



Hale Products, Inc. Service Bulletin

Bulletin #	SB92	Revision Level	A	Date	01/31/2007
Product Type Covered	Hale Products	X	Class 1		
Product Covered	TORRENT SVS VALVES				

Problem Statement

Correct linkage layout and installation, as well as handle / lever arm selection can REDUCE operating forces for discharge valves.

Written by	Anthony Galanti	Date	01/10/2007
Approved By	Mike Laskaris, PE	Product Manager	Mark Coley
Customer Service Designee	Steve Phipps		

BODY OF BULLETIN

The Torrent SVS Valve line is a heavy-duty product that will withstand serious use. The patented duplex seal provides exceptional durability and requires some installation considerations to minimize operating effort.

Linkage Design for Torrent SVS Valves

Proper linkage design and installation is critical to valve actuation. To maximize the available actuation force on a remote valve, the linkage lines should be as straight as possible.

It is recommended that the pull rod lines do not exceed a 10° line of travel (see Plate No. 1067A). Also, limit the number of bends to minimize flexing of the remote control rod(s).

Valve Handle / Lever Selection

In order to transmit the most torque to the valve stem, the longest SVS valve handle / lever available should always be used. Handle and lever selection and linkage become more critical on the 2.5" and 3" SVS valves. For the appropriate handle / lever actuator to use based on valve size, see Chart 1: "2.5" and 3" Handle / Lever Actuator Selection" on page 2. (Also refer to *Hale plate no. 1060A, Sheet 2* for actuator option selection, located at the back of this service bulletin for additional information. Connect linkage to the outermost hole on the lever. This reduces the amount of force required to operate the valve.

The 4" discharge valve requires a manual or electric gear actuator to provide the additional leverage needed for operation. **A 4" discharge valve should NEVER use a lever for operation.**

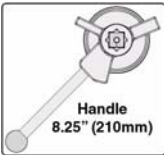





A 4" tank to pump valve should be used an air cylinder to move the valve with ease.



IMPORTANT !

THE 4" LEVER SHOULD BE USED WITH A TOP MOUNT CONTROL OR SIDE SWING LEVER TO PROVIDE ADDITIONAL LEVERAGE. USING A PUSH-PULL ON A 4" LEVER LEADS TO INCREASED OPERATION FORCES. THE 6.5" LEVER IS PREFERRED WHEN USING A PUSH-PULL.

2-1/2" SVS Valve

	Option #	HANDLE Operation	Length in. (mm)
	10, 15	Locking Handle, Direct Control, SHORT (Left and Right)	8.25" (210)
	20, 25	Locking Handle, Slow-Close, SHORT, (Left and Right)	8.25" (210)
	08	Non-Locking, Plain Handle Only	8.25" (210)
  	Option #	LEVER Operation	Length in. (mm)
	23, 28	Locking Lever, Remote, Slow-Close (Left and Right)	6.75" (172)
	13, 18	Locking Lever, LONG, (Left and Right)	6.75" (172)
	08	Non-Locking, Plain Lever Only.	6.75" (172)
	22, 27	Locking Lever, Slow-Close, LONG, for Side Discharge Remote Only (Left and Right)  CAUTION ! The 4.5" lever requires more force and better linkage to open and close.	4.5" (114)
	09	Non-Locking, Side Discharge Remote, Plain Lever Only  CAUTION ! The 4.5" lever requires more force and better linkage to open and close.	4.5" (114)
	07	Non-Locking, Plain Lever Only **Use only with Top Mount or Remote Swing Lever - see Figure 2: "Top Mount or Remote Handle" on page 3, ** **	4" (102)

3" SVS Valve

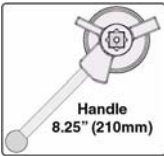





	Option #	HANDLE Operation	Length in. (mm)
	11, 16	Locking Handle, Direct Control, SHORT (Left and Right)	8.25" (210)
	21, 26	Locking Handle, Slow-Close, SHORT, (Left and Right)	8.25" (210)
	08	Non-Locking, Plain Handle Only	8.25" (210)
  	Option #	LEVER Operation	Length in. (mm)
	23, 28	Locking Lever, Remote, (Left and Right)	6.75" (172)
	13, 18	Locking Lever, LONG, (Left and Right)	6.75" (172)
	08	Non-Locking, Plain Handle Only	6.75" (172)
	22, 27	Locking Lever, Slow-Close, LONG, for Side Discharge Remote Only (Left and Right)  CAUTION ! The 4.5" lever requires more force and better linkage to open and close.	4.5" (114)
	09	Non-Locking, Side Discharge Remote, Plain Lever Only  CAUTION ! The 4.5" lever requires more force and better linkage to open and close.	4.5" (114)
	07	Non-Locking, Plain Lever Only **Use only with Top Mount or Remote Swing Lever - see Figure 2: "Top Mount or Remote Handle" on page 3. ** **	4" (102)

Chart 1: 2.5" and 3" Handle / Lever Actuator Selection



Hale Products, Inc. Service Bulletin

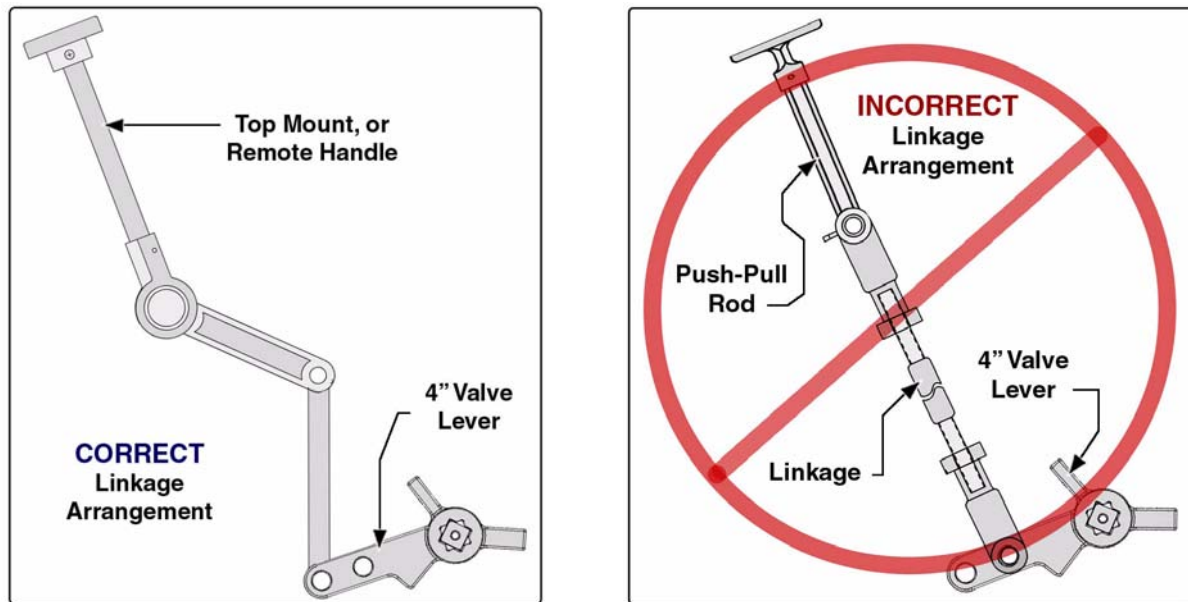


Figure 2: Top Mount or Remote Handle

Valve Handle / Lever Selection

1. The **07** actuator option is a **4" lever** for use strictly with a top-mount controller or remote swing handle. (See Figure 3: "Remote Swing Handle.")

The short lever arm is compensated for in the longer top-mount control handle. This should not be used with a push-pull handle. Only use the 4" lever with a remote swing handle or top mount control to provide the additional leverage.

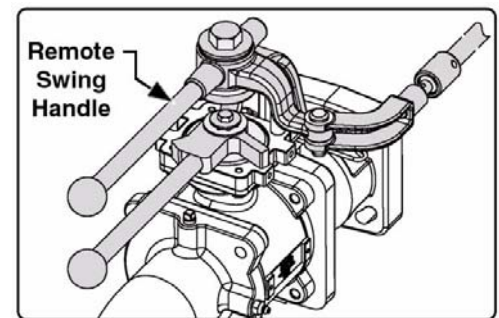


Figure 3: Remote Swing Handle

2. **Remote-operated officer's side discharge valve option -**

The **09** option has a 4.5" long lever arm. While not as efficient in actuation as the 6.75" lever arm, this is the **MAXIMUM** allowed for panel clearance in most apparatus. **Push-pull rods are not recommended for this application.** To overcome this reduced leverage, a remote stack swing handle installation is recommended with the 07 lever option. (See Hale plate no. 962B for details.)

Some apparatus panels do not allow clearance for the 4.5" long lever arm. In those cases, the remote stack swing handle is the best option. Other options require **INCREASED** force to operate.

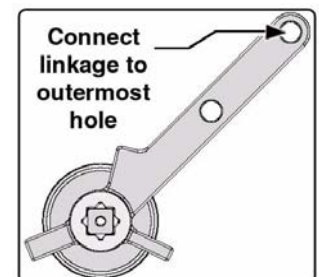


Figure 4: Linkage Connection

Additional holes are provided on these remote levers for utilization with various top-mount actuation panels. These holes are located closer to the valve stem, at 2.75", 3.25" and 4" but will not provide optimal leverage when used with a push-pull handle. (See Figure 4: "Linkage Connection.") **Always use the outermost holes possible (4.5" or 6.25").**

All 4" discharge valves, and any 3" valves with potentially less than optimum push-pull rod geometry, should be operated with a manual or electric gear actuator for ease of operation.

Manual and Electric Gear Actuator Options

When proper (straight) linkage runs are not obtainable, Hale gear actuators are available in both **manual** (hand wheel) and **electric** operation. These actuators provide smooth operation, as well as slow closing of the valve. *Refer to Hale plate no. 1060A, Sheet 3, for actuator option selection.*

Lubrication

For optimal valve actuation, the SVS Torrent Valve requires periodic lubrication. Lubrication intervals vary with many different conditions (amount of usage and water conditions). *Refer to Hale Service Bulletin # **SB-91** for lubricant details.* Lubrication information is also available in the standard Torrent SVS Valve Installation, Operation and Service Manual.

Additionally

Actual installed actuation force, is dependent upon many factors:

- ❑ **Pump pressure** - Valves are harder to operate at higher pressures.
- ❑ **Condition of linkage** - The remote pull rods, linkages and hardware should be kept clean and well lubricated. Linkage joints should be lubricated regularly.
- ❑ **Plumbing interferences** - When running remote linkage lines, be careful that they DO NOT come in contact with the pump, plumbing, or other linkage rods. This contact causes friction which increase the forces required to operate the valve handle.
- ❑ **Slow-close valve actuators** - The Hale slow-close actuators use a damping system that restricts rapid movement of the valve handle. (This prevents damage caused by excessive force generated when opening or closing valves too quickly while under pressure, i.e., water hammer.) These valves require "more" force to actuate than a standard locking valve.
- ❑ **Linkage Design** - As covered in this bulletin, there are different combinations possible to REDUCE valve operation effort. Selection of the best component combinations and careful installation will REDUCE the effort required to operate a valve.

Service Bulletins

Check your Hale / Customer Service / Service Bulletin internet site regularly for additional information about SVS valves and other Hale product information.

"SSS" VALVE SIZE	
710=	1.0 INCH **
815=	1.5 INCH DISCH/SUCT
820=	2.0 INCH DISCH/SUCT
825=	2.5 INCH DISCHARGE
826=	2.5 INCH SUCTION
830=	3.0 INCH DISCHARGE
831=	3.0 INCH SUCTION
740=	4.0 INCH DISCHARGE
741=	4.0 INCH SUCTION



SVS 800 SERIES STAINLESS VALVE SYSTEM OPTIONS

PUMP ADAPTERS

AVAILABLE SIZES				
1½"	2"	2½"	3"	4"
815	820	825	830	840

#		"XX" or "YY" DESIGNATIONS	AVAILABLE SIZES				
			1½"	2"	2½"	3"	4"
		00= NO ADAPTER	815	820	825	830	840
		02= 115 PUMP MT. ADAPTER ++	●	●	●	●	●
		03= 115 X 90° PUMP MT 70/72 ++			●	●	
		04= 115 X 90° PUMP MT 74/76 ++			●	●	
		05= 2433 ADAPTER ++		●	●	●	●
		06= 2433A 4° ANGLED ADAPTER ++		●	●	●	●
		07= 115A 4° ANGLED ADAPTER ++			●	●	
		13= OFFSET ADAPTER 70 DOWN ++			●	●	
		14= OFFSET ADAPTER 70 UP ++			●	●	
		21= OFFSET ADAPTER 74 DOWN ++			●	●	
		22= OFFSET ADAPTER 74 UP ++			●	●	
		37= PUMP ADAPTER - WATEROUS (7.78*BC) ++				●	
		38= PUMP ADAPTER - WATEROUS (5.5*BC)				●	
		39= PUMP ADAPTER - WATEROUS (5.5*BC 4° ANGLED)				●	
		48= 4" PUMP ADAPTER TANK VALVE++					●
		50= OFFSET ADAPTER - 72 DOWN ++			●	●	
		51= OFFSET ADAPTER - 72 UP ++			●	●	
		52= OFFSET ADAPTER - 76 DOWN ++			●	●	
		53= OFFSET ADAPTER - 76 UP ++			●	●	
		60= OFFSET - 72 DOWN			●	●	
		61= OFFSET - 72 UP			●	●	
		62= SUCTION ELBOW - 72			●		
		63= 115 ADAPTER			●		
		64= 2433 ADAPTER				●	
		65= 2433 ANGLED				●	
		66= 2433 1.5" OFFSET				●	
		67= 2433 3" OFFSET				●	
		68= SUCTION ELBOW - 70			●		

HOSE ADAPTERS

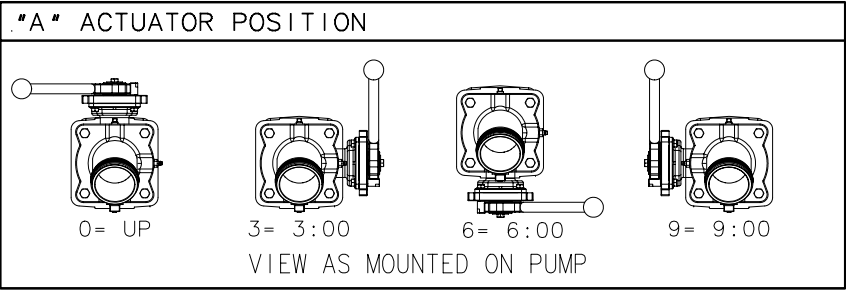
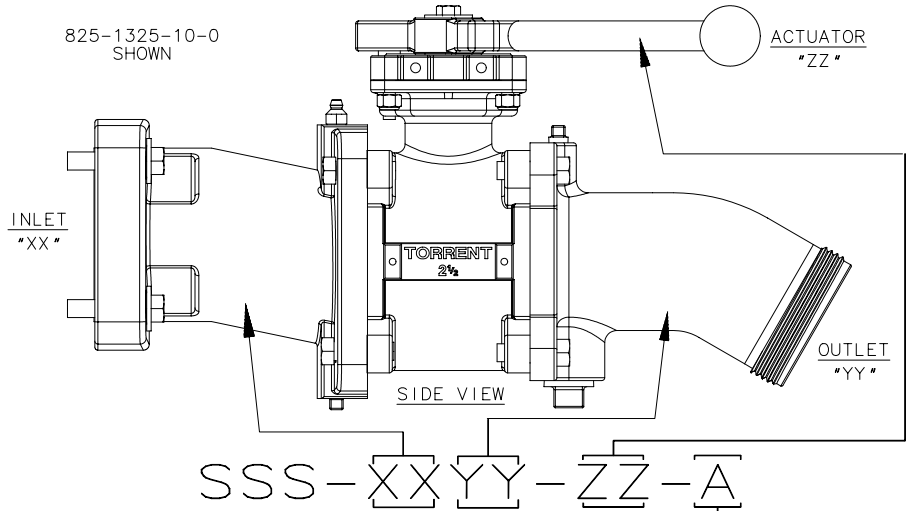
AVAILABLE SIZES				
1½"	2"	2½"	3"	4"
815	820	825	830	840

		"XX" or "YY" DESIGNATIONS	AVAILABLE SIZES				
			1½"	2"	2½"	3"	4"
		00= NO ADAPTER	815	820	825	830	840
		23= NH			●	●	
		25= NH DROOP			●	●	
		26= SUCTION COVER W/SWIVEL R			●	●	
		27= SUCTION COVER W/SWIVEL L			●	●	
		33= NH DISCHARGE-SPECIAL THREAD			●	●	
		34= NH DROOP - SPECIAL THREAD			●	●	
		36= SHORT NH ADAPTER (3.5")	●		●	●	
		41= 4" NH ++					●
		42= 4" NH W/RV ++					●
		43= 5" NH (SHORT) 8" ++					●
		44= 5" NH (LONG) 10" ++					●
		45= 5" NH W/RV (SHORT) 8" ++					●
		46= 5" NH W/RV (LONG) 10" ++					●

OTHER ADAPTERS

AVAILABLE SIZES				
1½"	2"	2½"	3"	4"
815	820	825	830	840

		"XX" or "YY" DESIGNATIONS	AVAILABLE SIZES				
			1½"	2"	2½"	3"	4"
		00= NO ADAPTER	815	820	825	830	840
		08= VICTAULIC W/DRAIN	●	●	●	●	
		09= VICTAULIC 45°		●	●	●	
		10= VICTAULIC 90°		●	●	●	
		11= WELD FLANGE	●	●	●	●	●
		24= TANK HOSE BARB				●	
		31= SS 115 ADAPTER W/WELD FLANGE			●		
		32= EXPANSION VICTAULIC #				●	
		35= VICTAULIC W/FLOWMETER PORT		●	●	●	
		47= 5" VICTAULIC 90° ELBOW ++					●
		49= 4" WELD FLANGE W/METER PORT		●	●	●	●



SEE SHEET 2 FOR ACTUATOR DETAILS "ZZ"

NPT ADAPTERS

AVAILABLE SIZES				
1½"	2"	2½"	3"	4"
815	820	826	831	841

		"XX" or "YY" DESIGNATIONS	AVAILABLE SIZES				
			1½"	2"	2½"	3"	4"
		00= NO ADAPTER	815	820	826	831	841
		01= NPT THREADS	●	●	●	●	
		16= NPT W/DRAIN	●	●	●	●	
		30= EXPANSION NPT ADAPTER #	●				
		40= 4" NPTF / 5" VIC ++					●

NOTE:

1. ARROW ON VALVE BODY INDICATES DIRECTION OF WATER FLOW THROUGH VALVE.
2. "++" - INDICATES MATERIAL IS CAST IRON.
3. "#" - EXPANSION ADAPTERS ACCOMODATE NEXT LARGER PIPE THREADS (EX. 1-1/2" VALVE TO 2" NPT) OR VICTAULIC CONNECTION.
4. "***" - ONE MODEL AVAILABLE: 710-0101-00-0 1" MANUAL VALVE X NPT X NPT.
5. INDIVIDUAL ADAPTERS CAN BE SUPPLIED AS KITS, IDENTIFIED BY AN "A" VALUE OF -50 (EXAMPLE: 820-0100-00-50 FOR A 2" NPT ADAPTER).

= IF SPACERS ARE REQUIRED FOR SUCTION ELBOW, ORDER THE FOLLOWING:

2.5"	3.0"
159-1980-00-0 (3/4" SPACER)	159-1980-02-0 (3/4" SPACER)
159-1980-01-0 (1-1/8" SPACER) (Q-PAK ONLY)	159-1980-03-0 (1-1/8" SPACER) (Q-PAK ONLY)
040-1550-00-0 (O-RING)	040-1590-00-0 (O-RING)

PL-1060AC (SHEET 1 OF 3)

ECO NO	REV	CHANGED FROM	BY	DATE	APVD	ECO NO	REV	CHANGED FROM	BY	DATE	APVD
						0203	A	RELEASE FOR PRODUCTION	TRB	10/04/05	MAL
						0234	B	CORRECTED PART DESCRIPTION	DBH	10/20/05	MAL
						0282	C	ADD ADAPTERS AND ACTUATORS	DBH	03/13/06	MAL



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Notes

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NOTES:

- OPTION NUMBER SHOWN IN ().
- REFER TO PLATE 1060A, SHEETS 1 FOR FULL LIST OF VALVE OPTIONS.

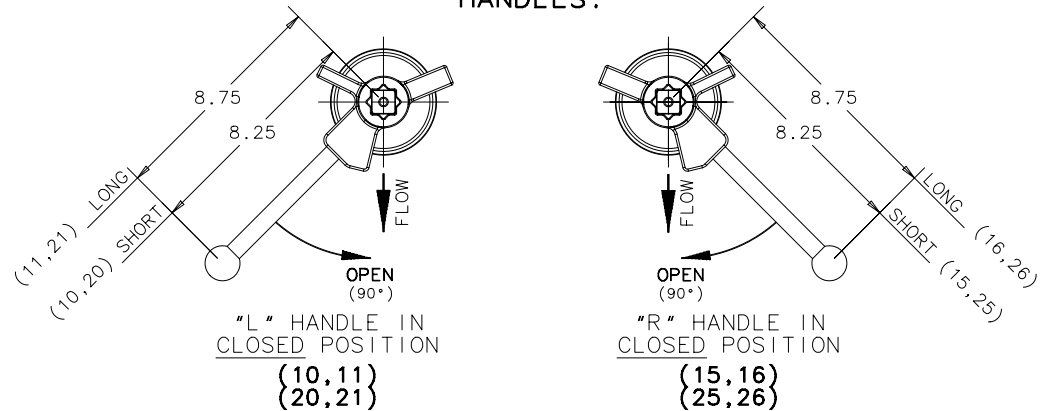


SVS STAINLESS VALVE SYSTEM OPTIONS

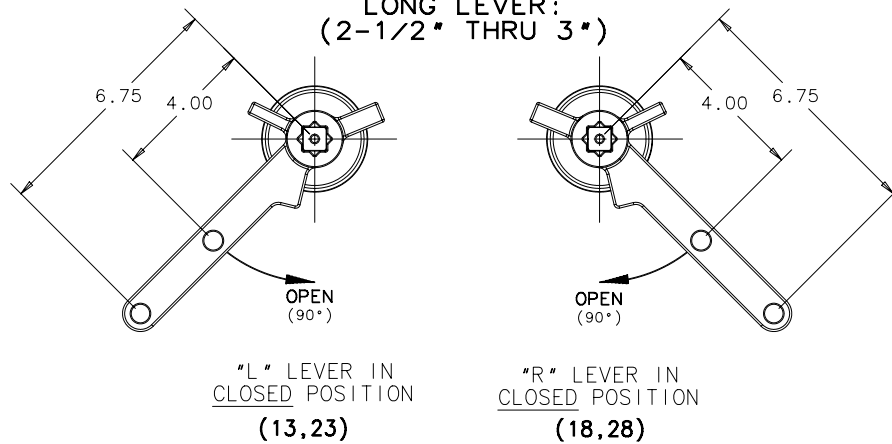
ACTUATOR OPTIONS

LOCKING OR LOCKING WITH SLOW CLOSE:

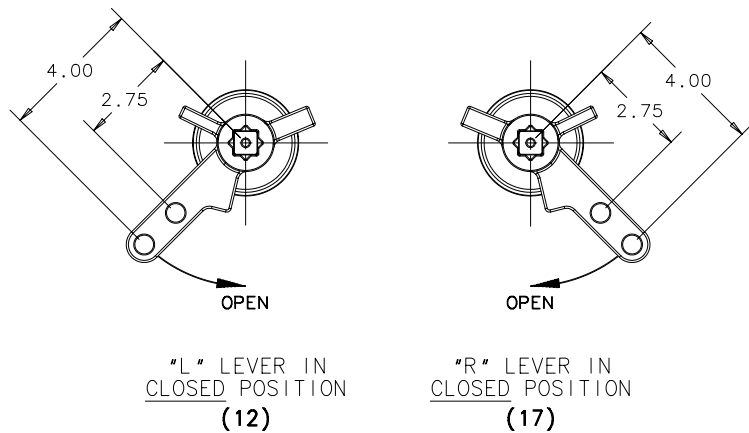
HANDLES:



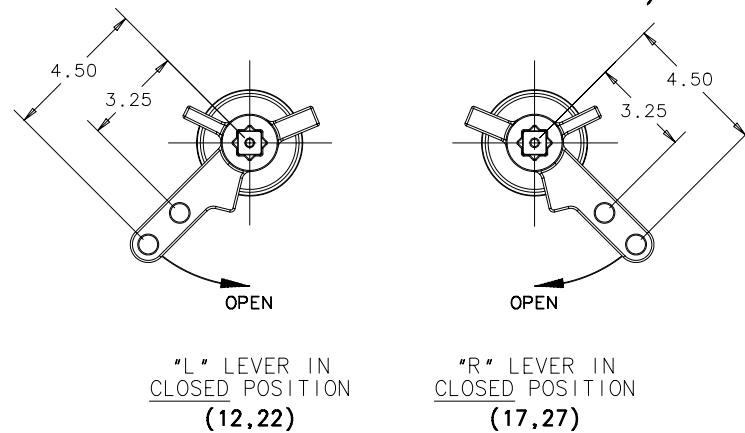
LONG LEVER: (2-1/2" THRU 3")



LEVER: (1-1/2" THRU 2")



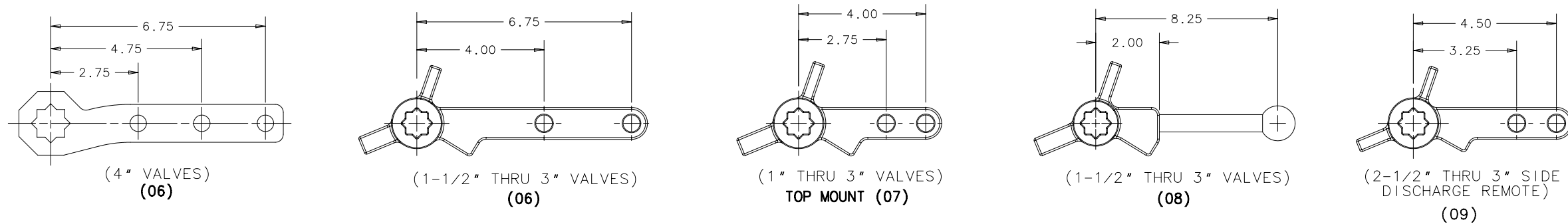
LEVER: 2-1/2" THRU 3" SIDE DISCHARGE REMOTE ONLY)



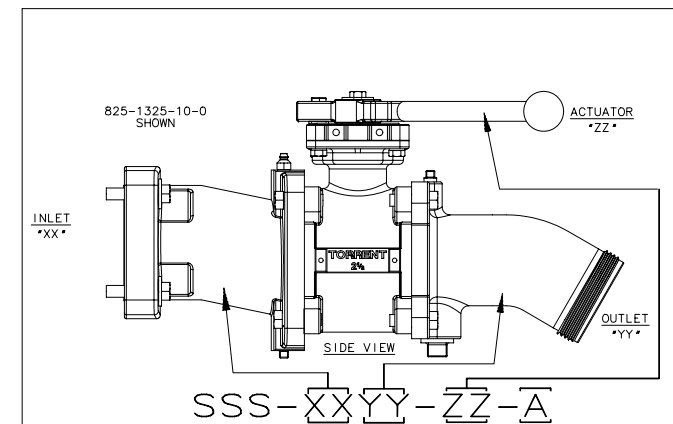
"ZZ" ACTUATOR

- LOCKING "LK" (1-1/2" THRU 3")
- 10= "L" SHORT HANDLE
 - 11= "L" LONG HANDLE (3" DISCHARGE)
 - 12= "L" REMOTE LEVER (SHORT 1-1/2" THRU 3" SIDE DISCHARGE REMOTE)
 - 13= "L" LONG LEVER (2-1/2" THRU 3")
- 15= "R" SHORT HANDLE
- 16= "R" LONG HANDLE (3" DISCHARGE)
 - 17= "R" REMOTE LEVER (SHORT 1-1/2" THRU 3" SIDE DISCHARGE REMOTE)
 - 18= "R" LONG LEVER (2-1/2" THRU 3")
- LOCKING WITH SLOW CLOSE "SC" (2-1/2" THRU 3")
- 20= "L" SHORT HANDLE
 - 21= "L" LONG HANDLE (3" DISCHARGE)
 - 22= "L" REMOTE LEVER (LONG 2-1/2" THRU 3" SIDE DISCHARGE REMOTE)
 - 23= "L" REMOTE LEVER (2-1/2" THRU 3")
- 25= "R" SHORT HANDLE
- 26= "R" LONG HANDLE (3" DISCHARGE)
 - 27= "R" REMOTE LEVER (LONG 2-1/2" THRU 3" SIDE DISCHARGE REMOTE)
 - 28= "R" REMOTE LEVER (2-1/2" THRU 3")
- PLAIN LEVER (NON-LOCKING)
- 06= LEVER LONG (2-1/2" THRU 4")
 - 07= LEVER TOP MOUNT (1" THRU 3")
 - 08= PLAIN HANDLE (1-1/2" THRU 3")
 - 09= LEVER SIDE DISCHARGE REMOTE (2-1/2" THRU 3")
- GEAR ACTUATOR
- 30= MANUAL GEAR ACTUATOR (1-1/2" THRU 4")
 - 31= ELECTRIC GEAR ACTUATOR (2-1/2" THRU 4")
 - 32= ELECTRIC ACTUATOR (1-1/2" THRU 3")
- (SEE SHEET 3 FOR CONTROLLER OPTIONS)

PLAIN LEVER: (NON-LOCKING)



SEE SHEET 3 FOR
ELECTRIC AND GEAR
ACTUATOR OPTIONS



PL-1060AC (SHEET 2 OF 3)

ECO NO	REV	CHANGED FROM	BY	DATE	APVD	ECO NO	REV	CHANGED FROM	BY	DATE	APVD
						0203	A	RELEASE FOR PRODUCTION	TRB	10/04/05	MAL
						0234	B	UPDATED DIMENSIONS AND DESCRIPTION	DBH	10/21/05	MAL
						0282	C	ADD ADAPTERS AND ACTUATORS	DBH	03/13/06	MAL



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DATE 04-11-03
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SCALE: NONE

Notes

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NOTES:

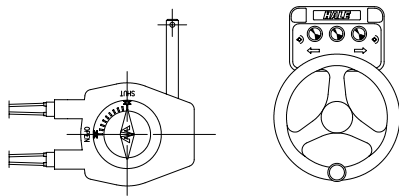
- 1. OPTION NUMBER SHOWN IN ().
- 2. REFER TO PLATE 1060A, SHEETS 1 AND 2 FOR FULL LIST OF VALVE OPTIONS.



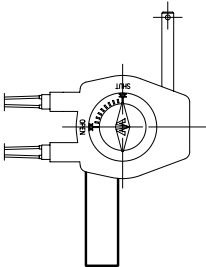
SVS STAINLESS VALVE SYSTEM OPTIONS

ACTUATOR OPTIONS

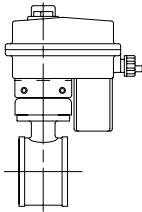
GEAR ACTUATORS :



GEAR ACTUATORS
(1-1/2 " THRU 4 ")
(30)

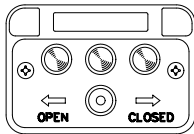


GEAR ACTUATORS
W/ELECTRIC MOTOR
(2-1/2 " THRU 4 ")
(31)

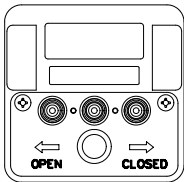


ELECTRIC ACTUATORS
(1-1/2 " THRU 3 ")
(32)

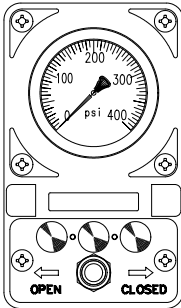
SEE ORDER SHEET, HALE BULLETIN NO. 996



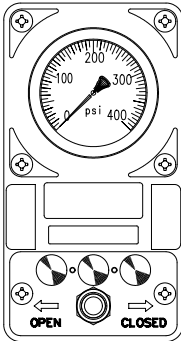
CLASS-1 CONTROLLER
P/N 107720
(STANDARD FOR ACT.
OPTION-31)



CLASS-1 CONTROLLER
W/FLOW-MINDER
P/N 107721 (12V)
109812 (24V)



CLASS-1 CONTROLLER
W/2.5 " ANALOG GAUGE
P/N 107722



CLASS-1 CONTROLLER
W/2.5 " ANALOG GAUGE
AND FLOW-MINDER
P/N 107723 (12V)
109811 (24V)

ECO NO	REV	CHANGED FROM	BY	DATE	APVD	ECO NO	REV	CHANGED FROM	BY	DATE	APVD
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						0234	B	UPDATED DIMENSIONS AND DESCRIPTION	DBH	10/21/05	MAL
						0282	C	ADD ADAPTERS AND ACTUATORS	DBH	03/13/06	MAL

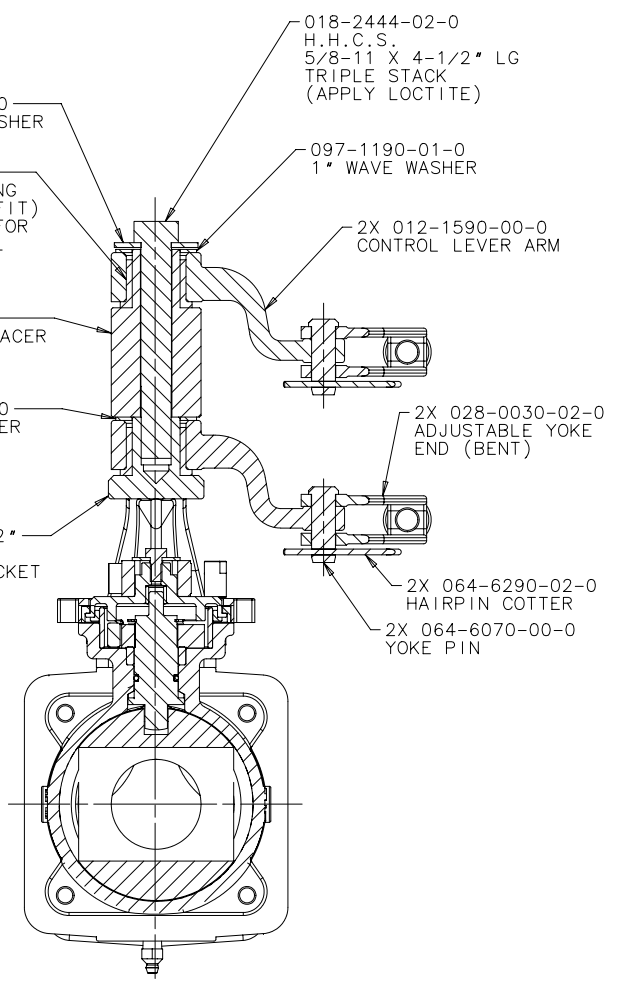
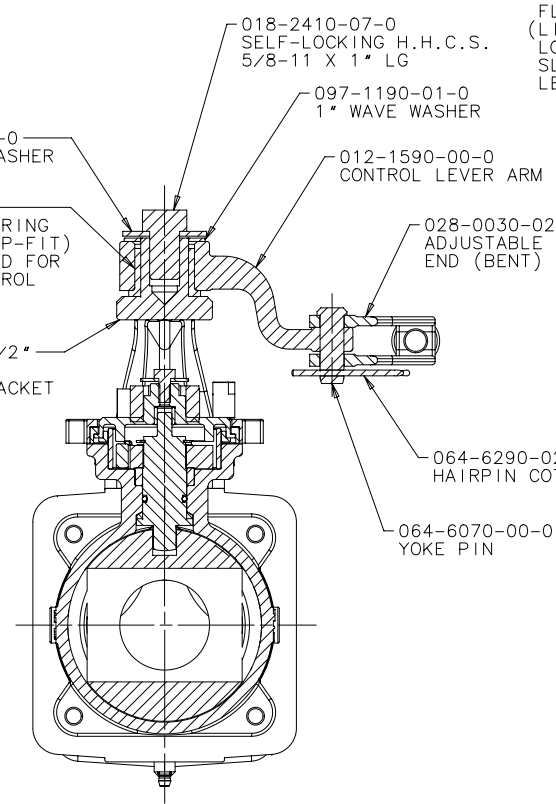
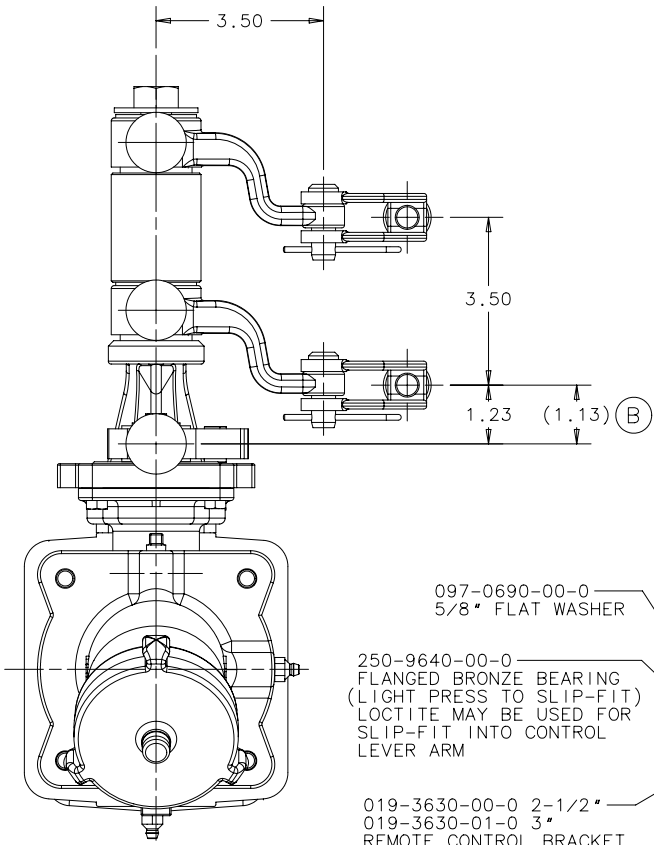
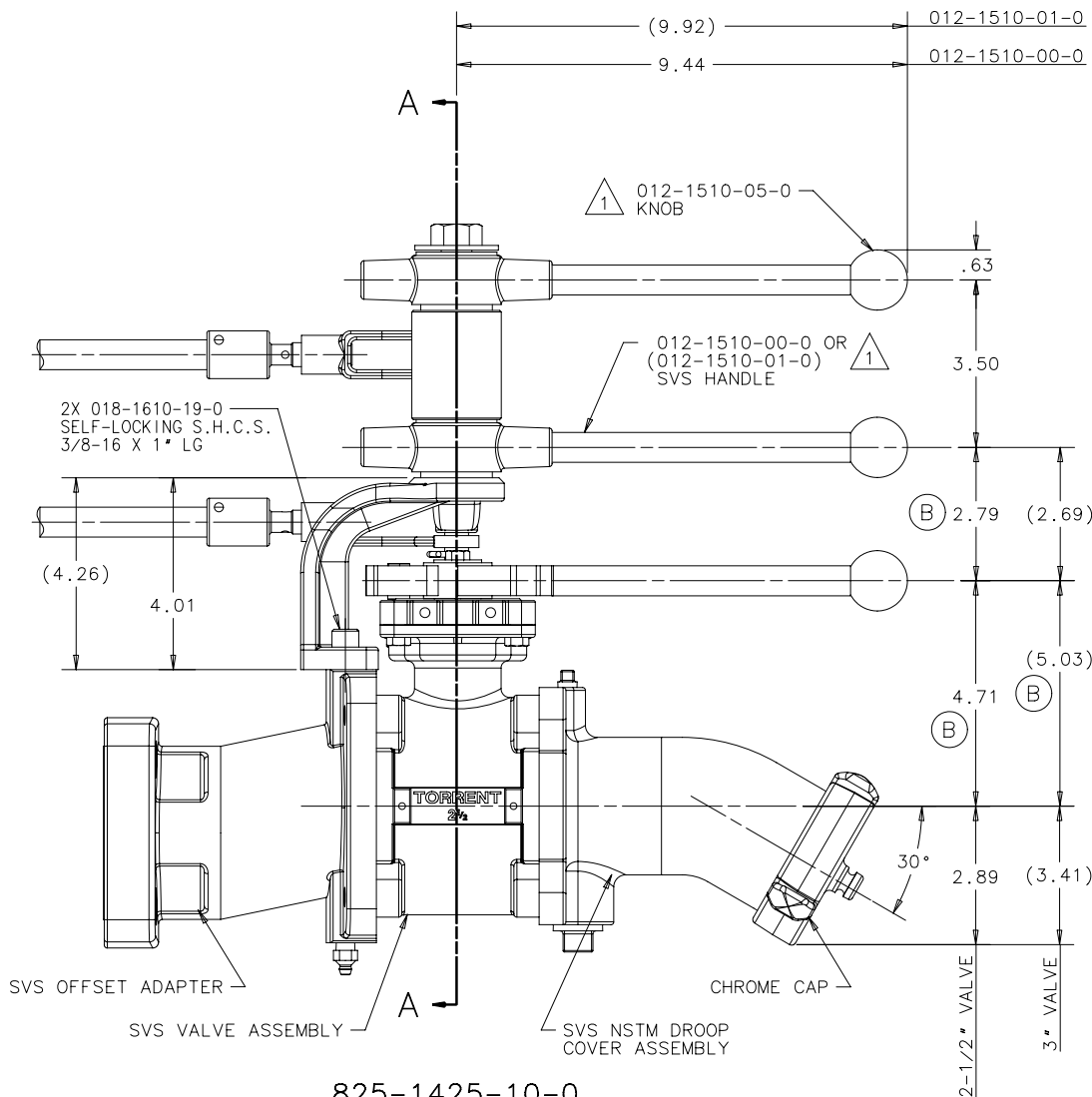


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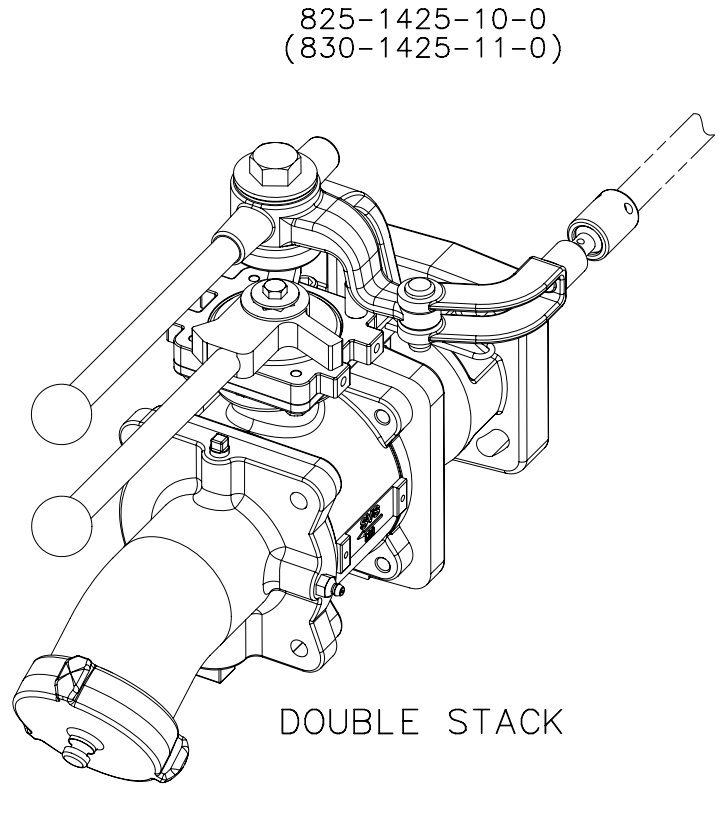
NOT TO BE REPRODUCED OR USED TO MAKE OTHER DRAWINGS OR MACHINERY.				DRAWN CHECKED	MAC AJG	DATE 04-11-03	SIZE D	SCALE: NONE
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Notes

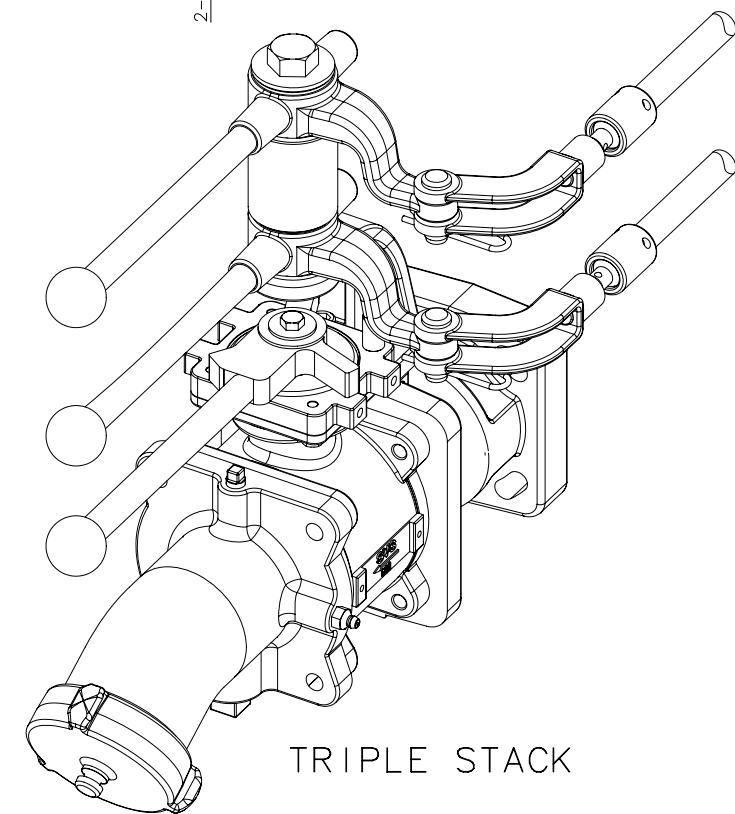
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NOTES:
1 HANDLES, P/N 012-1510-00-0 OR 012-1510-01-0, AND KNOBS, PN 012-1510-05-0 MUST BE INSTALLED WITH LOCTITE 242.



DOUBLE STACK



TRIPLE STACK

DOUBLE STACK OPTION
VALVE SHOWN IN CLOSED POSITION

VALVE SIZE	HALE PART NO.
2-1/2"	519-0510-25-0
3"	519-0510-30-0

TRIPLE STACK OPTION
VALVE SHOWN IN CLOSED POSITION


VALVE SIZE	HALE PART NO.
2-1/2"	519-0520-25-0
3"	519-0520-30-0

SVS REMOTE CONTROL ASSEMBLY

FOR 2-1/2" AND 3" SVS VALVES (2-1/2" SHOWN)

PLATE NO. 962BB

ECO NO	REV	CHANGED FROM	BY	DATE	APVD
0069	A	REDESIGNED PL962AC	MAB	5-03-05	AJG
0498	A	ADJUSTED HANDLE LOCATIONS	MAB	12-14-06	AJG



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A Unit of IDEX Corporation
Conshohocken, PA 19428 USA

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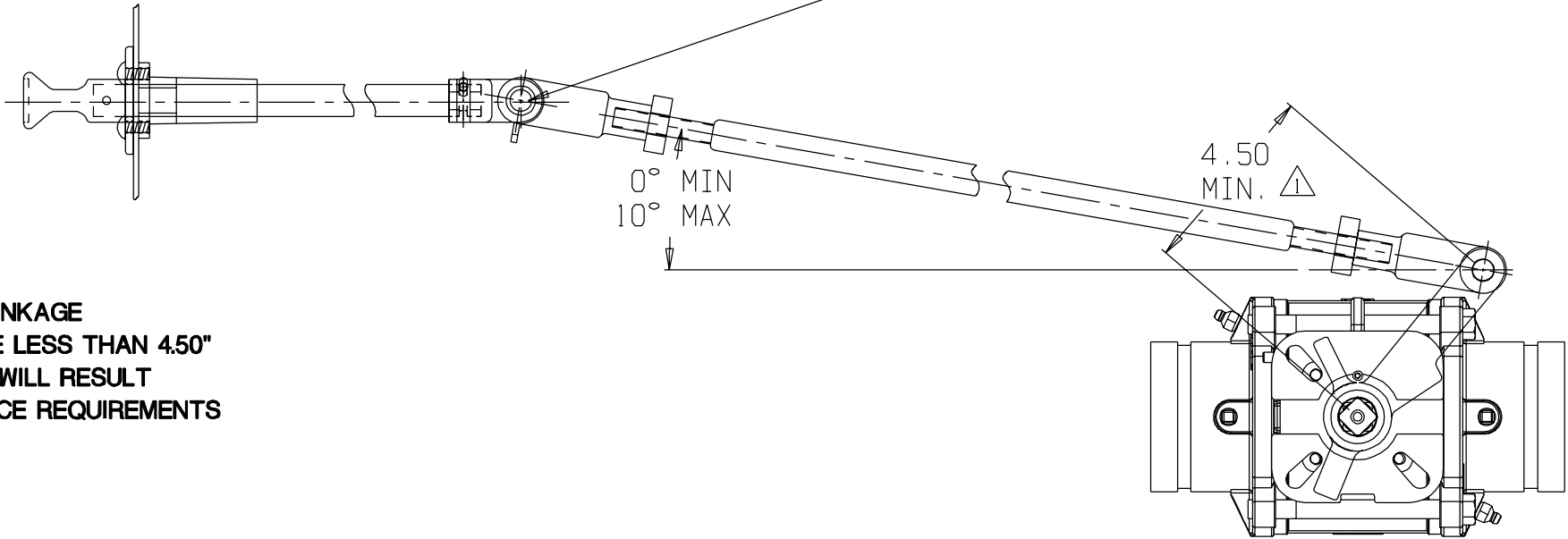
DRAWN	MAB	DATE 5-03-05	SIZE D	SCALE: 1/2
CHECKED	MAL			

Notes

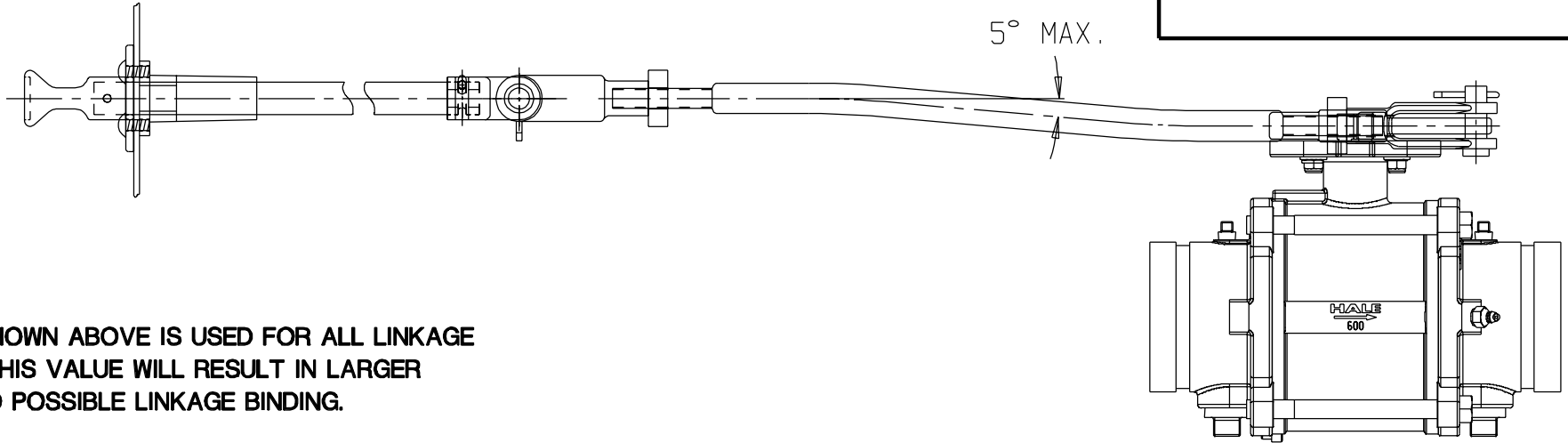
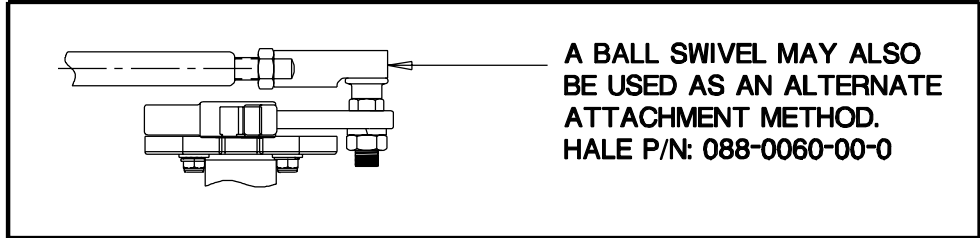
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HALE TORRENT VALVE SERIES
ADJUSTABLE LINKAGE ANGLE INSTALLATION GUIDE

(1) CLEVIS JOINT CONNECTION PER
LINKAGE RUN IS RECOMMENDED



⚠ VALVE HANDLE LENGTH TO LINKAGE
CONNECTION SHOULD NOT BE LESS THAN 4.50"
A SHORTER LENGTH HANDLE WILL RESULT
IN GREATER ACTUATION FORCE REQUIREMENTS




OFFSETS GREATER
THAN 5 DEGREE WILL RESULT
IN SIDE-LOADING OF
THE VALVE, RESULTING
IN DECREASED VALVE
COMPONENT LIFE.

- NOTES:**
- 1) MAXIMUM LINKAGE MOUNTING ANGLE SHOWN ABOVE IS USED FOR ALL LINKAGE CONNECTIONS, ANY DEVIATION FROM THIS VALUE WILL RESULT IN LARGER ACTUATION FORCE REQUIREMENTS AND POSSIBLE LINKAGE BINDING.
 - 2) CONNECTING RODS MUST NOT COME IN CONTACT WITH ANY PLUMBING OR COMPONENTS WITHIN THE PANEL.
 - 3) VALVES MUST BE LUBRICATED PER HALE RECOMMENDATIONS FOR OPTIONAL PERFORMANCE.

PLATE NO. 1067AC

PLATE NO. 1067AC

							HALE PRODUCTS, INC. A Unit of IDEX Corporation Conshohocken, PA 19428 USA						
0512	C	RELEASE FOR PRODUCTION	MJP	01-24-07	MAL		COPYRIGHT © NOT TO BE REPRODUCED OR USED TO MAKE OTHER DRAWINGS OR MACHINERY.		DRAWN CHECKED	MJP PRW	DATE 01-24-07	SIZE D	SCALE: FULL
ECO NO	REV	CHANGED FROM	BY	DATE	APVD								

Notes

[illegible]



Hale Products, Inc. Service Bulletins

Bulletin#: **SB-91** Revision#: **A** Date: **10/8/06**

Product Type Covered: Hale Pump ☒ Hurst Tool ☐ Lukas Tool ☐
Product Covered:

SVS - Valves

Problem Statement:

SVS Torrent Valves require lubrication to work properly and to maintain warranty.

Written by: **Mark Coley, Product** Date: **10/8/06**

Approved by: **Mike Laskaris**

Product Manager: **Mark Coley**

Customer Service Designee:

Body of the Bulletin

The SVS Torrent Valve is designed to use grease. The recommended types of grease are outlined below and can be found in Section 4, Routine Maintenance, of the SVS Installation and Service Manual, Hale p/n: 029-0020-90-0. Lubrication intervals vary dependent upon operating conditions (amount of usage, water conditions, etc.). When SVS Torrent Valves are inadequately lubricated it shortens the life span of smooth operation and causes unnecessary "downtime." The warranty on the SVS Torrent Valve is ten (10) years workmanship and two (2) years on the seals. **FAILURE TO PROPERLY MAINTAIN and LUBRICATE VALVES COULD RESULT IN WARRANTY DENIAL.**

LUBRICANTS:

Use one of the following lubricants. DO NOT substitute other lubricants.

- **Never-Seez** - White Food Grade with PTFE, manufactured by:
Bostik Findley, Inc.
211 Boston Street
Middleton, MA. 01949-2128
Web: www.neverseezproducts.com/bostik.htm
- **White Knight**™ - Food Grade Anti-Seize Compound, manufactured by:
Jet Lube Inc.
4849 Homestead Road
Suite 500
Houston, TX 77028
Web: www.jetlube.com
- **Anti-Seize**™ - manufactured by:
U.S. Valve Service & Training, Inc.
11875 West Little York
Suite 502
Houston, TX. 77041
Web: www.usvalveservices.com

Also see SVS Torrent Installation and Service Maintenance Manual, Hale p/n: 029-0020-90-0, Section 4 "Routine Maintenance" for additional information.



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