

# **Supplement**

to

# **Flight and Operation Manual for Gyroplane Calidus**



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## Introduction / Background






In order to simplify pre-rotation AutoGyro GmbH has developed a new 90-degree-gearbox with a transmission ratio specially geared to the Calidus. The new gearbox is factory installed from serial numbers (Werk-Nr.) C00212 on, or may be retrofitted as a unit together the pneumatic clutch.

The modified transmission ratio allows simpler handling during pre-rotation using a slightly increased clutch speed. The configuration state pneumatic clutch III (new 90-degree-gearbox) is easily discernible by using a black OVERDRIVE push button instead of a red one.

In case of pneumatic clutch III (new 90-degree-gearbox), identified by a black OVERDRIVE push button, the following changes have to be respected:

*ref. 2.6 (replacing):*

### 2.6 Powerplant Limitations and Instrument Marking

Engine Speed	Marking	
<b>Maximum engine speed</b>	Red radial 	<b>5800 RPM</b>
5 minute take-off power regime	Yellow arc 	5500 – 5800 RPM
<b>Maximum continuous power</b>	Green arc 	1400 – <b>5500 RPM</b>
<b>Recommended pre-rotation clutch speed</b>	Green radial 	<b>2100 RPM</b>
	Yellow arc 	0 – 1400 RPM

*ref. 4.8 (replacing):*

### 4.8 Take-off Procedure

- Check relative wind
- Maintain control stick in forward position with right hand
- Switch pneumatic mode selector to FLIGHT and return to brake with left hand
- Hold wheel brake without having locking pawl engaged
- While holding wheel brake adjust 2100 RPM with throttle
- Activate and hold pre-rotator
- Let pneumatic clutch fully engage (stabilization at about 110 rotor RPM).  
If necessary release pre-rotator button momentarily and press again to maintain engine RPM within green arc, respectively prevent engine from stalling
- Carefully increase throttle (~ 150 R-RPM/sec) to 200 R-RPM – max. 240 R-RPM
- Release pre-rotator button
- Gently move the control stick fully aft (stick travel ~ 1 second)
- Release wheel brake with throttle unchanged
- Monitor rotor speed and adequately increase throttle to take-off power

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