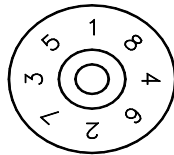


## MAINTENANCE & INSTALLATION INSTRUCTIONS

### For Chemline Type 21 True Union Ball Valve Size 1/2”- 4”

**Installation:**

1. Make sure all surfaces are clear and free of debris prior to installing valve in pipeline. Pipeline should be empty at connection site.
2. Valve should be set to the closed position.
3. When installing valves with socket connections, ensure that only PVC solvent cement is used. Excessive use of cement can cause sticking in the valve interior, therefore use caution when applying cement, especially on vertical piping.
4. For threaded connections we recommend the use of sealing tape and, with the use of a strap wrench, to tighten no more than 2 full turns past finger-tight. Use of a pipe wrench can deform the pipe or union nut and cause damage to the valve and/or connection(s).
5. Flanged connections should be torqued evenly and in a symmetrical pattern with a torque wrench and as per the figure and chart below:


**RECOMMENDED FLANGE BOLT TORQUES**

VALVE SIZE	FLANGE	BOLT TORQUE		AXIAL MISALIGNMENT	PARALLELISM (INCH)
		IN FT-LB	PSI - 150		
	PSI - 50	PSI - 100	PSI - 150		
1½	11	13	14	0.04	0.03
2	13	14	16	0.04	0.03
2½	13	14	16	0.04	0.03
3	18	20	22	0.04	0.03
4	20	20	22	0.04	0.04
5	22	15	29	0.04	0.04
6	25	15	32	0.04	0.04
8	25	32	40	0.06	0.04
10	25	32	40	0.06	0.04
12	29	36	43	0.06	0.04
14	32	36	43	0.06	0.04
16	36	[58-85 PSI]	58	0.06	0.04
18	36	[58-85 PSI]	-		
20	72	-	-		
24	72	-	-		

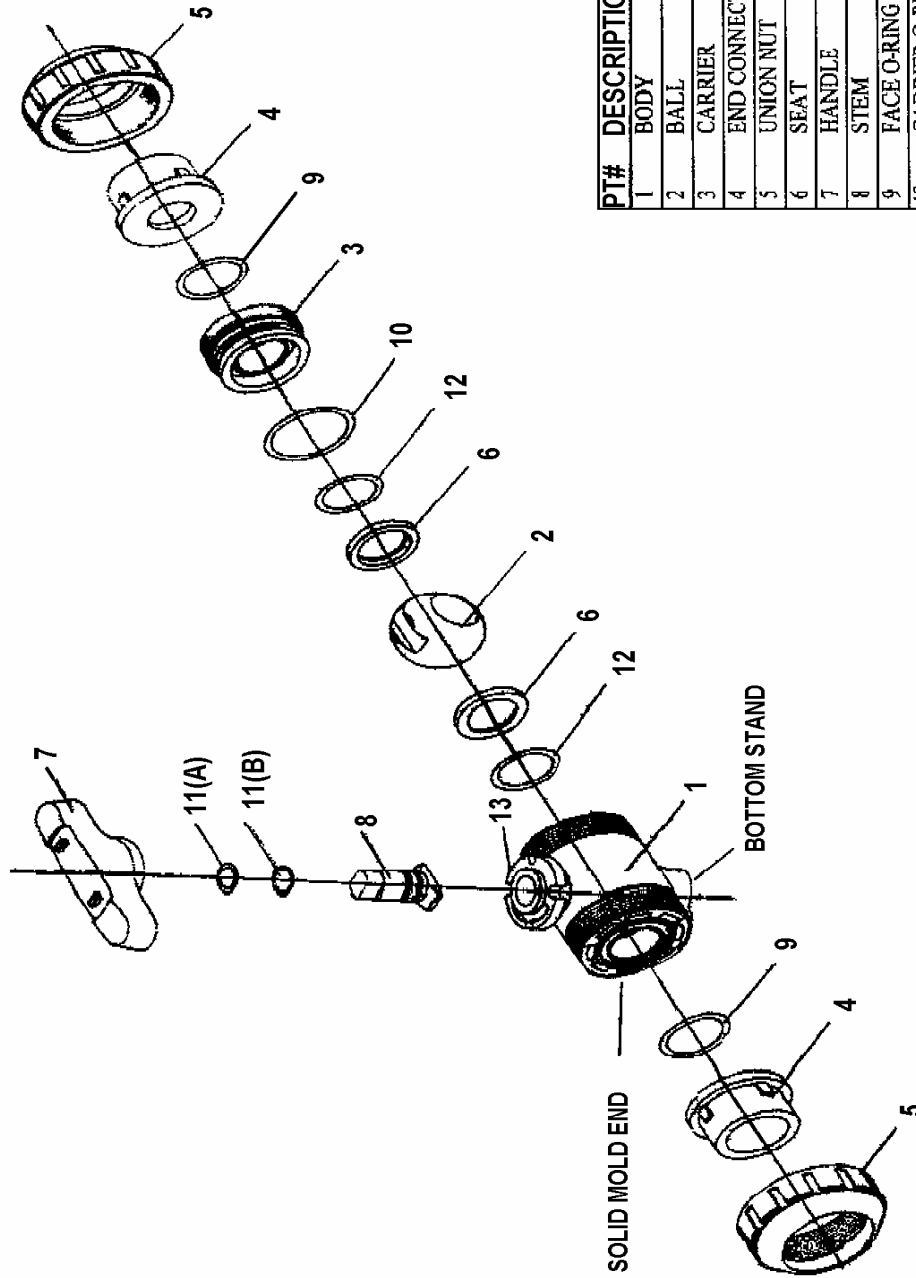
**Maintenance Instructions Type 21 Ball Valve cont.*****Maintenance:***

Refer to **ASSEMBLY DRAWING T21V Rev. 0.** And proceed as follows:

1. Turn valve to the closed position.
2. Unscrew union nut (5) from both ends of valve.
3. Remove end connectors (4).
4. On solid mold end, remove face o-ring (9). This completely disassembles this end of valve.
5. Pull upward on handle (7) to remove.
6. On opposite end of valve, remove face o-ring (9) and use handle (7) as a spanner wrench to remove carrier (3).
7. Remove carrier o-ring (10).
8. Remove seat (6) and seat cushion (12) to expose ball (2).
9. Remove ball (2) by pushing from solid molded end of body.
10. Remove stem (6) by pushing it down into body (1).
11. Remove stem o-rings 11(A) and 11(B) from groves in stem.
12. Remove other seat (6) and seat cushion (12).
13. Inspect all parts for wear and replace as necessary.
14. Before re-assembling valve, lubricate all o-rings with Dow Corning III silicone compound or equivalent.
15. To re-assemble valve follow steps 1 through 10 in reverse order.

**NOTE:** If mounting actuator on mounting flange (13), make sure handle (7) is removed and stem (6) and actuator are aligned.

After replacing carrier (3), the face of the carrier should remain slightly projected from the end of the body. Make sure the ball rotates smoothly with only a touch of resistance.



PT#	DESCRIPTION	QTY	MATERIALS
1	BODY	1	PVC/PP/PVDF/CPVC
2	BALL	1	PVC/PP/PVDF/CPVC
3	CARRIER	1	CPE/EPDM/VITON/HYP.
4	END CONNECTOR	2	PVC/PP/PVDF/CPVC
5	UNION NUT	2	PVC/PP/PVDF/CPVC
6	SEAT	1	CPE/EPDM/CITON/HYP.
7	HANDLE	1	PVC/PP/PVDF/CPVC
8	STEM	1	PVC/PP/PVDF/CPVC
9	FACE O-RING	2	CPE/EPDM/VITON/HYP.
10	CARRIER O-RING	1	CPE/EPDM/VITON/HYP.
11(A)	STEM O-RING (Upper)	1	CPE/EPDM/VITON/HYP.
11(B)	STEM O-RING (Lower)	1	CPE/EPDM/VITON/HYP.
12	SEAT CUSHION	2	CPE/EPDM/VITON/HYP.
13	MOUNTING FLANGE	1	PVC/PP/PVDF/CPVC

TITLE		SCALE	DATE
CHEMLINE TYPE 21 TRUE UNION BALL VALVE		DR. BY	
REFERENCE		CHKD BY	
SIZES 1/2" - 4"		APP. BY	
CHEMLINE PLASTICS		DWG. NO.	T21V
CHEMLINE		REV.	0