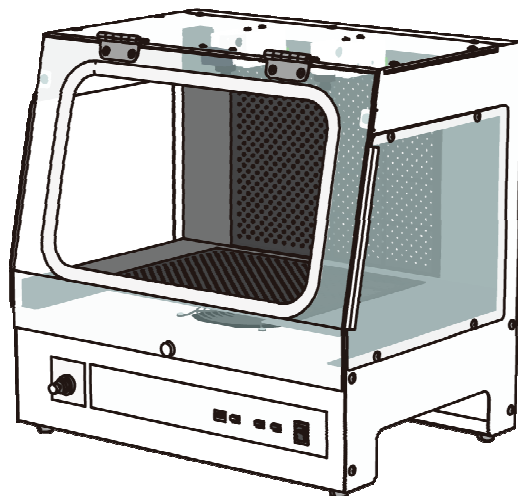


VESSEL

イオンパーツクリーナー

—取扱説明書—

No.IPC-A3



概要

本製品は、静電気により付着した微細粉塵や静電気を嫌う部品の除電・除塵に使用する装置です。イオン化された圧縮エアーを間欠で吹き出して塵埃を強力に吹き飛ばし、自己粘着性のあるウレタンゲルとフィルタで回収します。

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- 安全にお使いいただくためにP.2
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■安全にお使いいただくために



安全上のご注意

本製品をご使用前に本書を必ず熟読してください。




本製品をご使用される全員が安全性について認識できるように責任をもって本書を活用してください。






熟読された後はいつでも活用できるように大切に保管してください。

●ここに示した注意事項は、危険の大きさにより次の2段階に区分して表示しています。

| | |
|---|---|
|  警告 | 取り扱いを誤った場合、死亡または重傷を負う可能性が想定される場合 |
|  注意 | 取り扱いを誤った場合、傷害を負う可能性および物的損害のみの発生が想定される場合 |

絵表示の例

| | |
|---|-----------------------|
|  | この記号は、「警告や注意」を促す内容です。 |
|  | この記号は、行為を「禁止」する内容です。 |
|  | この記号は、行為を「強制」する内容です。 |

|  警告 | |
|---|--|
|  禁止 | 除電、除塵以外の目的に使用しないでください。 |
|  吸引禁止 | <p>火災事故防止のため、以下のような火気および爆発性粉塵、含塵液体液霧は絶対に吸引しないでください。</p> <p>火のついたもの：タバコの吸い殻、マッチなどの火種</p> <p>火花を含むもの：研削加工での火花や火の粉を含む粉塵など</p> <p>引火性のも：ガソリン、シンナー、ベンジン、灯油、油や洗浄液および引火性物質が付着混在した物質など</p> <p>爆発性のも：アルミニウム、マグネシウム、チタン、エポキシ樹脂等の爆発性粉塵、爆発性物質および粒径・濃度その他の条件により粉塵爆発を起こす可能性のある粉塵や爆発性液体、液霧および爆発性物質が付着混在した物質など</p> <p>可燃性のも：可燃性粉塵や可燃性液体液霧および可燃性物質が付着混在した物質など</p> <p>非常性のも：腐蝕性物質、粘着性物質およびそれらが付着混在する物体、ならびに非常性のもが多く含まれる気体など</p> <p>液体液霧状のも：工作機械から発生する水分を含んだ粉塵など</p> |
|  吸引禁止 | 故障事故防止のため、湿った粉塵や水、油など水分を含むものは絶対に吸引しないでください。 |
|  共用禁止 | <p>火災事故防止のため、以下のような共用使用は絶対におこなわないでください。</p> <ul style="list-style-type: none"> ・粉塵が本機内部で混合され危険な物質に変化する場合。 |

■安全にお使いいただくために

| ⚠警告 | |
|------------|---|
| ⊘ 禁止 | 火災事故防止のため、仕様に示された電源の規格以外で使用しないでください。 |
| ⊘ 塗装禁止 | 塗装ブースとしての使用禁止。塗装作業をおこなわないでください。 |
| ⊘ 覗込禁止 | エアノズルの先を覗き込まないでください。センサが感知し圧縮エアーが噴出しますので、目や顔に当たると危険です。 |
| ⊘ 分解禁止 | 構成部品の取り外しや改造、無理な分解・組立ではおこなわないでください。 ・製品は安全・性能面での基準で製作しており、取り外しや改造は危険です。 ・異常内容によっては、お客様による対応が不可能な場合がありますので必ずお買い求めの販売店または弊社営業所までお問い合わせください。 |
| ● 必ず守る | 感電事故防止のため、以下の事項を必ず守ってください。 ・結線作業時には必ず電源コードのプラグをコンセントから抜いて作業をおこなってください。 ・電源アダプタのプラグは、アース端子をもったコンセントへ接続してください。 |
| ● 必ず守る | 粉塵はためておかず、早めの処理をおこなってください。 粉塵は条件により、燃焼や爆発の危険があります。 |
| ● 必ず守る | 保守・点検作業時には、必ず電源アダプタのプラグをコンセントから抜いて作業をおこなってください。 |

| ⚠注意 | |
|------------|--|
| ● 必ず守る | 設置場所の周囲状況を考慮してください。 ・屋内で風雨や直射日光にさらされない所としてください。 ・水や油のかかる場所は避けてください。 ・本体に著しい振動や衝撃が加わる場所 ・温度は5℃～40℃。湿度は35～65%でご使用ください。 |
| ● 必ず守る | 火災事故防止のため、作業後には点検をおこなってください。 |
| ● 必ず守る | 本書は簡単に参照できるように、製品のそばに保管してください。 |
| ⊘ 禁止 | 本書を理解できるまでは、製品の設置、使用、保守をしないでください。 |

■安全にお使いいただくために

| | | | |
|---|------------------|---|----------------|
|  | 火気の吸引禁止 |  | 可燃性、引火性物質の吸引禁止 |
|  | 爆発性物質の吸引禁止 |  | 分解禁止 |
|  | 感電注意 |  | 回転体注意 |
|  | 取扱説明書をよくお読みください。 |  | エアノズル先端の覗き込み禁止 |

■製品の概要

特長

●静電気除去装置付き小型集塵ユニット

- 作業台と小型集塵機をコンパクトに一体化。セル生産現場に適した除電集塵機です。

●集塵フード

- フード前面には開閉可能な透明窓を設け、飛散防止と良好な視界を確保。
- ワークの出し入れがスムーズにできる最適な開口部を設計。
- 粘着ゲルシートの洗浄や交換が容易になりました。
粘着ゲルシートプレートがマグネットで脱着できますので、簡単に取り出せます。
- フード裏側には、塵埃捕集用紙パックフィルタまたはダクトホースが取り付けできます。

●除電除塵

- フード上側から下方に向けて吹き出すエアノズル型静電気除去装置を2台搭載。
- 静電気除去装置から吐出されるイオンエアで、ワークの除電と除塵を同時におこないます。
- 手でワーク持ってフード内に入れると、センサが感知し自動エアブロー。
- 間欠エアでワークに付着した塵埃に振動を与えて吹き飛ばします。
- エアブローの強さを調整できる流量調整弁付き。

●安全性

- 静電気除去装置は異常監視機能を装備し、ランプの点灯によりチェックが可能です。

本体仕様

| | |
|----------------|--|
| 型式 | : No. IPC-A3 |
| 塵埃捕集方法 | : 粘着ゲルシート+紙パックフィルタ |
| 電源電圧 | : DC24V ±5% (付属アダプタ: AC100V~240V、50/60Hz) |
| 消費電力 | : 22W |
| 消費電流 | : 900mA |
| 保護機能 | : 過電流保護ヒューズ (1A/125V) |
| 風量 | : 1.13 m ³ /min (内蔵ファン) |
| 静圧 | : 460Pa (内蔵ファン) |
| 使用エア圧力 | : 0.1~0.5MPa (クリーンエアを使用すること) |
| 使用エアホース | : 外径 φ10mm X 内径 φ6.5mm |
| 空気消費量 | : 約 315 ℓ/min (0.3MPa、連続運転時) |
| 環境温度・湿度 | : +5~+40℃ 35~65%RH (結露氷結のないこと) |
| 幅×奥行×高さ | : 420W×300D×411Hmm (突起部含まず) |
| 質量 | : 9.5 kg |
| 付属品 | : 粘着ゲルシートプレート (2枚/取り付け済み) : 専用 AC アダプタ(AD24-IT19) : ダクト用フランジ (φ75mm用) : 紙パックフィルタ (6枚) : 取扱説明書 (本書) |
| 交換部品 | : 粘着ゲルシート/紙パックフィルタ/針電極 |

静電気除去装置

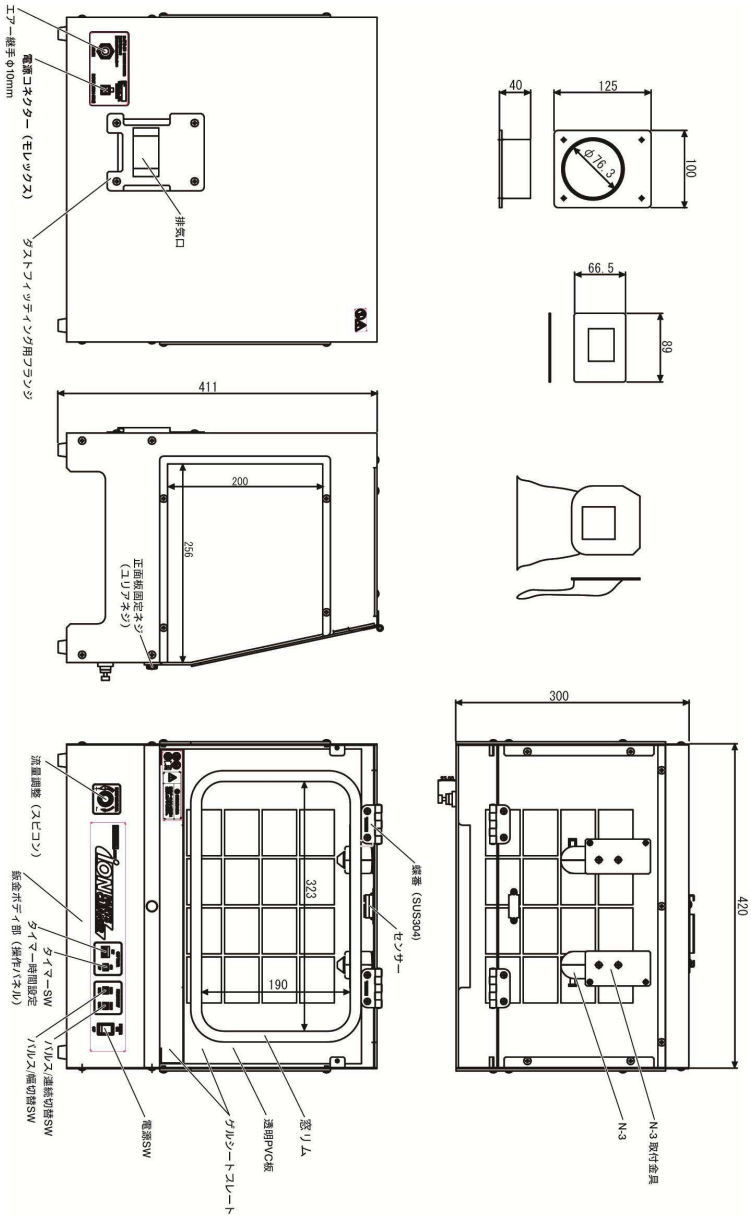
| | |
|----------------|---------------------|
| 型式 | : No. N-3 |
| イオン発生方式 | : 交流高圧コロナ放電式 |
| 印加電圧 | : AC 5.6 kV(p-p) |
| 警報出力 | : 高電圧出力停止警告 (赤 LED) |

除電能力

| N-3 単体 | | 条件 |
|---------|-------|--------------------|
| 除電時間 +側 | 0.7 秒 | 測定距離: ノズルから 150 mm |
| 除電時間 -側 | 0.7 秒 | エア-圧力: 0.3MPa |
| イオンバランス | -8.0V | エア-流量: 210L/min |

■外観図

外観図



設置場所

| ⚠ 警告 | |
|-------------|--|
| ⊘ 禁止 | 次の場所では使用しないでください。爆発や火災のおそれがあります。 <ul style="list-style-type: none"> ・ 防爆を要求する環境 ・ 腐蝕性ガスや可燃性・爆発性ガスを取り扱う場所 |
| ⚠ 注意 | |
| ● 必ず守る | 設置場所の周囲状況を考慮してください。 <ul style="list-style-type: none"> ・ 屋内で風雨や直射日光にさらされない所としてください。 ・ 水や油のかかる場所は避けてください。 ・ 本体に著しい振動や衝撃が加わる場所 ・ 温度は 5℃～40℃。湿度は 35～65%でご使用ください。 |
| ● 必ず守る | 本機を直接高温・多湿の場所にさらさないでください。 モータの焼損・故障の恐れがあります。 |

設置場所

屋内で風雨や直射日光にさらされない所としてください。
 水や油のかかる場所や結露・急激な温度変化のある場所は避けてください。
 本体に著しい振動や衝撃が加わる場所は避けてください。
 本機は本体側面下部が排気口となっています。
 壁面などに密着させますと正常な排気ができなくなり吸塵能力が低下しますので、本機の排気口は壁面などから 10cm 以上離して据え付けてください。

周囲温度・湿度

温度は、5℃～40℃ 湿度は 35～65%でご使用ください。

雰囲気

防爆を要求する環境では運転できません。
 腐蝕性ガスや可燃性・爆発性ガスを取り扱う場所では運転できません。
 風通しが良く、正常空気の雰囲気でご使用ください。

電源・クリーンエアー

本機は電源として AC100V (50/60Hz)、クリーンエアーは 0.1MPa～0.5MPa の圧縮空気が必要です。これらの配線および配管が可能な場所で使用してください。

保守スペース

保守・点検等のスペースを確保してください。
 特に、日常の手入れに必要な本機前面に必要なスペースの確保をしてください。

■ 設置

設置方法

本機の設置は、水平になるよう凹凸のない平坦な面で丈夫な台の上に乗せてご使用ください。

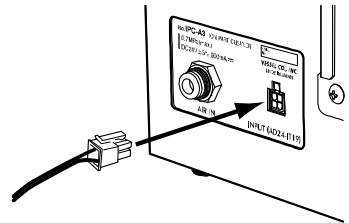
| ⚠ 警告 | |
|--------|--|
| ● 必ず守る | 転倒防止のため、作業面に乗ったり重量物を載せたりしないでください。 |
| ● 必ず守る | 設置するときは水平になるよう凹凸のない平坦な面で丈夫な台の上に乗せてご使用下さい。落下などにより、製品の破損や故障の原因となります。 |
| △ 注意 | 本製品の質量を確認の上、認識してください。 ・ 設置・移動の際には指、足や身体を製品の下にはさまれないように十分注意を払ってください。 ・ 設置・移動の際には転倒等に十分注意を払ってください。 ・ フードにものを載せた状態で移動しないでください。フードから落下するおそれがあります。 |

電源の配線

| ⚠ 警告 | |
|--------|---|
| ● 必ず守る | 必ず指定の電源アダプタご使用ください。 火災や感電の恐れがあります。 |
| ● 必ず守る | プラグをコンセントへさす時は、必ずスイッチが OFF になっていることを確認してください。 |

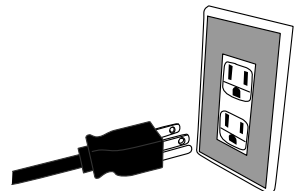
コネクタ

AC アダプタのコネクタが製品裏側の左下部にあります。
付属の専用 AC アダプタのコネクタを接続部に差し込んでください。



AC アダプタ

付属の専用 AC アダプタをご使用ください。
AC アダプタのプラグは3ピンです。
アース端子のあるコンセントへ接続してください。



エアの配管

⚠ 注意

- 必ず守る 必ず耐圧性能のあるエアホースをご使用ください。
耐圧のないホースは破裂・エア漏れの恐れがあります。

使用エア

本機は除塵エアブローのためクリーンな圧縮空気の供給が必要です。

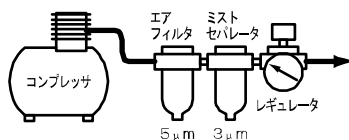
エア圧力は 0.1~0.5MPa の範囲で供給してください。

エアドライヤーを使用して水分を取り除いてください。

(露点温度-15℃以下)

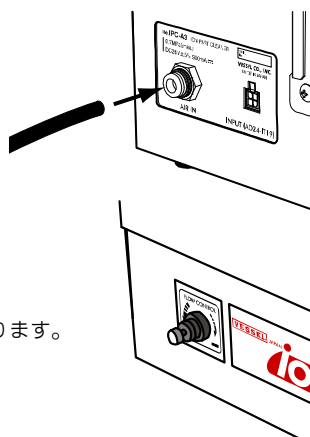
ミストセパレータ(0.3 μm)を使用して不純物を取り除いてください。

エアの温度は 5~40℃の範囲で供給してください



使用ホース

耐圧性能のあるエアホース (外径φ10mm×内径φ6.5mm 推奨) をご使用ください。



ホースの接続

本機裏側の左下部にワンタッチホース継ぎ手 (AIR IN) があります。エアホースを接続してください。

流量調整

本機前側の左下部に流量調整弁 (FLOW CONTROL) があります。

必要に応じて吐出されるエアの流量を調整してください。

使用前の点検

使用前の製品の点検

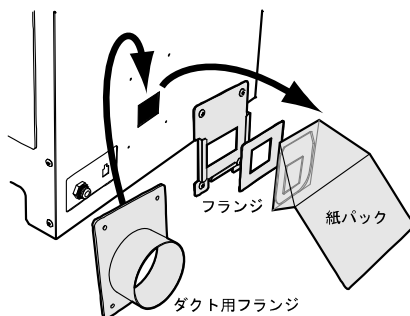
使用する前に、製品や電源アダプタなどに異常がないか確認してください。

破損、ネジのゆるみ、コネクタのゆるみなどがないか確かめてください。

■ 設置

フランジ

本機の排気口には標準で紙パック用のフランジが取り付けられていますが、ダクト用のフランジに付け替えて排気ダクトを取り付けることができます。排気ダクトの適用サイズは内径 75mm です。



使用前の点検

使用前の製品の点検

使用する前に、製品や電源アダプタなどに異常がないか確認してください。破損、ネジのゆるみ、コネクタのゆるみなどがなければ確かめてください。

■ 運転

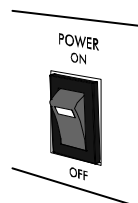
運転

スイッチについて

本機の運転と停止に使用します。

ON にすると電源が入りスイッチのLED が点灯し、ファンが運転を開始します。

OFF にすると電源が切れ、停止します。



前面窓について

作業状況等に合わせて窓を開閉して使用できます。

なお、性能は窓を閉じた状態で確保しておりますので、窓を開いてご使用の場合には作業に見合ったエア圧をご確認ください。

⚠ 注意

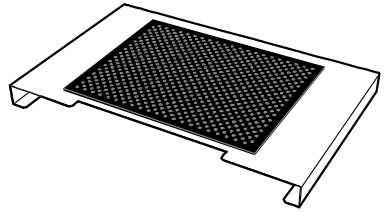


注意

前面窓の開閉時に指を挟まないようにご注意ください。

粘着ゲルシートプレートについて

ノズルで吹き飛ばした塵埃を捕集します。
自己粘着性を持ったポリウレタンゲルをステンレスプレートに貼り付けています。
使用する前に表面の保護フィルムをはがしてご使用ください。
交換の手順は、本書の「メンテナンス」の事項をご参照ください



| ⚠ 注意 | |
|-------------|--|
| △ 注意 | 作業を行っている過程で粘着ゲルシートプレートが変形・破損した場合に、そのまま使用をされますと作業中に危険を伴いますので、粘着ゲルシートプレートの管理には十分注意を払ってください。 変形・破損された場合には取り替えることをお奨めします。 |
| ● 必ず守る | 本機は手作業等による軽作業を対象としておりますので、粘着ゲルシートプレート上に重量物を載せたり、強い衝撃を与えたりしないでください。 粘着ゲルシートプレートの変形、破損の原因となります。 |


粉塵の条件

取り扱う粉塵は次の条件をお守りください。

- 本機は一般粉塵用です。乾いた微細粒粉塵のエアブロー作業に使用できます。
なお、濡れた粉塵や水油などの液体およびスプレーミストは絶対吸引させないでください。
また、爆発性・引火性・可燃性物質の付着した粉塵も絶対吸引させないでください。
- 粘着性および腐蝕性の物質は吸引させないでください。
- 火災事故防止のため、以下のような火気および爆発性粉塵、含塵液体液霧は絶対に吸引しないでください。
火のついたもの：タバコの吸い殻、マッチなどの火種
火花を含むもの：研削加工での火花や火の粉を含む粉塵など
引火性のも：ガソリン、シンナー、ベンジン、灯油、油や洗浄液
 および引火性物質が付着混在した物質など
爆発性のも：アルミニウム、マグネシウム、チタン、エポキシ樹脂等の爆発性粉塵、爆発性物質および粒径・濃度その他の条件により粉塵爆発を起こす可能性のある粉塵や爆発性液体、液霧および爆発性物質が付着混在した物質など
可燃性のも：可燃性粉塵や可燃性液体液霧および可燃性物質が付着混在した物質など
非常性のも：腐蝕性物質、粘着性物質およびそれらが付着混在する物体、ならびに非常性のものが多く含まれる気体など
液体液霧状のも：工作機械から発生する水分を含んだ粉塵など

■ 運転

- 可燃性粉塵や可燃性物質が付着した粉塵の吸引はしないでください。
不燃性物質が加工等により可燃性に変化している可燃性物質は特に注意が必要です。
可燃性粉塵に変化しているかどうかの判断は非常に難しく、お客様の責任において判断願います。また、可燃性粉塵と判明した場合は直ちに本機の使用を停止してください。
- 取り扱う粉塵のそれぞれがたとえ安全なものであっても粉塵が混合することにより危険な物質に変化する場合があります。混合に伴う物質の変化には特に注意が必要です。お客様の責任においてご確認ください。
粉塵の混合に伴う安全性が確認できなければ同一機での共用使用は絶対におこなわないでください。
なお、混合された捕集粉塵の廃棄処理については想定外の諸問題の発生も考えられますのでお客様の責任において判断願います。
- 湿った粉塵や水、油など水分を含むものは絶対に吸引しないでください。
想定外の故障・事故が発生する恐れがあります。

|  警告 | |
|--|--|
| ⊘ 吸引禁止 | 火気および引火性・爆発性・可燃性粉塵及び爆発性・引火性・可燃性物質の付着した粉塵・混在した粉塵等は絶対吸引させないでください。 |
| ⊘ 吸引禁止 | 爆発性・引火性・可燃性液体やそれらにより濡れた粉塵、また、それらが混在した粉塵・付着した粉塵等は絶対に吸引させないでください。 |
| ⊘ 吸引禁止 | 故障事故防止のため、湿った粉塵や水、油など水分を含むものは絶対に吸引しないでください。想定外の故障・事故などが発生する恐れがあります。 |
| ⊘ 共用禁止 | 混合時危険変化物質の同一機での共用使用禁止。 取り扱う粉塵が、たとえ安全なものであっても粉塵と粉塵とが混合することにより危険な物質に変化する場合があります。混合に伴う物質の変化には特に注意が必要です。お客様の責任においてご確認ください。 混合に伴う安全性が確認できなければ、同一機での共用使用は絶対におこなわないでください。 |

静電気除去装置/センサ

ワークを手に持ちセンサの下に差し込むと、センサが感知し電磁弁が解放され、それと連動してピンポイントノズル N-3 が動作しイオンエアーが吹き出します。

| ⚠警告 | |
|------------|---|
| ● 電源を抜く | 感電事故防止のため、静電気除去器の点検の際は必ず電源コードのプラグをコンセントから抜いて作業をおこなってください。 |

| ⚠注意 | |
|------------|---|
| ⊘ 分解禁止 | 製品を改造、分解することはおやめください。 高電圧部品が入っており大変危険です。 |
| ⊘ 禁止 | 吹出し口をふさがない。 故障のおそれがあります。 |
| ⊘ 禁止 | 開口部に金属や異物を差し込まない。 感電や故障の原因となります。 |
| ● 電源を抜く | 長期間使用しないときは電源コードのプラグをコンセントから抜いてください。絶縁劣化による感電や故障、火災のおそれがあります。 |

高圧異常警告機能

内蔵の高圧トランスの負荷オーバーを検出し、出力をシャットダウンした場合、本体カバーの一部が赤色に点灯し、運転を停止します。

アラームが点灯したときは、すぐに電源を切ってください。

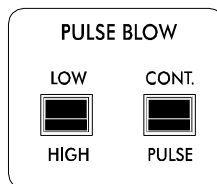
放電針に異物が付着している場合には、清掃して、再度電源を入れ、アラームが点かないことを確認してください。

電源を入れたとき、再度アラームが点灯する場合は、事故防止のため必ず販売店に点検修理を依頼してください。

パルスエアー運転

エアーを間欠的に吐出するパルスエアー運転モードにより、より効率の良い除塵をおこなうことができます。

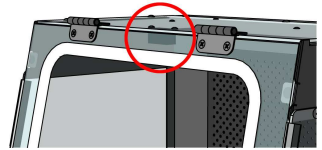
- ①パルスエアー運転モード切替スイッチを「PULSE」に切り替えます。
- ②パルス幅切替スイッチを用途に応じて切り替えます。
 - ・「LOW」：低速モード（大きな粒子の除塵に適しています。）
 - ・「HIGH」：高速モード（埃など小さな粒子の除塵に適しています。）



■ 運転

センサについて

天面前部に取り付けられた対物センサでワークを感知します
オフタイマ切替スイッチで、イオンエアーを吐出する時間を変更できます。

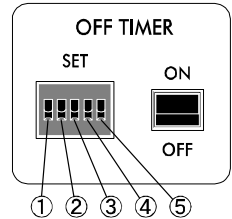


オフタイマ機能

センサがワークを感知すると設定時間だけエアー吐出をおこない自動的に停止するオフタイマ運転が可能です。

・ オフタイマ機能を使用しない場合

センサがワークを感知している間、エアー吐出をおこないます。
ワークがセンサから離れるとエアーがとまります。
オフタイマ運転モード切替スイッチを「OFF」にします。



・ オフタイマ機能を使用する場合

センサがワークを感知してから、設定時間だけエアー吐出をおこないます。

①オフタイマ運転モード切替スイッチを「ON」に切り替えます。

②設定時間をディップスイッチにより選択します。

希望する設定時間に対応するスイッチを ON 側（上側）にします。

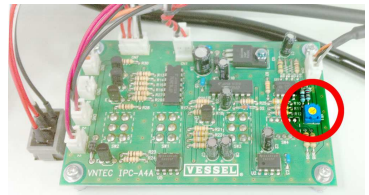
| ①スイッチ | ②スイッチ | ③スイッチ | ④スイッチ | ⑤スイッチ |
|-------|-------|-------|-------|-------|
| 約1秒 | 約3秒 | 約5秒 | 約10秒 | 約30秒 |

※ディップスイッチを全て OFF、または複数のスイッチを同時に ON に設定しないでください。
予期せぬ動作をおこなう場合があります。

センサ感度の調整方法

筐体底に取り付けられている基板上のボリュームを調整することで、センサの検出距離を調整できます。
粘着ゲルシートプレート上に土台等を置いて使用する場合にご利用ください。

ボリュームをプラスドライバーで右へ回すと検出距離が長くなり、左へ回すと検出距離が短くなります。



⚠注意

● 必ず守る

センサの感度は出荷時に調整しています。特に必要のない限りこの設定を変更しないでください。調整をおこなう場合は強い力で回すと破損することがありますので注意してください。


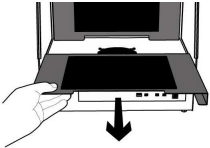
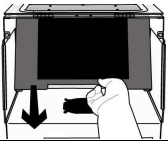
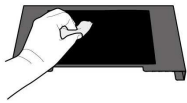
粘着ゲルシートの洗浄

粉塵が付着した時は、粘着ゲルシートをプレートごと取り外して水洗いしてください。
 水洗い後に乾燥させることによって粘着力が元に戻ります。
 洗浄しても粘着力が戻らない場合は交換時期ですので、交換部品をお求めください。
 粘着ゲルシートプレート取り外しの際は下記の手順の通りおこなってください。

⚠注意

● 必ず守る

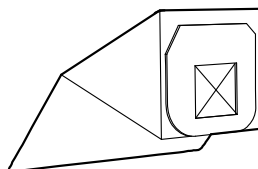
粘着ゲルシートプレートの付け外し時、プレートの縁で手を切らないようご注意ください。

- | | | |
|-----------------------|---|--|
| ①スイッチをOFF | 操作スイッチを切り、必ずファンの回転が完全に停止したことを確認してください。 | |
| ②前ふたを開ける | 前面のユリアネジを緩めて、前面窓を上を開いてください。 |  |
| ③粘着ゲルシートプレート（下部）を外す | 筐体内下部の粘着ゲルシートプレートを取り外します。 ※プレート裏にはマグネットがついています。少し持ち上げてから引き出してください。 |  |
| ④粘着ゲルシートプレート（背面部）を外す | 筐体内背面部の粘着ゲルシートプレートを取り外します。 |  |
| ⑤ゲルシートを洗浄する | 粘着ゲルシートを水洗いし、よく乾燥させてください。乾いた清潔な布巾等で水分を軽く拭き取るとより早く乾燥させることができます。 |  |
| ⑥粘着ゲルシートプレート（背面部）を付ける | 洗浄した粘着ゲルシートプレートを背面から先に取り付けます。N-3に接触しないよう慎重に挿入してください。 | |
| ⑦粘着ゲルシートプレート（下部）を付ける | 下部の粘着ゲルシートプレートを取り付けます。 | |
| ⑧前ふたを閉める | 前面窓を閉め、ユリアネジを締めてください。 | |

■メンテナンス

紙パックフィルタの交換

本体裏側に排気口があり、標準では紙パック用のフランジが取り付けられています。ご使用状況に応じて付属の紙パックを交換してください。紙パックがなくなったときは交換部品をご購入ください。紙パックフィルタ IPC-A3F (6枚セット)



静電気除去装置のメンテナンス

針電極の周囲の汚れや損耗は除電能力の低下を招きます。約56時間(8時間/日で約7日)ごとを目安に針電極の清掃をおこなってください。保守を怠りますと、除電能力の低下、製品寿命の低下を招きます。

また長期間使用しますと針電極の先端が摩耗し、除電能力が低下します。その場合、新しい電極と交換してください。電極の交換は1200時間(8時間/日で約6ヶ月)を目安におこなってください。

能力の低下をチェックするために、イオンバランスとイオン出力を定期的に測定することをお勧めいたします。

| ⚠注意 | |
|--------|---|
| ⊘ 分解禁止 | 針電極以外のメンテナンスはおこなわないでください。 |
| ● 必ず守る | 清掃時には必ず、電源の供給を止めて、エア-の元栓を止めてからメンテナンスをおこなってください。 |
| ⊘ 禁止 | 洗剤や溶剤で拭いたりしない。ひび割れ・感電や故障のおそれがあります。 |
| ⊘ 水濡禁止 | 水をかけないでください。感電や故障のおそれがあります。 |

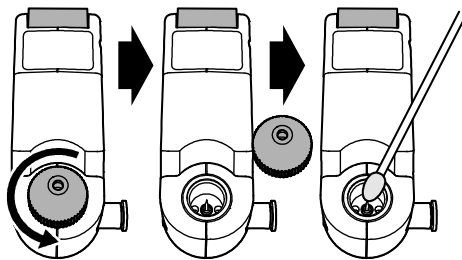
■メンテナンス

ボディの清掃方法

水を含ませた柔らかい布をよく絞ってから拭いてください。洗剤などに含まれる界面活性剤が除電性能に影響するおそれがありますので使用しないでください。

針電極の清掃方法

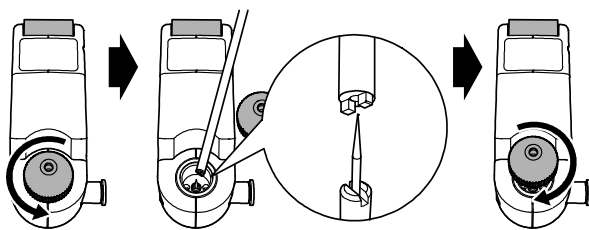
- ① ノズルを取り外す。
針電極を囲っているノズルをはずします。
- ② 汚れを取り除く。
針電極の先端を綿棒で汚れをふき取ります。
汚れがひどい場合はアルコールを少し含ませて付着物を取り除きます。
- ③ ノズルを取り付ける。
ノズルはしっかり取り付けてください。
締めすぎると破損する場合があります。
またゆるいと飛び出す恐れがあります。



針電極の交換方法

針電極は別売部品 GN-H をご使用ください。

- ① ノズルを取り外す。
針電極を囲っているノズルをはずします。
- ② 針電極を交換する。
別売の専用工具を使用して針電極を取り外してください。新しい針電極を確実に端子に取り付けてください。針で手をささないようよう気をつけてください。
- ③ ノズルを取り付ける。
ノズルはしっかり取り付けてください。締めすぎると破損する場合があります。
またゆるいと飛び出す恐れがあります。





除電能力のチェック

チャージプレートモニターを使用してイオンバランスと帯電圧減衰時間の測定をしてください。参考：IEC61340-5-1・2、ANSI EOS/ESD S3.1

調整

イオンバランスの調整機能はついていません。本製品は電源回路でイオンバランスを一定に保つようになっています。イオンバランスが良好でない場合は、弊社までご連絡ください。

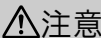



保管

|  注意 | |
|--|--|
|  禁止 | <p>次のような場所には保管しないでください。故障のおそれがあります。</p> <ul style="list-style-type: none"> ・ 本体に著しい振動や衝撃が加わる場所 ・ 仕様を示された範囲を超える高温多湿な場所 ・ 結露する場所 ・ 急激な温度変化のある場所 ・ 可燃性の溶剤や粉塵等、引火や爆発のおそれのある場所 ・ ホコリ・粉塵・煙が多い場所 ・ 水・油・薬品等がかかる場所 ・ 強電界・強磁界が発生する場所 |

■ 異常時の処置

異常時の処置


不良や異常のままで使用した場合、製品の故障や事故の原因となりますのですみやかに修理を依頼してください。修理はお買い上げの販売店にご相談ください。

|  注意 | |
|--|---|
|  禁止 | <p>次のような場合は使用しないでください。火災や感電のおそれがあります。</p> <ul style="list-style-type: none"> ・ コードが痛んだり熱くなったりしている。 ・ 落下や衝撃によって損傷している。 |
|  電源を止める | 異常時には電源とエアの供給を止めてください。 |
|  分解禁止 | 分解は絶対におこなわないでください。 |

■ 撤去

撤去

本機の撤去を行なう際には、周囲や作業者の安全を十分確保してからおこなってください。

|  注意 | |
|--|--|
| ● 電源を抜く | 本機の撤去作業時には、感電事故防止及び誤作動による事故防止のため、必ず電源アダプタのプラグをコンセントから抜いて作業を行なってください。 |
| ● 必ず守る | エアホースを取り外す際には、必ずエア源が遮断されているのを確認してからおこなってください。 また、エアホースを取り外すとエアホース内の圧縮エアが噴出するおそれがありますので、顔などを近づけて取り外さないでください。 |
| ● 必ず守る | 転倒防止のため、製品に乗ったり重量物を載せたりしないでください。 |
| ● 必ず守る | 本製品の質量を確認の上、認識してください。 ・設置・移動の際には指、足や身体を製品の下にはさまれないように十分注意を払ってください。 ・撤去、移動の際には転倒や落下等に十分注意を払ってください。 フードに物を載せた状態で移動しないで下さい。フードから落下するおそれがあります |

■ 廃棄

廃棄

本機を廃棄する際には、法令や地域の条例に従って適切に処理してください。

■ 交換部品

交換部品

お客様で交換可能な消耗部品は次の3部品となります。
型式とロットナンバーをご確認の上、販売店よりお取り寄せください。

- 粘着ゲルシート IPC-A4G
- 針電極 GN-H (針電極の交換には、別売の針電極交換用ドライバー G-7DR が必要です)
- 紙バックフィルタ IPC-A3F (6枚セット)

交換の手順は、本書の「メンテナンス」の事項をご参照ください。

■保証書

お買い上げいただき誠にありがとうございました。

保証期間内に取扱説明書、本体ラベルなどの注意書きに従って正常な状態で使用していて故障した場合には、本書の記載内容に基づいて無償修理いたします。

保証期間内に故障した場合は、お買い上げの販売店にご依頼ください。

保証期間中でも次のような場合には有償修理となります。

- 1) 誤った使用方法、取り扱い上の不注意によって生じた損傷や故障
- 2) 不当な修理や改造によって生じた損傷や故障
- 3) 火災、地震、水害、落雷その他天災地変、ガス害、塩害、公害や異常電圧などによって生じた損傷や故障
- 4) お買い上げ後の移動や輸送によって生じた損傷や故障
- 5) 本書の紛失、所定事項の未記入または字句を書き換えられた場合

本書は再発行いたしませんので紛失しないよう大切に保管してください。

- この保証書は、本製品の故障に対する無償修理または交換を保証するものであって、本製品の使用または使用不能によって生じた損害に対して当社が責任を負うものではありません。
- この保証書は、明示した期間、条件のもとにおいて無償修理をお約束するものです。したがってこの保証書によってお客様の法律上の権利を制限するものではありません。

| | | | |
|------|-------------|---|-----------------------------------|
| 型式 | IPC-A3 | | |
| 保証期間 | お買い上げ日より1年間 | | 弊社では製品シリアルナンバーにて出荷日の管理をおこなっております。 |
| お客様 | お名前 | | |
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株式会社ベッセル

お客様お問い合わせ窓口(企画開発部)

フリーコール **0120-999-914**

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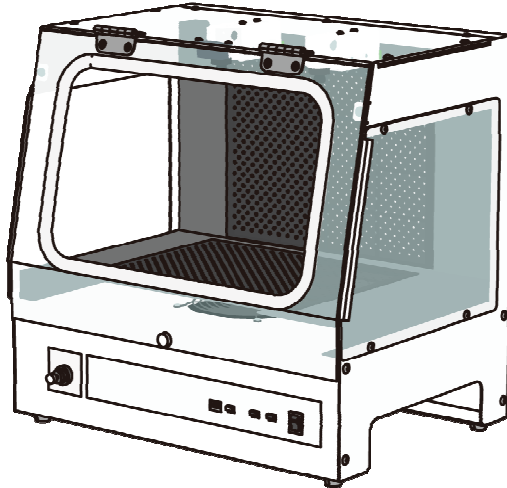
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17022700.00040

ION PARTS CLEANER

No. IPC-A3



Application

This product is used to remove fine powders and dust adhered due to static electricity and to eliminate static electricity from parts that are negatively affected by static electricity.

An ionized pulse of air blows off the debris effectively. The blown-off debris is collected by the self-adhesive of Polyurethane GEL sheets and a paper pack filter.

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■ For Your Safety



Safety Precautions

Please read this manual carefully before using this product.




Use this manual to take responsibility to ensure everyone that is using this product is doing so safely.




After carefully reading this manual, keep it in a protected place where it can be referred to at any time.










- The precaution items shown here are divided into two levels according to the level or risk.

| | |
|---|--|
|  WARNING | Indicates that improper handling can lead to serious injury or even death. |
|  CAUTION | Indicates that improper handling can lead to minor injury and property damage. |





- Example Pictorial Displays

| | |
|---|--|
|  | This symbol indicates a WARNING or CAUTION. |
|  | This symbol indicates a prohibited action. |
|  | This symbol indicates a mandatory required action. |

|  WARNING | |
|---|--|
|  Prohibited | Do not use IPC-A3 for anything other than static electricity elimination or dust removal. |
|  Vacuuming Up Prohibited | <p>To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:</p> <ul style="list-style-type: none"> - Items that are on fire: Cigarette butts, matches, and other sources of fire. - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc. - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances. - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances. - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc. - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc. - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc. |









| | |
|--|--|
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. |
|  Joint Use Prohibited | To prevent fires, absolutely do not make joint use of the following: · When the dust could transform into a hazardous substance when mixed inside the unit. |
|  Prohibited | To prevent fires, use the specified rated power source only. |
|  Painting Prohibited | Use as a painting booth is prohibited. Do not perform painting work in it. |
|  Peering Prohibited | Do not peer into the end of the air nozzle. The sensor will detect your presence and blast out compressed air, which could strike your eyes or face. |
|  Disassembly Prohibited | Do not remove components, or modify or unreasonably disassemble the product. · This product is manufactured in accordance with safety and performance standards, so removing components or modifying the product is dangerous. · Depending on the type of trouble, the customer might not be able to handle it, so always contact the store where the product was purchased. |
|  Remember | Be sure to observe the following to prevent electrical shock accidents: · Be sure to unplug the power cord from the outlet before performing any wiring. · Be sure to ground the ground wire. |
|  Remember | Discard dust from the filter pack regularly without letting it accumulate. Depending on the conditions, dust could cause a fire or explosion hazard. |
|  Remember | Be sure to unplug the power cord from the outlet before performing any maintenance or inspection work. |

 **CAUTION**

| | |
|---|---|
|  Remember | Take into consideration the conditions surrounding the installation area. · Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. · Do not install the unit where it may be exposed to water, oil, chemicals, etc. · Do not install the unit where it may be exposed to marked vibrations or shock · The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | To prevent fires, conduct an inspection after work is completed. |
|  Remember | Store this manual close to the product where it can be referred to quickly. |
|  Prohibited | Do not install, use, or service this product until you understand the contents in this manual. |

■ For Your Safety

The following prohibition and caution symbols are displayed on the product.
Example Pictorial Displays

| | | | |
|---|--|---|---|
|  | Vacuuming up sparks or flames is prohibited. |  | Vacuuming up flammable or combustible substances is prohibited. |
|  | Vacuuming up explosive substances is prohibited. |  | Disassembly is prohibited. |
|  | Be careful of electric shock. |  | Be careful of rotating parts. |
|  | Carefully read the instruction manual. |  | Peeking into the tip of Air Nozzle is prohibited. |

■ Features

A compact dust collector unit equipped with a static electricity removal device

- The work table and the compact dust collector have been unified. This static electricity removal equipment is appropriate for onsite cell production systems.

Dust collector hood

- A transparent window has been included on the front of the hood, which can be opened and closed, ensuring a scatter-proof installation with a good view.
- The openings to the cabinet have been designed to ensure that work piece can enter and exit smoothly.
- The adhesive polyurethane gel sheet is attached with magnets, making it easy to remove for cleaning and replacement.
- A paper pack filter or a duct hose can be attached to the exhaust port on the rear side (standard).

The static electricity removal device

- This product is equipped with two air-nozzle type ionizers. The air nozzles extend from the top panel within the hood downward.
- The ion air that comes from the ionizers eliminate the static electricity and remove dust at the same time.
- When you take a work piece in your hand and insert it into the hooded space, a sensor is activated and the air blow is initiated automatically.
- Intermittent air blows off dust adhered to a work piece by vibrating it.
- A wind flow adjusting valve is provided allowing the intensity of air blow to be adjusted.

Safety

- The static electricity removal device is equipped with an abnormal conditions surveillance function, and a lamp will light up when an abnormality occurs, so conditions can be checked easily.

Specifications

| | |
|-------------------------------|---|
| Model No.: | IPC-A3 |
| Dust Collection Method: | Self-adhesive Polyurethane GEL sheets and paper pack filter |
| Input Voltage: | 24V DC ±5% (Included AC adapter: 100~240V AC, 50/60Hz) |
| Power Output: | 22 W |
| Consumption Current: | 900 mA |
| Protection Feature: | Overcurrent protective fuse (1A/125V) |
| Air Flow: | 1.13 m ³ / min.(Fan) |
| Static Pressure: | 460 Pa (Fan) |
| Air Pressure: | 0.1~0.5 MPa (Use clean air) |
| Air Hose: | O/D φ 10 mm x I/D φ 6.5 mm |
| Air Consumption: | Approx. 315 L/min. (0.3 MPa, Continuous operation mode) |
| Working Temperature/ Humidity | Range: 5~40°C / 35~65 %RH (No dew condensation or freezing) |
| Dimensions: | W 420 x D 300 x H 411 mm (Protrusions are not measured) |
| Weight: | 9.5 kg |
| Accessory: | Self-adhesive Polyurethane GEL sheet plate 2pcs. Power adapter AD24-IT19 (Input: 100~240V AC, Output: 24V DC) Exhaust duct flange 1 pc. (For ø75 mm) Paper pack filter 6 pcs. Instruction Manual (this manual) 1 copy |
| Consumable parts: | Adhesive polyurethane gel sheet / Needle electrode / Paper pack filter |

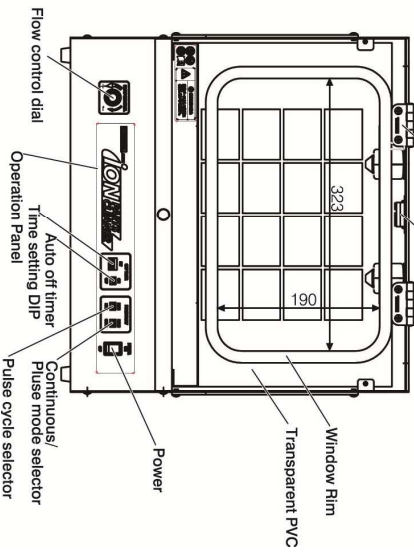
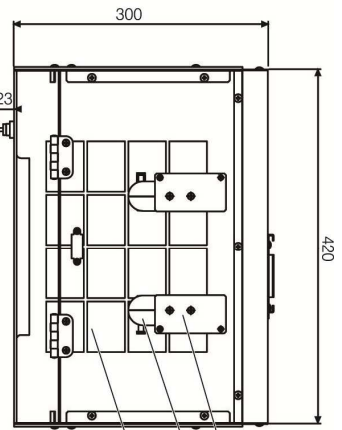
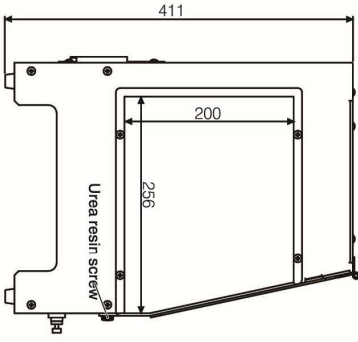
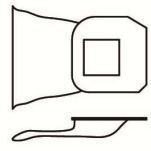
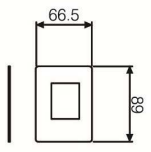
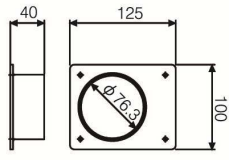
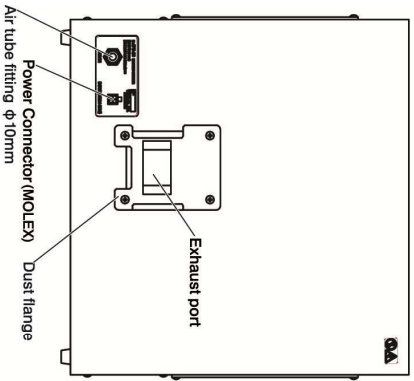
Specifications (Ionizer)

| | |
|------------------------|----------------------------------|
| Model No.: | N-3 |
| Ion Generation Method: | High voltage AC corona discharge |
| Output voltage: | ± 5.6 kV AC (p-p) |
| Alarm output: | High voltage alarm (Red LED) |



Ionizing performance (as reference)




| | | |
|-----------------------|----------|--|
| N-3 (individual unit) | | Measurement conditions: |
| Decay time (+) | 0.7 sec. | Distance: 150mm from the nozzle of ionizer |
| Decay time (-) | 0.7 sec. | Air pressure: 0.3 MPa |
| Ion balance | -8.0V | Air flow: 210L/min |

External View



Installation Area

|  WARNING | |
|--|--|
|  Prohibited | <p>Do not use this product in the following areas. Otherwise, there is a risk of an explosion or fire.</p> <ul style="list-style-type: none"> • Environments that require anti-explosion measures. • Areas where corrosive gases or flammable or explosive gases are used. |

|  CAUTION | |
|--|---|
|  Remember | <p>Take into consideration the conditions surrounding the installation area.</p> <ul style="list-style-type: none"> • Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. • Do not install the unit where it may be exposed to water, oil, chemicals, etc. • Do not install the unit where it may be exposed to marked vibrations or shock • The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | <p>Do not use this product where it will be directly exposed to high temperatures or high humidity. Doing so could cause the burn or breakdown of motor.</p> |

Installation Area

Install the unit in an indoor location not exposed to wind, rain, or direct sunlight.

Avoid using the unit in areas where water, oil, or condensation will get on it or where there will be sudden temperature changes.

Avoid using the unit where it will be exposed to strong vibration or impacts.

This unit has an exhaust outlet on the backside, bottom of the unit.

Install this unit so that the exhaust outlet is 10 cm or more away from the wall, etc. because the normal exhaust function will be impaired, causing a decrease in the dust collection capability, if the unit is installed with the back of the unit against a wall, etc.

Ambient temperature and humidity

Use in a temperature range of 5 °C to 40 °C. Use the unit in a humidity range of 35 to 65%.

Atmosphere

Do not operate the unit in environments where anti-explosion measures are required.

Do not operate the unit in areas where corrosive gases or flammable or explosive gases are used.

In addition, use the unit in a well ventilated area with a normal air atmosphere.

Input voltage and compressed clean air

This unit uses 24V DC input voltage and 0.1 MPa to 0.5 MPa compressed air for the cleaning air.

Install the unit where it can be connected to wiring and piping that meet these specifications.

Maintenance space

Space for maintenance and inspections should be maintained around the unit.

In particular, the space in front of the unit required for daily maintenance should be obtained.

■ Installation

Installation Method

When installing this unit, place it on a level, strong, and smooth, flat bench.

| ⚠ WARNING | |
|------------------|---|
| ● Remember | To keep the unit from falling over, do not climb on the working surface or place heavy objects on it. |
| ● Remember | When installing the IPC-A3, place it on a level, strong, and smooth, flat bench. It can be damaged and malfunction if it falls. |
| △ Caution | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being installed or moved.· Make sure the product does not fall over while it is being installed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

Electrical power wiring

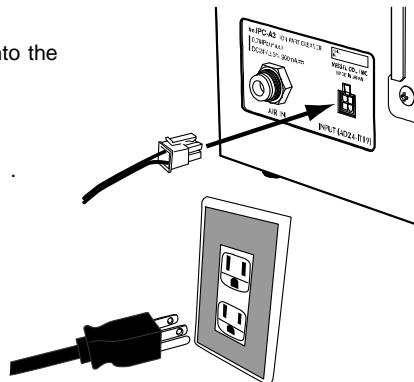
| ⚠ WARNING | |
|------------------|---|
| ● Remember | Use IPC-A3 only with the specific AC adapter. Otherwise, there is a risk of fire or electric shock. |
| ● Remember | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before performing any wiring. |

Connector connection

Insert the included special AC adapter connector into the jack on the back of the body.

Power Supply Adapter

Use the accompanying power adapter (AD24-IT19) . AC adapter is equipped with 3-pin plug. Connect this to a power outlet that has a ground terminal.



Compressed air piping

⚠ CAUTION

● Remember

Be sure to use an air hose with sufficient pressure resistance performance. A hose without pressure resistance could burst or leak air.

Compressed air used

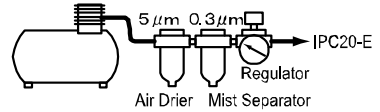
This unit requires that clean compressed air be supplied for the dust removal air blowing.

Supply air within the pressure range of 0.1 to 0.5 MPa.

Use an air drier to remove the moisture from the air. (The dew point temperature is -15°C or lower.)

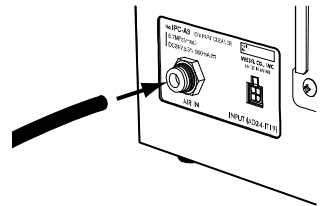
Use mist separator (0.3 μm) to remove the impurities from the air.

Supply air within the temperature range of 5 to 40°C



Hose used

Use an air hose with sufficient pressure resistance performance (outside diameter 10 mm x inside diameter 6.5 mm).



Hose connection

A one-touch hose coupling (air supply port) is provided on the lower left at the back of the body. Connect the air hose to this.

Flow rate adjustment

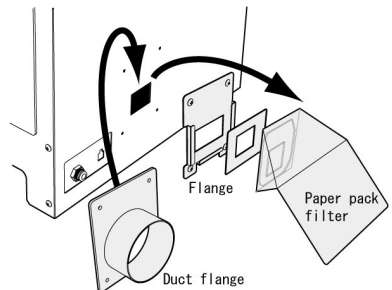
A flow rate adjusting valve (FLOW CONTROL) is provided on the lower right at the front of the body. Adjust the rate of the discharged air as necessary.



Flange

A paper pack filter can be attached to the exhaust port on the rear side (standard).

A $\varnothing 75\text{mm}$ (I/D) exhaust duct can be connected by exchanging it for a duct flange.



Pre-use inspection

Pre-use product inspection

Before using the product, make sure there are no problems with it, the power adapter, etc. Make sure there is no damage, and no loose of screws or connectors.

■ Operation

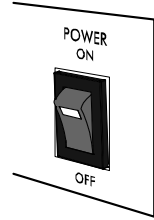
Operation

Switch

This is used to start and stop the unit.

When switched to [ON], the power is turned on, the switch LED lights up, and operation starts.

When switched to [OFF], the power is turned off and operation stops.



Front acrylic window

Open and close the acrylic window according to the working conditions.

Please note that the best performance is obtained when the acrylic window is closed, so when working with the window open, check to make sure of the air pressure suitable for the specific work.

⚠ CAUTION

△ Caution

Be careful not to get your finger caught when the front acrylic window is opened or closed.

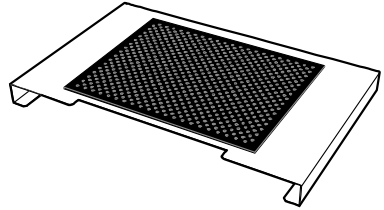
Adhesive gel sheets

The adhesive gel sheets capture the dust blown off by the ionizing nozzle.

The self-adhesive polyurethane gel sheets are attached to stainless steel plates.

Remove the protective surface film before using the unit.

Refer to the maintenance section of this manual in regard to the exchange procedure for the adhesive gel sheets.



⚠ CAUTION

△ Caution

If the adhesive gel sheets are deformed or broken while performing work, continuing to use the product in this condition is hazardous, so make sure the adhesive gel sheets are properly maintained.
Replacing deformed or damaged adhesive gel sheets is highly recommended.

● Remember

This unit is designed for light work, such as handwork, so do not place heavy objects on top of the adhesive gel sheets or forcefully strike it.
Doing so could deform or break the adhesive gel sheets.

Dust conditions

Observe the following conditions for the dust that is handled.

- This unit is for use with regular dust. It can be used to blow off dry fine dust.
 - Absolutely do not vacuum up wet dust, liquids like water, oil or spray mist.
 - Also absolutely do not vacuum up dust containing explosive, flammable, or combustible substances.

- Do not vacuum up adhesive or corrosive substances.






- To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:
 - Items that are on fire: Cigarette butts, matches, and other sources of fire.
 - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc.
 - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances.
 - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances.
 - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc.
 - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc.
 - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc.

- Do not vacuum up flammable dust or dust containing flammable substances.
 - Caution must be taken in particular with non-combustible substances that change into combustible substances when worked on, etc.
 - It is very difficult to determine if such substances are changing into combustible dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. The user is strongly advised to stop using the unit if a substance is determined to be combustible dust.

- Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances that change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail.
 - If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials.
 - Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail.



- Absolutely do not vacuum up damp dust or any moisture such as water or oil.
 - Unforeseen malfunctions or accidents could occur.






■ Operation

|  WARNING | |
|--|---|
|  Vacuuming Up Prohibited | Absolutely do not vacuum up sparks; flammable, explosive, or combustible dust; or dust containing or mixed with explosive, flammable, or combustible substances. |
|  Vacuuming Up Prohibited | Absolutely do not vacuum up explosive, flammable, or combustible liquids or dust wet with such liquids, or dust mixed with or containing such liquids. |
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. Unforeseen malfunctions or accidents could occur. |
|  Joint Use Prohibited | Use in the same unit of substances that change into a hazardous substance when mixed, is prohibited. Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances the change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail. If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials. Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. |

Ionizers / Sensor

When a work piece is held below the sensor, the sensor detects the work piece and releases the solenoid valve. This initiates the ion air blow from two pieces of pinpoint nozzle ionizers.

|  WARNING | |
|--|---|
|  Unplug the power cord | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before inspecting the ionizers. |

|  CAUTION | |
|---|---|
|  Disassembly Prohibited | Do not remodel or disassemble the IPC-A3. The IPC-A3 contains high voltage parts. |
|  Prohibited | Do not block openings such as the intake vent and the discharge vent. Doing so could cause a malfunction. |
|  Prohibited | Do not insert metal or foreign matters into the unit openings. Doing so could result in electrical shock accidents or equipment breakdown. |
|  Unplug power cable | Before long periods of disuse, unplug the power cable. Leaving the power on during periods of disuse can result in electric shock, breakdown and fire from degraded insulation. |

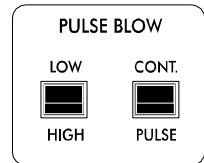
High Voltage Alarm Function

When the piezoelectric high voltage transformer in the ionizer detects an overload and shuts down the power output, the red indicator on the top of the ionizer will light and operation will stop.
 If the alarm lamp turns ON, turn the power OFF immediately with the power switch.
 If foreign matter is stuck on the needle electrode, clean the needle and then turn the power ON again.
 Confirm that the alarm lamp does not light up.
 If the alarm lights up when the power is turned ON, contact your certified sales agent for inspections to prevent accidents.

Pulse Air Operation

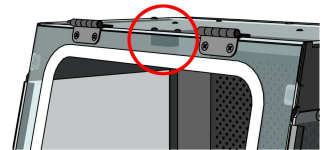
The pulse air operation mode provides an intermittent air blow, making it possible to obtain good and efficient dust removal.

1. Turn the pulse air operation mode to "PULSE."
2. The pulse width switch can be used to suit the usage required.
 [LOW]: Low-speed mode (appropriate for the removal of large-grained dust)
 [HIGH]: High-speed mode (appropriate for the removal of small-grained dust, such as dirt)



Sensor

The sensor affixed to the front of the top inside surface of the cabinet detects work pieces.
 Using the OFF TIMER switch, you can change the time intervals for the ion air blow.



Off-timer Function

When the off-timer function is on, and the sensor detects a work piece, the air blow occurs only for the time period set, and turns off automatically.

• When the off-timer function is not activated

The air blow is on as long as the sensor detects a work piece in the unit.
 The air blow will stop when the work piece is removed from the sensor's detection area.

Turn the off timer mode switch to [OFF].

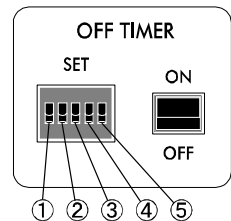
• When the off-timer function is activated

After the sensor detects a work piece in the unit, the air blow will on only for the time period set.

1. Turn the off-timer mode switch to [ON].
2. Use the DIP switches to set the air blow time period.

In order to set the time period desired, turn the appropriate DIP switch on (up position).

| Switch① | Switch② | Switch③ | Switch④ | Switch⑤ |
|--------------|--------------|--------------|---------------|---------------|
| About 1 sec. | About 3 sec. | About 5 sec. | About 10 sec. | About 30 sec. |



Caution: Do not turn all of the DIP switches off, or turn multiple DIP switches on.
 In some cases this may result in unexpected operations.

■ Operation

Adjusting the sensitivity of the sensor

Set the detection range of the sensor by adjusting the volume on the motherboard installed in the cabinet.

This adjustment is useful when employing a platform above the adhesive gel sheet plate.

When the volume control is turned to the right, using a Phillips head screwdriver, the detection range (distance between the sensor and the work piece) is increased, and decreased when it is turned to the left.



⚠ CAUTION

● Remember

The sensitivity of the sensor is factory-adjusted. Do not change this setting unless it is absolutely necessary. Using undue power to turn the volume control may cause damage to the unit, so be very careful when making adjustments.

■ Maintenance

Cleaning the adhesive gel sheets

When dust has collected on the adhesive gel sheet, remove both the adhesive sheet and the mounting plate and wash them.

The adhesive strength of the adhesive gel sheet will be restored after the sheet is dried.

When the adhesive strength of the adhesive gel sheet is not restored after the sheet is cleaned, it is time to replace the sheet, so request a replacement adhesive gel sheet.

When removing the mounting plate for the adhesive gel sheet, follow the directions exactly as shown below.

⚠ CAUTION

● Remember

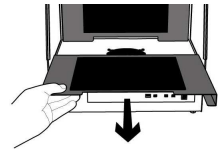
When removing the mounting plate for the adhesive gel sheet, be careful not to cut your hand on the edges of the plate.

1. Turning the switch off Turn off the power switch, and always confirm that the fan has stopped completely.

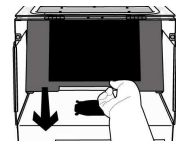
2. Opening the front cover Loosen the urea screw on the front, and pull the front window upward.



3. Removing the adhesive gel sheet plate (lower section) Remove the adhesive gel sheet plate from the bottom of the interior of the cabinet.
* Magnets are attached on the back of the plate. Please lift the plate a little and pull out.



4. Removing the adhesive gel sheet plate (rear surface section) Remove the adhesive gel sheet plate from the rear surface section of the cabinet.



5. Washing the adhesive gel sheet After washing the adhesive gel sheet in water, dry it out completely. The drying process can be hastened by wiping up any extra moisture from the sheet with a dry clean cloth, etc.



6. Attaching the adhesive gel sheet plate (back surface section) First, replace the cleaned adhesive gel sheet plate in the rear surface section of the cabinet. Attach the plate, while being careful not to let the plate touch the N-3 units.

7. Attaching the adhesive gel sheet plate (lower section) Next, attach the adhesive gel sheet plate in the lower section of the cabinet.

8. Closing the front cover Close the front window, and tighten the urea screw.

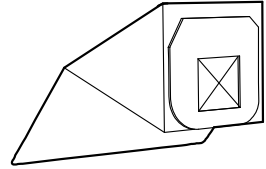
■Maintenance

Replacing the paper pack filter

There is an exhaust port on the back of the body. The flange for the paper pack filter is attached at the time of shipment.

Depending on your situation, please replace the paper pack filter provided.

Please purchase replacement parts when the paper pack filter is gone. Paper pack filter IPC-A3F (6-pcs set)



Maintenance of Ionizer

| ⚠ CAUTIONS | |
|-----------------------------|---|
| ⊘ DO NOT DISASSEMBLE | Do not perform any maintenance on the N-3 except for maintenance and replacement of the electrode. |
| ● REMEMBER | Before cleaning the electrode, shut off power and air supply at the source and disconnect the air hose. |
| ⊘ PROHIBITED | Do not wipe the ionizer with detergent or solvent. Substances of the sort can cause cracking and result in electric shock or breakdown. |
| ⊘ DO NOT WET | Do not wet the N-3. Exposure to moisture can result in electric shock or breakdown. |

Dirt and wear in the needle electrode can deteriorate the performance of this ionizer. Clean the electrode every 56 hours of use (= approximately 7 days based on calculation of use for 8 hours per day). If the electrode is not kept in an optimum condition, the performance will drop and product life might shorten as well.

If the unit is used for a long period of time, the tip of the needle electrode may wear out and consequently static erasing efficiency will decrease. In such case, replace the needle electrode with a new one. It is recommended that the needle electrode be replaced every 1,200 hours of operation (= approximately 6 months based on calculation of use for 8 hours per day).

Keep the unit in good working condition by measuring its ion balance and ion output regularly as a means for checking for a drop in capacity.

How to Clean the Casing

Remove the dirt over the casing with dry, soft cloth.

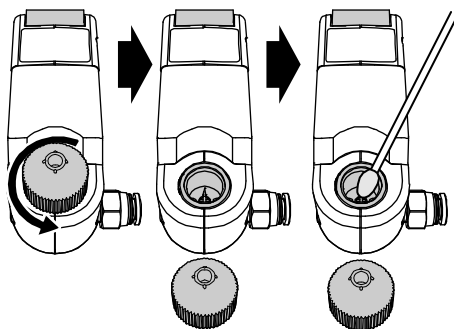
Never apply alcohol / thinner solvent / detergent, because the surface-active agent included in the detergent etc., may deteriorate the ionizing performance.

How to Clean the Electrode Needle

Power supply to the N-3 should be shut off before cleaning the needle electrode.

Please follow the instructions below:

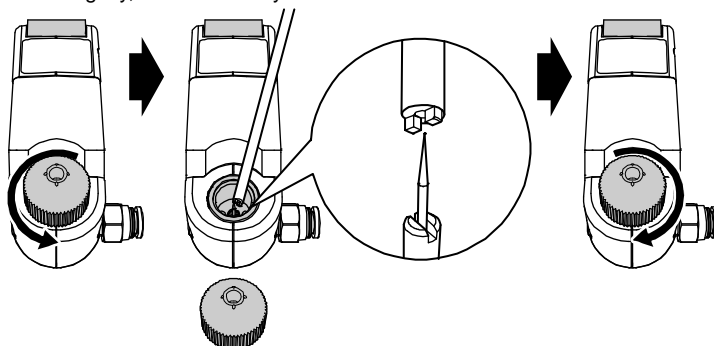
- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Clean the needle electrode
Clean the tip of the needle with a cotton stick. If it is especially dirty, use a few drops of alcohol-wet cloth.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



How to Replace the Electrode Needle

Replacement Needle Electrode is available as option: Model code GN-H

- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Replace the needle electrode
Remove the needle electrode with a dedicated screwdriver separately available. Attach the new needle electrode on the terminal. Be careful not to pick your fingers with the needle electrode.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



Checking Ionizer's Performance

Measure ion balance and decay time regularly by a charge plate monitor.



Reference: IEC61340-5-1, 2 ANSI EOS/ESD S3.1

Adjustment

The N-3 does not have an ion balance adjustment function. The ionizer is designed to maintain the ion balance with a circuit board. If the ion balance is out of the specified range, please contact us.

■ Storage

Storage





|  CAUTION | |
|---|--|
|  Prohibited | Do not store the IPC-A3 in the following environments: <ul style="list-style-type: none"> • Where excessive vibration or shock is applied to the unit. • Where temperature and humidity are outside specified ranges. • Where dew condensation occurs. • Where the sharp temperature fluctuations occurs. • Where is inflammable and/or there is a risk of explosion due to existence of combustible solvent, dust etc. • Where there is heavy dust or smoke • Where possibly wet by water, oil, chemicals, etc. • Where strong electric or magnetic fields are generated. |

■ Troubleshooting

Troubleshooting

Using the IPC-A3 when in anything but proper working condition can cause product damage or personal accidents.






Therefore, request servicing promptly if such trouble occurs. For servicing, contact your local distributor.

|  CAUTIONS for TROUBLESHOOTING | |
|--|--|
|  Prohibited | Do not use the IPC-A3 in the following situations. It can result in fire or electric shock. <ul style="list-style-type: none"> * If the power cable is damaged or hot * If the IPC-A3 has been damaged because of dropping or shock. |
|  Shut power off | Unplug power cable and stop supplying compressed air to the IPC-A3 if any defect is recognized. |
|  Do not disassemble | Never disassemble the IPC-A3. |

■ Removal

Removal

When removing this product, first make sure the surrounding area and other workers are safe.

|  CAUTION | |
|---|---|
|  Unplug power cable | To prevent electrical shock accidents and operational mistake accidents during the product removal work, be sure to unplug the power cord from the outlet. |
|  Remember | When disconnecting a compressed air hose, be sure to first shut off the source of the compressed air. In addition, the compressed air inside the air hose could spray out when the air hose is disconnected, so keep the hose away from the face, etc., when disconnecting it. |
|  Remember | To keep the unit from falling over, do not climb on the hood or dust collector or place heavy objects on them. |
|  Remember | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being removed or moved.· Make sure the product does not fall over while it is being removed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

■ Disposal

Disposal

When disposing of this product, dispose of it properly in accordance with the pertinent laws and local regulations.

■ Replacement Parts

Replacement Parts

There are 3 consumable parts that can be replaced by the customer.

Check the model and lot No. and then purchase the parts through the store where the product was purchased.

- Adhesive gel sheet No. IPC-A4G
- Electrode Needle No. GN-H (Optional dedicated needle electrode screwdriver G-7DR for replacement of needle electrode)
- unwoven fan filter IPC-A3F (6-pc set)

For information about the replacement procedure, refer to the "Maintenance" item in this manual.

LIMITED WARRANTY:

VESSEL expressly warrants that for a period of one (1) year from the date of purchase, VESSEL static erasers will be free of defects in material (parts) and workmanship (labour). Within the warranty period, Defects occurring will be repaired or products will be replaced at VESSEL's option and expense, if VESSEL receives notice during the warranty period. Defective products must be returned to VESSEL Osaka Japan with proof of purchase date. And if your unit is out of warranty, VESSEL will quote repair charges necessary to ship your unit freight prepaid to where you have originally purchased.

WARRANTY EXCLUSIONS:

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING FITNESS AND MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH IS SPECIFICALLY DISCLAIMED.

The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean, or repair products.

LIMIT OF LIABILITY:

This electronic static eraser use high voltage corona discharge and should not be used in or near flammable or explosive environments. In no event will VESSEL or any seller is responsible or liable for any injury, loss or damage, direct or consequential, whether based in tort or contract arising out of the use of or the inability to use the product. Fulfillment of VESSEL's warranty obligations will be Customer's exclusive remedy and VESSEL's and Seller's limit of liability for any breach of warranty or otherwise. Before using this unit, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.

| | | |
|----------|------------------------------------|--|
| Model | IPC-A3 | |
| Warranty | (1) year from the date of purchase | |
| Customer | Name | |
| | Address | |
| | Tel. No. | |
| Dealer | Name/Address/Tel. No. | |

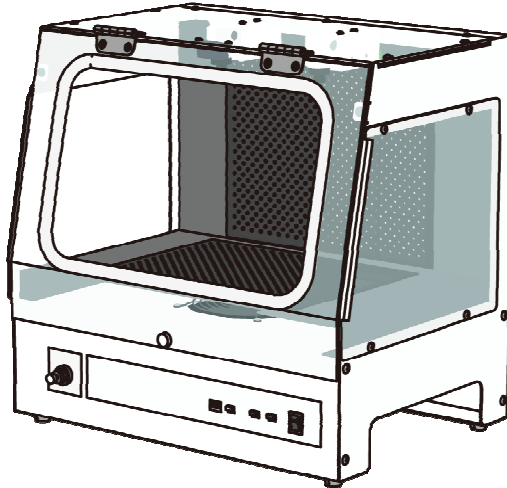
Manufactured by:**VESSEL Co., Inc.**

17-25, Fukae-Kita 2-chome,
Higashinari-ku, Osaka 537-0001 Japan
Tel : +81 6 6976 7778 Fax : +81 6 6972 9441
E-mail : export@vessel.co.jp
URL : <http://www.vessel.jp>

Product of Japan
17041700.00006

ION PARTS CLEANER

No. IPC-A3



Application

This product is used to remove fine powders and dust adhered due to static electricity and to eliminate static electricity from parts that are negatively affected by static electricity.

An ionized pulse of air blows off the debris effectively. The blown-off debris is collected by the self-adhesive of Polyurethane GEL sheets and a paper pack filter.

Table of Contents

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| ■For Your Safety | P.2 |
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■ For Your Safety



Safety Precautions

Please read this manual carefully before using this product.




Use this manual to take responsibility to ensure everyone that is using this product is doing so safely.




After carefully reading this manual, keep it in a protected place where it can be referred to at any time.










- The precaution items shown here are divided into two levels according to the level or risk.

| | |
|---|--|
|  WARNING | Indicates that improper handling can lead to serious injury or even death. |
|  CAUTION | Indicates that improper handling can lead to minor injury and property damage. |





- Example Pictorial Displays

| | |
|---|--|
|  | This symbol indicates a WARNING or CAUTION. |
|  | This symbol indicates a prohibited action. |
|  | This symbol indicates a mandatory required action. |

|  WARNING | |
|--|--|
|  Prohibited | Do not use IPC-A3 for anything other than static electricity elimination or dust removal. |
|  Vacuuming Up Prohibited | <p>To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:</p> <ul style="list-style-type: none"> - Items that are on fire: Cigarette butts, matches, and other sources of fire. - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc. - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances. - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances. - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc. - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc. - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc. |









| | |
|--|--|
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. |
|  Joint Use Prohibited | To prevent fires, absolutely do not make joint use of the following: · When the dust could transform into a hazardous substance when mixed inside the unit. |
|  Prohibited | To prevent fires, use the specified rated power source only. |
|  Painting Prohibited | Use as a painting booth is prohibited. Do not perform painting work in it. |
|  Peering Prohibited | Do not peer into the end of the air nozzle. The sensor will detect your presence and blast out compressed air, which could strike your eyes or face. |
|  Disassembly Prohibited | Do not remove components, or modify or unreasonably disassemble the product. · This product is manufactured in accordance with safety and performance standards, so removing components or modifying the product is dangerous. · Depending on the type of trouble, the customer might not be able to handle it, so always contact the store where the product was purchased. |
|  Remember | Be sure to observe the following to prevent electrical shock accidents: · Be sure to unplug the power cord from the outlet before performing any wiring. · Be sure to ground the ground wire. |
|  Remember | Discard dust from the filter pack regularly without letting it accumulate. Depending on the conditions, dust could cause a fire or explosion hazard. |
|  Remember | Be sure to unplug the power cord from the outlet before performing any maintenance or inspection work. |

 **CAUTION**

| | |
|---|---|
|  Remember | Take into consideration the conditions surrounding the installation area. · Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. · Do not install the unit where it may be exposed to water, oil, chemicals, etc. · Do not install the unit where it may be exposed to marked vibrations or shock · The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | To prevent fires, conduct an inspection after work is completed. |
|  Remember | Store this manual close to the product where it can be referred to quickly. |
|  Prohibited | Do not install, use, or service this product until you understand the contents in this manual. |

■ For Your Safety

The following prohibition and caution symbols are displayed on the product.
Example Pictorial Displays

| | | | |
|---|--|---|---|
|  | Vacuuming up sparks or flames is prohibited. |  | Vacuuming up flammable or combustible substances is prohibited. |
|  | Vacuuming up explosive substances is prohibited. |  | Disassembly is prohibited. |
|  | Be careful of electric shock. |  | Be careful of rotating parts. |
|  | Carefully read the instruction manual. |  | Peeking into the tip of Air Nozzle is prohibited. |

■ Features

A compact dust collector unit equipped with a static electricity removal device

- The work table and the compact dust collector have been unified. This static electricity removal equipment is appropriate for onsite cell production systems.

Dust collector hood

- A transparent window has been included on the front of the hood, which can be opened and closed, ensuring a scatter-proof installation with a good view.
- The openings to the cabinet have been designed to ensure that work piece can enter and exit smoothly.
- The adhesive polyurethane gel sheet is attached with magnets, making it easy to remove for cleaning and replacement.
- A paper pack filter or a duct hose can be attached to the exhaust port on the rear side (standard).

The static electricity removal device

- This product is equipped with two air-nozzle type ionizers. The air nozzles extend from the top panel within the hood downward.
- The ion air that comes from the ionizers eliminate the static electricity and remove dust at the same time.
- When you take a work piece in your hand and insert it into the hooded space, a sensor is activated and the air blow is initiated automatically.
- Intermittent air blows off dust adhered to a work piece by vibrating it.
- A wind flow adjusting valve is provided allowing the intensity of air blow to be adjusted.

Safety

- The static electricity removal device is equipped with an abnormal conditions surveillance function, and a lamp will light up when an abnormality occurs, so conditions can be checked easily.

Specifications

| | |
|-------------------------------|---|
| Model No.: | IPC-A3 |
| Dust Collection Method: | Self-adhesive Polyurethane GEL sheets and paper pack filter |
| Input Voltage: | 24V DC ±5% (Included AC adapter: 100~240V AC, 50/60Hz) |
| Power Output: | 22 W |
| Consumption Current: | 900 mA |
| Protection Feature: | Overcurrent protective fuse (1A/125V) |
| Air Flow: | 1.13 m ³ / min.(Fan) |
| Static Pressure: | 460 Pa (Fan) |
| Air Pressure: | 0.1~0.5 MPa (Use clean air) |
| Air Hose: | O/D φ 10 mm x I/D φ 6.5 mm |
| Air Consumption: | Approx. 315 L/min. (0.3 MPa, Continuous operation mode) |
| Working Temperature/ Humidity | Range: 5~40°C / 35~65 %RH (No dew condensation or freezing) |
| Dimensions: | W 420 x D 300 x H 411 mm (Protrusions are not measured) |
| Weight: | 9.5 kg |
| Accessory: | Self-adhesive Polyurethane GEL sheet plate 2pcs. Power adapter AD24-IT19 (Input: 100~240V AC, Output: 24V DC) Exhaust duct flange 1 pc. (For ø75 mm) Paper pack filter 6 pcs. Instruction Manual (this manual) 1 copy |
| Consumable parts: | Adhesive polyurethane gel sheet / Needle electrode / Paper pack filter |

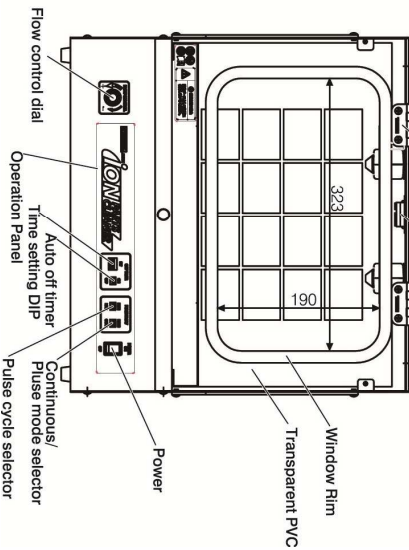
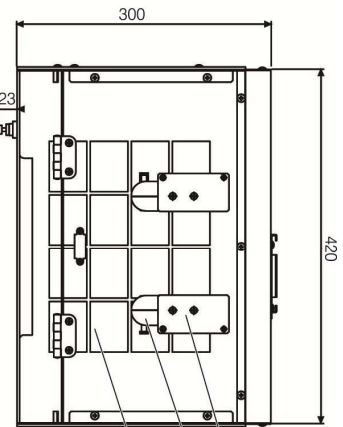
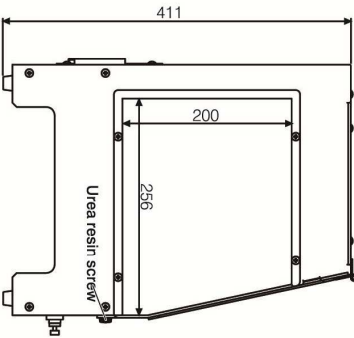
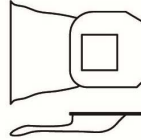
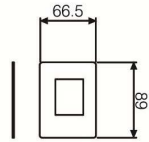
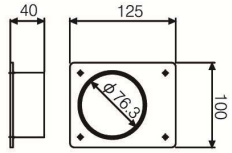
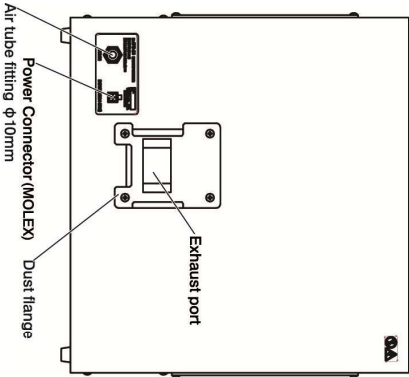
Specifications (Ionizer)

| | |
|------------------------|----------------------------------|
| Model No.: | N-3 |
| Ion Generation Method: | High voltage AC corona discharge |
| Output voltage: | ± 5.6 kV AC (p-p) |
| Alarm output: | High voltage alarm (Red LED) |


Ionizing performance (as reference)




| | | |
|-----------------------|----------|--|
| N-3 (individual unit) | | Measurement conditions: |
| Decay time (+) | 0.7 sec. | Distance: 150mm from the nozzle of ionizer |
| Decay time (-) | 0.7 sec. | Air pressure: 0.3 MPa |
| Ion balance | -8.0V | Air flow: 210L/min |

External View



Installation Area

|  WARNING | |
|--|--|
|  Prohibited | <p>Do not use this product in the following areas. Otherwise, there is a risk of an explosion or fire.</p> <ul style="list-style-type: none"> • Environments that require anti-explosion measures. • Areas where corrosive gases or flammable or explosive gases are used. |

|  CAUTION | |
|--|---|
|  Remember | <p>Take into consideration the conditions surrounding the installation area.</p> <ul style="list-style-type: none"> • Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. • Do not install the unit where it may be exposed to water, oil, chemicals, etc. • Do not install the unit where it may be exposed to marked vibrations or shock • The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | <p>Do not use this product where it will be directly exposed to high temperatures or high humidity. Doing so could cause the burn or breakdown of motor.</p> |

Installation Area

Install the unit in an indoor location not exposed to wind, rain, or direct sunlight.

Avoid using the unit in areas where water, oil, or condensation will get on it or where there will be sudden temperature changes.

Avoid using the unit where it will be exposed to strong vibration or impacts.

This unit has an exhaust outlet on the backside, bottom of the unit.

Install this unit so that the exhaust outlet is 10 cm or more away from the wall, etc. because the normal exhaust function will be impaired, causing a decrease in the dust collection capability, if the unit is installed with the back of the unit against a wall, etc.

Ambient temperature and humidity

Use in a temperature range of 5 °C to 40 °C. Use the unit in a humidity range of 35 to 65%.

Atmosphere

Do not operate the unit in environments where anti-explosion measures are required.

Do not operate the unit in areas where corrosive gases or flammable or explosive gases are used.

In addition, use the unit in a well ventilated area with a normal air atmosphere.

Input voltage and compressed clean air

This unit uses 24V DC input voltage and 0.1 MPa to 0.5 MPa compressed air for the cleaning air.

Install the unit where it can be connected to wiring and piping that meet these specifications.

Maintenance space

Space for maintenance and inspections should be maintained around the unit.

In particular, the space in front of the unit required for daily maintenance should be obtained.

■ Installation

Installation Method

When installing this unit, place it on a level, strong, and smooth, flat bench.

| ⚠ WARNING | |
|------------------|---|
| ● Remember | To keep the unit from falling over, do not climb on the working surface or place heavy objects on it. |
| ● Remember | When installing the IPC-A3, place it on a level, strong, and smooth, flat bench. It can be damaged and malfunction if it falls. |
| △ Caution | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being installed or moved.· Make sure the product does not fall over while it is being installed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

Electrical power wiring

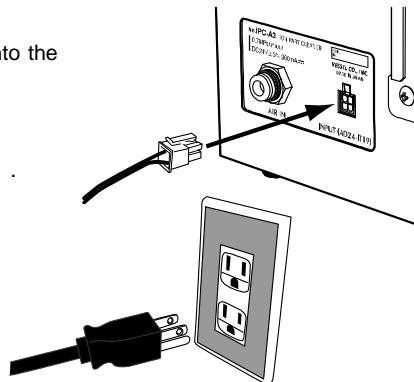
| ⚠ WARNING | |
|------------------|---|
| ● Remember | Use IPC-A3 only with the specific AC adapter. Otherwise, there is a risk of fire or electric shock. |
| ● Remember | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before performing any wiring. |

Connector connection

Insert the included special AC adapter connector into the jack on the back of the body.

Power Supply Adapter

Use the accompanying power adapter (AD24-IT19) . AC adapter is equipped with 3-pin plug. Connect this to a power outlet that has a ground terminal.



Compressed air piping

⚠ CAUTION

● Remember

Be sure to use an air hose with sufficient pressure resistance performance. A hose without pressure resistance could burst or leak air.

Compressed air used

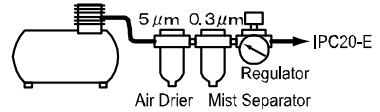
This unit requires that clean compressed air be supplied for the dust removal air blowing.

Supply air within the pressure range of 0.1 to 0.5 MPa.

Use an air drier to remove the moisture from the air. (The dew point temperature is -15°C or lower.)

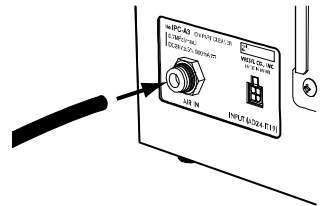
Use mist separator (0.3 μm) to remove the impurities from the air.

Supply air within the temperature range of 5 to 40°C



Hose used

Use an air hose with sufficient pressure resistance performance (outside diameter 10 mm x inside diameter 6.5 mm).



Hose connection

A one-touch hose coupling (air supply port) is provided on the lower left at the back of the body. Connect the air hose to this.

Flow rate adjustment

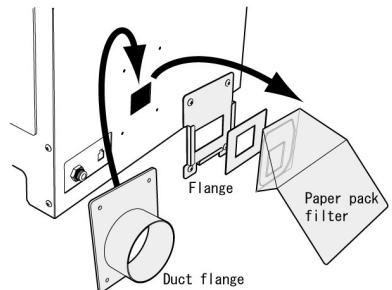
A flow rate adjusting valve (FLOW CONTROL) is provided on the lower right at the front of the body. Adjust the rate of the discharged air as necessary.



Flange

A paper pack filter can be attached to the exhaust port on the rear side (standard).

A $\varnothing 75\text{mm}$ (I/D) exhaust duct can be connected by exchanging it for a duct flange.



Pre-use inspection

Pre-use product inspection

Before using the product, make sure there are no problems with it, the power adapter, etc. Make sure there is no damage, and no loose of screws or connectors.

■ Operation

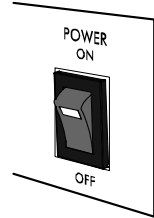
Operation

Switch

This is used to start and stop the unit.

When switched to [ON], the power is turned on, the switch LED lights up, and operation starts.

When switched to [OFF], the power is turned off and operation stops.



Front acrylic window

Open and close the acrylic window according to the working conditions.

Please note that the best performance is obtained when the acrylic window is closed, so when working with the window open, check to make sure of the air pressure suitable for the specific work.

⚠ CAUTION

△ Caution

Be careful not to get your finger caught when the front acrylic window is opened or closed.

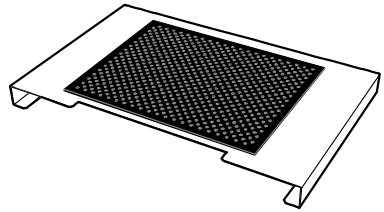
Adhesive gel sheets

The adhesive gel sheets capture the dust blown off by the ionizing nozzle.

The self-adhesive polyurethane gel sheets are attached to stainless steel plates.

Remove the protective surface film before using the unit.

Refer to the maintenance section of this manual in regard to the exchange procedure for the adhesive gel sheets.



⚠ CAUTION

△ Caution

If the adhesive gel sheets are deformed or broken while performing work, continuing to use the product in this condition is hazardous, so make sure the adhesive gel sheets are properly maintained.
Replacing deformed or damaged adhesive gel sheets is highly recommended.

● Remember

This unit is designed for light work, such as handwork, so do not place heavy objects on top of the adhesive gel sheets or forcefully strike it.
Doing so could deform or break the adhesive gel sheets.

Dust conditions

Observe the following conditions for the dust that is handled.

- This unit is for use with regular dust. It can be used to blow off dry fine dust.
 - Absolutely do not vacuum up wet dust, liquids like water, oil or spray mist.
 - Also absolutely do not vacuum up dust containing explosive, flammable, or combustible substances.

- Do not vacuum up adhesive or corrosive substances.






- To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:
 - Items that are on fire: Cigarette butts, matches, and other sources of fire.
 - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc.
 - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances.
 - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances.
 - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc.
 - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc.
 - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc.

- Do not vacuum up flammable dust or dust containing flammable substances.
 - Caution must be taken in particular with non-combustible substances that change into combustible substances when worked on, etc.
 - It is very difficult to determine if such substances are changing into combustible dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. The user is strongly advised to stop using the unit if a substance is determined to be combustible dust.

- Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances that change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail.
 - If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials.
 - Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail.



- Absolutely do not vacuum up damp dust or any moisture such as water or oil.
 - Unforeseen malfunctions or accidents could occur.






■ Operation

|  WARNING | |
|--|---|
|  Vacuuming Up Prohibited | Absolutely do not vacuum up sparks; flammable, explosive, or combustible dust; or dust containing or mixed with explosive, flammable, or combustible substances. |
|  Vacuuming Up Prohibited | Absolutely do not vacuum up explosive, flammable, or combustible liquids or dust wet with such liquids, or dust mixed with or containing such liquids. |
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. Unforeseen malfunctions or accidents could occur. |
|  Joint Use Prohibited | Use in the same unit of substances that change into a hazardous substance when mixed, is prohibited. Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances the change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail. If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials. Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. |

Ionizers / Sensor

When a work piece is held below the sensor, the sensor detects the work piece and releases the solenoid valve. This initiates the ion air blow from two pieces of pinpoint nozzle ionizers.

|  WARNING | |
|--|---|
|  Unplug the power cord | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before inspecting the ionizers. |

|  CAUTION | |
|---|---|
|  Disassembly Prohibited | Do not remodel or disassemble the IPC-A3. The IPC-A3 contains high voltage parts. |
|  Prohibited | Do not block openings such as the intake vent and the discharge vent. Doing so could cause a malfunction. |
|  Prohibited | Do not insert metal or foreign matters into the unit openings. Doing so could result in electrical shock accidents or equipment breakdown. |
|  Unplug power cable | Before long periods of disuse, unplug the power cable. Leaving the power on during periods of disuse can result in electric shock, breakdown and fire from degraded insulation. |

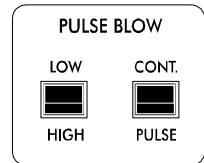
High Voltage Alarm Function

When the piezoelectric high voltage transformer in the ionizer detects an overload and shuts down the power output, the red indicator on the top of the ionizer will light and operation will stop.
 If the alarm lamp turns ON, turn the power OFF immediately with the power switch.
 If foreign matter is stuck on the needle electrode, clean the needle and then turn the power ON again.
 Confirm that the alarm lamp does not light up.
 If the alarm lights up when the power is turned ON, contact your certified sales agent for inspections to prevent accidents.

Pulse Air Operation

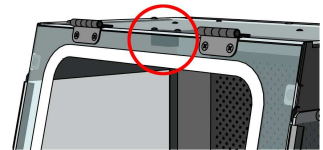
The pulse air operation mode provides an intermittent air blow, making it possible to obtain good and efficient dust removal.

1. Turn the pulse air operation mode to "PULSE."
2. The pulse width switch can be used to suit the usage required.
 [LOW]: Low-speed mode (appropriate for the removal of large-grained dust)
 [HIGH]: High-speed mode (appropriate for the removal of small-grained dust, such as dirt)



Sensor

The sensor affixed to the front of the top inside surface of the cabinet detects work pieces.
 Using the OFF TIMER switch, you can change the time intervals for the ion air blow.



Off-timer Function

When the off-timer function is on, and the sensor detects a work piece, the air blow occurs only for the time period set, and turns off automatically.

• When the off-timer function is not activated

The air blow is on as long as the sensor detects a work piece in the unit.
 The air blow will stop when the work piece is removed from the sensor's detection area.

Turn the off timer mode switch to [OFF].

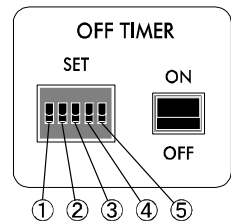
• When the off-timer function is activated

After the sensor detects a work piece in the unit, the air blow will on only for the time period set.

1. Turn the off-timer mode switch to [ON].
2. Use the DIP switches to set the air blow time period.

In order to set the time period desired, turn the appropriate DIP switch on (up position).

| Switch① | Switch② | Switch③ | Switch④ | Switch⑤ |
|--------------|--------------|--------------|---------------|---------------|
| About 1 sec. | About 3 sec. | About 5 sec. | About 10 sec. | About 30 sec. |



Caution: Do not turn all of the DIP switches off, or turn multiple DIP switches on.
 In some cases this may result in unexpected operations.

■ Operation

Adjusting the sensitivity of the sensor

Set the detection range of the sensor by adjusting the volume on the motherboard installed in the cabinet.

This adjustment is useful when employing a platform above the adhesive gel sheet plate.

When the volume control is turned to the right, using a Phillips head screwdriver, the detection range (distance between the sensor and the work piece) is increased, and decreased when it is turned to the left.



⚠ CAUTION

● Remember

The sensitivity of the sensor is factory-adjusted. Do not change this setting unless it is absolutely necessary. Using undue power to turn the volume control may cause damage to the unit, so be very careful when making adjustments.

■ Maintenance

Cleaning the adhesive gel sheets

When dust has collected on the adhesive gel sheet, remove both the adhesive sheet and the mounting plate and wash them.

The adhesive strength of the adhesive gel sheet will be restored after the sheet is dried.

When the adhesive strength of the adhesive gel sheet is not restored after the sheet is cleaned, it is time to replace the sheet, so request a replacement adhesive gel sheet.

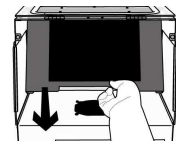
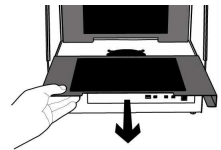
When removing the mounting plate for the adhesive gel sheet, follow the directions exactly as shown below.

⚠ CAUTION

● Remember

When removing the mounting plate for the adhesive gel sheet, be careful not to cut your hand on the edges of the plate.

- | | |
|--|--|
| 1. Turning the switch off | Turn off the power switch, and always confirm that the fan has stopped completely. |
| 2. Opening the front cover | Loosen the urea screw on the front, and pull the front window upward. |
| 3. Removing the adhesive gel sheet plate (lower section) | Remove the adhesive gel sheet plate from the bottom of the interior of the cabinet. * Magnets are attached on the back of the plate. Please lift the plate a little and pull out. |
| 4. Removing the adhesive gel sheet plate (rear surface section) | Remove the adhesive gel sheet plate from the rear surface section of the cabinet. |
| 5. Washing the adhesive gel sheet | After washing the adhesive gel sheet in water, dry it out completely. The drying process can be hastened by wiping up any extra moisture from the sheet with a dry clean cloth, etc. |
| 6. Attaching the adhesive gel sheet plate (back surface section) | First, replace the cleaned adhesive gel sheet plate in the rear surface section of the cabinet. Attach the plate, while being careful not to let the plate touch the N-3 units. |
| 7. Attaching the adhesive gel sheet plate (lower section) | Next, attach the adhesive gel sheet plate in the lower section of the cabinet. |
| 8. Closing the front cover | Close the front window, and tighten the urea screw. |



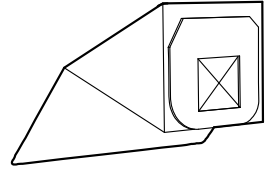
■Maintenance

Replacing the paper pack filter

There is an exhaust port on the back of the body. The flange for the paper pack filter is attached at the time of shipment.

Depending on your situation, please replace the paper pack filter provided.

Please purchase replacement parts when the paper pack filter is gone. Paper pack filter IPC-A3F (6-pcs set)



Maintenance of Ionizer

| ⚠ CAUTIONS | |
|-----------------------------|---|
| ⊘ DO NOT DISASSEMBLE | Do not perform any maintenance on the N-3 except for maintenance and replacement of the electrode. |
| ● REMEMBER | Before cleaning the electrode, shut off power and air supply at the source and disconnect the air hose. |
| ⊘ PROHIBITED | Do not wipe the ionizer with detergent or solvent. Substances of the sort can cause cracking and result in electric shock or breakdown. |
| ⊘ DO NOT WET | Do not wet the N-3. Exposure to moisture can result in electric shock or breakdown. |

Dirt and wear in the needle electrode can deteriorate the performance of this ionizer. Clean the electrode every 56 hours of use (= approximately 7 days based on calculation of use for 8 hours per day). If the electrode is not kept in an optimum condition, the performance will drop and product life might shorten as well.

If the unit is used for a long period of time, the tip of the needle electrode may wear out and consequently static erasing efficiency will decrease. In such case, replace the needle electrode with a new one. It is recommended that the needle electrode be replaced every 1,200 hours of operation (= approximately 6 months based on calculation of use for 8 hours per day).

Keep the unit in good working condition by measuring its ion balance and ion output regularly as a means for checking for a drop in capacity.

How to Clean the Casing

Remove the dirt over the casing with dry, soft cloth.

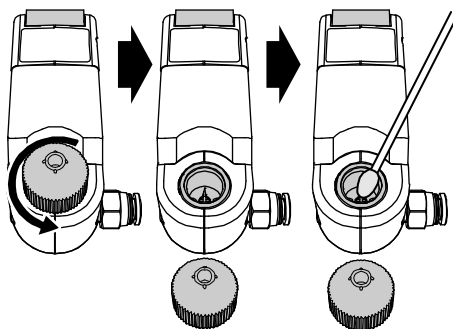
Never apply alcohol / thinner solvent / detergent, because the surface-active agent included in the detergent etc., may deteriorate the ionizing performance.

How to Clean the Electrode Needle

Power supply to the N-3 should be shut off before cleaning the needle electrode.

Please follow the instructions below:

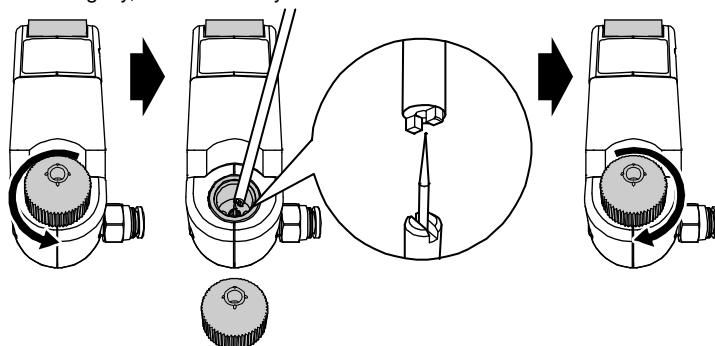
- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Clean the needle electrode
Clean the tip of the needle with a cotton stick. If it is especially dirty, use a few drops of alcohol-wet cloth.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



How to Replace the Electrode Needle

Replacement Needle Electrode is available as option: Model code GN-H

- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Replace the needle electrode
Remove the needle electrode with a dedicated screwdriver separately available. Attach the new needle electrode on the terminal. Be careful not to pick your fingers with the needle electrode.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



Checking Ionizer's Performance

Measure ion balance and decay time regularly by a charge plate monitor.



Reference: IEC61340-5-1, 2 ANSI EOS/ESD S3.1

Adjustment

The N-3 does not have an ion balance adjustment function. The ionizer is designed to maintain the ion balance with a circuit board. If the ion balance is out of the specified range, please contact us.

■ Storage

Storage





|  CAUTION | |
|---|---|
|  Prohibited | <p>Do not store the IPC-A3 in the following environments:</p> <ul style="list-style-type: none"> • Where excessive vibration or shock is applied to the unit. • Where temperature and humidity are outside specified ranges. • Where dew condensation occurs. • Where the sharp temperature fluctuations occurs. • Where is inflammable and/or there is a risk of explosion due to existence of combustible solvent, dust etc. • Where there is heavy dust or smoke • Where possibly wet by water, oil, chemicals, etc. • Where strong electric or magnetic fields are generated. |

■ Troubleshooting

Troubleshooting

Using the IPC-A3 when in anything but proper working condition can cause product damage or personal accidents.


Therefore, request servicing promptly if such trouble occurs. For servicing, contact your local distributor.

|  CAUTIONS for TROUBLESHOOTING | |
|--|---|
|  Prohibited | <p>Do not use the IPC-A3 in the following situations. It can result in fire or electric shock.</p> <ul style="list-style-type: none"> * If the power cable is damaged or hot * If the IPC-A3 has been damaged because of dropping or shock. |
|  Shut power off | <p>Unplug power cable and stop supplying compressed air to the IPC-A3 if any defect is recognized.</p> |
|  Do not disassemble | <p>Never disassemble the IPC-A3.</p> |

■ Removal

Removal

When removing this product, first make sure the surrounding area and other workers are safe.

|  CAUTION | |
|---|---|
| ● Unplug power cable | To prevent electrical shock accidents and operational mistake accidents during the product removal work, be sure to unplug the power cord from the outlet. |
| ● Remember | When disconnecting a compressed air hose, be sure to first shut off the source of the compressed air. In addition, the compressed air inside the air hose could spray out when the air hose is disconnected, so keep the hose away from the face, etc., when disconnecting it. |
| ● Remember | To keep the unit from falling over, do not climb on the hood or dust collector or place heavy objects on them. |
| ● Remember | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being removed or moved.· Make sure the product does not fall over while it is being removed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

■ Disposal

Disposal

When disposing of this product, dispose of it properly in accordance with the pertinent laws and local regulations.

■ Replacement Parts

Replacement Parts

There are 3 consumable parts that can be replaced by the customer.

Check the model and lot No. and then purchase the parts through the store where the product was purchased.

- Adhesive gel sheet No. IPC-A4G
- Electrode Needle No. GN-H (Optional dedicated needle electrode screwdriver G-7DR for replacement of needle electrode)
- unwoven fan filter IPC-A3F (6-pc set)

For information about the replacement procedure, refer to the "Maintenance" item in this manual.

LIMITED WARRANTY:

VESSEL expressly warrants that for a period of one (1) year from the date of purchase, VESSEL static erasers will be free of defects in material (parts) and workmanship (labour). Within the warranty period, Defects occurring will be repaired or products will be replaced at VESSEL's option and expense, if VESSEL receives notice during the warranty period. Defective products must be returned to VESSEL Osaka Japan with proof of purchase date. And if your unit is out of warranty, VESSEL will quote repair charges necessary to ship your unit freight prepaid to where you have originally purchased.

WARRANTY EXCLUSIONS:

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING FITNESS AND MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH IS SPECIFICALLY DISCLAIMED.

The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean, or repair products.

LIMIT OF LIABILITY:

This electronic static eraser use high voltage corona discharge and should not be used in or near flammable or explosive environments. In no event will VESSEL or any seller is responsible or liable for any injury, loss or damage, direct or consequential, whether based in tort or contract arising out of the use of or the inability to use the product. Fulfillment of VESSEL's warranty obligations will be Customer's exclusive remedy and VESSEL's and Seller's limit of liability for any breach of warranty or otherwise. Before using this unit, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.

| | | |
|----------|------------------------------------|--|
| Model | IPC-A3 | |
| Warranty | (1) year from the date of purchase | |
| Customer | Name | |
| | Address | |
| | Tel. No. | |
| Dealer | Name/Address/Tel. No. | |

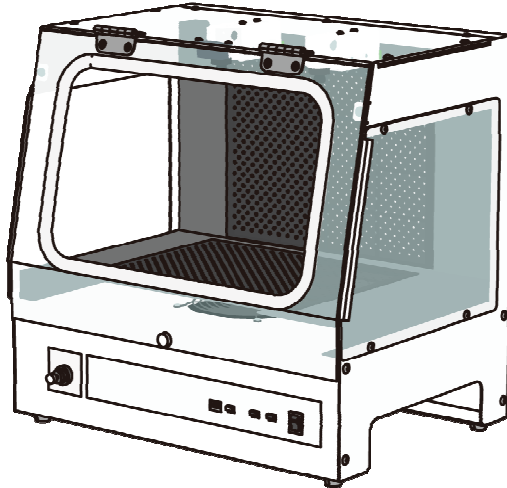
Manufactured by:**VESSEL Co., Inc.**

17-25, Fukae-Kita 2-chome,
Higashinari-ku, Osaka 537-0001 Japan
Tel : +81 6 6976 7778 Fax : +81 6 6972 9441
E-mail : export@vessel.co.jp
URL : <http://www.vessel.jp>

Product of Japan
17041700.00006

ION PARTS CLEANER

No. IPC-A3



Application

This product is used to remove fine powders and dust adhered due to static electricity and to eliminate static electricity from parts that are negatively affected by static electricity.

An ionized pulse of air blows off the debris effectively. The blown-off debris is collected by the self-adhesive of Polyurethane GEL sheets and a paper pack filter.

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■ For Your Safety



Safety Precautions

Please read this manual carefully before using this product.




Use this manual to take responsibility to ensure everyone that is using this product is doing so safely.




After carefully reading this manual, keep it in a protected place where it can be referred to at any time.










- The precaution items shown here are divided into two levels according to the level or risk.

| | |
|---|--|
|  WARNING | Indicates that improper handling can lead to serious injury or even death. |
|  CAUTION | Indicates that improper handling can lead to minor injury and property damage. |





- Example Pictorial Displays

| | |
|---|--|
|  | This symbol indicates a WARNING or CAUTION. |
|  | This symbol indicates a prohibited action. |
|  | This symbol indicates a mandatory required action. |

|  WARNING | |
|---|--|
|  Prohibited | Do not use IPC-A3 for anything other than static electricity elimination or dust removal. |
|  Vacuuming Up Prohibited | <p>To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:</p> <ul style="list-style-type: none"> - Items that are on fire: Cigarette butts, matches, and other sources of fire. - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc. - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances. - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances. - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc. - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc. - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc. |









| | |
|--|--|
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. |
|  Joint Use Prohibited | To prevent fires, absolutely do not make joint use of the following: · When the dust could transform into a hazardous substance when mixed inside the unit. |
|  Prohibited | To prevent fires, use the specified rated power source only. |
|  Painting Prohibited | Use as a painting booth is prohibited. Do not perform painting work in it. |
|  Peering Prohibited | Do not peer into the end of the air nozzle. The sensor will detect your presence and blast out compressed air, which could strike your eyes or face. |
|  Disassembly Prohibited | Do not remove components, or modify or unreasonably disassemble the product. · This product is manufactured in accordance with safety and performance standards, so removing components or modifying the product is dangerous. · Depending on the type of trouble, the customer might not be able to handle it, so always contact the store where the product was purchased. |
|  Remember | Be sure to observe the following to prevent electrical shock accidents: · Be sure to unplug the power cord from the outlet before performing any wiring. · Be sure to ground the ground wire. |
|  Remember | Discard dust from the filter pack regularly without letting it accumulate. Depending on the conditions, dust could cause a fire or explosion hazard. |
|  Remember | Be sure to unplug the power cord from the outlet before performing any maintenance or inspection work. |

 **CAUTION**

| | |
|---|---|
|  Remember | Take into consideration the conditions surrounding the installation area. · Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. · Do not install the unit where it may be exposed to water, oil, chemicals, etc. · Do not install the unit where it may be exposed to marked vibrations or shock · The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | To prevent fires, conduct an inspection after work is completed. |
|  Remember | Store this manual close to the product where it can be referred to quickly. |
|  Prohibited | Do not install, use, or service this product until you understand the contents in this manual. |

■ For Your Safety

The following prohibition and caution symbols are displayed on the product.
Example Pictorial Displays

| | | | |
|---|--|---|---|
|  | Vacuuming up sparks or flames is prohibited. |  | Vacuuming up flammable or combustible substances is prohibited. |
|  | Vacuuming up explosive substances is prohibited. |  | Disassembly is prohibited. |
|  | Be careful of electric shock. |  | Be careful of rotating parts. |
|  | Carefully read the instruction manual. |  | Peeking into the tip of Air Nozzle is prohibited. |

■ Features

A compact dust collector unit equipped with a static electricity removal device

- The work table and the compact dust collector have been unified. This static electricity removal equipment is appropriate for onsite cell production systems.

Dust collector hood

- A transparent window has been included on the front of the hood, which can be opened and closed, ensuring a scatter-proof installation with a good view.
- The openings to the cabinet have been designed to ensure that work piece can enter and exit smoothly.
- The adhesive polyurethane gel sheet is attached with magnets, making it easy to remove for cleaning and replacement.
- A paper pack filter or a duct hose can be attached to the exhaust port on the rear side (standard).

The static electricity removal device

- This product is equipped with two air-nozzle type ionizers. The air nozzles extend from the top panel within the hood downward.
- The ion air that comes from the ionizers eliminate the static electricity and remove dust at the same time.
- When you take a work piece in your hand and insert it into the hooded space, a sensor is activated and the air blow is initiated automatically.
- Intermittent air blows off dust adhered to a work piece by vibrating it.
- A wind flow adjusting valve is provided allowing the intensity of air blow to be adjusted.

Safety

- The static electricity removal device is equipped with an abnormal conditions surveillance function, and a lamp will light up when an abnormality occurs, so conditions can be checked easily.

Specifications

| | |
|-------------------------------|---|
| Model No.: | IPC-A3 |
| Dust Collection Method: | Self-adhesive Polyurethane GEL sheets and paper pack filter |
| Input Voltage: | 24V DC ±5% (Included AC adapter: 100~240V AC, 50/60Hz) |
| Power Output: | 22 W |
| Consumption Current: | 900 mA |
| Protection Feature: | Overcurrent protective fuse (1A/125V) |
| Air Flow: | 1.13 m ³ / min.(Fan) |
| Static Pressure: | 460 Pa (Fan) |
| Air Pressure: | 0.1~0.5 MPa (Use clean air) |
| Air Hose: | O/D φ 10 mm x I/D φ 6.5 mm |
| Air Consumption: | Approx. 315 L/min. (0.3 MPa, Continuous operation mode) |
| Working Temperature/ Humidity | Range: 5~40°C / 35~65 %RH (No dew condensation or freezing) |
| Dimensions: | W 420 x D 300 x H 411 mm (Protrusions are not measured) |
| Weight: | 9.5 kg |
| Accessory: | Self-adhesive Polyurethane GEL sheet plate 2pcs. Power adapter AD24-IT19 (Input: 100~240V AC, Output: 24V DC) Exhaust duct flange 1 pc. (For ø75 mm) Paper pack filter 6 pcs. Instruction Manual (this manual) 1 copy |
| Consumable parts: | Adhesive polyurethane gel sheet / Needle electrode / Paper pack filter |

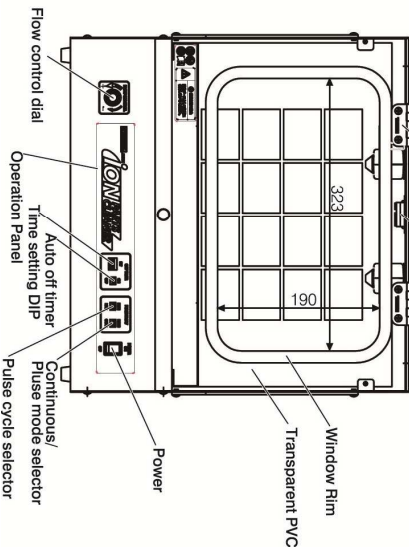
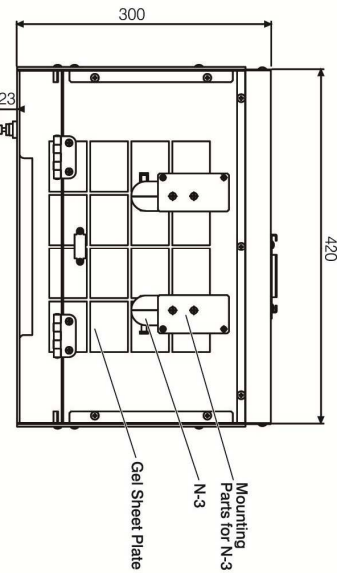
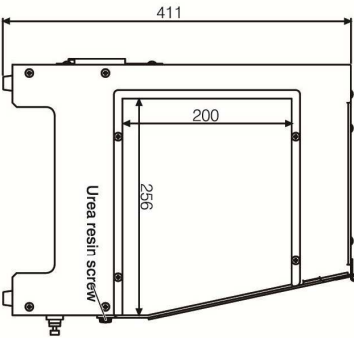
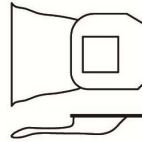
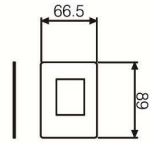
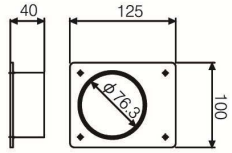
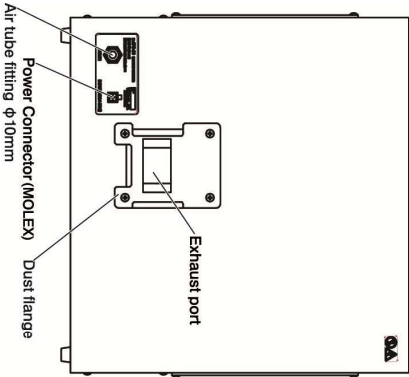
Specifications (Ionizer)

| | |
|------------------------|----------------------------------|
| Model No.: | N-3 |
| Ion Generation Method: | High voltage AC corona discharge |
| Output voltage: | ± 5.6 kV AC (p-p) |
| Alarm output: | High voltage alarm (Red LED) |


Ionizing performance (as reference)




| | | |
|-----------------------|----------|--|
| N-3 (individual unit) | | Measurement conditions: |
| Decay time (+) | 0.7 sec. | Distance: 150mm from the nozzle of ionizer |
| Decay time (-) | 0.7 sec. | Air pressure: 0.3 MPa |
| Ion balance | -8.0V | Air flow: 210L/min |

External View



Installation Area

|  WARNING | |
|--|--|
|  Prohibited | <p>Do not use this product in the following areas. Otherwise, there is a risk of an explosion or fire.</p> <ul style="list-style-type: none"> • Environments that require anti-explosion measures. • Areas where corrosive gases or flammable or explosive gases are used. |

|  CAUTION | |
|--|---|
|  Remember | <p>Take into consideration the conditions surrounding the installation area.</p> <ul style="list-style-type: none"> • Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. • Do not install the unit where it may be exposed to water, oil, chemicals, etc. • Do not install the unit where it may be exposed to marked vibrations or shock • The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | <p>Do not use this product where it will be directly exposed to high temperatures or high humidity. Doing so could cause the burn or breakdown of motor.</p> |

Installation Area

Install the unit in an indoor location not exposed to wind, rain, or direct sunlight.

Avoid using the unit in areas where water, oil, or condensation will get on it or where there will be sudden temperature changes.

Avoid using the unit where it will be exposed to strong vibration or impacts.

This unit has an exhaust outlet on the backside, bottom of the unit.

Install this unit so that the exhaust outlet is 10 cm or more away from the wall, etc. because the normal exhaust function will be impaired, causing a decrease in the dust collection capability, if the unit is installed with the back of the unit against a wall, etc.

Ambient temperature and humidity

Use in a temperature range of 5 °C to 40 °C. Use the unit in a humidity range of 35 to 65%.

Atmosphere

Do not operate the unit in environments where anti-explosion measures are required.

Do not operate the unit in areas where corrosive gases or flammable or explosive gases are used.

In addition, use the unit in a well ventilated area with a normal air atmosphere.

Input voltage and compressed clean air

This unit uses 24V DC input voltage and 0.1 MPa to 0.5 MPa compressed air for the cleaning air.

Install the unit where it can be connected to wiring and piping that meet these specifications.

Maintenance space

Space for maintenance and inspections should be maintained around the unit.

In particular, the space in front of the unit required for daily maintenance should be obtained.

■ Installation

Installation Method

When installing this unit, place it on a level, strong, and smooth, flat bench.

| ⚠ WARNING | |
|------------------|---|
| ● Remember | To keep the unit from falling over, do not climb on the working surface or place heavy objects on it. |
| ● Remember | When installing the IPC-A3, place it on a level, strong, and smooth, flat bench. It can be damaged and malfunction if it falls. |
| △ Caution | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being installed or moved.· Make sure the product does not fall over while it is being installed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

Electrical power wiring

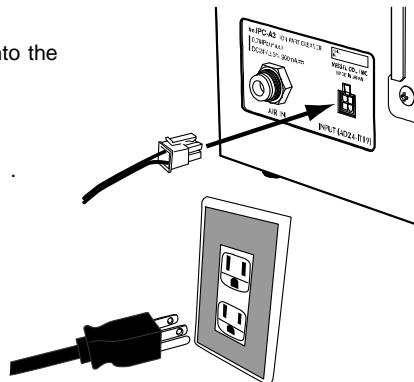
| ⚠ WARNING | |
|------------------|---|
| ● Remember | Use IPC-A3 only with the specific AC adapter. Otherwise, there is a risk of fire or electric shock. |
| ● Remember | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before performing any wiring. |

Connector connection

Insert the included special AC adapter connector into the jack on the back of the body.

Power Supply Adapter

Use the accompanying power adapter (AD24-IT19) . AC adapter is equipped with 3-pin plug. Connect this to a power outlet that has a ground terminal.



Compressed air piping

⚠ CAUTION

● Remember

Be sure to use an air hose with sufficient pressure resistance performance. A hose without pressure resistance could burst or leak air.

Compressed air used

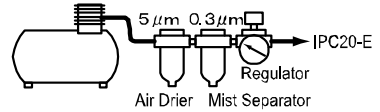
This unit requires that clean compressed air be supplied for the dust removal air blowing.

Supply air within the pressure range of 0.1 to 0.5 MPa.

Use an air drier to remove the moisture from the air. (The dew point temperature is -15°C or lower.)

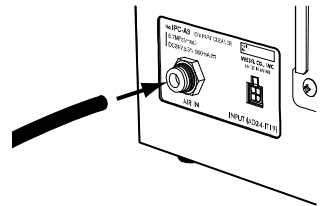
Use mist separator (0.3 μm) to remove the impurities from the air.

Supply air within the temperature range of 5 to 40°C



Hose used

Use an air hose with sufficient pressure resistance performance (outside diameter 10 mm x inside diameter 6.5 mm).



Hose connection

A one-touch hose coupling (air supply port) is provided on the lower left at the back of the body. Connect the air hose to this.

Flow rate adjustment

A flow rate adjusting valve (FLOW CONTROL) is provided on the lower right at the front of the body. Adjust the rate of the discharged air as necessary.



Flange

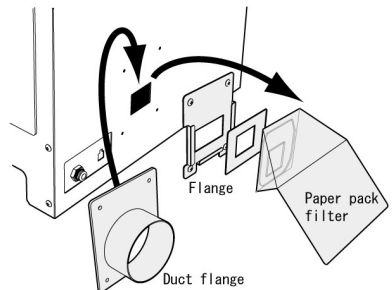
A paper pack filter can be attached to the exhaust port on the rear side (standard).

A $\varnothing 75\text{mm}$ (I/D) exhaust duct can be connected by exchanging it for a duct flange.

Pre-use inspection

Pre-use product inspection

Before using the product, make sure there are no problems with it, the power adapter, etc. Make sure there is no damage, and no loose of screws or connectors.



■ Operation

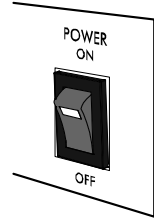
Operation

Switch

This is used to start and stop the unit.

When switched to [ON], the power is turned on, the switch LED lights up, and operation starts.

When switched to [OFF], the power is turned off and operation stops.



Front acrylic window

Open and close the acrylic window according to the working conditions.

Please note that the best performance is obtained when the acrylic window is closed, so when working with the window open, check to make sure of the air pressure suitable for the specific work.

⚠ CAUTION

△ Caution

Be careful not to get your finger caught when the front acrylic window is opened or closed.

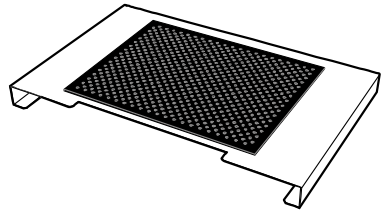
Adhesive gel sheets

The adhesive gel sheets capture the dust blown off by the ionizing nozzle.

The self-adhesive polyurethane gel sheets are attached to stainless steel plates.

Remove the protective surface film before using the unit.

Refer to the maintenance section of this manual in regard to the exchange procedure for the adhesive gel sheets.



⚠ CAUTION

△ Caution

If the adhesive gel sheets are deformed or broken while performing work, continuing to use the product in this condition is hazardous, so make sure the adhesive gel sheets are properly maintained.
Replacing deformed or damaged adhesive gel sheets is highly recommended.

● Remember






This unit is designed for light work, such as handwork, so do not place heavy objects on top of the adhesive gel sheets or forcefully strike it.
Doing so could deform or break the adhesive gel sheets.

Dust conditions

Observe the following conditions for the dust that is handled.



- This unit is for use with regular dust. It can be used to blow off dry fine dust.
 Absolutely do not vacuum up wet dust, liquids like water, oil or spray mist.
 Also absolutely do not vacuum up dust containing explosive, flammable, or combustible substances.
- Do not vacuum up adhesive or corrosive substances.
- To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:
 - Items that are on fire: Cigarette butts, matches, and other sources of fire.
 - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc.
 - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances.
 - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances.
 - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc.
 - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc.
 - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc.
- Do not vacuum up flammable dust or dust containing flammable substances.
 Caution must be taken in particular with non-combustible substances that change into combustible substances when worked on, etc.
 It is very difficult to determine if such substances are changing into combustible dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. The user is strongly advised to stop using the unit if a substance is determined to be combustible dust.
- Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances that change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail.
 If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials.
 Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail.
- Absolutely do not vacuum up damp dust or any moisture such as water or oil.
 Unforeseen malfunctions or accidents could occur.






■ Operation

|  WARNING | |
|--|---|
|  Vacuuming Up Prohibited | Absolutely do not vacuum up sparks; flammable, explosive, or combustible dust; or dust containing or mixed with explosive, flammable, or combustible substances. |
|  Vacuuming Up Prohibited | Absolutely do not vacuum up explosive, flammable, or combustible liquids or dust wet with such liquids, or dust mixed with or containing such liquids. |
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. Unforeseen malfunctions or accidents could occur. |
|  Joint Use Prohibited | Use in the same unit of substances that change into a hazardous substance when mixed, is prohibited. Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances the change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail. If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials. Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. |

Ionizers / Sensor

When a work piece is held below the sensor, the sensor detects the work piece and releases the solenoid valve. This initiates the ion air blow from two pieces of pinpoint nozzle ionizers.

|  WARNING | |
|--|---|
|  Unplug the power cord | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before inspecting the ionizers. |

|  CAUTION | |
|---|---|
|  Disassembly Prohibited | Do not remodel or disassemble the IPC-A3. The IPC-A3 contains high voltage parts. |
|  Prohibited | Do not block openings such as the intake vent and the discharge vent. Doing so could cause a malfunction. |
|  Prohibited | Do not insert metal or foreign matters into the unit openings. Doing so could result in electrical shock accidents or equipment breakdown. |
|  Unplug power cable | Before long periods of disuse, unplug the power cable. Leaving the power on during periods of disuse can result in electric shock, breakdown and fire from degraded insulation. |

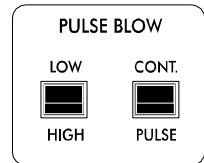
High Voltage Alarm Function

When the piezoelectric high voltage transformer in the ionizer detects an overload and shuts down the power output, the red indicator on the top of the ionizer will light and operation will stop.
 If the alarm lamp turns ON, turn the power OFF immediately with the power switch.
 If foreign matter is stuck on the needle electrode, clean the needle and then turn the power ON again.
 Confirm that the alarm lamp does not light up.
 If the alarm lights up when the power is turned ON, contact your certified sales agent for inspections to prevent accidents.

Pulse Air Operation

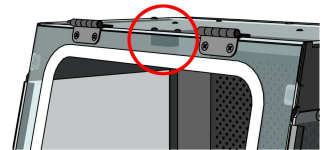
The pulse air operation mode provides an intermittent air blow, making it possible to obtain good and efficient dust removal.

1. Turn the pulse air operation mode to "PULSE."
2. The pulse width switch can be used to suit the usage required.
 [LOW]: Low-speed mode (appropriate for the removal of large-grained dust)
 [HIGH]: High-speed mode (appropriate for the removal of small-grained dust, such as dirt)



Sensor

The sensor affixed to the front of the top inside surface of the cabinet detects work pieces.
 Using the OFF TIMER switch, you can change the time intervals for the ion air blow.



Off-timer Function

When the off-timer function is on, and the sensor detects a work piece, the air blow occurs only for the time period set, and turns off automatically.

• When the off-timer function is not activated

The air blow is on as long as the sensor detects a work piece in the unit.
 The air blow will stop when the work piece is removed from the sensor's detection area.

Turn the off timer mode switch to [OFF].

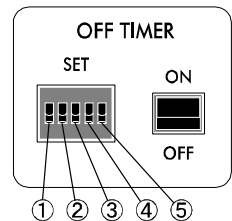
• When the off-timer function is activated

After the sensor detects a work piece in the unit, the air blow will on only for the time period set.

1. Turn the off-timer mode switch to [ON].
2. Use the DIP switches to set the air blow time period.

In order to set the time period desired, turn the appropriate DIP switch on (up position).

| Switch① | Switch② | Switch③ | Switch④ | Switch⑤ |
|--------------|--------------|--------------|---------------|---------------|
| About 1 sec. | About 3 sec. | About 5 sec. | About 10 sec. | About 30 sec. |



Caution: Do not turn all of the DIP switches off, or turn multiple DIP switches on.
 In some cases this may result in unexpected operations.

■ Operation

Adjusting the sensitivity of the sensor

Set the detection range of the sensor by adjusting the volume on the motherboard installed in the cabinet.

This adjustment is useful when employing a platform above the adhesive gel sheet plate.

When the volume control is turned to the right, using a Phillips head screwdriver, the detection range (distance between the sensor and the work piece) is increased, and decreased when it is turned to the left.



⚠ CAUTION

● Remember

The sensitivity of the sensor is factory-adjusted. Do not change this setting unless it is absolutely necessary. Using undue power to turn the volume control may cause damage to the unit, so be very careful when making adjustments.

■ Maintenance

Cleaning the adhesive gel sheets

When dust has collected on the adhesive gel sheet, remove both the adhesive sheet and the mounting plate and wash them.

The adhesive strength of the adhesive gel sheet will be restored after the sheet is dried.

When the adhesive strength of the adhesive gel sheet is not restored after the sheet is cleaned, it is time to replace the sheet, so request a replacement adhesive gel sheet.

When removing the mounting plate for the adhesive gel sheet, follow the directions exactly as shown below.

⚠ CAUTION

● Remember

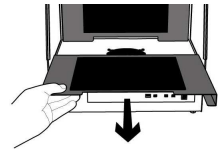
When removing the mounting plate for the adhesive gel sheet, be careful not to cut your hand on the edges of the plate.

1. Turning the switch off Turn off the power switch, and always confirm that the fan has stopped completely.

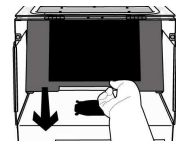
2. Opening the front cover Loosen the urea screw on the front, and pull the front window upward.



3. Removing the adhesive gel sheet plate (lower section) Remove the adhesive gel sheet plate from the bottom of the interior of the cabinet.
* Magnets are attached on the back of the plate. Please lift the plate a little and pull out.



4. Removing the adhesive gel sheet plate (rear surface section) Remove the adhesive gel sheet plate from the rear surface section of the cabinet.



5. Washing the adhesive gel sheet After washing the adhesive gel sheet in water, dry it out completely. The drying process can be hastened by wiping up any extra moisture from the sheet with a dry clean cloth, etc.



6. Attaching the adhesive gel sheet plate (back surface section) First, replace the cleaned adhesive gel sheet plate in the rear surface section of the cabinet. Attach the plate, while being careful not to let the plate touch the N-3 units.

7. Attaching the adhesive gel sheet plate (lower section) Next, attach the adhesive gel sheet plate in the lower section of the cabinet.

8. Closing the front cover Close the front window, and tighten the urea screw.

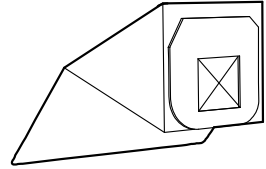
■Maintenance

Replacing the paper pack filter

There is an exhaust port on the back of the body. The flange for the paper pack filter is attached at the time of shipment.

Depending on your situation, please replace the paper pack filter provided.

Please purchase replacement parts when the paper pack filter is gone. Paper pack filter IPC-A3F (6-pcs set)



Maintenance of Ionizer

| ⚠ CAUTIONS | |
|-----------------------------|---|
| ⊘ DO NOT DISASSEMBLE | Do not perform any maintenance on the N-3 except for maintenance and replacement of the electrode. |
| ● REMEMBER | Before cleaning the electrode, shut off power and air supply at the source and disconnect the air hose. |
| ⊘ PROHIBITED | Do not wipe the ionizer with detergent or solvent. Substances of the sort can cause cracking and result in electric shock or breakdown. |
| ⊘ DO NOT WET | Do not wet the N-3. Exposure to moisture can result in electric shock or breakdown. |

Dirt and wear in the needle electrode can deteriorate the performance of this ionizer. Clean the electrode every 56 hours of use (= approximately 7 days based on calculation of use for 8 hours per day). If the electrode is not kept in an optimum condition, the performance will drop and product life might shorten as well.

If the unit is used for a long period of time, the tip of the needle electrode may wear out and consequently static erasing efficiency will decrease. In such case, replace the needle electrode with a new one. It is recommended that the needle electrode be replaced every 1,200 hours of operation (= approximately 6 months based on calculation of use for 8 hours per day).

Keep the unit in good working condition by measuring its ion balance and ion output regularly as a means for checking for a drop in capacity.

How to Clean the Casing

Remove the dirt over the casing with dry, soft cloth.

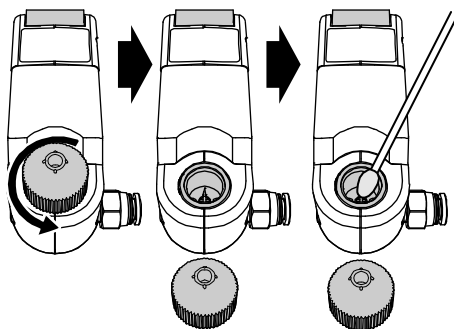
Never apply alcohol / thinner solvent / detergent, because the surface-active agent included in the detergent etc., may deteriorate the ionizing performance.

How to Clean the Electrode Needle

Power supply to the N-3 should be shut off before cleaning the needle electrode.

Please follow the instructions below:

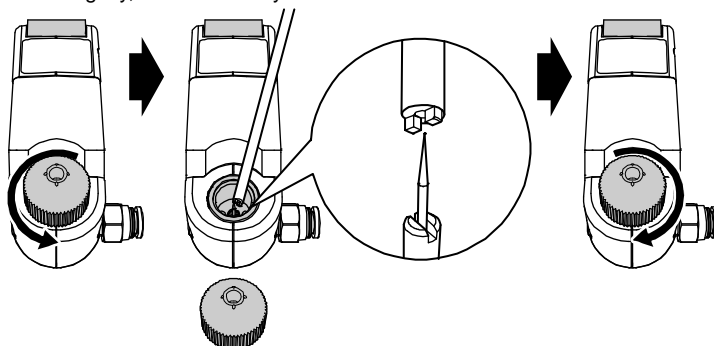
- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Clean the needle electrode
Clean the tip of the needle with a cotton stick. If it is especially dirty, use a few drops of alcohol-wet cloth.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



How to Replace the Electrode Needle

Replacement Needle Electrode is available as option: Model code GN-H

- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Replace the needle electrode
Remove the needle electrode with a dedicated screwdriver separately available. Attach the new needle electrode on the terminal. Be careful not to pick your fingers with the needle electrode.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



Checking Ionizer's Performance

Measure ion balance and decay time regularly by a charge plate monitor.



Reference: IEC61340-5-1, 2 ANSI EOS/ESD S3.1

Adjustment

The N-3 does not have an ion balance adjustment function. The ionizer is designed to maintain the ion balance with a circuit board. If the ion balance is out of the specified range, please contact us.

■ Storage

Storage





|  CAUTION | |
|--|---|
|  Prohibited | <p>Do not store the IPC-A3 in the following environments:</p> <ul style="list-style-type: none"> • Where excessive vibration or shock is applied to the unit. • Where temperature and humidity are outside specified ranges. • Where dew condensation occurs. • Where the sharp temperature fluctuations occurs. • Where is inflammable and/or there is a risk of explosion due to existence of combustible solvent, dust etc. • Where there is heavy dust or smoke • Where possibly wet by water, oil, chemicals, etc. • Where strong electric or magnetic fields are generated. |

■ Troubleshooting

Troubleshooting

Using the IPC-A3 when in anything but proper working condition can cause product damage or personal accidents.






Therefore, request servicing promptly if such trouble occurs. For servicing, contact your local distributor.

|  CAUTIONS for TROUBLESHOOTING | |
|---|---|
|  Prohibited | <p>Do not use the IPC-A3 in the following situations. It can result in fire or electric shock.</p> <ul style="list-style-type: none"> * If the power cable is damaged or hot * If the IPC-A3 has been damaged because of dropping or shock. |
|  Shut power off | <p>Unplug power cable and stop supplying compressed air to the IPC-A3 if any defect is recognized.</p> |
|  Do not disassemble | <p>Never disassemble the IPC-A3.</p> |

■ Removal

Removal

When removing this product, first make sure the surrounding area and other workers are safe.

|  CAUTION | |
|---|---|
|  Unplug power cable | To prevent electrical shock accidents and operational mistake accidents during the product removal work, be sure to unplug the power cord from the outlet. |
|  Remember | When disconnecting a compressed air hose, be sure to first shut off the source of the compressed air. In addition, the compressed air inside the air hose could spray out when the air hose is disconnected, so keep the hose away from the face, etc., when disconnecting it. |
|  Remember | To keep the unit from falling over, do not climb on the hood or dust collector or place heavy objects on them. |
|  Remember | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being removed or moved.· Make sure the product does not fall over while it is being removed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

■ Disposal

Disposal

When disposing of this product, dispose of it properly in accordance with the pertinent laws and local regulations.

■ Replacement Parts

Replacement Parts

There are 3 consumable parts that can be replaced by the customer.

Check the model and lot No. and then purchase the parts through the store where the product was purchased.

- Adhesive gel sheet No. IPC-A4G
- Electrode Needle No. GN-H (Optional dedicated needle electrode screwdriver G-7DR for replacement of needle electrode)
- unwoven fan filter IPC-A3F (6-pc set)

For information about the replacement procedure, refer to the "Maintenance" item in this manual.

LIMITED WARRANTY:

VESSEL expressly warrants that for a period of one (1) year from the date of purchase, VESSEL static erasers will be free of defects in material (parts) and workmanship (labour). Within the warranty period, Defects occurring will be repaired or products will be replaced at VESSEL's option and expense, if VESSEL receives notice during the warranty period. Defective products must be returned to VESSEL Osaka Japan with proof of purchase date. And if your unit is out of warranty, VESSEL will quote repair charges necessary to ship your unit freight prepaid to where you have originally purchased.

WARRANTY EXCLUSIONS:

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING FITNESS AND MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH IS SPECIFICALLY DISCLAIMED.

The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean, or repair products.

LIMIT OF LIABILITY:

This electronic static eraser use high voltage corona discharge and should not be used in or near flammable or explosive environments. In no event will VESSEL or any seller is responsible or liable for any injury, loss or damage, direct or consequential, whether based in tort or contract arising out of the use of or the inability to use the product. Fulfillment of VESSEL's warranty obligations will be Customer's exclusive remedy and VESSEL's and Seller's limit of liability for any breach of warranty or otherwise. Before using this unit, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.

| | | |
|----------|------------------------------------|--|
| Model | IPC-A3 | |
| Warranty | (1) year from the date of purchase | |
| Customer | Name | |
| | Address | |
| | Tel. No. | |
| Dealer | Name/Address/Tel. No. | |

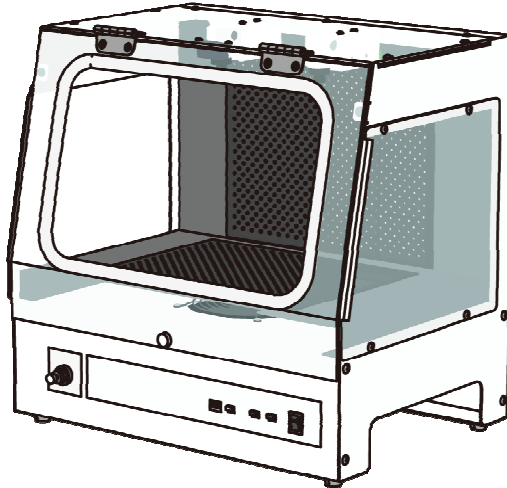
Manufactured by:**VESSEL Co., Inc.**

17-25, Fukae-Kita 2-chome,
Higashinari-ku, Osaka 537-0001 Japan
Tel : +81 6 6976 7778 Fax : +81 6 6972 9441
E-mail : export@vessel.co.jp
URL : <http://www.vessel.jp>

Product of Japan
17041700.00006

ION PARTS CLEANER

No. IPC-A3



Application

This product is used to remove fine powders and dust adhered due to static electricity and to eliminate static electricity from parts that are negatively affected by static electricity.

An ionized pulse of air blows off the debris effectively. The blown-off debris is collected by the self-adhesive of Polyurethane GEL sheets and a paper pack filter.

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■ For Your Safety



Safety Precautions

Please read this manual carefully before using this product.




Use this manual to take responsibility to ensure everyone that is using this product is doing so safely.




After carefully reading this manual, keep it in a protected place where it can be referred to at any time.










- The precaution items shown here are divided into two levels according to the level or risk.

| | |
|---|--|
|  WARNING | Indicates that improper handling can lead to serious injury or even death. |
|  CAUTION | Indicates that improper handling can lead to minor injury and property damage. |





- Example Pictorial Displays

| | |
|---|--|
|  | This symbol indicates a WARNING or CAUTION. |
|  | This symbol indicates a prohibited action. |
|  | This symbol indicates a mandatory required action. |

|  WARNING | |
|---|--|
|  Prohibited | Do not use IPC-A3 for anything other than static electricity elimination or dust removal. |
|  Vacuuming Up Prohibited | <p>To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:</p> <ul style="list-style-type: none"> - Items that are on fire: Cigarette butts, matches, and other sources of fire. - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc. - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances. - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances. - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc. - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc. - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc. |









| | |
|--|--|
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. |
|  Joint Use Prohibited | To prevent fires, absolutely do not make joint use of the following: · When the dust could transform into a hazardous substance when mixed inside the unit. |
|  Prohibited | To prevent fires, use the specified rated power source only. |
|  Painting Prohibited | Use as a painting booth is prohibited. Do not perform painting work in it. |
|  Peering Prohibited | Do not peer into the end of the air nozzle. The sensor will detect your presence and blast out compressed air, which could strike your eyes or face. |
|  Disassembly Prohibited | Do not remove components, or modify or unreasonably disassemble the product. · This product is manufactured in accordance with safety and performance standards, so removing components or modifying the product is dangerous. · Depending on the type of trouble, the customer might not be able to handle it, so always contact the store where the product was purchased. |
|  Remember | Be sure to observe the following to prevent electrical shock accidents: · Be sure to unplug the power cord from the outlet before performing any wiring. · Be sure to ground the ground wire. |
|  Remember | Discard dust from the filter pack regularly without letting it accumulate. Depending on the conditions, dust could cause a fire or explosion hazard. |
|  Remember | Be sure to unplug the power cord from the outlet before performing any maintenance or inspection work. |

 **CAUTION**

| | |
|---|---|
|  Remember | Take into consideration the conditions surrounding the installation area. · Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. · Do not install the unit where it may be exposed to water, oil, chemicals, etc. · Do not install the unit where it may be exposed to marked vibrations or shock · The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | To prevent fires, conduct an inspection after work is completed. |
|  Remember | Store this manual close to the product where it can be referred to quickly. |
|  Prohibited | Do not install, use, or service this product until you understand the contents in this manual. |

■ For Your Safety

The following prohibition and caution symbols are displayed on the product.
Example Pictorial Displays

| | | | |
|---|---|---|--|
|  | Vacuumping up sparks or flames is prohibited. |  | Vacuumping up flammable or combustible substances is prohibited. |
|  | Vacuumping up explosive substances is prohibited. |  | Disassembly is prohibited. |
|  | Be careful of electric shock. |  | Be careful of rotating parts. |
|  | Carefully read the instruction manual. |  | Peeking into the tip of Air Nozzle is prohibited. |

■ Features

A compact dust collector unit equipped with a static electricity removal device

- The work table and the compact dust collector have been unified. This static electricity removal equipment is appropriate for onsite cell production systems.

Dust collector hood

- A transparent window has been included on the front of the hood, which can be opened and closed, ensuring a scatter-proof installation with a good view.
- The openings to the cabinet have been designed to ensure that work piece can enter and exit smoothly.
- The adhesive polyurethane gel sheet is attached with magnets, making it easy to remove for cleaning and replacement.
- A paper pack filter or a duct hose can be attached to the exhaust port on the rear side (standard).

The static electricity removal device

- This product is equipped with two air-nozzle type ionizers. The air nozzles extend from the top panel within the hood downward.
- The ion air that comes from the ionizers eliminate the static electricity and remove dust at the same time.
- When you take a work piece in your hand and insert it into the hooded space, a sensor is activated and the air blow is initiated automatically.
- Intermittent air blows off dust adhered to a work piece by vibrating it.
- A wind flow adjusting valve is provided allowing the intensity of air blow to be adjusted.

Safety

- The static electricity removal device is equipped with an abnormal conditions surveillance function, and a lamp will light up when an abnormality occurs, so conditions can be checked easily.

Specifications

| | |
|-------------------------------|---|
| Model No.: | IPC-A3 |
| Dust Collection Method: | Self-adhesive Polyurethane GEL sheets and paper pack filter |
| Input Voltage: | 24V DC ±5% (Included AC adapter: 100~240V AC, 50/60Hz) |
| Power Output: | 22 W |
| Consumption Current: | 900 mA |
| Protection Feature: | Overcurrent protective fuse (1A/125V) |
| Air Flow: | 1.13 m ³ / min.(Fan) |
| Static Pressure: | 460 Pa (Fan) |
| Air Pressure: | 0.1~0.5 MPa (Use clean air) |
| Air Hose: | O/D φ 10 mm x I/D φ 6.5 mm |
| Air Consumption: | Approx. 315 L/min. (0.3 MPa, Continuous operation mode) |
| Working Temperature/ Humidity | Range: 5~40°C / 35~65 %RH (No dew condensation or freezing) |
| Dimensions: | W 420 x D 300 x H 411 mm (Protrusions are not measured) |
| Weight: | 9.5 kg |
| Accessory: | Self-adhesive Polyurethane GEL sheet plate 2pcs. Power adapter AD24-IT19 (Input: 100~240V AC, Output: 24V DC) Exhaust duct flange 1 pc. (For ø75 mm) Paper pack filter 6 pcs. Instruction Manual (this manual) 1 copy |
| Consumable parts: | Adhesive polyurethane gel sheet / Needle electrode / Paper pack filter |

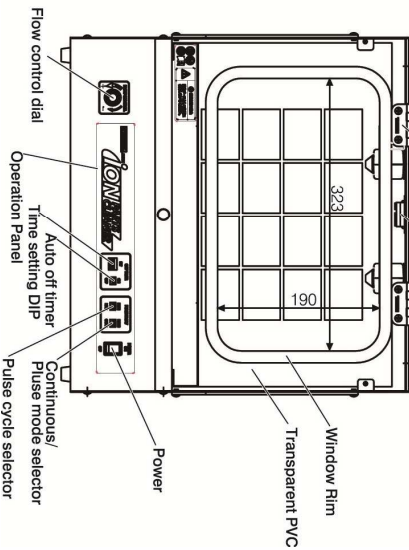
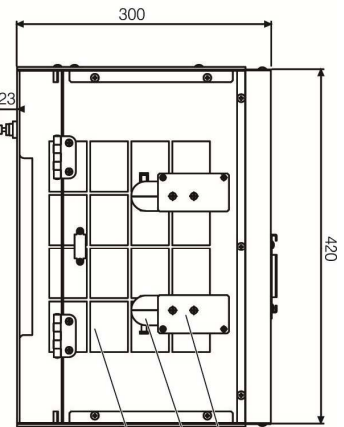
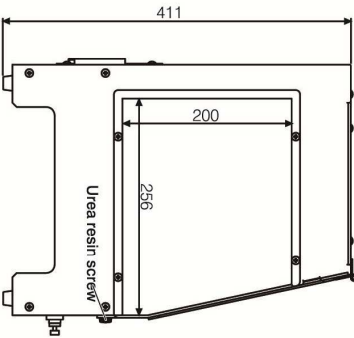
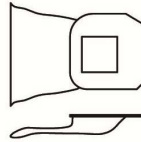
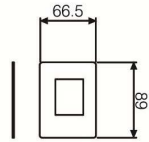
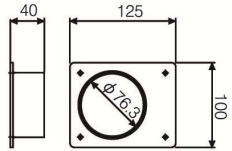
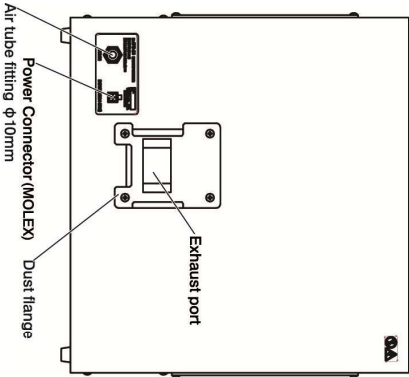
Specifications (Ionizer)

| | |
|------------------------|----------------------------------|
| Model No.: | N-3 |
| Ion Generation Method: | High voltage AC corona discharge |
| Output voltage: | ± 5.6 kV AC (p-p) |
| Alarm output: | High voltage alarm (Red LED) |



Ionizing performance (as reference)




| | | |
|-----------------------|----------|--|
| N-3 (individual unit) | | Measurement conditions: |
| Decay time (+) | 0.7 sec. | Distance: 150mm from the nozzle of ionizer |
| Decay time (-) | 0.7 sec. | Air pressure: 0.3 MPa |
| Ion balance | -8.0V | Air flow: 210L/min |

External View



Installation Area

|  WARNING | |
|--|--|
|  Prohibited | <p>Do not use this product in the following areas. Otherwise, there is a risk of an explosion or fire.</p> <ul style="list-style-type: none"> • Environments that require anti-explosion measures. • Areas where corrosive gases or flammable or explosive gases are used. |

|  CAUTION | |
|--|---|
|  Remember | <p>Take into consideration the conditions surrounding the installation area.</p> <ul style="list-style-type: none"> • Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. • Do not install the unit where it may be exposed to water, oil, chemicals, etc. • Do not install the unit where it may be exposed to marked vibrations or shock • The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | <p>Do not use this product where it will be directly exposed to high temperatures or high humidity. Doing so could cause the burn or breakdown of motor.</p> |

Installation Area

Install the unit in an indoor location not exposed to wind, rain, or direct sunlight.

Avoid using the unit in areas where water, oil, or condensation will get on it or where there will be sudden temperature changes.

Avoid using the unit where it will be exposed to strong vibration or impacts.

This unit has an exhaust outlet on the backside, bottom of the unit.

Install this unit so that the exhaust outlet is 10 cm or more away from the wall, etc. because the normal exhaust function will be impaired, causing a decrease in the dust collection capability, if the unit is installed with the back of the unit against a wall, etc.

Ambient temperature and humidity

Use in a temperature range of 5 °C to 40 °C. Use the unit in a humidity range of 35 to 65%.

Atmosphere

Do not operate the unit in environments where anti-explosion measures are required.

Do not operate the unit in areas where corrosive gases or flammable or explosive gases are used.

In addition, use the unit in a well ventilated area with a normal air atmosphere.

Input voltage and compressed clean air

This unit uses 24V DC input voltage and 0.1 MPa to 0.5 MPa compressed air for the cleaning air.

Install the unit where it can be connected to wiring and piping that meet these specifications.

Maintenance space

Space for maintenance and inspections should be maintained around the unit.

In particular, the space in front of the unit required for daily maintenance should be obtained.

■ Installation

Installation Method

When installing this unit, place it on a level, strong, and smooth, flat bench.

| ⚠ WARNING | |
|------------------|---|
| ● Remember | To keep the unit from falling over, do not climb on the working surface or place heavy objects on it. |
| ● Remember | When installing the IPC-A3, place it on a level, strong, and smooth, flat bench. It can be damaged and malfunction if it falls. |
| △ Caution | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being installed or moved.· Make sure the product does not fall over while it is being installed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

Electrical power wiring

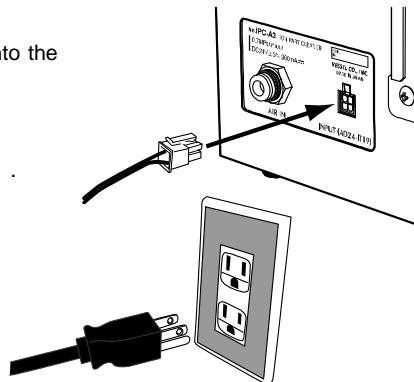
| ⚠ WARNING | |
|------------------|---|
| ● Remember | Use IPC-A3 only with the specific AC adapter. Otherwise, there is a risk of fire or electric shock. |
| ● Remember | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before performing any wiring. |

Connector connection

Insert the included special AC adapter connector into the jack on the back of the body.

Power Supply Adapter

Use the accompanying power adapter (AD24-IT19) . AC adapter is equipped with 3-pin plug. Connect this to a power outlet that has a ground terminal.



Compressed air piping

⚠ CAUTION

● Remember

Be sure to use an air hose with sufficient pressure resistance performance. A hose without pressure resistance could burst or leak air.

Compressed air used

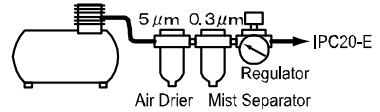
This unit requires that clean compressed air be supplied for the dust removal air blowing.

Supply air within the pressure range of 0.1 to 0.5 MPa.

Use an air drier to remove the moisture from the air. (The dew point temperature is -15°C or lower.)

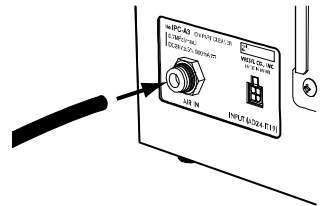
Use mist separator (0.3 μm) to remove the impurities from the air.

Supply air within the temperature range of 5 to 40°C



Hose used

Use an air hose with sufficient pressure resistance performance (outside diameter 10 mm x inside diameter 6.5 mm).



Hose connection

A one-touch hose coupling (air supply port) is provided on the lower left at the back of the body. Connect the air hose to this.

Flow rate adjustment

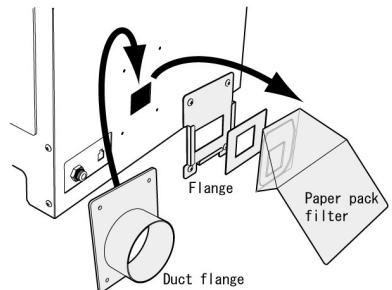
A flow rate adjusting valve (FLOW CONTROL) is provided on the lower right at the front of the body. Adjust the rate of the discharged air as necessary.



Flange

A paper pack filter can be attached to the exhaust port on the rear side (standard).

A $\varnothing 75\text{mm}$ (I/D) exhaust duct can be connected by exchanging it for a duct flange.



Pre-use inspection

Pre-use product inspection

Before using the product, make sure there are no problems with it, the power adapter, etc. Make sure there is no damage, and no loose of screws or connectors.

■ Operation

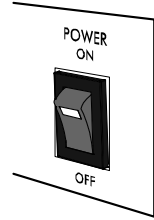
Operation

Switch

This is used to start and stop the unit.

When switched to [ON], the power is turned on, the switch LED lights up, and operation starts.


When switched to [OFF], the power is turned off and operation stops.



Front acrylic window

Open and close the acrylic window according to the working conditions.

Please note that the best performance is obtained when the acrylic window is closed, so when working with the window open, check to make sure of the air pressure suitable for the specific work.

|  CAUTION | |
|--|---|
|  Caution | Be careful not to get your finger caught when the front acryl window is opened or closed. |

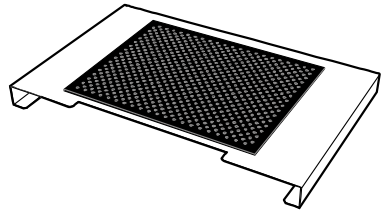
Adhesive gel sheets




The adhesive gel sheets capture the dust blown off by the ionizing nozzle.

The self-adhesive polyurethane gel sheets are attached to stainless steel plates.

Remove the protective surface film before using the unit.

Refer to the maintenance section of this manual in regard to the exchange procedure for the adhesive gel sheets.








|  CAUTION | |
|--|--|
|  Caution | If the adhesive gel sheets are deformed or broken while performing work, continuing to use the product in this condition is hazardous, so make sure the adhesive gel sheets are properly maintained. Replacing deformed or damaged adhesive gel sheets is highly recommended. |
|  Remember | This unit is designed for light work, such as handwork, so do not place heavy objects on top of the adhesive gel sheets or forcefully strike it. Doing so could deform or break the adhesive gel sheets. |

Dust conditions

Observe the following conditions for the dust that is handled.



- This unit is for use with regular dust. It can be used to blow off dry fine dust.
 Absolutely do not vacuum up wet dust, liquids like water, oil or spray mist.
 Also absolutely do not vacuum up dust containing explosive, flammable, or combustible substances.
- Do not vacuum up adhesive or corrosive substances.
- To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:
 - Items that are on fire: Cigarette butts, matches, and other sources of fire.
 - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc.
 - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances.
 - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances.
 - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc.
 - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc.
 - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc.
- Do not vacuum up flammable dust or dust containing flammable substances.
 Caution must be taken in particular with non-combustible substances that change into combustible substances when worked on, etc.
 It is very difficult to determine if such substances are changing into combustible dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. The user is strongly advised to stop using the unit if a substance is determined to be combustible dust.
- Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances that change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail.
 If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials.
 Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail.
- Absolutely do not vacuum up damp dust or any moisture such as water or oil.
 Unforeseen malfunctions or accidents could occur.






■ Operation

|  WARNING | |
|--|---|
|  Vacuuming Up Prohibited | Absolutely do not vacuum up sparks; flammable, explosive, or combustible dust; or dust containing or mixed with explosive, flammable, or combustible substances. |
|  Vacuuming Up Prohibited | Absolutely do not vacuum up explosive, flammable, or combustible liquids or dust wet with such liquids, or dust mixed with or containing such liquids. |
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. Unforeseen malfunctions or accidents could occur. |
|  Joint Use Prohibited | Use in the same unit of substances that change into a hazardous substance when mixed, is prohibited. Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances the change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail. If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials. Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. |

Ionizers / Sensor

When a work piece is held below the sensor, the sensor detects the work piece and releases the solenoid valve. This initiates the ion air blow from two pieces of pinpoint nozzle ionizers.

|  WARNING | |
|--|---|
|  Unplug the power cord | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before inspecting the ionizers. |

|  CAUTION | |
|---|---|
|  Disassembly Prohibited | Do not remodel or disassemble the IPC-A3. The IPC-A3 contains high voltage parts. |
|  Prohibited | Do not block openings such as the intake vent and the discharge vent. Doing so could cause a malfunction. |
|  Prohibited | Do not insert metal or foreign matters into the unit openings. Doing so could result in electrical shock accidents or equipment breakdown. |
|  Unplug power cable | Before long periods of disuse, unplug the power cable. Leaving the power on during periods of disuse can result in electric shock, breakdown and fire from degraded insulation. |

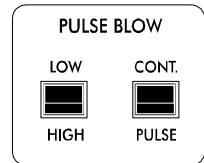
High Voltage Alarm Function

When the piezoelectric high voltage transformer in the ionizer detects an overload and shuts down the power output, the red indicator on the top of the ionizer will light and operation will stop.
 If the alarm lamp turns ON, turn the power OFF immediately with the power switch.
 If foreign matter is stuck on the needle electrode, clean the needle and then turn the power ON again.
 Confirm that the alarm lamp does not light up.
 If the alarm lights up when the power is turned ON, contact your certified sales agent for inspections to prevent accidents.

Pulse Air Operation

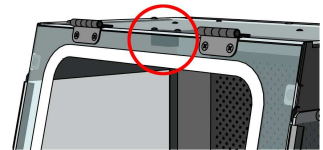
The pulse air operation mode provides an intermittent air blow, making it possible to obtain good and efficient dust removal.

1. Turn the pulse air operation mode to "PULSE."
2. The pulse width switch can be used to suit the usage required.
 [LOW]: Low-speed mode (appropriate for the removal of large-grained dust)
 [HIGH]: High-speed mode (appropriate for the removal of small-grained dust, such as dirt)



Sensor

The sensor affixed to the front of the top inside surface of the cabinet detects work pieces.
 Using the OFF TIMER switch, you can change the time intervals for the ion air blow.



Off-timer Function

When the off-timer function is on, and the sensor detects a work piece, the air blow occurs only for the time period set, and turns off automatically.

• When the off-timer function is not activated

The air blow is on as long as the sensor detects a work piece in the unit.
 The air blow will stop when the work piece is removed from the sensor's detection area.

Turn the off timer mode switch to [OFF].

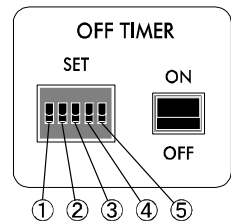
• When the off-timer function is activated

After the sensor detects a work piece in the unit, the air blow will on only for the time period set.

1. Turn the off-timer mode switch to [ON].
2. Use the DIP switches to set the air blow time period.

In order to set the time period desired, turn the appropriate DIP switch on (up position).

| Switch① | Switch② | Switch③ | Switch④ | Switch⑤ |
|--------------|--------------|--------------|---------------|---------------|
| About 1 sec. | About 3 sec. | About 5 sec. | About 10 sec. | About 30 sec. |



Caution: Do not turn all of the DIP switches off, or turn multiple DIP switches on.
 In some cases this may result in unexpected operations.

■ Operation

Adjusting the sensitivity of the sensor

Set the detection range of the sensor by adjusting the volume on the motherboard installed in the cabinet.

This adjustment is useful when employing a platform above the adhesive gel sheet plate.

When the volume control is turned to the right, using a Phillips head screwdriver, the detection range (distance between the sensor and the work piece) is increased, and decreased when it is turned to the left.



⚠ CAUTION

● Remember

The sensitivity of the sensor is factory-adjusted. Do not change this setting unless it is absolutely necessary. Using undue power to turn the volume control may cause damage to the unit, so be very careful when making adjustments.

■ Maintenance

Cleaning the adhesive gel sheets

When dust has collected on the adhesive gel sheet, remove both the adhesive sheet and the mounting plate and wash them.

The adhesive strength of the adhesive gel sheet will be restored after the sheet is dried.

When the adhesive strength of the adhesive gel sheet is not restored after the sheet is cleaned, it is time to replace the sheet, so request a replacement adhesive gel sheet.

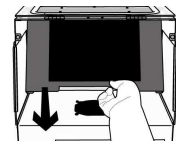
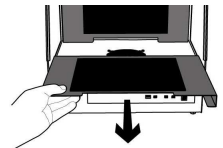
When removing the mounting plate for the adhesive gel sheet, follow the directions exactly as shown below.

⚠ CAUTION

● Remember

When removing the mounting plate for the adhesive gel sheet, be careful not to cut your hand on the edges of the plate.

- | | |
|--|--|
| 1. Turning the switch off | Turn off the power switch, and always confirm that the fan has stopped completely. |
| 2. Opening the front cover | Loosen the urea screw on the front, and pull the front window upward. |
| 3. Removing the adhesive gel sheet plate (lower section) | Remove the adhesive gel sheet plate from the bottom of the interior of the cabinet. * Magnets are attached on the back of the plate. Please lift the plate a little and pull out. |
| 4. Removing the adhesive gel sheet plate (rear surface section) | Remove the adhesive gel sheet plate from the rear surface section of the cabinet. |
| 5. Washing the adhesive gel sheet | After washing the adhesive gel sheet in water, dry it out completely. The drying process can be hastened by wiping up any extra moisture from the sheet with a dry clean cloth, etc. |
| 6. Attaching the adhesive gel sheet plate (back surface section) | First, replace the cleaned adhesive gel sheet plate in the rear surface section of the cabinet. Attach the plate, while being careful not to let the plate touch the N-3 units. |
| 7. Attaching the adhesive gel sheet plate (lower section) | Next, attach the adhesive gel sheet plate in the lower section of the cabinet. |
| 8. Closing the front cover | Close the front window, and tighten the urea screw. |



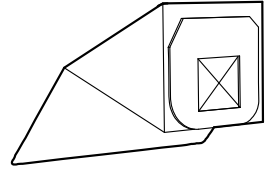
■Maintenance

Replacing the paper pack filter

There is an exhaust port on the back of the body. The flange for the paper pack filter is attached at the time of shipment.

Depending on your situation, please replace the paper pack filter provided.

Please purchase replacement parts when the paper pack filter is gone. Paper pack filter IPC-A3F (6-pcs set)



Maintenance of Ionizer

| ⚠ CAUTIONS | |
|-----------------------------|---|
| ⊘ DO NOT DISASSEMBLE | Do not perform any maintenance on the N-3 except for maintenance and replacement of the electrode. |
| ● REMEMBER | Before cleaning the electrode, shut off power and air supply at the source and disconnect the air hose. |
| ⊘ PROHIBITED | Do not wipe the ionizer with detergent or solvent. Substances of the sort can cause cracking and result in electric shock or breakdown. |
| ⊘ DO NOT WET | Do not wet the N-3. Exposure to moisture can result in electric shock or breakdown. |

Dirt and wear in the needle electrode can deteriorate the performance of this ionizer. Clean the electrode every 56 hours of use (= approximately 7 days based on calculation of use for 8 hours per day). If the electrode is not kept in an optimum condition, the performance will drop and product life might shorten as well.

If the unit is used for a long period of time, the tip of the needle electrode may wear out and consequently static erasing efficiency will decrease. In such case, replace the needle electrode with a new one. It is recommended that the needle electrode be replaced every 1,200 hours of operation (= approximately 6 months based on calculation of use for 8 hours per day).

Keep the unit in good working condition by measuring its ion balance and ion output regularly as a means for checking for a drop in capacity.

How to Clean the Casing

Remove the dirt over the casing with dry, soft cloth.

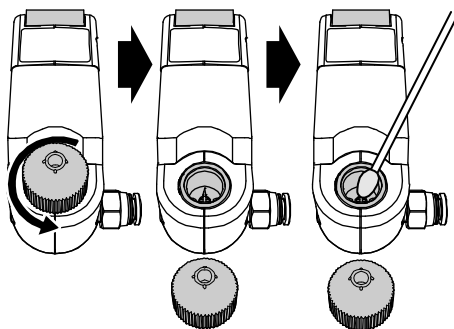
Never apply alcohol / thinner solvent / detergent, because the surface-active agent included in the detergent etc., may deteriorate the ionizing performance.

How to Clean the Electrode Needle

Power supply to the N-3 should be shut off before cleaning the needle electrode.

Please follow the instructions below:

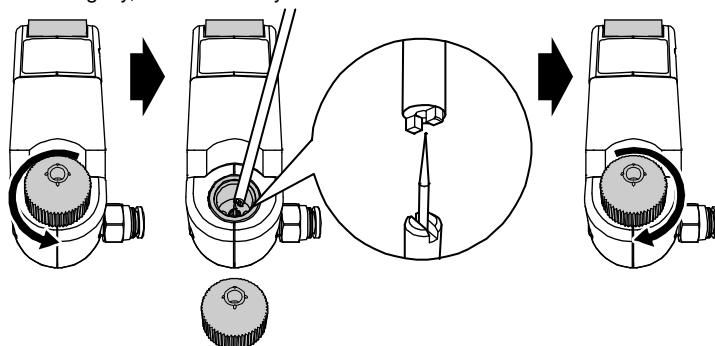
- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Clean the needle electrode
Clean the tip of the needle with a cotton stick. If it is especially dirty, use a few drops of alcohol-wet cloth.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



How to Replace the Electrode Needle

Replacement Needle Electrode is available as option: Model code GN-H

- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Replace the needle electrode
Remove the needle electrode with a dedicated screwdriver separately available. Attach the new needle electrode on the terminal. Be careful not to pick your fingers with the needle electrode.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



Checking Ionizer's Performance

Measure ion balance and decay time regularly by a charge plate monitor.



Reference: IEC61340-5-1, 2 ANSI EOS/ESD S3.1

Adjustment

The N-3 does not have an ion balance adjustment function. The ionizer is designed to maintain the ion balance with a circuit board. If the ion balance is out of the specified range, please contact us.

■ Storage

Storage





|  CAUTION | |
|---|---|
|  Prohibited | <p>Do not store the IPC-A3 in the following environments:</p> <ul style="list-style-type: none"> • Where excessive vibration or shock is applied to the unit. • Where temperature and humidity are outside specified ranges. • Where dew condensation occurs. • Where the sharp temperature fluctuations occurs. • Where is inflammable and/or there is a risk of explosion due to existence of combustible solvent, dust etc. • Where there is heavy dust or smoke • Where possibly wet by water, oil, chemicals, etc. • Where strong electric or magnetic fields are generated. |

■ Troubleshooting

Troubleshooting

Using the IPC-A3 when in anything but proper working condition can cause product damage or personal accidents.






Therefore, request servicing promptly if such trouble occurs. For servicing, contact your local distributor.

|  CAUTIONS for TROUBLESHOOTING | |
|--|---|
|  Prohibited | <p>Do not use the IPC-A3 in the following situations. It can result in fire or electric shock.</p> <ul style="list-style-type: none"> * If the power cable is damaged or hot * If the IPC-A3 has been damaged because of dropping or shock. |
|  Shut power off | <p>Unplug power cable and stop supplying compressed air to the IPC-A3 if any defect is recognized.</p> |
|  Do not disassemble | <p>Never disassemble the IPC-A3.</p> |

■ Removal

Removal

When removing this product, first make sure the surrounding area and other workers are safe.

|  CAUTION | |
|---|---|
|  Unplug power cable | To prevent electrical shock accidents and operational mistake accidents during the product removal work, be sure to unplug the power cord from the outlet. |
|  Remember | When disconnecting a compressed air hose, be sure to first shut off the source of the compressed air. In addition, the compressed air inside the air hose could spray out when the air hose is disconnected, so keep the hose away from the face, etc., when disconnecting it. |
|  Remember | To keep the unit from falling over, do not climb on the hood or dust collector or place heavy objects on them. |
|  Remember | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being removed or moved.· Make sure the product does not fall over while it is being removed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

■ Disposal

Disposal

When disposing of this product, dispose of it properly in accordance with the pertinent laws and local regulations.

■ Replacement Parts

Replacement Parts

There are 3 consumable parts that can be replaced by the customer.

Check the model and lot No. and then purchase the parts through the store where the product was purchased.

- Adhesive gel sheet No. IPC-A4G
- Electrode Needle No. GN-H (Optional dedicated needle electrode screwdriver G-7DR for replacement of needle electrode)
- unwoven fan filter IPC-A3F (6-pc set)

For information about the replacement procedure, refer to the "Maintenance" item in this manual.

LIMITED WARRANTY:

VESSEL expressly warrants that for a period of one (1) year from the date of purchase, VESSEL static erasers will be free of defects in material (parts) and workmanship (labour). Within the warranty period, Defects occurring will be repaired or products will be replaced at VESSEL's option and expense, if VESSEL receives notice during the warranty period. Defective products must be returned to VESSEL Osaka Japan with proof of purchase date. And if your unit is out of warranty, VESSEL will quote repair charges necessary to ship your unit freight prepaid to where you have originally purchased.

WARRANTY EXCLUSIONS:

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING FITNESS AND MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH IS SPECIFICALLY DISCLAIMED.

The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean, or repair products.

LIMIT OF LIABILITY:

This electronic static eraser use high voltage corona discharge and should not be used in or near flammable or explosive environments. In no event will VESSEL or any seller is responsible or liable for any injury, loss or damage, direct or consequential, whether based in tort or contract arising out of the use of or the inability to use the product. Fulfillment of VESSEL's warranty obligations will be Customer's exclusive remedy and VESSEL's and Seller's limit of liability for any breach of warranty or otherwise. Before using this unit, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.

| | | |
|----------|------------------------------------|--|
| Model | IPC-A3 | |
| Warranty | (1) year from the date of purchase | |
| Customer | Name | |
| | Address | |
| | Tel. No. | |
| Dealer | Name/Address/Tel. No. | |

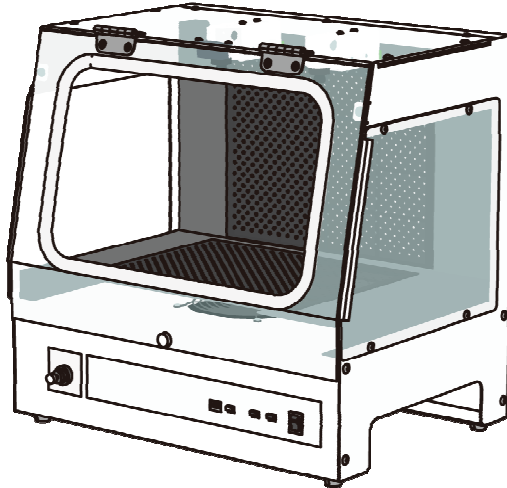
Manufactured by:**VESSEL Co., Inc.**

17-25, Fukae-Kita 2-chome,
Higashinari-ku, Osaka 537-0001 Japan
Tel : +81 6 6976 7778 Fax : +81 6 6972 9441
E-mail : export@vessel.co.jp
URL : <http://www.vessel.jp>

Product of Japan
17041700.00006

ION PARTS CLEANER

No. IPC-A3



Application

This product is used to remove fine powders and dust adhered due to static electricity and to eliminate static electricity from parts that are negatively affected by static electricity.

An ionized pulse of air blows off the debris effectively. The blown-off debris is collected by the self-adhesive of Polyurethane GEL sheets and a paper pack filter.

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■ For Your Safety



Safety Precautions

Please read this manual carefully before using this product.




Use this manual to take responsibility to ensure everyone that is using this product is doing so safely.




After carefully reading this manual, keep it in a protected place where it can be referred to at any time.










- The precaution items shown here are divided into two levels according to the level or risk.

| | |
|---|--|
|  WARNING | Indicates that improper handling can lead to serious injury or even death. |
|  CAUTION | Indicates that improper handling can lead to minor injury and property damage. |





- Example Pictorial Displays

| | |
|---|--|
|  | This symbol indicates a WARNING or CAUTION. |
|  | This symbol indicates a prohibited action. |
|  | This symbol indicates a mandatory required action. |

|  WARNING | |
|---|--|
|  Prohibited | Do not use IPC-A3 for anything other than static electricity elimination or dust removal. |
|  Vacuuming Up Prohibited | <p>To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:</p> <ul style="list-style-type: none"> - Items that are on fire: Cigarette butts, matches, and other sources of fire. - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc. - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances. - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances. - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc. - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc. - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc. |









| | |
|--|--|
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. |
|  Joint Use Prohibited | To prevent fires, absolutely do not make joint use of the following: · When the dust could transform into a hazardous substance when mixed inside the unit. |
|  Prohibited | To prevent fires, use the specified rated power source only. |
|  Painting Prohibited | Use as a painting booth is prohibited. Do not perform painting work in it. |
|  Peering Prohibited | Do not peer into the end of the air nozzle. The sensor will detect your presence and blast out compressed air, which could strike your eyes or face. |
|  Disassembly Prohibited | Do not remove components, or modify or unreasonably disassemble the product. · This product is manufactured in accordance with safety and performance standards, so removing components or modifying the product is dangerous. · Depending on the type of trouble, the customer might not be able to handle it, so always contact the store where the product was purchased. |
|  Remember | Be sure to observe the following to prevent electrical shock accidents: · Be sure to unplug the power cord from the outlet before performing any wiring. · Be sure to ground the ground wire. |
|  Remember | Discard dust from the filter pack regularly without letting it accumulate. Depending on the conditions, dust could cause a fire or explosion hazard. |
|  Remember | Be sure to unplug the power cord from the outlet before performing any maintenance or inspection work. |

 **CAUTION**

| | |
|---|---|
|  Remember | Take into consideration the conditions surrounding the installation area. · Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. · Do not install the unit where it may be exposed to water, oil, chemicals, etc. · Do not install the unit where it may be exposed to marked vibrations or shock · The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | To prevent fires, conduct an inspection after work is completed. |
|  Remember | Store this manual close to the product where it can be referred to quickly. |
|  Prohibited | Do not install, use, or service this product until you understand the contents in this manual. |

■ For Your Safety

The following prohibition and caution symbols are displayed on the product.
Example Pictorial Displays

| | | | |
|---|--|---|---|
|  | Vacuuming up sparks or flames is prohibited. |  | Vacuuming up flammable or combustible substances is prohibited. |
|  | Vacuuming up explosive substances is prohibited. |  | Disassembly is prohibited. |
|  | Be careful of electric shock. |  | Be careful of rotating parts. |
|  | Carefully read the instruction manual. |  | Peeking into the tip of Air Nozzle is prohibited. |

■ Features

A compact dust collector unit equipped with a static electricity removal device

- The work table and the compact dust collector have been unified. This static electricity removal equipment is appropriate for onsite cell production systems.

Dust collector hood

- A transparent window has been included on the front of the hood, which can be opened and closed, ensuring a scatter-proof installation with a good view.
- The openings to the cabinet have been designed to ensure that work piece can enter and exit smoothly.
- The adhesive polyurethane gel sheet is attached with magnets, making it easy to remove for cleaning and replacement.
- A paper pack filter or a duct hose can be attached to the exhaust port on the rear side (standard).

The static electricity removal device

- This product is equipped with two air-nozzle type ionizers. The air nozzles extend from the top panel within the hood downward.
- The ion air that comes from the ionizers eliminate the static electricity and remove dust at the same time.
- When you take a work piece in your hand and insert it into the hooded space, a sensor is activated and the air blow is initiated automatically.
- Intermittent air blows off dust adhered to a work piece by vibrating it.
- A wind flow adjusting valve is provided allowing the intensity of air blow to be adjusted.

Safety

- The static electricity removal device is equipped with an abnormal conditions surveillance function, and a lamp will light up when an abnormality occurs, so conditions can be checked easily.

Specifications

| | |
|-------------------------------|---|
| Model No.: | IPC-A3 |
| Dust Collection Method: | Self-adhesive Polyurethane GEL sheets and paper pack filter |
| Input Voltage: | 24V DC $\pm 5\%$ (Included AC adapter: 100~240V AC, 50/60Hz) |
| Power Output: | 22 W |
| Consumption Current: | 900 mA |
| Protection Feature: | Overcurrent protective fuse (1A/125V) |
| Air Flow: | 1.13 m ³ / min.(Fan) |
| Static Pressure: | 460 Pa (Fan) |
| Air Pressure: | 0.1~0.5 MPa (Use clean air) |
| Air Hose: | O/D ϕ 10 mm x I/D ϕ 6.5 mm |
| Air Consumption: | Approx. 315 L/min. (0.3 MPa, Continuous operation mode) |
| Working Temperature/ Humidity | Range: 5~40°C / 35~65 %RH (No dew condensation or freezing) |
| Dimensions: | W 420 x D 300 x H 411 mm (Protrusions are not measured) |
| Weight: | 9.5 kg |
| Accessory: | Self-adhesive Polyurethane GEL sheet plate 2pcs. Power adapter AD24-IT19 (Input: 100~240V AC, Output: 24V DC) Exhaust duct flange 1 pc. (For $\phi 75$ mm) Paper pack filter 6 pcs. Instruction Manual (this manual) 1 copy |
| Consumable parts: | Adhesive polyurethane gel sheet / Needle electrode / Paper pack filter |

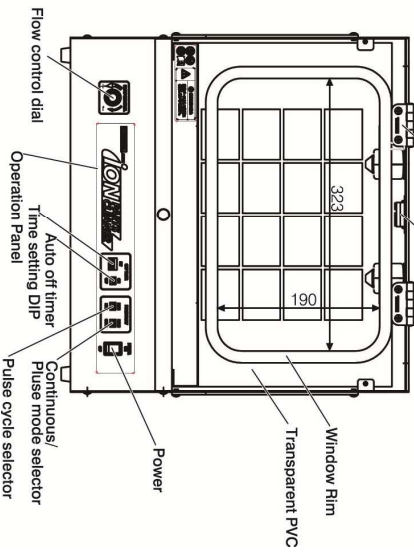
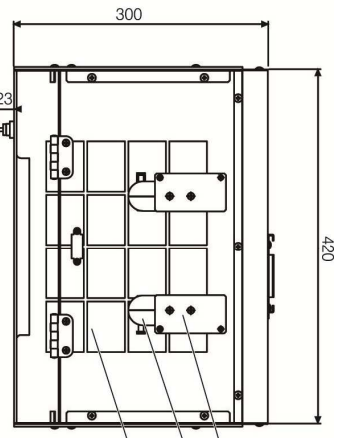
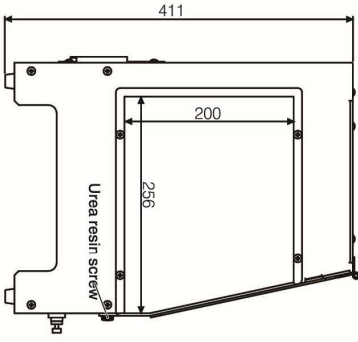
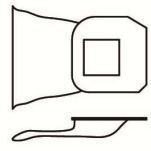
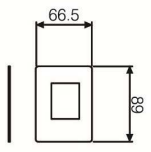
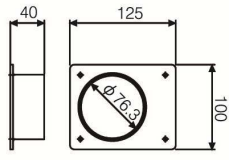
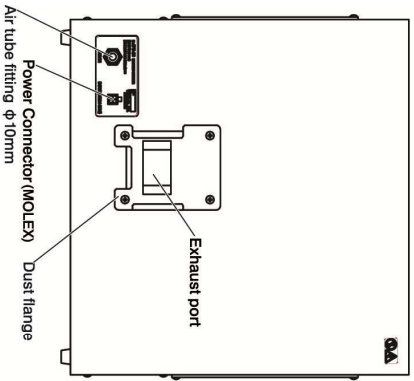
Specifications (Ionizer)

| | |
|------------------------|----------------------------------|
| Model No.: | N-3 |
| Ion Generation Method: | High voltage AC corona discharge |
| Output voltage: | ± 5.6 kV AC (p-p) |
| Alarm output: | High voltage alarm (Red LED) |



Ionizing performance (as reference)




| | | |
|-----------------------|----------|--|
| N-3 (individual unit) | | Measurement conditions: |
| Decay time (+) | 0.7 sec. | Distance: 150mm from the nozzle of ionizer |
| Decay time (-) | 0.7 sec. | Air pressure: 0.3 MPa |
| Ion balance | -8.0V | Air flow: 210L/min |

External View



Installation Area

|  WARNING | |
|--|--|
|  Prohibited | <p>Do not use this product in the following areas. Otherwise, there is a risk of an explosion or fire.</p> <ul style="list-style-type: none"> • Environments that require anti-explosion measures. • Areas where corrosive gases or flammable or explosive gases are used. |

|  CAUTION | |
|--|---|
|  Remember | <p>Take into consideration the conditions surrounding the installation area.</p> <ul style="list-style-type: none"> • Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. • Do not install the unit where it may be exposed to water, oil, chemicals, etc. • Do not install the unit where it may be exposed to marked vibrations or shock • The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | <p>Do not use this product where it will be directly exposed to high temperatures or high humidity. Doing so could cause the burn or breakdown of motor.</p> |

Installation Area

Install the unit in an indoor location not exposed to wind, rain, or direct sunlight.

Avoid using the unit in areas where water, oil, or condensation will get on it or where there will be sudden temperature changes.

Avoid using the unit where it will be exposed to strong vibration or impacts.

This unit has an exhaust outlet on the backside, bottom of the unit.

Install this unit so that the exhaust outlet is 10 cm or more away from the wall, etc. because the normal exhaust function will be impaired, causing a decrease in the dust collection capability, if the unit is installed with the back of the unit against a wall, etc.

Ambient temperature and humidity

Use in a temperature range of 5 °C to 40 °C. Use the unit in a humidity range of 35 to 65%.

Atmosphere

Do not operate the unit in environments where anti-explosion measures are required.

Do not operate the unit in areas where corrosive gases or flammable or explosive gases are used.

In addition, use the unit in a well ventilated area with a normal air atmosphere.

Input voltage and compressed clean air

This unit uses 24V DC input voltage and 0.1 MPa to 0.5 MPa compressed air for the cleaning air.

Install the unit where it can be connected to wiring and piping that meet these specifications.

Maintenance space

Space for maintenance and inspections should be maintained around the unit.

In particular, the space in front of the unit required for daily maintenance should be obtained.

■ Installation

Installation Method

When installing this unit, place it on a level, strong, and smooth, flat bench.

| ⚠ WARNING | |
|------------------|---|
| ● Remember | To keep the unit from falling over, do not climb on the working surface or place heavy objects on it. |
| ● Remember | When installing the IPC-A3, place it on a level, strong, and smooth, flat bench. It can be damaged and malfunction if it falls. |
| △ Caution | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being installed or moved.· Make sure the product does not fall over while it is being installed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

Electrical power wiring

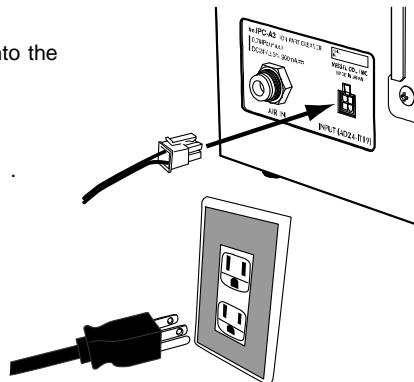
| ⚠ WARNING | |
|------------------|---|
| ● Remember | Use IPC-A3 only with the specific AC adapter. Otherwise, there is a risk of fire or electric shock. |
| ● Remember | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before performing any wiring. |

Connector connection

Insert the included special AC adapter connector into the jack on the back of the body.

Power Supply Adapter

Use the accompanying power adapter (AD24-IT19) . AC adapter is equipped with 3-pin plug. Connect this to a power outlet that has a ground terminal.



Compressed air piping

⚠ CAUTION

● Remember

Be sure to use an air hose with sufficient pressure resistance performance. A hose without pressure resistance could burst or leak air.

Compressed air used

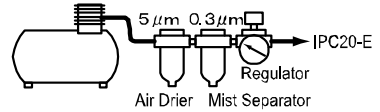
This unit requires that clean compressed air be supplied for the dust removal air blowing.

Supply air within the pressure range of 0.1 to 0.5 MPa.

Use an air drier to remove the moisture from the air. (The dew point temperature is -15°C or lower.)

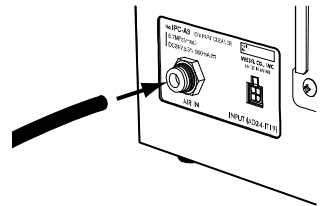
Use mist separator (0.3 μm) to remove the impurities from the air.

Supply air within the temperature range of 5 to 40°C



Hose used

Use an air hose with sufficient pressure resistance performance (outside diameter 10 mm x inside diameter 6.5 mm).



Hose connection

A one-touch hose coupling (air supply port) is provided on the lower left at the back of the body. Connect the air hose to this.

Flow rate adjustment

A flow rate adjusting valve (FLOW CONTROL) is provided on the lower right at the front of the body. Adjust the rate of the discharged air as necessary.



Flange

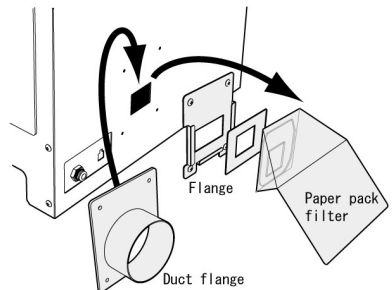
A paper pack filter can be attached to the exhaust port on the rear side (standard).

A $\varnothing 75\text{mm}$ (I/D) exhaust duct can be connected by exchanging it for a duct flange.

Pre-use inspection

Pre-use product inspection

Before using the product, make sure there are no problems with it, the power adapter, etc. Make sure there is no damage, and no loose of screws or connectors.



■ Operation

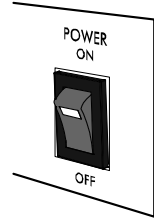
Operation

Switch

This is used to start and stop the unit.

When switched to [ON], the power is turned on, the switch LED lights up, and operation starts.

When switched to [OFF], the power is turned off and operation stops.



Front acrylic window

Open and close the acrylic window according to the working conditions.

Please note that the best performance is obtained when the acrylic window is closed, so when working with the window open, check to make sure of the air pressure suitable for the specific work.

⚠ CAUTION

△ Caution

Be careful not to get your finger caught when the front acrylic window is opened or closed.

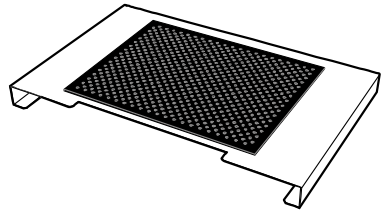
Adhesive gel sheets

The adhesive gel sheets capture the dust blown off by the ionizing nozzle.

The self-adhesive polyurethane gel sheets are attached to stainless steel plates.

Remove the protective surface film before using the unit.

Refer to the maintenance section of this manual in regard to the exchange procedure for the adhesive gel sheets.



⚠ CAUTION

△ Caution

If the adhesive gel sheets are deformed or broken while performing work, continuing to use the product in this condition is hazardous, so make sure the adhesive gel sheets are properly maintained.
Replacing deformed or damaged adhesive gel sheets is highly recommended.

● Remember

This unit is designed for light work, such as handwork, so do not place heavy objects on top of the adhesive gel sheets or forcefully strike it.
Doing so could deform or break the adhesive gel sheets.

Dust conditions

Observe the following conditions for the dust that is handled.

- This unit is for use with regular dust. It can be used to blow off dry fine dust.
 - Absolutely do not vacuum up wet dust, liquids like water, oil or spray mist.
 - Also absolutely do not vacuum up dust containing explosive, flammable, or combustible substances.

- Do not vacuum up adhesive or corrosive substances.






- To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:
 - Items that are on fire: Cigarette butts, matches, and other sources of fire.
 - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc.
 - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances.
 - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances.
 - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc.
 - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc.
 - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc.

- Do not vacuum up flammable dust or dust containing flammable substances.
 - Caution must be taken in particular with non-combustible substances that change into combustible substances when worked on, etc.
 - It is very difficult to determine if such substances are changing into combustible dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. The user is strongly advised to stop using the unit if a substance is determined to be combustible dust.

- Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances that change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail.
 - If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials.
 - Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail.



- Absolutely do not vacuum up damp dust or any moisture such as water or oil.
 - Unforeseen malfunctions or accidents could occur.






■ Operation

|  WARNING | |
|--|---|
|  Vacuuming Up Prohibited | Absolutely do not vacuum up sparks; flammable, explosive, or combustible dust; or dust containing or mixed with explosive, flammable, or combustible substances. |
|  Vacuuming Up Prohibited | Absolutely do not vacuum up explosive, flammable, or combustible liquids or dust wet with such liquids, or dust mixed with or containing such liquids. |
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. Unforeseen malfunctions or accidents could occur. |
|  Joint Use Prohibited | Use in the same unit of substances that change into a hazardous substance when mixed, is prohibited. Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances the change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail. If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials. Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. |

Ionizers / Sensor

When a work piece is held below the sensor, the sensor detects the work piece and releases the solenoid valve. This initiates the ion air blow from two pieces of pinpoint nozzle ionizers.

|  WARNING | |
|--|---|
|  Unplug the power cord | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before inspecting the ionizers. |

|  CAUTION | |
|---|---|
|  Disassembly Prohibited | Do not remodel or disassemble the IPC-A3. The IPC-A3 contains high voltage parts. |
|  Prohibited | Do not block openings such as the intake vent and the discharge vent. Doing so could cause a malfunction. |
|  Prohibited | Do not insert metal or foreign matters into the unit openings. Doing so could result in electrical shock accidents or equipment breakdown. |
|  Unplug power cable | Before long periods of disuse, unplug the power cable. Leaving the power on during periods of disuse can result in electric shock, breakdown and fire from degraded insulation. |

High Voltage Alarm Function

When the piezoelectric high voltage transformer in the ionizer detects an overload and shuts down the power output, the red indicator on the top of the ionizer will light and operation will stop.
 If the alarm lamp turns ON, turn the power OFF immediately with the power switch.
 If foreign matter is stuck on the needle electrode, clean the needle and then turn the power ON again.
 Confirm that the alarm lamp does not light up.
 If the alarm lights up when the power is turned ON, contact your certified sales agent for inspections to prevent accidents.

Pulse Air Operation

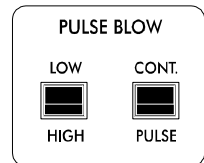
The pulse air operation mode provides an intermittent air blow, making it possible to obtain good and efficient dust removal.

1. Turn the pulse air operation mode to "PULSE."

2. The pulse width switch can be used to suit the usage required.

[LOW]: Low-speed mode (appropriate for the removal of large-grained dust)

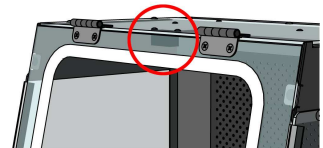
[HIGH]: High-speed mode (appropriate for the removal of small-grained dust, such as dirt)



Sensor

The sensor affixed to the front of the top inside surface of the cabinet detects work pieces.

Using the OFF TIMER switch, you can change the time intervals for the ion air blow.



Off-timer Function

When the off-timer function is on, and the sensor detects a work piece, the air blow occurs only for the time period set, and turns off automatically.

• When the off-timer function is not activated

The air blow is on as long as the sensor detects a work piece in the unit.

The air blow will stop when the work piece is removed from the sensor's detection area.

Turn the off timer mode switch to [OFF].

• When the off-timer function is activated

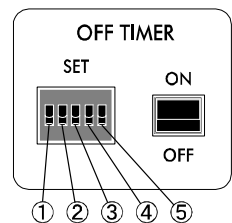
After the sensor detects a work piece in the unit, the air blow will on only for the time period set.

1. Turn the off-timer mode switch to [ON].

2. Use the DIP switches to set the air blow time period.

In order to set the time period desired, turn the appropriate DIP switch on (up position).

| Switch① | Switch② | Switch③ | Switch④ | Switch⑤ |
|--------------|--------------|--------------|---------------|---------------|
| About 1 sec. | About 3 sec. | About 5 sec. | About 10 sec. | About 30 sec. |



Caution: Do not turn all of the DIP switches off, or turn multiple DIP switches on.

In some cases this may result in unexpected operations.

■ Operation

Adjusting the sensitivity of the sensor

Set the detection range of the sensor by adjusting the volume on the motherboard installed in the cabinet.

This adjustment is useful when employing a platform above the adhesive gel sheet plate.

When the volume control is turned to the right, using a Phillips head screwdriver, the detection range (distance between the sensor and the work piece) is increased, and decreased when it is turned to the left.



⚠ CAUTION

● Remember

The sensitivity of the sensor is factory-adjusted. Do not change this setting unless it is absolutely necessary. Using undue power to turn the volume control may cause damage to the unit, so be very careful when making adjustments.

■ Maintenance

Cleaning the adhesive gel sheets

When dust has collected on the adhesive gel sheet, remove both the adhesive sheet and the mounting plate and wash them.

The adhesive strength of the adhesive gel sheet will be restored after the sheet is dried.

When the adhesive strength of the adhesive gel sheet is not restored after the sheet is cleaned, it is time to replace the sheet, so request a replacement adhesive gel sheet.

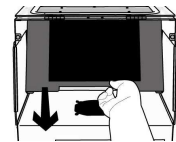
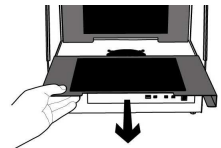
When removing the mounting plate for the adhesive gel sheet, follow the directions exactly as shown below.

⚠ CAUTION

● Remember

When removing the mounting plate for the adhesive gel sheet, be careful not to cut your hand on the edges of the plate.

- | | |
|--|--|
| 1. Turning the switch off | Turn off the power switch, and always confirm that the fan has stopped completely. |
| 2. Opening the front cover | Loosen the urea screw on the front, and pull the front window upward. |
| 3. Removing the adhesive gel sheet plate (lower section) | Remove the adhesive gel sheet plate from the bottom of the interior of the cabinet. * Magnets are attached on the back of the plate. Please lift the plate a little and pull out. |
| 4. Removing the adhesive gel sheet plate (rear surface section) | Remove the adhesive gel sheet plate from the rear surface section of the cabinet. |
| 5. Washing the adhesive gel sheet | After washing the adhesive gel sheet in water, dry it out completely. The drying process can be hastened by wiping up any extra moisture from the sheet with a dry clean cloth, etc. |
| 6. Attaching the adhesive gel sheet plate (back surface section) | First, replace the cleaned adhesive gel sheet plate in the rear surface section of the cabinet. Attach the plate, while being careful not to let the plate touch the N-3 units. |
| 7. Attaching the adhesive gel sheet plate (lower section) | Next, attach the adhesive gel sheet plate in the lower section of the cabinet. |
| 8. Closing the front cover | Close the front window, and tighten the urea screw. |



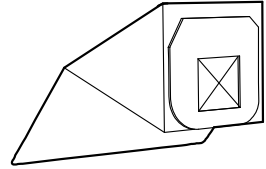
■Maintenance

Replacing the paper pack filter

There is an exhaust port on the back of the body. The flange for the paper pack filter is attached at the time of shipment.

Depending on your situation, please replace the paper pack filter provided.

Please purchase replacement parts when the paper pack filter is gone. Paper pack filter IPC-A3F (6-pcs set)



Maintenance of Ionizer

| ⚠ CAUTIONS | |
|-----------------------------|---|
| ⊘ DO NOT DISASSEMBLE | Do not perform any maintenance on the N-3 except for maintenance and replacement of the electrode. |
| ● REMEMBER | Before cleaning the electrode, shut off power and air supply at the source and disconnect the air hose. |
| ⊘ PROHIBITED | Do not wipe the ionizer with detergent or solvent. Substances of the sort can cause cracking and result in electric shock or breakdown. |
| ⊘ DO NOT WET | Do not wet the N-3. Exposure to moisture can result in electric shock or breakdown. |

Dirt and wear in the needle electrode can deteriorate the performance of this ionizer. Clean the electrode every 56 hours of use (= approximately 7 days based on calculation of use for 8 hours per day). If the electrode is not kept in an optimum condition, the performance will drop and product life might shorten as well.

If the unit is used for a long period of time, the tip of the needle electrode may wear out and consequently static erasing efficiency will decrease. In such case, replace the needle electrode with a new one. It is recommended that the needle electrode be replaced every 1,200 hours of operation (= approximately 6 months based on calculation of use for 8 hours per day).

Keep the unit in good working condition by measuring its ion balance and ion output regularly as a means for checking for a drop in capacity.

How to Clean the Casing

Remove the dirt over the casing with dry, soft cloth.

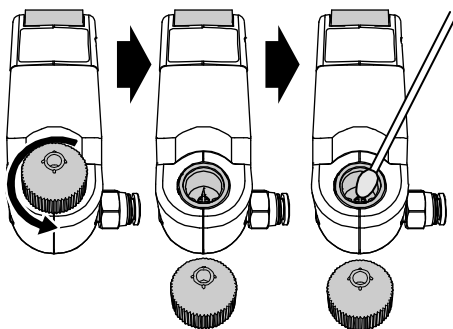
Never apply alcohol / thinner solvent / detergent, because the surface-active agent included in the detergent etc., may deteriorate the ionizing performance.

How to Clean the Electrode Needle

Power supply to the N-3 should be shut off before cleaning the needle electrode.

Please follow the instructions below:

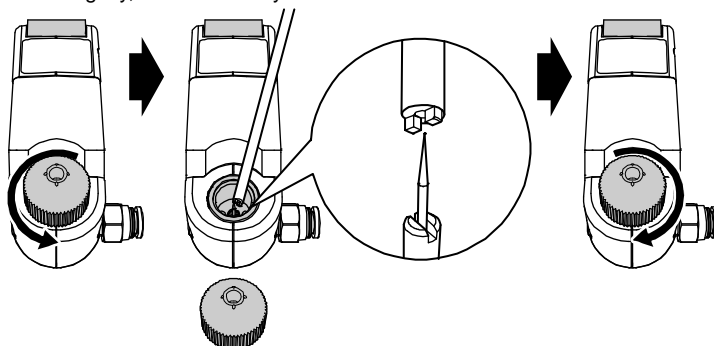
- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Clean the needle electrode
Clean the tip of the needle with a cotton stick. If it is especially dirty, use a few drops of alcohol-wet cloth.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



How to Replace the Electrode Needle

Replacement Needle Electrode is available as option: Model code GN-H

- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Replace the needle electrode
Remove the needle electrode with a dedicated screwdriver separately available. Attach the new needle electrode on the terminal. Be careful not to pick your fingers with the needle electrode.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



Checking Ionizer's Performance

Measure ion balance and decay time regularly by a charge plate monitor.



Reference: IEC61340-5-1, 2 ANSI EOS/ESD S3.1

Adjustment

The N-3 does not have an ion balance adjustment function. The ionizer is designed to maintain the ion balance with a circuit board. If the ion balance is out of the specified range, please contact us.

■ Storage

Storage





|  CAUTION | |
|---|---|
|  Prohibited | <p>Do not store the IPC-A3 in the following environments:</p> <ul style="list-style-type: none"> • Where excessive vibration or shock is applied to the unit. • Where temperature and humidity are outside specified ranges. • Where dew condensation occurs. • Where the sharp temperature fluctuations occurs. • Where is inflammable and/or there is a risk of explosion due to existence of combustible solvent, dust etc. • Where there is heavy dust or smoke • Where possibly wet by water, oil, chemicals, etc. • Where strong electric or magnetic fields are generated. |

■ Troubleshooting

Troubleshooting

Using the IPC-A3 when in anything but proper working condition can cause product damage or personal accidents.


Therefore, request servicing promptly if such trouble occurs. For servicing, contact your local distributor.

|  CAUTIONS for TROUBLESHOOTING | |
|--|---|
|  Prohibited | <p>Do not use the IPC-A3 in the following situations. It can result in fire or electric shock.</p> <ul style="list-style-type: none"> * If the power cable is damaged or hot * If the IPC-A3 has been damaged because of dropping or shock. |
|  Shut power off | <p>Unplug power cable and stop supplying compressed air to the IPC-A3 if any defect is recognized.</p> |
|  Do not disassemble | <p>Never disassemble the IPC-A3.</p> |

■ Removal

Removal

When removing this product, first make sure the surrounding area and other workers are safe.

|  CAUTION | |
|---|---|
| ● Unplug power cable | To prevent electrical shock accidents and operational mistake accidents during the product removal work, be sure to unplug the power cord from the outlet. |
| ● Remember | When disconnecting a compressed air hose, be sure to first shut off the source of the compressed air. In addition, the compressed air inside the air hose could spray out when the air hose is disconnected, so keep the hose away from the face, etc., when disconnecting it. |
| ● Remember | To keep the unit from falling over, do not climb on the hood or dust collector or place heavy objects on them. |
| ● Remember | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being removed or moved.· Make sure the product does not fall over while it is being removed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

■ Disposal

Disposal

When disposing of this product, dispose of it properly in accordance with the pertinent laws and local regulations.

■ Replacement Parts

Replacement Parts

There are 3 consumable parts that can be replaced by the customer.

Check the model and lot No. and then purchase the parts through the store where the product was purchased.

- Adhesive gel sheet No. IPC-A4G
- Electrode Needle No. GN-H (Optional dedicated needle electrode screwdriver G-7DR for replacement of needle electrode)
- unwoven fan filter IPC-A3F (6-pc set)

For information about the replacement procedure, refer to the "Maintenance" item in this manual.

LIMITED WARRANTY:

VESSEL expressly warrants that for a period of one (1) year from the date of purchase, VESSEL static erasers will be free of defects in material (parts) and workmanship (labour). Within the warranty period, Defects occurring will be repaired or products will be replaced at VESSEL's option and expense, if VESSEL receives notice during the warranty period. Defective products must be returned to VESSEL Osaka Japan with proof of purchase date. And if your unit is out of warranty, VESSEL will quote repair charges necessary to ship your unit freight prepaid to where you have originally purchased.

WARRANTY EXCLUSIONS:

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING FITNESS AND MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH IS SPECIFICALLY DISCLAIMED.

The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean, or repair products.

LIMIT OF LIABILITY:

This electronic static eraser use high voltage corona discharge and should not be used in or near flammable or explosive environments. In no event will VESSEL or any seller is responsible or liable for any injury, loss or damage, direct or consequential, whether based in tort or contract arising out of the use of or the inability to use the product. Fulfillment of VESSEL's warranty obligations will be Customer's exclusive remedy and VESSEL's and Seller's limit of liability for any breach of warranty or otherwise. Before using this unit, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.

| | | |
|----------|------------------------------------|--|
| Model | IPC-A3 | |
| Warranty | (1) year from the date of purchase | |
| Customer | Name | |
| | Address | |
| | Tel. No. | |
| Dealer | Name/Address/Tel. No. | |

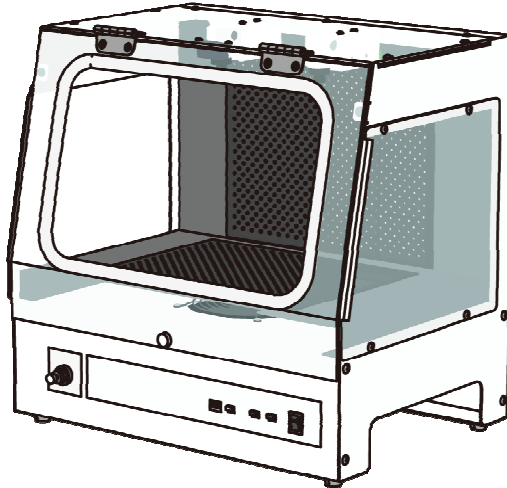
Manufactured by:**VESSEL Co., Inc.**

17-25, Fukae-Kita 2-chome,
Higashinari-ku, Osaka 537-0001 Japan
Tel : +81 6 6976 7778 Fax : +81 6 6972 9441
E-mail : export@vessel.co.jp
URL : <http://www.vessel.jp>

Product of Japan
17041700.00006

ION PARTS CLEANER

No. IPC-A3



Application

This product is used to remove fine powders and dust adhered due to static electricity and to eliminate static electricity from parts that are negatively affected by static electricity.

An ionized pulse of air blows off the debris effectively. The blown-off debris is collected by the self-adhesive of Polyurethane GEL sheets and a paper pack filter.

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■ For Your Safety



Safety Precautions

Please read this manual carefully before using this product.




Use this manual to take responsibility to ensure everyone that is using this product is doing so safely.




After carefully reading this manual, keep it in a protected place where it can be referred to at any time.










- The precaution items shown here are divided into two levels according to the level or risk.

| | |
|---|--|
|  WARNING | Indicates that improper handling can lead to serious injury or even death. |
|  CAUTION | Indicates that improper handling can lead to minor injury and property damage. |





- Example Pictorial Displays

| | |
|---|--|
|  | This symbol indicates a WARNING or CAUTION. |
|  | This symbol indicates a prohibited action. |
|  | This symbol indicates a mandatory required action. |

|  WARNING | |
|--|--|
|  Prohibited | Do not use IPC-A3 for anything other than static electricity elimination or dust removal. |
|  Vacuuming Up Prohibited | <p>To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:</p> <ul style="list-style-type: none"> - Items that are on fire: Cigarette butts, matches, and other sources of fire. - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc. - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances. - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances. - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc. - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc. - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc. |









| | |
|--|--|
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. |
|  Joint Use Prohibited | To prevent fires, absolutely do not make joint use of the following: · When the dust could transform into a hazardous substance when mixed inside the unit. |
|  Prohibited | To prevent fires, use the specified rated power source only. |
|  Painting Prohibited | Use as a painting booth is prohibited. Do not perform painting work in it. |
|  Peering Prohibited | Do not peer into the end of the air nozzle. The sensor will detect your presence and blast out compressed air, which could strike your eyes or face. |
|  Disassembly Prohibited | Do not remove components, or modify or unreasonably disassemble the product. · This product is manufactured in accordance with safety and performance standards, so removing components or modifying the product is dangerous. · Depending on the type of trouble, the customer might not be able to handle it, so always contact the store where the product was purchased. |
|  Remember | Be sure to observe the following to prevent electrical shock accidents: · Be sure to unplug the power cord from the outlet before performing any wiring. · Be sure to ground the ground wire. |
|  Remember | Discard dust from the filter pack regularly without letting it accumulate. Depending on the conditions, dust could cause a fire or explosion hazard. |
|  Remember | Be sure to unplug the power cord from the outlet before performing any maintenance or inspection work. |

 **CAUTION**

| | |
|---|---|
|  Remember | Take into consideration the conditions surrounding the installation area. · Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. · Do not install the unit where it may be exposed to water, oil, chemicals, etc. · Do not install the unit where it may be exposed to marked vibrations or shock · The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | To prevent fires, conduct an inspection after work is completed. |
|  Remember | Store this manual close to the product where it can be referred to quickly. |
|  Prohibited | Do not install, use, or service this product until you understand the contents in this manual. |

■ For Your Safety

The following prohibition and caution symbols are displayed on the product.
Example Pictorial Displays

| | | | |
|---|--|---|---|
|  | Vacuuming up sparks or flames is prohibited. |  | Vacuuming up flammable or combustible substances is prohibited. |
|  | Vacuuming up explosive substances is prohibited. |  | Disassembly is prohibited. |
|  | Be careful of electric shock. |  | Be careful of rotating parts. |
|  | Carefully read the instruction manual. |  | Peeking into the tip of Air Nozzle is prohibited. |

■ Features

A compact dust collector unit equipped with a static electricity removal device

- The work table and the compact dust collector have been unified. This static electricity removal equipment is appropriate for onsite cell production systems.

Dust collector hood

- A transparent window has been included on the front of the hood, which can be opened and closed, ensuring a scatter-proof installation with a good view.
- The openings to the cabinet have been designed to ensure that work piece can enter and exit smoothly.
- The adhesive polyurethane gel sheet is attached with magnets, making it easy to remove for cleaning and replacement.
- A paper pack filter or a duct hose can be attached to the exhaust port on the rear side (standard).

The static electricity removal device

- This product is equipped with two air-nozzle type ionizers. The air nozzles extend from the top panel within the hood downward.
- The ion air that comes from the ionizers eliminate the static electricity and remove dust at the same time.
- When you take a work piece in your hand and insert it into the hooded space, a sensor is activated and the air blow is initiated automatically.
- Intermittent air blows off dust adhered to a work piece by vibrating it.
- A wind flow adjusting valve is provided allowing the intensity of air blow to be adjusted.

Safety

- The static electricity removal device is equipped with an abnormal conditions surveillance function, and a lamp will light up when an abnormality occurs, so conditions can be checked easily.

Specifications

| | |
|-------------------------------|---|
| Model No.: | IPC-A3 |
| Dust Collection Method: | Self-adhesive Polyurethane GEL sheets and paper pack filter |
| Input Voltage: | 24V DC ±5% (Included AC adapter: 100~240V AC, 50/60Hz) |
| Power Output: | 22 W |
| Consumption Current: | 900 mA |
| Protection Feature: | Overcurrent protective fuse (1A/125V) |
| Air Flow: | 1.13 m ³ / min.(Fan) |
| Static Pressure: | 460 Pa (Fan) |
| Air Pressure: | 0.1~0.5 MPa (Use clean air) |
| Air Hose: | O/D φ 10 mm x I/D φ 6.5 mm |
| Air Consumption: | Approx. 315 L/min. (0.3 MPa, Continuous operation mode) |
| Working Temperature/ Humidity | Range: 5~40°C / 35~65 %RH (No dew condensation or freezing) |
| Dimensions: | W 420 x D 300 x H 411 mm (Protrusions are not measured) |
| Weight: | 9.5 kg |
| Accessory: | Self-adhesive Polyurethane GEL sheet plate 2pcs. Power adapter AD24-IT19 (Input: 100~240V AC, Output: 24V DC) Exhaust duct flange 1 pc. (For ø75 mm) Paper pack filter 6 pcs. Instruction Manual (this manual) 1 copy |
| Consumable parts: | Adhesive polyurethane gel sheet / Needle electrode / Paper pack filter |

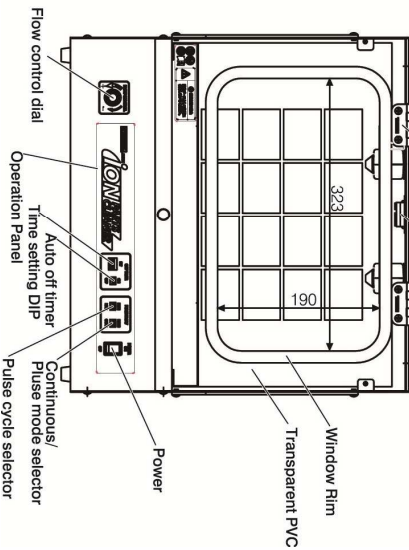
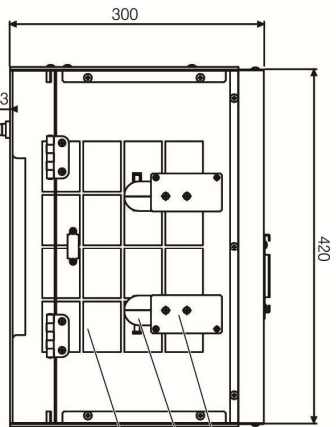
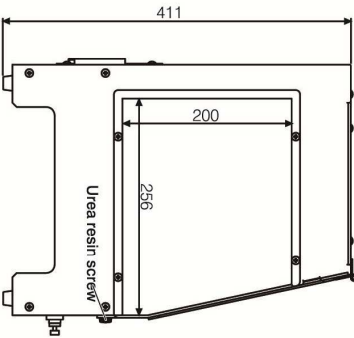
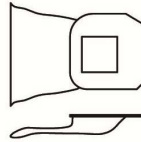
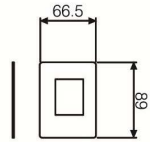
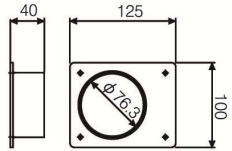
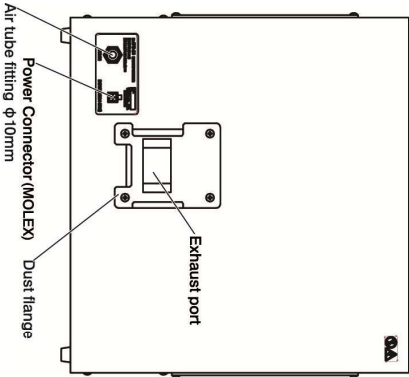
Specifications (Ionizer)

| | |
|------------------------|----------------------------------|
| Model No.: | N-3 |
| Ion Generation Method: | High voltage AC corona discharge |
| Output voltage: | ± 5.6 kV AC (p-p) |
| Alarm output: | High voltage alarm (Red LED) |


Ionizing performance (as reference)




| | | |
|-----------------------|----------|--|
| N-3 (individual unit) | | Measurement conditions: |
| Decay time (+) | 0.7 sec. | Distance: 150mm from the nozzle of ionizer |
| Decay time (-) | 0.7 sec. | Air pressure: 0.3 MPa |
| Ion balance | -8.0V | Air flow: 210L/min |

External View



Installation Area

|  WARNING | |
|--|--|
|  Prohibited | <p>Do not use this product in the following areas. Otherwise, there is a risk of an explosion or fire.</p> <ul style="list-style-type: none"> • Environments that require anti-explosion measures. • Areas where corrosive gases or flammable or explosive gases are used. |

|  CAUTION | |
|--|---|
|  Remember | <p>Take into consideration the conditions surrounding the installation area.</p> <ul style="list-style-type: none"> • Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. • Do not install the unit where it may be exposed to water, oil, chemicals, etc. • Do not install the unit where it may be exposed to marked vibrations or shock • The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | <p>Do not use this product where it will be directly exposed to high temperatures or high humidity. Doing so could cause the burn or breakdown of motor.</p> |

Installation Area

Install the unit in an indoor location not exposed to wind, rain, or direct sunlight.

Avoid using the unit in areas where water, oil, or condensation will get on it or where there will be sudden temperature changes.

Avoid using the unit where it will be exposed to strong vibration or impacts.

This unit has an exhaust outlet on the backside, bottom of the unit.

Install this unit so that the exhaust outlet is 10 cm or more away from the wall, etc. because the normal exhaust function will be impaired, causing a decrease in the dust collection capability, if the unit is installed with the back of the unit against a wall, etc.

Ambient temperature and humidity

Use in a temperature range of 5 °C to 40 °C. Use the unit in a humidity range of 35 to 65%.

Atmosphere

Do not operate the unit in environments where anti-explosion measures are required.

Do not operate the unit in areas where corrosive gases or flammable or explosive gases are used.

In addition, use the unit in a well ventilated area with a normal air atmosphere.

Input voltage and compressed clean air

This unit uses 24V DC input voltage and 0.1 MPa to 0.5 MPa compressed air for the cleaning air.

Install the unit where it can be connected to wiring and piping that meet these specifications.

Maintenance space

Space for maintenance and inspections should be maintained around the unit.

In particular, the space in front of the unit required for daily maintenance should be obtained.

■ Installation

Installation Method

When installing this unit, place it on a level, strong, and smooth, flat bench.

| ⚠ WARNING | |
|------------------|---|
| ● Remember | To keep the unit from falling over, do not climb on the working surface or place heavy objects on it. |
| ● Remember | When installing the IPC-A3, place it on a level, strong, and smooth, flat bench. It can be damaged and malfunction if it falls. |
| △ Caution | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being installed or moved.· Make sure the product does not fall over while it is being installed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

Electrical power wiring

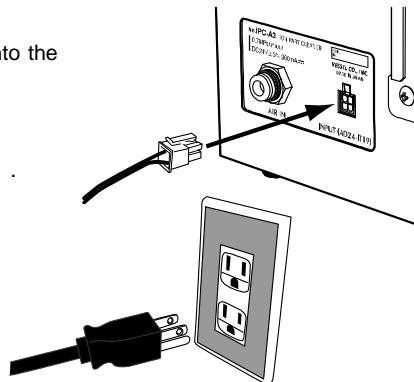
| ⚠ WARNING | |
|------------------|---|
| ● Remember | Use IPC-A3 only with the specific AC adapter. Otherwise, there is a risk of fire or electric shock. |
| ● Remember | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before performing any wiring. |

Connector connection

Insert the included special AC adapter connector into the jack on the back of the body.

Power Supply Adapter

Use the accompanying power adapter (AD24-IT19) . AC adapter is equipped with 3-pin plug. Connect this to a power outlet that has a ground terminal.



Compressed air piping

⚠ CAUTION

● Remember

Be sure to use an air hose with sufficient pressure resistance performance. A hose without pressure resistance could burst or leak air.

Compressed air used

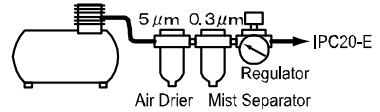
This unit requires that clean compressed air be supplied for the dust removal air blowing.

Supply air within the pressure range of 0.1 to 0.5 MPa.

Use an air drier to remove the moisture from the air. (The dew point temperature is -15°C or lower.)

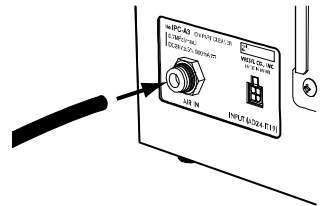
Use mist separator (0.3 μm) to remove the impurities from the air.

Supply air within the temperature range of 5 to 40°C



Hose used

Use an air hose with sufficient pressure resistance performance (outside diameter 10 mm x inside diameter 6.5 mm).



Hose connection

A one-touch hose coupling (air supply port) is provided on the lower left at the back of the body. Connect the air hose to this.

Flow rate adjustment

A flow rate adjusting valve (FLOW CONTROL) is provided on the lower right at the front of the body. Adjust the rate of the discharged air as necessary.



Flange

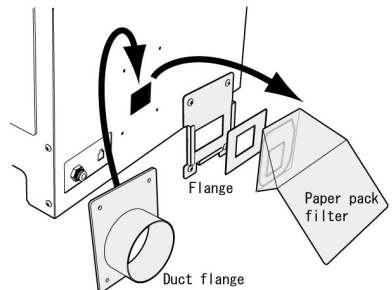
A paper pack filter can be attached to the exhaust port on the rear side (standard).

A $\varnothing 75\text{mm}$ (I/D) exhaust duct can be connected by exchanging it for a duct flange.

Pre-use inspection

Pre-use product inspection

Before using the product, make sure there are no problems with it, the power adapter, etc. Make sure there is no damage, and no loose of screws or connectors.



■ Operation

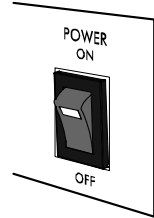
Operation

Switch

This is used to start and stop the unit.

When switched to [ON], the power is turned on, the switch LED lights up, and operation starts.

When switched to [OFF], the power is turned off and operation stops.



Front acrylic window

Open and close the acrylic window according to the working conditions.

Please note that the best performance is obtained when the acrylic window is closed, so when working with the window open, check to make sure of the air pressure suitable for the specific work.

⚠ CAUTION

△ Caution

Be careful not to get your finger caught when the front acrylic window is opened or closed.

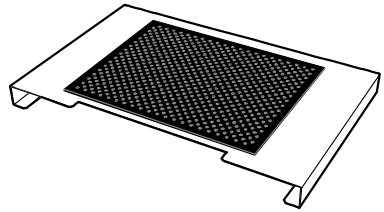
Adhesive gel sheets

The adhesive gel sheets capture the dust blown off by the ionizing nozzle.

The self-adhesive polyurethane gel sheets are attached to stainless steel plates.

Remove the protective surface film before using the unit.

Refer to the maintenance section of this manual in regard to the exchange procedure for the adhesive gel sheets.



⚠ CAUTION

△ Caution

If the adhesive gel sheets are deformed or broken while performing work, continuing to use the product in this condition is hazardous, so make sure the adhesive gel sheets are properly maintained.
Replacing deformed or damaged adhesive gel sheets is highly recommended.

● Remember

This unit is designed for light work, such as handwork, so do not place heavy objects on top of the adhesive gel sheets or forcefully strike it.
Doing so could deform or break the adhesive gel sheets.

Dust conditions

Observe the following conditions for the dust that is handled.

- This unit is for use with regular dust. It can be used to blow off dry fine dust.
 - Absolutely do not vacuum up wet dust, liquids like water, oil or spray mist.
 - Also absolutely do not vacuum up dust containing explosive, flammable, or combustible substances.

- Do not vacuum up adhesive or corrosive substances.






- To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:
 - Items that are on fire: Cigarette butts, matches, and other sources of fire.
 - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc.
 - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances.
 - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances.
 - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc.
 - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc.
 - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc.

- Do not vacuum up flammable dust or dust containing flammable substances.
 - Caution must be taken in particular with non-combustible substances that change into combustible substances when worked on, etc.
 - It is very difficult to determine if such substances are changing into combustible dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. The user is strongly advised to stop using the unit if a substance is determined to be combustible dust.

- Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances that change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail.
 - If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials.
 - Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail.



- Absolutely do not vacuum up damp dust or any moisture such as water or oil.
 - Unforeseen malfunctions or accidents could occur.






■ Operation

|  WARNING | |
|--|---|
|  Vacuuming Up Prohibited | Absolutely do not vacuum up sparks; flammable, explosive, or combustible dust; or dust containing or mixed with explosive, flammable, or combustible substances. |
|  Vacuuming Up Prohibited | Absolutely do not vacuum up explosive, flammable, or combustible liquids or dust wet with such liquids, or dust mixed with or containing such liquids. |
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. Unforeseen malfunctions or accidents could occur. |
|  Joint Use Prohibited | Use in the same unit of substances that change into a hazardous substance when mixed, is prohibited. Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances the change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail. If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials. Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. |

Ionizers / Sensor

When a work piece is held below the sensor, the sensor detects the work piece and releases the solenoid valve. This initiates the ion air blow from two pieces of pinpoint nozzle ionizers.

|  WARNING | |
|--|---|
|  Unplug the power cord | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before inspecting the ionizers. |

|  CAUTION | |
|---|---|
|  Disassembly Prohibited | Do not remodel or disassemble the IPC-A3. The IPC-A3 contains high voltage parts. |
|  Prohibited | Do not block openings such as the intake vent and the discharge vent. Doing so could cause a malfunction. |
|  Prohibited | Do not insert metal or foreign matters into the unit openings. Doing so could result in electrical shock accidents or equipment breakdown. |
|  Unplug power cable | Before long periods of disuse, unplug the power cable. Leaving the power on during periods of disuse can result in electric shock, breakdown and fire from degraded insulation. |

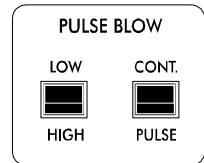
High Voltage Alarm Function

When the piezoelectric high voltage transformer in the ionizer detects an overload and shuts down the power output, the red indicator on the top of the ionizer will light and operation will stop.
 If the alarm lamp turns ON, turn the power OFF immediately with the power switch.
 If foreign matter is stuck on the needle electrode, clean the needle and then turn the power ON again.
 Confirm that the alarm lamp does not light up.
 If the alarm lights up when the power is turned ON, contact your certified sales agent for inspections to prevent accidents.

Pulse Air Operation

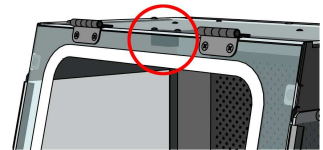
The pulse air operation mode provides an intermittent air blow, making it possible to obtain good and efficient dust removal.

1. Turn the pulse air operation mode to "PULSE."
2. The pulse width switch can be used to suit the usage required.
 [LOW]: Low-speed mode (appropriate for the removal of large-grained dust)
 [HIGH]: High-speed mode (appropriate for the removal of small-grained dust, such as dirt)



Sensor

The sensor affixed to the front of the top inside surface of the cabinet detects work pieces.
 Using the OFF TIMER switch, you can change the time intervals for the ion air blow.



Off-timer Function

When the off-timer function is on, and the sensor detects a work piece, the air blow occurs only for the time period set, and turns off automatically.

• When the off-timer function is not activated

The air blow is on as long as the sensor detects a work piece in the unit.
 The air blow will stop when the work piece is removed from the sensor's detection area.

Turn the off timer mode switch to [OFF].

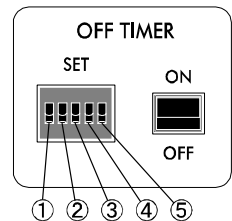
• When the off-timer function is activated

After the sensor detects a work piece in the unit, the air blow will on only for the time period set.

1. Turn the off-timer mode switch to [ON].
2. Use the DIP switches to set the air blow time period.

In order to set the time period desired, turn the appropriate DIP switch on (up position).

| Switch① | Switch② | Switch③ | Switch④ | Switch⑤ |
|--------------|--------------|--------------|---------------|---------------|
| About 1 sec. | About 3 sec. | About 5 sec. | About 10 sec. | About 30 sec. |



Caution: Do not turn all of the DIP switches off, or turn multiple DIP switches on.
 In some cases this may result in unexpected operations.

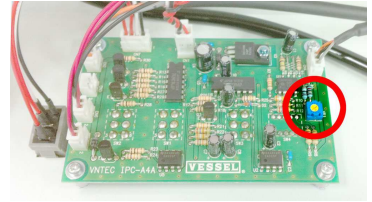
■ Operation

Adjusting the sensitivity of the sensor

Set the detection range of the sensor by adjusting the volume on the motherboard installed in the cabinet.

This adjustment is useful when employing a platform above the adhesive gel sheet plate.

When the volume control is turned to the right, using a Phillips head screwdriver, the detection range (distance between the sensor and the work piece) is increased, and decreased when it is turned to the left.



⚠ CAUTION

● Remember

The sensitivity of the sensor is factory-adjusted. Do not change this setting unless it is absolutely necessary. Using undue power to turn the volume control may cause damage to the unit, so be very careful when making adjustments.

■ Maintenance

Cleaning the adhesive gel sheets

When dust has collected on the adhesive gel sheet, remove both the adhesive sheet and the mounting plate and wash them.

The adhesive strength of the adhesive gel sheet will be restored after the sheet is dried.

When the adhesive strength of the adhesive gel sheet is not restored after the sheet is cleaned, it is time to replace the sheet, so request a replacement adhesive gel sheet.

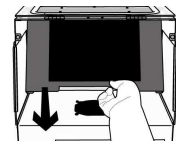
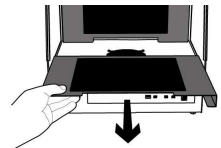
When removing the mounting plate for the adhesive gel sheet, follow the directions exactly as shown below.

⚠ CAUTION

● Remember

When removing the mounting plate for the adhesive gel sheet, be careful not to cut your hand on the edges of the plate.

- | | |
|--|--|
| 1. Turning the switch off | Turn off the power switch, and always confirm that the fan has stopped completely. |
| 2. Opening the front cover | Loosen the urea screw on the front, and pull the front window upward. |
| 3. Removing the adhesive gel sheet plate (lower section) | Remove the adhesive gel sheet plate from the bottom of the interior of the cabinet. * Magnets are attached on the back of the plate. Please lift the plate a little and pull out. |
| 4. Removing the adhesive gel sheet plate (rear surface section) | Remove the adhesive gel sheet plate from the rear surface section of the cabinet. |
| 5. Washing the adhesive gel sheet | After washing the adhesive gel sheet in water, dry it out completely. The drying process can be hastened by wiping up any extra moisture from the sheet with a dry clean cloth, etc. |
| 6. Attaching the adhesive gel sheet plate (back surface section) | First, replace the cleaned adhesive gel sheet plate in the rear surface section of the cabinet. Attach the plate, while being careful not to let the plate touch the N-3 units. |
| 7. Attaching the adhesive gel sheet plate (lower section) | Next, attach the adhesive gel sheet plate in the lower section of the cabinet. |
| 8. Closing the front cover | Close the front window, and tighten the urea screw. |



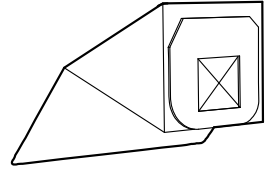
■Maintenance

Replacing the paper pack filter

There is an exhaust port on the back of the body. The flange for the paper pack filter is attached at the time of shipment.

Depending on your situation, please replace the paper pack filter provided.

Please purchase replacement parts when the paper pack filter is gone. Paper pack filter IPC-A3F (6-pcs set)



Maintenance of Ionizer

| ⚠ CAUTIONS | |
|-----------------------------|---|
| ⊘ DO NOT DISASSEMBLE | Do not perform any maintenance on the N-3 except for maintenance and replacement of the electrode. |
| ● REMEMBER | Before cleaning the electrode, shut off power and air supply at the source and disconnect the air hose. |
| ⊘ PROHIBITED | Do not wipe the ionizer with detergent or solvent. Substances of the sort can cause cracking and result in electric shock or breakdown. |
| ⊘ DO NOT WET | Do not wet the N-3. Exposure to moisture can result in electric shock or breakdown. |

Dirt and wear in the needle electrode can deteriorate the performance of this ionizer. Clean the electrode every 56 hours of use (= approximately 7 days based on calculation of use for 8 hours per day). If the electrode is not kept in an optimum condition, the performance will drop and product life might shorten as well.

If the unit is used for a long period of time, the tip of the needle electrode may wear out and consequently static erasing efficiency will decrease. In such case, replace the needle electrode with a new one. It is recommended that the needle electrode be replaced every 1,200 hours of operation (= approximately 6 months based on calculation of use for 8 hours per day).

Keep the unit in good working condition by measuring its ion balance and ion output regularly as a means for checking for a drop in capacity.

How to Clean the Casing

Remove the dirt over the casing with dry, soft cloth.

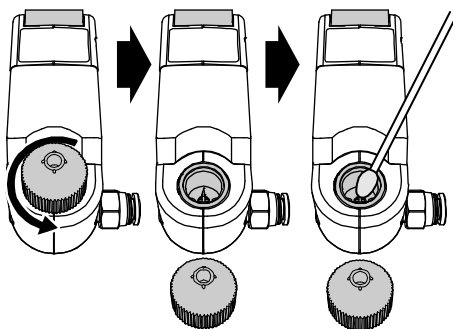
Never apply alcohol / thinner solvent / detergent, because the surface-active agent included in the detergent etc., may deteriorate the ionizing performance.

How to Clean the Electrode Needle

Power supply to the N-3 should be shut off before cleaning the needle electrode.

Please follow the instructions below:

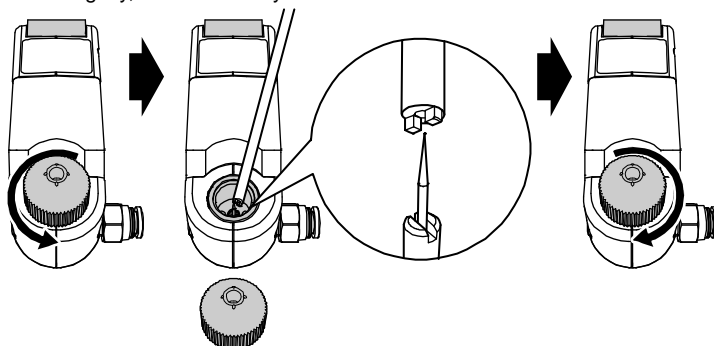
- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Clean the needle electrode
Clean the tip of the needle with a cotton stick. If it is especially dirty, use a few drops of alcohol-wet cloth.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



How to Replace the Electrode Needle

Replacement Needle Electrode is available as option: Model code GN-H

- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Replace the needle electrode
Remove the needle electrode with a dedicated screwdriver separately available. Attach the new needle electrode on the terminal. Be careful not to pick your fingers with the needle electrode.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



Checking Ionizer's Performance

Measure ion balance and decay time regularly by a charge plate monitor.



Reference: IEC61340-5-1, 2 ANSI EOS/ESD S3.1

Adjustment

The N-3 does not have an ion balance adjustment function. The ionizer is designed to maintain the ion balance with a circuit board. If the ion balance is out of the specified range, please contact us.

■ Storage

Storage





|  CAUTION | |
|---|---|
|  Prohibited | <p>Do not store the IPC-A3 in the following environments:</p> <ul style="list-style-type: none"> • Where excessive vibration or shock is applied to the unit. • Where temperature and humidity are outside specified ranges. • Where dew condensation occurs. • Where the sharp temperature fluctuations occurs. • Where is inflammable and/or there is a risk of explosion due to existence of combustible solvent, dust etc. • Where there is heavy dust or smoke • Where possibly wet by water, oil, chemicals, etc. • Where strong electric or magnetic fields are generated. |

■ Troubleshooting

Troubleshooting

Using the IPC-A3 when in anything but proper working condition can cause product damage or personal accidents.


Therefore, request servicing promptly if such trouble occurs. For servicing, contact your local distributor.

|  CAUTIONS for TROUBLESHOOTING | |
|--|---|
|  Prohibited | <p>Do not use the IPC-A3 in the following situations. It can result in fire or electric shock.</p> <ul style="list-style-type: none"> * If the power cable is damaged or hot * If the IPC-A3 has been damaged because of dropping or shock. |
|  Shut power off | <p>Unplug power cable and stop supplying compressed air to the IPC-A3 if any defect is recognized.</p> |
|  Do not disassemble | <p>Never disassemble the IPC-A3.</p> |

■ Removal

Removal

When removing this product, first make sure the surrounding area and other workers are safe.

|  CAUTION | |
|---|---|
| ● Unplug power cable | To prevent electrical shock accidents and operational mistake accidents during the product removal work, be sure to unplug the power cord from the outlet. |
| ● Remember | When disconnecting a compressed air hose, be sure to first shut off the source of the compressed air. In addition, the compressed air inside the air hose could spray out when the air hose is disconnected, so keep the hose away from the face, etc., when disconnecting it. |
| ● Remember | To keep the unit from falling over, do not climb on the hood or dust collector or place heavy objects on them. |
| ● Remember | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being removed or moved.· Make sure the product does not fall over while it is being removed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

■ Disposal

Disposal

When disposing of this product, dispose of it properly in accordance with the pertinent laws and local regulations.

■ Replacement Parts

Replacement Parts

There are 3 consumable parts that can be replaced by the customer.

Check the model and lot No. and then purchase the parts through the store where the product was purchased.

- Adhesive gel sheet No. IPC-A4G
- Electrode Needle No. GN-H (Optional dedicated needle electrode screwdriver G-7DR for replacement of needle electrode)
- unwoven fan filter IPC-A3F (6-pc set)

For information about the replacement procedure, refer to the "Maintenance" item in this manual.

LIMITED WARRANTY:

VESSEL expressly warrants that for a period of one (1) year from the date of purchase, VESSEL static erasers will be free of defects in material (parts) and workmanship (labour). Within the warranty period, Defects occurring will be repaired or products will be replaced at VESSEL's option and expense, if VESSEL receives notice during the warranty period. Defective products must be returned to VESSEL Osaka Japan with proof of purchase date. And if your unit is out of warranty, VESSEL will quote repair charges necessary to ship your unit freight prepaid to where you have originally purchased.

WARRANTY EXCLUSIONS:

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING FITNESS AND MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH IS SPECIFICALLY DISCLAIMED.

The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean, or repair products.

LIMIT OF LIABILITY:

This electronic static eraser use high voltage corona discharge and should not be used in or near flammable or explosive environments. In no event will VESSEL or any seller is responsible or liable for any injury, loss or damage, direct or consequential, whether based in tort or contract arising out of the use of or the inability to use the product. Fulfillment of VESSEL's warranty obligations will be Customer's exclusive remedy and VESSEL's and Seller's limit of liability for any breach of warranty or otherwise. Before using this unit, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.

| | | |
|----------|------------------------------------|--|
| Model | IPC-A3 | |
| Warranty | (1) year from the date of purchase | |
| Customer | Name | |
| | Address | |
| | Tel. No. | |
| Dealer | Name/Address/Tel. No. | |

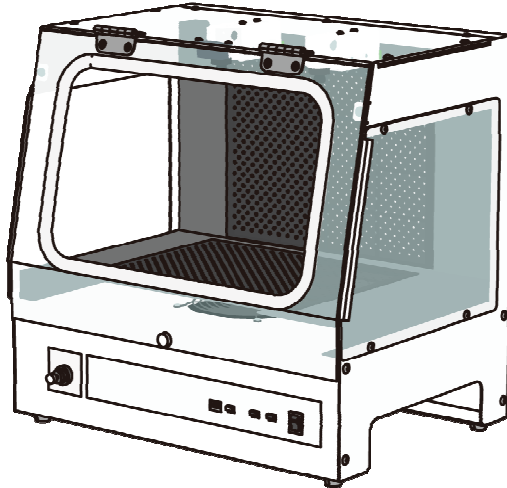
Manufactured by:**VESSEL Co., Inc.**

17-25, Fukae-Kita 2-chome,
Higashinari-ku, Osaka 537-0001 Japan
Tel : +81 6 6976 7778 Fax : +81 6 6972 9441
E-mail : export@vessel.co.jp
URL : <http://www.vessel.jp>

Product of Japan
17041700.00006

ION PARTS CLEANER

No. IPC-A3



Application

This product is used to remove fine powders and dust adhered due to static electricity and to eliminate static electricity from parts that are negatively affected by static electricity.

An ionized pulse of air blows off the debris effectively. The blown-off debris is collected by the self-adhesive of Polyurethane GEL sheets and a paper pack filter.

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■ For Your Safety



Safety Precautions

Please read this manual carefully before using this product.




Use this manual to take responsibility to ensure everyone that is using this product is doing so safely.




After carefully reading this manual, keep it in a protected place where it can be referred to at any time.










- The precaution items shown here are divided into two levels according to the level or risk.

| | |
|---|--|
|  WARNING | Indicates that improper handling can lead to serious injury or even death. |
|  CAUTION | Indicates that improper handling can lead to minor injury and property damage. |





- Example Pictorial Displays

| | |
|---|--|
|  | This symbol indicates a WARNING or CAUTION. |
|  | This symbol indicates a prohibited action. |
|  | This symbol indicates a mandatory required action. |

|  WARNING | |
|--|--|
|  Prohibited | Do not use IPC-A3 for anything other than static electricity elimination or dust removal. |
|  Vacuuming Up Prohibited | <p>To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:</p> <ul style="list-style-type: none"> - Items that are on fire: Cigarette butts, matches, and other sources of fire. - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc. - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances. - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances. - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc. - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc. - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc. |









| | |
|--|--|
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. |
|  Joint Use Prohibited | To prevent fires, absolutely do not make joint use of the following: · When the dust could transform into a hazardous substance when mixed inside the unit. |
|  Prohibited | To prevent fires, use the specified rated power source only. |
|  Painting Prohibited | Use as a painting booth is prohibited. Do not perform painting work in it. |
|  Peering Prohibited | Do not peer into the end of the air nozzle. The sensor will detect your presence and blast out compressed air, which could strike your eyes or face. |
|  Disassembly Prohibited | Do not remove components, or modify or unreasonably disassemble the product. · This product is manufactured in accordance with safety and performance standards, so removing components or modifying the product is dangerous. · Depending on the type of trouble, the customer might not be able to handle it, so always contact the store where the product was purchased. |
|  Remember | Be sure to observe the following to prevent electrical shock accidents: · Be sure to unplug the power cord from the outlet before performing any wiring. · Be sure to ground the ground wire. |
|  Remember | Discard dust from the filter pack regularly without letting it accumulate. Depending on the conditions, dust could cause a fire or explosion hazard. |
|  Remember | Be sure to unplug the power cord from the outlet before performing any maintenance or inspection work. |

 **CAUTION**

| | |
|---|---|
|  Remember | Take into consideration the conditions surrounding the installation area. · Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. · Do not install the unit where it may be exposed to water, oil, chemicals, etc. · Do not install the unit where it may be exposed to marked vibrations or shock · The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | To prevent fires, conduct an inspection after work is completed. |
|  Remember | Store this manual close to the product where it can be referred to quickly. |
|  Prohibited | Do not install, use, or service this product until you understand the contents in this manual. |

■ For Your Safety

The following prohibition and caution symbols are displayed on the product.
Example Pictorial Displays

| | | | |
|---|--|---|---|
|  | Vacuuming up sparks or flames is prohibited. |  | Vacuuming up flammable or combustible substances is prohibited. |
|  | Vacuuming up explosive substances is prohibited. |  | Disassembly is prohibited. |
|  | Be careful of electric shock. |  | Be careful of rotating parts. |
|  | Carefully read the instruction manual. |  | Peeking into the tip of Air Nozzle is prohibited. |

■ Features

A compact dust collector unit equipped with a static electricity removal device

- The work table and the compact dust collector have been unified. This static electricity removal equipment is appropriate for onsite cell production systems.

Dust collector hood

- A transparent window has been included on the front of the hood, which can be opened and closed, ensuring a scatter-proof installation with a good view.
- The openings to the cabinet have been designed to ensure that work piece can enter and exit smoothly.
- The adhesive polyurethane gel sheet is attached with magnets, making it easy to remove for cleaning and replacement.
- A paper pack filter or a duct hose can be attached to the exhaust port on the rear side (standard).

The static electricity removal device

- This product is equipped with two air-nozzle type ionizers. The air nozzles extend from the top panel within the hood downward.
- The ion air that comes from the ionizers eliminate the static electricity and remove dust at the same time.
- When you take a work piece in your hand and insert it into the hooded space, a sensor is activated and the air blow is initiated automatically.
- Intermittent air blows off dust adhered to a work piece by vibrating it.
- A wind flow adjusting valve is provided allowing the intensity of air blow to be adjusted.

Safety

- The static electricity removal device is equipped with an abnormal conditions surveillance function, and a lamp will light up when an abnormality occurs, so conditions can be checked easily.

Specifications

| | |
|-------------------------------|---|
| Model No.: | IPC-A3 |
| Dust Collection Method: | Self-adhesive Polyurethane GEL sheets and paper pack filter |
| Input Voltage: | 24V DC ±5% (Included AC adapter: 100~240V AC, 50/60Hz) |
| Power Output: | 22 W |
| Consumption Current: | 900 mA |
| Protection Feature: | Overcurrent protective fuse (1A/125V) |
| Air Flow: | 1.13 m ³ / min.(Fan) |
| Static Pressure: | 460 Pa (Fan) |
| Air Pressure: | 0.1~0.5 MPa (Use clean air) |
| Air Hose: | O/D φ 10 mm x I/D φ 6.5 mm |
| Air Consumption: | Approx. 315 L/min. (0.3 MPa, Continuous operation mode) |
| Working Temperature/ Humidity | Range: 5~40°C / 35~65 %RH (No dew condensation or freezing) |
| Dimensions: | W 420 x D 300 x H 411 mm (Protrusions are not measured) |
| Weight: | 9.5 kg |
| Accessory: | Self-adhesive Polyurethane GEL sheet plate 2pcs. Power adapter AD24-IT19 (Input: 100~240V AC, Output: 24V DC) Exhaust duct flange 1 pc. (For ø75 mm) Paper pack filter 6 pcs. Instruction Manual (this manual) 1 copy |
| Consumable parts: | Adhesive polyurethane gel sheet / Needle electrode / Paper pack filter |

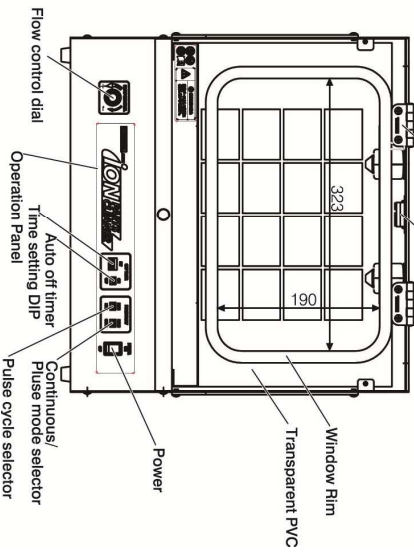
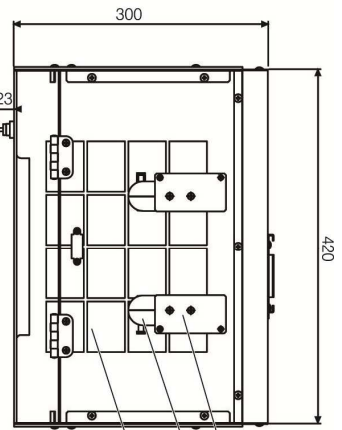
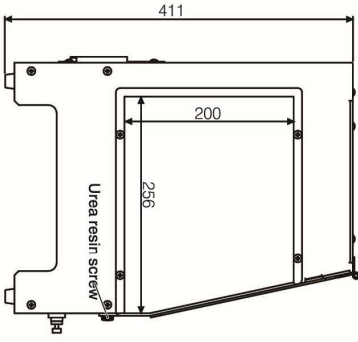
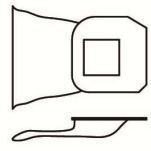
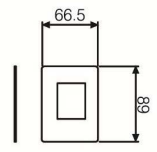
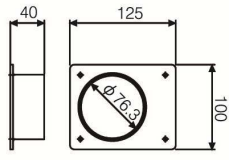
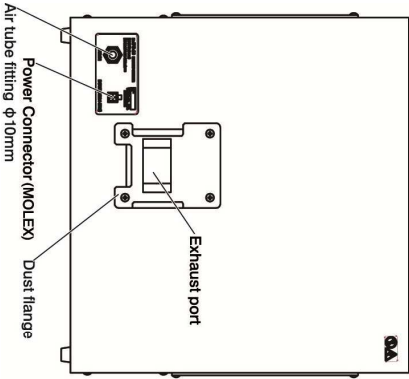
Specifications (Ionizer)

| | |
|------------------------|----------------------------------|
| Model No.: | N-3 |
| Ion Generation Method: | High voltage AC corona discharge |
| Output voltage: | ± 5.6 kV AC (p-p) |
| Alarm output: | High voltage alarm (Red LED) |



Ionizing performance (as reference)




| | | |
|-----------------------|----------|--|
| N-3 (individual unit) | | Measurement conditions: |
| Decay time (+) | 0.7 sec. | Distance: 150mm from the nozzle of ionizer |
| Decay time (-) | 0.7 sec. | Air pressure: 0.3 MPa |
| Ion balance | -8.0V | Air flow: 210L/min |

External View



Installation Area

|  WARNING | |
|--|--|
|  Prohibited | <p>Do not use this product in the following areas. Otherwise, there is a risk of an explosion or fire.</p> <ul style="list-style-type: none"> • Environments that require anti-explosion measures. • Areas where corrosive gases or flammable or explosive gases are used. |

|  CAUTION | |
|--|---|
|  Remember | <p>Take into consideration the conditions surrounding the installation area.</p> <ul style="list-style-type: none"> • Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. • Do not install the unit where it may be exposed to water, oil, chemicals, etc. • Do not install the unit where it may be exposed to marked vibrations or shock • The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | <p>Do not use this product where it will be directly exposed to high temperatures or high humidity. Doing so could cause the burn or breakdown of motor.</p> |

Installation Area

Install the unit in an indoor location not exposed to wind, rain, or direct sunlight.

Avoid using the unit in areas where water, oil, or condensation will get on it or where there will be sudden temperature changes.

Avoid using the unit where it will be exposed to strong vibration or impacts.

This unit has an exhaust outlet on the backside, bottom of the unit.

Install this unit so that the exhaust outlet is 10 cm or more away from the wall, etc. because the normal exhaust function will be impaired, causing a decrease in the dust collection capability, if the unit is installed with the back of the unit against a wall, etc.

Ambient temperature and humidity

Use in a temperature range of 5 °C to 40 °C. Use the unit in a humidity range of 35 to 65%.

Atmosphere

Do not operate the unit in environments where anti-explosion measures are required.

Do not operate the unit in areas where corrosive gases or flammable or explosive gases are used.

In addition, use the unit in a well ventilated area with a normal air atmosphere.

Input voltage and compressed clean air

This unit uses 24V DC input voltage and 0.1 MPa to 0.5 MPa compressed air for the cleaning air.

Install the unit where it can be connected to wiring and piping that meet these specifications.

Maintenance space

Space for maintenance and inspections should be maintained around the unit.

In particular, the space in front of the unit required for daily maintenance should be obtained.

■ Installation

Installation Method

When installing this unit, place it on a level, strong, and smooth, flat bench.

| ⚠ WARNING | |
|------------------|---|
| ● Remember | To keep the unit from falling over, do not climb on the working surface or place heavy objects on it. |
| ● Remember | When installing the IPC-A3, place it on a level, strong, and smooth, flat bench. It can be damaged and malfunction if it falls. |
| △ Caution | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being installed or moved.· Make sure the product does not fall over while it is being installed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

Electrical power wiring

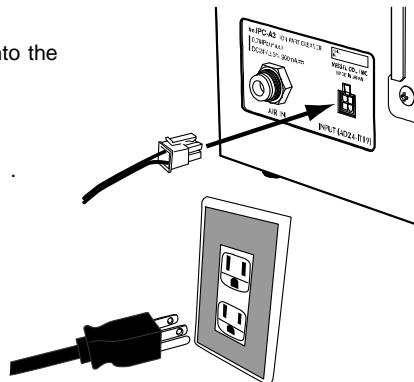
| ⚠ WARNING | |
|------------------|---|
| ● Remember | Use IPC-A3 only with the specific AC adapter. Otherwise, there is a risk of fire or electric shock. |
| ● Remember | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before performing any wiring. |

Connector connection

Insert the included special AC adapter connector into the jack on the back of the body.

Power Supply Adapter

Use the accompanying power adapter (AD24-IT19) . AC adapter is equipped with 3-pin plug. Connect this to a power outlet that has a ground terminal.



Compressed air piping

⚠ CAUTION

● Remember

Be sure to use an air hose with sufficient pressure resistance performance. A hose without pressure resistance could burst or leak air.

Compressed air used

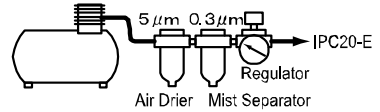
This unit requires that clean compressed air be supplied for the dust removal air blowing.

Supply air within the pressure range of 0.1 to 0.5 MPa.

Use an air drier to remove the moisture from the air. (The dew point temperature is -15°C or lower.)

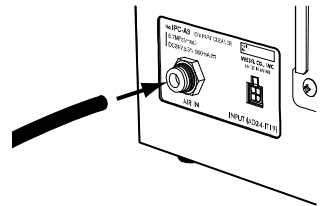
Use mist separator (0.3 μm) to remove the impurities from the air.

Supply air within the temperature range of 5 to 40°C



Hose used

Use an air hose with sufficient pressure resistance performance (outside diameter 10 mm x inside diameter 6.5 mm).



Hose connection

A one-touch hose coupling (air supply port) is provided on the lower left at the back of the body. Connect the air hose to this.

Flow rate adjustment

A flow rate adjusting valve (FLOW CONTROL) is provided on the lower right at the front of the body. Adjust the rate of the discharged air as necessary.



Flange

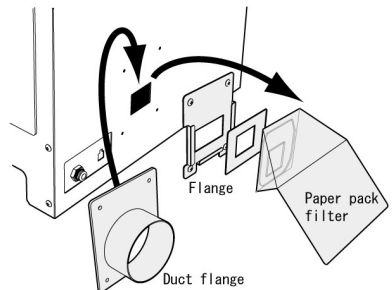
A paper pack filter can be attached to the exhaust port on the rear side (standard).

A $\varnothing 75\text{mm}$ (I/D) exhaust duct can be connected by exchanging it for a duct flange.

Pre-use inspection

Pre-use product inspection

Before using the product, make sure there are no problems with it, the power adapter, etc. Make sure there is no damage, and no loose of screws or connectors.



■ Operation

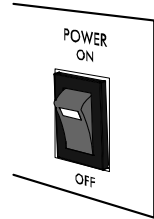
Operation

Switch

This is used to start and stop the unit.

When switched to [ON], the power is turned on, the switch LED lights up, and operation starts.

When switched to [OFF], the power is turned off and operation stops.



Front acrylic window

Open and close the acrylic window according to the working conditions.

Please note that the best performance is obtained when the acrylic window is closed, so when working with the window open, check to make sure of the air pressure suitable for the specific work.

⚠ CAUTION

△ Caution

Be careful not to get your finger caught when the front acrylic window is opened or closed.

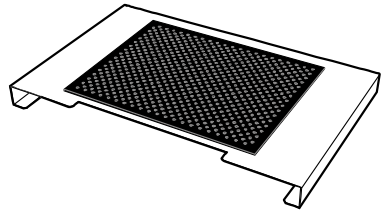
Adhesive gel sheets

The adhesive gel sheets capture the dust blown off by the ionizing nozzle.

The self-adhesive polyurethane gel sheets are attached to stainless steel plates.

Remove the protective surface film before using the unit.

Refer to the maintenance section of this manual in regard to the exchange procedure for the adhesive gel sheets.



⚠ CAUTION

△ Caution

If the adhesive gel sheets are deformed or broken while performing work, continuing to use the product in this condition is hazardous, so make sure the adhesive gel sheets are properly maintained.
Replacing deformed or damaged adhesive gel sheets is highly recommended.

● Remember

This unit is designed for light work, such as handwork, so do not place heavy objects on top of the adhesive gel sheets or forcefully strike it.
Doing so could deform or break the adhesive gel sheets.

Dust conditions

Observe the following conditions for the dust that is handled.

- This unit is for use with regular dust. It can be used to blow off dry fine dust.
 - Absolutely do not vacuum up wet dust, liquids like water, oil or spray mist.
 - Also absolutely do not vacuum up dust containing explosive, flammable, or combustible substances.

- Do not vacuum up adhesive or corrosive substances.






- To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:
 - Items that are on fire: Cigarette butts, matches, and other sources of fire.
 - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc.
 - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances.
 - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances.
 - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc.
 - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc.
 - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc.

- Do not vacuum up flammable dust or dust containing flammable substances.
 - Caution must be taken in particular with non-combustible substances that change into combustible substances when worked on, etc.
 - It is very difficult to determine if such substances are changing into combustible dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. The user is strongly advised to stop using the unit if a substance is determined to be combustible dust.

- Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances that change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail.
 - If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials.
 - Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail.



- Absolutely do not vacuum up damp dust or any moisture such as water or oil.
 - Unforeseen malfunctions or accidents could occur.






■ Operation

|  WARNING | |
|--|---|
|  Vacuuming Up Prohibited | Absolutely do not vacuum up sparks; flammable, explosive, or combustible dust; or dust containing or mixed with explosive, flammable, or combustible substances. |
|  Vacuuming Up Prohibited | Absolutely do not vacuum up explosive, flammable, or combustible liquids or dust wet with such liquids, or dust mixed with or containing such liquids. |
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. Unforeseen malfunctions or accidents could occur. |
|  Joint Use Prohibited | Use in the same unit of substances that change into a hazardous substance when mixed, is prohibited. Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances the change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail. If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials. Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. |

Ionizers / Sensor

When a work piece is held below the sensor, the sensor detects the work piece and releases the solenoid valve. This initiates the ion air blow from two pieces of pinpoint nozzle ionizers.

|  WARNING | |
|--|---|
|  Unplug the power cord | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before inspecting the ionizers. |

|  CAUTION | |
|---|---|
|  Disassembly Prohibited | Do not remodel or disassemble the IPC-A3. The IPC-A3 contains high voltage parts. |
|  Prohibited | Do not block openings such as the intake vent and the discharge vent. Doing so could cause a malfunction. |
|  Prohibited | Do not insert metal or foreign matters into the unit openings. Doing so could result in electrical shock accidents or equipment breakdown. |
|  Unplug power cable | Before long periods of disuse, unplug the power cable. Leaving the power on during periods of disuse can result in electric shock, breakdown and fire from degraded insulation. |

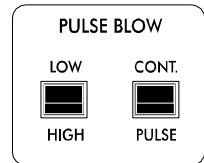
High Voltage Alarm Function

When the piezoelectric high voltage transformer in the ionizer detects an overload and shuts down the power output, the red indicator on the top of the ionizer will light and operation will stop.
 If the alarm lamp turns ON, turn the power OFF immediately with the power switch.
 If foreign matter is stuck on the needle electrode, clean the needle and then turn the power ON again.
 Confirm that the alarm lamp does not light up.
 If the alarm lights up when the power is turned ON, contact your certified sales agent for inspections to prevent accidents.

Pulse Air Operation

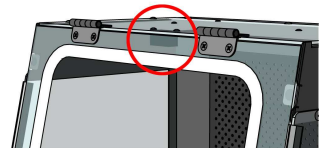
The pulse air operation mode provides an intermittent air blow, making it possible to obtain good and efficient dust removal.

1. Turn the pulse air operation mode to "PULSE."
2. The pulse width switch can be used to suit the usage required.
 [LOW]: Low-speed mode (appropriate for the removal of large-grained dust)
 [HIGH]: High-speed mode (appropriate for the removal of small-grained dust, such as dirt)



Sensor

The sensor affixed to the front of the top inside surface of the cabinet detects work pieces.
 Using the OFF TIMER switch, you can change the time intervals for the ion air blow.



Off-timer Function

When the off-timer function is on, and the sensor detects a work piece, the air blow occurs only for the time period set, and turns off automatically.

• When the off-timer function is not activated

The air blow is on as long as the sensor detects a work piece in the unit.
 The air blow will stop when the work piece is removed from the sensor's detection area.

Turn the off timer mode switch to [OFF].

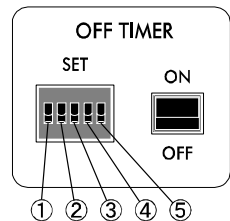
• When the off-timer function is activated

After the sensor detects a work piece in the unit, the air blow will on only for the time period set.

1. Turn the off-timer mode switch to [ON].
2. Use the DIP switches to set the air blow time period.

In order to set the time period desired, turn the appropriate DIP switch on (up position).

| Switch① | Switch② | Switch③ | Switch④ | Switch⑤ |
|--------------|--------------|--------------|---------------|---------------|
| About 1 sec. | About 3 sec. | About 5 sec. | About 10 sec. | About 30 sec. |



Caution: Do not turn all of the DIP switches off, or turn multiple DIP switches on.
 In some cases this may result in unexpected operations.

■ Operation

Adjusting the sensitivity of the sensor

Set the detection range of the sensor by adjusting the volume on the motherboard installed in the cabinet.

This adjustment is useful when employing a platform above the adhesive gel sheet plate.

When the volume control is turned to the right, using a Phillips head screwdriver, the detection range (distance between the sensor and the work piece) is increased, and decreased when it is turned to the left.



⚠ CAUTION

● Remember

The sensitivity of the sensor is factory-adjusted. Do not change this setting unless it is absolutely necessary. Using undue power to turn the volume control may cause damage to the unit, so be very careful when making adjustments.

■ Maintenance

Cleaning the adhesive gel sheets

When dust has collected on the adhesive gel sheet, remove both the adhesive sheet and the mounting plate and wash them.

The adhesive strength of the adhesive gel sheet will be restored after the sheet is dried.

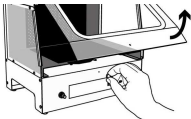
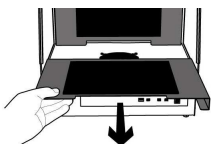
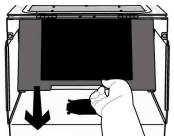
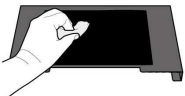
When the adhesive strength of the adhesive gel sheet is not restored after the sheet is cleaned, it is time to replace the sheet, so request a replacement adhesive gel sheet.

When removing the mounting plate for the adhesive gel sheet, follow the directions exactly as shown below.

⚠ CAUTION

● Remember

When removing the mounting plate for the adhesive gel sheet, be careful not to cut your hand on the edges of the plate.

- | | | |
|--|--|--|
| 1. Turning the switch off | Turn off the power switch, and always confirm that the fan has stopped completely. | |
| 2. Opening the front cover | Loosen the urea screw on the front, and pull the front window upward. |  |
| 3. Removing the adhesive gel sheet plate (lower section) | Remove the adhesive gel sheet plate from the bottom of the interior of the cabinet. * Magnets are attached on the back of the plate. Please lift the plate a little and pull out. |  |
| 4. Removing the adhesive gel sheet plate (rear surface section) | Remove the adhesive gel sheet plate from the rear surface section of the cabinet. |  |
| 5. Washing the adhesive gel sheet | After washing the adhesive gel sheet in water, dry it out completely. The drying process can be hastened by wiping up any extra moisture from the sheet with a dry clean cloth, etc. |  |
| 6. Attaching the adhesive gel sheet plate (back surface section) | First, replace the cleaned adhesive gel sheet plate in the rear surface section of the cabinet. Attach the plate, while being careful not to let the plate touch the N-3 units. | |
| 7. Attaching the adhesive gel sheet plate (lower section) | Next, attach the adhesive gel sheet plate in the lower section of the cabinet. | |
| 8. Closing the front cover | Close the front window, and tighten the urea screw. | |

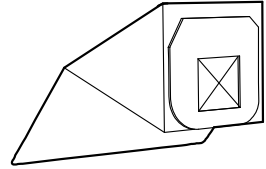
■Maintenance

Replacing the paper pack filter

There is an exhaust port on the back of the body. The flange for the paper pack filter is attached at the time of shipment.

Depending on your situation, please replace the paper pack filter provided.

Please purchase replacement parts when the paper pack filter is gone. Paper pack filter IPC-A3F (6-pcs set)



Maintenance of Ionizer

| ⚠ CAUTIONS | |
|-----------------------------|---|
| ⊘ DO NOT DISASSEMBLE | Do not perform any maintenance on the N-3 except for maintenance and replacement of the electrode. |
| ● REMEMBER | Before cleaning the electrode, shut off power and air supply at the source and disconnect the air hose. |
| ⊘ PROHIBITED | Do not wipe the ionizer with detergent or solvent. Substances of the sort can cause cracking and result in electric shock or breakdown. |
| ⊘ DO NOT WET | Do not wet the N-3. Exposure to moisture can result in electric shock or breakdown. |

Dirt and wear in the needle electrode can deteriorate the performance of this ionizer. Clean the electrode every 56 hours of use (= approximately 7 days based on calculation of use for 8 hours per day). If the electrode is not kept in an optimum condition, the performance will drop and product life might shorten as well.

If the unit is used for a long period of time, the tip of the needle electrode may wear out and consequently static erasing efficiency will decrease. In such case, replace the needle electrode with a new one. It is recommended that the needle electrode be replaced every 1,200 hours of operation (= approximately 6 months based on calculation of use for 8 hours per day).

Keep the unit in good working condition by measuring its ion balance and ion output regularly as a means for checking for a drop in capacity.

How to Clean the Casing

Remove the dirt over the casing with dry, soft cloth.

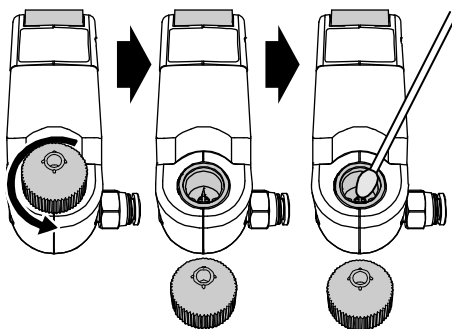
Never apply alcohol / thinner solvent / detergent, because the surface-active agent included in the detergent etc., may deteriorate the ionizing performance.

How to Clean the Electrode Needle

Power supply to the N-3 should be shut off before cleaning the needle electrode.

Please follow the instructions below:

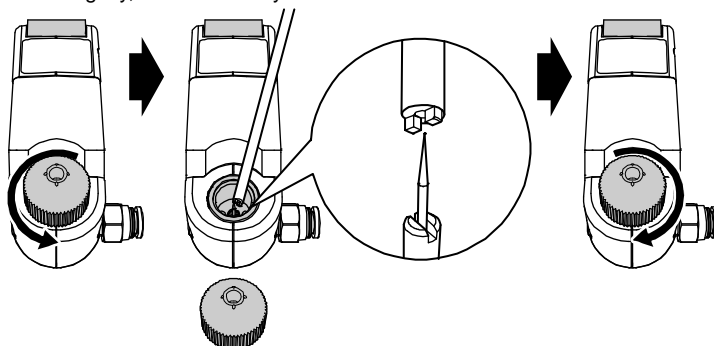
- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Clean the needle electrode
Clean the tip of the needle with a cotton stick. If it is especially dirty, use a few drops of alcohol-wet cloth.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



How to Replace the Electrode Needle

Replacement Needle Electrode is available as option: Model code GN-H

- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Replace the needle electrode
Remove the needle electrode with a dedicated screwdriver separately available. Attach the new needle electrode on the terminal. Be careful not to pick your fingers with the needle electrode.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



Checking Ionizer's Performance

Measure ion balance and decay time regularly by a charge plate monitor.



Reference: IEC61340-5-1, 2 ANSI EOS/ESD S3.1

Adjustment

The N-3 does not have an ion balance adjustment function. The ionizer is designed to maintain the ion balance with a circuit board. If the ion balance is out of the specified range, please contact us.

■ Storage

Storage





|  CAUTION | |
|---|---|
|  Prohibited | <p>Do not store the IPC-A3 in the following environments:</p> <ul style="list-style-type: none"> • Where excessive vibration or shock is applied to the unit. • Where temperature and humidity are outside specified ranges. • Where dew condensation occurs. • Where the sharp temperature fluctuations occurs. • Where is inflammable and/or there is a risk of explosion due to existence of combustible solvent, dust etc. • Where there is heavy dust or smoke • Where possibly wet by water, oil, chemicals, etc. • Where strong electric or magnetic fields are generated. |

■ Troubleshooting

Troubleshooting

Using the IPC-A3 when in anything but proper working condition can cause product damage or personal accidents.


Therefore, request servicing promptly if such trouble occurs. For servicing, contact your local distributor.

|  CAUTIONS for TROUBLESHOOTING | |
|--|---|
|  Prohibited | <p>Do not use the IPC-A3 in the following situations. It can result in fire or electric shock.</p> <ul style="list-style-type: none"> * If the power cable is damaged or hot * If the IPC-A3 has been damaged because of dropping or shock. |
|  Shut power off | <p>Unplug power cable and stop supplying compressed air to the IPC-A3 if any defect is recognized.</p> |
|  Do not disassemble | <p>Never disassemble the IPC-A3.</p> |

■ Removal

Removal

When removing this product, first make sure the surrounding area and other workers are safe.

|  CAUTION | |
|---|---|
| ● Unplug power cable | To prevent electrical shock accidents and operational mistake accidents during the product removal work, be sure to unplug the power cord from the outlet. |
| ● Remember | When disconnecting a compressed air hose, be sure to first shut off the source of the compressed air. In addition, the compressed air inside the air hose could spray out when the air hose is disconnected, so keep the hose away from the face, etc., when disconnecting it. |
| ● Remember | To keep the unit from falling over, do not climb on the hood or dust collector or place heavy objects on them. |
| ● Remember | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being removed or moved.· Make sure the product does not fall over while it is being removed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

■ Disposal

Disposal

When disposing of this product, dispose of it properly in accordance with the pertinent laws and local regulations.

■ Replacement Parts

Replacement Parts

There are 3 consumable parts that can be replaced by the customer.

Check the model and lot No. and then purchase the parts through the store where the product was purchased.

- Adhesive gel sheet No. IPC-A4G
- Electrode Needle No. GN-H (Optional dedicated needle electrode screwdriver G-7DR for replacement of needle electrode)
- unwoven fan filter IPC-A3F (6-pc set)

For information about the replacement procedure, refer to the "Maintenance" item in this manual.

LIMITED WARRANTY:

VESSEL expressly warrants that for a period of one (1) year from the date of purchase, VESSEL static erasers will be free of defects in material (parts) and workmanship (labour). Within the warranty period, Defects occurring will be repaired or products will be replaced at VESSEL's option and expense, if VESSEL receives notice during the warranty period. Defective products must be returned to VESSEL Osaka Japan with proof of purchase date. And if your unit is out of warranty, VESSEL will quote repair charges necessary to ship your unit freight prepaid to where you have originally purchased.

WARRANTY EXCLUSIONS:

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING FITNESS AND MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH IS SPECIFICALLY DISCLAIMED.

The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean, or repair products.

LIMIT OF LIABILITY:

This electronic static eraser use high voltage corona discharge and should not be used in or near flammable or explosive environments. In no event will VESSEL or any seller is responsible or liable for any injury, loss or damage, direct or consequential, whether based in tort or contract arising out of the use of or the inability to use the product. Fulfillment of VESSEL's warranty obligations will be Customer's exclusive remedy and VESSEL's and Seller's limit of liability for any breach of warranty or otherwise. Before using this unit, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.

| | | |
|----------|------------------------------------|--|
| Model | IPC-A3 | |
| Warranty | (1) year from the date of purchase | |
| Customer | Name | |
| | Address | |
| | Tel. No. | |
| Dealer | Name/Address/Tel. No. | |

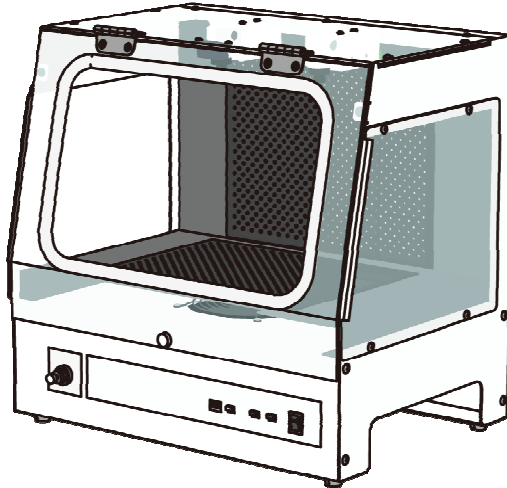
Manufactured by:**VESSEL Co., Inc.**

17-25, Fukae-Kita 2-chome,
Higashinari-ku, Osaka 537-0001 Japan
Tel : +81 6 6976 7778 Fax : +81 6 6972 9441
E-mail : export@vessel.co.jp
URL : <http://www.vessel.jp>

Product of Japan
17041700.00006

ION PARTS CLEANER

No. IPC-A3



Application

This product is used to remove fine powders and dust adhered due to static electricity and to eliminate static electricity from parts that are negatively affected by static electricity.

An ionized pulse of air blows off the debris effectively. The blown-off debris is collected by the self-adhesive of Polyurethane GEL sheets and a paper pack filter.

Table of Contents

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■ For Your Safety



Safety Precautions

Please read this manual carefully before using this product.




Use this manual to take responsibility to ensure everyone that is using this product is doing so safely.




After carefully reading this manual, keep it in a protected place where it can be referred to at any time.










- The precaution items shown here are divided into two levels according to the level or risk.

| | |
|---|--|
|  WARNING | Indicates that improper handling can lead to serious injury or even death. |
|  CAUTION | Indicates that improper handling can lead to minor injury and property damage. |





- Example Pictorial Displays

| | |
|---|--|
|  | This symbol indicates a WARNING or CAUTION. |
|  | This symbol indicates a prohibited action. |
|  | This symbol indicates a mandatory required action. |

|  WARNING | |
|---|--|
|  Prohibited | Do not use IPC-A3 for anything other than static electricity elimination or dust removal. |
|  Vacuuming Up Prohibited | <p>To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:</p> <ul style="list-style-type: none"> - Items that are on fire: Cigarette butts, matches, and other sources of fire. - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc. - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances. - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances. - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc. - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc. - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc. |









| | |
|--|--|
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. |
|  Joint Use Prohibited | To prevent fires, absolutely do not make joint use of the following: · When the dust could transform into a hazardous substance when mixed inside the unit. |
|  Prohibited | To prevent fires, use the specified rated power source only. |
|  Painting Prohibited | Use as a painting booth is prohibited. Do not perform painting work in it. |
|  Peering Prohibited | Do not peer into the end of the air nozzle. The sensor will detect your presence and blast out compressed air, which could strike your eyes or face. |
|  Disassembly Prohibited | Do not remove components, or modify or unreasonably disassemble the product. · This product is manufactured in accordance with safety and performance standards, so removing components or modifying the product is dangerous. · Depending on the type of trouble, the customer might not be able to handle it, so always contact the store where the product was purchased. |
|  Remember | Be sure to observe the following to prevent electrical shock accidents: · Be sure to unplug the power cord from the outlet before performing any wiring. · Be sure to ground the ground wire. |
|  Remember | Discard dust from the filter pack regularly without letting it accumulate. Depending on the conditions, dust could cause a fire or explosion hazard. |
|  Remember | Be sure to unplug the power cord from the outlet before performing any maintenance or inspection work. |

 **CAUTION**

| | |
|---|---|
|  Remember | Take into consideration the conditions surrounding the installation area. · Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. · Do not install the unit where it may be exposed to water, oil, chemicals, etc. · Do not install the unit where it may be exposed to marked vibrations or shock · The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | To prevent fires, conduct an inspection after work is completed. |
|  Remember | Store this manual close to the product where it can be referred to quickly. |
|  Prohibited | Do not install, use, or service this product until you understand the contents in this manual. |

■ For Your Safety

The following prohibition and caution symbols are displayed on the product.
Example Pictorial Displays

| | | | |
|---|--|---|---|
|  | Vacuuming up sparks or flames is prohibited. |  | Vacuuming up flammable or combustible substances is prohibited. |
|  | Vacuuming up explosive substances is prohibited. |  | Disassembly is prohibited. |
|  | Be careful of electric shock. |  | Be careful of rotating parts. |
|  | Carefully read the instruction manual. |  | Peeking into the tip of Air Nozzle is prohibited. |

■ Features

A compact dust collector unit equipped with a static electricity removal device

- The work table and the compact dust collector have been unified. This static electricity removal equipment is appropriate for onsite cell production systems.

Dust collector hood

- A transparent window has been included on the front of the hood, which can be opened and closed, ensuring a scatter-proof installation with a good view.
- The openings to the cabinet have been designed to ensure that work piece can enter and exit smoothly.
- The adhesive polyurethane gel sheet is attached with magnets, making it easy to remove for cleaning and replacement.
- A paper pack filter or a duct hose can be attached to the exhaust port on the rear side (standard).

The static electricity removal device

- This product is equipped with two air-nozzle type ionizers. The air nozzles extend from the top panel within the hood downward.
- The ion air that comes from the ionizers eliminate the static electricity and remove dust at the same time.
- When you take a work piece in your hand and insert it into the hooded space, a sensor is activated and the air blow is initiated automatically.
- Intermittent air blows off dust adhered to a work piece by vibrating it.
- A wind flow adjusting valve is provided allowing the intensity of air blow to be adjusted.

Safety

- The static electricity removal device is equipped with an abnormal conditions surveillance function, and a lamp will light up when an abnormality occurs, so conditions can be checked easily.

Specifications

| | |
|-------------------------------|---|
| Model No.: | IPC-A3 |
| Dust Collection Method: | Self-adhesive Polyurethane GEL sheets and paper pack filter |
| Input Voltage: | 24V DC ±5% (Included AC adapter: 100~240V AC, 50/60Hz) |
| Power Output: | 22 W |
| Consumption Current: | 900 mA |
| Protection Feature: | Overcurrent protective fuse (1A/125V) |
| Air Flow: | 1.13 m ³ / min.(Fan) |
| Static Pressure: | 460 Pa (Fan) |
| Air Pressure: | 0.1~0.5 MPa (Use clean air) |
| Air Hose: | O/D φ 10 mm x I/D φ 6.5 mm |
| Air Consumption: | Approx. 315 L/min. (0.3 MPa, Continuous operation mode) |
| Working Temperature/ Humidity | Range: 5~40°C / 35~65 %RH (No dew condensation or freezing) |
| Dimensions: | W 420 x D 300 x H 411 mm (Protrusions are not measured) |
| Weight: | 9.5 kg |
| Accessory: | Self-adhesive Polyurethane GEL sheet plate 2pcs. Power adapter AD24-IT19 (Input: 100~240V AC, Output: 24V DC) Exhaust duct flange 1 pc. (For ø75 mm) Paper pack filter 6 pcs. Instruction Manual (this manual) 1 copy |
| Consumable parts: | Adhesive polyurethane gel sheet / Needle electrode / Paper pack filter |

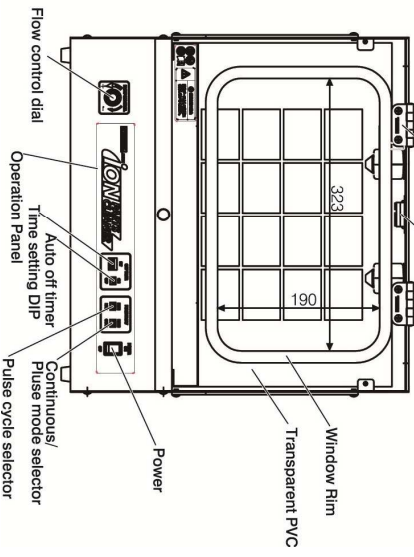
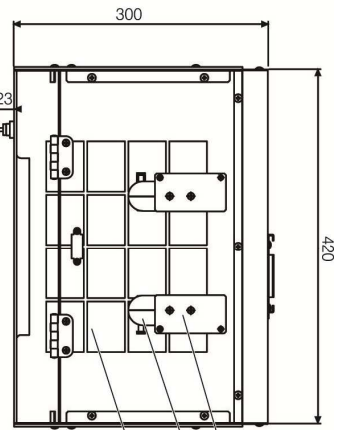
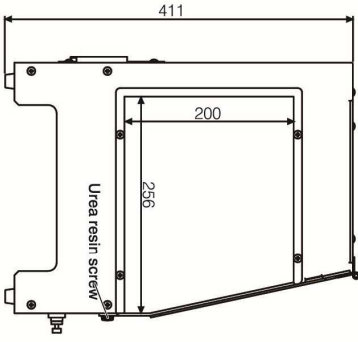
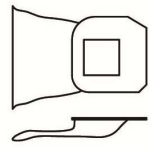
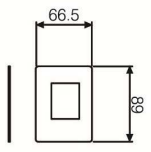
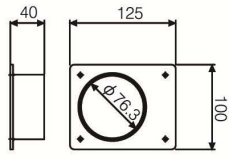
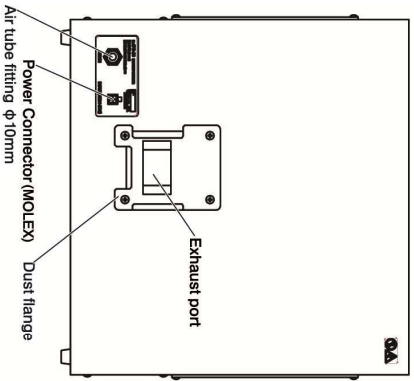
Specifications (Ionizer)

| | |
|------------------------|----------------------------------|
| Model No.: | N-3 |
| Ion Generation Method: | High voltage AC corona discharge |
| Output voltage: | ± 5.6 kV AC (p-p) |
| Alarm output: | High voltage alarm (Red LED) |


Ionizing performance (as reference)




| | | |
|-----------------------|----------|--|
| N-3 (individual unit) | | Measurement conditions: |
| Decay time (+) | 0.7 sec. | Distance: 150mm from the nozzle of ionizer |
| Decay time (-) | 0.7 sec. | Air pressure: 0.3 MPa |
| Ion balance | -8.0V | Air flow: 210L/min |

External View



Installation Area

|  WARNING | |
|--|--|
|  Prohibited | <p>Do not use this product in the following areas. Otherwise, there is a risk of an explosion or fire.</p> <ul style="list-style-type: none"> • Environments that require anti-explosion measures. • Areas where corrosive gases or flammable or explosive gases are used. |

|  CAUTION | |
|--|---|
|  Remember | <p>Take into consideration the conditions surrounding the installation area.</p> <ul style="list-style-type: none"> • Install the unit in an indoor location, not exposed to wind, rain, or direct sunlight. • Do not install the unit where it may be exposed to water, oil, chemicals, etc. • Do not install the unit where it may be exposed to marked vibrations or shock • The temperature range should be 5°C to 40°C. Use the unit in a humidity range of 35 to 65%. |
|  Remember | <p>Do not use this product where it will be directly exposed to high temperatures or high humidity. Doing so could cause the burn or breakdown of motor.</p> |

Installation Area

Install the unit in an indoor location not exposed to wind, rain, or direct sunlight.

Avoid using the unit in areas where water, oil, or condensation will get on it or where there will be sudden temperature changes.

Avoid using the unit where it will be exposed to strong vibration or impacts.

This unit has an exhaust outlet on the backside, bottom of the unit.

Install this unit so that the exhaust outlet is 10 cm or more away from the wall, etc. because the normal exhaust function will be impaired, causing a decrease in the dust collection capability, if the unit is installed with the back of the unit against a wall, etc.

Ambient temperature and humidity

Use in a temperature range of 5 °C to 40 °C. Use the unit in a humidity range of 35 to 65%.

Atmosphere

Do not operate the unit in environments where anti-explosion measures are required.

Do not operate the unit in areas where corrosive gases or flammable or explosive gases are used.

In addition, use the unit in a well ventilated area with a normal air atmosphere.

Input voltage and compressed clean air

This unit uses 24V DC input voltage and 0.1 MPa to 0.5 MPa compressed air for the cleaning air.

Install the unit where it can be connected to wiring and piping that meet these specifications.

Maintenance space

Space for maintenance and inspections should be maintained around the unit.

In particular, the space in front of the unit required for daily maintenance should be obtained.

■ Installation

Installation Method

When installing this unit, place it on a level, strong, and smooth, flat bench.

| ⚠ WARNING | |
|------------------|---|
| ● Remember | To keep the unit from falling over, do not climb on the working surface or place heavy objects on it. |
| ● Remember | When installing the IPC-A3, place it on a level, strong, and smooth, flat bench. It can be damaged and malfunction if it falls. |
| △ Caution | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being installed or moved.· Make sure the product does not fall over while it is being installed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

Electrical power wiring

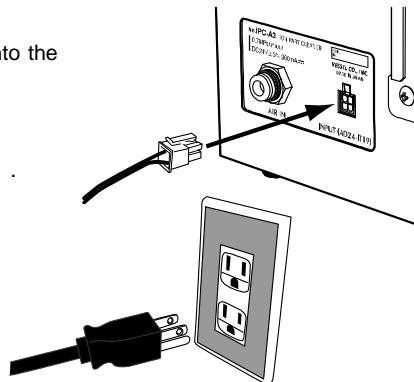
| ⚠ WARNING | |
|------------------|---|
| ● Remember | Use IPC-A3 only with the specific AC adapter. Otherwise, there is a risk of fire or electric shock. |
| ● Remember | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before performing any wiring. |

Connector connection

Insert the included special AC adapter connector into the jack on the back of the body.

Power Supply Adapter

Use the accompanying power adapter (AD24-IT19) . AC adapter is equipped with 3-pin plug. Connect this to a power outlet that has a ground terminal.



Compressed air piping

⚠ CAUTION

● Remember

Be sure to use an air hose with sufficient pressure resistance performance. A hose without pressure resistance could burst or leak air.

Compressed air used

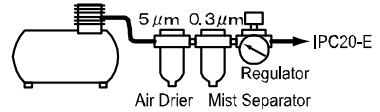
This unit requires that clean compressed air be supplied for the dust removal air blowing.

Supply air within the pressure range of 0.1 to 0.5 MPa.

Use an air drier to remove the moisture from the air. (The dew point temperature is -15°C or lower.)

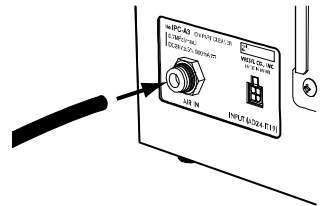
Use mist separator (0.3 μm) to remove the impurities from the air.

Supply air within the temperature range of 5 to 40°C



Hose used

Use an air hose with sufficient pressure resistance performance (outside diameter 10 mm x inside diameter 6.5 mm).



Hose connection

A one-touch hose coupling (air supply port) is provided on the lower left at the back of the body. Connect the air hose to this.

Flow rate adjustment

A flow rate adjusting valve (FLOW CONTROL) is provided on the lower right at the front of the body. Adjust the rate of the discharged air as necessary.



Flange

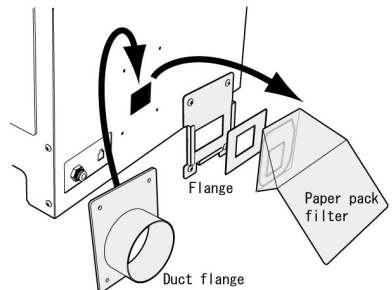
A paper pack filter can be attached to the exhaust port on the rear side (standard).

A $\varnothing 75\text{mm}$ (I/D) exhaust duct can be connected by exchanging it for a duct flange.

Pre-use inspection

Pre-use product inspection

Before using the product, make sure there are no problems with it, the power adapter, etc. Make sure there is no damage, and no loose of screws or connectors.



■ Operation

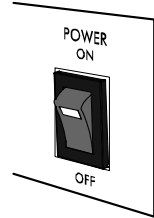
Operation

Switch

This is used to start and stop the unit.

When switched to [ON], the power is turned on, the switch LED lights up, and operation starts.

When switched to [OFF], the power is turned off and operation stops.



Front acrylic window

Open and close the acrylic window according to the working conditions.

Please note that the best performance is obtained when the acrylic window is closed, so when working with the window open, check to make sure of the air pressure suitable for the specific work.

⚠ CAUTION

△ Caution

Be careful not to get your finger caught when the front acrylic window is opened or closed.

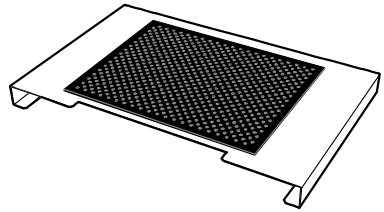
Adhesive gel sheets

The adhesive gel sheets capture the dust blown off by the ionizing nozzle.

The self-adhesive polyurethane gel sheets are attached to stainless steel plates.

Remove the protective surface film before using the unit.

Refer to the maintenance section of this manual in regard to the exchange procedure for the adhesive gel sheets.



⚠ CAUTION

△ Caution

If the adhesive gel sheets are deformed or broken while performing work, continuing to use the product in this condition is hazardous, so make sure the adhesive gel sheets are properly maintained.
Replacing deformed or damaged adhesive gel sheets is highly recommended.

● Remember






This unit is designed for light work, such as handwork, so do not place heavy objects on top of the adhesive gel sheets or forcefully strike it.
Doing so could deform or break the adhesive gel sheets.

Dust conditions

Observe the following conditions for the dust that is handled.



- This unit is for use with regular dust. It can be used to blow off dry fine dust.
 Absolutely do not vacuum up wet dust, liquids like water, oil or spray mist.
 Also absolutely do not vacuum up dust containing explosive, flammable, or combustible substances.
- Do not vacuum up adhesive or corrosive substances.
- To prevent fires, absolutely do not vacuum up flames, explosive dust, or liquid mist containing dust such as the following:
 - Items that are on fire: Cigarette butts, matches, and other sources of fire.
 - Things containing sparks: A large amount of sparks from grinding, dust that includes cinders, etc.
 - Flammable substances: Gasoline, thinner, benzene, kerosene, materials adhered with or containing oils, cleaning fluids, or flammable substances.
 - Explosive substances: Explosive dust, such as aluminum, magnesium, titanium, and epoxy resin; explosive materials and dust or explosive liquids that can make dust explode depending on the conditions such as particle diameter and concentration; liquid mists or substances adhered with or containing explosive substances.
 - Combustible substances: Combustible dust, combustible liquid mist, or materials adhered with or containing combustible materials, etc.
 - Detrimental substances: Corrosive substances, adhesive substances, liquids containing adhesive substances, gases containing large quantities of detrimental substances, etc.
 - Liquids and liquid mists: Dust containing moisture such as that generated by machine tools, etc.
- Do not vacuum up flammable dust or dust containing flammable substances.
 Caution must be taken in particular with non-combustible substances that change into combustible substances when worked on, etc.
 It is very difficult to determine if such substances are changing into combustible dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. The user is strongly advised to stop using the unit if a substance is determined to be combustible dust.
- Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances that change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail.
 If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials.
 Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail.
- Absolutely do not vacuum up damp dust or any moisture such as water or oil.
 Unforeseen malfunctions or accidents could occur.






■ Operation

|  WARNING | |
|--|---|
|  Vacuuming Up Prohibited | Absolutely do not vacuum up sparks; flammable, explosive, or combustible dust; or dust containing or mixed with explosive, flammable, or combustible substances. |
|  Vacuuming Up Prohibited | Absolutely do not vacuum up explosive, flammable, or combustible liquids or dust wet with such liquids, or dust mixed with or containing such liquids. |
|  Vacuuming Up Prohibited | To prevent an accident or malfunction, absolutely do not vacuum up damp dust or any moisture such as water or oil. Unforeseen malfunctions or accidents could occur. |
|  Joint Use Prohibited | Use in the same unit of substances that change into a hazardous substance when mixed, is prohibited. Even if the dusts are safe when individually handled, they may change into a hazardous substance when mixed together. Caution is especially required for substances the change when mixed, the user is kindly requested to be responsible for his/her verification of the dust in detail. If the safety of mixed dust cannot be determined, absolutely do not use the same machine for both kinds of materials. Since an unexpected problem could occur in the disposal of mixed collected dust, the user is kindly requested to be responsible for his/her verification of the dust in detail. |

Ionizers / Sensor

When a work piece is held below the sensor, the sensor detects the work piece and releases the solenoid valve. This initiates the ion air blow from two pieces of pinpoint nozzle ionizers.

|  WARNING | |
|--|---|
|  Unplug the power cord | To prevent electrical shock accidents, be sure to unplug the power cord from the outlet before inspecting the ionizers. |

|  CAUTION | |
|---|---|
|  Disassembly Prohibited | Do not remodel or disassemble the IPC-A3. The IPC-A3 contains high voltage parts. |
|  Prohibited | Do not block openings such as the intake vent and the discharge vent. Doing so could cause a malfunction. |
|  Prohibited | Do not insert metal or foreign matters into the unit openings. Doing so could result in electrical shock accidents or equipment breakdown. |
|  Unplug power cable | Before long periods of disuse, unplug the power cable. Leaving the power on during periods of disuse can result in electric shock, breakdown and fire from degraded insulation. |

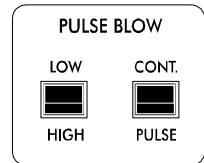
High Voltage Alarm Function

When the piezoelectric high voltage transformer in the ionizer detects an overload and shuts down the power output, the red indicator on the top of the ionizer will light and operation will stop.
 If the alarm lamp turns ON, turn the power OFF immediately with the power switch.
 If foreign matter is stuck on the needle electrode, clean the needle and then turn the power ON again.
 Confirm that the alarm lamp does not light up.
 If the alarm lights up when the power is turned ON, contact your certified sales agent for inspections to prevent accidents.

Pulse Air Operation

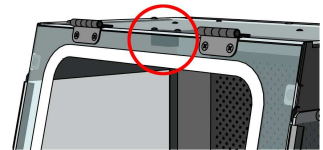
The pulse air operation mode provides an intermittent air blow, making it possible to obtain good and efficient dust removal.

1. Turn the pulse air operation mode to "PULSE."
2. The pulse width switch can be used to suit the usage required.
 [LOW]: Low-speed mode (appropriate for the removal of large-grained dust)
 [HIGH]: High-speed mode (appropriate for the removal of small-grained dust, such as dirt)



Sensor

The sensor affixed to the front of the top inside surface of the cabinet detects work pieces.
 Using the OFF TIMER switch, you can change the time intervals for the ion air blow.



Off-timer Function

When the off-timer function is on, and the sensor detects a work piece, the air blow occurs only for the time period set, and turns off automatically.

• When the off-timer function is not activated

The air blow is on as long as the sensor detects a work piece in the unit.
 The air blow will stop when the work piece is removed from the sensor's detection area.

Turn the off timer mode switch to [OFF].

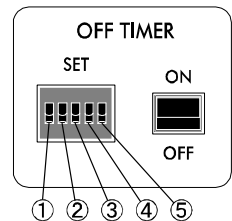
• When the off-timer function is activated

After the sensor detects a work piece in the unit, the air blow will on only for the time period set.

1. Turn the off-timer mode switch to [ON].
2. Use the DIP switches to set the air blow time period.

In order to set the time period desired, turn the appropriate DIP switch on (up position).

| Switch① | Switch② | Switch③ | Switch④ | Switch⑤ |
|--------------|--------------|--------------|---------------|---------------|
| About 1 sec. | About 3 sec. | About 5 sec. | About 10 sec. | About 30 sec. |



Caution: Do not turn all of the DIP switches off, or turn multiple DIP switches on.
 In some cases this may result in unexpected operations.

■ Operation

Adjusting the sensitivity of the sensor

Set the detection range of the sensor by adjusting the volume on the motherboard installed in the cabinet.

This adjustment is useful when employing a platform above the adhesive gel sheet plate.

When the volume control is turned to the right, using a Phillips head screwdriver, the detection range (distance between the sensor and the work piece) is increased, and decreased when it is turned to the left.



⚠ CAUTION

● Remember

The sensitivity of the sensor is factory-adjusted. Do not change this setting unless it is absolutely necessary. Using undue power to turn the volume control may cause damage to the unit, so be very careful when making adjustments.

■ Maintenance

Cleaning the adhesive gel sheets

When dust has collected on the adhesive gel sheet, remove both the adhesive sheet and the mounting plate and wash them.

The adhesive strength of the adhesive gel sheet will be restored after the sheet is dried.

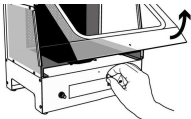
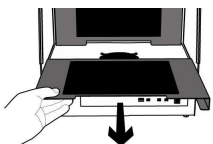
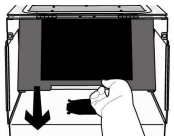
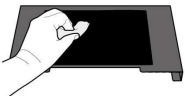
When the adhesive strength of the adhesive gel sheet is not restored after the sheet is cleaned, it is time to replace the sheet, so request a replacement adhesive gel sheet.

When removing the mounting plate for the adhesive gel sheet, follow the directions exactly as shown below.

⚠ CAUTION

● Remember

When removing the mounting plate for the adhesive gel sheet, be careful not to cut your hand on the edges of the plate.

- | | | |
|--|--|--|
| 1. Turning the switch off | Turn off the power switch, and always confirm that the fan has stopped completely. | |
| 2. Opening the front cover | Loosen the urea screw on the front, and pull the front window upward. |  |
| 3. Removing the adhesive gel sheet plate (lower section) | Remove the adhesive gel sheet plate from the bottom of the interior of the cabinet. * Magnets are attached on the back of the plate. Please lift the plate a little and pull out. |  |
| 4. Removing the adhesive gel sheet plate (rear surface section) | Remove the adhesive gel sheet plate from the rear surface section of the cabinet. |  |
| 5. Washing the adhesive gel sheet | After washing the adhesive gel sheet in water, dry it out completely. The drying process can be hastened by wiping up any extra moisture from the sheet with a dry clean cloth, etc. |  |
| 6. Attaching the adhesive gel sheet plate (back surface section) | First, replace the cleaned adhesive gel sheet plate in the rear surface section of the cabinet. Attach the plate, while being careful not to let the plate touch the N-3 units. | |
| 7. Attaching the adhesive gel sheet plate (lower section) | Next, attach the adhesive gel sheet plate in the lower section of the cabinet. | |
| 8. Closing the front cover | Close the front window, and tighten the urea screw. | |

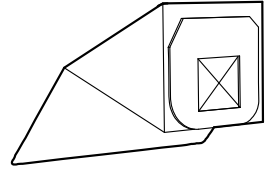
■Maintenance

Replacing the paper pack filter

There is an exhaust port on the back of the body. The flange for the paper pack filter is attached at the time of shipment.

Depending on your situation, please replace the paper pack filter provided.

Please purchase replacement parts when the paper pack filter is gone. Paper pack filter IPC-A3F (6-pcs set)



Maintenance of Ionizer

| ⚠ CAUTIONS | |
|-----------------------------|---|
| ⊘ DO NOT DISASSEMBLE | Do not perform any maintenance on the N-3 except for maintenance and replacement of the electrode. |
| ● REMEMBER | Before cleaning the electrode, shut off power and air supply at the source and disconnect the air hose. |
| ⊘ PROHIBITED | Do not wipe the ionizer with detergent or solvent. Substances of the sort can cause cracking and result in electric shock or breakdown. |
| ⊘ DO NOT WET | Do not wet the N-3. Exposure to moisture can result in electric shock or breakdown. |

Dirt and wear in the needle electrode can deteriorate the performance of this ionizer. Clean the electrode every 56 hours of use (= approximately 7 days based on calculation of use for 8 hours per day). If the electrode is not kept in an optimum condition, the performance will drop and product life might shorten as well.

If the unit is used for a long period of time, the tip of the needle electrode may wear out and consequently static erasing efficiency will decrease. In such case, replace the needle electrode with a new one. It is recommended that the needle electrode be replaced every 1,200 hours of operation (= approximately 6 months based on calculation of use for 8 hours per day).

Keep the unit in good working condition by measuring its ion balance and ion output regularly as a means for checking for a drop in capacity.

How to Clean the Casing

Remove the dirt over the casing with dry, soft cloth.

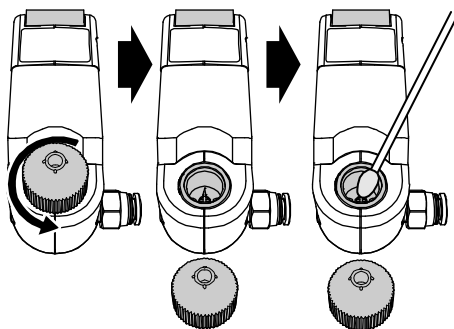
Never apply alcohol / thinner solvent / detergent, because the surface-active agent included in the detergent etc., may deteriorate the ionizing performance.

How to Clean the Electrode Needle

Power supply to the N-3 should be shut off before cleaning the needle electrode.

Please follow the instructions below:

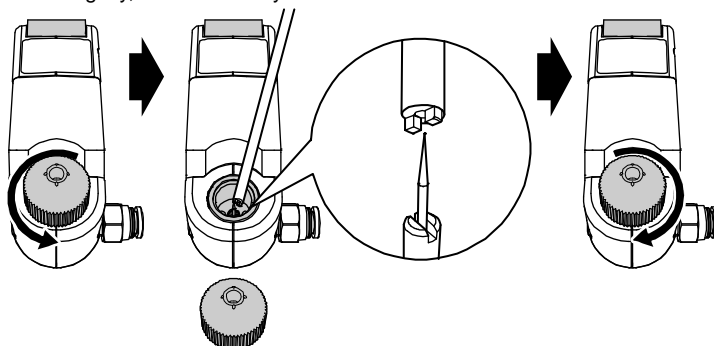
- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Clean the needle electrode
Clean the tip of the needle with a cotton stick. If it is especially dirty, use a few drops of alcohol-wet cloth.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



How to Replace the Electrode Needle

Replacement Needle Electrode is available as option: Model code GN-H

- 1) Remove the Nozzle.
Loosen the nozzle covering the needle electrode.
- 2) Replace the needle electrode
Remove the needle electrode with a dedicated screwdriver separately available. Attach the new needle electrode on the terminal. Be careful not to pick your fingers with the needle electrode.
- 3) Place the Nozzle back in place.
Attach the Nozzle firmly. If it is fastened too tightly, it may be damaged or break, but if it is fastened too lightly, the nozzle may come off while in use.



Checking Ionizer's Performance



Measure ion balance and decay time regularly by a charge plate monitor.
 Reference: IEC61340-5-1, 2 ANSI EOS/ESD S3.1

Adjustment

The N-3 does not have an ion balance adjustment function. The ionizer is designed to maintain the ion balance with a circuit board. If the ion balance is out of the specified range, please contact us.

■ Storage

Storage





|  CAUTION | |
|---|--|
|  Prohibited | Do not store the IPC-A3 in the following environments: <ul style="list-style-type: none"> • Where excessive vibration or shock is applied to the unit. • Where temperature and humidity are outside specified ranges. • Where dew condensation occurs. • Where the sharp temperature fluctuations occurs. • Where is inflammable and/or there is a risk of explosion due to existence of combustible solvent, dust etc. • Where there is heavy dust or smoke • Where possibly wet by water, oil, chemicals, etc. • Where strong electric or magnetic fields are generated. |

■ Troubleshooting

Troubleshooting

Using the IPC-A3 when in anything but proper working condition can cause product damage or personal accidents.


Therefore, request servicing promptly if such trouble occurs. For servicing, contact your local distributor.

|  CAUTIONS for TROUBLESHOOTING | |
|--|--|
|  Prohibited | Do not use the IPC-A3 in the following situations. It can result in fire or electric shock. <ul style="list-style-type: none"> * If the power cable is damaged or hot * If the IPC-A3 has been damaged because of dropping or shock. |
|  Shut power off | Unplug power cable and stop supplying compressed air to the IPC-A3 if any defect is recognized. |
|  Do not disassemble | Never disassemble the IPC-A3. |

■ Removal

Removal

When removing this product, first make sure the surrounding area and other workers are safe.

|  CAUTION | |
|---|---|
| ● Unplug power cable | To prevent electrical shock accidents and operational mistake accidents during the product removal work, be sure to unplug the power cord from the outlet. |
| ● Remember | When disconnecting a compressed air hose, be sure to first shut off the source of the compressed air. In addition, the compressed air inside the air hose could spray out when the air hose is disconnected, so keep the hose away from the face, etc., when disconnecting it. |
| ● Remember | To keep the unit from falling over, do not climb on the hood or dust collector or place heavy objects on them. |
| ● Remember | Check the following, being aware of the weight of the product. <ul style="list-style-type: none">· Be sufficiently careful that no part of the body, especially fingers and toes, will be caught underneath the product while it is being removed or moved.· Make sure the product does not fall over while it is being removed or moved.· Do not move the product while an object is set on its hood. The object could fall off of the hood. |

■ Disposal

Disposal

When disposing of this product, dispose of it properly in accordance with the pertinent laws and local regulations.

■ Replacement Parts

Replacement Parts

There are 3 consumable parts that can be replaced by the customer.

Check the model and lot No. and then purchase the parts through the store where the product was purchased.

- Adhesive gel sheet No. IPC-A4G
- Electrode Needle No. GN-H (Optional dedicated needle electrode screwdriver G-7DR for replacement of needle electrode)
- unwoven fan filter IPC-A3F (6-pc set)

For information about the replacement procedure, refer to the "Maintenance" item in this manual.

LIMITED WARRANTY:

VESSEL expressly warrants that for a period of one (1) year from the date of purchase, VESSEL static erasers will be free of defects in material (parts) and workmanship (labour). Within the warranty period, Defects occurring will be repaired or products will be replaced at VESSEL's option and expense, if VESSEL receives notice during the warranty period. Defective products must be returned to VESSEL Osaka Japan with proof of purchase date. And if your unit is out of warranty, VESSEL will quote repair charges necessary to ship your unit freight prepaid to where you have originally purchased.

WARRANTY EXCLUSIONS:

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING FITNESS AND MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH IS SPECIFICALLY DISCLAIMED.

The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean, or repair products.

LIMIT OF LIABILITY:

This electronic static eraser use high voltage corona discharge and should not be used in or near flammable or explosive environments. In no event will VESSEL or any seller is responsible or liable for any injury, loss or damage, direct or consequential, whether based in tort or contract arising out of the use of or the inability to use the product. Fulfillment of VESSEL's warranty obligations will be Customer's exclusive remedy and VESSEL's and Seller's limit of liability for any breach of warranty or otherwise. Before using this unit, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.

| | | |
|----------|------------------------------------|--|
| Model | IPC-A3 | |
| Warranty | (1) year from the date of purchase | |
| Customer | Name | |
| | Address | |
| | Tel. No. | |
| Dealer | Name/Address/Tel. No. | |

Manufactured by:**VESSEL Co., Inc.**

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