

CURD VALVE



INSTALLATION
OPERATION
MAINTENANCE

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INTRODUCTION

ABOUT

Thank you for purchasing a curd valve from Stainless Products, LLC (SPI).

This manual contains installation, operation, and maintenance instructions for the curd valve.

SPI curd valves are designed for minimal routine maintenance, but care and attention should be given to the instructions provided in this manual.

Do not remove any labeling on any SPI product. Immediately replace any label that is missing.

If, at any point, you have questions or concerns regarding your SPI valves, please call 1-800-558-9446 or 262-859-2826.

SAFETY

IMPORTANT SAFETY INFORMATION

Read this manual before installing, operating, and maintaining this equipment. Failure to read the manual can result in personal injury and/or equipment damage.

Do not attempt to remove and/or modify any SPI product. Doing so can create unsafe conditions for the operator(s) and/or surrounding persons. Any change to SPI products will void any and all warranties.

Do not place any SPI product in an application where general product service ratings are exceeded. Doing so puts the operator(s) and/or surrounding persons at risk of personal injury and/or result in equipment damage.

Do not remove any labeling on any SPI product. Immediately replace any label that is missing.

DISCLAIMER OF LIABILITY

SPI does not assume responsibility and expressly disclaims liability for loss, damage, or expenses that arise in any way from the installation, operation, use, or maintenance performed in accordance with this manual. SPI assumes no responsibility for any infringement of patents or other rights of third parties that may result from use of the module. No license is granted by implication or otherwise under any patent or patent rights.

SPI reserves the right to make changes to the product, specifications, or this manual without prior notice.

TECHNICAL DATA

MATERIALS OF CONSTRUCTION

- Valve body: 316L stainless steel
- Diverter/Shovel: 316L stainless steel
- Bonnet: 316L stainless steel
- Clamps (non-product contact): 304 stainless steel
- Actuator: 304 stainless steel
- Stem nut: Brass
- Other hardware: 18-8 or 300 series stainless steel

SEAL TYPES

- Stem o-ring: FDA Viton
- Stem guide: FDA PTFE
- Clamp gasket/body gasket: FDA Buna

SURFACE FINISH - PRODUCT CONTACT AREAS

- 32Ra or less by mechanical polish

ACTUATOR SUGGESTED PRESSURE

- 80-90 psi
- Double-acting actuator
- Opening speed: 0.2-0.5 seconds

PRINCIPLE OF OPERATION

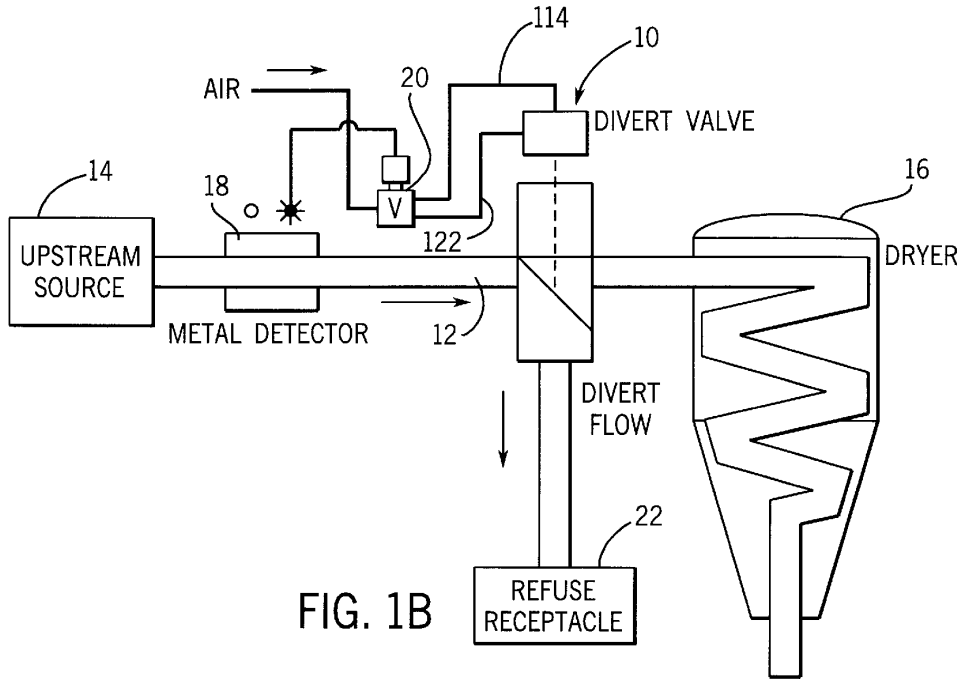
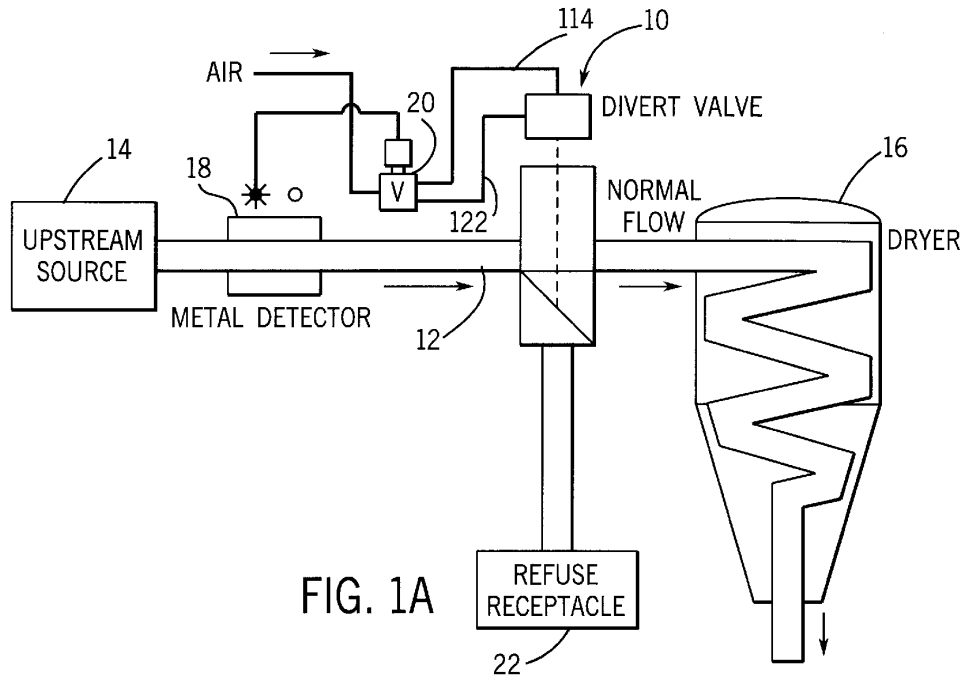
The SPI curd valve is a two-position divert valve for air-blown cheese curd or other larger air-blown solids. It utilizes a double-acting pneumatic, linear actuator to quickly move a diverter/shovel. The normal position is through the top of the body, which is free of obstructions to allow full-bore and straight flow in this direction. The divert position is where the diverter/shovel is lifted up and flow turns 90 degrees out the bottom port.

This valve is double-acting and utilizes quick-dump air valves to exhaust air close to the actuator. These provisions are necessary so that the valve acts quickly, moving in 0.2-0.5 seconds.

Applications would include air-blown curd going to a dryer or other destination. Upon metal detection, the valve will shift quickly so that the rejected material can dump out the bottom port, and then quickly resume to normal position to minimize losses.

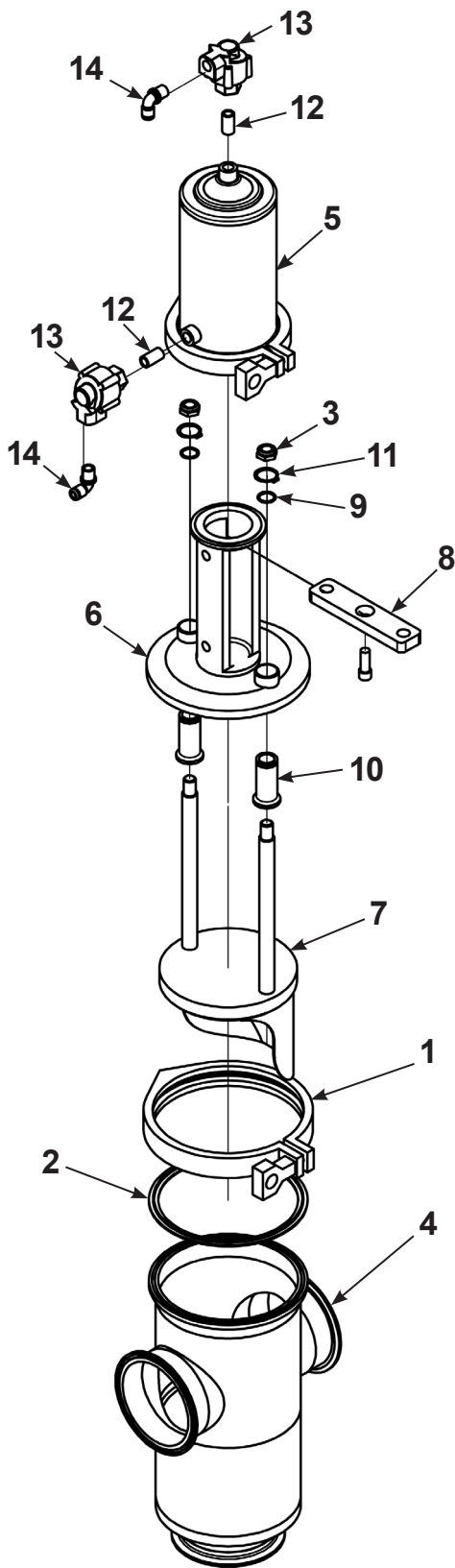
U.S. PATENT

- Date: Dec. 5, 2000
- Number: 6,155,300



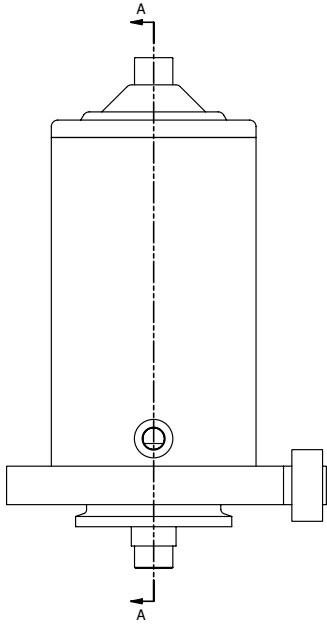
PARTS LIST – VALVE

SP161 - CURD VALVE

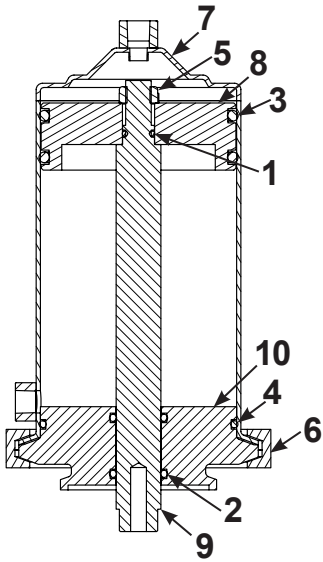


CURD VALVE			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	SP13HC-6	CLAMP HEAVY 2-PIECE 6" SINGLE PIN	1
2	SP40-U-6	GASKET 6" TRI CLAMP BUNA	1
3	SP10-12	STEM NUT BRASS	2
4	SPDR-4-1-316L	VALVE BODY 4" TRI CLAMP	1
5	SPDR-30	ACTUATOR AIR TO AIR	1
6	SPDR-4-3	BONNET	1
7	SPDR-4-2	DIVERT PLUG ASSEMBLY	1
8	SPDR-4-4A	BRACKET	1
9	SPDR-4-3OR	VITON O-RING	1
10	SPDR-4-3T	STEM GUIDE	2
11	SPDR-4-3SR	SNAP RING	2
12	SP160FDV-10MS-QR14A	FLOW DIVERSION COUPLING	2
13	SP160FDV-10MS-QR14	FLOW DIVERSION QUICK DUMP	2
14	SP10MS-14-NBP	AIR COUPLING 0.25"	2
N/A	SP13Z-2.5	CLAMP 2.5" LIGHT DUTY (not shown)	1

PARTS LIST – ACTUATOR



ACTUATOR			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	SP10-6	STEM O-RING VITON RED	1
2	SP10-7	LOWER STEM O-RING BUNA	2
3	SP10-8	PISTON O-RING BUNA FDA 341-1107	2
4	SP10-9	FOOT O-RING BUNA	1
5	SP10-12	STEM NUT BRASS	1
6	SP13HC-4	CLAMP HEAVY 2-PIECE 4" SINGLE PIN	1
7	SPDR-30-1	ACTUATOR CAN/HOUSING	1
8	SPDR-30-2	PISTON	1
9	SPDR-30-2D	ACTUATOR STEM	1
10	SPDR-SP110-4	ACTUATOR FOOT	1



MAINTENANCE AND CLEANING

Quarterly, or during shutdowns, the valve body and diverter/shovel should be inspected for wear. Contact between the diverter/shovel and the body can cause excess force required by the actuator to move the diverter. This will also cause the surface area to potentially exceed 32Ra and thus not be as sanitary as possible. Polish parts back to 32Ra or better if scratches or wear is present.

The stem guides and their o-rings are wear items and guide and seal the thrust of the diverter/shovel to ensure it does not have excessive radial movement, thus touching the body and getting damaged. A sign that these should be replaced would be large amounts of air leaking out of the exterior of the stem guide area. Inspect and clean the guides and o-rings by first removing the retaining C-clip. The guide will slide out the bottom.

For Actuator maintenance, refer to page x in this manual, and the main [SP160 manual](#).

This valve can be CIP'd, however note that it will leak fluid during CIP as it is not a positive-shutoff valve for liquids. The diverter/shovel should be pulsed several times during CIP. The backside (trailing edge) of the diverter/shovel may need to be COP'd.

WARRANTY

- A. **GENERAL PROVISIONS:** Stainless Products, LLC (the “Company”) warrants exclusively to the original purchaser (the “Customer”) that equipment or parts thereof manufactured and sold by the Company will be free from defects in material and workmanship only, under normal use and service, for a period of one (1) year from the original shipment date. The Company shall not be liable for any loss of revenue or profit, loss by reason of plant shutdown, non-operation or increased cost of operation, loss of products or materials, or other special or consequential loss or damages resulting from any such warranted defects. This warranty will not apply to any equipment or parts which has been subjected to accident, alteration, abuse, or misuse. This warranty is in lieu of all other warranties. All other warranties, both express or implied (including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose) warranties are hereby excluded and waived. The Company’s only obligation and liability shall be to fulfill the warranty specifically stated herein. The Company will neither assume nor authorize any other person to assume for it any other obligation or liability in connection with the equipment or parts. In the event of a claim under this warranty, the Company’s sole and exclusive liability for any warranted equipment or parts shall be, at the Company’s option, limited to the following (a) the purchase price of the equipment or parts that are defective, (b) replacement of the defective equipment or parts or (c) repair of the defective equipment or parts.
- B. **RETURN OF PARTS OR EQUIPMENT TO COMPANY PLANT:** In the event the Company elects to inspect the alleged defective equipment or parts for possible repair, Company will notify Customer in writing, and the equipment or parts must be returned with transportation cost prepaid by the Customer. In the event the Company’s inspection confirms defective equipment or parts covered by this warranty, the Company shall have the option to select any of the remedies described in Section A above. No transportation for returned or replaced items will be paid by the Company unless written approval for transportation charges is given by the Company.
- C. **COMPONENTS NOT MANUFACTURED BY THE COMPANY:** Components not manufactured by the Company, but furnished as part of its equipment will be warranted by the Company only to the extent of the component manufacturer’s warranty.
- D. **REPAIR OF EQUIPMENT INSTALLED IN THE CONTINENTAL UNITED STATES:** In the event the Company elects to repair a covered item and it is, in the judgement of the Company, impractical to return the equipment or parts for repairs, the Company may arrange for the repairs to be made by its personnel or, at its option, sublet such repairs to a qualified company. The Customer will be expected to cooperate by making the equipment or parts available and accessible when the work is scheduled and is expected to provide the necessary utilities. If local labor conditions prohibit such work being done by Company personnel under the conditions and at the rates payable by its contracts with its employees, the Company obligation shall be limited to supervision of the work, replacement of defective parts, and labor costs in an amount equal to the amount which would be payable for a reasonable number of hours required to make the repairs at the rates payable under the terms of Company contracts with its employees. In such event, all labor costs shall be paid by the Customer and the Company will reimburse the Customer to the extent set forth above.
- E. **REPAIR OF EQUIPMENT INSTALLED OUTSIDE THE CONTINENTAL UNITED STATES:** In the event the Company elects to repair a covered item for a Customer located outside the continental United States and it is, in the judgement of the Company, impractical to return the equipment for repairs, the Company shall have the additional options (in addition to the other options described herein) of either sending a service representative to repair (or supervise the repairs) or paying Customer a reasonable amount to allow the Customer to have the repairs made locally; provided, that in such situation, Company shall have no obligation to repair or replace equipment or parts that are repaired on by third party contractors selected by Customer.

