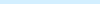




Dual Heli Frame  **  **  .   _____

 Copter  ,  ( -heli )  .



- `ESC` `8`
- `**` `11` `(` `)`
- `**FRAME CLASS**` `11` `(` `)`
- `**H DUAL MODE**`

"Motor Interlock" / .

****RC8 OPTION** 32

11

□ **traditional-helicopter-swashplate-setup** for basic information on how to setup each swashplate using the parameters below.

Tandem (Longitudinal)

../images/dual heli chinook.jpeg

This setup assumes that the forward rotor swashplate is controlled by servo output 1, 2, and 3 and the aft rotor swashplate is controlled by servo output 4, 5 and 6.

Parameter Settings:

- **H_DUAL_MODE** - Set to 0 for the longitudinal configuration
- **H_DCP_SCALER** - Scales the differential collective output to the rotors for a pitch axis input

- **H_DCP_YAW** - Feedforward input to yaw axis for pitch axis (DCP) inputs
- **H_YAW_SCALER** - Scales the differential lateral cyclic based on yaw axis input. This is a positive number for this setup.
- **H_COL_MAX**- PWM for maximum collective pitch on forward rotor head that corresponds to **H_COL_ANG_MAX**
- **H_COL_MIN** - PWM for minimum collective pitch on forward rotor head that corresponds to **H_COL_ANG_MIN**
- **H_SW_TYPE** - Swashplate type for forward rotor head
- **H_SW_COL_DIR** - Swashplate collective direction for forward rotor head
- **H_SW_LIN_SVO** - Enables linear servo feature for forward rotor head
- **H_COL2_MIN** - PWM for minimum collective pitch on aft rotor head that corresponds to **H_COL_ANG_MIN**
- **H_COL2_MAX**- PWM for maximum collective pitch on aft rotor head that corresponds to **H_COL_ANG_MAX**
- **H_SW2_TYPE** - Swashplate type for aft rotor head
- **H_SW2_COL_DIR** - Swashplate collective direction for aft rotor head
- **H_SW2_LIN_SVO** - Enables linear servo feature for aft rotor head
- **H_DCP_TRIM** - Removes pitch I term bias due to center of gravity offsets or discrepancies between rotors in swashplate setup. If pitch axis has I term bias while hovering in calm winds, use value of bias in DCP_TRIM to re-center I term.

These are only needed for the forward swashplate if **H_SW_TYPE** is set to H3 Generic.

- **H_SW_H3_ENABLE** - Do Not Set Manually! This is set automatically once **H_SW_TYPE** is set to H3 Generic
- **H_SW_H3_SV1_POS**
- **H_SW_H3_SV2_POS**
- **H_SW_H3_SV3_POS**
- **H_SW_H3_PHANG**

These are only needed for the aft swashplate if **H_SW2_TYPE** is set to H3 Generic.

- **H_SW2_H3_ENABLE** - Do Not Set Manually! This is set automatically once **H_SW2_TYPE** is set to H3 Generic
- **H_SW2_H3_SV1_POS**
- **H_SW2_H3_SV2_POS**
- **H_SW2_H3_SV3_POS**
- **H_SW2_H3_PHANG**

This parameter is not used for the longitudinal configuration - **H_YAW_REV_EXPO**

Side-by-Side (Transverse)

[../images/dual_heli_transverse.jpg](#)

This setup assumes that the left rotor swashplate is controlled by servo output 1, 2, and 3 and the right rotor swashplate is controlled by servo output 4, 5 and 6.

Parameter Settings:

- **H_DUAL_MODE** - Set to 1 for the transverse configuration
- **H_DCP_SCALER** - Scales the differential collective output to the rotors for a roll axis input
- **H_DCP_YAW** - Feedforward input to yaw axis for roll axis (DCP) inputs
- **H_YAW_SCALER** - Scales the differential longitudinal cyclic based on yaw axis input. This is a positive number for this setup.
- **H_COL_MAX**- PWM for maximum collective pitch on left rotor head that corresponds to **H_COL_ANG_MAX**
- **H_COL_MIN** - PWM for minimum collective pitch on left rotor head that corresponds to **H_COL_ANG_MIN**
- **H_SW_TYPE** - Swashplate type for left rotor head
- **H_SW_COL_DIR** - Swashplate collective direction for left rotor head
- **H_SW_LIN_SVO** - Enables linear servo feature for left rotor head
- **H_COL2_MIN** - PWM for minimum collective pitch on right rotor head that corresponds to **H_COL_ANG_MIN**
- **H_COL2_MAX**- PWM for maximum collective pitch on right rotor head that corresponds to **H_COL_ANG_MAX**
- **H_SW2_TYPE** - Swashplate type for right rotor head
- **H_SW2_COL_DIR** - Swashplate collective direction for right rotor head
- **H_SW2_LIN_SVO** - Enables linear servo feature for right rotor head
- **H_DCP_TRIM** - Removes roll I term bias due to center of gravity offsets or discrepancies between rotors in swashplate setup. If roll axis has I term bias while hovering in calm winds, use value of bias in DCP_TRIM to re-center I term.

These are only needed for the left swashplate if **H_SW_TYPE** is set to H3 Generic.

- **H_SW_H3_ENABLE** - Do Not Set Manually! This is set automatically once **H_SW_TYPE** is set to H3 Generic
- **H_SW_H3_SV1_POS**
- **H_SW_H3_SV2_POS**
- **H_SW_H3_SV3_POS**
- **H_SW_H3_PHANG**

These are only needed for the right swashplate if **H_SW2_TYPE** is set to H3 Generic.

- **H_SW2_H3_ENABLE** - Do Not Set Manually! This is set automatically once **H_SW2_TYPE** is set to H3 Generic
- **H_SW2_H3_SV1_POS**
- **H_SW2_H3_SV2_POS**
- **H_SW2_H3_SV3_POS**
- **H_SW2_H3_PHANG**

This parameter is not used for the longitudinal configuration

- **H_YAW_REV_EXPO**

Intermeshing

[../images/dual_heli_intermeshing.jpg](#)

This setup assumes that the left rotor swashplate is controlled by servo output 1, 2, and 3 and the right rotor swashplate is controlled by servo output 4, 5 and 6.

Parameter Settings:

- **H_DUAL_MODE** - Set to 2 for the intermeshing configuration
- **H_DCP_SCALER** - Scales the differential collective output to the rotors for a yaw axis input. For a positive value the left rotor would spin counter clockwise to give the proper yaw response.
- **H_YAW_SCALER** - Scales the differential longitudinal cyclic based on yaw axis input. This is a positive number for this setup.
- **H_COL_MAX** - PWM for maximum collective pitch on left rotor head that corresponds to **H_COL_ANG_MAX**
- **H_COL_MIN** - PWM for minimum collective pitch on left rotor head that corresponds to **H_COL_ANG_MIN**
- **H_SW_TYPE** - Swashplate type for left rotor head
- **H_SW_COL_DIR** - Swashplate collective direction for left rotor head
- **H_SW_LIN_SVO** - Enables linear servo feature for left rotor head
- **H_COL2_MIN** - PWM for minimum collective pitch on right rotor head that corresponds to **H_COL_ANG_MIN**
- **H_COL2_MAX** - PWM for maximum collective pitch on right rotor head that corresponds to **H_COL_ANG_MAX**
- **H_SW2_TYPE** - Swashplate type for right rotor head
- **H_SW2_COL_DIR** - Swashplate collective direction for right rotor head
- **H_SW2_LIN_SVO** - Enables linear servo feature for right rotor head
- **H_YAW_REV_EXPO** - Yaw reverser smoothing exponent, smoothen transition near zero collective region. Increase this parameter to shrink smoothing range. Set to -1 to disable reverser.

These are only needed for the left swashplate if **H_SW_TYPE** is set to H3 Generic.

- **H_SW_H3_ENABLE** - Do Not Set Manually! This is set automatically once **H_SW_TYPE** is set to H3 Generic
- **H_SW_H3_SV1_POS**
- **H_SW_H3_SV2_POS**
- **H_SW_H3_SV3_POS**

- `H_SW_H3_PHANG`

These are only needed for the right swashplate if **H_SW2_TYPE** is set to H3 Generic.

- **H_SW2_H3_ENABLE** - Do Not Set Manually! This is set automatically once **H_SW2_TYPE** is set to H3 Generic
- **H_SW2_H3_SV1_POS**
- **H_SW2_H3_SV2_POS**
- **H_SW2_H3_SV3_POS**
- `H_SW2_H3_PHANG`

These parameters are not used for the intermeshing configuration

- **H_DCP_YAW**
- **H_DCP_TRIM**

Coaxial

[../images/dual_heli_coaxial.jpg](#)

This setup assumes that the counter clockwise rotor swashplate is controlled by servo output 1, 2, and 3 and the clockwise rotor swashplate is controlled by servo output 4, 5 and 6.

Parameter Settings:

- **H_DUAL_MODE** - Set to 2 for the intermeshing configuration
- **H_DCP_SCALER** - Scales the differential collective output to the rotors for a yaw axis input.
- **H_YAW_SCALER** - This parameter is set to zero for the coaxial configuration.
- **H_COL_MAX**- PWM for maximum collective pitch on counter clockwise rotor head that corresponds to **H_COL_ANG_MAX**
- **H_COL_MIN** - PWM for minimum collective pitch on counter clockwise rotor head that corresponds to **H_COL_ANG_MIN**
- **H_SW_TYPE** - Swashplate type for counter clockwise rotor head
- **H_SW_COL_DIR** - Swashplate collective direction for counter clockwise rotor head
- **H_SW_LIN_SVO** - Enables linear servo feature for counter clockwise rotor head
- **H_COL2_MIN** - PWM for minimum collective pitch on clockwise rotor head that corresponds to **H_COL_ANG_MIN**
- **H_COL2_MAX**- PWM for maximum collective pitch on clockwise rotor head that corresponds to **H_COL_ANG_MAX**
- **H_SW2_TYPE** - Swashplate type for clockwise rotor head
- **H_SW2_COL_DIR** - Swashplate collective direction for clockwise rotor head
- **H_SW2_LIN_SVO** - Enables linear servo feature for clockwise rotor head
- **H_YAW_REV_EXPO** - Yaw reverser smoothing exponent, smoothen transition near zero collective region. Increase this parameter to shrink smoothing range. Set to -1 to disable

reverser.

These are only needed for the counter clockwise swashplate if **H_SW_TYPE** is set to H3 Generic.

- **H_SW_H3_ENABLE** - Do Not Set Manually! This is set automatically once **H_SW_TYPE** is set to H3 Generic
- **H_SW_H3_SV1_POS**
- **H_SW_H3_SV2_POS**
- **H_SW_H3_SV3_POS**
- **H_SW_H3_PHANG**

These are only needed for the clockwise swashplate if **H_SW2_TYPE** is set to H3 Generic.

- **H_SW2_H3_ENABLE** - Do Not Set Manually! This is set automatically once **H_SW2_TYPE** is set to H3 Generic
- **H_SW2_H3_SV1_POS**
- **H_SW2_H3_SV2_POS**
- **H_SW2_H3_SV3_POS**
- **H_SW2_H3_PHANG**

These parameters are not used for the coaxial configuration

- H_DCP_YAW
- H_DCP_TRIM

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