

# GWM WOLVERINE GROSS WEIGH BAGGING SCALE



EQUIPMENT SALES | PARTS | MANUFACTURING

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## GWM WOLVERINE GROSS WEIGH BAGGING SCALE

The GWM Wolverine Gross Weigh Mechanical Bagging Scale is designed for handling 20 lb. (10 kg.) through 110 lb. (50 kg.) weighments at a rate of 5-6 bags per minute and with an accuracy of +/- 4 oz. (100 grams) on all free flowing products such as corn, soybeans, salt, pellets, prilled fertilizers, sugar, etc. The Wolverine bagging scale can be supplied with a cam grip for non-dusty products, or a dust tight spout for dusty, free flowing products.

### Wolverine GWM Bagging Scale Specifications

Actual Weight - 175 lbs. (80 kg.)

Overall Height – 24.5 inches (61 cm.)

Inlet - 9 inches x 7 inches (22.5 cm. x 17.5 cm)

### Spout Circumferences Available

Cam Grip - 22 inch (56 cm.)

29 inch (73 cm.)

Dust Tight\* - 21 inch (53 cm)

25 inch (63 cm)

31 inch (79 cm.)

***Please note: Electricity and air are not required for the Cam Grip spout.  
60 P.S.I. air at 2-3 cubic feet per minute is required for the Dust Tight Spout.***

### PLANNING YOUR HOPPER BEFORE INSTALLATION OF SCALE

The flange on your hopper will need to support the scale plus the weight of your heaviest bag plus any product inside the bag. Most installations utilize ¼" flange material or heavier for supporting the scale. The inlet size is 9" X 7". The drawing on page 11 should give a good reference for constructing the hopper.

When constructing the hopper, remember that vibration can affect accuracy; the hopper should be isolated from as much plant vibration as possible. When designing hoppers, it is best to have no less than 60° slope. Some products flow better with one straight wall and three 60° slope walls. Other products will flow with four 60° slope walls.

The normal height for operating the scale is 48" (1.2 meters) from the bottom of the spout to the floor. The top of the scale will be 74" from the floor. The 48" (1.2m) from the bottom of the scale is normally set at 3 ft. (90 cm) for the bag + 12" for minimum conveyor height. If bags are taller than 36", then this height will need to be increased. If shorter, then conveyor height would need to be increased. These dimensions can vary due to each customer's needs.

## INSTALLATION

1. Place the bagging scale on the flange of the hopper. Once on the flanges, tighten the 6 bolts (3 on each side) on the top of the scale, so that the scale is firmly connected to the flange. Make sure that the scale is mounted straight and level.
2. Loosen the two bolts on the spout that hold the shipping clip in place on both sides of the scale. First, loosen the right side bolts and push the shipping clip to its lowest position and then re-tighten the two bolts. Second, repeat the previous step on the left side of the scale. At this point, the spout and the scale should be free.
3. Hang the weight rod on the main beam clevis hook at the back of the scale, making sure that the open part of the hook faces away from the scale.
4. Add dashpot oil to your dashpot located on the right rear of the scale. Oil is added into the oiler cup on the side of the dashpot. Two ounces of dashpot oil has been provided with the scale and the dashpot will take 90% of the oil provided. Additional dashpot oil can be ordered through JEM International or a non-temperature sensitive 200 weight silicone oil. If incorrect oil is used, it can affect the operation of the scale.

## ADJUSTMENTS

The Wolverine Bagging Scale has been calibrated at the factory prior to shipment. Only the following adjustments should be made by the customer. If you experience any problems not covered by these adjustments, please contact us by telephone at (913-441-4788) before making any additional adjustments.

### Bag Balance Weight (Right front of scale)

When your scale is mounted to the hopper and has the weight rod assembly attached (without weights), the weight indicator should point to zero. If not, adjust the indicator to zero by pushing the bag balance weight away from the operator. The bag balance weight is also used to compensate for the weight of the bag. Attach an empty bag. Now adjust the bag balance weight so that the weight indicator again points to zero.

### Trigger Trip Screw (Right rear of scale)

This is your adjustment for material weight in the bag. It accounts for the materials in suspension between the shut-off gate and the bag (similar to the water in a hose between the valve and the end of the hose).

If your bags are consistently light, the trigger trip screw is too sensitive and trips early. Adjust the screw upward. This will allow additional weight in the next bag. Do not attempt to adjust the trigger trip screw during the filling process.

### Regulating Slide (Left front of scale)

Some materials are heavier and some flow more freely than others. When weighing a heavy, fast flowing material, the opening should be smaller so that materials flow slower. Excessive flow causes inaccurate weighing. When shipped from the factory, the regulating slide is set for a small opening. To increase the opening, simply loosen the wing nut, pull the handle down and then re-tighten the wing nut.

**NOTE:** A change in the adjustment of the regulating slide will require adjustment of the trigger trip screw. Never make 2 adjustments at the same time. Make 1 adjustment at a time to determine if/where further adjustment will be needed.

### Dashpot (Right rear of scale)

The dashpot is the buffer between the scale and the pointer. Without a dampening device the pointer would never settle down. The dampening effect is accomplished by a metal plate about the size of a quarter riding up and down in an oil bath. The oil is non-temperature sensitive 200 weight silicone. The dampening effect is adjusted by turning the dashpot lid. The oil should completely fill the oiler to the top, approximately 2 oz. total. Change the oil when dirty or approximately every 6 months.

### Main Beams, Pivots & Bearings (Both sides of scale)

The bearings and pivots on both sides of the scale have bolts approximately  $\frac{1}{8}$ " (3 mm) from them to prevent them from jumping during operation. Please be sure that these bolts do not touch the bearings or pivots and that the gap spacing is correct.

### Compensation Spring

The compensation spring is used to help place the beam in motion. The beam should contact the spring before it reaches the beam stop bracket on the downward or empty position. The beam should be free or clear of the spring before the final cutoff. The compensation spring can be easily bent up or down to adjust.

## OPERATION

Place an empty bag on the spout of the scale, slide the balance weight (right front side) until the pointer (left front side) of scale returns to zero. Pull down on empty bag several times watching the pointer each time to ensure that it returns to zero. If not, check for possible binds in the scale.

### Possible Binds

1. Dashpot is not lined up squarely and possibly rubbing.
2. Check sway control link to make sure it is not pushing or pulling on spout.
3. Check to see that the weight rod has been installed correctly with the open part of the hook facing away from the scale.
4. Compensation spring should not contact beam when the main beam is balanced.

Pull feed gate handle (upper right side of scale) locking trigger assembly on the roller bearing. This should be a gentle, soft motion. The internal gate of the scale will be opened, thus allowing product to fall through the scale into the bag. When the beam comes toward balance, it will trip the trigger trip screw (right rear of scale), thus allowing gate to close.

At this point, balance indicator (left front of scale) will display actual weight in the bag as an over/under from target weight. If weight is over target weight, the trigger trip screw will need to be lowered. If weight is less than the target weight, then the trigger trip screw will need to be raised.

### Flow Control

The flow control adjust (left front of scale) is used to control speed at which product falls into the bag. Speed should not be faster than 10 lbs. (5 kg.) per second; in order to maintain a repeatable weight. If the speed is too fast, then raise the regulating slide handle. Subsequently, if the speed is too slow, then lower the regulating slide handle.

The scale is a 5 to 1 calibrated beam scale. The weights have been marked according to the amount of product in the bag they will counterbalance.

One 5 lb. weight actually counterbalances 25 lbs. of weight in the bag.

Place the desired amount of weights on the weight rod to counterbalance target weight of the bag.

For example: A 50 lb. bag would require two 5 lb. weights or a 50 kg. bag would require four 12.5 kg. weights. Weight sets are shipped to the customer with the scale.

The weights come in either lb. or kg, per customer request.

The lb. weight set comes with (1) 1#, (1) 2# and (2) 5# weights.

The kg. weight set comes with (1) 500 gram, (1) 1 kg and (2) 2 kg. The 12.5 kg. weights are labeled their counter balance weight and come as a separate kit. The others weights are labeled their actual weight.

<u>Weight</u>	=	<u>Counterbalance Weight</u>
1 lb.		5 lb.
2 lb.		10 lb. -) Kit
(2) 5 lb.		25 lb.
500 grams		2.5 kg
1 kg		5 kg -) Kit
2 kg		10 kg
(4) 12.5 kg*		12.5 kg*

#### TIPS TO REMEMBER

1. The Wolverine GWM Bagging Scale is designed for handling free flowing products if a feeder has not been provided.
2. Accuracy is normal at +/- 4 oz. (100 grams).
3. Normal speed is 5-6 bags per minute maximum.
4. The fill time should never exceed 10 lbs. (5 kg) per second.
5. The feed gate handle is to be gently pulled and positioned, locking on the roller bearing.
6. Be sure that no adjustments are made to the bolt behind the roller bearing. This adjustment has already been made at the factory and does not need to be re-adjusted.

Spare parts are available from either your distributor who supplied you with the equipment, or by contacting:

JEM International  
 6867 Martindale  
 Shawnee, Kansas 66218  
 Phone: 913-441-4788  
 Fax: 913-441-1711

## CALIBRATION

The scale has been pre-calibrated at the factory. These calibration steps are used only in the event new bearings and pivots are being replaced.

### GWM Wolverine Bagging Scale Calibration Steps

1. Torque torsion rod at both ends and make sure it does not rub.
2. Level the main beam with the housing, which should be level.
3. With the main beam level, set the turnbuckle until indicator reads zero.
4. Check compensation spring and make sure it is set at (-) 1, and free of the beam.
5. Set main beam stop bolt at (+) 2, and with the locknut down.
6. Check dashpot and make sure it is straight and center. (Make sure it does not rub)
7. Check that shipping clips are down and not touching the housing.
8. Calibration
  - a. Set bag balance weight flush with end of rod
  - b. Add shot to weight cup until indicator reads zero.
  - c. Hang empty bag and use bag balance weight to make indicator read zero.
  - d. Add weights to weight rod and then add weight to the bag. This is a 5 to 1 beam and the weights provided are marked with their actual weight. Multiply by 5 for the counterweight.
  - e. With equal ratio weight, indicator should read zero. (If not at zero perform steps f. to i.)
  - f. Move the left pivot to zero and move the right pivot to the other side of zero than it was previously reading. (If it reads (+)1, move the left pivot to zero, then move the right pivot to (-)1 ).
  - g. Remove all the weight and re-hang the bag.
  - h. Check zero; add or remove shot.
  - i. Re-hang the weights and check scale weight reading. If not at zero, repeat steps f. to i.

If, after several tries you cannot bring the bagging scale into calibration, please call us for assistance. 913-441-4788

## UNDERSTANDING YOUR SCALE

The GWM Wolverine Bagging Scale is extremely simple to operate and the adjustments are also extremely simple to do and understand. It is best to adjust the scale for accuracy by adjusting the trigger trip screw (right rear of scale), first. Second, adjust for speed by adjusting the flow control (left front of scale). Never adjust for speed and accuracy at the same time.

Photograph A – Wolverine with a Flex Belt Feeder





## **CALIBRATION PROCEDEURES** **for JEM International Gross Weigh and Net Weigh Bagging Scales**

1. Calibrating Brackets/ Strap have been supplied to support the calibration weights. It is important to remember that the weights must be used to counter balance themselves. We cannot have two weights on one side of the unit and no weights on the opposite side. It is extremely important to remember the manner in which the scale is used; all weight will be centered on the scale.
2. The calibration brackets/ straps have their actual weight marked on them and the weights are also clearly marked.
3. Gross Weigh Scale – Hang calibration strap centered on front and rear of the spout with the hooks hanging on the center grip or dust tight  $\frac{3}{4}$ " rod. For a gross weigh scale without a center grip or dust tight spout a different calibration set is provided.
4. Net Weigh Scale - Hang two brackets on the weigh hopper halo, or mount to brackets from load cells.
5. Once the brackets/ straps have been hung on the scale, you will add two known weight to the calibration bracket/ straps. We recommend using certified calibration weights for this process. You can calibrate now to the final weight – being the weight of the two known weights plus the weight of the brackets or strap. Another option is to zero out the weight of the brackets or straps and simply calibrate to the weight of the known certified calibration weights.

For example: If you have two 30 pound weights and two brackets weighing 2 pounds each, you have 64 pounds of known weight that can be calibrated.

Once this calibration is complete, you have certified that your scale is correct to either 60 or 64 pounds of weight.

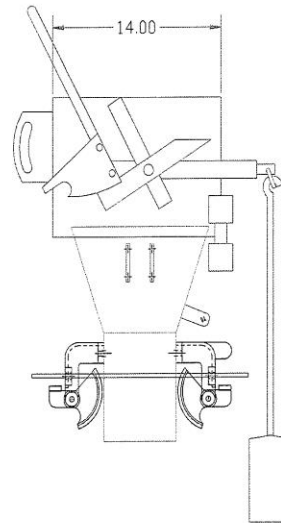
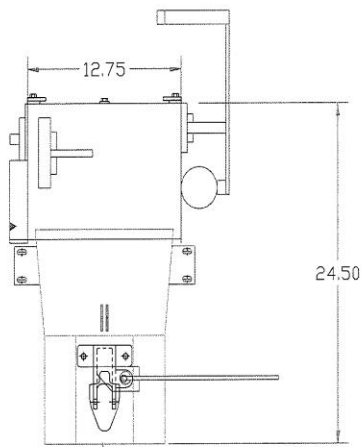
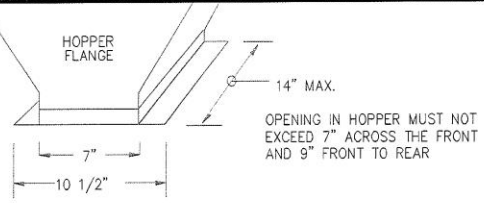
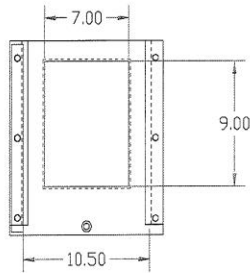
6. You can add a bag onto the spout or add product into the weigh hopper that will weigh less than this amount. Since you have calibrated to 60 or 64 pounds with known weights, then the scale is accurate up to this point with an unknown weight.

For example: If you add 50 pounds to the weigh hopper or to the bag, you are now reading 50 pounds on the digital controller and this is a weight that has been certified.

At this point, you can now add two 30 pound weights and the final weight should be 60 pounds more than the weight you put into the weigh hopper or into the bag.

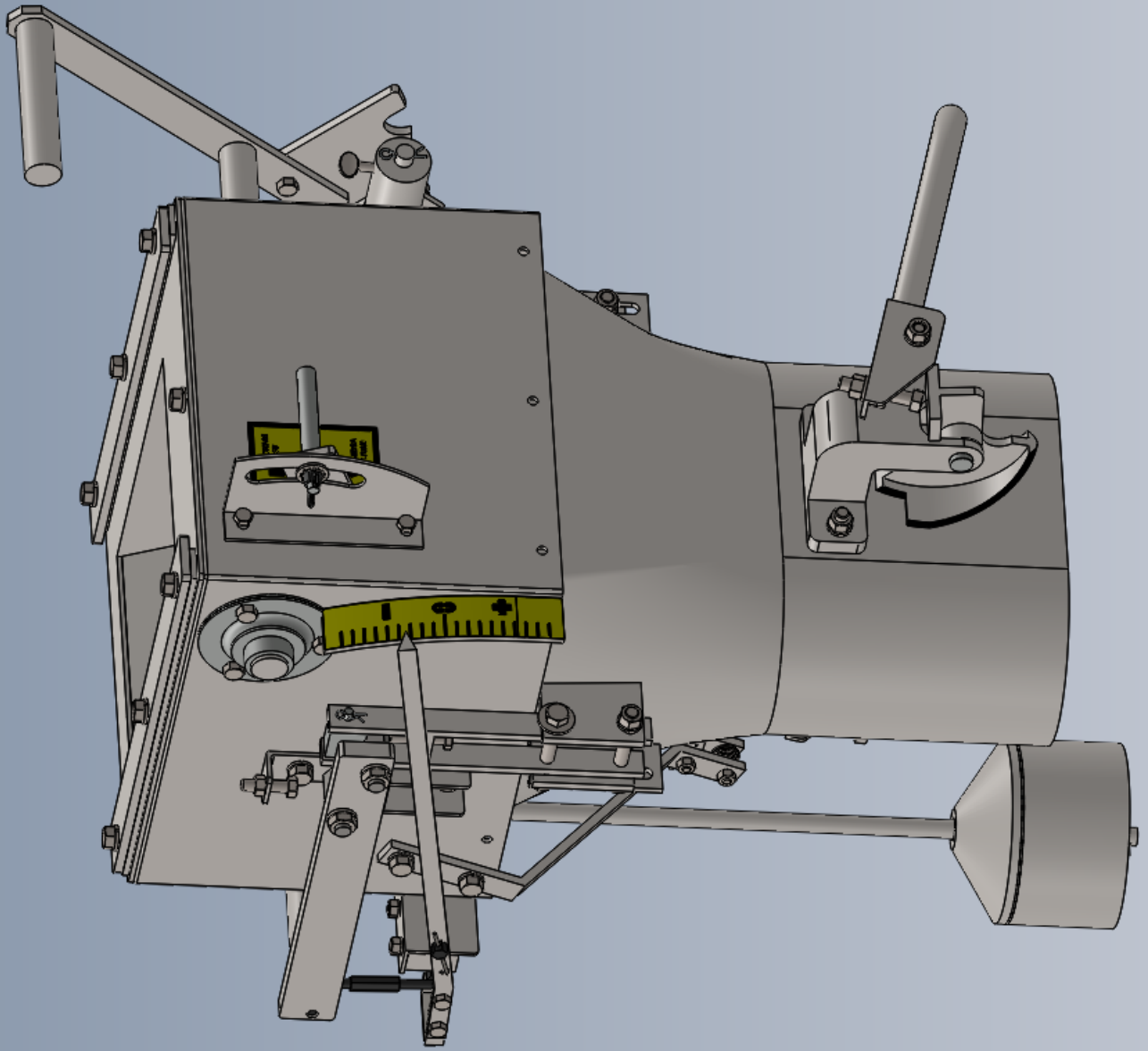
If you added exactly 50 pounds of product into the weigh hopper or into the bag, you should read 110 pounds when you add the 60 pounds of known weights. This is a build-up test and now the scale has been certified up to 110 pounds.

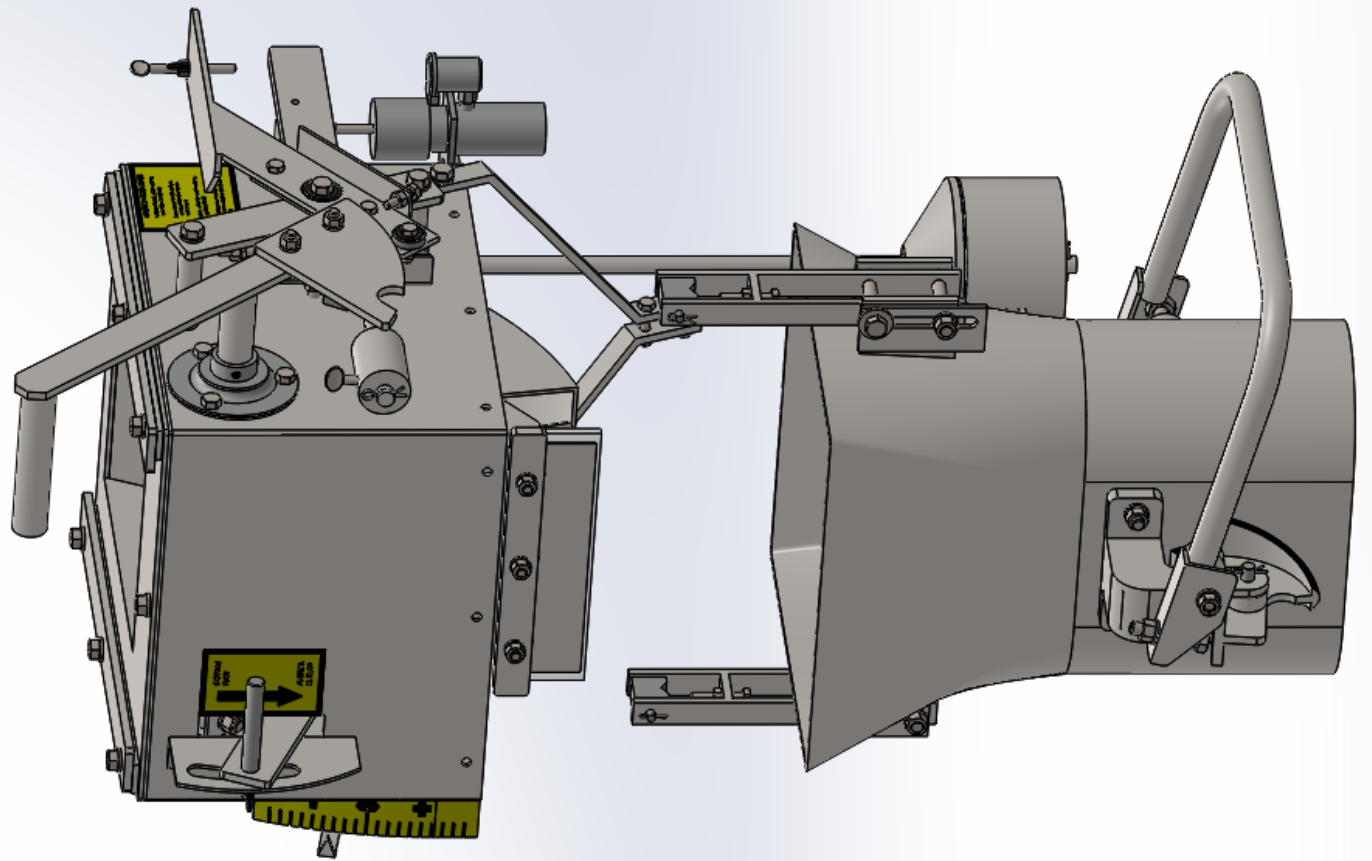
7. Store the weights and the brackets in an area where they will not fall and chip or be damaged in any way.

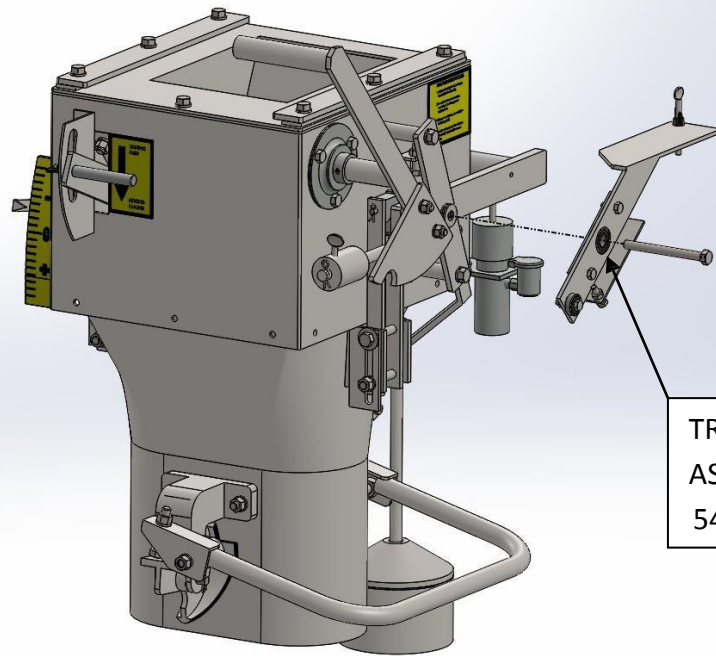


48.00  
TO FLOOR  
TYP.

REV. 1	<i>JEM INTERNATIONAL, INC.</i>			
REV. 2	6873 MARTINDALE RD. SHAWNEE, KANSAS 66218 (913) 441-4788			
REV. 3	NAME			
REV. 4	GWM WOLVERINE GROSS BAGGING SCALE			
REV. 5	FOR			
REV. 6	TOLERANCE	MATERIAL	SCALE	PART NUMBER
			D.N.S.	
REV. 7	DRAWING NUMBER	DRAWN BY	DATE	PART NUMBER
	GWM	COUGHLIN	08-04-14	

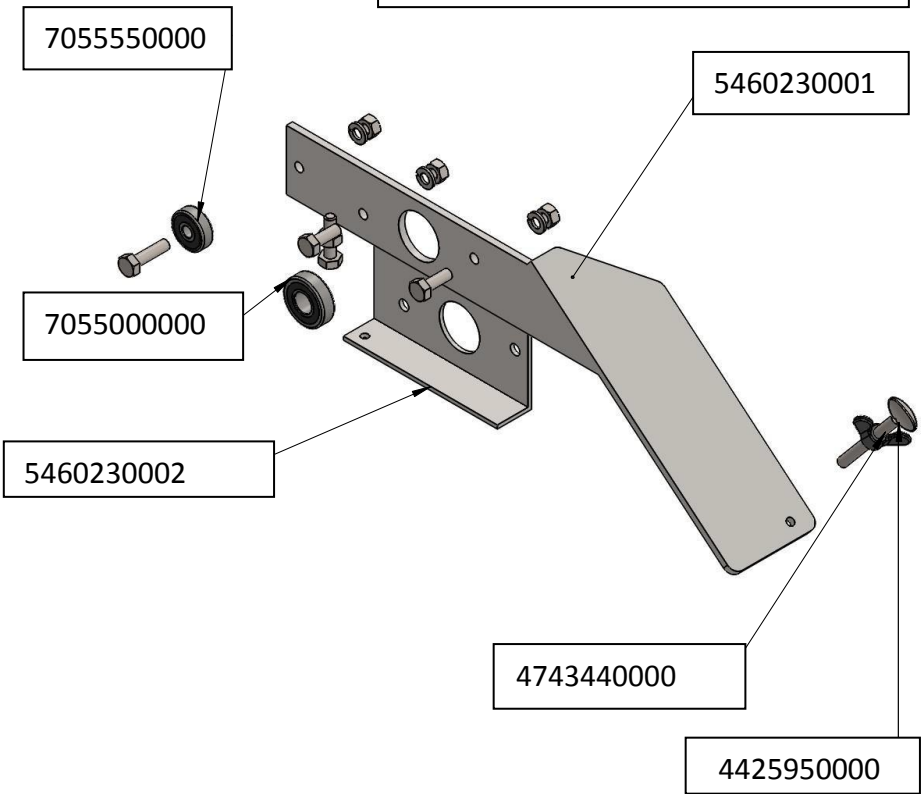






TRIGGER ARM  
ASSY  
5460230003

TRIGGER ARM ASSEMBLY  
5460230003



7055550000

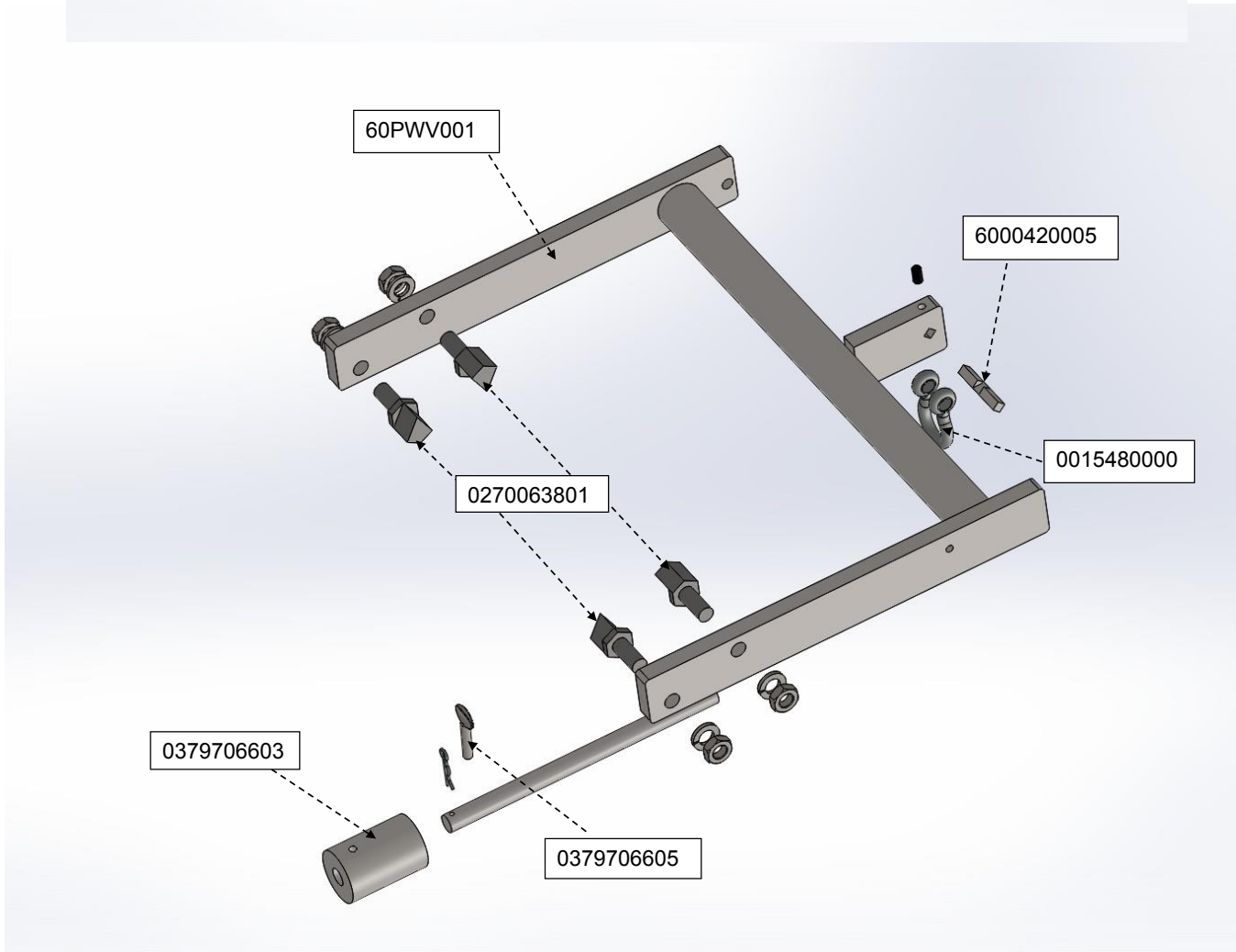
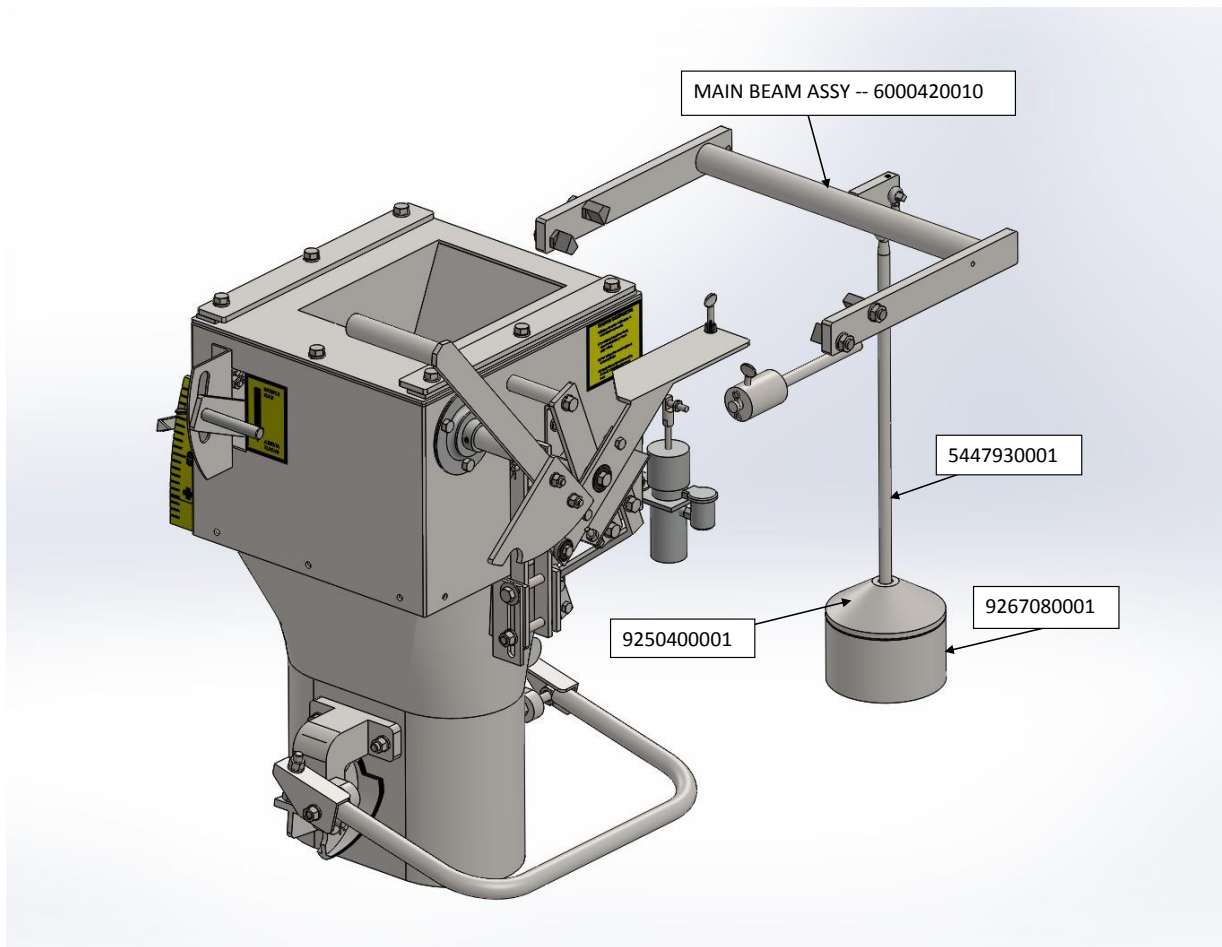
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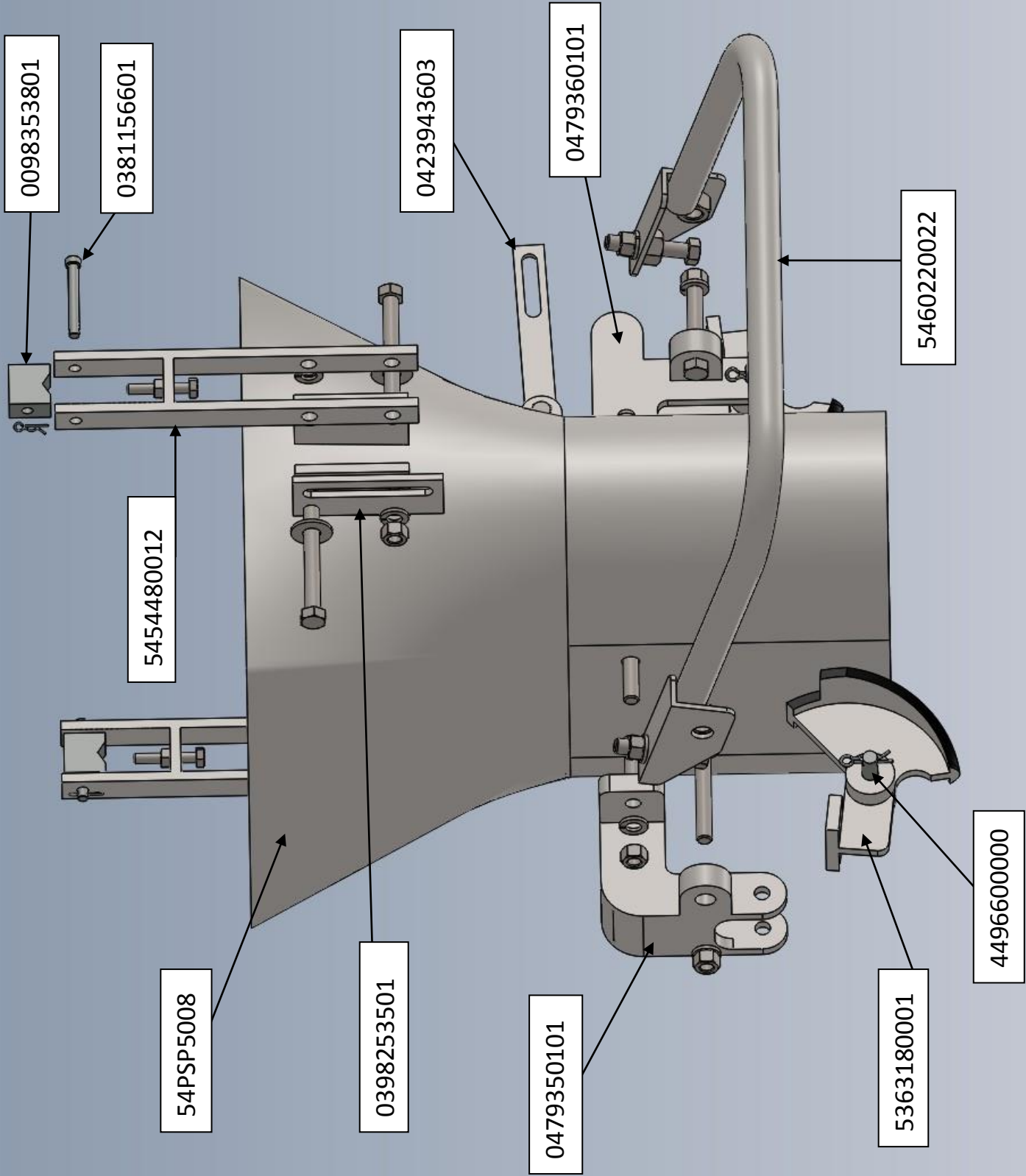
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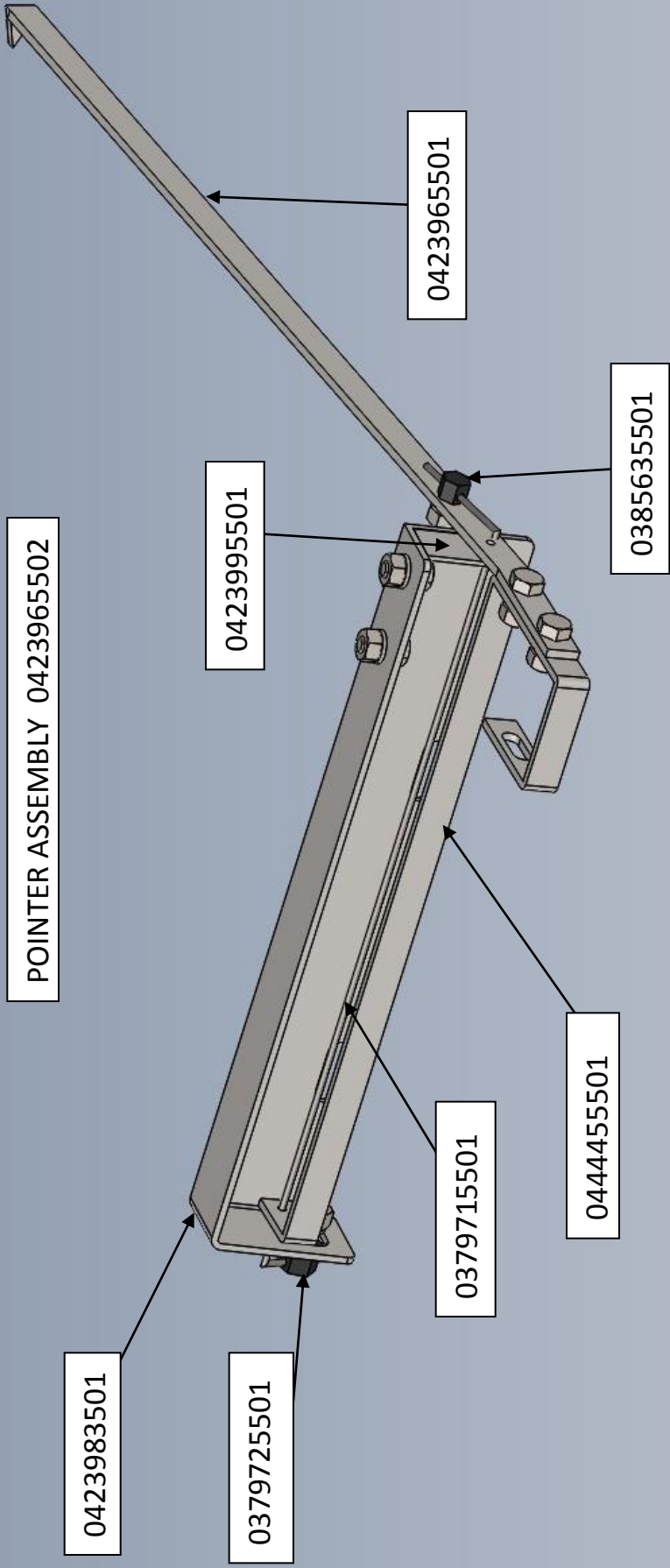
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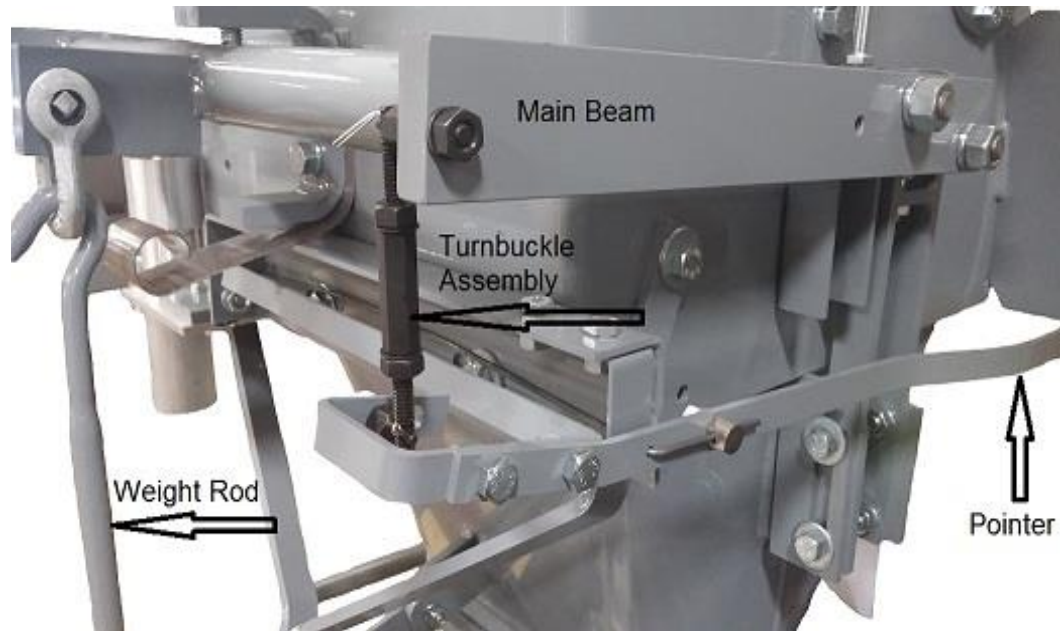
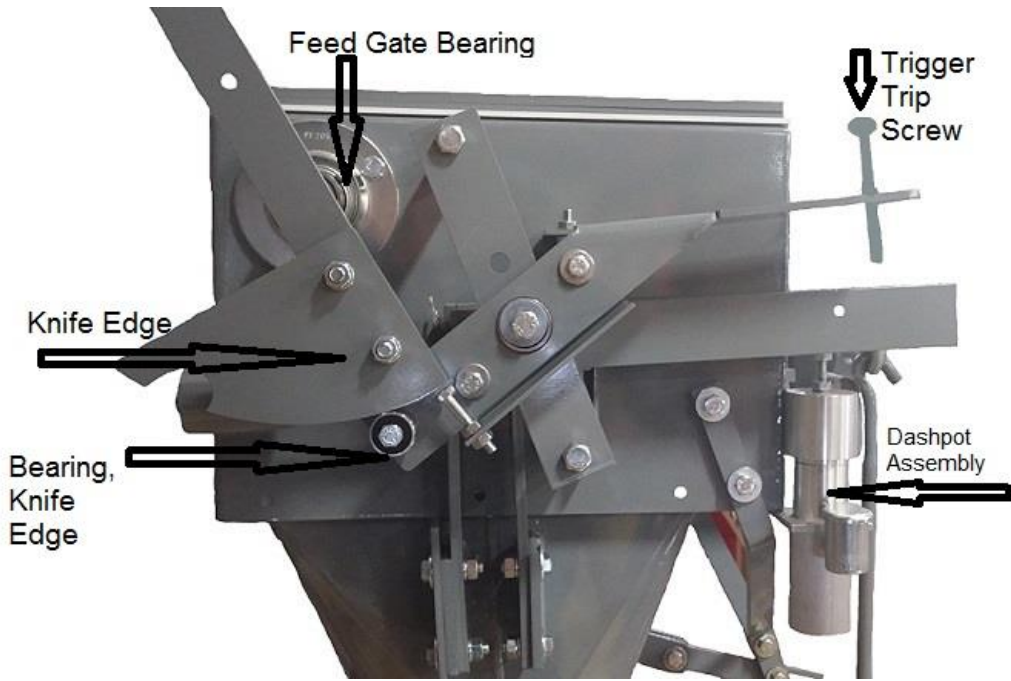
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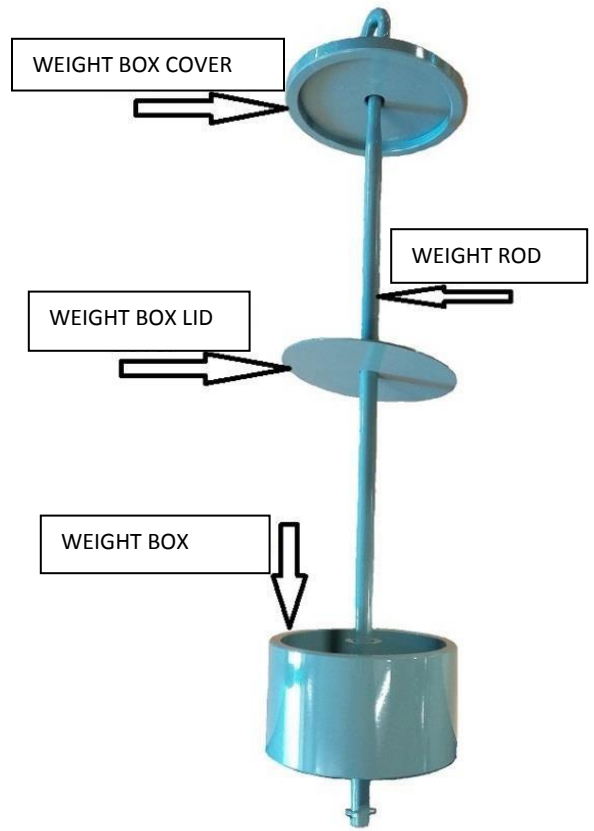












ITEM #	DESCRIPTION
0098353801	V BLOCK BEARING
0381156601	CLEVIS PIN
5454480012	H BRACKET, MS
0398253501	SHIPPING CLIP
0423943601	SWAY LINK
0479350101	FRONT BAGHOLDER BRACKET
0479360101	REAR BAGHOLDER BRACKET
5363180001	BAG CLAMP W/PINS
5460220022	RELEASE HANDLE GWM-22
0423965502	POINTER ASSEMBLY
0423983501	SUPPORT BRACKET
0379725501	TORSION ADJUST BOLT
0379715501	TORSION ROD
0444455501	BEARING BAR
0385635501	SPRING RETAINER BOLT
0423965501	POINTER

## WOLVERINE SCALE HOUSING

ITEM#	DESCRIPTION
0024257909	CHUTE SEAL
0024257911	PLATE SEAL
0034053614	SPACER- UPPER
0034053626	SPACER- LOWER
0098353801	BEARING- V BLOCK
0379823601	SLIDE BAR
0379833601	SLIDE BAR SPACER
0379943601	GATE STOP BAR
0381156601	CLEVIS PIN ¼ X 2"
0418176601	HANDLE, REGULATING SLIDE
0418183501	PLATE, REGULATING SLIDE
0423757001	KNIFE EDGE
0423793601	BRACKET, TRIGGER ARM MOUNT
0444385501	TURNBUCKLE PUSH ROD LH
0444395501	TURNBUCKLE PUSH ROD RH
0444405501	TURNBUCKLE
0444415501	TURNBUCKLE PUSH ROD PIN
0444425501	TURNBUCKLE ASSEMBLY
0467603501	PLATE RESTRICTOR
4425120000	WASHER, SPECIAL
4425150000	WING NUT, HANDLE REGULATING SLIDE
5418150001	TOP CHUTE
5418220001	REGULATING SLIDE
5423910001	CHUTE GATE
5424260001	HANDLE, GATE
5460160001	BRACKET, MIDDLE BEARING
5460180001	BRACKET, BEAM STOP
6000470001	DASHPOT ASSEMBLY
6011400016	65LB. BAG WEIGHT SET – 5"
6011500026	27.5KG. WEIGHT SET – 5"
7329000000	DASHPOT OIL 2OZ.
7675400001	DECAL LB.
7675400003	DECAL, INCREASE FLOW
7811270000	COMPENSATION SPRING
9300040000	DASHPOT INSTRUCTIONS, ENGLISH

## AO SPOUT PARTS LIST

ITEM #	DESCRIPTION
0447973601-J	DUST SKIRT BAR
3770330145-J	FILTER/REGULATOR
3770330148	FILTER BOWL
3799990001	BAG CLAMPS GJCT 48"
5448200004	L BRACKET
7623140002	¾" BEARING
7791780000	DUST SKIRT
821J-152-01-FT	3/8" AIRLINE
8333260000	SPOUT CYLINDER
8333260002	CLEVIS W/PIN
8953050002	FOOT VALVE

QTY      ITEM #                      DESCRIPTION                                      \*\*\*\*\* = COMPLETE ASSEMBLY

1	6000420010	MAIN BEAM ASSEMBLY- WOLVERINE *****
1	0015480000	CLEVIS- MAIN BEAM
4	0270063801	PIVOT WV/GJ
1	0379706603	WEIGHT- BAG BALANCE WV
1	0379706605	THUMB SCREW- BAG BALANCE WEIGHT
1	6000420005	PIVOT- REAR MAIN BEAM
1	60PWV001	MAIN BEAM WOLVERINE

1	5447930007	WEIGHT ROD ASSEMBLY WOLVERINE *****
1	0372813503	WEIGHT BOX LID 5"
1	5447930001	WEIGHT ROD
1	9250400001	WEIGHT BOX COVER 5"
1	9267080001	WEIGHT BOX 5"

1	5460230003	TRIGGER ARM ASSEMBLY WV/G *****
1	4425950000	WING NUT ¼-20 WV/G
1	4743440000	TRIGGER TRIP SCREW
1	5460230001	TRIGGER ARM
1	5460230002	TRIGGER ARM BEARING BRACKET
1	7055000000	BEARING- TRIGGER ARM
1	7055550000	BEARING- KNIFE EDGE

1	0423965502	POINTER ASSEMBLY WV/G *****
1	0379715501	TORSION ROD
1	0379722501	BOLT- TORSION ROD ASSEMBLY
1	0385635501	BOLT- SPRING RETAINER
1	0423965501	POINTER
1	0423983501	BEARING- SUPPORT BRACKET
1	0423995501	ANGLE SUPPORT
1	0444455501	BEARING BAR

## A-22-MS-GWM SPOUT

1	0398253501	SHIPPING CLIP
1	0423943603	SWAY LINK
1	0479350101	BRACKET BAG HOLDER FRONT WV/G
1	0479360101	BRACKET BAG HOLDER REAR WV/G
2	4496600000	PIN FULCRUM- CLAMP
2	5363180001	BAG CLAMP W/PIN
2	5454480012	H BRACKET GWM-MS
1	5460190001	BRACKET, SWAY CONTROL
1	5460220022	RELEASE HANDLE GWM-22
1	54PSP5008	SPOUT GROSS WEIGH- 22
1	7675400015-J	DECAL SHIPPING CLIP

## A-29-MS-GWM SPOUT

1	5460220029	RELEASE HANDLE GWM- 29
1	54PSP5010	SPOUT GROSS WEIGH- 29