

# ***SUPERIOR*** BOLTING SOLUTIONS



## ***NUT*** **SPLITTERS**



**TITAN**  
SUPERIOR BOLTING SOLUTIONS

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## INTRODUCTION

With the **TITAN Auto-Splitter**, you can safely cut through the largest frozen nuts in just seconds.

- ♦ **Versatility:** can be used on a wide range of nut sizes.
- ♦ **Flexibility:** fits into tight spaces and cuts virtually any shape nut with the use of adapters
- ♦ **Precision:** cutting chisel can be calibrated so that only the nut is cut, with no damage to the bolt or stud threads
- ♦ **Speed:** from toolbox to use in less than five minutes, and only 20 to 30 seconds to cut a nut
- ♦ **Safety:** no hammers, no impact, no flame, no hot permits required

## SAFETY TIPS

Always wear the appropriate protective equipment, such as safety glasses and gloves

Do not allow the hydraulic hoses to kink, twist, curl or bend so tightly that the oil flow within is blocked or reduced.

Never attempt to grasp a pressurized hose that is leaking.

Never exceed 10,000 PSI of hydraulic pressure while operating an Auto-Splitter.

Never place any body part between the tool and the equipment being worked on, especially moving parts such as the chisel.

Do not split nuts into sections smaller than half of the nut. Pieces may fly off the nut if it is split in small sections. See *Figure 1*.



Figure 1

**IMPORTANT NOTE:** Auto-Splitter cuts from 5/8" to 6-1/2" (16-165 mm) across the flats hexagonal nuts. You can use it for both inch and metric sizes, and with virtually any shape nut. **Round, square, 12-point and other special nuts will require the use of an adapter.** Adapters for splitting huck bolts are also available.



## POWER REQUIREMENTS

The Auto-Splitter is hydraulically driven. All models require a hydraulic pump that delivers 10,000 PSI of pressure. Any type of hydraulic power unit may be used, including air, electric and hand and foot pumps.

Power Units to be used with the Auto-Splitter:

Auto-Splitter Model	Pump Model	Power Type
AS100-AS200	100-H	Manual-Hand
AS100-AS210	105-A	Air
AS100-AS314	115-E	Electric
AS100-AS314	150-H	Manual-Hand
AS100-AS314	150-F	Manual-Foot
AS100-AS608	205-A	Air
AS100-AS608	215-E	Electric

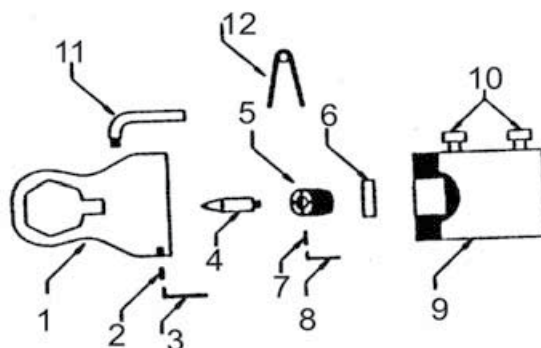
All hydraulic power units include the necessary fittings and hoses. If a hydraulic power unit is not being used to power the Auto-Splitter, the following requirements must be met:

Auto Splitter Model	Valve Type	Hose Rating	Usable Minimum Capacity
AS100	2-Way	10,000 PSI	5 in <sup>3</sup>
AS105-AS200	2-Way	10,000 PSI	10 in <sup>3</sup>
AS204-AS210	2-Way	10,000 PSI	44 in <sup>3</sup>
AS308-AS314	2-Way	10,000 PSI	82 in <sup>3</sup>
AS404-AS608	4-Way	10,000 PSI	460 in <sup>3</sup>

## Type 1

Auto-Splitters with externally threaded chisel holders, used in nut splitters with internal threads in the piston rod:

Item	Description	AS100	AS105	AS200	AS404	AS500	AS506
1	Housing	D88045	C87112	C87114	A91002	A92014	A92019
2	Set Screw	SSN4-20	SSN4-20	SSN4-20	SSB6-16	SSB6-16	SSB6-16
3	Allen Wrench	WSS2	WSS2	WSS2	WSS3	WSS3	WSS3
4	Chisel	B88046	B86216	B86216	A91003	A92015	A92015
5	Chisel Holder	A90002-1	B86215	B86215	A91004	A91004	A91004
6	Spacers Set		A92017	A92018	A91005	A92016	A92021
7	Set Screw for Chisel Holder	SSN4-20	SS#6-32	SS#6-32	SSN4-20	SSN4-20	SSN4-20
8	Allen Wrench for Chisel Holder		WSS1	WSS1	WSS2	WSS2	WSS2
9	Hydraulic Cylinder	C-10	C-25	C-25	C-150	C-150	C-150
10	Quick Disconnect Female	C-604	C-604	C-604	C-604	C-604	C-604
11	Handle for Housing (2)				A92030	A92030	A92030
12	Spanner Wrench for Chisel Holder				SW34154	SW34154	SW34154
13	Toolbox	10TB	25TB	25TB	150TB	150TB	150TB
14	Toolbox Insert	10TBI	25TBI	25TBI	150TBI	150TBI	150TBI



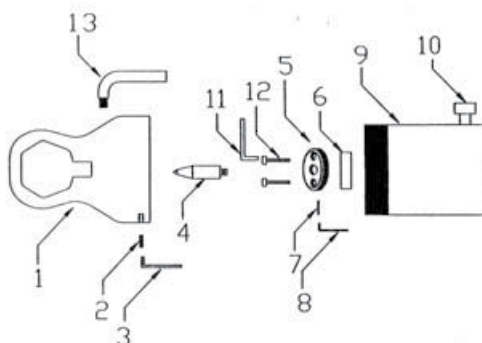
**Figure 2**



## PARTS LIST Type 2

Auto-Splitters that have a cylinder with threaded bolt holes in the piston rod and chisel holders that use socket head cap screws:

Item	Description	AS204	AS210	AS308	AS314
1	Housing	D880055	D88005	D87079	B92035
2	Set Screw	SSB6-16	SSB6-16	SSB6-16	SSB6-16
3	Allen Wrench	WSS3	WSS3	WSS3	WSS3
4	Chisel	B87090	B87090	B870902	A92036
5	Chisel Holder	B87089	B87089	B87089	B87089
6	Spacer Set	A91006	A91007	A91001	A92037
7	Set Screw for Chisel	SSN4-20	SSN4-20	SSN4-20	SSN4-20
8	Allen Wrench	WSS2	WSS2	WSS2	WSS2
9	Hydraulic Cylinder	C-55	C-55	C-100	C-100
10	Quick Disconnect Female	C604	C604	C604	C604
11	Allen Wrench for Cap Screws	WSS5	WSS5	WSS5	WSS5
12	Socket Head Cap Screws (2 each)	SHCS6-12 SHCS6-20	SHCS6-12 SHCS6-20	SHCS6-12 SHCS6-20	SHCS6-12 SHCS6-20
13	Handle for Housing (2)	A92030	A92030	A92030	A92030
14	Toolbox	55TB	55TB	100TB	100TB
15	Toolbox Insert	55TBI	55TBI	100TBI	100TBI



**Figure 3**

## ASSEMBLY

There are two types of Auto-Splitters. The only design difference between the two is the chisel holder (*see table below*).

The assembly directions are separated into two sections: Section 1 applies only to Type 1 splitters, Section 2 applies only to Type 2 splitters. Refer to the table below to find which type of Auto-Splitter assembly directions to follow.

TYPE 1	TYPE 2
AS100	AS204
AS105	AS210
AS200	AS308
AS404	AS314
AS500	
AS506	





## SECTION 1—ASSEMBLY DIRECTIONS TYPE 1

Type 1 Auto Splitters with externally threaded chisel holders; used in nut splitters with internal threads in the piston.

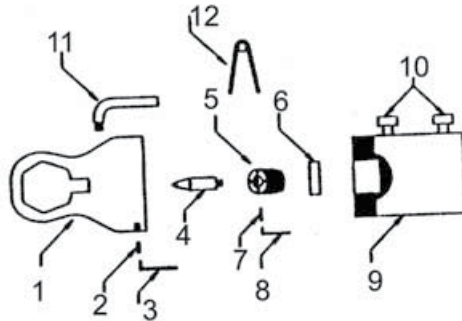


Figure 4

1. Unscrew the chisel holder (5) from cylinder (9).

**NOTE:** A spanner wrench (12) is supplied with models: AS404, AS500, AS506

2. Place the cutting chisel (4) in the drilled hole in the chisel holder (5). Insert the set screw (7) into the side of the chisel holder and tighten, using the provided Allen Wrench (8).

**NOTE:** Do not over-tighten the set screw. The chisel should be free to turn.

3. Drop spacer with printed size face up into cylinder (6).

**NOTE:** Each Auto-Splitter is designed to cut a wide range of sizes. This is achieved by using calibration spacers. For example: to cut a 1-7/8" nut (AS200) simply insert the spacer marked 1-7/8". No other spacer is needed. The largest nut size in the range of each nut splitter does not require a spacer.

4. Screw in the chisel holder (5) until it is seated metal to metal.

**WARNING:** Thread the chisel holder completely. Failure to do so will result in severe damage to the cylinder rod and chisel holder.

5. Connect the quick disconnect (10) to a hydraulic pump using a 10,000 PSI hydraulic hose. Refer to Power Requirements on Page 3 for appropriate hose and pump.
6. Extend cylinder rod; HOLD in the extended position.
7. Place the housing (1) on the hydraulic cylinder (9). The chisel (4) will project into the housing. Completely thread the housing onto the cylinder while the chisel is extended. Back off the housing one full turn. Lock in place by inserting the set screw on the side of the housing and tighten with the Allen Wrench.
8. Retract the cylinder rod—the chisel will retract.
9. Proceed to the **Operation** Section of this manual.



## SECTION 2—ASSEMBLY DIRECTIONS

### TYPE 2

Type 2 Auto-Splitters that have a cylinder with threaded bolt holes in the piston rod and chisel holders that use socket head cap screws

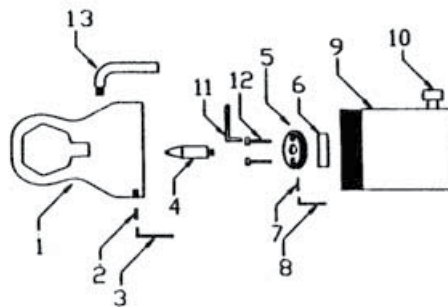


Figure 5

1. Remove the two socket head cap screws (12) from the cylinder (9) using the Allen Wrench (11).
2. Place the cutting chisel (4) into the center drilled hole in the chisel holder (5). Insert the set screw (7) into the side of the chisel holder and tighten using the provided Allen Wrench (8).

**NOTE:** Do not over-tighten the set screw. The chisel should be free to turn.

3. Line up the holes of the spacer (6) (when needed) and the chisel holder (5) with the bolt holes in the cylinder (9). Use the socket head cap screws (12)\* to bolt the spacer and chisel holder onto the cylinder.

\* *Some splitter models are equipped with two lengths of cap screws to accommodate spacer thickness. The cap screws should be long enough to fasten the spacer and chisel holder to the cylinder. Make sure that the cap screws are not too long. If the longer screws are used without spacers, the chisel holder will not be held tightly in place.*

**NOTE:** Each Auto-Splitter is designed to cut a wide range of nut sizes. This is achieved by using calibration spacers. For example, to cut a 1-7/8" nut (AS204) simply insert the spacer marked 1-7/8". No other spacer is needed. The largest nut size in the range of each nut splitter does not require a spacer.

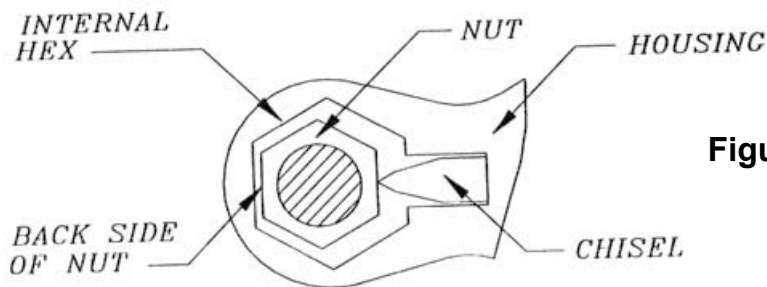
4. Connect the quick disconnect (10) to a hydraulic pump using a 10,000 PSI hydraulic hose. Refer to Power Requirements on page 3 for appropriate hose and pump.
5. Extend cylinder rod; HOLD in the extended position.
6. Place the housing (1) on the hydraulic cylinder (9). The chisel (4) will project into housing. Completely thread the housing onto the cylinder while the chisel is extended. Back off the housing one full turn. Lock in place by inserting the set screw (2) on the side of the housing and tightening with the Allen Wrench (3).
7. Retract the cylinder rod—the chisel will retract.
8. Proceed to the **Operation** Section of this manual.



## OPERATION

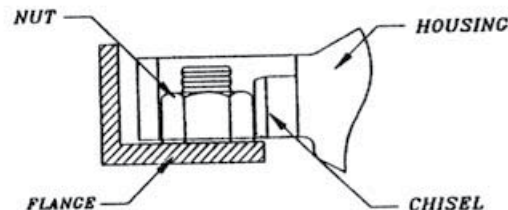
**NOTE:** Read and follow the assembly instructions and safety tips before operating the Auto-Splitter.

1. Lubricate the tip of the chisel with an anti-seize lubricant before each cut. TITAN 70+ lubricant is recommended.
2. Place the internal hex of the housing over the nut. Pull the housing against the back side of the nut, with the nut centered on the back side of the internal hex. The housing of the nut splitter should be flat on the surface of the flange. The cutting chisel should be as close to the bottom of the nut as possible and be centered on a flat of the nut (see *Figure 6*).



**Figure 6**

3. Extend the chisel slowly until it makes contact with the nut face. Check that the chisel is resting squarely on the center of the nut flat (see *Figure 7*).



**Figure 7**



4. Continue to apply hydraulic pressure to the cylinder until the nut is severed. A loud pop will occur, signifying that the nut is split.

**NOTE:** For complete nut removal, it may be necessary to cut the opposite face of the nut so that it falls away from the stud. If a second cut is required, proceed with the following steps.

5. Rotate the nut 180 degrees, after the first face has been split. An oversized wrench or hammer may be required to turn the nut.
6. Split the second face. Return to step 1 and follow the same procedure.



## MAINTENANCE

The Auto-Splitter is designed to be a low maintenance tool. The following should be done on a regular basis to increase the longevity of the tool:

- Always lubricate the chisel point with TITAN 70+ lubricant before each cut.
- Do not let the chisel get dull. Re-sharpen the chisel with a hand whetstone, or slowly with a grinder. Be sure to keep the chisel wet while sharpening.
- Replace the dust covers on the quick disconnects and thread protectors on the cylinder after each use.
- Store the Auto-Splitter in its custom toolbox.

## TROUBLE-SHOOTING TABLE

Problem	Possible Causes	Possible Solutions
Cylinder does not hold pressure	<ol style="list-style-type: none"> <li>1. Cylinder seal leaking</li> <li>2. Leaking connection</li> <li>3. Pump malfunction</li> </ol>	<ol style="list-style-type: none"> <li>1. Change cylinder</li> <li>2. Tighten connections</li> <li>3. Change pump</li> </ol>
Cylinder does not advance or advances partially	<ol style="list-style-type: none"> <li>1. Pump release valve open</li> <li>2. Not enough oil in pump</li> <li>3. Air in system</li> <li>4. Couplers not tightened</li> <li>5. Pump reservoir too small</li> </ol>	<ol style="list-style-type: none"> <li>1. Close valve</li> <li>2. Add oil</li> <li>3. Bleed air</li> <li>4. Fully tighten couplers</li> <li>5. Change pump (use one w/ larger reservoir)</li> </ol>
Cylinder advances slowly	<ol style="list-style-type: none"> <li>1. Leaking connection</li> <li>2. Restricted hydraulic hose or fitting</li> <li>3. Loose coupler</li> <li>4. Pump flow rate too slow</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten connections</li> <li>2. Change hoses or fittings</li> <li>3. Tighten couplers</li> <li>4. Change pump (use one w/ faster flow rate)</li> </ol>
Cylinder does not retract, retracts slowly or retracts partially	<ol style="list-style-type: none"> <li>1. Pump release valve closed</li> <li>2. Coupler not fully closed</li> <li>3. Blocked hydraulic hose</li> <li>4. Damaged retraction spring in cylinder (AS100-AS314 only)</li> <li>5. Pump reservoir overfilled</li> </ol>	<ol style="list-style-type: none"> <li>1. Open valve</li> <li>2. Close coupler</li> <li>3. Replace hoses</li> <li>4. Replace spring</li> <li>5. Remove excess oil</li> </ol>
Chisel does not penetrate nut	<ol style="list-style-type: none"> <li>1. Inadequate pump pressure</li> <li>2. Using incorrect spacer</li> <li>3. Chisel edge dull</li> <li>4. Housing not fully threaded</li> </ol>	<ol style="list-style-type: none"> <li>1. Increase to 10,000 PSI</li> <li>2. Change spacers</li> <li>3. Sharpen or replace chisel</li> <li>4. Thread housing all the way</li> </ol>
Chisel cuts through nut & damages the stud	<ol style="list-style-type: none"> <li>1. Using incorrect spacer</li> <li>2. Housing threaded more than necessary</li> </ol>	<ol style="list-style-type: none"> <li>1. Check spacer size, change spacer</li> <li>2. Back housing off a half turn at a time</li> </ol>



## FREQUENTLY ASKED QUESTIONS

*How many cuts will the chisel make?*

**Answer:** With proper maintenance and operation, dozens of cuts can be achieved before sharpening is needed. It is recommended to have two chisels on every job. Be sure to apply TITAN 70+ lubricant on chisel before each cut.

*Can I sharpen the chisel?*

**Answer:** Yes, but ensure that the chisel stays cool while sharpening. Refer to the Maintenance Section for further instructions.

*Must my power unit always have 10,000 PSI capability?*

**Answer:** Yes, regardless of the nut splitter model or the nut size and type.

*How do I know which TITAN power unit to use?*

**Answer:** All nut splitter models require 10,000 PSI. Refer to the Power Requirements Section on Page 3 for pump specifications.

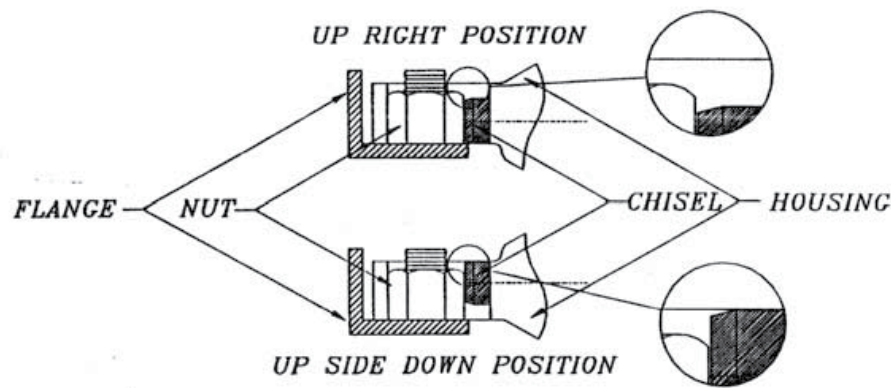
*Why is my nut splitter not cutting?*

**Answer:** Check to be sure you are using the correct spacer. Be sure housing is screwed on completely. Be sure you are 10,000 PSI, check couplers for tight connections. refer to the trouble-shooting guide.

(Continued on next page)

*I have reached maximum output pressure and the nut I am attempting to split will still not cut. What do I do?*

**Answer:** Lubricate the cutting chisel again. Reposition the nut splitter over the nut, upside down. This will place the chisel approximately 1/4" to 1/2" above the surface of the flange. Make sure that the cutting chisel is positioned in the same location where the previous cut was attempted. There will be 1/4" to 1/2" of the chisel visible above the nut. Apply hydraulic pressure until the nut is severed (see Figure 8).



**Figure 8**

*How can I be sure not to cause sparks?*

**Answer:** Be sure chisel is lubricated with TITAN 70+. You can also spray water or steam on chisel during use.

*The chisel seems slow. How do I increase the speed?*

**Answer:** Change to a different pump unit with a faster flow rate.





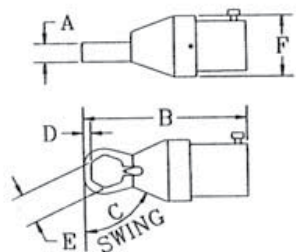
## AUTO-SPLITTER MODELS

Choose the right Auto-Splitter for your needs.  
See Auto-Splitter dimensions in Figures 9.

Model	Stud Diameter	Nut Size ATF	A	B	C	D	E	F	Weight
AS105	7/16" - 7/8" 11-22 mm	5/8" - 1 7/16" 16-36 mm	1-1/2" 38.1 mm	11" 279.4 mm	60"	3/8" 9.5 mm	1-1/2" 38.1 mm	4" 101.6 mm	20 lbs 9 kg
AS200	7/8" 1-1/4" 22-32 mm	1-7/16" - 2" 36-51 mm	1-1/2" 38.1 mm	11-3/4" 298.4 mm	45"	1/2" 12.7 mm	2-1/8" 54 mm	4" 101.6 mm	21 lbs 9.5 kg
AS204	1-1/4" - 1-1/2" 32-38 mm	1-13/16" - 2-3/8" 46-60 mm	2-1/4" 57.1 mm	16" 406.4 mm	30"	9/16" 14.3 mm	2-1/2" 63.5 mm	6" 152.4 mm	61 lbs 27.7 kg
AS210	1-3/8" - 1-3/4" 35-45 mm	2-1/4" - 2-3/4" 57-70 mm	2-1/4" 57.1 mm	16" 406.4 mm	30"	11/16" 17.5 mm	2-7/8" 73 mm	6" 152.4 mm	62 lbs 28.2 kg
AS308	1-3/4" - 2-1/4" 45-57 mm	2-3/4" - 3-1/2" 70-89 mm	3-1/16" 77.8 mm	17-3/4" 450.8 mm	30"	3/4" 19 mm	3-7/8" 98.4mm	7-1/4" 184.2 mm	95 lbs. 43.2 kg
AS314	2" - 2-1/2" 50-64 mm	3-1/8" - 3-7/8" 79.98mm	3-1/8" 79.4 mm	18" 457.2 mm	30"	7/8" 22.2 mm	4-1/4" 108 mm	7-1/4" 184.2 mm	100 lbs 45.4 kg
AS404	2-1/2" - 2-3/4" 64-70 mm	3-3/4" - 4-1/4" 95-108mm	3-3/4" 95.3 mm	22-3/4" 577.9 mm	60"	1-1/8" 28.6 mm	4-5/8" 117.5 mm	9-7/8" 250.8 mm	205 lbs. 93.2 kg
AS500	3" - 3-1/4" 76-83 mm	4-1/2" - 5" 114 -127 mm	4-1/8" 104.8 mm	23" 584.2 mm	60"	1-1/8" 28.6 mm	5-3/8" 136.5 mm	9-7/8" 250.8 mm	210 lbs. 95.4 kg
AS506	3-1/4" - 3-1/2" 83-89 mm	4-7/8" -5-3/8" 124-136 mm	4-1/8" 104.8 mm	23-1/2" 596.9 mm	60"	1-1/8" 28.6 mm	5-7/8" 149.2 mm	9-7/8" 250.8 mm	215 lbs 97.7 kg
AS608	3-3/4" - 4-1/4" 95-108mm	5 3/4" -6-1/2" 146-165mm	5 3/4" 146.05 mm	25 7/8" 656.51 mm	60"	1 3/8" 35.71m m	6 7/8" 174.63 mm	12 1/2" 317.50 mm	387 lbs 175.5

**Auto-Splitter**

**Figure 9**











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