

# Havoc 49cc Engine

Last Revision 10/27/16

Bintelli Scooters  
620 Dobbin Road  
Charleston, SC 29414  
(843) 531-6833 Phone  
(843) 556-4080 Fax

**FIG 1 - MOTOR**

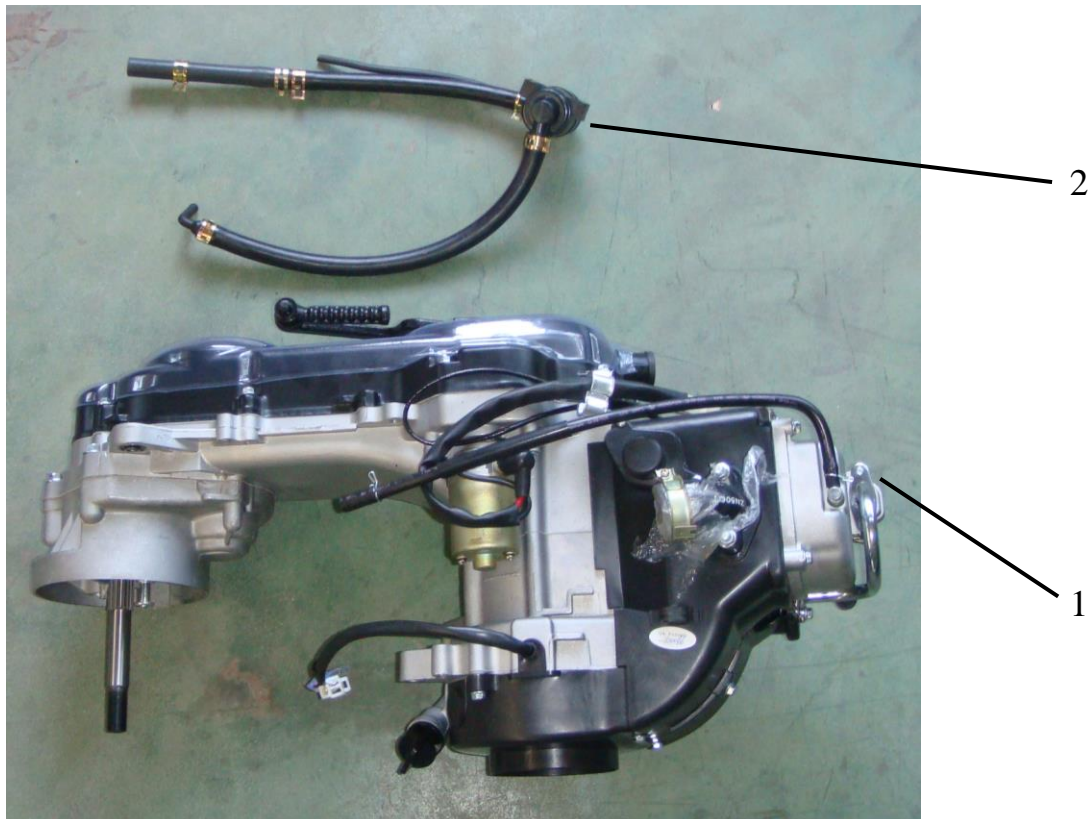


Diagram Number	Part Number	Description	Qty
1	10000-SQ5D-8000	Four-stroke engine 50CC long box	1
2	1865A-SQ5A-9000	Valve assembly	1

FIG 2 - CYLINDER

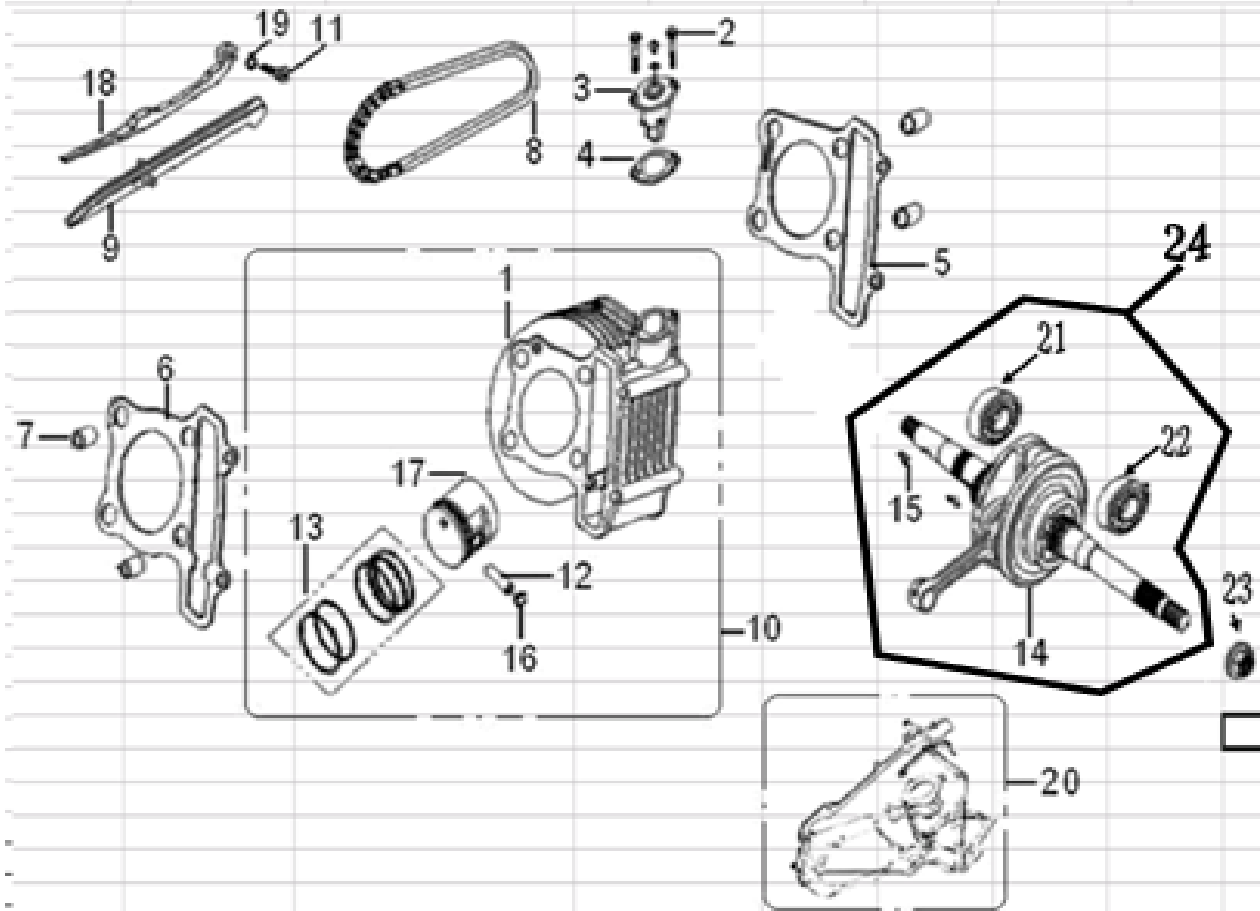


Diagram Number	Part Number	Description	Qty
1	12100-SQ5A-9000	Cylinder comp	1
2	96001-06018-08	Bolt M6x18	2
3	14550-SQ5A-9000	Chain adjuster assy	1
4	14555-SQ5A-9000	Gasket chain adjuster	1
5	12191-SQ5A-9000	Cylinder gasket	1
6	12251-SQ5A-9000	Gasket cylinder head	1
7	94301-08140	Bowel pin 8x14	4
8	14401-SQ5A-9000	Timing chain	1
9	14610-SQ5A-9000	Guide comp chain	1
10	1310A-9500	Cylinder, piston, piston rings, circlip, piston	1
11	14531-SQ5A-9000	Cam chain screw	1
12	13111-SQ5A-9000	Piston pin	1
13	13011-SQ5A-9000	Piston ring comp	1
14	13010-SQ5A-9000	Crank and connecting rod assembly	1
15	90741-SQ5A-9000	Woodruff key	1
16	13115-0A01-9000	Piston pin clip	2

FIG 2 - CYLINDER - Cont'd

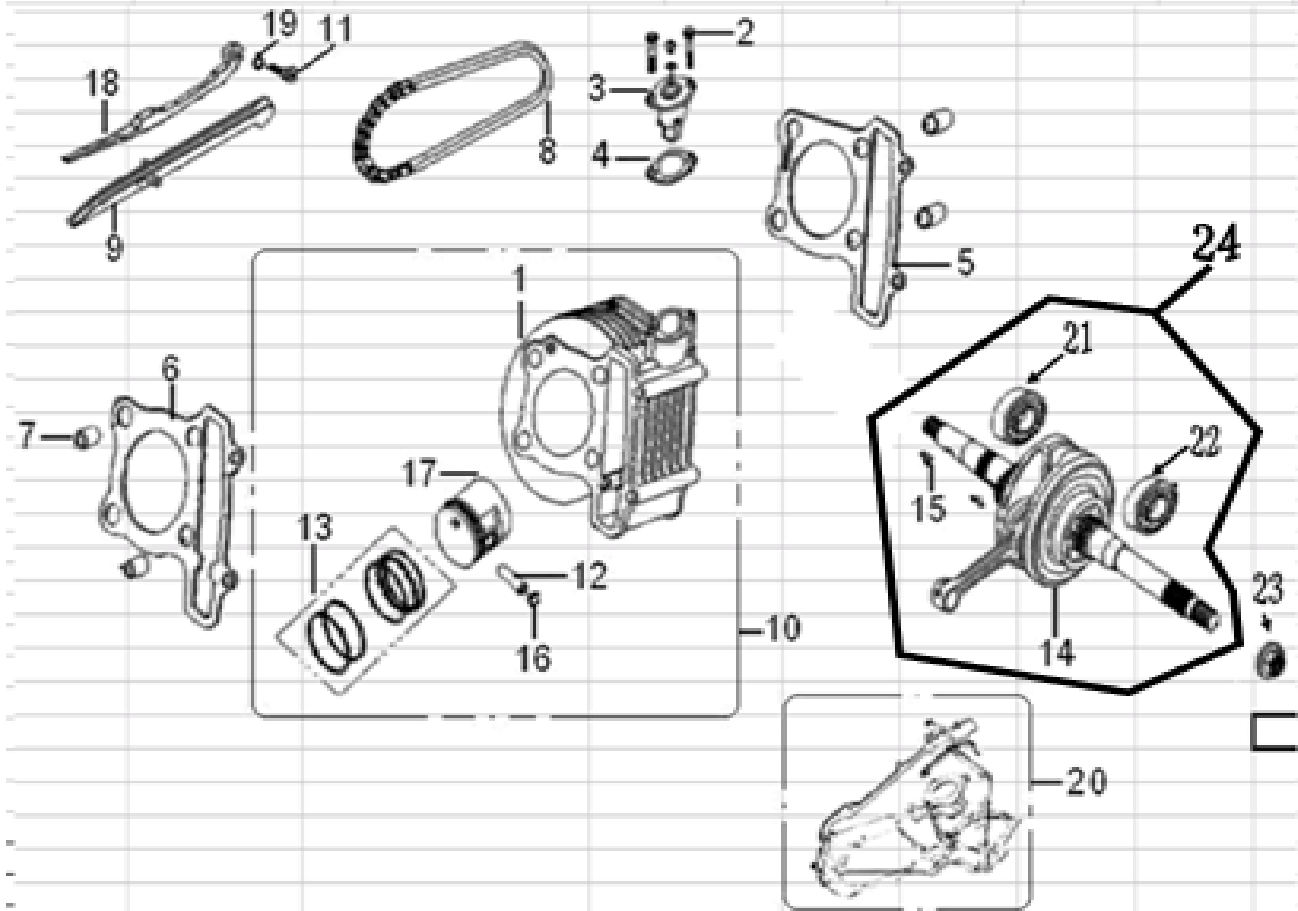


Diagram Number	Part Number	Description	Qty
17	13101-SQ5A-9000	Piston	1
18	14510-SQ5A-9000	Tension rod chain	1
19	91306-GY6A-9000	O-ring 15.2×1.5	1
20	1140A-9900	A full set of gaskets	1
21	91002-SQ5A-00	Right crank bearing	1
22	91002-62040-00	Left crank bearing 6204	1
23	94050-12080	Nut M12 * 1.25	1
24	13000-SQ5A-9000	Crankshaft connecting-rod assy	1

**FIG 3 - CYLINDER HEAD**

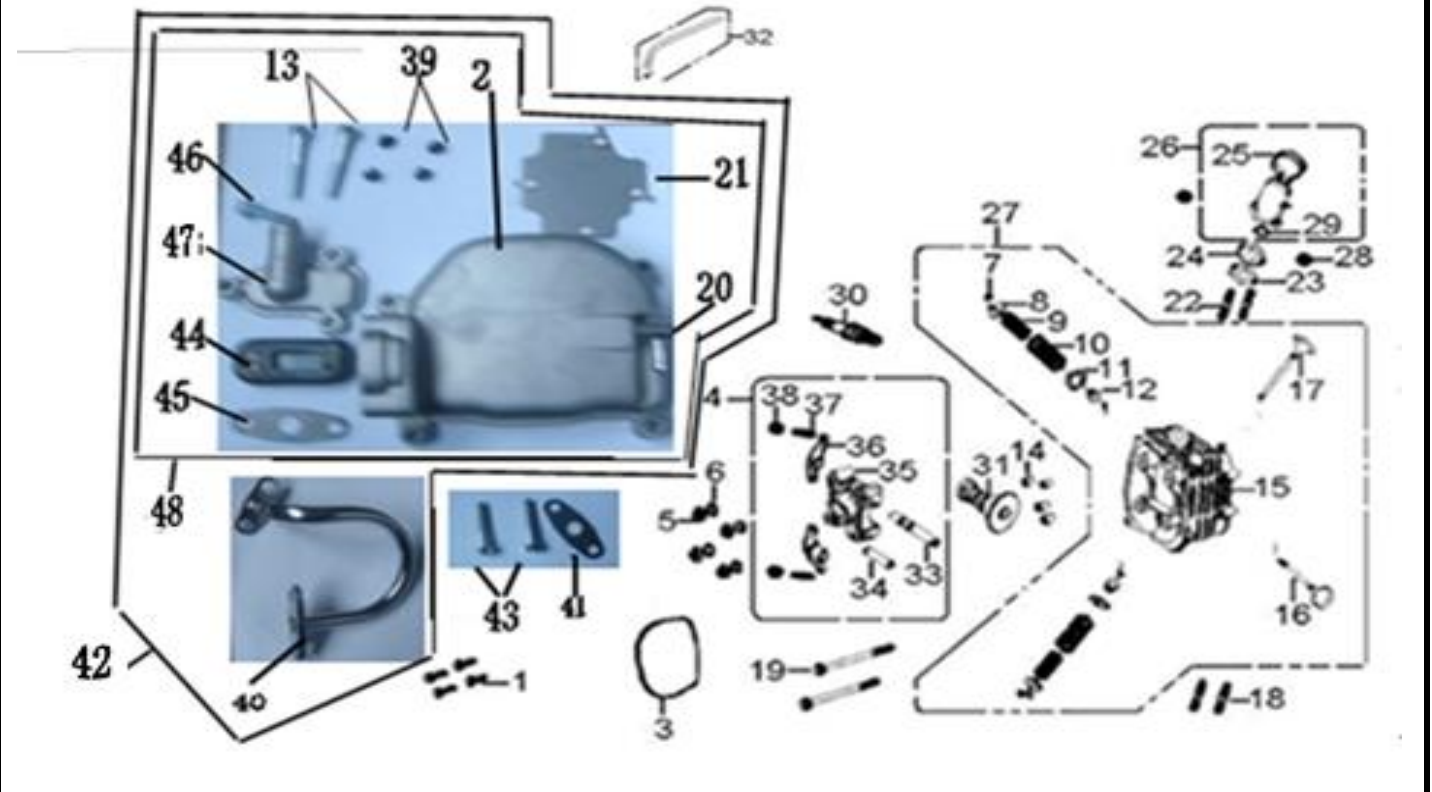


Diagram Number	Part Number	Description	Qty
1	96001-06025-08	Bolt M6×25	4
2	12301-SQ5A-9000	Cylinder head cover	1
3	12391-SQ5A-9010	O-ring cylinder head	1
4	1221A-SQ5A-9000	Rocker bracket assembly	1
5	90002-0700-00	Nut flange M7	4
6	90465-SQ5A-9000	Washer φ7xφ14x2	4
7	14781-GY6A-9000	Valve cone half	4
8	14771-GY6A-9000	Retainer valve spring	2
9	14761-SQ5A-9000	Spring valve inner	2
10	14751-SQ5A-9000	Spring valve outer	2
11	14775-GY6A-9000	Valve spring washer	2
12	12209-GY6A-9000	Valve seals	2
13	96001-06035-08	Bolt M6x35	2
14	94301-08140	Bowel pin 8x14	2
15	12200-SQ5A-9100	Cylinder head (50cc)	1
16	14711-SQ5A-9000	Valve intake	1
17	14721-SQ5A-9000	Exhaust valve	1
18	92900-06032-08	Double end studs M6×32	2
19	96001-06085-08	Bolt M6x85	2
20	12305-SQ5A-9000	Tube breather	1
21	12302-SQ5A-9000	Pressure plate breather	1

**FIG 3 - CYLINDER HEAD Cont'd**

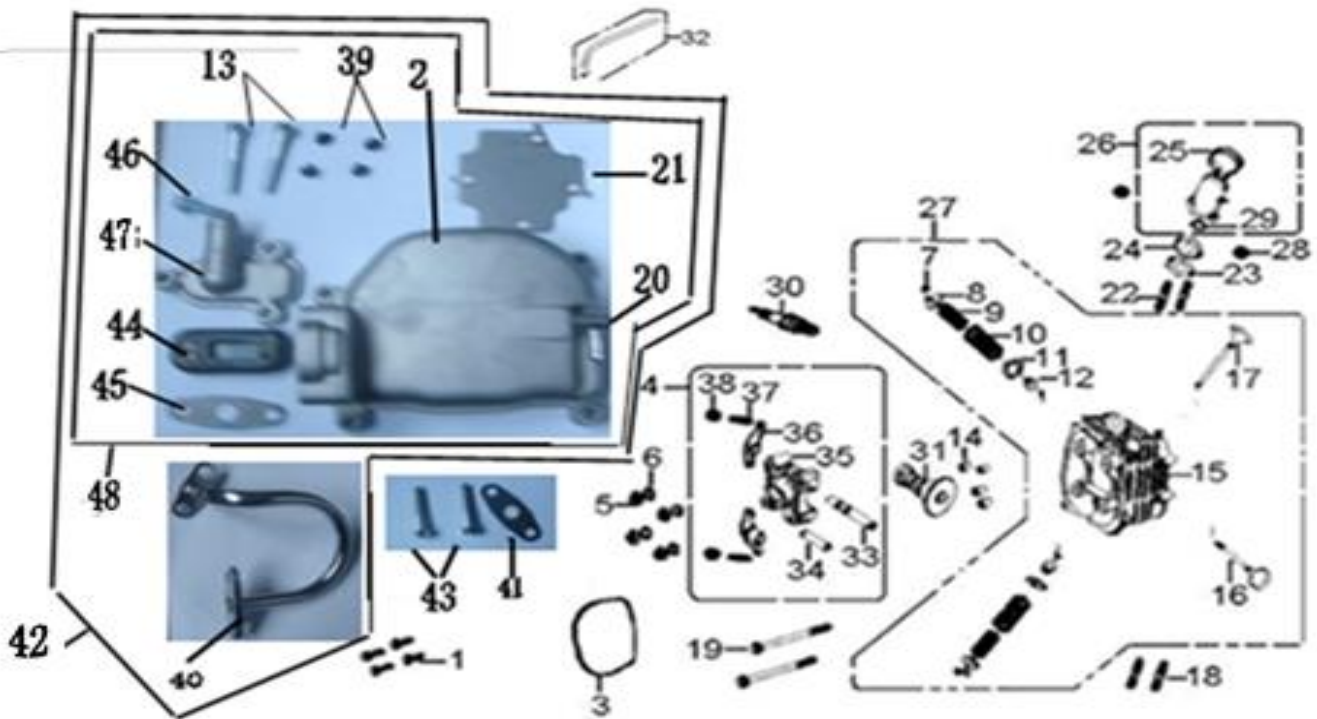


Diagram Number	Part Number	Description	Qty
22	92900-06063-08	Double end studs M6×63	2
23	91304-SQ5A-9000	O ring insulator carburetor	1
24	16211-SQ5A-9000	Insulator carburetor	1
25	17256-SQ5A-9000	Clip tube assy	1
26	1711A-SQ5A-9000	Inlet pipe	1
27	1220A-SQ5A-9000	Cylinder head assy	1
28	94050-06000	Unt flange M6	2
29	91307-SQ5A-9000	O ring inlet pipe	1
30	98056-5771R-00	"NGK"Spark plug (with R)	1
31	14100-SQ5A-9000	Camshaft group	1
32	11211-SQ5AA-9000	Air tube	1
33	14450-SQ5A-9000	Intake valve rocker shaft	1
34	14452-SQ5A-9000	Exhaust valve rocker shaft	1
35	12211-SQ5A-9000	Holder camshaft	1
36	14431-SQ5A-9000	Rocker arm inner	2
37	90012-GY6A-9000	Screw tappet adjusting	2
38	90206-GY6A-9000	Nut tappet adjusting	2
39	93903-04080	Screw st4×8-c-h	4
40	12321-SQ5A-9200	Aerate syphon	1
41	12322-SQ5A-9100	Qi port cylinder head gasket graphite	1

**FIG 3 - CYLINDER HEAD Cont'd**

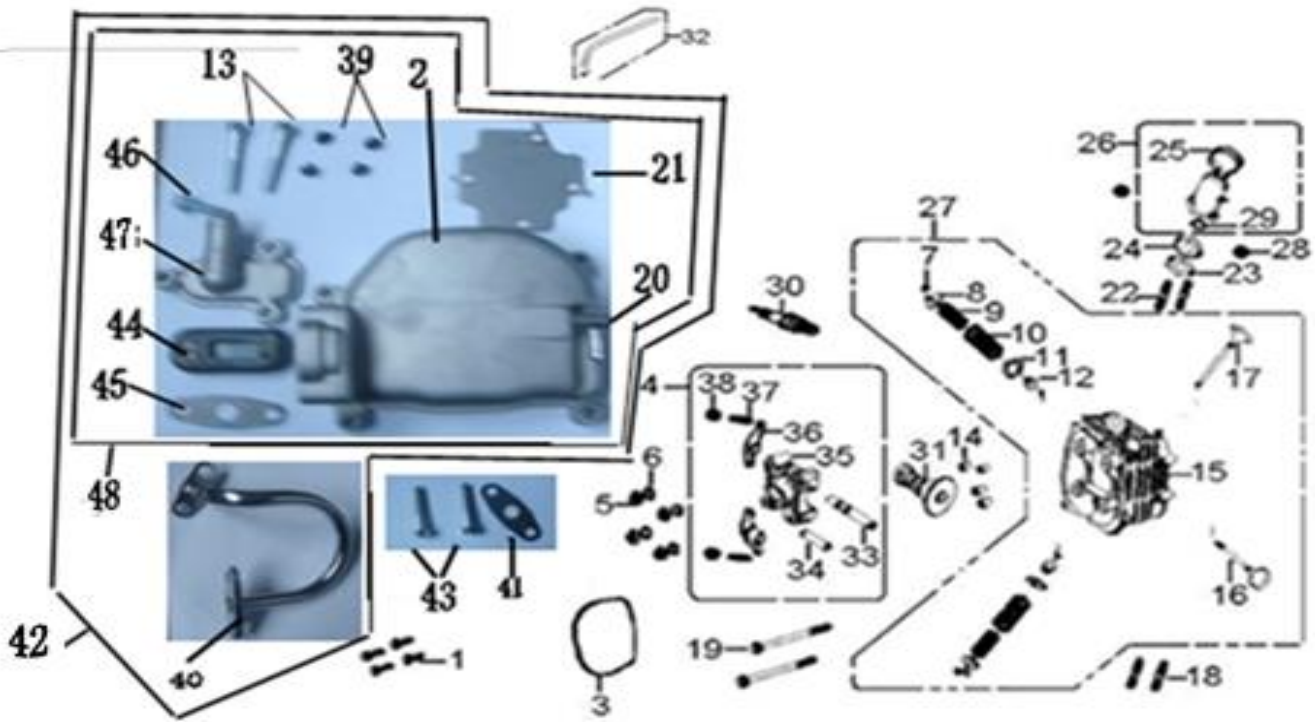


Diagram Number	Part Number	Description	Qty
42	1231A-SQ5A-9000	Cylinder head cover assembly	1
43	96001-06018-08	Bolt M6x18	2
44	12306-SQ5A-9000	One-way reed valve	1
45	12308-SQ5A-9000	Qi port cylinder head gasket graphite	1
46	96001-06018-08	Bolt M6x18	1
47	12307-SQ5A-9000	One-way reed valve cover	1
48	12300-SQ5A-9000	Whole pieces of the cylinder head cover	1

**FIG 4 - RIGHT SIDE CRANK CASE**

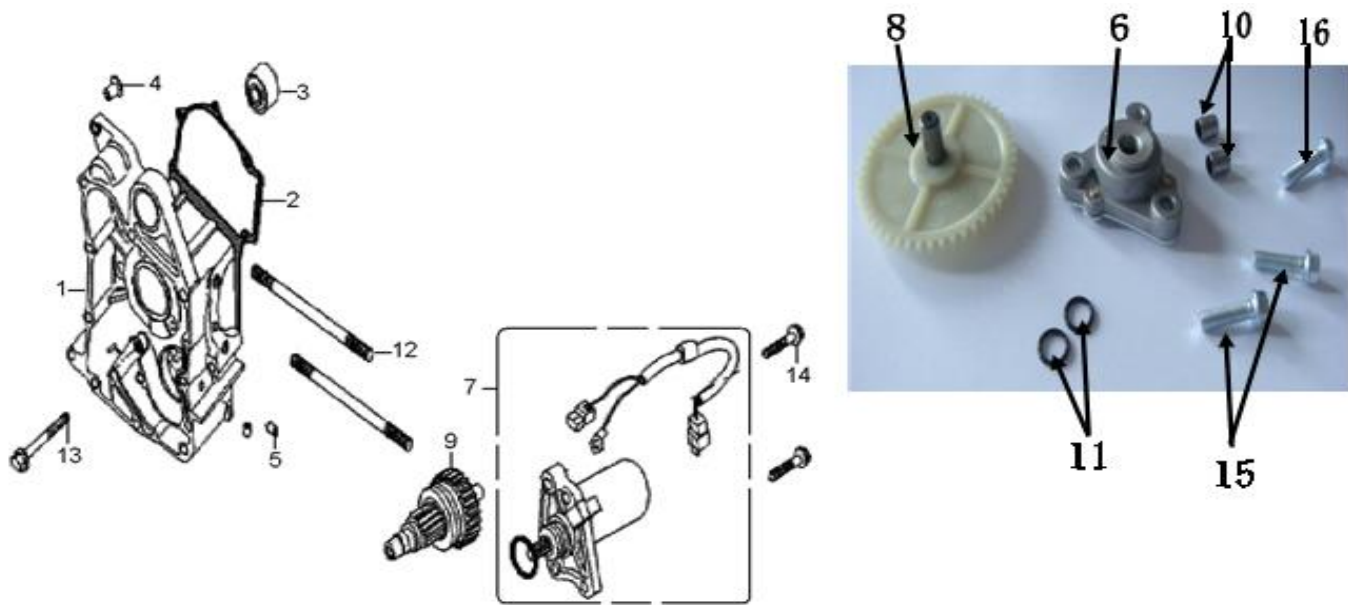


Diagram Number	Part Number	Description	Qty
1	11100-SQ5A-9000	Crank case comp right	1
2	11192-SQ5A-9000	Gasket crank case	1
3	11102-GY6A-9000	Bush enging hanger	1
4	11103-SQ5A-9000	Bush mainstand	1
5	94301-08140	Bowel pin 8x14	2
6	15100-SQ5A-9000	Oil pump assy.	1
7	31200-SQ5A-9000	Starting motor assy	1
8	15133-SQ5A-9000	Sprocket drive	1
9	31209-SQ5A-9000	Clutch	1
10	94301—08100	Bowel pin 8x10	2
11	91305-SQ5A-9000	O-ring 9x1.6	2
12	90031-SQ5A-9000	Double end studs M7x168	2
13	96001-06045-08	Bolt M6x45	1
14	96001-06025-08	Bolt M6x25	3
15	96001-06022-08	Bolt M6x22	2
16	96001-06025	Bolt M6x25	1

**FIG 5 - LEFT CRANK CASE**

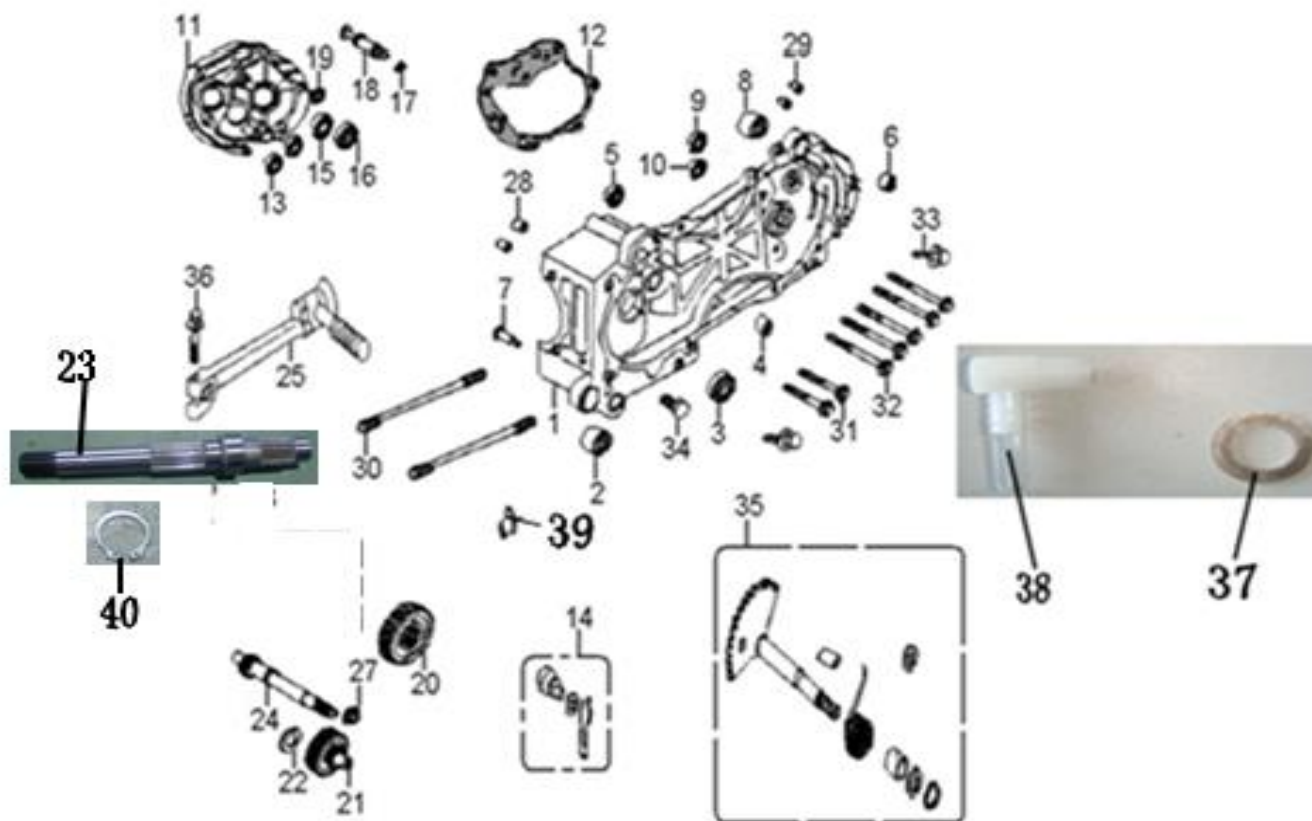


Diagram Number	Part Number	Description	Qty
1	11200-SQ5C-9000	Left crank case (extended)	1
2	11102-GY6A-9000	Bush engine hanger	1
3	91202-GY6A-9000	Left oil seal 19.8 * 30 * 5	1
4	11205-SQ5A-9000	Bush $\varnothing 8 \times 12 \times 9.5$	1
5	96100-62030-00	Bearing radial ball 6203	1
6	91204-SQ5A-9000	Oil seal 17*30*6	1
7	11206-SQ5A-9000	Spring hook mainstand	1
8	11203-GY6A-9000	Shock absorber tube	1
9	91004-62010-00	Bearing radial ball 6201	1
10	91004-63030-00	Bearing radial ball 6303	1
11	21201-SQ5A-9000	Gear box case	1
12	21395-SQ5A-9000	Gasket	1
13	91004-62010-00	Bearing radial ball 6201	2
14	28230-SQ5A-9000	Starting claw	1
15	96100-60040-00	Bearing radial ball 6004	1
16	91255-GY6A-9000-2	Oil seal 27 $\times$ 42 $\times$ 7	1
17	91303-GY6A-9000	O-ring 7.5x1.5	1



FIG 5 - LEFT CRANK CASE - Cont'd

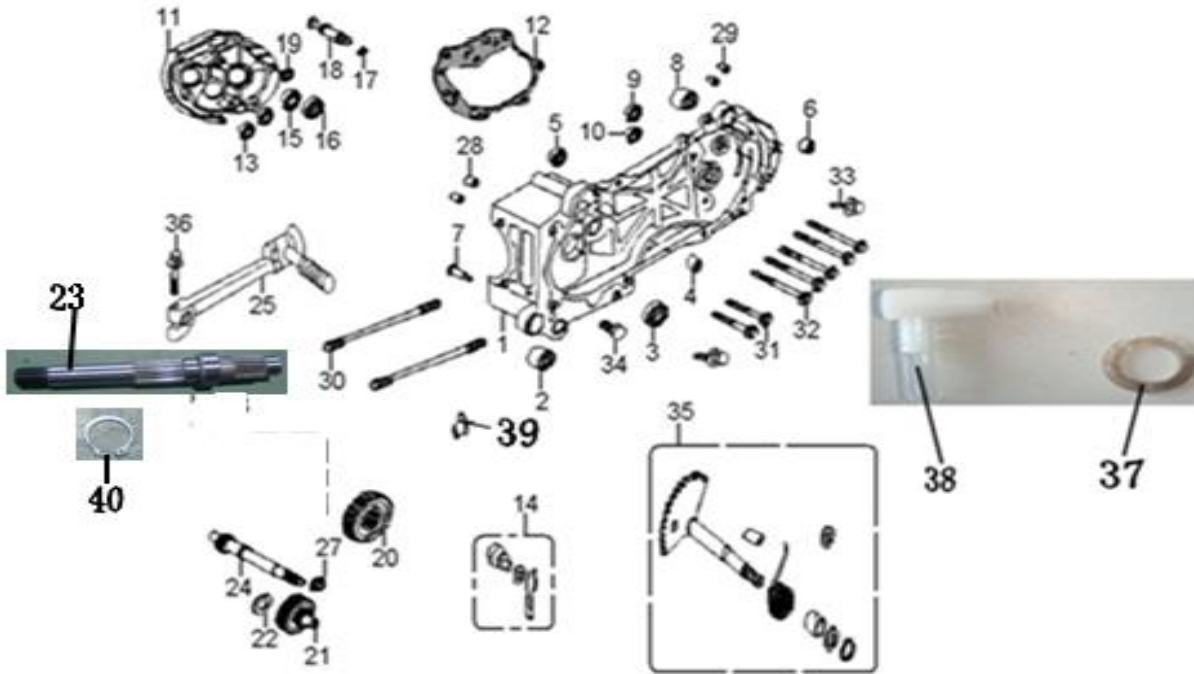


Diagram Number	Part Number	Description	Qty
18	1120B-SQ5A-9000	Pin brake shoe anchor	1
19	90309-08000-00	Nut M8	1
20	23432-SQ5A-9000	Final gear	1
21	23420-SQ5A-9000	Mid gear	1
22	90429-SQ5A-9000	Washer side	1
23	23431-SQ5A-9100	Output shaft	1
24	23411-SQ5A-9000	Output shaft (axis)	1
25	28300-SQ5A-9000	Kick start pedal	1
27	94050—10000	Nut M10	1
28	94301-08140	Bowel pin 8x14	2
29	94301—08100	Bowel pin 8x10	2
30	900032-SQ5A-9000	Bolt b stud M7x176	2
31	95701-08035-00	Bolt flange M8x35	5
32	95701-08040-00	Bolt flange M8x40	2
33	95701-08012-08	Bolt M8×12	2
34	9052A-GY6A-9000	Oil plug	1
35	28250-SQ5A-9000	Starter shaft assembly (length 55)	1
36	96001-06020-08	Bolt M6x20	1
37	90470-GY6A-9000	Oil drain plug gasket (ø12 * 20 * 1.5)	1
38	90480-SQ5A-9000	Room ventilation pin plastic gear	1
39	11103-SQ5A-9000	Bush mainstand	1
40	94510-20000	Output shaft snap ring	1

FIG 6 - RIGHT OIL COVER

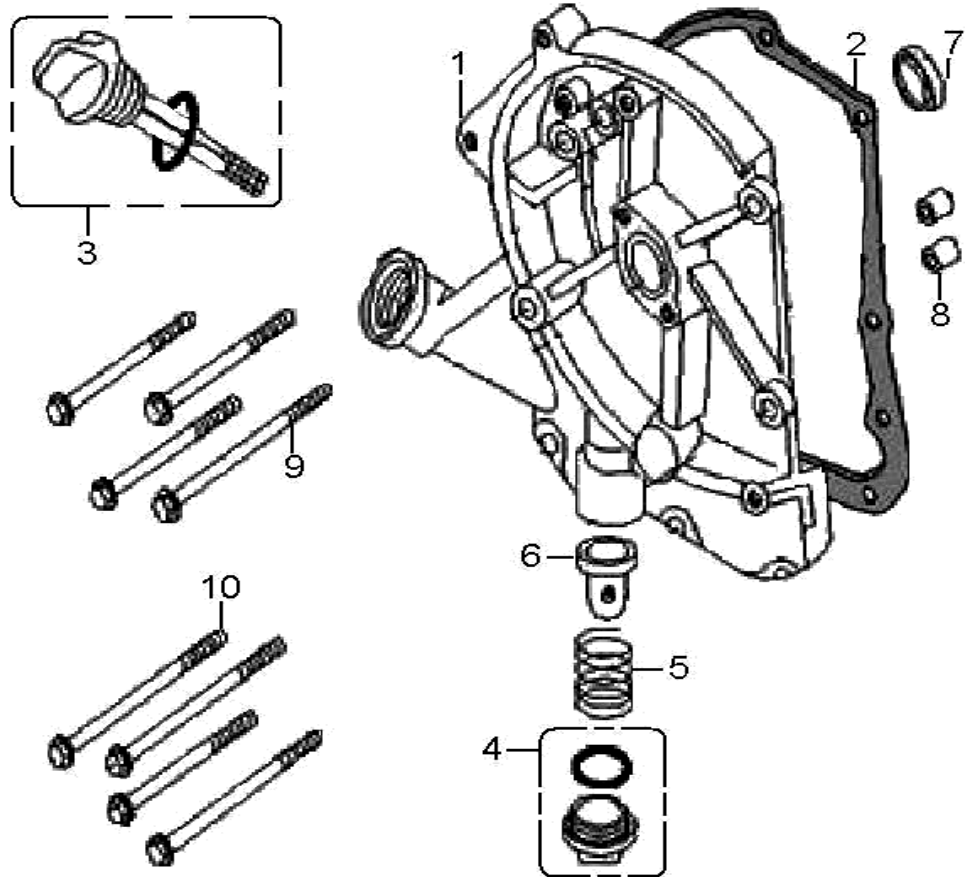


Diagram Number	Part Number	Description	Qty
1	11330-SQ5A-9000	Right crankcase cover	1
2	11394-SQ5A-9000	Right crankcase gasket	1
3	15651-GY6A-9000	Fuel gauge assy,	1
4	91302/12361-GY6A-9000	O-ring and oil network cover	1
5	15426-GY6A-9000	Oil filter spring	1
6	15421-GY6A-9000	Oil network	1
7	91201-SQ5A-9000	Oil seal 16.4 * 30 * 5	1
8	94301-08140	Bowel pin 8x14	2
9	96001-06085-08	Bolt m6x85	4
10	96001-06100-08	Bolt m6×100	4

**FIG 7 -TRANSMISSION COVER**

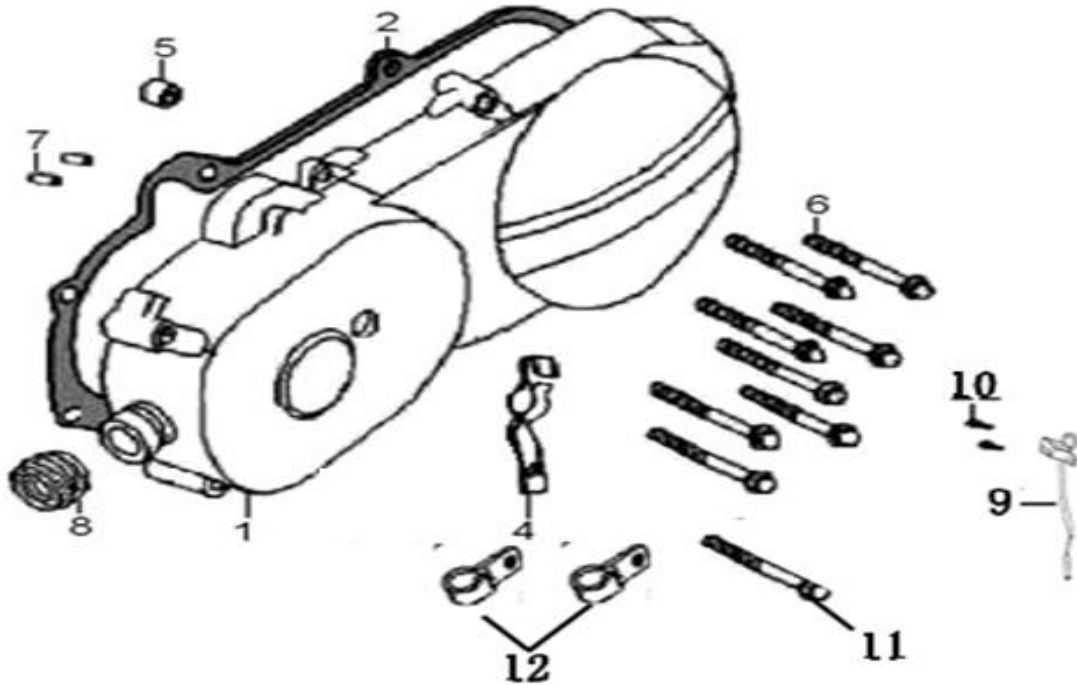


Diagram Number	Part Number	Description	Qty
1	11340-SQ5A-9100	Transmission Cover	1
2	11395-SQ5A-9000	Transmission Cover Gasket	1
4	11381-SQ5A-9000	Throttle cable clip	1
5	11205-SQ5A-9000	Bush $\phi 8 \times 12 \times 9.5$	1
6	96001-06035-08	Bolt M6 $\times$ 35	8
7	94301-08140	Bowel pin 8x14	2
8	11345-SQ5A-9000	Duct cover	1
9	31170-SQ5A-9000	Speed line	1
10	96001-05008-08	Bolt M5 $\times$ 8	2
11	96001-06040-08	Bolt M6 $\times$ 40	1
12	11389-SQ5A-9000	Speed clamp	2

FIG 8 - FAN & ALTERNATOR

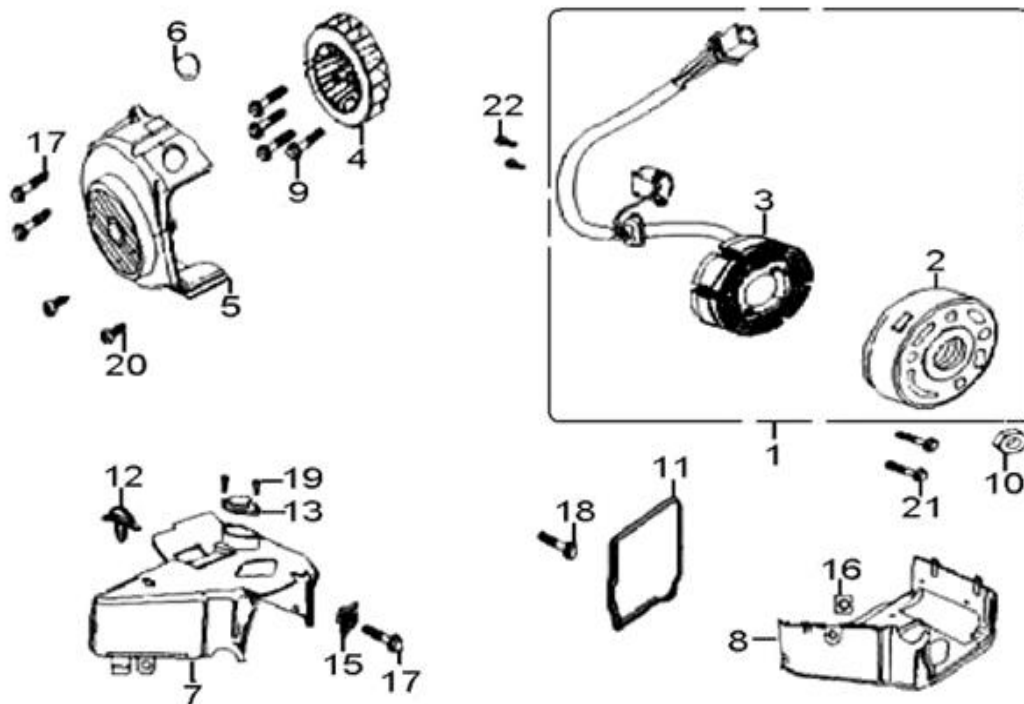


Diagram Number	Part Number	Description	Qty
1	31100-SQ5A-9000	<b>Must Order 2 &amp; 3</b>	1
2	31110-SQ5A-9000	Magneto flywheel	1
3	31120-SQ5A-9000	Magneto Coil	1
4	19510-SQ5A-9000	Wind wheel	1
5	1961A-SQ5A-9000	Wind impeller cover	1
6	70529-SQ5A-9000	Peephole cover	1
7	19630-SQ5A-9000	Shroud comp b	1
8	1962A-SQ5A-9000	Shroud assy a	1
9	96001-06016-00	Bolt M6x16	4
10	94050-10080	Nut flange M10	1
11	19625-SQ5A-9000	Oil seal cover assy fan	1
12	11385-SQ5A-9000	Clip vacuum tube	1
13	19636-SQ5A-9000	Box tensioner lifter	1
15	90701-00	Nut clip M6	1
16	90701-00	Nut clip M6	1
17	96001-06025-08	Bolt M6x25	2
18	96001-06016-08	Bolt M6x16	2
19	93904-S4012-00	Screw tapping st4.2x12	2
20	93904-35380	Screw tapping st5x16-c-h	2
21	96001-06022-08	Bolt M6x22	2
22	90001-05012-00	Bolt hex M5X12	2

**FIG 9 -VARIATOR & CLUTCH**

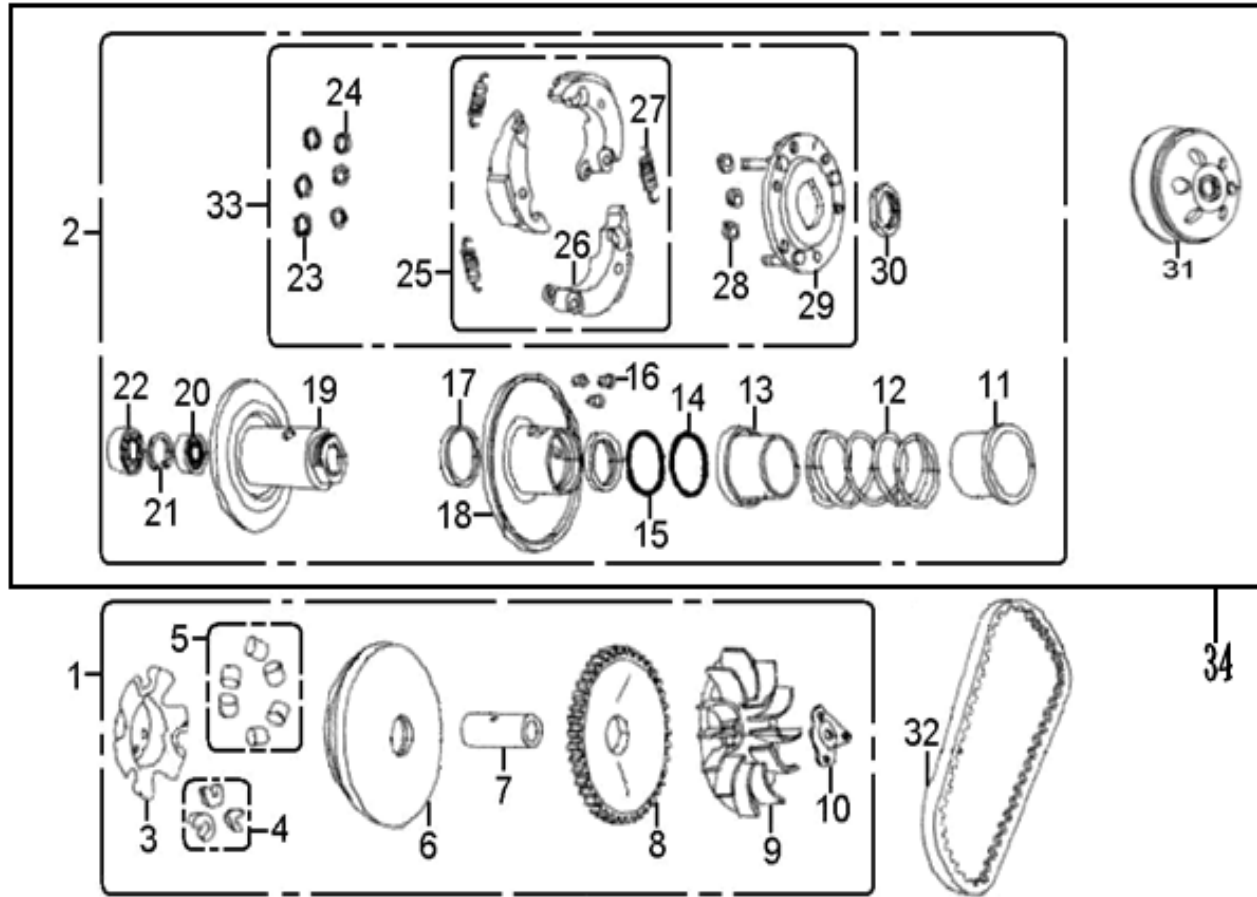


Diagram Number	Part Number	Description	Qty
1	22100-SQ5A-9000	Driving wheel assembly	1
2	23011-SQ5A-9000	Plate sub assy drive	1
3	22131-SQ5A-9000	Ramp plate	1
4	22132-SQ5A-9000	Ramp Edge Piece Set	1
5	22121-SQ5A-9010	Ball assembly	1
6	22110-SQ5A-9000	FACE COMP MOVABLE DRIVE	1
7	22105-SQ5A-9000	Village sets of driving wheel	1
8	22102-SQ5A-9000	Drive belt drive gear	1
9	22103-SQ5A-9000	Face drive	1
10	28211-SQ5A-9000	Starting spine Gear	1
11	23238-SQ5A-9000	Upper holder, spring	1
12	23233-SQ5A-9000	Spring, driven face	1
13	23237-SQ5A-9000	Lower holder, spring	1
14	91301-SQ5A-9000	O-ring 36x1.5	1
15	91302-SQ5A-9000	O-ring 39.8x2.2	1
16	23225-SQ5A-9000	Pin, roller guide	3

FIG 9 -VARIATOR & CLUTCH - Cont'd

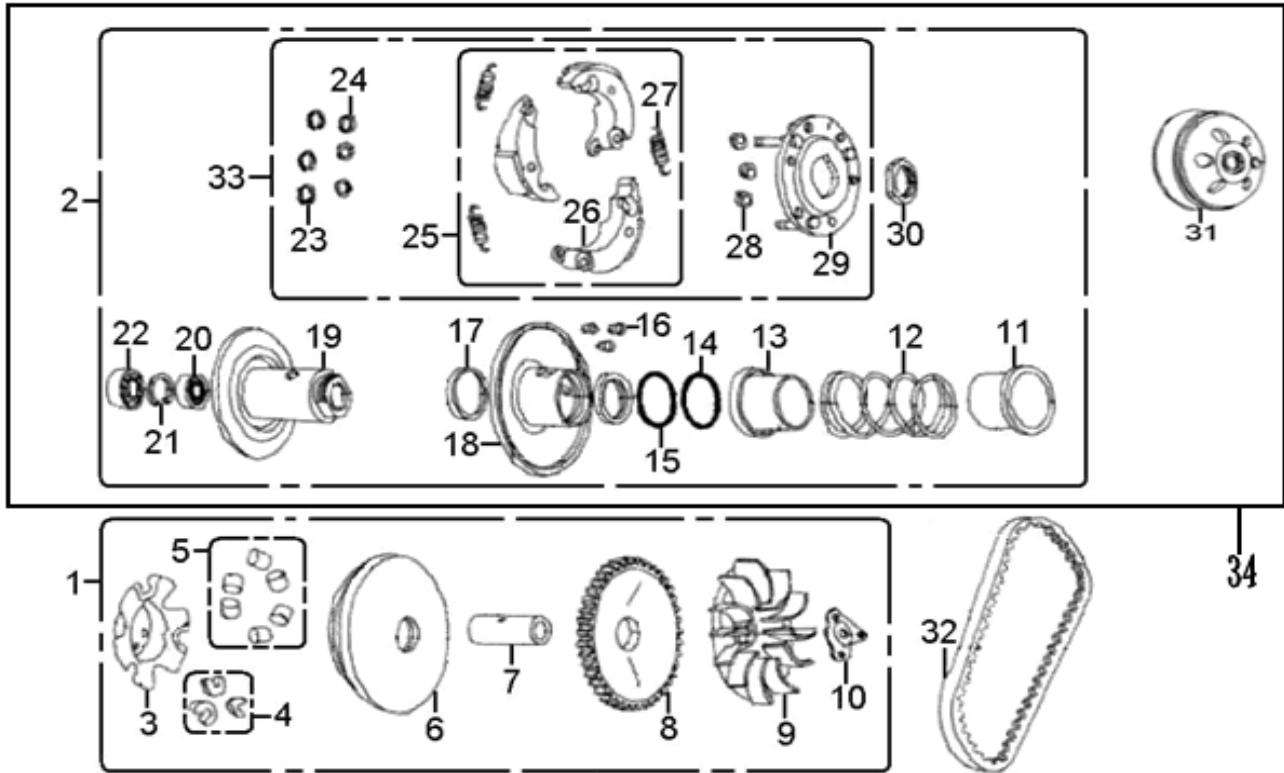


Diagram Number	Part Number	Description	Qty
17	91211-SQ5A-9000	Oil seal 34x39x3	2
18	23220-SQ5A-9000	Face comp movable drive	1
19	23210-SQ5A-9000	Driven pulley	1
20	91001-SQ5A-9000	Brg rakeal ball	1
21	94520-24000	Circlip in 24	1
22	91103-SQ5A-9000	Brg needle 17x25x18	1
23	90454-SQ5A-9000	Circlip 6	3
24	90442-0600-00	Thrust washer 6	3
25	22535-SQ5A-9000	Clutch brake shoe set	1
26	22530-SQ5A-9000	Weight set clutch	3
27	22401-SQ5A-9000	Spring clutch	3
28	22804-SQ5A-9000	Rubber clutch dumper	3
29	22350-SQ5A-9000	Fixing holder assy, brake shoe	1
30	90002-SQ5A-9000	Nut special m28	1
31	2301A-SQ5A-9000	Outer clutch	1
32	23100-SQ5C-9000	Belt drive (729)	1
33	22300-SQ5A-9000	Plate assy drive	1
34	23010-SQ5A-9000	Pulley assy drive	1



























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