



DHV TESTREPORT LTF

SWING SPHERA RS L

Type designation SWING Sphera RS L
Type test reference no DHV GS-01-2684-22
Holder of certification [Swing Flugsportgeräte GmbH](#)
Manufacturer [Swing Flugsportgeräte GmbH](#)
Classification D
Winch towing Yes
Number of seats min / max 1 / 1
Accelerator Yes
Trimmers No



BEHAVIOUR AT MIN WEIGHT IN FLIGHT (105KG)

BEHAVIOUR AT MAX WEIGHT IN FLIGHT (119KG)

Test pilots



Mario Eder

No release



Sebastian Mackrodt

No release

Inflation/take-off

B

B

Rising behaviour Easy rising, some pilot correction is required

Easy rising, some pilot correction is required

Special take off technique required No

No

Landing

A

A

Special landing technique required No

No

Speeds in straight flight

B

A

Trim speed more than 30 km/h Yes

Yes

Speed range using the controls larger than 10 km/h Yes

Yes

Minimum speed 25 km/h to 30 km/h

Less than 25 km/h

Control movement

C

C

Symmetric control pressure Increasing

Increasing

Symmetric control travel 50 cm to 65 cm

50 cm to 65 cm

Pitch stability exiting accelerated flight

A

A

Dive forward angle on exit Dive forward less than 30°

Dive forward less than 30°

Collapse occurs No

No

Pitch stability operating controls during accelerated flight

A

A

Collapse occurs No

No

Roll stability and damping

A

A

Oscillations Reducing

Reducing

Stability in gentle spirals

A

A

Tendency to return to straight flight Spontaneous exit

Spontaneous exit

Behaviour exiting a fully developed spiral dive

B

B

Initial response of glider (first 180°) en : keine unmittelbare Reaktion

en : keine unmittelbare Reaktion

Tendency to return to straight flight Spontaneous exit (g force decreasing, rate of turn decreasing)

Spontaneous exit (g force decreasing, rate of turn decreasing)

Turn angle to recover normal flight Less than 720°, spontaneous recovery

Less than 720°, spontaneous recovery

Symmetric front collapse

D

D

Entry Rocking back less than 45°

Rocking back less than 45°

Recovery Spontaneous in 3 s to 5 s

Spontaneous in 3 s to 5 s

Dive forward angle on exit Dive forward 0° to 30°

Dive forward 0° to 30°

Change of course Entering a turn of less than 90°

Keeping course

Cascade occurs No

No

Folding lines used yes

yes

<u>Unaccelerated collapse (at least 50 % chord)</u>	D	D
Entry Rocking back less than 45°		Rocking back less than 45°
Recovery Spontaneous in 3 s to 5 s		Recovery through pilot action in less than a further 3 s
Dive forward angle on exit Dive forward 0° to 30°		Dive forward 0° to 30°
Change of course Entering a turn of less than 90°		Keeping course
Cascade occurs No		No
Folding lines used yes		yes

<u>Accelerated collapse (at least 50 % chord)</u>	D	D
Entry Rocking back less than 45°		Rocking back less than 45°
Recovery Spontaneous in 3 s to 5 s		Recovery through pilot action in less than a further 3 s
Dive forward angle on exit Dive forward 0° to 30°		Dive forward 0° to 30°
Change of course Entering a turn of less than 90°		Keeping course
Cascade occurs No		No
Folding lines used yes		yes

<u>Exiting deep stall (parachutal stall)</u>	A	A
Deep stall achieved Yes		Yes
Recovery Spontaneous in less than 3 s		Spontaneous in less than 3 s
Dive forward angle on exit Dive forward 0° to 30°		Dive forward 0° to 30°
Change of course Changing course less than 45°		Changing course less than 45°
Cascade occurs No		No

<u>High angle of attack recovery</u>	A	A
Recovery Spontaneous in less than 3 s		Spontaneous in less than 3 s
Cascade occurs No		No

<u>Recovery from a developed full stall</u>	B	B
Dive forward angle on exit Dive forward 30° to 60°		Dive forward 30° to 60°
Collapse No collapse		No collapse
Cascade occurs (other than collapses) No		No
Rocking back Less than 45°		Less than 45°
Line tension Most lines tight		Most lines tight

<u>Small asymmetric collapse</u>	D	D
Change of course until re-inflation Less than 90°		Less than 90°
Maximum dive forward or roll angle Dive or roll angle 15° to 45°		Dive or roll angle 15° to 45°
Re-inflation behaviour Spontaneous re-inflation		Spontaneous re-inflation
Total change of course Less than 360°		Less than 360°
Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re inflation)		No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs No		No
Cascade occurs No		No
Folding lines used yes		yes

<u>Large asymmetric collapse</u>	D	D
Change of course until re-inflation 90° to 180°		Less than 90°
Maximum dive forward or roll angle Dive or roll angle 15° to 45°		Dive or roll angle 45° to 60°
Re-inflation behaviour Spontaneous re-inflation		Spontaneous re-inflation
Total change of course Less than 360°		Less than 360°
Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re inflation)		No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs No		No
Cascade occurs No		No
Folding lines used yes		yes

<u>Small asymmetric collapse accelerated</u>	D	D
Change of course until re-inflation Less than 90°		Less than 90°
Maximum dive forward or roll angle Dive or roll angle 15° to 45°		Dive or roll angle 15° to 45°
Re-inflation behaviour Spontaneous re-inflation		Spontaneous re-inflation
Total change of course Less than 360°		Less than 360°
Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re inflation)		No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs No		No
Cascade occurs No		No
Folding lines used yes		yes

<u>Large asymmetric collapse accelerated</u>	D	D
Change of course until re-inflation 90° to 180°		Less than 90°
Maximum dive forward or roll angle Dive or roll angle 15° to 45°		Dive or roll angle 45° to 60°
Re-inflation behaviour Spontaneous re-inflation		Spontaneous re-inflation
Total change of course Less than 360°		Less than 360°
Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re inflation)		No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs No		No
Cascade occurs No		No
Folding lines used yes		yes

<u>Directional control with a maintained asymmetric collapse</u>	A	A
Able to keep course Yes		Yes
180° turn away from the collapsed side possible in 10 s Yes		Yes

Amount of control range between turn and stall or spin More than 50 % of the symmetric control travel

More than 50 % of the symmetric control travel

Trim speed spin tendency

A

A

Spin occurs No

No

Low speed spin tendency

A

A

Spin occurs No

No

Recovery from a developed spin

A

A

Spin rotation angle after release Stops spinning in less than 90°

Stops spinning in less than 90°

Cascade occurs No

No

B-line stall

Not carried out because the manoeuvre is excluded in the user's manual

Big ears

B

B

Entry procedure Standard technique

Standard technique

Behaviour during big ears Stable flight

Stable flight

Recovery Recovery through pilot action in less than a further 3 s

Recovery through pilot action in less than a further 3 s

Dive forward angle on exit Dive forward 0° to 30°

Dive forward 0° to 30°

Big ears in accelerated flight

B

B

Entry procedure Standard technique

Standard technique

Behaviour during big ears Stable flight

Stable flight

Recovery Recovery through pilot action in less than a further 3 s

Recovery through pilot action in less than a further 3 s

Dive forward angle on exit Dive forward 0° to 30°

Dive forward 0° to 30°

Behaviour immediately after releasing the accelerator while maintaining big ears Stable flight

Stable flight

Alternative means of directional control

A

A

180° turn achievable in 20 s Yes

Yes

Stall or spin occurs No

No

Any other flight procedure and/or configuration described in the user's manual

No other flight procedure or configuration described in the user's manual