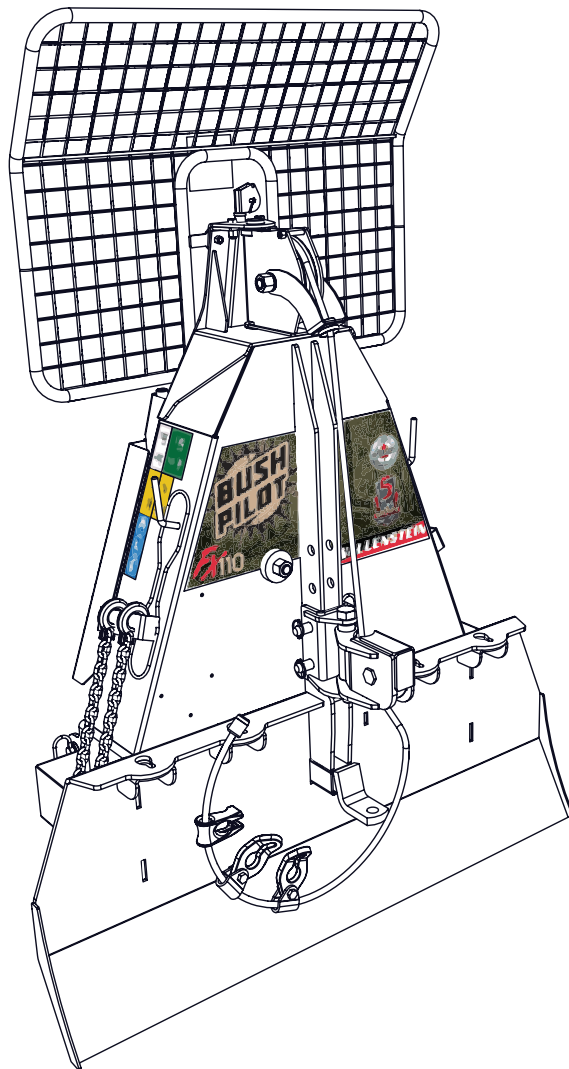




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FX110 and FX110R Skidding Winch Parts Manual

S/N 51101 & After



Refer to the operators
manual for safe
operation and
maintenance

Foreword

EMB Mfg. has prepared this parts manual to assist customers in ordering quality OEM replacement parts.

Proper and regular service and replacing old, worn or broken parts with the correct Wallenstein parts are essential to prolonging the life of your Wallenstein product. Please refer to this manual before ordering any replacement parts.

All information contained in this parts manual is based on the latest product specification available at the time of printing this manual. If your product differs from the specifications contained within this manual contact EMB Mfg. for information.

EMB reserves the right to alter specifications on their products at any time.

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For parts and information please contact your dealer. If your dealer is no longer available please go to our website: <http://www.wallensteinequipment.com> and click on "FIND A DEALER NEAR YOU" for information on a local dealer.

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Maintenance should be performed by
trained personnel only.



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manual for safe
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Bolt Torque

CHECKING BOLT TORQUE

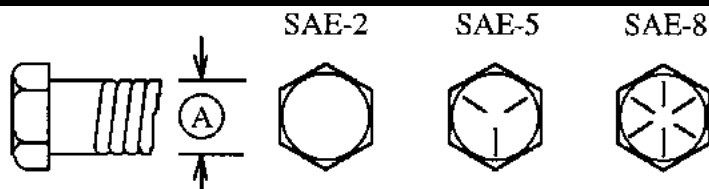
The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* Torque value for bolts and capscrews are identified by their head markings.

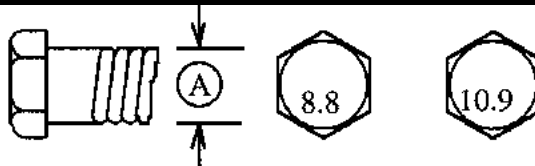
ENGLISH TORQUE SPECIFICATIONS

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



METRIC TORQUE SPECIFICATIONS

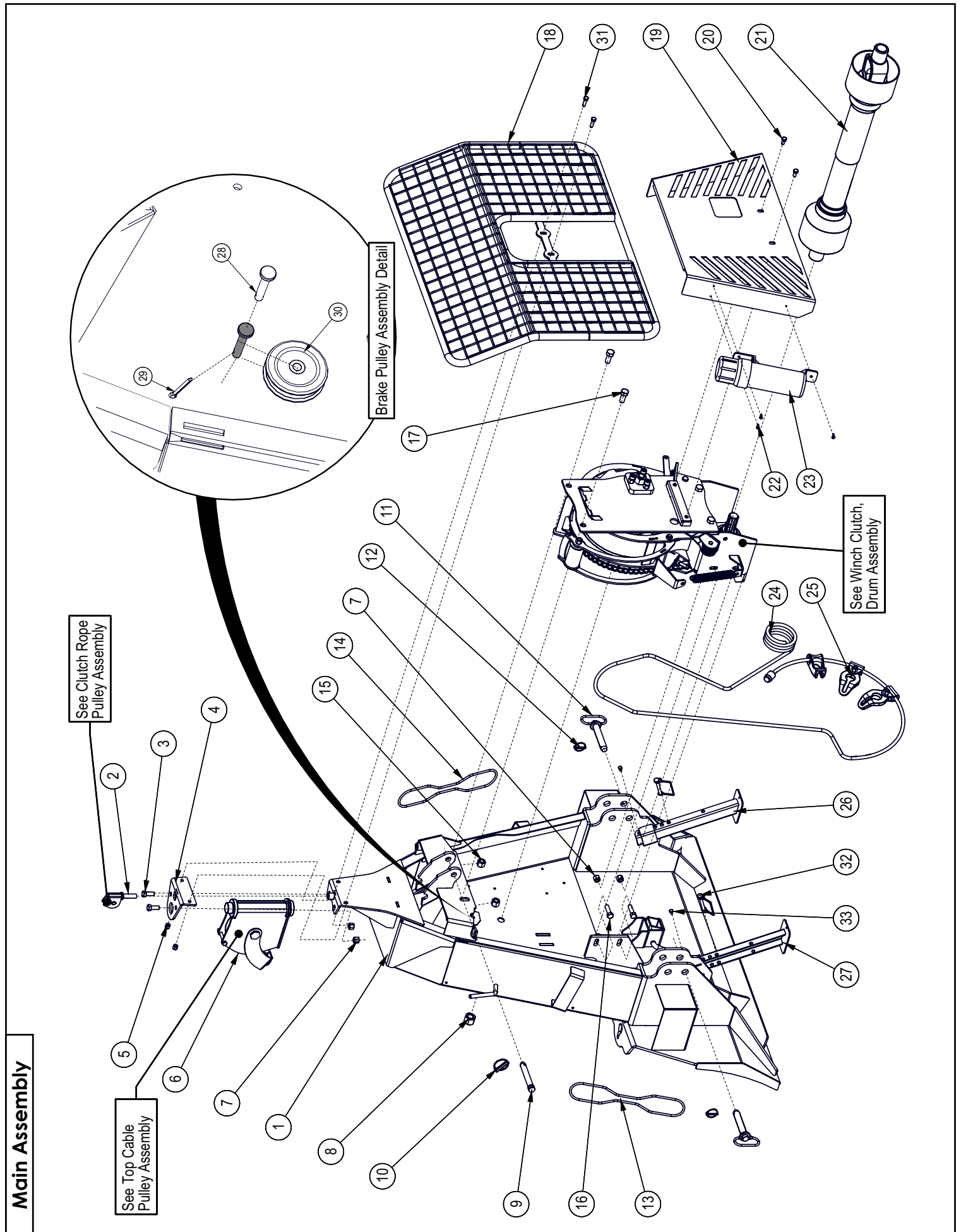
Bolt Diameter "A"	Bolt Torque*			
	8.8 (N.m) (lb-ft)		10.9 (N.m) (lb-ft)	
M3	0.5	0.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710



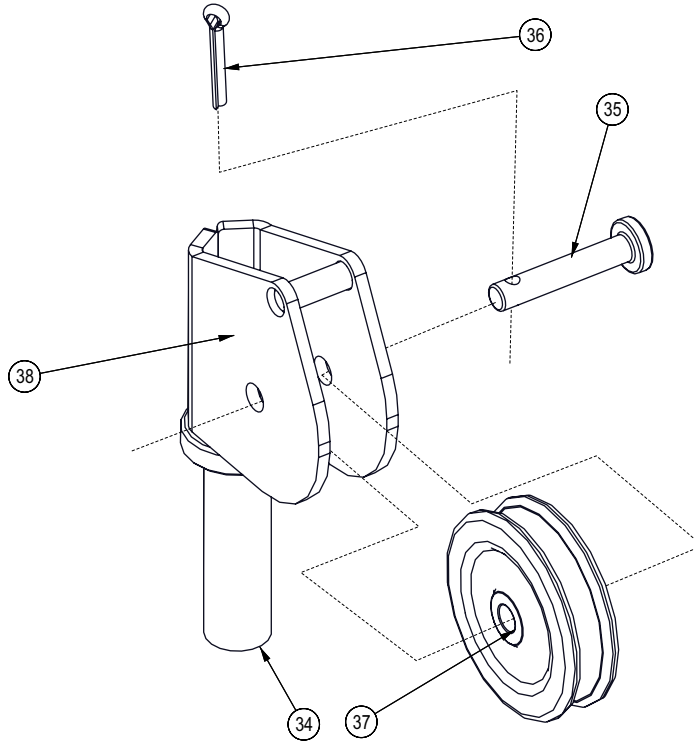
Hydraulic Fitting Torque**Tightening Flare Type Tube Fittings ***

1. Check flare and flare seat for defects that might cause leakage.
 2. Align tube with fitting before tightening.
 3. Lubricate connection and hand tighten swivel nut until snug.
 4. To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body and with the second tighten the swivel nut to the torque shown.
- The torque values shown are based on lubricated connections as in reassembly.

HYDRAULIC FITTING TORQUE					
Tube Size OD	Nut Size Across Flats	Torque Value*		Recommended Turns To Tighten (After Finger Tightening)	
		(N.m)	(lb-ft)	(Flats)	(Turn)
(in.)	(in.)				
3/16	7/16	8	6	1	1/6
1/4	9/16	12	9	1	1/6
5/16	5/8	16	12	1	1/6
3/8	11/16	24	18	1	1/6
1/2	7/8	46	34	1	1/6
5/8	1	62	46	1	1/6
3/4	1-1/4	102	75	3/4	1/8
7/8	1-3/8	122	90	3/4	1/8



Clutch Pulley

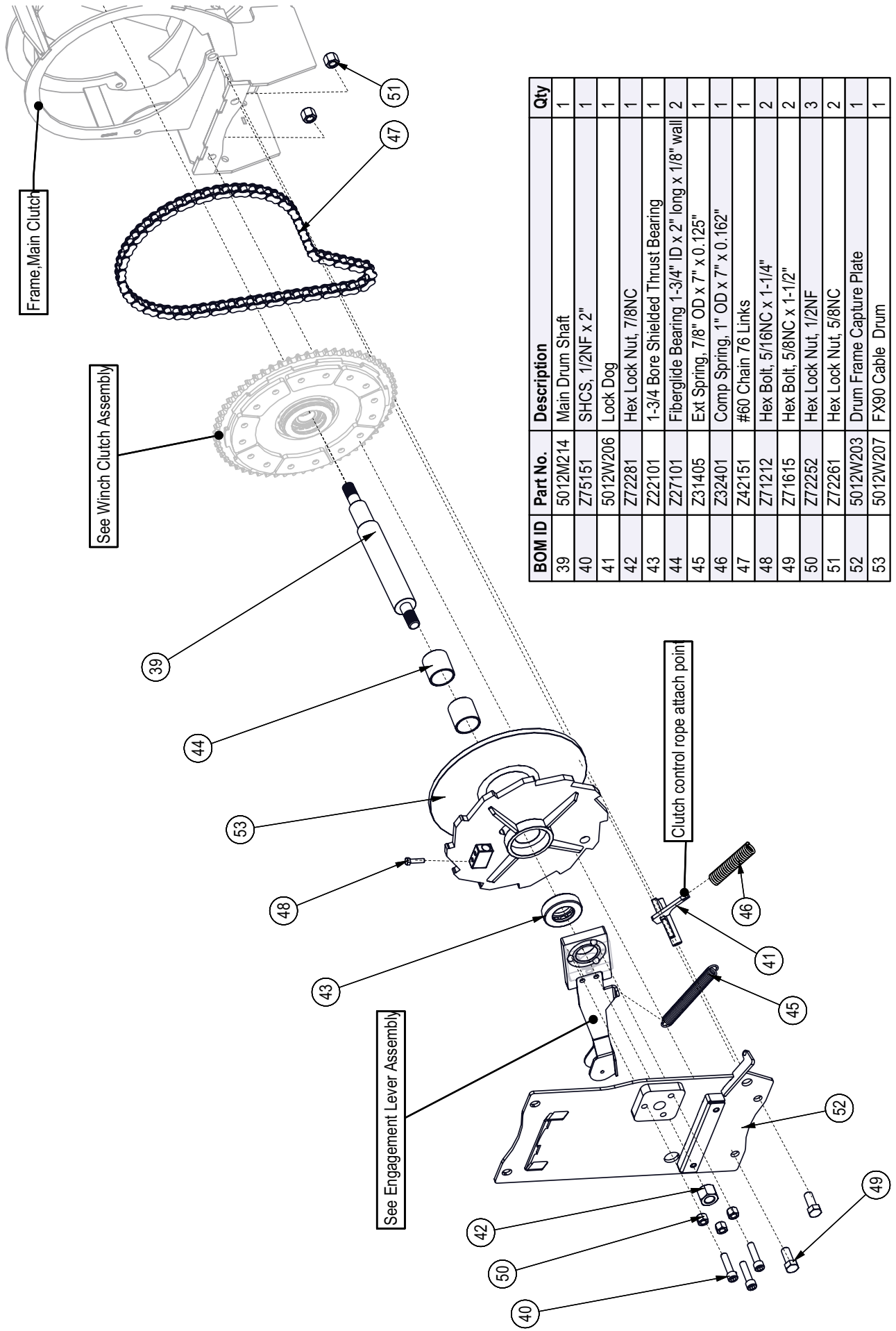


BOM ID	Part Number	Description	Qty
34	5012A207	Clutch Rope Pulley	1
35	Z11311	Clevis Pin, 1/4" x 1-1/8"	1
36	Z12311	Cotter Pin, 1/8" x 1"	1
37	Z92203	1/4 Groove Pulley 2 Diam.	1
38	5012W215	Clutch Rope Pulley Housing	1

Main Assembly - Parts List.

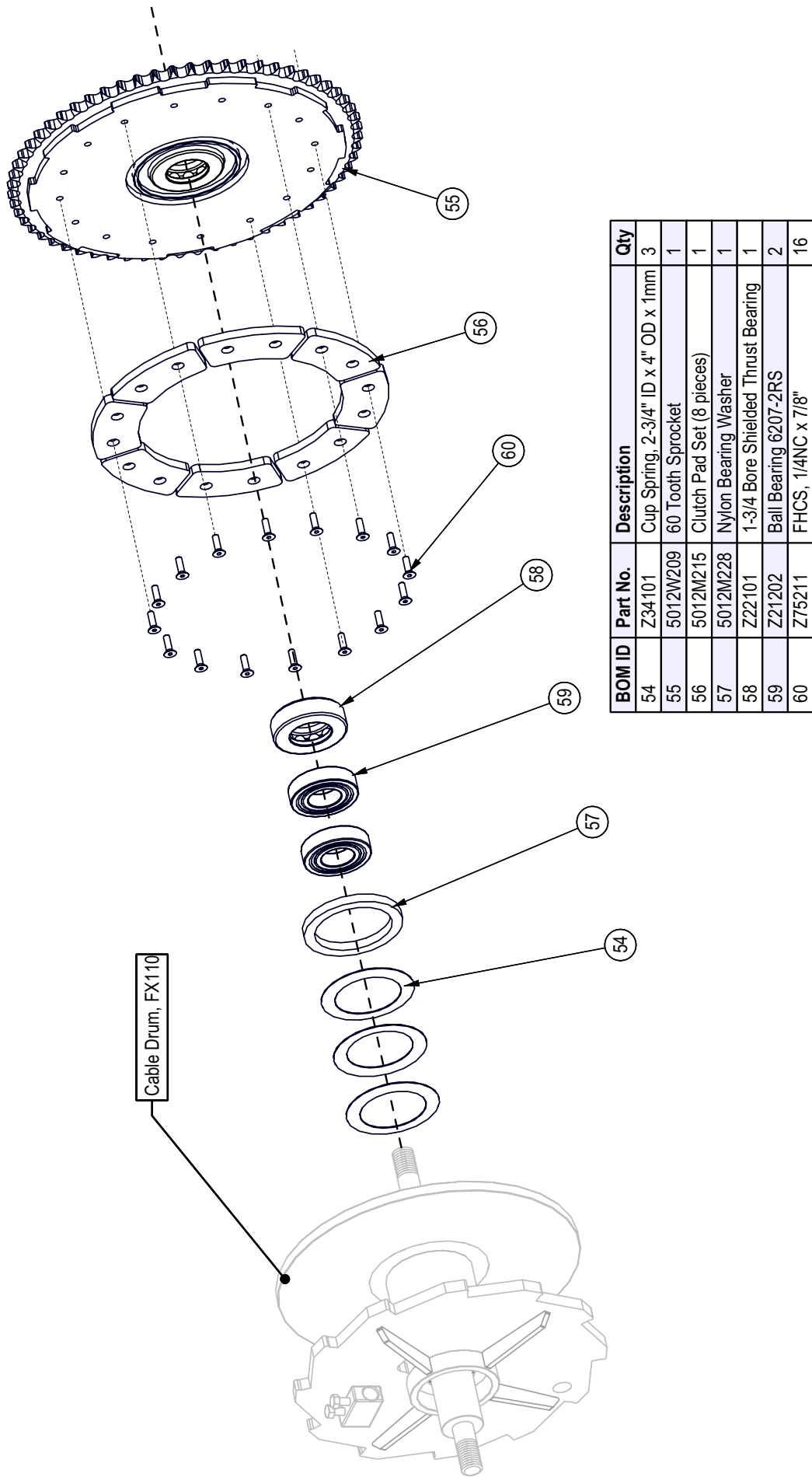
BOM ID	Part No.	Description	Qty
1	5012W225	Main Frame	1
2	5012A207	Clutch Rope Pulley	1
3	Z71512	Hex Bolt, 1/2NC x 1-1/4"	2
4	5012L285	Top Pulley Capture Bracket	1
5	Z72231	Hex Lock Nut, 3/8NC	2
6	5012A205	Top Cable Pulley Assembly	1
7	Z72251	Hex Lock Nut, 1/2NC	4
8	Z72281	Hex Lock Nut, 7/8NC	1
9	Z11122	Toplink Pin, 3/4" x 3-7/8"	1
10	Z12140	Lynch Pin, 7/16"	1
11	Z11251	Hitch Pin, 7/8" x 4-1/4"	2
12	Z12110	Lynch Pin, 3/16"	2
13	Z92205	Drum Brake Rope 18'	1
14	Z92201	Clutch Control Rope	1
15	Z72261	Hex Lock Nut, 5/8NC	2
16	Z76155	Flange Bolt, 1/2NC x 1-3/4"	2
17	Z76161	Flange Bolt, 5/8NC x 1-1/2"	2
18	5012W226	Safety Screen	1
19	5012L325	Lower Protective Shield	1
20	Z76133	Flange Bolt, 3/8NC x 3/4"	2
21	Z44402	#4 Global PTO Shaft M8 Shear	1
22	Z76721	Self-tapping Screw, 1/4 x 3/4"	3
23	Z96503	Manual Tube 3-1/2 Short	1
24	Z92120	Winch Cable, 7/16" x 165ft, Forged End	1
25	Z92301	Keyhole Slider	2
26	5012W218	Support Leg, LH	1
27	5012W217	Support Leg, RH	1
28	Z11311	Clevis Pin, 1/4" x 1-1/8"	1
29	Z12311	Cotter Pin, 1/8" x 1"	1
30	Z92203	1/4 Groove Pulley 2 Diam.	1
31	Z76137	Flange Bolt, 3/8NC x 1-1/4"	2
32	Z12432	Snap Lock Pin, 3/8" x 2-1/2"	2
33	Z71105	Hex Bolt, 1/4NC x 1/2"	2

Cable Drum Assembly



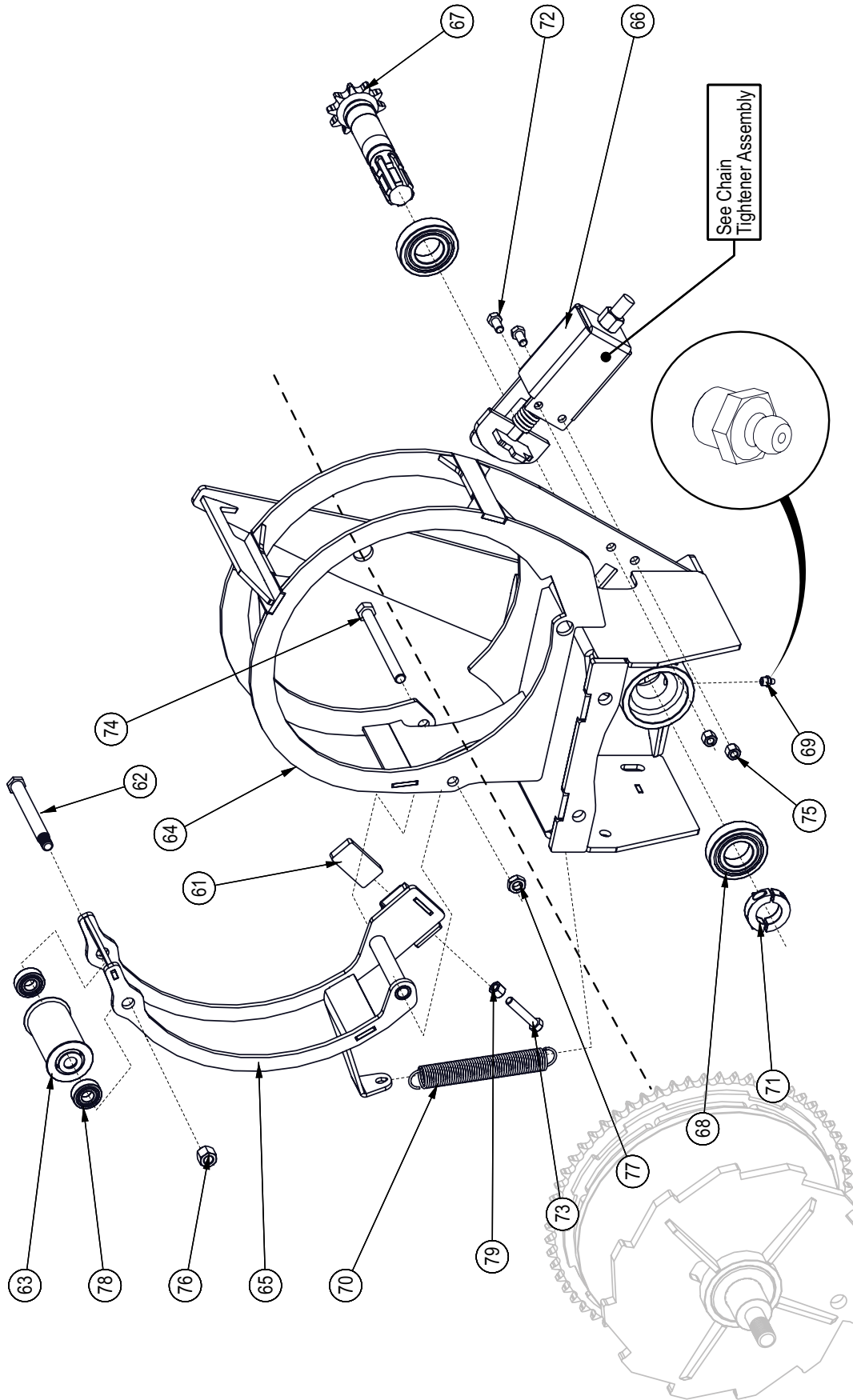
BOM ID	Part No.	Description	Qty
39	5012M214	Main Drum Shaft	1
40	Z75151	SHCS, 1/2NF x 2"	1
41	5012W206	Lock Dog	1
42	Z72281	Hex Lock Nut, 7/8NC	1
43	Z22101	1-3/4 Bore Shielded Thrust Bearing	1
44	Z27101	Fiberglass Bearing 1-3/4" ID x 2" long x 1/8" wall	2
45	Z31405	Ext Spring, 7/8" OD x 7" x 0.125"	1
46	Z32401	Comp Spring, 1" OD x 7" x 0.162"	1
47	Z42151	#60 Chain 76 Links	1
48	Z71212	Hex Bolt, 5/16NC x 1-1/4"	2
49	Z71615	Hex Bolt, 5/8NC x 1-1/2"	2
50	Z72252	Hex Lock Nut, 1/2NF	3
51	Z72261	Hex Lock Nut, 5/8NC	2
52	5012W203	Drum Frame Capture Plate	1
53	5012W207	FX90 Cable Drum	1

Clutch Assembly



BOM ID	Part No.	Description	Qty
54	Z34101	Cup Spring, 2-3/4" ID x 4" OD x 1mm	3
55	5012W209	60 Tooth Sprocket	1
56	5012M215	Clutch Pad Set (8 pieces)	1
57	5012M228	Nylon Bearing Washer	1
58	Z22101	1-3/4 Bore Shielded Thrust Bearing	1
59	Z21202	Ball Bearing 6207-2RS	2
60	Z75211	FHCS, 1/4NC x 7/8"	16

Cable Frame Assembly

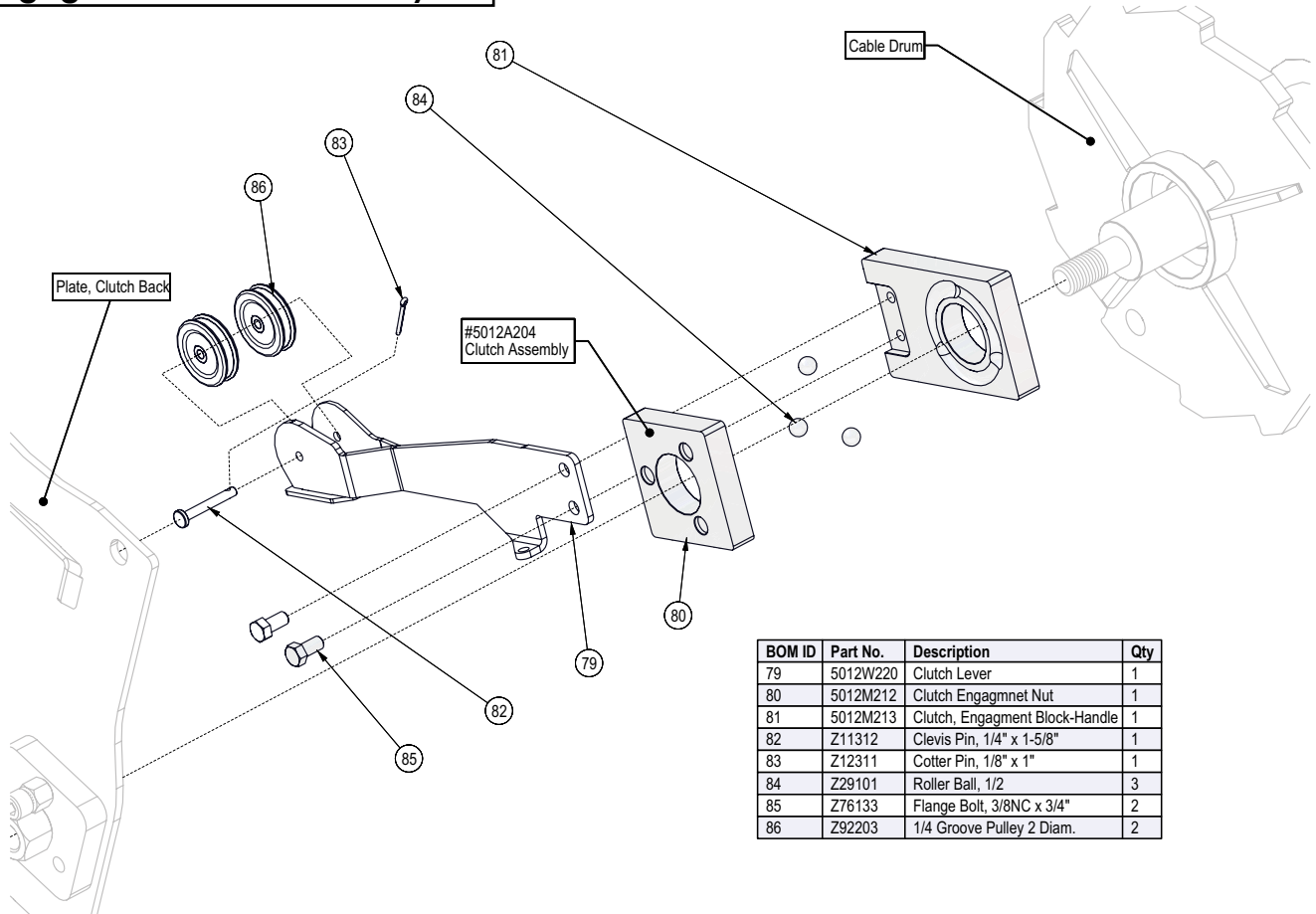


BOM ID	Part No.	Description	Qty
61	5012M204	Block, Drum Brake	1
62	5012M205	Cable Roller Pin	1
63	5012M206	Brake Arm Cable Roller	1
64	5012W202	Drum Frame Base	1
65	5012W204	Drum Brake Arm	1
66	5012A203	Single Auto Chain Tightener	1
67	5012W208	PTO Spline Shaft w/ Sprocket	1

BOM ID	Part No.	Description	Qty
68	Z21202	Ball Bearing 6207-2RS	2
69	Z29201	Grease Fitting, 1/8NPT	1
70	Z31403	Ext Spring, 27mm OD x 178mm x 0.105"	1
71	Z46311	Clamp-on Shaft Collar	1
72	Z71307	Hex Bolt, 3/8NC x 3/4"	2
73	Z71320	Hex Bolt, 3/8NC x 2"	1
74	Z71555	Hex Bolt, 1/2NC x 5-1/2"	1

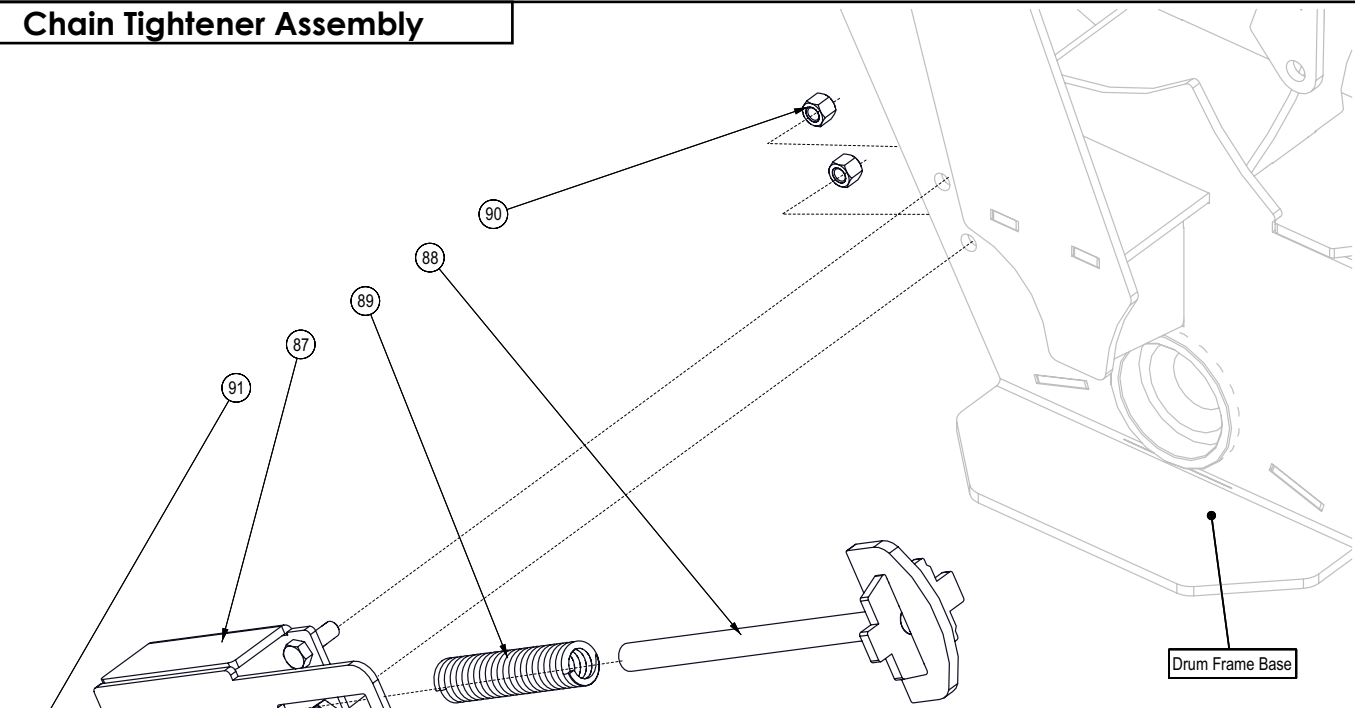
BOM ID	Part No.	Description	Qty
75	Z72231	Hex Lock Nut, 3/8NC	2
76	Z72251	Hex Lock Nut, 1/2NC	1
77	Z72351	Jam Nut, 1/2NC	1
78	Z21203	Ball Bearing 6202 2RS	2
79	Z72531	Serrated Flange Locknut, 3/8NC	1

Engagement Lever Assembly



BOM ID	Part No.	Description	Qty
79	5012W220	Clutch Lever	1
80	5012M212	Clutch Engagmnet Nut	1
81	5012M213	Clutch, Engagment Block-Handle	1
82	Z11312	Clevis Pin, 1/4" x 1-5/8"	1
83	Z12311	Cotter Pin, 1/8" x 1"	1
84	Z29101	Roller Ball, 1/2	3
85	Z76133	Flange Bolt, 3/8NC x 3/4"	2
86	Z92203	1/4 Groove Pulley 2 Diam.	2

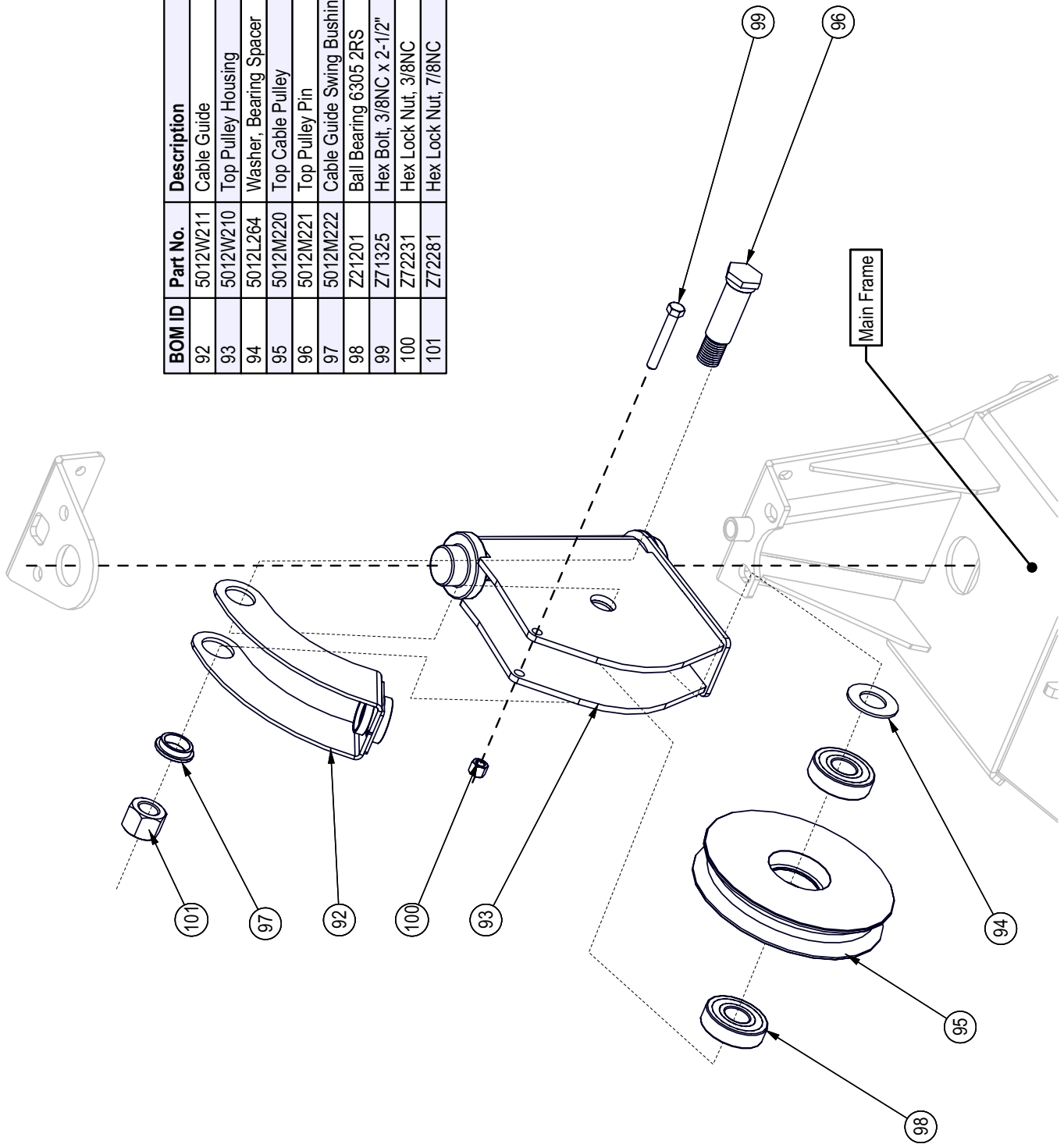
Chain Tightener Assembly



BOM ID	Part No.	Description	Qty
87	5012W221	Chain Tightener Housing	1
88	5012W205	Chain Tightener Plunger	1
89	Z32401	Comp Spring, 1" OD x 7" x 0.162"	1
90	Z72531	Serrated Flange Locknut, 3/8NC	2
91	Z72261	Hex Lock Nut, 5/8NC	1

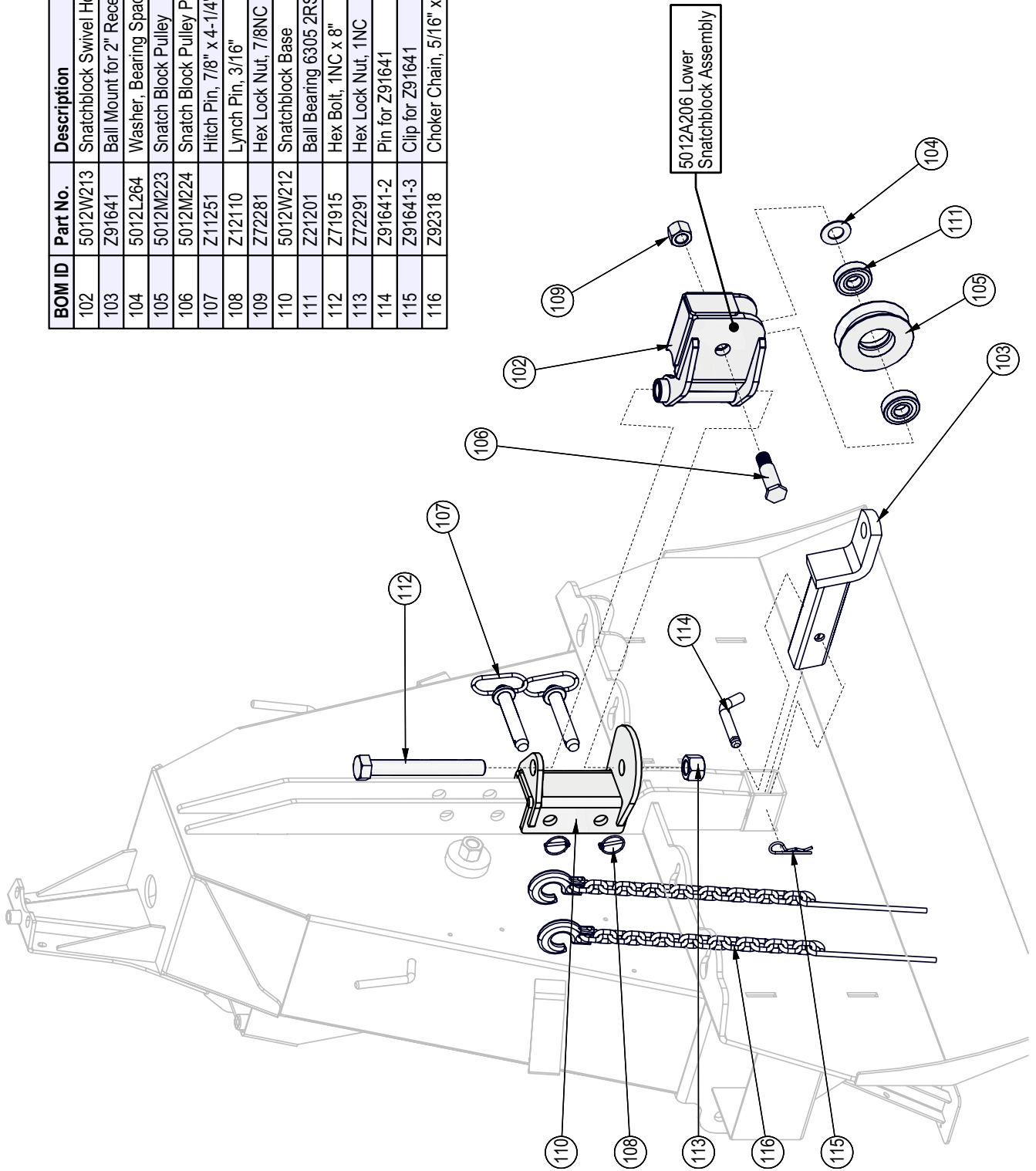
Top Cable Pulley Assembly

BOM ID	Part No.	Description	Qty
92	5012W211	Cable Guide	1
93	5012W210	Top Pulley Housing	1
94	5012L264	Washer, Bearing Spacer	1
95	5012M220	Top Cable Pulley	1
96	5012M221	Top Pulley Pin	1
97	5012M222	Cable Guide Swing Bushing	1
98	Z21201	Ball Bearing 6305 2RS	2
99	Z71325	Hex Bolt, 3/8NC x 2-1/2"	1
100	Z72231	Hex Lock Nut, 3/8NC	1
101	Z72281	Hex Lock Nut, 7/8NC	1

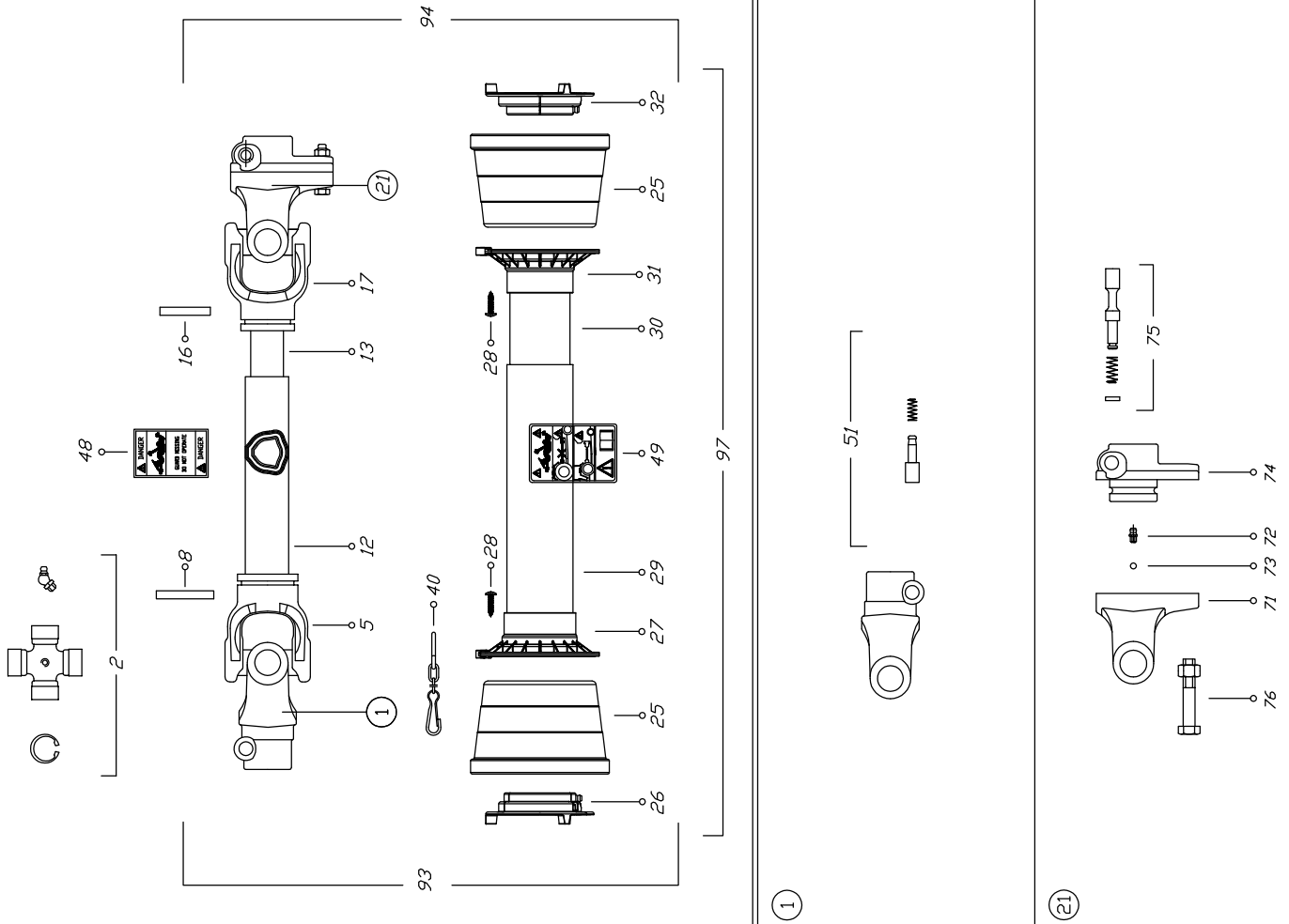


Snatch Block Assembly

BOM ID	Part No.	Description	Qty
102	5012W213	Snatchblock Swivel Housing	1
103	Z91641	Ball Mount for 2" Receiver	1
104	5012L264	Washer, Bearing Spacer	1
105	5012M223	Snatch Block Pulley	1
106	5012M224	Snatch Block Pulley Pin	1
107	Z11251	Hitch Pin, 7/8" x 4-1/4"	2
108	Z12110	Lynch Pin, 3/16"	2
109	Z72281	Hex Lock Nut, 7/8NC	1
110	5012W212	Snatchblock Base	1
111	Z21201	Ball Bearing 6305 2RS	2
112	Z71915	Hex Bolt, 1NC x 8"	1
113	Z72291	Hex Lock Nut, 1NC	1
114	Z91641-2	Pin for Z91641	1
115	Z91641-3	Clip for Z91641	1
116	Z92318	Choker Chain, 5/16" x 90"	2



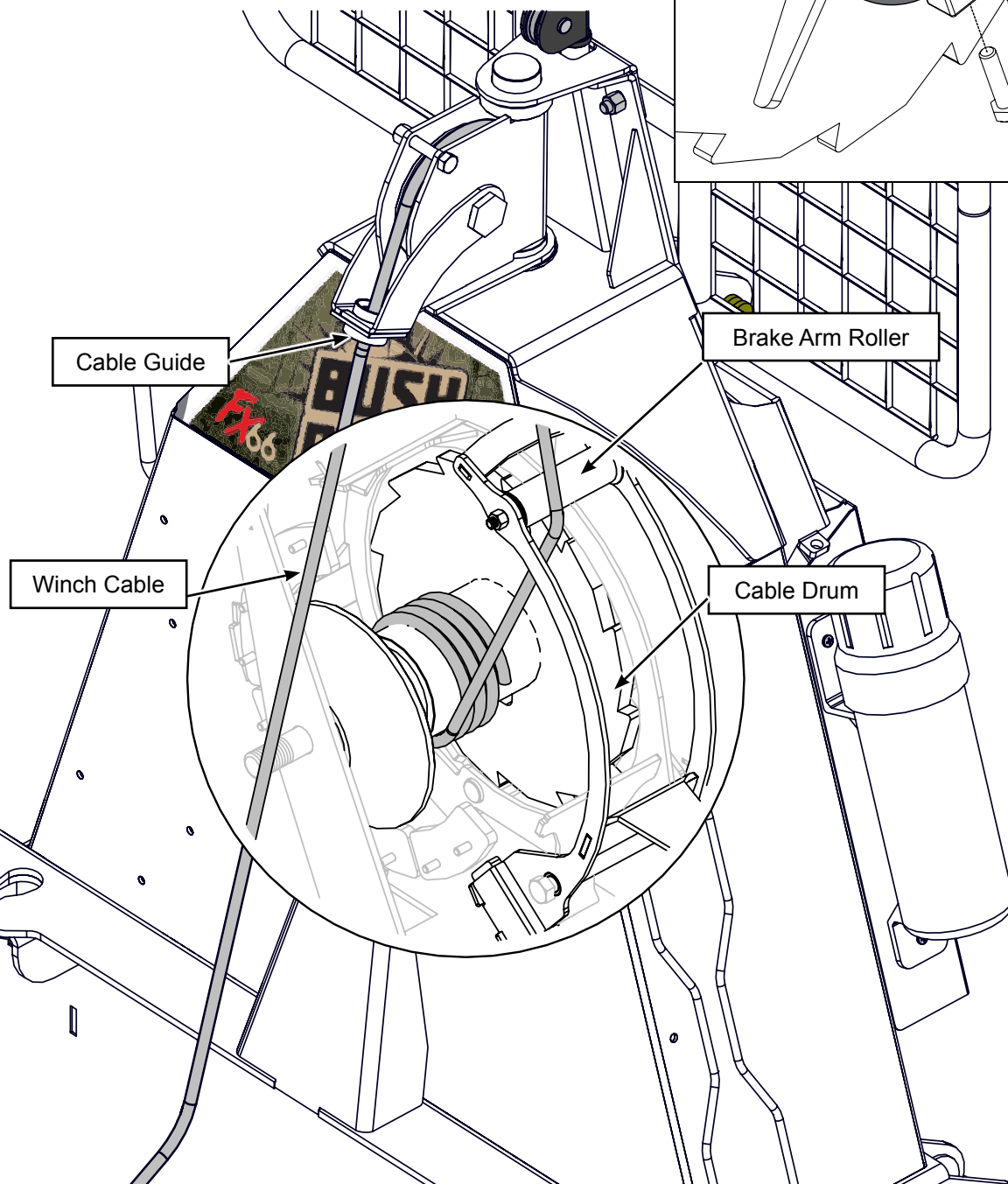
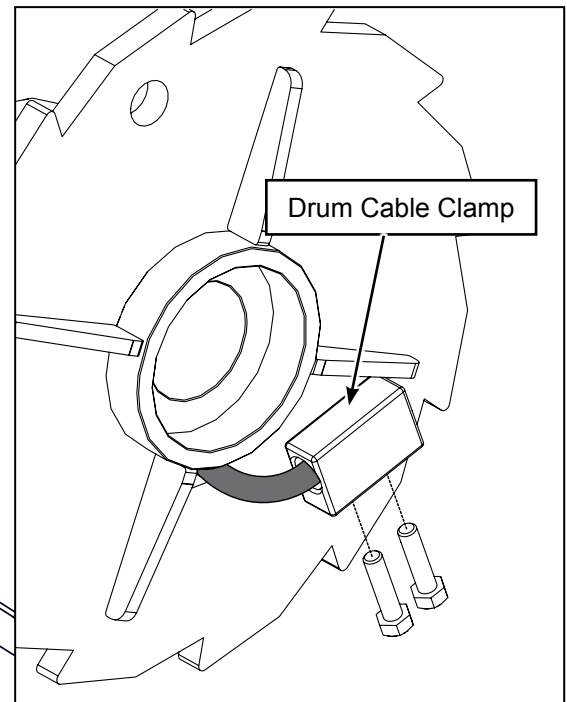
PTO Shaft



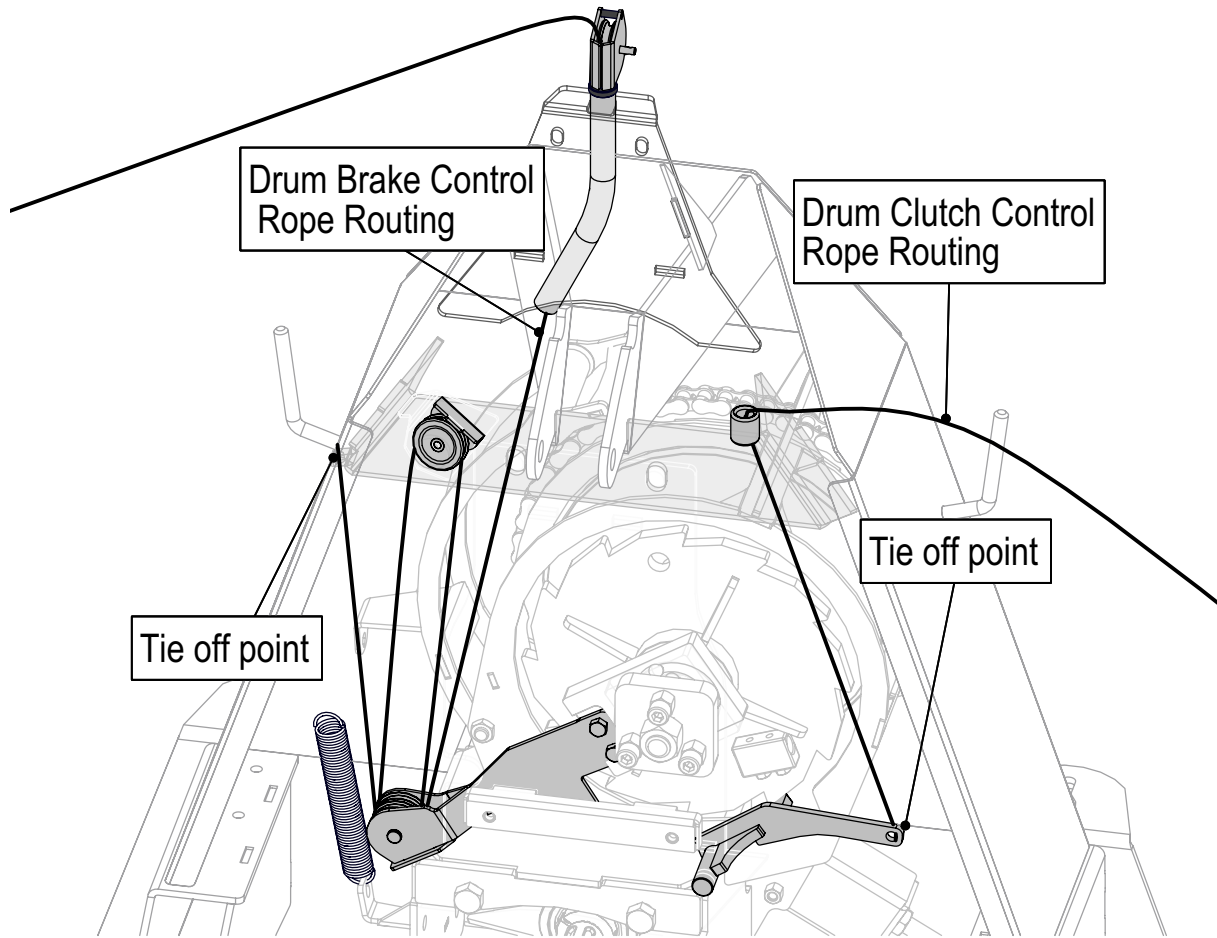
Binacchi SPARE PARTS LIST : B4N061USA60098			
POS.	DESCRIPTION	Q.	Part #
01	YOKE	1	0800403
02	CROSS JOURNAL ASS.	2	08204
05	OUTER TUBE YOKE	1	08004021
08	FLEXIBLE PIN	1	098700860
12	CM. 100 CARDAN TUBE(*)	1	09881433100
13	CM. 100 CARDAN TUBE(*)	1	09881364100
16	FLEXIBLE PIN	1	098700855
17	INNER TUBE YOKE	1	08004011
21	SHEAR BOLT M8X1.25X45	1	Z44902
25	CONE SHIELD BELL 03-04	2	021904C001
26	OUTER BEARING 03-04	1	025504C001
27	OUTER BASE CONE 03-04	1	025404C001
28	SCREW	6	0998052242
29	OUTER SAFETY TUBE	1	0988966NB4061
30	INNER SAFETY TUBE	1	0988961NB4061
31	INNER BASE CONE 03-04	1	025404C002
32	INNER BEARING 03-04	1	025504C002
40	CHAIN	1	0252000001
48	LABEL DANGER OUTER DRIVE TUBE	1	09872006
49	EXTERNAL SHIELD LABEL	1	09872003
51	COMPLETE PUSH BUTTION	1	0986014047
71	YOKE FOR LB4	1	08896904
72	GREASE NIPPLE	1	0984010150
73	STEEL BALL	23	098680104
74	HUB	1	088964
75	PUSH PIN SET	1	0986014075
76	NUT AND BOLT M8 x 1.25 x 45 10.9	1	Z44902
93	OUTER HALF SHAFT	1	B4N061US2
94	INNER HALF SHAFT	1	B4N061US1098
97	SAFETY GUARD	1	083US04061

Cable Install

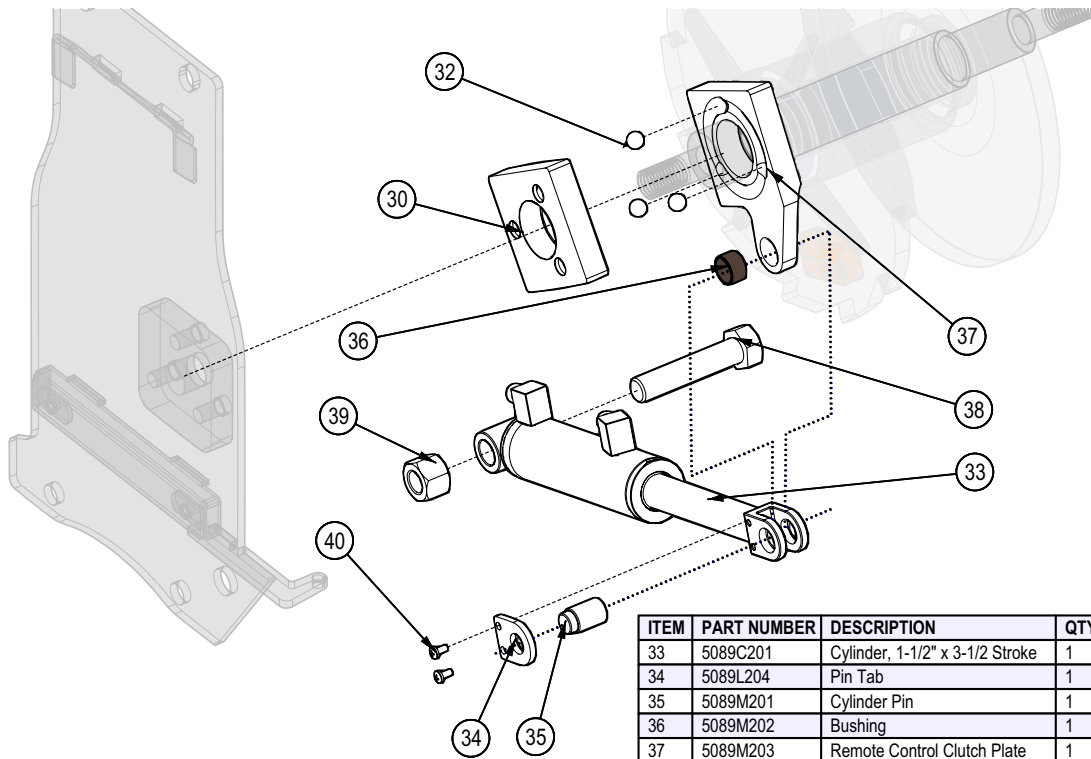
Feed cable through the eye of cable guide and over the pulley down into drum. Cable must be routed under brake roller on drum band coiler. Insert cable into hole in drum and tighten clamp.



Brake & Clutch Rope Routing

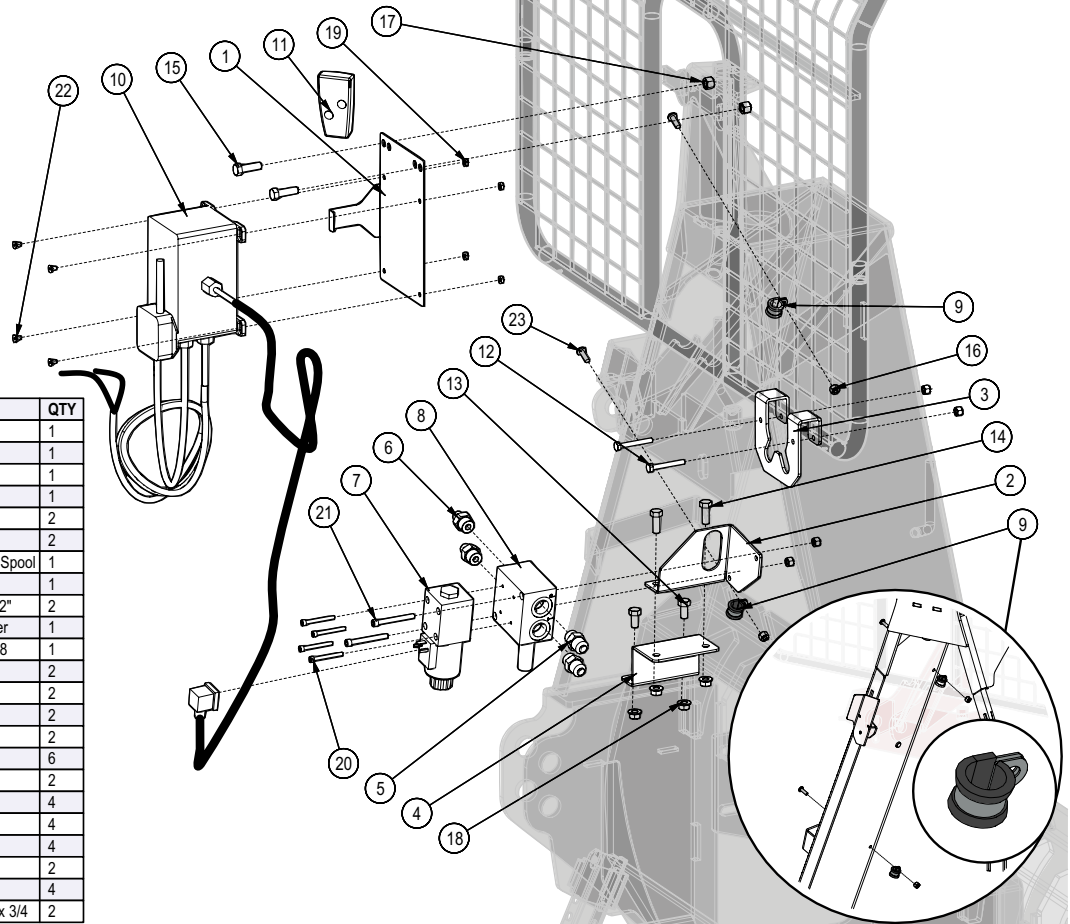


Cylinder / Clutch Plate Assembly - FX110R



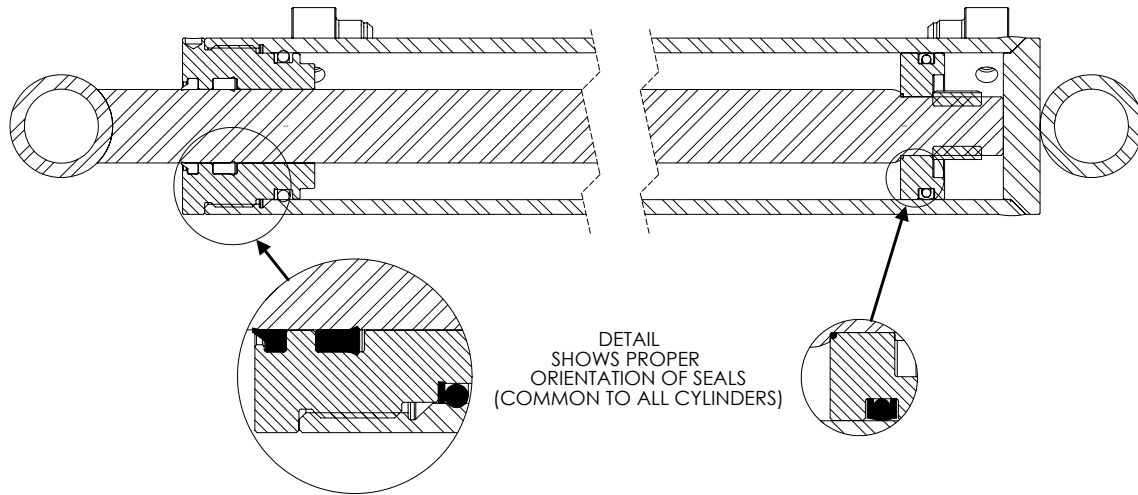
ITEM	PART NUMBER	DESCRIPTION	QTY
33	5089C201	Cylinder, 1-1/2" x 3-1/2 Stroke	1
34	5089L204	Pin Tab	1
35	5089M201	Cylinder Pin	1
36	5089M202	Bushing	1
37	5089M203	Remote Control Clutch Plate	1
38	Z71735	Hex Bolt, 3/4NC x 3-1/2	1
39	Z72271	Hex Lock Nut, 3/4NC	1
40	Z78302	Machine Screw, #10-32NF x 3/8	2

Remote Control Components - FX110R

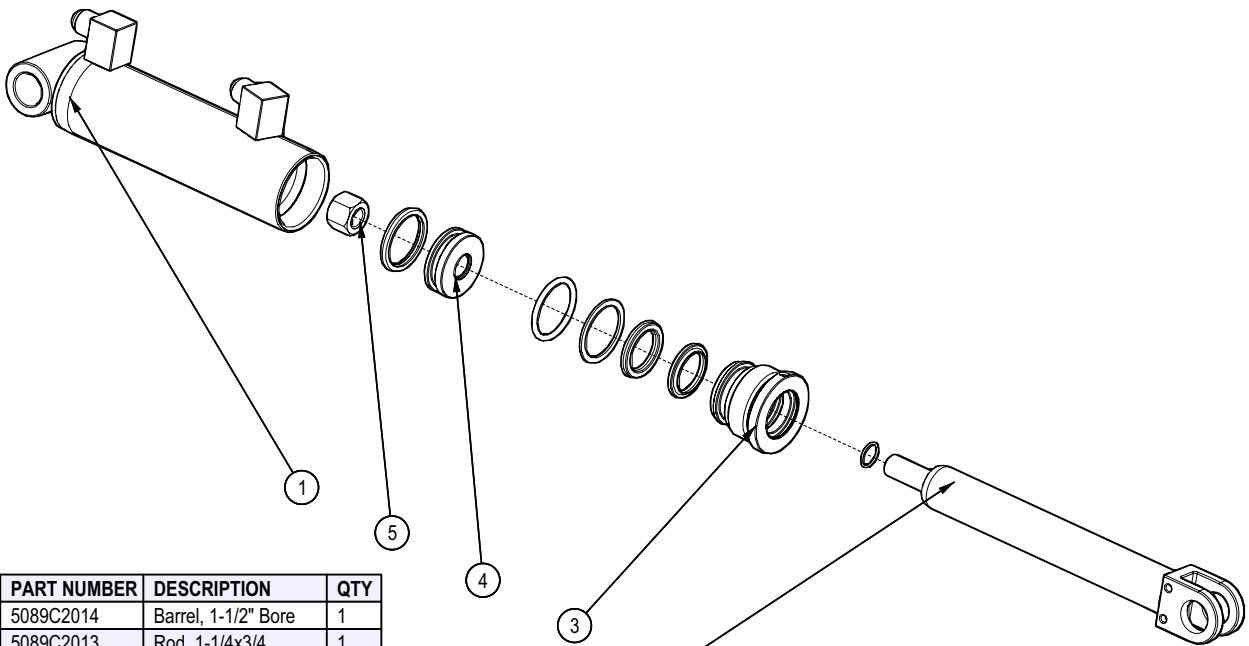


ITEM	PART NUMBER	DESCRIPTION	QTY
1	5089L205	Remote Box Mount	1
2	5089L208	Hydraulic Mount Base	1
3	5089L209	Hose Hanger	1
4	5089L210	Valve Mount Extension	1
5	Z51643	#8ORB x #8JIC	2
6	Z51644	#8ORB x #6JIC	2
7	Z56509	Solenoid 4-2 Valve - Motor Spool	1
8	Z56510	SubPlate with Relief	1
9	Z62819	Rubberized Wire Clamp, 1/2"	2
10	Z66208	Dual State Remote Receiver	1
11	Z66209	Remote Handset for Z66208	1
12	Z71120	Hex Bolt, 1/4NC x 2	2
13	Z71307	Hex Bolt, 3/8NC x 3/4	2
14	Z71310	Hex Bolt, 3/8NC x 1	2
15	Z71312	Hex Bolt, 3/8NC x 1-1/4	2
16	Z72211	Hex Lock Nut, 1/4NC	6
17	Z72231	Hex Lock Nut, 3/8NC	2
18	Z72531	Flange Nut 3/8NC	4
19	Z72752	Machine Nut, #10-32NF	4
20	Z75102	SHCS, #10-24NC x 1-3/4	4
21	Z75117	SHCS, 1/4NC x 2-1/4	2
22	Z75202	FHCS, #10-32NF x 3/8	4
23	Z78301	Machine Screw, 1/4-20NC x 3/4	2

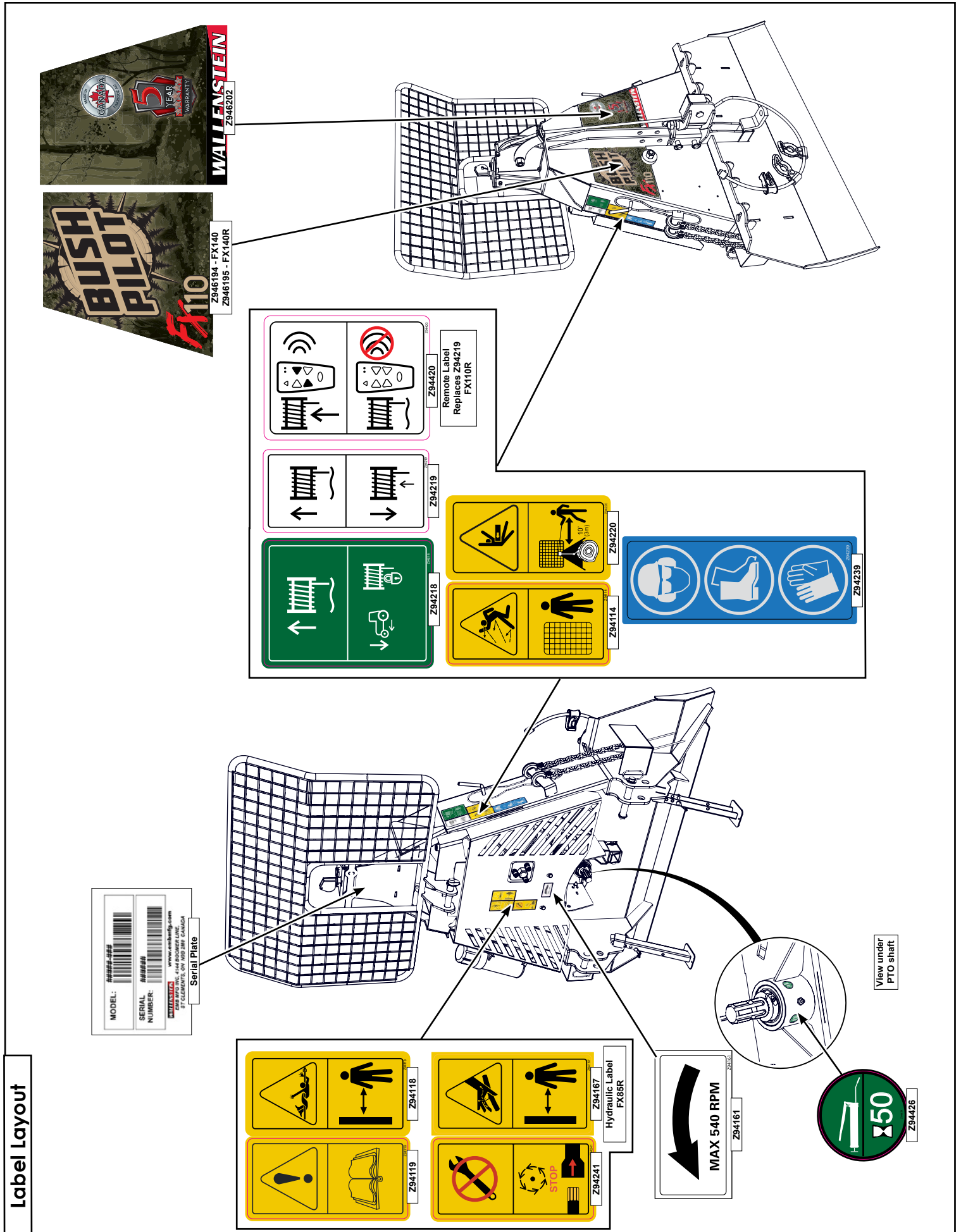
Cylinder Seal Installation - FX110R



Hydraulic Cylinder Detail - FX110R

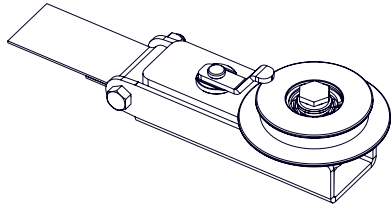


ITEM	PART NUMBER	DESCRIPTION	QTY
1	5089C2014	Barrel, 1-1/2" Bore	1
2	5089C2013	Rod, 1-1/4x3/4	1
3	G150-100S	1-1/2" X 1" GLAND	1
4	P500-150SP	1-1/2" BORE PISTON	1
5	Z72251	Hex Lock Nut, 1/2NC	1

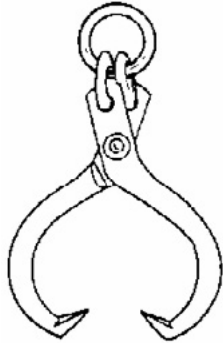


Label Layout

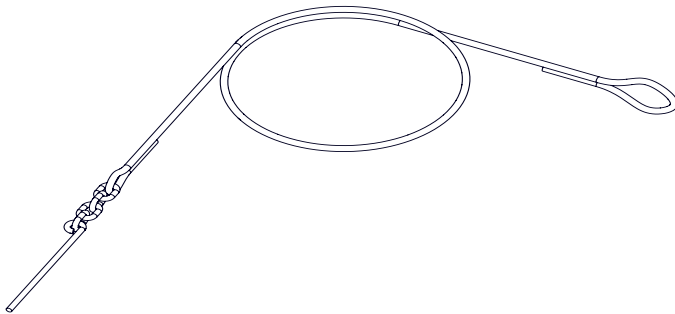
Accessories



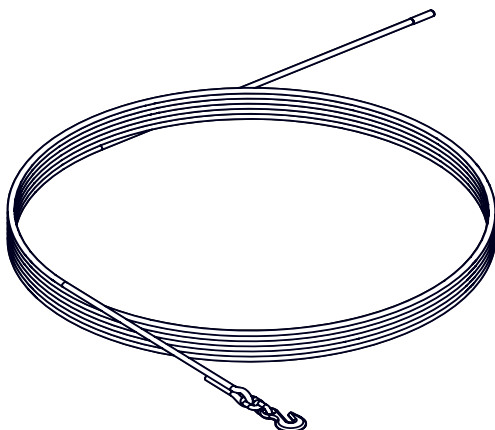
#5089A100 SELF RELEASING SNATCH BLOCK



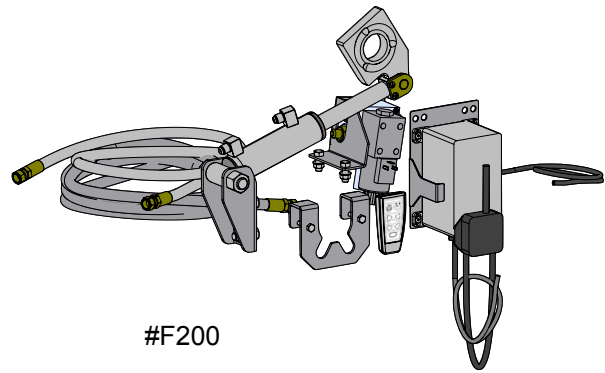
#Z99003 LOGGING TONGS



#Z92125 5 FT SYNTHETIC CHOKER WITH ROD CHAIN END
#Z92126 7 FT SYNTHETIC CHOKER WITH ROD CHAIN END



#Z92123 200 FT 7/16" SYNTHETIC MAINLINE WITH HOOK



#F200

#F200 REMOTE CONTROL WINCH KIT
For FX85, FX90 Skidding Winches

Dealer installed accessory.
F200 Remote Control retrofit kit for existing FX Skidding Winches.
Convenient and easy to use, eliminates the need to make your way back to the FX winch to engage the clutch.



#Z97090 OPERATORS MANUAL
Available as a download at
www.wallensteinequipment.com