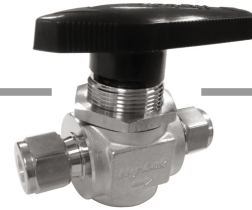
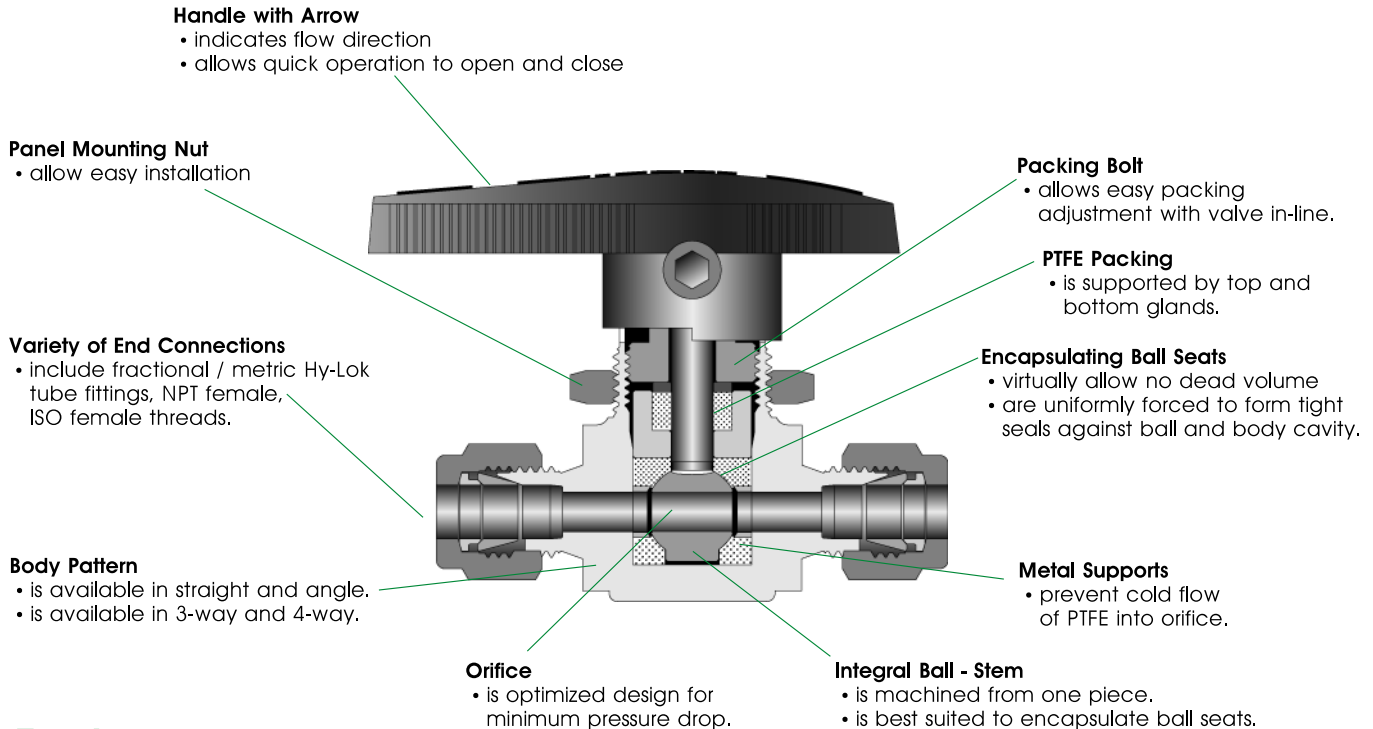


Hy-Lok 112 Series

Ball Valves



Catalog No. H - 112BV
Oct. 2013



Features

- **Pressure rating** up to 3000psig (206bar) at 70°F(21°C)
- **Temperature rating** from 50°F to 150°F (10°C to 65°C) with PTFE seat and packing
- **Vent to atmosphere available**
- **Both straight and angle, 3 - way and 4 - way patterns** available
- **Body materials** available in 316 stainless steel, brass, and alloy 400.
- **100% factory tested**

Technical Data

Materials of Construction

■ 2 - WAY & 3 - WAY

| Description | Grade / ASTM Specification | | |
|---------------------------|----------------------------|---------------|-----------------|
| | Valve Body Materials | | |
| | SS316 | Brass | Alloy 400 |
| Handle | Black Nylon | | |
| Mounting Nut | Stainless Steel | Brass | Stainless Steel |
| Packing Bolt | TP316 / A479 | Brass | TP316 / A479 |
| Packing* | PTFE | | |
| Packing Gland | 316 Stainless Steel | | |
| Encapsulating Ball Seats* | PTFE | | |
| Supports* | Stainless Steel | | |
| Ball Stem* | TP316 / A479 | N04400 / B164 | |
| Body | TP316 / A479 or A182 | Brass / B16 | N04400 / B164 |

Note : "*" marked are wetted parts. Lubricant is silicone based.

Pressure Rating @ 50°F to 150°F(10°C to 65°C)

for the valve with standard seat and packing

| Valve Designator | Straight 2 - way | Angle 2 - way | Switching 3 - way |
|------------------|------------------------|------------------------|------------------------|
| B 1 V | 2500 psig (172 bar) | 2500 psig (172 bar) | 2500 psig (172 bar) |
| B 2 V | 3000 psig (206 bar) | 2500 psig (172 bar) | 2500 psig (172 bar) |
| B 3 V | 2500 psig (172 bar) | 1500 psig (103 Bar) | 1500 psig (103 bar) |
| B 4 V | 2500 psig (172 bar) | 1500 psig (103 bar) | 1500 psig (103 bar) |

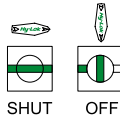
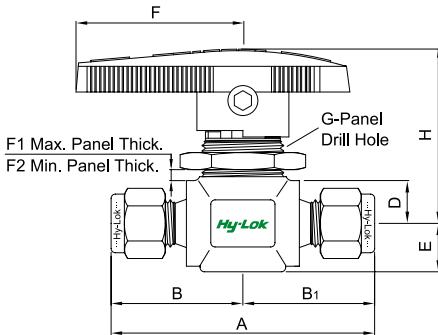


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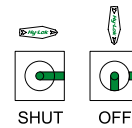
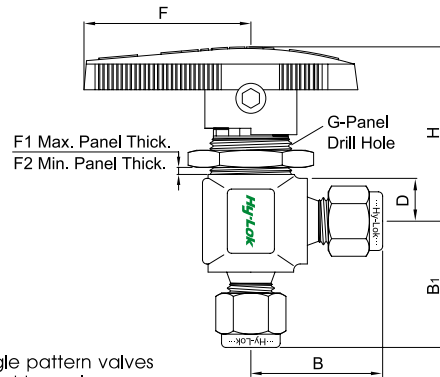
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2 - way (Shut - Off Valve)

Straight Pattern



Angle Pattern



For the dimension B & B1 of angle pattern valves see the dimension of 3-way switching valves

Table of Dimensions

| Basic Part No. | Orifice | | CV | End Connection | | Dimensions (mm) | | | | | | | | | |
|----------------|---------|-------|------|---------------------------|------|-----------------|------|------|------|------|------|-----|------|------|------|
| | mm | inch | | Inlet & Outlet | A | B | B1 | D | E | F | F1 | F2 | G | H | W |
| B1VH - 1T | 1.3 | 0,052 | 0.1 | 1/16 Hy-Lok | 42.6 | 21.3 | 21.3 | 9.5 | 8.8 | 28.0 | 5.5 | 2.0 | 15.0 | 34.0 | 19.0 |
| B1VH - 3M | 2.4 | 0,093 | 0.2 | 3mm Hy-Lok | 50.8 | 25.4 | 25.4 | 9.5 | 8.8 | 28.0 | 5.5 | 2.0 | 15.0 | 34.0 | 19.0 |
| B1VH - 2T | | | 0.2 | 1/8 Hy-Lok | | | | | | | | | | | |
| B1VF - 2N | 3.2 | 0,125 | 0.5 | 1/8 Female NPT | 41.2 | 20.6 | 20.6 | 9.5 | 8.8 | 28.0 | 5.5 | 2.0 | 15.0 | 34.0 | 19.0 |
| B1VH - 6M | | | 0.6 | 6mm Hy-Lok | | | | | | | | | | | |
| B1VH - 4T | | | 0.6 | 1/4 Hy-Lok | | | | | | | | | | | |
| B2VF - 2N | | | 1.2 | 1/8 Female NPT | | | | | | | | | | | |
| B2VF - 4N | 4.8 | 0,187 | 0.9 | 1/4 Female NPT | 52.4 | 26.2 | 26.2 | 11.3 | 10.0 | 39.0 | 6.0 | 2.5 | 20.0 | 41.2 | 21.0 |
| B2VF - 4R | | | 0.9 | 1/4 ISO Female Tapered | | | | | | | | | | | |
| B2VM - 4N | | | 1.2 | 1/4 Male NPT | | | | | | | | | | | |
| B2VMH - 4N4T | | | 1.6 | 1/4 Male NPT 1/4 Hy-Lok | 55.6 | 25.4 | 30.2 | | | | | | | | |
| B2VH - 6M | | | 2.4 | 6mm Hy-Lok | | | | | | | | | | | |
| B2VH - 4T | | | 2.4 | 1/4 Hy-Lok | | | | | | | | | | | |
| B2VH - 8M | | | 1.5 | 8mm Hy-Lok | 62.0 | 31.0 | 31.0 | | | | | | | | |
| B2VH - 6T | | | 1.5 | 3/8 Hy-Lok | 65.0 | 32.5 | 32.5 | | | | | | | | |
| B3VF - 4N | 7.1 | 0,281 | 3.0 | 1/4 Female NPT | 63.6 | 31.8 | 31.8 | 17.5 | 14.3 | 51.0 | 9.0 | 3.0 | 28.0 | 52.8 | 33.0 |
| B3VF - 6N | | | 2.6 | 3/8 Female NPT | | | | | | | | | | | |
| B3VF - 6R | | | 2.6 | 3/8 ISO Female Tapered | | | | | | | | | | | |
| B3VH - 6T | | | 6.0 | 3/8 Hy-Lok | | | | | | | | | | | |
| B3VH - 10M | | | 6.0 | 10mm Hy-Lok | | | | | | | | | | | |
| B4VF - 8N | 10.3 | 0,406 | 6.3 | 1/2 Female NPT | 79.2 | 39.6 | 39.6 | 22.0 | 17.5 | 77.0 | 10.0 | 3.0 | 39.0 | 67.0 | 41.0 |
| B4VF - 8R | | | 6.3 | 1/2 ISO Female Tapered | | | | | | | | | | | |
| B4VH - 12M | | | 12.0 | 12mm Hy-Lok | | | | | | | | | | | |
| B4VH - 8T | | | 12.0 | 1/2 Hy-Lok | | | | | | | | | | | |
| B4VH - 12T | | | 6.4 | 3/4 Hy-Lok | | | | | | | | | | | |

All dimensions are in millimeters. Dimensions shown with Hy-Lok nuts in finger-tight position, where applicable

Flow Rate

| Pressure Drop to Atmosphere (Δp) in psi | | Cv | | | | | | | | | | | | | | |
|---|-----|-----|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 0.1 | 0.2 | 0.5 | 0.6 | 0.9 | 1.2 | 1.5 | 1.6 | 2.4 | 2.6 | 3.0 | 6.0 | 6.3 | 6.4 | 12.0 |
| Air SCFM @70°F(21°C) | 10 | 1.1 | 2.7 | 6.9 | 8.3 | 12.0 | 17.0 | 21.0 | 22.0 | 33.0 | 36.0 | 41.5 | 83.0 | 87.2 | 88.6 | 166.0 |
| | 50 | 3.0 | 7.6 | 19.1 | 23.0 | 34.0 | 46.0 | 57.0 | 61.0 | 92.0 | 99.5 | 115.0 | 230.0 | 241.0 | 245.0 | 459.0 |
| | 100 | 5.3 | 14.0 | 33.9 | 40.7 | 61.0 | 81.0 | 100.0 | 110.0 | 160.0 | 176.0 | 203.0 | 407.0 | 427.0 | 434.0 | 814.0 |
| Water US GPM @70°F(21°C) | 10 | 0.3 | 0.6 | 1.6 | 1.9 | 2.8 | 3.7 | 4.7 | 5.0 | 7.5 | 8.2 | 9.5 | 19.0 | 19.9 | 20.2 | 37.9 |
| | 50 | 0.7 | 1.4 | 3.5 | 4.2 | 6.3 | 8.4 | 11.0 | 11.0 | 17.0 | 18.4 | 21.2 | 42.3 | 44.5 | 45.3 | 84.9 |
| | 100 | 1.0 | 2.0 | 5.0 | 6.0 | 9.0 | 12.0 | 15.0 | 16.0 | 24.0 | 26.0 | 30.0 | 60.0 | 63.0 | 64.0 | 120.0 |

The Cv is for the straight pattern valves. Cvs of angle pattern valves are the same as those of 3-way valves

3 - way (Switching Valves)

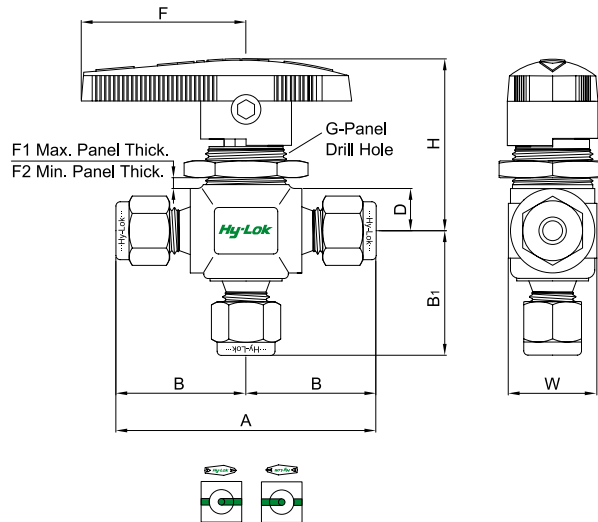


Table of Dimensions

| Basic Part No. | Orifice | | Cv | End Connection | | Dimensions (mm) | | | | | | | | | | | | | | | | |
|----------------|---------|------------------------|------|------------------------|--------------|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|-----|------|------|------|
| | mm | inch | | Side port | Bottom port | A | B | B1 | D | F | F1 | F2 | G | H | W | | | | | | | |
| B1V3H -1T | 1.3 | 0.052 | 0.08 | 1/16 Hy-Lok | | 42.6 | 21.3 | 20.6 | 8.8 | 28.0 | 5.5 | 2.0 | 15.0 | 34.0 | 19.0 | | | | | | | |
| B1V3H -3M | 2.4 | 0.093 | 0.15 | 3mm Hy-Lok | | 50.8 | 25.4 | 24.6 | 8.8 | 28.0 | 5.5 | 2.0 | 15.0 | 34.0 | 19.0 | | | | | | | |
| B1V3H -2T | | | 0.15 | 1/8 Hy-Lok | | | | | | | | | | | | | | | | | | |
| B1V3F -2N | 3.2 | 0.125 | 0.30 | 1/8 Female NPT | | 41.2 | 20.6 | 20.6 | 8.8 | 28.0 | 5.5 | 2.0 | 15.0 | 34.0 | 19.0 | | | | | | | |
| B1V3H -6M | | | 0.35 | 6mm Hy-Lok | | 55.4 | 27.7 | 26.9 | | | | | | | | | | | | | | |
| B1V3H -4T | | | 0.35 | 1/4 Hy-Lok | | | | | | | | | | | | | | | | | | |
| B2V3F -4N | | | 4.8 | 0.187 | 0.75 | 1/4 Female NPT | | 52.4 | | | | | | | | 26.2 | 26.2 | | | | | |
| B2V3F -4R | 0.75 | 1/4 ISO Female Tapered | | | | | | | | | | | | | | | | | | | | |
| B2V3H -6M | 0.90 | 6mm Hy-Lok | | | 60.4 | 30.2 | 29.5 | 10.0 | 39.0 | 6.0 | 2.5 | 20.0 | 41.2 | 21.0 | | | | | | | | |
| B2V3H -4T | 0.90 | 1/4 Hy-Lok | | | | | | | | | | | | | | | | | | | | |
| B2V3HM -4T4N | 0.80 | 1/4 Hy-Lok | | | 1/4 Male NPT | 62.0 | 31.0 | | | | | | | | 30.2 | | | | | | | |
| B2V3H -8M | 0.80 | 8mm Hy-Lok | | | | | | | | | | | | | | | | | | | | |
| B3V3F -4N | 7.1 | 0.281 | 1.7 | 1/4 Female NPT | | 63.6 | 31.8 | | | | | | | | 31.8 | 14.5 | 51.0 | 9.0 | 3.0 | 28.0 | 52.8 | 30.0 |
| B3V3F -6N | | | 1.5 | 3/8 Female NPT | | | | | | | | | | | | | | | | | | |
| B3V3F -6R | | | 1.5 | 3/8 ISO Female Tapered | | | | | | | | | | | | | | | | | | |
| B3V3H -6T | | | 2.0 | 3/8 Hy-Lok | | 73.2 | 36.6 | 35.8 | | | | | | | | | | | | | | |
| B3V3H -10M | | | 2.0 | 10mm Hy-Lok | | | | | | | | | | | | | | | | | | |
| B4V3F -8N | 10.3 | 0.406 | 3.5 | 1/2 Female NPT | | 79.2 | 39.6 | 39.6 | 17.5 | 77.0 | 10.0 | 3.0 | 39.0 | 67.0 | 41.0 | | | | | | | |
| B4V3F -8R | | | 3.5 | 1/2 ISO Female Tapered | | | | | | | | | | | | | | | | | | |
| B4V3H -12M | | | 4.6 | 12mm Hy-Lok | | | | | | | | | | | | 89.0 | 44.5 | 44.5 | | | | |
| B4V3H -8T | | | 4.6 | 1/2 Hy-Lok | | | | | | | | | | | | | | | | | | |
| B4V3H -12T | | | 3.8 | 3/4 Hy-Lok | | | | | | | | | | | | | | | | | | |

All dimensions are in millimeters. Dimensions shown with Hy-Lok nuts in finger-tight position, where applicable

Flow Rate

| Pressure Drop to Atmosphere (Δp) in psi | | Cv | | | | | | | | | | | | |
|---|-----|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| | | 0.08 | 0.15 | 0.30 | 0.35 | 0.75 | 0.8 | 0.9 | 1.5 | 1.7 | 2.0 | 3.5 | 3.8 | 4.6 |
| Air SCFM @70°F(21°C) | 10 | 0.9 | 2.0 | 4.2 | 4.8 | 10.0 | 11.0 | 12.0 | 20.8 | 23.5 | 27.7 | 48.4 | 52.6 | 63.7 |
| | 50 | 2.4 | 5.7 | 11.5 | 13.4 | 29.0 | 31.0 | 34.0 | 57.4 | 65.0 | 76.5 | 134.0 | 145.0 | 176.0 |
| | 100 | 4.3 | 10.1 | 20.3 | 23.7 | 51.0 | 54.0 | 61.0 | 102.0 | 115.0 | 136.0 | 237.0 | 258.0 | 312.0 |
| Water US GPM @70°F (21°C) | 10 | 0.3 | 0.4 | 0.9 | 1.1 | 2.3 | 2.5 | 2.8 | 4.7 | 5.4 | 6.3 | 11.1 | 12.0 | 14.5 |
| | 50 | 0.6 | 1.0 | 2.1 | 2.5 | 5.3 | 5.6 | 6.3 | 10.6 | 12.0 | 14.1 | 24.7 | 26.9 | 32.5 |
| | 100 | 0.8 | 1.5 | 3.0 | 3.5 | 7.5 | 8.0 | 9.0 | 15.0 | 17.0 | 20.0 | 35.0 | 38.0 | 46.0 |

Testing

- Each valve is tested with nitrogen @ 1000psig(69bar) to max leak rate of 0.1SCCM.
- Optional tests are available upon request.

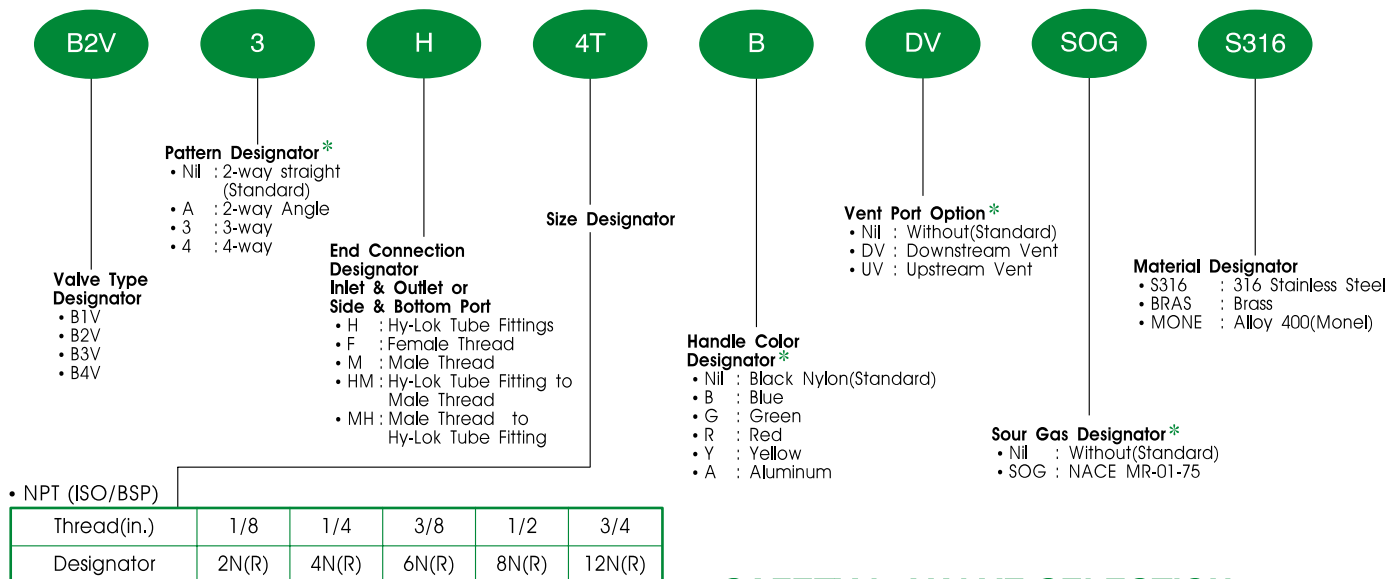
Sour Gas Service

- is provided to meet NACE Standard MR - 01 - 75.

Packing Adjustment

- Valves are factory adjusted for 1000psig service at 70°F(21°C).
- For services at higher pressure, the packing must be readjusted. This can be done with the valve in - line. Untighten the hex key to remove the handle. Tighten the packing bolt clockwise with the increment of **a quarter of a quarter** turn (22.5°) until leaktight seal is obtained. And then reassemble.
- Exposure of valves to varying temperature can affect the initial packing load. You may need check leak and readjust packing bolt.

Ordering Information



• Tube

| | | | | | | | | |
|-----------------|------------|------|-----|-----|-----|-----|-----|-----|
| Fractional Tube | O.D(in.) | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 |
| | Designator | 1T | 2T | 4T | 6T | 8T | 10T | 12T |
| Metric Tube | O.D(mm) | 3 | 6 | 8 | 10 | 12 | 16 | 20 |
| | Designator | 3M | 6M | 8M | 10M | 12M | 16M | 20M |

Note* : No designator is required for standard, black nylon handle, e.g.B2VH-4T-S316.

SAFETY in VALVE SELECTION

Proper installation, materials compatibility, operation and maintenance of these valves are the responsibility of the user. The total system design must be taken into consideration to ensure optimal performance and safety.

■ QUALITY SYSTEM CERTIFICATES



ISO 9001
CERTIFICATE NO. GQC 212

ASME SECT III (MO)
CERTIFICATE NO. GSC 584

■ TYPE APPROVALS (For Hy-Lok Tube Fittings)



American Bureau Shipping
CERTIFICATE NO.00-BK50288-X



Lloyd's Register
CERTIFICATE NO.01/10075



GERMANISCHER LLOYD
CERTIFICATE NO.57798 - 91 HH



DET NORSKE VERITAS
CERTIFICATE NO.P - 9100



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