



### **3.3.1.3 FILTERS**

The filters are designed to remove fine particles from the water, keeping it clean, clear and to a standard required for swimming.

Water filtration is carried out within the media. The two media are 16/30 filtering sand supported by the lower media bed of 6mm pea gravel. The varying size and densities of the material maintain separation of the media layers.

The 50m pool plant incorporates;  
4 no x 3.0m Dia. x 25% duty filters.

The learner pool plant incorporates;  
2 no x 1.5m Dia. x 50% duty filters.

The fun pool plant incorporates;  
2 No x 1.8m Dia. x 50% duty filters.

The Spa Pool plant incorporates;  
1 No. x 1.8m Dia filter.



*Typical Filter Frontal*

At the bottom of the filter, underneath the gravel bed, there is an even spread of filter nozzles connected to a header and lateral system horizontal encased in concrete. This provides an even distribution of the filtered water collection and also acts as a method of ensuring filter backwash and air scouring is carried out as evenly within the area of the filter. Backwashing with air scouring should be carried out on a regular basis and is described in detail later in this manual.

### **3.3.1.4 AIR BLOWERS**

The function of the air blower is for air scouring of the filters prior to the backwashing procedure.

Air scouring breaks up the media to loosen off any dirt that has formed in the media bed and makes it easier to be removed when the filter is backwashed.

The 50m pool, learner pool and fun pool plants are served by a common air blower.

The Spa pool plant is served by an independent air blower.



*Typical Air Blower*

#### **NOTE:**

**DO NOT APPLY ANY GREASE TO THIS UNIT.**

**DO NOT, UNDER ANY CIRCUMSTANCES, RUN THE UNIT AGAINST A CLOSED VALVE.**



### 3.3.3 EQUIPMENT SCHEDULE

This section gives details of the plant performance data plus a complete schedule and brief technical description of all items of plant. Additional information from equipment manufacturers is included later in this manual in Section 7.4, "Manufacturers Information".

#### 3.3.3.1 POOL PERFORMANCE DATA

Plant/Pool	Flow	Backwash Flow	Turnover Period	Volume
50m Pool Plant	628 m <sup>3</sup> /hr Mid Section 273 m <sup>3</sup> /hr End Section 2 355 m <sup>3</sup> /hr	247 m <sup>3</sup> /hr	3.50 Hour	2200 m <sup>3</sup>
Learner Pool Plant	85 m <sup>3</sup> /hr	62 m <sup>3</sup> /hr	2.00 Hour	170 m <sup>3</sup>
Fun Pool Plant	120 m <sup>3</sup> /hr	89 m <sup>3</sup> /hr	0.25 Hour	30 m <sup>3</sup>
Spa Pool Plant	30 m <sup>3</sup> /hr	18 m <sup>3</sup> /hr	0.10 Hour	3 m <sup>3</sup>

The plants has been designed to provide the client with a selection of operational permutations allowing energy savings during periods of low bather use and overnight running.



### **3.3.3.2 EQUIPMENT SCHEDULE**

#### **3.3.3.2.1 50M POOL FILTRATION PLANT**

##### **3.3.3.2.1.1 FILTERS**

No. Off:	4 No. x 100% duty
Size:	3.0 m Dia.
Type:	Euro Pools plc medium rated sand filter.
Material:	Mild Steel: Shell - 8mm Thick Ends - 10mm Thick
Working Pressure:	2.5 bar max.
Test Pressure:	3.7 bar
Filtration Rating:	22.24 m <sup>3</sup> /m <sup>2</sup> hr
Filtration Area	7.1 m <sup>2</sup> (per filter) - 28.4 m <sup>2</sup> (total)
Filter Flow:	157 m <sup>3</sup> /hr
Backwash Flow:	247 m <sup>3</sup> /hr
Minimum Duration:	5 min – air only. 5 min – No air at full wash volume.
Collector System:	Header, Lateral. Nozzles
Media Types:	16/30 Filtering Sand - Top Layer 6mm Pea Gravel - Bottom Layer
Media Depths:	900mm Sand Depth 250mm Gravel Depth
Ancillaries:	1 No. Automatic Air Release Valve (per filter) Bulk air release Inlet and outlet gauges Drain and air scour connections Inlet, outlet, and backwash valves.

##### **3.3.3.2.1.2 50M POOL MAIN CIRCULATING PUMPS**

No. Off:	3 No. 50% duty (2 Working, 1 Standby)
Model:	150-290 Starbloc
Type:	Armstrong Pumps Ltd.
Additional Reference Data:	Section 7.4
Duty:	314 m <sup>3</sup> /hr @ 19mTH per pump (at duty flow)
Motor Size:	22 kW
Motor Speed:	1450 rpm
Electrical Supply:	415V/3pH/50Hz
Starter	Inverter Speed Control





### 3.3.3.2.2 LEARNER POOL FILTRATION PLANT

#### 3.3.3.2.2.1 LEARNER POOL FILTERS

No. Off:	2 No. x 100% duty
Size:	1.5 m Dia.
Type:	Euro Pools plc medium rated sand filter.
Material:	Mild Steel: Shell - 8mm Thick Ends - 10mm Thick
Working Pressure:	2.5 bar max.
Test Pressure:	3.7 bar
Filtration Rating:	24.14 m <sup>3</sup> /m <sup>2</sup> hr
Filtration Area	1.76 m <sup>2</sup> (per filter) – 3.52 m <sup>2</sup> (total)
Filter Flow:	85 m <sup>3</sup> /hr
Backwash Flow:	62 m <sup>3</sup> /hr
Minimum Duration:	5 min – air only. 5 min – No air at full wash volume.
Collector System:	Header, Lateral. Nozzles
Media Types:	16/30 Filtering Sand - Top Layer 6mm Pea Gravel - Bottom Layer
Media Depths:	900mm Sand Depth 250mm Gravel Depth
Ancillaries:	1 No. Automatic Air Release Valve (per filter)  Bulk air release  Inlet and outlet gauges  Drain and air scour connections  Inlet, outlet, and backwash valves.

#### 3.3.3.2.2.2 LEARNER POOL MAIN CIRCULATING PUMPS

No. Off:	2 No. 100% duty (1 Working, 1 Standby)
Model:	100-250 Starbloc
Type:	Armstrong Pumps Ltd.
Additional Reference Data:	Section 7.4
Duty:	85 m <sup>3</sup> /hr @ 18mTH per pump (at duty flow)
Motor Size:	7.5 kW
Motor Speed:	1450 rpm
Electrical Supply:	415V/3pH/50Hz
Starter	Inverter Speed Control



### 3.3.3.2.3 FUN POOL FILTRATION PLANT

#### 3.3.3.2.3.1 FUN POOL FILTERS

No. Off:	2 No. x 100% duty
Size:	1.8 m Dia.
Type:	Euro Pools plc medium rated sand filter.
Material:	Mild Steel: Shell - 8mm Thick Ends - 10mm Thick
Working Pressure:	2.5 bar max.
Test Pressure:	3.7 bar
Filtration Rating:	23.62 m <sup>3</sup> /m <sup>2</sup> hr
Filtration Area	2.54 m <sup>2</sup> (per filter) – 5.8 m <sup>2</sup> (total)
Filter Flow:	60 m <sup>3</sup> /hr
Backwash Flow:	89 m <sup>3</sup> /hr
Minimum Duration:	5 min – air only. 5 min – No air at full wash volume.
Collector System:	Header, Lateral. Nozzles
Media Types:	16/30 Filtering Sand - Top Layer 6mm Pea Gravel - Bottom Layer
Media Depths:	900mm Sand Depth 250mm Gravel Depth
Ancillaries:	1 No. Automatic Air Release Valve (per filter)  Bulk air release  Inlet and outlet gauges  Drain and air scour connections  Inlet, outlet, and backwash valves.

#### 3.3.3.2.3.2 FUN POOL MAIN CIRCULATING PUMPS

No. Off:	2 No. 100% duty (1 Working, 1 Standby)
Model:	100-250 Starbloc
Type:	Armstrong Pumps Ltd.
Additional Reference Data:	Section 7.4
Duty:	120 m <sup>3</sup> /hr @ 18mTH per pump (at duty flow)
Motor Size:	11 kW
Motor Speed:	1450 rpm
Electrical Supply:	415V/3pH/50Hz
Starter	Inverter Speed Control



### 3.3.3.2.4 SPA POOL FILTRATION PLANT

#### 3.3.3.2.4.1 SPA POOL FILTERS

No.:	1 No.
Size:	1.2 m Dia. Horizontal
Type:	Euro Pools plc medium rated sand filter.
Material:	Mild Steel: Shell - 8mm Thick Ends - 10mm Thick
Working Pressure:	2.5 bar max.
Test Pressure:	3.7 bar
Filtration Rating:	26.55 m <sup>3</sup> /m <sup>2</sup> hr
Filtration Area	1.13 m <sup>2</sup> (per filter)
Filter Flow:	15 m <sup>3</sup> /hr
Backwash Flow:	18 m <sup>3</sup> /hr
Minimum Duration:	5 min – air only. 5 min – No air at full wash volume.
Collector System:	Header, Lateral. Nozzles
Media Types:	16/30 Filtering Sand - Top Layer 6mm Pea Gravel - Bottom Layer
Media Depths:	900mm Sand Depth 250mm Gravel Depth
Ancillaries:	1 No. Automatic Air Release Valve (per filter) Bulk air release Inlet and outlet gauges Drain and air scour connections Inlet, outlet, and backwash valves.

#### 3.3.3.2.4.2 SPA POOL MAIN CIRCULATING PUMPS

No. Off:	3 No. 50% duty (2 Working, 1 Standby)
Model:	Victoria Self Priming Pumps c/w Integral Strainer
Type:	Astral UK Ltd.
Additional Reference Data:	Section 7.4
Duty:	15 m <sup>3</sup> /hr @ 8 mTH per pump
Motor Size:	2.2 kW
Motor Speed:	1450 rpm
Electrical Supply:	230/400V/3pH/50Hz
Starter	D.O.L. Main Control Panel