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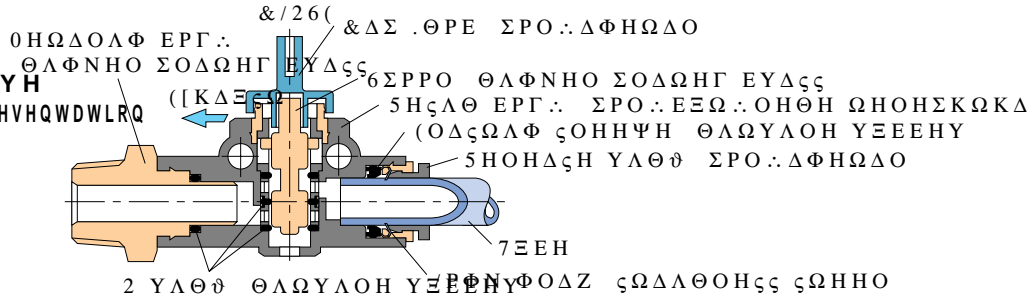
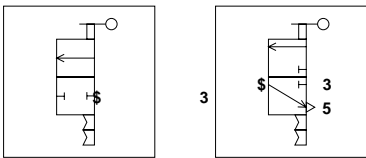
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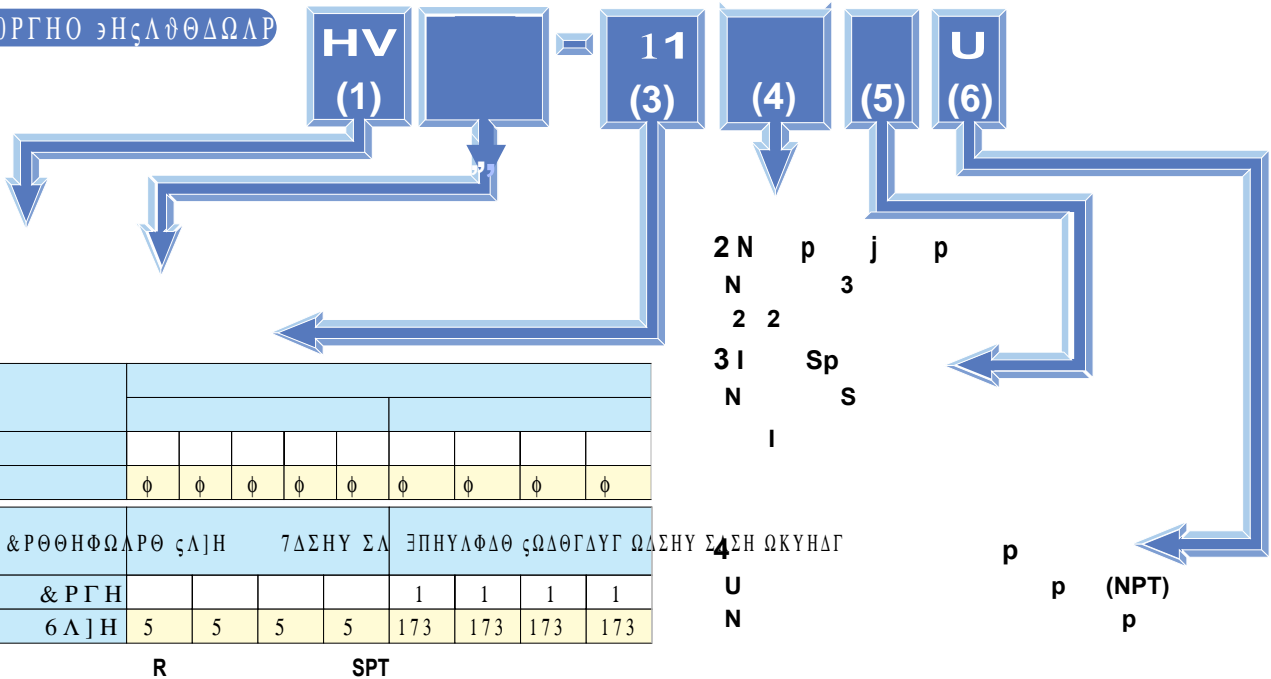
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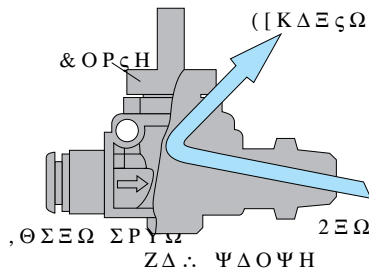
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Ο Ρ Γ Η Ο ε Η ς Λ Θ Θ Δ Ω Λ Ρ

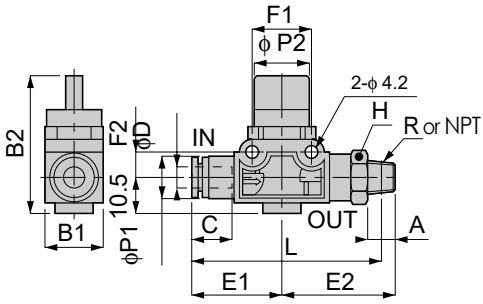


Ξ Ε Ρ Ε Ω Ζ Δ : : Δ Θ Γ



- 7 K H Ω Κ Υ Η Η Ζ Δ : : Ψ Δ Ο Ψ Η Υ Η Ο Η Δ ς Η ς Ω Κ Η Υ Η ς Λ Γ Ε Δ Ο Φ Ρ Θ Θ Η Φ Ω Η Γ Ζ Κ Η Θ Φ Ω Ξ Υ Θ Λ Θ Ω Ρ Ε Ι Θ Η Φ Η ς ς Δ Υ : : Ω Ρ ς ς : : ς Ω Η Π ς Δ Θ Δ Λ Θ ς Ω Π Δ Ο Ι Ε Θ Φ Ω Λ Ρ Θ Ρ Υ Γ Η Φ Υ Η Δ ς Η Ω Π Δ : : Ε Η Π Δ Λ Θ Ω Κ Η Ω Η Ψ : : Ψ Δ Ο Ψ Η Κ Ρ Ο Γ ς Ω Κ Η Σ Υ Η ς ς Ε Ι Ρ Υ Ω Κ Η Δ Σ Σ Ο Λ Φ Δ Ω Λ Ρ Θ Ζ Κ Η Υ Η Ω Κ Η Υ Η ς Λ Γ Ε Δ Ο Σ Υ Η Ω Δ Θ Ν Ρ Υ ς Ρ Π Η Ψ Δ Φ Ξ Ε Π ς : : ς Ω Η Π

| MODEL | Tube dia. ϕ | NPT | A | B2 | C | E1 | E2 | F1 | F2 | B1 | H | Weight (g) | Orifice ϕ mm | Eff. A. mm^2 | Cv |
|------------|------------------|-----|------|------|------|------|------|------|------|------|-------|------------|-------------------|-----------------------|------|
| HV3/16-N1U | 3/16 | 1/8 | 0.31 | 1.59 | 0.67 | 1.02 | 1.16 | 0.71 | 0.31 | 0.67 | 9/16 | 33.7 | 4.0 | 5.1 | 0.27 |
| HV3/16-N2U | 3/16 | 1/4 | 0.43 | 1.59 | 0.67 | 1.02 | 1.20 | 0.71 | 0.31 | 0.67 | 9/16 | 39.6 | 4.0 | 5.1 | 0.27 |
| HV3/16-N3U | 3/16 | 3/8 | 0.47 | 1.59 | 0.67 | 1.02 | 1.26 | 0.71 | 0.31 | 0.67 | 11/16 | 53.3 | 4.0 | 5.2 | 0.28 |
| HV1/4-N1U | 1/4 | 1/8 | 0.31 | 1.59 | 0.67 | 1.02 | 1.16 | 0.71 | 0.31 | 0.67 | 9/16 | 33.8 | 5.0 | 7.5 | 0.40 |
| HV1/4-N2U | 1/4 | 1/4 | 0.43 | 1.59 | 0.67 | 1.02 | 1.20 | 0.71 | 0.31 | 0.67 | 9/16 | 39.8 | 5.0 | 7.7 | 0.41 |
| HV1/4-N3U | 1/4 | 3/8 | 0.47 | 1.59 | 0.67 | 1.02 | 1.26 | 0.71 | 0.31 | 0.67 | 11/16 | 53.3 | 5.0 | 7.5 | 0.40 |
| HV5/16-N1U | 5/16 | 1/8 | 0.31 | 1.59 | 0.71 | 1.10 | 1.16 | 0.71 | 0.31 | 0.83 | 9/16 | 34.8 | 5.0 | 8.7 | 0.47 |
| HV5/16-N2U | 5/16 | 1/4 | 0.43 | 1.59 | 0.71 | 1.10 | 1.20 | 0.71 | 0.31 | 0.83 | 9/16 | 40.7 | 5.0 | 8.9 | 0.48 |
| HV5/16-N3U | 5/16 | 3/8 | 0.47 | 1.59 | 0.71 | 1.10 | 1.26 | 0.71 | 0.31 | 0.83 | 11/16 | 54.4 | 5.0 | 8.6 | 0.46 |
| HV3/8-N2U | 3/8 | 1/4 | 0.43 | 1.61 | 0.79 | 1.28 | 1.44 | 0.94 | 0.43 | 0.83 | 11/16 | 63.0 | 5.0 | 16.2 | 0.87 |
| HV3/8-N3U | 3/8 | 3/8 | 0.47 | 1.61 | 0.79 | 1.28 | 1.46 | 0.94 | 0.43 | 0.83 | 11/16 | 71.3 | 7.0 | 16.0 | 0.86 |
| HV3/8-N4U | 3/8 | 1/2 | 0.59 | 1.61 | 0.79 | 1.28 | 1.48 | 0.94 | 0.43 | 0.83 | 7/8 | 94.3 | 7.0 | 15.7 | 0.85 |
| HV1/2-N2U | 1/2 | 1/4 | 0.43 | 1.61 | 0.93 | 1.38 | 1.44 | 0.94 | 0.43 | 0.83 | 11/16 | 65.5 | 7.0 | 16.3 | 0.88 |
| HV1/2-N3U | 1/2 | 3/8 | 0.47 | 1.61 | 0.93 | 1.38 | 1.46 | 0.94 | 0.43 | 0.83 | 11/16 | 73.9 | 7.0 | 16.3 | 0.88 |
| HV1/2-N4U | 1/2 | 1/2 | 0.59 | 1.61 | 0.93 | 1.38 | 1.52 | 0.94 | 0.43 | 0.83 | 7/8 | 96.8 | 7.0 | 16.1 | 0.87 |

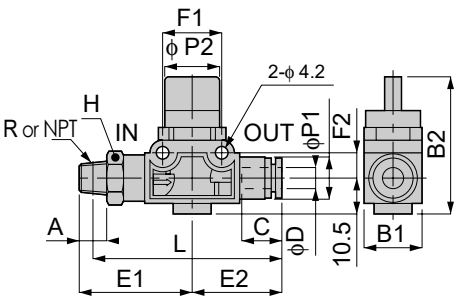


| Model | Tube O.D. ϕ D1 | R | A | B1 | B2 | L | ϕ P1 | ϕ P2 | Tube end C | E1 | E2 | H | F1 | F2 | Eff. area (mm^2) | Weight (g) | CAD file name |
|------------|---------------------|------|----|------|------|------|-----------|-----------|------------|------|------|----|----|----|-----------------------------|------------|---------------|
| HV6-01- | 6 | R1/8 | 8 | | | 55.9 | | | | 33.5 | | 14 | | | 7.5 | 34 | HV6-01_ |
| HV6-02- | | R1/4 | 11 | 17 | 40.5 | 56.8 | 12.5 | 16.5 | 17 | 26.4 | 36.5 | 17 | 18 | 8 | 7.7 | 40 | HV6-02_ |
| HV6-03- | | R3/8 | 12 | | | 58.3 | | | | | 38.3 | 17 | | | 7.5 | 53 | HV6-03_ |
| HV8-01- | 8 | R1/8 | 8 | | | 57.2 | | | | 33.5 | | 14 | | | 8.7 | 35 | HV8-01_ |
| HV8-02- | | R1/4 | 11 | 17 | 40.5 | 58.2 | 15 | 16.5 | 18.1 | 27.7 | 36.5 | 14 | 18 | 8 | 8.9 | 41 | HV8-02_ |
| HV8-03- | | R3/8 | 12 | | | 59.7 | | | | | 38.3 | 17 | | | 8.6 | 54 | HV8-03_ |
| HV10-02- | 10 | R1/4 | 11 | | | 68.7 | | | | 42.5 | | 17 | | | 16.2 | 62 | HV10-02_ |
| HV10-03- | | R3/8 | 12 | 21.7 | 41 | 69.4 | 17.5 | 19.5 | 20.2 | 32.2 | 43.5 | 21 | 24 | 11 | 16 | 71 | HV10-03_ |
| HV10-04- | | R1/2 | 15 | | | 70.5 | | | | | 46.5 | 21 | | | 15.7 | 93 | HV10-04_ |
| HV12-02- | 12 | R1/4 | 11 | | | 71.4 | | | | 42.5 | | 17 | | | 16.3 | 66 | HV12-02_ |
| HV12-03- | | R3/8 | 12 | 21.7 | 41 | 72.1 | 21 | 19.5 | 23.4 | 34.9 | 43.5 | 21 | 24 | 11 | 16.3 | 74 | HV12-03_ |
| HV12-04- | | R1/2 | 15 | | | 73.2 | | | | | 46.5 | 21 | | | 16.1 | 96 | HV12-04_ |
| HV1/4-01- | 1/4 | R1/8 | 8 | | | 55.9 | | | | 33.5 | | 14 | | | 8.2 | 34 | HV1_4-01_ |
| HV1/4-02- | | R1/4 | 11 | 17 | 40.5 | 56.8 | 12.5 | 16.5 | 17 | 26.4 | 36.5 | 14 | 18 | 8 | 8 | 40 | HV1_4-02_ |
| HV1/4-03- | | R3/8 | 12 | | | 58.3 | | | | | 38.3 | 17 | | | 8.2 | 53 | HV1_4-03_ |
| HV5/16-01- | 5/16 | R1/8 | 8 | | | 57.2 | | | | 33.5 | | 14 | | | 8.7 | 35 | HV5_16-01_ |
| HV5/16-02- | | R1/4 | 11 | 17 | 40.5 | 58.2 | 15 | 16.5 | 18.1 | 27.7 | 36.5 | 14 | 18 | 8 | 8.9 | 41 | HV5_16-02_ |
| HV5/16-03- | | R3/8 | 12 | | | 59.7 | | | | | 38.3 | 17 | | | 8.6 | 54 | HV5_16-03_ |
| HV3/8-02- | 3/8 | R1/4 | 11 | | | 68.7 | | | | 42.5 | | 17 | | | 15.4 | 63 | HV3_8-02_ |
| HV3/8-03- | | R3/8 | 12 | 21.7 | 41 | 69.4 | 17.5 | 19.5 | 20.2 | 32.2 | 43.5 | 21 | 24 | 11 | 15.7 | 71 | HV3_8-03_ |
| HV3/8-04- | | R1/2 | 15 | | | 70.5 | | | | | 46.5 | 21 | | | 15.4 | 93 | HV3_8-04_ |

❖ R thread is same as BSPT



| MODEL | Tube dia. ϕ | NPT | A | B2 | C | E1 | E2 | F1 | F2 | B1 | H | Weight (g) | Orifice ϕ mm | Eff. A. mm^2 | Cv |
|------------|------------------|-----|------|------|------|------|------|------|------|------|-------|------------|-------------------|-----------------------|------|
| HVN1-3/16U | 3/16 | 1/8 | 0.31 | 1.59 | 0.67 | 1.02 | 1.16 | 0.71 | 0.31 | 0.67 | 9/16 | 34.0 | 4.0 | 5.6 | 0.30 |
| HVN2-3/16U | 3/16 | 1/4 | 0.43 | 1.59 | 0.67 | 1.02 | 1.2 | 0.71 | 0.31 | 0.67 | 9/16 | 39.8 | 4.0 | 6.0 | 0.32 |
| HVN3-3/16U | 3/16 | 3/8 | 0.47 | 1.59 | 0.67 | 1.02 | 1.26 | 0.71 | 0.31 | 0.67 | 11/16 | 53.5 | 4.0 | 5.7 | 0.30 |
| HVN1-1/4U | 1/4 | 1/8 | 0.31 | 1.59 | 0.67 | 1.02 | 1.16 | 0.71 | 0.31 | 0.67 | 9/16 | 33.8 | 5.0 | 8.3 | 0.44 |
| HVN2-1/4U | 1/4 | 1/4 | 0.43 | 1.59 | 0.67 | 1.02 | 1.20 | 0.71 | 0.31 | 0.67 | 9/16 | 39.5 | 5.0 | 8.5 | 0.46 |
| HVN3-1/4U | 1/4 | 3/8 | 0.47 | 1.59 | 0.67 | 1.02 | 1.26 | 0.71 | 0.31 | 0.67 | 11/16 | 53.5 | 5.0 | 8.2 | 0.44 |
| HVN1-5/16U | 5/16 | 1/8 | 0.31 | 1.59 | 0.71 | 1.10 | 1.16 | 0.71 | 0.31 | 0.83 | 9/16 | 35.1 | 5.0 | 8.9 | 0.48 |
| HVN2-5/16U | 5/16 | 1/4 | 0.43 | 1.59 | 0.71 | 1.10 | 1.20 | 0.71 | 0.31 | 0.83 | 9/16 | 40.9 | 5.0 | 8.9 | 0.48 |
| HVN3-5/16U | 5/16 | 3/8 | 0.47 | 1.59 | 0.71 | 1.10 | 1.26 | 0.71 | 0.31 | 0.83 | 11/16 | 54.6 | 5.0 | 8.9 | 0.48 |
| HVN2-3/8U | 3/8 | 1/4 | 0.43 | 1.61 | 0.79 | 1.28 | 1.44 | 0.94 | 0.43 | 0.83 | 11/16 | 63.1 | 7.0 | 16.6 | 0.89 |
| HVN3-3/8U | 3/8 | 3/8 | 0.47 | 1.61 | 0.79 | 1.28 | 1.46 | 0.94 | 0.43 | 0.83 | 11/16 | 71.3 | 7.0 | 16.9 | 0.91 |
| HVN4-3/8U | 3/8 | 1/2 | 0.59 | 1.61 | 0.79 | 1.28 | 1.48 | 0.94 | 0.43 | 0.83 | 7/8 | 94.4 | 7.0 | 16.5 | 0.89 |
| HVN2-1/2U | 1/2 | 1/4 | 0.43 | 1.61 | 0.93 | 1.38 | 1.44 | 0.94 | 0.43 | 0.83 | 11/16 | 65.8 | 7.0 | 17.0 | 0.92 |
| HVN3-1/2U | 1/2 | 3/8 | 0.47 | 1.61 | 0.93 | 1.38 | 1.46 | 0.94 | 0.43 | 0.83 | 11/16 | 74.3 | 7.0 | 17.1 | 0.92 |
| HVN4-1/2U | 1/2 | 1/2 | 0.59 | 1.61 | 0.93 | 1.38 | 1.52 | 0.94 | 0.43 | 0.83 | 7/8 | 97.1 | 7.0 | 16.8 | 0.91 |



| Model | Tube O.D. ϕ D1 | R | A | B1 | B2 | L | ϕ P1 | ϕ P2 | Tube end C | E1 | E2 | H | F1 | F2 | Eff. area (mm^2) | Weight (g) | CAD file name |
|------------|---------------------|------|----|------|------|------|-----------|-----------|------------|------|------|----|----|----|-----------------------------|------------|---------------|
| HV01-6- | 6 | R1/8 | 8 | | | 55.9 | | | | 33.5 | | 14 | | | 8.3 | 34 | HV01-6_ |
| HV02-6- | | R1/4 | 11 | 17 | 40.5 | 56.8 | 12.5 | 16.5 | 17 | 36.5 | 26.4 | 14 | 18 | 8 | 8.5 | 40 | HV02-6_ |
| HV03-6- | | R3/8 | 12 | | | 58.3 | | | | | 38.3 | 17 | | | 8.2 | 53 | HV03-6_ |
| HV01-8- | 8 | R1/8 | 8 | | | 57.2 | | | | 33.5 | | 14 | | | 8.7 | 35 | HV01-8_ |
| HV02-8- | | R1/4 | 11 | 17 | 40.5 | 58.2 | 15 | 16.5 | 18.1 | 36.5 | 27.7 | 14 | 18 | 8 | 8.9 | 41 | HV02-8_ |
| HV03-8- | | R3/8 | 12 | | | 59.7 | | | | | 38.3 | 17 | | | 8.6 | 54 | HV03-8_ |
| HV02-10- | 10 | R1/4 | 11 | | | 68.7 | | | | 42.5 | | 17 | | | 16.6 | 62 | HV02-10_ |
| HV03-10- | | R3/8 | 12 | 21.7 | 41 | 69.4 | 17.5 | 19.5 | 20.2 | 43.5 | 32.2 | 17 | 24 | 11 | 16.9 | 71 | HV03-10_ |
| HV04-10- | | R1/2 | 15 | | | 70.5 | | | | | 46.5 | 21 | | | 16.5 | 93 | HV04-10_ |
| HV02-12- | 12 | R1/4 | 11 | | | 71.4 | | | | 42.5 | | 17 | | | 17 | 66 | HV02-12_ |
| HV03-12- | | R3/8 | 12 | 21.7 | 41 | 72.1 | 21 | 19.5 | 23.4 | 43.5 | 34.9 | 17 | 24 | 11 | 17.1 | 74 | HV03-12_ |
| HV04-12- | | R1/2 | 15 | | | 73.2 | | | | | 46.5 | 21 | | | 16.8 | 96 | HV04-12_ |
| HV01-1/4- | 1/4 | R1/8 | 8 | | | 55.9 | | | | 33.5 | | 14 | | | 8.7 | 34 | HV01-1_4_ |
| HV02-1/4- | | R1/4 | 11 | 17 | 40.5 | 56.8 | 12.5 | 16.5 | 17 | 36.5 | 26.4 | 14 | 18 | 8 | 8.4 | 40 | HV02-1_4_ |
| HV03-1/4- | | R3/8 | 12 | | | 58.3 | | | | | 38.3 | 17 | | | 8.5 | 53 | HV03-1_4_ |
| HV01-5/16- | 5/16 | R1/8 | 8 | | | 57.2 | | | | 33.5 | | 14 | | | 8.7 | 35 | HV01-5_16_ |
| HV02-5/16- | | R1/4 | 11 | 17 | 40.5 | 58.2 | 15 | 16.5 | 18.1 | 36.5 | 27.7 | 14 | 18 | 8 | 8.9 | 41 | HV02-5_16_ |
| HV03-5/16- | | R3/8 | 12 | | | 59.7 | | | | | 38.3 | 17 | | | 8.6 | 54 | HV03-5_16_ |
| HV02-3/8- | 3/8 | R1/4 | 11 | | | 68.7 | | | | 42.5 | | 17 | | | 16.5 | 63 | HV02-3_8_ |
| HV03-3/8- | | R3/8 | 12 | 21.7 | 41 | 69.4 | 17.5 | 19.5 | 20.2 | 43.5 | 32.2 | 17 | 24 | 11 | 16.8 | 71 | HV03-3_8_ |
| HV04-3/8- | | R1/2 | 15 | | | 70.5 | | | | | 46.5 | 21 | | | 16.6 | 93 | HV04-3_8_ |

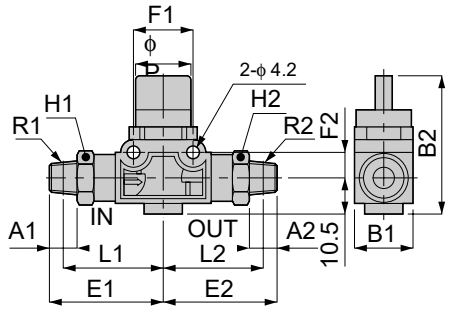
❖ R thread is same as BSPT

| Model | Tube O.D. ϕ D1 | Tube O.D. ϕ D2 | B1 | B2 | ϕ P1 | ϕ P2 | ϕ P3 | Tube end C1 | Tube end C2 | E1 | E2 | F1 | F2 | Eff. area (mm^2) | Weight (g) | CAD file name |
|--------------|---------------------|---------------------|----|------|-----------|-----------|-----------|-------------|-------------|------|------|----|----|-----------------------------|------------|---------------|
| HV5/32-5/32- | 5/32 | 5/32 | 17 | 40.5 | 10 | 10 | 16.5 | 14.9 | 14.9 | 25.8 | 25.8 | 18 | 8 | 3.4 | 24 | HV4-4_ |
| HV3/16-3/16- | 3/16 | 3/16 | 17 | 40.5 | 12.5 | 12.5 | 16.5 | 17 | 17 | 26.4 | 26.4 | 18 | 8 | 5.1 | 25 | |
| HV1/4-3/16- | 1/4 | 3/16 | 17 | 40.5 | 12.5 | 12.5 | 16.5 | 17 | 17 | 26.4 | 26.4 | 18 | 8 | 5.1 | 25 | |
| HV1/4-1/4- | | 1/4 | | </ | | | | | | | | | | | | |

unit:inch

HV
Nipple Type

RoHS compliant



| MODEL | R1 | R2 | A1 | A2 | B2 | L1 | L2 | E1 | E2 | F1 | F2 | H1 | H2 | B1 | (g) | Orifice φmm | Eff. A. mm ² | Cv |
|----------|--------|--------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|----------------|----------------------------|------|
| HVN1-N1U | 1/8NPT | 1/8NPT | 0.31 | 0.31 | 1.59 | 1.16 | 1.16 | 1.32 | 1.32 | 0.71 | 0.30 | 9/16 | 9/16 | 0.67 | 43.0 | 5.0 | 8.8 | 0.47 |
| HVN2-N1U | 1/4NPT | 1/8NPT | 0.43 | 0.31 | 1.59 | 1.16 | 1.16 | 1.44 | 1.32 | 0.71 | 0.30 | 9/16 | 9/16 | 0.67 | 48.9 | 5.0 | 9.0 | 0.48 |
| HVN2-N2U | 1/4NPT | 1/4NPT | 0.43 | 0.43 | 1.61 | 1.42 | 1.42 | 1.67 | 1.67 | 0.94 | 0.43 | 11/16 | 11/16 | 0.83 | 81.1 | 5.0 | 15.8 | 0.85 |
| HVN3-N2U | 3/8NPT | 1/4NPT | 0.47 | 0.43 | 1.61 | 1.42 | 1.42 | 1.71 | 1.67 | 0.94 | 0.43 | 11/16 | 11/16 | 0.83 | 89.5 | 5.0 | 15.6 | 0.84 |
| HVN3-N3U | 3/8NPT | 3/8NPT | 0.47 | 0.47 | 1.61 | 1.46 | 1.46 | 1.71 | 1.71 | 0.94 | 0.43 | 11/16 | 11/16 | 0.83 | 97.7 | 7.0 | 15.7 | 0.85 |

unit:mm

| MODEL | R1 | R2 | A1 | A2 | B1 | B2 | L1 | L2 | φP | E1 | E2 | H1 | H2 | F1 | F2 | Eff. A. (mm ²) | Weight (g) | CAD file name |
|----------|------|------|----|----|------|------|------|------|------|------|----------|----|----|----|----|-------------------------------|---------------|------------------|
| HV01-01- | R1/8 | R1/8 | 8 | 8 | 17 | 40.5 | 29.5 | 29.5 | 16.5 | 33.5 | 33.5 | 14 | 14 | 18 | 8 | 8.8 | 43 | HV01-01_ |
| HV02-01- | R1/4 | R1/8 | 11 | 8 | 17 | 40.5 | 30.5 | 29.5 | 16.5 | 36.5 | 33.5 | 14 | 14 | 18 | 8 | 9 | 49 | HV02-01_ |
| HV02-02- | | R1/4 | | 11 | 21.7 | 41 | 36.5 | 36.5 | 19.5 | 42.5 | 42.5 | 17 | 17 | 24 | 11 | 15.8 | 80 | HV02-02_ |
| HV03-02- | R3/8 | R1/4 | 12 | 11 | 21.7 | 41 | 37.2 | 36.5 | 19.5 | 43.5 | 42.5 | 17 | 17 | 24 | 11 | 15.6 | 88 | HV03-02_ |
| HV03-03- | | R3/8 | | 12 | 37.2 | 43.5 | 43.5 | 15.7 | | 96 | HV03-03_ | | | | | | | |

❖ R thread is same as BSPT

▲ Detailed Safety Instructions

Before using the PISCO device, be sure to read the "Safety Instructions", "Common Safety Instructions for Products Listed in This Manual" and "Common Safety Instructions for Change Series Valves".

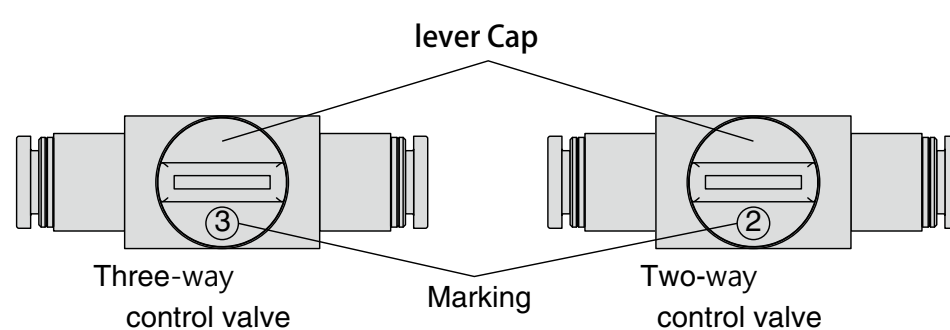
▲ Caution

- When operating the cap lever, turn it 90 degrees completely until it stops. Inadequate turning may result in poor conduction or low flow rate due to faulty switching.
- Distinguish between the two-directional and the three-directional control valve by checking the marking ② or ③ on the top surface of the cap lever.
- For use with negative pressures, provide a vacuum filter on the suction side. Otherwise dust sucked in may cause malfunction.

■ Identification between Three-directional control valve and Two-directional control valve Check the marking on the lever cap

③: Three-directional control valve - 3-way

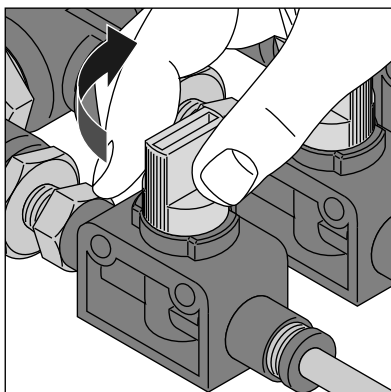
②: Two-directional control valve - 2-way



■ Cap lever operation

1. Open the valve

To open the valve, turn the cap lever 90 degrees until it stops.



2. Close the valve

To close the valve, turn the cap lever 90 degrees counterclockwise until it stops.

As for three-way valve, the residual pressure in outlet side is released from the gap between the lever cap and the body when turning it off.

