

CIRCULATING PUMP



motralec

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DET NORSKE VERITAS

QUALITY MANAGEMENT SYSTEM CERTIFICATE

Certificato No. / Certificate No. **CERT-04421-99-AQ-BOL-SINCERT**

Si attesta che / This certifies that

IL SISTEMA DI GESTIONE PER LA QUALITÀ DI / THE QUALITY MANAGEMENT SYSTEM OF

SPERONI S.p.A.

Via S. Biagio, 59/A - 42024 Castelnovo Sotto (RE) - Italy

È CONFORME AI REQUISITI DELLA NORMA PER I SISTEMI DI GESTIONE PER LA QUALITÀ
CONFORMS TO THE QUALITY MANAGEMENT SYSTEMS STANDARD

UNI EN ISO 9001:2000 (ISO 9001:2000)

Questa certificazione è valida per il seguente campo applicativo:

This certificate is valid for the following products or services:

(Ulteriori chiarimenti riguardanti lo scopo e l'applicabilità dei requisiti della normativa si possono ottenere consultando l'organizzazione certificata)
(Further clarifications regarding the scope and the applicability of the requirements of the standard(s) may be obtained by consulting the certified organisation)

**Progettazione, produzione, vendita e assistenza di elettropompe di superficie e sommerse
e motori elettrici asincroni monofase e trifase**

*Design, manufacture, sale and after-sale service of superficial and submersible electropumps
and mono/three-phase electrical motors*

Luogo e data
Place and date
Agrate Brianza, (MI) 2003-12-14

Data Prima Emissione:
First Issue Date:
1999-05-17

per l'Organismo di Certificazione
for the Accredited Unit
Det Norske Veritas Italia S.r.l.

Lead Auditor: Delio Bagnoli

Settore EA: 18

SINCERT
ACCREDITED ORGANISATION FOR QUALITY MANAGEMENT SYSTEMS

SGS Registrazione N. 003A
SIA Registrazione N. 003B
PRD Registrazione N. 003B
SCR Registrazione N. 004F
SSI Registrazione N. 002G

Membro degli Accordi di Mutuo Riconoscimento EA e UK
Signatory to EA and UK Mutual Recognition Agreements

Leonardo Omodeo Zorini
Management Representative

La validità del presente certificato è subordinata a sorveglianza periodica (ogni 6, 9 o 12 mesi) e al riesame completo del sistema con periodicità triennale
The validity of this certificate is subject to periodical audits (every 6, 9 or 12 months) and the complete re-assessment of the system every three years
Le aziende in possesso di un certificato valido sono presenti nella banca dati sul sito www.dnv.it e sul sito Sincert www.sincert.it - All the companies with a valid certificate are online at the following addresses: www.dnv.it and www.sincert.it



Technical Characteristics.

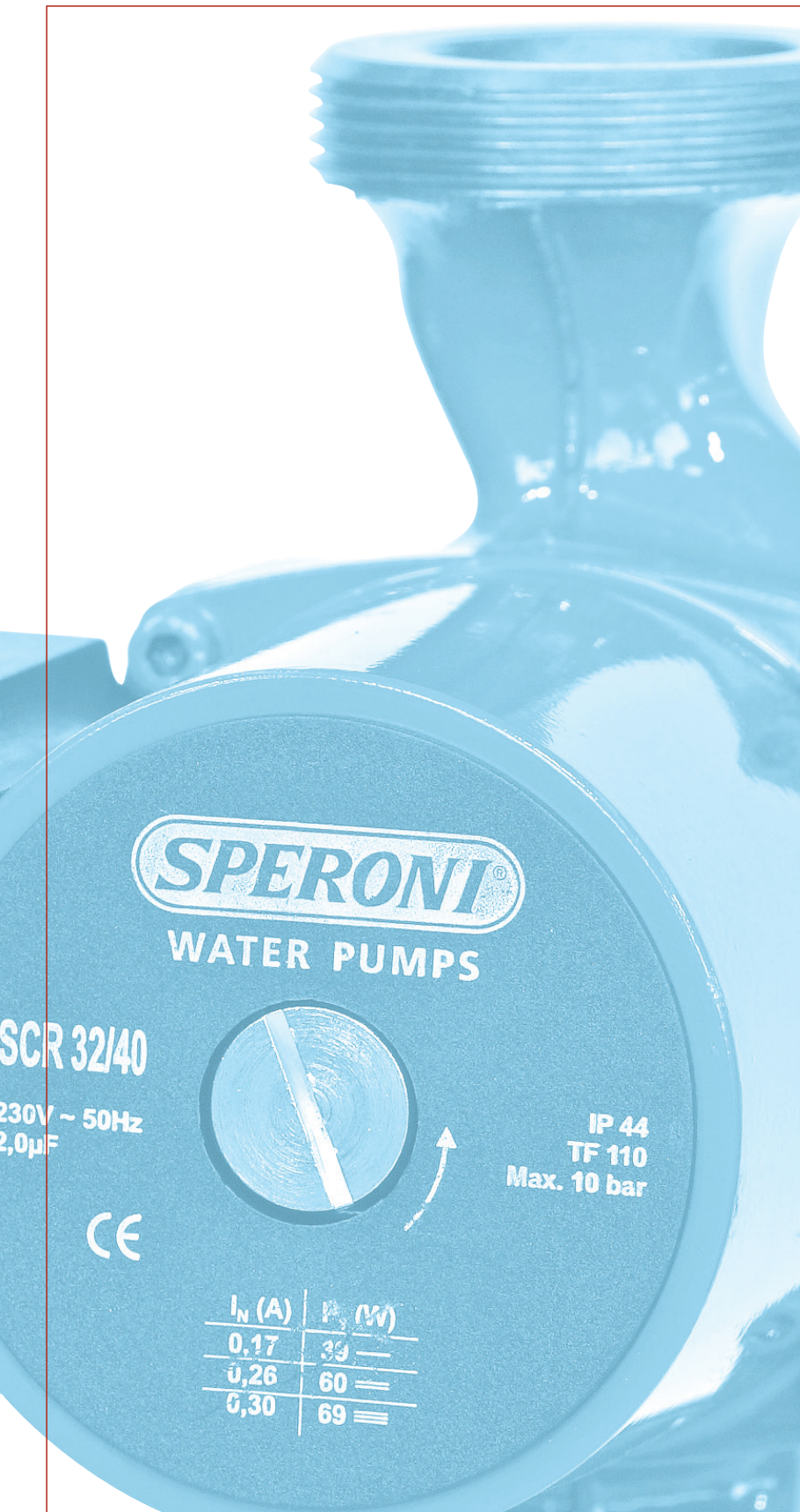
The technical data and characteristics stated in this General Catalogue are not binding. SPERONI spa reserves the right to make modifications without notice. Therefore weights, dimensions, performances and any other stated issues are indicative only and not binding. Anyway for any technical details you must require an up-to-date product technical card.

Competent Court.

In case of any dispute the competent Court will be one of Reggio Emilia even if the payment is by bill of exchange.



SPERONI[®]



Production program of the SPERONI Company

The production program of the SPERONI Company comprises pumps of forced circulation of hot and cold operating in heating systems.

Pumps with the rotor operating in liquid

In pumps with the rotor operating in "wet" conditions, the rotor is immersed in liquid and constitutes an element of electric motor.

The sleeve sealing the motor is made from high quality stainless steel and protects the stator of the motor against flooding by liquid. The pump shaft is made from material resistant to corrosion, featuring ceramic/graphite bearings. The pump has static sealing. Liquid forced through the pump fulfills the following two functions: cools the pump and decreases friction in bearings.

Pumps with the rotor operating in "wet" conditions operate without noise and do not require expenses to maintain them in the condition of technical efficiency. The group of pumps with the rotor operating in "wet" conditions includes pumps with three rotational speeds, selected with the use of U type switch as well as UE type pipes with electronic control.

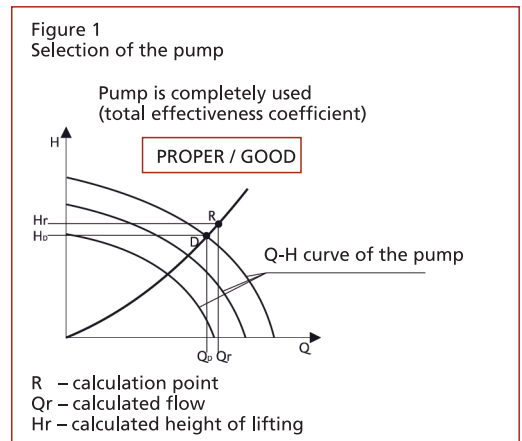
Selection of proper type of pump

Selection of pump with three levels of rotational speed

Characteristic features of pumps have been presented in the form of characteristic curves, showing pressure H , power P and level of pump usage depending on flow Q .

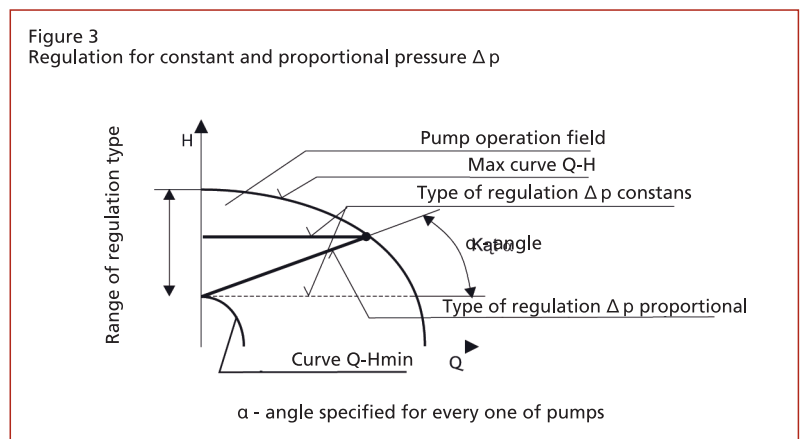
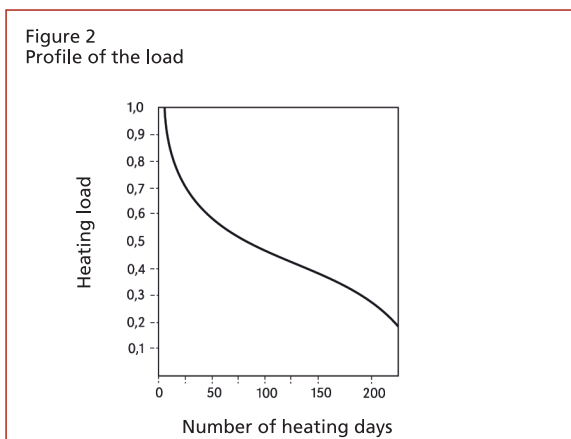
The data related to required flow and pressure drop in the system / installation are contained in the project documentation. These data can be compared with technical characteristics of pumps, shown in the form of charts; based on it we select a proper pump.

The calculated point R with coordinates Q_r and H_r constitutes the basis for selecting the pump. The pump having three levels of speed has three characteristics $Q-H$, for every level of revolutions (see Figure 1). This pump will operate in the actual working point D . This point constitutes the crossing between the curve of hydraulic resistance in installation and the curve $Q-H$ of a given pump.



Selection of electronically regulated pumps

Functioning of electronically regulated pumps has been adjusted to the requirements regarding usage of heating energy in a year. This average usage is shown on the chart – Figure 2 – presenting the profile of seasonal overload.



Proper selection of regulated pumps has been shown on figures 3, 4 and 5. (Comparison of pump characteristics, depending on the design, with actual technical characteristics of a given pump).

Figure 4
Regulation for constant pressure Δp

Calculation point is located in the proximity of the maximal curve

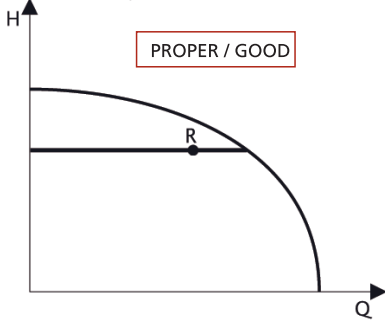
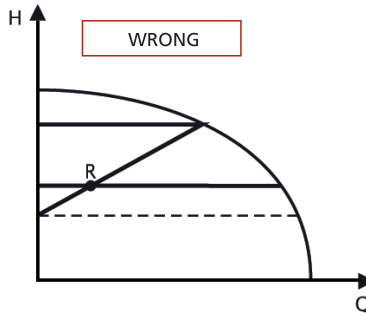


Figure 5
Regulation for proportional pressure Δp



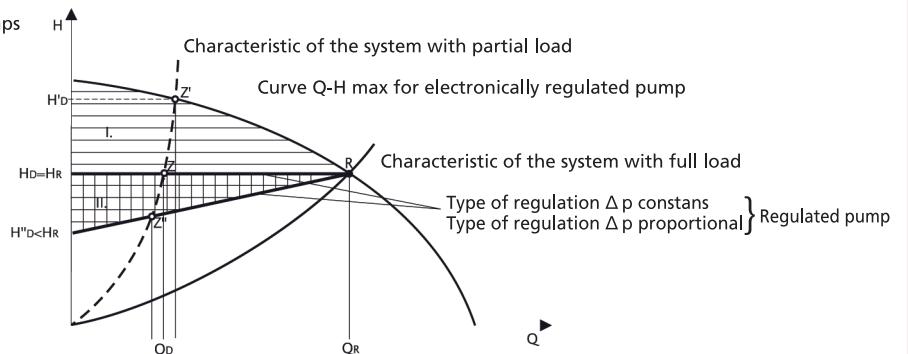
Calculation point is located far away from the maximal curve. The pump is oversized.

R – calculation point

In regulated pumps we have at our disposal the entire operational field of a given pump, contained between the minimal and maximal functional curve Q-H. Therefore, this type of regulation is called the stepless thermal regulation. The calculation point R should be located as close as possible to the maximal functional curve Q-H.

From the figure showing the annual load, we can notice that the heating system with the full load of thermal power, operates throughout the year only for several days. During the remaining days the regulation system of electronic pump decreases power usage. In the case of an optimal control in the system (also with the use of thermostatic valves installed on heating systems) we are able to save thanks to pumps regulating high amounts of supplied energy. These savings are shown on Figure 6.

Figure 6
Energy savings with the use of electronic circulating pumps



- I. + II. - savings field of pressure drops
- R - calculation point, full load
- Q_R - full flow
- Q_D - partial flow
- $H_D=H_R$ - required height of lifting the pump
- Z, Z', Z'' - work point, partial load

Viscosity of operational media

All hydraulic data and other data contained in the technical catalog, refer to operational media in the form of water, having kinematic viscosity of 1 mm²/sec.

When in individual pumps there are no separate data regarding operational medium, then in order to receive normal functionality of the pump we have to guarantee such medium that is clean, has a standard of normal, liquid form of heating water (according to the requirements of VDI 2035, specifying hardness and pH value of water), without aggressive and explosive additive, admixtures of mineral oil as well as hard and fibrous particles.

Kinematic viscosity of water can amount to 10 mm²/sec.

When viscosity of water is in the range between 1 and 10 mm²/sec, then addition of agents preventing against freezing (e.g. glycol) has no significant influence on operation of the pump.

All rights reserved as regards changes of technical characteristics of SPERONI products without the necessity of prior notification as well as errors in our technical catalog.

SCR



Applications

The threaded Speroni circulators assure the best technical and economic performances and they are able to solve all specific problems in every plants, thanks to their technological construction innovations.

Single phase circulators are perfect for single or collective plants of residences, sporting building, hospitals, greenhouses, etc

Particularly suitable for heating and conditioning plants, for water circulation in heating system and sanitary warm water system, with water hardness less than 30°F.

Limits of application

- Pressure rating 5,5 bar
- Working max pressure NP 10bar
- Delivery 3,5m/h
- Temperature liquid up to 110° C
- Recommended temperature 65° C
- Continuous service

Motor

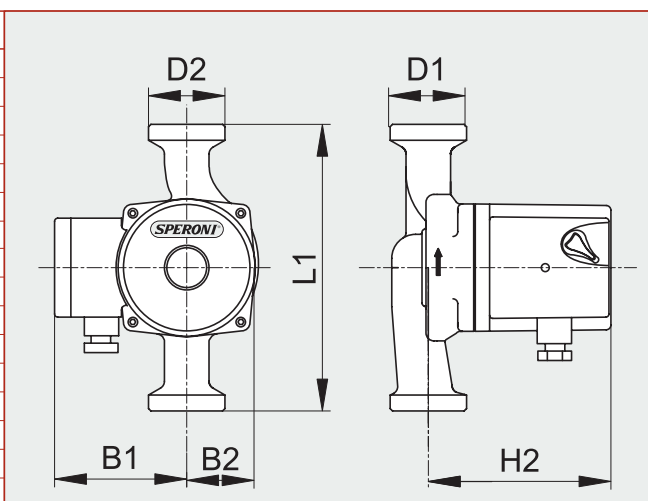
- Electric motor
- Isolation class F
- Protection IP 44

Components

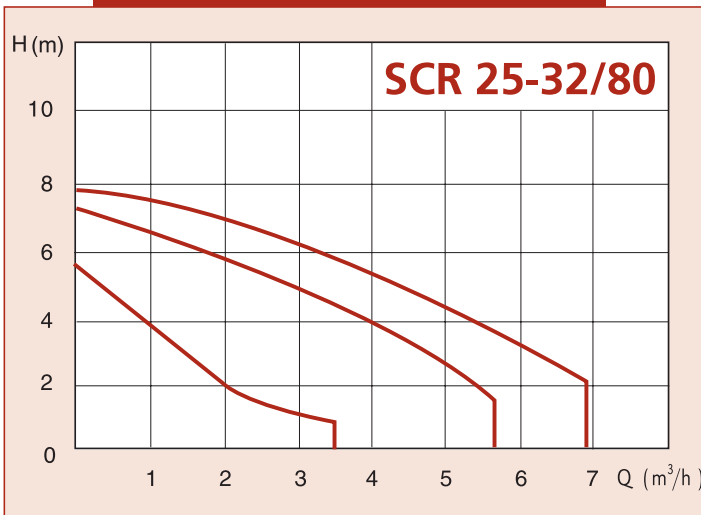
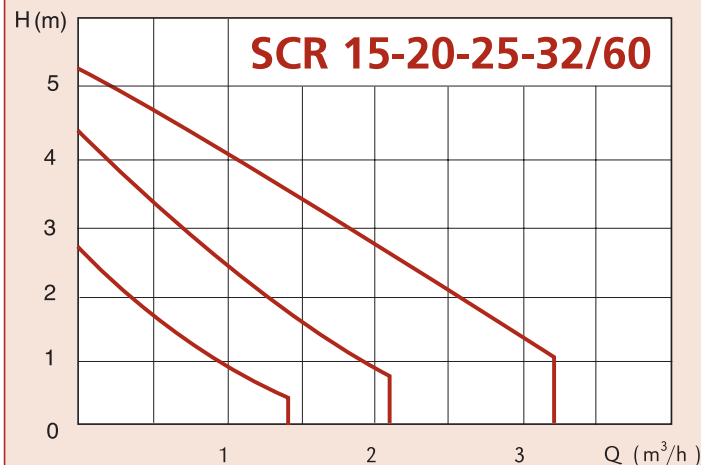
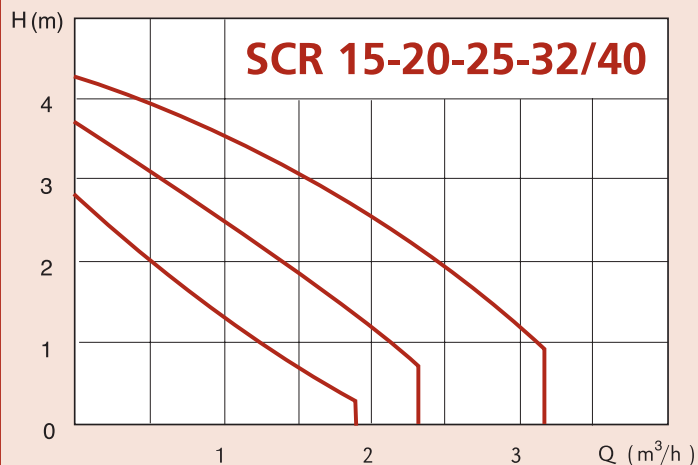
- Pumps body in cast iron GG25
- Synthetic Impeller (polymer)
- Shaft in ceramics
- Ball bearing in ceramics
- Trust bearing
- Rotor with Stainless steel housing
- Winding copper wire
- Gasket in EPDM

DIMENSIONS AND WEIGHTS

TYPE	DN	D1	D2	L1	B1	B2	H2	Kg
SCR 15/40-130	15	1/2"	1"	130	84	43	117	2,3
SCR 15/60-130	15	1/2"	1"	130	84	43	117	2,3
SCR 20/40-130	20	3/4"	1" 1/4	130	84	43	117	2,3
SCR 25/40-130	25	1"	1" 1/2	130	84	43	117	2,3
SCR 20/60-130	20	3/4"	1" 1/4	130	84	43	117	2,3
SCR 25/60-130	25	1"	1" 1/2	130	84	43	117	2,3
SCR 25/80-130	25	1"	1" 1/2	130	84	43	117	2,6
SCR 32/80-130	32	1" 1/4	2"	130	84	43	117	2,6
SCR 20/40-180	20	3/4"	1" 1/4	180	84	43	117	2,5
SCR 25/40-180	25	1"	1" 1/2	180	84	43	117	2,5
SCR 32/40-180	32	1" 1/4	2"	180	84	43	117	2,5
SCR 20/60-180	20	3/4"	1" 1/4	180	84	43	117	2,5
SCR 25/60-180	25	1"	1" 1/2	180	84	43	117	2,5
SCR 32/60-180	32	1" 1/4	2"	180	84	43	117	2,5
SCR 25/80-180	25	1"	1" 1/2	180	84	43	117	2,8
SCR 32/80-180	32	1" 1/4	2"	180	84	43	117	2,8

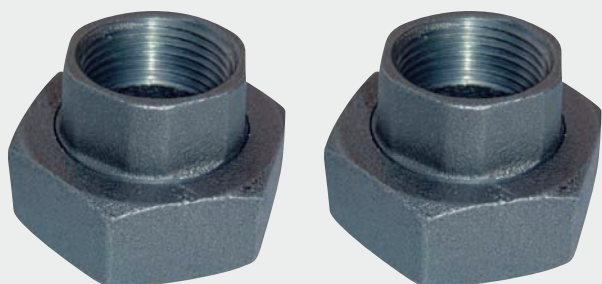


SCR



Type	DN	Pos.	(min-1)	P1 (W)	1x230 V (A)
SCR 15/40-130	15	1	1315	39	0,17
		2	1723	60	0,26
		3	2456	69	0,30
SCR 15/60-130	15	1	1080	39	0,17
		2	1396	62	0,27
		3	1980	80	0,35
SCR 20/40-130	20	1	1315	39	0,17
		2	1723	60	0,26
		3	2456	69	0,30
SCR 25/40-130	25	1	1315	39	0,17
		2	1723	60	0,26
		3	2456	69	0,30
SCR 20/60-130	20	1	1080	39	0,17
		2	1396	62	0,27
		3	1980	80	0,35
SCR 25/60-130	25	1	1080	39	0,17
		2	1396	62	0,27
		3	1980	80	0,35
SCR 25/80-130	25	1	1080	122	0,53
		2	1396	158	0,69
		3	1980	172	0,75
SCR 32/80-130	32	1	1080	122	0,53
		2	1396	158	0,69
		3	1980	172	0,75
SCR 20/40-180	20	1	1315	39	0,17
		2	1723	60	0,26
		3	2456	69	0,30
SCR 25/40-180	25	1	1315	39	0,17
		2	1723	60	0,26
		3	2456	69	0,30
SCR 32/40-180	32	1	1315	39	0,17
		2	1723	60	0,26
		3	2456	69	0,30
SCR 20/60-180	20	1	1080	69	0,17
		2	1396	62	0,26
		3	1980	80	0,30
SCR 25/60-180	25	1	1080	39	0,17
		2	1396	62	0,27
		3	1980	80	0,35
SCR 32/60-180	32	1	1080	39	0,17
		2	1396	62	0,27
		3	1980	80	0,35
SCR 25/80-180	25	1	1080	122	0,53
		2	1396	158	0,69
		3	1980	172	0,75
SCR 32/80-180	32	1	1080	122	0,53
		2	1396	158	0,69
		3	1980	172	0,75

ACCESSORIES



Set connections circulators 1/2" SCR 15

Set connections circulators 3/4" SCR 20

Set connections circulators 1" SCR 25

Set connections circulators 1 1/4" SCR 32

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