

# GENESYS® 3x2-6

## INSTALLATION AND SERVICE MANUAL

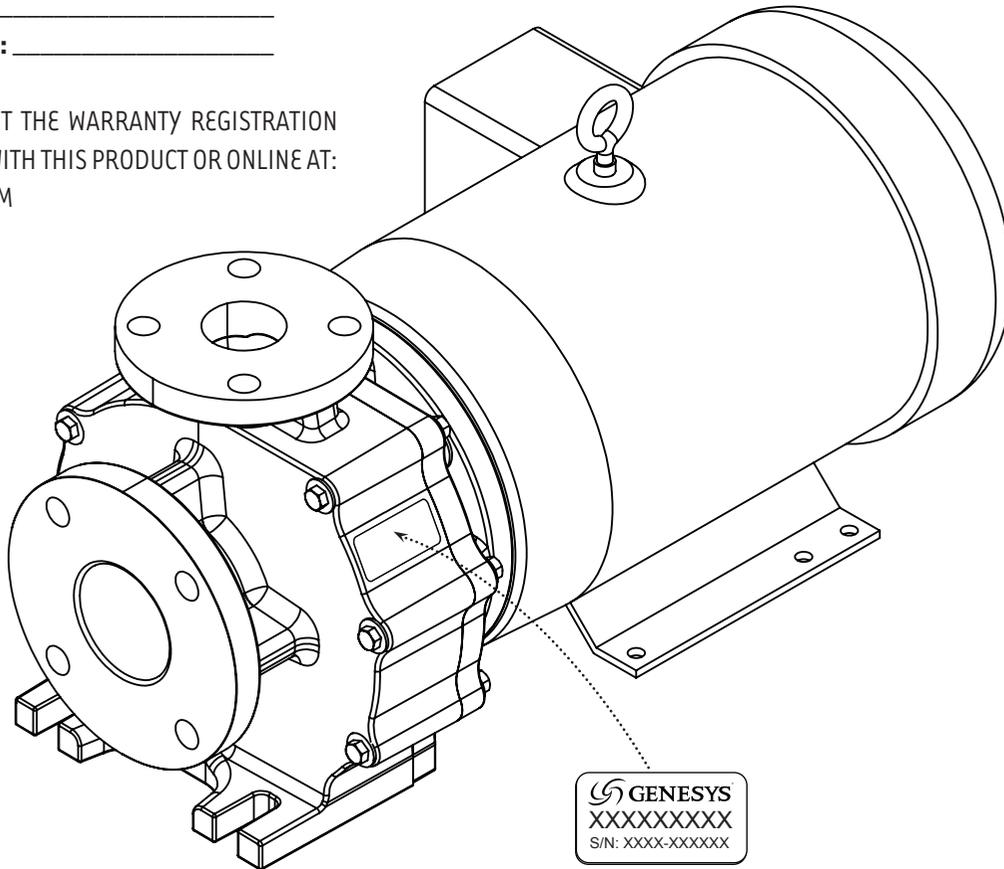
PLEASE FILL IN FOR FUTURE REFERENCE:

**MODEL:** \_\_\_\_\_

**SERIAL NUMBER:** \_\_\_\_\_

**DATE PURCHASED:** \_\_\_\_\_

\* PLEASE FILL OUT THE WARRANTY REGISTRATION CARD INCLUDED WITH THIS PRODUCT OR ONLINE AT: [WWW.MDMINC.COM](http://WWW.MDMINC.COM)



**TYPE:** END-SUCTION CENTRIFUGAL  
**MOTOR:** NEMA 143JM-215JM  
**PORT SIZE:** 3" FLANGED INLET, 2" FLANGED DISCHARGE  
**HORSEPOWER:** 3/4 HP THROUGH 15 HP  
**MATERIAL:** VINYL ESTER RESIN BRACKET AND VOLUTE,  
NORYL® IMPELLER  
**HARDWARE:** STAINLESS STEEL

**SEAL OPTIONS:** IMPENATRA® II NON-METALIC MECHANICAL SEAL: CARBON GRAPHITE/VITON®/SILICON CARBIDE SILICON CARBIDE/VITON®/SILICON CARBIDE, ETC.  
**OTHER OPTIONS:** EXTENSION COUPLED, PEDESTAL MOUNTED AND LONG COUPLED WITH PEDESTAL MOUNTED PUMP ON POLYMER BASEPLATE. PUMP ENDS INSERT: AND SEAL FLUSH PLANS AVAILABLE

**WARNING:** Please read completely before you install or operate your new pump. Do NOT allow the motor to become submerged. Never run dry - Never reverse rotation. Never exceed an internal case pressure of: 100 PSI.



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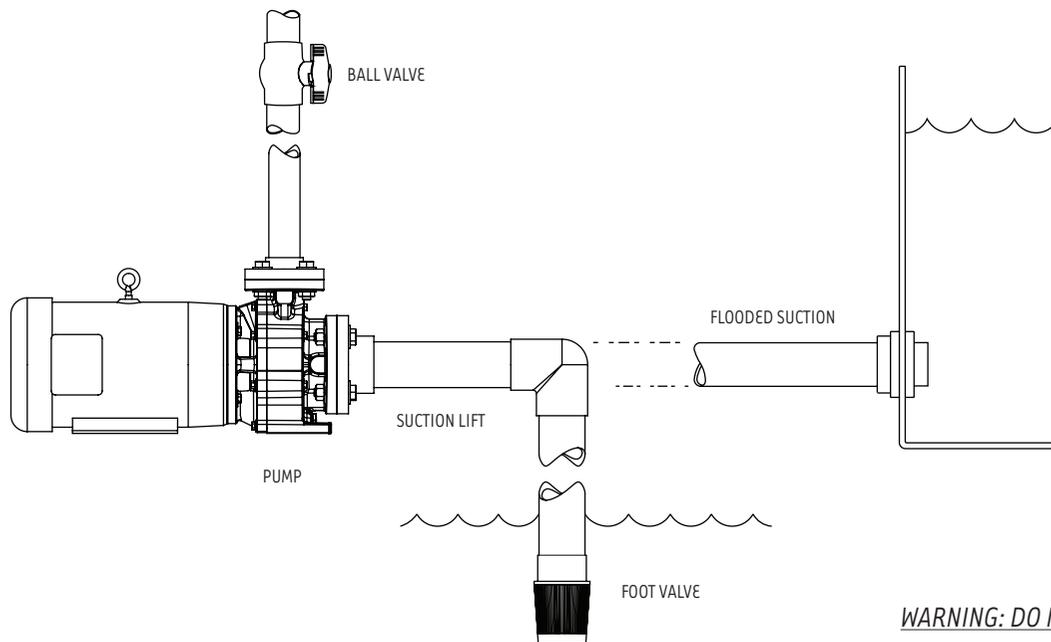
# GENESYS® 3x2-6

We congratulate you on your choice of the Genesys® Centrifugal Pump. It has been carefully designed using the advantages of today's technology and carefully constructed to give you the dependability of yesterday. To insure proper performance, we urge you to carefully follow the instructions in this manual. If you have any questions, call your nearest distributor or MDM for assistance.

## INSTALLATION

**Please read carefully. When properly installed, the Genesys® Pump will provide dependable trouble-free service.**

1. Locate the pump as near the fluid source as possible. A flooded suction situation is preferred.
2. Mount motor base to a secure, immobile foundation.
3. The pipe fittings should be self-supported and in neutral alignment with each port. (i.e. Fittings must not be forced into alignment which may cause premature line failure or damage to the pump volute.)
4. Never restrict the intake. Keep both input and discharge lines as free of elbows and valves as possible. Always use pipe of adequate diameter. This will reduce friction losses and maximize output.
5. The Genesys® Pump is not self-priming. It must not be run dry. We recommend a flooded suction installation. Please read carefully. When properly installed, the Genesys® Pump will provide dependable, trouble-free service.
6. For additional plumbing tips, review MDM's website: [www.mdminc.com](http://www.mdminc.com) for pond plumbing and pump installation hints.



**WARNING: ALWAYS SHUT OFF ELECTRICAL POWER BEFORE INSTALLATION AND / OR SERVICING THIS PUMP! ALL ELECTRICAL WIRING SHOULD MEET STATE AND LOCAL ORDINANCES. IMPROPER WIRING MAY NOT ONLY BE A SAFETY HAZARD BUT MAY PERMANENTLY DAMAGE THE MOTOR AND/OR PUMP! 50 HZ MOTORS AVAILABLE - CONTACT YOUR SUPPLIER FOR INFORMATION.**

## ELECTRICAL HOOK-UP

1. Check that supply voltages match the motor's requirements.
2. Check motor wiring and connect, according to instructions on motor, to match supply voltage.
3. Verify motor rotation with rotation meter. Incorrect rotation can cause serious damage to pump and/or motor. MDM does not recommend checking rotation by quickly switching power on and off because serious damage can occur.
4. Power cord should be protected by conduit or by cable and be of proper gauge. It should be no longer than necessary.
5. Power should be drawn directly from a box with circuit breaker protection or with a fused disconnect switch.



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## PUMP END ASSEMBLY

1. Clean and inspect all pump parts (o-rings, seal head, seal seat, pump casings, motor etc.).
2. Check motor rotation prior to pump assembly then check motor bearings for noise.
3. Install threaded rod in end of the motor shaft, leaving .725" ± .005" extended beyond the end of the motor shaft. Use thread locker to secure in place, let cure overnight. Be sure Loctite® is cured before proceeding. **Warning:** The threaded rod cannot move out of spec. (.725" ± .005").
4. Place 3/16" square key in motor shaft keyway. If a motor shaft sleeve is installed, the end of the square key will slide underneath. Install motor shaft heat shrink tubing sleeve at this time.
5. Place slinger over motor shaft then slide slinger all of the way onto motor face, bottomed out.
6. **Step A:** Using a silicon based grease such as Dow Corning 111® or a dielectric grease, lightly grease the OD of the seal head casing/o-ring and the pump bracket seal bore. **Step B:** Press the seal head assembly into the pump bracket seal bore to stop by applying pressure only on the seal casing shoulder by using 1 3/4" or 45mm socket (do not press on the seal head carbon). **Step C:** Wipe away any grease squeeze out.
7. **Step A:** Lightly grease the seal seat (mating ring) o-ring and impeller hub ID. **Step B:** Press the seal seat into the impeller hub to bottom, make sure seat face is facing up (exposed) and the seal seat (o-ring side is facing down towards impeller hub), making sure the o-ring has not dislodged and the seal seat sits flat in the bottom of the impeller hub. **Step C:** Wipe away any excess grease. **Step D:** Turn over impeller and then lightly chamfer the impeller cap recess.
8. **Step A:** Align the bracket over the motor mounting holes and C face. **Step B:** Using anti-seize on the bolt threads, install bracket/motor mounting bolts and washers. Coat bolt tips with anti-seize grease / lubricant to prevent corrosion buildup. **Step C:** Tighten to 75 in. lbs. Use 9/16" (15mm) or 3/4" (20mm). Use wrench to tighten bolts in a cross pattern.
9. **Step A:** Clean both seal faces with a lint free tissue and alcohol. **Warning:** Do not use grease on the seal faces. **Step B:** Lightly coat the motor shaft end, square key and impeller insert ID with anti-seize compound, avoiding excess squeeze out. **Step C:** With seal seat facing down slide impeller onto motor shaft aligning key and keyways until seal faces touch.
10. **Step A:** Slide the impeller further towards the motor, compressing the seal and hold in place. **Step B:** Coat rubber washer with Dow Corning 111/ dielectric grease. **Step C:** Place rubber impeller washer over the threaded rod until it bottoms in contact with the motor shaft. **Step D:** Impeller metal washer is next placed on top of the rubber impeller washer then lightly grease the side of the metal washer that will contact with the rubber washer. **Step E:** Lock the impeller in place with the 3/8"-16 hex jam nut, tighten to 30 in. lbs. **Warning:** Overtightening will cause damage to rubber impeller washer.
11. **Step A:** Lightly grease the impeller cap o-ring gland, place the o-ring in the gland and lightly grease the outside of the o-ring and the impeller nose opening. **Step B:** Assemble the impeller cap w/ o-ring onto the threaded rod. **Step C:** Tighten the impeller cap to 50 in. lbs.
12. Place large o-ring into the o-ring gland in the pump bracket and use grease only if required.
13. Assemble volute into position aligning over impeller.
14. Secure volute to bracket using the supplied five 5/16"-18 x 4" through bolts with washers, lock washers and nuts and three 5/16"-18 x 1-1/4" long bolts with washers and lock washers into the molded inserts. **Step A:** Using anti-seize on the bolt threads, coat bolt tips with anti-seize grease/ lubricant to prevent corrosion buildup. **Step B:** Tighten all bolts to 75 in. lbs. Use 1/2" (13mm) wrenches to tighten bolts and nuts in a cross pattern.
15. **Step A:** Apply thread sealant or Teflon tape to the drain plug threads. **Step B:** Tighten to seal.
16. Discharge hardware is supplied as it uses non-standard (and possibly hard to find) nuts. Coat bolt tips with anti-seize grease/ lubricant to prevent corrosion buildup.

## DISASSEMBLY

1. **Step A:** Shut off power to motor before disconnecting any electrical wiring from the motor. **Step B:** Remove drain plug from bottom of volute to drain out fluid" after shutting off power.
2. **Step A:** Disassemble volute from bracket by removing the five 5/16"-18 x 4" long hex cap screws, and the three 5/16"-18 x 1.25" hex cap screws. **Step B:** Pump/Bracket/Impeller Assembly may now be pulled back from the Volute. 1/2" (13mm) bolts 5/16"- 18x4" long. 1/2 (13mm) bolts "5/16"-18x1.25" hex cap screw.
3. **Step A:** Remove impeller eye 'cap' by unscrewing counterclockwise. **Step B:** Remove impeller locknut. **Step C:** Unscrew counterclockwise. **Step D:** Slide impeller off of motor shaft.
4. Remove mating ring from impeller. **Warning:** If you are replacing the seal, eye protection is recommended.
5. Detach bracket from motor by removing the four 9/16" (15mm) bolts or the four 3/4" (20mm) bolts after detaching bracket from motor.
6. Remove mechanical seal from bracket by pressing out from the back. **Warning:** Do not dig out from the front. (If you are replacing the seal).



**WARNING: EYE PROTECTION IS STRONGLY RECOMMENDED****MAINTENANCE**

*\*The pump must be drained before servicing or if stored below freezing temperatures. Periodic replacement of seals may be required due to normal carbon wear.*

**Lubrication:**

Rotary Seal - Requires no lubrication after assembly.

**TROUBLE SHOOTING AID****Motor Will Not Rotate**

1. Check for proper electrical connections to motor.
2. Check main power box for tripped circuit breaker.

**Motor Hums Or Will Not Rotate**

1. Check for proper electrical connections to motor and proper wire size according to local electrical codes.
2. Check for foreign material inside pump.
3. Remove volute and check for impeller rotation without excessive resistance and/or noise.
4. Remove pump and check shaft rotation for excessive bearing noise.
5. Check start switch and/or capacitor.

**Pump Operates With Little Or No Flow**

1. Check to insure that pump is primed.
2. Check for leaking seal.
3. Improper line voltage to motor or incorrect rotation.
4. Check for clogged inlet port and/or impeller.
5. Defective check or foot valve.
6. Check inlet lines for leakage, either fluid or air.

**Pump Loses Prime**

1. Defective check or foot valve.
2. Inlet line air leakage.
3. Seal leaking.
4. Fluid supply low.

**Motor Or Pump Overheats**

1. Check for proper line voltage and phase, also proper motor wiring.
2. Binding motor shaft or pump parts.
3. Inadequate ventilation.
4. Fluid being pumped should not exceed 194°F (90°C) for extended periods of time

**MDM INCORPORATED**

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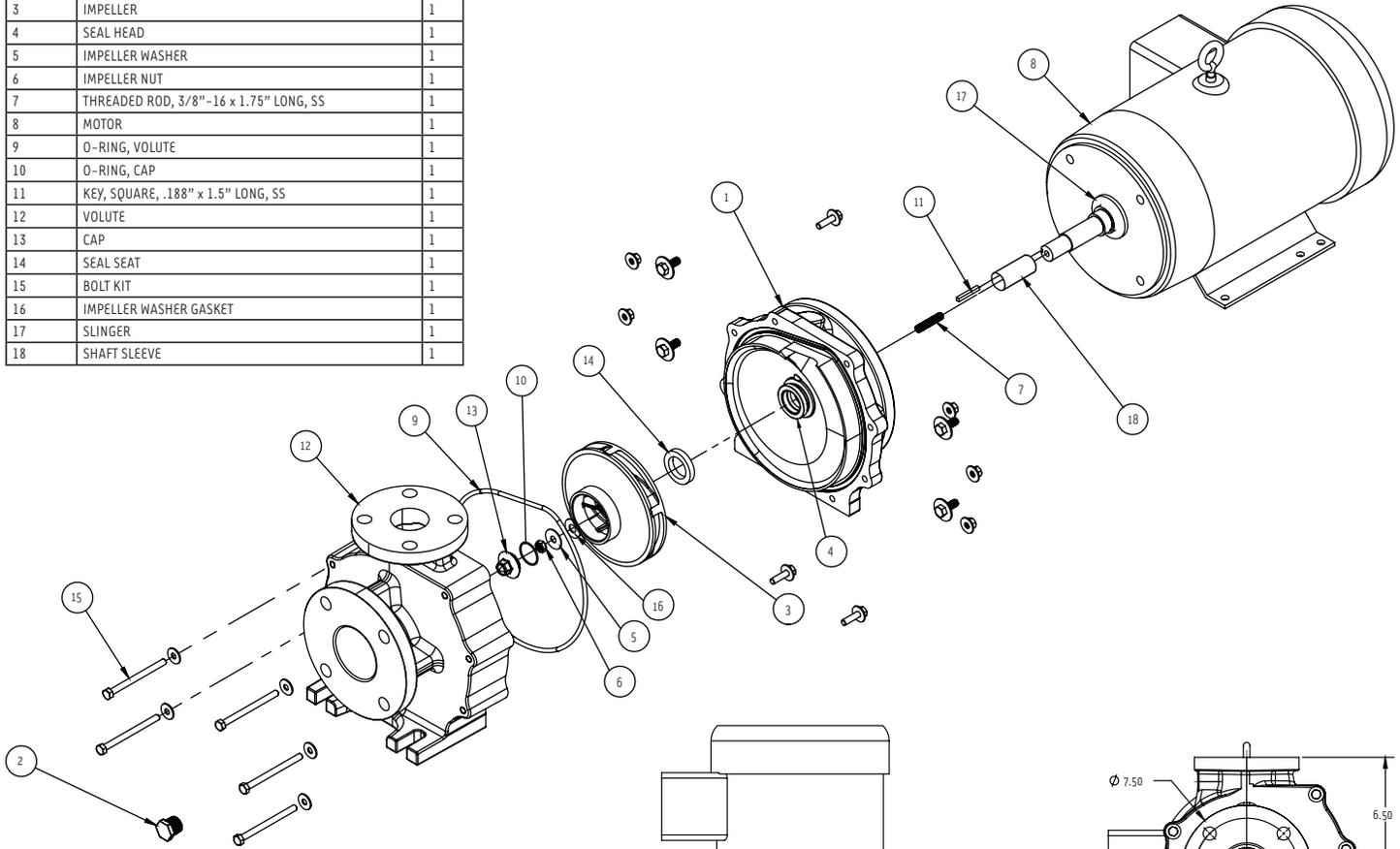
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# GENESYS<sup>®</sup> 3x2-6

## GENESYS<sup>®</sup> 3X2-6 PUMP SCHEMATIC

NUMBER	DESCRIPTION	QTY.
1	BRACKET	1
2	DRAIN PLUG	1
3	IMPELLER	1
4	SEAL HEAD	1
5	IMPELLER WASHER	1
6	IMPELLER NUT	1
7	THREADED ROD, 3/8"-16 x 1.75" LONG, SS	1
8	MOTOR	1
9	O-RING, VOLUTE	1
10	O-RING, CAP	1
11	KEY, SQUARE, .188" x 1.5" LONG, SS	1
12	VOLUTE	1
13	CAP	1
14	SEAL SEAT	1
15	BOLT KIT	1
16	IMPELLER WASHER GASKET	1
17	SLINGER	1
18	SHAFT SLEEVE	1



QTY	TOOLS / MATERIALS	USAGE
1	ROLL OF PAPER TOWELS	WIPE OFF EXCESS GREASE/ HANDS
1	TUBE OF DOW CORNING 111/ DIELECTRIC GREASE	LUBRICATE / SEALS PARTS
1	BOTTLE/ STICK LOCTITE	HOLD PARTS IN PLACE
1	HEAT GUN	SHRINK TUBING SLEEVE
1	BOX OF LINT FREE TISSUE	WIPE OFF SEAL FACES
1	BOTTLE OF RUBBING ALCOHOL	CLEAN SEAL FACES/ SURFACES
1	TUBE OF ANTI-SEIZE GREASE/ LUBRICANT	1. APPLY TO SHAFT TIP 2. APPLY TO ALL BOLT TIPS
1	BOX KNIFE	CUT HEAT SHRINKING TUBE
1	ARBOR PRESS	1. PRESS SEAL HEAD INTO BRACKET 2. PRESS SEAT INTO IMPELLER
1	**HAMMER/ MALLET	**IF ARBOR PRESS IS NOT AVAILABLE
1	CALIPERS	1. MEASURE THREADED ROD 2. MEASURE HEAT SHRINK TUBING SLEEVE
1	PLIERS/ CHANNEL LOCKS	HOLD SHAFT STILL
1	CHAMFERING TOOL	1. CHAMFER IMPELLER BORE EDGE 2. CHAMFER BRACKET BORE EDGE
1	1 3/4" (45mm) SOCKET	PRESS SEAL HEAD INTO BRACKET
1	3/16" (5mm) ALLEN WRENCH	INSTALL THREADED ROD INTO MOTOR SHAFT
1	9/16" (15mm) OR 3/4" (20mm) RATCHET WRENCH	INSTALL BRACKET BOLTS
1	TORQUE WRENCH, SET TO 30 FT. LBS.	TO INSTALL IMPELLER NUT, CANNOT EXCEED 30 FT. LBS.
1	9/16" (15mm) DEEP SOCKET	TIGHTEN IMPELLER NUT @ 30 FT. LBS.
1	5/8" (16mm) DEEP SOCKET	TIGHTEN IMPELLER CAP
2	1/2" WRENCH (13mm)	TIGHTEN VOLUTE BOLTS
2	15/16" WRENCH (24mm)	TIGHTEN FLANGE NUTS/ BOLTS

