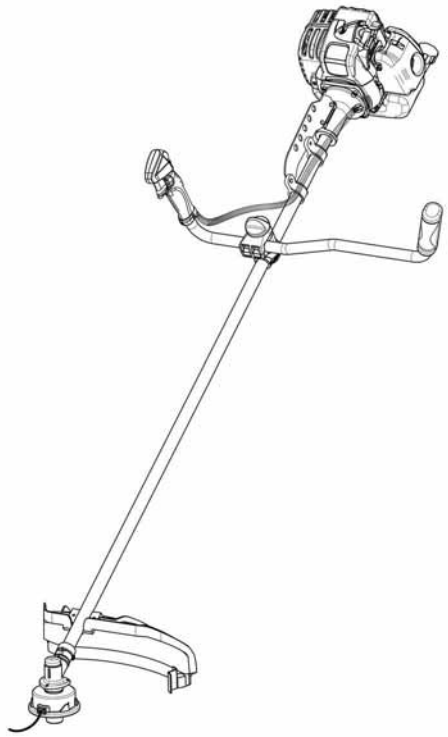
PARTS MANUAL



Models

Mfg. No.	Description
866015	MX33X, Murray Brush Cutter (2010)
866019	MX43X, Murray Brush Cutter (2010)

Manual Part No. 1751789
Revision B
Rev. Date: 7/27/2012

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PRODUCT COMPONENTS **PAGES**

Engine Group - MX33X 4
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Shaft Group 16
Torque Specification Chart ..... Inside Back Cover

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Engine Group - MX33X

NOTE: Unless noted otherwise, use the standard hardware torque specification chart.

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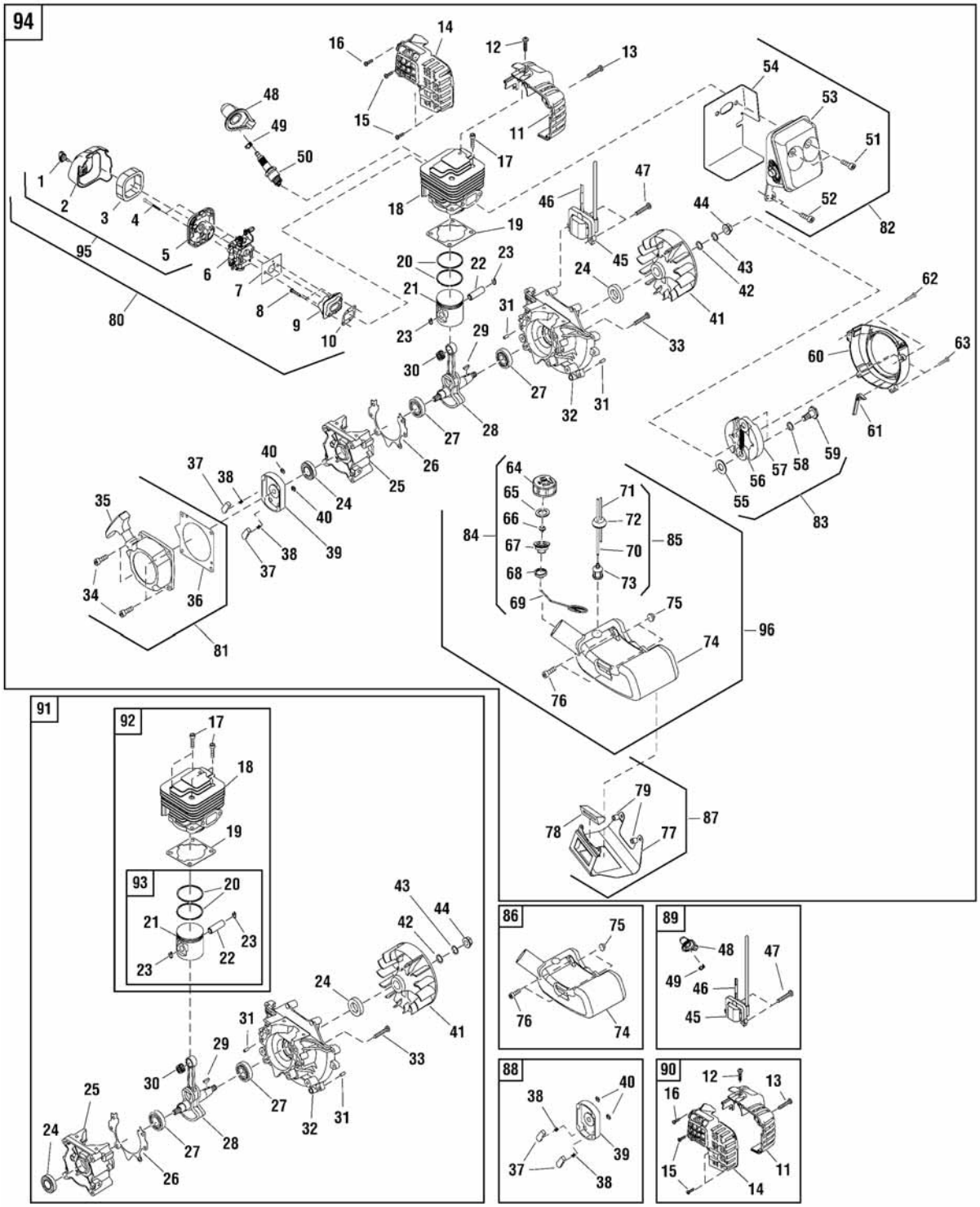

The above parts group applies to the following Mfg. Nos.:

866015 - MX33X

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Engine Group - MX33X

REF NO	PART NO.	QTY.	DESCRIPTION
1	700804	1	SCREW
2	700805	1	COVER, Cleaner, Outer
3	700317	1	FILTER
4	-----	2	BOLT, M5 x 55 (Not a serviceable part. Order Kit Ref. No. 80)
5	702081	1	COVER, Cleaner, Inner
6	700808	1	CARBURETOR
7	700327	1	GASKET, Carburetor
8	-----	2	BOLT, M5 x 20 (Not a serviceable part. Order Kit Ref. No. 80)
9	701910	1	ADMITTING PIPE
10	700325	1	GASKET, Admitting Pipe
11	700811	1	SHROUD, Front
12	-----	1	BOLT, M5 x 16 (Not a serviceable part. Order Kit Ref. No. 90)
13	-----	1	BOLT, M5 x 12 (Not a serviceable part. Order Kit Ref. No. 90)
14	700812	1	SHROUD, Rear
15	700764	3	SCREW, Self Tapping, 5×20
16	700765	1	SCREW, Self Tapping, 4.2 × 30
17	700391	4	BOLT, M5 x 18
18	700814	1	CYLINDER
19	700334	1	GASKET, Cylinder
20	700338	2	RING, Piston
21	700339	1	PISTON
22	700337	1	PIN, Piston
23	700314	2	PIN RETAIN RING
24	700345	2	OIL SEAL, 11.7 × 22 × 7
25	700819	1	CRANK CASE, Rear
26	700347	1	GASKET, Crank Case
27	700346	2	BEARING, 6201/P6
28	700817	1	CRANK SHAFT ASSEMBLY
29	700341	1	KEY, 3 × 5 × 13
30	700816	1	NEEDLE BEARING
31	700386	2	PIN, Cylindrical, B4 × 10
32	700820	1	CRANK CASE, Front
33	-----	1	BOLT, M5 x 30 (Not a serviceable part. Order Kit Ref. No. 91)
34	-----	4	BOLT, M5 x 20 (Not a serviceable part. Order Kit Ref. No. 81)
35	700809	1	STARTER
36	700329	1	PAD, Starter
37	-----	2	STARTER CLINCH (Not a serviceable part. Order Kit Ref. No. 88)
38	-----	2	SPRING, Starter (Not a serviceable part. Order Kit Ref. No. 88)
39	-----	1	STARTER BOX (Not a serviceable part. Order Kit Ref. No. 88)
40	-----	2	RING, Retainer, 4 (Not a serviceable part. Order Kit Ref. No. 88)
41	701893	1	FLY WHEEL
42	700380	1	WASHER, Flat, 8
43	700379	1	WASHER, Spring, 8

Footnotes

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866015 - MX33X

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Engine Group - MX33X

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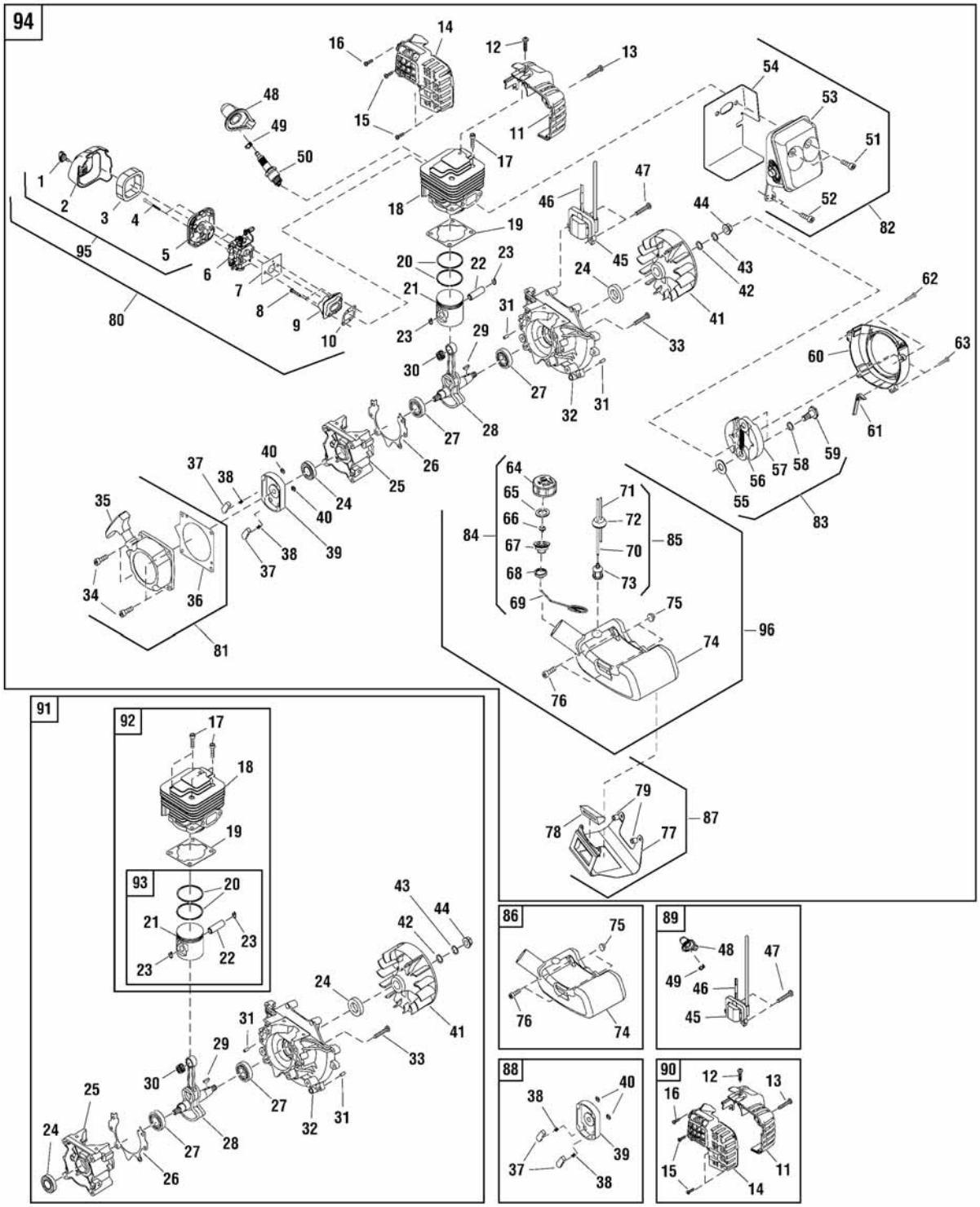

The above parts group applies to the following Mfg. Nos.:
866015 - MX33X

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1751789

Engine Group - MX33X

REF NO	PART NO.	QTY.	DESCRIPTION
44	700378	1	NUT, M8
45	700353	1	MAGNETO COIL
46	700827	1	CORD, Complete
47	-----	1	BOLT, M5 x 20 (Not a serviceable part. Order Kit Ref. No. 89)
48	700352	1	BOOT, Spark Plug
49	700351	1	CLIP, Spark Plug
50	700360	1	SPARK PLUG
51	-----	2	BOLT, M5 x 55-10.9 (Not a serviceable part. Order Kit Ref. No. 89)
52	-----	1	BOLT, M5 x 12 (Not a serviceable part. Order Kit Ref. No. 89)
53	700826	1	MUFFLER
54	700825	1	GASKET, Muffler
55	700383	1	WASHER, B
56	701897	1	SPRING, Clutch
57	700365	1	EXPANDER, Complete
58	700382	1	WASHER, Wave
59	700767	1	SCREW SHAFT?S=17?
60	700828	1	COVER, Fan
61	700362	1	FLASH PAN
62	-----	2	BOLT, M5 x 20 (Not a serviceable part. Order Kit Ref. No. 91)
63	-----	2	BOLT, M5 x 30 (Not a serviceable part. Order Kit Ref. No. 91)
64	-----	1	LID, Fuel Tank (Not a serviceable part. Order Kit Ref. No. 84)
65	-----	1	GASKET (Not a serviceable part. Order Kit Ref. No. 84)
66	-----	1	INLET (Not a serviceable part. Order Kit Ref. No. 84)
67	-----	1	LID, Inner, Fuel Tank (Not a serviceable part. Order Kit Ref. No. 84)
68	-----	1	COVER, End (Not a serviceable part. Order Kit Ref. No. 84)
69	-----	1	CHAIN (Not a serviceable part. Order Kit Ref. No. 84)
70	-----	1	PIPE, Fuel (Not a serviceable part. Order Kit Ref. No. 85)
71	-----	1	PIPE, Soft PVC (Not a serviceable part. Order Kit Ref. No. 85)
72	-----	1	PLUG, Fuel Line (Not a serviceable part. Order Kit Ref. No. 85)
73	701666	1	FILTER, Fuel
74	700831	1	FUEL TANK
75	700388	2	PLUG, Rubber
76	-----	2	BOLT, M5 x 16 (Not a serviceable part. Order Kit Ref. No. 86)
77	700370	1	BRACKET, Tank
78	700390	1	COVER, Rubber
79	700389	2	PAD, Bracket
80	702080	1	KIT, Air Cleaner & Carburetor (Includes Ref. Nos. 1, 2, 3, 4, 5, 6, 7, 8 ,9 & 10)
81	701912	1	KIT, Starter Assembly (Includes Ref. Nos. 34, 35 & 36)
82	701913	1	KIT, Muffler Assembly (Includes Ref. Nos. 51, 52, 53 & 54)
83	701916	1	KIT, Expander Assembly (Includes Ref. Nos. 55, 56, 57, 58 & 59)
84	701467	1	LID, Fuel Tank, Complete (Includes Ref. Nos. 64, 65, 66, 67, 68 & 69)
85	701915	1	KIT, Fuel Line Assembly (Includes Ref. Nos. 70, 71, 72 & 73)
86	701917	1	KIT, Fuel Tank (Includes Ref. Nos. 74, 75 & 76)

Footnotes

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Engine Group - MX33X

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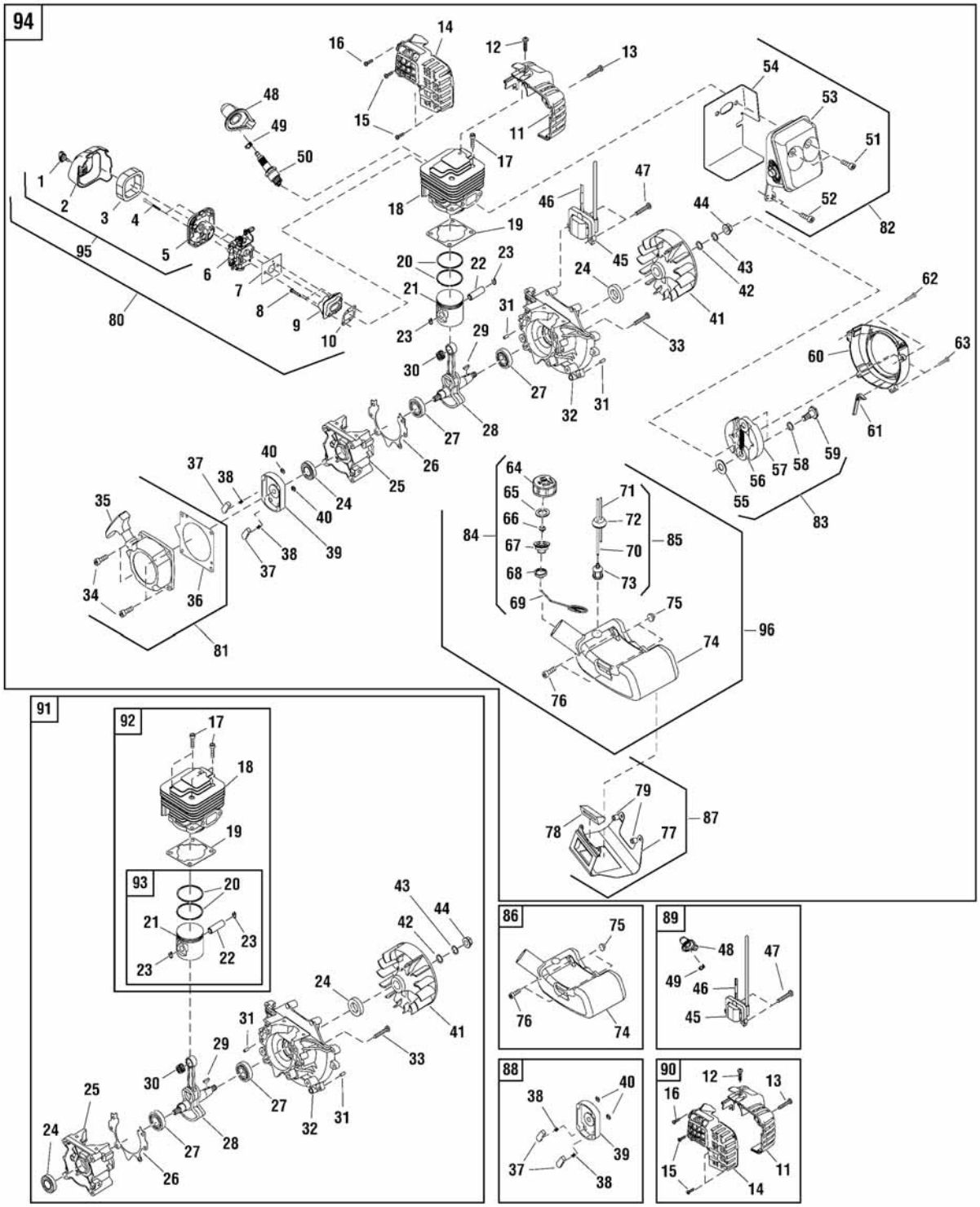

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Engine Group - MX33X

REF NO	PART NO.	QTY.	DESCRIPTION
87	701918	1	KIT, Tank Bracket Assembly (Includes Ref. Nos. 77, 78 & 79)
88	700330	1	START REEL, Complete (Includes Ref. Nos. 37, 38, 39 & 40)
89	701919	1	KIT, Magneto Assembly (Includes Ref. Nos. 45, 46, 47, 48 & 49)
90	702104	1	KIT, Shroud Assembly (Includes Ref. Nos. 11, 12, 13, 14, 15 & 16)
91	701921	1	KIT, Cylinder Assembly (Includes Ref. Nos. 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 41, 42, 43, 44 & 92)
92	702024	1	KIT, Cylinder Head Group (Includes Ref. Nos. 17, 18, 19 & 93)
93	702025	1	KIT, Piston (Includes Ref. Nos. 20, 21, 22 & 23)
94	702082	1	ENGINE, Complete
95	702309	1	KIT, Air Cleaner (Incldues Ref. Nos. 1, 2, 3, 4 & 5)
96	702310	1	KIT, Fuel Tank & Cap (Includes Ref. Nos. 84, 85 & 86)

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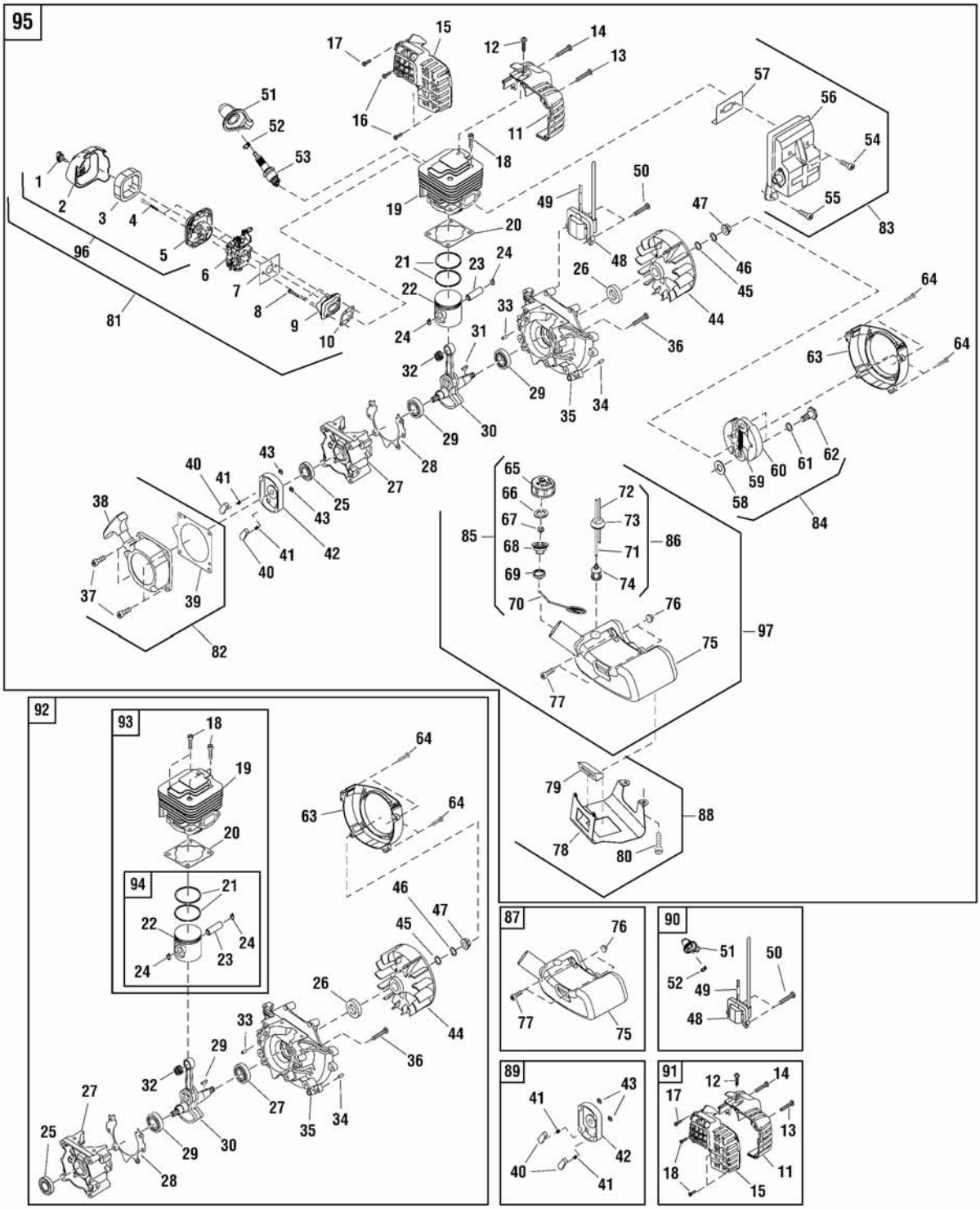
702109



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866019 - MX43X

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Engine Group - MX43X

REF NO	PART NO.	QTY.	DESCRIPTION
1	700804	1	SCREW
2	700904	1	COVER, Cleaner, Outer
3	700317	1	FILTER
4	702045	2	BOLT, M5 x 55
5	700806	1	COVER, Cleaner, Inner
6	700905	1	CARBURETOR
7	700849	1	GASKET, Carburetor
8	701850	2	BOLT, M5 x 25
9	700848	1	ADMITTING PIPE
10	700847	1	GASKET, Admitting Pipe
11	700902	1	SHROUD, Front
12	-----	1	BOLT, M5 x 16 (Not a serviceable part, order kit Ref. No. 91)
13	-----	1	BOLT, M5 x 12 (Not a serviceable part, order kit Ref. No. 91)
14	-----	1	BOLT, M5 x 12 (Not a serviceable part, order kit Ref. No. 91)
15	700908	1	SHROUD, Rear
16	700764	3	SCREW, Self Tapping, ST5 x 20
17	700924	1	SCREW, Self Tapping, ST4.2 x 25
18	700374	4	BOLT, M5 x 20
19	702052	1	CYLINDER HEAD
20	700853	1	GASKET, Cylinder Head
21	702053	2	PISOTN RING
22	700858	1	PISTON
23	700856	1	PIN, Piston
24	700912	2	RING, Pin Retain
25	700345	1	OIL SEAL,11.7 x 22 x 7
26	700864	1	OIL SEAL, 30 x 14.7 x 7
27	702039	1	CRANK CASE, Rear
28	700866	1	GASKET, Crank Case
29	700865	2	BEARING, 6201/P6
30	700861	1	CRANK SHAFT
31	700341	1	KEY, 3 x 5 x 13
32	700860	1	NEEDLE BEARING
33	700885	1	PIN, Cylindrical, B5 x 12
34	700386	1	PIN, Cylindrical, B4 x 10
35	702040	1	CRANK CASE, Front
36	-----	1	BOLT M5 x 30 (Not a serviceable part, order kit Ref. No. 92)
37	-----	4	BOLT, M5 x 20 (Not a serviceable part, order kit Ref. No. 82)
38	700809	1	KIT, Shroud Assembly
39	700329	1	PAD, Starter
40	-----	2	CINCH, Starter (Not a serviceable part, order kit Ref. No. 89)
41	-----	2	SPRING, Starter (Not a serviceable part, order kit Ref. No. 89)
42	-----	1	STARTER BOX (Not a serviceable part, order kit Ref. No. 89)
43	-----	2	RING, Retainer (Not a serviceable part, order kit Ref. No. 89)

Footnotes

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Engine Group - MX43X

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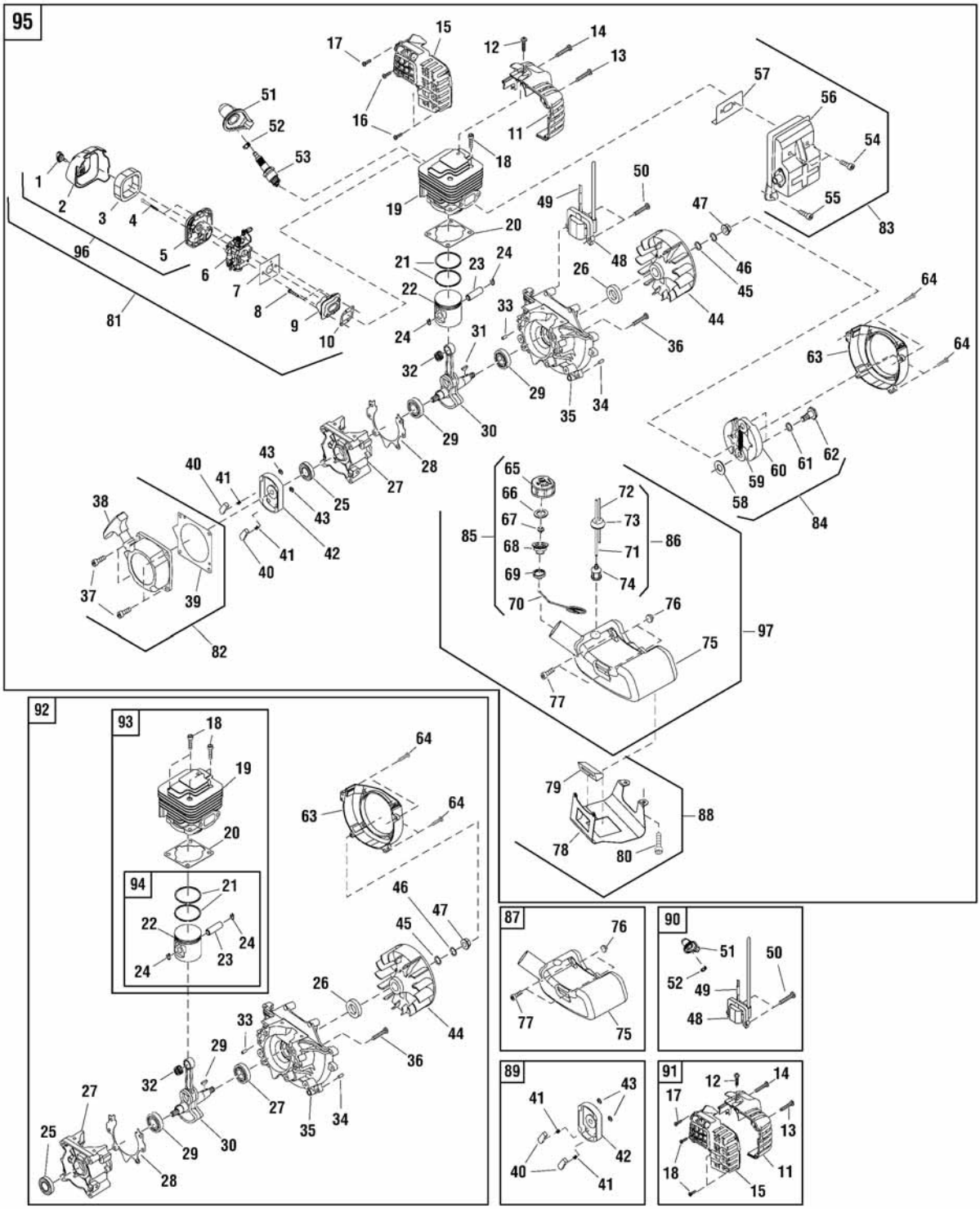

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Engine Group - MX43X

REF NO	PART NO.	QTY.	DESCRIPTION
44	702054	1	FLY WHEEL
45	700380	1	WASHER, Flat, 8
46	700379	1	WASHER, Spring, 8
47	700378	1	NUT, Hex, M8
48	702034	1	MAGNETO COIL
49	700827	1	CORD, Magneto
50	-----	2	BOLT M5 x 20 (Not a serviceable part, order kit Ref. No. 90)
51	700352	1	BOOT, Spark Plug
52	700351	1	CLIP, Spark Plug
53	700360	1	SPARK PLUG
54	702032	2	BOLT M6 x 5-10.9
55	-----	1	BOLT, M5 x 12 (Not a serviceable part, order kit Ref. No. 83)
56	700918	1	MUFFLER
57	700874	1	GASKET, Muffler
58	700383	2	WASHER, B
59	700364	1	SPRING, Clutch
60	700365	1	EXPANDER, Complete
61	700382	2	WASHER, Wave
62	700767	2	SCREW, Shaft
63	702041	1	COVER, Fan
64	701850	4	BOLT, M5 x 25
65	-----	1	LID, Fuel Tank (Not a serviceable part, order kit Ref. No. 85)
66	-----	1	GASKET (Not a serviceable part, order kit Ref. No. 85)
67	-----	1	INLET (Not a serviceable part, order kit Ref. No. 85)
68	-----	1	LID, Fuel Tank, Inner (Not a serviceable part, order kit Ref. No. 85)
69	-----	1	COVER, End (Not a serviceable part, order kit Ref. No. 85)
70	-----	1	CHAIN, Fuel Cap (Not a serviceable part, order kit Ref. No. 85)
71	-----	1	PIPE, Fuel (Not a serviceable part, order kit Ref. No. 86)
72	-----	1	PIPE, Soft PVC (Not a serviceable part, order kit Ref. No. 86)
73	-----	1	PLUG, Fuel Line (Not a serviceable part, order kit Ref. No. 86)
74	701666	1	FILTER, Fuel
75	702048	1	FUEL TANK
76	700388	2	PLUG, Rubber
77	-----	2	BOLT, M5 x 16 (Not a serviceable part, order kit Ref. No. 87)
78	700880	1	BRACKET, Tank
79	700390	1	COVER, Rubber
80	-----	2	BOLT, M5 x 16 (Not a serviceable part, order kit Ref. No. 88)
81	702110	1	KIT, Air Cleaner & Carburetor (Includes Ref. Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9 & 10)
82	701912	1	KIT, Starter Assembly (Includes Ref. Nos. 37, 38 & 39)
83	702031	1	KIT, Muffler Assembly (Includes Ref. Nos. 54, 55, 56 & 57)
84	701916	1	KIT, Expander Assembly (Includes Ref. Nos. 58, 59, 60, 61 & 62)
85	701467	1	KIT, Fuel Cap Assembly (Includes Ref. Nos. 65, 66, 67, 68, 69 & 70)
86	702046	1	KIT, Fuel Line Assembly (Includes Ref. Nos. 71, 72, 73 & 74)

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Engine Group - MX43X

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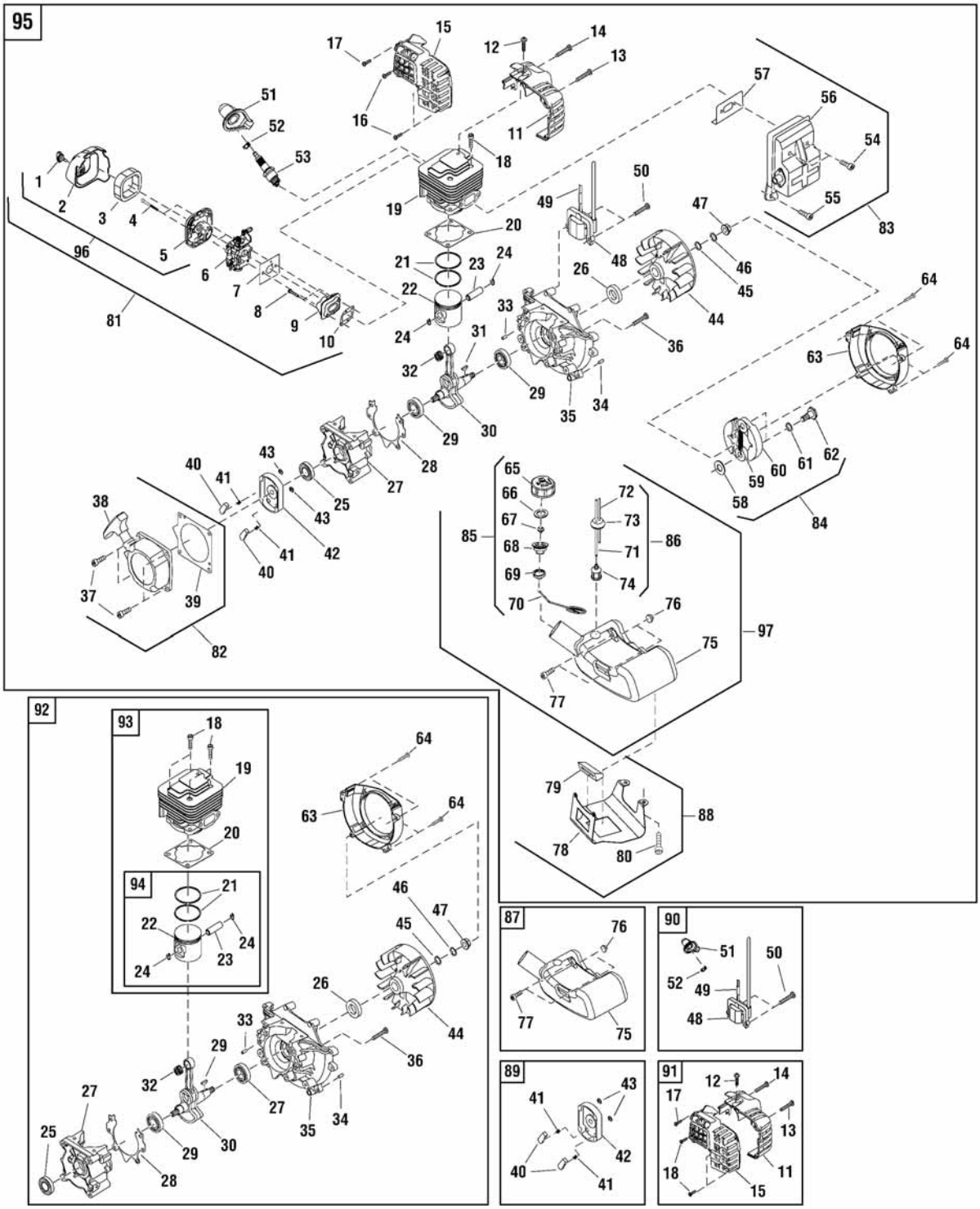

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Engine Group - MX43X

REF NO	PART NO.	QTY.	DESCRIPTION
87	702047	1	KIT, Fuel Tank Assembly (Includes Ref. Nos. 75, 76 & 77)
88	702049	1	KIT, Tank Bracket Assembly (Includes Ref. Nos. 78, 79 & 80)
89	700330	1	KIT, Start Reel Assembly (Includes Ref. Nos. 40, 41, 42 & 43)
90	702050	1	KIT, Magneto Assembly (Includes Ref. Nos. 48, 49, 50, 51 & 52)
91	702112	1	KIT, Shroud Assembly (Includes Ref. Nos. 11, 12, 13, 14, 15, 16 & 17)
92	702051	1	KIT, Cylinder Assembly (Includes Ref. Nos. 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 44, 45, 46, 47, 63, 64 & 93)
93	702037	1	KIT, Cylinder Head Assembly (Includes Ref. Nos. 18, 19, 20 & 94)
94	702038	1	KIT, Piston Assembly (Includes Ref. Nos. 21, 22, 23 & 24)
95	702111	1	KIT, Engine, Complete
96	702416	1	KIT, Air Cleaner (Includes Ref. Nos. 1, 2, 3, 4 & 5)
97	702417	1	KIT, Fuel Tank & Cap (Includes Ref. Nos. 85, 86 & 87)

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Footnotes

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Shaft Group

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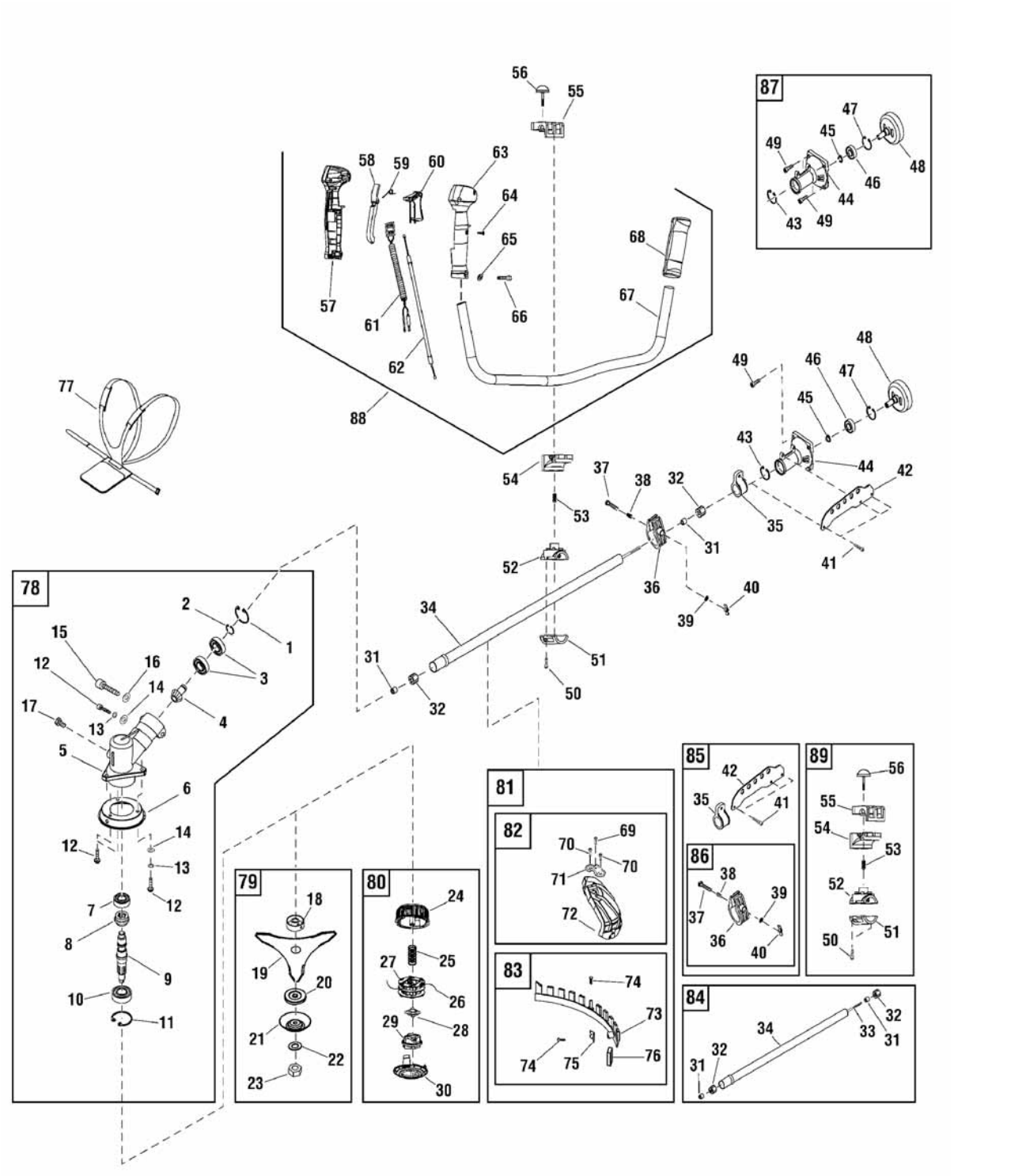
866014shft



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866015 - MX33X
866019 - MX43X

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Shaft Group

REF NO	PART NO.	QTY.	DESCRIPTION
1	-----	1	RING, Stop, 26 (Not a serviceable part. Order Kit Ref. No 78)
2	-----	1	RING, Stop,10 (Not a serviceable part. Order Kit Ref. No 78)
3	-----	2	BEARING, 6000/P6 (Not a serviceable part. Order Kit Ref. No 78)
4	702423	1	PINION
5	-----	1	GEAR BOX (Not a serviceable part. Order Kit Ref. No 78)
6	700393	1	COVER, Blade
7	-----	1	BEARING, 6002/P6 (Not a serviceable part. Order Kit Ref. No 78)
8	702424	1	GEAR
9	702425	1	SHAFT, Spline
10	-----	1	BEARING, 6002-2RS/P6 (Not a serviceable part. Order Kit Ref. No 78)
11	-----		STOP RING, 32
12	700399	4	BOLT, M5 x 12 (Not a serviceable part. Order Kit Ref. No 78)
13	700400	1	WASHER, Srping, 5
14	700401	1	WASHER, Flat, 5
15	700402	1	BOLT, M6 x 20 (Not a serviceable part. Order Kit Ref. No 78)
16	700403	4	WASHER, Spring, 6 (Not a serviceable part. Order Kit Ref. No 78)
17	700404	1	BOLT
18	700395	1	GASKET, Spline
19	701891	1	BLADE
20	700841	1	HOLDER
21	701901	1	PROTECTOR, Blade
22	700773	1	WASHER, Wave, 10
23	700397	1	NUT
24	-----	1	BOX, Bump Head (Not a serviceable part. Order Kit Ref. No 80)
25	-----	1	SPRING, Bump Head (Not a serviceable part. Order Kit Ref. No 80)
26	-----	1	ROPE, Flexible (Not a serviceable part. Order Kit Ref. No 80)
27	-----	1	SEAT, Flexible Rope (Not a serviceable part. Order Kit Ref. No 80)
28	-----	1	COVER, Flexible Rope (Not a serviceable part. Order Kit Ref. No 80)
29	-----	1	BUMP HEAD (Not a serviceable part. Order Kit Ref. No 80)
30	-----	1	COVER, Bump Head (Not a serviceable part. Order Kit Ref. No 80)
31	700407	2	BEARING, Oil
32	700406	2	RUBBER COVER, Bearing Oil
33	702429	1	DRIVE SHAFT
34	702427	1	SHAFT, Straight
35	700420	1	RING, Hang
36	-----	1	RING, Limit (Not a serviceable part. Order Kit Ref. No 86)
37	-----	1	BOLT, M6 (Not a serviceable part. Order Kit Ref. No 86)
38	-----	1	SPRING (Not a serviceable part. Order Kit Ref. No 86)
39	-----	1	WASHER, Flat, 6 (Not a serviceable part. Order Kit Ref. No 86)
40	-----	1	NUT, M6 (Not a serviceable part. Order Kit Ref. No 86)
41	702108	3	BOLT, M6 x 16
42	700421	1	HANDLE, Hang
43	-----	1	RING, Stop, 37 (Not a serviceable part. Order Kit Ref. No 87)

Footnotes

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866019 - MX43X

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Shaft Group

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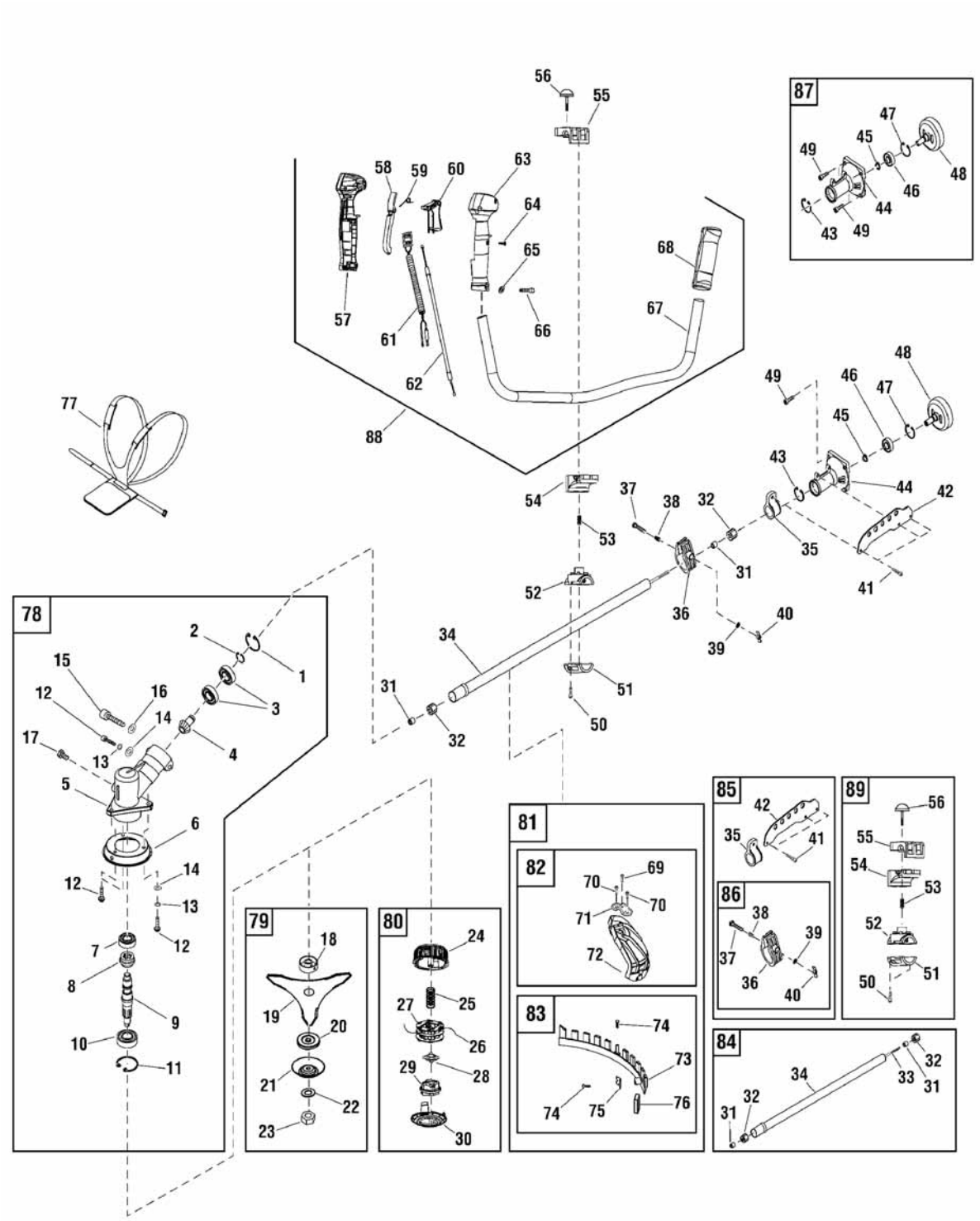
866014shft



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866019 - MX43X

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Shaft Group

REF NO	PART NO.	QTY.	DESCRIPTION
44	-----	1	CASE, Clutch (Not a serviceable part. Order Kit Ref. No 87)
45	-----	1	RING, Stop, 15 (Not a serviceable part. Order Kit Ref. No 87)
46	-----	1	BEARING, 6202-2RZ/P6 (Not a serviceable part. Order Kit Ref. No 87)
47	-----	1	RING, Stop, 35 (Not a serviceable part. Order Kit Ref. No 87)
48	701471	1	CLUTCH DRUM, Complete
49	-----	4	BOLT, M6 x 20 (Not a serviceable part. Order Kit Ref. No 87)
50	-----	2	BOLT, M5 x 16 (Not a serviceable part. Order Kit Ref. No 89)
51	700798	1	BRACKET, Shaft, Lower
52	700799	1	BRACKET, Shaft, Upper
53	700839	1	SPRING
54	700800	1	BRACKET, Handle, Lower
55	700801	1	BRACKET, Handle, Upper
56	702441	1	BOLT, With Knob, Red
57	700779	1	COVER, Handle, Control Switch, LH
58	700788	1	HANDLE, Self Lock
59	700787	1	SPRING, Torsion
60	700786	1	LEVEL, Throttle
61	700780	1	STOP BUTTON, Complete
62	700781	1	CABLE, Complete
63	700785	1	COVER, Handle, Control Switch, RH
64	700784	1	SCREW, Self Tapping, M3.5 x 13
65	700783	1	WASHER, Flat, 5
66	700782	1	SCREW, M5 x 30
67	700833	1	HANDLE
68	700834	1	COVER, Handle
69	700792	1	BOLT, M5 x 10
70	700791	2	BOLT, M5 x 12
71	700793	1	HOLDER, Safety Guard
72	700794	1	SAFTEY GUARD
73	700837	1	SECURING SADDLE
74	700795	2	SCREW, Self Tapping, ST4.2 x 16
75	700427	1	BLADE
76	700428	1	COVER, Blade
77	700797	1	SHOULDER BELT
78	702422	1	KIT, Gear Box (Includes Ref. Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 & 17)
79	702428	1	KIT, Blade (Includes Ref. Nos. 18, 19, 20, 21, 22 & 23)
80	700437	1	KIT, Bump Head (Includes Ref. Nos. 24, 25, 26, 27, 28, 29 & 30)
81	702106	1	KIT, Guard Assembly (Includes Ref. Nos. 82 & 83)
82	701926	1	KIT, Blade Guard (Includes Ref. Nos. 69, 70, 71 & 72)
83	702107	1	KIT, Securing Saddle (Includes Ref. Nos. 73, 74, 75 & 76)
84	702426	1	KIT, Drive Shaft (Includes Ref. Nos. 31, 32, 33 & 34)
85	702075	1	KIT, Hang Handle (Includes Ref. Nos. 36, 41, 42 & 86)

Footnotes

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The above parts group applies to the following Mfg. Nos.:
866015 - MX33X
866019 - MX43X

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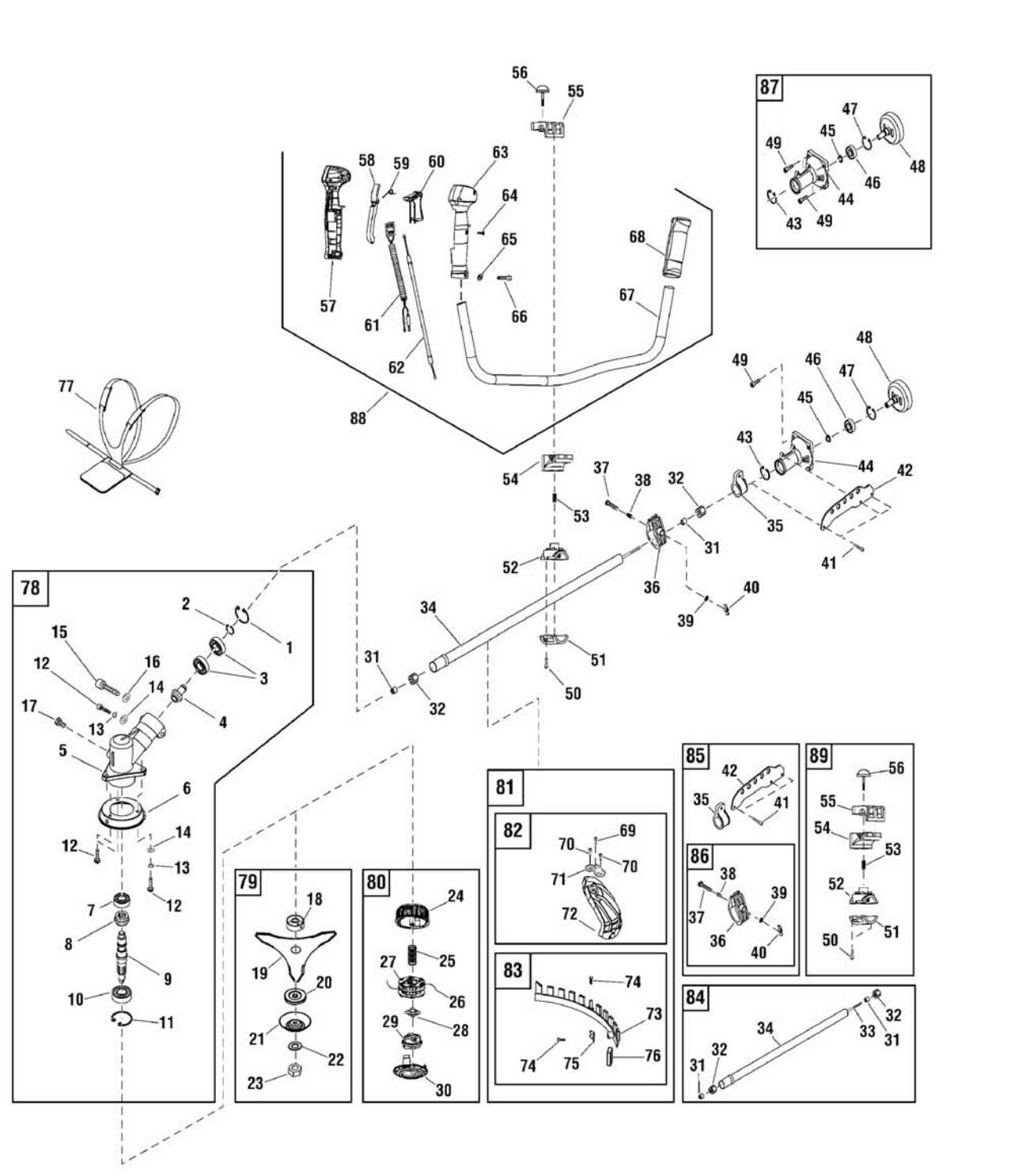
Shaft Group

NOTE: Unless noted otherwise, use the standard hardware torque specification chart.

866014shft



The above parts group applies to the following Mfg. Nos.:

866015 - MX33X
866019 - MX43X

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Shaft Group

REF NO	PART NO.	QTY.	DESCRIPTION
87	701931	1	KIT, Clutch Assembly (Includes Ref. Nos. 43, 44, 45, 46, 47, 48 & 49)
88	702077	1	KIT, Handle Assembly (Includes Ref. Nos. 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67 & 68)
89	702439	1	KIT, Handle Bracket Assembly (Includes Ref. Nos. 50, 51, 52, 53, 54, 55 & 56)

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866019 - MX43X

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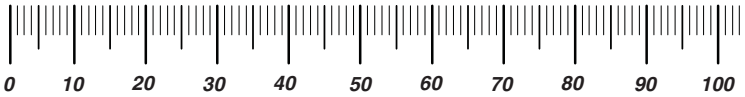
Hardware Identification & Torque Specifications

Torque Specification Chart

FOR STANDARD METRIC MACHINE HARDWARE (Tolerance ± 20%)

Property Class	5.6 Class 5.6		8.8 Class 8.8		10.9 Class 10.9		12.9 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.



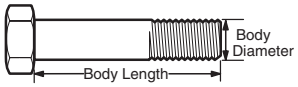
Nut, M8

Thread Diameter (mm)

Inside Diameter (in)

Threads per inch

Nut, 1/2-16



Screw, M8- 1.25 x 25

Thread Diameter (mm)

Distance between threads (mm)

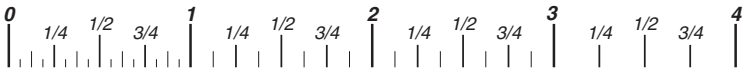
Body Length (mm)

Body Diameter

Threads per inch

Body Length (in)

Screw, 1/2- 16 x 2



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, (1.25 thread diameter).* The final number is the body length of the bolt or screw, 2 inches (50mm).

Torque Specification Chart

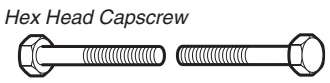
FOR STANDARD MACHINE HARDWARE (Tolerance ± 20%)

Hardware Grade	No Marks 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

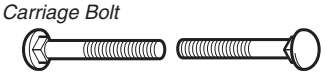
NOTES

1. 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.
2. Recommended seating torque values for locknuts:
   a. for prevailing torque locknuts - use 65% of grade 5 torques.
   b. for flange whizlock nuts and screws - use 135% of grade 5 torques.
3. Unless otherwise noted on assembly drawings, all torque values must meet this specification.

Common Hardware Types



Hex Head Capscrew



Carriage Bolt

Washer

Lockwasher

Hex Nut

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—22 mm

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