

# CENTRIFUGAL PUMPS

FOR MIXTURES OF LIQUIDS AND SOLIDS



SERIES CR

CENTRIFUGAL  
PUMPS  
SERIES CR



## **C.S.F. INOX SPA**

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# CENTRIFUGAL PUMPS

## CR SERIES

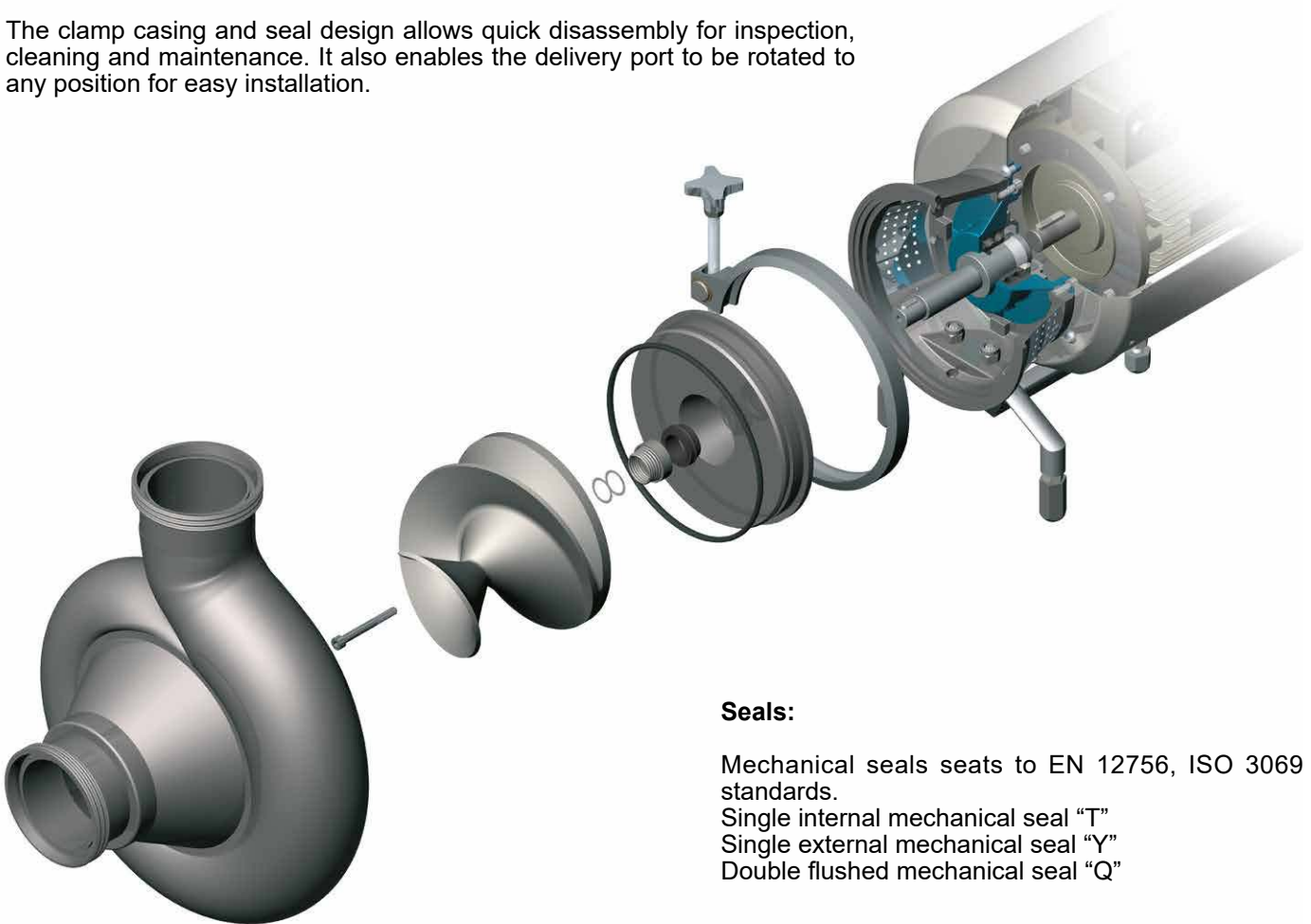
### Standard design

Centrifugal pumps incorporating a special auger type screw shaped impeller.

Wetted parts in investment cast CF-3M 1.4404 / AISI 316L stainless steel, electro-chemically polished to ensure the perfect surface finish.

Separate IEC standard motor.  
Flow rates range from 0 to 150 m<sup>3</sup> /h, heads up to 20 m (2 bar).

The clamp casing and seal design allows quick disassembly for inspection, cleaning and maintenance. It also enables the delivery port to be rotated to any position for easy installation.



### Seals:

Mechanical seals seats to EN 12756, ISO 3069 standards.

Single internal mechanical seal "T"  
Single external mechanical seal "Y"  
Double flushed mechanical seal "Q"

### Elastomers (certified to FDA):

EPDM  
Fluorocarbon  
Silicone  
P.T.F.E. (FEP)

### Connections:

DIN - SMS - IDF - BS / RJT - DS - CLAMP and EN 1092-1 PN16 flanges to suit most international standards.

### Applications

Delicate handling without clogging.

The CR Series has been designed for very gentle handling of sensitive media at extremely low flow velocities. The screw shape impeller combines the properties of a centrifugal pump with the delicate characteristics of a positive displacement pump. The ability to handle high solids products in an extremely gentle way makes CR Series pumps ideal for food processing.

Fruit and vegetable handling, Soups and sauces, Cereals, Fish transportation, Food pastes, Oil, Wine recirculation.



### **INDEPENDENT SUPPORT**

Sturdy and modular support to be integrated in the various solutions.



### **SEPARATE MOTOR**

For a self-sufficient choice in compliance with the following standards:

- IEC 34 - 1
- VDE 0530T1
- NF C51 - 111
- BS 5000 PART. 99
- NEMA MG1 PART. 1



### **REAR CASING COVER**

Achieved by investment casting, structured and machined according to the various mechanical seals and application requirements.



### **IMPELLER**

Each pump model has its own impeller that is manufactured with perfect shapes, thickness and materials thanks to the investment casting procedure. This means that they are perfectly efficient and reliable.



### **CASING**

Volute casing with variable circular cross section, minimum thickness 7 mm.

# VARIOUS EXECUTIONS



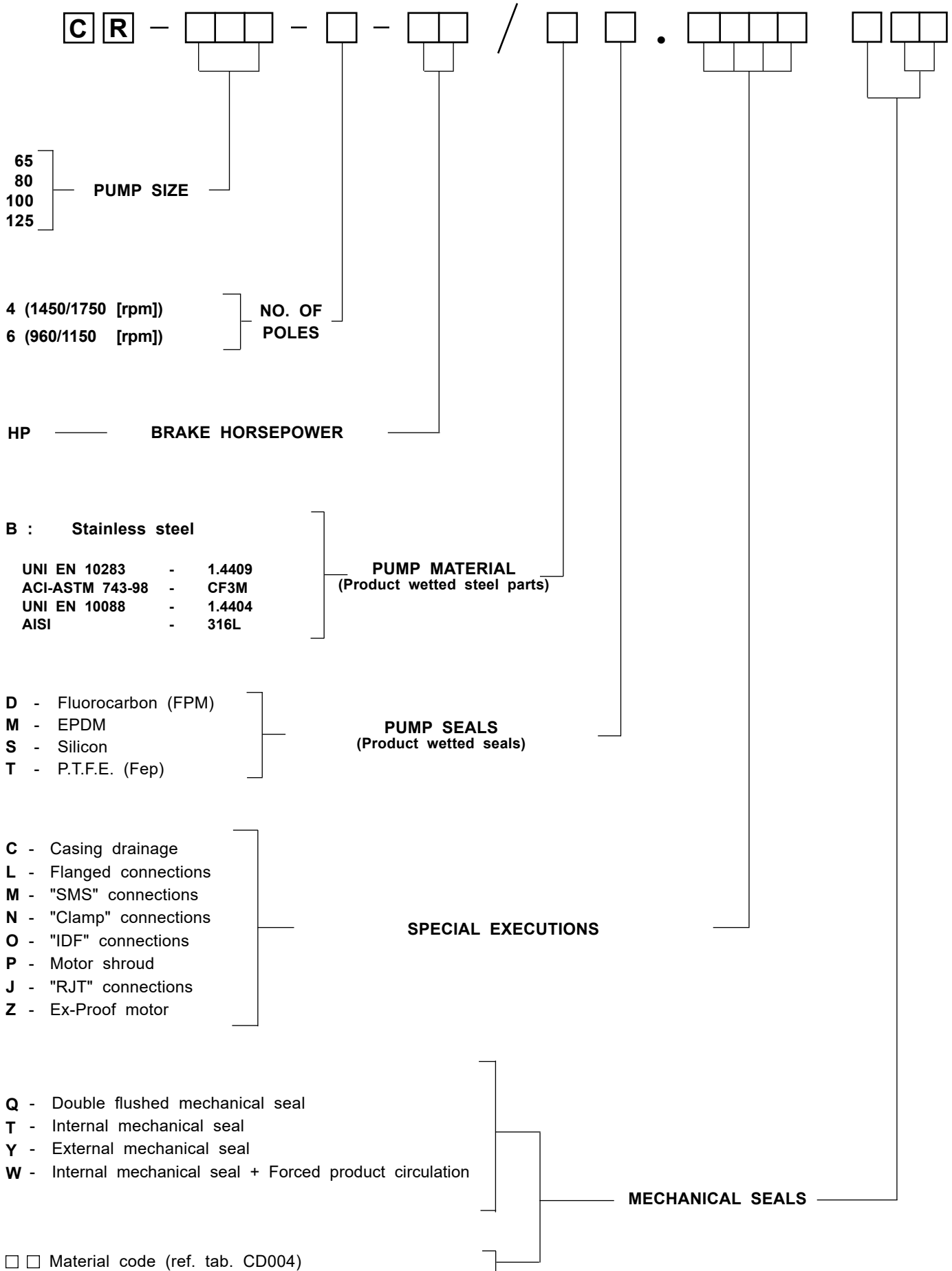
The industrial version differs from the other versions in terms of the motor, which is unprotected and also in terms of the type of support. It is manufactured with flanges type EN 1092-1 PN16 as an alternative to the threaded version available for the water treatment, chemical and wine-making sectors.

The most suitable version can be chosen amongst the many available depending on the customer's requirements.  
Version with motor shroud, quick connection clamps, adjustable feet, entirely in stainless steel, for foodstuff and pharmaceutical industries.



Available with different connections according to DIN - ENOLOGICAL - SMS - IDF - BS / RJT - CLAMP standards.  
Solution with trolley for differentiated duties.

# PUMP CODES GUIDE



Example: **CR 100-4-7,5/BM.LPT31**



# MECHANICAL SEALS

Mechanical seals with standardized seats according to the following standards are fitted on CR pumps: EN 12756, ISO 3069.

Thanks to the different materials available the customer can choose the most suitable versions amongst the many available, depending on the product to be pumped, the temperatures and working performance. The various applications meet and resolve the widest variety of installation and operational conditions.

## MATERIAL CODES

### METALS

**H** - Nickel-plated stainless steel AISI 304

**X** - Stainless steel AISI 316L

**L** - Hastelloy (Ni alloy)

### CARBONS

**V** - Normal carbon

**Z** - Special carbon

### RESINS

**5** - Normal PTFE

**4** - Loaded PTFE

**F** - O-Ring FEP

### METAL OXIDES

**2** - Alumina ceramic

### METAL CARBONS

**3** - Hard metal welded on stainless steel (TUC)

**R** - Integral anti-corrosion hard metal (TUC)

**K** - Integral silicate carbon (SIC)

### ELASTOMERS

**6** - Nitrile (NBR)

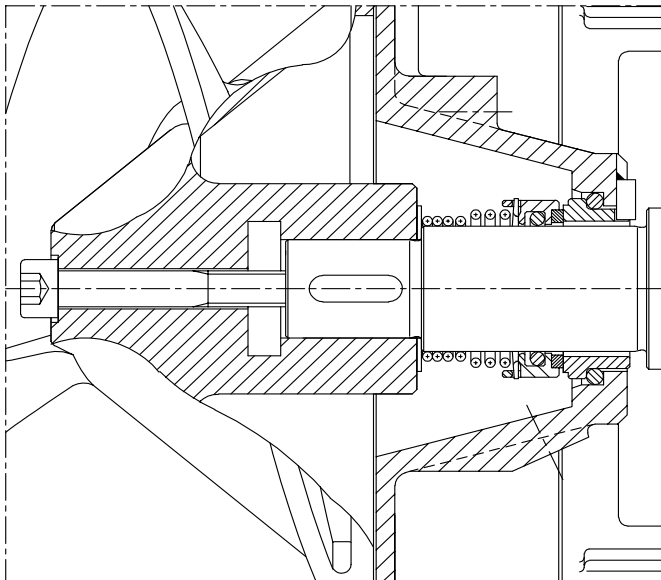
**7** - Ethylene propylene (EPDM)

**W** - FPM for high T

**Y** - Fluorocarbon (FPM)

**Y6** - Special Fluorocarbon

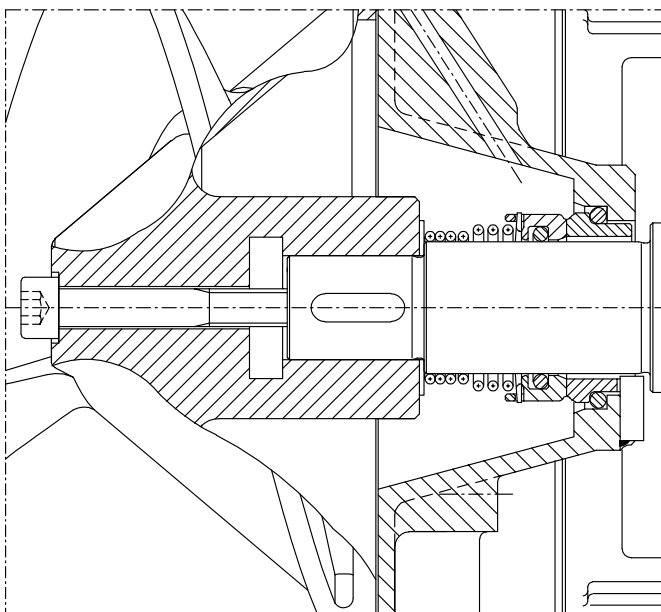
**B** - Silicone



## EXECUTION T

### STANDARD MECHANICAL SEAL "T"

The standard version entails the installation of an internal mechanical seal, dipped in the product and fitted behind the impeller in a suitable conic chamber in order to ensure correct circulation conditions.



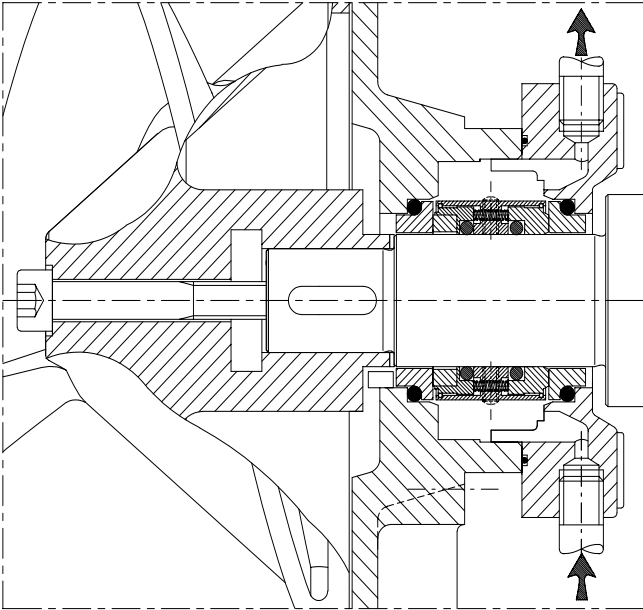
## EXECUTION W

### MECHANICAL SEAL WITH CIRCULATION "W"

Internal mechanical seal with forced circulation of the pumped liquid to restrict the working temperature, to eliminate air and steam bubbles, to improve lubrication and avoid residues or deposits on the seal.



# MECHANICAL SEALS



## EXECUTION Q

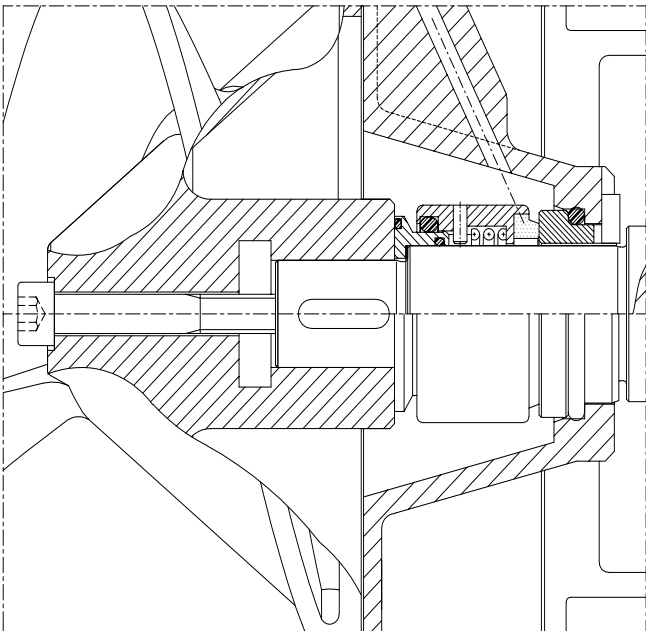
### COMPACT DOUBLE MECHANICAL SEAL "Q"

Double mechanical seal with circulation of the cleaning and cooling liquid.

It is used with products that tend to crystallise, to glue, to harden, to be abrasive, to reach high temperatures and whenever the seal life is limited.

The function of the fluxing is to clean, lubricate and cool the seal; the circulating liquid must be clean.

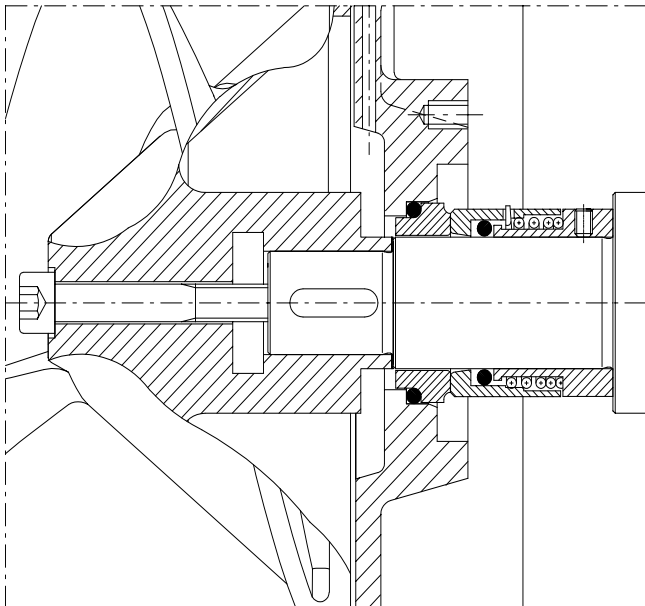
If the seal is leaking the fluxing liquid will point out this fault.



## EXECUTION WH

### INTERNAL MECHANICAL SEAL "WH"

Protected and balanced execution with forced circulation of the liquid pumped. It is suitable for viscous and dirty products, for vacuum applications or those subject to differences in pressure. It is easily cleaned and therefore ideal for sanitary and pharmaceutical applications etc.



## EXECUTION Y

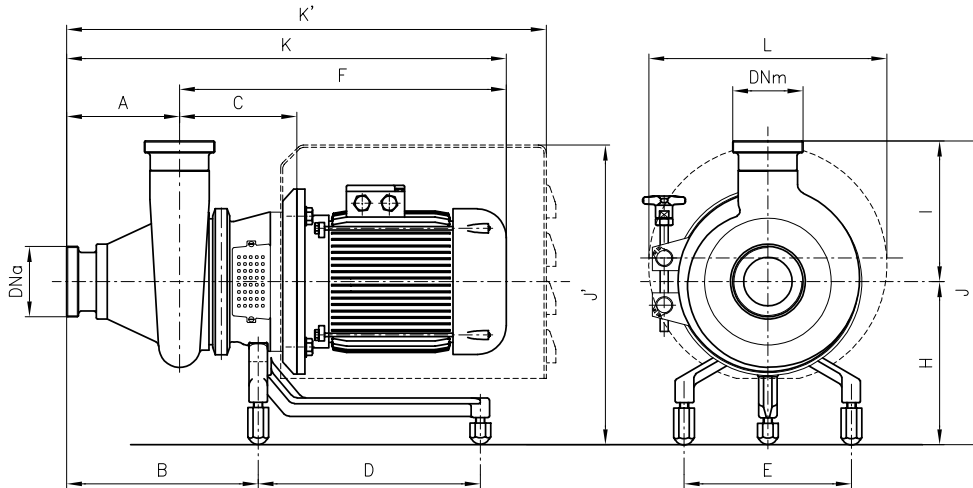
### EXTERNAL MECHANICAL SEAL "Y"

For all cases where the mechanical seal must not touch the pumped product, in order to avoid sanitary problems, corrosion and conditioning of its running.





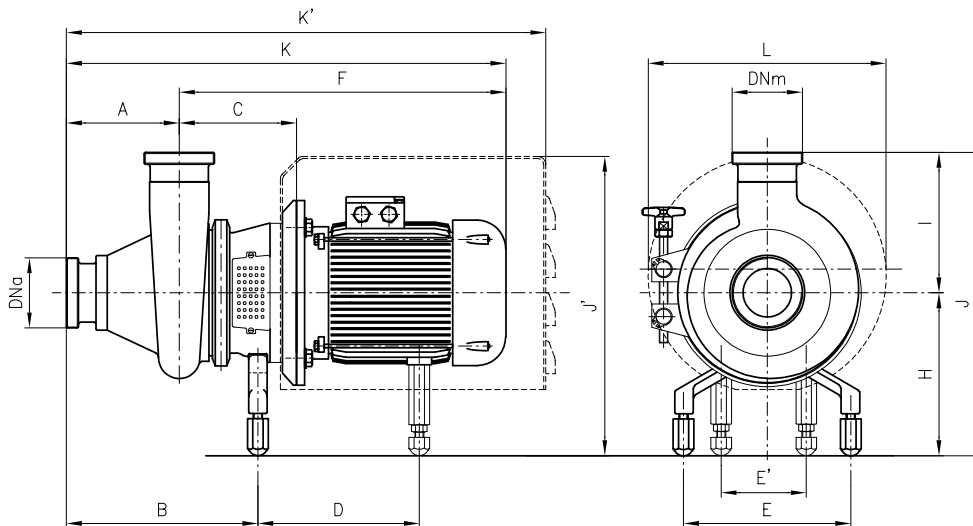
**MOTOR POWER FROM 0,55 kW TO 4 kW (SIZE IEC 80-112)**



DN = DIN 11851 male threaded connection - Dimensions not binding - exec. with standard IEC/EN motors

Pumps	1450 rpm	kW	DNa	DNm	A	B	C	D	E	E'	F	H	K	K'	I	J	J'	L	Weight kg						
CR 65		0,55	65	65	151	257	158	230	225	-	-	392	208	543	657	190	398	374	302						
	0,75	437										588													
	1,1	452										213		632							699	245	458	379	302
	1,5	508										230		690							767	475	435	330	
CR 80	1,1	80	80	181	297	168	300	225	-	-	452	230	632	699	245	458	379	302							
	1,5										508		690							767	475	435	330		
	2,2										536		238							741	824	296	534	443	330
	3																								
CR 100	2,2	100	100	205	337	202	300	225	-	-	536	238	741	824	296	534	443	330							
	3																								
	4																								

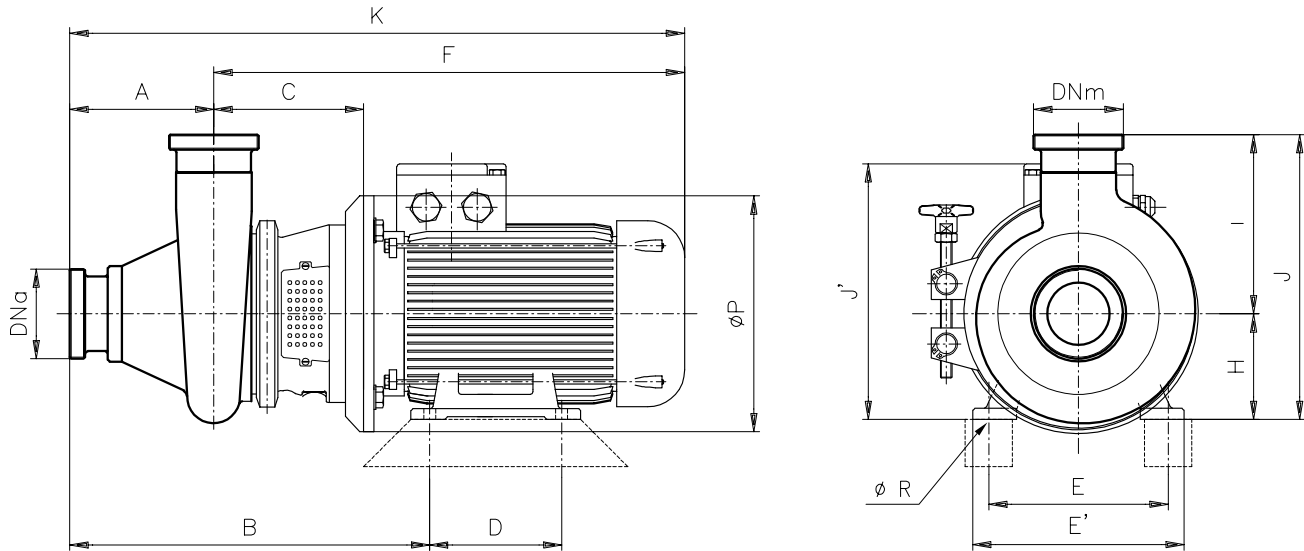
**MOTOR POWER FROM 5,5 kW TO 15 kW (SIZE IEC 132-160)**



DN = DIN 11851 male threaded connection - Dimensions not binding - exec. with standard IEC/EN motors

Pumps	1450 rpm	kW	DNa	DNm	A	B	C	D	E	E'	F	H	K	K'	I	J	J'	L	Weight kg							
CR 100		5,5	100	100	205	325	204	283	225	180	576	238	784	848	294	526	460	370								
	7,5	230																		727	247	932	1105	532	510	370
	11	230																		727	247	932	1105	532	510	370
	15	230																		727	247	932	1105	532	510	370
CR 125	5,5	125	125	232	370	230	292	225	180	604	238	836	900	346	584	501	430									
	7,5																		230	748	247	980	1035	593	510	430
	11																		230	748	247	980	1035	593	510	430
	15																		230	748	247	980	1035	593	510	430

MOTOR POWER FROM 0,55 kW TO 15 kW (SIZE IEC 80-160)



DN = DIN 11851 male threaded connection - Dimensions not binding - exec. with standard IEC/EN motors

Pumps	kW	DNa	DNm	A	B	C	D	E	E'	F	H	K	I	J	J'	ØP	ØR	Weight kg					
CR 65	0,55	65	65	151	360	158	100	125	150	392	80	543	190	270	200	200	10						
	0,75				362			140	165	437				90	588			280	218				
	1,1																						
CR 80	1,1	80	80	181	406	168	140	125	140	165	90	632	245	335	218	250	12						
	1,5																						
	2,2																						
	3																						
CR 100	4	100	100	205	413	202	140	160	196	481	112	720	294	345	235	300	12						
	2,2																						
	3																						
	4																						
	5,5																						
CR 125	7,5	125	125	232	477	230	140	190	240	515	132	836	346	406	331	350	15						
	11																						
	15																						
	5,5																						
CR 125	7,5	125	125	232	497	270	210	216	256	576	160	937	346	426	299	350	15						
	11																						
	15																						
CR 125	11	125	125	232	570	270	210	190	240	734	160	937	346	454	357	350	15						
	15																						
	5,5																						
CR 125	7,5	125	125	232	550	270	210	216	256	604	132	836	346	478	404	300	12						
	11																						
	15																						
CR 125	15	125	125	232	610	270	210	254	300	748	160	980	346	506	432	350	15						
	5,5																						
	7,5																						

# CURVE CARATTERISTICHE

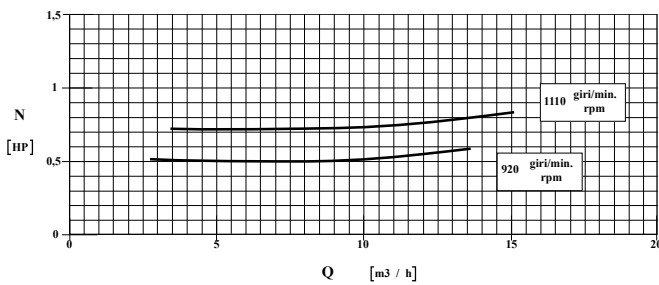
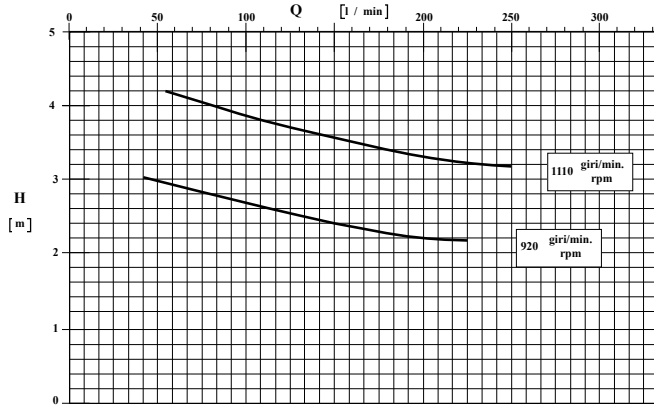
## PERFORMANCE CURVES

# Serie CR

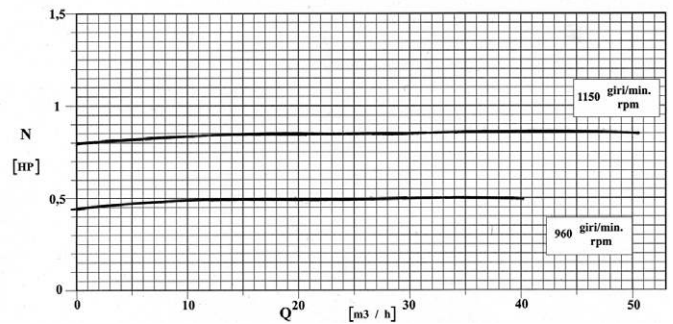
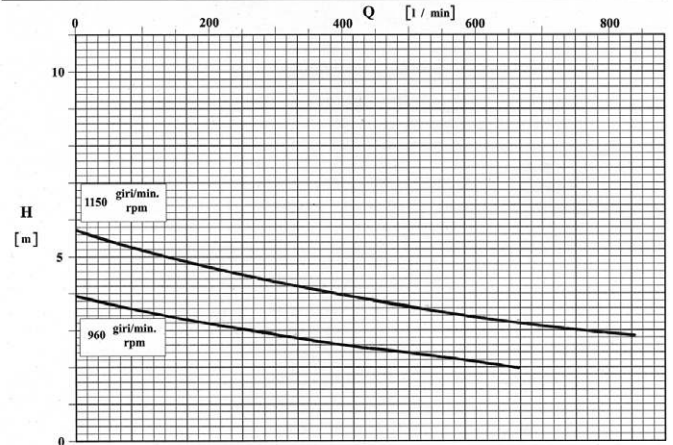
## CR Series

960 / 1150 giri/min

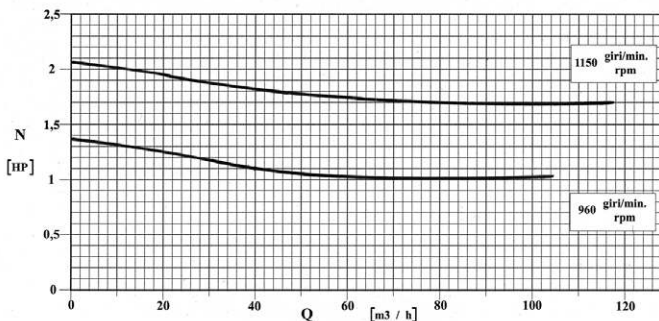
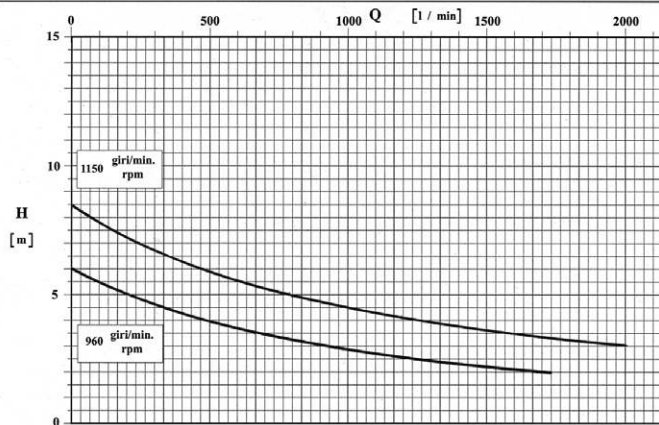
POMPA TIPO Pump type		<b>CR 65</b>			n <b>920/1110</b> giri / min r. p. m.	
GIRANTE — Impeller						
TIPO Type	N° di pale n° of vanes	Pass. sferico max. sphere	Ø max max. diameter	Ø min min. diameter	Bocche tipo Ports type	Bocca aspir. Suction port
APERTA	1 Elica	33 mm	156 mm	— mm	DIN 11851	DN 65
Bocca mand. Discharge port						
DN 65						
CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg/dm³) Curves show performance with clear water at 70°F - Specific gravity 1 (kg/dm³)						



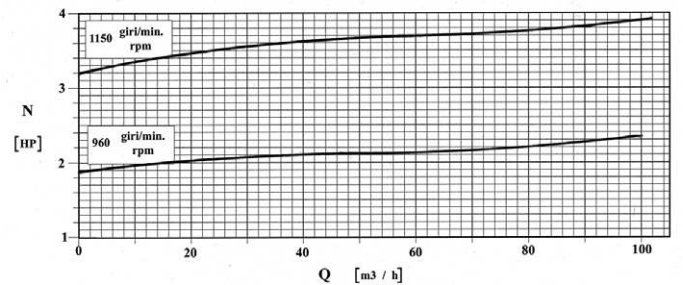
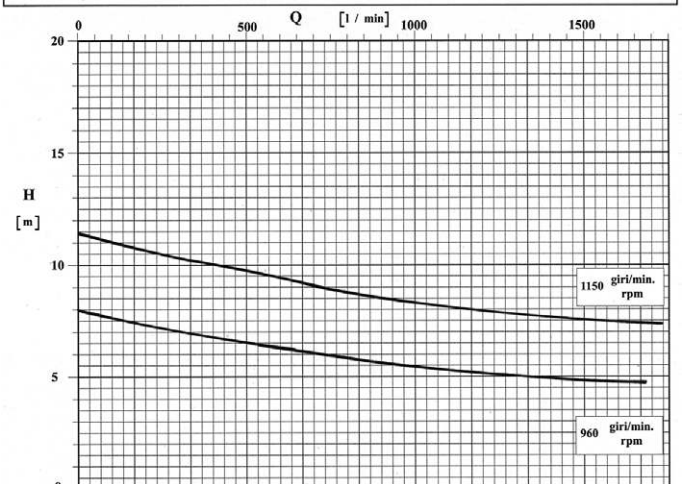
POMPA TIPO Pump type		<b>CR 80</b>			n <b>960/1150</b> giri / min r. p. m.	
GIRANTE — Impeller						
TIPO Type	N° di pale n° of vanes	Pass. sferico max. sphere	Ø max max. diameter	Ø min min. diameter	Bocche tipo Ports type	Bocca aspir. Suction port
APERTA	1 Elica	45 mm	178 mm	— mm	DIN 11851	DN 80
Bocca mand. Discharge port						
DN 80						
CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg/dm³) Curves show performance with clear water at 70°F - Specific gravity 1 (kg/dm³)						



POMPA TIPO Pump type		<b>CR 100</b>			n <b>960/1150</b> giri / min r. p. m.	
GIRANTE — Impeller						
TIPO Type	N° di pale n° of vanes	Pass. sferico max. sphere	Ø max max. diameter	Ø min min. diameter	Bocche tipo Ports type	Bocca aspir. Suction port
APERTA	1 Elica	58 mm	210 mm	— mm	DIN 11851	DN 100
Bocca mand. Discharge port						
DN 100						
CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg/dm³) Curves show performance with clear water at 70°F - Specific gravity 1 (kg/dm³)						



POMPA TIPO Pump type		<b>CR 125</b>			n <b>960/1150</b> giri / min r. p. m.	
GIRANTE — Impeller						
TIPO Type	N° di pale n° of vanes	Pass. sferico max. sphere	Ø max max. diameter	Ø min min. diameter	Bocche tipo Ports type	Bocca aspir. Suction port
APERTA	1 Elica	63 mm	260 mm	— mm	DIN 11851	DN 125
Bocca mand. Discharge port						
DN 125						
CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg/dm³) Curves show performance with clear water at 70°F - Specific gravity 1 (kg/dm³)						



# CURVE CARATTERISTICHE

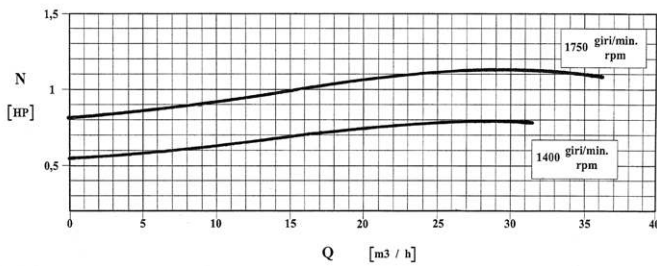
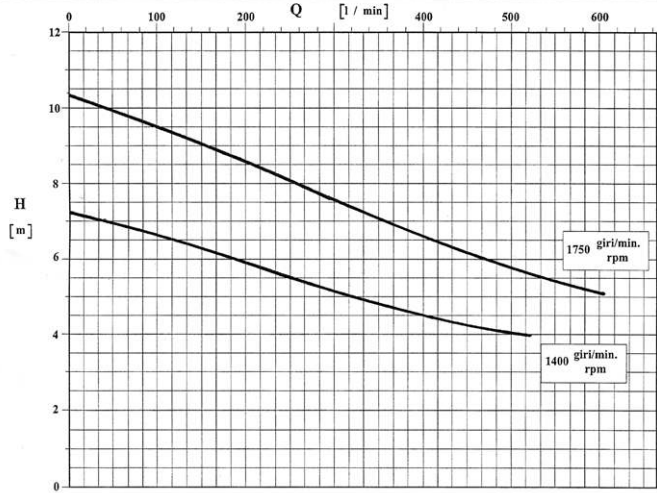
## PERFORMANCE CURVES

# Serie CR

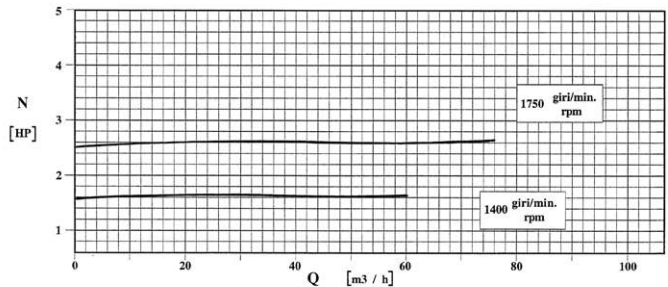
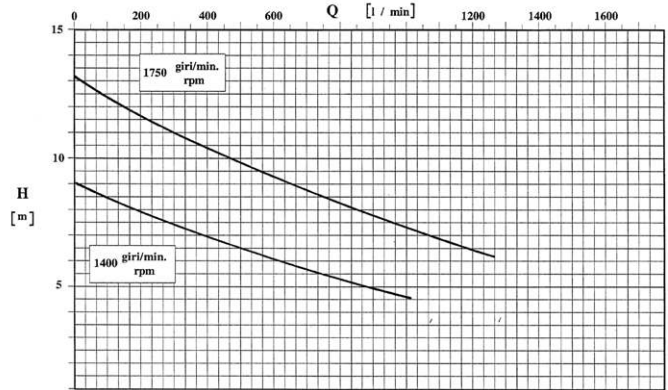
## CR Series

1450 / 1750 giri/min

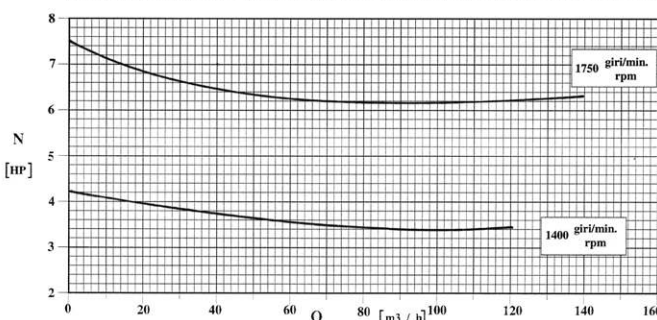
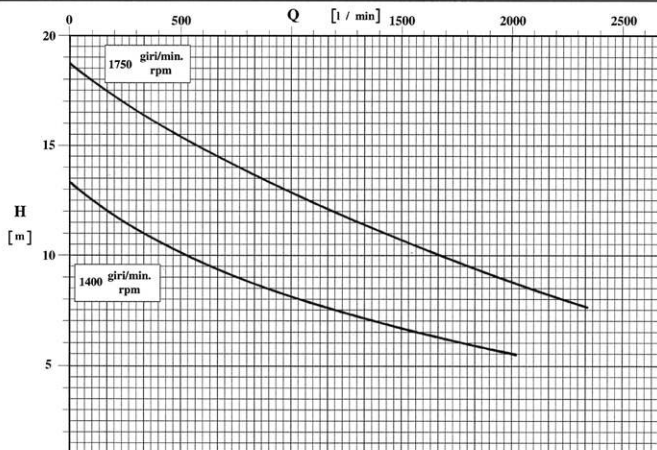
POMPA TIPO Pump type		<b>CR 65</b>			n <b>1400/1750</b> giri / min r. p. m.	
GIRANTE — Impeller						
TIPO Type	N° di pale n° of vanes	Pass. sferico max. sphere	Ø max max. diameter	Ø min min. diameter	Bocche tipo Ports type	Bocca aspir. Suction port DN <b>65</b>
APERTA	1 Elica	33 mm	156 mm	---	DIN 11851	Bocca mand. Discharge port DN <b>65</b>
CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg/dm <sup>3</sup> ) Curves show performance with clear water at 20°C - Specific gravity 1 (kg/dm <sup>3</sup> )						



POMPA TIPO Pump type		<b>CR 80</b>			n <b>1450/1750</b> giri / min r. p. m.	
GIRANTE — Impeller						
TIPO Type	N° di pale n° of vanes	Pass. sferico max. sphere	Ø max max. diameter	Ø min min. diameter	Bocche tipo Ports type	Bocca aspir. Suction port DN <b>80</b>
APERTA	1 Elica	45 mm	178 mm	---	DIN 11851	Bocca mand. Discharge port DN <b>80</b>
CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg/dm <sup>3</sup> ) Curves show performance with clear water at 20°C - Specific gravity 1 (kg/dm <sup>3</sup> )						



POMPA TIPO Pump type		<b>CR 100</b>			n <b>1450/1750</b> giri / min r. p. m.	
GIRANTE — Impeller						
TIPO Type	N° di pale n° of vanes	Pass. sferico max. sphere	Ø max max. diameter	Ø min min. diameter	Bocche tipo Ports type	Bocca aspir. Suction port DN <b>100</b>
APERTA	1 Elica	58 mm	210 mm	---	DIN 11851	Bocca mand. Discharge port DN <b>100</b>
CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg/dm <sup>3</sup> ) Curves show performance with clear water at 20°C - Specific gravity 1 (kg/dm <sup>3</sup> )						



POMPA TIPO Pump type		<b>CR 125</b>			n <b>1450/1750</b> giri / min r. p. m.	
GIRANTE — Impeller						
TIPO Type	N° di pale n° of vanes	Pass. sferico max. sphere	Ø max max. diameter	Ø min min. diameter	Bocche tipo Ports type	Bocca aspir. Suction port DN <b>125</b>
APERTA	1 Elica	63 mm	260 mm	---	DIN 11851	Bocca mand. Discharge port DN <b>125</b>
CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg/dm <sup>3</sup> ) Curves show performance with clear water at 20°C - Specific gravity 1 (kg/dm <sup>3</sup> )						

