

## Technical Product Information No. 2040 EN

### Pneumatically released brake Series 0428

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## About this Technical Product Information (TPI)

### Who is this TPI directed at?

This TPI is directed at qualified personnel who

- are entrusted with the assembly, commissioning and operation of the product and who
- have obtained the necessary qualifications by reading and understanding the instructions by training or instruction

It is intended for

- Fitters at the manufacturer of the machine / plant
- Maintenance fitters at the machine users.

### What will you find in the TPI?

The TPI provides all the necessary information for the assembly and maintenance of the product described on the title page

### Notes on the symbols used in the text

On the pages which follow, important sections of text are highlighted with the following symbols.



This symbol means:

There is a risk of injury during the activity described or in operational running!



This symbol means:

There is a risk of material damage during the activity described or in operational running!



This symbol indicates sections of text to which particular attention must be paid.

### The Ortlinghaus numbering system

**Example:** 0 111 - 222 - 33 - 444 555

0 = Code for products	_____		_____		_____		_____		_____
Code number for the model range	_____		_____		_____		_____		_____
Code number for design features	_____		_____		_____		_____		_____
Size	_____		_____		_____		_____		_____
Sequential number	_____		_____		_____		_____		_____
Other design features	_____		_____		_____		_____		_____

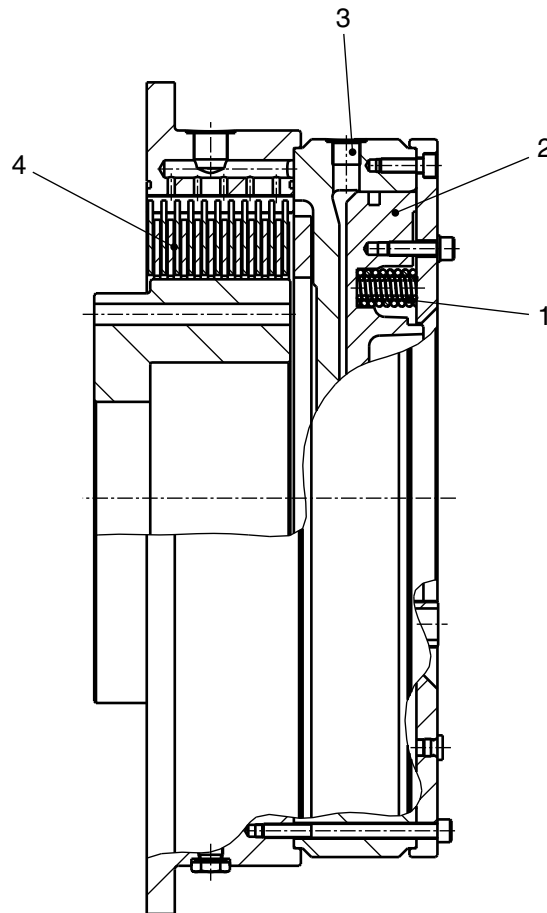


Pass this TPI on to your customers ! You can either order further copies of this TPI from us or you are free to make copies, for use by your customers.

## About the product

### Purpose of use and function of the brake

Spring loaded pneumatically opened brakes are excellent for use in presses due to their small space requirements, low moment of inertia and high permissible number of actuations. They are largely maintenance free. In addition, due to their multi-disc construction they permit the braking of higher torques at lower thermal loadings.



**Figure 1: The function of the brake**

**Normal braking:** Compression springs **1** load piston **2** in the cylinder. The brake plates **4** are pressed together by this and thus the brake is activated.

**Normal opening the brake:** Pressure **3** moves the piston **2** against the force of the compression springs **1**. This releases the brake plates **4**.



The normal opening pressure is **5,5 bar**, maximum permissible pressure is **6 bar**. Never open the brakes **at a higher pressure** as otherwise there is the risk of the bolts breaking.



- Always use dustfree, dry compressed air (a maintenance unit is required).
- Set the oiler of your maintenance unit so that it delivers from 1 to 3 drops of oil per m<sup>3</sup> air.

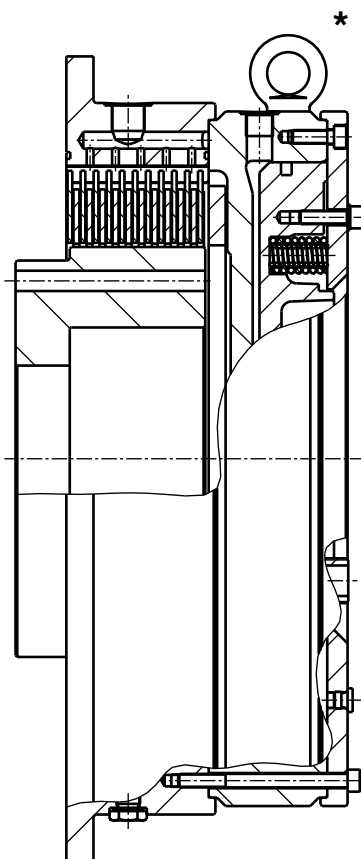
### Delivered state of the brake

The brake is supplied with the housing bolted and the plates inserted. The hup is supplied loose.



### Transport

Avoid any hard impacts during transportation.



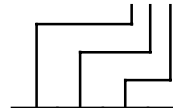
**Figure 2: Transport**

- \* For transport and handling by use of eye bolts. The clutch is equipped with 3 tapped holes on the circumference.

### Design variations

Type code:

0428 - . . . . - Size - . . . . .

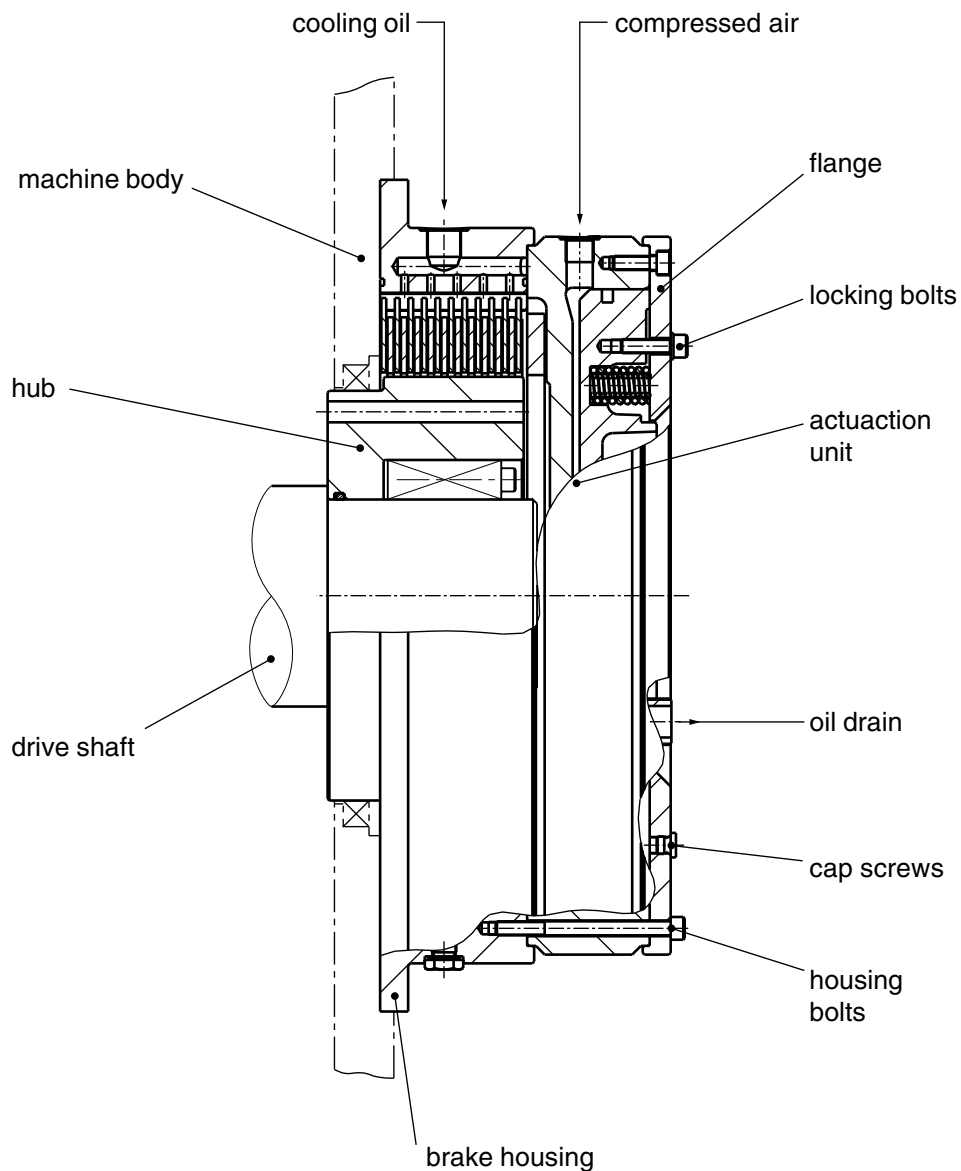


0		12 friction faces
1		16 friction faces
2		20 friction faces
3		24 friction faces
4		Abnormal number of friction faces
5		12 friction faces for through shaft
6		16 friction faces for through shaft
7		20 friction faces for through shaft
8		24 friction faces for through shaft
9		Abnormal number of friction faces for through shaft
	0	Normal design 36/36 springs
	1	Normal design 30/30 springs
	2	Normal design 24/24 springs
	3	Normal design 18/18 springs
	4	
	5	Normal design 36/36 springs for through shaft
	6	Normal design 30/30 springs for through shaft
	7	Normal design 24/24 springs for through shaft
	8	Normal design 18/18 springs for through shaft
	9	
	0	Hub with recess for locking device
	1	Hub with keyway
	2	
	3	
	4	
	5	Hub prebored
	6	
	7	
	8	
	9	

## Initial assembly and commissioning

It is not possible here to go into special built-in versions which depend on the construction of the machinery in question. Normally the brake is fitted onto the body of the machine.

## Installation



**Figure 3: Installation of the brake**

- Unbolt the brake housing from the actuator unit, bolt it to the body of the machine and fit the split pins.
- Fix the hub onto the shaft. Ensure the correct axial position! When fixing with clamping set always comply with the manufactures' assembly instructions and remove any plastic plugs fitted.
- Insert the plates to suit the delivered state, alternating an outer with an inner plate. The first and last plate is always an outer plate.
- Bolt the actuation unit to the brake housing. Use the correct torques for the housing bolts. Secure housing bolts with LOCTITE 262.



**Note:** Actuation unit and brake housing are marked. Identification must have the same alignment!

### Table of housing bolts

Size	80	86	Unit
Thread	M8	M10	-
Torque	37	75	Nm

- Remove the locking bolts.



**Note:** The brake springs will become effective and will press the piston of the actuation unit against the plates. The locking bolts should be carefully retained for use during disassembly!

- In place of the locking bolts insert the cap screws supplied.

### Table of locking bolts / cap screws

Size	80	86	Unit
Locking bolts	M8x25 10.9	M10x45 10.9	-
Torque	37	75	Nm
Cap screws	M10x1 DIN 908	M12x1,5 DIN 908	-

### Trial run of the brake

The brake must run for at least 20 hours as a trial run. As a rule there will be no more plate wear after this.

## Maintenance

### Checks during operation of the machine

The brake will be largely free of wear and will thus require no maintenance. Improper operation (excessively high operating temperature ...) however can lead to wear on the plates. Plate wear will show up in altered operating characteristics of the brake:

- The braking angle will increase, i.e. the press slide will travel past top dead centre before coming to a standstill.

If you find that the brake angle has increased you must immediately stop the machine. Call for Customer Service.



### Checking the state

The opening travel of the piston can be measured without disassembling it.

For this ensure that the no unintentional movement of the machine can occur due to it being necessary to neutralise the function of the brake:

- Move the press slide to bottom dead centre
- **Shut off the drive**

- Remove one cap screw from the activation unit (see picture fig. 3: installation of brake).
- Insert **one** securing screw approx. 5mm deep into the piston.
- Measure the depth dimension on the flange.
- Open the brake (comply with the safety instructions).
- Measure the depth dimension on the flange again.
- Replace the securing screw with a cap screw.

The difference between the depth measurements gives the opening travel of the piston. It is possible to assess this from the table below:

### Clearance dimensions (RF = friction surfaces)

Size	80			86		
	RF	RF	RF	RF	RF	RF
New state min. [mm]	1,6	2,1	2,6	1,8	2,4	3,0
After running in process [mm]	2,2	2,9	3,6	2,4	3,2	4,0
Max. value [mm]	3,7	4,9	5,8	4,2	5,6	6,7

The maximum possible opening clearance dimensions (max. value) give the piston stroke, determined by the design. In the normal running in process of the friction faces an increase in the opening travel of 0.05 mm per friction face can occur (after the running in process).

If the value for the running in process are considerably exceeded it is recommended that an inspection be carried out.

## Fault finding

Fault	Reason	Remedy
Brake slips (brake angle increases)	Friction linings worn out (maximum permissible size of air gap reached)	Call in Customer Service to replace the discs
	Cannot be determined <b>Machine fault</b>	Call in Customer Service



If wear is found on the plates the brake must have been operated improperly (excessively high operating temperature ....). In order to rule out further wear in the future you should ensure proper operation of the brake

- If the actuation unit malfunctions it should be sent back to the Ortlinghaus factory for checking.
- If required trained service engineers are available on site.

## Disassembly



When working on the brake ensure that the no unintentional movement of the machine can occur due to it being necessary to neutralise the function of the brake:

- Move the press slide to bottom dead centre
- **Shut off the drive**

Carry out the disassembly in reverse order to the assembly.



**Note:** The brake is under spring pressure! The parts will fly apart when the actuation unit is released, so first of all:

- Remove the cap screws. Keep it safe for later re-assembly.
- In place of the cap screws insert the locking bolts used for the delivery.
- Continue the disassembly in reverse order to the assembly.



**Note:** Actuation unit and brake housing are marked. Identification must have the same alignment!

- When re-assembling care should be taken to ensure that the plates are fitted in their original location and position, otherwise the running in process will have to be repeated.

## Spare Parts

We will only give a warranty on our products if you use genuine spare parts from the Ortlinghaus company. Please only order your spares in writing.

On the outside of the brake you will find the fabrication number under which the brake was manufactured. Always quote this number. It consists of a two digit year number and a sequential number, e.g. 00/12345. Also quote the article number for the brake wherever possible.

## Approved types of oil

We have cleared the following types of oil for operation of the brake. They have been tested by us and give an optimal performance.

Oil type	Manufacturer	Trade name
HL/CL	Agip	Agip OTE 32...68
	ARAL	Kosmol TF 32...68
		Vitam UF 46, 68
	BP	BP Energol HL 46
	DEA	Astron HI 22...68
	FINA	CIRKAN 22...68
	MOBIL	Mobil Turbine Oil Light
		Mobil Turbine Oil Medium
SHELL	Morlina 22, 46, 68	
ATF	Aral	ATF 33
	BP	Autran G
	Esso	Glide
	FUCHS	ATF TF M2C 33-F
	MOBIL	ATF 210
	SHELL	ATF Donax TF
Synthetic oils	CASTROL	Alphasyn T 32-68
	MONSANTO	Santotrac 20-50