

OPERATION MANUAL

**SPECIAL FORCES
1000/1000XL UDT
CHRONOGRAPH**



CHASE-DURER

Table of Contents

◆ Display and Screw Down Crown/Pushbuttons	1
◆ Setting Date and Time Zone	2
◆ Setting Time	3
◆ Resetting Chronograph Hands to Zero	4
◆ Timing Mode • Simple Chronograph Function	5
◆ Timing Mode • Split Time or Intermediate Times Function	6
◆ Tachymetre	7
◆ Tachymetre	8
◆ Navigation	9
◆ Miscellaneous	10
◆ Specifications	11

DISPLAY and Screw Down Crown/Pushbuttons

1.

BEZEL with Compass Markings

3.3° marker

10° marker

10° marker

CHRONOGRAPH HANDS

12 hour counter

60 minute counter

60 second counter

Pushbutton:
START/STOP

1/10 second counter

Setting crown

Date indicator

Pushbutton:
Split-Time /
Reset to Zero

Minute hand

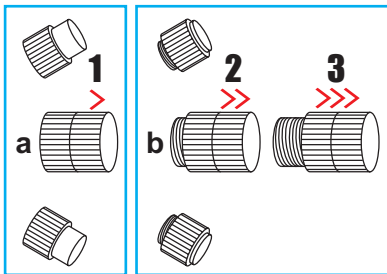
Second hand

Hour hand

WATCH HANDS

Screwed Down

Setting & Timing Positions



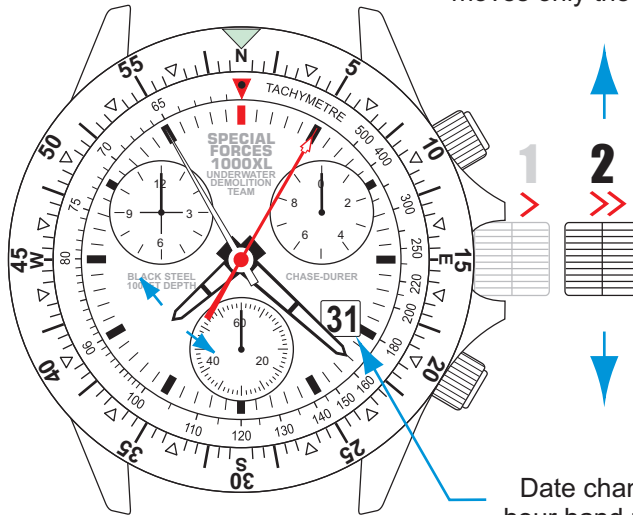
Screw Down Crown and Pushbuttons

- Push in and turn Crown clockwise until tight. Turn Pushbuttons clockwise until tight when not using. Pushbuttons do not require pushing in to screw down.
- Turn Crown counterclockwise until you no longer feel the threads gripping; Crown can now be pulled out. Unscrew Pushbuttons to use CHRONOGRAPH until light resistance is felt.

WARNING: Crown should be locked down in position 1 at all times, use position 2 & 3 for adjustments only. *Do not operate pushbuttons under water!*

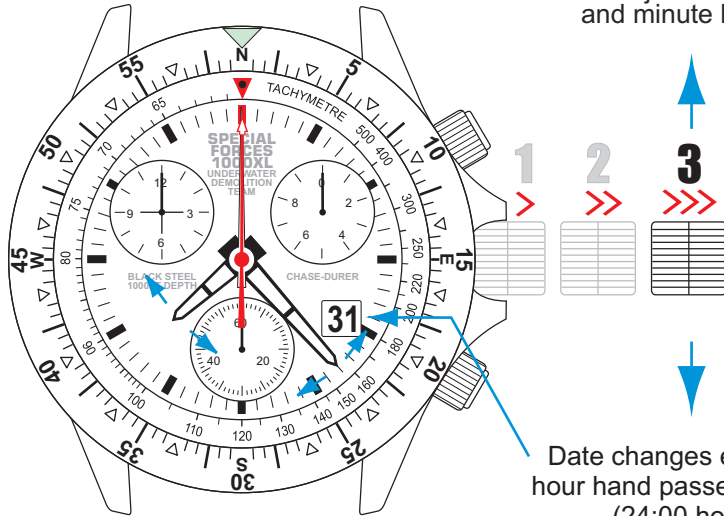
NOTE - Failure to screw down Crown and Pushbuttons to resist moisture will void your warranty

Setting crown in position **2**
moves only the hour hand



Date changes each time
hour hand passes midnight
(24:00 hours)

Setting Crown in position **3**
Stops Second Hand
and adjusts both hour
and minute hands*



Date changes each time
hour hand passes midnight
(24:00 hours)

***Note** - For precise setting of time, it is recommended to adjust the minute hand past the required time and turn backwards to the desired minute.

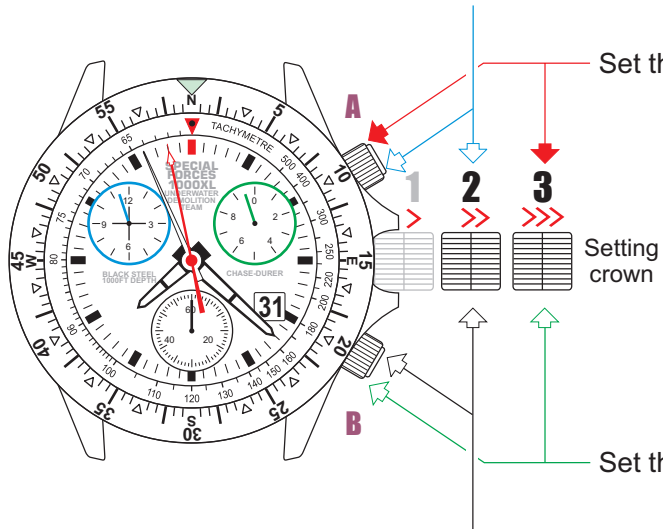
Resetting Chronograph Hands to Zero

4.

The chronograph hands can be set at zero or another time zone.

Set the 12 hour counter at 0

Set the 60 second counter at 0



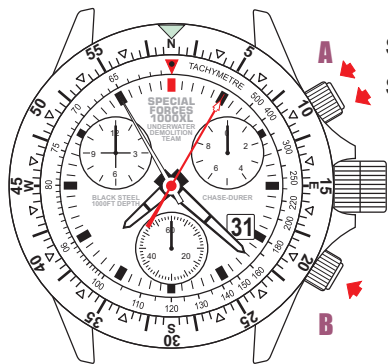
NOTE:

Do not keep setting crown in position **2** for more than 20 minutes (time could be lost).

When crown is pulled out to position **3**, movement will stop immediately; *second hand stops*.

Set the 60 minute counter at 0

Note: Press **PUSHBUTTONS** longer than 1 second to advance hands quickly



START ①
STOP ②

Setting crown in
 position **1**

**Reset to
 Zero ③**

WARNING:

Before each time is taken,
 the hands should be returned
 to their original position.

If necessary reset to zero
 with pushbutton **B**

① to **③** order of functions

ADD FUNCTION: Order in which pushbuttons should be pressed.



A

①

START

②

STOP

Read

③

START

④

STOP

Read

• • •



B

X

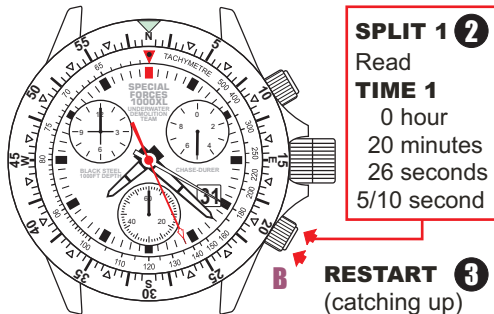
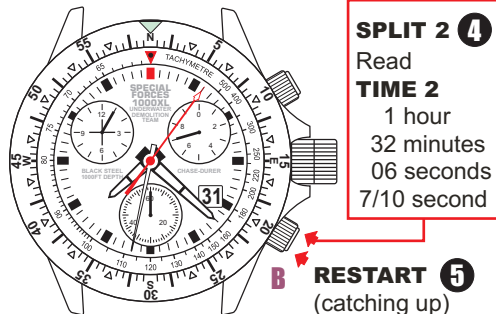
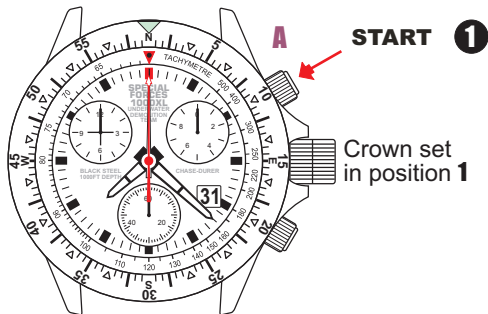
Reset to zero

Timing Mode • Split-Time or Intermediate Times Function

6.

1 to 7 order of functions

Note* Step 2 (or 4) may be repeated as many times as necessary; Step 6 is the final reading.



Using the TACHYMETRE scale

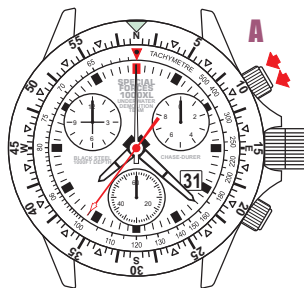
The TACHYMETRE dial is mainly used to compute an *average* speed after noting how long it takes to travel a fixed distance (like one mile or one kilometer), but it can also be used to compute many other things.

The dial is a logarithmic scale that uses this formula to compute: **TACHYMETRE DIAL = 3600 / Elapsed Time In Seconds**

The chronograph second hand indicates 1/10, 1/4, 1/2, 1, 10, 100 or 1,000 etc. units (miles, objects, pounds etc.). When stopped, the second hand points to the number on the TACHYMETRE scale by which the number of units (1, 10, 100 or 1,000 etc.) must be multiplied to obtain per-hour production rate or per-hour speed.



START/STOP



START/STOP

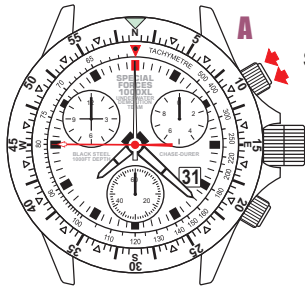
Example No. 1 – A car covers one mile in **30** seconds. The second hand, stopped as the mile marker is passed, reads **120** on the TACHYMETRE scale. Average speed of the car is 120×1 , or **120** miles per hour.

Although decimal units (100 liters, 1 mile, 10 kilometers) make computing simple, in practice, the TACHYMETRE scale can be used to calculate velocities and production rates from any number of units.

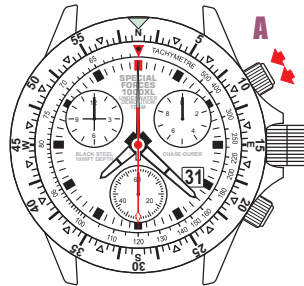
Example No. 2 – To measuring something much slower, such as a bicycle, you must use a shorter distance because the elapsed time must fall within the **7.2 - 60** second range.

For this example, it took **36** seconds for a cyclist to travel **1/4** of a mile. Reading the TACHYMETRE dial displays a speed of **100**mph, but the cyclist only traveled **1/4** of a mile, so the actual speed would be **1/4** of that or an average speed of **25**mph over the quarter mile.

NOTE - The scale is valid for all elapsed times from **7.2** seconds to **60** seconds. If the duration of the event is outside this range, then the answer on the dial is not valid. Some of the following examples show ways to get around this limitation.



START/STOP



START/STOP

Example No. 3 – A copier makes **10** copies in **45** seconds. The sweep second hand was thus stopped at the 45-second mark, which coincides with the figure **80** on the TACHYMETRE scale. The hourly rate of this copier is 80×10 , or **800** copies.

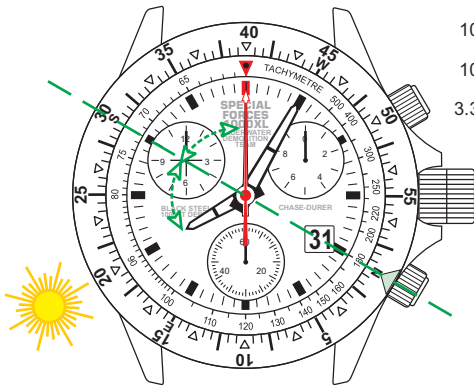
Example No. 4 – A manufacturing production line timed for **30** seconds produces **72** parts. Stopped at the 30-second mark, the chronograph second hand points to **120** on the TACHYMETRE scale; the production rate of the machine is 120×72 , or **8,640** parts per hour.

More Examples:

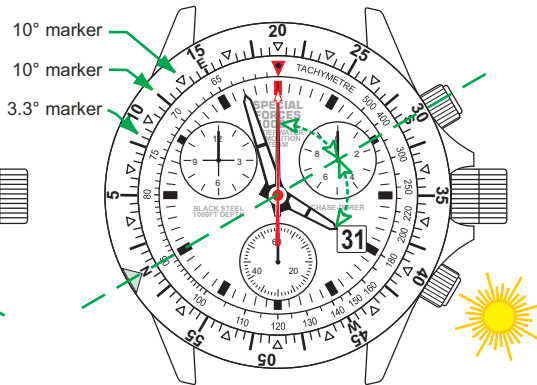
Suppose you wanted to measure the speed of a jet airplane. After traveling **10** kilometers, you noted that **40** seconds had elapsed. The TACHYMETRE dial displays **90**, but you traveled **10** kilometers, so the answer would be **10** times that, or **900** km/hour.

You can also measure other things, like fuel consumption. Suppose a pound of fuel took **48** seconds to burn. The chronograph second hand indicates on the TACHYMETRE dial that you are burning **75** pounds of fuel per hour.

8:05AM EST*



3:57PM EST*



Navigating by sun's position: The direction will be accurate if you are using true local time* without any adjustment for daylight savings time. The further you are from the equator, the more accurate this method will be.

In the northern hemisphere, bisect the angle between the hour hand and the 12 o'clock* mark and set the bezel's S (30s) indicator to that point. Hold the watch horizontal and point the hour hand at the sun; the bezel's ∇ N indicator will be pointing North. If there is any doubt as to which end of the line is north, remember that the sun rises in the east, sets in the west, and is due south at noon. The sun is in the east before noon and in the west after noon, so set the bezel's S (30s) indicator to the left of 12* in the AM and to the right of 12* in the PM.

***Note: If your watch is set for Daylight Savings Time instead of Standard Time, use the midway point between the hour hand and 1 o'clock to determine the north-south line.**

In the southern hemisphere, point 12 o'clock at the sun instead of the hour hand, the midway point between the hour hand and 12 o'clock will be the North/South line.

At **68°F** (20°C), sound travels at **344m** or **376yds** / **1,129ft** per second in air at sea level.

Therefore, at **68°F** (20°C) sound will travel:

- 1 mile** (1,760 yards / 5,280 feet) in **4.68** seconds
- 1,000 yards** in **2.66** seconds
- 1 kilometer** in **2.91** seconds

To estimate the distance to an event (such as an explosion, muzzle flash, lightning, etc.), measure the time from the visual flash to the sound and multiply the seconds by the per second speed.

For example the measured lightning to thunder time at **68°F** is **10** seconds. **10 x 344m** or **376yds** / **1,129ft** would produce **3,440m** or **3,760yds** / **11,290ft**. (**2.14miles**)

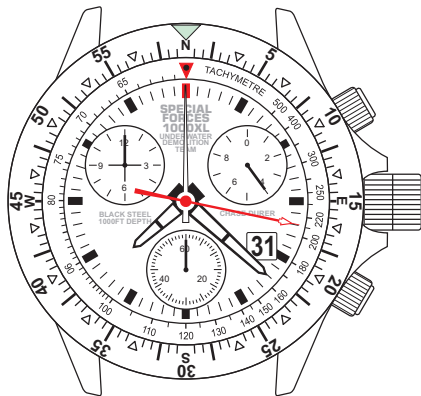
Alternately, you can divide the measured time at **68°F** by **4.68** to get miles (**10s / 4.68 = 2.14miles**), or **2.66** for thousand yard distance, or by **2.91** for kilometers.

NOTE:

At **32°F** (0°C), sound travels at **332m** or **363yds** / **1,089ft** per second in air at sea level.

Therefore, at **32°F** (0°C) sound will travel:

- 1 mile** / 1,760 yards / 5,280 feet in **4.85** seconds
- 1,000 yards** in **2.75** seconds
- 1 kilometer** in **3.01** seconds



Example: Sea level temp is **68°F** and lightning to thunder measured time is **17.4** seconds. Distance of lightning strike point is:

$$\begin{aligned}
 17.4s \times 1,129ft &= 19,644ft \\
 17.4s \times 376yds &= 6,542yds \\
 17.4s \times 344m &= 5,986meters
 \end{aligned}$$

OR:

$$\begin{aligned}
 17.4s / 4.68s &= 3.72 \text{ miles} \\
 17.4s / 2.66s &= 6.54 \text{ thousand yards} \\
 17.4s / 2.91s &= 5.98 \text{ kilometers}
 \end{aligned}$$

SPECIAL FORCES 1000 / 1000XL Underwater Demolition Team Technical Specifications

- ◆ SWISS Made, 27-jewel precision ETA 251.262 quartz movement.
- ◆ Chronograph: 1/10th second, 60 minutes & 12-hour elapsed time; lap time.
- ◆ Tachymetre.
- ◆ Case in black PVD solid 316L stainless steel.
- ◆ Screw-locked crown and pushers
- ◆ Screw-in back.
- ◆ Water resistant to 330m/1000 feet.
- ◆ Unidirectional, ratcheted 0-60 countdown and 360-degree compass heading marker bezel.
- ◆ Super-LumiNova advanced illumination system on hands & numbers.
- ◆ Scratch resistant, anti-reflective and distortion-free sapphire crystal.
- ◆ 1000 UDT diameter - 42mm; 1000XL UDT diameter - 44mm.
- ◆ Bracelet in black PVD solid 316L stainless steel.
- ◆ Expandable deployment buckle with double lock security clasp.
- ◆ Serial numbered.
- ◆ 2 year limited international warranty.

ETA Cal. 251.262

CHASE-DURER

9601 WILSHIRE BLVD. #1118

BEVERLY HILLS, CA 90210 USA

TEL: 800.544.4365 / 310.550.7280

FAX: 310.550.1830

E-MAIL: CUSTOMER-SERVICE@CHASE-DURER.COM

www.chase-durer.com