

# DS - DSF

## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

in cast iron

Submersible pumps with semi-open impeller for clean water and rainwater.

### APPLICATIONS

- Purification tank drainage
- Rain and spring water drainage
- Water supply

### TECHNICAL DETAILS

- Efficient semi-open impeller
- Strainer prevents blockages
- Shaft seal upper and lower part (DS)

### TECHNICAL DATA

- Maximum temperature of the liquid: 40°C
- Max solids size for passage: 5 mm (50DS)  
6 mm (65DS) (40DSF 1.1, 1.8 kW)  
7 mm (80DS) (40DSF 5.7 kW)  
8 mm (100DS)  
10 mm (65DSF)
- Max fibers length: 50mm (All DS models)
- 2 poles motor
- Insulation class F (DS)
- Insulation class H (DSF)
- Degree protection :IP68
- 380-415±10%, 50Hz threephase voltage (DS)  
230±10%, 50Hz singlephase voltage (DSF)  
400/690±10%, 50Hz threephase voltage (DSF)
- Flanges: DN50, DN65, DN80, DN100 (DS)  
DN40, DN65 (DSF)
- Power up to 15,9kW

### MATERIALS

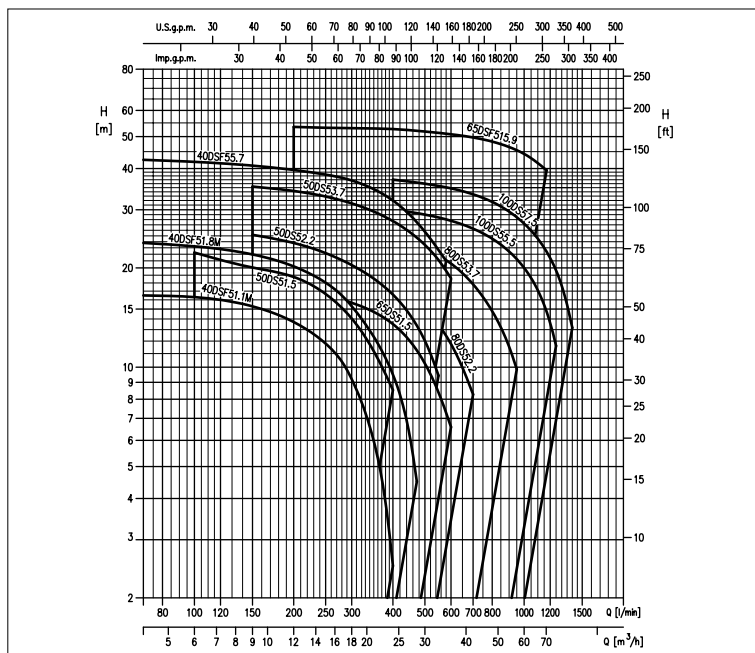
- Pump body, semi-open impeller, elbow in cast iron
- Shaft in AISI 403 (DS) and AISI 420B (DSF)
- Mechanical seal : SiC/SiC/NBR (pump side)  
Carbon/Ceramic/NBR (motor side)

### ACCESSORIES (ON REQUEST)

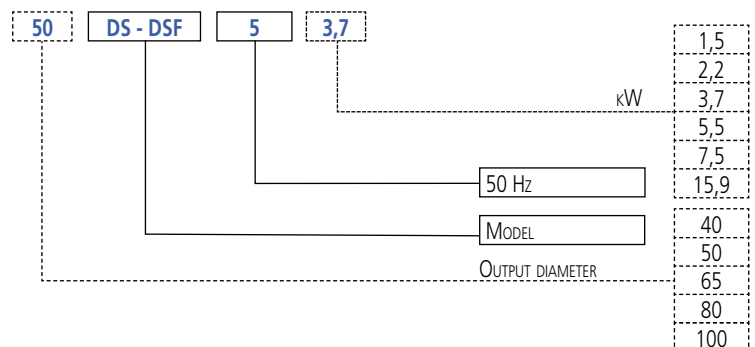
- see from page 142



### PERFORMANCE CHART (according to ISO 9906 Attachment A)



### PUMP IDENTIFICATION CODE





# DS - DSF

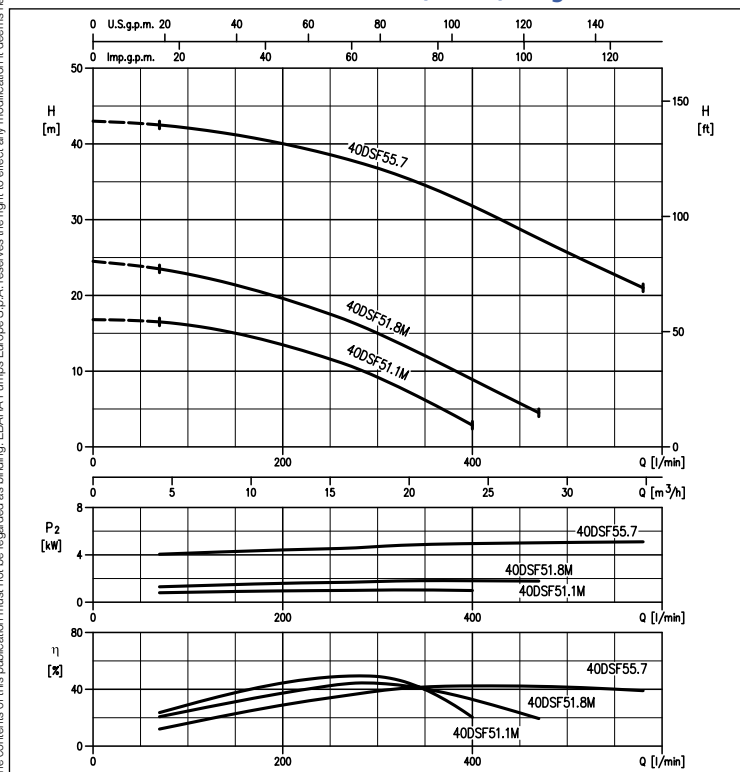
## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

in cast iron

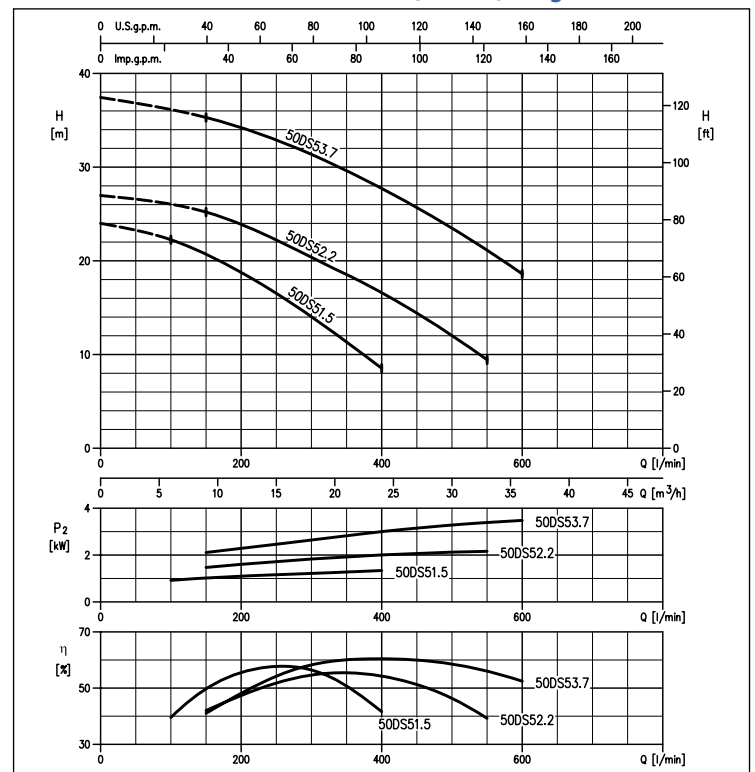
### PERFORMANCE TABLE

Model	P <sub>2</sub>		Q=Flow rate																						
	[HP]	[kW]	l/min	70	100	150	200	250	300	400	450	473	500	550	580	600	700	800	950	1000	1170	1200	1250	1400	
			m <sup>3</sup> /h	4	6	9	12	15	18	24	27	28	30	33	35	36	42	48	57	60	70	72	75	84	
H=Head [m]																									
40DSF51.1M	1,5	1,1	16,5	16,1	15,3	14,1	12	9,2	2,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40DSF51.8M	2,5	1,8	23,8	23,2	22	20,3	18,3	15,3	9,5	6	4,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40DSF55.7	7,5	5,7	42,5	42	41,5	40	38,9	36,8	32	29	27,5	25,8	23	21	-	-	-	-	-	-	-	-	-	-	-
50DS51.5	2	1,5	-	22,3	20,7	18,8	16,5	14	8,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50DS52.2	3	2,2	-	-	25,2	23,7	22,1	20,4	16,6	14,4	13,3	12	9,4	-	-	-	-	-	-	-	-	-	-	-	-
50DS53.7	5	3,7	-	-	35,3	34,2	32,9	31,4	27,7	25,7	24,6	23,5	21,1	19,5	18,6	-	-	-	-	-	-	-	-	-	-
65DS51.5	2	1,5	-	-	17,5	17,1	16,5	15,7	13,5	12	11,2	10,3	8,5	7,3	6,6	-	-	-	-	-	-	-	-	-	-
80DS52.2	3	2,2	-	-	-	20,8	20,2	19,4	17,6	16,4	15,8	15	13,4	12,5	11,8	8,3	-	-	-	-	-	-	-	-	-
80DS53.7	5	3,7	-	-	-	-	26,3	25,8	24,6	23,7	23,3	22,8	21,8	21,2	20,6	17,8	14,8	9,9	-	-	-	-	-	-	-
100DS55.5	7,5	5,5	-	-	-	-	-	30,7	30	29,5	29,3	29	28,4	28	27,8	26,3	24,5	21,3	20,0	14,8	13,6	11,6	-	-	-
100DS57.5	10	7,5	-	-	-	-	-	-	37	36,6	36,3	36	35,5	35,1	34,8	33,4	31,7	28,5	27,3	22,5	21,4	19,7	13,2	-	-

### PERFORMANCE CURVES 40DSF51.1M (1.1 kW) range 40DSF51.8M (1.8 kW) range 40DSF55.7 (5.7kW) range



### PERFORMANCE CURVES 50DS51.5 (1.5 kW) range 50DS52.2 (2.2 kW) range 50DS53.7 (3.7 kW) range





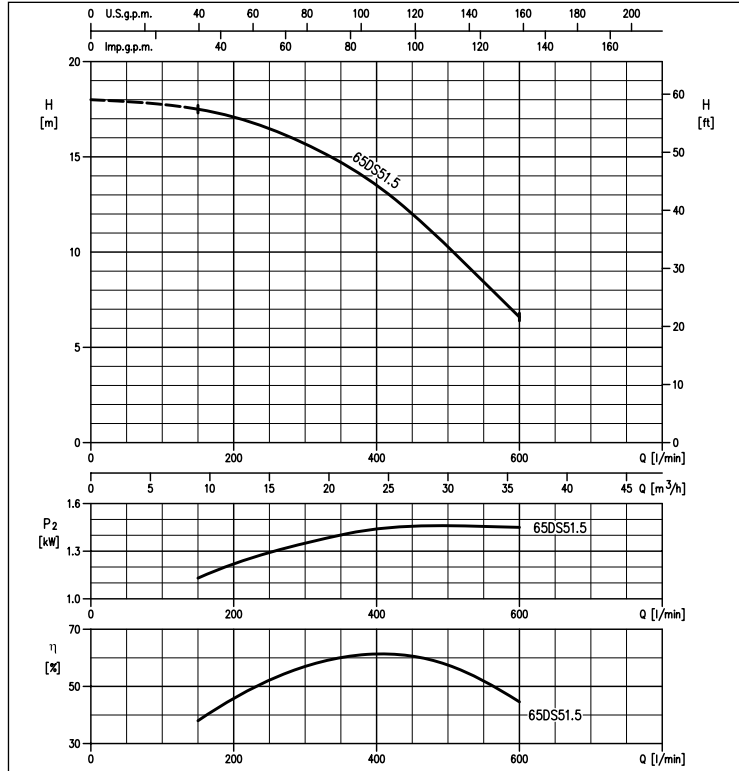
# DS - DSF

## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

in cast iron

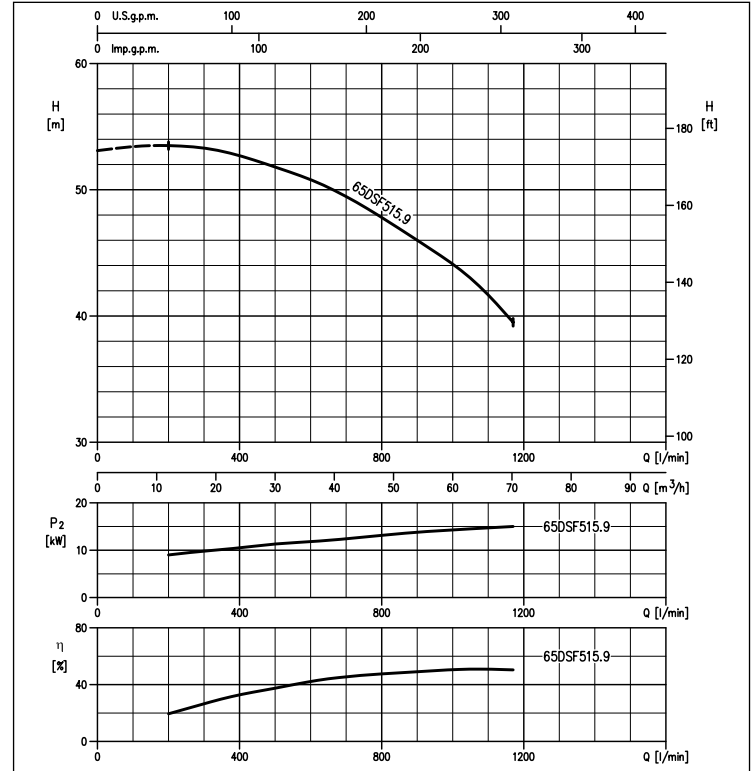
### PERFORMANCE CURVES 65DS51.5 (1.5 kW) range

(according to ISO 9906 Attachment A)



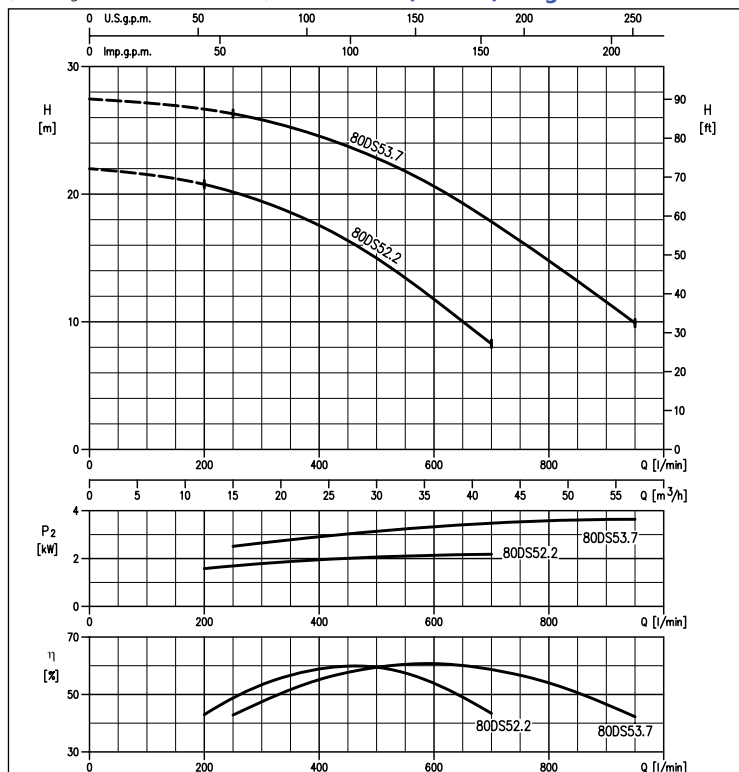
### PERFORMANCE CURVES 65DSF515.9 (15.9 kW) range

(according to ISO 9906 Attachment A)



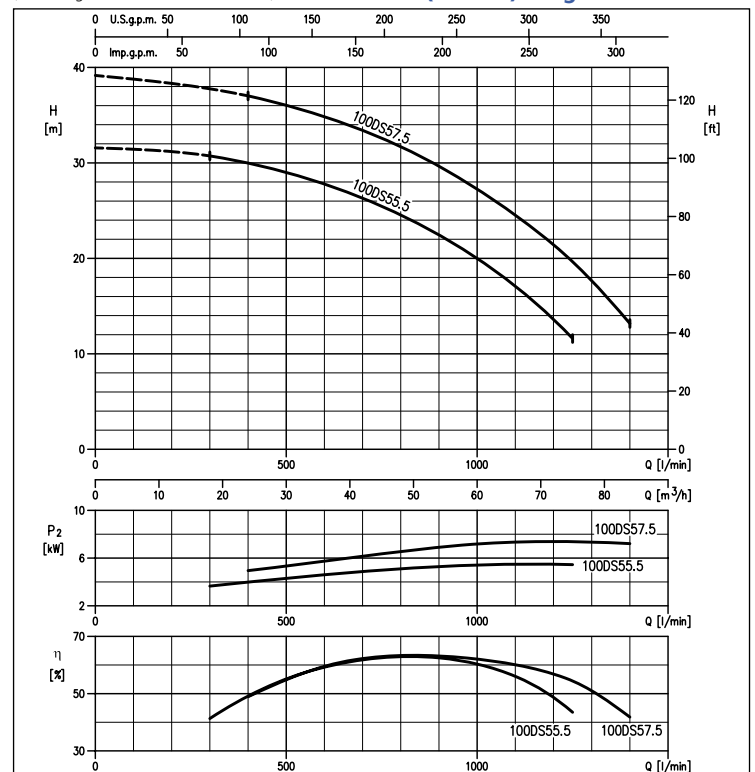
### PERFORMANCE CURVES 80DS52.2 (2.2 kW) range 80DS53.7 (3.7 kW) range

(according to ISO 9906 Attachment A)



### PERFORMANCE CURVES 100DS55.5 (5.5 kW) range 100DS57.5 (7.5 kW) range

(according to ISO 9906 Attachment A)



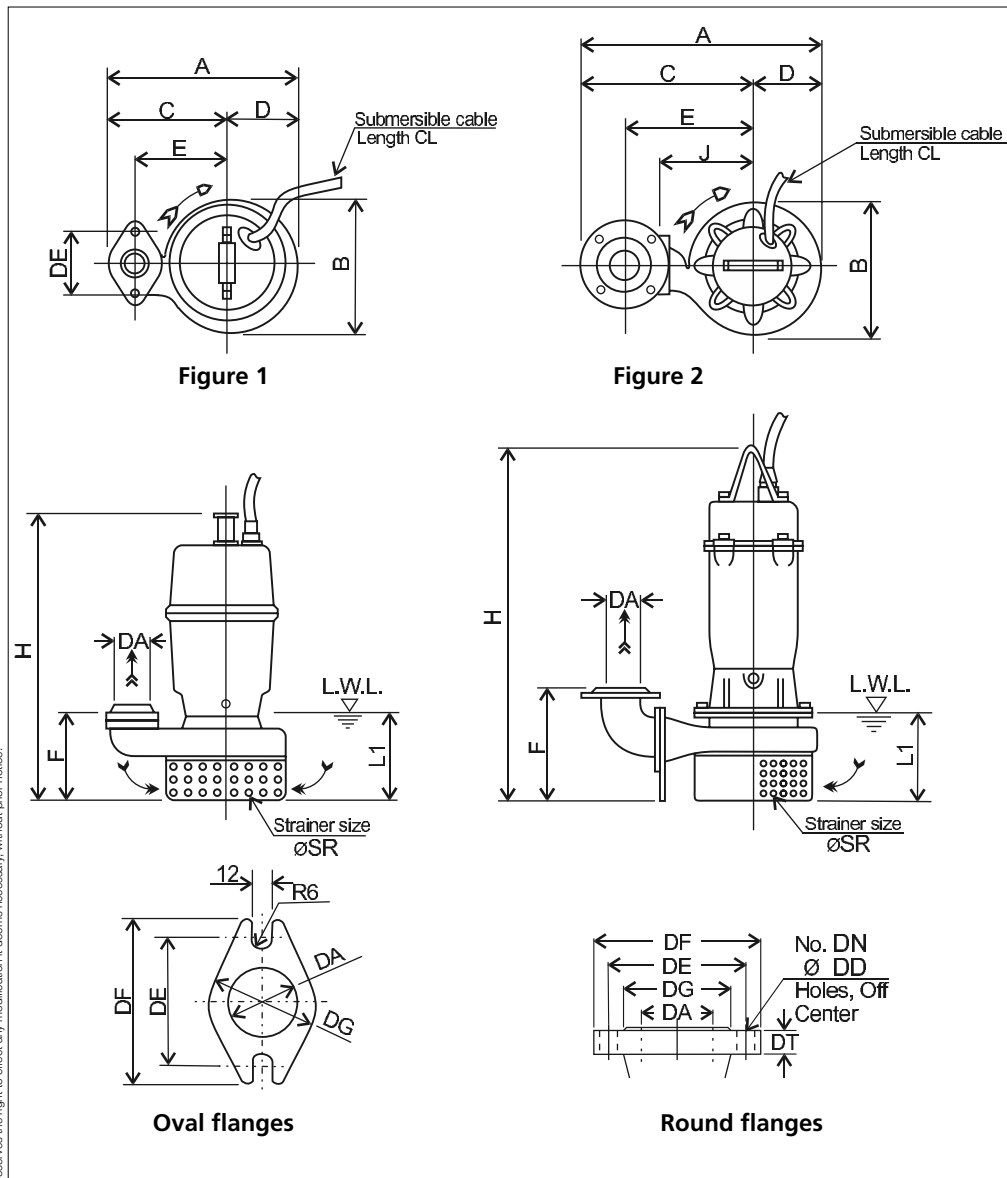
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## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

in cast iron

### DIMENSIONS DS



Discharge flanges dimensions [mm] - EN 1092-2							
Type	DA	DE	DF	DG	DT	DN	DD
Oval	50	96	114	76	-	-	-
		125	165	99	17	4	19
Round	65	145	185	118	19	8	
	80	160	220	132	21		
	100	180	220	156			

### DIMENSIONS TABLE DS

DA	Model	Fig.	Flanges Type	[kW]	DA	A	B	C	D	E	F	H	DE	J	L1 (*)	ØSR	CL [m]	Weight [kg]
50	50DS51.5	1	Oval	1.5	G2	266	200	168	98	130	115	450	96	-	120	10	6	25
	50DS52.2			2.2	50	433	245	313	120	235	198	619	-	180	160		10	55
	50DS53.7			3.7														61
65	65DS51.5	2	Round	1.5	65	407	210	303	104	215	197	503	-	150	120	10	6	35
	65DS52.2			2.2	80	503	268	368	135	275	215	625	-	200	160		10	59
80	80DS3.7			3.7	80	503	268	368	135	275	215	625	-	200	160	10	64	
	80DS55.5			5.5	100	615	309	460	155	355	257	730	-	250	200	13	92	
100	100DS57.5	7.5														104		

(\*) - L.W.L (Low Water Level)

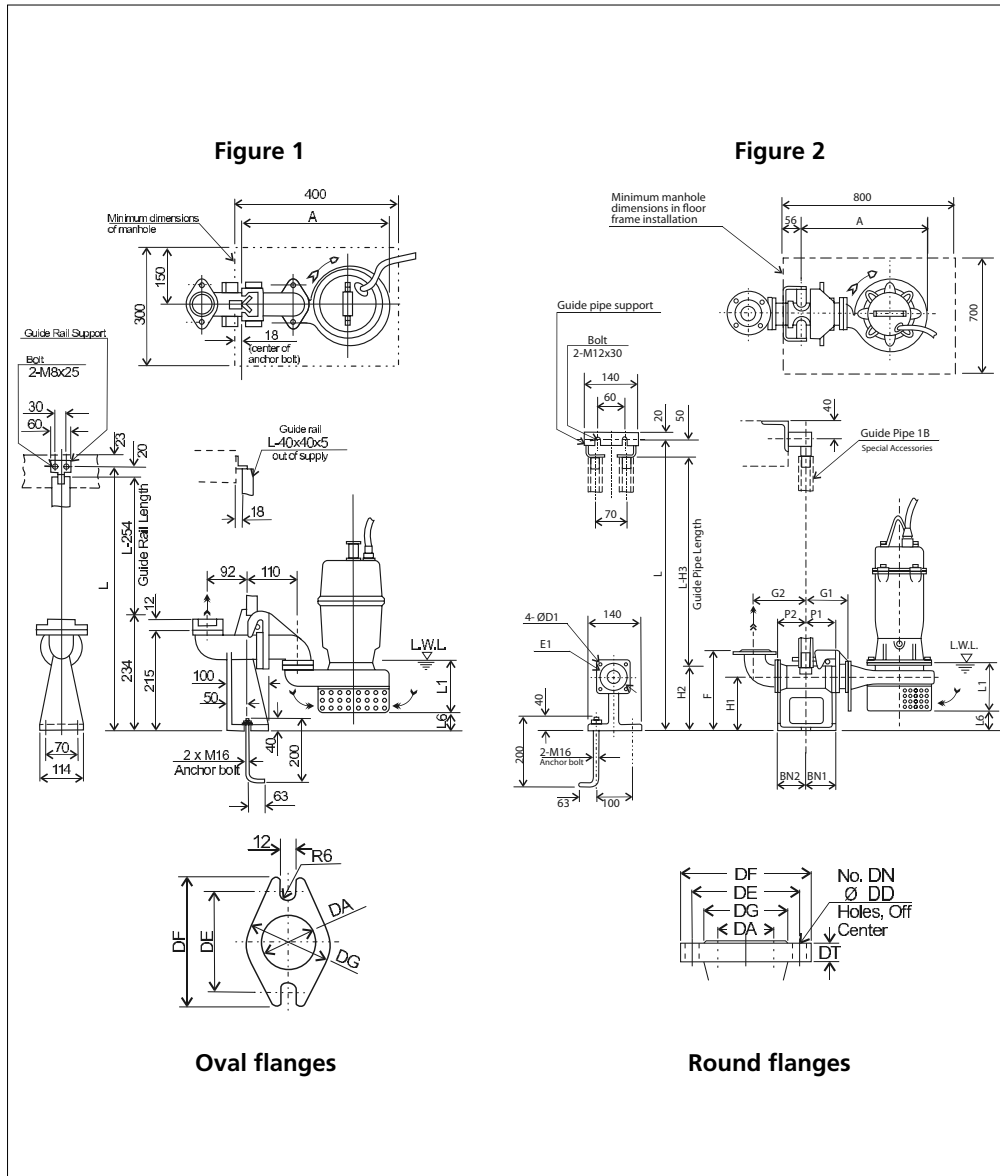
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## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

in cast iron

### DIMENSIONS DS with QDC (quick discharge connector) (1.5÷3.7 kW)



Discharge flanges dimensions [mm] - EN 1092-2							
Type	DA	DE	DF	DG	DT	DN	DD
Oval	50	96	114	76	-	-	-
		125	165	99	17	4	19
	65	145	185	118	19	8	
Round	80	160	220	132			

### DIMENSIONS TABLE DS with QDC (quick discharge connector) (1.5÷3.7 kW)

DA	Model	Fig.	Flanges Type	[kW]	DA	A	P1	P2	G1	G2	F	H1	H2	H3	L1 (*)	L6	BN1	BN2	D1	E1	QDC (quick discharge connector) Model	Weight [kg]
50	50DS51.5	1	Oval	1.5	G2	-	-	-	-	-	-	-	-	-	120	25	-	-	-	-	LS50	9
	2.2			50	415	75	80	115	135	230	135	165	215	160	32	75	80	12	120	LM50	11	
	3.7																					
65	65DS51.5	2	Round	1.5	65	374	75	95	120	160	250	145	190	240	120	53	75	95	12	140	LM65	14
	2.2			80	460	75	90	125	165	285	175	230	280	160	70	90	15	155	LM80	17		
	3.7																					
80	80DS52.2			2.2	80	460	75	90	125	165	285	175	230	280	160	70	90	15	155	LM80	17	
	2.2																					
	3.7																					

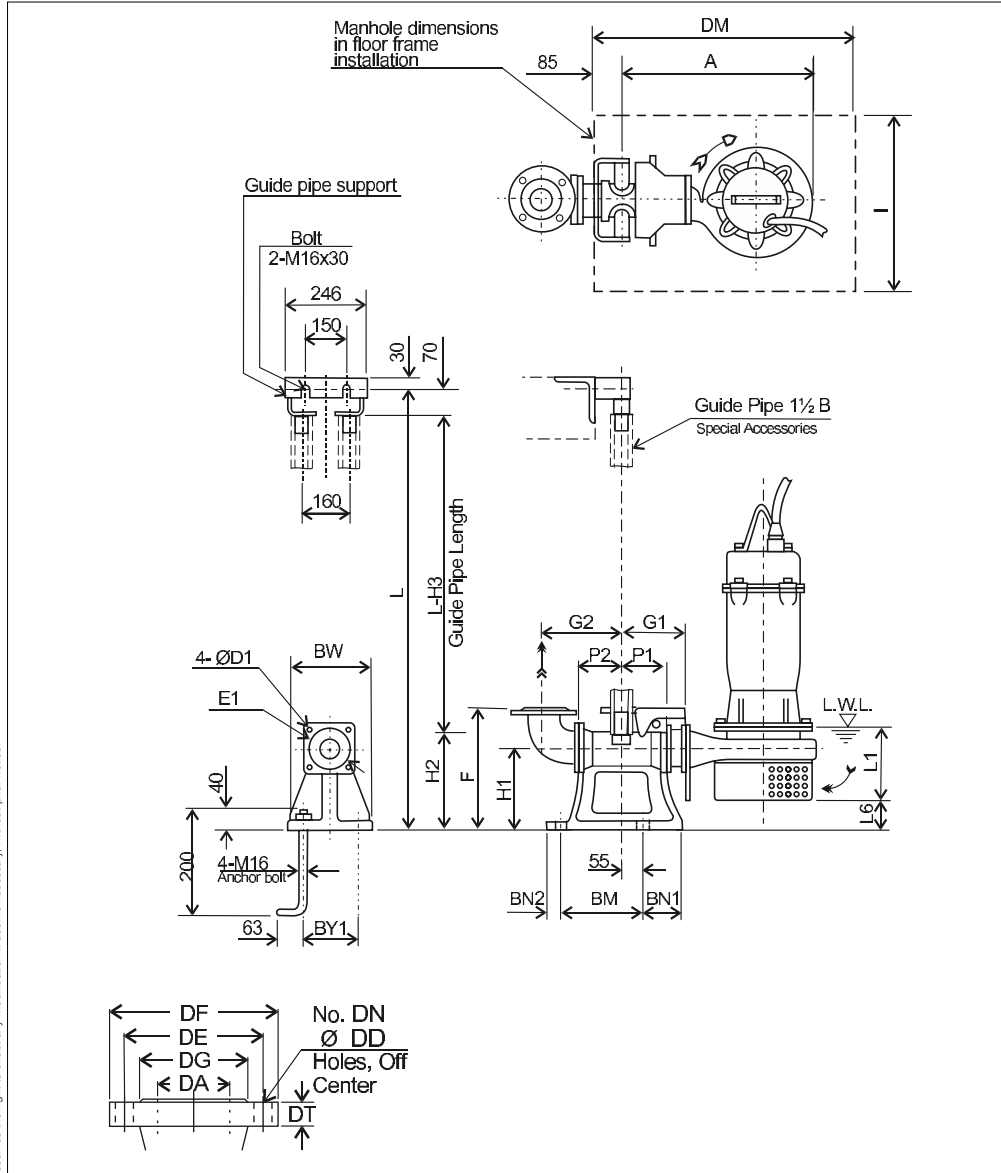
(\*) - L.W.L (Low Water Level)

# DS - DSF

## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

in cast iron

### DIMENSIONS DS with QDC (quick discharge connector) (5.5÷7.5 kW)



Discharge flanges dimensions [mm] - EN 1092-2							
Type	DA	DE	DF	DG	DT	DN	DD
Round	100	180	220	156	21	8	19

### DIMENSIONS TABLE DS with QDC (quick discharge connector) (5.5÷7.5 kW)

DA	Model	[kW]	A	P1	P2	G1	G2	F	H1	H2	H3	L1 (*)	L6	BN1	BN2	BM	BY1	BW	DM	I	D1	E1	QDC (quick discharge connector) Model	Weight [kg]
100	100DS55.5	5.5	590	105	105	185	210	365	240	265	335	200	108	100	40	220	180	230	800	700	19	175	LL100	46
	100DS57.5	7.5																						

(\*) - L.W.L. (Low Water Level)

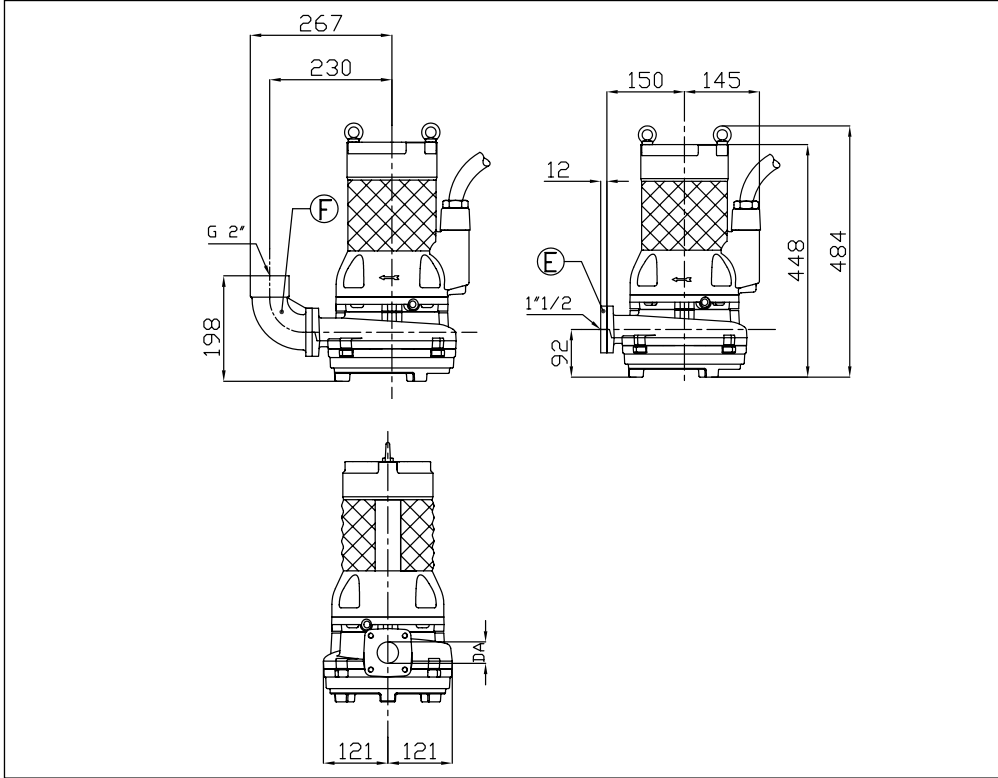
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## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

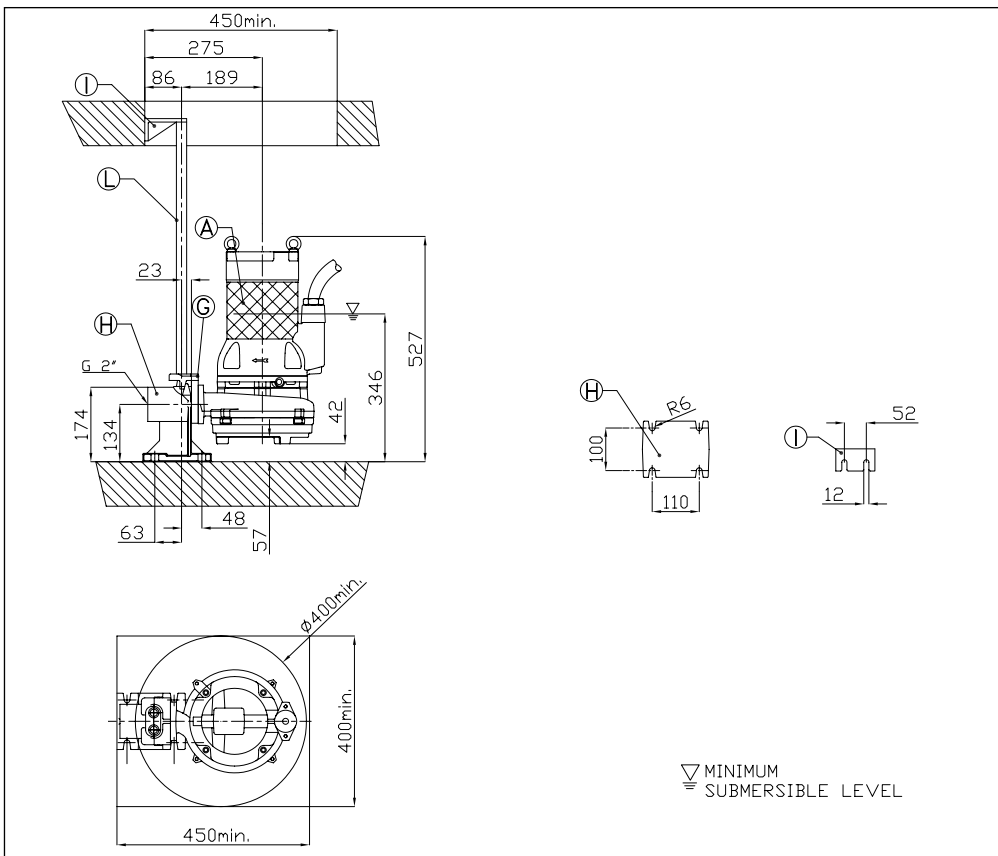
in cast iron

### DIMENSIONS 40DSF (1.1÷1.8 kW)



### DIMENSIONS TABLE 40DSF (1.1÷1.8 kW)

DA	Model	[kW]	Weight [kg]
40	40DSF51.1M (125)	1.1	38
	40DSF51.8M (150)	1.8	38

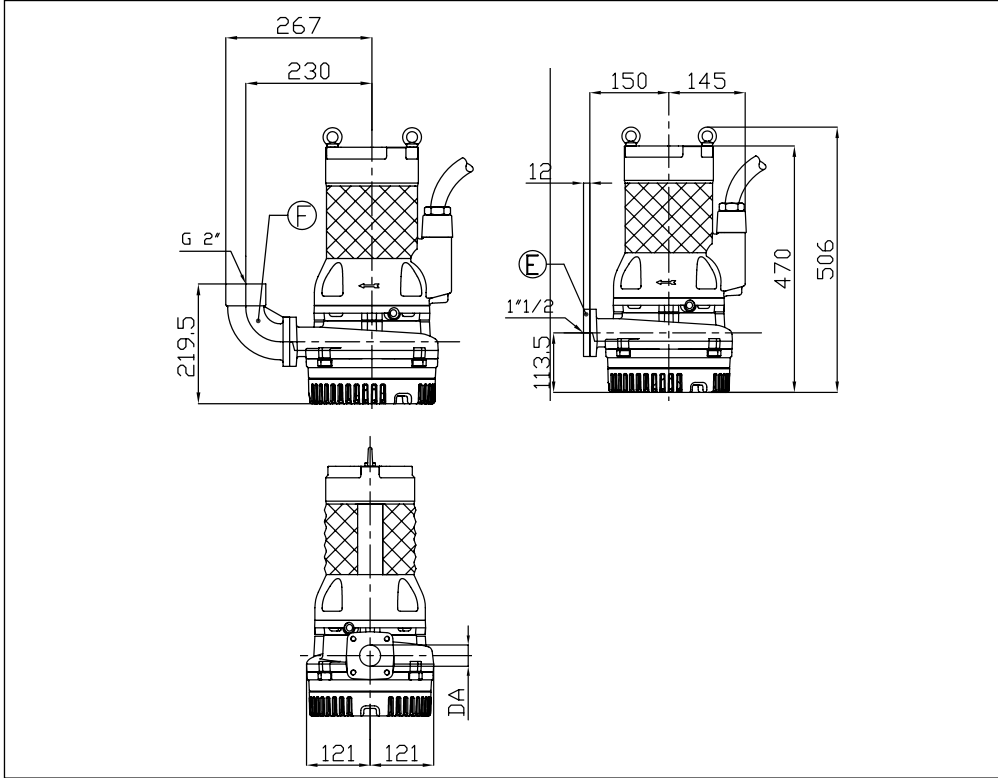


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## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

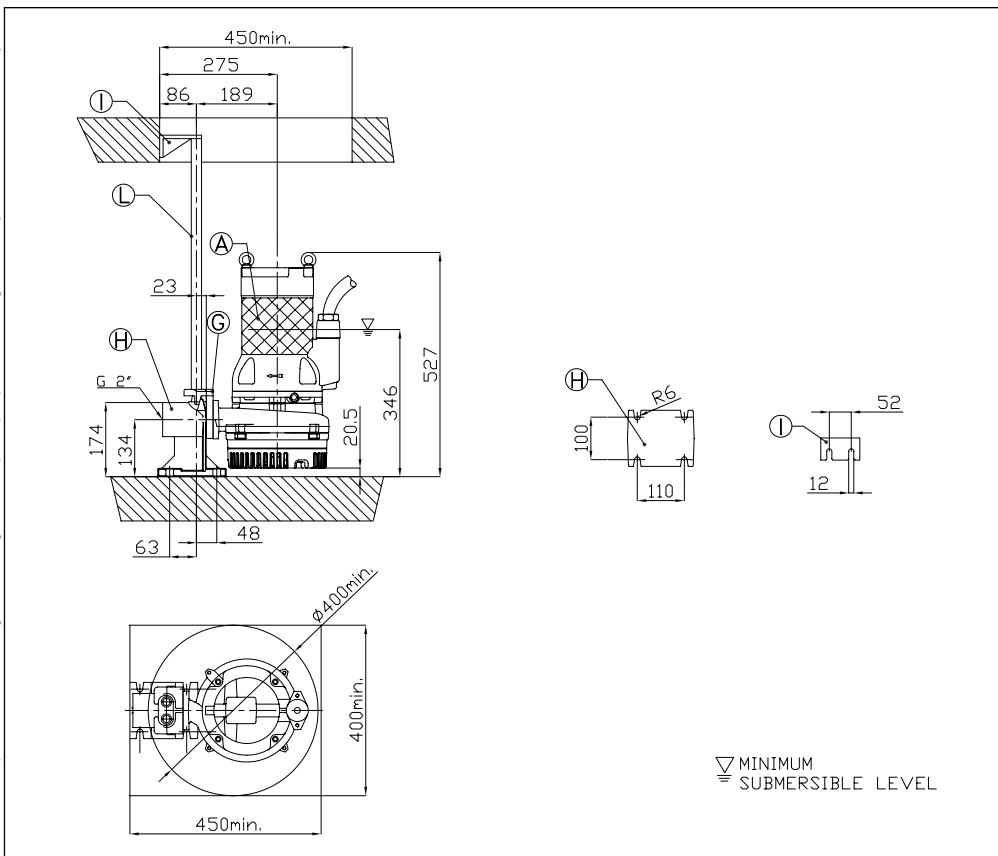
in cast iron

### DIMENSIONS 40DSF (5.7 kW)



### DIMENSIONS TABLE 40DSF (5.7 kW)

DA	Model	[kW]	Weight [kg]
40	40DSF55.7 (192)	5.7	68



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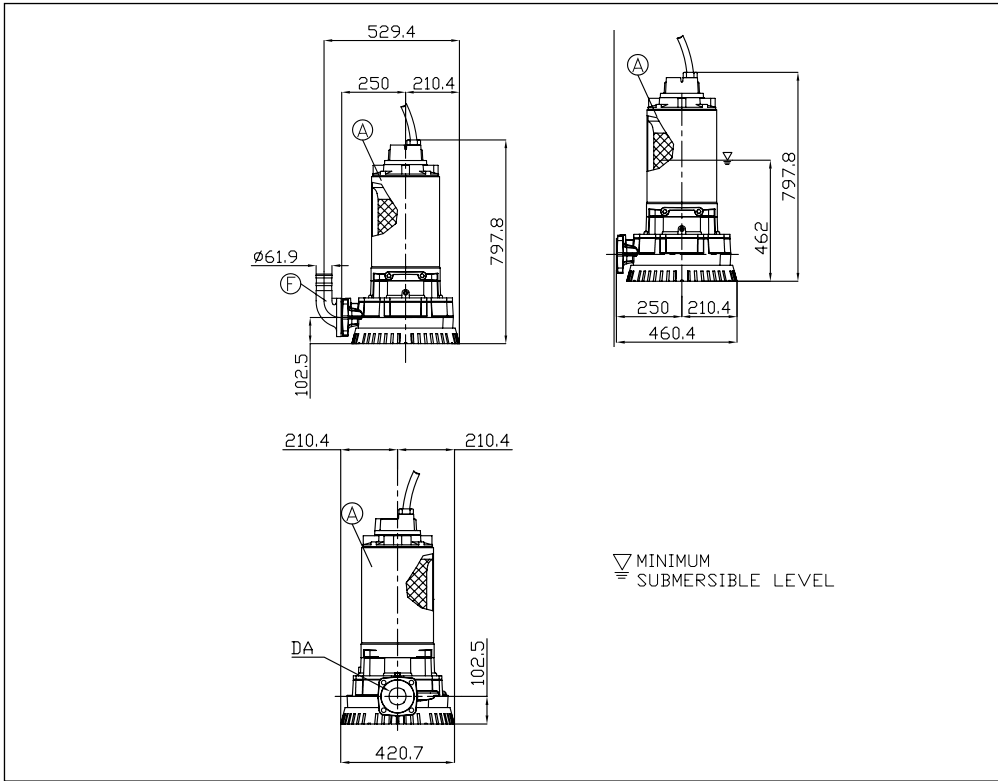


# DS - DSF

## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

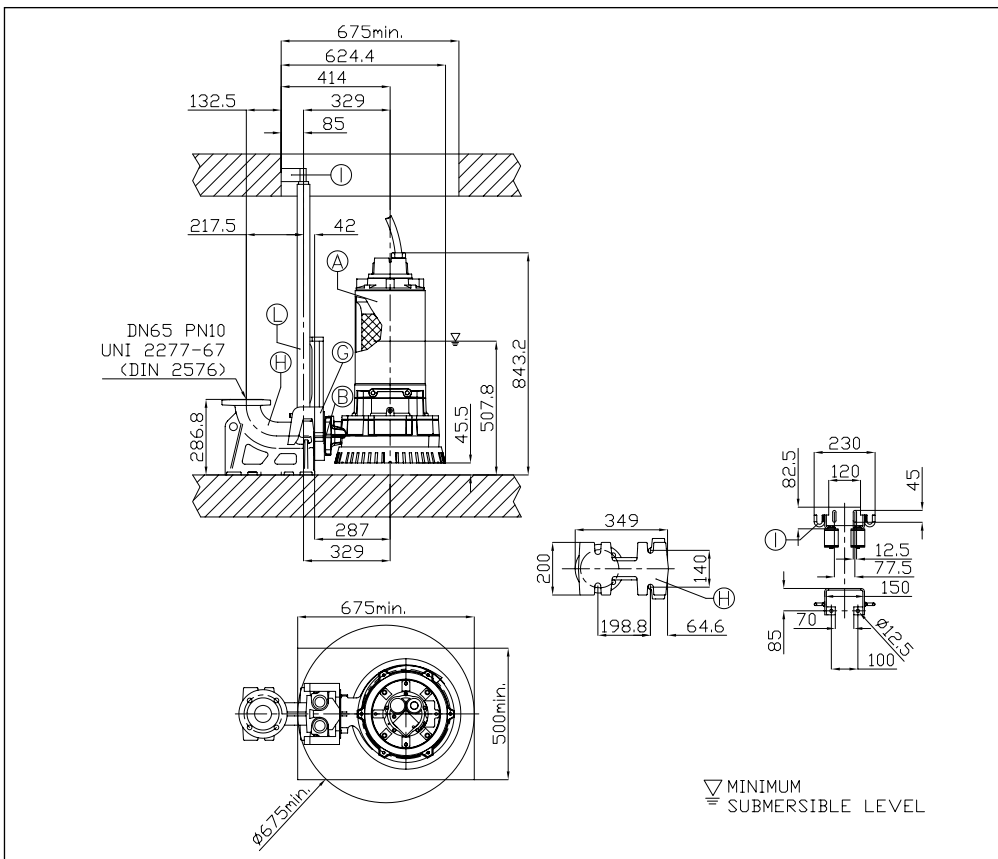
in cast iron

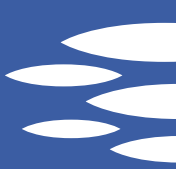
### DIMENSIONS 65DSF (15.9 kW)



### DIMENSIONS TABLE 65DSF (15.9 kW)

DA	Model	[kW]	Weight [kg]
DN65	65DSF515.9 (230)	15.9	200



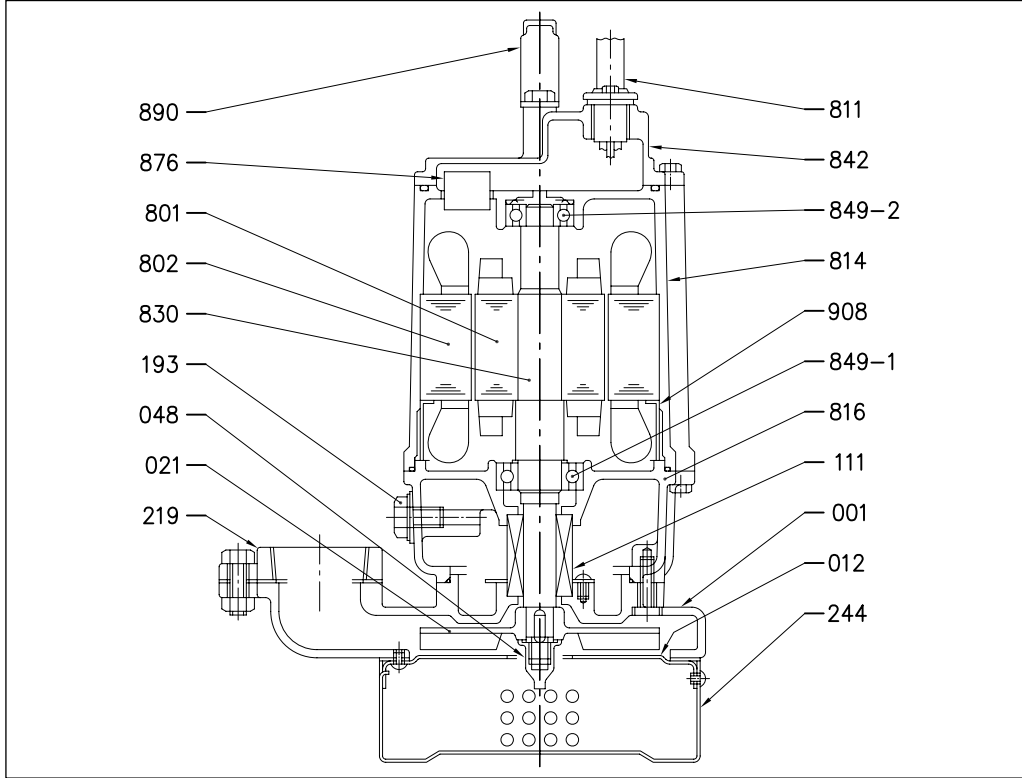


# DS - DSF

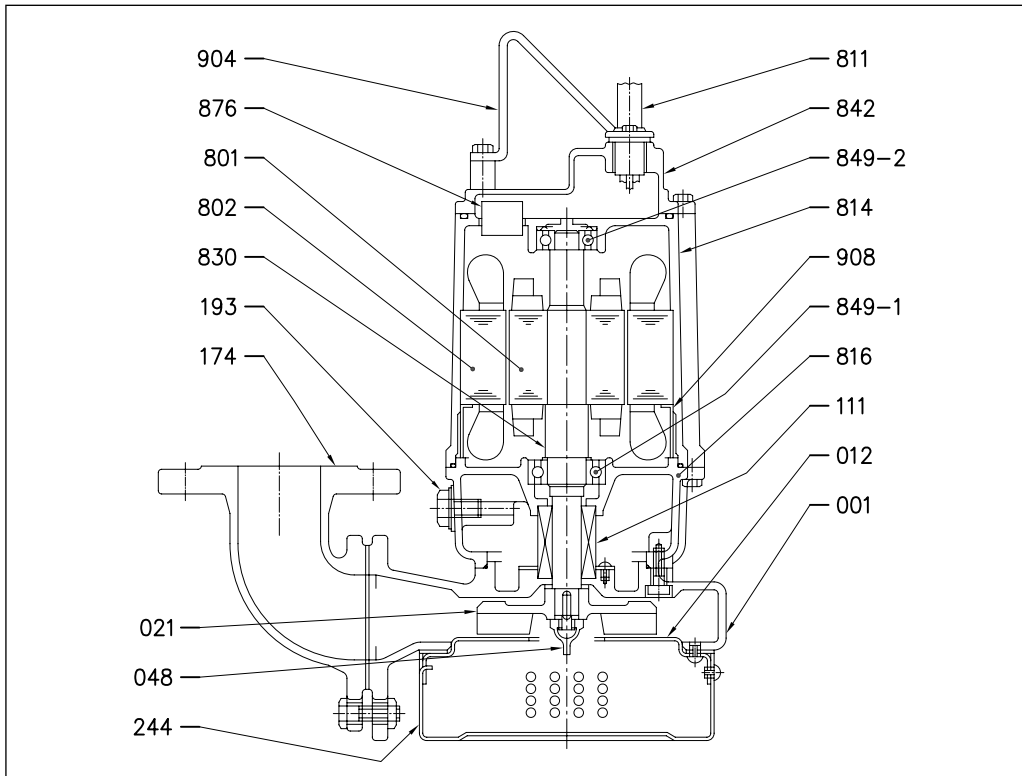
## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

in cast iron

SECTIONAL VIEW 50 DS (1.5kW)



SECTIONAL VIEW 65 DS (1.5kW)



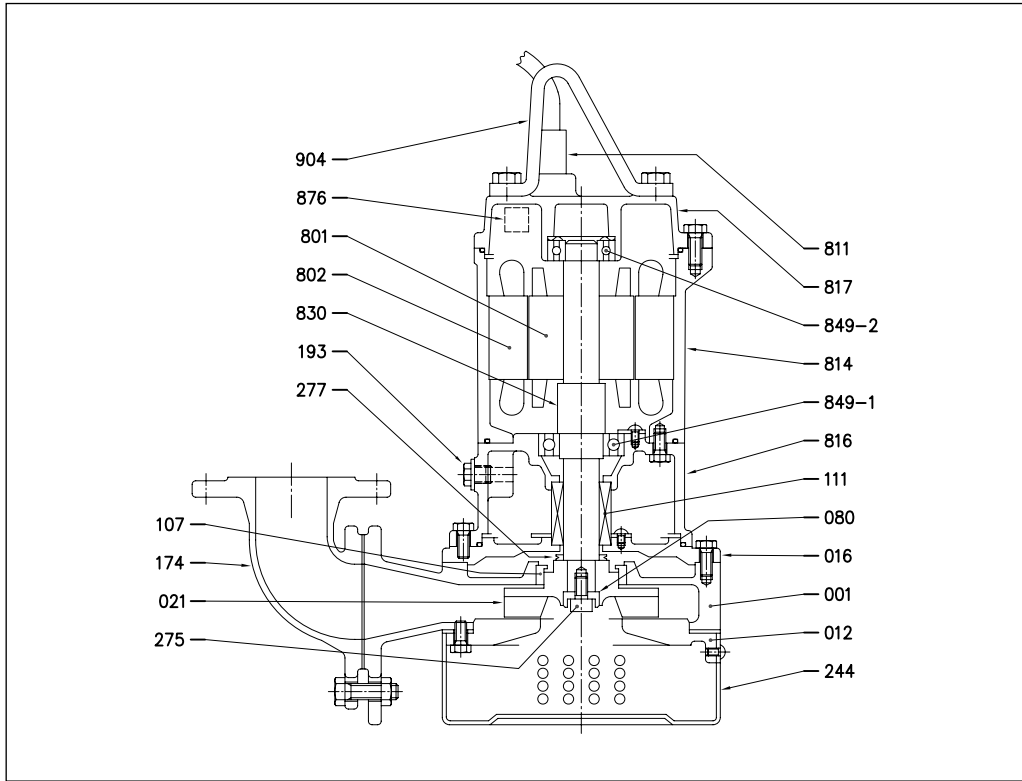
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## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

in cast iron

SECTIONAL VIEW 50(80) DS (2.2÷3.7 kW) - 100 DS (5.5÷7.5 kW)



MATERIALS TABLE DS

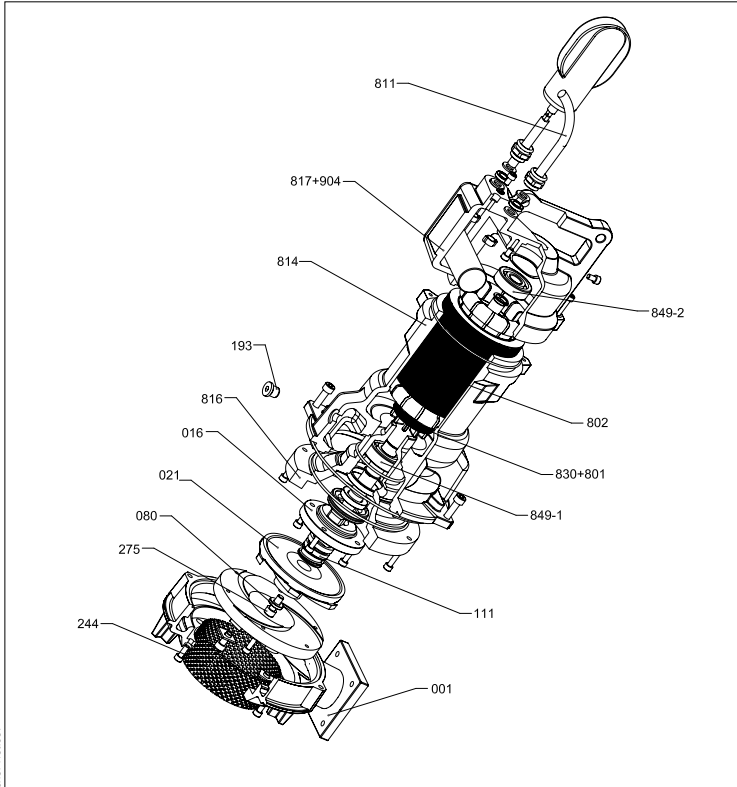
Ref.	Name	Material	Ref.	Name	Material
001	Pump body	Cast iron EN-GHJL-200-EN 1561	811	Cable	-
012	Suction side lid	EN 1.4301 (AISI 304)	814	Motor case	Cast iron EN-GHJL-200-EN 1561
021	Impeller	Cast iron EN-GHJL-200-EN 1561	816	Motor support	Cast iron EN-GHJL-200-EN 1561
048	Impeller nut	Brass	830	Shaft	EN 1.4006 (AISI403)
111	Mechanical seal	-	842	Motor cover	Cast iron EN-GHJL-200-EN 1561
174	Discharge bend	Cast iron EN-GHJL-200-EN 1561	849-1	Ball bearing	-
193	Oil plug	NBR/EN 1.4301 (AISI 304)	849-2	Ball bearing	-
244	Filter	EN 1.4301 (AISI 304)	876	Protector	-
801	Rotor	-	904	Lifting hanger	Steel inox
802	Stator	-	908	Spacer	Steel

# DS - DSF

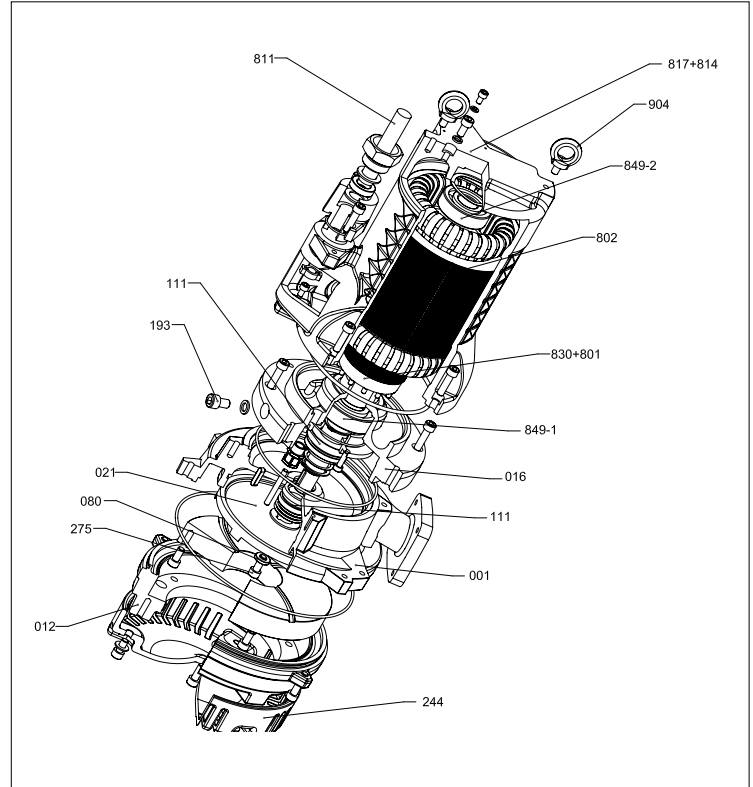
## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

in cast iron

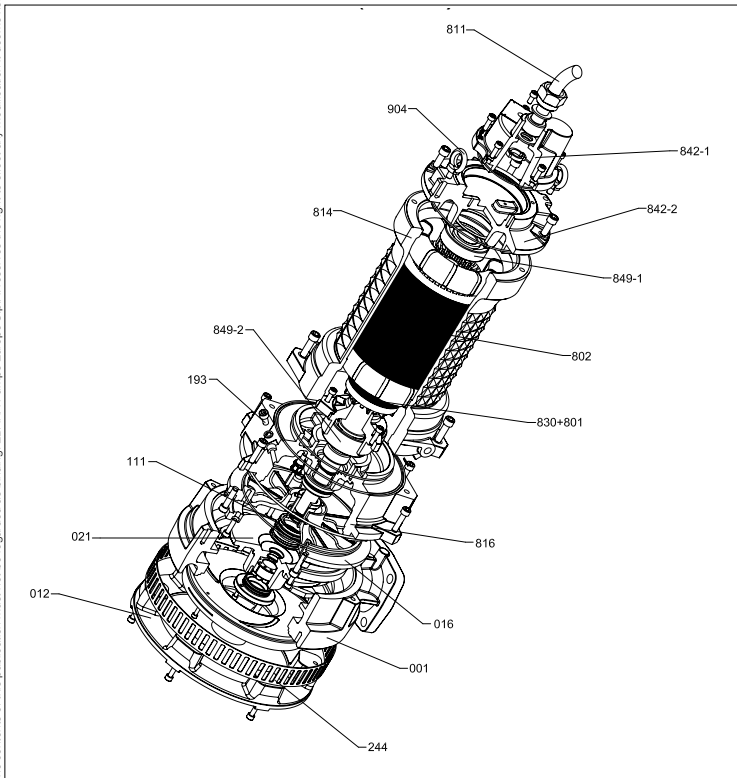
SECTIONAL VIEW 40 DSF (1.1÷1.8 kW)



SECTIONAL VIEW 40 DSF (5.7 kW)



SECTIONAL VIEW 40 DSF (15.9 kW)



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# DS - DSF

## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

in cast iron

### MATERIALS TABLE DSF

Ref.	Name	Material	Ref.	Name	Material
001	Pump body	Cast iron EN-GJL-250	811	Cable	-
012	Suction side lid	Cast iron EN-GJL-250	814	Motor case	Cast iron EN-GJL-250
016	Mechanical seal cover	Cast iron EN-GJL-250	816	Power side bracket	Cast iron EN-GJL-250
021	Impeller	AISI 420B	817	Opposite side bracket	Cast iron EN-GJL-250
080	Bushing	Steel	830	Shaft	AISI 420B
111	Mechanical seal	-	842-1	Motor cover	Cast iron EN-GJL-250
193	Oil plug	NBR/Stainless Steel	842-2	Motor cover	Cast iron EN-GJL-250
244	Filter	AISI 316L	849-1	Ball bearing	-
275	Impeller nut	Class A2 AISI 304	849-2	Ball bearing	-
801	Rotor	-	904	Lifting hanger [1]	Cast iron EN-GJL-250
802	Stator	-	904	Lifting hanger [2]	Steel

[1] - For model 40 DSF (1.1÷1.8 kW)

[2] - For model 40 DSF (5.7 kW) and 40 DSF (15.9 kW)

# DS - DSF

## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

in cast iron

### DS (1.5÷3.7 kW) MOTOR DATA

[P <sub>2</sub> ]		[kW]	1,5			2,2			3,7			
Resistance at 20°C		[Ω]	11,973			4,942			2,647			
GD <sup>2</sup>		[kg·m <sup>2</sup> ]	0,0057			0,0082			0,011			
Voltage		[V]	380	400	415	380	400	415	380	400	415	
Load	0%	Current	[A]	1,25	1,32	1,30	1,95	2,15	2,33	3,20	3,30	3,90
		Power	[W]	430	405	400	500	500	252	800	500	600
	75%	Current	[A]	2,92	2,62	2,61	4,07	4,06	3,82	7,07	6,32	6,45
		Efficiency	[%]	63,59	69,18	70,11	71,23	69,69	77,58	68,00	75,54	74,26
		Power factor	[%]	91,93	89,54	85,68	86,44	84,27	77,40	87,75	83,92	80,61
	100%	Speed	[min <sup>-1</sup> ]	2872	2887	2898	2895	2901	2927	2890	2917	2922
		Current	[A]	3,70	3,30	3,30	5,10	5,00	4,60	8,80	7,80	7,80
		Efficiency	[%]	65,61	71,25	70,89	73,05	72,28	79,33	70,79	77,64	76,74
		Power factor	[%]	93,88	92,08	89,21	89,71	87,87	83,88	90,24	88,18	86,00
	Speed	[min <sup>-1</sup> ]	2821	2847	2854	2851	2864	2900	2847	2886	2890	
		Locked Rotor Torque	[%]	243	295	303	161	186	184	175	216	233
	Start Current		[A]	20,5	21,1	22,5	28,7	30,0	31,5	51,2	51,0	53,0
No. starts per hour			10									
Model			ZDSEU									

### DS (5.5÷7.5 kW) MOTOR DATA

[P <sub>2</sub> ]		[kW]	5,5			7,5			
Resistance at 20°C		[Ω]	2,001			1,345			
GD <sup>2</sup>		[kg·m <sup>2</sup> ]	0,03			0,037			
Voltage		[V]	380	400	415	380	400	415	
Load	0%	Current	[A]	3,00	2,70	2,70	3,65	3,20	3,27
		Power	[W]	340	800	340	400	800	400
	75%	Current	[A]	8,37	8,36	7,59	11,43	11,02	10,17
		Efficiency	[%]	82,89	77,34	83,68	83,36	79,51	84,44
		Power factor	[%]	90,37	92,05	90,40	89,70	92,68	91,14
	100%	Speed	[min <sup>-1</sup> ]	2944	2932	2945	2941	2928	2942
		Current	[A]	10,80	10,80	9,80	14,80	14,30	13,20
		Efficiency	[%]	83,87	79,10	84,51	84,26	80,96	85,13
		Power factor	[%]	92,25	92,92	92,39	91,34	93,50	92,85
	Speed	[min <sup>-1</sup> ]	2922	2905	2923	2917	2900	2918	
		Locked Rotor Torque	[%]	168	155	168	159	154	159
	Start Current		[A]	77,0	70,0	70,0	105,0	93,5	94,0
No. starts per hour			10						
Model			ZDSEU						

# DS - DSF

## SUBMERSIBLE PUMPS WITH SEMI-OPEN IMPELLER FOR CLEAN WATER AND RAINWATER

in cast iron

### DSF (1.1÷15.9 kW) MOTOR DATA

[P <sub>2</sub> ]		[kW]	1,1	1,8	5,7	15,9	
Resistance at 20°C		[Ω]	1,97/4,34	1,9/4,3	2,800	0,560	
GD <sup>2</sup>		[kg·m <sup>2</sup> ]	0,000520	0,000520	0,003	0,016	
Voltage		[V]	230	230	400	400	
Load	0%	Current	[A]	2,31	2,5	4,9	12,6
		Power	[W]	415	420	760	1800
	75%	Current	[A]	5,4	7,6	8,7	22,4
		Efficiency	[%]	67	80	84	87,38
		Power factor	[%]	0,96	0,98	0,85	0,86
	100%	Speed	[min <sup>-1</sup> ]	2868	2795	2875	2925
		Current	[A]	7,5	10	12,5	30
		Efficiency	[%]	68	80,5	84	88,36
		Power factor	[%]	0,98	0,99	0,89	0,9
	Speed	[min <sup>-1</sup> ]	2750	2710	2840	2900	
		Locked Rotor Torque	[%]	20	30	260	330
	Start Current		[A]	21	35	73,8	171
Phase			1		3		
No. starts per hour			15				
Model			M271M/M 2282-3028-3534-6437	M271M/L 3026-3536-5432-5372-6436	M210T/L 3480	M213T/L 8622	