

TRACKSAFE INFLATABLE BARRIER SYSTEM

T.I.B.S.



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1. Introduction

The reason for this document is to understand the construction and the requirements that the manufacturer of the barriers has made.

The buyer of the system has to sign the documents to indicate that he/she understands the requirements for the safe use and storage of the system.

2. Dimensions

Standard barrier / Gate barrier
Height 130cm (when inflated)
Length 5m
Width 70cm

Lead In-Out Wedge
Height 130cm (when inflated)
Length 2.5m
Width 70cm – 0cm

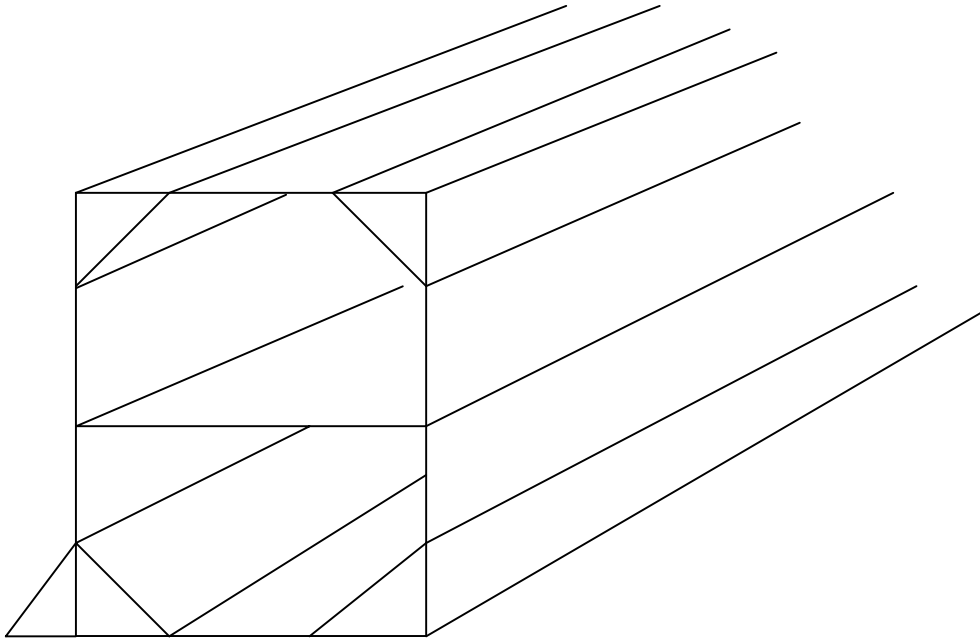


Two standard barriers joined together.



Lead In-Out wedge

3. Design and Construction of Air Barrier



The T.I.B.S. barrier consists of 5 internal membranes which creates the shape and structure of the barrier. The barrier is made up of 16 individual panels that are stitched on an internal seam; using twin needle double seamed stitching. This method simplifies replacing any damaged panels. The front panel is double skinned for extra strength therefore less likely to damage on impact.

The unique feature of the T.I.B.S. air barrier is the air filled wedge at the bottom front of the barrier which not only helps the barrier to be more stable, it also keeps the kick rubber at a 45 degree angle and in certain circumstances could prevent a rider from going under the barrier. (See pic 9)

4. Material Specification

| | | |
|----------------------------------|------------------------|---|
| Base Fabric | 100% PES 1100 dtex | DIN EN ISO 2060 |
| Total Weight | 610 g/m2 | DIN EN ISO 2286-2 BS 3424 Method 5A |
| Composition Fabric | 180 g/m2 | DIN EN ISO 2286-2 BS3424 Method 5B |
| Composition Coating | 430 g/m2 PVC | |
| Surface | Cape Embossing | Glossy |
| Breaking Strength Warp | 2100 N/5cm | DIN 53 354 BS 3424 Method 6A |
| Breaking Strength Weft | 2000 N/5cm | DIN 53 354 BS3424 Method 6A |
| Tear Strength Warp | 380 N | DIN 53 363 BS3424 Method 7B |
| Tear Strength Weft | 330 N | DIN 53 363 BS3424 Method 7B |
| Adhesion | 90 N/5cm | DIN 53 357 BS3424 Method 9B |
| Temperature Resistance | -30C/+70C | DIN EN 1876-2 BS3424 Method 10 |
| Light Fastness (except white) | 7-8 | DIN EN ISO 877 BS3424 Method 15 |
| Flammability | B1, B2, M1, M2, CL2 | DIN 75200 NFPA-701 CSFM Section 13115 |

5. Seat belt webbing

Width 50mm
Warp ends 148
Warp yarns 1100dtex Polypropylene
Picks per in 19
Locking threads 3
Woven construction 2/2 Twill 1 Turn
Breaking Strain (normal) 850kg

6. "D" ring (plated)

50mm 6mm steel

7. Velcro

Hook and loop fastener
Width hook 100mm
Loop 100mm
Textile strength Hook (N/cm overall width) 380.3
Loop (N/cm overall width) 340.6

8. Rubber skirting.

3mm Thick 35cm high, 5.2m long Insertion Rubber Belting with fabric insert to prevent tearing. The rubber skirting is secured to the barrier by means of double edged Velcro 50mm wide.

To fix the rubber skirting place the barrier on its back and secure the rubber skirting as illustrated below.



9. Parts used for connecting the barriers together

Pan Connectors and pipes secured to barriers with 120mm-140mm jubilee clips BS 5315.1991

Polypropylene straight pan connectors 110mm diameter, BS5627

PVC-U Pipes

Length 300mm

Outside diameter 90mm

Wall thickness 2.7mm

Pressure 7.5 bar

Manufactured to international standard BS-EN 150

9001-2008

Male – Female plastic connectors

10a Air Blowers

FP5006 1.5 standard

| | |
|-----------------------|----------------------------|
| Material | ABS |
| Motor Running Amps | Single phase 6.8/6za |
| Capacitor Type | Permanent cap 30 UF |
| Rated Output | 1.50hp |
| Performance | 550 CFM @ 5.52 wg |
| Electrical Supply | 1100W - 220V - 50HZ |
| Fan Weight | 15.6kg |
| Fan Size | 560W X 275D x 530H |
| Insulation/Protection | Class F / 1P55 |
| Plug Type | UK or European Schuko type |

10b Petrol Blowers

CF95 4HP Petrol Engine

| | |
|-----------------|------------------------------|
| Material | Hammer blue finish on zintec |
| Engine Type | Briggs and Stratton |
| Ignition System | Magnetron electronic |
| Rated Output | 4.0hp |
| Performance | 1200 CFM @ 6.0"wg |
| Fuel Capacity | 3.00 litres |
| Oil Capacity | 0.60 litres |
| Fan Weight | 26.3 kg |
| Dimensions | 390W x 363D x 439H |
| Speed | 360 rpm max |

11. Parts used for fixing barriers to existing fence

Polypropylene rope, 12mm thick.

Eye bolts M8

6mm Karabiner clips

6mm long link chain

12. Advertising panels

Secured to barriers by means of 100mm wide Velcro.

Front face Length 5m

Width 82cm

Front face and front top

Length 5m

Width 115cm

Front face and back top

Length 5m

Width 150mm

Please Note: Advertising banners can be of any size you wish, Velcro can be sewn to any part of the barrier to meet your personal requirements.

13. Principles of how the barriers work

The air pumps continually pump air into the barriers, on impact the air is deflected into the adjoining barriers.

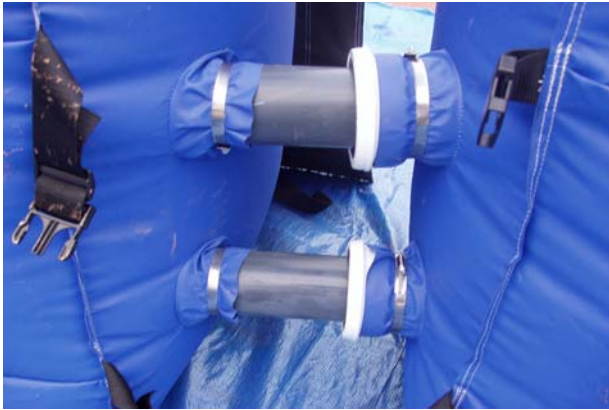
14. Positioning of the barriers

A site survey to be carried out to determine:-

- a) The number of barriers required.
- b) The number of lead in – lead out barriers required.
- c) The number of gate barriers required
- d) The number and positioning of the pumps.
- e) The best way to secure to your existing speedway fence
- f) Recommend the colours available
- g) The positioning of the Velcro for advertising panels.
- h) Recommend a cover for practise and storing purposes

15. Connecting the barriers together

Inflate number 1 barrier, connect number 2 barrier by means of pan connectors and pipes (*pic 1*). On inflation connect the 3 female plastic connectors at the back (*pic 2*), the 2 male/female connectors on the top (*pic 3*), the 1 male/female connector (or double D rings) underneath the front kick rubber (*pic 4*) and secure the 20cm Velcro overlap (*pic 5*). Secure number 1 barrier to existing speedway fence (see 16a/16b). Continue the same procedure on the remaining air barriers.



Pic1



Pic 2



Pic 3



Pic 4



Pic 5

16a. Connecting the barrier to a mesh fence

8 "D" rings pulled through the mesh fence and clipped to the existing speedway fence using hook bolts to secure the rings to the bottom. **The Karabiner clips at the top are designed so that it pulls the top of the air barrier down which should prevent the air barrier lifting on impact**, or alternatively secure the Karabiner clips to a 12m nylon rope (see pics 6,7 and 8).



Pic 6



Pic 7



Pic 8



Pic 9

16b. Connecting the barrier to a wooden fence

Secure the 12mm polyurethane rope to the bottom of the fence using the 8mm eye bolts 15cm from the ground and connecting the Karabiner clips from “D” rings to rope. The top “D” rings over the top of the wooden fence and secured to the rear of the wooden fence. (See pic 10 and 11)



Pic 10



Pic 11

17. Winter Storage

During long periods when not in use it is important that the barriers before storage are clean and dry before folding. They should be kept in a dry secure environment to prevent damage from vermin and weather elements.

18a. Pre Season Inspection

It is important that each individual barrier is inflated and inspected for any damage to the barrier and that all the clips are secure and clean before assembling.

18b. Pre Meeting Inspection

Designated personnel should inspect the barrier once inflated for any leakage or damage to all of the barriers, replacing any sections that are found to be faulty.

18c. During the Meeting

If there has been an accident where the rider or machinery has been in contact with the barrier it is important that the barrier is checked and if there is any damage then the damaged section **MUST** be replaced.

19. Cleaning the Barrier/Covers

In between speedway meetings it is important that the barrier is cleaned using hot water (not boiling). Do not use detergent as this may damage the material/stitching. After cleaning it is recommended that the cover is used to protect the barriers from elements also the cover can be used for covering the barriers during practice sessions keeping the barrier clean. **Covers are 15metres long 2metres wide.**

20. Personnel Training

It is recommended that at least four people fully understand how the air barrier is assembled/disassembled and how to replace any damaged barrier quickly and effectively during a speedway meeting. Please ensure that these personnel have read this manual.

Acceptance of T.I.B.S. Speedway Air Barrier

I confirm that I have received the following:-

- Standard Air Barriers
- Lead In Wedges
- Lead Out Wedges
- Pumps (Petrol or Electric)
- Practice Cover 15m lengths
- Advertising Panels

Signed (Purchaser):

Print Name: **Date:**

Signed (T.I.B.S.):

Print Name: **Date:**

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