



DB11/15 SERIES

ASSEMBLY, INSTALLATION AND OPERATION MANUAL



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IMPORTANT INFORMATION - READ ME FIRST

Model Number and Serial Number

Record the model number and serial number below for future reference. This is important information when ordering replacement parts or when technical assistance is required. The numbers are found on a label located on the motor adapter.

MODEL NUMBER _____









SERIAL NUMBER _____

Chemical Reaction Disclaimer





The user must exercise primary responsibility in selecting the product's materials of construction which are compatible with the fluid(s) that come(s) in contact with the product. The user may consult Finish Thompson, Inc. (manufacturer) and a manufacturer's representative/distributor agent to seek a recommendation of the product's material of construction that offers the optimum available chemical compatibility.

However neither manufacturer nor agent shall be liable for product damage or failure, injuries, or any other damage or loss arising out of a reaction, interaction or any chemical effect that occurs between the materials of the product's construction and fluids that come into contact with the product's components.

Safety Precautions

-  **WARNING:** READ THIS MANUAL COMPLETELY BEFORE INSTALLING AND OPERATING THIS UNIT. FAILURE TO FOLLOW THESE PRECAUTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.
-  **WARNING:** Magnetic field hazard. This pump contains powerful magnets. Exposed magnets (pump not connected to motor) produce powerful magnetic fields. Individuals with cardiac pacemakers, implanted defibrillators, other electronic medical devices, metallic prosthetic heart valves, internal wound clips (from surgery), metallic prosthetic devices or sickle cell anemia must not handle or be in the proximity of the magnets contained inside the pump. Consult a health care provider for specific recommendations before working with this pump.
-  **WARNING:** Magnetic force hazard. This pump should only be disassembled and assembled using the recommended procedures. The magnetic attraction is powerful enough to rapidly pull the motor end and the wet end together. Do not place fingers between the mating surfaces of the motor and wet ends to avoid injuries. Keep the drive magnet and impeller assembly away from metal chips or particles.
-  **WARNING:** Hot surfaces. DB Series pumps are capable of handling liquids with temperatures as high as 220° F (104° C). This may cause the outer areas of the pump to become hot as well and could cause burns.
-  **WARNING:** Rotating Parts. This pump has components that rotate while in operation. Follow local safety standards for locking out the motor from the power supply during maintenance or service.
-  **WARNING:** Chemical Hazard. This pump is used for transferring many types of potentially dangerous chemicals. *Always* wear protective clothing, eye protection and follow standard safety procedures when handling corrosive or personally harmful materials. Proper procedures should be followed for draining and decontaminating the pump before disassembly and inspection of the pump. There may be small quantities of chemicals present during inspection.
-  **WARNING:** The pump and associated components are heavy. Failure to properly support the pump during lifting and movement could result in serious injury or damage to the pump and components.
-  **WARNING:** Never run pump at less than minimum flow or with the discharge valve closed. This could lead to pump failure.

Installation/Operation Precautions

-  **CAUTION:** This pump should never be operated without liquid in the casing. It is recommended that run dry protection be used. Optional electronic power monitors are available to help protect against run dry. If the pump has a PTFE, ceramic or silicon carbide bushing, IT CANNOT BE RUN DRY WITHOUT CAUSING DAMAGE TO THE PUMP. **However, the pump can operate without liquid in the casing if the pump has a carbon bushing. The exact length of time the pump can operate dry with a carbon bushing varies with operating conditions and environment.**
-  **CAUTION:** Never start or operate with a closed suction valve. Never operate with a closed discharge valve.
-  **CAUTION:** Always provide adequate NPSHa (net positive suction head available). It is recommended to provide at least 2 feet (61 cm) above the NPSHr (net positive suction head required).
-  **CAUTION:** If pump is used on variable speed drive, do not exceed the frequency for which the pump was designed (for example, if the pump is a 50 Hz model, do not exceed 50 Hz).

⚠ CAUTION: Use of a power monitor is strongly recommended for pumps with ceramic, PTFE or silicon carbide bushings. The power monitor will stop the pump and help prevent damage if the pump should run dry. ATEX certified pumps MUST use a power monitor.

Safety Precautions for ATEX Pumps

⚠ CAUTION: Proper o-ring material must be chosen for the fluid being pumped. Improper material selection could lead to swelling and be a possible source of leaks. This is the responsibility of the end user.

⚠ WARNING: The pump must be checked for leaks on a regular basis. If leaks are noticed, the pump must be repaired or replaced immediately.

⚠ WARNING: The pump must be cleaned on a regular basis to avoid dust buildup greater than 5 mm.

⚠ WARNING: ATEX pumps must use a power monitor, flow switch, pressure switch or similar device to help protect against dry running, closed discharge valve and decoupling. Any of these conditions could lead to a rise in surface temperature of the pump.

Temperature Classification

The surface temperature of the DB Series pumps depends upon the temperature of the fluid that is being pumped. The following chart lists different fluid temperatures and the corresponding pump surface temperature.

Fluid Temperature	Maximum Surface Temperature	Temperature Class	Maximum Allowable Surface Temperature
70° F (27° C)	131° F (55° C)	T6	85° C
170° F (85° C)	168° F (76° C)	T5	100° C
220° F (104° C)	183° F (84° C)	T4	135° C

DB11/15 Capabilities

Maximum Working Pressure: 90 psi (6.2 bar) (models with o-ring)

Maximum Working Pressure: 50 psi (3.5 bar) (models with Gylon® gasket)

Maximum Viscosity: 150 cP

Maximum Temperature: Polypropylene -180° F (82° C); PVDF – 220° F (104° C)

Note: Maximum temperature is application dependent. Consult a chemical resistance guide or the chemical manufacturer for chemical compatibility and temperature limits.

Solids: Maximum particle size is 100 microns for slurries and 1/64" (.4 mm) for infrequent particles. Maximum hardness is 80 HS. Maximum concentration is 10% by weight. If solids are being pumped, it is recommended that the pump have either ceramic or for best results, silicon carbide components. Pumping solids may lead to increased wear.

Minimum Allowable Flow Rate:

Do not allow the flow rate to drop below the minimum flow rate listed in the chart below.

Model	3450 rpm	1725 rpm	2900 rpm	1450 rpm
DB11	4 gpm (.9 m3/hr)	2 gpm (.5 m3/hr)	.76 m3/hr (3.4 gpm)	.38 m3/hr (1.7 gpm)
DB15	5 gpm (1.1 m3/hr)	2.5 gpm (.6 m3/hr)	.95 m3/hr (4.2 gpm)	.48 m3/hr (2 gpm)

Maximum Allowable Motor Power:

Do not exceed the maximum power rating for the pump coupling.

Standard coupling for the DB11 is 6-pole; standard coupling for the DB15 is 8-pole.

6-pole coupling	=	2 horsepower (1.5 kW)
8-pole coupling	=	3 horsepower (2.2 kW)
10-pole coupling	=	5 horsepower (4 kW)

DB11/15 ASSEMBLY, INSTALLATION & OPERATION

Unpacking and Inspection

Unpack the pump and examine for any signs of shipping damage. If damage is detected, save the packaging and notify the carrier immediately.

Section I - Assembly

Pumps with Motors

Proceed to "Installation" Section.

Pumps Without Motors

NOTE: 184TC and 100/112 frame motors must have feet.

Tools Required - Metric socket or wrench set, 9/16" socket or wrench and 3/16" Allen Wrench (NEMA motors only).

1. Remove the pump, drive magnet assembly and hardware package from the carton. Do not remove the shipping plug until after the pump has been installed on the motor.

CAUTION: Keep away from metallic particles, tools, and electronics. Drive magnets **MUST** be free of metal chips.

WARNING: Keep the drive magnet away from the open end of the motor adapter and barrier. Strong magnetic attraction could allow the drive hub to enter the motor adapter resulting in injury or damage.

2. Place motor on the fan end. For 56C/145TC and B5 frame motors go to step 4. See figure 1.



Figure 1

3. For 184 NEMA and IEC motors only - install the motor adapter flange (item 10) on the motor face using bolts, lock washers and flat washers (items 21, 22, 23). See figure 2.



Figure 2

Torque bolts to the following:

80 frame (M6)	=90 in-lb (10.2 N-m)
90/100/112 frame (M8)	=130 in-lb (14.7 N-m)
184 NEMA (1/2")	=480 in-lb (54.3 N-m)

Note: Apply anti-seize compound on threads of the bolts.

4. Coat the motor shaft with anti-seize compound. Insert key supplied with motor into keyway on motor shaft. See figure 3.



Figure 3

NOTE: Make sure the motor shaft is clean and free of burrs. The outer drive is precision machined and has a bore tolerance of +.0005/-0 inch.

5. Slide the outer drive magnet assembly (item 9) onto the motor shaft until the motor shaft contacts the snap ring in the bore of the drive. Figures 4 and 5.



Figure 4



Figure 5

6. Secure the drive on the motor shaft.

WARNING: Be careful, magnets will try to attract tools.

Metric Motors: Secure the drive to the motor shaft using bolt, lock washer and flat washer (items 18, 19, 20). Thread the bolt into the end of the motor shaft (while holding the outer drive to prevent it from turning). See figure 6.

Tighten the bolt to the following:

80 frame (M6)	= 90 in-lb (10.2 N-m)
90 frame (M8)	= 130 in-lb (14.7 N-m)
100/112 frame (M10)	= 240 in-lb (27.1 N-m)

NEMA Motors: Install set screws (item 9A) into threaded holes on the side of the outer drive magnet assembly. Using a 3/16" Allen wrench, tighten to 228 in-lbs. (25.8 N-m). See figure 7.



Figure 6 - IEC Drive



Figure 7 - NEMA Drive

7. Install the pump end on the motor/drive magnet assembly. With the motor facing upright, align the pump feet so that the motor feet and pump feet are on the same side.

Tip the pump end at an angle (discharge is approximately 45°) so that it is just touching the edge of the outer drive magnet assembly. See figure 8.

Carefully lower the pump onto the drive magnet assembly by tipping discharge forward to 90° and dropping straight down. The last 3-4 inches (8-10 cm) before the pump reaches the motor will have **STRONG** magnetic attraction between the pump and outer drive magnet assembly.



Figure 8

8. Secure the pump to the motor with (4) 3/8" bolts, lock washers and flat washers (items 15,16,17). Tighten to 240 in-lb (27.1 N-m). See figures 9 and 10.

NOTE: B5 motors with clearance holes will require customer supplied hardware



Figure 9



Figure 10

9. Remove the shipping plug from the pump suction.
10. Rotate the motor fan to ensure that there is no binding in the pump.
11. Proceed to Installation Section

Section II - Installation

Mounting

Pump foot should be securely fastened to a solid foundation. If the pump was received with plastic shipping shims, these shims may be used as additional support for the motor feet (though not required).

Note: B5 pumps with 100/112 frame do not include a pump foot.

Piping

CAUTION: The NPSH available to the pump must be greater than the NPSH required. Filters, strainers and any other fittings in the suction line will lower the NPSH available and should be calculated into the application.

- Install the pump as close to the suction source as possible.
 - Support the piping independently near the pump to eliminate any strain on the pump casing. In addition, the piping should be aligned to avoid placing stress on the pump casing.
 - The suction side of the pump should be as straight and short as possible to minimize pipe friction.
 - Keep bends and valves at least ten pipe diameters away from the suction and discharge.
 - The suction line should be at least as large as the suction inlet port or one pipe size larger so that it does not affect the NPSHa. Do not reduce the suction line size.
 - The suction line should not have any high spots. This can create air pockets. The suction piping should be level or slope slightly upward to the pump.
 - A check valve and control valve (if used) should be installed on the discharge line. The control valve is used for regulating flow. An isolation valves on the suction and discharge are used to make the pump accessible for maintenance. The check valve helps prevent the pump against damage from water hammer. This is particularly important when the static discharge head is high.
 - If flexible hose is preferred, use a reinforced hose rated for the proper temperature, pressure and chemical resistance against the fluid being pumped.
 - The suction valve must be completely open to avoid restricting the suction flow.
 - It is advisable to install a flush system in the piping to allow the pump to be flushed before the pump is removed from service.
- NOTE:** The pump is provided with a provision for a customer installed ¼" drain in the impeller housing. See the Drain Installation Section for details.
- For units in a suction lift system, install appropriate piping in the discharge to allow priming of the pump (DB11/15 models are not self-priming).
 - When installing pumps with flanges, we recommend use of low seating stress gaskets such as Gore-Tex® or Gylon® (expanded PTFE).

Motor/Electrical

Install the motor according to NEC requirements and local electrical codes. The motor should have an overload protection circuit.

Wire the motor for clockwise rotation when facing the fan end of the motor.

⚠ CAUTION: Do not operate the pump to check rotation until the pump is full of liquid.

Check all electrical connections with the wiring diagram on the motor. Make sure the voltage, frequency, phase and amp draw comply with the supply circuit.

If utilized, verify that the power monitor has been properly installed according to the manufacturers instructions.

To verify correct rotation of the motor:

1. Install the pump into the system.
2. Fully open the suction and discharge valves.
3. Allow fluid to flow into the pump. Do not allow the pump to run dry (ceramic, PTFE and silicon carbide bushings can't be run dry without damage to pump components).
4. Jog the motor (allow it to run for 1-2 seconds) and observe the rotation of the motor fan. Refer to the directional arrow molded into the pump casing if necessary.

NOTE: A pump running backwards will pump but at a greatly reduced flow and pressure.

Section III - Start-up and Operation

1. This pump must be filled from a flooded suction tank (gravity) or primed with liquid from an outside source. The DB11/15 is not self-priming.
2. Open the inlet (suction) and discharge valves completely and allow the pump to fill with liquid.
3. Close the discharge valve.
4. Turn the pump on. Slowly open the discharge valve. Adjust the flow rate and pressure by regulating the discharge valve. Do not attempt to adjust the flow with the suction valve.
5. Use of a power monitor is strongly recommended for pumps with ceramic, PTFE or silicon carbide bushings. The power monitor will stop the pump and help prevent damage if the pump should run dry. ATEX certified pumps MUST use a power monitor.

Shutdown

Use the following procedure to shutdown the pump.

1. Slowly close the discharge valve.
2. Turn off the motor.
3. Close the suction valve.

Flush Systems

⚠ CAUTION: Some fluids react with water; use compatible flushing fluid.

1. Turn off the pump.
2. Completely close the suction and discharge valves.
3. Connect flushing fluid supply to flush inlet valve.
4. Connect flushing fluid drain to flush drain valve.
5. Open flushing inlet and outlet valves. Flush system until the pump is clean.

Optional Drain Installation

1. Remove the impeller housing from the pump assembly.
2. Clamp the impeller housing to a drill press table.
3. Using a 7/16" drill and the molded boss as a guide, drill completely through the molded boss into the interior of the impeller housing. De-burr the hole on the inside of the impeller housing.

⚠ CAUTION - Do not tap too deep or the impeller housing may be damaged.

4. Using a 1/4" NPT tap, tap the hole in the molded boss to the appropriate depth.
5. Install the drain plug or valve, being careful not to overtighten.

Section IV - Maintenance

Recommended maintenance schedule

The recommended maintenance schedule depends upon the nature of the fluid being pumped and the specific application. If the pump is used on a clean fluid, it is recommended that the pump be removed from service and examined after six months of operation or after 2,000 hours of operation. If the pump is used on fluids with solids, high temperatures or other items that could cause accelerated wear, then this initial examination should be sooner.

After the initial examination of the internal components and wear items are measured, a specific maintenance schedule can be determined. For best results, it is recommended that the pump be removed from service annually for examination.

Section V - Disassembly

⚠ WARNING: Rotating Parts. This pump has components that rotate while in operation. Follow local safety standards for locking out the motor from the power supply during maintenance or service.

⚠ WARNING: Chemical Hazard. This pump is used for transferring many types of potentially dangerous chemicals. *Always* wear protective clothing, eye protection and follow standard safety procedures when handling corrosive or personally harmful materials. Proper procedures should be followed for draining and decontaminating the pump before disassembly and inspection of the pump. There may be small quantities of chemicals present during inspection.

⚠ WARNING: Magnetic force hazard. This pump should only be disassembled and assembled using the recommended procedures. The magnetic attraction is powerful enough to rapidly pull the motor end and the wet end together. Do not place fingers between the mating surfaces of the motor and wet ends to avoid injuries. Keep the drive magnet and impeller assembly away from metal chips or particles.

1. Stop the pump, lock out the motor starter, close all the valves that are connected to the pump, and drain/decontaminate the pump.

⚠ WARNING: The pump must be thoroughly flushed of any hazardous materials and all internal pressure relieved prior to opening the pump. Allow the pump to reach ambient temperatures prior to performing maintenance.

2. For pumps with motors 2 horsepower (1.5 kW) or smaller, securely clamp the pump feet to the bench. Remove the (4) bolts, lock washers and flat washers (items 15,16,17) securing the pump to the motor. See figure 9.



Figure 9

Firmly grab the motor and pull straight back to disengage the motor and pump. See figure 11.



Figure 11

For pumps with motors 3 horsepower (2.2 kW) or larger, place the pump and motor on the floor. Remove the (4) bolts, lock washers and flat washers (items 15,16,17) securing the pump to the motor. See figure 9. Make sure the motor is on the fan end with the pump facing up. Pull straight up to remove the pump from the motor. See figure 12.



Figure 12

3. Place pump on bench with housing facing up. Remove (8) 10 mm housing bolts, lock washers and flat washers (items 12, 13, 14). See figure 13.



Figure 13

4. Pull housing (item 1) straight up to remove. Inspect housing for signs of wear or damage. Look for signs of rubbing, cracking on thrust ring, or damage to front shaft support. See figure 14.



Figure 14

5. Remove impeller/inner drive assembly (items 4A, 4, 5, 5A). Inspect impeller and drive for signs of wear or damage. Look for signs of rubbing or damage and wear to the impeller and inner drive. See figure 15.



Figure 15

Check the impeller thrust ring and bushing for wear. See figure 16.

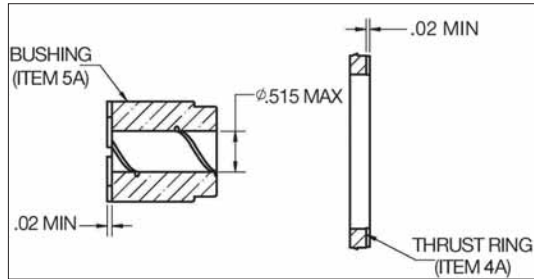


Figure 16

- Remove the impeller shaft (item 6) from the barrier and check for signs of cracking, chipping, scoring or wear. See figure 17.



Figure 17

- Remove the barrier (item 7) from the motor adapter (item 8). Make sure the spindle has been removed. If necessary, gently tap on the backside of the barrier with a soft rod (wood, plastic, etc.). Inspect the inside and outside of the barrier for signs of rubbing. See figure 18.



Figure 18

- Remove the o-ring (item 2) from the barrier and inspect for chemical attack, swelling, brittleness, cuts, etc.
- Visually inspect the outer drive (item 9) for rubbing, damage, corrosion or loose magnets.

Outer Drive Replacement

- Remove the setscrews (item 9A) from the side of the drive (NEMA motors) or the bolt, lock washer and flat washer (items 18, 19, 20) from the center of the drive (metric motors).

⚠ WARNING: Be careful, tools will want to be attracted to the magnets.

- Remove the drive magnet from the motor shaft by gently prying up from the bottom of the drive. See figure 19.



Figure 19

- To reinstall the drive or a new drive follow the instructions from Section I - Assembly, Pumps without Motors, steps 4-6.

Thrust Ring Replacement

- Thrust ring (item 4A) is held in-place with a snap fit with a ridge. Using a razor knife or side cutters, cut a notch out of the thrust ring. Pull ring up and out of the holder. See figures 20-21.

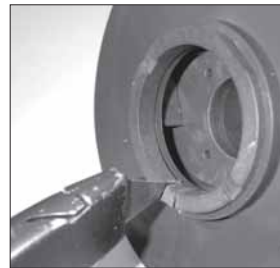


Figure 20



Figure 21

- To reinstall, align the two flats on the thrust ring with the flats in the bore of the impeller. Using a piece of wood, press into place using an arbor press until the thrust ring is completely seated in the impeller.

Bushing Replacement

- To remove the bushing, place the impeller/inner drive assembly in an arbor press. Insert a 3/4" diameter plastic or wood shaft through the eye of the impeller and press the bushing out.
- To replace the bushing (item 5A), place the top of the impeller on an arbor press with the thrust ring face down. Insert the front of the bushing (figure 22) into the center of the impeller/inner drive magnet assembly, aligning the flat on the bushing with the flat in the bore of the inner drive magnet. Using a soft arbor, press into place until the bushing reaches the shoulder molded into the inner drive (figures 23 and 24).



Figure 22



Figure 23



Figure 24

Impeller Replacement

⚠ Caution: Do not damage the outer surface of the inner drive magnet during impeller replacement.

Using the two slots provided, insert a flat blade screw driver into them and pry the impeller (items 4, 4A) up from the body of the inner drive magnet (items 5, 5A). Once a gap has been established, work around the perimeter to evenly increase the gap until the impeller can be removed. See figure 25.



Figure 25

To install a new impeller, place the inner drive magnet assembly face up (splines facing up) on an arbor press. Align the spines in the impeller with the ones in the bore on the inner drive magnet. Place a piece of wood over the top of the impeller thrust ring. Using an arbor press, push down on the impeller until it is completely seated in the inner drive.

Section VI - Reassembly

1. Install barrier (item 7) into motor adapter (item 8). Press firmly to ensure that the barrier is completely seated. See figure 26



Figure 26

2. Install o-ring (item 2) or Gylon gasket in groove in barrier.

Note: If pump has Gylon gasket, a new gasket should be used when the pump is reassembled.

3. Install impeller shaft (item 6) into barrier by aligning the flats on the shaft with the ones in the barrier. Make sure it is completely seated. See figure 27.



Figure 27

4. Carefully install the impeller/inner drive assembly (items 4, 4A, 5, 5A) by sliding it over the impeller shaft in the barrier. It is normal for the impeller/inner drive to pop up a slight amount due to magnetic forces. See figures 28 and 29.



Figure 28



Figure 29

5. Install the impeller housing (item 2). Make sure the discharge is in the correct orientation in relation to pump foot. Align the shaft in the barrier with the front shaft support in the impeller housing. Press down to push the impeller/inner drive magnet assembly into position. Holding the impeller housing with one hand, install and finger-tighten two bolts, lock washers and flat washers (items 12, 13, 14) in opposite locations. See figure 30.



Figure 30

6. Install the remaining bolts, lock washers and flat washers finger tight.

7. Tighten all the bolts evenly using a star pattern. Tighten to 20 foot-lbs (27 N-m).

8. Reinstall the pump on the motor/drive magnet following instructions found in "Assembly, Pumps Without Motors," steps 7-11.

PART NUMBER EXPLANATION

1. Select Base Model (Example: DB11P) *

2. If Standard Components aren't suitable, enter symbol(s) of alternative components in any order.

Base Model - - - - -
 DB11P - E - U - 14

(Example: DB11P-E-U-14 is a DB11P with EPDM o-ring, unions and 145TC motor adapter.)

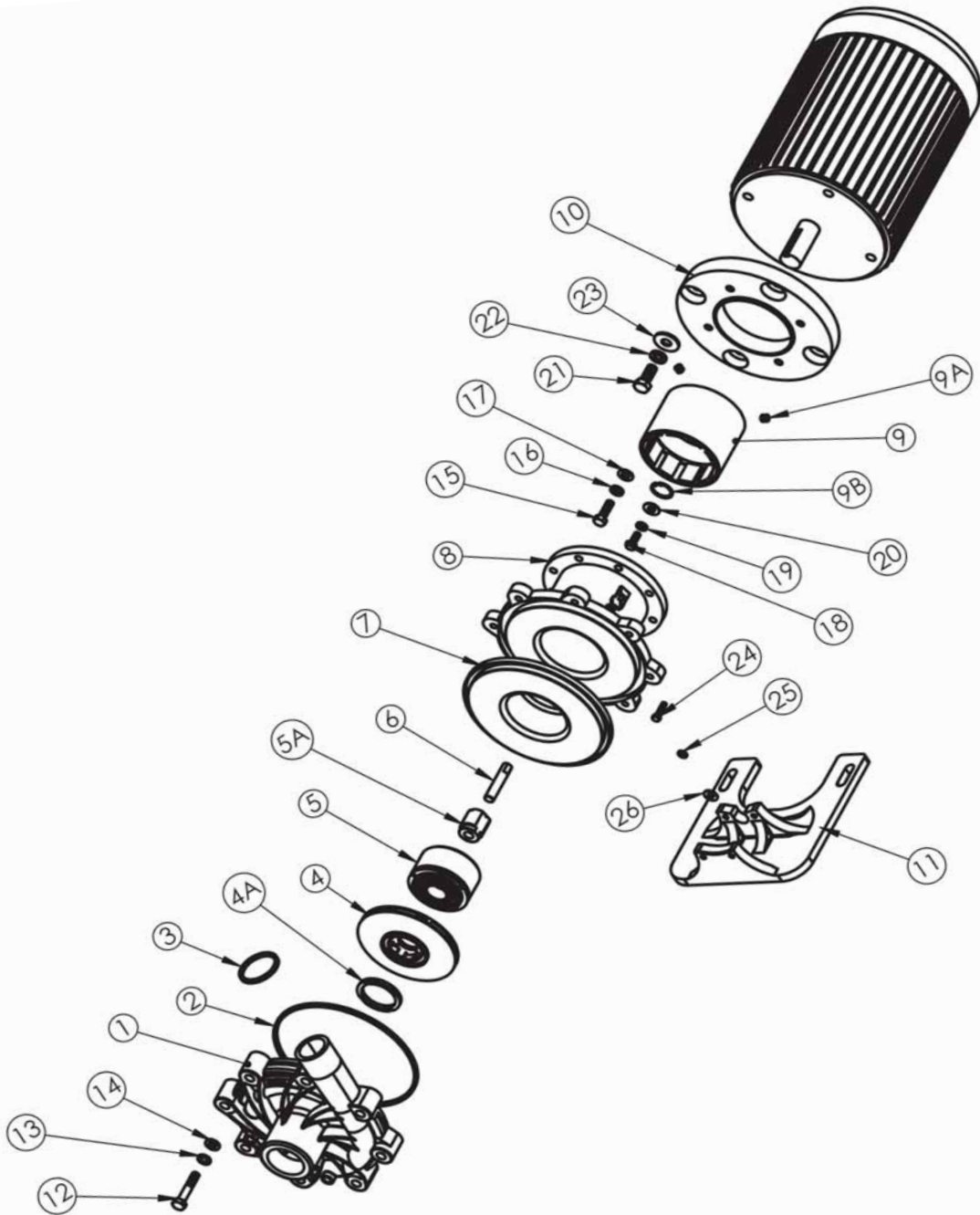
3. Alternative Components - select from below

STANDARD COMPONENTS		ALTERNATIVE COMPONENTS								
Graphite Carbon	Bushing	PTFE	T							
		Alumina Ceramic*	R							
Viton	O-Ring	EPDM	E							
		Gylon*	G							
		Simriz*	S							
		Kalrez*	K							
NPT	Connection	BSP Threads	B							
		Union*	U							
		Steel enforced flange*	Fs							
		Fiberglass enforced flange*	Ff							
1	Impeller	Select Impeller from Performance Curve								
		60 Hz				50 Hz				
		2	3	4	5	6	7	8	9	10
DB11: 6-Pole DB15: 8-Pole	Magnet	6-Pole (56C, 145, 80, 90 frame only)	6p							
		8-Pole (56C, 145, 80, 90 frame only)*	8p							
		10-Pole (184, 100, 112 frame only)*	10p							
56C NEMA	Motor Adapter	145TC NEMA	14							
		184TC NEMA	18							
		IEC 80/B14	84							
		IEC 90/B14	94							
		IEC 100/B14	04							
		IEC 112/B14	24							
		IEC 80/B5	85							
		IEC 90/B5	95							
		IEC 100/B5	05							
IEC 112/B5	25									
SS hardware, PTFE/ceramic thrust rings, ceramic shaft	Specials	SiC bushing, thrust ring, shaft*	Si							
		Hastelloy shaft*	Hs							
		Titanium hardware*	Ti							
		Non-sparking ring*	Ns							
		ATEX*	A							
Not Standard	Motor	Select Motor Reference Number from Motor Price Sheets								

*The model number is on the serial number label located on the motor adapter. The model number contains a base model that features certain standard components. Compare the model number on the pump to the chart below to determine if the pump contains any alternate components. Model numbers containing "P" have primary components molded from polypropylene. Model numbers containing "V" have primary components molded from PVDF.

Base Model Numbers: DB11P, DB11V, DB15P, DB15V

DB11 Exploded View - Parts Diagram



Item	Qty	Description	DB11		DB15		
			Pump Material		Pump Material		
			Polypropylene	PVDF	Polypropylene	PVDF	
1	1	Standard Housing					
		NPT Threads & Alumina Ceramic Ring	105688-1	105688-3	105739-1	105739-3	
		BSP Threads & Alumina Ceramic Ring	105688-5	105688-7	105739-5	105739-7	
		Steel Flanges & Alumina Ceramic Ring	105744-1	105744-2	105745-1	105745-2	
		Fiberglass Flanges & Alumina Ceramic Ring	105744-5	105744-6	105745-5	105745-6	
		Union & Alumina Ceramic Ring	105746-1	105746-3	105747-1	105747-3	
		NPT Threads & Silicon Carbide Ring	105903	105903-1	105904	105904-2	
		BSP Threads & Silicon Carbide Ring	105903-4	105903-5	105904-4	105904-6	
		Steel Flanges & Silicon Carbide Ring	105905	105905-1	105924	105924-1	
		Fiberglass Flanges & Silicon Carbide Ring	105905-4	105905-5	105924-4	105924-5	
		105906	105906-2	105923	105923-2		
1	1	Gasket Housing					
		NPT Threads & Alumina Ceramic Ring	105688-2	105688-4	105739-2	105739-4	
		Steel Flanges & Alumina Ceramic Ring	105744-3	105744-4	105745-3	105745-4	
		Fiberglass Flanges & Alumina Ceramic Ring	105744-7	105744-8	105745-7	105745-8	
		NPT Threads & Silicon Carbide Ring	105903-2	105903-3	105904-1	105904-3	
		Steel Flanges & Silicon Carbide Ring	105905-2	105905-3	105924-2	105924-3	
		Fiberglass Flanges & Silicon Carbide Ring	105905-6	105905-7	105924-6	105924-7	
2	1	O-ring/Gasket	EPDM	105717			
			Viton®	105716			
			Simriz®	105719			
			Kalrez®	105718			
			Gylon Gasket	105721			
3	1	Discharge O-ring (BSP threaded housings only)	EPDM	105918			
			Viton®	105919			
			Simriz®	105718			
			Kalrez®	105921			
4	1	Impeller Assembly					
		with PTFE thrust ring	#1	105911	105911-1	105911-12	105911-13
			#2	105911-4	105911-5	105916	105916-2
			#3	105911-6	105911-7	105916-4	105916-5
			#4	105911-8	105911-9	105916-6	105916-7
			#5	105911-10	105911-11	105916-8	105916-9
			#6	105911-2	105911-3	105916-1	105916-3
			#7	105911-14	105911-15	105916-10	105916-11
			#8	105911-16	105911-17	105916-12	105916-13
			#9	105911-18	105911-19	105916-14	105916-15
#10	105911-20		105911-21	N/A	N/A		
4	1	with silicon carbide thrust ring	#1	105915	105915-1	105915-12	105915-13
			#2	105915-4	105915-5	105917	105917-2

Item	Qty	Description	DB11		DB15		
			Pump Material		Pump Material		
			Polypropylene	PVDF	Polypropylene	PVDF	
4	1	Impeller Assembly with silicon carbide thrust ring	#3	105915-6	105915-7	105917-4	105917-5
			#4	105915-8	105915-9	105917-6	105917-7
			#5	105915-10	105915-11	105917-8	105917-9
			#6	105915-2	105915-3	105917-1	105917-3
			#7	105915-14	105915-15	105917-10	105917-11
			#8	105915-16	105915-17	105917-12	105917-13
			#9	105915-18	105915-19	105917-14	105917-15
			#10	105915-20	105915-21	N/A	N/A
4A	1	Impeller Thrust Ring Only	Filled PTFE	105694-1			
			Silicon Carbide	105694-3			
5	1	Impeller Drive Assembly with carbon bushing	6-Pole	105913	105913-3	105913	105913-3
			8-Pole	105913-1	105913-4	105913-1	105913-4
			10-Pole	105913-2	105913-5	105913-2	105913-5
		with PTFE bushing	6-Pole	105913-6	105913-9	105913-6	105913-9
			8-Pole	105913-7	105913-10	105913-7	105913-10
			10-Pole	105913-8	105913-11	105913-8	105913-11
		with alumina ceramic bushing	6-Pole	105913-12	105913-15	105913-12	105913-15
			8-Pole	105913-13	105913-16	105913-13	105913-16
			10-Pole	105913-14	105913-17	105913-14	105913-17
		with silicon carbide bushing	6-pole	105913-18	105913-21	105913-18	105913-21
			8-Pole	105913-19	105913-22	105913-19	105913-22
			10-Pole	105913-20	105913-23	105913-20	105913-23
5A	1	Impeller Bushing	Carbon	J100977			
			Filled PTFE	J100977-1			
			Alumina Ceramic	J100977-2			
			Silicon Carbide	J100977-3			
6	1	Impeller Shaft	Alumina Ceramic	105811-1			
			Silicon Carbide	105811-2			
			Hastelloy C	105811-3			
7	1	Barrier	105689-1	105689-2	105689-1	105689-2	
8	1	Motor Adapter					
		Standard (NEMA and IEC/B14)	105734-1	105734-5	105734-1	105734-5	
		Standard with Bronze Ring	105884-1				
		IEC/B5 - 80/90 Frame	105986	105986-1	105986	105986-1	
		IEC/B5 - 100/112 Frame	105985	105985-1	105985	105985-1	
9	1	Drive Magnet Assembly	56C frame includes set screws and snap ring	6-Pole	105878		
				8-Pole	105878-1		
			145TC frame includes set screws and snap ring	6-Pole	105878-3		
				8-Pole	105878-4		
			184TC frame includes set screws and snap ring	10-Pole	105730-9		
			80 frame includes snap ring	6-Pole	105882		
				8-Pole	105882-1		
			90 frame includes snap ring	6-Pole	105882-3		
				8-Pole	105882-4		
					100/112 frame includes snap ring	10-Pole	105730-18

Item	Qty	Description	DB11		DB15		
			Pump Material		Pump Material		
			Polypropylene	PVDF	Polypropylene	PVDF	
9A	2	Set Screws- NEMA Motor Frames Only	J101084				
9B	1	Snap Ring	56C Frame	105708			
			145TC Frame	105709			
			184TC Frame	105710			
			80 Frame	105711			
			90 Frame	105712			
			100/112 Frame	105710			
10	1	Motor Adapter Flange	184TC Frame	105751-1	105751-2	105751-1	105751-2
			80 Frame	105724-1	105724-2	105724-1	105724-2
			90 Frame	105725-1	105725-2	105725-1	105725-2
			100/112 Frame	105726-1	105726-2	105726-1	105726-2
		Motor Adapter Flange ATEX	80 Frame	105724-3			
			90 Frame	105725-3			
			100/112 Frame	105726-3			
11	1	Foot <i>B5 pumps with 100/112 frame do not include a pump foot.</i>	Standard	105691-1	105691-4	105691-1	105691-4
			100 Frame	105691-3	105691-6	105691-3	105691-6
			112 Frame	105691-2	105691-5	105691-2	105691-5
		Hardware	DB11/15 Stainless Steel		DB11/15 Titanium		
12	8	Housing Bolt	105755		105756		
13	8	Housing Lockwasher	105757		105758		
14	8	Housing Flat Washer	105722		105773		
15	4	Motor Adapter Bolts	J103118		105752		
16	4	Motor Adapter Lockwashers	J100115		J104206		
17	4	Motor Adapter Flatwashers	J100128		J104207		
18	1	Drive Bolt- 80 Frame IEC	105765		105766		
		Drive Bolt- 90 Frame IEC	105770		105771		
		Drive Bolt- 100/112 Frame IEC	105774		105775		
19	1	Drive Lockwasher- 80 Frame IEC	J100672		J104203		
		Drive Lockwasher- 90 Frame IEC	J102282		J103847		
		Drive Lockwasher- 100/112 Frame IEC	J100115		J104206		
20	1	Drive Flatwasher- 80 Frame IEC	105767		105768		
		Drive Flatwasher- 90 Frame IEC	105722		105773		
		Drive Flatwasher- 100/112 Frame IEC	105776		105777		
21	4	Motor Adapter Flange Bolts - 184TC Frame	J103782		105761		
		Motor Adapter Flange Bolts - 80 Frame	J103780		105764		
		Motor Adapter Flange Bolts - 90 Frame	105770		105771		
		Motor Adapter Flange Bolts - 100/112 Frame	105770		105771		
22	4	Lockwasher- Motor Adapter Flange- 184TC Frame	J101023		105762		
		Lockwasher- Motor Adapter Flange- 80 Frame	J100672		J104203		
		Lockwasher- Motor Adapter Flange- 90 Frame	J102282		J103847		
		Lockwasher- Motor Adapter Flange- 100/112 Frame	J102282		J103847		
23	4	Flatwasher- Motor Adapter Flange- 184TC Frame	J103851		105763		
		Flatwasher- Motor Adapter Flange- 80 Frame	J100113		J104204		
		Flatwasher- Motor Adapter Flange- 90 Frame	J101293		J103845		
		Flatwasher- Motor Adapter Flange - 100/112 Frame	J101293		J103845		
24	4	Foot Bolt	J103780		105764		
25	4	Foot Lockwasher	J100672		J104203		
26	4	Foot Flatwashers	J100113		J104204		

Section VII - Troubleshooting

General Notes:

- Do not pump liquids containing ferrous metal fines.
- If magnets decouple, stop pump immediately. Operating the pump with the magnets decoupled will eventually weaken the magnets.
- Power monitors are required and must be used with all ATEX certified pumps.
- Do not use mismatched drive magnet assemblies (different number of magnets on inner and outer drive magnet assemblies).
- Contact our Technical Service Department -
Phone: 1-800-888-3743
Email: techservice@finishthompson.com
if you have any questions regarding product operation or repair.

No or Insufficient Discharge

- Air leaks in suction piping
- Pump not primed
- System head higher than anticipated
- Closed valve
- Viscosity or specific gravity too high
- Motor too large for magnet coupling rating (magnets uncoupled)
- Suction lift too high or insufficient NPSH
- Clogged suction line or impeller vanes
- Motor rotation incorrect (correct rotation when viewed from the fan end is clockwise)

Insufficient Pressure

- Air or gas in liquid
- Impeller diameter too small
- System head lower than anticipated
- Motors speed insufficient (too low) or motor rotation incorrect (correct rotation when viewed from the fan end is clockwise)

Loss of Prime

- Leak in suction piping
- Foot valve or suction opening not submerged enough
- Foot valve too small or leaking
- Air or gas in liquid

- Foreign matter in impeller
- Leaking valve. Suction lift too high or insufficient NPSHa

Excessive Power Consumption

- Head lower than rating
- Excessive flow
- Specific gravity or viscosity too high.

Vibration/Noise

- Loose magnet
- Drive magnet rubbing
- Pump cavitating from improper suction or feed
- Motor or piping not properly secured
- Foreign object in impeller

Section VIII - Warranty

Finish Thompson, Inc (manufacturer) warrants this product to be free of defects in materials and workmanship for a period of five years from date of purchase by original purchaser. If a warranted defect, which is determined by manufacturer's inspection, occurs within this period, it will be repaired or replaced at the manufacturer's option, provided (1) the product is submitted with proof of purchase date and (2) transportation charges are prepaid to the manufacturer. Liability under this warranty is expressly limited to repairing or replacing the product or parts thereof and is in lieu of any other warranties, either expressed or implied. This warranty does not apply to normal wear of the product or components. This warranty does not apply to products or parts broken due to, in whole or in part, accident, overload, abuse, chemical attack, tampering, or alteration. The manufacturer accepts no responsibility for product damage or personal injuries sustained when the product is modified in any way. If this warranty does not apply, the purchaser shall bear all cost for labor, material and transportation.

Manufacturer shall not be liable for incidental or consequential damages including, but not limited to, process down time, transportation costs, costs associated with replacement or substitution products, labor costs, product installation or removal costs, or loss of profit. In any and all events, manufacturer's liability shall not exceed the purchase price of the product and/or accessories.

Ordering Spare Parts

Spare parts can be ordered from your local distributor. Always refer to the pump model to avoid error.



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Literature ID No. FT06-923E

