

**ShinMaywa**

# **Submersible Pumps**

(Non-Clogging Vortex Type)

CV/CVH·CVS·CVL·CVC·CVM Series



Non-Clogging Vortex Type

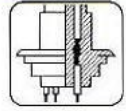
# Even sewage containing foreign matter does not "clog" or cause "entanglement" in the pump

There are **MANY ADVANTAGES** with ShinMaywa Submersible Pump.

## ● Features And Construction

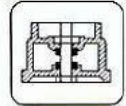
### Cable outlet with core sealer

The self-contained core sealer of the cable outlet shuts the water out from penetrating into the motor chamber through the core wires even if the cable tip is immersed in water or the sheath is damaged.



### Shaft seal

A highly wear resistant silicon carbide double mechanical seal positively prevents the water from penetrating into the motor chamber. Besides, combined use of an oil seal further extends the service life of the mechanical seal.



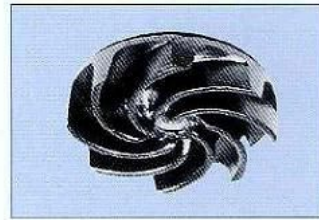
### Discharge connection

When the automatic connection type submersible pump is lowered along with the guide pipe, the pump is automatically connected to the discharge pipe with the discharge connection.

## Applications

**For sewage and sanitary sewage containing a lot of fibrous debris**

- For use at relay pump stations or manholes to relay raw water.
- For discharging sludge and scum at industrial waste water treatment plants, etc.
- For use at food processing factories or livestock production facilities to discharge sewage and sludge.
- For controlling flow rate and discharging at night soil treatment plants, etc.
- For controlling flow rate and discharging at combined treatment plants.

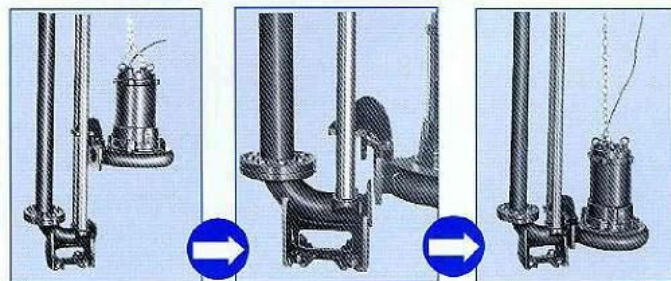


## Features of vortex type

As illustrated, a vortex type impeller provides a broad area for passage, thereby eliminating the possible clogging, winding and/or entanglement of solids, fibrous matter, etc.

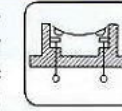
Sewage or sludge does not directly pass through the interior of an impeller. As a result, the vortex type impeller scarcely abrades while showing an excellent level of durability.

## Automatic connection type



### Motor protector

A built-in automatic-reset type motor protector (automatic cutoff or thermal protector) positively protects the motor from burnout due to overload, impeller clogging and open phase.

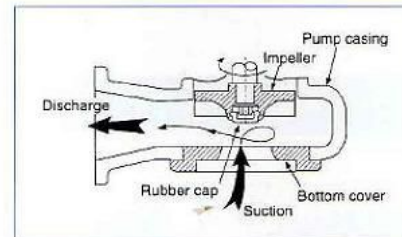


### Motor

Dry type motor with Class E (or Class F) Insulation is employed.

### Impeller

A vortex type impeller most suitable for each application is employed. Also, dynamic and static balance of impeller adjusted.



## CV/ CVH

**2Poles**  
(under 1.5kW)  
**4Poles**  
(over 2.2kW)

Impeller Passage:42~53%

Bore (mm)	40	50	65	80	100	150
Output(kW) 0.15						
0.25						
0.4		•	•			
0.75		•	•			
1.5		•	•	•		
2.2			•	•	•	
3.7			•	•	•	•
5.5				•	•	•
7.5				•	•	•
11				•	•	•
15				•	•	•
22				•	•	•

CV/CVH

## CVS

**2Poles**

Impeller Passage:35~56%

Bore (mm)	40	50	65	80	100	150
Output(kW) 0.15	•					
0.25	•	•				
0.4		•				
0.75		•				
1.5			•	•		
2.2			•	•	•	
3.7				•	•	•
5.5				•	•	•
7.5				•	•	•
11						
15						
22						

CVS

## CVL

**4Poles**

Impeller Passage:56~70%

Bore (mm)	40	50	65	80	100	150
Output(kW) 0.15						
0.25		•				
0.4		•				
0.75		•	•			
1.5			•	•		
2.2				•		
3.7				•	•	
5.5				•	•	
7.5				•	•	
11						
15						
22						

CVL

## CVC

**4Poles**

Impeller Passage:70%

Bore (mm)	40	50	65	80	100	150
Output(kW) 0.15						
0.25						
0.4						
0.75		•	•			
1.5		•	•	•		
2.2			•	•	•	
3.7			•	•	•	•
5.5				•	•	•
7.5				•	•	•
11						
15						
22						

CVC

## CVM

**4Poles**

Impeller Passage:100%  
(CVM150:83%)

Bore (mm)	40	50	65	80	100	150
Output(kW) 0.15						
0.25						
0.4		•				
0.75		•				
1.5			•	•		
2.2			•	•	•	
3.7			•	•	•	•
5.5				•	•	•
7.5				•	•	•
11						
15						
22						

CVM

# CV/CVH Series

<Bore> 50 to 150mm  
<Output> 0.4 to 22kW

**2Poles**  
(under 1.5kW)  
**4Poles**  
(over 2.2kW)

Impeller Passage: 42~53%

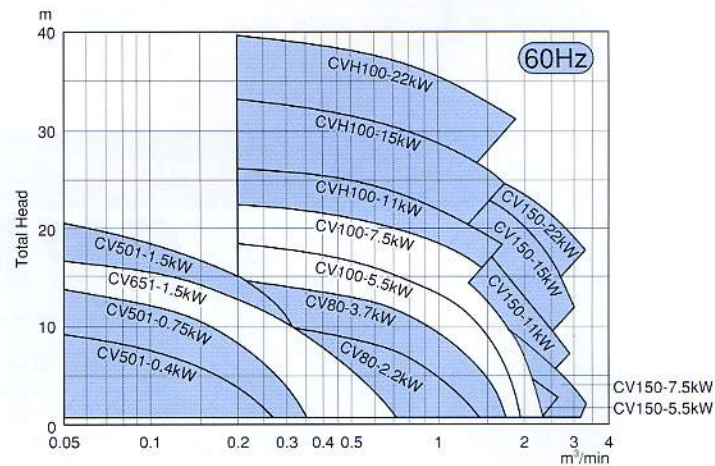
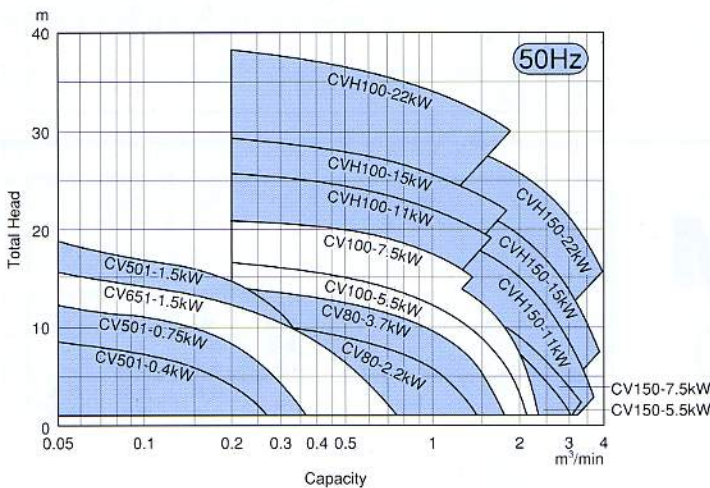


## Standard Specifications

Bore mm	Pump Model	Connection Part No.		Output kW	Pole	Capacity—Total Head		Impeller Passage Size mm	Weight (Pump Proper) kg
		Automatic Connection	Flange Connection			50Hz m <sup>3</sup> /min—m	60Hz m <sup>3</sup> /min—m		
50	CV501T	P50	F50	0.4	2	0.15—5.9	0.15—5.9	35	17
	CV501			0.75		0.2—8.5	0.2—8.5		18
				1.5		0.2—14.7	0.2—15.2		26
65	CV501T	P65B	F65B	0.4	2	0.15—5.9	0.15—5.9	35	17
	CV501			0.75		0.2—8.5	0.2—8.5		18
				1.5		0.2—14.7	0.2—15.2		26
	CV651	P65	F65	1.5	2	0.4—8.7	0.4—8.2	46	29
	CV80	P65	F65	2.2	4	0.8—7.4	0.7—7.7	42	58
				3.7		1.0—9.7	0.9—10.5		70
80	CV651	P80	F80	1.5	2	0.4—8.7	0.4—8.2	46	29
	CV80			2.2		0.8—7.4	0.7—7.7		58
		3.7	1.0—9.7	0.9—10.5	70				
	CV100	P80B	F80	5.5	4	1.2—11.3	1.2—12.1	42	95
				7.5		[1] 1.3—13.8 [2] 1.3—14.3	[3] 0.8—18.5 [4] 0.8—19.5		108
100	CV80	P100B	F100	2.2	4	0.8—7.4	0.7—7.7	42	58
				3.7		1.0—9.7	0.9—10.5		70
				5.5		1.2—11.3	1.2—12.1		95
	CV100	P100B	F100	7.5	4	[1] 1.3—13.8 [2] 1.3—14.3	[3] 0.8—16.5 [4] 0.8—19.5	54	108
				11		0.8—23	0.86—23		192
				15		0.94—26	0.9—29		208
150	CVH100	P100C	F100B	22	4	1.05—34	0.92—36	65	262
				5.5		1.6—8.9	1.3—8.6		120
				7.5		1.9—9.4	1.6—10.5		132
	CV150	P150	F150	11	4	1.9—16	1.67—16	68	185
				15		2.15—19	2.05—20		197
				22		2.75—23	2.15—23		256

[ ] : Impeller No.

## Performance Curves



# CVS Series

<Bore> 40 to 100mm  
<Output> 0.15 to 11kW

**2Poles**

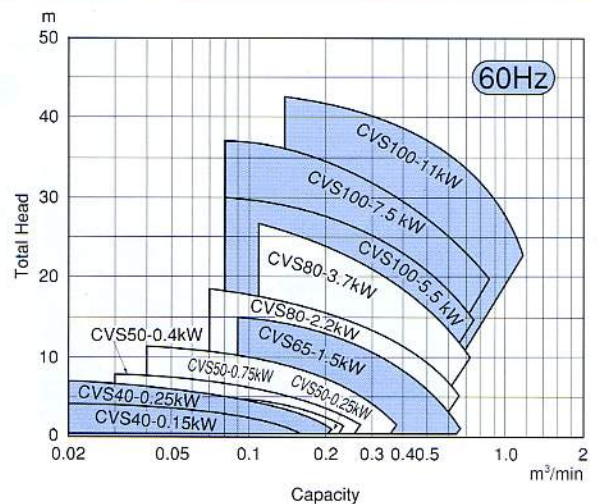
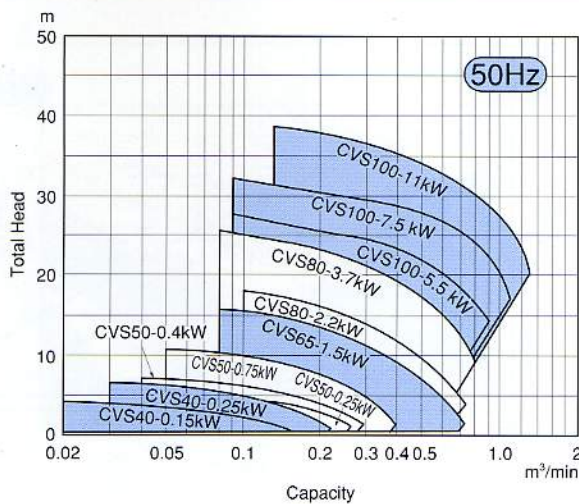
Impeller Passage: 35~56%



## Standard Specifications

Bore mm	Pump Model	Connection Part No.		Output kW	Capacity—Total Head		Impeller Passage size mm	Weight (Pump Proper) kg
		Automatic Connection	Flange Connection		50Hz m <sup>3</sup> /min—m	60Hz m <sup>3</sup> /min—m		
40	CVS40T	P40	F40	0.15	0.08 — 2.8	0.06 — 3.2	21	14
				0.25	0.10 — 5.0	0.09 — 4.9		17
50	CVS50T	P50	F65B	0.25	0.14 — 4.0	0.12 — 4.0	28	17
				0.4	0.14 — 5.3	0.14 — 5.0		18
	CVS50			0.75	0.17 — 8.5	0.17 — 8.3		21
65	CVS65	P65	F65	1.5	0.42 — 9.0	0.38 — 9.0	30	28.5
	CVS80	P65	F65	2.2	0.44 — 11.0	0.42 — 11.0		46
				3.7	0.51 — 17.0	0.47 — 17.0		55
80	CVS65	P80	F80	1.5	0.42 — 9.0	0.38 — 9.0	30	28.5
	CVS80	P80	F80	2.2	0.44 — 11.0	0.42 — 11.0		46
				3.7	0.51 — 17.0	0.47 — 17.0		55
	CVS100	P80	F80	5.5	0.45 — 22.7	0.40 — 23.6	35	82
				7.5	0.55 — 27.2	0.45 — 28.5		92
100	CVS80	P100	F100	3.7	0.51 — 17.0	0.47 — 17.0	30	55
				5.5	0.45 — 22.7	0.40 — 23.6		35
	CVS100	P100	F100	7.5	0.55 — 27.2	0.45 — 28.5	92	
				11	0.60 — 33.0	0.60 — 35.6	120	

## Performance Curves



# CVL Series

<Bore> 50 to 180mm  
<Output> 0.25 to 1.5kW

**4 Poles**

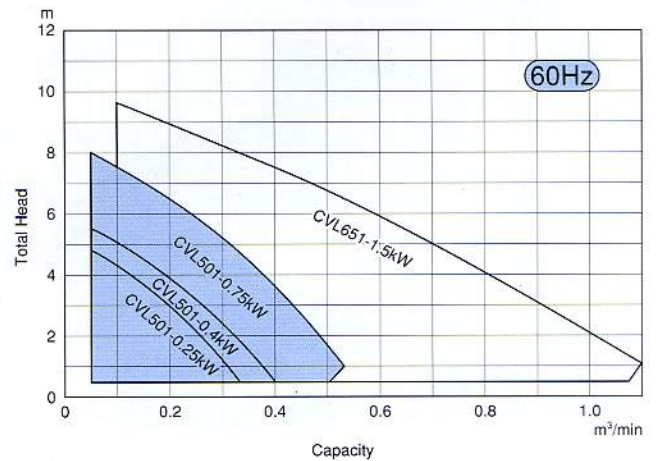
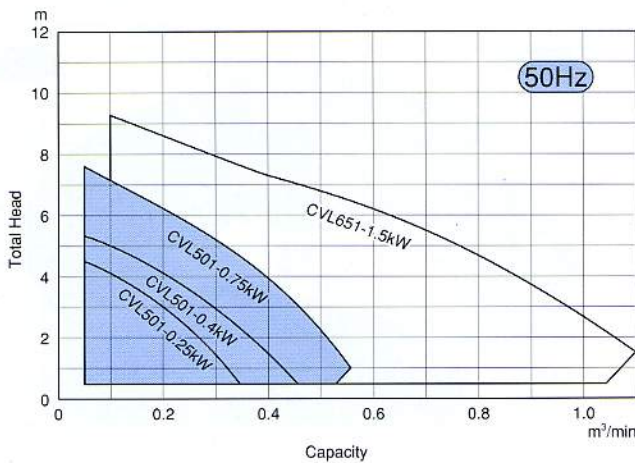
Impeller Passage: 56~70%



## Standard Specifications

Bore mm	Pump Model	Connection Part No.		Output kW	Capacity—Total Head		Impeller Passage Size mm	Weight (Pump Proper) kg
		Automatic Connection	Flange Connection		50Hz m <sup>3</sup> /min—m	60Hz m <sup>3</sup> /min—m		
50	CVL501	P50	F50	0.25	0.19 — 3.1	0.19 — 3.0	28	19
				0.4	0.26 — 3.5	0.23 — 3.5		
				0.75	0.32 — 5.0	0.32 — 5.0		
65	CVL501	P65B	F65B	0.4	0.26 — 3.5	0.23 — 3.5	35	26
				0.75	0.32 — 5.0	0.32 — 5.0		
65	CVL651	P65	F65	1.5	0.63 — 6.0	0.59 — 6.0	40	45
				0.75	0.32 — 5.0	0.32 — 5.0		
80	CVL651	P80	F80	1.5	0.63 — 6.0	0.59 — 6.0	40	45

## Performance Curves



# CVC Series

<Bore> 50 to 100mm  
<Output> 0.4 to 7.5kW

**4 Poles**

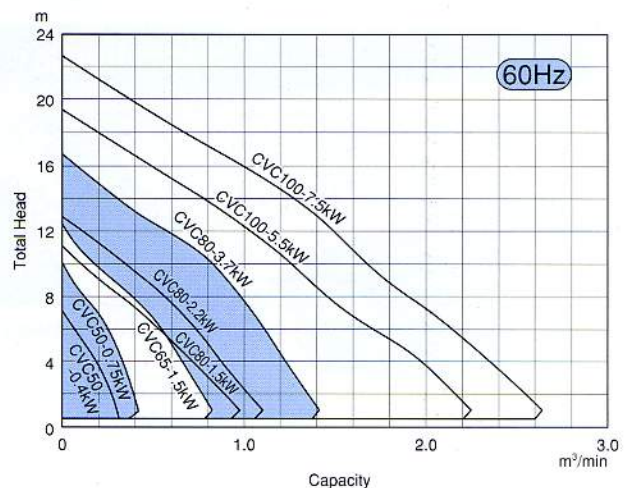
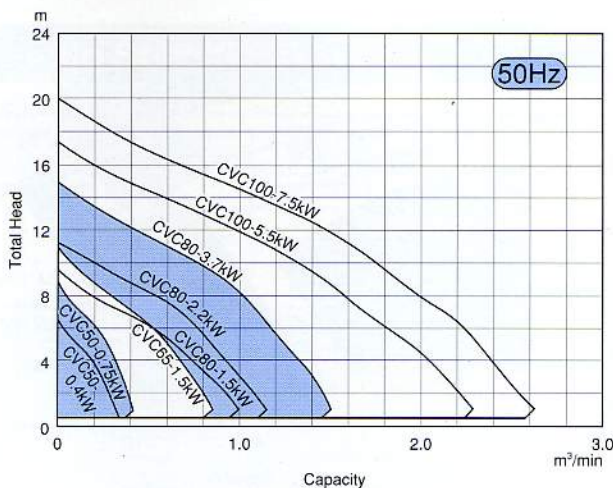
Impeller Passage: 70%



## Standard Specifications

Bore mm	Pump Model	Connection Part No.		Output kW	Capacity—Total Head		Impeller Passage Size mm	Weight (Pump Proper) kg
		Automatic Connection	Flange Connection		50Hz m <sup>3</sup> /min—m	60Hz m <sup>3</sup> /min—m		
50	CVC50	P50	F50	0.4	0.18 — 4.2	0.18 — 4.2	35	23.5
				0.75	0.23 — 5.8	0.23 — 6.5		26
65	CVC50	P65B	F65B	0.4	0.18 — 4.2	0.18 — 4.2	35	23.5
				0.75	0.23 — 5.8	0.23 — 6.5		26
	CVC65	P65	F65	1.5	0.45 — 6.7	0.45 — 7.2	45	39.5
				1.5	0.52 — 6.0	0.52 — 6.0		43
	CVC80	P65	F65	2.2	0.6 — 7.5	0.6 — 7.5	56	43
				3.7	0.8 — 9.8	0.8 — 10.1		54.5
80	CVC65	P80	F80	1.5	0.45 — 6.7	0.45 — 7.2	45	39.5
				1.5	0.52 — 6.0	0.52 — 6.0		43
	CVC80	P80B	F80	2.2	0.6 — 7.5	0.6 — 7.5	56	54.5
				3.7	0.8 — 9.8	0.8 — 10.1		64
	CVC100	P80B	F80	5.5	1.2 — 10.7	1.2 — 10.5	70	89
				7.5	1.3 — 13.0	1.3 — 13.7		98
100	CVC80	P100B	F100	2.2	0.6 — 7.5	0.6 — 7.5	56	54.5
				3.7	0.8 — 9.8	0.8 — 10.1		64
	CVC100	P100B	F100	5.5	1.2 — 10.7	1.2 — 10.5	70	89
				7.5	1.3 — 13.0	1.3 — 13.7		98

## Performance Curves



# CVM Series

<Bore> 50 to 100mm  
<Output> 0.4 to 7.5kW

**4 Poles**

Impeller Passage:100%  
(CVM150:83%)

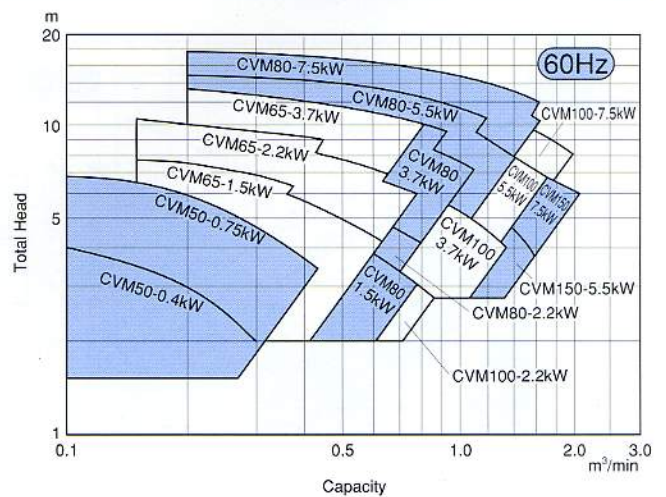
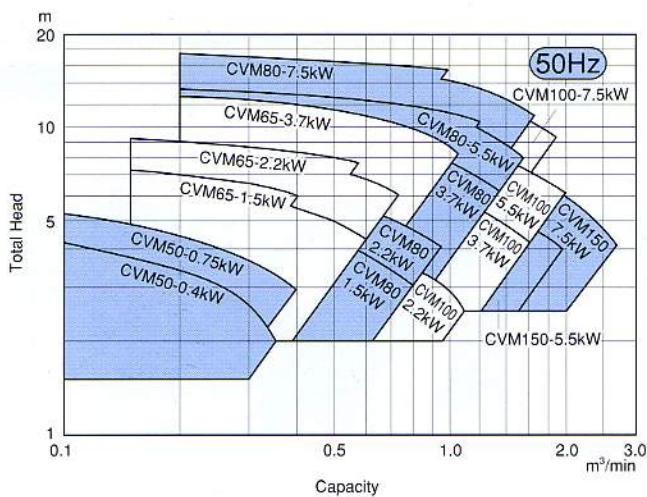


## Standard Specifications

Bore mm	Pump Model	Connection Part No.		Output kW	Capacity—Total Head		Impeller Passage Size mm	Weight (Pump Proper) kg
		Automatic Connection	Flange Connection		50Hz m <sup>3</sup> /min—m	60Hz m <sup>3</sup> /min—m		
50	CVM501	P50	F50	0.4	0.18 — 3.55	0.17 — 3.3	50	25
				0.75	0.23 — 4.1	0.22 — 5.7		26
65	CVM65	P65	F65	1.5	(1) 0.21 — 6.9 (3) 0.37 — 5.8	(2) 0.20 — 7.5 (4) 0.33 — 6.1	65	43
				2.2	(1) 0.28 — 8.8 (4) 0.38 — 7.9	(2) 0.20 — 10.0 (4) 0.34 — 8.4		55
				3.7	(1) 0.52 — 11.4	(2) 0.64 — 10.6		69
80	CVM80	P80B	F80	1.5	(5) 0.2 — 6.5 (7) 0.42 — 4.7	(6) 0.16 — 6.9 (8) 0.40 — 4.9	80	46
				2.2	(5) 0.26 — 7.2 (7) 0.45 — 5.9	(4) 0.25 — 7.5 (6) 0.38 — 5.8		58
				3.7	(1) 0.42 — 11.0 (3) 0.66 — 9.2	(2) 0.46 — 11.2 (4) 0.57 — 10.0		72
				5.5	(1) 0.56 — 12.4 (3) 0.84 — 11.0	(2) 0.55 — 13.0 (4) 0.86 — 10.8		93
				7.5	(1) 0.47 — 16.4 (3) 0.94 — 14.0	(2) 0.80 — 16.0 (4) 1.00 — 14.1		106
100	CVM100	P100C	F100B	2.2	(9) 0.24 — 6.9 (11) 0.50 — 4.5	(8) 0.23 — 5.0 (10) 0.47 — 3.7	100	61
				3.7	(5) 0.40 — 9.3 (7) 0.78 — 6.7	(6) 0.30 — 9.5 (8) 0.72 — 6.2		73
				5.5	(5) 0.62 — 10.8 (7) 1.02 — 8.9	(6) 0.44 — 12.0 (8) 0.86 — 9.4		97
				7.5	(5) 0.52 — 14.6 (7) 0.96 — 12.0	(6) 0.80 — 13.2 (8) 1.05 — 11.8		111
				7.5	(7) 0.51 — 7.6 (9) 0.80 — 6.5	(8) 0.55 — 7.3 (10) 0.64 — 6.2		107
150	CVM150	P150	F150	5.5	(9) 0.92 — 9.4 (11) 1.32 — 7.6	(8) 0.78 — 9.7 (10) 1.04 — 8.1	125	123

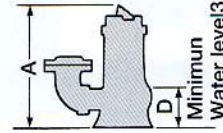
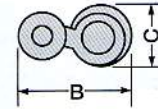
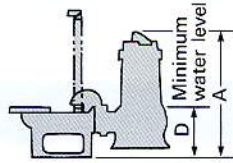
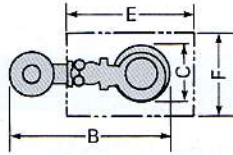
[ ] : Impeller No.

## Performance Curves





# Dimensions



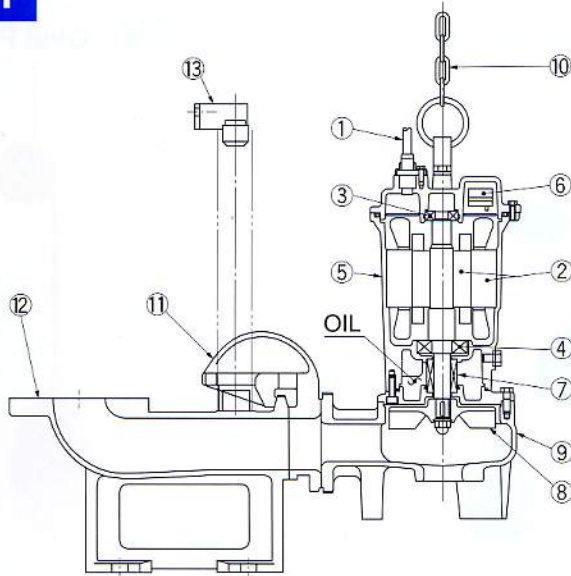
## Automatic Connection

## Flange Connection

	Automatic Connection									Flange Connection															
	Pump Model	Connection Part No.	Output kW	A	B	C	D	E	F	Pump Model	Connection Part No.	Output kW	A	B	C	D									
CV CVH	CV501(T)	P50	0.4 · 0.75	461	427	156	180	550	350	CV501(T)	F50	0.4 · 0.75	415	229	156	135									
		P65B			500						F65B			324											
	CV501	P50	1.5	501	448	176	195	550	350	CV501	F50	1.5	455	250	176	150									
		P65B			521						F65B			345											
	CV651	P65	1.5	539	627	182	235	550	350	CV651	F65	1.5	474	382	182	170									
		P80			579						F80			397											
	CV80	P85	2.2	580	754	292	220	600	500	CV80	F85	2.2	550	509	292	190									
					773									331			612	528							
		P80	2.2	620	830	292	260	600	500		F80	2.2	550	524	292										
			3.7	682	849	331						3.7	612	543	331										
	P100B	2.2	710	843	292	260	600	500	F100	2.2	550	541	292												
		3.7	745	862	331					3.7	612	560	331												
	CV100	P80B	5.5	710	907	355	260	700	600	CV100	F80	5.5	640	601	355										
			7.5	745	922	387						7.5	675	616	387										
			5.5	710	920	355						5.5	640	618	355										
	CVH100	P100B	7.5	745	935	387	260	700	600	CVH100	F100	7.5	675	633	387										
			11	861	1,110	486						11	782	846	486										
			15	955	1,132	529						15	876	870	529										
CV150	P150	5.5	779	1,094	400	325	900	700	CV150	F150	5.5	713	836	400	260										
		7.5	814	1,188	489						7.5	748	901	489											
		11	871	1,148	450						11	804	890	450											
CVS	CVS40T	P40	0.15 · 0.25	441	443	188	170	550	350	CVS40T	F40	0.15 · 0.25	370	245	188	100									
				0.25									441				0.25	383							
				0.4 · 0.75									461				0.4 · 0.75	403							
CVS50(T)	P50	1.5	516	663	192	200	550	350	CVS50(T)	F50	1.5	440	418	192	125										
				556									739			433	433								
				2.2									580			697	200	2.2	538	452	200				
CVS651	P65	3.7	620	697	266	240	550	350	CVS651	F65	3.7	579	467	266	160										
				2.2									621			773	240	2.2	538	467	240				
				3.7									661			786	240	3.7	579	484	240				
CVS80	P80	5.5	698	803	248	255	700	600	CVS80	F80	5.5	616	497	248	173										
		7.5	733	814	284						7.5	651	529	284											
		11	814	836	284						11	733	529	284											
CVS100	P100	5.5	698	816	248	255	700	600	CVS100	F100	5.5	616	514	248	173										
		7.5	733	816	248						7.5	651	514	248											
		11	814	849	284						11	733	529	284											
CVL	CVL501	P50	0.4 · 0.75	418	469	506	220	160	550	350	CVL501	F50	0.4 · 0.75	378	267	220									
				469										506			246	165	445	308	246	140			
				469										579			246	165	445	403	246	140			
CVL651	P65	1.5	564	725	302	220	550	350	CVL651	F65	1.5	529	480	302	180										
				604									801			260	495								
				220									260			495	302								
CVC	CVC50	P50	0.4 · 0.75	497	490	563	204	190	550	350	CVC50	F50	0.4 · 0.75	292	204	145									
				497										563			387	387							
				1.5										586			643	230	235	550	350	1.5	525	398	230
CVC65	P65	1.5	591	683	230	240	550	350	CVC65	F65	1.5	549	438	230	200										
				2.2									607			709	282	245	600	500	2.2	565	464	282	205
				3.7									669			709	282	245	600	500	3.7	627	464	282	205
CVC80	P80B	1.5	631	759	230	280	550	350	CVC80	F80	1.5	549	453	230	200										
		2.2	647	785	282	285	600	500			2.2	565	479	282	205										
		3.7	709	785	282	285	600	500			3.7	627	479	282	205										
CVC100	P100B	2.2	647	798	282	285	600	500	CVC100	F100	2.2	565	496	282	205										
		3.7	709	798	282	285	600	500			3.7	627	496	282	205										
		5.5	749	846	324	300	700	600			5.5	693	540	324	245										
CVM	CVM50	P50	0.4 · 0.75	506	475	188	195	550	350	CVM50	F50	0.4 · 0.75	486	277	188	172									
				601									637				219	243	572	392	219				
				2.2									625				687	238	260	595	442	238			
CVM65	P65	1.5	659	758	230	301	550	350	CVM65	F65	1.5	573	452	230	258										
				2.2									673			769	249	308	630	462	249				
				3.7									735			777	267	310	692	471	267				
CVM80	P80B	5.5	765	830	292	310	700	600	CVM80	F80	5.5	722	523	292											
		7.5	800	841	313						7.5	757	534	313											
		2.2	50Hz	740	781						248	375	677	479	248	312									
CVM100	P100C	3.7	803	817	280	376	600	500	CVM100	F100	3.7	740	515	280	313										
				5.5									841			851	310	386	557	549	310	323			
				7.5									859			873	332	379	571	571	332	316			
CVM150	P150	5.5	854	907	304	399	700	600	CVM150	F150	5.5	806	649	304	373										
		7.5	881	921	331	391					7.5	856	663	331	366										

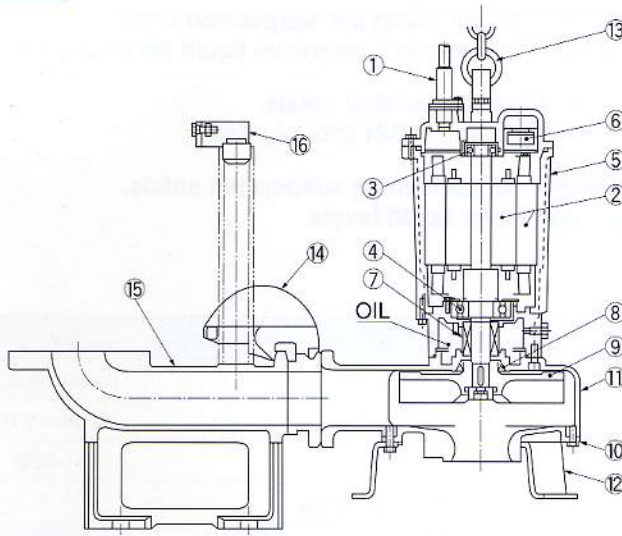
# Sectional View

## CV651



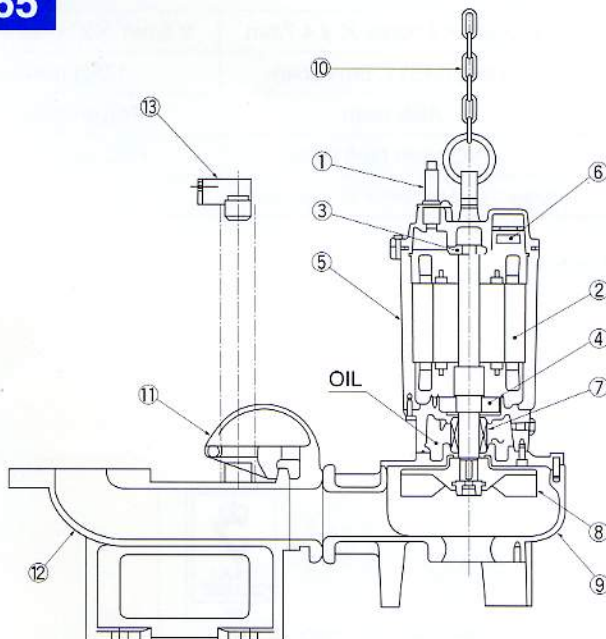
No.	Part Name	Material
1	Cable	VCT
2	Motor	Shaft=SUS420J2
3	Ball Bearing(Upper)	---
4	Ball Bearing(Lower)	---
5	Stator Casing	FC200
6	Auto Cut	---
7	Mechanical Seal	---
8	Impeller	FC200
9	Pump Casing	FC200
10	Lifting Chain	SS400
11	Sliding Bracket	FC200
12	Connection	FC200
13	Guide Holder	SCS13

## CVL651



No.	Part Name	Material
1	Cable	VCT
2	Motor	Shaft=SUS420J2
3	Ball Bearing(Upper)	---
4	Ball Bearing(Lower)	---
5	Stator Casing	FC200
6	Auto Cut	---
7	Mechanical Seal	---
8	Oil Seal	N.B.R.
9	Impeller	FC200
10	Base Cover	FC200
11	Pump Casing	FC200
12	Stand	SS400
13	Lifting Chain	SS400
14	Sliding Bracket	FC200
15	Connection	FC200
16	Guide Holder	SS400

## CVC65



No.	Part Name	Material
1	Cable	VCT
2	Motor	Shaft=SUS420J2
3	Ball Bearing(Upper)	---
4	Ball Bearing(Lower)	---
5	Stator Casing	FC200
6	Auto Cut	---
7	Mechanical Seal	---
8	Impeller	FC200
9	Pump Casing	FC200
10	Lifting Chain	SS400
11	Sliding Bracket	FC200
12	Connection	FC200
13	Guide Holder	SCS13

★ Note: VCT: Polyvinyl-chloride sheathed cable SUS: Stainless steel SS: Mild steel FC: Gray iron casting

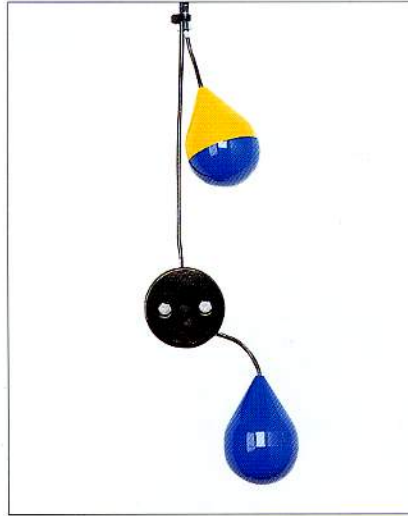
## Special Accessories

**Liquid Level Regulators** - All models are non-mercury structure for earth environment.

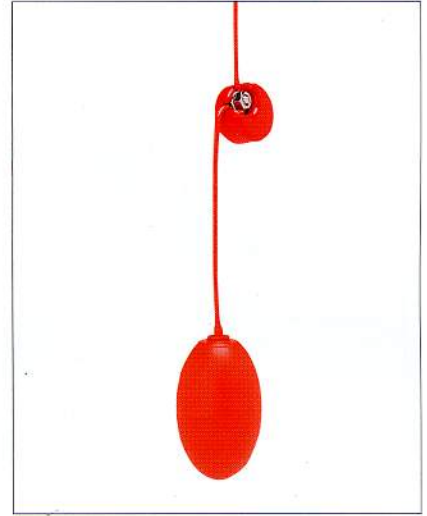
**LC** "Level Switch"



**MS** "Mini Switch"



**FV** "Oval Float"



### Features

**LC** Useful for drinking water, waste water and sewage containing the suspended solids. Hardly affected by corrosion or rust even if it is immersed in a corrosive liquid for a long time.

**MS** Useful for waste water and sewage containing a few suspended solids. The MS is available in two types, MS11 (single float) and MS21 (double float).

**FV** Useful for the fresh water as well as waste water not containing suspended solids. A single FV is able to control both the upper and lower liquid levels.

### Specifications

Model	LC12	MS11, MS21	FV11
Switch	Micro Switch	Lead Switch	Lead Switch
Specific gravity of liquid	0.95~1.15	0.95~1.10	0.95~1.10
Liquid Temp	0~60°C	0~40°C	0~60°C
Voltage	AC/DC30V or under		
Current	5A or under	0.5A or under	0.6A
Cable Length	6m, 13m, 20m, 30m, 40m, 50m (further cable extension at interval of 10m)		
Cable Type	0.75mm <sup>2</sup> ×3 cores, Flat Type	0.2mm <sup>2</sup> ×2 cores × φ 4.7mm	0.5mm <sup>2</sup> ×2 cores × φ 5.8mm
Weight (including cable)	1.2kg (6m cable)	0.6kg (MS11, 6m cable)	1.0kg (6m cable)
Material	Case	Polypropylene resin	ABS resin
	Cable	VCTFK	PVC resin (soft type)
	Others	Chain : SUS304	Sinker : Cast iron with PVC resin coating

Specifications and dimensions are subject to change without notice.

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