OPTIMA MX INT

ENG Installation instructions

CE 0120

Others langages on: http://www.bienair.com/dental_support_installation.asp

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Set

REF 1600534-001

REF 1302927

REF 1500868-001

4 x

REF 1303408

REF 1600472-001 (DMX-S) **or** REF 1600473-001 (DMX-B)

REF 1600387-001

REF 1600375-001

English

Contents

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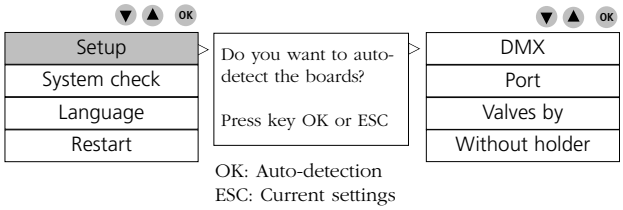
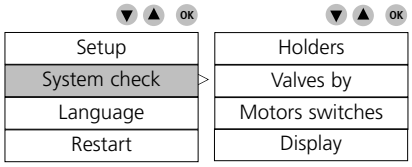
Apparatus configuration

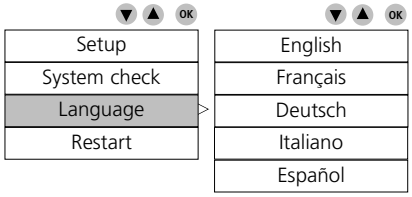
Press and hold the 3 keys simultaneously DURING power up until the integrator's menu appears



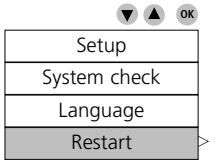
OK: Auto-detection
ESC: Current settings



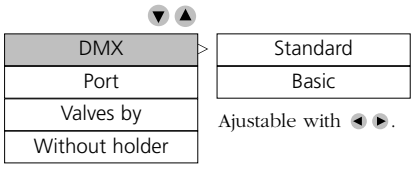
Select the testing parameter ▲ ▼
and confirm with «OK».
Return with «ESC»



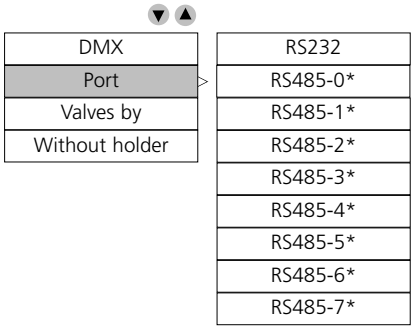
Select language required ▲ ▼
and save with «SAVE».
Return with «ESC»



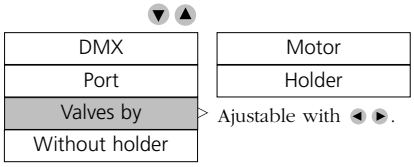
Confirm with «OK». Restarts the system.



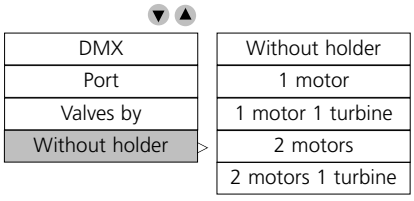
Ajustable with ◄ ►.



Ajustable with ◄ ►.
*Not available



Ajustable with ◄ ►.



Ajustable with ◄ ►.
Once finished adjustments,
confirm with «SAVE»

Configurations: see pages 24–34

1 motor, without holder
1 motor, with holder
1 motor and one turbine with light
2 motors
2 motors and one turbine with light

Set supplied

Set OPTIMA MX INT with DMX Standard kit 1 motor	**REF 1700258-001**
1 OPTIMA MX INT control unit	REF 1600534-001
1 sterilisable MX micromotor	REF 1600375-001
1 4VX hose for MX micromotor	REF 1600387-001
1 DMX Standard electronic control unit	REF 1600472-001
1 Aluminium angled bracket	REF 1302927
4 Angled bracket fixing screw	REF 1303408
1 Connection cable, 70 cm	REF 1500868

Set OPTIMA MX INT with DMX Basic kit 1 motor	**REF 1700260-001**
1 OPTIMA MX INT control unit	REF 1600534-001
1 sterilisable MX micromotor	REF 1600375-001
1 4VX hose for MX micromotor	REF 1600387-001
1 DMX Basic electronic circuit with box	REF 1600473-001
1 Aluminium angled bracket	REF 1302927
4 Angled bracket fixing screw	REF 1303408
1 Connection cable, 70 cm	REF 1500868

Set OPTIMA MX INT with DMX Standard kit 2 motors	**REF 1700259-001**
1 OPTIMA MX INT control unit	REF 1600534-001
2 sterilisable MX micromotors	REF 1600375-001
2 4VX hoses for MX micromotor	REF 1600387-001
1 DMX Standard electronic control unit	REF 1600472-001
1 PL DMS relay	REF 1500554-001
1 converter, 24 Vac / 32 Vdc - 24 Vdc	REF 1500580-001
1 Aluminium angled bracket	REF 1302927
4 Angled bracket fixing screw	REF 1303408
1 Connection cable, 70 cm	REF 1500868

Optional accessories

REF 1600591-001
Power supply (Optima Type)
5m extension. 2-wire connection

REF 1500580-001
Converter, 24 Vac / 32 Vdc - 24 Vdc

Symbols

CAUTION!
Refer to the accompanying documents

Recyclable materials

Light

Class II equipment

Technical data

OPTIMA MX Int	**REF 1600534-001**
Operating voltage	+ 5 Vdc
Operating current	85 mA
Max. input power	< 500 mW
Electromagnetic compatibility in accordance with IEC 60601-1-2	
Degree of protection IP 32 (Protected against vertically falling water drops or up to 15°)	
Dimensions (L x W x H)	147 x 96 x 34 mm
Weight	230 g

Environmental conditions
for transport and storage:
• Environmental conditions for a period of max. 15 weeks
Temperature: -25°C to +70°C
Humidity relative: 10% à 95%
Pressure atmosph.: 500 hPa to 1060 hPa
• Operating conditions
Temperature: from +10°C to +40°C

For instruments:	see Instructions:
DMX Standard REF 1600472-001	REF 2100092
DMX Basic REF 1600473-001	REF 2100093
Micromotor MX REF 1600375-001	REF 2100062
4VX & 4BVX REF 1600387-001	REF 2100053

ENG

Warning

Precautions regarding Electromagnetic Compatibility (EMC)
Medical electrical equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in the user's manual and in the present document.
The OPTIMA MX Int complies with the EMC requirements according to IEC 60601-1-2. Radio transmitting equipment, cellular phones, etc. shall not be used in the close proximity of the device since this could influence the performance of the device. Particular precaution must be considered during use of strong emission sources such as High Frequency surgical equipment and similar so that e.g. the HF cables are not routed on or near the device. If in doubt, please contact a qualified technician or Bien-Air Dental.
The OPTIMA MX Int should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the OPTIMA MX Int should be observed to verify normal operation in the configuration in which it will be used.

WARNING !
The use of accessories, transducers and cables other than those specified, with the exception of transducers and cables sold by Bien Air Dental as replacements parts for internal components, may result in increased emissions or decreased immunity of the OPTIMA MX Int.

Guidance and manufacturer's declaration - electromagnetic emissions
The OPTIMA MX Int is intended for use in the electromagnetic environment specified below.
The customer or the user of the OPTIMA MX Int should assure that it is used in such an environment.

Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group 1	The OPTIMA MX Int uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The OPTIMA MX Int is suitable for use in all Establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Not applicable	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not applicable	

Guidance and manufacturer's declaration - electromagnetic immunity

The OPTIMA MX Int is intended for use in the electromagnetic environment specified below.
The customer or the user of the OPTIMA MX Int should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Power frequency magnetic field (50/60 Hz) IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE: U_T is the a.c. mains voltage prior to application of the test level.

Guidance and manufacturer's declaration – electromagnetic immunity

The OPTIMA MX Int is intended for use in the electromagnetic environment specified below.
The customer or the user of the OPTIMA MX Int should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 V	Portable and mobile RF communications equipment should be used no closer to any part of the OPTIMA MX Int, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2,5 GHz
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m	where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey [a] should be less than the compliance level in each frequency range [b] . Interference may occur in the vicinity of equipment marked with the following symbol:

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the OPTIMA MX Int is used exceeds the applicable RF compliance level above, the OPTIMA MX Int should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the OPTIMA MX Int.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended separation distances between portable and mobile RF communications equipment and the OPTIMA MX Int

The OPTIMA MX Int is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the OPTIMA MX Int can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the OPTIMA MX Int as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	**Separation distance according to frequency of transmitter m**		
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	**80 MHz to 800 MHz** $d = 1.2\sqrt{P}$	**800 MHz to 2,5 GHz** $d = 2.3\sqrt{P}$
0.01	**0.12**	**0.12**	**0.23**
0.1	**0.38**	**0.38**	**0.73**
1	**1.2**	**1.2**	**2.3**
10	**3.8**	**3.8**	**7.3**
100	**12**	**12**	**23**

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

ENG

Assembly

IMPORTANT!

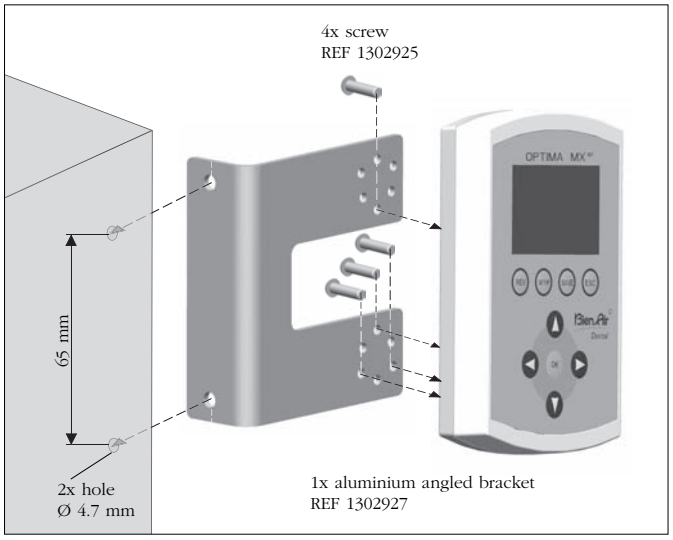
Before use, please read these product instructions and the operating instructions REF 2100140 carefully.
Switch them on only when the system is ready for use.

Note! In order to conform to the IEC 60601-1-2 standards, take into account the different routes of the wires through the unit (bend, fold, section etc) and only use the transformer provided with the kit or the unit's power supply.

In order to maintain warranty, this device must be installed with the greatest care. Follow all the necessary instructions.

Fixation

The unit is supplied with an angled mounting bracket REF 1302927 enabling the unit to be fitted on the right or left side of a dental unit.



To fit on the left side, turn the angled mounting bracket through 180°.

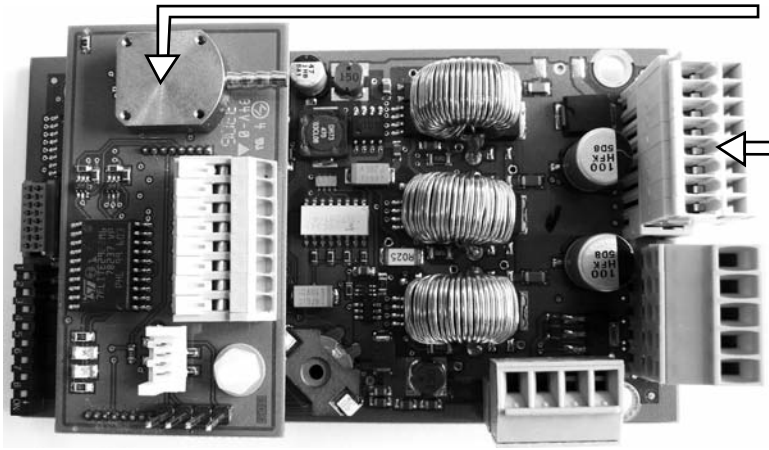
Drawings

Others langages on: http://www.bienair.com/dental_support_installation.asp

OPTIMA MX Int with DMX Standard

	1 motor (without holder)	1 motor	1 motor & 1 turbine light	2 motors	2 motors & 1 turbine light
32VDC (130W peak) available	N°1 (Option A)	N°2 (Option A)	N°3 (Option A)	N°4 (Option A)	N°5 (Option A)
24VAC (130W peak) available	N°1 (Option B)	N°2 (Option B)	N°3 (Option B)	N°4 (Option B)	N°5 (Option B)
No power supply available	N°1 (Option C)	N°2 (Option C)	N°3 (Option C)	N°4 (Option C)	N°5 (Option C)

For all DMX-S connecting diagrams:



Connect a pneumatic footcontrol (0 – 300 kPa)

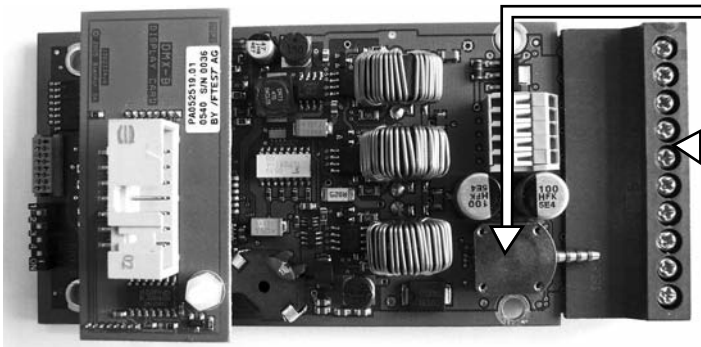
OR

Connect an electrical footcontrol (0 – 5 Vdc)

OPTIMA MX Int with DMX Basic

	1 motor (without holder)	1 motor	1 motor & 1 turbine light	2 motors	2 motors & 1 turbine light
32VDC (130W peak) available	N°6 (Option A)	N°7 (Option A)	N°8 (Option A)	N°9 (Option A)	N°10 (Option A)
24VAC (130W peak) available	N°6 (Option B)	N°7 (Option B)	N°8 (Option B)	N°9 (Option B)	N°10 (Option B)
No power supply available	N°6 (Option C)	N°7 (Option C)	N°8 (Option C)	N°9 (Option C)	N°10 (Option C)

For all DMX-B connecting diagrams:

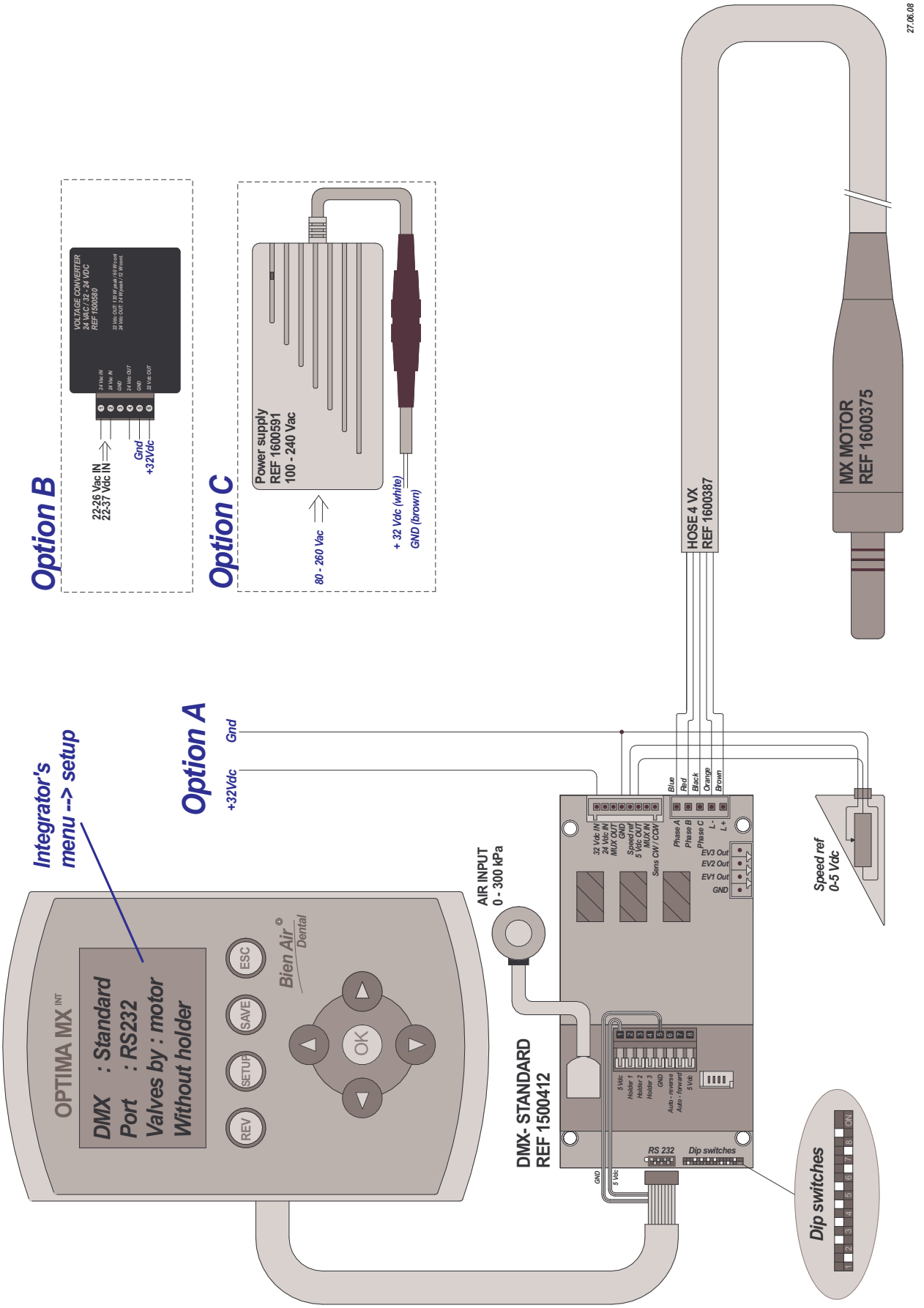


Connect a pneumatic footcontrol (0 – 300 kPa)

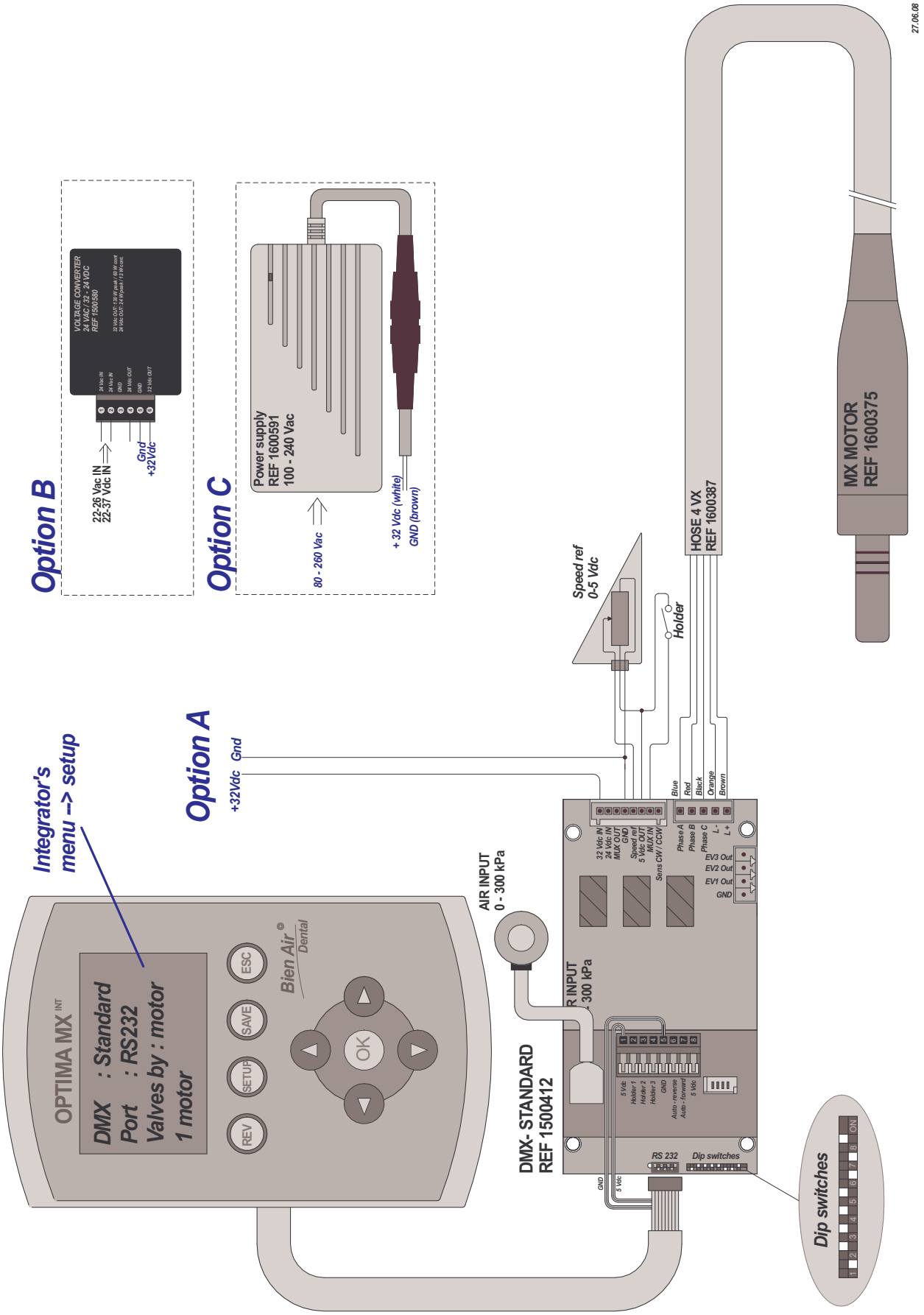
OR

Connect an electrical footcontrol (0 – 5 Vdc)

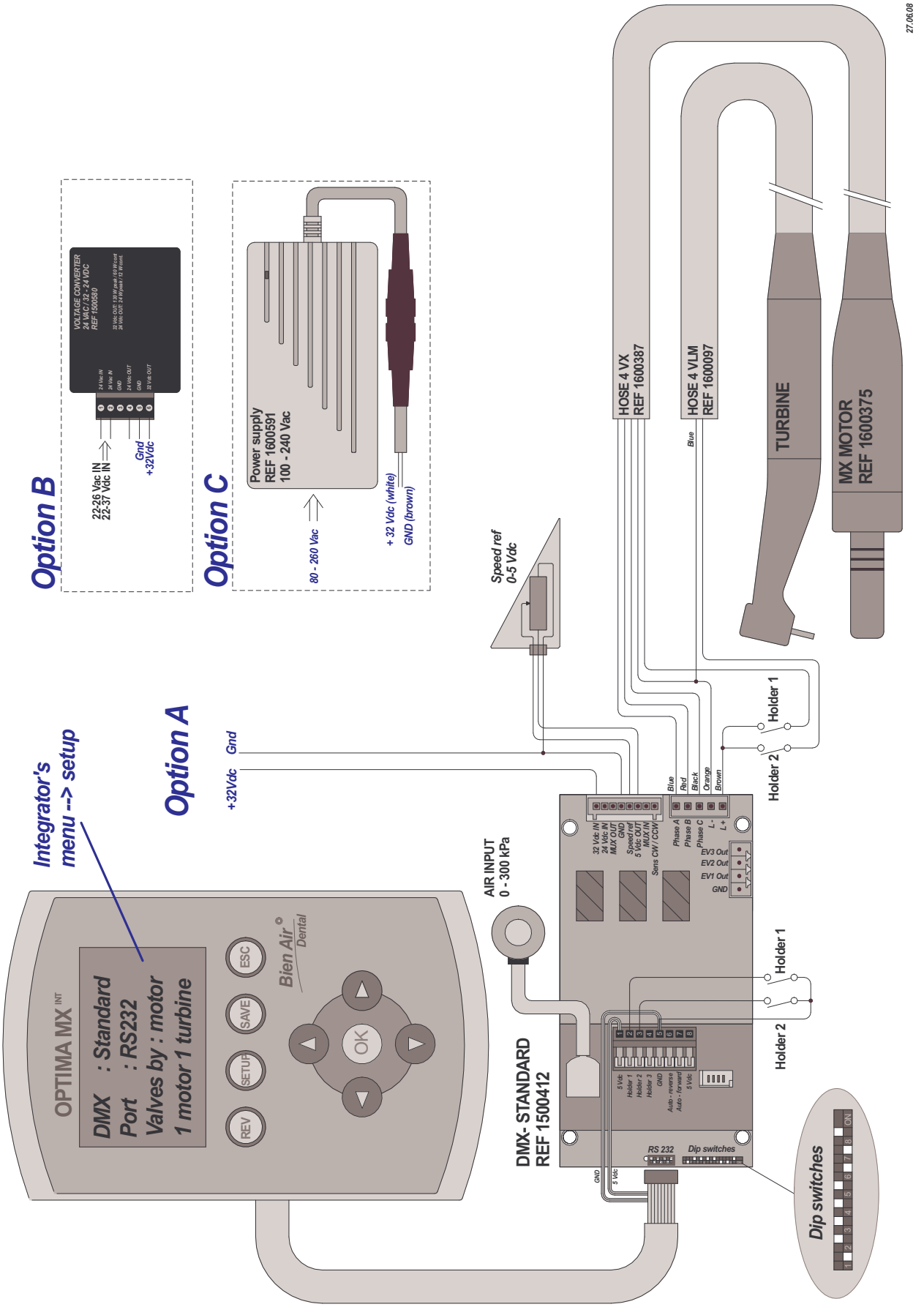
N°1- Drawing OPTIMA MX Int connection with DMX Standard 1 motor without holder



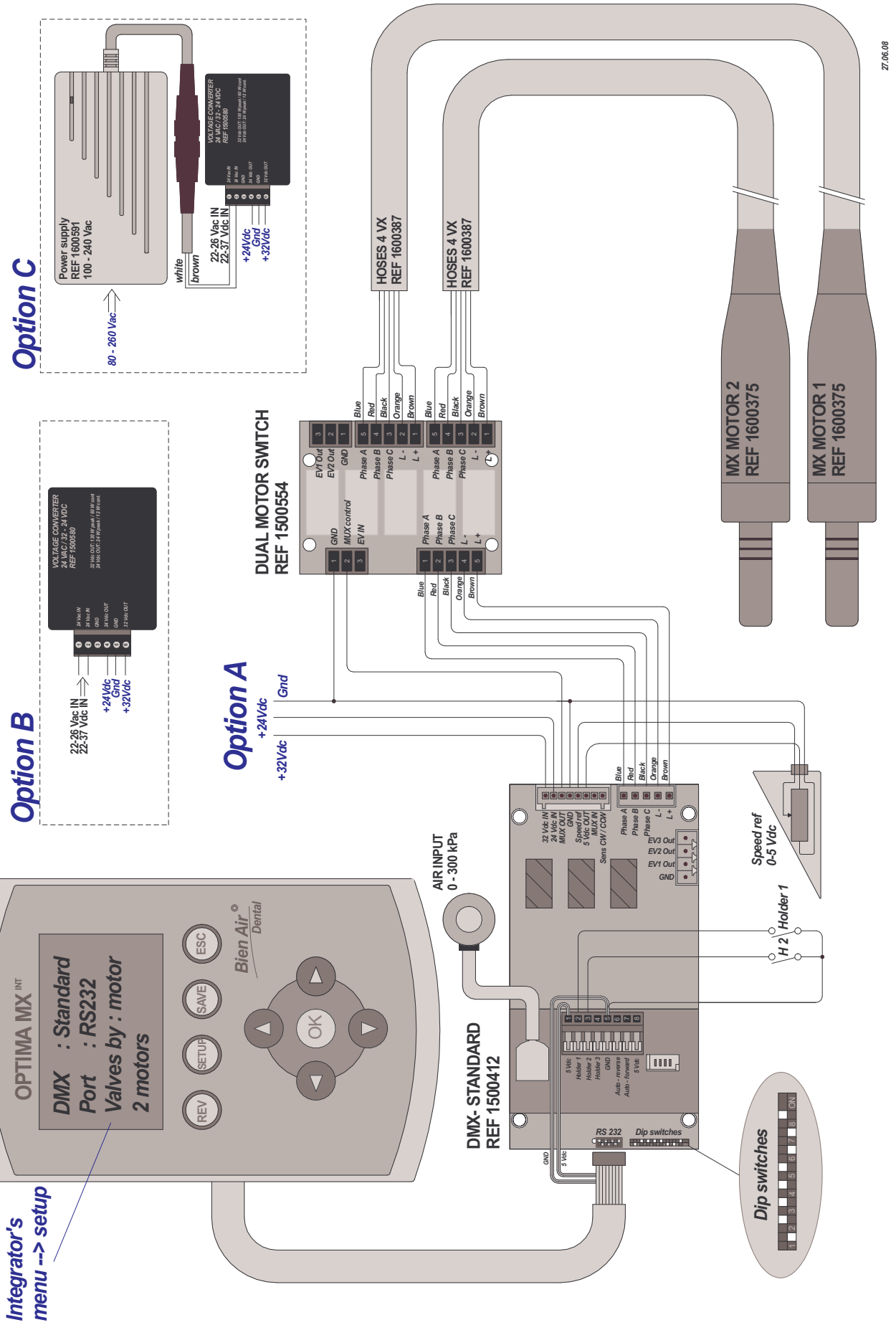
N°2 - Drawing OPTIMA MX Int connection with DMX Standard 1 motor



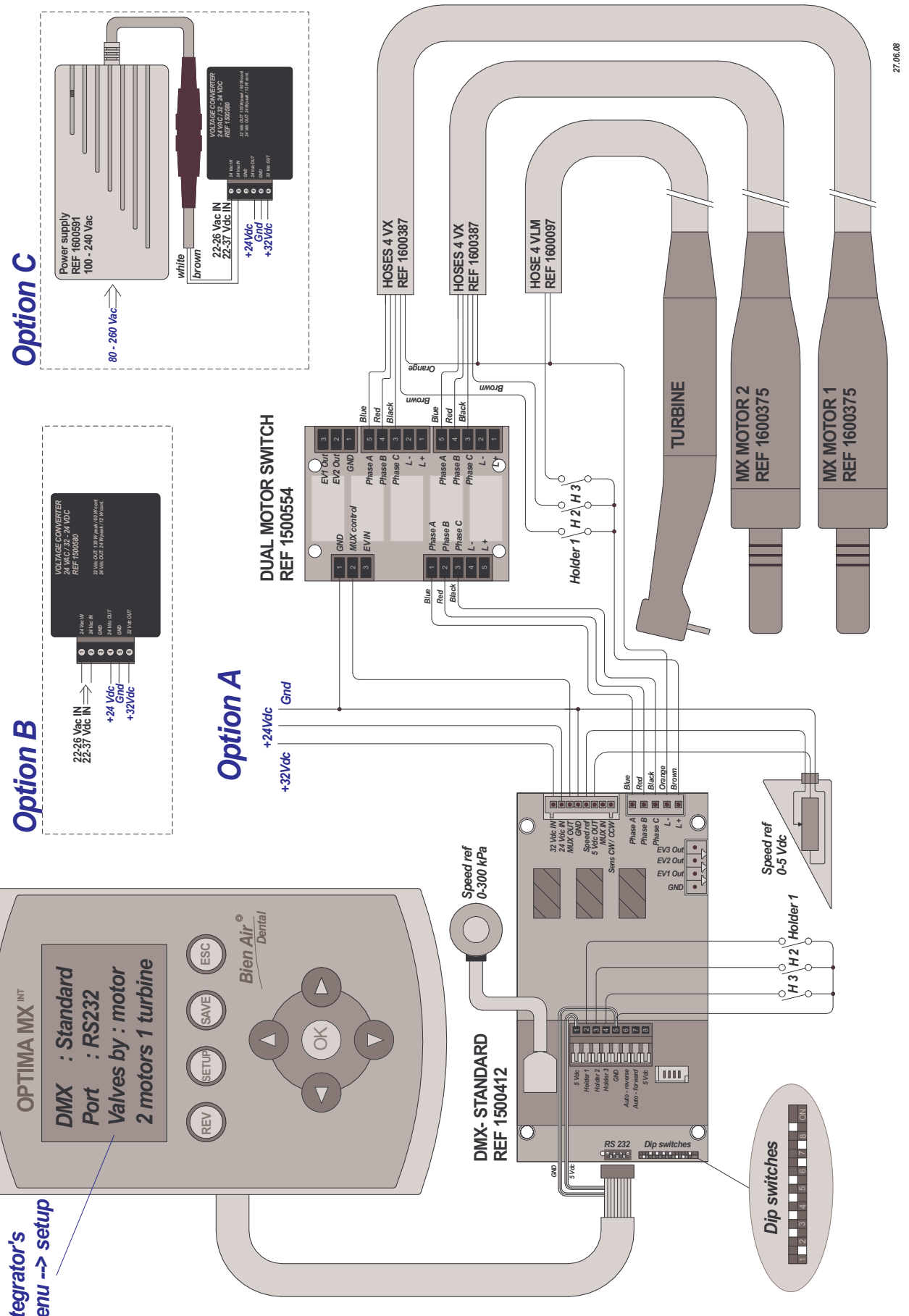
N°3 - Drawing OPTIMA MX Int connection with DMX Standard 1 motor 1 turbine



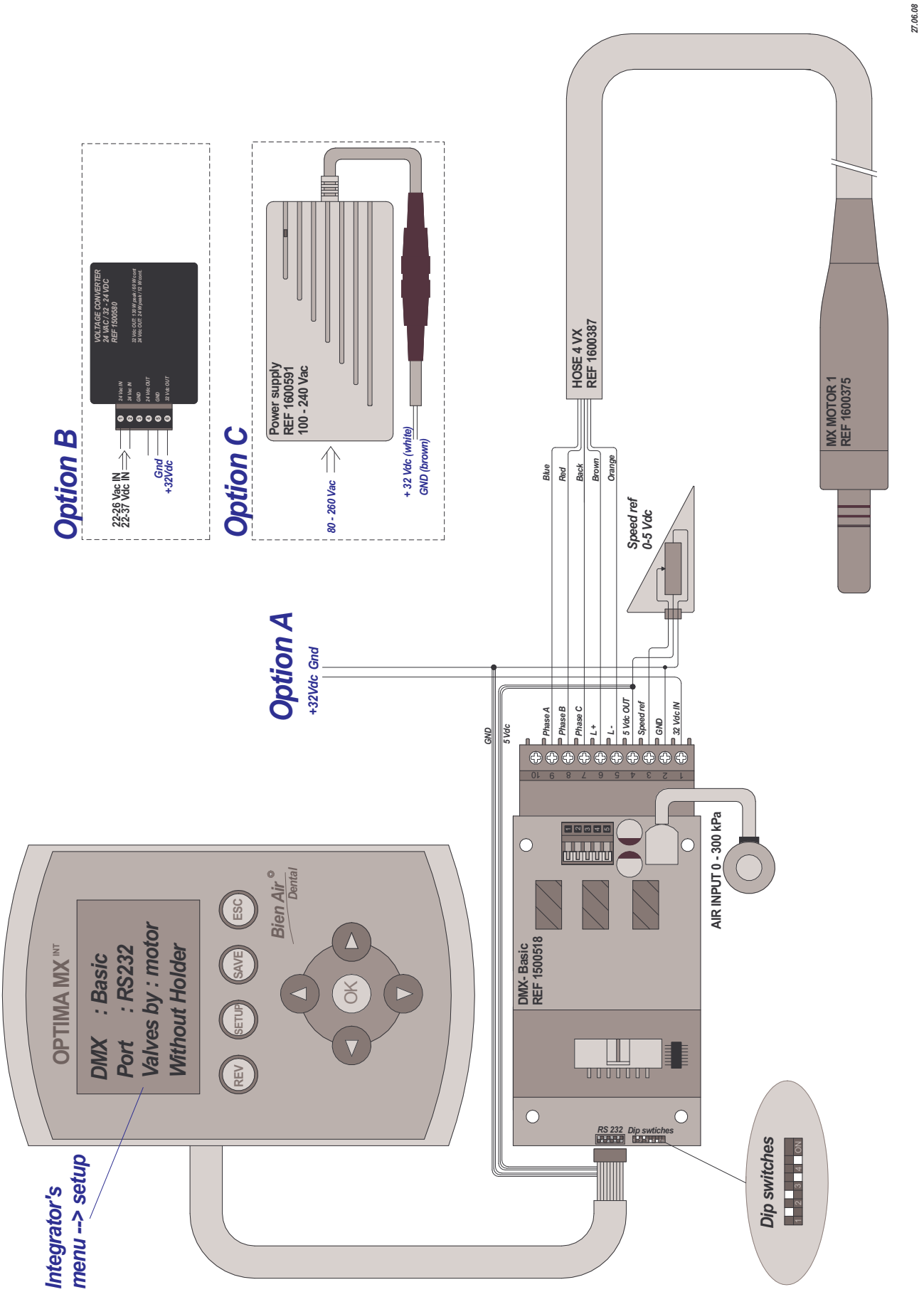
N°4 - Drawing OPTIMA MX Int connection with DMX Standard 2 motors



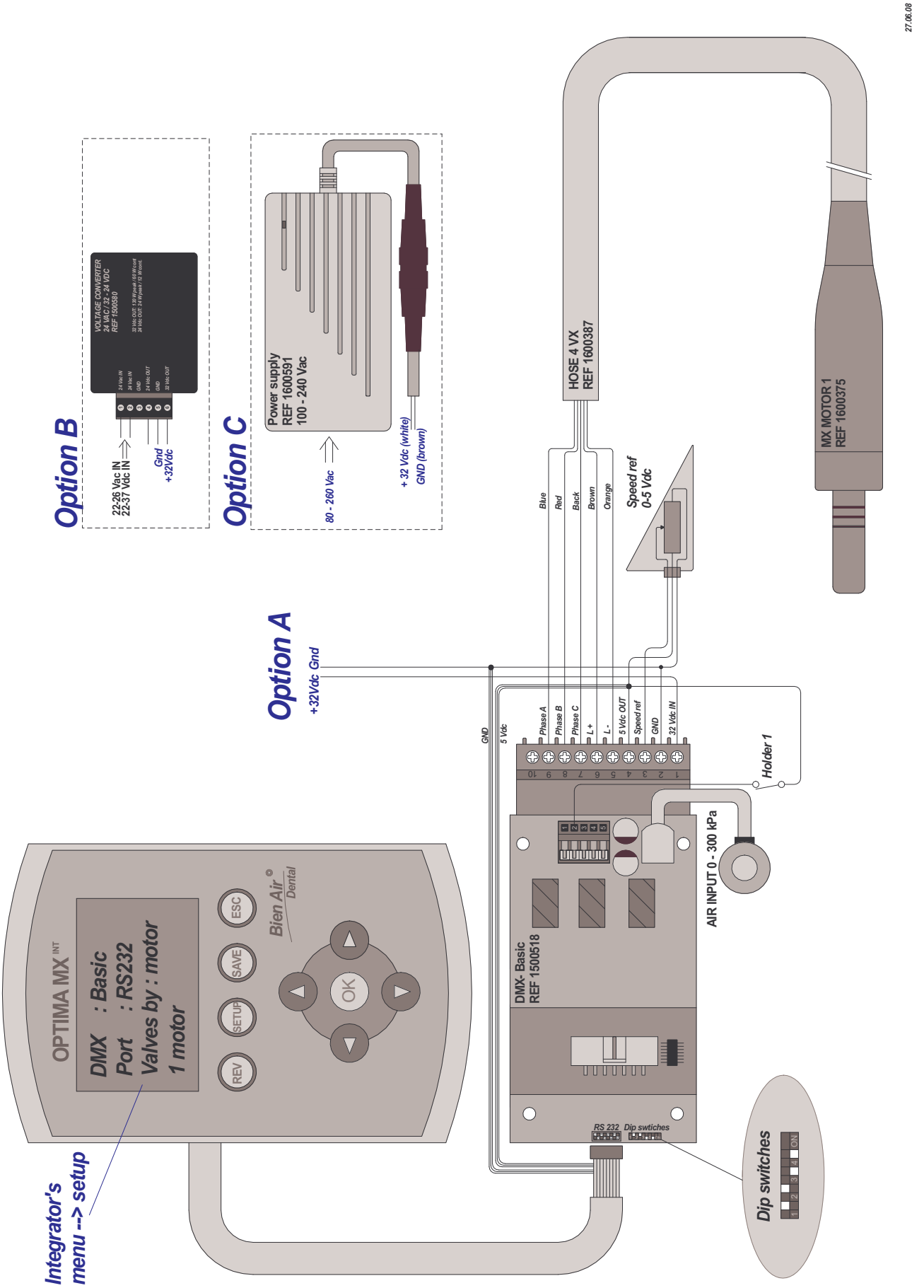
N°5 - Drawing OPTIMA MX Int connection with DMX Standard 2 motors 1 turbine



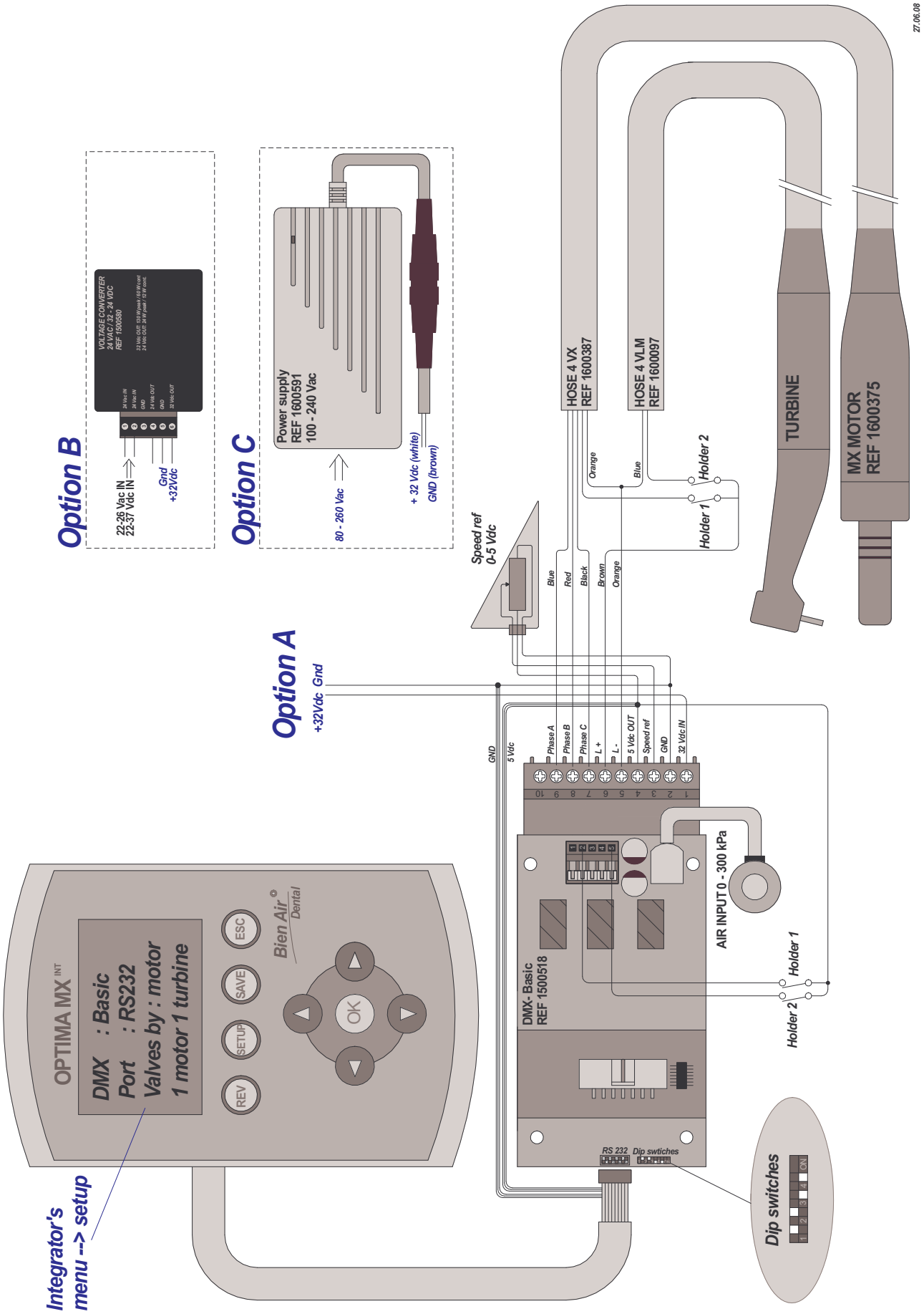
N°6 - Drawing OPTIMA MX Int connection with DMX Basic 1 motor without holder



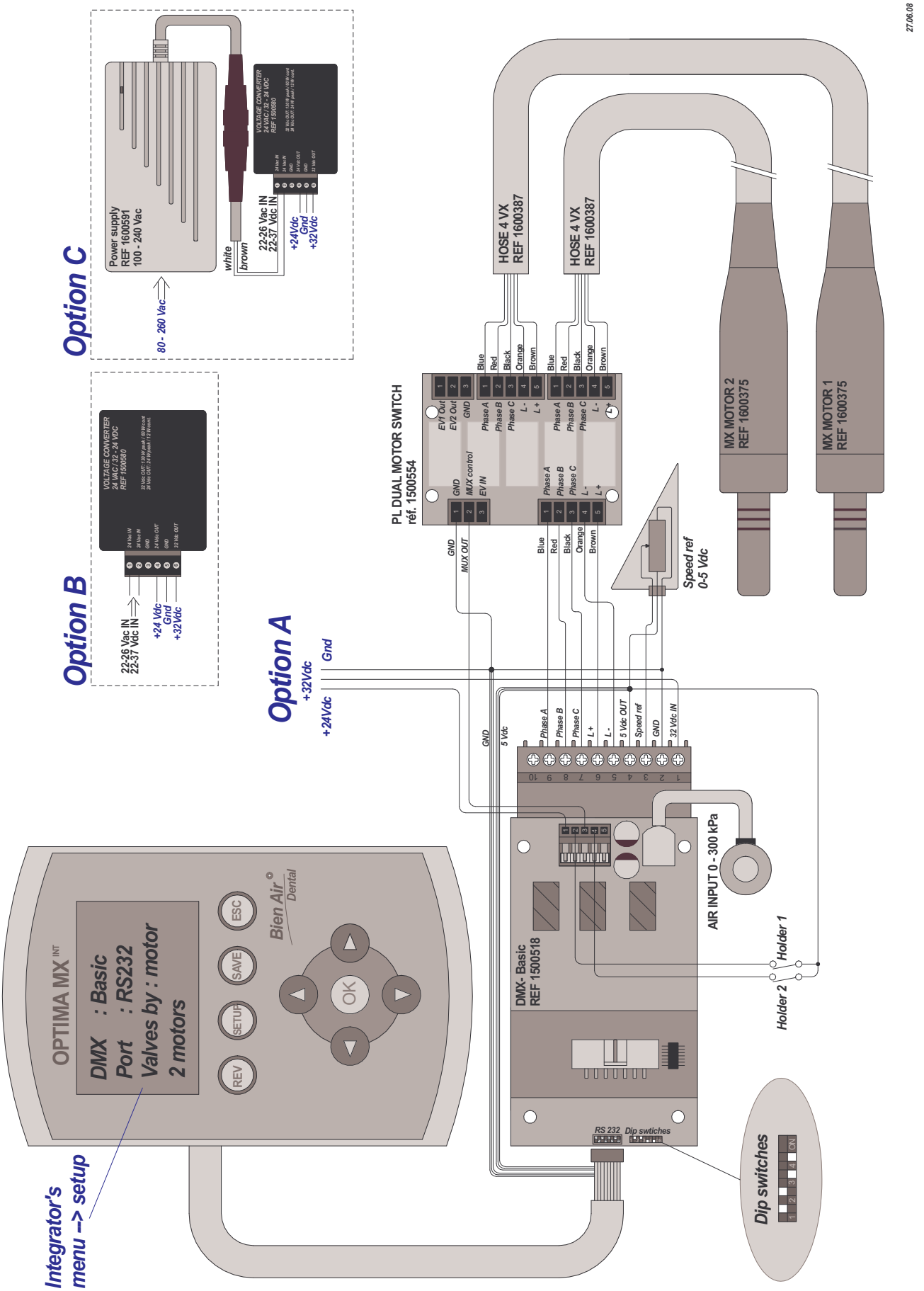
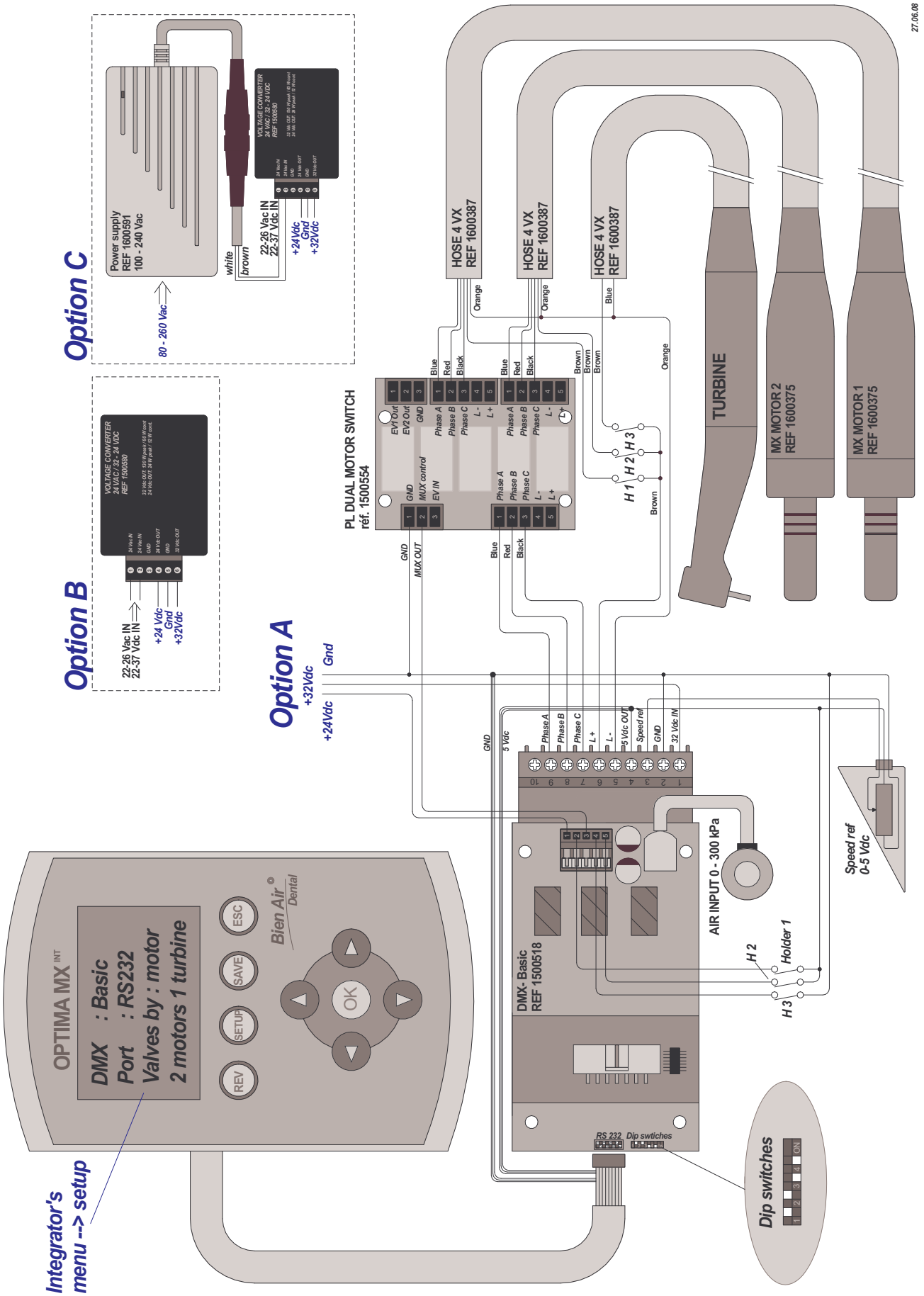
N°7- Drawing OPTIMA MX Int connection with DMX Basic 1 motor



N°8 - Drawing OPTIMA MX Int connection with DMX Basic 1 motor 1 turbine



N°9 - Drawing OPTIMA MX Int connection with DMX Basic 2 motors



N°10 - Drawing OPTIMA MX Int connection with DMX Basic 2 motors 1 turbine