



6", 8", 10" and 12" Rewindable Submersible Motors

GB

Assembly and Operating Instructions



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1 About This Document

The assembly and operating instructions form an integral part of the rewindable submersible motor and describe its safe, intended use in all operating phases.

- Document Retention** ⇒ Keep the assembly and operating instructions in the immediate vicinity of the motor.
⇒ Hand the assembly and operating instructions over to every subsequent user of the motor.

Application The assembly and operating instructions only apply to the motors described in this booklet.

1.1 Warning notices and warning symbols

Warning notices point out special dangers and indicate the measures that can be taken to avoid the danger. Warning notices come in three levels:

Warning word	Meaning
DANGER	Immediate danger to life and health
WARNING	Possible danger to life and health
CAUTION	Possible danger of slight injury or material damage

Warning notices are built up as follows:



Warning word

Type and source of danger as well as the possible consequences of measures not being observed!

- ⊙ *Forbidden actions.*
⇒ *Measures to avoid the danger.*
-

1.2 Instructions and Highlights

In the assembly and operating instructions we use the following symbols and highlights, for improved legibility and uniform identification.

- Insulation measuring unit (this indicates a listing)
☑ Instructions ... observed (this indicates a condition)
⇒ Switch off the motor. (this indicates an instruction to take action)
Motor has stopped. (this indicates the result of the action)
Immediately switch off the motor... (you can see a highlight in bold here)



Note

Specifically important information is given here. You should observe this information to ensure correct and safe operation of the motor.

2 Safety

This section describes the safety rules which must be observed for the safe use of submersible motors. Possible sources of danger and the relevant safety measures are listed here.

2.1 Intended use

Franklin Electric submersible motors are only intended for integration with a submersible pump in order to drive the relevant pump under water. They must only be put into use if the machine fulfils the provisions of the applicable directives and statutory provisions.

Installation position: Vertical (Mandatory mounting position: vertical, shaft up. Only one diameter step allowed, i.e. 6" motor on 8" pump). Horizontal (only allowed if the pump size is identical to the motor size, e.g. 6" motor with 6" pump). The pump has to sufficient "Down Thrust" transmit to the motor.

The submersible motors must only be used in clean, highly fluid media, such as drinking or process water.

The following media are not allowed: air, highly flammable, explosive media and wastewater.

Loss of guarantee and exclusion of liability

Franklin Electric shall not be liable for the damage resulting from any further, non-intended use. The risk of such use rests solely with the user.

2.2 Target group

The electrical system must only be installed by professional staff (qualified electrical engineers or electrical machine technicians).

2.3 General safety instructions

The following safety measures must be observed prior to putting the motor into use:

- Do not carry out any other work on the motor other than described in these instructions.
- Only use the motor under water (the motor and the short motor cable must be fully submersed).
- Do not implement any changes or conversions to the motor or its electrical connections.
- Never open the motor.
- Never use the motor in combination with damaged pump units or parts.
- Only work on the motor when it is switched off. No work or checks require the motor to be running.
- Switch off the power supply to the motor before carrying out any work on it.
- Make sure that nobody can switch on the voltage unexpectedly while work is being carried out on the motor.
- Never work on electrical systems during a thunderstorm.
- Make sure immediately after ending the work that all protective and safety devices have been fitted again and are operational.
- Before switching on the motor, make sure that all electrical connections and safety devices have been checked and that all fuses and safeties have been set correctly.
- Make sure that no danger zones are freely accessible (e.g. rotating parts, suction locations, pressure output locations, electrical connections).
- Observe the pump manufacturer's commissioning instructions.
- If motors or pump units have been used in contaminated media they must be marked as such before handing them over to a third party (e.g. when submitting them for repair). Pay attention to possible residues in "dead spaces" (diaphragm cover).
- Contaminated motors or pump units must be marked as such before handing them over to a third party (e.g. when submitting them for repair).
- Repairs must only be carried out by authorized professional workshops. Use only original Franklin Electric spare parts.

3 Storage, Transport, Disposal

- Storage**
- ⇒ Store the motor in its original packaging until the time of installing it.
 - ⇒ If the motor is stored standing up, make sure that it cannot topple over (shaft always pointing up!).
 - ⇒ Do not store the motor in direct sunlight or within the reach of other heat sources.
 - ⇒ Observe the storage temperature (-15 - +60°C, see technical specifications).

Transport



DANGER

Falling loads may cause lethal injuries or may crush parts of the body!

- ⊙ Nobody is allowed to be located under suspended loads.
 - ⇒ Only use approved hoisting gear.
 - ⇒ Select the hoisting gear on the basis of the total weight to be transported.
-

Unpacking

- ⇒ After unpacking the motor check it for possible damage, e.g. damage to the diaphragm cover, housing, endbell, connection and motor cable.
- ⇒ Immediately inform the supplier of any damage found.



DANGER

Danger to life due to electrocution if the motor cable is damaged!

- ⊙ Do **not** install the motor and do **not** put it into operation.
-

Disposal In order to avoid environmental damage:

- Avoid contamination by lubricants, detergents etc.
- Dispose of the motor and the packaging material in a proper, environmentally sound manner.
- Observe local regulations.

4 Technical specifications

Description	Value
Performance/model number	6": 4 - 37 kW models 262 ... 8": 30 - 93 kW models 263 ... 10": 85 - 185 kW models 264 ... 12": 185 - 400 kW models 265 ...
Winding insulation	Standard: PVC Optional: PE2/PA (12 inch Standard)
Voltage range	220 V ... 1000 V, 3~ 50/60 Hz
Voltage tolerance (on the motor terminals)	50Hz: -10 to +6 % of U _N , i.e. at a nominal voltage of 380-415 V: 380 V -10 % = 342 V / 415 V + 6 % = 440 V 60Hz: ± 10% of U _N
Frequency tolerance	± 2%
Speed	approx. 2900 rpm at 50 Hz
Start alternatives	Direct starting, wye-delta-starting

Description	Value
Switching frequency	Max. number of switching actions per hour with a minimum off time of 90 seconds 6": 20 switching actions 8", 10": 10 switching actions 12": 5 switching actions
Protection	IP 68 according to IEC 60529
Submersion depth	max. 350 m
Installation location	Vertical (Mandatory mounting position: vertical, shaft up. Only one diameter step allowed, i.e. 6" motor on 8" pump). Horizontal (only allowed if the pump size is identical to the motor size, e.g. 6" motor with 6" pump). The pump has to sufficient "Down Thrust" transmit to the motor. 6"–37 kW, 8"–93 kW and 10"–185 kW cannot be used horizontally.(For horizontal use up to 150 kW the Franklin Electric encapsulated motor is the technically better alternative.) No general guarantee when installed in pressure boosting systems
Operating temperature	≥ -3 °C
Sound pressure level	≤ 70 dB(A)
Maximum axial thrust towards the motor (8" and 10" motors: for clockwise rotation please consult Franklin Electric)	6": 4 - 26 kW 15.5 kN 30 - 37 kW 27.5 kN 8": all motors 45.0 kN 10": all motors 60.0 kN 12": all motors 60.0 kN (Optional 80 kN)
Maximum axial thrust away from the motor (only for a short-time load of max. 3 minutes; independent of performance rating)	6": 2.0 kN 8" 3.0 kN 10" / 12": 4.4 kN
Material	The person placing the order is responsible for selecting the correct material, specifically as regards its resistance in the medium to be transported. Cast-Iron Design: Stator 304, powder-coated castings 304SS: Stator and castings (only 6") 316SS: Stator and castings 904L: Stator and castings
Motor fluid	FES 93 (approved, water-based emulsion) Filling fluid replacement on request
Weight	Technical data sheets (see appendix)
Storage temperature	-15 °C to +60 °C
Motor cable	KTW and VDE short motor cables are included in the delivery. 6": Motor cable 4.0 m long 8", 10" & 12": Motor cable 6.0 m long
Connection flange	6", 8": NEMA flange (see appendix) 10" & 12": Standard flange (see appendix)
Temperature monitoring	PT100 temperature sensor for retrofitting (separate order; see appendix)

Motor cooling

Motor size (")	Performance rating (kW)	Coolant flow speed* (m/s)	Max. medium temperature for winding (°C)	
			PVC	PE2/PA
6	5.5 - 15	0.2	30	50
	18.5 - 30	0.5	30	50
	37	0.5	□	45
8	30 - 52	0.2	30	50
	55 - 93	0.5	30	50
10	85 - 185	0.5	25	45
12	185 - 400	0,5	-	30

*The **coolant flow speed** is the speed of the medium flowing along the motor casing during normal operation.

In the event of higher media temperatures, operation is only allowed if you

- use a special winding PE2/PA,
- reduce the performance (De-Rating, see Appendix),
- increase the coolant flow speed.

5 Pre-Operation Checks

5.1 Check the motor prior to installation

If a leak is visible or if the motor is more than one year old (e.g. in the event of re-use or after long storage):

⇒ Check the fluid level in the motor prior to installing it.

Tools You need the following tools for assembly and inspection work:

- Insulation measuring unit: 500 VDC testing
 - Filling Kit 308 726 103
- ⇒ Determine the age of the motor by checking manufacturing code near the type plate (see Figure 5-1).

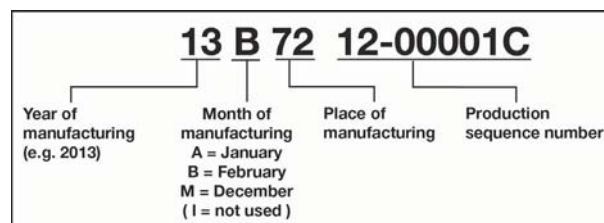


Figure 5-1: manufacturing code with date and place of manufacture

5.1.1 Checking the motor fluid



Motor damage due to being insufficiently filled!

- ⇒ Fill the motor with sufficient motor fluid
- ⇒ Wear safety goggles and gloves when filling and draining the motor.

⇒ Top up using original motor fluid from Franklin Electric FES93 (concentrate FES92 id. no. 308 353 941, 5-liter container) or clean drinking water.
Never use distilled water!

Filling volumes

- 6": approx. 5 litres
- 8": approx. 12 litres
- 10": approx. 20 litres
- 12": approx. 41 liters

Venting the motor

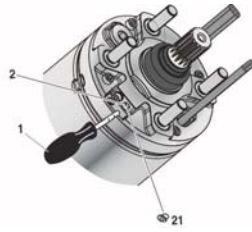


Figure 5-2: 6", 8", 10" motor

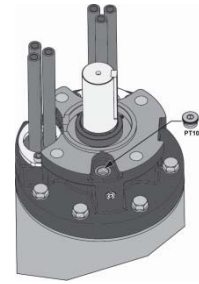
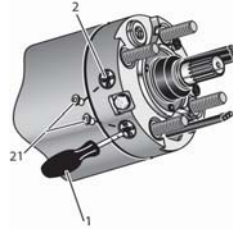
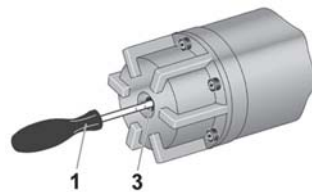


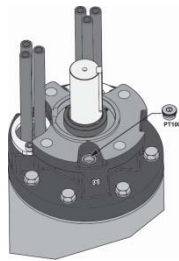
Figure 5-3: 12" motors

- ⇒ Place the motor horizontally so that the filling valve (2) is located at the highest position.
- ⇒ Remove the plug (21) from the filling valve (2).
- ⇒ Carefully push the test pin (1) into the filling valve (2) until air and some fluid escape from it.

Checking the motor 6-12"



6" / 8" / 10"

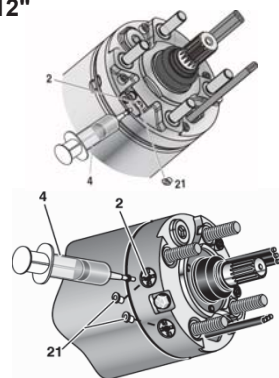


12"

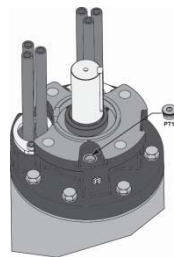
Figure 5-5: Checking the motor fluid

- ⇒ Feed the test pin (1) through the opening in the diaphragm housing (3) (8"/10" de-central cover opening) until resistance is felt.
- ⇒ Measure the actual diaphragm distance to the side of the opening in the diaphragm cover.
If the measured result is not identical to the target value:
44 mm ±2 mm (6"/8" motor)
64 mm ±2 mm (10" motor) or
- ⇒ Top up or drain motor fluid.
- ⇒ 12" – Place the motor vertically and remove the PT100 plug
- ⇒ the fluid level must be on the threaded hole end

Topping up the motor 6-12"



6" / 8" / 10"



12"

Figure 5-6: Topping up the motor fluid

- ⇒ Apply the filling syringe (4) to the filling valve (2).
- ⇒ Top up the motor filling fluid until the value of the diaphragm position is lower than the target value.
- ⇒ 12" , overfill the motor with fluid
- ⇒ fit the PT100 plug screw

Adjusting the motor

- ⇒ Adjust the diaphragm position by draining (see Venting) or topping up motor fluid until the target value is reached. (6" / 8" / 10")
- ⇒ Fit the valve plug (21) again.



Risk of injury from pre-tensioned 8"/10" diaphragm cover during disassembly!

- ⇒ Secure the diaphragm cover: screw the M8 threaded rod through the central cover opening in the diaphragm insert cover.
- ⇒ Lock it from the outside using an M8 locknut.

5.2 Assembling the motor and pump



Note

These assembly and operating instructions only describe action steps related to the motor. You should also observe the pump unit manufacturer's instructions in all events.

Preparation

- Shaft protector removed
- Motor shaft rotated manually before assembly – runs freely after overcoming static friction
- Surfaces of parts to be connected are free from dust and dirt
- Coupling attached to the pump shaft, slides on the motor shaft

Assembly

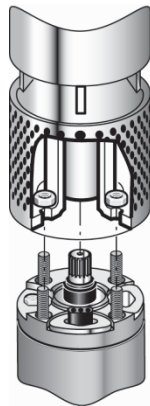


Figure 5-7: 6"

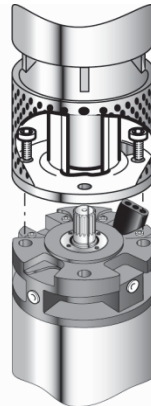


Figure 5-8: 8", 10", 12"

- ⇒ Apply water-resistant, acid-free grease (e.g. Mobil FM 102, Texaco, Cygnus 2661, Gleitmo 746) to the inner part of the coupling to the pump unit.
- ⇒ Make sure that the splined section (with 6" or 8" motors) is encased by an O-ring when the motor and the pump unit are assembled together.
- ⇒ Align the pump unit and motor shaft to each other and connect the pump unit and the motor.



Note

Only use fixing screws of the relevant grade and dimensions approved by the pump unit manufacturer. Observe the indicated torques.

- ⇒ Screw the motor to the pump unit, tighten the fixing screws crosswise as instructed.
6": M12 8": Bore Ø 17.5 mm 10" / 12": Bore Ø 22.0 mm
- ⇒ Protect the coupling location against contact.

5.3 Connecting the drop cable



Motor damage due to damaged motor cable!

- ⇒ Make sure that the motor cable is not in contact with any sharp edges.
- ⇒ Protect the cable against damage using the cable guard.

- The unit manufacturer's instructions regarding the cable connection have been observed
- Only extension cable and insulating material used which are suitable for the specific use (specifically drinking water) and which are approved for the temperatures occurring in the relevant medium
- Cable cross-sections: The tables in the appendix only serve as recommended suggestions. The fitter is responsible for the correct selection and dimensioning of the cable
- ⇒ Lay the cable along the pump.
- ⇒ Connect the ground conductor correctly (motors or integrated ground conductors are prepared for external grounding).
- ⇒ Protect the cable connection location against water penetration (shrink hoses, compounds or ready cable sets).
- ⇒ Make sure that the short motor cable is always fully surrounded by transport medium for proper cooling during operation.

5.4 Measuring the insulation resistance

This measurement is to be carried out using an insulation measuring unit (500 VDC, 1 min) before and while submersing the fully assembled unit at the place of use.

- ⇒ Before submersing the unit, connect a measuring cable to the ground conductor.
- ⇒ Make sure that the contact points are clean.
- ⇒ Connect the other measuring cable to every core of the connected motor cable in succession.

The insulation resistance is shown on the insulation measuring unit.

Minimum insulation resistance (ambient temperature 20°C) with extension cable:

- for a new motor > 4 MΩ
- for a used motor > 1 MΩ

For your information

Minimum insulation resistance (ambient temperature 20°C) without extension cable:

- for a new motor > 400 MΩ
- for a used motor > 20 MΩ

5.5 Powering the motor



Danger to life due to electrocution!

- ⇒ *Prior to making the electrical motor connection make sure that there is no more voltage on the entire plant and that nobody can accidentally switch on the voltage again while the work is being carried out.*

Observe the instructions on the motor type plate and dimension the electrical system accordingly. The connection examples in this chapter concern the actual motor and do not serve as recommendation for the upstream control elements.

- All action steps of the previous chapter have been carried out properly

Energy supply by generator



Note

We urgently recommend that you discuss the plant dimensions with the generator manufacturer.

The voltage tolerance, 50Hz: -10 % to +6 %/ 60Hz: ± 10%,(on the motor terminals) and the deviation of a motor current from the mean value of all three currents must not be more than 5 %.

- Generator selected on the basis of the motor start behaviour, i.e. starting current with a mean $\cos \varphi$ of 0.5
- Sufficient continuous generator power available

- ☑ Starting voltage at least 55 % of the nominal voltage
- ⇒ You must follow the following switch-on sequences unconditionally:
first switch on the generator and then the motor.
first switch off the motor and then the generator.

Fusing and motor protection

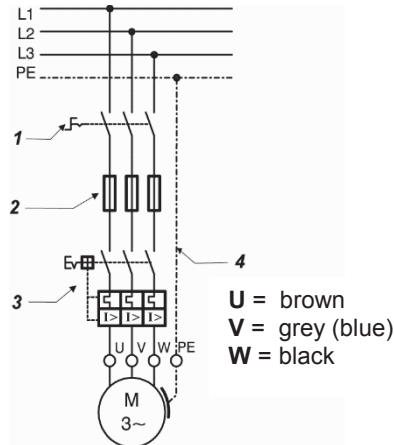


Figure 5-10: Fusing and motor protection

- ⇒ Provide an external mains switch (1) enabling the voltage to be removed from the system.
- ⇒ Provide fuses (2) for every single phase on site.
- ⇒ Provide a motor starting and protection switch (3) (see connection alternatives)
- ⇒ Provide an emergency stop system, if required for your specific application.
- ⇒ Ground the motor (4) (exterior grounding possible with all motors)

Surge voltage protection

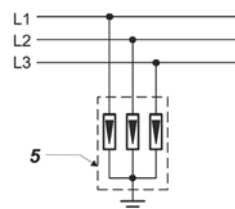


Figure 5-12: Surge voltage protection

- ⇒ Integrate an overload protector in accordance with IEC 60099 in the power supply (lightning safety (5)).

Connection alternatives

The connection example shows the usual circuit with a right-hand field and an anti-clockwise direction of rotation:

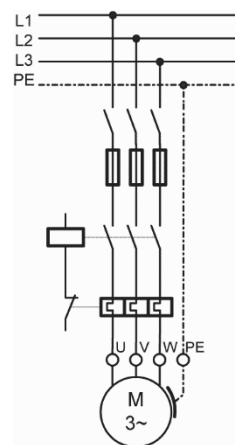


Figure 5-13: Direct starting

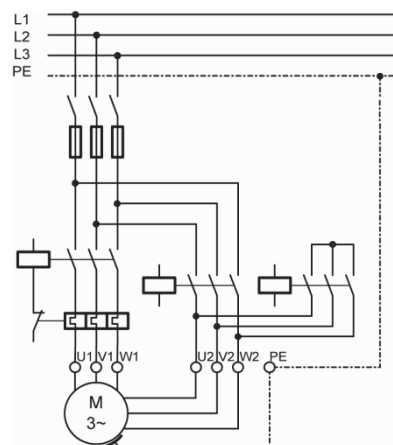


Figure 5-14: Wye-delta-starting

Motor safety switch

A motor safety switch (overload relay) is absolutely necessary!

Only use thermal trips of tripping categories 10A or 10, with

- ⇒ tripping time < 10 s at 500 % I_N (nominal current),
- ⇒ phase sensitivity,
- ⇒ Temperature compensation.
- ⇒ Set the motor protection unit to the value of the operating current measured without exceeding the rated motor current I_N (as indicated on the type plate); recommendation: 90 % of the nominal motor current.

6 Motor Operation

6.1 Proper motor cooling



Damage to the motor and the motor cable due to overheating

- ⇒ Make sure that the coolant flow speed along the motor is sufficient.
- ⇒ Make sure that the short motor cable is always fully surrounded by transport medium for proper cooling.

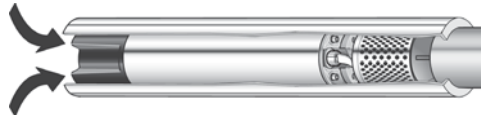


Figure 6-1: Cooling tube

If the required minimum coolant flow speed cannot be reached (e.g. if the inlet opening of the well is located above the motor or if using large-diameter wells):

- ⇒ Fit a cooling tube (see figure 6-1).
- ⇒ Make sure that the cooling tube encases the entire motor and the pump water inlet opening.
The motor is force-cooled.

6.2 Providing a check valve and level sensor

- ⇒ Provide one spring-loaded check valve in the production tube in case no such check valve has been fitted in the pump.
- ⇒ Ensure that the check valve is no further than 7 meters away from the pump.
- ⇒ Install a level sensor for wells with a highly varying water inflow.

6.3 Switching on the motor

- ☑ All action steps of the previous chapter have been carried out properly
- ⇒ Switch on the motor using the mains switch in the control cabinet.
- ⇒ Measure the following values after switching on:
 - Motor operating current in every phase
 - Mains voltage when motor is running
 - Level of the medium to be transported
- ⇒ **Immediately switch off the motor if:**
 - the nominal current as specified on the type plate is exceeded,
 - voltage tolerances of more than, 50Hz: -10 % to +6 %/ 60Hz: ± 10%, relative to the nominal voltage are measured on the motor,
 - there is a risk of the motor running dry,
 - motor current deviates from the mean value of all three currents by more than 5 %.

6.4 Motor operation with frequency converter



Note

When operating a motor with a frequency converter, the relevant operating manual must be observed!

- ⇒ Make sure that the motor current in all operating levels of the regulating range does not exceed the nominal motor current indicated on the type plate.
- ⇒ Adjust the frequency converter so that the limit values for the nominal motor frequency of min. 30 Hz and max. the value of the nominal motor frequency (50 or 60 Hz) are observed.

- ⇒ Limit any voltage peaks on the motor when using a frequency converter to the following values: max. voltage rise 500 V/μs, max. voltage peak 1000 V.
- ⇒ Make sure that the running up time from 0 to 30 Hz and the deceleration time from 30 to 0 Hz is maximum one second.
- ⇒ Dimension the cable such that power loss due to additional filters is taken into consideration.
- ⇒ Make sure that the required coolant flow speed along the motor is also observed with frequency converter operation.

6.5 Motor operation with soft starter



Note

When operating a motor with a soft starter, the relevant operating manual must be observed!

- ⇒ Set the starting voltage of the soft starter to 55 % of the nominal voltage and set the running up and delay times to max. three seconds.
- ⇒ Bridge the soft starter after running up, using a contactor.

7 Maintenance and service

The motor is maintenance-free, no maintenance or service activities are necessary.

8 Troubleshooting

Fault	Remedy
Unusual noises, problems with the proper running of the pump or the pump switching on and off too frequently.	⇒ Try to find the cause of the fault on the pump unit.
The pump repeatedly switches off	<ul style="list-style-type: none"> ⇒ Have the insulation resistance checked by a professional (see chapter 5.4). ⇒ If no cause can be found in the motor or the motor cable: Have the electrical system checked.

9 Service

Repairs must only be carried out by authorised professional workshops (only use original Franklin Electric spare parts).

If you have any questions or problems, please contact your dealer or contact Franklin Electric via Internet (www.franklin-electric.eu) or via mail to: field-service@franklin-electric.de.

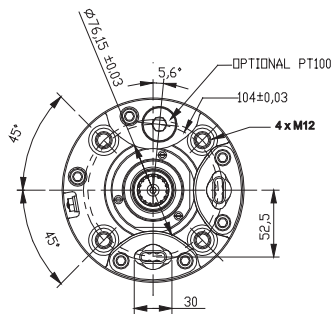
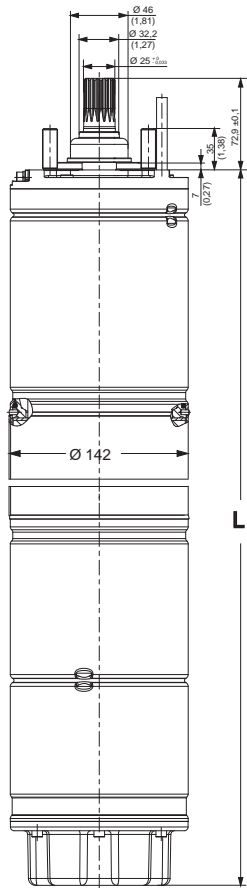
10 Appendix

Page	Explanation
Page A	Outline drawing 6" and 8"
Page B	Outline drawing 10" and 12"
Page C	Assembly instructions PT100
Page D	Cable cross-sections DOL and YD



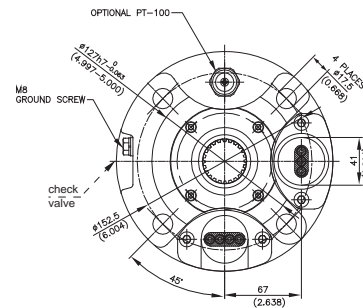
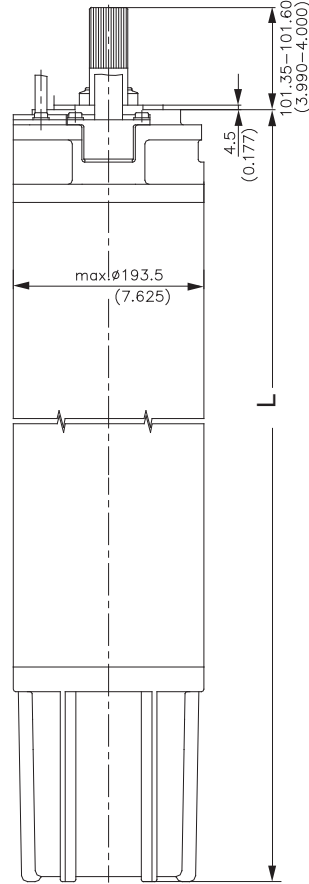
6" Rewindable

304SS / 316SS / 904L - Standard / PM



8" Rewindable

304SS / 316SS / 904L



6" Rewindable Motors

P _N [kW]	6" Rewindable Motors		Shipping Weight [kg]	
	Standard L [mm]	PM L [mm]	Standard	PM
4	679	655	48	46
5,5	679		48	
7,5	699		50	
9,3	729	809	54	61
11	759		58	
13	809		62	
15	854		66	
18,5	899	971	71	77
22	989		82	
26	1094		93	
30	1194		103	
37	1274		110	

8" Rewindable Motors Standard

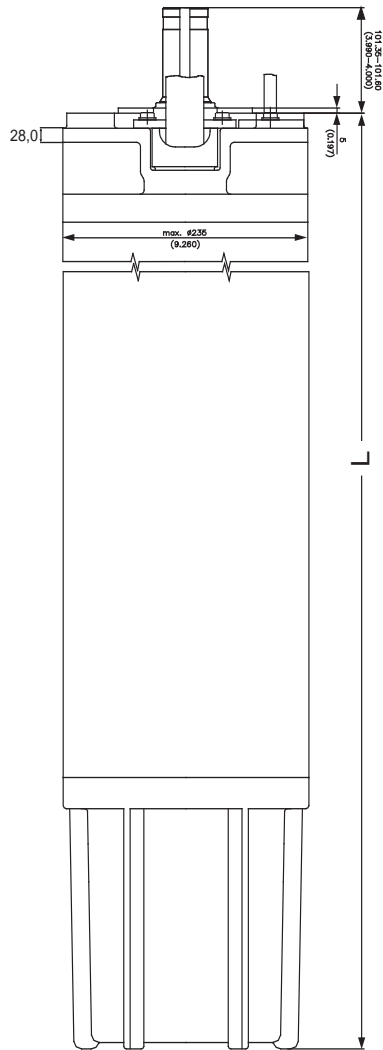
P _N [kW]	L [mm]	Shipping Weight [kg]
30	1140	140
37	1140	140
45	1230	156
52	1340	179
55	1340	179
60	1470	198
67	1470	198
75	1560	215
83	1560	247
93	1740	247

8" Rewindable Motors PM

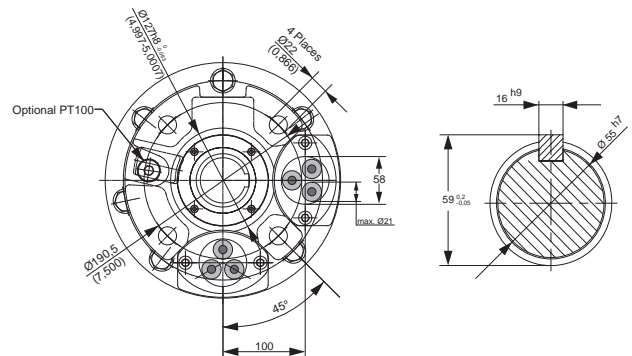
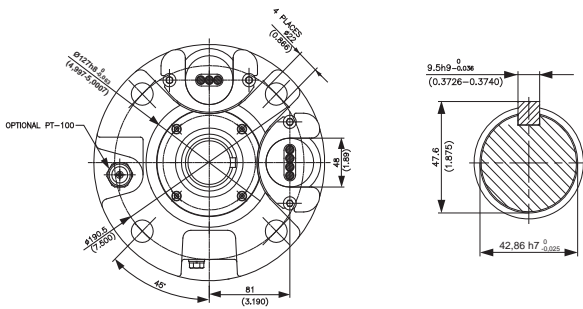
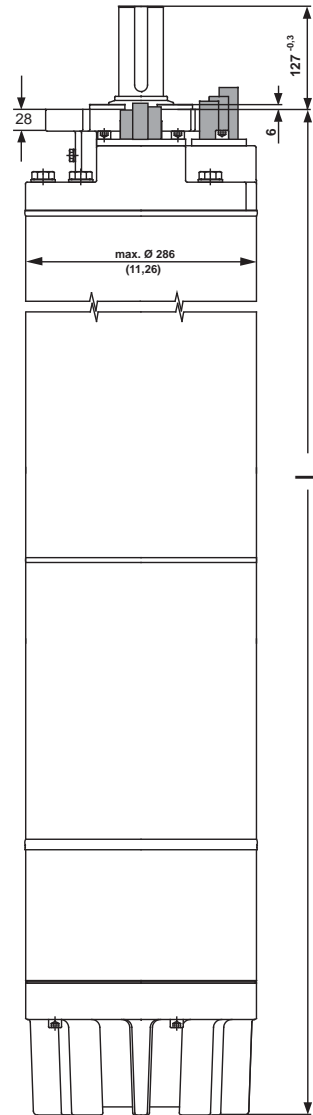
P _N [kW]	L [mm]	Shipping Weight [kg]
45	1205	179
55		
67		
75	1316	198
75		
83		
93		
100	1594	252
100		
110		
130		
150		



10" Rewindable
304SS / 316SS / 904L



12" Rewindable
304SS / 316SS




P_N [kW]	L [mm]	Motor Weight [kg]
85	1419	280
110	1529	315
130	1659	362
150	1769	413
185	1919	449

P_N [kW]	L [mm]	Motor Weight [kg]
185	1893	663
220	1893	663
250	1893	663
300	2043	726
350	2143	769
400	2193	794

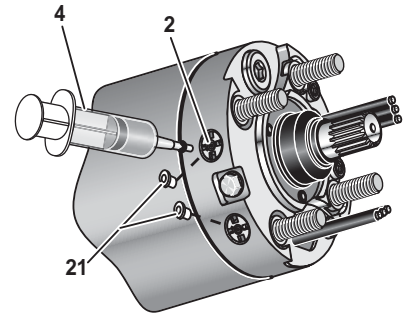


Required parts and tools

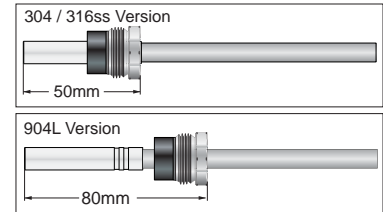
- PT 100 Kit 304/316: (308 016 40 .)
904L: (308 016 42 .)
- Filling – Kit: (308 726 103)
- Filling liquid (5L FES92): 308 353 941

 Caution	<ul style="list-style-type: none"> • Wear safety goggles and gloves when filling and draining the motor • Do not pull on the PT 100
---	---

(Fig.1)



(Fig.2)



Pressure compensation (Fig.1)

Stand the motor vertically and remove the plug (21) from the filling valve (2). Remove the plunger from the syringe (4) and carefully push the syringe into the fill valve (2) until motor fluid escapes into the cylinder; collect the motor fluid in a clean tank.

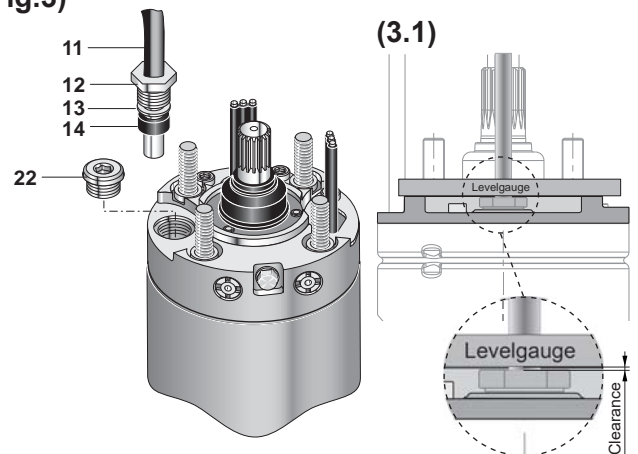
When the interior is no longer pressurized, that is no fluid flows out, remove the syringe from the valve and reassemble it.

PT100 assembly (Fig.2 / Fig.3)

Remove the plug (22) from the end bell. Put the jam nut (12), washer (13) and seal (14) on the PT 100 (11) see Fig.2. Tighten the jam nut and keep the above described position.

For 6" Rew Re-Design Motors, please check the screw position(3.1).

(Fig.3)



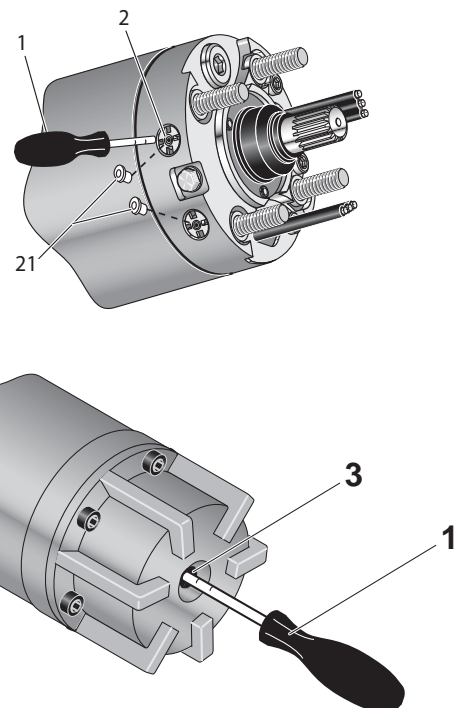
(Fig.4)

Venting (Fig. 4): Place the motor horizontally so that the filling valve (2) is located at the highest position. Carefully push the test pin (1) into the filling valve (2) until air and some fluid escapes.

Checking (Fig. 5): 6"/8"/10" - Feed the test pin (1) through the opening in the diaphragm cover (3) (8"/10" de-central cover opening) until resistance is felt. Measure the actual diaphragm distance to the side of the opening in the diaphragm cover. Adjust the diaphragm position by draining (see venting) or topping up motor fluid (tap water) until the target value is reached. Fit the plug (21) or the PT100 again.

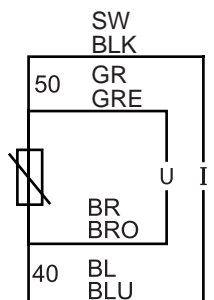
12" - Remove the plug (22) or PT100, the fluid level must be on the threaded hole end . Fit the plug (22) or the PT100 again.

(Fig.5)



Electric installation:

Adjusting switching equipment		
PVC	Winding insulation	55°C
PE2/PA	Winding insulation	75°C



CONNECTION DIAGRAM
PT100



maximum lengths in meters for 400V / 50Hz and 3% voltage drop at 50°C ambient temperature and 90°C at copper wire
Jacketed Drop Cable Length

rating		cable size mm ² , copper wire - 90°C rated insulation																
KW	HP	2,5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400	500
4	5,5	95	155	230	385	605	915											
5,5	7,5	70	110	170	280	440	670	915										
7,5	10	50	80	126	205	325	500	685	935									
9,3	12,5	40	65	100	170	270	410	565	770	1030								
11	15		55	85	140	225	345	470	645	865	1110							
13	17,5		50	75	125	195	300	410	560	750	965							
15	20		40	65	105	170	265	360	495	665	855	1030						
18,5	25			50	85	140	210	290	400	530	680	810	950					
22	30				75	120	180	250	340	455	585	700	815	945				
26	35				60	100	150	210	290	385	500	600	705	815	970			
30	40					85	135	185	250	335	430	515	600	695	820	935		
37	50						105	150	205	270	350	420	485	565	665	760	875	980
45	60						90	125	175	235	310	375	445	520	630	730	860	980
52	70						80	110	155	210	270	325	385	450	540	625	735	840
55	75							105	145	195	255	305	360	420	505	580	685	770
60	80							95	135	185	240	290	345	400	485	560	660	750
67	90								120	160	210	255	300	350	415	480	565	640
75	100								105	145	185	225	270	315	375	435	510	580
83	111								95	130	170	210	250	290	350	405	480	540
85	114									125	160	195	230	265	315	365	425	480
93	125									115	150	185	215	255	300	350	410	460
110	150										120	145	170	200	235	270	310	350
130	175											130	155	180	215	250	290	330
150	200												145	170	205	235	275	280
185	250														140	160	185	210
220	300														130	150	175	200
250	335															125	145	160
300	400																	150
350	470																	120
400	540																	

rating		cable size mm ² , copper wire - 90°C rated insulation																	
KW	HP	2,5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400	500	
4	5,5	145	230	350	575	900													
5,5	7,5	106	170	250	420	660	1010												
7,5	10	75	125	185	310	490	750	1025											
9,3	12,5	60	100	155	255	405	620	845	1160										
11	15		85	130	210	340	520	715	980										
13	17,5		75	110	185	295	450	615	845	1125									
15	20		65	95	160	260	395	540	740	995									
18,5	25			80	130	210	320	435	600	800	1025								
22	30				110	180	275	375	510	685	875	1050							
26	35				95	150	230	315	435	580	750	900	1055						
30	40					130	200	275	375	500	645	775	905	1045					
37	50						160	220	305	410	525	625	730	845	1000				
45	60						135	190	260	355	460	560	665	780	945	1095			
52	70						120	165	230	310	405	490	580	680	815	940			
55	75							155	220	295	380	460	545	635	760	875	1025		
60	80							145	205	275	360	435	510	605	725	840	990	1130	
67	90								180	240	315	380	450	525	625	720	845	960	
75	100								160	215	280	340	405	470	565	655	765	875	
83	111								145	200	260	315	375	435	525	610	715	820	
85	114									185	240	290	345	400	475	550	640	725	
93	125									175	230	275	325	380	455	525	615	695	
110	150										180	220	255	300	355	405	465	525	
130	175											195	230	270	325	375	435	495	
150	200												200	230	275	320	400	420	
185	250															210	240	280	315
220	300															195	225	260	300
250	335																190	220	250
300	400																	205	235
350	470																		190
400	540																		

* only for individual conductor cable



EC Herstellererklärung

eller: Franklin Electric Europa GmbH Rudolf-Diesel-Strasse 20 D-54516 Wittlich
jekt: Wiederable Unterwassermotoren
szeknung: 262... 263... 264... 265... 266...
ben genannten Produkte sind mit den folgenden Europäischen Richtlinien konform:
2006/95/EC
(Niederspannungsrichtlinie), und
2004/108/EC (EMC Richtlinie)
wendete harmonisierte Standards: EN 60034-1: 2010

P. Klippel
Engineering & Quality Manager
3 December 2013

Wittlich/ Germany, Rudolf Diesel Str.20 franklinwater.eu



Déclaration de Conformité CE

fabricant: Franklin Electric Europa GmbH Rudolf-Diesel-Strasse 20 D-54516 Wittlich
roduits : Moteur immerges rebobinables
ésignation: 262... 263... 264... 265... 266...
es produits mentionnés ci-dessus sont conformes avec les Directives européennes suivantes :
2006/95/EC (directive Basse Tension)
et
2004/108/EC (Directive EMC)
standards harmonisés appliqués : EN 60034-1 : 2010

P. Klippel
Engineering & Quality Manager
3 December 2013

16 Wittlich/ Germany, Rudolf Diesel Str.20 franklinwater.eu



EC Dichiarazione di Conformità

oduttore: Franklin Electric Europa GmbH Rudolf-Diesel-Strasse 20 D-54516 Wittlich/Germany
odotti: Motori sommersi riavvolgibili
tori del tipo: 262... 263... 264... 265... 266...
odotti sopra descritti sono conformi alle seguenti Direttive Europee
2006/95/EC (Direttiva Basso Voltaggio)
(e)
2004/108/EC (Direttiva EMC)
conformità allo standard EN 60034-1: 2010

P. Klippel
Engineering & Quality Manager
3 December 2013

Wittlich/ Germany, Rudolf Diesel Str.20 franklinwater.eu



Declaración de Conformidad CE

Fabricante: Franklin Electric Europa GmbH Rudolf-Diesel-Strasse 20 D-54516 Wittlich/Germany
Producto: Motores Sumergibles rebobinables
Modelos: 262... 263... 264... 265... 266...
Los productos mencionados anteriormente están en conformidad con las siguientes Directivas Europeas:
2006/95/EC (Directiva Baja Tensión),
y
2004/108/EC (Directiva EMC)
Normas armonizadas aplicadas: EN 60034-1: 2010

P. Klippel
Engineering & Quality Manager
3 December 2013

54516 Wittlich/ Germany, Rudolf Diesel Str.20 franklinwater.eu



Declaração de Conformidade EC

Produtor: Franklin Electric Europa GmbH Rudolf-Diesel-Strasse 20 D-54516 Wittlich/Alemantia
Producto: Motores Submersíveis do tipo rebobináveis
Designação do tipo: 262... 263... 264... 265... 266...
Os produtos acima estão em conformidade com as seguintes diretivas europeias em vigor:
2006/95/EC (Directiva de baixa tensão),
e
2004/108/EC (Directiva EMC)
Padrões harmonizados aplicáveis: EN 60034-1: 2010

P. Klippel
Engineering & Quality Manager
15 December 2013

54516 Wittlich/ Germany, Rudolf Diesel Str.20 franklinwater.eu



EC Δήλωση Συμμόρφωσης

Κατασκευστής: Franklin Electric Europa GmbH Rudolf-Diesel-Strasse 20 D-54516 Wittlich/Germany
Προϊόν: Rewindable Submersible motors
Όνομασία Τύπου: 262... 263... 264... 265... 266...
Τα παραπάνω προϊόντα είναι σύμφωνα με τις ακόλουθες ευρωπαϊκές οδηγίες:
2006/95/EC (Οδηγίες για χαμηλή τάση)
και
2004/108/EC (EMC Οδηγίες)
Εφαρμοσμένα εναρμονισμένα πρότυπα: EN 60034-1: 2010

P. Klippel
Engineering & Quality Manager
3 Δεκεμβρίου 2013

54516 Wittlich/ Germany, Rudolf Diesel Str.20 franklinwater.eu



بيان الشركة المتقدمة طبقاً للوائح الأوروبية
Franklin Electric Europa GmbH
Rudolf-Diesel-Strasse 20
D-54516 Wittlich/Germany
262... 263... 264... 265... 266...
EN 60034-1: 2010

P. Klippel
Engineering & Quality Manager
3 December 2013

54516 Wittlich/ Germany, Rudolf Diesel Str.20 franklinwater.eu



Üretici Beyanamesi

Üretici: Franklin Electric Europa GmbH Rudolf-Diesel-Strasse 20 D-54516 Wittlich
Üniter: Tekrar Sarmalı Dalgıç Motorları
Modeler: 262... 263... 264... 265... 266...
Adı verilen ürünlerimiz, aşağıda belirtilen Avrupa Birliği yönetmelikleri ile uyumluktadır:
2006/95/EC: Alpak Gerilim Çihazları Yönetmeliği
2004/108/EC: EMC Elektromanyetik Uyumluluk Yönetmeliği
EN 60034-1: 2010 : Diğer Elektrik Makinaları Bölümü 1, Beyan değerleri ve performans standartları

P. Klippel
Engineering & Quality Manager
Aralık 15, 2013

54516 Wittlich/ Germany, Rudolf Diesel Str.20 franklinwater.eu



Заявление о соответствии стандартам ЕС

Изготовитель: Franklin Electric Europa GmbH Rudolf-Diesel-Strasse 20 D-54516 Wittlich/Germany
Название изделия: Переключаемые Погружные Электродвигатели
Тип изделия: 262... 263... 264... 265... 266...
Вышеуказанные погружные электродвигатели соответствуют требованиям следующих Европейских Директив:
2006/95/EC Директива Европейского парламента и Совета от 12 декабря 2006 года по унификации правовых норм государств-членов ЕС относительно применения аппаратуры управления в пределах определенного диапазона значений напряжения (кодифицированная редакция)
2004/108/EC Директива Европейского парламента и Совета по унификации законодательных директив стран-членов ЕС по электромагнитной совместимости (директива по EMC)
Применяемые согласованные стандарты: EN 60034-1: 2010

P. Klippel
Engineering & Quality Manager
15 декабря 2013 года

54516 Wittlich/ Germany, Rudolf Diesel Str.20 franklinwater.eu



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