













WARNING

-  **TORNADO** powered respirators are designed for use by personnel who are familiar with workplace hazards.
-  **This leaflet must be read together with the user leaflet for T/POWER and T/FILTER.**
-  **DO NOT** use in confined spaces, oxygen deficient atmospheres (<19.5%), oxygen enriched atmospheres (>23%) or areas where there is an immediate **DANGER** to life or health
-  **DO NOT** use if the mask or air hose is damaged, the filter is clogged or the filter is time expired (see filter label).
-  **DO NOT** use with a low airflow output.
-  **T7/VISION 2** is not approved for use with T/A/LINE.
-  **DO NOT** modify facemasks as this will invalidate all approvals and may result in death or injury to the wearer.
-  **Protection** will only be obtained if the unit is fitted correctly.
-  **In the unlikely event of T/Power failing while in a hazardous atmosphere, there may be a reduction in airflow within the facepiece. DO NOT** remove the facepiece. **GO IMMEDIATELY** to a safe area then remove the facepiece.
-  **It is unlikely that the requirements for leakage will be achieved if hair, spectacle side arms or clothing intrude into the face seal.**

T7/VISION 2 SPECIFICATION

Facepiece		T7/VISION-S/M/ML
Description		Full Facemask
Classification:	T7/VISION 2 Visor	EN 12942 TM3 Meets impact requirements of EN 166 Grade B
Minimum design flow rate		110 L/min
Assigned* protection factor		40
Nominal protection factor		2,000
Operating temperature range		-10°C to 40°C
Storage temperature range		10°C to 40°C
Face seal material		Silicone elastomer

**According to BS4275 : 1997*

DESCRIPTION

Vision 2 is a full facemask that conforms to EN12942 TM3. There are three size versions of the mask:

T7/VISION 2/S (small)

T7/VISION 2/M (medium)

T7/VISION 2/ML (medium large)

With an option of standard head harness or PN (Polynet).

The face seal and neckstrap are silicone elastomer and the headharness is EPDM. The coated polycarbonate visor meets the impact requirements of EN166, Grade B.

The inner mask, with speech diaphragm, reduces carbon dioxide dead space and minimised visor misting. The maximum weight of the mask without the air hose is approximately 730 grams.

In use, filtered air from the Tornado blower is delivered via an air hose, over the inner surface of the visor (keeping it clear of misting) and into the inner mask through inlet valves. Exhaled air flows out of the inner mask through the exhale valve to the atmosphere.

Vision 2 is easily dismantled for repair and servicing, requiring only a pozi-drive screwdriver to undo the front fitting. Servicing should only be carried out by trained, authorised personnel.

USING T7/VISION 2

1. Check that the facemask, inhale and exhale valves and head harness are clean and undamaged.
2. Check that the filter(s) fitted are not clogged or time expired and are suitable for the hazards that may be encountered. If necessary fit new filter(s). Check that a filter seal(s) is in place and is in good condition. Replace if necessary.
3. Check that the exhale valve is clean and in good condition. Check that the valve flap is not distorted.
4. Hang the mask around your neck by the neckstrap, fully slacken the head harness and remove the filter cover. The neckstrap pin can be pressed into the hole at the top of the head harness to support the facemask in an upright attitude, keeping it free from dust and debris when the mask is not in use.
5. Hold the head harness with the thumbs inside the harness. Fit the chin into the chin-cup and then pull the harness over the head. Gently tighten the harness straps: lower first, then the middle straps and then the top strap. A good seal should be achieved without over tightening, which will cause the facemask seal to distort and cause discomfort.
6. Check the face to mask seal before connecting the blower air hose by blocking the mask inlet and breathing in. The mask should pull onto the face. Hold your breath for 10 seconds and check that the mask seal is maintained over the 10 seconds. If the seal fails, indicated by the mask pulling away from the face, adjust the mask seal to the face, then repeat the test. If it fails a second time the mask should be serviced.

WARNING If the mask does not seal after servicing, it MUST NOT be used.

7. Connect the hose to the facemask, check that the elbow is at a suitable angle and tighten the nut.
8. Arrange the breathing hose so that it trails freely down the back and is not kinked or likely to snag.
9. See the T/POWER leaflet for further user information.

AFTER USE

1. DO NOT remove the facemask until well clear of the hazard area.
2. The mask must be cleaned after use. DO NOT use solvent, detergent or abrasive cleaners that may damage the mask. After any service procedure the leak test described above must be performed to ensure that the mask is safe to use.
3. Replace the filter cover. Check that the filter is not clogged, saturated or time expired. If it is either clogged, saturated or time expired, renew it.

4. Detach the air hose from the facemask and use a synthetic sponge moistened in a warm solution of water and TriGene to clean and sanitise it.

Note: Water MUST NOT enter the hose.

5. Sponge the facemask with a synthetic sponge moistened in a warm solution of water and TriGene to clean and sanitise it. Take care not to scratch the visor.
6. Flush the exhale valve under clean running water and check that it is in good condition.
7. Hang the mask by the head harness away from direct sunlight and high temperatures until it is completely dry. Store it carefully to ensure that the visor will not be damaged, in a cool, clean, dry store, away from direct sunlight.
8. Perform the leak test as described in Using T7/Vision 2, sub-section 6.

MAINTENANCE

Maintenance tasks must only be performed by trained personnel. Contact **Protector** for training information. Following servicing, mask integrity can be checked using the Protector Respirator Test Equipment. Contact Protector Internal Sales (+44 (0) 1695 711711) for details on Service Providers.

FACESEAL AND INNER MASK – During pre and post use inspections and at the stipulated maintenance intervals, inspect for holes, surface damage or excessive distortion, particularly around the face seal. Replace as necessary.



Fig 1

EXHALATION VALVES – These should be as new with no damage. The valves are marked with a code indicating the year and year quarter of manufacture (see Fig 1). The two digit number stamped on the valve is the year of manufacture. The dot, stamped in one of the four quadrants is the quarter of the year in which manufacture took place. Top right (in relation to the year digits) = Jan to March, bottom right = April to June, bottom left = July to September and top left = October to December. Exhalation valves should be replaced at least annually, regardless of condition.

HEADHARNESS – This should be checked for possible failure, paying particular attention to the anchor studs. The EPDM headharnesses are stamped on the outside centre, with a code indicating the date of manufacture. The number in the centre is the year of manufacture and the dots around the number indicate the month of manufacture during that year. Therefore the number '00' with seven dots around it is July 2000.

NOTE: REPLACEMENT INTERVALS FOR COMPONENTS MARKED WITH A DATE OF MANUFACTURE SHOULD BE CALCULATED FROM THE DATE OF FIRST USE OF THE COMPONENT AND NOT THE DATE OF MANUFACTURE.

RECORD INSPECTION AND MAINTENANCE DETAILS

Record test and maintenance details on the Inspection and Maintenance Record Sheet (appendix A)

Information recorded usually includes:

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

SHELF LIFE OF COMPONENTS

O-rings spares packs are marked with a shelf life. **DO NOT** use O-rings from spares packs with a shelf life expiry date that has passed. O-rings must be replaced at least annually, regardless of condition.

NOTE: REPLACEMENT INTERVALS FOR COMPONENTS ORIGINATING FROM A SPARES PACK MARKED WITH A SHELF LIFE MUST BE CALCULATED FROM THE *DATE OF FIRST USE* OF THE COMPONENT AND NOT FROM THE SHELF LIFE EXPIRY DATE.

NOTE: FOR CALCULATING PERIODIC MAINTENANCE DATES THE '*DATE OF FIRST USE*' IS THE DATE ON WHICH THE END USER TAKES DELIVERY OF A COMPLETE VISION 2 FACEMASK FROM THE SUPPLIER OR IN THE CASE OF SPARES, THE DATE ON WHICH THE REPLACEMENT COMPONENT IS FITTED TO THE VISION 2 FACEMASK.

REPLACEMENT OF VISOR

1. Release head harness and remove from facemask.
2. Remove the screws from the front cover (1) and remove front fitting from inside of mask. Unscrew the two visor clamp screws (10), remove the visor clamps and the visor.
3. Inspect O-ring (5) and if necessary replace. Lubricate new O-ring with MS4 silicone grease.
4. Position the visor over the front fitting, ensuring that the hook on the front fitting engages outside the visor. Fit the tab at the top of the visor through the slot at the top of the silicone outer mask and feed the visor into the groove in the outer mask.
5. Fit the visor clamps and secure with screws and nuts. Replace front cover (1) and secure with screws. Ensure that the front fitting encloses the visor rim and beds smoothly onto the front of the body front fitting (7).
6. Fit head harness.

Replacement of Inhale Valve

1. Push out the inhale valve (4) from inside the facemask.
2. Fit the new valve flap (3) over the valve frame boss. Push the inhale valve assembly into the facemask breathing hose inlet and check that the flap lies flat on the valve frame.

Replacement of Exhale Valve

1. Remove the front fitting (7) and push the exhale valve assembly from inside the mask, out through the front fitting. Check that the flap and O-ring are in good condition. If necessary replace both.
2. If the O-ring is replaced it must first be lubricated with MS4 silicone grease.

Replacement of Inner Mask Inhale Valves

The valve flaps are located on the inner side of the inner mask

1. Carefully pull the inhale valve flaps and valve pins (18) from inner mask (19). Clean the inner mask and fit new valve flaps.
2. Check that the valve flaps move freely on the pin and lie flat on the inner mask.

Important:

Check the valve flaps before each use to ensure that they are clean and undamaged.

Check that the inhalation valve flaps are flexible.

Valves and O-rings must be replaced if they are damaged in any way and at least annually, regardless of condition.

Storage Note: Rubber components should always be stored in clean, dry conditions away from direct sunlight and heat.

Replacement of Speech Diaphragm

1. Rotate the speech diaphragm retainer (19) 10° anti-clockwise and withdraw the retainer, speech diaphragm and O-ring (8). Check that the speech diaphragm is in good condition and replace if necessary. Lightly lubricate the replacement O-ring with MS4 silicone grease.

2. Fit O-ring (9) over the speech diaphragm and press the diaphragm and O-ring into the front fitting, black grid first, taking care to ensure that the O-ring stays in place on the diaphragm. Secure with the retainer for the speech diaphragm, with apron uppermost.

Replacement of Inner Mask

Gently pull the inner mask from the front fitting (7) and feed the rim of the new inner mask into the groove in the front fitting (7).

Replace the front cover and tighten the two retaining screws (1) evenly.

SPARE PARTS

Item numbers refer to the exploded view at the front of the book and bracketed number in maintenance descriptions. Bracketed numbers show the number of items per spare pack.

ITEM	DESCRIPTION	PART NO.
1	Front cover and screws (1)	RXFC/T7VIS
2	Visor and side fittings (1)	071.835.89
	Valve flap inhale (5)	071.736.98
3	Valve flap inhale and exhale kit (1 set)	071.736.99
4	Valve frame and pin inhale (1)	071.705.89
5	O-ring for front fitting (5)	054.235.89
6	Exhale valve, complete assembly	071.212.99
	Valve flap exhale (5)	071.124.99
	O-ring for Exhale valve	054.066.99
7	Front fitting and inserts (1)	071.695.99
8	Speech diaphragm, complete assembly with o-ring (1)	071.211.85
9	O-ring for Speech diaphragm (5)	054.067.89
10	Clamp screws and nuts for M/L (1)	071.710.89
	Clamp screws and nuts for M (1)	RX/CLAMPS/VIS/M
	Clamp screws and nuts for S (1)	RX/CLAMPS/VIS/S
11	Mask hinge, 3 upper and 2 lower (1 set)	071.708.89
12	Face seal M/L (1)	071.702.89
	Face seal S (1)	071.868.89
13	Neckstrap (1)	071.733.89
14	Buckles and rollers (5)	071.707.89
15a	Head harness	071.704.89
15b	Head harness Polynet	071.898.89
16	Stirrup, rubber link and top mount	071.751.89
17	Inner mask and valves L (1)	071.712.89
	Inner mask and valves S/M (1)	071.875.89
18	Inhale valve flaps (6)	017.114.29
19	Retainer for Speech diaphragm (1)	071.694.89
	MS4 silicone grease	074.101.02
	TriGene - 1 litre	013.028.00

NOTIFIED BODY

Inspec Certification Ltd (Number 0194),
Upper Wingbury Courtyard, Wingrave, Aylesbury,
Buckinghamshire, HP22 SLO, UK