

Sumitomo QT Pumps

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Sumitomo
QT Pumps



01
Exceptional durability

Thanks to the combination of a simple design with forced lubrication of parts' sliding surfaces, there is no contact between parts and almost no wear of functional parts. Consequently, QT Pumps exhibit

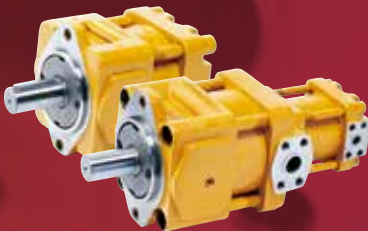


surprisingly little wear even when using oil with poor lubricity (water glycol oil, etc.), allowing them to be used at levels of pressure that would be unthinkable in the past (24.5 MPa). (See page 18.)

02
Suitability for a broad range of applications

A multistage design makes it possible for Sumitomo to offer QT Pumps models for three pressure levels using combinations of the same parts (low for use in 6.9 MPa systems, medium for use in 13.7 MPa systems, and high for use in 20.6 MPa and

higher systems) as well as a Double Pump series that combines those models. Motor-equipped models feature an integrated motor to save space, further expanding the range of applications in which QT Pumps can be used.



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03
Low pulsation

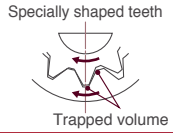
Because they induce almost no pulsation (0.02 MPa), QT Pumps are ideal for use in systems that demand precise speed control, for example press machinery and testing equipment.



04
Super-low-noise performance

QT Pumps exhibit extremely low noise levels that increase little even as pressure and RPM rise (see page 18). This performance derives from the pumps' extremely low trapped volume thanks to their use of an

inscribed gear design and specially shaped teeth. As a result, they offer favorable sound characteristics and do not generate unpleasant noise during operation.



QT Pumps can be used with either an inverter motor or a servomotor. *Optional specifications. Contact Sumitomo for details.

Low-pressure pumps Maximum instantaneous pressure : 7.8 MPa
Volume: 10 to 250 cm³/rev.

A single stage with a pair of identical gears allows these pumps to deliver twice the flow rate. Since they're significantly quieter and generate less pulsation than vane pumps, QT Pumps are often used in applications such as precision machining equipment.

Medium-pressure pumps Maximum instantaneous pressure : 15.7 MPa
Volume: 5 to 125 cm³/rev.

These pumps use a basic design that consists of a single, one-gear stage. They are often used in general industrial applications such as injection machines.

High-pressure pumps Maximum instantaneous pressure : 31.4 MPa
Volume: 5 to 125 cm³/rev.

These pumps' gears are positioned in series, with the second-stage gear accepting the first-stage gear's discharge pressure (15.7 MPa) to deliver a maximum instantaneous pressure of 31.4 MPa. Since these pumps' low-noise performance becomes more pronounced as the pressure level rises, they are often used in applications such as press machinery and testing equipment.

Super-high-pressure pumps Maximum instantaneous pressure : 34.3 MPa
Volume: 5 to 125 cm³/rev.

We added gears to our high-pressure pump design to achieve a maximum instantaneous pressure of 34.3 MPa in response to customers' needs.

QT Single Pumps



Example model number

QT 4 3-25 F ※ - ※ - A

Base model

Size

Nominal theoretical discharge rate (cm³/rev.)

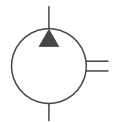
Design symbol

S*:Other special specifications

Pump pressure category
1: Low-pressure pump
2: Medium-pressure pump
3: High-pressure pump
4: Super-high-pressure pump

Direction of rotation and port locations		
Direction of rotation (Viewed from motor side)		Intake/discharge port locations
Clockwise rotation	Counterclockwise rotation	
Forward direction	Intake ↑ Discharge ↓	No symbol
Reverse direction	Intake ↓ Discharge ↑	F
		L
		E

Symbol



Accessories (sold separately) Page 14

- ▶ Pipe flanges
- ▶ Feet

Shaft seal types

	Shaft seal		O-rings
	Allowable intake pressure	Material	Material
No symbol	-0.03 to +0.03 MPa	NBR	NBR
H	0 to 0.2MPa	NBR	NBR
V	-0.03 to +0.03MPa	FKM	FKM

Single Pump model table

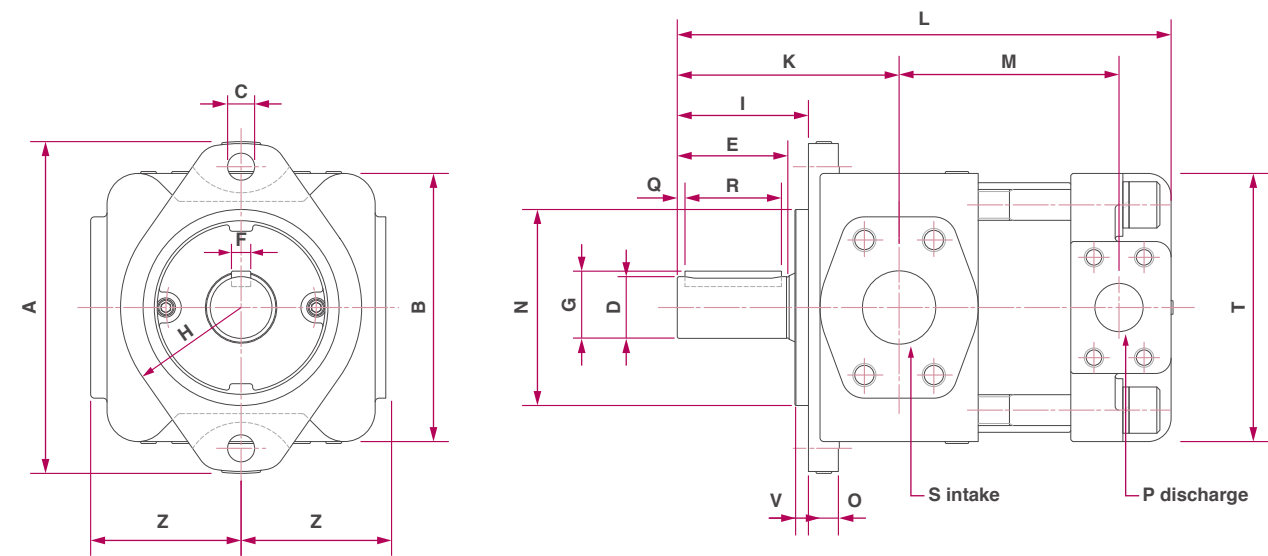
Discharge rate (L/min.) (At rated output)				Pump models												Maximum speed (rpm/min.)
6P Motor		4P Motor		Low-pressure pumps			Medium-pressure pumps			High-pressure pumps			Super-high-pressure pumps			
50Hz	60Hz	50Hz	60Hz	Rated output	6.2MPa	N	Rated output	13.7MPa	N	Rated output	24.5MPa	N	Rated output	31.4MPa	N	
1000min ⁻¹	1200min ⁻¹	1500min ⁻¹	1800min ⁻¹	Maximum instantaneous pressure	7.8MPa		Maximum instantaneous pressure	15.7MPa		Maximum instantaneous pressure	31.4MPa		Maximum instantaneous pressure	34.3MPa		
—	—	3.6	5.1				QT22-4	※	2.0	QT23-4	※	3.1				
1.7	2.9	4.7	6.4				QT22-5	※	2.4	QT23-5	※	4.3	QT24-5		5.8	
2.9	4.4	6.5	8.5				QT22-6.3	※	2.9	QT23-6.3	※	5.2	QT24-6.3		7.0	
4.5	6.3	8.9	11.4				QT22-8	※	3.7	QT23-8	※	6.5	QT24-8		8.6	
4.7	6.9	10.3	13.6				QT32-10	※	4.6	QT33-10		8.3	QT34-10		11.4	
7.3	10.0	14.2	18.3				QT32-12.5	※	5.8	QT33-12.5		10.4	QT34-12.5		14.3	
10.3	13.6	18.7	23.7				QT32-16	※	7.1	QT33-16		12.8	QT34-16		17.6	
13.2	17.6	24.2	30.6	QT31-20	※	4.5	QT42-20		9.2	QT43-20		16.5	QT44-20		20.9	
18.0	23.3	31.4	39.3	QT31-25	※	5.6	QT42-25		11.4	QT43-25		20.4	QT44-25		25.8	
25.2	32.0	42.2	52.2	QT31-31.5	※	6.9	QT42-31.5		14.6	QT43-31.5		26.1	QT44-31.5		33.0	
30.2	38.4	50.8	63.1	QT41-40		8.9	QT52-40		17.7	QT53-40		31.6	QT54-40		40.0	
41.5	52.0	67.8	83.4	QT41-50		11.0	QT52-50		22.6	QT53-50		40.5	QT54-50		51.3	
54.5	67.6	87.3	106.8	QT41-63		14.1	QT52-63		28.3	QT53-63		50.7	QT54-63		64.3	
65.3	82.0	107.1	131.9	QT51-80		17.0	QT62-80		35.6	QT63-80		63.7	QT64-80		80.7	
86.1	107.0	138.3	169.3	QT51-100		21.7	QT62-100		44.6	QT63-100		80.0	QT64-100		101.3	
109.8	135.4	173.8	212.0	QT51-125		27.1	QT62-125		54.9	QT63-125		98.4	QT64-125		124.7	
148.2	180.2	228.3	276.4	QT61-160		34.0										
189.8	230.2	290.7	351.2	QT61-200		42.5										
237.2	287.0	361.8	436.6	QT61-250		52.1										

■ Pumps whose model number is followed by an asterisk are also available in our Motor-equipped QT Pump series. (See pages 13 and 14.) ■ Limit use at maximum instantaneous pressure to one-third or less of each cycle and to 20 sec. or less. ■ Super-high-pressure pumps ship standard with an end cover support (S1144).

Note 1 / Use this table to make a preliminary pump model selection. Then check that pump's detailed specifications on the pump performance table. Required horsepower (kW) figures in the table indicate the horsepower needed when operating at rated pressure and 1,800 rpm/min. Note 2 / Counterclockwise-rotating high-pressure and super-high-pressure pumps are manufactured as orders are received. Please contact Sumitomo for more information.

● QT22-4 and QT23-4 should be used within the following speed range: 1,500 rpm/min. to 1,800 rpm/min. ● QT23-4 has a rated pressure of 20.6 MPa and a maximum instantaneous pressure of 24.5 MPa.

External dimensional drawings



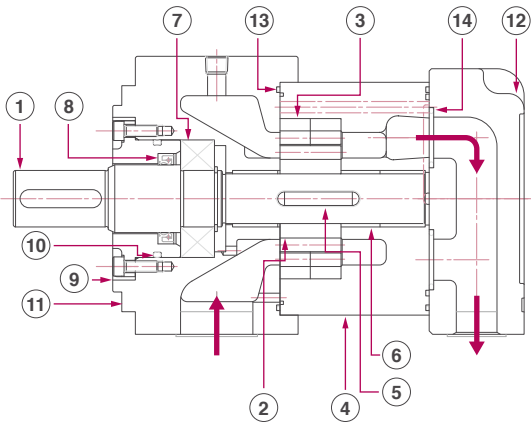
Size Model			QT2※-			QT3※-				QT4※-				QT5※-				QT6※-				
			22-	23-	24-	31-	32-	33-	34-	41-	42-	43-	44-	51-	52-	53-	54-	61-	62-	63-	64-	
Foot type			QF-2			QF-3				QF-4				QF-5				QF-6				
Flange type	Screw-mounted	Intake-use (S)	QGT-08-A(1″)			QGT-10-A(1¼″)				QGT-12-A(1½″)				QGT-16-A(2″)				QGT-20-A(2½″)				
		Discharge-use (P)	QGT-04-A(½″)			QGT-06-A(¾″)				QGT-08-A(1″)				QGT-10-A(1¼″)				QGT-12-A(1½″)				
	Welded	Intake-use (S)	QGW-08-A(1″)			QGW-10-A(1¼″)				QGW-12-A(1½″)				QGW-16-A(2″)				QGW-20-A(2½″)				
		Discharge-use (P)	QGW-04-A(½″)			QGW-06-A(¾″)				QGW-08-A(1″)				QGW-10-A(1¼″)				QGW-12-A(1½″)				
Pump body			A	120			134				172				214				266			
			B	100			106				146				181				229			
			C	φ9.0			φ12.0				φ14.0				φ18.0				φ23.0			
			H	40			50				62.5				75				95			
			I	42			48				68				92				92			
			K	77			90				115				145				154			
			L	170	205	240	226	205	250	295	283	256	312	368	347	313	383	453	412	370	460	553
			M	73.5	108.5	143.5	115	94	139	184	141	114	170	226	170	136	206	276	216.5	174.5	264.5	354.5
			N	63.0 ^{+0 -0.05}			82.55 ^{+0 -0.05}				101.6 ^{+0 -0.05}				127.0 ^{+0 -0.05}				152.4 ^{+0 -0.05}			
			O	12			12				16				20				24			
			T	95			115				139				170				216			
			V	4			4				7				7				7			
			Z	50			60				75				93				118			
Shaft			D	20 ^{+0.009 -0.004}			25 ^{+0.009 -0.004}				32 ^{+0.011 -0.005}				40 ^{+0.011 -0.005}				50 ^{+0.011 -0.005}			
			E	36			42				58				82				82			
			F	6 ^{+0 -0.03}			8 ^{+0 -0.036}				10 ^{+0 -0.036}				12 ^{+0 -0.043}				14 ^{+0 -0.043}			
			G	22.1			27.8				34.9				42.9				53.5			
			O	4			3				4				6				6			
			R	28			36				50				70				70			
Weight (kg)			6.8	8.0	9.2	13.1	11.7	14.2	16.7	22.9	20.5	23.3	26.1	43.0	38.3	48.4	58.5	88.0	75.0	99.0	123	

■ Choose either a screw-mounted (T) or welded (W) flange.

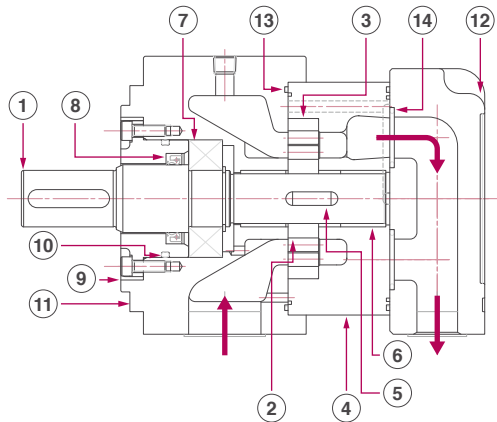
Note / Please note that the actual dimensions of welded flanges are 1 size smaller than the nominal diameter.

Structural drawings

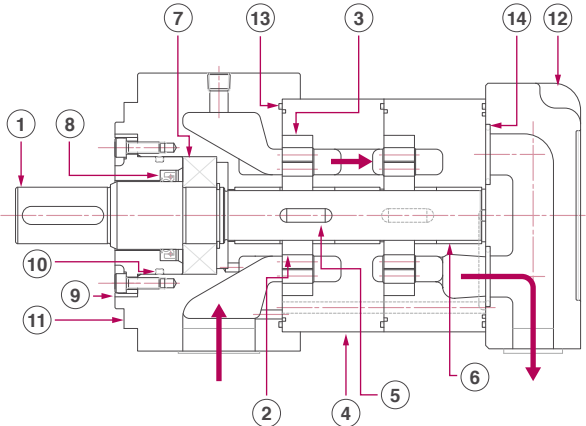
Low-pressure pumps



Medium-pressure pumps



High-pressure pumps



Super-high-pressure pumps

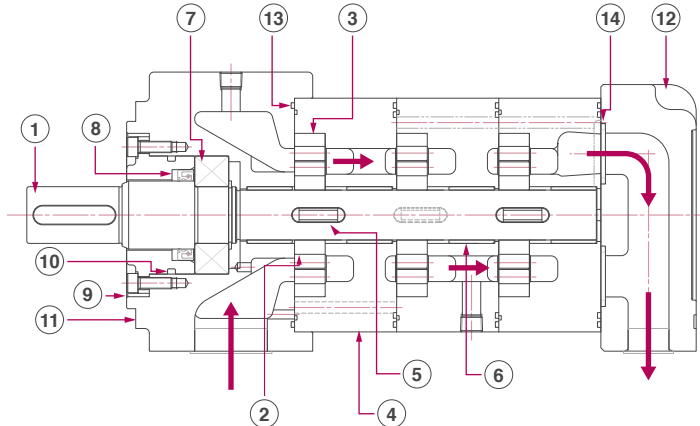


Table of parts

No.	Name	Quantity				No.	Name	Quantity			
		Low-pressure models	Medium-pressure models	High-pressure models	Super-high-pressure models			Low-pressure models	Medium-pressure models	High-pressure models	Super-high-pressure models
①	Shaft	1	1	1	1	⑧	Shaft seal	1 ※	1 ※	1 ※	1 ※
②	Pinion gear	1	1 ※	2 ※	3 ※	⑨	Seal housing	1 ※	1 ※	1 ※	1 ※
③	Ring gear	2 ※	1 ※	2 ※	3 ※	⑩	O-ring	1 ※	1 ※	1 ※	1 ※
④	Gear housing	1	1	2	3	⑪	Front cover	1 ※	1 ※	1 ※	1 ※
⑤	Key	1	1 ※	2 ※	3 ※	⑫	End cover	1 ※	1 ※	1 ※	1 ※
⑥	Bearing	2 ※	2 ※	3 ※	4 ※	⑬	O-ring	2 ※	2 ※	3 ※	4 ※
⑦	Ball bearing	1 ※	1 ※	1 ※	1 ※	⑭	O-ring	2 ※	2 ※	2 ※	2 ※

■Asterisks indicate use of identical parts for each pump size.

Seal type table

No.	Name	Quantity			Type 2	Type 3	Type 4	Type 5	Type 6
		Low-/medium-pressure models	High-pressure models	Super-high-pressure models					
⑧	Seal housing set	Standard type	1	1	09-0554-2	09-0554-3	09-0554-4	09-0554-5	09-0554-6
⑨		H-type	1	1	09-0554-2H	09-0554-3H	09-0554-4H	09-0554-5H	09-0554-6H
⑩		V-type	1	1	09-0554-2V	09-0554-3V	09-0554-4V	09-0554-5V	09-0554-6V

Standard spare

The standard spare is a shaft seal. It should be replaced with a seal housing set (consisting of part nos. 8, 9, and 10) from the standpoint of workability and reliability when replacing the shaft seal.

Performance table: Low-pressure pumps

Values in table apply to use with a liquid viscosity of 40cSt. Please refer to the description of how to read the table (on page 20) for details. An asterisk indicates that the model in question is also available in the Motor-equipped QT Pump series.

Speed (rpm/min.)	Pump model	Theoretical discharge rate (cm ³ /rev.)	Discharge rate (L/min.)							Required horsepower (kW)					
			0.5MPa	2.1MPa	3.4MPa	4.9MPa	6.9MPa	7.8MPa		0.5MPa	2.1MPa	3.4MPa	4.9MPa	6.9MPa	7.8MPa
1000	QT31	-20	20.0	19.8	19.1	18.4	17.7	16.8	16.3	0.33	0.86	1.40	1.93	2.64	3.00
		-25	25.2	24.9	24.2	23.4	22.7	21.7	21.2	0.42	1.08	1.75	2.42	3.31	3.76
		-31.5	31.2	30.9	30.1	29.3	28.4	27.3	26.8	0.51	1.33	2.16	2.98	4.07	4.62
	QT41	-40	40.6	40.1	38.5	36.9	35.3	33.2	32.1	0.66	1.72	2.78	3.84	5.26	5.97
		-50	50.2	49.7	48.1	46.5	44.9	42.8	41.7	0.82	2.12	3.42	4.72	6.46	7.33
		-63	64.6	64.1	62.5	60.9	59.3	57.2	56.1	1.05	2.71	4.37	6.03	8.25	9.36
	QT51	-80	78.4	77.7	75.5	73.4	71.3	68.4	67.0	1.27	3.27	5.28	7.28	9.96	11.29
		-100	101.0	100.3	98.1	96.0	93.9	91.0	89.6	1.63	4.19	6.75	9.31	12.73	14.43
		-125	127.0	126.3	124.1	122.0	119.9	117.0	115.6	2.04	5.23	8.43	11.63	15.89	18.02
	QT61	-160	160.2	159.3	156.4	153.6	150.7	146.9	145.0	2.56	6.56	10.56	14.57	19.90	22.57
		-200	201.8	200.9	198.0	195.2	192.3	188.5	186.6	3.21	8.21	13.22	18.22	24.89	28.23
		-250	249.2	248.3	245.4	242.6	239.7	235.9	234.0	3.95	10.09	16.22	22.35	30.53	34.62
1200	QT31	-20	20.0	23.8	23.1	22.4	21.7	20.8	20.3	0.43	1.07	1.71	2.35	3.21	3.63
		-25	25.2	30.0	29.2	28.5	27.7	26.7	26.2	0.54	1.34	2.14	2.94	4.01	4.55
		-31.5	31.2	37.2	36.3	35.5	34.7	33.5	33.0	0.66	1.65	2.64	3.62	4.94	5.59
	QT41	-40	40.6	48.2	46.6	45.0	43.4	41.3	40.3	0.86	2.13	3.41	4.68	6.37	7.22
		-50	50.2	59.7	58.1	56.5	55.0	52.8	51.8	1.06	2.62	4.19	5.75	7.83	8.87
		-63	64.6	77.0	75.4	73.8	72.2	70.1	69.1	1.36	3.35	5.35	7.34	10.00	11.33
	QT51	-80	78.4	93.4	91.2	89.1	86.9	84.1	82.7	1.64	4.05	6.46	8.86	12.07	13.67
		-100	101.0	120.5	118.3	116.2	114.1	111.2	109.8	2.11	5.18	8.26	11.33	15.43	17.48
		-125	127.0	151.7	149.5	147.4	145.3	142.4	141.0	2.64	6.48	10.32	14.15	19.27	21.83
	QT61	-160	160.2	191.3	188.4	185.6	182.7	178.9	177.0	3.32	8.13	12.93	17.73	24.13	27.34
		-200	201.8	241.2	238.4	235.5	232.7	228.9	227.0	4.17	10.17	16.18	22.18	30.19	34.19
		-250	249.2	298.1	295.2	292.4	289.5	285.7	283.8	5.13	12.50	19.86	27.22	37.03	41.94
1500	QT31 ※	-20	20.0	29.8	29.1	28.4	27.7	26.8	26.3	0.59	1.40	2.20	3.00	4.07	4.60
		-25	25.2	37.5	36.8	36.0	35.3	34.3	33.8	0.75	1.75	2.75	3.75	5.09	5.76
		-31.5	31.2	46.5	45.7	44.9	44.0	42.9	42.4	0.92	2.15	3.39	4.62	6.26	7.08
	QT41	-40	40.6	60.4	58.8	57.2	55.6	53.5	52.4	1.20	2.79	4.38	5.97	8.09	9.15
		-50	50.2	74.8	73.2	71.6	70.0	67.9	66.8	1.47	3.43	5.38	7.33	9.94	11.24
		-63	64.6	96.4	94.8	93.2	91.6	89.5	88.4	1.89	4.38	6.88	9.37	12.69	14.36
	QT51	-80	78.4	116.9	114.7	112.6	110.5	107.6	106.2	2.29	5.30	8.30	11.31	15.32	17.32
		-100	101.0	150.8	148.6	146.5	144.4	141.5	140.1	2.94	6.78	10.62	14.46	19.59	22.15
		-125	127.0	189.8	187.6	185.5	183.4	180.5	179.1	3.68	8.48	13.27	18.07	24.46	27.66
	QT61	-160	160.2	239.4	236.5	233.7	230.8	227.0	225.1	4.63	10.63	16.63	22.64	30.64	34.64
		-200	201.8	301.8	298.9	296.1	293.2	289.4	287.5	5.81	13.31	20.82	28.32	38.33	43.33
		-250	249.2	372.9	370.0	367.2	364.3	360.5	358.6	7.15	16.36	25.56	34.76	47.03	53.16
1800	QT31 ※	-20	20.0	35.8	35.1	34.4	33.7	32.8	32.3	0.78	1.75	2.71	3.67	4.95	5.59
		-25	25.2	45.1	44.4	43.6	42.9	41.9	41.4	0.99	2.19	3.39	4.59	6.20	7.00
		-31.5	31.2	55.9	55.0	54.2	53.4	52.3	51.7	1.22	2.70	4.18	5.65	7.63	8.61
	QT41	-40	40.6	72.6	71.0	69.4	67.8	65.7	64.6	1.58	3.49	5.40	7.30	9.85	11.12
		-50	50.2	89.8	88.2	86.7	85.1	83.0	81.9	1.95	4.29	6.63	8.98	12.10	13.67
		-63	64.6	115.8	114.2	112.6	111.0	108.9	107.8	2.50	5.49	8.48	11.47	15.46	17.46
	QT51	-80	78.4	140.4	138.3	136.1	134.0	131.1	129.7	3.02	6.63	10.24	13.85	18.66	21.07
		-100	101.0	181.1	178.9	176.8	174.7	171.8	170.4	3.88	8.49	13.10	17.72	23.86	26.94
		-125	127.0	227.9	225.7	223.6	221.5	218.6	217.2	4.87	10.62	16.38	22.13	29.80	33.64
	QT61	-160	160.2	287.4	284.6	281.7	278.9	275.1	273.2	6.12	13.33	20.53	27.73	37.34	42.14
		-200	201.8	362.3	359.4	356.6	353.7	349.9	348.0	7.69	16.69	25.70	34.70	46.71	52.72
		-250	249.2	447.6	444.8	441.9	439.1	435.3	433.4	9.47	20.51	31.55	42.60	57.32	64.68

Performance table: Medium-pressure pumps

Values in table apply to use with a liquid viscosity of 40cSt. Please refer to the description of how to read the table (on page 20) for details.
An asterisk indicates that the model in question is also available in the Motor-equipped QT Pump series.

Speed (rpm/min.)	Pump model		Theoretical discharge rate (cm ³ /rev.)	Discharge rate (L/min.)						Required horsepower (kW)					
				0.5MPa	3.4MPa	6.9MPa	10.3MPa	13.7MPa	15.7MPa	0.5MPa	3.4MPa	6.9MPa	10.3MPa	13.7MPa	15.7MPa
1000	QT22	-5	5.5	5.4	4.9	4.2	3.6	3.0	2.6	0.08	0.35	0.67	0.98	1.29	1.47
		-6.3	6.7	6.5	5.9	5.2	4.5	3.8	3.4	0.10	0.43	0.82	1.20	1.59	1.81
		-8	8.3	8.2	7.5	6.7	5.8	5.0	4.5	0.13	0.54	1.02	1.50	1.99	2.26
		-10	10.0	9.9	9.3	8.6	8.0	7.3	6.9	0.16	0.68	1.29	1.90	2.50	2.85
	QT32	-12.5	12.6	12.5	11.8	11.0	10.3	9.5	9.1	0.21	0.86	1.62	2.38	3.14	3.58
		-16	15.6	15.5	14.7	13.8	12.9	11.9	11.4	0.25	1.06	2.00	2.94	3.88	4.41
		-20	20.3	20.0	18.5	16.8	15.0	13.2	12.2	0.33	1.37	2.59	3.81	5.02	5.72
		-25	25.1	24.8	23.3	21.6	19.8	18.0	17.0	0.41	1.69	3.19	4.69	6.19	7.04
	QT42	-31.5	32.3	32.0	30.5	28.8	27.0	25.2	24.2	0.52	2.17	4.09	6.01	7.93	9.02
		-40	39.2	38.9	37.0	34.7	32.5	30.2	28.9	0.63	2.62	4.94	7.27	9.59	10.91
		-50	50.5	50.2	48.3	46.0	43.8	41.5	40.2	0.81	3.36	6.34	9.32	12.30	14.00
		-63	63.5	63.2	61.3	59.0	56.8	54.5	53.2	1.02	4.21	7.94	11.67	15.40	17.53
	QT62	-80	80.1	79.6	76.4	72.7	69.0	65.3	63.2	1.28	5.30	9.98	14.66	19.34	22.02
		-100	100.9	100.4	97.2	93.5	89.8	86.1	84.0	1.61	6.65	12.52	18.39	24.27	27.62
		-125	124.6	124.1	120.9	117.2	113.5	109.8	107.7	1.98	8.18	15.40	22.63	29.85	33.98
1200	QT22	-5	5.5	6.5	6.0	5.4	4.8	4.2	3.8	0.11	0.43	0.81	1.18	1.56	1.77
		-6.3	6.7	7.9	7.3	6.6	5.9	5.3	4.9	0.13	0.53	0.99	1.46	1.92	2.18
		-8	8.3	9.8	9.2	8.4	7.6	6.8	6.4	0.17	0.66	1.24	1.82	2.40	2.73
		-10	10.0	11.9	11.3	10.7	10.0	9.4	9.0	0.21	0.84	1.56	2.29	3.02	3.44
	QT32	-12.5	12.6	15.0	14.4	13.6	12.9	12.2	11.7	0.27	1.05	1.96	2.88	3.79	4.31
		-16	15.6	18.6	17.8	17.0	16.1	15.2	14.7	0.33	1.30	2.42	3.55	4.68	5.32
		-20	20.3	24.1	22.7	21.0	19.3	17.6	16.6	0.43	1.68	3.14	4.60	6.06	6.89
		-25	25.1	29.9	28.4	26.7	25.0	23.3	22.3	0.53	2.07	3.87	5.67	7.46	8.49
	QT42	-31.5	32.3	38.5	37.1	35.4	33.7	32.0	31.0	0.68	2.65	4.95	7.26	9.56	10.88
		-40	39.2	46.7	44.9	42.7	40.6	38.4	37.2	0.82	3.21	5.99	8.78	11.57	13.16
		-50	50.5	60.3	58.5	56.3	54.2	52.0	50.8	1.05	4.12	7.69	11.26	14.83	16.88
		-63	63.5	75.9	74.1	71.9	69.8	67.6	66.4	1.32	5.16	9.63	14.10	18.58	21.13
	QT62	-80	80.1	95.6	92.6	89.1	85.5	82.0	80.0	1.66	6.48	12.10	17.72	23.34	26.55
		-100	100.9	120.6	117.6	114.0	110.5	107.0	105.0	2.09	8.13	15.18	22.23	29.28	33.31
		-125	124.6	149.0	146.0	142.5	138.9	135.4	133.4	2.58	10.01	18.68	27.35	36.02	40.97
1500	QT22 ※	-4	4.6	6.4	5.8	5.2	4.7	4.1	3.8	0.13	0.47	0.87	1.26	1.66	1.89
		-5	5.5	8.2	7.7	7.1	6.6	6.0	5.7	0.15	0.55	1.02	1.49	1.96	2.23
		-6.3	6.7	9.9	9.3	8.7	8.1	7.4	7.1	0.19	0.68	1.26	1.84	2.42	2.75
		-8	8.3	12.3	11.7	11.0	10.2	9.5	9.1	0.23	0.85	1.57	2.30	3.02	3.43
	QT32	-10	10.0	14.9	14.4	13.8	13.2	12.6	12.2	0.29	1.07	1.98	2.90	3.81	4.33
		-12.5	12.6	18.8	18.2	17.5	16.8	16.1	15.7	0.37	1.35	2.49	3.63	4.78	5.43
		-16	15.6	23.3	22.6	21.8	21.0	20.1	19.7	0.46	1.66	3.07	4.48	5.89	6.70
		-20	20.3	30.2	28.9	27.3	25.7	24.2	23.2	0.59	2.16	3.98	5.81	7.63	8.68
	QT42	-25	25.1	37.4	36.1	34.5	32.9	31.4	30.5	0.73	2.66	4.91	7.16	9.40	10.69
		-31.5	32.3	48.2	46.9	45.3	43.7	42.2	41.3	0.94	3.41	6.29	9.17	12.05	13.69
		-40	39.2	58.5	56.8	54.8	52.8	50.8	49.7	1.14	4.13	7.61	11.09	14.57	16.56
		-50	50.5	75.5	73.8	71.8	69.8	67.8	66.6	1.47	5.29	9.76	14.23	18.69	21.24
	QT62	-63	63.5	95.0	93.3	91.3	89.3	87.3	86.1	1.84	6.63	12.23	17.82	23.41	26.61
		-80	80.1	119.7	116.9	113.6	110.3	107.1	105.2	2.32	8.34	15.36	22.39	29.41	33.42
		-100	100.9	150.9	148.1	144.8	141.5	138.3	136.4	2.91	10.47	19.28	28.09	36.90	41.93
		-125	124.6	186.4	183.6	180.4	177.1	173.8	171.9	3.59	12.88	23.72	34.56	45.39	51.59
1800	QT22 ※	-4	4.6	7.5	7.1	6.5	6.0	5.5	5.2	0.17	0.58	1.05	1.53	2.01	2.28
		-5	5.5	9.8	9.4	8.8	8.3	7.8	7.5	0.20	0.68	1.25	1.81	2.37	2.70
		-6.3	6.7	11.9	11.4	10.8	10.2	9.6	9.3	0.25	0.84	1.53	2.23	2.92	3.32
		-8	8.3	14.8	14.3	13.6	12.9	12.2	11.8	0.31	1.05	1.92	2.78	3.65	4.15
	QT32	-10	10.0	17.9	17.4	16.9	16.3	15.7	15.4	0.39	1.32	2.42	3.51	4.60	5.23
		-12.5	12.6	22.6	22.0	21.4	20.7	20.1	19.7	0.49	1.66	3.03	4.41	5.78	6.56
		-16	15.6	28.0	27.3	26.6	25.8	25.0	24.6	0.60	2.05	3.74	5.44	7.13	8.09
		-20	20.3	36.3	35.1	33.6	32.1	30.6	29.8	0.78	2.66	4.85	7.04	9.23	10.48
	QT42	-25	25.1	45.0	43.7	42.2	40.8	39.3	38.4	0.97	3.28	5.98	8.68	11.37	12.92
		-31.5	32.3	57.9	56.7	55.2	53.7	52.2	51.4	1.24	4.21	7.66	11.12	14.57	16.55
		-40	39.2	70.3	68.7	66.8	64.9	63.1	62.0	1.51	5.09	9.27	13.45	17.63	20.02
	QT52	-50	50.5	90.6	89.0	87.2	85.3	83.4	82.3	1.94	6.53	11.89	17.25	22.61	25.67
		-63	63.5	114.0	112.4	110.6	108.7	106.8	105.7	2.43	8.19	14.90	21.61	28.32	32.15
	QT62	-80	80.1	143.7	141.1	138.0	135.0	131.9	130.1	3.06	10.29	18.72	27.15	35.58	40.39
		-100	100.9	181.2	178.5	175.5	172.4	169.3	167.6	3.85	12.92	23.49	34.06	44.63	50.68
		-125	124.6	223.8	221.2	218.1	215.1	212.0	210.2	4.75	15.90	28.90	41.91	54.91	62.35

Performance table: High-pressure pumps

Values in table apply to use with a liquid viscosity of 40cSt. Please refer to the description of how to read the table (on page 20) for details.
An asterisk indicates that the model in question is also available in the Motor-equipped QT Pump series.

Speed (rpm/min.)	Pump model	Theoretical discharge (cm³/rev.)	Discharge rate (L/min.)								Required horsepower (kW)							
			0.5MPa	3.4MPa	6.9MPa	13.7MPa	20.6MPa	24.5MPa	31.4MPa	0.5MPa	3.4MPa	6.9MPa	13.7MPa	20.6MPa	24.5MPa	31.4MPa		
1000	QT23	-5	5.5	5.5	5.2	4.9	4.3	3.8	3.4	2.9	0.09	0.39	0.70	1.33	1.95	2.31	2.94	
		-6.3	6.7	6.6	6.3	6.0	5.3	4.7	4.3	3.6	0.11	0.48	0.86	1.63	2.40	2.84	3.62	
		-8	8.3	8.2	7.9	7.5	6.8	6.0	5.6	4.8	0.14	0.60	1.08	2.04	3.00	3.55	4.52	
	QT33	-10	10.0	10.0	9.7	9.3	8.6	7.9	7.5	6.8	0.18	0.75	1.36	2.57	3.79	4.48	5.69	
		-12.5	12.6	12.5	12.2	11.8	11.0	10.2	9.8	9.0	0.23	0.94	1.71	3.23	4.75	5.62	7.15	
		-16	15.6	15.5	15.1	14.7	13.8	12.9	12.4	11.5	0.28	1.16	2.10	3.98	5.86	6.94	8.81	
	QT43	-20	20.3	20.2	19.4	18.5	16.7	14.9	13.9	12.1	0.36	1.51	2.73	5.16	7.59	8.98	11.42	
		-25	25.1	25.0	24.2	23.3	21.5	19.7	18.7	16.9	0.45	1.86	3.36	6.36	9.35	11.07	14.07	
		-31.5	32.3	32.2	31.4	30.5	28.7	26.9	25.9	24.1	0.58	2.39	4.31	8.15	11.99	14.18	18.02	
	QT53	-40	39.2	39.0	38.1	36.9	34.7	32.4	31.1	28.8	0.70	2.89	5.21	9.85	14.50	17.15	21.79	
		-50	50.5	50.3	49.4	48.2	46.0	43.7	42.4	40.1	1.16	3.71	6.68	12.64	18.59	22.00	27.95	
		-63	63.5	63.3	62.4	61.2	59.0	56.7	55.4	53.1	1.45	4.65	8.37	15.83	23.29	25.55	35.00	
QT63	-80	80.1	79.8	78.3	76.4	72.7	69.0	66.9	63.2	1.83	5.84	10.52	19.89	29.25	34.61	43.97		
	-100	100.9	100.6	99.1	97.2	93.5	89.8	87.7	84.0	2.30	7.33	13.21	24.95	36.70	43.41	55.16		
	-125	124.6	124.3	122.8	120.9	117.2	113.5	111.4	107.7	2.83	9.03	16.25	30.70	45.15	53.41	67.86		
1200	QT23	-5	5.5	6.6	6.3	6.0	5.5	4.9	4.6	4.1	0.16	0.48	0.86	1.61	2.36	2.79	3.54	
		-6.3	6.7	7.9	7.7	7.3	6.7	6.1	5.7	5.1	0.19	0.59	1.05	1.98	2.90	3.43	4.36	
		-8	8.3	9.9	9.6	9.2	8.5	7.8	7.4	6.7	0.24	0.74	1.32	2.47	3.63	4.29	5.44	
	QT33	-10	10.0	12.0	11.7	11.3	10.7	10.0	9.6	9.0	0.31	1.93	1.66	3.12	4.57	5.41	6.86	
		-12.5	12.6	15.1	14.7	14.4	13.6	12.9	12.4	11.7	0.39	1.17	2.08	3.91	5.74	6.79	8.61	
		-16	15.6	18.7	18.3	17.9	17.0	16.1	15.6	14.8	0.48	1.45	2.57	4.83	7.08	8.37	10.62	
	QT43	-20	20.3	24.2	23.5	22.7	20.9	19.2	18.3	16.6	0.62	1.87	3.33	6.25	9.17	10.84	13.76	
		-25	25.1	30.0	29.3	28.4	26.7	25.0	24.0	22.3	0.77	2.31	4.11	7.70	11.30	13.36	16.95	
		-31.5	32.3	38.6	37.9	37.1	35.3	33.6	32.7	31.0	0.99	2.96	5.27	9.87	14.48	17.11	21.72	
	QT53	-40	39.2	46.9	46.0	44.9	42.7	40.6	39.3	37.2	1.20	3.58	6.37	11.94	17.52	20.70	26.27	
		-50	50.5	60.4	59.5	58.4	56.3	54.1	52.9	50.7	1.54	4.60	8.17	15.92	22.47	26.55	33.69	
		-63	63.5	76.0	75.1	74.0	71.9	69.7	68.5	66.3	1.93	5.77	10.24	19.19	28.14	33.25	42.20	
QT63	-80	80.1	95.9	94.4	92.6	89.1	85.5	83.5	80.0	2.43	7.25	12.87	24.11	35.35	41.77	53.01		
	-100	100.9	120.8	119.3	117.6	114.0	110.5	108.5	105.0	3.06	9.10	16.15	30.25	44.35	52.40	66.56		
	-125	124.6	149.3	147.8	146.0	142.5	138.9	136.9	133.4	3.78	11.21	19.88	37.22	54.56	64.47	81.81		
1500	QT23 ※	-4	4.6	6.4	6.1	5.8	5.3	4.8	4.5	—	0.19	0.53	0.93	1.72	2.52	2.97	—	
		-5	5.5	8.2	8.0	7.7	7.2	6.7	6.4	5.9	0.23	0.63	1.10	2.04	2.98	3.51	4.45	
		-6.3	6.7	9.9	9.7	9.4	8.8	8.2	7.9	7.3	0.28	0.77	1.35	2.51	3.67	4.33	5.48	
		-8	8.3	12.4	12.1	11.8	11.1	10.4	10.0	9.4	0.35	0.97	1.69	3.13	4.58	5.40	6.85	
	QT33	-10	10.0	15.0	14.7	14.4	13.8	13.1	12.8	12.2	0.44	1.22	2.13	3.95	5.77	6.81	8.64	
		-12.5	12.6	18.8	18.5	18.2	17.5	16.8	16.4	15.7	0.56	1.53	2.68	4.96	7.25	8.55	10.84	
		-16	15.6	23.3	23.0	22.6	21.8	21.0	20.5	19.7	0.69	1.89	3.30	6.12	8.94	10.55	13.37	
	QT43	-20	20.3	30.3	29.7	28.9	27.3	25.7	24.8	23.2	0.89	2.46	4.28	7.93	11.58	13.67	17.32	
		-25	25.1	37.5	36.9	36.1	34.5	32.9	32.0	30.4	1.10	3.03	5.28	9.77	14.27	16.84	21.33	
		-31.5	32.3	48.3	47.7	46.9	45.3	43.7	42.8	41.2	1.42	3.89	6.76	12.52	18.28	21.58	27.33	
	QT53	-40	39.2	58.7	58.0	57.2	55.6	54.0	53.1	51.5	1.72	4.70	8.19	15.15	22.12	26.10	33.06	
		-50	50.5	75.6	75.0	74.2	72.6	71.0	70.1	68.5	2.21	6.04	10.50	19.44	28.37	33.47	42.40	
-63		63.5	95.1	94.5	93.7	92.1	90.5	89.6	88.0	2.78	7.57	13.16	24.35	35.53	41.92	53.11		
QT63	-80	80.1	119.9	118.5	116.8	113.5	110.2	108.4	105.0	3.50	9.52	16.54	30.59	44.64	52.67	66.71		
	-100	100.9	151.1	149.7	148.0	144.7	141.4	139.6	136.2	4.40	11.95	20.76	38.38	56.00	66.07	83.69		
	-125	124.6	186.7	185.2	183.6	180.3	177.0	175.1	171.8	5.43	14.72	25.55	47.23	68.90	81.29	102.97		
1800	QT23 ※	-4	4.6	7.7	7.4	7.1	6.6	6.2	6.0	—	0.26	0.67	1.14	2.10	3.05	3.60	—	
		-5	5.5	9.9	9.7	9.4	8.9	8.5	8.2	7.7	0.31	0.79	1.35	2.48	3.61	4.25	5.38	
		-6.3	6.7	11.9	11.7	11.4	10.9	10.3	10.0	9.5	0.38	0.97	1.67	3.05	4.44	5.23	6.62	
		-8	8.3	14.9	14.6	14.3	13.7	13.1	12.7	12.1	0.47	1.22	2.08	3.82	5.55	6.54	8.27	
	QT33	-10	10.0	18.0	17.7	17.4	16.8	16.3	15.9	15.4	0.60	1.53	2.63	4.81	7.00	8.25	10.43	
		-12.5	12.6	22.6	22.4	22.0	21.4	20.7	20.3	19.7	0.75	1.93	3.30	6.04	8.78	10.35	13.09	
		-16	15.6	28.0	27.7	27.3	26.6	25.8	25.4	24.6	0.93	2.38	4.07	7.45	10.83	12.77	16.15	
	QT43	-20	20.3	36.4	35.8	35.1	33.6	32.1	31.2	29.8	1.21	3.09	5.28	9.66	14.04	16.54	20.92	
		-25	25.1	45.1	44.4	43.7	42.2	40.7	39.9	38.4	1.49	3.81	6.50	11.90	17.29	20.38	25.77	
		-31.5	32.3	58.0	57.4	56.7	55.2	53.7	52.8	51.4	1.92	4.88	8.34	15.25	22.16	26.11	33.02	
	QT53	-40	39.2	70.4	69.6	68.7	66.8	64.9	63.9	62.0	1.97	5.91	10.09	18.45	26.81	31.58	39.94	
		-50	50.5	90.8	90.0	89.0	87.1	85.3	84.2	82.3	2.54	7.59	12.95	23.67	34.39	40.51	51.23	
-63		63.5	114.2	113.4	112.4	110.5	108.7	107.6	105.7	3.19	9.51	16.22	29.65	43.07	50.74	64.16		
QT63	-80	80.1	144.0	142.6	141.1	138.0	134.9	133.2	130.1	4.02	11.97	20.39	37.25	54.11	63.74	80.60		
	-100	100.9	181.4	180.1	178.5	175.5	172.4	170.6	167.5	5.97	15.03	25.60	46.75	67.89	79.97	101.12		
	-125	124.6	224.1	222.7	221.2	218.1	215.0	213.3	210.2	7.36	18.51	31.51	57.52	83.53	98.40	124.41		

Single Pumps

Performance table: Super-high-pressure pumps

Values in table apply to use with a liquid viscosity of 40cSt. Please refer to the description of how to read the table (on page 20) for details. An asterisk indicates that the model in question is also available in the Motor-equipped QT Pump series.

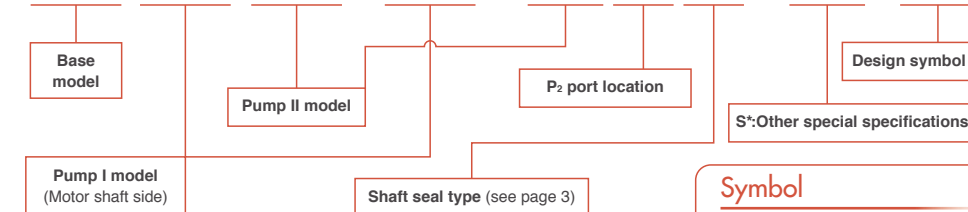
Speed (rpm/min.)	Pump model		Theoretical discharge rate (cm ³ /rev.)	Discharge rate (L/min.)								Required horsepower (kW)							
				0.5MPa	13.7MPa	20.6MPa	24.5MPa	27.5MPa	31.4MPa	34.3MPa	0.5MPa	13.7MPa	20.6MPa	24.5MPa	27.5MPa	31.4MPa	34.3MPa		
1000	QT24	-5	5.5	5.4	4.9	4.6	4.5	4.3	4.2	4.1	0.16	1.46	2.13	2.51	2.80	3.19	3.47		
		-6.3	6.7	6.6	6.1	5.8	5.6	5.5	5.3	5.2	0.20	1.76	2.57	3.04	3.39	3.85	4.20		
		-8	8.3	8.2	7.7	7.4	7.2	7.1	7.0	6.8	0.25	2.19	3.19	3.77	4.20	4.77	5.20		
	QT34	-10	10.0	10.0	9.3	8.9	8.7	8.6	8.4	8.2	0.30	2.64	3.86	4.55	5.07	5.77	6.29		
		-12.5	12.6	12.6	11.9	11.5	11.3	11.2	11.0	10.8	0.38	3.32	4.84	5.71	6.37	7.24	7.89		
		-16	15.6	15.6	14.9	14.5	14.3	14.2	14.0	13.8	0.47	4.09	5.97	7.05	7.86	8.93	9.74		
	QT44	-20	20.3	20.3	19.5	19.0	18.8	18.6	18.4	18.2	0.61	5.30	7.74	9.13	10.18	11.57	12.61		
		-25	25.1	25.1	24.3	23.8	23.6	23.4	23.2	23.0	0.75	6.54	9.54	11.25	12.54	14.25	15.54		
		-31.5	32.3	32.3	31.5	31.0	30.8	30.6	30.4	30.2	0.96	8.38	12.22	14.42	16.07	18.26	19.91		
	QT54	-40	39.2	39.1	36.0	34.4	33.5	32.8	31.9	31.2	1.17	10.13	14.79	17.44	19.44	22.09	24.09		
		-50	50.5	50.4	47.3	45.7	44.8	44.1	43.2	42.5	1.50	13.00	18.97	22.37	24.93	28.34	30.90		
		-63	63.5	63.4	60.3	58.7	57.8	57.1	56.2	55.5	1.88	16.29	23.76	28.03	31.23	35.49	38.70		
	QT64	-80	80.1	79.9	74.9	72.4	70.9	69.8	68.3	67.2	2.37	20.47	29.85	35.21	39.23	44.60	48.62		
		-100	100.9	100.7	95.7	93.2	91.7	90.6	89.1	88.0	2.99	25.69	37.46	44.18	49.23	55.95	61.00		
		-125	124.6	124.4	119.4	116.9	115.4	114.3	112.8	111.7	3.68	31.61	46.09	54.36	60.57	68.84	75.05		
1200	QT24	-5	5.5	6.5	6.0	5.8	5.6	5.5	5.3	5.2	0.22	1.78	2.58	3.04	3.39	3.85	4.19		
		-6.3	6.7	7.9	7.4	7.1	7.0	6.9	6.7	6.6	0.27	2.15	3.12	3.68	4.09	4.65	5.07		
		-8	8.3	9.9	9.4	9.1	8.9	8.8	8.7	8.6	0.33	2.66	3.87	4.56	5.08	5.76	6.28		
	QT34	-10	10.0	12.0	11.3	11.0	10.8	10.7	10.5	10.3	0.40	3.22	4.67	5.51	6.13	6.97	7.59		
		-12.5	12.6	15.1	14.4	14.1	13.9	13.8	13.6	13.4	0.51	4.04	5.87	6.91	7.70	8.74	9.53		
		-16	15.6	18.7	18.0	17.7	17.5	17.4	17.2	17.0	0.63	4.98	7.24	8.53	9.50	10.79	11.75		
	QT44	-20	20.3	24.3	23.6	23.1	22.9	22.7	22.5	22.3	0.82	6.46	9.38	11.05	12.30	13.97	15.23		
		-25	25.1	30.1	29.3	28.9	28.7	28.5	28.3	28.1	1.01	7.96	11.56	13.62	15.16	17.22	18.76		
		-31.5	32.3	38.7	38.0	37.5	37.3	37.1	36.9	36.7	1.30	10.20	14.81	17.45	19.43	22.06	24.04		
	QT54	-40	39.2	46.9	44.0	42.5	41.6	41.0	40.1	39.4	1.57	12.34	17.92	21.11	23.50	26.69	29.08		
		-50	50.5	60.5	57.6	56.0	55.2	54.5	53.7	53.0	2.03	15.83	22.99	27.08	30.14	34.23	37.30		
		-63	63.5	76.1	73.2	71.6	70.8	70.1	69.3	68.6	2.54	19.83	28.79	33.91	37.76	42.88	46.72		
	QT64	-80	80.1	95.9	91.2	88.7	87.3	86.3	84.9	83.8	3.21	24.92	36.18	42.61	47.44	53.87	58.70		
		-100	100.9	120.9	116.2	113.7	112.3	111.2	109.8	108.8	4.03	31.27	45.40	53.47	59.52	67.59	73.65		
		-125	124.6	149.3	144.6	142.1	140.7	139.7	138.3	137.2	4.98	38.49	55.86	65.79	73.24	83.17	90.61		
1000	QT24	-5	5.5	8.2	7.7	7.4	7.3	7.2	7.1	6.9	0.32	2.27	3.27	3.85	4.28	4.86	5.29		
		-6.3	6.7	9.9	9.4	9.2	9.0	8.9	8.8	8.7	0.39	2.74	3.95	4.65	5.17	5.87	6.39		
		-8	8.3	12.4	11.9	11.6	11.5	11.4	11.2	11.1	0.49	3.40	4.90	5.77	6.41	7.28	7.92		
	QT34	-10	10.0	15.0	14.4	14.1	13.9	13.7	13.6	13.4	0.59	4.10	5.93	6.97	7.75	8.79	9.57		
		-12.5	12.6	18.9	18.3	18.0	17.8	17.6	17.5	17.3	0.74	5.15	7.44	8.75	9.73	11.03	12.01		
		-16	15.6	23.4	22.8	22.5	22.3	22.1	22.0	21.8	0.92	6.36	9.18	10.79	12.00	13.61	14.82		
	QT44	-20	20.3	30.4	29.7	29.3	29.1	28.9	28.7	28.6	1.19	8.24	11.89	13.98	15.55	17.64	19.20		
		-25	25.1	37.6	36.9	36.5	36.3	36.1	35.9	35.8	1.47	10.15	14.66	17.23	19.16	21.73	23.66		
		-31.5	32.3	48.4	47.7	47.3	47.1	46.9	46.7	46.6	1.89	13.02	18.78	22.08	24.55	27.85	30.32		
	QT54	-40	39.2	58.7	56.0	54.5	53.7	53.1	52.3	51.7	2.30	15.75	22.73	26.71	29.70	33.69	36.68		
		-50	50.5	75.6	72.9	71.5	70.7	70.1	69.3	68.7	2.95	20.21	29.16	34.27	38.10	43.21	47.05		
		-63	63.5	95.1	92.4	91.0	90.2	89.6	88.8	88.2	3.71	25.32	36.52	42.93	47.73	54.13	58.93		
	QT64	-80	80.1	120.0	115.6	113.3	111.9	111.0	109.6	108.7	4.68	31.82	45.90	53.94	59.97	68.01	74.04		
		-100	100.9	151.2	146.8	144.5	143.1	142.2	140.8	139.9	5.89	39.94	57.59	67.68	75.25	85.34	92.90		
		-125	124.6	186.7	182.3	180.0	178.7	177.7	176.4	175.4	7.26	49.15	70.87	83.28	92.59	105.0	114.3		
1200	QT24	-5	5.5	9.8	9.4	9.1	9.0	8.9	8.8	8.7	0.44	2.77	3.98	4.67	5.19	5.88	6.40		
		-6.3	6.7	11.9	11.5	11.2	11.1	11.0	10.9	10.8	0.54	3.35	4.81	5.65	6.27	7.11	7.73		
		-8	8.3	14.8	14.4	14.1	14.0	13.9	13.8	13.7	0.67	4.16	5.97	7.00	7.78	8.81	9.59		
	QT34	-10	10.0	18.0	17.4	17.1	17.0	16.8	16.7	16.5	0.81	5.03	7.21	8.46	9.40	10.65	11.59		
		-12.5	12.6	22.7	22.1	21.8	21.6	21.5	21.3	21.2	1.02	6.31	9.05	10.62	11.80	13.37	14.54		
		-16	15.6	28.1	27.5	27.2	27.0	26.9	26.7	26.6	1.26	7.79	11.17	13.11	14.56	16.49	17.94		
	QT44	-20	20.3	36.5	35.8	35.5	35.3	35.1	34.9	34.8	1.63	10.09	14.48	16.98	18.86	21.37	23.25		
		-25	25.1	45.2	44.5	44.1	43.9	43.8	43.6	43.4	2.02	12.44	17.84	20.93	23.24	26.33	28.65		
		-31.5	32.3	58.1	57.4	57.1	56.9	56.7	56.5	56.4	2.60	15.94	22.87	26.82	29.79	33.74	36.71		
	QT54	-40	39.2	70.5	67.9	66.6	65.8	65.3	64.5	63.9	3.15	19.29	27.66	32.45	36.04	40.82	44.41		
		-50	50.5	90.8	88.3	86.9	86.2	85.6	84.9	84.3	4.05	24.76	35.49	41.63	46.23	52.36	56.97		
		-63	63.5	114.2	111.7	110.3	109.6	109.0	108.3	107.7	5.09	31.02	44.47	52.15	57.91	65.59	71.36		
	QT64	-80	80.1	144.0	139.9	137.7	136.5	135.6	134.4	133.5	6.42	38.99	55.88	65.53	72.77	82.42	89.66		
		-100	100.9	181.5	177.3	175.2	174.0	173.0	171.8	170.9	8.08	48.94	70.13	82.23	91.31	103.4	112.5		
		-125	124.6	224.1	220.0	217.8	216.6	215.7	214.5	213.6	9.97	60.24	86.30	101.2	112.4	127.3	138.4		

QT Double Pumps



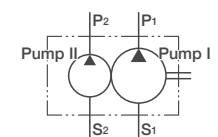
Example model number

QT 51 43-80-20F※-※-A

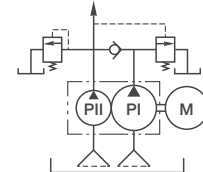


These models, which combine two separate pumps with separate intake ports so that they can be driven by a single, common shaft, deliver the same low-noise performance and wear resistance of their Single Pump counterparts.

Symbol



Example circuit schematic



Accessories (sold separately) Page 16

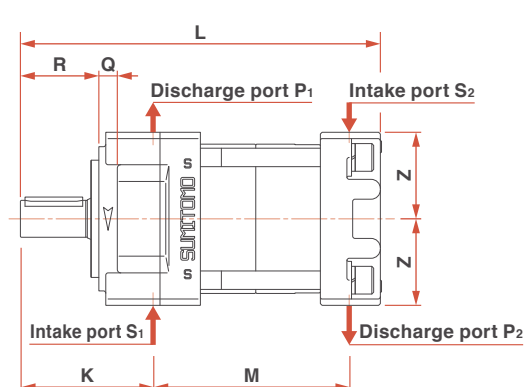
- Pipe flanges
- Feet

Double Pump combinations

				Pump II (low capacity; on end)																
				4 / 5 6.3 / 8		10 12.5 16		20 25 31.5		40 50 63		80 100 125		160 200 250						
				Nominal theoretical intake/ discharge rate (m³/rev.)	Maximum instantaneous pressure (MPa)	Size														
				15.7	31.4		15.7	31.4	7.8	15.7	31.4	7.8	15.7	31.4	7.8	15.7	31.4	7.8		
				22-..	23-..		32-..	33-..	31-..	42-..	43-..	41-..	52-..	53-..	51-..	62-..	63-..	61-..		
Pump I (high capacity; on shaft side)	4 / 5 6.3 / 8		15.7	22-..	Ⓒ															
			31.4	23-..																
	10 12.5 16																			
			15.7	32-..	Ⓐ	Ⓐ														
	31.4	33-..		Ⓐ																
	20 25 31.5		7.8	31-..	↓	↓		↓	↓	↘										
			15.7	42-..	Ⓐ	Ⓐ		Ⓐ	Ⓐ	→	Ⓒ									
			31.4	43-..	Ⓑ	Ⓑ														
	40 50 63		7.8	41-..	→	Ⓐ		→	Ⓐ	↘	↓	↓	↘							
			15.7	52-..	Ⓐ	Ⓐ		Ⓐ	↓	→	Ⓐ	Ⓐ	→	Ⓒ						
			31.4	53-..				→	Ⓑ											
	80 100 125		7.8	51-..	↓	Ⓐ		→	Ⓐ	→	→	Ⓐ	↘	↘	↓	↘				
15.7			62-..	Ⓐ						Ⓐ	Ⓐ	→	Ⓐ	Ⓐ	→	Ⓒ				
31.4			63-..								Ⓑ						Ⓓ	Ⓓ		
160/200 250		7.8	61-..	→	Ⓐ				→	→	Ⓐ	→	Ⓐ	Ⓐ	※Ⓒ					

Absence of a symbol indicates model QT6363. Figures in parentheses indicate dimensions of model QT6362; otherwise, dimensions are the same.

Type ©



Types (A) and (B)

Model number	R	Q	K	M ₁	M ₂	L	Z ₁	Z ₂	Discharge		Intake		Foot type
									P ₁	P ₂	S ₁	S ₂	
QT3223-※-※	48	12	90	103	110.5	323	60	50	$\frac{3}{4}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	QF-3
QT3323-※-※	48	12	90	148	110.5	368	60	50	$\frac{3}{4}$	$\frac{1}{2}$	$1\frac{1}{4}$	1	
QT4123-※-※	68	16	115	146	110.5	391	75	50	1	$\frac{1}{2}$	$1\frac{1}{2}$	1	
QT4133-※-※	68	16	115	153	141	430	75	60	1	$\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{4}$	
QT4222-※-※	68	16	115	119	75.5	329	75	50	1	$\frac{1}{2}$	$1\frac{1}{2}$	1	QF-4D
QT4223-※-※	68	16	115	119	110.5	364	75	50	1	$\frac{1}{2}$	$1\frac{1}{2}$	1	
QT4232-※-※	68	16	115	126	96	358	75	60	1	$\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{4}$	
QT4233-※-※	68	16	115	126	141	403	75	60	1	$\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{4}$	
QT4323-※-※	68	16	115	175	110.5	420	75	50	1	$\frac{1}{2}$	$1\frac{1}{2}$	1	
QT4333-※-※	68	16	115	182	141	459	75	60	1	$\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{4}$	
QT5123-※-※	92	20	145	177	117.5	459	93	50	$1\frac{1}{4}$	$\frac{1}{2}$	2	1	QF-5
QT5133-※-※	92	20	145	177	141	484	93	60	$1\frac{1}{4}$	$\frac{3}{4}$	2	$1\frac{1}{4}$	
QT5143-※-※	92	20	145	179.5	171.5	523	93	75	$1\frac{1}{4}$	1	2	$1\frac{1}{2}$	
QT5222-※-※	92	20	145	143	82.5	390	93	50	$1\frac{1}{4}$	$\frac{1}{2}$	2	1	
QT5223-※-※	92	20	145	143	117.5	425	93	50	$1\frac{1}{4}$	$\frac{1}{2}$	2	1	
QT5232-※-※	92	20	145	143	96	405	93	60	$1\frac{1}{4}$	$\frac{3}{4}$	2	$1\frac{1}{4}$	
QT5242-※-※	92	20	145	145.5	115.5	433	93	75	$1\frac{1}{4}$	1	2	$1\frac{1}{2}$	
QT5243-※-※	92	20	145	145.5	171.5	489	93	75	$1\frac{1}{4}$	1	2	$1\frac{1}{2}$	
QT5333-※-※	92	20	145	213	141	520	93	60	$1\frac{1}{4}$	$\frac{3}{4}$	2	$1\frac{1}{4}$	QF-6
QT6143-※-※	92	24	154	216	171	568	118	75	$1\frac{1}{2}$	1	$2\frac{1}{2}$	$1\frac{1}{2}$	
QT6152-※-※	92	24	154	223	137	546	118	93	$1\frac{1}{2}$	$1\frac{1}{4}$	$2\frac{1}{2}$	2	
QT6153-※-※	92	24	154	223	207	616	118	93	$1\frac{1}{2}$	$1\frac{1}{4}$	$2\frac{1}{2}$	2	
QT6222-※-※	92	24	154	174	86.5	434	118	50	$1\frac{1}{2}$	$\frac{1}{2}$	$2\frac{1}{2}$	1	
QT6242-※-※	92	24	154	174	115	470	118	75	$1\frac{1}{2}$	1	$2\frac{1}{2}$	$1\frac{1}{2}$	
QT6243-※-※	92	24	154	174	171	526	118	75	$1\frac{1}{2}$	1	$2\frac{1}{2}$	$1\frac{1}{2}$	
QT6252-※-※	92	24	154	181	138	505	118	93	$1\frac{1}{2}$	$1\frac{1}{4}$	$2\frac{1}{2}$	2	
QT6253-※-※	92	24	154	181	207	574	118	93	$1\frac{1}{2}$	$1\frac{1}{4}$	$2\frac{1}{2}$	2	QF-6
QT6343-※-※	92	24	154	264	171	616	118	75	$1\frac{1}{2}$	1	$2\frac{1}{2}$	$1\frac{1}{2}$	

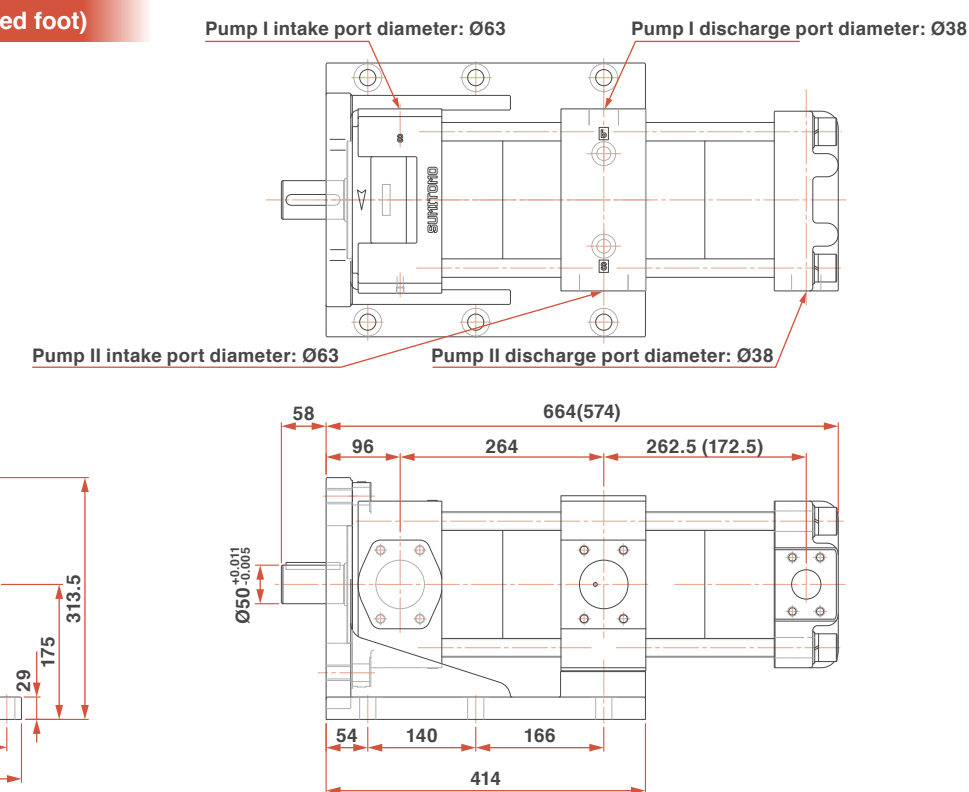
Note / The dimensions of the shaft side from the flange surface are the same as the single pump used as Pump 1

Type ©

Model number	R	Q	K	M	L	Z	Discharge		Intake		Food type
							P ₁	P ₂	S ₁	S ₂	
QT2222- ~~※~~ - ~~※~~	42	12	77	108.5	205	50	$\frac{1}{2}$	$\frac{1}{2}$	1	$\frac{1}{2}$	QF-2
QT4242- ~~※~~ - ~~※~~	68	16	115	170	312	75	$1\frac{1}{4}$	1	$1\frac{1}{2}$	1	QF-4D
QT5252- ~~※~~ - ~~※~~	92	20	145	214	397	93	$1\frac{1}{4}$	$1\frac{1}{4}$	2	2	QF-5
QT6162- ~~※~~ - ~~※~~	62	24	216	308	508	118	$1\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	QF-6
QT6262- ~~※~~ - ~~※~~	92	24	154	266	466	118	$1\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	QF-6

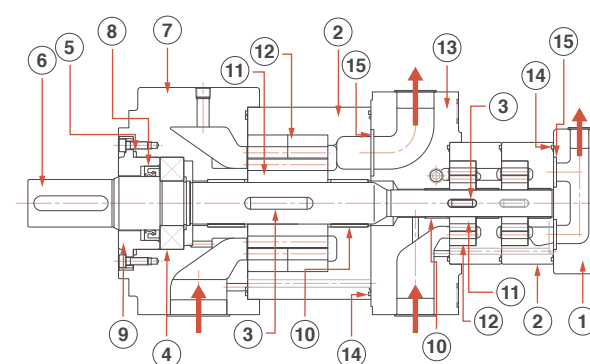
■ Pump I for model QT6162 is available only with a discharge rate of 160 or 200 (not available with a discharge rate of 250).

Type (D) (with integrated foot)



Structural drawings

Types (A), (B) and (D)



Type ©

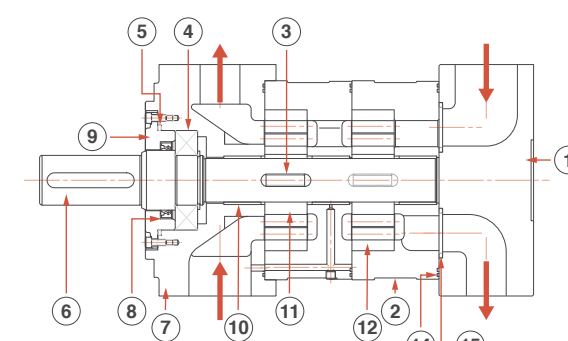


Table of parts

No.	Name	No.	Name
①	End cover	⑨	Seal housing
②	Gear housing	⑩	Bearing
③	Key	⑪	Pinion gear
④	Ball bearing	⑫	Ring gear
⑤	O-ring	⑬	Middle flange
⑥	Shaft	⑭	O-ring
⑦	Front cover	⑮	O-ring
⑧	Shaft seal		

Standard spare

The standard spare is a seal housing set (consisting of part nos. 8, 9, and 10). Its model number is the same as the Pump I single pump (see page 5).

QTM

Motor-equipped QT Pumps



Example model number

QTM 22-5F-1.5-1 R-※

Base model

Pump model

Motor horsepower
1.5/2.2/4.0/5.5 (kW)

Design symbol

Intake port orientation

Motor terminal box orientation (standard specifications)

Explanation of port orientations

Symbol

Table of Motor-equipped QT Pump model combinations

Pump			Motor			
Model	Nominal theoretical discharge rate (cm³/rev.)	Rated output (MPa)	1.5kW	2.2kW	4.0kW	5.5kW
QT22-※	4~8	13.7	○	○	—	—
QT23-※		24.5	○	○	○	○
QT31-※	20~31.5	6.9	—	○	○	○
QT32-※	10~16	13.7	—	○	○	○
QT41-※	40~63	6.9	—	—	○	○
QT42-※	20~31.5	13.7	—	—	—	○

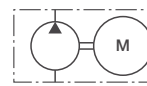
List of Motor-equipped QT Pump models

Motor-equipped QT model	QT model	Motor horsepower	50Hz		60Hz	
			Discharge rate	Maximum instantaneous pressure under 100% motor load	Discharge rate	Maximum instantaneous pressure under 100% motor load
QTM22- 4- 1.5※	QT22-4	1.5kW	3.4 L/min	13.0 MPa	5.2 L/min	10.7 MPa
5-	QT22-5		5.1	10.8	7.1	8.7
6.3-	QT22-6.3		7.3	8.6	9.6	7.0
8-	QT22-8		10.5	6.8	13.2	5.4
QTM22- -5- 2.2※	QT22-5	2.2kW	4.3	13.7 ☆	6.6	12.8
6.3-	QT22-6.3		6.8	12.5	9.2	10.2
8-	QT22-8		9.7	9.8	12.6	8.0
QTM32- 10- 2.2※	QT32-10		12.4	7.7	15.6	6.2
12.5-	QT32-12.5	2.2kW	16.9	6.0	21.1	4.8
16-	QT32-16		21.9	4.8	26.8	3.7
QTM41- 40- 2.2※R	QT41-40		59.9	1.0	72.6	0.5
50-	QT41-50		74.3	1.0	89.8	0.5
63-	QT41-63	2.2kW	96.2	0.7	115.8	0.3
QTM23- 5- 4.0※R	QT23-5		4.8	24.5 ☆	7.0	21.1
6.3-	QT23-6.3		7.2	20.8	9.6	17.0
8-	QT23-8		10.0	16.5	12.8	13.2
QTM32- 10- 4.0※R	QT32-10	4.0kW	10.5	13.3	13.1	10.9
12.5-	QT32-12.5		15.3	10.5	20.0	8.4
16-	QT32-16		20.6	8.4	25.9	7.0
QTM31- 20- 4.0※R	QT31-20		24.7	6.2	31.8	4.9
25-	QT31-25	4.0kW	33.7	4.8	42.0	3.8
31.5-	QT31-31.5		43.0	3.8	53.6	2.9
QTM41- 40- 4.0※R	QT41-40		57.7	2.9	71.0	2.0
50-	QT41-50		73.2	2.0	88.7	1.5
63-	QT41-63	4.0kW	95.3	1.5	115.3	1.0
QTM23- 5- 5.5※R	QT23-5		6.4	24.5	8.2	24.5
6.3-	QT23-6.3		7.9	24.5	10.0	24.0
8-	QT23-8		10.1	23.5	13.2	19.1
QTM31- 20- 5.5※R	QT31-20	5.5kW	26.8	6.9	32.8	6.9
25-	QT31-25		34.3	6.9	42.4	5.9
31.5-	QT31-31.5		43.5	5.9	53.7	4.4
QTM32- 10- 5.5※R	QT32-10		12.6	13.7	15.7	13.7
12.5-	QT32-12.5	5.5kW	16.1	13.7	20.3	12.7
16-	QT32-16		20.4	12.7	25.8	10.3
QTM33- 10- 5.5※R	QT33-10		13.2	19.4	16.6	15.9
12.5-	QT33-12.5		17.3	15.3	21.5	12.4
16-	QT33-16	5.5kW	22.1	11.0	27.0	9.6
QTM41- 40- 5.5※R	QT41-40		56.1	4.4	69.4	3.4
50-	QT41-50		71.6	3.4	87.7	2.5
63-	QT41-63		94.3	2.5	114.2	2.0
QTM42- 20- 5.5※R	QT42-20	5.5kW	26.2	9.3	33.2	7.8
25-	QT42-25		34.3	7.4	42.6	5.9
31.5-	QT42-31.5		45.9	5.9	56.3	4.4

Space-saving design makes QT Pumps' low-noise performance even more accessible.

These pumps combine a QT Pump with a motor so that it's even easier to take advantage of their low-noise performance. The resulting space-saving design eliminates the need for parts such as a coupling, coupling protective cover, and pump base as well as the need for time-consuming assembly work such as wiring.

Symbol



Accessories (sold separately) [Page 16](#)

- Pipe flanges
- Feet

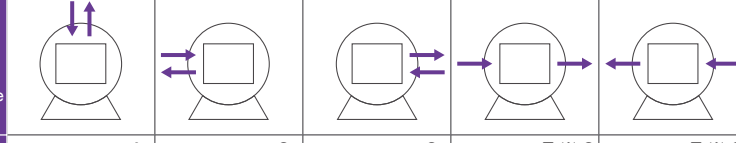
Intake port orientation

1: Top
2: Left (when viewed from the pump side)
3: Right (when viewed from the pump side)

Motor terminal box orientation (standard specifications)

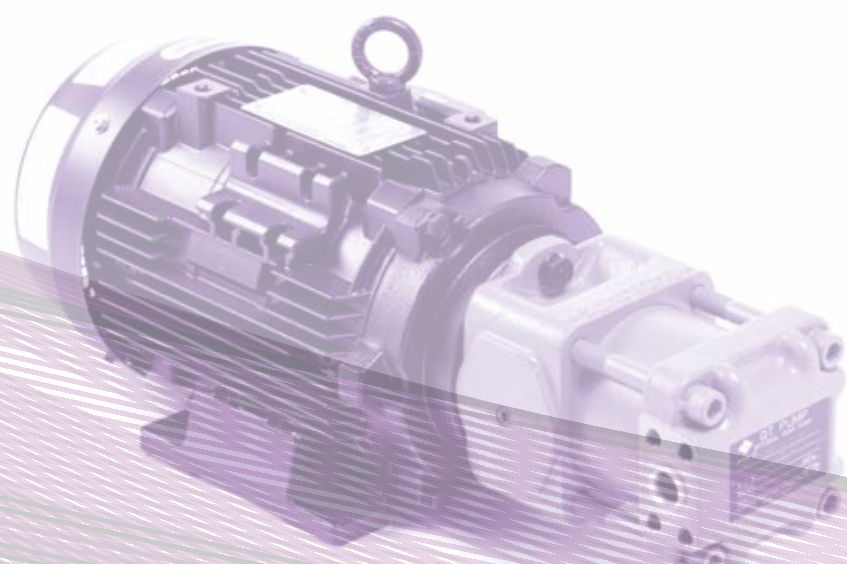
None: Left (when viewed from the pump side) (1.5/2.2 kW)
R: Right (when viewed from the pump side) (4.0/5.5 kW)

Explanation of port orientations



Star symbols indicate that the preceding figure is the pump's rated output value.

● Pump can be operated for a short period of time above its maximum instantaneous pressure under 100% motor load.

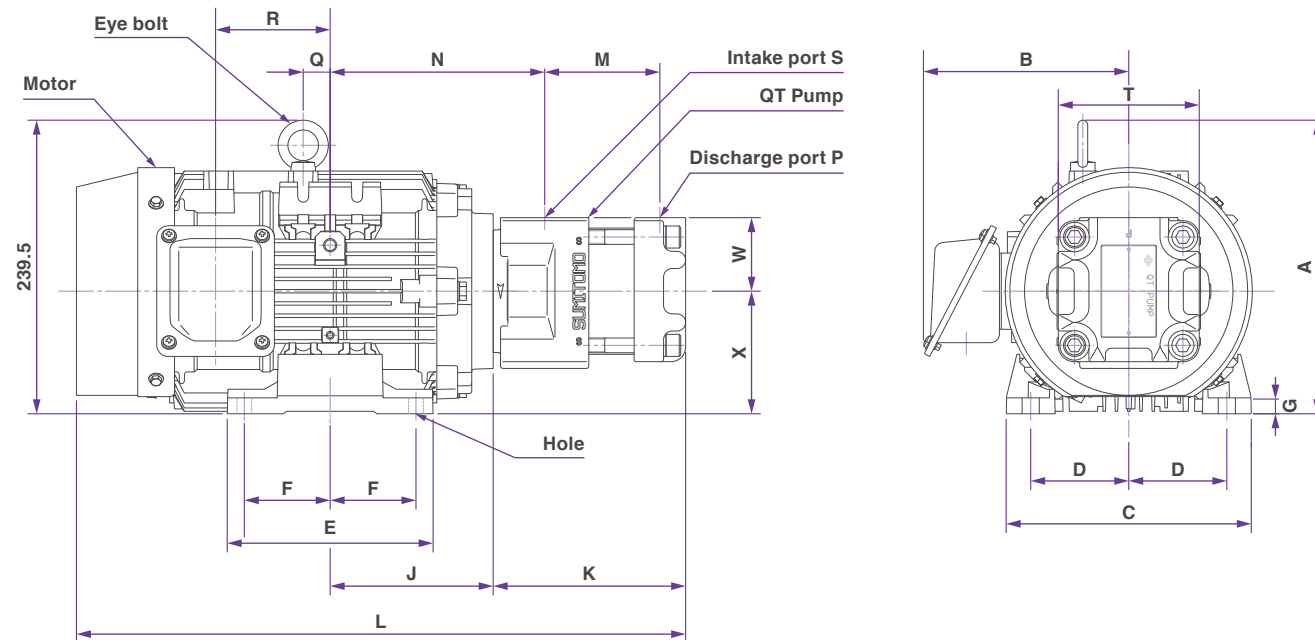


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Motor-equipped QT Pumps

External dimensional drawings



Motor-equipped QT Pumps

QTM		22※-1.5	22※-2.2	31※-2.2	32※-2.2	23※-4.0	31※-4.0	32※-4.0	23※-5.5	32※-5.5	42※-5.5	
Flange type	Screw-mounted	Intake S	QGT-08A	QGT-08A	QGT-10A	QGT-10A	QGT-08A	QGT-10A	QGT-10A	QGT-08A	QGT-10A	QGT-12A
		Discharge P	QGT-04A	QGT-04A	QGT-06A	QGT-06A	QGT-04A	QGT-06A	QGT-06A	QGT-04A	QGT-06A	QGT-08A
	Welded	Intake S	QGW-08A	QGW-08A	QGW-10A	QGW-10A	QGW-08A	QGW-10A	QGW-10A	QGW-08A	QGW-10A	QGW-12A
		Discharge P	QGW-04A	QGW-04A	QGW-06A	QGW-06A	QGW-04A	QGW-06A	QGW-06A	QGW-04A	QGW-06A	QGW-08A
Pump body	A	197	239.5	239.5	239.5	263.5	263.5	263.5	313	313	313	
	B	168	167.5	167.5	167.5	187	187	187	261	261	261	
	C	176	200	200	200	220	220	220	260	260	260	
	D	70	80	80	80	95	95	95	108	108	108	
	E	149	168	168	168	168	168	168	175	175	175	
	F	62.5	70	70	70	70	70	70	70	70	70	
	G	10	12	12	12	12	12	12	15	15	15	
	J	118.5	133	133	133	170	170	170	173	173	173	
	K	128	145	178	157	180	178	157	180	157	208	
	L	430	485	518	497	569	567	546	591	568	619	
	M	73.5	73.5	115	94	108.5	115	94	108.5	94	114	
	N	153.5	185	175	175	222	212	212	225	215	240	
	Q	—	22	22	22	23	23	23	24	24	24	
	R	70	93.5	93.5	93.5	95	95	95	85	85	85	
	T	95	95	115	115	95	115	115	95	115	139	
	X	90	100	100	100	112	112	112	132	132	132	
	W	50	50	60	60	50	60	60	50	60	75	
Weight (kg)		31	40	45	44	53	56	55	74	76	88	

● The shaft dimensions of pumps used in QTM models differ from their standard counterparts. ● The design symbol (※) indicates the motor specifications. Pump shape is unchanged (providing installation compatibility). ● Dimensions indicated above described a pump with design letter G. ● If you wish to order the pump alone, for example as a spare part, add M to the pump's model number and enclose the motor horsepower and intake port orientation in parentheses. Example: QTM22-5F-(1.5-1R)-G ● Vertical pumps are also available. Please contact Sumitomo for more information.

Motor specifications

4-pole, totally-enclosed fan-cooled type
Power supply: 200 V (50/60 Hz), 220 V (60 Hz) Heat resistance class F: 1.5 kW, 2.2 kW, 4.0 kW, 5.5 kW

QT Accessories

Pipe flange (sold separately)

Example model number

QG ※ - ※ - ※ - A

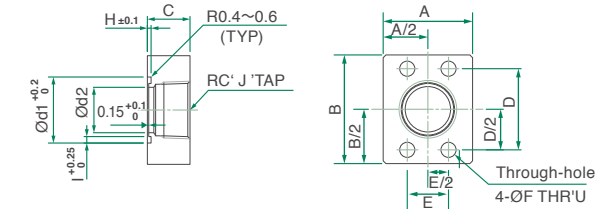
T: Screw-mounted
W: Welded

Size
(see dimensional table)

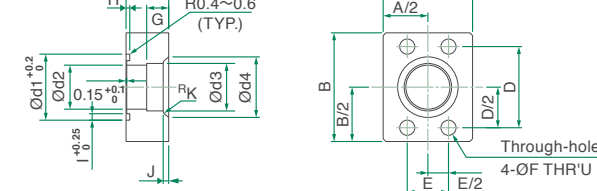
Option
None: NBR (standard)
V: FKM

External dimensional drawings

Screw-mounted flange



Welded flange



Flange type	Nominal diameter	A	B	C	D	E	F	G	H	I	J		K	d1	d2		d3	d4	O-ring JISB-2401	Mounting bolts	Weight (kg)
											Screw-mounted	Welded			Screw-mounted	Welded					
QG※-04-A	1/2	38	54	21	38	17.5	9	11	2.7	4.7	1/2	3.5	3	28	12.5	12	17.8	24	1BP22A	M8x35-10.9	0.3
QG※-06-A	3/4	50	65	24	48	22	11	12	2.7	4.7	3/4	3.5	3	34	20	16	22.2	30	1BP28	M10x40-10.9	0.6
QG※-08-A	1	50	70	31	52	26	11	14	2.7	4.7	1	4.0	3	40	25	20	27.7	36	1BP34	M10x50-10.9	0.7
QG※-08W-A																				M10x45-10.9	
QG※-10-A	1 1/4	65	79	31	59	30	11	16	2.7	4.7	1 1/4	4.0	3	48	32	25	34.5	44	1BP42	M10x50-10.9	1.1
QG※-10W-A																				M10x45-10.9	
QG※-12-A	1 1/2	75	94	31	70	36	13	18	2.7	4.7	1 1/2	6.0	3	56	38	32	43.2	54	1BP50	M12x50-10.9	1.4
QG※-16-A	2	85	100	37	78	43	13	20	2.4	4.1	2	7.0	5	68.2	50	40	49.1	63	1BG60	M12x50-10.9	1.9
QG※-20-A	2 1/2	100	110	37	89	51	13	22	2.4	4.1	2 1/2	7.0	5	78.2	63	50	61.1	75	1BG70	M12x50-10.9	2.2

Note / The flange kit includes a flange, O-ring, and mounting bolts. Please note that for welded flanges, dimension (F) is one size smaller than the nominal diameter.

Feet (sold separately)

Example model number

QF-4 ※

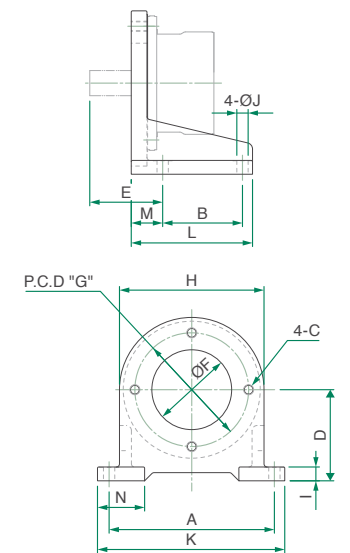
Same as pump size

None: For single pump
D: For double pump
(Note only for type 4 models.
The foot type is the same
for other single and double pump models.)

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Hexagonal head bolts JISB-1180	Weight (kg)
QF-2	158	89	M8	85	48	63.0	100	135	12	10	184	130	20	51.5	M8×30-10.9	3.0
QF-3	173	89	M10	95	64	82.55	106	150	12	10	200	134	30	52	M10×30-10.9	4.0
QF-4	221	114	M12	108	65	101.6	146	194	15	12	246	140	13	58	M12×30-10.9	5.0
QF-4D	221	114	M12	108	65	101.6	146	192	24	12	246	154	27	58	M12×30-10.9	10.0
QF-5	263	127	M16	145	116	127.0	181	230	22	18	298	193	50	74	M16×45-5.6	11.0
QF-6	317	140	M20	175	111	152.4	229	278	24	22	357	214	49	96	M20×55-5.6	21.0

Note / Mounting bolts for the pump are included with the foot.

External dimensional drawings



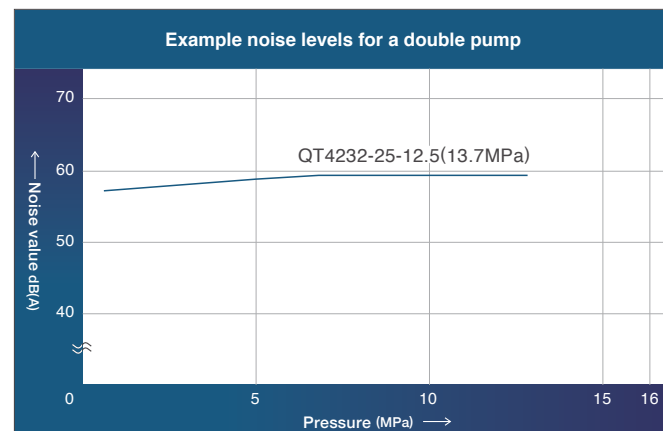
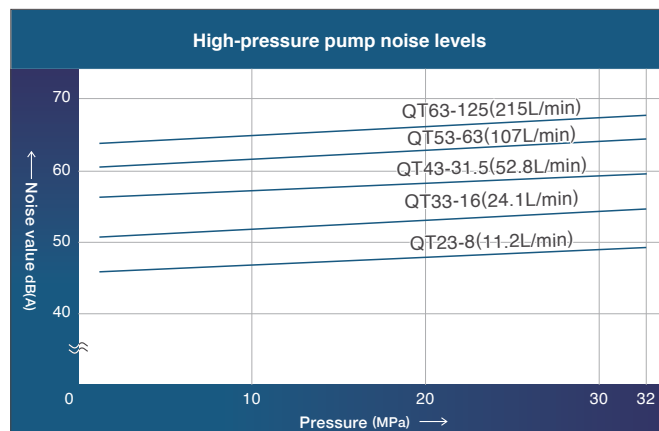
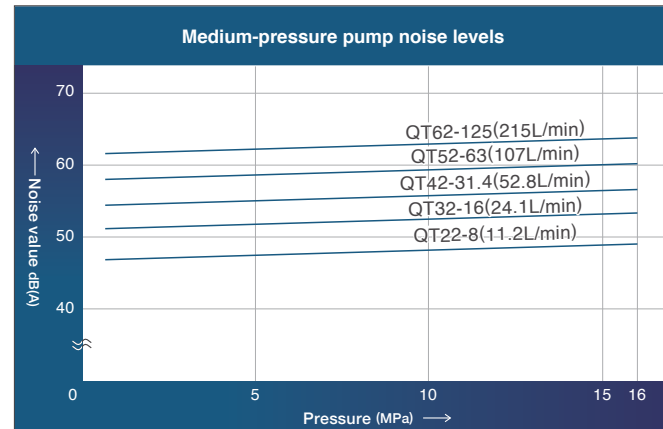
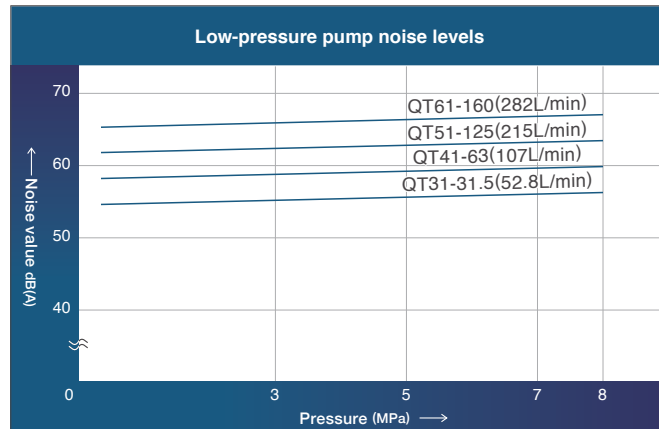
QT Example Data

Noise data

Measurement conditions

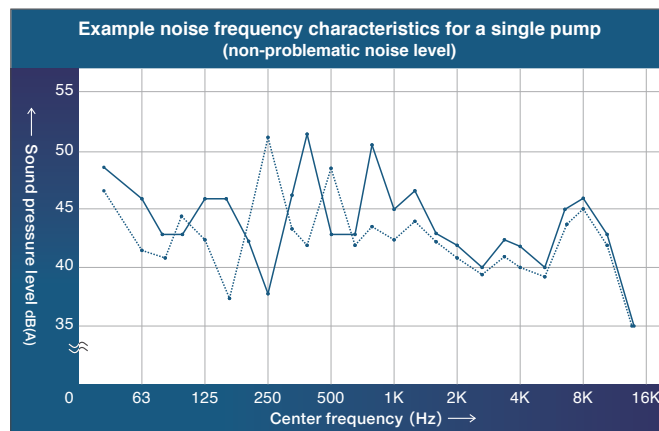
Measurement method: Standalone pump measured in anechoic chamber
Measurement distance: 1 m
Oil temperature: 45°C to 50°C
Speed: 1,800 rpm/min.
Viscosity: 30 to 40 cSt
Intake pressure: -0.01 to 0.02 MPa

Noise values remain unchanged, even as pressure rises.



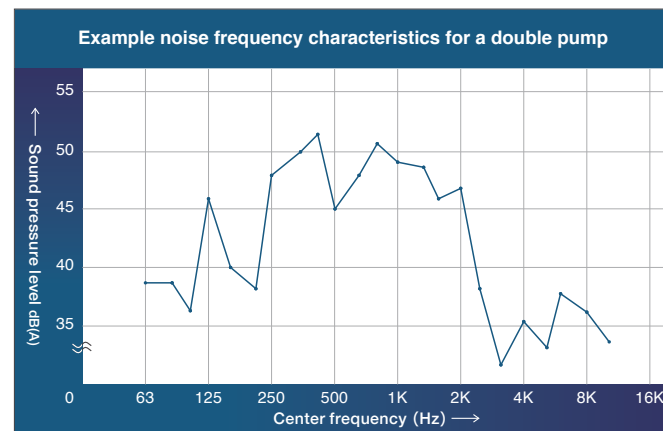
Measurement conditions

Model: QT43-31.5
Pressure: 24.5 MPa
Speeds: 1,800 rpm/min. (solid line) / 1,200 rpm/min. (dashed line)
Viscosity: 40 cSt (oil temperature: 50°C)
Measurement point: 1 m behind pump



Measurement conditions

Model: QT4232-25-12.5
Speed: 1,800 rpm/min.
Measurement point: 1 m behind pump
Viscosity: 40 cSt (oil temperature: 50°C)
Pressure: 13.7 MPa

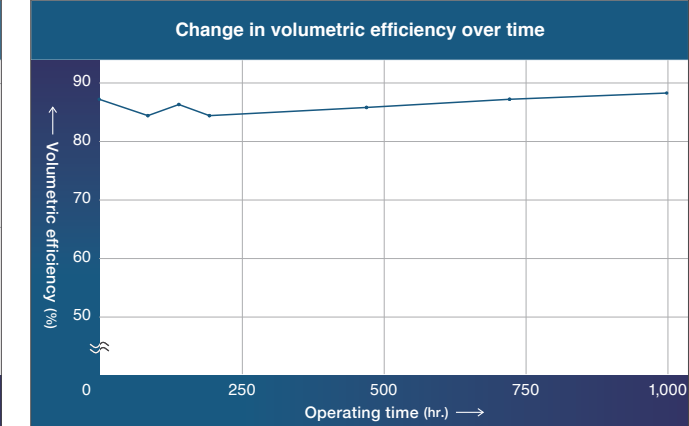
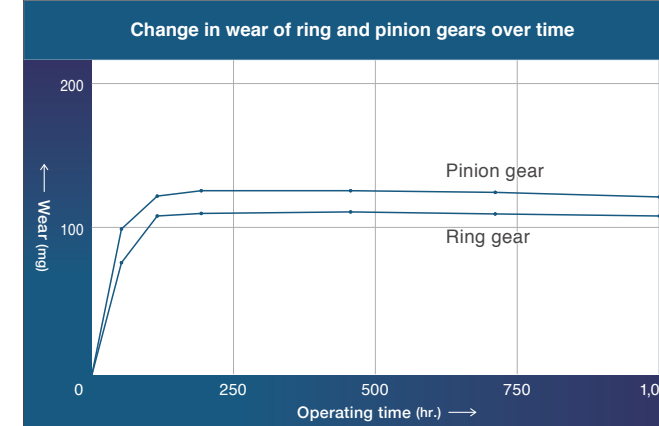


Wear resistance (wear resistance using water glycol hydraulic fluid)

Pumps exhibit almost no wear, even when using hydraulic fluid that offers inferior lubricity compared to mineral oil.

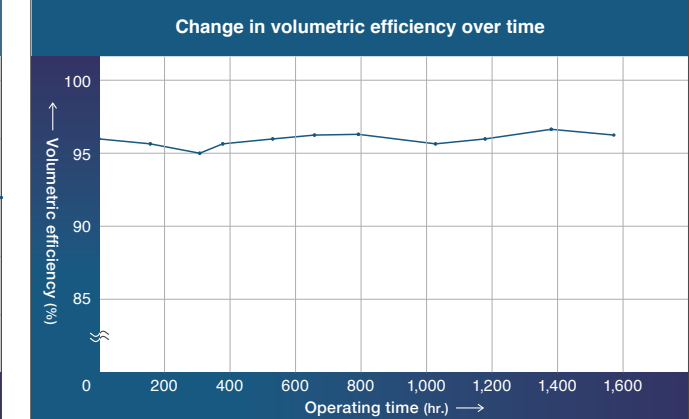
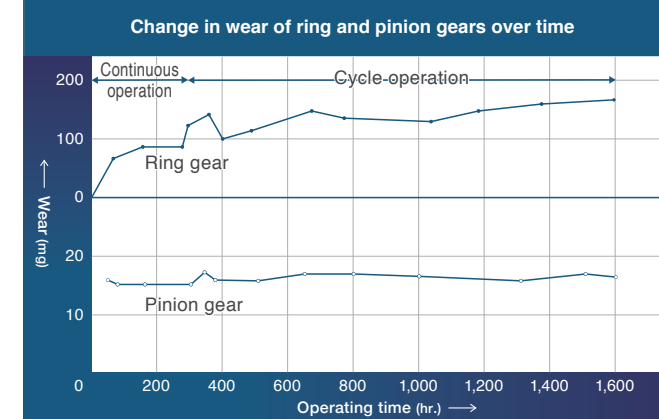
Measurement conditions

Test pump: QT43-25
Pressure: 24.5 MPa continuous
Hydraulic fluid: Water glycol hydraulic fluid (Hydol HAW) (Supplied by: Matsumura Oil Co., Ltd.)
Oil temperature: 40°C to 50°C
Speed: 1,200 rpm/min.

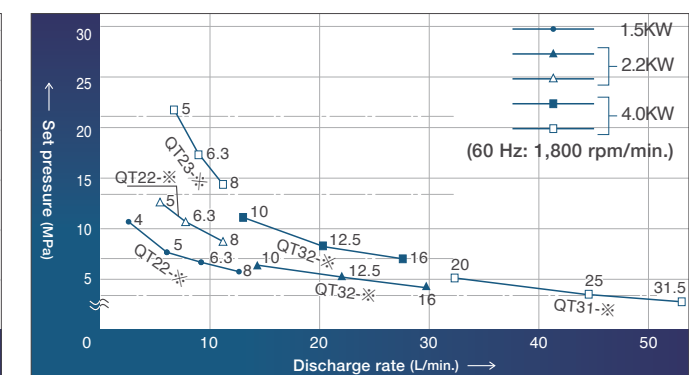
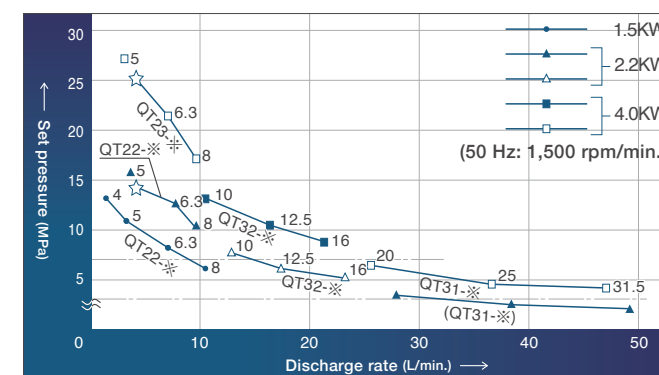


Measurement conditions

Test pump: QT52-63
Pressure: 12.3 MPa
Cycle operation: 12.3 MPa (4 sec./cyc), 0.5 MPa (1 sec./cyc)
Hydraulic fluid: Highland FRG46 (Supplied by: Nippon Oil Corporation)
Oil temperature: 40°C to 50°C
Speed: 1,800 rpm/min.



Maximum set pressure diagram for Motor-equipped QT Pump models (at 100% motor load)



Star symbol indicates pump's rated pressure value.

Example Data

⚠ Operating Precautions

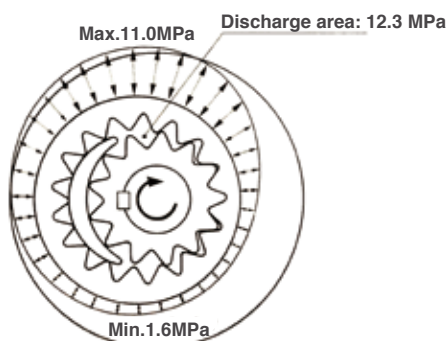
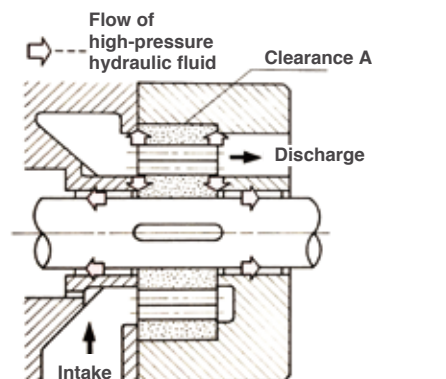
List of mass inertia moment figures

Model	Moment of inertia (kg/m ²)	Model	Moment of inertia (kg/m ²)	Model	Moment of inertia (kg/m ²)	Model	Moment of inertia (kg/m ²)	Model	Moment of inertia (kg/m ²)
QT22-4	5.45E-05	QT31-20	3.12E-04	QT41-40	1.03E-03	QT51-80	3.10E-03	QT61-160	9.83E-03
QT22-5	6.12E-05	QT31-25	3.79E-04	QT41-50	1.23E-03	QT51-100	3.84E-03	QT61-200	1.20E-02
QT22-6.3	7.05E-05	QT31-31.5	4.55E-04	QT41-63	1.54E-03	QT51-125	4.71E-03	QT61-250	1.45E-02
QT22-8	8.35E-05	QT32-10	1.79E-04	QT42-20	5.79E-04	QT52-40	1.76E-03	QT62-80	5.47E-03
QT22-9	8.88E-05	QT32-12.5	2.13E-04	QT42-25	6.81E-04	QT52-50	2.13E-03	QT62-100	6.57E-03
QT23-4	9.46E-05	QT32-16	2.51E-04	QT42-31.5	8.35E-04	QT52-63	2.56E-03	QT62-125	7.82E-03
QT23-5	1.08E-04	QT33-10	3.16E-04	QT43-20	1.04E-03	QT53-40	3.14E-03	QT63-80	9.98E-03
QT23-6.3	1.27E-04	QT33-12.5	3.83E-04	QT43-25	1.25E-03	QT53-50	3.89E-03	QT63-100	1.22E-02
QT23-8	1.53E-04	QT33-16	4.60E-04	QT43-31.5	1.55E-03	QT53-63	4.76E-03	QT63-125	1.47E-02
QT23-9	1.63E-04	QT34-10	4.53E-04	QT44-20	1.50E-03	QT54-40	4.53E-03	QT64-80	1.45E-02
QT24-4	1.35E-04	QT34-12.5	5.54E-04	QT44-25	1.81E-03	QT54-50	5.64E-03	QT64-100	1.78E-02
QT24-5	1.55E-04	QT34-16	6.68E-04	QT44-31.5	2.27E-03	QT54-63	6.95E-03	QT64-125	2.15E-02
QT24-6.3	1.83E-04								
QT24-8	2.22E-04								
QT24-9	2.37E-04								

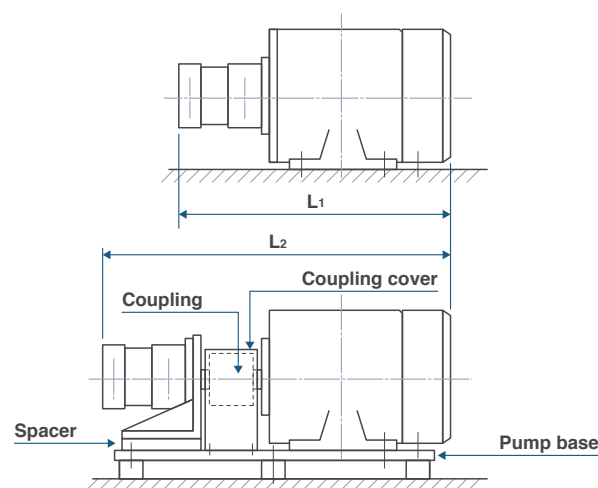
Note / In the above moment of inertia figures, the two-digit number following "E" indicates the power of 10 (for example, "E-05" signifies "10⁻⁵"). Example: The QT22-5's moment of inertia, "6.12E-05," is 6.12 × 10⁻⁵. The QT43-20's moment of inertia, "1.04E-03," is 1.04 × 10⁻³.

Reference

Lubricity and pressure of high-pressure hydraulic fluid



Space-saving design of Motor-equipped QT models



Unit: mm

	L ₁	L ₂	Difference (L ₂ -L ₁)
QTM22-※-1.5	430	514	84
QTM22-※-2.2	485	590	105
QTM32-※-2.2	497	608	111
QTM23-※-4.0	569	653	84
QTM32-※-4.0	546	651	105
QTM31-※-4.0	567	672	105

1. Hydraulic fluid

- Use hydraulic fluid with a viscosity grade of ISO VG46 to V68 (viscosity index of 90 or greater) or equivalent. For high pressure levels of 6.9 MPa or greater, it is recommend to use a wear-resistant hydraulic fluid with a viscosity grade of ISO VG46 to V68 or equivalent.
- Please contact Sumitomo if you plan to use nonflammable hydraulic fluid (for example, ester phosphate, water glycol, fatty acid ester, water-in-oil emulsion, etc.).
- Use only clean hydraulic fluid and exercise care concerning contamination with foreign matter, water, and other substances. White turbidity indicates contamination with air bubbles, while brown discoloration indicates deterioration of the hydraulic fluid.

2. Viscosity and oil temperature

- Use pumps with a viscosity range of 20 to 500 cSt and an oil temperature range of 0°C to 60°C.

3. Intake pressure

- Standard-pressure shaft seal: -0.03 MPa to +0.03 MPa
High-pressure shaft seal: 0 to 0.2 MPa

4. Filters

- Install a filter with a mesh value of about 150 on the intake side of the pump. Pump service life can be extended by using a 25 μm line filter (on the discharge side), magnetic filter, or similar device.

5. Pump installation and wiring

- Mount the pump on a sufficiently rigid base.
- Install the pump so that its intake port is facing sideways or down.
- Use a chain coupling or other flexible coupling to connect the pump shaft to the motor shaft. Keep eccentric error to 0.05 mm or less and avoid applying force perpendicularly to the shaft.
- Pumps cannot be used with a horizontal drive utilizing a belt, chain, gears, or similar mechanism.
- Attach the coupling to the pump shaft so that it can be smoothly disconnected and reattached.

6. Pipework

- Use flanges for all pipes.
- Use a short pipe run and choose the intake pipe diameter so that oil velocity does not exceed 1.5 m/sec. and so that the intake negative pressure does not exceed -0.03 MPa.
- If using copper pipes, exercise care to ensure that the pump is not subjected to force from the pipe.

7. Precautions when starting operation

- Add oil to the inside of the pump before operation so that sliding surfaces are well lubricated.
- When starting the pump for the first time, be sure to repeatedly start and stop it in an unloaded state to eliminate any air inside the pump and in the intake pipe before continuous operation. Do not abruptly start operating the pump at high speed without first completing this "inching" operation.
- If you hear signs of air entrainment, unload the pump and operate in an unloaded state until the sounds have dissipated.
- Check for air bubbles coming from air vents during unloaded operation and when operating at the pump's rated pressure.
- Perform the following procedure if you hear signs of air entrainment: (1) operate the pump by itself in an unloaded state, (2) progressively increase the pressure while the pump is operating, (3) operate the pump at its rated pressure, and (4) operate the pump within the hydraulic circuit.

8. Direction of rotation

- The standard direction of rotation is clockwise (when viewing the flange surface from the end of the shaft). Counterclockwise rotation is available as a special specification. To check a pump's direction of rotation, operate it momentarily.

9. Maximum instantaneous pressure

- Operate the pump at its maximum instantaneous pressure for no more than one-third of each cycle and no more than 20 sec.

- 10. If you must disassemble the pump, please contact Sumitomo in advance.

How to read performance tables

1. Required horsepower and discharge rate figures

A. Required horsepower

- (1) Required horsepower figures in the tables indicate average values. Allow the following margins if specifying motor current precisely:

1/2 rated voltage or less: ±10%	1/2 rated voltage or more: ±3%
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- (2) Viscous friction inside the pump will rise if the viscosity of the hydraulic fluid increases, with the result that the required horsepower will also rise. Refer to "3. Correcting required horsepower for high viscosity" below.

B. Discharge rate

Discharge rate figures in the tables indicate lower limits. Internal leakage in the pump will decrease as the viscosity of the hydraulic fluid increases, with the result that the discharge rate will rise. (Figures in tables reflect use of 40 cSt fluid.)

2. Horsepower and discharge rates at intermediate pressure

Use the following equations to calculate the discharge rate Q_x and required horsepower N_x at intermediate pressure P_x, which are not shown in the tables.

$$Q_x = Q_1 \cdot \frac{(P_x - P_1)(Q_1 - Q_2)}{P_2 - P_1}$$

Discharge rate Q₁
Required horsepower N₁
At pressure P₁

$$N_x = N_1 \cdot \frac{(P_x - P_1)(N_2 - N_1)}{P_2 - P_1}$$

Discharge rate Q₂
Required horsepower N₂
At pressure P₂
For P_x, where P₂ > P_x > P₁

3. Correcting required horsepower for high viscosity

$$\Delta N(s) = \frac{2\pi n^2 V_{TH}(S-38) (-0.2837 \log_{10}(S-38) + 1.124) \times 10^{-7}}{6120}$$

ΔN: Additional horsepower required (kW)
n: Pump speed (rpm/min.)
V_{TH}: Theoretical discharge rate (cm³/rev.)
S: Kinetic viscosity (cSt)

Calculating efficiency

Total efficiency

$$\eta_o = \frac{P \times Q}{612} \times \frac{1}{N}$$

P: Pressure (MPa)
Q: Discharge rate from table (L/min.)
N: Required horsepower from table (kW)

Volumetric efficiency

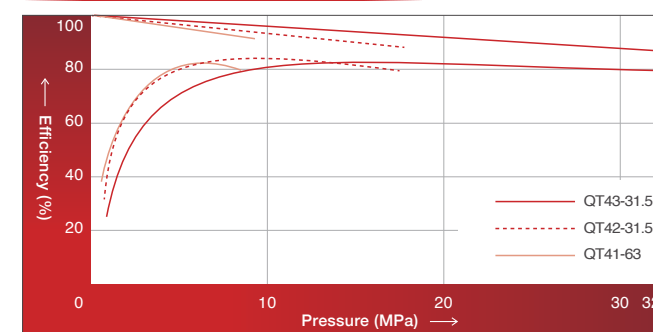
$$\eta_v = \frac{Q}{V_{TH} \times n \times 10^{-3}}$$

V_{TH}: Theoretical discharge rate (cm³/rev.)
n: Pump speed (rpm/min.)

Mechanical efficiency

$$\eta_m = \frac{\eta_o}{\eta_v}$$

Example efficiency graph



! Operating Precautions

Before use

1. Introduction

- Be sure that you have read the QT Pump User Manual (HMP-0567) before using the product.
- a) The User Manual has been prepared to ensure safe use of QT Pumps.
- b) Be sure to comply with the instructions and restrictions provided in the User Manual.
- c) Do not use the pump in contravention of the instructions and restrictions provided in the User Manual. Doing so may cause bodily injury or property damage in the event the pump stops functioning or fails. The operator is solely responsible for all use of the pump under conditions that diverge from the instructions provided in the User Manual.
- d) The product you purchased may differ from the device described in the User Manual due to design changes or improvements.
- e) Please contact the Sales Group in Sumitomo's Hydraulic Equipment Department if you have any questions about a purchased product or the contents of the User Manual.

2. Confirmation of shipped product

Check the product you received to ensure that it is the same product you ordered.

3. Safety considerations

The User Manual uses the following symbols to communicate information necessary to ensure proper, safe use of pumps.



: Indicates an imminent hazard that could result in an accident leading to death or serious injury if action is not taken.



: Indicates a latent hazard that could result in an accident leading to death or serious injury if action is not taken.



: Indicates a latent hazard that could result in an accident leading to minor or moderate injury, or a risk of property damage.

Safety-related precautions

1. Precautions related to product handling



: Check the weight of the product (as noted on the external dimensional drawings).
Do not transport by hand if the product weighs more than 20 kg.



: Never approach a product hanging underneath a crane, block and tackle, etc.

2. Precautions related to product mounting, removal, and installation



: The product should only be mounted, removed, or installed by an individual with specialized knowledge (a Class 2 hydraulic technician).



: Be sure to disconnect power to the pump and release any residual pressure before mounting, removal, or installation.
Verify appropriate temperature (30°C to 40°C) as the product and hydraulic fluid may remain hot after operation.



: Do not stand on the pump, strike the pump, or subject it to external force. Doing so may result in injury or equipment damage.



: Use only designated bolts to mount the pump, and be sure to tighten them to the designated torque.



: Clean the mounting surface and mounting holes.

3. Precautions related to product operation



: Be sure to attach a protective cover to the rotating shaft such that it keeps fingers away from rotating parts.
Never touch rotating parts while the pump is operating.



: Operate the pump only under designated operating conditions (ambient temperature, hydraulic fluid temperature, viscosity, etc.).
Operating the pump outside those conditions may result in malfunction, failure, or fire.



: Do not touch the pump with bare hands as it may become hot during operation.

4. Precautions related to maintenance



: Do not disassemble, reassemble, or modify the pump without Sumitomo's consent.
Sumitomo is not liable in the event of unauthorized disassembly, reassembly, or modification as those actions will void the warranty.



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Safety precautions

To ensure proper and safe use, be sure to carefully read the User Manual before using the product.

- The contents of this catalog are subject to change without notice.