



Parts Manual

Mfg. No: 5600906
52" EZ Dump 12 cu. ft. Hopper (2100)

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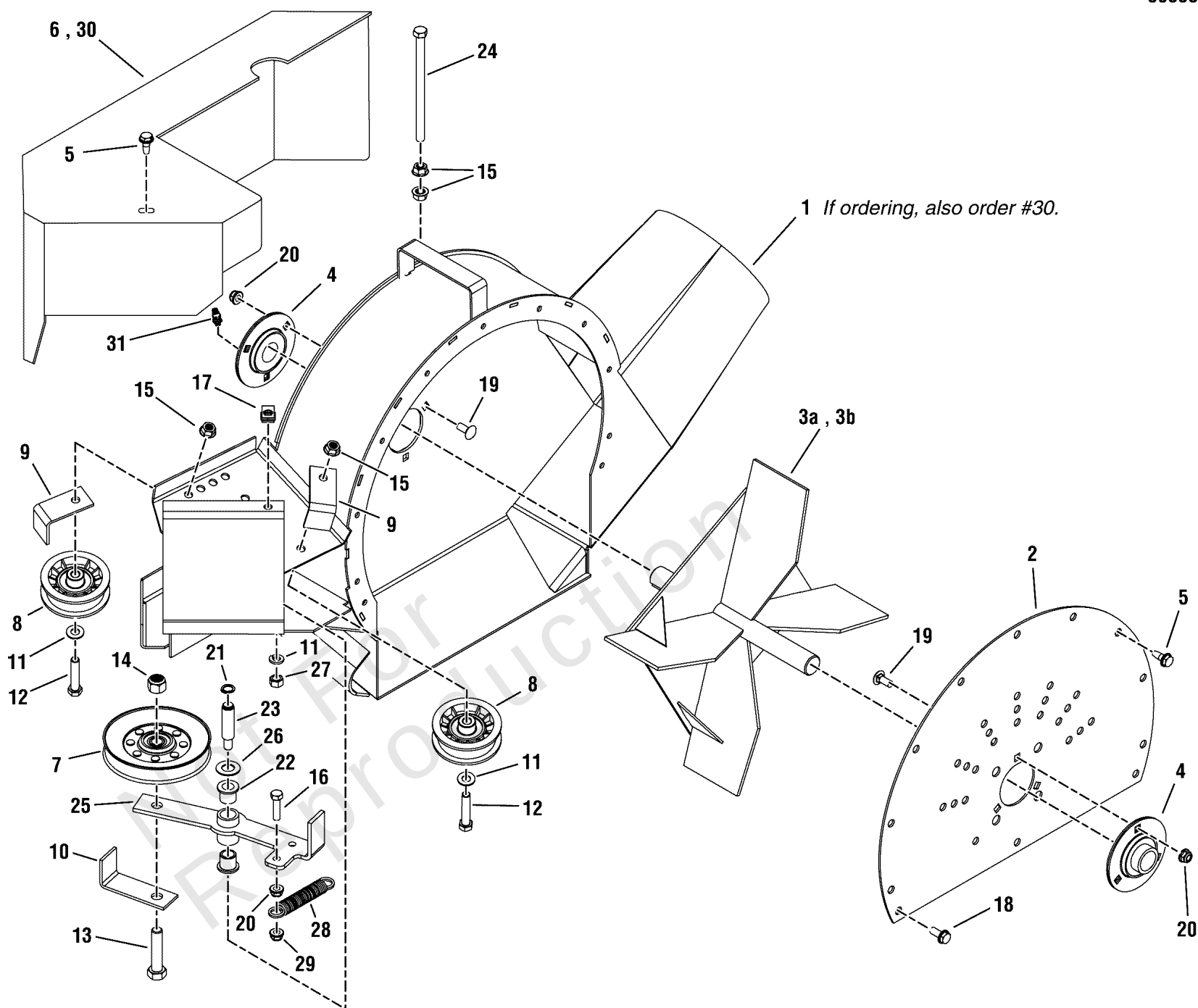
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Blower Group, FAST-Vac

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 5600906

5900800



Blower Group, FAST-Vac

REF NO	PART NO	QTY	DESCRIPTION
1	5403723A	1	WELD, BLOWER HOUSING - FAST VAC - BLK
2	5403750A	1	PLATE, BACK - BLK
3a	5407093	1	WELD, IMPELLER, FAST-VAC BLOWER -(S/N: 04/07/2010 & Later)
3b	5403741	1	WELD, IMPELLER, FAST VAC BLOWER -(S/N: 04/06/2010 & Earlier)
4	7100021SM	2	BEARING, FLANGE, 1" Bore -(Torque set screws to 87 in-lbs (9.8 Nm). Use Loctite 271 Threadlocker on threads).
5	7091541	5	BOLT, 5/16-18 X 3/4" Self Tap
6	5403736A	1	WELD, BELT GUARD, BLOWER - BLK -(S/N: 07/14/2013 & Earlier)
7	5021097	1	PULLEY-IDLER-V, 4.85OB, .506 ID, .94W, STL
8	5106480	2	PULLEY, IDLER, 2.75"OD X .37"ID, INSERT
9	5403749A	2	KEEPER, BELT - BLK
10	5403740A	1	RETAINER, BELT - BLK
11	5025156	3	WASHER, 3/8 SAE
12	80003522	2	HHCS, 3/8-16 X 2.00, GR5, ZINC/CLEAR
13	5025017X18	1	BOLT, 1/2-13 X 2-1/4" GD5 CZ
14	5025056	1	NUT, 1/2-13 HEX NYLON LOCK
15	5025128	4	NUT, 3/8-16 Hex Large Serrated Flange
16	5025011X10	1	BOLT, 5/16-18 X 1-1/4" GD5 YZ
17	5022308	3	BODY CLIP, 5/16-18-7GA MATERIAL
18	7091811	6	BOLT, 5/16-18 X 5/8" Self Lock
19	5025145X6	6	BOLT, 5/16-18 X 3/4, CARRIAGE, GD5, CZ
20	5025392	6	NUT, 5/16-18 HEX NYLOCK FLANGE NUT
21	7010776	1	RETAINING RING, 1/2"
22	7014409	2	FLANGE BEARING, 9/16"
23	7044995	1	IDLER STUD
24	5025013X48	1	BOLT, 3/8-16 X 6" GD5 CZ
25	5411358	1	ASSM, IDLER ARM, FAST-VAC
26	5103679	1	WASHER, FLAT, 9/16 ID, 1-1/8 OD, 98THK -Was 5025171
27	5025097	1	NUT, 3/8-24 Hex Nylon Lock -Was 5025097
28	5020807	1	SPRING, Extension
29	7091575	1	NUT, 5/16-18 Hex Center Lock
30	5411464A	1	WELD, Fast-Vac Guard - BLK -(S/N: 07/15/2013 & Later)
31	-----	1	ZERK, Grease Fitting (65 Deg, 1/4-28 Taper Male)

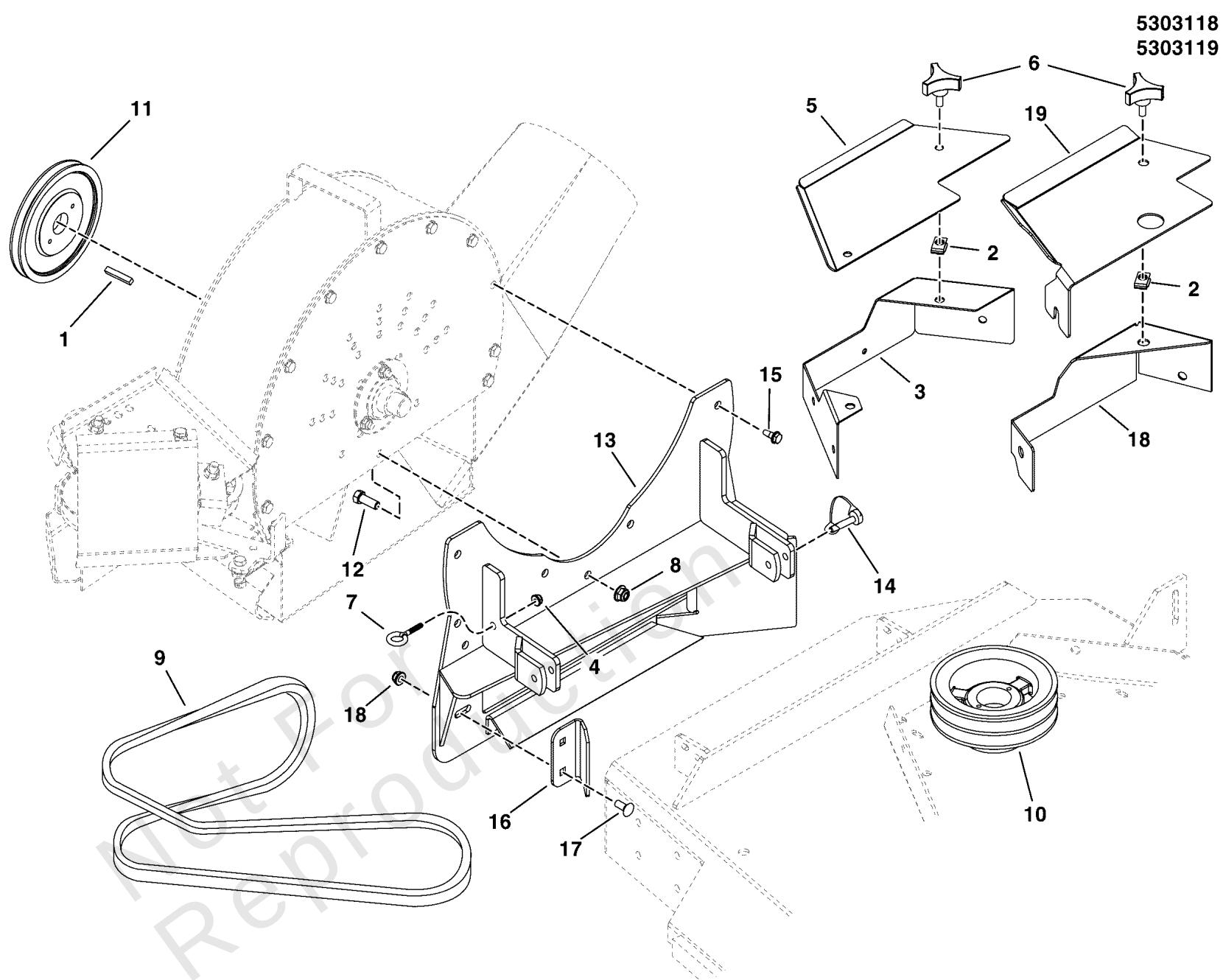
Footnotes:

**If replacing, order 5411464A also.

Blower Mount Group - 52" Mower Decks

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 5600906



Blower Mount Group - 52" Mower Decks

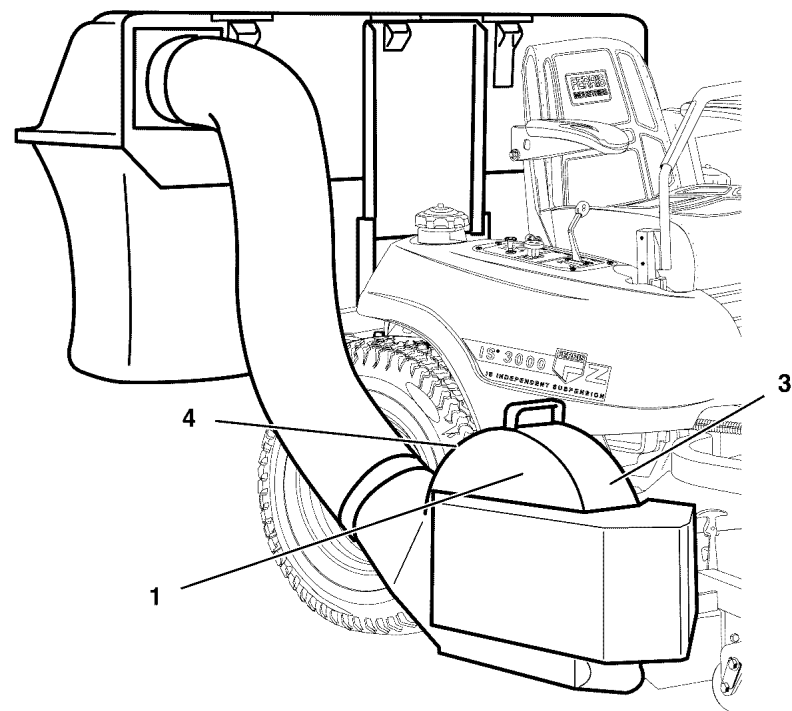
REF NO	PART NO	QTY	DESCRIPTION
1	5022726	1	KEY 1/4 SQ X 1 1/2 LONG
2	5022308	2	BODY CLIP, 5/16-18-7GA MATERIAL
3	5061858A	1	GUARD, DECK 48, 52 - BLK -(F160Z & S150XT Models)
4	5025391	1	NUT, 1/4-20 HEX NYLOCK FLANGE
5	5400007A	1	GUARD, DECK - BLACK -(F160Z & S150XT Models)
6	5022319	2	KNOB, PLASTIC, 5/16-18 X 3/4
7	5022205	1	EYE BOLT, 1/4-20 X 2.5, 1THRD, .5EYE,CZ
8	5025394	3	NUT, 3/8-16 HEX NYLOCK FLANGE
9	5022844	1	BELT, A-SEC, 92.00EL, ARAMID, WRPD
10	5023177	1	PULLEY-BLOWER 52 DECK
11	5102247	1	PULLEY, BC-46, 4.55 OD X 1.00 ID
12	5025013X8	3	BOLT, 3/8-16 X 1" GD5 CZ
13	5408253A	1	WELD, ADAPTER, 52ICD, FVAC BLK (5302764)
14	5100847	2	SNAPPERPIN, 5/16 X 2
15	7091811	2	BOLT, 5/16-18 X 5/8" SELF LOCK
16	5408292A	1	BRACKET,DEFLECTOR PLATE,52iCD 2011 - BLK
17	5025145X6	2	BOLT, 5/16-18 X 3/4, CARRIAGE
18	5025392	2	NUT, 5/16-18 HEX NYLOCK FLANGE
19	5405962A	1	GUARD, DECK, 52/2000 SND - BLK -(IS2100Z Models)
20	5405961A	1	GUARD, BELT, 52/2000 SND - BLK -(IS2100Z Models)

Decal Group - Fast-Vac Blower S/N: 07/2014 & Above

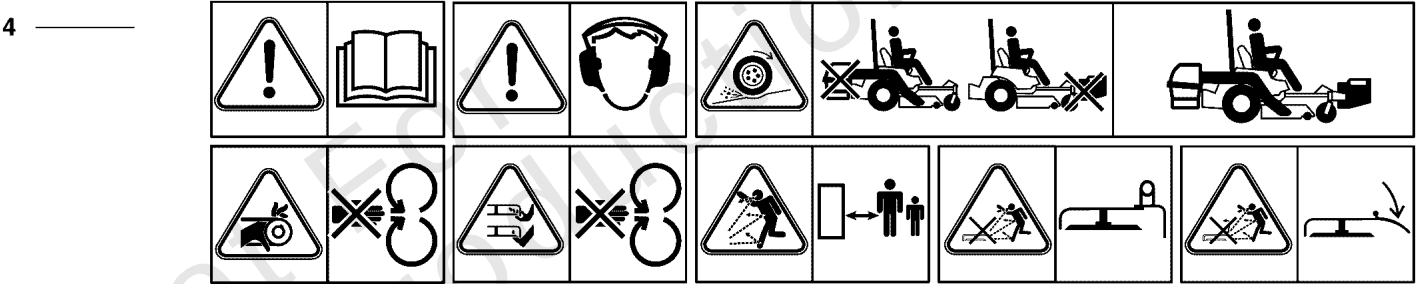
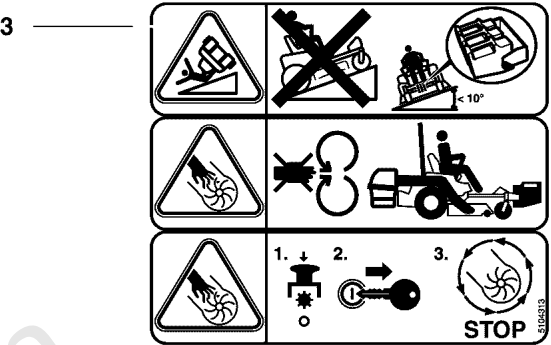
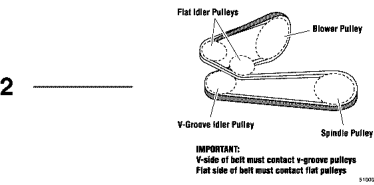
Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 5600906

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1 — **FAST-Vac**



Decal Group - Fast-Vac Blower S/N: 07/2014 & Above

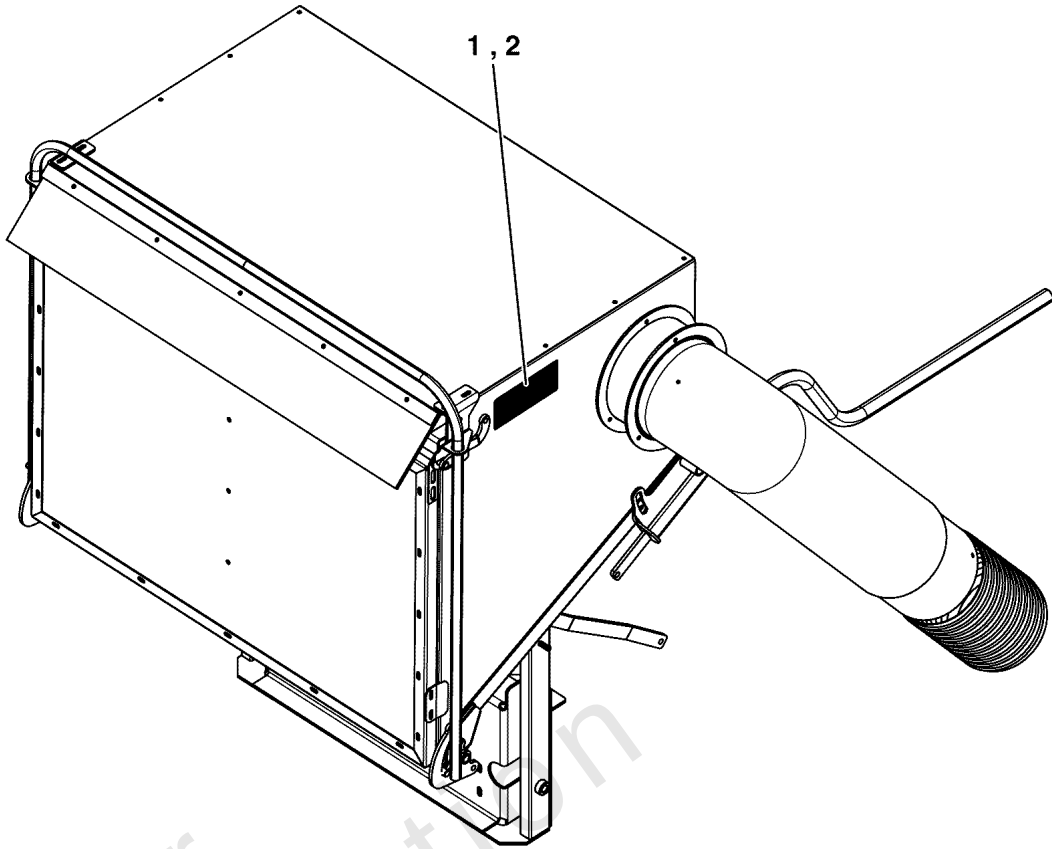
REF NO	PART NO	QTY	DESCRIPTION
1	3046944	1	DECAL, FAST-VAC
2	5100081	1	DECAL, BELT ROUTING
3	5104313	1	DECAL, BLOWER, SMALL, ICONS
4	5104314	1	DECAL, BLOWER, MAIN, LARGE, ICONS

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Decal Group - Hopper

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1

⚠ WARNING

Thrown objects hazard

- Objects thrown by the mower can seriously injure or kill you.
- Do not open the hopper while the mower blades are turning.
- Do not operate the mower without the complete catcher in place.

1732820

2

A grid of safety icons. The top row shows a falling object hazard, a blade contact hazard, and a large icon of a person on a riding mower. The bottom row shows a blade contact hazard, a blade contact hazard, and a blade contact hazard.

5104915

Decal Group - Hopper

REF NO	PART NO	QTY	DESCRIPTION
1	1732820	1	DECAL-WARNING BM,CQ,PR CATCHER 2006 -(S/N: 06/2014 & Below)
2	5104315	1	DECAL, CONTAINER, ICONS -(S/N: 07/2014 & Above)

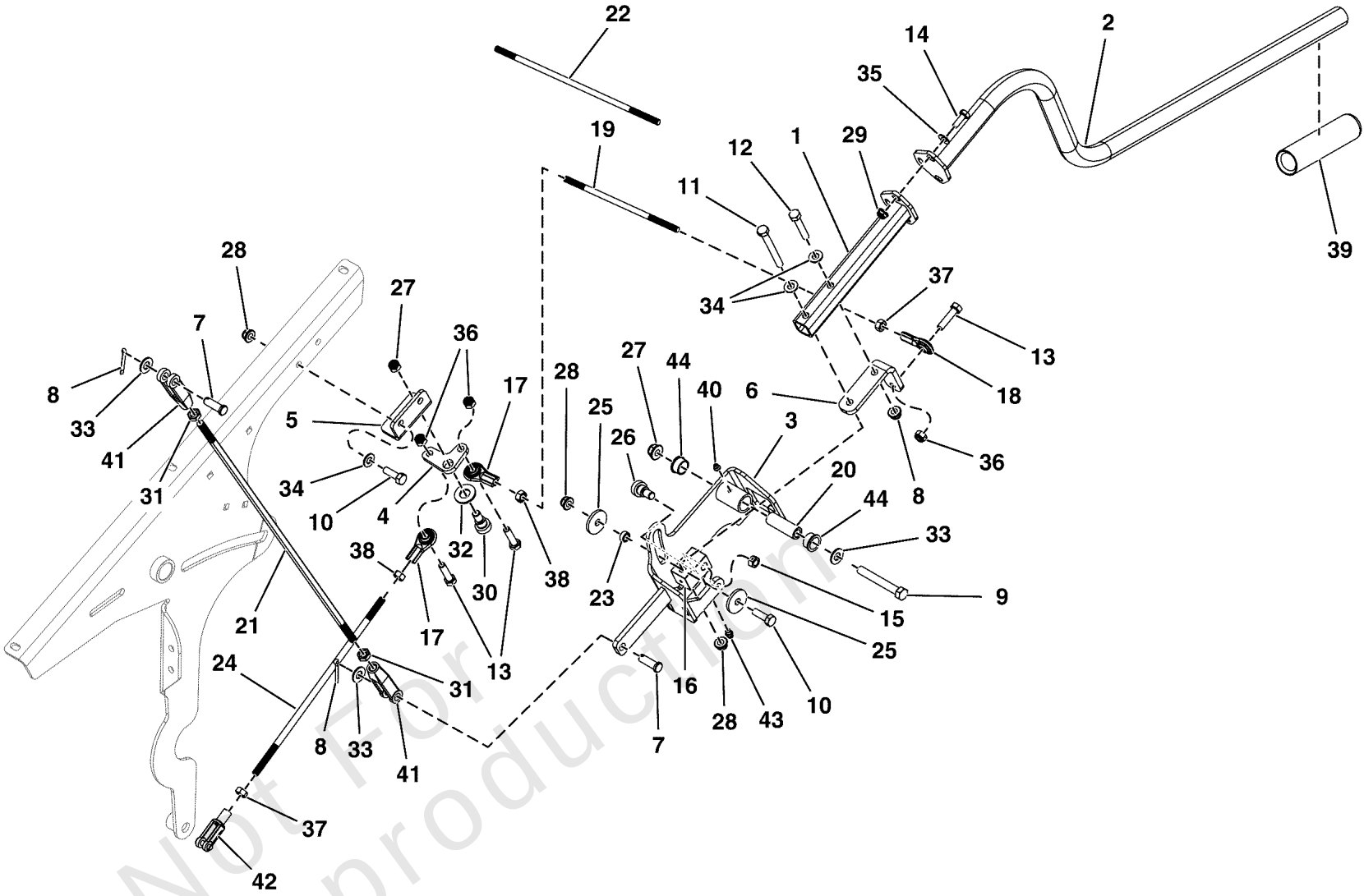
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Dump Handle Group

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Mfg. No: 5600906

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Dump Handle Group

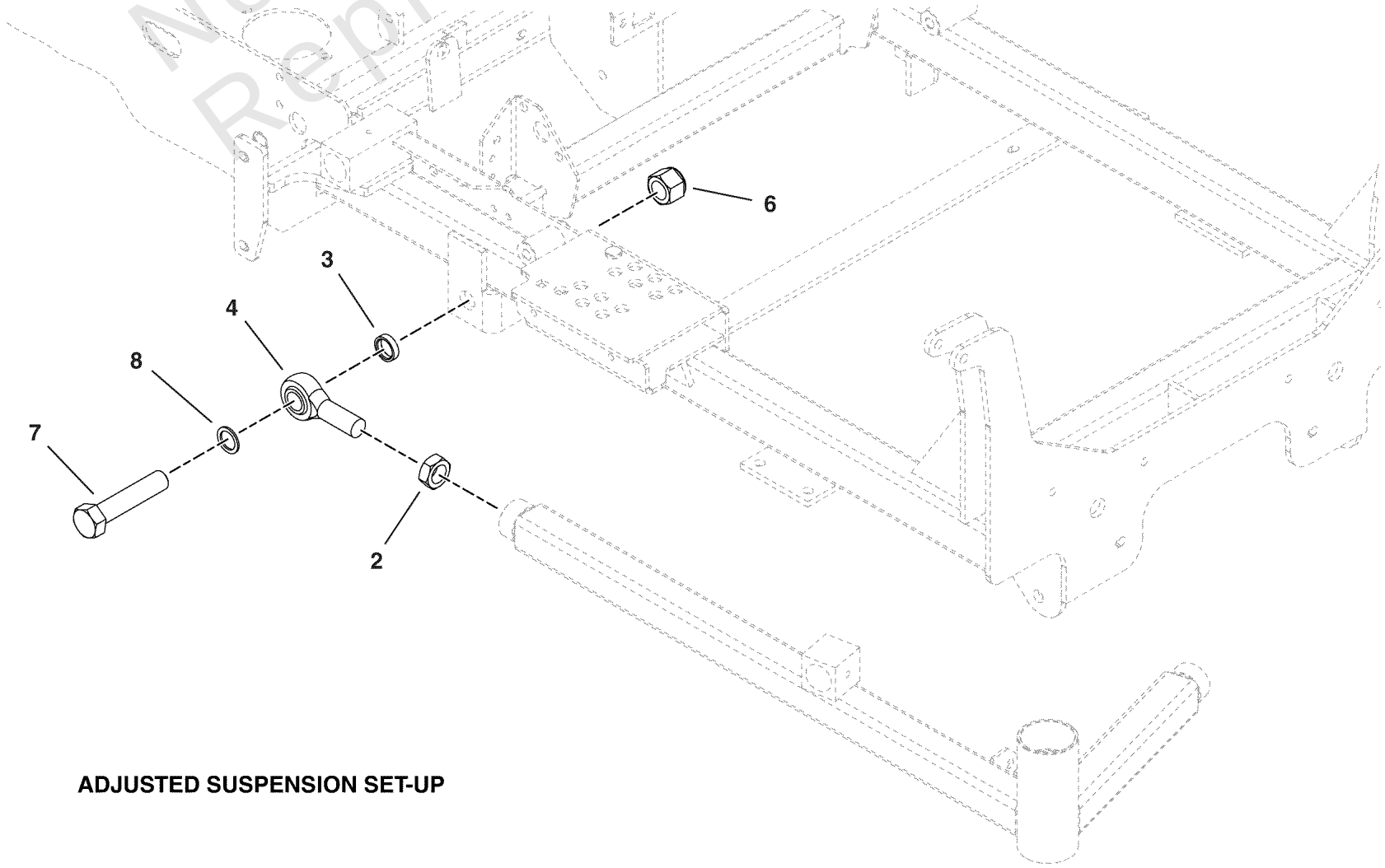
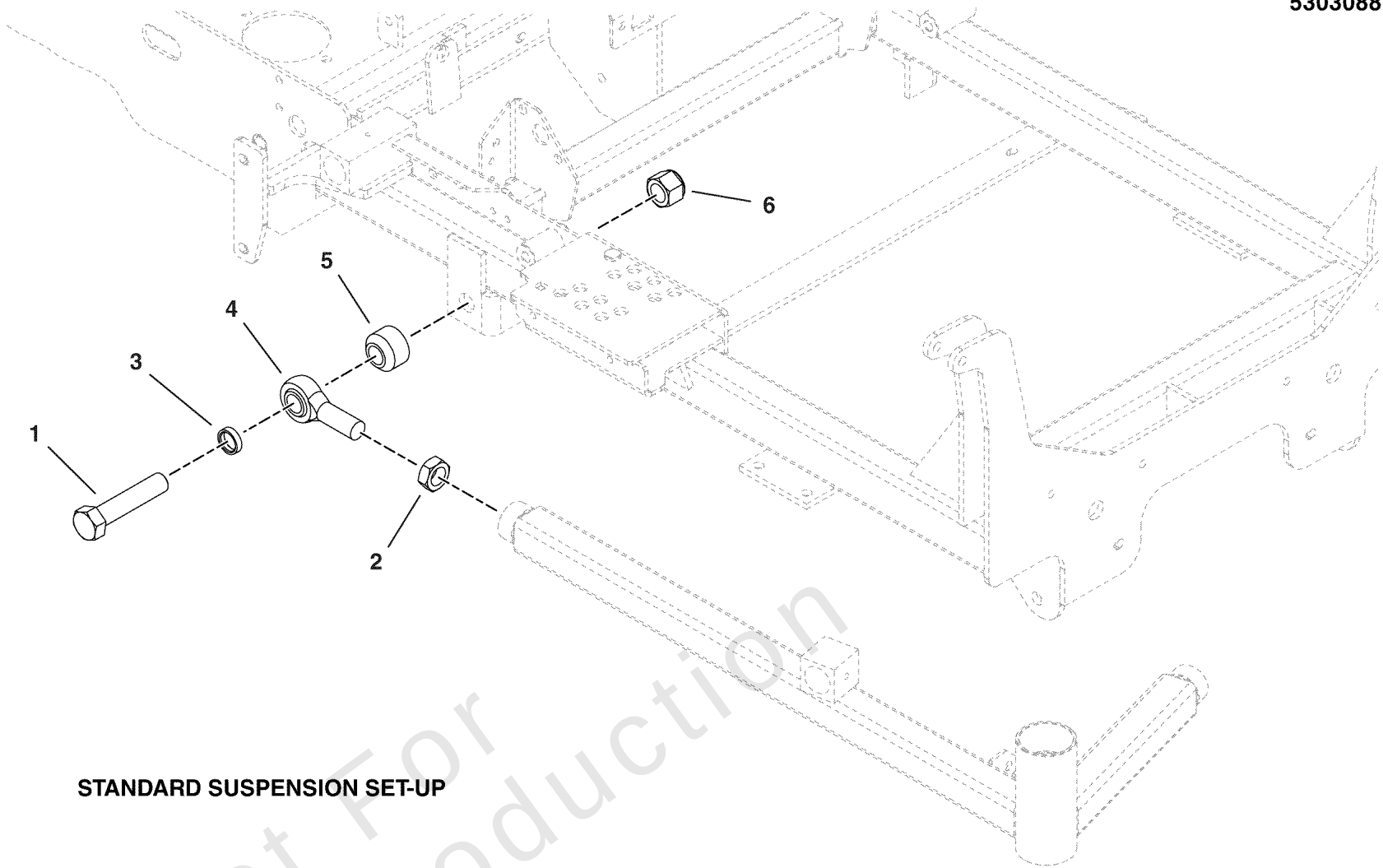
REF NO	PART NO	QTY	DESCRIPTION
1	5414426A	1	WELD, STUB SHAFT, HOPPER - BLK
2	5414424A	1	WELD, HANDLE, DUMP - BLK
3	5414387A	1	WELD, HANDLE MOUNT, HOPPER - BLK
4	5414383A	1	PLATE, PIVOT, HOPPER - BLK
5	5414382A	1	BRACE, PIVOT, HOPPER - BLK
6	5414381A	1	PLATE, HINGE, LOWER - BLK
7	5025214X9	2	PIN, CLEVIS, 3/8 X 1-1/8, PLATED
8	80002736	2	PIN, 3/32 X .750, COT, ZINC/CLEAR
9	5025013X22	1	BOLT, 3/8-16 X 2-3/4" GD5 CZ
10	5025011X8	3	BOLT, 5/16-18 X 1 GD5 CZ
11	5025011X22	1	BOLT, 5/16-18 X 2-3/4 GD5 CZ
12	5025011X14	1	BOLT, 5/16-18 X 1-3/4 GD5 CZ
13	5025011X10	3	BOLT, 5/16-18 X 1-1/4 GD5 CZ
14	5025010X6	3	BOLT, 1/4-20 X 3/4 GD5 CZ
15	80003675	1	NUT, 5/16-18, HEX, CNTR LK,ZINC PHOS/OIL
16	5104828	1	BLOCK, PIVOT, HANDLE, CZ
17	5104579	2	BALL JOINT 5/16-24 LH FEMALE STAMPED STL
18	5104578	1	BALL JOINT 5/16-24 RH FEMALE STAMPED STL
19	5103674	1	ROD, 5/16 X 7.00, LH-RH, CZ -(12 cu. Ft. Hoppers Only)
20	1657242	1	SPACER-0.390ID 0.625OD 1.85 LG HARDENED
21	5102630	1	ROD, GATE PULL, HOPPER
22	5102064	1	ROD, 5/16 X 10.25, CZ -(14 cu. Ft. Hoppers Only)
23	1666697	1	SPACER-0.328ID 0.497OD 0.218LG PM
24	5046420	1	ROD, HYDRO LINKAGE, CZ
25	5044617	2	WASHER, .34 X 1.25 X 10 GA
26	5025627	1	BOLT, 5/16-18, 3/8 X 1-1/4 SHOULDER
27	5025394	2	NUT, 3/8-16 HEX NYLOCK FLANGE
28	5025392	5	NUT, 5/16-18 HEX NYLOCK FLANGE
29	5025391	3	NUT, 1/4-20 HEX NYLOCK FLANGE
30	5025356	1	BOLT, 3/8-16 X 3/8, 1/2 SHOULDER
31	5025309	2	NUT, 3/8-24 HEX JAM
32	5025158	1	WASHER, 1/2 SAE
33	5025156	3	WASHER, 3/8 SAE
34	5025155	7	WASHER, 5/16" SAE
35	5025154	3	WASHER, 1/4 SAE
36	5025057	3	NUT, 5/16-18 HEX NYLON LOCK
37	5025033	2	NUT, 5/16-24 HEX
38	5023212	2	NUT, 5/16-24 HEX, LH
39	5104659	1	GRIP, FOAM, .940" X 4.62" X .187"
40	5021637	1	GREASE FITTING, PRESS, SHORT
41	5101800YP	2	CLEVIS, 3/8-24 RH
42	5020980FS	1	CLEVIS -(Includes clevis pin and cotter pin)
43	5020095	1	GREASE FITTING, 1/4-28 STRAIGHT
44	1676148	2	BUSHING-0.628IDX0.751ODX0.400LG PWDR MTL

Front Suspension Adjustment

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Mfg. No: 5600906

5303088



Front Suspension Adjustment

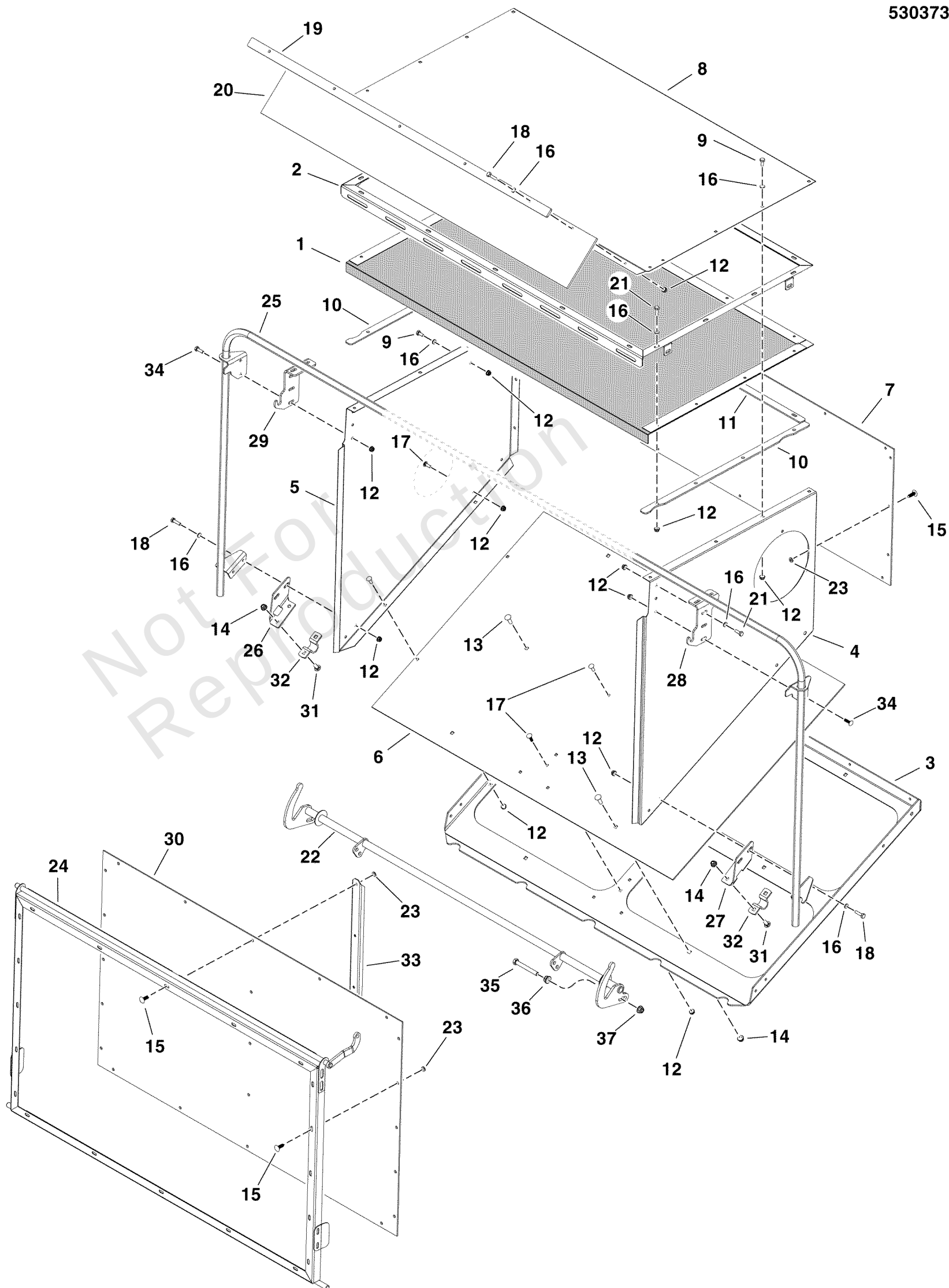
REF NO	PART NO	QTY	DESCRIPTION
1	5025265X28	0	BOLT, 3/4-16 X 3-1/2" YZ GD5
2	5025093	0	NUT, Hex, Jam, 3/4-16
3	5047461	1	SPACER, .76 x 1.00 x .25
4	5022039	0	BALL JOINT, 3/4-16, MALE
5	5046093	0	SPACER, .75 X 1.50 X 1.00, CZ
6	5025284	0	NUT, Hex, Nylon Lock, 3/4-16
7	5025265X20M	1	HEX BOLT, MODIFIED, 3/4-16 X 2.5 GD5, CZ
8	1960114	1	WASHER-0.750(0.76IDX1.06ODX.07THK) BLK

Hopper Group - 12 cu. ft.

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Mfg. No: 5600906

5303731



Hopper Group - 12 cu. ft.

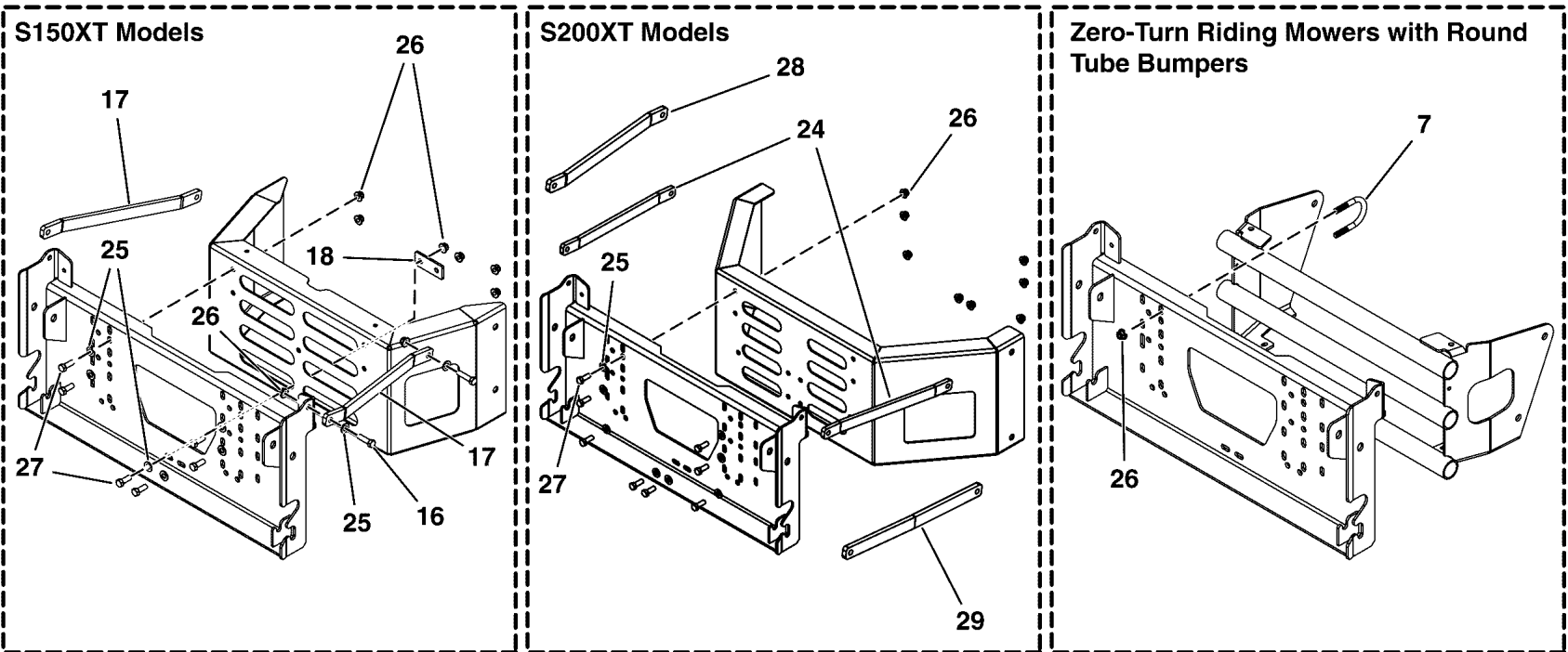
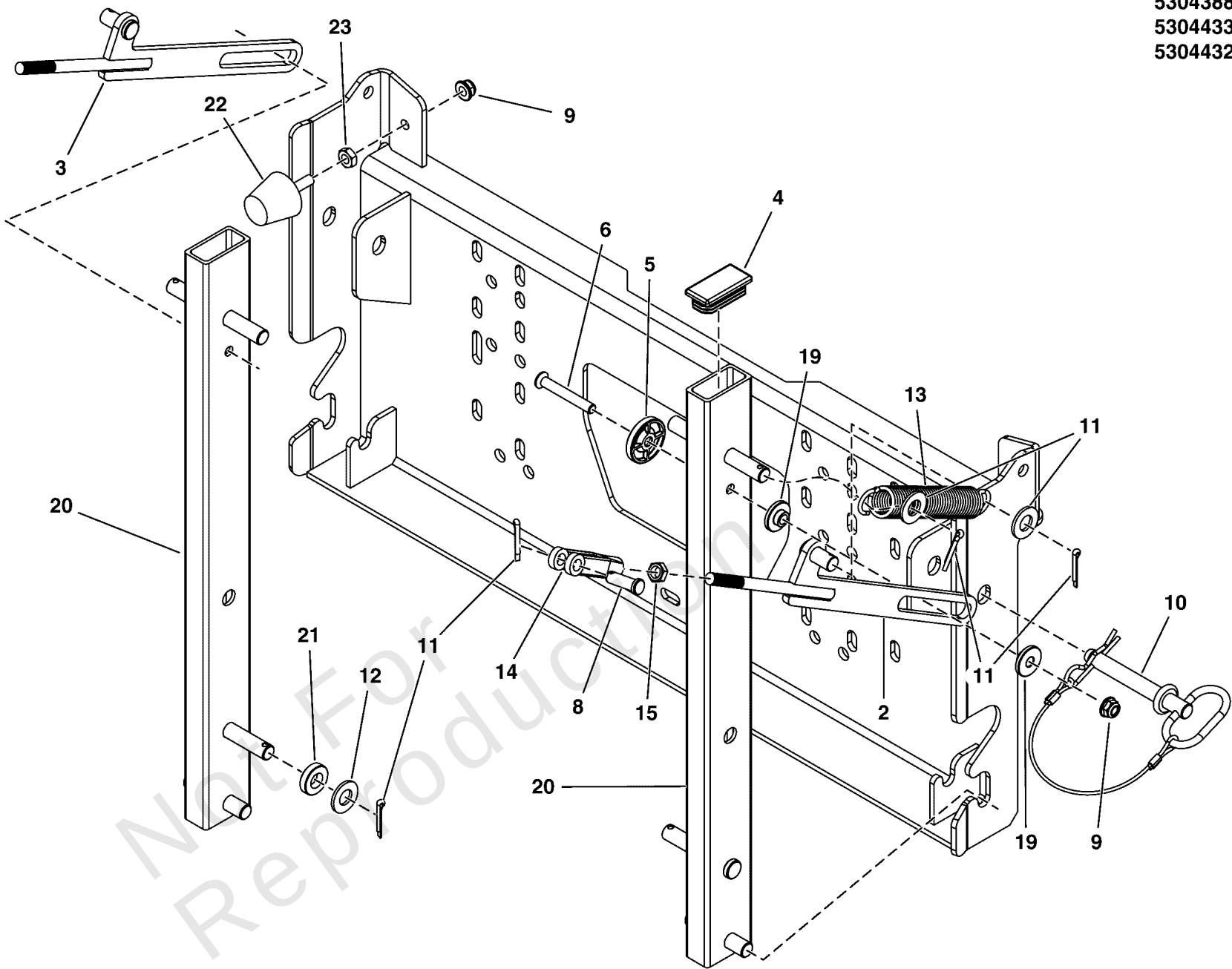
REF NO	PART NO	QTY	DESCRIPTION
1	5104226	1	SCREEN, ASM, 12FT HOPPER
2	5412114A	1	WELD, SCREEN FRAME, 12FT HOPPER - BLK
3	5412115A	1	WELD, SUBFRAME, 12FT HOPPER - BLK
4	5406321A	1	PANEL, RIGHT, 14FT HOPPER - BLK
5	5406320A	1	PANEL, LEFT, 14FT HOPPER
6	5412112	1	PANEL, BOTTOM, 12FT HOPPER
7	5412113	1	PANEL, FRONT, 12FT HOPPER
8	5412102A	1	PANEL, TOP, 12FT HOPPER - BLK
9	-----	6	HHCS, 1/4-20 X 0.625, GR5, ZINC/CLEAR
10	5412105A	2	STRIP, SHORT CLAMP, 12FT HOPPER - BLK
11	5412106A	1	STRIP, LONG CLAMP, 12FT SCREEN - BLK
12	5025391	49	NUT, 1/4-20 Hex Nylock Flange
13	5025145X8	6	BOLT, 5/16-18 X 1, CARRIAGE, GD5, CZ
14	5025392	10	NUT, 5/16-18 HEX NYLOCK FLANGE NUT
15	5025431	39	PUSH RIVET (TREE TYPE), BLACK
16	5025154	37	WASHER, 1/4 SAE
17	80003518	8	BOLT,1/4-20X0.750,GR5,STD NECK,SQ,ZC/CL
18	5025010X8	9	BOLT, 1/4-20 X 1" GD5 CZ
19	5412119A	1	BAR, DEFLECTOR, 12FT HOPPER - BLK
20	5104200	1	DEFLECTOR, RUBBER, 12FT HOPPER
21	5025010X6	22	BOLT, 1/4"-20 X 3/4" GD5 YZ
22	5412117A	1	WELD, LATCH ASSY, 12FT HOPPER - BLK
23	5025607	39	WASHER, #12 SAE FLAT, .25X.531X.051, CZ
24	5412118A	1	WELD, GATE FRAME, 12FT HOPPER - BLK
25	5412116A	1	WELD, ARCH ASSEMBLY, 12FT HOPPER - BLK
26	5406463A	1	BRACKET, GATE LATCH, LEFT - BLK
27	5406464A	1	BRACKET, GATE LATCH, RIGHT - BLK
28	5405711A	1	PLATE, HINGE RIGHT, HOPPER - BLK
29	5405710A	1	PLATE, HINGE LEFT, HOPPER - BLK
30	5412111	1	PANEL, GATE, 12FT HOPPER
31	5025145X6	4	BOLT, 5/16-18 X 3/4, CARRIAGE, GD5, CZ
32	1761690HYP	2	STRAP, ROCKER SHAFT
33	5406760A	1	BRACKET, RIB, HOPPER - BLK
34	7090496YP	4	RHSSNB, 1/4C X1 GR5 Z
35	5025013X24	2	BOLT, 3/8-16 X 3" GD5 CZ
36	5025128	2	NUT, 3/8-16 Hex Large Serrated Flange
37	5025394	2	NUT, 3/8 - 16 HEX NYLOCK FLANGE

Hopper Mount Group - 12 cu. Ft. & 14 cu. Ft. Hoppers

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 5600906

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5304433
5304432



Hopper Mount Group - 12 cu. Ft. & 14 cu. Ft. Hoppers

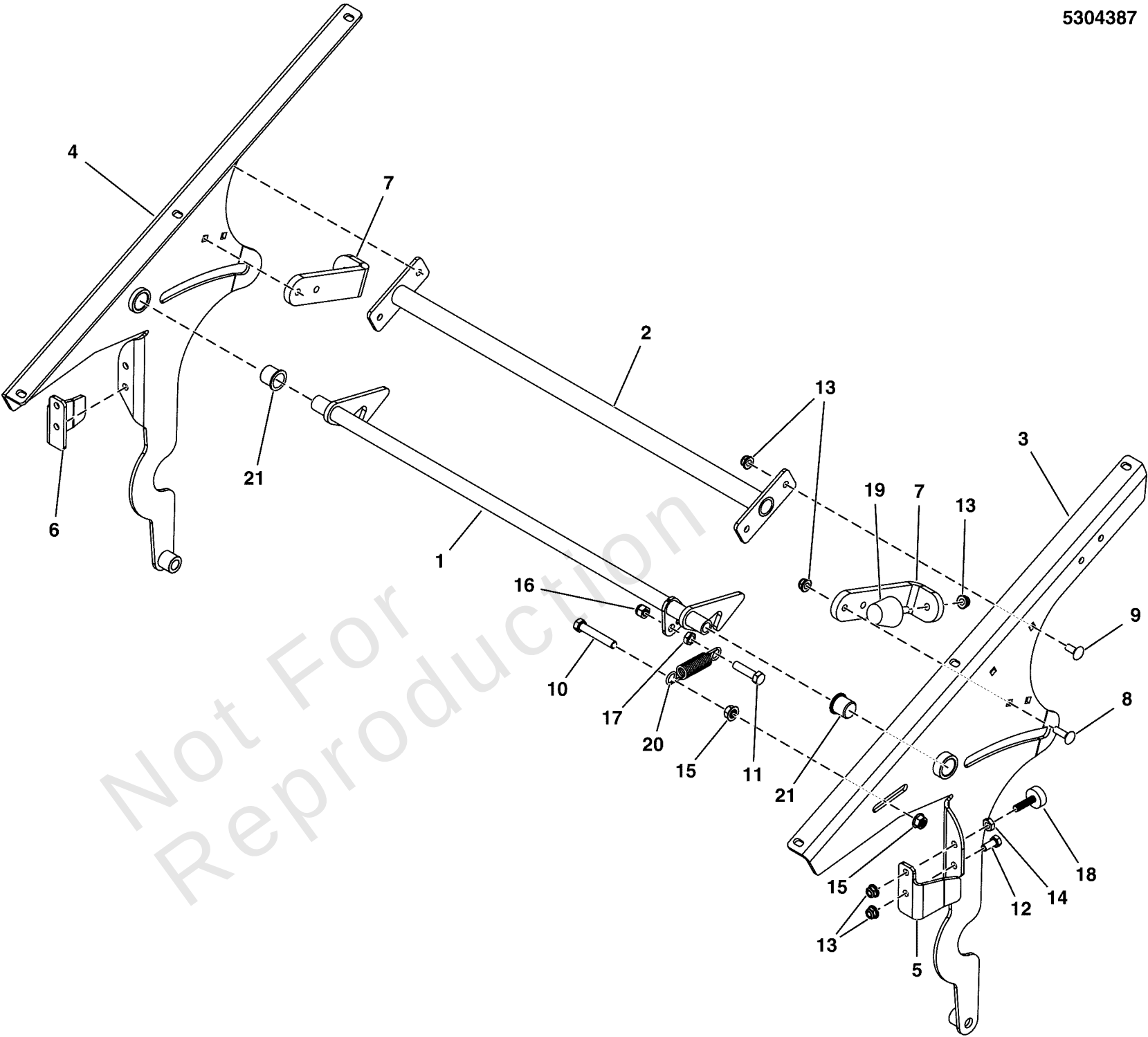
REF NO	PART NO	QTY	DESCRIPTION
1	5414452A	1	WELD, HOPPER MOUNT, ZTR - BLK
2	5414565A	1	WELD, RIGHT LATCH PULL, ZTR - BLK
3	5414566A	1	WELD, LEFT LATCH PULL, ZTR - BLK
4	5102392	2	PLUG, 1 X 2, 10-14 GA. TUBING
5	5102701	2	SPACER, .34 X 1.54 X .25, PL
6	5025303X18	2	SCREW, 5/16-18X2.25, FLAT HEAD SOC, CZ
7	5100009	4	U-BOLT, 3/8 X 1-1/4 -(Models w/ Round Tube Bumpers Only)
8	5025214X9	2	PIN, CLEVIS, 3/8 X 1-1/8, PLATED
9	5025392	4	NUT, 5/16-18 HEX NYLOCK FLANGE
10	5100013	2	PIN, HITCH, .50 X 3.25 W/ LAY
11	80002736	8	PIN, 3/32 X .750, COT, ZINC/CLEAR
12	5025158	8	WASHER, 1/2 SAE
13	1715435	2	SPRING, EXTENSION, 1.00
14	5101800YP	2	CLEVIS, 3/8-24 RH
15	5025309	2	NUT, 3/8-24 HEX JAM
16	5025013X10	4	BOLT, 3/8-16 X 1-1/4" GD5 CZ
17	5414579A	2	BAR, STAY STRAP, S150XT-52 - BLK -(S150XT Models Only)
18	5414580A	1	PLATE, BACKER, 150XT - BLK -(S150XT Models Only)
19	1723244	4	SPACER, HYDRAULIC LIFT PIVOT
20	5414454A	2	WELD, SUPPORT TUBE, HOPPER - BLK
21	5101376	2	SPACER, .52 X 1.00 X .25, CZ
22	5022612	2	BUMPER, RUBBER 5/16-18
23	5025388	2	NUT, 5/16-18 HEX JAM
24	5414581A	2	BAR, STAY STRAP, S200XT-61 - BLK -(S200XT Models w/ 14 cu. Ft. Hopper Only)
25	5025156	12	WASHER, 3/8 SAE
26	5025394	18	NUT, 3/8-16 HEX NYLOCK FLANGE
27	5025013X8	8	BOLT, 3/8-16 X 1" GD5 CZ
28	5414582A	1	BAR, LEFT STAY STRAP, S200XT, 12FT - BLK -(S200XT Models w/ 12 cu. Ft. Hopper Only)
29	5414583A	1	BAR, RIGHT STAY STRAP, S200XT, 12FT, BLK -(S200XT Models w/ 12 cu. Ft. Hopper Only)

Hopper Support Group

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5304387



Hopper Support Group

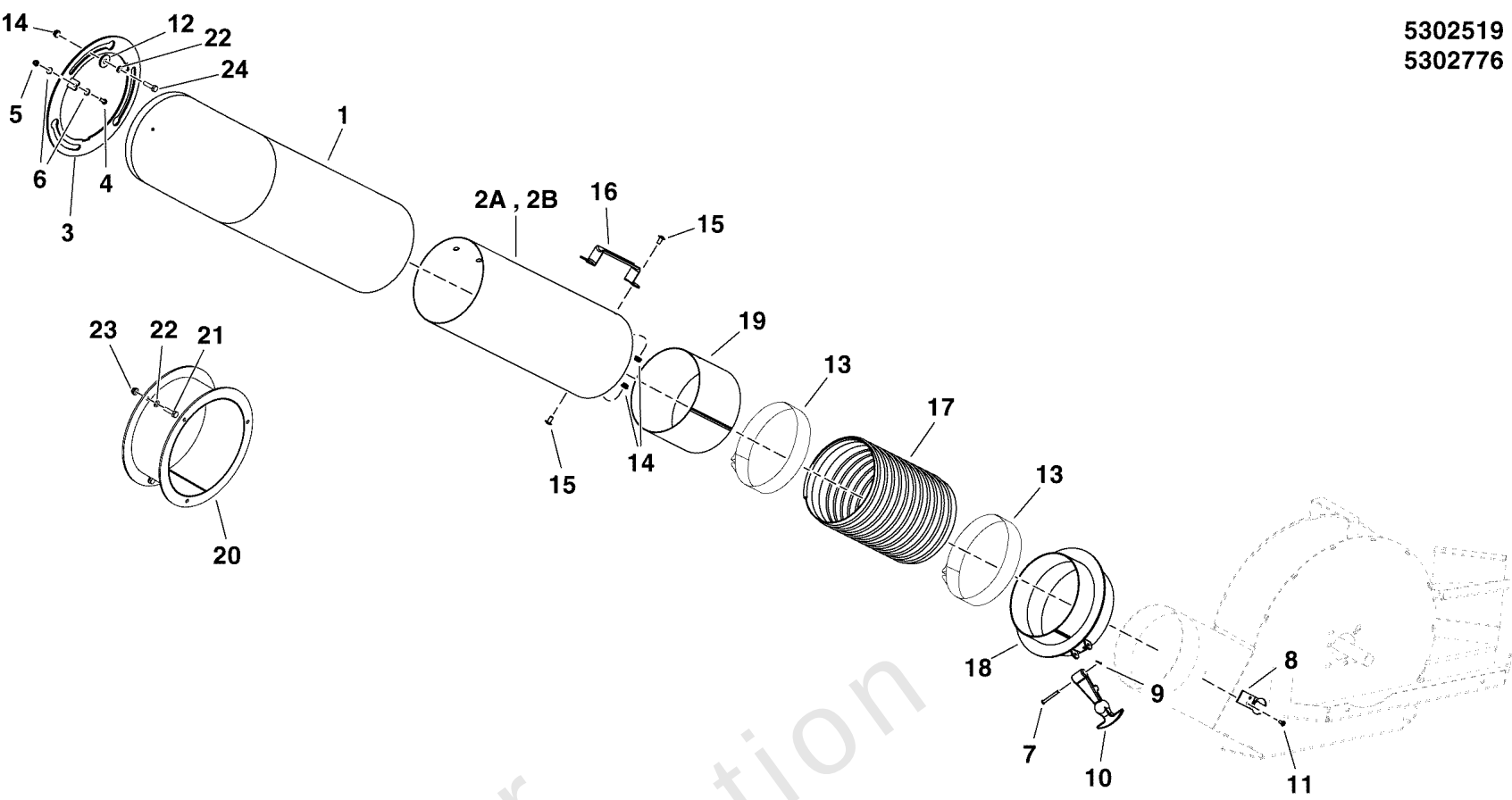
REF NO	PART NO	QTY	DESCRIPTION
1	5414572A	1	WELD, LATCH ASSY, CENTER - BLK
2	5414570A	1	WELD, CROSS MEMBER - BLK
3	5414448A	1	WELD, RIGHT SUPPORT, HOPPER - BLK
4	5414447A	1	WELD, LEFT SUPPORT, HOPPER - BLK
5	5414357A	1	BRACKET, RIGHT KEEPER - BLK
6	5414356A	1	BRACKET, LEFT KEEPER - BLK
7	5407170A	2	BAR, STOP, HOPPER - BLK
8	5025145X8	4	BOLT, 5/16-18 X 1, CARRIAGE
9	5025145X6	4	BOLT, 5/16-18 X 3/4, CARRIAGE
10	5025013X18	1	BOLT, 3/8-16 X 2-1/4" GD5 CZ
11	5025013X12	1	BOLT, 3/8-16 X 1-1/2" GD5 CZ
12	5025011X6	2	BOLT, 5/16-18 X 3/4 GD5
13	5025392	14	NUT, 5/16-18 HEX NYLOCK FLANGE
14	5025388	2	NUT, 5/16-18 HEX JAM
15	5025128	2	NUT, 3/8-16 HEX SERRATED FLANGE
16	5025096	1	NUT, 3/8-16 HEX NYLON LOCK
17	5025084	1	NUT, 3/8-16 HEX JAM
18	5022807	2	BUMPER, RUBBER, 5/16-18
19	5022612	2	BUMPER, RUBBER 5/16-18
20	5021242	1	SPRING, EXTENSION
21	2176440	2	BUSHING-0.765ID 0.885OD 0.877LG NYLON

Tube Assembly

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Mfg. No: 5600906

5302519
5302776



Tube Assembly

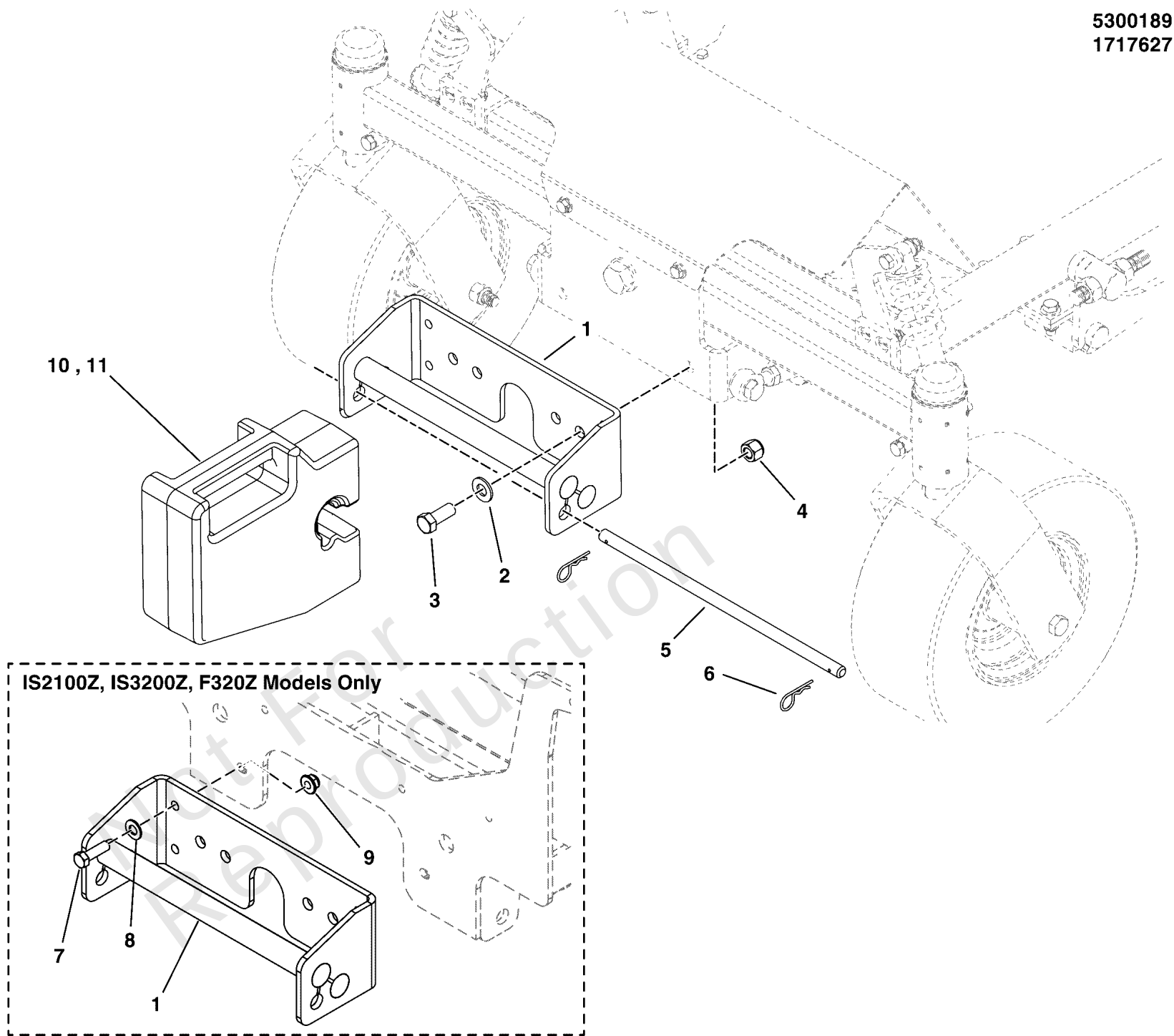
REF NO	PART NO	QTY	DESCRIPTION
1	5407079	1	ELBOW, ABS PLASTIC, HOPPER
2A	5102388	1	TUBE, IS3100Z, FAST-VAC -(ZTR Models)
2B	5102387	1	TUBE, S800X, FAST-VAC -(Outfront Models)
3	5406308A	1	WELD, FLANGE ASSY - BLK
4	5025179X6	3	SCREW, #10-24 X 3/4 ROUND PHILLIPS
5	5025271	3	NUT, #10-24 HEX NYLON LOCK
6	1910531SM	6	WASHER, Rivet, 3/16
7	5020841X4	2	PIN, CLEVIS
8	5020841X2	2	LATCH, RUBBER, KEEPER
9	5020841X5	2	PIN, COTTER
10	5020841X1	2	LATCH, RUBBER
11	1675044	4	RIVET-POP.188 .429L AL,AL STEM.37HD DIA
12	5109477	3	SPACER, STEP, HOPPER
13	5022875	2	CLAMP, HOSE, UPPER
14	5025391	6	NUT, 1/4-20 HEX NYLOCK FLANGE
15	5025299X4	3	SCREW, 1/4-20 X 1/2 ALLEN BH
16	720533CK	1	HANDLE CONNECT TUBE, BLACK TEXTURED
17	5102391	1	HOSE, FLEXIBLE, FAST-VAC
18	5407219A	1	WELD, HOSE ATTACHMENT - BLK
19	5406305A	1	WELD, THIMBLE, BAGGER - BLK
20	5412387A	1	WELD, ELBOW EXTENSION, HOPPERS - BLK
21	5025010X8	3	BOLT, 1/4-20 X 1" GD5 CZ
22	5025154	6	WASHER, 1/4 SAE
23	5025391	3	NUT, 1/4-20 HEX NYLOCK FLANGE
24	5025010X6	3	BOLT, 1/4"-20 X 3/4" GD5 YZ

Weight Mount Group

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Mfg. No: 5600906

5300189
1717627



Weight Mount Group

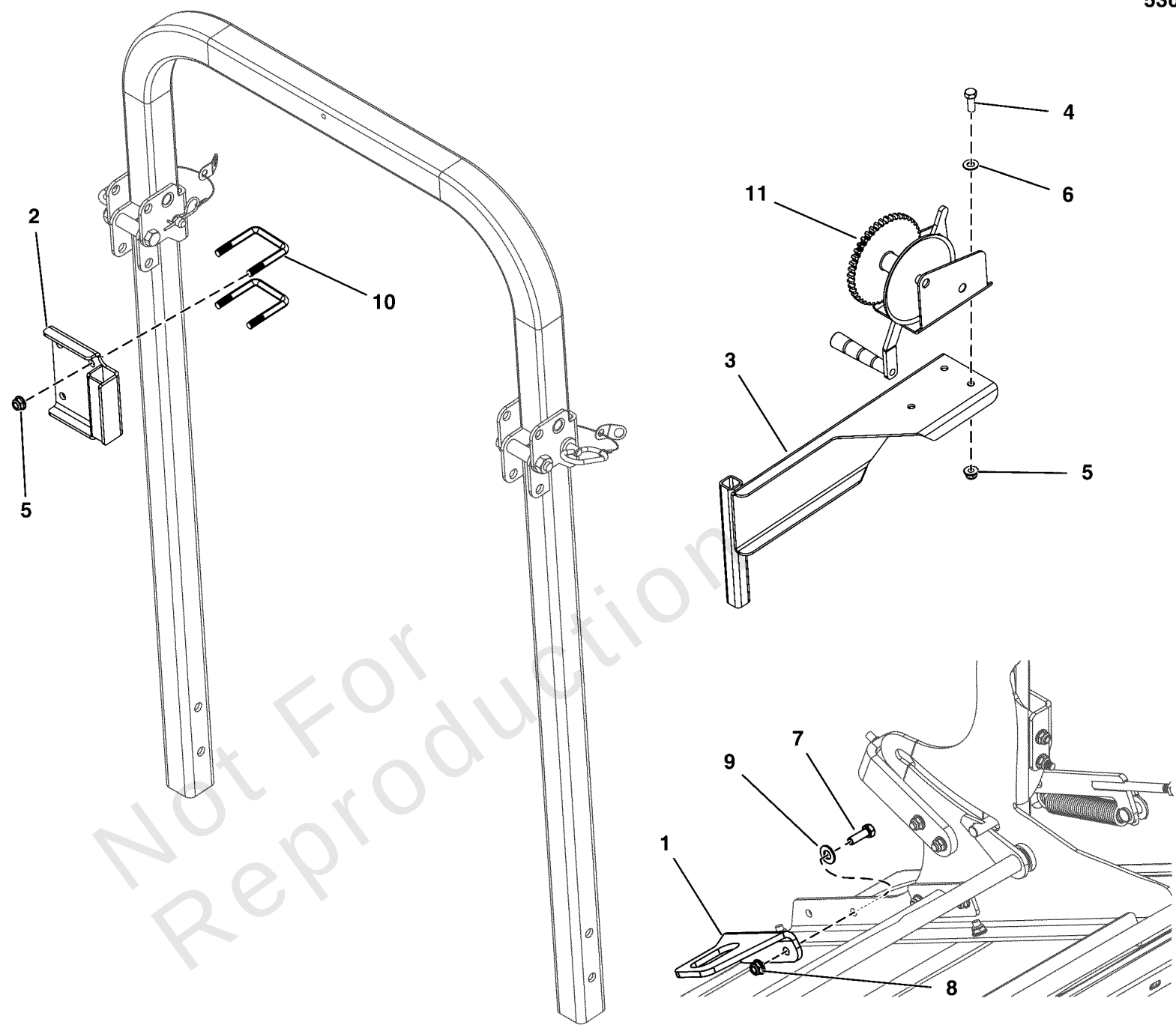
REF NO	PART NO	QTY	DESCRIPTION
1	5049082A	1	HOLDER ASMY-WEIGHT CONS Z CAT - BLACK
2	5025158	2	WASHER, 1/2 SAE
3	5025018X10	2	BOLT, 1/2-20 X 1-1/4" GD8 CZ
4	5025098	2	NUT, Hex, Nylon Lock, 1/2-20
5	5049143	1	ROD, .500DIA 13.75LG CZ
6	5025210	2	PIN, HAIR, .0915 X 1-7/8
7	5025013X10	2	BOLT, 3/8-16 X 1-1/4" GD5 CZ
8	5025156	2	WASHER, 3/8 SAE
9	5025394	2	NUT, 3/8-16 HEX NYLOCK FLANGE
10	1717627	2	WEIGHT-QUICK ATTACH 50LB SUITCASE PAINTED -(All Other Models)
11	1717627	3	WEIGHT-QUICK ATTACH 50LB SUITCASE PAINTED -(S200XT Models with 14 cu. ft. Hopper)

Winch and Mount Group

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 5600906

5304535



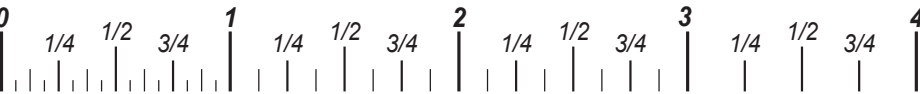
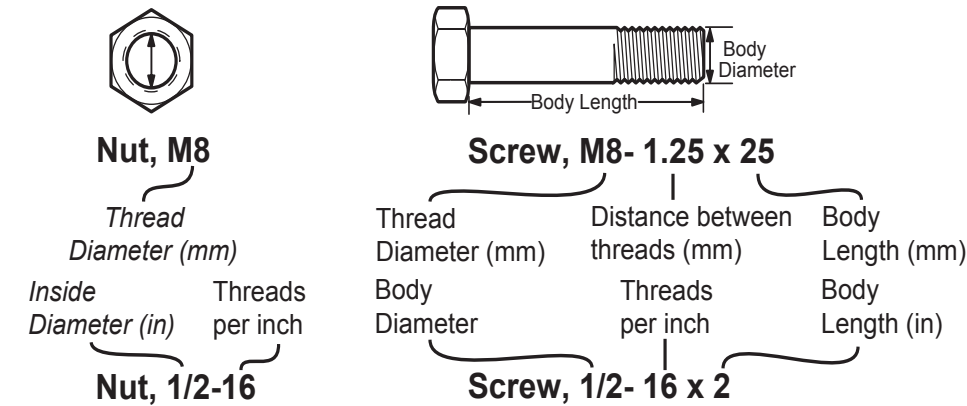
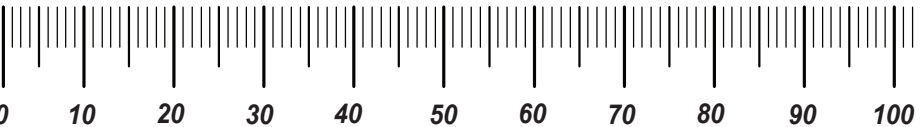
Winch and Mount Group

REF NO	PART NO	QTY	DESCRIPTION
1	5414664A	1	BRACKET, ANCHOR, WINCH - BLK
2	5414800A	1	WELD, QUICK MOUNT, WINCH - BLK
3	5414894A	1	WELD, ASSY, WINCH BASE - BLK
4	5025013X8	3	BOLT, 3/8-16 X 1" GD5 CZ
5	5025394	7	NUT, 3/8-16 HEX NYLOCK FLANGE
6	5025156	3	WASHER, 3/8 SAE
7	5025011X8	2	BOLT, 5/16-18 X 1 GD5 CZ
8	5025392	2	NUT, 5/16-18 HEX NYLOCK FLANGE
9	5025155	2	WASHER, 5/16" SAE
10	5025630	2	U-BOLT, SQR, 3/8 X 2 X 2-5/8, CZ
11	5600908	1	KIT, HOPPER WINCH, ZTR

Hardware Identification & Torque Specifications

Torque Specification Chart								
FOR STANDARD METRIC MACHINE HARDWARE (Tolerance ± 20%)								
Property Class	 Class 5.6		 Class 8.8		 Class 10.9		 Class 12.9	
Size Of Hardware	in/lbs ft/lbs	Nm.	in/lbs ft/lbs	Nm.	in/lbs ft/lbs	Nm.	in/lbs ft/lbs	Nm.
M3	5.88	.56	13.44	1.28	19.2	1.80	22.92	2.15
M4	13.44	1.28	30.72	2.90	43.44	4.10	52.56	4.95
M5	26.4	2.50	60.96	5.75	5.97	8.10	7.15	9.7
M6	44.64	4.3	7.3	9.9	10.3	14	12.1	16.5
M7	5.2	7.1	12.1	16.5	16.9	23	19.9	27
M8	7.7	10.5	17.7	24	25	34	29	40
M10	15	21	35	48	50	67	59	81
M12	26	36	61	83	86.2	117	103	140
M14	42	58	101	132	136	185	162	220
M16	64	88	147	200	210	285	250	340
M18	89	121	202	275	287	390	346	470
M20	126	171	290	390	405	550	486	660
M22	169	230	390	530	559	745	656	890
M24	217	295	497	375	708	960	840	1140
M27	320	435	733	995	1032	1400	1239	1680
M30	435	590	995	1350	1401	1900	1681	2280
M33	590	800	1349	1830	1902	2580	2278	3090
M36	759	1030	1740	2360	2441	3310	2935	3980
M39	988	1340	2249	3050	3163	4290	3798	5150

The guides and ruler furnished below are designed to help you select the appropriate hardware.



Standard Hardware Sizing

When a washer or nut is identified as 1/2" (M8), this is the *Nominal size*, meaning the *inside diameter* is 1/2 inch (8mm metric thread diameter); if a second number is present it represents the *threads per inch* (distance between threads).

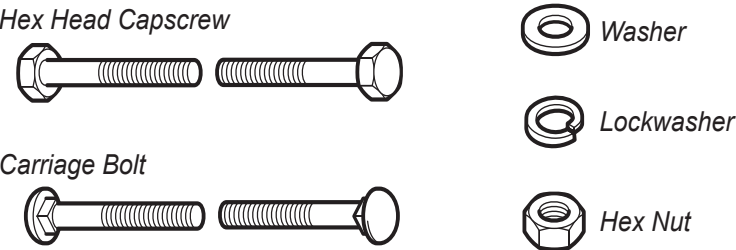
When bolt or capscrew is identified as 1/2 - 16 x 2" (M8 - 1.25 x 50), this means the *Nominal size*, or body diameter is 1/2 inch (8mm metric thread diameter), the second number, 16, represents the *threads per inch*, (*distance between threads*). The final number is the body length of the bolt or screw, 2 inches (50mm).

Torque Specification Chart						
FOR STANDARD MACHINE HARDWARE (Tolerance ± 20%)						
Hardware Grade	 SAE Grade 2		 SAE Grade 5		 SAE Grade 8	
Size Of Hardware	in/lbs ft/lbs	Nm.	in/lbs ft/lbs	Nm.	in/lbs ft/lbs	Nm.
8-32	19	2.1	30	3.4	41	4.6
8-36	20	2.3	31	3.5	43	4.9
10-24	27	3.1	43	4.9	60	6.8
10-32	31	3.5	49	5.5	68	7.7
1/4-20	66	7.6	8	10.9	12	16.3
1/4-28	76	8.6	10	13.6	14	19.0
5/16-18	11	15.0	17	23.1	25	34.0
5/16-24	12	16.3	19	25.8	29	34.0
3/8-16	20	27.2	30	40.8	45	61.2
3/8-24	23	31.3	35	47.6	50	68.0
7/16-14	30	40.8	50	68.0	70	95.2
7/16-20	35	47.6	55	74.8	80	108.8
1/2-13	50	68.0	75	102.0	110	149.6
1/2-20	55	74.8	90	122.4	120	163.2
9/16-12	65	88.4	110	149.6	150	204.0
9/16-18	75	102.0	120	163.2	170	231.2
5/8-11	90	122.4	150	204.0	220	299.2
5/8-18	100	136	180	244.8	240	326.4
3/4-10	160	217.6	260	353.6	386	525.0
3/4-16	180	244.8	300	408.0	420	571.2
7/8-9	140	190.4	400	544.0	600	816.0
7/8-14	155	210.8	440	598.4	660	897.6
1-8	220	299.2	580	788.8	900	1,244.0
1-12	240	326.4	640	870.4	1,000	1,360.0

NOTES

- These torque values are to be used for all hardware excluding: locknuts, self-tapping screws, thread forming screws, sheet metal screws and socket head setscrews.
- Recommended seating torque values for locknuts:
 - for prevailing torque locknuts - use 65% of grade 5 torques.
 - for flange whizlock nuts and screws - use 135% of grade 5 torques.
- Unless otherwise noted on assembly drawings, all torque values must meet this specification.

Common Hardware Types



Wrench & Fastener Size Guide

 1/4" Bolt or Nut Wrench—7/16"	 5/16" Bolt or Nut Wrench—1/2"	 3/8" Bolt or Nut Wrench—9/16"	 7/16" Bolt or Nut Wrench (Bolt)—5/8" Wrench (Nut)—11/16"	 1/2" Bolt or Nut Wrench—3/4"
M6 Bolt or Nut Wrench—10mm	M8 Bolt or Nut Wrench—13mm	M10 Bolt or Nut Wrench—17mm	M12 Bolt or Nut Wrench—19mm	M14 Bolt or Nut Wrench—22mm

