

# Dual counterbalance with brake release port

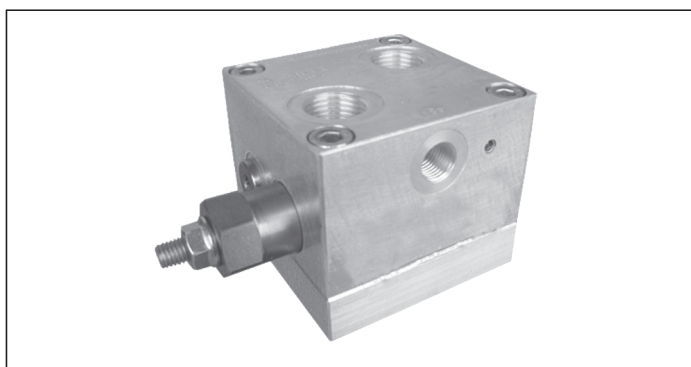
VBSO-DE-VF-30-FM

06.03.01 - X

**RE 18308-56**

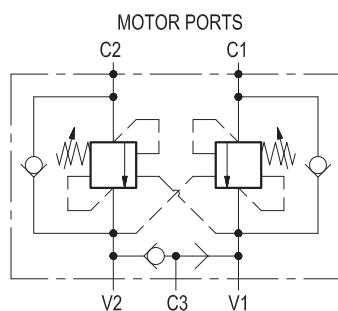
Edition: 03.2016

Replaces: 04.2010



## Description

It provides static and dynamic motion control by regulating the flow IN and OUT of the hydraulic motor, through ports C1 and C2. It includes 2 sections, each one composed by a check and a relief valve pilot assisted by pressure in the opposite line: the check allows free flow into the motor, then locks and prevents reverse movement. With pilot pressure applied at the line across, the pressure setting of the relief is reduced in proportion to the stated ratio until opening and allowing controlled reverse motion. With motor turning and without pilot pressure, the relief function builds up back-pressure at the motor port in order to stop the motion. Back-pressure at V1 or V2 is additive to the pressure setting in all functions. Through port C3, a shuttle valve directs either V1 or V2 line pressure to the spring actuated brake for brake releasing.



## Technical data

|                    |                          |
|--------------------|--------------------------|
| Operating pressure | up to 210 bar (3000 psi) |
|--------------------|--------------------------|

|           |                    |
|-----------|--------------------|
| Max. flow | 60 l/min. (16 gpm) |
|-----------|--------------------|

|  |  |
|--|--|
| Flangeable on SAUER-DANFOSS orbital motors OMS series. |  |
|--|--|

Relief setting: at least 1.3 times the highest expected load. In addition, both the relief setting and the pilot ratio must be determined in order to achieve building-up of pilot pressure in V1 or V2 high enough to release the brake prior to any valve opening.

|        |                  |
|--------|------------------|
| Weight | 1.6 kg (3.5 lbs) |
|--------|------------------|

|                   |           |
|-------------------|-----------|
| Manifold material | Aluminium |
|-------------------|-----------|

Note: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.

|       |   |
|-------|---|
| Fluid | Mineral oil (HL, HLP) according DIN 51524 |
|-------|---|

|                         |                               |
|-------------------------|-------------------------------|
| Fluid temperature range | -30 °C to 100 (-22 to 212 °F) |
|-------------------------|-------------------------------|

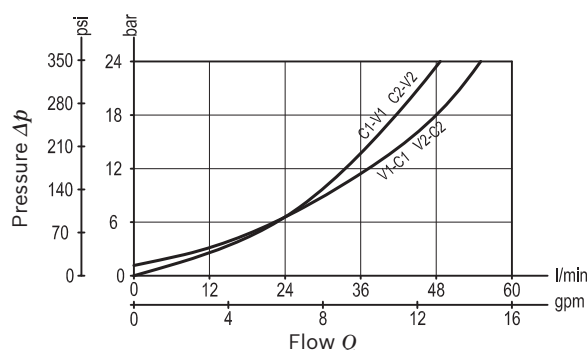
|                 |                                    |
|-----------------|------------------------------------|
| Viscosity range | 10 to 500 mm <sup>2</sup> /s (cSt) |
|-----------------|------------------------------------|

|   |                                      |
|---|--------------------------------------|
| Recommended degree of fluid contamination | Class 19/17/14 according to ISO 4406 |
|---|--------------------------------------|

|                      |                         |
|----------------------|-------------------------|
| Other technical data | see data sheet 18350-50 |
|----------------------|-------------------------|

Note: for applications outside these parameters, please consult us.

## Characteristic curve



Ordering code

|  |       |          |   |
|--|-------|----------|---|
|  |       | 06.03.01 | X |
| Dual counterbalance<br>with brake release port |       |          |   |
| Pilot ratio                                    |       |          |   |
| 013  | 4.2:1 |          |   |
| 023  | 11:1  |          |   |

|              | SPRINGS                             |  |   |
|--------------|-------------------------------------|--|---|
|              | Adj. pressure<br>range<br>bar (psi) | Pres. increase<br>bar/turn<br>(psi/turn) | Std. setting<br>Q=5 (l/min.)<br>bar (psi) |
| for<br>X=013 | 60-210<br>(900-3000)                | 56<br>(812)                              | 200<br>(2900)                             |
| for<br>X=023 | 60-250<br>(900-3600)                | 70<br>(1015)                             | 250<br>(3600)                             |

|            |         |         |       |
|------------|---------|---------|-------|
| Port sizes | V1 - V2 | C1 - C2 | C3    |
|            | G 1/2   | G 1/2   | G 1/4 |

Tamper resistant cap  
ordering code 11.04.23.002  
Mat. no. R930000752



| Type            | Material number |
|-----------------|-----------------|
| 06030101300000C | R930002738      |
| 06030102300000D | R930002751      |

| Type | Material number |
|------|-----------------|
|      |                 |
|      |                 |

Dimensions

