



OPERATION AND MAINTENANCE MANUAL



INDUSTRIAL VACUUM CLEANER SYSTEMS
PNEUMATIC (AIR OPERATED)
FOR DRY RECOVERY ONLY

Static dissipative / grounded models:

AVSD-40L

DUST CLASS "H"

CE  II 3 GD c IIC T6 (85°C)

Providing an Equipment Protection Level EPL Gc/Dc

**READ ALL INSTRUCTIONS BEFORE OPERATING,
CLEANING OR SERVICING**

IMPORTANT - SAVE THESE INSTRUCTIONS

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September 8, 2015

1.0 INSPECTION

Carefully unpack and inspect your vacuum cleaner for shipping damage. Each vacuum cleaner is tested and thoroughly inspected before being shipped; therefore, any damage is the responsibility of the delivering carrier, who should be notified.

2.0 APPLICATIONS

WARNING: A complete risk assessment has to be conducted by the user for the recovery of dusts in hazardous areas. The recommendations in this manual cannot, in any case, supplant the conclusions of a complete risk assessment.

Model AVSD-40L is a pneumatic (air operated), static dissipative / grounded industrial vacuum cleaner system for use in potentially explosive atmospheres classified ATEX Zone 2 for Gas and Zone 22 for Dust.

Model AVSD-40L is certified in conformance with Directive 94/9/EC for Group II and Category 3 and bears the following marking:

  II 3 GD c IIC T6 (85°C)

For this equipment an internal control of production has been performed in accordance with Annex VIII of Directive 94/9/EC.

WARNING: THIS VACUUM CLEANER IS NOT DESIGNED TO BE USED IN ZONE 20 OR IN ZONE 21 HAZARDOUS AREAS. DO NOT USE THIS VACUUM CLEANER IN ZONE 20 OR IN ZONE 21 HAZARDOUS AREAS.

WARNING: THIS VACUUM CLEANER IS NOT DESIGNED TO BE USED IN HAZARDOUS AREAS CONTAINING CONDUCTIVE DUSTS. DO NOT USE THIS VACUUM CLEANER IN HAZARDOUS AREAS CONTAINING CONDUCTIVE DUSTS.

WARNING: This vacuum cleaner is designed for the recovery of dry materials only. Do not recover liquids.

WARNING: Only tools and accessories provided by the manufacturer shall be used with this vacuum cleaner. The use of other tools and accessories may impair safety.

2.1. APPLICATIONS IN POTENTIALLY EXPLOSIVE ATMOSPHERES IN PRESENCE OF FLAMMABLE GASES, VAPORS OR LIQUIDS

Model AVSD-40L can be used in **Zone 2** classified areas in which an explosive atmosphere consisting of a mixture with air or flammable substances in the form of gas, vapour or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

Model AVSD-40L is certified for Gas Group II C which representative gases are Hydrogen and Acetylene and their maximum surface temperature is T6 – 85°C.

WARNING: **The maximum surface temperature of the vacuum cleaner must always be lower than the ignition temperature of the gas present in the hazardous area.**

WARNING: **Model AVSD-40L is designed for the recovery of dry materials only. Model AVSD-40L cannot be used to recover liquids and in particular flammable liquids or solvents.**

2.2. APPLICATIONS IN POTENTIALLY EXPLOSIVE ATMOSPHERES IN PRESENCE OF COMBUSTIBLE DUST

Model AVSD-40L can be used in **Zone 22** classified areas in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but – if it does occur – will persist for a short period only.

Model AVSD-40L can be used to recover:

- carbon black, charcoal, coal or coke dusts or these dusts sensitized by other materials so that they present an explosion hazard
- Other combustible dusts including flour, grain, wood, plastic and chemicals

WARNING: THIS VACUUM CLEANER IS NOT DESIGNED TO BE USED IN HAZARDOUS AREAS CONTAINING CONDUCTIVE DUSTS. **DO NOT USE THIS VACUUM CLEANER IN HAZARDOUS AREAS CONTAINING CONDUCTIVE DUSTS.**

WARNING: DO NOT RECOVER ANY HOT EMBERS OR IGNITED DUSTS.

3.0 SPECIAL CONDITION FOR SAFE USE

IMPORTANT: FOLLOW THE BELOW SPECIAL CONDITIONS FOR SAFE USE TO AVOID POTENTIAL SOURCES OF IGNITION.

3.1. LAYERS OF DUST

WARNING: Clean regularly the vacuum cleaner surfaces with a water damped cloth to avoid dust accumulation which could create a potential source of ignition.

3.2. BURNING MATERIAL

WARNING: DO NOT PICK-UP ANYTHING THAT IS BURNING OR SMOKING, SUCH AS HOT ASHES, CIGARETTES, MATCHES OR LIVE EMBERS.

3.3. FLAMMABLE LIQUIDS

WARNING: THIS VACUUM CLEANER IS NOT DESIGNED TO RECOVER FLAMMABLE LIQUIDS. DO NOT USE THIS VACUUM CLEANER TO RECOVER FLAMMABLE LIQUIDS.

3.4. METAL DUST

WARNING: THIS VACUUM CLEANER IS NOT DESIGNED TO RECOVER METAL DUSTS. DO NOT USE THIS VACUUM CLEANER TO RECOVER METAL DUSTS.

3.5. SELF-IGNITION OF DUST

WARNING: DO NOT USE THIS VACUUM CLEANER TO RECOVER DUST OR MIXTURE OF DUSTS THAT CAN SELF-IGNITE.

3.6. MECHANICALLY GENERATED SPARKS

WARNING: To prevent mechanically generated sparks (thermite reaction) avoid impact of the wand and tools supplied with the vacuum cleaner with any rusted parts present in the working area.

3.7. SPECIAL CONDITION FOR SAFE USE IN REGARD TO ELECTROSTATIC CHARGES GENERATION

When the vacuum cleaner is used as recommended in this manual it has been determined that no significant or continuous electrostatic charge accumulation, which could act as a potential ignition source, can occur.

Nevertheless, it is recommended for safe use not to perform any specific action on the insulating items assembled on the vacuum cleaner, such as a continuous and intense manual rubbing, which could lead to a significant electrostatic charge accumulation.

This special condition for safe use is to be observed particularly in regard to the plastic handles, the plastic wheel covers and the paint coating on the vacuum cleaner.

4.0 COMPRESSED AIR REQUIREMENTS

IMPORTANT: The compressed air has to be clean, dry and oil free to prevent blockage of the pneumatic system.

AIR SUPPLY HOSE I.D.	1/2" (12.5 mm)
AIR VOLUME	991 l/min (35 CFM)
AIR PRESSURE	552 kPa (5.5 bars / 80 PSI)
COMPRESSOR	10 HP

The above requirements are for ideal performance. The performance is proportional to the amount of compressed air input.

IMPORTANT: Do not downsize the compressed air fittings or air supply line. Downsizing the fittings will result in a reduction of the vacuum cleaner's performance.

IMPORTANT: Conductive metallic fittings are required to ensure spark free operation and to ensure ground continuity between vacuum cleaner and the compressed air supply.

PRE-USAGE NOTE: Always shut off the main air supply and open the ball valve on the vacuum to relieve the line pressure before disconnecting the air pressure supply line.

WARNING: Use caution when connecting and disconnecting compressed air lines. When static air pressure is suddenly released, it can cause the airline to whip.

5.0 PRE-USAGE INSTRUCTIONS AND IMPORTANT SAFETY PRECAUTIONS

WARNING: THIS VACUUM CLEANER MUST BE GROUNDED DURING USE. (SEE SECTION "GROUNDING INSTRUCTIONS")

WARNING: DO NOT OPERATE UNIT WITHOUT A PROPER GROUND SOURCE. THIS UNIT IS DESIGNED TO OPERATE ON A GROUNDED AIR SUPPLY OUTLET. IT IS THE RESPONSIBILITY OF THE USER TO ENSURE THAT THE AIR SUPPLY OUTLET IS GROUNDED.

WARNING: AIR-OPERATED VACUUM CLEANERS CAN GENERATE STATIC ELECTRICITY DURING USE. TO ENSURE THAT THERE IS NO STATIC BUILD UP DURING OPERATION, THE VACUUM CLEANER UNIT AND DETACHABLE TOOLS AND ACCESSORIES ARE COMPLETELY GROUNDED AND USE SPECIAL STATIC-FREE MATERIALS. ANY STATIC CHARGE DEVELOPED IS DISSIPATED TO GROUND THROUGH THE STATIC DISSIPATING GROUNDED AIR SUPPLY HOSE INCLUDED WITH THE VACUUM CLEANER UNIT.

WARNING: This appliance is for dry use only and is not to be used or stored outdoors in wet conditions.

WARNING: Before use, operators should be provided with information, instruction and training for the use of the appliance and the substances for which it is to be used, including the safe method of removal and disposal of the material collected

WARNING: Use only original replacement parts from the manufacturer or from one of its authorized distributors. The use of other hose and tools may impair safety. Any alteration to this equipment by a third party nullifies its warranty.

WARNING: During normal operation surface temperatures of vacuum cleaner may rise to T85°C

WARNING: **This appliance is not suitable to pick up dusts or liquids of high explosion risk, nor mixtures of combustible dust with liquids.**

WARNING: **Improper use of this vacuum cleaner will result in the voiding of the warranty.**

- a. Inspect the vacuum cleaner's air supply hose before every use. Return to manufacturer for servicing if damaged.
- b. Do not pull vacuum cleaner by the air supply hose.
- c. Turn off the vacuum cleaner and disconnect the air supply hose before servicing or storing the pneumatic explosion proof vacuum cleaner. Clean and service this vacuum cleaner **only in a NON-HAZARDOUS AREA.**
- d. Always shut off main air supply and open ball valve on the vacuum to relieve the line pressure before disconnecting the air supply hose.

WARNING: **Use caution when connecting and disconnecting compressed air lines. When static air pressure is suddenly released, it can cause the airline to whip.**

- e. The tank should be clean and dry before using the vacuum.
- f. Do not pick-up anything that is burning or smoking, such as hot ashes, cigarettes, matches or live embers.
- g. Do not use without appropriate filters in place.
- h. Conductive metallic fittings are required to ensure spark free operation and to ensure ground continuity between vacuum cleaner and the compressed air supply

6.0 PRE-CAUTIONS FOR THE RECOVERY OF HAZARDOUS MATERIALS

WARNING: MODEL AVSD-40L NOT EQUIPPED WITH A HEPA FILTER IS NOT SUITABLE FOR THE RECOVERY OF HAZARDOUS MATERIALS.

DANGER: IF THE VACUUM CLEANER IS USED TO RECOVER TOXIC OR NUISANCE MATERIALS, THE FOLLOWING SAFETY PRECAUTIONS MUST BE TAKEN:

- a. The vacuum cleaner must be equipped with a HEPA filter.
- b. Service and operation should only be carried out by trained personnel.
- c. Appropriate clothing and personal protective equipment should be worn when operating or servicing the vacuum cleaner.
- d. Dispose of collected materials responsibly. Follow applicable government regulations for the disposal of hazardous materials.

WARNING: This appliance contains dust hazardous to health. Emptying and maintenance operations, including removal of the dust collection means, must only be carried out by authorized personnel wearing suitable personal protection. Do not operate without the full filtration system fitted.

NOTE: ANY HEALTH HAZARD ASSOCIATED WITH THE USE OF THIS VACUUM CLEANER IN CONJUNCTION WITH THE RECOVERY OF ASBESTOS AND OTHER HAZARDOUS SUBSTANCES HAS NOT BEEN INVESTIGATED.

7.0 GROUNDING INSTRUCTIONS

This vacuum cleaner must be properly grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to prevent the build-up static electrical charge and to ensure that static electricity is discharged to ground. The build-up of static electricity could create a sparking hazard and an ignition hazard.

This vacuum cleaner is equipped with conductive metallic fittings and can be supplied with an optional static dissipating air supply hose (Part number 62449). It is the responsibility of the user to ensure that the compressed air supply outlet is grounded.

WARNING: TO EFFECTIVELY DISSIPATE STATIC ELECTRICITY AND TO ENSURE SPARK-FREE OPERATION, THIS VACUUM CLEANER MUST BE GROUNDED DURING USE.

DANGER: DO NOT OPERATE VACUUM CLEANER IF THE GROUNDED IS QUESTIONABLE.

8.0 TESTING FOR GROUND CONTINUITY

WARNING: TEST THE ELECTRICAL CONTINUITY OF THE VACUUM CLEANER BEFORE EACH USE. THIS WILL ENSURE THAT ANY STATIC ELECTRICITY THAT IS PRODUCED WHILE VACUUMING WILL BE DISCHARGED TO GROUND.

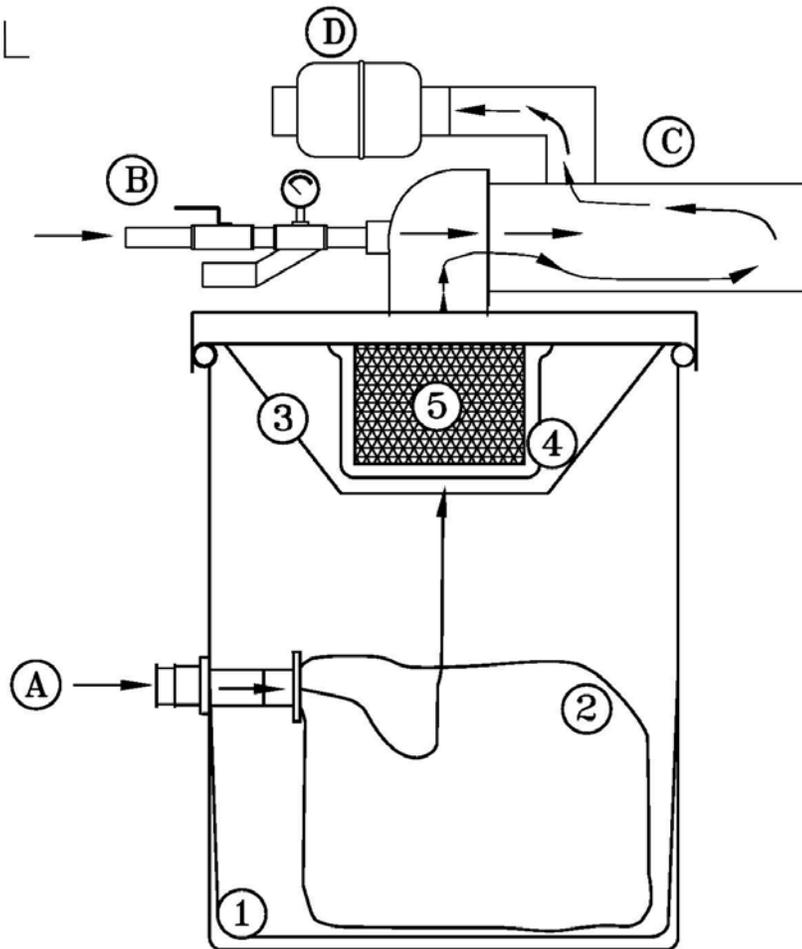
WARNING: USE ONLY ORIGINAL REPLACEMENT PARTS FROM THE MANUFACTURER OR FROM ONE OF ITS AUTHORIZED DISTRIBUTORS.

An ohm-meter is required to perform the following electrical continuity test.

- a. Disconnect the air supply hose from the compressed air supply and from the compressed air inlet on the vacuum cleaner.
- b. Make sure that all the latches on the vacuum cleaner are fastened and that the detachable recovery tank is properly installed on the vacuum cleaner.
- c. Disconnect the suction hose from the vacuum cleaner.
- d. Using the ohm-meter test for the electrical continuity of the vacuum cleaner from the compressed air inlet on the vacuum cleaner to the suction intake of the vacuum cleaner. A reading between 10^6 ohms and 10^9 ohms or less is satisfactory to ensure proper grounding and static dissipation.

9.0 FILTRATION SYSTEM

AVSD-40L



1. POLY LINER
2. COLLECTION BAG (STATIC DISSIPATIVE)
3. MAIN CLOTH FILTER (WASHABLE)
4. SAFETY FILTER (STATIC DISSIPATIVE)
5. HEPA (HIGH EFFICIENCY PARTICULATE AIR) FILTER: With efficiency of 99.995% on 0.3 micron.

- A. SUCTION INLET
- B. BALL VALVE
- C. WORKING AIR EXHAUST
- D. FOAM SILENCER

10.0 OPERATING INSTRUCTIONS FOR DRY RECOVERY

WARNING: THIS VACUUM CLEANER IS NOT DESIGNED TO BE USED IN HAZARDOUS AREAS CONTAINING CONDUCTIVE DUSTS. **DO NOT USE THIS VACUUM CLEANER IN HAZARDOUS AREAS CONTAINING CONDUCTIVE DUSTS.**

WARNING: DO NOT RECOVER ANY HOT EMBERS OR IGNITED DUSTS.

- a. Release latches and remove power head from recovery tank.
- b. Place the polyliner in the recovery tank
- c. Attach the collection bag to the suction intake inside the recovery tank
- d. Place the cloth filter with gasket on the lip of the recovery tank. Make sure that the filter's gasket covers the entire circumference of the tank.

WARNING: Do not use without appropriate filters in place.

- e. Place the power head on recovery tank and fasten latches.
- f. Fasten hose to suction intake on side of recovery tank and attach desired tools to hose.
- g. Connect the air pressure line to the ball valve on the power head.
- h. To operate unit, open ball valve to desired setting.
- i. To shut off unit, first shut off main air supply, open ball valve at vacuum to relieve pressure and then disconnect air pressure line.
- j. Empty the recovery tank when necessary, but also after every use (8 hours shift). Do not allow recovered materials to sit for extended periods of time. An excessive accumulation of recovered materials can create a dust ignition hazard.
- k. It is recommended that the cloth filter be cleaned regularly. A dirty cloth filter will reduce the airflow through and reduce the performance of the vacuum cleaner. The cloth filter can be washed with warm water (no detergents required).

IMPORTANT: Make sure the cloth filter is completely dry before reinstalling it in the vacuum. Do not reinstall the cloth filter if it is still wet.

11.0 MAINTENANCE AND CLEAN-UP PROCEDURE

- a. Shut off main air supply and open the ball valve on the vacuum's powerhead to relieve the pressure in the air supply hose.
- b. Close the ball valve and disconnect the air supply hose.
- c. Release the three latches and remove the power head from recovery tank.
- d. Remove filters from recovery tank.
- e. Empty collected materials into suitable container.
- f. Empty and clean the recovery tank when necessary, but also after every use (8 hours shift).
- g. The HEPA filter should be replaced yearly, or every two years, depending on the use.
- h. Clean or rinse the cloth filter regularly. A clogged filter restricts the air flow and reduces the vacuum's performance. Make sure the filter is completely dry before reinstalling them in the vacuum cleaner.
- i. The cloth filter should be replaced every two or three years depending on use.
- j. Inspect the cloth filter regularly. If the filter is torn, replace immediately. A torn filter allows dust and other materials to enter the motor and may cause premature wear of the motor
- k. Examine the vacuum cleaner's air supply hose for damage (cracking or ageing) before every use. Return to manufacturer for servicing if damaged.
- l. Keep the air supply hose clean and dry. This will help prevent blockage of the venturi jet which could reduce the vacuum cleaner's performance.

WARNING: **When carrying out service or repair operations, all contaminated items which cannot be satisfactorily cleaned, are to be disposed of; such items shall be disposed of in impervious bags in accordance with any current regulation for the disposal of such waste;**

WARNING: **Do not reuse the HEPA filter after removal out of the appliance.**

12.0 STORAGE

It is recommended that the inside of the recovery tank be clean and dry when storing the pneumatic explosion proof vacuum cleaner.

13.0 ASSEMBLING AND REPLACING THE HEPA FILTER

A HEPA filter is designed for filtration of ultra-fine particles. A clogged HEPA filter will reduce the air flow thereby reducing the vacuum's performance thus requiring replacement.

The life of the HEPA filter depends greatly on the use of the vacuum cleaner. It is recommended that the HEPA filter be replaced once a year if the vacuum is used intensively (daily). The filter can be replaced every two years if the vacuum cleaner is used less frequently (two or three times per week)

WARNING: PROPER CLOTHING AND RESPIRATORY EQUIPMENT ARE REQUIRED WHEN SERVICING THE HEPA FILTER HOUSING OR ANY OTHER CONTAMINATED PART OF THE UNIT.

IMPORTANT: USE ONLY ORIGINAL BRAND REPLACEMENT HEPA FILTERS.

1. Shut off main air supply, open ball valve on the vacuum to relieve the line pressure and then disconnect the air supply hose.
2. Disengage the latches and remove the power head from the recovery tank.
3. Remove the safety filter and unscrew the bolt securing the cylindrical HEPA filter to the underside of the lid.
4. Discard the old HEPA filter.
5. Place the new filter under the lid.
6. Securely fasten the HEPA filter using the bolt and place back the safety filter around the HEPA filter.
7. Dispose of the contaminated filter according to government regulations. (If applicable)

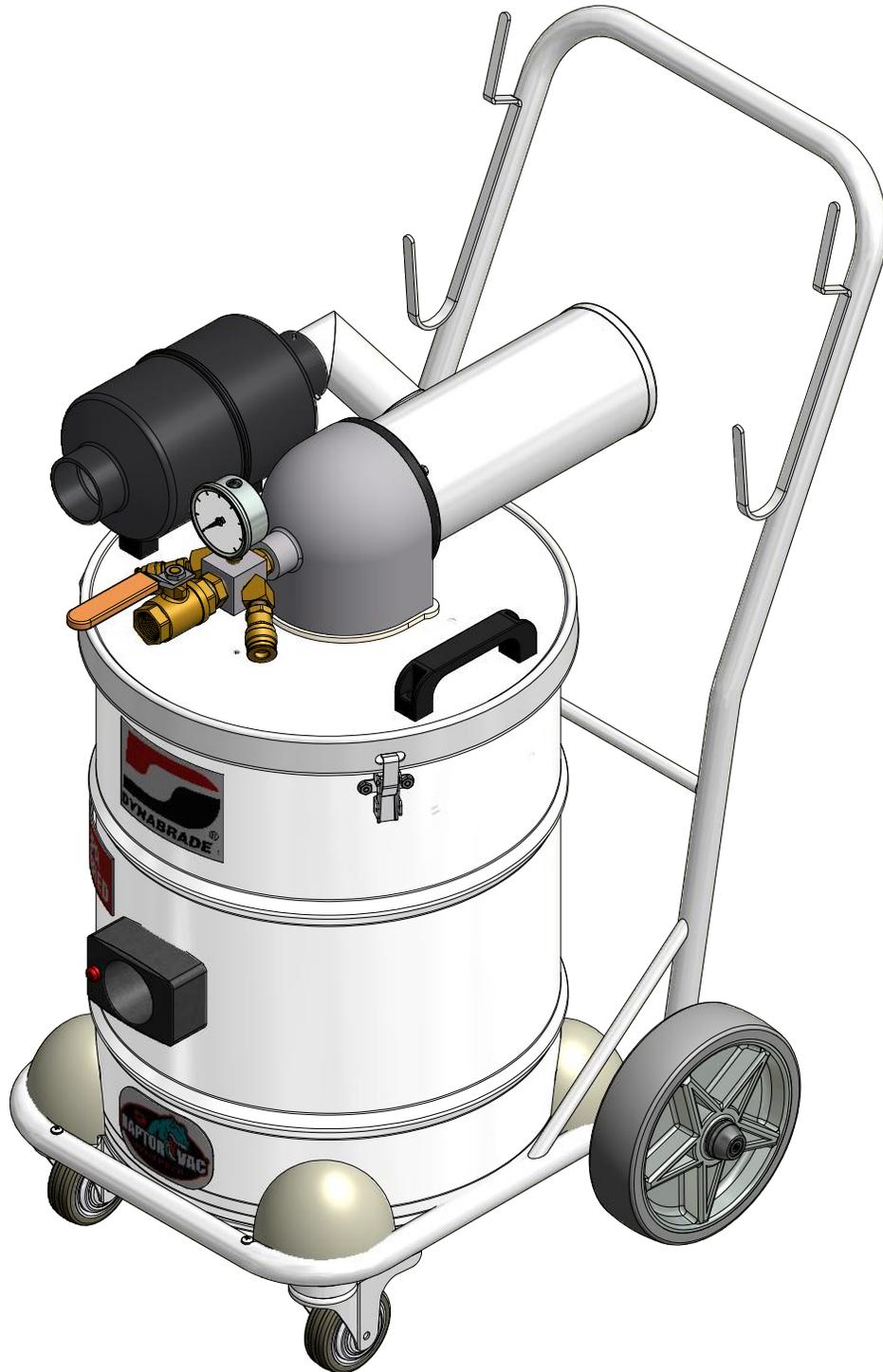
14.0 PERFORMANCE CHART AND DATAS

Model	Compressor size	Nb. of venturi	Air supply hose I.D.	Input air pressure	Suction intake	Vacuum H ₂ O	Airflow
AVSD-40L	15 HP min.	1	1/2" (12.5 mm) to 3/4" (19 mm)	80 to 110 PSI (5.5 to 7.5 bars)	38mm (1.5")	4572 mm H ₂ O (180" H ₂ O)	187 m ³ /h (110 CFM)
Dimensions: L69cm x W57cm x H90cm. 24 kg. Recovery capacity 48l (wet) / 38l (dry)							
Noise level : 75 dB(A) at 2m							

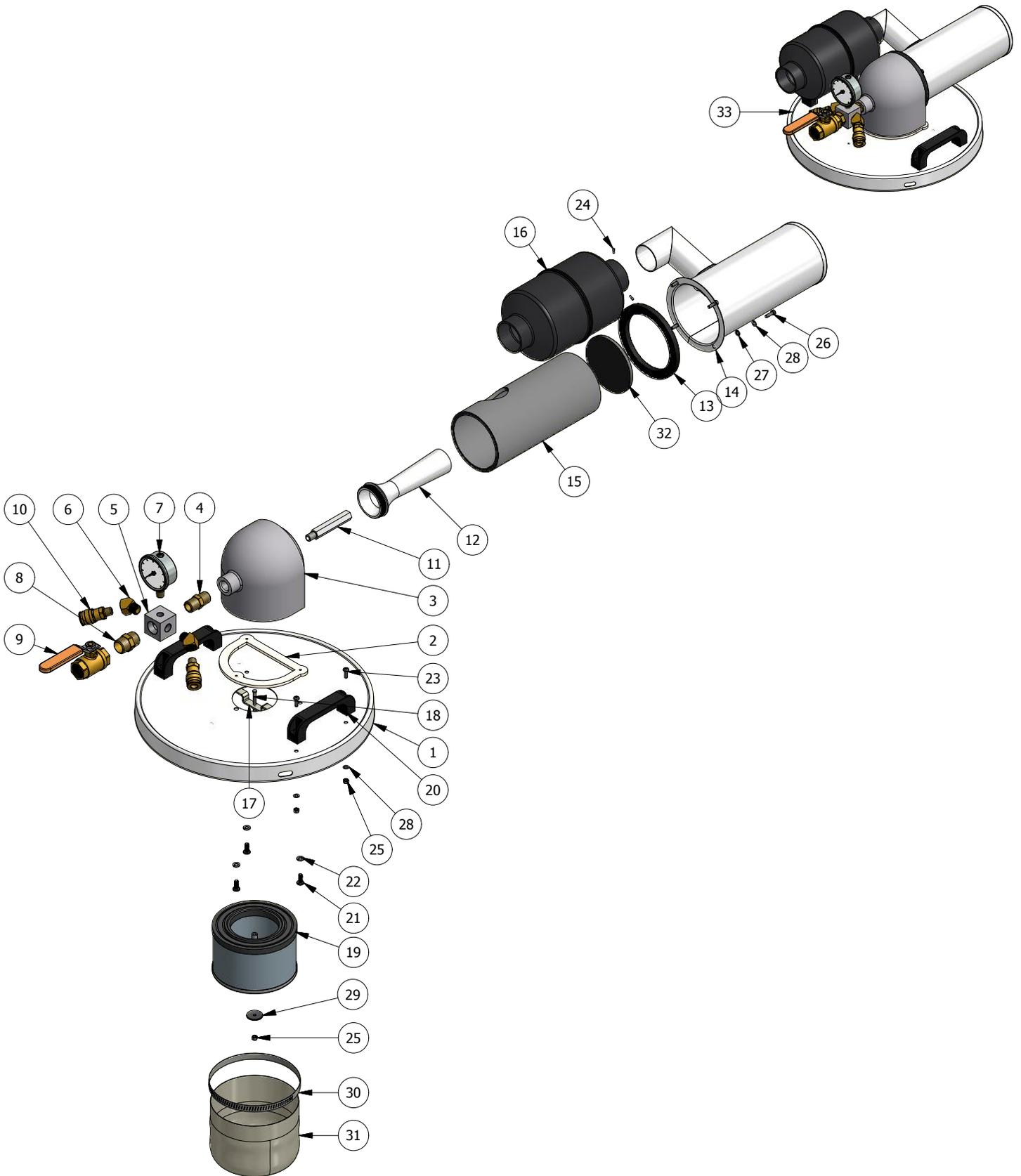
15.0 TROUBLESHOOTING:

PROBLEM	PROBABLE CAUSE	SOLUTION
Drop in suction power	Cloth filter may be excessively dirty or covered with dust.	Wash or replace the cloth filter.
	Recovery tank may be full	Empty the recovery tank
	Suction hose or vacuum tools may be blocked	Clear blockage using a broom handle or other appropriate device

DYNABRADE AVSD-40L (2+2) HEPA



DYNABRADE AVSD-40L (2+2) HEPA
POWER HEAD



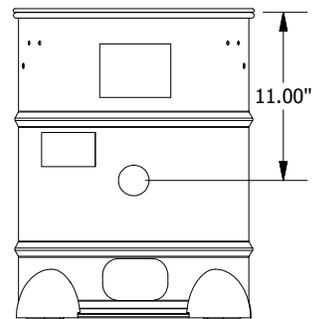
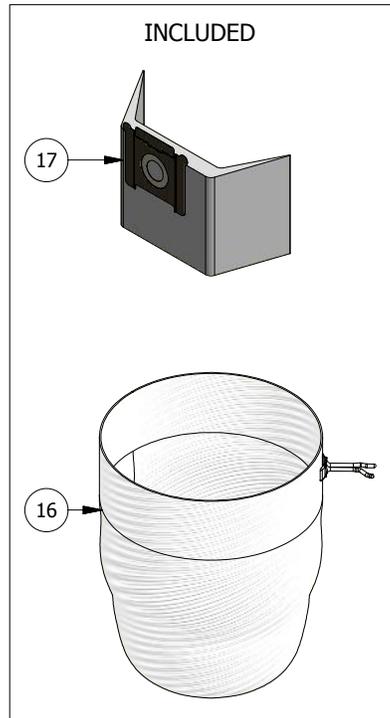
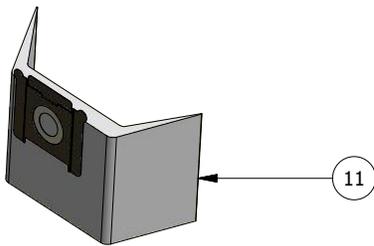
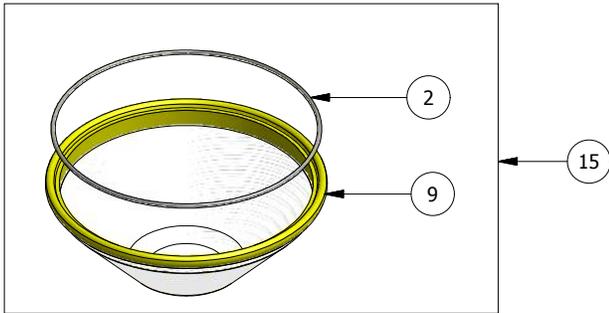
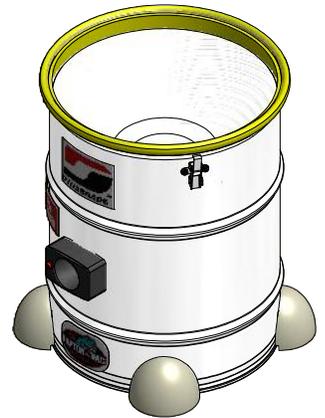
CE Ex II 3 GD c IIC T6 (85°C)

DYNABRADE AVSD-40L (2+2) HEPA
POWER HEAD

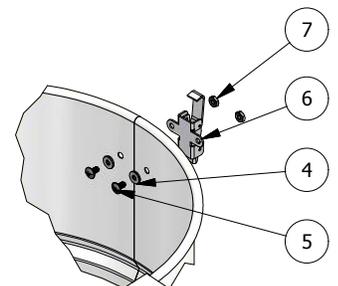
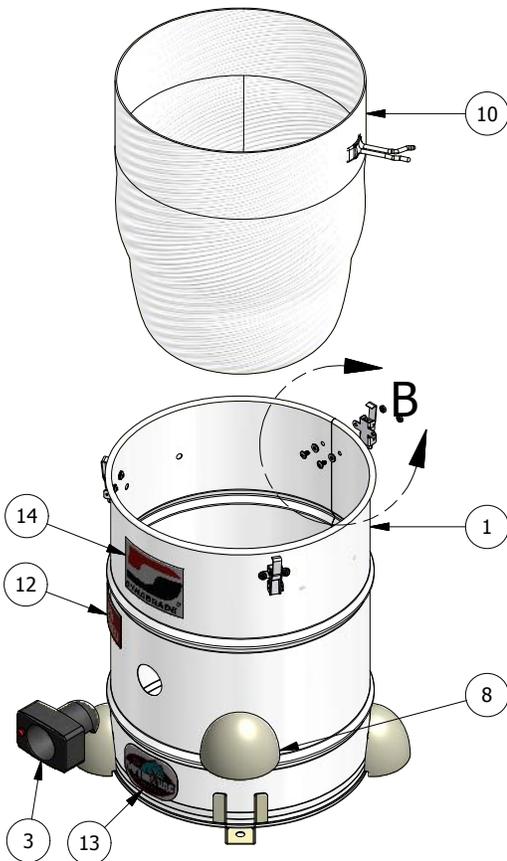
PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	62809	LID	1
2	62357	GASKET	1
3	62810	DOME	1
4	62599	HEX NIPPLE	1
5	62811	MANIFOLD	1
6	62788	ELBOW	2
7	62812	PRESSURE GAGE	1
8	62460	HEX NIPPLE	1
9	62502	BALL VALVE	1
10	62548	QUICK DISCONNECT, FEMALE	2
11	62594	AIR JET	1
12	62595	BLOWER CHAMBER SHORT	1
13	62396	GASKET	1
14	62813	SILENCER HOUSING	1
15	62750	1/4" WHITE NITRILE / SQ-FT	1
16	62814	SILENCER	1
17	62815	BRACKET	1
18	62521	HEX BOLT	1
19	62640	HEPA FILTER	1
20	62816	HANDLE	2
21	62358	BOLT	3
22	62367	SPRING WASHER	3
23	62352	BOLT	4
24	62817	RIVET	3
25	62363	HEX NUT	5
26	62590	BOLT	4
27	62402	SEAL WASHER	4
28	62361	FLAT WASHER	8
29	62462	SEALING WASHER	1
30	62452	CLAMP	1
31	62414	MICRO SAFETY FILTER	1
32	62751	1/4" WHITE NITRILE CUT CIRCLE AT 2 3/16 RADIUS	1
33	61445	POWER HEAD	1

DYNABRADE AVSD-40L (2+2) HEPA TANK



DETAIL



DETAIL B

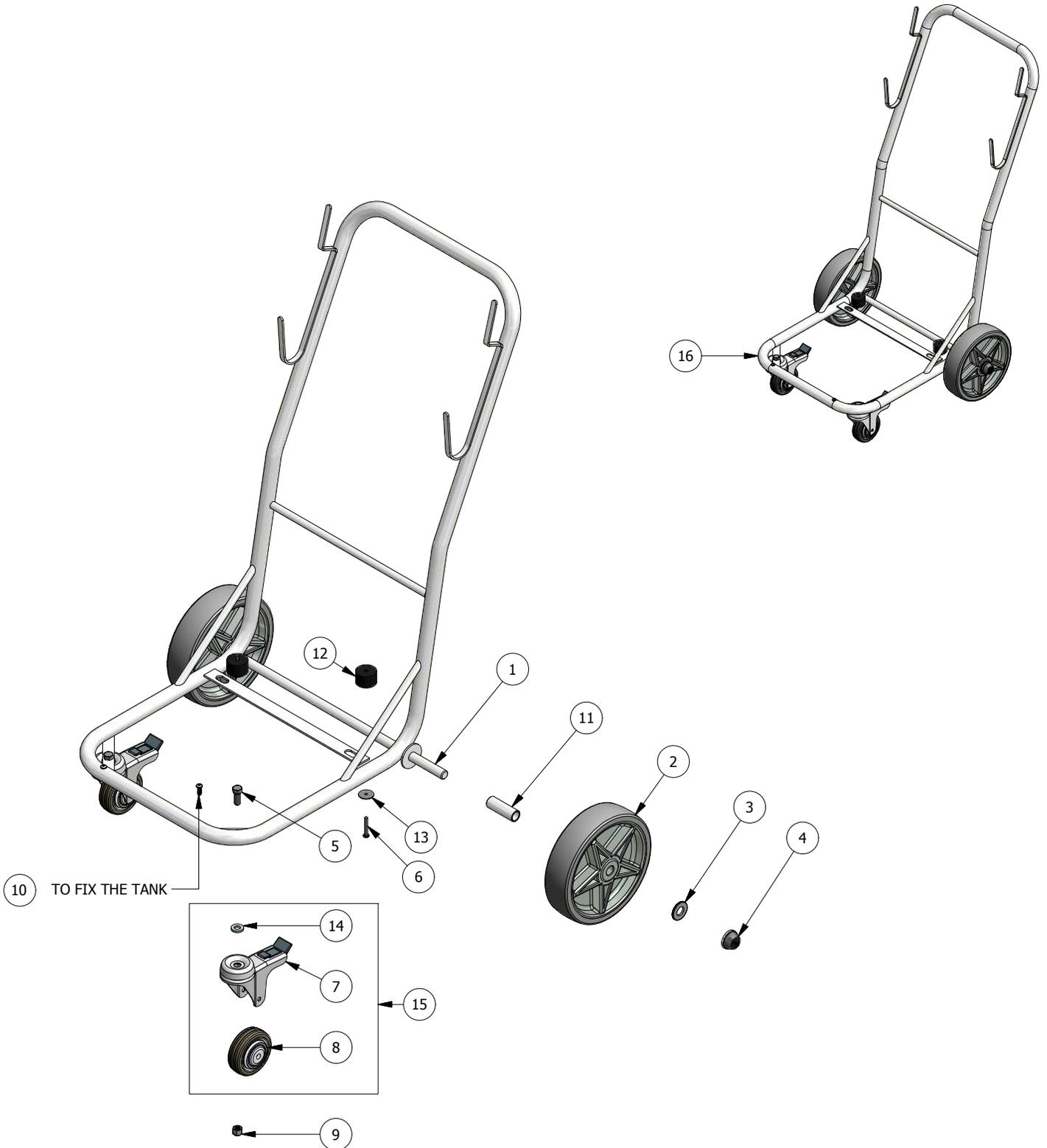
CE  II 3 GD c IIC T6 (85°C)

DYNABRADE AVSD-40L (2+2) HEPA
TANK

PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	62619	DRUM	1
2	62374	RING FOR FILTER	1
3	62519	SUCTION INLET	1
4	62399	SEAL WASHER	6
5	62457	SCREW	6
6	62397	LATCH	3
7	62441	HEX NUT	6
8	62464	WHEEL COVER	4
9	62676	MAIN FILTER	1
10	62637	CONDUCTIVE POLY LINER	1
11	62646	COLLECTION BAG	1
12	96618	HEPA FILTERED LABEL	1
13	96616	RAPTOR VAC SYSTEMS LABEL	1
14	19920	SMALL DYNABRADE LABEL	1
15	62677	MAIN FILTER ASSEMBLY	1
16	62629	CONDUCTIVE POLY LINER	1
17	62647	COLLECTION BAGS	1

DYNABRADE AVSD-40L (2+2) HEPA
CART



CE Ex II 3 GD c IIC T6 (85°C)

DYNABRADE AVSD-40L (2+2) HEPA
CART

PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	62790	CARRIAGE FRAME	1
2	62791	REAR WHEEL	2
3	62499	DOWEL	2
4	62498	CAP	2
5	62448	HEX BOLT	2
6	62792	BOLT	2
7	62687	FRAME	2
8	62455	WHEEL	2
9	62424	HEX NUT	2
10	62352	BOLT	2
11	62793	BUSHING	2
12	62794	BUMPER	2
13	62774	FLAT WASHER	2
14	62818	FLAT WASHER	2
15	62688	WHEEL	2
16	62684	CARRIAGE FRAME ASSEMBLY	1