

Techcon TS5623 Series Diaphragm Valve

User Guide



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8. LIMITED WARRANTY

Manufacturer warrants this product to the original purchaser for a period of one (1) year from date of purchase to be free from defects in material and workmanship, but not against damages by misuse, negligence, accident, faulty installations and instructions. Manufacturer will repair or replace (at factory's option), free of charge, any component of the equipment thus found to be defective, on return of the component, "PREPAID" to the factory during the warranty period. In no event shall any liability or obligation of the Manufacturer arising from this warranty exceed the purchase price of the equipment. This warranty is only valid if the defective product is returned as a complete assembly without physical damage. The Manufacturer's liability, as stated herein, cannot be altered or enlarged except by a written statement signed by an officer of the company. In no event shall the Manufacturer be liable for consequential or incidental damages. A return authorization is required from OK International prior to shipping a defective unit to the factory.

Manufacturer reserves the right to make engineering product modifications without notice.

Send warranty returns to:

OK International
10800 Valley View Street
Cypress, CA 90630

1. SPECIFICATIONS

| | TS5623HT | TS5623HD | TS5622HU |
|------------------------|--------------------------------|--------------------------------|--------------------------------|
| Size | 3.9" X 1.06" (99mm X 27 mm) | 3.9" X 1.06" (99mm X 27 mm) | 3.9" X 1.06" (99mm X 27 mm) |
| Weight | 0.26lb (116g) | 0.26lb (116g) | 0.26lb (116g) |
| Fluid Inlet Port | 1/8"NPT female | 1/8"NPT female | 1/8"NPT female |
| Fluid Outlet Port | 1/4 - 28 UNF | 1/4 - 28 UNF | 1/4 - 28 UNF |
| Maximum Fluid Pressure | 70 psi (4.8 bars) | 70 psi (4.8 bars) | 70 psi (4.8 bars) |
| Wetted Parts | Teflon® | Acetal | UHMWPE |

2. UNPACKING AND INSPECTION

Carefully unpack the valve and examine the items contained in the carton.

These will include:

- Valve Assembly
- Sample Needle Kit and fluid line
- User Guide

Inspect the unit for any damaged which may have occurred in transit. If such damage has occurred, notify the carrier at once. Claim for damage must be made by the consignee to the carrier, and should be reported to the manufacturer.

Teflon is a registered trademark of E.I. DuPont.

3. THEORY OF OPERATION

The TS5623 Series hand operated Diaphragm Valves are normally closed by an internal compression spring (1). Pressing the hand lever (2) drives the piston assembly (3) back, opening the material path allow fluid flow from the material inlet (3) to the material outlet (4). The valve closes instantly when the hand lever is released.

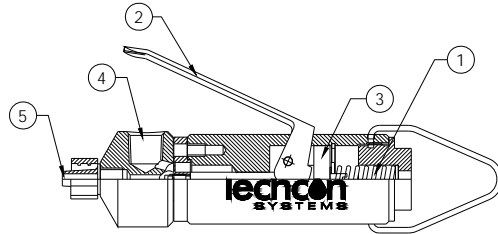


Figure 1.0

4. SETUP INSTRUCTIONS

Refer to figure 2.0

1. Connect the fluid reservoir feed tube (1) to the valve inlet port (2).
2. Connect appropriate dispensing tip or nozzle to the fluid outlet port (4).
3. Set the fluid reservoir pressure. Do not exceed 70 psi (4.8 bars)
4. Make sure all connections are tight
5. Place container under the valve outlet and press the hand lever down until the fluid flows steady.

The amount of fluid that flows through the valve is determined by:

- Fluid reservoir pressure
- Dispensing tip size

PLANT AIR MUST BE PROPERLY FILTERED AND DRY. IF NOT, SPECIFY A 5-MICRON FILTER REGULATOR.

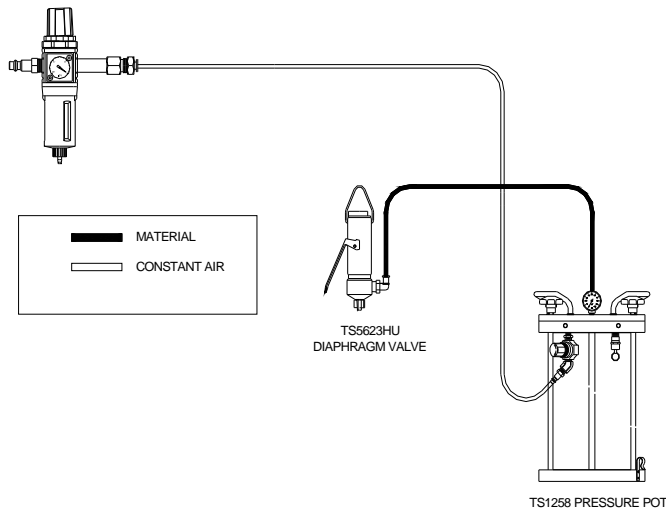


Figure 2.0

7.2 Standard Accessories:

| PART NUMBER | DESCRIPTION |
|--------------|--------------------|
| 9000-000-100 | Sample needles kit |
| TSD126-360BK | Black fluid line |

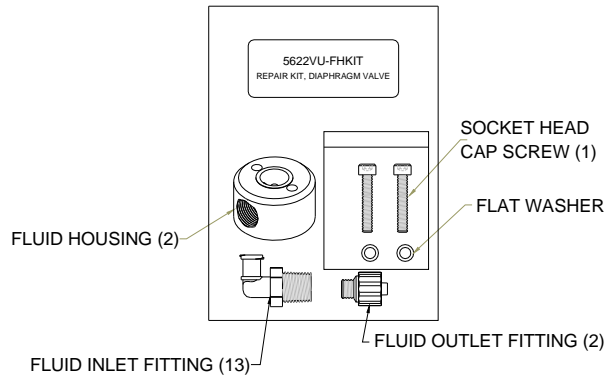
7.3 Optional Accessories

| TE SERIES NEEDLE | | | |
|------------------|-------|-----------|--------|
| PART NUMBER | Gauge | Hub Color | ID(in) |
| TE714050PK | 14 | Olive | .063 |
| TE715050PK | 15 | Amber | .054 |
| TE718050PK | 18 | Green | .033 |
| TE720050PK | 20 | Pink | .024 |
| TE721050PK | 21 | Purple | .020 |
| TE722050PK | 22 | Blue | .016 |
| TE723050PK | 23 | Orange | .013 |
| TE725050PK | 25 | Red | .010 |
| TE727050PK | 27 | Clear | .008 |
| TE730050PK | 30 | Lavender | .006 |
| TE732025PK | 32 | Yellow | .004 |

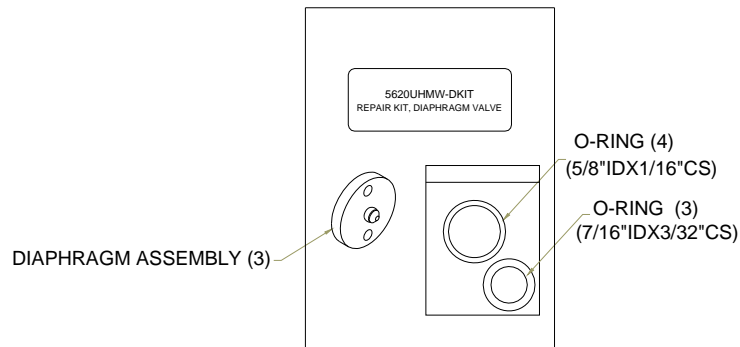
| TT SERIES NEEDLE | | | |
|------------------|-------|-----------|---------|
| PART NUMBER | Gauge | Hub Color | ID (in) |
| TT14-DHUVPK | 14 | Olive | .063 |
| TT16-DHUVPK | 16 | Grey | .047 |
| TT18-DHUVPK | 18 | Green | .033 |
| TT20-DHUVPK | 20 | Pink | .024 |
| TT22-DHUVPK | 22 | Blue | .016 |
| TT25-DHUVPK | 25 | Red | .010 |
| TT27-DHUVPK | 27 | Clear | .008 |

Fluid housing kit and Diaphragm kit are also available, see below information.

The fluid housing replacement kit includes:



The diaphragm replacement kit includes:



Please refer to the chart below for part numbers:

| VAVLE PART NUMBER | FLUID HOUSING KIT | DIAPHRAGM KIT |
|-------------------|-------------------|---------------|
| TS5623HU | 5620HU-FHKIT | 5620UHMW-DKIT |
| TS5623HT | 5620HT-FHKIT | 5620TFE-DKIT |
| TS5623HD | 5620HD-FHKIT | 5620UHMW-DKIT |

5. TROUBLESHOOTING

| PROBLEM | POSSIBLE CAUSE | CORRECTION |
|--|---|--------------------------------------|
| No fluid flow | Fluid pressure too low | Increase fluid pressure |
| | Dispense tip clogged | Replaced tip |
| | Fluid cured in valve chamber | Clean valve thoroughly |
| Inconsistent fluid flow | Fluid pressure fluctuating | Make sure fluid pressure is constant |
| | Air trapped in fluid housing | Purge valve |
| Fluid drools after the valve closes, eventually stopping | Air trapped in fluid housing | Purge valve |
| Steady drip | Worn diaphragm | Replace diaphragm |
| | Worn fluid housing | Replace fluid housing |
| | Fluid pressure exceeds 70 psi (4.8 bars) | Lower fluid pressure |
| | Valve re-assembled incorrectly after cleaning | Refer to Maintenance section |
| Fluid leaks between diaphragm and fluid housing | Mounting screws loose | Tighten screws |
| Fluid leaks out of bleed hole | Diaphragm ruptured | Replace diaphragm |

6. MAINTENANCE AND CLEANING

Normally, purging the valve with appropriate flush material or solvent after use is sufficient for cleaning. However some material may cause a buildup in the valve chamber, in this case periodic and thorough cleaning will be required.

CAUTION: Make sure the fluid pressure is released before disassemble the valve.

6.1 Cleaning (Refer to figure 3.0)

1. Release fluid pressure
2. Disconnect fluid line
3. Remove the two socket head cap screws (15) from the fluid housing (1)
4. Pull the fluid housing away from the cylinder assembly (3)
5. Clean Diaphragm (2) and fluid housing (1)

NOTE: Avoid using sharp probes for cleaning. Any nicks or scratches on the

6. Reinstall the fluid housing (1).
7. Align the fluid housing mounting holes with diaphragm and cylinder holes.
8. Reinsert the two socket head cap screws (15). Tighten in accordance with the Torque specifications Chart below.

6.2 To Change the Diaphragm

Tool required: Flat tip screwdriver, 7/64" hex wrench.

1. Remove the two socket head cap screws (15) from the fluid housing (1)
2. Pull the fluid housing away from the cylinder assembly (3)
3. Remove the old diaphragm (2) by unscrew it in the counterclockwise direction.
4. Install the new diaphragm by threading it in the clockwise direction. Make sure the internal thread on the diaphragm is not stripped or cross-threaded.
5. Hand tightened the diaphragm until it bottoms against shoulder on piston rod. At this point, do not over tighten or loosen the diaphragm to align the diaphragm and air cylinder holes.
6. The valve is designed so that the fluid housing can be rotated to allow for material input/output alignment. To align the holes of the diaphragm with the appropriate holes in the cylinder body, insert a small flat tip screwdriver through the hole in the end cap (6) and engage the piston rod slot. Turn the screwdriver clockwise to rotate the rod, piston and diaphragm assembly until the appropriate holes are lined up.
7. Reinstall the fluid housing (1).
8. Align the fluid housing mounting holes with diaphragm and cylinder holes.
9. Reinsert the two socket head cap screws (15). Tighten in accordance with the Torque specifications Chart below.

| Fluid Housing Material | Torque specifications |
|------------------------|-----------------------|
| Acetal (Delrin) | 14 in lb (1.58 N-m) |
| UHMW | 7 in lb (0.79 N-m) |
| Teflon® | 5 in lb (0.56 N-m) |

7. SPARE PARTS AND ACCESSORIES

7.1 Spare Parts:

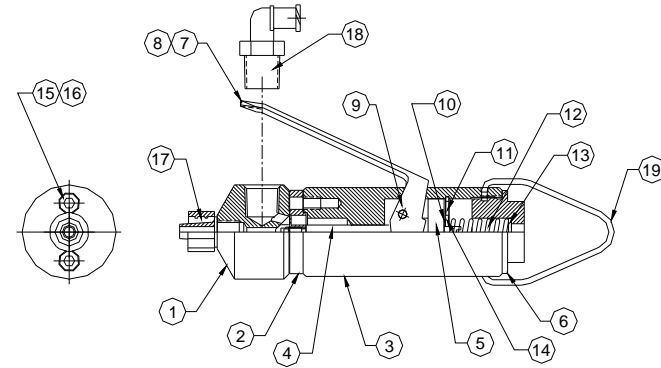


Figure 3.0

| | | | |
|------|---------------|---|-----|
| 21 | 9000-000-100 | NEEDLE KIT (NOT SHOWN) | 1 |
| 20 | TSD126-360 BK | FLUID LINE ASSY. (BLACK) (NOT SHOWN) | 1 |
| 19 | T1000235 | HANGER | 1 |
| 18 | TSD931-75 | FEMALE LUER ELBOW, BLACK P.P | 1 |
| 17 | TSD931-60 | MALE LUER ADAPTER | 1 |
| 16 | TSD1109-53 | FLAT WASHER, .147 I.D x .219 O.D x .030 THK., SS | 2 |
| 15 | TSD1103-336 | SHCS, 6-32 UNC x 3/4, SS | 2 |
| 14 | TSD1109-2 | FLAT WASHER #6, SS | 1 |
| 13 | TSD1109-65 | FLAT WASHER, .210 I.D x .312 O.D x .031 THK., NYLON | 1 |
| 12 | TSD1150-43 | SPRING, COMPRESSION, SS | 1 |
| 11 | TSD1120-11 | RETAINING RING, SS | 1 |
| 10 | TSD1120-332 | RETAINING E-RING, SS | 1 |
| 9 | TSD1136-117 | PIN, DOWEL, #3/32 x 7/8 LG., SS | 1 |
| 8 | T1000234 | SLEEVE, HANDLE | 1 |
| 7 | T1000233 | HANDLE | 1 |
| 6 | T1000230 | END CAP | 1 |
| 5 | T1000232 | PISTON | 1 |
| 4 | T1000231 | SHAFT | 1 |
| 3 | T1000229 | CYLINDER | 1 |
| 2 | 5620-000-002 | DIAPHRAGM/SPRING ASSY. | 1 |
| 1 | 5622-000-001 | FLUID HOUSING | 1 |
| ITEM | PART NO. | DESCRIPTION | QTY |