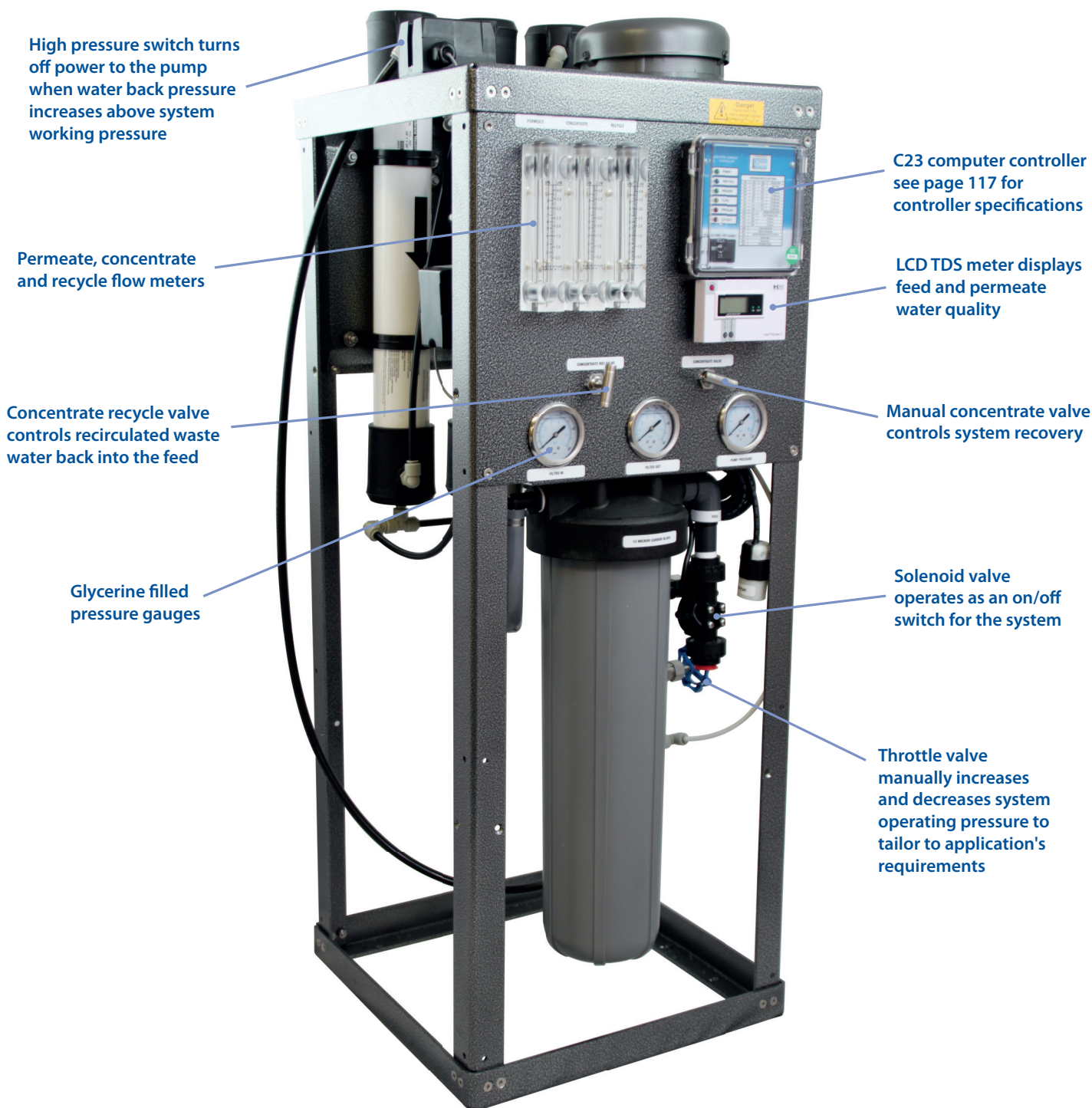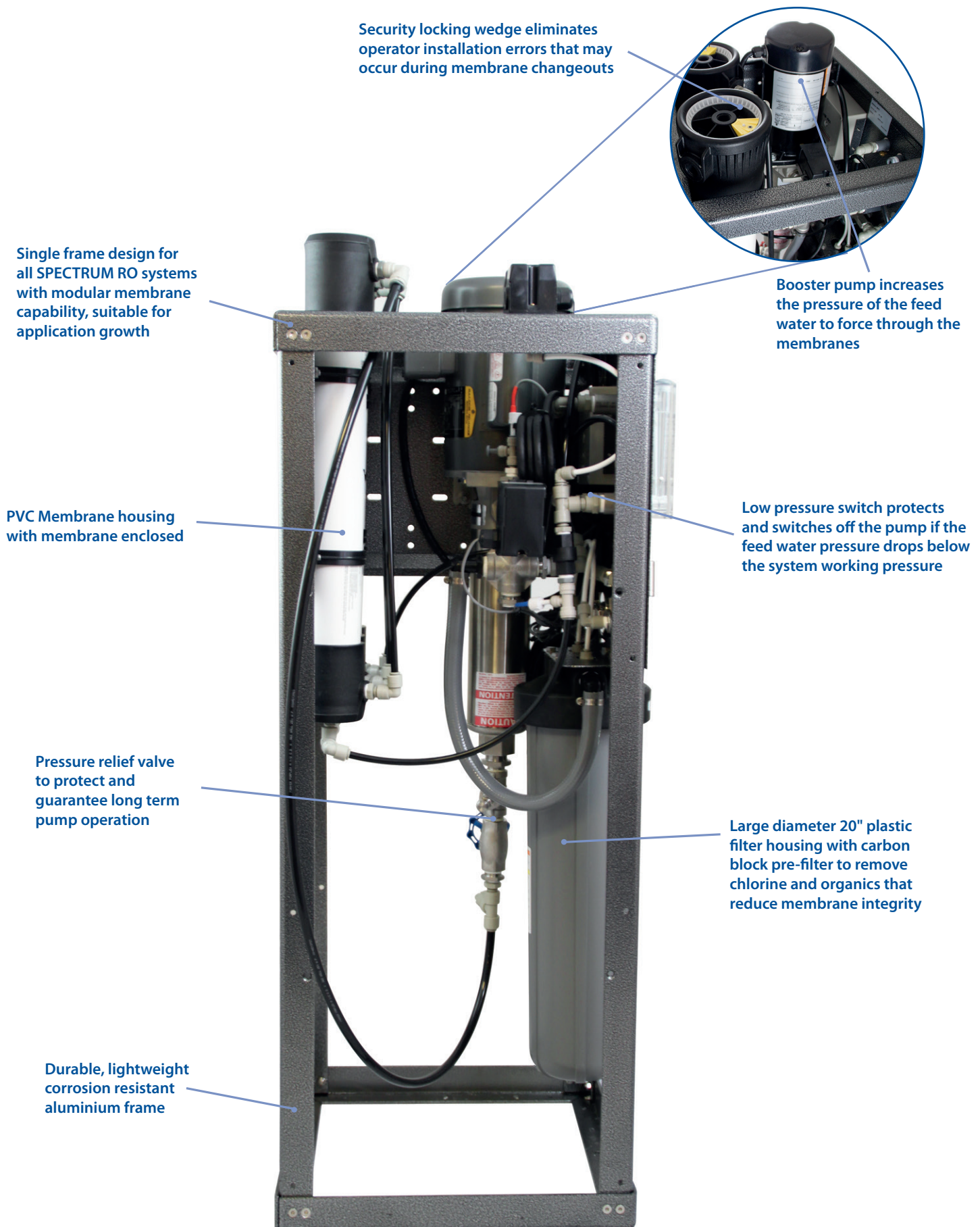# Reverse Osmosis Systems

SPECTRUM RO Systems NEW

With an innovative and robust design, the SPECTRUM range of reverse osmosis systems offers a modular system that is flexible for future growth and application requirements.

The SPECTRUM range of reverse osmosis systems are state of the art, versatile units, designed for purifying a wide variety of water sources ranging from mains tap water to borehole water supplies. With flow rates up to 30,000 litres (30m³) per day, this range is capable of producing large volumes of purified water with minimal energy consumption, low maintenance and operation costs.

SPECTRUM RO System - Front View

High pressure switch turns off power to the pump when water back pressure increases above system working pressure

Permeate, concentrate and recycle flow meters

Concentrate recycle valve controls recirculated waste water back into the feed

Glycerine filled pressure gauges

C23 computer controller see page 117 for controller specifications

LCD TDS meter displays feed and permeate water quality

Manual concentrate valve controls system recovery

Solenoid valve operates as an on/off switch for the system

Throttle valve manually increases and decreases system operating pressure to tailor to application's requirements

SPECTRUM RO System - Side View

Security locking wedge eliminates operator installation errors that may occur during membrane changeouts

Single frame design for all SPECTRUM RO systems with modular membrane capability, suitable for application growth

Booster pump increases the pressure of the feed water to force through the membranes

PVC Membrane housing with membrane enclosed

Low pressure switch protects and switches off the pump if the feed water pressure drops below the system working pressure

Pressure relief valve to protect and guarantee long term pump operation

Large diameter 20" plastic filter housing with carbon block pre-filter to remove chlorine and organics that reduce membrane integrity

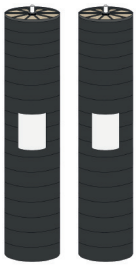**Durable, lightweight corrosion resistant aluminium frame**

Reverse Osmosis Systems

SPECTRUM RO Systems

SRO-SYS-2.6 (3 x HF4-2521)

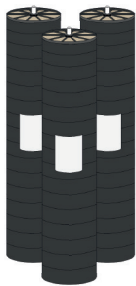| Feed flow rate (lpm)	6.3 - 22.7
Minimum concentrate flow rate (lpm)	3.7
Maximum concentrate recycle (lpm)	3.7
Upgrade system to	-
Housing array	1 : 1 : 1
Production rate (lpm)	2.6

SRO-SYS-5.2 (1 x SRO-4040)

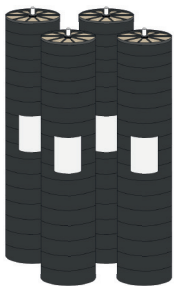| Feed flow rate (lpm)	16.5 - 52.9
Minimum concentrate flow rate (lpm)	11.3
Maximum concentrate recycle (lpm)	18.9
Upgrade system to	SRO-SYS-10
Housing array	1
Production rate (lpm)	5.2

SRO-SYS-10 (2 x SRO-4040)

Feed flow rate (lpm)	21.3 - 52.9
Minimum concentrate flow rate (lpm)	11.3
Maximum concentrate recycle (lpm)	18.9
Upgrade system to	-
Housing array	1 : 1
Production rate (lpm)	10.4

SRO-SYS-16 (3 x SRO-4040)

Feed flow rate (lpm)	27.3 - 52.9
Minimum concentrate flow rate (lpm)	11.3
Maximum concentrate recycle (lpm)	18.9
Upgrade system to	SRO-SYS-21
Housing array	1 : 1 : 1
Production rate (lpm)	16

SRO-SYS-21 (4 x SRO-4040)

Feed flow rate (lpm)	32.3 - 52.9
Minimum concentrate flow rate (lpm)	11.3
Maximum concentrate recycle (lpm)	18.8
Upgrade system to	-
Housing array	1 : 1 : 1 : 1
Production rate (lpm)	21

The SPECTRUM SRO-SYS Systems test parameters: 1000 TDS filtered (5 micron) feed water, operating feed pressure 8.6 bar, with a water temperature of 25°C.

∞ 🌀 SPECTRUM™

Versatile RO systems for ultimate flexibility

CE

Key product features

- Space saving design for low footprint, ease of access for routine maintenance, servicing and monitoring
- Supplied 'off the shelf', 100% integrity tested, CE compliant ready-to-use with full instructions and maintenance procedures
- Powder coated aluminium frame for corrosion resistance in industrial environments
- System upgrades available for process 'future proofing' on some models
- The SPECTRUM RO systems are shipped with dry membranes for indefinite shelf life

Operating parameters

- °C **4 - 48°C**
- **Minimum Feed Pressure (bar) : 3.1**
- **Operating Pressure (bar) : 6.8 - 10.3**
- **Maximum Feed Flow Rate (lpm) : 52.9**
- **pH Range : cleaning : 2 - 12**
  : operating : 5 - 11

Feed quality

- PPM **Maximum ppm : 2000**
- SDI **Maximum SDI : <3**
- **Maximum Turbidity (NTU) : <1**
- Cl **Maximum Free Chlorine (ppm) : 2**
- **Maximum Hardness (mg/l CaCO$_3$) : 120**

System specifications

- % **Membrane rejection (%) : 99**
- **Pump Type : Sta-Rite SS**
- **Voltage (V) : 220 AC**
- **Frequency (Hz) : 50**
- **RPM @ Hz : 2850**
- **L 457 x W 457 x H 1143 (mm)**
- **Feed Connection (") : ¾**

SPECTRUM C23 Computer Controller

All of the new SPECTRUM RO systems feature a simple switch mechanism computer controller (C23) that enables a broad array of features to manually tailor system performance to meet application requirements.

Simple programmable and customisable RO controller

The SPECTRUM SRO-SYS controller performs all the functions expected from a commercial and industrial system; including multiple programmable flush cycles which can be enabled and disabled to suit application and membrane maintenance, high/low pressure switches, tank monitoring and system integration to external devices for complete control.

Tank full indication based on high pressure switch feedback or optional float switch

Pre-set controller delays built-in to protect the pump operation

8 flushing time settings for complete flexibility and control, ensuring the membrane life is optimised

Low pressure cut off switch to prevent cavitation of pumping system

4 auto flush settings (start-up, process, shut down, tank full)

When the tank is full, the system will perform a flush cycle prior to shut down

Ensures external equipment essential to the RO process (i.e. pre-filtration softener) can link up to protect the membranes from premature fouling

POWER

TANK FULL

PROCESS

FLUSH

PRESSURE

LOCKOUT

MANUAL FEED / OFF / POWER

1 2 3 4 5 6 7

PROGRAM SWITCH SETTINGS			
S1	S2	S3	Flush Time
OFF	OFF	OFF	No Flush
OFF	OFF	ON	0.5 Minute
OFF	ON	OFF	1.0 Minute
OFF	ON	ON	1.5 Minutes
ON	OFF	OFF	2.0 Minutes
ON	OFF	ON	3.0 Minutes
ON	ON	OFF	4.0 Minutes
ON	ON	ON	5.0 Minutes
S4	S5		Process Flush Cycle
OFF	OFF		No Process Flush
OFF	ON		2 Hours
ON	OFF		3 Hours
ON	ON		4 Hours
S6			Tank Full Flush
OFF			Before Shutdown
ON			Before Shutdown & 24 Hr Cycle
S7			Flush Type
OFF			Feed Flush
ON			Permeate Flush

Reverse Osmosis System Controller

Pricing and technical information

Product Code	Description	Membrane	Port Size (")	Recovery (%)	Permeate Flow Avg (lpm)	Price Each (£)	Weight (kg)
SRO-SYS-2.6	SPECTRUM Premier RO system	HF4-2521	⅜	75	2.6	5,800.00	45
SRO-SYS-5.2	SPECTRUM Premier RO system	SRO-4040-2500-LE	⅜	75	5.2	6,600.00	45
SRO-SYS-10	SPECTRUM Premier RO system	SRO-4040-2500-LE	⅜	75	10	7,300.00	54
SRO-SYS-16	SPECTRUM Premier RO system	SRO-4040-2500-LE	⅜	75	16	8,500.00	63
SRO-SYS-21	SPECTRUM Premier RO system	SRO-4040-2500-LE	⅜	75	21	10,000.00	72