



Model 889 Cultivator Operators Manual

Model #760-828

Model #760-829





Do Not Use or Operate This Equipment



Until You Have Read and Understand This Manual

The purpose of this manual is to explain maintenance requirements and adjustments which are necessary for the most efficient operation of the machine. Read this manual thoroughly and completely before using your machine. Keep this manual handy for reference when questions arise.

Should you have questions or difficulties which your dealer or representative are unable to answer, please call or write:

**Bigham Ag
705 E. Slaton Rd.
P.O. Box 3338
Lubbock, TX 79452**

SAFETY FIRST

**PREVENT ACCIDENTS BY “THINKING SAFETY” IN
UNLOADING, SETTING UP, MOVING, STORAGE AND
OPERATING ALL EQUIPMENT**



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A MESSAGE TO THE OWNER AND OPERATOR:

This machine was carefully designed and manufactured to give you dependable service. To keep it running efficiently, read the instructions in this Operator's Manual. Check each item and acquaint yourself with the adjustments required to obtain efficient operation and maximum performance. Remember, the machine's performance depends on how you operate and care for it.

After each operating season, thoroughly clean your machine and inspect it. Preventive maintenance saves time and pays dividends. Your dealer has original equipment parts which assure proper fit and best performance. Record the model number, serial number and date of purchase in the space provided on this page. Your dealer needs this information to give you efficient service when you order parts or attachments. The model number and serial number appear on the identification plate on the front left side of the tool bar mast.

The warranty on your machine is included with this manual. Your dealer will review the manual and warranty with you when you take delivery of your machine.

WARRANTY

Bigham Ag warrants all products of its manufacture to be free from defects in materials and workmanship for a period of six months from date of delivery to the retail purchaser. Parts assumed to be defective must be returned F.O.B. Lubbock, Texas for our inspection or inspected in the field by our authorized representative. Our obligation under this warranty is limited to replacement or repair of the defective part and does not cover other damages to persons or property. Other than the aforesaid, no warranties of merchantability or fitness for a particular purpose will apply. We do not assume liability for altered or remanufactured components or machines or applications beyond their intended use. Some states do not allow limitation of how long an implied warranty lasts, or exclusions of, or limitations on relief such as incidental or consequential damages, so the above limitations or exclusion may not apply to you. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

Warranty does not cover damage due to abuse, neglect, collision, towing, pulling, normal wear and tear or any other factor beyond the control of the manufacturer. Tool bars that are bent, bowed or that have been welded on or modified in any way are specifically excluded from any warranties.

Dealer: _____
Model Number: _____
Serial Number: _____
Date Of Purchase: _____

LIMITED LIFETIME WARRANTY ON TOOL BAR CLAMPS

Bigham Ag will replace any ductile iron clamp body that breaks or cracks under normal use for as long as the original purchaser owns them. This includes all replaceable bolt ductile iron clamps sold by Bigham Ag after December 31, 1987.

Clamps that fail should be returned to Bigham Ag, freight prepaid along with caps, bolts, set screws and nuts for evaluation. If found to have failed under normal operating conditions, a new clamp body will be returned along with your old caps, bolts, set screws and nuts. Only clamps that have been used with Grade 2 bolts of the proper size will be replaced. All other provisions of the above warranty apply.

Safety Precautions:



Be alert when you see this symbol in the instructions.

It warns of a hazard which might lead to injury.

It means: “Attention! Become alert! Your Safety At Risk!”

Before Use: **DO NOT operate this equipment until you have read and understood this manual.**

- Assure operators have read and are familiar with the instructions contained in the Operator's Manual
- If working on the Model 889 Cultivator, make sure it is level and stable. Proper stands should be lowered and secured. Use support blocks when necessary. The work area should be on a level, load bearing surface, e.g. concrete floor. **NEVER** work under a Cultivator while it is supported by only the tractor's hydraulics.
- Consult the “Tractor Manufacturers Manual” for instructions on safe mounting of implements and operating methods.
- Never stand between the Cultivator and tractor with engine running.

During Use:

- Check and tighten all bolts after 30 minutes of initial operation and after adjustments have been made.
- Assure the Model 889 Cultivator is correctly attached to the tractor.
- Be alert to underground obstructions, e.g. large stones, tree roots, cables, pipe lines, etc. Should an obstruction be encountered, **STOP IMMEDIATELY AND INVESTIGATE**. Non-hazardous obstructions should be removed before continuing operation. **NOTIFY THE APPROPRIATE AUTHORITY IF BURIED CABLES OR PIPELINES ARE SUSPECTED.**
- Maintain a safe operating speed.
- Never allow anyone to ride on the Model 889 Cultivator during operation.
- Never travel in reverse with the Model 889 Cultivator in the operating position.
- Never carry out adjustments or repairs to a mounted Model 889 Cultivator unless the tractor engine is stopped and the Model 889 Cultivator is firmly supported or lowered to the ground.
- Inspect the Model 889 Cultivator for wear or damage on a regular basis.
- Check all nuts, bolts and other fasteners for tightness on a regular basis. Replace worn fasteners as needed.
- Carry out maintenance and lubrication procedures as detailed in this manual.
- When disconnecting the Model 889 Cultivator do so on a level, hard surface. Assure it is left in a stable position with proper stands in the correct position.

Always:

- Wear gloves and safety footwear when handling worn parts with sharp edges.
- Assure the Model 889 Cultivator is operated by trained persons.
- Use the Model 889 Cultivator only for the purpose for which it was designed and tested, and always according to the instructions contained in this manual.
- Reduce speed when transporting over uneven or rough terrain.
- Place a “Slow Moving Vehicle” emblem on the rear of the unit before driving on open roads.
- Keep hands, feet and clothing away from all moving parts.
- Exercise care when adjusting gangs, disc coulters or other tooling. The assemblies are heavy and may have sharp edges.

“Left” and “Right” of the machine refers to the side when standing behind the Cultivator and facing the tractor.



**BE A SAFE OPERATOR, THINK BEFORE OPERATING.
READ ALL INSTRUCTIONS BEFORE
ASSEMBLY OR OPERATION OF THE CULTIVATOR!**



Model 889 Cultivator on Rigid Tool Bar

INTRODUCTION:

- The Model 889 Cultivator/Lister has two primary functions: cultivation of growing crops and pre-plant bedding operations. Independent parallel-linked gangs assure consistent operation over uneven ground.
- When configured as a cultivator, a combination of sweeps and barring-off discs clear weeds from areas between rows of growing plants. Crop shields are used for high speed cultivating operations. See page 29 and page 30.
- For bedding operations, shear bolt protected shanks, busters, lister bottoms, bedding sweeps or super sweeps are mounted on the shank at the rear of each gang. Bed dividers are used for high speed bedding operations. See page 28.



889 Cultivator Overview

- The Bigham Ag Model 889 Cultivator is equipped with an uneven number of parallel linkage tooling gangs one for each crop seedbed plus one. Normal configuration includes a leading trash-cutting coulter with depth band or height adjustable tire, a center rigid coulter, sweeps, fertilizer knives or barring-off discs, rear chisel shank with bedding or cultivating tools and crop shields.

Gang Placement

- Check/set row spacing from the center line at the point of the sweep or buster—not at the top of the clamp on the tool bar. Manufacturing tolerances may affect position at the end of the tool. Set center gang between two stringer plates. Ensure center of sweep or buster is on center. Run a tape from center point and ensure each point is the right distance from this point. For example, for 38" rows, points should be at 38", 76", 114", 152", 190", 228", etc. from the center point. Do not measure one point to the next, because any error can be compounded to the next gang.
- Set chisel shanks all the way to the top of the adjustment slot for cultivators equipped with adjustable depth control tires. Set the shank all the way to the bottom of the adjustment slot for cultivators equipped with depth band coulters.

Gang Mounting

- Gangs are mounted to the toolbar with the wrap-around assembly. The wrap around assembly allows for four inches of up travel and 4 inches of down travel. Each gang is fastened by the use of two 5/8" 7"x7" grade 5 u-bolts for each gang. See Figure 3. The gang pivots on four 3/4" x 8" Grade 5 bolts. See Figure 1 and Figure 2. Position each clamp so the gang is centered in the furrow.



Figure 1



Figure 2



Figure 3

Down Pressure Kit

- Cultivator gangs can be equipped with a down pressure kit to help ground engagement in hard or rough soil conditions. Down pressure kits can be added during the initial order or ordered later if the need arises. The add on down pressure kit part number is 889-225.
- The down pressure kit allows the operator to adjust the down force from a minimum of 235 pounds (See Figure 5) to a maximum of 355 pounds (See Figure 6). The change in down pressure is made by turning the adjustment nut on the end of the upper linkage arm. See Figure 4. Turn clockwise to increase down pressure and turn counter clockwise to decrease down pressure. Operators must measure and adjust the trunion position in the slot to ensure consistent down pressure across the 889 cultivator units.

Installation Instructions:

1. The trunion must be assembled with the bolts having equal thread engagement in the trunion block. See Figure 7. The screw jack stud must be installed before assembling the trunion.
2. The outer jam nut is to be tightened against the shoulder of the 5/8" x 2 3/4" bolt.
3. The bolts are to be tightened until the 5/8" washer touches the linkage arm then back them off 1/4 turn.
4. The inner jam nut is to be tightened against the trunion block after the bolts are set.
5. Then install the springs around the trunion. the springs are to fit between the jam nuts. See Figure 7.
6. Next install the 1/2" x 5 1/2" bolt. Use a block of wood behind the springs and a pry bar to set the 1/2" x 5 1/2" bolt. **Note: Be sure the trunion is all the way forward in the slot so the minimum amount of pre load is required to set the springs.**



Figure 4



Figure 5



Figure 6



Figure 7

Set Operating Depth

- Gang operating height is set by either an adjustable depth control tire or an adjustable coulter and depth bands. On models with the adjustable depth control tire, rigid coulters mount directly to the gang and do not adjust vertically. The adjustable coulter and adjustable tire allow vertical adjustment via the screw jack. See Figure 8 and Figure 9.
- Using the adjustable coulter or tire allows working height adjustment of the gang independent of the other tooling. **Be sure to retighten the set screw after adjusting the working height! Failure to do so will allow the gang height to change during operation!** See Figure 10.
- Adjust gauge wheels or three-point lift so the parallel linkages on the gang are level at operating depth. If hard ground prevents the tool from fully engaging, install a down pressure kit. See page 7 and page 15. **Failure to give the gang proper up and down travel range can result in damage to coulters, wheels, tooling, and gang.**
- On a gang with a rigid coulter, all tooling heights are set to the coulter operating depth.
- Scrapers are available to keep wet soil from sticking to coulters. See Figure 11.



Figure 8



Figure 9

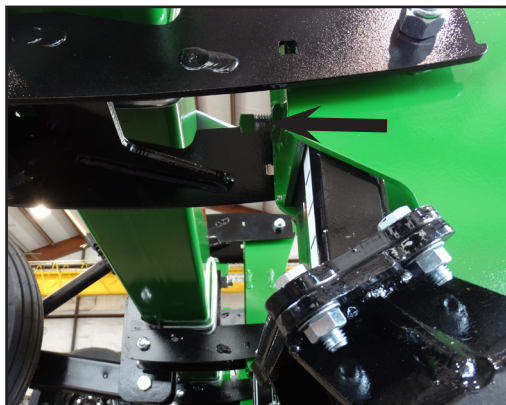


Figure 10



Figure 11

Tooling Bar Options

- Six tooling bars are available for mounting four different ground engaging options. The four options offered are barring off discs, fin sweeps, fertilizer knives and cultivator sweeps.
- Barring off disc tooling is available for narrow row spacings (30"- 32"), wide row spacings (34"- 40"), and 30-50 skip row spacings (46"- 50"). See Figure 12 and Figure 13.
- Fin sweep, fertilizer knife, and cultivator sweep tooling is available for narrow row spacings (30"- 32"), wide row spacings (34"- 40"), and 30-50 skip row spacings (46"- 50"). See Figure 14 and Figure 15
- The Quick-Adjust tooling tube positions ground engaging with pin settings. No wrenches necessary for side-to-side or vertical tool adjustments. See Figure 12.
- Each tube is held in place with a set screw on top of the gang weldment. See Figure 13 . Make sure tube is centered in the gang weldment to ensure consistent cultivation.



Figure 12



Figure 13

Fin sweep tooling
picture

Figure 14

Fin sweep tooling
picture

Figure 15

Rear Shanks

- The cultivator gang mounts a chisel shank weldment with two 3/4" x 5-1/2" grade 5 bolts. See Figure 16 and Figure 17. Note the shank may be adjusted three inches vertically by loosening the two bolts. See Figure 17.
- The rigid shank is welded directly to the mount tube at the rear of the gang.
- The shear bolt protected chisel shank is required for bedding operations. A 1/2" x 2 3/4" grade 2 shear bolt will ensure the longevity of the chisel shank and cultivator gang. See Figure 18 and Figure 19.



Figure 16



Figure 17

Shank with shear bolt
picture

Figure 18

Shank with shear bolt
picture

Figure 19

Crop Shields

- The cultivator gang mounts crop shield bundles to protect the crop from moving soil. The crop shields are set up on a parallel linkage to prevent damage while traveling through the field. Shield operating heights are pin adjustable at either the handle or the shank.
- The bed divider option is provided for high speed bedding applications. See Figure 20.
- The closed top crop shield is provided for cultivation of smaller crops early on in the season. See Figure 21.
- The second option is an open top crop shield for later cultivation on taller crops. See Figure 22.

Bed divider picture

Figure 20



Figure 21

Open top crop shields
picture

Figure 22



Attaching Tractors to Model 889 Cultivator

Choosing the proper tractor:

- It is extremely important to utilize a tractor with sufficient horsepower and traction. Soil conditions and tooling (i.e. bedding tools vs. cultivator sweeps) will effect horsepower requirements, but allow 10-30 HP per row, i.e., 4 rows requires a 40-120 HP tractor.
- The Model 889 Cultivator is equipped with rear-extending gangs. The three-point linkage of the tractor must allow 36 inches between the ground and the lower hitch points in the “fully raised” position to provide adequate transport clearance.
- Ensure that both the right and left lift arms are identical in length, and the tool bar is level (right to left). They must be equal to achieve uniform operating depth and transport clearance.
- Sway blocks or stabilizing chains should be adjusted to minimize lateral movement.
- Insure tractor has sufficient front end weight to permit constant positive steering at all times.
- Insure tire pressures are equal and set at manufacturer’s recommended pressures.



CAUTION: NEVER STAND BETWEEN TRACTOR AND MODEL 889 CULTIVATOR WITH THE TRACTOR ENGINE RUNNING.





Hitch Setup / Field Use and Adjustment

Tractors Equipped With Quick Hitches:

- Attach quick hitch to the Model 889 Cultivator and make sure lower pin locks are secured.
- Raise the parking stand into the clamp body or remove to allow the Model 889 Cultivator into a working position.
- When disconnecting the Model 889 Cultivator adjust stands to leave the tool bar tilted slightly forward. This will permit easier disconnecting and reattaching.

WARNING: Never work under the Model 889 Cultivator when it is in the raised position. Always lower the unit to the ground before making any adjustments.

Tractors Without Quick Hitch:

- Attach lower lift arms of the tractor to the Model 889 Cultivator utilizing appropriate pins. Standard equipment for all units is a Category III wide hitch with 1-7/16" Lower and 1-1/4" Upper Pin diameters.
- Attach top link after connecting lower lift arms. Raise parking stands into clamps or remove. When disconnecting, place stand to leave the Model 889 Cultivator in a stable position.

CAUTION:DO NOT MOVE TRACTOR WITHOUT MAKING SURE TOP HITCH IS CONNECTED TO TRACTOR.

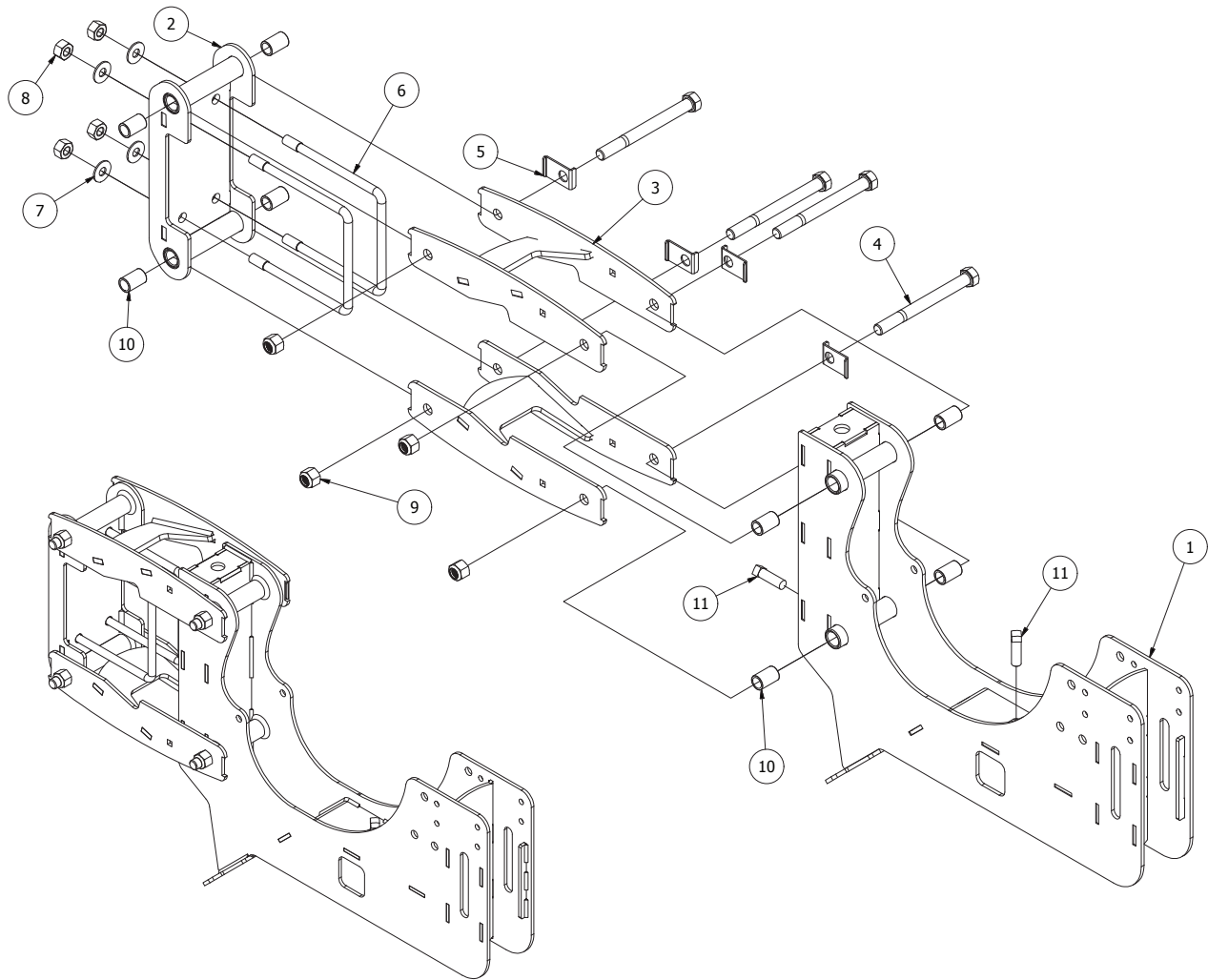
Field Use and Adjustments:

NEVER ALLOW ANYONE TO RIDE ON THIS EQUIPMENT DURING OPERATION

- Maximum operating speed 4 - 8 mph. If obstructions are present, lower operating speed to a safe level. This will help minimize damage.
- Adjust the depth by raising or lowering the depth control tires or coulters.
- The frame must be horizontal (level) front to back and right to left when in use. Adjust by lengthening or shortening the tractor's top link or lift linkages.
- Check and adjust if necessary the adjustable coulters position in relation to the tillage shank working depth.
- Never back up with the Model 889 Cultivator is in the ground.
- Do not make sharp turns when the Model 889 Cultivator in the ground.
- For best results make sure to operate on matching rows.



Model 889 Cultivator
Parts Breakdown
760-828 Gang Bundle
Model Year 2015-Current

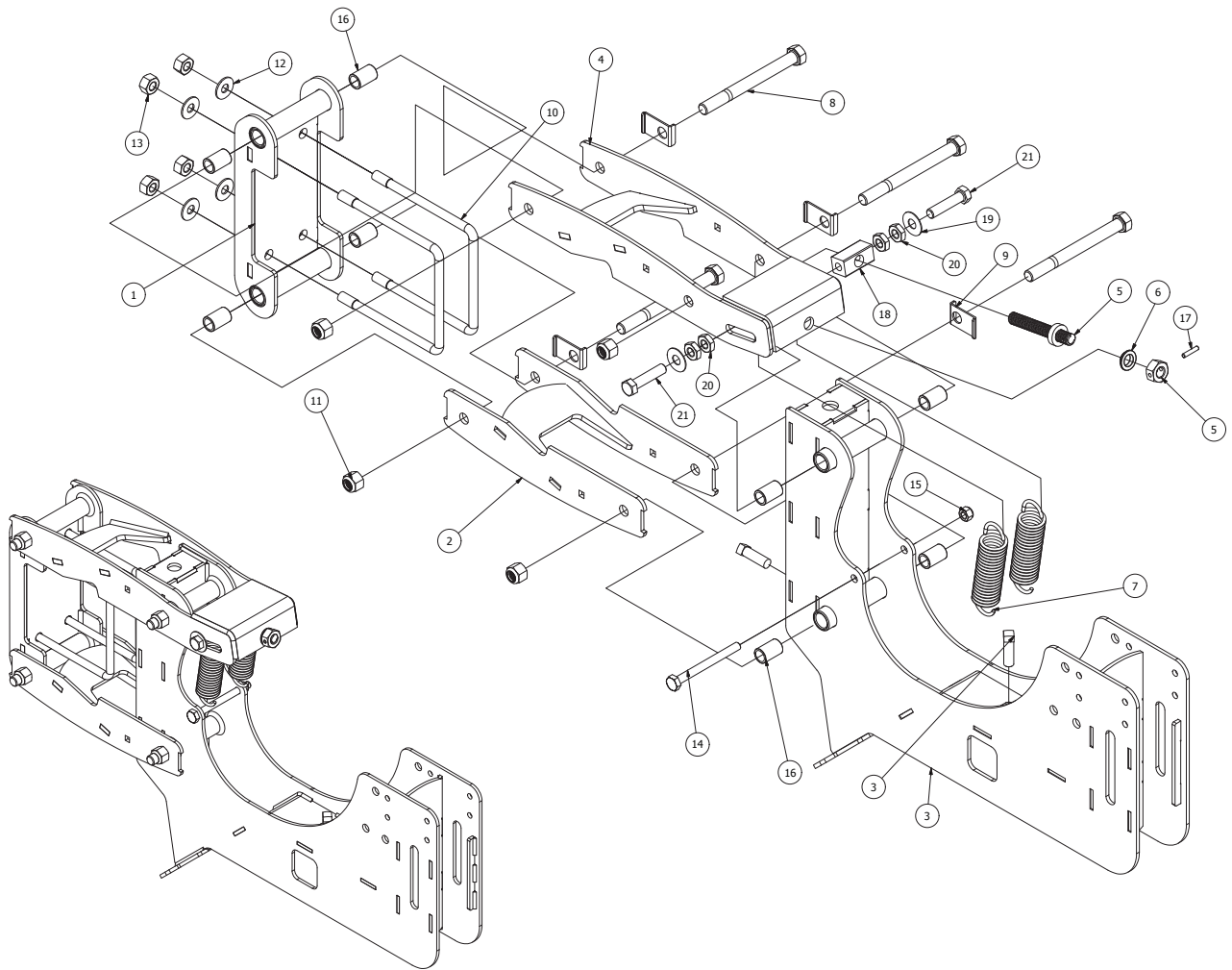


Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	789-206H	TAIL GANG, CULTIVAOR	1				
2.	689-300	BRACKET, 7" CULT. WRAPAROUND	1				
3.	689-307	LINKAGE ARM, CULT. WRAPAROUND	2				
4.	601-1232Z	BOLT, HCS 3/4"X8" (GR5) ZP	4				
5.	689-311	BOLT RETAINER, CULTIVATOR	4				
6.	L6406012	U-BOLT, 5/8" FOR 7X7" BAR ZP	2				
7.	L1050018	WASHER, 5/8" F436 HARD ZP	4				
8.	611-1001Z	NUT, HEX ZP 5/8	4				
9.	613-1200Z	NUT, HEX NYLOCK ZP 3/4	4				
10.	624-116	BUSHING, 3/4"X1"X1-1/2" (DURALON)	8				
11.	606-1008Z	SET SCREW, SQR HD ZP 5/8"X2"	2				

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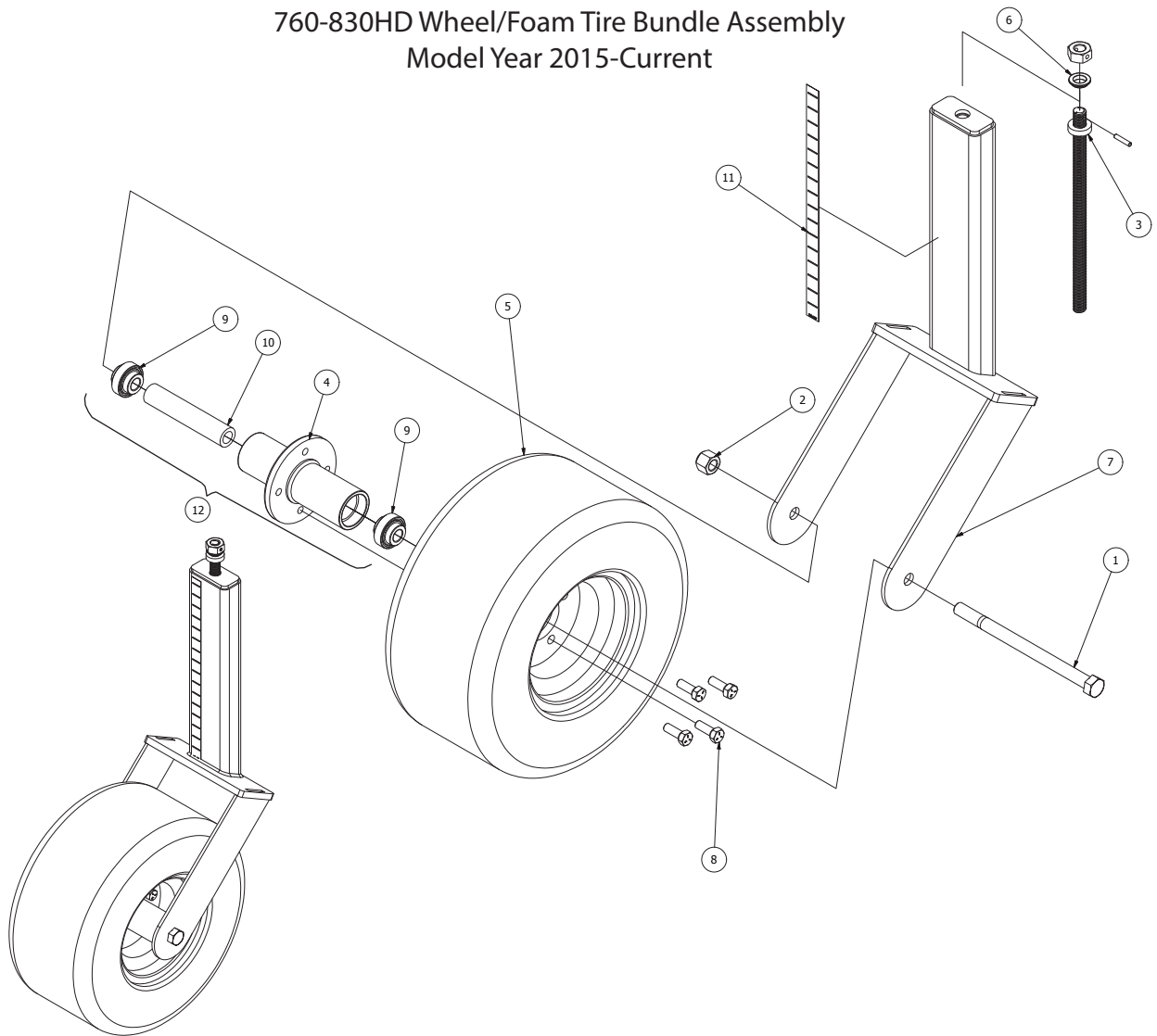
Model 889 Cultivator
Parts Breakdown
760-829 Gang Bundle (Down Pressure)
Model Year 2015-Current



Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	689-300	BRACKET, 7" CULT. WRAP AROUND	1	13.	611-1001Z	NUT, HEX ZP 5/8	4
2.	689-307	LINKAGE ARM, CULT. WRAP AROUND	1	14.	602-0822Z	BOLT, HCS 1/2"X5-1/2" (GR5) ZP	1
3.	789-206H	TAIL GANG, CULTIVATOR	1	15.	613-0800Z	NUT, HEX NYLOCK ZP 1/2"	1
4.	689-332	LINKAGE ARM, DOWN PRESSURE WRAP AROUND	1	16.	624-116	BUSHING, 3/4"X1"X1-1/2"	8
5.	689-333	STUD, SCREW JACK	1	17.	617-064	PIN, ROLL 1/4X1-1/4" ZP	1
6.	624-114	BUSHING, 3/4X1-1/4X9/16" W/HD	1	18.	310-065	BLOCK, 3/4"SQ. X 1-1/2"	1
7.	633-046	SPRING, CULTIVATOR DOWN PRESSURE	2	19.	616-1000Z	WASHER, FLAT ZP 5/8	2
8.	601-1232Z	BOLT, HCS 3/4"X8" (GR5) ZP	4	20.	614-1001Z	NUT, HEX JAM 5/8 ZP	4
9.	689-311	BOLT RETAINER, CULTIVATOR	4	21.	602-1011Z	BOLT, HCS 5/8" X 2-3/4" (GR5) ZP	2
10.	L6406012	U-BOLT, 5/8 FOR 7X7" BAR ZP	2				
11.	613-1200Z	NUT, HEX NYLOCK ZP 3/4"	4				
12.	L1050018	WASHER, 5/8 F436 HARD ZP	4				



Model 889 Cultivator
Parts Break Down
760-830HD Wheel/Foam Tire Bundle Assembly
Model Year 2015-Current

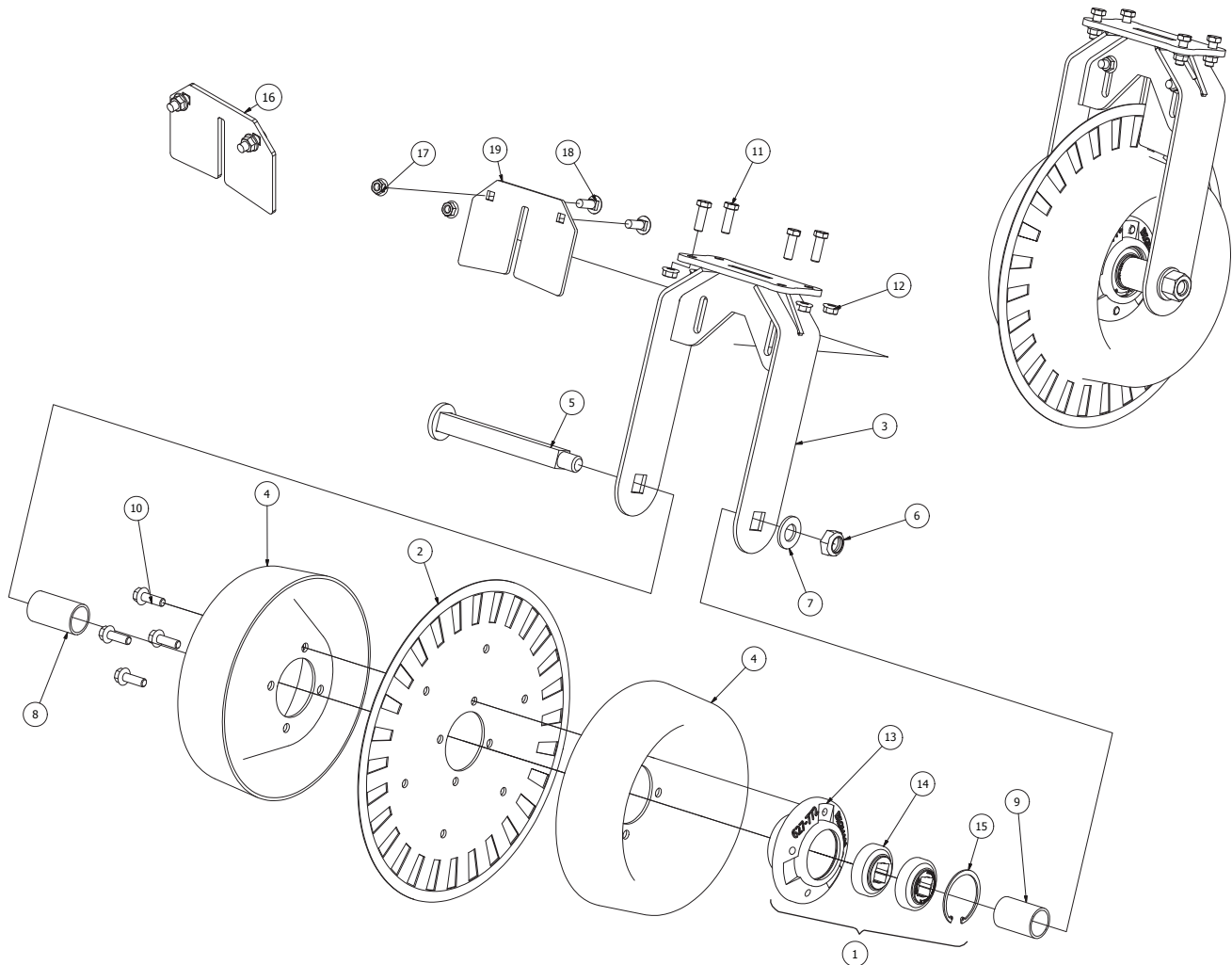


Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	602-1244Z	BOLT, HCS 3/4"X11.00" (GR.5) ZP	1				
2.	613-1215J	NUT, HEX NYLOCK JAM ZP 3/4"	1				
3.	689-306	STUD, SCREW JACK	1				
4.	627-764	HUB, 4 HOLE WHEEL STRIP-TILL	1				
5.	705-008S	WHL/TIRE, 4HOLE 18X8.5X8" FILLED	1				
6.	624-114	BUSHING, 3/4"X1-1/4"X9/16" W/HD	1				
7.	689-305	TIRE BRACKET WELDMENT	1				
8.	607-0805P	BOLT, LUG 1/2"X1.25" (13/16 HD)	4				
9.	L2050144	BEARING	2				
10.	636-882	SPACER, BRG. 4-HOLE HUB STRIPTILL	1				
11.	399-063	STINGER, RULER CULTIVATOR DECAL	1				
12.	627-771	HUB/BRG., 4 HOLE WHEEL STRIPTILL	-				

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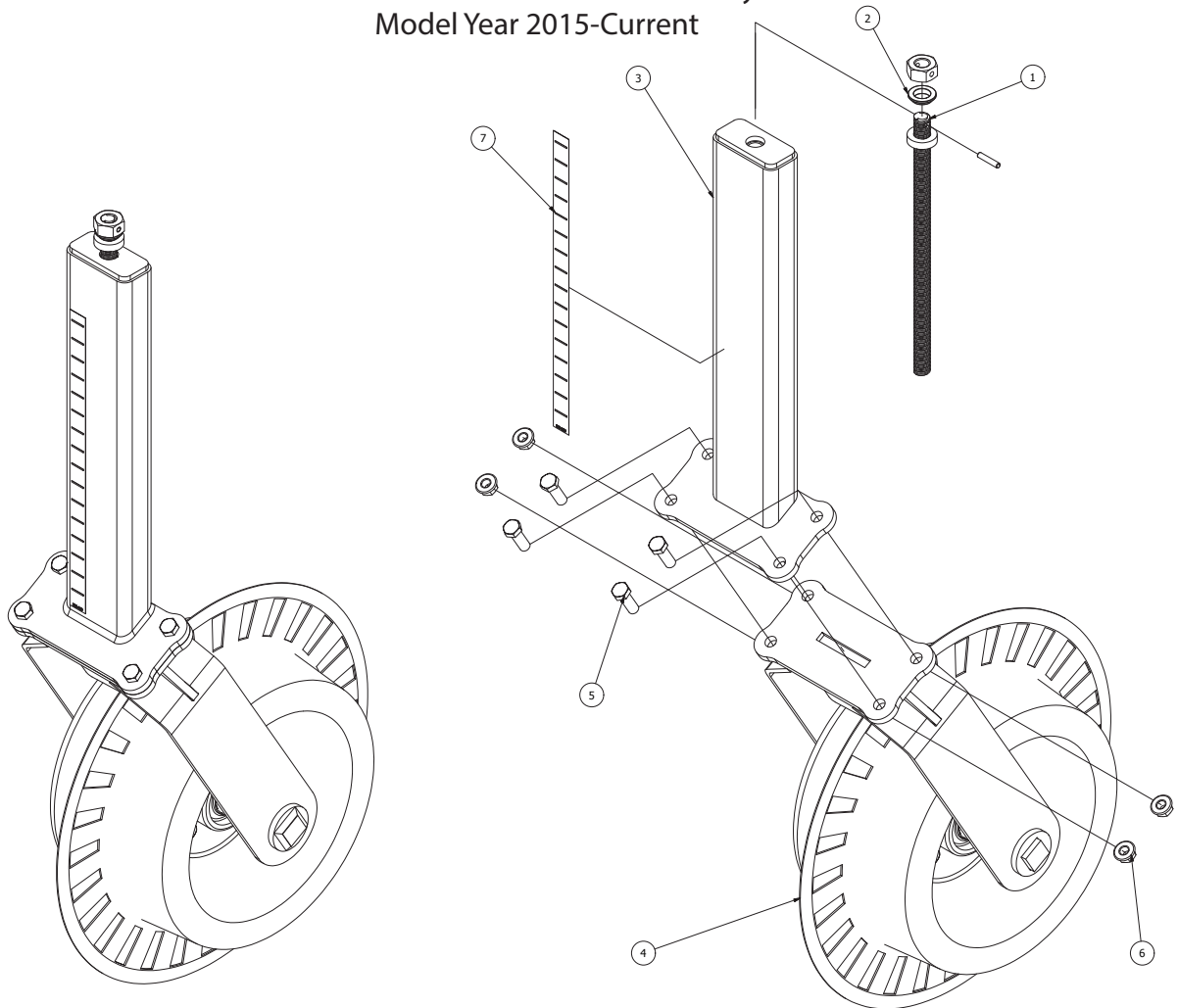
Model 889 Cultivator
Parts Break Down
789-307 Bundle ASSY., Rigid Coulter (Wide)
Model Year 2015-Current



Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	627-773	HUB/BRG. ASSY, CLTR. STRIPTILL	-	15.	627-010	SNAP RING, DISC BDR HOUSING	1
2.	630-012	BLADE FLUTED 20.00X4.5MM HOLE	1	16.	889-125	SCRAPER KIT, ADJ. S-TILL COULTER	-
3.	689-207W	BRKT., RIGID CLTR. STRIPTILL WIDE	1	17.	614-0801Z	NUT, HEX SERRATED FLANGE 1/2"	2
4.	660-142	DEPTH BAND, 4X14 FOR 20" BLADE	2	18.	604-0806Z	BOLT, CRG 1/2"X1-1/2" (GR5) ZP	2
5.	610-0064	COULTER BOLT	1	19.	310-999	SCRAPER, STRIPTILL COULTER	1
6.	614-1606Z	NUT,HEX NYLOCK JAM ZP 1"	1				
7.	616-1605Z	WASHER, FLAT 1.00 S.A.E.	1				
8.	312-421	BUSHING, 1.61 I.D. X 3.3125"L	1				
9.	312-422	BUSHING, 1.61 I.D. X 2.8125"L	1				
10.	602-0806F	BOLT, FLANGE 1/2" X 1-1/2"	4				
11.	602-0806Z	BOLT, HCS 1/2" X 1-1/2"	4				
12.	614-0801Z	NUT, HEX SERRATED FLANGE 1/2"	4				
13.	627-772	HUB, COULTER STRIP-TILL	1				
14.	622-057	BEARING, 1.125" SQ BBI SPECIAL	2				



Model 889 Cultivator
Parts Break Down
760-831 Coulter Bundle Assembly
Model Year 2015-Current

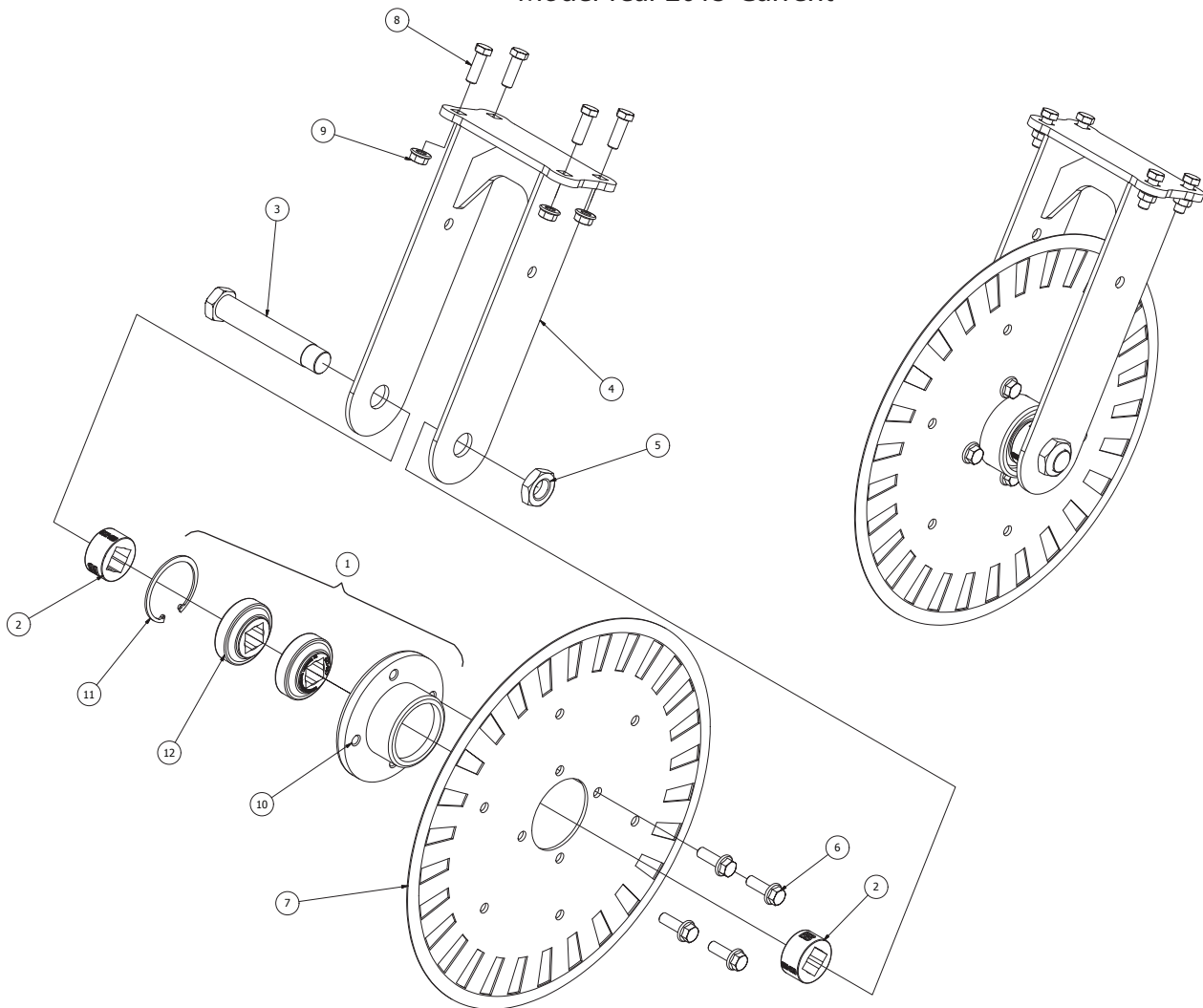


Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	689-306	STUD, SCREW JACK	1				
2.	624-114	BUSHING, 3/4"X1-1/4"X9/16" W/HD	1				
3.	689-337	STINGER, COULTER MNT. CULT.	1				
4.	789-307	RIGID CLTR. BUNDLE ASSY. (SEE PAGE 8 FOR BREAKDOWN)	1				
5.	602-0806Z	BOLT, HCS 1/2"X1-1/2"	4				
6.	614-0801Z	NUT, HEX SERRATED FANGE 1/2"	4				
7.	399-063	STINGER, RULER CULTIVATOR DECAL	1				

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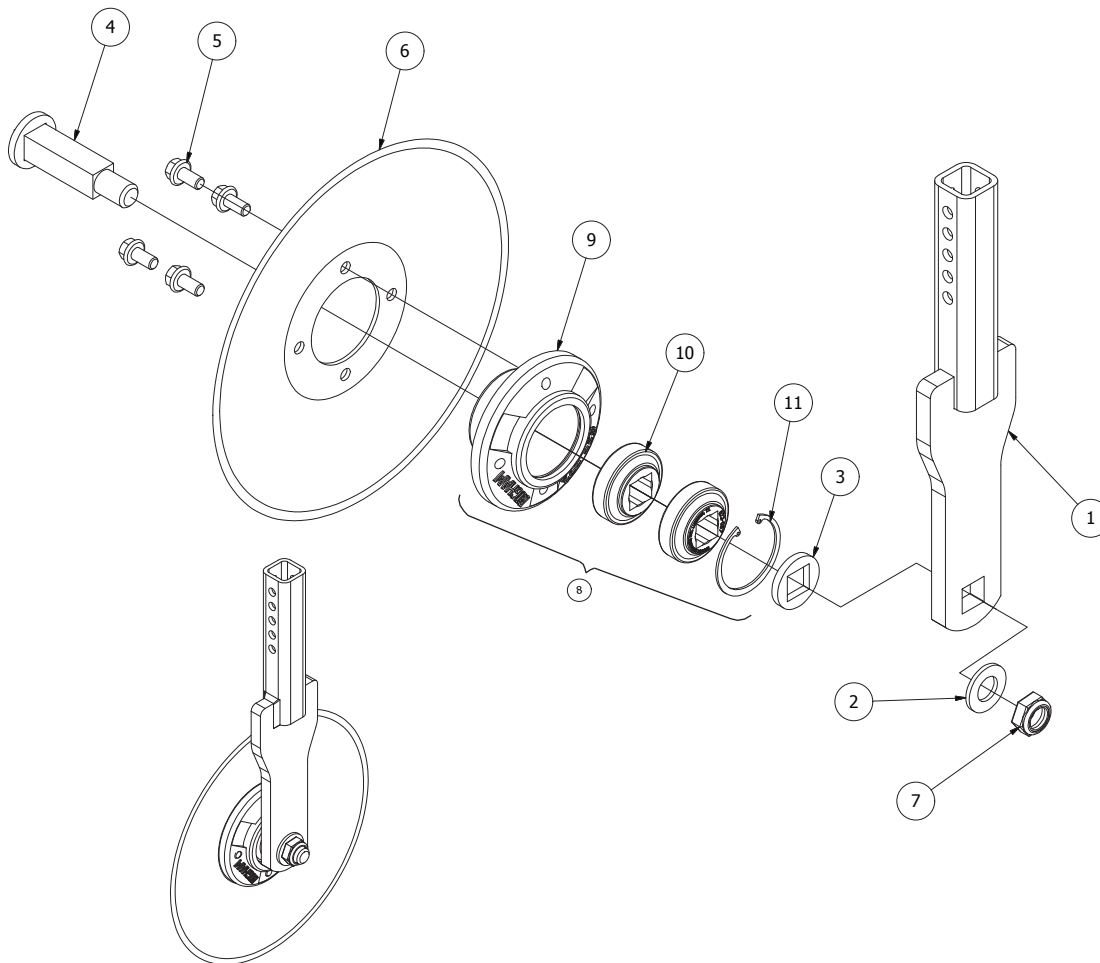
Model 889 Cultivator
Parts Break Down
789-309 Cult. Rigid Cltr. Bundle ASSY.
Model Year 2015-Current



Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	627-773	HUB/BRG. ASSY, CLTR. STIPTILL	-				
2.	689-210	SPACER, COULTER HUB STRIPTILL	2				
3.	610-0061	AXLE, 1.209" X 6.125" USBL.	1				
4.	689-207R	BRACKET, RIGID COULTER RND.	1				
5.	614-1800M	NUT, HEX NYLOCK JAM 1-1/8	1				
6.	602-0806F	BOLT, FLANGE 1/2"X1-1/2"	4				
7.	630-023	BLADE, FLUTED 17.00 X 4.5MM HOLE	1				
8.	602-0806Z	BOLT, HCS 1/2"X1-1/2"	4				
9.	614-0801Z	NUT, HEX SERRATED FLANGE 1/2"	4				
10.	627-772	HUB, COULTER STRIPTILL	1				
11.	627-010	SNAP RING, DISC BDR HOUSING	1				
12.	622-057	BEARING, 1.125 SQ BBI SPECIAL	2				



Model 889 Cultivator
Parts Break Down
812-145 Blade/Shank/Hub 16" Conc. Disc
Model Year 2015-Current

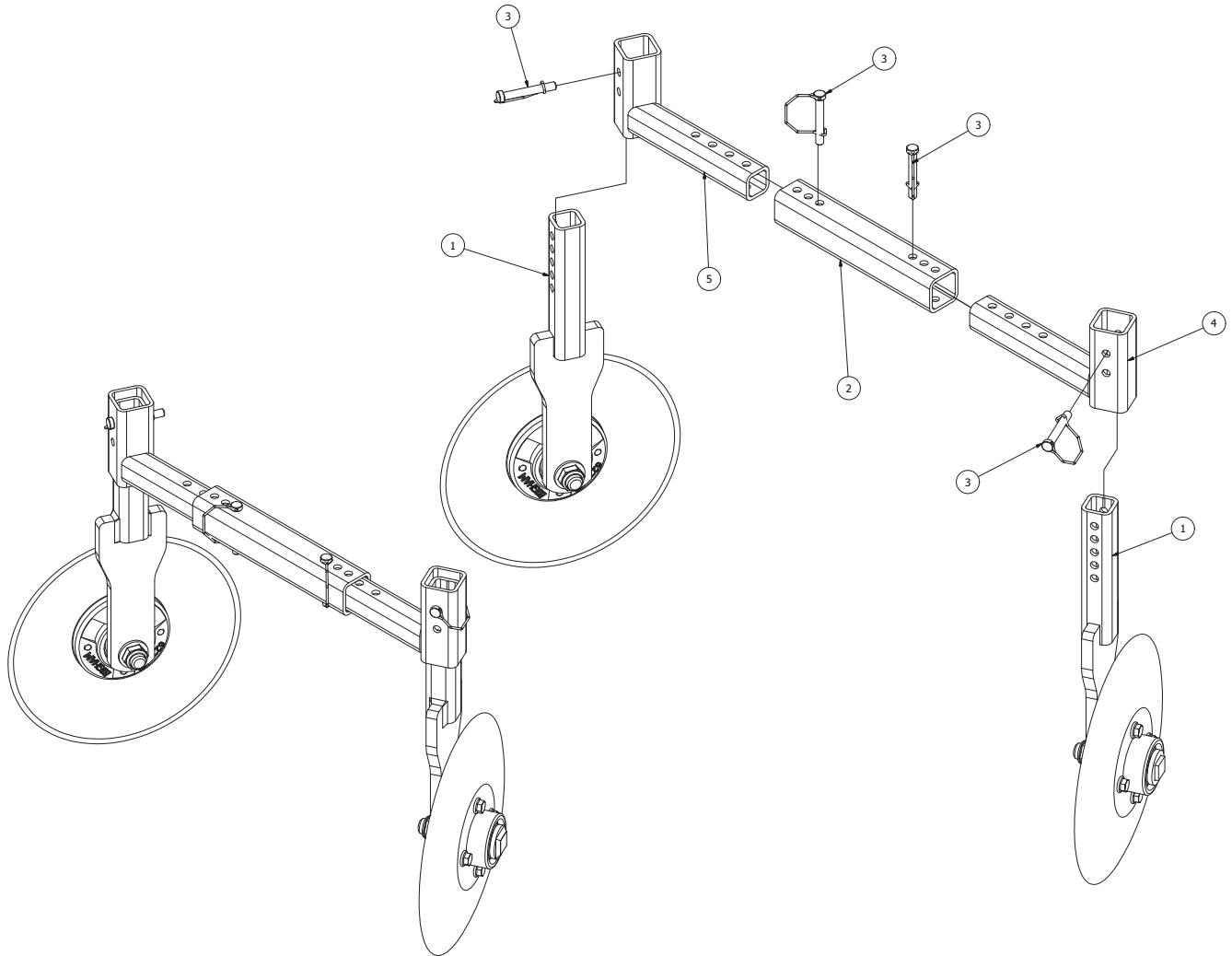


Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	689-343	SHANK WELDMWNT, B.O.D.	1				
2.	616-1605Z	WASHER, FLAT 1.00 S.A.E.	1				
3.	310-940	HEAD PLATE .31 X 2.25RD X 1.18 SQ.	1				
4.	610-0059	BOLT, BAR OFF DISC	1				
5.	607-0804	BOLT, FLG (NF) 1/2" X 1" (3/4"HD)	4				
6.	630-028	DISC, CONC 16"X4.5MM 4 HOLE	1				
7.	614-1606Z	NUT, HEX NYLOCK JAM ZP 1"	1				
8.	627-773	HUB/BRG. ASSY, CLTR STRIPTILL	-				
9.	627-772	HUB, COULTER STRIP-TILL	1				
10.	622-057	BEARING, 1.125" SQ BBI SPECIAL	2				
11.	627-010	SNAP, RING, DISC BDR HOUSING	1				

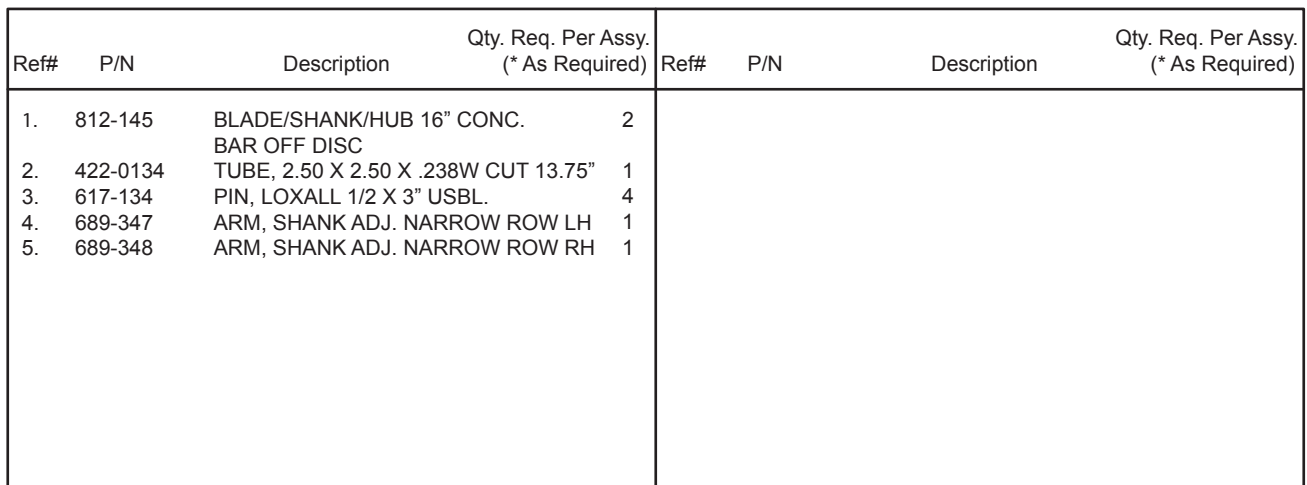
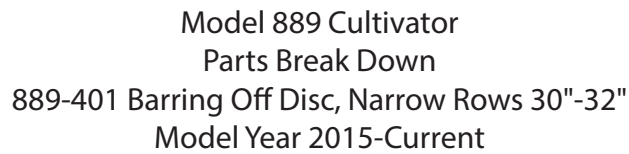
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Model 889 Cultivator
Parts Break Down
889-400 Barring Off Disc, Wide Rows 34"-40"
Model Year 2015-Current

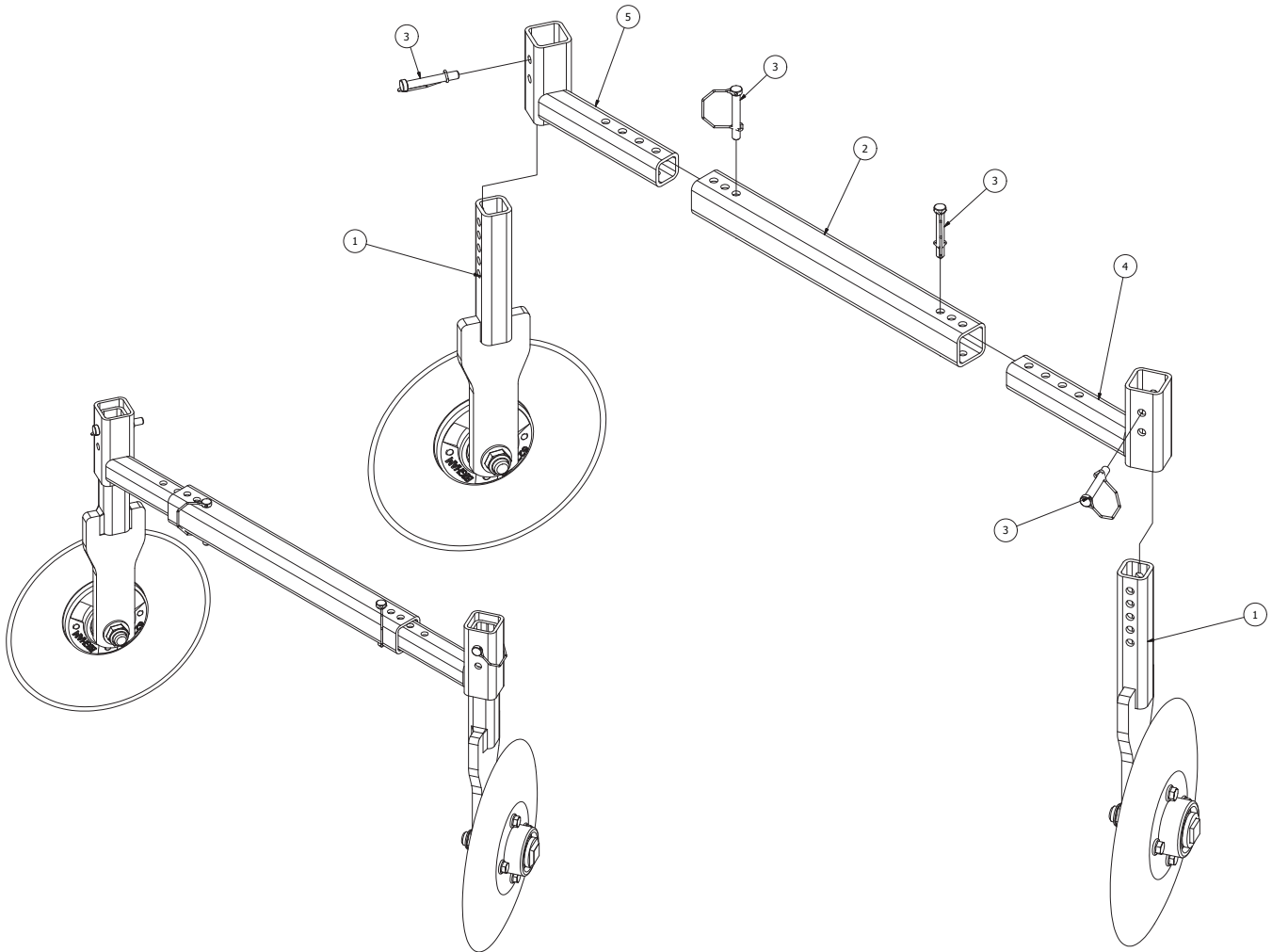


Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	812-145	BLADE/SHANK/HUB 16" CONC. BAR OFF DISC	2				
2.	422-0134	TUBE, 2.50 X 2.50 X .238W CUT 13.75"	1				
3.	617-134	PIN, LOXALL 1/2 X 3" USBL.	4				
4.	689-344	ARM, SHANK ADJ. LH	1				
5.	689-345	ARM, SHANK ADJ. RH	1				





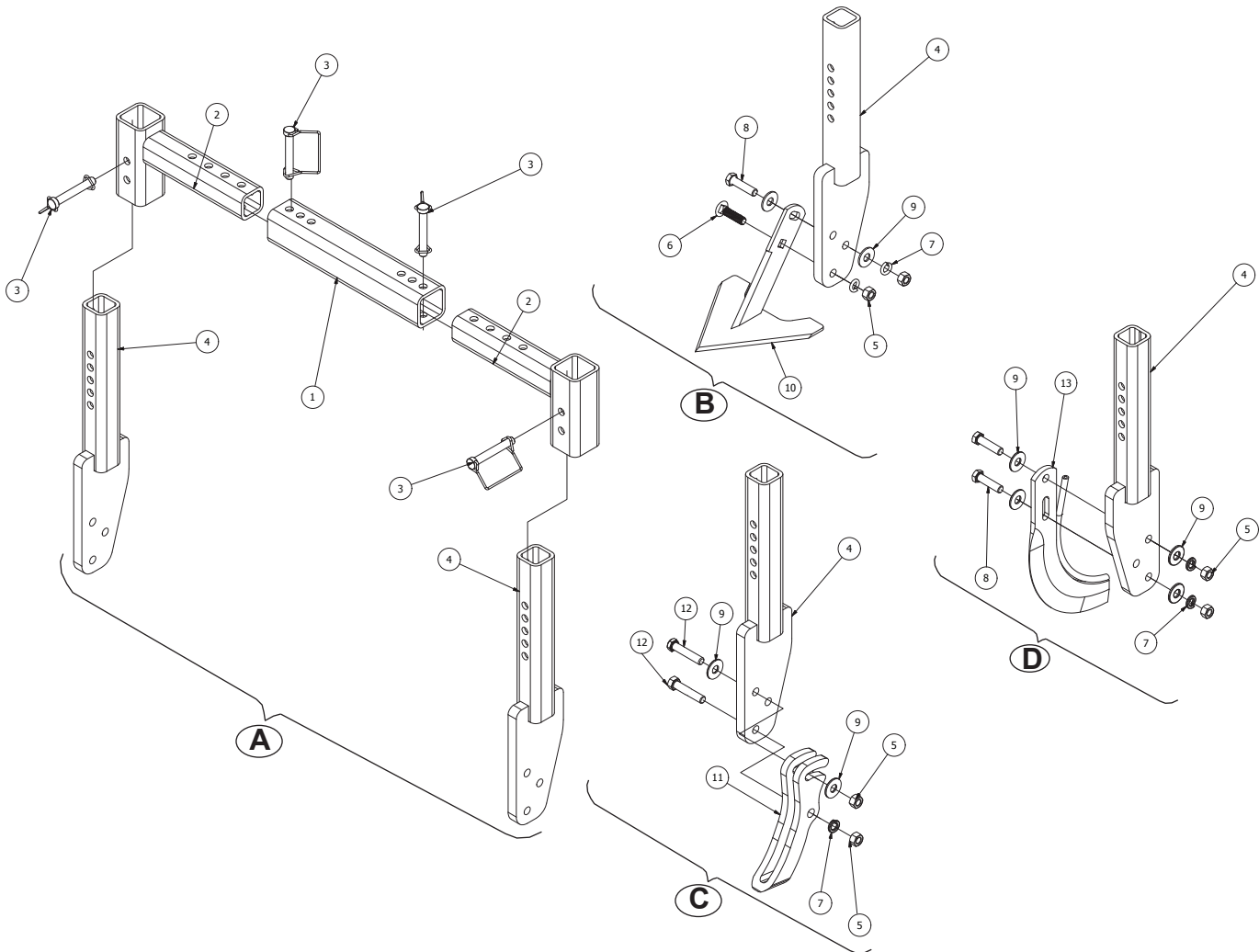
Model 889 Cultivator
Parts Break Down
889-402 Barring Off Disc, Wide Rows 46"-50"
Model Year 2015-Current



Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	812-145	BLADE/SHANK/HUB 16" CONC. BAR OFF DISC	2				
2.	422-0234	TUBE, 2.50 X 2.50 X .238W.CUT 23.75"	1				
3.	617-134	PIN, LOXALL 1/2 X 3" USBL.	4				
4.	689-344	ARM, SHANK ADJ. LH	1				
5.	689-345	ARM, SHANK ADJ. RH	1				



Model 889 Cultivator
Parts Break Down
889-403 Side Sweep, Wide Rows 34"-40"
Model Year 2015 - Current

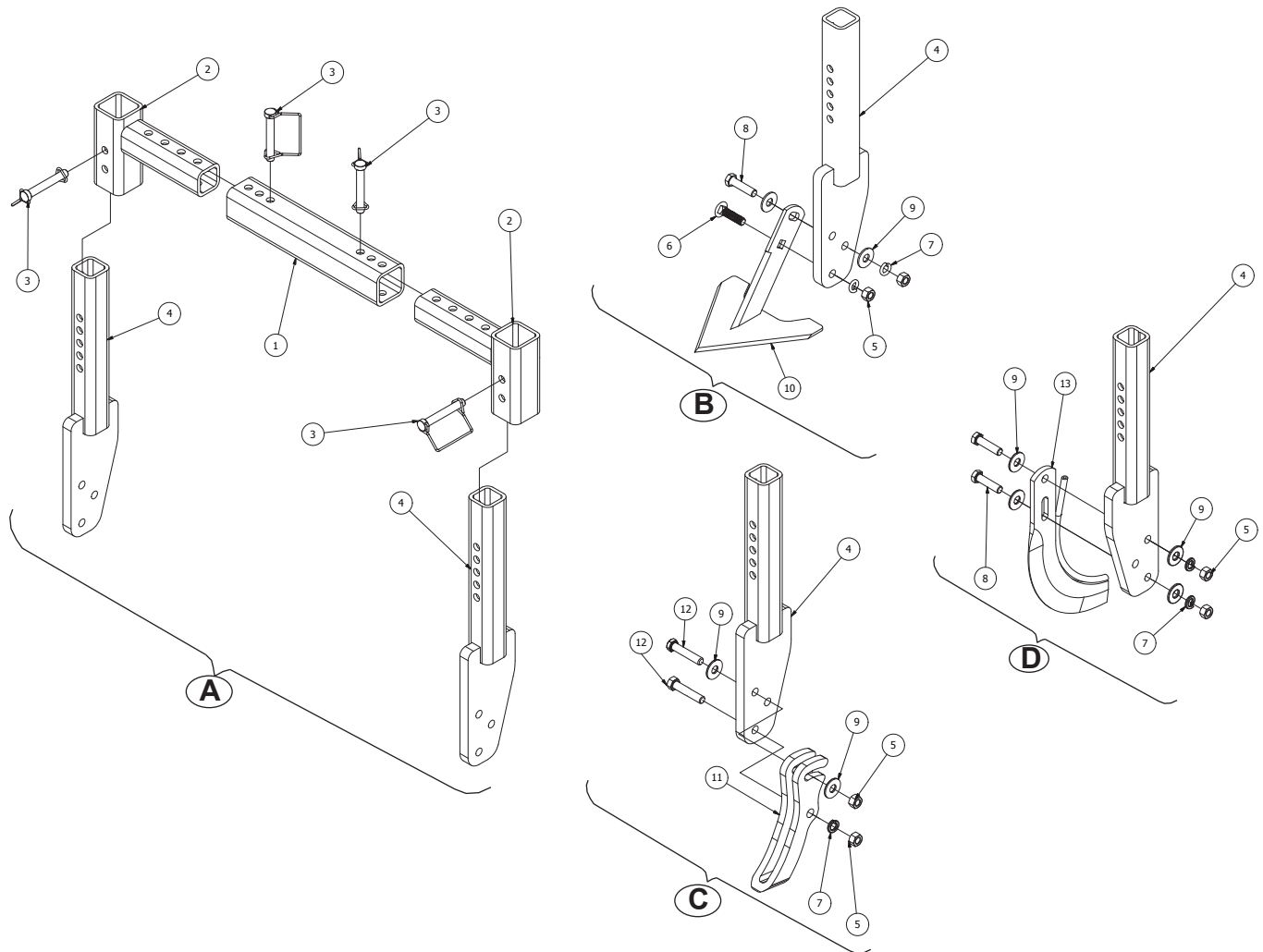


Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
A				C			
1.	422-0134	TUBE, 2.50 X .25 W. CUT 13.75"	1	4.	689-349	SHANK WELDMWNT, SWEEP	1
2.	689-350	ARM, SHANK, ADJ. FIN SWEEP	2	5.	611-0801Z	NUT, HEX ZP 1/2 GR. 5	2
3.	617-134	PIN, LOXAL 1/2X3" USBL.	4	7.	615-0800Z	WASHER, LOCK ZP 1/2	1
4.	689-349	SHANK WELDMENT, SWEEP	2	9.	616-0800Z	WASHER, FLAT ZP 1/2	2
B				11.	628-005	FOOT PIECE, 3/4 X 2-1/2" SHANK	1
4.	689-349	SHANK WELDMENT, SWEEP	1	12.	602-0810Z	BOLT. HCS 1/2 X 2.5 (GR. 5) ZP	2
5.	611-0801Z	NUT, HEX ZP 1/2 GR. 5	2	D			
6.	604-0808Z	BOLT, CRG 1/2"x2" (GR5) ZP	1	4.	689-349	SHANK WELDMENT, SWEEP	1
7.	615-0800Z	WASHER, LOCK ZP 1/2	2	5.	611-0801Z	NUT, HEX ZP 1/2 GR. 5	2
8.	602-0808Z	BOLT, HCS 1/2 X 2.00 GR. 5 ZP	1	7.	615-0800Z	WASHER, LOCK ZP 1/2	2
9.	616-0800Z	WASHER, FLAT ZP 1/2	2	8.	602-0808Z	BOLT, HCS 1/2 X 2.00 GR. 5 ZP	2
10.	FIN SWEEP	8" FIN SWEEP (NOT PROVIDED)	1	9.	616-0800Z	WASHER, FLAT ZP 1/2	2
				13.	630-704	KNIFE, FERT. BACKSWEEP	1

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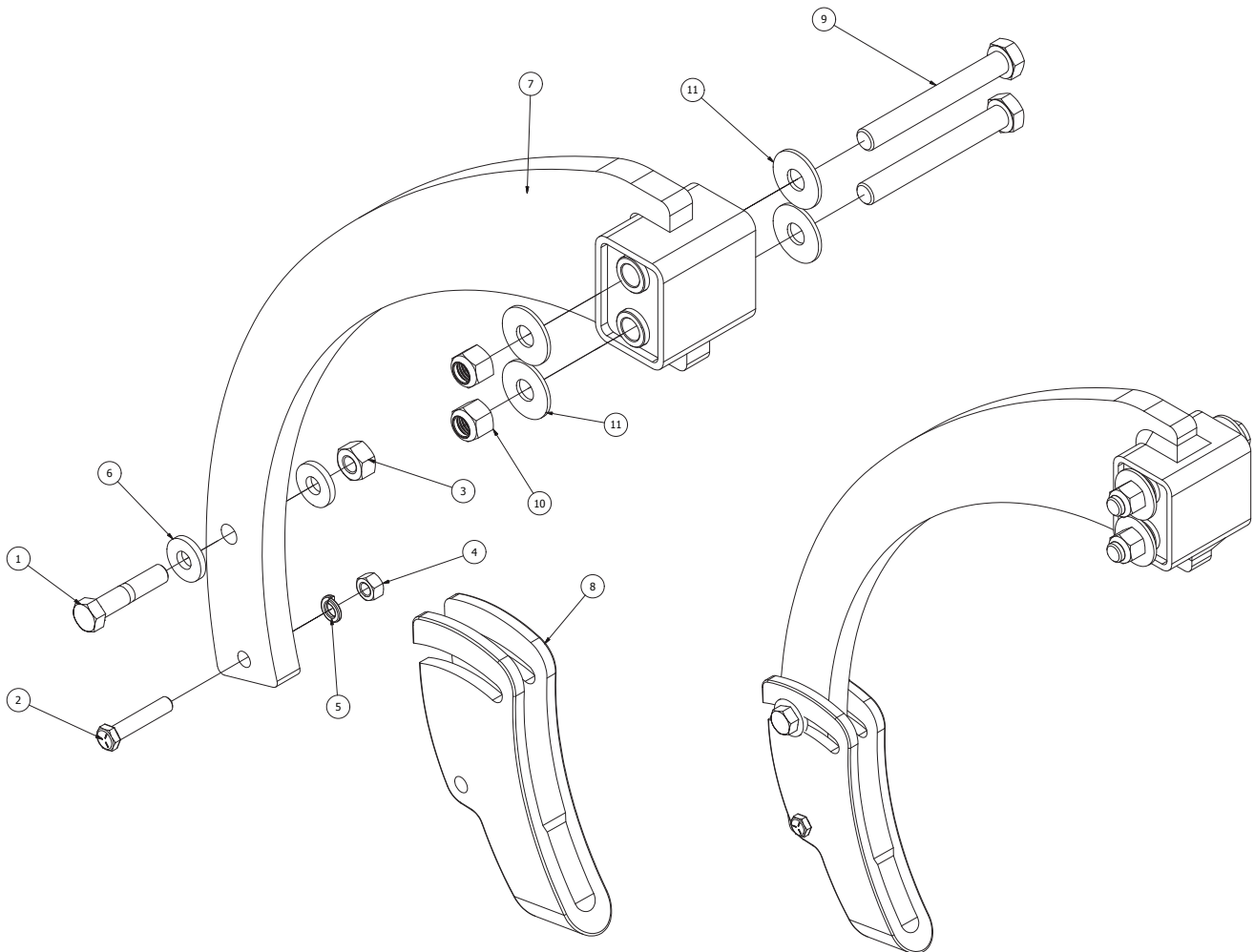
Model 889 Cultivator
Parts Break Down
889-404 Side Sweep, Narrow Rows 30"-32"
Model Year 2015 - Current



Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
A			-	C			-
1.	422-0134	TUBE, 2.50 X .25 W. CUT 13.75"	1	4.	689-349	SHANK WELDMWNT, SWEEP	1
2.	689-351	ARM, SHANK, ADJ. FIN SWEEP	2	5.	611-0801Z	NUT, HEX ZP 1/2 GR. 5	2
3.	617-134	PIN, LOXAL 1/2X3" USBL.	4	7.	615-0800Z	WASHER, LOCK ZP 1/2	1
4.	689-349	SHANK WELDMENT, SWEEP	2	9.	616-0800Z	WASHER, FLAT ZP 1/2	2
B			-	11.	628-005	FOOT PIECE, 3/4 X 2-1/2" SHANK	1
4.	689-349	SHANK WELDMENT, SWEEP	1	12.	602-0810Z	BOLT. HCS 1/2 X 2.5 (GR. 5) ZP	2
5.	611-0801Z	NUT, HEX ZP 1/2 GR. 5	2	D			-
6.	604-0808Z	BOLT, CRG 1/2"X2" (GR5) ZP	1	4.	689-349	SHANK WELDMENT, SWEEP	1
7.	615-0800Z	WASHER, LOCK ZP 1/2	2	5.	611-0801Z	NUT, HEX ZP 1/2 GR. 5	2
8.	602-0808Z	BOLT, HCS 1/2 X 2.00 GR. 5 ZP	1	7.	615-0800Z	WASHER, LOCK ZP 1/2	2
9.	616-0800Z	WASHER, FLAT ZP 1/2	2	8.	602-0808Z	BOLT, HCS 1/2 X 2.00 GR. 5 ZP	2
10.	FIN SWEEP	8" FIN SWEEP (NOT PROVIDED)	1	9.	616-0800Z	WASHER, FLAT ZP 1/2	2
				13.	630-704	KNIFE, FERT. BACKSWEEP	1



Model 889 Cultivator
Parts Break Down
705-279 Chisel Shank Weldment W/Adj. Foot Piece
Model Year 2015-Current



Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	602-1012Z	BOLT, HCS 5/8 X 3.00 (GR.5) ZP	1				
2.	602-0810Z	BOLT, HCS 1/2 X 2.50 (GR.5) ZP	1				
3.	611-1001Z	NUT, HEX ZP 5/8	1				
4.	611-0801Z	NUT, HEX ZP 1/2 GR. 5	1				
5.	615-0800Z	WASHER, LOCK ZP 1/2	1				
6.	616-1002Z	WASHER, FLAT 5/8 (HEAVY) ZP	2				
7.	689-294	WELDMENT, CULTIVATOR CHISEL SHANK	1				
8.	628-003	FOOT PC. 1.00 X 3.00 HS	1				
9.	602-1224Z	BOLT, HCS 3/4 X 6.00 (GR.5) ZP	2				
10.	613-1200Z	NUT, HEX NYLOCK ZP 3/4"	2				
11.	616-1200Z	WASHER, FLAT 3/4" ZP	4				

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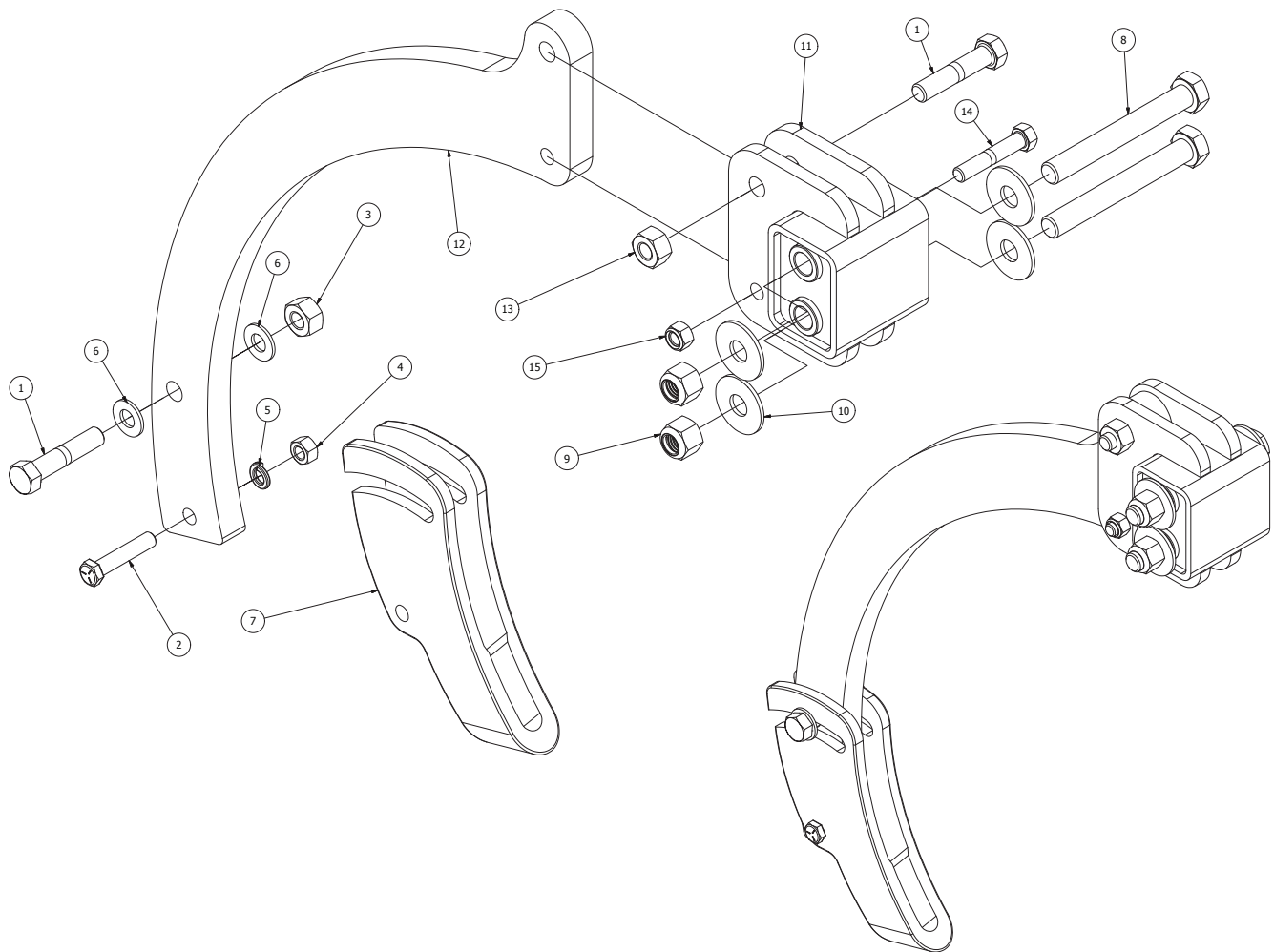


Model 889 Cultivator

Parts Break Down

705-280 Shear Bolt Chisel Shank Weldment W/Adj. Foot Piece

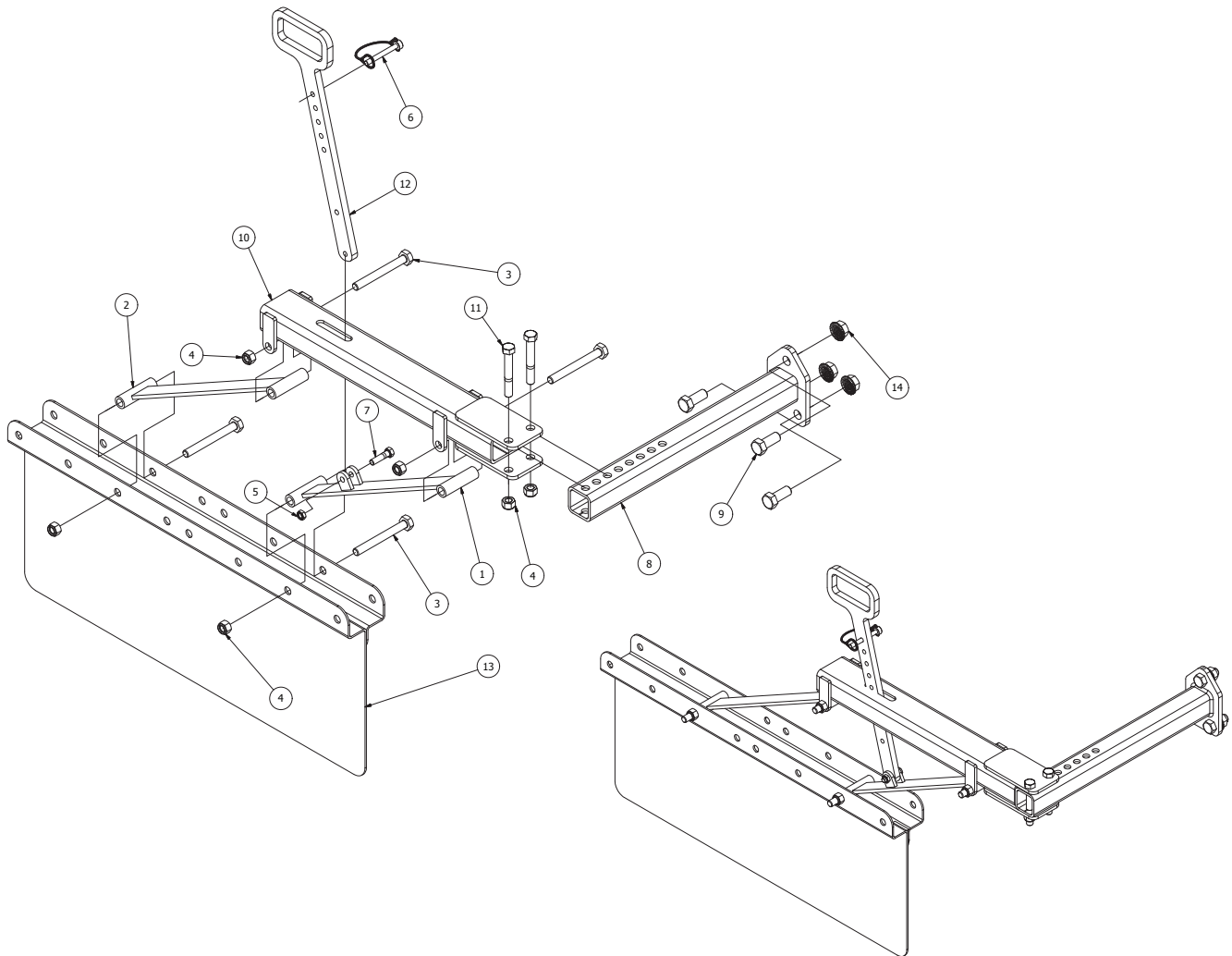
Model Year 2015-Current



Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	602-1012Z	BOLT, HCS 5/8 X 3.00 (GR.5) ZP	2	15.	613-0800Z	NUT, HEX NYLOCK ZP 1/2	1
2.	602-0810Z	BOLT, HCS 1/2 X 2.50 (GR.5) ZP	1				
3.	611-1001Z	NUT, HEX ZP 5/8	1				
4.	611-0801Z	NUT, HEX ZP 1/2 GR. 5	1				
5.	615-0800Z	WASHER, LOCK ZP 1/2	1				
6.	616-1002Z	WASHER, FLAT 5/8 (HEAVY) ZP	2				
7.	628-003	FOOT PC. 1.00 X 3.00 HS	1				
8.	602-1224Z	BOLT, HCS 3/4 X 6.00 (GR.5) ZP	2				
9.	613-1200Z	NUT, HEX NYLOCK ZP 3/4"	2				
10.	616-1200Z	WASHER, FLAT 3/4" ZP	4				
11.	689-294B	SHANK MNT., CHISEL (SHEAR)	1				
12.	631-019	SHANK, CULTIVATOR (SHEAR)	1				
13.	613-1005Z	NUT, HEX NYLOCK ZP 5/8	1				
14.	601-0811Z	BOLT, HCS 1/2"X2-3/4" (GR2) ZP	1				



Model 889 Cultivator
Parts Break Down
760-820 CROP SHIELD ASSY., CULTILISTER
Model Year 2015-Current



Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	689-309	LINKAGE ARM, CROP SHIELD	1				
2.	689-274R	LINKAGE ARM, REAR CROP SHIELD	1				
3.	602-0818Z	BOLT, HCS 1/2" X 4-1/2" (GR 5) ZP	4				
4.	613-0800Z	NUT, HEX NYLOCK ZP 1/2	6				
5.	613-0600Z	NUT, HEX NYLOCK ZP 3/8"	1				
6.	617-131	PIN, LOCK PTO SQR. 5/16" X 2-1/4"	1				
7.	602-0606Z	BOLT, HCS 3/8 X 1.50 (GR. 5) ZP	1				
8.	689-346	BRACKET, CULT. SHIELD MOUNT	1				
9.	602-1006Z	BOLT, HCS 5/8" X 1-1/2" (GR. 5) ZP	3				
10.	689-308H	TOP ARM, CROP SHIELD	1				
11.	602-0814Z	BOLT, HCS 1/2 X 3.50 GR. 5 ZP	2				
12.	310-691H	HANDLE, CROP SHIELD HD	1				
13.	689-352	WELDMENT, BED SPLITTER	1				
14.	614-1004Z	NUT, HEX SERRATED FLANGE 5/8"	3				

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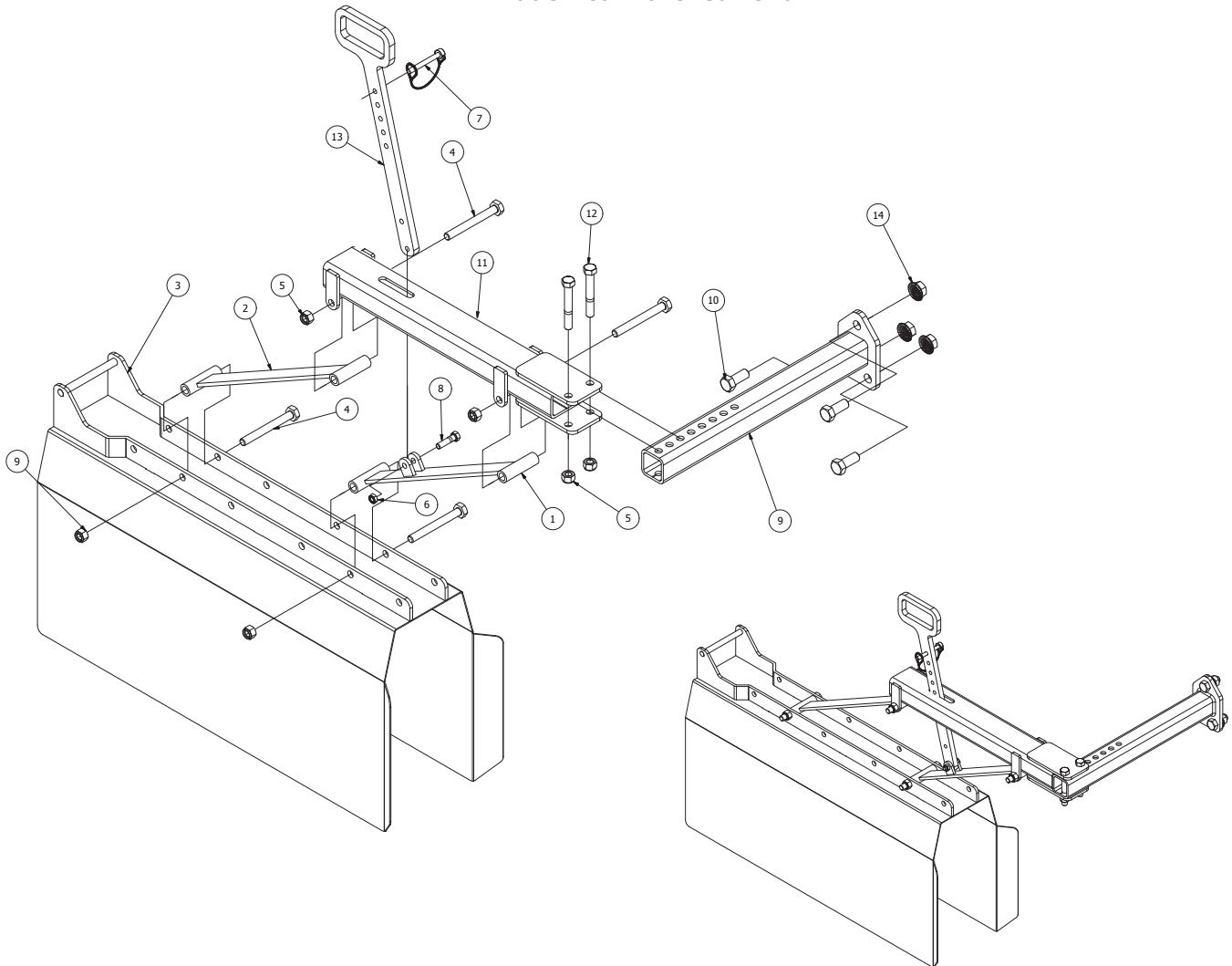


Model 889 Cultivator

Parts Break Down

760-821 Heavy Duty Crop Fender Bundle Assembly

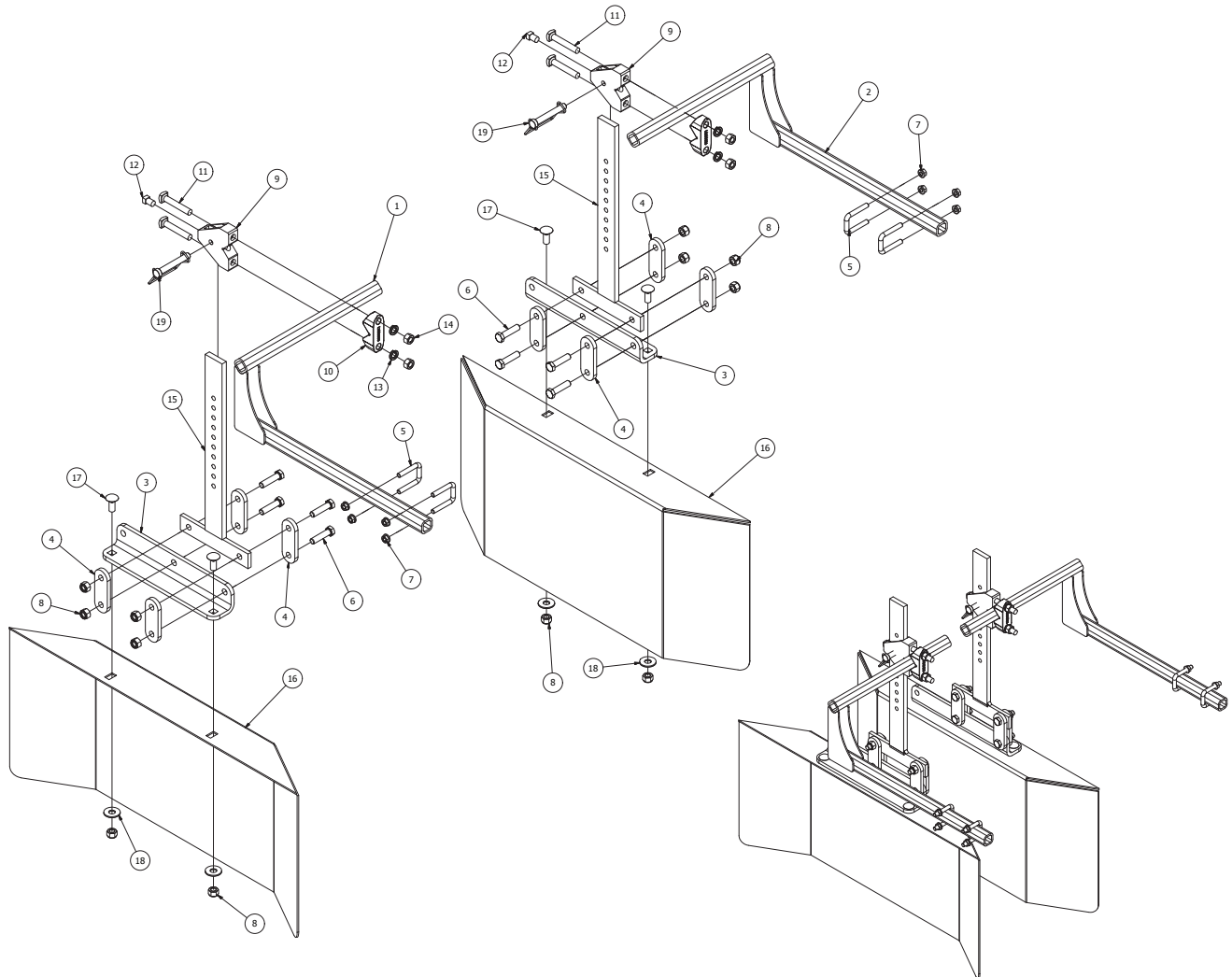
Model Year 2015-Current



Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	689-309	LINKAGE ARM, CROP SHIELD	1				
2.	689-274R	LINKAGE ARM, REAR CROP SHIELD	1				
3.	689-277	HOOD WLMT, 34" 888 CULTIVATOR	1				
4.	602-0818Z	BOLT, HCS 1/2" X 4-1/2" (GR 5) ZP	4				
5.	613-0800Z	NUT, HEX NYLOCK ZP 1/2	6				
6.	613-0600Z	NUT, HEX NYLOCK ZP 3/8"	1				
7.	617-131	PIN, LOCK PTO SQR. 5/16"X2-1/4"	1				
8.	602-0606Z	BOLT, HCS 3/8 X 1.50 (GR. 5) ZP	1				
9.	689-346	BRACKET, CULT. SHIELD MOUNT	1				
10.	602-1006Z	BOLT, HCS 5/8" X 1-1/2" (GR. 5) ZP	3				
11.	689-308H	TOP ARM, CROP SHIELD	1				
12.	602-0814Z	BOLT, HCS 1/2 X3.50 (GR. 5) ZP	2				
13.	310-691H	HANDLE, CROP SHIELD HD	1				
14.	614-1004Z	NUT, HEX SERRATED FLANGE 5/8"	3				



Model 889 Cultivator
Parts Break Down
760-822 Cultivator Split Crop Shield Bundle Assembly
Model Year 2015 - Current

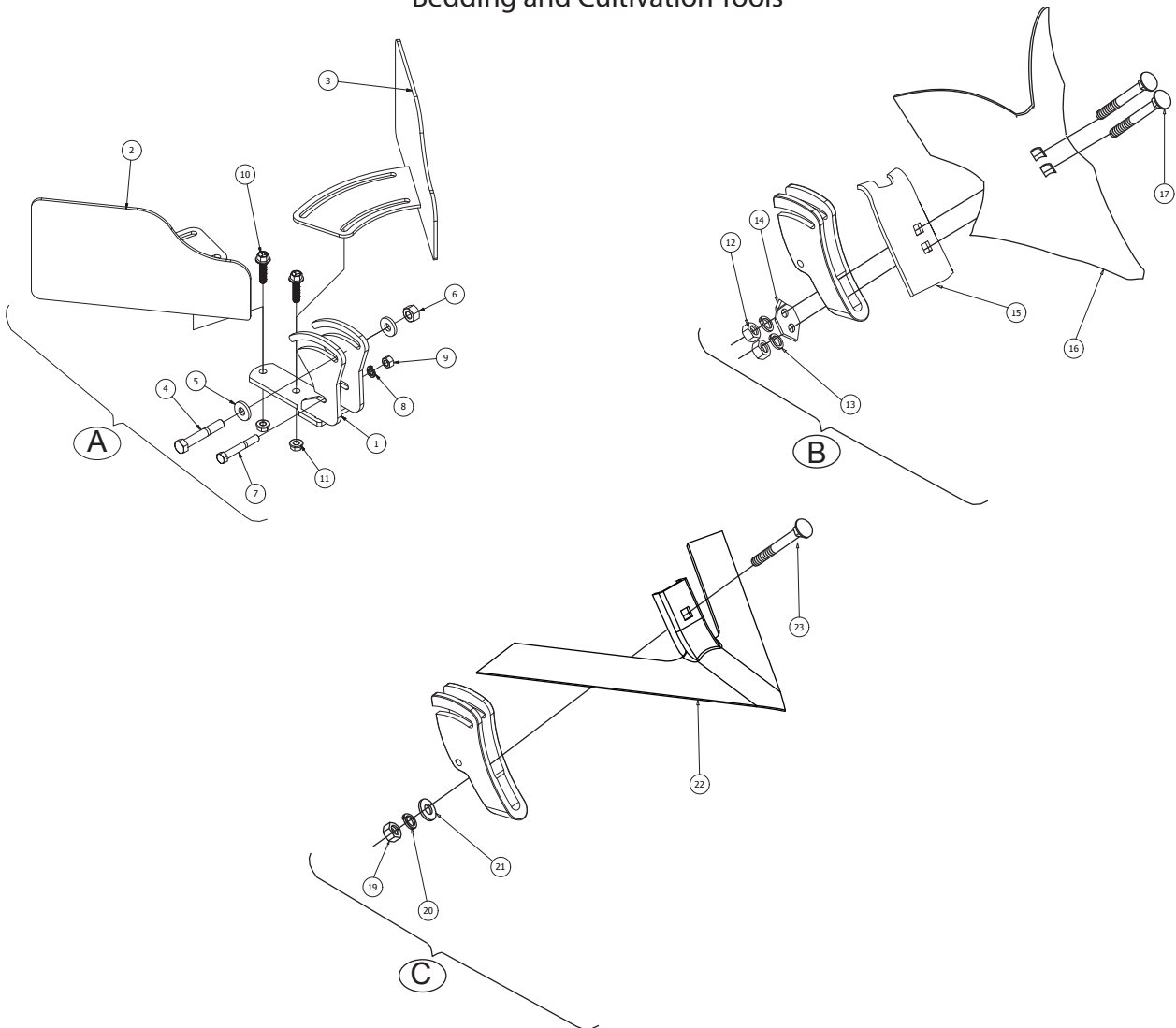


Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	689-245L	MOUNT ARM, CROP SHIELD LH	1	15.	S-7674	SHANK, HOOD FENDER .50 X 2.00 X 18.00	2
2.	689-245R	MOUNT ARM, CROP SHIELD RH	1	16.	S-7826	CROP SHIELD, UNIVERSAL	2
3.	715-615	BRACKET, HOOD PIVOT 888 CULT.	2	17.	604-0805Z	BOLT, CRG 1/2"X1-1/4" (GR5) ZP	4
4.	715-605	LUG, PIVOT HOOD FENDER	8	18.	616-0800Z	WASHER, FLAT ZP 1/2	4
5.	610-0017	U-BOLT, 3/8" FOR 1.25"SQR. BAR ZP	4	19.	617-134	PIN, LOXAL 1/2X3" USBL.	2
6.	602-0808Z	BOLT, HCS 1/2 X 2.00 GR. 2 ZP	8				
7.	614-0601Z	NUT, HEX FLANGE ZP 3/8"	8				
8.	613-0800Z	NUT, HEX NYLOCK ZP 1/2	12				
9.	L50000025	CLAMP, 1.25 DIA. TO .5X2.0"SHANK	2				
10.	L2000036	BRACKET CLAMP	2				
11.	L7161630	BOLT, SQ HD 1/2X3" GR5 ZP	4				
12.	606-0803Z	SET SCREW, SQ HD 1/2"X3/4"	2				
13.	615-0800Z	WASHER, LOCK ZP 1/2	4				
14.	611-0801Z	NUT, HEX ZP 1/2 GR. 5	4				

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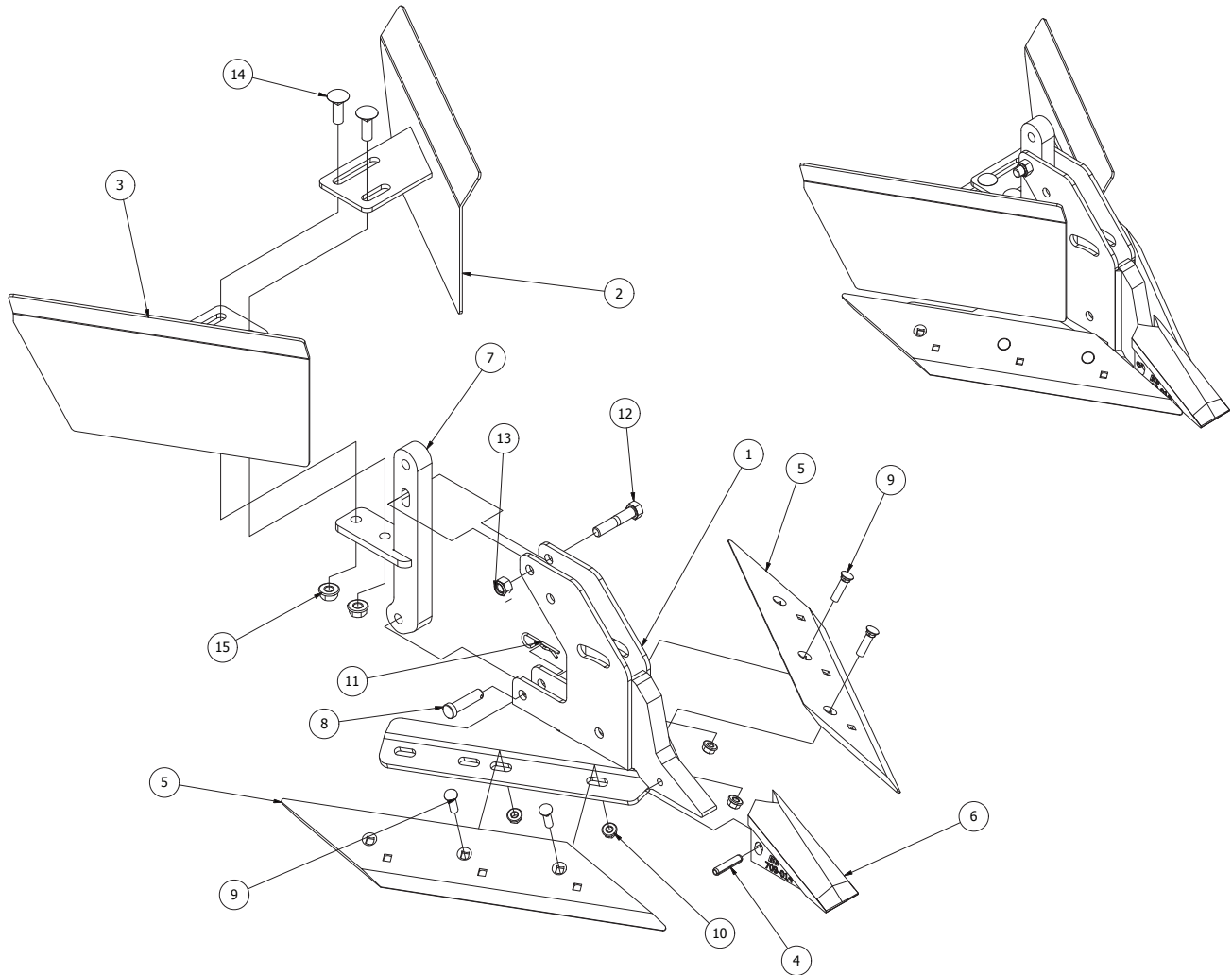
Model 889 Cultivator
Parts Break Down
Bedding and Cultivation Tools



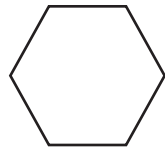
Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
A				B			
1.	689-342	FOOT PIECE, A1DJ. RIDGING WING	1	12.	611-1001Z	NUT, HEX ZP 5/8"	2
2.	689-249R	PLATE, RH ADJ. RIDGING WINGS	1	13.	615-1000Z	WASHER, LOCK ZP 5/8"	2
3.	689-249L	PLATE, LH ADJ. RIDGING WINGS	1	14.	638-582	WASHER, 2-HOLE 2" CTR 3/4 BOLT	1
4.	602-1016Z	BOLT, HCS 5/8 X 4.00 (GR. 5) ZP	1	15.	636-994	TIPPER, 2-HOLE FOR 1X3" SHANK	1
5.	616-1002Z	WASHER, FLAT 5/8 (HEAVY) ZP	2	16.	638-346	BUSTER, 15" 346	1
6.	611-1001Z	NUT, HEX ZP 5/8	1	17.	604-1220Z	BOLT, CRG 3/4 X 5" (GR 5) ZP	2
7.	602-0814Z	BOLT, HCS 1/2 X 3.50 GR. 5 ZP	1	C			
8.	615-0800Z	WASHER, LOCK ZP 1/2	1	19.	611-1001Z	NUT, HEX ZP 5/8"	1
9.	611-0801Z	NUT, HEX ZP 1/2 GR. 5	1	20.	615-1000Z	WASHER, LOCK ZP 5/8"	1
10.	602-0808F	BOLT, FLANGE HD. 1/2X2" GR5 ZP	2	21.	616-1002Z	WASHER, FLAT 5/8" (HEAVY) ZP	1
11.	614-0801Z	NUT, HEX SERRATED FLANGE 1/2"	2	22.	638-024	SWEEP, CULTIVATOR 24"	1
				23.	604-1018Z	BOLT, CARRIAGE 5/8" X 4-1/2" (GR 5) ZP	1



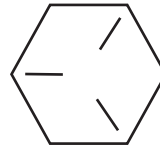
Model 889 Cultivator
Parts Break Down
889-320 Super Sweep Assembly
Model Year 2015 - Current



Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)	Ref#	P/N	Description	Qty. Req. Per Assy. (* As Required)
1.	689-320	FROG WELDMENT, SUPER SWEEP	1	14.	604-0806Z	BOLT, CRG. 1/2"X1-1/2" (GR 5) ZP	2
2.	689-321	WING, LH SUPER SWEEP	1	15.	614-0801Z	NUT, HEX SERRATED FLANGE 1/2"	2
3.	689-322	WING, RH SUPER SWEEP	1				
4.	617-063	PIN, ROLL 3/8 X 1.75	1				
5.	638-116	SHARE, 16" J.D. UNIV.	2				
6.	709-014	POINT, RIPPER CHROMIUM CARBIDE	1				
7.	689-328	MOUNT ARM, RIDGING WING	1				
8.	617-148	PIN, CLEVIS ZP .5"X1.75" USBL	1				
9.	608-0607Z	BOLT, PLOW 3/8"X1-1/2" GR 5	4				
10.	614-0601Z	NUT, HEX FLANGE ZP 3/8"	4				
11.	617-106	HAIRPIN, 1/8X2" (1/2" I.D.)	1				
12.	601-0810Z	BOLT, HCS 1/2 X 2.50 (GR. 2) ZP	1				
13.	613-0800Z	NUT, HEX NYLOCK ZP 1/2"	1				



GRADE 2:
No Marks



GRADE 5:
3 Lines on
Bolt Head

RECOMMENDED ASSEMBLY TORQUES FOR HEXAGON HEAD CAP SCREWS

Based on dry assembly. Variables such as lubrication, plating etc. may reduce the values listed below as much as 20%, and must be taken into consideration.

	Bright Cap Screws 1018 Grade 2			Heat Treated 1038 Hexagon Head Cap Screws, SAE Grade 5			
Cap Screw Diam.	Yield Strength PSI Min.	Recommended Torque (Ft. Lbs.)		Yield Strength PSI Min.	Tensile Strength PSI Min.	Recommended Torque (Ft. Lbs.)	
		UNC	UNF			UNC	UNF
1/4"	58,000	6	7	90,000	120,000	11	13
5/16"	58,000	13	14	90,000	120,000	21	23
3/8"	58,000	23	26	90,000	120,000	38	40
7/16"	58,000	37	41	90,000	120,000	55	60
1/2"	58,000	57	64	90,000	120,000	85	95
5/8"	55,000	111	128	90,000	120,000	175	210
3/4"	55,000	200	223	90,000	120,000	300	330
7/8"	55,000	315	340	81,000	115,000	450	490
1"	50,000	400	460	81,000	115,000	680	715
1-1/8"	50,000	570	635	77,000	105,000	885	990

General Formula for calculating Torque is as follows:

Torque in Inch Lbs. = .2 x Nominal Diameter of Screw x Load in Lbs., where Load = 80% of Yield Strength, expressed in Lbs., not pounds per square inch.

The tension induced in a cap screw may be checked by measuring overall length before torquing and then under torque load. The screw stretches .001" per inch of screw length for each 30,000# P.S.I. induced tension. Applies only to loads below the yield point.

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Form # B15-889

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