

SM302gb - rev 02/09

**Pneumatic Multidisc
Clutch**

P 130 VAR00 / VAR02



We: **WARNER ELECTRIC EUROPE**, 7, rue Champfleu, B.P. 20095, F-49182 St Barthélemy d'Anjou Cedex,

declare that the clutches made in our factories from St Barthélemy d'Anjou, and hereafter designated : **P 130 VAR00 / VAR02**

are designed to be incorporated into an installation or assembled with other equipment in order to form a machine that is covered by directive 98/37/EC.

St Barthélemy d'Anjou, July 2002

Eric Prat, General Managing Director

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1 Technical specifications

| Size | | 100 | 200 | 400 | 800 | 1600 |
|-----------------|-------------------|------|------|------|------|------|
| N max. | min ⁻¹ | 4800 | 3900 | 3500 | 2700 | 2400 |
| P nominal | bar | 5 | 5 | 5 | 5 | 5 |
| P max | bar | 6 | 6 | 6 | 6 | 6 |
| Weight | kg | 6 | 9,5 | 13 | 25 | 39 |
| Length "L ±0,5" | mm | 81 | 89 | 96 | 118 | 135 |

| Size | | 3200 | 6400 | 12800 | 25600 | 51200 |
|-----------------|-------------------|------|------|-------|-------|-------|
| N max. | min ⁻¹ | 2000 | 1500 | 1200 | 1000 | 800 |
| P nominal | bar | 5 | 5 | 5 | 5 | 5 |
| P max | bar | 6 | 6 | 6 | 6 | 6 |
| Weight | kg | 55 | 87 | 125 | 260 | 480 |
| Length "L ±0,5" | mm | 155 | 170 | 190 | - | - |

NB : Data for catalogue equipment.

Table 1



Symbol designating an action that might damage the brake



Symbol designating an action that might be dangerous to human safety



Symbol designating an electrical action that might be dangerous to human safety

2 Precautions and restrictions on use

2.1 Restrictions on use



These clutches are designed to run dry. Any oily material alters their performance.



Exceeding the maximum rotation speed given in the catalogue invalidates the warranty.



These clutches are designed solely to run on a horizontal shaft. Ask our technical department about other positions.

2.2 Precautions in use and safety measures



During maintenance work, ensure that the mechanism to be driven by the clutch is at rest and that there is no risk of it being started accidentally. All intervention have to be made by qualified personnel, owning this manual.



Any modification made to the brake without the express authorisation of a representative of Warner Electric, in the same way than any use out of the contractual specifications accepted by "Warner Electric", will result in the warranty being invalidated and Warner Electric will no longer be liable in any way with regard to conformity.

3 Installation

3.1 Transport / storage

These units are supplied as standard in packaging guaranteeing protection for a period of 6 months by land or air transport, or after transport by ship to neighbouring continents (without crossing the tropics).

3.2 Handling



The clutch is supplied assembled with the driving flange not fixed.



Avoid any impact on the units so as not to alter their performance.

3.3 Mise en place

The hub (515) is normally supplied at tolerances H7 for the bore and P9 for the width of the keyway (In accordance with NF E 22-175/DIN 6885/BS 4235/ISO R773).

The drive flange (529) is generally supplied at a bore H7 but without fixing holes.

We recommend a tolerance h6 for the shaft and an adjustment H7/f7 for the drive flange (529).

- Centre the flange (529) on the receiving part, then fix it with bolts and lock them
- Slide the hub (515) onto the shaft (after adjusting the keyways) by positioning the teeth of the outer discs (302) or (305), opposite the hollows of the driving flange (529)



In cases where two coaxial shafts are fitted, the maximum authorised setover is 0,05 mm. The angular misalignment should not exceed 0,1 mm over a length of 100 mm. If these values cannot be attained, we recommend that an elastic coupling is fitted between the drive and receiving parts.



Do not forget to secure the bolts fixing the driving flange (529) with Loctite 243 or an equivalent type of product and tighten them to torque.



Never directly strike the cylinder (401), closing flange (408), or hub (515), use a soft alloy block or drift between these parts and the fitting device provided.



It is essential to comply with the length dimension " $L \pm 0,5$ " (see table 1) in order to prevent any risk of contact between the drive flange (529) and the hub (515).

4 Maintenance

4.1 Maintenance

P130, VAR00/02 series clutches only require low maintenance because wear in the disc set is automatically compensated for by movement in the piston, within the limits of its travel.

It is however necessary to:

- Regularly check the seal of the pressure chamber and in the event of leakage, or after 5 years use, change the seals (701, 702)
- Check the wear on the disc set, by measuring the travel of the piston (402), using table 2, below and the diagrams on annex

| Size | 100 | 200 | 400 | 800 | 1600 | 3200 | 6400 | 12800 | 25600 | 51200 |
|-------------------------------|-----|-----|-----|-----|------|------|------|-------|-------|-------|
| Initial travel (mm) | 1,7 | 2,2 | 2,6 | 2,9 | 2,4 | 5 | 5 | 5 | 5 | 5 |
| Travel, clutch worn max. (mm) | 5 | 4,5 | 4 | 6,5 | 7,5 | 10 | 11,5 | 12,5 | 12,5 | 12,5 |

Table 2

4.2 Spare parts

All orders for spare parts must state the size of the unit with its code number, the reference number of the part (see appendice 1), and the quantity of each component wanted.

4.3 Dismantling / reassembling

During maintenance work, ensure that the mechanism to be driven by the clutch is at rest and that there is no risk of it being started accidentally. Also ensure that the compressed air is turned off.

Dismantling:

- Remove the fixing screws from the cylinder (401) or closing flange (408)
- Remove the cylinder (401) or closing flange (408)
- Take out the piston (402)
- Remove the worn disc set
- Fit a new disc set



Start with an outer disc (302 or 305), then an inner disc (308), and then alternate, ending of necessity with an outer disc.

- Change the seals (701, 702)
- Refit the piston (402)
- Refit the cylinder (401) or closing flange (408)



Take care not to damage the seals while reassembling

- Replace the cylinder (401) or closing flange (408) fixing screws, tighten them to the torque shown in table 3, below and secure them with Loctite 243 or an equivalent type of product

| Size | 100 | 200 | 400 | 800 | 1600 | 3200 | 6400 | 12800 | 25600 | 51200 |
|------------------------|-----|-----|-----|-----|------|------|------|-------|-------|-------|
| Screw | M4 | M5 | M6 | M8 | M10 | M10 | M14 | M16 | M16 | M20 |
| Tightening torque (Nm) | 2,6 | 5,2 | 9,1 | 22 | 44 | 44 | 121 | 189 | 189 | 370 |

Table 3

5 Pneumatic connections

5.1 Important recommendations



Ensure that working pressures are complied with, to get the nominal performance from the equipment.



Do not exceed the maximum pressures (see table 1).



These clutches should be supplied with filtered, oiled air.

5.2 Connection diagram

The diagrams are only given as an indication.

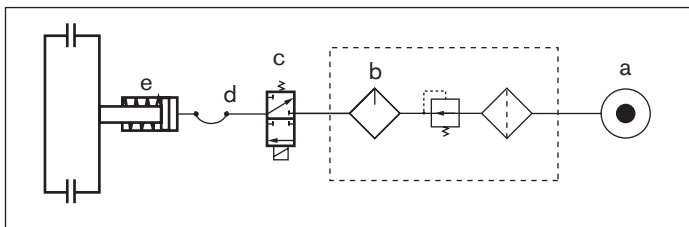


Fig 1: Basic circuit for circuit under pressure

a: source of pressure

b: air treatment unit

c: distributor

d: flexi pipe and rotating seal

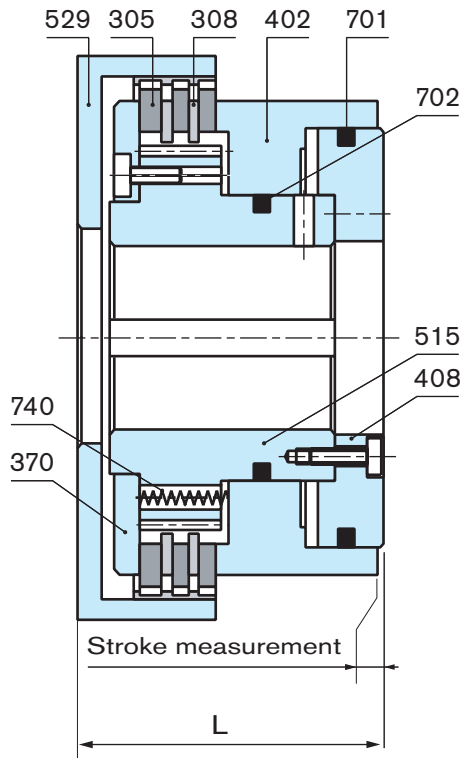
e: clutch engagement by application of pressure

6 Appendix

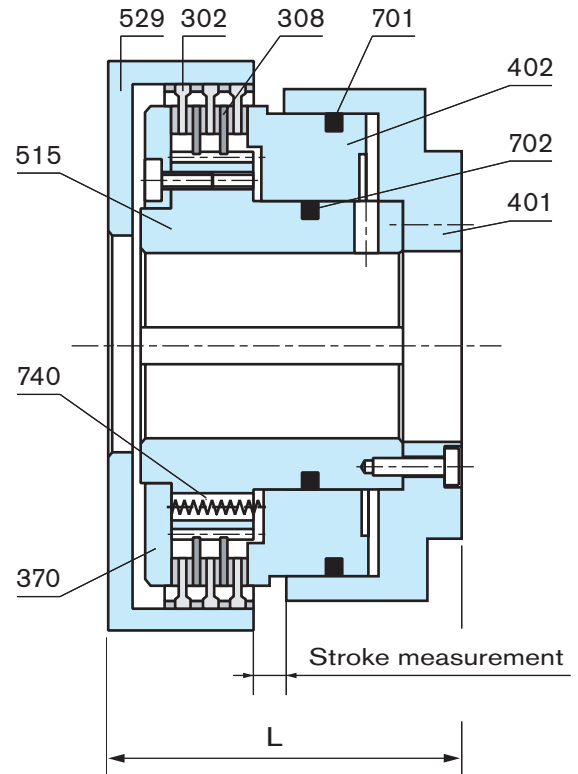
6.1 Drawings / Description

VAR 00 / 02

Sizes 100 - 1600



Sizes 3200 - 12800



| Ref. Nr | Description |
|---------|-------------------------|
| 302 | Double faced outer disc |
| 305 | One piece disc |
| 308 | Steel inner disc |
| 370 | Pressure ring |
| 401 | Cylinder |
| 402 | Piston |
| 408 | Closing flange |

| Ref. Nr | Description |
|---------|--------------------------------------|
| 515 | Hub |
| 529 | Driving flange |
| 701 | Cylinder 'O' ring seal |
| 702 | Piston 'O' ring seal |
| 703 | Cylinder quad ring seal (size 12800) |
| 704 | Piston quad ring seal (size 12800) |
| 740 | Spring |

7 Troubleshooting

| Troubleshooting | | |
|-------------------------|--|---|
| Problem | Possible reason | Action |
| The clutch slips | <ul style="list-style-type: none"> Pneumatic pressure too low Fault in the pneumatic circuit Faulty pressure chamber seals Discs worn or damaged - Oily material present | <ul style="list-style-type: none"> Check that nominal pressure is complied with (see table 1) Check it Check the condition of the contact surface (scratches, foreign particles, etc.) clean, change the seals Change the discs - Check the condition of the receiving parts' teeth (hub, flange) |

Subject to alteration without prior notice