

GB

## Operating and Maintenance Instructions

### WARNINGS



Before using this equipment, read the contents of EN 529 : 2005 and familiarise yourself with the requirements for respiratory protective devices and their potential effects on the wearer.



TORNADO and AIRLINE FCV system users must be familiar with workplace hazards prior to using the equipment and must be fully trained in the use of the apparatus.



TORNADO head-tops must be used with a T/POWER blower or AIRLINE FCV. Read this Manual in conjunction with the appropriate User Manual for the air-supplying device prior to using the equipment.



T/POWER must be fitted with filters selected from the TORNADO range of filters which are appropriate for the workplace hazard.



This product must only be used with Protector-branded filters manufactured by Scott Health and Safety Limited. The use of any other filters will negate the approval and will be likely to reduce the level of protection provided.



DO NOT confuse the EN 12941 and EN 12942 TORNADO filter markings with filter markings relating to other EN standards.



DO NOT use T45 in confined spaces, oxygen deficient atmospheres (<19.5%), oxygen enriched atmospheres (>23%) or where there is an immediate hazard to life or health.



DO NOT use if the ambient temperature is outside of the range -10°C to +50°C. Humidity levels up to 95% RH do not present any operational problems.



DO NOT use if the apparatus is damaged. The head-top and air hose must be inspected on every occasion before use to ensure that no damage of any kind is evident, (eg chemical damage, splits or broken stitching), which could cause leakage or reduced levels of protection. A monthly inspection of the apparatus is a mandatory requirement in the UK under COSHH regulations and inspection on a monthly basis is strongly recommended for all other countries.



Protection will only be obtained if the unit is fitted correctly.



Protection levels may be reduced if wind speed exceeds 2 metres per second.



In the unlikely event that the air-supplying device fails while in a hazardous atmosphere, there may be a reduction in airflow within the head-top. DO NOT remove the head-top. GO IMMEDIATELY to a safe area and then remove the head-top.



T45 is not approved as intrinsically safe.



T45 is not suitable for laser or gas welding.



At very high work-rates, pressure inside the face-piece may become negative with the result that the protection may be less than expected.



It is unlikely that the requirements for leakage will be achieved if hair, spectacle side arms or clothing intrude into the face-seal.



Eye protectors against high-speed particles worn over standard ophthalmic spectacles may transmit impacts, thus creating a hazard to the wearer.



Scratched or damaged visors should be replaced.



Filters must not be fitted directly to the helmet/hood.

# TORNADO T45

## SPECIFICATION

|   |   |  |
|---|---|--|
| Description:  | Welding shield with visor, face-seal, headband, air duct and air hose |  |
| Classification when used with:                        | T/POWER<br>AIRLINE FCV  | EN 12941 TH2<br>EN 14594 2B  |
| Minimum Design Flow Rate when used with:              | T/POWER<br>AIRLINE FCV  | 140 L/min<br>175 L/min   |
| Assigned* (Nominal) Protection Factor when used with: | T/POWER<br>AIRLINE FCV  | 20 (50)<br>(50)  |
| Operating Temperature Limits:                         | Head-top<br>Air-supplying device                                      | -10°C to +50°C<br>Refer to User Manual for air-supplying device being used |
| Weight:   | 550 Grams   |  |

\* According to EN 529 : 2005

## MARKINGS AND MEANINGS

The **T45** head-top markings are in conformance with EN 12941, as follows:

### Welding Shield Markings:

| Marking  | Meaning   |
|--|---|
| EUOMASKI   | Name of manufacturer  |
| CE   | CE mark   |
| EN175  | Standard - welding shield   |
| S  | Increased robustness  |
|  | Date of manufacture:<br>06 Indicates year (2006)<br>● Indicates month (March) |

### UV Filter Markings:

| Marking  | Meaning  |
|--|--|
| 1.7  | Shade 1.7 (EN 169 & EN 170)  |
| 3  | Shade 3 (EN 169 & EN 170)  |
| 5  | Shade 5 (EN 169 & EN 170)  |
| EUOMASKI   | Name of manufacturer   |
| 2  | Optical class 2 (EN 166)   |
| B  | Medium energy impact (EN 166)  |
| F  | Low energy impact (EN 166)   |
| CE   | CE mark  |
|  | Date of manufacture:<br>04 Indicates year (2004)<br>↑ Indicates month (June) |

### Visor Filter Markings:

| Marking   | Meaning  |
|---|--|
| 8   | Shade 8 (EN 169)   |
| 10  | Shade 10 (EN 169)  |
| EUOMASKI  | Name of manufacturer   |
| 2   | Optical class 2 (EN 166)   |
| S   | Increased robustness (EN 166)  |
| CE  | CE mark  |
|  | Date of manufacture:<br>04 Indicates year (2004)<br>↑ Indicates month (June) |

## WEARING

### WARNING:

The head-top should be examined for damage of any kind such as deep scratches, abrasions, cracks and deterioration before every use. Damaged parts, components which have come into contact with solvents and parts that have received significant impact should be replaced.

### CAUTION:

Whilst the materials which may come into contact with the wearer's skin are not known to be likely to cause skin irritation or other adverse effects to health, they may cause allergic reactions in particularly susceptible individuals.

1. Check that the head-top and breathing hose are in good condition and free from damage that might reduce respiratory protection.
2. Ensure that the UV filter and visor filter are clean, in good condition and free from cracks, blemishes or scratches that might impair vision. Check that the visor filter body is correctly mounted on welding shield body.

**WARNING:**

- **If damage or imperfections of any kind are evident, the head-top MUST NOT be used until the damaged items have been replaced.**
  - **Ensure that the visor filter shade selected is suitable for the welding tasks to be carried out.**
3. Don the head-top and pull the face-seal under the chin, ensuring that hair and clothing are not trapped in the face-seal.
  4. The head-top must be adjusted in order to ensure maximum protection and comfort during use. When adjusted correctly, the eye-line should be approximately in the middle of the visor filter and the headband should fit securely and comfortably around the head.

To adjust the eye-line:



- i) Remove the head-top and invert so that the face-seal and headband are uppermost.
- ii) Lift the tongue of the crown strap to remove the locating peg from its location hole.

- iii) Adjustment is achieved by refitting the location peg into a different hole to increase or decrease the wearing height as required.
- iv) Don the head-top as described above and ensure that the eye-line is at the correct level. Repeat this process if necessary.

To adjust the headband:

- i) Don the head-top as described above.
- ii) Turn the ratchet knob at the back of the headband until the headband sits securely and comfortably around the head.

**WARNING:**

**DO NOT attempt to use the head-top until the correct level of adjustment has been achieved.**

5. If required, the tilt angle of the welding shield body can be increased or decreased.

To adjust the angle of tilt:



- i) Remove the head-top and invert so that the face-seal and headband are uppermost.
- ii) Lift the tilt adjustment plate from its locating peg on the welding shield body.

**Note:**

The tilt adjustment plate can be found between the face-seal and welding shield body, on the right hand side of the head-top.

# TORNADO T45

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iii) Adjustment is achieved by inserting the location peg into a different hole to increase or decrease the angle of tilt as required.

6. Tighten the visor filter body mounting screws such that the visor filter body can still be moved, but will remain in the raised position when required.

7. Remove the head-top and ensure that the breathing hose is securely connected to the air duct.

8. Attach the breathing hose to the air supplying device and don the device in accordance with the User Manual for the device being used.

9. Don the head-top as described above, taking care to ensure that the breathing hose trails freely down the back and is not kinked or looped and is not likely to snag.

## AFTER USE

### WARNING:

**DO NOT remove the head-top until safely clear of the hazard area.**

1. Disconnect the breathing hose and use a synthetic sponge moistened in a warm soap and water solution to clean the head-top and hose. DO NOT permit water to enter the air duct or hose.

2. Rinse the sponge in clean water and remove all traces of soap from the apparatus. Allow the head-top to dry in air at room temperature.

### CAUTION:

- **DO NOT store until thoroughly dry.**
- **DO NOT use heat or sunlight to dry the apparatus.**
- **DO NOT allow the visor to become scratched or damaged.**
- **DO NOT use solvents or strong detergents to clean this product.**
- **Failure to observe the above may result in damage which will be difficult to detect and which could degrade the protective performance.**

3. Replace damaged items or apparatus.

4. If disinfection is required, use **TriGene™** disinfectant wipes or a dilute solution of **TriGene™** disinfectant and warm water.

## STORAGE

When not in use the equipment should be stored in a clean, dry environment, away from direct heat sources between +10°C and +50°C, at a humidity of less than 75% RH.

## MAINTENANCE

Carry out a thorough inspection of all component parts before and after each occasion of use, paying particular attention to the UV and visor filters. If damage or imperfections of any kind are evident, the damaged component or head-top must be replaced before use.

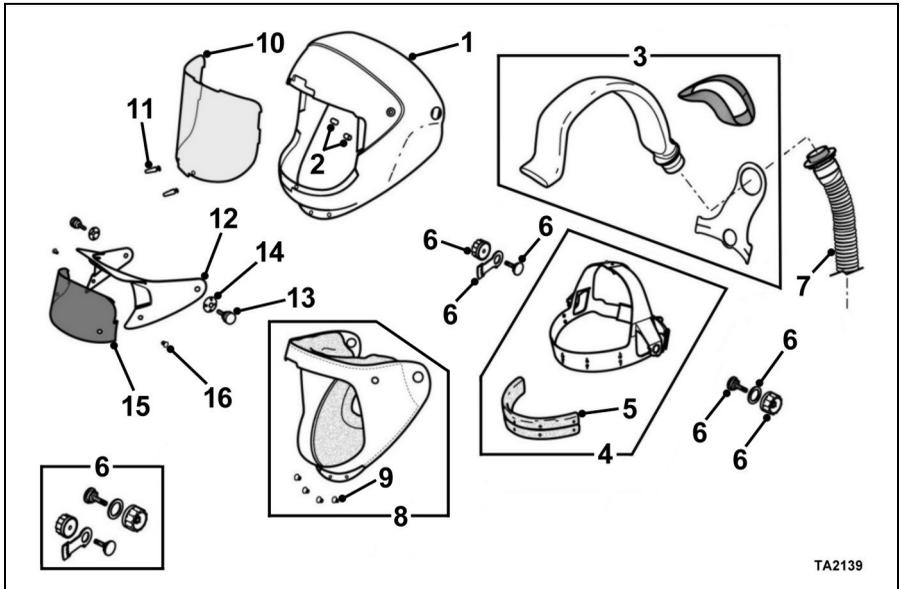
## RECORD INSPECTION AND MAINTENANCE DETAILS

Record test and maintenance details on the Inspection and Maintenance Record Sheet provided at the back of this Manual.

Information recorded usually includes:

- Name of employer responsible for the apparatus.
- Make, model number or identification mark of the apparatus, together with a description of any distinguishing features, sufficient to enable clear identification.
- Date of the inspection/maintenance together with the name, signature or unique authentication mark of the examiner.
- Condition of the apparatus, details of any defects found and any remedial action taken.

## SPARE PARTS



| Item No. | Description                        | Part No.             |
|----------|------------------------------------|----------------------|
| 1        | Welding Shield Body                | -                    |
| 2        | Protective Cap                     | -                    |
| 3        | Air Duct, Holding Strap & Retainer | 5094082              |
| 4        | Headband Assembly                  | 5094084              |
| 5        | Sweatband                          | (Pack of 10) 5094083 |
| 6        | Fixings Set                        | 5094085              |
| 7        | Breathing Hose                     | T/HOSE/EPDM          |
| 8        | Face-seal & Fixing Studs           | 5064696              |
| 9        | Fixing Stud                        | (Pack of 4) 5094087  |
| 10       | UV Filter - Shade 1.7              | 5094092              |
| 10       | UV Filter - Shade 3                | 5094093              |
| 10       | UV Filter - Shade 5                | 5094096              |
| 11       | Retaining Stud                     | (Pack of 2) 5094089  |
| 12       | Visor Filter Body                  | 5094094              |
| 13       | Mounting Screw                     | (Pack of 2) 5094095  |
| 14       | Spring Washer                      | (Pack of 2) 5094086  |
| 15       | Visor Filter - Shade 8             | 5094098              |
| 15       | Visor Filter - Shade 10            | 5094099              |
| 16       | Fixing Stud                        | (Pack of 4) 5094087  |
| -        | TriGene Liquid                     | (1 Litre) 2008247    |
| -        | TriGene Disinfecting Wipes         | (Pack of 20) 2004225 |

# TORNADO T45

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## FITTING SPARES

### To Replace the Hose:

1. Remove the hose from the air duct by unscrewing in a counter-clockwise direction.
2. Fit the new hose by inserting the threaded end into the aperture at the rear of the air duct. Secure hose by screwing in a clockwise direction until finger-tight. **DO NOT** over-tighten.

### To Replace the Headband:

1. Invert the head-top so that the face-seal and headband are uppermost.
2. Remove the fixings that secure the headband and face-seal to each side of the welding shield body, taking particular care to note their location and orientation. Place fixings aside.
3. Withdraw headband and air duct assembly from the welding shield body.



4. Squeeze together the two halves of the split location tongue on the retainer until they overlap each other. Withdraw location tongue from the gate on the headband. Repeat this operation for the opposite side.
5. Slide the large hole near the split tongues on the retainer over the ratchet knob on the headband.
6. Undo the crown strap on the headband to release the holding strap, air duct and retainer from the headband.
7. Undo the crown strap on the replacement headband and insert the holding strap over one half of the crown strap.

8. Taking care to ensure that the air duct and headgear are orientated correctly, position the upper face of the crown strap to the underside of the air duct.

9. Wrap the holding strap around the upper face of the air duct and insert the free half of the crown strap through the holding strap. Locate and secure the two halves of the crown strap together.

10. Insert the ratchet knob on the headband through the large hole in the retainer.

11. Insert each of the split tongues on the retainer through the gates on the headband until securely located.

12. Adjust the position of the headgear on the air duct to ensure that the headgear is located centrally, such that the sweatband is in contact with the **Velcro™** strip at the front of the air duct.

13. Insert the headband and air duct assembly into the welding shield body.

14. Locate each of the fixing lugs on the headband BETWEEN the welding shield body and face-seal. Secure in position using the set of fixings removed previously.

### CAUTION:

- **Ensure that the fixings are located and orientated correctly.**
- **Take care not to cross the threads when re-fitting the fixing nuts to the spigots.**
- **DO NOT over-tighten fixing nuts.**

### To Replace the Sweatband:

1. Detach the sweatband from the **Velcro™** strip on the air duct.
2. Remove sweatband from the ten retaining hooks on the forehead strap.
3. Wrap the new sweatband around the forehead strap and secure in position over the ten retaining hooks.
4. Attach the replacement sweatband centrally to the **Velcro™** strip on the air duct.

## To Replace Air Duct:

1. Remove the air duct, holding strap and retainer as described in operations 1 to 6 in *To Replace the Headband*.
2. Slide the largest hole on the replacement retainer over the breathing hose connection on the replacement air duct until securely positioned.
3. Re-assemble the air duct, holding strap and retainer to the head-top as described in operations 7 to 14 in *To Replace the Headband*.

## To Replace the Face-seal:

### Note:

For ease of access it will be necessary to remove the headband and air duct assembly from the welding shield body as described in *To Replace the Headband*.

1. Working from inside the welding shield body, remove the two protective caps from the threaded inserts located either side of the UV filter. Place protective caps aside.
2. Carefully remove the face-seal from the four fixing studs at the front of the welding shield body.
3. Withdraw face-seal from the welding shield body and discard face-seal.
4. Locate the replacement face-seal over the two threaded inserts at either side of the UV filter and re-fit the protective caps over the inserts to help retain the face-seal.
5. Fit the front of the face-seal over the four fixing studs at the front of the welding shield body, taking care to ensure that the face-seal is held securely by the studs.
6. Ensure that the front edge of the face-seal sits flat against the inside of the welding shield body.
7. Re-fit the headband and air duct assembly to the welding shield body as described in *To Replace the Headband*.

## To Replace the Visor Filter:

1. Remove the fixings that secure the visor filter body to the welding shield body. Place fixings aside.

2. Carefully remove the two fixing studs that secure the visor filter to the visor filter body.
3. Remove the visor filter and discard.
4. Fit the replacement visor filter to the visor filter body and secure in position using the two fixing studs.
5. Attach the visor filter body to the welding shield body using the mounting screws and spring washers removed previously.
6. Tighten the mounting screws such that the visor filter body can still be moved, but will remain in the raised position when required. DO NOT over-tighten.

## To Replace the UV Filter:

### Note:

For ease of access it may be helpful to remove the visor filter and body from the welding shield body as described above.

1. Working from inside the welding shield body, push the two retaining studs out through the front of the welding shield body and UV filter. Place aside or discard retaining studs as appropriate.
2. Grasp the lower tab of the UV filter and pull to withdraw the filter from the welding shield body. Discard UV filter.

### Note:

To enable ease of fitment, please carry out the following steps exactly as described.

3. Insert the upper edge of the UV filter into its location slot in the welding shield body and twist the filter slightly to insert the two location tabs on one side of the filter into their respective slots.
4. Squeeze the outside face of the filter slightly and insert the two location tabs on the opposite side of the filter into their respective slots.
5. Ensure that the filter is positioned correctly on the welding shield body and that all location tabs are retained securely in their respective slots.
6. Secure the UV filter to the welding shield body by fitting the two retaining studs at the lower edge of the filter.

## WARRANTY

The products manufactured at our factories in Skelmersdale and Vaasa carry a warranty of 12 months (unless stated otherwise) for parts, labour and return to site. The warranty period runs from the date of purchase by the end user.

These products are warranted to be free from defects in materials and workmanship at the time of delivery. **SCOTT** will be under no liability for any defect arising from wilful damage, negligence, abnormal working conditions, failure to follow the original manufacturer's instructions, misuse or unauthorised alteration or repair.

Evidence of purchase date will need to be provided for any claims arising during the warranty period. All warranty claims must be directed through **SCOTT Customer Services** and in accordance with our sales return procedure.

## NOTIFIED BODIES

Inspec International Limited (0194)  
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