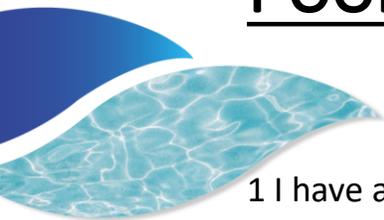




Pool twin Display, Pool twin Duo and
Wifipool
Trouble shooter

Pool twin & Wifipool Trouble shooter : What is the problem ?



1 I have a leak

- 1.1 Leaking on / around chlorine injection nipple
- 1.2 Leaking on a / around acid injection nipple
- 1.3 Leak in/around peristaltic pump

2 Instrument is not dosing

- 2.1 Peristaltic pump(s) turning but no liquid enters the dosing tube
- 2.2 Peristaltic pump(s) not turning

3 pH or redox electrodes do not calibrate (error when calibrating)

4 Uncertainty about pH on Pool Twin, Pool Duo or Wifipool :

pH does not match pH measured with a color method

- 4.1 Difference in pH $\leq 0,3$ units
- 4.2 Difference in pH $> 0,3$ units

5 Uncertainty about RX on Pool Twin, Pool Duo or Wifipool :

Redox Pool twin / wifipool does not match the chlorine measured with a color method

6 pH in swimming pool is too low or too high compared to setpoint

7 redox in swimming pool is too low or too high compared to setpoint

7.1 Redox is lower than 300 mV

7.2 Redox is 1000mV or higher

8 Instrument has been dosing too much pH-

9 Instrument has been dosing too much chlorine

9a Liquid chlorine – peristaltic pump

9b Salt electrolysis

10 Instrument is not dosing enough pH-

11 Instrument is not dosing enough chlorine

11a : Liquid Chlorine – Peristaltic pump

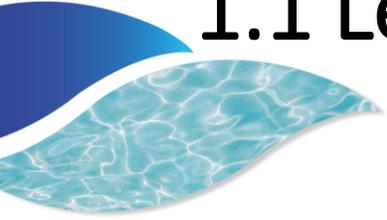
11b : Salt electrolysis

12 Error on salt electrolysis instrument

13.a salt electrolysis HS

13,b salt electrolysis LS

13 The push buttons do not work work correctly



1.1 Leaking on / around chlorine injection nipple

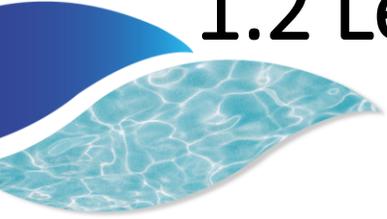
During the operation, wear safety gloves and goggles. Chlorine is corrosive. Read and follow all safety instructions on the chlorine container.

Make sure the leakage is caught in a chlorine resistant container (preferably Polypropylene) and cannot mix with a leakage on the acid injection nipple. Acid and chlorine will react to dangerous chlorine gas.

Make sure the leakage cannot drip onto humans ,equipment or floor..

Replace the injection nipple and or injector feed tube. Use filetplast to ensure water thight installation. Let filetplast dry 24 hrs, before starting up the equipment.

Preventively replace the chlorine injection nipple yearly, and use liquid chlorine containing anti lime additive.



1.2 Leaking on / around acid injection nipple

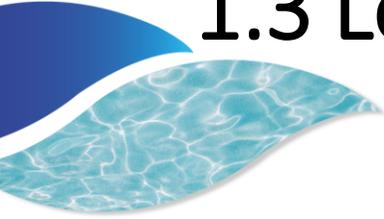
During the operation, wear safety gloves and goggles. Sulphuric acid is corrosive. Read and follow all safety instructions on the acid container.

Make sure the leakage is caught in a acid resistant container (preferably Polypropylene) and cannot mix with a leakage on the chlorine injection nipple. Acid and chlorine will react to dangerous chlorine gas.

Make sure the leakage cannot drip onto humans ,equipment or floor..

Replace the injection nipple and or injector feed tube. Use filetplast to ensure water thight installation. Let filetplast dry 24 hrs, before starting up the equipment.

Preventively replace the acid injection nipple yearly.



1.3 Leaking on / around a peristaltic pump

During the operation, wear safety gloves and goggles. Sulphuric acid and chlorine are corrosive. Read and follow all safety instructions on the acid and chlorine containers.

Make sure the leakage is caught in a acid and chlorine resistant container (preferably Polypropylene) and that acid and chlorine cannot mix. Acid and chlorine will react to dangerous chlorine gas.

Make sure the leakage cannot drip onto humans ,equipment or floor..

Replace the peristaltic pump white/yellow dosing tube, and possibly the feed and injection tube. Verify that the leak was not caused by a blockage in the injection tube.

Preventively replace the peristaltic pump white/yellow dosing tube, and the injection tube yearly.

2.1 Peristaltic Pump(s) turning but no liquid enters the dosing tube



During the operation, wear safety gloves and goggles. Sulphuric acid and chlorine are corrosive. Read and follow all safety instructions on the acid and chlorine containers.

First verify that indeed there is no liquid entering : for Pool Twin and Pool duo : Set dosing method continuous, set dosing liquid = pH- , set pH setpoint 1 unit below pH measured OR RX setpoint 200mV below redox measured . For Wifipool : select manual control and start the peristaltic pump.

Take the suction foot out of the container for 30 seconds while the pump is turning. Watch the installation during 5 minutes while the pump keeps turning. If OK, you can see a air bubble moving into the peristaltic pump and into the injection nozzle.

If no liquid is moving verify that the injection bubble is not blocked. Switch off pump, unscrew the dosing tube under the faulty peristaltic pump, place a chemical resistant container (preferably Polypropylene) under the open peristaltic pump and start the pump. If liquid is dripping, the injector is blocked.

Replace the peristaltic pump white/yellow dosing tube, and repeat the test above.

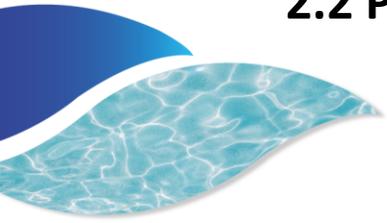
If not OK, replace the suction foot, and repeat the test above.

If still not OK, contact your supplier and mention error code 2.1

Preventively replace the peristaltic pump white/yellow dosing tube, and the injection tube yearly.

Make sure that acid and chlorine cannot mix. Acid and chlorine will react to dangerous chlorine gas.

2.2 Peristaltic pump(s) not turning



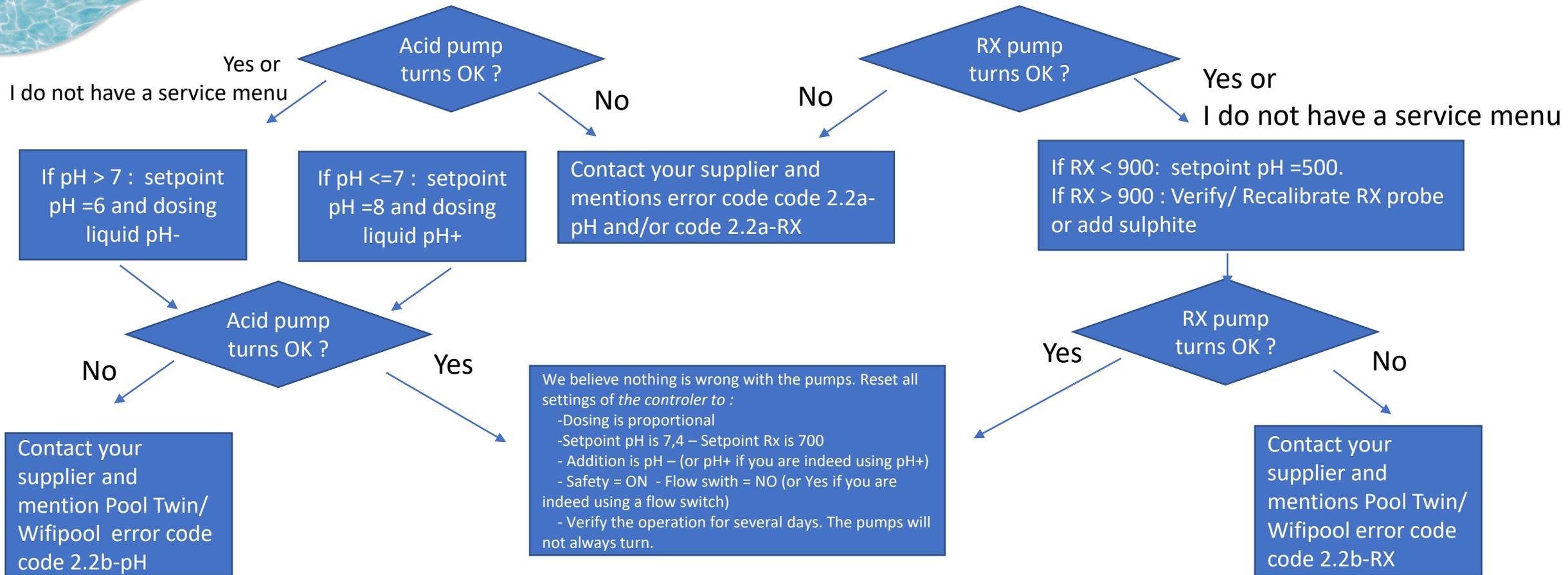
Action 1 : Verify that the switch UNDER the blue peristaltic pump is ON

Action 2 : make sure the pH is between 5,6 and 8,4, and redox is below 900mV. If necessary, adjust manually with pH+ or pH- of sulphite (redox reducer). If in doubt, recalibrate electrodes.*

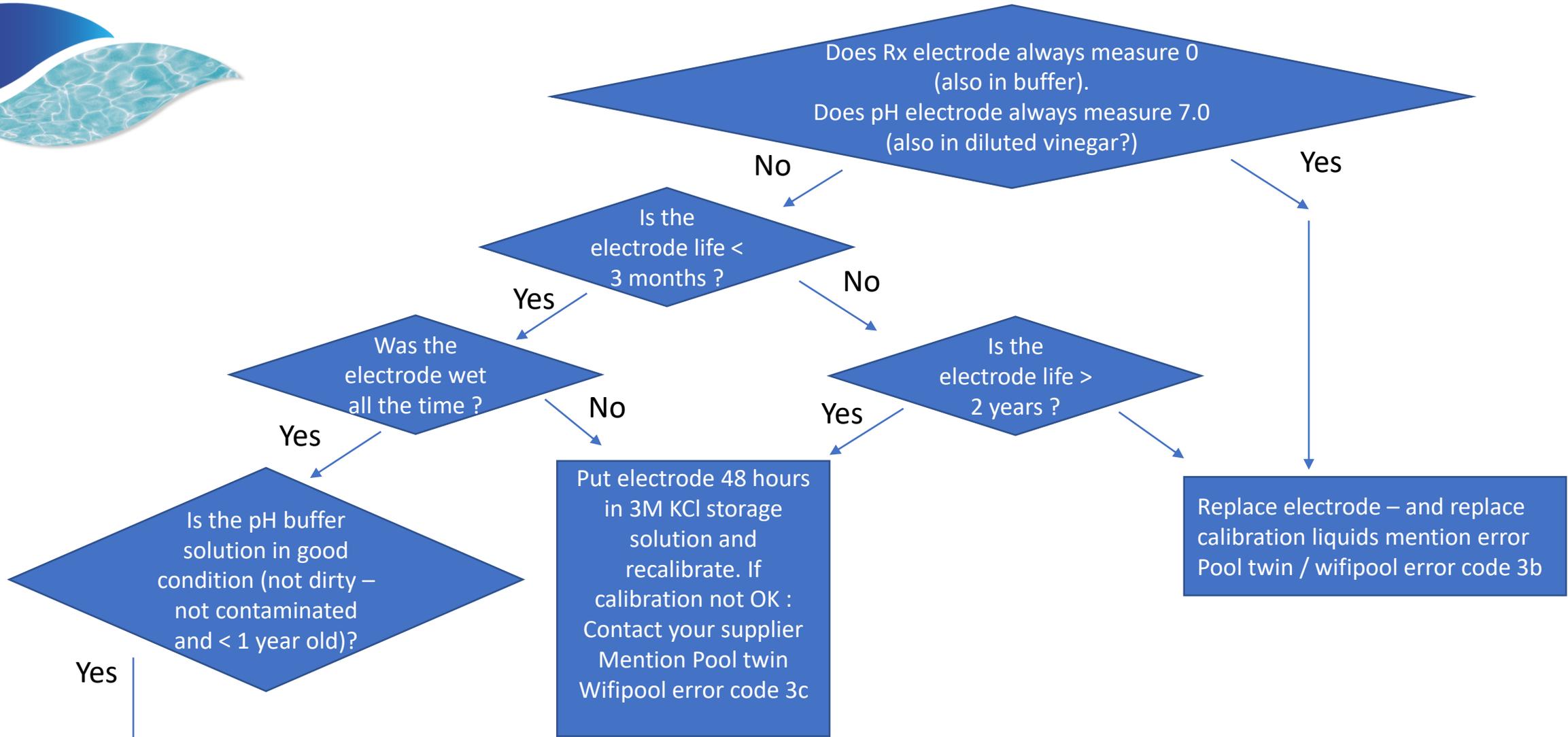
Action 3 : select dosing mode = continuous

Test 2.2a for Pool Twin/Pool Duo : (from 2021 onwards) : Go in the menu to “Service”. Enter with password “2121”. Press “start acid pump” and start “Chlorine pump”. Test 2.2a for Wifipool : Select manual control and switch the peristaltic pump on.

* If pH < 5,5, or redox > 900 goto page **Trouble shooter Page 1 : What is the problem ?**



3 pH or RX electrodes do not calibrate (error when calibrating)



Contact your supplier. Send faulty electrode en a envelope in protection liquid in envelope to your supplier. Mention Pool twin / Wifipool error code 3a and the supplier’s customer service reference number.

Put electrode 48 hours in 3M KCl storage solution and recalibrate. If calibration not OK : Contact your supplier Mention Pool twin Wifipool error code 3c

Replace electrode – and replace calibration liquids mention error Pool twin / wifipool error code 3b

4 Uncertainty about pH on Pool Twin, Pool Duo or Wifipool : pH does not match pH measured with a color method

4.1 Difference in pH $\leq 0,3$ units



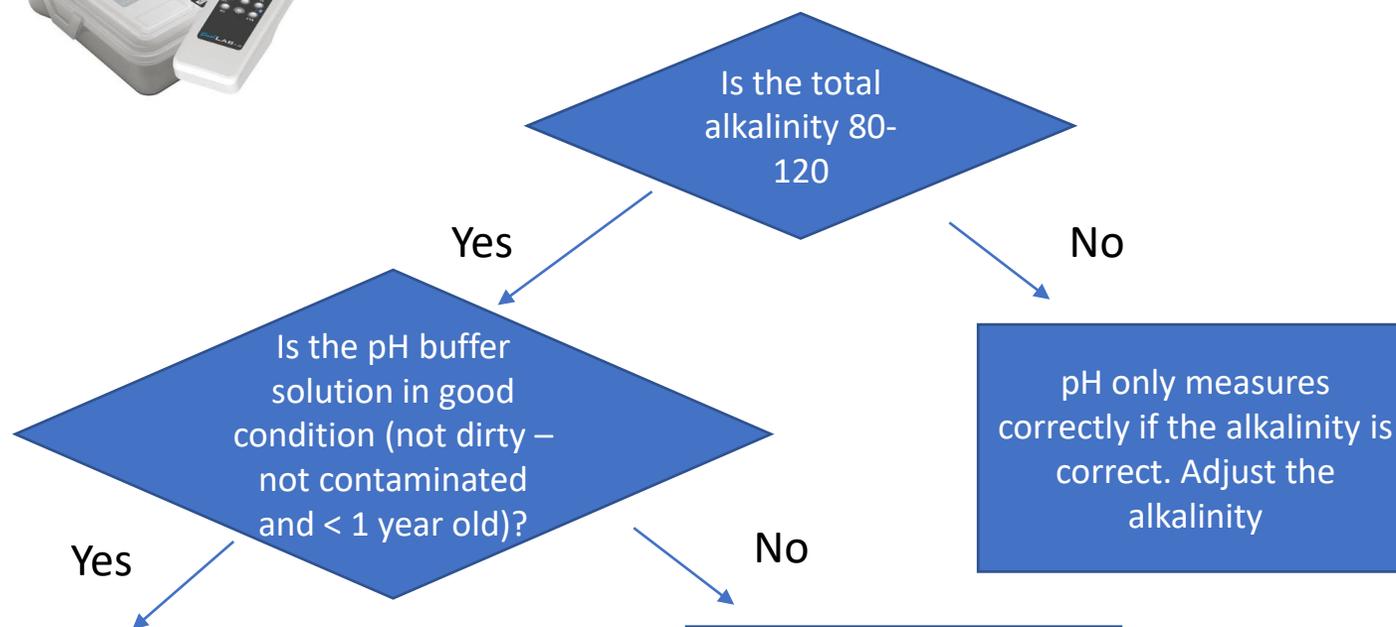
Action 1 : Measure Total alkalinity with a high quality color method style Poollab.

If

such a instrument : Believe the Pool twin result

Do not use a instrument based on drops of strips such as Aquac

OK



Recalibrate and believe the Pool Twin / Pool duo / Wifipool measurement if difference $\leq 0,3$ (PS : This is the advice of supplier of a high quality color measurement). If difference is $\geq 0,4$ goto page 3.2 If pH electrode always measures 7,0 (also in diluted vinegar) : Change electrode and report Pool Twin / Wifipool error 4.1

68 41 84 29

4 Uncertainty about pH on Pool Twin, Pool Duo or Wifipool : pH does not match pH measured with a color method

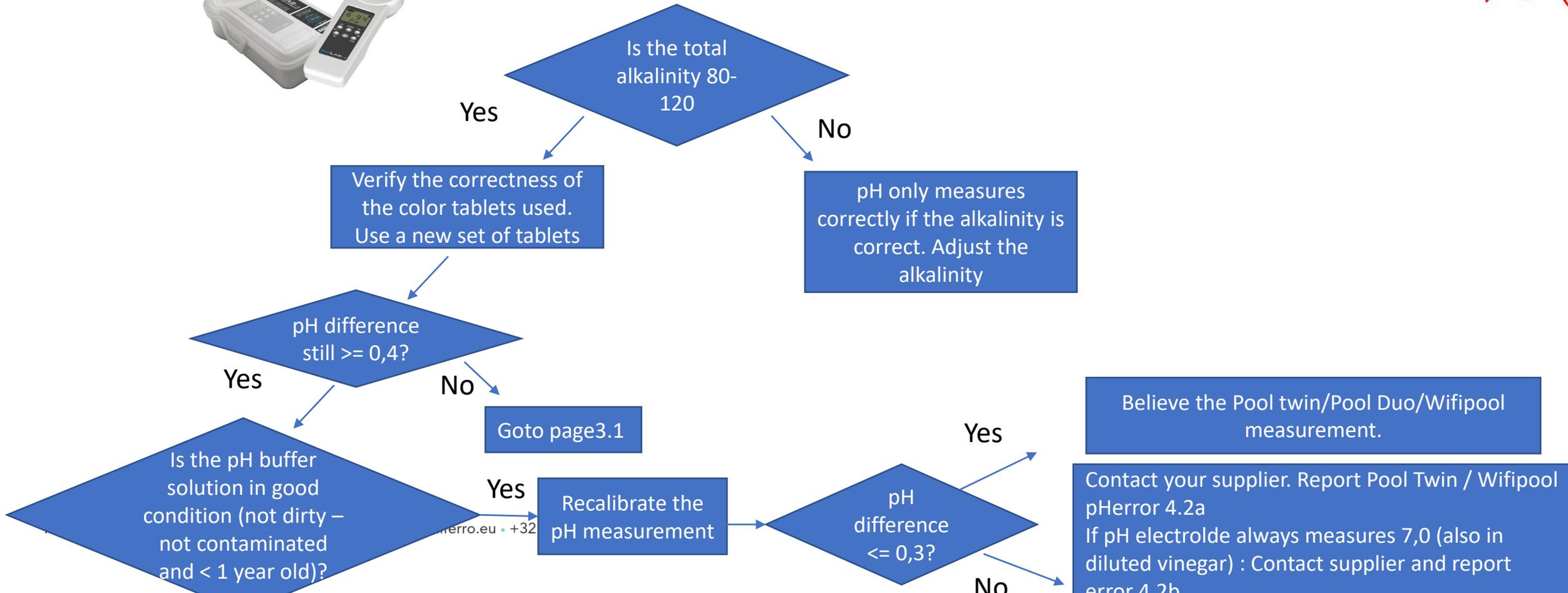
4.2 Difference in pH $\geq 0,4$ units

Action 1 : Measure Total alkalinity with a high quality color method style Poollab.

If you do not have such a instrument : Believe the Pool twin result

Do not use a instrument based on drops of strips such as Aquacheck

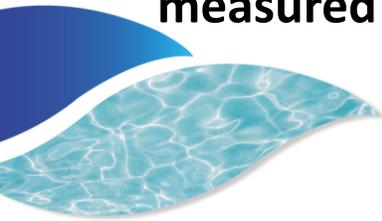
OK



5 Uncertainty about RX on Pool Twin, Pool Duo or Wifipool : Redox does not match the chlorine measured with a color method

Action 1 : recalibrate the Rx probe and verify if problem persists

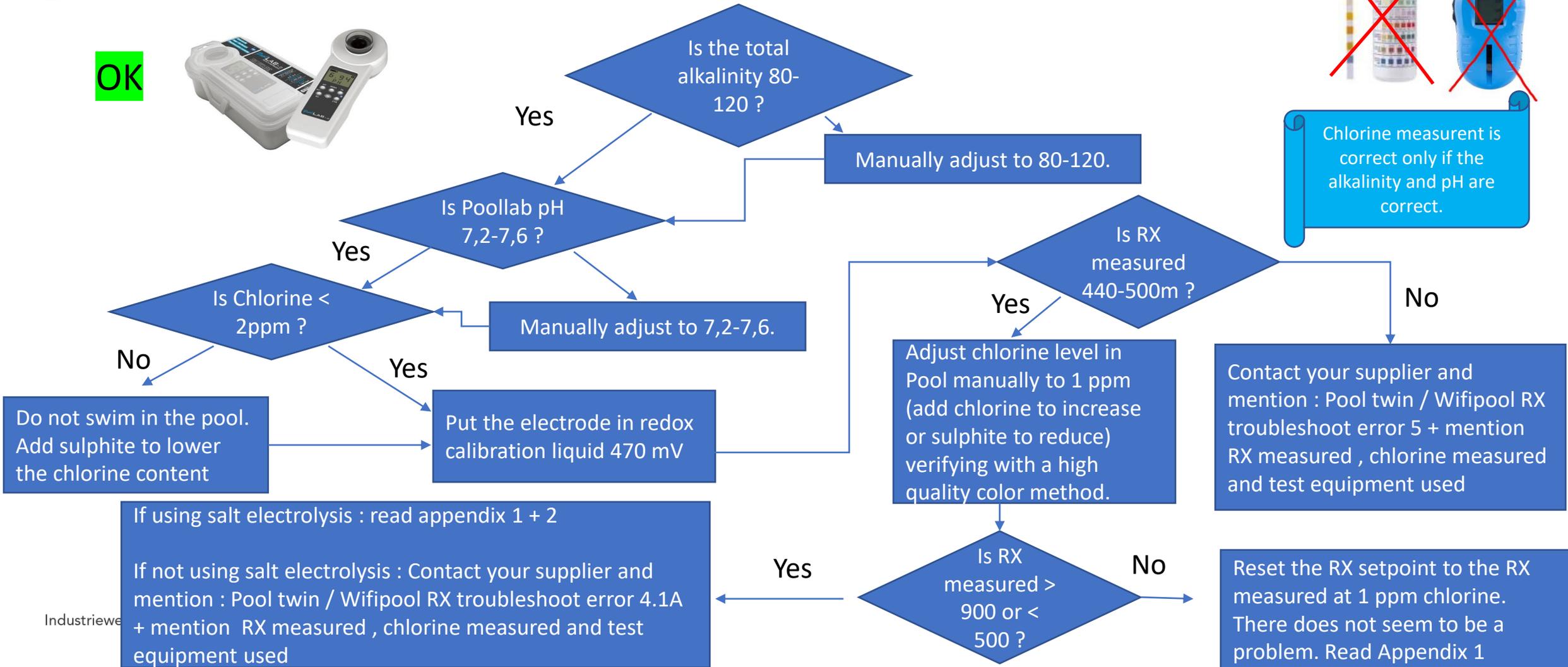
Action 2 : Measure Total alkalinity / pH and Chlorine level with a high quality color method style Poollab.



OK



Chlorine measurement is correct only if the alkalinity and pH are correct.



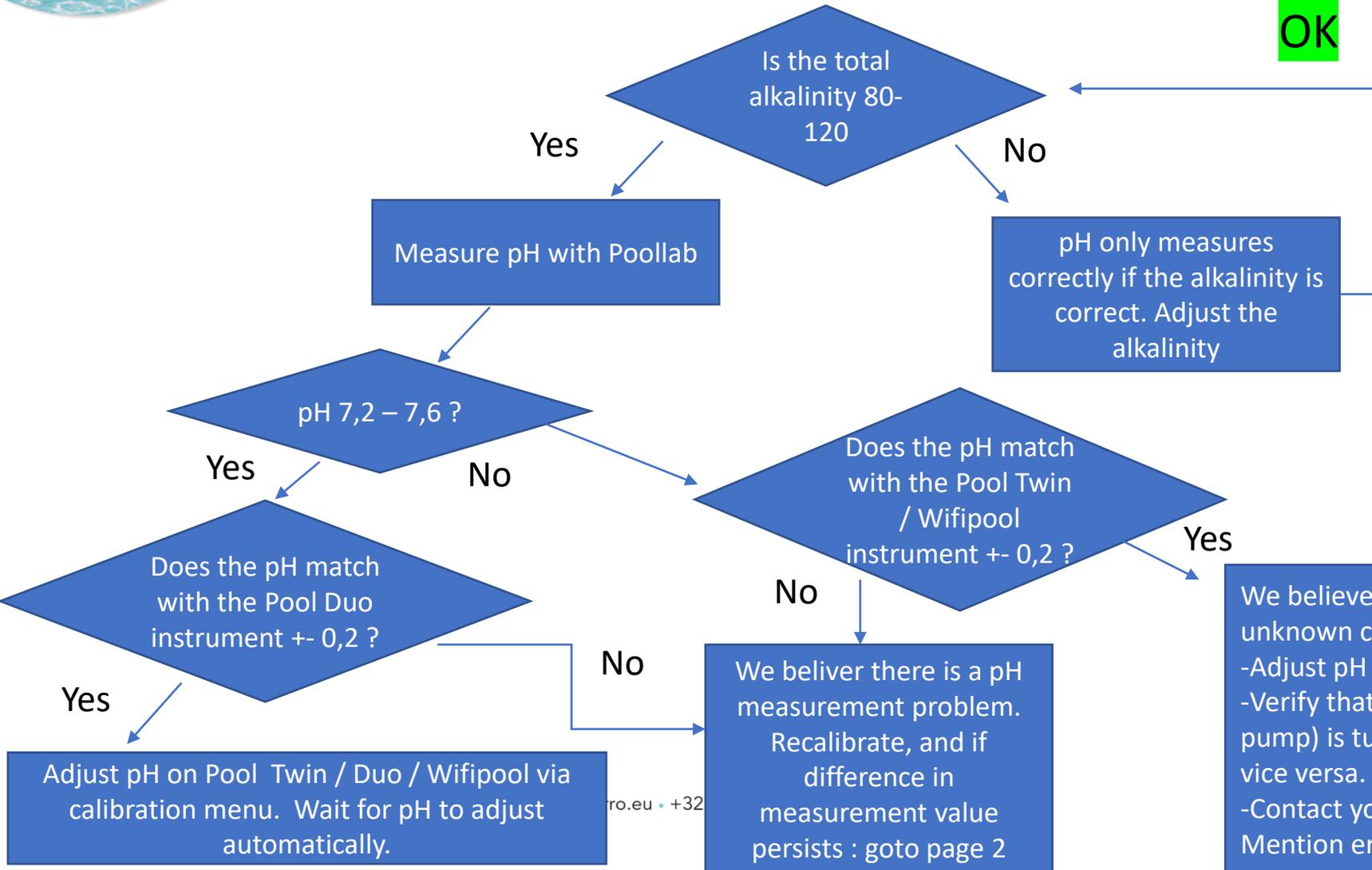
6 pH in swimming pool is too low or too high compared to setpoint

Action 1 : Verify that pH and Chlorine drums have not been switched.

Action 2 : Measure the values with a high quality color method such as the Poollab.



OK

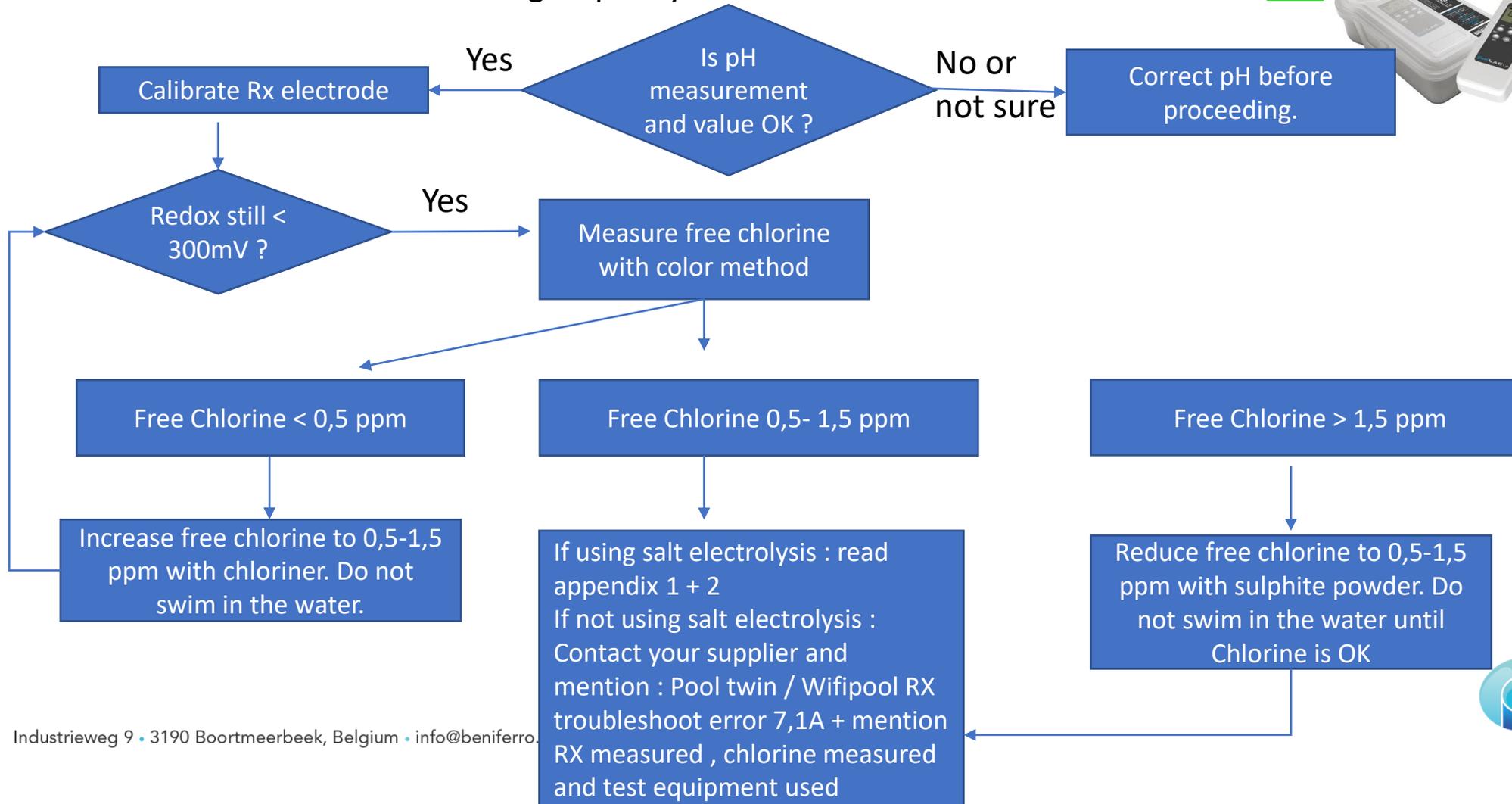


7 redox in swimming pool is too low or too high compared to setpoint

7.1 Redox is 300 mV or lower

Measure the values with a high quality color method such as the Poollab.

OK

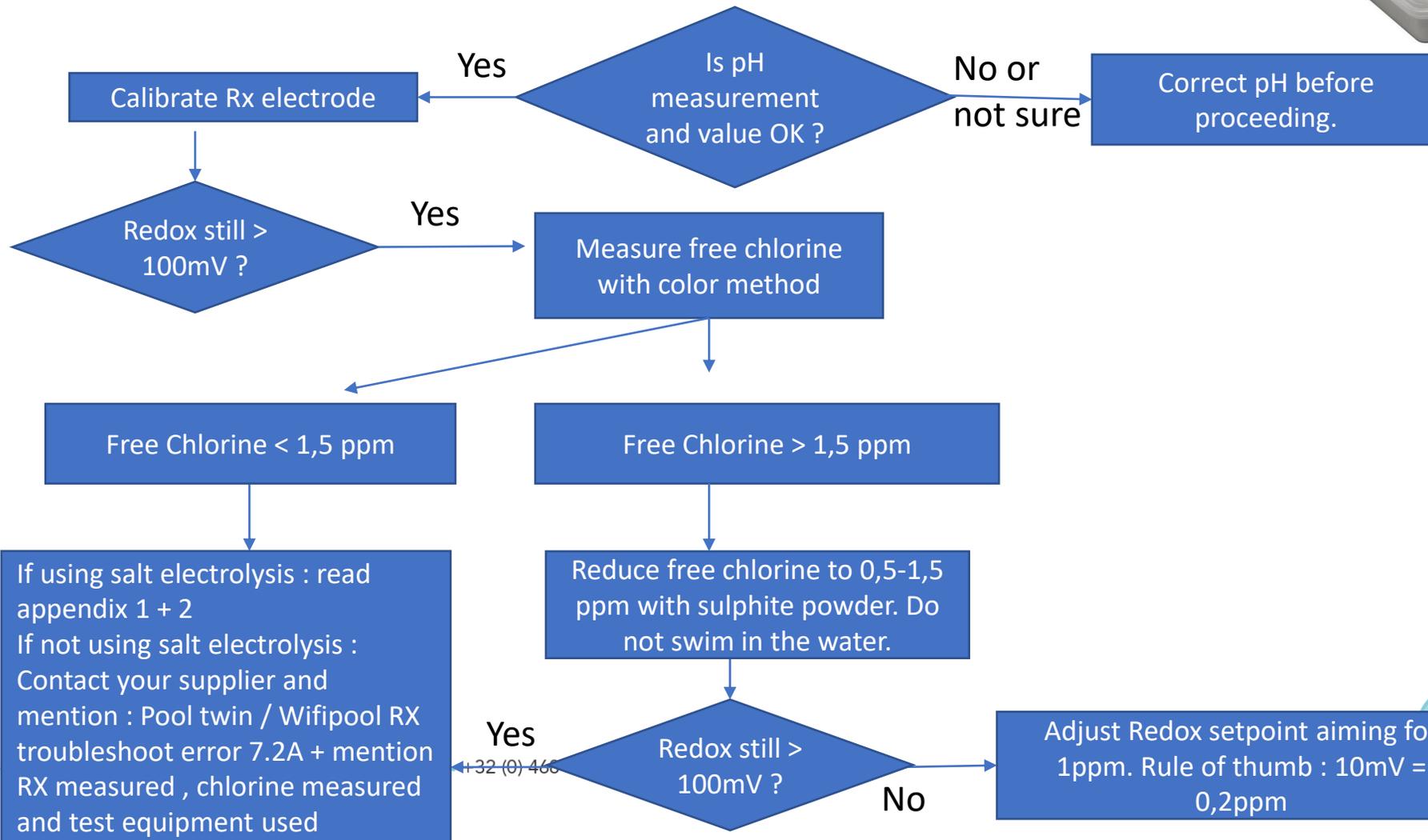


7 redox in swimming pool is too low or too high compared to setpoint

7.2 Redox is 1000mV or higher

Measure the values with a high quality color method such as the Poollab.

OK

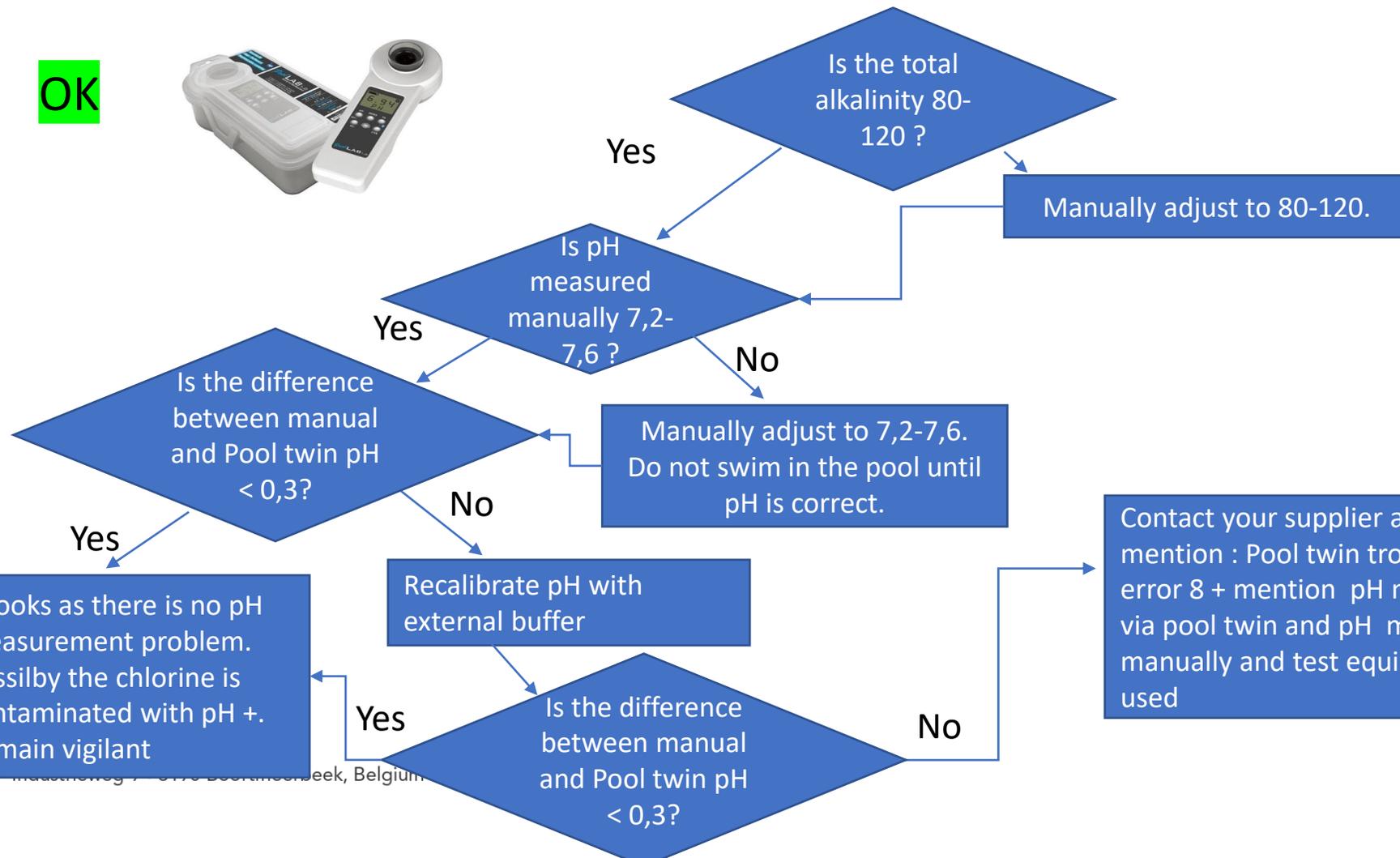


8 Instrument has been dosing too much pH- or pH+

Action 1 : Verify if the acid / chlorine container or pumps are not switched. Acid pump = left, chlorine pump is right.
 (Set dosing method continuous, and set pH setpoint 1 unit below pH measured and RX setpoint 100mV below redox measured .
 The pH pump – and only the pH pump- will turn).

Action 2 : Verify pool status as indicated below.

OK



pH measurent is correct only if the alkalinity is correct.

9a Instrument has been dosing too much chlorine (Peristaltic pump)

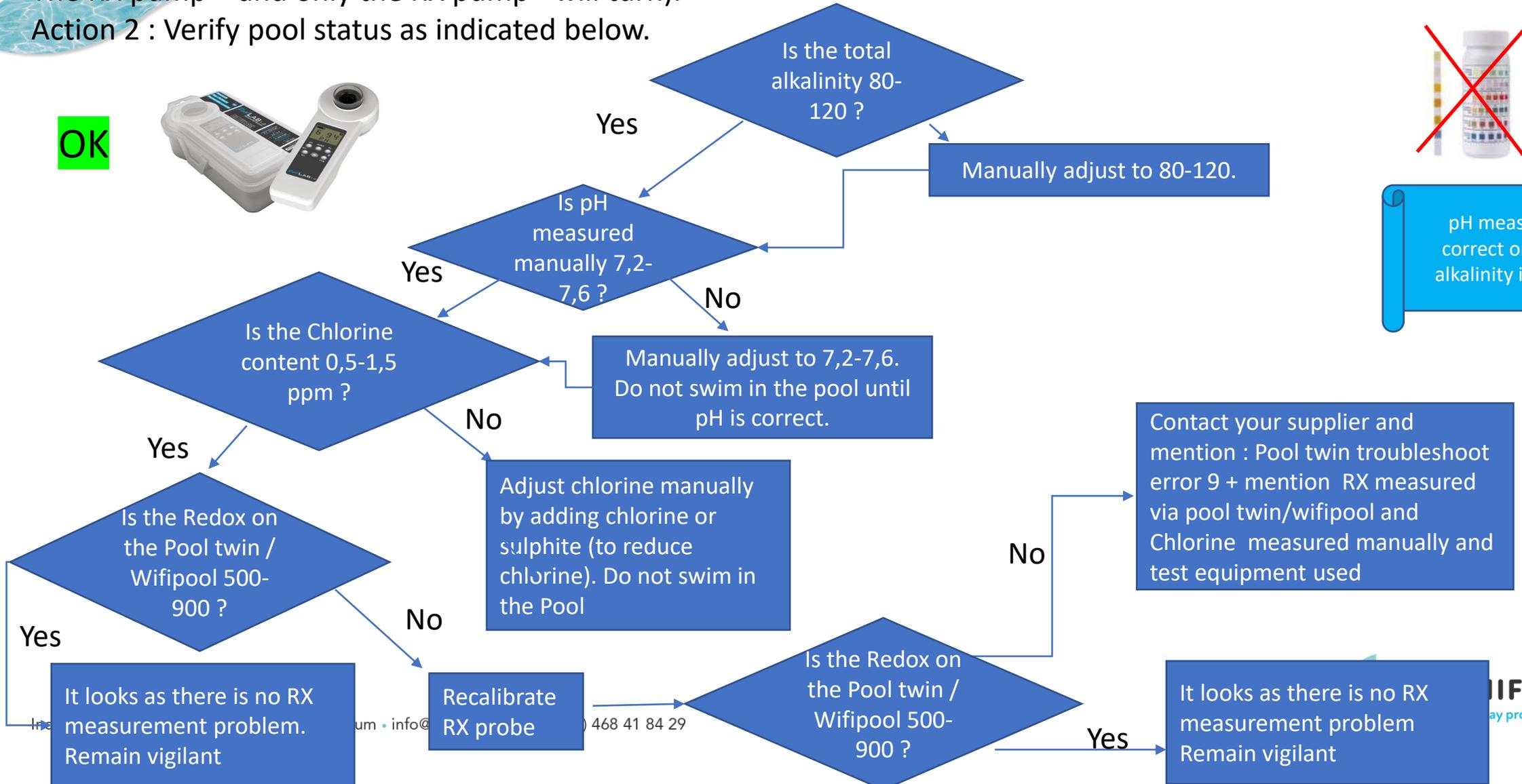
Action 1 : Verify if the acid / chlorine container or pumps are not switched. Acid pump = left, chlorine pump is right.
 (Set dosing method continuous, and set pH setpoint 1 unit above pH measured and RX setpoint 100mV above redox measured
 The RX pump – and only the RX pump- will turn).

Action 2 : Verify pool status as indicated below.

OK



pH measurement is correct only if the alkalinity is correct.



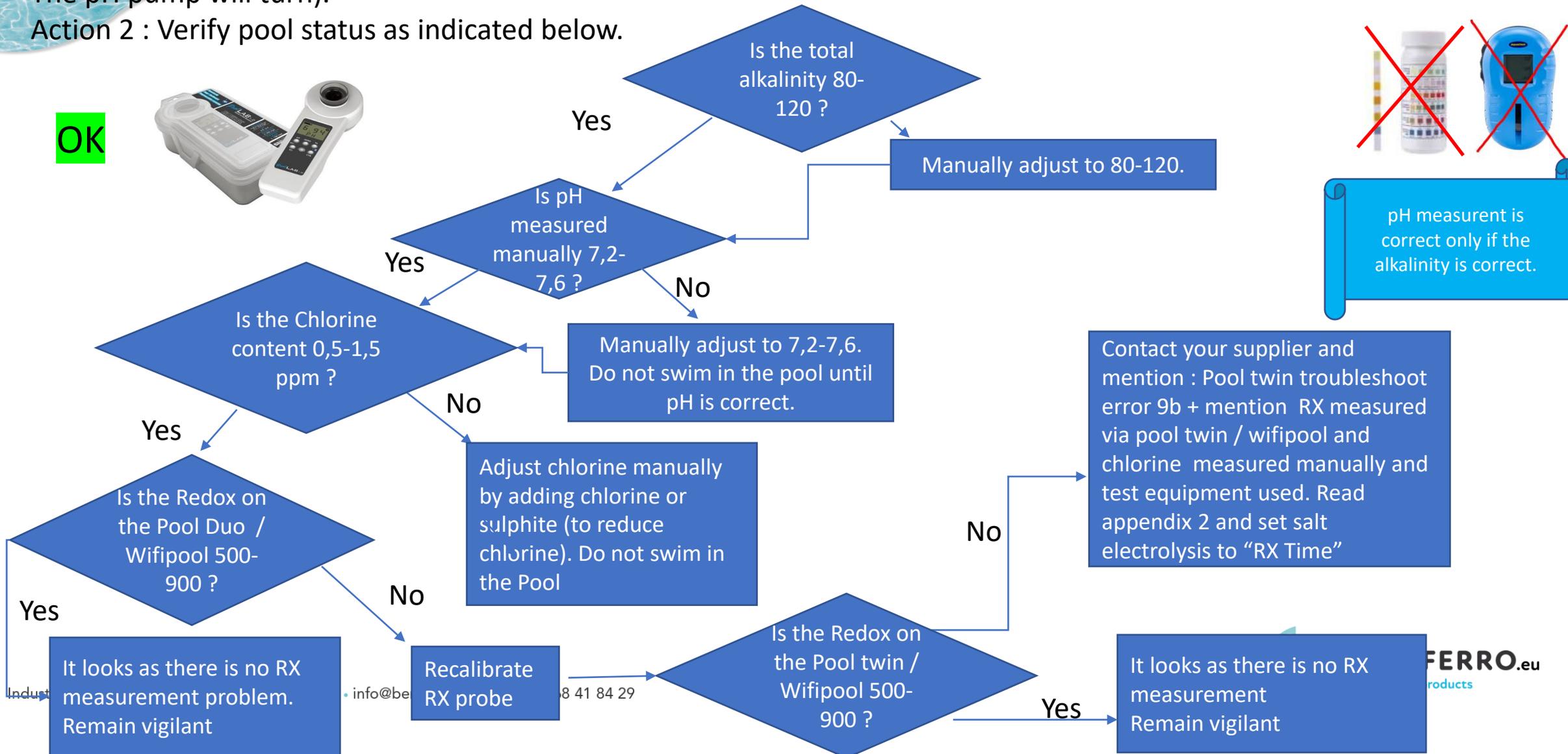
9b Instrument has been dosing too much chlorine (Salt electrolysis)

Action 1 : Verify if the acid / electrolysis electricity wires are not switched. (Set dosing method continuous, and set pH setpoint 1 unit below pH measured and RX setpoint 100mV above redox measured . The pH pump will turn).

The pH pump will turn).

Action 2 : Verify pool status as indicated below.

OK



pH measurement is correct only if the alkalinity is correct.

10 Instrument has not been dosing enough pH- : pH is too high

Verify if the acid chlorine container or pumps are not switched. Acid pump = left, chlorine pump is right.

Verify pH pump is working. Set dosing method continuous, set dosing liquid = pH- , set pH setpoint 1 unit below pH measured and RX setpoint 200mV below redox measured .

Nothing wrong with the pump or controls.
Take the suction foot out of the container for 30 seconds while the pump is turning.
Watch the installation during 5 minutes while the pump keeps turning.

yes

Is pH pump = (left pump) and only pH pump turning ?

No

Contact your supplier and mention error code 10.1

Do you see a air bubble flowing throught the suction/injection lines ?

yes

Nothing wrong with the Pool Twin. Consider to extend the operating time. Reste settings to :
dosing method = PROP , set dosing liquid = pH- , set pH setpoint = 7,4 and RX setpoint to original setpoint.
Consider dosing pH- manually to speed upreaching the equilibrium

No

There is a blockage in Suction nozzle, suction lines, Peristaltip pump tube or injection nozzle. Verify these lines one per one. Wear the appropriate protection equipment.

8 41 84 29

11a Instrument has not been dosing enough Chlorine : RX is too low – PERISTALTIC PUMP

Verify if the acid chlorine container or pumps are not switched. Acid pump = left, chlorine pump is right.
Verify that the ON-OFF switch of the peristaltic pump is ON

Verify RX pump is working. Set dosing method continuous, set dosing liquid = pH- , set pH setpoint 1 unit below pH measured and RX setpoint 200mV above the redox measured .

Nothing wrong with the pump or controls.
Take the suction foot out of the container for 30 seconds while the pump is turning.
Watch the installation during 5 minutes while the pump keeps turning.

yes

Is RX pump = (right pump) and only RX pump turning ?

No

Goto trouble shooter 2,2

Do you see a air bubble flowing throught the suction/injection lines ?

No

There is a blockage in Suction nozzle, suction lines, Peristaltic pump tube or injection nozzle. Verify these lines one per one. Wear the appropriate protection equipment.

yes

Verify chlorine content with a high quality color measurement (such as Pool lab)

Chlorine content 0,5-1,5 ppm?

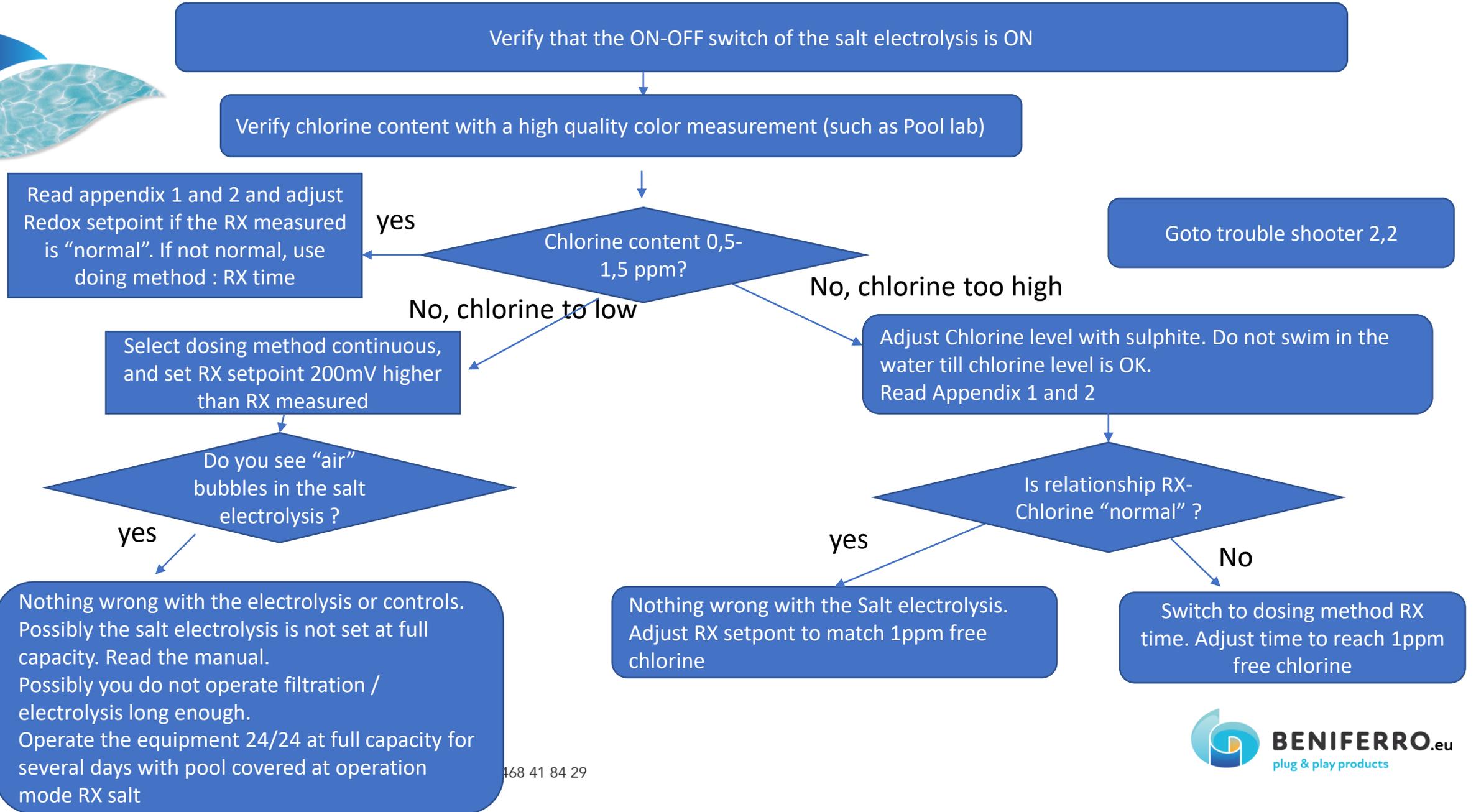
yes

Nothing wrong with the Pool Twin. Consider to extend the operating time. Reste settings to :
dosing method = PROP , set dosing liquid = pH- , set pH setpoint = 7,4 and RX setpoint to original setpoint. Consider dosing Chlorine manually to speed upreaching the equilibrium

No

Goto trouble shooter 5

11b Instrument has not been dosing enough Chlorine : RX is too low – SALT ELECTROLYSIS



12 Salt electrolysis error codes

12.a High salt

Instrument is not working at all :

- Verify that the Redox setpoint and dosing method are correct. In mode RX salt, the electrolysis will be shutting down during pH dosing and pH/RX measurement cycle. Watch the instrument for 6 minutes
- Press the button (standby/on)

Error code 05 : not enough salt

- Increase the salt in the pool
- If unsuccessful : decrease chlorine production by reducing the salt productions (press “-” on the instrument) until the alarm disappears.

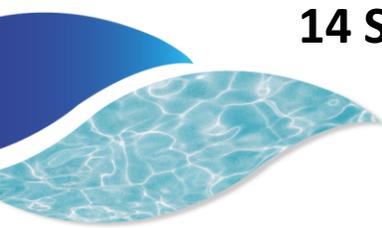
Error code E3 : not enough flow

- Increase the flow over the instrument.

Error code E8 : this code will appear shortly when the instrument is shutting down for the measurement cycle. It will disappear from itself. No action required.

E9 en Ea : change the electrolysis cell

Other errors : see manual



14 Salt electrolysis error codes

14.b Low salt

Attention : setting parameters incorrectly can cause damage to the instrument.

The instrument is factory set to CE (commande extérieure / external command). If this is changed (via the menu on the electrolysis equipment), the instrument can break down.

If instrument is working (100% on display screen), the instrument shows a figure from 0 to 10. This is the chlorinator intensity, and usually it has to be set at 10.

Instrument is not working at all :

- Verify that the Redox setpoint and dosing method are correct. In mode RX salt, the electrolysis will be shutting down during pH dosing and pH/RX measurement cycle. Watch the instrument for 6 minutes
- Press the button (standby/on)

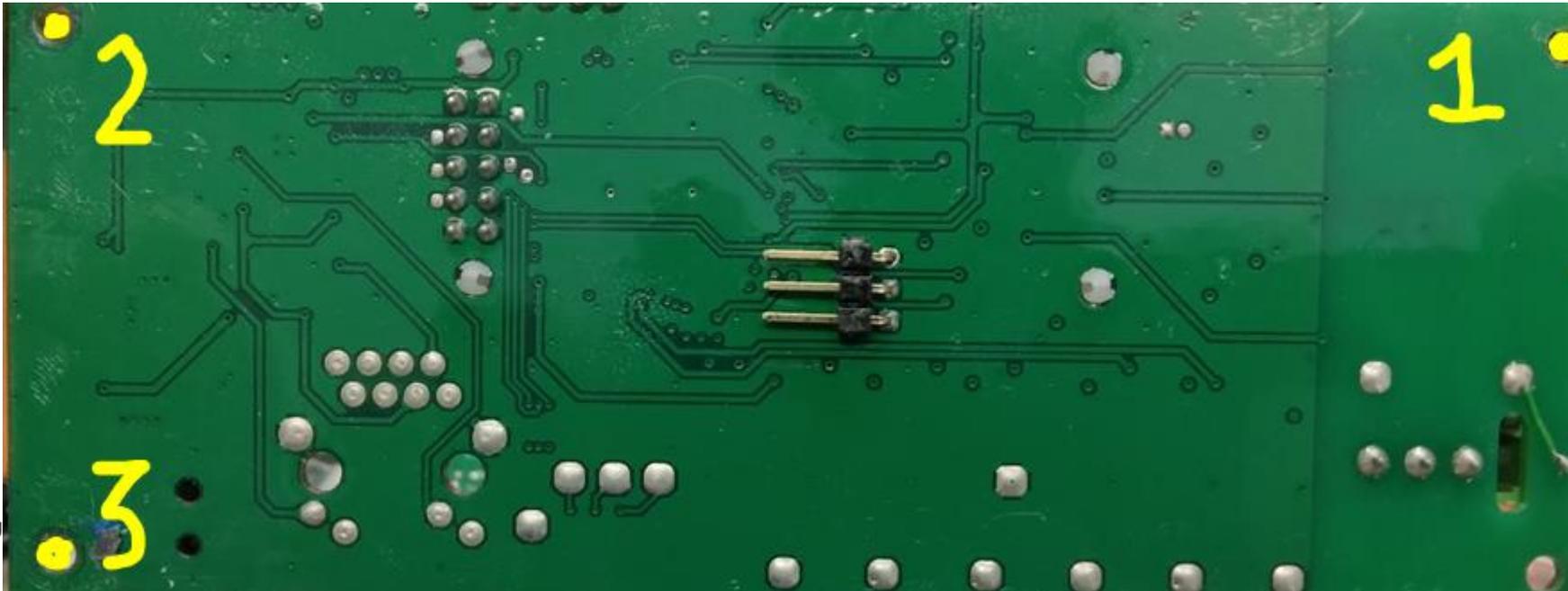
13 Push buttons does not work correctly

Unscrew the blue cover of the control unit

Untighten $\frac{1}{4}$ turn screw 1 and tighten $\frac{1}{4}$ turn screw 2 and 3

If this does not work : repeat the operation once more.

If the buttons stil do not work : contact your supplier, , mentioning error code 7



Appendix 1 : relationship Chlorine-Redox

The Rx (redox) is a measure of the chlorine content (oxidation capacity) of the pool water. The higher the Rx, the higher the chlorine content. Below is a table which shows the ratios between mV and pH and the corresponding ppm free Chlorine. For example, your device has the following values on the screen: pH 7.2 and redox of 740 then your pool water has a chlorine content of 1.2 ppm.

Attention, this table is not always correct.

Due to products such as flocculants, wall cleaner, settling agents, sulphates, copper sulphate, extremely dirty water (chloramines) ... , due to electromagnetic interference and/or a non-ideal grounding, an Rx of 700-750 mV may NOT correspond to a chlorine content of 1-1.5ppm. Often this is a temporary phenomenon that occurs mainly when salt electrolysis is used. See appendix 2

A colour measurement with a solid device (e.g. Pool lab ZWMX1060), gives the best indication of the chlorine content in the pool. The correct manner to set the RX setpoint is :

- 1 Adjust Chlorine content in the pool to 1 ppm
- 2 Record the Redox when your pool has 1 ppm Chlorine and pH 7,2-7,6.
- 3 Set the RX setpoint to the Redox recorded at 1ppm chlorine, pH 7,2-7,6

Verify the manual on Beniferro.eu.

Free Chlorine ORP/mV vs pH

pH	6,9	7	7,2	7,3	7,4	7,5	7,6	7,7	7,8	7,9	8	8,1	8,2	ppm
mV	507	505	502	500	499	497	496	494	493	491	490	488	487	0,2
mV	561	558	553	550	548	546	544	541	539	536	534	532	529	0,3
mV	599	596	590	586	583	580	577	574	571	568	565	562	559	0,4
mV	629	625	618	615	611	607	604	600	597	593	590	586	583	0,5
mV	652	648	640	637	632	629	625	621	617	613	610	605	602	0,6
mV	663	658	650	646	642	638	634	630	626	622	618	614	610	0,65
mV	673	669	660	656	651	647	643	639	635	630	626	622	618	0,67
mV	682	677	668	664	660	663	651	647	642	638	634	629	625	0,75
mV	690	686	677	672	668	655	659	654	650	645	641	636	632	0,8
mV	698	694	684	680	675	670	666	661	657	652	647	643	638	0,95
mV	706	702	692	687	682	677	673	668	663	658	654	649	644	0,9
mV	713	708	698	694	689	684	679	674	669	664	659	654	650	0,95
mV	720	715	705	700	695	690	685	680	675	670	665	660	655	1
mV	733	727	717	712	707	701	696	691	686	680	675	670	665	1,1
mV	744	739	728	722	717	712	706	701	695	690	685	679	674	1,2
mV	755	749	738	732	727	721	716	710	705	699	694	688	682	1,3
mV	765	759	747	742	736	730	724	719	713	707	702	696	690	1,4
mV	774	768	756	750	744	738	732	727	721	715	709	703	697	1,5
mV	790	784	771	765	759	753	747	741	735	728	722	716	710	1,7
mV	798	792	779	773	766	760	754	748	741	735	729	722	716	1,8
mV	812	805	792	785	779	773	766	760	753	747	740	734	727	2
mV	824	818	804	797	791	784	777	771	764	757	751	744	737	2,2
mV	841	834	826	813	806	800	792	785	778	771	764	757	751	2,5

Appendix 2 : Salt electrolysis RX measurement

The Rx (redox) is a measure of the chlorine content (oxidation capacity) of the pool water. The higher the Rx, the higher the chlorine content.

Below is a table which shows the ratios between mV and pH and the corresponding ppm free Chlorine. For example, your device has the following values on the screen: pH 7.2 and redox of 740 then your pool water has a chlorine content of 1.2 ppm.

Attention, this table is not always correct.

Due to products such as flocculants, wall cleaner, settling agents, sulphates, copper sulphate, extremely dirty water (chloramines) ... , due to electromagnetic interference and/or a non-ideal grounding, an Rx of 700-750 mV may NOT correspond to a chlorine content of 1-1.5ppm. Often this is a temporary phenomenon that occurs mainly when salt electrolysis is used. The deviations can be very important, and sometimes the Redox is just unmeasurable or does not correlate at all with the Chlorine content.

A colour measurement with a solid device (e.g. Pool lab ZWMX1060), gives the best indication of the chlorine content in the pool.

Switch to operation mode "salt time" until the problem disappears. This can take several weeks/months. You will have to adjust the operation time of the electrolysis, so that the free chlorine content measured with a color method is +/- 1ppm

Verify the manual on Beniferro.eu.

Free Chlorine ORP/mV vs pH

pH	6,9	7	7,2	7,3	7,4	7,5	7,6	7,7	7,8	7,9	8	8,1	8,2	ppm
mV	507	505	502	500	499	497	496	494	493	491	490	488	487	0,2
mV	561	558	553	550	548	546	544	541	539	536	534	532	529	0,3
mV	599	596	590	586	583	580	577	574	571	568	565	562	559	0,4
mV	629	625	618	615	611	607	604	600	597	593	590	586	583	0,5
mV	652	648	640	637	632	629	625	621	617	613	610	605	602	0,6
mV	663	658	650	646	642	638	634	630	626	622	618	614	610	0,65
mV	673	669	660	656	651	647	643	639	635	630	626	622	618	0,67
mV	682	677	668	664	660	663	651	647	642	638	634	629	625	0,75
mV	690	686	677	672	668	655	659	654	650	645	641	636	632	0,8
mV	698	694	684	680	675	670	666	661	657	652	647	643	638	0,95
mV	706	702	692	687	682	677	673	668	663	658	654	649	644	0,9
mV	713	708	698	694	689	684	679	674	669	664	659	654	650	0,95
mV	720	715	705	700	695	690	685	680	675	670	665	660	655	1
mV	733	727	717	712	707	701	696	691	686	680	675	670	665	1,1
mV	744	739	728	722	717	712	706	701	695	690	685	679	674	1,2
mV	755	749	738	732	727	721	716	710	705	699	694	688	682	1,3
mV	765	759	747	742	736	730	724	719	713	707	702	696	690	1,4
mV	774	768	756	750	744	738	732	727	721	715	709	703	697	1,5
mV	790	784	771	765	759	753	747	741	735	728	722	716	710	1,7
mV	798	792	779	773	766	760	754	748	741	735	729	722	716	1,8
mV	812	805	792	785	779	773	766	760	753	747	740	734	727	2
mV	824	818	804	797	731	784	777	771	764	757	751	744	737	2,2
mV	841	834	826	813	806	800	792	785	778	771	764	757	751	2,5