

OPERATION AND PARTS MANUAL



CV/SVA-SERIES MODELS

**900, 1000, 1300,
1400, 1700, 2100, 2600
VIBRATOR HEADS**

Revision #0 (03/22/10)

THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.



PN: 36858

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PROPOSITION 65 WARNING



CALIFORNIA — Proposition 65 Warning

Engine exhaust and some of its constituents, and some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.


Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks.
- Cement and other masonry products.
- Arsenic and chromium from chemically treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: **ALWAYS** work in a well ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.

SILICOSIS/RESPIRATORY WARNINGS

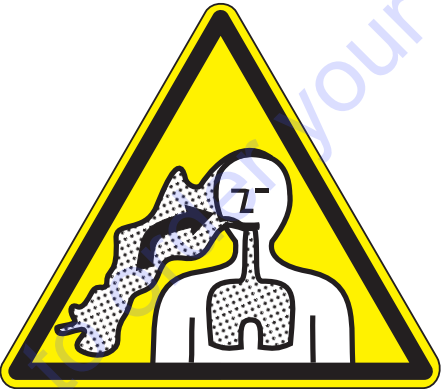
! WARNING



SILICOSIS WARNING

Grinding/cutting/drilling of masonry, concrete, metal and other materials with silica in their composition may give off dust or mists containing crystalline silica. Silica is a basic component of sand, quartz, brick clay, granite and numerous other minerals and rocks. Repeated and/or substantial inhalation of airborne crystalline silica can cause serious or fatal respiratory diseases, including silicosis. In addition, California and some other authorities have listed respirable crystalline silica as a substance known to cause cancer. When cutting such materials, always follow the respiratory precautions mentioned above.

! WARNING



RESPIRATORY HAZARDS

Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious or fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm. If you are unfamiliar with the risks associated with the particular process and/or material being cut or the composition of the tool being used, review the material safety data sheet and/or consult your employer, the material manufacturer/supplier, governmental agencies such as OSHA and NIOSH and other sources on hazardous materials. California and some other authorities, for instance, have published lists of substances known to cause cancer, reproductive toxicity, or other harmful effects.

Control dust, mist and fumes at the source where possible. In this regard use good work practices and follow the recommendations of the manufacturers or suppliers, OSHA/NIOSH, and occupational and trade associations. Water should be used for dust suppression when wet cutting is feasible. When the hazards from inhalation of dust, mists and fumes cannot be eliminated, the operator and any bystanders should always wear a respirator approved by NIOSH/MSHA for the materials being used.

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Specifications and part numbers are subject to change without notice.

SAFETY MESSAGE ALERT SYMBOLS

FOR YOUR SAFETY AND THE SAFETY OF OTHERS!

Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the Safety Messages and Operating Instructions could result in injury to yourself and others.

NOTE

This Owner's Manual has been developed to provide complete instructions for the safe and efficient operation of the MULTIQUIP VIBRATOR HEADS.

Before using this equipment, ensure that the operating individual has read and understands all instructions in this manual.

SAFETY MESSAGE ALERT SYMBOLS

The three (3) Safety Messages shown below will inform you about potential hazards that could injure you or others. The Safety Messages specifically address the level of exposure to the operator, and are preceded by one of three words: **DANGER**, **WARNING**, or **CAUTION**.



DANGER: You **WILL** be **KILLED** or **SERIOUSLY** injured if you **DO NOT** follow directions.



WARNING: You **CAN** be **KILLED** or **SERIOUSLY** injured if you **DO NOT** follow directions.



CAUTION: You **CAN** be injured if you **DO NOT** follow directions.

Potential hazards associated with Multiquip VIBRATOR HEADS operation will be referenced with "**Hazard Symbols**" which appear throughout this manual, and will be referenced in conjunction with Safety "**Message Alert Symbols**".

HAZARD SYMBOLS



Engine exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled. **NEVER** operate this equipment in a confined area or enclosed structure that does not provide ample free flow air.



Explosive Fuel



Gasoline is extremely flammable, and its vapors can cause an explosion if ignited. **DO NOT** start the engine near spilled fuel or combustible fluids. **DO NOT** fill the fuel tank while the engine is running or hot. **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system. Store fuel in approved containers, in well-ventilated areas and away from sparks and flames. **NEVER** use fuel as a cleaning agent.



Burn Hazards



High Temperatures – Unplug the machine and allow to **cool** before performing service and maintenance functions. Contact with **hot!** components can cause serious burns.



Rotating Parts



NEVER operate equipment with covers, or guards removed. Keep fingers, **hands**, **hair** and **clothing** away from all moving parts to prevent injury.



Sight and Hearing hazard



ALWAYS wear approved eye and hearing protection.



Accidental Starting



OFF **ALWAYS** place the motor ON/OFF switch in the **OFF** position, when the Vibrator Motor is not in use.

RULES FOR SAFE OPERATION

WARNING:

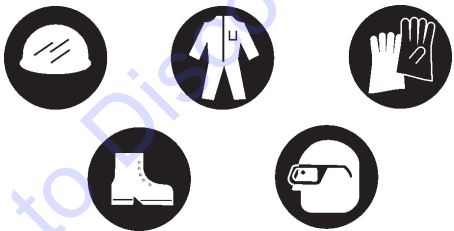


Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be operated by trained and qualified personnel only! This equipment is for industrial use only.

The following safety guidelines should always be used when operating this equipment.

SAFETY

- **DO NOT** operate or service this equipment before reading this entire manual.
- **ALWAYS** use proper lifting techniques when using the the vibrator motor, flexible shaft and vibrator head assembly.
- **ALWAYS** check to make sure that the operating area is clear before starting the vibrator motor or engine.
- **NEVER** leave the machine *unattended* while running.
- Keep the vibrator motor or engine in proper running condition.
- Make sure that there is no buildup of concrete, grease, oil or debris on the equipment.
- Fix damage to the equipment immediately and always replace broken parts.
- This equipment should not be operated by persons under 18 years of age.
- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, steel-toed boots and other protective devices required by the job.



- **NEVER** operate this equipment when not feeling well due to fatigue, illness or taking medicine.



- **NEVER** operate this equipment under the influence of drugs or alcohol.



- **ALWAYS** check the equipment for loosened threads or bolts before starting.
- **NEVER** use accessories or attachments, which are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.

EMERGENCIES

- **ALWAYS** know the location of the nearest *fire extinguisher*.



- **ALWAYS** know the location of the nearest and *first aid kit*.



- In emergencies *always* know the location of the nearest phone or *keep a phone on the job site*. Also know the phone numbers of the nearest *ambulance*, *doctor* and *fire department*. This information will be invaluable in the case of an emergency.



PREPARATION & OPERATION



This safety alert symbol is used to attract your attention. Personal safety is involved. When you see this symbol, become alert; heed its message.

WARNING!



DO NOT attempt to operate this vibrator head until the Safety and Operating Instructions for the Electric Motor or Gasoline Power Unit and Flexible Shaft have been read and fully understood. Failure to do so could result in serious bodily injury and/or property damage.

1. The vibrator motor, flexible shafting, and heads are shipped from the factory ready to use.
2. Use only the combination of flexible shafting and heads shown below in Table 1.

MODEL	SHAFT	HEAD SIZE	MAX. SHAFT LENGTH
1HP SV-1, DI 1 75ER	314V	900 1000 1300	21 FT.
2HP SV-2, DI 2 130 ER	382V	1400 1700	28 FT.
		2100	21 FT.
3HP SV-3, DI3 200 ER	382V	1400 1700 2100 2600	35 FT.

3. To connect the flexible shafting to the vibrator motor see (Figure 1). (382V Shafting shown)

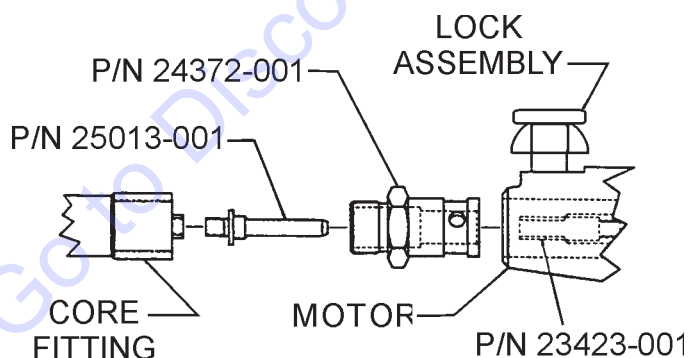
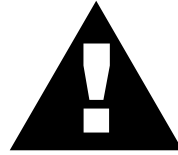


Figure 1. Shafting to Motor Connection
(382V Shafting Shown)

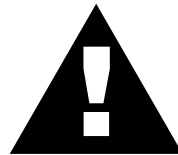
WARNING!



MAKE CERTAIN the motor is disconnected from the power source and the switch is in the "OFF" position.

4. When connecting the head to the casing, clean the mating threads with an anaerobic sealant primer and allow it to air dry for several minutes. Apply a ring of anaerobic sealant (Loctite 271, Hernon 427 or equivalent), to the casing threads and screw the head tightly to the casing. Wait for one hour before using.

CAUTION!



The vibrator head is cooled by the concrete. Operation of the vibrator head in air longer than 2 minutes at a time will cause overheating of the bearings which will result in premature head failure.

5. See Compaction Coverage Chart, (Figure 2).

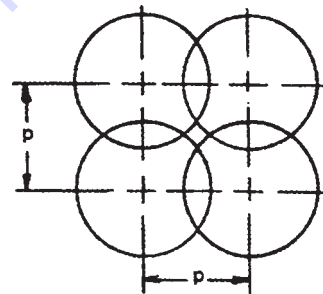


Figure 2. Compaction Coverage
with 50% Radial Overlap

Head	900	1000	1300	1400	1700	2100	2600
P-Dimension	4"	5-1/2"	8"	8"	12"	14"	18"

6. Immerse the head for 5 to 10 seconds, (until air stops rising), and then withdraw it slowly to let the concrete fill the void left by the head. The head should be completely below the surface when vibrating to keep the head cool. When vibrating a thin horizontal slab, the head can be used in a horizontal position.

CAUTION!



If the shaft begins to helix (buckle) excessively during operation, stop and investigate. This is an indication of an overload condition.

MAINTENANCE

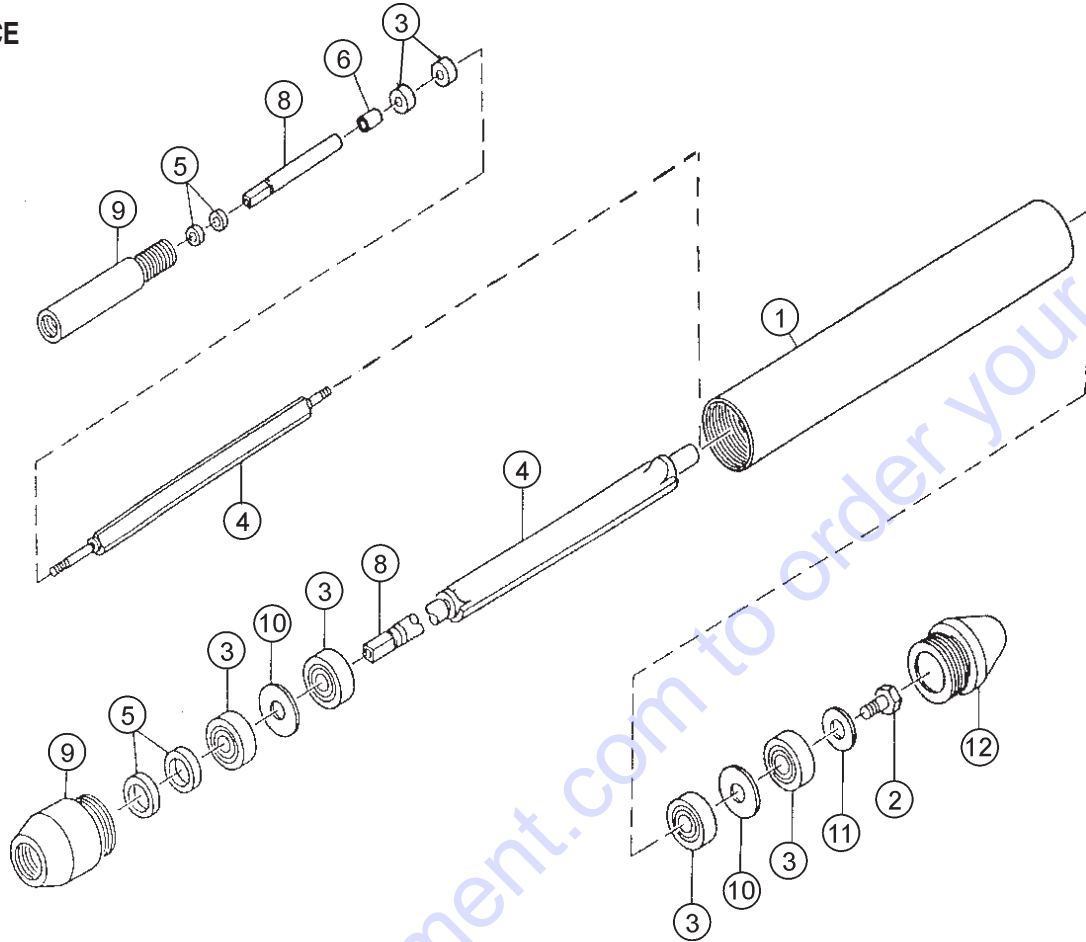
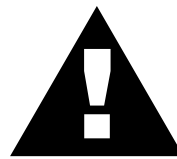


Figure 3. Head Parts

Reference

Number	Description
1	Housing
2	Nut or Screw
3	Bearing
4	Spindle
5	Seal
6	Spacer
8	Fitting Adapter
9	Casing Adapter
10	Shim
11	Flat Washer
12	Tip

CAUTION!



DO NOT allow the vibrator head to wear below the following dimensions: See General Specifications - page 11.

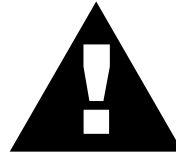
The vibrator heads should be inspected and lubricated after every 100 hours of use. Refer to (Figure 3).

To Disassemble a Vibrator Head:

1. Remove the flexible shaft from the head. Heat should be applied to the threads to break down the anaerobic sealant. This will help prevent possible damage to the threads. Threads are left-hand.
2. Remove the casing adapter from the housing. Head should be applied to the threads to break down the anaerobic sealant. Threads are right-hand. (Ref. 9)
3. Remove the hardened tip from the housing. Heat should be applied to the threads to break down the anaerobic sealant. Threads are right-hand. (Ref. 1, 12)

4. Remove the cap screw or hex nut that holds the lower bearings in place. (Ref. 2)
5. Remove the spindle with the upper bearings still attached. The lower bearings (tip-end) can now be removed from the housing. (Ref. 4)
6. Remove and discard the oil seals. Note the way the seals face so that the new seals will be installed correctly. (Ref. 5)
7. Thoroughly clean all parts with a degreasing solvent and blow dry with air. Compressed air is not recommended for cleaning and drying solvents out of the bearings. Bearings should never be spun at high speed using compressed air. (Ref. 3)
8. After cleaning, inspect all parts for wear. The bearings should be checked by applying a light thrust load against one bearing ring, while slowly rotating the other ring. Do this in both directions. If any roughness or excessive looseness is felt, the bearing should be replaced. Any other parts that show heavy wear should also be replaced at this time. (Ref. 3)
6. Apply a high strength anaerobic sealant to the external threads of the casing adapter. Screw the adapter into the housing and tighten. Threads are left-hand. (Ref. 1,9)
7. Tip head over and pour in the required amount of Lube P/N 12000-301. Refer to General Specifications Table on page 11.

CAUTION!



DO NOT use more than the specified amount of lubricant in the vibrator head. Over-filling will cause the head to overheat and lead to premature failure.

8. Assemble the lower bearings to the spindle. (Ref. 3)
9. Clean the tip threads and the mating threads on the housing with anaerobic sealant primer. Allow to dry. (Ref. 1,12)
10. Apply a high strength anaerobic sealant to the tip threads and screw the tip into the housing. Threads are right-hand. (Ref. 1,12)

To Reassemble a Vibrator Head:

1. **Bearing Installation:** Bearing installation should take place under the cleanest possible conditions. Inspect the spindle bearing seat diameter for nicks and burrs. If any are found, carefully remove using a stone or fine file. Wipe the bearing seat diameter with head oil to help prevent galling while the bearing is being pressed on. While installing the bearing, the installation force should always be applied squarely and evenly to the inner race of the bearing. (Ref. 3)
2. **Seal Installation:** Remove any nicks or burrs that will interfere with the installation of the seal. Make sure the seal is facing the right direction and that it is properly positioned so that it will seat squarely without damage. See illustration on page 12. Use an installation tool that will apply the force evenly around the outer edge of the seal.
3. Insert the spindle with upper bearings assembled on it, into the housing. Using a light push fit, seat the bearings into the housing. (Ref. 4)
4. Insert the seals into the casing adapter per the seal installation instructions. (See page 12)
5. Clean the casing adapter external threads and the mating internal threads on the housing with anaerobic primer and let dry. (Ref. 1,9)

Assemble the Head to the Casing:

11. Clean the casing threads and the mating threads on the head with an anaerobic sealant primer and allow to dry.
12. Apply a ring of anaerobic high strength sealant to the casing threads. Screw the casing into the head and tighten.
13. Allow to set one hour before use.

SPECIFICATIONS

SPECIFICATIONS

TABLE 3. GENERAL SPECIFICATIONS							
Model	900	1000	1300	1400	1700	2100	2600
Weight	1 lb. 11 oz.	2 lb. 6 oz.	4 lbs. 11 oz.	4 lbs. 10 oz.	6 lbs. 4 oz.	8 lbs. 11 oz.	12 lbs. 10 oz.
Length	15"	14"	15"	15"	14"	13"	13"
Manufacturing Diameter	7/8	1 - 1/16	1 - 3/8	1 - 3/8	1 - 11/16	2 - 1/8	2 - 5/8
Minimum Wear Diameter	13/16	1	1 - 1/4	1 - 1/4	1 - 9/16	1 - 7/8	2 - 1/4
Head Lube Capacity	1/2 oz.	1/2 oz.	1/2 oz.	1/2 oz.	3/4 oz.	1 oz.	1 - 1/2 oz.

SEAL INSTALLATION

SEAL INSTALLATION

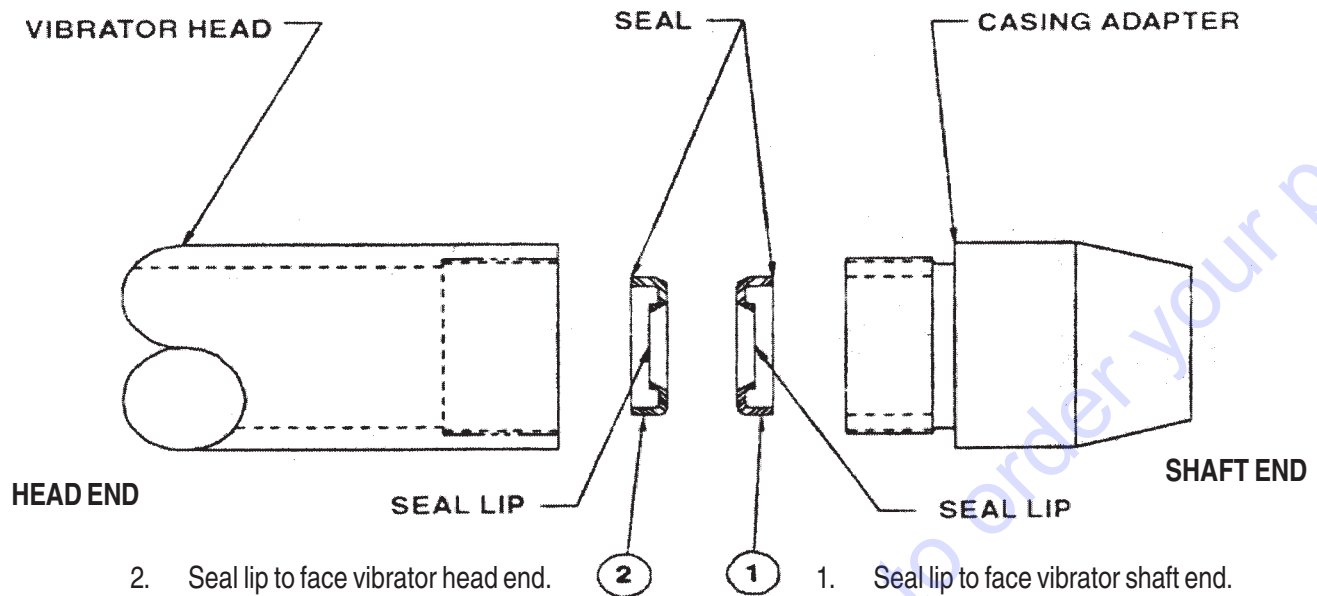


Figure 4. Seal Installation

- Seal outer case to face outer case of first seal pressed into casing adapter.
- Depending on vibrator head model, casing adapter may not appear exactly as shown.

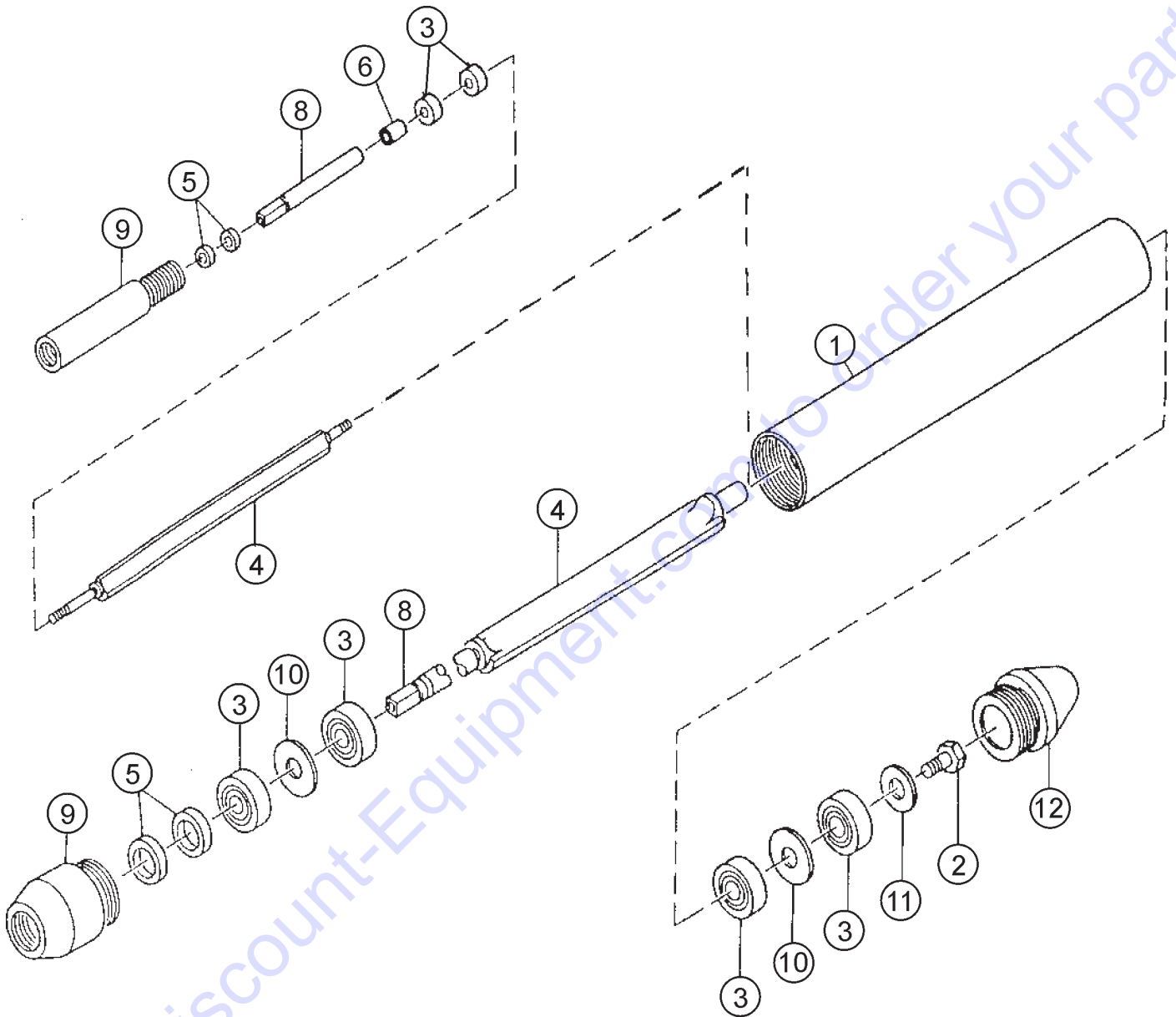
CAUTION!



Improper seal installation may cause premature head failure.

VIBRATOR HEAD ASSY.

VIBRATOR HEAD ASSY.



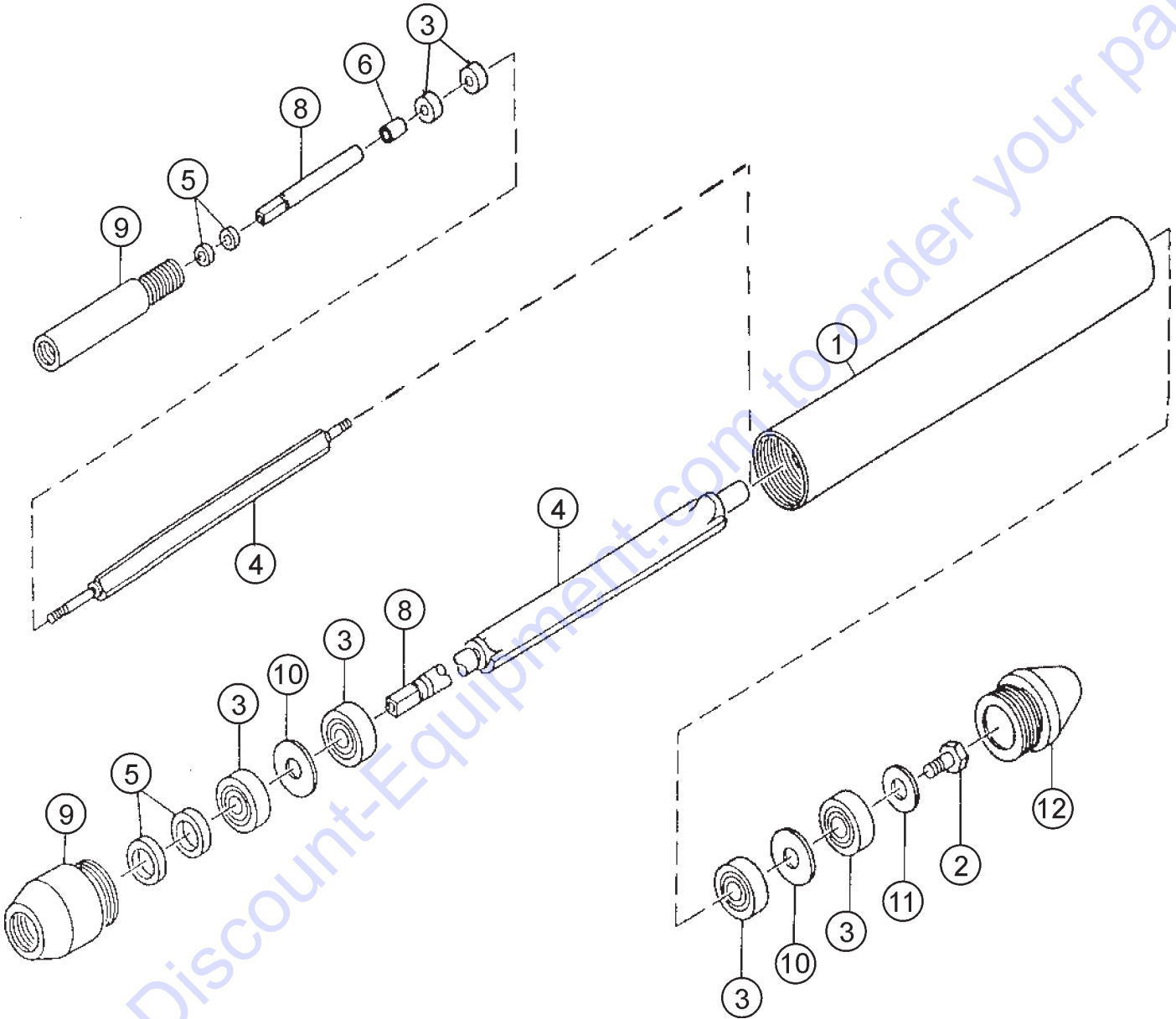
VIBRATOR HEAD ASSY.

VIBRATOR HEAD ASSY.

ITEM NO.	PART NO.	DESCRIPTION	900	1000	1300	1400	1700	2100	2600
-	17302-505	MODEL 900	X						
-	16369-501	MODEL 1000		X					
-	16317-501	MODEL 1300			X				
-	16316-501	MODEL 1400				X			
-	15699-505	MODEL 1700					X		
-	16301-501	MODEL 2100						X	
-	16274-501	MODEL 2600							X
1	17303-002	HOUSING	1						
1	16371-001	HOUSING		1					
1	16320-001	HOUSING			1	1			
1	15700-001	HOUSING					1		
1	16305-001	HOUSING						1	
1	16279-001	HOUSING							1
2	08233-004	NUT GRIPCO 1/4-20	1						
2	08233-005	NUT GRIPCO 5/16-18		1					
2	08297-006	NUT GRIPCO 3/8-24			1	1			
2	06511-005	HHCS 3/8-24 x 5/8					1	1	
2	06513-006	HHCS 1/2-20 x 3/4							1
3	09189-002	BEARING	4						
3	10093-401	BEARING		4					
3	19393-004	BEARING			4	4			
3	19393-003	BEARING					4		
3	19393-001	BEARING						4	
3	19393-002	BEARING							4
4	11199-002	SPINDLE	1						
4	19484-001	SPINDLE		1					
4	18871-001	SPINDLE			1	1			
4	26900-001	SPINDLE					1		
4	18785-001	SPINDLE						1	
4	18809-001	SPINDLE							1

VIBRATOR HEAD ASSY.

VIBRATOR HEAD ASSY.



VIBRATOR HEAD ASSY.

VIBRATOR HEAD ASSY.

ITEM NO.	PART NO.	DESCRIPTION	900	1000	1300	1400	1700	2100	2600
5	07001-056	SEAL	2						
5	07001-021	SEAL		2					
5	07001-029	SEAL			2	2			
5	07001-046	SEAL					2		
5	07001-057	SEAL						2	
5	07001-019	SEAL							2
6	26055-001	SPACER	1						
8	26050-001	FITTING ADAPTER	1						
8	16375-001	FITTING ADAPTER		1					
8	16328-001	FITTING ADAPTER			1				
8	16327-001	FITTING ADAPTER				1			
9	26049-001	CASING ADAPTER	1						
9	16374-002	CASING ADAPTER		1					
9	16325-001	CASING ADAPTER			1				
9	16326-001	CASING ADAPTER				1			
9	16704-001	CASING ADAPTER					1		
9	16303-001	CASING ADAPTER						1	
9	16278-001	CASING ADAPTER							1
10	11906-025	SHIM	2	2					
10	11906-012	SHIM			2	2			
10	11906-015	SHIM					2	2	
10	11906-020	SHIM							2
11	07030-006	FLATWASHER 3/8					1	1	
11	07030-008	FLATWASHER 1/2							1
12	11204-001	TIP	1						
12	16368-001	TIP		1					
12	16318-001	TIP			1	1			
12	15705-001	TIP					1		
12	16302-001	TIP						1	
12	16277-001	TIP							1

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Description:	<input type="text"/>
Part Number:	<input type="text"/>
Quantity:	<input type="text"/>
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