Installation Instructions

DEUBLIN®

HPS SERIES

Steam Joints

Model C15D-004-02-3A (UNC)

DEUBLIN® COMPANY

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DEUBLIN®	HPS SERIES Installation Instructions	Model/Series: C15D-004-02-3A UNC / HPS Number: 040-822 Release: 2014-01 Rev.A

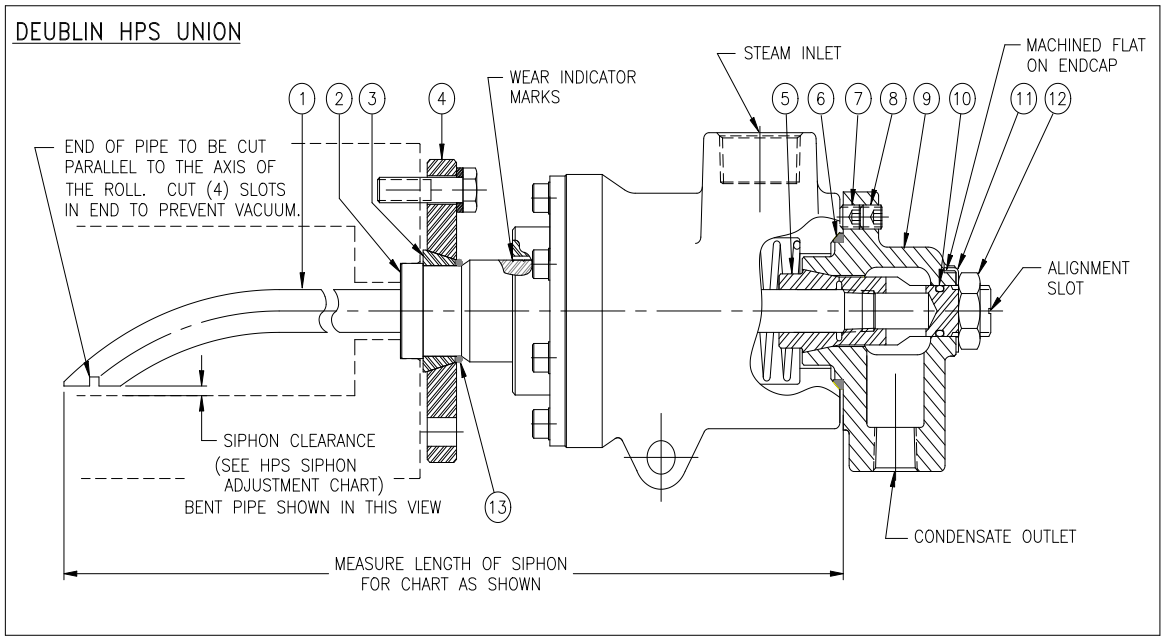
The following instructions are designed to insure proper installation and operation of the **HPS Series Rotating Union, 1-1/2 inch, Double-Bearing with External Siphon Adjustment.**

Required Tools

- Allen wrench (5/16 inch)
- Allen wrench (3/16 inch) for adjustment set screw
- Open end wrench (7/8 inch)
- Torque wrench
- Adjustable wrench to fit 1-1/2" nut

Additional items that may be required for installation

- 1/2 inch Schedule 80 siphon pipe
- Mounting adaptation kit (to go from 1-1/2 inch mounting to 2 inch or 1-1/2 inch mounting to 1-1/4 inch mounting)



1. Siphon Pipe
2. Rotor Gasket
3. Split Wedges
4. Rotor Flange
5. Siphon Bushing
6. Copper Gasket
7. Adjustment Set Screw
8. Adjustment Locking Set Screw
9. End Cap
10. O-ring (for Siphon Bushing)
11. Tab Washer
12. Jam Nut
13. Hairpin Clip

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Note: *It is advisable to use some type of anti-seize compound on all bolts and screws in this installation.*

Preparation

1. Clean all threads and bores to remove any grease and metal chips which may be left from machining.

2. When installing a bent pipe it should be threaded to 1/2" NPT and bent to the desired shape.

HPS Installation

1. With the union on the bench, slide the siphon pipe (Item 1) into the union from the journal end. See Figure 1.

2. With the siphon pipe extending from the union, thread the siphon bushing (Item 5) onto the siphon pipe. Tighten the bushing hand-tight and align the alignment slot with the downward leg of the siphon. See Figure 2.

3. Place the o-ring (Item 10), on the siphon bushing, in the groove as shown. See Figure 2.

4. Coat the tapered portion of the bushing with anti-seize compound. Lubricate the o-ring with silicone base grease.

5. Ensure that the copper gasket (Item 6) is installed on the end cap (Item 9), and slide the siphon bushing and siphon pipe into the end cap, aligning the siphon opening with the condensate outlet in the end cap and being careful not to damage the o-ring. See Figure 2.

6. Place the tab washer (Item 11) and jam nut (Item 12) on the end of the bushing and hand-tighten only at this time. See Figure 3.

7. Start the bolts in the end cap leaving them loose at this time.

8. Remove existing steam joint and journal flange, if necessary. Clean the end of the journal or journal flange, removing any residual gasket material.

9. Install new journal flange and gasket, **(<u>if necessary</u>).**

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10. Ensure that the siphon is installed in the union and end cap as previously noted.

11. Attach flexible hoses to the inlet and outlet ports of the union. The design of the flexible hoses must not restrain the natural movement of the union or place additional loads on the union. See the Hose Installation Guide (page 6).

12. Temporarily remove hairpin clip (Item 13). Place the rotor flange (Item 4) over the rotor. Position the split wedges (Item 3) in the rotor grooves. Slide the rotor flange forward, over the split wedges, securing the rings in place. Replace hairpin clip behind flange as shown to hold flange and split wedges during assembly.

13. Place the rotor gasket (Item 2) in the recess of the journal flange.

14. Approach the union to the journal and carefully slide the rotor into the journal flange pilot.

15. Secure the rotor flange to the journal flange with the four hex head bolts and lock washers using a uniform locking pattern. A uniform gap between the flanges is critical and must be consistent to 0.020" to ensure the joint is properly aligned.

16. Remove the locking set screw (Item 8) at the top of the end cap and back out the adjusting set screw (Item 7) until it is flush with the end cap flange face.

17. Align siphon pipe by turning the alignment slot on the siphon bushing (Item 5) so it is vertical. Hold the siphon bushing in this position with a screwdriver and tighten the jam nut (Item 12) to 60 ft.-lbs. Ensure that the tab on the washer (Item 11) is not aligned with the machined flat on the end cap (Item 9). See Figure 3.

18. Bend the tab portion of the washer against one of the nut flats and bend the circular portion into the machined flat on the end cap.

19. Back out all end cap bolts and then with two fingers gently tighten the two bolts 90° from the set screw.

20. Tighten adjustment set screw (Item 7) until it just touches the union housing. Tighten the adjustment set screw the additional amount required to obtain the desired siphon clearance per Figure 4.

21. Tighten all remaining bolts 1 through 6 following the sequence shown in Figure 3. Torque initially to 12 ft.-lbs., then re-torque all bolts to 25 ft.-lbs.

22. Replace the locking set screw (Item 8).

23. Attach torque restraining rods that will allow 3/16” axial and 1/4” radial movement.

24. After 2-3 hours of operation, verify that all connections remain secure.

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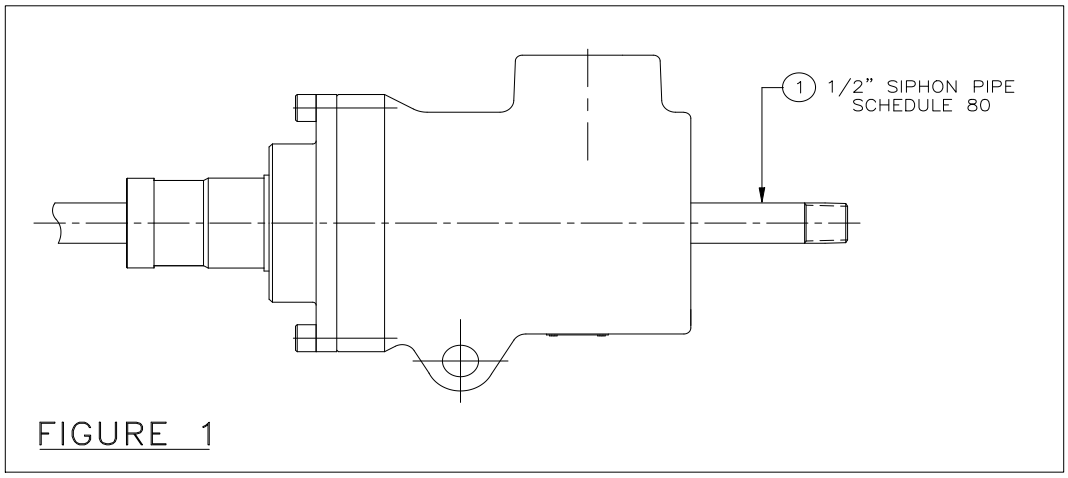

FIGURE 1

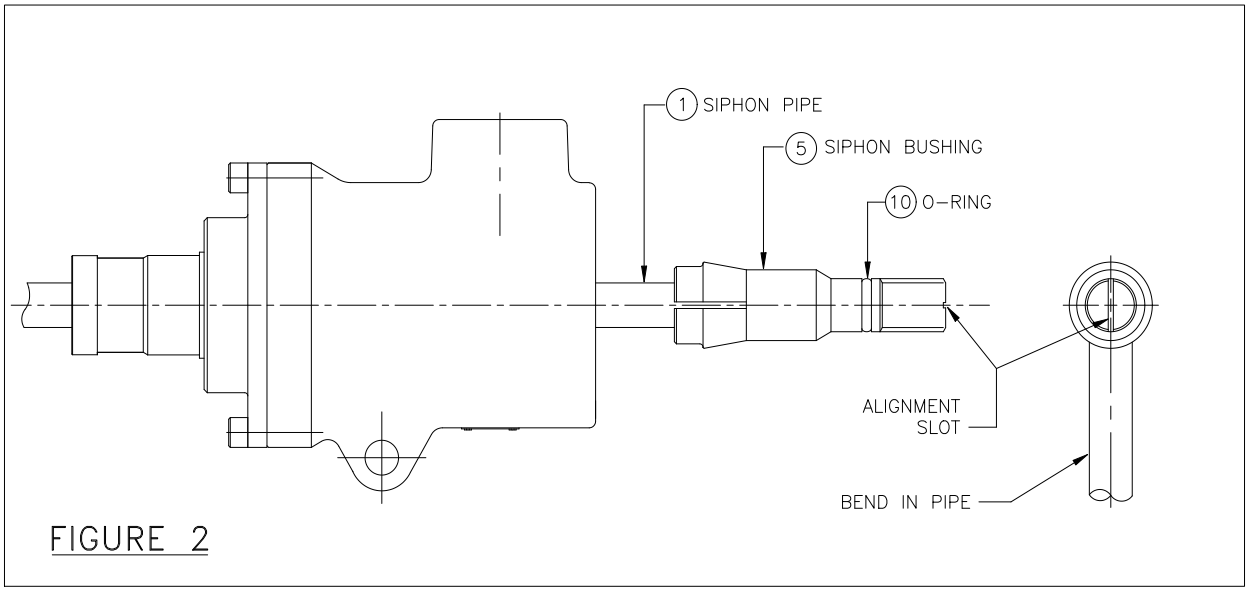

FIGURE 2

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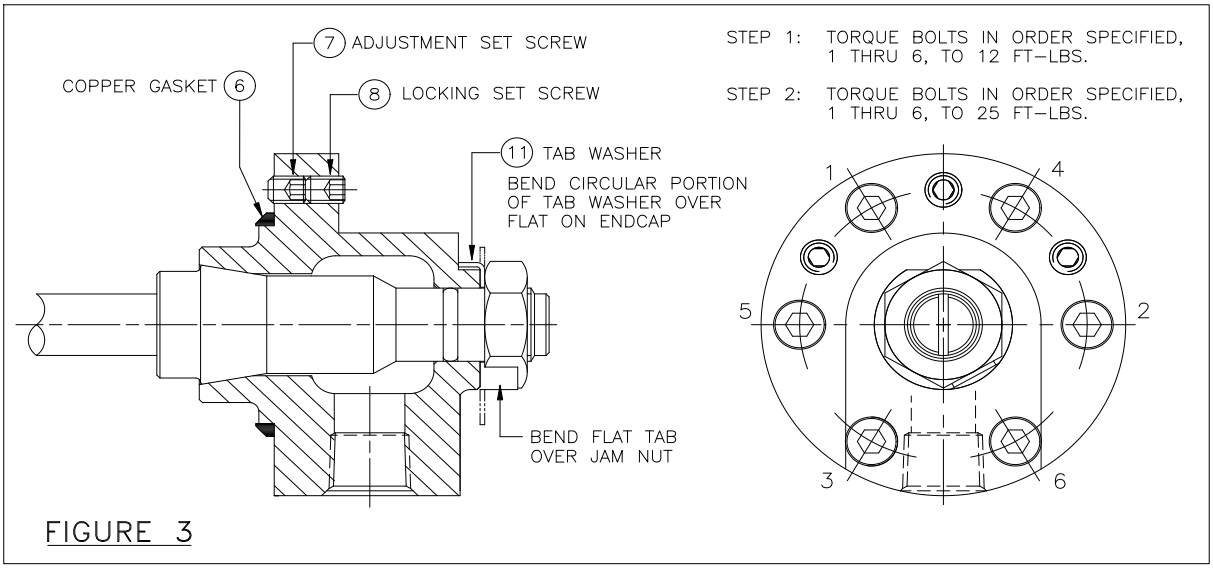

FIGURE 3

TURNS OF UNC ADJUSTMENT SCREW vs. SIPHON CLEARANCE

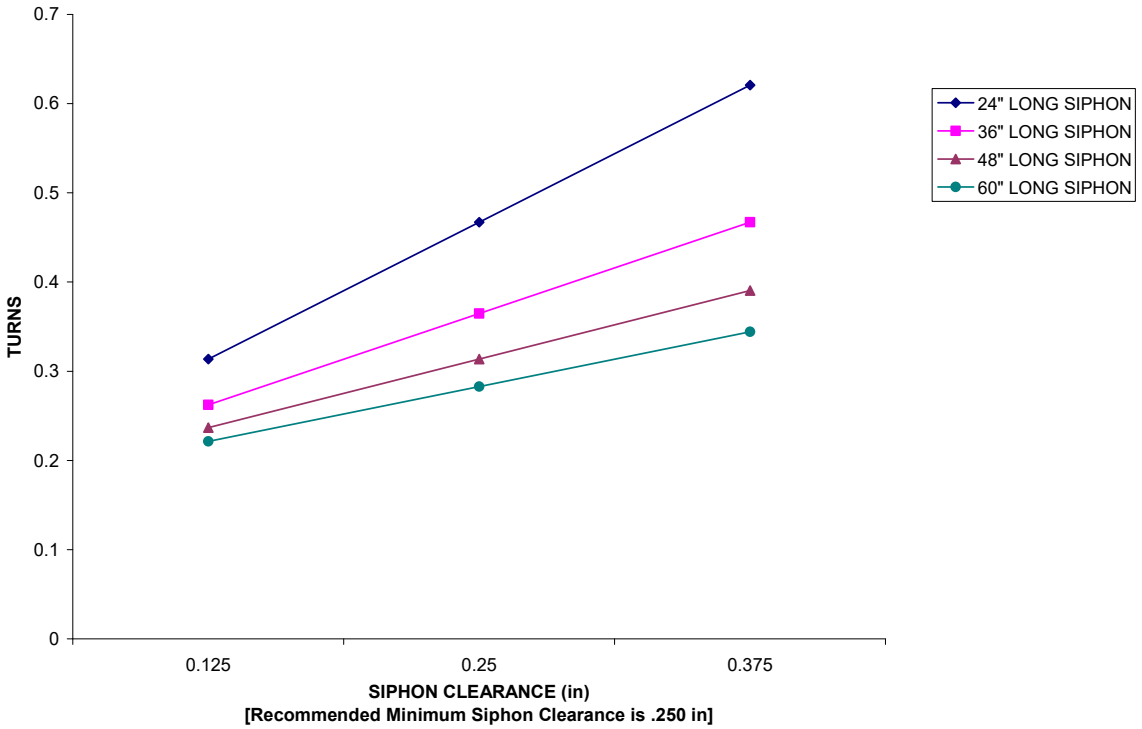

FIGURE 4

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Flexible hose must be used to connect the HPS Series Rotating Union to its steam supply and condensate return piping. Use of rigid piping will drastically reduce the life of the rotating union due to its inflexibility. The union should not be burdened with the weight of the pipe and fittings. The hose should be connected directly to the union and suitable support should be provided for the fittings and supply pipe beyond the hose. Use braided metal hose for inlet and outlet connections. Make certain that the pressure rating of the hose is above the operating pressure of the system.

FIGURE A

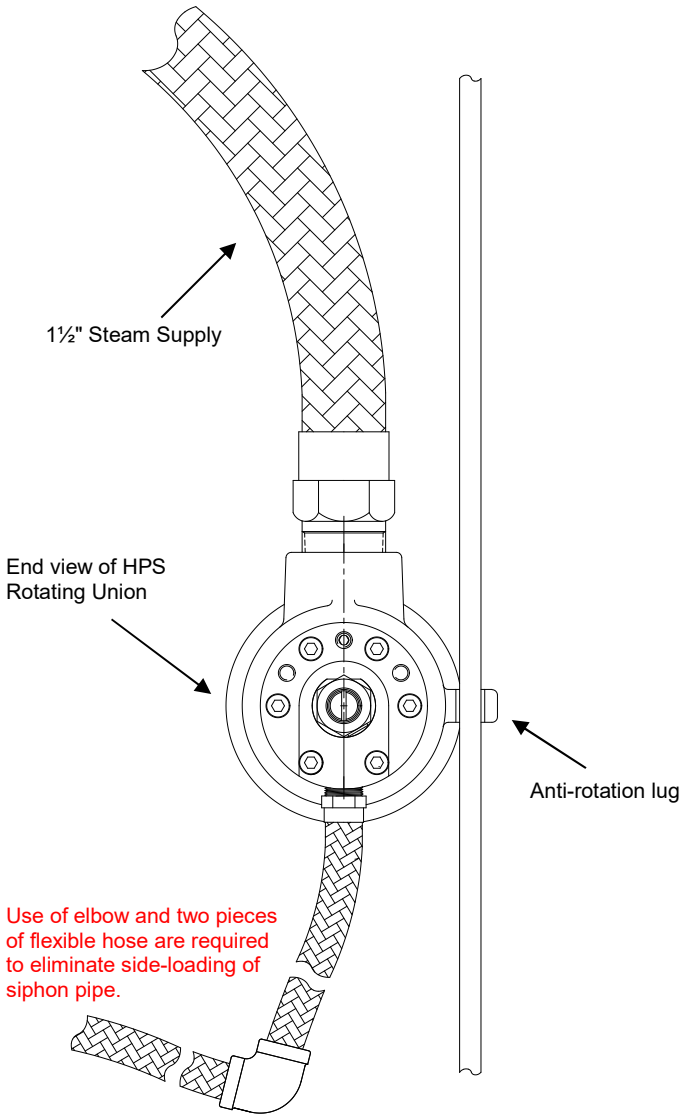
Minimum Recommended Hose Lengths for Steam Inlet & Condensate Outlet		
Hose Diameter		Length
1/2”	x	10”
3/4”	x	14”
1”	x	16”
1-1/4”	x	18”
1-1/2”	x	20”
2”	x	24”

NOTE: WARRANTY WILL BE VOID IF TWO-PIECE HOSE ASSEMBLY IS NOT UTILIZED IN CONDENSATE RETURN LINE.

FIGURE B

Steam inlet and condensate outlet connections.

Use 45º or 90º elbow and pipe union for connection to supply and return headers. Ensure that the hose is not installed taut.



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