

OPERATION AND SERVICE INSTRUCTION

PURPOSE:

This manual contains operation and service instructions for Type TA – 35 Ton, 65 Ton, 100 and 150 Ton. Included are assembly drawings and complete parts breakdown. This manual provides a guide for assembly and disassembly and repair.

DESCRIPTION:

BVM center latch elevator is used for handling plain, upset, drill collar, and casing with square shoulder.. The BVM elevator comes in sizes ranging from 1.05” through 8-5/8”, with a capacity of 35, 65, 100, 150 tons. Elevators are made from alloy steel; load tested and are magnetic particle inspected.

SECTION 2- INSTALLATION

The TA type elevators are easily installed on the links.

- 1) Remove cotter pin and nut from link block bolt and remove link block bolt.
- 2) Lift the bottom of the link block and hook the small end to the link through the link block and link arm.
- 3) Lower the link block and re-install the link block bolt, nut and cotter pin.
- 4) Repeat this procedure on the other link block.
- 5) To remove, simply reverse the installation process.

OPERATION:

The latch and safety latch lock of the TA elevators lock automatically when the elevator is closed around the pipe by using the front handles.. To open the elevator, simply pull the latch lock handle out and swing the elevator halves apart.

WARNING:

- Elevators are manufactured to operate only in a vertical direction and should **NEVER** be used for laying down on the ground for picking up pipe or tubing.
- **NEVER** use a Type “TA” Elevator for clamping around a taper pipe by using the taper to hold the string of pipes.
- Be sure to use the handles provided for opening and closing the elevator. Keep hands away from all other areas when the elevator is in use.
- Check the latch and latch lock for full engagement when closed around the pipe.
- Make sure the TA elevators are used with the correct size, tubing or pipe. (per specifications). Oversized pipe could result in the elevator latching partially or not at all. Undersized or oversized pipe could cause uneven stress distribution. Inadequate load-bearing area, and possible elevator failure.
- Elevator’s are made from cast alloy steel and should not be welded in the field. Improper welding can cause cracks and brittleness in repaired area and can result in drastic weakening of the Elevator and Parts and possible Failure.
- Repairs which involve welding and or machining by others that is not authorized by BVM will void the warranty.
- Using an Elevator which has been improperly welded can result in serious bodily harm and property damage.
- Never use the elevator other than what it is intended for: size and tonnage, which is clearly marked (metal stamp) on elevator.

Note: If an elevator is used despite the above warnings BVM voids all warranties.

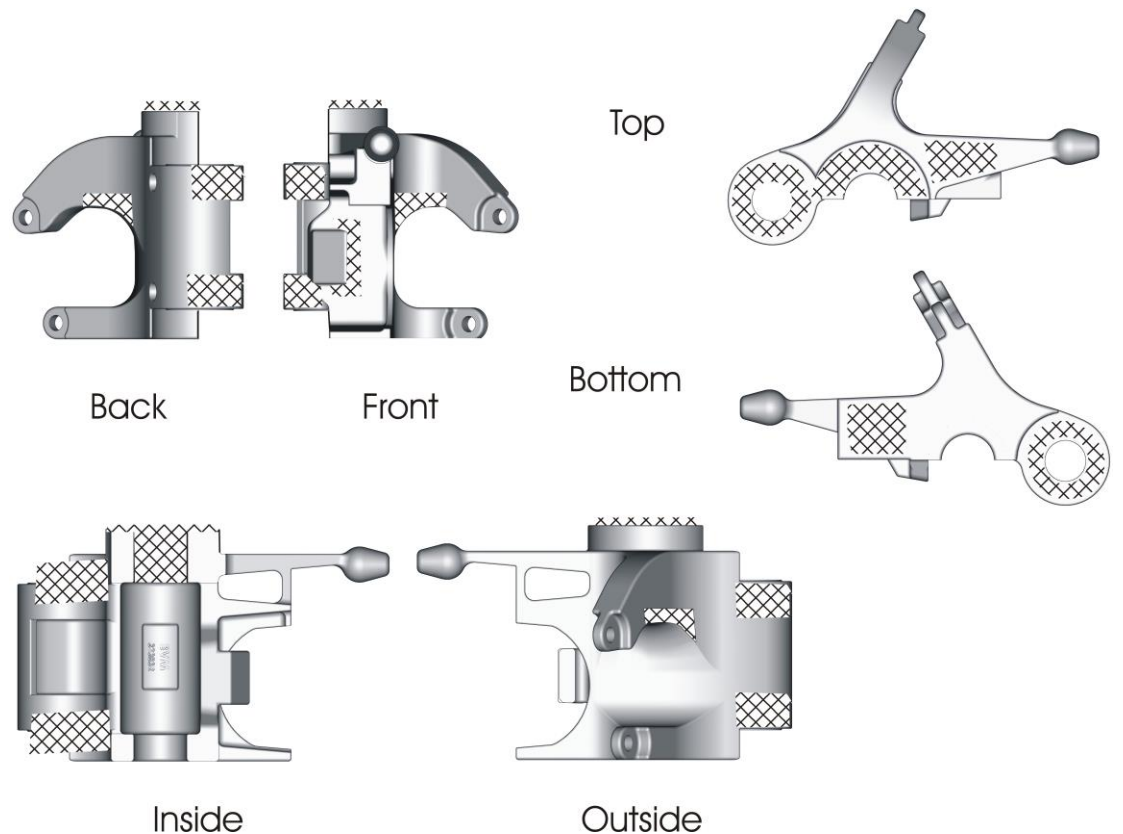
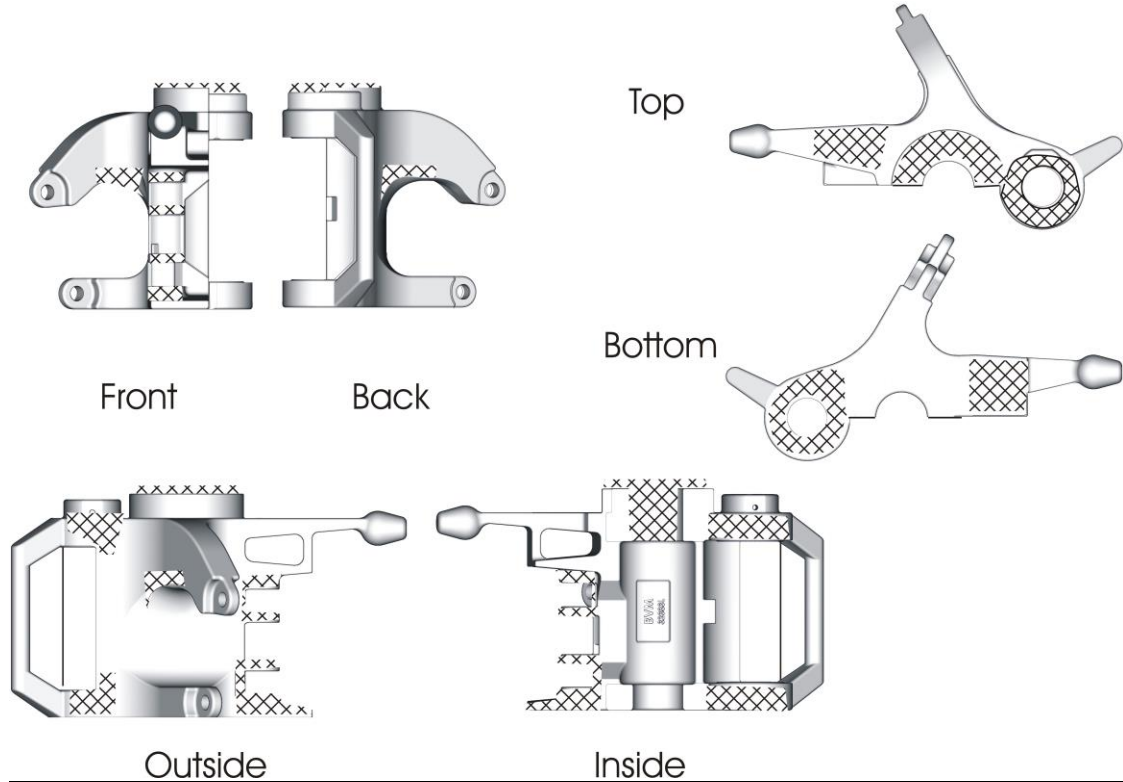
MAINTENANCE

Caution: Safety should be practiced at all times when servicing the equipment always use BVM Corporation, approved safety methods, material and tools. Always wear protective gear for eyes, head and hands.

1. Check for worn hinge pin, latch pin, latch lock pin, and their mating parts. These may hinder proper opening and closing of door, latch and latch lock.

2. Check for proper operating of latch stop mechanism. Latch should not stop against the body when engaged.
3. Open elevator and check hinge pin for wear by checking the radial play between the body and door.
4. Check latch pin for wear by checking the radial play between the latch and body. Close elevator and check that the latch and latch lock mechanisms function properly. Open and close elevator several times, check for proper latch and latch lock function each time. Check for proper operation of latch stop mechanism.

CRITICAL WEAR AREAS



LUBRICATION

Lubricate the Elevator regularly during usage and storage to prevent corrosion. Use an extreme pressure, multipurpose, lithium-based grease of No. 1 or No 2 consistency and multi-weight motor oil.

1. Lubricate on a regular basis when in use.
2. Oil or grease hinge, latch and latch lock pin
3. Grease hinge and latch pin through grease nipples.
4. Grease underside of link arms.
5. Grease springs.
6. Grease link retainer fasteners.
7. Lubricate regularly during usage and storage to prevent corrosion from Attacking any part of the elevators operating mechanism.

BVM CORPORATION EQUIPMENT REPAIR

Worn elevators are repaired to original high quality standards. When tools are received for repairs, they are dismantled and checked for dimensional accuracy and undergo magnetic particle inspection which includes a load test. Worn parts are replaced with new parts. After a second magnetic particle inspection the tools are reassembled and carefully checked.

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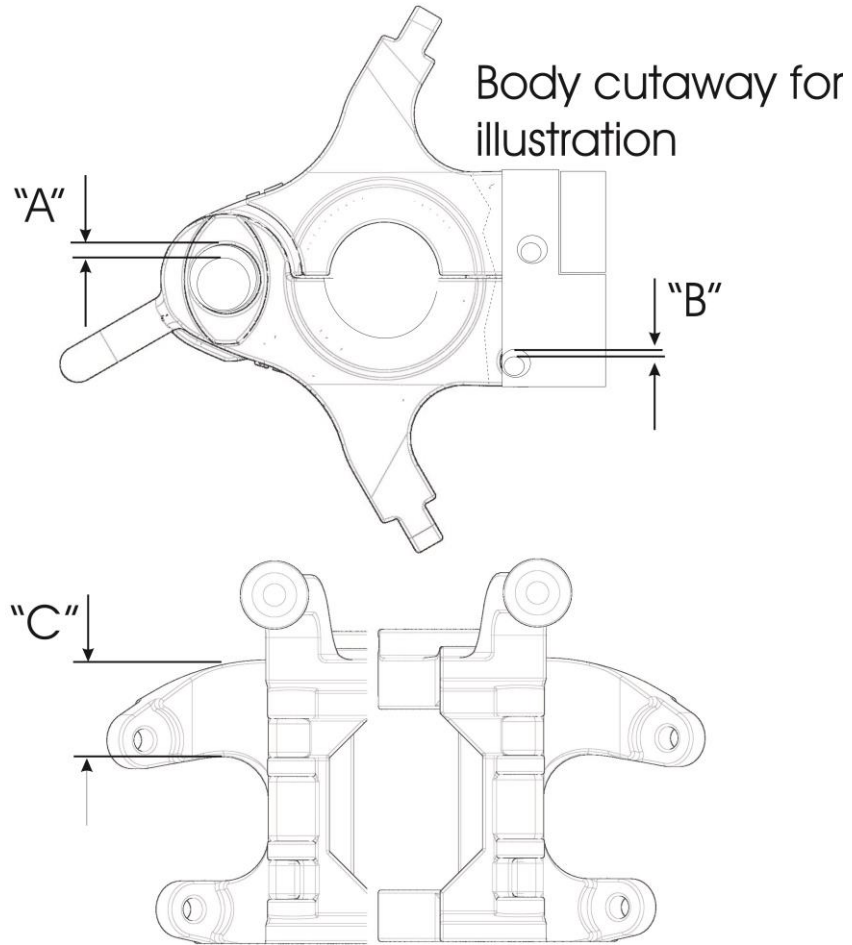
- Do not use any elevator if the Latch and Latch lock do not function properly.
- Use only parts manufactured and sold by BVM Corporation
- Re-machining of parts should be performed only at BVM Corporation. Improper machining could result in increased stress (Decreased Load carrying capability) or improper alignment of component parts. Either condition could be hazardous to personnel and equipment.
- Bodies and Doors should be matched by trained BVM personnel. For this reason, a body or door from one elevator should never be exchanged with a body or door from another elevator.
- Always wear gloves and eye protection when grinding, striking or handling parts.
- Do not use any elevator with wear in hinge pin, latch pin, and lock pin areas. Wear in these areas will cause latch and latch lock to function improperly and may cause failure.

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- Wear Data Illustration TA elevator

Maximum Wear Data to Maintain 100% Rating - BVM TA Elevators - 100 Ton - 65 Ton - 35 Ton

Elevator Part #	29960-xxx	32384-xxx	32383-xxx	32386-xxx	32385-xxx	32387-xxx
Rated Capacity	100 Ton	100 Ton	100 Ton	65 Ton	65 Ton	35 Ton
Hinge Pin side						
Hinge pin Part #	29963	32919-1	32915-1	32916	32914	32917
Total clearance "A"	0.030"	.030"	.030"	.030"	.030"	.030"
Hinge pin new Min	1.934"	1.934"	1.747"	1.747"	1.624"	1.247"
Bore Dia New Max	1.938"	1.938"	1.755"	1.755"	1.630"	1.255"
Bore Dia Worn Max	1.956"	1.956"	1.773"	1.773"	1.648"	1.273"
Latch Pin side						
Latch Pin part #	29334	32424-1	32424-5	32424-2	32424-3	32424-4
Total clearance "B"	0.030"	0.030"	0.030"	0.030"	0.030"	0.030"
Latch pin new Min	1.123	0.748	0.748	0.748	0.748	0.623
Bore Dia New Max	1.13	0.755	0.755	0.755	0.755	0.665
Bore Dia Worn Max	1.148	0.773	0.773	0.773	0.773	0.683
Link Ears						
Min. Dimension "C"	3"	2.32"	2.32"	2.0"	2.0"	2.0"