



INSTALLATION, OPERATION, & MAINTENANCE MANUAL

MAINTENANCE MANUAL #: MM-CH001

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Rev. A

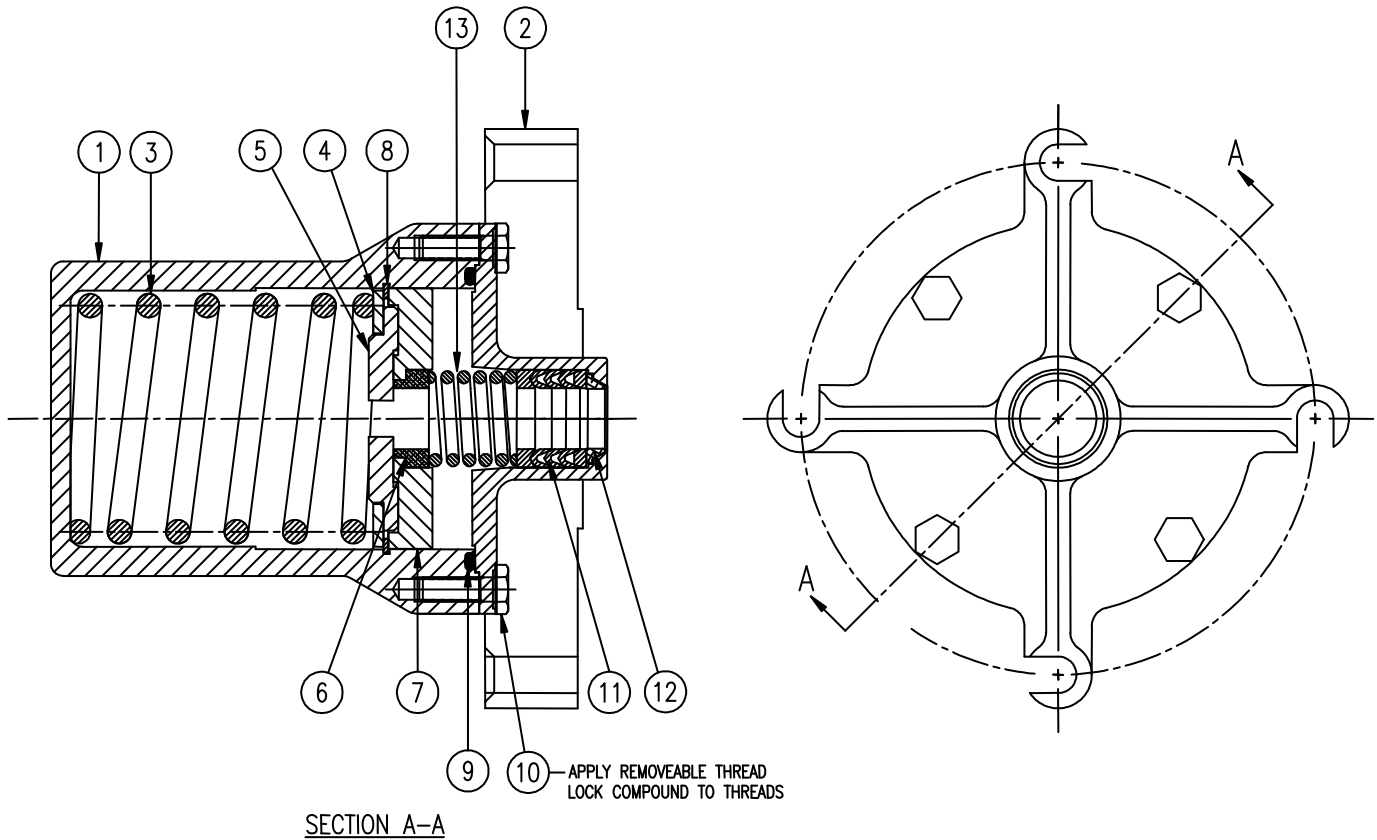
Page 1 of 8

QUICK CLEAN SPRING HOUSING ASSEMBLY PART NUMBERS (Including, but not inclusive) 36054SSTS



Table of Contents

1.0	General	Page 3
2.0	Description & Intended Use	Page 4
3.0	Installation	Page 4
4.0	Inspection & Testing	Page 4
5.0	Disassembly & Rebuild	Page 4
6.0	Troubleshooting Guide	Page 5






NO.	REQ.	PART NO.	MATERIAL	DESCRIPTION
1	1	28244SS	316 STNLS	SPRING HOUSING
2	1	28341SS	316 STNLS	SPIDER
3	1	19413SS	316 STNLS	SPRING
4	1	19083SS	316 STNLS	WASHER
5	1	75269SS	316 STNLS	SPRING WASHER
6	1	18467TG	TEF/GLASS	SPACER SLEEVE
7	1	75268SS	316 STNLS	BUSHING HOLDER
8	1	9Q4923	302 STNLS	RETAINING RING
9	1	75274TS	TEF ENCAP SIL	BASE O-RING
10	4	9Q5822A	316 STNLS	SPIDER RETAINER SCREW
11	1	8N2833	TEFLON	PACKING SET
12	1	18172TG	TEF/GLASS	WIPER
13	1	19050SL	302 STNLS	PACKING SPRING

Figure 1

1.0 General

- 1.1 It is strongly recommended that this entire manual be read prior to any operation, disassembly, or assembly of this equipment.
- 1.2 Betts Industries, Inc. provides this manual as a guideline for reference only and assumes no responsibility for personal or property damage that may occur in conjunction with this manual. Betts Industries, Inc. cannot be held responsible for incorrect installation, operation or maintenance of product.
- 1.3 Betts Industries, Inc. recommends all equipment be placed on a regular maintenance schedule that includes the routine replacement of seals and gaskets and visual inspection for leaks and corrosion. The end user must make their own determination and set their own schedule based upon use and environment. In some cases, regulations may dictate the minimum testing frequency of items. Make sure operators are aware of all applicable codes.
- 1.4 Only trained personnel should attempt to perform maintenance on this equipment.
- 1.5 As with any maintenance work, proper safety gear and procedures must be used at all times. A list of hazards may include but are not limited to contents under pressure, loaded springs, residual product, flammable liquid and vapors, pinch points.
- 1.6 Safety alert symbols are used to alert operator to potential personal injury hazards. These symbols are per ANSI 2535.5 and are listed below. Operator **MUST** obey all instructions that follow a safety symbol.

Alerts will be used to indicate known safety concerns. Additional concerns are possible and should be identified and avoided by the operator.

	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

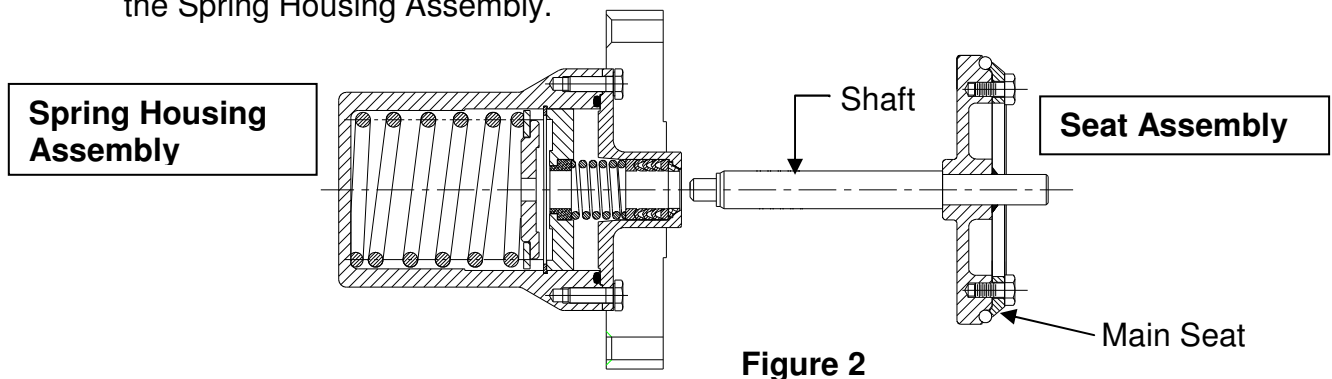
- 1.7 Product Warranty shall be void if product is subject to misapplication, misuse, neglect, alteration or damage.
- 1.8 Specific design details described in this document are for reference only and are subject to change without notice. See Betts Industries, Inc. web page for the most recent revision to this document. www.bettsind.com
- 1.9 For additional questions or more detailed technical assistance, contact the Betts Industries, Inc. Sales or Engineering Department at (814)723-1250.

2.0 Description and Intended Use

- 2.1 The Spring Housing Assembly is to be used with the Quick Clean style of Chemical Hydraulic Valves. It will act as the spring force to close the valve when hydraulic pressure is released. Valve part number list includes but not inclusive CH46861SSTS, CH46874SSTS, CH46867SSTS and CH46880SSTS.
- 2.2 With all exposed surfaces made from 316 stainless steel material, the Spring Housing Assembly is designed for use with a wide variety of chemicals. The housing assembly can be quickly assembled and disassembled from its mating valve to allow for easy inspection, maintenance and/or cleaning.
- 2.3 Spring Housing Seal Replacement Kit #CH75549TF is available and includes Base O-Ring [9], Packing Set [11], Wiper [12], and Spacer Sleeve [6].
- 2.4 See Installation, Operation & Maintenance Manual for Quick Clean Chemical Hydraulic Valves (MM-CH002) for instructions on the valve and actuator.
- 2.5 A complete information page can be found in our catalog Section 35 Page 7A & 7B. Also available is a wall chart showing all parts; chart number 5VCH03.

3.0 Installation

- 3.1 Inspect shaft for scratches/pitting/damage. Damage to the shaft will cause the Packing Set to leak which will allow product into the Spring Housing Assembly.
- 3.2 Carefully insert the shaft from the Seat Assembly into the corresponding opening in the Spring Housing Assembly.



- 3.3 Line up the Main Seat from with the seat from the valve being sure the shaft is centered. Be sure the Spider arms are NOT in line with the Retaining Posts on the valve. (See Figure 3)

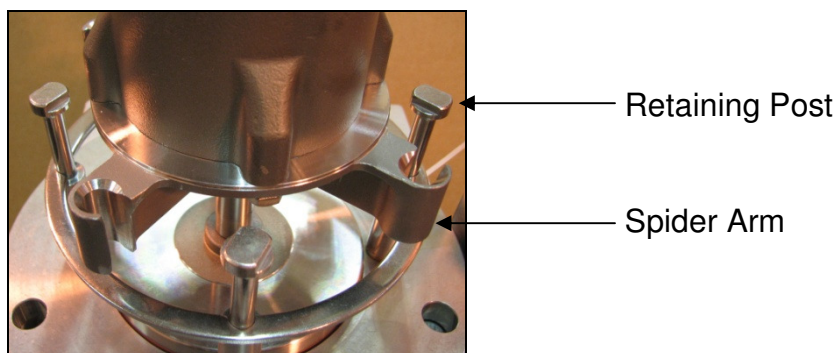




Figure 3

- 3.4 Apply even pressure to the top of the Spring Housing Assembly until the Spider is below the top of the Retaining Posts.
- 3.5 Rotate counter clockwise until spider is lined up with Retaining Posts and slowly release the spring force.

	UNSAFE PRACTICE CAUTION: Do NOT stand on or apply excessive force to the Spring Housing Assembly – damage to the valve cage or disengagement is possible.
	PINCH POINT WARNING: Be sure fingers and other body parts are not in between the spider and the posts.

- 3.6 Verify/ensure that all 4 valve Retaining Posts are engaged fully and locked into place with Spider locking features. (See Figure 4)

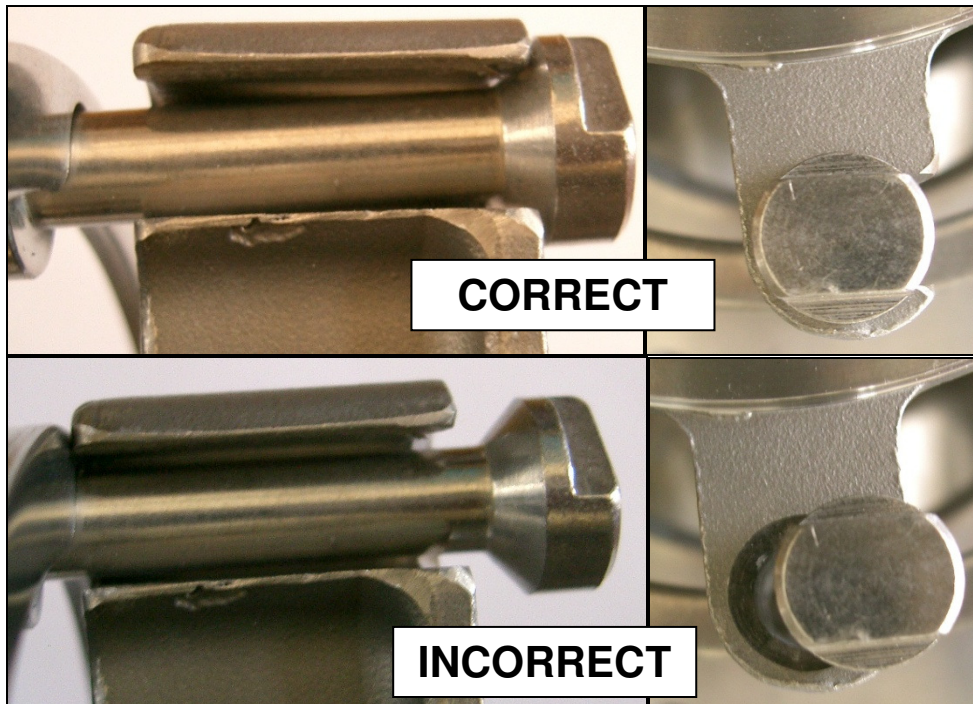


Figure 4

4.0 Inspection and Testing

- 4.1 After Spring Housing Assembly is installed on the valve, open and close valve.
 - 4.1.1 The valve should operate without binding.
- 4.2 Test Main Seat to ensure proper seal.

5.0 Disassembly and Rebuild Instructions

- 5.1 Apply even pressure to the top of the Spring Housing Assembly until the Spider is below the top of the Retaining Posts.
- 5.2 Rotate Spring Housing Assembly clockwise until Spider Arms are NOT lined up with Retainer Posts (See Figure 3) and slowly release the spring force.
- 5.3 Lift Spring Housing Assembly with Seat Assembly from valve being careful not to damage the seat.
- 5.4 Remove Seat Assembly from Spring Housing Assembly. (See Figure 2)
- 5.5 Remove (4) Spider Retaining Screws from Spring Housing and Spider.
- 5.6 Separate Spider from Spring Housing and remove Base O-Ring. NOTE: Care must be taken to not damage the seat for this O-ring.
- 5.7 Remove and inspect Packing Spring, Spacer Sleeve, Bushing Holder and Spring Washer; replace if necessary.

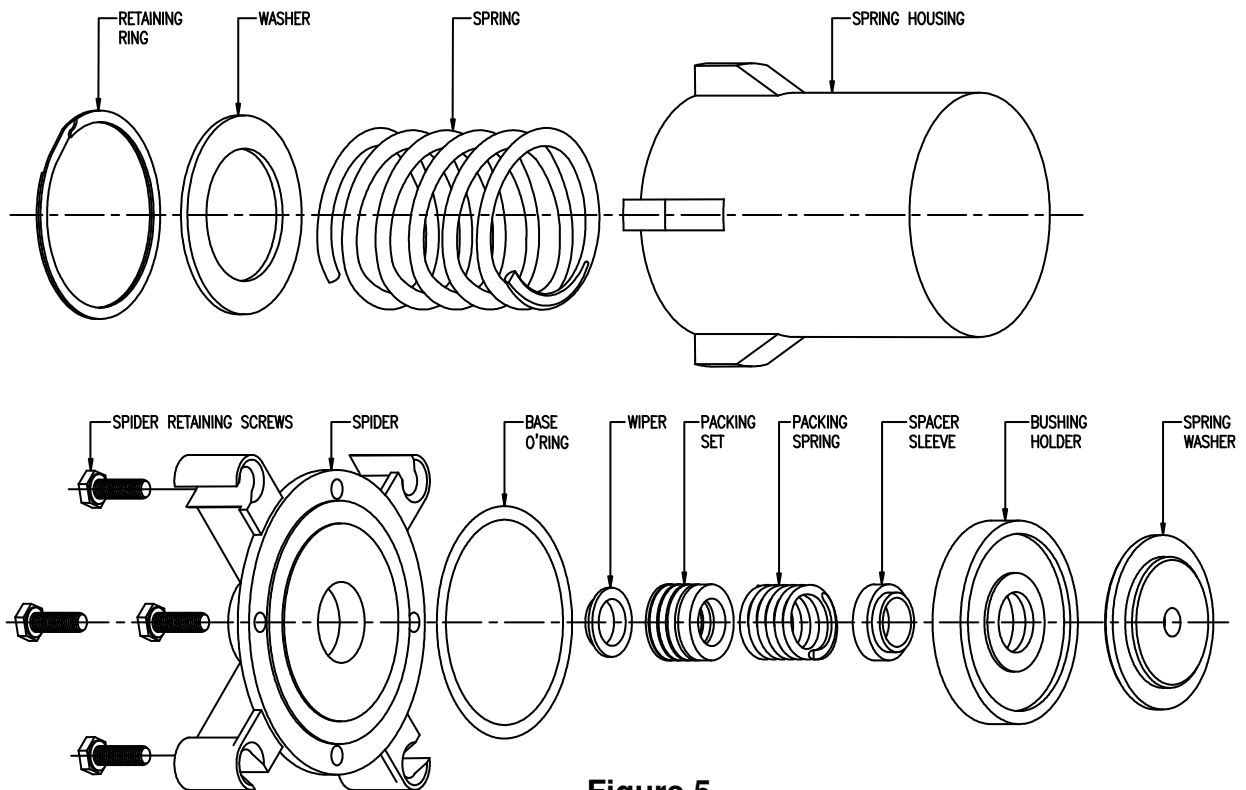


Figure 5

- 5.8 Clean and flush spring area of Spring Housing.
- 5.9 Inspect Spring for damage. If replacement is necessary:



PRE-LOADED SPRING:

Use caution when unloading and loading spring; force is high and could cause bodily harm if not contained properly.

- 5.9.1 Place Spring Washer into Washer and carefully compress Spring using an arbor press.
- 5.9.2 Remove Retaining Ring.
- 5.9.3 Carefully unload Spring and remove from Spring Housing.
- 5.9.4 Reinstall Spring and Washer and use Spring Washer to compress Spring using and arbor press.
- 5.9.5 Replace Retaining Ring.
- 5.9.6 Use caution when releasing compression on Spring and be sure that Retainer Ring is in place properly
- 5.10 Insert new Base O-ring into Spring Housing groove being careful not to pinch or damage.
- 5.11 Carefully remove the Packing Set and Wiper from the Spider.
- 5.12 Clean and flush product buildup on bore area of Spider. NOTE: Care must be taken to NOT damage the ID of the Spider.
- 5.13 Inspect the bore of the Spider for scratches, wear, corrosion or damage. Replace Spider if necessary.
- 5.14 Replace Wiper and Packing Set being sure to press all the way to the bottom of the Spider bore. NOTE: Be sure chevrons of Packing Set are aligned in the proper direction (See Figure 1).
- 5.15 Inspect Packing Spring for damage and replace if needed.
- 5.16 Apply removable thread locking compound to Spider Retaining Screws and reattach Spider to Spring Housing. Torque cap screws using a star/cross pattern to approx. 60 in-lbs and then around the pattern to approx. 110 in-lbs.
- 5.17 See Section 3 for instructions to reassemble to valve.

SEE TROUBLE SHOOTING GUIDE ON PAGE 8

6.0 Troubleshooting Guide

Problem	Cause	Solution
Product in Spring Housing	Damaged Valve Stem	Replace Packing Set and Valve Stem
	Damaged Spider Bore	Replace Packing Set and Spider
	Damaged/Pinched Base O-Ring	Replace Base O-Ring (careful to not damage O-Ring)
	Damaged or stripped Spider Retainer Screw	Replace Spider Retainer Screws being sure Spring Housing female threads are not damaged Replace Base O-Ring
Valve binds or does not open and close properly	Damaged or broken Spring	Replace Spring
	Product built up in Spring Housing	Clean out Spring Housing or replace if necessary
	Spring Housing Assembly misaligned on Retaining Posts	Ensure Spring Housing Assembly is fully engaged on Retaining Posts (See Figure 4)
	Valve Retaining Posts damaged or bent	Replace Valve