CYPRES

CYPRES 2
Military User's Guide

- English version -

Congratulations on your choice of CYPRES, the safest and most accurate AAD currently available. Like most parachutists, you probably assume you will always have time to deploy your reserve canopy yourself, and that situations requiring use of an automatic activation device always happen to others. We do hope you will never have such trouble, and that your CYPRES will never have to take action to save your life.

Should CYPRES ever decide to activate your reserve, it will most likely happen at a moment which, no matter how experienced and cautious you are, justifies that you haven't left your safety to chance.

Airtec GmbH Safety Systems

Contents

1. Function

1.1 Design philosophy

CYPRES, an acronym for "CYbernetic Parachute RElease System", is an automatic activation device which meets all needs, requirements, and desires of today's parachutists. Once it is installed, you can't hear it, you can't feel it and you can't see it.
The operation is quite simple: Just switch it on prior to the first jump of the day, then forget about it. It is not necessary to switch it off, because CYPRES will do this itself.
When not operated in Military mode, the weather is constantly checked by CYPRES over the day by measuring the air pressure twice a minute. This means that the unit is always calibrated to the precise ground level.
The Unit is designed in a way that it won't restrict the parachutist in any way. CYPRES will even cope with extreme maneuvers during exit and in freefall. Whatever you can think of under canopy like stalls, spiral turns, down planes, as well as any CRW, CYPRES will analyze these movements without problems. It won't interfere with any normal activities while parachuting.
Only freefall at a very low altitude will cause CYPRES to take action. In this situation CYPRES is designed to activate the reserve approx. 4.5 seconds prior to impact.
The CYPRES family of AAD‘s work with a remarkable reliability. To date, as production of CYPRES 1 comes to an end during spring 2003, CYPRES units have saved the lives of more than 1000 parachutists, without a single unit ever refusing to activate when the conditions were met.
CYPRES 2 is the next generation of the most reliable piece of parachute equipment ever produced.

As the next generation of CYPRES, CYPRES 2 combines tried and true quality and reliability with new achievements, technology and discoveries made during the past 12 years of continued research and development. CYPRES 2 offers numerous additional features and attributes including:

- unit is waterproof for 15 minutes at a depth of 15 feet (5 meters) in fresh and saltwater.
- power supply of CYPRES 2 is maintenance-free for the user. There is no need to observe a replacement date, record the number of jumps made, monitor the voltage during self-test, watch for a `low bat' sign, purchase a battery, or have a rigger open or repack the reserve for this reason.
- unit serial number accessible from the display.
- maintenance due date accessible from the display.
- reminds you of the maintenance when close to the due date.
- smaller and lighter.
- robust, rigger friendly case, with rounded corners and edges.
- extended maintenance window: +/- 6 months from month of manufacture, no down-time during the busy part of the year regardless of month of manufacture.
- self test is completed in 10 seconds.

The handling of the CYPRES 2 is simple:
After you have purchased it, the rigger slides it into the factory integrated CYPRES set up (pouches and cable chanels in the harness/container) and you forget about it for 4 years*
Then you have the maintenance done and forget about it for another 4 years.*
Then you have another maintenance done and forget about it for another 4 years. *

* Except for switching it on at the beginning of the day and changing the filter if you should have landed in water and respecting the total contents of this User's Guide.

1.2 Components

CYPRES consists of a control unit, a processing unit and one release unit (cutter) for 1-pin reserve container or two release units (cutters) for 2-pin reserve container.

control unit

Please do not:
- pull
- lift
- carry or
- throw CYPRES by the cables

processing unit

release unit
(cutter)

1.2.1 How CYPRES works

Every time CYPRES is switched on, it measures the air pressure several times in a short period of time, takes the average value as the value for ground level, thus “zeroing“ itself. This happens during the integrated self-test.

While it is in use, CYPRES constantly checks the air pressure while on the ground and, if necessary, adjusts to changing weather conditions, e.g. air pressure. Even though you might need to reset your altimeter before a jump, CYPRES takes care of itself. This very accurate calibration is the basis for CYPRES to recognize exactly the activation altitude and speed.

The processing unit contains a factory-programmed microprocessor that is capable of real-time calculations of the jumper's altitude and rate of descent based on barometric pressure.

By monitoring this data, certain criteria are generated from which conclusions are drawn. Should the conclusion be that the jumper is in a dangerous situation (i.e. still in freefall at a low altitude) the processing unit triggers the release unit to open the reserve container.

The release unit (cutter) system for the reserve container is completely independent of the rig's primary system, because it does not pull the ripcord pin out of the closing loop, but rather cuts the loop inside the reserve container to release the pilot chute.

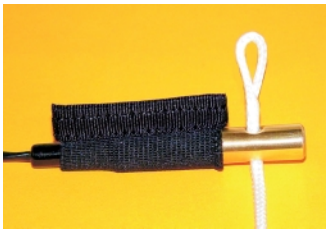
Opening a reserve container by cutting the loop is a method invented and patented by the founder of Airtec, Helmut Cloth, in 1987.

The CYPRES' activation system has these advantages:

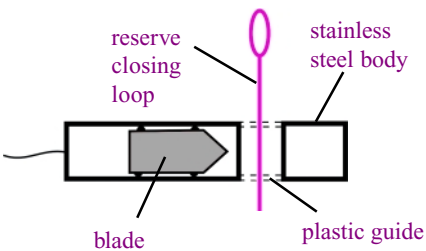
- The reserve container can be opened in two different ways. One method is by the jumper pulling the reserve release handle. The other method is used by CYPRES when it cuts the closing loop.
- Mechanical components are reduced to a single movable piston in the release unit.
- The activation system is located inside the reserve container where it is not exposed to excessive shock or other adverse influences.

- The system is unobtrusive and can be installed so that it is undetectable from the outside.

Release unit (cutter) with elastic keeper



Functional diagram:



The distance which the piston moves in case of an activation is approx. 5 mm.

The release unit (cutter) is completely self-contained and specifically developed for CYPRES. In the event of activation, nothing escapes or is expelled.

During an 18 month long investigation by BAM (Bundesanstalt für Materialprüfung), Berlin, 99 release units were tested. The result is that BAM and the U.S. DOT have classified the CYPRES as being non-hazardous.

Due to its high reliability and other properties, the CYPRES release unit is currently being used in aerospace applications (satellites).

The Training Unit

– ENTER the training mode by switching on the CYPRES 2: click, click, click, click. That's it. There is nothing more to do. –

This features the normal CYPRES 2 Expert properties with all its incredible convenience and reliability.

Ideal whenever you are doing typical training jumps.
That means when you go to an airfield or a DZ, enter your airplane or helicopter, do a descent, repack there, do another jump and maybe more. No matter how many jumps you do and what kind of parachuting activity you carry out, the only attention that your CYPRES 2 Military Unit requires is your click, click, click, click switching on procedure before your first jump of the day.

The CYPRES 2 Military Unit in the training mode takes care of all meteorologic influences during the day (even a bad weather front with it's extreme pressure changes).

As this is probably the main application, the CYPRES 2 Military Unit is particularily well adapted and requires no attention after switch on.

The CYPRES 2 Military Unit is designed

The Operation Unit

– ENTER the operation mode by keeping the push button pressed after the last switch-on click and choose the intended landing elevation –

This feature of the CYPRES 2 Military unit allows to protect the parachutist during every military operation that you can think of.

The unit can be set to every DZ on this globe, whether it is the Dead Sea in Syria or on the Himalaya in Asia or even to a higher virtual DZ on a HaHo jump.

It is possible to do the programming prior the take-off to another DZ elevation, while still beeing on the ground.

Or you can choose your DZ while you are already in flight and then programm it at altitude.

Or you can choose your DZ while you are already in flight in an active pressurizee cabin and programm it there.

The way to get that done is as simple as you can think of.
You just enter the airpressure value of your target DZ into your CYPRES 2 Military Unit.
The setting is intuitive, faulty-tolerant and takes less than 45 seconds.

A number of tools (circular calculator, PDA) are available to help you in finding the right setting for any place in the world. The use of these tools is easy and can be learned in a few minutes.

1.4 Power supply

No attention is needed to the power supply of CYPRES 2.
The unit is designed to function from the date of manufacture until the first maintenance, from the first maintenance to the second maintenance and from the second maintenance until the end of life without limitations as long as the unit is used for parachuting. Should CYPRES 2 cease to work due to a faulty power supply prior to the maintenance due date, Airtec will take care of this with the highest priority.

1.5 Operational safety

There are two important points to remember regarding the operational safety of CYPRES:

1. CYPRES self-tests automatically every time it is switched on. After every switch-on procedure, CYPRES executes a self-test routine during which all important internal functions are checked. A positive outcome to this self-test gives you the best possible assurance for a trouble-free operation for up to 14 hours. When the display unit shows 0▼, the self-test has been completed successfully. If the self-test has detected an error or discrepancy, CYPRES will not assume operating mode but will switch itself off after displaying an error code. This error code indicates why the self-test process was aborted (see chapter 5).

2. CYPRES has fail-safe error detection. Two processes are activated in CYPRES once the unit has been switched on: a primary working process and an independently operating controlling process that monitors the working process continuously. In case of errors while the working process is active, the backup controlling process will switch the unit off.
Depending on the type and potential impact of the error, CYPRES can either be switched on again or it will stay in shut-down mode permanently. With certain error codes (see Chapter 5), it is not possible for the user to reactivate the unit. In these cases, CYPRES must be sent to the manufacturer or service center for inspection and adjustment.

2. Product overview

CYPRES 2 Military is available in the following standard models:

1000/35 A

1500/35 A

1900/35 A

2500/29 A

The difference between the 3 first versions is the activation altitude.

The forth differs concerning the activation altitude and the vertical activation speed.

All units can either carry a one-pin cutter or a two-pin cutter.
A swap can be performed at any time by unplugging the old one and plugging in the new one.

1000/35 A

1000/35 A indicates that this unit is set to activate at approx. 1000 ft above the DZ if the vertical speed is faster than approx. 35 meters per seconds (about 78mph).

The A indicates that the setting of the pressure value of a target DZ at another elevation has to be done in an absolute pressure value (only in the operation mode).

This unit is the standard CYPRES 2 Military unit. Please get in contact for any application advice.

Model	Nato Stock Number
M-CYPRES 2 1000/35	
1-pin absolute calibration	1670-12-361-9578
M-CYPRES 2 1000/35	
2-pin absolute calibration	1670-12-361-9579

1500/35 A

1500/35 A indicates that this unit is set to activate at approx. 1500 ft above the DZ if the vertical speed is faster than approx. 35 meters per seconds (about 78mph).

The A indicates that the setting of the pressure value of a target DZ at another elevation has to be done in an absolute pressure value (only in the operation mode).

This unit is the standard CYPRES 2 Military unit with a 500 feet higher activation altitude. Please get in contact for any application advice.

Model	Nato Stock Number
M-CYPRES 2 1500/35	
1-pin absolute calibration	1670-12-361-9580
M-CYPRES 2 1500/35	
2-pin absolute calibration	1670-12-361-9581

1900/35 A

1900/35 A indicates that this unit is set to activate at approx. 1900 ft above the DZ if the vertical speed is faster than approx. 35 meters per seconds (about 78mph).

The A indicates that the setting of the pressure value of a target DZ at another elevation has to be done in an absolute pressure value (only in the operation mode).

This unit is the CYPRES 2 Military Tandem unit. Please get in contact for any application advice.

Model	Nato Stock Number
M-CYPRES 2 1900/35	
1-pin absolute calibration	1670-12-361-9582
M-CYPRES 2 1900/35	
2-pin absolute calibration	1670-12-361-9583

2500/29 A

2500/29 A indicates that this unit is set to activate at approx. 2500 ft above the DZ if the vertical speed is faster than approx. 29 meters per seconds (about 65mph).

The A indicates that the setting of the pressure value of a target DZ at another elevation has to be done in an absolute pressure value (only in the operation mode).

This unit is the CYPRES 2 Military Bundle unit. Please get in contact for any application advice.

Model	Nato Stock Number
M-CYPRES 2 2500/29	
1-pin absolute calibration	1670-12-361-9584
M-CYPRES 2 2500/29	
2-pin absolute calibration	1670-12-361-9585

3. Installation

Since 1994, Airtec is providing all the necessary parts to nearly all rig manufacturer worldwide, so that all rigs can be delivered CYPRES ready. Additionally, for nearly all older rigs, Airtec has published detailed retrofit instructions in the “CYPRES Rigger’s Guide for Installation“. If an older rig is not CYPRES ready, the retrofit can be organized by any CYPRES dealer.
All CYPRES dealers have the necessary documentation for the correct setup. Retrofit setup must only be performed by Airtec qualified riggers. Deviation from the instructions in the "CYPRES Rigger's Guide for Installation" are NOT ALLOWED .

CYPRES can be assembled into rigs with existing setups by riggers (packers). Please refer to the “Packer‘s Checklist“ to verify the correct setup in each sport container.

Please comply with your country-specific regulations concerning a retrofit.

Excess cable is stowed in the flat part of the pocket underneath the velcro-adjustable flap. If you have to stow both the thinner cutter cable and the thicker control unit cable, be sure to place the thicker cable on top of the thinner one. Cables should be coiled in order to avoid twists. Always avoid pulling, bending, twisting, or kinking the cables.

Removal of CYPRES can be done by the user without any difficulties. Do not pull the cables, instead push the processing unit, cutter and control unit from their keepers.

When removing the CYPRES do not pull on the cabled, instead push the processing unit, cutter and control unit from their keepers.

right

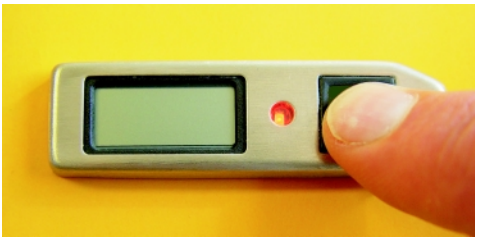
wrong

- cables not flat on bottom
- thin cable on top of thicker cable
- cable twisted

4. How to operate CYPRES 2

4.1 Handling the control unit

The push button on the control unit should be pressed with the fingertip; please do not use a fingernail or any other object. Use a short click action in the middle of the button.



Please familiarize yourself with switching CYPRES 2 on and off (see chapter 4.2) and changing altitude reference (see chapter 4.4) prior to use.
The push button is the only means the user has to control CYPRES 2 functions. For a parachutist necessary handling is reduced to the following six actions:

- switch on
- switch off
- increase altitude reference
- decrease altitude reference
- display the serial number
- display the next maintenance date

The following sections provide thorough descriptions of these six actions.

4.2 Switching CYPRES on

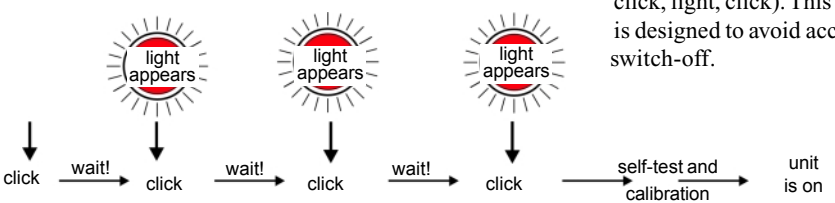
CYPRES is switched on by clicking the push button four times with very short clicks. Start the switch-on cycle by clicking the button once. After approx. one second, the red LED-light will glow. You must acknowledge the red light immediately by clicking the button again. This sequence - a click following appearance of the red light - will be repeated two more times. After a total of four clicks, CYPRES goes into self-test mode.

If you do not act promptly after seeing the LED-light, or if you push the button to soon, CYPRES will ignore the switch-on attempt.

This four-click initiation cycle has been designed to avoid accidental switch-on.

Once the switch-on procedure is finished, the unit will run through its self-test. Initially, the display will show the number "10", and then a countdown ending with "0". Between displaying "1" and displaying "0" CYPRES shows the actual ambient airpressure. When the "0" with the arrow down is shown, the unit is functional for the next 14 hours. After 14 hours have passed, the unit will switch itself off automatically. A manual switch-off is always possible using the push button. If the self-test is not successful, an error code is shown on the display for approximately 2 seconds. The meaning of this error code can be read in chapter 5.

The manual switch-off sequence is identical to the switch-on procedure (click, light, click, light, click, light, click). This routine is designed to avoid accidental switch-off.



4.3 Using CYPRES in the Training mode

In the training mode, CYPRES must be switched on at the takeoff site on the ground. It must never be switched on inside an flying aircraft, helicopter, balloon, etc.
To reset CYPRES, switch off and then on again. The unit will then re-calibrate and "zero" itself to this elevation.

When the takeoff airfield and intended dropzone are on the same location and all jumping activity is restricted to that place, an initial switch-on at the dropzone will suffice for any number of jumps, provided they all take place within 14 hours. Should any of the following situations occur, CYPRES must be reset before the next jump:

- The dropzone is missed and the landing takes place in an area with an elevation greater than 30 feet (10 m) above or below the dropzone level. Or, on the return journey to the dropzone the ground elevation changes similarly.
- The unit is taken away from the airfield/ dropzone by vehicle or carried by hand and later brought back again.
- If the total time for a single jump (takeoff to landing) exceeds one and a half hours, CYPRES will function normally, but must be reset after landing.

General recommendation: If you have a doubt, reset CYPRES.

4.4 Using CYPRES in the Operation mode

Whenever you want to land at a DZ elevation that is different from your takeoff elevation, you must use the operation mode of your CYPRES 2 Military Unit. The only information that your CYPRES 2 Military Unit needs is the air pressure of your target DZ.
Get the information from your pilot, meteorologist or your officer in charge.
This value has to be programmed in.

How can you enter this value in the CYPRES 2?

So: Switch on the unit and after the fourth click hold the push button pressed until immediately after the selftest the number "1000" appears.
The "1" alternates with "0". Let the button go to choose "0" or "1".
The choosen figure remains visible on the display.

Press the button again – The second digit counts from "0" through "9".
Let the button go at the choosen figure. This figure remains visible on the display.

Press the button again – The third digit counts from "0" through "9".
Let the button go at the choosen figure. This figure remains on the display.

Press the button again – The fourth digit counts from "0" through "9".
Let the button go at the choosen figure. This figure remains on the display.

If you missed a figure, just keep the finger on the button until the figure shows up again.
(After "9" the display restarts automatically with "0".)

DZ at 910 hPA

When you have done that, the red LED confirmes by litting for four seconds.
In case you have made a mistake you can restart the programming during that time.
Just press the button, look at the alternating first digit and choose.
When the LED shuts off, everything is fixed.

The pressure adjustment and the display indication remains until the unit is switched off . If you have to change your setting, you must switch the CYPRES off and on again.

If you try to enter a pressure of less than 200 hPa (approx. 39.000 feet above sea level) or more than 1.075 hPa (approx. -1.600 feet below sea level), the CYPRES switches itself off. The blank display indicates that the desired adjustment is outside the specified parameters.

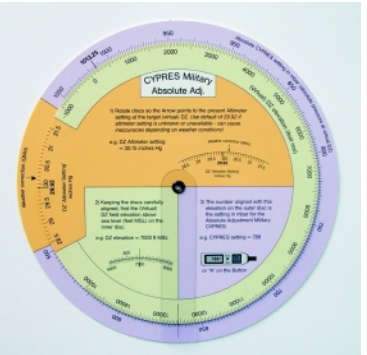
4.4.1 Using the circular calculator

If the atmospheric (absolute) air pressure values to perform the altitude adjustment are not known, it is possible to do the altitude adjustment using the ft/hPa-(or m/hPa-)calculator. This calculator can be ordered separately and is available in different languages.

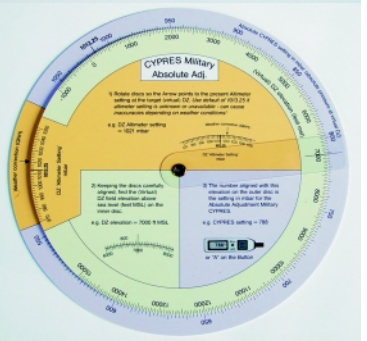
When using the calculator, the following vital points are to be considered:

- Use this calculator for 'Absolute Adjustment' Military CYPRES Units only ('Abs. Adj.' or ‘A’ nomenclature on Control Unit)
- Small inaccuracies can occur with the use of this calculator because of its' physical properties.
- Greater accuracy can be achieved with the use of the PC Based ‘Excel' spreadsheet calculator or by utilizing the on-line calculator that can be found at www.militarycypres.cc

circular calculator inches Hg scale



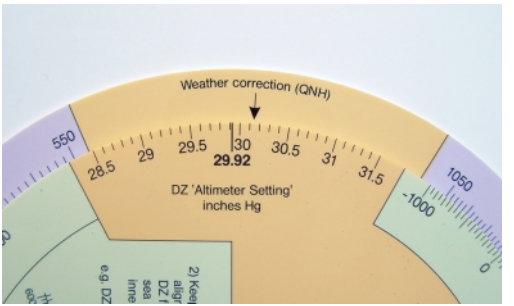
circular calculator mbar scale



The altitude adjustment using the calculator is done as follows:

1.) Rotate discs so the Arrow points to the current altimeter setting at the target (virtual) DZ.

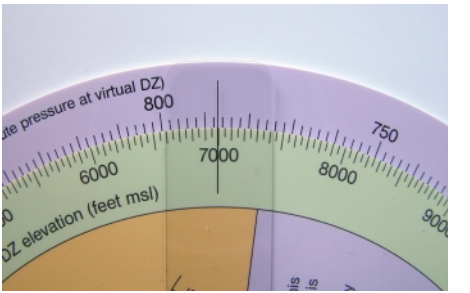
e.G. DZ altimeter setting = 30.15 inches HG



2.) Keeping the discs carefully aligned, find the (virtual) DZ field elevation above sea level (feet MSL) on the inner disc.

e.G. DZ elevation = 7000 feet MSL

The number aligned with this elevation on the outer disc is the setting in mbar for the Absolute Adjustment Military CYPRES

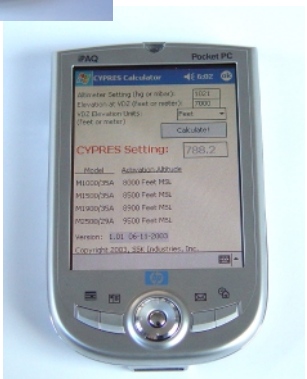


4.4.2 Using the PDA computer

If the atmospheric (absolute) air pressure values to perform the altitude adjustment are not known, it is possible to do the altitude adjustment using the iPAQ CYPRES Military Absolute Calculator. This calculator can be ordered separately.

Using:

- Enter the altimeter setting of where you are (in either hg or mbar)
- Enter the elevation at the Virtual Dop Zone (in either feet or meter)
- Select from the drop down box the elevation scale (either feet or meters)
- Click the ‘Calculate!’ button
- The value for the CYPRES setting is displayed in the box



4.5 Access to unit information

CYPRES 2 provides an easy way to view the serial number and next maintenance due date.
Simply perform an unvalid altitude reference (less than 200 hPa or more than 1075 hPa).

After that your CYPRES 2 Military Unit will show you its serial number for 5 sec.
Than the display will go blank and after that the month and year of the next maintenance due date will be shown for 5 sec.

display of the serial number

next maintenance due in 05 / 2007

4.6 CYPRES 2 and Water jumps

The design of the CYPRES 2 allows water jumps without removal of the unit. CYPRES 2 is waterproof down to a water depth of 15 feet (5 meters) for a duration up to 15 minutes. This is achieved through a waterproof casing, sealed plug connections, a sealed cutter, a sealed control unit, and a special filter. The filter allows precise measurement of the air pressure and at the same time keeps water away from the inside of the unit. As long as there is no contact with water, the filter never needs to be replaced by the user.

If water did enter into the filter, the unit must be switched off after taking of the rig and the filter must be replaced before the next use.

CYPRES 2 comes with one spare filter and a filter changing tool. The CYPRES 2 filter changer tool is made from stainless steel, specifically for the purpose of filter removal and replacement. Filter replacement (see chapter 4.7) can be done by your rigger (packer). After water contact, the rig and the reserve must be dried according to the manufacturers instructions. After that the rig and CYPRES 2 with the new filter can be used again.

4.7 Changing the filter

Filter Removal: Hold the CYPRES filter changer at the non-slotted end and push it straight (without tilting) onto the filter up to the stop position.

Tightly grip the filter changer, twist off by turning in a counter-clockwise direction and remove the filter. If there is water in the casing groove (behind the filter), dry it with a cloth. Remove the old filter from the filter changer by pushing with your finger or with the eraser end of a pencil. Discard it.

Filter Installation: Place the new filter with the labeled side toward and into the slotted end of the filter changer up to the stop (flush) position. Do not angle.

Hold the filter changer by the non-slotted end, gently slide the filter fitting into the unit holding it straight without tilting. Turn the filter changer clockwise, initially there will be little resistance. Continue turning the filter changer until it slips on the filter. (The filter stops turning but the changer continues to turn.) Remove the filter changer from the filter by pulling straight back.

Do not use other tools !

5. Error Display

If an error condition is detected during the self-test countdown, CYPRES 2 displays a code number on the display for approx. 2 seconds, then it switches itself off. (Display goes blank).

Error code number / error code description:

1111 or **2222**

One or both of the attached release units are not correctly electrically connected to the unit. The reason may be a cable break, the cutter plug could be disconnected, or the release unit(s) may have activated.

3333

Excessive variations in ambient air pressure have been measured during the self-test period. The unit is unable to obtain consistent values for the ambient air pressure at ground level. Possible reasons could be an attempt to switch on CYPRES in the training mode in a car, driving uphill or downhill, in an elevator or in an airborne aircraft.

The switch-on procedure can be performed several times after a "3333" error was displayed. If the 0▼ is displayed, the unit is fully functional and can be used for parachuting.

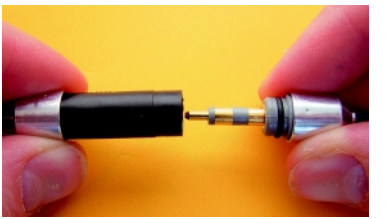
If other than these three described numbers appear in the display, or if the unit switches itself off and can not be switched on again, please contact Airtec or SSK.
Please record the error code number!

6. Changing the release unit(s)

After an activation the release unit can be changed by any rigger (packer) via the plug-and-socket connection.

Disconnecting the release unit:
Hold plug and socket by their aluminium grips and pull them apart using a smooth straight motion. Do not twist!

Connecting the release unit(s):
Hold plug and socket by their aluminium grips. Place the plug directly in front of the socket and connect them by pushing together with a smooth straight motion until it is completely seated. Do not twist!



It is easy to change a 1-pin CYPRES to a 2-pin CYPRES or vice-versa, by swapping cutter types.

1-pin Cutter

2-pin Cutter

Notes:

1. CYPRES 1 field replaceable cutters (no aluminum grip) can be used with CYPRES 2. They will function properly, however this combination is not water-resistant.
   CYPRES 2 cutters (identified by aluminum grip) can be used with any CYPRES 1 with the field replaceable cutter connector. They function properly - but this combination is not water-resistant.
2. Release units (cutters) have a serial number on a heat shrink tubing placed on the cable. This number identifies the cutter. A table of cutter numbers with their corresponding dates of manufacture is available at www.cypres.cc
3. It is possible that the cutter plug separates from the socket after a CYPRES activation. In the rare combination of this event and a water landing, the socket must be dried out before further use. Do that by tapping the open end of the socket onto a flat surface such as a table top. Once no additional water comes out while tapping on the table top, store the CYPRES with the open end of the socket hanging downward for another 24 hours in a dry area, to allow the socket to dry out completely. When completely dry, insert the plug of the new cutter. Never insert an object (i.e. Q-tip) to dry out the plug.
4. Use a one-pin cutter in a one-pin container and a two-pin cutter in a two-pin container.

WARNING! Do not use release units (cutters), with an expired lifetime! (Older than 12 years and 6 months)

Release units (cutters) also require technical service (maintenance) every four years.
Please send cutters more than four years old, that have not been attached to a CYPRES during maintenance to Airtec or SSK for a free no-charge inspection prior to use.

7. Technical service

The extremely reliable function of CYPRES is based on 4 facts: exclusive use of carefully pretreated and approved parts, strict and detailed manufacturing procedures, continuous quality control and monitoring through the manufacturing process, and regular periodic technical service (maintenance). 4 and 8 years after the original date of manufacture, maintenance procedures according to the manufacturers guidelines are necessary. There are 4 primary reasons for the maintenance:

1. Deviations between nominal and actual values are corrected to ideal values. Every detail is observed. It is common that signs of wear and tear are corrected and sometimes even 'cosmetic' treatment is done.
2. The technical condition of each unit is analyzed. The fact that a very high percentage of units are returned for the periodic maintenance gives the ability to see statistical trends and to predict potential problems at a very early stage. The advantage: it is often possible to prevent situations by modifications during the maintenance procedures, rather than having to fix problems with downtime later.
3. Experience shows that during a period of 4 years, changes and improvements do happen. Applicable updates are performed during maintenance. Such updates may have the background of technical improvements, or enhancement of knowledge, or may result from environmental changes or changes in the sport (e.g. new disciplines), which Airtec is always researching and taking into consideration.
4. The most important part of the maintenance is the individual pre-adjustment of each unit for the next 4 years. A unit will not be returned before a high confidence level is reached regarding the prediction of the unit's proper function for the next 4 years.

The maintenance has to be performed 4 and 8 years after the original date of manufacture. The earliest possible date for the CYPRES 2 maintenance is 6 months early, the latest 6 months after the month of manufacture.

A delayed maintenance has no advantage. It does not save any cost, nor will the total lifetime of the unit be extended. It's smart to choose a suitable time during the 13 month window for sending the unit in for maintenance, rather than waiting until the last possible moment, or until the beginning of the next season.
Because of the 75,000+ maintenance procedures performed to date on CYPRES, and changes incorporated into the design of CYPRES 2, Airtec has determined that it is possible to extend the maintenance window to 13 months on CYPRES 2. This maintenance window gives you more freedom, and avoids maintenance down-time at the wrong time of the year - please use this new feature wisely!

At any time it's possible to check the date of the next maintenance by holding the button down at the last click during the switch on procedure until you see 'next maint. inmonth / year'. (See chapter 4.5)

If the unit enters the 6 month period before a maintenance due date, the maintenance date (next maint. in month / year) will automatically be shown at each selftest. 6 months after the due date the display will change to: 'next maint. now'.

All displayed dates are only a reminder.
Please choose a suitable date during the 13 month time frame for a convenient performance of the maintenance. According to our experience, the number of maintenances and the necessary time to do them increases between February and May. For quicker service, a date between June and January is a better choice.

After the 8-year maintenance, CYPRES 2 should be airworthy until the end of life. The expected lifetime of CYPRES 2 is 12 years from date of manufacture.

CYPRES 2 maintenance cost is a flat-rate (always the same), even when a unit requires extensive repairs. During the lifetime of a CYPRES 2 unit, the parachutist should not have any operation costs other than the 2 maintenance fees (except for any required replacement cutters or waterproof filters).

Please contact your local CYPRES dealer concerning the maintenance. Please contact Airtec when you don't know who your local dealre is. The CYPRES Service Center for the USA, Canada, South America and other Western Hemisphere countries is:

SSK Industries, Inc.,
1008 Monroe Road
Lebanon, OH 45036 - USA
Tel: ++ 1 513 934 3201
Fax: ++ 1 513 934 3208
email: info@cypres-usa.com
www.cypres-usa.com

8. Important Notes

8.1 Important notes for jump pilots

The following 3 points have only than to be taken into account if the CYPRES 2 Military Unit is used without altitude adjustment (in Training mode).

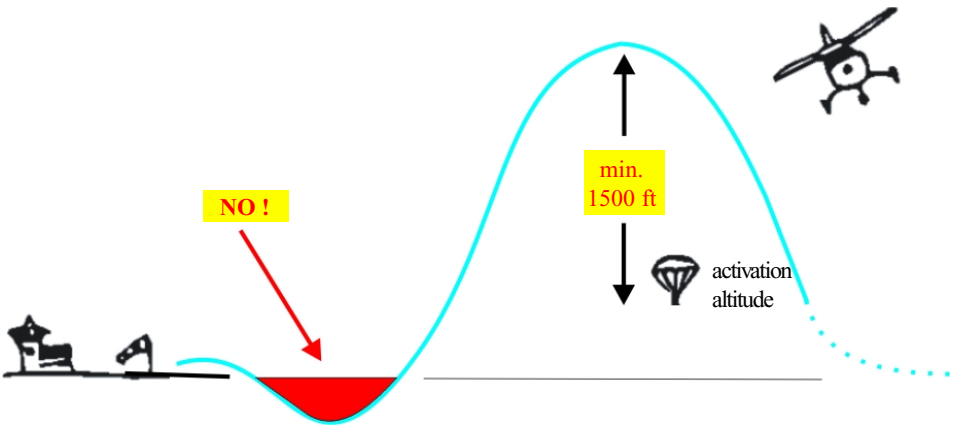
- Every CYPRES 2 Military Unit has to exceed an altitude of more than 1500 feet above its firing altitude to become fully armed.
- Never descend to an altitude below the airfield takeoff elevation.
- If the aircraft can be pressurized, make sure that the cabin remains open when the turbines are started up. Leave a window, a door, or the ramp open slightly until after lift-off. Make sure that the cabin pressure cannot build up above the air pressure on the ground. (Hint: the parachutist's altimeters should never go below "0".)

Always:

Stay below the vertical activation speed in the activation window (6900 feet/min or 5700 feet/min for 2500/29/A CYPRES) if you are on descent in an aircraft.

The sketch below shows what must not be done / should be done when the unit is used without altitude adjustment (in Training mode)

- Never fly below the airfield takeoff elevation.
- Always go at least 1500 feet above the activation altitude.



If the CYPRES 2 Military Unit is used with an altitude adjustment (in Operation mode), the above mentioned limitations do not apply.

8.2 Important notes for users

- CYPRES must not be used for parascending or paragliding/sailing.
- CYPRES cannot be used for base jumps (jumps from fixed objects), and must be switched off prior to making a base jump.
- To make sure that a CYPRES 2 Military device is armed when it is used in the training mode, you must fly at least 1500ft above the preset firing altitude (thumb of rule. Exact specifications available from Airtec / SSK). The CYPRES 2 Military device is always armed when in the operation mode.
- A two canopy scenario can be generated via a CYPRES activation, if the main deploys too low.
- CYPRES is shielded against radio transmitter signals. Extreme concerted efforts have been taken to protect CYPRES 2 from "radio pollution". Although the extraordinary shielding system of CYPRES 2 has been investigated thoroughly, it is impossible to have 100% protection. It is still recommended to avoid strong radio transmitters. Please contact Airtec if you have questions.
- A release unit that has activated builds up a high internal pressure and will remain pressurized. Never attempt to open it by force. It can, however, be stored safely for an indefinite period of time, provided it has not been damaged.
- A good reserve pilot chute is an important safety factor. On systems with an internally-mounted pilot chute, we recommend that owners equip their rigs with one that has been Airtec tested and subsequently qualified by Airtec and the rig manufacturer. Typically the rig manufacturer delivers these pilot chutes with the rig. If there is any doubt, please contact Airtec.

9. Repacking of reserves

The following tips are only brief suggestions. Detailed instructions for riggers (packers) can be found in our special publications. ("Rigger's Guide for Installation" and "CYPRES Packer's Checklist")

General:
Please closely check the grommets at each repack. Grommets with rough edges will ultimately destroy any loop. Replace damaged grommets immediately. Only use original CYPRES loops / loop material, pull ups, and discs when a CYPRES is installed in the container. Even if you do not have a CYPRES in your container, a CYPRES loop will markedly improve your safety. Non adjustable loops which are attached to a CYPRES disc and are mounted in containers with internal pilot chute should be replaced at each repack. Repack cycles are getting longer, so this increases your safety inexpensively. After attachment to the disc, CYPRES loops should be treated with CYPRES loop silicone on the upper 4 centimeter. The loops provided by Airtec are already impregnated on the first 4 centimeters.

1-Pin Pop Top:
Please check the loop carefully and replace if necessary. On all adjustable loops, silicone should not be used. The adjustment will not remain fixed.

2-Pin Pop Top:
Since 1991 Airtec endorses the 'Running Loop' for 2-Pin Pop Top rigs, an Airtec development. The 'Running Loop' has the characteristic that even when you pull one of the two pins, the pilot chute will launch. Please ensure that a 'Running Loop' is installed. The 'Running Loop' must be siliconed. A 'Running Loop' channel is available from Airtec at no cost.

Additional notes on the Racer from Jump Shack:
On Racer systems in countries where US TSO standards apply, you must use the quick loop system in accordance with the rig manufacturer's instructions. Do not use silicone on quick loops.

For all CYPRES loops including running loops and quick loops, you must use genuine CYPRES loop material.

CYPRES Loop

- extremely flexible
- extremely slippery
- breaking strength: 450 lbs
- diameter: 1/16 inch (1,6mm)

CYPRES disc “Smily“
- no sharp edges
- minimal loop tearing

Tips for Riggers (packers):

The ‘Packer’s Kit’ is available from CYPRES dealers. It contains a lot of things that make life easier, including:

50 meter spool of loop material, finger trapping needles, discs, temporary pins, silicone, a User’s Guide and the ‘Packer’s Checklist’ with detailed installation instructions for nearly all sport containers, tips for packing of CYPRES equipped rigs etc.

Further information on CYPRES installations and for packing CYPRES equipped rigs can be found at www.cypres.cc

10. Switching Rigs

Switching your CYPRES to another CYPRES ready rig will require only a few moments of work for your rigger.

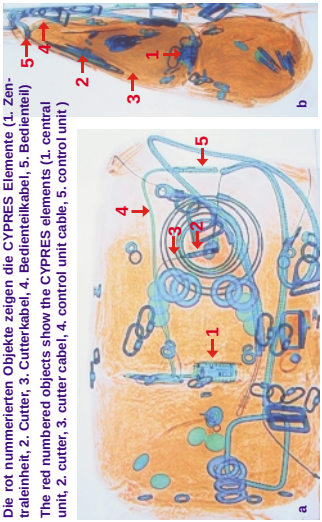
If the container swap requires a change in the number of release elements (cutters), this can be done quickly on-site by unplugging the old cutter and swapping with the required type cutter (1-pin or 2-pin). It is not necessary to send the CYPRES to the manufacturer. The necessary cutter can be purchased from any CYPRES dealer.

11. Regarding Air Travel

A CYPRES equipped rig may be transported in freight and passenger airplanes without restrictions. All its components (e.g. measuring technique, electronics, power supply, loop cutter, control unit, plugs, cables, casing) as well as the complete system, contain parts and materials that are approved by U.S. DOT and other competent agencies world-wide, and are not subject to any transport regulations.

Because of the size of a rig we recommend to check it in as normal luggage and to not take it on board as hand luggage. In case of questions or objections from the security personnel, please use the card shown on the right which you'll find in the back cover of this book. The card shows an X-ray of a complete rig with CYPRES 2. Depending on type and design of the rig the X-ray on the security's screen may vary.

Presently, the Parachute Industry Association and the USPA are working with the Transportation Security Agency concerning traveling with parachutes.



If you've lost the card, you can get a new one from Airtec or SSK.

original card located in the back cover

12. Technical Data

Technical data for all Military CYPRES:

Length, width, height of the processing unit ..... approx. 3 1/3 x 2 2/3 x 1 1/4 inch (85 x 43 x 32mm)
Length, width, height of the control unit ..... approx. 2 1/2 x 3/4 x 1/4 inch (65 x 18 x 6.5mm)
Length, diameter of the release unit ..... approx. 1 5/8 x 3/8 inch (43 x 8.0mm)
Cable length of the control unit ..... approx. 47 1/3 inch (1200mm)
Cable length of the release unit ..... approx. 20 inch (500mm)
Volume ..... 9,15 cubic inch (150 cm^3)
Weight ..... 7,44 ounces (210 grams)
Storing temperature ..... +160° F to -58° F (+ 71° to - 50° centigrade)
Storing pressure ..... 200 to 1075 hPa (5,906 to 31,745 In.Hg)
Working temperature ..... +145° F to -25° F * (+ 63° to - 32° centigrade *)
Maximum allowable humidity ..... up to 99,9 % rel. humidity
Waterproof ..... up to 15 minutes down to a depth of 15 feet
Altitude adjustment range according ..... 200 to 1075 hPa (5,906 to 31,745 In.Hg)
Operating range above sea level ..... - 1600 feet to + 65500 feet
Functioning period ..... 14 hours
Power supply ..... lifetime warranty**
Maintenance ..... 4 and 8 years from date of manufacture
Total lifetime ..... 12 years from date of manufacture***

* These temperature limits do not mean the outside (ambient) temperatures but rather temperatures inside the processing unit. Therefore, these limits won't have any meaning until the processing unit itself has reached the temperatures in question. In fact, these limits will rarely be reached due to the mandatory location of the CYPRES in the reserve container, and the insulating properties of the processing unit pouch and parachute canopies.

Special data for the 1000/35 A CYPRES:
Activation altitude ..... approx. 1000 feet
Activation speed ..... approx. 78 mph at sea level

Special data for the 1500/35 A CYPRES:
Activation altitude ..... approx. 1500 feet
Activation speed ..... approx. 78 mph at sea level

Special data for the 1900/35 A CYPRES:
Activation altitude ..... approx. 1900 feet
Activation speed ..... approx. 78 mph at sea level

Special data for the 2500/29 A CYPRES:
Activation altitude ..... approx. 2500 feet
Activation speed ..... approx. 65 mph at sea level

** If required maintenance has been performed.
*** Anticipated, according to the present knowledge base.

13. Warranty

Technical defects that show up during the first 2 years from the date of manufacture will be repaired by the manufacturer at no cost.
The manufacturer reserves the right to decide whether the unit will be repaired or replaced. Neither repair nor replacement will change the original warranty period of 2 years from original DOM.
When a CYPRES 2 unit is returned to the manufacturer or service center, it must be packed in the original box, or an equivalent shipping package.
No claims will be accepted if the unit has been damaged or has been opened by an unauthorized individual, or if an opening of the processing unit, release unit (cutter), or control unit has been attempted.

14. Disclaimer

In designing and manufacturing CYPRES, the aim of Airtec GmbH is that the device should never cause an accidental canopy opening, but should always open a reserve container at an appropriate altitude when the activation criteria are met.
All investigations and experiments performed during the product's development, and all laboratory and field tests accompanying trial and production phases have shown to date that CYPRES meets both requirements.
However, the occurrence of a malfunction cannot be excluded. We accept no responsibility for damages and consequences resulting from any malfunction.
Airtec GmbH also accepts no responsibility for damages or problems which are caused by the use of non original Airtec parts and supplies.

The use of CYPRES does not automatically prevent from injury or death. Risk can be reduced by assuring that each component has been installed in strict compliance with the manufacturer‘s instructions, by obtaining proper instruction in the use of this system, and by operating each component of the system in strict compliance with this User‘s Guide.

Automatic activation devices (AADs) sometimes fail to operate properly, and sometimes activate when they should not, even when properly installed and operated. Therefore the user risks serious injury or even death to themselves and others during each use.
By using or allowing others to use CYPRES, you acknowledge that you accept responsibility for the proper use of the device, as well as accepting the consequences of any and all use of this device.
Airtec GmbH, their Dealers, Service Centers, and Agents total and complete responsibility is limited to the repair or replacement of any defective device.

CYPRES is strictly a backup device, and is not intended to replace proper training or timely execution of appropriate emergency procedures.

15. Index

16. Packing List

In addition to the CYPRES 2 unit and the user's guide, the following items will be delivered:

For 1-pin CYPRES 2:

2 1-pin Loops
1 pull up
1 disc
1 spare filter
1 filter changer

For 2-pin CYPRES 2:

1 2-pin Loop
2 pull ups
2 soft bodkins
2 discs
1 spare filter
1 filter changer

Trade Marks

CYPRES is a trade mark of Airtec GmbH.

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Further informations can be found at:
www.militarycypres.cc

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