



FLUME BLASTA

Parts & Installation Guide

PRODUCT INFORMATION



Manufactured in the United Kingdom

Your Serial Number is:

Please quote this number when ordering parts or seeking telephone assistance

Company Information

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A member of the Tornado International Leisure group

Before Installation

Important - please read this!

This guide and information is provided in good faith and is believed to be accurate. Tornado International has no control over the manner in which the product is used, users should satisfy themselves that any information or instruction contained in this guide is appropriate for the conditions under which the product is being installed and operated.

In the interest of continued development, we reserve the right to alter or modify the product where necessary.

On Delivery

- Before opening, check the number of crates delivered agrees with shipping documents.
- Inspect crates for damage. If there is any visible damage please note the crate number and the position and extent of the damage. If the crates are not to be opened immediately, please notify the shipping company as soon as possible. If the crates are to be opened, wait until the product is inspected for damage.
- Please open and remove the contents carefully. Damage should be reported immediately to the shipping company and to Tornado International. Any shortage should be reported to Tornado International as soon as possible and in any event not later than 5 days after receipt.

Standard Flume Blasta Unit Consists Of:

- A number of Flume Blasta positions and covers, please check your delivery note. The part number stated on the documents will be 9FB00. The "00" will be a number from 01 to 08. This corresponds to 1 position - 8 positions. Please check you have the correct number of playing positions.
- Power supply box complete with local mains power lead and length of 2 core cable.
- Water hoses, fittings and spares.
- Optional booster pump assembly may also be supplied.

Important Safety Information

This unit is fitted with the following safety features which must not be interrupted from their operation:

- Flume Blasta must be only operated using POTABLE water.
- The electronics are fitted with a "purge mode" feature. For factory standard this is activated to fire a continuous jet of water for a period of 10 seconds on first power up and then every 15 minutes after inactivity for a period of 5 seconds. Both of these settings can be configured on site. The length of water hoses used should be considered when deciding on a suitable time. This all to help ensure your guests are sprayed only with fresh water.
- The power supply must be connected to an R.C.D.

Legionnaire Disease

Warning!

The following information regarding the control of legionella is provided for your guidance. However information regarding the bacteria, its health risks and effective control changes over time. The user should ensure that they are using the latest information and control techniques and that the method of control they choose is suitable for the equipment and location of its use. The following information was published in September 2003.

What is Legionnaires Disease?

Legionnaires disease is a form of pneumonia which, for certain susceptible groups of people is potentially fatal. The cause of the disease is the Legionella bacteria which is found commonly in nature, in rivers, ponds and water courses.

How are people infected with the Legionella bacteria?

Infection is caused by a person breathing in small droplets of water contaminated with the bacteria. Everyone is potentially susceptible but some groups of people are more at risk. People over 45, smokers, heavy drinkers, those with an impaired immune system and people suffering from chronic respiratory or kidney disease.

Under what conditions will the bacteria become a threat?

As previously stated, the bacteria is present in the environment but generally causes no harm. However, under certain conditions it will thrive and multiply, producing water that is so contaminated that droplets of such water, if inhaled, cause a real threat to health. Three conditions affect the risk of infection. These are water temperature, water cleanliness and droplet size.

Water Temperature

The bacteria thrives at water temperatures between 20°C & 45°C. At cooler water temperatures the bacteria is not killed but does not multiply. At higher water temperatures (above 60°C) the bacteria is killed.

Water Cleanliness

If the water is between 20°C and 40°C the bacteria will thrive if a supply of nutrients is present. Rust, sludge, scale, algae or other bacteria will provide a suitable nutrient source for the bacteria. It should be noted that nutrients may be present in water that appears to be clean to the naked eye.

Droplet Size

If the two conditions above are met then the final criteria to enable infection is droplet size. The droplets produced by the equipment's operation have to be small enough to be inhaled by people.

How can the risk be controlled?

Of the three conditions above two are outside of your control. The droplet size is a function of the water pressure at the gun, the angle the stream hits the targets and the weather conditions. The HSE advise that water falling into a bath from a tap can produce droplets of a suitable size, so it is reasonable to assume that the operation of these Flume Blasta's will also produce droplets of a size that are able to be inhaled.

Water temperature will vary according to the time of day, the season and equipment's location. It should be noted that it is the water temperature that is important, not the air temperature. As a rule water heats up more slowly than air but takes longer to cool when the source of heat is removed.

Legionnaire Disease Continued

In practice this means that if the game is sited outdoors and facing south in the United Kingdom, it will reach maximum water temperature in the late afternoon. It should be noted that if the water temperature exceeds 20°C for part of the day, it is possible for the bacteria to multiply during the warm period. As the bacteria is not killed by cooler temperatures they will survive the cooler periods, only to multiply again when the water returns to higher temperatures. It is thus possible for the bacteria to multiply by installments, increasing in quantity with each successive warm period.

The bacteria will not multiply without both warm water and nutrients. However, trying to deprive the bacteria of nutrients is not a practical solution as it is impossible to tell visually if nutrients are available.

Management Regime

The water temperature will need to be monitored using a water thermometer. If the water temperature stays below 20°C it is only necessary to keep the water clean by removing any debris promptly and changing the water as and when necessary. If the water temperature exceeds 20°C then a biocide needs to be added to the water to kill the bacteria. Many biocides are available but consideration should be given to the following issues. The treated water will find its way onto skin and clothes of the public and as such needs to be safe in these conditions. The biocide chosen needs to be compatible with the materials used in the construction of the game. These include Glass fibre, PVC, Brass Stainless Steel and Cast Iron. Your employees will have to handle the biocide and consideration should be given to their training, health and safety.

Caution!

In all cases, guidance should be obtained from the chemical manufacturer and their instructions followed carefully. Undiluted chemicals may cause harm to people and the equipment. It is vital to train all relevant personnel in the correct use of any chemical.

The biocide needs to be diluted and administered according to the manufacturer's instructions. You should keep records of temperature checks and biocide use.

Your Obligations Under Law

To comply with general health and safety law you must consider the risks from Legionella that may affect your staff or members of the public and take suitable precautions. You must:

Identify and assess the sources of risk

Prepare a scheme or course of action for preventing or controlling the risk

Implement and manage the scheme and appoint a person to be responsible for the scheme

Keep records and check that what has been done is effective

If you have five or more employees you must keep records in writing of the findings of any assessment and details of any monitoring, checking or treatment carried out.

Flume Blasta Installation Guide



1. Typical Installation Method

this method is preferred as all hoses and power cables can be run underground and out of sight

pull cords should be used to daisy chain 24V power between the consoles

25mm duct to run from the position of the power supply to console number 1 or 4

water supply



100mm duct

minimum distance between console centres 600mm

water supply pipe to protrude 70-150mm above concrete surface

smooth surface of concrete

please remember that the length of water jet will vary depending on local water supply and installation conditions

a booster pump may be required
flume console 3 omitted for clarity

2. Parts Supplied to Assist with Installation

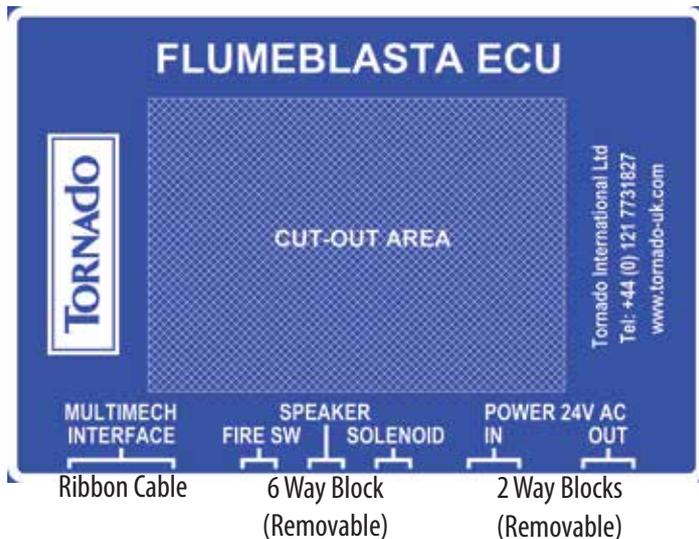
- Water hose pipe 12.5mm ID x 18.5mm OD.
- Raw plug bolts for stand mounting onto concrete surface, 4 per flume position.
- Power supply unit (set for local mains input) and 2 core 24V power cable.
- Water T's, elbows, couplers, hose clips and drain taps. Drain tap to be fitted at end of pipe run (lowest point) to drain system during winter / closed season.
- Selection of spares.

3. Connecting Power & Water

- Flume Blasta must be operated using potable water only.
- 24V (AC) power supply unit is supplied which converts local main supply to the required voltage. Please check your local supply matches the front of the Tornado supplied PSU. Can be mounted inside or outside.
- Power is distributed to each position by means of the 2 core cable supplied, please see below. Water and power cables to be routed from either the bottom of the stand or through the entry (will need drilling on site) of the black PVC base cover.
- Flush all pipes before attaching hoses to water valves.

4. Inside the Flume Blasta Pod

Control Electronics



Blue/Brown 2 core cable supplied can be wired to any side of the block, AC power can be Bl/Br or Br/Bl

Power to each Flume Blasta is linked from one position to the next

Water Valve
Coin Mech
Coin Mech Interface PCB

Mech Interface PCB
Menu Button
Free Go Button
Counter Button



QL Coin Mech

Water OUT to Gun

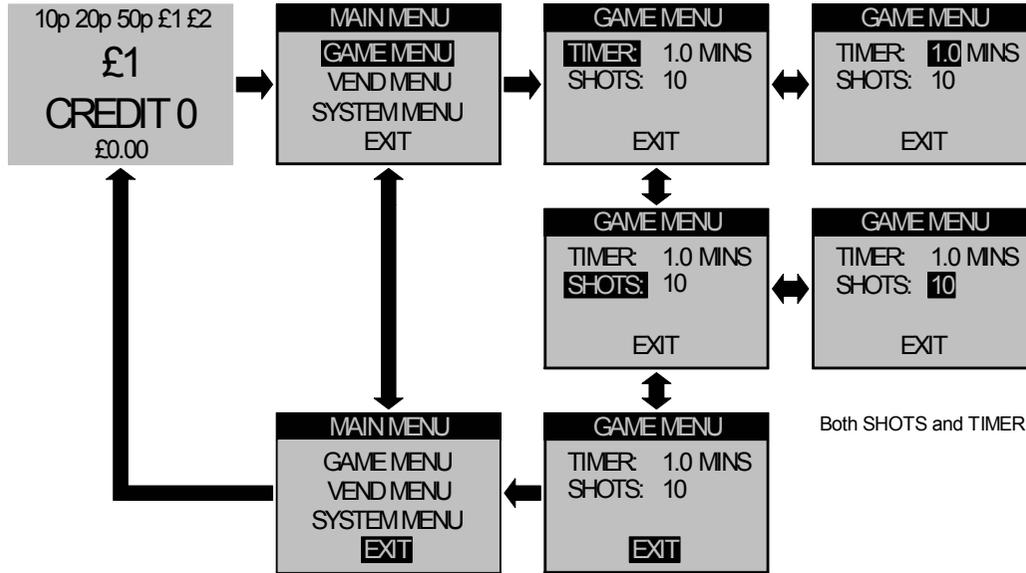
Water IN potable

Flume Blasta Installation Guide



GAME MENU:

Used the **↑** **↓** and ENTER buttons located on the multi-mech interface board to navigate through the menu screen.



TIMER:
A play timer can be set from OFF to 9.9 minutes.

SHOTS:
The number of SHOTS can be set from OFF to 99.

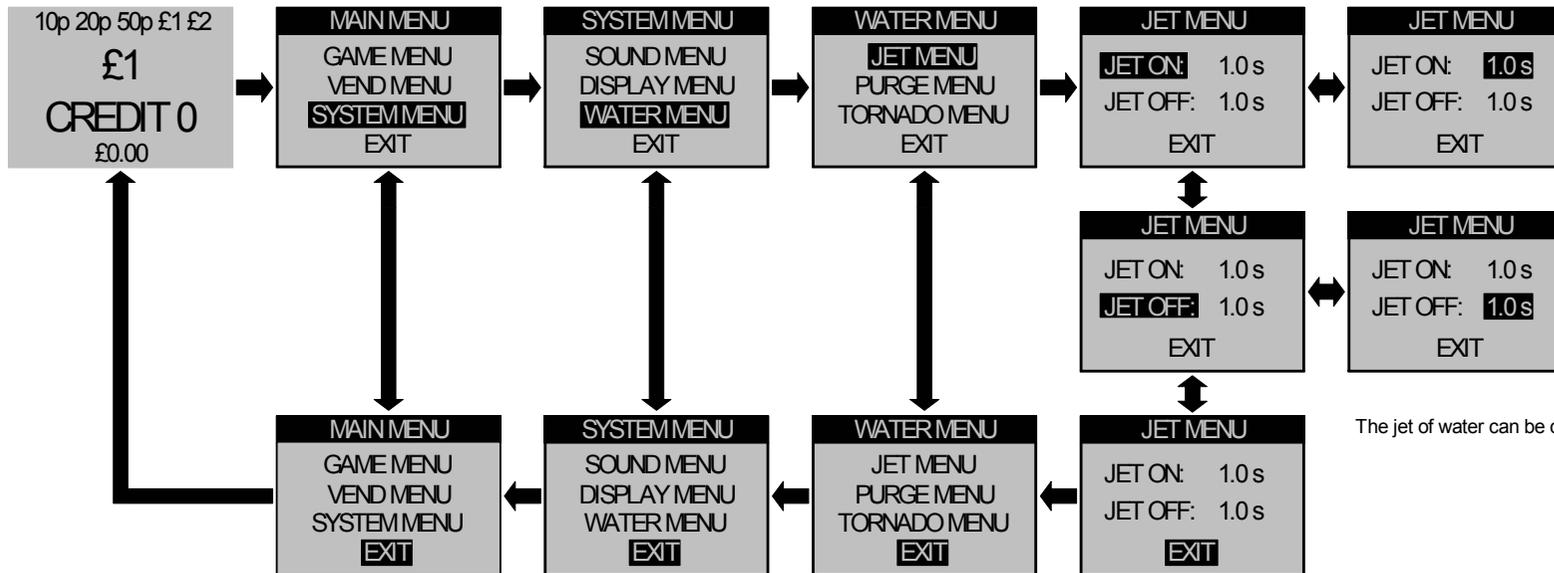
Both SHOTS and TIMER functions can be used either individually or simultaneously.

A guide to the most common features which users are likely to change on first installation. Many other features and menus exist.

Please contact Tornado directly for assistance if unsure how to alter any Flume Blasta mode settings.

JET MENU:

Used the **↑** **↓** and ENTER buttons located on the multi-mech interface board to navigate through the menu screen.

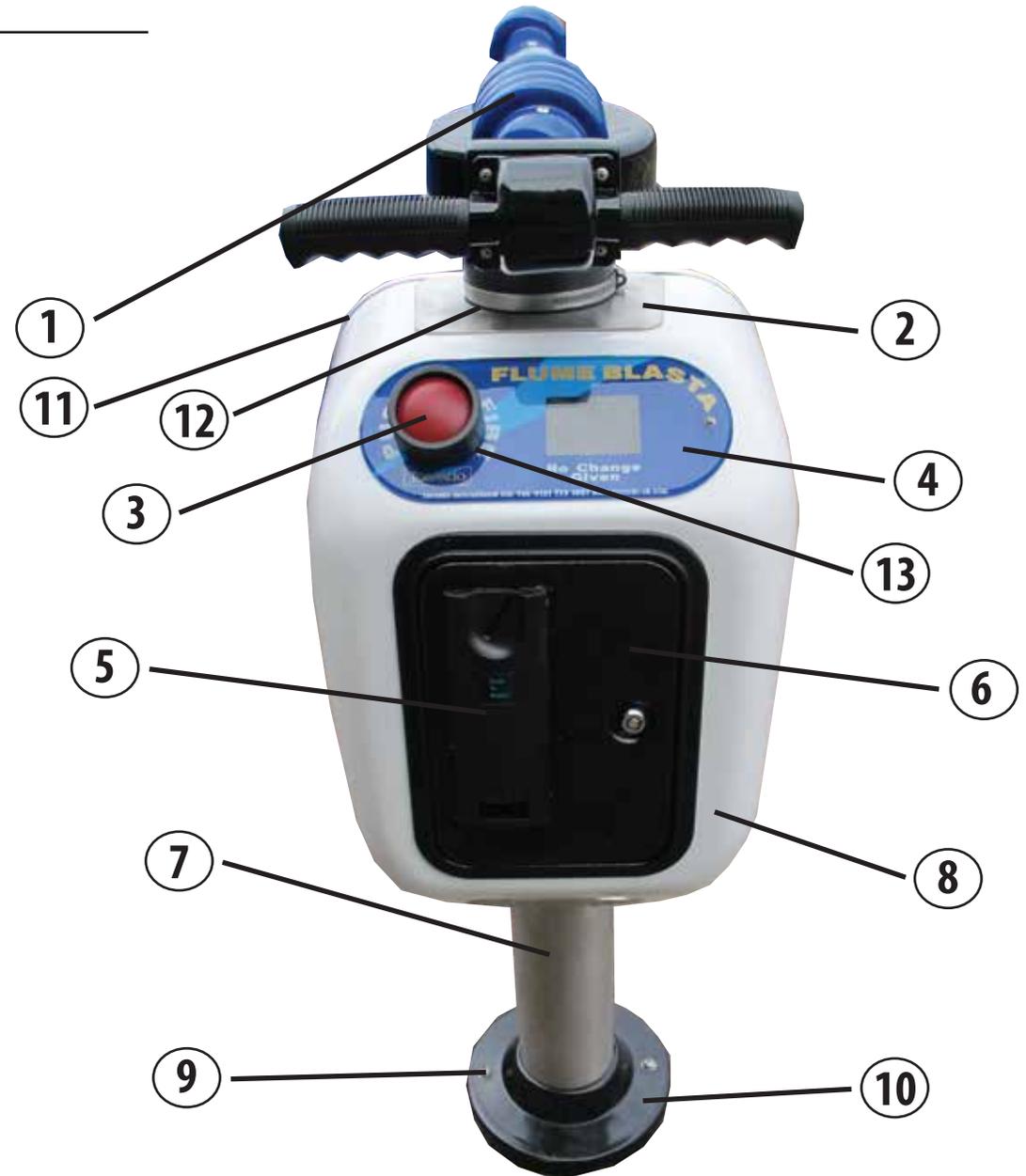


JET ON:
The JET ON can be set from CONT, continuous to 9.9 seconds. This sets the length of water jet.

JET OFF:
The JET OFF can be set from OFF to 9.9 seconds. This sets a delay before another water jet is permissible.

The jet of water can be controlled by adjusting the JET ON & JET OFF times.

Item	Part Number	Description
1	3J01-430	Flume Blasta Gun c/w Cover & Retainer (see 3. FB Gun Assembly)
2	1H01-490	Flume Blasta Console Top Re-inforcing Plate
3	2J03-051	Flume Blasta Fire Button & Surround
		To fix Button & Surround to console:
	0F00-400	M4 Nut S/S
	0F00-407	M4 Washer S/S
	0F00-420	M Screw M4 x 30mm Pozi/Head S/S
4	1L21-000	Flume Blasta Electronics & Fire Button Plate
		To fix Plate to console:
	0F00-303	M3 Washer S/S
	0F00-329	M SCREW M3x20mm Pin Hex Button Head
5	0A01-021	QL Microcoin Faceplate
6	0A00-791	Flume Blasta Coin Door Laser Cut c/w Frame & Fittings c/w
	0H00-008	Lock, Tongue & Key Assembly
7	1H01-428	Flume Blasta Stand
8	2G21-000	Flume Blasta Console Drilled
9	0F00-807	M8 Washer S/S
	0F00-867	M Screw M8x30mm Skt Btn/Head S/S
10	2V01-428	Flume Blasta Base Cover Midg
11	1H01-651	Flume Blasta Console Chrome Strip
12	1H01-652	Universal Gun Base Rubber Seal
13	1H01-653	Flume Blasta Button Rubber Seal

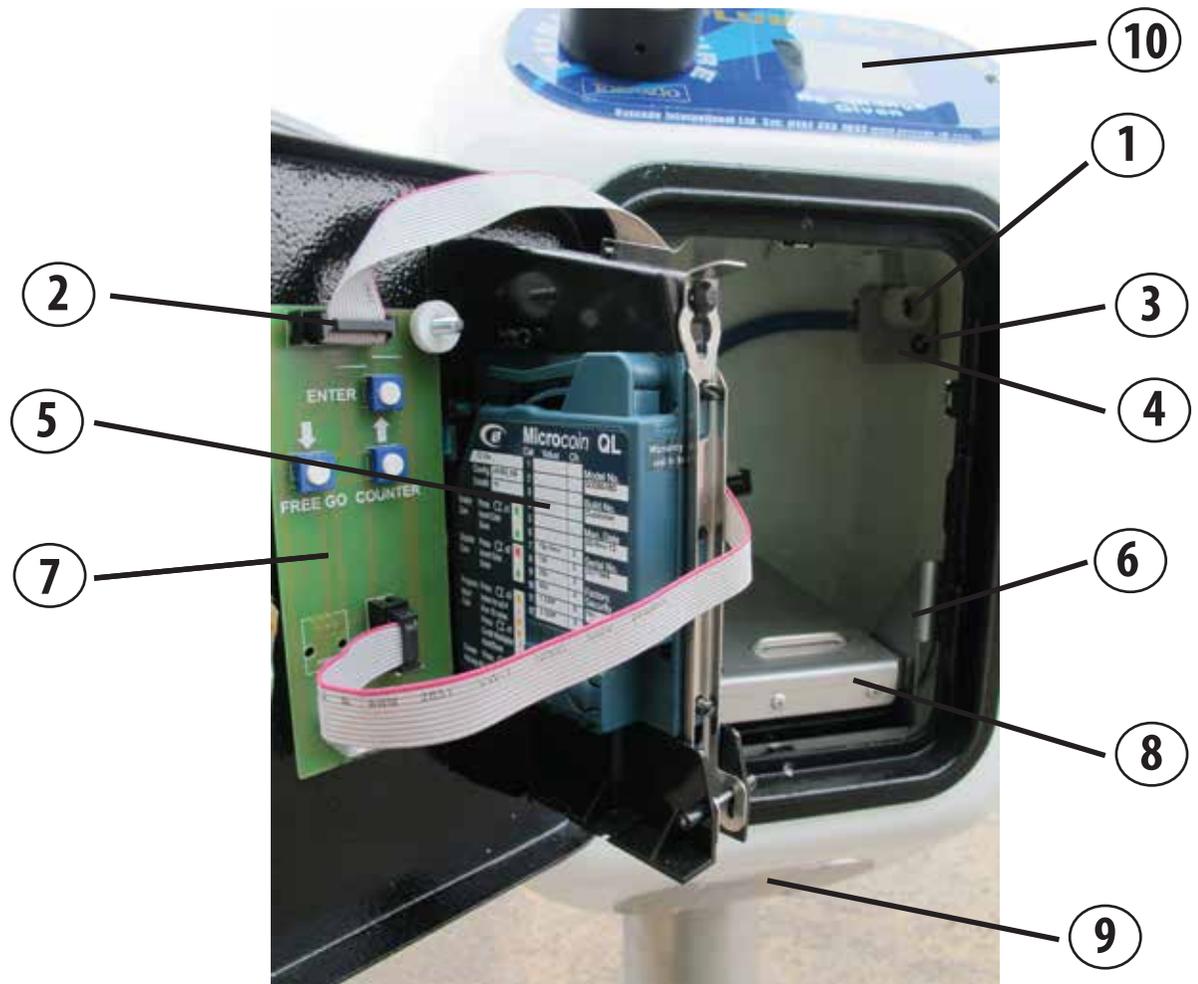


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1. Flume Blasta Complete



Item	Part Number	Description
1	0E00-646	Water Valve 24V A.C.
2	2J01-435	Flume Blasta Coin Mech Interface Ribbon Lead
3	0E00-975	Grommet PVC 11.9x6.4mm
4	1H01-430	Flume Blasta Valve Bracket
	To fix Bracket to console:	
	0F05-095	Pop Rivet Alum 4.8x15.0mm White M/Grip
5	0A01-008	QL Multi Mech (World-wide version)
	0A01-015	QL Multi Mech (Hong Kong version special order)
6	1H01-435	Flume Blasta Cash Box Support Bracket
7	3J03-051	Flume Blasta Door Interface PCB
	To fix PCB to door:	
	0F00-506	Nut Nylon Thumb M5
8	2J01-434	Flume Blasta Cash Box
	At Rear of console to secure Cash Box:	
	1H00-725	AB Cash Box Hasp
	0F05-095	Pop Rivet Alum 4.8x15.0mm White M/Grip
9	1H01-438	Flume Blasta Speaker Grill
10	4J03-050	Flume Blasta Control Electronics Boxed
	To hold Electronics inside console:	
	1H01-431	Flume Blasta Electronics Bracket
	1H01-434	Flume Blasta Electronics Strap



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2. Flume Blasta Console



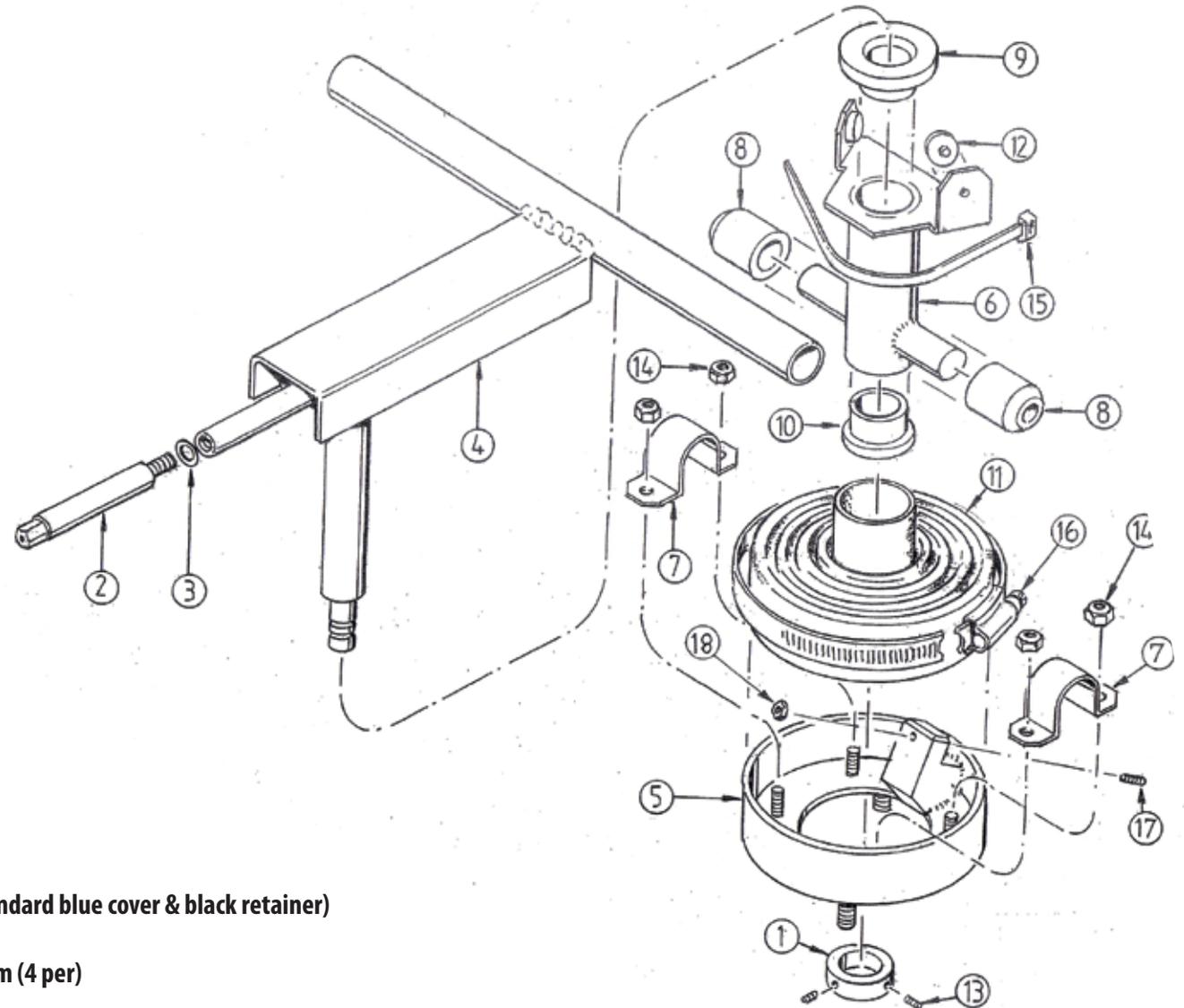
Item	Part Number	Description
1	1H00-216	S/W Collar 30mm
2	1H00-418	AB Gun Nozzle
3	1H00-428	AB Nozzle Washer
4	1H01-417	AB Universal Gun Body
5	1H01-420	AB Universal Gun Base
6	1H01-421	AB Universal Gun Carrier
7	1H01-422	AB Universal Gun Carrier Clamp
8	1H01-423	AB Universal Gun Elevation Bearing
9	1H01-424	AB Universal Gun Top Bearing
10	1H01-425	AB Universal Gun Bottom Bearing
11	1H01-426	AB Universal Gun Gaiter
12	0E00-810	Rubber Insert Foot Round
13	0F00-541	Socket Set Screw M5x5mm
14	0F00-605	Nut M6 Nyloc
15	0H00-425	Hose Clip (25-40mm) Stainless Steel
16	0H15-001	Hose Clip (90-110mm) Stainless Steel
17	0F00-542	Socket Set Screw M5x12mm
18	0F00-545	M5 Full Nut Stainless Steel

Not shown but locates across part 6, 1H01-421, AB Gun Carrier

19	1H01-427	Flume Blasta Carrier Brace
20	0F00-803	Nut M8 Stainless Steel
21	0F00-867	M Screw M8x30mm Skt Button/Hd S/S

Other items not shown

0H05-035	Hand Grip Black (2 per)
2J01-422	Flume Blasta PVC Gun Cover & Carriage (standard blue cover & black retainer)
2V15-200	Rear Gun retainer PVC
0F05-156	Retainer Rivets Alu Domed Blbx 4.0x21.3mm (4 per)

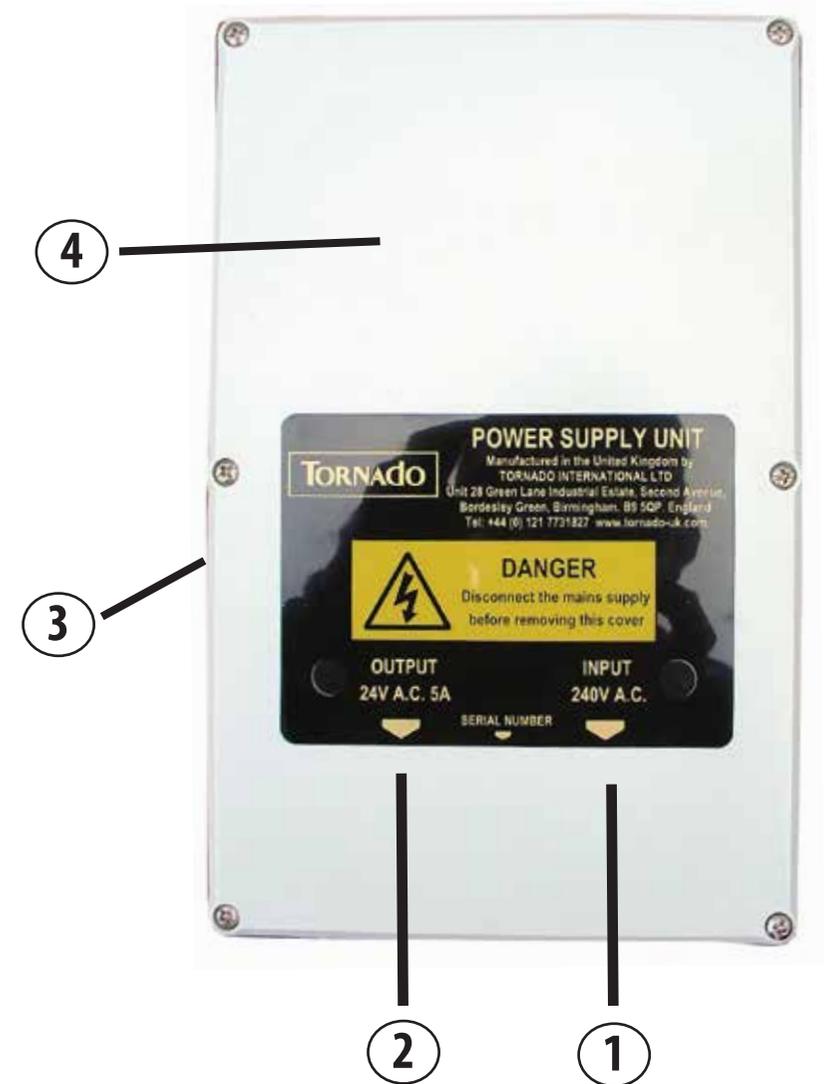


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3. Flume Blasta Gun Assembly



Item	Part Number	Description
1	OK00-270	Moulded Cord Set UK Mains Plug
	OK00-271	Moulded Cord Set USA Mains Plug
	OK00-272	Moulded Cord Set EU Mains Plug
	OK00-???	Moulded Cord Set Other Countries
2	0W00-622	24V A.C. Power Lead 2 Core Black 0.75mm 3182Y (supplied at standard of 9.5 metres)
3	1H01-432	PSU Mounting Bracket Stainless Steel
4	4J01-940	Universal PSU Assy Cased



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4. Power Supply

