RADIAL SSR
ASSEMBLY MANUAL
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RECOMMENDED EQUIPMENT

MACHINERY & TOOLS
The minimum basic hand tools and equipment needed for Radial SSR assembly:

1. Small Dead Blow Hammer – Qty: 1
2. Small Flat-head Screwdriver – Qty: 1
3. Small Pry Bar – Qty: 1
4. Torque Wrench, 50 Nm – Qty: 1
   • Set at 25 - 35 - 45 Nm
5. 19 mm Socket – Qty: 2
6. Torque Wrench, 140 Nm – Qty: 1
   • Set at 100 Nm

STAGE KIT PARTS LIST
A. Impeller
B. Standard Diffuser
C. Standard Shaft Spacer
COMMON PARTS LIST

A. Motor Bracket  
B. Suction Screen  
C. Motor Bracket Adapter  
D. Upper Bearing Support  
E. Discharge  
F. (2) Impellers  
G. Bottom Cup (taller & without diffuser)  
H. Upthrust Diffuser (includes metal upthrust pad)  
I. Top Diffuser (no white wear ring)  
J. Upthrust Bearing  
K. Long Shaft Spacer  
L. (2) Standard Shaft Spacers  
M. Short Shaft Spacer  
N. Black Sleeve Bearing  
O. Compression Washer & Bolt  
P. (4) Strap Nuts  
Q. Nameplate with (2) Rivets  
R. Motor Fastener Kit with Cable Guard Protector
1. Jig fixture for the pump assembly.

2. Check the motor bracket to ensure the screen has been pre-installed.

3. Place the motor bracket on the fixture.

4. Align one of the mounting holes in the bracket to the orientation pin located on the fixture.

5. Place motor bracket adapter ring onto the motor bracket.

6. Place the shaft down through the motor bracket, making sure the coupling is fully seated on the assembly fixture splines.
   - Jig shaft gage line should not be visible when the shaft is fully seated.

7. Place the bottom cup (taller and without diffuser) on the motor bracket adapter.

8. Install the long shaft spacer (K) on the shaft.

9. Install the first impeller onto shaft with the impeller eye facing down.

10. Install the upthrust bearing (J) carbon-up.

11. Install the standard shaft spacer (L) onto shaft.
12. Install the upthrust diffuser onto the shaft.
   • The upthrust diffuser includes an upthrust pad on the bottom.

13. Install the second impeller over the shaft with the impeller eye facing down.

14. Install the standard shaft spacer (L) onto the shaft.

15. Install the standard diffuser with white wear ring onto the shaft.
   • Standard diffuser includes a white wear ring located inside the diffuser.

16. Install the next impeller onto the shaft with the impeller eye facing down.

17. For pumps with four or more stages, repeat steps 14–16 until the last impeller is installed.

18. Install the standard shaft spacer (L) onto the shaft.

19. Install the top diffuser over the shaft onto last impeller.
   • Top diffuser does not contain a wear ring assembly.
20. Install the short shaft (M) spacer onto the shaft.

21. Install the black sleeve bearing (N) onto the top of the shaft.
   • There will be a gap between the top of the shaft and the top of the bearing.

22. Install the compression washer (O) onto the compression bolt (O) and install into the end of the shaft.
   • The bolt has a thread-locking compound pre-applied.

23. Tighten to 100 Nm with the 19 mm socket torque wrench.

24. Install the upper bearing support.
   • The bolt head should be above the bearing support when installed correctly.

25. Place the discharge onto the upper bearing support.

26. The discharge flat should line up with the cable guard location.

27. Apply anti-seize thread compound to all four threaded studs at the bottom of the straps.
   • Use Jet-Lube® White Knight™ food grade anti-seize or similar. If the pump is intended for drinking water application, ensure that the anti-seize compound used is safe for drinking water.
28. Hook the first of four straps into the discharge.

29. Ensure the strap hook is completely seated in the slot on the top of the discharge.

30. The strap may have to be bowed to insert the stud through the mounting hole.

31. Slide the threaded stud into the motor bracket mounting location.

32. Ensure the stud extends through the bracket mounting hole.

33. Repeat steps 28–32 for the next three straps.

34. Thread all four nuts (P) onto the four straps.

35. Hand-tighten all of the nuts.
36. Insert the small pry bar behind the edge of the strap to ensure it does not rotate during the torque procedures. Torque in a crisscross pattern the following requirements in three stages:
   - Torque strap nuts to 25 Nm
   - Torque strap nuts to 35 Nm
   - Torque strap nuts to 45 Nm

37. Check shaft endplay with the following procedure:
   1. The groove in the jig shaft should not be seen with the pump shaft fully seated.
   2. Pry up the bottom end of the shaft using the pry bar.
   3. With the pump shaft raised up, the top of the gage groove line in the jig shaft should be seen.

38. Use the small dead blow hammer to flatten any straps that rotated during the torque procedure.

39. Remove the assembly from the jig and lay the pump on its side to install the cable guard.

40. Orientate the cable guard so the angled tab is on the motor bracket end and the top two tabs extend past the pump’s discharge.

41. Install the cable guard tabs closest to the motor bracket.
ASSEMBLY INSTRUCTIONS

42. Gently tap the side of the cable guard to drive one of the tabs under the strap.
   • Do not tap the tabs.

43. Use the small flat-head screwdriver to gently raise the strap on the opposite side of the cable guard.

44. Gently tap the other tab under the strap. Remove the screwdriver after the cable guard tab has started under the strap.

45. The cable guard should be centered between the two straps.

46. Repeat steps 40–44 for all the tabs except the top two.

47. After all but the top two tabs have been installed, gently tap the top end of the cable guard down toward the motor bracket.
   • Be careful not to damage or bend the cable guard.

48. Apply pressure to the end of the cable guard while tapping on the top side of the tabs close to the motor bracket. This will allow for the end of the cable guard to slide under the motor bracket ears.
49. Gently tap the cable guard to drive one of the top two cable guard tabs under the strap.

50. Use the small flat-head screwdriver to gently guide the tab under the strap on the opposite side of the cable guard.

51. Once the tab is started under the strap, remove the screwdriver.

52. The cable guard should be centered between the two straps.

53. Fill out the nameplate data.

54. Install the nameplate (Q) by inserting drive rivets (Q) into the two pre-drilled holes located on the motor bracket.
ASSEMBLY INSTRUCTIONS

BUILD FIXTURE ASSEMBLY

Order # 154038100

Weld motor shaft post to base at chamfer.
Grind weld flat after welding.

Ø12.7 x 25.4 Long Dowell Pin, pressed in place
TOLL FREE HELP FROM A FRIEND
1-800-348-2420
FAX: 1-260-827-5102

Phone Franklin's toll free SERVICE HOTLINE for answers to your pump and motor installation questions. When you call, a Franklin expert will offer assistance in troubleshooting and provide immediate answers to your system application questions. Technical support is also available online.

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