DAVID BROWN
HYDRAULICS

Q SERIES
HYDRAULIC GEAR PUMPS

16 to 240 cm^3/rev (1 to 14.6 cu.in/rev)
280 bar (4000 psi) peak pressure

AT A GLANCE - THE DAVID BROWN HYDRAULICS Q SERIES PUMP RANGE

QR SERIES Spur Gears			
MODEL	**DISPLACEMENT** cm³/rev (cu.in/rev)	**RATED PRESSURE** bar (psi)	**PEAK PRESSURE** bar (psi)
R4016	16 (0.975)	250 (3625)	280 (4060)
R4019	19 (1.158)	250 (3625)	280 (4060)
R4023	23 (1.402)	250 (3625)	280 (4060)
R4027	27 (1.646)	250 (3625)	280 (4060)
R4032	32 (1.951)	250 (3625)	280 (4060)
R4038	38 (2.317)	250 (3625)	280 (4060)
R4045	45 (2.746)	250 (3625)	280 (4060)
R4053	53 (3.230)	210 (3045)	235 (3408)
R4060	60 (3.660)	180 (2610)	200 (2900)
R5045	45 (2.746)	250 (3625)	280 (4060)
R5053	53 (3.231)	250 (3625)	280 (4060)
R5063	63 (3.841)	250 (3625)	280 (4060)
R5073	73 (4.451)	250 (3625)	280 (4060)
R5085	85 (5.183)	250 (3625)	280 (4060)
R5100	100 (6.098)	210 (3045)	235 (3408)
R5120	120 (7.317)	180 (2610)	200 (2900)
R6100	100 (6.098)	250 (3625)	280 (4060)
R6117	117 (7.134)	250 (3625)	280 (4060)
R6137	137 (8.354)	250 (3625)	280 (4060)
R6160	160 (9.756)	250 (3625)	280 (4060)
R6187	187 (11.402)	210 (3045)	235 (3408)
R6220	220 (13.415)	180 (2610)	200 (2900)

QS SERIES Helical Gears			
MODEL	**DISPLACEMENT** cm³/rev (cu.in/rev)	**RATED PRESSURE** bar (psi)	**PEAK PRESSURE** bar (psi)
S4016	16.0 (0.975)	250 (3625)	280 (4060)
S4023	22.2 (1.341)	250 (3625)	280 (4060)
S4027	26.1 (1.585)	250 (3625)	280 (4060)
S4032	30.9 (1.884)	250 (3625)	280 (4060)
S4037	35.8 (2.183)	250 (3625)	280 (4060)
S4042	40.6 (2.476)	210 (3045)	235 (3408)
S5045	43.5 (2.652)	250 (3625)	280 (4060)
S5051	49.3 (3.006)	250 (3625)	280 (4060)
S5060	58.0 (3.537)	250 (3625)	280 (4060)
S5070	67.7 (4.128)	250 (3625)	280 (4060)
S5085	82.2 (5.012)	210 (3045)	235 (3408)
S6083	80.3 (4.896)	250 (3625)	280 (4060)
S6097	93.8 (5.720)	250 (3625)	280 (4060)
S6113	109.3 (6.665)	250 (3625)	280 (4060)
S6132	127.6 (7.780)	250 (3625)	280 (4060)
S6155	149.9 (9.140)	210 (3045)	235 (3408)
S7155	149.9 (9.140)	250 (3625)	280 (4060
S7180	174.1 (10.615)	250 (3625)	280 (4060)
S7208	201.1 (12.262)	250 (3625)	280 (4060)
S7248	239.8 (14.622)	250 (3625)	280 (4060)

Note: Theoretical flow rate $= \frac{(\text{cm}^3/\text{rev} \times \text{rev/min})}{1000}$ (litre/min)

$=$ (.00433 x cu.in/rev x rev/min) (US gal/min)

Q SERIES PUMPS - MODEL NUMBERS*

Front or single pump | Rear pump (omit for single pumps) | Front or single port configuration | Rear port configuration (omit for single pump)

R1A4016R4016B12A1H1A0X1AA

Gear type
R = spur
S = helical

1 = design mark

Shaft seals
A = seal and wiper
C = seal wiper, seal with tell-tale

Frame size
4, 5, 6, 7

Gear type
R = spur
S = helical

Frame size
4, 5, 6, 7

Rotation
from shaft end
A = anti-clockwise
C = clockwise

See port options below

Displacements

R Series	DISPLACEMENT cm³/rev	DISPLACEMENT in³/rev
R4016	16.0	0.975
R4019	19.0	1.158
R4023	23.0	1.402
R4027	27.0	1.646
R4032	32.0	1.951
R4038	38.0	2.317
R4045	45.0	2.746
R4053	53.0	3.230
R4060	60.0	3.660
R5045	45.0	2.746
R5053	53.0	3.231
R5063	63.0	3.841
R5073	73.0	4.451
R5085	85.0	5.183
R5100	100.0	6.098
R5120	120.0	7.317
R6100	100.0	6.098
R6117	117.0	7.134
R6137	137.0	8.354
R6160	160.0	9.756
R6187	187.0	11.402
R6220	220.0	13.415

S Series	DISPLACEMENT cm³/rev	DISPLACEMENT in³/rev
S4016	16.0	0.975
S4023	22.2	1.341
S4027	26.1	1.585
S4032	30.9	1.884
S4037	35.8	2.183
S4042	40.6	2.476
S5045	43.5	2.652
S5051	49.3	3.006
S5060	58.0	3.537
S5070	67.7	4.128
S5085	82.2	5.012
S6083	80.3	4.896
S6097	93.8	5.720
S6113	109.3	6.665
S6132	127.6	7.780
S6155	149.9	9.140
S7155	149.9	9.140
S7180	174.1	10.615
S7208	201.1	12.262
S7248	239.8	14.622

Drive Shafts

Code	Description	Frame Sizes			
A	5/8" - SAE A spline	4			
E	5/8" - SAE A parallel	4			
B	7/8" - SAE B spline	4	5		
F	7/8" - SAE B parallel	4			
Q	1" - SAE BB spline	4	5		
H	1" - SAE BB parallel	4	5		
C	1.1/4" - SAE C spline		5	6	7
G	1.1/4" - SAE C parallel		5	6	7
T	1.1/2" - SAE CC spline			6	7
N	1.1/2" - SAE CC parallel			6	7
D	1.3/4" - SAE D spline				7
P	1.3/4" - SAE D parallel				7
	See page number	12	20	28	35

Mounting Flanges

Code	Description	Frame Sizes			
1	2 bolt SAE A	4			
2	2 bolt SAE B	4	5		
3	4 bolt SAE B	4	5		
4	2 bolt SAE C	4	5	6	
5	4 bolt SAE C	4	5	6	7
7	4 bolt SAE D				7
	See page number	13	21	29	36

Outlet port sizes *see pages 15, 23, 31 & 37*

Port Code	Port Size
A	1/2
B	3/4
D	1
E	1.1/16
F	1.1/4
G	1.5/16
H	1.1/2
J	1.5/8
K	2

Outlet port type *- see pages 15, 23, 31 & 37*

Code	Description
1	SAE split flange - metric bolts - Code 61
2	SAE split flange - UNC bolts - Code 61
3	BSP.P thread
4	SAE UNF 'O'-ring thread

Inlet port sizes *- see pages 15, 23, 31 & 37*

Port Code	Port Size	Port Code	Port Size
A	1/2	H	1.1/2
B	3/4	J	1.5/8
C	7/8	K	2
D	1	L	2.1/2
E	1.1/16	M	3
F	1.1/4	N	4
G	1.5/16	X	No Port

Inlet port type *- see pages 15, 23, 31 & 37*

Code	Description
0	No port
1	SAE split flange - metric bolts - Code 61
2	SAE split flange - UNC bolts - Code 61
3	BSP.P thread
4	SAE UNF O'ring thread

Inlet port positions *- see pages 14, 22, 31 & 37*

Code	Description	Single Pump	Double Pump	Dual Pump
A	Inlet port in front section	✓	✓	
B	Separate inlet ports		✓	
C	Common inlet port			✓

Number of pump sections

Code	Description
1	1 pump section
2	2 pump sections
3	3 pump sections
4	4 pump sections

* Use this chart to compile standard dual and double pump model numbers. For special features and for triple and quadruple pumps please consult your David Brown Hydraulics representative.

Before ordering please check that the pump will be operated within quoted parameters and that drive shaft "pD" factors are not exceeded. See page 38.

QR4/QS4 DIMENSIONAL DATA

PUMP	A mm (in)	B mm (in)	C mm (in)	D mm (in)	F1 Front Pump mm (in)	F2 Rear Pump mm (in)	WEIGHT kg (lb)		
							Single*	Front*	Rear*
R4016	145.0 (5.71)	99.0 (3.90)	92.0 (3.62)	115.0 (4.53)	0	0	11.7 (25.7)	13.9 (30.6)	11.2 (24.6)
R4019	147.0 (5.79)	101.0 (3.98)	94.0 (3.70)	118.0 (4.65)	3.0 (0.12)	3.0 (0.12)	12.0 (26.4)	14.2 (31.2)	11.5 (25.3)
R4023	150.0 (5.91)	104.0 (4.09)	97.0 (3.82)	121.0 (4.76)	6.0 (0.24)	6.0 (0.24)	12.2 (26.8)	14.4 (31.7)	11.7 (25.7)
R4027	154.0 (6.06)	108.0 (4.25)	101.0 (3.98)	124.0 (4.88)	9.0 (0.35)	9.0 (0.35)	12.6 (27.7)	14.8 (32.6)	12.1 (26.6)
R4032	158.0 (6.22)	112.0 (4.41)	105.0 (4.13)	128.0 (5.04)	13.0 (0.51)	13.0 (0.51)	13.0 (28.6)	15.2 (33.4)	12.5 (27.5)
R4038	163.0 (6.42)	117.0 (4.61)	110.0 (4.33)	133.0 (5.24)	18.0 (0.71)	18.0 (0.71)	13.5 (29.7)	15.7 (34.5)	13.0 (28.6)
R4045	169.0 (6.65)	123.0 (4.84)	116.0 (4.57)	139.0 (5.47)	24.0 (0.94)	24.0 (0.94)	14.0 (30.8)	16.2 (35.6)	13.5 (29.7)
R4053	175.0 (6.89)	129.0 (5.08)	122.0 (4.80)	146.0 (5.75)	31.0 (1.22)	31.0 (1.22)	14.7 (32.3)	16.9 (37.2)	14.2 (31.2)
R4060	181.0 (7.13)	135.0 (5.31)	128.0 (5.04)	151.0 (5.94)	36.0 (1.42)	36.0 (1.42)	15.2 (33.4)	17.4 (38.3)	14.7 (32.3)
S4016	151.0 (5.94)	104.0 (4.09)	98.0 (3.86)	121.0 (4.76)	0	0	12.3 (27.0)	14.5 (31.9)	11.8 (26.0)
S4023	158.0 (6.22)	112.0 (4.41)	105.0 (4.13)	129.0 (5.08)	8.0 (0.31)	8.0 (0.31)	13.0 (28.6)	15.2 (33.4)	12.5 (27.5)
S4027	163.0 (6.42)	117.0 (4.61)	110.0 (4.33)	134.0 (5.28)	13.0 (0.51)	13.0 (0.51)	13.5 (29.7)	15.7 (34.5)	13.0 (28.6)
S4032	169.0 (6.65)	123.0 (4.84)	116.0 (4.57)	139.0 (5.47)	18.0 (0.71)	18.0 (0.71)	14.0 (30.8)	16.2 (35.6)	13.5 (29.7)
S4037	175.0 (6.89)	129.0 (5.08)	122.0 (4.80)	145.0 (5.71)	24.0 (0.94)	24.0 (0.94)	14.5 (31.9)	16.7 (36.7)	14.0 (30.8)
S4042	181.0 (7.13)	135.0 (5.31)	128.0 (5.04)	151.0 (5.94)	30.0 (1.18)	30.0 (1.18)	15.0 (33.0)	17.2 (37.8)	14.5 (31.9)

Note Weights are approximate

Double pump weight = (front + rear) weights

Dual pump weight = (front + rear) weights - 4.5 kg (10 lb)

QR5/QS5 DIMENSIONAL DATA

PUMP	A mm (in)	B mm (in)	C mm (in)	D mm (in)	F1 Front Pump mm (in)	F2 Rear Pump mm (in)	WEIGHT kg (lb)		
							Single*	Front*	Rear*
R5045	178.0 (7.00)	123.0 (4.84)	105.0 (4.13)	144.0 (5.67)	0	0	19.7 (43.3)	23.2 (51.9)	17.2 (37.8)
R5053	182.0 (7.16)	127.0 (5.00)	109.0 (4.29)	148.0 (5.83)	4.0 (0.16)	4.0 (0.16)	20.8 (45.8)	24.3 (53.5)	18.3 (40.3)
R5063	187.0 (7.36)	133.0 (5.24)	115.0 (4.53)	154.0 (6.06)	10.0 (0.39)	10.0 (0.39)	21.7 (47.7)	25.2 (55.4)	19.2 (42.2)
R5073	193.0 (7.60)	138.0 (5.43)	120.0 (4.72)	159.0 (6.26)	15.0 (0.59)	15.0 (0.59)	22.5 (49.5)	26.0 (57.2)	20.0 (44.0)
R5085	199.0 (7.83)	145.0 (5.71)	127.0 (5.00)	166.0 (6.53)	22.0 (0.87)	22.0 (0.87)	23.5 (51.7)	27.0 (59.4)	21.0 (46.2)
R5100	207.0 (8.15)	153.0 (6.02)	135.0 (5.31)	174.0 (6.85)	30.0 (1.18)	30.0 (1.18)	25.0 (55.0)	28.5 (62.7)	22.5 (49.5)
R5120	218.0 (8.58)	164.0 (6.46)	146.0 (5.75)	185.0 (7.28)	40.0 (1.57)	40.0 (1.57)	26.5 (58.3)	30.0 (66.0)	24.0 (52.8)
S5045	188.0 (7.40)	133.0 (5.24)	115.0 (4.53)	154.0 (6.06)	0	0	24.0 (53.0)	27.5 (60.5)	21.5 (47.3)
S5051	192.0 (7.56)	138.0 (5.43)	120.0 (4.72)	159.0 (6.26)	5.0 (0.20)	5.0 (0.20)	24.5 (54.0)	28.0 (61.6)	22.0 (48.4)
S5060	199.0 (7.83)	145.0 (5.71)	127.0 (5.00)	166.0 (6.53)	12.0 (0.47)	12.0 (0.47)	25.0 (55.0)	28.5 (62.7)	22.5 (49.5)
S5070	207.0 (8.15)	152.0 (5.98)	134.0 (5.28)	173.0 (6.81)	20.0 (0.79)	20.0 (0.79)	25.5 (26.0)	29.0 (63.8)	23.0 (50.6)
S5085	218.0 (8.58)	164.0 (6.50)	146.0 (5.75)	185.0 (7.28)	31.0 (1.22)	31.0 (1.22)	26.8 (59.0)	30.3 (66.7)	24.3 (50.0)

**** Note*** Weights are approximate

Double pump weight = (front + rear) weights

Dual pump weight = (front + rear) weights - 6 kg (13 lb)

QR6/QS6 DIMENSIONAL DATA

PUMP	A mm (in)	B mm (in)	C mm (in)	D mm (in)	WEIGHT kg (lb)		
					Single*	Front*	Rear*
R6100	220.0 (8.66)	152.0 (5.98)	130.0 (5.12)	182.0 (7.16)	35.0 (77.0)	40.0 (88.0)	30.0 (66.0)
R6117	226.0 (8.90)	158.0 (6.22)	136.0 (5.35)	188.0 (7.40)	36.5 (80.0)	41.5 (91.0)	31.5 (69.0)
R6137	233.0 (9.17)	165.0 (6.50)	143.0 (5.63)	195.0 (7.68)	39.0 (86.0)	44.0 (97.0)	34.0 (75.0)
R6160	241.0 (9.49)	173.0 (6.81)	151.0 (5.94)	203.0 (7.99)	42.0 (92.0)	47.0 (103.0)	37.0 (81.0)
R6187	251.0 (9.88)	182.0 (7.16)	161.0 (6.34)	213.0 (8.38)	45.3 (100.0)	50.3 (111.0)	40.3 (89.0)
R6220	263.0 (10.35)	194.0 (7.64)	173.0 (6.81)	225.0 (8.86)	49.0 (108.0)	54.0 (119.0)	44.0 (97.0)
S6083	226.0 (8.90)	158.0 (6.22)	136.0 (5.35)	188.0 (7.40)	40.5 (39.0)	45.5 (100.0)	35.5 (77.0)
S6097	234.0 (9.21)	165.0 (6.50)	143.0 (5.63)	196.0 (7.72)	42.0 (92.0)	47.0 (103.0)	37.0 (87.0)
S6113	242.9 (9.56)	173.0 (6.81)	151.0 (5.94)	204.0 (8.03)	43.5 (96.0)	48.5 (107.0)	38.5 (85)
S6132	251.0 (9.88)	183.0 (7.20)	161.0 (6.34)	213.0 (8.39)	45.5 (100.0)	50.5 (111.0)	40.5 (89.0)
S6155	263.0 (10.35)	194.0 (7.64)	173.0 (6.81)	225.0 (8.86)	47.5 (105.0)	52.5 (116.0)	42.5 (94.0)

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

QS7 DIMENSIONAL DATA, PERFORMANCE DATA

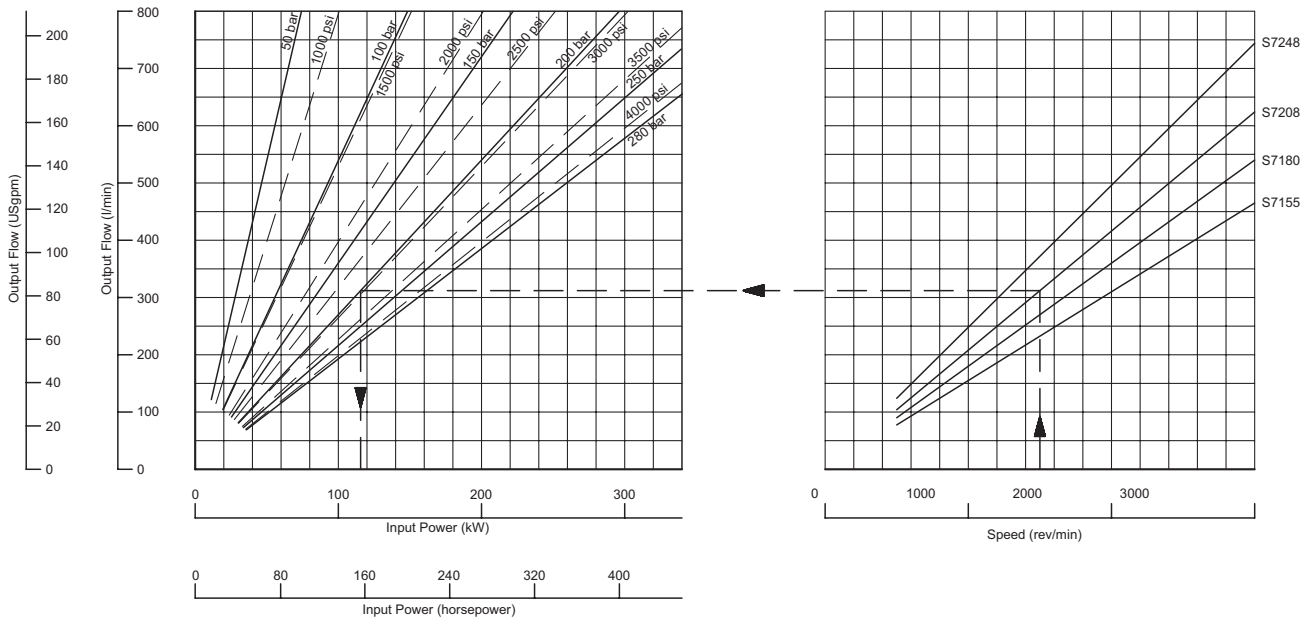
PUMP	A mm (in)	B mm (in)	C mm (in)	D mm (in)	WEIGHT kg (lb) Single*	Front*	Rear*
S7155	288.0 (11.338)	183.0 (7.205)	183.0 (7.205)	~	79.0 (174.0)	84.0 (185.0)	67.0 (147.0)
S7180	296.0 (11.653)	191.0 (7.520)	191.0 (7.520)	~	82.0 (180.0)	87.0 (1910)	70.0 (154.0)
S7208	305.0 (12.000)	201.0 (7.913)	201.0 (7.913)	~	86.0 (190.0)	91.0 (200.0)	74.0 (163.0)
S7248	318.0 (12.520)	214.0 (8.425)	214.0 (8.425)	~	91.0 (200.0)	96 (211.0)	79.0 (174.0)

~ 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).

HydraTorque

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Fluid Power Solutions