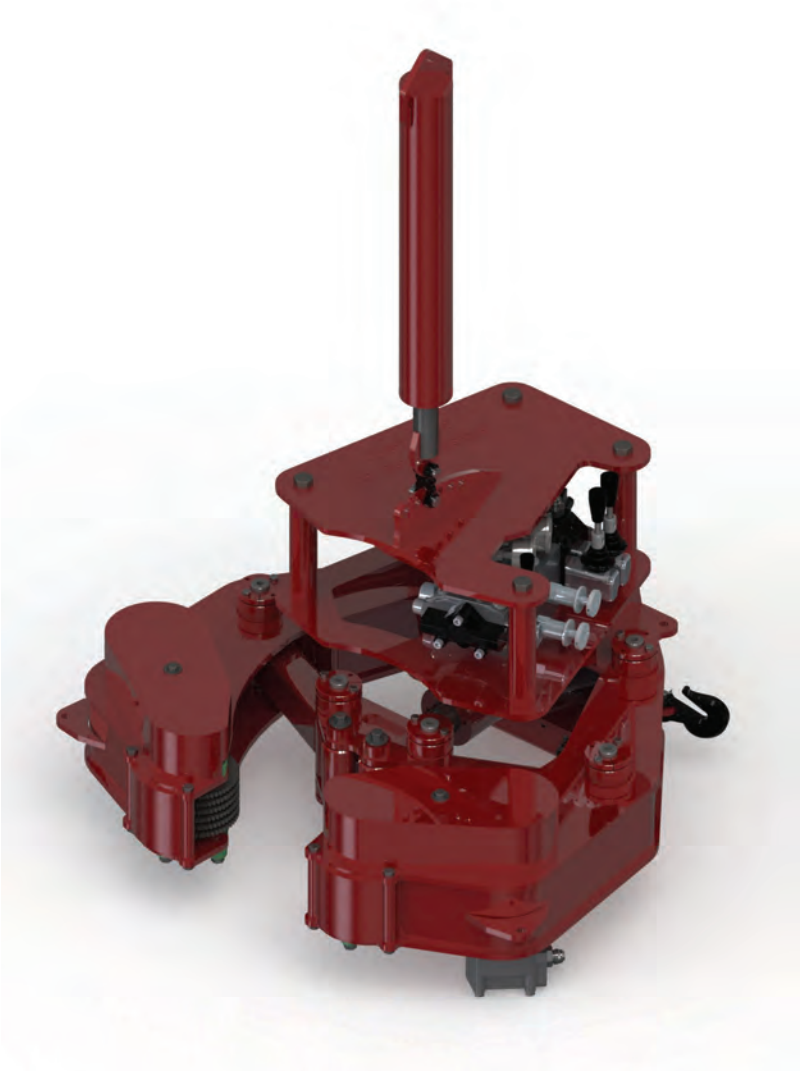
GENERATION II PIPE SPINNER



OPERATION, MAINTENANCE AND SERVICE MANUAL

210 HP SERIES

SARGENT PIPE COMPANY
NORTH 1ST AVE.
BROKEN BOW, NE 68822
PHONE: (308) 872-6477
FAX (308) 872-3136
www.sargentpipe.com

GENERATION II
MODEL 210 HP

FEATURES

HEAVY DUTY DRIVE ROLLERS

LOW MAINTENACE DESIGN

BUILT IN PRESSURE CONTROLS

SELF ADJUSTING TO PIPE SIZE

COMPACT DESIGN

HIGH TORQUE OUTPUT

WILL FIT 2”-10” PIPE

WILL INCREASE SPEED AND PROFIT

WILL REDUCE INJURIES

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INTRODUCTION

SAFETY

The 210HP is a safe and effective way to spin out or spin in column pipe or drill stem. The safe use of this tool will prevent injuries of field personnel and will safely speed up production. This tool will reduce fires caused by torches used in cutting and removing pipe, as well as eliminate the use of heavy chain wrenches and cheater pipes. With any piece of equipment there is always precautions to take. Here is a list of safety precautions to keep in mind when operating this piece of equipment.

HYDRAULIC SAFETY

INJECTION RISK

1. Do not touch any leaky hose or component.
2. Always wear safety equipment.
3. Do not attempt to repair any leaky hydraulic component with the hydraulics live.

BURN RISK

1. Do not touch any hydraulic components they maybe hot.
2. Any leaky hose or component could cause severe burns.

MECHANICAL SAFETY

PINCH RISK

1. The 210hp is self adjusting and actuates a large distance, so keep hands and clothing clear of all moving mechanism.
2. The 210hp is a heavy tool do not try to lift back injury could occur.
3. The 210hp is a very powerful tool do not try to operate with out being properly secured.
4. The 412 pipe clamp should be used in conjunction with the spinner to prevent injury
5. Keep all fingers, hands and clothing from the drive wheels.
6. Do not try to repair anything on equipment with the hydraulics live.

GUARANTEE

Sargent Pipe Company wants to supply the best tool possible with the most dependable and state of the art designs. With this in mind we offer guarantee:

Your Generation II pipe spinner must be free of material and workmanship defects for a period of 1 year. If any items fail because of a manufacturing defect within that period of time that item will be replaced by Sargent Pipe Co.

Replacement of parts will be accomplished either at the factory or at a designated service point. This guarantee does not include the replacement of parts where failure occurred due to normal wear or the misuse of the tool.

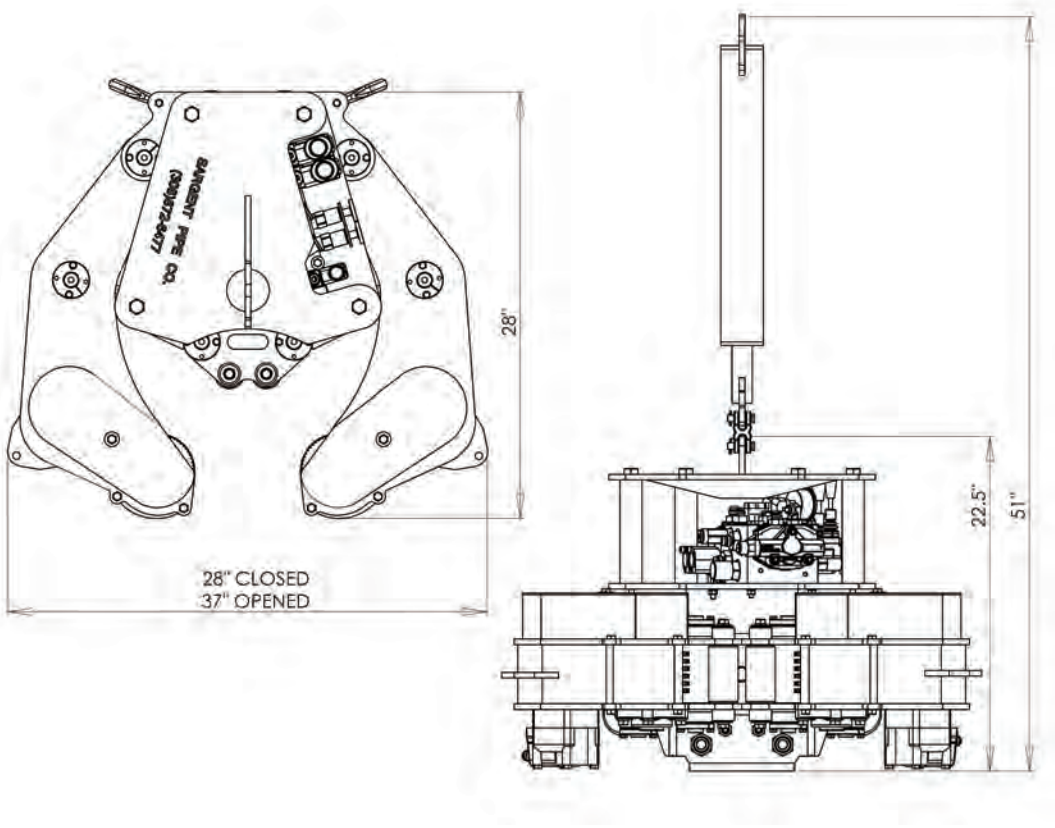
Sargent Pipe Co. will in no event be liable for consequential damages or contingent liabilities arising out of the failure of any parts to operate properly.

No expressed, implied, or statutory guarantee other than herein set forth is made, or authorized to be made, by Sargent Pipe Co.

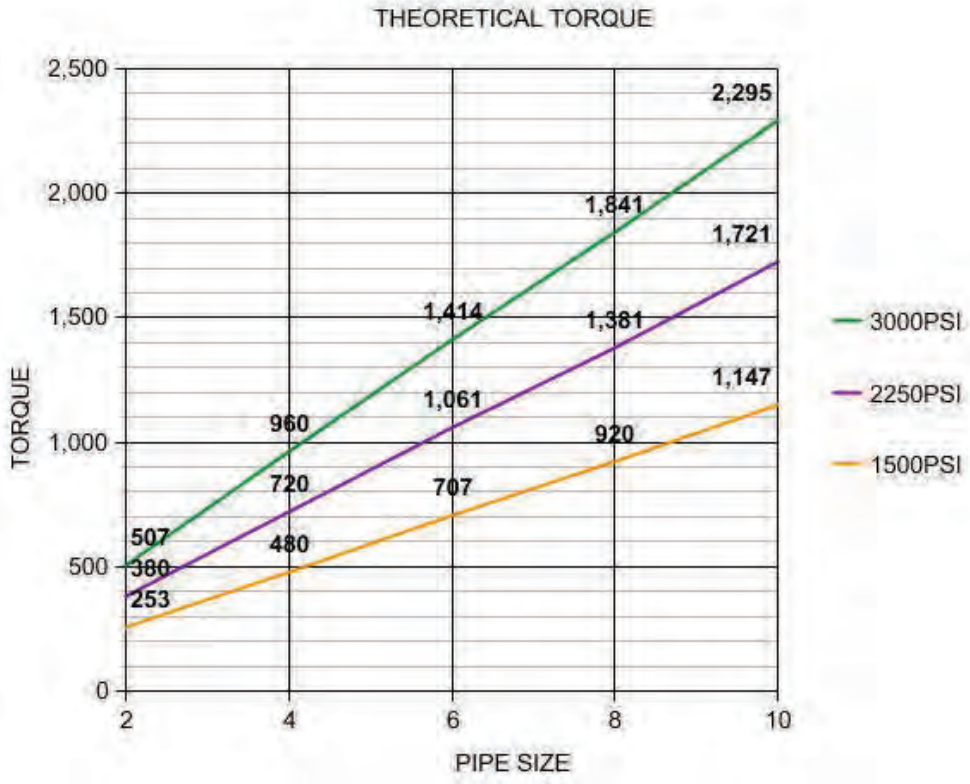
For warranty claims call Sargent Pipe Co. (308)872-6477

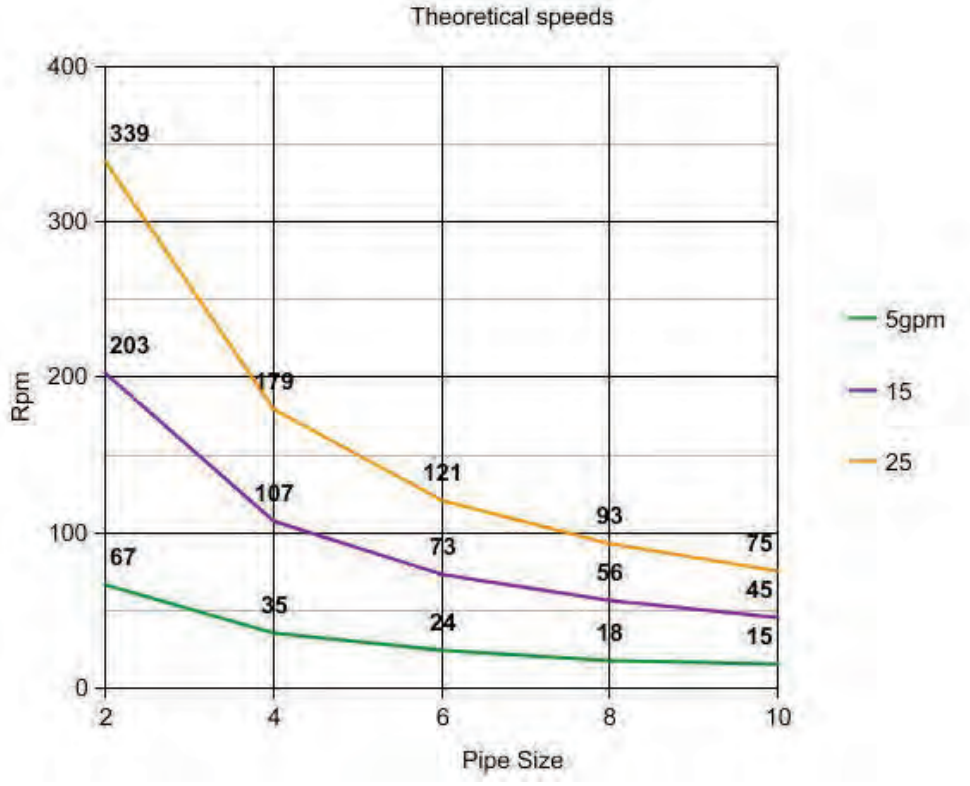
SPECIFICATIONS

LENGTH:	28”
WIDTH:	28”
HEIGHT:	42”
WEIGHT:	480 LBS
HYDRAULICS REQUIRED:	25GPM @ 2850PSI



THEORETICAL TORQUE
3000PSI @ 25 GPM
10” PIPE 2295 FOOT POUND OF TORQUE @ 90 RPM
TORQUE CHART ON NEXT PAGE


THEORETICAL TORQUE
2,500
2,000
1,500
1,000
500
0
TORQUE
2
4
6
8
10
PIPE SIZE
2,295
1,841
1,721
1,414
1,381
1,147
1,061
960
920
720
707
507
480
380
253
3000PSI
2250PSI
1500PSI


Theoretical speeds
400
300
200
100
0
Rpm
2
4
6
8
10
Pipe Size
339
203
179
121
107
93
75
73
67
56
45
35
24
18
15
5gpm
15
25

SETUP

SUSPENSION:

1. Use the spring hanger provided with spinner.
2. Use minimum of 1/4 cable suspending spinner.
3. If using lifting slings, the spinner suspension cable must be offset from main hoisting cable.
4. There is an auxiliary valve on the spinner for hoisting the spinner up or down. When a cylinder or small winch is being used.
5. The spinner should be used with the pipe clamp. It comes equipped with tie off chains. This will keep the spinner from rotating out of control.
6. The spinner can be sat on the ground or tied back to rig when it is not being used.
7. Cables and shackles should be inspected daily.

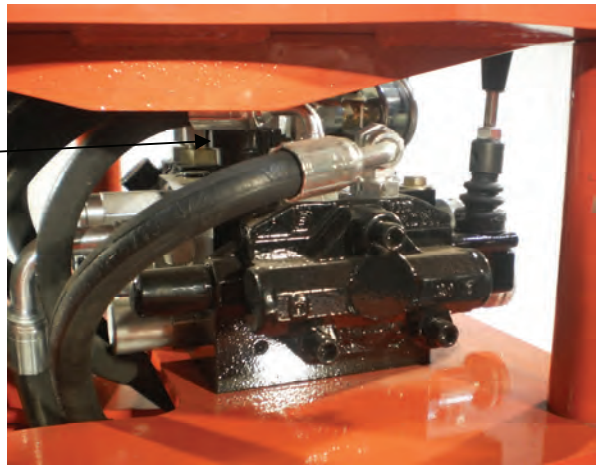
HYDRAULIC HOOK UP:

1. Clean all connections thoroughly before connecting.
2. If installing on new truck, the operator must make sure the pressure is hooked up on lh side of the spinner.
3. There are 4 quick connections. Only 2 are required to be used. There are 2 large ones, one male and the other is a female. This keeps users from hooking hydraulics up backwards.
4. There are 2 smaller quick connections on the spinner. They can be used for lifting the spinner with a cylinder or small winch.

5. The 210hp is designed for 25gpm @ 2850psi.
   MAX PRESSURE 3000PSI
   MIN PRESSURE 1500PSI
   MAX GALLONS 30GPM
   MIN GALLONS 8GPM
   NOTE Lack of pressure will limit the torque of the unit. Lack of oil will limit the speed of the unit.

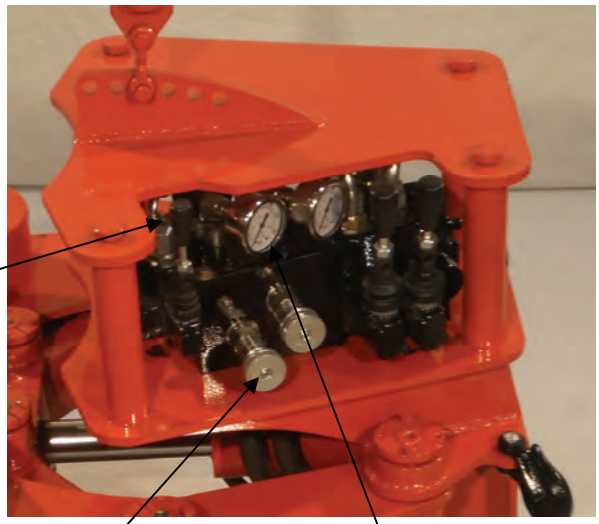
HYDRAULIC ADJUMENTS:

1. The 210hp was designed with ease in mind. There are two adjustments that the operator will frequently use. Also there are two gauges to aid in these adjustments.
2. The knob on the left is clamp pressure, marked with a CR. This will set how tight the spinner will clamp on the pipe. Only set high enough to keep the drive wheels from slipping.
   NOTE Do not set higher than your trucks system pressure or drive wheels will not turn. You can set the pressure using the clamp gauge.
3. The knob on the right is the drive wheel pressure, is marked with a MR. This will set how much torque you want to apply to the drive wheels. Do not tighten pipe with pressure at the max. To set desired pressure you should start with pressure setting low and check the pipe with a chain wrench to see how tight it is. Only tighten to desired torque.
   NOTE All diameters will have pressure settings.



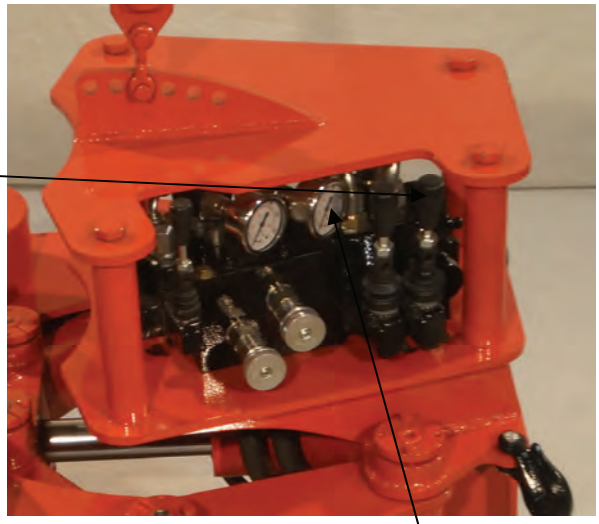
4. There is a speed control on the clamp speed. There is no need to adjust this very often. The unit is designed to actuate slowly to prevent injuries. You will not see major change in this control when turned.
5. There is a pressure relief valve on the unit. This is pre set valve from the factory.

TO OPERATE



ADJUSTING FOR PIPE SIZ-ES

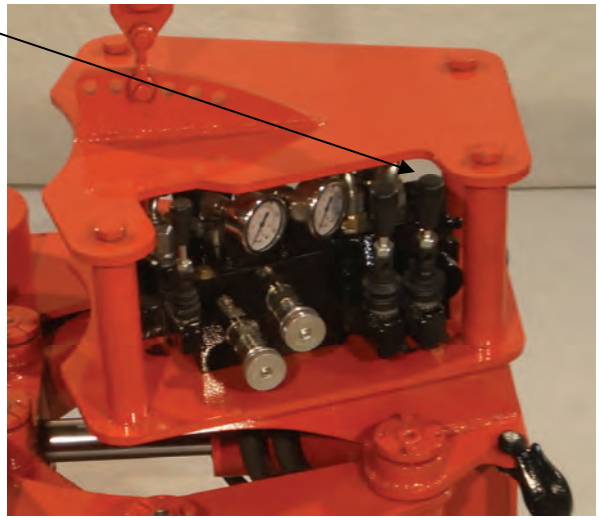
1. <u>To clamp</u> on the pipe push the small lever on the left forward, it will detent into position. Keep hands and clothing away from moving parts. This unit will automatically close down on any pipe no smaller than 2 inch.
2. <u>To unclamp</u> the pipe pull the small lever on the left back it will go past neutral and the unit will open up.
3. Smaller pipe may require higher pressure. To adjust the pressure on the clamp turn the dial clockwise. The left gauge will give you a reading on the amount of pressure being applied.



SPINNING PIPE

1. <u>Spinning in</u> use the lever to the far right hand side. Push the lever forward and this will tighten the pipe up. Also, if you push the lever forward this is the direction the spinner will want to move. When spinning in make sure the pressure is high enough to achieve desired torque of pipe. Make sure pressure is not to high or the tool may not be able to spin out. Pressure can be read with gauge on the right.

SPINNING PIPE



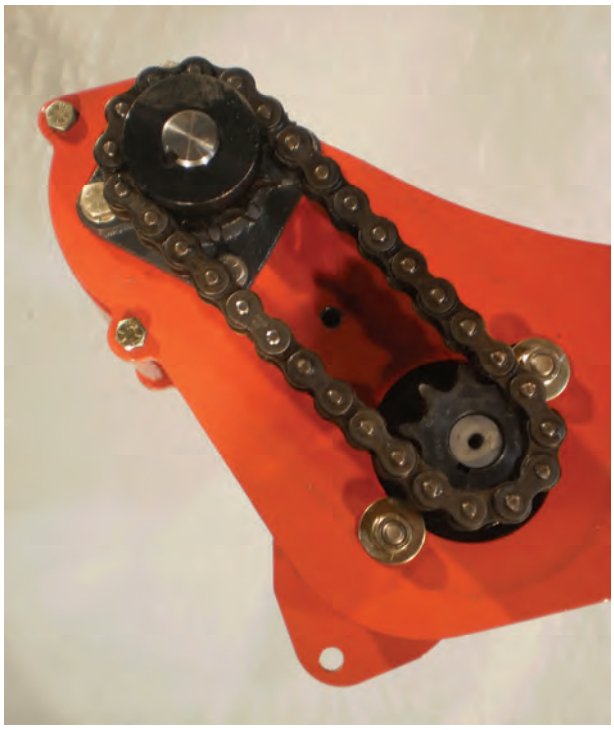
2. Spinning out; use the lever to the far right hand side. Pull the lever back and this will unscrew the pipe. Pressure can be maxed out on this unless the clamp pressure has to be lowered due to crushing of the pipe. The motor pressure may have to be lowered to keep the drive wheels from spinning on the pipe.
3. Raise/Lower spinner; the lever in the middle is an auxiliary lever most commonly used for raising and lowering the pipe spinner unit. The direction of the handle in relationship to up or down can be changed by changing the small hose location on the rear of the unit.

TIPS

1. When spinning out, this unit will usually break the joint apart, but in instances that it does not here are a few things that will help break the joint. First, slack the chain just slightly this will allow the hydraulic motors to get a rolling start that will raise the motor torque. This will help breaking the joint.
2. If the first tip does not work, the second thing to do is hold back on the spin out lever and take a large hammer or air hammer and tap around the pipe above the coupling. Do not hit the coupling.
3. The lower the setting on clamp pressure. The more torque the drive wheels will develope.
4. Do not allow the pipe coupling to turn if you are using it to hold the string of pipe up.

ADJUSTMENT AND REPAIR

CHAIN

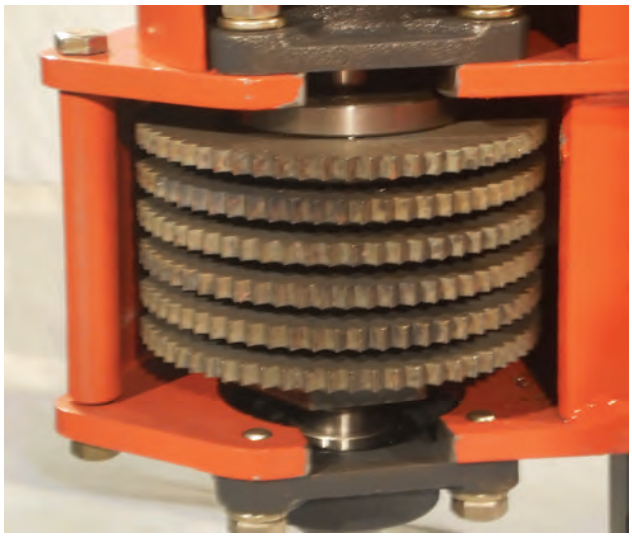


1. The 210 hp is driven by # 60 roller chain. The chain will require a slight amount of maintenance. Every 20 hours of operation the chain covers should be removed and a chain should be checked for wear.
2. Chain tension should be checked ever 20hrs of operation. There is no adjustment on the later version of this spinner.

SPROCKETS

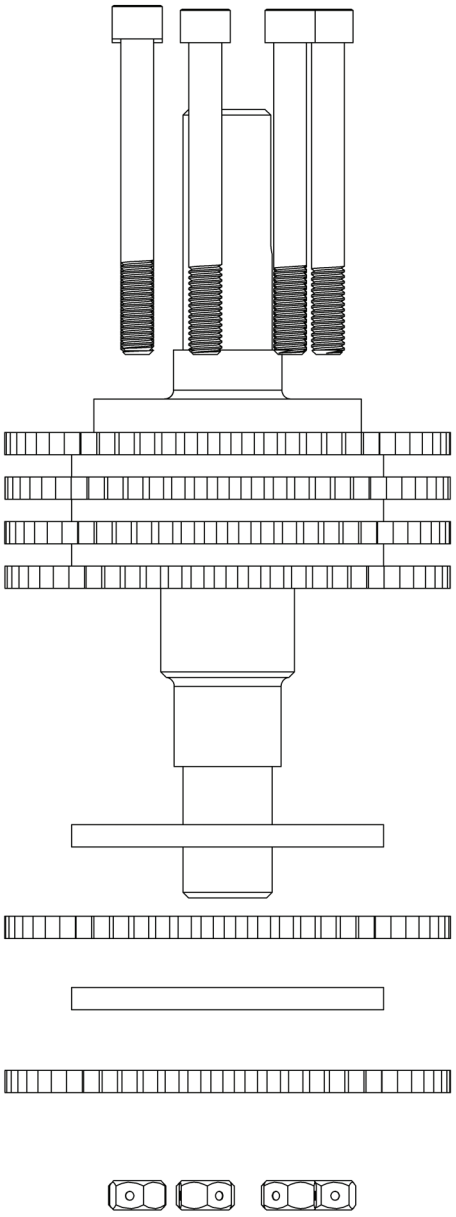
1. The Sprockets Should also be checked for wear. If there is excessive wear on the sprockets they should be replaced. If you have to replace them you will need to remove the chain and loosen the set screws in the sprockets and remove them. Do not loose the key in the drive wheel spindle it is a special material key. When installing new sprockets make sure the chain is in proper alignment.

DRIVE WHEELS



1. The drive wheels are a special hardened steel. They will eventually wear out. When they are wore to a place were they will not spin the pipe without slipping they need to be replaced.
2. To replace drive wheels you will need to remove the drive chain covers.

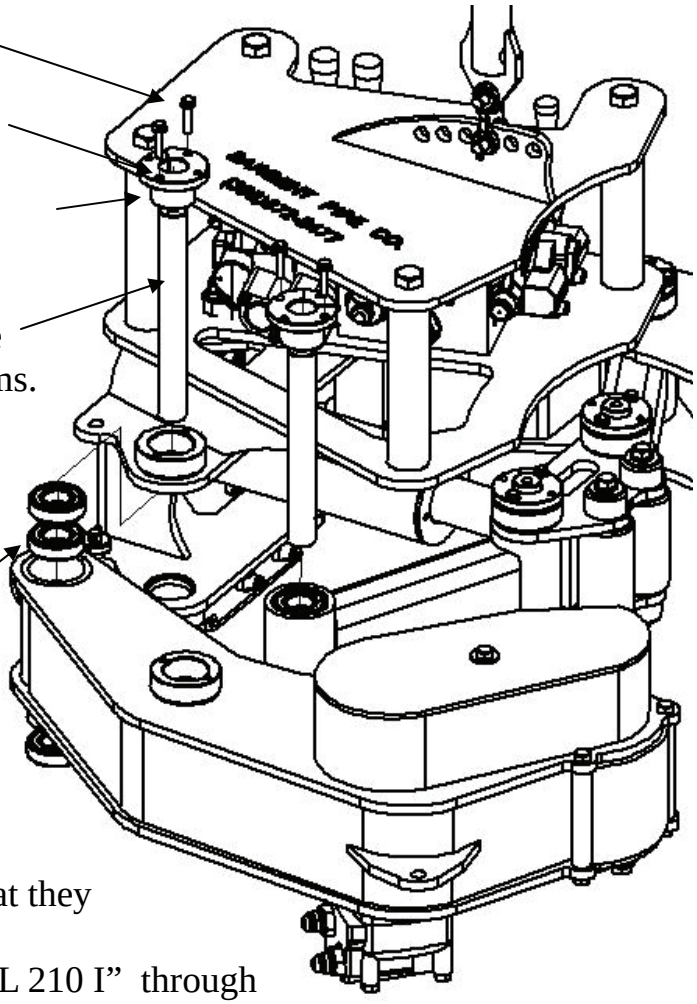
3. Remove the drive chain the drive sprocket
4. Remove the bolts in the upper and lower flange bearings
5. Remove the two flanged bearings
6. Now you will be able to take out the drive wheel assembly
7. Remove the 7 lock nuts
8. Remove the 7 socket head cap screws
9. Remove the drive wheel
10. Remove the drive wheel spacer
11. Repeat Steps 9 and 10 until all the drive wheels and drive wheel spacers are removed
12. Before placing new drive wheels on drive shaft take note that there are 7 small holes in the drive wheels. These hole can be staggered to achieve a helical patter. They come from the factory in a helical type pattern. You can reference the indicator notch in one of the bolt holes for pattern. There are two other patterns that can be achieved straight type or v pitch.
13. When installing new drive wheels place a drive wheel then a spacer until you stack 6 of the drive wheels and 5 of the spacers.
14. Install socket head cap screws and nuts. The assembly is now ready to be installed into the spinner arms.
15 Install the 2 flange bearings
16. Install the drive sprocket and the special key
17. Install the chain
18. Last install the chain drive chain covers



HINGE BEARINGS

1. Hinge bearing's are a sealed ball bearing . They are a low maintenance part, but they may have to be replaced at some point and time. There are some special tools you may need to replace these bearings.
2. Hinge bearings will need to be replaced if there is excessive play or seizing of bearings or the unit does not clamp.

3. First loosen the 4 bolts holding the QD bushings in place
4. Place the 4 bolts in the holes 90 degrees from the original holes. This will force the QD bushing out of the taper.
5. After the bushings are removed place a puller “PL 210 E” on the pin. Then pull pin out of the arms.
6. When you get to this step you will be able to access the bearings in the arms. You can use a steel drift to drive the old bearings out of the arms. There are 4 sealed bearings in each hinge.
7. Now you can replace the bearings. Press or drive new bearings into place. Make sure to anti-seize the bore to prevent galling. Once in place verify that they will turn easily.

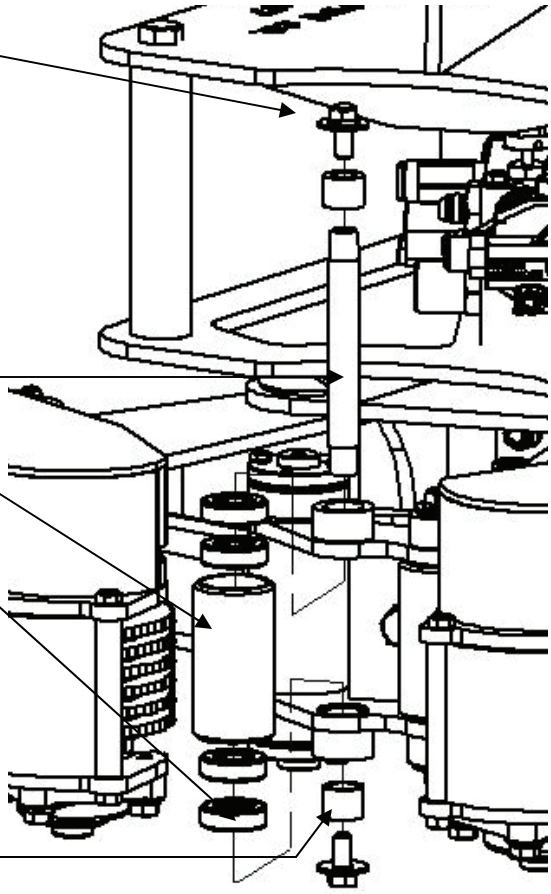


8. Slide the pin installation tool “PL 210 I” through the hinge assembly and attach to the pin. Then pull the pin through the hinge assembly until the pin length is even on top and bottom.
9. Remove the installation tool
10. Slide the QD bushings into place
11. Finally install the small bolts that hold the QD Bushing into place

Idler rollers

1. The idler rollers are a low maintenance item. If the roller is not turning or is wearing you will have to replace the bearings or the rollers themselves.

2. First loosen the bolt on top and the bolt on the bottom
3. Tap on upper bolt until lower wedge bushing comes loose
4. Tap on lower bolt until upper wedge bushing comes loose
5. Remove both bolts lower and upper
6. Remove both wedge bushings
7. Using special puller “PL 210 E” attach to the taper pin and pull pin from the assembly. Now you have the idler roller removed. The bearings will be exposed at this point.
8. Use a steel drift to remove the bearings
9. Now your ready for new bearings or a complete idler roller assembly.
10. Slip special installation “PL 210 I” through the assembly and attach it to taper pin.
11. Pull the pin in until it is equal length on top and bottom.
12. Install the wedge bushings both upper lower
13. Finally install the upper and lower bolts



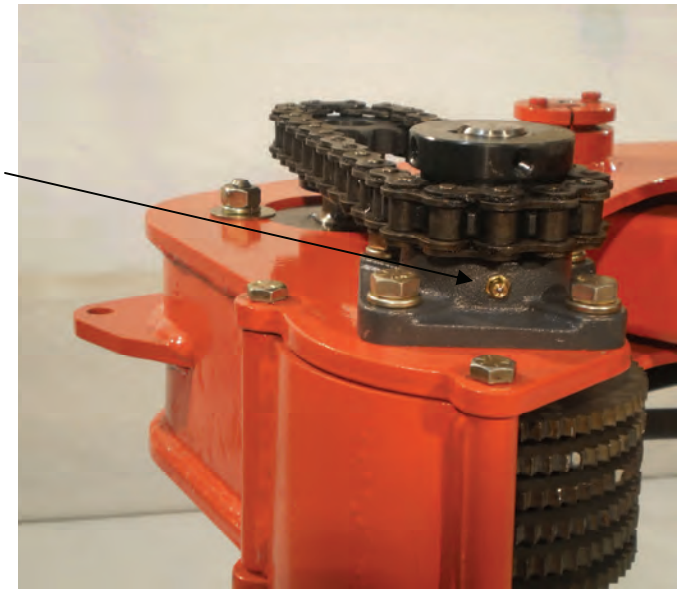
LUBRICATION

DRIVE CHAINS

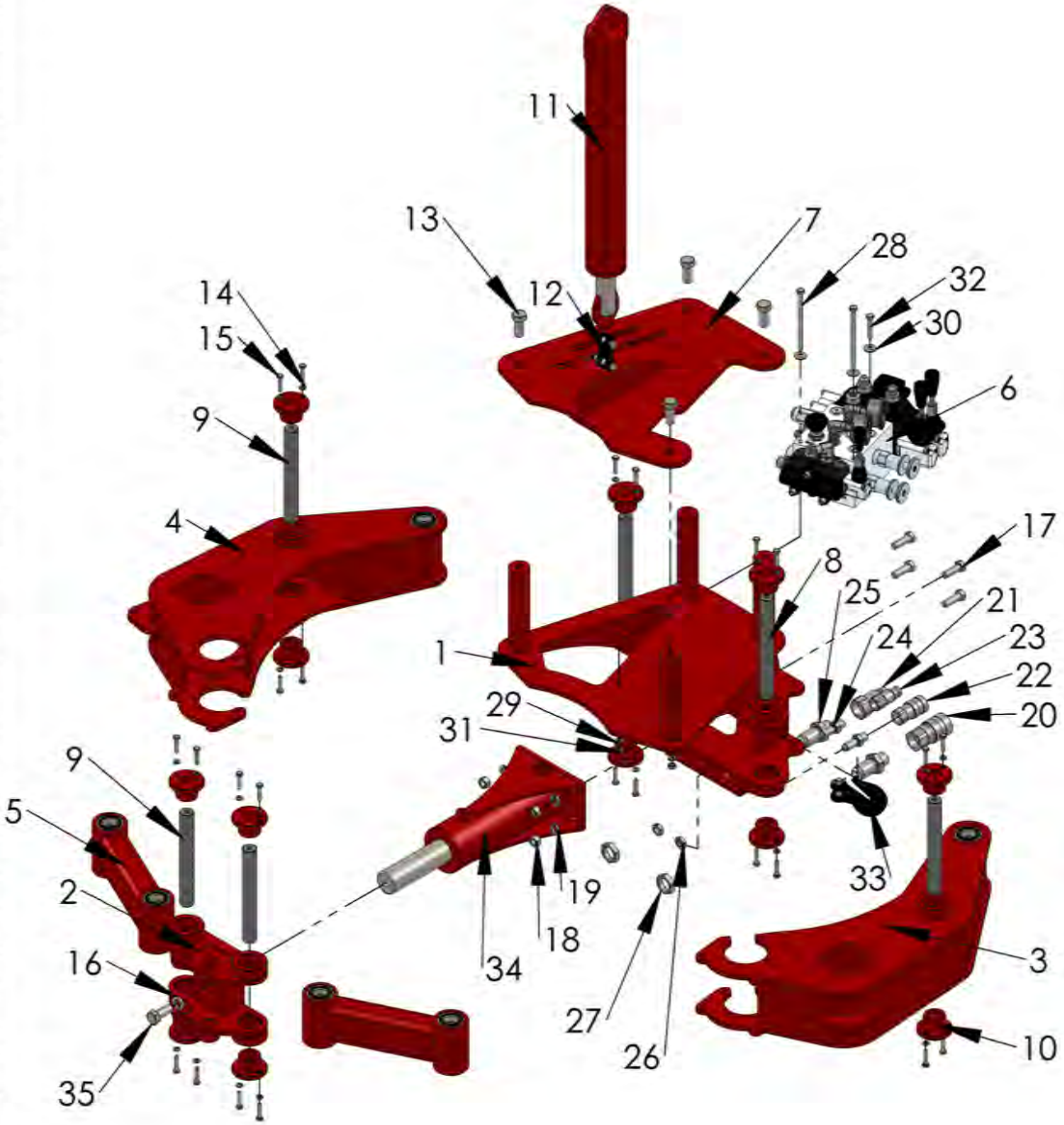
1. The 210 hp is driven by a # 60 roller chain and will require a slight amount of maintenance. After every 20 hours of operation chain covers should be removed and a chain lube should be applied to the chain.

BEARINGS

1. The 4 flange bearings should be greased after every 20 hours of operation.

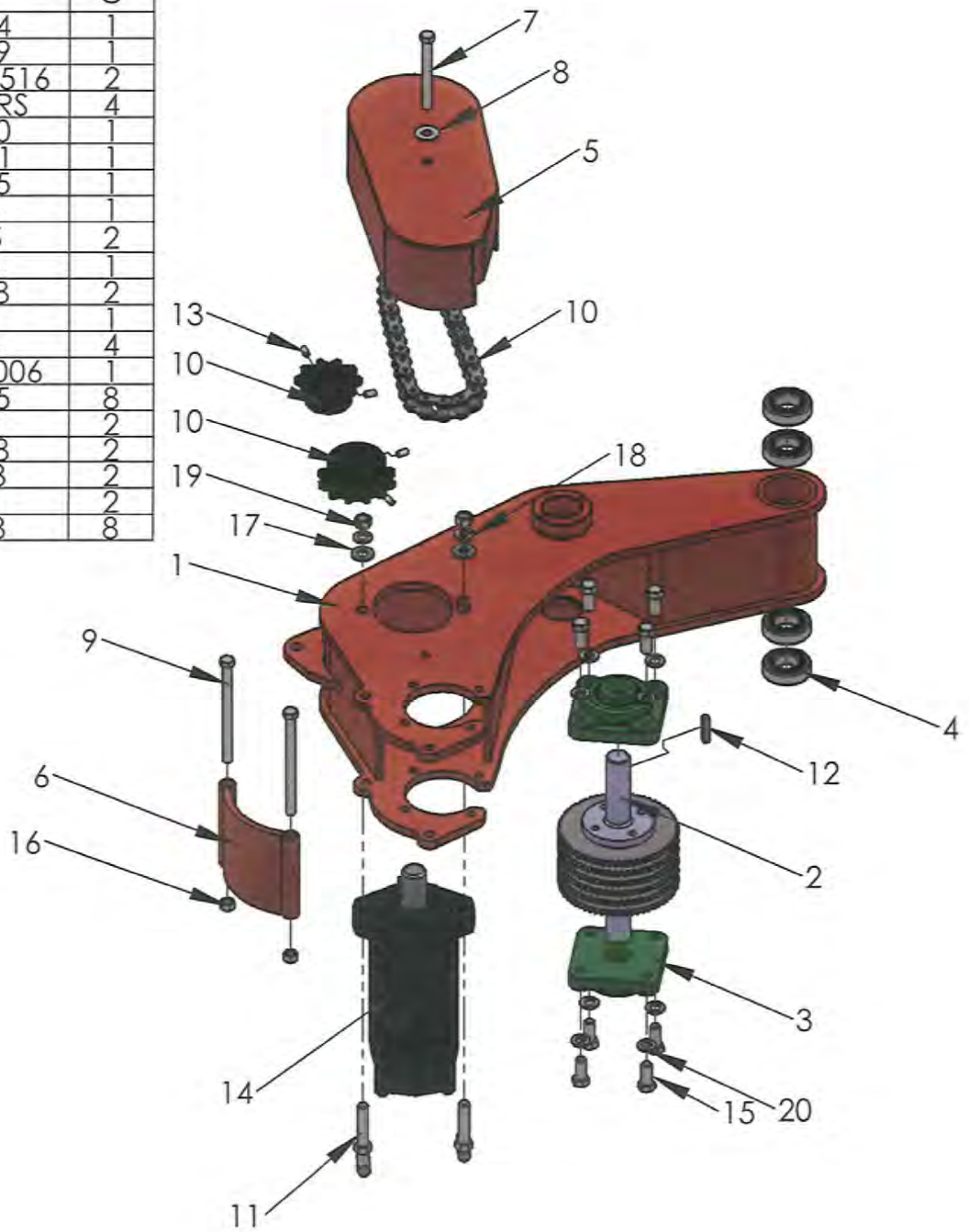


ITEM NO.	PART NUMBER	PART NUMBER	QTY.
1	MAIN FRAME	B14201	1
2	IDLER ROLLER FRAME	B14202	1
3	LEFT ARM FRAME	B14203	1
4	RIGHT ARM FRAME	B14204	1
5	PUSH ARMS	A14205	2
6	VALVE ASSEMBLY	FTP157131A	1
7	HYDRAULIC VALVE COVER ASSY	B14206	1
8	PIVOT PIN LONG	A14208	2
9	PIVOT PIN SHORT	A14209	4
10	QD BUSHING	A14207	12
11	SPRING HANGER ASSY	B14220	1
12	5/16 H-LINK ASSY.	HL313	1
13	HEX BOLT 5/8" x 1 1/2" LONG	B62515	5
14	LOCK WASHER 1/4"	LW25	24
15	HEX BOLT 1/4"X1" LONG	B251	24
16	LOCK WASHER 5/8"	LW625	1
17	HEX BOLT 1/2"x1 1/2" LONG	B515	4
18	HEX NUT 1/2"	N5	4
19	LOCK WASHER 1/2"	LW5	4
20	QUICK COUPLING FEMALE 3/4"	QCF75	1
21	QUICK COUPLING MALE 3/4"	QCM75	1
22	QUICK COUPLING FEMALE 3/8"	QCF375	1
23	QUICK COUPLING MALE 3/8"	QCM375	1
24	STAND OFF 3/8"	2706 6-6	2
25	STAND OFF 3/4"	2706 12-12	2
26	STAND OFF NUT 3/8"	306-06	2
27	STAND OFF NUT 3/4"	306-12	2
28	HEX BOLT 5/16"x5" LONG	B3135	2
29	LOCK WASHER 5/16"	LW313	3
30	FLAT WASHER 5/16"	W313	3
31	HEX NUT 5/16"	N313	3
32	HEX BOLT 5/16"x1 3/4 LONG	B313175	1
33	CHAIN HOOK	CH375	2
34	CYLINDER ASSEMBLY	MH175366875	1
35	HEX BOLT 5/8" x 1 1/2" LONG	B62515	1

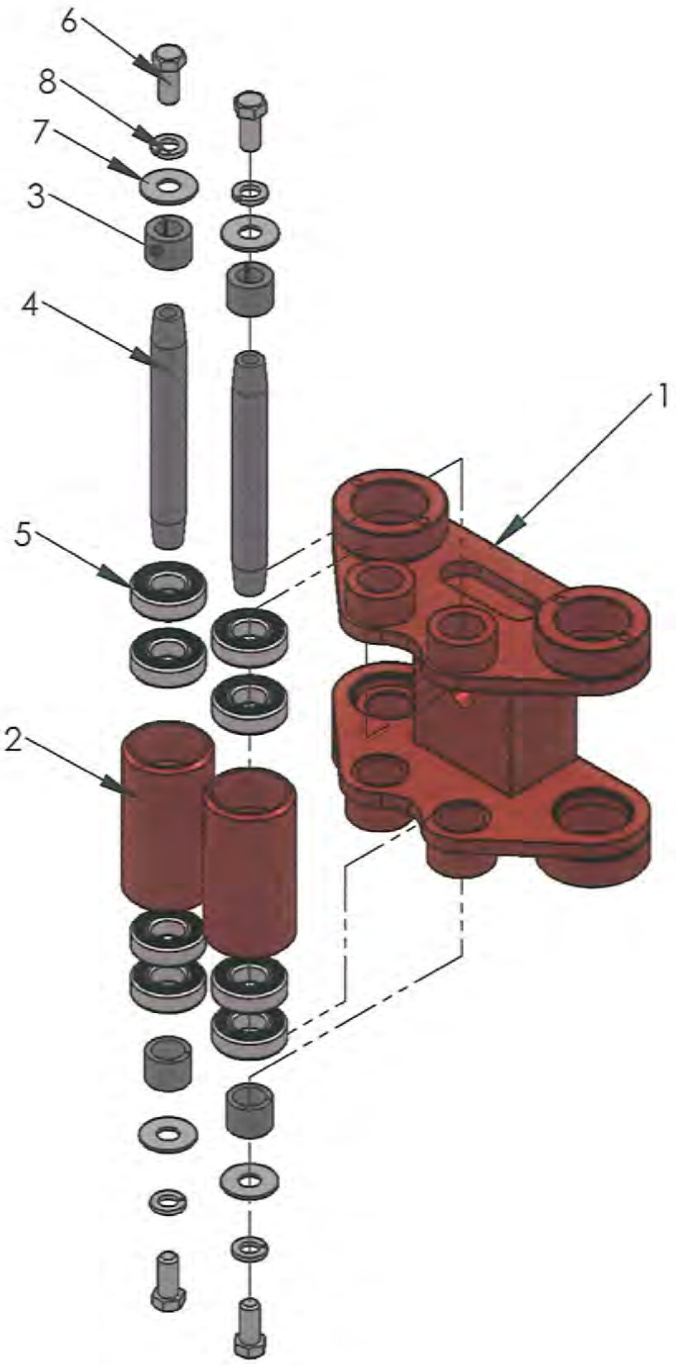


ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
1	RIGHT ARM ASSY.	B14204	1
2	DRIVE WHEEL ASSY	B14219	1
3	BEARING UCF205-16	BBUCF20516	2
4	1641 RS BEARING	BB1641RS	4
5	RH CHAIN COVER	B14210	1
6	DRIVE WHEEL GAURDS	A14211	1
7	HEX BOLT 3/8" X 3 1/2" LONG	B37535	1
8	3/8" FLAT WASHER	W375	1
9	HEX BOLT 3/8"X5"LONG	B3755	2
10	DRIVE CHAIN	DC60	1
11	7/16" NON TURN LUG	NTL438	2
12	1/4" HSS KEY	K25	1
13	SET SCREW 1/4" x 1/2" LONG	SS255	4
14	CHARLYNN 104-1006	AC1041006	1
15	HEX BOLT 7/16" x 1 1/2"	B43815	8
16	HEX NUT 3/8"	N375	2
17	HEAVY WASHER 7/16"	HW438	2
18	LOCK WASHER 7/16"	LW438	2
19	HEX NUT 7/16"	N438	2
20	7/16" LOCK WAHER	LW438	8

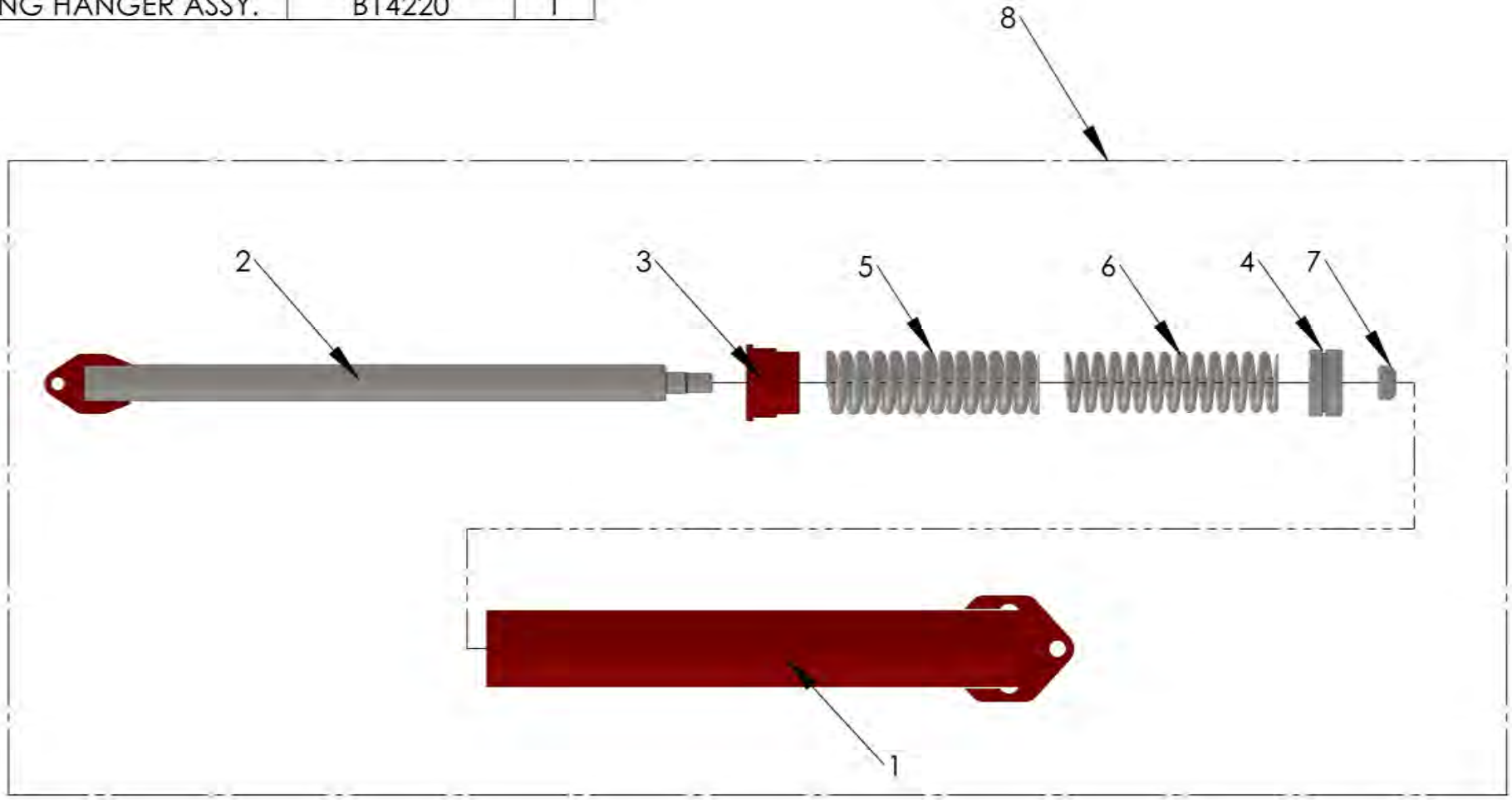
NOTE ALL PARTS IN THE LH ARM ASSEMBLY WILL BE THE SAME EXCEPT FOR ITEM NUMBER 1. ITS DESCRIPTION WILL BE "LH ARM FRAME" PART NUMBER OF LH B14203



ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
1	IDLER ROLLER FRAME	B14202	1
2	IDLER ROLLER	A14212	2
3	WEDGE BUSHING	A14213	4
4	TAPER PIN	A14214	2
5	BALL BEARING	BB1630-2RS	8
6	HEX BOLT 7/16" x 1" LONG	B4381	4
7	FLAT WASHER 7/16"	W438	4
8	LOCK WASHER 7/16"	LW438	4

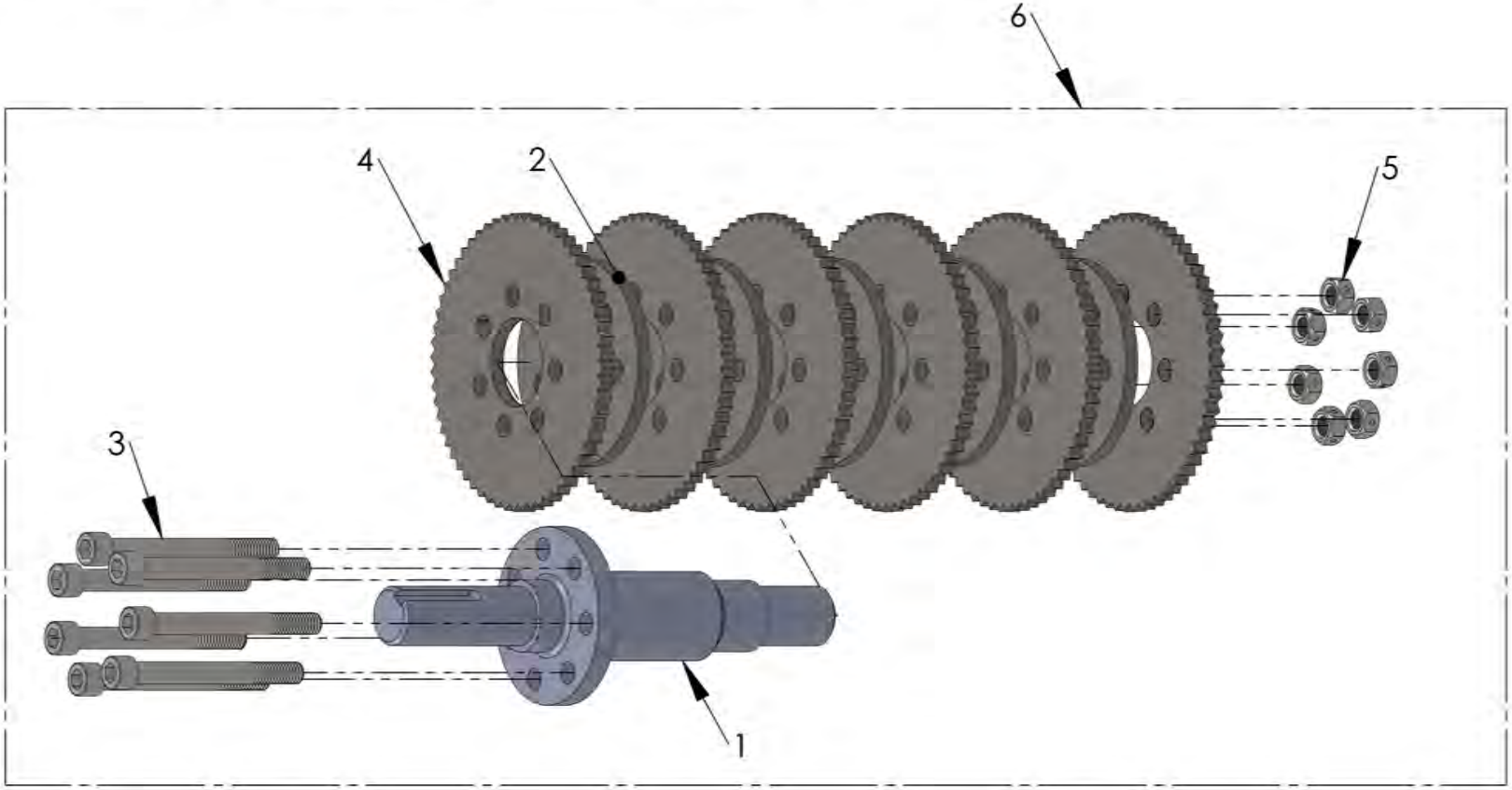


ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
1	COVER TUBE	B14221	1
2	LOWER SHAFT	B14222	1
3	LOWER SHAFT GUIDE	A14223	1
4	SPRING STOP	A14224	1
5	HEAVY COMP. SPRING	MM24383138	1
6	LIGHT COMP. SPRING	MM24284388	1
7	3/4 NUT	N75	1
8	SPRING HANGER ASSY.	B14220	1

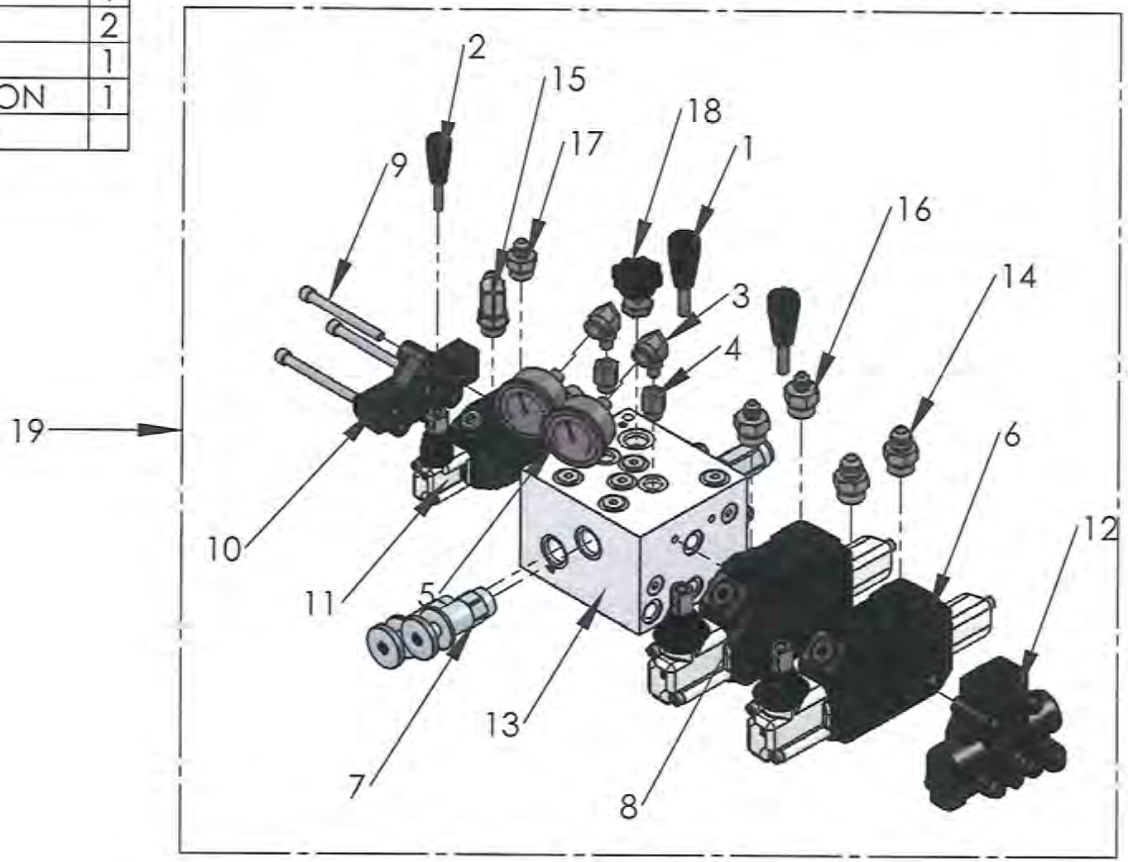


ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
1	DRIVE WHEEL SHAFT	A14237	1
2	DRIVE WHEEL SPACERS	A14217	5
3	SOCKET HD. CAP SCREW 3/8" X 3 1/2" LONG	CS37535	7
4	DRIVE WHEEL COARSE TOOTH	A14218	6
5	TWO-WAY LOCK NUT 3/8"	LN375	7
6	DRIVE WHEEL ASSEMBLY	B14219	1

NOTE: CURRENT SETUP FOR SERIAL NUMBERS XXXXX5XX AND HIGHER.

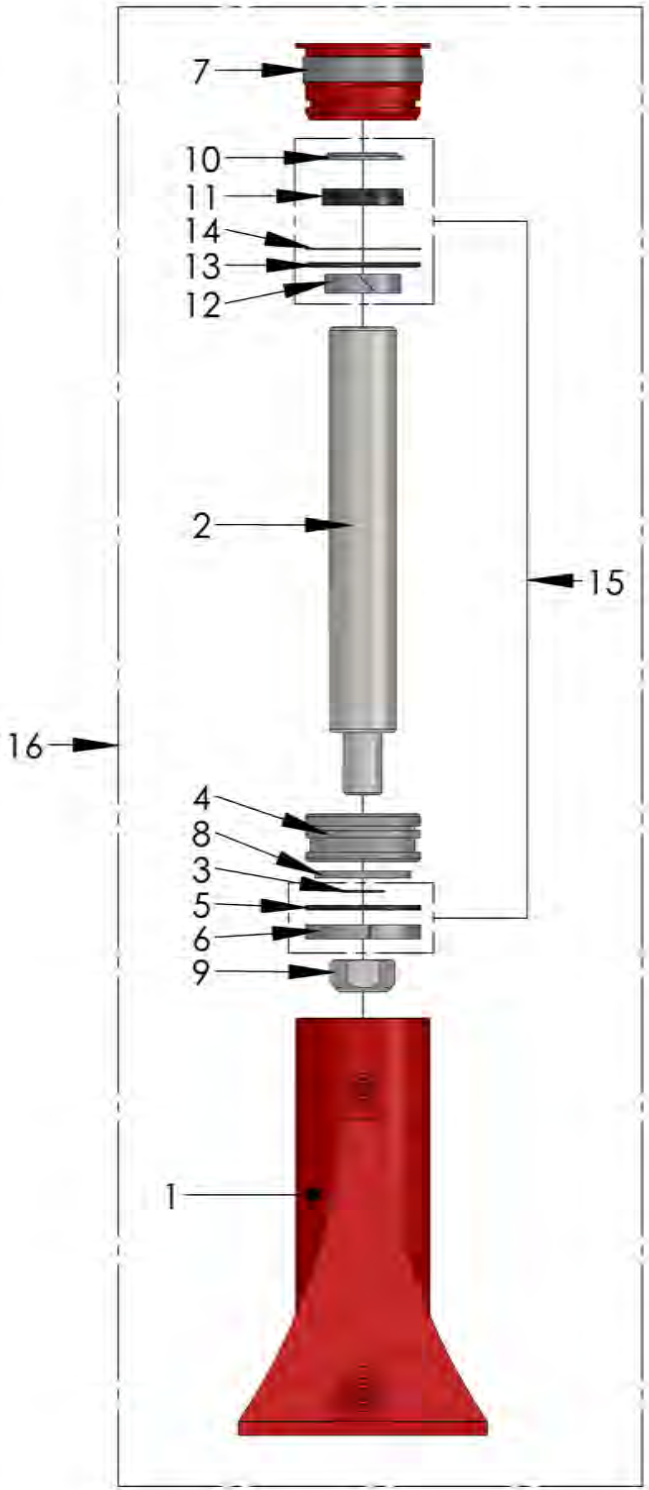


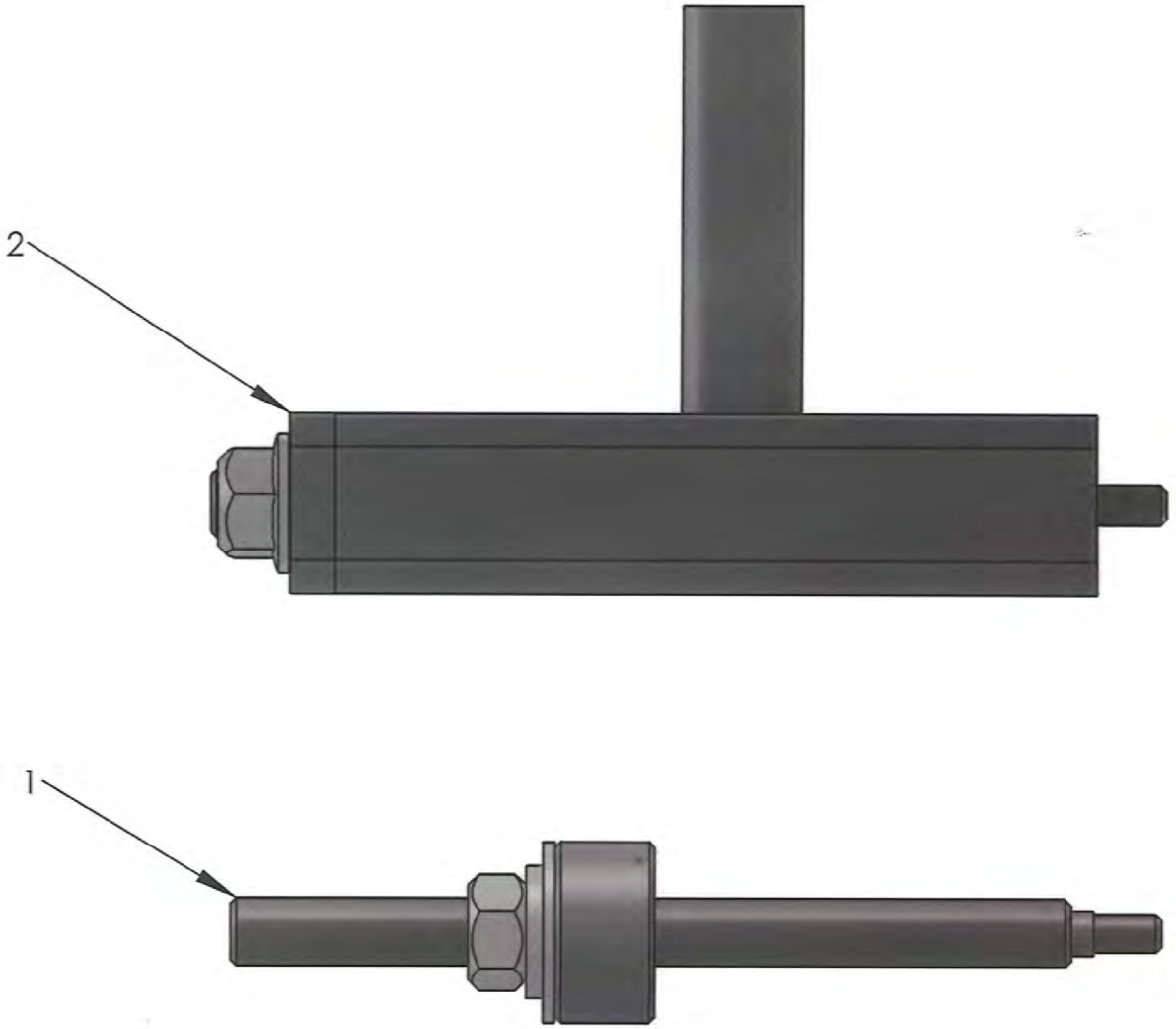
ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
1	BAUCHER V20 HANDLE	FT200702220010	2
2	BAUCHER V10 HANDLE	FT2007022110190	1
3	HYDRAULIC FITTING 90 DEG	6805 4-4	2
4	HYDRAULIC FITTING O-RING	6410 6-4	2
5	2" GAUGE 3000 PSI	AP3802996	2
6	BAUCHER V20 VALVE SECTION	FTHDS20K04C56L100	1
7	FLOW CONROL	FTRV10-20B	2
8	BAUCHER V20 C/C VAVE	FTHDS20K04A56L100	1
9	HEX BOLT 5/16"X3 1/4" LONG	B313325	3
10	OUTLET	FTHDS11	1
11	BAUCHER V10 VALVE SECTION	FTHDS11K02A02L100	1
12	LARGE OUTLET	FTHDS20P12	1
13	O-RING FITTING	6400 8-12	2
14	O-RING FITTING	6400 8-10	2
15	O-RING FITTING	6801 6-8	1
16	O-RING FITTING	6400 6-10	2
17	O-RING FITTING	6400 6-8	1
18	NEEDLE VALVE	FTH/F NV0821EON	1
19	VALVE ASSEMBLY	FTP157131A	



ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
1	TUBE	MHPCT3	1
2	ROD	MHPCR175	1
3	O-RING	MHOR022	1
4	PISTON	MHPCP3	1
5	SQUARE O-RING	MHSOR232	1
6	3" X 2 3/4" WEAR RING	MHWR3275	1
7	GLAND	MHPCG175	1
8	SPACER	MHPCS25175	1
9	1"-14UNS NUT	MHN1	1
10	WIPER	MHAN-19	1
11	1 3/4" U-SEAL	MHUS175	1
12	1 3/4" WEAR SLEEVE	MHWS175	1
13	O-RING	MHOR232	1
14	BACKUP WASHER	MHBW232	1
15	SEAL KIT	MH1753	1
16	CYLINDER ASSEMBLY	MH175366875	1

NOTE: SERIAL NUMBERS WITH XXXXX5XX AND HIGHER HAVE GUSSETS ON ITEM 1 AS SHOWN.



ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
1	PIN INSTALATION TOOL*	PL 210 I	1
2	PIN EXTRACTION TOOL*	PL 210E	1

*NOT INCLUDED WITH SPINNER