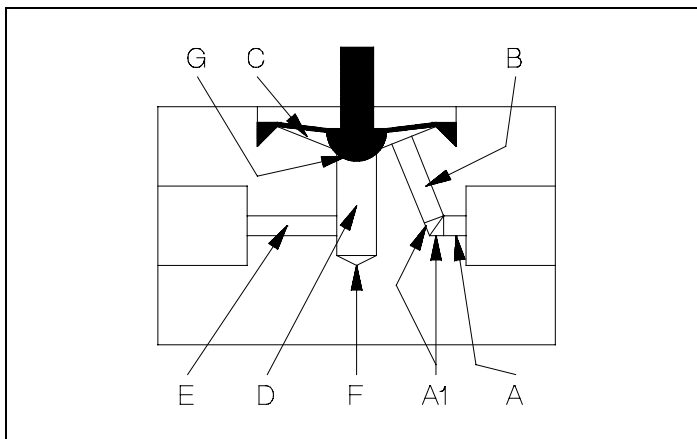


Internal volumes for 2-Way N.C. & N.O. PTFE valves.



LEGEND

- A** = Volume of cross drilling at the base of the threaded port to the intersection of drilling B.
- A1** = Volume of the angular cavities where the drilling B intersects A.
- B** = Volume of the cross drilling from the cavity beneath the diaphragm to the angular cavities at point A1.
- C** = Volume of the cavity beneath the diaphragm. Note that the same figure is used whether open or closed to simplify the calculations.
- D** = Volume of the central cavity beneath the poppet and seat.
- E** = Volume of the cross drilling between the threaded port and the central cavity D.
- F** = Volume of the cone left by the tooling to machine cavity D.
- G** = Volume of the displacement of the poppet entering the cavity D.

The individual cavities and cross drillings are itemised so that with critical applications it is possible to calculate the particular areas which may be of concern.

A breakdown of each individual valve type is shown on the following page.

Internal volumes for 2-Way N.C. & N.O. PTFE valves.

161T01x & 161T02x

A	=	0.45 μ l
A1 x2	=	0.43 μ l
B	=	2.76 μ l
C	=	1.00 μ l
F + D	=	7.15 μ l
E	=	2.68 μ l

Sub-total **14.77 μ l**

Less G = **0.50 μ l**

Total Vol. **13.97 μ l**

360T01x & 360T02x

A	=	6.04 μ l
A1 x2	=	5.73 μ l
B	=	16.27 μ l
C	=	3.40 μ l
F + D	=	52.17 μ l
E	=	25.95 μ l

Sub-total **109.56 μ l**

Less G = **6.60 μ l**

Total Vol. **102.96 μ l**

225T01x & 225T02x

A	=	2.78 μ l
A1 x2	=	1.71 μ l
B	=	7.09 μ l
C	=	2.80 μ l
F + D	=	17.47 μ l
E	=	9.57 μ l

Sub-total **1.42 μ l**

Less G = **1.20 μ l**

Total Vol. **40.22 μ l**

648T01x & 648T02x

A	=	22.75 μ l
B*	=	58.69 μ l
C	=	9.40 μ l
F + D	=	194.58 μ l
E	=	75.83 μ l

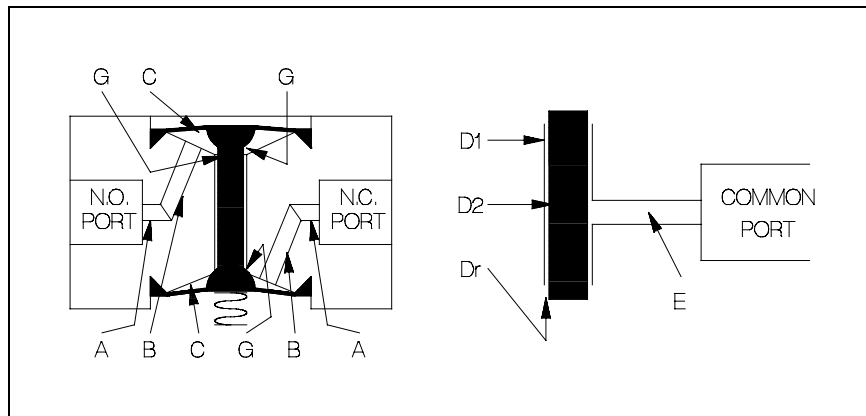
Sub-total **361.25 μ l**

Less G = **26.90 μ l**

Total Vol. **334.35 μ l**

[B*] = In the 648 models there are kidney shaped slots.

Internal volumes for 3-Way Diverting PTFE valves.



LEGEND

- A** = Volume of cross drilling at the base of the threaded port to the intersection of drilling B.
- B** = Volume of the cross drilling from the cavity beneath the diaphragm to the cross drilling A.
- C** = Volume of the cavity beneath the diaphragm. Note that the same figure is used whether open or closed to simplify the calculations. Note, the apparently large variation shown in the diagram is only for clarity of operational principles.
- Dr** = Volume of the central cavity D1, less the volume of the poppet stems D2.
- E** = Volume of the cross drilling between the threaded port and the central cavity D.

The individual cavities and cross drillings are itemised so that with critical applications it is possible to calculate the particular areas which may be of concern.

A breakdown of each individual valve type is shown on the following page.

Internal volumes for 3-Way Diverting PTFE valves.

161T03x

A x 2	=	0.80 µl
B x 2	=	3.70 µl
C x 2	=	2.00 µl
Dr	=	3.82 µl
E	=	1.60 µl

Total Vol. **11.92 µl**

360T03x

A x 2	=	19.88 µl
B x 2	=	41.14 µl
C x 2	=	6.80 µl
Dr	=	25.66 µl
E	=	26.67 µl

Total Vol. **120.15 µl**

225T03x

A x 2	=	7.64 µl
B x 2	=	16.30 µl
C x 2	=	5.60 µl
Dr	=	18.07 µl
E	=	9.56 µl

Total Vol. **57.17 µl**

648T03x

A x 2	=	46.98 µl
B* x 2	=	117.38 µl
C x 2	=	18.80 µl
Dr	=	137.54 µl
E	=	78.30 µl

Total Vol. **399.00 µl**

[B*] = In the 648 models there are kidney shaped slots.