Note: Drawings show clockwise rotation pumps. For anti-clockwise rotation pumps reverse the inlet and outlet port positions. (Rotation convention - view from pump shaft end).

Full detailed dimensions are shown on the relevant pages covering drive shafts, mounting flanges and ports.

**SINGLE PUMPS** - standard ports  
Code A  
Example S1A7155C51 A 1L1HA

**DOUBLE PUMPS** - 1 inlet/2 outlets  
Code A  
Example S1A7155S7155C52 A 1M1H1M1HA

**DOUBLE PUMPS** - 2 inlets/2 outlets  
Code B  
Example S1A7155S7155C52 B 1L1H1L1HA

**TRIPLE AND QUADRUPLE PUMPS** - See Pages 38 and 39.
DIMENSIONAL DATA, PERFORMANCE DATA

<table>
<thead>
<tr>
<th>PUMP</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>WEIGHT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm (in)</td>
<td>mm (in)</td>
<td>mm (in)</td>
<td>mm (in)</td>
<td>kg</td>
<td>lb</td>
</tr>
<tr>
<td>S7155</td>
<td>288.0</td>
<td>183.0</td>
<td>183.0</td>
<td>~</td>
<td>79.0</td>
<td>84.0</td>
</tr>
<tr>
<td></td>
<td>(11.3)</td>
<td>(7.2)</td>
<td>(7.2)</td>
<td>~</td>
<td>(174)</td>
<td>(185.0)</td>
</tr>
<tr>
<td>S7180</td>
<td>290.0</td>
<td>191.0</td>
<td>191.0</td>
<td>~</td>
<td>82.0</td>
<td>87.0</td>
</tr>
<tr>
<td></td>
<td>(11.7)</td>
<td>(7.5)</td>
<td>(7.5)</td>
<td>~</td>
<td>(180.0)</td>
<td>(1910)</td>
</tr>
<tr>
<td>S7208</td>
<td>305.0</td>
<td>201.0</td>
<td>201.0</td>
<td>~</td>
<td>86.0</td>
<td>91.0</td>
</tr>
<tr>
<td></td>
<td>(12.0)</td>
<td>(7.9)</td>
<td>(7.9)</td>
<td>~</td>
<td>(190.0)</td>
<td>(200.0)</td>
</tr>
<tr>
<td>S7248</td>
<td>318.0</td>
<td>214.0</td>
<td>214.0</td>
<td>~</td>
<td>91.0</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>(12.5)</td>
<td>(8.4)</td>
<td>(8.4)</td>
<td>~</td>
<td>(200.0)</td>
<td>(211.0)</td>
</tr>
</tbody>
</table>

~ Please contact your David Brown Hydraulics’ representative.

*Note
Weights are approximate
Double pump weight = (front + rear) weights

PERFORMANCE
Curves drawn for average pumps at 50°C (120°F). Fluid viscosity 23 mm²/sec (110 SSU).

OUTPUT FLOWS are theoretical. Generally volumetric efficiencies are in excess of 95%. Your David Brown Hydraulics' representative will advise for specific conditions.

INPUT POWERS are actual, taking into account average efficiencies. Please consult your David Brown Hydraulics' representative when output pressure is less than 50 bar.

Example
S7208 at 1500 rev/min gives output flow of 302 l/min (80 US gal/min) and requires 118 kW (159 hp) to drive it at 200 bar (2900 psi).
QS7 EFFICIENCIES, NOISE LEVELS, MOMENTS OF INERTIA

PUMP EFFICIENCIES

All Q Series pumps share very high efficiencies. The graph shows typical QS7 volumetric efficiency curves at 1000 and 2250 rev/min.

NOISE LEVELS

As described on Page 6, the reduction of noise levels was a major factor in the development of the Q Series pumps. The following graphs show QS7 sound pressure levels at one metre from the pump derived from measurements of sound power levels to ISO9614-4.

Q7 Sound Pressure at 1 metre - 1000 rpm

Q7 Sound Pressure at 1 metre - 1500 rpm

Q7 Sound Pressure at 1 metre - 1800 rpm

Q7 Sound Pressure at 1 metre - 2250 rpm

MOMENTS OF INERTIA

QS7 SERIES

<table>
<thead>
<tr>
<th>PUMP SIZE</th>
<th>S7155</th>
<th>S7180</th>
<th>S7208</th>
<th>S7248</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moment of Inertia</td>
<td>kg cm²</td>
<td>(lb in²)</td>
<td>60.33</td>
<td>(20.51)</td>
</tr>
</tbody>
</table>
**QS7 SHAFT SEALS & DRIVE SHAFTS**

### SHAFT SEALS

**Code A**  
Shaft seal and wiper for external drives  
*Example*  
S1A7155C51A1L1HA

**Code C**  
Shaft seal, wiper and seal with tell-tale hole for torque converter and gearbox drives. The tell-tale hole indicates leakage before mixing of fluids can occur.  
*Example*  
S1C7155C51A1L1HA

### DRIVE SHAFTS

#### Code C  
SAE 32-4 (C) 1.1/4” spline  
*Example*  
S1A7155C51A1L1HA

- **INVOLUTE SPLINE**  
  - 14 TEETH  
  - 1/24 DP  
  - FLAT ROOT  
  - SIDE FIT  
  - 30° PRESSURE ANGLE  
  - MAJOR DIA.  
  - 31.22/31.12 (1.226/1.225)

- $p \times D = 45565 \text{ (bar } \times \text{ cm}^3/\text{rev)}$  
- $p \times D = 40325 \text{ (psi } \times \text{ cu.in/rev)}$

#### Code G  
SAE 32-1 (C) 1.1/4” parallel  
*Example*  
S1A7155G51A1L1HA

#### Code D  
SAE 38-4 (CC) 1.1/2” spline  
*Example*  
S1A7155D51A1L1HA

- **INVOLUTE SPLINE**  
  - 17 TEETH  
  - 1/24 DP  
  - FLAT ROOT  
  - SIDE FIT  
  - 30° PRESSURE ANGLE  
  - MAJOR DIA.  
  - 37.57/37.44 (1.479/1.474)

- $p \times D = 86950 \text{ (bar } \times \text{ cm}^3/\text{rev)}$  
- $p \times D = 76690 \text{ (psi } \times \text{ cu.in/rev)}$

#### Code N  
SAE 38-1 (CC) 1.1/2” parallel  
*Example*  
S1A7155N51A1L1HA

- **INVOLUTE SPLINE**  
  - 13 TEETH  
  - 8/16 DP  
  - FLAT ROOT  
  - SIDE FIT  
  - 30° PRESSURE ANGLE  
  - MAJOR DIA.  
  - 43.71/43.60 (1.721/1.716)

- $p \times D = 121400 \text{ (bar } \times \text{ cm}^3/\text{rev)}$  
- $p \times D = 107439 \text{ (psi } \times \text{ cu.in/rev)}$

#### Code P  
SAE 44-1 (D) 1.3/4” parallel  
*Example*  
S1A7155P51A1L1HA

#### Code D  
SAE 44-4 (D) 1.3/4” spline  
*Example*  
S1A7155D51A1L1HA

#### Code G  
SAE 44-1 (C) 1.3/4” parallel  
*Example*  
S1A7155G51A1L1HA

$^*$p = outlet pressure, D = displacement. The stated values must not be exceeded.

**Note**  
For multiple pumps the sum of the $p \times D$ values must not exceed the stated value. See Page 38.
MOUNTING FLANGES

NUMBER OF PUMP SECTIONS AND INLET PORT POSITIONS

**SINGLE PUMP Example**

- Number of pump sections
- Inlet port position - see fig 1
- Inlet port type - see table 1
- Inlet port size - see table 1
- Outlet port type - see table 2
- Outlet port size - see table 2
- Rotation - viewed from shaft

**MULTI PUMP Example**

- Number of pump sections
- Inlet port position - see figs 2 or 3
- 1st Inlet port type - see table 1
- 1st Inlet port size - see table 1
- 1st Outlet port type - see table 2
- 1st Outlet port size - see table 2
- 2nd Inlet port type - see table 1
- 2nd Inlet port size - see table 1
- 2nd Outlet port type - see table 2
- 2nd Outlet port size - see table 2
- Rotation - viewed from shaft

A = anti-clockwise
C = clockwise
### INLET PORT OPTIONS - Table 1

<table>
<thead>
<tr>
<th>Port Type Code</th>
<th>SINGLE PUMP INLET PORT OPTIONS</th>
<th>COMMON INLET PORT OPTIONS</th>
<th>DUAL INLET PORT OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAE Flange Metric</td>
<td>SAE Flange UNC</td>
<td>SAE Flange Metric</td>
</tr>
<tr>
<td>Port Size</td>
<td>1 1/2</td>
<td>2</td>
<td>2 1/2</td>
</tr>
<tr>
<td>S7008</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>S7208</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>S7248</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

-Preferred port size
-Non-preferred port size

**Note:** When coding, for single inlet multiple pumps, use ‘O’ in ‘2nd inlet port position’ and ‘X’ in ‘2nd inlet port type’ in the model number.

### OUTLET PORT OPTIONS - Table 2

<table>
<thead>
<tr>
<th>Port Type Code</th>
<th>1</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td>Port Type</td>
<td>SAE Flange Metric</td>
<td>SAE Flange UNC</td>
</tr>
<tr>
<td>Port Size Code</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Port Size</td>
<td>1/2</td>
<td>3/4</td>
</tr>
<tr>
<td>S7155</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>S7180</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>S7208</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>S7248</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

-Preferred port size
-Non-preferred port size

### MULTIPLE PUMPS
Please consult your David Brown representative.

### SAE FLANGE PORT DETAILS

SAE code 61.
Standard pressure series

#### SAE FLANGE SIZE

<table>
<thead>
<tr>
<th>SAE FLANGE SIZE</th>
<th>A mm (in)</th>
<th>B mm (in)</th>
<th>C mm (in)</th>
<th>D</th>
<th>E DEPTH mm (in)</th>
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</thead>
<tbody>
<tr>
<td>1.1/2&quot;</td>
<td>38.1</td>
<td>35.7</td>
<td>70.0</td>
<td>M12x1.75</td>
<td>26.9</td>
</tr>
<tr>
<td></td>
<td>(1.50)</td>
<td>(1.406)</td>
<td>(2.750)</td>
<td></td>
<td>(1.06)</td>
</tr>
<tr>
<td>2&quot;</td>
<td>50.8</td>
<td>42.9</td>
<td>77.9</td>
<td>M12x1.75</td>
<td>26.9</td>
</tr>
<tr>
<td></td>
<td>(2.00)</td>
<td>(1.688)</td>
<td>(3.062)</td>
<td></td>
<td>(1.06)</td>
</tr>
<tr>
<td>2.1/2&quot;</td>
<td>63.5</td>
<td>50.8</td>
<td>89.0</td>
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<tr>
<td></td>
<td>(2.50)</td>
<td>(2.00)</td>
<td>(3.50)</td>
<td></td>
<td>(1.19)</td>
</tr>
<tr>
<td>3&quot;</td>
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<td>61.9</td>
<td>105.4</td>
<td>M16x2.00</td>
<td>30.2</td>
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<tr>
<td></td>
<td>(3.00)</td>
<td>(2.44)</td>
<td>(4.19)</td>
<td>5/8&quot;-11 UNC</td>
<td>(1.19)</td>
</tr>
</tbody>
</table>
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