

COMPACT[®]
AUTOMATION PRODUCTS

Val-U-Act Ball Operators



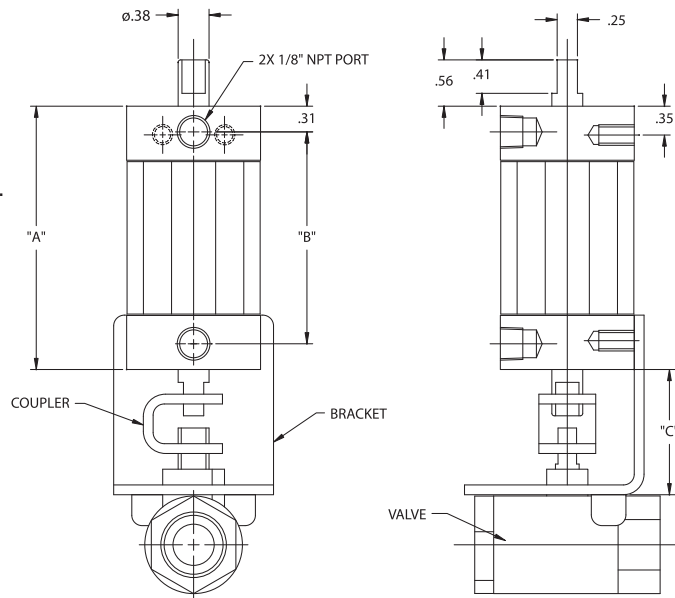
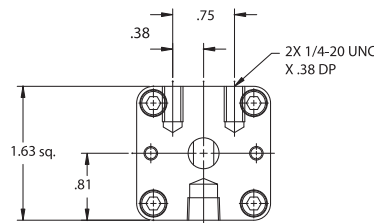
Specifications: Class-Act (CL) Valve Operator (1/4"-3/4")

Double Acting Valve Operator Systems

- Valve Sizes from 1/4" to 3/4"
- 48 in. lbs. to 80 in. lbs.

As compared to other rotary devices, ITT Vane Actuators Have:

- One Moving Part Providing:
 - ZERO Backlash
 - No Loss of Motion
 - Smooth Rotation
 - Precise Repeatability
 - Continuous Full Torque Throughout Rotation
- ITT Patented Urethane Seals for:
 - Long Cycle Life and Non-Lube Service



SPECIFICATIONS

Unit Materials

| | |
|-------------------------|------------------------|
| Stator/Rotor Seals..... | Urethane |
| Shaft/Tube Seals..... | Buna |
| Cylinder..... | Anodized Alum. |
| End Caps..... | Anodized Alum. |
| Shaft..... | Stainless Steel |
| Trim..... | Mild Steel, Opt'l S.S. |
| Bearings..... | Delrin |
| Brackets..... | Stainless Steel |
| Couplings..... | Stainless Steel |

Miscellaneous

Inlets1/8" NPT

Filtration

Air 25-30 microns

Temperature Range

40°F to 180°F.

For applications below 40°F, a variety of seal options are available based upon cycle rates, temperatures and frequency of use. Consult the factory to discuss your cold temperature application for your optimum solution.

| Torque Chart (in.lbs.) | | | | | |
|------------------------|--------------------|--------|--------|---------|---------|
| Actuator Model | Actuator Torque at | | | | |
| | 40 PSI | 60 PSI | 80 PSI | 100 PSI | 150 PSI |
| 742 | 21 | 35 | 48 | 60 | 90 |
| 762 | 35 | 58 | 80 | 100 | 150 |

| Dimensions (in.) | | |
|------------------|------|------|
| Actuator Size | A | B |
| 4 | 3.20 | 2.57 |
| 6 | 4.75 | 4.12 |

| Capacity per Stroke | |
|---------------------|--------------|
| Actuator Model | Cubic Inches |
| 742 | 1.66 |
| 762 | 2.52 |

| Weight | |
|----------------|--------|
| Actuator Model | Pounds |
| 742 | 0.88 |
| 762 | 1.13 |
| Brackets | 0.30 |

| Dimensions (in.) | |
|-----------------------|------|
| Valve Size | C |
| Apollo 1/4" thru 1/2" | 1.57 |
| Apollo 3/4" | 1.73 |

How To Order: Class-Act (CL) Valve Operator (1/4" – 3/4")

Part Number Example: 742-501-BC-V1-E00

| | | | | | | | |
|-------|----------|-------|---------------|-------|--------------------|---------|---------|
| MODEL | END CAPS | SHAFT | UNIT MATERIAL | VALVE | BRACKET & COUPLING | OPTIONS | OPTIONS |
| 742 | 5 | O | 1 | BC | V1 | E00 | XXX |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

1

| Model | |
|--|--------------------|
| Operator - Torque (100 psi) - Rotation | |
| 742 | 60 in. lbs. - 90° |
| 762 | 100 in. lbs. - 90° |

2

| End Caps | |
|----------|--------------------------|
| 5 | Pneumatic Clear Anodized |

3

| Shaft | |
|-------|------------------------|
| O | Double Manual Override |

4

| Unit Materials | |
|---------------------|--|
| Shaft - Body - Trim | |
| 1 | 303 Stainless Steel, Aluminum, Steel |
| 3 | 303 Stainless Steel, Aluminum, Stainless Steel |

5

| Apollo Bronze Ball Valves ¹ | | | |
|--|-----------------|---|---|
| (Use '00' if not selecting a valve) | | | |
| Size - Type - Operator | | | |
| 00 | No Valve | | |
| BA | 1/4" - 2 way | - | 4 |
| BB | 3/8" - 2 way | - | 4 |
| BC | 1/2" - 2 way | - | 4 |
| BD | 3/4" - 2 way | - | 6 |
| BL | 1/2" - Diverter | - | 6 |

| Apollo Stainless Steel Ball Valves ² | | | |
|---|-----------------|---|---|
| Valve Size - Type - Operator Size | | | |
| SA | 1/4" - 2 way | - | 4 |
| SB | 3/8" - 2 way | - | 4 |
| SC | 1/2" - 2 way | - | 4 |
| SD | 3/4" - 2 way | - | 6 |
| SL | 1/2" - Diverter | - | 6 |

1 Bronze 2-way 1/4", 3/8" and 1/2" are Apollo Series 77 Full Port Ball Valve. The 3/4" is Apollo Series 71 Standard Port. Diverter Valves are Series 70. All Bronze valves have Stainless Steel Ball and Stem.

2 Stainless Steel 2-way and diverter valves are Apollo Series 76.

6

| Bracket | |
|-------------------------------------|---|
| Valve Brand - Valve Size - Material | |
| 00 | No Bracket |
| V1 | Apollo - 1/4", 3/8", 1/2" 304 Stainless Steel |
| V2 | Apollo - 3/4", 1" 304 Stainless Steel |

7

| Options | |
|---------|--|
| 000 | No Options |
| E00 | Factory Assembled Operator Bracket, Coupling and Valve |
| 400 | Adjustable Stroke Control Cap End |
| 704 | Teflon Impregnated Hard Anodized |

8

| Switch Options | |
|--|---|
| All Axx Switch Options are Single End Only | |
| A00 | Switch Ready - No Switches |
| A02 | Switch Package ¹ - 2 Reed Switches |
| A05 | Switch Package ² - 2 Sourcing Switches |
| A08 | Switch Package ² - 2 Sinking Switches |

1 Switch has built in protection for use with ABPLC

2 Switch function can be either sinking or sourcing depending on wiring scheme.

Consult Factory for Quick Disconnect Switches

Specifications: Val-U-Act (VA) Valve Operator (1/4" – 3")

Double Acting Valve Operator Systems

- Valve Sizes from 1/4" to 3"
- 140 in. lbs. to 560 in. lbs.

As compared to other rotary devices, ITT Vane Actuators Have:

- One Moving Part Providing:
 - ZERO Backlash
 - No Loss of Motion
 - Smooth Rotation
 - Precise Repeatability
 - Continuous Full Torque Throughout Rotation
- ITT Patented Urethane Seals for:
 - Long Cycle Life and Non-Lube Service

SPECIFICATIONS

Unit Materials

| | |
|--------------------------|------------------------|
| Stator/Rotor Seals | Urethane |
| Shaft/Tube Seals | Buna |
| Cylinder | Anodized Alum. |
| End Caps | Anodized Alum. |
| Shaft | Mild Steel, Opt'l S.S. |
| Trim | Mild Steel, Opt'l S.S. |
| Bearings | Delrin |
| Brackets | Stainless Steel |
| Couplings | Stainless Steel |

Miscellaneous

Inlets 1/4" NPT

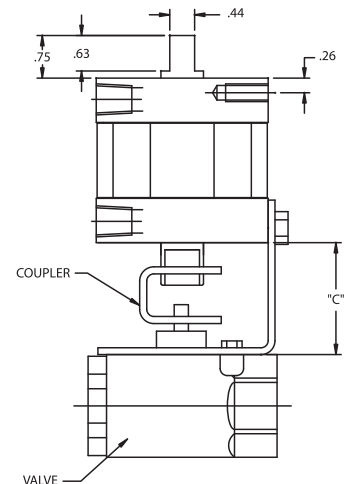
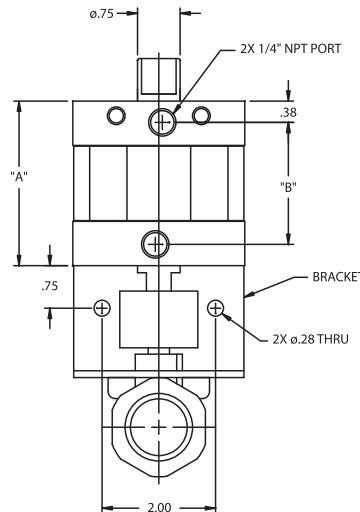
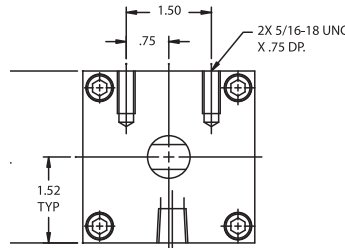
Filtration

Air 25-30 microns

Temperature Range

40°F to 180°F

For applications below 40°F, a variety of seal options are available based upon cycle rates, temperatures and frequency of use. Consult the factory to discuss your cold temperature application for your optimum solution.



| Torque Chart (in.lbs.) | | | | | |
|------------------------|--------------------|--------|--------|---------|---------|
| Actuator Model | Actuator Torque at | | | | |
| | 40 PSI | 60 PSI | 80 PSI | 100 PSI | 150 PSI |
| 812 | 70 | 105 | 140 | 175 | 265 |
| 822 | 140 | 210 | 280 | 350 | 524 |
| 832 | 280 | 420 | 560 | 700 | 1050 |

| Dimensions (in.) | | |
|------------------|------|------|
| Actuator Size | A | B |
| 1 | 2.90 | 2.15 |
| 2 | 4.40 | 3.64 |
| 3 | 7.42 | 6.67 |

| Capacity per Stroke | |
|---------------------|--------------|
| Actuator Model | Cubic Inches |
| 812 | 2.75 |
| 822 | 5.50 |
| 832 | 11.00 |

| Weight | |
|----------------|---------|
| Actuator Model | Pounds |
| 812 | 2.5 |
| 822 | 3.3 |
| 832 | 6.0 |
| Brackets | 0.2-0.8 |

| Spring Return | |
|----------------|-------------|
| Actuator Model | Add. Weight |
| 822 | 3.0 |
| 832 | 9.0 |

| Dimensions (in.) | |
|-----------------------|------|
| Valve Size | C |
| Apollo 1/4" thru 1/2" | 1.69 |
| Apollo 3/4" thru 1" | 1.97 |
| Apollo 1 1/4" thru 2" | 2.31 |
| Apollo 2 1/2" thru 3" | 2.25 |

How To Order: Val-U-Act (VA) Valve Operator (1/4" - 3")

Part Number Example: 812-501-BC-V1-E00

| | | | | | | | |
|-------|----------|-------|---------------|-------|--------------------|---------|---------|
| MODEL | END CAPS | SHAFT | UNIT MATERIAL | VALVE | BRACKET & COUPLING | OPTIONS | OPTIONS |
| 812 | 5 | O | 1 | BC | V1 | E00 | XXX |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

1 Model
Operator - Torque (100 psi) - Rotation

| | |
|-----|--------------------|
| 812 | 175 in. lbs. - 90° |
| 822 | 350 in. lbs. - 90° |
| 832 | 700 in. lbs. - 90° |

2 End Caps

| | |
|---|--------------------------|
| 5 | Pneumatic Clear Anodized |
|---|--------------------------|

3 Shaft

| | |
|---|------------------------|
| O | Double Manual Override |
|---|------------------------|

4 Unit Materials
Shaft - Body - Trim

| | |
|---|---|
| 1 | Polished & Ground Fatigue Proof 1144 Steel - Anod. Alum. - Carb.Steel |
| 3 | 303 Stainless Steel - Anod. Alum. - Stainless Steel |

5 Apollo Bronze Ball Valves¹
(Use '00' if not selecting a valve)
Size - Type - Operator

| | | | |
|----|----------|------------|-----|
| 00 | No Valve | | |
| BA | 1/4" | - 2 way | - 1 |
| BB | 3/8" | - 2 way | - 1 |
| BC | 1/2" | - 2 way | - 1 |
| BD | 3/4" | - 2 way | - 1 |
| BE | 1" | - 2 way | - 1 |
| BF | 1 1/4" | - 2 way | - 2 |
| BG | 1 1/2" | - 2 way | - 2 |
| BH | 2" | - 2 way | - 2 |
| BJ | 3" | - 2 way | - 3 |
| BL | 1/2" | - Diverter | - 1 |
| BM | 3/4" | - Diverter | - 1 |
| BN | 1" | - Diverter | - 1 |
| BO | 1 1/4" | - Diverter | - 2 |
| BP | 1 1/2" | - Diverter | - 2 |
| BQ | 2" | - Diverter | - 2 |

Apollo Stainless Steel Ball Valves²
Valve Size - Type - Operator Size

| | | | |
|----|--------|------------|-----|
| SA | 1/4" | - 2 way | - 1 |
| SB | 3/8" | - 2 way | - 1 |
| SC | 1/2" | - 2 way | - 1 |
| SD | 3/4" | - 2 way | - 1 |
| SE | 1" | - 2 way | - 1 |
| SF | 1 1/4" | - 2 way | - 2 |
| SG | 1 1/2" | - 2 way | - 2 |
| SH | 2" | - 2 way | - 2 |
| SI | 2 1/2" | - 2 way | - 3 |
| SJ | 3" | - 2 way | - 3 |
| SL | 1/2" | - Diverter | - 1 |
| SM | 3/4" | - Diverter | - 1 |
| SN | 1" | - Diverter | - 1 |
| SP | 1 1/2" | - Diverter | - 2 |
| SQ | 2" | - Diverter | - 2 |

¹ Bronze 2-way 1/4", 3/8" and 1/2" are Apollo Series 77 Full Port Ball Valve. 3/4" thru 3" are Apollo Series 71 Standard Port. Diverter Valves are Series 70. All Bronze valves have Stainless Steel Ball and Stem.
² Stainless Steel 2-way and diverter valves are Apollo Series 76.

6 Bracket
Valve Brand - Valve Size - Material

| | |
|----|--|
| 00 | No Bracket |
| V1 | Apollo - 1/4", 3/8", 1/2" 304 Stainless Steel |
| V2 | Apollo - 3/4", 1" 304 Stainless Steel |
| V3 | Apollo - 1 1/4", 1 1/2", 2" 304 Stainless Steel |
| V4 | Apollo - 2 1/2", 3" 304 Stainless Steel |

7 Options

| | |
|-----|--|
| 000 | No Options |
| E00 | Factory Assembled Operator Bracket, Coupling and Valve |
| 400 | Adjustable Stroke Control Cap End |
| 704 | Teflon Impregnated Hardened Anodized |

8 Switch Options
All Axx Switch Options are Single End Only

| | |
|-----|---|
| A00 | Switch Ready - No Switches |
| A02 | Switch Package ¹ - 2 Reed Switches |
| A05 | Switch Package ² - 2 Sourcing Switches |
| A08 | Switch Package ² - 2 Sinking Switches |

¹ Switch has built in protection for use with ABPLC
² Switch function can be either sinking or sourcing depending on wiring scheme.

Consult Factory for Quick Disconnect Switches

How To Order: Val-U-Act Spring Return (VS) (1/4" - 3")

Part Number Example: 822-5A1-BC-V1-E00

| MODEL | END CAPS | SHAFT | UNIT MATERIAL | VALVE | BRACKET & COUPLING | OPTIONS |
|-------|----------|-------|---------------|-------|--------------------|---------|
| 822 | 5 | A | 1 | BC | V1 | E00 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| 1 Model | |
|--|--------------------|
| Operator - Torque (100 psi) - Rotation | |
| 822 | 350 in. lbs. - 90° |
| 832 | 700 in. lbs. - 90° |

| 2 End Caps | |
|------------|--------------------------|
| 5 | Pneumatic Clear Anodized |

| 3 Shaft | |
|---------|---------------------|
| A | Spring Closes Valve |
| B | Spring Opens Valve |

| 4 Unit Materials | |
|---------------------|---|
| Shaft - Body - Trim | |
| 1 | Polished & Ground Fatigue Proof 1144 Steel - Anod. Alum. - Carb.Steel |
| 3 | 303 Stainless Steel - Anod. Alum. - Stainless Steel |

| 5 Apollo Bronze Ball Valves ¹ | | | |
|--|----------|------------|-----|
| (Use '00' if not selecting a valve) | | | |
| Size - Type - Operator | | | |
| 00 | No Valve | | |
| BA | 1/4" | - 2 way | - 2 |
| BB | 3/8" | - 2 way | - 2 |
| BC | 1/2" | - 2 way | - 2 |
| BD | 3/4" | - 2 way | - 2 |
| BE | 1" | - 2 way | - 2 |
| BF | 1 1/4" | - 2 way | - 3 |
| BG | 1 1/2" | - 2 way | - 3 |
| BH | 2" | - 2 way | - 3 |
| BL | 1/2" | - Diverter | - 2 |
| BM | 3/4" | - Diverter | - 2 |
| BN | 1" | - Diverter | - 2 |
| BO | 1 1/4" | - Diverter | - 3 |
| BP | 1 1/2" | - Diverter | - 3 |
| BQ | 2" | - Diverter | - 3 |

| Apollo Stainless Steel Ball Valves ² | | | |
|---|--------|------------|-----|
| Valve Size - Type - Operator Size | | | |
| SA | 1/4" | - 2 way | - 2 |
| SB | 3/8" | - 2 way | - 2 |
| SC | 1/2" | - 2 way | - 2 |
| SD | 3/4" | - 2 way | - 2 |
| SE | 1" | - 2 way | - 2 |
| SF | 1 1/4" | - 2 way | - 3 |
| SG | 1 1/2" | - 2 way | - 3 |
| SH | 2" | - 2 way | - 3 |
| SL | 1/2" | - Diverter | - 2 |
| SM | 3/4" | - Diverter | - 2 |
| SN | 1" | - Diverter | - 2 |
| SP | 1 1/2" | - Diverter | - 3 |
| SQ | 2" | - Diverter | - 3 |

| 6 Bracket | |
|-------------------------------------|--|
| Valve Brand - Valve Size - Material | |
| 00 | No Bracket |
| V1 | Apollo - 1/4", 3/8", 1/2" 304 Stainless Steel |
| V2 | Apollo - 3/4", 1" 304 Stainless Steel |
| V3 | Apollo - 1 1/4", 1 1/2", 2" 304 Stainless Steel |
| V4 | Apollo - 2 1/2", 3" 304 Stainless Steel |

| 7 Options | |
|-----------|--|
| 000 | No Options |
| E00 | Factory Assembled Operator Bracket, Coupling and Valve |
| 400 | Adjustable Stroke Control Cap End, Pos. 5 |
| 704 | Teflon Impregnated Hard Anodized Note: Operator Only |

Spring Return

Description:

Spring Return operators are formed bolting a spring return unit to a double acting Val-U-Act operator. The return movement is effected by a clock-type spring which is pretensioned to about half the operator torque. The amount of pretension is large, compared to the rotation and therefore the torque does not vary more than 20% over the rotation.

Spring returns are factory-installed and adjusted.

Specifications:

Spring Casing - pressure diecast to BS1004 zinc or aluminum alloy LM25

Finish - Epoxy stove enamel

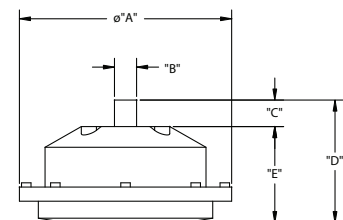
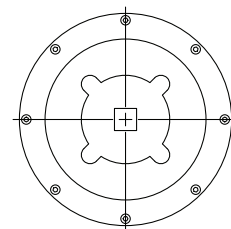
Spring - Clock type, spring steel

Ordering:

The spring return is available with the optional Adjustable Stroke Control but not with the Hall Effect or AC/DC Reed Switches.

1 Bronze 2-way 1/4", 3/8" and 1/2" are Apollo Series 77 Full Port Ball Valve. 3/4" thru 3" are Apollo Series 71 Standard Port. Diverter Valves are Series 70. All Bronze valves have Stainless Steel Ball and Stem.

2 Stainless Steel 2-way and diverter valves are Apollo Series 76.



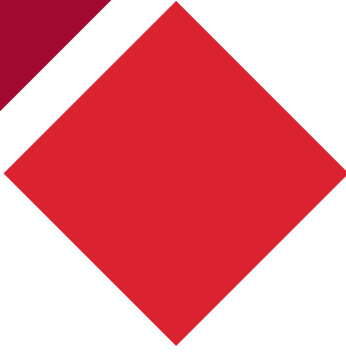
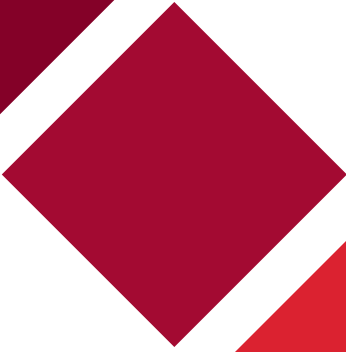
| Dimensions (in.) | | | | | |
|------------------|------|------|------|------|------|
| Operator Size | A | B | C | D | E |
| 2 | 4.22 | .375 | .500 | 2.25 | 1.78 |
| 3 & 4 | 5.97 | .625 | .750 | 4.06 | 3.23 |

Warranty Statement

Warranty

Seller warrants for one year from the date of shipment Seller's manufactured products to the extent that Seller will replace those having defects in material or workmanship when used for the purpose and in the manner which Seller recommends. If Seller's examination shall disclose to its satisfaction that the products are defective, and an adjustment is required, the amount of such adjustment shall not exceed the net sales price of the defective products only and no allowance will be made for labor or expense of repairing or replacing defective products or workmanship or damage resulting from the same. Seller warrants the products which it sells of other manufacturers to the extent of the warranties of their respective makers. Where engineering design or fabrication work is supplied, Buyer's acceptance of Seller's design or of delivery of work shall relieve Seller of all further obligation, other than as expressed in Seller's product warranty. THIS IS SELLER'S SOLE WARRANTY. SELLER MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED. AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED SELLER'S AFORESTATED OBLIGATION ARE HEREBY DISCLAIMED BY SELLER AND EXCLUDED FROM THIS WARRANTY. Seller neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of its engineering designs or products. This warranty shall not apply to any products or parts of products which (a) have been repaired or altered outside of Seller's factory, in any manner; or (b) have been subjected to misuse, negligence or accidents; or (c) have been used in a manner contrary to Seller's instructions or recommendations. Seller shall not be responsible for design errors due to inaccurate or incomplete information supplied by Buyer or its representatives.

SELLER'S LIABILITY: Seller will not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether based upon warranty (except for the obligation accepted by Seller under "Warranty" above), contract or negligence, arising in connection with the design, manufacture, sale, use or repair of the products or of the engineering designs supplied to Buyer.



COMPACT[®]
AUTOMATION PRODUCTS

Compact Automation Products, LLC
105 Commerce Way
Westminster, SC 29693
Tel: 864.647.9521
Fax: 864.647.9574
www.compactautomation.com

CAP639R3

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12/20