QR6/QS6
HYDRAULIC GEAR PUMPS
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: R1A6100C41 A1L1HA

DOUBLE PUMPS - 1 inlet/2 outlets  
Code: A  
Example: R1A6100R6100C42 A1M1H1M1HA

DOUBLE PUMPS - 2 inlets/2 outlets  
Code: B  
Example: R1A6100R6100C42 B1L1H1L1HA

TRIPLE AND QUADRUPLE PUMPS - See Pages 38 and 39.
## QR6/QS6 DIMENSIONAL DATA

<table>
<thead>
<tr>
<th>PUMP</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm)</th>
<th>WEIGHT (kg)</th>
<th>Single*</th>
<th>Front*</th>
<th>Rear*</th>
</tr>
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<tr>
<td>QR6100</td>
<td>220.0</td>
<td>152.0</td>
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<td>151.0</td>
<td>203.0</td>
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<td>47.0</td>
<td>37.0</td>
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</tr>
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<td>161.0</td>
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<td>40.3</td>
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<td>173.0</td>
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<td>136.0</td>
<td>188.0</td>
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<td>35.5</td>
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<td>143.0</td>
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<td>37.0</td>
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</tr>
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<td>151.0</td>
<td>204.0</td>
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<td>48.5</td>
<td>38.5</td>
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<td>161.0</td>
<td>213.0</td>
<td>45.5</td>
<td>50.5</td>
<td>40.5</td>
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</tr>
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<td>194.0</td>
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<td>47.5</td>
<td>52.5</td>
<td>42.5</td>
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</tr>
</tbody>
</table>

**Note**
- Weights are approximate
- **Double** pump weight = (front + rear) weights
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 R6187 at 1500 rev/min gives output flow of 281 l/min (74 US gal/min) and requires 107 kW (144hp) to drive it at 200 bar (2900 psi).

Curves drawn for average pumps at 50°C (120°F) - fluid viscosity 23 mm²/sec (110 SSU).
QR6/QS6 EFFICIENCIES, NOISE LEVELS, MOMENTS OF INERTIA

PUMP EFFICIENCIES

All Q Series pumps share very high efficiencies. The graph shows typical QS6 volumetric efficiency curves at 1000 and 2400 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 QR6 and QS6 sound pressure levels at one metre from the pump derived from measurements of sound power levels to ISO9614-4.

MOMENTS OF INERTIA

QR6 SERIES

<table>
<thead>
<tr>
<th>PUMP SIZE</th>
<th>R6100</th>
<th>R6117</th>
<th>R6137</th>
<th>R6160</th>
<th>R6187</th>
<th>R6220</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moment of Inertia (kg cm² (lb in²))</td>
<td>16.18 (5.50)</td>
<td>17.76 (8.04)</td>
<td>19.61 (8.67)</td>
<td>21.74 (7.40)</td>
<td>24.24 (8.24)</td>
<td>27.29 (9.28)</td>
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</table>

QS6 SERIES

<table>
<thead>
<tr>
<th>PUMP SIZE</th>
<th>S6083</th>
<th>S6097</th>
<th>S6113</th>
<th>S6132</th>
<th>S6155</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moment of Inertia (kg cm² (lb in²))</td>
<td>21.71 (7.38)</td>
<td>23.50 (7.99)</td>
<td>25.55 (8.69)</td>
<td>27.98 (9.51)</td>
<td>30.92 (10.51)</td>
</tr>
</tbody>
</table>
**SHAFT SEALS**

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

*Example* R1A6100C11A1L1HA

**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* R1C6100C41A1L1HA

**DRIVE SHAFTS**

**Code G** SAE 32-4 (C) 1.1/4" spline

*Example* R1A6100G41A1L1HA

**Code C** SAE 32-1 (C) 1.1/4" parallel

*Example* R1A6100C41A1L1HA

**Code T** SAE 38-4 (CC) 1.1/2" spline

*Example* R1A6100T41A1L1HA

**Code N** SAE 38-1 (CC) 1.1/2" parallel

*Example* R1A6100N41A1L1HA

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

**Note** For multiple pumps the sum of the p x D values must not exceed the stated value. See Page 38.
QR6/QS6 MOUNTING FLANGES

Example

**Code 4**

**SAE 127-2 (C - 2 bolt)**

**Example**

R1A6100C41A1L1HA

**Code 5**

**SAE 127-4 (C - 4 bolt)**

**Example**

R1A6100C51A1L1HA
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

**MULTIPLE PUMPS** - Please consult your David Brown Hydraulics' representative.

**SAE FLANGE PORT DETAILS**

SAE code 61.
Standard pressure series

<table>
<thead>
<tr>
<th>SAE FLANGE SIZE</th>
<th>A (mm)</th>
<th>B (in)</th>
<th>C (in)</th>
<th>D</th>
<th>E DEPTH (mm)</th>
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<tr>
<td>1.1/2&quot;</td>
<td>38.1</td>
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<td>(1.406)</td>
<td>M12x1.75</td>
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<td>M16x2.00</td>
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<td></td>
<td>61.9</td>
<td>(2.44)</td>
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<td>(1.19)</td>
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</table>
## 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>
</tr>
</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>K</td>
<td>L</td>
</tr>
<tr>
<td>Port Size</td>
<td>2 3 3 3 2 1 2 1 4 4</td>
<td>2 3 3 3 2 1 2 1 4 4</td>
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<td>R6100</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>R6117</td>
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<tr>
<td>R6137</td>
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<tr>
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<td>☐</td>
</tr>
<tr>
<td>S6155</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>
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<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 3/4 1 1 1/4 1/2</td>
<td>1/2 3/4 1 1 1/4 1/2</td>
</tr>
<tr>
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<tr>
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<td>☐</td>
</tr>
<tr>
<td>R6220</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>S6083</td>
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<tr>
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</tr>
<tr>
<td>S6155</td>
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</tr>
</tbody>
</table>

- Preferred port size
- Non-preferred port size
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