

# **DAVINCI** **GLIDERS**

# **RHYTHM**

**REV. 5**

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## Congratulations!

Congratulations!  
Thank you for choosing the RHYTHM.

The RHYTHM has been designed for newcomers and accuracy competition pilots who want to be a winner.

This manual will help you to get all information about your glider. We strongly recommend that you read this manual carefully in order to be aware of any general limitations, performance characteristics, take off and flight characteristics, landing procedures, dealing with emergency situations and general maintenance.

This is information about the design of the RHYTHM, advice how to use it best and how to care for it to ensure it has a long life, We hope that the RHYTHM will give you a lot of satisfactory flying times.

### **-DAVINCI GLIDERS TEAM-**

#### WARNING!

THIS IS NOT TRAINING MANUAL. ATTEMPTING TO FLY THIS OR ANY OTHER PARAGLIDER WITHOUT PROPER INSTRUCTION FROM A CERTIFIED PROFESSIONAL INSTRUCTOR IS EXTREMELY DANGEROUS TO YOURSELF AND BYSTANDERS.

DAVINCI GLIDERS are carefully manufactured and inspected at the factory. Please use the glider only as described in this manual.

Do not make any modifications to the glider.  
As with any sport – without taking the necessary safety precautions, paragliding can be dangerous.

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# 1. Technical DATA

<b>RHYTHM</b>			XS	S	M	L
<i>CELLS</i>	NUMBER		36	36	36	36
	CLOSED		8	8	8	8
<i>FLAT</i>	AREA	m <sup>2</sup>	21.9	25.4	27.5	29.8
	SPAN	m	10.2	10.9	11.3	11.8
	ASPECT RATIO		4.7	4.7	4.7	4.7
<i>PROJECTED</i>	AREA	m <sup>2</sup>	18.9	21.9	23.7	25.7
	SPAN	m	8.0	8.6	8.9	9.3
	ASPECT RATIO		3.38	3.38	3.38	3.38
<i>FLATTENING</i>		%	13.7	13.7	13.7	13.7
<i>CORD</i>	MAX	m	2.8	3.0	3.1	3.3
	MIN	m	0.60	0.65	0.67	0.7
	AVER	m	2.2	2.3	2.4	2.5
<i>LINES</i>	HEIGHT	m	6.38	6.87	7.15	7.4
	MAIN		3/4/3			
<i>RISERS</i>	NUMBER	3	A,A'/B/C			
	TRIMS		NO	NO	NO	NO
	ACCELERATOR		120	120	120	120
<i>WEIGHT RANGE</i>	MIN-MAX	KG	55-75	70-95	80-105	95-120
<i>CERTIFICATION</i>	EN-926-1/2 LTF	KG	EN-A	EN-A	EN-A	EN-A
<i>GLIDER WEIGHT</i>		KG	4.3	4.6	5.3	5.4

## 2. Materials DATA

CANOPY	FABRIC CODE	SUPPLIER
UPPER SURFACE	30D FM	DOMINICO TEXTILE CO
BOTTOM SURFACE	30D FM	DOMINICO TEXTILE CO
PROFILES	30D FM(NON WR)	DOMINICO TEXTILE CO
DIAGONALS	30D FM(NON WR)	DOMINICO TEXTILE CO

SUSPENSION LINES	FABRIC CODE	SUPPLIER
UPPER CASCADES	DSL-70	LIROS
MIDDLE CASCADES	PPSL-120	LIROS
MAIN	7343-280	EDELRID
UPPER STABLE	DSL-70	LIROS
MAIN STABLE	6843-160	EDELRID
UPPER BRAKE	DSL-70	LIROS
MIDDLE BRAKE	PPSL-120	LIROS
MAIN BREAK	10N-200	EDELRID

RISERS	FABRIC CODE	SUPPLIER
MATERIAL	WEBBING 20MM	GUTH&WOLF GMBH
PULLEYS	RIELY	LW RILEY PTY LTD

### 3. Introduction and Pilot Target

The RHYTHM is an easy-going EN/LTF A glider which is suitable for training and accuracy competition. The main focus of design is on safety and maximum forgiveness in handling, but with an eye to handling and performance. The RHYTHM is perfectly suited for beginner pilots looking for a glider with maximum safety. Long brake travel and excellent passive safety, as well as the good stability make the good ideal for progression. The RHYTHM sits well within the limits of the LTF/EN-A class as proven by the certification test results in all manoeuvres.

-LTF and EN certification

The RHYTHM is certified during official testing as LTF /EN-A.

The glider has been type-tested for "one-seated" use only.

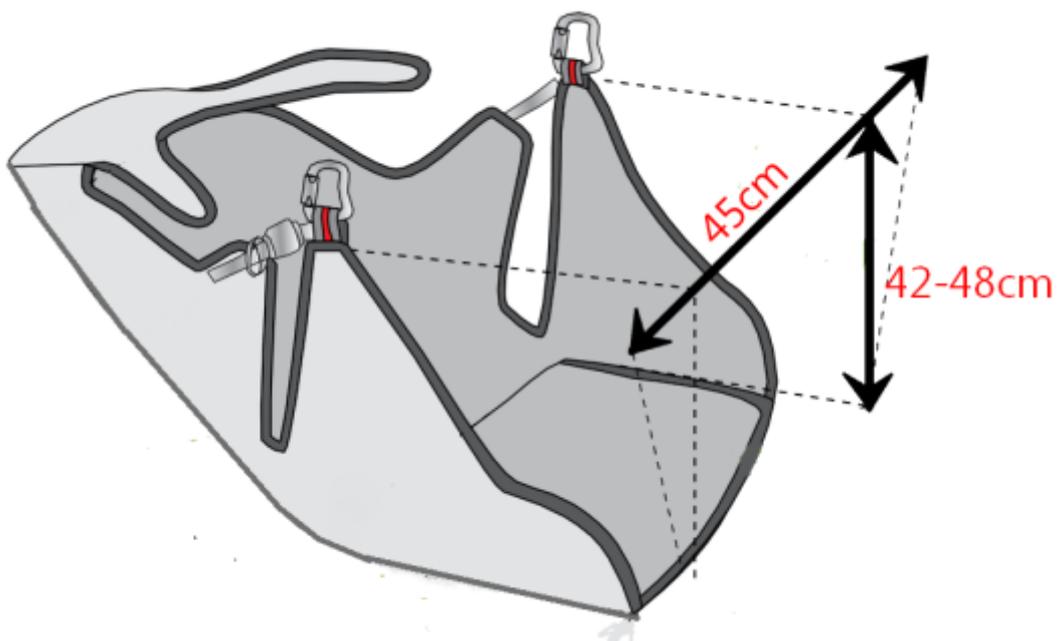
-Suitability for training The RHYTHM is suitable for the use in the school and educational flying.

-For the RHYTHM it has minimum of 65cm symmetrical travel length at maximum total-load.

It would be dangerous to use the brake travel according to those numbers, because it is not practicable to measure the brake travel during flight, and in turbulences the stall might occur with less brake travel. If you want to use the whole brake travel of your glider safely, it is necessary to do many intended spins and full stalls to get a feeling for the stall behaviour.

### 4. Harness

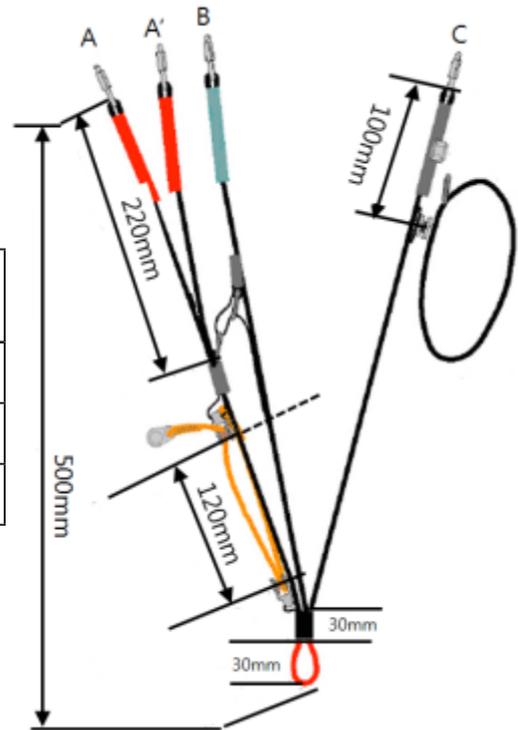
The RHYTHM is certified for harnesses in Group GH(without rigid cross-bracing). The suspensiion points of the chosen harness should ideally have a caraviner distance of approximately 45cm and a height of 40 to 48cm.



## 5. Risers

RHYTHM has 3 risers. The A riser has a red cover to easy identification. There is another line with red mailon. There is A' and is for the big ears.

	Standard [mm]	Accelerated [mm]	Travel length [mm]
A	500	500	0
B	500	440	60
C	500	380	120



## 6. Lines

They come in different diameters of Kevlar and Dyneema with sheathed cover. They must to be inspected every 150 hours or 24months maximum.

In case of Brake lines, it was cut a little longer, so every pilot can adjust it according to his personal taste.

But you must always leave 10cm before the brakes line starts acting in order to avoid trailing edge deformation when the wing is fully accelerated. In case the brake handle comes loose during flight or any brake lines is cut you can use the C riser softly for directional control instead of brake line.

## 7. Accelerator system

The accelerator has being limited in travel up to a safety point, however you can gain 8-12 km of extra speed.

You have to adjust the harness to the speed system so you can use all the speed travel.

To do so you have to be seated in the ground meanwhile you are in your harness and adjust the lines by pulling up the risers with tension. Another person help to do this is recommended. Make sure also that the speed bar is not pulling down the risers when you are not using it.

Once all the gear is rigged you have to test the whole speed travel in calm air. The use of the speed system reduces the angle of attack and the canopy may be more sensitive to collapses therefore do not use near the ground or in turbulent air and in case you are hit by turbulence remove your feet off the speed bar as quickly as possible. Always far away from the ground when using the speed bar.

## 8. Pre-flight check

To know yourself with the glider it is a good idea to perform practice inflations and ground handling in advance. You should have no difficulties flying the RHYTHM for the first time in suitable conditions, but as with all new equipment.

When you have the new glider, the below points should be inspected.

- Check the lines are clear and not twisted.
- Connection points between the glider and harness.
- All harness buckles are closed.
- The Karabiners are fully closed and not damaged.
- The sewing, condition of the lines and connection of the lines are right
- Internal damage to ribs and diagonal ribs.
- Damage to the top and bottom panels and seams between panels.

## 9. Take-Off

RHYTHM has easy inflation behaviour at the forward/reverse launch because of its profile system. To get the right wing shape for the take-off, pull the brake until the canopy shows at the perfect banana shape on the flat ground. While inflating the RHYTHM, you should hold both of the A risers on your hands. Smoothly and gradually inflate the wing. It does not need excessive energy and you feel the lift force very fast. It does not tend to over-shooting characteristics and provides a leisurely launch time with you.

### 9.1 Tow launch

The RHYTHM is easy to launch using a winch and it has no any special skills. To practice this launching technique special training is needed and you have to know the procedures and dangers, which are specific for winching. We do not recommend using any special towing device which accelerates the glider during the winch launch.

## 10. In flight characteristics

RHYTHM has the best stable glide performance in a normal position with no any brakes. In strong thermals and turbulence, we recommend to gently pull both brakes without acceleration to increase stability. The brakes provide feedback about the surrounding air, which is needed for active flying.

To familiarize yourself with the RHYTHM your first turns should be gradual and progressive. To make efficient and coordinated turns with the RHYTHM first look in the direction you want to go and check that the airspace is clear. Your first input for directional change should be weight-shift, followed by the smooth application of the brake until the desired bank angle is achieved. To regulate the speed and radius of the turn, coordinate your weight shift and use the outer brake.

In the unlikely event that a brake line releases from the brake handle or breaks, the glider is manoeuvrable using the C-risers. By pulling gently on the C-risers it is possible to steer the glider and land safely.

Alternative Steering:

In the unlikely event, that a brake line releases from the brake handle, or breaks, or the brake-lines are tangled up, the glider is manoeuvrable using the rear-risers. By pulling gently on the rear-risers, it is possible to steer the glider and land safely. Don't pull the rear-risers too much, to avoid a deep stall!

## 11. Deflations

In spite of the RHYTHM has great stability of the flight, strong turbulence or piloting error may cause a portion of the wing suddenly to be a deflation.

### 11.1 Asymmetric collapse

Asymmetric collapse usually happens when the pilot has not foreseen this possible reaction of the wing.

Asymmetric collapses should be controlled by weight shifting away from the collapse and applying enough brake to control your direction. And you should use the brake to re-inflate the glider.

### 11.2 Frontal collapse

RHYTHM does not come out the symmetrical front collapse by itself. It has high internal pressure with its well designed profile. However a symmetric collapse may occur in strong turbulent condition, but it could be fast recovered, if you apply the brake down to 15 to 20cm. Release the brake lines, you may recover to the normal flight.

### 11.3 Full stall

Full stall can occur when you fully pull the both brakes enough long time. This means that the wing loses its forward momentum. To recover to the normal flight you must release both brakes. After this usually comes a front dive with a possible front deflation. An asymmetric recovery (one control released faster than the other) from a full-stall can cause a big dynamic collapse. The full-stall is a hazardous manoeuvre and as such outside the scope of this manual. You should practice and learn this manoeuvre only on a SIV course under professional instructor.

### 11.4 Deep stall

It is possible for gliders to enter a state of deep stall. This can be caused by several situations including; a very slow release from a B-line stall; flying the glider when wet; very old glider; or after a front/symmetric deflation.

When you meet this situation you should fully raise up the both brakes and push the A-risers forwards or use the speed bar symmetrically to regain normal flight.

### 11.5 Asymmetrical stall

It can take place when you pull one of the brakes too hard, or while spiraling at a small speed in turbulence you increase the angle of attack. Rotation in the asymmetrical stall is called negative spiral. This is one of the most dangerous flying situations. In order to get out of asymmetrical stall, just release the brakes. There may follow side thrust forward with a following wing collapse.

### 11.6 B stall

The RHYTHM has a very clean stable B stall. To enter the B stall, the pilot has to pull the first 20cm slowly until the glider loses forward speed and starts to descend at around 6 m/s vertically. Do not release the brake handles during B stall. If you pull too much B-line the glider may horseshoe and move around a lot. If this happens, release the B risers.

To exit the B-stall the B-risers should be released symmetrically and in one smooth, progressive motion. The glider will resume normal forward flight without further input. Check you have forward flight again before using the brakes.

## 11.7 Cravat

In case a cravat should occur from an asymmetric collapse or other manoeuvres, it is important to keep your flying direction by applying some brake on the opposite side and weight shift.

You can also use strong deep pumps on the brake to the cravated side. If a pull of the brake line is unsuccessful, pulling the stable line which is the outermost line on the B-riser may work.

If you can not do it and the rotation is increasing, you must use the parachute.

# 12. Descent Techniques

## 12.1 Big ears

Sink rate can be decreased in a controlled way by folding both wing tips. While holding the brakes you should symmetrically pull the outermost A-risers.

In order to return to the normal flight, you should release the A-risers and pull the brake short times until wing tips regain pressure.

Spiraling is not permitted with big ears, because of the increased load on the remaining lines so that they can be physically deformed.

## 12.2 Spiral dive

The spiral dive is the most demanding descent technique and should be learned at enough height, preferably during an SIV course.

When you hold one sided brake down for a long time, the glider goes into a fast sharp turn and loses a lot of height. The sink rate could be more than 15 m/sec. To get out of the spiral dive you must release the inner brake and use the outside brake to manage your sink rate. Mind that RHYTHM may take one more turn after releasing the brake.

## 13. Landing

We recommend to land with trimmers to the normal slow position. Don't use the sharp turns or radical maneuvers.

When you are 1-2m over the ground, you should face into wind and standing upright and ready to run. Finally you may pull the brakes smoothly for minimize vertical speed.

Don't hit the ground by your overtake the glider. If you in windy condition, as soon as you touch the ground you have to turn around to face the glider and move towards it during full pulling break symmetrically.

## 14. Packing your RHYTHM

Spread the RHYTHM completely out on the ground. Separate the lines to the each side. The RHYTHM must be folded cell to cell to keep the plastic reinforcement at the leading edge lie flat on each other and don't get bent. Try to pack your RHYTHM as loosely as the rucksack allows, because every fold weakens the fabric.

Avoid packing the glider where it is wet or abrasive conditions(sand, asphalt pavement, concrete)

## 15. Maintenance and cleaning

Cleaning should be carried out with only pure water. If the glider comes in contact with salt water, clean thoroughly with fresh water. Do not use solvents of any kind, as this may remove the protective coatings and destroy the fabric.

## 16. Caring tips

- Do not expose your glider to the sun any longer than necessary
- Keep it away from water and other liquids
- Do not let the front edge hit the ground
- Keep your glider away from fire
- Do not put anything heavy on your glider, do not pack it in a rucksack too tightly.
- Regularly inspect the canopy, lines, risers and harness. If you find any defects, contact your dealer or the manufacturer. Do not attempt to repair the paraglider by yourselves.
- If you detect a damaged line, inform the dealer or manufacturer about the line number according to the line plan
- Keep your RHYTHM in a bag in a dry well-ventilated place under neutral temperature and humidity conditions
- If you do not use the glider, then once a month you should unpack it, ventilate it well, and then pack it back in the bag

## 17. Warrantee

The producer guarantees the correctness of the declared characteristics and the paraglider's normal performance for two years after the purchase date. The producer conducts special, and after warranty repairs and maintenance at the owners' request for an extra price.

We recommend to inspect your paraglider (including checking suspension line strength, line geometry, riser geometry and permeability of the canopy material) one time at two years, or every 150 hours of flying time (whichever comes first); Those inspection must be made by manufacturer, importer, distributor, dealer or other authorised persons. The checking must be proven by a stamp on the certification sticker on the glider as well in the manual book.

## 18. Respecting nature and environment

Finally, we would ask each pilot to take care of nature and our environment. Respect nature and the environment at all times but most particularly at take-off and landing places. Respect others and paraglider in harmony with nature.

Do not leave marked tracks and do not leave rubbish behind. Do not make unnecessary noise and respect sensitive biological areas.

The materials used on a paraglider should be recycled. Please send old Davinci gliders back to us Davinci Gliders offices. We will undertake to recycle the glider.

# Checked line sheet(with riser)

The measured values at the lower surface of the tailing edge, cll depth and spacing of the articulation points were determined under tensile load of 50N.

## Medium size

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>Brake</b>
<b>1</b>	7137	7020	7094	7183	7651
<b>2</b>	7111	6996	7069	7156	7168
<b>3</b>	7118	7005	7078	7163	6994
<b>4</b>	7143	7034	7106	7188	6939
<b>5</b>	7188	7019	7039	7113	6764
<b>6</b>	7102	7011	7029	7097	6923
<b>7</b>	7093	7008	7024	7089	6754
<b>8</b>	7105	7026	7040	7099	6644
<b>9</b>	7025	6963	6923	6969	6568
<b>10</b>	6961	6909	6869	6910	
<b>11</b>	6843	6802	6759	6791	
<b>12</b>	6769	6727	6681	6706	
<b>13(STABLE)</b>	6493	6420	6488		

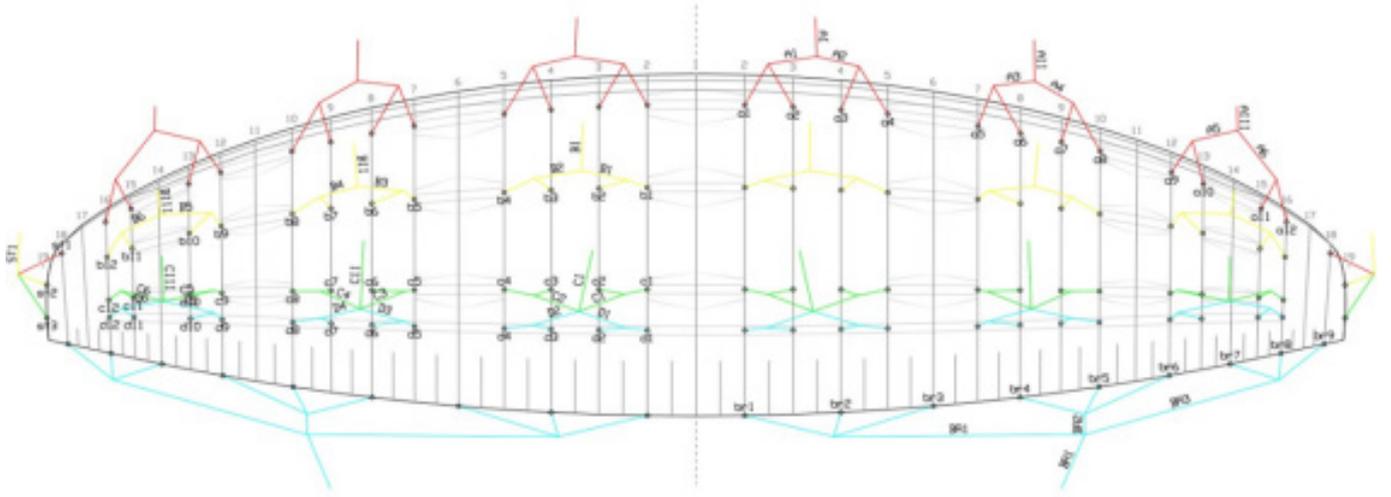
<b>Name</b>	<b>Length</b>										
a1	907	b1	890	c1	914	d1	1003	st1	973	br1	1841
a2	881	b2	866	c2	889	d2	976	st2	900	br2	1358
a3	888	b3	875	c3	898	d3	983	st3	968	br3	1184
a4	913	b4	904	c4	926	d4	1008			br4	1089
a5	888	b5	889	c5	909	d5	983	ST1	5020	br5	914
a6	872	b6	881	c6	899	d6	967			br6	1073
a7	863	b7	878	c7	894	d7	959			br7	934
a8	875	b8	896	c8	910	d8	969			br8	824
a9	895	b9	883	c9	893	d9	939			br9	748
a10	831	b10	829	c10	839	d10	880				
a11	713	b11	722	c11	729	d11	761			BR1	2510
a12	639	b12	647	c12	651	d12	676			BR2	2550
										BR3	2520
A1	1800	B1	1800	C1	1800	D1	1800				
A2	1800	B2	1800	C2	1800	D2	1800			BRI	3300
A3	1750	B3	1750	C3	1750	D3	1750				
A4	1750	B4	1750	C4	1750	D4	1750				
A5	1600	B5	1700	C5	1700	D5	1700				
A6	1600	B6	1700	C6	1700	D6	1700				
AI	3950	BI	3850	CI	3900						
AII	4000	BII	3900	CII	3900						
AIII	4050	BIII	3900	CIII	3850						

**Large size**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>Brake</b>
<b>1</b>	7424	7302	7327	7419	8024
<b>2</b>	7398	7278	7302	7393	7523
<b>3</b>	7405	7288	7312	7400	7344
<b>4</b>	7432	7319	7341	7427	7297
<b>5</b>	7407	7304	7324	7402	7118
<b>6</b>	7391	7296	7314	7386	7281
<b>7</b>	7381	7293	7310	7377	7094
<b>8</b>	7393	7312	7326	7387	6990
<b>9</b>	7310	7246	7257	7304	6950
<b>10</b>	7245	7190	7201	7243	
<b>11</b>	7121	7079	7086	7119	
<b>12</b>	7044	7000	7004	7030	
<b>13(STABLE)</b>	6455	6677	6749		

<b>Name</b>	<b>Length</b>										
a1	944	b1	922	c1	947	d1	1039	st1	1015	br1	1914
a2	918	b2	898	c2	922	d2	1013	st2	937	br2	1413
a3	925	b3	908	c3	932	d3	1020	st3	1009	br3	1234
a4	952	b4	939	c4	961	d4	1047			br4	1137
a5	927	b5	924	c5	944	d5	1022	ST1	5240	br5	958
a6	911	b6	916	c6	934	d6	1006			br6	1121
a7	901	b7	913	c7	930	d7	997			br7	984
a8	913	b8	932	c8	946	d8	1007			br8	880
a9	930	b9	926	c9	937	d9	984			br9	840
a10	865	b10	870	c10	881	d10	923				
a11	741	b11	759	c11	766	d11	799			BR1	2660
a12	664	b12	680	c12	684	d12	710			BR2	2710
										BR3	2660
A1	1880	B1	1880	C1	1880	D1	1880				
A2	1880	B2	1880	C2	1880	D2	1880			BRI	3450
A3	1830	B3	1830	C3	1830	D3	1830				
A4	1830	B4	1830	C4	1830	D4	1830				
A5	1670	B5	1770	C5	1770	D5	1770				
A6	1670	B6	1770	C6	1770	D6	1770				
AI	4120	BI	4020	CI	4020						
AII	4170	BII	4070	CII	4070						
AIII	4230	BIII	4070	CIII	4070						

<i>Name</i>	<i>Manufacturer</i>										
a1	DSL 70	b1	DSL 70	c1	DSL 70	d1	DSL 70	st1	DSL 70	br1	DSL70
a2	DSL 70	b2	DSL 70	c2	DSL 70	d2	DSL 70	st2	DSL 70	br2	DSL70
a3	DSL 70	b3	DSL 70	c3	DSL 70	d3	DSL 70	st3	DSL 70	br3	DSL70
a4	DSL 70	b4	DSL 70	c4	DSL 70	d4	DSL 70			br4	DSL70
a5	DSL 70	b5	DSL 70	c5	DSL 70	d5	DSL 70	ST1	6843 - 160	br5	DSL70
a6	DSL 70	b6	DSL 70	c6	DSL 70	d6	DSL 70			br6	DSL70
a7	DSL 70	b7	DSL 70	c7	DSL 70	d7	DSL 70			br7	DSL70
a8	DSL 70	b8	DSL 70	c8	DSL 70	d8	DSL 70			br8	DSL70
a9	DSL 70	b9	DSL 70	c9	DSL 70	d9	DSL 70			br9	DSL70
a10	DSL 70	b10	DSL 70	c10	DSL 70	d10	DSL 70				
a11	DSL 70	b11	DSL 70	c11	DSL 70	d11	DSL 70			BR1	PPSL 120
a12	DSL 70	b12	DSL 70	c12	DSL 70	d12	DSL 70			BR2	PPSL 120
										BR3	PPSL 120
A1	PPSL 120	B1	PPSL 120	C1	PPSL 120	D1	PPSL 120				
A2	PPSL 120	B2	PPSL 120	C2	PPSL 120	D2	PPSL 120			BRI	10N - 200
A3	PPSL 120	B3	PPSL 120	C3	PPSL 120	D3	PPSL 120				
A4	PPSL 120	B4	PPSL 120	C4	PPSL 120	D4	PPSL 120				
A5	PPSL 120	B5	PPSL 120	C5	PPSL 120	D5	PPSL 120				
A6	PPSL 120	B6	PPSL 120	C6	PPSL 120	D6	PPSL 120				
AI	7343 - 280	BI	7343 - 280	CI	7343 - 280						
AII	7343 - 280	BII	7343 - 280	CII	7343 - 280						
AIII	7343 - 280	BIII	7343 - 280	CIII	7343 - 280						



### Overview

