

D4 / D4 SL Schedule 5 Series

DOUBLE SEAT MIX PROOF VALVES

FORM NO.: 95-03106 REVISION: 1, 08/2020

READ AND UNDERSTAND THIS MANUAL PRIOR TO OPERATING OR SERVICING THIS PRODUCT.



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1. General Terms

This instruction manual should be read carefully by the competent operating and maintenance personnel.

We point out that we will not accept any liability for damage or malfunctions resulting from the non-compliance with this instruction manual.

Descriptions and data given herein are subject to technical changes.

2. Safety

2.1 Symbols



Caution!

The technical safety symbol draws your attention to important directions for operating safety. You will find it wherever the activities described are bearing health hazards and risks for persons and / or material assets.



Important Note!

Critical technical information

2.2 Safety Instructions



**Opening of the actuators and upper shafts is strictly forbidden.
Danger to health and life!**

Actuators and upper shafts which are no longer used and/or are defective must be disposed in professional manner.

Defective actuators and upper shafts must be returned to your SPX FLOW company for their professional disposal and free of charge for you.

Please address to your local SPX FLOW company.



- Never touch the valve or pipelines during hot liquid or sterilization processes!



- Disconnect electric and pneumatic connections, e.g. before maintenance.



- Before any maintenance work, depressurize the line and cleaning system and discharge the lines if possible.

2. Safety



- Observe Service Instructions to ensure safe maintenance of the valve.



- Connections which are not used must be sealed by a plug!



- The safe discharge of the cleaning liquids must be ensured.



- The valves must be assembled, disassembled and reassembled only by persons who have been trained in the valves or by SPX FLOW service team members. If necessary, contact your local SPX FLOW representative.

3. Intended Use

The intended use as field of application of the double seat mix proof valve is the safe shut-off of pipeline sections and the separation of incompatible liquids in the food and beverage industries as well as in pharmaceutical and chemical applications.



Caution! The standard D4 / D4 SL valve must not be used in explosive atmospheres.



Caution! Arbitrary, structural changes at the valves may affect safety as well as the intended functionality of the valves and are not permitted.

SPX FLOW D4 / D4 SL Valves are intended for use in the food and beverage industries, as well as in pharmaceutical and chemical applications.

SPX FLOW D4 / D4 SL Valves (without safety function) are allocated to Category 1 and are evaluated as per Conformity Assessment Module A of the Pressure Equipment Directive 2014/68/EU.

According to Article 13, the following allocation applies for the fluids processed in the valves.

Product media – Fluid group 2 – valves in all dimensions.

CIP-cleaning liquids – Fluid group 1 – Schedule 5 valves in the dimensions ≤ 3" can be used at temperatures up to 284°F (140°C), in the dimensions > 3" at temperatures up to 212°F (100°C).

Authorizations and External Approvals

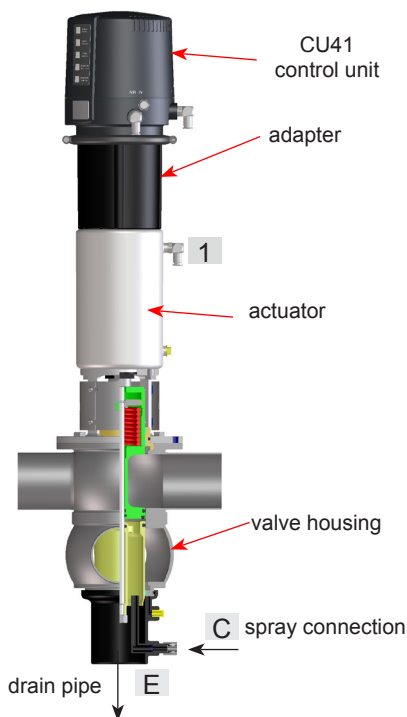
To view the certifications for this and other innovative SPX FLOW products, visit

<https://www.spxflow.com/en/waukesha-cherry-burrell/about-us/certifications/>

It is within the responsibility of the plant operator to evaluate and verify the suitability of SPX FLOW products for the intended purpose and service conditions, as well as to determine and follow the applicable laws for the intended applications and areas of application.

4. Mode of Operation

fig. 4.1. D4 valve



4.1. General terms

Due to its construction and mode of operation as well as to the use of high quality stainless steel and adequate seal materials, the D4 and D4 SL double seat mix proof valves are suited for applications in the food and beverage industries as well as in pharmaceutical and chemical applications.

- The D4 and D4 SL valves separate two line passages by two balanced and independently operating valve shafts with an intervening leakage chamber.
- The valve opens from the top to the bottom in a low-leakage design.
- Leakages are discharged via the drain pipe (E) in depressurized state.
- The pneumatic actuator opens the valve via the air connection (1). The spring force resets the valve into the “closed” safe position.
- The standard D4 valve is equipped with a non-seat lift actuator and a CU41 control unit.
- The standard D4 SL valve is equipped with an actuator including seat lift function and a CU43 control unit.
- D4 SL valve:
Cleaning of the seat is controlled via the air connections.
2 = to lift upper shaft
3 = to lift lower shaft
- The spray connection (C) cleans the leakage chamber.
- As an option, the closed and open positions of the D4 and D4 SL can be detected via proximity switches.

fig. 4.1.1. D4 SL valve

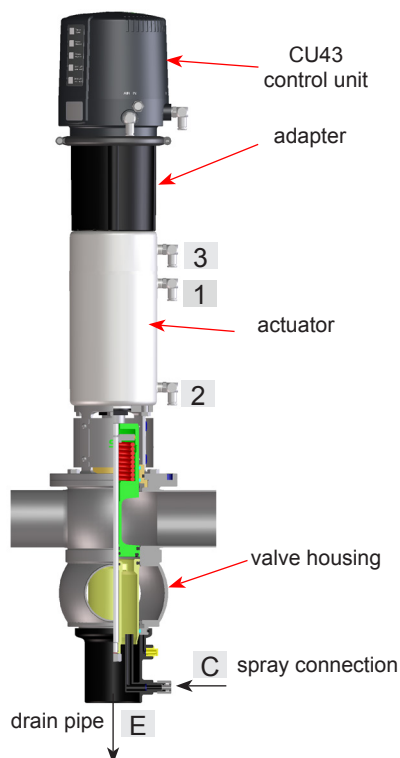
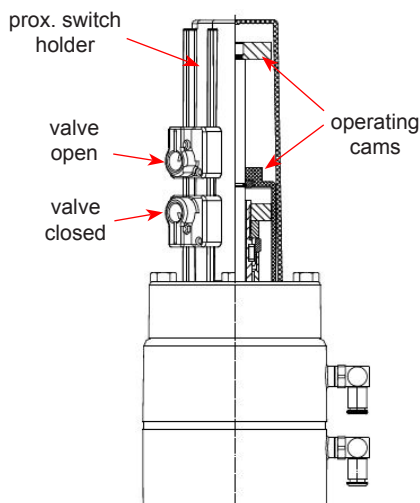


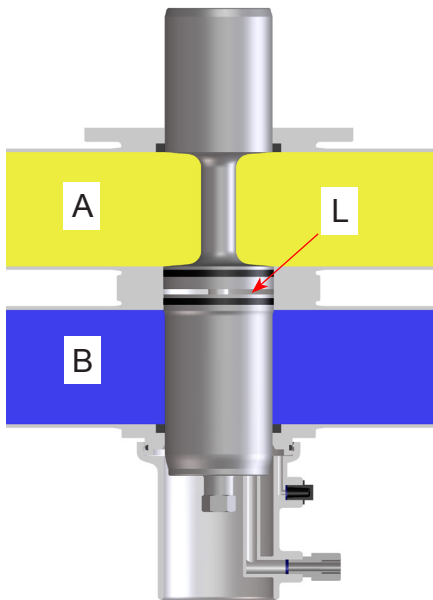
fig. 4.1.2.

D4 / D4 SL with valve position indication



4. Mode of Operation

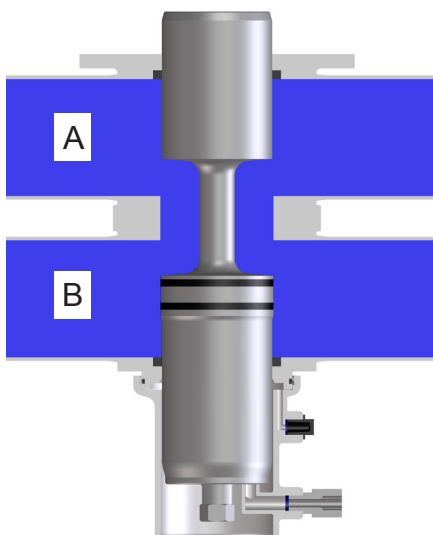
fig. 4.2.



4.2. Valve in "closed" position

The lower and upper valve shaft are in closed position and safely separate the different liquids A and B. The leakage chamber L, which is situated between the two valve shafts, provides for a free and depressurized discharge to the bottom. The valve shafts are balanced and protected against pressure hammer.

fig. 4.3.



4.3. Valve in "open" position

The upper valve shaft is pressed against the seal of the lower valve shaft by control of the actuator. First, the leakage chamber L is closed against the product chamber. Then the two valve shafts move downwards into the open position. The connection between the two pipelines A and B is established.

5. Control Units / Valve Position Indication

5.1. Control unit and adapter

An adapter is required to assemble the control unit on the D4/D4 SL valve. The following different designs are available:

CU4 control unit



Designation		
	D4	D4 SL
∅ Air connection	1/4" OD	1/4" OD
CU4 Control Unit		
Direct Connect	CU41-D4 Direct Connect H336959	CU43-D4 Direct Connect H336960
AS-interface extended	CU41-D4 AS-i extended H336961	CU43-D4 AS-i extended H336962
AS-interface extended M12	CU41-D4-M12 AS-i extended M12 H338900	CU43-D4-M12 AS-i extended M12 H338901
AS-interface standard	CU41-D4 AS-i standard H338151	CU43-D4 AS-i standard H338153
AS-interface standard M12	CU41-D4-M12 AS-i standard M12 H338902	CU43-D4-M12 AS-i standard M12 H338903
Adapter	CU4 adapter D4 H337098	
CU4plus Control Unit		
AS-interface extended V1	CU41plus-D4-V1 AS-i extended V1 H338823	CU43plus-D4-V1 AS-i extended V1 H338824
AS-interface extended V1 M12	CU41plus-D4-V1-M12 AS-i extended V1 M12 H338868	CU43plus-D4-V1-M12 AS-i extended V1 M12 H338869
Adapter	CU4plus adapter D4 V1 H336441	

5.2. Valve position indication

Proximity switches to signal the closed and open position of the valve can be installed at the proximity switch holder.

We recommend using one of these standard types:

three-wire proximity switch
 operating distance: 0.196" (5 mm)
 diameter: 0.433" (11 mm)
 operating voltage: 10–30 V DC
 pnp pulse-shifting, closing function
 "non-flush" installation

Recommendation:

Proximity switch 24V DC, PNP, 11 mm DIA. (5 m cable): H16223
 Proximity switch 24V DC, PNP, 11 mm DIA. (cable box): H16432

Note: If the customer decides to use valve position indicators other than those listed, SPX FLOW cannot assume any liability for the functionality of the valve.

6. Cleaning

In the cleaning process of the valves, distinction is made between the following areas: Flow areas, Seat area, and Leakage chamber.

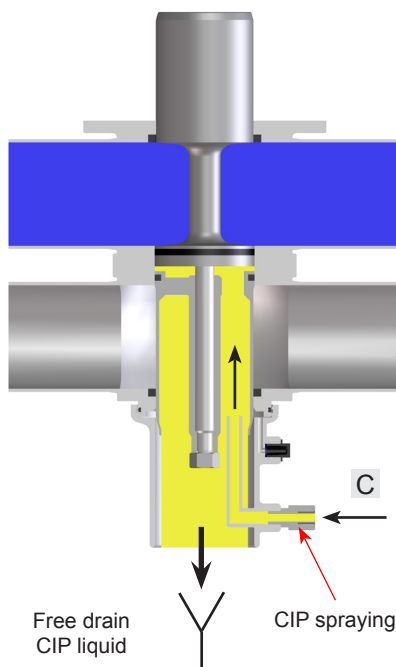
6.1. Flow area

The CIP-fluid cleans the upper and lower passages of the valve during CIP.

6.2. Seat area - D4 SL valve (chapters 6.5. and 6.6.)

The seat area and leakage chamber are cleaned through lifting of the individual valve shafts during cleaning of the respective passage.

fig. 6.3.



6.3. Seat area and Leakage chamber

CIP spraying cleans the seat area and the leakage chamber. The cleaning connection is at item C in fig. 6.3.

D4 valve: CIP spraying must generally be undertaken.

CIP spraying does not produce pressure build-up in the leakage chamber. SPX FLOW recommends performing CIP-spraying in the closed valve position; however, it can also be done in the open valve position.

Under standard conditions 15 valves size 2" Sh5 - 3" Sh5 or 10 valves size 4" Sh5 - 6" Sh5 can be cleaned via one spray distribution line 1".

6.4. Cleaning recommendation

Cleaning steps	Seat lifting cycle (D4 SL)	CIP spraying
pre-flushing	–	3 x 10 sec.
caustic flushing 176°F (80°C)	3 x 5 sec.	3 x 10 sec.
intermediate flushing	2 x 5 sec.	2 x 10 sec.
acid flushing	3 x 5 sec.	3 x 10 sec.
subsequent flushing	2 x 5 sec.	2 x 10 sec.

- **D4 SL Valve:** The lifting cycles refer to a cleaning pressure of $p = 29 - 72$ psi (2-5 bar).
- Depending on the pressure ratio, cleaning temperatures, cleaning steps and degree of soiling, time and number of cycles must be adjusted.
- Flushing quantities per CIP spraying cycle:
 - 2" Sh5 - 3" Sh5 about 0.32 US gal/10s (1.2 ltr/10s)
 - 4: Sh5 - 6" Sh5 about 1.32 US gal/10s (5.0 ltr/10s)
- Cleaning pressure at CIP cleaning connection:
 - min. 29 psi (2 bar)
 - max. 72 psi (5 bar)

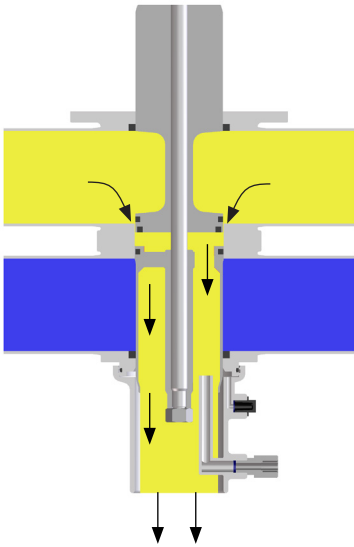


Caution!

The cleaning liquid applied must be compatible with the respective seal material.

6. Cleaning

fig. 6.5.



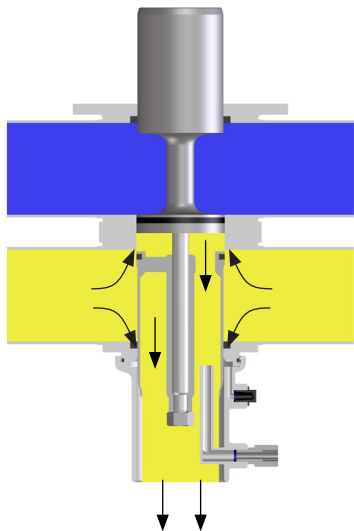
6.5. Cleaning of upper area - D4 SL valve (fig. 6.5.)

The upper valve shaft is lifted via connection (2), as shown in fig. 4.1.1 on page 6.

Through the lifting of the upper valve shaft, the cleaning fluid flushes over the upper seat seal and the upper valve seat into the leakage chamber and cleans this area. The cleaning fluid is drained off to the bottom in a depressurized state.

The lifting stroke is limited by a stop in the actuator.

fig. 6.6.



6.6. Cleaning of lower area - D4 SL valve (fig. 6.6.)

The lower valve shaft is lifted via connection (3), as shown in fig. 4.1.1 on page 6.

Through the lifting of the lower valve shaft, the cleaning fluid flushes over the lower seat seal into the leakage chamber and cleans this area. The cleaning fluid is drained off to the bottom in a depressurized state.

The lifting stroke is limited by a stop in the actuator.

7. Installation and Commissioning



- The valve must be installed in vertical position to ensure that fluids can drain off freely from the valve housing and the leakage chamber.

Caution! Leakages and fluid losses from seat lifting and CIP-spraying must be safely collected and drained!



- The valve housing can be welded directly into the pipeline (completely removable valve insert).

Note! Observe welding instructions.



- Observe heights of installation and removal!

Caution!
Before first startup:

- Actuate the valve by applying compressed air. The opening, closing and shaft lifting processes must run smoothly.
- Check the function of the control unit or valve position indication.
- Check for possible leakages during commissioning. Replace defective seals.

7.1. Welding Instructions



- Before welding the valve, remove the valve insert from the housing.

Caution! Handle and store the valve insert carefully to avoid damaging the parts.

2-4" valves: Remove the lower shaft seal and guide ring from the housing.

6" valve: It is not necessary to remove the lower shaft seal as it can be damaged during removal.

- Welding should only be carried out by certified welders (DIN EN ISO 9606-1) (seam quality DIN EN ISO 5817).
- The welding of the valve housings must be undertaken in such a way that the valve body is not deformed.
- The preparation of the weld seam up to 0.12" (3 mm) thickness must be carried out as a square butt joint without air. Consider shrinkage!
- TIG orbital welding is recommended.



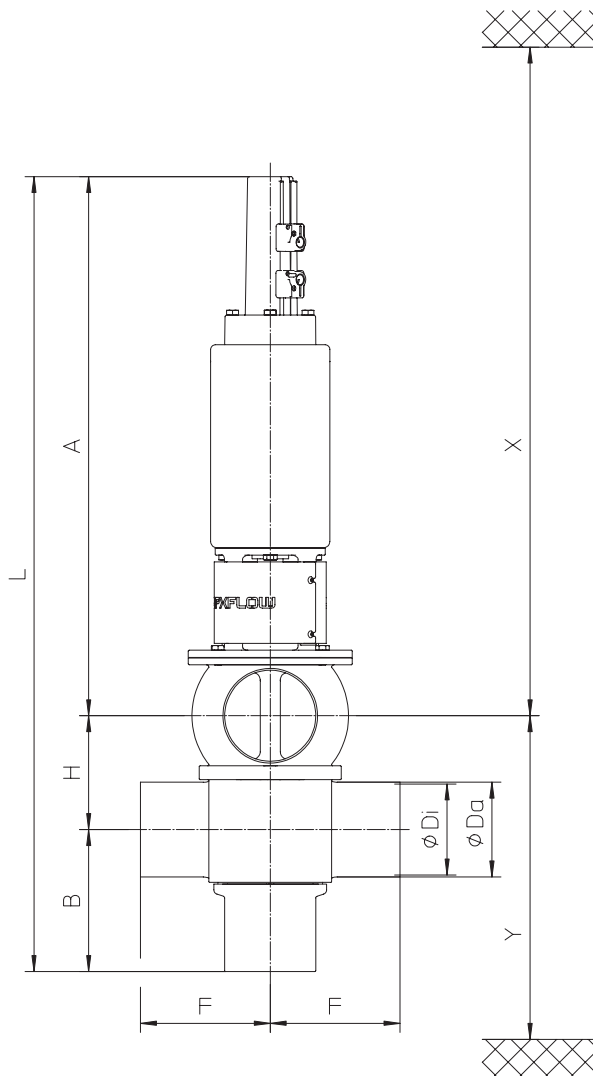
- **Caution!** After welding the valve housing or mating flanges, and after performing any work on the piping, do not operate the valves until the corresponding areas of the installation and piping have been cleaned and welding residue has been removed. If the piping is not cleaned before operation, welding residue and dirt particles can settle in the valves and cause damage to the valves and seals.

- If these welding instructions are not followed, any resulting damage will not be covered by the warranty.

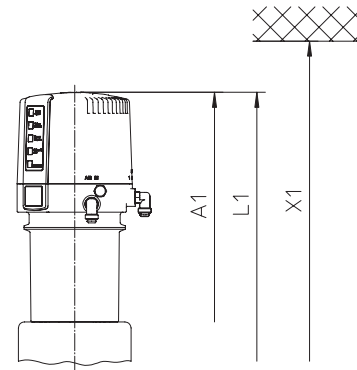
- Welding directives for aseptic applications shall be drawn from the AWS/ANSI Directives and EHEDG Guidelines.

8. Dimensions / Weights

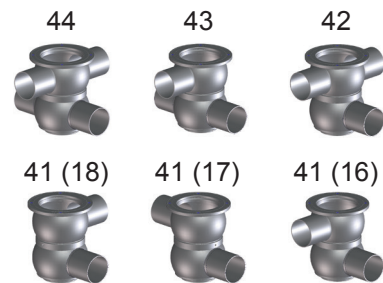
8.1. D4 Valve



CU4 control unit



housing configuration

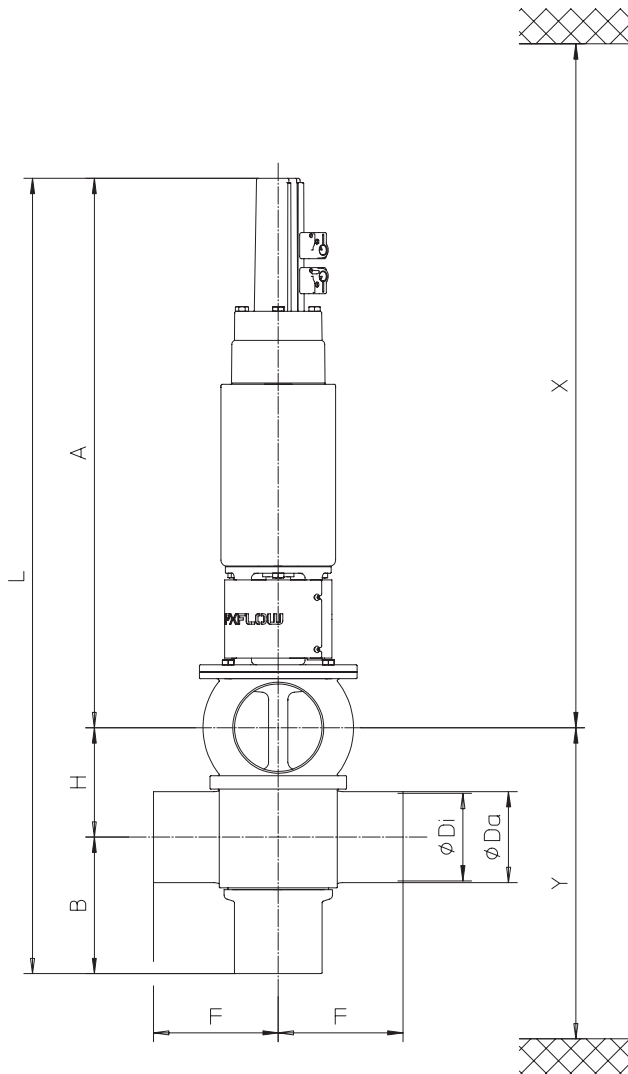


Dimensions in IN										Install. dimensions min. in IN		
Size	A	A1	B	Ø Da	Ø Di	F	H	L	L1	X*	X1*	Y*
2" Sh5	19.3	22.6	5.1	2.4	2.2	4.9	3.2	27.6	30.9	29.5	32.8	9.0
3" Sh5	23.0	26.3	5.8	3.5	3.3	5.6	4.3	33.2	36.4	35.4	38.7	11.1
4" Sh5	26.4	29.6	6.7	4.5	4.3	5.9	5.3	38.4	41.7	40.2	43.5	13.0
6" Sh5	28.8	31.5	7.9	6.6	6.4	5.9	7.4	44.1	46.8	42.7	46.1	16.1

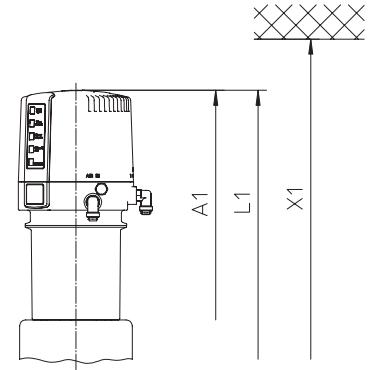
*Minimum installation and valve insert removal dimensions

8. Dimensions / Weights

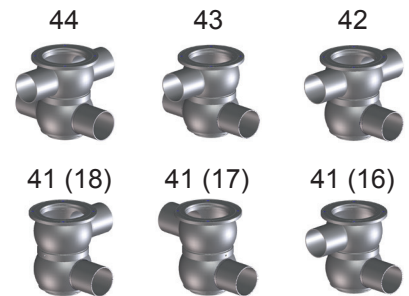
8.2. D4 SL Valve



CU4 control unit



housing configuration



Dimensions in IN										Install. dimensions min. in IN		
Size	A	A1	B	Ø Da	Ø Di	F	H	L	L1	X*	X1*	Y*
2" Sh5	20.9	24.2	5.1	2.4	2.2	4.9	3.2	29.2	32.5	31.1	34.4	9.0
3" Sh5	24.4	27.7	5.8	3.5	3.3	5.6	4.3	34.6	37.8	36.8	40.1	11.1
4" Sh5	26.4	29.6	6.7	4.5	4.3	5.9	5.3	38.4	41.7	40.2	43.5	13.0
6" Sh5	28.8	31.5	7.9	6.6	6.4	5.9	7.4	44.1	46.8	42.7	46.1	16.1

*Minimum installation and valve insert removal dimensions

9. Technical Data

9.1. General data

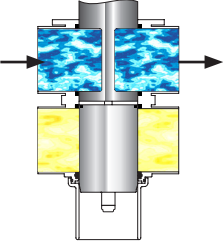
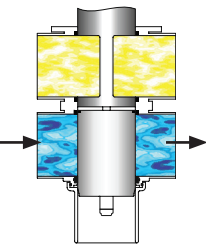
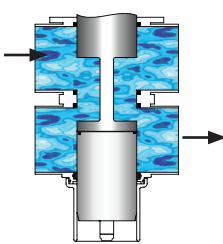
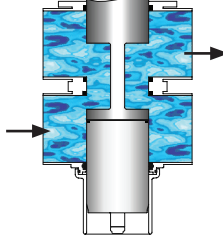
Product-wetted parts	AISI 316L (1.4404) (DIN EN 10088)
Other parts	AISI 304 (1.4301) (DIN EN 10088)
Seals standard options	EPDM/ PTFE compound HNBR/ PTFE compound FPM/ PTFE compound
Max. line pressure	145 psi (10 bar)
Max. operating temperature	275°F EPDM, HNBR (135°C) *FPM
Short-term load	284°F EPDM, HNBR (140°C) *FPM *no steam
Valves > 3" Sh5	CIP cleaning liquids up to 212°F (100°C)
Tightening torque for stop sleeve	7 ft-lb (10 Nm)
Tightening torque for safety nuts at lower and upper valve shaft	29 ft-lb (40 Nm)
Spray connection	PP (polypropylene)
Ø Cleaning connection	
2" - 3" Sh5	0.315 x 0.039" (8x1 mm)
4" - 6" Sh5	0.393 x 0.039 (10x1 mm)
Ø Air connection	1/4" OD
Max. pneumatic air pressure	116 psi (8 bar)
Min. pneumatic air pressure	72 psi (5 bar)

9.2. Compressed air quality

Quality class	acc. to DIN ISO 8573-1
Content of solid particles	quality class 3, max. size of solid particles per m ³ 10000 of 0.5 µm < d < 1.0 µm 500 of 1.0 µm < d < 5.0 µm
Content of water	quality class 3, max. dew point temperature -20°C For installations at lower temperatures or at higher altitudes, consider additional measures to reduce the pressure dew point accordingly.
Content of oil	quality class 1, max. 0.01 mg/m ³
The oil applied must be compatible with Polyurethane elastomer materials.	

9. Technical Data

9.3. Cvs values in gpm*psi

								
	upper line		lower line		upper - lower line		lower - upper line	
Size	D4	D4 SL	D4	D4 SL	D4	D4 SL	D4	D4 SL
2" Sh5	164	154	128	128	73	69	74	71
3" Sh5	288	272	227	227	172	165	168	165
4" Sh5	474	474	349	349	271	271	268	268
6" Sh5	1169	1169	733	733	479	479	454	454

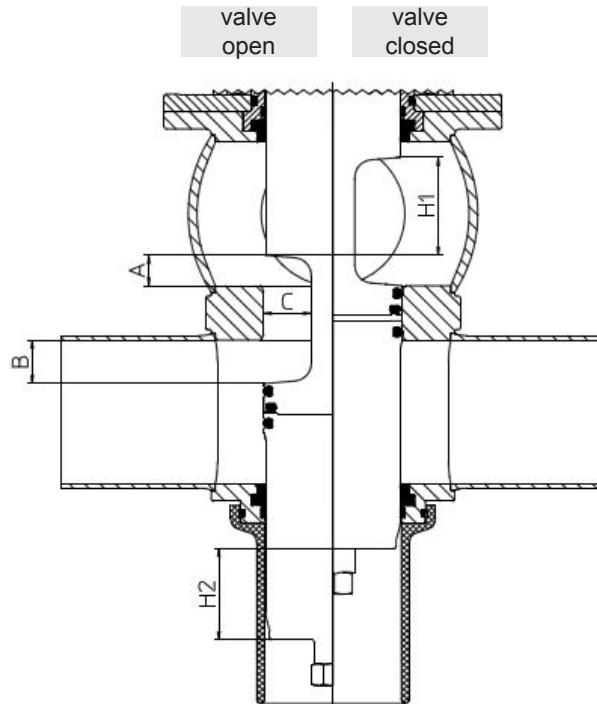
9.4. Air consumption / Switching times

D4 Valve	Air consumption at 72 psi (5 bar)	Switching times in seconds at 72 psi (5 bar) / CU41	
	Actuator	Open	Closed
Size	ft ³ /stroke valve open		
2" Sh5	0.07	1.7	2
3" Sh5	0.13	2.6	3.3
4" Sh5	0.19	3.4	5.2
6" Sh5	0.30	3.5	9.3

D4 SL Valve	Air consumption at 72 psi (5 bar)			Switching times in seconds at 72 psi (5 bar) / CU43	
	Actuator	Seat lift actuator		Open	Closed
Size	ft ³ /stroke valve open	ft ³ /stroke upper seat lift	ft ³ /stroke lower seat lift		
2" Sh5	0.06	0.12	0.008	1.6	1.9
3" Sh5	0.13	0.27	0.008	2.6	3.3
4" Sh5	0.19	0.37	0.008	3.4	5.2
6" Sh5	0.30	0.58	0.026	3.5	9.3

9. Technical Data

9.5. Valve stroke / Opening cross section



D4 Valve: Dimensions in IN					
Size	A	B	C	stroke H1 upper shaft	stroke H2 lower shaft
2" Sh5	0.5	0.8	0.8	1.8	1.7
3" Sh5	1.4	1.0	1.4	2.0	1.9
4" Sh5	1.7	1.4	1.7	2.4	2.2
6" Sh5	3.6	1.6	2.1	2.6	2.4

D4 SL Valve: Dimensions in IN					
Size	A	B	C	stroke H1 upper shaft	stroke H2 lower shaft
2" Sh5	0.4	0.6	0.8	1.5	1.4
3" Sh5	1.1	1.0	1.4	2.0	1.9
4" Sh5	1.7	1.4	1.7	2.4	2.2
6" Sh5	3.6	1.6	2.1	2.6	2.4

10. Maintenance



Note!

The maintenance intervals are different depending on the application and must be determined by the operator performing regular checks.

- Compressed air is not required to remove the valve.



Caution!

Do not clean the valve with products containing abrasive or polishing substances. Abrasive and polishing agents are especially harmful to the upper and lower shaft.



Required tools for standard maintenance:

- 1 x wrench SW13, SW24, SW30, SW32
- 1 x wrench SW36
- 2 x wrench SW17
- 1 x Allen key SW3, SW6
- long hook with 45° tip or long nose pliers
- pick tool for O-ring and rubber seal removal
- double joint forceps
- assembly stick D4 for assembly of lower shaft seal, see page 23
- disassembly and assembly tool for lower shaft seal, see page 23
- assembly tool for middle seal, see page 24
- assembly tool for seat seals, see page 25
- 2 long M8 hex screws for safe removal of valve insert
- For valve maintenance SPX FLOW offers complete seal kits (see spare parts lists).



Caution!

The use of seal materials being compatible with the product, application and CIP liquids must be ensured. In case of doubt, contact your local SPX FLOW representative.

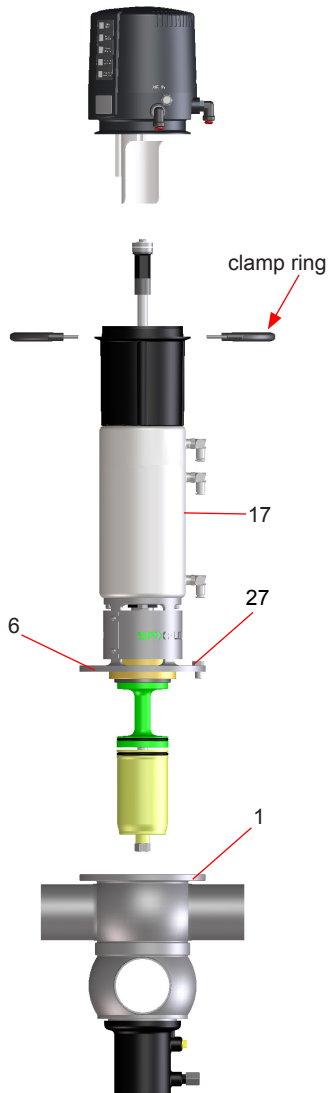
- For seal replacement instructions, see section 11.2 to 11.3.
- Provide all seals with a thin layer of grease before their installation!
 Recommendation:
 Assembly grease for EPDM, HNBR and FPM (Viton)
 0.75 kg/tin - Part no. H147382
 60 g/tube - Part no. H147381
- Provide all screws and threaded parts with grease before their installation.
 Recommendation: Klüber paste UH1 84-201
 60 g/tube - Part no. H147379
- Recommendation for actuator:
 Pneumatic grease:
 25 ml/tube - Part no. H164725
- For valve assembly instructions, see section 11.3.

11. Service Instructions

The item numbers refer to the spare parts drawings in section 15, starting on page 27.

For Disassembly/Assembly tools, see chapter 13.

fig. 11.1.



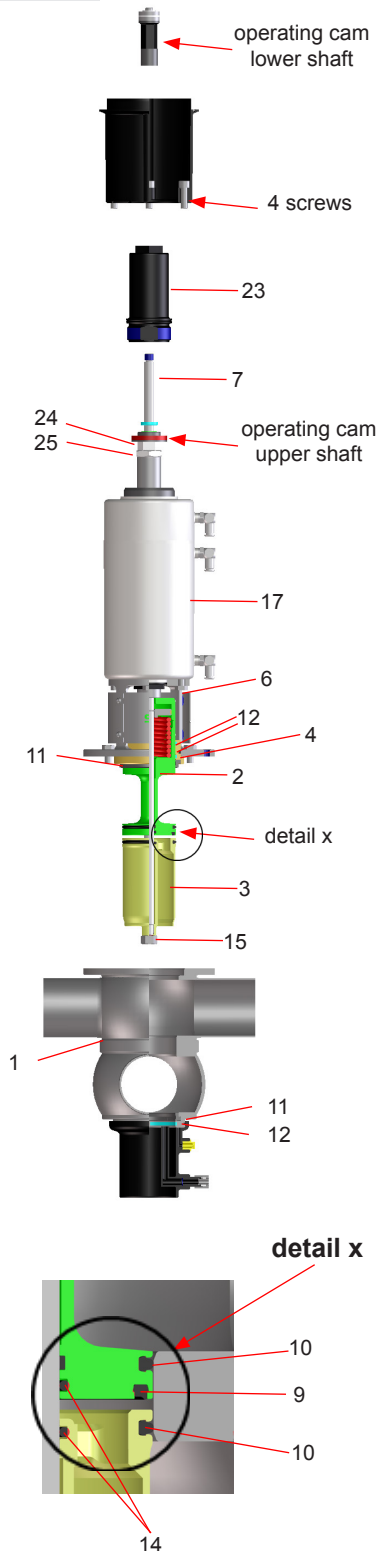
11.1. Removal from the line system

Caution!

1. Shut off the line pressure in the product and cleaning lines, and discharge the pipes if possible.
2. Remove the compressed air lines from the valve actuator (17).
3. Release the 2 screws at the clamp rings and lift the control unit off the adapter.
4. Design with proximity switch holder:
Release the screws at the proximity switch holder and lift off the proximity switch holder.
5. Remove the flange screws (27) in the yoke (6). For additional safety, replace two flange screws with longer screws that are partially threaded into the flange. Once these longer screws are in place, the other two flange screws can be safely removed.
6. Screw one flange screw (27) into the threaded bore of the yoke (6) to lift the complete valve insert. Do not remove the screw. It helps to re-install the valve insert.
7. Carefully lift the valve insert vertically out of the valve housing (1).

11. Service Instructions

fig. 11.2.

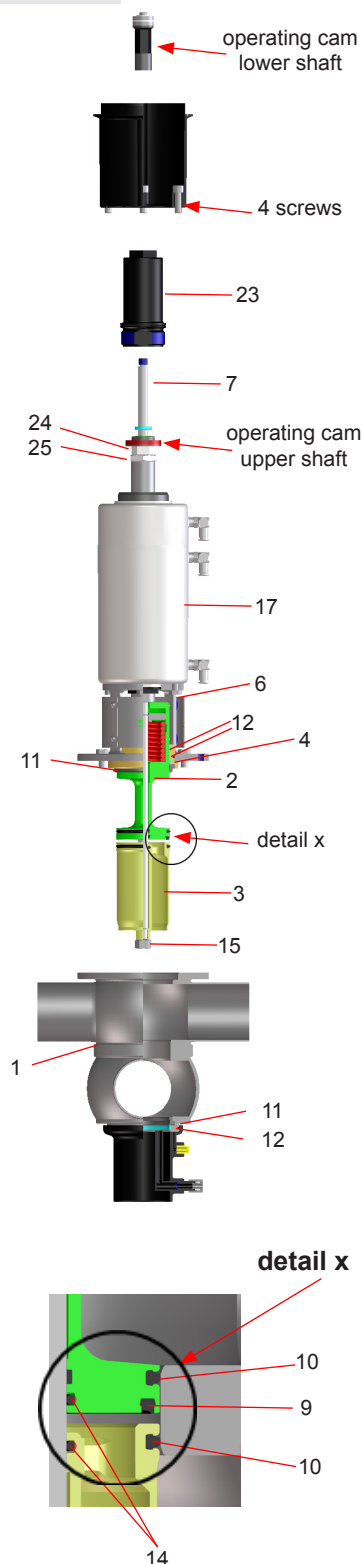


11.2. Removal of product-wetted parts

1. Remove the operating cam from the guide rod (7).
2. In order to take off the adapter, remove the 4 screws.
3. Release the lower safety nut (15). Hold the lower shaft (3) with an SW17 wrench to keep it from turning.
4. After removing the nut (15), lift off the lower shaft (3).
5. Place the point of the tool along the side of the seat seal (10) and pull it out of the groove. Take the quad ring (14) out of the groove.
6. Remove the stop screw (23).
7. Take the guide rod (7) out through the top of the actuator.
8. Remove the operating cam at the upper shaft.
9. Unscrew the safety nut (24). Hold the lock washer (25) with a SW30 key to keep it from turning. Remove the lock washer.
10. Lift off the actuator (17) with yoke (6).
11. Slide the shaft bearing (4) over the balancer of the upper valve shaft (2).
12. Remove the shaft seal (11) (also 11.1 for 4" and 6" Sh5 only) and guide rings (12) from the grooves.
13. Removing the seals in the upper shaft
Place the point of the tool along the side of the seat seal (10) and middle seal (9) and pull them out of the groove. Take the quad ring (14) out of the groove.
14. Removing the lower shaft seal from the housing
Place the point of the disassembly tool along the side of the shaft seal (11) and pull it out through the top of the housing (1).
15. For 2" and 3" Sh5 sizes only: Place the metal point of a hook in the gap of the guide ring (12). Slightly turn the hook to lift the guide ring (12) out of the groove and housing (1).

11. Service Instructions

fig. 11.3.



11.3. Installation of product-wetted seals and assembly of the valve

Note! Make sure that all seals and bearing surfaces in the product area are slightly greased before their installation.

1. (2" and 3" Sh5 only) Install the guide ring (12) in the lower flange of the housing (1) using a double joint forceps or long nose pliers.



2. Install the lower shaft seal (11) in the lower housing flange. For the small size, we recommend using the 2 insertion tools, see chapter 13.

3. Install the quad ring (14) in the upper shaft (2) and lower shaft (3).

4. Insert the middle seal (9) in the upper shaft (3) using the assembly tool (see chapter 13.2).

5. Insert the 2 seat seals (10) in the grooves of the upper shaft (2) and lower shaft (3).

6. Install the shaft seal (11) and the two guide rings (12) in the shaft bearing (4).

7. Slide the shaft bearing (4) over the balancer of the upper shaft (2).

8. Slide the upper shaft (2) and the shaft bearing (4) through the yoke (6) and actuator (17).

9. Align the key and fasten the upper valve shaft (2) with the lock washer (25) and safety nut (24). Hold the lock washer (25) with a SW30 wrench to keep the lock washer from turning. Tightening torque: 29 ft-lb (40 Nm)



Caution! Overtightening the safety nut could result in thread damage on the upper shaft.

10. Screw the operating cam on the upper shaft.

11. Ensure the key is secure on the guide rod. Slide in the guide rod (7) from the top through the actuator (17) until it stops.

12. Screw in the stop screw (23) until it stops. Tightening torque: 7 ft-lb (10 Nm). The stop screw must be flush with the top of the collar (D4) or piston (D4 SL).

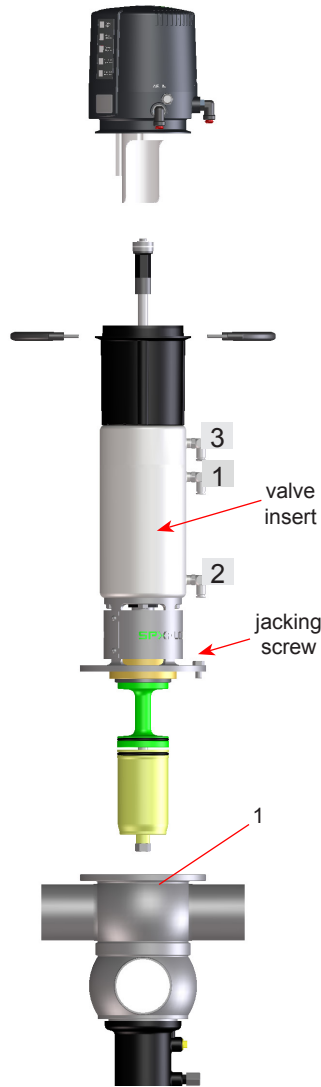
13. Slide the lower valve shaft (3) on the guide rod (7). Align the lower shaft to the key on the guide rod and fasten it with the safety nut (15). Tightening torque: 29 ft-lb (40 Nm)

14. Fasten the adapter on the actuator with the 4 screws and ensure that the air fittings on the CU align properly with the air fittings on the D4 valve.

15. Screw the operating cam on the guide rod (7).

11. Service Instructions

fig. 11.4.



11.4. Installation of the valve insert

1. Carefully place the valve insert in the valve housing (1) until the screw stops.
2. Remove the jacking screw and carefully press the valve insert into the housing (1).
3. Screw in the hex. screws (27) and fasten them crosswise.
4. Place the control unit on the adapter. Make sure that the control unit is centered on the adapter.
5. Place the clamp ring and fasten it with the screws.
6. Assemble the compressed air lines.

D4 Valve:	Air connection 1:	to open valve
D4 SL Valve:	Air connection 1:	to open valve
	Air connection 2:	to lift upper shaft
	Air connection 3:	to lift lower shaft
7. Check the valve position indicators:

Closed valve position feedback – sensor 1 controlled

To adjust Hall sensor 1, ensure that the valve is in the closed position, the solenoid / manual override are not activated. Turn adjustment screw 1 into the required position. The LED "Valve Closed" lights up.

Open valve position feedback – sensor 2 controlled

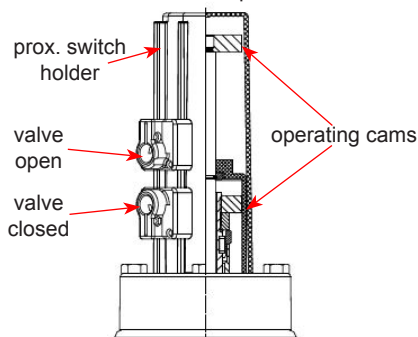
To adjust Hall sensor 2, first activate the solenoid valve 1, either manually or electrically. Then turn adjustment screw 2, to adjust the open valve position and the corresponding feedback. When it reaches the required position, the LED "Valve Open" lights up.

Observe the switching hysteresis of the Hall effect sensors! Therefore, adjust the switch point of the sensors with overlap in order to permit small variations. We recommend additional 2 x 360° turns of the adjustment screw.

8. Design with proximity switch holder: Set the proximity switch holder in position and fasten it with the screws. Check to see if the "Valve Closed" or "Valve Open" message appears. Re-position the proximity switch if required.

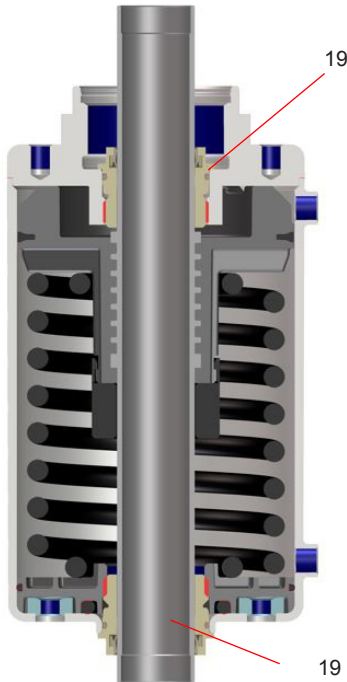
fig. 11.4.1.

D4 / D4 SL with valve position indication



12. Maintenance of Actuator

fig. 12.: D4 Valve actuator



The item numbers refer to the spare parts drawings in section 15, starting on page 27.

12.1. Removing the actuator screws

1. Remove the yoke cover and yoke.
2. Unscrew the two actuator screws (19) with a SW36 socket wrench.
3. Remove the V-seals (20) and O-rings (18).

12.2. Installing the seals and assembling the actuator

1. Install the slightly greased O-rings (18) and V-seals (20) in the actuator screws (19). Check the correct installation position of the V-seal (20).

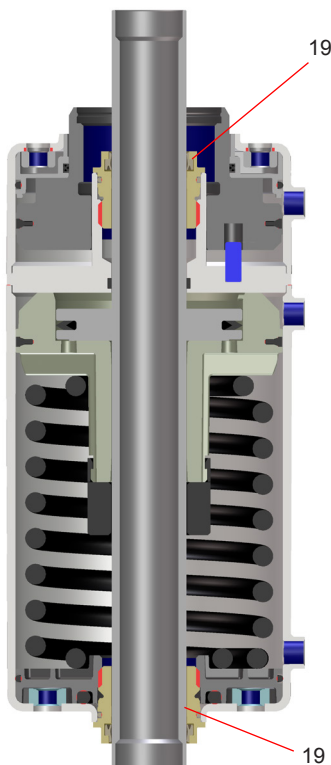
Recommendation for actuator:

Pneumatic grease

25 ml /tube - Part no. H164725

2. Place the assembly tool (H338580) on the end of the piston rod. Screw the actuator screws (19) with a socket wrench SW36 over the piston rod at both sides of the actuator and fasten them.
3. Re-install the yoke and yoke cover.

fig. 12.: D4 SL Valve actuator



Actuator screw

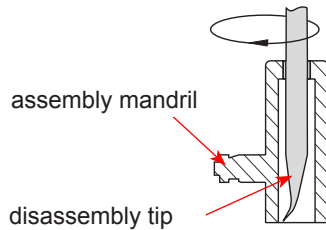


Assembly tool
for actuator screw (H338580)



13. Assembly Instructions and Tools for Seals

fig 13a.: Assembly/disassembly tool (H171889)

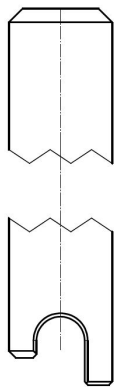


13.1. Lower shaft seal

For the simple assembly of the lower shaft seal (11), the assembly/disassembly tool (part no. H171889) and the assembly stick (part no. H338450) can be used. These tools are especially recommended for valves of small sizes (2"-3" Sh5) as access to the lower shaft seal from the top is difficult as a result of the narrow seat.

See fig 13a. To use the disassembly tip, hold the assembly mandril and turn the handle clockwise to loosen the tip. Continue turning to disengage the tip from the mandril. When finished using the disassembly tip, slide the mandril down over the tip. Hold the mandril in place, then turn the handle counter-clockwise to re-thread the mandril onto the tip and lock it in place.

fig. 13b.: Assembly stick (H338450)



Caution! To avoid injuries, make sure the disassembly tip is covered by the assembly mandril when it is not being used.

1. Slightly grease the shaft seal (11).
2. See fig. 13c. Use the assembly mandril (assembly/disassembly tool H171889) to insert the shaft seal (14) from the top of the valve, making sure to keep the narrow side of the seal facing up. Push the shaft seal down through the intermediate ring of the housing, into the lower flange housing ball.
3. Position the shaft seal (11) using the groove of the assembly mandril (H171889).
4. Press the shaft seal (11) into one spot in the groove of the housing flange and hold the seal in place with the assembly mandril.
5. See fig. 13d. While holding the seal in place with the assembly mandril, position the groove of the assembly stick (H338450) on the seal lip. Slightly turn the stick and position the shaft seal (11) in the groove. Work the stick the rest of the way around the seal lip until the shaft seal is completely inserted in the groove.

fig. 13c

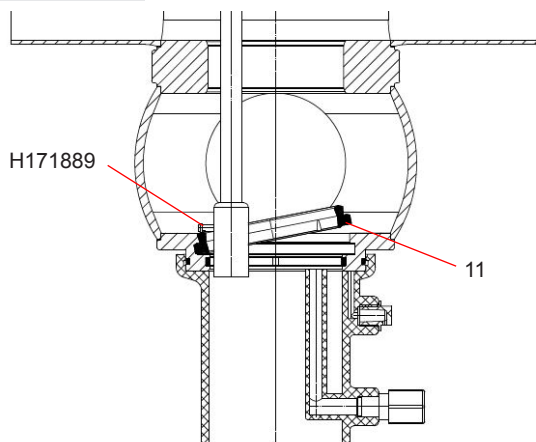
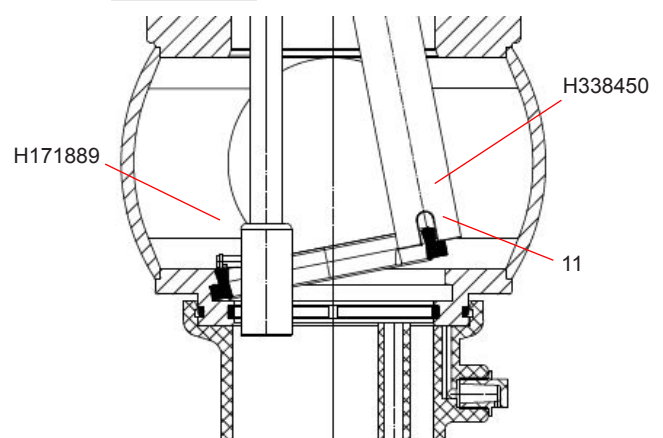


fig. 13d



13. Assembly Instructions and Tools for Seals

13.2. Middle seal

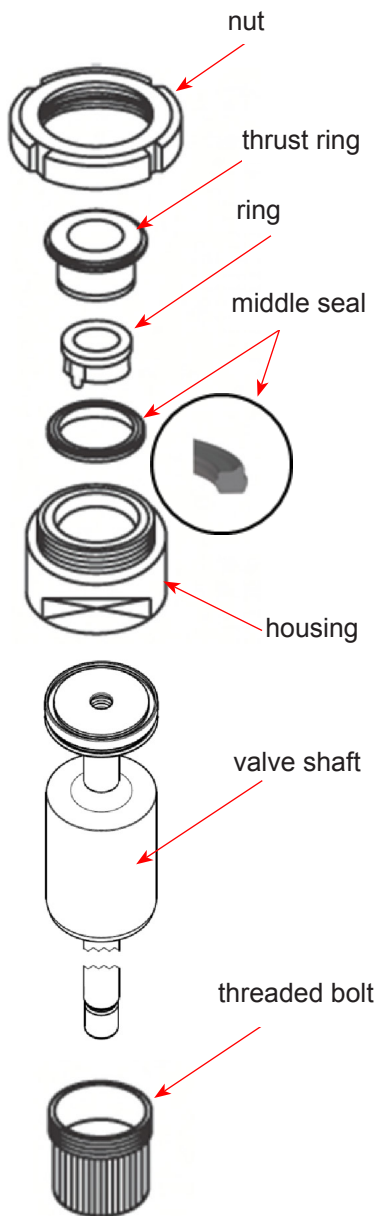
The assembly tool consists of:

- nut
- thrust ring
- ring with venting tip
- housing
- threaded bolt

Installation of the middle seal in the valve shaft

1. Insert the valve shaft into the housing making sure that the seal groove is in the housing.
2. Use the threaded bolt to clamp the shaft into the housing. Clamp the housing into a vice.
3. Slightly grease the middle seal with assembly grease. Then install the seal on the ring.
4. Insert the ring with the installed seat seal into the housing. Make sure that the venting tip is positioned in the seal groove.
5. Insert the thrust ring around the ring in the housing. Screw on the nut and tighten it with a hook spanner until it stops.
6. Release the nut. Take the ring and thrust ring off the housing.
7. Take the housing out of the vice. Take off the threaded bolt. Detach the valve shaft from the housing.

Make sure the middle seal fits evenly.

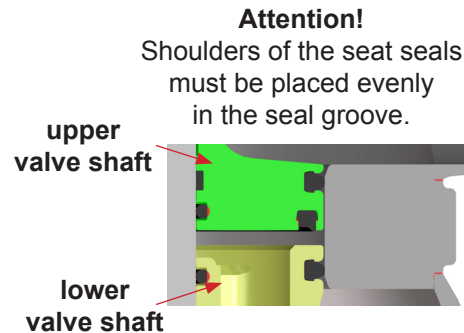
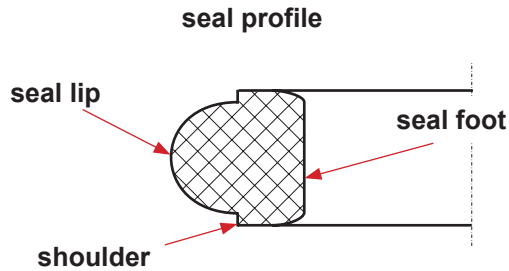


Assembly tool for middle seal

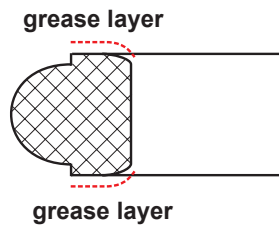
IPS	Designation	Part no.
2" Sh5	DA3 - 62	H207310
3" Sh5	DA3 - 92	H207311
4" Sh5	D4 - 114	H340758
6" Sh5	D4 - 138	H340823

13. Assembly Instructions and Tools for Seals

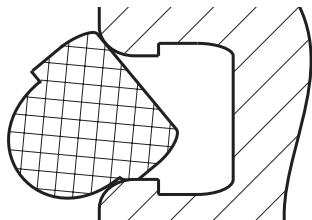
13.3. Seat seals



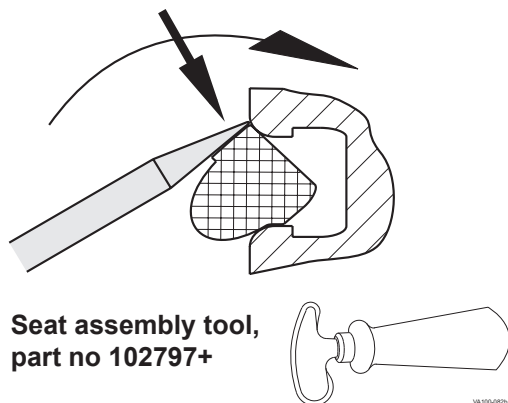
1. Provide the seal shoulder with a thin layer of grease.



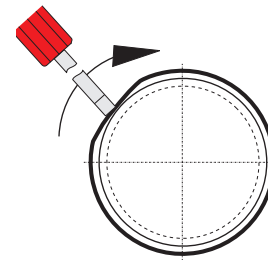
2. Insert the seat seal into the valve shaft; see to an even inclined position of the seal.



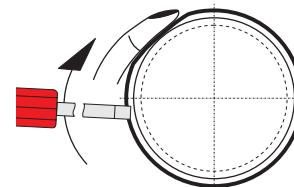
3. Press the seal circumferentially into the groove using the seat assembly tool (part no. 102797+) or a screwdriver with round edges. Place the assembly tool at the upper seal shoulder. To get an even fit of the seal, proceed step by step as follows:



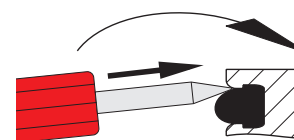
- 3.1. Press a short piece part of the seal into the groove.



- 3.2. With your finger, hold the section of the seal already pressed in from step 3.1. (This helps prevent loops.) Use the seat assembly tool to press a short section of the seal in the direction of your finger. Continue around the circumference to install the seal into the groove.



4. Press the seat assembly tool between the seal shoulder and the groove edge (both sides). Proceed around the circumference. Then proceed around the circumference of the lower seal shoulder. This is to vent the seal groove and to lock the seal shoulder.



14. Trouble Shooting

Failure	Valve position		Required seal replacement
	closed	open	
Leakage at upper housing flange or yoke	x	x	upper shaft seal (11)
Leakage from the inside of the lower valve shaft	x		seat seals (10)
Leakage from the inside of the lower valve shaft		x	middle seal (9)
Leakage at the outside of the lower valve shaft (remove spray connection for this purpose)	x	x	lower shaft seal (11)

The position numbers refer to the spare parts drawings.

15. Spare Parts Lists

The reference numbers of the spare parts for the different valve designs and sizes are included in the attached spare parts drawings with corresponding lists on the following pages.

Please consider that the spare parts lists for the **D4 Sh5 valve** and the **D4 SL Sh5 valve** are different. Please find **four separate lists** on the following pages:

For D4 Sh5 - 2"-3", drawing RN 500.047.02, see page 27 and parts lists on the subsequent pages.

For D4 Sh5 - 4"-6", drawing RN 501.047.04, see page 30 and parts lists on the subsequent pages.

For D4 SL Sh5- 2"-3", drawing RN 501.047.02, see page 33 and parts lists on the subsequent pages.

For D4 SL Sh5- 4"-6", drawing RN 501.047.04, see page 36 and parts lists on the subsequent pages.

Note!

Accompanying products: Column 4 "to be added to spare part order" indicates the position numbers of the parts which have to be ordered together with the part which you intend to replace.

Please indicate the following data to place an order for spare parts:

- number of required parts
- designation.

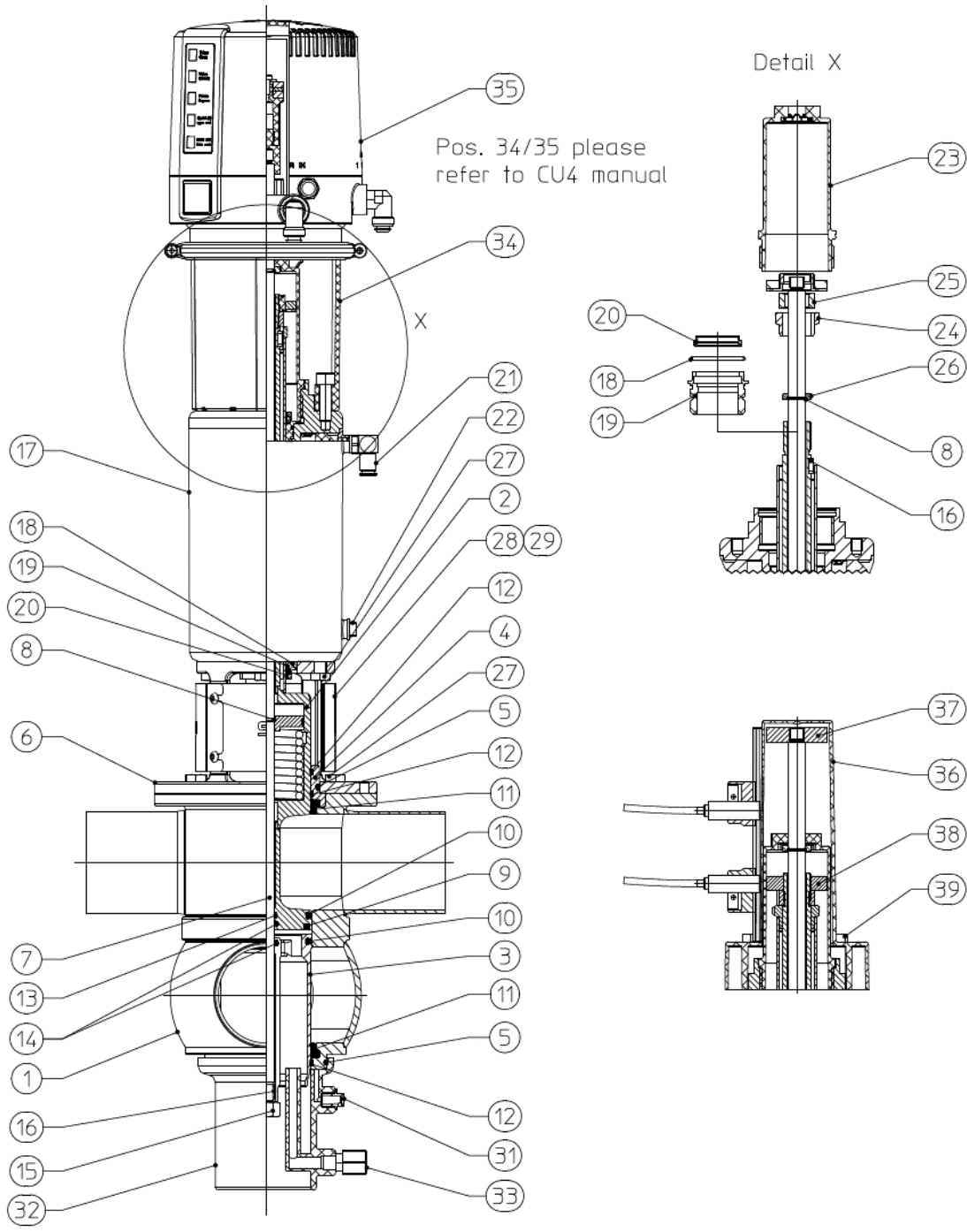
Data are subject to change.

Waukesha Cherry-Burrell® brand D4 / D4 SL Schedule 5 Valves

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Spare Parts list	Date:	11.10.19	SPX FLOW
	Name:	Sze-Si.	
	Reviewed		
Double seat mix proof valve D4 - 2" Sh5 - 3" Sh5	Date:		Page 1 of 3
	Name:		RN 500.047.02
	Reviewed		



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Spare Parts list					Date:	11.10.19		SPX FLOW
					Name:	Sze-Si.		
					Reviewed:			
Double seat mix proof valve D4 - 2" Sh5 - 3" Sh5					Date:			Page 2 of 3
					Name:			RN 500.047.02
					Reviewed:			
pos. item	Qty	Description	to be added in spare parts order (pos.)	Material	2" Sh5 Part no.	3" Sh5 Part no.		
1	1	Housing D41 / 1-6		1.4404	H339890	H339914		
	1	Housing D41 / 1-7		1.4404	H339891	H339915		
	1	Housing D41 / 1-8		1.4404	H339892	H339916		
	1	Housing D42		1.4404	H339893	H339917		
	1	Housing D43		1.4404	H339894	H339918		
	1	Housing D44		1.4404	H339895	H339919		
2	1	Upper valve shaft	13, 16, 25	1.4404	H341260	H341261		
3	1	Lower valve shaft		1.4404	H339907	H339930		
4	1	Shaft bearing		1.4404	H334381	H335713		
5	2	O-ring		EPDM	H77039	H77061		
6	1	Yoke		1.4301	H334383	H335994		
7	1	Tie rod	8, 15, 16	1.4404	H341289	H341290		
8	2	Retainer ring		1.4310	H14883			
9	1	Middle seal		EPDM	H327602	H327985		
	1	Middle seal		HNBR	H332652	H332649		
	1	Middle seal		FPM	H332653	H332648		
10	2	Seat seal		EPDM	H168192	H168153		
	2	Seat seal		HNBR	H171561	H171565		
	2	Seat seal		FPM	H171559	H171563		
11	2	Shaft seal		EPDM	H337476	H337668		
	2	Shaft seal		HNBR	H337478	H337670		
	2	Shaft seal		FPM	H337477	H337669		
12	3	Guide ring		Iglidur A500	H334863	H335702		
13	1	Guide band		Acoflon	H334865			
14	1	Quad ring 12,37x 2,62		EPDM	H311646			
15	2	Hex. Screw M10x1		A2	H118903			
16	2	Square key DIN6885 - A - 3x3x10		A2	H335171			
17	1	Actuator incl. 2 x pos. 18,19,20		1.4301	H334365	H335686		
18	2	O-ring 30 x 2,5		NBR	H337897			
19	2	Actuator screw		Iglidur J350	H334376			
20	2	V-seal		NBR	H334379			
21	1	W-union G1/8" 1/4" OD		hard nickel-plated	H312732			
22	1	Venting plug G-1/8"		PE-Hard	H16218			
23	1	Stop screw		Grivory	H334382			
24	1	Lock washer D4		1.4301	H335172			
25	1	Safety nut D3		1.4301	H147640			
26	1	Thrust ring		1.4057	H123151			
27	8	Hex. screw M8 x 16		A2	H78772			
28	1	Yoke cover D4	29	1.4301	H341311	H341312		
29	4	Savetix head screw M4 x 8 washer M4 as set		1.4301	H336707			

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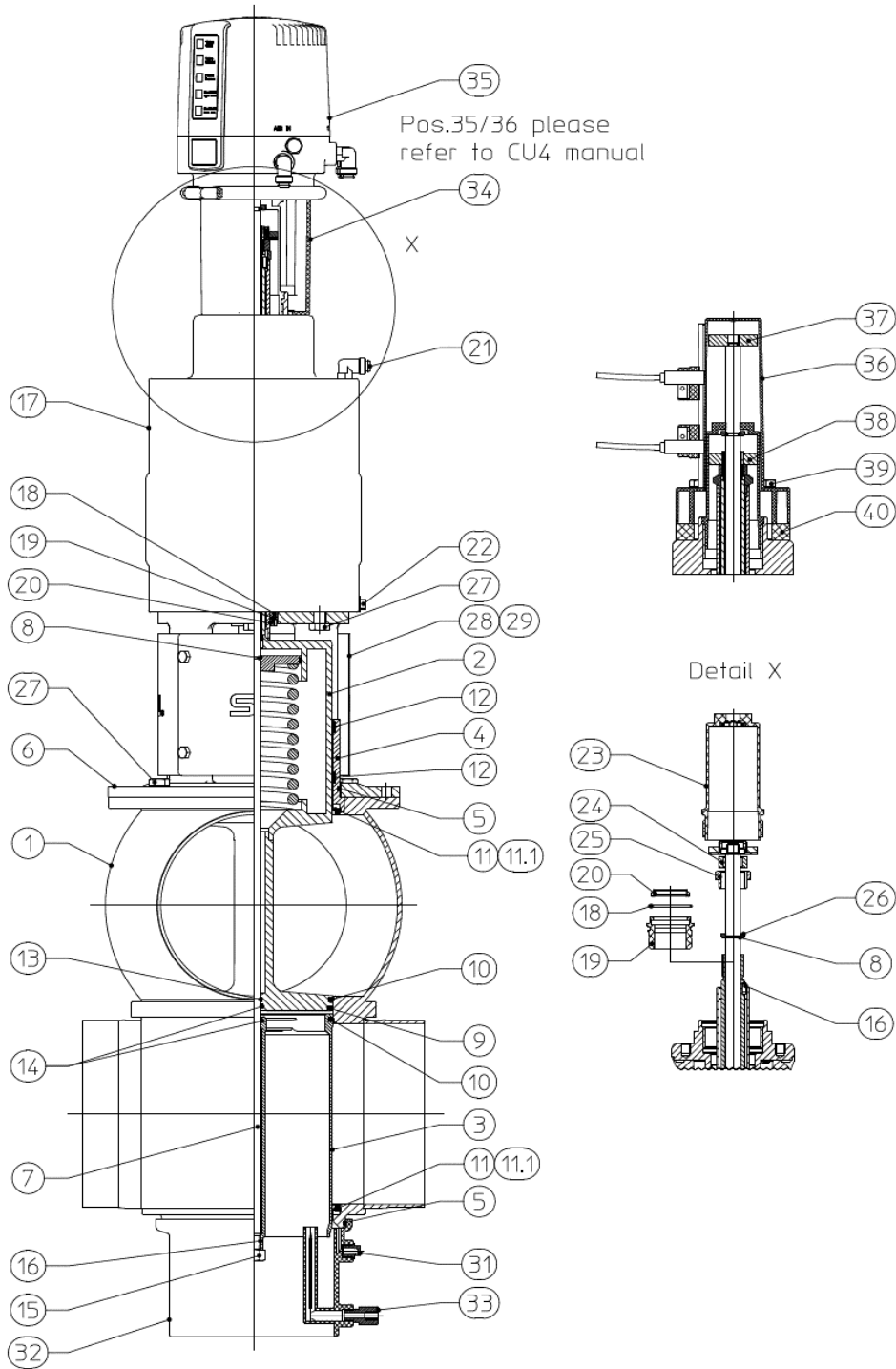
Spare Parts list					Date:	11.10.19		SPX FLOW
Double seat mix proof valve D4 - 2" Sh5 - 3" Sh5					Name:	Sze-Si.		
					Reviewed:			
					Date:			Page 3 of 3
					Name:			RN 500.047.02
					Reviewed:			
pos. item	Qty	Description	to be added in spare parts order (pos.)	Material	2" Sh5 Part no.	3" Sh5 Part no.		
31	1	Venting plug G-1/8"		PE-Hard	H16507			
32	1	Spray connection DE3		PP	H168321	H168322		
33	1	G-union 8x1-G1/8"		PVDF-black	H16388			
34	1	CU4 D4 adapter cmpl.		PA6.6 GF30 black	H337098			
	1	CU4plus D4 adapter cmpl.		PA6.6 GF30 black	H336441			
35	1	CU41 D4 DC 1/4" OD		PA6.6 GF30 black	H336959			
	1	CU41 D4 AS-i Ext. 1/4" OD		PA6.6 GF30 black	H336961			
	1	CU41 D4 AS-i Std. 1/4" OD		PA6.6 GF30 black	H338151			
	1	CU41 D4 M12 AS-i Ext. 1/4"OD		PA6.6 GF30 black	H338900			
	1	CU41 D4 M12 AS-i Std. 1/4" OD		PA6.6 GF30 black	H338902			
	1	CU41plus D4 AS-i Ext. 1/4"OD		PA6.6 GF30 black	H338823			
	1	CU41plus D4 M12 AS-i Ext. 1/4" OD		PA6.6 GF30 black	H338868			
36	1	Prox. switch holder D4 cmpl.		PA6.6 GF30 black	H336751			
37	1	Operating cam D4 top		1.4523 / 444FR	H334387			
38	1	Operating cam D4 bottom		1.4523 / 444FR	H334386			
39	4	Hex. screw M8x40		A2-70	H336675			
Pos. 9, 10, 11, 12, 13, 15 available as complete seal kits only								
	1	Seal kit		EPDM	H337884	H337887		
	1	Seal kit		FPM	H337886	H337889		
	1	Seal kit		HNBR	H337885	H337888		

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Spare Parts list	Date:	10.06.20	SPX FLOW
	Name:	Sze-Si.	
	Reviewed		
Double seat mix proof valve D4 - 4" Sh5 - 6" Sh5	Date:		Page 1 of 3
	Name:		RN 500.047.04
	Reviewed		



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Spare Parts list Double seat mix proof valve D4 - 4" Sh5 - 6" Sh5		Date:	10.06.20	SPX FLOW
		Name:	Sze-Si.	
		Reviewed:		
		Date:		Page 2 of 3
		Name:		RN 500.047.04
		Reviewed:		

pos. item	Qty	Description	to be added in spare parts order (pos.)	Material	4" Sh5	6" Sh5	
					Part no.	Part no.	
1	1	Housing D41 / 1-6		1.4404	H340128	H340149	
	1	Housing D41 / 1-7		1.4404	H340130	H340150	
	1	Housing D41 / 1-8		1.4404	H340131	H340151	
	1	Housing D42		1.4404	H340127	H340148	
	1	Housing D43		1.4404	H340126	H340147	
	1	Housing D44		1.4404	H340125	H340146	
2	1	Upper valve shaft	13, 16, 25	1.4404	H341273	H341274	
3	1	Lower valve shaft		1.4404	H340301	H340334	
4	1	Shaft bearing		1.4404	H340243	H340322	
5	2	O-ring		EPDM	H77074	H77081	
6	1	Yoke		1.4301	H340244	H340323	
7	1	Guide rod	8, 15, 16	1.4404	H341302	H341303	
8	2	Retainer ring		1.4310	H14883		
9	1	Middle seal		EPDM	H340247	H340325	
	1	Middle seal		HNBR	H340248	H340326	
	1	Middle seal		FPM	H340294	H340327	
10	2	Seat seal		EPDM	H173940	H173739	
	2	Seat seal		HNBR	H173939	H173738	
	2	Seat seal		FPM	H340246	H338070	
11	2	Shaft seal		EPDM	H77611	H77628	
	2	Shaft seal		HNBR	H170178	H170177	
	2	Shaft seal		FPM	H77610	H77627	
11.1	2	PTFE Shaft seal		PTFE	H340295	H340328	
12	2	Guide ring		Iglidur A500	H340198	H340182	
13	1	Guide band		Acoflon	H334865		
14	2	Quad ring 12.37x 2.62		EPDM	H311646		
15	2	Hex. Screw M10x1		A2	H118903		
16	2	Square key DIN6885 - A - 3x3x10		A2	H335171		
17	1	Actuator	18, 19, 20	1.4301	H340639	H340636	
18	2	O-ring 30 x 2.5		NBR	H337897		
19	2	Actuator screw		Iglidur J350	H334376		
20	2	V-seal		NBR	H334379		
21	1	W-union G1/8" 1/4" OD		hard nickel-plated	H312732		
22	1	Venting plug G-1/8"		PE-Hard	H16218		
23	1	Stop screw		Grivory	H334382		
24	1	Safety nut D3		1.4301	H147640		
25	1	Lock washer D4		1.4301	H335172		
26	1	Thrust ring		1.4057	H123151		
27	8	Hex. screw M10 x 20		A2	H340472		

Waukesha Cherry-Burrell® brand D4 / D4 SL Schedule 5 Valves

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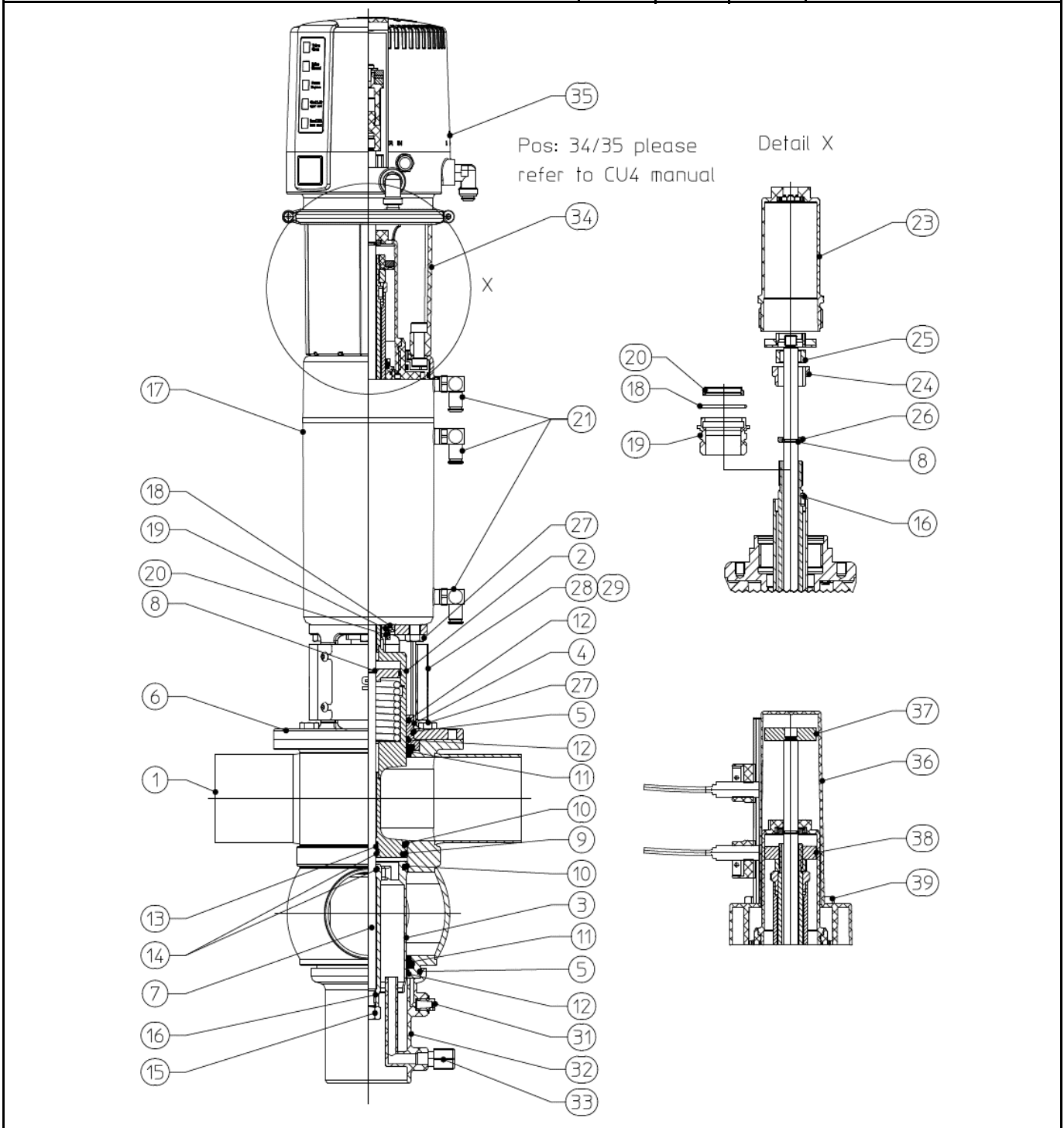
Spare Parts list					Date:	10.06.20	SPX FLOW
Double seat mix proof valve D4 - 4" Sh5 - 6" Sh5					Name:	Sze-Si.	
					Reviewed:		
					Date:		Page 3 of 3
					Name:		RN 500.047.04
					Reviewed:		
pos. item	Qty	Description	to be added in spare parts order (pos.)	Material	4" Sh5 Part no.	6" Sh5 Part no.	
28	1	Yoke cover D4	29	1.4301	H341313	H341314	
29	4	Savetix head screw M6 x 8 washer M6 as set		1.4301	H340632		
31	1	Venting plug G-1/8"		PE-Hard	H16507		
32	1	Spray connection DE3		PP	H178450	H200320	
33	1	G-union 10/8-G1/4" with supp. sleeve cpl		1.4571	H329696		
34	1	CU4 D4 adapter cpl.		PA6.6 GF30 black	H337098		
	1	CU4plus D4 V1 adapter cpl.		PA6.6 GF30 black	H336441		
35	1	CU41 D4 DC 1/4" OD		PA6.6 GF30 black	H336959		
	1	CU41 D4 M12 DC 1/4" OD		PA6.6 GF30 black	H341351		
	1	CU41 D4 AS-i Ext. 1/4" OD		PA6.6 GF30 black	H336961		
	1	CU41 D4 M12 AS-i Ext. 1/4" OD		PA6.6 GF30 black	H338900		
	1	CU41plus D4 V1 AS-i Ext. 1/4" OD		PA6.6 GF30 black	H338823		
	1	CU41plus D4 V1 M12 AS-i Ext. 1/4" OD		PA6.6 GF30 black	H338868		
36	1	Prox. switch holder D4 cpl.		PA6.6 GF30 black	H336751		
37	1	Operating cam D4 top		1.4523 / 444FR	H334387		
38	1	Operating cam D4 bottom		1.4523 / 444FR	H334386		
39	4	Hex. Screw		A2-70	H336675	H340751	
40	1	Spacer		PA6.6 GF30 black	-	H340179	
Pos. 9, 10, 11, 12, 13, 15 available as complete seal kits only							
	1	Seal kit		EPDM	H340575	H340578	
	1	Seal kit		FPM	H340577	H340580	
	1	Seal kit		HNBR	H340576	H340579	

Waukesha Cherry-Burrell® brand D4 / D4 SL Schedule 5 Valves

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Spare Parts list	Date:	11.10.19	SPX FLOW
	Name:	Sze-Si	
	Reviewed		
Double seat mix proof valve D4 SL - 2" Sh5 - 3" Sh5	Date:		Page 1 of 3
	Name:		RN 501.047.02
	Reviewed		



Waukesha Cherry-Burrell® brand D4 / D4 SL Schedule 5 Valves

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Spare Parts list					Date:	11.10.19		SPX FLOW
					Name:	Sze-Si.		
					Reviewed:			
Double seat mix proof valve D4 SL - 2" Sh5 - 3" Sh5					Date:			Page 2 of 3
					Name:			RN 501.047.02
					Reviewed:			
pos. item	Qty	Description	to be added in spare parts order (pos.)	Material	2" Sh5 Part no.	3" Sh5 Part no.		
1	1	Housing D41 / 1-6		1.4404	H339890	H339914		
	1	Housing D41 / 1-7		1.4404	H339891	H339915		
	1	Housing D41 / 1-8		1.4404	H339892	H339916		
	1	Housing D42		1.4404	H339893	H339917		
	1	Housing D43		1.4404	H339894	H339918		
	1	Housing D44		1.4404	H339895	H339919		
2	1	Upper valve shaft	13, 16, 25	1.4404	H341271	H341272		
3	1	Lower valve shaft		1.4404	H339907	H339930		
4	1	Shaft bearing		1.4404	H334381	H335713		
5	2	O-ring		EPDM	H77039	H77061		
6	1	Yoke		1.4301	H334383	H335994		
7	1	Tie rod	8, 15, 16	1.4404	H341300	H341301		
8	2	Retainer ring		1.4310	H14883			
9	1	Middle seal		EPDM	H327602	H327985		
	1	Middle seal		HNBR	H332652	H332649		
	1	Middle seal		FPM	H332653	H332648		
10	2	Seat seal		EPDM	H168192	H168153		
	2	Seat seal		HNBR	H171561	H171565		
	2	Seat seal		FPM	H171559	H171563		
11	2	Shaft seal		EPDM	H337476	H337668		
	2	Shaft seal		HNBR	H337478	H337670		
	2	Shaft seal		FPM	H337477	H337669		
12	3	Guide ring		Iglidur A500	H334863	H335702		
13	1	Guide band		Acoflon	H334865			
14	1	Quad ring 12,37x 2,62		EPDM	H311646			
15	2	Hex. Screw M10x1		A2	H118903			
16	2	Square key DIN6885 - A - 3x3x10		A2	H335171			
17	1	Actuator incl. 2 x pos. 18,19,20		1.4301	H335468	H335862		
18	2	O-ring 30 x 2,5		NBR	H337897			
19	2	Actuator screw		Iglidur J350	H334376			
20	2	V-seal		NBR	H334379			
21	3	W-union G1/8" 1/4" OD		hard nickel-plated	H312732			
23	1	Stop screw		Grivory	H334382			
24	1	Lock washer D4		1.4301	H335172			
25	1	Safety nut D3		1.4301	H147640			
26	1	Thrust ring		1.4057	H123151			
27	8	Hex. screw M8 x 16		A2	H78772			
28	1	Yoke cover D4	29	1.4301	H341311	H341312		
29	4	Savetix head screw M4 x 8 washer M4 as set		1.4301	H336707			

Waukesha Cherry-Burrell® brand D4 / D4 SL Schedule 5 Valves

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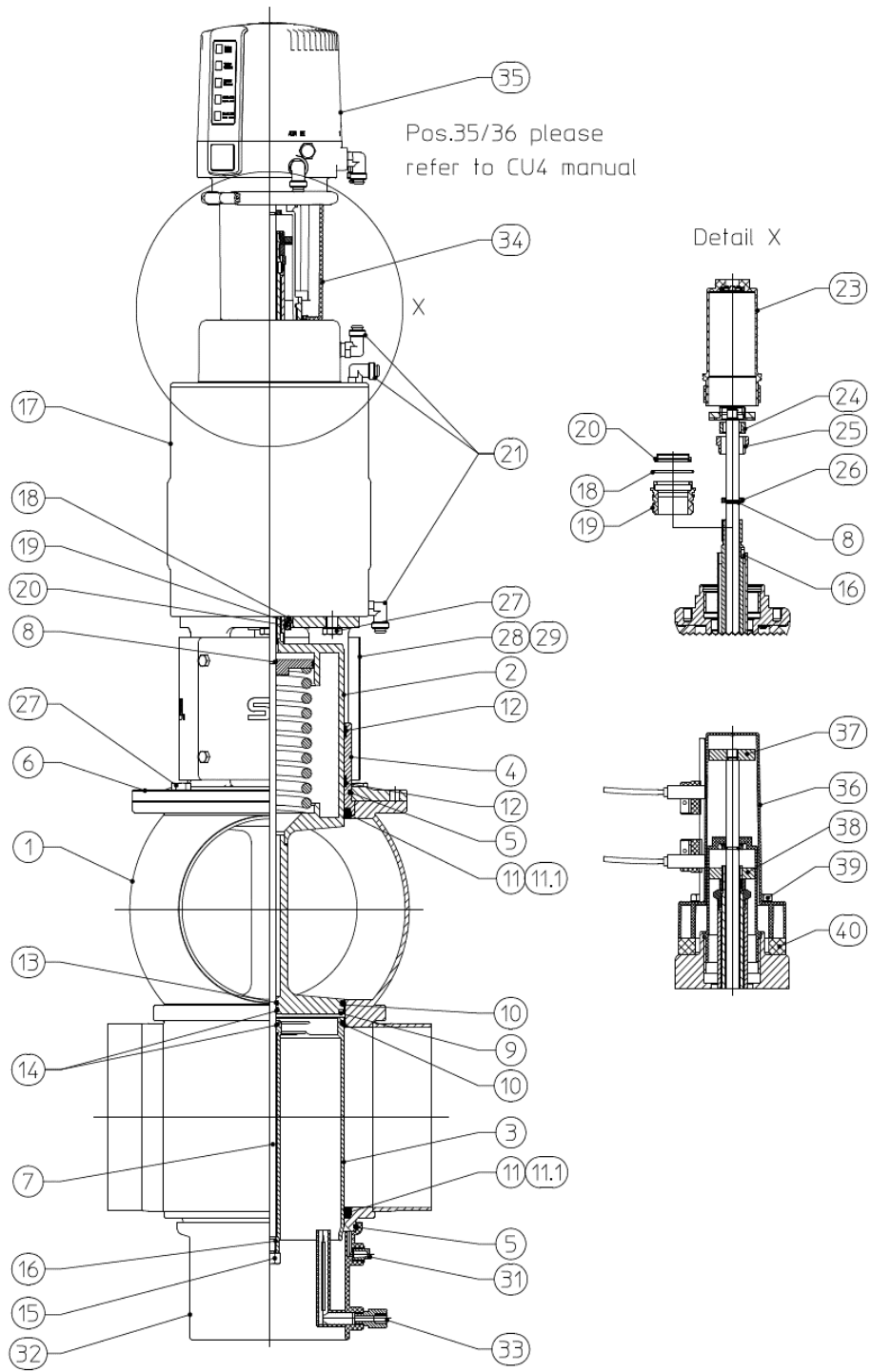
Spare Parts list					Date:	11.10.19	SPX FLOW
					Name:	Sze-Si.	
					Reviewed:		
Double seat mix proof valve D4 SL - 2" Sh5 - 3" Sh5					Date:		Page 3 of 3
					Name:		RN 501.047.02
					Reviewed:		
pos. item	Qty	Description	to be added in spare parts order (pos.)	Material	2" Sh5 Part no.	3" Sh5 Part no.	
31	1	Venting plug G-1/8"		PE-Hard	H16507		
32	1	Spray connection DE3		PP	H168321	H168322	
33	1	G-union 8x1-G1/8"		PVDF-black	H16388		
34	1	CU4 D4 adapter cmpl.		PA6.6 GF30 black	H337098		
	1	CU4plus D4 adapter cmpl.		PA6.6 GF30 black	H336441		
35	1	CU43 D4 DC 1/4" OD		PA6.6 GF30 black	H336960		
	1	CU43 D4 AS-i Ext. 1/4" OD		PA6.6 GF30 black	H336962		
	1	CU43 D4 AS-i Std. 1/4" OD		PA6.6 GF30 black	H338153		
	1	CU43 D4 M12 AS-i Ext. 1/4"OD		PA6.6 GF30 black	H338901		
	1	CU43 D4 M12 AS-i Std. 1/4" OD		PA6.6 GF30 black	H338903		
	1	CU43plus D4 AS-i Ext. 1/4"OD		PA6.6 GF30 black	H338824		
	1	CU43plus D4 M12 AS-i Ext. 1/4" OD		PA6.6 GF30 black	H338869		
36	1	Prox. switch holder D4 cmpl.		PA6.6 GF30 black	H336751		
37	1	Operating cam D4 top		1.4523 / 444FR	H334387		
38	1	Operating cam D4 bottom		1.4523 / 444FR	H334386		
39	4	Hex. screw M8x40		A2-70	H336675		
Pos. 9, 10, 11, 12, 13, 15 available as complete seal kits only							
	1	Seal kit		EPDM	H337884	H337887	
	1	Seal kit		FPM	H337886	H337889	
	1	Seal kit		HNBR	H337885	H337888	

Waukesha Cherry-Burrell® brand D4 / D4 SL Schedule 5 Valves

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Spare Parts list Double seat mix proof valve D4 SL - 4" Sh5 - 6" Sh5	Date:	10.06.20	SPX FLOW
	Name:	Sze-Si.	
	Reviewed:		
	Date:		Page 1 of 3
	Name:		RN 501.047.04
	Reviewed:		



Waukesha Cherry-Burrell® brand D4 / D4 SL Schedule 5 Valves

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Spare Parts list					Date:	10.06.20		SPX FLOW
					Name:	Sze-Si.		
					Reviewed:			
Double seat mix proof valve D4 SL - 4" Sh5 - 6" Sh5					Date:			Page 2 of 3
					Name:			RN 501.047.04
					Reviewed:			
pos. item	Qty	Description	to be added in spare parts order (pos.)	Material	4" Sh5 Part no.	6" Sh5 Part no.		
1	1	Housing D41 / 1-6		1.4404	H340128	H340149		
	1	Housing D41 / 1-7		1.4404	H340130	H340150		
	1	Housing D41 / 1-8		1.4404	H340131	H340151		
	1	Housing D42		1.4404	H340127	H340148		
	1	Housing D43		1.4404	H340126	H340147		
	1	Housing D44		1.4404	H340125	H340146		
2	1	Upper valve shaft	13, 16, 25	1.4404	H341273	H341274		
3	1	Lower valve shaft		1.4404	H340301	H340334		
4	1	Shaft bearing		1.4404	H340243	H340322		
5	2	O-ring		EPDM	H77074	H77081		
6	1	Yoke		1.4301	H340244	H340323		
7	1	Guide rod	8, 15, 16	1.4404	H341302	H341303		
8	2	Retainer ring		1.4310	H14883			
9	1	Middle seal		EPDM	H340247	H340325		
	1	Middle seal		HNBR	H340248	H340326		
	1	Middle seal		FPM	H340294	H340327		
10	2	Seat seal		EPDM	H173940	H173739		
	2	Seat seal		HNBR	H173939	H173738		
	2	Seat seal		FPM	H340246	H338070		
11	2	Shaft seal		EPDM	H77611	H77628		
	2	Shaft seal		HNBR	H170178	H170177		
	2	Shaft seal		FPM	H77610	H77627		
11.1	2	PTFE Shaft seal		PTFE	H340295	H340328		
12	2	Guide ring		Iglidur A500	H340198	H340182		
13	1	Guide band		Acoflon	H334865			
14	2	Quad ring 12.37x 2.62		EPDM	H311646			
15	2	Hex. Screw M10x1		A2	H118903			
16	2	Square key DIN6885 - A - 3x3x10		A2	H335171			
17	1	Actuator	18, 19, 20	1.4301	H340197	H340181		
18	2	O-ring 30 x 2.5		NBR	H337897			
19	2	Actuator screw		Iglidur J350	H334376			
20	2	V-seal		NBR	H334379			
21	3	W-union G1/8" 1/4" OD		hard nickel-plated	H312732			
23	1	Stop screw		Grivory	H334382			
24	1	Safety nut D3		1.4301	H147640			
25	1	Lock washer D4		1.4301	H335172			
26	1	Thrust ring		1.4057	H123151			
27	8	Hex. screw M10 x 20		A2	H340472			
28	1	Yoke cover D4	29	1.4301	H341313	H341314		

Waukesha Cherry-Burrell® brand D4 / D4 SL Schedule 5 Valves

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Spare Parts list					Date:	10.06.20	SPX FLOW	
Double seat mix proof valve D4 SL - 4" Sh5 - 6" Sh5					Name:	Sze-Si.		
					Reviewed:			
					Date:		Page 3 of 3	
					Name:		RN 501.047.04	
					Reviewed:			
pos. item	Qty	Description	to be added in spare parts order (pos.)	Material	4" Sh5	6" Sh5		
					Part no.	Part no.		
29	4	Savetix head screw M6 x 8 washer M6 as set		1.4301	H340632			
31	1	Venting plug G-1/8"		PE-Hard	H16507			
32	1	Spray connection DE3		PP	H178450	H200320		
33	1	G-union 10/8-G1/4" with supp. sleeve cpl		1.4571	H329696			
34	1	CU4 D4 adapter cpl.		PA6.6 GF30 black	H337098			
	1	CU4plus D4 V1 adapter cpl.		PA6.6 GF30 black	H336441			
35	1	CU43 D4 DC 1/4" OD		PA6.6 GF30 black	H336960			
	1	CU43 D4 M12 DC 1/4" OD		PA6.6 GF30 black	H341352			
	1	CU43 D4 AS-i Ext. 1/4" OD		PA6.6 GF30 black	H336962			
	1	CU43 D4 M12 AS-i Ext. 1/4" OD		PA6.6 GF30 black	H338901			
	1	CU43plus D4 V1 AS-i Ext. 1/4" OD		PA6.6 GF30 black	H338824			
	1	CU43plus D4 V1 M12 AS-i Ext. 1/4" OD		PA6.6 GF30 black	H338869			
36	1	Prox. switch holder D4 cpl.		PA6.6 GF30 black	H336751			
37	1	Operating cam D4 top		1.4523 / 444FR	H334387			
38	1	Operating cam D4 bottom		1.4523 / 444FR	H334386			
39	4	Hex. Screw		A2-70	H336675	H340751		
40	1	Spacer		PA6.6 GF30 black	-	H340179		
Pos. 9, 10, 11, 12, 13, 15 available as complete seal kits only								
	1	Seal kit		EPDM	H340575	H340578		
	1	Seal kit		FPM	H340577	H340580		
	1	Seal kit		HNBR	H340576	H340579		

D4 / D4 SL Schedule 5

DOUBLE SEAT MIX PROOF VALVES

SPXFLOW

SPX FLOW, Inc.

611 Sugar Creek Road

Delavan, WI 53115

P: (262) 728-1900 or (800) 252-5200

F: (262) 728-4904 or (800) 252-5012

E: wcb@spxflow.com

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