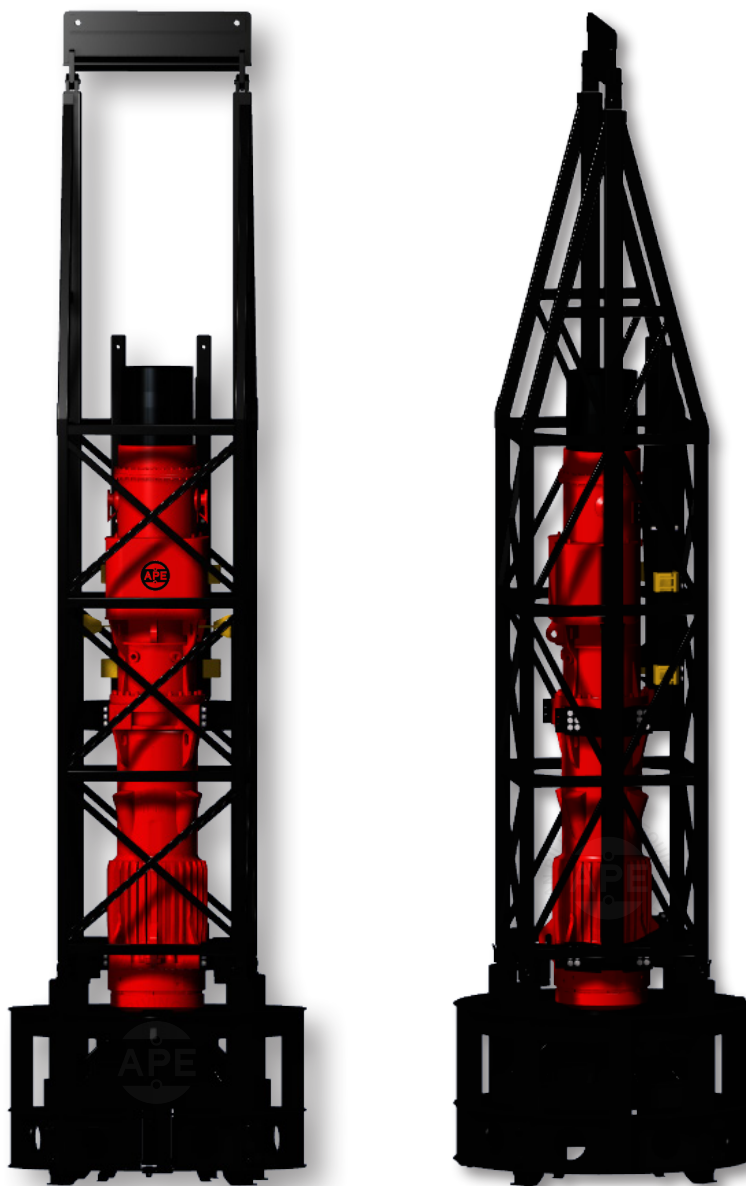




APE DIESEL HAMMER SPARE PARTS MANUAL

DEEP FOUNDATION SOLUTIONS



800-248-8498

WWW.AMERICANPILEDRIVING.COM

MODEL D320

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MODEL D320

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Quick Reference Guide

This Quick Reference Guide will assist you in finding the information you're looking for.

GENERAL INFORMATION

EQUIPMENT OVERVIEW

REFUSAL CRITERIA

REPLACEMENT PARTS

REFERENCE / NOTES

A Table of Contents is included after the Foreword.

Description:

MODEL D320 Diesel Hammer



800-248-8498
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MODEL D320

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Warranty Information

GENERAL INFORMATION

American Piledriving Equipment, Inc. (APE) warrants new products sold by it to be free from defects in material or workmanship for a period of one (1) years after the date of delivery to the first user and subject to the following conditions:

- APE's obligation and liability under this WARRANTY is expressly limited to repairing or replacing, at APE's option, any parts which appear to APE upon inspection to have been defective in material or workmanship. Such parts shall be provided at no cost to the user, at the business establishment of APE or the authorized APE distributor of the product during regular working hours.
- This WARRANTY shall not apply to component parts or accessories of products not manufactured by APE, and which carry the warranty of the manufacturer thereof, or to normal maintenance (such as engine tune-up) or normal maintenance parts (such as filters).
- Replacement or repair parts installed in the product covered by this WARRANTY are warranted only for the remainder of the warranty as if such parts were original components of said product.
- APE makes no other warranty, expressed or implied, and makes no warranty of merchantability of fitness for any particular purpose.
- APE's obligations under this WARRANTY shall not include any transportation charges, costs of installation, duty, taxes or any other charges whatsoever, or any liability for direct, indirect, incidental or consequential damage or delay.
- If requested by APE, products or parts for which a warranty claim is made are to be returned, transportation prepaid, to APE.

OIL MUST MEET ISO CLEANLINESS CODE 17/15/11. OIL THAT DOES NOT MEET CLEANLINESS CODE WILL **VOID** THE WARRANTY

ANY IMPROPER USE, INCLUDING OPERATION AFTER DISCOVERY OF DEFECTIVE OR WORN PARTS, OPERATION BEYOND RATED CAPACITY, SUBSTITUTION OF ANY PARTS WHATSOEVER, USE OF PARTS NOT APPROVED BY APE OR ANY ALTERATION OR REPAIR BY OTHERS IN SUCH A MANNER AS, IN APE'S JUDGMENT, AFFECTS THE PRODUCT MATERIALLY AND ADVERSELY, SHALL **VOID** THIS WARRANTY.

ANY TYPE OF WELDING ON APE'S EQUIPMENT WILL **VOID** THE WARRANTY UNLESS AUTHORIZED IN WRITING BY APE

NO EMPLOYEE IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGE IS MADE IN WRITING AND SIGNED BY AN OFFICER OF APE, INC.



Foreword

This parts manual covers **APE Diesel Hammer** replacement information. This parts manual should be stored in a literature holder or literature storage area.

Some photographs or illustrations in this parts manual show details or attachments that may be different from your equipment. Continuing improvement and advancement of product design may have caused changes to your equipment which are not included in this manual. Whenever a question arises regarding your equipment, or this manual, please consult with your APE dealer for the latest available information.

Using this Parts manual:

- Refer to the Table of Contents for the page location of applicable sections.
- All weights and measurements are in English and Metric units.
- Please visit www.americanpiledriving.com for product data sheets and manuals and latest available information.

DISCLAIMER:

This unit was tested before leaving our facility. In order to help provide years of trouble-free usage, please review the following documentation and make sure to clean and flush the quick disconnect fitting on any equipment before connecting it to the power unit.

Refer to schematic diagrams and the BOM (Bill of Materials) for component part specifications and recommended spare parts.

When calling APE, always have the equipment serial number on hand in order to obtain quicker service.

CALIFORNIA Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

CALIFORNIA Proposition 65 Warning

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer, birth defects and reproductive harm. **Wash hands after handling.**

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Safety Section

General Safety Precautions



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a hazardous situation where injury could occur but is unlikely to be serious or lead to death.



NOTICE indicates information that may help or guide you in the operation or service of the equipment.

DISCLAIMER:

This unit was tested and flushed before leaving our facility. In order to help provide years of trouble free usage, please review the following documentation and make sure to clean and flush the field piping before connecting it to the power unit.

Refer to schematic diagrams and the BOM (Bill of Materials) for component part specifications and recommended spare parts.

When calling APE (American Piledriving Equipment), always inform them of the supplied serial # in order to obtain quicker service

NOTICE

READ THIS MANUAL THOROUGHLY BEFORE OPERATING AND / OR WORKING ON THE EQUIPMENT

1. Read and follow any safety instructions in the OPERATOR'S MANUAL.
2. Only well-trained and experienced personnel should attempt to operate or maintain this equipment.
3. NEVER adjust, lubricate and/or repair the unit when it is in operation or lifted above ground level.
4. NEVER remove, paint over and/or cover warning or safety labels. If labels become damaged or unreadable, replace immediately.
5. All personnel should wear approved safety clothing including HARD HATS, SAFETY SHOES, SAFETY GLASSES and HEARING PROTECTION when near this equipment.
6. Do **NOT** stand any closer to this equipment than necessary when it is in operation. Parts may loosen and fall. **NEVER** stand under operating or elevated equipment.
7. When maintaining and/or repairing the equipment, **NEVER** substitute parts not supplied or approved in writing by APE.

NOTICE

Do NOT weld or flame cut on this equipment.

8. NEVER use or store flammable liquids on or near the equipment.
9. Insure that all lifting equipment, including cranes, wire rope, slings, hooks, shackles, etc., are properly sized for the worst caseloads anticipated during operations.
10. If there are any questions about the weights, specifications and/or performance of the unit, contact APE before handling and/or operating the equipment.
11. Check wire rope clips for tightness and wire ropes for wear daily.
12. Insure that ground vibrations will not damage or collapse adjacent structures or excavations.

Safety Section



***When operating in an enclosed area,
exhaust fumes should be piped outside.
Continued breathing of exhaust fumes may
prove FATAL.***

13. Remove all tools, parts and/or electrical cords before starting the unit.
14. When filling the fuel tank, do **NOT** smoke and/or use an open flame in the vicinity.
15. If abnormal equipment operation is observed, discontinue use immediately and correct the problem.
16. Store oily rags in approved containers and away from the engine exhaust system.
17. NEVER operate this equipment with hydraulic hoses that are damaged or 'kinked'. Replace damaged hoses immediately.
18. Do **NOT** lift and/or support hydraulic hoses with wire rope slings.
19. NEVER attempt to connect Quick Disconnects (QDs) when the Power Unit is running.
20. Do **NOT** pull on and/or attempt to move equipment with the hydraulic hoses.
21. Do **NOT** attempt to locate hydraulic leaks with your hands. High-pressure leaks can penetrate skin and cause severe damage, blood poisoning and/or infection.
22. Do **NOT** attempt to repair leaks while the equipment is in operation.
23. Do **NOT** attempt to tighten and/or loosen fittings and/or hoses when the machine is in operation.
24. Power Unit must always be placed on level, stable ground.
25. Do **NOT** remove Power Unit heat shields. Do NOT attempt to use the Power Unit without heat shields. Severe fires may result.

NOTICE

***A properly maintained fire
extinguisher, suitable for oil fires,
MUST be kept in the immediate
vicinity of equipment operations.***

26. When moving and/or transporting this equipment, insure that the vehicle and/or vessel is of sufficient capacity to handle the load. Make sure that the equipment is properly tied down.
27. When moving and/or transporting this equipment, be sure that the QD Dust Caps are tight and that the cap safety cables are in place. Be sure that all equipment parts are tight and/or properly secured before shipment. Unsecured parts may vibrate loose and fall during transport causing injury and/or property damage.
28. Rounded and/or damaged bolt heads and/or nuts should be replaced so that proper torque values may be obtained. Proper torque values are necessary to prevent parts on this equipment, leads and/or crane booms from loosening and/or falling. (Refer to the torque chart in this manual for the proper values.)
29. When operating in a closed area, pipe exhaust fumes outside. (**Warning:** Breathing exhaust fumes can cause serious injury or even death.)
30. If diesel hammer is equipped with a Power unit, When loading or unloading the power unit using a forklift, the forks must be placed under the entire depth of the unit.
31. Never stand under an equipment at any time and keep your eyes on the equipment when it is in operation.

Safety Section

SAFETY MESSAGES

There may be several specific safety messages on your equipment. The exact location and description of the safety messages are reviewed in this section. Become familiar with all safety messages.

Ensure that all the safety messages are legible. Clean the safety messages or replace the safety messages if the words cannot be read or if the illustrations are not visible. Use a cloth, water and soap to clean the safety messages. Do not use solvents, gasoline, or other harsh chemicals. Solvents, gasoline, or harsh chemicals could loosen the adhesive that secures the safety messages. The safety messages that are loosened could drop off the equipment.

Replace any safety message that is damaged or missing. If a safety message is attached to a part of the equipment that is replaced, install a new safety message on the replacement part. Your APE dealer can provide new safety messages.



Do not operate or work on this equipment unless you have read and understand the instructions and warnings in the Operation and Maintenance Manual. Failure to follow the instructions or read the warnings could result in injury or death. Contact any APE dealer for replacement manuals. Proper care is your responsibility.

DO NOT WELD



Do **NOT** weld on or around the power unit unless authorized in writing by APE. Doing so will void all warranties and may cause damage to the power unit or vibro.



Safety Section

GENERAL HAZARD INFORMATION



Attach a “Do Not Operate” warning tag to the start switch or controls before the equipment is serviced or repaired. Attach the warning tags to the engine and to each operator control panel. When appropriate disconnect the negative terminal on the battery.

Do not allow unauthorized personnel on the equipment or around the equipment while being serviced.

Cautiously remove the following parts. To help prevent spraying or splashing of pressurized fluids hold a rag over the part that is being removed.

- Filler caps
- Grease fittings
- Pressure taps
- Breathers
- Drain plugs

PRESSURIZED AIR AND WATER

Pressurized air and/or water can cause debris and/or hot water to be blown out which could result in personal injury.

The maximum air pressure for cleaning purposes must be reduced to 30psi (205 kPa) when the air nozzle is deadheaded and used with effective chip guarding (if applicable) and personal protective equipment. The maximum water pressure for cleaning purposes must be below 40psi (275 kPa). When pressurized air and/or pressurized water is used for cleaning, wear protective clothing, protective shoes, and eye protection. Eye

protection includes goggles or a protective face shield. Always wear eye protection for cleaning the cooling system.

Avoid direct spraying of water on electrical connectors, connections, and components. When using air for cleaning, allow the equipment to cool to reduce the possibility of fine debris igniting when redeposited on hot surfaces.

FLUID PENETRATION

Always use a board or cardboard when you check for a leak. Leaking fluid that is under pressure can penetrate body tissue. Fluid penetration can cause serious injury and possible death. A pin hole leak can cause severe injury. If fluid is injected into your skin, you must get medical treatment immediately. Seek treatment from a doctor that is familiar with this type of injury.

CONTAINING FLUID SPILLAGE

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the equipment. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids. Dispose of all fluids according to local regulations and mandates.

LINES, TUBES, AND HOSES

Do not bend or strike high-pressure lines. Do not install lines, tubes, or hoses that are damaged. Repair any fuel lines, oil lines, tubes, or hoses that are loose or damaged. Leaks can cause fires or injury. Inspect all lines, tubes, and hoses carefully. Do not use bare hands to check for leaks. Always use a board or cardboard for checking equipment components for leaks. Tighten all connections to the recommended torque.

Safety Section

Check for the following conditions:

- End fittings that are damaged or leaking
- Outer covering that is chafed or cut
- Wire that is exposed in reinforced hose
- Outer covering that is ballooning locally
- Flexible part of the hose that is kinked or crushed
- Armoring that is embedded in the outer covering

Ensure that all of the clamps, guards, and heat shields are installed correctly. Correct installation of these components will help to prevent these effects: vibration, rubbing against other parts and excessive heat during operation.

INHALATION

Exhaust fumes can be hazardous to your health. If you operate the equipment in an enclosed area, adequate ventilation is necessary,

BURN PREVENTION

Do not touch any part of the equipment during operation. Allow the equipment to cool before any maintenance is performed on the engine. Relieve all pressures in the hydraulic system, fuel system, lubrication system, or cooling system before any lines, fittings, or related items are disconnected.

OIL

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact the skin.

Keep all of the exhaust manifold and turbocharger heat shields in place in order to protect components from oil spray if there is a failure of a line, tube, or seal.

CRUSHING PREVENTION AND CUTTING PREVENTION

Support the equipment properly when work beneath the equipment is performed.

Unless other maintenance instructions are provided never attempt adjustments while the engine is running. Stay clear of all rotating parts and moving parts. Leave the guards in place until maintenance is performed. After the maintenance is performed reinstall the guards.

Keep objects away from moving fan blades. The fan blades will throw objects or cut objects. Wear protective glasses in order to avoid injury to the eyes. Chips or other debris may fly off objects when objects are struck. Before objects are struck, ensure that no one will be injured by flying debris.

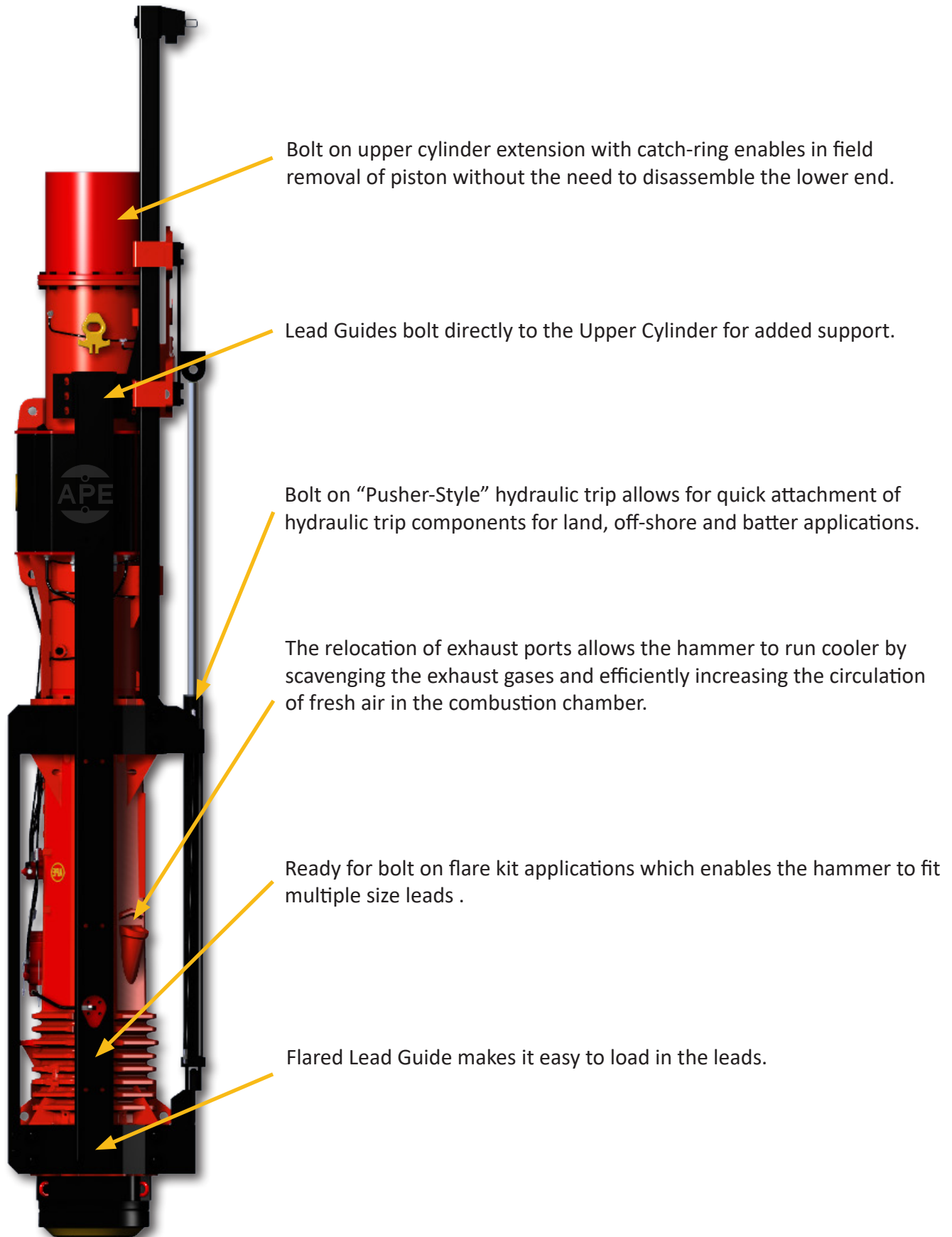
MOUNTING AND DISMOUNTING

Do not climb on the equipment, and do not jump off the equipment. Do not stand on the components which can not support your weight. Mount the equipment and dismount the equipment only at locations that have a ladder or handholds.

Diesel Hammer Features & Benefits



Diesel Hammer Features & Benefits



Lubrication Instructions



LUBRICATION INSTRUCTIONS

Call APE at 253-872-0141 or your nearest APE branch location.
Visit our website at www.americanpiledriving.com for free training CD's.

WARNING: Do not use general purpose grease like that used to lubricate crane parts. Use high temperature moly graphite type grease only. Improper grease will burn & seize up the piston rings and cause hammer to lose compression. A loss in compression can cause increased ram velocity at impact which may mushroom the end of the piston.

DAILY COMPRESSION CHECK

Dry fire hammer by tripping hammer while fuel is shut-off. Piston should strike anvil & then bounce upwards then slowly settle down onto top of anvil. Count the seconds it takes for the piston to stop bouncing from compression. If less than 10 seconds is recorded, then re-ring the hammer. Check for bore cylinder sleeve damage. Call APE for a free checklist of steps to take when rebuilding a diesel hammer.

GREASING INSTRUCTIONS

Grease lower impact block area every 20 minutes of driving time. Never grease the lower part of the hammer while anvil is sticking out or you will inject grease into the hammer cylinder.

CHECKING LUBE PUMP

If lube pump is not pumping oil, the ram will appear dry. Dump 2-cycle motor oil on top of piston to aid in lubrication. When time permits, remove lube pump & check wear parts for damage. All APE lube pumps are self-bleeding & do not need priming. A very metallic looking piston means the lube pump is not working properly. A dark oil piston or ram with oil dripping off the hammer is a good indication that the oil pump is over-oiling. Too much oil may cause excessive smoke & premature ring wear.

Oil Type: This diesel hammer is a 2-cycle engine. Use 2-stroke motor oil.

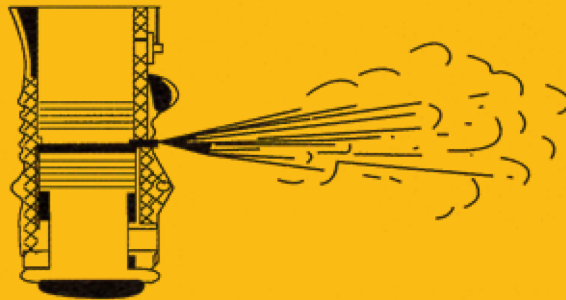
NEVER DRY FIRE A DIESEL HAMMER TO CLEAN THE COMBUSTION CHAMBER USE BLOW PLUG INSTEAD

Grease recommendations:

Bel Ray Molyube Extreme Pressure AC 2
Schaeffer Moly EP 274 Synthetic Plus

Oil recommendations:

Bel Ray Mc1 2 Cycle
Summer: Motor Oil SAE 40/50
Winter: Motor Oil SAE 20



Note: Water can build up in the combustion chamber from rain or condensation. If not removed, this water can be forced up the injector & into the fuel pump or even the fuel tank. Water is the main source of downtime on a diesel hammer. Blow out your hammer each morning. Failure to do so will result in hard starting & irregular stroke. Never dry fire a hammer to remove unwanted water or oil.

ADDITIONAL WARNING: While wearing eye protection, each morning, prior to driving piles, please remove the plug located on the lower cylinder at the main combustion area & dry fire the hammer to blow out unwanted fuel that may have built up overnight. Drop piston once or twice & then replace plug.

October 2021

Scan for more Diesel
Information



000133

Warning Labels

WARNING

**STANDARD REFUSAL IS CONSIDERED
10 BLOWS PER INCH.**

**MORE THAN 10 BLOWS WILL RESULT IN SERIOUS DAMAGE
TO THE PILEDRIVING EQUIPMENT.
PLEASE CONSULT APE / J&M IF YOU HAVE ANY QUESTIONS.
800-248-8498**

UPDATED: 10/2015

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WARNING

**THE GREASE SHIPPED WITH THIS HAMMER HAS BEEN
SELECTED ESPECIALLY FOR DIESEL HAMMERS AFTER
EXTENSIVE RESEARCH & DEVELOPMENT.
THE HAMMER MUST BE GREASED AFTER EACH 20 MINUTES
OF RUNNING TIME. THE FAILURE TO DO SO WILL CAUSE
INTERNAL DAMAGE, IMPAIR OPERATION & VOID ANY
WARRANTIES.**

AMERICAN PILEDRIVING EQUIPMENT, INC.

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**NO MORE
THAN 10
BLOWS
PER INCH**

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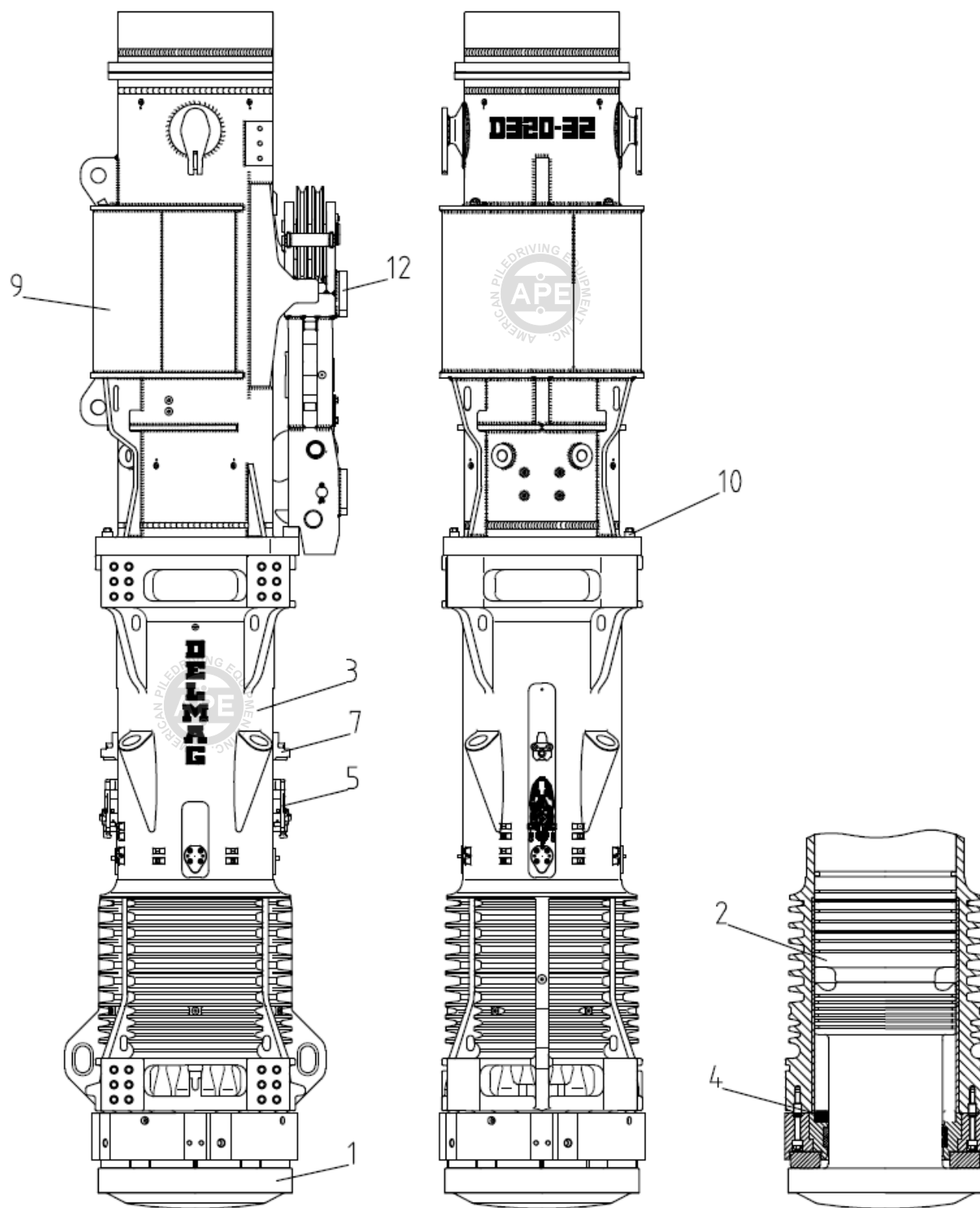
NOTICE

When operating the hammer, do not exceed 10 blows per inch or 120 blows per foot. In cases of setting of the pile it is permitted to increase the blow count to 250 blows per foot, but for no more than one foot of driving penetration. Pile inspectors should consult the APE factory for permission to exceed these limits. Failure to do so will void the warranty.

REFUSAL CRITERIA



Diesel Pile Hammer D320 Assembly



REPLACEMENT PARTS

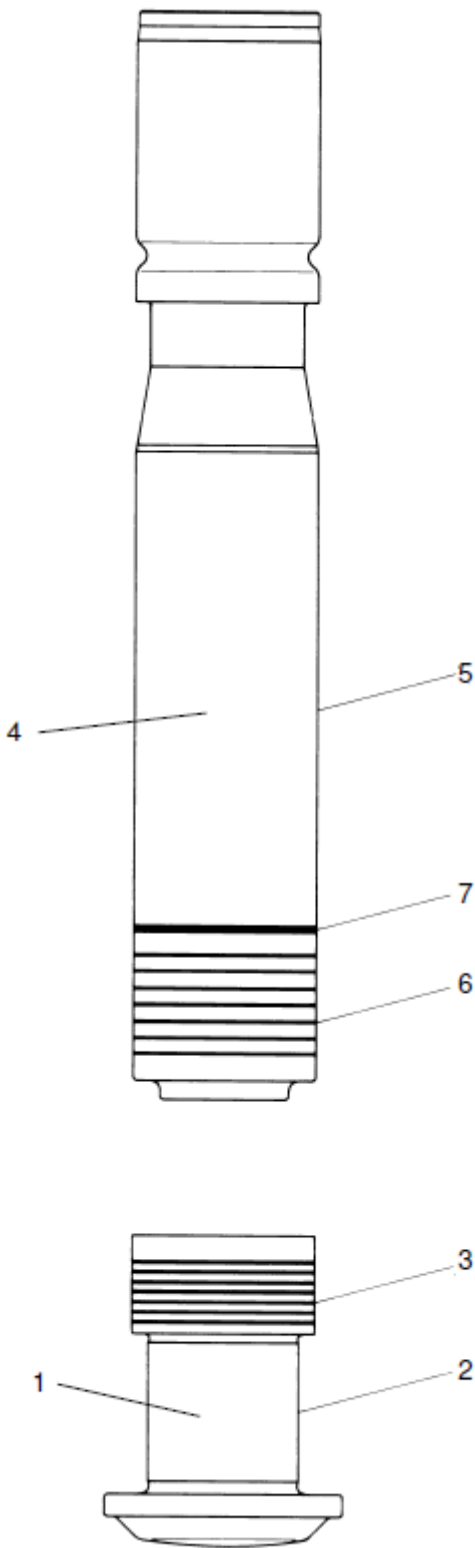
Diesel Pile Hammer D320 Assembly

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
-	200201	Diesel Pile Hammer	1	
-	200299	Diesel Pile Hammer Assembly	1	
1	185813	Impact Block Assembly	1	
2	200205	Striking Weight (Piston) Assembly	1	
3	185802	Lower Cylinder Assembly	1	
4	185837	Inner Damping Ring	1	
5	200215	Fuel Injection Device	2	
6	200214	Fuel Line/Breather Line Assembly	1	
7	150165	Lubrication Pump Assembly	2	
8	185819	Lubrication Line with Connecting Parts	1	
9	185840	Upper Cylinder with Tank Assembly	1	
10	185889	Set of Connecting Parts	1	
11	185884	Transport Protection Kit Assembly	1	
12	185860	Tripping Device Assembly	1	
-	185880	Tool Assembly	1	
-	-	Set of Signs	1	

REPLACEMENT PARTS



Impact Block Assembly

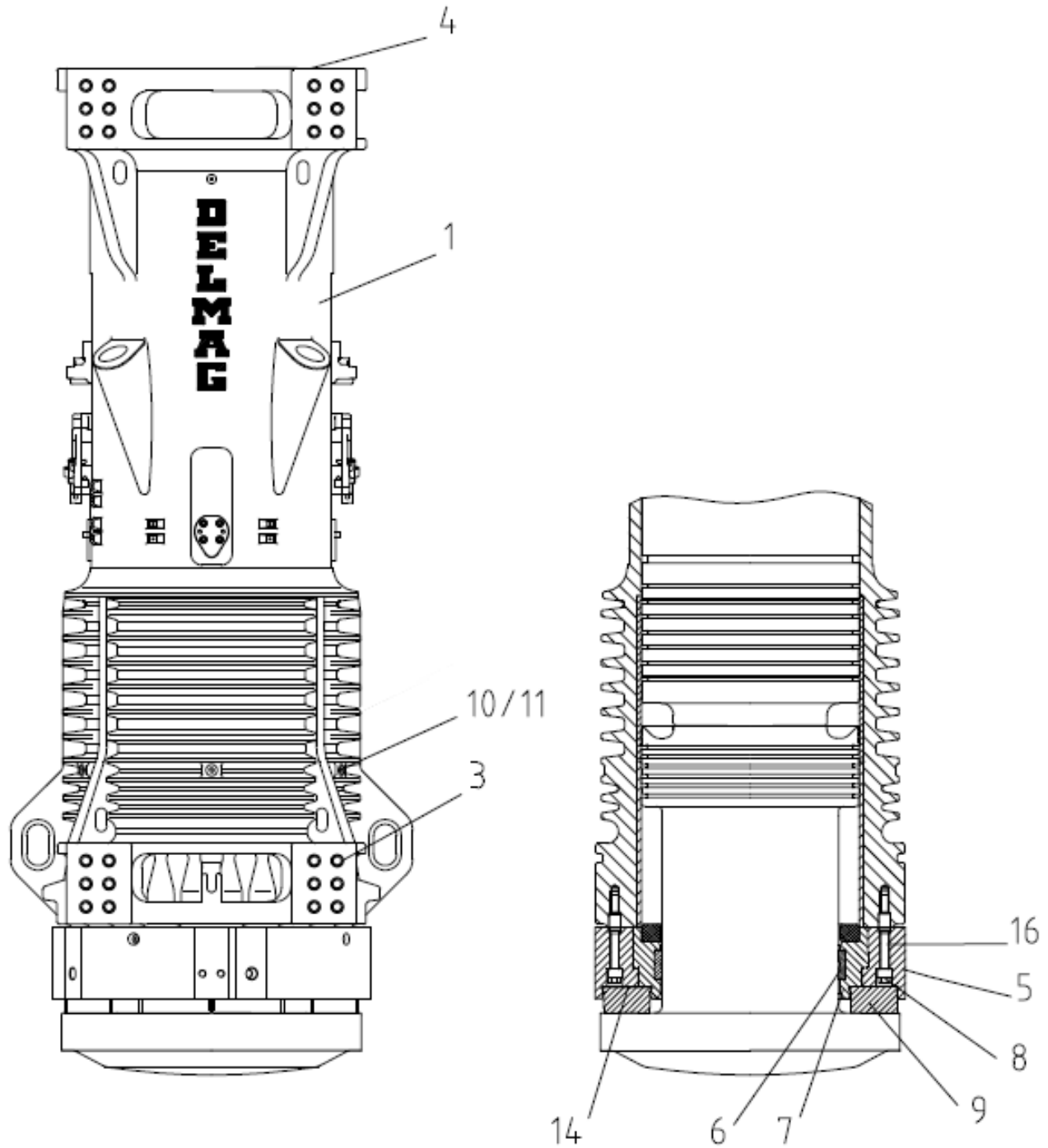


Impact Block Assembly

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
1	185813	Impact Block Assembly	1	
2	185814	Impact Block	1	
3	185812	Piston Ring	5	
4	200204	Striking Weight (Piston) Assembly	1	
5	200205	Striking Weight (Piston)	1	
6	185812	Piston Ring	7	
7	185822	Catch Piston Ring	1	



Lower Cylinder Assembly



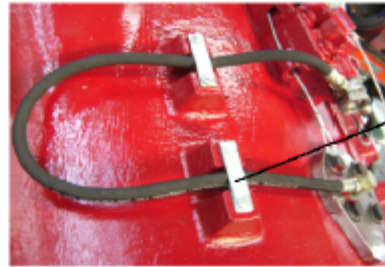
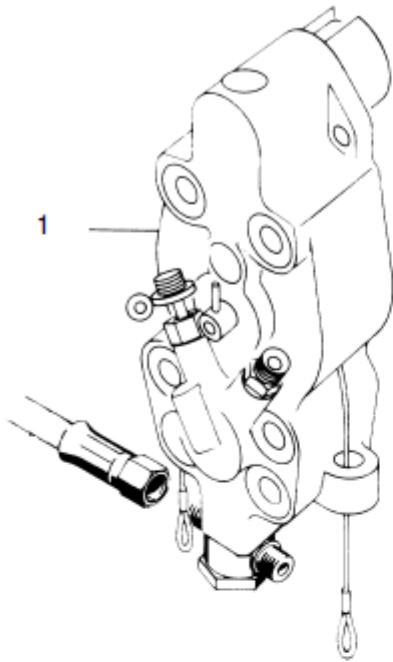
Lower Cylinder Assembly

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
-	185802	Lower Cylinder Assembly	1	
1	185803	Lower Cylinder	1	
2	-	Cylinder Sleeve	2	
3	198735	Threaded Insert	48	
4	94281	Tension Bush	48	
-	200208	Cylinder End Ring Assembly	1	
5	200209	Cylinder End ring	1	
6	185839	Ring 2 Pieces	1	
7	200224	Ring 2 Pieces	1	
8	187309	Reduced Screw	24	
9	149622 / 200225	Rubber Ring 8 Piece	1	
10	200222	Reducer	4	
11	90791	Grease Nipple	10	
12	185835	Plug Screw	1	
13	90002	Sealing Ring	1	
14	148658	Ring 2 Piece	1	

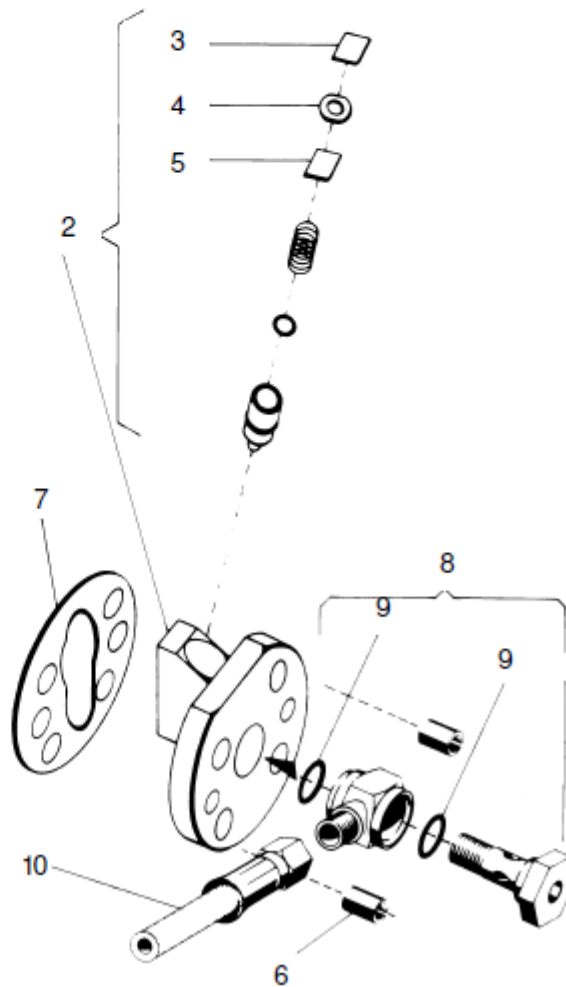
REPLACEMENT PARTS



Fuel Injection System Assembly



11/12/13



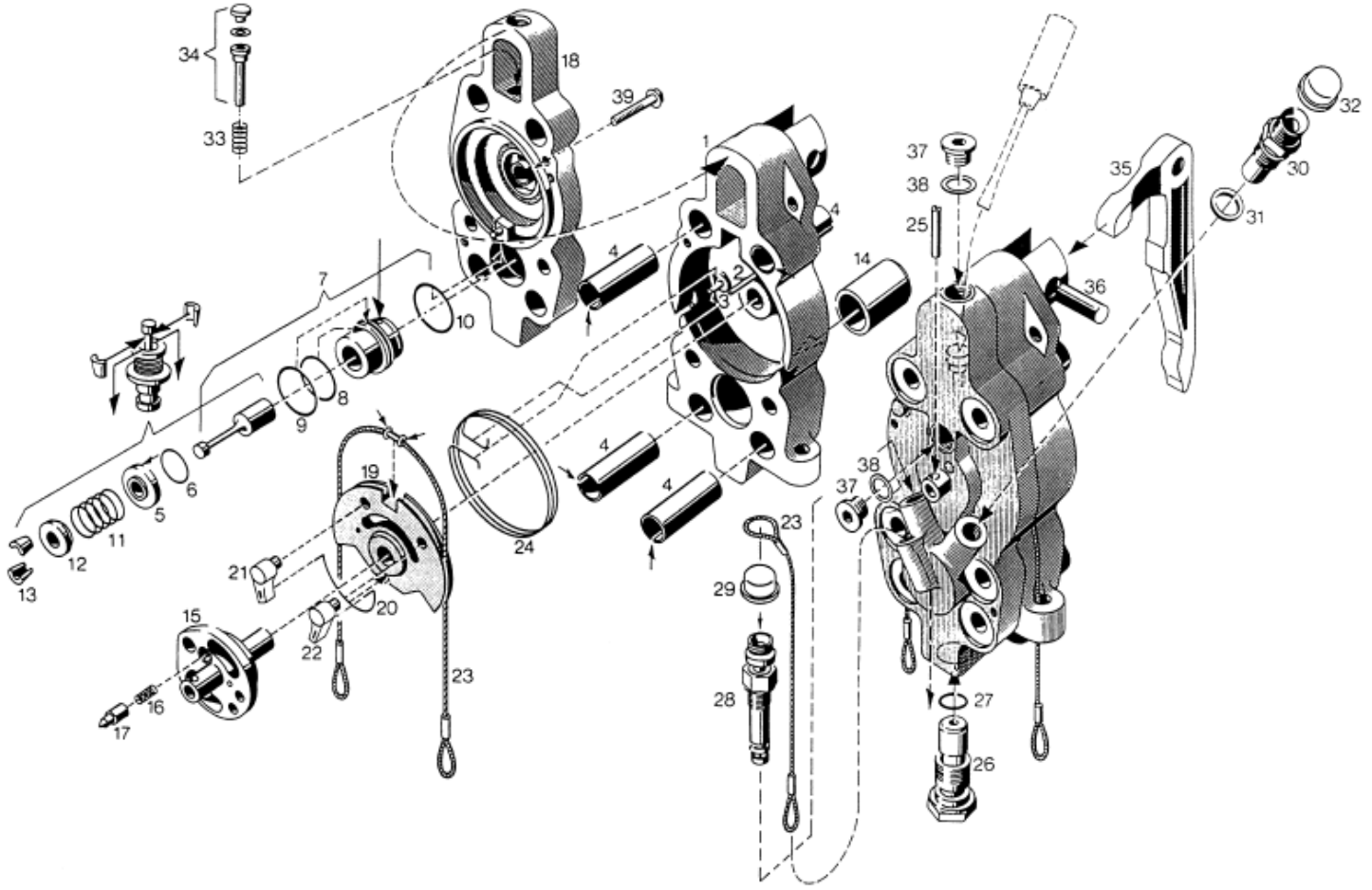
Fuel Injection System Assembly

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
-	200215	Fuel Injection System Assembly	1	
1	186915	Variable Delivery Fuel Pump	2	
-	185818	Injection Valve With Line Assembly	1	
2	185806	Injection Valve Assembly 23deg	4	
3	64460	Locking plate	1	
4	64461	Disk Spring	1	
5	64460	Locking Plate	1	
6	95633	Dowel Pin	8	
7	45647	Sealing	4	
8	97038	Fitting	4	
9	97258	Sealing	2	
10	185815	Hydraulic Hose	4	
11	66954	Latch	4	
12	66950	Clip	4	
13	93412	Locking Bolt	8	

REPLACEMENT PARTS



Variable Fuel Pump Assembly



REPLACEMENT PARTS

NO.	APE PART NUMBER	DESCRIPTION	1QTY	REMARKS
-	186915	Variable-Delivery Fuel Pump	1	
1	186863	Pump Body Assembly	1	
2	90155	Dowel Pin	1	
3	90137	Dowel Pin	1	
4	94315	Dowel Pin	4	
5	43994	Holder Ring	1	
6	92996	Round Sealing Ring	1	
7	186975	Pump Element Assembly	1	
8	91339	Round Sealing Ring	1	
9	91322	Round Sealing Ring	1	
10	95933	Round Sealing Ring	1	

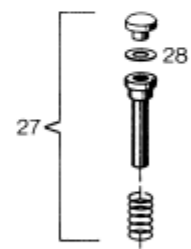
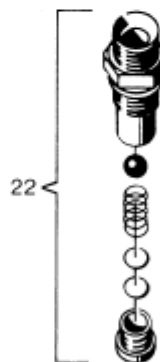
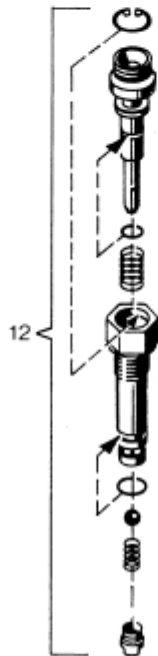
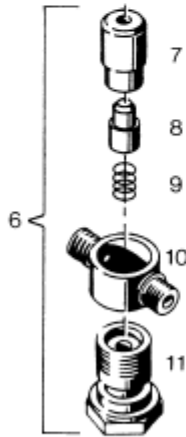
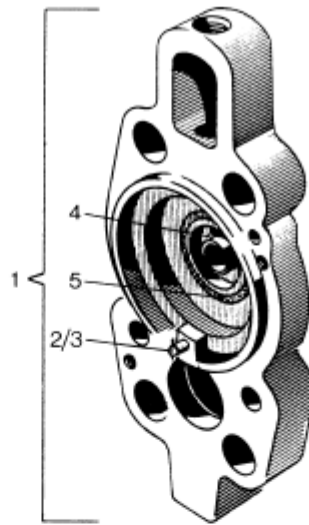
Variable Fuel Pump Assembly

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
11	22060	Pressure Spring	1	
12	22058	Spring Retaining Collar	1	
13	22059	Conical Ring 2 Piece	1	
14	43287	Guide Sleeve	1	
15	43308	Switch Shaft	1	
16	22044	Pressure Spring	1	
17	22049	Screen Pin	1	
18	186861	Pump Cover Assembly	1	
19	22040	Rope Disc Assembly	1	
20	22245	Spring	1	
21	22051	Cam	1	
22	22052	Cam	1	
23	17546	Regulating Rope	2	
24	22062	Swivel Spring	1	
25	90150	Dowel Pin	1	
26	60827	Non-return Valve Assembly	1	
27	91296	Round Sealing Ring 22x3	1	
28	186867	Stop Valve Assembly	1	
29	93236	Protection Cap	1	
30	186865	Suction Valve Assembly	1	
31	92031	Sealing Ring	1	
32	93236	Protection Cap	1	
33	22046	Pressure Spring	1	
34	62125	Pressure Piece Assembly	1	
35	186873	Pump Lever	1	
36	22043	Pin	1	
37	93055	Plug Screw	2	
38	90002	Sealing Ring	2	
39	93456	Locking Bolt	1	

REPLACEMENT PARTS



Variable Fuel Pump Assembly Cont.



REPLACEMENT PARTS

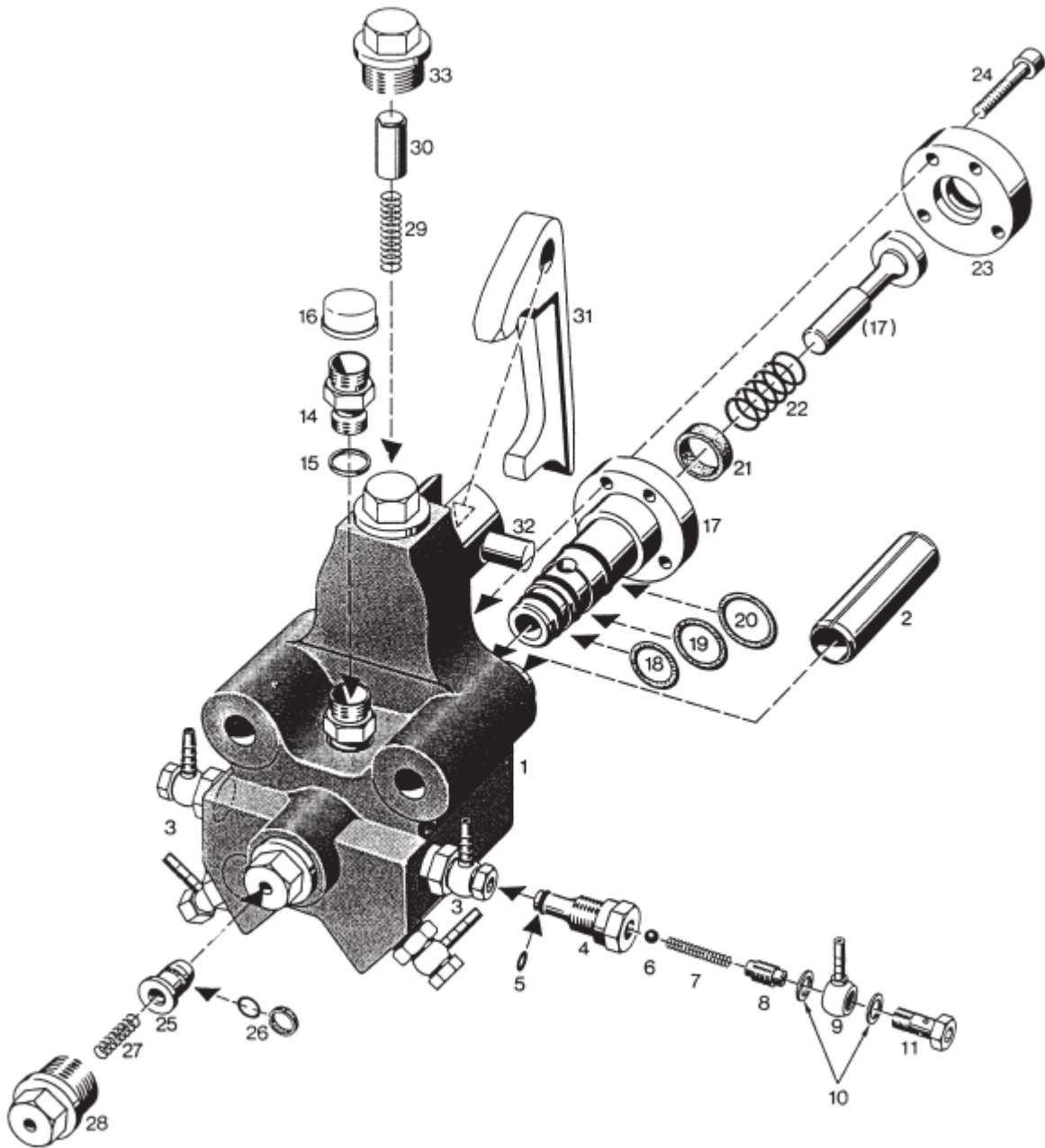
Variable Fuel Pump Assembly Cont.

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
1	186861	Pump Cover Assembly	1	
2	90231	Dowel Pin	1	
3	22796	Stop	1	
4	43307	Stop Pin	1	
5	22050	Ring	1	
6	60827	Non-return Valve Assembly	1	
7	43297	Housing	1	
8	43299	Valve Piston	1	
9	22034	Pressure Spring	1	
10	60195	Ring Stud	1	
11	60194	Bolt	1	
12	186867	Stop Valve Assembly	1	
22	186865	Suction Valve Assembly	1	
27	62125	Pressure Piece Assembly	1	
28	97332	Adjusting Washer	x	
28	97348	Adjusting Washer	x	
28	97333	Adjusting Washer	x	
28	97334	Adjusting Washer	x	

REPLACEMENT PARTS



Lube Pump Assembly



REPLACEMENT PARTS

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
-	150165	Lube Pump Assembly	2	
1	108315	Pump Body	1	
2	94315	Dowel Pin	2	
3	108317	Pressure Valve Assembly	3	
4	108319	Adapter (Tube to Thread)	1	
5	97855	O-Ring	1	
6	90307	Ball	1	

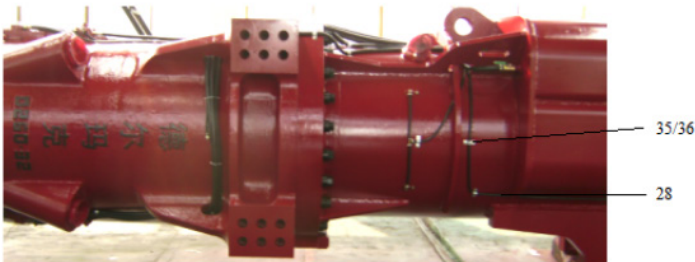
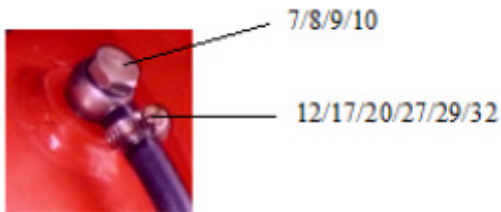
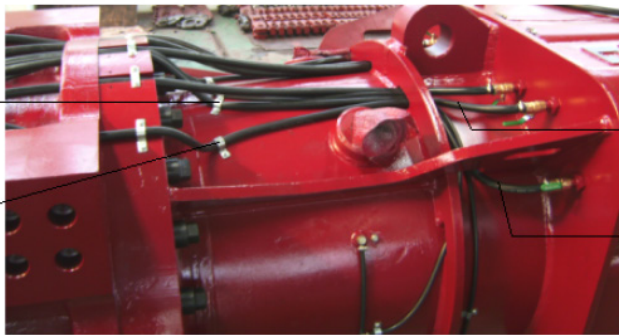
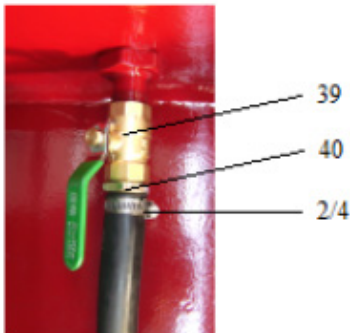
Lube Pump Assembly

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
7	190005	Pressure Spring	1	
8	104679	Threaded Plug	1	
9	97949	Ring Type Nipple	1	
10	91417	Sealing Ring	2	
11	97948	Hollow Screw	1	
14	67209	Adapter (Tube to Thread)	1	
15	92031	Sealing Ring	1	
16	93236	Protecting Cap	1	
17	67279	Cylinder Assembly	1	
18	91296	O-Ring	1	
19	91357	O-Ring	1	
20	92952	O-Ring	1	
21	67283	Ring	1	
22	67325	Pressure Spring	1	
23	67282	Washer	1	
24	90937	Socket Bolt	4	
25	67284	Piston Assembly	1	
26	97326	Slide Ring	1	
27	190479	Pressure Spring	1	
28	108328	Plug Screw	1	
29	22089	Pressure Spring	1	
30	22090	Sleeve	1	
31	22081	Pump Lever	1	
32	22082	Pin	1	
33	91976	Pin Screw	1	

REPLACEMENT PARTS



Lubrication Line with Connecting Parts

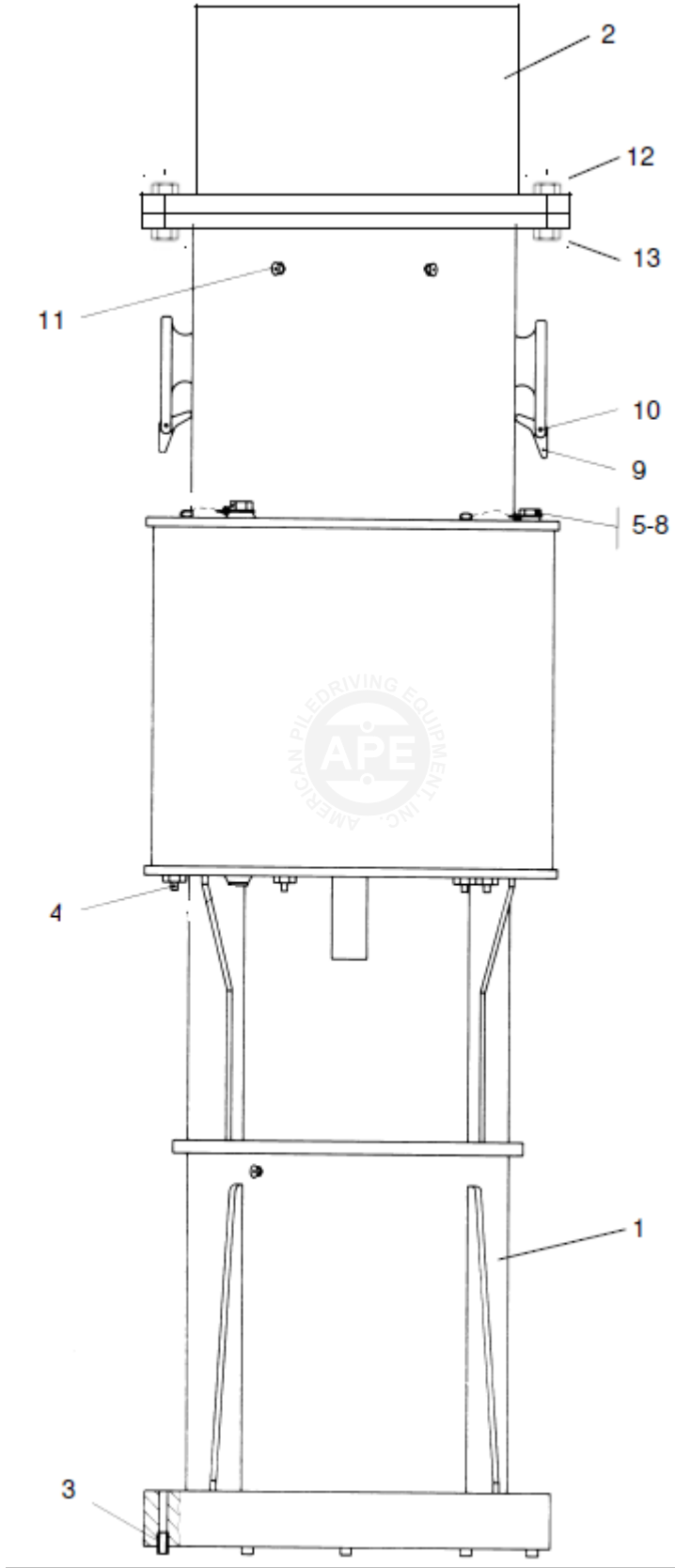


REPLACEMENT PARTS

Lubrication Line with Connecting Parts

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
-	185819	Lubrication line with connecting parts	1	
1	98549	Hose 2.9m long	1	
2	94299	Hose clip	1	
3	98561	Hose 4.6m long	1	
4	94299	Hose clip	1	
5	16235	Clip	2	
6	93412	Locking screw	46	
7	91417	Sealing ring	13	
8	97949	Ring Stud	13	
9	91417	Sealing Ring	13	
10	97948	Hollow Screw	13	
11	109862	Hose 1m long	2	
12	95115	Hose clip	4	
13	94522	Stud	2	
14	41987	Hose 0.45m long	4	
15	95115	Hose clip	8	
16	43323	Hose 5.24m long	1	
17	95115	Hose Clip	2	
18	94522	Stud	1	
19	43328	Hose 0.37m long	2	
20	95115	Hose Clip	4	
21	109861	Hose 1.65m long	2	
22	95115	Hose Clip	4	
23	94522	Stud	2	
26	41989	Hose 0.31m long	2	
27	95115	Hose Clip	4	
28	190864	Hose 4.8m long	1	
29	95115	Hose Clip	2	
30	94522	Stud	1	
31	43328	Hose 0.37m long	2	
32	95115	Hose clip	4	
33	41982	Clip	8	
34	93412	Locking Bolt	6	
35	2932	Clip	3	
36	93412	Locking Bolt	8	
37	43478	Clip	6	
38	93412	Locking Bolt	12	
39	-	Ball Valve	6	
40	-	Reducer	6	

Upper Cylinder Assembly



REPLACEMENT PARTS



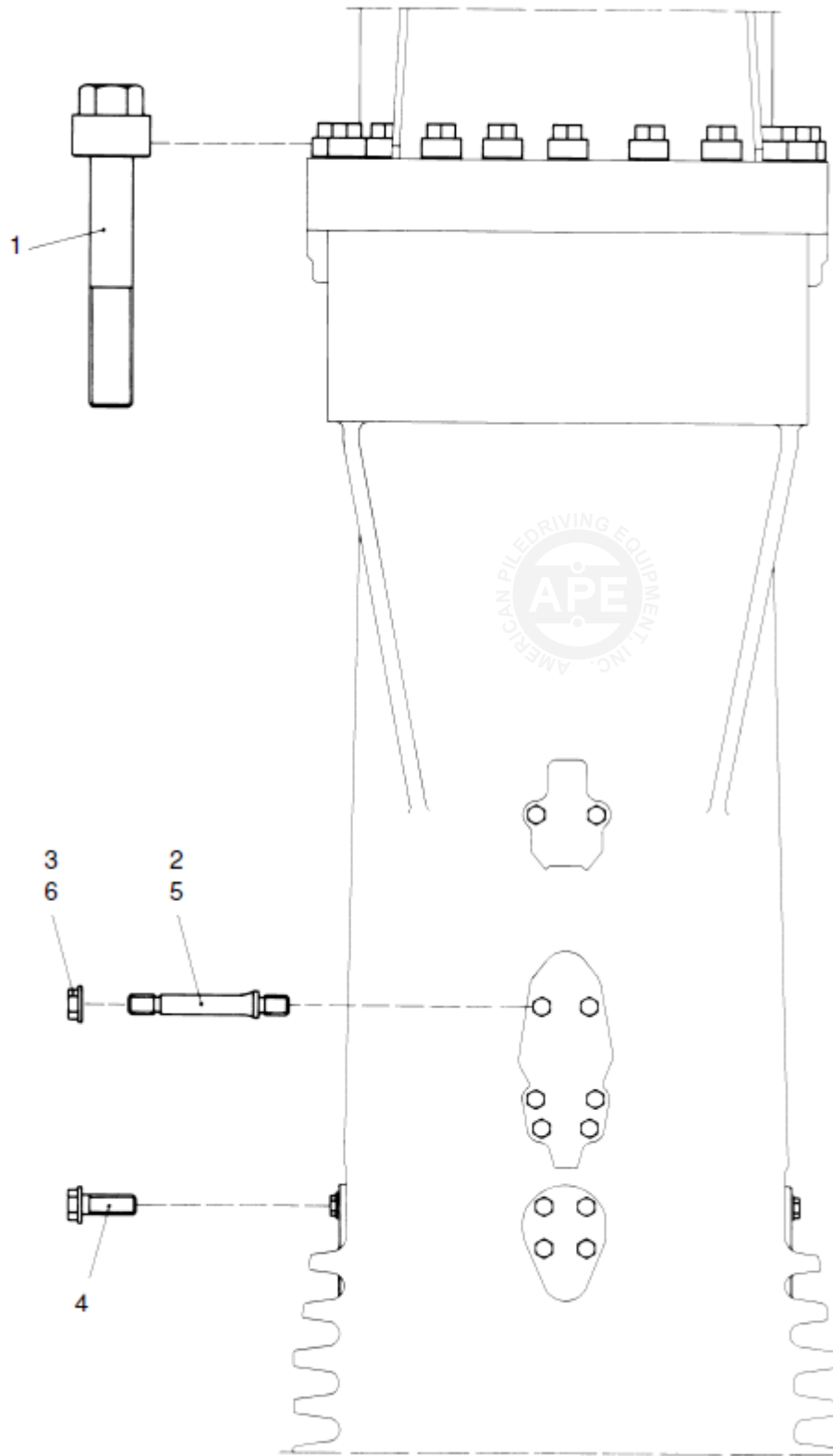
Upper Cylinder Assembly

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
-	185840	Upper Cylinder Assembly	1	
1	185841	Upper Cylinder	1	
2	185855	Upper End Ring	1	
3	94281	Tension Bushing	24	
4	186853	Filter Nozzle	6	
5	17186	Plug Screw "Diesel"	3	
6	2253	Chain Link, Exchangeable	3	
7	17188	Plug Screw "Oil"	1	
8	2253	Chain Link, Exchangeable	1	
9	177065	Ratchet	2	
10	90325	Dowel Pin	2	
11	90791	Grease Nipple	8	
12	DIN 931	Hexagon Bolt M27x150 10.9	21	
13	DIN 980	Hexagon Nut M27 -10	21	

REPLACEMENT PARTS



Set Of Connecting Parts

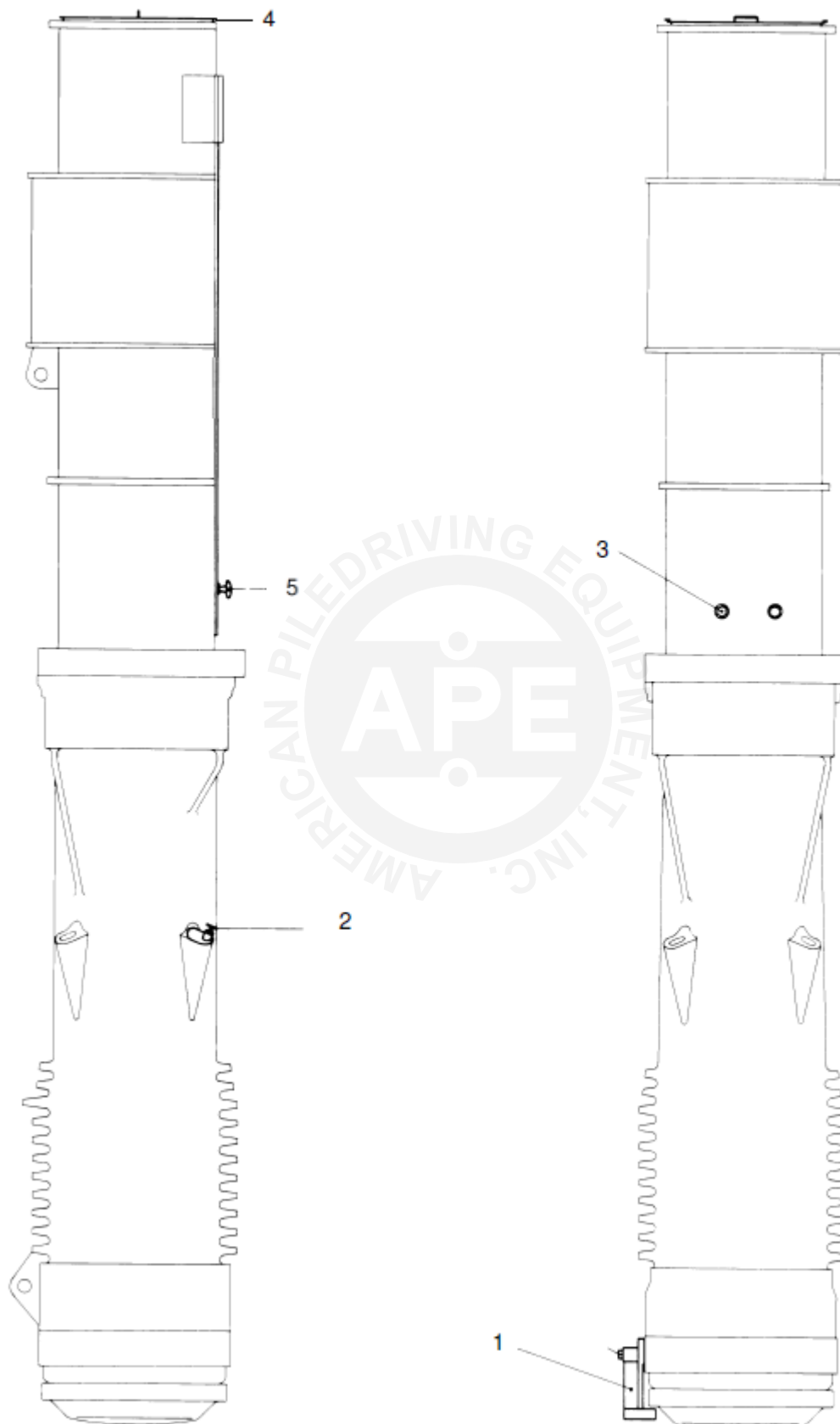


Set Of Connecting Parts

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
-	185889	Set of Connecting Parts	1	
1	20038	Reduced Screw	24	
2	20189	Stud Bolt	12	
3	94722	Locking Nut	12	
4	95639	Locking Screw	16	
5	20189	Stud bolt	4	
6	94722	Locking Nut	4	



Transport Protection Assembly

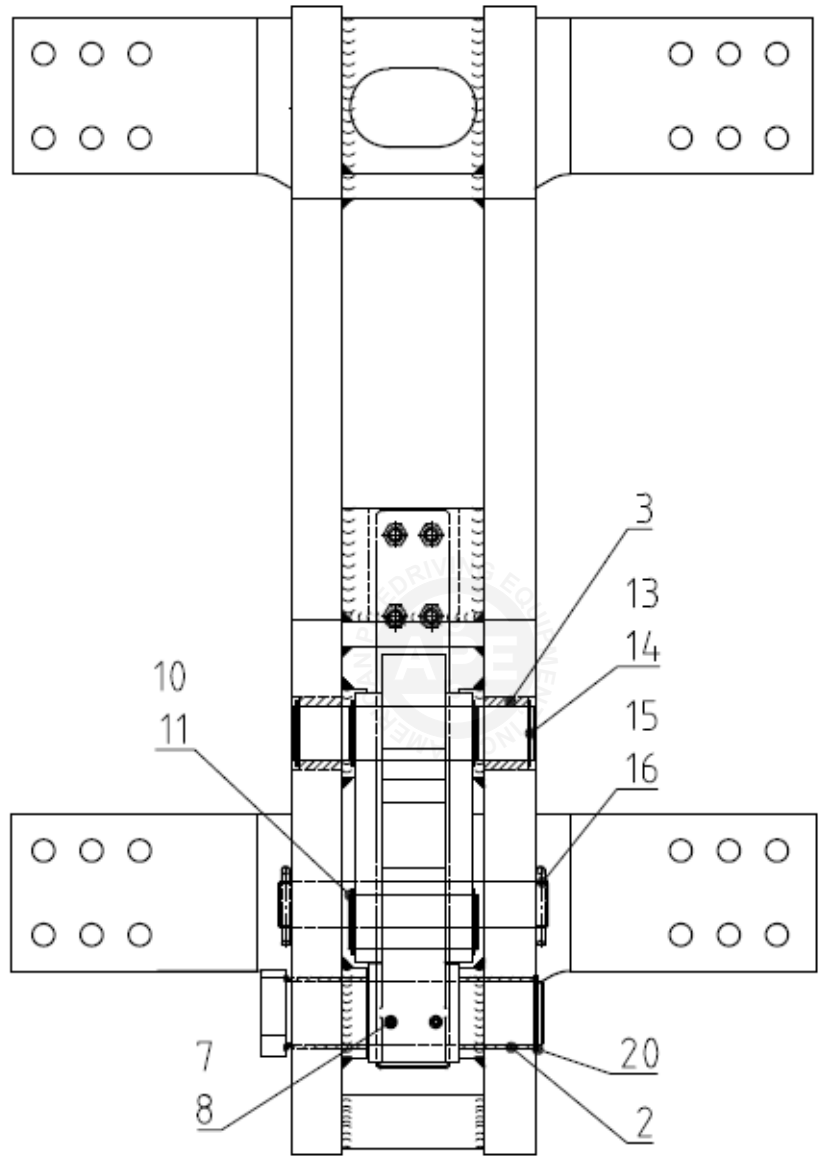
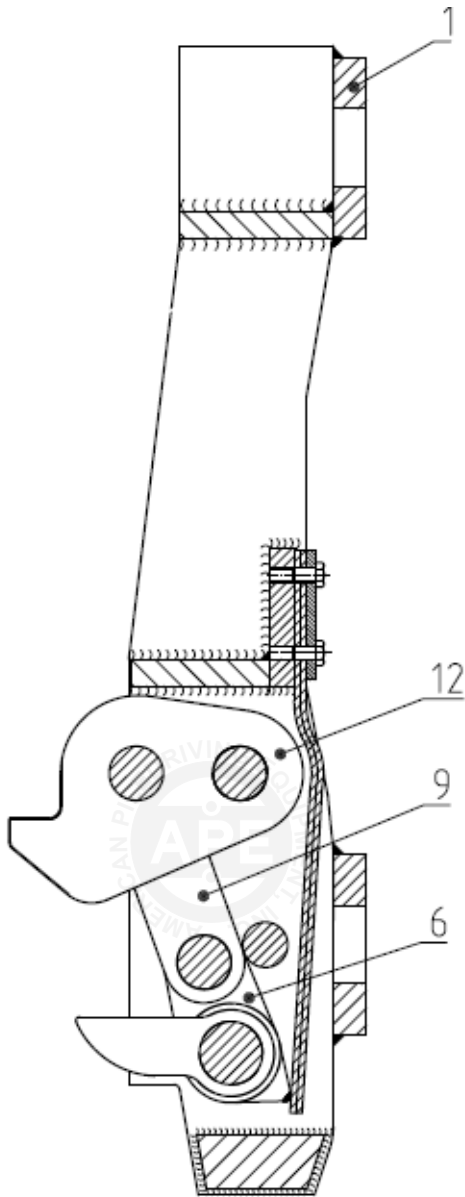


Transport Protection Assembly

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
-	185884	Transport Protection Kit	1	
1	185885	Impact Block Securing Clamp	1	
2	185888	Exhaust Cover Assembly	4	
3	147785	Locking Screw	2	
4	185887	Protection Cover	1	
5	185886	Cylinder Slow Cover Cpl.	1	



Tripping Device Assembly



Tripping Device Assembly

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
-	185860	Tripping Device Assembly	1	
1	185861	Guide Body Assembly	1	
2	148689	Sleeve	2	
3	149606	Sleeve	2	
5	90791	Grease Nipple	1	
6	185823	Cam with Lever Assembly	1	
7	198736	Dowel Pin	2	
8	198737	Dowel Pin	2	
9	148682	Latch	2	
10	148691	Joint Bolt	2	
11	94585	Circlip	4	
12	185868	Pawl	1	
13	148692	Pin	1	
14	94585	Circlip	2	
15	149767	Pin	1	
16	90638	Split Pin	2	
17	185869	Leaf Spring	2	
18	185829	Plate	1	
19	95639	Locking Screw	4	
20	1x	Circlip	1	

REPLACEMENT PARTS



Tools and Accessories

NO.	APE PART NUMBER	DESCRIPTION	QTY	REMARKS
	185880	Tool Box Assembly	1	
	90890	Tool Box Empty	1	
	185881	Piston Ring Installation Strap Assembly	1	
	135880	Piston Ring Installation Strap Assembly	1	
	22700	Assembly Plate	2	
	192191	Rope 35m	4	
	1129	Rope 70m	2	
	189967	Ring Screw M80	1	
	198737	Dowel Pin 12x160	2	
	198736	Dowel Pin 20x160 Din 1481	2	
	90791	Grease Nipple M10x1	2	
	90795	Grease Gun	1	
	93551	Lubricant	1	
	90670	Oil Can	1	
	89015	Sealing Compound	1	
	92133	Safety Helmet	1	
	90196	Ratchet Spanner	1	
	90199	Socket Wrench Insert SW46	1	
	95071	Double Ended Open Spanner 13x17 DIN 895	1	
	92015	Double Ring Spanner 17x19 DIN 838	1	
	90443	Double Ended Open Spanner 19x22 DIN 895	1	
	95834	Double Ring Spanner 22x24 DIN 838	1	
	90465	Single Ended Open Spanner 27 DIN 894	1	
	93368	Double Ended Open Spanner 30x32 DIN 838	1	
	192138	Ring Spanner 46	1	
	90055	Angled Screw Driver 5 DIN 911	1	
	90862	Angled Screw Driver 6 DIN 911	1	
	90657	Angled Screw Driver 8 DIN 911	1	
	90469	Angle Screw Driver 10 DIN 911	1	
	90079	Angle Screw Driver 14 DIN 911	1	
	90194	Angle Screw Driver 19 DIN 911	1	
	90178	Punch D4 DIN 6458	1	
	93348	Punch D8 DIN 6458	1	
	93349	Punch C12	1	
	90354	Punch C16	1	
	90785	Pliers A19 DIN 5254	1	
	197668	Warning Sign 28 DWN 203	1	



REFERENCE / NOTES

RECOMMENDED BOLT TIGHTENING TORQUE “LUBRICATED SHCS”

Socket Head Cap Screws

When installing any APE equipment or parts apply lubricant and use APE standard **Anti-Seize** torque specs.
See Tightening Torque Spec below. Failure to follow tightening torque spec can result in under / over tightening fasteners, leading to equipment failure or personal injury.



COARSE THREADS

Nominal Screw Size	Nominal Socket Size	Tightening Torque (ft-lbs)
#10-24	5/32	6
.25-20	3/16	10
.31-18	1/4	22
.38-16	5/16	38
.44-14	3/8	61
.50-13	3/8	93
.63-11	1/2	179
.75-10	5/8	317
.88-9	3/4	511
1.00-8	3/4	767
1.25-7	7/8	1,533
1.50-6	1	2,668

FINE THREADS

Nominal Screw Size	Nominal Socket Size	Tightening Torque (ft-lbs)
#10-32	5/32	6
.25-28	3/16	12
.31-24	1/4	24
.38-24	5/16	43
.44-20	3/8	68
.50-20	3/8	105
.63-18	1/2	202
.75-16	5/8	354
.88-14	3/4	564
1.00-12	3/4	860
1.25-12	7/8	1,697
1.50-12	1	3,001

RECOMMENDED ANTI-SEIZE LUBRICANT

BENEFITS & FEATURES

- **Excellent Anti-Seize** Prevents seizing caused by galling, galvanic action, fretting, fusion, pitting, thread distortion, breakage, rust, and corrosion.
- **Water Resistant** Provides long term protection with just one application, outdoors or indoors, even in the damp areas or against salt spray. Will not wash off.
- **Wide Temperature Range** Coating withstands temperatures of -65 Degree F to 2100 Degree F. (-54 C to 1100 C)
- **Stable Coating** Will not harden or fuse to metal, cake, evaporate or separate
- **Compatible with many materials** Can be used as an anti-seize on the threads of steel, stainless steel, steel alloy, cast iron, aluminum, copper brass, and titanium parts and reduces friction and wear on plastic.
- **Environmentally Desirable** Past contains no lead compounds traditionally found in this type of product.



**WARNING: USING OTHER TYPES OF ANTI-SEIZE NOT RECOMMENDED BY APE CAN LEAD TO EQUIPMENT FAILURE OR PERSONAL INJURY.
WARRANTY WILL BE VOIDED AND FEES MAY APPLY.**

REFERENCE / NOTES



All information given in this Manual is current and valid per the information available at the time of publication. (Please check the updated revision date at the bottom of each page.)

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