

Technical Product Information No. 2030 EN

Pneumatically actuated clutch Series 0427

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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:

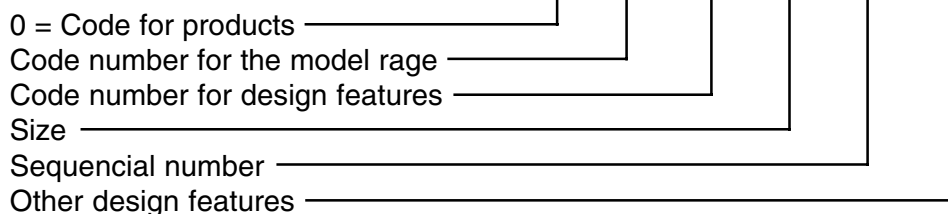
There is a risk of material damage during the activity described or in operational running!



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

The Ortlinghaus numbering system

Example: 0 111 - 222 - 33 - 444 555



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 clutch

Pneumatically actuated clutches 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-plate construction they permit the transmission of higher torques at lower thermal loadings.

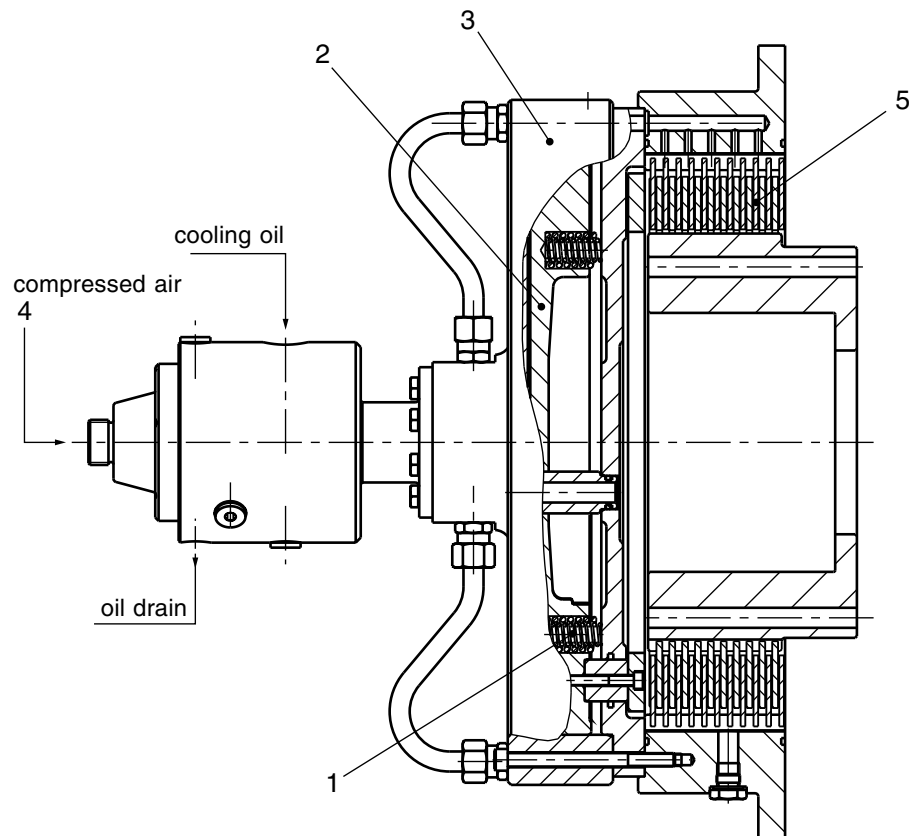


Figure 1: The function of the clutch

Operation of the clutch: Compression springs **1** load piston **2** in the cylinder **3**. This opens the clutch plates. Pressured air **4** moves the piston against the force of the compression springs. This causes the clutch plates to grip **5**.

The normal operating pressure is **5.5 bar**, the maximum permissible pressure **6 bar**. **Never** operate the clutch with a **higher pressure** since this can lead to the risk of the cylinder 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 m³ air.

Delivered state of the clutch

The clutch is supplied with the housing bolted and the plates inserted.
The hub is supplied loose.



Transport

Avoid any hard impacts during transportation.

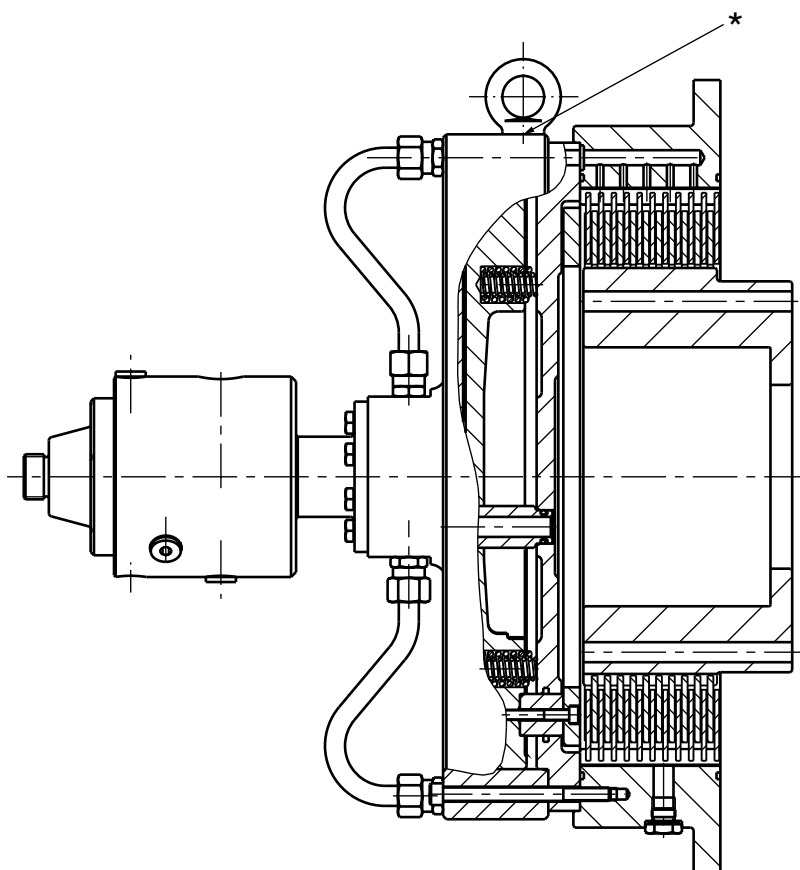


Figure 2: Transport

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

Design variations

Clutches in the 0427 range are available in three design variations

- a version with 12 friction faces
- a version with 16 friction faces
- a version with 20 friction faces

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 clutch is fitted onto the flywheel.

Installation

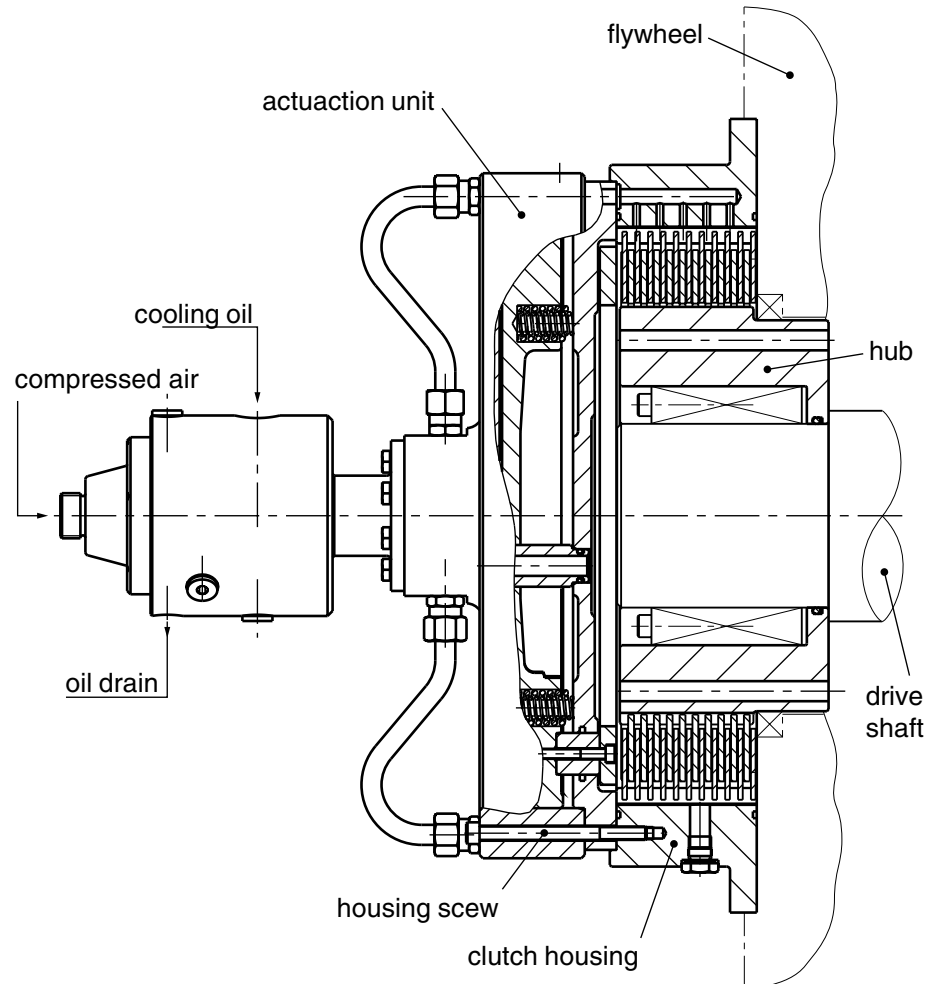


Figure 3: Installation of the clutch

- Unbolt the clutch housing from the actuation unit, bolt it to the flywheel 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 clutch housing. Use the correct torques for the bolts. Secure bolts with LOCTITE 262.

Bolts

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

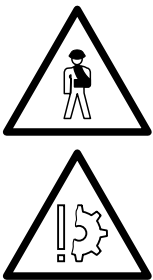
Trial run of the clutch

The clutch 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 clutch will be largely free of wear and will thus require no maintenance. Improper operation (air pressure too low, operating temperature too high....) however can lead to wear on the plates. Plate wear will show up in altered operating characteristics of the clutch, e.g. the clutch will slip.



If you find that the clutch is slipping you must immediately stop the machine. Call for Customer Service.

Checking the state

The clearance of the piston (piston travel) can only be measured after dis-assembly of the clutch.

Clearance dimensions

(RF = friction faces)

Size	80			86		
	RF	16	20	RF	16	20
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
Clutch slips	Air pressure too low	Increase working pressure to 5,5 bar / 6 bar* respectively
	Fault in the air supply (contamination, leakage ...)	Repair the air supply
	Friction linings worn out (maximum permissible size of air gap reached)	Call in Customer Service to replace the plates
	Cannot be determined	Call in Customer Service
	Machine fault	



* **Note:** Different (lower) working pressures are possible!
Look at the design calculations!



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

- 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

Carry out the disassembly in reverse order to the assembly. 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 cylinder you will find the fabrication number under which the clutch 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 clutch wherever possible.

Approved types of oil

We have cleared the following types of oil for operation of the clutch. 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