | — | — | — |

> INSTALLATION

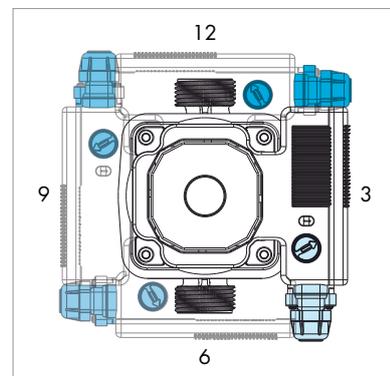
Askoll E-Pure circulators have to be always installed with the motor shaft in **horizontal position**.



Ensure that the pressure at the inlet of the circulator is at least equal to the minimum value required. You should not start the circulator before you fill and bleed the hydraulic system.

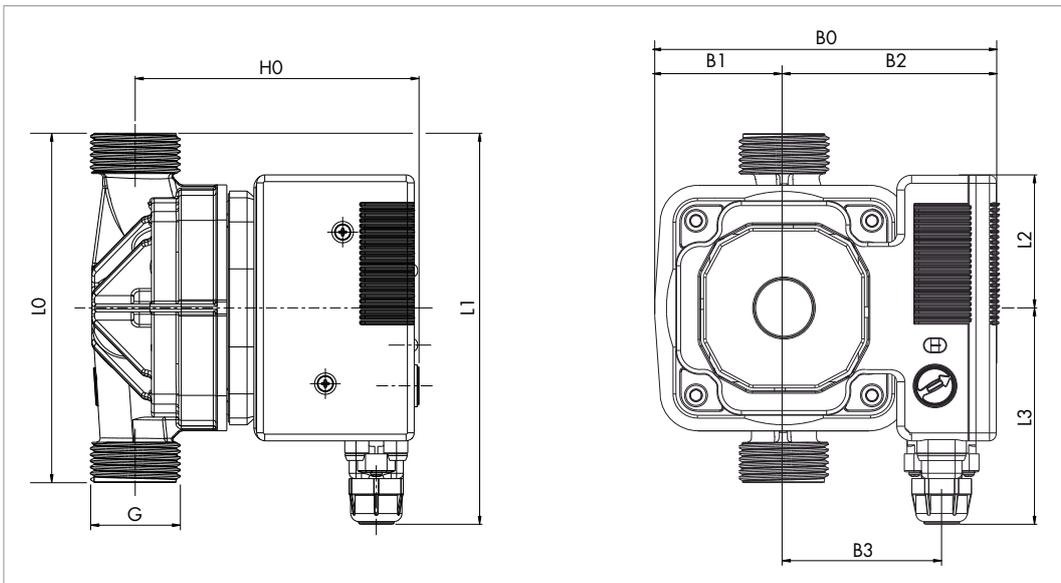


The **special cable pland** allows a rapid electrical connection: connect the two conductors (orange) to the terminal board and connect this latter into the suitable compartment of the connection box.



Possible positions of the connection box.

> DIMENSIONS, WEIGHTS



| TYPE | THREAD | | PUMP DIMENSIONS | | | | | | | | SHIP. VOL. | WEIGHT ABOUT |
|------------------|--------|-----|-----------------|----|----|------|----|----|----|-----|-------------------|--------------|
| | G | L0 | L1 | L2 | L3 | B0 | B1 | B2 | B3 | H0 | | |
| | - | | | | | [mm] | | | | | [m ³] | [kg] |
| EP C 10 - 40/130 | G 3/4 | 130 | 146 | 49 | 81 | 127 | 48 | 79 | 58 | 105 | 0,0036 | 1,55 |
| EP C 15 - 40/130 | G 1 | 130 | 146 | 49 | 81 | 127 | 48 | 79 | 58 | 105 | 0,0036 | 1,55 |

> IT MEETS THE REQUIREMENTS OF DIFFERENT SYSTEMS

Askoll E-Pure is "universal": a single model covers over 80% of installations for the recirculation of domestic hot water.

REPLACEMENT LIST

List of circulators that could be replaced by **Askoll E-Pure**.

| BRAND | MODEL | BRAND | MODEL |
|----------|-------------------------|---------|------------------------|
| BIRAL | AXW 10 smart (PM motor) | HALM | BUP 20-3.0 U |
| BIRAL | AXW 12 smart (PM motor) | HALM | BUP 20-4.0 U |
| BIRAL | AXW 13 smart (PM motor) | LOWARA | EB/EBV 15-1 (PM motor) |
| BIRAL | AXW 12 (PM motor) | LOWARA | EB/EBV 20-1 (PM motor) |
| BIRAL | AXW 13 (PM motor) | LOWARA | EBV xx-3 (PM motor) |
| BIRAL | WX10 | LOWARA | TLCB 1.5 |
| BIRAL | WX12 | LOWARA | TLCB 3.0 |
| BIRAL | WX13 | KSB | C 20-10 |
| BIRAL | WX14 | KSB | R 12-1 E |
| DAB | VS 8 | KSB | C 12-15 |
| DAB | VS 16 | KSB | C 12-30 |
| DAB | VS 35 | KSB | C 20-15 |
| GRUNDFOS | UP 15-13 B | KSB | C 20-30 |
| GRUNDFOS | UP 15-14 B | SALMSON | SB 04 – 15 |
| GRUNDFOS | UP 15-15 N | SALMSON | THERMO SB 04 – 15 V |
| GRUNDFOS | UP 15-25 N | SALMSON | NSB 05-15B |
| GRUNDFOS | UP 20-14 B | SALMSON | NSB 10-15B |
| GRUNDFOS | UP 20-15 N | SALMSON | NSB 15-15B |
| GRUNDFOS | UP 20-30 N | WILO | Star Z NOVA (PM motor) |
| GRUNDFOS | UM 24-08 N | WILO | Star-Z 15 |
| GRUNDFOS | UM 25-08 N | WILO | Star-Z 15 A |
| GRUNDFOS | UM 25-12 N | WILO | Star-Z 20/1 |
| GRUNDFOS | UPS 25-40 B | WILO | Star-Z 25/2 EM |
| HALM | BUP 20-1.5 U | | |



NB: Circulators, even if they are interchangeable, do not necessarily have the same performance and/or construction features. Check the consistency of the pump body size (center-to-center distance), inlet and outlet diameter, power supply (three phase / single phase), maximum operating pressure and relation between circulator and system curves.

■ On the installer's side:

Choosing the right model to install becomes extremely easy.

■ On the distributor's side:

Extraordinary reduction of storage fixed costs: up to 80% less!
Stock management becomes easy, convenient and inexpensive.

For further information see: www.askoll.com





SOLAR THERMAL

Solar power systems use the sun's energy to generate heat and thus employing renewable clean energy: they reduce the emission of harmful substances, reduce the use of non-renewable resources, and therefore help protect the environment.

A solar thermal system produces **up to 40% less carbon dioxide** than a conventional plant.

A good solar thermal system also offers significant economic benefits, since it can cover almost all of a family's hot water needs. However, even the most advanced systems often use conventional circulators which consume a great deal of energy: it makes no sense! **To take advantage of all the sun's energy you need to have an intelligent circulator.**

Askoll has developed circulators for solar thermal systems which, thanks to their innovative technology, are able to circulate every single kWh of energy captured by the panels.



ENERGY SAVING SOLAR

The **Askoll Energy Saving Solar** circulator is a wet rotor type, driven by a permanent magnet synchronous motor (PM motor) controlled by an on board inverter. The **Askoll Energy Saving Solar** models have been specifically designed for renewable energy solar thermal systems and provide tremendous advantages:

1. ENERGY SAVING

3. IDEAL PERFORMANCE



SAVINGS

Up to 80% less than traditional pumps



TECHNOLOGY

Best available technology - PM Motor



ENVIRONMENT

protection



INVERTER TECH

Best performance with high flexibility



2. COMPACT DESIGN

4. EASY INSTALLATION



1. ENERGY SAVING

LET YOUR SOLAR ENERGY FLOW

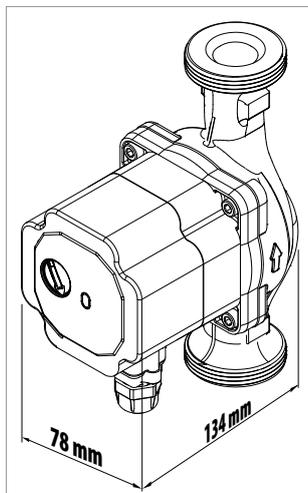
The sun provides huge quantities of radiant energy which can be harnessed with solar thermal systems and used to generate heat, thus allowing us to save precious resources. However, in this type of system, even the most advanced ones, conventional circulators are often used which consume a great deal of energy.

The **Askoll Energy Saving Solar** models are high-efficiency variable speed circulators characterized by an extremely low Energy Efficiency Index- EEI. EEI is a measurement used to indicate energy consumption: the lower the EEI the higher the energy efficiency. Compared to conventional circulators currently on the market with equivalent performance, they consume up to 80% less electricity: this means they ensure greater respect for the environment and more savings for families.

Askoll Energy Saving Solar meet the requirements of Commission Regulations (EC) no. 641/2009 and no. 622/2012 (EuP and ErP Directives) which also call for a drastic reduction of energy consumption of circulators for solar thermal systems.

Askoll circulators are always a winning choice, also in economic terms. They are the ideal replacement, even in existing systems, for technically obsolete circulators: in less than 2 years it is possible to get a return on your investment and start to earn.

2. COMPACT DESIGN: THE SMALLEST OF ITS CLASS



Compared to models currently on the market with equivalent performances, **Askoll Energy Saving Solar** is the most compact circulator available on the market. They provide maximum power for the minimum footprint.

3. IDEAL PERFORMANCE

Heating domestic water is one of the best applications for a solar thermal system. Solar energy can also be used for heating interiors, even if the solar radiation available during the colder months is much less than in the summer. The Askoll models for solar heat are perfectly suited to meet the demands of systems in domestic and residential environments. In fact the circulator is equipped with an advanced electronic control used to adjust the performance of the circulator to meet the required specifications of the system.

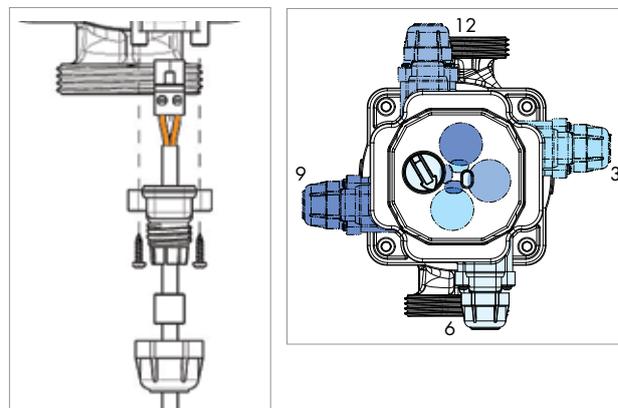
The circulator and the electronic control unit that regulates the flow of liquid in the primary circuit must always be efficient. A block in circulation can cause the primary

fluid to boil and result in damage, sometimes critical, to the solar panel. Therefore, it is important that you choose the right circulator size carefully. If the circulator capacity is too low, the temperature within the collector circuit may fluctuate a great deal thus resulting in poor efficiency. On the other hand, a circulator that is too powerful will consume unnecessarily large amounts of energy.

Askoll Energy Saving Solar features manually adjustable operating curves by positioning the selector at any point between the Min and Max position; as a result, it is possible to meet any installation requirements and to always ensure excellent performance. When installing a conventional three-speed circulator is not always possible to operate the circulator at the optimum working point of the system. The **Askoll Energy Saving Solar** circulator is able to cover the entire operating range from 1.5 to 6 m of head. **Askoll Energy Saving Solar** replaces the entire range of conventional circulators: warehouse management becomes much easier.

Askoll Energy Saving Solar is suitable for both standard High-Flow solar systems, where the temperature rises slowly and evenly with the solar irradiance, and for Low-Flow solar systems, where the thermovector fluid is heated up more intensely. The Askoll circulator is also suitable for all systems that provide for circulation to stop via the control unit in accordance with the set ΔT and to resume, after a certain time in order to reestablish the exchange between collectors and boiler.

4. EASY INSTALLATION AND ADJUSTMENT

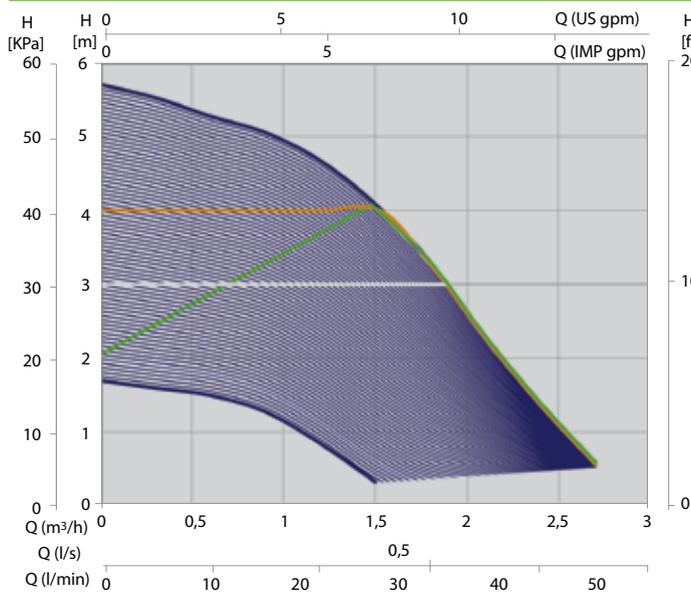


- **Ready answer:** maximum ease in selecting the best suited circulator to the single installation.
- **Easy installation**
- **Fast intervention**
- **4 possible positions of the connection box**

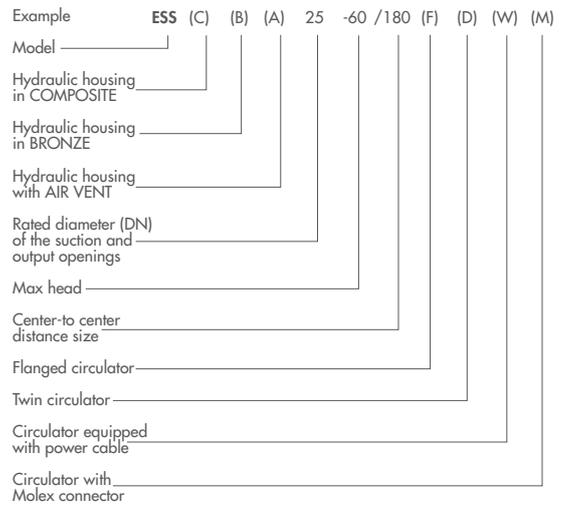
Askoll Energy Saving Solar circulators are equipped with a special cable gland: just plug the two wires to the terminal board and connect the same with the suitable joint placed on the motor: very fast.

The adjustment of **Askoll Energy Saving Solar** circulators is simple and intuitive: simply turn the regulator to select the desired operating curve.

> ASKOLL ENERGY SAVING SOLAR MODELS



Model description



| TYPE | Progr: | 230 V A | P abs W | Q | Q | | | | | | | |
|------------------------|--------------------|------------|------------|---|-------|------|------|------|------|------|------|------|
| | | | | | m³/h | 0,0 | 0,5 | 1,0 | 1,5 | 2,0 | 2,5 | 2,7 |
| | | | | | l/min | 0,0 | 8,3 | 16,6 | 25,0 | 33,3 | 41,6 | 45,0 |
| ESS 15-60 ESS 25-60 | Max | 0,40 | 53 | H | m | 5,70 | 5,40 | 4,90 | 4,10 | 2,70 | 1,30 | 0,60 |
| | Min | 0,08 | 8,4 | | | 1,70 | 1,50 | 1,20 | 0,30 | - | - | - |
| | P (Δp-v) | 0,40 | 53 | | | 2,10 | 2,80 | 3,40 | 4,10 | 2,70 | 1,30 | 0,60 |
| | C3 (Δp-c) - H = 3m | 0,40 | 53 | | | 3,00 | 3,00 | 3,00 | 3,00 | 2,70 | 1,30 | 0,60 |
| | C4 (Δp-c) - H = 4m | 0,40 | 53 | | | 4,00 | 4,00 | 4,00 | 4,00 | 2,70 | 1,30 | 0,60 |

APPLICATIONS

Askoll Energy Saving Solar models are innovative circulators based on synchronous technology designed and manufactured especially for use in renewable energy solar thermal systems, in biomass boilers and in all hot water heating systems.

FEATURES

Askoll Energy Saving Solar circulators are of a **wet rotor** type, driven by a synchronous motor controlled by an on board INVERTER.

MOTOR TECHNICAL DATA

Permanent Magnet synchronous motor controlled by INVERTER

| | |
|---------------------------|---|
| Power supply | 1 x 230 V (-10% + 6%) - 50 Hz |
| Insulation class | H |
| Protection class | IP 44 |
| Appliance class | II |
| Overload protection | Automatic, with electronic release function of the rotor; Protection with thermal protection |
| External motor protection | Not required |

PUMP TECHNICAL DATA

| | |
|--|---|
| Allowed temperature field* | da +2° C a +110° C |
| Ambient temperature | da +0° C a +40° C |
| Maximum operating pressure | 1.0 MPa - 10 bar |
| Storage conditions | -20° C to +70° C with RH 95% at 40° C |
| Sound pressure level | < 43 dB(A) |
| Maximum percentage of glycol | 40% |
| The construction complies with ECM regulations | EN 61000 - 3 - 2 / EN 61000 - 3 - 3 / EN 55014 - 1 / EN 55014 - 2 |

The pump housing is **cataphoresis treated and resistant to corrosion caused by the formation of condensation.**

* To avoid condensation in the motor and the electronics the temperature of the pumped liquid must always be greater than the ambient temperature.

PUMPED LIQUIDS

Askoll Energy Saving Solar circulators are designed for pumping clean liquids, non-aggressive for the constituent materials and free of solid particles that might damage the constituent bodies. **They should not be used for pumping flammable liquids and/or explosives.**

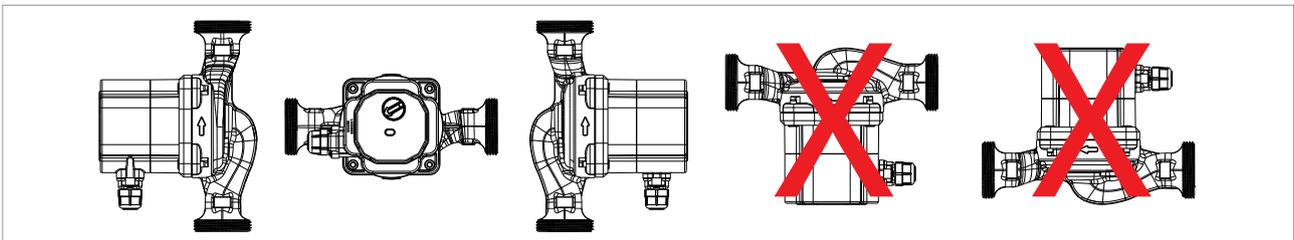
■ **Real time diagnostics:** immediate check at all times.

| Program | Light | Program | Light | Red light |
|---|---|---|--|--|
|  Program P (Δp-v) |  Green light |  Program C3 (Δp-c) - H=3m |  White light |  WARNING! <i>The circulator is blocked, but is still power supplied.</i> |
|  Program C4 (Δp-c) - H=4m |  Orange light |  Program Min-Max |  Blue light | |

A warning light provides information about the operation status of the circulator, with different colors.

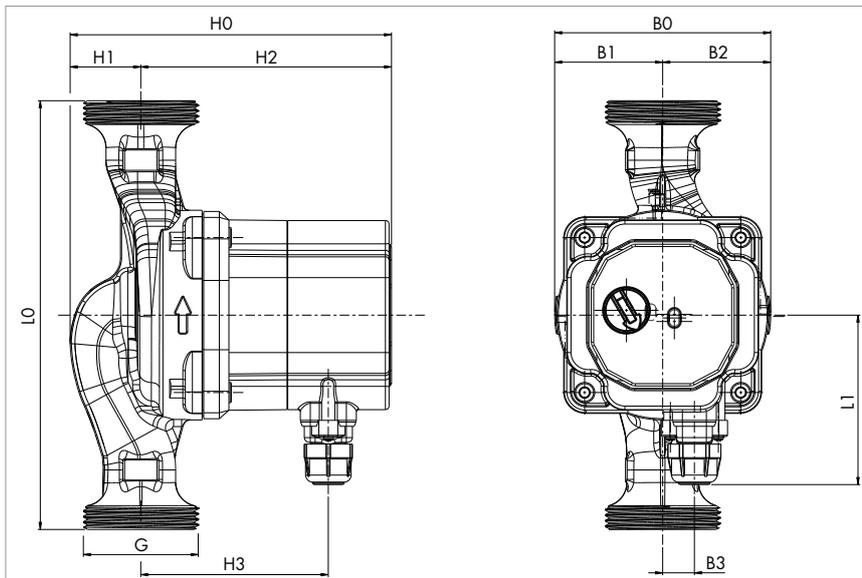
> INSTALLATION

Askoll Energy Saving circulators have to be installed always **with the motor shaft horizontal**.



Ensure that the pressure at the inlet of the circulator is at least equal to the minimum value required. You should not start the circulator before you fill and bleed the hydraulic system.

> DIMENSIONS, WEIGHT



| TYPE | THREAD | | PUMP DIMENSIONS | | | | | | | | | SHIP. VOL. | WEIGHT ABOUT |
|-----------------|---------|-----|-----------------|----|----|----|----|------|----|-----|----|-------------------|--------------|
| | G | L0 | L1 | B0 | B1 | B2 | B3 | H0 | H1 | H2 | H3 | | |
| | | | | | | | | | | | | - | - |
| | | | | | | | | [mm] | | | | [m ³] | [kg] |
| ESS 15 - 60/130 | G 1 | 130 | 71 | 90 | 45 | 45 | 13 | 134 | 30 | 104 | 78 | 0,0036 | 1,67 |
| ESS 25 - 60/130 | G 1 1/2 | 130 | 71 | 90 | 45 | 45 | 13 | 134 | 30 | 104 | 78 | 0,0036 | 1,81 |
| ESS 25 - 60/180 | G 1 1/2 | 180 | 71 | 90 | 45 | 45 | 13 | 134 | 30 | 104 | 78 | 0,0036 | 1,96 |



www.imq.it

**CERTIFICATO N.
CERTIFICATE N. 9105.ASK3**

SI CERTIFICA CHE IL SISTEMA QUALITA' DI
WE HEREBY CERTIFY THAT THE QUALITY SYSTEM OPERATED BY

ASKOLL HOLDING SRL

VIA INDUSTRIA 30 - 36031 DUEVILLE (VI)

UNITA' OPERATIVE
OPERATIVE UNITS

ASKOLL TRE SRL (1)

VIA INDUSTRIA 11 - 36031 DUEVILLE (VI)

ASKOLL P&C SRL (1)

VIA STATALE 99 - 14033 CASTELL'ALFERO (AT)

ASKOLL ROMANIA SRL (1)

SAT ARGESELU, COMUNA MĂRĂCINENI, NR. 537G, JUDEȚ ARGEȘ ROMANIA

ASKOLL SLOVAKIA SRO (1)

POTVORICE 331, 916 25 POTVORICE SLOVAKIA

ASKOLL SEI SRL (2)

VIA G. GALILEI 89/91 - 36066 SANDRIGO (VI)

E' CONFORME ALLA NORMA
IS IN COMPLIANCE WITH THE STANDARD

ISO 9001:2008

PER LE SEGUENTI ATTIVITA'
FOR THE FOLLOWING ACTIVITIES

- (1) Progettazione, produzione, assistenza e commercializzazione di motori a collettore universali, B.P.M., ad induzione, pompe di ricircolo e scarico e ventole tangenziali per elettrodomestici dinamici e sistemi di ventilazione. (2) Progettazione, produzione, assistenza di circolatori sincroni per impianti di riscaldamento e per la circolazione di acqua calda sanitaria domestica
- (1) Design, production, assistance and trading of commutator motors for dynamic household appliances, B.P.M. induction motors, pumps for dishwashers, draining pumps and ventilation systems.
- (2) Design, production and assistance of synchronous circulator pumps for heating systems and circulation in domestic hot water service systems

Riferirsi al manuale della qualità per l'applicabilità dei requisiti della norma ISO 9001:2008
Refer to quality manual for details of applications to ISO 9001:2008 requirements

IL PRESENTE CERTIFICATO E' SOGGETTO AL RISPETTO DEL
REGOLAMENTO PER LA CERTIFICAZIONE DEI SISTEMI DI GESTIONE
THE USE AND THE VALIDITY OF THE CERTIFICATE SHALL SATISFY THE
REQUIREMENTS OF THE RULES FOR CERTIFICATION OF MANAGEMENT SYSTEMS

| DATE: | PRIMA CERTIFICAZIONE FIRST CERTIFICATION | EMISSIONE CORRENTE CURRENT ISSUE | SCADENZA EXPIRY |
|-------|---|-------------------------------------|--------------------|
| | 1998-08-07 | 2013-01-31 | 2015-07-10 |

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EA: 19

ISO 9001:2008, ISO 14001:2004, ISO 19011:2011, IAF 1001:2011, IAF 1002:2011, IAF 1003:2011, IAF 1004:2011, IAF 1005:2011, IAF 1006:2011, IAF 1007:2011, IAF 1008:2011, IAF 1009:2011, IAF 1010:2011, IAF 1011:2011, IAF 1012:2011, IAF 1013:2011, IAF 1014:2011, IAF 1015:2011, IAF 1016:2011, IAF 1017:2011, IAF 1018:2011, IAF 1019:2011, IAF 1020:2011, IAF 1021:2011, IAF 1022:2011, IAF 1023:2011, IAF 1024:2011, IAF 1025:2011, IAF 1026:2011, IAF 1027:2011, IAF 1028:2011, IAF 1029:2011, IAF 1030:2011, IAF 1031:2011, IAF 1032:2011, IAF 1033:2011, IAF 1034:2011, IAF 1035:2011, IAF 1036:2011, IAF 1037:2011, IAF 1038:2011, IAF 1039:2011, IAF 1040:2011, IAF 1041:2011, IAF 1042:2011, IAF 1043:2011, IAF 1044:2011, IAF 1045:2011, IAF 1046:2011, IAF 1047:2011, IAF 1048:2011, IAF 1049:2011, IAF 1050:2011, IAF 1051:2011, IAF 1052:2011, IAF 1053:2011, IAF 1054:2011, IAF 1055:2011, IAF 1056:2011, IAF 1057:2011, IAF 1058:2011, IAF 1059:2011, IAF 1060:2011, IAF 1061:2011, IAF 1062:2011, IAF 1063:2011, IAF 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The motors, pumps, and fans for home appliances and heating systems manufactured by Askoll, the leading Italian manufacturer of electrical synchronous motors, are all marked by thirty years of high energy efficiency, low consumption and raw material savings. The continued investment in Research & Development and the perfect integration between product and process development allows Askoll to invariably offer the most innovative and environmentally friendly solutions.

Our components are installed on a wide range of boilers manufactured by the largest groups in the industry: Buderus, Junkers and E.L.M. Leblanc by Bosch TT, Remeha by BDR Thermea, Ariston Thermo Group, Immergas and Savio Boilers are just a few companies that rely on Askoll technology. Today Askoll is an international group with headquarters in Dueville and 10 units operating in Italy, Brazil, Mexico, Slovakia, Romania, and China, as well as sales offices in the United States and South Korea.

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