

## LOW-ENERGY BOTTLE WASHING MACHINE

## Technical Data CB 15-1-RV-8,2 VdF ng

control range max.         bottles/h         0,000           Control range min.         bottles/h         0,000           Cycle time         sec.         5.4           Running time         min.         11.7           Bottle length up to         mm         308           Bottle length up to         mm         90           Bottles per row         pieces         1.935           Bottle sidence time         pieces         1.935           Bottle sidence time         sec.         190.8           Freathers:         "**         190.8           Caustic:         "**         190.8           Total residence time         min.         5.6           Bottles filled with caustic soak         min.         5.6           Bottles filled with caustic soak         min.         3.9           Teather time effective         min.         3.9           Total residence time         min.         3.9           Total residence time         min.         3.9           Total residence time         sec.         2.2           Locality of the caustic time of fective         sec.         3.4           Bottles filled with caustic soak         sec.         3.4	Performance	bottles/h	10,000
Control range min.         bottles/h         5,000           Cycle time         sec.         5,44           Running time         min.         11,7           Bottle length up to         mm         90           Bottle length up to         mm         90           Bottles per row         pieces         1,93           Bottle sinside the machine         pieces         1,93           Bottle cell carrier         pieces         1,93           Total residence time sec.         109,8           Total residence time         sec.         102,6           Bottles filled with caustic soak         min.         5,6           Cooling down area:           Total residence time         min.         3,9           Total residence time         sec.         1,2           Total residence time         <		•	•
Cycle lime         sec.         5.4           Running time         min.         11.7           Bottle length up to         mm         308           Bottle sing the up to         mm         90           Bottles per row         pieces         1,935           Bottles inside the machine         pieces         1,935           Bottle cell carrier         pieces         19.8           Pre-heating:           Total residence time         sec.         199.8           Total residence time         min.         3.7           Total residence time         min.         3.7           Cooling down area:           Cooling down area:           Total residence time         min.         3.9           Total			
Running time         min.         11.7           Bottle langth up to         mm         308           Bottle dameter up to         mm         90           Bottles per row         pieces         1,935           Bottles inside the machine         pieces         1,935           Bottle cell carrier         pieces         1,935           Pre-heating           Freatment time effective         sec.         199.8           Caustic:           Total residence time         min.         5.6           Bottles filled with caustic soak         min.         3.7           Cooling down area:           Total residence time         min.         3.9           Total residence time         min.         3.9           Total residence time         min.         3.9           Total residence time         min.         3.0			
Bottle length up to         mm         308           Bottle diameter up to         mm         90           Bottle sper row         pieces         1,935           Bottle cell carrier         pieces         1,935           Bottle cell carrier         pieces         134           Pre-heating:           Total residence time         sec.         190.8           Causific:           Causific:           Total residence time         min.         5.6           Bottle shilled with caustic soak         min.         3.9           Total residence time         min.         3.9			
Bottles per row         pieces         15           Bottles inside the machine         pieces         1,335           Bottles inside the machine         pieces         1,335           Per-heating:           Total residence time         sec.         199.8           Total residence time         min.         5.6           Bottles filled with caustic soak         min.         3.7           Cooling down area:           Cooling down area:           Total residence time         min.         3.9           Treatment time effective           Williams of the feetive           Spraying time effective:           Williams of feetive:           Williams of feetive:           Williams of feetive:           Warmwater!         sec.         3.6           Caustic!         sec.         3.6           Caustic!         sec.         1.4           Warmwater!         sec.         1.4           Warmwater!         sec.         1.4           Countainer contents:           Pre-soaking         m³			
Bottles per row			
Bottles inside the machine         pieces         1,935           Bottle cell carrier         pieces         134           Pre-heating:	bottle diameter up to		70
Bottle cell carrier         pieces         134           Pre-heating:	Bottles per row	pieces	15
Pre-heating:	Bottles inside the machine	pieces	1,935
Total residence time         sec.         199.8           Treatment time effective         sec.         102.6           Caustic:         Total residence time         min.         5.6           Bottles filled with caustic soak         min.         3.7            Total residence time         min.         3.9           Treatment time effective         min.         1.9           Spraying time effective:           Hot caustic         sec.         7.2           Caustic I         sec.         3.6           Caustic II         sec.         14.4           Warm-water I         sec.         14.4           Warm-water II         sec.         14.4           Fresh-water max.         sec.         14.4           Container contents:         rec.         14.4           Pre-soaking         m³         3.3           Caustic II         m³         0.3           Caustic II         m³         0.3           Caustic II         m³         0.3           Container contents:         rec.         14.4           Pre-soaking         m³         0.3           Warm-water II         m³         0.3 <td>Bottle cell carrier</td> <td>pieces</td> <td>134</td>	Bottle cell carrier	pieces	134
Total residence time         sec.         199.8           Treatment time effective         sec.         102.6           Caustic:         Total residence time         min.         5.6           Bottles filled with caustic soak         min.         3.7            Total residence time         min.         3.9           Treatment time effective         min.         1.9           Spraying time effective:           Hot caustic         sec.         7.2           Caustic I         sec.         3.6           Caustic II         sec.         14.4           Warm-water I         sec.         14.4           Warm-water II         sec.         14.4           Fresh-water max.         sec.         14.4           Container contents:         rec.         14.4           Pre-soaking         m³         3.3           Caustic II         m³         0.3           Caustic II         m³         0.3           Caustic II         m³         0.3           Container contents:         rec.         14.4           Pre-soaking         m³         0.3           Warm-water II         m³         0.3 <td></td> <td></td> <td></td>			
Treatment time effective         sec.         102.6           Caustic:         Total residence time         min.         5.6           Bottles filled with caustic soak         min.         3.7           Cooling down area:         Total residence time         min.         3.9           Treatment time effective         min.         3.9           Spraying time effective:           Hot caustic         sec.         7.2           Caustic I         sec.         3.6           Caustic II         sec.         14.4           Warm-water I         sec.         14.4           Warm-water II         sec.         14.4           Fresh-water max.         sec.         14.4           Container contents:         Tere-soaking         m³         3.3           Caustic II         m³         3.3           Caustic II         m³         0.3           Warm-water II         m³         0.3           Warm-water II         m³         0.3           Cold-water         m³         0.3           Warm-water II         m³         0.3           Warm-consumption for 0,5 l bottles         m³/h         2.0           Water consumption fo			
Caustic:         min.         5.6           Bottles filled with caustic soak         min.         3.7           Cooling down area:         Total residence time         min.         3.9           Treatment time effective         min.         3.9           Spraying time effective:         Wreatment time effective:           Hot caustic         sec.         7.2           Caustic I         sec.         3.6           Caustic II         sec.         14.4           Warm-water II         sec.         14.4           Cold-water         sec.         14.4           Fresh-water max.         sec.         14.4           Container contents:         Pre-soaking         m³         1.4           Caustic I         m³         3.3           Caustic II         m³         3.3           Caustic II         m³         0.3           Warm-water II         m³         0.3           Warm-water II         m³         0.3           Cold-water         m³         0.3           Water consumption for 1 litre VdF bottles         m³/h         2.0           Water consumption for 1 litre VdF bottles with ho			
Total residence time         min.         5.6           Bottles filled with caustic soak         min.         3.7           Cooling down area:	Treatment time effective	sec.	102.6
Total residence time	Cauctic		
Bottles filled with caustic soak         min.         3.7           Cooling down area:         min.         3.9           Treatment time effective         min.         1.9           Spraying time effective:           Hot caustic         sec.         7.2           Caustic I         sec.         3.6           Caustic II         sec.         14.4           Warm-water I         sec.         14.4           Warm-water max.         sec.         14.4           Fresh-water max.         sec.         14.4           Container contents:         Tere-soaking         m³         3.3           Caustic I         m²         0.3           Warm-water II         m³         0.3           Warm-water II         m³         0.3           Cold-water         m³         0.3           Warm-water II         m³         0.3           Water consumption for 0,5 l bottles         m³ / h         2.0           Water consumption for 1 litre VdF bottles         m³/h         2.0           Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C         m²/h         2.0           Water consumption while operating, caustic 80°C         kJ/hx 1000         650		min	5.6
Cooling down area:   Total residence time			
Total residence time         min.         3.9           Treatment time effective         min.         1.9           Spraying time effective:           Spraying time effective:           Hot caustic         sec.         7.2           Caustic I         sec.         3.6           Caustic II         sec.         14.4           Warm-water II         sec.         14.4           Cold-water         sec.         14.4           Freshading         m³         1.4           Container contents:           Pres-soaking         m³         1.4           Container contents:           Pres-soaking         m³         1.4           Caustic I         m³         3.3           Caustic I         m³         0.3           Warm-water I         m³         0.3           Warm-water II         m³         0.3           Cold-water         m³         0.3           Ware consumption for 0,5 I bottles         m³         2.0           Water consumption for 0,5 I bottles         m³/h         2.	Dotties filled with caustic soak	111111.	5.7
Total residence time         min.         3.9           Treatment time effective         min.         1.9           Spraying time effective:           Spraying time effective:           Hot caustic         sec.         7.2           Caustic I         sec.         3.6           Caustic II         sec.         14.4           Warm-water II         sec.         14.4           Cold-water         sec.         14.4           Freshading         m³         1.4           Container contents:           Pres-soaking         m³         1.4           Container contents:           Pres-soaking         m³         1.4           Caustic I         m³         3.3           Caustic I         m³         0.3           Warm-water I         m³         0.3           Warm-water II         m³         0.3           Cold-water         m³         0.3           Ware consumption for 0,5 I bottles         m³         2.0           Water consumption for 0,5 I bottles         m³/h         2.	Cooling down area:		
Treatment time effective         min.         1.9           Spraying time effective:		min.	3.9
Spraying time effective:           Hot caustic         sec.         7.2           Caustic II         sec.         3.6           Caustic III         sec.         14.4           Warm-water I         sec.         14.4           Warm-water III         sec.         14.4           Cold-water         sec.         14.4           Fresh-water max.         sec.         14.4           Container contents:         Tereshading         m³         1.4           Caustic I         m³         3.3           Caustic II         m³         0.3           Warm-water II         m³         0.3           Cold-water         m³         0.3           Water consumption for 0,5 l bottles         m³/h         2.0           Water consumption for 1 litre VdF bottles         m³/h         2.0           Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C         m²/h         2.0           Heat consumption while pearating, caustic 80°C         kJ/h x 1000         960           Heat consumption while operating, caustic 80°C for 1 litre VdF bottles         kJ/h x 1000         720           Power connected load         kW         19.7	Treatment time effective		
Hot caustic   Sec.   7.2			
Caustic II         sec.         14.4           Warm-water I         sec.         14.4           Warm-water III         sec.         14.4           Cold-water         sec.         14.4           Fresh-water max.         sec.         14.4           Contents:           Pre-soaking         m³         1.4           Caustic I         m³         3.3           Caustic II         m³         0.3           Warm-water I         m³         0.3           Warm-water II         m³         0.3           Cold-water         m³         0.3           Water consumption for 0,5 l bottles         m³         0.3           Water consumption for 1 litre VdF bottles         m³/h         2.0           Water consumption for 1 litre VdF bottles         m³/h         2.0           Heat consumption while heating the caustic from 15°C to 80°C         kJ x 1000         960           Heat consumption while operating, caustic 80°C for 1 litre VdF bottles         kJ/h x 1000         650           Water consumption while operating, caustic 80°C for 1 litre VdF bottles         kJ/h x 1000         720	Spraying time effective:		
Caustic II       sec.       14.4         Warm-water I       sec.       14.4         Warm-water III       sec.       14.4         Cold-water       sec.       14.4         Fresh-water max.       sec.       14.4         Container contents:         Pre-soaking       m³       1.4         Caustic I       m³       3.3         Caustic II       m³       0.3         Warm-water I       m³       0.3         Warm-water II       m³       0.3         Cold-water       m³       0.3         Water consumption for 0,5 l bottles       m³/h       2.0         Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C       m³/h       2.0         Heat consumption while heating the caustic from 15°C to 80°C       k) x 1000       960         Heat consumption while operating, caustic 80°C for 1 litre VdF bottles with hot bottle discharge 55°C       k)/h x 1000       720         Power connected load       kW       19.7	Hot caustic	sec.	7.2
Warm-water I       sec.       14.4         Warm-water II       sec.       14.4         Cold-water       sec.       14.4         Fresh-water max.       sec.       14.4         Container contents:         Pre-soaking       m³       1.4         Caustic I       m³       3.3         Caustic II       m³       0.3         Warm-water I       m³       0.3         Warm-water III       m³       0.3         Cold-water       m³       0.3         Water consumption for 0,5 l bottles       m³/h       2.0         Water consumption for 1 litre VdF bottles       m³/h       3.5         Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C       m³/h       2.0         Heat consumption while heating the caustic from 15°C to 80°C       kJ/h x 1000       960         Heat consumption while operating, caustic 80°C       kJ/h x 1000       650         Heat consumption while operating, caustic 80°C for 1 litre VdF bottles with hot bottle discharge 55°C       kJ/h x 1000       720         Power connected load       kW       19,7	Caustic I	sec.	3.6
Warm-water II         sec.         14.4           Cold-water         sec.         14.4           Fresh-water max.         sec.         14.4           Container contents:           Pre-soaking         m³         1.4           Caustic I         m³         3.3           Caustic II         m³         0.3           Warm-water I         m³         0.3           Warm-water II         m³         0.3           Cold-water         m³         0.3           Water consumption for 0,5 l bottles         m³/h         2.0           Water consumption for 1 litre VdF bottles         m³/h         3.5           Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C         m³/h         2.0           Heat consumption while heating the caustic from 15°C to 80°C         kJ x 1000         960           Heat consumption while operating, caustic 80°C         kJ/h x 1000         650           Heat consumption while operating, caustic 80°C for 1 litre VdF bottles with hot bottle discharge 55°C         kJ/h x 1000         720           Power connected load         kW         19.7	Caustic II	sec.	14.4
Container contents:  Pre-soaking m³ 1.4  Caustic I m³ 0.3  Warm-water II m³ 0.3  Cold-water m³ 0.3  Water consumption for 0,5 l bottles m³ 0.3  Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C kJ/h x 1000 960  Heat consumption while operating, caustic 80°C for 1 litre VdF bottles with hot bottle discharge 55°C  Power connected load kW 14.4  Fresh-water max. sec. 14.4  m³ 0.14  m³ 0.3  0.3  Mag m³ 0.3  0.3  Warm-water II m³ 0.3  0.3  Water consumption for 0,5 l bottles m³ 0.3  Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C m³/h 2.0  Heat consumption while heating the caustic from 15°C to 80°C kJ x 1000 960  Heat consumption while operating, caustic 80°C for 1 litre VdF bottles kJ/h x 1000 720  With hot bottle discharge 55°C kJ m 19.7	Warm-water I	sec.	14.4
Fresh-water max.  Container contents:  Pre-soaking m³ 1.4  Caustic I m³ 3.3  Caustic II m³ 0.3  Warm-water I m³ 0.3  Warm-water II m³ 0.3  Cold-water m³ 0.3  Water consumption for 0,5 I bottles m³ 0.3  Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C m³/h 2.0  Heat consumption while operating, caustic 80°C for 1 litre VdF bottles kJ/h x 1000 for 20 with hot bottle discharge 55°C  Power connected load kW 19,7	Warm-water II	sec.	14.4
Container contents:  Pre-soaking m³ 1.4  Caustic I m³ 3.3  Caustic II m³ 0.3  Warm-water II m³ 0.3  Cold-water m³ 0.3  Water consumption for 0,5 I bottles m³/h 2.0  Water consumption for 1 litre VdF bottles m³/h 3.5  Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C m³/h 2.0  Heat consumption while heating the caustic from 15°C to 80°C kJ x 1000 960  Heat consumption while operating, caustic 80°C kJ/h x 1000 650  Heat consumption while operating, caustic 80°C for 1 litre VdF bottles kJ/h x 1000 720  with hot bottle discharge 55°C  Power connected load kW 19.7	Cold-water	sec.	14.4
Pre-soaking m³ 1.4  Caustic I m³ 3.3  Caustic II m³ 0.3  Warm-water I m³ 0.3  Warm-water II m³ 0.3  Cold-water m³ 0.3  Cold-water m³ 0.3  Water consumption for 0,5 l bottles m³ 0.3  Water consumption for 1 litre VdF bottles m³/h 2.0  Water consumption for 1 litre VdF bottles m³/h 3.5  Water consumption while heating the caustic from 15°C to 80°C m³/h 2.0  Heat consumption while operating, caustic 80°C  Heat consumption while operating, caustic 80°C  Heat consumption while operating, caustic 80°C  Power connected load kW 19.7	Fresh-water max.	sec.	14.4
Pre-soaking m³ 1.4  Caustic I m³ 3.3  Caustic II m³ 0.3  Warm-water I m³ 0.3  Warm-water II m³ 0.3  Cold-water m³ 0.3  Cold-water m³ 0.3  Water consumption for 0,5 l bottles m³ 0.3  Water consumption for 1 litre VdF bottles m³/h 2.0  Water consumption for 1 litre VdF bottles m³/h 3.5  Water consumption while heating the caustic from 15°C to 80°C m³/h 2.0  Heat consumption while operating, caustic 80°C  Heat consumption while operating, caustic 80°C  Heat consumption while operating, caustic 80°C  Power connected load kW 19.7			
Caustic I m³ 3.3  Caustic II m³ 0.3  Warm-water I m³ 0.3  Warm-water II m³ 0.3  Cold-water m³ 0.3  Cold-water m³ 0.3  Water consumption for 0,5 l bottles m³ 0.3  Water consumption for 1 litre VdF bottles m³/h 2.0  Water consumption for 1 litre VdF bottles m³/h 3.5  Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C m³/h 2.0  Heat consumption while heating the caustic from 15°C to 80°C kJ x 1000 960  Heat consumption while operating, caustic 80°C kJ/h x 1000 650  Heat consumption while operating, caustic 80°C for 1 litre VdF bottles kJ/h x 1000 720  with hot bottle discharge 55°C  Power connected load kW 19.7		3	4.7
Caustic II m³ 0.3  Warm-water I m³ 0.3  Warm-water II m³ 0.3  Cold-water m³ 0.3  Cold-water m³ 0.3  Water consumption for 0,5 l bottles m³ 0.3  Water consumption for 1 litre VdF bottles m³/h 3.5  Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C m³/h 2.0  Heat consumption while heating the caustic from 15°C to 80°C kJ x 1000 960  Heat consumption while operating, caustic 80°C kJ/h x 1000 650  Heat consumption while operating, caustic 80°C for 1 litre VdF bottles kJ/h x 1000 720  with hot bottle discharge 55°C  Power connected load kW 19.7			
Warm-water Im³0.3Warm-water IIm³0.3Cold-waterm³0.3Water consumption for 0,5 l bottlesm³/h2.0Water consumption for 1 litre VdF bottlesm³/h3.5Water consumption for 1 litre VdF bottles with hot bottle discharge 55°Cm³/h2.0Heat consumption while heating the caustic from 15°C to 80°CkJ x 1000960Heat consumption while operating, caustic 80°CkJ/h x 1000650Heat consumption while operating, caustic 80°C for 1 litre VdF bottles with hot bottle discharge 55°CkJ/h x 1000720Power connected loadkW19.7			
Warm-water II m³ 0.3  Cold-water m³ 0.3  Water consumption for 0,5 l bottles m³/h 2.0  Water consumption for 1 litre VdF bottles m³/h 3.5  Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C m³/h 2.0  Heat consumption while heating the caustic from 15°C to 80°C kJ x 1000 960  Heat consumption while operating, caustic 80°C kJ/h x 1000 650  Heat consumption while operating, caustic 80°C for 1 litre VdF bottles kJ/h x 1000 720  with hot bottle discharge 55°C  Power connected load kW 19.7			
Cold-waterm³0.3Water consumption for 0,5 l bottlesm³/h2.0Water consumption for 1 litre VdF bottlesm³/h3.5Water consumption for 1 litre VdF bottles with hot bottle discharge 55°Cm³/h2.0Heat consumption while heating the caustic from 15°C to 80°CkJ x 1000960Heat consumption while operating, caustic 80°CkJ/h x 1000650Heat consumption while operating, caustic 80°C for 1 litre VdF bottles with hot bottle discharge 55°CkJ/h x 1000720Power connected loadkW19.7			
Water consumption for 0,5 l bottles m³/h 2.0  Water consumption for 1 litre VdF bottles m³/h 3.5  Water consumption for 1 litre VdF bottles with hot bottle discharge 55°C m³/h 2.0  Heat consumption while heating the caustic from 15°C to 80°C kJ x 1000 960  Heat consumption while operating, caustic 80°C kJ/h x 1000 650  Heat consumption while operating, caustic 80°C for 1 litre VdF bottles kJ/h x 1000 720  with hot bottle discharge 55°C  Power connected load kW 19.7			
Water consumption for 1 litre VdF bottlesm³/h3.5Water consumption for 1 litre VdF bottles with hot bottle discharge 55°Cm³/h2.0Heat consumption while heating the caustic from 15°C to 80°CkJ x 1000960Heat consumption while operating, caustic 80°CkJ/h x 1000650Heat consumption while operating, caustic 80°C for 1 litre VdF bottles with hot bottle discharge 55°CkJ/h x 1000720Power connected loadkW19.7	Cold-water	III	0.3
Water consumption for 1 litre VdF bottlesm³/h3.5Water consumption for 1 litre VdF bottles with hot bottle discharge 55°Cm³/h2.0Heat consumption while heating the caustic from 15°C to 80°CkJ x 1000960Heat consumption while operating, caustic 80°CkJ/h x 1000650Heat consumption while operating, caustic 80°C for 1 litre VdF bottles with hot bottle discharge 55°CkJ/h x 1000720Power connected loadkW19.7	Water consumption for 0,5 l bottles	m³/h	2.0
Heat consumption while heating the caustic from 15°C to 80°C kJ x 1000 960  Heat consumption while operating, caustic 80°C kJ/h x 1000 650  Heat consumption while operating, caustic 80°C for 1 litre VdF bottles kJ/h x 1000 720 with hot bottle discharge 55°C  Power connected load kW 19.7	Water consumption for 1 litre VdF bottles	m³/h	3.5
Heat consumption while heating the caustic from 15°C to 80°C kJ x 1000 960  Heat consumption while operating, caustic 80°C kJ/h x 1000 650  Heat consumption while operating, caustic 80°C for 1 litre VdF bottles kJ/h x 1000 720 with hot bottle discharge 55°C  Power connected load kW 19.7		m³/h	2.0
Heat consumption while operating, caustic 80°C for 1 litre VdF bottles with hot bottle discharge 55°C ky/h x 1000 720  Power connected load kW 19.7	Heat consumption while heating the caustic from 15°C to 80°C	kJ x 1000	960
Heat consumption while operating, caustic 80°C for 1 litre VdF bottles with hot bottle discharge 55°C kJ/h x 1000 720  Power connected load kW 19.7		kJ/h x 1000	650
Power connected load kW 19.7			720
		kW	19.7
	Operating weight		

Consumption specifications refer to fresh-water 8-13°C, wastewater 35-43°C, bottle infeed 28-33°C, room temperature 15°C, bottle temperature at infeed 15°C Exchange ratio:  $1000 \text{ kJ} \cong 238.8 \text{ kcal} \cong 0.45 \text{ kg low pressure steam} \cong 0.278 \text{ kWh}$