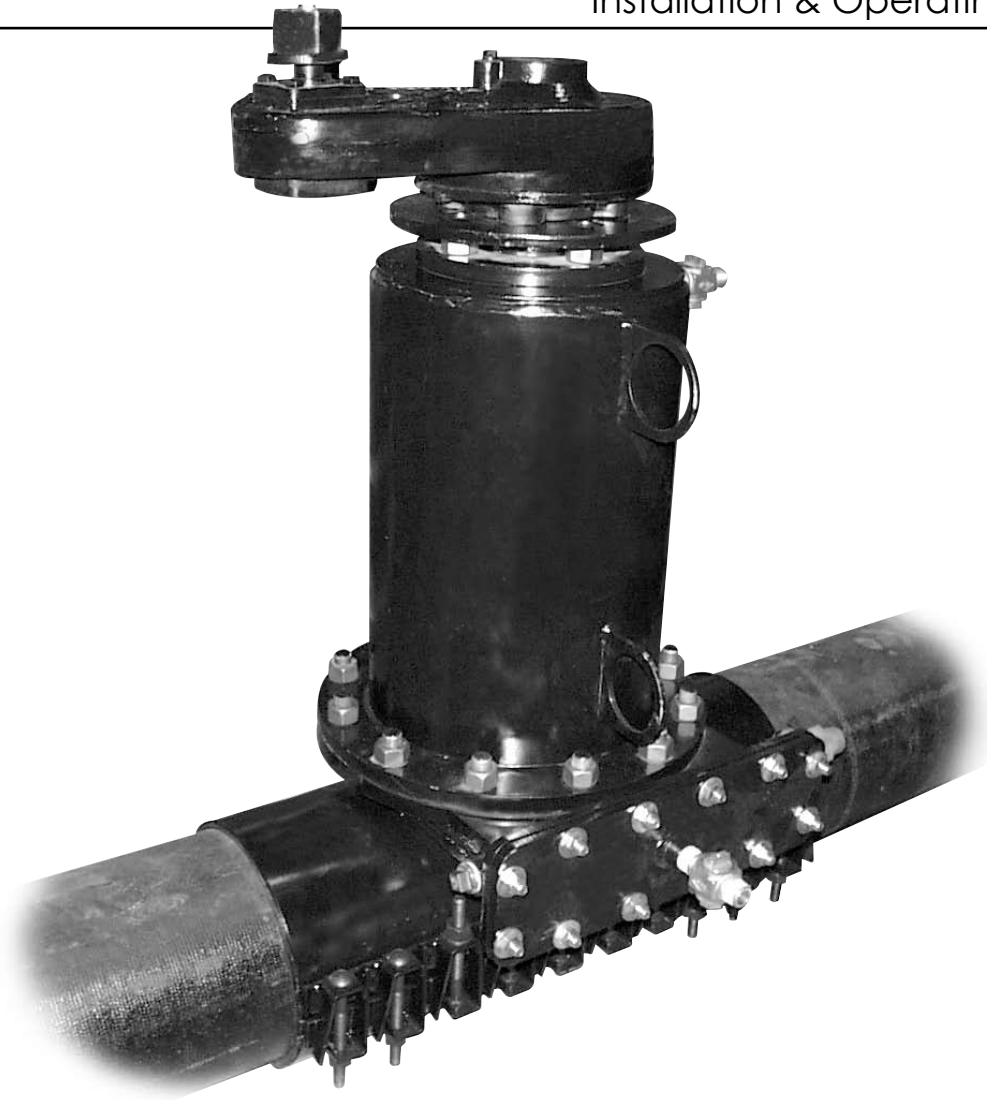


# *Inserta*Valve™

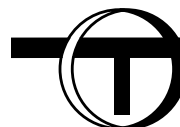
Installation & Operating Manual

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Thank you for your purchase of the InsertaValve™.

Please read and understand this operation manual. Our goal is to serve you, our customer. If you have any questions, complaints or improvement suggestions please call us at 1-800-426-9341



**Transmate**

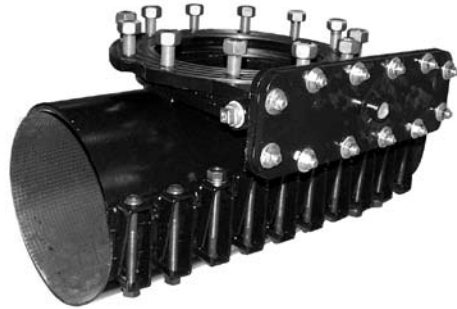
a Division of Romac Industries, Inc.

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# COMPONENTS

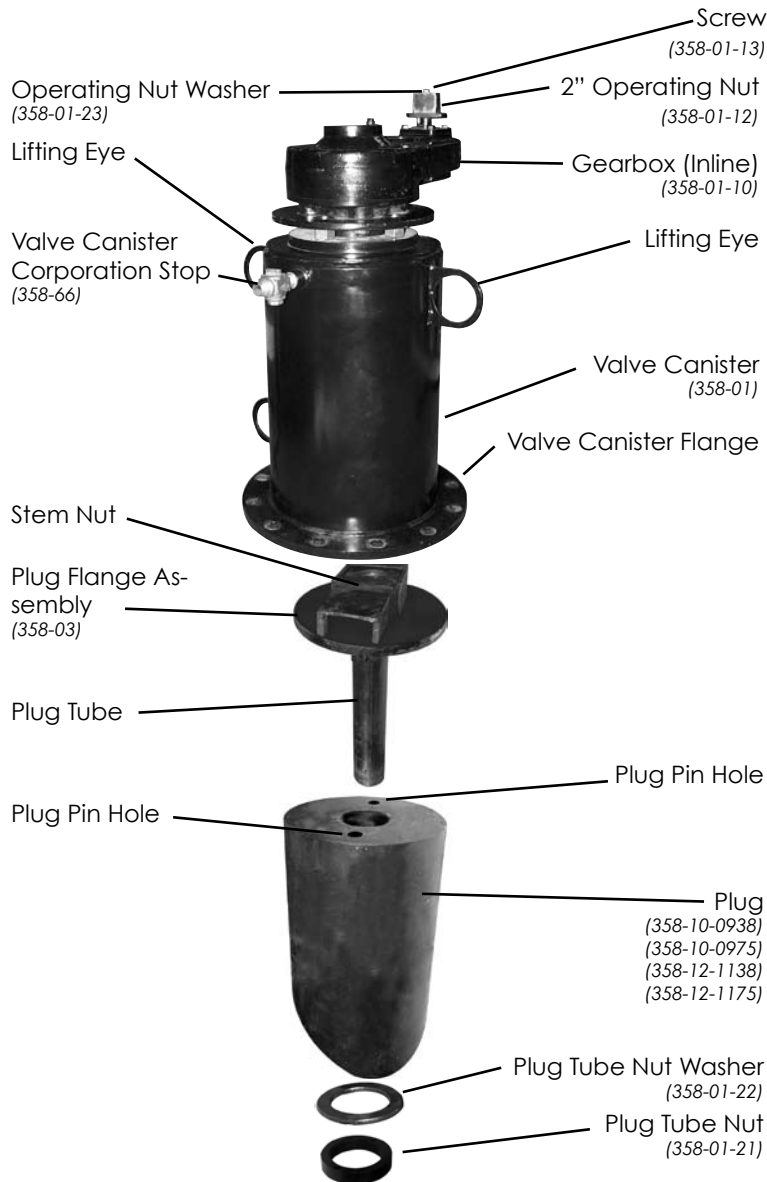


InsertaValve™ Sleeve



Valve Canister  
 (358-01-0938)  
 (358-01-0975)  
 (358-01-1138)  
 (358-01-1178)

## Valve



## The Plug



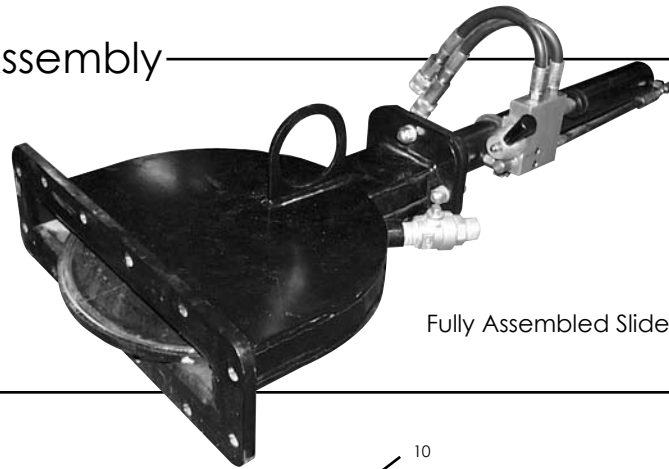
Different size plugs can easily be changed out to accommodate different pipes. The InsertaValve™ uses only one Valve Canister and Plug Flange Assembly.

Once the Plug has been removed from the Valve Canister, the Plug may be changed by following these steps below:

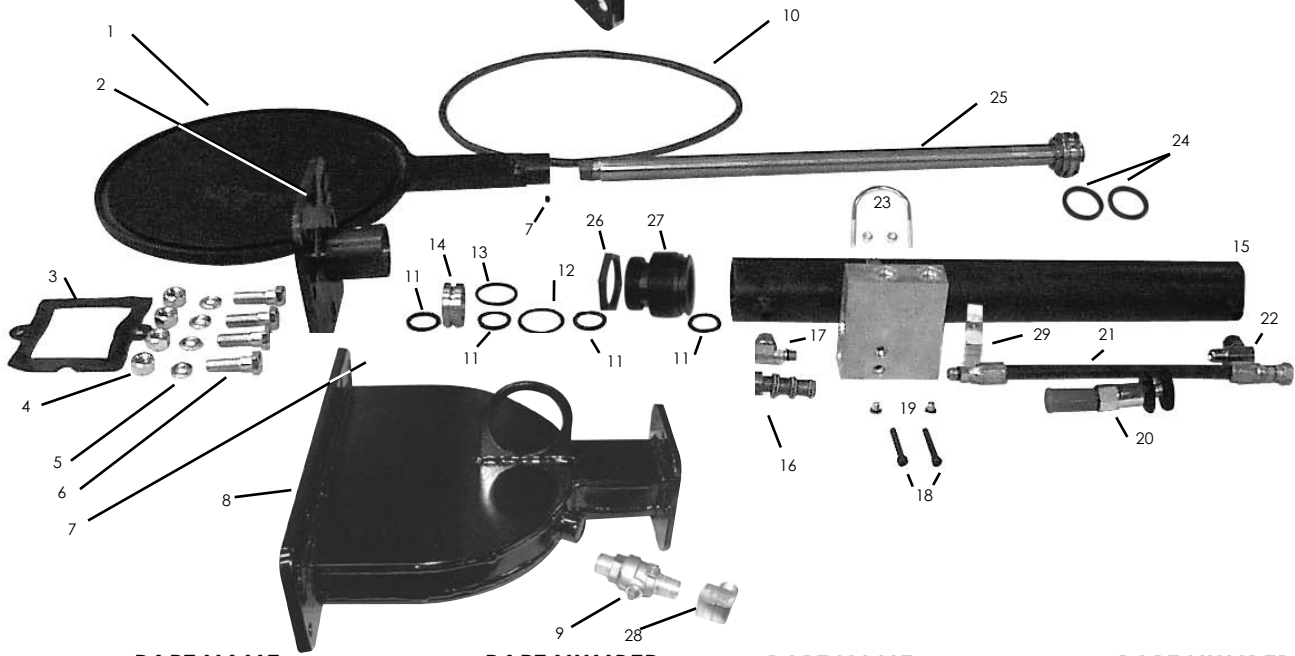
- Loosen Plug Tube Nut with Spanner Wrench provided.
- Remove Plug Tube Nut and Washer.
- Slide Plug off Plug Tube.
- Align replacement Plug so that the Plug Pins line up with the Plug Pin Holes. Slide Plug into place.
- Replace Plug Tube Nut and Washer and Plug Tube Nut.
- Tighten the Plug Tube down.
- Chisel punch end of Plug Tube to keep the Plug Tube Nut from unthreading.

# EQUIPMENT

## Slide Gate Assembly



Fully Assembled Slide Gate Assembly  
(358-50)



PART NAME	PART NUMBER	PART NAME	PART NUMBER
1 Slide Gate Disk	358-51	15 Cylinder Tube	358-57
2 Slide Gate W.B. Housing	358-55	16 Slide Gate Control Handle	358-61
3 Slide Gate W.B. Flange Gasket	358-55-03	17 Manifold Adapter Swivel	358-65-2
4 Nut (4 req.)	375-50-04	18 Manifold Clamp Screw (2 req.)	358-63
5 Washer (4 req.)	358-85-1	19 Manifold Plug (2 req.)	375-01-03
6 Bolt (4 req.)	358-85	20 Speed/Force Control Valve	358-62
7 Set Screw	351-51-2	21 Manifold Hose	358-65-3
8 Slide Gate Housing	358-52	22 Nipple Adapter	358-65-1
9 Slide Gate Housing Corporation Stop	358-66-2	23 Bracket U-Bolt with Nuts	358-64-1
10 Slide Gate Disk O-Ring	358-51-3	24 Piston Poly Pac (2 req.)	350-58-02
11 Wiper Bushing Poly Pac (4 req.)	358-53-02	25 Piston Rod	358-58
12 Cylinder Nose O-Ring	358-56-02	26 Cylinder Tube Nut	358-59
13 Wiper Bushing O-Ring	358-53-03	27 Cylinder Nose	358-56-01
14 Wiper Bushing	358-53-01	28 Elbow Fitting	358-66-01
		29 Manifold Bracket	358-64

## Miscellaneous



By-Pass  
Hose  
(358-69)



9 1/2" - 10"; 11 1/2" - 12"  
Holesaws

- 9 1/2" (350-01-1080)
- 10" (350-01-6080)
- 11 1/2" (350-01-1096)
- 12" (350-01-6096)

# EQUIPMENT (cont.)

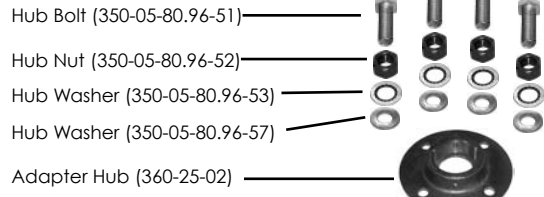
## InsertaValve™ Machine Adapter Bell



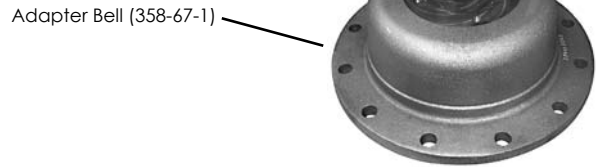
Machine Adapter  
Bell Assembly  
(358-67)



Machine Canister  
Bolts & Nuts  
(8FN-HHX C14) (385-86)



Hub Bolt (350-05-80.96-51)  
Hub Nut (350-05-80.96-52)  
Hub Washer (350-05-80.96-53)  
Hub Washer (350-05-80.96-57)

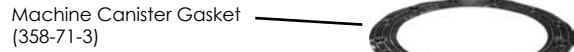


Adapter Hub (360-25-02)  
Adapter Bell (358-67-1)

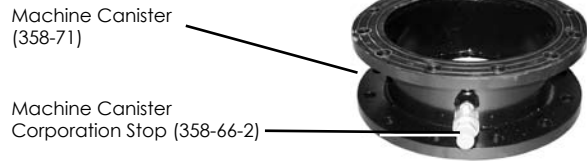
## InsertaValve™ Machine Canister



Machine Canister  
Assembly  
(358-71)



Machine Canister Gasket  
(358-71-3)



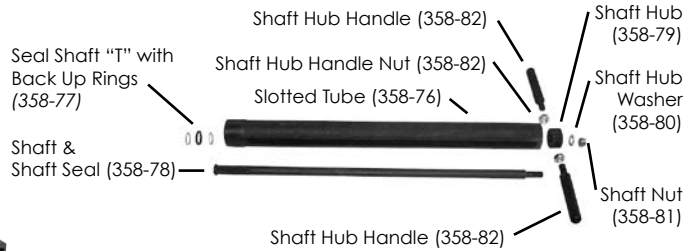
Machine Canister  
(358-71)

Machine Canister  
Corporation Stop (358-66-2)

## Seal Rod



Seal Rod  
(358-75)



Seal Shaft "T" with  
Back Up Rings  
(358-77)

Shaft &  
Shaft Seal (358-78)

Shaft Hub Handle (358-82)

Shaft Hub Handle Nut (358-82)

Slotted Tube (358-76)

Shaft Hub Handle (358-82)

Shaft Hub  
(358-79)

Shaft Hub  
Washer  
(358-80)

Shaft Nut  
(358-81)

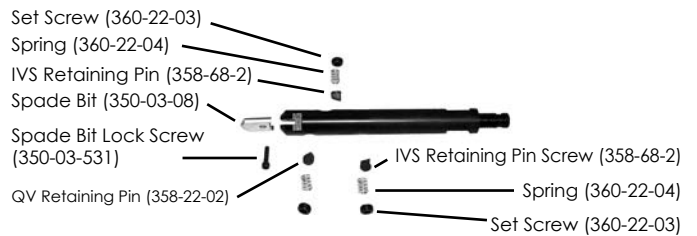
## InsertaValve™ Shaft Nose & PVC Pilot



IVS Shaft Nose  
(358-68)



PVC Pilot  
(358-84)



Set Screw (360-22-03)

Spring (360-22-04)

IVS Retaining Pin (358-68-2)

Spade Bit (350-03-08)

Spade Bit Lock Screw  
(350-03-531)

QV Retaining Pin (358-22-02)

IVS Retaining Pin Screw (358-68-2)

Spring (360-22-04)

Set Screw (360-22-03)

Set Screw (360-22-03)

Spring (360-22-04)

IVS Retaining Pin (358-68-2)

QV Retaining Pin (360-22-02)

IVS Retaining Pin Screw (358-68-2)

Spring (360-22-04)

Set Screw (360-22-03)

**SLEEVE SPECIFIED BY LARGE OD**

Sleeve Size	Pipe and Class	Part Number
10.75 - 10.95	PVC 10" (10.75) ASTM D 2241CL 100,125,160,200 Steel 10 (10.75) Sch. 40, 80	311-1095010
10.85 - 11.25	DI 10" (11.10) 50 - 56 CI 10" (11.10) 50 CC & PC; 100 CC & PC; 150 CC & PIT; 200 CC & PIT; 250 CC; A, B. PVC C-900 10" (11.10) 100,150, 200	311-1125010
11.05 - 11.45	DI (11.10) 50 - 56 CI (11.10,11.40) PVC C-900 (11.10); 100, 150, 200 SIMPLEX (11.43); AC 150, AC 100 J-M (11.37)	311-1145010
11.40 - 11.80	CI 250 PIT (11.40), C (11.40),D (11.40) E, F (11.60) AC 100 CERTAIN-TEED (11.46), SIMPLEX (11.43)	311-1180010
11.80 - 12.20	CI G, H (11.84) AC 150 J-M (11.92) SIMPLEX (11.95); AC 200 J-M (11.92) CERTAIN-TEED (11.88)	311-1220010
12.20 - 12.60	AC 200 SIMPLEX (12.45)	Non-stocked item, please call for special quote
12.75 - 12.95	PVC 12" (12.75) ASTM D 2241CL 100, 125, 160, 200 Steel 12" (12.75) Sch. 40, 80	311-1295010
12.90 - 13.20	DI 12" (13.20) 50 - 56 CI 12" (13.20) 50 CC & PC; 100 CC & PC; 150 CC & PIT; 200 CC & PIT; 250 CC; A, B PVC C-900 12" (13.20) 100,150, 200	311-1320010
13.10 - 13.50	DI 12" (13.20) 50 - 56 CI 12" (13.20) 50 CC & PC; 100 CC & PC; 150 CC & PIT; 200 CC & PIT; 250 CC; A, B; A,B;CI (13.50) 250 PIT, C, D PVC C-900 12" (13.20) 100,150, 200 AC 100 J-M (13.49)	311-1350010
13.40 - 13.80	CI (13.50) 250 PIT, C, D, (13.76) E, F AC 100 J-M (13.49) CERTAIN-TEED (13.70) SIMPLEX (13.61)	311-1380010
13.70 - 14.10	CI G, H (14.08)	311-1410010
14.00 - 14.40	AC 150 J-M (14.18) CERTAIN-TEED (14.11) SIMPLEX (14.21) AC 200 J-M (14.18) CERTAIN-TEED (14.11)	311-1440010
14.40 - 14.80	AC 200 SIMPLEX (14.72)	Non-stocked item, please call for special quote

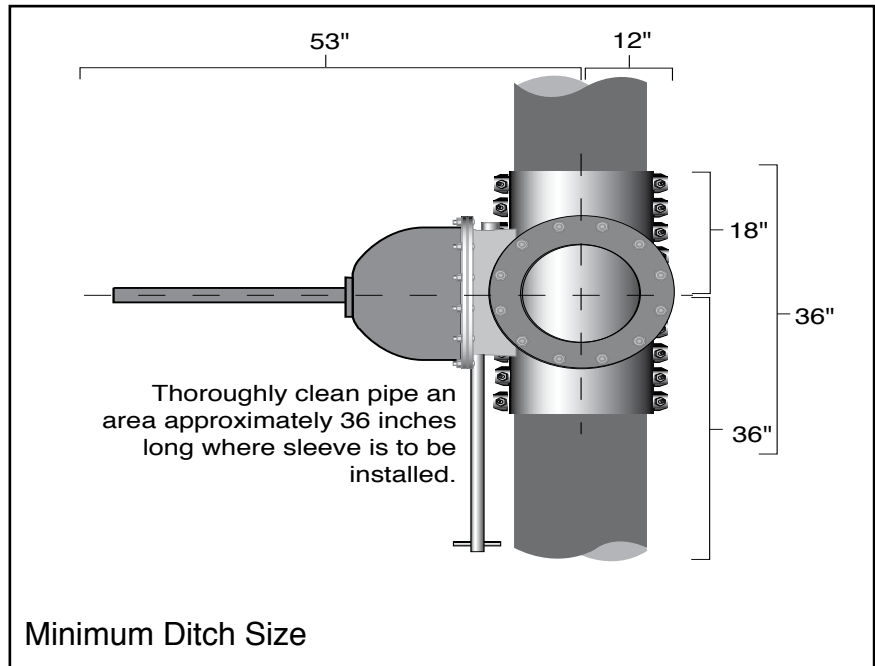
Plug Size		Pipe and Class	Part Number
Nominal	Diameter		
10"	9 3/8"	PVC C-900 CL 200 AC JM CL 200, CERTAIN-TEED CL 200; Steel Sch. 80	358-01-0938
	9 3/4"	DI 50 - 56 CI - All types C-900 CL 100,150; ASTM D 2241 PVC CL 100,125, 160, 200 AC100,150, SIMPLEX 200 Steel Sch. 40	358-01-0975
12"	11 3/8"	PVC C-900 CL 200 ASTM D 2241 PVC CL 200 AC JM CL 100, 200, CERTAIN-TEED CL 200 Steel Sch. 80	358-01-1138
	11 3/4"	DI 50 - 56 CI - All types C-900 CL 100,150; ASTM D 2241 PVC CL 100,125, 160, 200 AC100,150, SIMPLEX 200 Steel Sch. 40	358-01-1175

# SLEEVE INSTALLATION

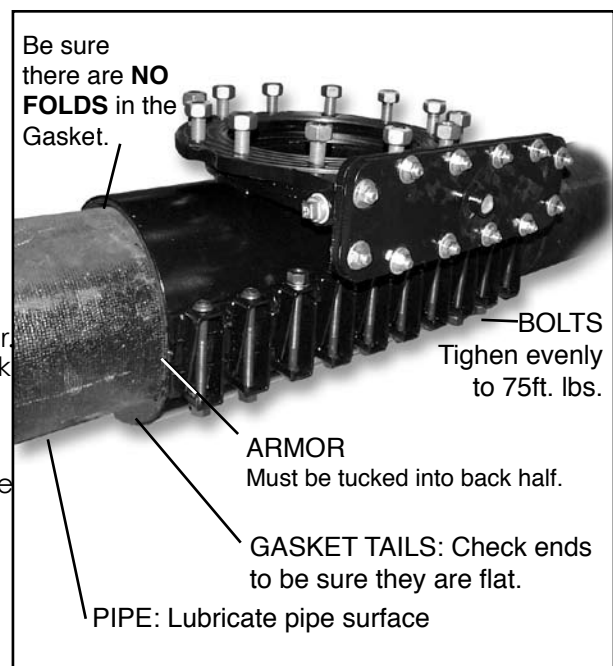
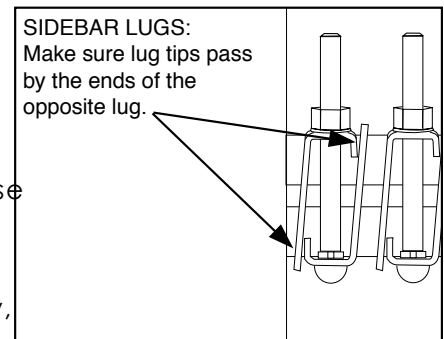
- Expose Pipe. NOTE: To install the InsertaValve, you need to have access to its components. See ditch dimensions.

The InsertaValve™ needs a minimum depth of bury to the top of the pipe of 40 inches.

- Before installing the InsertaValve™ sleeve, clean pipe thoroughly, removing all dirt, rock, scale and foreign material in area where tapping sleeve is to be installed. Clean a 36" minimum length of pipe on which to position the sleeve. Make sure to clean under side of pipe thoroughly



- Check the outside diameter (O.D.) of the pipe and the range marked on the tapping sleeve to ensure you have the proper size sleeve. See drawing figures below for details. Refer to page 6 for sleeve sizes available.
- Remove bolts, washers, and nuts; be careful not to lose washers. Note: Wood shims are to be discarded; these are for shipping purposes only.
- Before installing tapping sleeve, clean pipe thoroughly, removing all dirt, rock, scale, and foreign material in area where tapping sleeve is to be installed. Lubricate the gasket tails. Lubricate gasket and pipe surface with a suitable gasket lubricant. Lubrication is especially important on rough surface pipe (Iron and A/C) to assure proper seal.
- Place outlet-half of sleeve on pipe and move into position.
- Bring back half of sleeve into position and install bolts, washers, and nuts. Check gasket edges along sleeve top and bottom halves to be sure they overlap and are not folded under. Make sure that armors are tucked into the back half of the sleeve. Make sure that sidebar lugs are properly aligned.
- Insert bolts into sidebars. Well-tightened nuts are important to ensure a full-circle seal. Tighten nuts, starting with center bolts, alternating on either side of the sleeve. Gap between sleeve halves on either side should be the same when bolts are fully tightened.



## SLEEVE INSTALLATION (cont.)

---

- Attach a blind flange or InsertaValve equipment and test sleeve to 1.25 times the working pressure of the pipe to be tapped using test connection. Use corporation stops to attach test equipment. If assembly does not leak, proceed with tap and valve insertion. If assembly leaks, check bolts to be sure the nuts have been tightened to at least 75 ft. •lbs. and then re-test.



Please note: Tighten nuts evenly in 25 ft.lb. increments to a minimum of 75 ft.lbs. (this is approximately a 65 lb. Pull on a 16" wrench). Wait 10 minutes, then retighten to 75 ft. lbs. Check to see that the corporation stops and test plugs are properly inserted and tightened.

- Attach InsertaValve equipment. Proceed with tap per instructions with equipment.

### Precautions

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1. Check diameter of pipe to make sure you're using the correct size sleeve.
2. Clean pipe to remove as much dirt and corrosion as possible from the surface.
3. Make sure no foreign materials stick to the gasket as it is brought around the pipe, or become lodged between gasket and pipe as nuts are tightened.
4. Avoid loose fittings wrenches, and wrenches so short that achieving proper torque may be difficult.
5. Keep threads free of foreign material to allow proper tightening. Use a torque wrench.
6. Bolts are often not tightened enough when a torque wrench is not used. Take extra care in this situation to make sure proper tightening occurs and that the tightening sequence is uniform.
7. Support InsertaValve tapping sleeve and equipment during tapping and plug insertion. Properly backfill the pipe and InsertaValve Tapping sleeve before tapping. Note: Tapping sleeves are designed for sealing purposes only, not structural support.
8. ALWAYS PRESSURE TEST FOR LEAKS BEFORE TAPPING PIPE.
9. Backfill and compact soil carefully around sleeve.

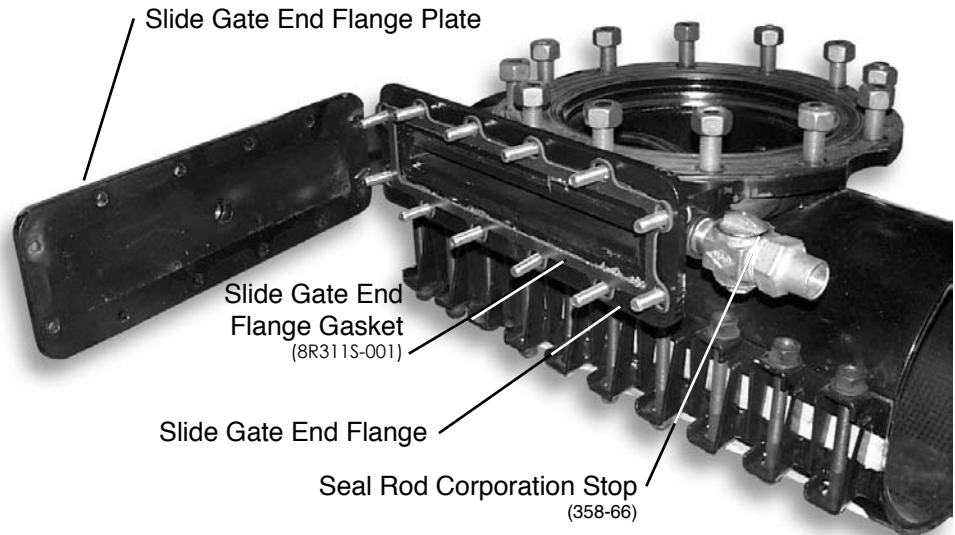
### Common Installation Errors

---

1. Not enough torque on bolts.
2. No gasket lubrication.
3. Rocks or debris cutting gaskets.
4. Dirty threads on bolts or nuts.
5. Allowing tapping sleeve to support the load of the slide gate valve and tapping machine.
6. Not using the proper size sleeve for the pipe.

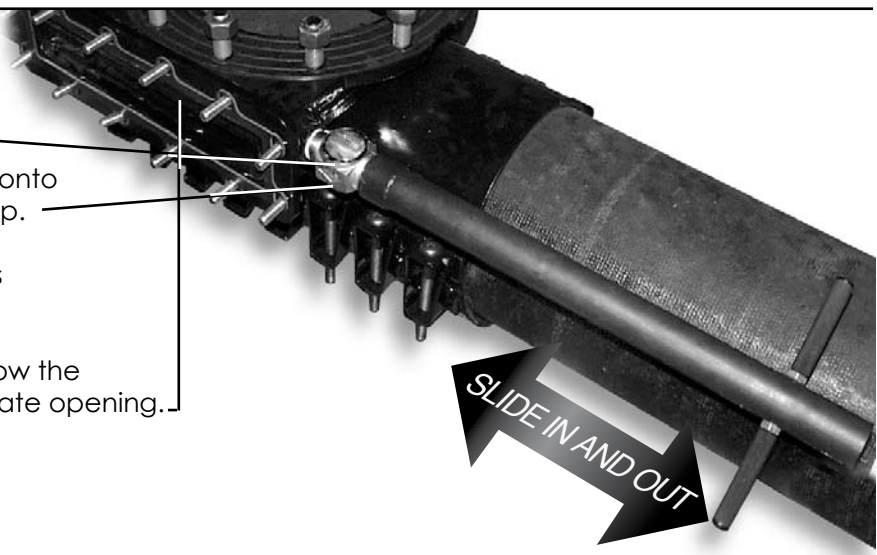
## Slide Gate End Flange Plate

- Remove Slide Gate End Flange Plate by removing the twelve 1/2" nuts and washers. Be sure to retain the Slide Gate End Flange Plate for use later on. Ensure that the Slide Gate End Flange Gasket remains in place.



## THE SEAL ROD

- Open Seal Rod Corporation Stop.
- Install Seal Rod by threading onto the Seal Rod Corporation Stop.
- Make sure the Seal Rod slides all the way in and out easily.
- Look in the opening to see how the Seal Rod seals off the Slide Gate opening.



- For the next step, position the Seal Rod all the way back in the slot.



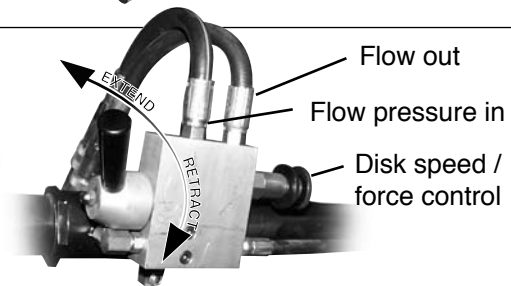
# THE SLIDE GATE

- Connect the Slide Gate to a recommended Hydraulic Power Source.
- Fully actuate Slide Gate to make sure it is operating smoothly and easy.
- With Slide Gate Disk O-Ring fully extended, lubricate Slide Gate Disk O-Ring.



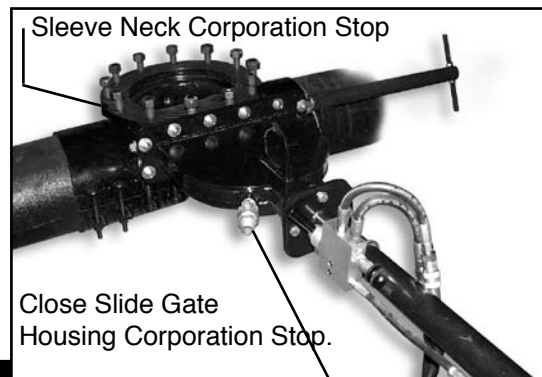
## Slide Gate Controls

- An understanding of the Slide Gate Controls is essential to the operation of the InsertaValve™. You will be prompted several times in this manual to open or close the Slide Gate. Be sure you follow these directions carefully.



# ATTACHING THE SLIDE GATE

- Attach the Slide Gate Housing to the Slide Gate End Flange. To secure the Slide Gate Housing, use the 1/2" Bolts, Nuts and Washers provided. Ensure there is a proper seal between Slide Gate End Flange and Slide Gate Housing.
- Close Slide Gate Housing Corporation Stop.



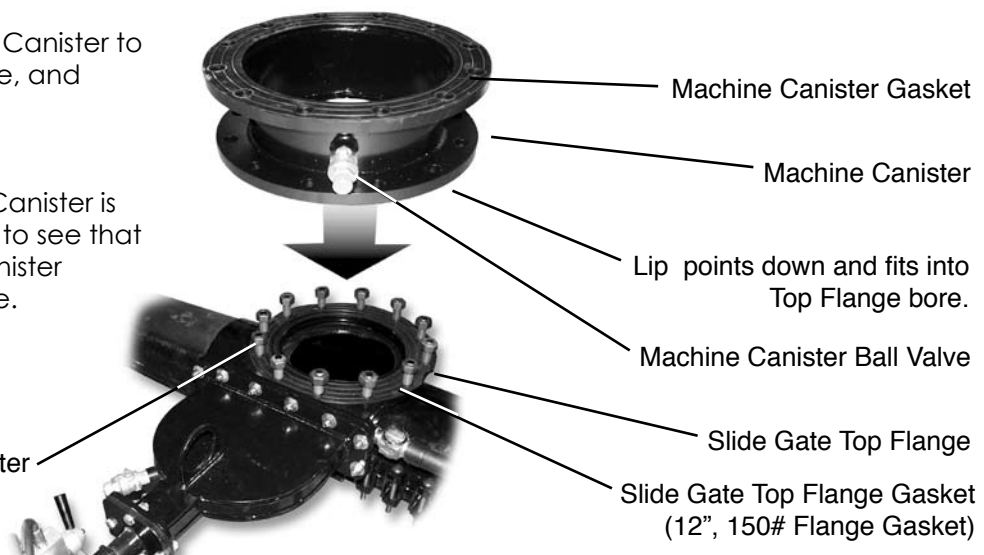
## TESTING THE SLIDE GATE SEAL:

1. Extend Slide Gate Disk until it fully covers the neck opening.
2. Connect appropriate test unit to Sleeve Neck Corporation Stop.
3. Pressurize Neck to 1.25 times main working pressure if using water (25-50 psi if testing with air).

# ATTACHING THE MACHINE CANISTER

- Attach Machine Canister to Slide Gate Flange, and tighten Nuts.
- Once Machine Canister is attached check to see that the Machine Canister Gasket is in place.

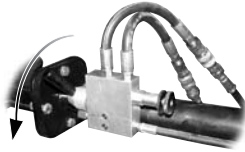
Remove these nuts prior to installing canister



## PREPERATION FOR DRILLING THE HOLE

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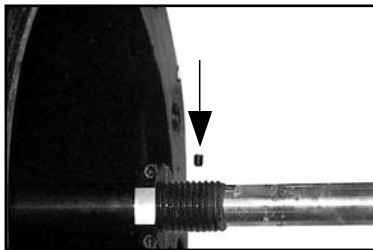
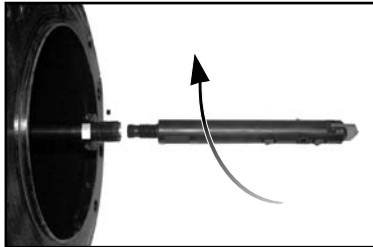
- Open Slide Gate.



## Installing Shaft Nose or PVC Pilot

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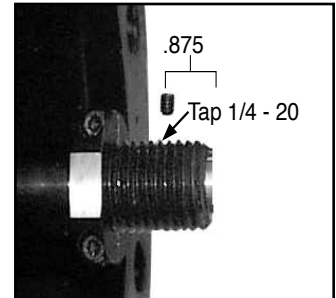
- Before drilling the hole, you must properly install the Shaft Nose or PVC Pilot and secure it to the Main Shaft with a Set Screw.
- Install Shaft Nose or PVC Pilot by threading into the end of the Main Shaft. To secure the Shaft Nose or PVC Pilot into place, thread Set Screw in from side and into the groove in the Shaft Nose or PVC Pilot.



NOTE: The Set Screw must fully seat in the groove in the Shaft Nose or PVC Pilot

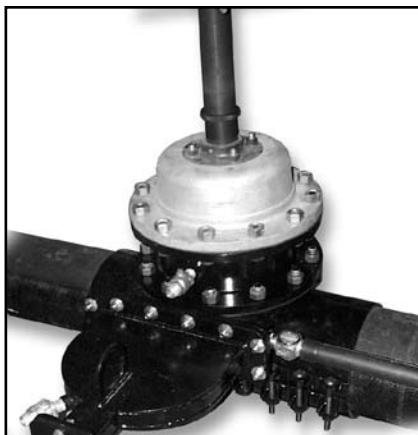


- It is essential to secure the Shaft Nose and PVC Pilot to the end of the Main Shaft to ensure that the Shaft Nose and PVC Pilot stay in place. In addition, the Retaining Pins on the InsertaValve™ Shaft Nose and PVC Pilot are flat backed to retain the coupon. If the Holesaw does not cut the coupon loose from the pipe, the only way to release the Shaft Nose from the coupon is to rotate it counter-clockwise allowing the retaining pins to cut their way out. If this occurs, the large diameter Shaft Nose will need to be used with the Small (9 1/2", 11 1/2") Holesaw.



## MOUNT DRILLING MACHINE

---



- Mount Drilling Machine and Adapter Bell onto Machine Canister. Secure Drilling Machine using Machine Canister Bolts and Nuts.
- Drill Hole: Follow directions provided with and pertaining to your drilling machine.

# DRILLING CHARTS



**NOTE: See Plug Chart on Page 6 for proper Plug to pipe selection**

## HOLESAW CHART

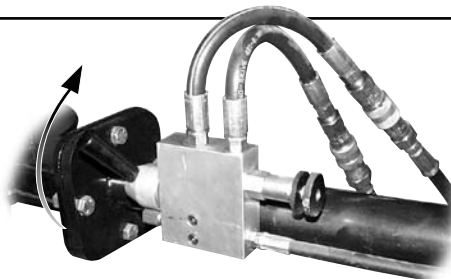
10" NOMINAL		12" NOMINAL	
if installing:	use:	if installing:	use:
9 3/8" Plug	9 1/2" Holesaw	11 3/8" Plug	11 1/2" Holesaw
9 3/4" Plug	10" Holesaw	11 3/4" Plug	12" Holesaw

## TRAVEL DEPTH CHART

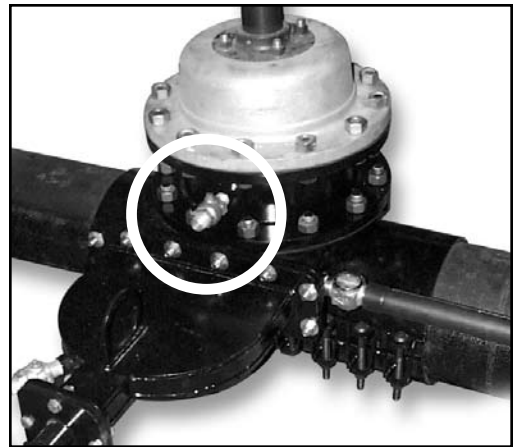
**NOTE: Travel starts when the Spade Bit Contacts the pipe.**

NOM	OD	Sleeve Recommended	Travel Depth (Q.V. & TapMate Machines)
10"	10.75	10.95	6.6" (6" + 7.2 turns)
	11.10	11.45, 11.25	6.8" (6" + 9.6 turns)
	11.40	11.45	7" (7" + 0 Turns)
	11.43	11.45	7" (7" + 0 Turns)
	11.60	11.80	7.2" (7" + 2.4 turns)
	11.84	12.20	7.2" (7" + 2.4 turns)
	11.88	12.20	7.2" (7" + 2.4 turns)
	11.92	12.20	7.2" (7" + 2.4 turns)
	11.95	12.20	7.2" (7" + 2.4 turns)
	12.45	12.60	7.5" (7" + 6 turns)
12"	12.75	12.95	7.6" (7" + 7.2 turns)
	13.20	13.50, 13.20	7.9" (7" + 10.8 turns)
	13.49	13.50	8" (8" + 0 Turns)
	13.50	13.50, 13.80	8" (8" + 0 Turns)
	13.61	13.80	8.1" (8" + 1.2 turns)
	13.70	13.80	8.1" (8" + 1.2 turns)
	13.76	13.80	8.1" (8" + 1.2 turns)
	14.08	14.10	8.3" (8" + 3.6 turns)
	14.11	14.40	8.3" (8" + 3.6 turns)
	14.18	14.40	8.3" (8" + 3.6 turns)
	14.72	14.80	8.6" (8" + 7.2 turns)

- Once the cut is complete, fully retract the holesaw and coupon, then fully extend Slide Gate.



- Once the Slide Gate Disk has been extended, open Machine Canister Ball Valve and leave open. This is to determine whether a proper seal has been established. If initial flow of water from Ball Valve ceases, this indicates that a seal has been established. If you have a proper seal, you may continue to the next step.



## MOUNTING THE VALVE CANISTER



Measure the plug at this point to ensure that the size of the plug that you are planning on installing is the plug that is in the canister. See plug chart for actual plug diameters.

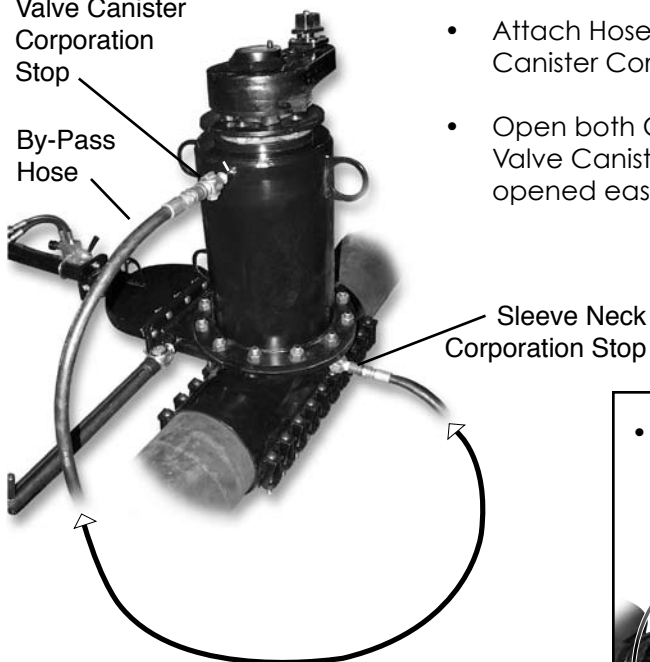


**WARNING:** If you install the wrong size plug, you run the risk of not sealing against the pipe and/or damaging the pipe.

- Remove Drilling Machine and Machine Canister from top of sleeve.
- Place and attach the Valve Canister to the Flange. Tighten Nuts (90 - 120 ft-lbs. of torque) Before opening the Slide Gate, you must equalize the pressure between the Sleeve Neck and the Valve Canister. This is done using the By-Pass Hose provided with your InsertaValve™. The following steps will guide you through this procedure.

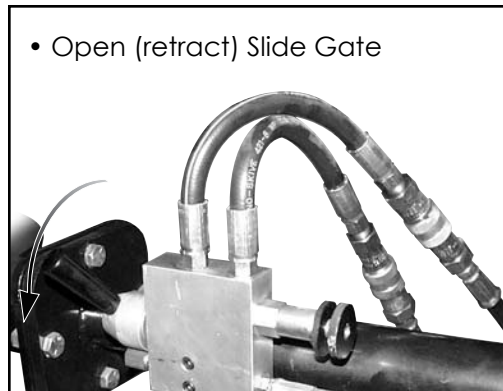
Valve Canister Corporation Stop

By-Pass Hose



- Attach Hose to Sleeve Neck Corporation Stop and Valve Canister Corporation Stop.
- Open both Corporation Stops to equalize pressure in Valve Canister and Sleeve. This will allow the Slide Gate to be opened easily.

- Open (retract) Slide Gate





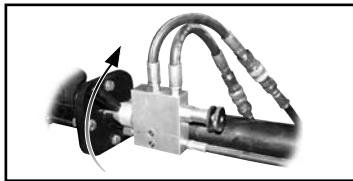
**NOTE: This page only applies if you are using the InsertaValve™ to perform a line stop. This section will guide you through the line stop procedure using the InsertaValve™. If you are NOT performing a line stop, then you can skip over this page directly to page 16.**

## PERFORMING A LINE STOP

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- Close Valve to shut down water flow.
- Cut pipe and perform needed work.
- Slowly open Valve to re-pressurize pipe.
- Fully open Valve.



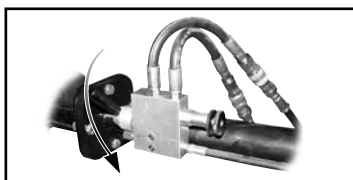
- Extend Slide Gate Disk to shut off flow from Sleeve Neck.



- Remove Valve Canister.



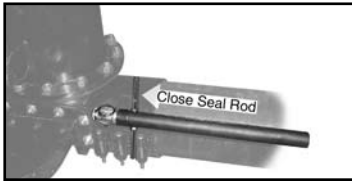
- Install the Blind Flange.  
(a standard 150# pattern will work)
- Secure the Blind Flange by threading the 7/8" nuts into place ( 90 - 125 ft-lbs. of torque).



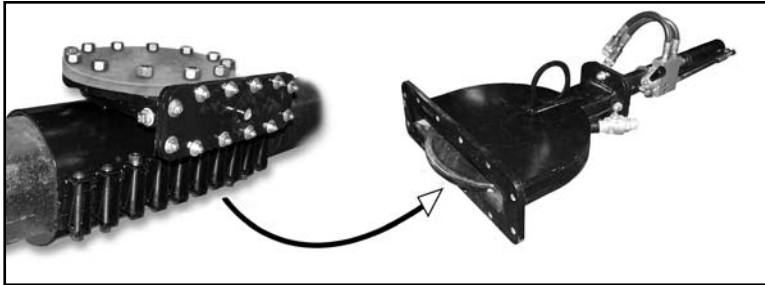
- Open (retract) Slide Gate Disk slowly.

## PERFORMING A LINE STOP (cont.)

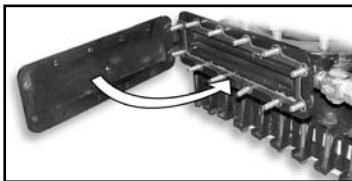
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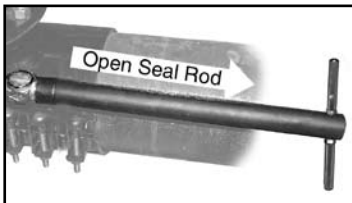
- Push Seal Rod Handles all the way towards the Seal Rod Corporation Stop to seal the Gate Body Opening.
- Open Slide Gate Housing Ball Valve to release pressure in Slide Gate Housing.



- Remove Slide Gate Housing from Slide Gate End Flange.



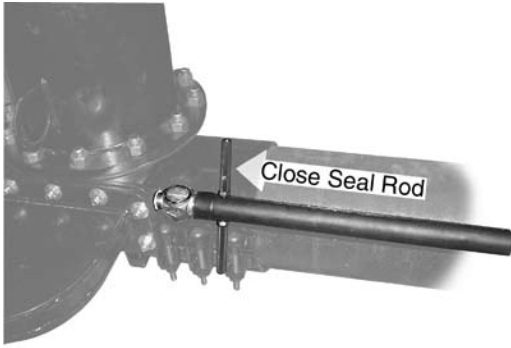
- Install and securely tighten down the Slide Gate End Flange Plate using 1/2 inch Nuts.
- Attach Hose from Sleeve Neck Corporation Stop to Slide Gate End Flange Corporation Stop.
- Open both to equalize pressure.



- Retract the Seal Rod, close the Seal Rod Corporation stop.
- Close Sleeve Neck Corporation Stop.
- Close Slide Gate End Flange Corporation Stop.
- Unthread and remove Seal Rod & Hose.

## REMOVING THE SLIDE GATE

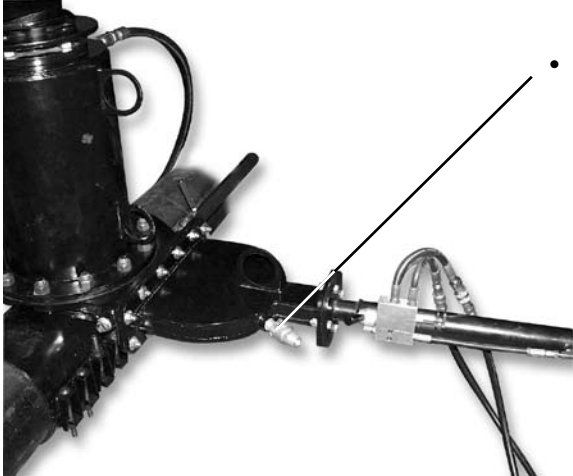
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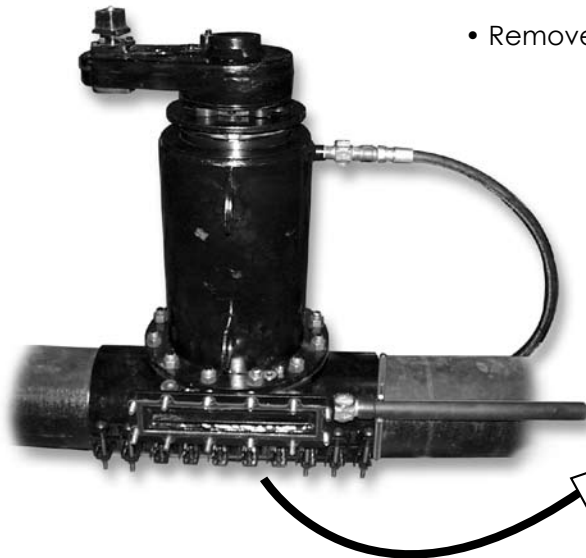
- Push Seal Rod Handles all the way towards the Seal Rod Corporation Stop to seal the Gate Body Opening.



**NOTE: Be sure the Seal Rod is completely installed before proceeding.**



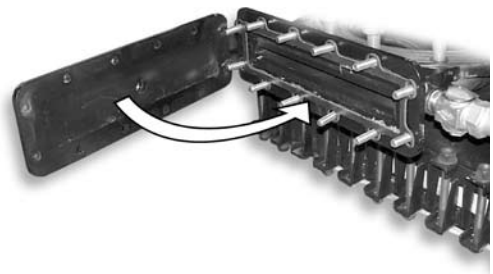
- Open Slide Gate Housing Ball Valve to release pressure in Slide Gate Housing.

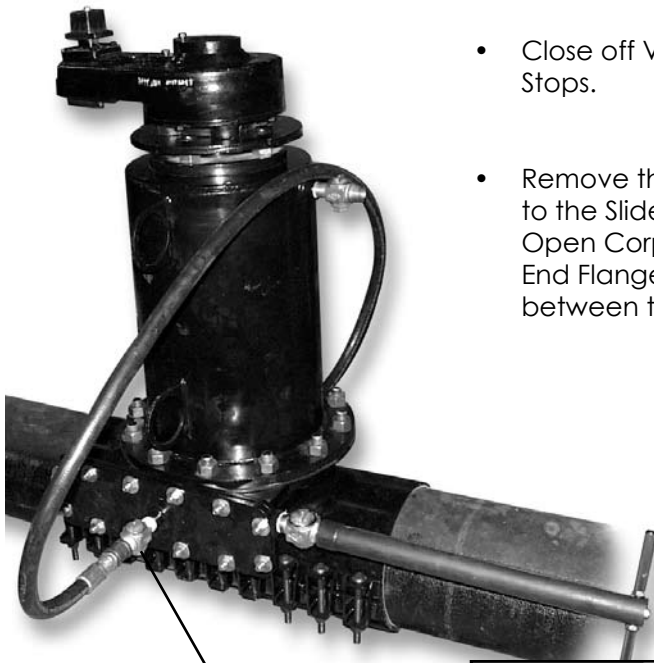


- Remove Slide Gate Housing from Slide Gate End Flange.



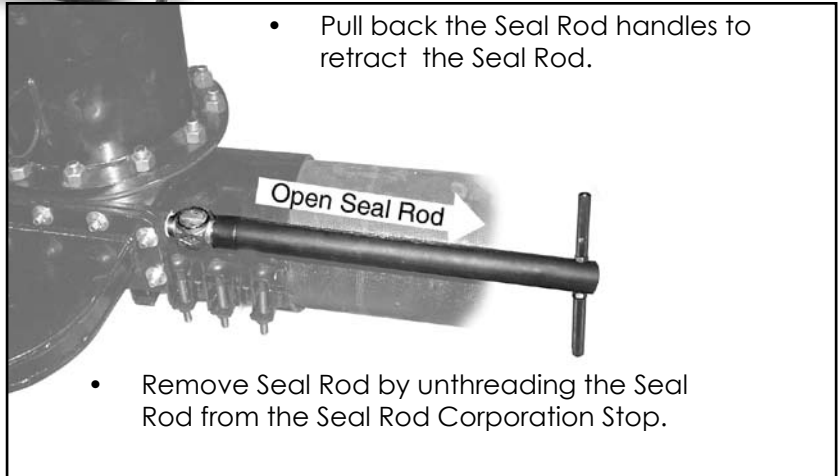
Install the Slide Gate End Flange Plate.





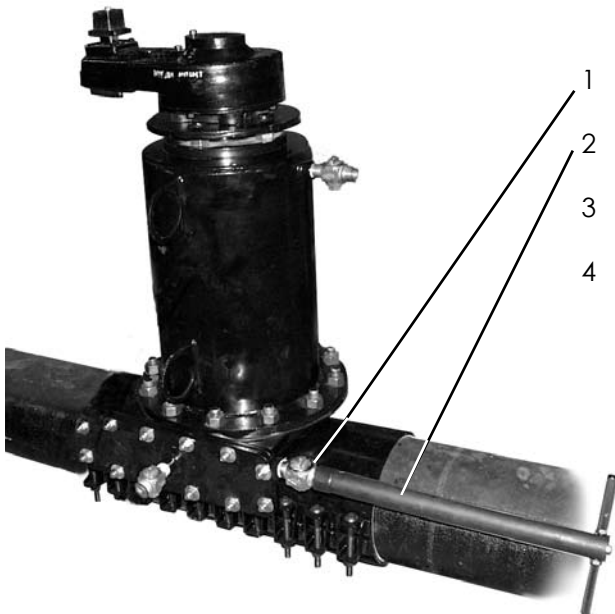
- Close off Valve Canister and Sleeve Neck Corporation Stops.
- Remove the hose from the Valve Canister and attach to the Slide Gate End Flange Plate Corporation Stop. Open Corporation Stops on Sleeve Neck and Slide Gate End Flange Plate to once again equalize pressure between the two.

Slide Gate End Flange Plate Corporation Stop



- Pull back the Seal Rod handles to retract the Seal Rod.
- Remove Seal Rod by unthreading the Seal Rod from the Seal Rod Corporation Stop.

## REMOVING THE SEAL ROD

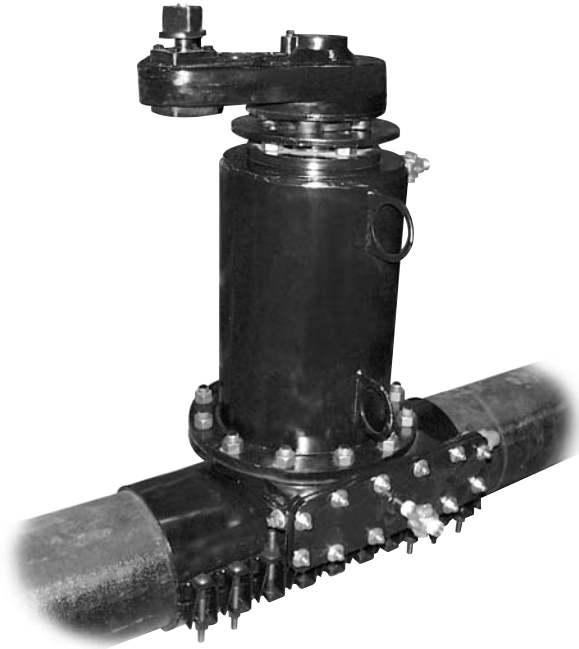


- 1 Close Seal Rod Corporation Stop.
- 2 Remove Seal Rod.
- 3 Close Sleeve Neck Corporation Stop.
- 4 Close Slide Gate End Flange Plate Corporation Stop.

## OPERATING THE VALVE

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- Your InsertaValve™ is now ready to be used. To open and close the valve will take approximately 215 full turns. Close Valve until flow of water ceases.

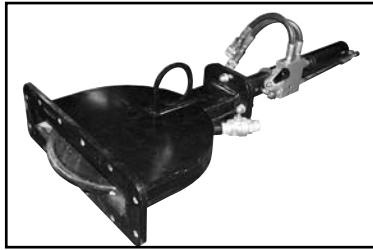


## MAINTENANCE

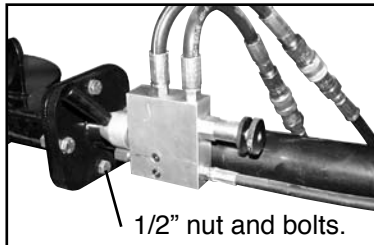
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### Removing the Slide Gate Disk

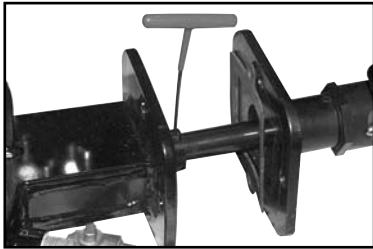
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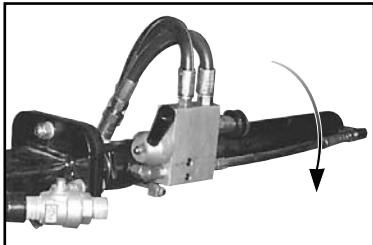
- Extend Slide Gate Disk out 1 to 2 inches.



- Remove the four 1/2" Nuts and Bolts.



- Remove Set Screw.



- Thread Cylinder Rod out of end of the Slide Gate Disk.

## MAINTENANCE (cont.)

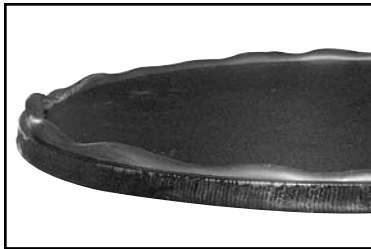
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### Replacing the Slide Gate O-Ring

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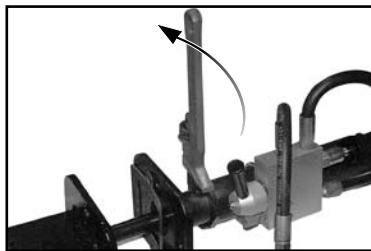
- Remove old Disk O-Ring.
- Clean Disk O-Ring groove with chisel or screw driver. Be careful not to damage the groove.
- Apply a small amount of super glue in bottom of groove.



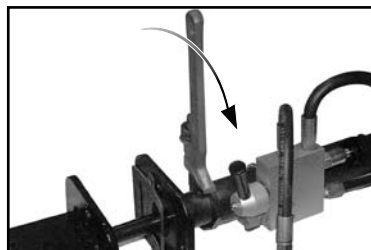
- Press the O-Ring every 2" around groove as shown. Then press bulges into groove. Once the O-Ring is fully seated into the groove, your Slide Disk is ready to be used again.

### Adjusting the Cylinder Tube

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- Loosen Cylinder Tube Nut with Wrench.



- Rotate Cylinder Tube into place.
- Tighten Cylinder Tube Nut with Wrench.

