

DESCALING



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DESCALING PUMPS

DESCALING

Time and above all rise in temperature make calcium salts, usually present in water, precipitate in the form of microcrystals and settle on metallic surfaces of pipes, plant coils and heat exchangers, thus making flow rate and thermal output lower.

To restore the original plant performances it is necessary to carry out a descaling with specific products and equipments.

GEL produces a wide range of descaling pumps and chemicals, which are technologically ahead.

Some pump models are provided with the "**FLOW REVERSER**" device (GEL patent), available in two models: the **manual** model, where the operator has to directly act on the flow reverser and the **automatic** model, where the operator only has to set the frequency of the flow reversion and the total duration of the descaling treatment, that will be carried out in complete autonomy.





MANUAL REVERSER



AUTOMATIC REVERSER

During descaling, scale dissolves and becomes effervescent with following gas formation, thus creating a sort of “plug”, slowing down and, sometimes, preventing descaling from being carried on. By acting on the flow reverser, delivery and return pump flows (fig. 1 and 2) are changed, thus enabling the draining of effervescence and gases in the tank. In this way the “plug” effect is removed.

Moreover, by attacking scale on both sides, the flow reverser makes descaling particularly fast (as the normal dissolving action is combined with the detachment in flakes of the scale made friable from the double attack) and effective, even when pipes and exchangers are almost totally clogged.

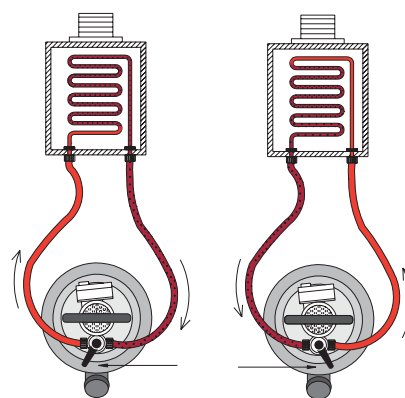


fig. 1 - Clockwise circulation

fig. 2 - Anti-clockwise circulation

BOY C 10 C 15 SUPER C 15 MATIC

CE

Descaling pump

BOY C 10

Vertical axis pump with tank for descaling coils of boilers and small heat exchangers.

BOY C 15 SUPER

Model identical to the previous one, but fitted with **flow reverser** (GEL patent), particularly effective for descaling coils of boilers and small heat exchangers even almost completely clogged.

BOY C 15 MATIC

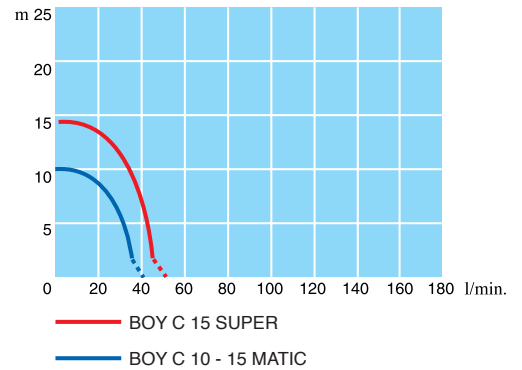
Model identical to the previous one, but fitted with programmable **automatic flow reverser** (GEL patent). Particularly recommended for difficult descaling treatments, it works in complete safety and autonomy allowing the operator to carry out other works at the same time.



TECHNICAL FEATURES

Vertical axis pump

Motor (BOY C 10)	230 V - Hp 0,17
Motor (BOY C 15 Matic)	230 V - Hp 0,17
Motor (BOY C 15 Super)	230 V - Hp 0,20
Protection grade	IP 54
Max. temperature	50° C - 122°F
Flow rate (BOY C 10)	40* l/min.
Flow rate (BOY C 15 Matic)	40* l/min.
Flow rate (BOY C 15 Super)	48* l/min.
Head (BOY C 10)	10* m
Head (BOY C 15 Matic)	10* m
Head (BOY C 15 Super)	14* m
Hose fittings	1/2"
Tank capacity	15 l
Dimensions Ø x H	35 x 48 cm
Weight	Kg 6



* Data referred to the pump outlet.

DESCALING PUMPS

Model Code	Boy C 10 121.010.00	Boy C 15 Super 121.031.00	Boy C 15 matic 121.035.00
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CE



BOY C 20 C 30 C 30 MATIC

Descaling pump

BOY C 20

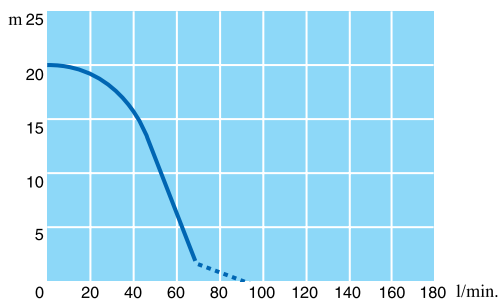
Vertical axis pump with tank for descaling coils of boilers, heat exchangers, cooling circuits and boilers.

BOY C 30

Model identical to the previous one, but fitted with **flow reverser** (GEL patent), particularly effective for descaling coils of boilers, heat exchangers, cooling circuits and boilers even almost completely clogged.

BOY C 30 MATIC

Model identical to the previous one, but equipped with an automatic flow reverser device (GEL patent) with timer. Specially recommended for difficult descaling treatments. It works within safety and autonomy conditions allowing the operator to carry out other works.



TECHNICAL FEATURES

Vertical axis pump	
Motor	230 V - Hp 0,45
Protection grade	IP 54
Max. temperature	50° C - 122°F
Flow rate	90* l/min.
Head	20* m
Hose fittings	1/2"
Tank capacity	24 l
Dimensions Ø x H	40 x 63 cm
Weight	Kg 10,5

* Data referred to the pump outlet.

DESCALING PUMPS

Model Code	Boy C 20 121.050.00	Boy C 30 121.070.00	Boy C 30 matic 121.075.00
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BOY C 30 PLANT



DESCALING

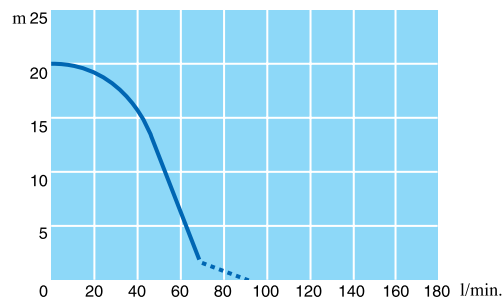
Pump for quick restoring treatments of heating systems

Vertical axis pump with tank and hydraulic intercepting group for washing and restoring small systems, or parts of big plants with special restoring and not acid products. The pump is fitted with flow reverser, special connections and valves to adjust the flows and carry out drainings to quickly remove from the system the sludge caused by the treatment.



TECHNICAL FEATURES

Vertical axis pump	
Motor	230 V - Hp 0,45
Protection grade	IP 54
Max. temperature	50°C - 122°F
Flow rate	90* l/min.
Head	20* m
Delivery hose fitting	12 mm
Return hose fitting	16 mm
Tank capacity	24 l
Dimensions Ø x H	40 x 63 cm
Weight	Kg 11



* Data referred to the pump outlet

DESCALING PUMPS

Model	Boy C 30 Plant
Code	121.070.65

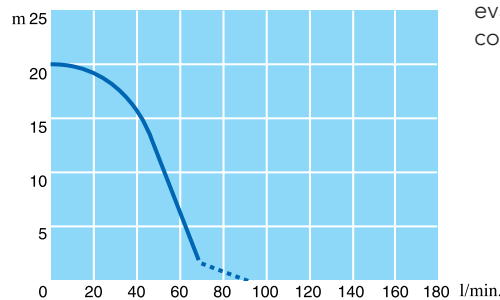
CE



TECHNICAL FEATURES

Vertical axis pump

Motor	230 V - Hp 0,45
Protection grade	IP 54
Max. temperature	50°C - 122°F
Flow rate	90* l/min.
Head	20* m
Hose fittings	1/2"
Tank capacity	100 l
Dimensions Ø x H	53 x 70 cm
Weight	Kg 12



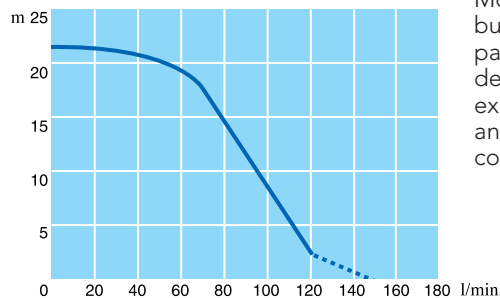
* Data referred to the pump outlet



TECHNICAL FEATURES

Vertical axis pump

Motor	230 V - Hp 0,75
Protection grade	IP 54
Temperatura max.	50°C - 122°F
Flow rate	150* l/min.
Head	22* m
Hose fittings	1"
Tank capacity	100 l
Dimensions Ø x H	53 x 72 cm
Weight	Kg 14



* Data referred to the pump outlet.

BOY C 120 C 130

Descaling pump

BOY C 120

Vertical axis pump with tank for descaling coils of boilers, heat exchangers, boilers, cooling circuits and small evaporating towers.

BOY C 130

Model identical to the previous one, but fitted with **flow reverser** (GEL patent), particularly effective for descaling coils of boilers, heat exchangers, cooling circuits and evaporating towers even almost completely clogged.

BOY C 180 C 190

Descaling pump

BOY C 180

Vertical axis pump with tank for descaling coils of boilers, heat exchangers, boilers, cooling circuits and small evaporating towers.

BOY C 190

Model identical to the previous one, but fitted with **flow reverser** (GEL patent), particularly effective for descaling coils of boilers, heat exchangers, boilers, cooling circuits and evaporating towers even almost completely clogged.

DESCALING PUMPS

Model Code	Boy C 120 121.090.00	Boy C 130 121.110.00	Boy C 180 121.130.00	Boy C 190 121.150.00
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BOY C 220 C 230



Descaling pump

BOY C 220

Vertical axis pump with tank for descaling coils of boilers, heat exchangers, boilers, cooling circuits and evaporating towers.

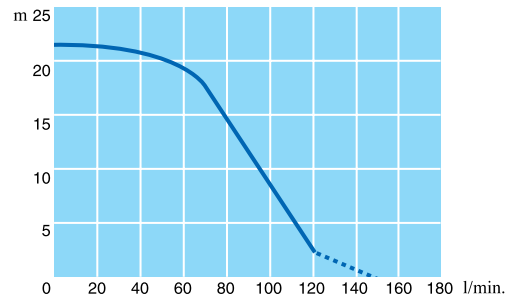
BOY C 230

Model identical to the previous one, but fitted with **flow reverser** (GEL patent), particularly effective for descaling coils of boilers, heat exchangers, boilers, cooling circuits and evaporating towers even almost completely clogged.



TECHNICAL FEATURES

Vertical axis pump	
Motor	230 V - Hp 0,75
Protection grade	IP 54
Max. temperature	50°C - 122°F
Flow rate	150* l/min.
Head	22* m
Hose fittings	1"
Tank capacity	200 l
Dimensions Ø x H	67 x 85 cm
Weight	Kg 16

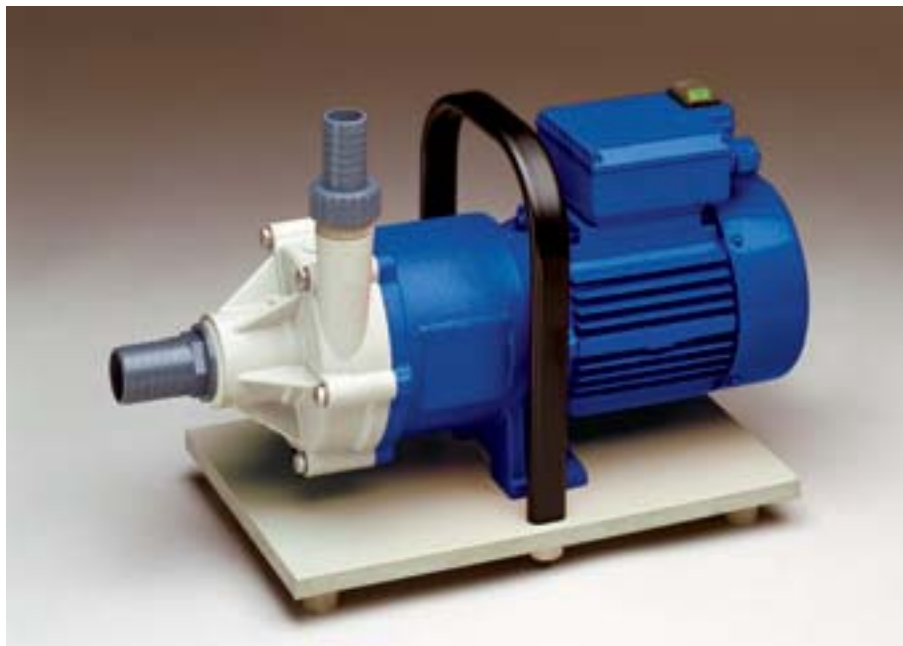


* Data referred to the pump outlet.

DESCALING PUMPS

Model Code	Boy C 220 121.170.00	Boy C 230 121.190.00
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CE

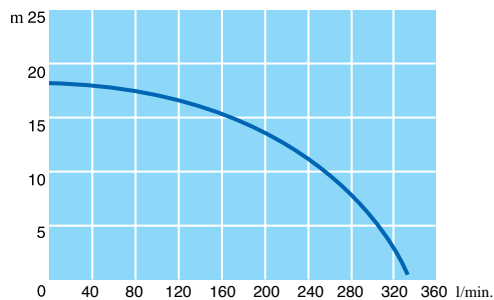


BOY C 200

Anti-acid pump for transfer and descaling

BOY C200

Magnetically coupled not centrifugal horizontal axis pump (not self-priming), suitable for transferring acid solutions and for descaling coils of big heat exchangers, big boilers, big cooling circuits and big evaporating towers.



TECHNICAL FEATURES

Magnetically coupled horizontal axis pump

Motor	230 V - Hp 1,5
Protection grade	IP 55
Max. temperature	80°C - 176°F
Flow rate	330* l/min.
Head	18* m
Inlet hose fitting	1" 1/2 x 40 mm
Delivery hose fitting	1" 1/4 x 32 mm
Dimensions L x Z x H	46 x 24 x 35 cm
Weight	Kg 21

* Data referred to the pump outlet.

DESCALING PUMPS

Model Code	Boy C 200 121.220.00
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DESCALING CHEMICALS

DESCALING

Time and above all rise in temperature make calcium salts, usually present in water, precipitate in the form of microcrystals and settle on metallic surfaces of pipes, plant coils and heat exchangers, thus making flow rate and thermal output lower. To remove scale it is necessary to let circulate inside the pipes, by using GEL descaling pumps, the chemical products of the **Boiler Cleaner** line which, reacting with scale, solubilize and therefore remove it.

GEL produces a wide range of products for descaling plants and heat exchangers meeting the different requirements of the various materials employed.

All the products are made with high quality materials in order to get the best performance operating within the highest safety.





CHEMICAL PHYSICAL PROPERTIES

Mixture of inorganic acid, additives, corrosion inhibitors, antifoaming agents. It contains colour change indicator.

Colour	ruby red
Odour	sharp
Specific weight	1,15 Kg/dm ³
pH	1
Dilution	10 - 20 %

BOILER CLEANER E

Descaling liquid for plants and heat exchangers in copper

Concentrated descaling liquid with strongly powerful reaction, to remove scale on plants and heat exchangers in **copper**. Acid-based product, containing special antifoaming agents and special inhibitors preventing corrosion on metallic surfaces of plants. **Boiler Cleaner E** is to be diluted in water at 10-20%, it contains an exhaustion indicator with colour change (red active product, yellow-orange exhausted product).

P.S.: Once descaling is ended, a neutralizing washing of the residual acidity with the product Boiler Cleaner N is recommended.



CHEMICAL PHYSICAL PROPERTIES

Mixture of inorganic acids, additives, corrosion inhibitors, antifoaming agents. It contains colour change indicator.

Colour	ruby red
Odour	sharp
Specific weight	1,15 Kg/dm ³
pH	1
Dilution	10 - 30 %

BOILER CLEANER D.E.

Descaling liquid for plants and heat exchangers in copper and steel

Concentrated descaling liquid with powerful reaction, to remove scale and deposits on plants and heat exchangers in **copper and steel**. Acid-based product, containing special wetting, antifoaming agents and special inhibitors preventing corrosion on metallic surfaces of plants.

Boiler Cleaner D.E. is to be diluted in water at 10-30%, it contains an exhaustion indicator with colour change (red active product, yellow-orange exhausted product).

P.S.: Once descaling is ended, a neutralizing washing of the residual acidity with the product Boiler Cleaner N is recommended.

DESCALING CHEMICALS

Model Code	Boiler Cleaner E 30 Kg	Boiler Cleaner E 10 Kg	Boiler Cleaner E 5 Kg	Boiler Cleaner D.E. 30 Kg	Boiler Cleaner D.E. 10 Kg	Boiler Cleaner D.E. 5 Kg
	113.005.1E	113.005.3E	113.005.5E	113.010.1E	113.010.3E	113.010.5E



BOILER CLEANER ECO

Non-fuming descaling liquid for plants and exchangers in copper and steel

Ecological concentrated descaling liquid (non-fuming), to remove scale on plants and heat exchangers in **copper** and **steel**. Acid-based solution, containing special antifoaming and special inhibitors preventing corrosion on metallic surfaces of plants. Boiler Cleaner ECO is to be diluted in water at 20-40%, according to the consistency and quantity of the scale deposit.

When the effervescence stops, add further Boiler Cleaner ECO until in the acid solution no bubbles will appear anymore.

P.S.: Once descaling is ended, a neutralizing washing of the residual acidity with the product Boiler Cleaner N is recommended.

CHEMICAL PHYSICAL PROPERTIES

Mixture of organic and inorganic acid, corrosion inhibitors, antifoaming agents.

Colour	opalescent
Odour	none
Specific weight	1,1 Kg/dm ³
pH	1
Dilution	20 - 40 %



DESCALING

BOILER CLEANER D.P.

Degreasing- descaling liquid for plants and exchangers in copper and steel

Concentrated descaling liquid (non-fuming) with high degreasing action, to remove scale, deposits and oily sludge on plants and heat exchangers in **copper** and **steel**. Acid-based product, containing special wetting, antifoaming agents and special inhibitors preventing corrosion on metallic surfaces of plants.

Boiler Cleaner D.P. is to be diluted in water at 20-40%, it contains an exhaustion indicator with colour change (bright red active product, yellow-orange exhausted product).

P.S.: Once descaling is ended, a neutralizing washing of the residual acidity with the product Boiler Cleaner N is recommended.

CHEMICAL PHYSICAL PROPERTIES

Mixture of inorganic acids, additives, corrosion inhibitors, antifoaming agents. It contains a colour change indicator.

Colour	ruby red
Odour	none
Specific weight	1,2 Kg/dm ³
pH	1
Dilution	20 - 40 %



DESCALING CHEMICALS

Model Code	Boiler Cleaner ECO 30 Kg	Boiler Cleaner ECO 10 Kg	Boiler Cleaner ECO 5 Kg	Boiler Cleaner D.P. 30 Kg	Boiler Cleaner D.P. 10 Kg	Boiler Cleaner D.P. 5 Kg
	113.020.1E	113.020.3E	113.020.5E	113.030.1E	113.030.3E	113.030.5E



CHEMICAL PHYSICAL PROPERTIES

Mixture of organic acids, additives, corrosion inhibitors, dispersing agents. It contains a colour change indicator.

Colour	ruby red
Odour	none
Specific weight	1,6 Kg/dm ³
pH	1 (in solution 10%)
Dilution	10 - 15 %

BOILER CLEANER P

Descaling powder for plants and exchangers in stainless steel, aluminium, brass, tin, light alloys

Concentrated descaling powder (not corrosive, non-fuming), to remove scale and deposits on plants and heat exchangers in **stainless steel, aluminium, brass, tin, light alloys**. Acid-based product, containing special wetting, antifoaming agents and special corrosion inhibitors preventing corrosion on metallic surfaces of plants. **Boiler Cleaner P** is to be dissolved in water at 10-15%, it contains an exhaustion indicator with colour change (bright red active product, yellow-orange exhausted product).

P.S.: Once descaling is ended, a neutralizing washing of the residual acidity with the product Boiler Cleaner N is recommended.



CHEMICAL PHYSICAL PROPERTIES

Mixture of organic acids, additives, corrosion inhibitors, dispersing agents. It contains a colour change indicator.

Colour	ruby red
Odour	none
Specific weight	1,6 Kg/dm ³
pH	1 (in solution 10%)
Dilution	10 - 15 %

BOILER CLEANER P.Z.

Descaling powder for plants and exchangers in stainless steel, aluminium, brass, tin, light alloys, zinc

Product similar to Boiler Cleaner P with special inhibitor to protect **galvanised surfaces**.

P.S.: Once descaling is ended, a neutralizing washing of the residual acidity with the product Boiler Cleaner N is recommended.

DESCALING CHEMICALS

Model Code	Boiler Cleaner P 50 Kg	Boiler Cleaner P 10 Kg	Boiler Cleaner P 1,5 Kg	Boiler Cleaner P.Z. 50 Kg	Boiler Cleaner P.Z. 10 Kg	Boiler Cleaner P.Z. 1,5 Kg
	113.050.10	113.050.50	113.050.70	113.070.10	113.070.50	113.070.70



BOILER CLEANER L.Z.

DESCALING

Descaling liquid for plants and exchangers in steel, stainless steel, aluminium, brass, tin, light alloys, zinc

Concentrated descaling liquid (not corrosive, non-fuming), to remove scale and deposits on plants and heat exchangers in **copper, steel, stainless steel, aluminium, brass, tin, light alloys and galvanised surfaces.**

Acid-based product, containing special wetting, antifoaming agents and special inhibitors preventing corrosion on metallic surfaces of plants.

Boiler Cleaner L.Z. is to be diluted in water at 20-30%, it contains an exhaustion indicator with colour change (bright red active product, yellow-orange exhausted product).

P.S.: Once descaling is ended, a neutralizing washing of the residual acidity with the product Boiler Cleaner N is recommended.

CHEMICAL PHYSICAL PROPERTIES

Mixture of organic acids, additive compounds, corrosion inhibitors, dispersing agents. It contains a colour change indicator.

Colour	ruby red
Odour	none
Specific weight	1,19 Kg/dm ³
pH	1 (in solution 10%)
Dilution	20 - 30 %



BOILER CLEANER N

Neutralizing powder for the residual acidity after descaling

Concentrated neutralizing powder to remove residual acidity after descaling in plants and heat exchangers.

Boiler Cleaner N is to be dissolved in water at 3-5%, by letting it circulate inside the plant for some minutes. Boiler Cleaner N can also be used as final neutralizer of the acid solutions used for descaling.

CHEMICAL PHYSICAL PROPERTIES

Mixture of alkaline salts made up of carbonates and sodium phosphates, neutralizer for the residual acidity.

Colour	white
Odour	none
Specific weight	1,2 Kg/dm ³
pH	13 (in solution 10%)
Dilution	3 - 5 %



DESCALING CHEMICALS

Model Code	Boiler Cleaner L.Z. 30 Kg 113.070.8E	Boiler Cleaner L.Z. 10 Kg 113.070.9E	Boiler Cleaner L.Z. 5 Kg 113.071.0E
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NEUTRALIZERS

Model Code	Boiler Cleaner N 10 Kg 113.130.30	Boiler Cleaner N 1 Kg 113.130.50
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DESCALING PUMPS											
Item	Manual flow reverser	Automatic flow reverser	Electrical features			Protection grade	Tank capacity (l)	Dimensions (cm)	Weight (Kg)	Max. flow rate (l/min)	Head (m)
			V	KW	HP						
Boy C 10			230	0,13	0,17	IP 54	15	h 48 Ø 35	6	40	10
Boy C 15 Super	•		230	0,15	0,20	IP 54	15	h 48 Ø 35	6	48	14
Boy C 15 Matic		•	230	0,13	0,17	IP 54	15	h 48 Ø 35	6	40	10
Boy C 20			230	0,33	0,45	IP 54	24	h 63 Ø 40	10,5	90	20
Boy C 30	•		230	0,33	0,45	IP 54	24	h 63 Ø 40	10,5	90	20
Boy C 30 Matic		•	230	0,33	0,45	IP 54	24	h 63 Ø 40	10,5	90	20
Boy C 30 Plant	•		230	0,33	0,45	IP 54	24	h 63 Ø 40	11	90	20
Boy C 120			230	0,33	0,45	IP 54	100	h 70 Ø 53	12	90	20
Boy C 130	•		230	0,33	0,45	IP 54	100	h 70 Ø 53	12	90	20
Boy C 180			230	0,55	0,75	IP 54	100	h 72 Ø 53	14	150	22
Boy C 190	•		230	0,55	0,75	IP 54	100	h 72 Ø 53	14	150	22
Boy C 220			230	0,55	0,75	IP 54	200	h 85 Ø 67	16	150	22
Boy C 230	•		230	0,55	0,75	IP 54	200	h 85 Ø 67	16	150	22
Boy C 200			230	0,75	1,5	IP 55	–	h 25x46x25	21	330	18

* Data referred to the pump outlet.

DESCALING PRODUCTS		
Item	Description	Dilution %
Boiler Cleaner E	Concentrated descaling liquid with strongly powerful reaction for plants and heat exchangers in: COPPER	10 - 20
Boiler Cleaner D.E	Concentrated descaling liquid with powerful reaction for plants and heat exchangers in: COPPER - STEEL	10 - 30
Boiler Cleaner ECO	Ecological concentrated descaling liquid (non-fuming), suitable for removing scale on plants and heat exchangers in: COPPER – STEEL	20 - 40
Boiler Cleaner D.P	Concentrated descaling liquid (non-fuming) with high degreasing action for plants and heat exchangers in: COPPER - STEEL	20 - 40
Boiler Cleaner P	Concentrated descaling powder (not corrosive, non-fuming) for plants and heat exchangers in: STAINLESS STEEL - ALUMINIUM - BRASS - TIN - LIGHT ALLOYS	10 - 15
Boiler Cleaner P.Z	Concentrated descaling powder (not corrosive, non-fuming) for plants and heat exchangers in: STAINLESS STEEL - ALUMINIUM - BRASS - TIN - LIGHT ALLOYS - ZINC (with special inhibitor for zinc)	10 - 15
Boiler Cleaner L.Z	Concentrated descaling liquid (not corrosive, non-fuming) for plants and heat exchangers in: COPPER - STEEL - STAINLESS STEEL - ALUMINIUM - BRASS - TIN - LIGHT ALLOYS - ZINC (with special inhibitor for zinc)	20 - 30

NEUTRALIZING PRODUCTS		
Item	Description	Dilution %
Boiler Cleaner N	Concentrated neutralizing powder to remove residual acidity after descaling in plants and heat exchangers. Also suitable for neutralizing descaling products used.	3 - 5

1
BOY C10 - C15 SUPER - C15 MATIC - C20 - C30 - C30 MATIC
 Suitable for descaling wall boilers and small exchangers

2
BOY C120 - C130
 Suitable for descaling big exchangers

3
BOY C180 - C190
 Suitable for descaling big exchangers and cooling towers

4
BOY C220 - C230
 Suitable for descaling big boilers

5
BOY C30 PLANT
 Suitable for restoring heating systems

6
BOY C200
 Suitable for restoring big heating systems and descaling systems for producing hot sanitary water

