

**1-6330 SERIES  
THECO  
AUTOMATED  
VALVES**

# THECO 1-6330 SERIES AUTOMATED ON-OFF VALVES

Compact and sturdy construction and reduced dimension make this valve suitable for on-off service in continuous or discontinuous low capacity processes for long and heavy operation almost without maintenance.

Two and three way models are identical, except for the bottom flange, which is anyhow interchangeable.

The piston design plug allows changing the valve action by simply turning plug and spring upside down. The seal ring mounted on the plug grants perfect sealing in closed position.

Limit switches provided with induction detectors may be installed as well at both travel ends. Plants for rubber vulcanizing, food industry, plastic molding, etc. are commonly automated by THECO valves.

## TECHNICAL CHARACTERISTICS

### BODY

material: AISI 316  
 dimensions: DN ½", ¾", 1", 1.¼", 1.½"  
 connections: ANSI B2.1 - 500 psi series threaded ANSI 300 - PN40 flanged  
 ratings: see p/T diagram

### PACKING

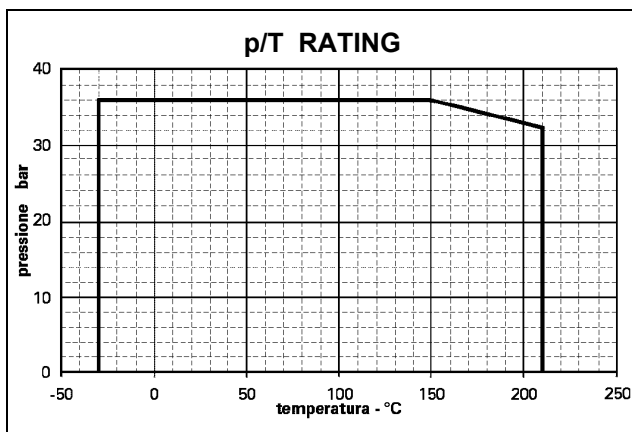
Teflon "V" rings supplied with preloading spring.

### PLUG

design: integral with the stem  
 inserts: loaded TEFLON  
 sealing: VI class as per IEC 60534-4  
 service: on-off

### SEAT

construction: directly machined in the body or bottom flange



## ACTUATOR

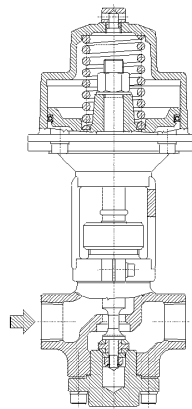
- pneumatic cylinder
- spring range: 1 ÷ 1.5 bar
- action: direct or reverse (changeable)
- connection: ¼" NPT
- air supply:
  - nominal: 2.5 or 3.5 bar (see max allowable Δp table)
  - max air supply to avoid internal parts damage: 5 bar
  - pressure containing parts design: 11 bar

## INSTALLATION

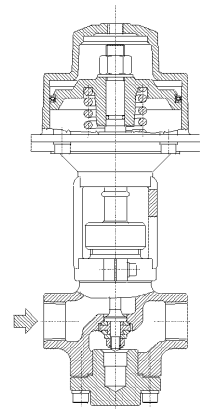
1-6330 series valves may be installed in any position.

The valve orientation is identified with regard to flow direction by suitable marks on the body corresponding to schematics shown in the present bulletin.

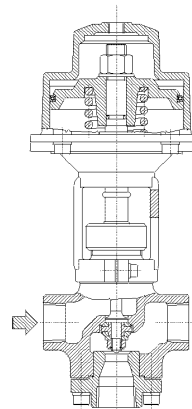
## AVAILABLE MODELS



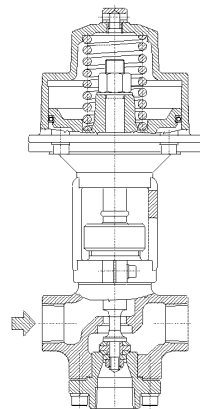
**1-6331**  
two way – air to close  
(normally-open)



**1-6332**  
two way – air to open  
(normally-closed)



**1-6333**  
three way - air to open straight way  
(normally-closed straight way)



**1-6334**  
three way – air to close straight way  
(normally-open straight way)

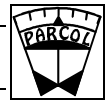
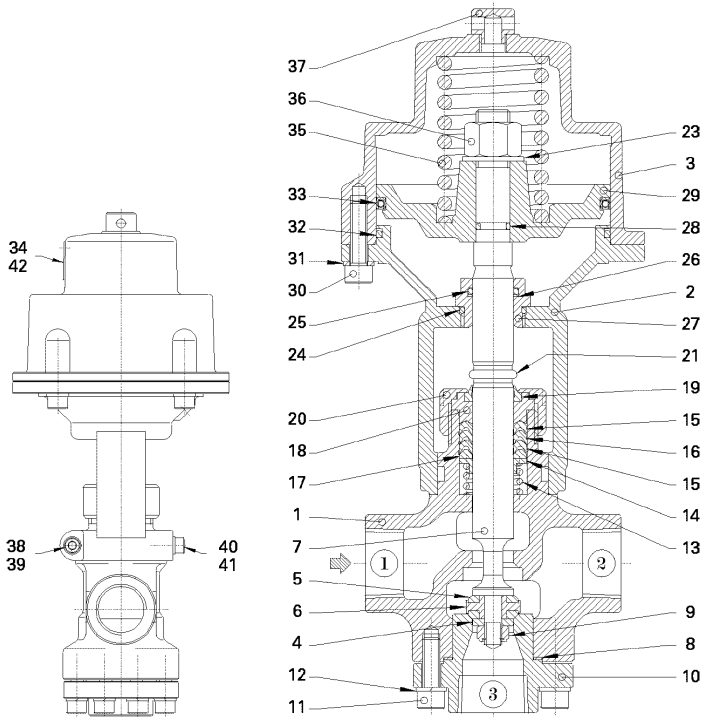


Fig. 1 – PART LIST



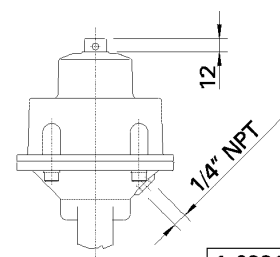
| Item | Part name         | Material                      |
|------|-------------------|-------------------------------|
| 1    | BODY              | AISI 316                      |
| 2    | YOKE              | SPHEROIDAL GRAPHITE CAST IRON |
| 3    | CYLINDER          | SPHEROIDAL GRAPHITE CAST IRON |
| 4    | WASHER            | AISI 316                      |
| 5    | SEALING SEAT RING | LOADED PTFE                   |
| 6    | SUPPORT           | 17-4-PH                       |
| 7    | STEM              | HARDENED STAINLESS STEEL      |
| 8    | GASKET            | COPPER                        |
| 9    | ELASTIC STOP-NUT  | AISI 304                      |
| 10   | BOTTOM FLANGE     | AISI 316                      |
| 11   | SCREW             | AISI 304                      |
| 12   | WASHER            | AISI 304                      |
| 13   | SPRING            | AISI 316                      |
| 14   | SPRING SEAT       | LEADED BRASS                  |
| 15   | PACKING RING      | PTFE                          |
| 16   | INTERMEDIATE RING | LOADED PTFE                   |
| 17   | PACKING END RING  | LOADED PTFE                   |
| 18   | PACKING FOLLOWER  | LEADED BRASS                  |
| 19   | SCRAPER           | PTFE                          |
| 20   | CLAMPING NUT      | CARBON STEEL                  |
| 21   | TRAVEL INDICATOR  | SILICONE                      |
| 23   | STOP WASHER       | AISI 304                      |
| 24   | O-RING            | NBR 70                        |
| 25   | O-RING            | NBR 70                        |
| 26   | BACK-UP           | TEFLON                        |
| 27   | GUIDE             | LEADED BRASS                  |
| 28   | O-RING            | NBR 70                        |
| 29   | PISTON            | ALUMINIUM                     |
| 30   | SCREW             | AISI 304                      |
| 31   | WASHER            | AISI 304                      |
| 32   | O-RING            | NBR 70                        |
| 33   | SEAL RING         | LOADED PTFE                   |
| 34   | RIVET             | ALUMINIUM                     |
| 35   | SPRING            | CARBON STEEL                  |
| 36   | NUT               | AISI 304                      |
| 37   | PLUG              | PVC                           |
| 38   | SCREW             | AISI 304                      |
| 39   | WASHER            | AISI 304                      |
| 40   | SCREW             | AISI 304                      |
| 41   | WASHER            | AISI 304                      |
| 42   | PLATE             | AISI 304                      |

| DN<br>inches  | Ø SEAT<br>mm | TRAVEL<br>mm | Flow coefficients C <sub>v</sub> |                |                |
|---|--------------|--------------|----------------------------------|----------------|----------------|
|   |              |              | 2 way direct                     | 2 way reverse  | 3 way          |
|   |              |              | 1 → 2<br>2 → 1                   | 1 → 2<br>2 → 1 | 2 → 3<br>3 → 2 |
| 1/2   | 16           | 12           | 6                                | 6              | 7              |
| 3/4   | 16           | 12           | 6                                | 6              | 7              |
| 1   | 19           | 15           | 8                                | 8              | 9.5            |
| 1.1/4   | 25           | 18           | 15                               | 15             | 17             |
| 1.1/2   | 32           | 22           | 24                               | 24             | 27             |
| F <sub>L</sub> recovery factor  |              |              | 0.9                              | 0.9            | 0.8            |
| Pressure differential ratio factor in limit flow condition X <sub>T</sub> |              |              | 0.74                             | 0.74           | 0.65           |

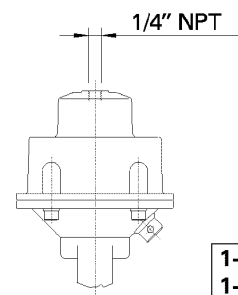
MAX ALLOWABLE Δp - bar

| DN<br>in. | 2 way |             |         |      | 3 way |    |            |             |    |         |            |             |    |         |    |      |
|-----------|-------|-------------|---------|------|-------|----|------------|-------------|----|---------|------------|-------------|----|---------|----|------|
|           | P1    | P2          |         |      | N.A.  | P1 | 1 - 2 open |             |    |         | 2 - 3 open |             |    |         |    |      |
|           |       | N.C. supply |         |      |       |    | N.A.       | N.C. supply |    |         |            | N.C. supply |    |         |    |      |
|           |       | 2.5 bar     | 3.5 bar | N.A. |       |    |            | 2.5 bar     |    | 3.5 bar |            | 2.5 bar     |    | 3.5 bar |    | N.A. |
|           |       |             |         |      |       |    |            | P2          | P3 | P2      | P3         | P2          | P3 | P2      | P3 |      |
| 1/2       | 36    | 18          | 32      | 27   | 36    | 36 | 18         | 36          | 32 | 36      | 27         | 18          | 32 | 27      |    |      |
| 3/4       | 36    | 18          | 32      | 27   | 36    | 36 | 18         | 36          | 32 | 36      | 27         | 18          | 32 | 27      |    |      |
| 1         | 36    | 19          | 34      | 29   | 36    | 36 | 19         | 36          | 34 | 36      | 29         | 19          | 34 | 29      |    |      |
| 1.1/4     | 36    | 15          | 27      | 23   | 36    | 36 | 15         | 36          | 27 | 36      | 23         | 15          | 27 | 23      |    |      |
| 1.1/2     | 36    | 14          | 25      | 22   | 36    | 36 | 14         | 36          | 25 | 36      | 22         | 14          | 25 | 22      |    |      |

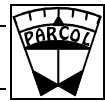
PNEUMATIC SUPPLY



1-6331  
1-6334

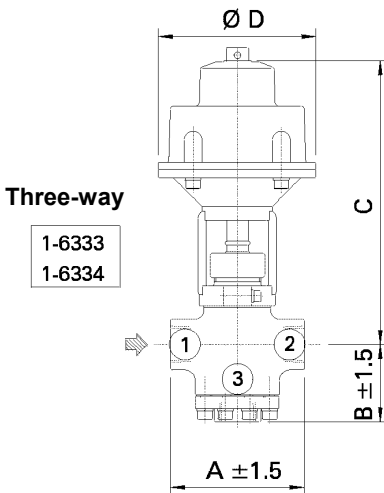
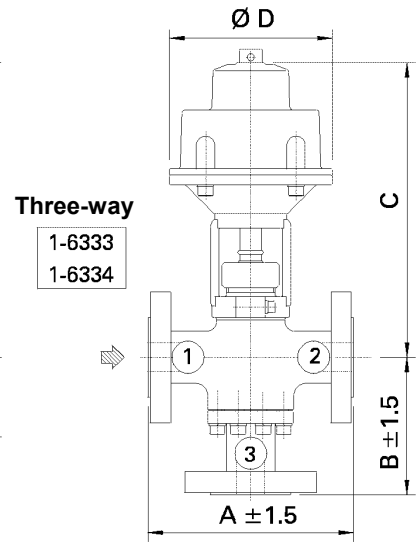
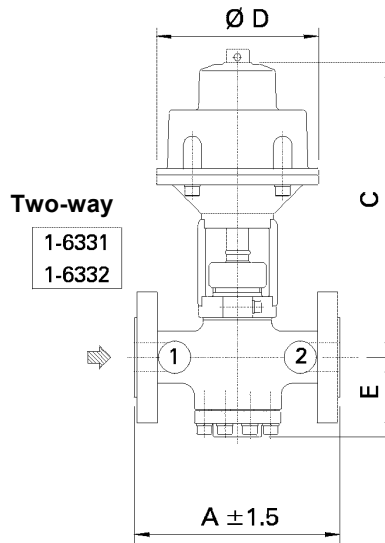
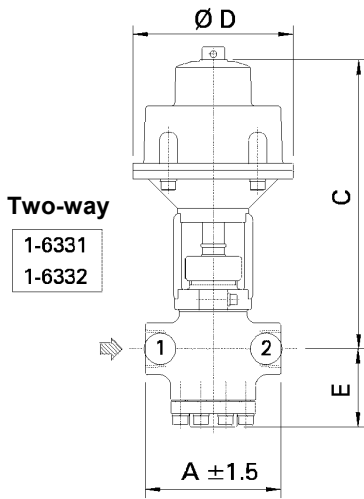


1-6332  
1-6333



**THREADED CONSTRUCTION NPTF ANSI 300**

**FLANGED CONSTRUCTION ANSI 300 and PN 40**



| way number | commutating valve |                 | switching valve | mixing valve |
|------------|-------------------|-----------------|-----------------|--------------|
|            | normally open     | normally closed |                 |              |
| 1          | outlet            | inlet           | outlet          | inlet        |
| 2          | tank              | tank            | inlet           | outlet       |
| 3          | inlet             | outlet          | outlet          | inlet        |

| NPS                       |                        | in                    | 1/2 | 3/4 | 1   | 1.1/4 | 1.1/2 |
|---------------------------|------------------------|-----------------------|-----|-----|-----|-------|-------|
| STROKE                    |                        | mm                    | 12  | 12  | 15  | 18    | 22    |
| Ø CYLINDER                |                        | mm                    | 90  | 90  | 110 | 125   | 150   |
| THREADED CONSTRUCTION (1) | A                      |                       | 104 | 104 | 136 | 136   | 165   |
|                           | B                      |                       | 89  | 89  | 102 | 102   | 129   |
| FLANGED CONSTRUCTION      | IEC 534-3-1 Tab. 1 (2) | A                     | 170 | 194 | 197 | 213   | 235   |
|                           |                        | B                     | 112 | 119 | 144 | 155   | 169   |
|                           | IEC 534-3-1 Tab. 2     | A                     | 130 | 150 | 160 | 180   | 200   |
|                           |                        | B                     | 140 | 140 | 140 | 140   | 175   |
| C                         |                        |                       | 206 | 206 | 251 | 283   | 340   |
| D                         |                        |                       | 115 | 115 | 142 | 163   | 195   |
| E                         |                        |                       | 57  | 57  | 70  | 84    | 102   |
| MASS                      | kg                     | THREADED CONSTRUCTION | 5   | 5   | 8   | 11    | 19    |
|                           |                        | FLANGED CONSTRUCTION  | 8   | 8   | 11  | 16    | 24    |

(1) INTERCHANGEABLE WITH VULCA N 1-6320  
 (2) INTERCHANGEABLE WITH VULCA 1-6310



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