



# DVS

## Submersible Semi-vortex Pumps



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## Features and Applications



Model **DVS**  
Manual



Model **DVSA**  
Automatic

### ■ Features

- **Semi-Vortex impeller**  
The semi-vortex impeller offers non-clog operation and high pumping efficiency. Allows pumping of waste water containing foreign matter as large as 60-70% of discharge size.
- **Easy Maintenance**  
Due to semi-vortex design with no strainer or close tolerance suction cover, only 3 or 4 bolts need to be removed for quick and easy maintenance.
- **Double mechanical seal in oil chamber**  
An oil lubricated double mechanical seal with lower faces of hard silicon carbide provides strong and reliable shaft sealing
- **In built motor protection**  
Quick acting dual response overloads provides protection against overload, lock or open phase.
- **Automatic operation**  
All models up to 3.7 kW are available as automatic (A' type) pumps with inbuilt controls and float switches. No need for separate control panels, simply connect to power source.

### ■ Applications

- Ideal for waste water applications containing soft or fibrous solids.
- Industrial waste water drainage
- Septic effluent.
- Miscellaneous drainage.

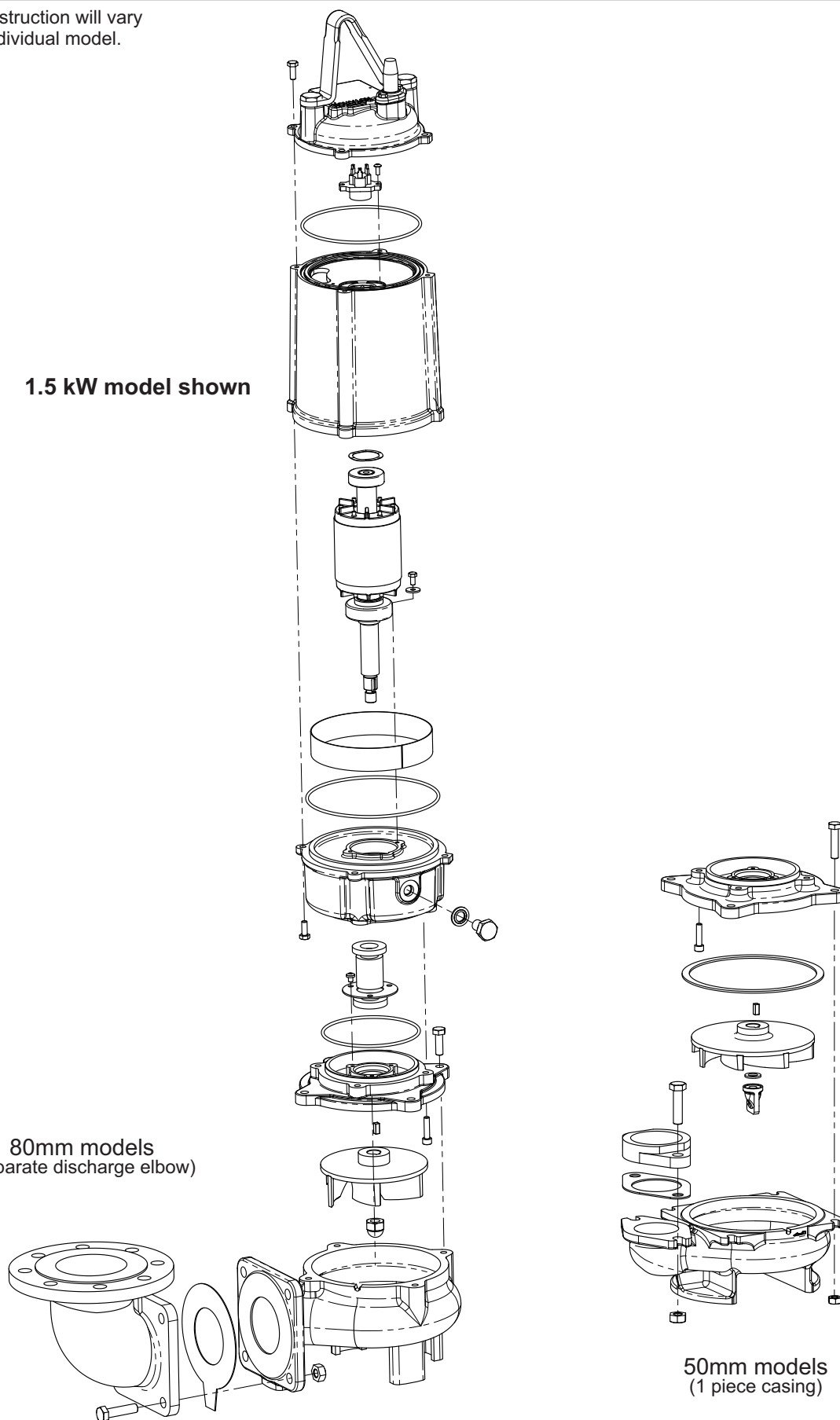
## Typical Exploded View

Note: Actual construction will vary depending on individual model.

1.5 kW model shown

80mm models  
(separate discharge elbow)

50mm models  
(1 piece casing)

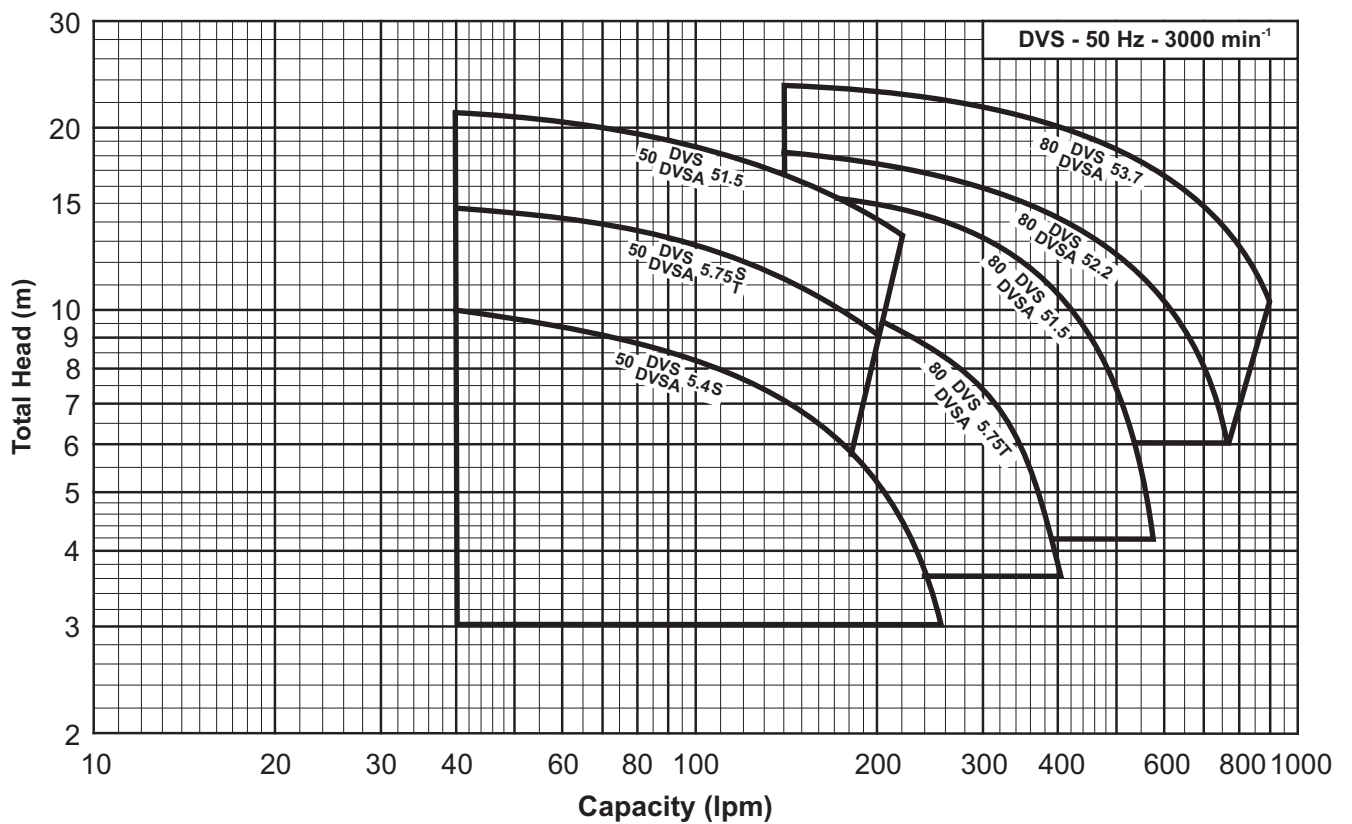


## Specifications

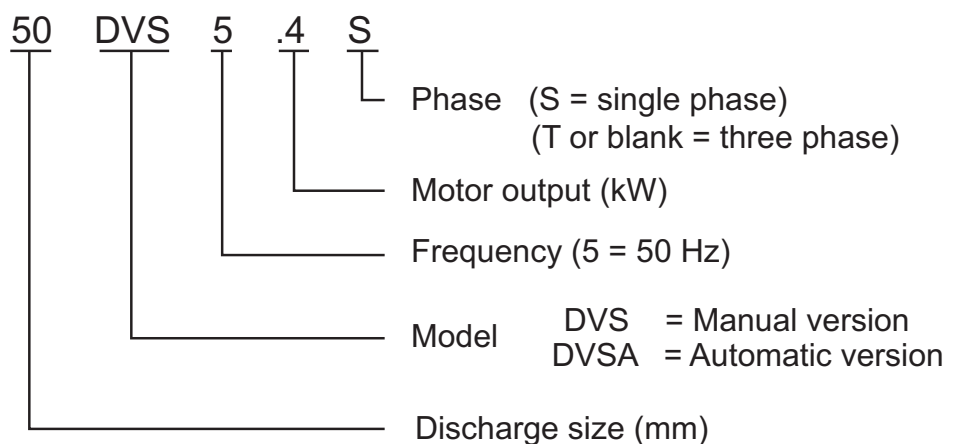
		Standard	Optional
Scope	Discharge	50 - 80 mm	
	Motor Power	0.4 - 0.75 kW (1ph.)      0.75- 3.7 kW (3ph.)	
	Performance	Capacity: 40 - 900 lpm Head: 3 - 24m.	
Liquid	Type	Water containing foreign matter.	
	Max. Temp.	40°C	
	Max. Solids	Refer to table below	
Submergence	Maximum	8 m. (2.2 - 3.7 kW)      4m. (0.4 - 1.5 kW).	
	Minimum	Refer to low water level (L.W.L) in dimensions.	
Construction	Impeller	Semi-Vortex	
	Mechanical Seal	Oil lubricated double mechanical seal, single spring.	
Materials	Casing	Cast Iron	
	Impeller	Cast Iron	
	Shaft	403 Stainless Steel	
	Motor Frame	Cast Iron	
	Fasteners	304 Stainless Steel	
	Mechanical Seal	Upper Faces: Carbon / Ceramic Lower Faces: Silicon Carbide / Silicon Carbide Lubricating Oil: Turbine oil VG32 (SAE 10W/20W)	
Motor	Type	Air filled dry submersible, IP58, Class F insulation.	
	Poles/Speed	2 pole / 2900 rpm	
	Applicable Voltages	220/230/240 Volt, 1 phase, 50 Hz 380/400/415 Volt, 3 phase, 50 Hz	
	Starting	DOL	
	Protection	In built overload protection	
	Bearings	Pre lubricated sealed ball bearings.	
Cable	Length	6m. (0.4 to 1.5 kW)      10m. (2.2 to 3.7 kW)	
Accessories	Flange	Screwed oval type (50Ø sizes) Discharge elbow with screwed companion flange. (80Ø sizes)	
			Quick Discharge Connector (QDC)

Solids Handling			
Model	- discharge	50 Ø	80 Ø
	- motor kW	All	0.75 ~ 1.5
Max. diameter of solids		32 mm	45 mm
Max. length of fibres		150~250 mm	200~320 mm
			245~350 mm

## Performance Chart



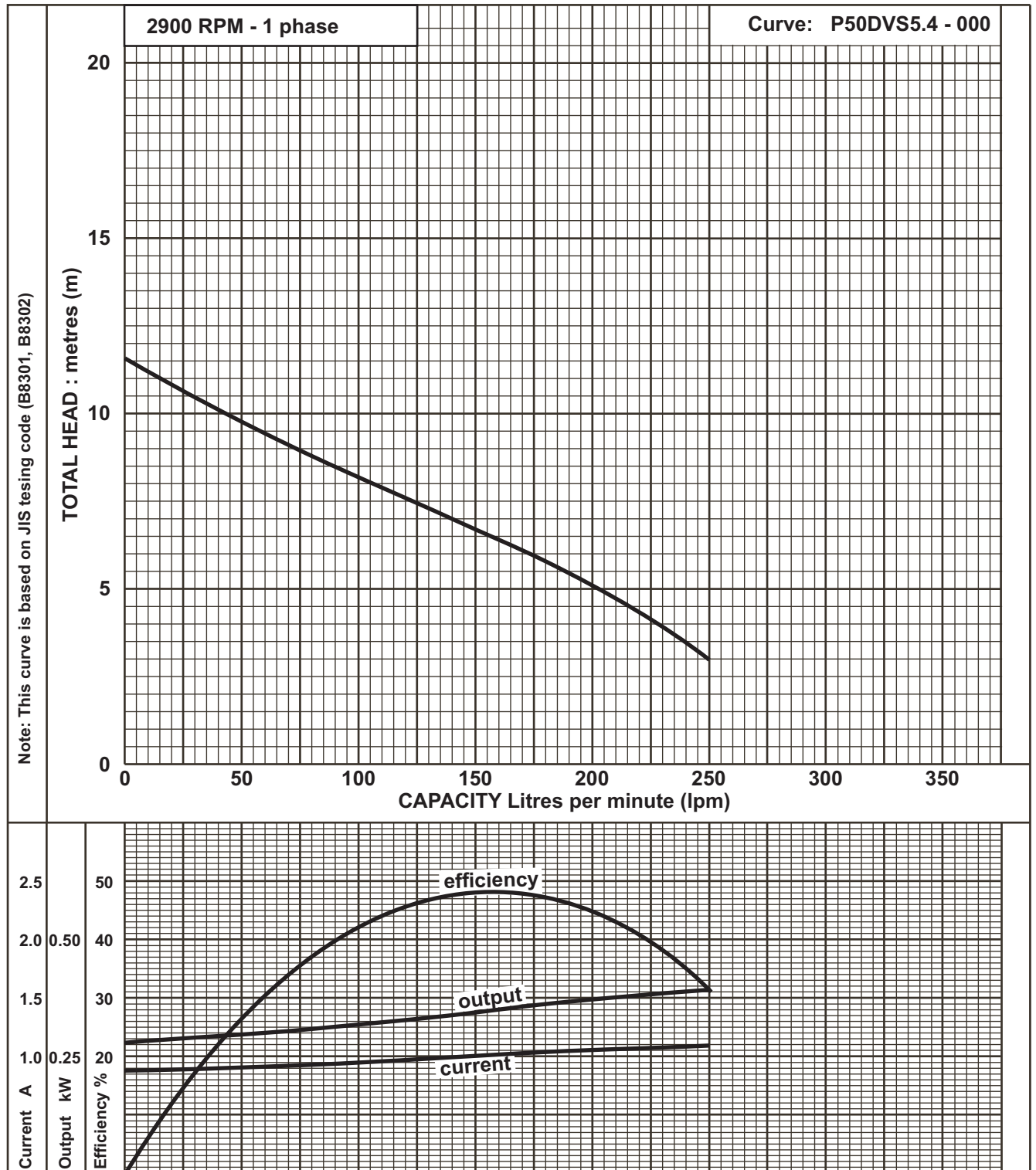
## Model code



## Performance Curve

## 50 DVS 5.4S

Applicable to models :- 50 DVS 5.4S, 50 DVSA 5.4S



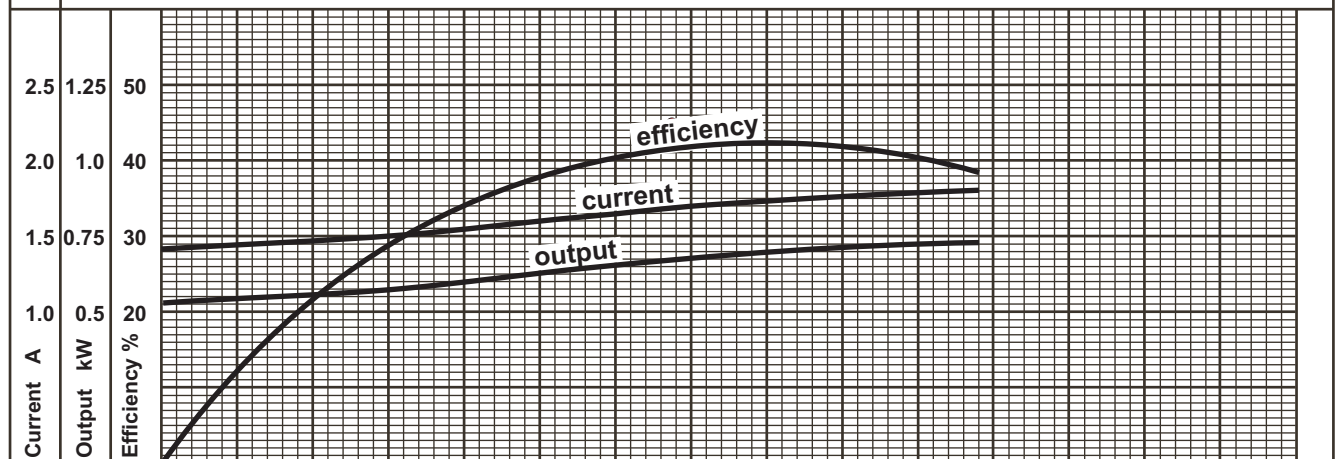
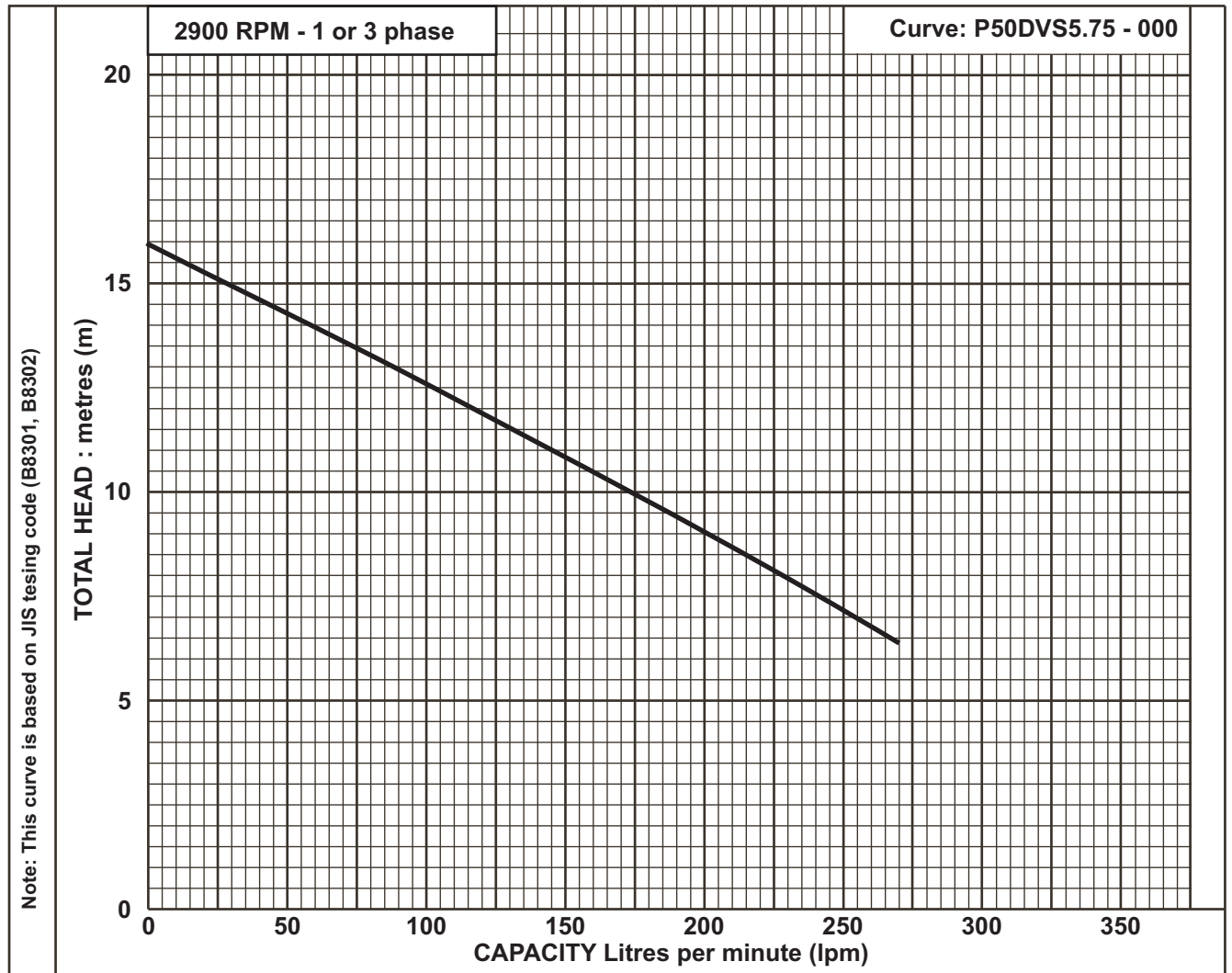
Test No.	Pump		
	Capacity lpm	Total Head m	Effic. %
1	0	11.6	0
2	80	8.8	37.1
3	140	7.0	47.2
4	180	5.8	46.8
5	250	3.0	31.1

Model:	<b>50 DVS 5.4S</b>	Frequency:	<b>50 Hz</b>
Discharge Ø:	<b>50 mm</b>	Output:	<b>0.4 kW</b>
Pump Rating	Capacity - lpm :		<b>250</b>
	Total Head - m		<b>3.0</b>
Motor Rating	<b>240 Volt</b>	<b>3.8 Amp</b>	<b>2 pole</b>
	Maker:	<b>SA</b>	Type: <b>Dry Type</b>

## Performance Curve

## 50 DVS 5.75

Applicable to models :- 50 DVS 5.75S, 50 DVS 5.75T, 50 DVSA 5.75S, 50 DVSA 5.75T



Test No.	Pump			Motor - 400 V - 3ph			
	Capacity lpm	Total Head m	Effic. %	Current A	Input kW	Effic. %	Output kW
1	0	16.0	0	1.420	.822	64.4	.529
2	80	13.3	30.1	1.500	.887	65.0	.576
3	140	11.2	39.4	1.630	.987	65.7	.648
4	180	9.8	42.0	1.710	1.037	65.9	.683
5	270	6.4	38.5	1.810	1.106	66.0	.730

Note: Electrical data only refers to 3 phase versions.

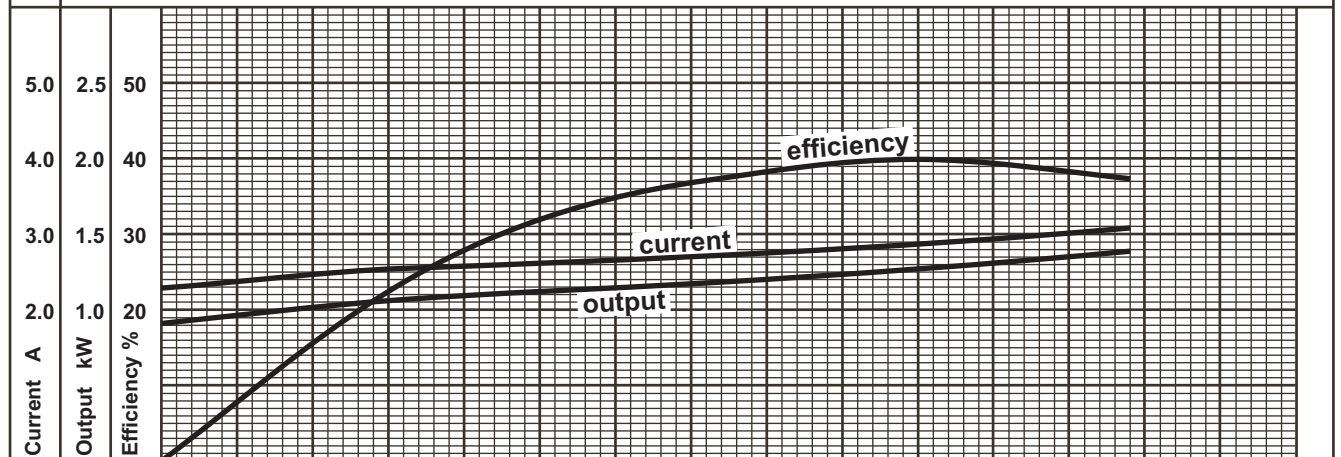
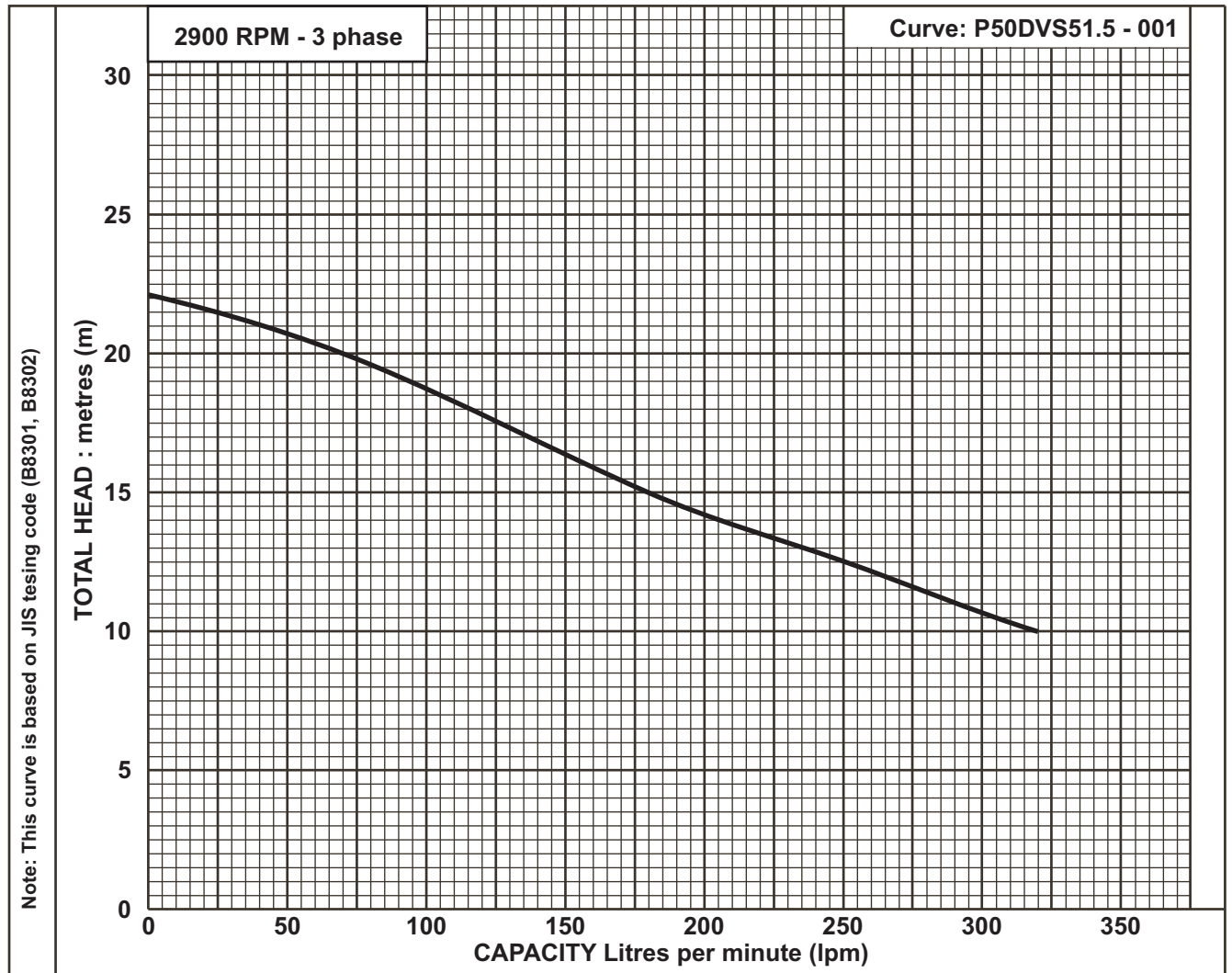
Model:	50 DVS 5.75	Frequency:	50 Hz
Discharge Ø:	50 mm	Output:	0.75 kW
Pump Rating	Capacity - lpm :	35	200
	Total Head - m	14.8	9.0
Motor Rating	400 Volt	1.9 Amp	2790 rpm
	Maker: Ebara	Type: Dry Type	



## Performance Curve

## 50 DVS 51.5

Applicable to models :- 50 DVS 51.5, 50 DVSA 51.5



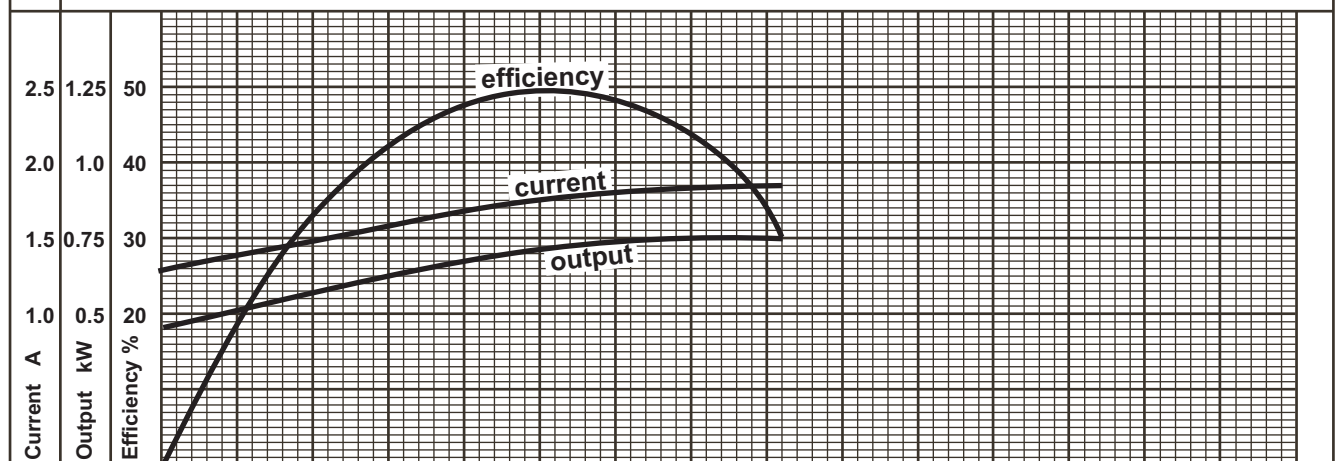
Test No.	Pump			Motor - 400 V - 3ph			
	Capacity lpm	Total Head m	Effic. %	Current A	Input kW	Effic. %	Output kW
1	0	22.1	0	2.300	1.369	66.5	.910
2	80	19.6	23.9	2.550	1.566	68.3	1.069
3	180	15.0	37.2	2.720	1.706	69.2	1.180
4	250	12.5	40.0	2.880	1.824	69.7	1.271
5	320	10.0	37.5	3.090	1.980	70.2	1.390

Model:	50 DVS 51.5	Frequency:	50 Hz
Discharge Ø:	50 mm	Output:	1.5 kW
Pump Rating	Capacity - lpm :	35	220
	Total Head - m	21.4	13.5
Motor Rating	400 Volt	3.3 Amp	2845 rpm
	Maker:	Ebara	Type: Dry Type

## Performance Curve

## 80 DVS 5.75

Applicable to models :- (65) 80 DVS 5.75, (65) 80 DVSA 5.75



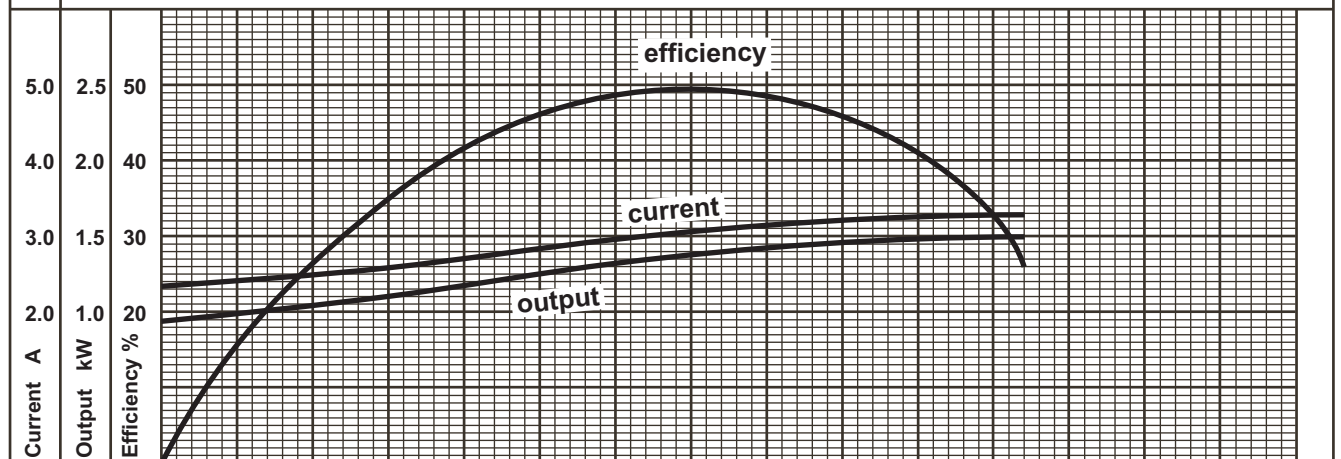
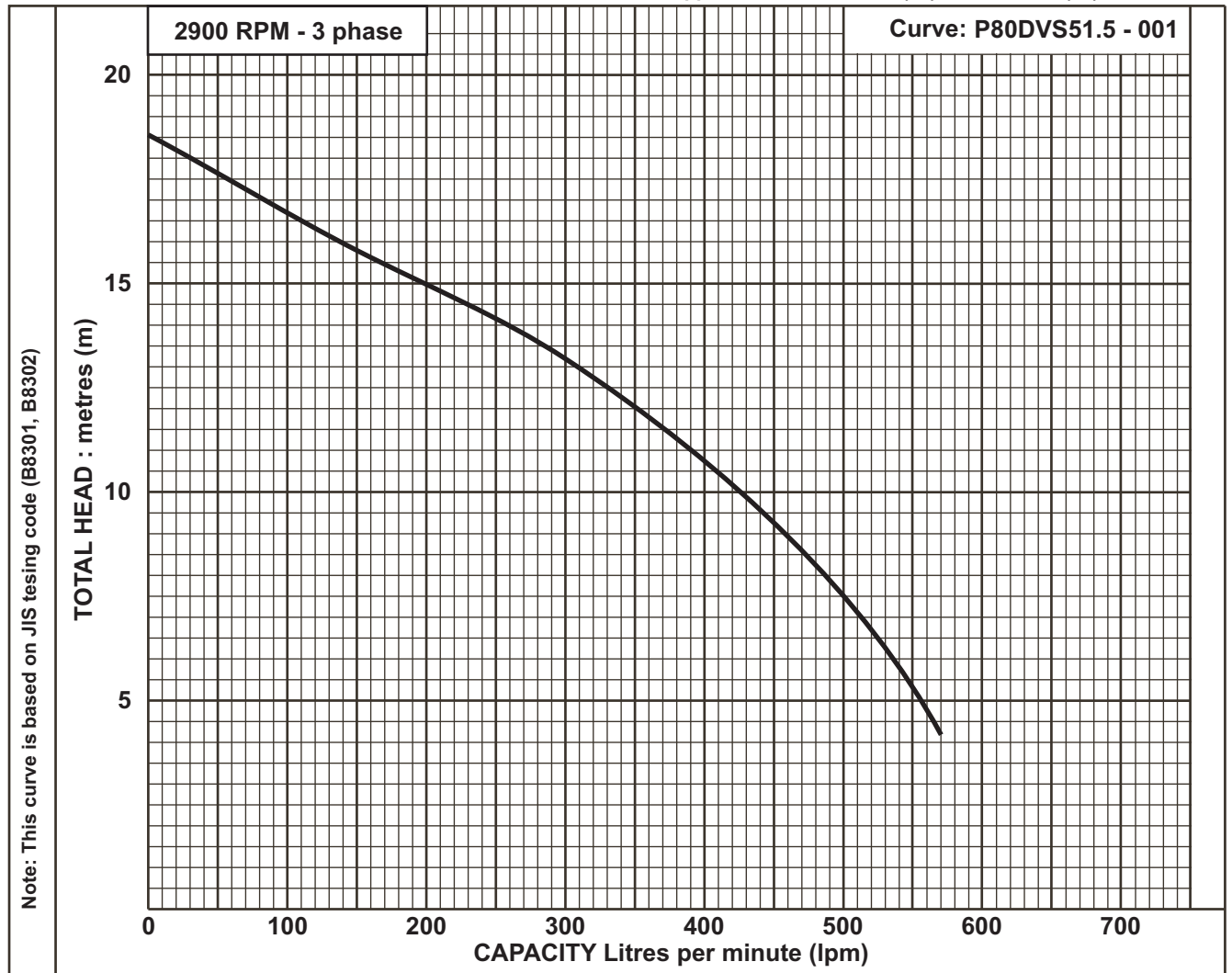
Test No.	Pump			Motor - 400 V - 3ph			
	Capacity lpm	Total Head m	Effic. %	Current A	Input kW	Effic. %	Output kW
1	0	13.2	0	1.290	.721	62.7	.452
2	100	11.5	33.1	1.480	.873	64.9	.566
3	230	9.1	49.0	1.730	1.057	65.9	.696
4	380	4.7	39.0	1.840	1.131	66.0	.746
5	410	3.4	30.2	1.850	1.137	66.0	.750

Model:	80 DVS5.75		Frequency:	50 Hz	
Discharge Ø:	80 mm		Output:	.75 kW	
Pump Rating	Capacity - lpm :	140	400		
	Total Head - m	10.9	3.8		
Motor Rating	400 Volt	1.9 Amp	2790 rpm		
	Maker: Ebara	Type: Dry Type			

## Performance Curve

## 80 DVS 51.5

Applicable to models :- (65) 80 DVS 51.5, (65) 80 DVSA 51.5



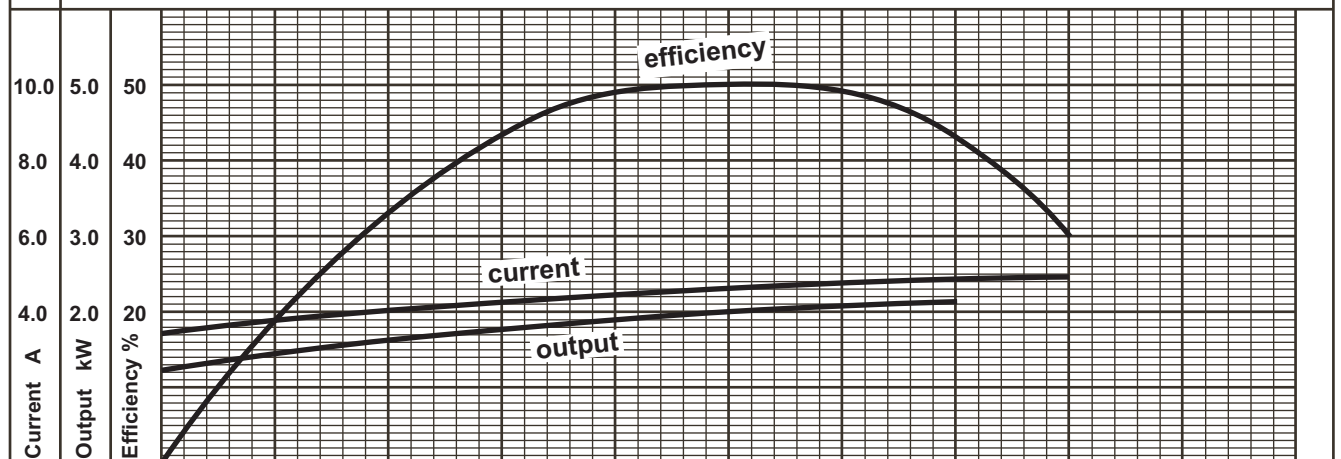
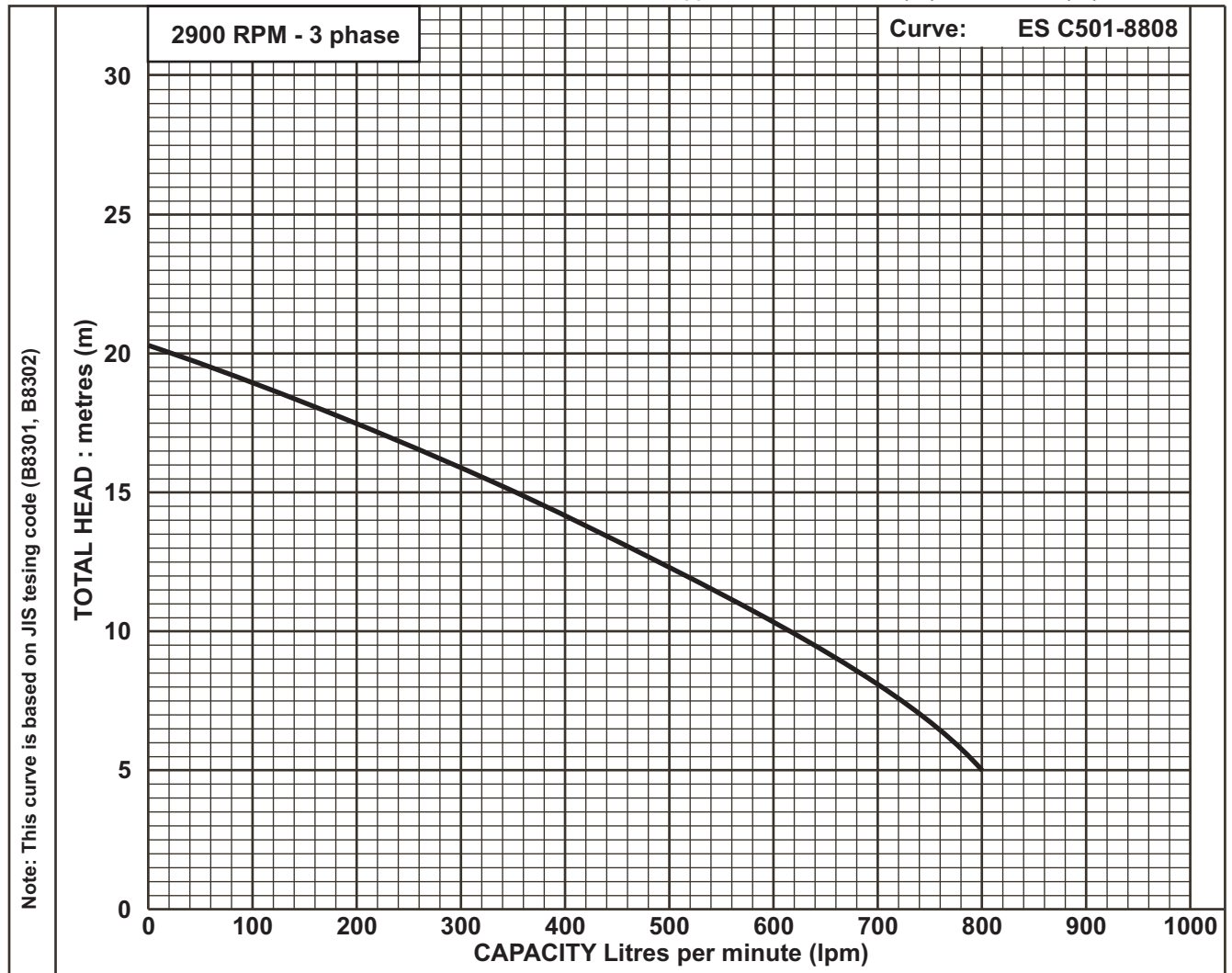
Test No.	Pump			Motor - 400 V - 3ph			
	Capacity lpm	Total Head m	Effic. %	Current A	Input kW	Effic. %	Output kW
1	0	18.6	0	2.340	1.405	66.9	.940
2	150	15.8	35.0	2.590	1.607	68.6	1.102
3	300	13.2	48.8	2.970	1.889	70.0	1.322
4	520	6.7	38.3	3.260	2.100	70.5	1.480
5	570	4.2	26.0	3.290	2.127	70.5	1.499

Model:	80 DVS51.5	Frequency:	50 Hz
Discharge Ø:	80 mm	Output:	1.5 kW
Pump Rating	Capacity - lpm :	140	570
	Total Head - m	15.9	4.2
Motor Rating	400 Volt	3.3 Amp	2845 rpm
	Maker: Ebara	Type: Dry Type	

## Performance Curve

## 80 DVS 52.2

Applicable to models :- (65) 80 DVS 52.2, (65) 80 DVSA 52.2



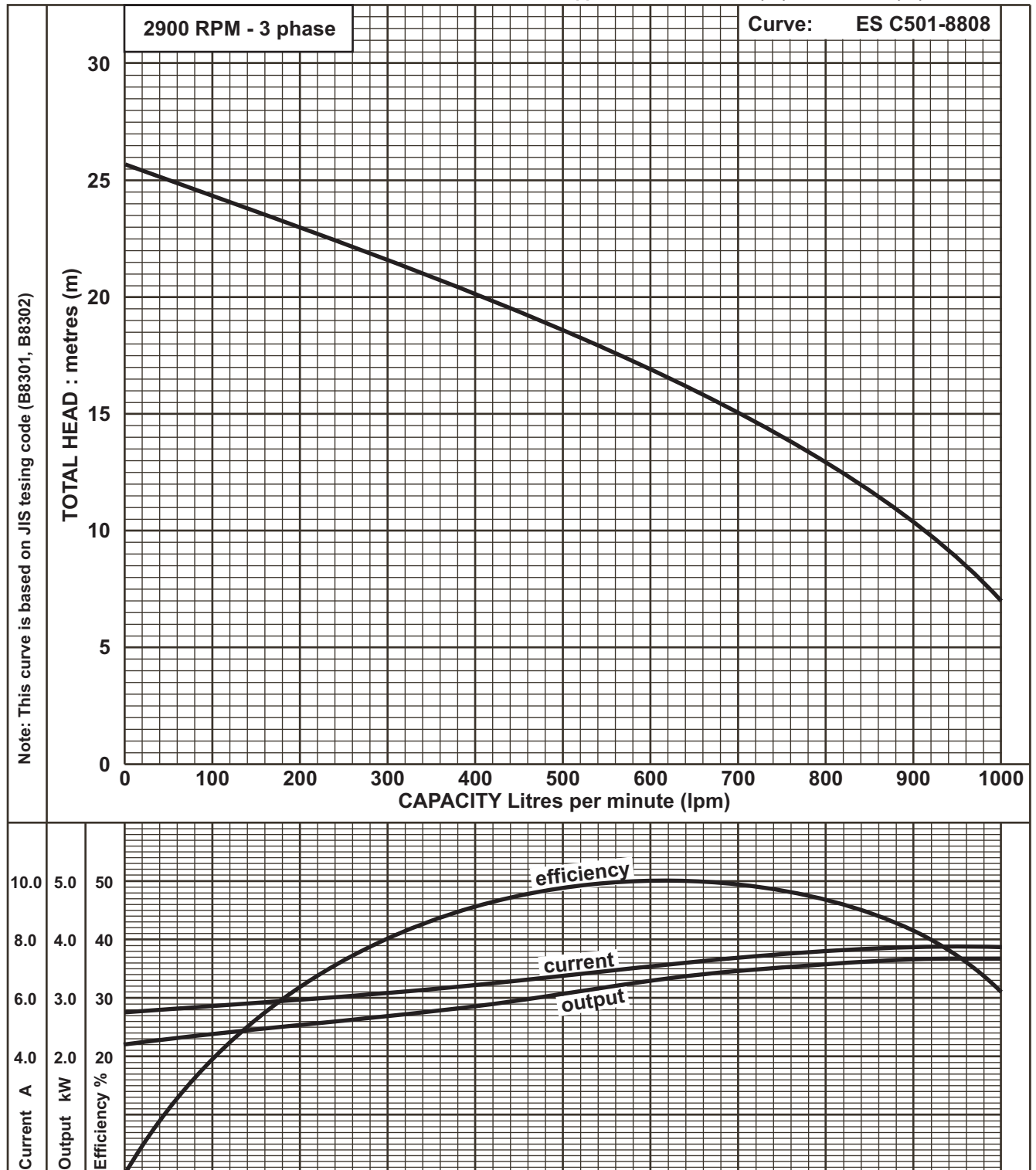
Test No.	Pump			Motor - 400 V - 3ph			
	Capacity lpm	Total Head m	Effic. %	Current A	Input kW	Effic. %	Output kW
1	0	20.3	0	3.45	1.874	65.7	1.231
2	330	15.4	45.8	4.31	2.558	70.6	1.806
3	500	12.3	50.1	4.63	2.793	71.5	1.997
4	700	8.1	43.1	4.89	2.978	72.0	2.144
5	800	5.0	30.1	4.93	3.009	72.0	2.166

Model:	80 DVS 52.2	Frequency:	50 Hz
Discharge Ø:	80 mm	Output:	2.2 kW
Pump Rating	Capacity - lpm :	140	770
	Total Head - m	18.3	6.0
Motor Rating	400 Volt	5.0 Amp	2860 rpm
	Maker: Ebara	Type: Dry Type	

## Performance Curve

## 80 DVS 53.7

Applicable to models :- (65) 80 DVS 53.7, (65) 80 DVSA 53.7



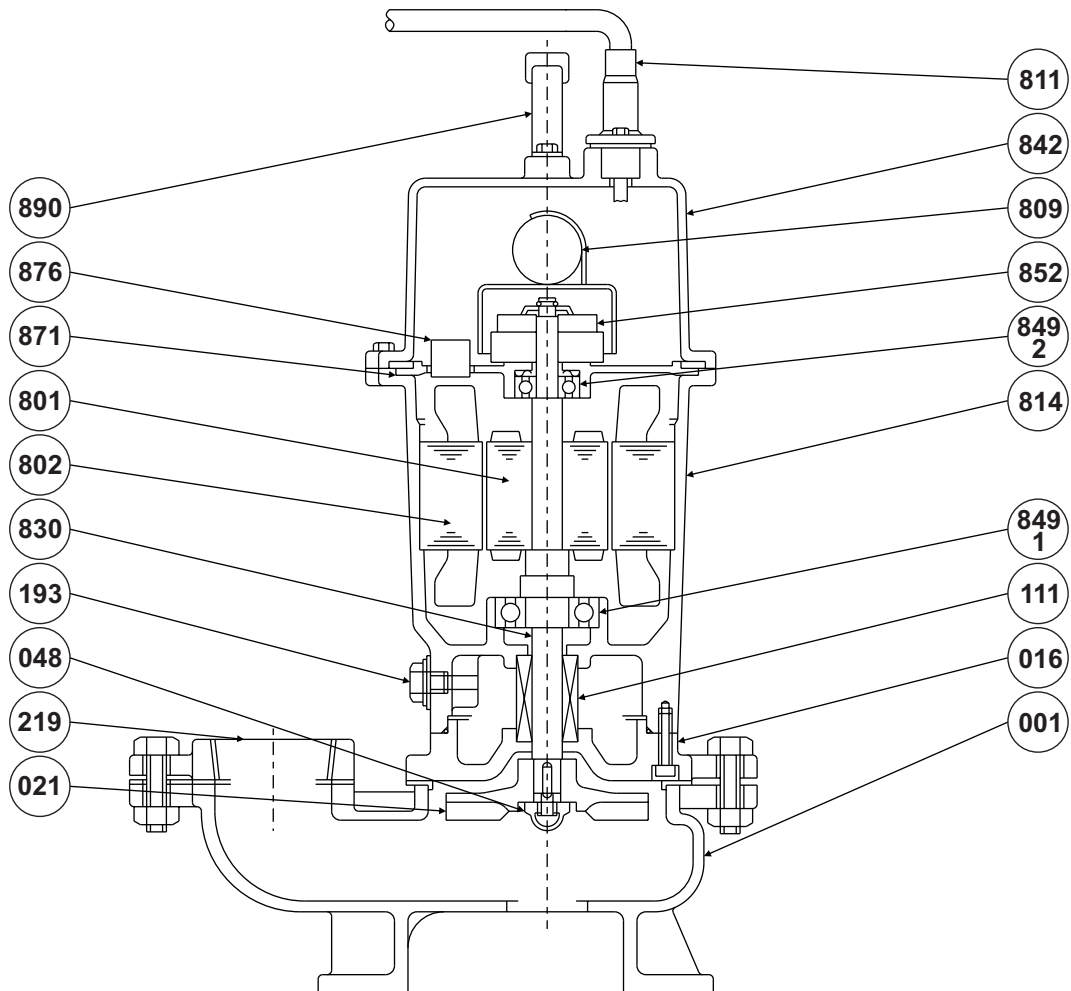
Test No.	Pump			Motor - 400 V - 3ph			
	Capacity lpm	Total Head m	Effic. %	Current A	Input kW	Effic. %	Output kW
1	0	25.7	0	5.520	3.006	73.3	2.203
2	400	20.1	45.7	6.430	3.776	75.8	2.862
3	700	15.0	49.4	7.390	4.498	77.1	3.468
4	900	10.4	41.6	7.730	4.734	77.4	3.664
5	1000	7.0	30.9	7.750	4.758	77.4	3.682

Model:	80 DVS 53.7	Frequency:	50 Hz
Discharge Ø:	80 mm	Output:	3.7 kW
Pump Rating	Capacity - lpm :	140	900
	Total Head - m	23.6	10.4
Motor Rating	400 Volt	7.8 Amp	2880 rpm
	Maker: Ebara	Type: Dry Type	

## Sectional View

■ Applicable Models - 50 DVS 5.4S, 5.75S

Single Phase - Manual Type



Item Number	Description	Material	Quantity per unit
001	Casing	FC200 Cast Iron	1
016	Mechanical Seal Cover	FC200 Cast Iron	1
021	Impeller	FC200 Cast Iron	1
048	Impeller Nut	SUS304 Stainless Steel	1
111	Mechanical Seal		1
193	Oil Plug	C3604 or SUS304 Brass or Stainless Steel	1
219	Companion Flange	FC200 Cast Iron	1
801	Rotor		1
802	Stator		1
809	Condensor		1

Item Number	Description	Material	Quantity per unit
811	Cable		1
814	Motor Frame	FC150 Cast Iron	1
830	Shaft #	SUS403 Stainless Steel	1
842	Motor Cover	FC150 Cast Iron	1
849-1	Ball Bearing		1
849-2	Ball Bearing		1
852	Starting Switch		1
871	Bearing Bracket	FC150 Cast iron	1
876	Auto Cut		1
890	Handle	SUS Stainless Steel	1

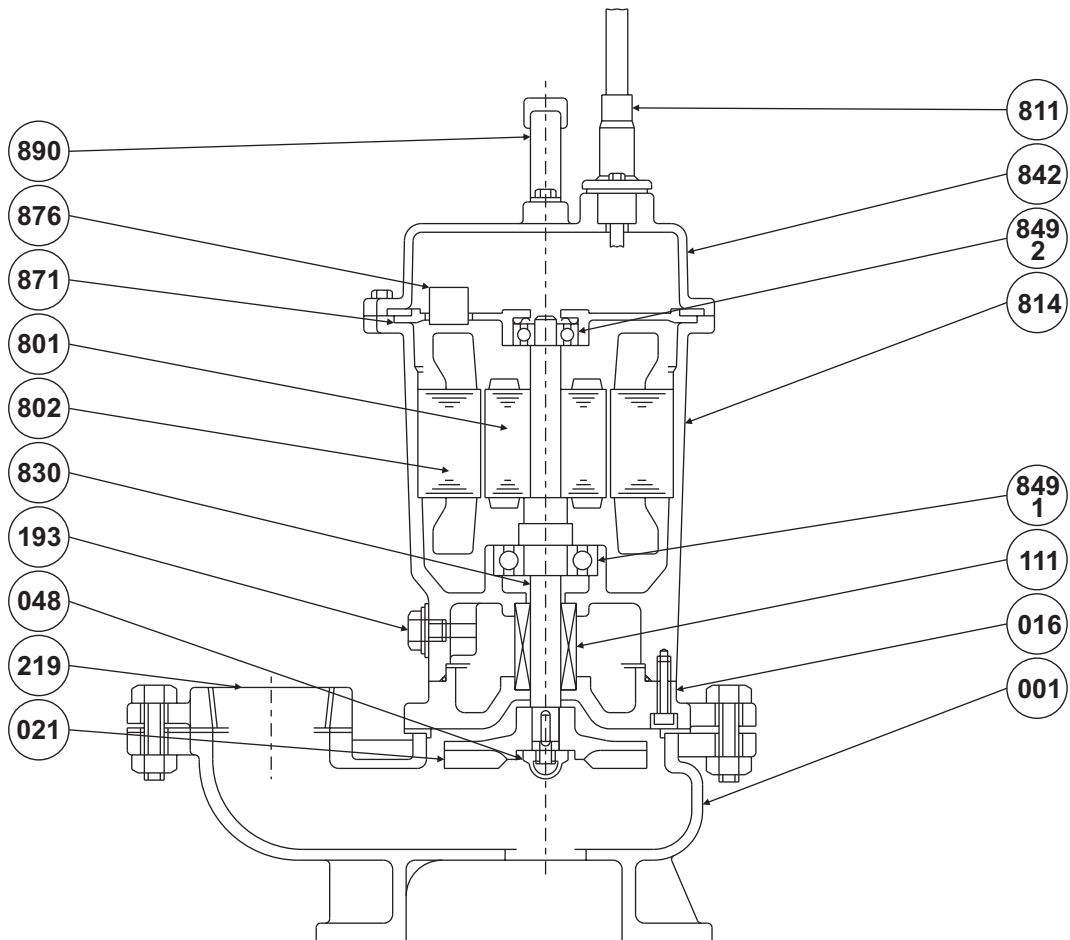
VDVS-031

# refers to pump side of shaft material

## Sectional View

■ Applicable Models - 50 DVS 5.75T

Three Phase - Manual Type



Item Number	Description	Material	Quantity per unit
001	Casing	FC200 Cast Iron	1
016	Mechanical Seal Cover	FC200 Cast Iron	1
021	Impeller	FC200 Cast iron	1
048	Impeller Nut	SUS304 Stainless Steel	1
111	Mechanical Seal		1
193	Oil Plug	C3604 or SUS304 Brass or Stainless Steel	1
219	Companion Flange	FC200 Cast Iron	1
801	Rotor		1
802	Stator		1

Item Number	Description	Material	Quantity per unit
811	Cable		1
814	Motor Frame	FC150 Cast Iron	1
830	Shaft #	SUS403 Stainless Steel	1
842	Motor Cover	FC150 Cast Iron	1
849-1	Ball Bearing		1
849-2	Ball Bearing		1
871	Bearing Bracket	FC150 Cast Iron	1
876	Auto Cut		1
890	Handle	SUS Stainless Steel	1

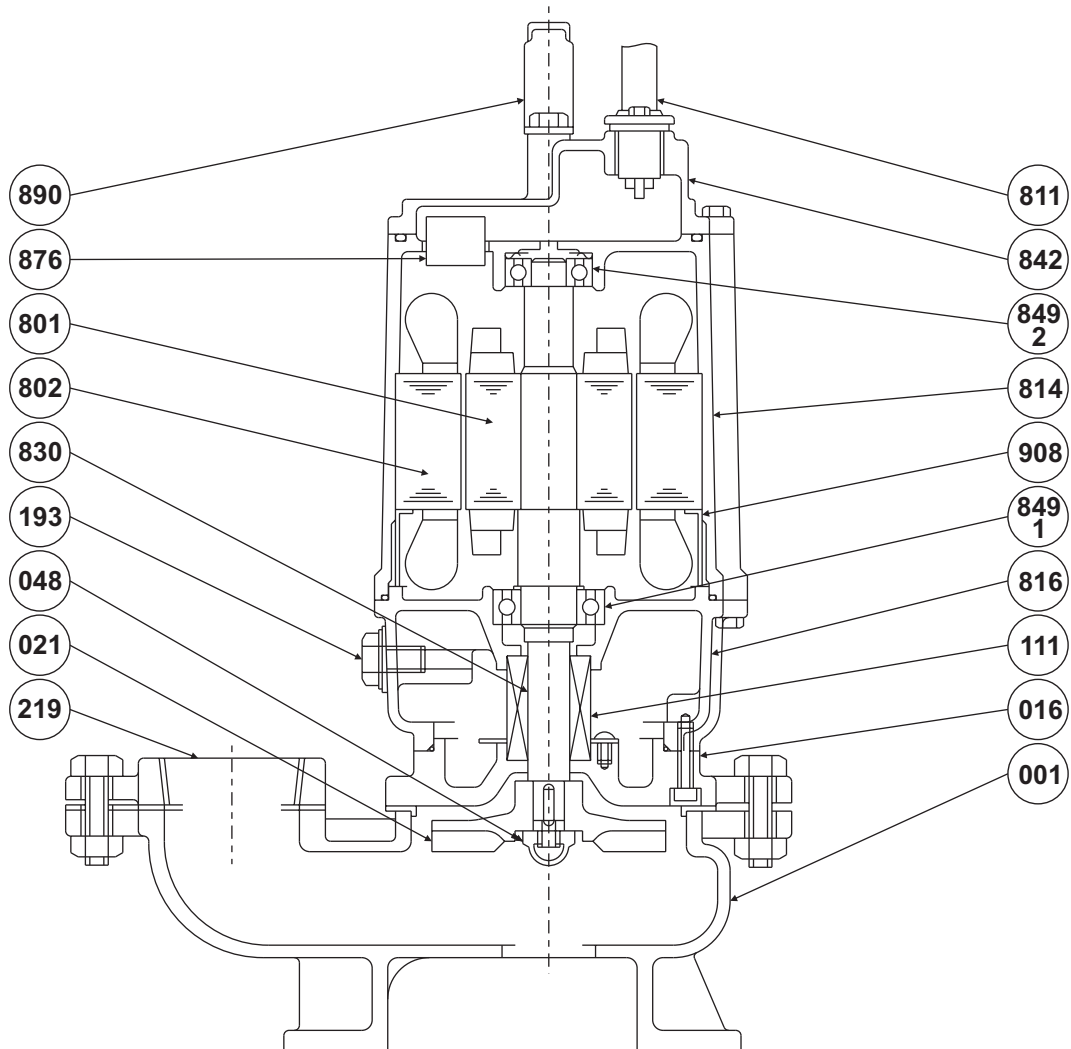
VDVS-041

# refers to pump side of shaft material

## Sectional View

■ Applicable Models - 50 DVS 51.5

Three Phase - Manual Type



Item Number	Description	Material	Quantity per unit
001	Casing	FC200 Cast Iron	1
016	Mechanical Seal Cover	FC200 Cast Iron	1
021	Impeller	FC200 Cast Iron	1
048	Impeller Nut	SUS304 Stainless Steel	1
111	Mechanical Seal		1
193	Oil Plug	SUS304 Stainless Steel	1
219	Companion Flange	FC200 Cast Iron	1
801	Rotor		1
802	Stator		1
811	Cable		1

Item Number	Description	Material	Quantity per unit
814	Motor Frame	FC150 Cast Iron	1
816	Lower Bracket	FC150 Cast Iron	1
830	Shaft #	SUS403 Stainless Steel	1
842	Motor Cover	FC150 Cast Iron	1
849-1	Ball Bearing		1
849-2	Ball Bearing		1
876	Auto Cut		1
890	Handle	SUS Stainless Steel	1
908	Spacer	SS Steel	1

# refers to pump side of shaft material

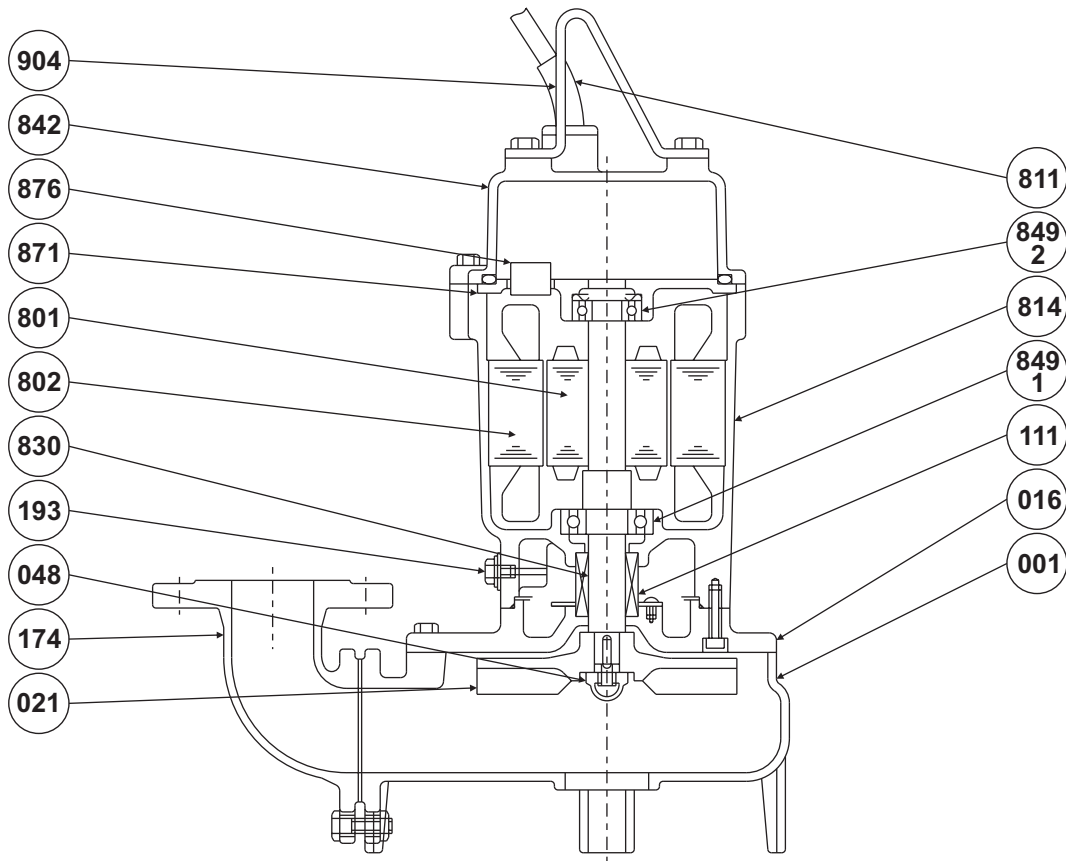
VDVS-051



## Sectional View

■ Applicable Models - 80 DVS 5.75T

Three Phase - Manual Type



Item Number	Description	Material	Quantity per unit
001	Casing	FC200 Cast Iron	1
016	Mechanical Seal Cover	FC200 Cast Iron	1
021	Impeller	FC200 Cast Iron	1
048	Impeller Nut	SUS304 Stainless Steel	1
111	Mechanical Seal		1
174	Discharge Bend	FC200 Cast Iron	1
193	Oil Plug	SUS304 Stainless Steel	1
801	Rotor		1
802	Stator		1

Item Number	Description	Material	Quantity per unit
811	Cable		1
814	Motor Frame	FC150 Cast Iron	1
830	Shaft #	SUS403 Stainless Steel	1
842	Motor Cover	FC150 Cast Iron	1
849-1	Ball Bearing		1
849-2	Ball Bearing		1
871	Bearing Bracket	FC150 Cast Iron	1
876	Auto Cut		1
904	Lifting Hanger	SUS Stainless Steel	1

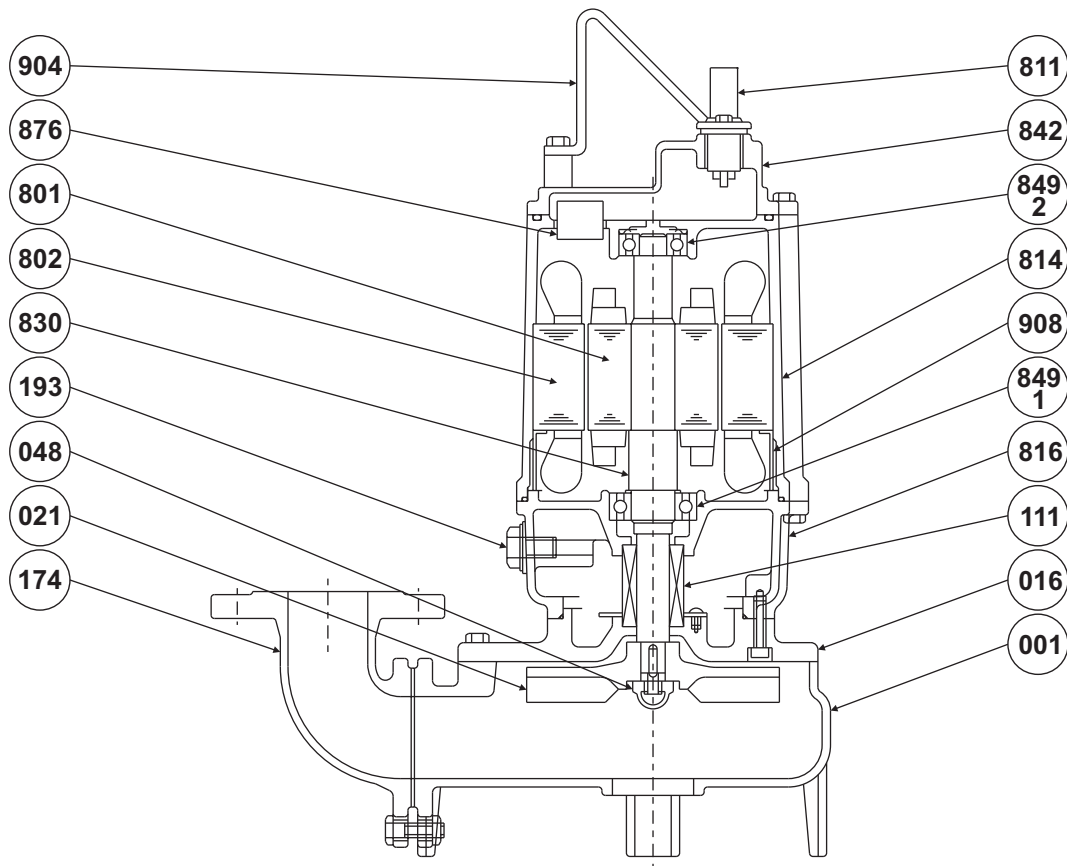
VDVS-061

# refers to pump side of shaft material

## Sectional View

■ Applicable Models - 80 DVS 51.5

Three Phase - Manual Type



Item Number	Description	Material	Quantity per unit
001	Casing	FC200 Cast Iron	1
016	Mechanical Seal Cover	FC200 Cast Iron	1
021	Impeller	FC200 Cast Iron	1
048	Impeller Nut	SUS304 Stainless Steel	1
111	Mechanical Seal		1
174	Discharge Bend	FC200 Cast Iron	1
193	Oil Plug	SUS304 Stainless Steel	1
801	Rotor		1
802	Stator		1
811	Cable		1

Item Number	Description	Material	Quantity per unit
814	Motor Frame	FC150 Cast Iron	1
816	Lower Bracket	FC150 Cast Iron	1
830	Shaft #	SUS403 Stainless Steel	1
842	Motor Cover	FC150 Cast Iron	1
849-1	Ball Bearing		1
849-2	Ball Bearing		1
876	Auto Cut		1
904	Lifting Hanger	SS Steel	1
908	Spacer	SS Steel	1

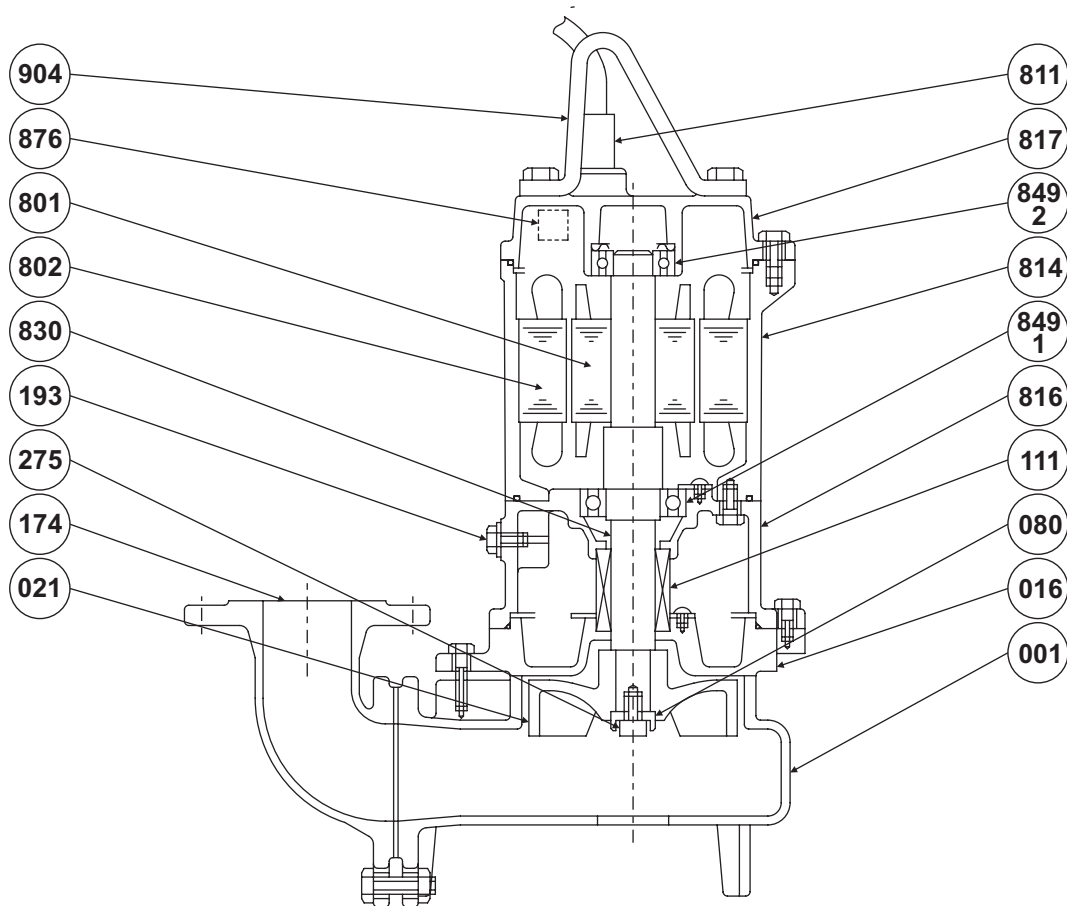
# refers to pump side of shaft material

VDVS-071

## Sectional View

■ Applicable Models - 80 DVS 52.2, 53.7

Three Phase - Manual Type



Item Number	Description	Material	Quantity per unit
001	Casing	FC200 Cast Iron	1
016	Mechanical Seal Cover	FC200 Cast Iron	1
021	Impeller	FC200 Cast Iron	1
080	Bushing	SS Steel	1
111	Mechanical Seal		1
174	Discharge Bend	FC200 Cast Iron	1
193	Oil Plug	SUS304 Stainless Steel	1
275	Impeller Bolt	SUS304 Stainless Steel	1
801	Rotor		1
802	Stator		1

Item Number	Description	Material	Quantity per unit
811	Cable		1
814	Motor Frame	FC150 Cast Iron	1
816	Lower Bracket	FC150 Cast Iron	1
817	Upper Bracket	FC150 Cast Iron	1
830	Shaft #	SUS403 Stainless Steel	1
849-1	Ball Bearing		1
849-2	Ball Bearing		1
876	Auto Cut		1
904	Lifting Hanger	SS Steel	1

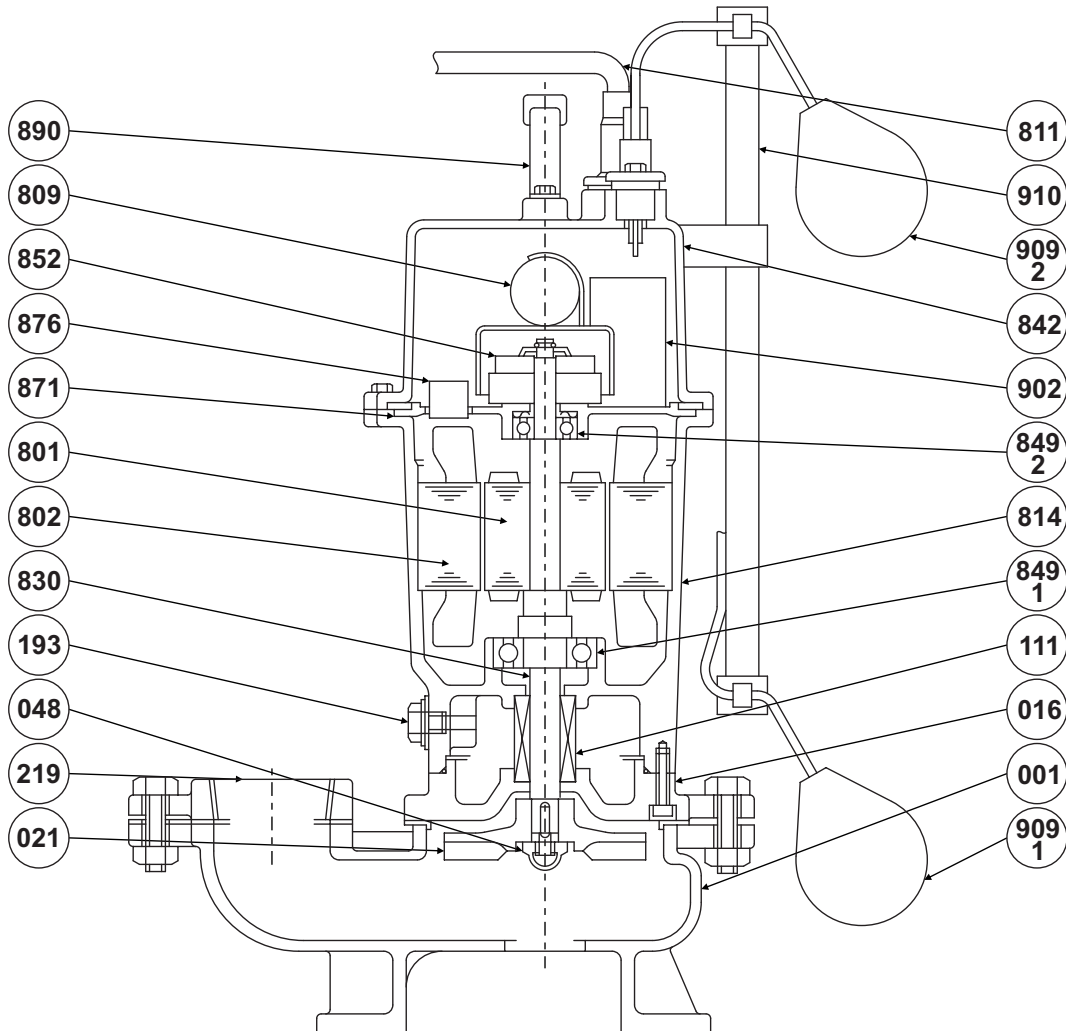
# refers to pump side of shaft material

VDVS-081

## Sectional View

■ Applicable Models - 50 DVSA 5.4S, 5.75S

Single Phase - Automatic Type



Item Number	Description	Material	Quantity per unit
001	Casing	FC200 Cast Iron	1
016	Mechanical Seal Cover	FC200 Cast Iron	1
021	Impeller	FC200 Cast Iron	1
048	Impeller Nut	SUS304 Stainless Steel	1
111	Mechanical Seal		1
193	Oil Plug	C3604 or SUS304 Brass or Stainless Steel	1
219	Companion Flange	FC200 Cast Iron	1
801	Rotor		1
802	Stator		1
809	Condensor		1
811	Cable		1
814	Motor Frame	FC150 Cast Iron	1

Item Number	Description	Material	Quantity per unit
830	Shaft #	SUS403 Stainless Steel	1
842	Motor Cover	FC150 Cast Iron	1
849-1	Ball Bearing		1
849-2	Ball Bearing		1
852	Starting Switch		1
871	Bearing Bracket	FC150 Cast Iron	1
876	Auto Cut		1
890	Handle	SUS Stainless Steel	1
902	Control Device		1
909-1	Float Switch		1
909-2	Float Switch		1
910	Float Pole	Plastic	1

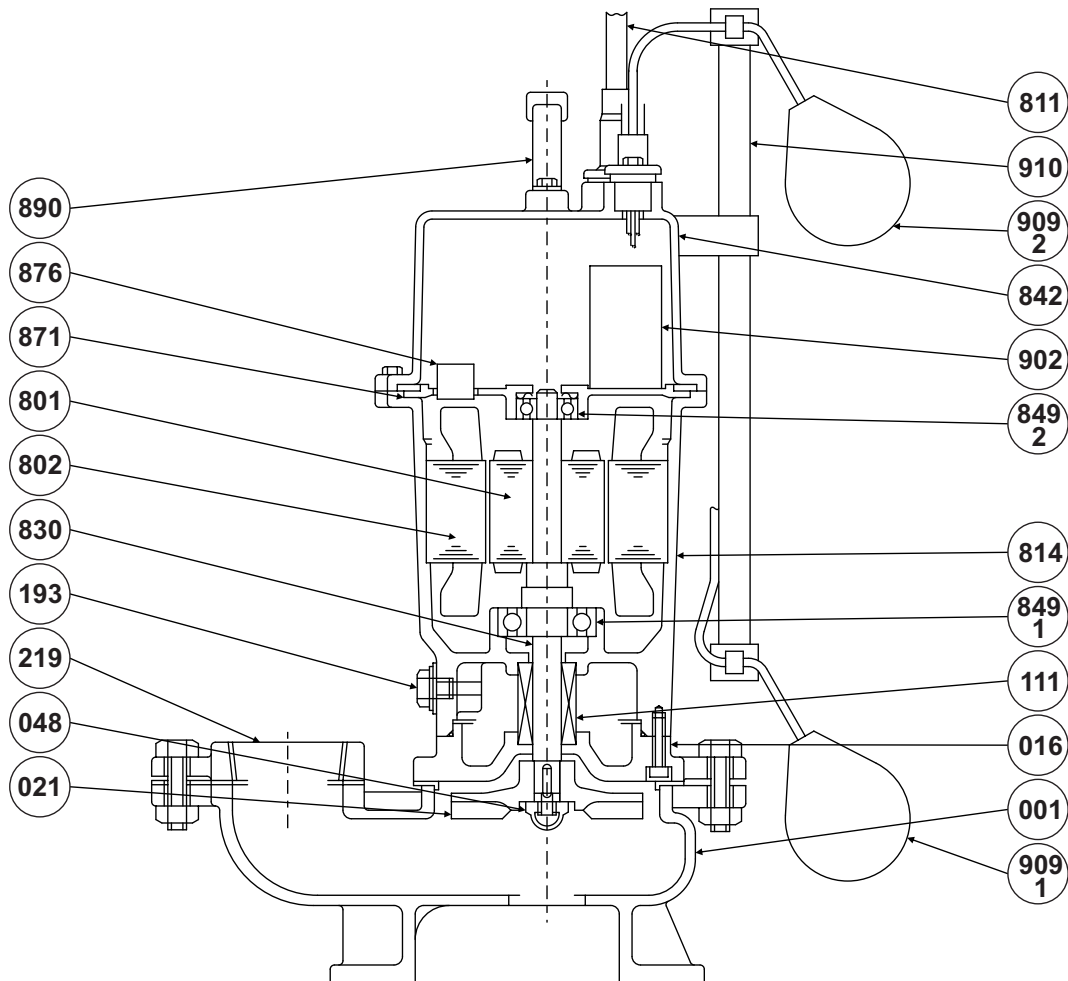
VDVSA-031

# refers to pump side of shaft material

## Sectional View

■ Applicable Models - 50 DVSA 5.75T

Three Phase - Automatic Type



Item Number	Description	Material	Quantity per unit
001	Casing	FC200 Cast Iron	1
016	Mechanical Seal Cover	FC200 Cast Iron	1
021	Impeller	FC200 Cast iron	1
048	Impeller Nut	SUS304 Stainless Steel	1
111	Mechanical Seal		1
193	Oil Plug	C3604 or SUS304 Brass or Stainless Steel	1
219	Companion Flange	FC200 Cast Iron	1
801	Rotor		1
802	Stator		1
811	Cable		1
814	Motor Frame	FC150 Cast Iron	1

Item Number	Description	Material	Quantity per unit
830	Shaft #	SUS403 Stainless Steel	1
842	Motor Cover	FC150 Cast Iron	1
849-1	Ball Bearing		1
849-2	Ball Bearing		1
871	Bearing Bracket	FC150 Cast Iron	1
876	Auto Cut		1
890	Handle	SUS Stainless Steel	1
902	Control Device		1
909-1	Float Switch		1
909-2	Float Switch		1
910	Float Pole	Plastic	1

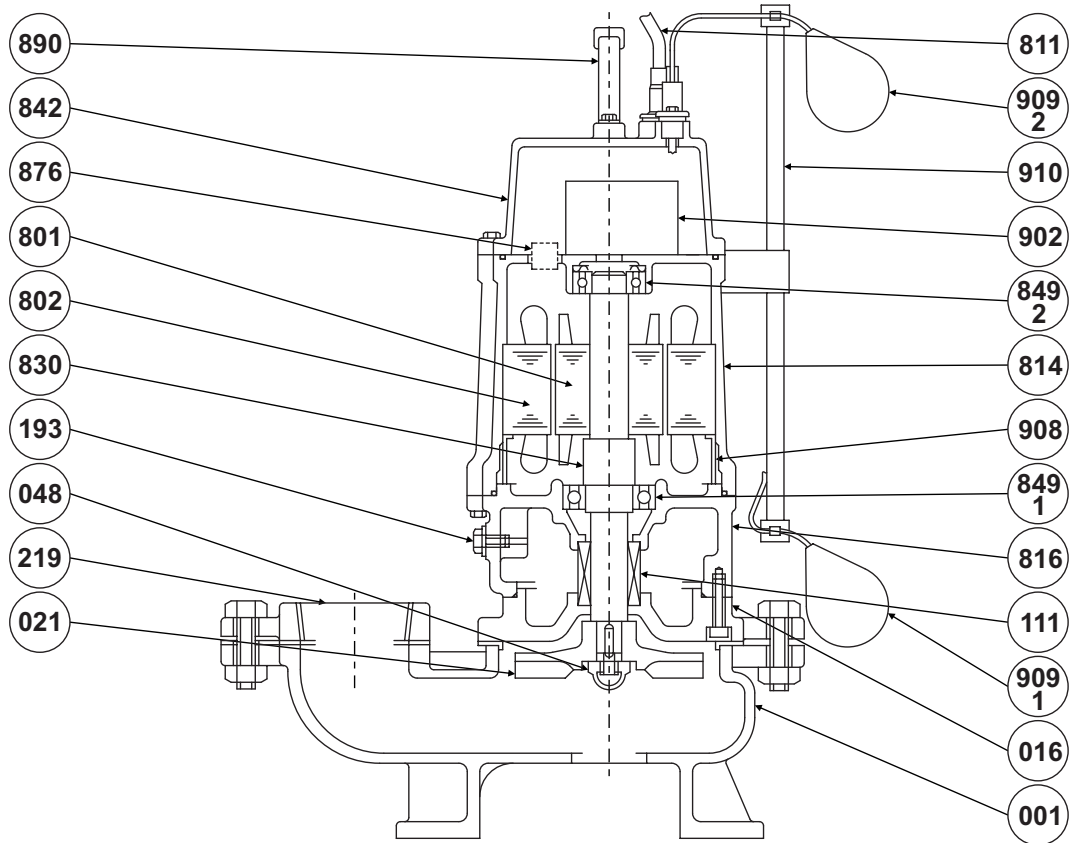
VDVSA-041

# refers to pump side of shaft material

## Sectional View

■ Applicable Models - 50 DVSA 51.5

Three Phase - Automatic Type



Item Number	Description	Material	Quantity per unit
001	Casing	FC200 Cast Iron	1
016	Mechanical Seal Cover	FC200 Cast Iron	1
021	Impeller	FC200 Cast Iron	1
048	Impeller Nut	SUS304 Stainless Steel	1
111	Mechanical Seal		1
193	Oil Plug	SUS304 Stainless Steel	1
219	Companion Flange	FC200 Cast Iron	1
801	Rotor		1
802	Stator		1
811	Cable		1
814	Motor Frame	FC150 Cast Iron	1
816	Lower Bracket	FC150 Cast Iron	1

Item Number	Description	Material	Quantity per unit
830	Shaft #	SUS403 Stainless Steel	1
842	Motor Cover	FC150 Cast Iron	1
849-1	Ball Bearing		1
849-2	Ball Bearing		1
876	Auto Cut		1
890	Handle	SUS Stainless Steel	1
908	Spacer	SS Steel	1
902	Control Device		1
909-1	Float Switch		1
909-2	Float Switch		1
910	Float Pole	Plastic	1

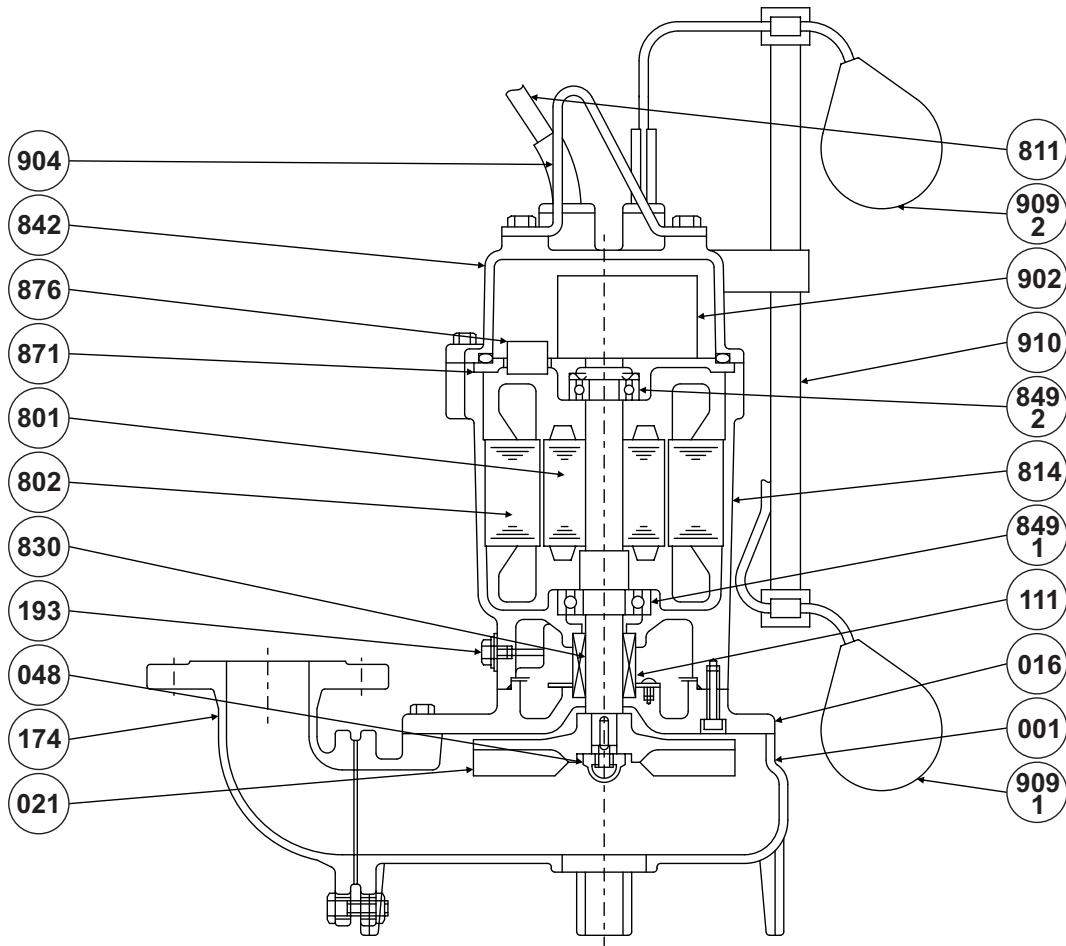
# refers to pump side of shaft material

VDVSA-051

## Sectional View

■ Applicable Models - 80 DVSA 5.75T

Three Phase - Automatic Type



Item Number	Description	Material	Quantity per unit
001	Casing	FC200 Cast Iron	1
016	Mechanical Seal Cover	FC200 Cast Iron	1
021	Impeller	FC200 Cast Iron	1
048	Impeller Nut	SUS304 Stainless Steel	1
111	Mechanical Seal		1
174	Discharge Bend	FC200 Cast Iron	1
193	Oil Plug	SUS304 Stainless Steel	1
801	Rotor		1
802	Stator		1
811	Cable		1
814	Motor Frame	FC150 Cast Iron	1

Item Number	Description	Material	Quantity per unit
830	Shaft #	SUS403 Stainless Steel	1
842	Motor Cover	FC150 Cast Iron	1
849-1	Ball Bearing		1
849-2	Ball Bearing		1
871	Bearing Bracket	FC150 Cast Iron	1
876	Auto Cut		1
904	Lifting Hanger	SUS Stainless Steel	1
902	Control Device		1
909-1	Float Switch		1
909-2	Float Switch		1
910	Float Pole	Plastic	1

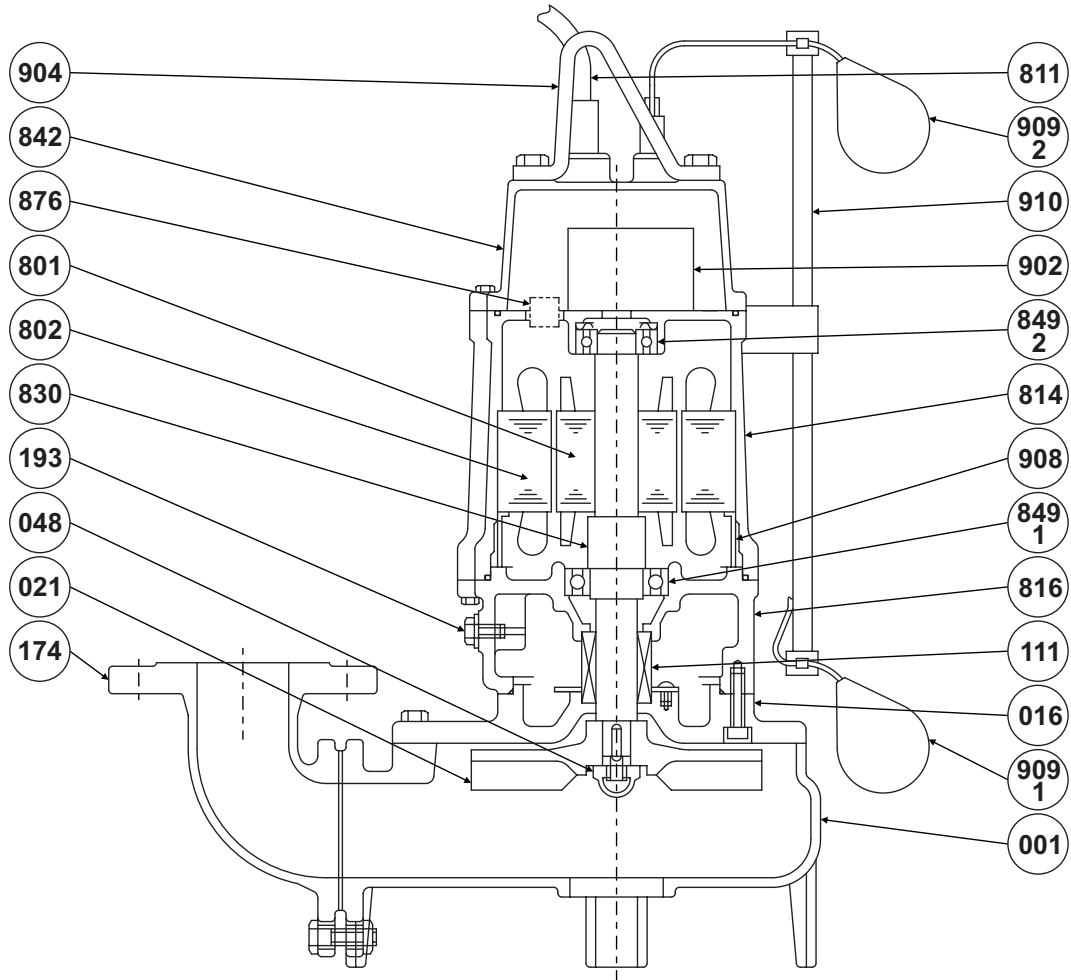
VDVSA-061

# refers to pump side of shaft material

## Sectional View

■ Applicable Models - 80 DVSA 51.5

Three Phase - Automatic Type



Item Number	Description	Material	Quantity per unit
001	Casing	FC200 Cast Iron	1
016	Mechanical Seal Cover	FC200 Cast Iron	1
021	Impeller	FC200 Cast Iron	1
048	Impeller Nut	SUS304 Stainless Steel	1
111	Mechanical Seal		1
174	Discharge Bend	FC200 Cast Iron	1
193	Oil Plug	SUS304 Stainless Steel	1
801	Rotor		1
802	Stator		1
811	Cable		1
814	Motor Frame	FC150 Cast Iron	1
816	Lower Bracket	FC150 Cast Iron	1

Item Number	Description	Material	Quantity per unit
830	Shaft #	SUS403 Stainless Steel	1
842	Motor Cover	FC150 Cast Iron	1
849-1	Ball Bearing		1
849-2	Ball Bearing		1
876	Auto Cut		1
902	Control Device		1
904	Lifting Hanger	SS Steel	1
908	Spacer	SS Steel	1
909-1	Float Switch		1
909-2	Float Switch		1
910	Float Pole	Plastic	1

# refers to pump side of shaft material

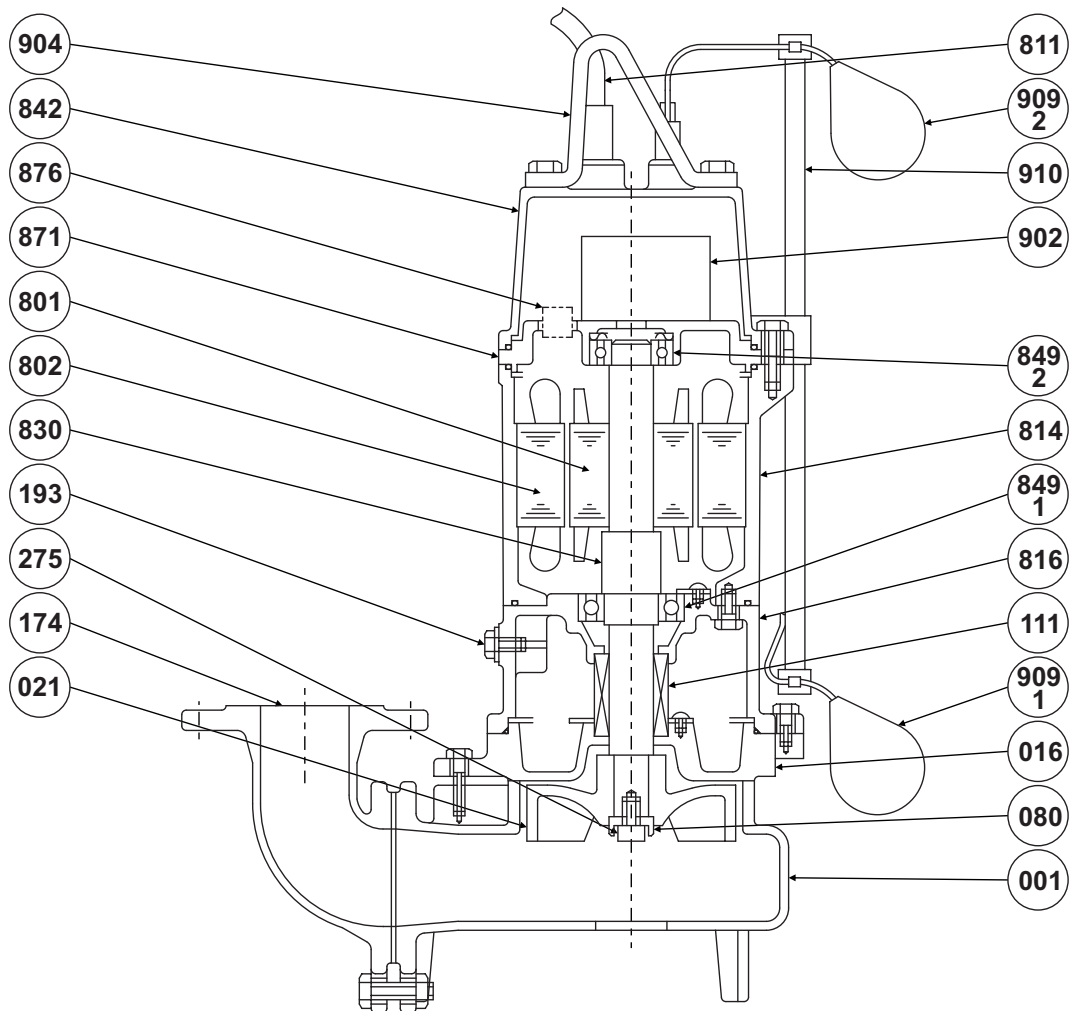
VDVSA-071



## Sectional View

■ Applicable Models - 80 DVSA 52.2, 53.7

Three Phase - Automatic Type



Item Number	Description	Material	Quantity per unit
001	Casing	FC200 Cast Iron	1
016	Mechanical Seal Cover	FC200 Cast Iron	1
021	Impeller	FC200 Cast Iron	1
080	Bushing	SS Steel	1
111	Mechanical Seal		1
174	Discharge Bend	FC200 Cast Iron	1
193	Oil Plug	SUS304 Stainless Steel	1
275	Impeller Bolt	SUS304 Stainless Steel	1
801	Rotor		1
802	Stator		1
811	Cable		1
814	Motor Frame	FC150 Cast Iron	1

Item Number	Description	Material	Quantity per unit
816	Lower Bracket	FC150 Cast Iron	1
817	Upper Bracket	FC150 Cast Iron	1
830	Shaft #	SUS403 Stainless Steel	1
849-1	Ball Bearing		1
849-2	Ball Bearing		1
876	Auto Cut		1
902	Control Device		1
904	Lifting Hanger	SS Steel	1
909-1	Float Switch		1
909-2	Float Switch		1
910	Float Pole	Plastic	1

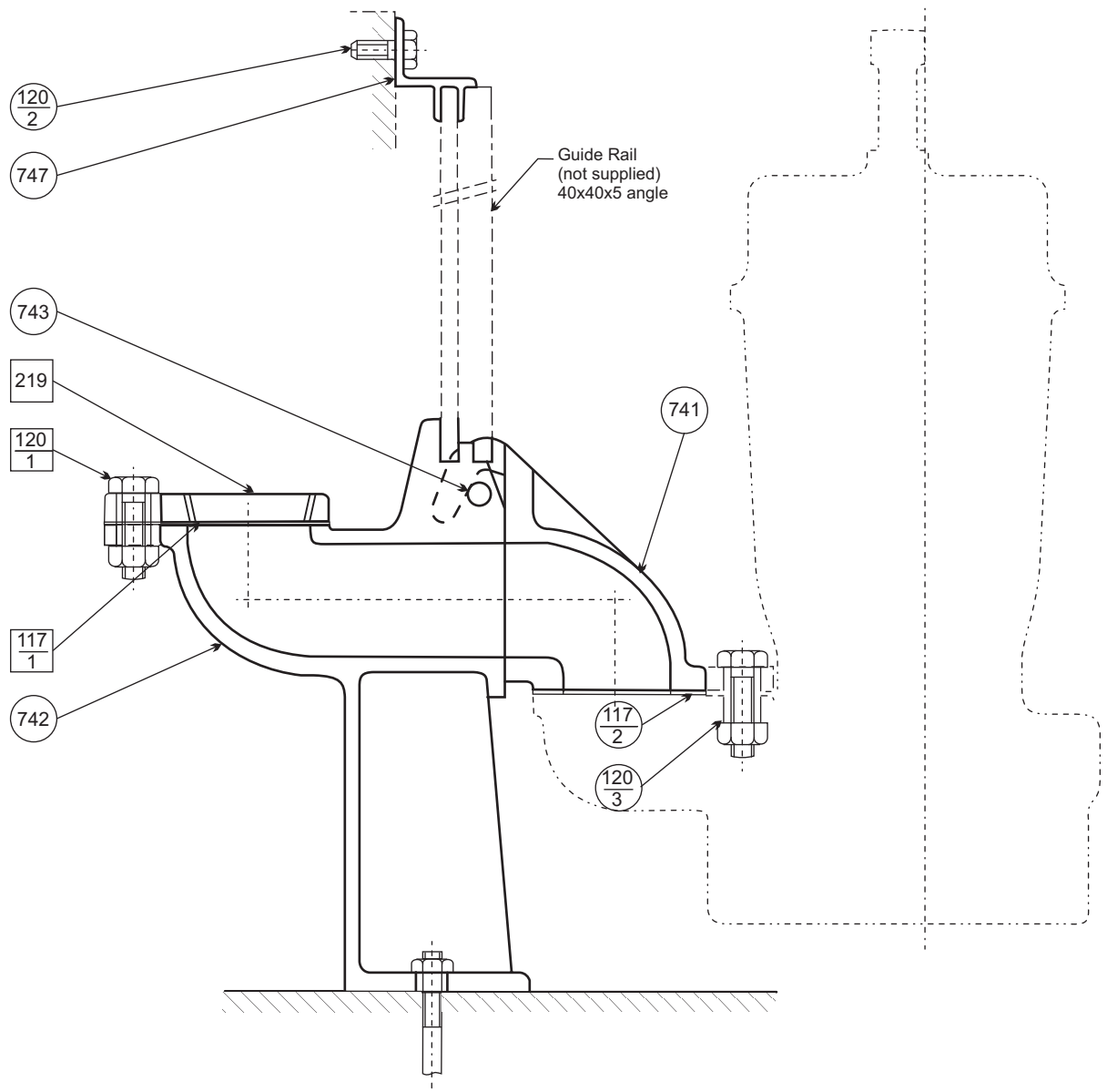
# refers to pump side of shaft material

VDVSA-081

## Sectional View

## Model LS 50 Quick Discharge Connector

Applicable for all 50mm DVS & DVSA models



Item Number	Description	Material	Quantity per unit
117-1	Gasket	NBR Rubber	1
117-2	Gasket	NBR Rubber	1
120-1	Bolt & Nut	SUS Stainless Steel	2
120-2	Bolt	SUS Stainless Steel	2
120-3	Bolt	SUS Stainless Steel	2

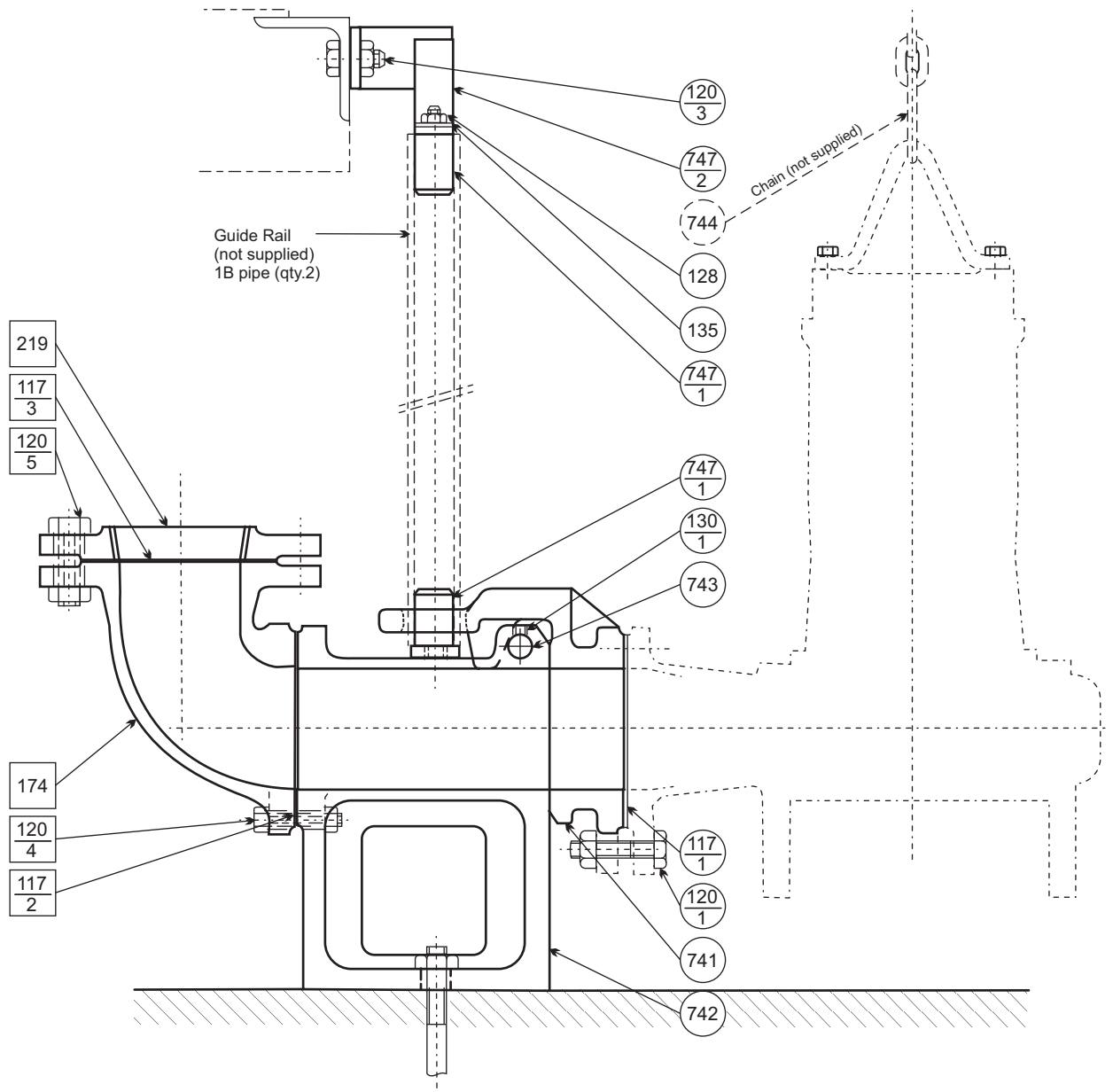
Item Number	Description	Material	Quantity per unit
219	Companion Flange	FC200 Cast iron	1
741	Sliding Guide	FC200 Cast iron	1
742	QDC Body	FC200 Cast iron	1
743	Suspension Bar	SUS Stainless Steel	1
747	Guide Support	SS Steel (Plated)	1

Note: Those parts with item number indicated in a  are supplied with the pump.

## Sectional View

## Model LM 65 Quick Discharge Connector

Applicable to all 80mm DVS & DVSA models



Item Number	Description	Material	Quantity per unit
117-1	Gasket	NBR Rubber	1
117-2	Gasket	NBR Rubber	1
117-3	Gasket	NBR Rubber	1
120-1	Bolt & Nut	SUS Stainless Steel	4
120-3	Bolt & Nut	SUS Stainless Steel	2
120-4	Bolt & Nut	SUS Stainless Steel	4
120-5	Bolt & Nut	SUS Stainless Steel	4or8
128	Nut	SUS Stainless Steel	2
130-1	Set Screw	SUS Stainless Steel	1

Item Number	Description	Material	Quantity per unit
135	Washer	SUS Stainless Steel	2
174	Discharge Bend	FC200 Cast iron	1
219	Companion Flange	FC200 Cast iron	1
741	Sliding Guide	FC200 Cast iron	1
742	QDC Body	FC200 Cast iron	1
743	Suspension Bar	SUS Stainless Steel	1
744	Chain	(Not supplied)	1
747-1	Guide Pin	S17C Steel	4
747-2	Guide Support	SS Steel	1

Note: Those parts with item number indicated in a  are supplied with the pump.

## Dimensions - Manual Models - DVS

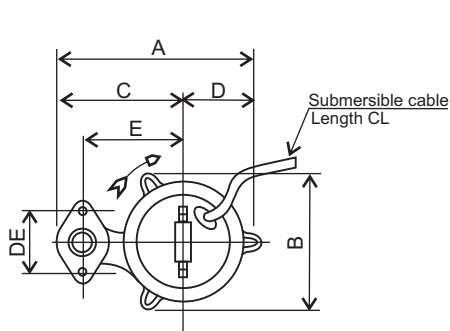


Figure 1

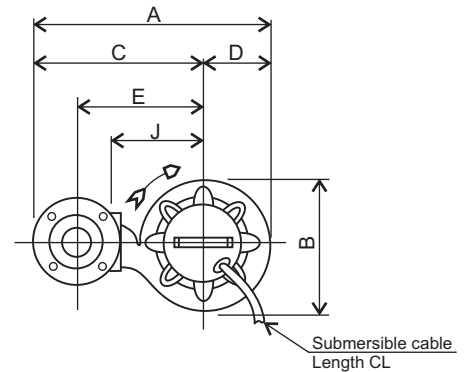
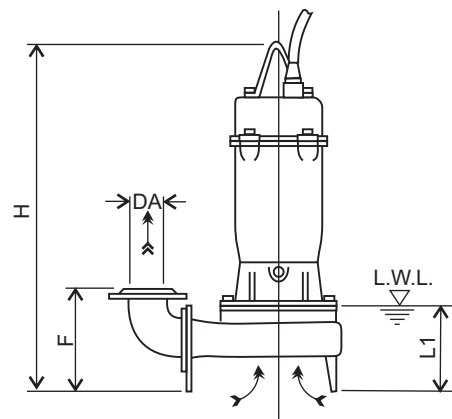
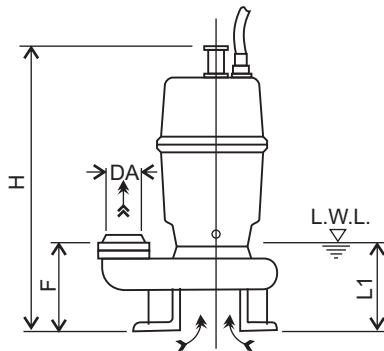


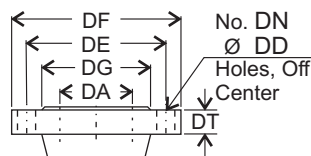
Figure 2



Note:

- 1/. L.W.L (Low Water Level)  
Is limited to 10 minutes operation at low water level.
- 2/. Is limited to 30 minutes operation with water level below top of motor.

### Discharge Flange Dimensions (JIS 10kgf/cm<sup>2</sup>)



DA	DE	DF	DG	DT	DN	DD
80	150	185	126	18	8	15

Size	Model	Fig.	Output KW	Phase	DA	A	B	C	D	E	F	H	DE	J	L1	CL	Weight
50	50 DVS 5.4S	1	0.4	1	PT2"	239	160	148	91	110	82	435	96	-	105	6 m	18 kg
	50 DVS 5.75S	1	0.75	1	PT2"	249	171	163	86	125	82	497	96	-	105	6 m	26 kg
	50 DVS 5.75T	1	0.75	3	PT2"	249	171	163	86	125	82	397	96	-	105	6 m	19 kg
	50 DVS 51.5	1	1.5	3	PT2"	249	171	163	86	125	82	439	96	-	105	6 m	27 kg
80	80 DVS 5.75T	2	0.75	3	80	411	195	313	98	220	183	467	-	145	125	6 m	26 kg
	80 DVS 51.5	2	1.5	3	80	411	195	313	98	220	183	519	-	145	125	6 m	35 kg
	80 DVS 52.2	2	2.2	3	80	442	227	328	114	235	206	643	-	160	155	10m	51 kg
	80 DVS 53.7	2	3.7	3	80	442	227	328	114	235	206	643	-	160	155	10m	60 kg

Units: mm unless otherwise specified

## Dimensions - Automatic Models - DVSA

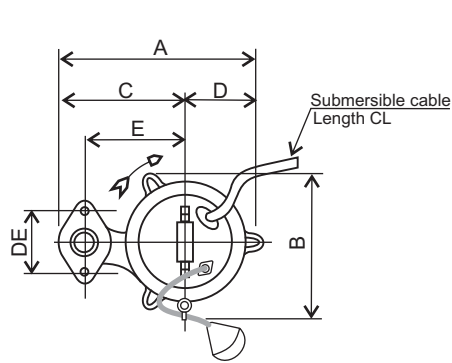


Figure 1

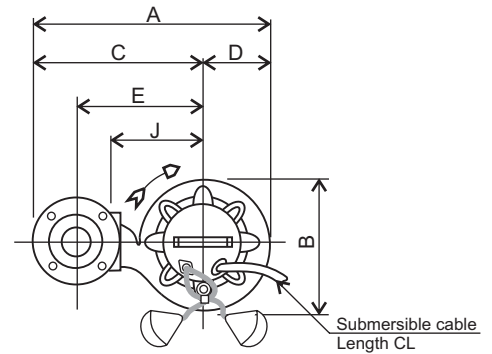
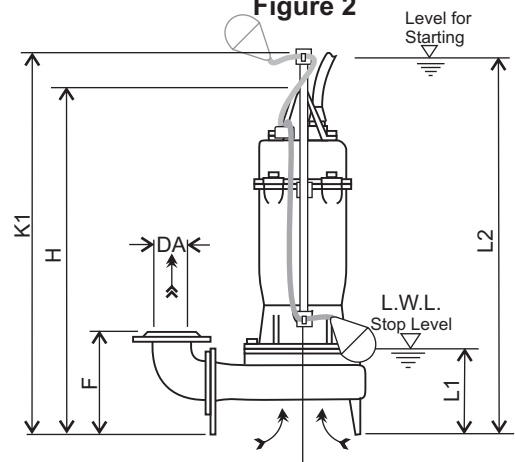
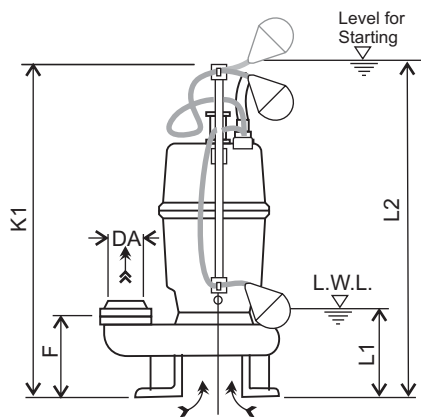


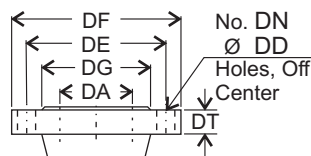
Figure 2



Note:

- 1/. L.W.L (Low Water Level)  
Is limited to 10 minutes operation at low water level.
- 2/. Is limited to 30 minutes operation with water level below top of motor.

### Discharge Flange Dimensions (JIS 10kgf/cm<sup>2</sup>)



DA	DE	DF	DG	DT	DN	DD
80	150	185	126	18	8	15

Size	Model	Fig.	Output kW	Phase	DA	A	B	C	D	E	F	H	DE	J	K1	L1	L2	CL	Weight
50	50 DVSA 5.4S	1	0.4	1	PT2"	239	183	148	91	110	82	-	96	-	530	150	490	6 m	20 kg
	50 DVSA 5.75S	1	0.75	1	PT2"	249	197	163	86	125	82	-	96	-	530	150	490	6 m	27 kg
	50 DVSA 5.75T	1	0.75	3	PT2"	249	197	163	86	125	82	-	96	-	530	150	490	6 m	20 kg
	50 DVSA 51.5	1	1.5	3	PT2"	249	201	163	86	125	82	-	96	-	530	150	490	6 m	30 kg
80	80 DVSA 5.75T	2	0.75	3	80	411	206	313	98	220	183	504	-	145	530	150	490	6 m	27 kg
	80 DVSA 51.5	2	1.5	3	80	411	210	313	98	220	183	593	-	145	530	150	490	6 m	36 kg
	80 DVSA 52.2	2	2.2	3	80	442	237	328	114	235	206	717	-	160	770	250	730	10m	52 kg
	80 DVSA 53.7	2	3.7	3	80	442	237	328	114	235	206	717	-	160	770	250	730	10m	61 kg

Units: mm unless otherwise specified

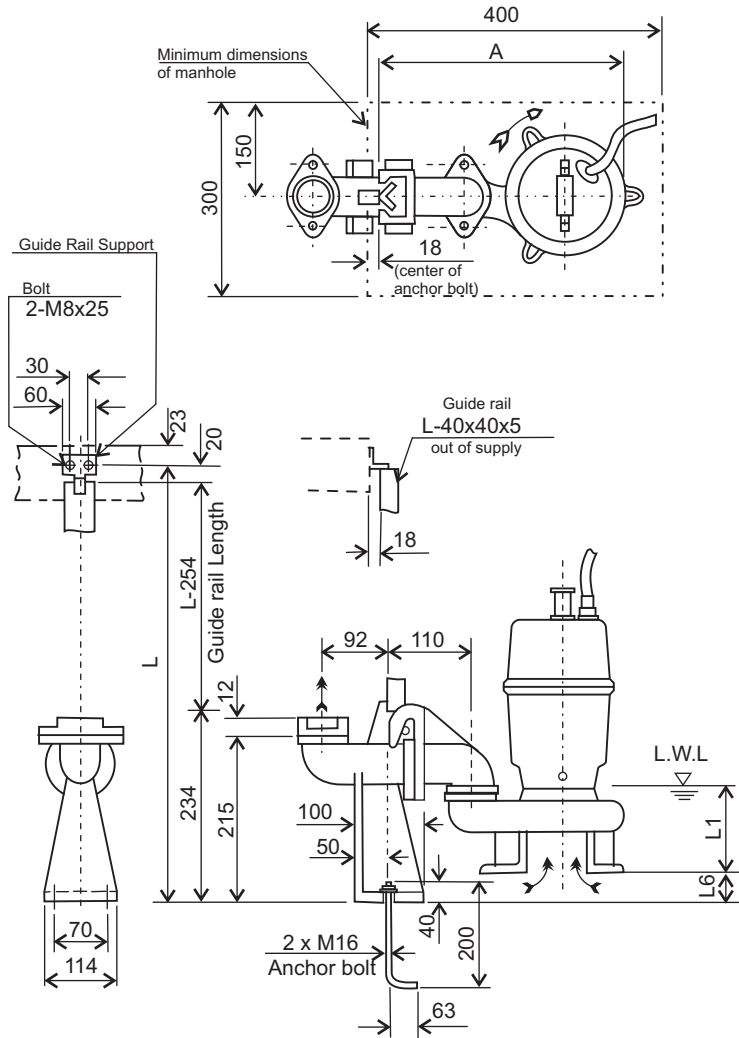
# Ebara Submersible Semi-vortex Pumps

Model **DVS**

## Dimensions with QDC

Pump **DVS** QDC **LS**

### Applicable Models - 50 DVS



Note:

1/. For detailed dimensions of the pumps, refer to separate dimension data sheets.

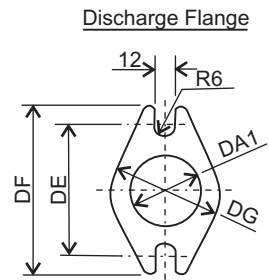
2/. The companion flange supplied with the pump are used with the QDC.

3/. The weight in dimension tables refers only to the weight of the QDC.

4/. Standard accessories supplied with QDC include:-

- Connector body with foundation bolts.
- Guide rail support
- Adaptor Flange

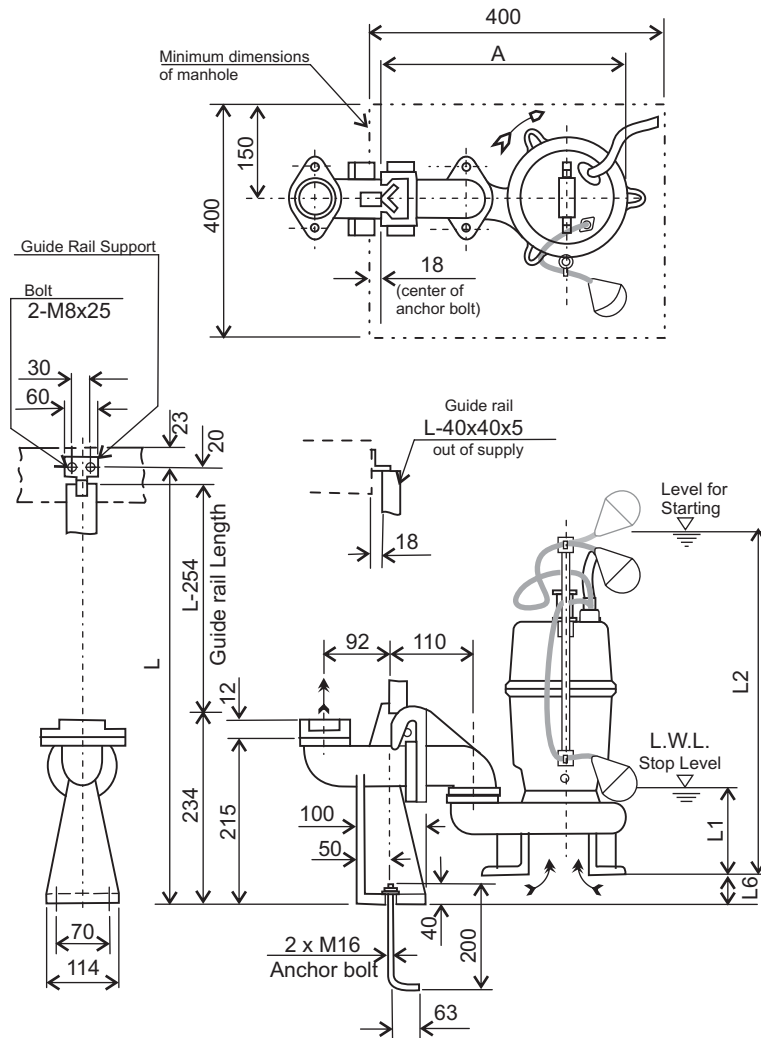
Guide Rail is not supplied.



Pump Model	A	DA1	DE	DF	DG	L1	L6	QDC Model	Weight
50 DVS 5.4S	311	50	96	114	76	105	58	LS50	9 kg
50 DVS 5.75S	321	50	96	114	76	105	58	LS50	9 kg
50 DVS 5.75T	321	50	96	114	76	105	58	LS50	9 kg
50 DVS 51.5	321	50	96	114	76	105	58	LS50	9 kg

Units: mm unless otherwise specified

### ■ Applicable Models - 50 DVSA



Note:

1/. For detailed dimensions of the pumps, refer to separate dimension data sheets.

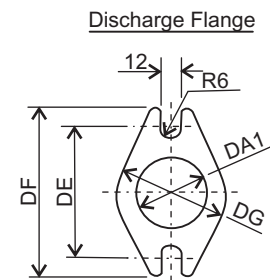
2/. The companion flange supplied with the pump are used with the QDC.

3/. The weight in dimension tables refers only to the weight of the QDC.

4/. Standard accessories supplied with QDC include:-

- Connector body with foundation bolts.
- Guide rail support
- Adaptor Flange

Guide Rail is not supplied.



Pump Model	A	DA1	DE	DF	DG	L1	L2	L6	QDC Model	Weight
50 DVSA 5.4S	311	50	96	114	76	150	490	58	LS50	9 kg
50 DVSA 5.75S	321	50	96	114	76	150	490	58	LS50	9 kg
50 DVSA 5.75T	321	50	96	114	76	150	490	58	LS50	9 kg
50 DVSA 51.5	321	50	96	114	76	150	490	58	LS50	9 kg

Units: mm unless otherwise specified

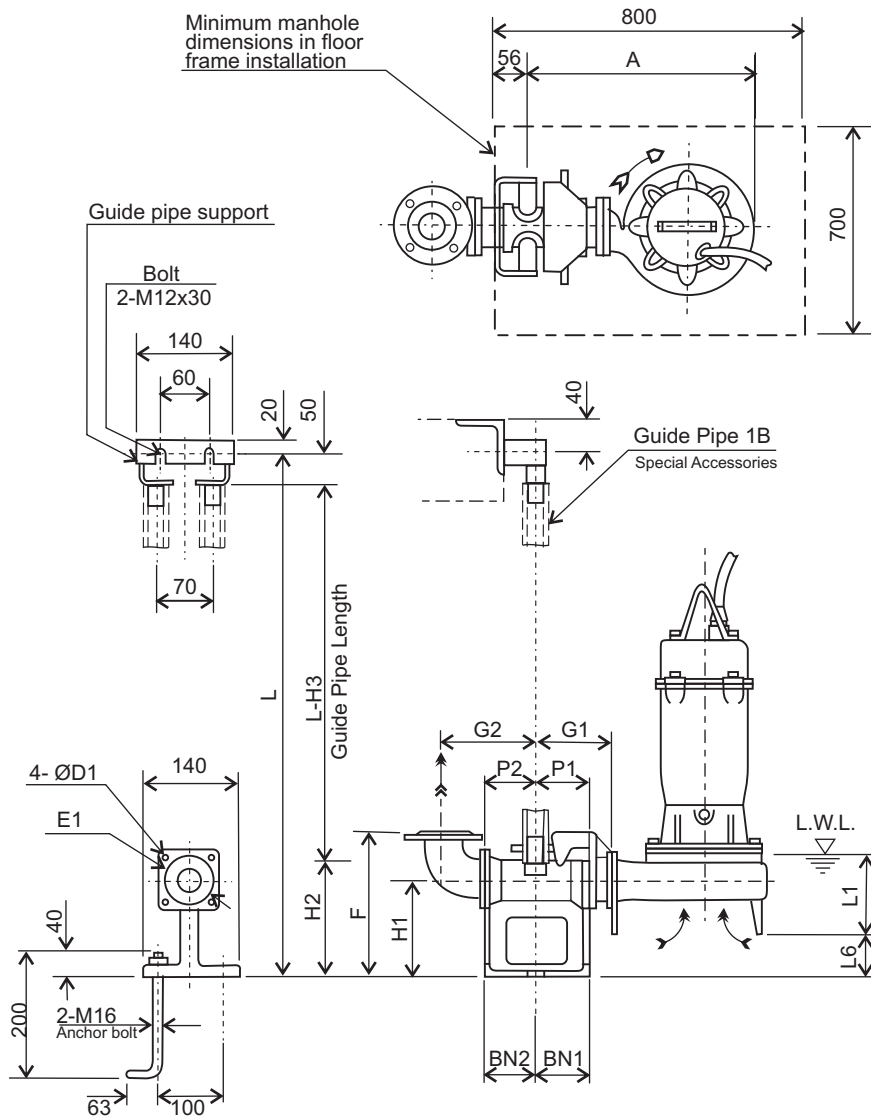
# Ebara Submersible Semi-vortex Pumps

Model **DVS**

## Dimensions with QDC

Pump **DVS** QDC **LM**

### ■ Applicable Models - 80 DVS



Note:

1/. For detailed dimensions of the pumps, refer to separate dimension data sheets.

2/. The discharge bend and companion flange supplied with the pump are used with the QDC.

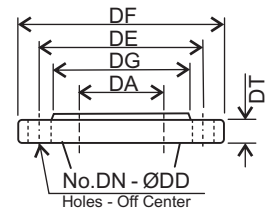
3/. The weight in dimension tables refers only to the weight of the QDC.

4/. Standard accessories supplied with QDC include:-

- Connector body with foundation bolts.
- Guide pipe support
- Sliding Glide
- Adaptor Flange

Guide Pipe is not supplied.

Discharge Flange  
(JIS 10kgf/cm<sup>2</sup>)



DA	DE	DF	DG	DT	DN	DD
80	150	185	126	18	8	15

Pump Model	A	P1	P2	G1	G2	F	H1	H2	H3	L1	L6	BN1	BN2	D1	E1	QDC Model	Weight
80 DVS 5.75T	363	75	95	120	170	255	145	190	240	125	72	75	95	12	140	LM65	14 kg
80 DVS 51.5	363	75	95	120	170	255	145	190	240	125	72	75	95	12	140	LM65	14 kg
80 DVS 52.2	394	75	95	120	170	255	145	190	240	155	49	75	95	12	140	LM65	14 kg
80 DVS 53.7	394	75	95	120	170	255	145	190	240	155	49	75	95	12	140	LM65	14 kg

Units: mm unless otherwise specified



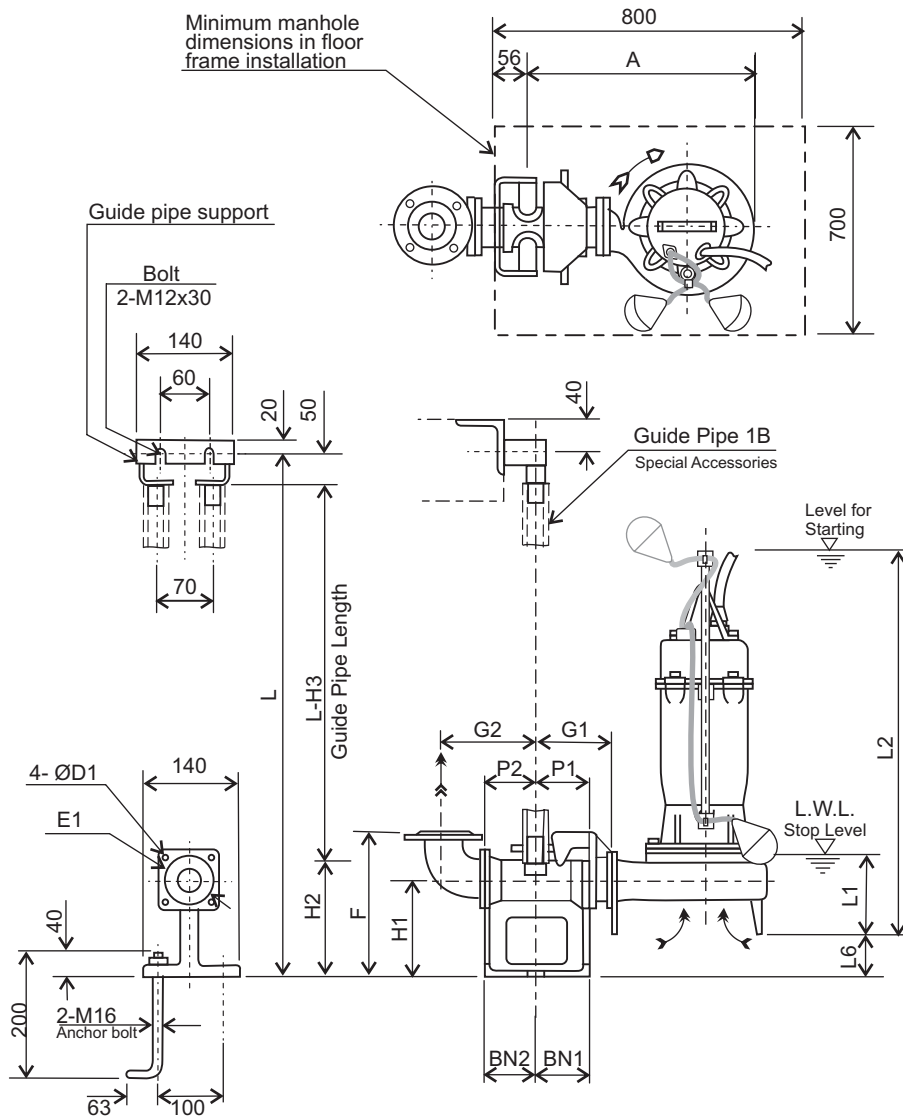
# Ebara Submersible Semi-vortex Pumps

Model **DVS**

## Dimensions with QDC

Pump **DVSA** QDC **LM**

### ■ Applicable Models - 80 DVSA



Note:

1/. For detailed dimensions of the pumps, refer to separate dimension data sheets.

2/. The discharge bend and companion flange supplied with the pump are used with the QDC.

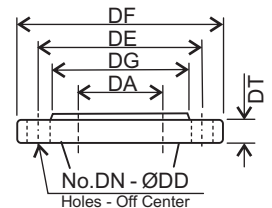
3/. The weight in dimension tables refers only to the weight of the QDC.

4/. Standard accessories supplied with QDC include:-

- Connector body with foundation bolts.
- Guide pipe support
- Sliding Glide
- Adaptor Flange

Guide Pipe is not supplied.

Discharge Flange  
(JIS 10kgf/cm<sup>2</sup>)

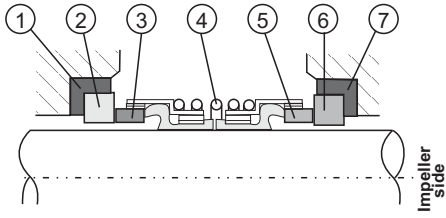


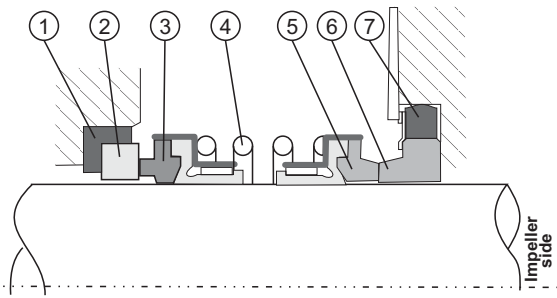
DA	DE	DF	DG	DT	DN	DD
80	150	185	126	18	8	15

Pump Model	A	P1	P2	G1	G2	F	H1	H2	H3	L1	L2	L6	BN1	BN2	D1	E1	QDC Model	Weight
80 DVSA 5.75T	363	75	95	120	170	255	145	190	240	150	490	72	75	95	12	140	LM65	14 kg
80 DVSA 51.5	363	75	95	120	170	255	145	190	240	150	490	72	75	95	12	140	LM65	14 kg
80 DVSA 52.2	394	75	95	120	170	255	145	190	240	250	730	49	75	95	12	140	LM65	14 kg
80 DVSA 53.7	394	75	95	120	170	255	145	190	240	250	730	49	75	95	12	140	LM65	14 kg

Units: mm unless otherwise specified

Applicable Models	Output kW	Mechanical Seal Type	Lubricating Oil		Bearings	
			Capacity - CC	Type	Bottom	Top
50 & 80 DVS, DVSA models	0.4	A-15	180	Turbine Oil SAE 10W or SAE 20W (Turbine Oil#32)	6303ZZ	6201ZZ
	0.75				6303ZZ	6201ZZ
	1.5	A-20	6205ZZ		6203ZZ	
	2.2	A-30	1180		6307ZZ	6304ZZ
	3.7		6308ZZ		6304ZZ	

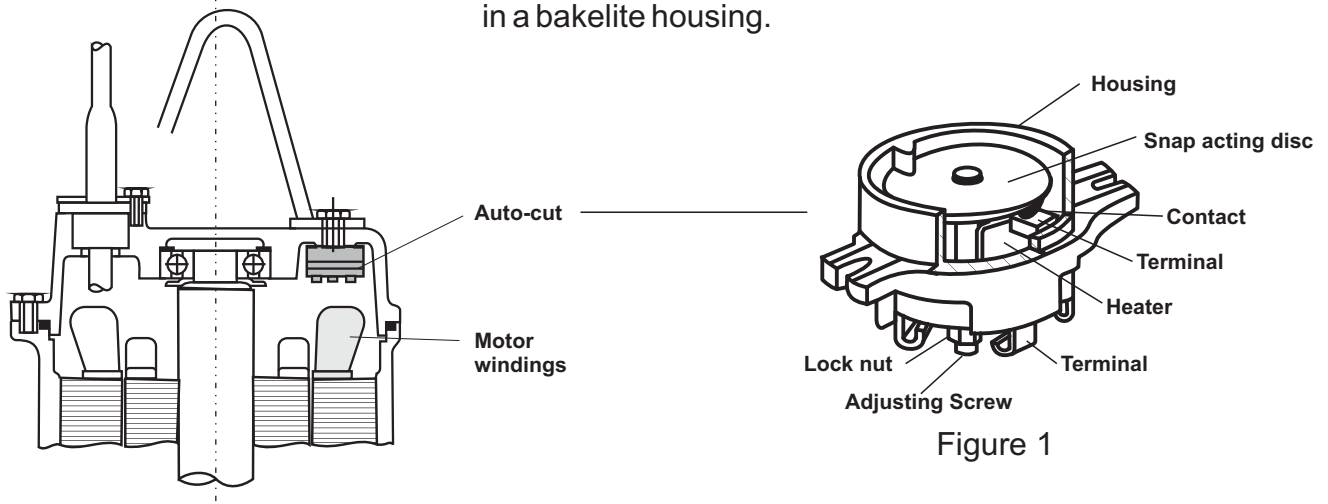
No.	Part Name	Material	No. per Set	<b>Type A-15</b> 
1	Packing	N.B.Rubber	1	
2	Floating Ring	Ceramic	1	
3	Seal Ring	Carbon Graphite	1	
4	Spring	304 SS	1	
5	Seal Ring	Silicon Carbide	1	
6	Floating Ring	Silicon Carbide	1	
7	Packing	N.B.Rubber	1	

No.	Part Name	Material	No. per Set	<b>Type A-20 A-25 A-30</b> 
1	Packing	N.B.Rubber	1	
2	Floating Ring	Ceramic	1	
3	Seal Ring	Carbon Graphite	1	
4	Spring	304 SS	1	
5	Seal Ring	Silicon Carbide	1	
6	Floating Ring	Silicon Carbide	1	
7	Packing	N.B.Rubber	1	

### Applicable to DVS up to 3.7 kW

There are two different types of Auto-Cuts, one is a single pole model used for single phase motors, and the other is a three pole model that is used for three phase models. The three pole model is illustrated below.

The Auto-Cut consists of: 3 sets of contacts, 1 snap-acting disk, 3 heaters, 3 terminals and 1 calibration bolt and nut, all enclosed in a bakelite housing.



The Auto-Cut is installed directly over the motor winding of the motor where it not only senses over heating of the winding but also excess amperage draw by each winding.

Figure 2 shows the Auto-Cut in its normal operating condition (contacts closed). When actuating temperature is reached, the snap acting disc opens to interrupt the circuit as shown in figure 3 and stops the motor.

When the motor temperature cools down to the safe operating temperature, the snap acting disc resets automatically to the original position as shown in figure 2, and the motor restarts.

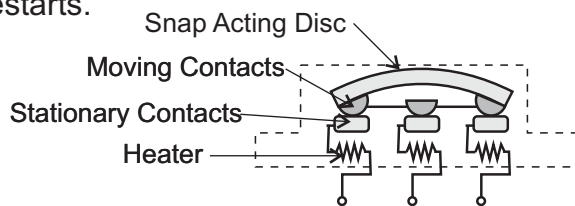


Figure 2

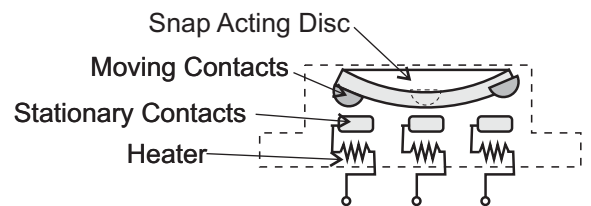
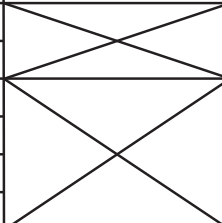


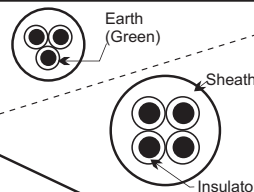
Figure 3

To suit models DVS		
Phase	Power kW	Auto-Cut
Single Phase	0.4	KA-112-KPXN25
	0.75	KA-143-CBVL403
Three Phase	0.75	KA-311-DAT65
	1.5	KA-311-DAXL78
	2.2	KA-313-GQXL104
	3.7	KA-313-GDZL103

## Technical Data

## Cable Specifications

Applicable Models		Motor kW	Starting method	Length of cable	Material	Number & size of conductor(s)	
						Power Cable(s)	Protector Cable
DVS	Single Phase	0.4	DOL	6m	VCT	3 x 1.25 mm <sup>2</sup>	
		0.75	DOL	6m	VCT	3 x 1.25 mm <sup>2</sup>	
	Three Phase	0.75	DOL	6m	H07RN-F	4 x 1.5 mm <sup>2</sup>	
		1.5	DOL	6m	H07RN-F	4 x 1.5 mm <sup>2</sup>	
		2.2	DOL	10m	H07RN-F	4 x 1.5 mm <sup>2</sup>	
		3.7	DOL	10m	H07RN-F	4 x 1.5 mm <sup>2</sup>	

Item	Cross sectional area of conductors	No. of conductors	Cable Type	Sheath Material	Insulation Material	Sheath Thickness mm	Insulation Thickness mm	Overall Diameter mm	
Single Phase	1.25 mm <sup>2</sup>	3	VCT	Vinyl	Vinyl	1.7	0.8	10.1	
ThreePhase	1.5 mm <sup>2</sup>	4	H07RN-F	PCR	EPR	1.7	0.8	11.2	

CR = Polychloroprene Rubber      EPR = Ethylene Propylene Rubber

Note: Cable specifications for 3 phase models were changed in 2009 to be meet CE market requirements. See page 500 for more details.

## Motor Data

## 0.4 to 0.75 kW, Single Phase, 2 Pole Motors

Hz	Poles	Phase	Output (kW)	Voltage	Applicable Models
50	2	1	0.4 to 0.75	240 V	DVS

Name-Plate Rating	Model	DFS	DFS				
	Output - kW	0.4	0.75				
	Phase	1	1				
	Poles	2	2				
	Volts	240	240				
	Amps	3.8	6.0				
	Speed - rpm	2805	2840				
	Insulation Class	E	E				
Start Capacitor - $\mu$ F		170	200				
No Load Test	Amps	2.31	3.60				
	Watts	120	155				
Resistance at 20° C	Ohms Main/Auxiliary	4.68/6.10	2.89/8.01				
75% Load	Current - Amps	3.15	4.9				
	Efficiency - %	53.6	63.2				
	Power Factor - %	74.1	75.7				
	Speed - rpm	2872	2900				
100% Load	Current - Amps	3.82	5.95				
	Efficiency - %	52.5	61.7				
	Power Factor - %	83.1	85.1				
	Speed - rpm	2805	2840				
Locked Rotor Torque - %		160	145				
Start Current - amps		15	27				
Number starts per hour		20	20				
Design Standard		JIS	JIS				
Voltage Tolerance		$\pm 10\%$	$\pm 10\%$				
Frequency Tolerance		$\pm 5\%$	$\pm 5\%$				
Gd <sup>2</sup> - kgm <sup>2</sup>		.0011	.0045				
Mft's Symbols		SA	SA				

# Ebara Submersible Semi-vortex Pumps

Model **DVS**

## Motor Data

0.75 to 3.7 kW, Three Phase, 2 Pole Motors

Hz	Poles	Phase	Output (kW)	Voltage	Applicable Models
50	2	3	0.75 to 3.7	415 V	DVS


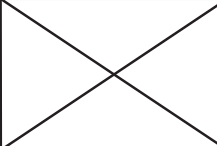
Name-Plate Rating	Model	VZDS	VZDS	VZDS	VZDS		
	Output - kW	0.75	1.5	2.2	3.7		
	Phase	3	3	3	3		
	Poles	2	2	2	2		
	Volts	415	415	415	415		
	Amps	1.7	3.3	4.6	7.8		
	Speed - rpm	2820	2850	2900	2890		
	Insulation Class	F	F	F	F		
No Load Test	Amps	0.88	1.30	2.33	3.90		
	Watts	190	400	252	600		
Resistance at 20° C	Ohms	21.933	12.005	4.888	2.585		
75% Load	Current - Amps	1.39	2.61	3.82	6.45		
	Efficiency - %	69.58	70.11	77.58	74.26		
	Power Factor - %	80.80	85.68	77.40	80.61		
	Speed - rpm	2879	2898	2927	2922		
100% Load	Current - Amps	1.70	3.30	4.60	7.80		
	Efficiency - %	70.94	70.89	79.33	76.74		
	Power Factor - %	86.52	89.21	83.88	86.00		
	Speed - rpm	2831	2854	2900	2890		
Locked Rotor Torque - %		226	303	184	233		
Start Current - amps		9.6	22.5	31.5	53.0		
Number starts per hour		20	20	20	20		
Design Standard		JEC37	JEC37	JEC37	JEC37		
Voltage Tolerance		± 10%	± 10%	± 10%	± 10%		
Frequency Tolerance		± 5%	± 5%	± 5%	± 5%		
Gd <sup>2</sup> - kgm <sup>2</sup>		0.0022	0.0057	0.0082	0.0110		
Mft's Symbols		EB	EB	EB	EB		

## Change to Cable Specifications (3 phase models)

Note: Cable specifications for the 3 phase models were changed in 2009 to be meet CE market requirements. Materials and colour of cables where changed as below.

Cables with the same gland shape are interchangeable, providing conductor size is suitable for motor power.


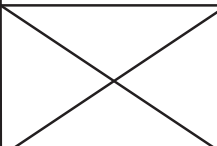
Note that superceded cable conductors were often of larger size as they were designed for use with lower voltage (200Volt) motors.

"New" CE Marked cables (from August 2009)								
Applicable Models		Motor kW	Starting method	Length of cable	Material	Number & size of conductors		
						Power Cable(s)	Gland Shape	Protector Cable
DVS	Three Phase	0.75	DOL	6m	H07RN-F	4 x 1.5 mm <sup>2</sup>		
		1.5						
		2.2		10m				
		3.7						

Cable Colours (& tag)	BLACK 1 (U1), BLACK 2 (V1) & BLACK 3 (W1) with GREEN/YELLOW Earth (PE)
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The cable number is printed along each black cable.



Superceded cables (pre August 2009)									
Applicable Models		Motor kW	Starting method	Length of cable	Material	Number & size of conductors			
						Power Cable(s)	Gland Shape	Protector Cable	
DVS	Three Phase	0.75	DOL	6m	VCT	4 x 1.25 mm <sup>2</sup>			
		1.5							
		2.2		10m	HVCT				4 x 2 mm <sup>2</sup>
		3.7							

Cable Colours	RED, WHITE & BLACK with GREEN Earth
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