

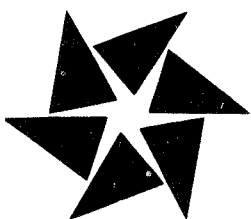
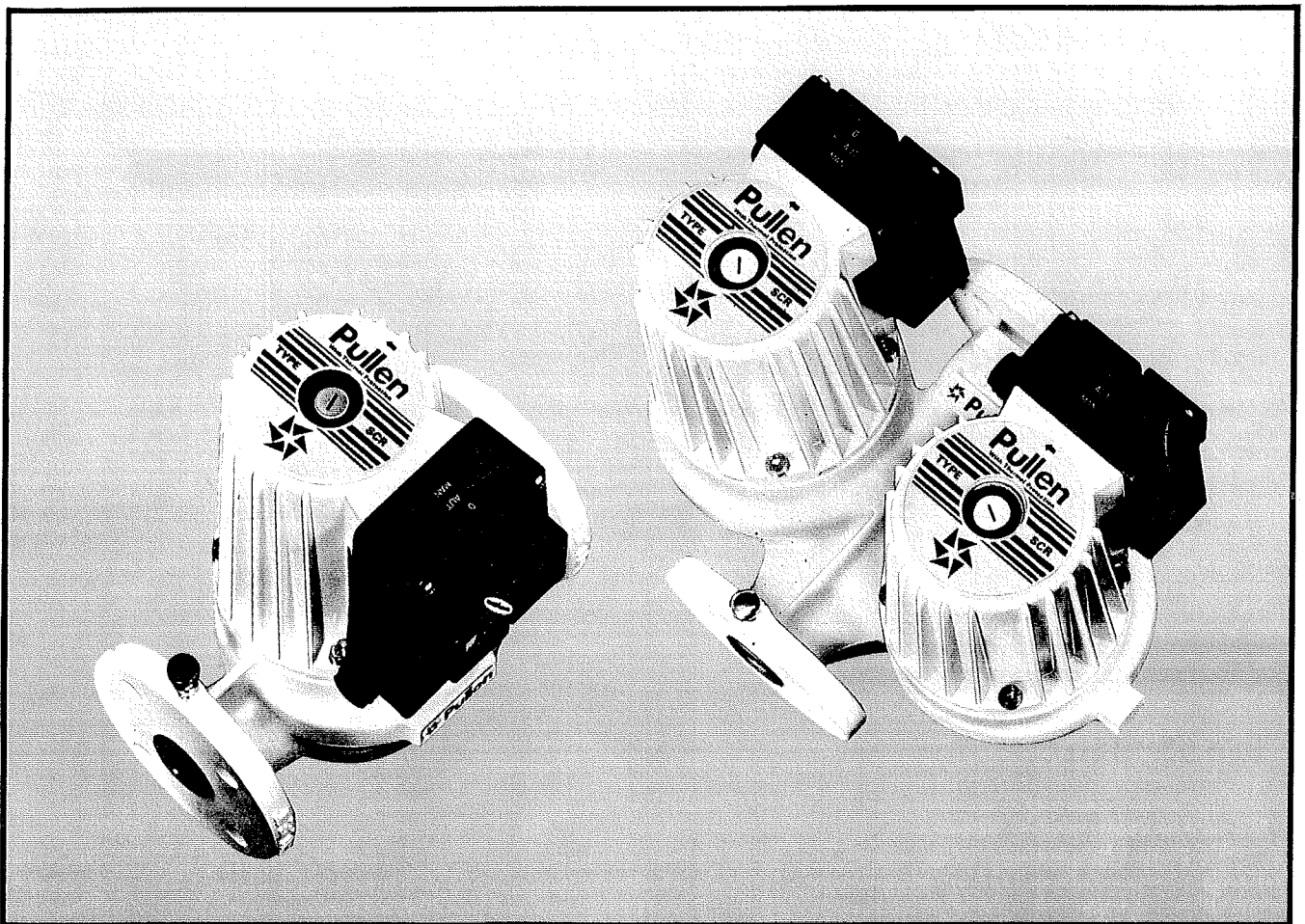
# Pullen

Sect. 030

Leaflet No. SCR201

## SCR Multi-Speed Canned-Rotor Pumps

*- New -*



**For Pressurised and  
Non-Pressurised Heating Systems**

## Introduction

Pullen type SCR canned-rotor pumps are multi-speed circulators suitable for pressurised and non-pressurised heating systems handling water at working pressures up to 8 bar and water temperatures from 15°C to 120°C

Each pump can operate at three different speeds, thereby enabling the correct speed to be selected to suit ideal flow conditions in the system. This speed change can be achieved manually by means of a three-position captive plug in the motor terminal box. Alternatively Pullen Pumps can provide remote automatic control to change the duty and standby pumps on a regular time basis, with an additional energy saving feature of automatically reducing the speed of the pump when the outside ambient air temperature increases.

All pump motors are protected with a thermal overload switch in the form of a 'Klixon' cut-out. This is connected, via a relay in the terminal box, to cut off the electrical supply to the motor in the event of overload.

SCR pumps are extremely quiet in operation and are available as individual units or as a twin pump unit comprising two pumps in one common casing for either duty and standby, or parallel operation. The advantages of the twin pump unit are that it only requires the same flange-to-flange space as the single unit, and incorporates a flap-type valve to prevent recirculation through the stationary pump. This results in a compact installation and considerable cost saving to the customer in not having to provide and install unnecessary isolating and non-return valves.

## Features

- Multi-speed motor (manual selection) gives flexibility of pump performance.
- Quiet running.
- Compact twin version saves on space and installation costs.
- Stainless steel internals.
- Motor overload protection.

## Advantages of Pullen SCR Pump Range

- British manufactured product supported by the acknowledged high standard of Pullen service
  - Ease of speed change utilising a simple 3-position captive plug
  - Choice of electrical controls utilising either
    - (a) Cyclic Controller
    - or
    - (b) Cyclic Speed Controller
  - Motor overload protection, fitted as standard
- (for further information see back page)

## Capabilities

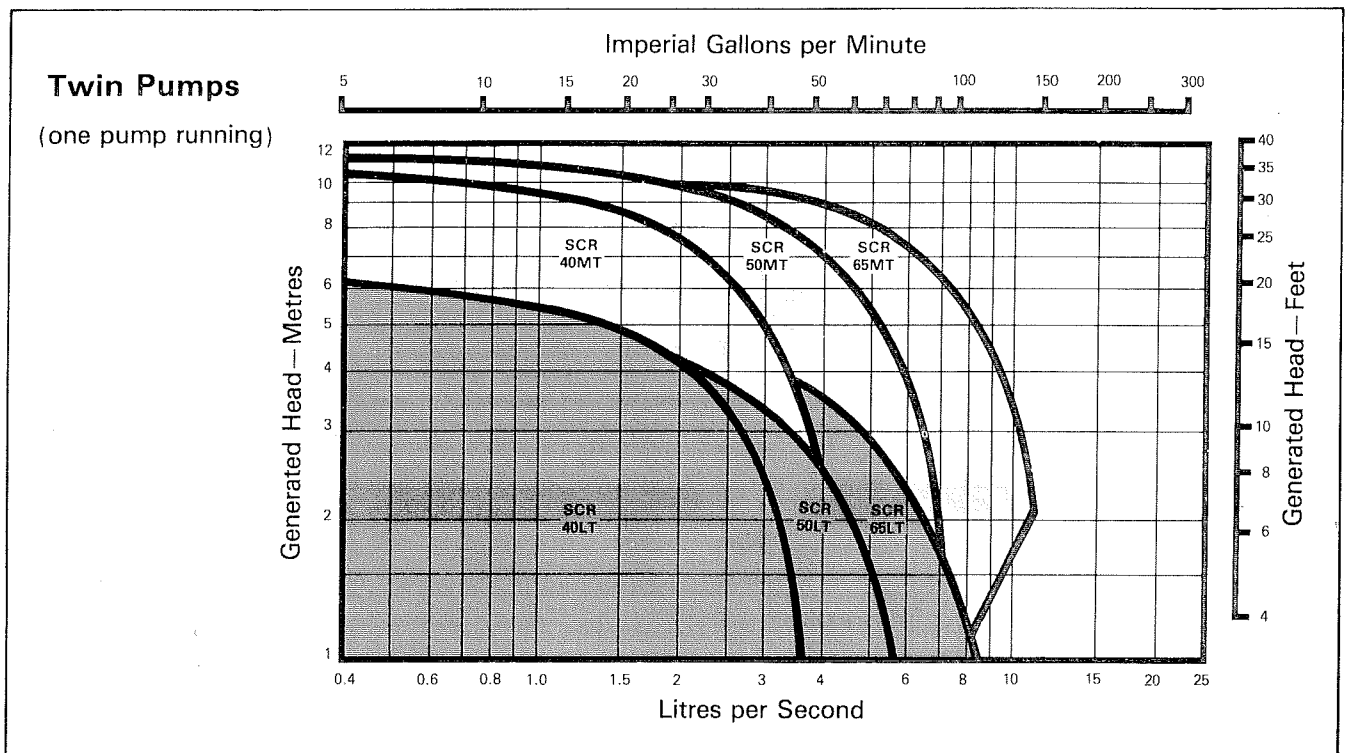
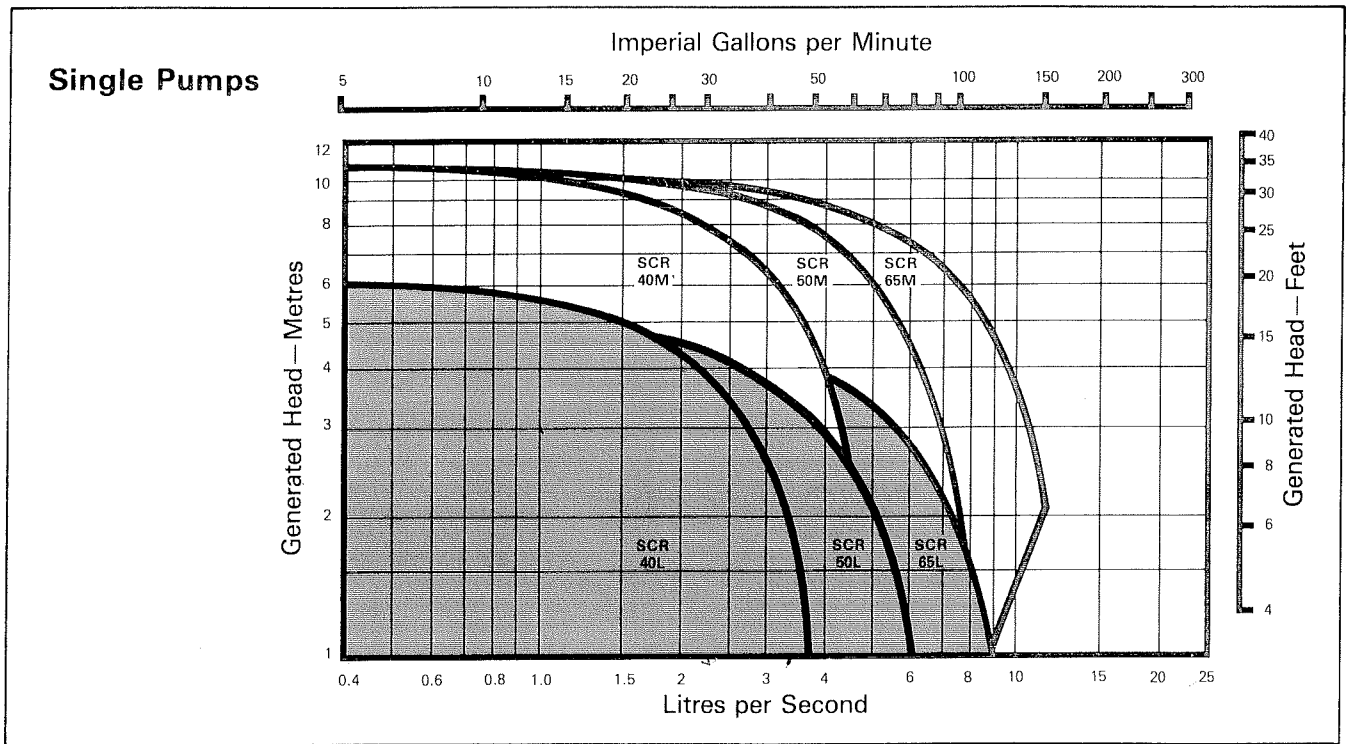
Working temperature from  
15°C to +120°C.

Working pressure:  
up to 8 bar.

Note: The liquid temperature must always be higher than the ambient temperature. Please refer to Pullen Leaflet SCK201 for chilled-water applications.

Minimum Inlet Pressure—Metres to prevent cavitation in the motor								
Temp °C	40L	40M	50L	50M	65L	65M	80L	80M
75	1.5	3.5	0.5	3.5	0.5	5.5	3.5	5.5
90	5.0	7.0	4.0	7.0	4.0	9.0	7.0	9.0
120	17.5	19.5	16.5	19.5	16.5	21.5	19.5	21.5

# Performance Characteristics at 50Hz — Single Phase

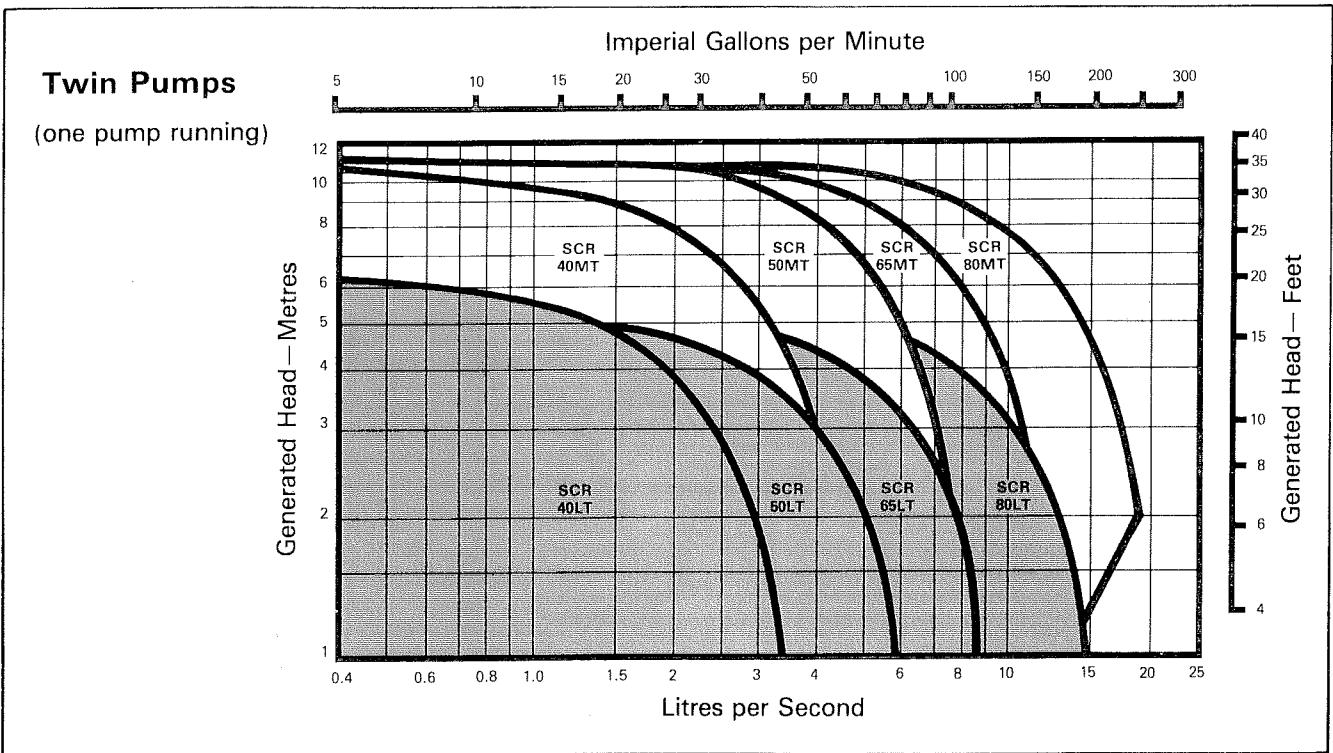
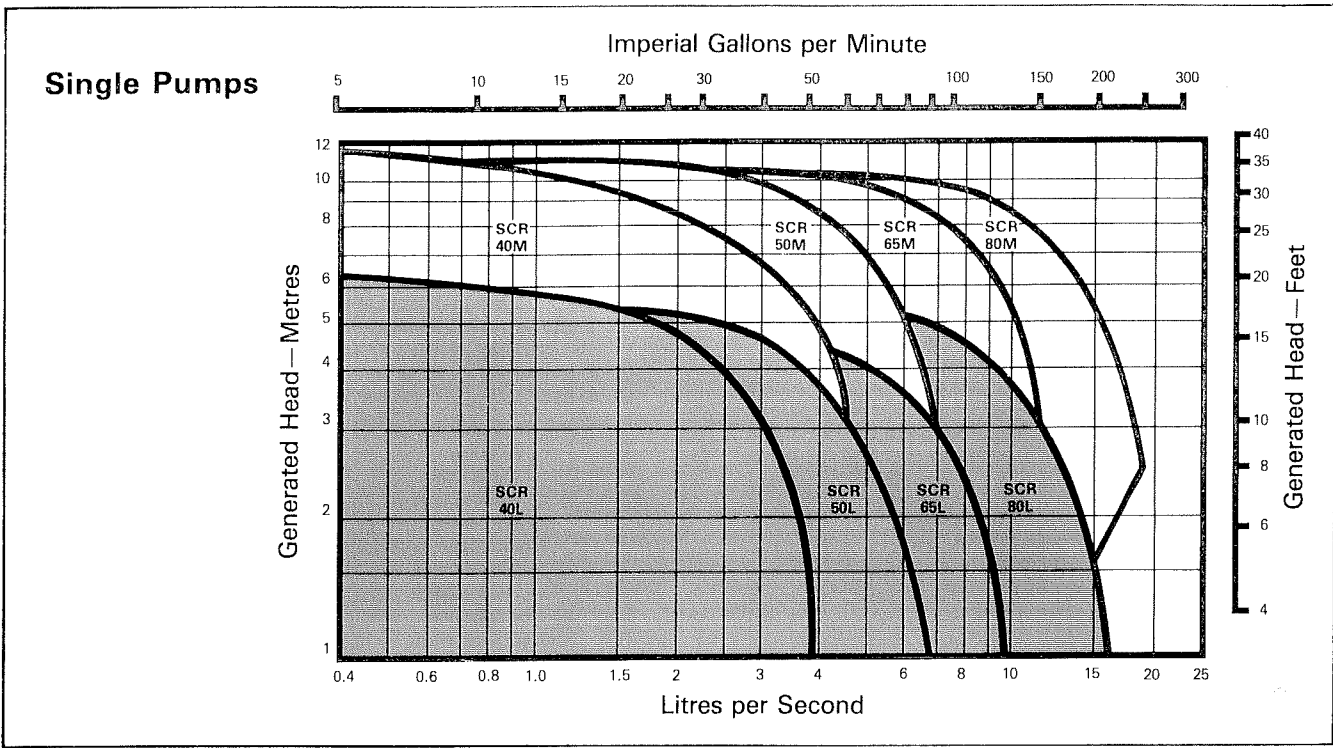


## Electrical Data—Single Phase Motors 240 Volts 50 Hz

Pump Single/ Twin	Speed 3			Speed 2			Speed 1			Capa- citor Rating
	RPM	Input Watts	Full Load Amps	RPM	Input Watts	Full Load Amps	RPM	Input Watts	Full Load Amps	
SCR40L	2710	265	1.09	2250	260	1.17	1780	230	1.04	6 $\mu$ F
SCR50L	1290	430	1.91	1090	325	1.65	850	240	1.18	14 $\mu$ F
SCR65L	1310	570	2.48	1110	430	2.19	920	335	1.68	20 $\mu$ F
SCR40M	2710	535	2.29	2090	545	2.48	1560	455	2.10	10 $\mu$ F
SCR50M	2580	850	3.62	2210	775	3.48	1800	670	3.06	20 $\mu$ F
SCR65M	2570	1190	5.14	2230	1120	5.03	1820	990	4.48	25 $\mu$ F

Consult Pullen Pumps on electrical data for 220V and 380V supplies. See back page.\*

# Performance Characteristics at 50Hz – Three Phase

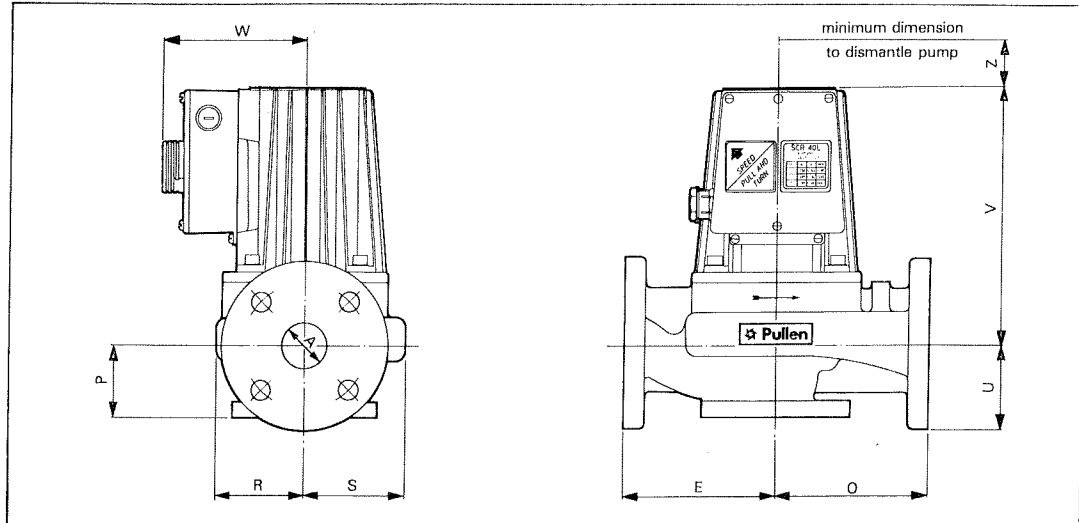


## Electrical Data – Three Phase Motors 415 Volts 50 Hz

Pump Single/ Twin	Speed 3			Speed 2			Speed 1		
	RPM	Input Watts	Full Load Amps	RPM	Input Watts	Full Load Amps	RPM	Input Watts	Full Load Amps
SCR40L	2790	290	0.64	2240	185	0.31	1440	95	0.16
SCR50L	1380	435	1.02	1040	255	0.44	580	110	0.19
SCR65L	1410	570	1.47	1140	370	0.64	680	170	0.31
SCR80L	1380	950	2.14	1050	575	1.03	610	245	0.46
SCR40M	2730	545	1.03	2070	330	0.56	1270	145	0.25
SCR50M	2760	940	1.69	2100	590	0.98	1250	265	0.45
SCR65M	2790	1350	2.36	2210	915	1.48	1350	430	0.72
SCR80M	2800	2020	3.51	2250	1385	2.22	1420	665	1.12

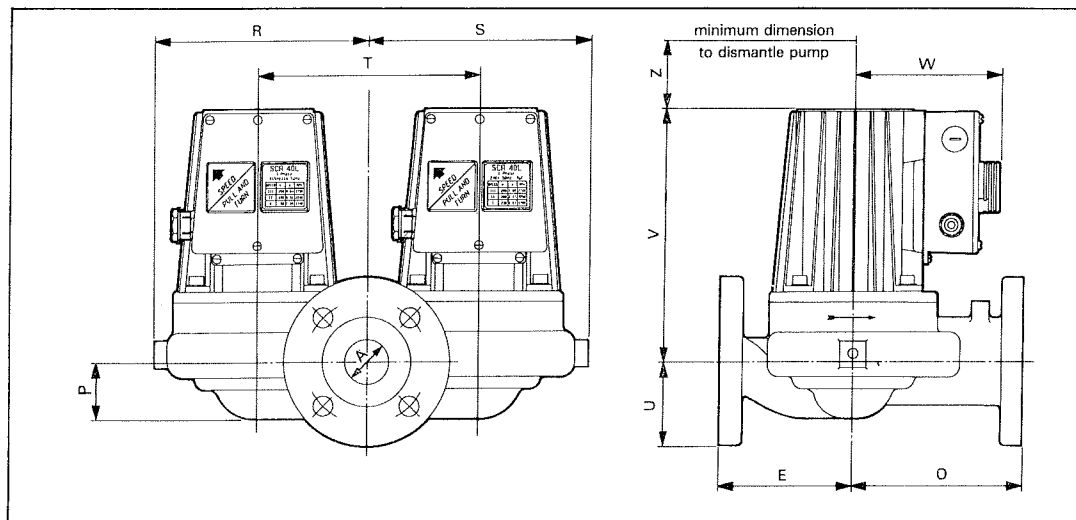
# Dimensions (millimetres)

## Single Pump



Pump	A	E	O	P	R	S	U	V	W	Z	Weight (kg)
SCR40L	40	135	135	67	76	93	75	223	129	62	17.5
SCR50L	50	165	165	85	100	105	83	210	144	71	27.5
SCR65L	65	175	175	95	100	125	93	262	144	71	34.5
SCR80L	80	200	200	105	103	131	100	269	144	71	43.0
SCR40M	40	135	135	67	76	93	75	223	129	62	18.5
SCR50M	50	165	165	85	100	105	83	210	144	71	28.0
SCR65M	65	175	175	95	100	125	93	262	144	71	35.5
SCR80M	80	200	200	105	103	131	100	269	144	71	44.0

## Twin Pump



Pump	A	E	O	P	R	S	T	U	V	W	Z	Weight (kg)
SCR40LT	40	135	135	50	192	198	200	75	223	129	62	30.0
SCR50LT	50	165	165	70	233	233	240	83	210	144	71	48.5
SCR65LT	65	150	200	75	236	243	240	93	264	144	71	61.0
SCR80LT	80	170	230	93	239	254	240	100	259	144	71	73.0
SCR40MT	40	135	135	50	192	198	200	75	223	129	62	32.0
SCR50MT	50	165	165	70	233	233	240	83	210	144	71	49.5
SCR65MT	65	150	200	75	236	243	240	93	264	144	71	63.0
SCR80MT	80	170	230	93	239	254	240	100	259	144	71	75.0

Flanges are to BS4504 NP10 as standard.

Counterflanges are available as an extra.

# Specification

## Casing:

Close-grained cast iron to BS1452 Grade 220 machined to fine limits. Twin pump casings incorporate a flap-type valve to prevent recirculation through the stationary pump. This also enables both pumps to be run in parallel.

## Impeller:

Fabricated from lightweight stainless steel, with extremely smooth surfaces, resulting in minimum drag with maximum performance.

## Casing Sealing Ring:

High grade stainless steel and renewable.

## Motor:

Three-speed canned-rotor motor, incorporating a stainless-steel can, which positively seals the motor windings from the pumped water. Motor shaft is stainless steel, coated with tungsten carbide, and runs in water-lubricated ceramic bearings, to give a long trouble-free life. Motor speed can be changed manually by means of a three-position captive plug on the terminal box. An alternative terminal box is available for connecting to a remote Pullen control panel.

## Electrical supply:

Single-phase, 220\* or 240 volt-50Hz (branch sizes up to 65mm). Three-phase, 380\* or 415 volt-50Hz.

# Pullen Control Systems

## SCR Cyclic Controller:

Provides automatic control to change the duty and standby pumps on a regular time basis thereby reducing the risk of pump failure due to the build up of sediment over a prolonged period. The control panel incorporates circuit breakers with thermal and magnetic releases. Motor protection is given at all three speeds, together with the necessary starting relays and printed circuits, to provide automatic changeover in the event of overload trip and lock out of the failed pump. Running and tripped indicators are provided on the fascia.

## SCR Cyclic Speed Controller:

Provides significant energy saving by automatically controlling the speed of SCR Multi-speed pumps. This is achieved by the necessary relays and circuitry to

automatically reduce the speed of the pump when a remote thermostat detects an increase in the outside ambient air temperature. The control panel also includes all the facilities incorporated in the SCR Cyclic Controller.

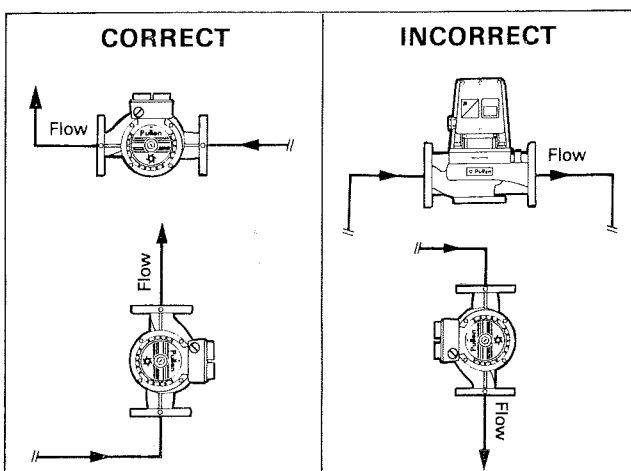
Both controllers are housed in compact enclosures having dimensions 400mm wide x 400mm high x 200 mm deep.

## Note:

If pumps are to be manually controlled, without the use of a Pullen automatic control panel, then an isolator with suitable HRC fuses should be incorporated in the electrical supply to the motor.

# Mounting Arrangements

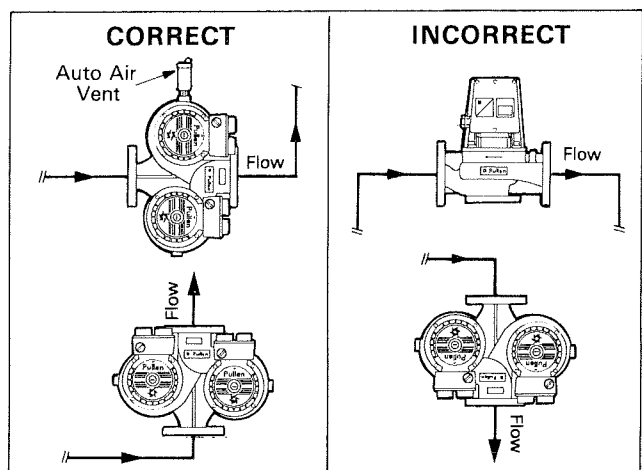
## Single Pump



## Note:

It is important to ensure that the discharge pipework from the pump rises to clear the air passed through the pump.

## Twin Pump



*As we are constantly endeavouring to improve standards, we reserve the right to alter details given without prior notice.*



# Pullen Pumps Ltd

58 Beddington Lane, Croydon, Surrey CR9 4PT, England  
Telephone: 01-684 9521 Fax: 01-689 8892 Telex: 946597

Northern Regional Sales Office:  
11 Eagle Brow  
LYMM, Cheshire  
Tel: 092 575 5201/2/3  
Telex: 627956

AUG 87

SUPERSEDES