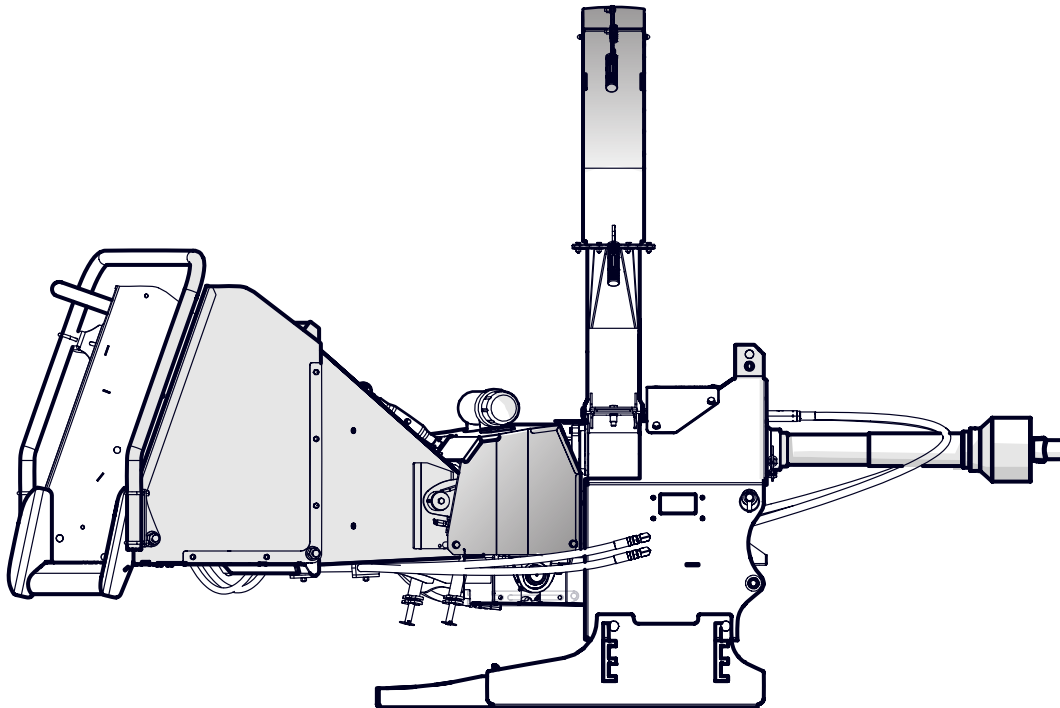


# PARTS MANUAL

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Serial Number 152R1437 & Up

## **BX52R / RI** **3 PH Roller-feed Chipper**



## Foreword

This Wallenstein parts manual is prepared to assist customers in ordering quality OEM replacement parts.

Regular maintenance combined with replacing old, worn or broken parts with the correct OEM parts is essential in prolonging the life of your Wallenstein product. Refer to this manual to identify replacement parts.

To order parts, contact your Wallenstein dealer or distributor. Have the product model and serial number handy.

If your dealer is no longer available, please go to [WallensteinEquipment.com](http://WallensteinEquipment.com). At the bottom of the page, select Dealer Locator.

All information contained in this parts manual is current as per the revision date at the bottom of the page. Wallenstein reserves the right to change product specifications at any time without notice.

If your product specifications differ from those contained in this manual, contact Wallenstein for current information.

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## WARNING!

For safety, operation, and maintenance information, see the Operator's Manual.

Maintenance should be performed by trained personnel only.

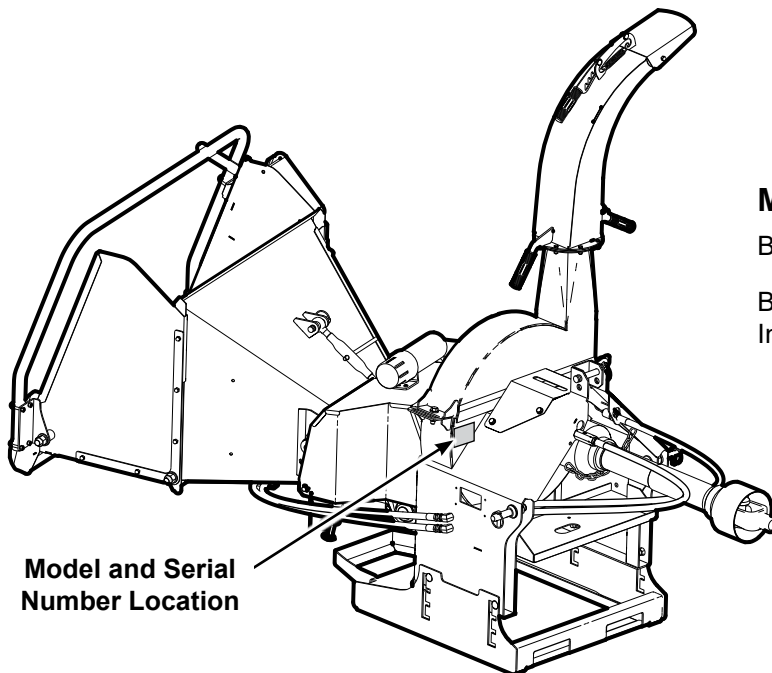
## Serial Number Location

Always provide the model and serial number of your Wallenstein product when ordering parts or requesting service or other information. The serial number is on the product information plate as shown below.

Record your product information here for future reference.

Model \_\_\_\_\_

Serial Number \_\_\_\_\_



## Models covered in this manual:

BX52R – Roller-feed Chipper

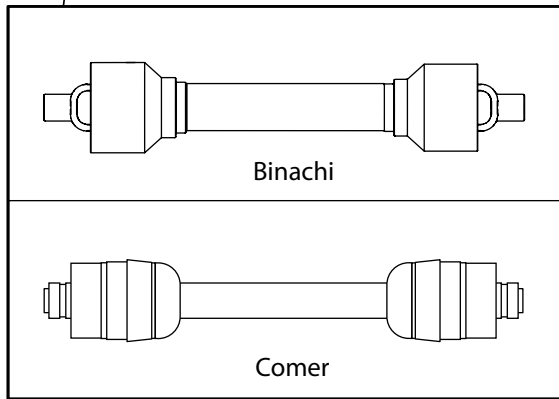
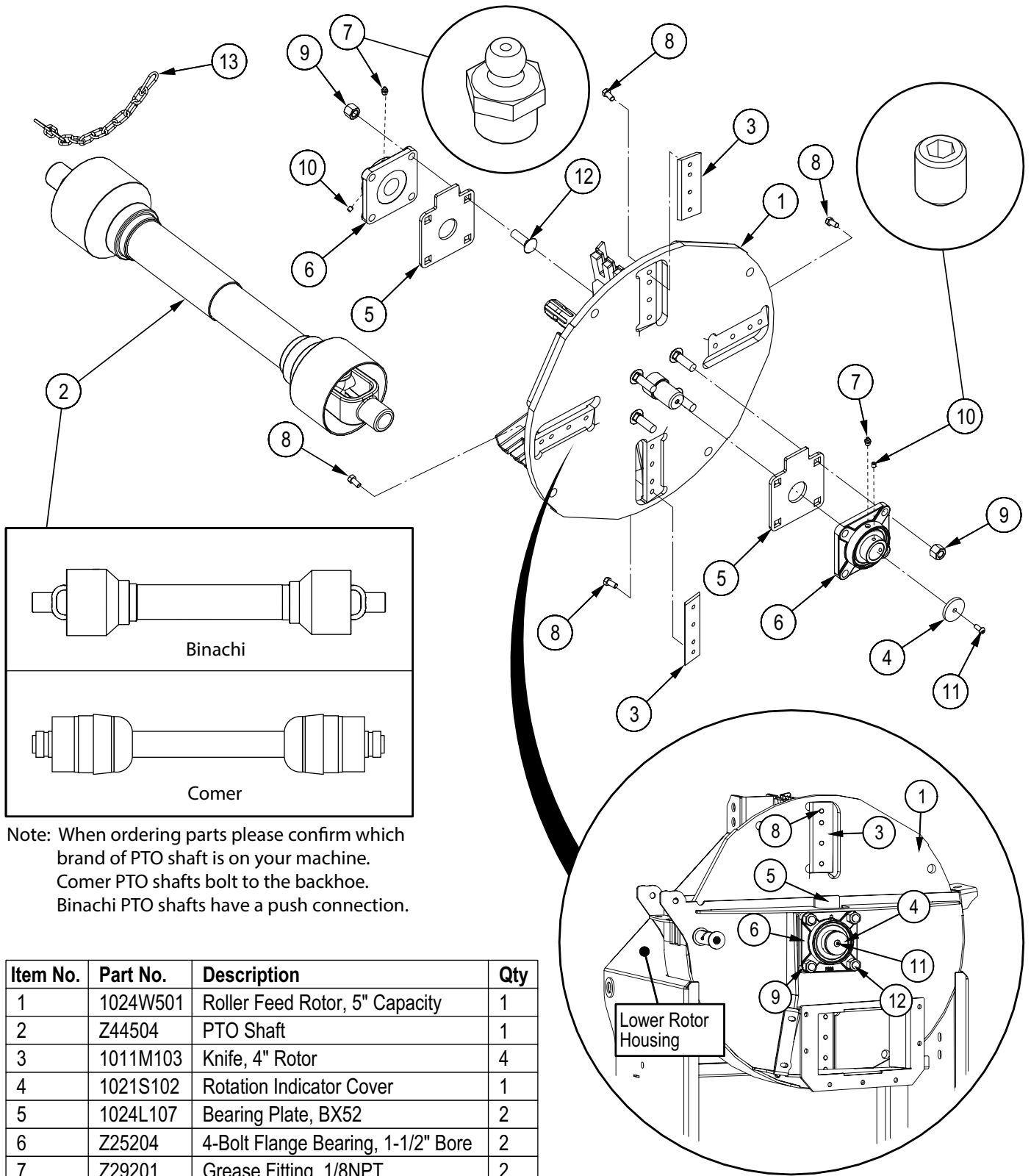
BX52RI – Roller-feed Chipper with IntelliFEED

[www.wallensteinequipment.com](http://www.wallensteinequipment.com)

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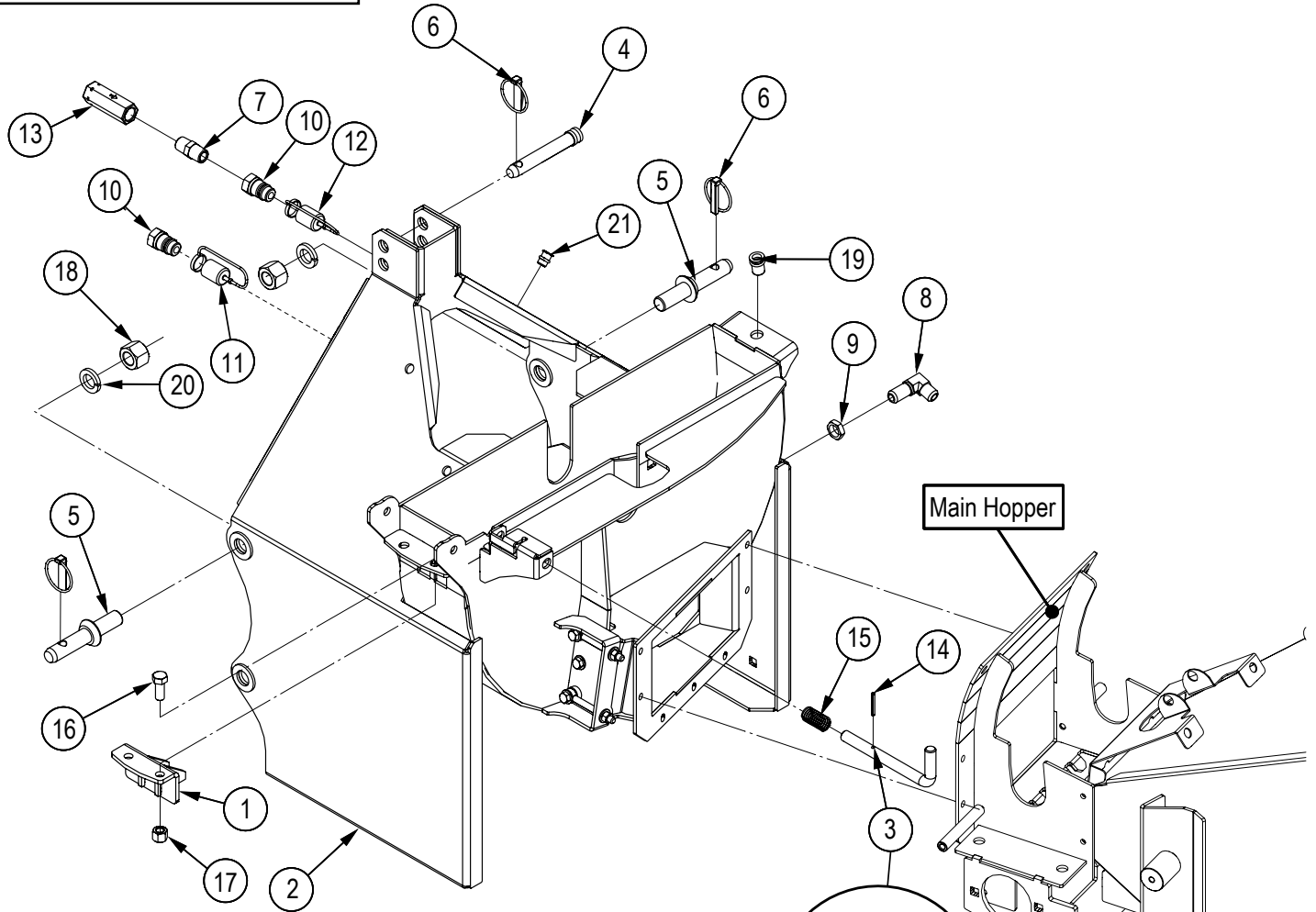
**Rotor Assembly**



Note: When ordering parts please confirm which brand of PTO shaft is on your machine.  
 Comer PTO shafts bolt to the backhoe.  
 Binachi PTO shafts have a push connection.

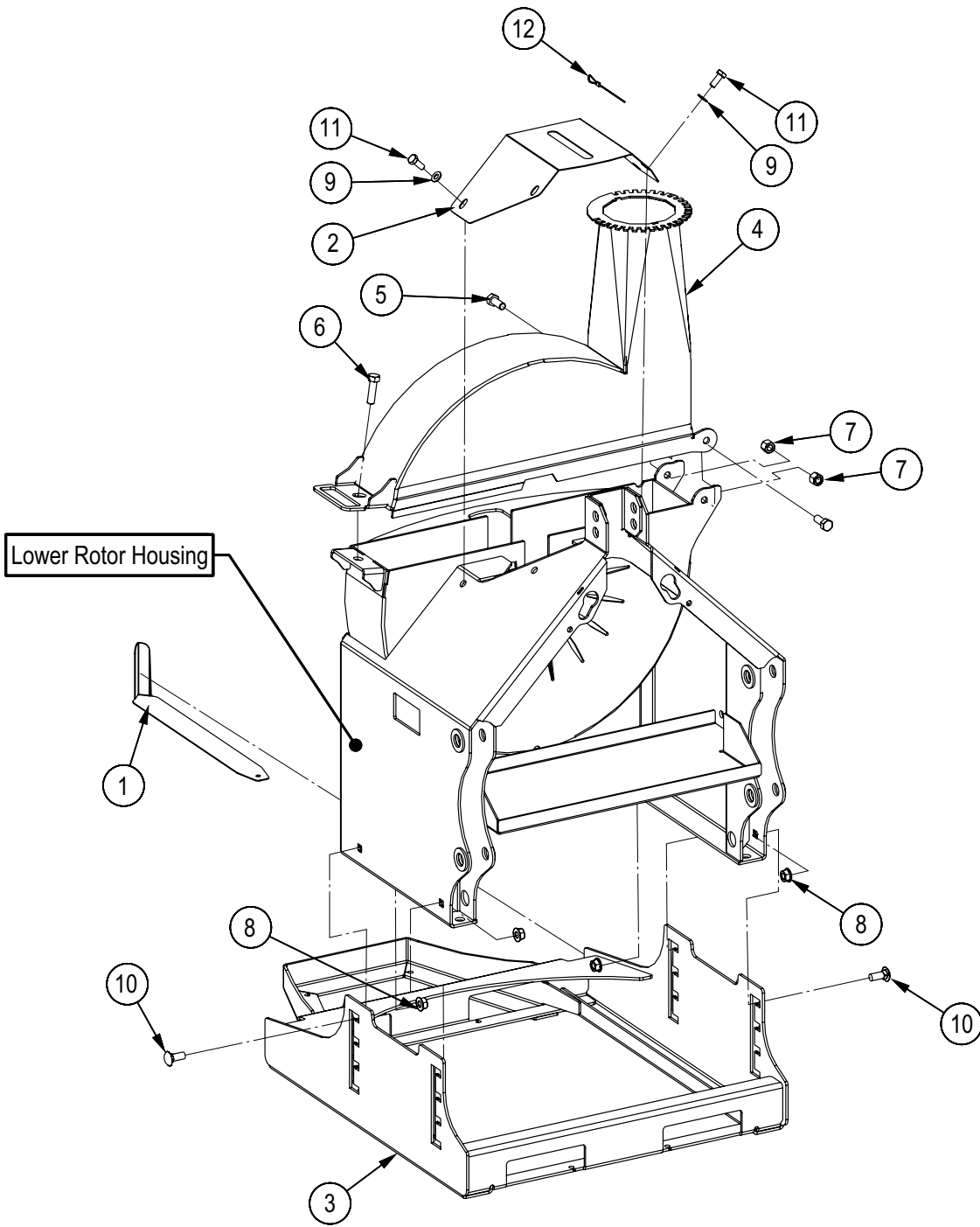
Item No.	Part No.	Description	Qty
1	1024W501	Roller Feed Rotor, 5" Capacity	1
2	Z44504	PTO Shaft	1
3	1011M103	Knife, 4" Rotor	4
4	1021S102	Rotation Indicator Cover	1
5	1024L107	Bearing Plate, BX52	2
6	Z25204	4-Bolt Flange Bearing, 1-1/2" Bore	2
7	Z29201	Grease Fitting, 1/8NPT	2
8	Z71373G8	Hex Bolt, 3/8NF x 3/4 G8	16
9	Z72261G8	Hex Lock Nut, 5/8NC G8	8
10	Z74122	Set Screw, 5/16NF x 3/8"	4
11	Z75351	BHCS, 5/16NF x 3/4"	1
12	Z76261G8	Carriage Bolt, 5/8NC x 2" G8	8
13	Z92310	Chain 3/16" x 12" double hook ends	1

**Lower Rotor Housing**



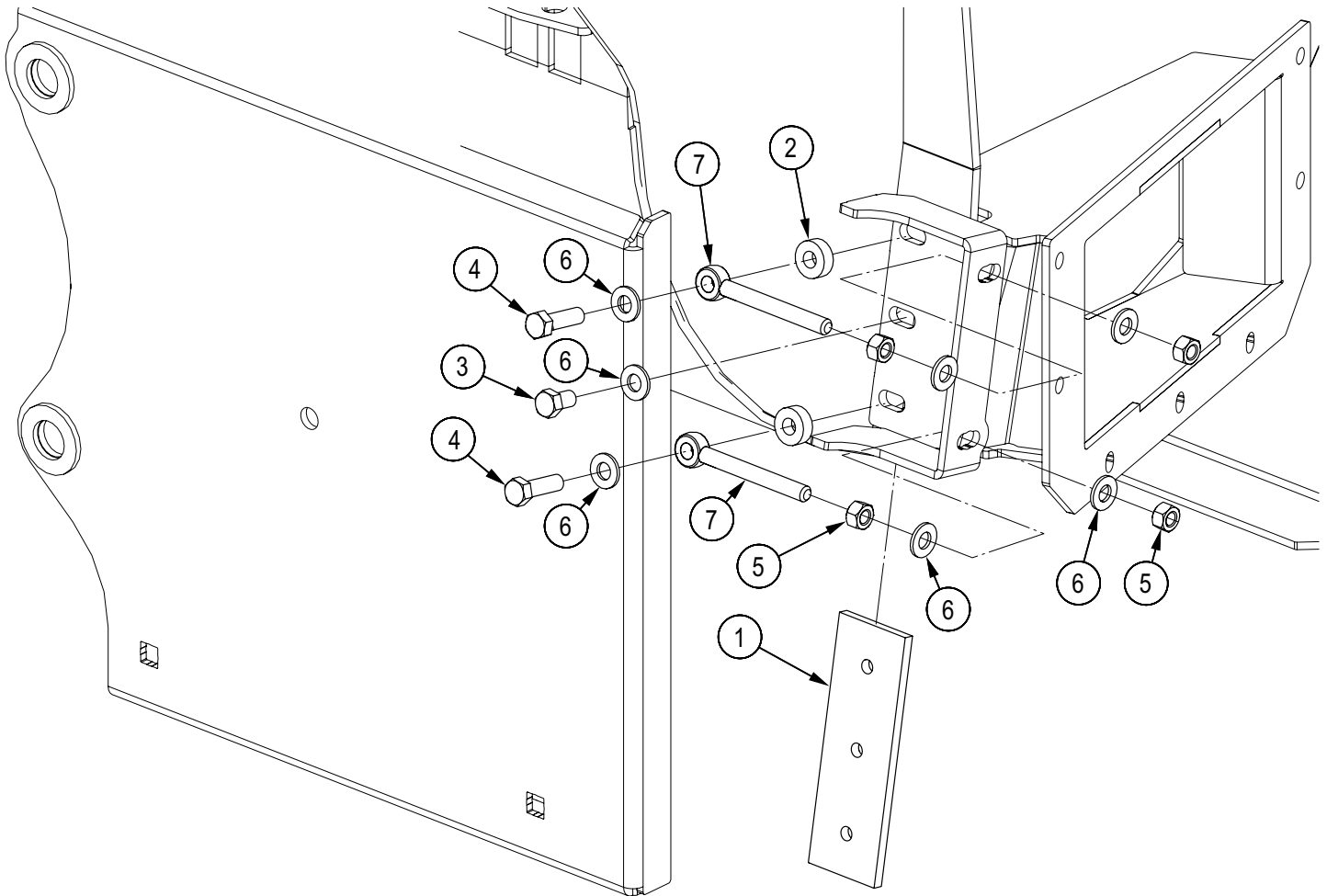
Item No.	Part No.	Description	Qty
1	1024W103	Twig Breaker, BX52	1
2	1024W711	Lower Rotor Housing	1
3	1026M102	L Handled Plunger, Compact	1
4	Z11122	Toplink Pin, 3/4" x 3-7/8"	1
5	Z11431	Implement Pin, 7/8" x 1-3/4" x 7/8NF	2
6	Z12140	Lynch Pin, 7/16"	3
7	Z51122	Straight, MP x MP 0808	1
8	Z51492	Elbow 90, MJIC x BH 0808	2
9	Z51493	BH Locknut, 08	2
10	Z51926	Quick Coupler, FP08 x M ISO 7241-1	2
11	Z52831	Nipple Cap, ISO 7241-1 x Red	1
12	Z52832	Nipple Cap, ISO 7241-1 x Black	1
13	Z56102	Check Valve, FP08 x 0PSI	1
14	Z14151	Roll Pin, 3/16" x 1-1/2"	1
15	Z32305	Comp Spring, 0.845" OD x 3-1/2" x 0.085"	1
16	Z71512	Hex Bolt, 1/2NC x 1-1/4"	2
17	Z72251	Hex Lock Nut, 1/2NC	2
18	Z72282	Hex Lock Nut, 7/8NF	2
19	Z72960	Rivet Nut, 1/2NC x 200	1
20	Z73381	Split Lock Washer, 7/8"	2
21	Z77940	Rivet Nut, M10x1.5 x 313	4

**Upper Rotor Housing**



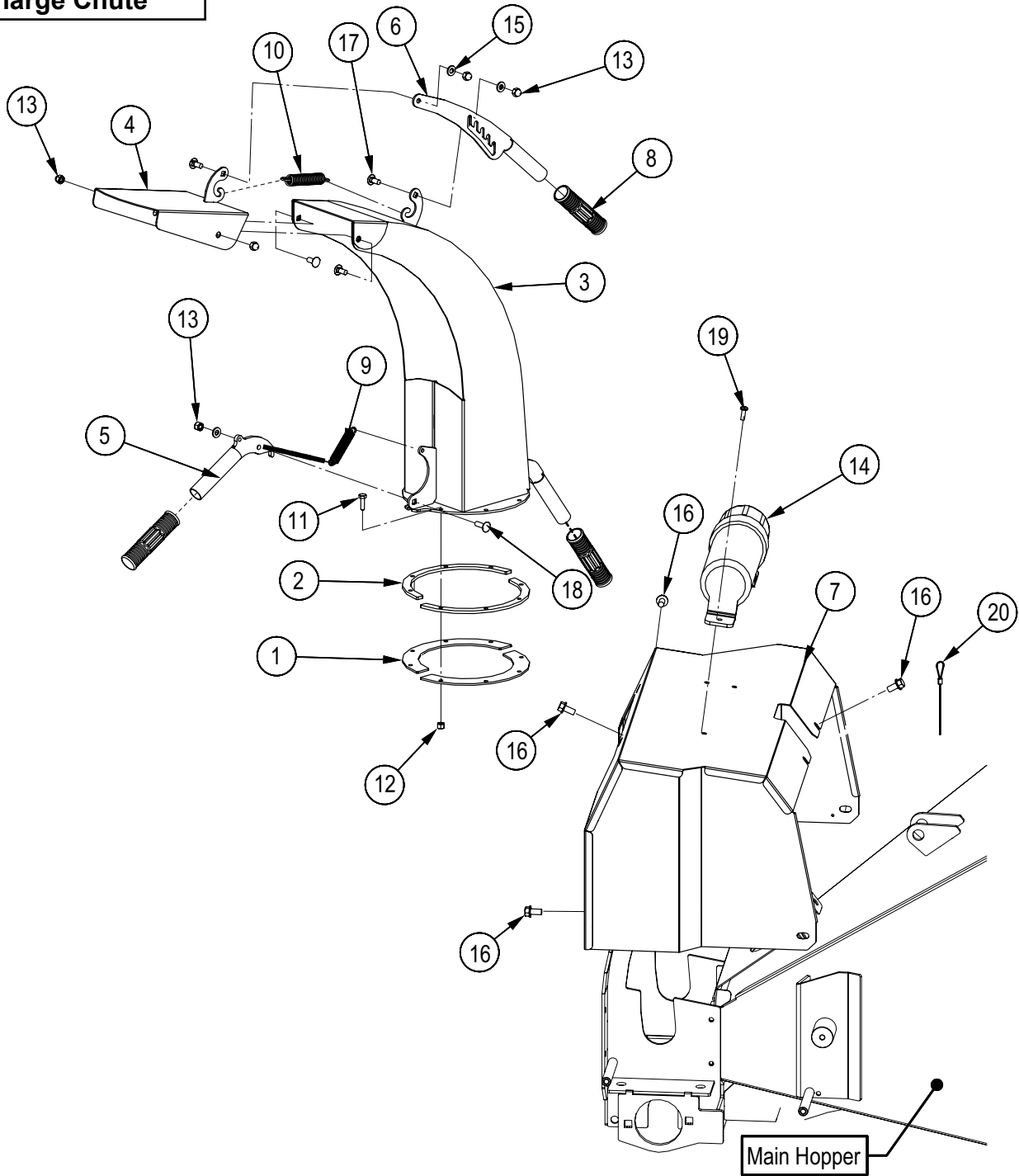
Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1	1012L269	Gauge, Ledger Setting	1	7	Z72251	Hex Lock Nut, 1/2NC	2
2	1024L554	PTO Guard	1	8	Z72551	Serrated Flange Locknut, 1/2NC	4
3	1024W709	BX52R Extended Base	1	9	Z73131	SAE Washer, 3/8"	4
4	1024W104	Upper Rotor Housing	1	10	Z76259	Carriage Bolt, 1/2NC x 1-1/4"	4
5	Z71512	Hex Bolt, 1/2NC x 1-1/4"	2	11	Z77162	Hex Bolt, M10x1.5 x 25mm	4
6	Z76155	Flange Bolt, 1/2NC x 1-3/4"	1	12	Z92127	1/16 Aircraft cable x 16"	1

**Ledger Knife Detail**



Item No.	Part No.	Description	Qty
1	1011M104	Knife, 4" Ledger	1
2	1024L124	Ledger Washer	2
3	Z71372G8	Hex Bolt, 3/8NF x 5/8" G8	1
4	Z71379G8	Hex Bolt, 3/8NF x 1-1/4" G8	2
5	Z72131	Hex Nut, 3/8NC	4
6	Z73131	SAE Washer, 3/8"	7
7	Z76534	Rod End, 3/8NC x 3-1/2"	2

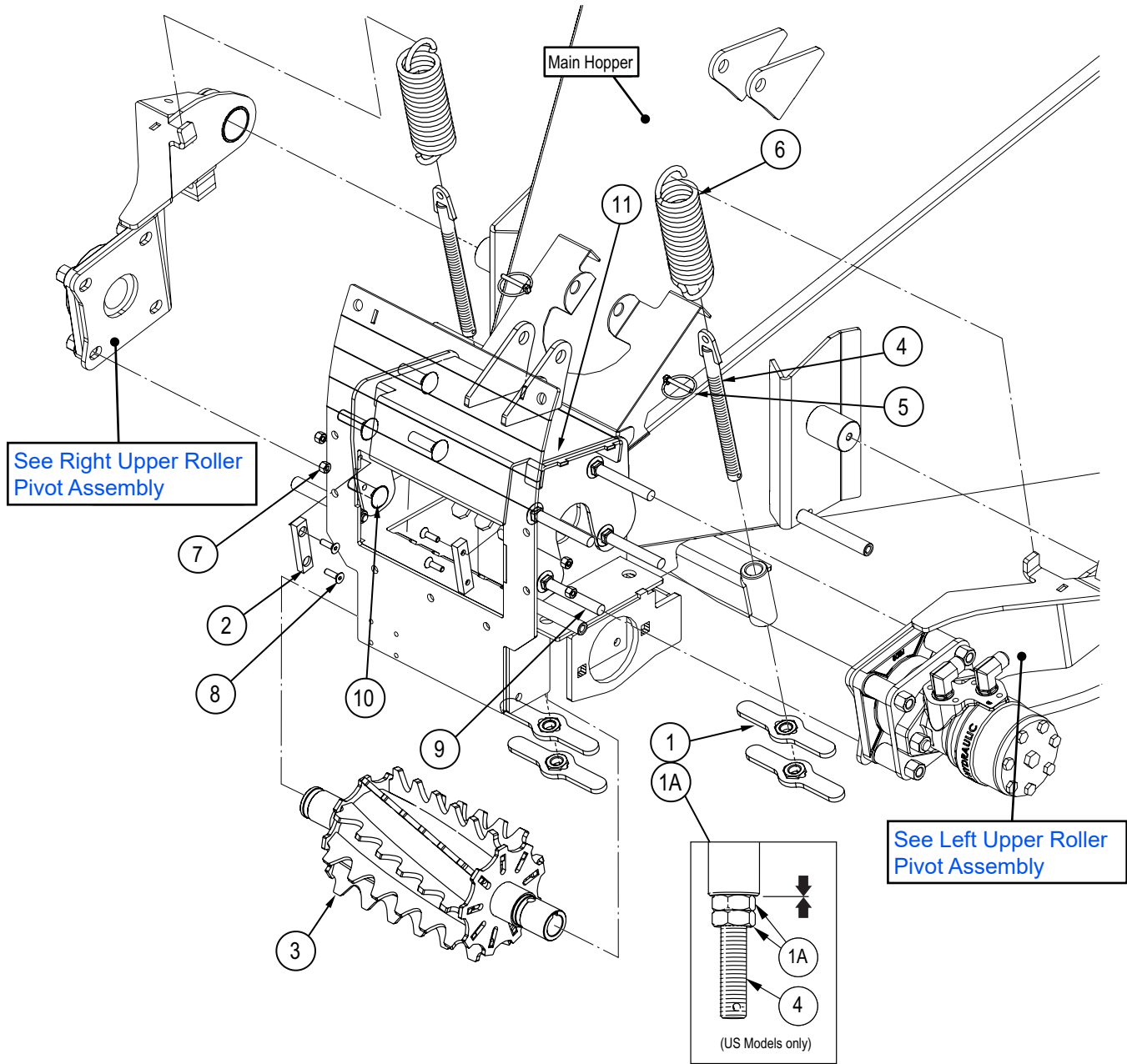
**Discharge Chute**



Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1	1024L133	Hood Capture Ring	2	11	Z71108	Hex Bolt, 1/4NC x 7/8"	8
2	1024L134	Spacer Ring	2	12	Z72211	Hex Lock Nut, 1/4NC	11
3	1024W106	Discharge Chute	1	13	Z72221	Hex Lock Nut, 5/16NC	5
4	1024W107	Discharge Deflector	1	14	Z96503	Manual Tube 3-1/2 Short	1
5	1024W108	Discharge Latch	1	15	Z73122	SAE Washer, 5/16"	3
6	1024W109	Discharge Adjustor	1	16	Z76133	Flange Bolt, 3/8NC x 3/4"	8
7	1024W621	Bridge Guard	1	17	Z76221	Carriage Bolt, 5/16NC x 3/4"	4
8	Z19321	Grip, 1" x 5"	3	18	Z76225	Carriage Bolt, 5/16NC x 1"	1
9	Z31305	Ext Spring, 5/8" OD x 3" x 0.08"	1	19	Z78301	Machine Screw, 1/4NC x 3/4"	3
10	Z31401	Ext Spring, 3/4" OD x 4" x 0.105"	1	20	Z92110	1/16 Aircraft cable x 2'	1

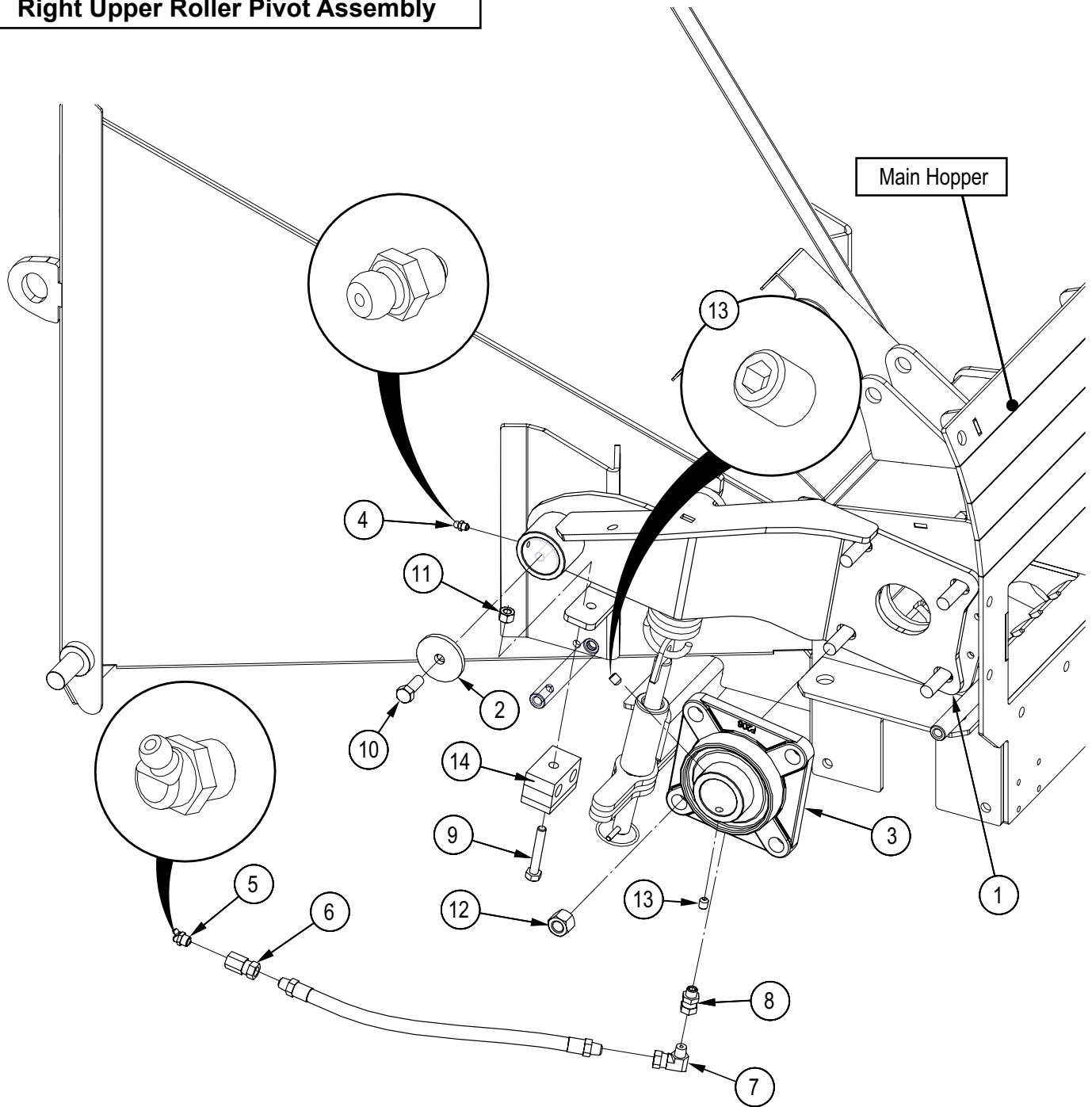


**Upper Roller Detail**



Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1	1022W220	Nut Handle	4	6	Z31501	Ext Spring, 2" OD x 7" x 0.250"	2
1A	Z72361	Jam Nut, 5/8NC (US Models only)	4	7	Z72211	Hex Lock Nut, 1/4NC	4
2	1024S707	Rotor Hood Slide	2	8	Z75211	FHCS, 1/4NC x 7/8"	4
3	1024W710	Upper Feed Roller, Spiral Overlap	1	9	Z762510	Carriage Bolt, 1/2NC x 3-1/2"	4
4	1024W708	Spring Yoke	2	10	Z76258	Carriage Bolt, 1/2NC x 1-3/4"	4
5	Z12110	Lynch Pin, 3/16"	2	11	1024W618	Bridge	1

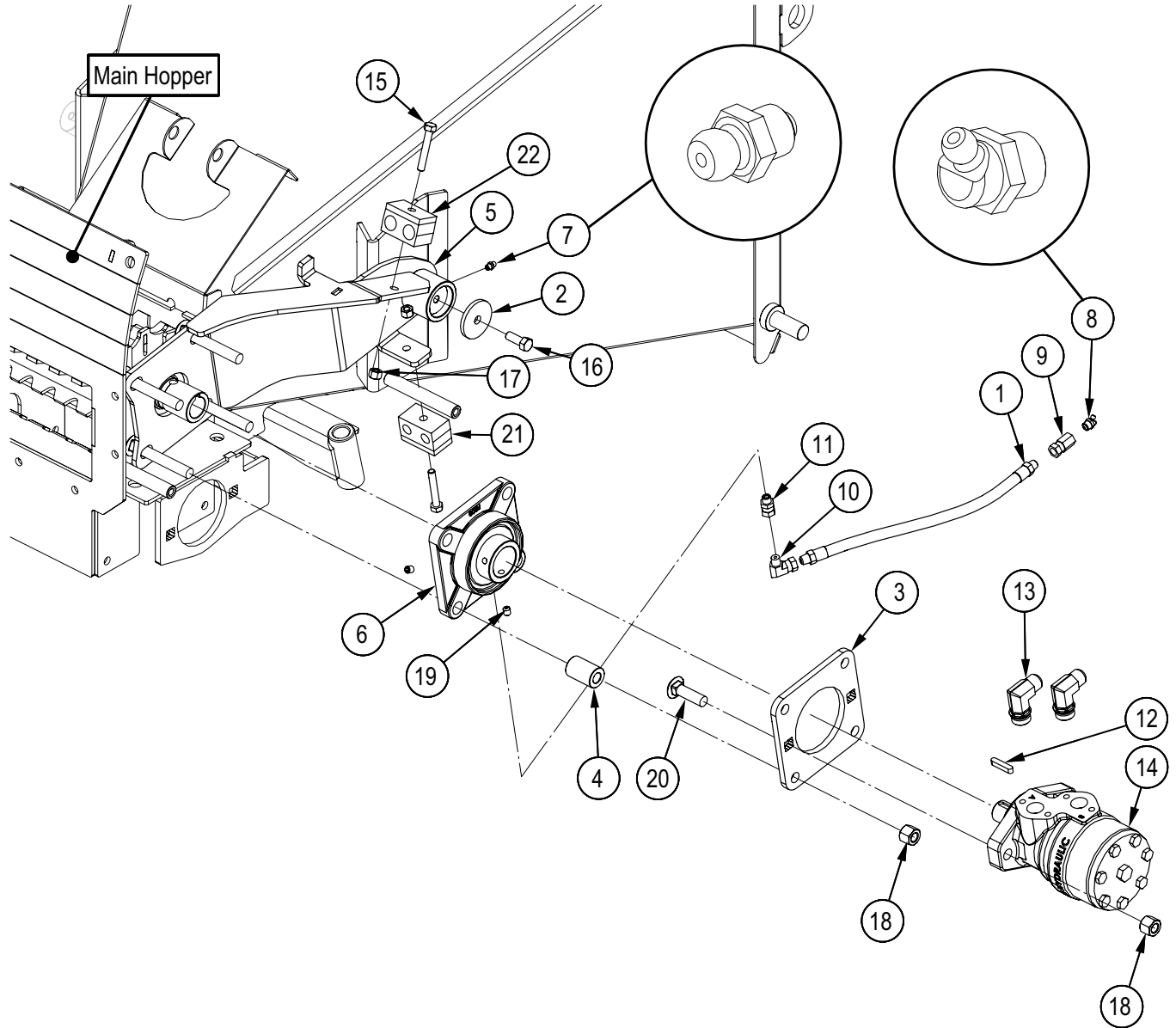
**Right Upper Roller Pivot Assembly**



Item No.	Part No.	Description	Qty
1	1024W602H	Roller Pivot Arm RH	1
2	1024L618	Capture Washer	1
3	Z25204	4-Bolt Flange Bearing, UCF208-24	1
4	Z29202	Grease Fitting, 1/4NF	1
5	Z29204	Elbow 45 Grease Fitting, MP02	1
6	Z29302	Grease Fitting, FP x FPX 0202	1
7	Z29307	Elbow 90 Grease Fitting, MP x FPX 0202	1

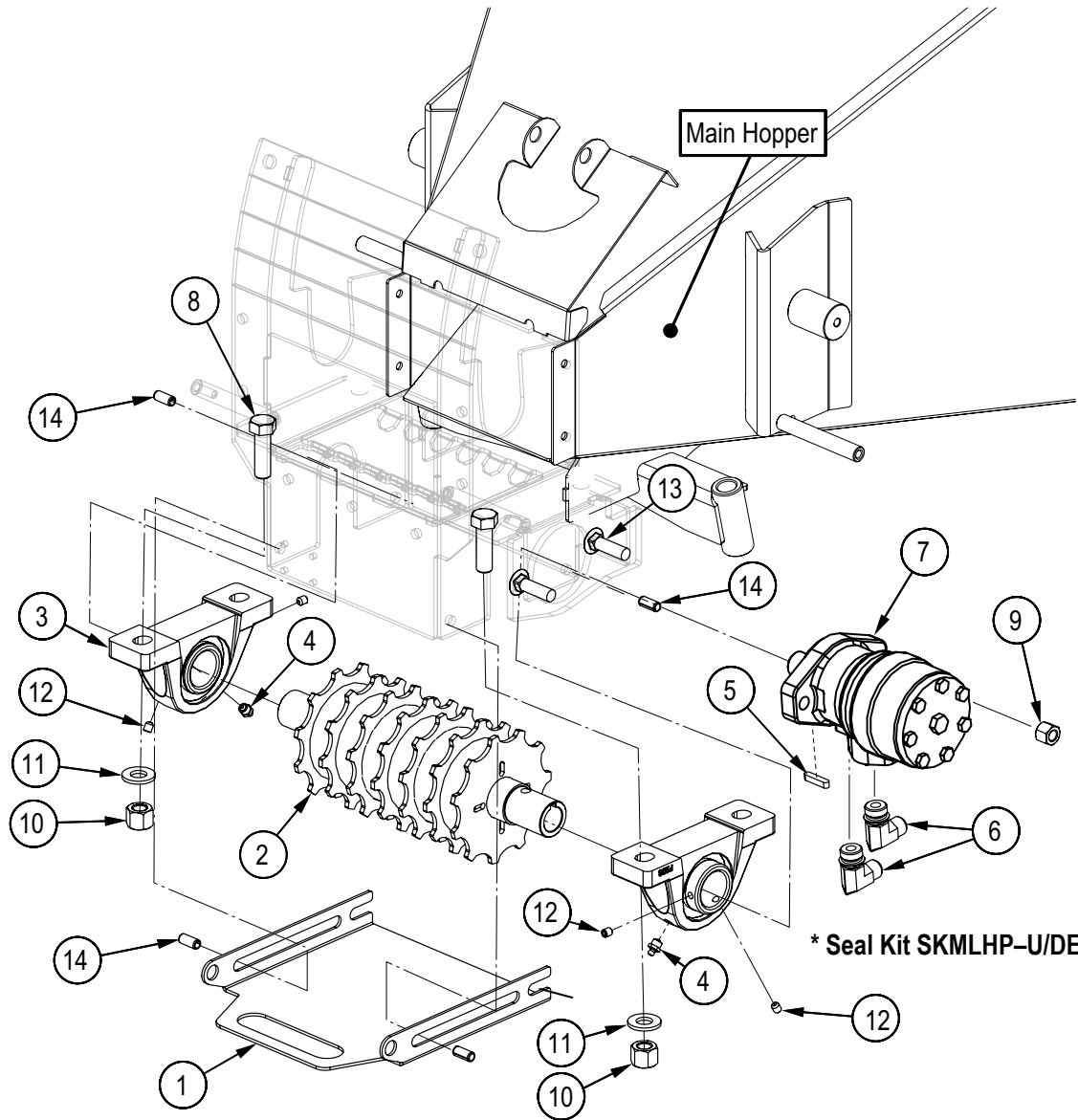
Item No.	Part No.	Description	Qty
8	Z29311	Grease Fitting, MP x FPX 0202	1
9	Z71220	Hex Bolt, 5/16NC x 2"	1
10	Z71310	Hex Bolt, 3/8NC x 1"	1
11	Z72221	Hex Lock Nut, 5/16NC	1
12	Z72251	Hex Lock Nut, 1/2NC	4
13	Z74122	Set Screw, 5/16NF x 3/8"	2
14	Z79462	Double Hose Clamp, 1/2" OD	1

**Left Upper Roller Pivot Assembly**



Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1	1024F502	1/4" Grease Whip 11"	1	12	Z46594	Blind Chipper Key 1/4 x 1-1/4	1
2	1024L618	Capture Washer	1	13	Z51658	Elbow 90, MJIC x MORB 0810	2
3	1024L771	Motor Bearing Interface	1	14	Z54102	Hydraulic Motor, 200CCR	1
4	1024M505	Motor Bearing Spacer	4	15	Z71220	Hex Bolt, 5/16NC x 2"	2
5	1024W602	Roller Pivot Arm LH	1	16	Z71310	Hex Bolt, 3/8NC x 1"	1
6	Z25204	4-Bolt Flange Bearing, 1-1/2" Bore	1	17	Z72221	Hex Lock Nut, 5/16NC	2
7	Z29202	Grease Zerk 1/4NF	1	18	Z72251	Hex Lock Nut, 1/2NC	6
8	Z29204	Grease Fitting, 1/8NPT x 45	1	19	Z74122	Set Screw, 5/16NF x 3/8"	2
9	Z29302	Straight, FP x FPX 0202	1	20	Z76258	Carriage Bolt, 1/2NC x 1-3/4"	2
10	Z29307	Elbow 90 MP x FPX 0202	1	21	Z79462	Double Hose Clamp, 1/2" OD	1
11	Z29311	Straight, MP x FPX 0202	1	22	Z79463	Double Hose Clamp, 11/16" OD	1

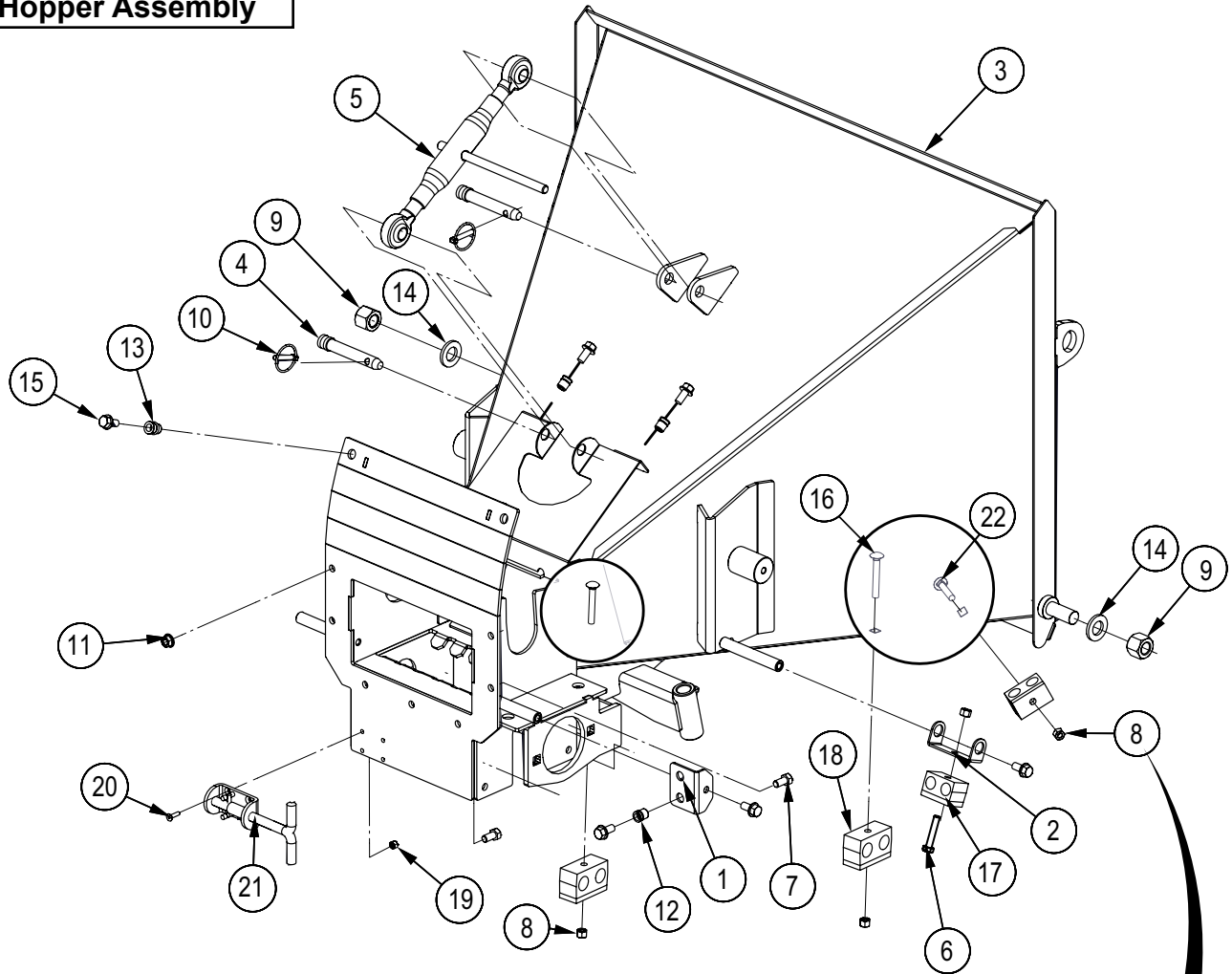
**Lower Roller Assembly**



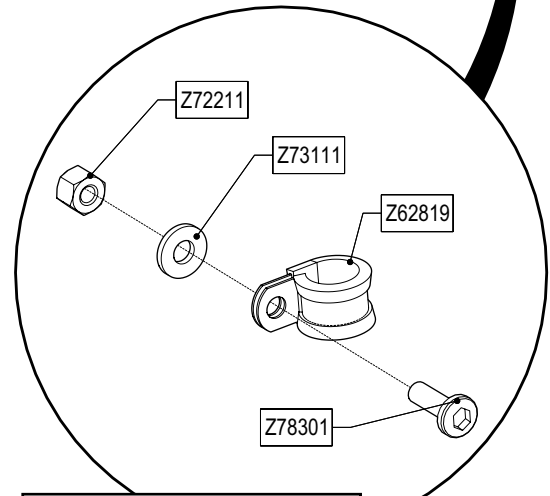
\* Seal Kit SKMLHP-U/DE

Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1	1024L774	Lower Roller Guard	1	8	Z71620	Hex Bolt, 5/8NC x 2"	4
2	1024W605	Lower Feed Roll	1	9	Z72251	Hex Lock Nut, 1/2NC	2
3	Z24101	P208 Pillow Block 1-1/2	2	10	Z72261	Hex Lock Nut, 5/8NC	4
4	Z29201	Grease Fitting, 1/8NPT	2	11	Z73161	SAE Washer, 5/8"	4
5	Z46594	Blind Chipper Key 1/4 x 1-1/4	1	12	Z74122	Set Screw, 5/16NF x 3/8"	4
6	Z51658	Elbow 90, MJIC x MORB 0810	2	13	Z76258	Carriage Bolt, 1/2NC x 1-3/4"	2
7	Z54102	Hydraulic Motor, 200CCR	1	14	Z14301	Roll Pin, 10mm x 22mm	4

**Main Hopper Assembly**



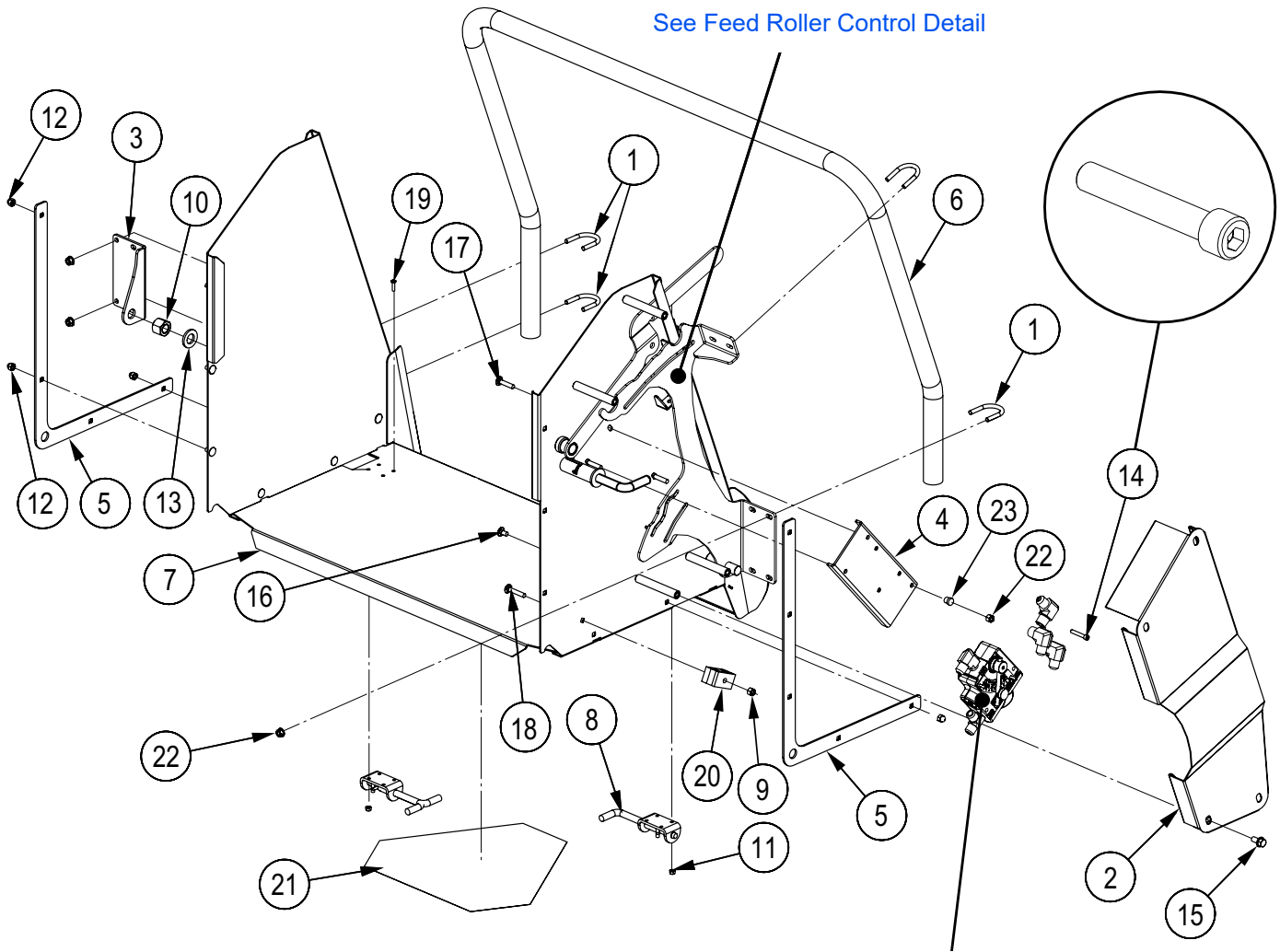
Item No.	Part No.	Description	Qty
1	1023L300	Bridge Guard Mount	1
2	1024L775	Clamp Mount	1
3	1024W601	Main Hopper	1
4	Z11111	Toplink Pin, 5/8" x 2-3/4"	2
5	Z11501	Toplink, Cat 0 x 10-1/2" x 16"	1
6	Z71217	Hex Bolt, 5/16NC x 1-3/4"	1
7	Z71307	Hex Bolt, 3/8NC x 3/4"	7
8	Z72221	Hex Lock Nut, 5/16NC	4
9	Z72271	Hex Lock Nut, 3/4NC	2
10	Z12120	Lynch Pin, 1/4"	2
11	Z72531	Serrated Flange Locknut, 3/8NC	7
12	Z72958	Rivet Nut, 3/8NC x 150	3
13	Z72959	Rivet Nut, 3/8NC x 312	2
14	Z73171	SAE Washer, 3/4"	2
15	Z76133	Flange Bolt, 3/8NC x 3/4"	9
16	Z76228	Carriage Bolt, 5/16NC x 2-1/4"	2
17	Z79463	Double Hose Clamp, 11/16" OD	2
18	Z79464	Double Hose Clamp, 13/16" OD	2
19	Z72204	Hex Lock Nut, #10NF	4
20	Z75203	FHCS, #10NF x 3/4"	4
21	Z18207	Spring Latch Pin 1/2 x 1" Stroke	1
22	Z76227	Carriage Bolt, 5/16NC x 1-3/4"	1



Used on BX52RI instead of # 8, 17 & 22.

Part No.	Description	Qty
Z62819	Rubberized Wire Clamp, 1/2"	1
Z72211	Hex Lock Nut, 1/4NC	1
Z73111	SAE Washer, 1/4"	1
Z78301	Machine Screw, 1/4NC x 3/4"	1

**Feed Table Assembly**



See Feed Roller  
Valve Detail: BX52R

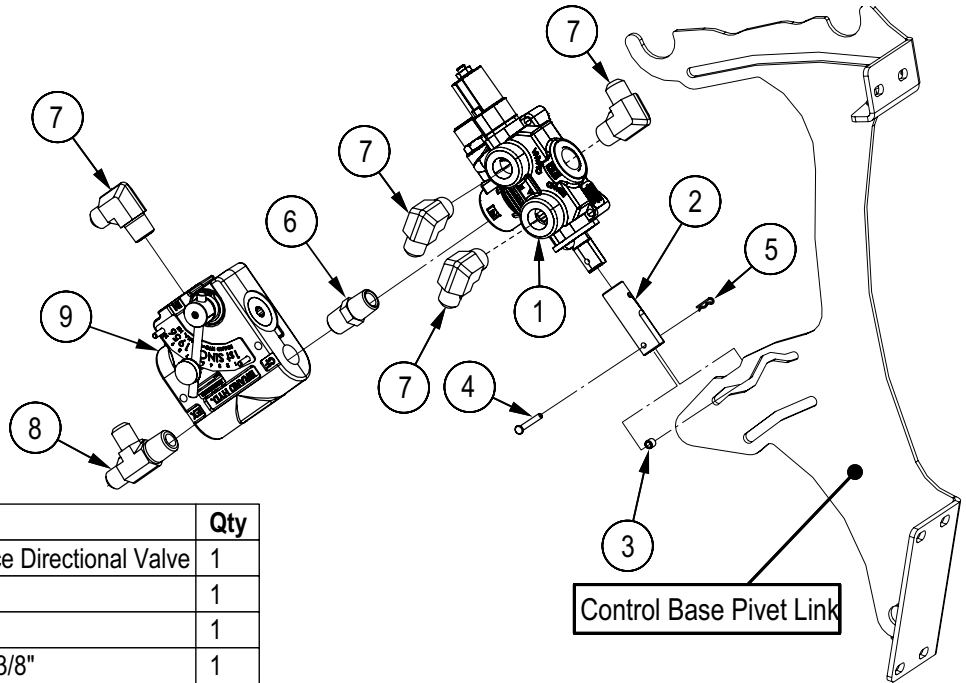
Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1	1015S538	U-bolt, Bearing Adapter	5	16	Z76222	Carriage Bolt, 5/16NC x 5/8"	10
2	1022L256	Valve Guard	1	17	Z76224	Carriage Bolt, 5/16NC x 1-1/2"	3
3	1022L271	Feed Control Pivot	1	18	Z76227	Carriage Bolt, 5/16NC x 1-3/4"	1
4	1023L285	Valve Mount Plate	1	19	Z78316	Machine Screw, #10NF x 3/4"	8
5	1024L724	Fold Table Trap Plate	2	20	Z79463	Double Hose Clamp, 11/16" OD	1
6	1024S703	Feed Control Handle	1	21	Z94601	Decal, SMV	1
7	1024W704	Feed Table Weldment	1	22	Z72521	Serrated Flange Locknut, 5/16NC	13
8	Z18207	Spring Latch Pin, 1/2" x 1" Stroke	2	23	Z72955	Rivet Nut 1/4 NC	3
9	Z72221	Hex Lock Nut, 5/16NC	1				
10	Z72271	Hex Lock Nut, 3/4NC	1				
11	Z72204	Hex Lock Nut, #10NF	8				
12	Z72914	Acorn Nut, 5/16NC	10				
13	Z73171	SAE Washer, 3/4"	1				
14	Z75116	SHCS, 1/4NC x 1-1/2"	3				
15	Z76133	Flange Bolt, 3/8NC x 3/4"	4				

Used on BX52RI instead of # 9, 18 & 20.

Part No.	Description	Qty
Z62819	Rubberized Wire Clamp, 1/2"	1
Z72211	Hex Lock Nut, 1/4NC	1
Z73111	SAE Washer, 1/4"	1
Z78301	Machine Screw, 1/4NC x 3/4"	1

**Feed Roller Valve Detail**

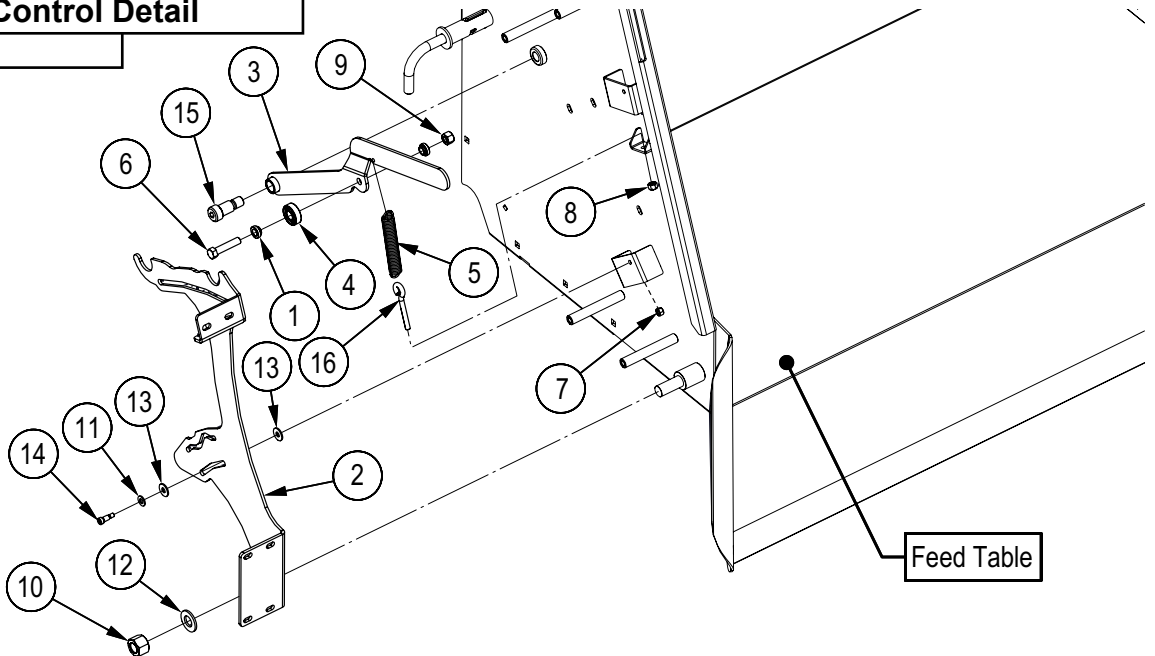
MODELS BX52R, BX52RI



Item No.	Part No.	Description	Qty
1	Z56215	Spring Ctr Low Force Directional Valve	1
2	1022M213	Bearing Yoke	1
3	1022M217	Solid Bearing	1
4	Z11301	Clevis Pin 3/16 x 1-3/8"	1
5	Z12210	Hitch Pin Clip, 1/16	1
6	Z51122	Nipple, MP x MP 0808	1
7	Z51451	#8JIC x 1/2NPT 90 Elbow	4
8	Z51487	Tee MJIC x MP x MJIC 080808	1
9	Z56305	Brand PFC 0-8 GPM	1

**Feed Roller Control Detail**

MODELS BX52R, BX52RI

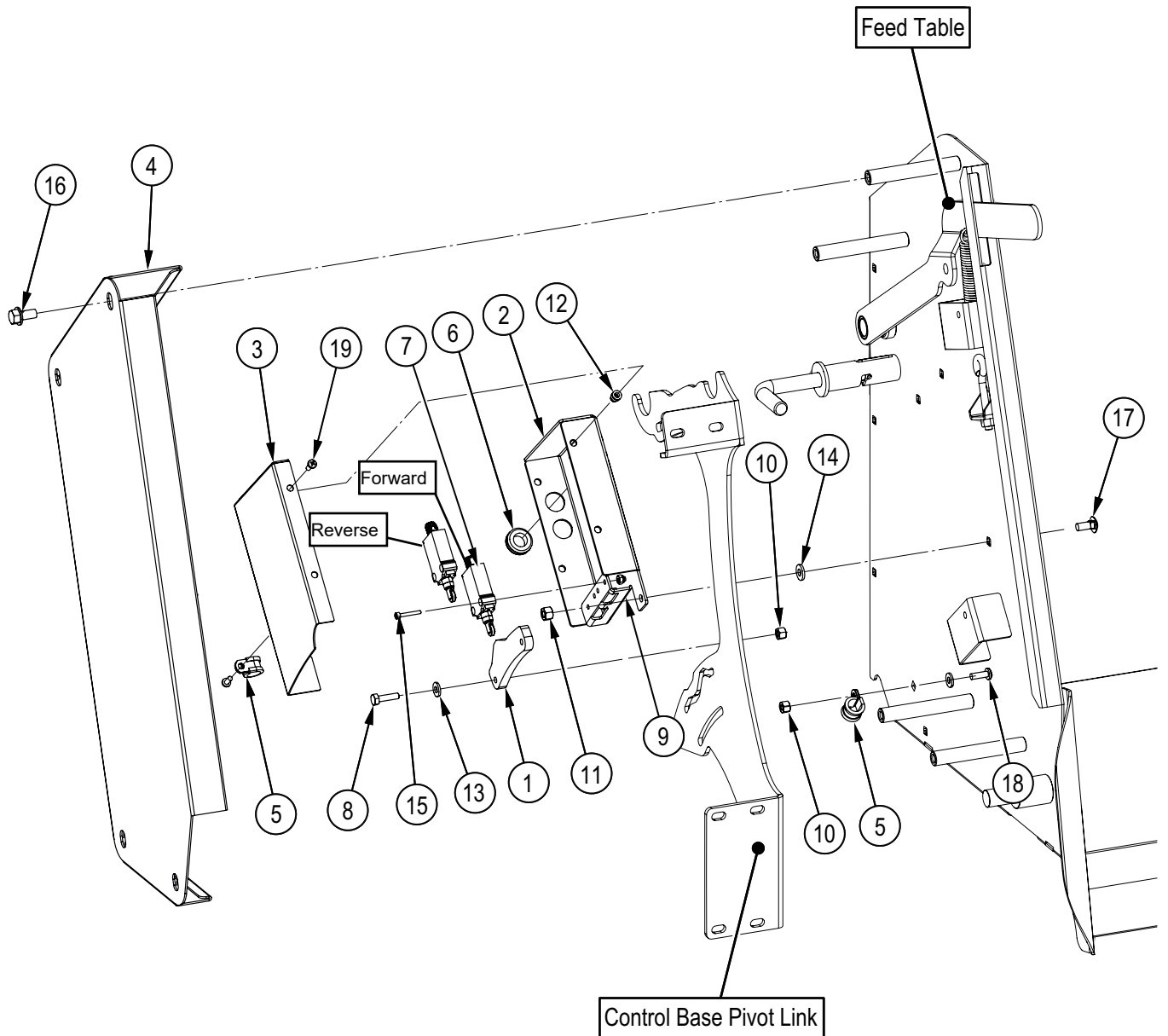


Item No.	Part No.	Description	Qty
1	1015M537	Bushing, Bearing	2
2	1022L239	Control Base Pivot Link	1
3	1022W224	Detent Reset	1
4	Z21203	Ball Bearing 6202 RS	1
5	Z31401	Spring 3/4 x 4" Heavy	1
6	Z71420	Hex Bolt, 7/16NC x 2	1
7	Z72211	Hex Lock Nut, 1/4NC	2
8	Z72221	Hex Lock Nut, 5/16NC	1
9	Z72241	Hex Lock Nut, 7/16NC	1

Item No.	Part No.	Description	Qty
10	Z72271	Hex Lock Nut, 3/4NC	1
11	Z73122	Flat Washer, 5/16	2
12	Z73171	Flat Washer, 3/4"	1
13	Z73222	PTFE Flat Washer, 5/16 x 0.080"	4
14	Z75522	Shoulder Bolt, 5/16 x 1/2"	2
15	Z75574	Shoulder Bolt, 3/4 x 1	1
16	Z76522	Eye Bolt 5/16NC x 2	1

**Roller Control Components**

MODEL BX52RI



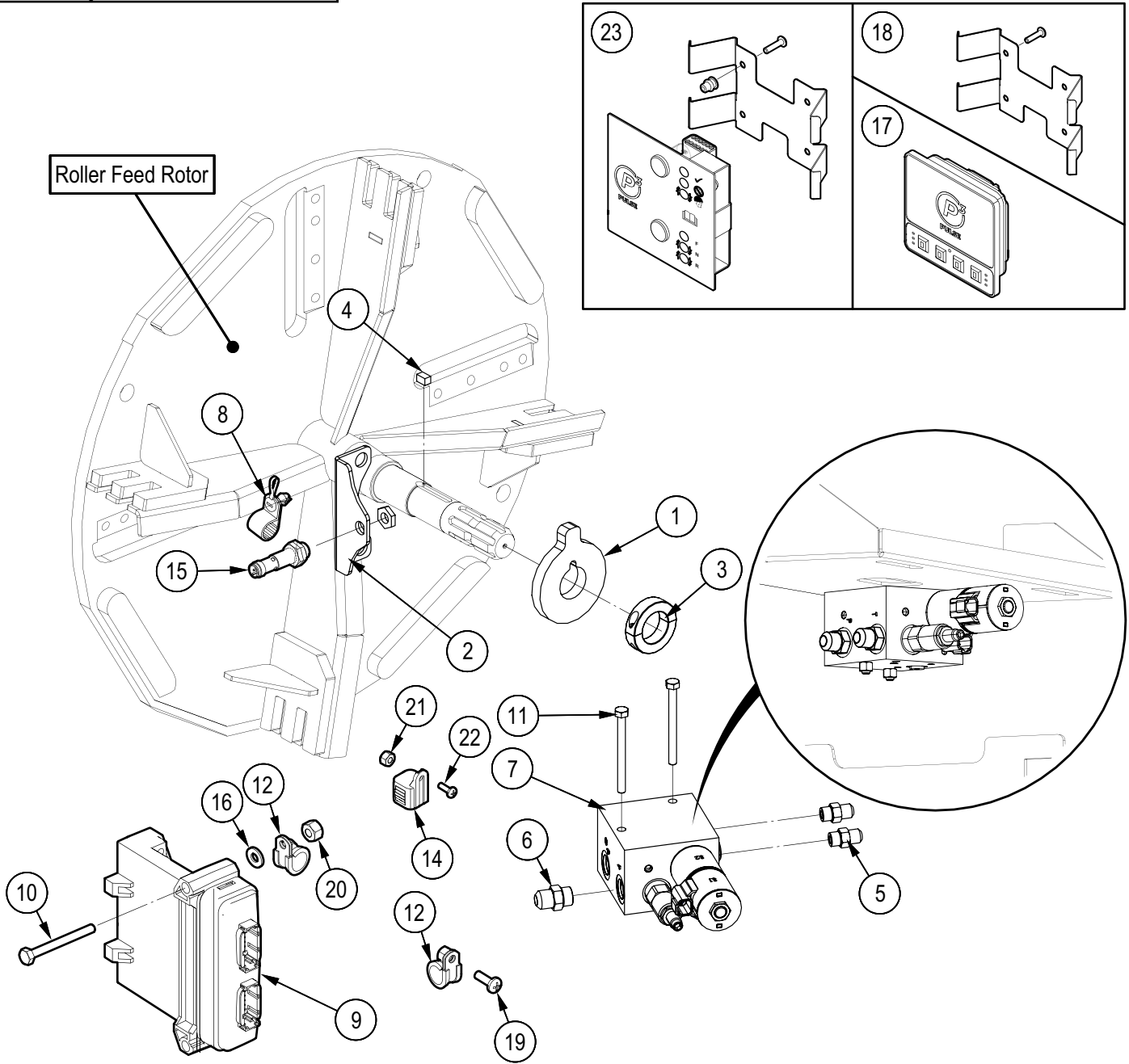
ECN0430

Item No.	Part No.	Description	Qty
1	1060L402	Feed Pickup Trigger	1
2	1060L403	Switch Mount Plate, LH	1
3	1083L155	Sensor Box Lid	1
4	1083L156	Feed Switch Guard	1
5	Z62819	Rubberized Wire Clamp, 1/2"	2
6	Z62823	Rubber Grommet, 5/8" x 1/8"	2
7	Z66115	Limit Switch, Roller Tip x M12	2
8	Z71110	Hex Bolt, 1/4NC x 1"	2
9	Z72202	Hex Lock Nut, #8NC	4
10	Z72211	Hex Lock Nut, 1/4NC	3

Item No.	Part No.	Description	Qty
11	Z72221	Hex Lock Nut, 5/16NC	3
12	Z72954	Rivet Nut, #10NF x 130	4
13	Z73111	SAE Washer, 1/4"	3
14	Z73123	Rubber Washer, 5/16" x 0.093"	3
15	Z75103	SHCS, #8NC x 1"	4
16	Z76133	Flange Bolt, 3/8NC x 3/4"	4
17	Z76221	Carriage Bolt, 5/16NC x 3/4"	3
18	Z78301	Machine Screw, 1/4NC x 3/4"	1
19	Z78303	Machine Screw, #10NF x 1/2"	4



**P3 Components – BX52RI**

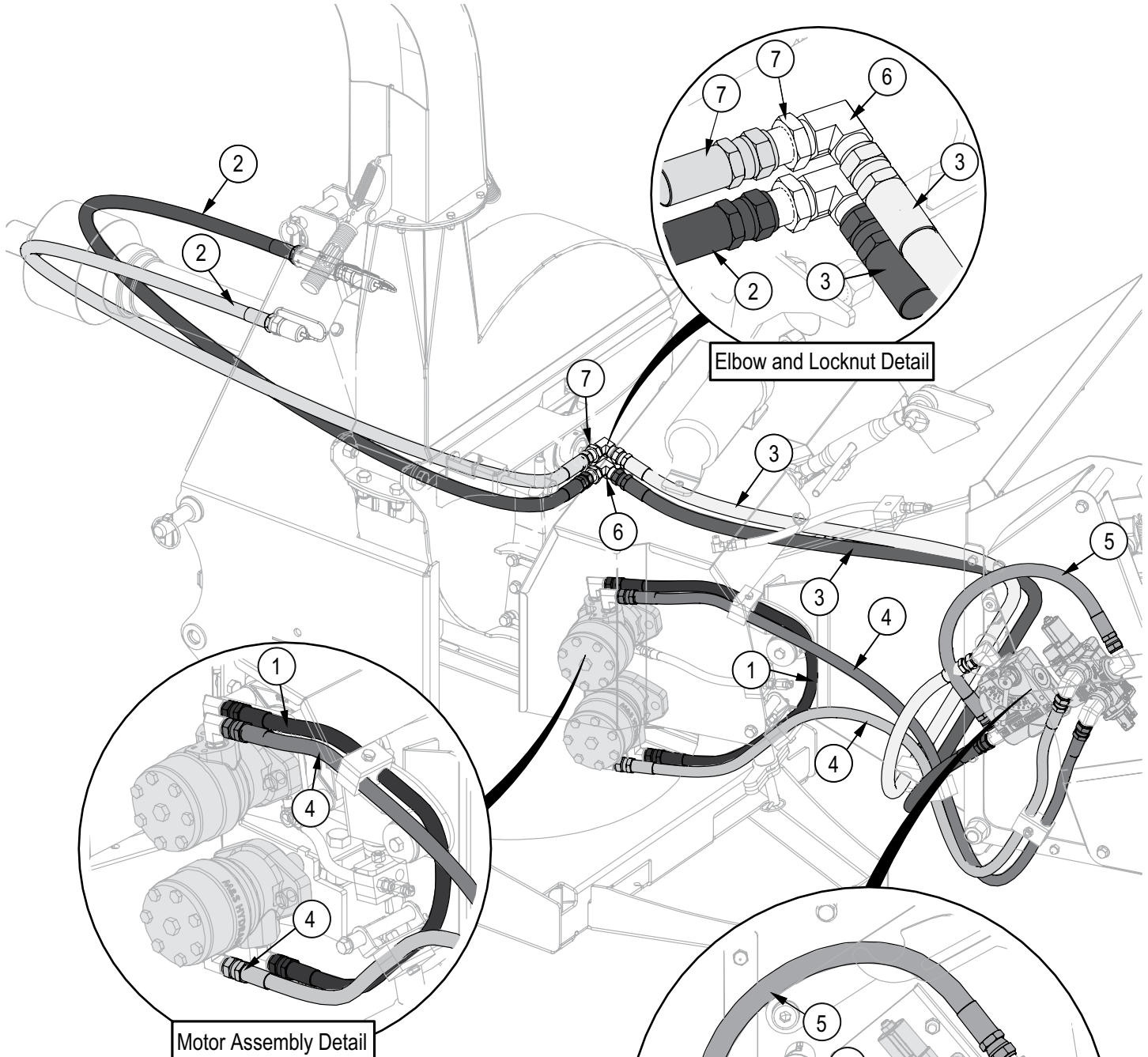


Item No.	Part No.	Description	Qty
1	1023L751	Rotor Speed Indicator, BX102R	1
2	1024L556	Sensor Mounting Bracket	1
3	Z46315	Shaft Collar, 1-3/8" ID x 9/16	1
4	Z46545	Key, 5/16 x 5/16 x 1/2	1
5	Z51641	Straight, MJIC x MORB 0606	2
6	Z51643	Straight, MJIC x MORB 0808	2
7	Z56508	Single Spool Valve, OC Tandem 6GPM	1
8	Z62828	Cable Clamp, P-Type Push In 1/2"	3
9	1062E002	Controller, 24 Pin V3.0	1
10	Z71125	Hex Bolt, 1/4NC x 2-1/2"	2
11	Z71235	Hex Bolt, 5/16NC x 3-1/2"	2
12	Z62819	Rubberized Wire Clamp, 1/2"	2
13	Z72221	Hex Lock Nut, 5/16NC	2

Item No.	Part No.	Description	Qty
14	Z62829	Dust Cap, DT06-6S x Lug	1
15	Z64406	Prox Sensor, 12mm NO x 4mm x M12	1
16	Z73111	SAE Washer, 1/4"	2
17	1062E004	Display, 4.3" x 4 Button V3.0	1
18	Z66223	Bracket, Display Mounting Kit	1
19	Z78301	Machine Screw, 1/4NC x 3/4"	2
20	Z72211	Hex Lock Nut, 1/4NC	3
21	Z72204	Hex Lock Nut, #10NF	1
22	Z78316	Machine Screw, #10NF x 3/4"	1
23	1063A059	Indicator Panel / Mounting Kit	1

**Hydraulic Circuit**

MODEL BX52R



Motor Assembly Detail

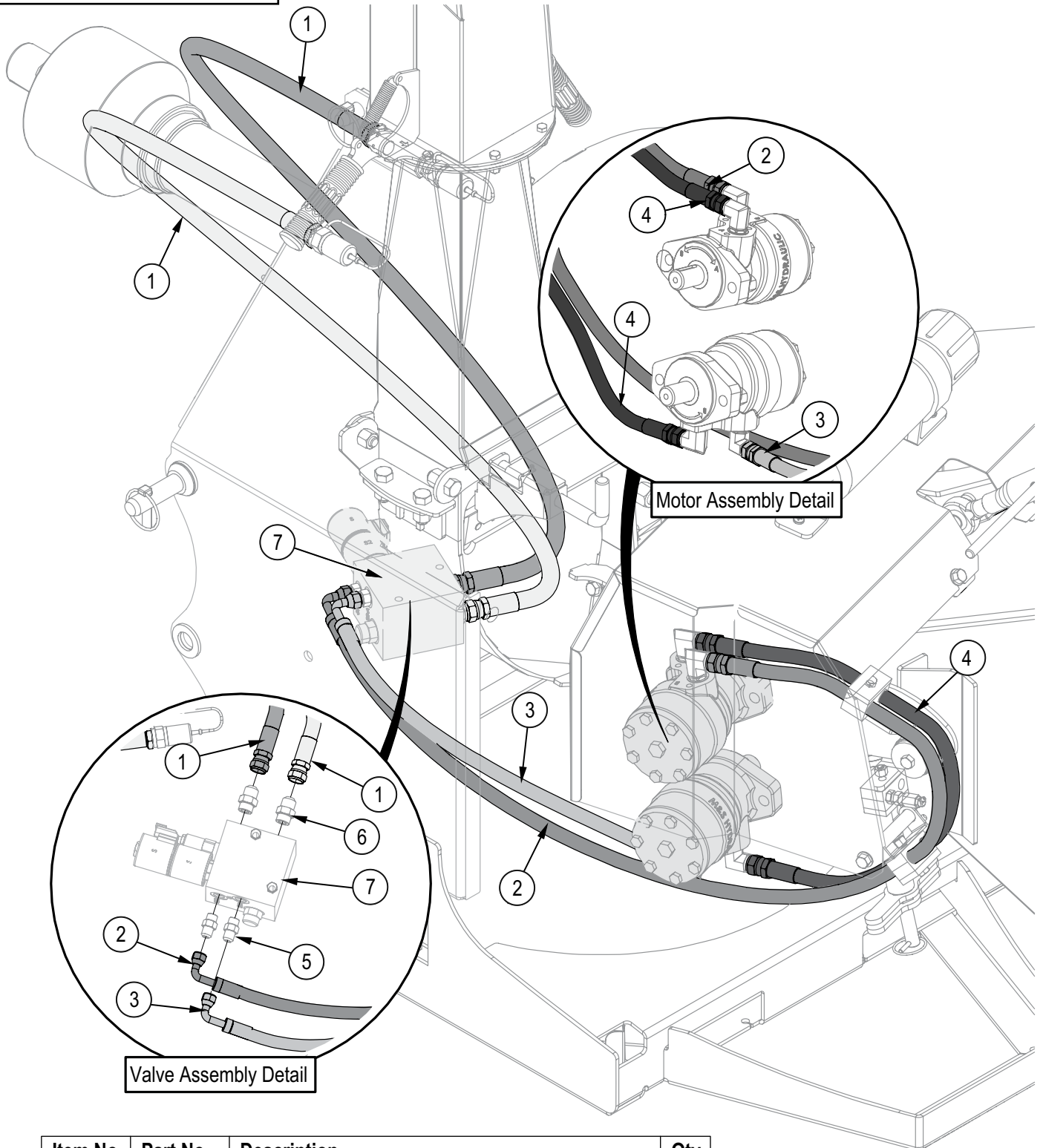
Elbow and Locknut Detail

Valve Assembly Detail

Item No.	Part No.	Description	Qty
1	1024F501	3/8" Hose, FJIC08 x FJIC08 x 31"	1
2	1024F503	1/2" Hose, FJIC08 x MP08 x 54"	2
3	1024F504	1/2" Hose, FJIC08 x FJIC08 x 70"	2
4	1024F505	3/8" Hose, FJIC08 x FJIC08 x 52"	2
5	1024F701	1/2 Hose, FJIC08 x FJIC08 x 22"	1
6	Z51492	Elbow 90, MJIC x BH 0808	2
7	Z51493	BH Locknut, 08	2

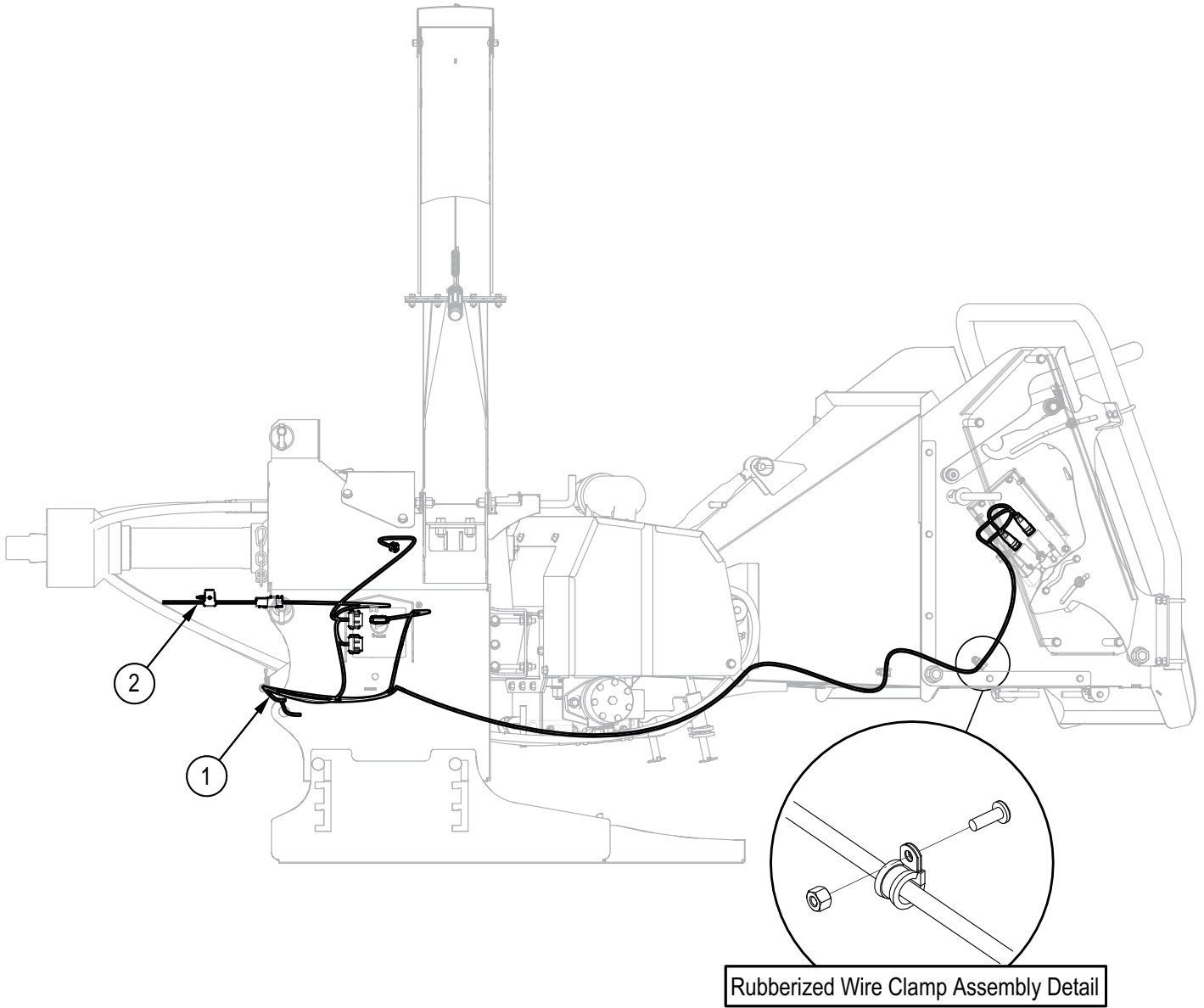
**Hydraulic Circuit**

MODEL BX52RI



Item No.	Part No.	Description	Qty
1	1024F503	1/2" Hose, FJIC08 x MP08 x 54"	2
2	1024F702	3/8" Hose, FJIC08 x 90FJIC06 x 56"	1
3	1024F703	3/8" Hose, FJIC08 x 90FJIC06 x 21"	1
4	1024F501	3/8" Hose, FJIC08 x FJIC08 x 31"	1
5	Z51641	Straight, MJIC x MORB 0606	2
6	Z51643	Straight, MJIC x MORB 0808	2
7	Z56508	Single Spool Valve, OC Tandem PROPSOL x 6GPM	1

**Wiring Diagram**

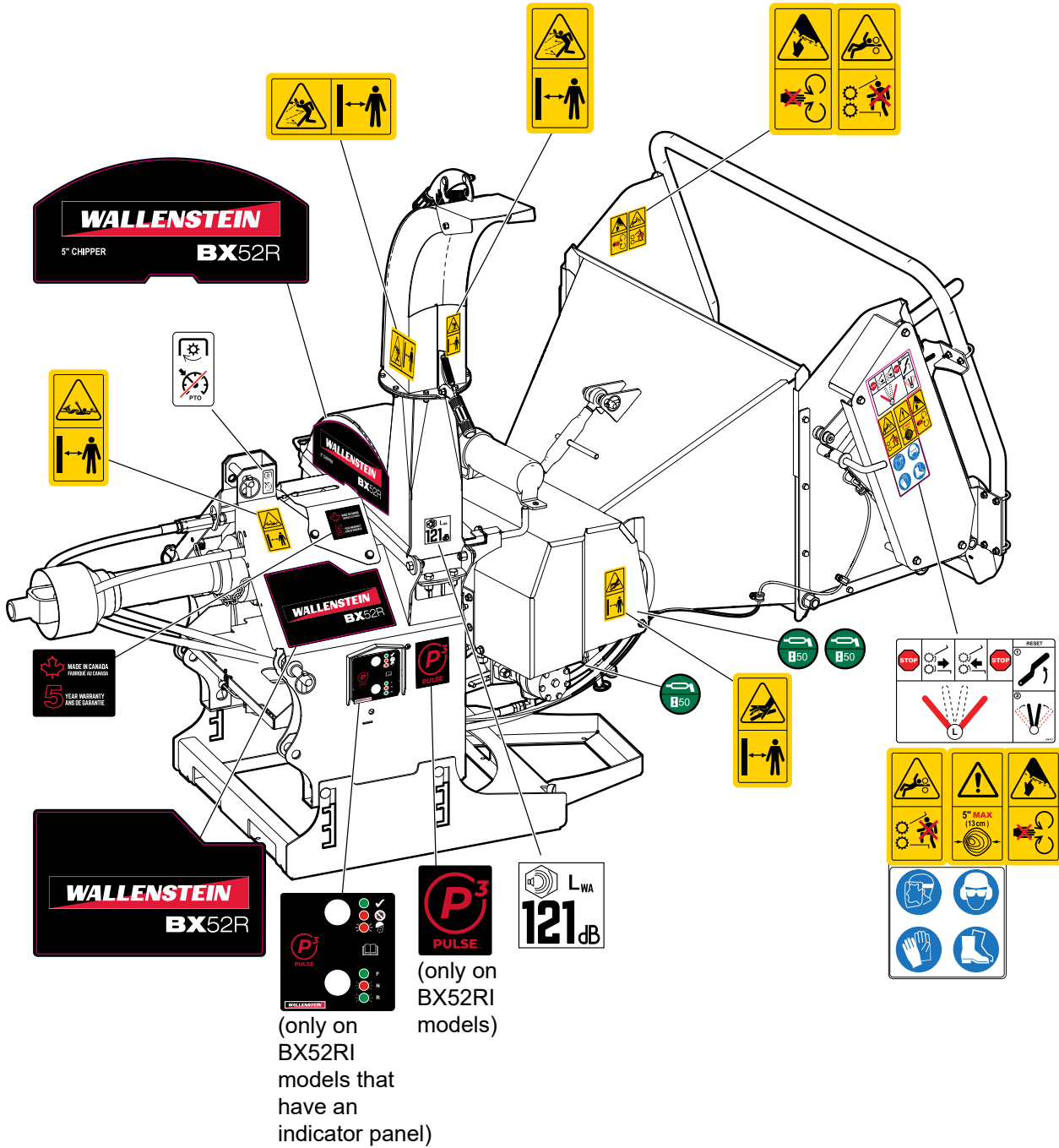


Item No.	Part No.	Description	Qty
1	1083F159	Harness, P3 Logic	1
2	1083F158	Harness, Feed Logic Power 6 Pin	1

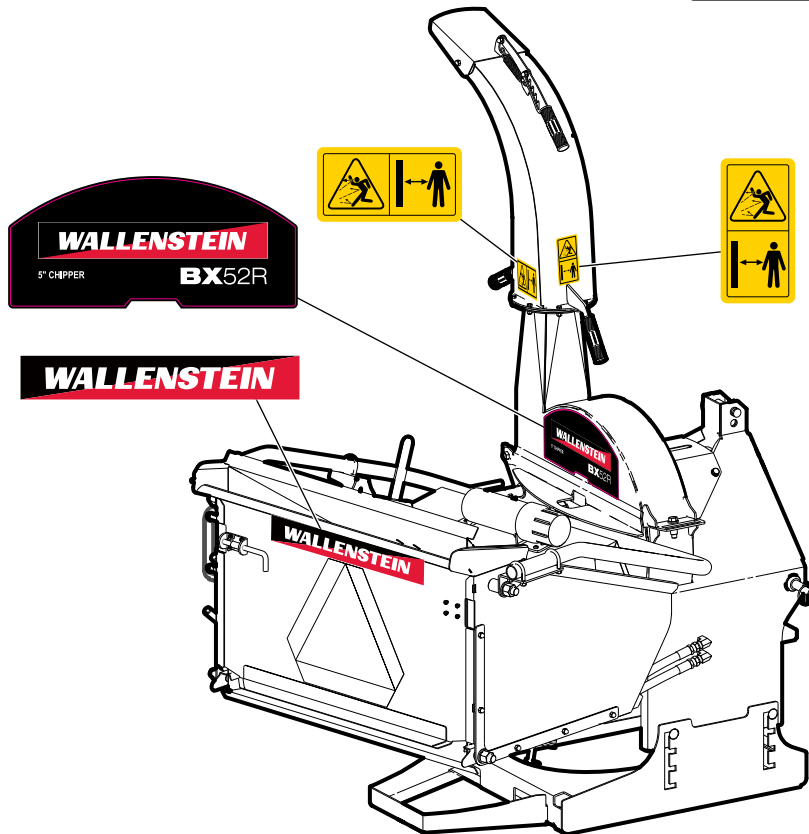
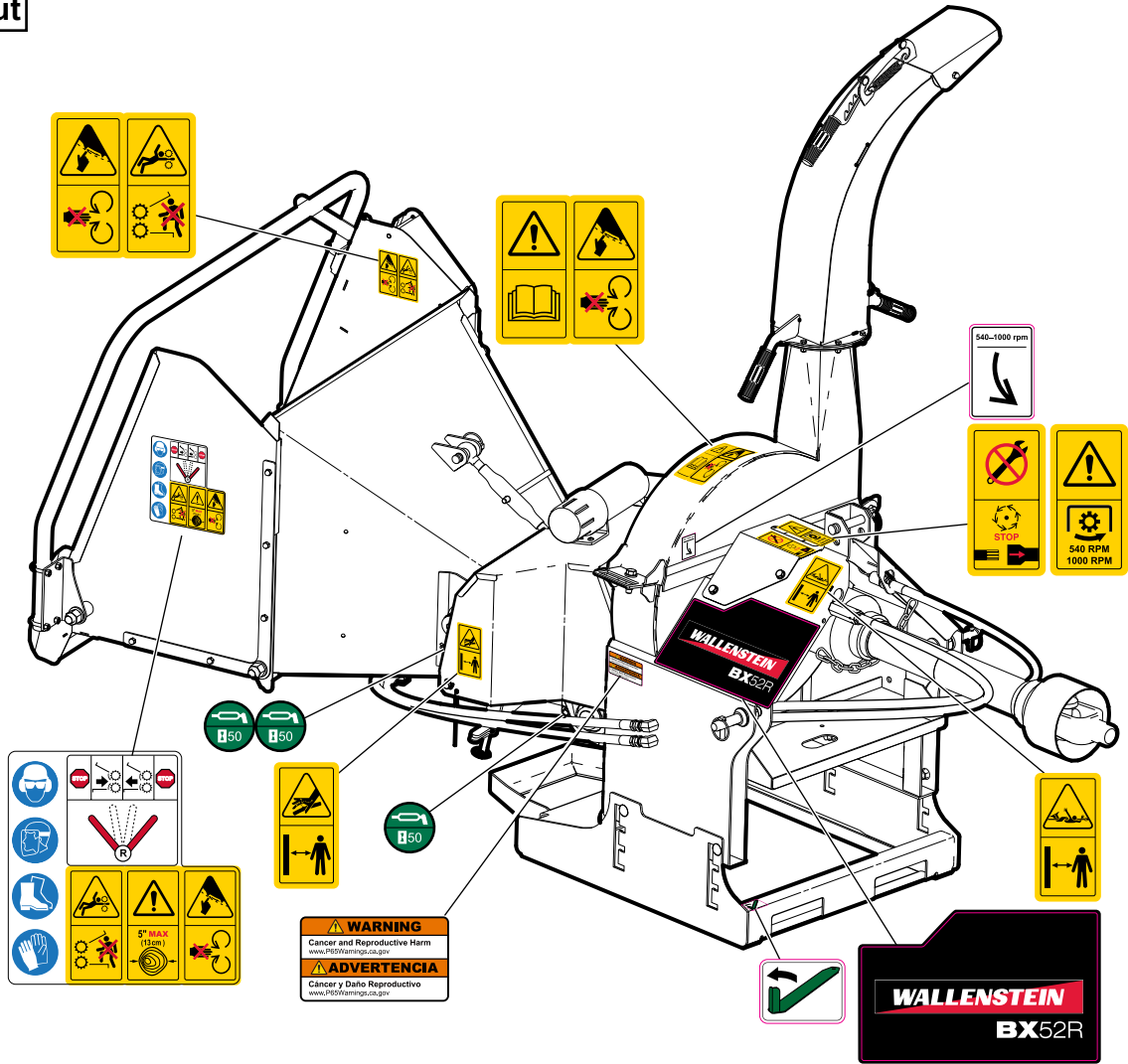
**Decal Layout**

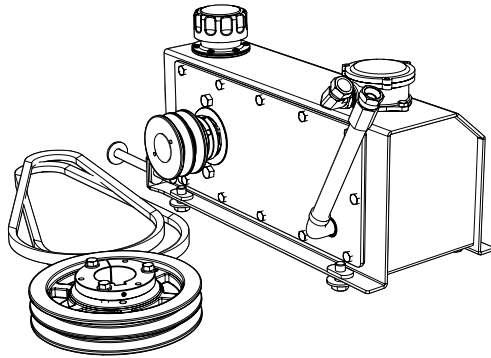
**IMPORTANT!** If parts are replaced that have safety signs on them, new signs must be applied. Safety signs must always be replaced if they become damaged, are removed, or become illegible.

Safety signs are included in the product decal kit available from your authorized dealer. Decals are not available separately.



Decal Layout



**Accessories****Self-contained PTO Power Pack  
P/N – C3540**

For tractors without available remote hydraulics to power the chipper self-feed control.

The power pack mounts under the PTO shaft on the chipper frame.


## Common Bolt Torque Values

### Checking Bolt Torque

The tables shown give correct torque values for various bolts and capscrews. Tighten all bolts to the torque values specified in the table, unless indicated otherwise. Check tightness of bolts periodically.

**IMPORTANT!** If replacing hardware, use fasteners of the same grade.

**IMPORTANT!** Torque figures indicated in the table are for non-greased or non-oiled threads. Do not grease or oil threads unless indicated otherwise. When using a thread locker, increase torque values by 5%.

 **NOTE:** Bolt grades are identified by their head markings.

### Imperial Bolt Torque Specifications

Bolt Diameter	Torque Value					
	SAE Gr. 2		SAE Gr. 5		SAE Gr. 8	
	lbf•ft	N•m	lbf•ft	N•m	lbf•ft	N•m
1/4"	6	8	9	12	12	17
5/16"	10	13	19	25	27	36
3/8"	20	27	33	45	45	63
7/16"	30	41	53	72	75	100
1/2"	45	61	80	110	115	155
9/16"	60	95	115	155	165	220
5/8"	95	128	160	215	220	305
3/4"	165	225	290	390	400	540
7/8"	170	230	420	570	650	880
1"	225	345	630	850	970	1320



SAE Gr. 2



SAE Gr. 5



SAE Gr. 8

### Metric Bolt Torque Specifications

Bolt Diameter	Torque Value			
	Gr. 8.8		Gr. 10.9	
	lbf•ft	N•m	lbf•ft	N•m
M3	0.4	0.5	1.3	1.8
M4	2.2	3	3.3	4.5
M6	7	10	11	15
M8	18	25	26	35
M10	37	50	52	70
M12	66	90	92	125
M14	83	112	116	158
M16	166	225	229	310
M20	321	435	450	610
M30	1,103	1 495	1,550	2 100



8.8



10.9



## Hydraulic Fitting Torque Values

### Tightening Flare Type Tube Fittings

1. Check flare and flare seat for defects that might cause leakage.
2. Align tube with fitting before tightening.
3. Hand-tighten swivel nut until snug.
4. To prevent twisting the tube, use two wrenches. Place one wrench on the connector body and tighten the swivel nut with the second. Torque to values shown.

If a torque wrench is not available, use the FFFT (Flats From Finger Tight) method.

Hydraulic Fitting Torque					
Tube Size OD	Hex Size Across Flats	Torque value		Flats From Finger Tight	
		lbf•ft	N•m	Flats	Turns
3/16	7/16	6	8	2	1/6
1/4	9/16	11–12	15–17	2	1/6
5/16	5/8	14–16	19–22	2	1/6
3/8	11/16	20–22	27–30	1-1/4	1/6
1/2	7/8	44–48	59–65	1	1/6
5/8	1	50–58	68–79	1	1/6
3/4	1-1/4	79–88	107–119	1	1/8
1	1-5/8	117–125	158–170	1	1/8

Values shown are for non-lubricated connections.