

DOCUMENTATION

# **AUTOMATIC ELECTROSTATIC GUN**

## **KAX**

**Manual : 582.077.110-UK - 1904**

*Date: 25/04/19*

*Supersede : 27/05/16*

*Modif.:*

### **TRANSLATION FROM THE ORIGINAL MANUAL**

***IMPORTANT : Before assembly and start-up, please read and clearly understand all the documents relating to this equipment (professional use only).***

THE PICTURES AND DRAWINGS ARE NON CONTRACTUAL. WE RESERVE THE RIGHT TO MAKE CHANGES WITHOUT PRIOR NOTICE..

**SAMES KREMLIN SAS**

13, chemin de Malacher  
38 240 - MEYLAN - France  
☎ : 33 (0)4 76 41 60 60

**[www.sames-kremlin.com](http://www.sames-kremlin.com)**



<p align="center"><b>FR</b></p> <p><b>Pour une utilisation sûre, il est de votre responsabilité de :</b></p> <ul style="list-style-type: none"> <li>• Lire attentivement tous les documents contenus dans le CD joint avant la mise en service de l'équipement,</li> <li>• D'installer, d'utiliser, d'entretenir et de réparer l'équipement conformément aux préconisations de SAMES KREMLIN ainsi qu'aux réglementations nationales et/ou locales,</li> <li>• Vous assurez que les utilisateurs de cet équipement ont été formés, ont parfaitement compris les règles de sécurité et qu'ils les appliquent.</li> </ul>	<p align="center"><b>UK</b></p> <p><b>To ensure safe use of the machinery, it is your responsibility to:</b></p> <ul style="list-style-type: none"> <li>• Carefully read all documents contained on the enclosed CD before putting the machinery into service,</li> <li>• Install, use, maintain and repair the machinery in accordance with SAMES KREMLIN's recommendations and national and/or local regulations,</li> <li>• Make sure that the users of the machinery have received proper training and that they have perfectly understood the safety rules and apply them.</li> </ul>	<p align="center"><b>DE</b></p> <p><b>Eine sichere Nutzung setzt voraus, dass Sie :</b></p> <ul style="list-style-type: none"> <li>• alle in der CD enthaltenen Dokumente vor der Inbetriebnahme der Anlage aufmerksam lesen,</li> <li>• die Anlage im Einklang mit den Empfehlungen von SAMES KREMLIN sowie mit den nationalen und/oder lokalen Bestimmungen installieren, verwenden, warten und reparieren,</li> <li>• sich vergewissern, dass die Nutzer dieser Anlage angemessen geschult wurden, die Sicherheitsbestimmungen verstanden haben und sie anwenden.</li> </ul>
<p align="center"><b>ES</b></p> <p><b>Para una utilización segura, será de su responsabilidad:</b></p> <ul style="list-style-type: none"> <li>• leer atentamente todos los documentos que se incluyen en el CD adjunto antes de la puesta en servicio del equipo,</li> <li>• instalar, utilizar, efectuar el mantenimiento y reparar el equipo con arreglo a las recomendaciones de SAMES KREMLIN y a la normativa nacional y/o local,</li> <li>• cerciorarse de que los usuarios de este equipo han recibido la formación necesaria, han entendido perfectamente las normas de seguridad y las aplican.</li> </ul>	<p align="center"><b>IT</b></p> <p><b>Per un uso sicuro, vi invitiamo a:</b></p> <ul style="list-style-type: none"> <li>• leggere attentamente tutta la documentazione contenuta nel CD allegato prima della messa in funzione dell'apparecchio,</li> <li>• installare, utilizzare, mantenere e riparare l'apparecchio rispettando le raccomandazioni di SAMES KREMLIN, nonché le normative nazionali e/o locali,</li> <li>• accertarvi che gli utilizzatori dell'apparecchio abbiano ricevuto adeguata formazione, abbiano perfettamente compreso le regole di sicurezza e le applichino.</li> </ul>	<p align="center"><b>PT</b></p> <p><b>Para uma utilização segura, é da sua responsabilidade:</b></p> <ul style="list-style-type: none"> <li>• Ler atentamente todos os documentos incluídos no CD em anexo antes de pôr o equipamento em funcionamento,</li> <li>• Proceder à instalação, utilização, manutenção e reparação do equipamento de acordo com as preconizações de SAMES KREMLIN, bem como com outros regulamentos nacionais e/ou locais aplicáveis,</li> <li>• Assegurar-se que os utilizadores do equipamento foram devidamente capacitados, compreenderam perfeitamente e aplicam as devidas regras de segurança.</li> </ul>
<p align="center"><b>NL</b></p> <p><b>Voor een veilig gebruik dient u:</b></p> <ul style="list-style-type: none"> <li>• alle document op de bijgevoegde cd aandachtig te lezen alvorens het apparaat in werking te stellen,</li> <li>• het apparaat te installeren, gebruiken, onderhouden en repareren volgens de door SAMES KREMLIN gegeven aanbevelingen en overeenkomstig de nationale en/of plaatselijke reglementeringen,</li> <li>• zeker te stellen dat de gebruikers van dit apparaat zijn opgeleid, de veiligheidsregels perfect hebben begrepen en dat zij die ook toepassen.</li> </ul>	<p align="center"><b>SE</b></p> <p><b>För en säker användning av utrustningen ansvarar ni för följande:</b></p> <ul style="list-style-type: none"> <li>• Läs noga samtliga dokument som finns på den medföljande cd-skivan innan utrustningen tas i drift.</li> <li>• Installera, använd, underhåll och reparera utrustningen enligt anvisningarna från SAMES KREMLIN och enligt nationella och/eller lokala bestämmelser.</li> <li>• Försäkra er om att användare av denna utrustning erhållit utbildning, till fullo förstått säkerhetsföreskrifterna och tillämpar dem.</li> </ul>	<p align="center"><b>FI</b></p> <p><b>Käytön turvallisuuden varmistamiseksi velvollisuutesi on:</b></p> <ul style="list-style-type: none"> <li>• Lukea huolella kaikki CD:llä olevat asiakirjat ennen laitteiston käyttöönottoa,</li> <li>• Noudattaa laitteiston asennuksessa, käytössä, kunnossapidossa ja huollossa SAMES KREMLIN in suosituksia sekä kansallisia ja/tai paikallisia määräyksiä,</li> <li>• Varmistaa, että laitteiston käyttäjät ovat koulutettu ja ymmärtävät täysin turvallisuusmääräykset ja miten niitä sovelletaan.</li> </ul>
<p align="center"><b>PL</b></p> <p><b>Dla zapewnienia bezpiecznego użytkowania na użytkownika spoczywa obowiązek:</b></p> <ul style="list-style-type: none"> <li>• Uważnie zapoznać się ze wszystkimi dokumentami znajdującymi się na załączonej płycie CD przed pierwszym uruchomieniem urządzenia,</li> <li>• Instalowania, użytkowania, konserwacji i naprawy urządzenia zgodnie z zaleceniami firmy SAMES KREMLIN oraz z przepisami miejscowymi,</li> <li>• Upewnienia, że wszyscy przeszkoleni użytkownicy urządzenia zrozumieli zasady bezpieczeństwa i stosują się do nich.</li> </ul>	<p align="center"><b>CS</b></p> <p><b>Pro bezpečné používání jste povinni:</b></p> <ul style="list-style-type: none"> <li>• Před uvedením zařízení do provozu si pozorně přečíst veškeré dokumenty obsažené na příloženém CD,</li> <li>• Nainstalovat, používat, udržovat a opravovat zařízení v souladu s pokyny firmy SAMES KREMLIN a s národními a/nebo místními legislativními předpisy,</li> <li>• Ujistit se, že uživatelé tohoto zařízení byli vyškoleni, že dokonale pochopili bezpečnostní pravidla a že je dodržují.</li> </ul>	<p align="center"><b>SL</b></p> <p><b>Za varno uporabo ste dolžni:</b></p> <ul style="list-style-type: none"> <li>• natančno prebrati vse dokumente na CD pred zagonom stroja,</li> <li>• inštalirati, uporabljati, vzdrževati in popravljati opremo po določilih SAMES KREMLIN in v skladu z veljavnimi nacionalnimi in/ali lokalnimi predpisi,</li> <li>• poskrbeti, da so uporabniki te opreme ustrezno usposobljeni, poznajo varnostne predpise in da jih upoštevajo.</li> </ul>
<p align="center"><b>SK</b></p> <p><b>V záujme bezpečného je vašou povinnosťou:</b></p> <ul style="list-style-type: none"> <li>• pozorne si prečítať všetky dokumenty obsiahnuté na priloženom CD predtým, ako zariadenie uvediete do prevádzky,</li> <li>• nainštalovať, používať, udržiavať a opravovať zariadenie v súlade s odporúčaniami spoločnosti SAMES KREMLIN a národnými a/alebo miestnymi predpismi,</li> <li>• uistiť sa, že používatelia tohto zariadenia boli zaškolení, riadne porozumeli pravidlám bezpečnosti a používajú ich.</li> </ul>	<p align="center"><b>HU</b></p> <p><b>A biztonságos használat érdekében az Ön felelőssége, hogy:</b></p> <ul style="list-style-type: none"> <li>• a berendezés üzembe helyezése előtt figyelmesen elolvassa a mellékelt CD által tartalmazott összes dokumentumot,</li> <li>• a berendezést a SAMES KREMLIN ajánlásainak valamint a nemzeti és/vagy helyi szabályozásoknak megfelelően helyezze üzembe, használja, tartsa karban és javítsa,</li> <li>• megbizonyosodjon róla, hogy a berendezés felhasználói képzettek, tökéletesen megértették és alkalmazzák a biztonsági előírásokat.</li> </ul>	<p align="center"><b>RO</b></p> <p><b>Pentru o utilizare sigură, este responsabilitatea dvs. să:</b></p> <ul style="list-style-type: none"> <li>• Citiți cu atenție toate documentele de pe CD-ul anexat, înainte de punerea în funcțiune a echipamentului,</li> <li>• Instalați, utilizați, întrețineți și reparați echipamentul conform instrucțiunilor SAMES KREMLIN precum și reglementărilor naționale și/sau locale,</li> <li>• Vă asigurați că utilizatorii acestei echipament au fost instruiți, au înțeles perfect regulile de securitate și le aplică integral.</li> </ul>

Declaration(s) de conformité au verso de ce document / Declaration(s) of conformity at the back of this document / Konformitätserklärung(en) auf der Rückseite dieser Unterlage / Declaración (es) de conformidad en el reverso de este documento / Dichiarazione/i di conformità sul retro del presente documento / Declaração(ões) de conformidade no verso do documento / Conformiteitsverklaring(en) op de keerzijde van dit document / Försäkran om överensstämmelse på omstående sida av detta dokument / Vaatimustenmukaisuusvakuutukset tämän asiakirjan kääntöpuolella / Deklaracja(e) zgodności na odwrocie dokumentu / Prohlášení o shodě se nachází/nacházejí na zadní straně tohoto dokumentu / Deklaracija(e) o skladnosti na hrbtni strani tega dokumenta / Vyhlášení/-a o zhode sa nachádzajú na zadnej strane dokumentu / A dokumentum hátlapján szereplő megfeleléségi nyilatkoz(ok) / Declarații de conformitate pe versoul acestui document



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Déclare que le matériel désigné ci-après / Herewith declares that the equipment / erklart hiermit, dass die / Declara que el material designado a continuación / Dichiaro che il materiale sottoindicato / Declara que o material a seguir designado / verklaart dat de hieronder aangeduide apparatuur / Kungör att den utrustning som anges här nedan / ilmoittaa, että alla mainitut laitteistot / Oświadcza, że wymienione poniżej urządzenia / Prohlašuje, že níže uvedené vybavení / Izjavlja, da je opisana oprema spodaj / Vyhlasuje, že zariadenie uvedené nižšie / Kijelenti, hogy a megjelölt anyag a továbbiakban / Declară că echipamentul precizat mai jos:

**PISTOLET AUTOMATIQUE DE PULVERISATION ELECTROSTATIQUE**  
**AUTOMATIC ELECTROSTATIC SPRAYING GUN**  
**ELEKTROSTATISCHE AUTOMATIK-SPRITZPISTOLE**  
**PISTOLA DE PULVERIZACIÓN AUTOMÁTICA ELECTROSTÁTICA**

KA\* Ex

Est conforme à la législation d'harmonisation de l'Union applicable suivante / Is in conformity with the relevant Union harmonisation legislation / Erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union / es conforme con la legislación de armonización pertinente de la Unión / è conforme alla pertinente normativa di armonizzazione dell'Unione / in overeenstemming met de desbetreffende harmonisatiewetgeving van de Unie / med den relevanta harmoniserade unionslagstiftningen / on asiaa koskevan unionin yhdenmukaistamislainsäädännön vaatimusten mukainen / jest zgodny z odnośnymi wymaganiami unijnego prawodawstwa harmonizacyjnego / Shoduje se s následující příslušnou evropskou harmonizační legislativou / V skladu s harmonizirano zakonodajo Unije / Je v súlade s uplatniteľnými harmonizačnými právnymi predpismi EÚ / Megfelel a következő alkalmazandó uniós harmonizációs szabályozásnak / Este conform cu legislația aplicabilă de armonizare de mai jos

Directive ATEX / ATEX Directive / ATEX Richtlinie / Directiva ATEX / Direttiva ATEX / Diretiva ATEX / ATEX-Richtlijn / ATEX-direktivet / ATEX-direktivi / Dyrektywa ATEX / Směrnice ATEX / Direktiva ATEX / Smernica ATEX / ATEX-irányelv	 II 2G EEx 0,24 mJ	<b>2014/34/UE</b>
EN 50050:2001 EN 50014:1997 + A1:1999 + A2:1999 EN 50019:2000 EN 50028:1987 <b>Attestation d'examen CE de type / EC certificate examination, INERIS 04 ATEX 0093 X avec son complément n° 1 / with its n° 1 addition</b> Notifiée par / Notified by : INERIS 0080 - 60550 Verneuil-en-Halatte - France <i>"Les normes utilisées ne sont plus celles qui sont harmonisées, mais la conformité du matériel n'est pas impactée par les modifications substantielles des normes de la série EN 60079 et EN 50050." / 'The standards used are no longer the harmonized ones, but the conformity of the equipment is not affected by the substantial modifications of the EN 60079 and EN 50050 serie standards'.</i> <b>Notification Assurance Qualité de Production / Production Quality Assurance Notification INERIS 03 ATEX Q721</b> Notifiée par / Notified by : INERIS 0080 - 60550 Verneuil-en-Halatte - France		

La présente déclaration de conformité est établie sous la seule responsabilité du fabricant / This declaration of conformity is issued under the sole responsibility of the manufacturer / Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller / La presente declaración de conformidad se expide bajo la exclusiva responsabilidad del fabricante / La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante / A presente declaração de conformidade é emitida sob a exclusiva responsabilidade do fabricante / Deze conformiteitsverklaring wordt verstrekt onder volledige verantwoordelijkheid van de fabrikant / Denna försäkran om överensstämmelse utfärdas på tillverkarens eget ansvar / Tämä vaatimustenmukaisuusvakuutus on annettu valmistajan yksinomaisella vastuulla / Niniejsza deklaracja zgodności wydana zostaje na wyłączną odpowiedzialność producenta / Toto prohlášení o skodě se vydává na výhradní odpovědnost výrobce / Za izdajo te izjave o skladnosti je odgovoren izključno proizvajalec / Toto vyhlásenie o zhode sa vydáva / na vlastnú zodpovednosť výrobcu / Ezt a megfelelőségi nyilatkozatot a gyártó kizárólagos felelőssége mellett adják ti / Prezenta declarație de conformitate este emisă pe răspunderea exclusivă a producătorului.



Hervé WALTER

Directeur Innovation & Développement / Innovation & Development Director / Direktor für Innovation & Entwicklung / Director de Inovación y Desarrollo / Direttore Innovazione e sviluppo / Diretor de Inovação / Manager Innovatie en Ontwikkeling / Direktör för Forskning och Utveckling / Innovaatio- ja kehitysjohtaja / Dyrektor ds. Innowacji i Rozwoju / Ředitel pro inovace a vývoj / Direktor za inovacije in razvoj / Riaditeľ pre inováciu a rozvoj / Innovációs és fejlesztési igazgató / Director Inovație și Dezvoltare

Fait à Meylan, le / Established in Meylan, on / Geschehen zu Meylan, am / En Meylan, a / Redatto a Meylan, / Vastgesteld te Meylan, / Utformat i Meylan, den / Meylan, Ranska, / Sporządzono w Meylan, dnia / Meylan, dnia / V Meylanu, / V Meylan dňa / Kelt Meylanban, / Întocmită la Meylan, pe data de 12/04/2019 - 04/12/2019



INSTRUCTION MANUAL

**AUTOMATIC ELECTROSTATIC GUN  
SERIE KA\* Ex**

*Manual : 1904 573.181.112*

*Date : 15/04/19 - Supersede : 20/06/14*

*Modif : Update*

**TRANSLATION FROM THE ORIGINAL MANUAL**

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INSTRUCTION MANUAL

## ELECTROSTATIC AUTOMATIC GUN

### MODEL KA\* Ex

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**ADDITIONAL DOCUMENTATIONS :**

EU Declaration of Conformity	578.018.130
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<b>Parts Identification List</b>	
KA* Ex Electrostatic guns	573.350.050
KAP Ex Electrostatic gun	573.338.050
KAV Ex Electrostatic gun	573.340.050
KAC Ex Electrostatic gun	573.341.050
KAX Ex Electrostatic gun	573.339.050
Generator barrel	573.348.050

Dear Customer,

We would like to take this opportunity to thank you for buying a new **electrostatic automatic gun**. We are confident that you have made the right choice.

We have taken every care, from original design to final manufacture, to ensure that this product gives you complete satisfaction.

To obtain the best performance and reliability from this equipment, we would strongly advise you to read this instruction manual attentively before attempting to use the equipment.

## 1. GENERAL SAFETY INSTRUCTIONS

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**1 - The non-compliance with the safety requirements and precautions stated in this manual could result in unsafe conditions.**

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- 2 - The personnel involved in operating and servicing the electrostatic coating equipment must be fully aware of all the safety requirements stated in this manual.
- 3 - The workshop supervisor must be certain that the personnel has perfectly understood the safety instructions and complies with them. These instructions cover the precautions required for solvent-based paint spraying and the specific precautions in connection with the use of equipment requiring high voltage.

The electrostatic coating system shall be used by qualified personnel only. The personnel must also be familiar with the local safety standards which can be in force in certain countries.

**WARNING : failure to observe the safety precautions contained herein could result in operating troubles and create unsafe conditions (body injury, explosion fire or electric shock).**

### ■ INSTALLATION

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➔ **The EN 50 176 standard covers the select, installation and use requirements of the automatic electrostatic projection equipments for ignitable materials.**

**That standard defines 3 classes of electrostatic projection systems. The class A covers the systems in conformity with the EN 50050 standard with an energy limit of 0,24mJ.**

The KA\* Ex gun is a gun designed **only** for the application of paint and varnishes.

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- 4 - Spraying, cleaning and servicing must be made in a ventilated area so that solvent vapours are properly drained.
  - 5 - **The power supply unit must be installed in a non-hazardous area. Ground the earth terminal.**
  - 6 - All metallic parts located within 3 meters (10 ft) around the gun (such as pumps, drums, conveyor, etc...) must be correctly grounded.
  - 7 - Storage of paint and solvent drums near or inside the spraying area is prohibited. Keep all fluid containers properly closed in a non-hazardous area.
- 

➔ **Use cleaning solvents with the highest flash point - if possible, higher than the ambient temperature.**

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- 8 - Remove the useless parts from the spraying area and keep this area clean. Part holders and conveyor hooks must be removed and frequently cleaned.
- 9 - The floor must be electrically conductive and grounded (maximum resistivity of the floor : 1 MΩ as per EN 50 053-7-2).
- 10 - The warning sign supplied in the case must be hung up in the spraybooth so that it can be easily seen and read by all operators.

## ■ SPRAYING

- 11 - Never point the spray gun to anyone or at any part of the body.
- 12 - Never throw or drop the gun-generator barrel assembly. Any misuse of the spray gun equipment or accessories can damage them and result in serious body injury, fire or explosion.
- 13 - The part to be painted must be properly grounded. Any incorrect electrical continuity might result in stock hazard.
- 14 - Never operate the electrostatic spray gun if air leaks are detected on the gun. Never use air hoses on which air can occur.
- 15 - Be sure that the distance between the parts hanging on the conveyor and the gun air cap is at least of 15 cm / 5.9".
- 16 - Be sure that tip and air cap are in position and hand tightened with the retaining ring onto the gun before turning on the power supply.
- 17 - Verify that any person entering the spray area is correctly grounded with conductive sole shoes (in accordance with EN 344 standard).

The operator must not wear gloves which insulate the hand from the conductive gun handle. If using gloves, check that they are conductive (in accordance with EN 50 053) or that a square has been cut- out in the glove palm.

## ■ SERVICING

- 18 - The electrical supply must be shut off before any cleaning (box switch O).
- 19 - When shutting off high voltage and before any action on the gun, wait a moment to leave the electrostatic charge flow out freely to earth.
- 20 - Never immerse the gun or plastic parts of the gun in solvent.  
This could seriously damage the gun and cause fire, explosion or body injury. To clean the gun use soft cloth or bristle brush with a moderate amount of non-conductive solvent, wipe the front of the gun at fluid nozzle with the gun pointed down to prevent from flowing back into the air passages.
- 21 - Before disconnecting the hoses, check that they are no more under pressure and that the power supply is off.
- 22 - The personnel involved in the electrostatic coating system servicing must be trained and qualified. If you face any trouble which cannot be repaired, do not try to start up the equipment. Consult immediately your local authorized SAMES KREMLIN distributor for assistance.
- 23 - After any servicing or cleaning, never switch on the power supply tip and air cap are in position and secured with the retaining ring onto the gun.

## ■ ENVIRONMENT



The equipment consists of a label plate with the name of the manufacturer, the equipment part number, the interesting informations to use correctly the equipment (pressure, voltage...) and the above pictogram.

The equipment is designed with and consists of high quality materials and components which can be re-used.

The 2012/19/EU European Directive covers all equipments with a crossed-out bin pictogram. Please inform yourself about the collection systems for electric and electronic equipments.

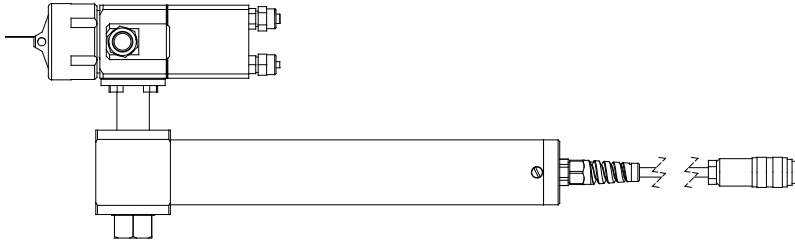
Please act according to local rules and **do not throw the old equipments with household wastes**. A correct disposal of the old equipment will help prevent negative consequences for the environment and health.



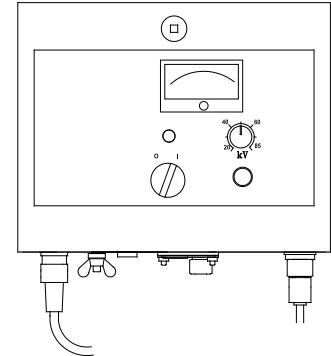
## 2. OPERATING PRINCIPLE

KA\* Ex gun assembly with BG Ex barrel

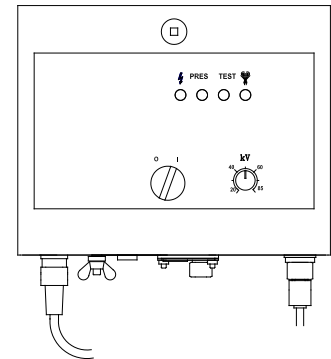
STD 9 A or STD 9 power supply unit



STD9A



STD9



The electrostatic coating system consists of an automatic spraying gun with its generator barrel and of an electronic control box.

### ■ STD 9 A OR STD 9 POWER SUPPLY

The power supply transforms the 100/220 Vac into an adjustable continuous low voltage which can be set from the electronic regulator.

The electronic regulator built into the power supply unit automatically reduces the intensity and voltage when the electrode on the spray gun is close to a grounded object (less than 100 mm or 4 inches) thereby preventing any electric discharge.

➔ **The power supply unit includes a 3-pin plug and cable assembly so as guarantee a safe grounded AC input power system. Failure to ground the power supply may result in an electric shock hazard.**

Interconnect the STD 9 A or STD 9 power supply unit with the air pressure network (maximum pressure 6 bar / 87 psi).

**STD 9 A power supply unit** : The pressure switch incorporated into the power supply unit provides the 12 Vdc to the generator barrel only when independent air pressure is activated (minimum air pressure : 4 bar / 58 psi).

**STD 9 power supply unit** : The atomizing air of the electrostatic spray gun flows through the power supply - via the power supply unit - via the flow switch - and then exhausts through the gun air cap. The flow switch provides the low voltage supply to generator barrel.

■ **KA\* Ex GUN-BARREL ASSEMBLY**

The generator barrel transforms the low voltage supply supplied by the power supply unit into a high voltage.

The KA\* Ex electrostatic gun, on its generator barrel, is designed to negatively charge the material being sprayed.

As a result of the electrostatic charge of the paint particules, a more efficient and uniform application of the coating material is applied to the front but also on the sides, edges and back of the grounded work pieces.

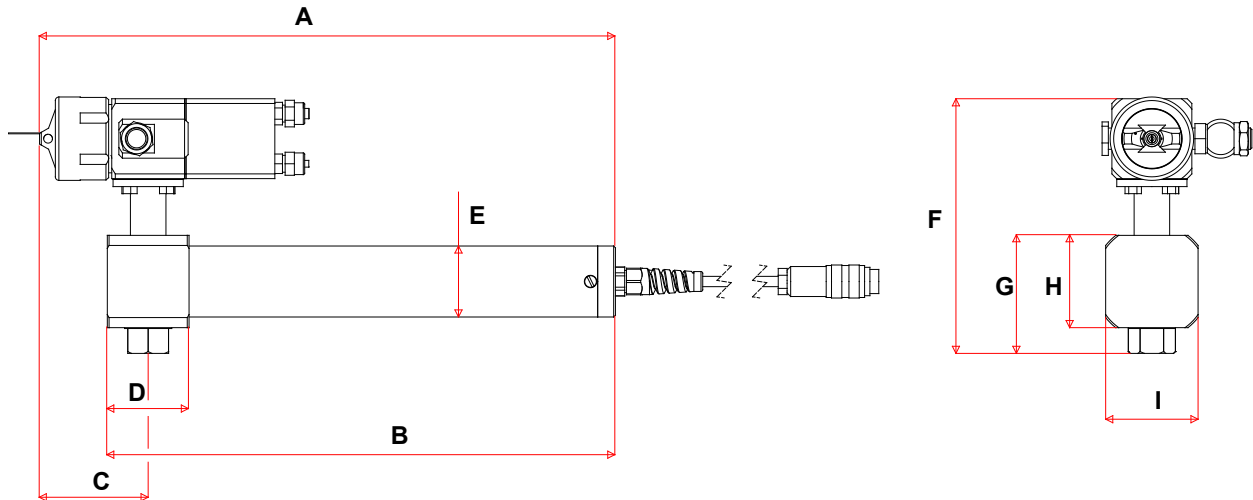
**3. SPECIFICATIONS**

■ **COMMON FEATURES TO ALL KA\* Ex GUNS**

Dimensions

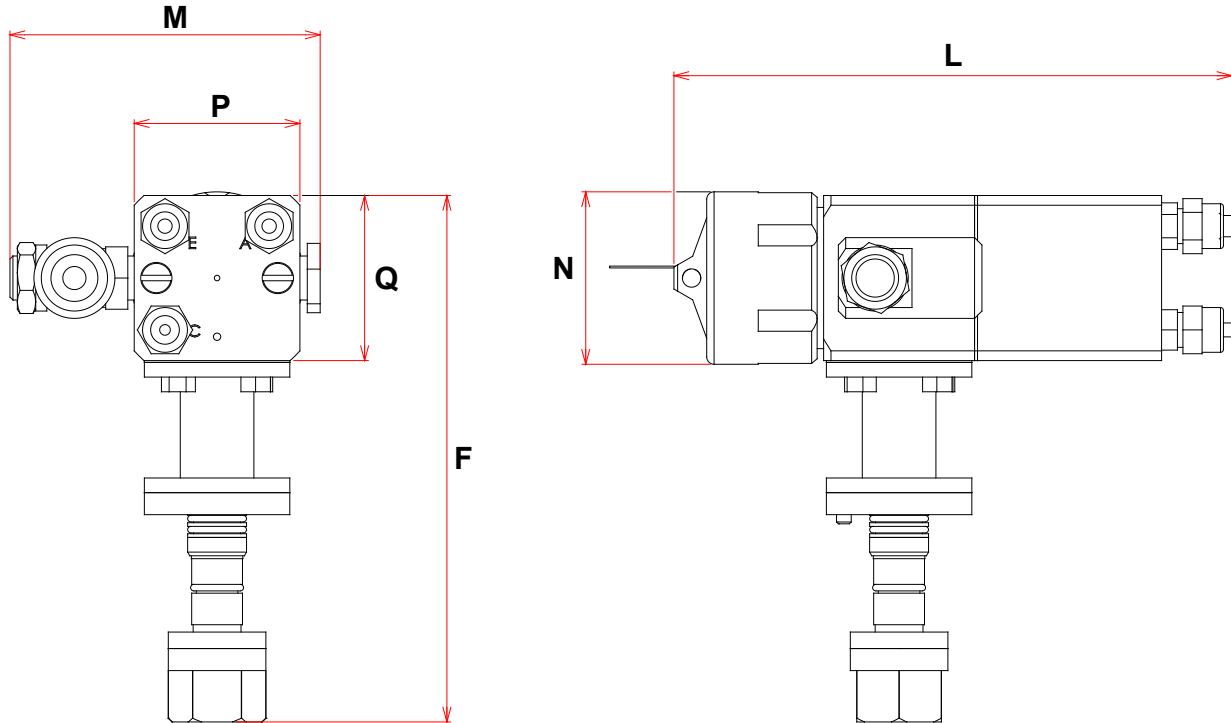
**Gun + BG**

Ind.	A	B	C	D	E	F	G	H	I
mm	325	285	60	46	40	145	64	52	52
"	12.8	11.2	2.36	1.81	1.57	5.7	2.52	2.04	2.04



**KA\* Ex gun**

Ind.	L	M	N	P	Q
mm	160	85	50	45	45
"	6.3	3.35	1.97	1.77	1.77



**Electric specifications**

Type .....	integrated generator (in the BG Ex barrel)
Number of electrodes .....	1
Operating voltage (electrode) .....	negative, adjustable between 20 kV to 80 kV.
Current .....	100 $\mu$ A.
Low voltage .....	adjustable from 3 V to 12 Vdc (refer to the STD9 instruction manual)
Low voltage display .....	by a galvanometer on the STD 9 A supply unit by a LED on the STD 9 supply unit
Maximum current consumption .....	0,65 A at 12 V.
BT electric cable length.....	12 m or 30 m for assembly with KA. Ex gun 6 m for assembly with iso bubble

**Fluid specifications**

Fluid fitting (gun).....	fitting F 12x125
Fluid fitting (hose).....	fitting F 1/2 JIC
Maximum viscosity .....	40 s CA 4 - For higher viscosity, consult your local authorized SAMES KREMLIN distributor.
Maximum temperature .....	60° C / 140 ° F
Fluid hose .....	Specific hose (fitting M 12 x 125 - fitting F 1/2 JIC)
Fluid viscosity .....	>5 M $\Omega$ (assembly with a specific hose, 1 or 5 m long + an AIRMIX hose)
Fluid hose.....	from 0 to 5 M $\Omega$ (solvent paint or water-based paint) assembly with an insulated specific hose , 10 or 15 m long)

**Nota : For water based materials, use an ISO BUBBLE (to isolate the pump, the paint container). Consult your local authorized SAMES KREMLIN distributor.**

**Pneumatic specifications :**

Bleeder gun

Air pressure :

- Atomizing air ..... Maximum 6 bar / 87 psi
- Control air (C) ..... Minimum 4 bar / 58 psi (for gun opening)

Connections :

- Atomizing air
  - Fan air (E) ..... hose 6x8 insulate (polyamide)
  - Central air (A) ..... hose 6x8 insulate (polyamide)
- Control air ..... hose 4x6 insulate (polyamide)

**Materials in contact with the fluid :**

Steel - Stainless steel - Polyamide - Tungsten carbide - Polyacetale.

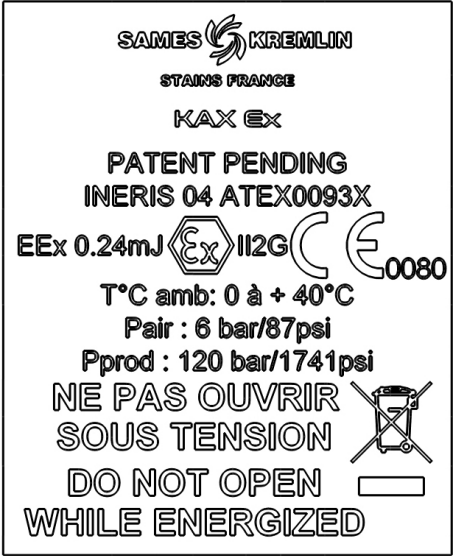
**Weight :**




- Gun only ..... 460 g
- Gun with barrel ..... 1120 g



Gun operating temperature range .... From 0 to 40° C / from 32° F to 104° F

■ DESCRIPTION OF THE MARKING LABEL

<p>Marking in accordance with the ATEX regulation</p> <p>(Example : KAX Ex gun label)</p>	
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COMMON MARKING TO GUNS	DESCRIPTION
<b>SAMES KREMLIN STAINS FRANCE</b>	Name and address of the manufacturer
<b>KAX Ex (or KAP Ex or KAV Ex or KAC Ex)</b>	Gun version
<b>PATENT PENDING</b>	Registered patent
<b>INERIS 04 ATEX 0093 X</b>	Fluid approval N° given by INERIS
<b>EEx 0.24mJ  II 2 G</b>	EEx 0.24mJ : marking corresponding to the projection guns for paints for the non-flammable paints or flock in association with non-flammable adhesive vapours with an energy less than 0.24 mJ (EN 50 050 standard)   : For use in explosive area II : group II    2 : class 2 Surface equipment meant to be in an area where explosive atmospheres due to gas, vapours, mists are liable to appear from time to time in usual operating. G : gas
<b>CE0080</b>	0080 : INERIS code that notifies the Quality Management System
<b>P air : 6 bar / 87 psi</b>	Maximum air pressure
<b>P prod : 120 bar / 1741 psi</b>	Maximum fluid temperature (depending on gun version : 120 bar / 1741 psi for the KAX Ex and KAC Ex 10 bar / 145 psi for the KAP Ex and KAV Ex)
	Environment indication (refer to § 2 - Environment)
<b>N° Serie /Serial Nb</b> <i>(engraved on the side of the gun body and at the foot for the generator barrel)</i>	Number given by SAMES KREMLIN. The two first numbers indicate the manufacturing year.

■ SPECIFIC FEATURES OF THE KA EX GUNS

	AIRMIX <sup>®</sup> GUNS		PNEUMATIC GUNS	
	KAX EX	KAC EX	KAP EX	KAV EX
<b>Gun assembly with air cap and nozzle</b>	<i>KX 16 air cap</i> <i>09/135 nozzle</i>	<i>KXC 5 air cap</i> <i>K 30 nozzle</i>	<i>KP 3 air cap</i> <i>Ø 1,2 nozzle</i>	<i>KMV air cap</i> <i>Swirling fan nozzle</i>
<b>Fluid specifications</b>				
Fan pattern	Airmix <sup>®</sup> - Adjustable flat pattern	Airmix <sup>®</sup> - Round hollow spray	Pneumatic - Flat pattern	Pneumatic - round pattern
Maximum fluid pressure	120 bar / 1740 psi	120 bar / 1740 psi	10 bar / 145 psi	10 bar / 145 psi
Fluid flow rate and fan width	Adjustable by air flow rate variation on the air cap - Refer to AIRMIX <sup>®</sup> nozzle chart - ('KAX Ex Spare parts' list' Doc)	Refer to AIRMIX <sup>®</sup> nozzle chart - ('KAC Ex Spare parts' list' Doc)	Maxi 1 litre/minute Fan width at 25 cm : 30 cm	Maxi 1 litre/minute Fan width at 25 cm : 20 cm
<b>Air specification</b>	KX 16 air cap flow rate: 8 Nm <sup>3</sup> /h.	KXC 5 air cap flow rate: 8 Nm <sup>3</sup> /h.	KP 3 air cap flow rate : maxi 20 Nm <sup>3</sup> /h at 4 bar (58 psi)	KMV air cap flow rate: 16 Nm <sup>3</sup> /h at 4 bar (58 psi)

#### 4. INSTALLATION

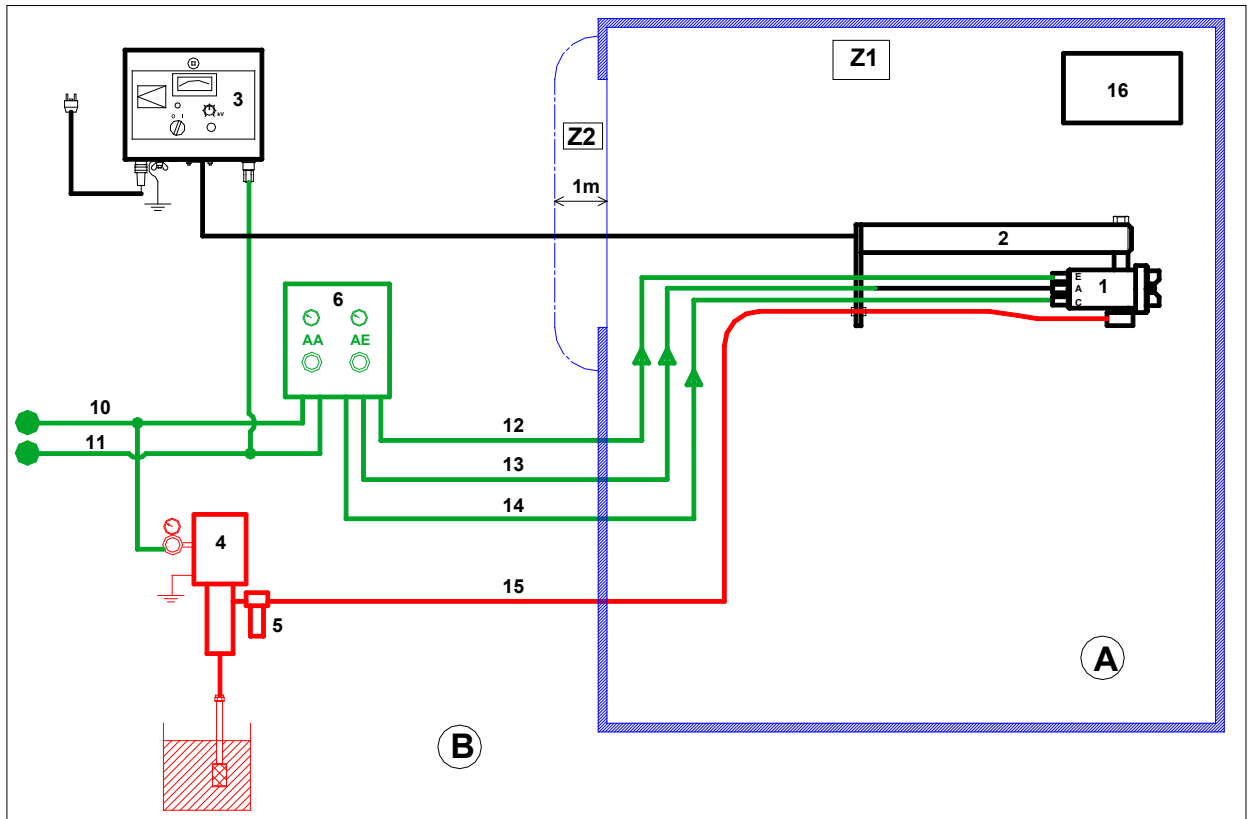
➡ **REFER TO GENERAL SAFETY INSTRUCTIONS**

That equipment requires compliance with all applicable safety standards and requirements outlined in this manual. Any improper installation or misuse of the electrostatic coating system can cause serious body injury, fire, explosion or electric shock hazard (refer to general safety instructions).

The European safety standard EN 50 053 and EN 50 176 cover installation and operation regulations of electrostatic coating system.

## ■ INSTALLATION DIAGRAM

### Installation diagram with a STD 9 A power supply unit



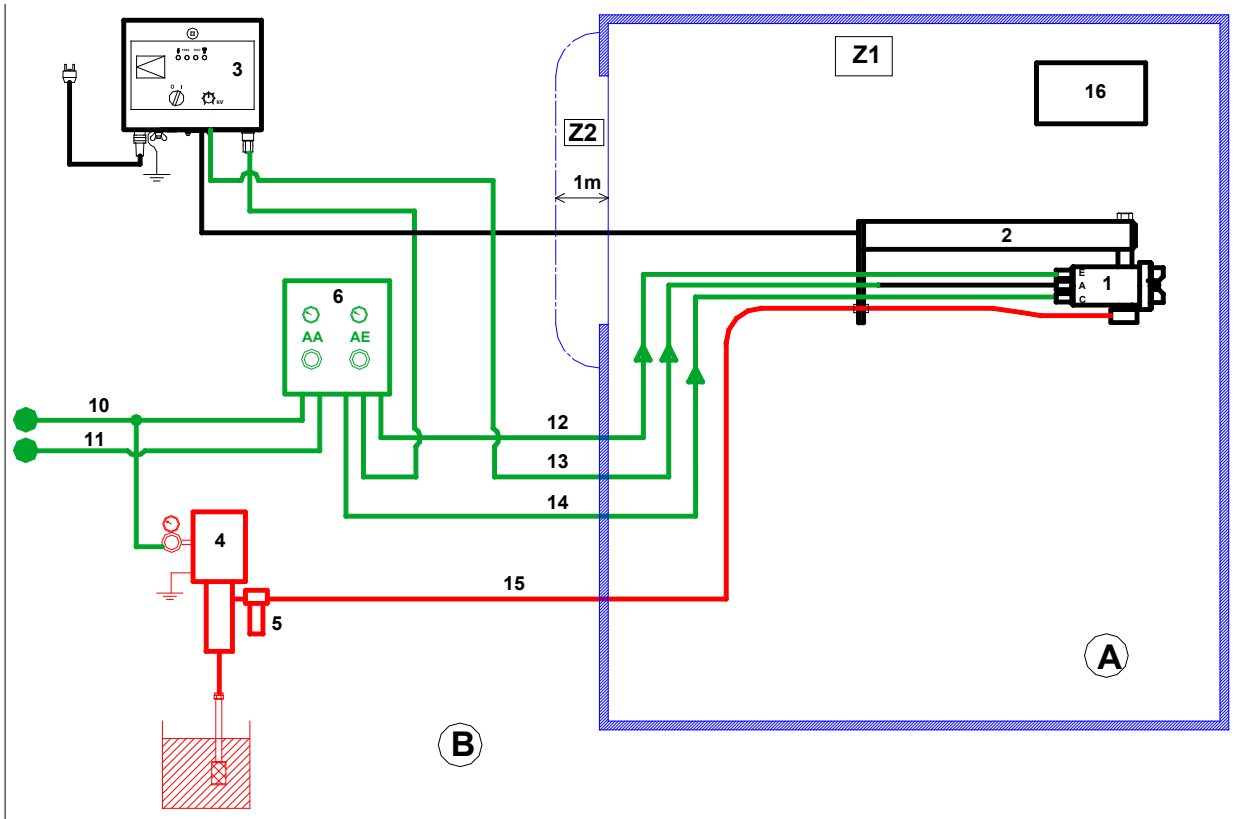
Ind.	Description
A	Explosive area (area 1 and area 2) spray booth
B	Non explosive area
1	KA* Ex gun (depending on the model)
2	HV generator barrel
3	STD 9 A control supply unit
4	Fluid pump (pneumatic or AIRMIX® depending on the model)
5	Fluid filter
6	Air control box (option)

Ind.	Description
10	Main air supply line (P = max 6 bar / 87 psi)
11	Robot control air (P = mini 4 bar / 58 psi)
12	Air hose, Ø 6x8 (fan air)
13	Air hose, Ø 6x8 (central air)
14	Air hose, Ø 4x6 (control air)
15	Fluid hose (depending hose) For water-based paint → insulating specific hose (10 or 15 m long) For solvent paint → specific hose + AIRMIX® hose
16	Warning sign

The **typical installation** shown above is only a guide for selecting and installing an electrostatic coating system.

The air control box (ind. 6) is optional. It enables air to be not exhausted through the gun air cap (no bleeder type gun). It checks the air pressures (spraying air and fan air)

### Installation diagram with a STD 9 power supply unit



Ind.	Description
A	Explosive area (area 1 and area 2) spray booth
B	Non explosive area
1	KA* Ex gun (depending on model)
2	HV generator barrel
3	STD 9 control supply unit
4	Fluid pump (pneumatic or AIRMIX® depending on model)
5	Fluid filter
6	Air control box

Ind.	Description
10	Main air supply line (P = max 6 bar / 87 psi)
11	Robot control air (P = mini 4 bar / 58 psi)
12	Air hose, Ø 6x8 (fan air)
13	Air hose, Ø 6x8 (central air)
14	Air hose, Ø 4x6 (control air)
15	Fluid hose (suivant modèle) For water-based paint → insulating specific hose (10 or 15 m long) For solvent paint → specific hose + AIRMIX® hose
16	Warning sign

The **typical installation** shown above is only a guide for selecting and installing an electrostatic coating system.

As the STD 9 power supply unit is fitted out with a flow switch (the STD 9 A power supply unit consists of a pressure switch), **it is compulsory to mount an air control box** or any other material (electrovalves, automaton, robot...) that can shut off the atomizing air (fan air and central air) of the guns.

For assistance in designing other system, contact your local authorized SAMES KREMLIN distributor.



## ■ GUN ASSEMBLY

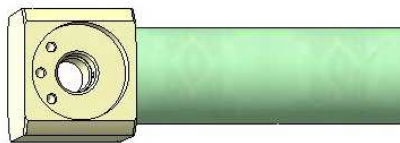
Mount the BG generator barrel as indicated. For a correct assembly, use only SAMES KREMLIN hook up systems.

- ➔ The stand used to support the parts to be painted must imperatively be grounded (be careful with hooks covered with dry paint!).
- ➔ The appropriate spraying distance must be of about 20 to 30 cm / 8" to 12" between the gun air cap and the part to be painted (the minimum distance must be of 15 cm / 6").

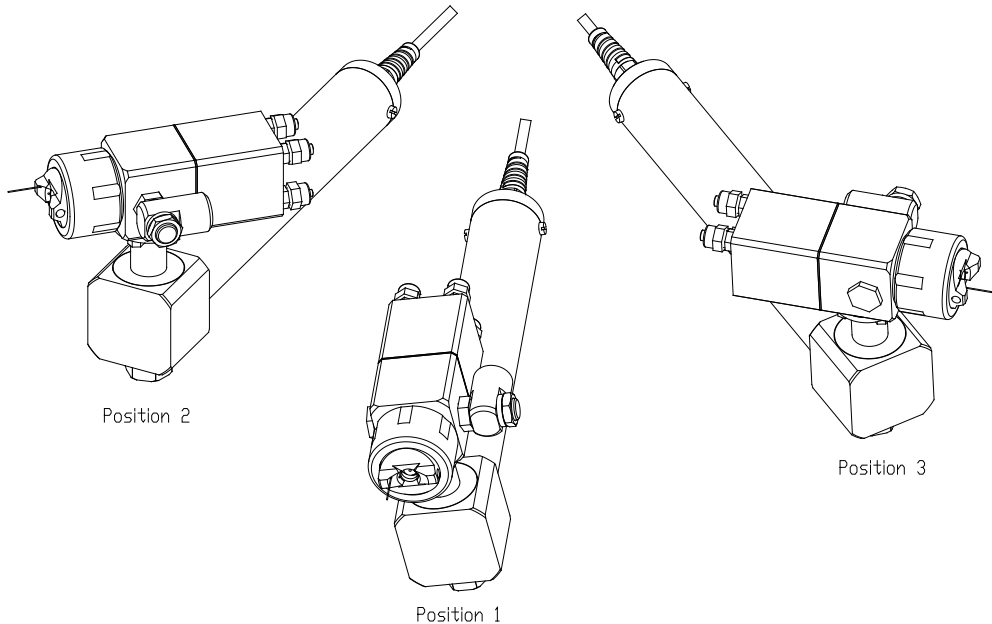
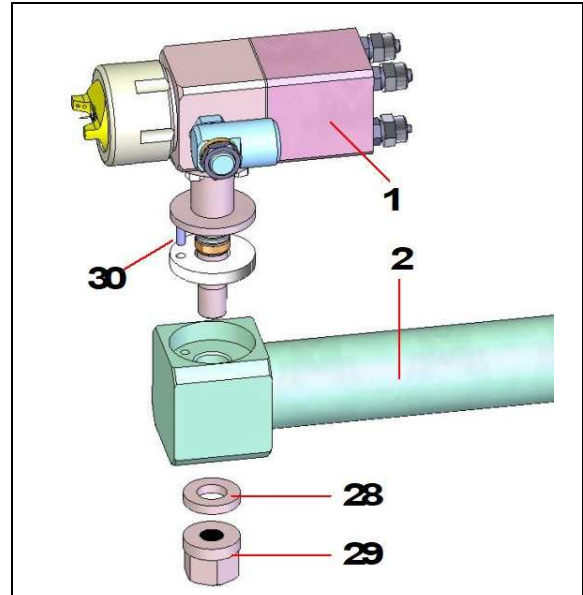
Mount the KA\* Ex gun (1) on the BG barrel (2) :

- Take off the nut (29) and the lower washer (28).
- Insert the gun axle into the barrel according to the position chosen. First, position the washer (28) and then screw the axle nut (29).

Three positions are possible depending on the position of the pin (30) in one of the holes of the generator barrel.



↑ 3 holes at 45°



➔ According to the installation, you can mount the gun either above or below the barrel.

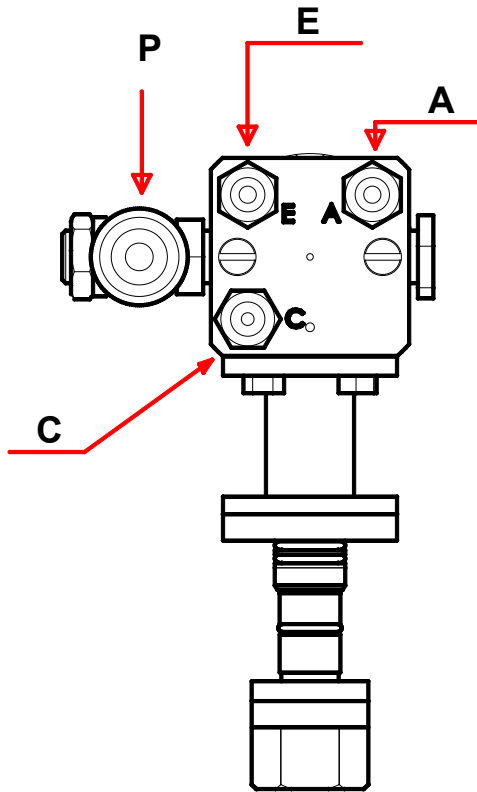
## ■ COMPRESSED AIR SUPPLY CONNECTION

Compressed air supply to the electrostatic coating system must be dry and clean. Dirt or moisture can ruin the quality of your finished work piece and can cause the gun to malfunction.

For correct operation of the electrostatic coating system, supply air to the pressure switch located in the power supply unit.

If necessary, install an air line lubricator at the pump inlet.

Check that the compressed air network has a minimum pressure of 4 bar / 58 psi (clean air).



### GUN BACK VIEW

- A Air hose, 6x8 (Polyamide)
- E Air hose, 6x8 (Polyamide)
- C Air hose, 4x6 (Polyamide)
- P Specific fluid hose

	Fitting	Air supply	Atomizing	Pressure adjustment (bar/psi)
<b>KA* Ex</b>	<b>C</b>	Control air	Gun opening → fluid	P = from 4 to 6 bar / from 58 to 87 psi
<b>KAX Ex</b>	<b>E</b>	Fan air	Even fan → elimination of tails	P = from 1 to 3 bar / from 14.5 psi to 43.5 psi
	<b>A</b>	Central air	Fan width : - wide fan - narrow fan	P = 0 P = from 1 to 3 bar / from 14.5 psi to 43.5 psi
<b>KAC Ex</b>	<b>E</b>	Central air	Fan width : - wide fan - narrow fan	P = 0 P = from 1 to 3 bar / from 14.5 to 43.5 psi
	<b>A</b>	Swirling air	Fineness of spraying	P = from 1 to 3 bar / from 14.5 to 43.5 psi
<b>KAP Ex</b>	<b>E</b>	Fan air	Fan width : - round fan - flat fan	P = 0 P = from 1 to 4 bar / from 14.5 to 58 psi
	<b>A</b>	Central air	Fineness of spraying	P = from 2 to 5 bar / from 29 to 72.5 psi
<b>KAV Ex</b>	<b>E</b>	Central air	Fan width : - narrow fan - wide fan	P = 0 P = from 1 to 4 bar / from 14.5 to 58 psi
	<b>A</b>	Swirling air	Fineness of spraying	P = from 2 to 5 bar / from 29 to 72.5 psi

An air control box enables a separate air connections and manages a separate adjustment of the fan air and central air (hose 6 x 8).

In this way, the air does not exhaust through the gun air cap (no bleeder type gun). The box control air will enable the air to be provided in 2 phases : atomizing air at first, then gun triggering air.

## ■ PRODUCT SUPPLY CONNECTION

Before connecting the fluid hose (15), check that the hose is suited to the pump working pressure and to the kind of paint sprayed (water-based paint or solvented paint).

*Nota : for easier assembly of the insulating specific hose, remove the gun fluid fitting, interconnect the hose to the fitting and mount the whole on the gun.*

Never use damaged fluid hoses. Use only SAMES KREMLIN fluid hose designed for the resistivity range of the fluid to be sprayed.

Connect the fluid filter (5) onto the pump fluid outlet (4).

Interconnect the fluid supply hose (15) between the filter (5) and the gun (1).

## ■ VENTILATE THE SPRAY BOOTH

To prevent hazardous concentrations of toxic and / or flammable vapors, spray only in a correctly ventilated spray booth.

Never operate the spray gun when the ventilation system is stopped.

High velocity air exhaust will decrease the operating efficiency of the electrostatic system (air exhaust velocity of 30 meters (98.5 ft)/minute should be sufficient).

Nevertheless, before operating the electrostatic coating system, make sure that the air velocity of the spray booth complies with the local regulations.

## ■ ELECTRICAL CHECKS

**Install the power supply unit (STD 9 A or STD 9) outside of the coating application area.**

Before connecting the power supply unit (3) on the main power source, be sure is compatible with the local voltage source.

Connect the three pin plug and cable assembly to the power source.

Connect the ground wire to the earth connection of the spray booth and conveyor.

With a megohmmeter, check the electrical grounding continuity between the ground connection of the power supply (3) and the grounded AC input power source (real earth connection).

Do not attempt to by-pass or defeat the ground interconnections : it may result in an electric shock hazard, fire or explosion.

Interconnect the generator barrel (2) electric cable to the power supply unit (3).

## 5. STARTING UP

### ➡ REFER TO GENERAL SAFETY INSTRUCTIONS

## ■ SAFETY REQUIREMENTS

Before using the electrostatic coating system :

Check that the operators have fully understood the safety instructions stated in this manual.

The operators must not wear gloves which could insulate the hand from the conductive gun handle. If using gloves, check that they are conductive in accordance with EN 50 053 or that a square has been cut out in the glove palm.

Be sure that the personnel entering the spraying area has read and understood the safety requirements stated in this manual.

Verify that any person entering the spray area is correctly grounded with conductive sole shoes or personal grounding straps.

Check that fans are in good operating condition.

Remove any useless parts from the spraying area and keep this area clean. Part holders and conveyor hooks must be cleaned frequently. All conductive objects must be electrically grounded as well.

## ■ FAN PATTERN ADJUSTMENT

Install the air nozzle and the air cap on the gun.

Screw retaining ring and air cap firmly onto the spray gun positioning the air cap to obtain the desired pattern orientation. Pattern orientation will be 90° from the orientation of the air horns on the air cap.

Prime the pump.

Trigger the gun with a minimum pressure of 4 bar / 58 psi.

Adjust the material pressure (pump air regulator) for the desired flow rate.

Adjust fan air pressure (E) and central air pressure (A).

**Nota : If more or less material are required, select another spray tip.**

## ■ ELECTROSTATIC CIRCUIT

Connect the STD 9 A or STD 9 power supply unit to its 115 V / 230 Vac power source.

Turn the power supply O-I switch to the I position.

Supply the power supply unit with compressed air (P = 4 bar / 58 psi).

→ The red indicator light turns on denoting electrostatic effect presence.

Turn the voltage adjustment knob (potentiometer "kV" fully clockwise :

→ The power supply emits a constant voltage at any given setting. This regulated voltage is transformed into high voltage within the generator barrel before being delivered to the gun.

## ■ FINISHING ADJUSTMENT

Adjust the spraying parameters :

- Fluid flow rate (pump air pressure).
- Atomizing air
- Fan width
- Electrostatic effect (high voltage is adjusted by the front potentiometer).

The fluid and air hoses as well as the gun remain clean.

The electrostatic wrap effect efficiency decreases quickly when gun and hoses are dirty.

## 6. DAILY CARE AND CLEANING

### ➡ REFER TO GENERAL SAFETY INSTRUCTIONS

The fluid and air hoses as well as the gun remain clean.

The electrostatic wrap effect efficiency decreases quickly when gun and hoses are dirty.

## ■ FLUID NETWORK CLEANING

### **Important recommendations**

Cleaning and flushing of the electrostatic coating system must be carried out in a ventilated area.

The ON / OFF switches on the power supply and gun must be OFF before starting cleaning operation.

All metallic parts located within 4 m (13 ft) around the gun must be correctly connected to the ground. The floor must be conductive and grounded.

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**Use cleaning solvents with the highest flash point - if possible, higher than the ambient temperature.**

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Only apply a moderate amount of solvent onto a clean soft cloth or bristle brush to clean the gun and hoses.

Synthetic resins used in the fabrication of the electrostatic manual guns can react with certain solvents.

**Avoid using the most toxic solvents. Do not use chlorinated solvents.**

Clean all parts with a non-conductive (1) solvent, compatible with the fluid being sprayed (conductive (1) solvent can cause the gun to malfunction). If cleaning requires the use of a conductive (1) solvent, never leave this solvent inside the fluid network. Flush it with a non-conductive (1) solvent, blow the fluid hose out with air and dry the gun carefully.

(1) non-conductive solvents are also called non polar solvents; conductive solvents are also called polar solvents.

Before switching ON the electrostatic effect :

- Install the air cap assembly over the needle seat or tip and secure in position with retaining ring on-to the gun.
- After applying solvent onto the gun and hoses check they are completely dried.
- Check the cleaning solvent vapors due to the cleaning operation are totally evacuated.

## **Procedure**

Turn the ON / OFF switch on the power supply and gun to OFF "O" (All indicator lights switch off).

Depressurize air hoses.

Empty all material from the container, then fill the material container with a solvent compatible with the material just emptied.

Decrease the air pressure on the pump air motor (KAX Ex and KAC Ex guns).

Send the control air to trigger the gun.

**Warning : Never switch on the power supply unit during this flushing operation. Otherwise it may result in ignition or explosion of the air / solvent mixture.**

When clear solvent flows from the gun, stop the pump and depressurize fluid hoses.

Blow up the fluid hose with compressed air.

Reassemble the air cap and tip onto the spray gun and clean them with the appropriate solvent.

*Before switching ON the electrostatic effect :*

- *Install the air cap assembly over the needle seat or tip and secure in position with retaining ring on-to the gun.*
- *After applying solvent onto the gun and hoses check they are completely dried.*
- *Check the cleaning solvent vapors due to the cleaning operation are totally evacuated.*

## ■ **GUN CLEANING**

Never immerse the gun in solvent.

Do not use metal tools to clean the gun or the air cap holes, as they scratch them and create a distortion of the spray pattern.

Only use soft cloth or bristle brush.

Clean the front of the gun and the fluid nozzle with the gun pointed down, to prevent dirty solvent from flowing back into the air passages.

## ■ **AIR CAP CLEANING**

Make sure that the fluid pressure has been released in fluid hose.

Remove air cap ring and air cap from the spray gun.

Clean them with a soft brush and some solvent (do not leave these items immersed in solvent).

Blow up the air cap and air cap ring with compressed air.

After cleaning, store the air cap, tip, nozzle and needle seat or reinstall them onto the gun.

On KAX Ex and KAC Ex guns, check the electrode wire. Never start up a gun whose electrode wire is damaged or broken.

## 7. INSTALLATION SHUTDOWN

### ■ SHORT DURATION SHUTDOWN

You can leave paint inside hoses and gun, except paint with a high percentage of hardener (for example, polyurethane paint).

### ■ LONG DURATION SHUTDOWN

➔ **Shut off the electrical supply.**

Flush the installation with solvent. Clean the gun carefully with a soft cloth or bristle brush.

Blow up with compressed air. Make sure the tip is not clogged.

Install the tip onto the gun after cleaning.

➔ **Never immerse the air cap, the tip or the gun in solvent. Keep them in a dry area.**

➔ **Do not use metal tools to clean the gun or the air cap holes, as they scratch them and create a distortion of the spray pattern.**

## 8. MAINTENANCE

During the day, make sure :

- make sure the gun is clean,
- coating material is not present in the air hoses,
- all hoses are not worn or crimped and all air and coating material connections are tight.
- the safety circuit is functioning properly by moving a grounded object toward the front of the gun.

## 9. TROUBLESHOOTING AND ELECTRICAL TESTS

### ■ GUN OPERATION TROUBLESHOOTING CHART

TROUBLE	PROBABLE CAUSE	SOLUTION
Jerking or spitting spray.	Air is being suctioned into material stream.	Check pump suction hose for leaks and tighten fittings. If necessary, use thread sealant or male thread.
	Unsufficient fluid pressure.	Increase pump air pressure and / or clean fluid filter.
	Dirt in the fluid line.	Clean the fluid line, clean the fluid filter.
	Not enough fluid in the fluid container.	Fill the fluid container.
No fluid output	Tip blocked	Clean it
	Insufficient air pressure to trigger the gun.	Minimum pressure = 4 bar / 58 psi
	Fluid filter clogged	Clean it.
	No pressure on the pump	Check it
Fluid continuously leaking from gun tip	Needle tip worn	Replace it
	Seat worn	Replace it

TROUBLE	PROBABLE CAUSE	SOLUTION
Fluid leaks through holes in air cap	Loose air cap. Improper position of tip over the needle seat (KAX Ex, KAC Ex). O Ring on seat worn or damaged	Tighten air cap retaining ring; do not overtighten. Clean the air cap and tip. Check that fluid did not flow back in the air passages. Replace it.
Poor atomization	Tip obstructed / tip clogged (KAX Ex - KAC Ex). Low fluid pressure (KAX Ex - KAC Ex). Fluid viscosity too high Atomizing air pressure low. Fluid flow rate too high (KAV Ex - KAP Ex).	Clean it. Increase pressure. Reduce viscosity adding compatible solvent (or heating material where appropriate). Increase atomized air pressure. Decrease the fluid flow rate (decrease pump air pressure).
"Orange peel" finish	Evaporation of solvent too fast. Improper thinner of fluid being sprayed.	Use slower evaporation solvent. Dilute fluid with solvent - Increase the air pressure (KAX Ex - KAC Ex). Increase fluid pressure - Use smaller tip size.
Fluid runs	Evaporation of solvent too slow. Excessive delivery	Use faster evaporating solvent. Spray at a greater distance. Reduce fluid flow rate - Increase air atomization pressure - Reduce electrostatic system.
Excessive delivery in middle of spray	Excessive fluid flow rate (KAP Ex - KAV Ex). Improper tip size (KAX Ex). Improper fluid thinner. Air holes in air cap obstructed.	Reduce fluid flow rate. Increase air atomization pressure. Use a smaller tip Dilute fluid with solvent or heating fluid where appropriate. Clean air cap.

## ■ ELECTRICAL TROUBLESHOOTING CHART

TROUBLE	PROBABLE CAUSE	SOLUTION
No electrostatic effect	No high voltage	Check for low voltage from power supply, check power supply manual troubleshooting. Check the electrical interconnection.
	Improper distance between gun and work part.	Adjust spraying distance between 200 and 300 mm (8" to 12").
	Poorly grounded parts.	Check these parts, holder and conveyors are correctly grounded. Clean where necessary.
	High exhaust velocity in booth	Reduce exhaust velocity (within standard limit).
	Atomizing air pressure too high.	Reduce it.
	Excessive fluid pressure (KAP Ex - KAV Ex).	Reduce it.
	Improper fluid viscosity	Check with supplier for proper fluid for electrostatic spraying.
Low or high fluid resistivity.	Check with resistivity meter.	

## 10. DISASSEMBLY - REASSEMBLY



**WARNING :** Before any action on the gun, shut off the electrical supply, the compressed air supply and depressurize the systems. (refer to § 2 "GENERAL SAFETY INSTRUCTIONS").

### ■ GUN REPLACEMENT

Disassemble gun from generator barrel.

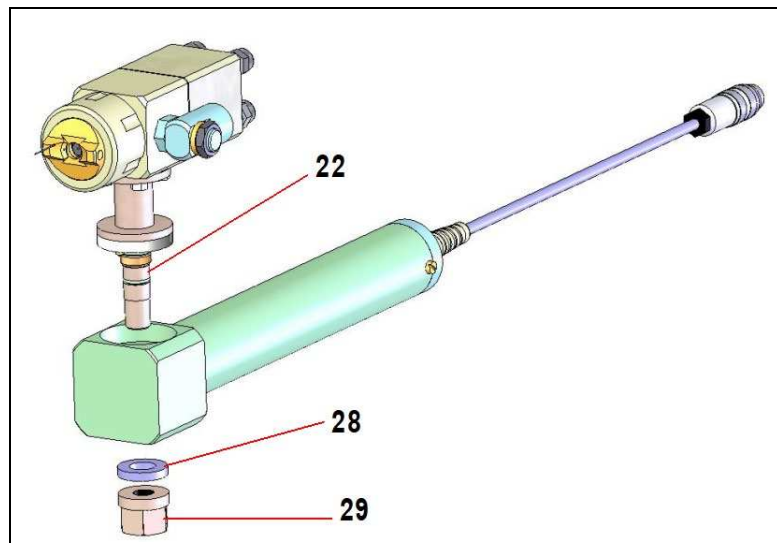
Unscrew nut (29) and remove washer (28).

Take off the gun.

Put grease on the axle washers of the new gun (22).

Insert gun axle onto barrel.

Place washer (28), then screw axle nut (29).





■ **SEAT (49) : ACCESS BY THE FRONT PART OF THE GUN**

Unscrew ring (40), put aside air cap (43) and tip (44).

Unscrew seat (49) and replace it. Make sure you install the seat seal (50).

■ **NEEDLE (55) : ACCESS BY THE BACK PART OF THE GUN**

Unscrew plugs (12) and screws (11).

Remove rear body (6) and spring (15) (pay attention to the seal 8).

Pull piston to remove needle-piston assembly (55).

Take new needle-piston assembly, lubricate slightly ball and O Ring and insert it carefully into tightening screw (16), cartridge (17).

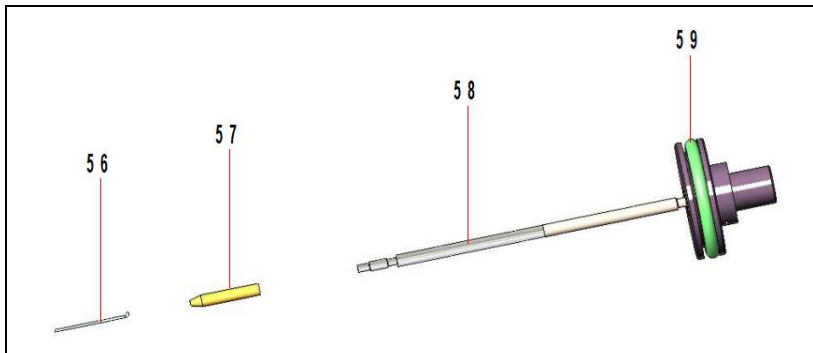
Change seals if necessary.

Reinstall spring, rear body, screws and plugs.

➔ **Make sure plugs (12) are installed. They contribute to the security.**

**Nota :** For the KAP Ex needle, you can change the electrode (56) or the needle end (57) without changing the complete needle.

Remove the air cap and the tip of the gun, then remove the end to change the electrode.



■ **TIGHTNESS CARTRIDGE (17) : ACCESS BY THE BACK PART OF THE GUN**

Unscrew the plugs (12), the screws (11)

Remove rear body (6) and spring (15) (pay attention to the seal 8).

Pull piston to remove needle-piston assembly (55).

Unscrew screwing screw (16).

With a long-nose pliers, pull the cartridge (17).

After the lubrication of the O Ring seal (19), replace it. Comply with installation order.

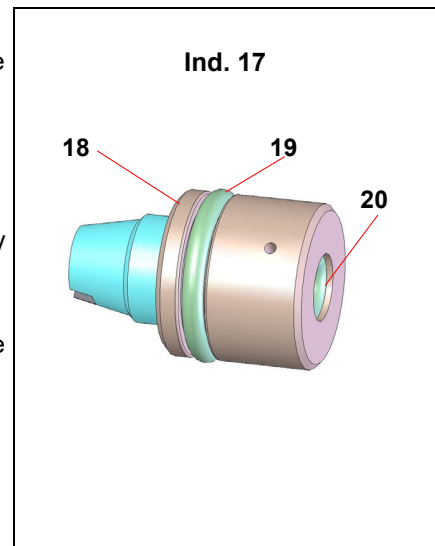
Screw tighten screw (16).

Lubricate slightly end ball and seal (58), then insert needle piston assembly (55).

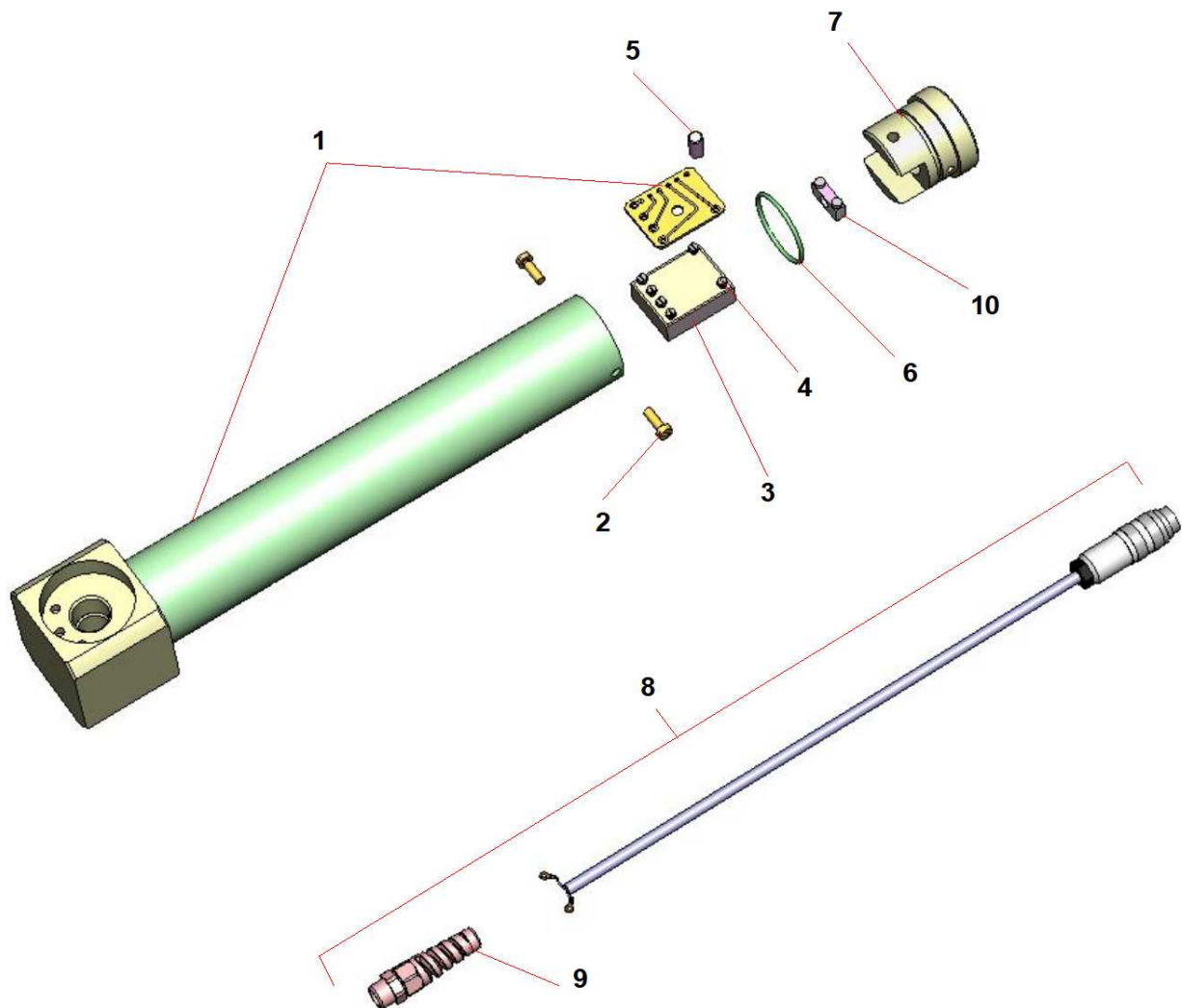
Change seals if necessary.

Remount spring, rear body, screws and plugs.

➔ **Make sure plugs (12) are installed. They contribute to the security.**



## ■ OSCILLATOR REPLACEMENT (IND. 3)



### **Removal**

- 1 - Separate the barrel from its support (wrench # 3).
- 2 - Unscrew the 2 screws (2)
- 3 - Pull the end (7) **carefully** to take off the oscillator.
- 4 - Unscrew the screw (5).
- 5 - Unscrew the stuffing-box (9) holding the lock nut (wrench # 15) to make the cable slide.
- 6 - Take off the oscillator and its circuit from the end (7).
- 7 - Unscrew the 6 screws (4 and 98) carefully and separate the oscillator (3) from its circuit.
- 8 - Change the oscillator (3).

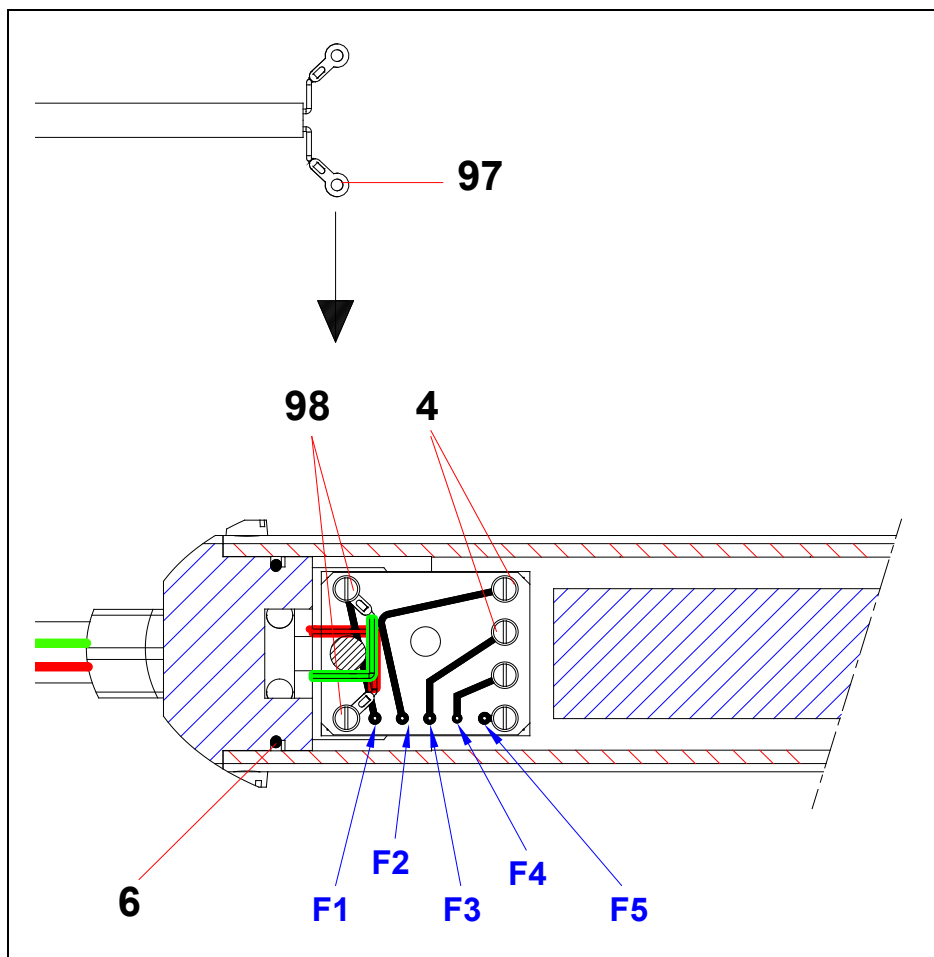
### **Installation**

**IMPORTANT : prior to reinstalling, change the O-ring (6).**

- 1 - Fix the circuit on the oscillator with 4 screws (4) and 4 washers (screws and washers are supplied with the spare oscillator).
- 2 - Fix the 2 thimbles (97) of the cable on the oscillator with 2 washers and 2 screws (98).

**Do not forget to install the washers.**

Comply with the position and the orientation of the thimbles.



- 3 - Insert the oscillator (3) inside the end (7) and fix it with the screw (5).
- 4 - Tighten the stuffing-box (9).
- 5 - Fix the end (7) at the end of the barrel tightening the 2 screws (2).

**COMPLY WITH INSTALLATION ORDER - CORRECT TIGHTENING IS REQUIRED.**

## ■ HV CABLE REPLACEMENT (IND. 8)

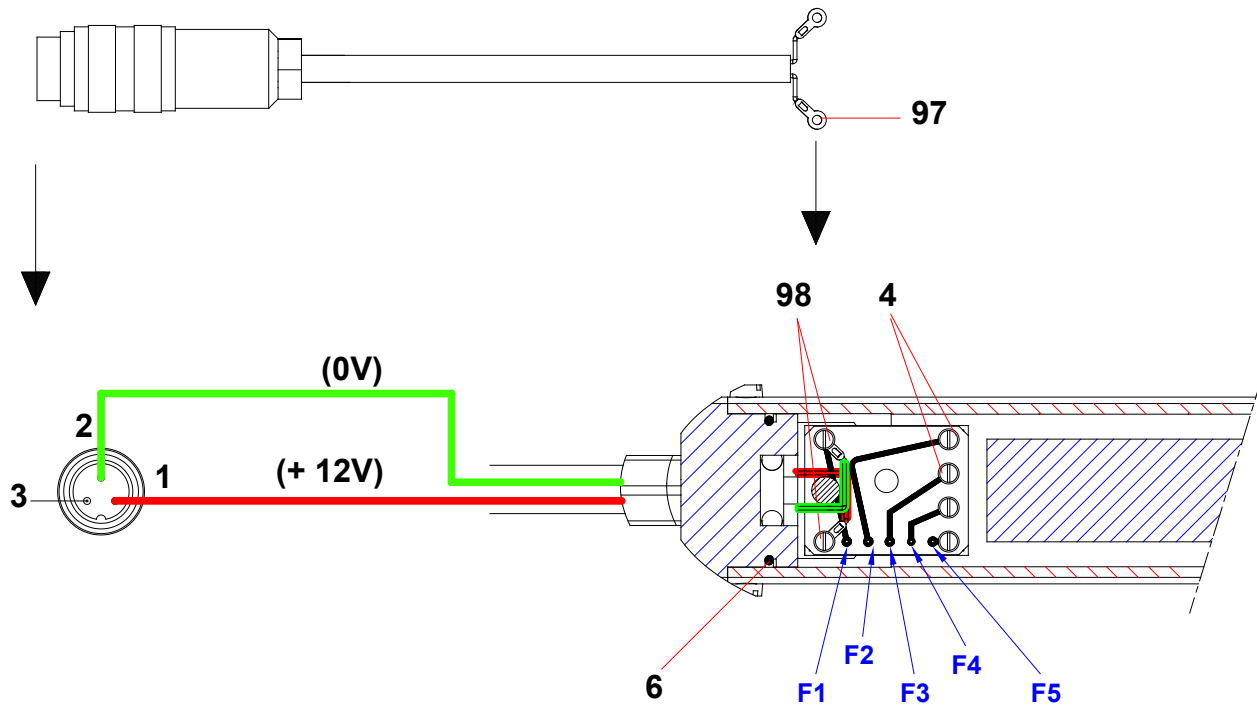
### Removal

- 1 - Carry out operations **1 to 6** of oscillator removal.
- 7 - Unscrew the screws cable grip.
- 8 - Unscrew the 2 screws (98) to separate cable from the oscillator.
- 9 - Change the cable.

### Installation

- 1 - Change the seal (6)
- 2 - insert the cable into end (7).
- 3 - Install the cable grip without tightening the screws.
- 4 - Fix the 2 thimbles (97) of the cable on the oscillator with 2 washers and 2 screws (98).
- 5 - Tighten the screws of the cable grip.
- 6 - Pull the cable to install the cable grip inside the end.
- 7 - Insert the oscillator inside the end (7) and fix it with the screw (5).
- 8 - Install the end (7) at the end of the barrel.
- 9 - Screw the lock-nut of the stuffing-box.
- 10 - Tighten the 2 screws (2).

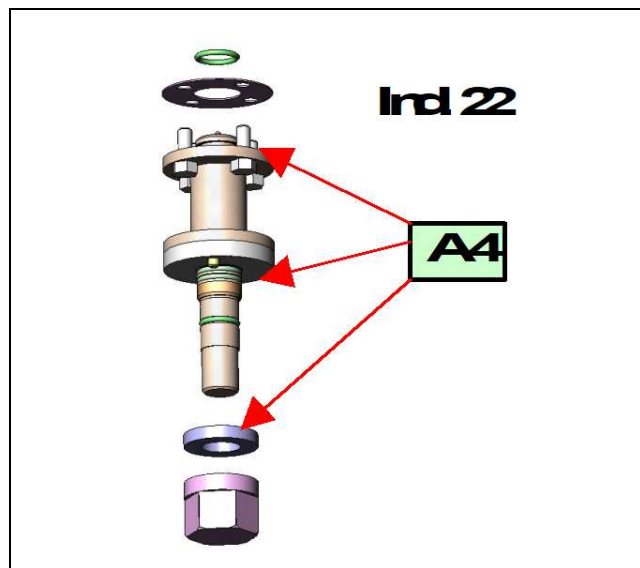
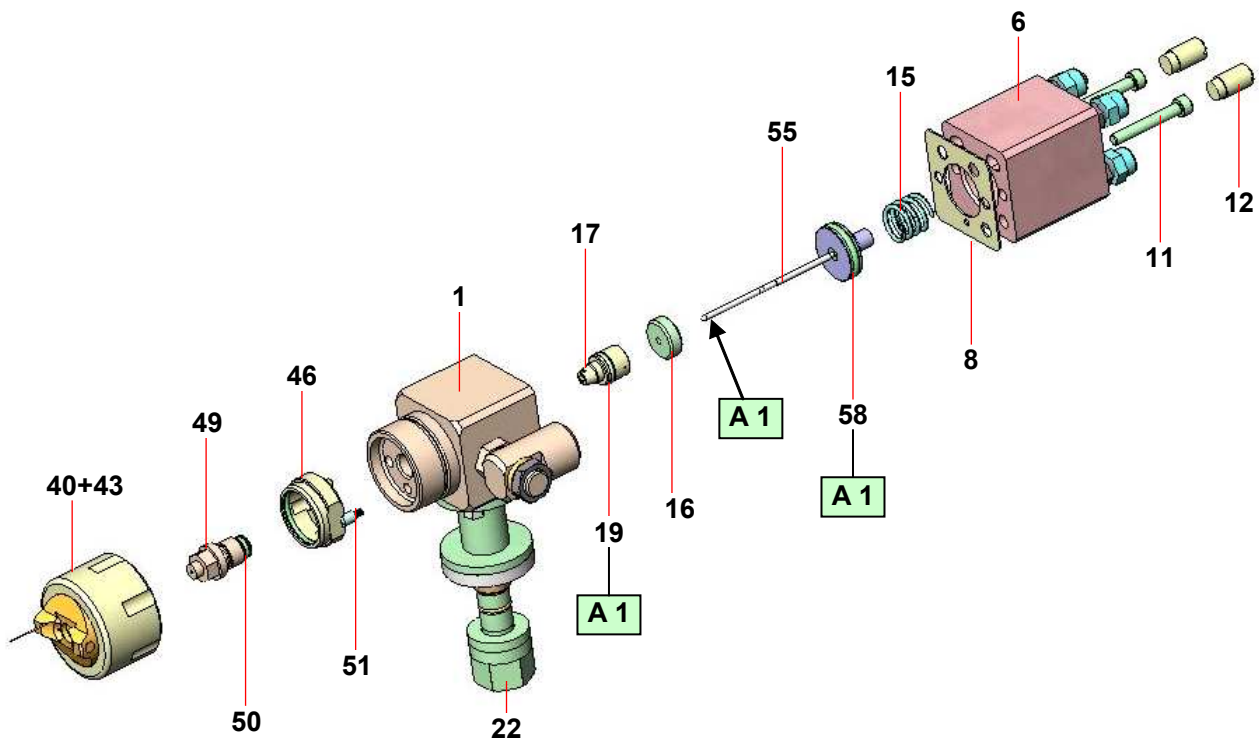
### Connection of the cable



1	Red wire (+12V)
2	Green wire (0V)

F1	White wire
F2	Yellow wire
F3	Green wire
F4	Red wire
F5	Blue wire

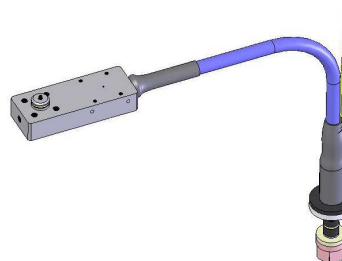
# 11. ASSEMBLY INSTRUCTIONS (Example : KAX Ex GUN)



Index	Instructions	Description	Part number
A 1	PTFE grease	PTFE grease (10 ml / 0.0026 US gal)	560.440.101
A 4	Isolating grease	-	-

## 12. OPTION


### SPECIAL HIGH VOLTAGE CABLE



The high voltage cable, 1.5 m / 5 ft long, is designed to separate an electrostatic automatic gun (models KAP Ex, KAV Ex, KAX Ex or KAC Ex) from its generator barrel.

#### Disassembly :

(drawing A)

 Shut off the voltage at the supply box level.

Separate the gun (1) from the generator barrel (2) removing the nut (29) and the washer (28).


Unscrew the 4 screws (24) to remove the axis (23).

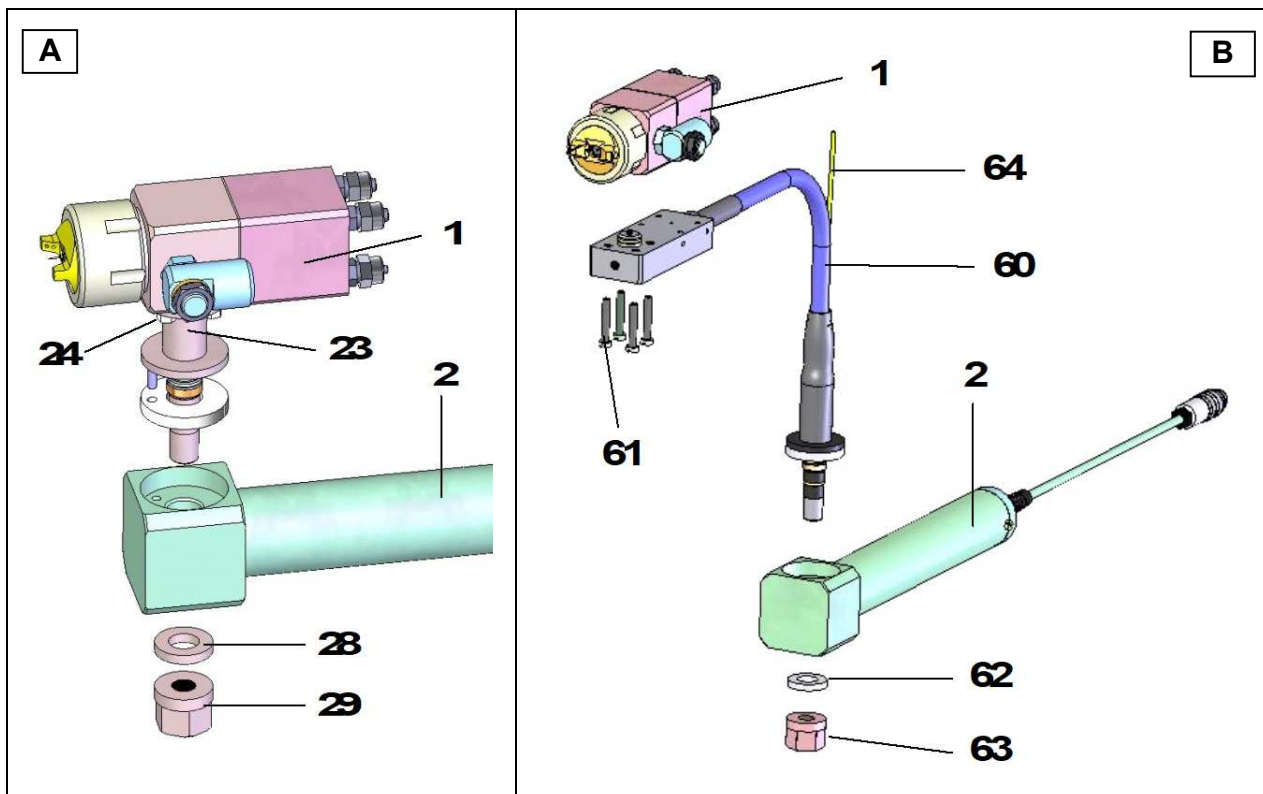
#### Assembly :

(drawing B)


Install the gun on the base of the HV cable (60). Fix it by means of the 4 screws (61).

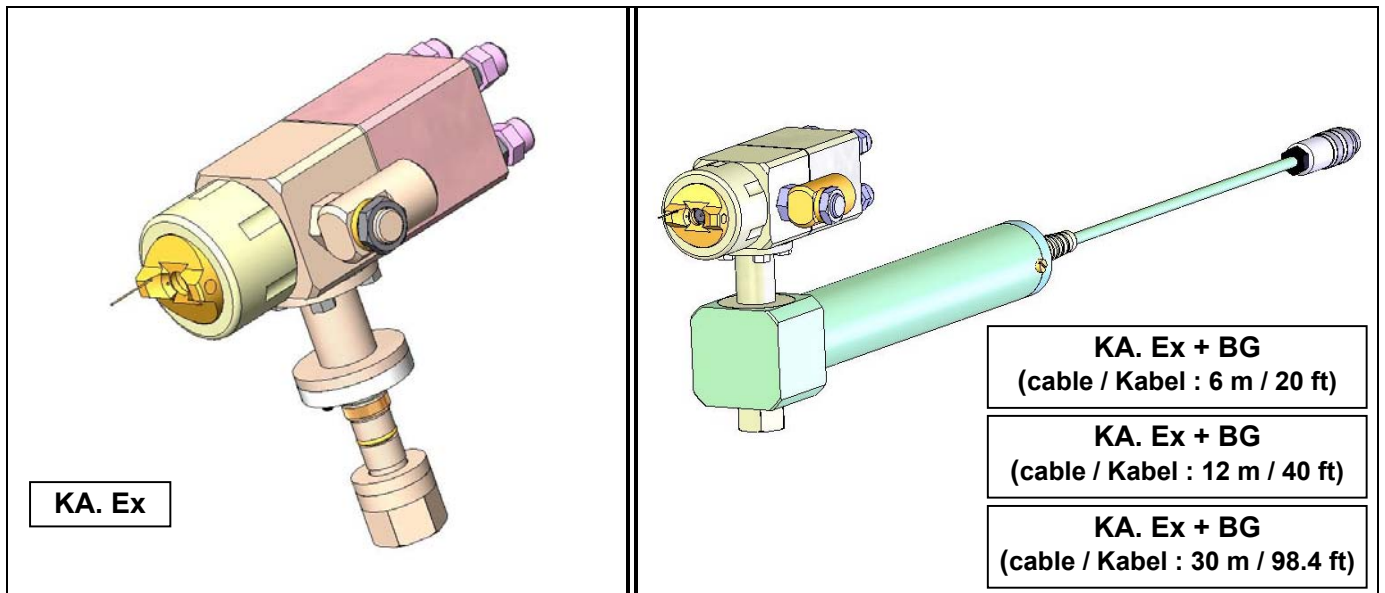
Remove the nut (63) and the washer (62) located at the end of the cable. Locate the axis on the GB (2). Fix the whole reinstalling the washer and the nut.

 Ground the earth cable (64) to a safe earth.



<b>Doc. 573.350.050</b> Date/Datum/Fecha : 17/04/19 Annule/Cancel/ Ersetzt/Anula : 18/01/08	<b>Modif. / Änderung :</b> Mise à jour / Update / Aktualisierung / Actualización	<b>Pièces de rechange</b> <b>Spare parts list</b> <b>Ersatzteilliste</b> <b>Piezas de repuesto</b>
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<b>KA.</b> 	<b>TABLEAU DES REFERENCES DES PISTOLETS</b> <b>/ ELECTROSTATIC GUNS PART NUMBER LIST</b> <b>/ TABELLE DER BESTELL- NUMMERN DER SPRITZPISTOLEN</b> <b>/ CUADRO DE LAS REFERENCIAS DE LAS PISTOLAS</b>
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		KA. Ex #	KA. Ex + BG #
<b>KAP Ex</b>	Pistolet + buse 12 + tête KP 3 Spray gun + nozzle # 12 + KP 3 aircap Pistole + Düse 12 + Luftkappe KP 3 Pistola + boquilla 12 + cabezal KP 3	<b>129.397.400</b>	<b>135.397.740</b>
<b>KAV Ex</b>	Pistolet + buse + tête Spray gun + nozzle + aircap Pistole + Düse + Luftkappe Pistola + boquilla + cabezal	<b>129.397.300</b>	<b>135.397.730</b>
<b>KAX Ex</b>	Pistolet + tête KX 16, sans buse Spray gun + KX 16 aircap, without tip Pistole + Luftkappe KX 16, ohne Düse Pistola + cabezal KX 16, sin boquilla	<b>129.397.200</b>	<b>135.397.720</b>
<b>KAC Ex</b>	Pistolet + buse K 30 + tête KAXC 5 Spray gun + K 30 nozzle + KAXC 5 aircap Pistole + Düse K 30+ Luftkappe KAXC 5 Pistola + boquilla K 30+ cabezal KAXC 5	<b>129.397.500</b>	<b>135.397.750</b>

## KITS DE CONVERSION / CONVERSION KIT / UMBAUSÄTZE / KIT DE TRANSFORMACIÓN

<b>Kit KAP Ex</b> # 129.397.410	<b>Kit KAX Ex</b> # 129.397.210
<b>Kit KAV Ex</b> # 129.397.310	<b>Kit KAC Ex</b> # 129.397.510





Quel que soit le type de pistolet (KAP Ex, KAV Ex, KAX Ex, KAC Ex), il est possible de le transformer dans une autre version (par ex. : de KAC Ex vers KAX Ex) en montant le kit de conversion correspondant à la version souhaitée.

Whatever spray gun you have (KAP Ex, KAV Ex, KAX Ex, KAC Ex), it is possible to change it into another version (for eg. from KAC Ex to KAX Ex) by fitting the relevant conversion kit to your existing gun.

Für jeden Pistolentyp (KAP Ex, KAV Ex, KAX Ex, KAC Ex) ist es möglich, ihn in eine andere Version (z.B. von KAC Ex zu KAX Ex) umzubauen, indem Sie den entsprechenden Umbausatz montieren.

Sea cual sea el tipo de pistola (KAP Ex, KAV Ex, KAX Ex, KAC Ex) siempre es posible transformarlo en una versión diferente (por ej. : de KAC Ex en KAX Ex) montando el kit de transformación correspondiente a la versión deseada.

## MATERIELS COMPLEMENTAIRES AUX PISTOLETS KA Ex / ACCESSORIES FOR KA Ex GUNS / ZUBEHÖR FÜR KA EX-PISTOLEN / MATERIALES COMPLEMENTARIOS PARA PISTOLAS KA Ex

			
Ind. / Pos. 1a / 1b	Ind. / Pos. 2	Ind. / Pos. 3	Ind. / Pos. 4

Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
1a	129 397 600	Barreau générateur (avec câble électrique, longueur 12 m)	Generator barrel (with electric cable, 12 m / 40 ft long)	Generator (mit Elektrokabel, Länge 12 m)	Generadora (con cable de alimentación, Longitud 12 m)	1
1b	129 397 660	Barreau générateur (avec câble électrique, longueur 30 m)	Generator barrel (with electric cable, 30 m / 98.4 ft long)	Generator (mit Elektrokabel, Länge 30 m)	Generadora (con cable de alimentación, Longitud 30 m)	1
2	148 200 400	Boîtier STD9 A	STD 9 A power supply	STD 9 A-Steuereinheit	Armario STD9 A	1
3	910 005 790	Résistivomètre	Resistivity meter	Widerstandsmeßgerät	Resistivometro	1
4	148 250 000	Coffret de gestion d'air	Air control box	Luftsteuereinheit	Armario de gestión de aire	1

### Tuyau air / Air hose / Luftschlauch / Tubería de aire

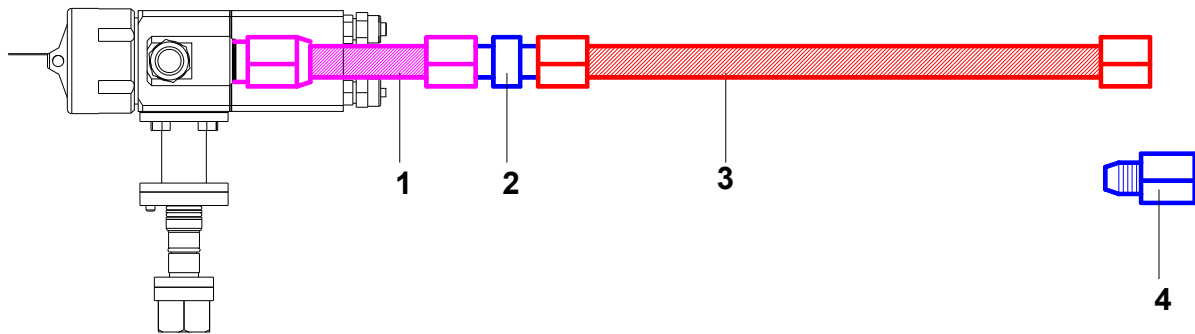
#	Désignation	Description	Bezeichnung	Denominación
	Tuyau air	Air hose	Luftschlauch	Tubería de aire
050 371 001	∅ 4 x 6 mm	∅ 4 x 6 mm	∅ 4 x 6 mm	∅ 4 x 6 mm
050 371 002	∅ 6 x 8 mm	∅ 6 x 8 mm	∅ 6 x 8 mm	∅ 6 x 8 mm



Tuyau produit / Fluid hose / Materialschlauch / Tubería de producto

Résistivité du produit / Resistivity of the coating material  
/ Widerstand des Materials / Resistividad del producto a pulverizar :

> 5 MΩ.cm

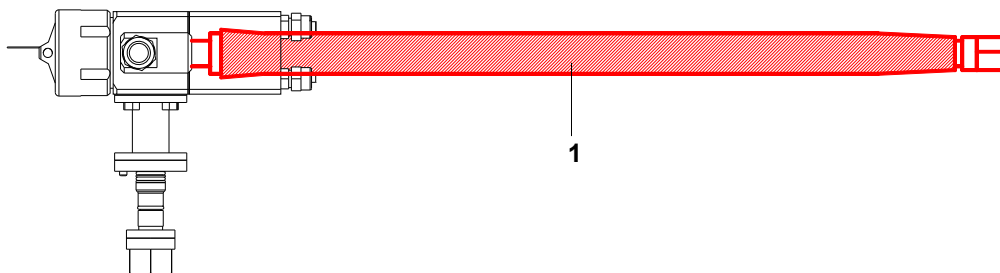


Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
1	129 393 060 129 393 050	Tuyau produit (Ø 4,8 int.), raccord spécifique + raccord F 1/2 JIC • Longueur 1 m • Longueur 5 m	Fluid hose (i.d. 3/16 " ), specific fitting + fitting, # 5 JIC (F 1/2 JIC) • 1 m / 3.3 ft long • 5 m / 16.5 ft long	Materialschlauch (Ø 4,8 inn ) spezifische Anschluß + Anschluß IG 1/2 JIC • Länge 1 m • Länge 5 m	Tubería de producto (Ø 4,8 int), racor especial + racor H 1/2 JIC • Longitud 1 m • Longitud 5 m	1
2	050 102 301	Raccord MM 1/2 JIC	Fitting, # 5 JIC (MM 1/2 JIC)	Doppelnippel, AG 1/2 JIC	Racor MM 1/2 JIC	1
3	050 450 801 050 450 802	Tuyau produit , non conducteur, raccords F 1/2 JIC : Ø 4,8 int. • Longueur 5 m • Longueur 10 m	Fluid hose, no conductive, fittings # 5 JIC (F 1/2 JIC) i.d. 3/16 " • 5 m / 16.5 ft long • 10 m / 33 ft long	Materialschlauch, nicht leitfähig, Anschluß IG 1/2 JIC Ø 4,8 inn • Länge 5 m • Länge 10 m	Tubería de producto, no conductor, radores H 1/2 JIC Ø 4,8 int • Longitud 5 m • Longitud 10 m	1
	050 450 709 050 450 710	Ø 6,3 int. • Longueur 15 m • Longueur 30 m	i.d. 1/4 " • 15 m / 50 ft long • 30 m / 98.4 ft long	Ø 6,3 inn • Länge 15 m • Länge 30 m	Ø 6,3 int • Longitud 15 m • Longitud 30 m	

Pour pompe pneumatique / For pneumatic pump / Für pneumatik-Pumpe / Para bomba neumática

4	050 123 306	Raccord F 3/8 NPS - M 1/2 JIC	Fitting, F 3/8 NPS - M # 5 JIC (1/2 JIC)	Anschluß IG 3/8 NPS - AG 1/2 JIC	Racor H 3/8 NPS - M 1/2 JIC	1
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<b>Résistivité du produit / Resistivity of the coating material / Widerstand des Materials / Resistividad del producto a pulverizar :</b>	<b>0 → 5 MΩ.cm</b>
<b>Pour peintures hydrodiluable / For water-based material applications / Für das Arbeiten mit Wasserlacken / Para pinturas hidrosolubles</b>	



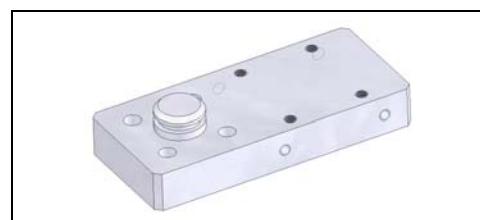
Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
1		Tuyau produit (isolé)	Fluid hose (insulating)	Materialschläuche	Tubería producto (aislada)	1
	129 292 310	▪ Longueur 10 m	▪ 10 m / 33 ft long	▪ Länge 10 m	▪ Longitud 10 m	
	129 292 315	▪ Longueur 15 m	▪ 15 m / 50 ft long	▪ Länge 15 m	▪ Longitud 15 m	
	129 292 320	▪ Longueur 30 m	▪ 30 m / 98.4 ft long	▪ Länge 30 m	▪ Longitud 30 m	

**Pour montage pistolet KA. Ex avec bulle hydrodiluable / For assembly of KA. Ex gun with Isobubble  
/ Für Montage der Pistole KA. Ex mit der Wasserlack Isolierblase  
/ Para montaje de la pistola KA. Ex con burbuja hidrosoluble**

#	Désignation	Description	Bezeichnung	Denominación
129 397 650	Barreau générateur (avec câble électrique, long. 6 m)	Generator barrel (with electric cable, 6 m / 20 ft long)	Generator (mit Elektrokabel, Länge 6 m)	Generadora (con cable de alimentación, Longitud 6 m)
129 397 910	Embase avec joints et vis	Base with O ring and screws	Sockel mit O-Ring und Schrauben	Base con juntas y tornillos

L'embase se monte sur le pistolet KA. Ex à la place du barreau générateur.  
The base is mounted instead of the generator barrel on the KA.Ex gun.  
Sockel für Montage der Pistole KA. Ex mit der Wasserlack Isolierblase.  
La base se monta en la pistola KA.Ex en vez de la barra generadora.

**# 129.397.910**



**OPTIONS - ON REQUEST - OPTIONEN - OPCIÓN**

#	Désignation	Description	Bezeichnung	Denominación
129 270 087	Enveloppe de protection des tuyaux (lg. 10 m)	Protective hose sleeving (10 m / 33 ft long)	Schlauch Schutzhülle (Länge 10 m)	Funda de protección de las tuberías (10 m de largo)
129 270 089	Outil démontage-contact	Specific tool (contact removal)	Spezialwerkzeug (für Ausbau Hochspannungskontakt)	Util desmontaje-contacto
155 010 000	Filtre produit en ligne (avec tamis de 6 - Pression : 200 bar)  • entre 2 tuyaux (raccord MM 1/2 JIC) (voir Doc. 573.253.050)	In-line fluid filter (with screen # 6 - Pressure : 200 bar / 2900 psi)  • To be mounted between 2 hoses (fitting, double male, # 5 JIC) (refer to Doc. 573.253.050)	Durchgang Materialfilter (mit Sieb Nr. 6 - Druck : 200 bar)  • Zwischen 2 Schläuchen (Anschluß AG 1/2" JIC - AG 1/2" JIC) (siehe Dok. 573.253.050)	Filtro producto en línea (con tamiz de 6 - Presión : 200 bar)  • Entre 2 tuberías (racor MM 1/2 JIC) (consultar Doc. 573.253.050)
155 010 100	• à la crosse du pistolet (raccord MF 1/2 JIC) (voir Doc. 573.253.050)	• to be mounted on gun handle (fitting MF # 5 JIC) (refer to Doc. 573.253.050)	• am Pistolen Handgriff (Anschluß AG 1/2" JIC - IG 1/2" JIC) (siehe Dok. 573.253.050)	• a la empuñadura de la pistola (racor MH 1/2 JIC) (consultar Doc. 573.253.050)



Câble spécial HT (long.1,5m)

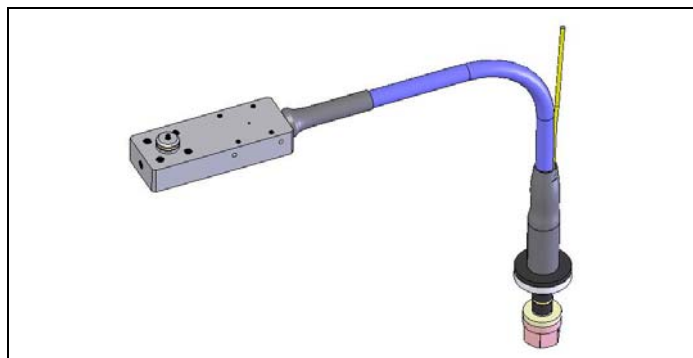
Special HV cable (1,5 m / 5 ft long)

Spezielles Hochspannungskabel (Länge : 1,5 m)

Cable especial alta tensión (1,5 m de largo)

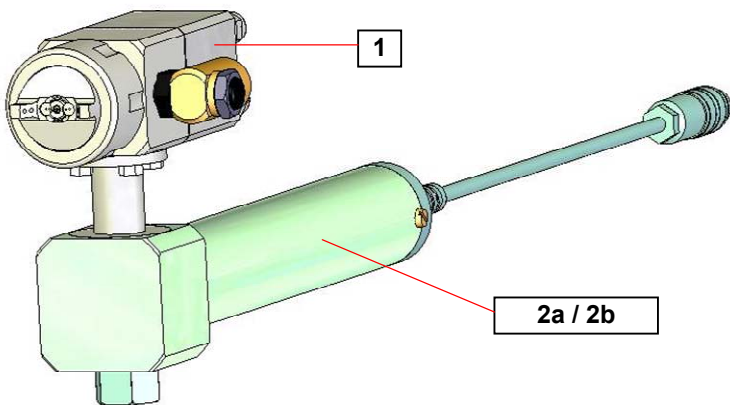
# 129.397.800

(📄 Doc. 573.136.080)

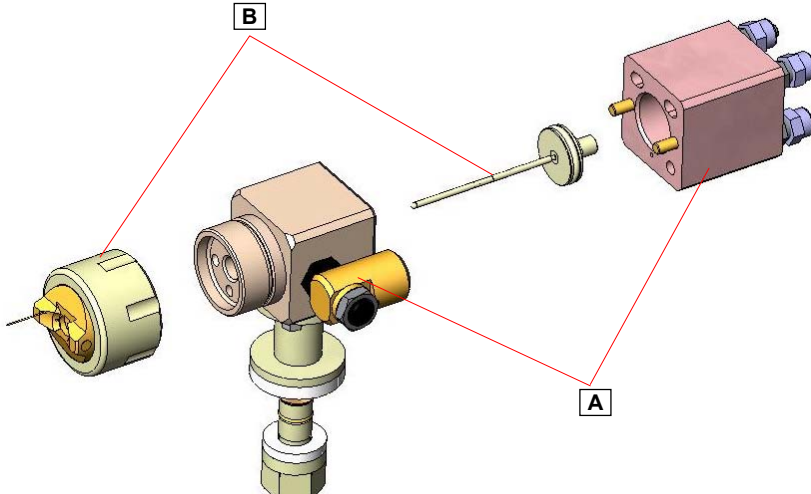


<b>Doc. 573.339.050</b> Date/Datum/Fecha : 24/04/19 Annule/Cancel/ Ersetzt/Anula : 01/10/09	<b>Modif. / Änderung :</b> Mise à jour / Update / Aktualisierung / Actualización	<b>Pièces de rechange</b> <b>Spare parts list</b> <b>Ersatzteilliste</b> <b>Piezas de repuesto</b>
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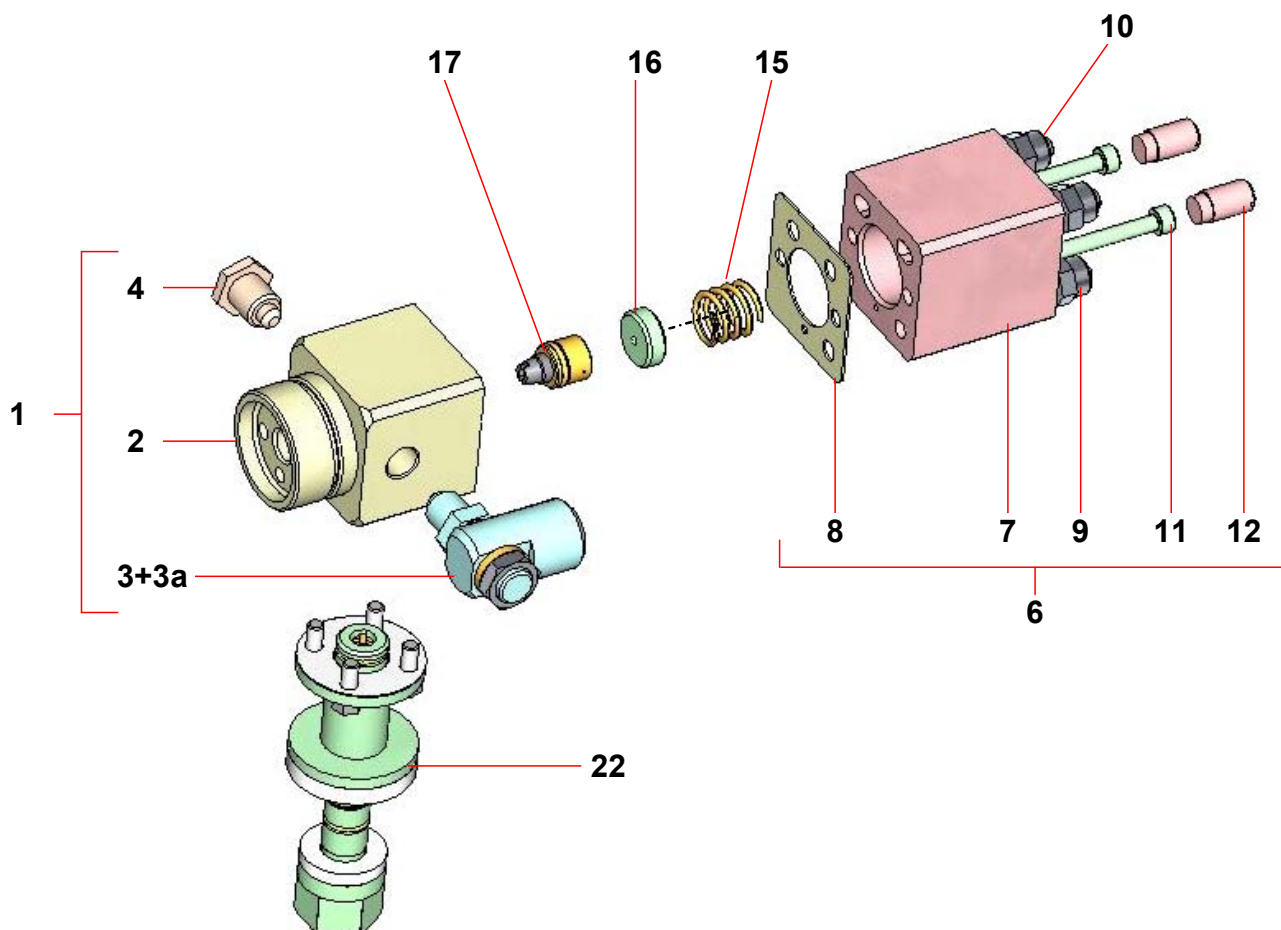
<b>PISTOLET ELECTROSTATIQUE AUTOMATIQUE AIRMIX®</b> <b>AIRMIX® AUTOMATIC ELECTROSTATIC SPRAY GUN</b> <b>AIRMIX® ELEKTROSTATISCHE AUTOMATIK-SPRITZPISTOLE</b> <b>PISTOLA AUTOMÁTICA ELECTROESTÁTICA AIRMIX®</b>	
<b>KAX Ex + BG (câble / cable / Kabel : 12 m / 40 ft)</b>	<b># 135.397.720</b>
<b>KAX Ex + BG (câble / cable / Kabel : 30 m / 40 ft)</b>	<b># 135.397.725</b>

<b>1 - KAX Ex</b> # 129.397.200  <b>2a - BG</b> (câble / cable / Kabel : 12m / 40 ft) # 129.397.600  <b>2b - BG</b> (câble / cable / Kabel : 30m / 98.4 ft) # 129.397.660	
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<b>KAX Ex</b>	avec tête KX 16, sans buse, sans barreau générateur with KX 16 air cap, without tip, without generator barrel mit Luftkappe KX16, ohne Düse, ohne Generator con cabezal KX 16, sin boquilla, sin barra generadora	<b># 135.397.200</b>
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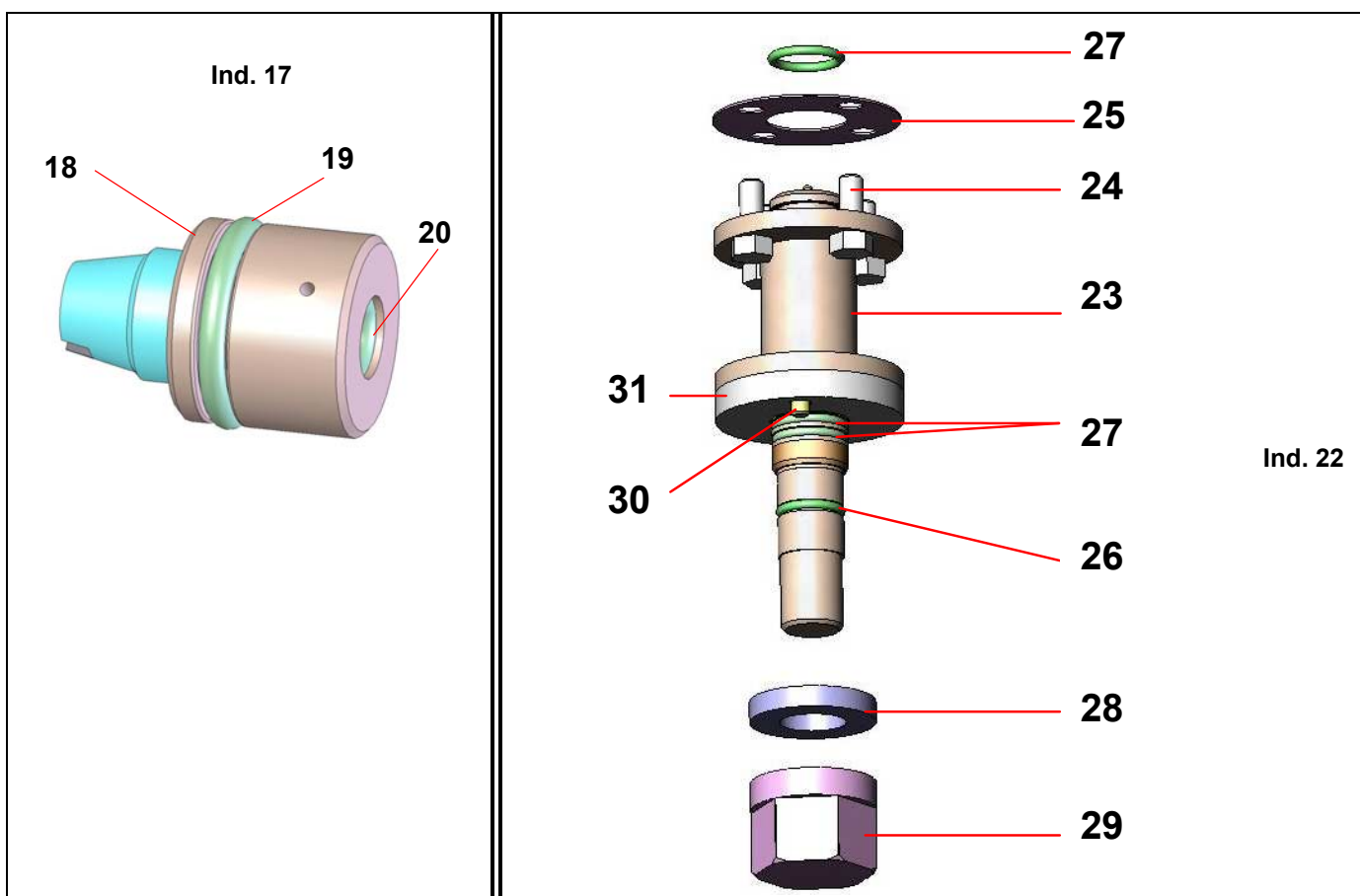
<b>A - Pièces communes</b> Common parts Gleiche Teile Partes comunes (→ KA Ex)  <b>B - Pièces spécifiques</b> Specific parts Spezifische Teile Partes específicas (→ KAX Ex)	
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**A : Pièces communes - Common parts - Gleiche Teile - Partes comunes**  
**(KAC Ex - KAP Ex - KAV Ex - KAX Ex)**



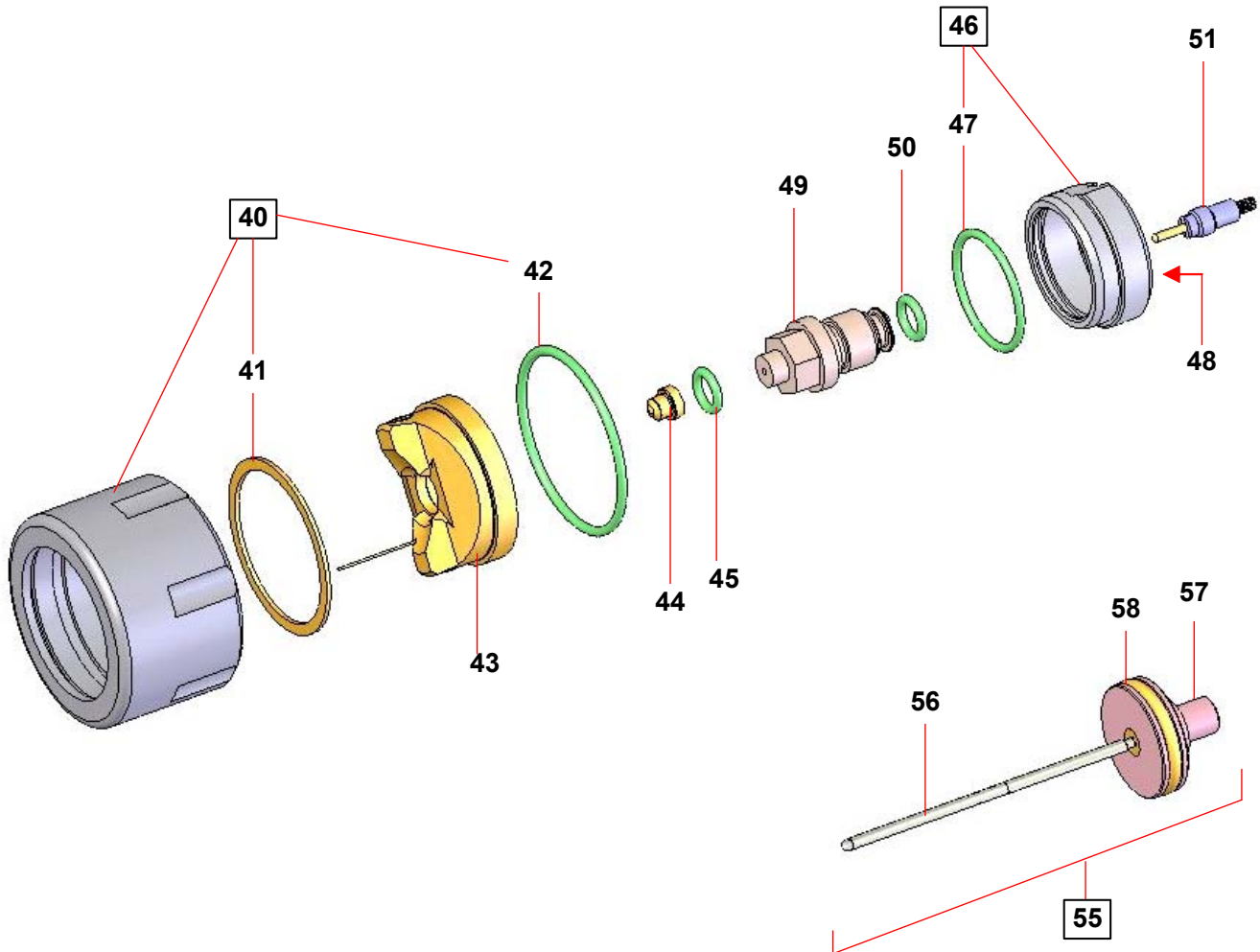
Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
1	129 397 902	<b>Corps avant équipé (produit)</b>	<b>Front body assembly (fluid)</b>	<b>Vorderkörper, komplett (Material)</b>	<b>Cuerpo delantero equipado (producto)</b>	1
2	NC / NS	▪ Corps avant nu	▪ Bare front body	▪ Vorderkörper	▪Cuerpo delantero solo	1
3	129 397 .120	▪ Raccord produit	▪ Fluid connector	▪ Winkelnippel	▪ Racor producto	1
*3a	109 420 708	▪ ▪ Joint (pochette de 4)	▪ ▪ Seal (pack of 4)	▪ ▪ Dichtung (4 St.)	▪ ▪ Junta (bolsa de 4)	2
4	029 393 003	▪ Bouchon produit	▪ Plug	▪ Stopfen	▪ Tapón producto	1
*6	129 397 901	<b>Corps arrière équipé (air)</b>	<b>Back body assembly (air)</b>	<b>Hinterkörper, komplett (Luft)</b>	<b>Cuerpo trasero equipado (aire)</b>	1
7	NC / NS	▪ Corps arrière nu	▪ Bare back body	▪ Hinterkörper	▪ Cuerpo trasero solo	1
8	129 397 103	▪ Joint (les 10)	▪ Gasket, korp (x 10)	▪ Dichtung (10 St.)	▪ Junta (bolsa de 10)	1
9	905 190 206	▪ Raccord 1/8 - T 4x6	▪ Connector 1/8" - hose 4x6	▪ Einschraubnippel 1/8" - Schlauch 4x6	▪ Racor recto 1/8 - T 4x6	1
10	905 190 207	▪ Raccord 1/8 - T 6x8	▪ Connector 1/8" - hose 6x8	▪ Einschraubnippel 1/8" - Schlauch 6x8	▪ Racor recto 1/8 - T 6x8	2
11	933 151 441	▪ Vis CHC 5x35	▪ Screw, CHc 5x35	▪ Schraube CHC 5x35	▪ Tornillo CHc M 5x35	2
12	029 392 004	▪ Bouchon	▪ Plug	▪ Stopfen	▪ Tapón	2

Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
15	050 314 300	Ressort de piston	Spring, piston	Kolbenfeder	Muelle de pistón	1
16	029 392 003	Vis de serrage	Screw, locking	Blockenschraube	Tornillo de aprete	1
<b>*17</b>	<b>129 392 040</b>	<b>Cartouche équipée</b>	<b>Cartridge assembly</b>	<b>Packung, komplett</b>	<b>Cartucho equipado</b>	<b>1</b>
18	NC / NS	▪ Cartouche seule	▪ Cartridge, only	▪ Packung	▪ Cartucho solo	1
19	909 429 256	▪ Joint torique blanc, polyfluid	▪ O Ring, white	▪ O-Ring, weiß	▪ O ring blanco	1
20	129 479 911	▪ Bague R1 noir (les 10)	▪ Ring, R1 black (pack of 10)	▪ O-Ring R1, schwarz (10 St.)	▪ Junta R1 negro (bolsa de 10)	1
<b>*22</b>	<b>129 397 150</b>	<b>Axe équipé</b>	<b>Axle assembly</b>	<b>Achse, komplett</b>	<b>Eje equipado</b>	<b>1</b>
23	NC / NS	▪ Axe	▪ Axle	▪ Achse	▪ Eje	1
24	939 011 168	▪ Vis H 5x12	▪ Screw, H 5x12	▪ Schraube H 5x12	▪ Tornillo H 5x12	2
25	129 397 154	▪ Joint plat (les 2)	▪ Gasket (pack of 2)	▪ Dichtung (2 St.)	▪ Junta plana (bolsa de 2)	1
26	129 529 907	▪ Joint vert (les 10)	▪ O Ring, green (pack of 10)	▪ O-Ring (10 St.)	▪ Junta verde (bolsa de 10)	1
27	129 529 908	▪ Joint vert (les 10)	▪ O Ring, green (pack of 10)	▪ O-Ring (10 St.)	▪ Junta verde (bolsa de 10)	3
28	029 397 153	▪ Rondelle	▪ Washer	▪ Scheibe	▪ Arandela	1
29	029 397 152	▪ Erou	▪ Nut	▪ Mutter	▪ Tuerca	1
30	029 397 156	▪ Pion	▪ Pin	▪ Stift	▪ Peón	1
31	029 397 155	▪ Rondelle	▪ Washer	▪ Scheibe	▪ Arandela	1



**B : Pièces spécifiques - Specific parts - Spezifische Teile - Partes específicas (KAX Ex)**

**# 129.397.210**

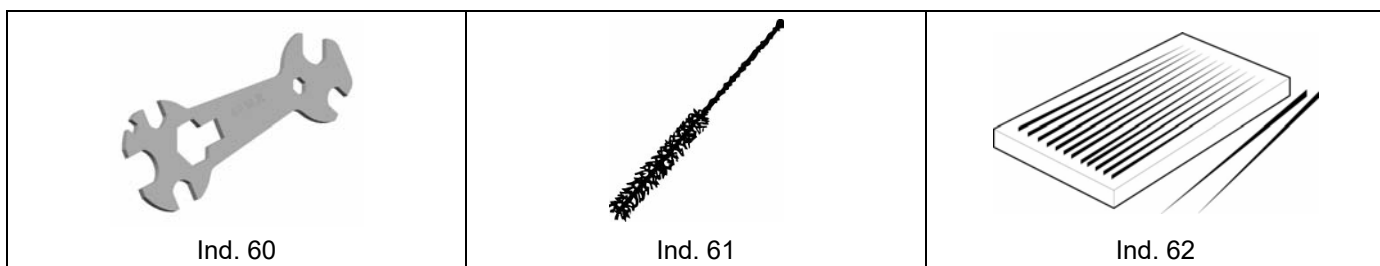


Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
40	129 276 001	Bague de tête avec joints	Air cap ring with seals	Überwurfring mit Dichtungen	Anillo de cabezal con juntas	1
41	129 274 301	▪ Rondelle d'étanchéité (les 10)	▪ Watertightness washer (pack of 10)	▪ Dichtung für Zerstäuberkopf (10 St.)	▪ Junta de estanqueidad (bolsa de 10)	1
42	150 040 305	▪ Joint de bague (les 10)	▪ Seal, air cap ring (pack of 10)	▪ Dichtung für Überwurfring (10 St.)	▪ Junta de anillo (Bolsa de 10)	1
*43	132 284 000	Tête KX16 avec bague de contact	KX16 air cap with contact ring	Zerstäuberkopf KX 16 mit Kontaktring	Cabezal KX16 con anillo de contacto	1
44	-	Buse Airmix® (voir accessoires)	Airmix®-Tip (refer to accessories)	Airmix® Düse (siehe Zubehör)	Boquilla Airmix® (consultar accesorios)	1
45a	129 529 903	▪ Joint de buse (les 10) (voir accessoires)	▪ Seal, tip (pack of 10) (refer to accessories)	▪ O-Ring, Düse (10 St.) (siehe Zubehör)	▪ Junta para boquilla (bolsa de 10) (consultar accesorios)	1
		ou	or	oder	o	
45b	129 609 901	▪ Micro-tamis (les 10) (voir accessoires)	▪ Microfilter (pack of 10) (refer to accessories)	▪ Mikrosieb (10 St.) (siehe Zubehör)	▪ Micro-tamiz (x 10) (consultar accesorios)	1

Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
46	129 284 010	Adapteur de tête complet	Air cap adapter	Adapter für Zerstäuberkopf, kpl.	Adaptador de cabezal completo	1
47	129 398 907	▪ Joint O Ring (les 2)	▪ O Ring (pack of 2)	▪ O-Ring (2 St.)	▪ O ring (bolsa de 2)	1
*49	129 284 001	Siège sans joint	Seat without seal	Düsennadelsitz ohne Dichtung	Asiento sin junta	1
50	909 429 702	Joint de siège blanc (POLYFLUID)	White seal, seat (POLYFLUID)	Dichtungsring für Nadelsitz (POLYFLUID)	Junta de asiento blanco (POLIFLUIDA)	1
51	129 400 905	Contact assemblé	Contact assembly	Hochspannungskontakt, komplett	Contacto montado	1
<b>*55</b>	<b>129 397 211</b>	<b>Ensemble pointeau-piston</b>	<b>Needle-piston assembly</b>	<b>Einheit Kolben-Farbnadel</b>	<b>Conjunto aguja-pistón</b>	<b>1</b>
56	NC / NS	▪ Pointeau	▪ Needle	▪ Farbnadel	▪ Aguja	1
57	NC / NS	▪ Piston	▪ Piston	▪ Kolben	▪ Pistón	1
58	144 659 902	▪ Joint noir (les 10)	▪ O Ring, black (pack of 10)	▪ O-Ring, schwarz (10 St.)	▪ O ring, negro (bolsa de 10)	1

Ind. / Pos. 44 & 45a/45b : non fournis avec le pistolet KAX Ex / not supplied with KAX Ex gun / mit der Pistole KAX Ex nicht geliefert / no suministrados con pistola KAX Ex

Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
60	049 030 021	Clé plate	Gun wrench	Pistolenschlüssel	Llave para pistola	1
61	906 300 101	Goupillon	Large size brush	Pistolenreinigungsbürste	Cepillo grande	1
62	000 094 000	Boîte aiguilles de débouchage pour buses de 06 à 09 (les 12)	Unclogging needle for tips (from 06 to 09) (pack of 12)	Reinigungsnadeln für Düsengröße 06 und 09 (12 St.)	Caja de agujas desobturadoras para boquillas de 06 a 09 (bolsa de 12)	1



Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
*	<b>129 397 903</b>	<b>Pochette de maintenance des pièces communes (KA. Ex)</b> (ind. 8, 15, 16, 17, 19, 20, 25, 26, 27x3, 28, 30, 31)	<b>Servicing kit, common parts (KA. Ex)</b> (ind. 8, 15, 16, 17, 19, 20, 25, 26, 27x3, 28, 30, 31)	<b>Wartungssatz - Gleiche Teile (KA. Ex)</b> (Pos. 8, 15, 16, 17, 19, 20, 25, 26, 27x3, 28, 30, 31)	<b>Kit reparación, partes comunes (KA. Ex)</b> (ind. 8, 15, 16, 17, 19, 20, 25, 26, 27x3, 28, 30, 31)	<b>1</b>
*	<b>129 397 905</b>	<b>Pochette de maintenance des pièces spécifiques (KAX Ex)</b> (ind. 41, 42, 45a, 45b, 47, 48, 51, 58)	<b>Servicing kit, specific parts (KAX Ex)</b> (ind. 41, 42, 45a, 45b, 47, 48, 51, 58)	<b>Wartungssatz, spezifische Teile (KAX Ex)</b> (Pos. 41, 42, 45a, 45b, 47, 48, 51, 58)	<b>Kit reparación, partes específicas (KAX Ex)</b> (ind. 41, 42, 45a, 45b, 47, 48, 51, 58)	<b>1</b>

\* Pièces de maintenance préconisées.

\* Preceding the index number denotes a suggested spare part.

\* Bezeichnete Teile sind empfohlene Ersatzteile.

\* Piezas de mantenimiento preventivas.

N C : Non commercialisé.

N S : Denotes parts are not serviceable.

N S : Bezeichnete Teile gibt es nicht einzeln, sondern nur komplett.

N S : no suministrado.



**ACCESSOIRES - ACCESSORIES - ZUBEHÖR - ACCESORIOS**

**TABLEAU DES BUSES - SPRAY TIP CHART - DÜSENTABELLE - CUADRO DE LAS BOQUILLAS**

Calibre / Size / Größe		06	09	12	14	20
Débit d'eau / Water flow rate / Wasserdurchfluss / Caudal de agua (l/mn)	20 bar	0.15	0.20	0.26	0.30	0.40
	35 bar	0.20	0.30	0.36	0.40	0.50
	50 bar	0.30	0.45	0.55	0.70	1.00
Ø equiv. (mm)		0.28	0.33	0.38	0.41	0.50
Repère tamis / Mesh number  / Siebgröße / Índice tamiz	Filtre pistolet / Gun filter / Pistolenfilter / Filtro pistola	4	6	6	6	12
	Filtre pompe / Pump filter / Pumpenfilter / Filtro bomba	4 ou / or / oder / o 6	6 ou / or / oder / o 8	6 ou / or / oder / o 8	8 ou / or / oder / o 12	12
		Repère gravé sur la buse / Number engraved on the tip / Eingravierte Düsen - Kennzahl / índice gravado sobre la boquilla				
Largeur moyenne du jet à 25 cm / Average width of fan at 25 cm (10") / Strahlbreite bei 25 cm Abstand / Anchura media de abanico a 25 cm	15 cm	06/075	09/075	--	--	--
	19 cm	06/095	09/095	12/095	14/095	--
	23 cm	06/115	09/115	12/115	--	--
	27 cm	06/135	09/135	12/135	--	--
	31 cm	--	--	--	--	--
	35 cm	--	--	--	14/175	--
		+ ind.45b	+ ind. 45a			

Pour établir la référence d'une buse, remplacer les croix par le nombre repère de la buse précédé de **134.5XX.XXX**.  
Exemple : pour commander une buse 09/115, utiliser la référence : **134.509.115**

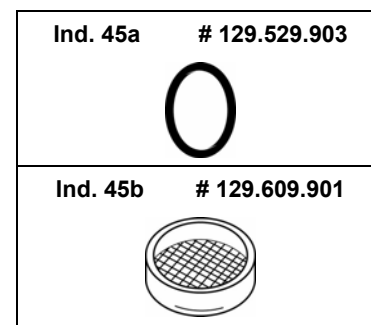
To determine the tip part number, replace the "Xs" in the part number **134.5XX.XXX** with the tip number.  
Example : to order an 09/115 tip, order by part number **134.509.115**

Die Bestell Nr. erhält man, indem man die Kreuze durch die vorgenannte Kennzahl ersetzt : **134.5XX.XXX**  
Beispiel : für die Airmix Düse 09/115 ergibt sich die Bestell Nr. **134.509.115**

Para establecer la referencia de una boquilla, sustituir las X por las cifras gravadas en la boquilla precedido de **134.5XX.XXX**.  
Ejemplo : para pedir una boquilla 09/115, utilizar la referencia : **134.509.115**

**Nota :**

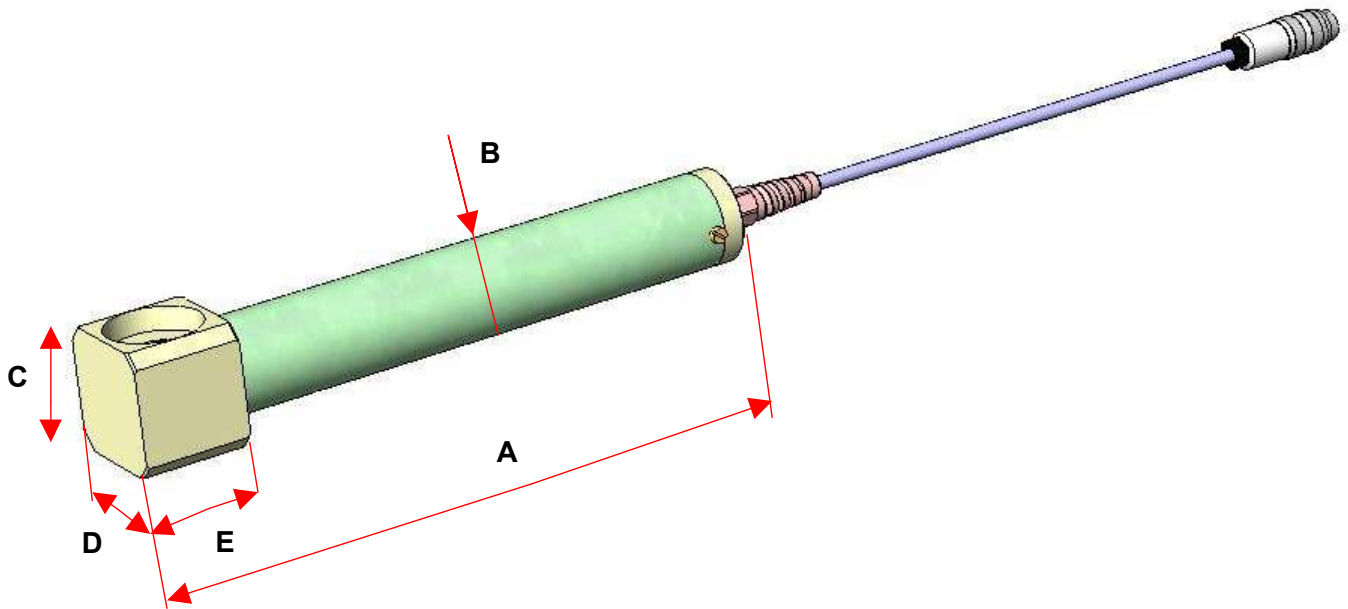
- pour buse de 09 et calibre supérieur : monter un joint de buse (ind. 45a)
- pour buse de 06 : remplacer le joint (ind. 45a) par un microtamis 100 µ (ind. 45b)
- for tip size 09 and above : install a tip seal (ind. 45a)
- for tip size 06 : replace seal (ind. 45a) with a microfilter 100 µ (ind. 45b)
- für Düsengröße 09 und größer : Düsendichtung einsetzen (Pos. 45a)
- für Düsengröße 06 und kleiner : Düsendichtung (Pos. 45a) gegen Düsensiebe 100 µ (Pos. 45b) tauschen
- para boquilla de 09 y calibre superior : montar una junta de boquilla (ind. 45a)
- para boquilla de 06 : cambiar la junta (ind. 45a) por un microtamiz 100 µ (ind. 45b)



<b>Doc. 573.348.050</b> Date/Datum/Fecha : 15/04/19 Annule/Cancela/ Ersetzt/Anula : 01/12/05	<b>Modif. / Änderung :</b> + # 129.397.660, Ind. / Pos.8 (+ 129.397.911)	<b>Pièces de rechange</b> <b>Spare parts list</b> <b>Ersatzteilliste</b> <b>Piezas de repuesto</b>
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<b>BARREAU GENERATEUR / GENERATOR BARREL / GENERATORSTAB / BARRA GENERADORA</b>		
<b>⇒ KA* EX</b>	Avec cable électrique / with electrical cable / mit Elektrokabel / con cable de alimentación Longueur 12 m / 12 m-40 ft long / Länge 12 m / Longitud 12 m	<b>#</b> <b>129.397.600</b>
	Avec câble électrique / with electrical cable / mit Elektrokabel / con cable de alimentación Longueur 30 m / 30 m-98.4 ft long / Länge 30 m / Longitud 30 m	<b>#</b> <b>129.397.660</b>
<b>⇒ Bulle / Isobubble / Isolierblase / Burbuja</b>	Avec câble électrique / with electrical cable / mit Elektrokabel / con cable de alimentación Longueur 6 m / 6 m-20 ft long / Länge 6 m / longitud 6 m	<b>#</b> <b>129.397.650</b>

**Encombrement / Dimensions / Abmessungen / Dimensiones**

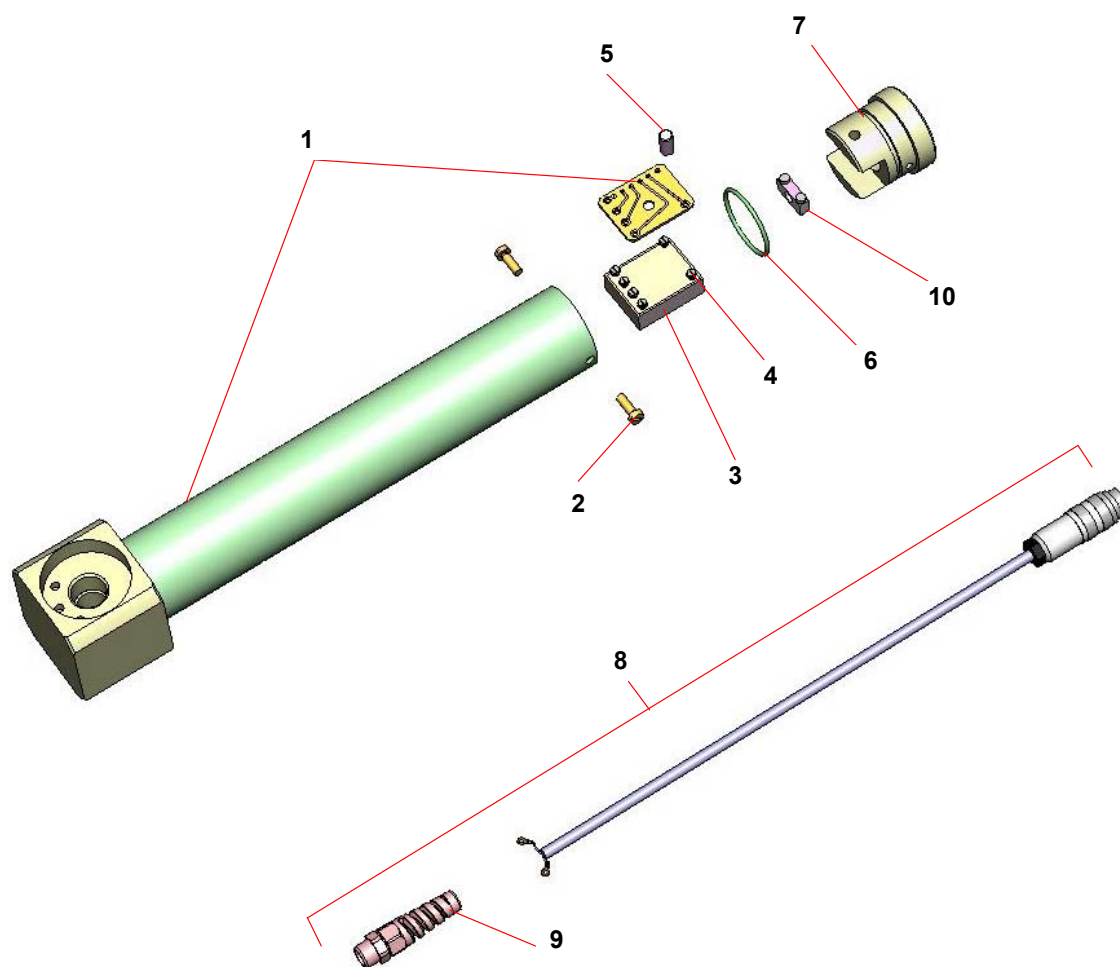


	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
mm	285	∅ 40	52	52	46
"	11.2	∅ 1.6	2	2	1.8

**Câble d'alimentation électrique / Electric cable / Elektrokabel / Cable de alimentación eléctrico**

Longueur / Long / Länge / Longitud	12 m / 40 ft 30 m / 98.4 ft 6 m / 20 ft
Prise / Plug / Anschluss / Stecker	DIN 3 br.
Tension / Voltage / Spannung / Tensión	+ 12V =

**Pièces de rechange / Spare parts / Ersatzteilliste/ Piezas de repuesto**



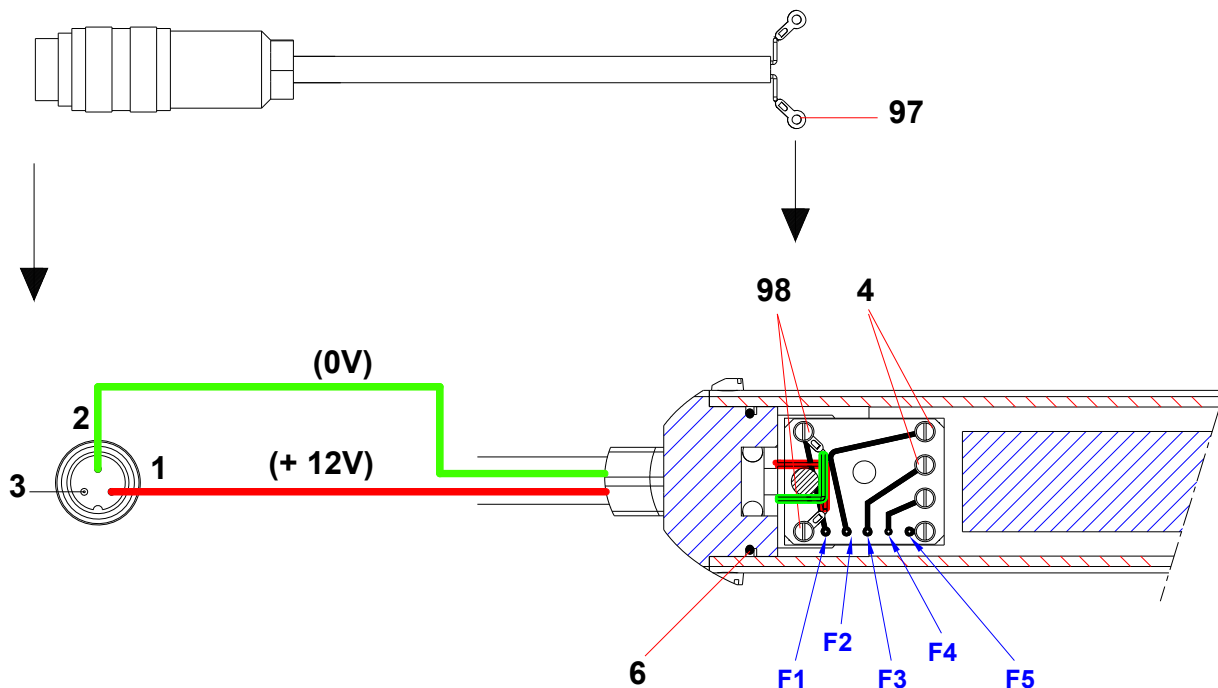
Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
1	NC / NS	Tube avec générateur	Tube with generator	Elektronenröhre	Tubo con generador	1
2	939 061 166	Vis TC 4x12	Screw, TC 4x12	Schraube TC 4x12	Tornillo TC 4x12	2
*3	129 397 610	Oscillateur équipé	Oscillator assembly	Oszillator kpl.	Oscilador equipado	1
4	933 061 072	▪ Vis	▪ Screw	▪ Schraube	▪ Tornillo	6
5	939 161 170	Vis M 6x12	Screw, M 6x12	Schraube M 6x12	Tornillo M 6x12	1
*6	109 420 104	Joint (pochette de 10)	O ring (pack of 10)	O-Ring (10 St.)	O ring (bolsa de 10)	1
7	029 397 603	Embout	End	Endstück	Terminal	1

*8	129 397 908	Câble équipé (long. 12 m)	Cable assembly (length 12 m / 40 ft)	Elektrokabel kpl. (Länge 12 m)	Cable equipado (12 m de largo)	1
9	901 202 032	▪ Presse-étoupe	▪ Cup	▪ Zugentlastung	▪ Prensa estopa	1
10	901 202 303	▪ Serre-cable	▪ Wire-rope clamp	▪ Kabelklemme	▪ Cierre cable	1

*8	129 397 911	Câble équipé (long. 30 m)	Cable assembly (length 30 m / 98.4 ft)	Elektrokabel kpl. (Länge 30 m)	Cable equipado (30 m de largo)	1
9	901 202 032	▪ Presse-étoupe	▪ Cup	▪ Zugentlastung	▪ Prensa estopa	1
10	901 202 305	▪ Serre-cable	▪ Wire-rope clamp	▪ Kabelklemme	▪ Cierre cable	1

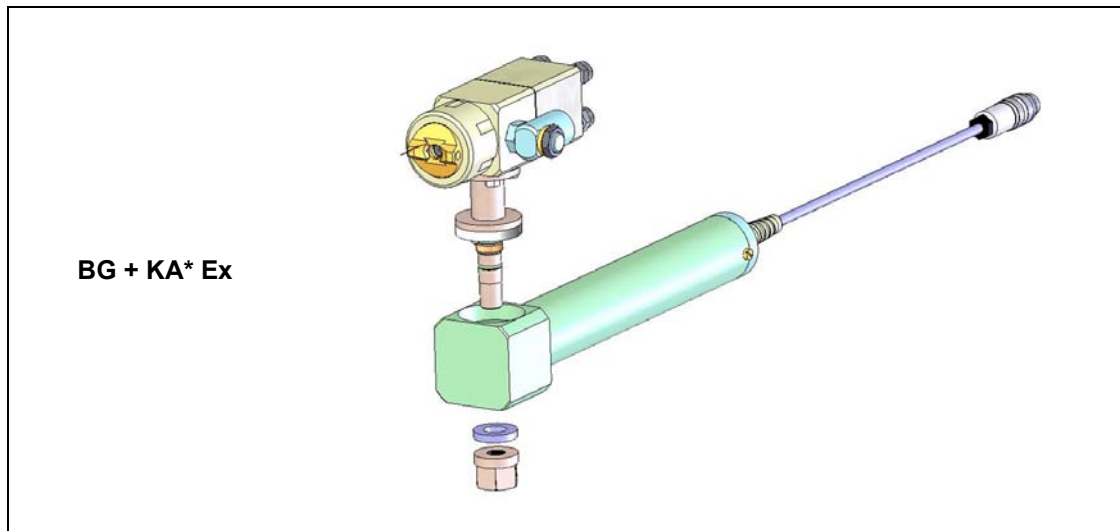
Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
*8	129 397 909	Câble équipé (long. 6 m)	Cable assembly (length 6 m / 20 ft)	Elektrokabel kpl. (Länge 6 m)	Cable equipado (6 m de largo)	1
9	901 202 032	▪ Presse-étoupe	▪ Cup	▪ Zugentlastung	▪ Prensa estopa	1
10	901 202 305	▪ Serre-cable	▪ Wire-rope clamp	▪ Kabelklemme	▪ Cierre cable	1

**Branchement du câble d'alimentation / Electric cable connection  
Anschluss des Elektrokabels / Conexión del cable de alimentación**



<b>1</b>	Fil rouge (+12V)	Red wire (+ 12V)	Rotes Kabel (+ 12V)	Hilo rojo (+ 12V)
<b>2</b>	Fil vert (0V)	Green wire (0V)	Grünes Kabel (0V)	Hilo verde (0V)
<b>F1</b>	Fil blanc	White wire	Weißes Kabel	Hilo blanco
<b>F2</b>	Fil jaune	Yellow wire	Gelbes Kabel	Hilo amarillo
<b>F3</b>	Fil vert	Green wire	Grünes Kabel	Hilo verde
<b>F4</b>	Fil rouge	Red wire	Rotes Kabel	Hilo rojo
<b>F5</b>	Fil bleu	Blue wire	Blaues Kabel	Hilo azul

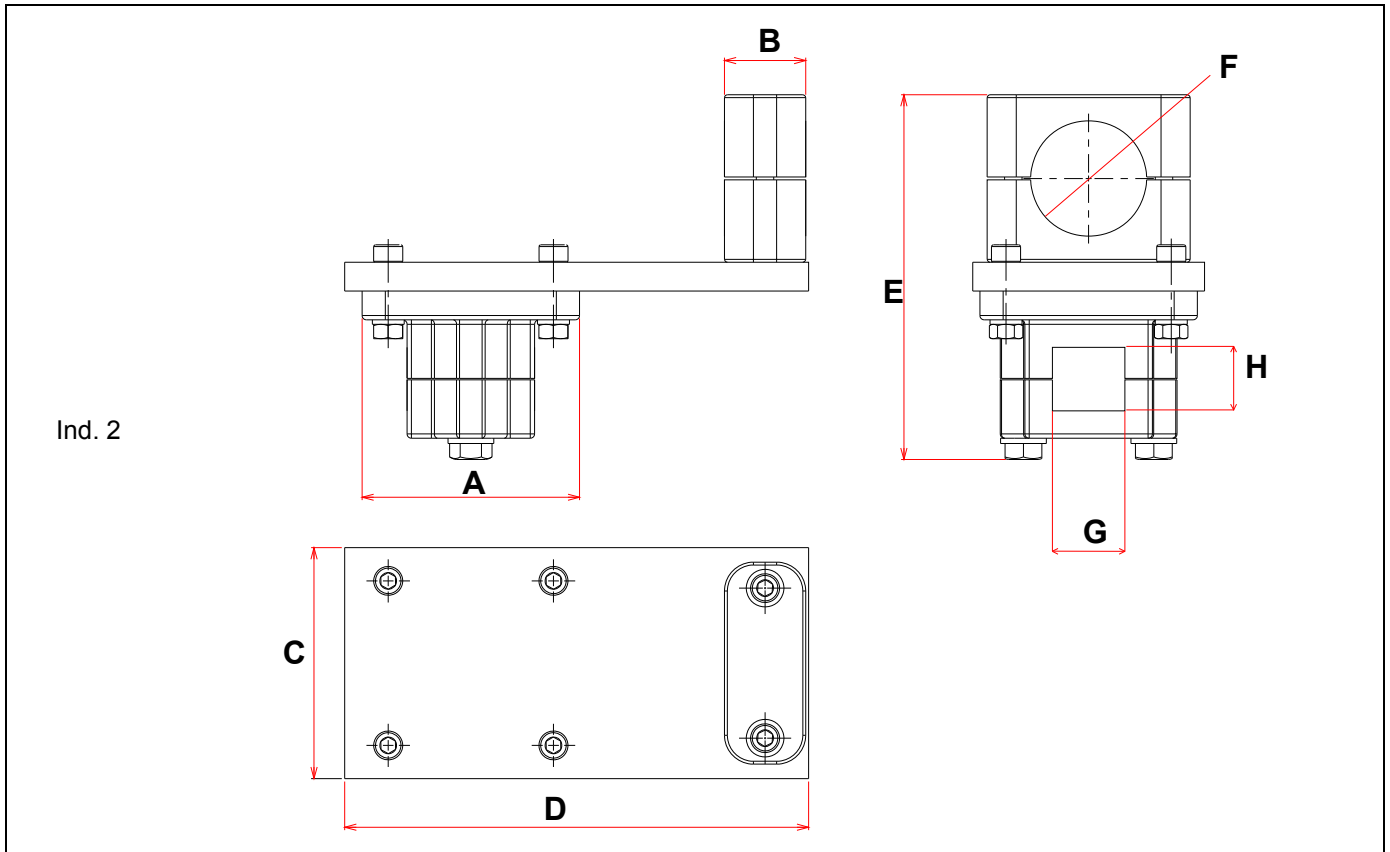
Montage BG / BG mounting / BG-Einbau / Montaje BG



ACCESSOIRES / ACCESSORIES / ZUBEHÖR / ACCESORIOS

<p><b>Ind. 1</b>          Plaque passe-tuyauteries          Plate, hose-support          Schlauchübergangsplatte          Placa pasa tuberías</p> <p><b># 129.397.960</b></p>	
<p><b>Ind. 2</b>          Support pour BG          Support, BG          Halterung für BG Soporte          para BG</p> <p><b># 129.397.950</b></p>	

**Encombremet / Dimensions / Abmessungen / Dimensiones**



	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>
mm	75	28	80	160	126,40	Ø 40	25	22 mini
"	2.95	1.1	3.15	6.3	5	Ø 1.6	10	min 0.87