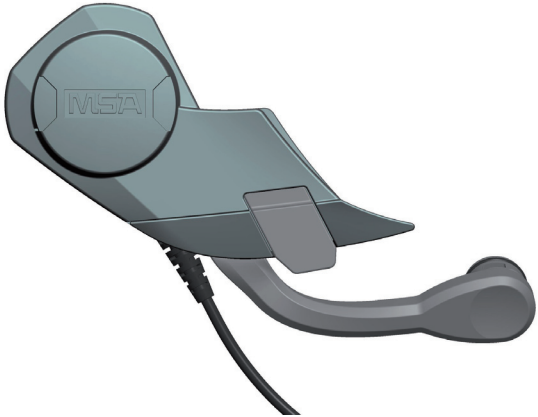
MSA
The Safety Company



Operating Manual

C1 Headset

CE

10195953/03

The Declaration of Conformity can be found under the following link: **https://MSAsafety.com/DoC**.

MSA
The Safety Company

Schlüsselstrasse 12
8645 Rapperswil-Jona
Switzerland

Contents

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1 Safety Regulations

1.1 Correct Use

The C1 Headset is a mask mounted headset. The headset is intended for communicating while wearing a MSA full face mask. To operate, an adapter must be installed on the mask and the headset must be connected to a Push-to-Talk (PTT) module (not in the scope of delivered but available on request) and a portable radio (not supplied).

WARNING!

Uses in explosive atmosphere require the use of ATEX approved equipment.

Selected configurations of the C1 Headset are ATEX certified for use with ATEX certified radios.

Before using the product in an ATEX area, it is the responsibility of the user to correctly verify the ATEX compatibility of the interconnected systems, particularly between the radio and the PTT (push to talk). Refer if necessary to the ATEX certificate of the products concerned. MSA disclaims any liability for the improper use.

Be aware that other configurations are not ATEX certified and must not be used in explosive areas.

To know if a configuration is ATEX certified or not, refer to section 9.2 "C1 Headsets with ATEX Approval".

It is imperative that this operating manual be read and observed when using the device. In particular, the safety instructions, as well as the information for the use and operation of the device, must be carefully read and observed. Furthermore, the national regulations applicable in the user's country must be taken into account for a safe use.

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WARNING!

This product is supporting life and health. Inappropriate use, maintenance or servicing may affect the function of the device and thereby seriously compromise the user's life.

Before use, the product operability must be verified. The product must not be used if the function test is unsuccessful, it is damaged, a competent servicing/maintenance has not been made, genuine MSA spare parts have not been used.

Alternative use, or use outside this specification will be considered as non-compliance. This also applies especially to unauthorised alterations to the product and to commissioning work that has not been carried out by MSA or authorised persons.

1.2 Liability Information

MSA accepts no liability in cases where the product has been used inappropriately or not as intended. The selection and use of the product are the exclusive responsibility of the individual operator.

Product liability claims, warranties also as guarantees made by MSA with respect to the product are voided if it is not used, serviced, or maintained in accordance with the instructions in this manual.

Changes and modifications not expressly approved by the manufacturer will void the user's authority to operate the equipment.

1.3 Safety and Precautionary Measures to be Adopted

- Also read and observe the operating instructions for the radio set and external accessories when you use it.
- The device can produce high sound pressures through which it is possible to damage your hearing.
- Before using the device in explosive atmospheres, check chapter 9.2 "C1 Headsets with ATEX Approval"for ATEX information.The ATEX class of any other equipment used together with this device has to be regarded as well. The lowest class sets the limit.
- When the device is used with non-ATEX certified devices in an explosive atmosphere, the device might be damaged in non-obvious ways.
- Make sure that connecting cables do not get caught or entangled on objects to avoid accidents.

2 Description

Fig. 12 Overview

1 *Speaker*
2 *Plug: Nexus 4*
3 *Unlock slide (red: ATEX/grey: standard)*
4 *Microphone*
5 *Component housing cover*
6 *Sound funnel*
7 *Full face mask adapter*
8 *Washer (not for helm-mask-combinations)*
9 *Replacement screw*

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The device consists of a microphone and a speaker in a shock-resistant and waterproof plastic housing. The device is connected to the full-face mask with an adapter. The device operates in Simplex mode (Listen OR Talk).

The device only functions as part of a communication system in combination with a PTT module and a radio.

The adapter and the PTT module can be ordered separately (→ chapter 11 "Ordering Information").

3 Marking

3.1 C1 Headsets

1	*Material number*
2	*Manufacturing date*
3	*CE marking*
4	*Address of manufacturer*

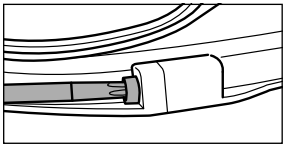
3.2 C1 Headsets with ATEX Approval

1	*Material number*	4	*ATEX information*
2	*Serial number*	5	*Address of manufacturer*
3	*Manufacturing date*	6	*CE marking*

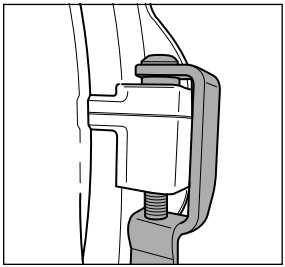
4 Preparing the G1 Mask

C1-ready full face masks are available. If no adapter is installed, the full face mask can be retrofitted with an adapter for the C1 Headset.

The C1 Headset is always mounted on the right-hand side of the full face mask.

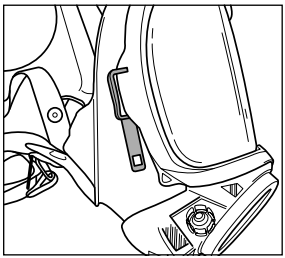


(1) Remove the screw from the facepiece lens rings on the right-hand side, using an appropriate torx screwdriver.



(2) Install the replacement screw with the adapter and the washer on the right-hand side.

For mask-helmet combinations, do not install the washer.



(3) Screw in the replacement lens ring screw for the adapter.

a) Connect the torque screwdriver to the torque control blade.

b) Use the combined tool to install and tighten the screws to 1.7 ± 0.1 Nm (15 ± 2 in-lbs). Keep hand pressure on both halves of the lens ring as you tighten the screws.

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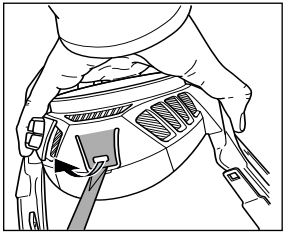
CAUTION!

Do not over-tighten. Rubber must not show between the lens ring ends at the joint. If this happens, reassemble. Failure to follow this precaution may cause the facepiece to leak and result in serious personal injury or death.

(4) Uninstall the standard component housing cover:



(5) Insert a small flat blade screwdriver into the tabbed slot below the connector.

(6) Leverage the blade to unlock until the retaining lug unsnaps.

CAUTION!

Be careful not to damage internal parts of the component housing assembly (exhalation valve, spring, retainer, or speaking diaphragm) once the cover is removed.

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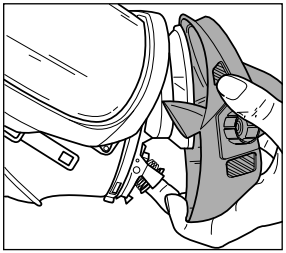

(7) Install the component housing cover with adapter:

a)Hook the top of the cover to the top tab of the component housing assembly.

b)Position the sound funnel in front of the speech diaphragm.

c)Press the cover over the front of the component housing assembly.

The cover noticeably snaps into place.

NOTE: Apply even pressure on both sides of the cover to snap the locking tab securely onto the component housing assembly.

WARNING!

Risk of leaks

Since the mask needs to be partly disassembled and reassembled to attach the adapter, a tightness test is necessary before the full face mask may be used again.

▶ Refer to the maintenance manual of the full face mask for the tightness test procedure.

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5 Use

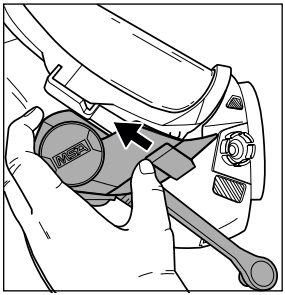
The device can only be used with the following full face masks:

- G1 Facepiece
- G1-H Mask

The device cannot be used with the G1 Facepiece with fixed Push-To-Connect (Code 1).

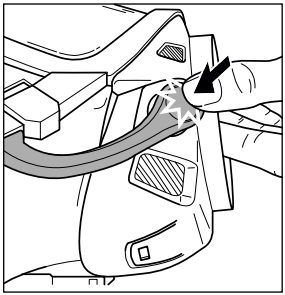
The full face mask must be prepared to be used in combination with the device, see 4 "Preparing the G1 Mask".

5.1 Attaching the Device



(1) Slide the C1 Headset onto the adapter

The C1 Headset noticeably snaps into place.

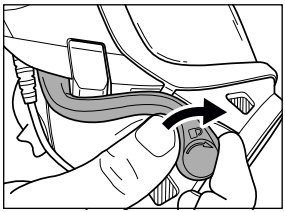


(2) Press the microphone into the microphone adapter.

5.2 Donning the Mask

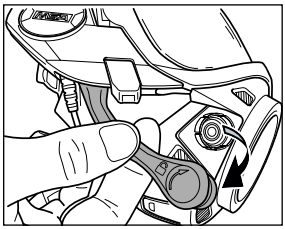
When donning the mask (refer to Full Face Mask Operating Manual), lead the cable along the nape of the neck to keep it covered by the neck curtain.

5.3 Removing the Device from Mask

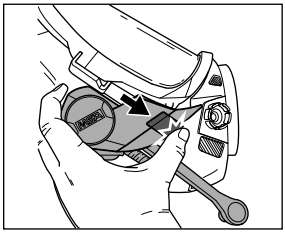


(1) Grip the microphone at the marked areas.

(2) Turn the microphone into the removal position



(3) Pull off the microphone.



(4) Use the grasping recess and press the unlock slide to pull off the device gently.

6 Connecting the Device

The device needs to be connected to other devices to function properly:

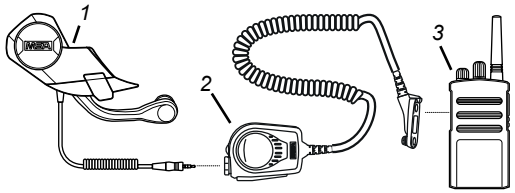


Fig. 13 Connection overview

1 C1

2 HandyCom

3 Radio

WARNING!

The RSM/PTT module and headset should be connected to the radio before switching on the terminal. Do not disconnect the device while the radio is in use.

Supported MSA RSM/PTT

Description	Part No.
HandyCom PTT for Motorola MTP850 FuG	10157059
HandyCom PTT for Motorola GP320 etc.	10160506
HandyCom PTT for Motorola APX 6000 etc.	10163388
HandyCom PTT for Motorola XTS 5000 etc	10163389
HandyCom PTT for Sepura div. STP	10157058
HandyCom PTT for TPH 700	10157057
HandyCom PTT for Kenwood TK290 etc.	10164662
HandyCom PTT for TPH/TTH 900	10211674

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7 Maintenance

The device is maintenance-free.

Repairs must be carried out only by authorized service centres or by MSA.

7.1 Troubleshooting

The headset is an accessory that must be used with a PTT module and a radio device. It does not provide any communication when used alone.

When experiencing transmission / communication problems, it is advised to always check first that the radio transmission is working properly, by testing communication without the device is connected onto the radio.

- Check the connection of the PTT module and the device.
- Check the connection of the PTT module and the radio.
- Check the radio according to the manual of the radio.

If the problem still exists, contact the MSA Customer Service for detailed information.

7.2 Cleaning

CAUTION!

For cleaning purposes, never use caustic cleaning agents, alcohol or other corrosive substances that might attack the housing.

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(1) Remove loose dust with a soft brush.
(2) Wipe off any persistent dirt with a damp lint-free cloth.
(3) Use a small amount of detergent if necessary.
(4) Clean the device under running water in case of heavy soiling.
(5) Hold the device upright (cable from top) for about 30 seconds to allow the water to drain out completely through the loudspeaker and microphone holes.
(6) Dry the module.

The C1 module must be completely dried before returning to service.

8 Storage

Store the C1 Headset in a dry place, free from dust and dirt, at approx. 20 °C. Protect device from direct sunlight.

9 Certification and Approval

9.1 C1 Headsets

In combination with the full face masks listed in section 5 "Use" the C1 headset complies with the requirements of the PPE Regulation (EU) 2016/425 and the standards EN 136:1998 and EN 137:2006. For the temperature range for use in potentially explosive atmospheres, see the operating manual of the radio.

⚠ WARNING!

Do not use devices without ATEX certification in explosive areas.

Uses in explosive atmosphere require the use of ATEX approved equipment.

Be aware that not all models of the C1 Headset are ATEX certified. ‘

▶ To know if a configuration is ATEX certified or not, refer to section 5 "Use".

The device is designed for use with 1-way radios (simplex mode).

9.2 C1 Headsets with ATEX Approval

In combination with the full face masks listed in section 5 "Use" the C1 headset complies with the requirements of the PPE Regulation (EU) 2016/425 and the standards EN 136:1998 and EN 137:2006. For the temperature range for use in potentially explosive atmospheres, see the operating manual of the radio.

ATEX certified
• C1 Headset with red unlock slide
No ATEX certification
• C1 Headset with grey unlock slide

Check if the plug correctly fits the attached devices and if the current is limited to match ATEX requirements.

WARNING!

Risk of explosion.

Never connect or disconnect the device (refer to Chapter 5 "Use") in a hazardous area.

CAUTION!

All components need ATEX approval for explosion-proof use

The device only is explosion-proof if used together with ATEX-approved components.

If one of the components does not have the necessary ATEX approval, the device will no longer be explosion-proof.

The device is designed for use with 1-way radios (simplex mode).

9.2.1 Marking, Certificates and Approvals according to the Directive 2014/34/EU (ATEX) and National Standards

Manufacturer	MSA Europe GmbH Schlüsselstr.12 CH - 8645 Rapperswil-Jona
Product:	**C1 Headset**
EU-Type Examination Certificate:	BVS 19 ATEX E 052
Standards:	EN 60079-0: 2018 EN 60079-11: 2012
Marking: 	II 2G Ex ib IIC T4 Gb -30°C ≤ Ta ≤ +60°C
C1 Headset Interface: 10194312 and 10194313	Nexus Jack Loudspeaker/microphone circuit: U_i = 9.5 V I_i = 170 mA P_i = 600 mW C_i = 461 pF L_i = 508 µH R_{load} ≈ 110 Ω

C1 Headset Interface: 10194314	Can be used with Motorola MTP….Ex with RSM PMMN*** and Nexus Jack (BVS 15 ATEX E 054 X) Loudspeaker/microphone circuit: U_i = 9.5 V I_i = 170 mA P_i = 600 mW C_i = 370 nF L_i = 508 µH $R_{load} \approx 110\ \Omega$
Special Conditions:	
Quality Assurance Notification:	0158
Year of Manufacturing:	see Label
Serial No.:	see Label
Installation:	Installation/connection has to be done outside of the hazardous areas.
Maintenance:	Maintenance free
Reparation:	Only from MSA trained People

9.2.2 Marking and Certificates according to IECEx

Manufacturer	MSA Europe GmbH Schlüsselstr.12 CH - 8645 Rapperswil-Jona
Product:	**C1 Headset**
IECEx-Type Examination Certificate:	IECEx BVS 19.0047
Standards:	IEC 60079-0:2017, IEC 60079-11:2011+Cor.:2012
Marking: 	Ex ib IIC T4 Gb -30°C ≤ Ta ≤ +60°C
C1 Headset Interface: 10194312 and 10194313	Nexus Jack Loudspeaker/microphone circuit: U_i = 9.5 V I_i = 170 mA P_i = 600 mW C_i = 461 pF L_i = 508 µH R_{load} ≈ 110 Ω

C1 Headset Interface: 10194314	Can be used with Motorola MTP….Ex with RSM PMMN*** and Nexus Jack (IECEx BVS 15.0047X) Loudspeaker/microphone circuit: U_i = 9.5 V I_i = 170 mA P_i = 600 mW C_i = 370 nF L_i = 508 µH $R_{load} \approx 110\ \Omega$
Special Conditions for Safe Use:	non
Quality Assurance Notification:	0158
Year of Manufacturing:	see Label
Serial No.:	see Label
Installation:	Installation/connection has to be done outside of the hazardous areas.
Maintenance:	Maintenance free
Reparation:	Only from MSA trained People

10 Technical Data

C1 Headset

ATEX certified
• C1 Headset with red unlock slide
No ATEX certification
• C1 Headset with grey unlock slide

Weight	<100 g	
Environmental conditions	**Use**	-20 °C to + 50 °C, relative humidity 0 to 98%
	Storage	-20 °C to + 50 °C, relative humidity 0 to 98%

11 Ordering Information

Description	Part No.
Upgrade kit G1 AirElite, C1 prepared	10192778
Upgrade kit G1 ESA/M45X3, C1 prepared	10194309
Upgrade kit G1 MAXX, C1 prepared	10194308
Screws for lens frame bracket (x10)	10250507
Headset C1 (3 POL, Asymmetrical – Unbalanced)	10194300
Headset C1 (4 POL, Symmetrical – Balanced)	10194311
Headset C1 (3 POL, Asymmetrical – Unbalanced)	10194299
Headset C1 EX (3 POL, Asymmetrical – Unbalanced)	10194312
Headset C1 EX (4 POL, Symmetrical – Balanced)	10194313
Headset C1 EX (4 POL, Adj. for MOTOROLA MTP85XX and PMMN4093A)	10194314