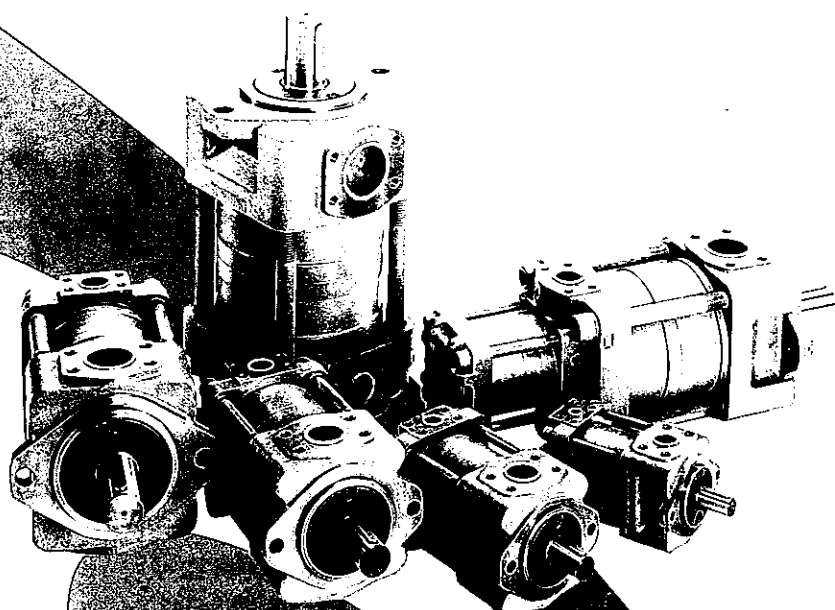


SUMITOMO
QT PUMP



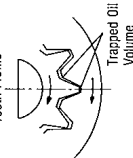
Sumitomo Precision Products Co., Ltd.

QT PUMP SMOOTH AND SOOTHING TO YOUR EARS

Ultra-low noise

QT Pumps feature internal gears that minimize operational noise level. The most outstanding characteristic is that because of their specially shaped tooth profile the noise level is almost constant even when the pressure becomes higher (see the following page).

Specially Shaped Tooth Profile



Suitable for high pressure application

In addition to their simple mechanism, the friction surfaces of all parts are forced-lubricated with high pressure hydraulic fluid which eliminates the direct contact between parts and minimizes abrasion of functional parts (see the following page). The pumps can operate at a pressure as high as 250 kgf/cm² even with inferior lubrication fluids (water glycol, etc.) because of their extremely low abrasion.

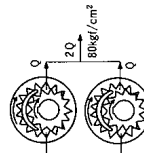
Free from pressure ripples

QT Pumps are almost free from pressure ripples, so they are ideal choice for systems which require accurate speed control such as machine tools.

Wide application

With multi-stage construction, three pressure ratings. Low pressure : 70kgf/cm², Medium pressure : 140kgf/cm², High pressure : 210kgf/cm², and double pumps (combination of single pumps) are available for wide applications. Plus newly developed "ultra QT pump", "mini QT" "QT pump with motor" and "standard power packs with QT pumps" are available.

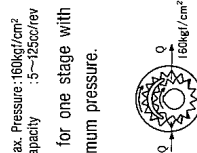
Low pressure pump



- Two pairs of the same type of gears installed in one housing which doubles the flow amount while the maximum pressure is halved to 80kgf/cm².

80KGF/CM² SERIES

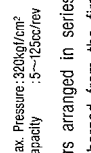
Medium pressure pump



- A pair of gears for one stage with 160 kgf/cm² of maximum pressure.

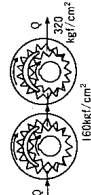
160KGF/CM² SERIES

High pressure pump



- Two pairs of gears arranged in series. The pressure discharged from the first pair of gears (160kgf/cm²) is delivered to the next pair to generate maximum pressure of 320kgf/cm².

320KGF/CM² SERIES



QT PUMP WITH MOTOR

Handy, low-noise

ULTRA-QT

Quieter

STANDARD POWER PACK WITH QT PUMP

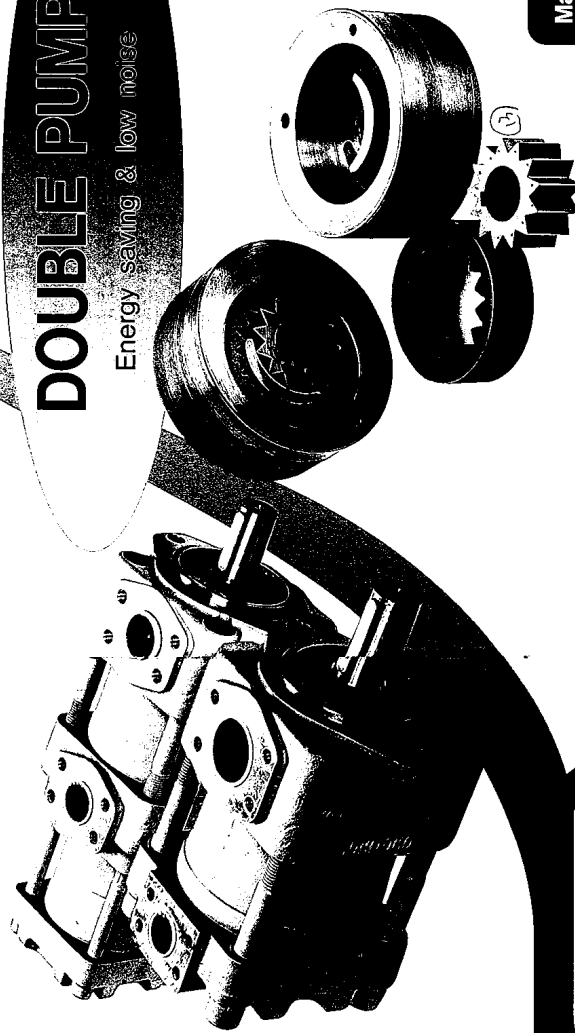
Multi-function with low-noise

MINI-QT

Smaller delivery (4cc/rev.)

DOUBLE PUMP

Energy saving & low noise



Manufacture and Sales Network of QT Pumps

- Japan and South-East Asia — Sumitomo Precision Products Co., Ltd.
- U.S.A. and Canada — Delaval
- Germany and Europe — Blicher K. B.
- Switzerland and Europe — Truninger A. G.

QT Single pump

Model Number

QT 4 3-25 F-※-A

Model Number	Design Number
Size	Optional Specifications
Pressure Rating	Direction of Rotation and Port Position
1. low pressure pump	See the figure on the right
2. medium pressure pump	Theoretical Displacement (cc/rev)
3. high pressure pump	

Graphical symbol



Piping flanges (to be ordered separately)

See page 16 for details

Mounting foot (to be ordered separately)

Port position	Direction of rotation	Right	Left
Same direction	in ↓ out ↑	no code	L
Opposite direction	in ↓ out ↓	F	E

Optional Specifications

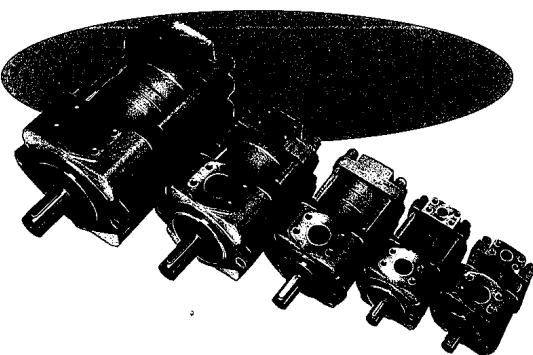
H : Shaft seal for high suction pressure (up to 2kgf/cm²)

V : Viton seal for phosphate ester fluid

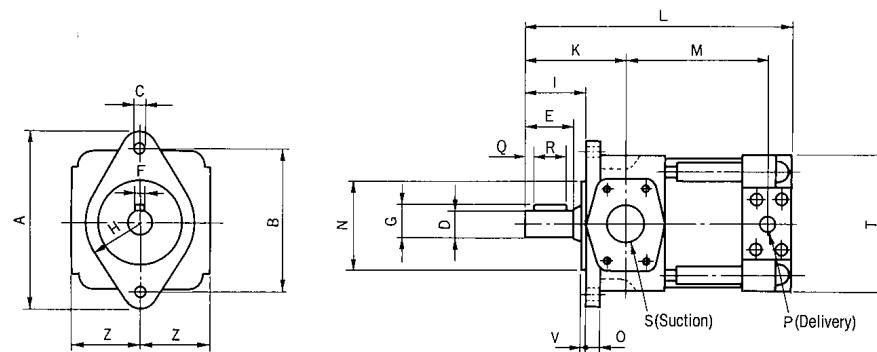
S※ : Other options

Mini-QT Pump

QT22-4 and QT23-4 are Mini QT's.



Dimensions



Single Pumps

Delivery ℓ/min. (at the rated pressure)				Pump Model								Maximum speed rpm
6P Motor		4P Motor		Low pressure pump		Medium pressure pump		High pressure pump				
50Hz	60Hz	50Hz	60Hz	Rated pressure 63kgf/cm ²	N	Rated pressure 140kgf/cm ²	N	Rated pressure 25kgf/cm ²	N			
1000rpm	1200rpm	1500rpm	1800rpm	Max. pressure 80kgf/cm ²	(KW)	Max. pressure 160kgf/cm ²	(KW)	Max. pressure 300kgf/cm ²	(KW)			
—	—	3.6	5.1			QT22-4 ※	2.0	QT23-4 ※	3.1	1,800		
1.7	2.9	4.7	6.4			QT22-5 ※	2.4	QT23-5 ※	4.3			
2.9	4.4	6.5	8.5			QT22-6.3 ※	2.9	QT23-6.3 ※	5.2			
4.5	6.3	8.9	11.4			QT22-8 ※	3.7	QT23-8 ※	6.5			
4.7	6.9	10.3	13.6			QT32-10 ※	4.6	QT33-10	8.3	1,800		
7.3	10.0	14.2	18.3			QT32-12.5 ※	5.8	QT33-12.5	10.4			
10.3	13.6	18.7	23.7			QT32-16 ※	7.1	QT33-16	12.8			
13.2	17.6	24.2	30.6	QT31-20 ※	4.5	QT42-20	9.2	QT43-20	16.5			
18.0	23.3	31.4	39.3	QT31-25 ※	5.6	QT42-25	11.4	QT43-25	20.4	1,800		
25.2	32.0	42.2	52.2	QT31-31.5 ※	6.9	QT42-31.5	14.6	QT43-31.5	26.1			
30.2	38.4	50.8	63.1	QT41-40	8.9	QT52-40	17.7	QT53-40	31.6			
41.5	52.0	67.8	83.4	QT41-50	11.0	QT52-50	22.6	QT53-50	40.5			
54.5	67.6	87.3	106.8	QT41-63	14.1	QT52-63	28.3	QT53-63	50.7	1,800		
65.3	82.0	107.1	131.9	QT51-80	17.0	QT62-80	35.6	QT63-80	63.7			
86.1	107.0	138.3	169.3	QT51-100	21.7	QT62-100	44.6	QT63-100	80.0			
109.8	135.4	173.8	212.0	QT51-125	27.1	QT62-125	54.9	QT63-125	98.4			
148.2	180.2	228.3	276.4	QT61-160	34.0					1,800		
189.8	230.2	290.7	351.2	QT61-200	42.5							
237.2	287.0	361.8	436.6	QT61-250	52.1							

Note:

The power consumption N is at rated pressure of 1,800r.p.m. and fluid viscosity of 30-80 cSt. See the following pages about power consumption and delivery at the rated pressure.

CCW rotation of high pressure pumps are optional.

Mini QT's must be used at the speed between 1,500~1,800r.p.m.

QT23-4
Rated pressure: 210kgf/cm²
Maximum pressure: 250kgf/cm²

Size		QT2※-		QT3※-			QT4※-			QT5※-			QT6※-		
Type		22-	23-	31-	32-	33-	41-	42-	43-	51-	52-	53-	61-	62-	63-
Foot type		QF-2		QF-3			QF-4			QF-5			QF-6		
Port Connection	Threaded type	Suction(S)		OGT-08 (1")			OGT-10 (1 1/4")			OGT-12 (1 1/2")			OGT-16 (2")		
	Delivery(D)	OGT-04 (1/2")		OGT-06 (3/4")			OGT-08 (1")			OGT-10 (1 1/4")			OGT-12 (1 1/2")		
	Welding type	Suction(S)		OGW-08 (1")			OGW-10 (1 1/4")			OGW-12 (1 1/2")			OGW-16 (2")		
	Delivery(D)	OGW-04 (1/2")		OGW-06 (3/4")			OGW-08 (1")			OGW-10 (1 1/4")			OGW-12 (1 1/2")		
Pump body	A	120		134			172			214			266		
	B	100		106			146			181			229		
	C	9.0		11.5			14.5			18.5			23.0		
	H	40		50			62.5			75			95		
	I	42		48			68			92			92		
	K	77		90			115			145			154		
	L	187	170	205	226	205	250	283	256	312	347	313	383	415	463
	M	90.5	73.5	108.5	115	94	139	141	114	170	170	136	206	216.5	264.5
	N	63.0 ± 0.05		82.55 ± 0.05			101.6 ± 0.05			127.0 ± 0.05			152.4 ± 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 ± 0.03		8 ± 0.036			10 ± 0.036			12 ± 0.043			14 ± 0.043		
	G	22.4		28.1			35.0			43.0			53.5		
	Q	4		3			4			6			6		
	R	28		36			50			70			70		
Weight (kg)		—	6.8	8.0	13.1	11.7	14.2	22.9	20.5	23.3	43.0	38.3	48.4	88.0	99.0

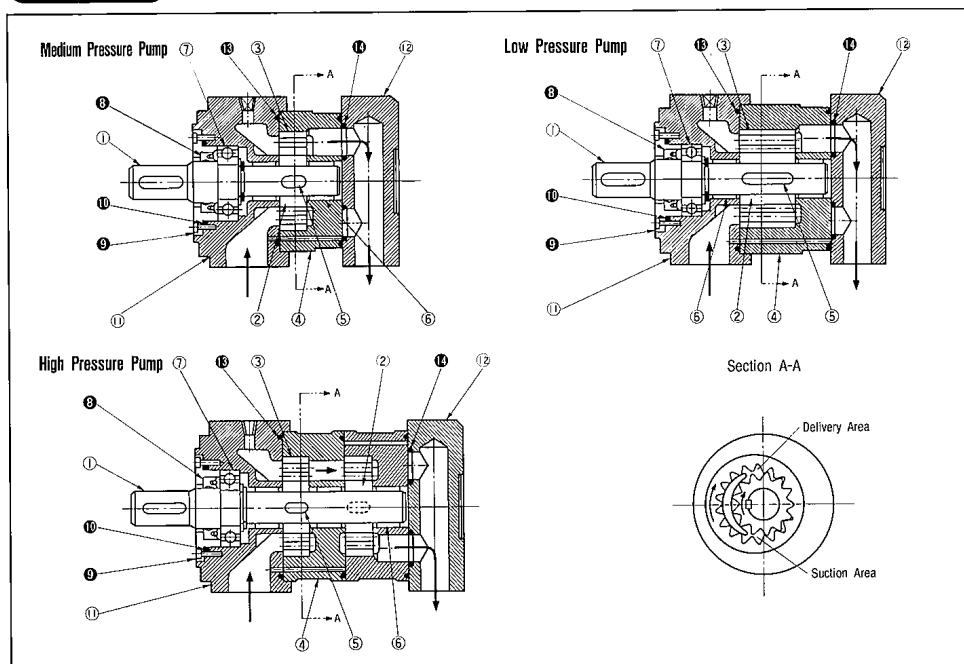
Note:

A flange kit consists of flanges for the inlet and outlet, "O" rings and bolts. "F" dimension of welding type flanges are smaller by one size than those of threaded ones.

※ indicates "Pump with Motor" is available

QT Single Pump

Construction



Parts

No.	Part Name	Quantity			No.	Part Name	Quantity		
		Low	Medium	High			Low	Medium	High
1	Shaft	1	1	1	8	Shaft Seal	1	1	1
2	Pinion Gear	1	1	2	9	Seal Housing	1	1	1
3	Ring Gear	2	1	2	10	"O" Ring	1	1	1
4	Gear Housing	1	1	2	11	Front Cover	1	1	1
5	Key	1	1	2	12	End Cover	1	1	1
6	Bearing	2	2	3	13	"O" Ring	1	2	2
7	Ball Bearing	1	1	1	14	"O" Ring	2	2	2

Note: Same parts are used in the same size pump.

Seals

No.	Part Name	Quantity		Model 2	Model 3	Model 4	Model 5	Model 6
		Low/Medium	High					
8-9	Seal Housing Set	Standard	1	09-0554-2	09-0554-3	09-0554-4	09-0554-5	09-0554-6
		Model H	1	09-0554-2H	09-0554-3H	09-0554-4H	09-0554-5H	09-0554-6H
10	"O" Ring	1	1	ARP568-128	ARP568-133	ARP568-145	JIS W1516-G14	JIS W1516-G17
13	"O" Ring	2	3	S-75	S-95	S-120	S-150	S-188
14	"O" Ring	2	2	JIS W1516-P12	ARP568-118	ARP568-121	JIS B2401-1BP34	ARP568-223

Standard Spares

Standard spares consist of a shaft seal and seal housing. For convenience and reliability shaft seal and seal housing set (8,9) must be replaced when changing shaft seals.

Performance

Low Pressure Pump

Refer to "guide for performance table" on page 17. Data are based on fluid viscosity of 40cSt.

Speed (r.p.m)	Pump Model No.	Theoretical Displacement (cc/rev)	Delivery (l/min)						Power Consumption(KW)					
			5kg/cm ²	20kg/cm ²	35kg/cm ²	50kg/cm ²	70kg/cm ²	80kg/cm ²	5kg/cm ²	20kg/cm ²	35kg/cm ²	50kg/cm ²	70kg/cm ²	80kg/cm ²
1000	QT31	20	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	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	0.51	1.33	2.16	2.99	4.07	4.62
	QT41	40	40.6	40.1	38.5	36.9	35.3	33.2	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	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	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	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	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	2.04	5.23	8.43	11.63	15.69	18.02
	QT61	160	160.2	159.3	156.4	153.6	150.7	146.9	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	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	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	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	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	0.66	1.65	2.64	3.62	4.94	5.59
	QT41	40	40.6	48.2	46.3	45.0	43.4	41.3	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	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	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	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	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	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	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	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	5.13	12.50	19.96	27.22	37.03	41.94
1500	QT31	20	20.0	29.8	29.1	28.4	27.7	26.8	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	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	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	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	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	1.89	4.38	6.68	9.37	12.69	14.36
	QT51	80	78.4	116.9	114.7	112.6	110.5	107.6	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	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	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	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	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	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	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	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	1.22	2.70	4.18	5.65	7.63	8.61
	QT41	40	40.6	72.8	71.0	69.4	67.8	65.7	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	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	2.50	5.49	8.48	11.47	15.46	17.45
	QT51	80	78.4	140.4	138.3	136.1	134.0	131.1	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	3.89	8.49	13.10	17.72	23.86	26.94
		125	127.0	225.7	223.6	221.5	219.4	216.5	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	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	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	9.47	20.51	31.55	42.60	57.32	64.69

※"QT pump with motor" is also available.

QT Single Pump

Performance

●Medium pressure pump

Refer to "guide for performance table" on page 17. Data are based on fluid viscosity of 40cSt.

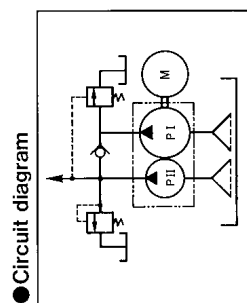
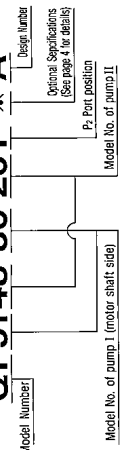
Speed (r.p.m)	Pump Model No.	Theoretical Displacement (c.c./rev)	Delivery (ℓ /min)						Power Consumption(KW)						
			5kg/cm²	35kg/cm²	70kg/cm²	105kg/cm²	140kg/cm²	160kg/cm²	5kg/cm²	35kg/cm²	70kg/cm²	105kg/cm²	140kg/cm²	160kg/cm²	
1000	QT22	— 5	5.5	5.4	4.9	4.2	3.6	3.0	2.6	0.08	0.35	0.67	0.98	1.29	1.47
		— 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
	QT32	— 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
		— 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
	QT42	— 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
		— 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
	QT52	— 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
1200	QT22	— 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
	QT32	— 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
	QT42	— 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
		— 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
	QT52	— 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
		— 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
1500	QT22	— 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	55.3	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
	QT32	— 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
	QT42	— 4	4.3	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
	QT52	— 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
		— 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
1800	QT22	— 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
		— 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
	QT32	— 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
	QT42	— 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
	QT52	— 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
		— 4	4.3	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
2100	QT22	— 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
		— 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
	QT32	— 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	40.6	39.3	39.4	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
		— 80	80.1	143.7	141.1	138.0	135.0	131.9	130.1	3.06	10.29	18.72	27.15	35.68	40.39
2400	QT22	— 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
		— 4	4.3	7.5	7.1	6.5	6.0	5.5	5.2	0.17	0.58	1.05	1.53	2.01	2.28
	QT32	— 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
	QT42	— 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
	QT52	— 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
		— 25	25.1	45.0	43.7	42.2	40.6	39.3	39.4	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
QT62	— 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	
	— 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	
2700	QT22	— 80	80.1	143.7	141.1	138.0	135.0	131.9	130.1	3.06	10.29	18.72	27.15	35.68	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
	QT32	— 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

QT Double Pump

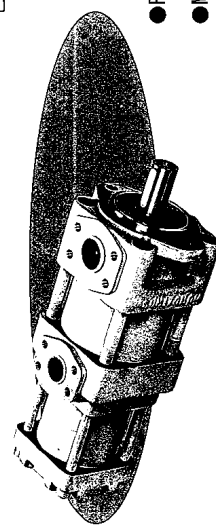
A double pump consists of two independent pumps each with an independent inlet.
The unit houses a single driving shaft which drives both pumps.

Model Number

QT 5143-80-20 F-※-A



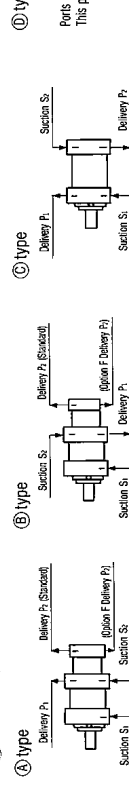
● Piping flanges (to be ordered separately)
● Mounting foot (to be ordered separately) — See page 16 for details



Standard Double Pumps

Pump I		Pump II		Pressure (MPa)		Flow (L/min)		Port Position		Mounting Foot	
Model No.	Port Position	Model No.	Port Position	4/5/6.3/8	10/12.5/16	20/25/31.5	40/50/63	80/100/125	200/250	160	200
160	22-...	160	22-...	22-...	22-...	22-...	22-...	22-...	22-...	22-...	22-...
160	23-...	160	23-...	23-...	23-...	23-...	23-...	23-...	23-...	23-...	23-...
160	24-...	160	24-...	24-...	24-...	24-...	24-...	24-...	24-...	24-...	24-...
160	25-...	160	25-...	25-...	25-...	25-...	25-...	25-...	25-...	25-...	25-...
160	26-...	160	26-...	26-...	26-...	26-...	26-...	26-...	26-...	26-...	26-...
160	27-...	160	27-...	27-...	27-...	27-...	27-...	27-...	27-...	27-...	27-...
160	28-...	160	28-...	28-...	28-...	28-...	28-...	28-...	28-...	28-...	28-...
160	29-...	160	29-...	29-...	29-...	29-...	29-...	29-...	29-...	29-...	29-...
160	30-...	160	30-...	30-...	30-...	30-...	30-...	30-...	30-...	30-...	30-...
160	31-...	160	31-...	31-...	31-...	31-...	31-...	31-...	31-...	31-...	31-...
160	32-...	160	32-...	32-...	32-...	32-...	32-...	32-...	32-...	32-...	32-...
160	33-...	160	33-...	33-...	33-...	33-...	33-...	33-...	33-...	33-...	33-...
160	34-...	160	34-...	34-...	34-...	34-...	34-...	34-...	34-...	34-...	34-...
160	35-...	160	35-...	35-...	35-...	35-...	35-...	35-...	35-...	35-...	35-...
160	36-...	160	36-...	36-...	36-...	36-...	36-...	36-...	36-...	36-...	36-...
160	37-...	160	37-...	37-...	37-...	37-...	37-...	37-...	37-...	37-...	37-...
160	38-...	160	38-...	38-...	38-...	38-...	38-...	38-...	38-...	38-...	38-...
160	39-...	160	39-...	39-...	39-...	39-...	39-...	39-...	39-...	39-...	39-...
160	40-...	160	40-...	40-...	40-...	40-...	40-...	40-...	40-...	40-...	40-...
160	41-...	160	41-...	41-...	41-...	41-...	41-...	41-...	41-...	41-...	41-...
160	42-...	160	42-...	42-...	42-...	42-...	42-...	42-...	42-...	42-...	42-...
160	43-...	160	43-...	43-...	43-...	43-...	43-...	43-...	43-...	43-...	43-...
160	44-...	160	44-...	44-...	44-...	44-...	44-...	44-...	44-...	44-...	44-...
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160	46-...	160	46-...	46-...	46-...	46-...	46-...	46-...	46-...	46-...	46-...
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160	53-...	160	53-...	53-...	53-...	53-...	53-...	53-...	53-...	53-...	53-...
160	54-...	160	54-...	54-...	54-...	54-...	54-...	54-...	54-...	54-...	54-...
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160	58-...	160	58-...	58-...	58-...	58-...	58-...	58-...	58-...	58-...	58-...
160	59-...	160	59-...	59-...	59-...	59-...	59-...	59-...	59-...	59-...	59-...
160	60-...	160	60-...	60-...	60-...	60-...	60-...	60-...	60-...	60-...	60-...
160	61-...	160	61-...	61-...	61-...	61-...	61-...	61-...	61-...	61-...	61-...

※ (A) standard power packs are available.



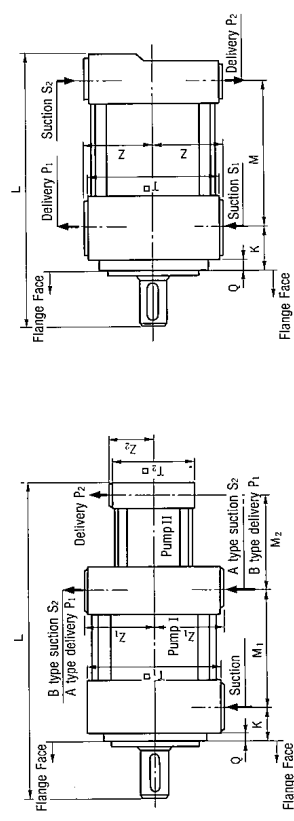
- Notes:
- ①, ②, and ③ show standard double pumps and a combination of two single pumps.
(A box with an arrow indicates non-standard pump. Choose pointed standard model.)
 - Clock wise rotation (viewed from shaft-end) is standard. CCW rotation is optional.
 - ④, ⑤, and ⑥ indicate pump outlook and ports position as shown below.

Ports positions are the same with ③. This pump is supplied with a mounting foot.

Dimensions

● (A) or (B) type

● (C) type



● (A) or (B) type

Shaft dimensions from the flange face are the same as those of pump I (single pump).

Model Number	Q	L	M1	M2	K	T1	Z1	Z2	Delivery		Suction		Mounting Foot Model No.
									P1	P2	S1	S2	
QT3222-※-※	12	290	103	75.5	42	115	60	50	3/4"	3/4"	1 1/4"	1"	QF-3
QT4123-※-※	12	323	103	110.5	42	115	60	50	3/4"	3/4"	1 1/4"	1"	QF-3
QT4123-※-※	16	391	146	110.5	47	139	75	50	1"	1"	1 1/2"	1"	QF-3
QT4133-※-※	16	430	153	141	47	139	75	60	1"	1"	1 1/2"	1 1/4"	QF-4D
QT4222-※-※	16	329	119	75.5	47	139	75	50	1"	1"	1 1/2"	1"	QF-4D
QT4223-※-※	16	364	119	110.5	47	139	75	50	1"	1"	1 1/2"	1 1/4"	QF-4D
QT4232-※-※	16	358	126	96	47	139	75	60	1"	1"	1 1/2"	1 1/4"	QF-4D
QT4233-※-※	16	403	126	141	47	139	75	60	1"	1"	1 1/2"	1 1/4"	QF-4D
QT4322-※-※	16	385	175	75.5	47	139	75	50	1"	1"	1 1/2"	1"	QF-5
QT4323-※-※	16	420	175	110.5	47	139	75	50	1"	1"	1 1/2"	1 1/4"	QF-5
QT5133-※-※	20	484	177	141	53	170	93	60	1 1/4"	1 1/4"	2"	1 1/2"	QF-5
QT5143-※-※	20	523	179.5	171.5	53	170	93	75	1 1/4"	1 1/4"	2"	1 1/2"	QF-5
QT5223-※-※	20	425	143	117.5	53	170	93	50	1 1/4"	1 1/4"	2"	1"	QF-6
QT5242-※-※	20	433	145.5	115.5	53	170	93	75	1 1/4"	1 1/4"	2"	1 1/2"	QF-6
QT5243-※-※	20	489	145.5	171.5	53	170	93	75	1 1/4"	1 1/4"	2"	1 1/2"	QF-6
QT5333-※-※	20	520	213	141	53	170	93	60	1 1/4"	1 1/4"	2"	1 1/2"	QF-6
QT6123-※-※	24	511	216	121.5	62	216	118	50	1 1/2"	1 1/2"	2 1/2"	1"	QF-6
QT6143-※-※	24	568	216	171	62	216	118	75	1 1/2"	1 1/2"	2 1/2"	1 1/2"	QF-6
QT6153-※-※	24	616	223	207	62	216	118	93	1 1/2"	1 1/2"	2 1/2"	2"	QF-6
QT6222-※-※	24	434	174	86.5	62	216	118	50	1 1/2"	1 1/2"	2 1/2"	1"	QF-6
QT6253-※-※	24	574	181	207	62	216	118	93	1 1/2"	1 1/2"	2 1/2"	2"	QF-6

※ (A) standard power packs are available. (p22)

● (C) type

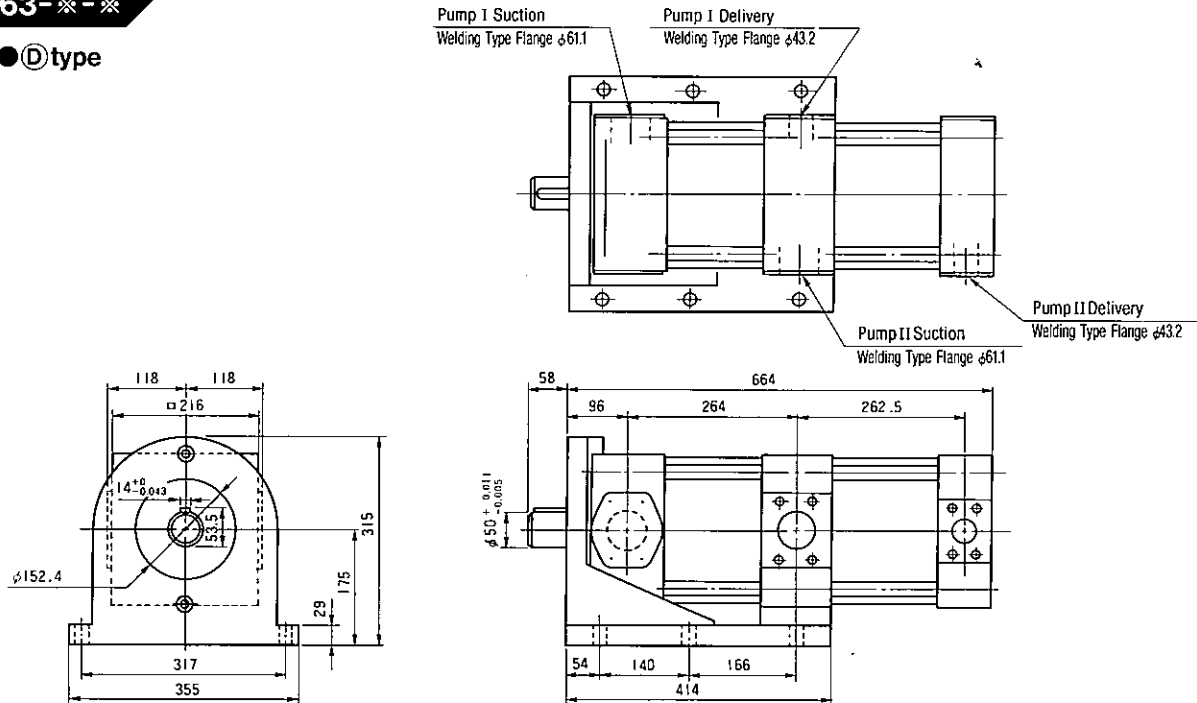
Model Number	Q	L	M	K	T	Z	Delivery		Suction		Mounting Foot Model No.
							P1	P2	S1	S2	
QT2222-※-※	12	203	109	35	95	50	3/4"	3/4"	1"	1/2"	QF-2
QT4242-※-※	16	312	170	47	139	75	1 1/4"	1 1/4"	1 1/2"	1"	QF-4D
QT5252-※-※	20	397	214	53	170	93	1 1/4"	1 1/4"	2"	2"	QF-5
QT6262-※-※	24	463	266	62	216	118	1 1/2"	1 1/2"	2 1/2"	2 1/2"	QF-6

QT Double Pump

Dimensions

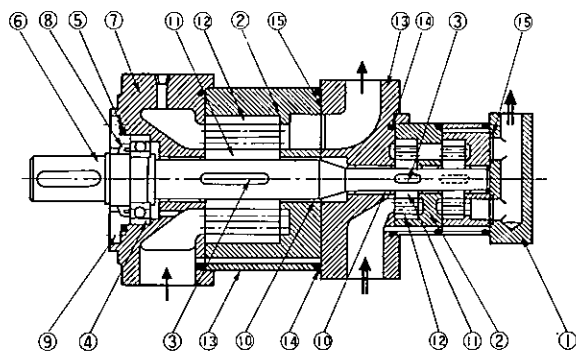
QT6363-※-※

●D type

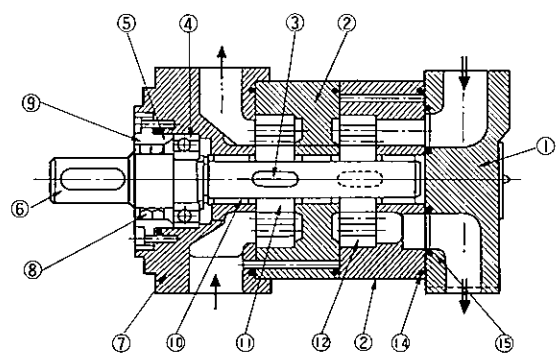


Construction

●A、B、D type



●C type



Parts

No.	Parts Name	No.	Parts 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		

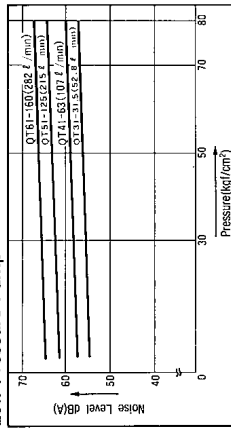
Standard Spares

Standard spares consist of a shaft seal and seal housing. For convenience and reliability shaft seal and seal housing set (8,9) must be replaced when changing shaft seals.

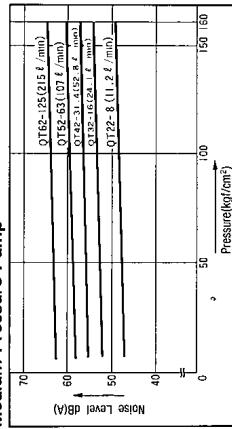
How to use "performance table"

● Noise Level — Noise level does not rise in accordance with pressure.

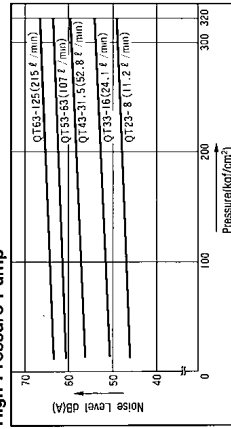
Low Pressure Pump



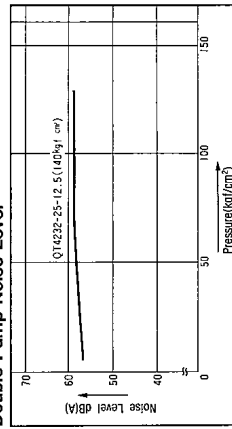
Medium Pressure Pump



High Pressure Pump



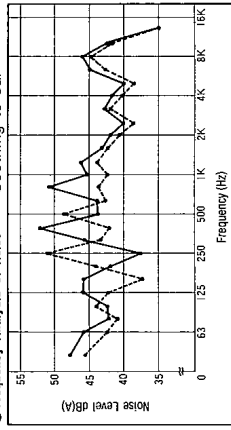
Double Pump Noise Level



Measuring Conditions

Measured in: Anechoic chamber
Distance: 1m
Rpm: 1800r.p.m.
Viscosity: 30—40cSt
Fluid Temp.: 45—50°C
Suction Press.: -0.1—0.2kg/cm²

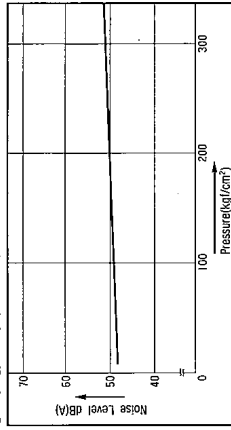
● Frequency Analysis of Noise — Soothing to ear —



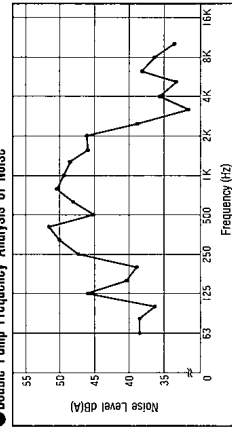
Measuring Conditions

Type: QT43-31.5
Rpm: 1800r.p.m.
Pressure: 250kg/cm²
Viscosity: 40cSt (Fluid temperature 50°C)
Distance: 1m

Ultra QT Noise Level



● Double Pump Frequency Analysis of Noise



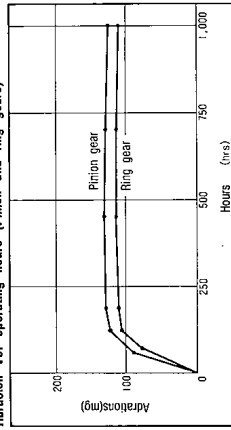
Measuring Conditions

Type: QT4232-25-12.5
Rpm: 1800r.p.m.
Pressure: 140kg/cm²
Viscosity: 40cSt (Fluid temperature 50°C)
Distance: 1m

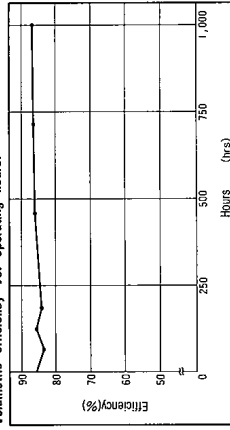
● Abrasion Resistance (With water glycol fluid)

Almost no abrasion is observed with water glycol fluid, which is less lubricative than ordinary mineral-based fluid.

Abrasion Vs. operating hours (Pinion and ring gears)



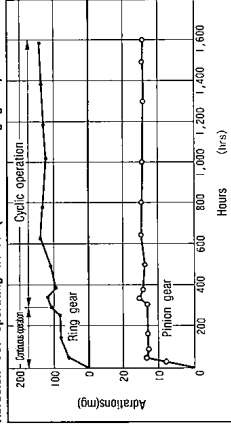
Volumetric efficiency Vs. operating hours.



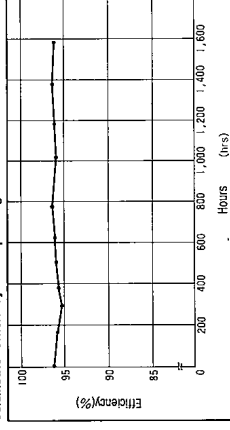
Conditions

Pump: QT43-25
Hydraulic fluid: Water glycol (Hydro HAW) Matsumura
Oil Research Corporation
Pressure: 250kg/cm²
Speed: 1200r.p.m.
Oil temperature: 40°C—50°C

Abrasion Vs. operating hours (Pinion and ring gears)



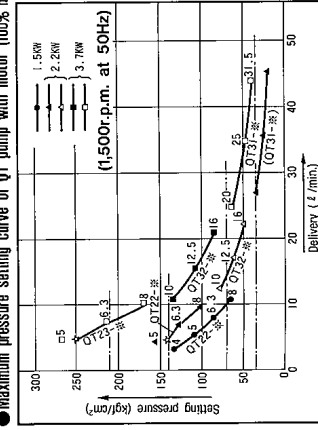
Volumetric efficiency Vs. operating hours.



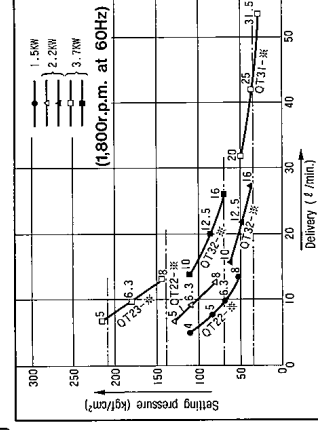
Conditions

Pump: QT52-63
Hydraulic fluid: Hiland FRG-46
Pressure: 125kg/cm²
Speed: 1800r.p.m.
Oil temperature: 40°C—50°C

● Maximum pressure setting curve of QT pump with motor (100% motor load)



☆ Indicates rated pressure.



Inertial Moment of Pump (GD²)

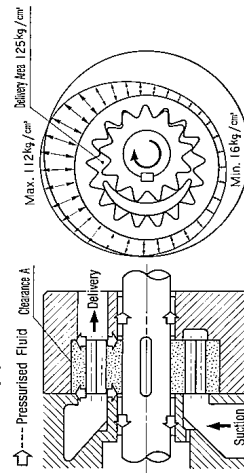
- Inertial moment of single pump.
- Add inertial moments of pump I and II to obtain that of double pump.

Unit : kg · m²

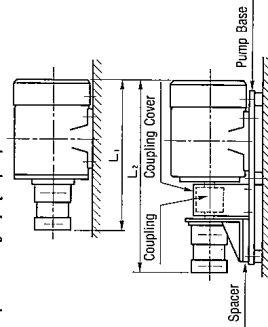
Type	GD ²	Type	GD ²	Type	GD ²
		QT22-5	1.93 × 10 ⁻⁴	QT23-5	2.88 × 10 ⁻⁴
		QT22-6.3	2.07 × 10 ⁻⁴	QT23-6.3	3.15 × 10 ⁻⁴
		QT22-8	2.47 × 10 ⁻⁴	QT23-8	3.95 × 10 ⁻⁴
QT31-20	8.29 × 10 ⁻⁴	QT32-10	5.88 × 10 ⁻⁴	QT33-10	8.88 × 10 ⁻⁴
QT31-25	9.27 × 10 ⁻⁴	QT32-12.5	6.37 × 10 ⁻⁴	QT33-12.5	9.86 × 10 ⁻⁴
QT31-31.5	1.04 × 10 ⁻³	QT32-16	6.93 × 10 ⁻⁴	QT33-16	1.10 × 10 ⁻³
QT41-40	2.46 × 10 ⁻³	QT42-20	1.68 × 10 ⁻³	QT43-20	2.61 × 10 ⁻³
QT41-50	2.76 × 10 ⁻³	QT42-25	1.83 × 10 ⁻³	QT43-25	2.91 × 10 ⁻³
QT41-63	3.21 × 10 ⁻³	QT42-31.5	2.06 × 10 ⁻³	QT43-31.5	3.36 × 10 ⁻³
QT51-80	8.47 × 10 ⁻³	QT52-40	5.98 × 10 ⁻²	QT53-40	9.05 × 10 ⁻³
QT51-100	9.57 × 10 ⁻³	QT52-50	6.53 × 10 ⁻³	QT53-50	1.02 × 10 ⁻²
QT51-125	1.09 × 10 ⁻²	QT52-63	7.18 × 10 ⁻³	QT53-63	1.14 × 10 ⁻²
QT61-160	2.38 × 10 ⁻²	QT62-80	1.61 × 10 ⁻²	QT63-80	2.54 × 10 ⁻²
QT61-200	2.70 × 10 ⁻²	QT62-100	1.77 × 10 ⁻²	QT63-100	2.87 × 10 ⁻²
QT61-250	3.07 × 10 ⁻²	QT62-125	1.95 × 10 ⁻²	QT63-125	3.23 × 10 ⁻²

Reference

Lubrication by pressurised fluid



Space saving by QT pump with motor



Unit : mm

	L ₁	L ₂
QTM22-※-1.5	406	490
QTM22-※-2.2	436	541
QTM32-※-2.2	465	576
QTM23-※-3.7	507	591
QTM32-※-3.7	486	591
QTM31-※-3.7	507	612

1. Hydraulic Fluid

- Use hydraulic fluid with the viscosity of ISO VG46~68 (With viscosity index of more than 70kgf/cm² anti-wear hydraulic fluid of ISO VG46~68 is recommendable.)
- Consult the manufacturer in case nonflammable fluid (phosphate-ester, water-glycol, fatty ester, water in oil emulsion, etc) is used.
- Use clean fluid without foreign bodies or water. Whiteness fluid indicates aeration and brown fluid deterioration.

2. Viscosity and Temperature of Fluid

- Viscosity : 20~500cSt.
- Temperature: 0°C~60°C

3. Suction Pressure

- Suction pressure must be within -0.3~+0.3kgf/cm²
- (Specify high suction pressure shaft seal if pump is used at suction pressure higher than +0.3kgf/cm²)

4. Filtration

- Fit a filter of 150 mesh or above in suction line. A 25μm in-line filter in delivery line or a magnet filter will extend pump life.

5. Installation and Alignment

- Mount pump on a base with sufficient rigidity.
- Pump must be so mounted that the suction port may be on either side or upper position.
- Eccentricity between shafts of pump and motor must be less than 0.05mm by using flexible coupling such as chain coupling. Avoid radial force on pump shaft.
- Coupling must go in and out on pump shaft smoothly.

6. Piping

- Use piping flanges.
- Piping size of suction line must be chosen to allow fluid flow of less than 1.5m/sec and suction pressure less than -0.3kgf/cm² piping must be as short as possible.
- Avoid push-or pull-force when using steel pipe.

7. Initial Start-Up

- For good lubrication between moving and stationary elements, pour fluid into the pump before use.
- To purge air in pump body, be sure to operate pump by an inching start (on and off) at unload.

8. Rotating Direction

- Clockwise (seen from shaft end) is standard. Counter clockwise optional.
- Check rotation direction by a moment start-up of motor.

9. Maximum Pressure

- Operation at maximum pressure must not exceed 1/3 of one cycle and 20 seconds.

10. Consult the manufacturer if disassembly is required.

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