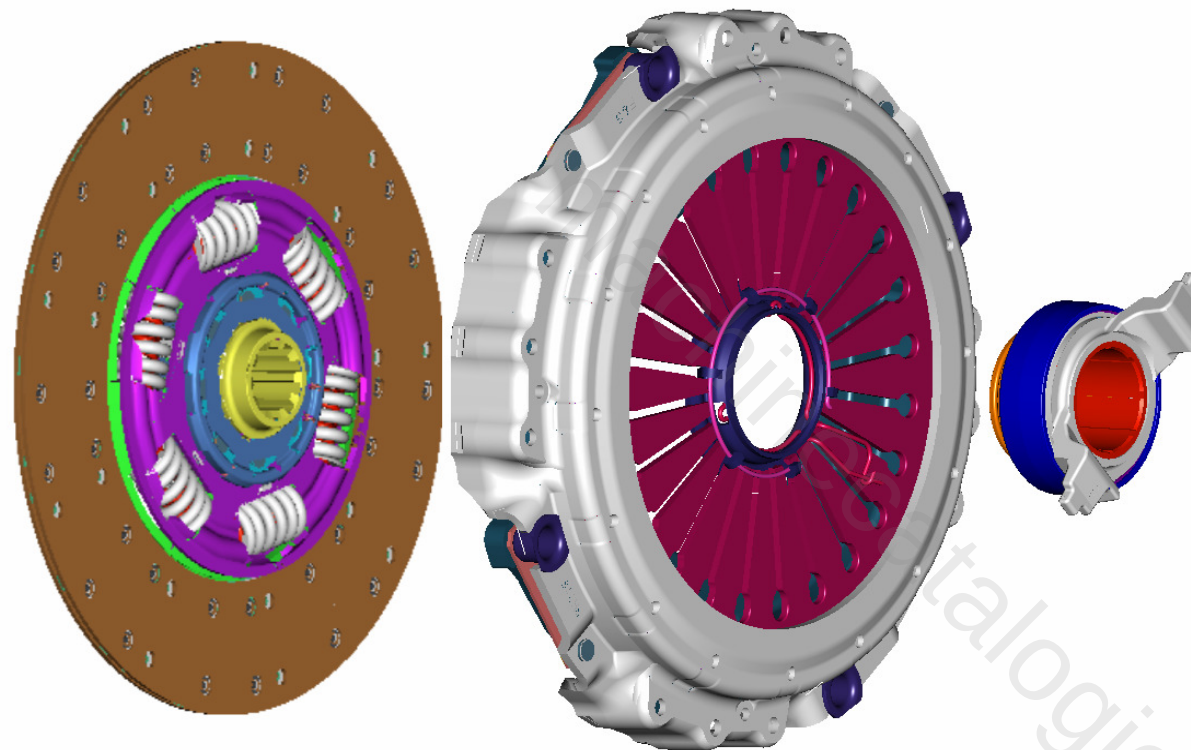




SACHS 430 mm Clutch for ZF AS Tronic Transmission



ZF Sachs AG

1. Introduction

1.1 Description

The **clutch** for the Astronic Transmission is a pull-type, single plate, 430 mm clutch with a stamped housing. The plate load is provided by a diaphragm spring.

The release bearing has a “**snap-in**”-**connection** to the diaphragm spring, which acts also as a lever to disengage the clutch.

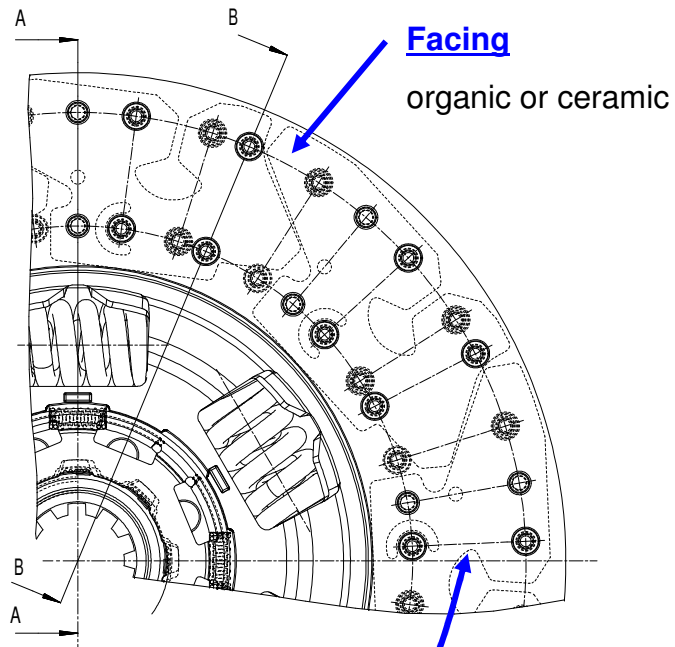
The disc **facing material** is organic and is “cushioned”, i.e. between the driven plate and the facing material are axially flexible components to ensure a smooth clutch engagement.

The disc also incorporates two **torsional dampers**:

- one “main” damper to reduce the transmission of engine oscillation in drive and coast operation and
- one “pre”-damper to reduce transmission gear rattle at engine idling.

2. Clutch Components

2.5 Features of SACHS disc



Cushion Springs

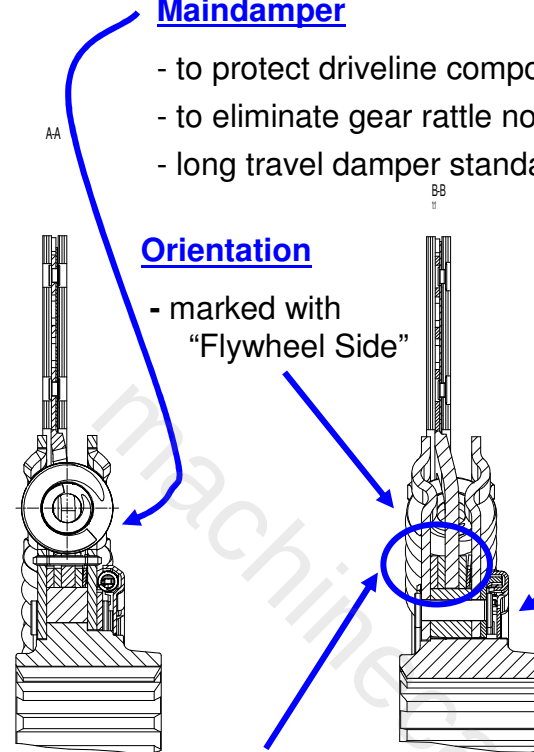
- available for ceramic and organic facing
- promotes smooth engagement
- helps to reduce the release load peak

Maindamper

- to protect driveline components
- to eliminate gear rattle noise
- long travel damper standard (6 spring)

Orientation

- marked with "Flywheel Side"



Friction Device

- generates hysteresis
- to eliminate gear rattle noise
- to protect the powertrain (durability)
- friction stable over life

Predamper

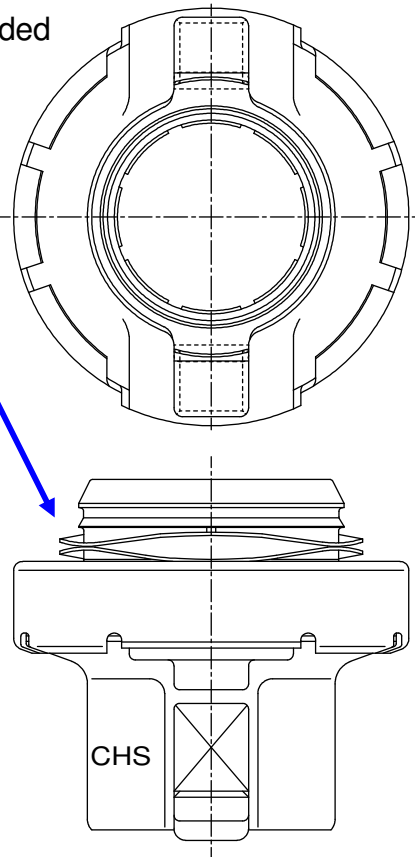
- to eliminate idle rattle

2. Clutch Components

2.7 Features of SACHS release bearing

Interface to Cover Assembly

- spring washers included to provide load for connection to diaphragm spring
- ensures snap-in connection during mating of transmission and engine
- disassembly via wire (part of cover assembly)

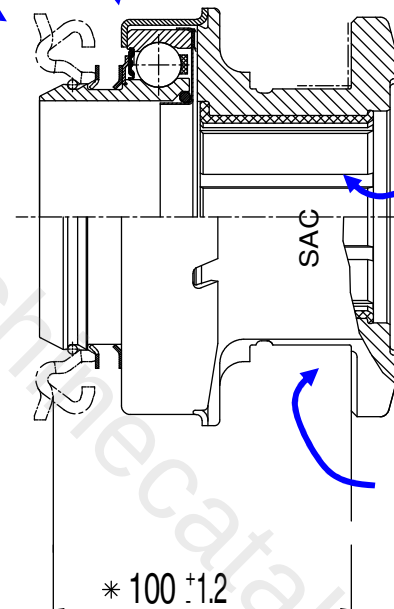


Sealed Bearing

- NO lubrication required
- self-centering
- 1.5 to 2.5 mm axial displ. possible

Bearing Sleeve

- DO NOT grease at I.D. polymer Material as Interface to steel transmission quill



Interface to release fork

- induction hardened
- Lubrication:
ONLY INITIALLY BY ZF
(with 5g Olista Longtime)

Preload of 100...200 N REQUIRED !

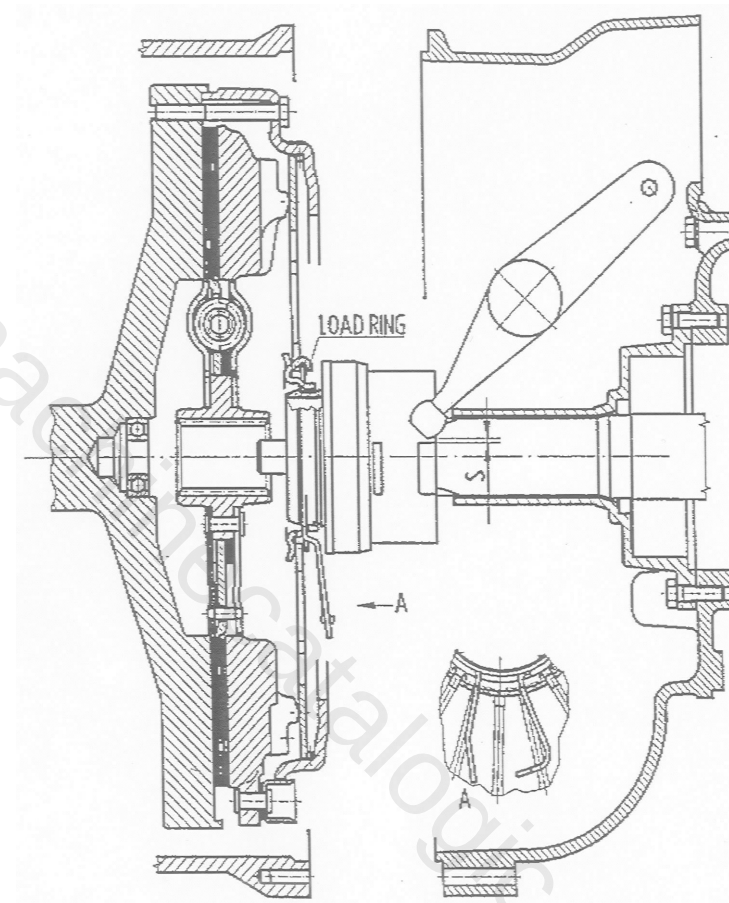
- required load on bearing by actuation system to avoid noise, wear and to guarantee constant turning of bearing
- preload established by pneumatic actuator

3. Installation and Maintenance

3.3 Snap-in Connection

Disassembly

- Separate the actuator from the fork so that it can move freely
- unbolt the transmission housing from the flywheel housing and start moving the transmission away from the engine; allow the fork to have the clearance "S" between fork and 'dogs' of the releaser
- open the hook at the end of the load ring as shown in detail "A"
- push releaser towards engine to unload the load ring - with this the load rings widens
- pull the releaser out of the release ring



4. Troubleshooting

4.1 Failure Analysis List

Clutch does not disengage

- wrong clutch disc with wrong thickness installed
- run out of disc is too high
(max. 0,6mm in regards to the clutch drawing, in any case, please contact the clutch supplier and manufactor)
- orientation of disc is wrong (Note marking 'flywheel side' on retainer plate of the disc assembly!)
- disc is sticking on input shaft due to rust, dirt, wear or improper slip fit to input shaft
- release travel of actuation system is too short
- wear at pickle fork
- pilot bearing is defective and does not move freely
- due to rust or contamination the disc is sticking to the flywheel

5. Inspection

Clutch does not disengage

Max. runout:
approx. 0.5-
0.6mm by using
the correct
measurement
tool (order no.
Sachs: 4200
080 580)

Disc has excessive run-out

- disc bent during transportation or installation



Clutch disc warped (cone shaped)

- major overheating (steel components are discolored blue)

⇒ the specified pressure plate lift is not sufficient enough to release clutch disc



Hub / input shaft spline damaged

- transmission input shaft and clutch hub misaligned / forced together during installation

⇒ clutch disc does not slide freely on input shaft, causing release problems



Tangential leaf springs bent or deformed

- transportation or installation damage
 - excessive play in drive train
 - extreme deceleration loading resulting from
 - improper shifting
 - improper towing technique
 - operator error during rolling test bed
- ⇒ pressure plate does not disengage correctly

If the customer says that the clutch does not disengage, the clutch is not necessarily at fault. Frequently the release system is faulty or the pilot bearing worn out.

Full Version Available

ZF Sachs 430 mm clutch for AS Tronic Transmission Service Manual

ZF Sachs 430 mm clutch for AS Tronic transmission service manual with repair and adjustment procedures. Searchable 30-page PDF. Instant PDF download.

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