U 15 HD-M

Instruction manual

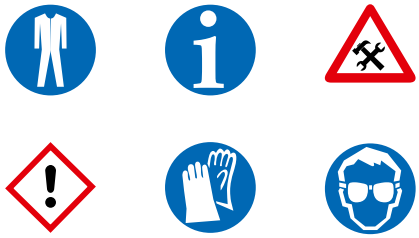
DIN EN ISO 9001:2008

iGEBA®

ULV Aerosol Generator

Made in Germany

DIN EN ISO 9001:2008
DIN EN ISO 9001:2008
DIN EN ISO 9001:2008
DIN EN ISO 9001:2008
DIN EN ISO 9001:2008
DIN EN ISO 9001:2008
DIN EN ISO 9001:2008
DIN EN ISO 9001:2008



Sicherheitshinweise für ULV Aerosol Generatoren

Safety instructions for ULV Aerosol Generators

IGEBA®

First choice fogging equipment

Sehr geehrter Kunde,

wir beglückwünschen Sie zum Kauf eines IGEBA-Qualitätsproduktes und wünschen Ihnen viel Erfolg bei der Anwendung!

Zum besseren Verständnis der Betriebsanleitungen sind die im Text beschriebenen Teile des Gerätes mit einer in Klammern stehenden Positions-Nummer hinterlegt. Mit der Pos.-Nr. im Text und mit Hilfe der Explosionszeichnung ist eine eindeutige begriffliche Zuordnung in der vorliegenden Betriebsanleitung gegeben.

Bei Ersatzteilbestellungen unbedingt die Geräte Nr., die Positions-Nummer, die Teilebezeichnung und die Teile-Nummer aus der Ersatzteilliste angeben.

IGEBA Thermalnebelgeräte und ULV Aerosolgeneratoren werden ausschließlich in der Bundesrepublik Deutschland von der Firma IGEBA Geraetebau GmbH hergestellt. Original IGEBA-Erzeugnisse sind mit einem Hologramm gekennzeichnet.

Dear Customer,

Congratulations for the purchase of our IGEBA quality product and we wish you every success in the employment of this equipment.

For a better understanding of the Instruction Manuals parts of the unit described in the text of the Instruction Manual are often combined with an item number in brackets. By using the item no. combined with the explosion drawing all descriptions in the Instruction Manual become clear.

If you send us an order for spare parts, always mention the device no., item number, the part number and the spare parts name from the spare parts list.

IGEBA Fog Generators and ULV Aerosol Generators are solely manufactured in Germany by IGEBA Geraetebau GmbH. Original IGEBA products are marked with a hologram.

Bestimmungsgemäße Verwendung:

Mit den IGEBA ULV Aerosol Generatoren werden chemische Wirkstoffbrühen (Formulierungen) als feiner Aerosolnebel ausgebracht. Die Geräte sind ausschließlich für folgende Anwendungsgebiete bestimmt:

- Schädlingsbekämpfung
- Pflanzenschutz
- Vorratsschutz (Lebensmittel, Tabak, Baumwolle)
- Hygiene und Desinfektion

Jeder darüber hinausgehende Gebrauch gilt als nicht bestimmungsgemäß.
Die Betriebsanleitung gehört in die Hand des Bedieners, weil die Betriebsanleitung wichtige Sicherheitshinweise enthält. Die Weitergabe oder Veräußerung des Gerätes an Dritte darf nur zusammen mit dieser Betriebsanleitung erfolgen.

Restricted fields of application:

The IGEBA ULV Aerosol Generators are suitable for transforming chemical solutions (formulations) into finest aerosol fog. The units are exclusively restricted to the following fields of application:

- Pest and vector control
- Protection of crops
- Protection of stocks (foodstuff, tobacco, cotton)
- Hygiene und disinfection

All other applications are regarded as forbidden fields of application.
The owner of must give the Instruction Manual to the user, because of the safety instructions described in the Instruction Manual. If the owner sells the unit to another person, the owner has to guarantee that the Instruction Manual is attached to the unit.

DIN EN ISO 9001:2008

Das Gerät darf erst in Betrieb genommen werden, wenn der Bediener diese Betriebsanleitung sorgfältig gelesen und sich mit allen Einzelheiten insbesondere den Risiken und Sicherheitsmaßnahmen vertraut gemacht hat.

Bei Fehlbedienung und nicht bestimmungsgemäßer Verwendung des Gerätes drohen Gefahren für den Bediener und der Umwelt. Für hieraus resultierende Schäden haftet die Firma IGEBA nicht.

Before starting the unit, the user must read the Instruction Manual with due diligence. The user must be familiar with the above applications, especially with all risks and safety precautions in order to avoid damage.

Risks for persons and environment could arise out of faulty operation and out of forbidden fields of application. Damages due to faulty operation of the unit and usage in forbidden fields of application are consequently out of IGEBA's responsibility.

Hersteller und Vertrieb:

IGEBA Geraetebau GmbH
Heinrich-Nicolaus-Straße 15
87480 Weitnau I Germany

Telefon: +49 (0) 8375/92 00-0
Telefax: +49 (0) 8375/92 00-22
eMail: info@igeba.de
Internet: www.igeba.de

© Stand 01/2013

Die Anleitung ist urheberrechtlich geschützt. Die dadurch Beg ründeten Rechte, insbesondere die der Übersetzung, des Nachdruckes, der Wiedergabe auf photomechanischem oder ähnlichem Wege sowie der Speicherung und Auswertung in Datenverarbeitungsanlagen, bleiben auch bei auszugsweiser Verwertung vorbehalten oder bedürfen andernfalls einer schriftlichen Vereinbarung.

Die IGEBA Geraetebau GmbH behält sich das Recht vor, jederzeit und ohne Ankündigung das hier beschriebene Produkt gemäß dem technischen Fortschritt zu ändern.

Manufacturer and Distributor:

IGEBA Geraetebau GmbH
P,O,Box 6
D-87478 Weitnau I Germany

Telephone: +49(0) 8375/92 00-0
Fax: +49 (0) 8375/92 00-22
e.mail: info@igeba.de
Website: www.igeba.de

© Last update 01/2013

The manual is copyrighted. All such rights, in particular the rights of translation, reproduction, duplication by photomechanical or similar means, as well as storage and processing in data processing systems, even in parts are reserved or otherwise require a written agreement.

IGEBA Geraetebau GmbH reserves the right to modify the herein described product according to the technical progress at any time and without prior notice.

DIN EN ISO 9001:2008

Gewährleistung:

Für jedes gelieferte IGEBA-Erzeugnis leistet die Firma IGEBA Geraetebau GmbH im Rahmen der Vertrags- und Lieferbedingungen Gewähr für ordnungsgemäße Fertigung.
Diese Gewährleistung bezieht sich nicht auf solche Schäden, die durch normale Abnutzung, unsachgemäße Behandlung, fahrlässigen Gebrauch, Einbau von Nicht- Original-Ersatzteilen, ungenügender Pflege und/oder Nichtbeachtung dieser Betriebsanleitung entstehen.

Das Nebelgerät darf nur von entsprechend eingewiesenen Personen genutzt werden, andernfalls erlischt jede Gewährleistung entsprechend den Lieferbedingungen.

ULV Aerosol Generator Identifikation:

Auf dem Typenschild sind folgende Daten angegeben:
Herstellerangaben - Nebelgerätetyp – Seriennummer – Baujahr.

Warranty:

IGEBA Geraetebau GmbH guarantees the proper manufacturing for all delivered IGEBA products according to the General Terms and Conditions of Delivery.
The warranty does not apply for damages due to normal wear, improper handling, negligent use, installation of non-original spare parts, insufficient care and/or non-compliance with this instruction manual.

The fog generator may only be operated by trained and skilled personnel, otherwise any warranty expires according to the condition of delivery.

ULV Aerosol Generator identification:

The type plate includes the following data:
Manufacturer's data - fog generator model - serial number – year of construction.

Hinweise zur Betriebsanleitung:

Diese Betriebsanleitung ist für den Betreiber der Nebelgeräte Typenreihe ULV die Grundlage für den einwandfreien Betrieb.

Die Betriebsanleitung muss vom zuständigen Bedienpersonal gelesen, verstanden und beachtet werden. Nur mit Kenntnis dieser Betriebsanleitung können Fehler, Schäden und Verletzungen vermieden und ein störungsfreier Betrieb sichergestellt werden.

Die Betriebsanleitung in greifbarer Nähe des ULV - Gerätes aufbewahren und für das Bedien- und Wartungspersonal zugänglich halten. Für Schäden und Betriebsstörungen, die sich aus der Nichtbeachtung dieser Betriebsanleitung ergeben, übernimmt die IGEBA Geraetebau GmbH keine Haftung und keine Gewährleistungspflicht.

Notes on the instrucional manual:

This manual is for the user of the high-performance fog generator ULV essential for proper operation.

The instruction manual must be read, understood and observed by the responsible operating personnel. Only with knowledge of this instruction manual, mistakes, damages and injuries can be prevented and a proper operation can be guaranteed.

The instruction manual should be stored near to the ULV - Generator and has to be accessible for the operating and maintenance personnel.
IGEBA Geraetebau GmbH assumes no liability or any warranty for damages and malfunction due to non-observance of this instruction manual.

DIN EN ISO 9001:2008

Konformitätserklärung
Declaration of conformity

Der Hersteller
The manufacturer

IGEBA Geraetebau GmbH
Heinrich-Nicolaus-Strasse 15
87480 Weitnau I Germany

IGEBA Geraetebau GmbH
P.O.Box 6
D-87478 Weitnau I Germany

erklärt, dass im Sinne der EG-Richtlinien
declares, that in accordance to the EC-Standards

- **Maschinenrichtlinie / 2006/42/EG**
- Machines standard / 2006/42/EG

- **Niederspannungsrichtlinie / 2006/95EG**
- Low - voltage directive / 2006/95EG

- **Elektromagnetische Verträglichkeit / 2004/108EG**
- Electromagnetic compatibility / 2004/108EG

folgende Produkte in Übereinstimmung mit den oben genannten EG-Richtlinien hergestellt worden sind:
the following product-line is produced in accordance to the above-mentioned EC-Standards:

Art: ULV Aerosol Gerneratoren
Subject: ULV Aerosol Generators

Typ/ Typ/ Type: U 10 M - U 15 HD-M - U 40 HD-M - U 15 E - U 40 HD-E - Unipro5

und deren Varianten/
and their other versions/

Folgende Normen wurden angewandt/
The following standards are used/

DIN EN ISO 9001:2008

Norm/Standard: Titel/Title:

DIN EN 12100
Sicherheit von Maschinen
Safety of machines

DIN EN ESO 13857
Sicherheitsabstände
Safety distances

Eine technische Dokumentation mit Betriebsanleitung, Stromlaufplänen, Ersatzteillisten und Explosionszeichnungen ist vorhanden!
A technical documentation with manual, wiring diagrams, spare parts list and exploded view is available!

Achtung:

1) Der Betrieb von diesen Geräten darf nur von entsprechend unterwiesenen Personen vorgenommen werden.
2) Die Vernebelung von brennbaren Flüssigkeiten in geschlossenen Räumen ist absolut verboten. Hinweise in der Bedienungsanleitung.
3) Den Dosierhinweisen der Mittelhersteller ist Folge zu leisten.

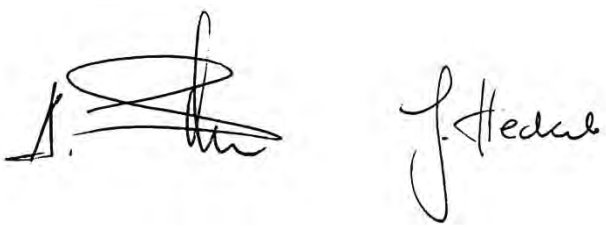
Attention:

1) The operation of these units has to be made only by well instructed people.
2) The fogging of flammable liquid in closed areas is absolutely forbidden. Advices in the manual.
3) The recommendations of the producers of the liquids are strictly obligatory

Autorisierte Person für die Zusammenstellung der Technischen Dokumente ist:
Carlos Jaramillo - IGEBA Geraetebau GmbH - Weitnau I Germany

Authorized Person for the assemble of technical documentation:
Carlos Jaramillo - IGEBA Geraetebau GmbH - Weitnau/Germany

IGEBA Geraetebau GmbH



Alberto Sabatini Joerg Heckel

DIN EN ISO 9001:2008

Sicherheitshinweise - Produkthaftung

Die ULV Gerneratoren nach dem Stand der Technik und den anerkannten sicherheitstechnischen Regeln gebaut. Dennoch können bei nicht sachgemäßer Verwendung Gefahren für Leib und Leben des Benutzers oder Dritten bzw. Beeinträchtigungen des Nebelgerätes und anderer Sachwerte entstehen.

Das ULV Gerät ist nur in technisch einwandfreiem Zustand sowie bestimmungsgemäß und unter Beachtung der Sicherheitshinweise sowie der Betriebsanleitung zu benutzen! Insbesondere Störungen, die die Sicherheit beeinträchtigen können, müssen umgehend beseitigt oder bei der Firma IGEBA Geraetebau GmbH gemeldet werden.

Das ULV Gerät ist ausschließlich zum Vernebeln geeigneter Wirkstoffflüssigkeiten bestimmt. Eine andere oder darüber hinausgehende Benutzung gilt als nicht bestimmungsgemäß.

Für hieraus resultierende Schäden haftet die Firma IGEBA Geraetebau GmbH nicht.

Das Risiko trägt allein der Anwender !!

Zur bestimmungsgemäßen Verwendung gehören auch das Beachten der Betriebsanleitung und die Einhaltung der Pflege- und Wartungsbedingungen.

Die Betriebsanleitung ständig am Einsatzort des Nebelgerätes griffbereit aufbewahren!

Ergänzend zur Betriebsanleitung sind die am Einsatzort allgemeingültigen gesetzlichen und sonstigen verbindlichen Regelungen zur Unfallverhütung und zum Umweltschutz zu beachten und anzuwenden!

Safety instructions - product liability

The ULV Generators employs state of the art technology and complies with accepted safety standards. However, inappropriate operation may cause danger to life and limb of the user or third parties or damage the fog generator and other assets.

The ULV Generators may only be used in proper technical condition as well as for its intended use and in compliance with safety notes and the instruction manual! In particular, malfunctions that may affect the safety must be repaired immediately or have to be reported to IGEBA Geraetebau GmbH.

The ULV Generators is exclusively intended for fogging suitable solutions. Another use is not intended.

IGEBA Geraetebau GmbH is not responsible for damages due to inappropriate use.

The user solely bears any risk !!

The intended use includes the observation of the instruction manual, care and maintenance terms.

The instruction manual needs to be ready to hand at the work location of the fog generator!

In addition to the instruction manual, the local regulations and other mandatory rules for accident prevention and environmental protection must be applied and observed!

DIN EN ISO 9001:2008

Das mit Tätigkeiten am Nebelgerät beauftragte Personal muss vor Arbeitsbeginn die Betriebsanleitung und besonders dieses Kapitel „Sicherheitshinweise“ lesen.

Any personnel working with the fog generator must read the instruction manual and, in particular, this chapter „Safety instructions“ prior to start of their work.

Keine Veränderungen, An- und Umbauten am Nebelgerät vornehmen, soweit diese nicht ausdrücklich in dieser Betriebsanleitung vorgesehen sind. Dies gilt auch für den Einbau und die Einstellung von Sicherheitseinrichtungen.

No modification or rebuilding is permitted unless it is clearly indicated in this instruction manual. This applies also for the mounting and set up of safety devices

Ersatzteile müssen den vom Hersteller festgelegten technischen Anforderungen entsprechen. Dies ist nur bei Original-IGEBA-Geraetebau GmbH Ersatzteilen gewährleistet

Spare parts must comply with technical requirement as specified by the manufacturer. This is only guaranteed with original spare parts from IGEBA-Geraetebau GmbH.

Nur geschultes, unterwiesenes und beauftragtes Personal einsetzen.
Zuständigkeiten des Personals für den Betrieb klar festlegen!

Only employ trained, instructed and appointed personnel. Define clearly the responsibilities of the personnel for the operation!

Sicherheitshinweise für den Betrieb:

Safety instructions for the operation:

Jede sicherheitsbedenkliche Arbeitsweise unterlassen. Bei Funktionsstörungen das Nebelgerät sofort stillsetzen und sichern! Störungen umgehend beseitigen lassen.
Ein- und Ausschaltvorgänge, Kontrollanzeigen gemäß Betriebsanleitung beachten!

Refrain from any risky operation method.
Stop and secure the fog generator in case of any malfunction! Malfunction must be repaired immediately.
Observe switch on and off procedures and control indicators according to the instruction manual!

Personen mit Herzschrittmachern dürfen das Gerät nicht bedienen/berühren.

Persons with cardiac pacemakers may not operate / touch the device.

Weitere und nicht erlaubte Handhabungen und Modifikation des Gerätes außerhalb der offiziellen Richtlinien:

Es dürfen keine Umbauten am Gerät vorgenommen werden ohne die technische Abklärung mit der Firma IGEBA Geraetebau GmbH und/oder deren Einweisung.

Das Gerät und die damit verbundenen Handhabungen dürfen nicht unter Alkohol-, Medikamenten-, oder Drogeneinfluss durchgeführt werden.

Es ist untersagt, bei laufendem oder abgekühltem Nebelgerät Gegenstände, Körperteile, Tiere etc. in die Öffnungen einzuführen oder an heiße Teile anzulehnen.

Other and not permitted applications and modifications of the unit beside the official guidelines:

No modifications of the unit are permitted without technical clarification with IGEBA Geraetebau GmbH and/or their advise.

The device must not be operated under the influence of alcohol, medicine or drugs.

Furthermore, objects, body parts, animals etc. must not be inserted in the openings or leaned on hot parts of the running or cooled unit.

Warn- und Sicherheitshinweise:

Arbeits- und Betriebsverfahren, die genau einzuhalten sind, um eine Gefährdung von Personen auszuschließen.

Explosionsgefahr / Lebensbedrohende Verletzungen

Arbeits- und Betriebsverfahren, die genau einzuhalten sind, um Beschädigungen oder Zerstörungen am Nebelgerät zu vermeiden.
Bedienungsanleitung lesen!

Technische oder anwendungstechnische Informationen, die der Bediener des Nebelgerätes besonders beachten muss.

Gehörschutz tragen!
Arbeiten ohne Gehörschutz an dem eingeschalteten Nebelgerät kann das Gehör schädigen.

Warning and Safety notes:

Operation procedures that need to be strictly observed to prevent risk and damage to persons.

Explosion hazards / life threatening injuries

Operating procedures that need to be strictly observed to prevent damages or destruction of the fog generator.
Read the instruction manual!

Technical information which needs to be particular observed by the user of the fog generator.

Wear ear protection!
The operation of the fog generator without ear protection may damage your hearing.

DIN EN ISO 9001:2008

Schutzmaske tragen!
Je nach ausgebrachtem Wirkstoff ist das Tragen einer Gesichtsmaske mit Wirkstofffilter erforderlich. Entsprechende Informationen sind dem beigelegtem Gefahrendatenblatt des Wirkstoffes zu entnehmen.

Wear respiratory protection!
A face mask with respective filter may be required depending on the applied active agent. Further information may be obtained from the attached data sheet of the active agent.

Schutzanzug tragen! Es muss ohne jegliche Ausnahme ein Schutzanzug getragen werden, sofern die Richtlinien und die Hinweise des Wirkstoffherstellers dies erfordern.

Wear protective clothing! Protective clothing must be worn without any exception if required by guidelines and notes of the manufacturer of the active agent

Schutzbrille tragen!

Wear protective goggles!

Bitte beachten Sie die Hinweise bei Wirkstoffen, die ätzende Verletzungen verursachen können, und treffen Sie alle notwendigen Maßnahmen.

Please observe the notes regarding active agents that may cause chemical burns and take all necessary measures

Es muss von Seiten des Benutzers gewährleistet sein, dass die verwendeten Mittel nicht eingenommen werden bzw. Körperkontakt entsteht, insbesondere von Kindern und Personen, die damit nicht vertraut sind.

The user must ensure that used substances will not be inhaled nor swallowed nor in contact with skin, in particular for children and persons who are not familiar with it.

Fangen Sie Wirkstoffrückstände in einem geeigneten Behälter auf und entsorgen Sie diese gemäß den Umweltbestimmungen.

Prepare an appropriate container to collect excessive solution and dispose it according to the environmental designation.

Personen mit Herzschrittmachern dürfen das Gerät nicht bedienen/berühren. (siehe Produkthaftung)

Persons with cardiac pacemakers may not operate / touch the device. (See product liability

Brandgefahr !

Fire hazard!

Es muss jederzeit ein Feuerlöscher griffbereit sein, um im Falle eines Brandes sofort erste Maßnahmen zu ergreifen.

A fire extinguisher must be in reach to take measures immediately in case of fire.

Es dürfen keine Gegenstände im Bereich der Maschine liegen oder stehen, die eine Stolpergefahr bewirken könnten.

In order to reduce the risk of stumbling, no objects may lay or stand in the vicinity of the machine.

DIN EN ISO 9001:2008

Es muss sich ein Erste-Hilfe-Kasten in unmittelbarer Nähe befinden, um bei Verletzungen die Erstversorgung zu gewährleisten.

A First-Aid-Kit must be in reach to ensure first aid in case of injuries.

Bei technischen Problemen, die in dieser Anleitung nicht angesprochen sind, steht Ihnen der Kundendienst (Telefon +49(0)8375/9200-0) zur Verfügung sowie Ihr persönlicher Händler vor Ort.

For technical problems that are not part of this manual, you may contact the customer service at +49(0)8375/9200-0 as well as your local distributor.

Sicherheitsmaßnahmen lesen:

Read Safety instructions:

1. Die mit der Bedienung des Gerätes betrauten Personen müssen sich vor der Inbetriebnahme des Gerätes mit den Sicherheitsmaßnahmen vertraut machen.
Lesen sie vor der Inbetriebnahme des Gerätes die komplette Betriebsanleitung.

1. Before first starting the unit the operator must be firm with the safety instructions. Only educated and authorized persons are allowed to work with the unit. Read this manual completely before operating the machine.

2. Nehmen sie keine Veränderungen am Gerät vor. Für einen sicheren Betrieb müssen alle Schutzabdeckungen montiert sein. Ziehen sie vor allen Wartungs- und Einstellarbeiten den Netzstecker.

2. Any modifications of the machine are permitted. All shrouds and guards have to be in place for a safe operation. Disconnect the mains before performing any service or maintenance.

3. Das Gerät darf nur in technisch einwandfreiem Zustand und von geschultem Personal betrieben, gewartet oder transportiert werden.

3. It is only allowed to run the machine in a technically perfect condition and proper training of the personnel involved in the operation, maintenance and transport.

4. Richten Sie den Luftstrom der Sprühköpfe keinesfalls direkt auf Körperteile, insbesondere das Gesicht. Tragen Sie während dem Betrieb sowie allen Befüll-, Wartungs-, Reinigungs- und Einstellarbeiten geeignete persönliche Schutzausrüstung (Schutzbrille, Schutzhandschuhe, Atemschutz, Gehörschutz, Schutzkleidung).

4. Do not direct the air blast from the nozzles directly at any part of your body, particularly the face. Always use appropriate PPE (protection goggles, protection gloves, respirator mask, ear protection) during operation, tank loading, maintenance, cleaning and calibration.

DIN EN ISO 9001:2008

5. Während der Behandlung und Einwirkzeit sind alle Zutrittsmöglichkeiten zu den behandelten Räumen mit Zutrittsverboten zu kennzeichnen und ggfs. zu verschließen. Verhindern sie insbesondere den Zutritt von Kindern und Unbefugten. Beachten sie ihre länderspezifischen Bestimmungen sowie die Auflagen des Wirkstoffherstellers.

5. Every possible access to the treated rooms has to be marked with a prohibition of entry during treatment and residence time, if necessary lock all treated rooms. Particularly prevent the access of children or unauthorized persons. Respect your country-specific regulations as well as the guidelines of the agent manufacturer.

6. Das Verdichtergehäuse sowie die Rohrführung werden bei längerem Betrieb heiß. Berühren sie keines dieser Teile, während dem Betrieb. Lassen sie diese Teile nach dem Abstellen einige Minuten abkühlen, bevor sie sie berühren.

6. Blower housing and tubing become hot during prolonged operation. Do not touch any of these parts while running, wait several minutes after stoppage, allowing these parts to cool down.

7. Betreiben sie die Maschine nicht ohne komplett montierten Luftfilter. Schmutz, Gegenstände oder Kleidungsstücke könnten angesaugt werden und das Gebläse zerstören bzw. Personen verletzen.

7. Do not operate the engine without completely installed blower intake air filter. Debris, objects or clothing can be sucked into the blower causing potential damage to the blower or injury to operators.

8. Bedienen Sie die Maschine nicht unter Alkohol- oder Drogeneinfluss.

8. Do not operate the machine under influence of alcohol or drugs.

9. Lassen Sie das Gerät vor dem Transport oder der Einlagerung abkühlen.

9. Let the machine cool down before transport or storage.

10. Stellen sie den Motor ab und warten sie ca. eine Minute, bevor sie den Deckel des Wirkstoffbehälters öffnen.

10. Switch of motor and wait about one minute, before opening the cover of the solution tank.

11. Es ist verboten in geschlossenen Räumen zu nebeln, in denen sich offene Flammen, Kerzenlicht, heiße Maschinen oder elektrische Geräte befinden. Es besteht Brandgefahr.

11. It is forbidden to fog into enclosed rooms where open flames, candle lights, hot engines or electrical appliances exist. There is fire danger.

12. Beachten sie die Dosierhinweise, insbesondere beim Nebeln in geschlossenen Räumen. Nebeln sie nicht länger als erforderlich. Bei Wirkstoffen mit brennbaren Anteilen können zündfähige Gemische entstehen

12. Follow dosing recommendations, particularly when fogging indoors. Do not fog longer than necessary. Application of formulations with combustible fractions may lead to formation of an explosive mixture.

13. Vor dem Transport des Gerätes in geschlossenen Fahrzeugen unbedingt den Wirkstofftank entleeren.

13. Drain solution tank before transporting the unit in closed vehicles.

14. Beachten Sie die Angaben der Wirkstoffhersteller bezüglich Dosierung und notwendiger Schutzmaßnahmen. Verwenden Sie beim Befüllen immer den IGEBA Einfülltrichter mit Sieb. Falls Sie Wirkstoffbrühe verschütten, wischen Sie die Brühe ab. Entsorgen Sie Restemengen ordnungsgemäß. Befolgen Sie die rechtlichen Vorschriften hinsichtlich Lagerung und Entsorgung von Wirkstoffen.

14. Comply with the specifications of manufacturers regarding safety instructions and dosage of formulations. Do not spill solution, when filling the solution tank. Use the IGEBA funnel with strainer. In case of spilling solution, use a dry cloth and clean residual solution from the unit. Store and depose residual formulations carefully according to legal regulations.

15. Tragen Sie beim Arbeiten mit dem Gerät immer einen geeigneten Gehörschutz. Das Gerät entwickelt einen Schallpegel von mehr als 90 dBA.

15. Wear suitable ear protectors when operating the unit. The noise level of the unit exceeds 90 dBA.

16. Das Gerät muss auf einem waagerechten, festen Untergrund stehen. Bremse betätigen.

16. The unit must stand horizontal and stable on a rigid base. Please adduct the break.

17. Nie Nebeln, wenn das Gerät nicht einwandfrei funktioniert.

17. Do not fog if the unit does not work properly.

18. Jegliches Umbauen des Gerätes ist verboten. Verwenden Sie nur Originalersatzteile und Originalzubehör der Firma IGEBA.

18. A reconstruction of the unit without written permission of IGEBA is not allowed. Use only original spare parts and accessories from IGEBA.

19. Lagern Sie Wirkstoffe und das Gerät so, dass es vor dem Zugriff von Kindern und unbefugten Personen sicher ist.

19. Store formulations, fuel and the unit itself at places where they are not accessible to children and other unauthorized persons.

20. Um ungewollte chemische Reaktionen, beim Mischen von unterschiedlichen Wirkstoffen, zu vermeiden, müssen die Vorgaben der Wirkstoffhersteller befolgt werden.

20. To avoid chemical reaction when mixing different agents, respect the instructions of the agent manufacturers.

DIN EN ISO 9001:2008

Made in Germany

DIN EN ISO 9001:2008
DIN EN ISO 9001:2008
DIN EN ISO 9001:2008
DIN EN ISO 9001:2008
DIN EN ISO 9001:2008
DIN EN ISO 9001:2008
DIN EN ISO 9001:2008
DIN EN ISO 9001:2008

Sicherheitshinweise für ULV Aerosol Generatoren

Safety instructions for ULV Aerosol Generators

IGEBA®

IGEBA Geraetebau GmbH
87480 Weitnau I Germany

T +49 (0) 8375 9200-0
F +49 (0) 8375 9200-22

info@igeba.de
www.igeba.de

Operating Instructions
IGEBA ULV AEROSOL - Generator
U 15 HD-M

Contents Page

03/1999

1. Mode of operation of the ULV Aerosol-Generator (cold fog generator)

All fog generators in the U series operate on the same principle.

A drive motor (electromotor or combustion engine) powers a side channel blower via a belt drive. The side channel blower functions according to the side channel principle and is of a single-stage or two-stage design. The characteristics of this design harmonise well with the design of the atomiser and aerosol nozzles, i.e. a compression ratio of approx. 1.3-1.35 is achieved with a relatively low air flow (approx. 1.5 m^3 per minute and nozzle). This is advantageous with respect to small nozzle cross-sections.

The aerosol nozzle is of a two-stage design. In the first stage the coaxially introduced liquid jet is dispersed by the incoming centripetal air flow at a high velocity (approx. 200 m/s). At the end of a short, conical diffuser more compressed air is introduced centripetally. This jet of air swirls in an opposite direction to that of the first jet of air so that the central jet from the first stage is bundled to a certain extent.

The jet of droplets leaves the nozzle without having touched the inside surface of the diffuser; this is of great advantage when using powders.

The quantity of liquid is controlled by dosing nozzles or an infinitely adjustable flow meter.

Practical accessories enable a fully automatic operation of electrically powered units.

2.	**Technical data for the series**	U 10 M	U 15 HD-M
a.	Petrol engine		
	Output HP (KW)	5 (3.6)	11 (8.1)
	Speed rpm	3,600	3,600
	Preset speed rpm, approx.	3,300	2,800
	Speed control	Centrifugal governor	
	No. of cylinders / Arrangement	1 / vertical	1 / inclined
	Ignition	electronic	
	Starter	electric 12 V DC	
	Generator/battery	12 V DC/36 Ah	12 V DC/36 Ah
	Fuel tank capacity (l)	3,5	7,5
b.	Side channel blower, design		
	Number of stages	1	1
	Flow rate, m^3/minute	1.5	3.0
	Pressure before nozzle, bar	0.25	0.3
	Max. air temperature, °C	40	40
	Air filter	Paper-Star	
	Speed per minute, approx.	4,200	4,000
	Drive	V-belt	
c.	Solution system		
	No. of aerosol nozzles	1	2
	Solution tank (nom./actual capacity), l	20/22	60/65
	Solution tank, material	PE / V2A*	V4A
	(* standard PE, optional V 2 A)		
	Overpressure in solution tank, bar	0.25	0.25
	Output, measured with water l/h	15	30
	(with standard hose length)		
	Dosing nozzle 0.8 integrated	X	X
	Droplet size at nom. throughput	90 % < 35 µ *	
	(* measured with water)		
	Flow filter with sieve	X	X
	(mesh 0.2 mm, wire thickness 0.13 mm)		
	Solenoid valve (2-way)	X	X
	Solution tap (3-way)	X	X
d.	Control system		
	Engine Start/Stop	X	X
	Solution Start/Stop	X	X
	Connecting cable 5 m long	X	X

2.1 Standard accessories

	U 10 M	U 15 HD-M
Solution funnel with sieve	X	X
Petrol funnel with sieve	X	X
Operating instructions	X	X
Spark plug spanner	X	X
Single end spanner, 13 DIN 693	X	X
Battery 12 V DC, 36 Ah	X	X

2.2 Optional extras

Manometer to measure tank pressure, 0-0.6 bar	X	X
Manometer to measure vacuum at atomiser nozzles, 0,5 - 0 bar	X	X
Control for clocked operation:		
Only when spraying	X	X
Air hose extension, m, max. (only in horizontal direction or downwards)	5	10

3. Operating instructions

Pay attention to the following general points:

1. Wear ear protection when working with the unit!
2. Always replace any safety units and guards which have been removed for repair and servicing work before restarting the machine!
3. When filling with petrol make sure that the machine or hot parts such as the exhaust, etc. have cooled down; do not spill any petrol!
4. Smoking and naked flames are prohibited when working with fuels!

Always take heed of the applicable safety regulations when working with flammable liquids!

The following applies in particular when working with ULV-Generators:

- Never fog with the machine if the engine is not running perfectly!

- Always wear a gas mask with combination filter against organic vapours and solvents when working in closed rooms; wear protective clothing!

- Follow dosing instructions precisely when working in closed rooms, do not overdose!

- Warnings concerning the formation of explosive mixtures, cf. Page 7

- Always empty the solution tank before transporting the unit in closed vehicles!

3.1 Preparing the unit for use

- Unbolt the two U-shaped sections from the pallete after the unit has been unpacked.

- Place the unit on the designated loading area and bolt into place. There are 4 rubber elements between the two U-shaped sections and the lower part of the frame to reduce vibrations.

  4 wheels are available as optional extras which have to be fitted using the enclosed axle and spanners The two steering rollers are to be bolted into the frame plates, the pole also has to be bolted to the frame.

- The cable (204) from the control box (201) to the terminal box (190) are to be connected by snapping in the plug-type connectors and these then secured by turning the locking ring (page 2).

- The control box can be taken into the vehicle cab.

- The cable connections to the battery should be checked for their tight fit; (+) and (-) poles are marked on the battery housing.

- Fill up with petrol. The petrol tank holds approx., 6 litres. The engine can be run on normal unleaded petrol, though at least 80 RON. The petrol reserves are adequate for an operating period of approx. 2.5 - 3 hours.

3.2 Filling with solution

Remove solution tank (20 litres respectively 60 litres capacity) from mounting and fill (only U 10 M). The enclosed filling funnel must always be used. Close tank cap carefully. There is a vacuum, max. 0.3 bar, in the tank during operation.

Only place the tank in the designated mount in the device frame when depressurized. Only then the two lines or nipples be pressed into the couplings on the tank. Check whether the connections are tight and without leaks by pulling back. The lines may not be confused (only U 10 M) ! The level of the insecticide can be observed at the viewing glass 143, page 2 (U 15 M).

3.3 Determining the output

0.8 dosing nozzles are fitted as standard equipment to guarantee the nominal quantity of 10 l/h respectively 20 l/h - relative to water (Fig. No.). In the case of liquids containing oil the output is reduced depending on the viscosity, which can heavily be influenced by the temperature.

		Nozzle Ø mm	Water l/h	Oil / Diesel l/h
		06	5	2.5
U 10 M		08	10	5.0
		10	15	7.5
	2x	06	10	5
U 15 M	2x	08	20	10
	2x	10	30	15

Warning:

The unit may not be operated in closed rooms on account of its combustion engine and exhaust emissions!

If the unit is left to run outside a room or building and if only the aerosol enters a room after the nozzle mount has been loosened, the max. permissible dosing quantities are to be observed. The following maximum values for 1,000 m^3 room volume may not be exceeded:

a. Carriers for water		**b. Fuels, white oil**	
Nebol	3.0 l	Vegetable oils	2.5 l
Glycerine	2.5 l	Diesel/ Heating oil	2 l
Ekomist	2 l	Petroleum	2 l
Ethylene glycol	2 l	Petropal	2 l
Diethylene glycol	2 l	Shell Risella 15	1.5 l
Aerostabil	3 l	DEA White Oil Pharma	1,5 l
VK2-special	2 l		
VK1*	1.5 l		
Nevolin/Nevokol*	1.5 l		

* not for water

The values listed are far below the ignition limits: on the other hand they are above those listed in the recommendations. We recommend that only that quantity which has been calculated for the specific room volume be used, particularly if the unit is used without supervision.

Starting the engine

First fix the starter flap (choke) on the carburettor in position „choke“ before starting a cold engine.

Then keep the push button I (206) on the control unit (201) pressed until the engine starts. Slowly open the starter flap (choke) until fully open as soon as the engine starts to run , making sure that the engine does not lose speed.

The starter flap remains open during a so-called warm start and the engine can be started by simply pressing the push button (I).

3.5 Fogging

When the engine is running the unit can immediately be used for fogging after the rotary switch "FOGGING" (207) has been turned to the "Start" position and the dosage valves (119) are opened; lever in a vertical position (page 2).

Liquid appears at the aerosol nozzle (28) after a few seconds.

Make sure that there is always enough petrol in the tank so that the engine does not come to an uncontrolled stop during fogging. In this case the solenoid valve would close and interrupt fogging!

Always keep an eye on the green control lamp "Charging". This must always be on when the engine is running. It indicates that the battery gets charged.

The quantity of liquid needed can be easily controlled by taking the time needed for the liquid level at the viewing glass to drop from one graduation mark to the next or over a number of graduation marks with a stop-watch.

Example: measurement from one graduation mark to the next:

1st graduation mark = 1 litre

Time taken: 400 sec.

Output: 1 L x (3600 sec. / 400 h sec) = 9 l/h

3.6 Stopping the unit

If the tank is empty or if fogging is to be interrupted turn the "FOGGING" switch (207) to "Stop" and press the red "Engine" button (205) until the engine comes to a standstill (201, page 2).

Please note that the blower (2) continues to run longer than the engine on account of centrifugal force (67).

If the tank (141) is empty the solution lines have also been blown clean. If the tank (141) is not empty the complete line system is also still full of solution.

Warning:

The tank and line system are under pressure during fogging, approx. 0.3 bar.
You should thus never open the lid of the reservoir when the machine is running!

4 Cleaning and maintenance

The following points should be checked regularly, i.e. at least once a week or after 20 - 25 operating hours. (The working hour meter (195) can be found on the right side of the control box [190]).

- Check the belt tension (74, page 1)
- Condition of the inlet air filter (5) on the blower (2, page 1)
- Condition of the solution filter (100) in the control box (190, page 2)
- Visual check of the spray nozzles (28) and spray jet (form, uniformity, etc.) [page 1]
- Check the inlet air filter on the engine
- Check engine oil with dip stick, pay attention to oil change intervals (50 hours)
- Check fluid level in battery (top up with distilled water)

4.1 Cleaning the solution tank

The tank should always be empty at the end of work; if not it has to be emptied.

Open outlet tap (119) and collect running-out liquid in a suitable container. When tank (141) is empty, fill again with 1-2 litres of water and rinse again. Finally fill-in again 1-2 litres of water, start unit and run this quantity through the solution line and nozzles until line system is empty.

4.2 Cleaning the line system

When the tank has been run empty the line system is automatically blown clean provided all shut-off elements are open.
The flow filter [100] (or its sieve [103]) in the line [99-95] can be controlled from outside provided the glass cup (104) is still more or less clear. If this is not the case release the wing nuts on the glass pot's (104) retaining bow (105), pivot bow (105) to one side and remove glass pot (104). The exposed filter sieve (103) can now be turned to the left and unscrewed, rinsed in water or , e.g. benzene and blown clean and dry with compressed-air wherever possible.

Check the condition of the gasket in the top of the filter's (100) aluminium housing (101) before replacing the sieve, then screw in the sieve (103) by hand. Push glass pot against seal and at the same time pivot bow (105) down and tighten wing nut (Fig. No. 12).
Though the liquid system is clean and the tank pressure (0,25 bar) sufficient but still the throughput too small, check dosage nozzles (127) and blow through with compressed air.

4.3 Cleaning the air filter (blower)

A perfect condition of the filter (5) is decisive for the service life of the blower (2).

Turn star handles to the left to check and possibly clean the filter; the pressure plate (7) and the filter housing (6) can now be removed. The filter (5) is now exposed and can be pulled out.

A jet of compressed-air should be blown parallel to the paper folds of the filter (5) to clean this; you can then blow through from the inside to the outside if required. During subsequent assembly pay attention to the tight fit of the filter (5) ! Damaged filter inserts must be replaced.
Please remember that particles, however small these may be (< 1 mm) can destroy the blower (2) , which then means expensive repairs.
Carry out a check after approx. 8-10 hours at the latest if the ambient air is very dirty and after 20-25 hours with normal air.

4.4 Servicing the engine

Please follow the enclosed instructions of the engine manufacturer and pay particular attention to the prescribed intervals for oil changes, filter changes, etc..

5 Troubleshooting

5.1 Drive engine

Only adequately trained personnel should be allowed to service or repair combustion engines.

One exception here is the engine air filter which can be controlled after the nuts have been loosened and the housing removed. Replace pre-filter and/or cartridge. Refer to page 6 of the manufacturer’s manual.

5.2 Side channel blower (blower)

The rotor of the side channel blower (2) runs without contact and is maintenance-free. The ball bearings have a lifetime grease filling.

The easy running of the rotor can be checked by moving the belt drive (74) backwards and forwards (remove belt guard [176] beforehand!).

If the belt drive is blocked or sticks, this may be due to 2 possible causes:

a. The centrifugal clutch (67) is faulty or no longer separates
b. Compressor rotor touches the housing or the bearing is damaged.

The clutch (67) cannot be repaired and must be replaced!

5.3 Belt drive

The tension of the V-belt (74) can be tested by pressing down on the V-belt through the hole in the top of the belt drive's cover with a blunt object after the machine has been switched off. The V-belt should be able to be pushed in by approx. 0.5 to a max. of 1 cm. If the play is too large you have to remove the belt guard (176) and decide whether the belt can be tightened or a new belt fitted. In case of doubt we always recommend that a new belt be fitted.

5.4 Solution system

5.4.1 Too little solution

If the output is too little or if the liquid only comes jerkily this may have one of the following causes:

a. The line system does not allow enough liquid to get through. The filter (100) has to be dismantled and cleaned if necessary (cf. 4.2).

b. The solenoid valve (100) no longer releases the full flow cross-section since the gaskets are faulty (e.g. swollen). Remove the coil after loosening the 4 screws and check the condition of the valve, remove any dirt (cf. figure 94-09 300.00).

c. Check the pressure if the overpressure or delivery pressure in the solution tank (141) is too low:

   disconnect pressure line (51) at the clutch (54) from tank (141); connect manometer to check the pressure with the machine running. 0.25-0.3 bar is OK!

   If the pressure in the tank (141) is too low remove cover (150), check tank seal (152) and clean if dirty. Then carefully replace and screw down cover (150).

d. And finally, the vacuum created by the aerosol nozzle (28) has to be checked. Disconnect the solution line from the coupling (126) with the machine running, all shut-off units (119) in the solution line are closed. Wait until no more liquid appears at the aerosol nozzle and hold a finger over the end of the solution line. You can immediately feel whether there is a vacuum in the line or not. If not, check whether the solution line is connected tightly to the aerosol nozzle's hose stem. Release the circlip (23) on the air hose (24) and remove the aerosol nozzle so that the solution line (91) can be controlled.
If the solution line is slipped off part 31 (clutch), replace solution line part and push over carefully but firmly.

5.2.4 No solution

1. Are all shut-of units (119, 110) open?
2. Is there a free passage through the filter (100)?
3. Is the solenoid valve (110) free?
4. Are the dosage valves (127) free?
5. Is there a residue blockage at the aerosol nozzle?

Cleaning of the solution line system after every day`s use guarantees a high reliability of operation and avoids residues in the system as well !

5.2 Side channel blower (blower)

The rotor of the side channel blower (2) runs without contact and is maintenance-free. The ball bearings have a lifetime grease filling.

The easy running of the rotor can be checked by moving the belt drive (74) backwards and forwards (remove belt guard [176] beforehand!).

If the belt drive is blocked or sticks, this may be due to 2 possible causes:

a. The centrifugal clutch (67) is faulty or no longer separates
b. Compressor rotor touches the housing or the bearing is damaged.

The clutch (67) cannot be repaired and must be replaced!

5.3 Belt drive

The tension of the V-belt (74) can be tested by pressing down on the V-belt through the hole in the top of the belt drive's cover with a blunt object after the machine has been switched off. The V-belt should be able to be pushed in by approx. 0.5 to a max. of 1 cm. If the play is too large you have to remove the belt guard (176) and decide whether the belt can be tightened or a new belt fitted. In case of doubt we always recommend that a new belt be fitted.

5.4 Solution system

5.4.1 Too little solution

If the output is too little or if the liquid only comes jerkily this may have one of the following causes:

a. The line system does not allow enough liquid to get through. The filter (100) has to be dismantled and cleaned if necessary (cf. 4.2).

b. The solenoid valve (100) no longer releases the full flow cross-section since the gaskets are faulty (e.g. swollen). Remove the coil after loosening the 4 screws and check the condition of the valve, remove any dirt (cf. figure 94-09 300.00).

c. Check the pressure if the overpressure or delivery pressure in the solution tank (141) is too low:

   disconnect pressure line (51) at the clutch (54) from tank (141); connect manometer to check the pressure with the machine running. 0.25-0.3 bar is OK!

   If the pressure in the tank (141) is too low remove cover (150), check tank seal (152) and clean if dirty. Then carefully replace and screw down cover (150).

d. And finally, the vacuum created by the aerosol nozzle (28) has to be checked. Disconnect the solution line from the coupling (126) with the machine running, all shut-off units (119) in the solution line are closed. Wait until no more liquid appears at the aerosol nozzle and hold a finger over the end of the solution line. You can immediately feel whether there is a vacuum in the line or not. If not, check whether the solution line is connected tightly to the aerosol nozzle's hose stem. Release the circlip (23) on the air hose (24) and remove the aerosol nozzle so that the solution line (91) can be controlled.
If the solution line is slipped off part 31 (clutch), replace solution line part and push over carefully but firmly.

5.2.4 No solution

1. Are all shut-of units (119, 110) open?
2. Is there a free passage through the filter (100)?
3. Is the solenoid valve (110) free?
4. Are the dosage valves (127) free?
5. Is there a residue blockage at the aerosol nozzle?

Cleaning of the solution line system after every day`s use guarantees a high reliability of operation and avoids residues in the system as well !

English

Warning notes and safety regulations for lead-acid batteries

Follow information about the battery, in the instructions for use and instructions for operating the vehicle.

Wear eye protection

Keep children away from acid and batteries.

Explosion hazard:
- A highly-explosive oxyhydrogen gas mixture occurs when charging batteries, therefore:

Fires, sparks, naked lights and smoking are prohibited:
- Avoid causing sparks when dealing with cables and electrical equipment, and beware of electrostatic discharges.
- Avoid short-circuits.

Corrosive hazard:
- Battery acid is highly corrosive, therefore:
- Wear protective gloves and eye protection.
- Do not tilt battery, acid can escape from the degassing openings or vents.

First aid:
- Rinse off acid splashed in the eyes immediately for several minutes with clear water. Then consult a doctor immediately.
- Neutralize acid splash on skin or clothes immediately with acid neutralizer (soda) or soap suds and rinse with plenty of water.
- If acid is consumed, consult a doctor immediately.

Warning note:
- Do not place batteries in direct daylight without protection.
- Discharged batteries can freeze up, therefore store in an area free from frost.

Disposal:
- Hand in old batteries at a collection point. The notes listed under item 1 are to be followed for transport. Never dispose of old batteries as domestic waste.

1. Storage and transport
   - Store dry and cool. Unfilled batteries have a very long shelf life.
   - Recharge filled batteries when the acid density falls below 1.21 kg/l (1.18 in the case of electrolyte 1.23).
   - Store and transport batteries upright and steady to avoid acid spillage.
   - Only remove protective cap from positive post when connected in the vehicle and place on the pole of the battery which has been replaced to avoid short-circuits.

2. Commissioning
   - Batteries supplied filled are ready for operation.
   - Fill batteries supplied unfilled with sulphuric acid in accordance with VDE 0510 of density 1.28 kg/l (for tropical countries 1.23 kg/l) up to the max. acid level mark or 15 mm above the upper edge of the plates:
   - Battery and acid temperature should be above 10°C if at all possible.
   - After 15 min. slightly tilt filled battery several times and top up acid if required.
   - Lock in sealing plug securely, wipe off any acid splash.
   - If starting performance is inadequate – recharge (see item 4).

3. Installation in the vehicle
   - Switch off engine and all electrical equipment.
   - Avoid short-circuits for example by tools.
   - When removing, first disconnect the negative post.
   - Remove foreign bodies from the battery carrier and clamp battery tightly after installation.
   - Clean terminal posts and clamps and other fixings and lubricate slightly with battery grease.
   - When installing, first connect positive post and check post clamps for firm seating.
   - Put on attachment parts such as post covers, degassing reservoir, elbow, hose connection, and clampholders from the battery which has been replaced.
   - If venting tubes have been fitted, place these tubes in the venting holes again.
   - If only one venting tube has been fitted, the opposite venting hole has to be closed up with a vent plug. This vent plug has been cast on to the red cap for the positive terminal. Remove this vent plug, and close up the open lateral borehole on the housing cover. This vent plug is not required for batteries without lateral boreholes.
   - Leave at least one gas outlet open! This applies also to the return of old batteries.
   - Elbow and plugs are available under item no. 1183386002 and 1180522002, if required.

4. Charging
   - Remove battery from the vehicle and be sure to disconnect the battery cables.
   - Ensure adequate ventilation.
   - Only use suitable direct current chargers.
   - Connect positive pole of the battery to the positive output of the charger. Connect negative post appropriately.
   - Only switch on charger after connection to the battery and switch off the charger first after charging.
   - Charging current recommendation: 1/10 amperes of the battery capacity Ah.
   - If the acid temperature exceeds 55°C, interrupt charging.
   - The battery is fully charged when the acid density and the charging voltage have stopped rising for 2 hours.
   - Check acid level and if required top up with distilled water. Never top up acid.

5. Maintenance
   - Keep battery dry and clean.
   - Check acid level regularly and replenish with distilled water. (In the event of considerable water consumption, have the alternator voltage regulator checked)
   - Do not use any so-called improving agents.
   - If the acid density is below 1.21 kg/l (1.18 in the case of electrolyte 1.23), recharge battery.

6. Jump starting
   - Only use standard jump leads in accordance with DIN 72553 and follow their operating instructions.
   - Only use batteries of the same nominal voltage.
   - Switch off both vehicle engines
   - First connect the two positive posts. Then connect the negative post of the vehicle providing charging assistance. Then connect the negative crocodile clip to a bare metallic point on the vehicle requiring assistance remote from the battery. (Follow the vehicle providing assistance, then start the engine of the vehicle requiring assistance for a maximum of 15 sec.
   - Disconnect cables in reverse sequence.

7. Taking batteries out of service
   - Charge battery, store in a cool place and if the battery is to remain in the vehicle, disconnect negative terminal.
   - Check battery state of charge regularly and correct by recharging, if required. (See item 4).

8. Warranty

We accept warranty for material and manufacturing defects which occur within the applicable warranty period. Normal wear and tear, damage due improper use, failure caused by external damage, and damage caused by opening the battery shall be expressly excluded from the warranty. Valid warranty claims are usually met by providing a similar battery. Cancellatio sale and reduction of the purchase price shall be excluded, unless the replacement delivery does not remedy the defect.

Warranty services can be demanded only after presentation of battery subject to complaint and of the receipt.

U-15 HD-M

Liste Ersatzteile | Spare parts list

DIN EN ISO 9001:2008

iGEBA®

ULV Aerosol Kaltnebelgerät

ULV Aerosol Generator

Ersatzteilliste für U 15 HD- M (13 HP) ab Ger Nr. 68608
Spare parts list for U 15 HD- M (13HP) from serial No. 68608

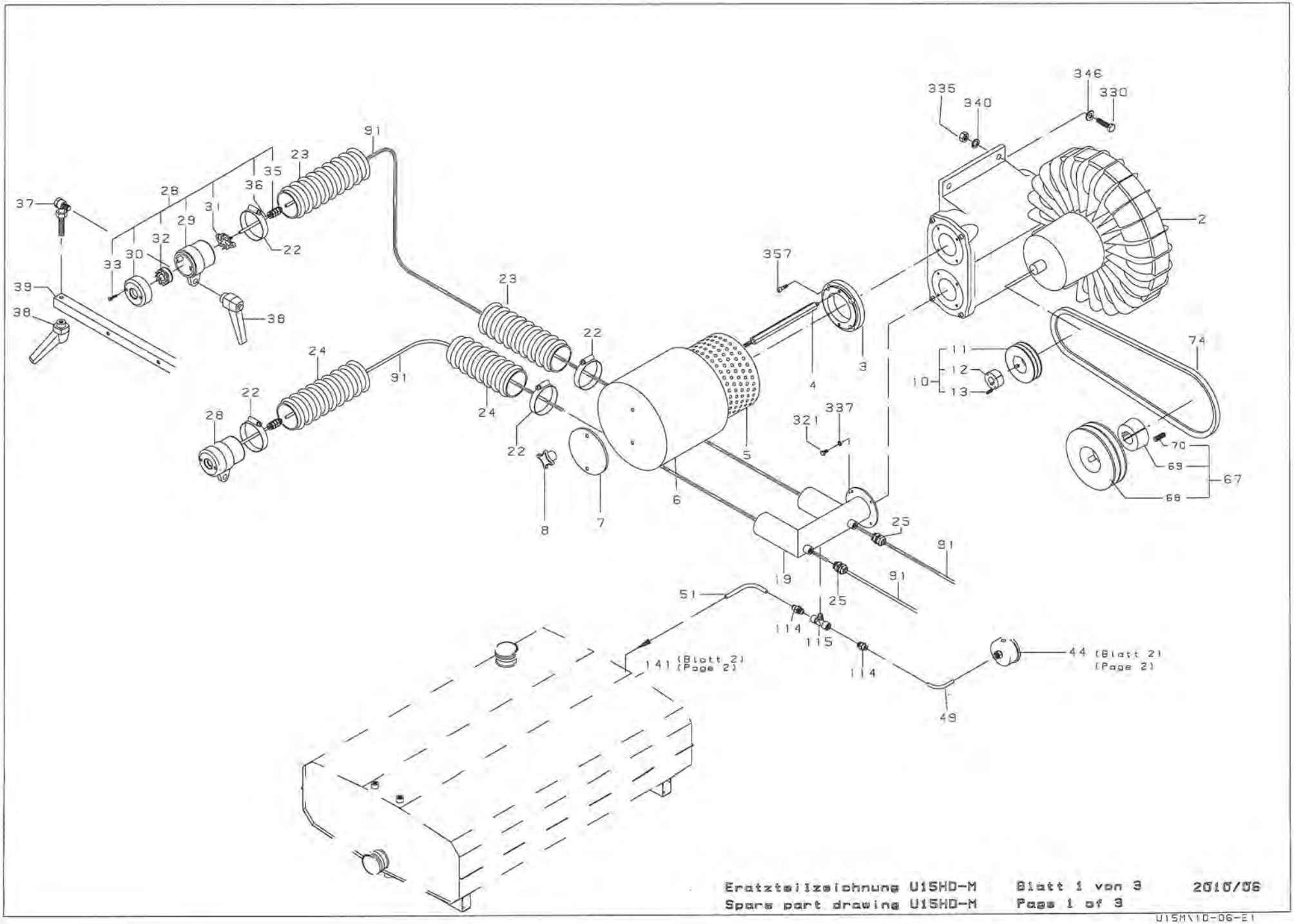
Bei Ersatzteilbestellung bitte **Pos.Nr**., **Teilbezeichnung**, **Teile Nr**. und **Geräte Nr**. angeben
in case of orders Please give **Pos.Nr**., **par name, part number**, and **serial number**

Pos.Nr Ill. Nr.	Teilebezeichnung / Partname	Teile-Nr. / Part-No.
1	**Gebläse mit Ansaugfilter; bestehend aus:** **Blower with intake filter / consisting of:**	
2	Seitenkanalverdichter / Side channel blower	193-04 100.00
3	Flansch / Flange	90-04 000.01
4	Zentrierstange / Centering bar	193-04 000.02
5	Filtereinsatz / Filter cartridge	11-12 000.01
6	Haube / Hood	94-04 200.00
7	Spanndeckel / Cover	90-04 000.02
8	Sterngriff / Star handle	94-04 000.02
10	Keilriemenscheibe, vollständig / V-belt pulley **Pos 11 - 13**	193-04 300.00
11	Keilriemenscheibe / V-belt pulley Ø106 (ab Ger. Nr.243)	193-04 300.01
12	Spannbuchse / Spring collet Ø25	93-04 300.02
13	Gewindestift / Setscrew	7/16"
14		
15		
	Luftführung / Air duct	
19	Flansch 90° 2 x Ø50 / Flange 90° 2 x Ø50	293-06 100.00
20		
21		
22	Schlauchschelle ∅ 50 / Clamp ∅ 50	96-06 000.01
23	Luftschlauch ∅ 50 / Air hose ∅ 50 1000mm	293-06 000.01
24	Luftschlauch ∅ 50 / Air hose ∅ 50 850mm	293-06 000.02
25	Gerade Verschraubung	1014 d7-R¼
26	PG-Verschraubung / Screwing	PG 9 KU
27	PG-Verschraubung / Screwing	PG 16 MS / Z
28	Sprühkopf, vollständig / Spray nozzle, complete **Pos 29 - 36**	94-06 200.00
29	Zerstäuberhalter / Nozzle holder	94-06 200.01
30	Zerstäuberblende / Nozzle screen	94-06 200.02
31	Zerstäuberdüse / Atomizer Inkl. / incl. Pos 33	94-06 200.06
32	Diffusor / Diffusor	94-06 200.04
33	Senkschraube / Countersunk head screw	770 3035
34		
35	Kupplung / Coupling	1580-6/4
36	Schlauchstück / Hose	94-06 200.05
37	Augenschraube, vollständig / Screw, complete	94-06 600.00
38	Klemmhebel / Clamping lever	94-06 000.05
39	Haltestange für Sprühkopf /	293-06 000.06
44	Druckmanometer / Manometer	94-06 700.01
45	Haltebügel	94-06 700.03
46	Muffe / Bushing	251 057
47	Gerade Verschraubung / Straight screw fitting	1510-8-¼
48	Winkelverschraubung / Angle insert screwing	1500-6-¼
49	Druckleitung / Pressure line Ø6 x1 1000 mm lg blau	293-06 000.04
50	Druckleitung / Pressure line Ø6 x1 300 mm lg blau	293-06 000.05
51	Druckleitung / Pressure line Ø6 x1 500 mm lg blau	293-06 000.03
52	Hohlschraube / Hollow screw	DIN7623 -A4
53	Ringstück / Ring connection	11-38 100.00
54	Winkelverschraubung / Angle insert screwing	1500-8-¼

Pos.Nr Ill. Nr.	Teilebezeichnung / Partname	Teile-Nr. / Part-No.
	Antrieb / Drive:	
66	Motor, vollständig / Engine, complete (13HP)	293-05 101.00
66/1	Magnetschalter / Magneto switch	293-05 100.01
66/2	Regler / Regulator	293-05 100.02
66/3	Schlüsselschalter / Key switch	293-05 100.03
66/4	Kabelschutzhaube /	293-05 100.60
66/5	Kantenschutz / Edge protection 155mmlg	
66/6	Kabelbaum / Cable harness	293-05 100.70
67	Keilriemenscheibe, vollständig / V-belt pulley **Pos 68 - 70**	293-05 300.00
68	Keilriemenscheibe / V-belt pulley SPA Ø150 /2	99-05 300.01
69	Spannbuchse / Spring collet Ø 1“	293-05 300.02
70	Gewindestift / Setscrew	7/16"
71		
74	Keilriemen / V-belt XPA Lw1000	293-05 000.01
78	Abgasleitblech / Exhaust duct	393761
	Wirkstoffführung und Wirkstofftank / Solution line system and solution tank	
90	Wirkstoffleitung / Solution line 1 Ø8x1 300mm	293-07 000.02
91	Wirkstoffschlauch / Solution tube Ø6x1 1900mm	293-07 000.01
92	Wirkstoffleitung / Solution line 2 Ø8x1 500mm	293-07 000.03
93		
94	Wirkstoffleitung / Solution line 4 Ø8x1 1000mm	293-07 000.04
95		
96	Dichtring / Gasket	DIN 7603 A13,5x18 Cu
97	Schottverschraubung / Bulk head stutting box	117 00 13
98		
99		
100	Wirkstoffilter, vollständig / Solution filter, complete; **Pos 101 - 105**	11-07 601.00
101	Filtergehäuse / Filter housing	11-07 601.01
102	Dichtung / Gasket	11-07 600.02
103	Filter / Filter	11-07 600.03
104	Glastopf / Glass cup	11-07 600.04
105	Klammer / Clamp	11-07 600.05
106	Wirkstoffhahn / Solution tap	11-07 101.01
107		
110	Magnetventil, vollst./ Solenoid valve, cpl. s.Seite	94-09 301.00
111	Winkel Einschraubverschraubung / Angle insert screwing	109 08 13
112	Verbindungsstück / Adapter	13-07 105.01
113	Gerade Verschraubung / Straight screw fitting	1510-6-¼
114	Gerade Verschraubung / Straight screw fitting	6510-6-¼
115	T-Verschraubung / T-fitting	2060-¼
116	Reduzierstück / Reducing piece	250 757
117	Winkel-Verschraubung / Angle screw fitting	252 107
118	Doppelnippel / Double fitting	250 357
119	Wirkstoffhahn, / Solution tap,	11-02 301.00
120	Verschraubung / Threaded joint	11-09 200.05
124		
125	Dichtring / Gasket	DIN 7603-A10x13,5 PA
126	Ringstück / Ring piese	1610-6-1/8
127	Hohlschraube mit Düse, 08 / Hollow screw with nozzle, 08	90-07 080.00
128	Hohlschraube / Hollow screw	304 006
130	Schlauchnippel / Hose nipple	250 194
131	Schlauchschelle / Clamp	Ø 11 - 19
132	Schlauch / Hose	94-07 000.06

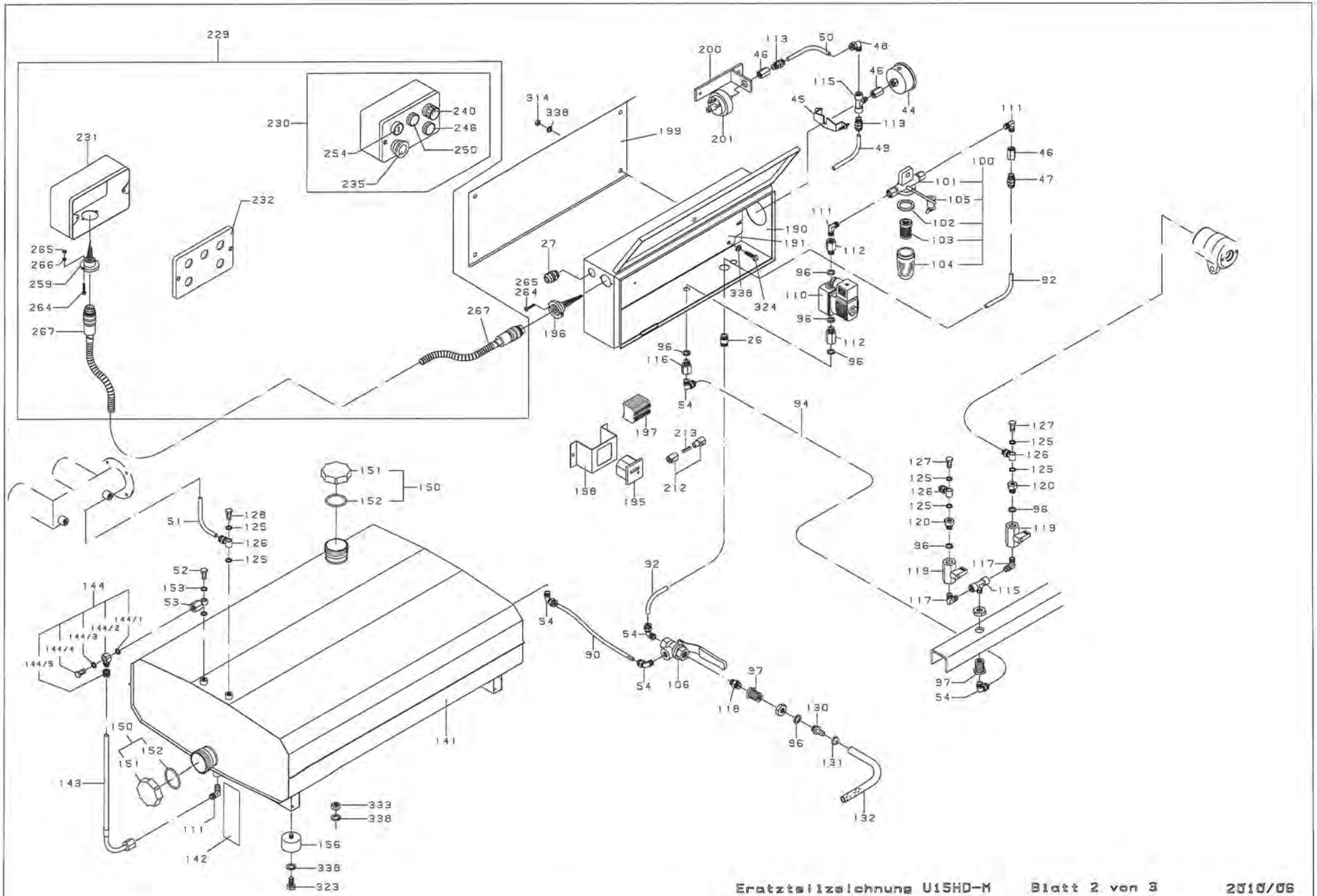
Pos.Nr Ill. Nr.	Teilebezeichnung / Partname	Teile-Nr. / Part-No.
140	**Wirkstoffbehälter, vollst., bestehend aus / Pos. 141 -153 / 52 / 53** **Solution tank, cpl., consisting of:**	
141	Wirkstoffbehälter / Solution tank	293-01 100.00
142	Literskala / Level scale	11-38 000.01
143	Schlauch mit Rohrbogen / Level hose and tube	11-01 102.50
144	Schwenkverschraubung, vollständig / Swivelling scew fitting, cpl.	326 638
144/1	Distanzring / Spacer	252 928
144/2	Ringstück / Ring connection	303 430
144/3	Dichtring / Gasket	252 926
144/4	Hohlschraube / Hollow screw	304 230
144/5	Überwurfmutter / Nut of tube	250 010
150	Tankverschluß kompl./ Tank cap cpl.	8-01 205.00
151	Tankverschluß / Tank cap	8-01 205.01
152	Dichtung / Gasket	Ø43 x 3 Viton
153	Dichtring / Gasket	DIN 7603-A10x13,5 Cu
156	Gummipuffer, / Rubber buffer,	Ø40 x 30 / M8
165	Rahmen /Frame	293-03 101.00
167	Platte / Plate	94-03 000.01
168	Gummipuffer, / Rubber buffer,	94-03 000.04
177	U-Schiene unten / U-track	293-02 000.01
178	Lochblech Gebläseseitig / Hole plate, blower side	293-02 200.00
179	Lochblech Motorseitig / Hole plate, engine side	293-02 100.00
180	Blechmutter / Sheet metal nut	BM 15 226
181	Riemenschutz / Belt guard	293-02 301.00
182		
	Steuereinrichtung / Controlsystem	
190	Schaltkasten / Housing	193-09 100.00
191	Grundplatte für Schaltkasten/ Plate for Controlbox	193-09 100.01
195	Betriebsstundenzähler / Running hour meter	94-09 070.00
196	Steckdose mit Kabel / Socket with cable	94-09 040.00
197	Klemmenblock / Wire terminal	
198	Halterung / Support	93-09 000.01
199	Abdeckblech für Steuerkasten /	193-09 000.03
200	Halterung für Druckschalter / Support for manometric switch	293-09 000.01
201	Druckschalter / Manometric switch	94-09 060.00
211	Not - Aus / Emergency cut-off	93-09 020.00
212	Sicherungshalter / Fuse box	94-09 000.09
213	Sicherung / Fuse KFZ 15 Amp	52-06 201 56
214	Sicherung / Fuse	KFZ 10 Amp
219	Befestigungswinkel / Fastening link	193-09 000.01
220	Batteriekabel 900 lg / Battery wire	193-09 400.00
220/1	Batteriekabel 1050 lg / Battery wire (Minus)	293-09 400.00
221	Batterie / Battery	94-09 005.01
222	Polklemme "plus" / Pole binder "plus"	94-09 005.02
223	Polklemme "minus" / Pole binder "minus"	94-09 005.03
224	Pluspolabdeckung / Pole covering "plus"	94-09 005.04
225	Schlauch / Hose	93-09 005.07
226	Gummitülle / Grommet	85-06 000.03
229	Fernbedienung vollst. **mit Kabel** / Remote control cpl. **with cable** bestehend aus / consisting of : **POS 231 - 267**	293-09 600.00
230	Fernbedienung vollst. **ohne Kabel** / Remote control cpl. **with out** cable bestehend aus / consisting of : **POS 231 - 266**	293-09 650.00
231	Gehäuse / Housing	193-09 601.01
232	Deckel / Cover	193-09 601.02
235	Stop Taster, vollst./ Cut-off button, cpl.	293-09 650 70
240	Drehknopf, vollst. / Turn switch, cpl.	293-09 650.50
246	Kontrolleuchte, vollst. grün / Pilot lamp, cpl. green	293-09 650.80
250	Kontrolleuchte, vollst. gelb / Pilot lamp, cpl.yellow	293-09 650.90
254	Drucktaster "Start", vollst. / Press button switch "Start", cpl.	293-09 650.60

Pos.Nr Ill. Nr.	Teilebezeichnung / Partname	Teile-Nr. / Part-No.
259	Steckdose 12-polig mit Kabel / Socket 12-pole with cabel	94-09 610.00
264	Zylinderschraube / Pan head screw	DIN 84 M3 x 10
265	Mutter / Nut	DIN 934 M3
266	Federring / Spring washer	DIN 127 B3
267	Kabel mit Stecker (5m) / Cable with plug (5m)	94-09 620.00
314	Sechskantmutter / Hexagon nut	DIN985 M8
315	Blechschraube / Tapping screw	DIN 7981 B4,8 x 9,5
318	Sechskantschraube / Hexagon screw	DIN933 M5x20
321	Sechskantschraube / Hexagon screw	DIN 933 M6x16
322	Sechskantschraube / Hexagon screw	DIN 933 M6x35
323	Sechskantschraube / Hexagon screw	DIN933 M8x16
324	Sechskantschraube / Hexagon screw	DIN933 M8x25
325	Sechskantschraube / Hexagon screw	DIN933 M8x35
326	Sechskantschraube / Hexagon screw	DIN933 M8x55
327	Sechskantschraube / Hexagon screw	DIN933 M8x40
328	Sechskantschraube / Hexagon screw	DIN933 M10x16
328/1	Sechskantschraube / Hexagon screw	DIN933 M10x30
329	Sechskantschraube / Hexagon screw	DIN933 M10x45
330	Sechskantschraube / Hexagon screw	DIN933 M12x35
331	Sechskantmutter / Hexagon nut	DIN934 M5
332	Sechskantmutter / Hexagon nut	DIN934 M6
333	Sechskantmutter / Hexagon nut	DIN934 M8
334	Sechskantmutter / Hexagon nut	DIN934 M10
334/1	Sechskantmutter / Hexagon nut	DIN6923 M10 VERBUS
335	Sechskantmutter / Hexagon nut	DIN934 M12
336	Federring / Spring washer	DIN127 B5
337	Federring / Spring washer	DIN127 B6
338	Federring / Spring washer	DIN127 B8
339	Federring / Spring washer	DIN127 B10
340	Federring / Spring washer	DIN127 B12
341	Unterlegscheibe / Disc	DIN125 B4,3
342	Unterlegscheibe / Disc	DIN9021 B5,3
343	Unterlegscheibe / Disc	DIN125 B6,3
344	Unterlegscheibe / Disc	DIN125 B8,4
345	Unterlegscheibe / Disc	DIN125 B10,5
346	Unterlegscheibe / Disc	DIN9021 B13
347	Federring / Spring washer	DIN 127 B4
348	Sechskantmutter / Hexagon nut	DIN 934 M4
349	Linsenkopfschraube / Oval head screw	DIN 7985 M4 x 10
351	Linsenkopfschraube / Oval head screw	DIN 7985 M5 x 8
352	Linsenkopfschraube / Oval head screw	DIN 7985 M5 x 12
357	Innensechskantschraube / Hexagon socket screw	DIN 912 M6 x 12



Ersatzteilzeichnung U15HD-M Blatt 1 von 3 2010/06
Spare part drawing U15HD-M Page 1 of 3

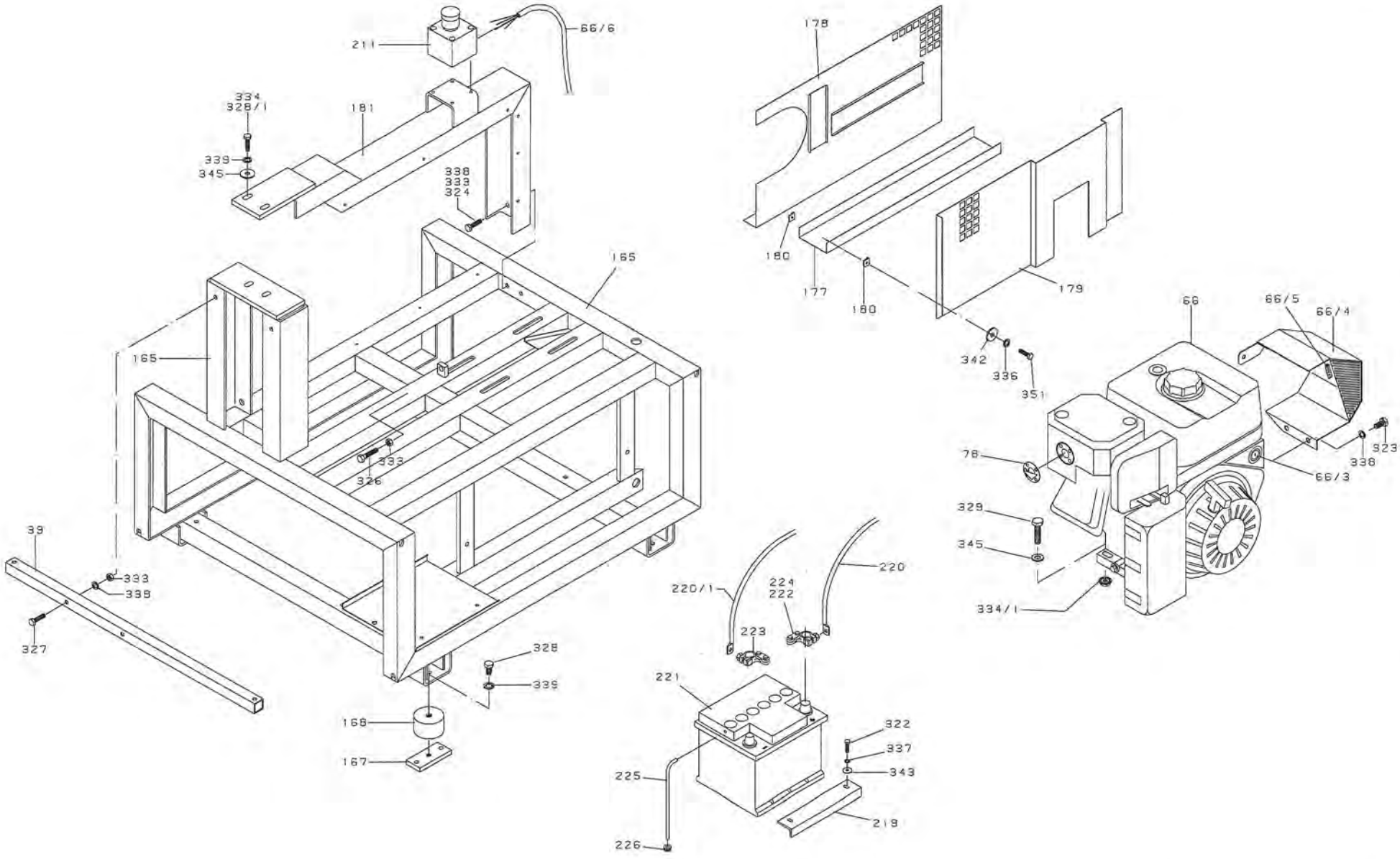
U15M\10-06-E1



Ersatzteilzeichnung U15HD-M Blatt 2 von 3 2010/06

Spare part drawing U15HD-M Page 2 of 3

10-06-E2



Ersatzteilzeichnung U15HD-M Blatt 3 von 3 2010/06
Spare part drawing U15HD-M Page 3 of 3

10-06-E3

FORM MS-1093-06/14/2007
REPLACES FORM MS-1093-04/16/2007
FILE IN SECT. 2 OF SERVICE MANUAL

245400

Illustrated Parts List

Model Series

245400

TYPE NUMBERS
0035 THROUGH 0580.

TABLE OF CONTENTS

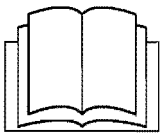
PRINTED IN U.S.A.

BRIGGS & STRATTON ®

COPYRIGHT by BRIGGS & STRATTON CORPORATION
All rights reserved. No part of this material may be reproduced or transmitted, in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system, without permission in writing from Briggs & Stratton Corporation.

245400 to 245499

1058 OPERATOR'S MANUAL



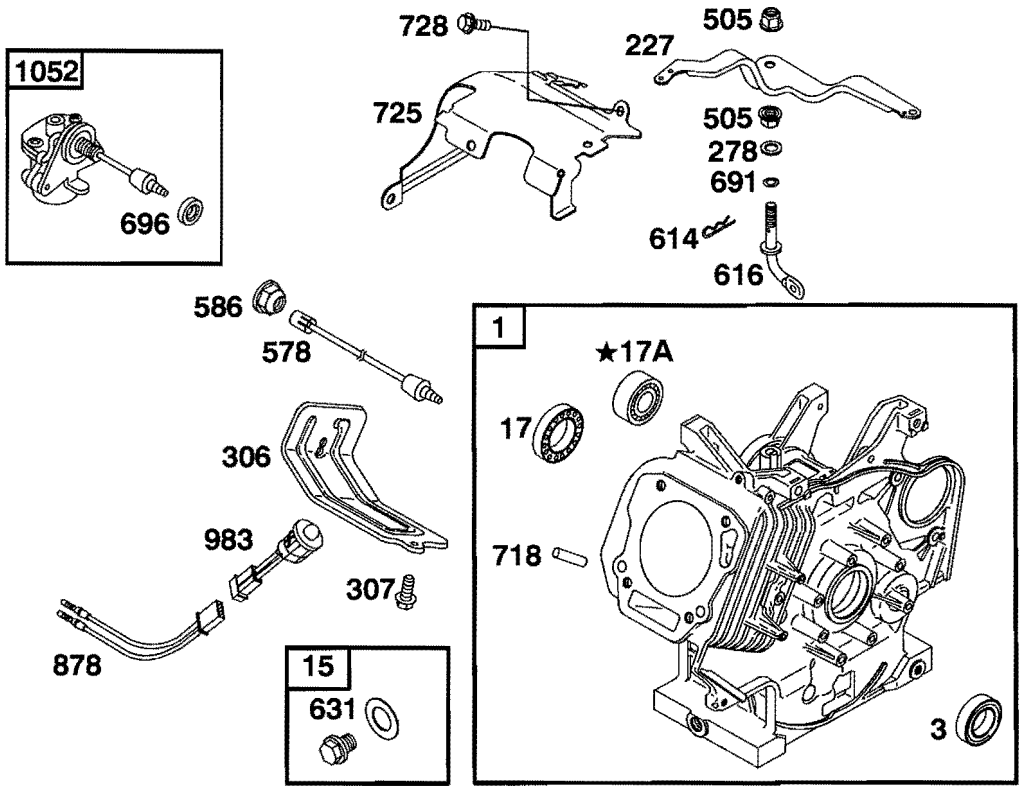
1330 REPAIR MANUAL

1319 WARNING LABEL

***REQUIRED** when replacing parts with warning labels affixed.*

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1058	**MS3824**	Operator's Manual	**1319**	**794467**	Label-Warning	**1330**	**272147**	Rfepair Manual

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

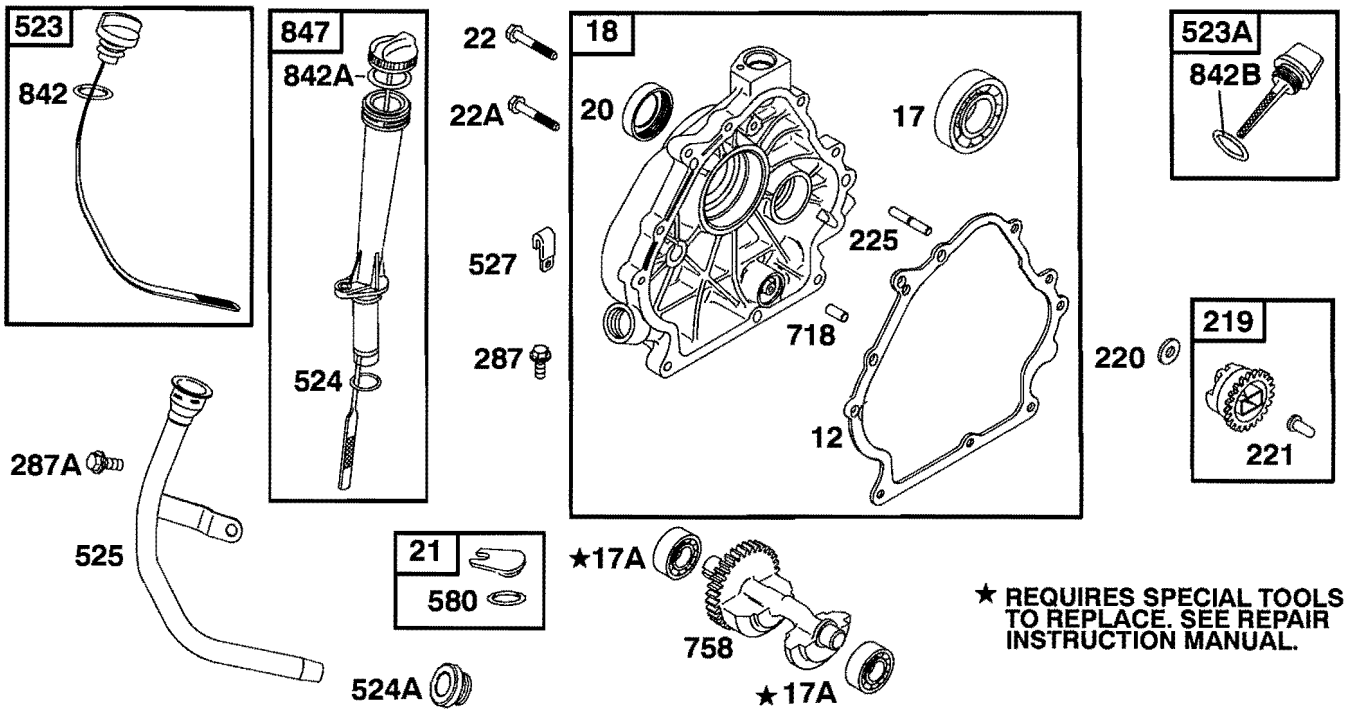


★ **REQUIRES SPECIAL TOOLS TO REPLACE. SEE REPAIR INSTRUCTION MANUAL.**

REF. NO.	PART NO.	DESCRIPTION
1	**715355**	Cylinder Assembly
		------- **Note** -----
		715356 Cylinder Assembly Used on Type No(s). 0121, 0521, 0538, 0546, 0548.
		715357 Cylinder Assembly Used on Type No(s). 0074, 0076, 0080, 0084, 0128, 0276, 0280, 0284, 0528, 0539, 0550, 0555.
		715622 Cylinder Assembly Used on Type No(s). 0299.
3	★**291675s**	Seal-Oil (Magneto Side)
15	**715000**	Plug-Oil Drain
17	**710528**	Bearing-Ball
		------- **Note** -----
		710657 Bearing-Ball Used on Type No(s). 0047, 0247.
17A	**710482**	Bearing-Ball
227	**710561**	Lever-Governor Control
278	**710058**	Washer (Governor Control Lever)
306	**710242**	Shield-Cylinder
307	**710023**	Screw (Cylinder Shield)
505	**710059**	Nut (Governor Control Lever)
578	**710308**	Wire Assembly
		------- **Note** -----
		710086 Wire Assembly Used on Type No(s). 0299.
586	**710090**	Nut (Oil Sensor)
614	**710056**	Pin-Cotter
616	**710560**	Crank-Governor
631	★**710004**	Washer (()il Drain Plug)
691	★**710055**	Seal-Governor Shaft
696	★**710091**	Seal-O Ring (Oil Sensor)
718	**710005**	Pin-Locating
725	**710568**	Shield-Heat
728	**710023**	Screw (Heat Shield)
878	**710417**	Harness-Alternator
983	**692362**	Light-Indicator
1052	**715353**	Sensor-Oil

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

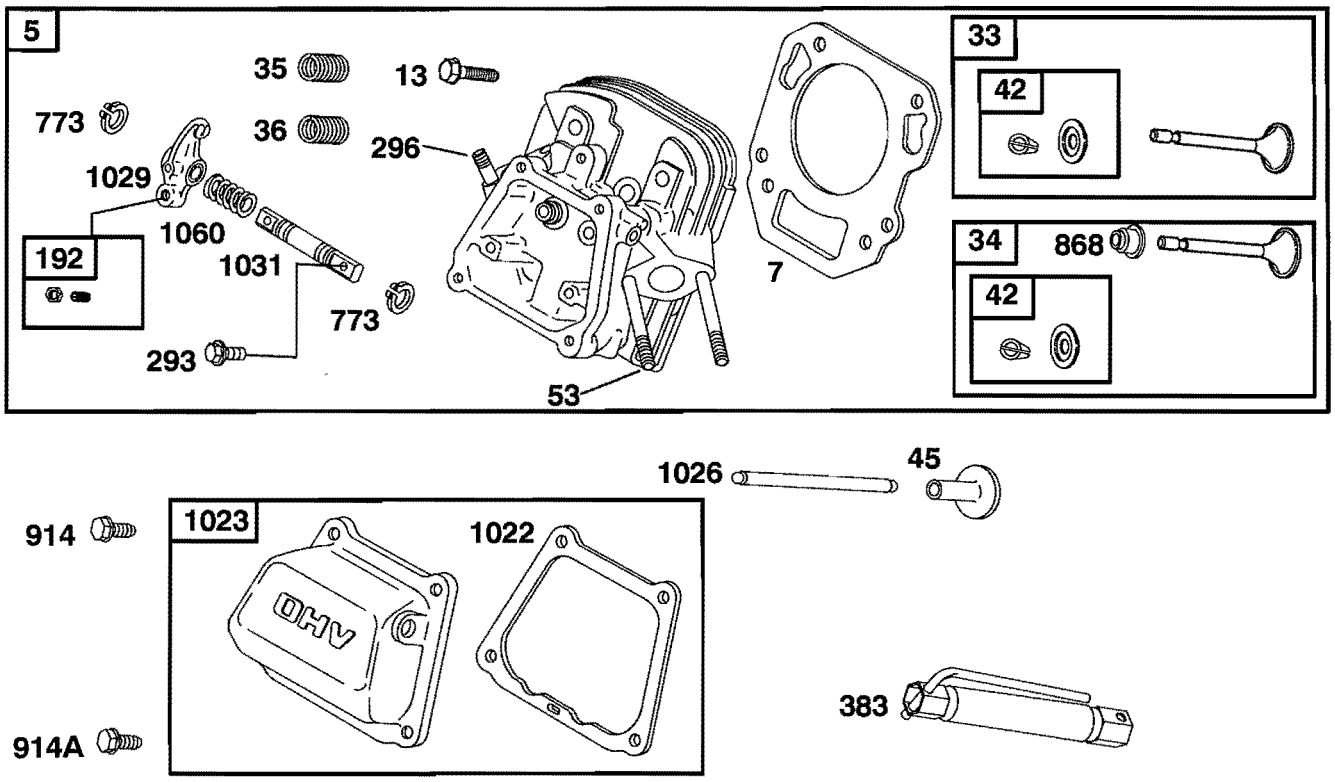
245400 to 245499



★ REQUIRES SPECIAL TOOLS TO REPLACE. SEE REPAIR INSTRUCTION MANUAL.

REF. NO.	PART NO.	DESCRIPTION
12	★710378	Gasket-Crankcase
17	710528	Bearing-Ball
		------- Note -----
		710657 Bearing-Ball Used on Type No(s). 0047, 0247.
17A	710482	Bearing-Ball
18	715359	Cover-Crankcase
		------- Note -----
		715358 Cover Crankcase Used on Type No(s). 0042, 0242, 0261, 0519, 0546, 0549.
		715526 Cover-Crankcase Used on Type No(s). 0058.
		715537 Cover-Crankcase Used on Type No(s). 0539.
		715623 Cover-Crankcase Used on Type No(s). 0299.
		715711 Cover-Crankcase (Includes Ref. 17A) Used on Type No(s). 0127.
20	★291675s	Seal-Oil (PTO Side)
21	493668	Cap-Oil Fill
22	710032	Screw (Crankcase Cover/Sump)
22A	710306	Screw (Crankcase Cover/Sump)
219	715696	Gear-Governor
220	710545	Washer (Governor Gear)
221	710027	Cup-Governor
225	710028	Shaft-Governor Gear
287	710234	Screw (Dipstick Tube)
287A	710023	Screw (Dipstick Tube)
523	692100	Dipstick Used on Type No(s). 0299.
523A	710817	Dipstick (Yellow)
524	280854	Seal-Dipstick Tube
524A	710394	Seal-Dipstick Tube Used on Type No(s). 0299.
525	710391	Tube-Dipstick Used on Type No(s). 0299.
527	710100	Clamp-Tube
580	280854	Seal-O Ring (Oil Fill Cap)
718	710005	Pin-Locating
758	710542	Counterweight
842	690611	Seal-O Ring (Dipstick Tube)
842A	270920	Seal-O Ring (Dipstick Tube)
842B	★710218	Seal-O Ring (Dipstick Tube)
847	710543	Dipstick/Tube Assembly

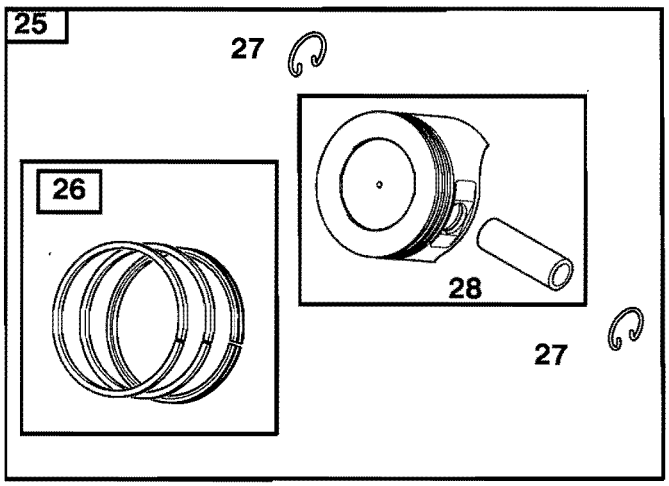
★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

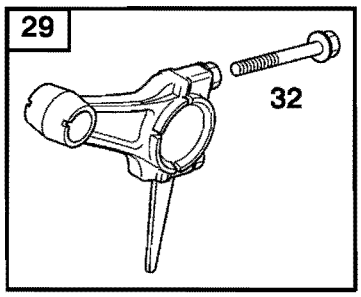


REF. NO.	PART NO.	DESCRIPTION
5	715375	Head-Cylinder
7	Δ★710539	Gasket-Cylinder Head
13	710204	Screw (Cylinder Head)
33	716079	Valve-Exhaust
34	716080	Valve-Intake
35	691279	Spring-Valve (Intake)
36	691279	Spring-Valve (Exhaust)
42	715130	Keeper-Valve
45	710530	Tappet-Valve
53	710556	Stud (Carburetor)
		------- **Note** -----
		710816 Stud Used on Type No(s). 0299.
192	715372	Adjuster-Rocker Arm
293	710538	Screw (Rocker Arm Shaft)
296	710099	Stud (Muffler)
383	19374	Wrench-Spark Plug
773	710537	Retainer
868	Δ710863	Seal-Valve
914	710023	Screw (Rocker Cover) (M6x12MM Long)
		------- **Note** -----
		710248 Screw (Rocker Cover) (M6X16MM Long)
914A	710248	Screw (Rocker Cover)
1022	Δ★710377	Gasket-Rocker Cover
1023	715376	Cover-Rocker Arm
1026	710373	Rod-Push
1029	710534	Arm-Rocker
1031	710533	Shaft-Rocker Arm
1060	710535	Spring-Rocker Shaft

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

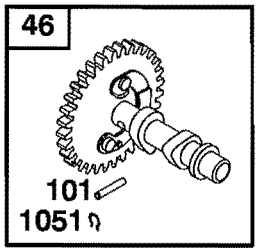
245400 to 245499

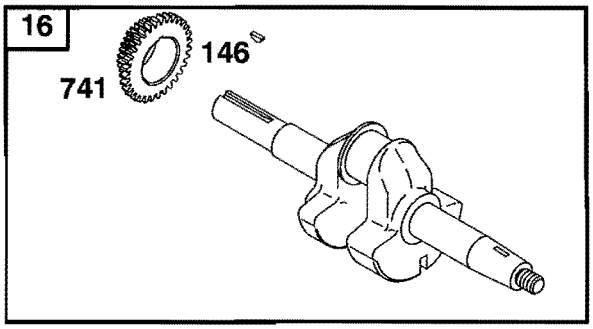


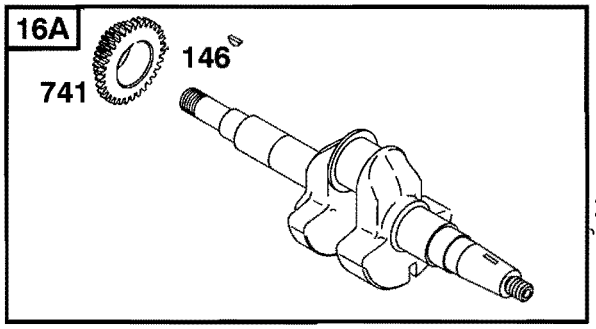


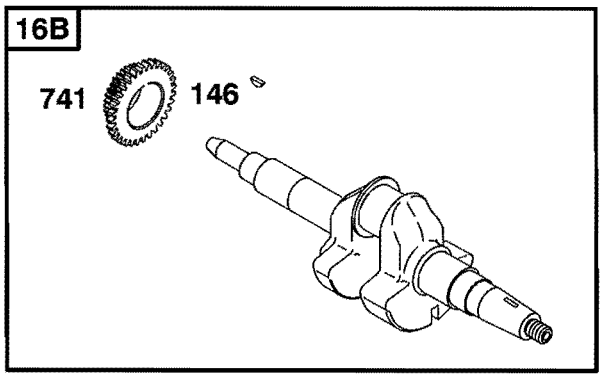
REF. NO.	PART NO.	DESCRIPTION
25	**715793**	Piston Assembly (Standard)
		------- Note -----
		715797 Piston Assembly (.020" Oversize)
26	**715346**	Ring Set (Standard)
		------- Note -----
		715368 Ring Set (.020" Oversize)
27	**691792**	Lock-Piston Pin
28	**715407**	Pin-Piston (Standard)
29	**715345**	Rod-Connecting (Standard)
		------- Note -----
		715366 Rod-Connecting-020 (.020" Undersize)
32	**710221**	Screw (Connecting Rod)

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.





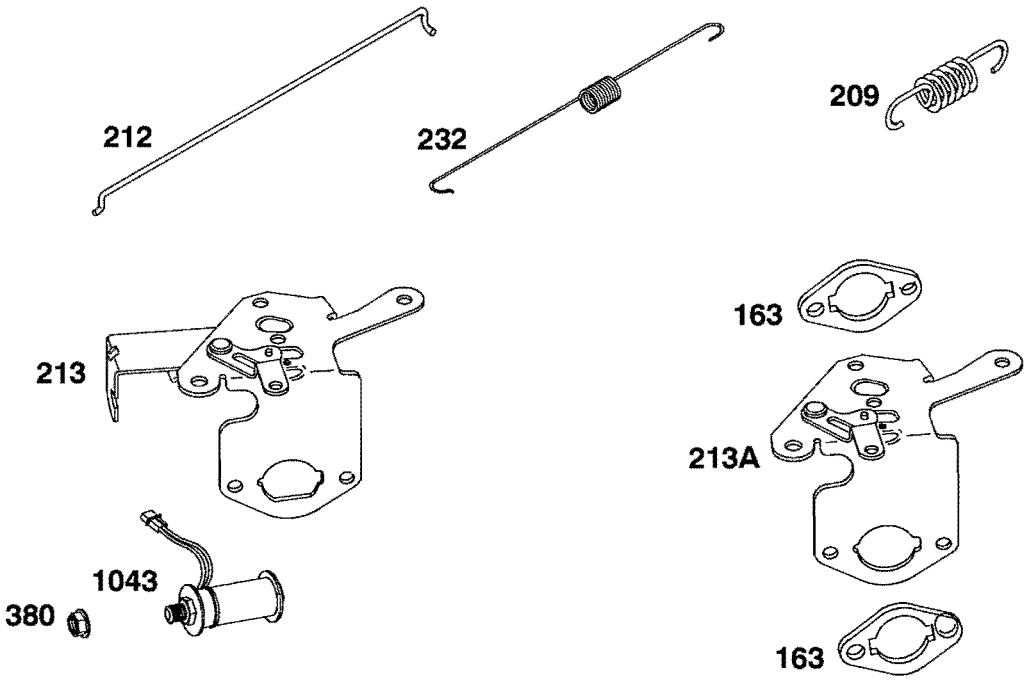




REF. NO.	PART NO.	DESCRIPTION
16	716181	Crankshaft (SAE 1" Keyway, With Loose Spur Gear) (Used After Code Date 01013100). ------- Note ----- **715342** Crankshaft (SAE 1" Keyway, With Pressed On Spur Gear) (Used Before Code Date 01020100).
16A	716182	Crankshaft (SAE 1"Threaded, With Loose Spur Gear) (Used After Code Date 01013100). ------- Note ----- **715344** Crankshaft (SAE 1" Threaded, With Pressed On Spur Gear) (Used Before Code Date 01020100).
16B	716083	Crankshaft (SAE Taper, With Loose Spur Gear) (Used After Code Date 01013100). ------- Note ----- **715343** Crankshaft (SAE Taper, With Pressed On Spur Gear) (Used Before Code Date 01020100).
24	710037	Key-Flywheel
46	715369	Camshaft (Spur Gear With Compression Release)(Use Also For Non-Compression Release Application)
101	710547	Pin-Shaft
146	711336	Key-Timing
741	711335	Gear-Timing (Used After Code Date 01013100).
1051	710548	Ring-Retaining

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

245400 to 245499

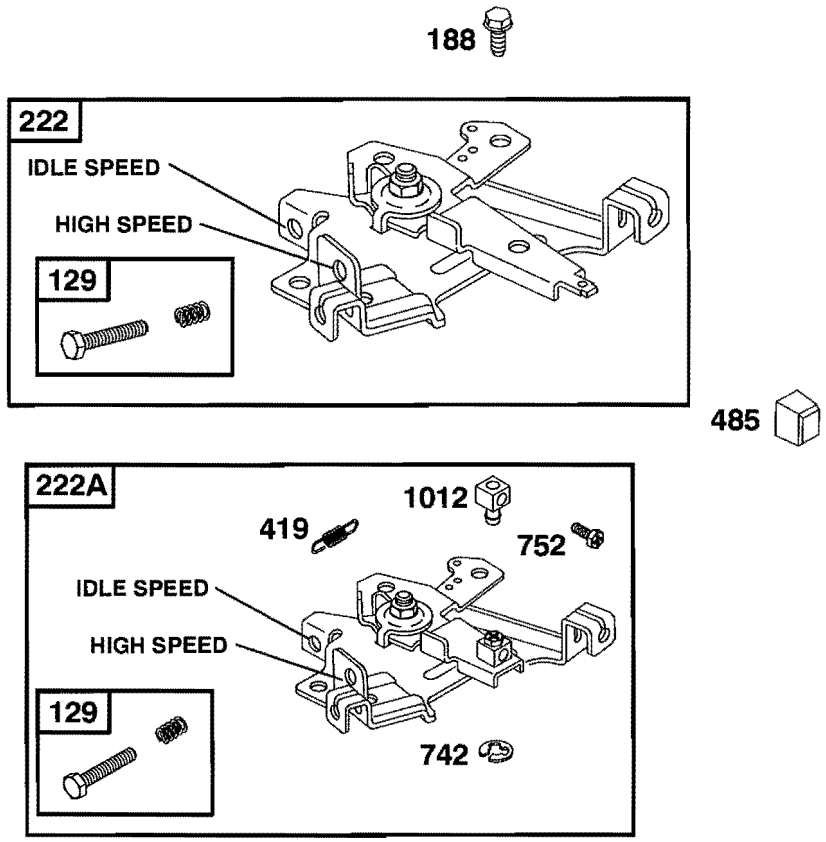


REF. NO.	PART NO.	DESCRIPTION
163★◆●710557		Gasket-Air Cleaner
209	710706	Spring-Governor
		------- **Note** -----
		710565 Spring-Governor Used on Type No(s). 0047, 0058, 0080, 0083, 0090, 0127, 0128, 0280, 0290, 0519, 0523, 0527, 0528, 0544, 0550, 0553, 0555, 0562, 0563.
		710655 Spring-Governor Used on Type No(s). 0042, 0070, 0071, 0074, 0242, 0261, 0270, 0532, 0549, 0559, 0561.

REF. NO.	PART NO.	DESCRIPTION
212	710562	Link-Throttle
213	715348	Bracket-Choke Control Used on Type No(s). 0042, 0242, 0261, 0532, 0559.
213A	715347	Bracket-Choke Control

REF. NO.	PART NO.	DESCRIPTION
232	710563	Spring-Governor Link
380	710081	Nut (Electro Magnet)
1043	692955	Magnet-Electro

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.



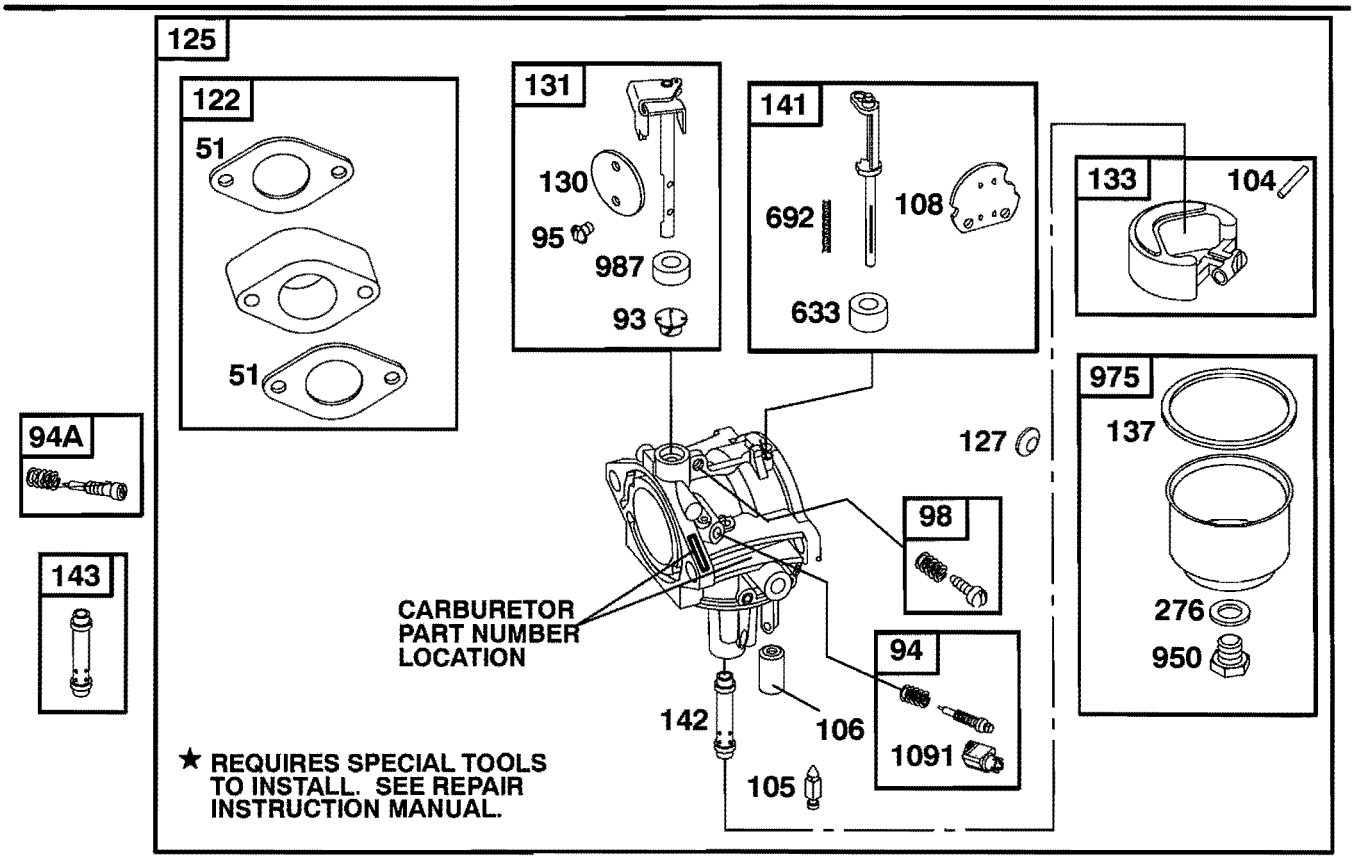
REF. NO.	PART NO.	DESCRIPTION
129	**715024**	Screw/Spring-Governor Speed (Idle & High Speed Adjustment) **-------- Note -----** **715170** Screw/Spring-Governor Speed (Idle & High Speed Adjustment) Used on Type No(s). 0042, 0071, 0074, 0080, 0083, 0090.
188	**710057**	Screw (Control Bracket)

REF. NO.	PART NO.	DESCRIPTION
222	**715025**	Bracket-Control **-------- Note -----** **715046** Bracket-Control Used on Type No(s). 0042, 0058, 0070, 0071, 0074, 0080, 0083, 0090, 0127, 0128, 0242, 0261, 0270, 0280, 0290, 0519, 0523, 0527, 0528, 0529, 0532, 0544, 0549, 0550, 0555, 0559, 0561, 0562, 0563.

REF. NO.	PART NO.	DESCRIPTION
222A	**715676**	Bracket-Control Used on Type No(s). 0538.
419	**710475**	Spring-Return
485	**692295**	Knob-Control
742	**710477**	Retainer-E Ring
752	**710478**	Screw (Link Retainer)
1012	**710855**	Retainer-Link

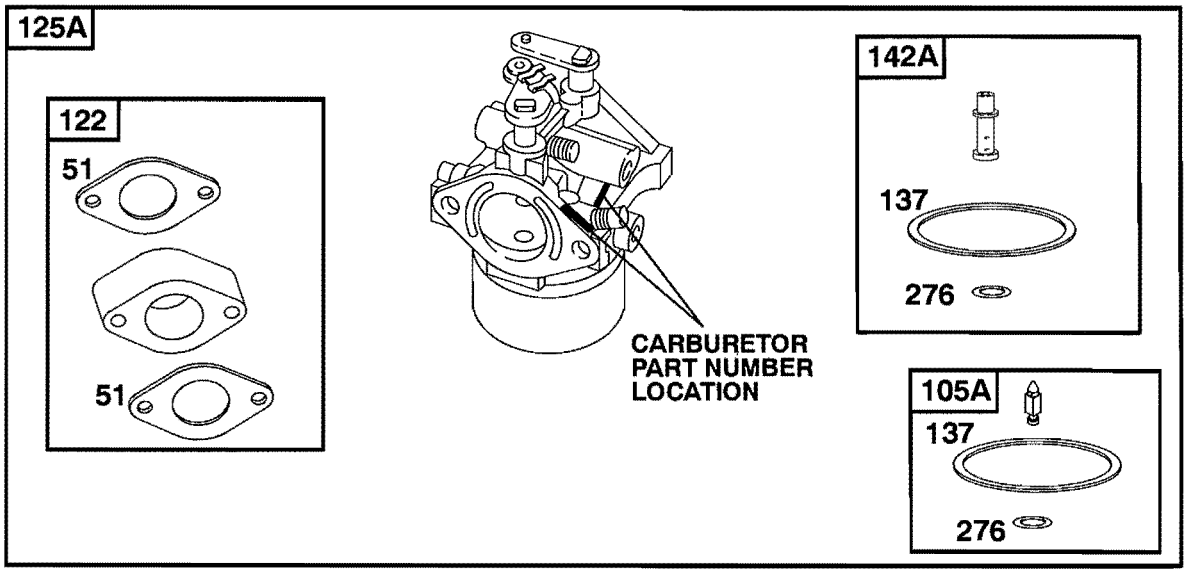
★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

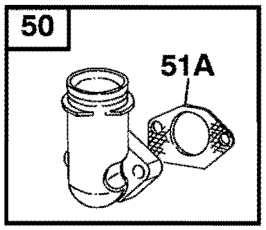
245400 to 245499



REF. NO.	PART NO.	DESCRIPTION
51★●◆△	710559	Gasket-Intake
93	●690602	Bushing-Throttle Shaft
94	498030	Kit-Idle Mixture (Carburetor Pt. No. 715330)
94A	496589	Kit-Idle Mixture (Carburetor Pt. No. 715399)
95	●691636	Screw (Throttle Valve)
98	495800	Kit-Idle Speed
104	●690525	Pin-Float Hinge
105	●231855s	Valve-Float Needle
106	●690577	Seat-Inlet
108	691227	Valve-Choke
122	715377	Spacer-Carburetor
125		Carburetor (Carburetor Pt. No. 715330)((Replace With Service Carburetor 715783)
127	●695005	Plug-Welch
130	690468	Valve-Throttle
131	715388	Kit-Throttle Shaft
133	494381	Float-Carburetor
137●◆	281165s	Gasket-Float Bowl
141	715382	Kit-Choke Shaft
142	●691462	Nozzle-Carburetor (Standard)
143	691462	Nozzle-Carburetor (High Altitude)
276	●◆692255	Washer-Sealing
633	●690597	Seal-Choke/Throttle Shaft
692	691301	Spring-Detent
950	691657	Screw-Float Bowl
975	495933	Bowl-Float
987	●691326	Seal-Throttle Shaft
1091	691333	Cap-Limiter

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
△ Included in Valve Gasket Set-Ref. No. 1095.

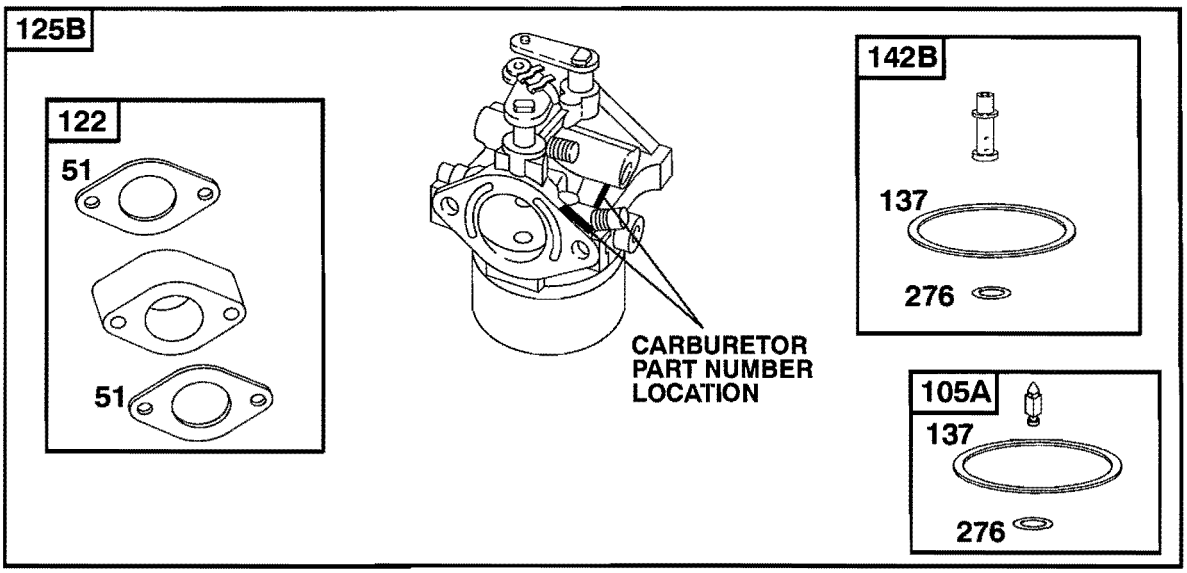




REF. NO.	PART NO.	DESCRIPTION
50	**715783**	Manifold-Intake Used on Type No(s). 0299.
51	Δ★**710559**	Gasket-Intake
51A	**710819**	Gasket-Intake Used on Type No(s). 0299.
105A	**712001**	Valve-Float Needle
122	**715377**	Spacer-Carburetor
125A	**715625**	Carburetor Used on Type No(s). 0299.
137	♦**281165s**	Gasket-Float Bowl
142A	**711995**	Nozzle-Carburetor
276	♦**692255**	Washer-Sealing

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

245400 to 245499

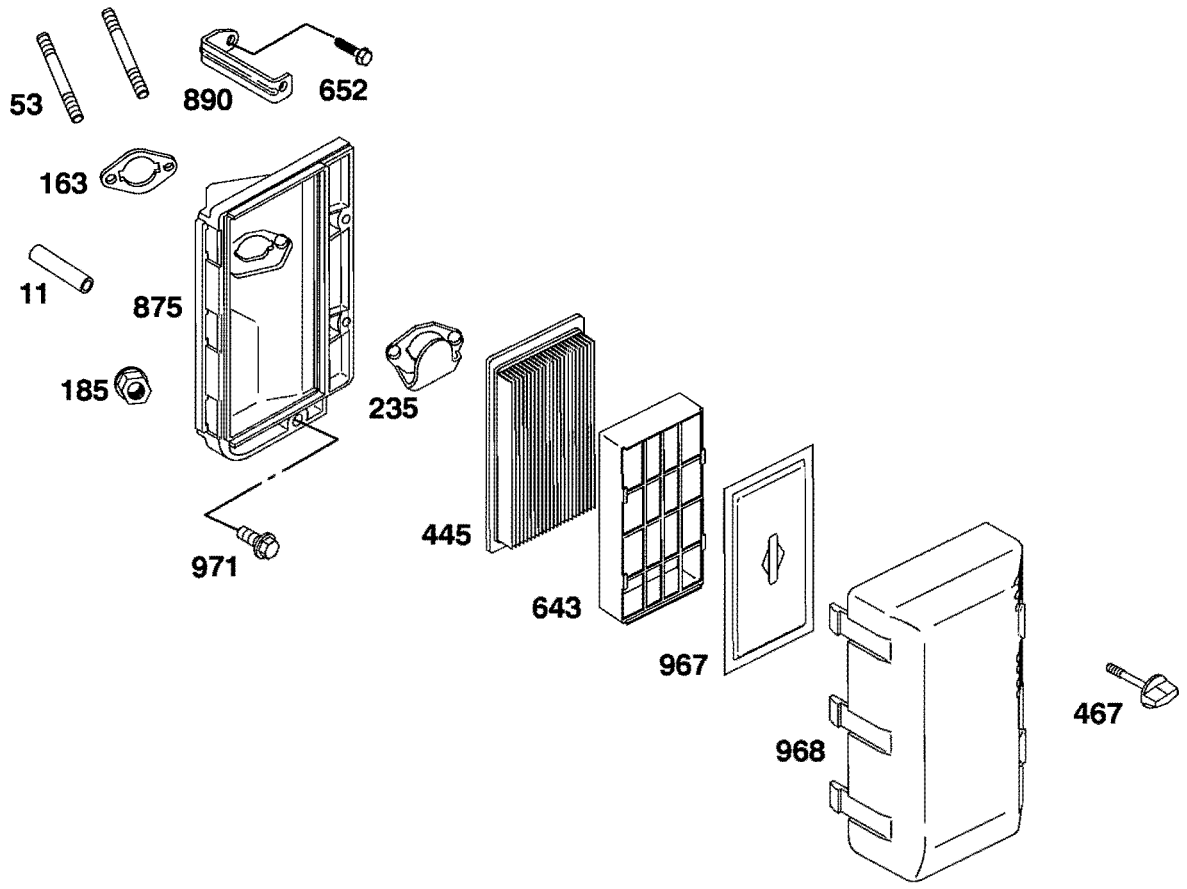


REF. NO.	PART NO.	DESCRIPTION
105A	**712001**	Valve-Float Needle
125B	**715783**	Carburetor **-------- Note -----** **715784** Carburetor Used on Type No(s). 0261, 0553, 0561, 0562.
137	**♦281165s**	Gasket-Float Bowl

REF. NO.	PART NO.	DESCRIPTION
142B	**712002**	Nozzle-Carburetor **-------- Note -----** **712009** Nozzle- Carburetor Used on Type No(s). 0261, 0553, 0561, 0562.

REF. NO.	PART NO.	DESCRIPTION
276	**♦692255**	Washer-Sealing

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.



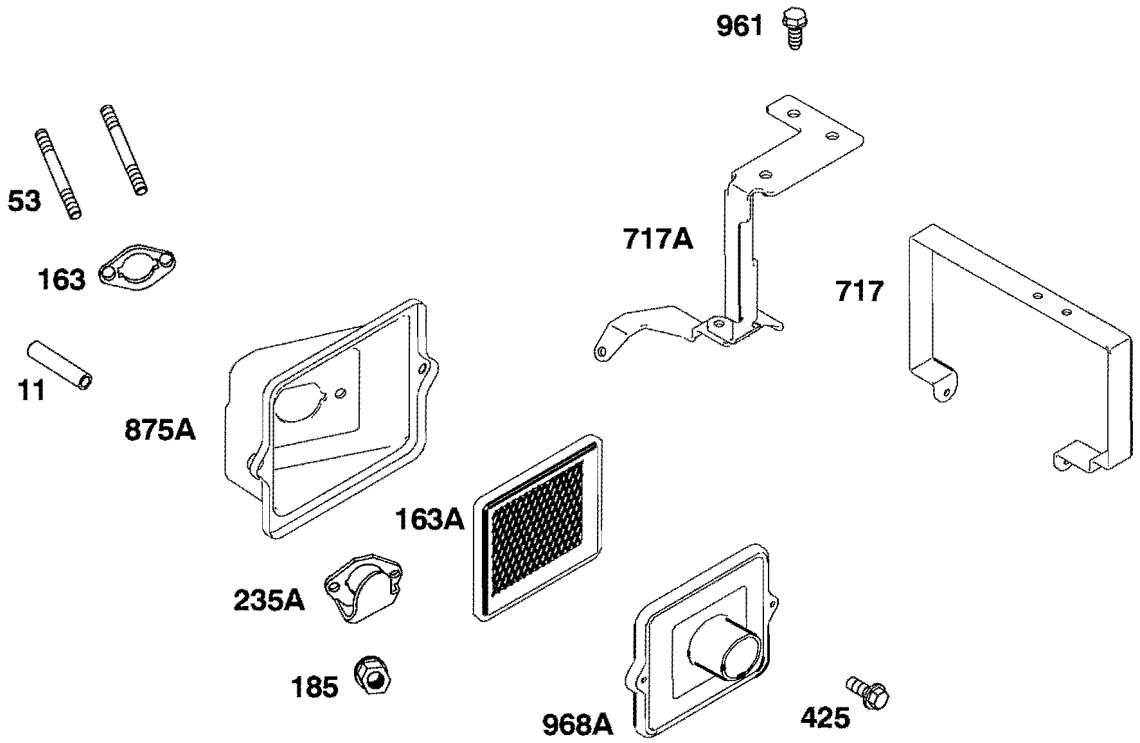
REF. NO.	PART NO.	DESCRIPTION
11	710115	Tube-Breather
		------- Note -----
		710815 Tube-Breather Used on Type No(s). 0299.
53	710556	Stud (Carburetor)
		------- Note -----
		710816 Stud Used on Type No(s). 0299.

REF. NO.	PART NO.	DESCRIPTION
163★◆●	710557	Gasket-Air Cleaner
185	710068	Nut (Air Cleaner Base)
235	710553	Shield-Fuel Spray
445	710266	Filter-Air Cleaner Cartridge
467	710113	Knob-Air Cleaner
643	710228	Retainer-Air Filter
652	710248	Screw (Support Bracket)
875	710551	Base-Air Cleaner (Plastic)

REF. NO.	PART NO.	DESCRIPTION
890	710554	Bracket-Support (Air Cleaner)
967	710268	Filter-Pre Cleaner
968	710552	Cover-Air Cleaner
971	710234	Screw (Air Cleaner Base To Carburetor)

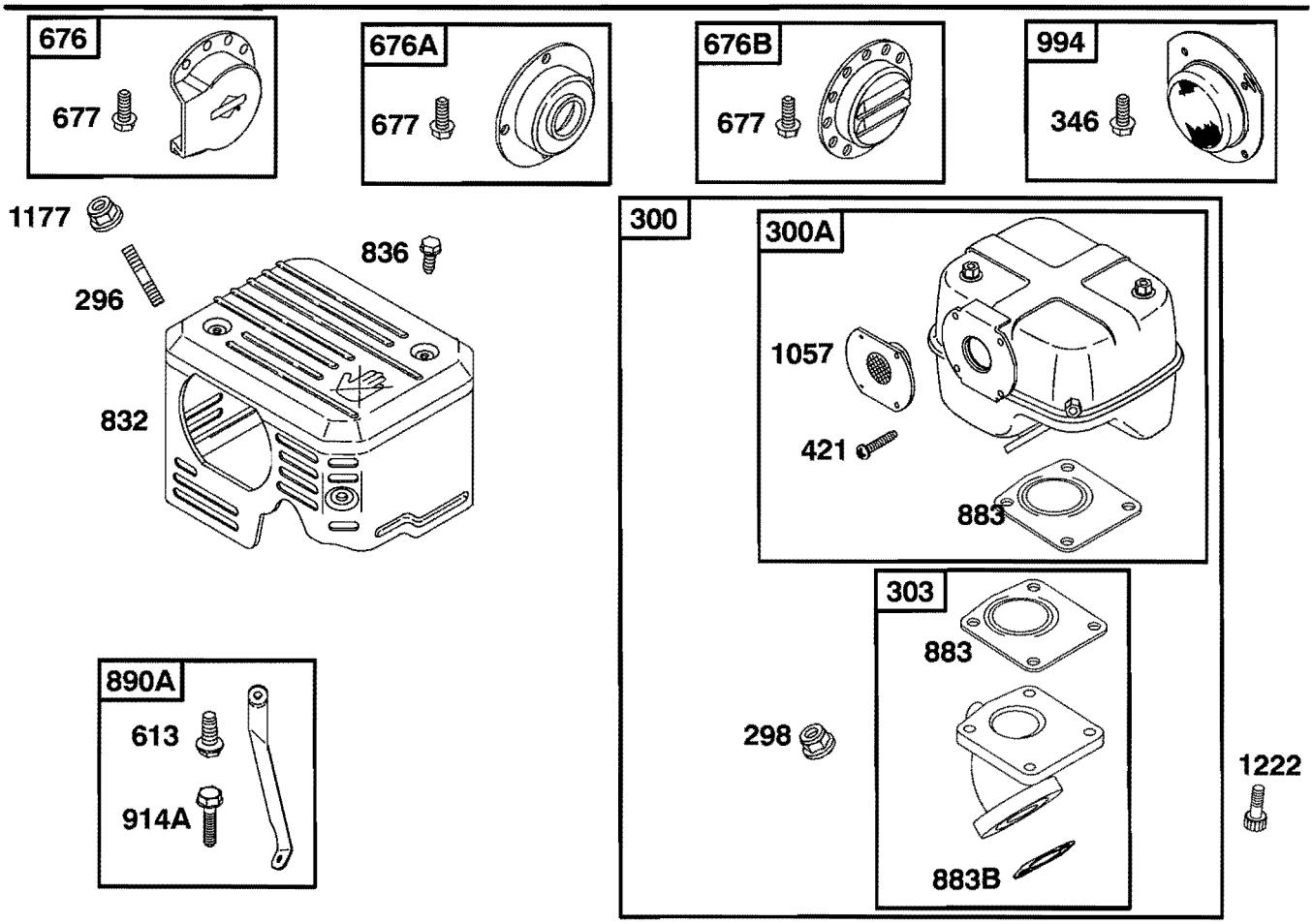
★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

245400 to 245499



REF. NO.	PART NO.	DESCRIPTION
11	710115	Tube-Breather
53	710556	Stud (Carburetor)
163★◆●Δ	710557	Gasket-Air Cleaner
163A	711950	Gasket-Air Cleaner
185	710068	Nut (Air Cleaner Base)
235A	711956	Shield-Fuel Spray
425	694515	Screw (Air Cleaner Cover)
717	711951	Bracket-Air Cleaner
717A	711952	Bracket-Air Cleaner
875A	711955	Base-Air Cleaner
961	711953	Screw (Air Cleaner Bracket)
968A	711954	Cover-Air Cleaner

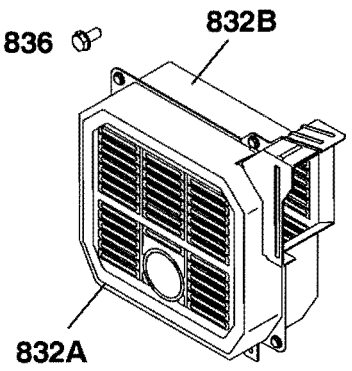
★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

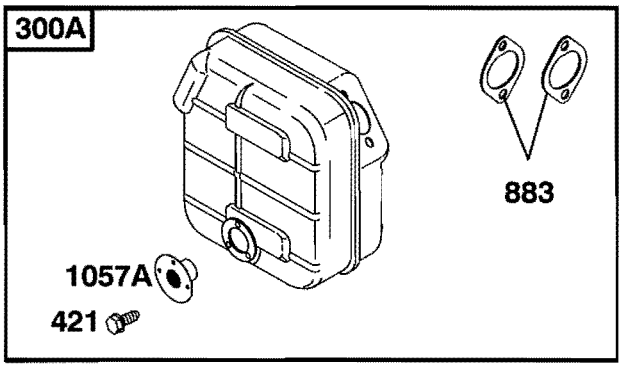


REF. NO.	PART NO.	DESCRIPTION
296	710099	Stud (Muffler)
298	710090	Locknut-Muffler/Elbow
300	715894	Muffler
300A	715826	Muffler
303	715824	Elbow-Exhaust
346	690661	Screw (Spark Arrestor)
421	710307	Screw (Outlet Screen)
613	710976	Screw (Muffler)
676	393761	Deflector-Muffler (Side Out)
676A	396903	Deflector-Muffler (Direct Out)
676B	397630	Deflector-Muffler (Louvered)
677	690771	Screw (Muffler Deflector)
832	710586	Guard-Muffler
836	710074	Screw (Muffler Guard)
883	Δ★711182	Gasket-Exhaust
883B	Δ★711181	Gasket-Exhaust
890A	715422	Bracket-Support
914A	710248	Screw (Rocker Cover)
994	392390	Arrestor-Spark
1057	710585	Screen-Outlet
1177	710081	Nut (Muffler) Used on Type No(s). 0299.
1222	711183	Screw (Exhaust Pipe)

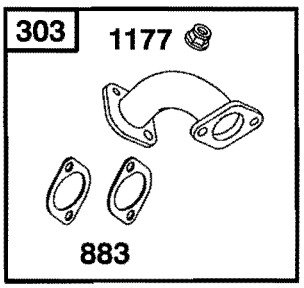
★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

245400 to 245499



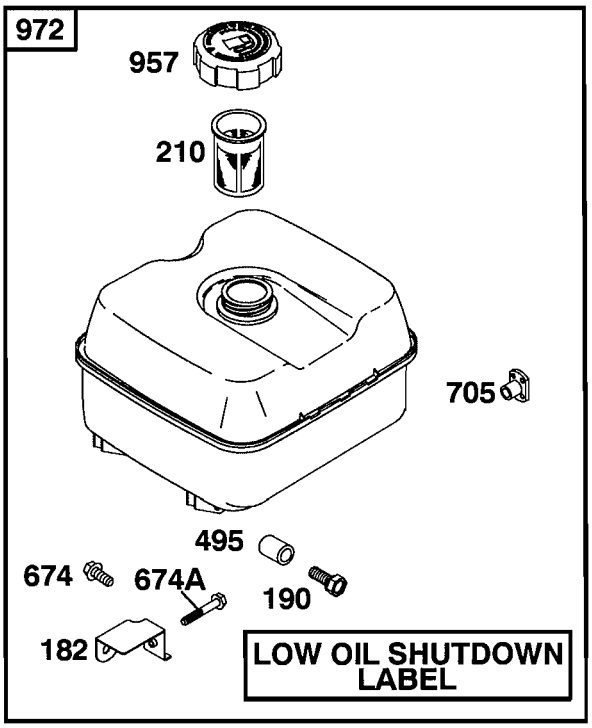


NOTE: This muffler is intended for replacement purposes only and is not to be used for retrofitting to engines with different exhaust systems.



REF. NO.	PART NO.	DESCRIPTION
300A	**715600**	Muffler (Low Mount)
303	**715604**	Elbow-Exhaust (Low Mount)
421	**710307**	Screw (Outlet Screen)
832A	**710791**	Guard-Muffler (Low Mount, Front)
832B	**710792**	Guard-Muffler (Low Mount, Rear)
836	**710074**	Screw (Muffler Guard)
883	**Δ★710250**	Gasket-Exhaust
1057A	**710331**	Screen-Outlet
1177	**710090**	Nut (Muffler)

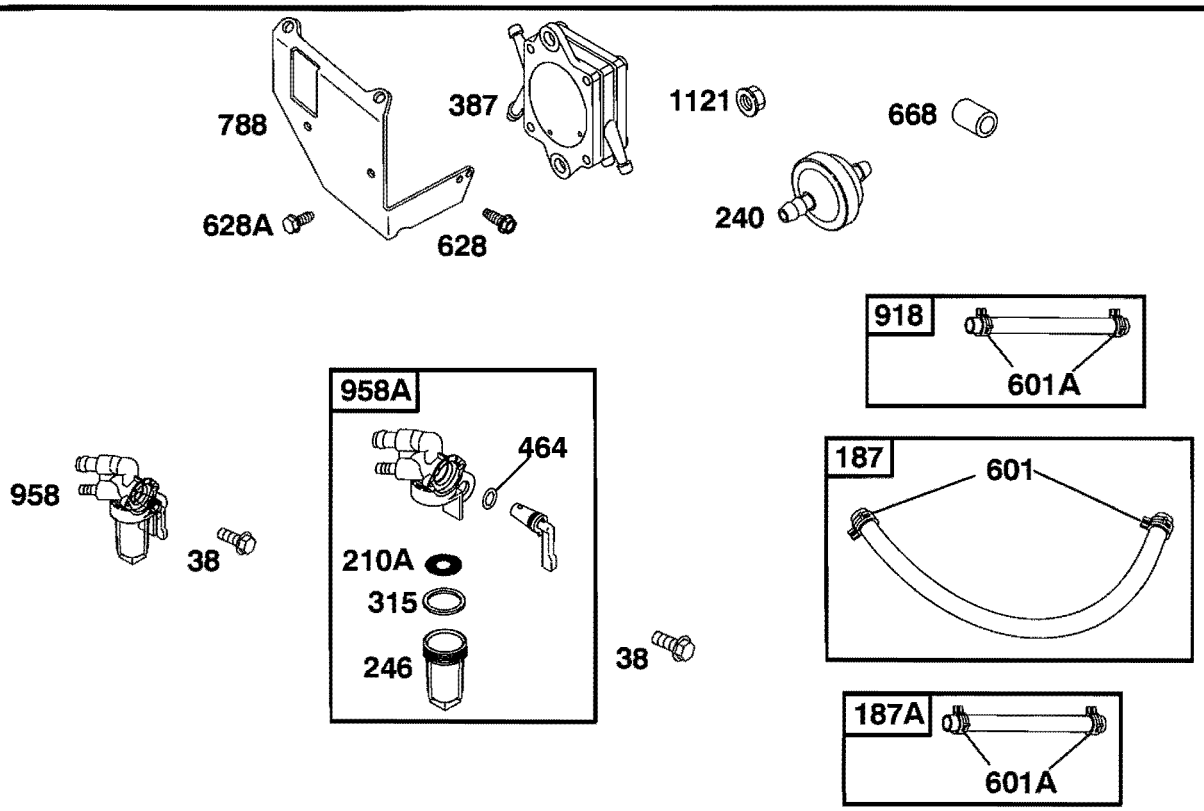
★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.



REF. NO.	PART NO.	DESCRIPTION
182	**710491**	Bracket-Fuel Tank
190	**710047**	Screw (Fuel Tank)
210	**691370**	Strainer-Fuel (Fuel Tank Bracket)
495	**710508**	Bushing
674	**710023**	Screw (Fuel Tank Bracket)
674A	**710095**	Screw (Fuel Tank Bracket)
705	**710509**	Nut (Fuel Tank)
957	**491367**	Cap-Fuel Tank
972	**715516**	Tank-Fuel (Plastic)

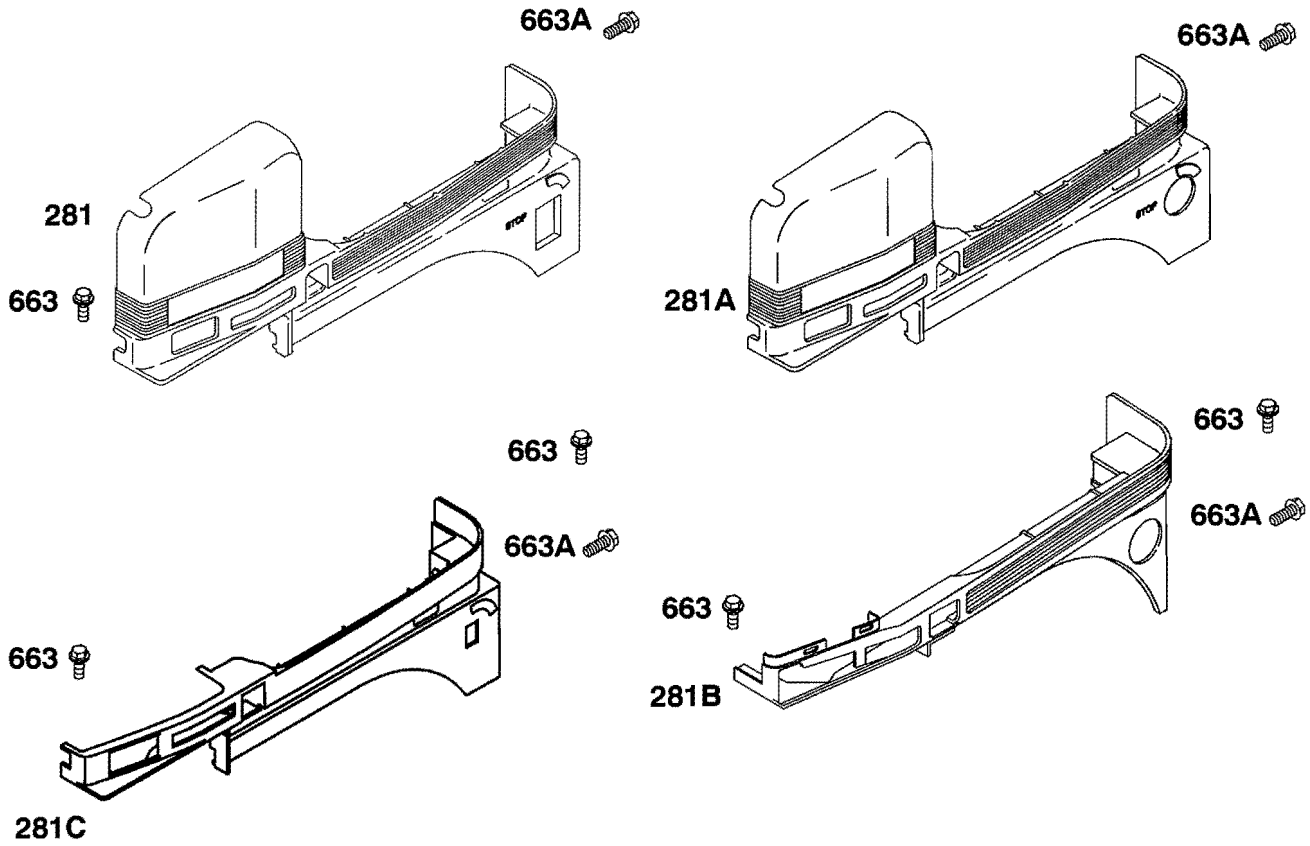
★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

245400 to 245499



REF. NO.	PART NO.	DESCRIPTION
38	**710160**	Screw (Fuel Shut Off Valve)
187	**716126**	Line-Fuel (8mm Inside Diameter) (Cut To Required Length)
187A	**716123**	Line-Fuel (6mm Inside Diameter) (Cut To Required Length)
210A	**710071**	Strainer-Fuel
240	**298090s**	Filter-Fuel
		------- Note -----
		691035 Filter-Fuel Used on Type No(s). 0299.
246	**710070**	Bowl-Fuel Filter
315	**710072**	Seal-O Ring (Filter Bowl)
387	**715303**	Pump-Fuel
		------- Note -----
		808656 Pump-Fuel Used on Type No(s). 0299.
464	**★710069**	Seal-O Ring (Fuel Shut Off Valve)
601	**711998**	Clamp-Hose
601A	**711925**	Clamp-Hose
628	**710248**	Screw (Fuel Pump Bracket)
628A	**710234**	Screw (Fuel Pump Bracket)
668	**710159**	Spacer
788	**710917**	Bracket-Fuel Pump
918	**716124**	Hose-Vacuum (6mm Inside Diameter) (Cut To Required Length)
958	**716111**	Valve-Fuel Shut Off (Plastic) (Used After Code Date 04072900).
958A	**715224**	Valve-Fuel Shut Off (Plastic) (Used Before Code Date 04073000).
1121	**710068**	Nut (Fuel Pump Bracket)

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

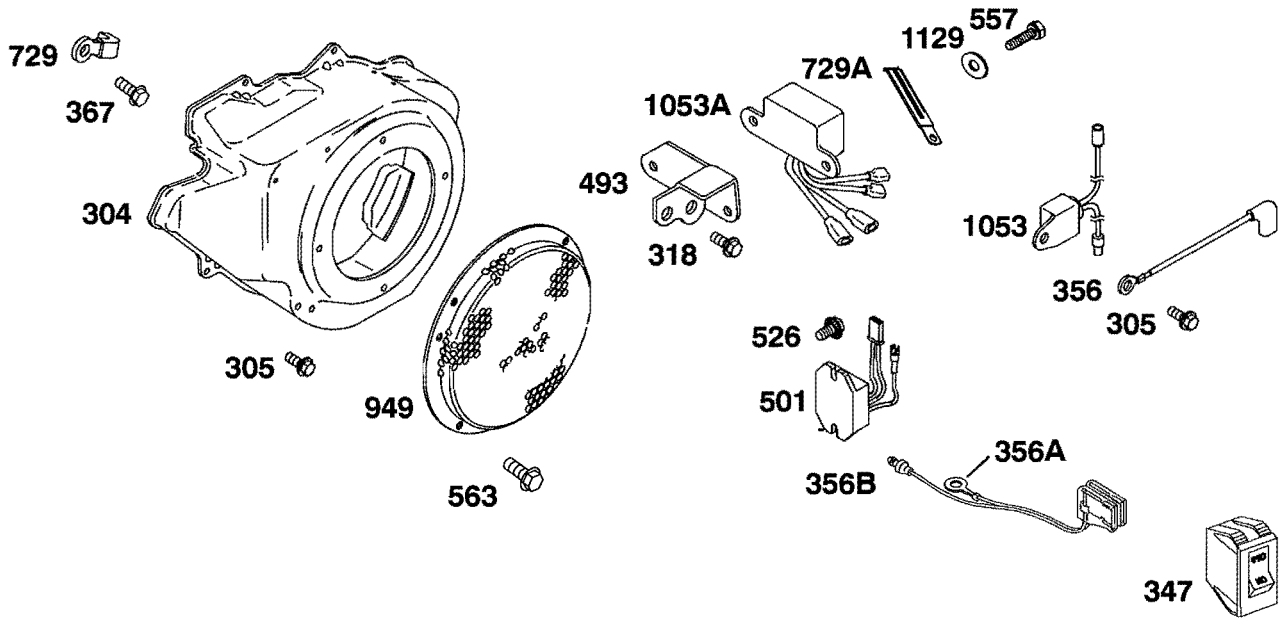


1036 EMISSIONS LABEL

REF. NO.	PART NO.	DESCRIPTION
281	**711765**	Panel-Control (Manual Start With Cover)
281A	**711990**	Panel-Control (Electric Start With Cover) (Used After Code Date 03063000). ------- **Note** ----- **711296** Panel-Control (Electric Start With Cover) (Used Before Code Date 03070100).
281B	**711991**	Panel-Control (Electric Start Without Cover) (Used After Code Date 03063000). ------- **Note** ----- **710919** Panel-Control (Electric Start Without Cover) (Used Before Code Date 03070100).
281C	**711959**	Panel-Control (Manual Start Without Cover) (Used After Code Date 03063000). ------- **Note** ----- **710571** Panel-Control (Used Before Code Date 03070100). (Manual Start Without Cover)
663	**710234**	Screw (Control Panel)
663A	**710095**	Screw (Control Panel)
1036		Label-Emissions (Available From A Briggs & Stratton Authorized Dealer)

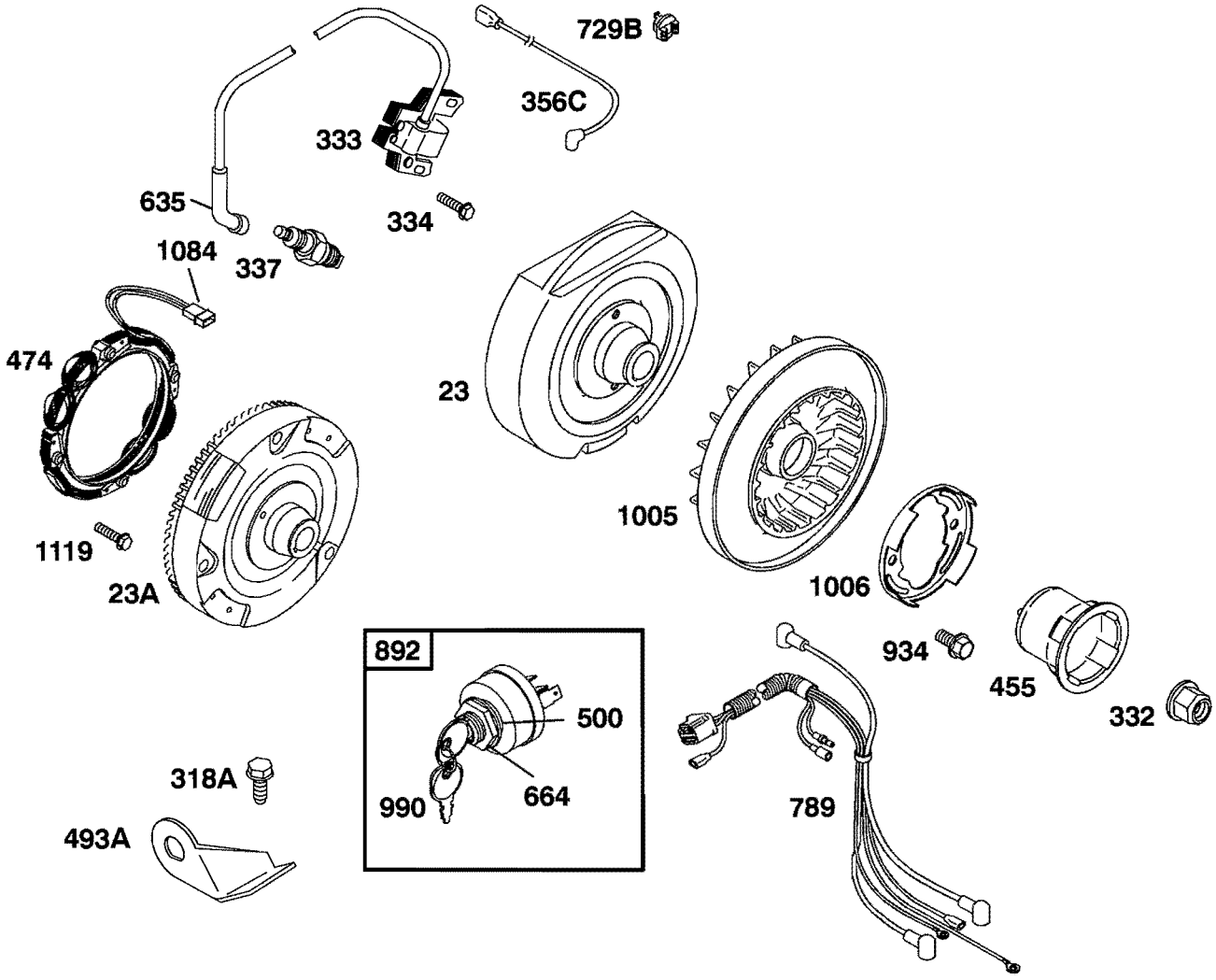
★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

245400 to 245499



REF. NO.	PART NO.	DESCRIPTION
304	**711286**	Housing-Blower (Red)(Electric Start)
		------- Note -----
		710574 Housing-Blower (Red)(Electric Start) Used on Type No(s). 0284A1.
		711937 Housing-Blower (Black)(Rewind Start)
305	**710023**	Screw (Blower Housing)
318	**710023**	Screw (Mounting Bracket)
347	**711764**	Switch-Rocker
356	**710120**	Wire-Stop
356A	**711839**	Wire-Stop
356B	**711840**	Wire-Stop
367	**710023**	Screw (Wire Clip)
493	**710085**	Bracket-Mounting (Oil Gard® Module) Used on Type No(s). 0299.
501	**691185**	Regulator
526	**710057**	Screw (Regulator)
557	**710781**	Screw (Oil Gard® Module)
563	**710074**	Screw (Debris Guard Screen)
729	**710083**	Clip-Wire
729A	**710407**	Clip-Wire Used on Type No(s). 0299.
949	**690475**	Guard-Debris Screen
1053	**710305**	Module-Oil Gard®
1053A	**710408**	Module-Oil Gard® Used on Type No(s). 0299.
1129	**710415**	Screw (Oil Gard® Module)

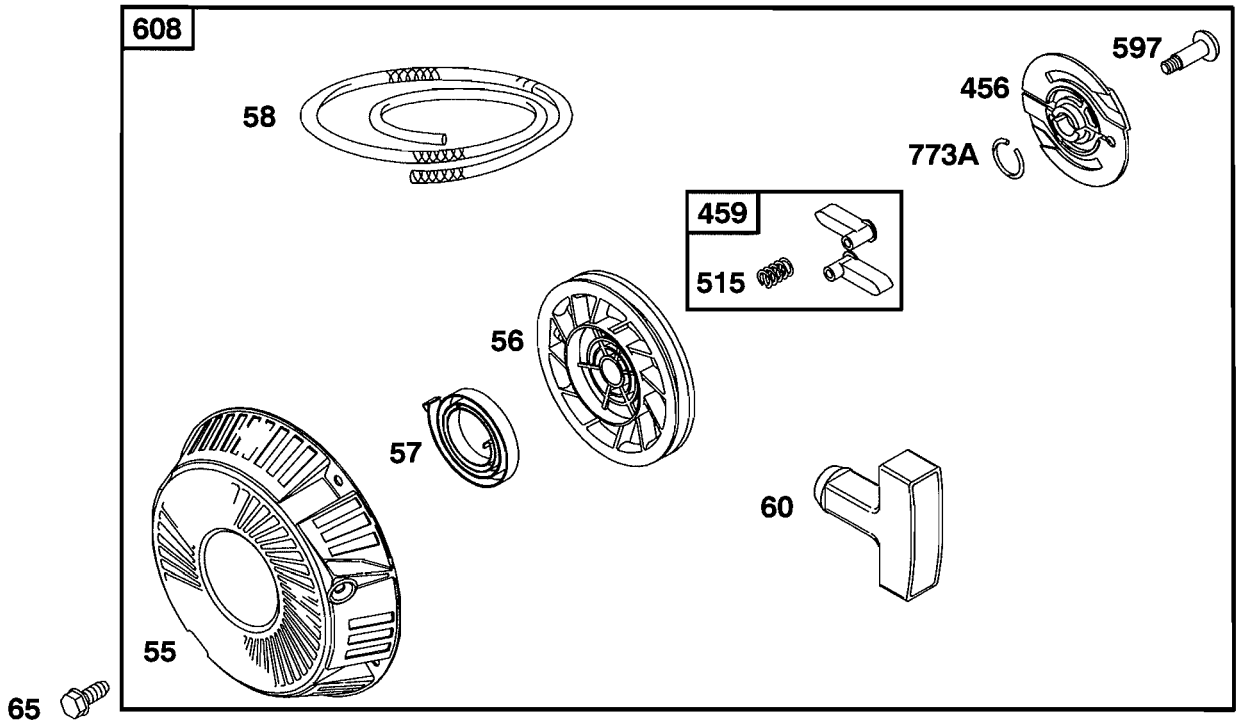
★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.



REF. NO.	PART NO.	DESCRIPTION
23	715265	Flywheel (For Rewind Starter)
23A	715258	Flywheel (Electric Start)
		------- Note -----
		715260 Flywheel (Electric Start) Used on Type No(s). 0084, 0128, 0284, 0528, 0539, 0541.
318A	710057	Screw (Mounting Bracket)
332	710345	Nut (Flywheel)
333	492341	Armature-Magneto
334	690938	Screw (Magneto Armature)
337	491055	Plug-Spark
356C	710324	Wire-Stop
		------- Note -----
		710097 Wire-Stop Used on Type No(s). 0299.
455	710588	Cup-Flywheel
		------- Note -----
		710820 Cup-Flywheel Used on Type No(s). 0299.
474	715798	Alternator
493A	710575	Bracket-Mounting (Key Switch)
500	691086	Washer (Key Switch)
635	710901	Boot-Spark Plug
664	691087	Nut (Key Switch)
729B	710046	Clip-Wire
789	710576	Harness-Wiring
892	692318	Switch-Key
934	710550	Screw (Fan Retainer)
990	691959	Key Set
1005	691905	Fan-Flywheel
1006	690452	Retainer-Fan
1084	710386	Connector-Terminal
1119	690938	Screw (Alternator)

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

245400 to 245499

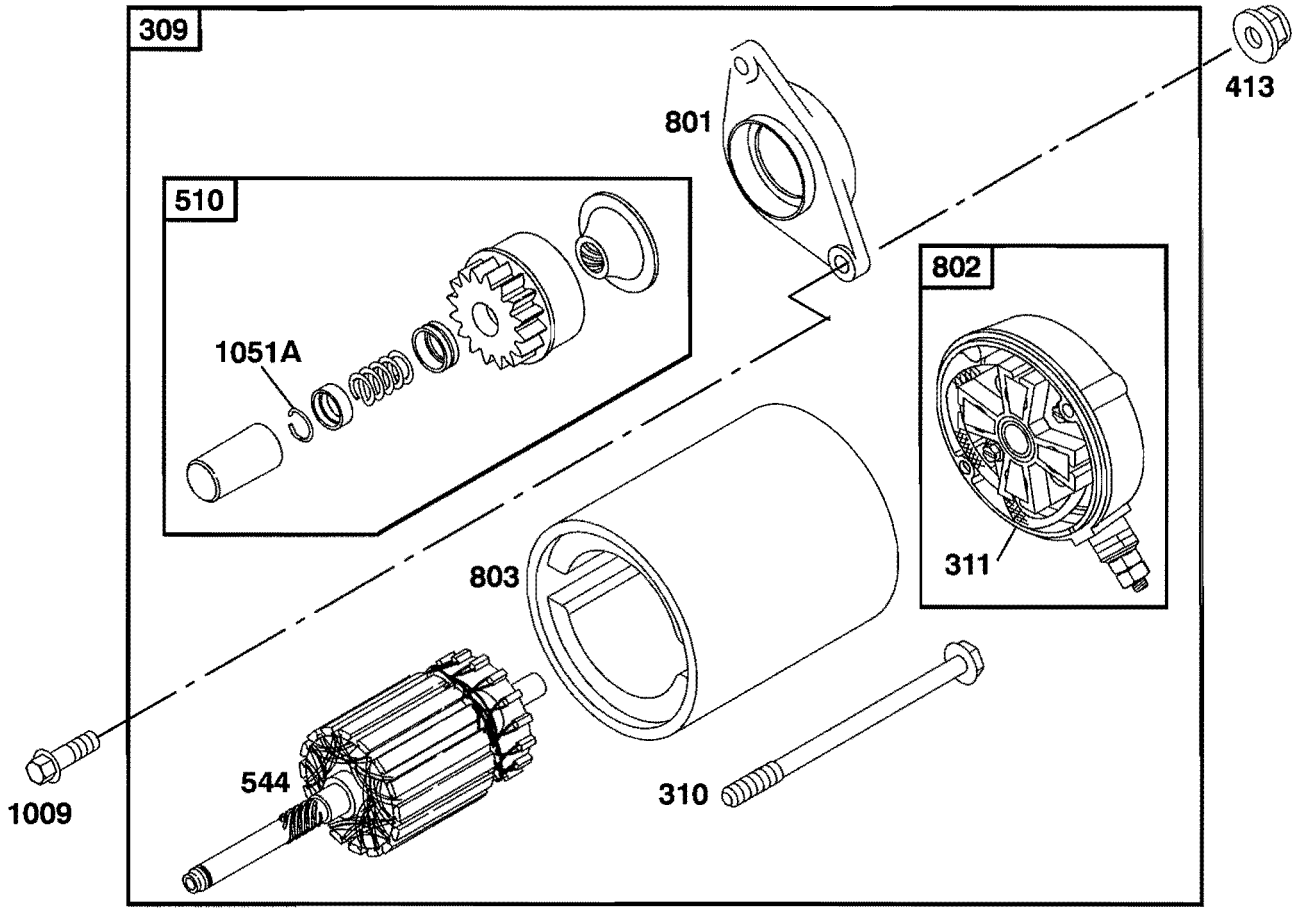


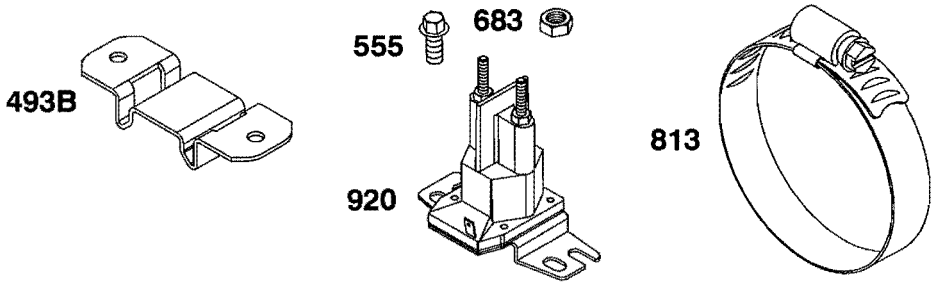
REF. NO.	PART NO.	DESCRIPTION
55	**691568**	Housing-Rewind Starter
56	**692085**	Pulley-Starter
57	**692086**	Spring-Rewind Starter
58	**66574**	Rope-Starter (Cut to Required Length)

REF. NO.	PART NO.	DESCRIPTION
60	**490652**	Grip-Starter Rope
65	**710074**	Screw (Rewind Starter)
456	**691529**	Plate-Pawl Friction
459	**808166**	Pawl-Ratchet
515	**691528**	Spring-Pawl

REF. NO.	PART NO.	DESCRIPTION
597	**690876**	Screw (Pawl Friction Plate)
608	**692102**	Starter-Rewind
773A	**690875**	Retainer

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.



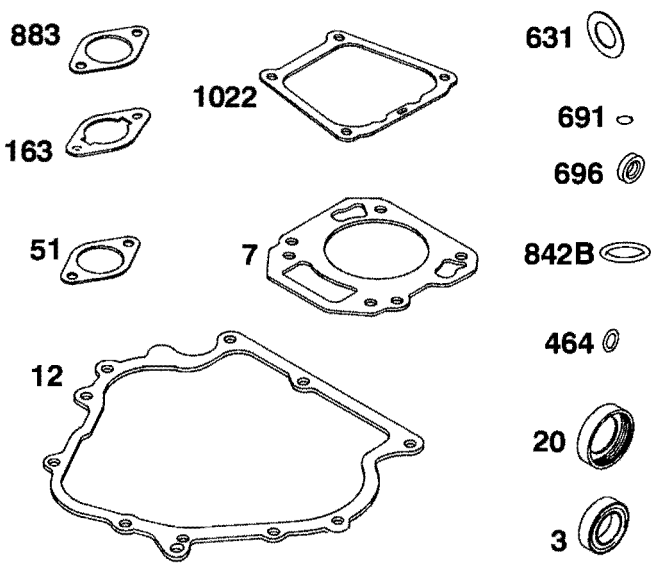


REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
309	**715208**	Motor-Starter (Steel Pinion)	**510**	**496881**	Drive-Starter	**801**	**715394**	Cap-Drive
310	**710589**	Bolt (Starter Motor)	**544**		Armature-Starter (Service With Starter Motor 715208)	**802**	**715393**	Cap-End
311	**496887**	Brush Set				**803**	**690854**	Housing-Starter
413	**710081**	Nut (Starter Motor)				**813**	**690635**	Clamp
493B	**691177**	Bracket-Mounting	**555**	**810059**	Screw (Starter Solenoid)	**920**	**691656**	Solenoid-Starter
			683	**691029**	Nut (Starter Solenoid)	**1009**	**710348**	Screw (Starter Motor)
						1051A	**691124**	Ring-Retaining

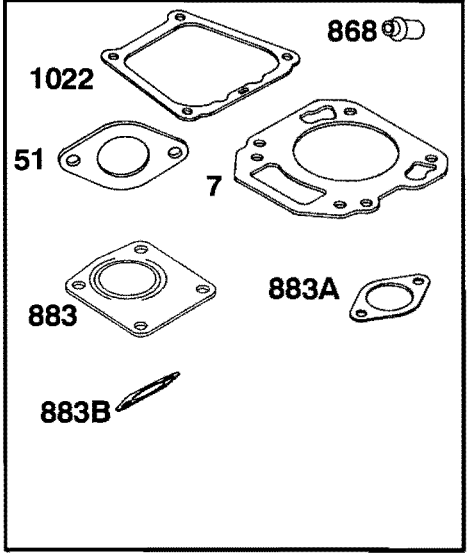
★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

245400 to 245499

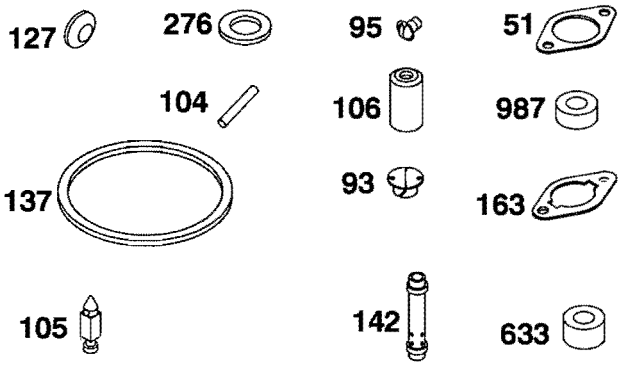
358 ENGINE GASKET SET



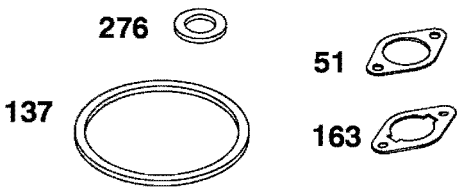
1095 VALVE GASKET SET



121 CARBURETOR OVERHAUL KIT



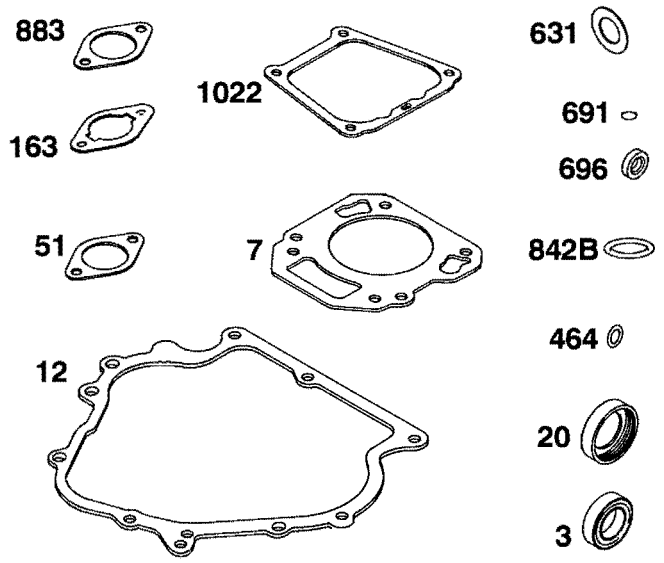
977 CARBURETOR GASKET SET



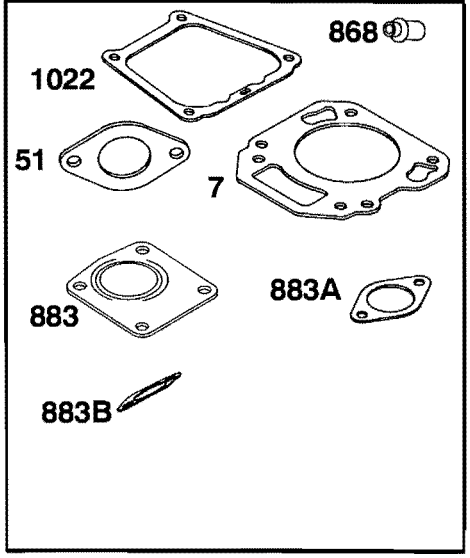
REF. NO.	PART NO.	DESCRIPTION
3	★291675s	Seal-Oil (Magneto Side)
7	Δ★710539	Gasket-Cylinder Head
12	★710378	Gasket-Crankcase
20	★291675s	Seal-Oil (PTO Side)
51	★●◆Δ710559	Gasket-Intake
93	●690602	Bushing-Throttle Shaft
95	●691636	Screw (Throttle Valve)
104	●690525	Pin-Float Hinge
105	●231855s	Valve-Float Needle
106	●690577	Seat-Inlet
121	715707	Kit-Carburetor Overhaul (Carburetor Part No. 715330)
127	●695005	Plug-Welch
137	●◆281165s	Gasket-Float Bowl
142	●691462	Nozzle-Carburetor (Standard)
163	★◆●710557	Gasket-Air Cleaner
276	●◆692255	Washer-Sealing
358	715383	Gasket Set-Engine
464	★710069	Seal-O Ring (Fuel Shut Off Valve)
631	★710004	Washer (Oil Drain Plug)
633	●690597	Seal-Choke/Throttle Shaft
691	★710055	Seal-Governor Shaft
696	★710091	Seal-O Ring
842B	★710218	Seal-O Ring
868	Δ710863	Seal-Valve

★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.

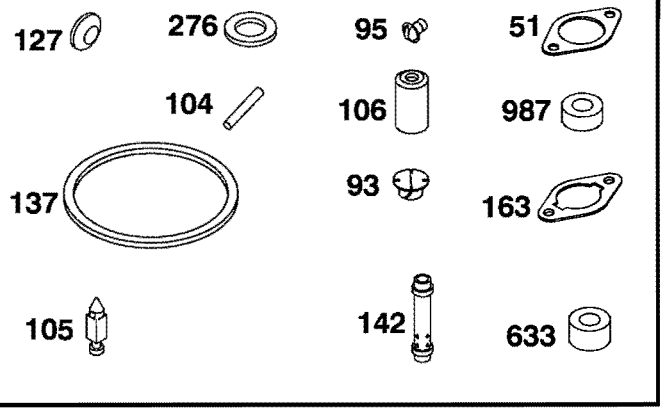
358 ENGINE GASKET SET



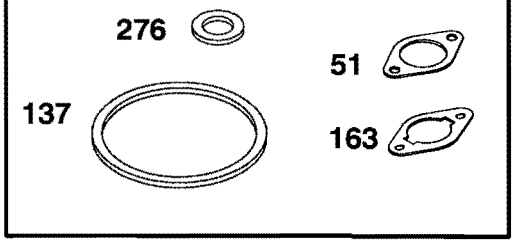
1095 VALVE GASKET SET



121 CARBURETOR OVERHAUL KIT



977 CARBURETOR GASKET SET

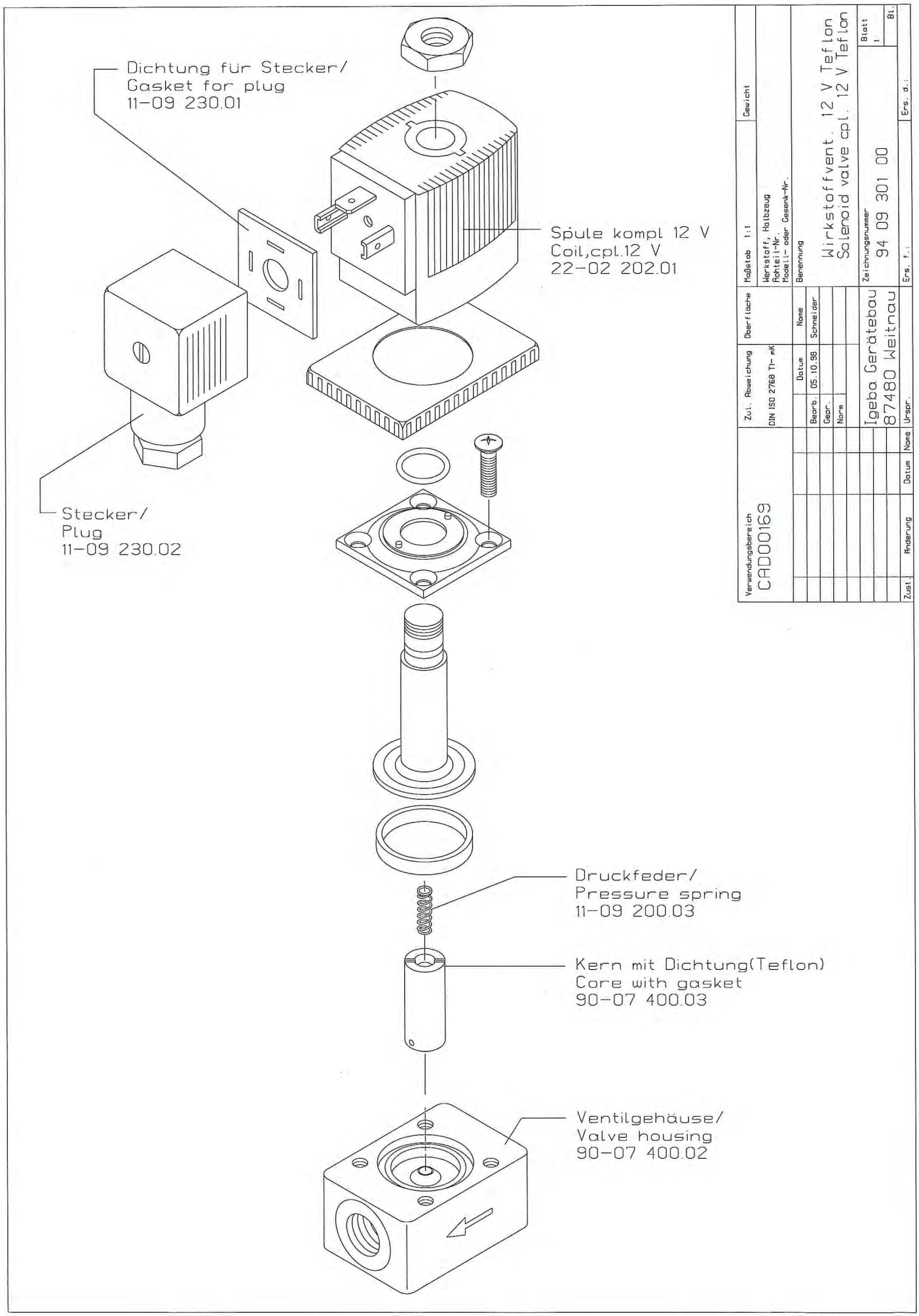


REF. NO.	PART NO.	DESCRIPTION
883	**Δ★711182**	Gasket-Exhaust
883A	**Δ★710250**	Gasket-Exhaust
883B	**Δ★711181**	Gasket-Exhaust

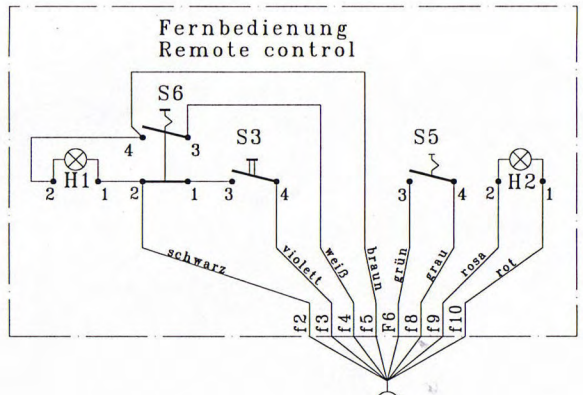
REF. NO.	PART NO.	DESCRIPTION
977	**715391**	Gasket Set-Carburetor
987	**●691326**	Seal-Throttle Shaft

REF. NO.	PART NO.	DESCRIPTION
1022	**Δ★710377**	Gasket-Rocker Cover
1095	**715386**	Gasket Set-Valve

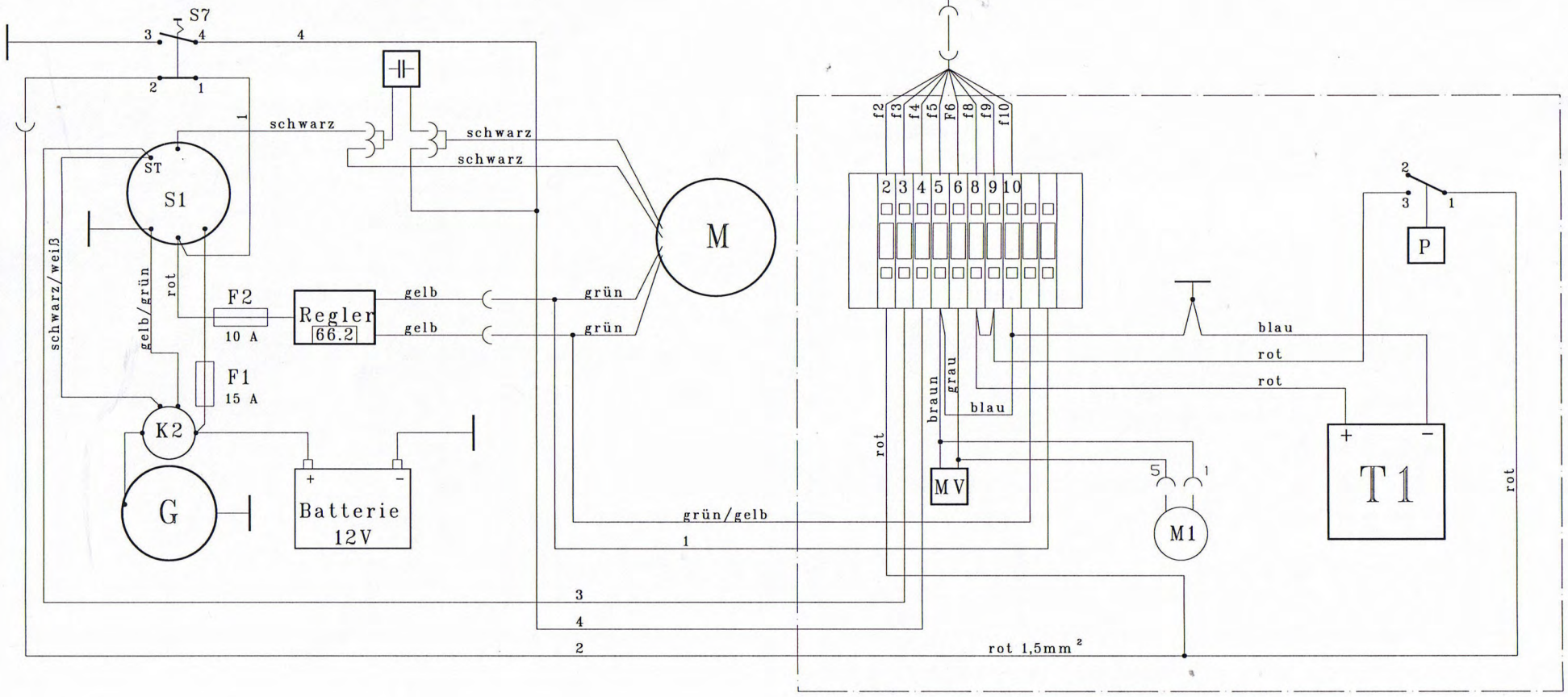
★ Included in Engine Gasket Set-Ref. No. 358.
◆ Included in Carburetor Gasket Set-Ref. No. 977.
● Included in Carburetor Overhaul Kit-Ref. No. 121.
Δ Included in Valve Gasket Set-Ref. No. 1095.


Dichtung für Stecker/
Gasket for plug
11-09 230.01
Spule kompl 12 V
Coil,cpl.12 V
22-02 202.01
Stecker/
Plug
11-09 230.02
Druckfeder/
Pressure spring
11-09 200.03
Kern mit Dichtung(Teflon)
Core with gasket
90-07 400.03
Ventilgehäuse/
Valve housing
90-07 400.02
Wirkstoffvent. 12 V Teflon
Solenoid valve cpl. 12 V Teflon
Igeba Gerätebau
87480 Weitnau
94 09 301 00
CAD00169
DIN ISO 2768 TH mK
Schneider
05.10.98

S1	Schlüsselschalter - Key switch	66.3
S3	Motor start - Engine start	255
S5	Nebel Ein-Aus - Fogging On-Off	240
S6	Not-Aus - Emergency stop	236
S7	Not-Aus - Emergency stop	211
H1	Batterykontrolle - Battery	250
H2	Ladekontrolle - Charging	246
T1	Betriebsstundenzähler - Running hour meter	195
K2	Magnetschalter - Starter switch	66.1
P	Druckschalter - Manometric switch	201
G	Anlasser - Starter	
M	Motor - Engine	66
F1	Sicherung - Fuse	213
F2	Sicherung - Fuse	214
MV	Wirkstoffventil - Solution valve	110
M1	Wirkstoffpumpe - Solution pump	138/2



blau - blue - bleu - azur
schwarz - black - noir - negro
rot - red - rouge - rojo
grün - green - vert - verde
braun - brown - brun - pardo
grau - grey - gris - gris
weiß - withe - blanc
gelb - yellow - jaune
violett - violet
rosa - pink -



Stromlaufplan
Wire diagram

U15HD-M

02/2011

U15M\11-02-S1

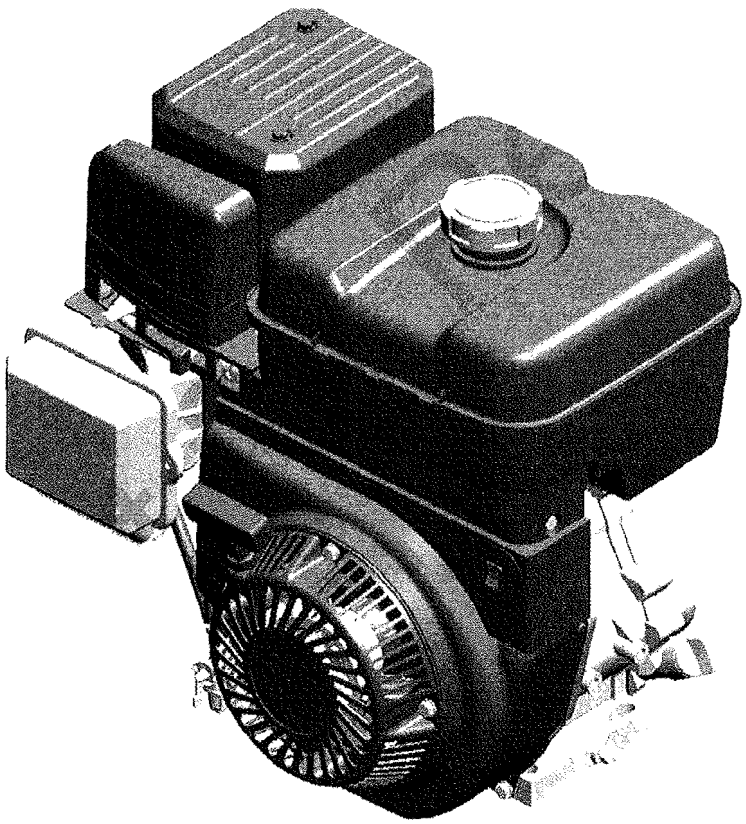
BRIGGS&STRATTON

COMMERCIAL POWER

(en) ***Operator's Manual***
(da) ***Betjeningsvejledning***
(de) ***Bedienungsanleitung***
(el) ***Εγχειρίδιο Χρήσης***
(es) ***Manual del Operario***
(fi) ***Käyttäjän käsikirja***
(fr) ***Manuel de l'opérateur***
(it) ***Manuale dell'Operatore***
(nl) ***Gebruiksaanwijzing***
(no) ***Brukerhåndbok***
(pt) ***Manual do Operador***
(sv) ***Instruktionsbok***

Model 50000
80000
110000
130000
180000
230000
240000

Vanguard™

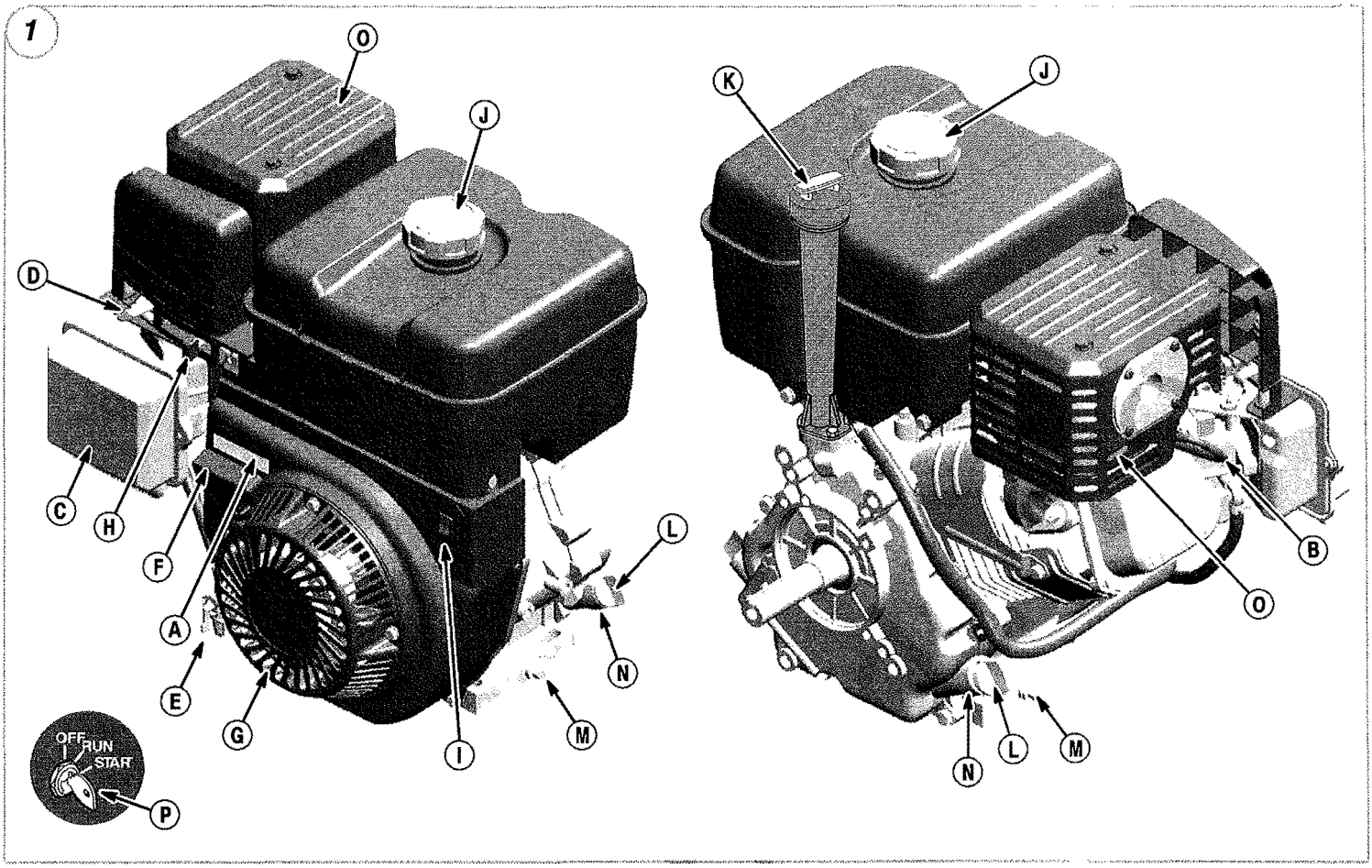


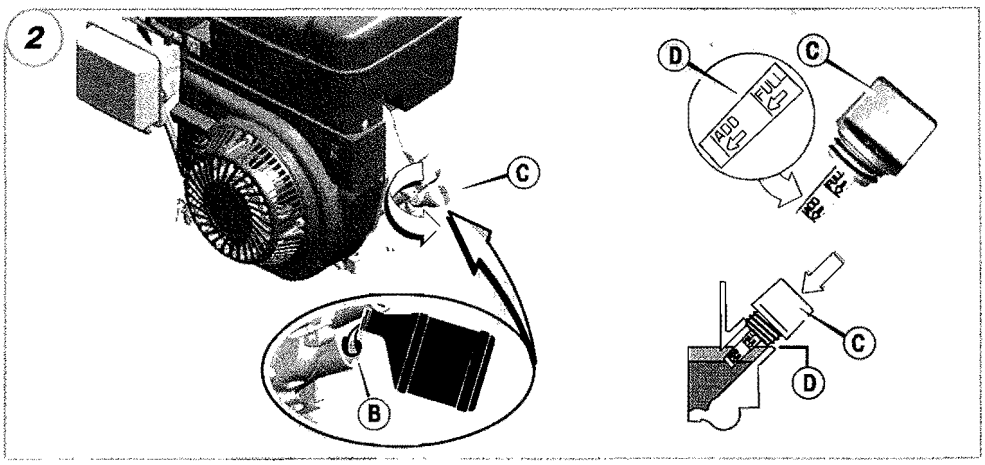
Briggs & Stratton is a registered trademark of Briggs & Stratton Corporation

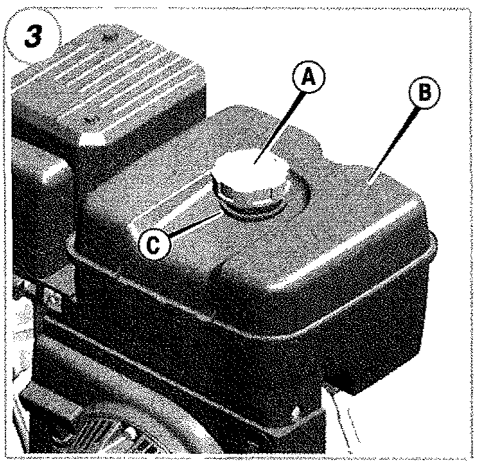
© 2009 Briggs & Stratton Corporation, Milwaukee, WI, USA. All rights reserved.

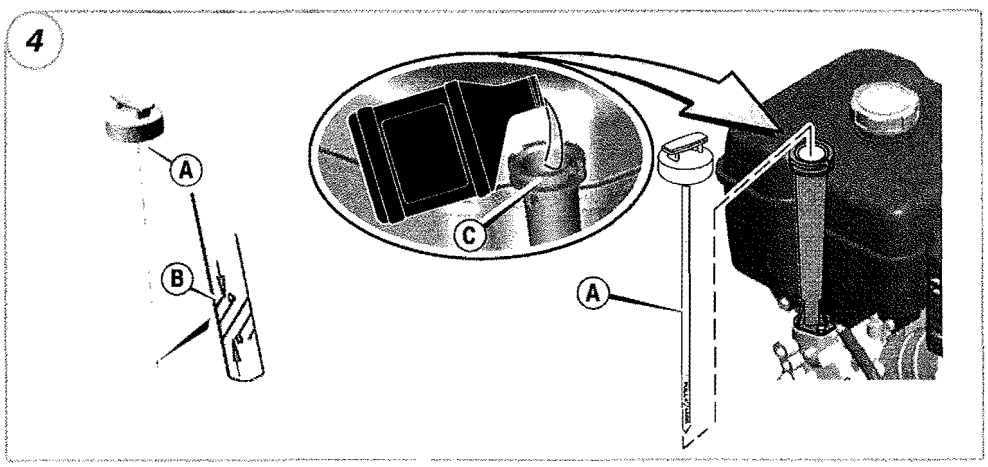
Form No. 278407**WST A**

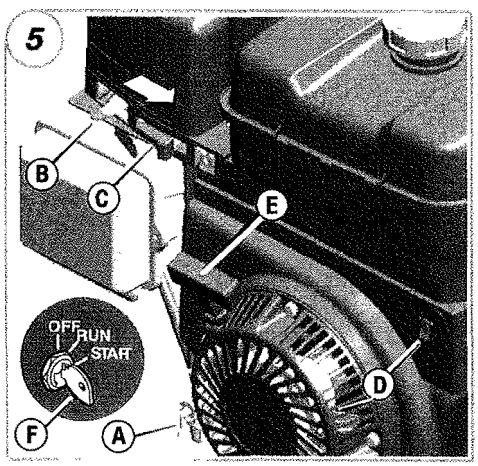
English	Dansk	Deutsch	Ελληνικά	Español	Suomi	Français	Italiano	Nederlands	Norsk	Português	Svenska
en	da	de	el	es	fi	fr	it	nl	no	pt	sv

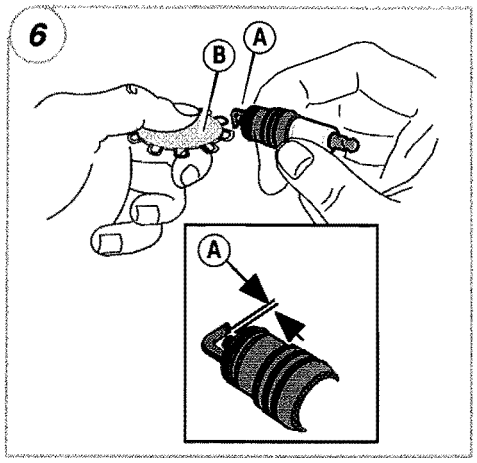

1
O
J
D
C
H
F
A
E
G
I
L
N
M
P
OFF
RUN
START
K
J
B
O
N
L
M

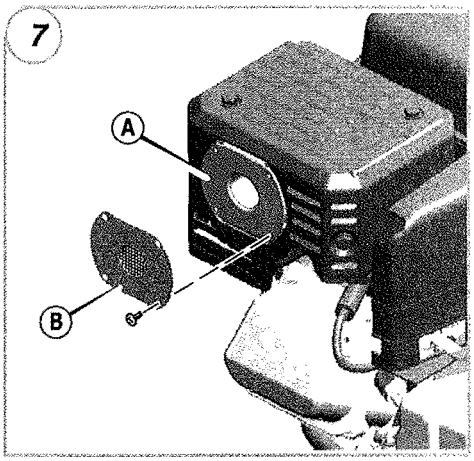

2
C
B
D
C
ADD
FULL
FULL
ADD
C
D

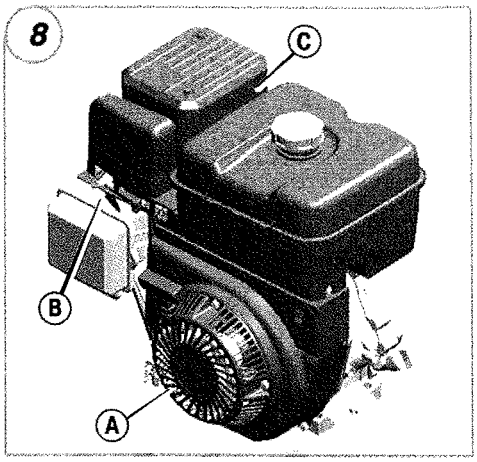

3
A
B
C

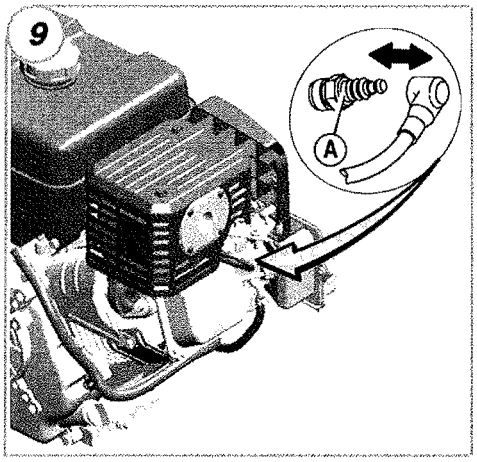

4
A
B
C
A

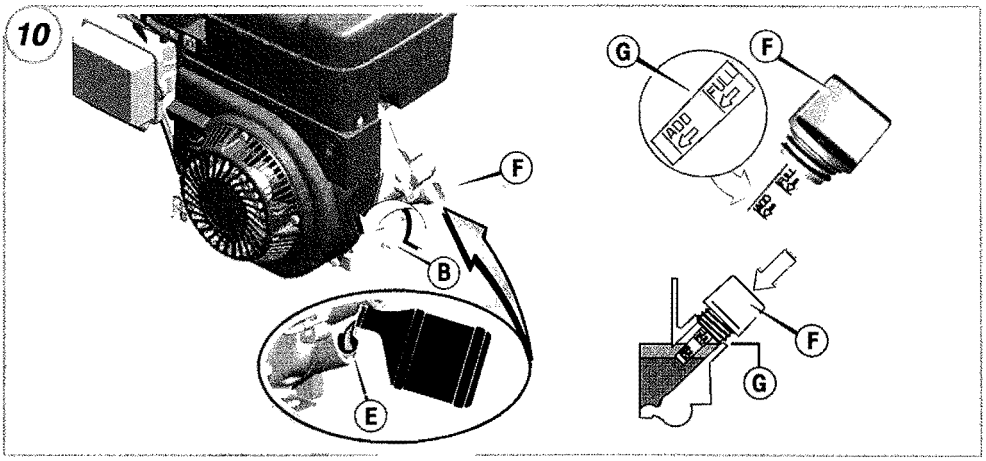

5
B
C
E
OFF
RUN
START
D
F
A

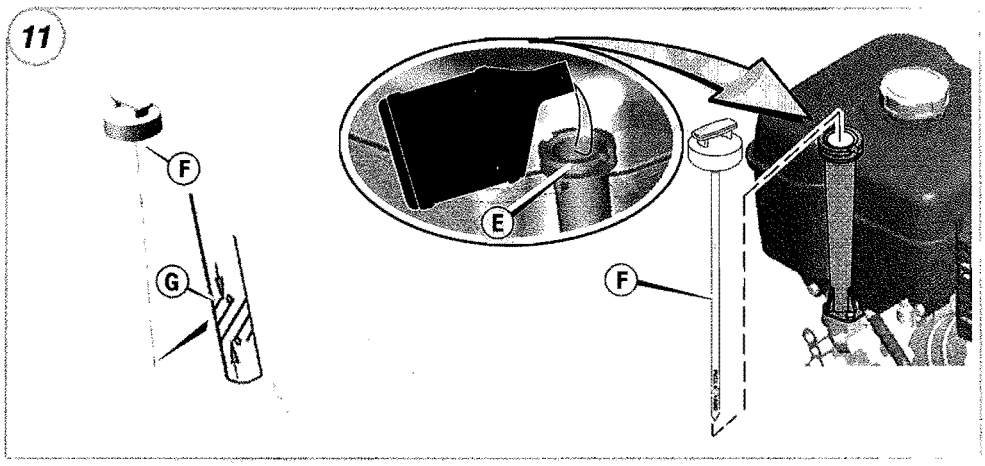

6
A
B
A

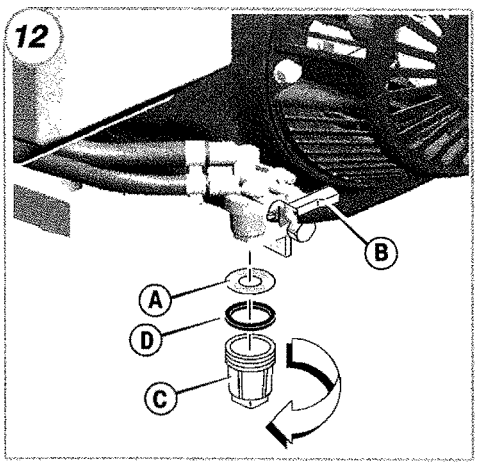

7
A
B

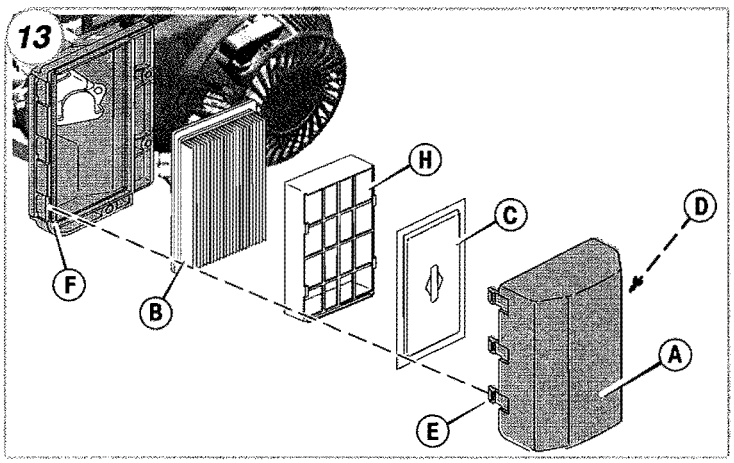

8
C
B
A

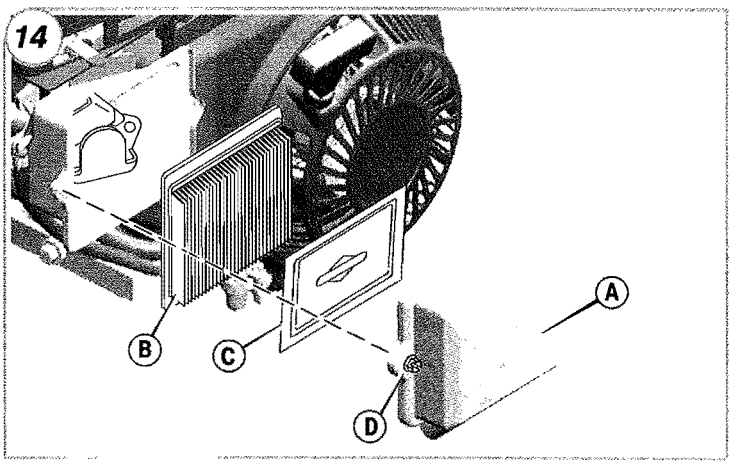

9
A


10
F
B
E
G
F
ADD
FULL
F
G


11
F
G
E
F


12
B
A
D
C


13
H
C
D
F
B
A
E


14
A
B
C
D

General Information

For replacement parts or technical assistance, record below the engine model, type, and code numbers along with the date of purchase. These numbers are located on your engine (see the ***Features and Controls*** page).

Date of purchase: _____
MM/DD/YYYY

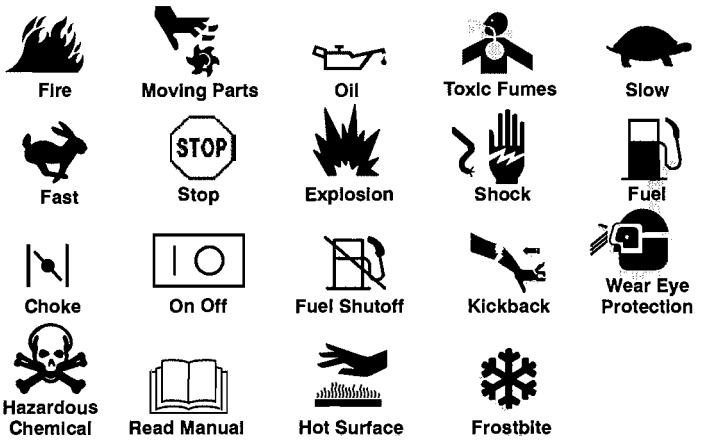
Engine model: _____
Model: Type: Code:

Engine Power Rating Information

The gross power rating for individual gas engine models is labeled in accordance with SAE (Society of Automotive Engineers) code J1940 (Small Engine Power & Torque Rating Procedure), and rating performance has been obtained and corrected in accordance with SAE J1995 (Revision 2002-05). Torque values are derived at 3060 RPM; horsepower values are derived at 3600 RPM. Actual gross engine power will be lower and is affected by, among other things, ambient operating conditions and engine-to-engine variability. Given both the wide array of products on which engines are placed and the variety of environmental issues applicable to operating the equipment, the gas engine will not develop the rated gross power when used in a given piece of power equipment (actual "on-site" or net power). This difference is due to a variety of factors including, but not limited to, accessories (air cleaner, exhaust, charging, cooling, carburetor, fuel pump, etc.), application limitations, ambient operating conditions (temperature, humidity, altitude), and engine-to-engine variability. Due to manufacturing and capacity limitations, Briggs & Stratton may substitute an engine of higher rated power for this Series engine.

Operator Safety

SAFETY AND CONTROL SYMBOLS



The safety alert symbol ⚠ is used to identify safety information about hazards that can result in personal injury. A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of injury. In addition, a hazard symbol may be used to represent the type of hazard.

⚠ **DANGER** indicates a hazard which, if not avoided, **will result in death or serious injury.**

⚠ **WARNING** indicates a hazard which, if not avoided, **could result in death or serious injury.**

⚠ **CAUTION** indicates a hazard which, if not avoided, **could result in minor or moderate injury.**

NOTICE indicates a situation that **could result in damage to the product.**

⚠ **WARNING**
Certain components in this product and its related accessories contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. Wash hands after handling.

⚠ **WARNING**
The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

⚠ **WARNING**
Briggs & Stratton does not approve or authorize the use of these engines on 3-wheel All Terrain Vehicles (ATVs), motor bikes, fun/recreational go-karts, aircraft products, or vehicles intended for use in competitive events. Use of these engines in such applications could result in property damage, serious injury (including paralysis), or even death.

NOTICE: This engine was shipped from Briggs & Stratton without oil. Before you start the engine, make sure you add oil according to the instructions in this manual. If you start the engine without oil, it will be damaged beyond repair and will not be covered under warranty.

⚠ **WARNING**
Gasoline and its vapors are extremely flammable and explosive.
Fire or explosion can cause severe burns or death.

When Adding Fuel
- Turn engine off and let engine cool at least 2 minutes before removing the fuel cap.
- Fill fuel tank outdoors or in well-ventilated area.
- Do not overfill fuel tank. To allow for expansion of the gasoline, do not fill above the bottom of the fuel tank neck.
- Keep gasoline away from sparks, open flames, pilot lights, heat, and other ignition sources.
- Check fuel lines, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary
- If fuel spills, wait until it evaporates before starting engine.

When Starting Engine
- Ensure that spark plug, muffler, fuel cap and air cleaner (if equipped) are in place and secured.
- Do not crank engine with spark plug removed.
- If engine floods, set choke (if equipped) to OPEN/RUN position, move throttle (if equipped) to FAST position and crank until engine starts.

When Operating Equipment
- Do not tip engine or equipment at angle which causes gasoline to spill.
- Do not choke the carburetor to stop engine.
- Never start or run the engine with the air cleaner assembly (if equipped) or the air filter (if equipped) removed.

When Changing Oil
- If you drain the oil from the top oil fill tube, the fuel tank must be empty or fuel can leak out and result in a fire or explosion.

When Transporting Equipment
- Transport with fuel tank EMPTY or with fuel shut-off valve OFF.

When Storing Gasoline Or Equipment With Fuel In Tank
- Store away from furnaces, stoves, water heaters or other appliances that have pilot light or other ignition source because they can ignite gasoline vapors.

⚠ **WARNING**
Starting engine creates sparking.
Sparking can ignite nearby flammable gases.
Explosion and fire could result.
- If there is natural or LP gas leakage in area, do not start engine.
- Do not use pressurized starting fluids because vapors are flammable.

⚠ **WARNING**
Engines give off carbon monoxide, an odorless, colorless, poison gas.
Breathing carbon monoxide can cause nausea, fainting or death.
- Start and run engine outdoors.
- Do not start or run engine in enclosed area, even if doors or windows are open.

WARNING

Rapid retraction of starter cord (kickback) will pull hand and arm toward engine faster than you can let go.

Broken bones, fractures, bruises or sprains could result.

- When starting engine, pull the starter cord slowly until resistance is felt and then pull rapidly to avoid kickback.
- Remove all external equipment/engine loads before starting engine.
- Direct-coupled equipment components such as, but not limited to, blades, impellers, pulleys, sprockets, etc., must be securely attached.

WARNING

Rotating parts can contact or entangle hands, feet, hair, clothing, or accessories.

Traumatic amputation or severe laceration can result.

- Operate equipment with guards in place.
- Keep hands and feet away from rotating parts.
- Tie up long hair and remove jewelry.
- Do not wear loose-fitting clothing, dangling drawstrings or items that could become caught.

WARNING

Running engines produce heat. Engine parts, especially muffler, become extremely hot.

Severe thermal burns can occur on contact.

Combustible debris, such as leaves, grass, brush, etc. can catch fire.

- Allow muffler, engine cylinder and fins to cool before touching.
- Remove accumulated debris from muffler area and cylinder area.
- It is a violation of California Public Resource Code, Section 4442, to use or operate the engine on any forest-covered, brush-covered, or grass-covered land unless the exhaust system is equipped with a spark arrester, as defined in Section 4442, maintained in effective working order. Other states or federal jurisdictions may have similar laws. Contact the original equipment manufacturer, retailer, or dealer to obtain a spark arrester designed for the exhaust system installed on this engine.

WARNING

Unintentional sparking can result in fire or electric shock.

Unintentional start-up can result in entanglement, traumatic amputation, or laceration.

Fire hazard

Before performing adjustments or repairs:

- Disconnect the spark plug wire and keep it away from the spark plug.
- Disconnect battery at negative terminal (only engines with electric start.)
- Use only correct tools.
- Do not tamper with governor spring, links or other parts to increase engine speed.
- Replacement parts must be the same and installed in the same position as the original parts.
- Do not strike the flywheel with a hammer or hard object because the flywheel may later shatter during operation.

When testing for spark:

- Use approved spark plug tester.
- Do not check for spark with spark plug removed.

Features and Controls

Compare the illustration (1) with your engine to familiarize yourself with the location of various features and controls.

A. Engine Identification
Model Type Code

B. Spark Plug

C. Air Cleaner

D. Choke Control

E. Fuel Shut-off Valve (optional)

F. Starter Cord Handle

G. Finger Guard

H. Throttle Control (optional)

I. Stop Switch (optional)

J. Fuel Tank and Cap

K. Extended Dipstick (optional)

L. Short Dipstick (optional)

M. Oil Drain Plug

N. Oil Fill

O. Muffler
Muffler Guard (optional)
Spark Arrester (optional)

P. Electric Start Switch (electric start models) *

* Equipment may have remote controls. See the equipment manual for location and operation of remote controls.

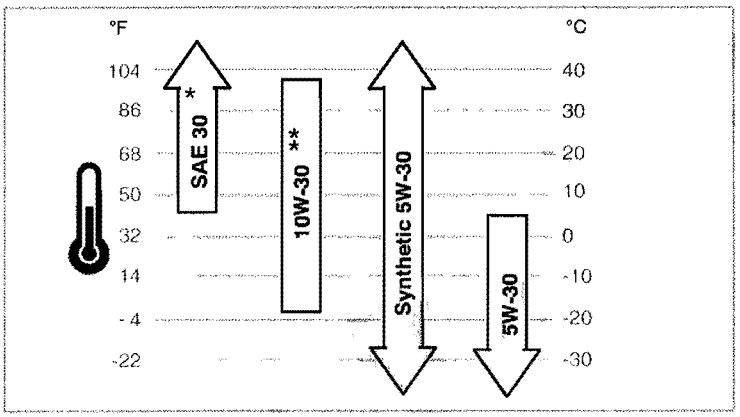
Operation

Oil capacity (see the ***Specifications*** section)

Oil Recommendations

We recommend the use of Briggs & Stratton Warranty Certified oils for best performance. Other high-quality detergent oils are acceptable if classified for service SF, SG, SH, SJ or higher. Do not use special additives.

Outdoor temperatures determine the proper oil viscosity for the engine. Use the chart to select the best viscosity for the outdoor temperature range expected.



* Below 40°F (4°C) the use of SAE 30 will result in hard starting.

** Above 80°F (27°C) the use of 10W-30 may cause increased oil consumption. Check oil level more frequently.

How To Check/Add Oil - *Figure* (2) (4)

Before adding or checking the oil

- Place engine level.
- Clean the oil fill area of any debris.

Models with short dipstick (Figure 2)

1. Remove the dipstick (**C**) and wipe with a clean cloth.
2. Insert the dipstick but **do not** screw in. Oil level should be at FULL mark (**D**).
3. To add oil, pour the oil slowly into the engine oil fill (**B**). Fill to point of overflowing.
4. Replace and tighten the dipstick.

Models with extended dipstick (Figure 4)

1. Remove the dipstick (**A**) and wipe with a clean cloth.
2. Insert and tighten the dipstick.
3. Remove the dipstick and check the oil level. It should be at the top of the full indicator (**B**) on the dipstick.
4. To add oil, pour the oil slowly into the engine oil fill (**C**). **Do not overfill.** After adding oil, wait one minute and then recheck the oil level.
5. Replace and tighten the dipstick.

Fuel Recommendations

Fuel must meet these requirements:

- Clean, fresh, unleaded gasoline.
- A minimum of 87 octane/87 AKI (91 RON). High altitude use, see below.
- Gasoline with up to 10% ethanol (gasohol) or up to 15% MTBE (methyl tertiary butyl ether) is acceptable.

CAUTION: Do not use unapproved gasolines, such as E85. Do not mix oil in gasoline or modify the engine to run on alternate fuels. This will damage the engine components and **void the engine warranty.**

To protect the fuel system from gum formation, mix a fuel stabilizer into the fuel. See ***Storage.*** All fuel is not the same. If starting or performance problems occur, change fuel providers or change brands. This engine is certified to operate on gasoline. The emissions control system for this engine is EM (Engine Modifications).

High Altitude

At altitudes over 5,000 feet (1524 meters), a minimum 85 octane/85 AKI (89 RON) gasoline is acceptable. To remain emissions compliant, high altitude adjustment is required. Operation without this adjustment will cause decreased performance, increased fuel consumption, and increased emissions. See a Briggs & Stratton Authorized Dealer for high altitude adjustment information.

Operation of the engine at altitudes below 2,500 feet (762 meters) with the high altitude kit is not recommended.

How To Add Fuel - *Figure* (3)

WARNING

Gasoline and its vapors are extremely flammable and explosive.
Fire or explosion can cause severe burns or death.

When Adding Fuel

- Turn engine off and let engine cool at least 2 minutes before removing the fuel cap.
- Fill fuel tank outdoors or in well-ventilated area.
- Do not overfill fuel tank. To allow for expansion of the gasoline, do not fill above the bottom of the fuel tank neck.
- Keep gasoline away from sparks, open flames, pilot lights, heat, and other ignition sources.
- Check fuel lines, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary
- If fuel spills, wait until it evaporates before starting engine.

1. Clean the fuel cap area of dirt and debris. Remove the fuel cap (**A**) (Figure 3).
2. Fill the fuel tank (**B**) with gasoline. To allow for expansion of the gasoline, do not fill above the bottom of the fuel tank neck (**C**).
3. Reinstall the fuel cap.

How To Start The Engine - *Figure* (5)

WARNING

Rapid retraction of starter cord (kickback) will pull hand and arm toward engine faster than you can let go.
Broken bones, fractures, bruises or sprains could result.

- When starting engine, pull the starter cord slowly until resistance is felt and then pull rapidly to avoid kickback.

WARNING

Gasoline and its vapors are extremely flammable and explosive.
Fire or explosion can cause severe burns or death.

When Starting Engine

- Ensure that spark plug, muffler, fuel cap and air cleaner (if equipped) are in place and secured.
- Do not crank engine with spark plug removed.
- If engine floods, set choke (if equipped) to OPEN/RUN position, move throttle (if equipped) to FAST position and crank until engine starts.

WARNING

Engines give off carbon monoxide, an odorless, colorless, poison gas. Breathing carbon monoxide can cause nausea, fainting or death.

- Start and run engine outdoors.
- Do not start or run engine in enclosed area, even if doors or windows are open.

NOTICE: This engine was shipped from Briggs & Stratton without oil. Before you start the engine, make sure you add oil according to the instructions in this manual. If you start the engine without oil, it will be damaged beyond repair and will not be covered under warranty.

Note: Equipment may have remote controls. See the equipment manual for location and operation of remote controls.

1. Check the oil level. See the ***How To Check/Add Oil*** section.
2. Make sure equipment drive controls, if equipped, are disengaged.
3. Turn the fuel shut-off valve (**A**), if equipped, to the on position (Figure 5).
4. Move the choke control lever (**B**) to the choke position.

   Note: Choke is usually unnecessary when restarting a warm engine.
5. Move the throttle control lever (**C**), if equipped, to the fast position. Operate the engine with the throttle control lever in the fast position.
6. On engines equipped with a stop switch (**D**), move the switch to the on position.
7. **Rewind Start:** Firmly hold the starter cord handle (**E**). Pull the starter cord handle slowly until resistance is felt, then pull rapidly.

   Note: If the engine does not start after repeated attempts, go to **BRIGGSandSTRATTON.COM** or call **1-800-233-3723** (in USA).

WARNING: Rapid retraction of the starter cord (kickback) will pull your hand and arm toward the engine faster than you can let go. Broken bones, fractures, bruises or sprains could result. When starting engine, pull the starter cord slowly until resistance is felt and then pull rapidly to avoid kickback.

8. **Electric Start:** Turn the electric start switch (**F**) to the on/start position.

   Note: If the engine does not start after repeated attempts, go to **BRIGGSandSTRATTON.COM** or call **1-800-233-3723** (in USA).
9. As the engine warms up, move the choke control (**B**) to the run position.

How To Stop The Engine - *Figure* 5

WARNING

Gasoline and its vapors are extremely flammable and explosive. Fire or explosion can cause severe burns or death.

- Do not choke the carburetor to stop engine.

1. **Electric Start:** With the throttle control (**C**) in the slow position, turn the electric start switch (**F**) to the off position (Figure 5). Remove the key and keep in a safe place out of the reach of children.
2. **Rewind Start:** Push the stop switch (**D**) to the off position,

   or

   Move the throttle control (**C**) to the stop position.
3. After the engine stops, turn the fuel shut-off valve (**A**), if equipped, to the closed position.

Maintenance

Use only original equipment replacement parts. Other parts may not perform as well, may damage the unit, and may result in injury. In addition, use of other parts may void your warranty.

We recommend that you see any Briggs & Stratton Authorized Dealer for all maintenance and service of the engine and engine parts.

NOTICE: All the components used to build this engine must remain in place for proper operation.

Emissions Control

Maintenance, replacement, or repair of the emissions control devices and systems may be performed by any non-road engine repair establishment or individual. However, to obtain "no charge" emissions control service, the work must be performed by a factory authorized dealer. See the Emissions Warranty.

WARNING

Unintentional sparking can result in fire or electric shock.

Unintentional start-up can result in entanglement, traumatic amputation, or laceration.

Fire hazard

Before performing adjustments or repairs:

- Disconnect the spark plug wire and keep it away from the spark plug.
- Disconnect battery at negative terminal (only engines with electric start.)
- Use only correct tools.
- Do not tamper with governor spring, links or other parts to increase engine speed.
- Replacement parts must be the same and installed in the same position as the original parts.
- Do not strike the flywheel with a hammer or hard object because the flywheel may later shatter during operation.

When testing for spark:

- Use approved spark plug tester.
- Do not check for spark with spark plug removed.

Maintenance Chart

First 5 Hours

- Change oil

Every 8 Hours or Daily

- Check engine oil level
- Clean area around muffler and controls
- Clean finger guard

Every 25 Hours or Annually

- Clean air filter *
- Clean pre-cleaner *

Every 50 Hours or Annually

- Change engine oil
- Check muffler and spark arrester

Annually

- Replace air filter
- Replace pre-cleaner
- Replace spark plug
- Clean fuel filter
- Clean air cooling system *
- Check valve clearance **

* In dusty conditions or when airborne debris is present, clean more often.

** Not required unless engine performance problems are noted.

Carburetor Adjustment

Never make adjustments to the carburetor. The carburetor was set at the factory to operate efficiently under most conditions. However, if adjustments are required, see any Briggs & Stratton Authorized Dealer for service.

NOTICE: The manufacturer of the equipment on which this engine is installed specifies the top speed at which the engine will be operated. **Do not exceed** this speed.

How To Replace The Spark Plug - *Figure* 6

Check the gap (**A**, Figure 6) with a wire gauge (**B**). If necessary, reset the gap. Install and tighten the spark plug to the recommended torque. For gap setting or torque, see the ***Specifications*** section.

Note: In some areas, local law requires using a resistor spark plug to suppress ignition signals. If this engine was originally equipped with a resistor spark plug, use the same type for replacement.

Inspect Muffler And Spark Arrester - *Figure* (7)

WARNING

Running engines produce heat. Engine parts, especially muffler, become extremely hot.

Severe thermal burns can occur on contact.

Combustible debris, such as leaves, grass, brush, etc. can catch fire.

- Allow muffler, engine cylinder and fins to cool before touching.
- Remove accumulated debris from muffler area and cylinder area.
- It is a violation of California Public Resource Code, Section 4442, to use or operate the engine on any forest-covered, brush-covered, or grass-covered land unless the exhaust system is equipped with a spark arrester, as defined in Section 4442, maintained in effective working order. Other states or federal jurisdictions may have similar laws. Contact the original equipment manufacturer, retailer, or dealer to obtain a spark arrester designed for the exhaust system installed on this engine.

Inspect the muffler (**A**, Figure 7) for cracks, corrosion, or other damage. Remove the spark arrester (**B**), if equipped, and inspect for damage or carbon blockage. If replacement parts are required, make sure to use only original equipment replacement parts.

WARNING: Replacement parts must be the same and installed in the same position as the original parts or fire could result.

How To Change The Oil - *Figure* (9) (10) (11)

Used oil is a hazardous waste product and must be disposed of properly. Do not discard with household waste. Check with your local authorities, service center, or dealer for safe disposal/recycling facilities.

Remove Oil

1. With engine off but still warm, disconnect the spark plug wire (**A**) and keep it away from the spark plug (Figure 9).
2. Remove the oil drain plug (**B**, Figure 10). Drain the oil into an approved receptacle. *Note:* Any of the oil drain plugs shown below may be installed in the engine.

3. After the oil has drained, install and tighten the oil drain plug.

Add oil

- Place engine level.
- Clean the oil fill area of any debris.
- See the ***Specifications*** section for oil capacity.

Models with short dipstick

1. Remove the dipstick (**F**, Figure10) and wipe with a clean cloth.
2. Pour the oil slowly into the engine oil fill (**E**). Fill to point of overflowing.
3. Install the dipstick but **do not** screw in. Remove and check the oil level. Oil level should be at the FULL mark (**G**) on the dipstick.
4. Install and tighten the dipstick.

Models with extended dipstick

1. Remove the dipstick (**F**, Figure 11) and wipe with a clean cloth.
2. Pour the oil slowly into the engine oil fill (**E**). **Do not overfill.** After adding oil, wait one minute and then recheck the oil level.
3. Install and tighten the dipstick.
4. Remove the dipstick and check the oil level. It should be at the top of the full indicator (**G**) on the dipstick.
5. Install and tighten the dipstick.

How To Service The Air Filter - *Figure* (13) (14)

WARNING

Gasoline and its vapors are extremely flammable and explosive.

Fire or explosion can cause severe burns or death.

- Never start or run the engine with the air cleaner assembly or the air filter removed.

NOTICE: Do not use pressurized air or solvents to clean the filter. Pressurized air can damage the filter and solvents will dissolve the filter.

The air cleaner system uses a pleated filter with an optional pre-cleaner. The pre-cleaner can be washed and reused.

1. Loosen the fasteners (**D**) that hold the cover (**A**).
2. Open the cover and remove the pre-cleaner (**C**), the filter retainer (**H**), if equipped, and the filter (**B**). See Figure 13 and 14..
3. To loosen debris, gently tap the filter on a hard surface. If the filter is excessively dirty, replace with a new filter.
4. Wash the pre-cleaner in liquid detergent and water. Then allow it to thoroughly air dry. **Do not** oil the pre-cleaner.
5. Install the dry pre-cleaner, the filter retainer (if equipped), and the filter.
6. On models equipped with air filter shown in Figure 13, install the cover tabs (**E**) into the slots (**F**).
7. Install cover and secure with the fasteners. Make sure the fasteners are tight.

How To Clean The Fuel Filter - *Figure* (12)

WARNING

Gasoline and its vapors are extremely flammable and explosive.

Fire or explosion can cause severe burns or death.

- Keep gasoline away from sparks, open flames, pilot lights, heat, and other ignition sources.
- Check fuel lines, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.
- Before cleaning or replacing the fuel filter, drain the fuel tank or close the fuel shut-off valve.
- Replacement parts must be the same and installed in the same position as the original parts.
- If fuel spills, wait until it evaporates before starting engine.

1. Close the fuel shut-off valve (**B**, Figure 12) and let the engine run until it stops. Otherwise, fuel can leak out and cause a fire.
2. Remove the bowl (**C**) with a wrench. Clean debris from the filter (**A**) and the bowl.
3. Check the filter and bowl for cracks or other damage. Replace if necessary.
4. Install the filter, the gasket (**D**), and bowl. Tighten with a wrench.
5. Open the fuel shut-off valve and check for leaks.

How To Clean The Air Cooling System - *Figure* (8)

WARNING

Running engines produce heat. Engine parts, especially muffler, become extremely hot.

Severe thermal burns can occur on contact.

Combustible debris, such as leaves, grass, brush, etc. can catch fire.

- Allow muffler, engine cylinder and fins to cool before touching.
- Remove accumulated debris from muffler area and cylinder area.

NOTICE: Do not use water to clean the engine. Water could contaminate the fuel system. Use a brush or dry cloth to clean the engine.

This is an air cooled engine. Dirt or debris can restrict air flow and cause the engine to overheat, resulting in poor performance and reduced engine life.

Use a brush or dry cloth to remove debris from the finger guard (**A**) (Figure 8). Keep linkage, springs and controls (**B**) clean. Keep the area around and behind the muffler (**C**) free of any combustible debris.

Storage

WARNING

Gasoline and its vapors are extremely flammable and explosive.

Fire or explosion can cause severe burns or death.

When Storing Gasoline Or Equipment With Fuel In Tank

- Store away from furnaces, stoves, water heaters or other appliances that have pilot lights or other ignition sources because they can ignite gasoline vapors.

Fuel System

Fuel can become stale when stored over 30 days. Stale fuel causes acid and gum deposits to form in the fuel system or on essential carburetor parts. To keep fuel fresh, use Briggs & Stratton FRESH START® fuel stabilizer, available as a liquid additive or a drip concentrate cartridge.

There is no need to drain gasoline from the engine if a fuel stabilizer is added according to instructions. Run the engine for 2 minutes to circulate the stabilizer throughout the fuel system. The engine and fuel can then be stored up to 24 months.

If gasoline in the engine has not been treated with a fuel stabilizer, it must be drained into an approved container. Run the engine until it stops from lack of fuel. The use of a fuel stabilizer in the storage container is recommended to maintain freshness.

Engine Oil

While the engine is still warm, change the engine oil.

Troubleshooting

Need Assistance? Go to **BRIGGSandSTRATTON.COM** or call **1-800-233-3723.**

Specifications - Service Parts

Model 50000 *	
Displacement	4.94 ci (81 cc)
Bore	2.047 in (52.00 mm)
Stroke	1.496 in (38.00 mm)
Oil Capacity	13.5 oz (0.4 L)
Spark Plug Gap	0.025 in (0.64 mm)
Spark Plug Torque	180 lb-in (20 Nm)
Armature Air Gap	0.012 - 0.020 in (0.30 - 0.51 mm)
Intake Valve Clearance	0.004 - 0.008 in (0.10 - 0.20 mm)
Exhaust Valve Clearance	0.004 - 0.008 in (0.10 - 0.20 mm)
Rectangular Air Filter	711459
Rectangular Air Filter Pre-cleaner	711460
Fuel Additive	5041, 5058
Resistor Spark Plug	711252
Spark Plug Wrench	19576
Spark Tester	19368

Model 130000 *	
Displacement	13.18 ci (216 cc)
Bore	2.835 in (72.00 mm)
Stroke	2.087 in (53.00 mm)
Oil Capacity	30 - 32 oz (0.89 - 0.95 L)
Spark Plug Gap	0.030 in (0.76 mm)
Spark Plug Torque	180 lb-in (20 Nm)
Armature Air Gap	0.012 - 0.020 in (0.30 - 0.51 mm)
Intake Valve Clearance	0.005 - 0.008 in (0.13 - 0.20 mm)
Exhaust Valve Clearance	0.005 - 0.008 in (0.13 - 0.20 mm)
Square Air Filter	491588
Square Air Filter Pre-cleaner	491435
Fuel Additive	5041, 5058
Resistor Spark Plug	491055
Spark Plug Wrench	19576
Spark Tester	19368

Model 80000 *	
Displacement	7.75 ci (127 cc)
Bore	2.441 in (62.00 mm)
Stroke	1.654 in (42.00 mm)
Oil Capacity	18 - 20 oz (0.54 - 0.59 L)
Spark Plug Gap	0.030 in (0.76 mm)
Spark Plug Torque	180 lb-in (20 Nm)
Armature Air Gap	0.012 - 0.020 in (0.30 - 0.51 mm)
Intake Valve Clearance	0.002 - 0.004 in (0.05 - 0.10 mm)
Exhaust Valve Clearance	0.002 - 0.004 in (0.05 - 0.10 mm)
Square Air Filter	491588
Square Air Filter Pre-cleaner	491435
Rectangular Air Filter	710265
Rectangular Air Filter Pre-cleaner	710267
Fuel Additive	5041, 5058
Resistor Spark Plug	711252
Spark Plug Wrench	19576
Spark Tester	19368

Model 180000 *	
Displacement	18.12 ci (297 cc)
Bore	3.150 in (80.00 mm)
Stroke	2.323 in (59.00 mm)
Oil Capacity	30 - 32 oz (0.89 - 0.95 L)
Spark Plug Gap	0.030 in (0.76 mm)
Spark Plug Torque	180 lb-in (20 Nm)
Armature Air Gap	0.012 - 0.020 in (0.30 - 0.51 mm)
Intake Valve Clearance	0.002 - 0.004 in (0.05 - 0.10 mm)
Exhaust Valve Clearance	0.002 - 0.004 in (0.05 - 0.10 mm)
Square Air Filter	491588
Square Air Filter Pre-cleaner	491435
Rectangular Air Filter	710266
Rectangular Air Filter Pre-cleaner	710268
Fuel Additive	5041, 5058
Resistor Spark Plug	491055
Spark Plug Wrench	19576
Spark Tester	19368

Model 110000 *	
Displacement	11.11 ci (182 cc)
Bore	2.677 in (68.00 mm)
Stroke	1.969 in (50.00 mm)
Oil Capacity	22 - 24 oz (0.65 - 0.71 L)
Spark Plug Gap	0.030 in (0.76 mm)
Spark Plug Torque	180 lb-in (20 Nm)
Armature Air Gap	0.012 - 0.020 in (0.30 - 0.51 mm)
Intake Valve Clearance	0.002 - 0.004 in (0.05 - 0.10 mm)
Exhaust Valve Clearance	0.002 - 0.004 in (0.05 - 0.10 mm)
Square Air Filter	491588
Square Air Filter Pre-cleaner	491435
Rectangular Air Filter	494511
Rectangular Air Filter Pre-cleaner	492889
Fuel Additive	5041, 5058
Resistor Spark Plug	711252
Spark Plug Wrench	19576
Spark Tester	19368

Model 230000 *, 240000 *	
Displacement	23.92 ci (392 cc)
Bore	3.504 in (89.00 mm)
Stroke	2.480 in (63.00 mm)
Oil Capacity	30 - 32 oz (0.89 - 0.95 L)
Spark Plug Gap	0.030 in (0.76 mm)
Spark Plug Torque	180 lb-in (20 Nm)
Armature Air Gap	0.008 - 0.012 in (0.20 - 0.30 mm)
Intake Valve Clearance	0.004 - 0.006 in (0.10 - 0.15 mm)
Exhaust Valve Clearance	0.004 - 0.006 in (0.10 - 0.15 mm)
Rectangular Air Filter	710266
Rectangular Air Filter Pre-cleaner	710268
Fuel Additive	5041, 5058
Resistor Spark Plug	491055
Spark Plug Wrench	19576
Spark Tester	19368

* Engine power will decrease 3.5% for each 1,000 feet (300 meters) above sea level and 1% for each 10° F (5.6° C) above 77° F (25° C). The engine will operate satisfactorily at an angle up to 15°. Refer to the equipment operator's manual for safe allowable operating limits on slopes.

We recommend that you see any Briggs & Stratton Authorized Dealer for all maintenance and service of the engine and engine parts. Use only genuine Briggs & Stratton parts.

Elektror

Seitenkanal-verdichter SD

(D) (A) Elektror-Seitenkanalverdichter – Betriebsanleitung und Ersatzteilliste

(GB) (IRL) Elektror-Side channel blower – Operating instructions and replacement parts list

(F) (B) (L) Elektror-Soufflante à canal latéral – Notice d'utilisation et liste des pièces détachés

(I) Elektror-Soffiante anulare a canale laterale – Istruzioni per l'uso ed elenco ricambi

(E) Elektror-Compresor de canal lateral – Instrucciones de servicio y lista de recambios

SD 2n-1, SD 3-1, SD 4n-1, SD 6-1, SD 600-1, SD 7-1, SD 8-1, SD 9-1

Elektror
KARL W. MÜLLER GMBH & CO.

(D) (A)

Inhalt

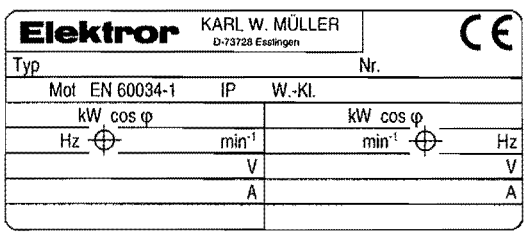
Diese Betriebsanleitung muß dem Bedienungspersonal jederzeit zugänglich sein. Lesen Sie die vorliegende Betriebsanleitung vor Montage und Inbetriebnahme des Seitenkanal-verdichters sorgfältig durch. Änderungen vorbehalten. Im Zweifelsfall ist eine Rücksprache mit dem Hersteller erforderlich. Diese Unterlage ist urheberrechtlich geschützt. Sie darf ohne unsere ausdrückliche schriftliche Zustimmung Dritten nicht zugänglich gemacht werden. Jede Form der Vervielfältigung oder Erfassung und Speicherung in elektronischer Form ist untersagt.

1 Technische Daten

Die folgenden Daten gelten für die Serienausführung. Ihr Seitenkanalverdichter kann davon abweichen (siehe »Typenschild«).

	SD 2n-1	SD 3-1	SD 4n-1	SD 6-1
Volumenstrom [m³/min]	1,55	0,75	3,4	5,6
Gesamtdruck-differenz [Pa]	210	350	240	300
max. zul. Verdichter-Drehzahl [min⁻¹]	3430	3520	3400	3440
Leistungsbed. bei max. zul. Drehzahl [kw]	0,65	0,55	1,6	3,1
Gewicht [kg]	10,5	10,5	13,7	23,5
Keilriemenprofil nach DIN 7753	XPZ	XPZ	XPZ	XPZ
Anzahl der Rillen	1	1	1	2
	SD 600-1	**SD 7-1**	**SD 8-1**	**SD 9-1**
Volumenstrom [m³/min]	5,6	8,0	11,0	17,5
Gesamtdruck-differenz [Pa]	300	400	380	350
max. zul. Verdichter-Drehzahl [min⁻¹]	3600	3500	3520	3520
Leistungsbed. bei max. zul. Drehzahl [kw]	3,5	6,5	8,0	13,5
Gewicht [kg]	25,5	43	64	76
Keilriemenprofil nach DIN 7753	XPZ	XPZ	XPZ	XPZ
Anzahl der Rillen	2	2	4	4

Typenschild
Für Anschluß, Wartung und Bestellung von Ersatzteilen sind ausschließlich die Daten auf dem Typenschild maßgeblich.



2 Sicherheit

Unsere Seitenkanalverdichter zeichnen sich durch ein hohes Maß an Betriebssicherheit aus. Da es sich bei den Seitenkanal-verdichtern um sehr leistungsfähige Maschinen handelt, sind zur Vermeidung von Verletzungen, Beschädigungen von Sachen und der Maschine selbst, folgende Sicherheitshinweise streng zu beachten.

2.1 Ansaugwirkung

Seitenkanalverdichter erzeugen eine starke Saugwirkung.

Warnung!
Am Ansaugstutzen können Gegenstände, Kleidungsstücke und auch Haar angesaugt werden. Verletzungsgefahr!
Während des Betriebs nicht in der Nähe der Ansaugöffnung aufhalten.
Der Seitenkanalverdichter darf nie mit offener Ansaugöffnung betrieben werden. Der offene Ansaug muß mit einem Schutzgitter nach DIN EN 294 abgedeckt werden.
Nicht in die Ansaugöffnung hineingreifen.

2.2 Ausblaswirkung

Warnung!
Sehr starke Ausblaswirkung am Ausblasstutzen. Angesaugte Gegenstände können mit hoher Geschwindigkeit herausgeschleudert werden (Verletzungsgefahr!).
Seitenkanalverdichter eignen sich ausschließlich zum Fördern von Reinluft. Das Ansaugen von Fremdkörpern oder Verunreinigungen, die ausgeblasen werden könnten, müssen unbedingt vor Eintritt in den Seitenkanalverdichter ausgefiltert werden.
Der Seitenkanalverdichter darf nie mit offenem Ausblasstutzen betrieben werden und muß daher mit einem Schutzgitter nach DIN EN 294 abgedeckt werden. Nicht in die Ausblasöffnung hineingreifen.

2.3 Temperatur

Warnung!
Das Verdichtergehäuse erwärmt sich während des Betriebs. Wenn die Temperatur über +50° C ansteigt, muß der Seitenkanalverdichter vom Betreiber vor direktem Berühren geschützt werden (Verbrennungsgefahr!).

2.4 Bestimmungsgemäße Verwendung

Die Seitenkanalverdichter eignen sich ausschließlich zum Fördern von Reinluft.

Der Einsatz für
- aggressive,
- giftige,
- explosionsfähige oder
- sehr feuchte

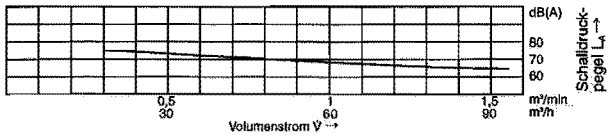
Medien ist nicht zulässig.

Die zulässige Fördermedientemperatur für die Standardausführung beträgt –30° C bis +40° C. Im Fördermedium enthaltene Feststoffe oder Verunreinigungen müssen vor Eintritt in den Seitenkanalverdichter ausgefiltert werden.
Die maximale Umgebungstemperatur darf +60° C nicht überschreiten, die minimale –20° C nicht unterschreiten.
Der Seitenkanalverdichter eignet sich nicht für die Aufstellung in explosionsfähiger Atmosphäre.
Sonderausführungen für den Einsatz außerhalb der oben beschriebenen Anwendungen stehen auf Anfrage zur Verfügung.
Umbau und Veränderungen des Seitenkanalverdichters sind nicht zulässig.

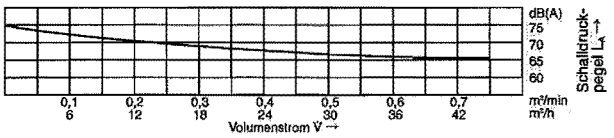
2.5 Geräuschentwicklung

Die vom Seitenkanalverdichter abgestrahlten Geräusche sind nicht über den gesamten Leistungsbereich konstant (siehe Diagramme unten).

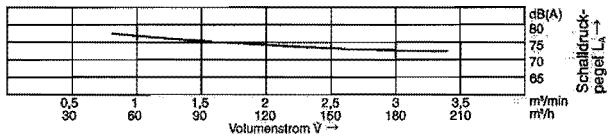
SD 2n-1



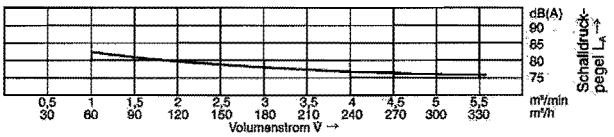
SD 3-1



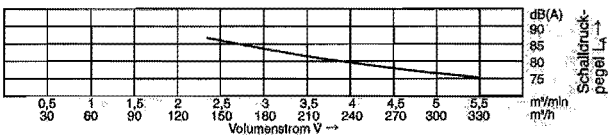
SD 4n-1



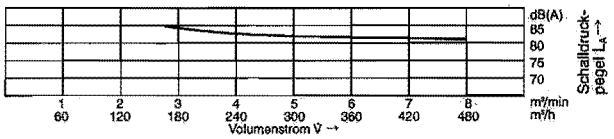
SD 6-1



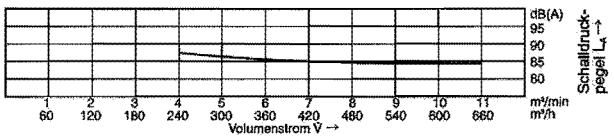
SD 600-1



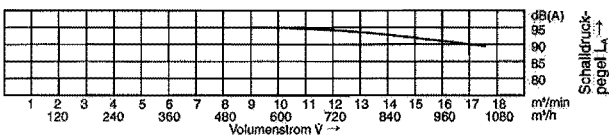
SD 7-1



SD 8-1



SD 9-1



In bestimmten ungünstigen Einzelfällen ist eine Schalldämmung erforderlich (Messungen durch den Betreiber werden empfohlen).
Die Schalldämmung muß der Betreiber vornehmen, damit die gesetzlich zugelassenen Höchstwerte an Arbeitsplätzen in der Umgebung des Seitenkanalverdichters nicht überschritten werden.

3 Installation

3.1 Transport

- Prüfen Sie vor Montage und Inbetriebnahme alle Teile auf Transportschäden.
- Seitenkanalverdichter nicht ungeschützt im Freien lagern (vor Feuchtigkeit schützen).
- Hebezeug sicher anschlagen. Nur Hebezeuge und Lastaufnahmeeinrichtungen mit ausreichender Tragfähigkeit verwenden.

3.2 Aufstellen, Montage

- Seitenkanalverdichter vor Witterung geschützt, horizontal aufstellen.
- Keinen Schwing- oder Stoßbelastungen aussetzen.
- Seitenkanalverdichter am Einsatzort auf ebenem, festem Untergrund fest verschrauben.
- Offene Ansaug- oder Ausblasöffnung mit Schutzgittern nach DIN EN 294 abdecken.
- Riemenantrieb und freidrehende Teile sind mit einem Riemenschutz nach DIN EN 294 abzudecken.
- Für ausreichende Motorbelüftung sorgen, max. Umgebungstemperatur +60° C.

3.3 Elektrischer Anschluß

Hinweis!
Auf die Angaben des jeweiligen Elektromotorenherstellers sind zu achten. Der Anschluß ist nach den einschlägigen örtlichen Bestimmungen vorzunehmen.
Die in diesem Abschnitt beschriebenen Arbeiten dürfen nur von einer Elektrofachkraft ausgeführt werden.

Drehrichtungsprüfung

Seitenkanalverdichter einschalten.
Die Laufrichtung des Laufrades muß mit dem Richtungspfeil auf dem Gehäuse übereinstimmen. Die Strömungsrichtung des Luftstromes muß ebenfalls mit den Richtungspfeilen auf dem Schalldämpfergehäuse übereinstimmen.

4 Keilriemenantrieb

Hinweis!
Die Seitenkanalverdichter sind serienmäßig mit Keilriemenscheiben für Schmalkeilriemen nach DIN 7753 ausgerüstet.
Um vorzeitige Schäden an den Rillenkugellagern zu vermeiden, müssen die Keilriemenantriebe richtig vorgespannt sein. Die Auslegung des Keilriemenantriebes muß nach den entsprechenden Berechnungsverfahren der jeweiligen Riemenhersteller erfolgen.

- Die Verdichterriemenscheibe darf nicht verändert werden.
- Die max. zulässige Verdichterdrehzahl darf nicht überschritten werden (siehe Tabelle Abschnitt 1)
- Der Riemenantrieb und freidrehende Teile sind mit einem Riemenschutz nach DIN EN 294 abzudecken.
- Den Seitenkanalverdichter niemals in Betrieb nehmen, wenn das Schutzgitter nicht angebracht und fest verschraubt ist. (Verletzungsgefahr).

5 Wartung

Hinweis!
Reparaturen dürfen nur vom Hersteller ausgeführt werden. Bei Reparaturen durch Dritte übernehmen wir keine Haftung.

6 Ersatzteilliste

Bei der Bestellung bitte angeben

Hinweis!

- ***Geräte-Nr. (Typenschild)***
- ***Geräte-Typ (Typenschild)***
- ***Artikel-Nr. und/oder Pos.-Nr. (Ersatzteilliste)***

7 EG-Herstellererklärung

Elektror
KARL W. MÜLLER GMBH & CO.
Richard-Hirschmann-Strasse 12, D-73728 Esslingen/Neckar
Postfach 10 02 51, D-73702 Esslingen/Neckar

Wir erklären in alleiniger Verantwortung, daß das Produkt, auf das sich diese Erklärung bezieht, mit den aufgeführten Normen und normativen Dokumenten übereinstimmt.
Bei einer nicht mit uns abgestimmten Änderung des (der) Gerät(e)s verliert diese Erklärung ihre Gültigkeit.

Beschreibung der Maschine:
Seitenkanalverdichter SD 2n-1, SD 4n-1
Seitenkanalverdichter SD 3-1
Seitenkanalverdichter SD 6-1, SD 600-1
Seitenkanalverdichter SD 7-1
Seitenkanalverdichter SD 8-1
Seitenkanalverdichter SD 9-1

Einschlägige Bestimmungen, denen diese Maschine entspricht:
EG-Maschinen-Richtlinie (98/37/EG)

Fundstellen der harmonisierten Normen:
DIN EN 292, Sicherheit von Maschinen, Grundbegriffe, allgemeine Gestaltungsleitsätze;
Teil 1: Grundsätzliche Terminologie, Methodik
Teil 2: Technische Leitsätze und Spezifikationen

Die Inbetriebnahme des Maschinenteils ist so lange untersagt, bis nach Einbau in die Hauptmaschine bzw. nach Anbringen der notwendigen Sicherheitsvorkehrungen alle Anforderungen der EG-Maschinenrichtlinie bezüglich Sicherheit und Gesundheit erfüllt sind.

ppa. Luik (Prokurist)
Esslingen, den 31.05.1999

Pos.	Typ / Benennung	SD 2n-1 Artikel-Nr.	SD 3-1 Artikel-Nr.	SD 4n-1 Artikel-Nr.	SD 6-1 Artikel-Nr.	SD 600-1 Artikel-Nr.	SD 7-1 Artikel-Nr.	SD 8-1 Artikel-Nr.	SD 9-1 Artikel-Nr.
1	Verdichtergehäuse	005293	005273	001136	001922	001922	001931	001138	001296
2	Gehäusedeckel	002405	000500	001906	001925	001925	001929	001937	001949
3	Laufrad	002407	005291	000851	000670	000862	000860	000746	001298
4	Schalldämpfergehäuse mit Fuß	002408	001128	401312	400839	400839	000747	000747	001299
5	Flansch	000529	000945	001313	000557	000557	000944	000944	001300
6									
7	Schutzgitter	000838	000838	000499	000671	000671	000748	000748	001301
8	Schaumstoff	002406	000530	000476	000672	001511	000749	000749	002880
9									
10	Scheibe	002375	002375	004274	003511	002375	003833	003620	004262
11	Büchse	002399	002399	002399	004214	004214	004215	004217	004219
12	Lagerabschlußdeckel	400799	400799	400799	400045	400045	001010	000831	001303
13	Büchse	003175	003175	004128	003635	003635	004215	004217	004219
14									
15	Gehäuse	007668	007668	001132	001133	001133	002053	004867	004867
16	Scheibe	002375	002375	002375	002375	003511	002375	003620	003620
17	Lagerschild	–	–	–	–	–	001005	000331	000331
18	Lagerabschlußdeckel	–	–	–	–	400473	401248	410832	410832
19	Keilriemenscheibe	000988	000988	000989	000986	000986	000986	000987	000987
20									
21									
22	Welle	005277	005277	001034	006285	006285	006283	001032	006338
23	Kugellager	000556	000556	000556	000588	000588	000979	000750	001306
24	Kugellager	000587	000587	000556	000588	000588	000978	000750	000750
25	Tellerfeder	002373	002373	003154	003100	003100	003126	003140	003140
26									
27	Paßfeder	002772	002772	003088	002898	002898	002898	003502	003502
28	Paßfeder	003406	003406	003406	002414	002414	002896	003621	006675
29	Teflon-Radialwellendichtung	000157	000157	000157	000819	000819	000821	000820	001274
30									
31	Abdeckblech	–	–	–	–	–	006734	006761	006761
32									
33									
34									
35									
36									
37									
38									
39	Distanzscheibe 0,05 mm dick	002382	002382	002382	003245	003245	–	–	–
40	Distanzscheibe 0,1 mm dick	003191	003191	003191	003246	003246	003674	003627	006689
41	Distanzscheibe 0,2 mm dick	002384	002384	002384	003247	003247	004198	003626	006690
42									

Zeichenerklärung: X erforderlich, – nicht erforderlich

Contents

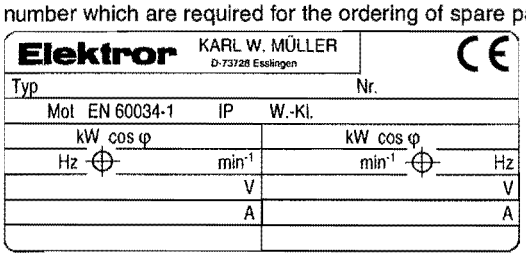
This instruction manual must be accessible to the operating personnel at any time. The present instruction manual has to be read carefully before installation or starting operation of the side-channel blower.
Subject to modifications. In case of doubt clarification with the manufacturer is required. This document is protected by copyright. It is not to be made accessible to third parties without our explicit written consent. Any form of duplication or recording and storage in electronic equipment is forbidden.

1 Technical data

The following data apply to the standard version. Your side-channel blower may differ from these data (see «rating plate»).

	SD 2n-1	SD 3-1	SD 4n-1	SD 6-1
Volumetric flow rate [m³/min]	1,55	0,75	3,4	5,6
Total pressure difference [Pa]	210	350	240	300
Max. permitted blower speed [rpm]	3430	3520	3400	3440
Power consumption at max. perm. speed [kw]	0,65	0,55	1,6	3,1
Weight [kg]	10,5	10,5	13,7	23,5
V-belt profile in accordance with DIN 7753	XPZ	XPZ	XPZ	XPZ
Number of grooves	1	1	1	2
	SD 600-1	**SD 7-1**	**SD 8-1**	**SD 9-1**
Volumetric flow rate [m³/min]	5,6	8,0	11,0	17,5
Total pressure difference [Pa]	300	400	380	350
Max. permitted blower speed [rpm]	3600	3500	3520	3520
Power consumption at max. perm. speed [kw]	3,5	6,5	8,0	13,5
Weight [kg]	25,5	43	64	76
V-belt profile in accordance with DIN 7753	XPZ	XPZ	XPZ	XPZ
Number of grooves	2	2	4	4

Rating plate
Details of electrical data can be found on the rating plate, which also includes the model identification number and serial number which are required for the ordering of spare parts.



2 Safety

Our side-channel blowers excel by a high degree of operating safety. As the side-channel blowers are rather high-powered machines, the safety instructions must be strictly adhered to in order to avoid injuries, damage to objects and to the machine itself.

2.1 Suction effect

Side-channel blowers produce a powerful suction effect.

Warning

Objects, items of clothing and also hair can be sucked into the intake port.
Danger of injury!
Do not stand near the intake opening during operation.
Never operate the side-channel blower with open intake port. The open intake port must be covered with a wire guard in accordance with DIN EN 294.
Do not reach into intake opening.

2.2 Blowing effect

Warning
Powerful blow-out at the discharge flange. Sucked-in objects may be ejected at very high speed (danger of injury).
Side-channel blowers are meant for conveying clean air only. The sucking-in of solid particles and other contaminants – which might be discharged – must be avoided at all times. These objects have to be withheld before entering into the side-channel blower by installing a filter.
The side-channel blower may never be operated with open discharge flange, and therefore has to be protected with a wire guard in accordance with DIN EN 294. Do not reach into the discharge opening.

2.3 Temperature

Warning
The side-channel blower housing heats up during operation. If the temperature exceeds +50° C, the side-channel blower must be protected by the operator against direct contact (danger of burning!).

2.4 Proper application

The side-channel blowers are designed for conveying clean air only.

Using them for
- aggressive
- poisonous
- explosive or
- very moist

media is not permitted.

The maximum permissible temperature of the conveyed medium for the standard version is –30° C to +40° C. Solid particles or contaminants must be withheld by a filter unit before entering the side-channel blower.

The maximum ambient temperature must not exceed +60° C, the minimum not below –20° C.

The side-channel blower cannot be operated in an explosive atmosphere.

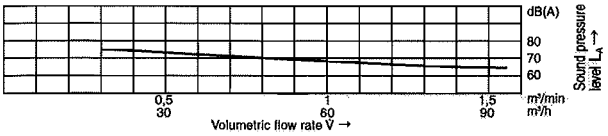
Special versions for applications not mentioned above are available on demand.

Remodelling and modifications of the side-channel blower are not allowed.

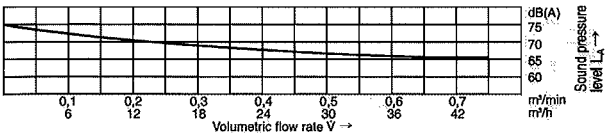
2.5 Generation of noise

The noise generated by the side-channel blower is not constant over the whole performance curve (see diagrams below).

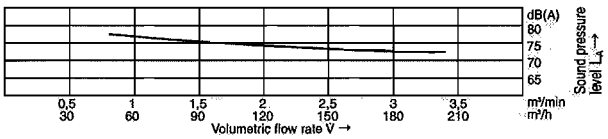
SD 2n-1



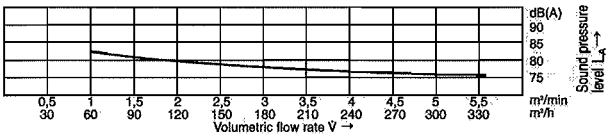
SD 3-1



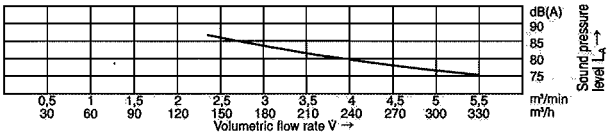
SD 4n-1



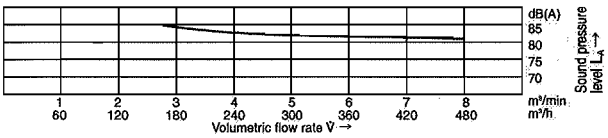
SD 6-1



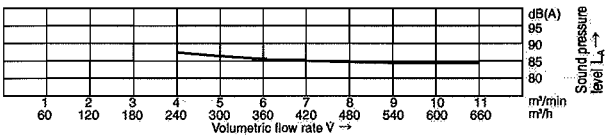
SD 600-1



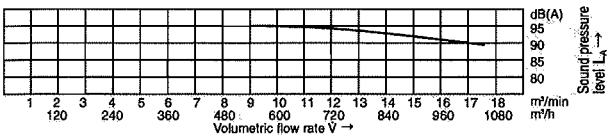
SD 7-1



SD 8-1



SD 9-1



In certain unfavourable cases a sound-absorbing device may be required (measurements by the operator are recommended).

Sound-absorbing measures are to be carried out by the operator so as not to exceed the legally permitted peak values at the work places near of the side-channel blower.

3 Installation

3.1 Transport

- Check all parts for damage during transport before installation and starting of operation.
- Do not store the side-channel blower unprotected in the open (protect against moisture).
- Attach hoist securely. Only use hoists and load suspension devices with sufficient load-carrying capacity.

3.2 Installation, assembly

- Install the side-channel blower in a horizontal position protected against the weather.
- Do not subject the blower to any vibrations or shocks.
- Bolt the side-channel blower on a solid and level base at the site of installation.
- Uncovered intake and discharge openings have to be protected by wire guards in accordance with DIN EN 294.
- Belt drive and dree rotating parts are to be covered with a belt guard in accordance with DIN EN 294.
- Ensure adequate motor cooling; max. ambient temperature +60° C

3.3 Electrical connection

Note!
The instructions of the relevant electric motor manufacturer should be observed. Connect in accordance with relevant local regulations. The work described in this section must only be carried out by an electrical specialist.

Checking direction of rotation

Start operation of the side-channel blower.
The direction of rotation of the impeller must correspond to the directional arrow on the housing. The flow direction of the air has to correspond to the directional arrows on the silencer housing as well.

4 V-belt drive

Note!
As a standard feature, the side-channel blowers have been fitted with V-belt puileys for narrow V-beits in accordance with DIN 7753.
To avoid premature damage to the grooved bali bearings, the V-belt drives must be tensioned correctly. The V-belt drive must be dimensioned in accordance with the appropriate method of calculation applied by the respective V-belt manufacturer.

- The blower belt pulley must not be modified.
- The maximum permissible blower speed must not be exceeded (cf. table in section 1).
- The belt drive and free rotating parts are to be covered with a belt guard in accordance with DIN EN 294.
- Never operate the side-channel blower, if the protective guard is not attached and screwed on securely (danger of injury).

5 Maintenance

Note!
Repairs must be carried out by the manufacturer only. We cannot accept any liability for repairs carried out by third parties.

6 List of spare parts

When ordering please state

Note!

- ***Serial no. (rating plate)***
- ***Blower type (rating plate)***
- ***Part No. and/or item no. (spare parts list)***

7 EC Manufacturer Declaration

Elektror
KARL W. MÜLLER GMBH & CO.
Richard-Hirschmann-Strasse 12, D-73728 Esslingen/Neckar
Postfach 10 02 51, D-73702 Esslingen/Neckar

We certify on our sole responsibility that the product to which this certificate relates, is in conformity with the standards or standard-setting documents listed below.
If a modification of the unit(s) is made without our consent, this certificate becomes invalid.

Description of the machine:
Side-channel blower SD 2n-1, SD 4n-1
Side-channel blower SD 3-1
Side-channel blower SD 6-1, SD 600-1
Side-channel blower SD 7-1
Side-channel blower SD 8-1
Side-channel blower SD 9-1

Relevant regulations to which this machine corresponds:
EC machine directives (98/37/EC)

Source references of harmonised standards:
DIN EN 292, Safety of machines, basic terms, general configuration directives;
Part 1: Basic terminology, methodology
Part 2: Technical principles and specifications

Starting operation of this machinery part is not allowed as long as it is not assembled into the main installation respectively not all necessary safety devices have been installed which fulfill the requirements of the EC directive for machines with regard to safety and health.

ppa. Luik (Director)
Esslingen, 31.05.1999

Item	Type	SD 2n-1	SD 3-1	SD 4n-1	SD 6-1	SD 600-1	SD 7-1	SD 8-1	SD 9-1
	Designation	**Part no.**	**Part no.**	**Part no.**	**Part no.**	**Part no.**	**Part no.**	**Part no.**	**Part no.**
1	Blower housing	005293	005273	001136	001922	001922	001931	001138	001296
2	Housing cover	002405	000500	001906	001925	001925	001929	001937	001949
3	Impeller	002407	005291	000851	000670	000862	000860	000746	001298
4	Silencer housing with base plate	002408	001128	401312	400839	400839	000747	000747	001299
5	Flange	000529	000945	001313	000557	000557	000944	000944	001300
6									
7	Wire mesh guard	000838	000838	000499	000671	000671	000748	000748	001301
8	Plastic foam	002406	000530	000476	000672	001511	000749	000749	002880
9									
10	Washer	002375	002375	004274	003511	002375	003833	003620	004262
11	Bush	002399	002399	002399	004214	004214	004215	004217	004219
12	Bearing cap	400799	400799	400799	400045	400045	001010	000831	001303
13	Bush	003175	003175	004128	003635	003635	004215	004217	004219
14									
15	Housing	007668	007668	001132	001133	001133	002053	004867	004867
16	Washer	002375	002375	002375	002375	003511	002375	003620	003620
17	Bearing endshield	–	–	–	–	–	001005	000331	000331
18	Bearing cap	–	–	–	–	400473	401248	410832	410832
19	V-belt pulley	000988	000988	000989	000986	000986	000986	000987	000987
20									
21									
22	Shaft	005277	005277	001034	006285	006285	006283	001032	006338
23	Ball bearing	000556	000556	000556	000588	000588	000979	000750	001306
24	Ball bearing	000587	000587	000556	000588	000588	000978	000750	000750
25	Dished spring	002373	002373	003154	003100	003100	003126	003140	003140
26									
27	Key	002772	002772	003088	002898	002898	002898	003502	003502
28	Key	003406	003406	003406	002414	002414	002896	003621	006675
29	Teflon radial shat seal	000157	000157	000157	000819	000819	000821	000820	001274
30									
31	cover plate	–	–	–	–	–	006734	006761	006761
32									
33									
34									
35									
36									
37									
38									
39	Spacer washer 0,05 mm thick	002382	002382	002382	003245	003245	–	–	–
40	Spacer washer 0.1 mm thick	003191	003191	003191	003246	003246	003674	003627	006689
41	Spacer washer 0.2 mm thick	002384	002384	002384	003247	003247	004198	003626	006690
42									

Explantation of symbols: X required, – not required

Sommaire

Le personnel de service doit avoir accès à tout moment à cette notice d'utilisation. Lisez attentivement la présente notice d'utilisation avant le montage et la mise en service de la soufflante à canal latéral. Sous réserve de modifications, en cas de doute, il est nécessaire de consulter le fabricant.

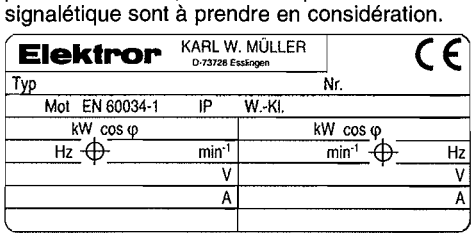
Ce document est protégé par droit d'auteur. Il ne peut pas être communiqué à des tiers sans notre autorisation écrite express. Toute forme de reproduction ou d'enregistrement et de sauvegarde sous forme électronique est interdite.

1 Spécifications techniques

Les spécifications suivantes sont valables pour la réalisation en série. Votre soufflante à canal latéral peut être différent (voir «Plaque signalétique»)

	SD 2n-1	SD 3-1	SD 4n-1	SD 6-1
Débit volumétrique [m³/min]	1,55	0,75	3,4	5,6
Difference de pression totale [Pa]	210	350	240	300
Vitesse de rotation max. autorisée du soufflante [min⁻¹]	3430	3520	3400	3440
Condit. de puissance pour la vitesse de rotation max. autorisée [kw]	0,65	0,55	1,6	3,1
Poids [kg]	10,5	10,5	13,7	23,5
Profil de courroie trapézoïdale selon DIN 7753	XPZ	XPZ	XPZ	XPZ
Nombre de rainures	1	1	1	2
	SD 600-1	**SD 7-1**	**SD 8-1**	**SD 9-1**
Débit volumétrique [m³/min]	5,6	8,0	11,0	17,5
Difference de pression totale [Pa]	300	400	380	350
Vitesse de rotation max. autorisée du soufflante [min⁻¹]	3600	3500	3520	3520
Condit. de puissance pour la vitesse de rotation max. autorisée [kw]	3,5	6,5	8,0	13,5
Poids [kg]	25,5	43	64	76
Profil de courroie trapézoïdale selon DIN 7753	XPZ	XPZ	XPZ	XPZ
Nombre de rainures	2	2	4	4

Plaque signalétique
Pour le raccordement, la maintenance et la commande de pièces détachées, seules les spécifications de la plaque signalétique sont à prendre en considération.



2 Sécurité

Nos soufflantes à canal latéral se distinguent par un haut niveau de sécurité de fonctionnement. Les soufflantes à canal latéral étant des machines très puissantes, il faut strictement observer les consignes de sécurité suivantes, pour éviter les blessures, les détériorations d'objets et de la machine elle-même.

2.1 Aspiration

Les soufflantes à canal latéral génèrent une forte aspiration.

Danger !
Des objets, des morceaux de vêtement et même des cheveux peuvent être aspirés au niveau de la tubulure d'aspiration. Danger de blessure !
Ne pas séjourner à proximité de l'orifice d'aspiration pendant le fonctionnement.
La soufflante à canal latéral ne doit jamais fonctionner orifice d'aspiration ouvert. L'orifice d'aspiration ouvert doit être recouvert d'une grille de protection conformément à DIN EN 294. Ne pas introduire les mains dans l'orifice d'aspiration.

2.2 Refoulement

Danger !
Refoulement très puissant à l'orifice de refoulement. Des objets aspirés peuvent être éjectés à une très grande vitesse (risque de blessure).
Les soufflantes à canal latéral sont exclusivement réservés au déplacement d'air pur. Les corps étrangers ou impuretés, qui, après aspiration, pourraient être refoulés, doivent absolument être filtrés avant l'entrée dans la soufflante à canal latéral.
La soufflante à canal latéral ne doit jamais fonctionner lorsque la tubulure de refoulement est ouverte, et doit donc être recouvert d'une grille de protection conforme à DIN EN 294. Ne pas introduire les mains dans l'orifice de refoulement.

2.3 Température

Danger !
Le carter de la soufflante se réchauffe pendant le fonctionnement. Si la température excède +50° C, la soufflante à canal latéral doit être protégée contre les contacts directs par l'exploitant (danger de brûlure).

2.4 Utilisation conforme aux prescriptions

Les soufflantes à canal latéral sont réservés exclusivement au déplacement d'air pur.

Leur utilisation pour des fluides:
- agressifs
- toxiques
- explosifs ou
- très humides

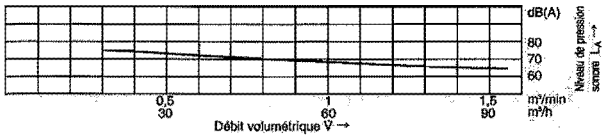
n'est pas autorisée.

La température admissible du fluide véhiculé est de –30° C à +40° C pour le modèle standard. Les matières solides ou les impuretés contenues dans le fluide véhiculé doivent être filtrées avant l'entrée dans la soufflante à canal latéral. La température ambiante maximale ne doit pas dépasser +60°C, et la température ambiante minimale ne doit pas descendre en-dessous de –20°C. La soufflante à canal latéral n'est pas fait pour être placé dans une atmosphère explosive.
Des réalisations particulières pour un emploi autre que les utilisations décrites ci-dessus sont disponibles sur demande.
La reconstruction ou des modifications de la soufflante à canal latéral ne sont pas autorisées.

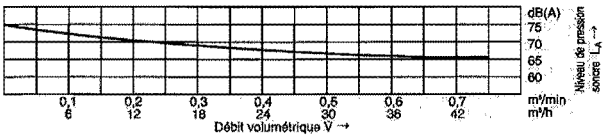
2.5 Formation de bruits

Les bruits produits par la soufflante à canal latéral ne sont pas constants sur tout le champ de puissance (voir diagrammes ci-dessous).

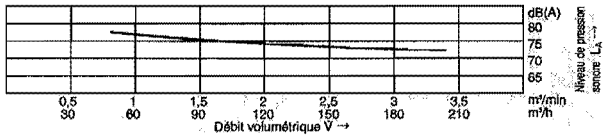
SD 2n-1



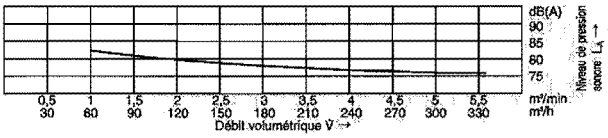
SD 3-1



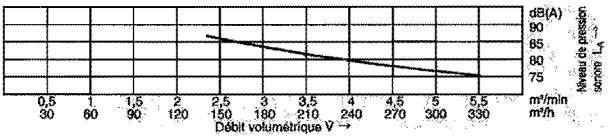
SD 4n-1



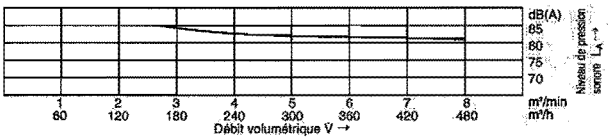
SD 6-1



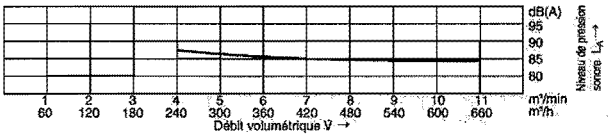
SD 600-1



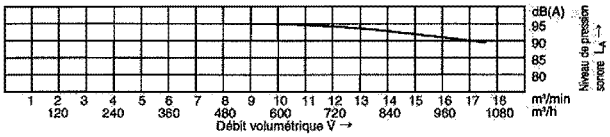
SD 7-1



SD 8-1



SD 9-1



Dans certains cas isolés défavorables, une insonorisation est nécessaire (il est recommandé que l'utilisateur effectue des mesures).

L'utilisateur doit procéder à l'insonorisation pour que les valeurs maximales légalement autorisées sur les lieux de travail ne soient pas dépassées à proximité de la soufflante à canal latéral.

3 Installation

3.1 Transport

- Avant le montage et la mise en service, vérifier qu'aucune des pièces n'a subi de dommage pendant le transport.
- Ne pas laisser la soufflante à canal latéral sans protection (protéger de l'humidité).
- Elinguer de façon sûre l'outil de levage. N'utiliser que des outils de levage et des installations de suspension de charge ayant une force de levage suffisante.

3.2 Mise en place, montage

- Placer la soufflante à canal latéral à l'horizontale de sorte qu'elle soit protégée des intempéries.
- Ne pas l'exposer à des charges par à-coups ou vibrations.
- Visser solidement la soufflante à canal latéral au lieu d'utilisation sur une surface solide et plane.
- Recouvrir les ouvertures d'aspiration et de refoulement au moyen de grilles de protection conformes à la norme DIN EN 294.
- La commande à courroie et les parties tournant librement doivent être recouvertes d'une protection de courroie selon DIN EN 294.
- Pour une ventilation suffisante du moteur, la température ambiante maximale est de +60°C.

3.3 Branchement électrique

Attention!
Respecter les instructions du fabricant de moteurs électriques. Le raccordement doit être effectué selon les prescriptions applicables localement. Les travaux décrits dans cette section ne peuvent être effectués que par une main d'œuvre spécialisée an électricité.

Vérification du sens de rotation

Mettre la soufflante à canal latéral en marche. Le sens de fonctionnement de la turbine à doit correspondre à la flèche de direction figurant sur le carter. Le sens du courant d'air doit correspondre aux flèches de direction figurant sur le carter du silencieux.

4 Commande de courroie trapézoïdale

Attention!
Les soufflantes à canal latéral sont équipées en série de poulies pour courroies trapézoïdales étroites selon DIN 7753.
Afin d'éviter des dommages prématurés sur les roulements rainurés à billes, les commandes de courroies trapézoïdales doivent être correctement précontraintes. Le dimensionnement de la commande de courroie trapézoïdale doit être effectué selon les méthodes de calcul correspondantes du fabricant de courroies.

- La poulie de la soufflante ne doit pas être modifiée.
- La vitesse de rotation maximale autorisée de la soufflante ne doit pas être dépassée (cf. tableau section 1).
- La commande de courroie et les parties tournant librement doivent être recouvertes d'une protection de courroie selon DIN EN 294.
- Ne jamais mettre la soufflante à canal latéral en service lorsque la grille de protection n'est pas posée et vissée solidement (risque de blessures).

5 Maintenance

Attention!
Les réparations ne peuvent être effectuées que par le fabricant. Nous ne sommes pas responsables de réparations effectuées par des tiers.

6 Liste des pièces détachées

Lors de la commande, veuillez indiquer

Attention!
- ***Le no. de l'appareil (plaque signalétique)***
- ***Le type d'appareil (plaque signalétique)***
- ***Le no. de pièce et/ou le no. de repère (liste des pièces détachées)***

7 Déclaration CE du fabricant

Elektror
KARL W. MÜLLER GMBH & CO.
Richard-Hirschmann-Strasse 12, D-73728 Esslingen/Neckar
Postfach 10 02 51, D-73702 Esslingen/Neckar

Nous attestons sous notre seule responsabilité que le produit auquel se rapporte cette attestation est conforme aux normes ou aux documents normatifs énumérés ci-dessous.
En cas de modification d'appareil(s) réalises sans notre accord, cette attestation n'est plus valable.

Description de la machine:
Soufflante à canal latéral SD 2n-1, SD 4n-1
Soufflante à canal latéral SD 3-1
Soufflante à canal latéral SD 6-1, SD 600-1
Soufflante à canal latéral SD 7-1
Soufflante à canal latéral SD 8-1
Soufflante à canal latéral SD 9-1

Prescriptions s'y appliquant, auxquelles cette machine correspond:
Directives de la CE sur les machines (98/37/CE)

Sources de normes harmonisées:
DIN EN 292, Sécurité de machines, concepts de base, directives générales de réalisation.
1ère partie: Terminologie fondamentale, méthodique
2ème partie: Directives techniques et spécifications

La mise en service de la machine est interdite jusqu'à ce que, après intégration dans la machine principiale ou application des principes de sécurité nécessaires, toutes les exigences des directives de la CEE concernant les machines du point de vue de la sécurité et de la santé soient remplies.

ppa. Luik (Fondé de pouvoir)
Esslingen, le 31.05.1999

Rep.	Type Désignation	SD 2n-1 N° pièce	SD 3-1 N° pièce	SD 4n-1 N° pièce	SD 6-1 N° pièce	SD 600-1 N° pièce	SD 7-1 N° pièce	SD 8-1 N° pièce	SD 9-1 N° pièce
1	Carter de soufflante	005293	005273	001136	001922	001922	001931	001138	001296
2	Couvercle de carter	002405	000500	001906	001925	001925	001929	001937	001949
3	Turbine	002407	005291	000851	000670	000862	000860	000746	001298
4	Carter de silencieux avec pied	002408	001128	401312	400839	400839	000747	000747	001299
5	Bride	000529	000945	001313	000557	000557	000944	000944	001300
6									
7	Grille de protection	000838	000838	000499	000671	000671	000748	000748	001301
8	Elément alvéolaire pour silencieux	002406	000530	000476	000672	001511	000749	000749	002880
9									
10	Rondelle	002375	002375	004274	003511	002375	003833	003620	004262
11	Douille	002399	002399	002399	004214	004214	004215	004217	004219
12	Couvercle de palier	400799	400799	400799	400045	400045	001010	000831	001303
13	Douille	003175	003175	004128	003635	003635	004215	004217	004219
14									
15	Carter	007668	007668	001132	001133	001133	002053	004867	004867
16	Rondelle	002375	002375	002375	002375	003511	002375	003620	003620
17	Bride-palier	–	–	–	–	–	001005	000331	000331
18	Couvercle de palier	–	–	–	–	400473	401248	410832	410832
19	Poulie motrice à gorges trap.	000988	000988	000989	000986	000986	000986	000987	000987
20									
21									
22	Arbre	005277	005277	001034	006285	006285	006283	001032	006338
23	Roulement à billes	000556	000556	000556	000588	000588	000979	000750	001306
24	Roulement à billes	000587	000587	000556	000588	000588	000978	000750	000750
25	Rondelle-ressort	002373	002373	003154	003100	003100	003126	003140	003140
26									
27	Clavette parallèle	002772	002772	003088	002898	002898	002898	003502	003502
28	Clavette parallèle	003406	003406	003406	002414	002414	002896	003621	006675
29	Joint d'arbre radial en Teflon	000157	000157	000157	000819	000819	000821	000820	001274
30									
31	Tôle de protection	–	–	–	–	–	006734	006761	006761
32									
33									
34									
35									
36									
37									
38									
39	Rondelle d'espacement 0,05 mm d'épaisseur	002382	002382	002382	003245	003245	–	–	–
40	Rondelle d'espacement 0,1 mm d'épaisseur	003191	003191	003191	003246	003246	003674	003627	006689
41	Rondelle d'espacement 0,2 mm d'épaisseur	002384	002384	002384	003247	003247	004198	003626	006690
42									

Explication: X requis, – non requis

Indice

Le presenti istruzioni per l'uso devono essere sempre a disposizione del personale di servizio. Prima del montaggio e della messa in funzione della soffiante anulare a canale laterale, leggere attentamente le istruzioni per l'uso. Con riserva di modifiche. In caso di dubbio si prega di rivolgersi al produttore. Questo documento è protetto dalla legge sul diritto d'autore e non può essere messo a disposizione di terzi senza nostra esplicita autorizzazione scritta. E' vietata ogni forma di riproduzione o di registrazione o memorizzazione con procedimento elettronico.

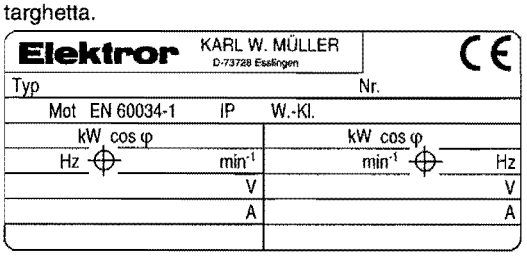
1 Dati tecnici

I dati tecnici sottoindicati sono validi per la versione di serie. E'possibile che la Vostra soffiante anulare a canale laterale differisca da tali dati (vedere «Targhetta»).

	SD 2n-1	SD 3-1	SD 4n-1	SD 6-1
Portata in volume [m³/min]	1,55	0,75	3,4	5,6
Differenza di pressione totale [Pa]	210	350	240	300
Numero di giri max. ammissibile della soffiante [min⁻¹]	3430	3520	3400	3440
Assorbimento di corrente al numero di giri max. ammissibile [kw]	0,65	0,55	1,6	3,1
Peso [kg]	10,5	10,5	13,7	23,5
Profilo della cinghia trapezoidale in conformità a Norma DIN 7753	XPZ	XPZ	XPZ	XPZ
Numero di gole	1	1	1	2

	SD 600-1	SD 7-1	SD 8-1	SD 9-1
Portata in volume [m³/min]	5,6	8,0	11,0	17,5
Differenza di pressione totale [Pa]	300	400	380	350
Numero di giri max. ammissibile della soffiante [min⁻¹]	3600	3500	3520	3520
Assorbimento di corrente al numero di giri max. ammissibile [kw]	3,5	6,5	8,0	13,5
Peso [kg]	25,5	43	64	76
Profilo della cinghia trapezoidale in conformità a Norma DIN 7753	XPZ	XPZ	XPZ	XPZ
Numero di gole	2	2	4	4

Targhetta
Per l'allacciamento, la manutenzione e l'ordinazione dei pezzi di ricambio fanno fede esclusivamente i dati contenuti nella targhetta.



2 Sicurezza

Le nostre soffianti anulari a canale laterale si distinguono per il loro alto grado di sicurezza di funzionamento. Essendo le soffianti anulari a canale laterale macchine di grande efficienza, è necessario rispettare rigorosamente le seguenti norme di sicurezza, allo scopo di evitare lesioni, danni a cose o alla macchina stessa.

2.1 Effetto di aspirazione

Le soffianti anulari a canale laterale generano un forte effetto di aspirazione.

Attenzione!
Nel bocchettone d'aspirazione possono essere aspirati oggetti, capi di vestiario ed anche capelli. Pericolo di lesioni!
Durante l'esercizio non soffermarsi in prossimità del bocchettone d'aspirazione. La soffiante anulare non deve mai essere posta in funzione con il bocchettone d'aspirazione aperto. Il bocchettone d'aspirazione deve essere dotato di una griglia di protezione in conformità alla norma DIN EN 294. Non introdurre la mano nel bocchettone di aspirazione.

2.2 Effetto di pressione

Attenzione!
Effetto di pressione molto forte nel bocchettone di mandata. Gli oggetti aspirati possono essere proiettati verso l'esterno a elevata velocità (pericolo di lesioni!). Le soffianti anulari a canale laterale sono idonee esclusivamente al convogliamento di aria pura. E'pertanto assolutamente indispensabile filtrare, prima dell'ingresso nella soffiante anulare a canale laterale, eventuali corpi estranei o impurità aspirati che potrebbero essere espulsi all'esterno. La soffiante anulare a canale laterale ad alta pressione non deve mai essere messa in funzione con il bocchettone di mandata aperto e per questa ragione deve essere coperta da una griglia protettiva in conformità alla norma DIN EN 294. Non inserire le mani nel bocchettone di mandata.

2.3 Temperatura

Attenzione!
La custodia della soffiante si riscalda durante il funzionamento. Qual'ora la temperatura salga oltre +50° C, l'utente dovrà proteggere la soffiante anulare a canale laterale da un eventuale contatto diretto (pericolo di ustioni!).

2.4 Impiego in conformità alle norme

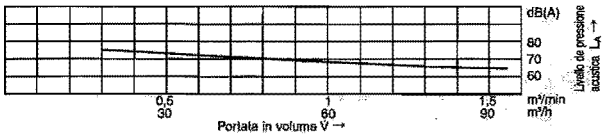
Le soffiante anulari a canale laterale sono esclusivamente idonee al convogliamento di aria pura.
Non è ammesso l'impiego per mezzi:
- aggressivi
- tossici
- esplosivi
- molto umidi

La temperatura ammissibile del mezzo convogliato per l'esecuzione standard è compresa fra –30° C e +40° C. Sostaze solide o impurità contenute nel mezzo convogliato devono essere filtrate prima dell'ingresso nella soffiante anulare a canale laterale. La massima temperatura ambiente non deve superare +60° C, la minima non deve scendere al di sotto di –20°C. La soffiante anulare a canale laterale non è idonea per essere installata in atmosfera esplosiva. Versioni speciali per l'impiego al di fuori delle applicazioni sopra descritte sono disponibili a richiesta. Non sono ammesse trasformazioni e modifiche del a canale laterale.

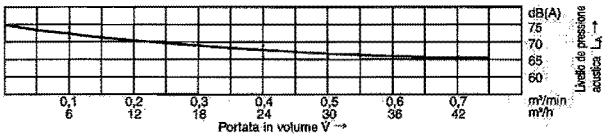
2.5 Formazione di rumori

I rumori irradiati dalla soffiante anulare a canale laterale non sono costanti nell'intero campo d'applicazione (vedere diagrammi sotto).

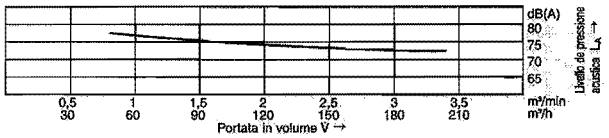
SD 2n-1



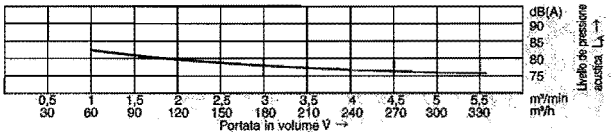
SD 3-1



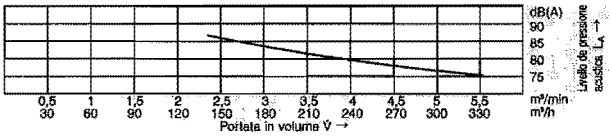
SD 4n-1



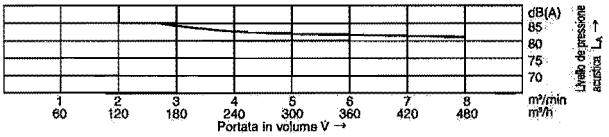
SD 6-1



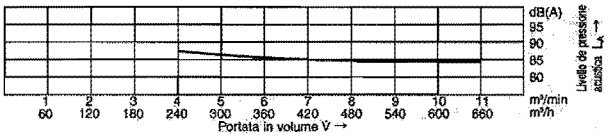
SD 600-1



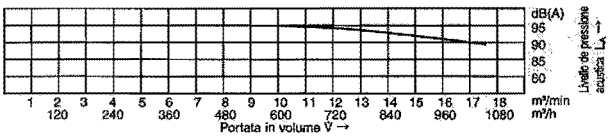
SD 7-1



SD 8-1



SD 9-1



In determinati singoli casi sfavorevoli è necessaria un'insonorizzazione (si consigliano misurazioni da parte dell'utente).

L'utente deve provvedere all'insonorizzazione affinché non vengano superati i valori massimi ammessi per legge nei posti di lavoro nella zona circostante la soffiante anulare a canale laterale.

3 Installazione

3.1 Trasporto

- Prima di procedere al montaggio e alla messa in funzione controllare tutti i pezzi per accertare eventuali danni dovuti al trasporto.
- Non depositare all'aperto la soffiante anulare a canale laterale senza adeguata protezione (proteggerlo dall'umidità).
- Fissare in modo sicuro il paranco. Utilizzare solo paranchi e dispositivi di sollevamento del carico aventi una portata sufficiente.

3.2 Installazione, montaggio

- Installare la soffiante anulare a canale laterale orizzontalmente e protetta dagli agenti atmosferici.
- Non esporlo a sollecitazioni d'urto e di oscillazione.
- Fissare saldamente la soffiante anulare a canale laterale con viti sul luogo d'impiego, su una base robusta e in piano.
- Coprire le aperture d'aspirazione o di mandata con griglie di protezione in conformità alla norma DIN EN 294.
- Coprire l'azionamento a cinghia e le parti a rotazione libera con una protezione per cinghie in conformità a Norma DIN EN 294.
- Assicurare una sufficiente aerazione del motore, temperatura ambiente massima + 60°C.

3.3 Allacciamento elettrico

Attenzione!
Accertarsi che vengano rispettati i dati forniti dal produttore del motore elettrico.
Effettuare l'allacciamento attenendosi alle disposizioni localmente vigenti in materia.
Le operazioni descritte in questo paragrafo possono essere eseguite soltanto da un elettrotecnico qualificato.

Controllo del senso di rotazione

Inserire la soffiante anulare a canale laterale.
Il senso di rotazione della girante deve corrispondere alla direzione della freccia visibile sulla custodia. Anche la direzione della corrente d'aria deve corrispondere a quella indicata dalle frecce presenti sull'involucro d'insonorizzazione.

4 Azionamento a cinghia trapezoidale

Attenzione!
Nella versione di serie la soffianti anulari a canale laterale sono corredate di pulegge per cinghie trapezoidali a passo ridotto in conformità alla norma DIN 7753.
Per evitare il danneggiamento precoce dei cuscinetti a sfere a gola profonda, gli azionamenti a cinghia trapezoidale devono essere pretensionati correttamente. L'azionamento a cinghia trapezoidale deve essere installato rispettando i calcoli forniti dal produttore della cinghia.

- La puleggia della soffiante anulare a canale laterale non deve essere modificata.
- Il numero di giri max. ammissibile della soffiante non deve essere superato (vedi tabella paragrafo 1).
- L'azionamento a cinghia e le parti a rotazione libera devono essere coperti da una protezione per cinghia in conformità a Norma DIN EN 294.
- Non azionare mai la soffiante anulare a canale laterale se la griglia di protezione non è montata e ben avvitata (pericolo di lesioni).

5 Manutenzione

Attenzione!
Le riparazioni possono essere eseguite solo dal fabbricante. In caso di riparazioni ad opera di terzi non ci assumiamo alcuna responsabilità.

6 Elenco ricambi

All'atto dell'ordinazione si prega di specificare

Attenzione!

- ***N. dell'apparecchio (targhetta)***
- ***Tipo di apparecchio (targhetta)***
- ***N. del pezzo e/o N. della posizione (elenco parti di ricambio)***

7 Dichiarazione CE del produttore

Elektror
KARL W. MüLLER GMBH & CO.
Richard-Hirschmann-Strasse 12, D-73728 Esslingen/Neckar
Postfach 10 02 51, D-73702 Esslingen/Neckar

Noi dichiariamo sotto la nostra responsabilità che il prodotto a cui si riferisce la presente dichiarazione è conforme alle norme o alle documentazioni normative sotto specificate.
Nel caso di una modifica non concordata con noi dell'(degli) apparecchio(i), la presente dichiarazione perde la propria validità.

Descrizione della macchina:
Soffiante anulare a canale laterale SD 2n-1, SD 4n-1
Soffiante anulare a canale laterale SD 3-1
Soffiante anulare a canale laterale SD 6-1, SD 600-1
Soffiante anulare a canale laterale SD 7-1
Soffiante anulare a canale laterale SD 8-1
Soffiante anulare a canale laterale SD 9-1

Disposizioni vigenti in materia, alle quali la presente macchina è conforme:
Direttiva CE sulle macchine (98/37/CE)

Norme armonizzate di riferimento:
DIN EN 292, Sicurezza delle macchine, definizioni, caratteristiche generali
Parte 1°: Terminologia basilare, metodica
Parte 2°: Caratteristiche tecniche e specifiche

La messa in funzione del ventilatore è vietata fino a dopo il montaggio sulla macchina principale o l'applicazione delle misure di sicurezza che soddisfino tutte le richieste dalla direttiva macchine CE, relative alla sicurezza e alla tutela della salute.

ppa. Luik (Procuratore)
Esslingen, 31.05.1999

Pos.	Tipo / Denominazione	SD 2n-1 N. pezzo	SD 3-1 N. pezzo	SD 4n-1 N. pezzo	SD 6-1 N. pezzo	SD 600-1 N. pezzo	SD 7-1 N. pezzo	SD 8-1 N. pezzo	SD 9-1 N. pezzo
1	Custodia della soffiante	005293	005273	001136	001922	001922	001931	001138	001296
2	Coperchio carcasse	002405	000500	001906	001925	001925	001929	001937	001949
3	Girante per rotazione	002407	005291	000851	000670	000862	000860	000746	001298
4	Custodia del silenziatore con base d'appoggio	002408	001128	401312	400839	400839	000747	000747	001299
5	Flangia	000529	000945	001313	000557	000557	000944	000944	001300
6									
7	Griglia di protezione	000838	000838	000499	000671	000671	000748	000748	001301
8	Gommapiuma	002406	000530	000476	000672	001511	000749	000749	002880
9									
10	Disco	002375	002375	004274	003511	002375	003833	003620	004262
11	Boccola	002399	002399	002399	004214	004214	004215	004217	004219
12	Coperchio di chiusura cuscinetto	400799	400799	400799	400045	400045	001010	000831	001303
13	Boccola	003175	003175	004128	003635	003635	004215	004217	004219
14									
15	Custodia	007668	007668	001132	001133	001133	002053	004867	004867
16	Disco	002375	002375	002375	002375	003511	002375	003620	003620
17	Scudo cuscinetto	–	–	–	–	–	001005	000331	000331
18	Coperchio di chiusura cuscinetto	–	–	–	–	400473	401248	410832	410832
19	Puleggia cinghia trapezoidaleper	000988	000988	000989	000986	000986	000986	000987	000987
20									
21									
22	Albero	005277	005277	001034	006285	006285	006283	001032	006338
23	Cuscinetto a sfere	000556	000556	000556	000588	000588	000979	000750	001306
24	Cuscinetto a sfere	000587	000587	000556	000588	000588	000978	000750	000750
25	Molla a tazza	002373	002373	003154	003100	003100	003126	003140	003140
26									
27	Linguetta	002772	002772	003088	002898	002898	002898	003502	003502
28	Linguetta	003406	003406	003406	002414	002414	002896	003621	006675
29	Guarnizione albero radiale in teflon	000157	000157	000157	000819	000819	000821	000820	001274
30									
31	Lamierino protettivo	–	–	–	–	–	006734	006761	006761
32									
33									
34									
35									
36									
37									
38									
39	Rondella distanziale spessore 0,05 mm	002382	002382	002382	003245	003245	–	–	–
40	Rondella distanziale spessore 0,1 mm	003191	003191	003191	003246	003246	003674	003627	006689
41	Rondella distanziale spessore 0,2 mm	002384	002384	002384	003247	003247	004198	003626	006690
42									

Legenda: X necessario, – non necessario

Indice

Las presentes instrucciones de servicio deben estar siempre a disposición del personal. Léalas atentamente antes del montaje y la puesta en servicio del compresor de canal lateral. Reservado el derecho a modificaciones. En caso de duda es necesario consultar al fabricante. Este documento tiene copyright. No está permitido ponerlo a disposición de terceros sin nuestra expresa autorización escrita. Queda prohibida cualquier forma de reproducción, registro y memorización en forma electrónica.

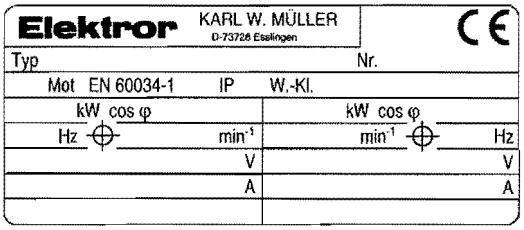
1 Datos técnicos

Los siguientes datos son válidos para la versión estándar. Su compresor de canal lateral puede diferir de ellos (ver «Placa de características»).

	SD 2n-1	SD 3-1	SD 4n-1	SD 6-1
Caudal volumétrico [m³/min]	1,55	0,75	3,4	5,6
Presión diferencial total [Pa]	210	350	240	300
Máx número de revoluciones admisible del compresor [rpm]	3430	3520	3400	3440
Consumo de potencia al máximo Nº de revoluciones admisible [kw]	0,65	0,55	1,6	3,1
Peso [kg]	10,5	10,5	13,7	23,5
Perfil de la correa trapezoidal según DIN 7753	XPZ	XPZ	XPZ	XPZ
Número de ranuras	1	1	1	2

	SD 600-1	SD 7-1	SD 8-1	SD 9-1
Caudal volumétrico [m³/min]	5,6	8,0	11,0	17,5
Presión diferencial total [Pa]	300	400	380	350
Máx número de revoluciones admisible del compresor [rpm]	3600	3500	3520	3520
Consumo de potencia al máximo Nº de revoluciones admisible [kw]	3,5	6,5	8,0	13,5
Peso [kg]	25,5	43	64	76
Perfil de la correa trapezoidal según DIN 7753	XPZ	XPZ	XPZ	XPZ
Número de ranuras	2	2	4	4

Placa de características
Son decisivos para la conexión, el mantenimiento y el pedido de piezas de recambio únicamente los datos que aparecen en la placa de características.



2 Seguridad

Nuestros compresores de canal lateral se distinguen por una elevada medida de seguridad funcional. Dado que a los compresores de canal lateral son máquinas muy potentes, las siguientes instrucciones de seguridad deben ser observadas estrictamente para prevenir lesiones y daños materiales y en la misma máquina.

2.1 Efecto de aspiración

Los compresores de canal lateral tienen una elevada capacidad de aspiración.

¡Aviso!
En el manguito de aspiración pueden absorberse objetos, ropa e incluso el pelo. Existe peligro de accidente. Durante la marcha no es permisible estacionarse cerca de la abertura de aspiración.
El compresor de canal lateral no debe nunca operarse con la abertura de aspiración abierta. La aspiración abierta tiene que ser cubierta con una rejilla protectora según la norma DIN EN 294. No meter la mano dentro de la abertura de aspiración.

2.2 Efecto de soplado

¡Aviso!
Efecto de soplado muy fuerte en el racor de salida. Los objetos aspirados pueden ser proyectados a gran velocidad (¡peligro de lesiones!).
Los compresores de canal lateral están destinados únicamente para el transporte de aire puro. La aspiración de cuerpos extraños o impurezas que pueden ser expulsados debe impedirse en todo caso filtrando el aire antes de su entrada en el compresor de canal lateral.
El compresor de canal lateral no debe funcionar nunca con el racor de salida abierto; por lo tanto, éste debe ser cubierto con una rejilla de protección según DIN EN 294. No meter la mano en la salida de evacuación de aire.

2.3 Temperatura

¡Aviso!
El armazón del compresor se calienta durante la marcha. Si la temperatura sube por encima de los +50° C, tiene el empresario que proteger el compresor de canal lateral para que no pueda ser tocado directamente (existe peligro de sufrir quemaduras).

2.4 Uso adecuado

Los compresores de canal lateral están destinados únicamente para el transporte de aire puro.

El uso con medios
- agresivos,
- tóxicos,
- explosivos o
- muy húmedos

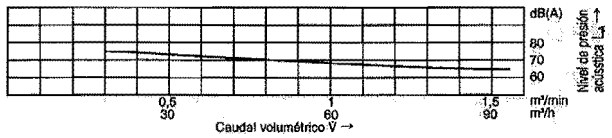
no está permitido.

La temperatura permisible del medio transportado es de –30° C a +40° C para el equipo standard. Las partículas sólidas o impurezas contenidas en el medio a transportar deben ser filtradas antes de la entrada en el compresor de canal lateral. La máxima temperatura ambiente no debe sobrepasar los +60° C; la mínima no debe bajar por debajo de los –20° C. El compresor de canal lateral no es adecuado para la instalación en ambientes explosivos. Versiones especiales para el uso fuera de las aplicaciones arriba descritas están disponibles bajo consulta. No se permiten transformaciones y modificaciones en del compresor de canal lateral.

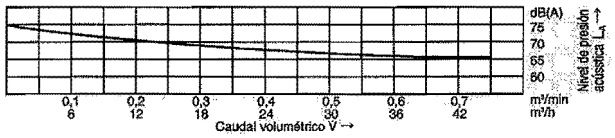
2.5 Ruido

Los ruidos emitidos por del compresor de canal lateral no son constantes en toda la gama de potencia (ver diagramas).

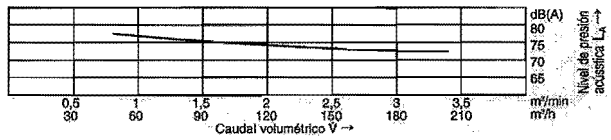
SD 2n-1



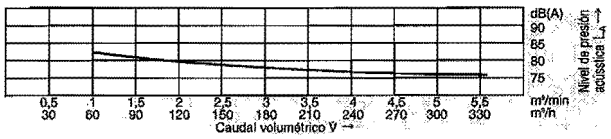
SD 3-1



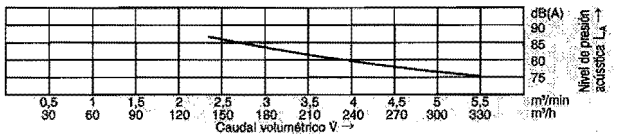
SD 4n-1



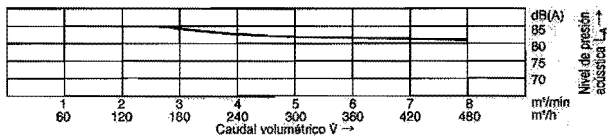
SD 6-1



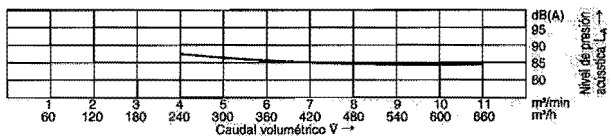
SD 600-1



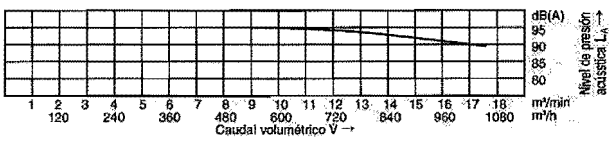
SD 7-1



SD 8-1



SD 9-1



En determinados casos individuales desfavorables, se precisa una amortiguación de ruidos (se recomienda la ejecución de mediciones por el usuario).

El usuario debe establecer la amortiguación de ruidos para no sobrepasar los valores máximos legalmente permitidos en los puestos de trabajo situados en el entorno del compresor de canal lateral.

3 Instalación

3.1 Transporte

- Antes del montaje y la puesta en servicio, compruebe todas las piezas en cuanto a eventuales daños de transporte.
- El compresor de canal lateral no debe ser almacenado al aire libre sin protección (proteger de la humedad).
- Fije los aparatos de elevación de forma segura. Utilice únicamente aparatos elevadores e instalaciones de suspensión de cargas con suficiente capacidad de carga.

3.2 Instalación, montaje

- Colocar el compresor de canal lateral en posición horizontal y protegerlo contra los efectos de la intemperie.
- No lo exponga a esfuerzos de vibración o choque.
- Atornillar el compresor de canal lateral fijamente en el lugar de emplazamiento sobre una superficie llana y resistente.
- Cubra los orificios abiertos de aspiración y de salida con rejillas protectoras según DIN EN 294.
- El accionamiento por correa y las piezas en libre rotación deben ser cubiertas con un cubrecorreas según DIN EN 294.
- Cuide de una suficiente ventilación del motor; máx temperatura ambiente +60° C.

3.3 Conexión eléctrica

¡Nota!
Se han de observar las indicaciones del fabricante del electromotor en cuestión. La conexión debe ser efectuada conforme a las prescripciones locales aplicables.
Los trabajos descritos en este apartado deben ser realizados únicamente por un técnico electricista.

Comprobación del sentido de rotación

Conectar el compresor de canal lateral.
El sentido de rotación del rodete debe corresponder al indicado con la flecha en la carcasa.
El sentido de la corriente de aire ha de concordar igualmente con las flechas de dirección de la carcasa de amortiguación de ruidos.

4 Accionamiento por correa trapezoidal

¡Nota!
Los compresores de canal lateral se encuentran equipados en serie con poleas de correa trapezoidal para correas estrechas según DIN 7753.
Para evitar daños prematuros en los rodamientos ranurados de bolas, los accionamientos por correa trapezoidal deben estar correctamente tensados.
El dimensionado del accionamiento por correa trapezoidal debe realizarse según los procedimientos de cálculo de los fabricantes de la correa en cuestión.

- La polea de correa del compresor no debe modificarse.
- El número máximo permitido de revoluciones del compresor no debe sobrepasarse (véase tabla apartado 1).
- El accionamiento por correa y las piezas en libre rotación deben ser cubiertas con un cubrecorreas según DIN EN 294.
- No ponga nunca el compresor de canal lateral en servicio si la rejilla protectora no se encuentra montada y firmemente atornillada (peligro de lesiones).

5 Mantenimiento

¡Nota!
Las reparaciones deben ser realizadas únicamente por el fabricante. No nos hacemos responsables en caso de reparaciones por parte de terceros.

6 Lista de recambios

Indicar en el pedido

¡Nota!

- ***Número del aparato (placa de características)***
- ***Tipo del aparato (placa de características)***
- ***Nº de pieza y/o Nº de pos. (lista de recambios)***

7 Declaración del fabricante CE

Elektror
KARL W. MÜLLER GMBH & CO.
Richard-Hirschmann-Strasse 12, D-73728 Esslingen/Neckar
Postfach 10 02 51, D-73702 Esslingen/Neckar

Declaramos bajo nuestra única responsabilidad que el producto al cual se refiere la presente declaración es conforme a las normas y documentos normativos abajo citados.
En caso de una modificación del (de los) aparato(s) no coordinada con nuestra empresa, la presente declaración pierde su validez.

Descripción de la máquina:
Compresor de canal lateral SD 2n-1, SD 4n-1
Compresor de canal lateral SD 3-1
Compresor de canal lateral SD 6-1, SD 600-1
Compresor de canal lateral SD 7-1
Compresor de canal lateral SD 8-1
Compresor de canal lateral SD 9-1

Disposiciones aplicables a las cuales corresponde esta máquina:
Norma CE para maquinaria (98/37/CE)

Fuentes de las normas armonizadas:
DIN EN 292, Seguridad de maquinaria, Conceptos básicos, Normas generales para el diseño
Parte 1: Terminología básica, metodología
Parte 2: Reglas técnicas y especificaciones

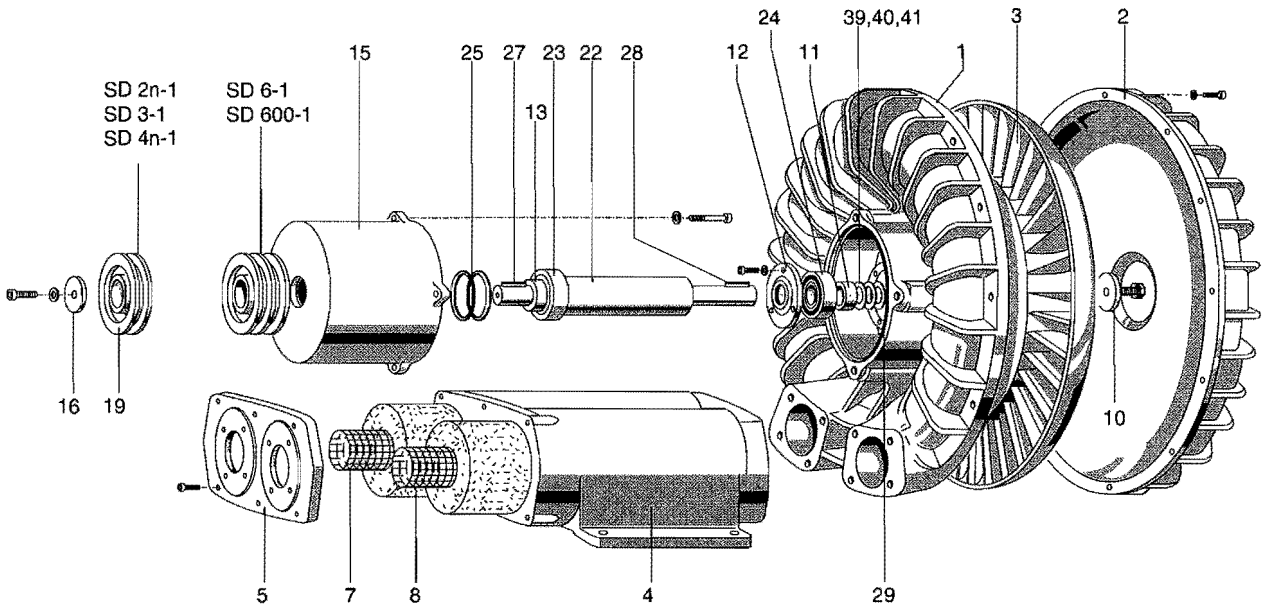
La puesta en servico del componente de máquina queda prohibida hasta que, después de la instalación en la máquina principal o tras el montaje de los necesarios dispositivos de seguridad, estén cumplidos todos los requisitos de la Norma CE para maquinaria en cuanto a seguridad y salud.

ppa. Luik (Apoderado)
Esslingen, 31.05.1999

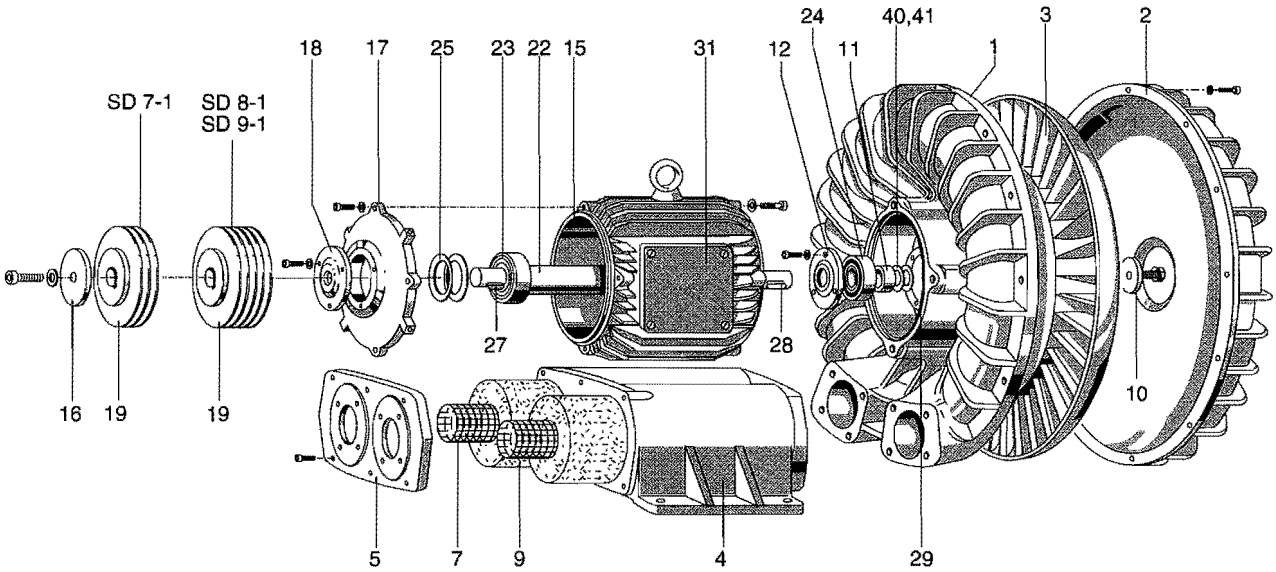
Pos.	Tipo / Denominación	SD 2n-1 Nº de pieza	SD 3-1 Nº de pieza	SD 4n-1 Nº de pieza	SD 6-1 Nº de pieza	SD 600-1 Nº de pieza	SD 7-1 Nº de pieza	SD 8-1 Nº de pieza	SD 9-1 Nº de pieza
1	Carcasa	005293	005273	001136	001922	001922	001931	001138	001296
2	Tapa de carcasa	002405	000500	001906	001925	001925	001929	001937	001949
3	Rodete	002407	005291	000851	000670	000862	000860	000746	001298
4	Caja del silenciador con base	002408	001128	401312	400839	400839	000747	000747	001299
5	Brida	000529	000945	001313	000557	000557	000944	000944	001300
6									
7	Parilla de protección	000838	000838	000499	000671	000671	000748	000748	001301
8	Material esponjoso	002406	000530	000476	000672	001511	000749	000749	002880
9									
10	Anrandela	002375	002375	004274	003511	002375	003833	003620	004262
11	Casquillo	002399	002399	002399	004214	004214	004215	004217	004219
12	Tapa da remate de cojinete	400799	400799	400799	400045	400045	001010	000831	001303
13	Casquillo	003175	003175	004128	003635	003635	004215	004217	004219
14									
15	Carcasa	007668	007668	001132	001133	001133	002053	004867	004867
16	Anrandela	002375	002375	002375	002375	003511	002375	003620	003620
17	Platillo de cojinete	–	–	–	–	–	001005	000331	000331
18	Tapa da remate de cojinete	–	–	–	–	400473	401248	410832	410832
19	Polea de correa trapezoidal	000988	000988	000989	000986	000986	000986	000987	000987
20									
21									
22	Eje	005277	005277	001034	006285	006285	006283	001032	006338
23	Rodamiento de bolas	000556	000556	000556	000588	000588	000979	000750	001306
24	Rodamiento de bolas	000587	000587	000556	000588	000588	000978	000750	000750
25	Muelle belleville	002373	002373	003154	003100	003100	003126	003140	003140
26									
27	Chaveta de ajuste	002772	002772	003088	002898	002898	002898	003502	003502
28	Chaveta de ajuste	003406	003406	003406	002414	002414	002896	003621	006675
29	Obturacion radial del eje de teflón	000157	000157	000157	000819	000819	000821	000820	001274
30									
31	Chapa de proteccion	–	–	–	–	–	006734	006761	006761
32									
33									
34									
35									
36									
37									
38									
39	Arandela separadora 0,05 mm	002382	002382	002382	003245	003245	–	–	–
40	Arandela separadora 0,1 mm	003191	003191	003191	003246	003246	003674	003627	006689
41	Arandela separadora 0,2 mm	002384	002384	002384	003247	003247	004198	003626	006690
42									

Explicación de los signos: X necesario, – no necesario

SD 2n-1, SD 3-1, SD 4n-1, SD 6-1 SD 600-1



SD 7-1, SD 8-1, SD 9-1



BRIGGS & STRATTON ENGINE OWNER WARRANTY POLICY

September 2008

LIMITED WARRANTY

Briggs & Stratton Corporation will repair or replace, free of charge, any part(s) of the engine that is defective in material or workmanship or both. Transportation charges on product submitted for repair or replacement under this warranty must be borne by purchaser. This warranty is effective for and is subject to the time periods and conditions stated below. For warranty service, find the nearest Authorized Service Dealer in our dealer locator map at BRIGGSandSTRATTON.COM, or by calling 1-800-233-3723, or as listed in the 'Yellow Pages'.

There is no other expressed warranty. Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to one year from purchase, or to the extent permitted by law and all implied warranties are excluded. Liability for incidental or consequential damages are excluded to the extent exclusion is permitted by law. Some states or countries do not allow limitations on how long an implied warranty lasts, and some states or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state and country to country.

STANDARD WARRANTY TERMS *▲

Brand/Product Type	Consumer Use	Commercial Use
Vanguard™	2 years	2 years
Extended Life Series™; I/C®; Intek™ I/C®; Intek™ Pro; Professional Series™ with Dura-Bore™ Cast Iron Sleeve; 850 Series™ with Dura-Bore™ Cast Iron Sleeve; Snow Series MAX™ with Dura-Bore™ Cast Iron Sleeve	2 years	1 year
All Other Briggs & Stratton Engines	2 years	90 days

* These are our standard warranty terms, but occasionally there may be additional warranty coverage that was not determined at time of publication. For a listing of current warranty terms for your engine, go to BRIGGSandSTRATTON.COM or contact your Authorized Briggs & Stratton Service Dealer.

▲ Engines used on Home Standby Generator applications are warranted under consumer use only. This warranty does not apply to engines on equipment used for prime power in place of a utility. **Engines used in competitive racing or on commercial or rental tracks are not warranted.**

The warranty period begins on the date of purchase by the first retail consumer or commercial end user, and continues for the period of time stated in the table above. "Consumer use" means personal residential household use by a retail consumer. "Commercial use" means all other uses, including use for commercial, income producing or rental purposes. Once an engine has experienced commercial use, it shall thereafter be considered as a commercial use engine for purposes of this warranty.

No warranty registration is necessary to obtain warranty on Briggs & Stratton Products. Save your proof of purchase receipt. If you do not provide proof of the initial purchase date at the time warranty service is requested, the manufacturing date of the product will be used to determine the warranty period.

About Your Warranty

Briggs & Stratton welcomes warranty repair and apologizes to you for being inconvenienced. Any Authorized Service Dealer may perform warranty repairs. Most warranty repairs are handled routinely, but sometimes requests for warranty service may not be appropriate.

If a customer differs with the decision of the Service Dealer, an investigation will be made to determine whether the warranty applies. Ask the Service Dealer to submit all supporting facts to his Distributor or the Factory for review. If the Distributor or the Factory decides that the claim is justified, the customer will be fully reimbursed for those items that are defective. To avoid misunderstanding which might occur between the customer and the Dealer, listed below are some of the causes of engine failure that the warranty does not cover.

Normal wear: Engines, like all mechanical devices, need periodic parts service and replacement to perform well. Warranty will not cover repair when normal use has exhausted the life of a part or an engine. Warranty would not apply if engine damage occurred because of misuse, lack of routine maintenance, shipping, handling, warehousing or improper installation. Similarly, warranty is void if the serial number of the engine has been removed or the engine has been altered or modified.

Improper maintenance: The life of an engine depends upon the conditions under which it operates, and the care it receives. Some applications, such as tillers, pumps and rotary mowers, are very often used in dusty or dirty conditions, which can cause what appears to be premature wear. Such wear, when caused by dirt, dust, spark plug cleaning grit, or other abrasive material that has entered the engine because of improper maintenance, is not covered by warranty.

This warranty covers engine related defective material and/or workmanship only, and not replacement or refund of the equipment to which the engine may be mounted. Nor does the warranty extend to repairs required because of:

1 **Problems caused by parts that are not original Briggs & Stratton parts.**

2 Equipment controls or installations that prevent starting, cause unsatisfactory engine performance, or shorten engine life. (Contact equipment manufacturer.)

3 Leaking carburetors, clogged fuel pipes, sticking valves, or other damage, caused by using contaminated or stale fuel.

4 Parts which are scored or broken because an engine was operated with insufficient or contaminated lubricating oil, or an incorrect grade of lubricating oil (check and refill when necessary, and change at recommended intervals). OIL GARD may not shut down running engine. Engine damage may occur if oil level is not properly maintained.

5 Repair or adjustment of associated parts or assemblies such as clutches, transmissions, remote controls, etc., which are not manufactured by Briggs & Stratton.

6 Damage or wear to parts caused by dirt, which entered the engine because of improper air cleaner maintenance, re-assembly, or use of a non-original air cleaner element or cartridge. At recommended intervals, clean and/or replace the filter as stated in the Operator's Manual.

7 Parts damaged by over-speeding, or overheating caused by grass, debris, or dirt, which plugs or clogs the cooling fins, or flywheel area, or damage caused by operating the engine in a confined area without sufficient ventilation. Clean engine debris at recommended intervals as stated in the Operator's Manual.

8 Engine or equipment parts broken by excessive vibration caused by a loose engine mounting, loose cutter blades, unbalanced blades or loose or unbalanced impellers, improper attachment of equipment to engine crankshaft, over-speeding or other abuse in operation.

9 A bent or broken crankshaft, caused by striking a solid object with the cutter blade of a rotary lawn mower, or excessive v-belt tightness.

10 Routine tune-up or adjustment of the engine.

11 Engine or engine component failure, i.e., combustion chamber, valves, valve seats, valve guides, or burned starter motor windings, caused by the use of alternate fuels such as, liquified petroleum, natural gas, altered gasolines, etc.

Warranty service is available only through authorized service dealers by Briggs & Stratton Corporation. Locate your nearest Authorized Service Dealer in our dealer locator map on BRIGGSandSTRATTON.COM or by calling 1-800-233-3723, or as listed in the 'Yellow Pages'.

November 2008

California, U.S. EPA, and Briggs & Stratton Corporation Emissions Control Warranty Statement
Your Warranty Rights And Obligations

The California Air Resources Board, U.S. EPA, and Briggs & Stratton (B&S) are pleased to explain the emissions control system warranty on your Model Year 2008 and later engine/equipment. In California, new small off-road engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. B&S must warrant the emissions control system on your engine/equipment for the periods of time listed below provided there has been no abuse, neglect, or improper maintenance of your small off-road engine.

Your emissions control system may include parts such as the carburetor or fuel injection system, fuel tank, ignition system, and catalytic converter. Also included may be hoses, belts, connectors, sensors, and other emissions-related assemblies.

Where a warrantable condition exists, B&S will repair your engine/equipment at no cost to you including diagnosis, parts, and labor.

Manufacturer's Warranty Coverage:

Small off-road engines are warranted for two years. If any emissions-related part on your engine/equipment is defective, the part will be repaired or replaced by B&S.

Owner's Warranty Responsibilities:

- As the small engine/equipment owner, you are responsible for the performance of the required maintenance listed in your owner's manual. B&S recommends that you retain all receipts covering maintenance on your engine/equipment, but B&S cannot deny warranty solely for the lack of receipts or your failure to ensure the performance of all scheduled maintenance.
- As the engine/equipment owner, you should however be aware that B&S may deny you warranty coverage if your engine/equipment or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications.
- You are responsible for presenting your engine/equipment to a B&S distribution center, servicing dealer, or other equivalent entity, as applicable, as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days. If you have any questions regarding your warranty rights and responsibilities, you should contact B&S at (414) 259-5262.

Briggs & Stratton Emissions Control Warranty Provisions

The following are specific provisions relative to your Emissions Control Warranty Coverage. It is in addition to the B&S engine warranty for non-regulated engines found in the Operator's Manual.

1. Warranted Emissions Parts

   Coverage under this warranty extends only to the parts listed below (the emissions control systems parts) to the extent these parts were present on the engine purchased.

   a. Fuel Metering System
      - Cold start enrichment system (soft choke)
      - Carburetor and internal parts
      - Fuel pump
      - Fuel line, fuel line fittings, clamps
      - Fuel tank, cap and tether
      - Carbon canister

   b. Air Induction System
      - Air cleaner
      - Intake manifold
      - Purge and vent line

   c. Ignition System
      - Spark plug(s)
      - Magneto ignition system

   d. Catalyst System
      - Catalytic converter
      - Exhaust manifold
      - Air injection system or pulse valve

   e. Miscellaneous Items Used in Above Systems
      - Vacuum, temperature, position, time sensitive valves and switches
      - Connectors and assemblies

2. Length of Coverage

   For a period of two years from date of original purchase, B&S warrants to the original purchaser and each subsequent purchaser that the engine is designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board; that it is free from defects in material and workmanship that could cause the failure of a warranted part; and that it is identical in all material respects to the engine described in the manufacturer's application for certification. The warranty period begins on the date the engine is originally purchased.

   The warranty on emissions-related parts is as follows:

   - Any warranted part that is not scheduled for replacement as required maintenance in the owner's manual supplied, is warranted for the warranty period stated above. If any such part fails during the period of warranty coverage, the part will be repaired or replaced by B&S at no charge to the owner. Any such part repaired or replaced under the warranty will be warranted for the remaining warranty period.
   - Any warranted part that is scheduled only for regular inspection in the owner's manual supplied, is warranted for the warranty period stated above. Any such part repaired or replaced under warranty will be warranted for the remaining warranty period.
   - Any warranted part that is scheduled for replacement as required maintenance in the owner's manual supplied, is warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part will be repaired or replaced by B&S at no charge to the owner. Any such part repaired or replaced under warranty will be warranted for the remainder of the period prior to the first scheduled replacement point for the part.
   - Add on or modified parts that are not exempted by the Air Resources Board may not be used. The use of any non exempted add on or modified parts by the owner will be grounds for disallowing a warranty claim. The manufacturer will not be liable to warrant failures of warranted parts caused by the use of a non exempted add on or modified part.

3. Consequential Coverage

   Coverage shall extend to the failure of any engine components caused by the failure of any warranted emissions parts.

4. Claims and Coverage Exclusions

   Warranty claims shall be filed according to the provisions of the B&S engine warranty policy. Warranty coverage does not apply to failures of emissions parts that are not original equipment B&S parts or to parts that fail due to abuse, neglect, or improper maintenance as set forth in the B&S engine warranty policy. B&S is not liable for warranty coverage of failures of emissions parts caused by the use of add-on or modified parts.

Look For Relevant Emissions Durability Period and Air Index Information On Your Engine Emissions Label

Engines that are certified to meet the California Air Resources Board (CARB) Emissions Standard must display information regarding the Emissions Durability Period and the Air Index. Briggs & Stratton makes this information available to the consumer on our emissions labels. The engine emissions label will indicate certification information.

The **Emissions Durability Period** describes the number of hours of actual running time for which the engine is certified to be emissions compliant, assuming proper maintenance in accordance with the Operating & Maintenance Instructions. The following categories are used:

Moderate:
Engine is certified to be emissions compliant for 125 hours of actual engine running time.

Intermediate:
Engine is certified to be emissions compliant for 250 hours of actual engine running time.

Extended:
Engine is certified to be emissions compliant for 500 hours of actual engine running time.

For example, a typical walk-behind lawn mower is used 20 to 25 hours per year. Therefore, the **Emissions Durability Period** of an engine with an **Intermediate** rating would equate to 10 to 12 years.

Briggs & Stratton engines are certified to meet the United States Environmental Protection Agency (USEPA) Phase 2 emissions standards. For Phase 2 certified engines, the Emissions Compliance Period referred to on the Emissions Compliance label indicates the number of operating hours for which the engine has been shown to meet Federal emissions requirements.

For engines less than 225 cc displacement.
Category C = 125 hours , Category B = 250 hours , Category A = 500 hours

For engines of 225 cc or more displacement.
Category C = 250 hours , Category B = 500 hours , Category A = 1000 hours