

SUPERIOR BOLTING SOLUTIONS



MANUAL **FLANGE** SPREADERS



TITAN
SUPERIOR BOLTING SOLUTIONS

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The MS10K Auto-Spreader™ is designed for spreading and lifting. It is a small, light and powerful precision tool. It generates 10,000 lbs. of spreading force by using a screw principle of operation. It is extremely versatile, and can be used wherever lifting power is needed.

Some Common Applications:

- Flange Spreading
- Controlled Lift, Level, and Align Heavy Equipment
- Shaft Replacement
- Impeller Replacement
- Separate Manways
- Change Gaskets, Turn Blinds

Safety Tips

- Always wear the appropriate protective equipment, such as safety glasses and gloves.
- **Never** use an extension on the ratchet wrench handle to increase the leverage. The Auto-Spreader™ is designed for maximum operation with the attached ratchet assembly. 100 ft-lbs. input at the ratchet generates 10,000 lbs. of force at the feet.
- Always use safety blocks under any load being lifted with the tool. See figure 1.
- Firmly hold the tool while turning the ratchet handle.
- Maintain a constant grip on the tool in the ratcheting mode.
- Never place any body parts between the tool and the equipment being worked on.

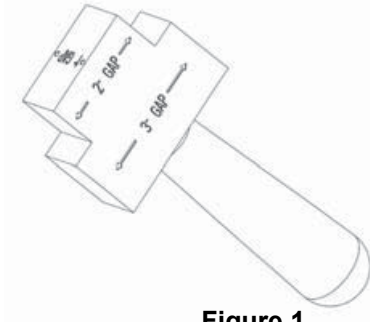


Figure 1

Safety Block Benefits

- **Multi-Step Design:** Each safety block has three steps - 1", 2", & 3", which allows the operator to choose the width of flange separation.
- **Light Weight with Easy Grip Handle:** Allows the operator to easily grip the safety block, even when wearing gloves.
- **Secure Support:** After the Auto-Spreader opens the flange, safety blocks are inserted in the gap between the flanges. The flange spreaders are then closed to transfer the load to the safety blocks, enabling the operator to work more safely on the gasket surfaces.

Operation

Important: Do not operate the tool before reading these instructions.

The Auto-Spreader is simple to use. The Auto-Spreader only needs .09" or 2.3 mm gap to engage the feet. The Auto-Spreader has a separating capacity of 3" spread under full load.

To spread: Set the ratchet lever to the clockwise direction. Insert the steel feet at the entry point and turn the ratchet wrench handle. Be sure to insert the feet completely. The housing should almost touch the equipment being worked on. Use a hammer to strike the back of the housing to facilitate insertion if necessary.

To retract: Set the ratchet lever to the counter-clockwise direction and turn the ratchet wrench handle.



Note: When using the Auto-Spreader for flange spreading, it is recommended that two Auto-Spreaders be used. Place the flange spreaders on opposite sides of the flange for even spreading. See figure 2.

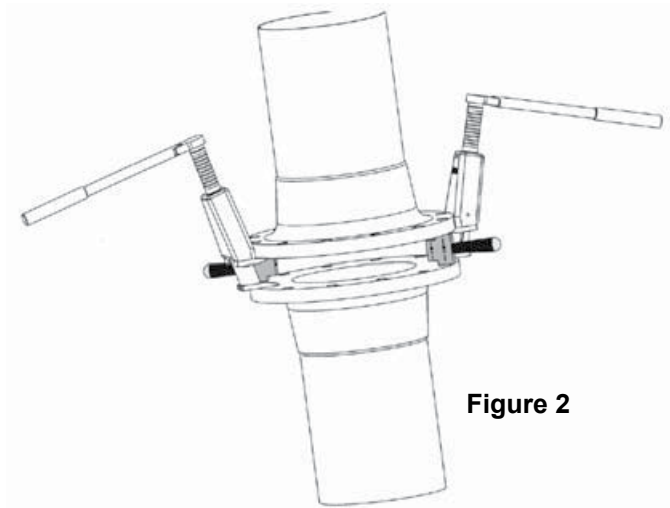


Figure 2

Maximum Spreader Extension

A red mark will appear on the shaft of the center foot, when maximum safe extension is achieved. DO NOT OVER EXTEND - DAMAGE MAY OCCUR. See figure 3.

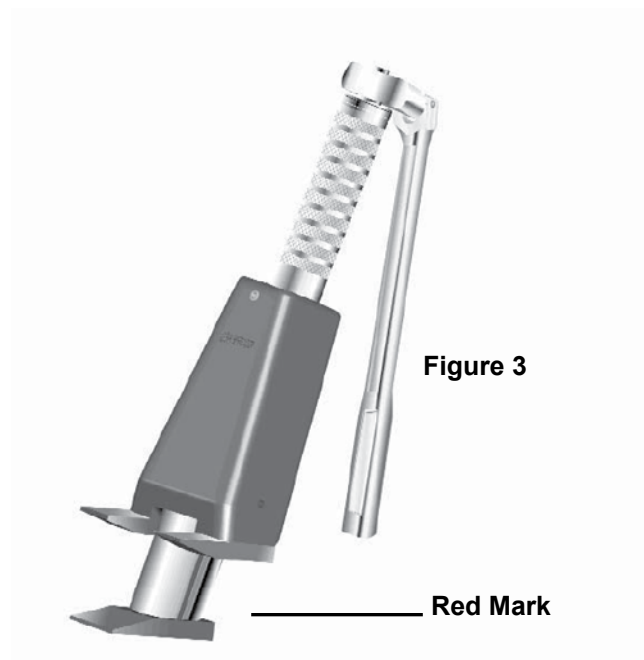


Figure 3

Red Mark

Maintenance

Treat the Auto-Spreader like any other precision tool. Keep it clean and free from moisture. Simply wipe it down with a cloth or paper towel after use. If there is damage, due to improper storage or unusual circumstances, contact Titan for handling instructions.

All internal parts are lubricated at the factory and do not need cleaning or lubricating.

All the materials used in the Auto-Spreader were chosen through extensive research. All parts are rated for their intended use, and should not require field repair.

Improper assembly, modification or substitution of other parts is unsafe, will void the warranty and could damage the tool.

Foot Replacement Kit

After extended usage, the feet may need replacement. They are the only parts which are field replaceable.

Please call 1-866-345-8484 to order the Foot Replacement Kit. Please refer to part #RKCF for center foot kit or #RKOF for outside foot kit.

Foot Replacement Instructions

When it is necessary to replace a foot on the Auto-Spreader follow these steps:

1. Close the feet. The center foot (5) should be aligned with the outside feet (2 and 3). See figure 4.
2. Loosen the two flat head Allen screws (1 & 4) on the bottom of the foot being replaced.
3. Install new foot.
4. Torque the two flat head Allen screws to 40 ft. lbs.



Tool Storage

1. Wipe the tool clean with a cloth or paper towel.
2. Close the feet.
3. The Auto-Spreader should be kept in the ready position when not in use; feet closed, and the ratchet wrench handle set for clockwise turning. See figure 4.

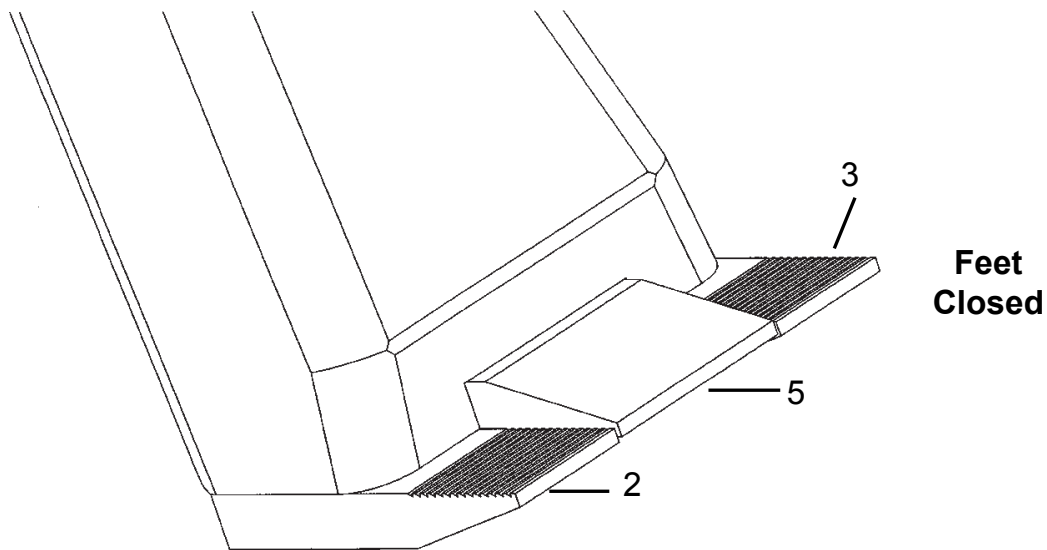
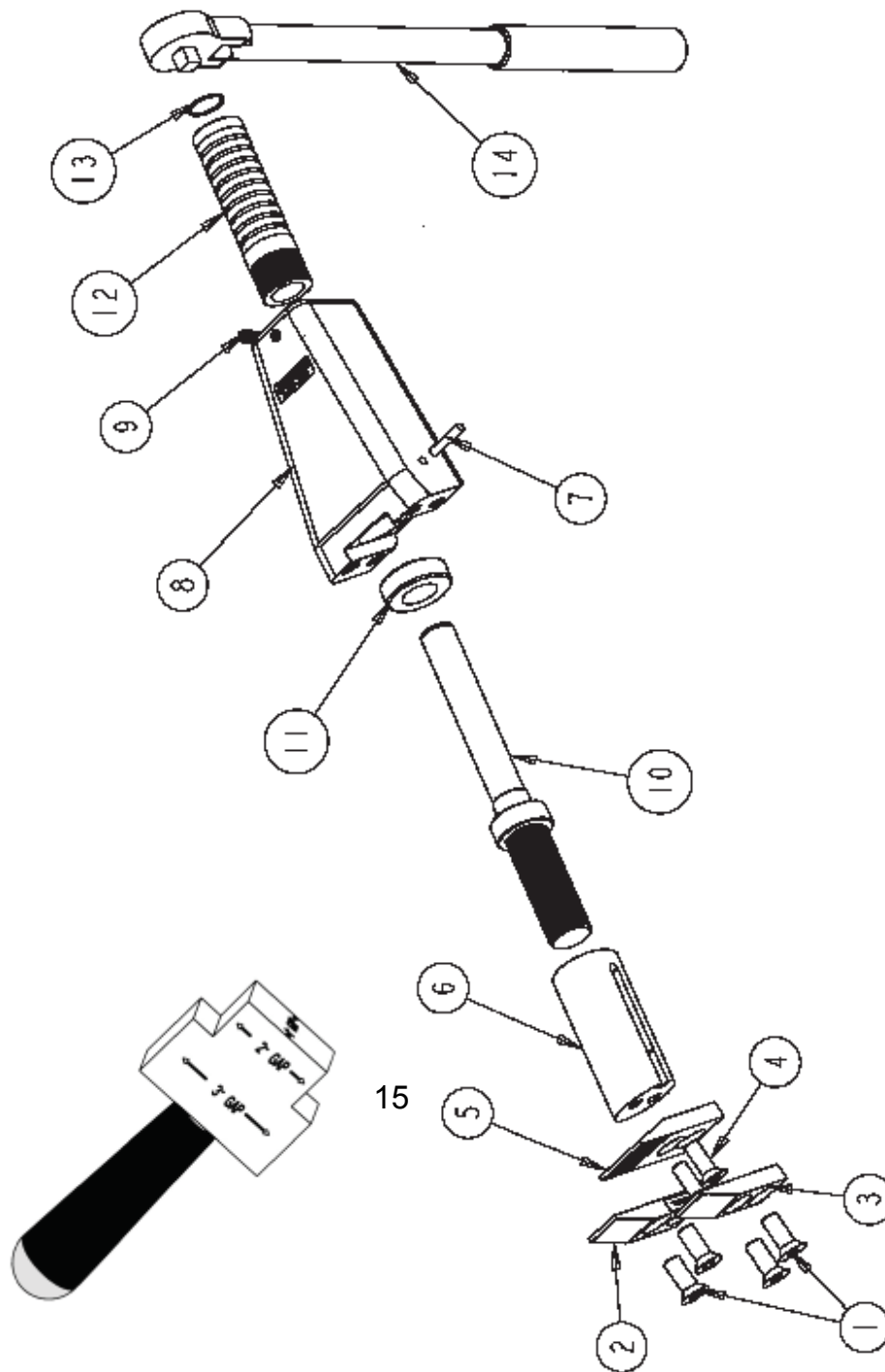


Figure 4

Parts List

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty</u>
1	FHCS08-13x20	Flat Head Allen Screw 1/2", 1-1/4" Lg	4
2	A95055L	Left Jaw	1
3	A95055R	Right Jaw	1
4	FHCS07-14x16	Flat Head Allen Screw 7/16", 1" Lg	2
5	A95050	Center Jaw	1
6	B99050	Piston	1
7	DP04X20PO	1/4" Dowel Pin, 1-1/4" Lg	1
8	D98175	Housing	1
9	SS05-18x08SS	5/16" Stainless Set Screw, 1/2" Lg	1
10	B99091	Shaft	1
11	D-10	Thrust Bearing	1
12	B95064	Handle	1
13	WS-98-502	Retaining Ring	1
14	9-44816	1/2" Dr. Ratchet Wrench 18" Lg	1
15	SK10K-SB	Safety Block	1
16	55TB	Tool Box (not shown)	1
17	MS10K-TBI	Tool Box Insert (not shown)	1

Refer to Figure 5 for corresponding item numbers.



MS10K Exploded View

Figure 5

Assembly/Disassembly Instructions

The Auto-Spreader™ is delivered assembled and ready to use. If any of the Auto-Spreader components are damaged, please contact your Titan representative before use.

Disassembly Instructions

All numbers in parentheses are referenced in figure 4 and 5 and on the parts list on page 7.

Should it become necessary to disassemble the Auto-Spreader, please follow these steps:

1. Close the feet by retracting the center foot (5) until it is aligned with the outside feet (2 and 3). See figure 4.
2. Position the Auto-Spreader™ on its side. The side with dowel pin (7) should be facing up.
3. Insert a socket head cap screw or any hardened screw with #8-32 threads and about 2" long in the roll pin hole and screw it in the dowel pin inside the hole.
4. Engage the screw using a pry bar and pull it out 1/2". The dowel pin will come out along with the screw.
5. Remove the ratchet handle (14) from the shaft (10) by pressing the center button on top of the ratchet gear.



6. Disengage the retaining ring from the groove on the shaft using a small screw driver, and remove it.
7. The shaft (10), piston (6), center foot (5) assembly will slide out of the housing (8) and handle (12). The bearing (11) may come out on the shaft. If the bearing does not come out with the shaft, simply shake the housing and the bearing will come out.
8. Loosen the set screw (9) in the front of the housing with a 5/32" Allen wrench. Remove the handle (12).

Assembly

1. Review the Parts List and verify that all the parts are available and in working order.
2. Clean all the parts with a de-greasing solvent.
3. Screw the handle (12) all the way into the housing (8).
Note: It may be necessary to adjust the handle, when the Auto-Spreader is completely re-assembled, for alignment with other parts.
4. Position the outside feet (2 and 3) against bottom of the housing (8). Be sure to place the feet, which are marked (L) and (R), on the appropriate sides of the housing. The countersunk screw holes should be facing out, and not against the bottom of the housing (8).
5. Insert the flat head Allen screws (1) in the screw holes on the outside feet, and tighten them with a 5/16" Allen wrench to 35-40 ft lbs.
6. Place the center foot (5), on top of the piston (6). The countersunk screw hole will be facing up. See figure 6.



7. Insert the flat head Allen screws (4) in the screw holes on the center foot, and tighten them with a 1/4" Allen wrench to 25-30 Ft lbs.

8. Lubricate the threads on the shaft (10) with Titan A/G lubricant, which can be purchased from Titan. Screw the shaft into the piston (6), all the way until the shoulder on shaft touches the top of the piston. There is no torque required on the shaft. Note: The shaft has left hand threads.

9. Slide the bearing (11) on the shaft (10) until it rests on the top side of the shaft shoulder. Make sure that the side of the bearing that has identification markings is on bottom, facing the shaft shoulder.

10. Lightly lubricate the outside of the piston (6).

11. Insert the sub-assembly in the housing (8) and through the handle (12). The sub-assembly consists of the center foot (5), piston (6), shaft (10), and bearing (11). The top end of the shaft should extend beyond the top end of the handle, and the center foot should be aligned with the outside feet.

12. Position the housing (8) on its side. The side with the dowel pin (7) hole should be facing up. Install the roll pin in the hole on the side of the housing, use a hammer if necessary. The dowel pin will ride in the slot on the side of the piston, if everything is properly assembled.

13. Check to make sure the feet are aligned, which will make the end of the shaft (10) rise above the top of the handle (12).

14. There may be a gap between the retaining ring (13) and the top of the handle (12). Adjust the handle by turning it counter clockwise, to close the gap between the handle and the retainer.

15. Check the feet again to be sure they are still aligned. Insert the set screw (9) in the hole provided in the front of the housing (8). Tighten the set screw to retain the handle position. Do not tighten the set screw too tight, or future removal of the set screw may be difficult.

16. Place the ratchet handle (14) in the square in the end of the shaft (10) by pressing the center button on the top of the ratchet gear. Be sure to align the ball on the ratchet square drive with the hole in the square in the top of the shaft.

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