



OPERATION AND MAINTENANCE MANUAL

**EXPLOSION PROOF / DUST IGNITION PROOF
INDUSTRIAL VACUUM CLEANER**

MODELS: EXP1-XX (YY) “DT”

**DETACHABLE TANK SERIES
FOR DRY RECOVERY ONLY**



File number: 090716

**Designed and Certified for use in
Class I - Group D, T3C and
Class II - Groups E, F & G Hazardous Locations
as defined in the National Electrical Code (NFPA 70)**

**READ ALL INSTRUCTIONS BEFORE OPERATING,
CLEANING OR SERVICING
IMPORTANT - SAVE THESE INSTRUCTIONS**

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JANUARY 13, 2015

1.0 INSPECTION

Carefully unpack and inspect your Explosion Proof/Dust Ignition Proof 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 full Process Hazard Analysis 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 full Process Hazard Analysis.

EXP1-xx (yy) explosion proof vacuum / dust ignition proof vacuum cleaners are certified for use in Class I - Group D, T3C and Class II - Groups E, F & G Hazardous Locations as defined in the NFPA 70 (National Electrical Code and Canadian Electrical code).

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

2.1. APPLICATIONS IN POTENTIALLY EXPLOSIVE ATMOSPHERES IN PRESENCE OF SOLVENTS AND FLAMMABLE LIQUIDS

The complete EXP1-xx (yy) vacuum cleaners series can be used in areas where solvents are present.

WARNING: EXP1-xx (yy) DT vacuum cleaners series cannot be used to recover flammable liquids and solvents:

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

EXP1-xx (yy) vacuum cleaners can be used to recover:

- carbon black, charcoal, coal or coke dusts
- flour, grain, wood, plastic and chemicals

And, based on the application, (See note below):

- Explosive dusts (ex.: gun powder), combustible metal dusts, including aluminum, magnesium, and their commercial alloys, or other combustible dusts whose particle size, abrasiveness, and conductivity present an equivalent hazard

IMPORTANT NOTE CONCERNING THE RECOVERY OF EXPLOSIVE DUSTS AND OF METAL DUSTS:

The applicable standards do not specifically regulate the recovery of combustible dusts and flammable liquids in hazardous areas.

For the recovery of explosive dusts and of metal dusts, in particular, a risk assessment shall be conducted by the user. The following recommendations cannot, in any case, supplant the conclusions of a risk assessment.

For the recovery of explosive dusts and of metal dusts:

- In the case explosive dusts or metal dusts are mixed with other kind of dusts and the quantity of explosive dusts or metal dusts to recover is not significant (ex.: sanding of painted surfaces) the recovered dusts do not need to be rendered inert in a liquid bath.
- For the specific recovery of a significant quantity of explosive dusts or metal dusts or when these dusts are not mixed with other kind of dusts we recommend the use of an optional interceptor (model EXP1-IT EX) for the dusts to be rendered inert in a liquid bath.

WARNING CONCERNING THE INTERCEPTOR:

It is the user's responsibility to determine the appropriate liquid (water, oil, etc) to use to neutralize the metal dust in the interceptor.

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

3.0 PRE-USAGE INSTRUCTIONS AND IMPORTANT SAFETY PRECAUTIONS

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

WARNING: Operation and service of this vacuum cleaner must only be carried out by trained personnel.

WARNING: Use only original replacement parts from the manufacturer or from one of its authorized distributors. This equipment is certified for explosion proof operation, only if used with supplied or recommended hose and tools. Any alteration to this equipment by a third party nullifies its certification.

- a. Consult local electric code and authority having jurisdiction before using. Make sure that the electrical installation is compatible with the voltage stated on the nameplate.
- b. The explosion proof vacuum cleaner is supplied without an electrical plug. It is the user's responsibility to install a suitable explosion proof plug certified for the hazardous locations area classification. The explosion proof plug should be installed by a qualified electrician only.
- c. Inspect the vacuum cleaner's electrical cable before each use. Return to manufacturer for servicing if cable is damaged.
- d. Do not pull vacuum cleaner by the power supply cable.
- e. Turn off the vacuum cleaner and disconnect the power supply before cleaning or servicing this vacuum cleaner. Clean and service this vacuum cleaner only in a NON-HAZARDOUS AREA.

WARNING: To reduce the risk of electric shock - use indoors only.

- f. The tank should be clean and dry before using the vacuum.
- g. Do not pick-up anything that is burning or smoking, such as hot ashes, cigarettes or matches.

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

- h. Connect to a properly grounded outlet only. See Grounding Instructions.
- i. Do not use without appropriate filters in place.

4.0 PRECAUTIONS FOR THE RECOVERY OF TOXIC / NUISANCE DUST

DANGER: If the explosion proof 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 or ULPA 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.

5.0 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 reduce the risk of electric shock. This vacuum cleaner is equipped with a cord having an equipment-grounding conductor. The explosion proof vacuum cleaner is supplied without an electrical plug. It is the user's responsibility to install a suitable plug certified for the hazardous locations area classification.

The explosion proof plug should be installed by a qualified electrician only. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances. Ensure that the fuse/breaker on the electrical panel is of the correct rating and exceeds the maximum current rating shown on the technical data sticker of the vacuum unit. Test the electrical continuity of the vacuum cleaner prior to each use (see section 6: testing for ground continuity).

WARNING: This vacuum cleaner for hazardous locations is equipped with conductive wheels, which allow for the vacuum cleaner to be grounded with the floor. Do not substitute the conductive wheels and use only replacement conductive wheels supplied by the manufacturer.

WARNING: Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether an outlet is properly grounded. If the plug will not fit the outlet, have a proper plug or outlet installed by a qualified electrician. No adaptor should be used with this vacuum cleaner

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 electrical outlet is not properly grounded or if the grounding is questionable.

6.0 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.

- a. An ohm-meter is required to perform the following electrical continuity test. A reading of 10 ohms or less is satisfactory to ensure proper grounding and static dissipation.
- b. Disconnect the vacuum cleaner from the electrical outlet.
- c. 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.
- d. Disconnect the suction hose from the vacuum cleaner.
- e. Using the ohm-meter test for the electrical continuity of the vacuum cleaner from the ground pin on the electrical plug to the suction intake of the vacuum cleaner. A reading of 10 ohms or less is satisfactory to ensure proper grounding and static dissipation.

7.0 OPERATING INSTRUCTIONS

WARNING: Always wear eye protection when sanding or grinding even if using vacuum assisted tools.

WARNING: It is the users responsibility to determine the type of protective clothing and respiratory equipment required.

IMPORTANT: Carefully read and follow the instructions provided with the vacuum assisted sander or grinder to ensure proper operation.

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

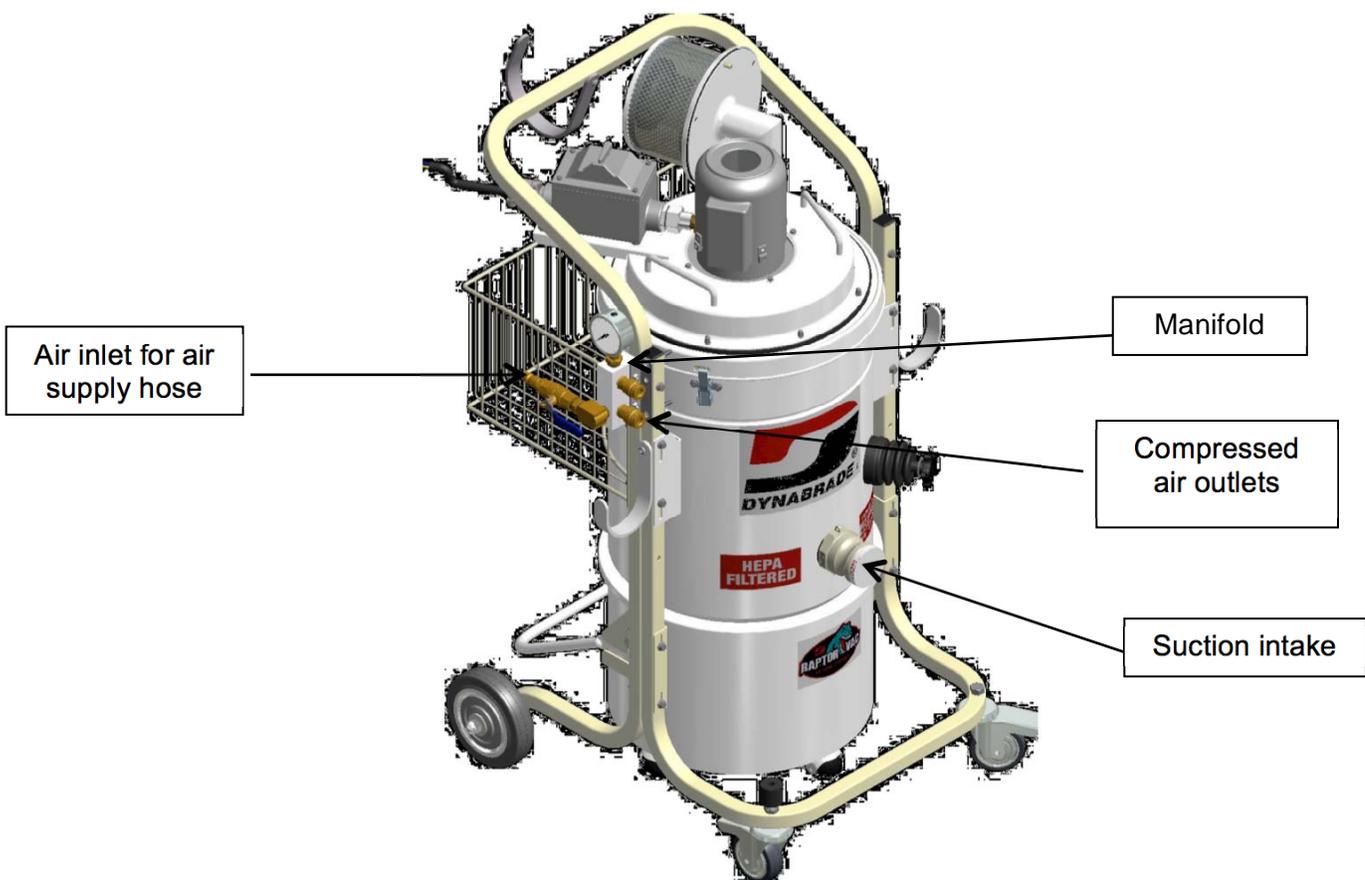


Figure 1

- a. Remove the detachable recovery tank from the vacuum cleaner
- b. Place the poly liner at the bottom of the detachable recovery tank and pull the top of the poly liner over the lip of the recovery tank. Please note that a poly liner retainer plate with clip is available to hold down the poly liner.
- c. Place back the detachable recovery tank on the vacuum cleaner
- d. Disengage the latches and remove the powerhead from the middle ring.
- e. If using an optional pre-filter place it in the middle ring by overlapping the filter's elastic over the lip of the middle ring. Make certain the elastic covers the entire circumference of the middle ring.
- f. Install the static dissipating main filter in the middle ring. Make certain that the filter's gasket covers the entire circumference of the middle ring.
- g. Place the powerhead on the middle ring and fasten the latches.
- h. Connect a static dissipating air supply hose to the air inlet on the manifold (see Fig. 1) placed on the side of the vacuum cleaner
- i. Connect one or two suction / air supply hose(s) to the suction intake(s) (see Fig. 1) on the vacuum cleaner. If using only one suction hose with the vacuum cleaner, close the unused suction intake with the storage plug to prevent loss of suction.
- j. Connect the static dissipating suction / air supply hoses to the compressed air outlet on the manifold (see Fig. 1).
- k. Connect the vacuum assisted sander or grinder to the static dissipating suction / air supply hose. Follow the instructions provided with the vacuum assisted sander or grinder to ensure proper operation.
- l. Connect the vacuum to a grounded electrical outlet.
- m. To turn on the vacuum cleaner, turn switch to the ON position.

8.0 MAINTENANCE AND CLEAN-UP PROCEDURE

- a. Turn off the vacuum cleaner and disconnect the power supply cable from the electrical power supply.
- b. Release the three latches and remove the power head from recovery tank.
- c. Remove filters from recovery tank.
- d. Empty collected materials into suitable container.
- e. Empty and clean the inside of the recovery tank after every use.

WARNING: Flush the suction hose with water to remove build up dirt

- f. Clean or rinse the static dissipating cloth filters filter regularly. A clogged filter restricts the airflow and reduces the vacuum's performance. If the static dissipating cloth filters are rinsed, make sure that they completely dry before reinstalling them in the vacuum cleaner.
- g. Inspect the vacuum cleaner's electrical cable before each use. Return to manufacturer for servicing if cable is damaged.

9.0 TRANSPORT AND HANDLING

EXP1-xx (yy) series vacuum cleaners are packaged on wood pallets and can be transported and handled with a power lift truck.

EXP1-xx (yy) series vacuum cleaners are portable vacuum cleaners on wheel carts that can be easily transported when necessary.

10.0 STORAGE

- a. It is recommended that the inside of the recovery tank be clean and dry when storing the explosion proof vacuum cleaner.
- b. The suction intake must be closed using the storage cap provided with the vacuum cleaner.

11.0 HOW TO PROPERLY CHANGE A HEPA/ULPA FILTER (RE SERIES)

NOTE: A second vacuum cleaner, sprays or other power sources are not required for this type of operation in our industry. Proper clothing is, however, required by OSHA for the health and safety of the operator.



In the Controlled Environment Industry for the recovery of designated substances, changing a filter is considered a low to moderate risk. However, a protective mask and gloves should be worn. The following procedure is valid for both electrically and pneumatically (air) operated vacuum cleaners.



Remove the 3 screws on the HEPA/ULPA housing using a Philips Screw Driver.



Gently remove the housing and place it on the floor.



Place a poly liner around the now exposed HEPA/ULPA filter. Carefully remove the HEPA/ULPA filter from the back plate. Gently place the HEPA/ULPA filter into the poly liner. Gently twist the poly liner and then seal it with a tie wrap.



The HEPA/ULPA filter is now sealed inside of the poly liner and can be disposed of according to local governmental laws. (*Conductive poly liners are available.*)

12.0 HEPA FILTER REPLACEMENT

The best indication of a saturated HEPA filter is a noticeable drop in the performance of the vacuum cleaner. For users who wish to implement a conservative protocol for replacing the HEPA filter, it is recommended that the HEPA filter be replaced once a year.

WARNING: Proper clothing and respiratory equipment are required when replacing the HEPA filter.

IMPORTANT: Use only original brand replacement HEPA filters.

- a. Turn off the vacuum cleaner and disconnect the power supply cable from the electrical power supply.
- b. Remove the three bolts that hold the HEPA filter housing and remove the HEPA filter housing.
- c. Remove the used HEPA filter and install a new HEPA filter.
- d. Re-install the HEPA filter housing by securely fastening the three bolts that hold the HEPA filter housing in place.
- e. Dispose of the contaminated filter according to applicable government or state regulations.

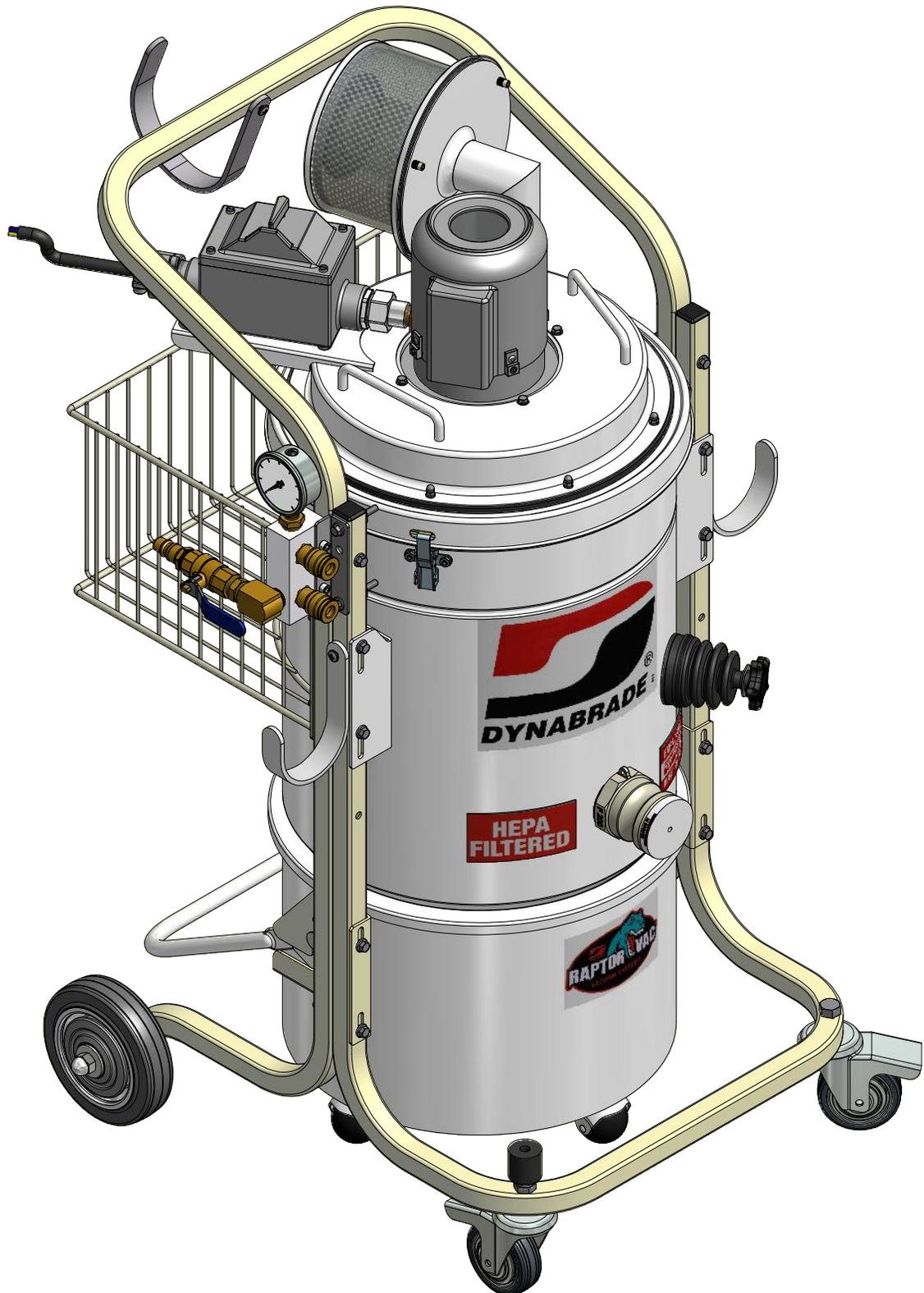
13.0 VACUUM CLEANER DISPOSAL

The vacuum cleaner is made of recyclable material. Please refer to the parts list and contact your local authorities for more information.



CLASS I, GROUP D T3C
CLASS II, GROUPS E, F, & G

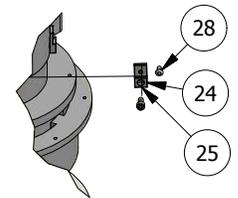
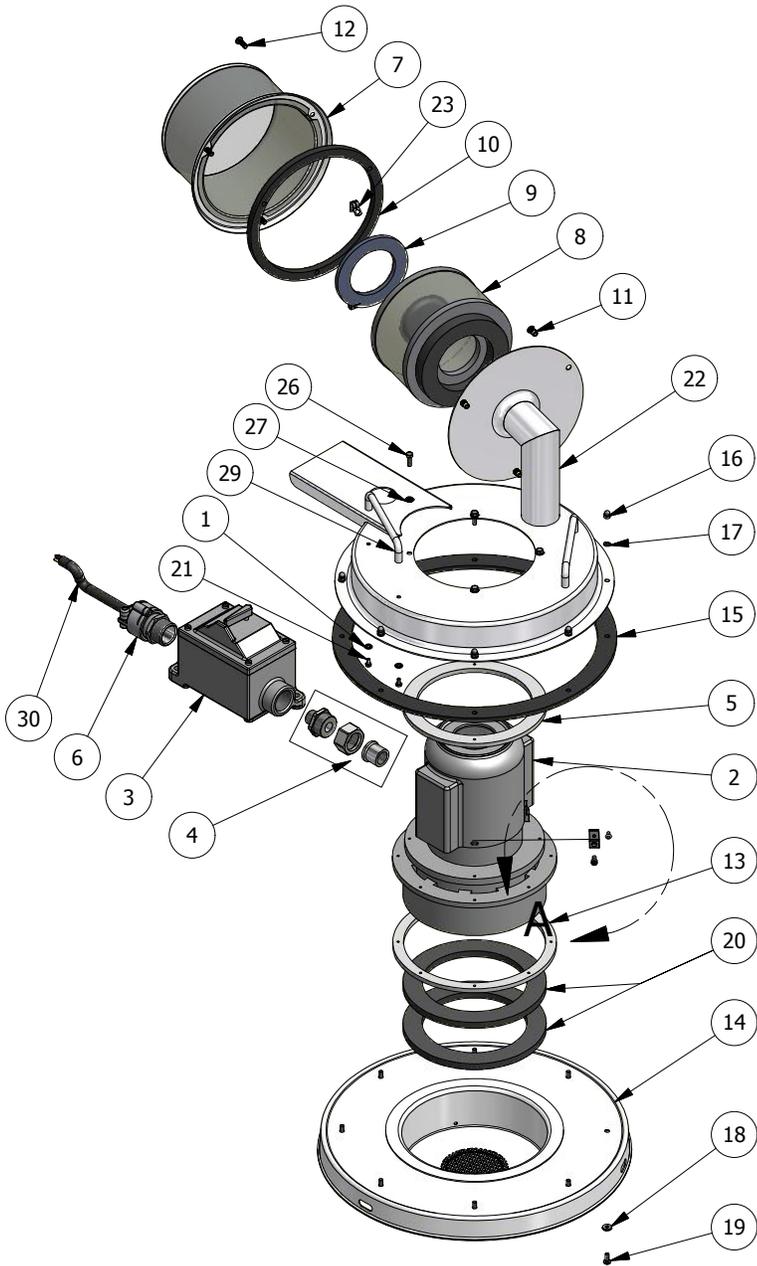
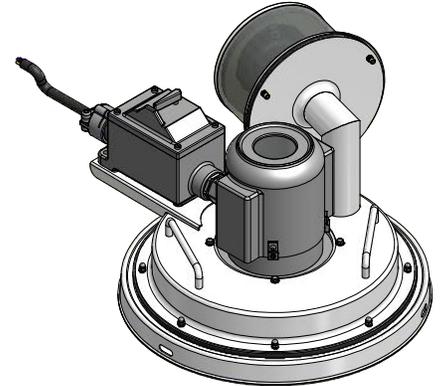
DYNABRADE EXP1-20 DT MFS CSA





CLASS I, GROUP D T3C
CLASS II, GROUPS E, F, & G

DYNABRADE EXP1-20 DT MFS CSA
POWER HEAD



DETAIL A



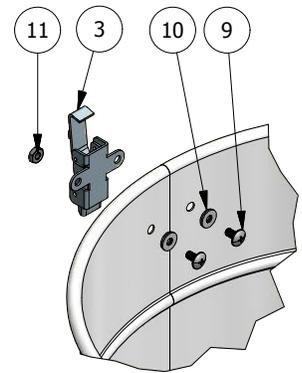
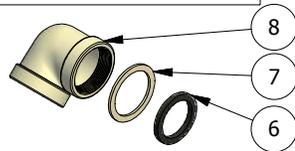
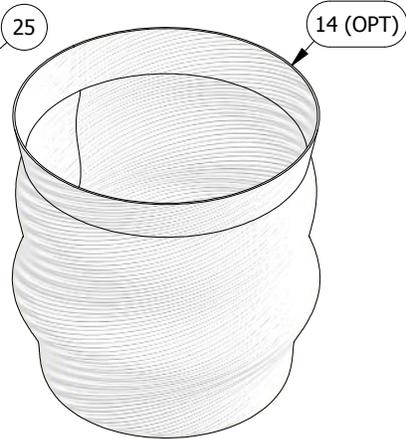
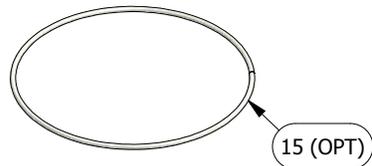
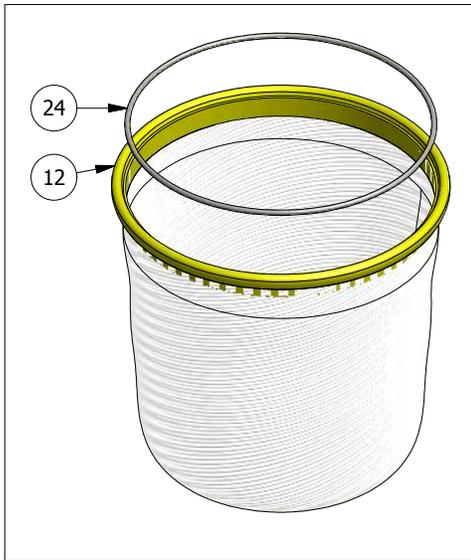
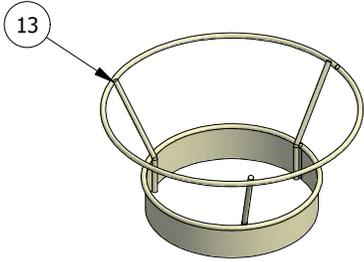
CLASS I, GROUP D T3C
CLASS II, GROUPS E, F, & G

DYNABRADE EXP1-20 DT MFS CSA
POWER HEAD

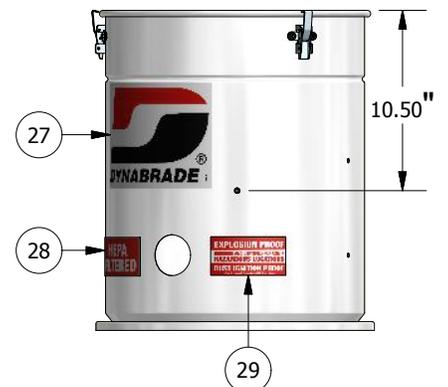
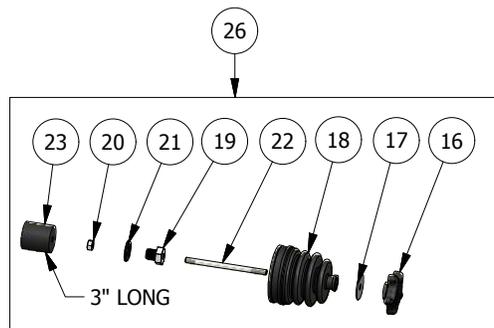
PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	62620	SEAL WASHER	4
2	62379	MOTOR	1
3	62384	SWITCH	1
4	62383	CONNECTOR	1
5	62381	GASKET	1
6	62385	CORD CONNECTOR	1
7	62616	HEPA HOUSING EXTERNAL	1
8	62585	HEPA FILTER	1
9	62428	GASKET	1
10	62386	GASKET	1
11	62442	RIVET NUT	3
12	62352	BOLT	3
13	62380	GASKET	1
14	62378	LID	1
15	62382	GASKET	1
16	62372	ACORN HEX NUT	8
17	62364	SPRING WASHER	8
18	62399	SEAL WASHER	8
19	62360	BOLT	8
20	62366	FLOATER GASKET	2
21	62506	SCREW	4
22	62405	EXHAUST HOUSING	1
23	62437	CLIP	2
24	62422	BOLT COVER BRACKET	4
25	62472	SCREW	4
26	62590	BOLT	4
27	62355	SEAL WASHER	4
28	62747	RIVET	4
29	62354	HANDLE	2
30	62608	POWER CABLE	15M

DYNABRADE EXP1-20 DT MFS CSA
MIDDLE RING



DETAIL B





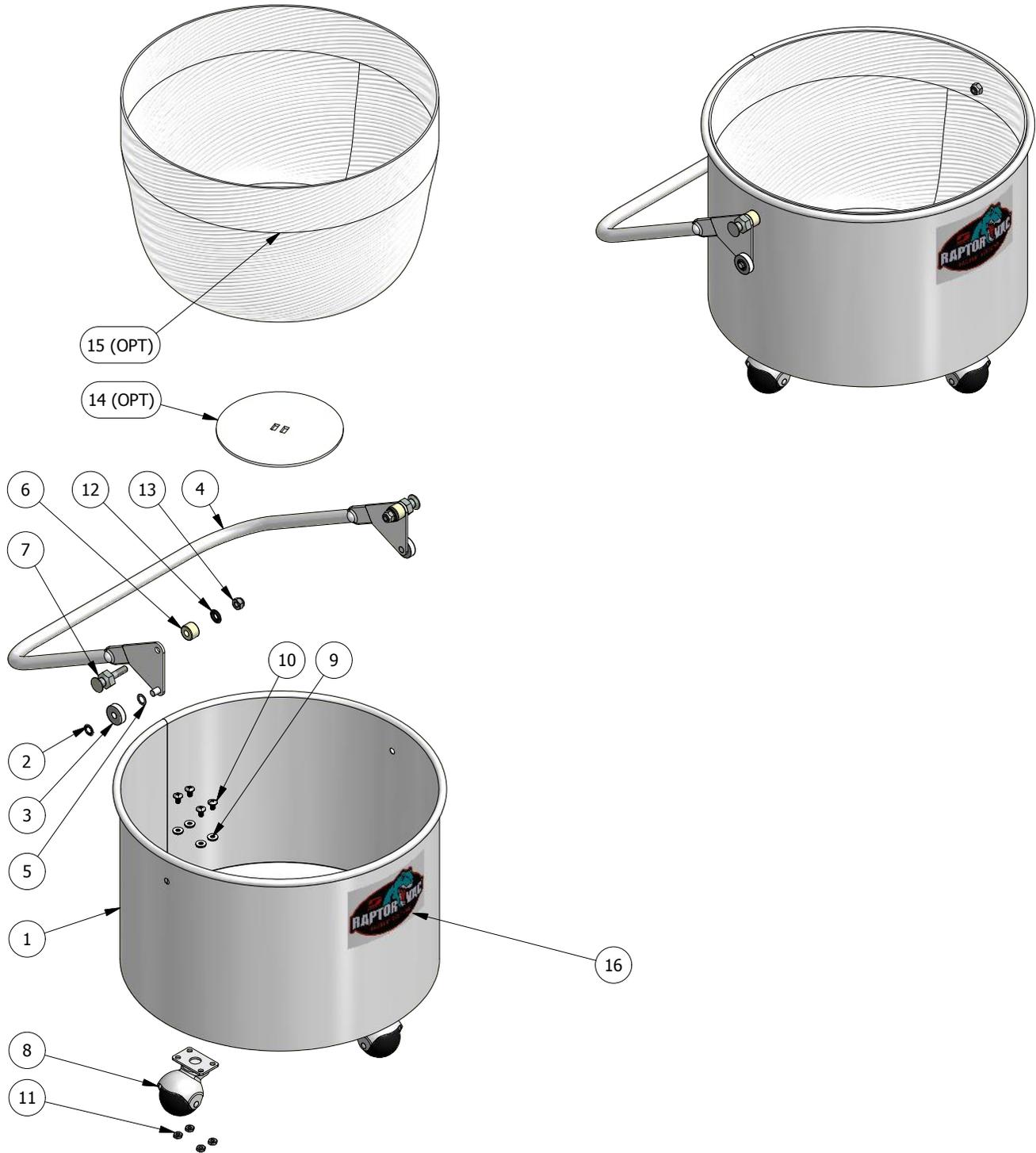
CLASS I, GROUP D T3C
CLASS II, GROUPS E, F, & G

DYNABRADE EXP1-20 DT MFS CSA
MIDDLE RING

PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	62470	FILTER CHAMBER	1
2	62746	GASKET	1
3	62397	LATCH	3
4	62615	CAMLOCK	1
5	62649	PLUG	1
6	62369	GASKET	1
7	62398	SHIM WASHER	1
8	62603	ELBOW	1
9	62457	SCREW	6
10	62399	SEAL WASHER	6
11	62441	HEX NUT	6
12	62669	MAIN FILTER	1
13	62664	WIRE CAGE	1
14	62482	PREFILTER	OPT
15	62392	RING	OPT
16	62459	STAR SHAPE KNOB	1
17	62628	WASHER	1
18	62485	BOOT ONLY	1
19	62648	NUT	1
20	62648	NUT	1
21	62463	SEALING WASHER	1
22	62429	THREADED SHAKER ROD	1
23	62748	RUBBER TUBE	1
24	62374	RING FOR FILTER	1
25	62668	MAIN FILTER ASSEMBLY	1
26	62427	SHAKER PLUNGER ASSEMBLY	1
27	12412	LARGE DYNABRADE LABEL	1
28	96618	HEPA FILTERED LABEL	1
29	96619	EXPLOSION PROOF LABEL	1

DYNABRADE EXP1-20 DT MFS CSA
TANK





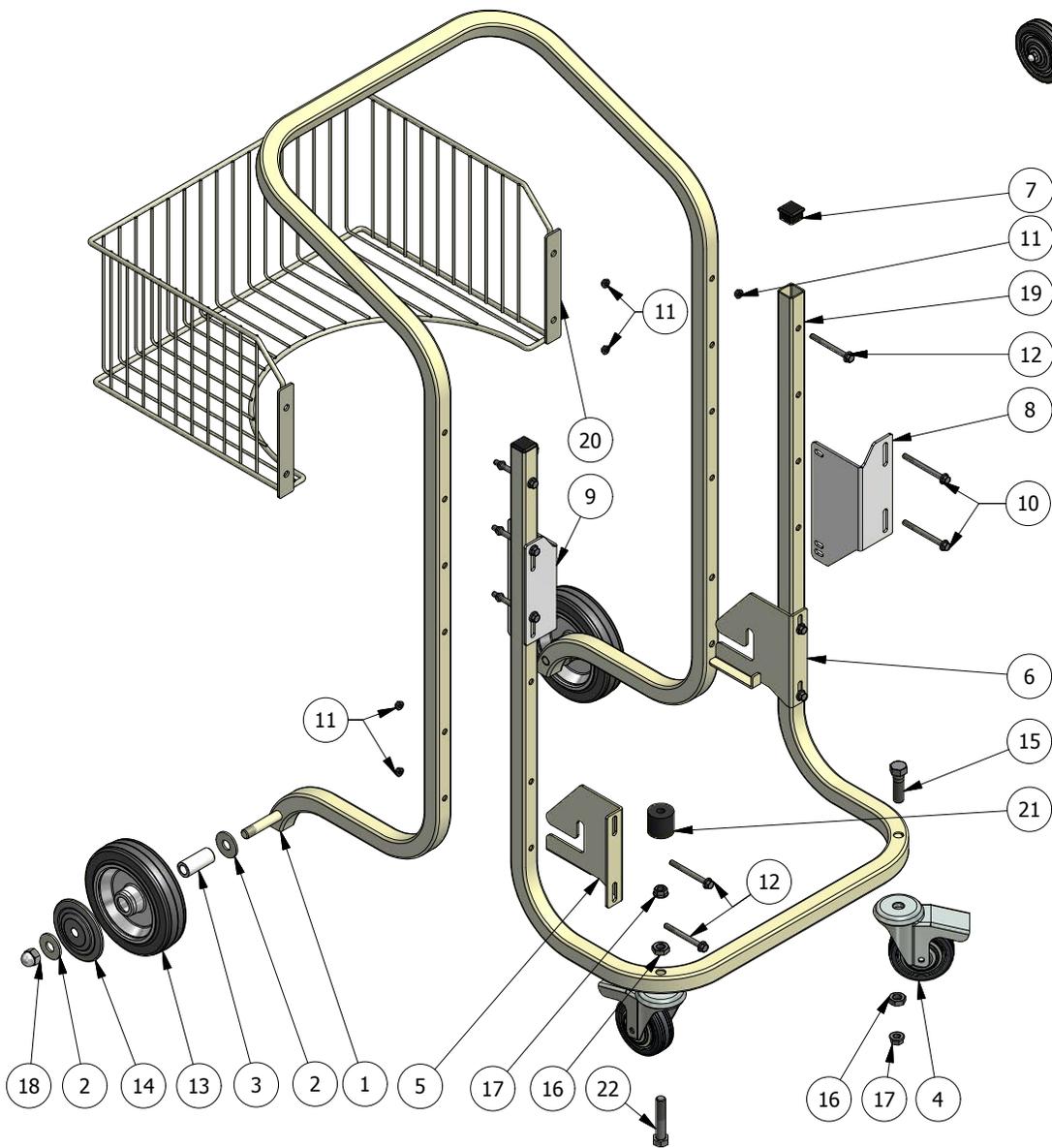
CLASS I, GROUP D T3C
CLASS II, GROUPS E, F, & G

DYNABRADE EXP1-20 DT MFS CSA
TANK

PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	62528	TANK	1
1B	62529	TANK	OPT
2	62514	RETAINING RING	2
3	62700	SPACER	2
4	62694	LIFTING HANDLE	1
5	62702	FLAT WASHER	2
6	62515	SPACER	2
7	62663	PIVOT	2
8	62389	BALL CASTER	4
9	62399	SEAL WASHER	16
10	62457	SCREW	16
11	62441	HEX NUT	16
12	62454	SEAL WASHER	2
13	62480	LOCKNUT	2
14	62440	POLY LINER RETAINER PLATE	OPT
15	62636	CONDUCTIVE POLY LINER	OPT
15B	62635	CONDUCTIVE POLY LINER	OPT
16	96616	RAPTOR VAC SYSTEMS LABEL	1

DYNABRADE EXP1-20 DT MFS CSA
CART





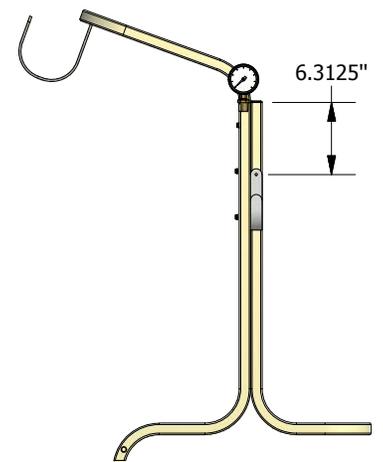
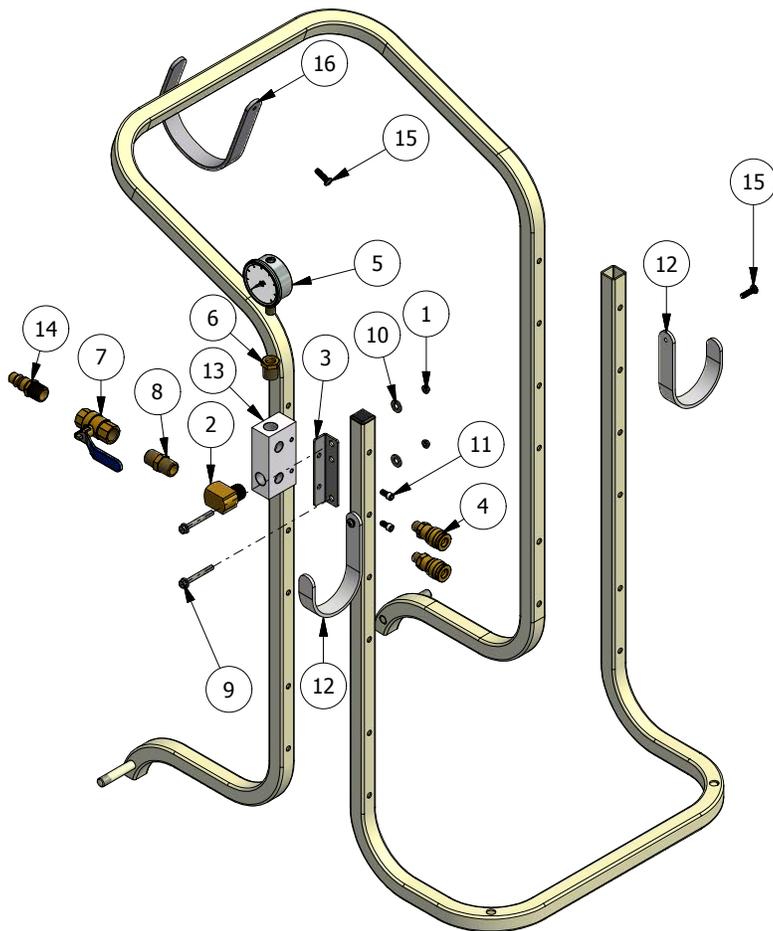
CLASS I, GROUP D T3C
CLASS II, GROUPS E, F, & G

DYNABRADE EXP1-20 DT MFS CSA
CART

PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	62691	FRAME	1
2	62660	FLAT WASHER	4
3	62693	BUSHING	2
4	62476	WHEEL	2
5	62698	LEFT CAM BRACKET	1
6	62697	RIGHT CAM BRACKET	1
7	62509	PLUG	2
8	62695	RIGHT BRACKET	1
9	62696	LEFT BRACKET	1
10	62511	SCREW	4
11	62458	FLANGE NUT	13
12	62510	SCREW	6
13	62474	WHEEL	2
14	62666	THREAD GUARD	2
15	62512	HEX BOLT	1
16	62406	LOCKWASHER	2
17	62504	LOCKNUT	2
18	62513	ACORN CAP NUT	2
19	62692	FRAME	1
20	62665	TOOL BASKET	1
21	62540	RUBBER BUMPER	1
22	62518	HEX BOLT	1

DYNABRADE EXP1-20 DT MFS CSA
CART CONNECTION



DETAIL



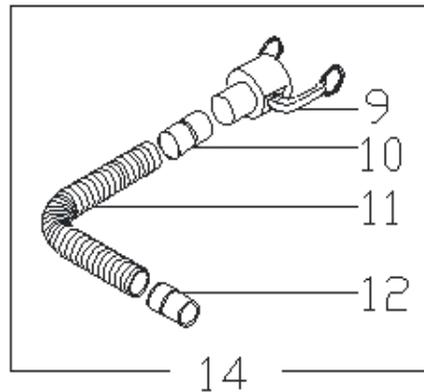
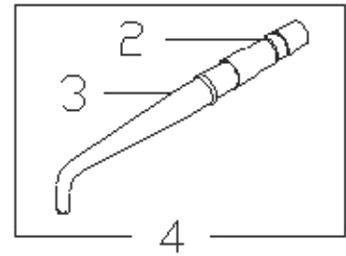
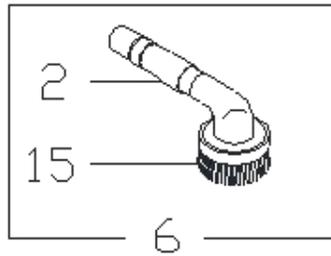
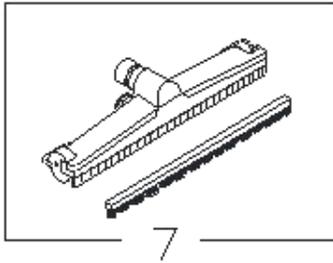
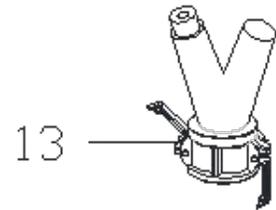
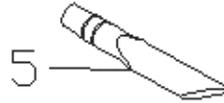
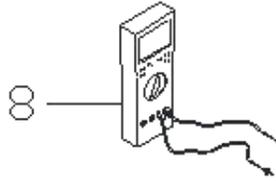
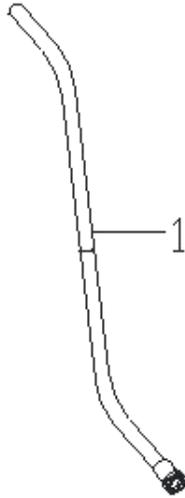
CLASS I, GROUP D T3C
CLASS II, GROUPS E, F, & G

DYNABRADE EXP1-20 DT MFS CSA
CART CONNECTION

PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	62458	FLANGE NUT	2
2	62596	90 DEGREE ELBOW	1
3	62723	BRACKET	1
4	62548	QUICK DISCONNECT, FEMALE	2
5	62362	PRESSURE GAUGE	1
6	62598	REDUCER BUSHING	1
7	62365	BALL VALVE BRASS	1
8	62599	HEX NIPPLE	1
9	62699	SCREW	2
10	62481	FLAT WASHER	2
11	62419	SCREW	2
12	62705	CABLE HOOK	2
13	62556	MANIFOLD	1
14	62351	MALE QUICK DISCONNECT	1
15	62754	HEX BOLT	3
16	62755	HOSE HOOK	1

DYNABRDE EXP1-20 DT MFS CSA
ACCESSORIES





CLASS I, GROUP D T3C
CLASS II, GROUPS E, F, & G

DYNABRDE EXP1-20 DT MFS CSA
ACCESSORIES

PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	62732	WAND ASSEMBLY	1
2	62728	CONNECTOR	1
3	62737	CONICAL NOZZLE	1
4	62736	CONICAL NOZZLE ASMBLY	1
5	62733	CREVICE TOOL	1
6	62730	BRUSH	1
7	62573	UNIVERSAL TOOL	1
8	62591	MULTIMETER	1
9	62581	CAMLOCK	1
10	62577	HOSE CUFF EXPANDER	1
11	62579	KANAFLEX SUCTION HOSE	10'
12	62578	HOSE CUFF	1
13	62583	WYE CONNECTOR	1
14	62734	SUCTION HOSE ASSEMBLY	1
15	62729	BRUSH	1