

# Line Check Sheet for Paragliders

# Piece Check

Glider Type: UP Makalu 3 XS (LTF/EN B)	Serial No.:
Rev. No.: 7	Date: 20.02.2012

### Line lengths [mm]

R. No.	Area A										Area B										Area C									
	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm		
2	6678										6634												6682							
4	6591										6547												6600							
6	6628										6584												6635							
8	6595										6551												6597							
10	6516										6472												6521							
12	6547										6502												6547							
14	6491										6439												6473							
16	6355										6307												6331							
18	6290										6247												6270							
19	6280										6239												6252							
21	5988										5948												5977							
23											5826																			
23											5788																			
23											5841																			

Total line length in cm from riser quick link to canopy including line loops, following DHV measuring method. Line load is 5 daN.

Rib numbering starts in the center of the wing. Wing sides in flight direction, seen from top.

Measurements are rounded to the next 0,5 cm. Please mark measurements relative to nominal by crossing X

R. No.	Area D										Brake										rib no. brakes								
	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm		+10 mm	+20 mm						
2	6817										7573												3						
4	6734										7254												5-6						
6	6764										7142												8						
8	6726										6985												10						
10	6641										6840												12						
12	6647										6833												14						
14	6536										6741												16						
16	6377										6617												18						
18											6593												20						
19											6611												22						
21																													
23																													
23																													
23																													

brakes measured inkl. 10cm-loop

Loops on Quick link:		Loop Index MTS
Factory setting		
A1	--	0
A2	--	0
A3	--	0
B1	--	0
B2	--	0
B3	--	0
C1	Round turn	1
C2	Round turn	1
C3	Round turn	1
STI	Round turn	1

### Single Line Lengths

Glider Type: UP Makalu 3 XS (LTF/EN B)  
Rev. No.: 7

Serial No.:  
Date: 20.02.2012

Line no.	Quantity	Length [mm]	material	colour
a1	2	1943	6480/D-130	grey
a2	2	1856	6480/D-130	grey
a3	2	1893	6480/D-130	grey
a4	2	1860	6480/D-130	grey
a5	2	1781	6480/D-130	grey
a6	2	1812	6480/D-130	grey
a7	2	1757	6480/D-90	grey
a8	2	1621	6480/D-90	grey
a9	2	358	6480/D-90	grey
a10	2	348	6480/D-90	grey
a11	2	1246	6480/D-90	grey
b1	2	1899	6480/D-130	grey
b2	2	1812	6480/D-130	grey
b3	2	1849	6480/D-130	grey
b4	2	1816	6480/D-130	grey
b5	2	1738	6480/D-130	grey
b6	2	1767	6480/D-130	grey
b7	2	1705	6480/D-90	grey
b8	2	1573	6480/D-90	grey
b9	2	315	6480/D-90	grey
b10	2	307	6480/D-90	grey
b11	2	1207	6480/D-90	grey
c1	2	1942	6480/D-90	grey
c2	2	1860	6480/D-90	grey
c3	2	1895	6480/D-90	grey
c4	2	1857	6480/D-90	grey
c5	2	1781	6480/D-90	grey
c6	2	1807	6480/D-90	grey
c7	2	1734	6480/D-90	grey
c8	2	1592	6480/D-90	grey
c9	2	334	6480/D-90	grey
c10	2	317	6480/D-90	grey
c11	2	1236	6480/D-90	grey
d1	2	2076	6480/D-90	grey
d2	2	1993	6480/D-90	grey
d3	2	2023	6480/D-90	grey
d4	2	1985	6480/D-90	grey
d5	2	1900	6480/D-90	grey
d6	2	1908	6480/D-90	grey
d7	2	1796	6480/D-90	grey
d8	2	1638	6480/D-90	grey

Line no.	Quantity	Length [mm]	material	colour
AM1	2	1200	6480/D-90	red
BM1	2	1200	6480/D-90	red
CM1	2	1200	6480/D-90	red
AI	2	4752	7950-200	red
All	2	4752	7950-200	red
Alll	2	4752	7950-150	red
BI	2	4752	7950-200	blue
BII	2	4752	7950-200	blue
BIII	2	4752	7950-150	blue
CI	2	4771	7950-200	yellow
CII	2	4771	7950-200	yellow
CIII	2	4771	7950-150	yellow
st1	2	1085	6480/D-90	blue
st2	2	1046	6480/D-90	blue
st3	2	1099	6480/D-90	blue
STI	2	4762	7950-100	violet

Brake no.	Quantity	Length [mm]	material	colour
br1	2	2218	989/1.1	pink
br2	2	1899	989/1.1	pink
br3	2	1787	989/1.1	pink
br4	2	1630	989/1.1	pink
br5	2	1484	989/1.1	pink
br6	2	1477	989/1.1	pink
br7	2	1385	989/1.1	pink
br8	2	1261	989/1.1	pink
br9	2	1237	989/1.1	pink
br10	2	1256	989/1.1	pink
BR1	2	2880	989/1.3	pink
BR2	2	2880	989/1.3	pink
BR3	2	2880	989/1.3	pink
BRI	2	2390	989/1.5	pink

**Line material:**

Edelrid 7950-200  
Edelrid 7950-150  
Edelrid 7950-100  
Edelrid 6480/D-130  
Edelrid 6480/D-90  
Cousin 989 1,1mm  
Cousin 989 1,3mm  
Cousin 989 1,5mm

total length	no. of lines
290438	142

# Line Check Sheet for Paragliders

# Piece Check

Glider Type: UP Makalu 3 S (LTF/EN B)	Serial No.:
Rev. No.: 7	Date: 20.02.2012

### Line lengths [mm]

R. No.	Area A										Area B										Area C												
	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm
2	6957										6911											6942											
4	6869										6821												6856										
6	6910										6864												6893										
8	6877										6830												6858										
10	6794										6748												6774										
12	6828										6779												6801										
14	6768										6713												6729										
16	6631										6576												6581										
18	6563										6513												6517										
19	6553										6505												6499										
21	6238										6197												6227										
23											6070																						
23											6030																						
23											6085																						

Total line length in cm from riser quick link to canopy including line loops, following DHV measuring method. Line load is 5 daN.

Rib numbering starts in the center of the wing. Wing sides in flight direction, seen from top.

Measurements are rounded to the next 0,5 cm. Please mark measurements relative to nominal by crossing X

R. No.	Area D										Brake										rib no. brakes		
	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm		+10 mm	+20 mm
2	7077										7880												3
4	6992										7548												5-6
6	7026										7431												8
8	6987										7268												10
10	6898										7116												12
12	6905										7109												14
14	6794										7013												16
16	6629										6884												18
18											6859												20
19											6878												22
21																							
23																							
23																							
23																							

brakes measured inkl. 10cm-loop

Loops on Quick link:		Loop Index MTS
Factory setting		
A1	--	0
A2	--	0
A3	--	0
B1	--	0
B2	--	0
B3	--	0
C1	Round turn	1
C2	Round turn	1
C3	Round turn	1
STI	Round turn	1

### Single Line Lengths

Glider Type: UP Makalu 3 S (LTF/EN B)  
Rev. No.: 7

Serial No.:  
Date: 20.02.2012

Line no.	Quantity	Length [mm]	material	colour
a1	2	2024	6480/D-130	grey
a2	2	1936	6480/D-130	grey
a3	2	1977	6480/D-130	grey
a4	2	1944	6480/D-130	grey
a5	2	1861	6480/D-130	grey
a6	2	1895	6480/D-130	grey
a7	2	1836	6480/D-90	grey
a8	2	1699	6480/D-90	grey
a9	2	383	6480/D-90	grey
a10	2	373	6480/D-90	grey
a11	2	1298	6480/D-90	grey
b1	2	1978	6480/D-130	grey
b2	2	1888	6480/D-130	grey
b3	2	1931	6480/D-130	grey
b4	2	1897	6480/D-130	grey
b5	2	1815	6480/D-130	grey
b6	2	1846	6480/D-130	grey
b7	2	1781	6480/D-90	grey
b8	2	1644	6480/D-90	grey
b9	2	333	6480/D-90	grey
b10	2	325	6480/D-90	grey
b11	2	1257	6480/D-90	grey
c1	2	2013	6480/D-90	grey
c2	2	1927	6480/D-90	grey
c3	2	1964	6480/D-90	grey
c4	2	1929	6480/D-90	grey
c5	2	1845	6480/D-90	grey
c6	2	1872	6480/D-90	grey
c7	2	1796	6480/D-90	grey
c8	2	1648	6480/D-90	grey
c9	2	338	6480/D-90	grey
c10	2	320	6480/D-90	grey
c11	2	1287	6480/D-90	grey
d1	2	2148	6480/D-90	grey
d2	2	2063	6480/D-90	grey
d3	2	2097	6480/D-90	grey
d4	2	2058	6480/D-90	grey
d5	2	1969	6480/D-90	grey
d6	2	1976	6480/D-90	grey
d7	2	1861	6480/D-90	grey
d8	2	1696	6480/D-90	grey

Line no.	Quantity	Length [mm]	material	colour
AM1	2	1250	6480/D-90	red
BM1	2	1250	6480/D-90	red
CM1	2	1250	6480/D-90	red
AI	2	4945	7950-200	red
All	2	4945	7950-200	red
Alll	2	4950	7950-150	red
BI	2	4945	7950-200	blue
BII	2	4945	7950-200	blue
BIII	2	4950	7950-150	blue
CI	2	4965	7950-200	yellow
CII	2	4965	7950-200	yellow
CIII	2	4965	7950-150	yellow
st1	2	1130	6480/D-90	blue
st2	2	1090	6480/D-90	blue
st3	2	1145	6480/D-90	blue
STI	2	4960	7950-100	violet

Brake no.	Quantity	Length [mm]	material	colour
br1	2	2310	989/1.1	pink
br2	2	1978	989/1.1	pink
br3	2	1861	989/1.1	pink
br4	2	1698	989/1.1	pink
br5	2	1546	989/1.1	pink
br6	2	1539	989/1.1	pink
br7	2	1443	989/1.1	pink
br8	2	1314	989/1.1	pink
br9	2	1289	989/1.1	pink
br10	2	1308	989/1.1	pink
BR1	2	3000	989/1.3	pink
BR2	2	3000	989/1.3	pink
BR3	2	3000	989/1.3	pink
BRI	2	2485	989/1.5	pink

**Line material:**

- Edelrid 7950-200
- Edelrid 7950-150
- Edelrid 7950-100
- Edelrid 6480/D-130
- Edelrid 6480/D-90
- Cousin 989 1,1mm
- Cousin 989 1,3mm
- Cousin 989 1,5mm

total length	no. of lines
302298	142

# Line Check Sheet for Paragliders

# Piece Check

Glider Type: UP Makalu 3 M (LTF/EN B)	Serial No.:
Rev. No.: 7	Date: 20.02.2012

### Line lengths [mm]

R. No.	Area A										Area B										Area C												
	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm
2	7271										7223											7256											
4	7179										7129												7162										
6	7221										7174												7205										
8	7187										7138												7168										
10	7100										7052												7081										
12	7136										7085												7109										
14	7073										7021												7033										
16	6930										6873												6874										
18	6859										6807												6812										
19	6849										6799												6793										
21	6520										6477												6508										
23											6344																						
23											6302																						
23											6360																						

Total line length in cm from riser quick link to canopy including line loops, following DHV measuring method. Line load is 5 daN.

Rib numbering starts in the center of the wing. Wing sides in flight direction, seen from top.

Measurements are rounded to the next 0,5 cm. Please mark measurements relative to nominal by crossing X

R. No.	Area D										Brake										rib no. brakes		
	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm		+10 mm	+20 mm
2	7397										8226												3
4	7303										7879												5-6
6	7339										7757												8
8	7303										7586												10
10	7210										7428												12
12	7217										7420												14
14	7101										7320												16
16	6929										7185												18
18											7159												20
19											7179												22
21																							
23																							
23																							
23																							

brakes measured inkl. 10cm-loop

Loops on Quick link:		Loop Index MTS
Factory setting		
A1	--	0
A2	--	0
A3	--	0
B1	--	0
B2	--	0
B3	--	0
C1	Round turn	1
C2	Round turn	1
C3	Round turn	1
STI	Round turn	1

### Single Line Lengths

Glider Type: UP Makalu 3 M (LTF/EN B)  
Rev. No.: 7

Serial No.:  
Date: 20.02.2012

Line no.	Quantity	Length [mm]	material	colour
a1	2	2115	6480/D-130	grey
a2	2	2023	6480/D-130	grey
a3	2	2066	6480/D-130	grey
a4	2	2031	6480/D-130	grey
a5	2	1945	6480/D-130	grey
a6	2	1980	6480/D-130	grey
a7	2	1919	6480/D-90	grey
a8	2	1775	6480/D-90	grey
a9	2	400	6480/D-90	grey
a10	2	390	6480/D-90	grey
a11	2	1356	6480/D-90	grey
b1	2	2067	6480/D-130	grey
b2	2	1973	6480/D-130	grey
b3	2	2018	6480/D-130	grey
b4	2	1982	6480/D-130	grey
b5	2	1897	6480/D-130	grey
b6	2	1929	6480/D-130	grey
b7	2	1866	6480/D-90	grey
b8	2	1718	6480/D-90	grey
b9	2	348	6480/D-90	grey
b10	2	340	6480/D-90	grey
b11	2	1314	6480/D-90	grey
c1	2	2104	6480/D-90	grey
c2	2	2008	6480/D-90	grey
c3	2	2052	6480/D-90	grey
c4	2	2016	6480/D-90	grey
c5	2	1928	6480/D-90	grey
c6	2	1956	6480/D-90	grey
c7	2	1877	6480/D-90	grey
c8	2	1717	6480/D-90	grey
c9	2	353	6480/D-90	grey
c10	2	334	6480/D-90	grey
c11	2	1345	6480/D-90	grey
d1	2	2245	6480/D-90	grey
d2	2	2151	6480/D-90	grey
d3	2	2186	6480/D-90	grey
d4	2	2151	6480/D-90	grey
d5	2	2058	6480/D-90	grey
d6	2	2065	6480/D-90	grey
d7	2	1945	6480/D-90	grey
d8	2	1772	6480/D-90	grey

Line no.	Quantity	Length [mm]	material	colour
AM1	2	1306	6480/D-90	red
BM1	2	1306	6480/D-90	red
CM1	2	1306	6480/D-90	red
AI	2	5168	7950-200	red
All	2	5168	7950-200	red
Alll	2	5173	7950-150	red
BI	2	5168	7950-200	blue
BII	2	5168	7950-200	blue
BIII	2	5173	7950-150	blue
CI	2	5188	7950-200	yellow
CII	2	5188	7950-200	yellow
CIII	2	5188	7950-150	yellow
st1	2	1181	6480/D-90	blue
st2	2	1139	6480/D-90	blue
st3	2	1197	6480/D-90	blue
STI	2	5183	7950-100	violet

Brake no.	Quantity	Length [mm]	material	colour
br1	2	2414	989/1.1	pink
br2	2	2067	989/1.1	pink
br3	2	1945	989/1.1	pink
br4	2	1774	989/1.1	pink
br5	2	1616	989/1.1	pink
br6	2	1608	989/1.1	pink
br7	2	1508	989/1.1	pink
br8	2	1373	989/1.1	pink
br9	2	1347	989/1.1	pink
br10	2	1367	989/1.1	pink
BR1	2	3135	989/1.3	pink
BR2	2	3135	989/1.3	pink
BR3	2	3135	989/1.3	pink
BRI	2	2592	989/1.5	pink

**Line material:**

- Edelrid 7950-200
- Edelrid 7950-150
- Edelrid 7950-100
- Edelrid 6480/D-130
- Edelrid 6480/D-90
- Cousin 989 1,1mm
- Cousin 989 1,3mm
- Cousin 989 1,5mm

total length	no. of lines
315861	142

# Line Check Sheet for Paragliders

# Piece Check

Glider Type: UP Makalu 3 L (LTF/EN B)	Serial No.:
Rev. No.: 7	Date: 20.02.2012

### Line lengths [mm]

R. No.	Area A										Area B										Area C									
	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm		
2	7654										7604											7652								
4	7557										7505											7558								
6	7602										7552											7598								
8	7566										7515											7559								
10	7475										7425											7463								
12	7512										7458											7492								
14	7447										7387											7417								
16	7296										7235											7259								
18	7221										7166											7189								
19	7210										7158											7169								
21	6864										6819											6852								
23											6679																			
23											6635																			
23											6696																			

Total line length in cm from riser quick link to canopy including line loops, following DHV measuring method. Line load is 5 daN.

Rib numbering starts in the center of the wing. Wing sides in flight direction, seen from top.

Measurements are rounded to the next 0,5 cm. Please mark measurements relative to nominal by crossing X

R. No.	Area D										Brake										rib no. brakes						
	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	Nom.	-20 mm	-10 mm	0 mm	+10 mm	+20 mm	-20 mm	-10 mm	0 mm		+10 mm	+20 mm				
2	7793										8649															<b>3</b>	
4	7700										8284																<b>5-6</b>
6	7737										8155																<b>8</b>
8	7694										7976																<b>10</b>
10	7596										7809																<b>12</b>
12	7604										7801																<b>14</b>
14	7493										7695																<b>16</b>
16	7312										7553																<b>18</b>
18											7526																<b>20</b>
19											7547																<b>22</b>
21																											
23																											
23																											
23																											

brakes measured inkl. 10cm-loop

Loops on Quick link:		Loop Index MTS
Factory setting		
A1	--	0
A2	--	0
A3	--	0
B1	--	0
B2	--	0
B3	--	0
C1	Round turn	1
C2	Round turn	1
C3	Round turn	1
STI	Round turn	1

### Single Line Lengths

Glider Type: UP Makalu 3 L (LTF/EN B)  
Rev. No.: 7

Serial No.:  
Date: 20.02.2012

Line no.	Quantity	Length [mm]	material	colour
a1	2	2226	6480/D-130	grey
a2	2	2130	6480/D-130	grey
a3	2	2175	6480/D-130	grey
a4	2	2138	6480/D-130	grey
a5	2	2047	6480/D-130	grey
a6	2	2085	6480/D-130	grey
a7	2	2020	6480/D-90	grey
a8	2	1869	6480/D-90	grey
a9	2	421	6480/D-90	grey
a10	2	410	6480/D-90	grey
a11	2	1428	6480/D-90	grey
b1	2	2176	6480/D-130	grey
b2	2	2077	6480/D-130	grey
b3	2	2124	6480/D-130	grey
b4	2	2087	6480/D-130	grey
b5	2	1997	6480/D-130	grey
b6	2	2031	6480/D-130	grey
b7	2	1965	6480/D-90	grey
b8	2	1808	6480/D-90	grey
b9	2	366	6480/D-90	grey
b10	2	358	6480/D-90	grey
b11	2	1383	6480/D-90	grey
c1	2	2220	6480/D-90	grey
c2	2	2125	6480/D-90	grey
c3	2	2166	6480/D-90	grey
c4	2	2127	6480/D-90	grey
c5	2	2030	6480/D-90	grey
c6	2	2065	6480/D-90	grey
c7	2	1981	6480/D-90	grey
c8	2	1824	6480/D-90	grey
c9	2	383	6480/D-90	grey
c10	2	363	6480/D-90	grey
c11	2	1416	6480/D-90	grey
d1	2	2363	6480/D-90	grey
d2	2	2269	6480/D-90	grey
d3	2	2307	6480/D-90	grey
d4	2	2264	6480/D-90	grey
d5	2	2166	6480/D-90	grey
d6	2	2174	6480/D-90	grey
d7	2	2058	6480/D-90	grey
d8	2	1877	6480/D-90	grey

Line no.	Quantity	Length [mm]	material	colour
AM1	2	1375	6480/D-90	red
BM1	2	1375	6480/D-90	red
CM1	2	1375	6480/D-90	red
AI	2	5440	7950-200	red
All	2	5440	7950-200	red
Alll	2	5445	7950-150	red
BI	2	5440	7950-200	blue
BII	2	5440	7950-200	blue
BIII	2	5445	7950-150	blue
CI	2	5467	7950-200	yellow
CII	2	5467	7950-200	yellow
CIII	2	5467	7950-150	yellow
st1	2	1243	6480/D-90	blue
st2	2	1199	6480/D-90	blue
st3	2	1260	6480/D-90	blue
STI	2	5456	7950-100	violet

Brake no.	Quantity	Length [mm]	material	colour
br1	2	2541	989/1.1	pink
br2	2	2176	989/1.1	pink
br3	2	2047	989/1.1	pink
br4	2	1868	989/1.1	pink
br5	2	1701	989/1.1	pink
br6	2	1693	989/1.1	pink
br7	2	1587	989/1.1	pink
br8	2	1445	989/1.1	pink
br9	2	1418	989/1.1	pink
br10	2	1439	989/1.1	pink
BR1	2	3300	989/1.3	pink
BR2	2	3300	989/1.3	pink
BR3	2	3300	989/1.3	pink
BRI	2	2723	989/1.5	pink

**Line material:**

- Edelrid 7950-200
- Edelrid 7950-150
- Edelrid 7950-100
- Edelrid 6480/D-130
- Edelrid 6480/D-90
- Cousin 989 1,1mm
- Cousin 989 1,3mm
- Cousin 989 1,5mm

total length	no. of lines
332731	142