

Technical Product Information No. 1000 EN

Pneumatically actuated compact drive Series 0046

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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

Sequence number

Other design features



Please pass on this product information to your customers! If required you can download our TPIs via the Internet from www.ortlinghaus.com in the directory 'Service'. However you may also duplicate the copy you have.

The Product

Use of the compact drive

The pneumatic activated compact drive is designed for mounting to machines of forming technology, requiring a large amount of energy per cycle and operated preferably continuously, e.g. punching or shaping presses.

The driving components of a press - flywheel, bearing of flywheel, clutch/brake combination series 0420/0406, Air supply and planetary drive - are mounted in a compact unit, the compact drive.

This results in a significantly reduced cost for installation and production of the press manufacturer.

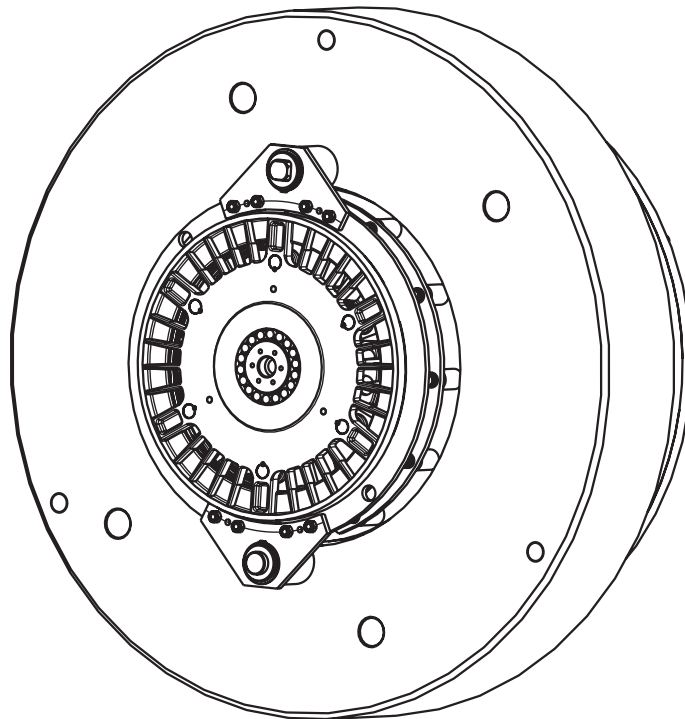
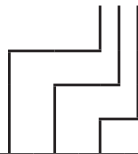


Fig. 1: Pneumatically actuated Compact Drive

Various Types of Compact Drive

Series Code:

0046 -



0		Connection with eccentric shaft via Shrink-fit shaft/hub connectors
1		Connection with eccentric shaft via mech. Shrink disc
2		Connection with eccentric shaft via hydraulic Shrink disc
3		Connection with eccentric shaft via Key
4		
5		
6		
7		
8		
9		Other fixture for eccentric shaft
	0	Spring application 0
	1	Spring application 1
	2	Spring application 2
	3	Spring application 3
	4	Spring application 4
	5	
	6	
	7	
	8	
	9	
	0	Gear transmission ratio greater than 1 : 6.5 till (including) 1 : 8.5
	1	Gear transmission ratio greater than 1 : 5.5 till (including) 1 : 6.5
	2	Gear transmission ratio greater than 1 : 4.5 till (including) 1 : 5.5
	3	Gear transmission ratio greater than 1 : 8.5 till (including) 1 : 11
	4	Gear transmission ratio smaller or equal 1 : 4,5
	5	Gear transmission ratio greater than 1 : 11
	6	
	7	
	8	
	9	

Compact Drive Function

The Energy of the spinning flywheel is forwarded to the drive shaft by the planetary drive, when the clutch is pneumatic activated

By shutting-off the air pressure supply, the spring loaded brake is activated and brakes the eccentric shaft on the mounting flange of the machine housing. A detailed description of the clutch/brake combination function series 0420/0406 can be found in the TPI No 750/650 .

Shipping Condition

The Compact Drive is delivered completely assembled. The hub is supplied either separately with the shipment or mounted with fasteners at the compact drive.

The Air feed duct is supplied separately. Shrink disc and/or Shrink-fit shaft/hub connectors for fastening the hub to the drive shaft are included in shipment as ordered. Two load adapters are mounted to the flywheel. The bearing of the flywheel is lubricated for life span.



There is no oil in the planetary drive.

Transport

For transport, always both load adapters must be used (refer to Fig. 2)



Mechanical shocks must be prevented during transport, not to damage the flywheel bearing.

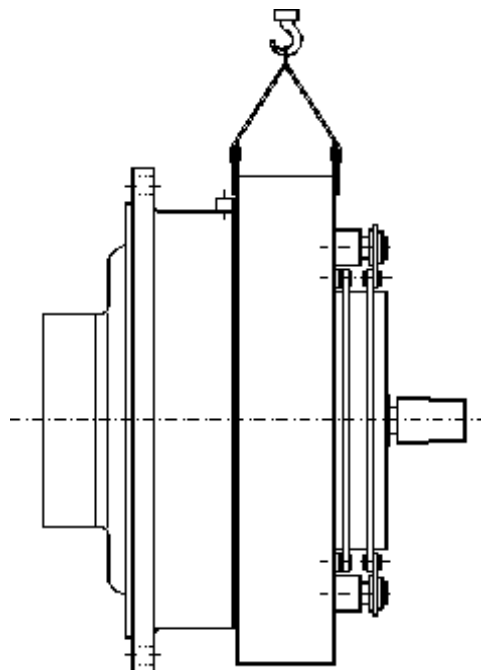


Fig. 2: Auxiliary Transport Devices

Initial installation

- Fix hub with shrink disc or Shrink-fit shaft/hub connectors on drive shaft. Observe the distance measurements on installation drawing.
- Mount load adapter unilaterally, arranged radial and opposite to flywheel (refer to Fig. 1).
- Place O-ring in the O-ring groove of the flange according to the installation drawing and eventually, secure it with grease to prevent falling.
- Move the complete compact drive over the hub spline and fasten the mounting flange to the machine housing. Therefore bolts of strength class 10.9 are to be used (Fastening torque according to table page 7).
- Remove auxiliary load adapter.
- Mount thread of air inlet in the shaft, using sealant tape or paste (do not use an O-ring). The planed surface of the cone must be completely adjacent, to guarantee trouble-free spinning!



Observe that the drive belt runs only on the indicated axial position (see installation drawing).

Lubrication

For lubrication an oil circulation is provided. The planetary drive, the gear roller bearing and the spline are lubricated by turbulent flow.

The lubricating oil supply is to be connected as shown on the installation drawing. (Oil amount in l/min according to installation drawing).

Oil is supplied at the gearbox flange, if the option „Oil return gearbox in machine housing“ applies.



Gear oil with nominal viscosity of ISO VG2LP 68 till ISO VG CLP220 is in use. For type and amount of oil refer to installation drawing.

Maintenance

Checks during machine operation

Check the wear and tear of the friction surfaces at the air gap between clutch plate and piston. With increased wear the brake period is increased.

Wear and tear inspections of friction surfaces are to be executed according to TPI No. 750/650 of clutch/brake combination.

Lubrication frequency

Planetary drive with circulating oil lubrication:

Supply only filtered oil to the gear box. Cleanliness of Oil according to ISO4406. The degree of contamination should be better than 17/15.

Flywheel bearing:

The bearing of the flywheel is lubricated for the whole life span. The grease package should be replaced every 25000 hours of operation. Please contact our customer's service.



Eventually grease repackaging frequency is indicated on the installation drawing. Please order on demand.

According to series, the flywheel bearing is lubricated by the gear box oil circulation, refer to installation drawing of the compact drive.

Troubleshooting

In case of problems with the clutch/brake combination, please refer to TPI No. 750/650. For other problems please contact our customer service.

Remedy

Problem	Cause	Remedy
Strange sounds in bearing of flywheel	Insufficient lubrication Defect bearing	Call Ortlinghaus-Werke Customer service
Clutch not engaging or slips during work cycle	Air volume or air pressure insufficient	Refer to TPI Clutch/ Brake combination, Call Ortlinghaus-Werke Customer service
Brake failure; changed brake angle	Cause must be defined absolutely. Work safety is in danger!	Refer to TPI Clutch/ Brake combination, Call Ortlinghaus-Werke Customer service
Strange Sounds in planetary drive	Cause must be defined absolutely	Call Ortlinghaus-Werke Customer service
Oil leakage	Shaft Sealing Rings or other sealing defect	Call Ortlinghaus-Werke Customer service



Complete assembly

Please contact our customer service.

Torque for fasteners

according to VDI 2230 sheet 1 for bolts according to DIN 912 - 10.9
Table:

Metric Dimensions according to DIN 13	Fastening Torque [Nm]
M 6	15,5
M 8	37
M 10	75
M 12	130
M 14	205
M 16	310
M 20	620
M 24	1060
M 27	1550
M 30	2100

for internal Shrink-fit shaft/hub connectors RfN 7012 according to installation drawing clutch/brake combination

for shrink discs RfN 4071 with bolts DIN 912-10.9, refer to installation drawing of compact drive.

Spare parts

We provide warranty on our products only, if authentic spare parts of Ortlinghaus-Werke are used. Please order spare parts only in writing. The part identification number can be found on the manufacturing label. Please, always indicate this part identification number. It consists of a two-digit-number for the year and a continued number, e.g. 00/12345. When ordering, please provide this number, as well as the serial number of the compact drive

Schematic diagram

Pneumatically actuated Compact Drive

