Colour Control6

Order Code: Control6

User Manual
Cobra Colour Control 6

Dear Customer,

Thank you for purchasing the Cobra Colour Control 6. With decades of experience in design and production, Cobra is one of the leading manufacturers of professional sound and lighting equipment.

This unit has been designed and manufactured to the highest of standards so you can be assured you have made a good investment.

For optimum safety and to take full advantage of all the Cobra Control 6 features, please ensure you read this manual in full.

Product Description
The Cobra Colour Control 6 is a 6 channel DMX controller, suitable for use with dimmer packs, LED lighting and effects lights. The controller is manual controller with six faders and one master dimmer fader. The Control 6 can be used with a battery, or be connected to the mains.

Safety Advice
1. Read this manual in full before operating this product.
2. Keep this manual in a safe place for future reference.
3. Carry and transport this product with care. Dropping this product may result in serious mechanical failure.
4. The manufacturer accepts no responsibility for injury or damage caused by not following the manual provided.

Protection from Electric Shock
1. Do not connect the AC power plug to the unit before connecting your lights.
2. Only connect this unit to a mains socket with suitable trip and RCD protection.
3. To disconnect from the mains socket always remove by the mains plug. Do not attempt to remove by pulling the mains cable.
4. Disconnect the unit from the mains supply before cleaning. Cleaning should be carried out with a soft, dry cloth.
5. Do not expose this unit to any liquids.
6. Do not operate near exposed water or in high humidity.
7. Choose a suitable route for mains cables, ensuring trip hazards are avoided and the mains cable is not at risk of being crushed.
8. Do not open this unit to service. There are no user serviceable parts inside. Any servicing or repairs should be carried out by a qualified engineer only. Any user attempt to service or adapt this unit will void your warranty and could result in serious malfunction or injury.

Protection from Fire

1. Do not place near sources of heat or ignition.

2. Do not block any ventilation holes.

3. Check your AC wall socket will take the power you are applying to avoid overloading the mains supply.

4. Ensure you are using the correct voltage DC power supply, set to the correct polarity.

Protection from Injury and Damage

1. Do not attempt to modify this unit.

2. Always install the unit in a suitable location where vibrations to the unit are avoided.

3. Check this unit matches the mains voltage and frequency before plugging it in to your mains socket.

4. If any liquids or objects have entered the unit, switch it off immediately and consult a qualified engineer.

5. In the event of malfunction or damage to the mains cable, disconnect from the mains supply immediately and consult a qualified engineer.

6. All parts should be replaced with genuine spare parts and carried out by a qualified engineer.

Contents & Unpacking

1. The box should contain Cobra Colour Control 6, DC power supply and user manual.

2. If you suspect any damage or missing parts, please contact your dealer immediately.

Specifications

Name: Colour Control 6

Code: Control 6

Power supply: DC 12v 100mA min. PP3 9v Battery

Power consumption: 2 watts

Output: DMX 512 (3-pin XLR)

Dimensions: 173 x 153 x 55mm

Weight: 0.8kg

Features

The Colour Control 6 is DMX 6-channel controller suitable for DMX products up to six channels.

Features Include

1. Small, lightweight and portable.

2. 6 manual channel faders.

3. 1 master dimmer fader.

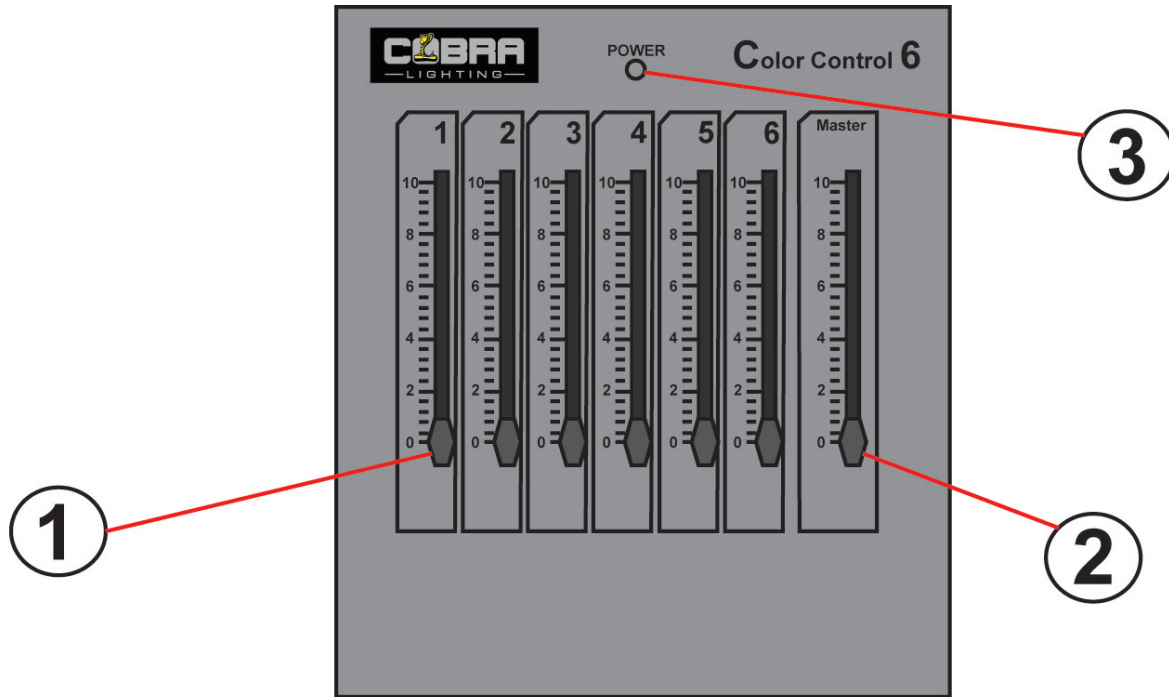4. Battery or mains operated.

5. Polarity Switch.

Troubleshooting

If fixture is not responding to DMX

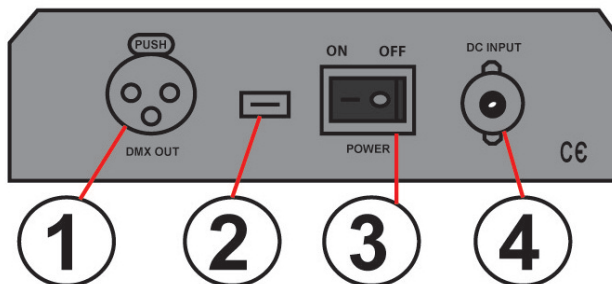1. Check all connections are correct.

2. Check DMX addressing is correct.

Controller Front
1.   1-6 Channel faders.
2.   Master dimmer fader.
3.   Power LED

Rear Panel
1.   3pin DMX out.
2.   Polarity switch.
3.   On/off power switch.
4.   DC input. Connect a 12v 100mA min adaptor.

Common Terms
The following are common terms used in intelligent light programming:
1. **Blackout** - is a state where by all lighting fixtures light output is set to '0' or 'off', usually on a temporary basis.
2. **DMX-512** - is an industry standard digital communication protocol, frequently used in entertainment lighting equipment.
3. **Fixture** - refers to your lighting effect or other device such as a dimmer, which you can control.
4. **Sliders** - are also known as faders.
5. **Scanner** - refers to a lighting effect which has a pan and tilt mirror; However DMX controllers may refer to this term when describing the control of a DMX512 compatible device.
6. **MIDI** - is a standard term for representing musical information in a digital format. A MIDI input provides external triggering of scenes using MIDI devices such as a MIDI keyboard.
7. **Stand Alone** - refers to a fixtures ability to function independently of an external controller. This is usually in sync to music due to a built in microphone.
8. **Fader slider** - is used to adjust the fade time between scenes within a chase.
9. **Speed slider** - affects the amount of time a scene will hold its state. It is also considered a wait time.
10. **Shutter** - is a mechanical device in the lighting fixture that allows you to block the lights path. It is often used to lessen the intensity of the light output or strobe.
11. **Playbacks** - can either be scenes or chases that are directly recalled by the user. A playback may also be considered a program memory which can be used during a show.
12. **Patching** – refers to the process of assigning faders to a DMX channel fixture.

First Time Operation
1. Remove all packaging materials.
2. Connect a DMX cable from controller to your first light or pack. Connect a DMX cable from the first light or pack to the second. Do this until all lights or packs are connected.
3. Plug any par can/theatre spots in to your dimmer packs if you are using dimmer packs.
4. Plug your controller into the mains with the supplied AC/DC power supply or with a PP3 battery (not provided).
5. Plug your dimmer packs or lights in to the mains.
6. Set correct DMX addresses on your lights or dimmers. Some lights or packs have dip-switches. Some have digital displays.
7. Once you have turned on your controller, move up the master slider.
8. You are now ready to use your controller. If you find the lights or dimmers are not functioning, try switching the polarity switch at the rear.

Troubleshooting
If fixture is not responding to DMX
1. Check all connections are correct.
2. Check DMX addressing is correct.
3. Check master dimmer fader is up.
4. Check polarity switch at the back of the unit is in the correct position.
5. Check fade slider is up to the top.
6. If all the above fails to work, unplug from the mains, wait 30 seconds then reconnect to the power supply.
7. If it is still not working, contact your dealer.

DMX BASICS

DMX is short for digital multiplexer, which is a universal protocol designed for the lighting industry allowing for controlling of intelligent fixtures like scanners, moving heads, LED par cans, dimmer packs, fog machines etc.

DMX allows you to control many fixtures channels, normally up to 512 with varying channels from 0-255 (0-100%).

This will give control of channels like gobo selection, up and down movements, colours and dimming etc.

DMX is a very good system as all this information can be sent down one cable, used in conjunction with a DMX controller with memory all your channel settings can be saved and recalled easily.

DMX was designed so that all manufacturers can use the same protocol/language to control their fixtures allowing the end user to use any make of fixture on their DMX controller as long as both are DMX compatible, and the controller has enough channels to control the fixture that is attached.

Fixtures have an input and output DMX socket, allowing you to connect from the controller to the first fixture then from that fixture to the next (this is called daisy chaining).

Sockets are normally 3 pin XLR but can be 5 pin XLR as well.

DMX fixtures need to have a DMX address set, as this is so they can then decode the correct information from the controller. This is normally done by a digital display panel, where the address can be changed by simple up and down buttons; the address ranges from 1-512. In addition to this it can be controlled by a row of small switches, called dip switches; there the required address is converted to a binary number.

To work out your dip switch settings you can simply download a DMX calculator from the internet or see our table further on.
The order in which fixtures are connected in a DMX line does not influence the DMX address, a fixture set to DMX address 1 can be put in a DMX line from beginning, middle or end, as it is set to address 1 it knows to take information from that point onwards.
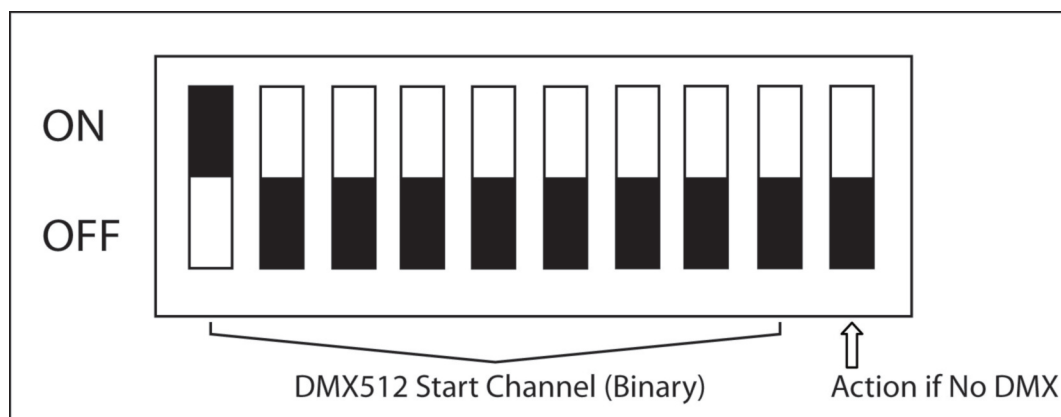
Normal DIP Switch assignments: DMX start channel = 1

DMX Wiring:

3 pin wiring is more common, 5 pin is the correct way. 3 pin may be used to save on cost. With 5 pin connections, not all pins are used, though it is worth checking your manual for your fixture, as some lights use the unused pins for low voltage control. 5 pin would be better so there is no confusion over mixer leads and DMX leads in big rigs, sending a mixers 48v phantom power down a DMX cable could damage the DMX light.
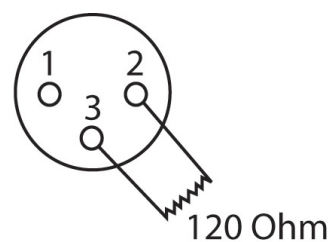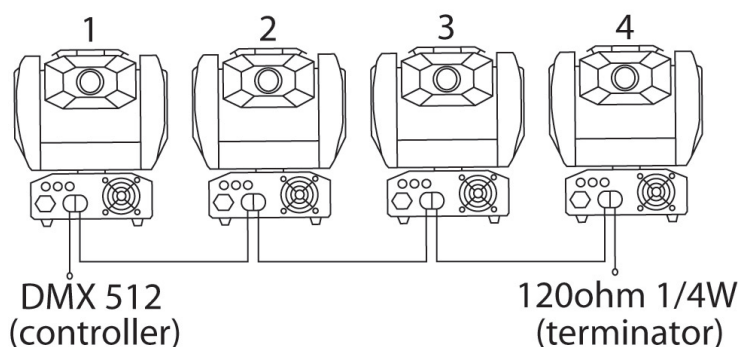
When making cables try and used proper DMX cable and do not connect pin 1 GND to the outer casing of the connector as you might do with audio cables as this may cause erratic behaviour from your fixture.
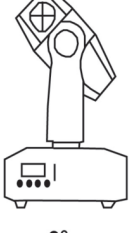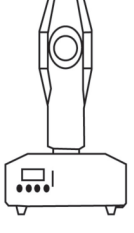
Do not make Y leads to split cables to fixtures; always use the in and out sockets or a DMX splitter as again this may cause erratic behaviour from your fixture.

We recommend you to put a DMX terminator in any fixture which hasn't got a DMX lead connected from the output socket to another fixture; this again is to reduce erratic behaviour from your fixtures. A DMX terminator is simply a male XLR plug with 120 ohms, ¼ watt resistor soldered across pin 2 & 3.

3 PIN	5 PIN
PIN 1 GND	PIN 1 GND
PIN 2 -	PIN 2 -
PIN 3 +	PIN 3 +
	PIN 4 NOT USED
	PIN 5 NOT USED

Example of a DMX line

120 Ohm

1   2   3   4

DMX 512
(controller)

120ohm 1/4W
(terminator)

Ch1	Ch2	Ch3	Ch4	Colour	
Pan	Tilt	Shutter/Shaking	Gobo	Normal	Split
540°	270°	246-255 Open	255 Fastest speed Gobo change	255 Fastest speed Rainbow Effect	255 Fastest speed Rainbow Effect
		247 Fastest speed shaking	128 Slowest speed Gobo change	128 Slowest speed Rainbow effect	128 Slowest speed Rainbow effect
			120-127	118-127 Pink	121-127 Pink
			111-119	107-117 Yellow	113-120 Yellow+Pink
			103-110	096-106 Orange	106-112 Yellow
			094-102	086-095 Light Green	098-105 Orange+Yellow
		132 Slowest speed shaking	086-083	075-085 UV Purple	091-097 Orange
			077-085	064-074 Blue	083-090 Light Green+Orange
		131 Fastest speed shutter	069-076	054-063 Red	076-082 Light Green
			060-068	043-053 Amber	068-075 UV Purple
			052-059	032-042 Light Blue	061-067 Blue
			044-051	022-031 Magenta	053-060 Red+Blue
			035-043	011-021 Green	046-052 Red
		16 Slowest speed shutter	0-26-034	000-010 White	038-045 Amber
			018-025		031-037 Light Blue
		008-015 Open	009-017		023-030 Magenta
			000-008		016-022 Green+Magenta
		000-007 Blackout			008-016 Green
0°	0°				000-007 White

Each fixture takes up 5 DMX Channels (See Above)

The controller is a fairly basic 24 channel.

So you have a cable from the controller to the first fixture cable from first to second and so on, the last light has a DMX terminator plugged in.

Fixture 1 would be set to DMX address:

1 dipswitch number 1 on.

Fixture 2 would be set to DMX address:

6 dipswitch numbers 2 & 3 on.

Fixture 3 would be set to DMX address:

11 dipswitch numbers 1, 2 & 4 on.

Fixture 4 would be set to DMX address:

16 dipswitch number 5 on.

We would recommend you to fully read manuals for your light and controller as some controllers tell you what each fixture address needs to be, and some lights need other settings changed to make them work.

When setting address you need to make sure fixtures don't overlap from one to the next.
You can set 2 fixtures to the same address, and as long as they are the same fixture (i.e. same channel layout) they will then do the same as each other.

COBRA LIGHTING

TABLE SET DMX ADDRESS

DMX DIPSWITCH SET
- 0 = OFF
- 1 = ON
- X = OFF OR ON

Dipswitches 6, 7, 8, 9 select the column (offset); dipswitches 1–5 select the row. The four-bit column header below lists switches (9, 8, 7, 6).

sw1	sw2	sw3	sw4	sw5	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0	0	0	0	0	32	64	96	128	160	192	224	256	288	320	352	384	416	448	480
1	0	0	0	0	1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481
0	1	0	0	0	2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482
1	1	0	0	0	3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483
0	0	1	0	0	4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484
1	0	1	0	0	5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485
0	1	1	0	0	6	38	70	102	134	166	198	230	262	294	326	358	390	422	454	486
1	1	1	0	0	7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487
0	0	0	1	0	8	40	72	104	136	168	200	232	264	296	328	360	392	424	456	488
1	0	0	1	0	9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489
0	1	0	1	0	10	42	74	106	138	170	202	234	266	298	330	362	394	426	458	490
1	1	0	1	0	11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491
0	0	1	1	0	12	44	76	108	140	172	204	236	268	300	332	364	396	428	460	492
1	0	1	1	0	13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493
0	1	1	1	0	14	46	78	110	142	174	206	238	270	302	334	366	398	430	462	494
1	1	1	1	0	15	47	79	111	143	175	207	239	271	303	335	367	399	431	463	495
0	0	0	0	1	16	48	80	112	144	176	208	240	272	304	336	368	400	432	464	496
1	0	0	0	1	17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497
0	1	0	0	1	18	50	82	114	146	178	210	242	274	306	338	370	402	434	466	498
1	1	0	0	1	19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499
0	0	1	0	1	20	52	84	116	148	180	212	244	276	308	340	372	404	436	468	500
1	0	1	0	1	21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501
0	1	1	0	1	22	54	86	118	150	182	214	246	278	310	342	374	406	438	470	502
1	1	1	0	1	23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503
0	0	0	1	1	24	56	88	120	152	184	216	248	280	312	344	376	408	440	472	504
1	0	0	1	1	25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505
0	1	0	1	1	26	58	90	122	154	186	218	250	282	314	346	378	410	442	474	506
1	1	0	1	1	27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507
0	0	1	1	1	28	60	92	124	156	188	220	252	284	316	348	380	412	444	476	508
1	0	1	1	1	29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509
0	1	1	1	1	30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510
1	1	1	1	1	31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511