

LCT Engines

Online Service Manual

LCT

LIQUID COMBUSTION TECHNOLOGY

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Engine Model Number & Serial Numbering System

The first two lines of an engine's number is the model number. It is alphanumeric and engraved on the side of the block to the right of the recoil. The third line is alphanumeric and is also the serial number.

Serial Number Definitions:

- The engine serial number consists of 11 to 12 alphanumeric characters. (example: 08 60H 02 03611)
- First two digits = year produced
- Next two to three digits = engine horsepower
- Next two digits = month produced
- Last five digits = sequence number of engine



Definition of example: This engine is the 3611th 6HP engine produced in February of 2008

LCT Engine Model Numbering System Definition (see chart on page 3):

- 1. Preproduction** - This column is coded and reserved for prototype engines only.
- 2. Plant** - This column is coded and used for LCT internal use only.
- 3. Design Family** - This column is used for emissions regulations and coded for LCT internal use only.
- 4. Crankshaft** - This column indicated whether the PTO shaft (crankshaft) is configured in the engine horizontally or vertically.
- 5. Shaft** - This column is used for the description of the PTO shaft. This will aid in determining what will be the engine's primary use.
- 6. Shaft Detail** - This column references a chart that designates which LCT engineering drawing corresponds to the PTO shaft.
This is for LCT internal use only.
- 7. Horsepower** - This column is coded to designate the engine's power output (horsepower) with its corresponding size (cubic centimeters).
- 8. Paint Code** - This column is coded to which color scheme the engine is equipped with.
- 9. Starter Type** - This column is coded to which type of starting system the engine is equipped with.
- 10. Options** - This column is coded to designate which equipment options the engine is equipped with.
- 11. Emissions Label** - This column is coded for the emissions standards the engine meets.
- 12. Pack Code** - This column is reserved for LCT Packaging Department only.

NOTE:

The LCT Engine Model and Serial Number Systems is subject to be changed or edited at any time

Engine Model Number & Serial Numbering System

Preproduction	Plant	Design Family	Crankshaft	Shaft	Shaft Detail	HP	Paint Code	Starter Type	Options	Emissions Label	Pack Code
x	P	LM Moderate	H Horizontal	T Threaded	XX	150 1.5HP (63cc)	1 Black Recoil (Pantone Black G Glossy)	E Electric Starter	A Fixed Speed	E1 50 State	S Single Pack
	S	LS Intermediate	V Vertical	K Straight-Keyed		200 2HP (87cc)	2 Black Tank (Pantone Black G Glossy)	P Pull Handle	B Manual Choke	E2 49 State	M Multi-Pack
		LX Extended		P Tapered		300 3HP (142cc)	3 Titan Yellow Blower Housing	A Alternator Only	C Catalytic Muffler	E4 California Preempt	
		LD Diesel				400 4HP (163cc)	4 Black Blower Housing (Pantone Black G Glossy)		D Generator Air Filter	E5 California Exh Only	

PLMHK14650124PBGQRSE2

P	Lister
LM	Moderate Design Family
H	Horizontal Crankshaft
K	Keyed PTO design
14	#14 Crankshaft Drawing
650	6.5hp (208cc) engine
1	Black Recoil (Glossy)
2	Black Tank (Glossy)
4	Black Blower Housing (Glossy)
P	Pull Start
B	Manual Choke
G	High Oil Fill Tube
P	Pleated Paper Air Filter
Q	No Low Oil Sensor
R	Low Temperature Muffler
S	Atmosphere Vented Plastic Fuel Cap w/ Tether Cord
E2	49 State Compliant
M	Multi-Pack

450 4.5HP (173cc)	5 Yellow Recoil (Pantone 1235C)		E Generator Muffler	E7 (TBD)	
650 6.5HP (208cc)	6 Yellow Tank (Pantone 1235C)		F No Tank	E8 (TBD)	
850 8.5HP (291cc)	7 Black Tank (Pantone Black M Matte)		G High Oil Fill Tube	E9 (TBD)	
1150 11.5HP (414cc)	8 Black Blower Housing (Pantone Black M Matte)		H Commercial Fuel Tank (Large Fuel Tank)	E10 (TBD)	
C1219A 4HP (219cc)					
C1305 6HP (305cc)	9 Yellow Blower Housing (Pantone 1235C)		I AC Charging Coil Equipped	E11 (TBD)	
C1305A 7HP (305cc)	1A Titan Green Blower Housing (Pantone Green 364C)		J DC Charging Coil Equipped	E12 (TBD)	
C1418 8HP (418cc)	1B Titan Green Recoil (Pantone Green 364C)		K Evaporative Emission Equipped	E13 (TBD)	
C1418A 9HP (418cc)	1D Black Recoil (Pantone Black M Matte)		L High Output Air Filter - CA	E14 (TBD)	
	1C Carmine Red Blower Housing (RAL 3002)		M Remote Throttle Control	E15 (TBD)	
	1E Blue Recoil (Pantone 1235C)		N High Output Air Filter - Non CA		
	1F Blue Tank (Pantone 294C)		O Snow Engine Equipped		
	1G Blue Blower Housing (Pantone 294C)		P Pleated Paper Air Filter		
	1H (TBD)		Q No Low Oil Sensor		
	1I (TBD)		R Low Temperature Muffler		
	1J (TBD)		S Atm. Vented Plastic Fuel Cap w/ Tether Cord		
			T Two Low Oil Fill Plugs		
			U C&U Bearings		
			V Viton Oil Seals		
			X Single Coil DC Charging System		
			Y Dual Coil DC Charging System		
			Z (TBD)		

General Specifications

Item	208cc	291cc	414cc
Maximum Speed	3850±50rpm	3850±50rpm	3850±50rpm
Idle Speed	2150+/-50rpm	2150+/-50rpm	2150+/-50rpm
Compression Ratio	8.5:1	8.2:1	8:1
Displacement	208cc	291cc	414cc
Compression Release	yes	yes	yes
Cast Iron Sleeve	yes	yes	yes
Bore x Stroke	2.76" x 2.13" (70mm x 54mm)	3.15" x 2.28" (80mm x 58mm)	3.54" x 2.56" (90mm x 65mm)
PTO Rotation	CCW (measured from PTO side)	CCW (measured from PTO side)	CCW (measured from PTO side)
Fuel (DO NOT USE E85)	regular unleaded gasoline	regular unleaded gasoline	regular unleaded gasoline
Low Oil Shutoff	if equipped	if equipped	if equipped
Fuel Shutoff Valve	yes	yes	yes
Oil Fill Capacity	16oz	32oz	38oz
Spark Plug Gap	0.7-0.8mm (.027-.030 in.)	0.7-0.8mm (.027-.030 in.)	0.7-0.8mm (.027-.030 in.)
Ignition Air Gap (At Flywheel)	0.4 +/- 0.2mm	0.4 +/- 0.2mm	0.4 +/- 0.2mm
Valve Adjustment (gap) Intake	.15 +/- .02mm (.005-.007in)	.15 +/- .02mm (.005-.007in)	.15 +/- .02mm (.005-.007in)
Valve Adjustment (gap) Exhaust	.20 +/- .02mm (.007-.009 in.)	.20 +/- .02mm (.007-.009 in.)	.20 +/- .02mm (.007-.009 in.)
Dry Weight (Summer Engines)	35lbs (16.6kg)	57.32lbs (26kg)	69.45lbs (31.5kg)
Dry Weight (Snow Engines)	38lbs (17.25kg)	61.5lbs (28.9kg)	75.5lbs (34.3kg)

General Troubleshooting

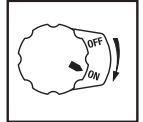
Engine will not start:

1. Check oil level- Do you have the correct amount of oil? (Ref: Engine Oil Service, pg. 10)

Remedy: Oil should be visible and to the top 2 threads of the LOWEST oil fill spout.

2. Is on/off switch on?

Remedy: Turn to the on position.



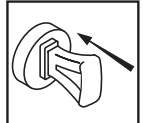
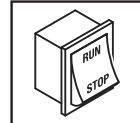
3. Snow Only:

a) Is the Run/Stop switch in the Run Position?

Remedy: Push switch to the Run Position.

b) Is the snow safety key inserted into slot?

Remedy: Push key into slot to fully engage.

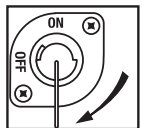
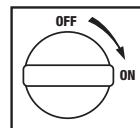


4. Do you have fuel in the fuel tank?

Remedy: Add fuel.

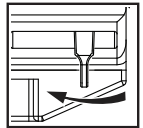
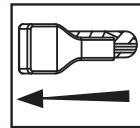
5. Is the fuel petcock turned to the on position?

Remedy: Turn to the on position.



6. Was the engine choked?

Remedy: When starting the engine the choke lever should be pushed left to the on position and after starting pushed right to the off position. If engine still does not start move to half choke and pull twice.



Snow

Summer

7. Is the spark plug boot securely fastened to the spark plug?

Remedy: Slide over spark plug and fit securely.

8. Has the fuel being used been purchased within the last three months and was it stored in a plastic container?

Remedy: Replace old fuel with new fuel.

9. Is the engine flooded?

Remedy: Remove spark plug and replace with any of the spark plugs listed under Spark Plug Service, pg. 9.

• NOTICE

Using an incorrect spark plug may cause engine damage.

General Troubleshooting

Engine stops running:

1. Has the fuel being used been purchased within the last three months and was it stored in a plastic container?

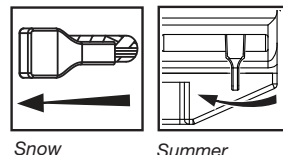
Remedy: Replace old fuel with new fuel.

2. Is the air filter dirty?

Remedy: Replace air filter element if dirty. Clean prefilter of any dirt or dust.

3. Was the engine choked?

Remedy: When starting the engine the choke lever should be pushed left to the on position and after starting pushed right to the off position. If engine still does not start move to half choke and pull twice.



4. Is the spark plug corroded?

Remedy: Remove spark plug and replace with any of the plugs listed under Spark Plug Service, pg.9.

• NOTICE

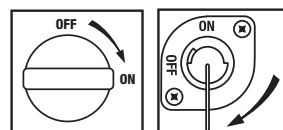
Using an incorrect spark plug may cause engine damage.

5. Has the engine run out of fuel?

Remedy: Refuel engine.

6. Is the fuel petcock turned to the on position?

Remedy: Turn to the on position.



7. Is the throttle set too low (variable speed models only)?

Remedy: Increase the throttle.



Advanced Troubleshooting – For Authorized LCT Technicians

ENGINE		
Complaint	Symptom and possible causes	Remedy
Engine will not start, or is hard to start	Compression too low	
	1. Valves out of adjustment	Adjust
	2. Worn valve guides or poor seating of valves	Repair or Replace
	3. Mistiming valves	Adjust
	4. Excessively worn piston rings	Replace
	5. Worn-down cylinder bore	Replace
	6. Poor seating of spark plug	Retighten
	7. Failed head gasket	Replace
	Plug not sparking	
	1. Fouled spark plug	Replace
	2. Wet spark plug	Dry off
	3. Defective ignition coil	Replace
	4. Spark plug wire damaged	Replace
	5. Kill switch in “OFF” position	Switch to “On”
	6. Ignition coil air gap is too wide	Reset
	7. Ignition coil failure	Replace
	No fuel reaching the intake manifold	
	1. Clogged fuel filter or fuel line	Replace
2. Dirty/gummed up carburetor	Clean	
3. Fuel petcock is turned off	Turn on	
4. Fuel tank is empty	Fill	
Engine idles poorly	1. Out of adjustment tappet clearance	Adjust
	2. Poor seating of valves	Replace or Repair
	3. Defective valve guides	Replace
	4. Worn down camshaft	Replace
	5. Too wide spark plug gap	Adjust or replace
	6. Defective ignition coil	Replace
	7. Ignition coil air gap too wide	Adjust
	8. Dirty/gummed up carburetor	Clean
	9. Stale fuel	Replace
Engine stalls easily	1. Dirty/gummed up carburetor	Clean
	2. Fouled spark plug	Replace
	3. Clogged fuel line	Replace
	4. Valves out of adjustment	Adjust

Noisy Engine	Excessive Valve Chatter	
	1. Too large valve clearance	Adjust
	2. Weakened or broken valve spring	Replace
	3. Worn tappet or cam lobe	Replace
	4. Worn and burnt camshaft journal	Replace
	Noise seems to come from piston	
	1. Worn down piston or cylinder	Replace
	2. Fouled with carbon combustion chamber	Clean
	3. Worn piston pin or piston pin bore	Replace
	4. Worn piston rings or ring grooves	Replace
	Noise seems to come from crankshaft	
	1. Rattling bearings due to wear	Replace
	2. Worn and burnt main bearings	Replace
	3. Worn and burnt pin bearing	Replace
	4. Too large endplay	Adjust
Noise seems to come from outside of engine		
1. Loose trim item	Tighten	
Engine runs poorly in high speed range	Defective engine internal/electrical parts	
	1. Weakened valve springs	Replace
	2. Worn camshaft	Replace
	3. Valve timing out of adjustment	Adjust
	4. Too narrow spark plug gaps	Adjust
	5. Defective ignition coil	Replace
	6. Clogged air cleaner element	Replace
	7. Clogged fuel line, resulting in inadequate fuel supply to carburetor	Replace
	8. Worn bearings	Replace
	9. Blown head gasket	Replace
	10. Ignition coil air gap too wide	Adjust
	11. Dirty/gummed up carburetor	Clean
	12. Stale fuel	Replace
	Defective air flow system	
1. Carburetor gasket leak - sucking air causing engine to run lean	Replace	
Engine lacks power	Defective engine internal/electrical parts	
	1. Loss of valve clearance	Adjust
	2. Weakened valve springs	Replace
	3. Out of adjustment valve timing	Adjust
	4. Worn piston ring or cylinder	Replace
	5. Poor seating of valves	Replace
	6. Fouled spark plug	Replace
	7. Incorrect spark plug	Replace
	8. Clogged air filter element	Replace
	9. Carburetor gasket leak - sucking air causing engine to run lean	Replace
	10. Too much engine oil	Adjust
	11. Air fins clogged on engine causing to overheat	Remove debris
	12. Not enough oil in engine	Adjust

Dirty or heavy exhaust smoke	1. Too much engine oil in the engine	Adjust
	2. Worn piston rings or cylinder	Replace
	3. Worn valve guides	Replace
	4. Scored or scuffed cylinder wall	Replace
	5. Worn valve stems	Replace
	6. Defective stem seal	Replace
	7. Worn oil ring side rails	Replace
No spark or poor spark	1. Defective ignition coil	Replace
	2. Defective spark plug	Replace
	3. Open-circuit wiring connection	Check and repair
Spark plug fouled with carbon	1. Incorrect gasoline	Replace
	2. Dirty air cleaner element	Replace
	3. Too cold spark plug	Use hotter plug
Spark plug becomes fouled too soon	1. Worn piston rings	Replace
	2. Worn piston or cylinder	Replace
	3. Excessive clearance of valve stems in valve guides	Replace
	4. Worn valve stem oil seal	Replace
Spark plug electrode overheated or burnt	1. Too hot spark plug	Use colder plug
	2. Overheated the engine	Tune up
	3. Loose spark plug	Tighten
	4. Too lean fuel mixture	Check for air leak

Spark Plug Service

Recommended spark plugs: Torch Plug: F6RTC

Cross References

- Champing plug cross reference is: **RN9YC (some tables show RN9YCC)**
- **NGK** plug cross reference is: **BPR6ES**
- **BOSCH** plug cross reference is: **WR6DC**

• NOTICE

Using an incorrect spark plug may cause engine damage.

1. When engine is cool, disconnect the spark plug cap and remove any debris from the spark plug area with high pressure air.
2. Remove the spark plug with a 13/16-inch spark plug wrench.
3. Inspect the spark plug. Replace it if the electrodes are worn or if the insulator is cracked or chipped. Spark plug gap should be set to 0.027 - 0.030 inches.
4. Install the spark plug carefully to avoid cross threading. Screw in spark plug by hand until it stops turning.
5. Tighten the spark plug with a 13/16-inch spark plug wrench. Tighten 1/4 turn after the spark plug seats.

• NOTICE

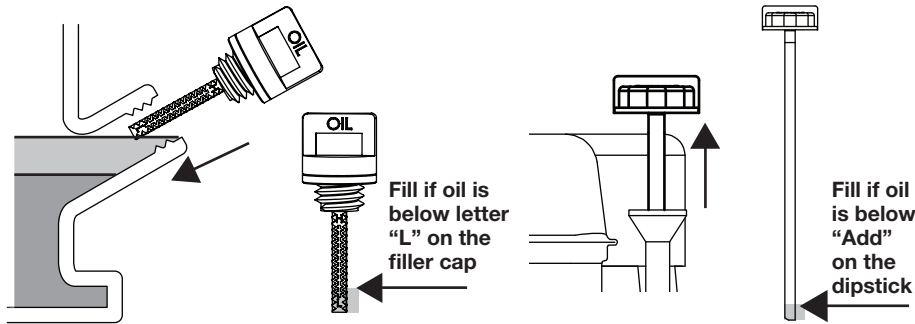
A loose spark plug can overheat and damage the engine. Over-tightening the spark plug can damage the threads in the cylinder head.

6. Attach the spark plug cap. Ensure spark plug cap snaps into place securely.

Engine Oil Level Check

Check the engine oil level with the engine stopped and with the engine in a level position.

1. Remove either side mounted filler cap dipstick or high oil fill dipstick and wipe it clean.
2. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.
3. If the oil level is low, fill to the edge of the oil filler hole with the recommended oil.
4. Securely screw in the filler cap/dipstick. Running the engine with a low oil level can cause engine damage. Always check the engine oil before start up.



Engine Oil Change

Drain the used oil while the engine is warm. Warm oil drains quickly and completely. Avoid contact with hot oil.

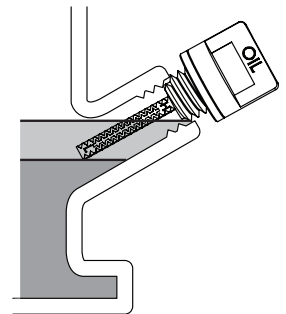
1. Place a suitable container below the engine to catch the used oil then remove the filler cap/dipstick and the drain plug.
2. Allow the used oil to drain completely, then reinstall the drain plug, and tighten it securely. Do not over tighten. Dispose of used motor oil in a manner that is compatible with the environment. We suggest you take used oil in a sealed container to your local recycling center or service station for reclamation. Do not throw used oil in the trash, pour it on the ground, or pour down a drain.
3. With the engine in a level position, fill to the outer edge of the oil filler hole with the recommended oil. (see fill limits right)

• NOTICE

Running the engine with a low oil level can cause engine damage.

4. Securely screw in the filler cap/dipstick.

Max Upper Level
Max Lower Level

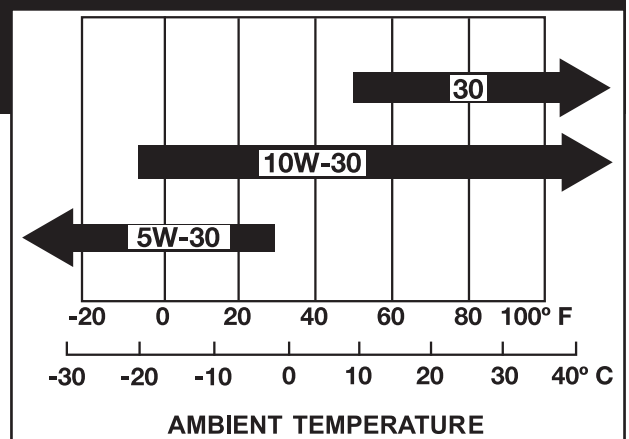


Engine Oil Recommendations

Engine oil affects performance and service life. Use 4-stroke automotive detergent oil.

SAE 10W-30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area warrants.

The SAE oil viscosity and service classification are in the API label on the oil container. The manufacturer recommends you use API SERVICE category SJ engine oil, or better.



Maintenance Schedule

Normal Operating Conditions (less than 40 hrs. per year)

	EACH USE	FIRST MONTH	EVERY 6 MONTHS	ONCE A YEAR
Engine Oil Level	Check			
Engine Oil		Replace	Replace	
Air Filter	Check			Clean / Replace
Spark Plug*			Clean	Replace
Cylinder/Head Fins				Clean
Oil Leaks	Check			
Bolts	Check			
Fuel Hose Clamps	Check			

* Spark plug gap to be set to 0.027 - 0.030 inches.

Extreme Operating Conditions (greater than 40 hrs. per year)

	EACH USE	EVERY 40 HOURS
Engine Oil Level	Check	
Engine Oil		Replace
Air Filter	Check	
Spark Plug*		Replace
Cylinder/Head Fins	Check	Clean
Oil Leaks	Check	
Bolts	Check	
Fuel Hose Clamps	Check	

* Spark plug gap to be set to 0.027 - 0.030 inches.

NOTE

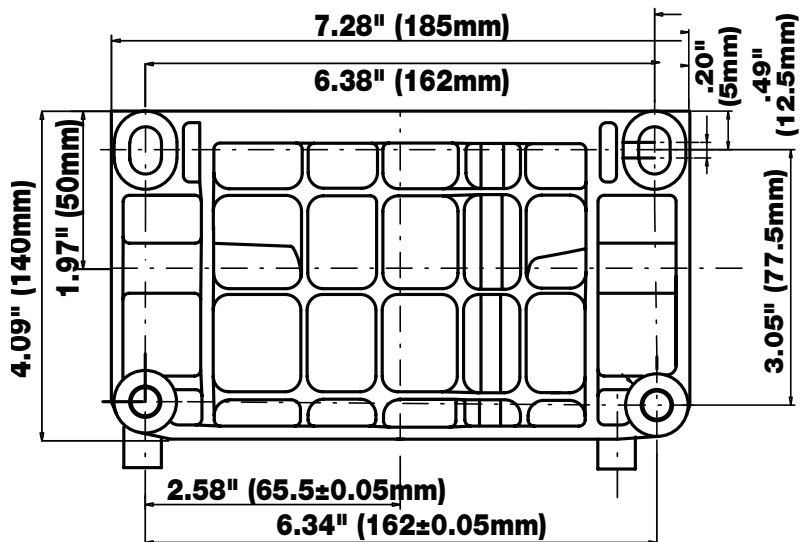
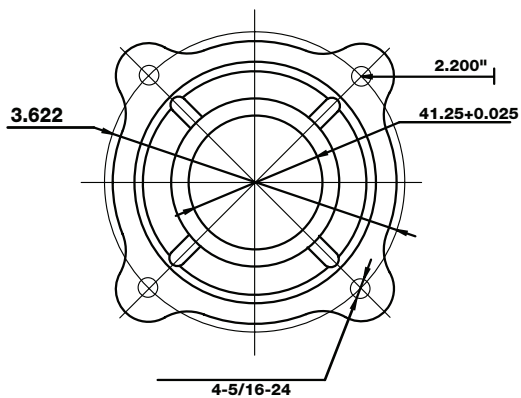
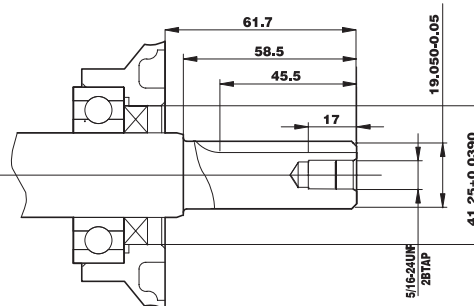
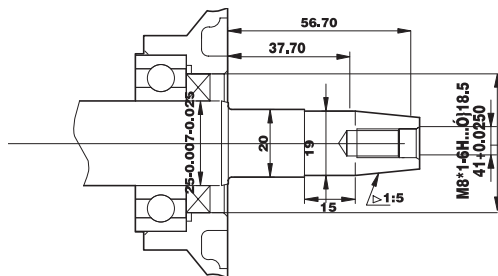
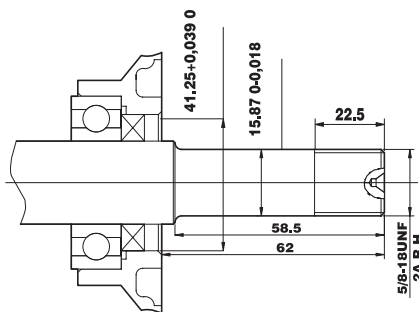
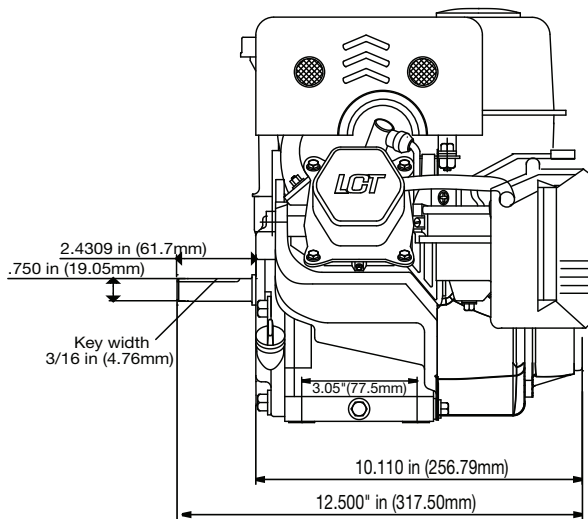
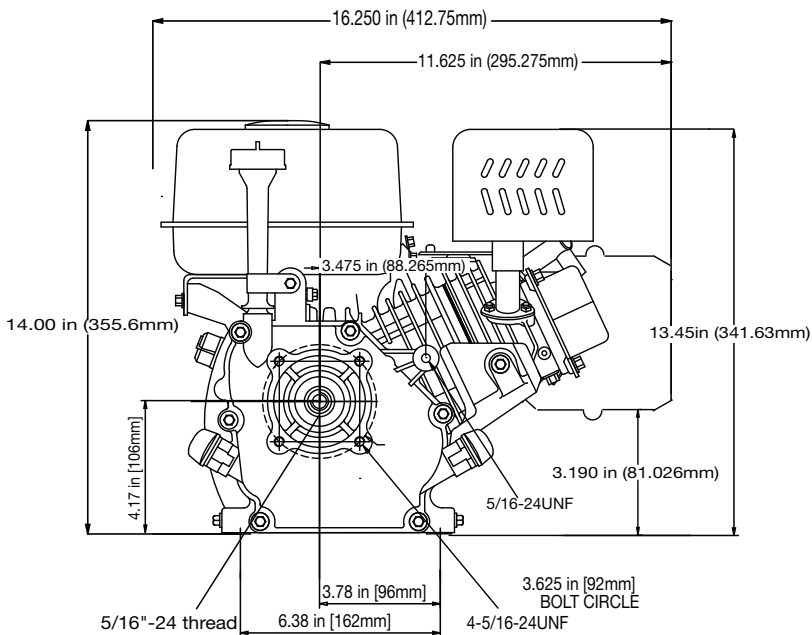
Following proper maintenance is critical under extreme operating conditions.

Torque Specifications

Item	208cc Torque (N.M)	291cc Torque (N.M)	414cc Torque (N.M)
Drain bolt	12	24	24
Oil sensor	8	8	8
Oil level cap	3	3	3
Spark plug	20-25	20-25	20-25
Carburetor studs	10-12	20	20
Exhaust studs	20-24	20-24	20-24
Pivot bolt M8	22-25	22-25	22-25
Connecting rod bolt	12-14	20	20-24
Flange bolt	18-24	18-24	18-24
Distributor M6*27	10-12	10-12	10-12
Flange bolt of cylinder head M8*55	36	40-42	48
Pivot adjusting nut for intake, exhaust valve	10	10	10
Flange bolt for head cover	10-12	10-12	10-12
The bolt for crankcase cover M6*14	10-12	10-12	10-12
Side plate M6*12	8	8	8
Governor support	8	8	8
Carburetor nut M6	7	8	8
Muffler nut M8	24	24	24
Rocker bolt	20-25	20-25	20-25
Cylinder cover bolt (crankcase/ PTO cover)	24	24-26	24-26
Cylinder head bolt	36	40-42	48
Flywheel nut	75-80	96-102	96-102
Flange bolt for valve cover (head cover)	7	12-13	12-13

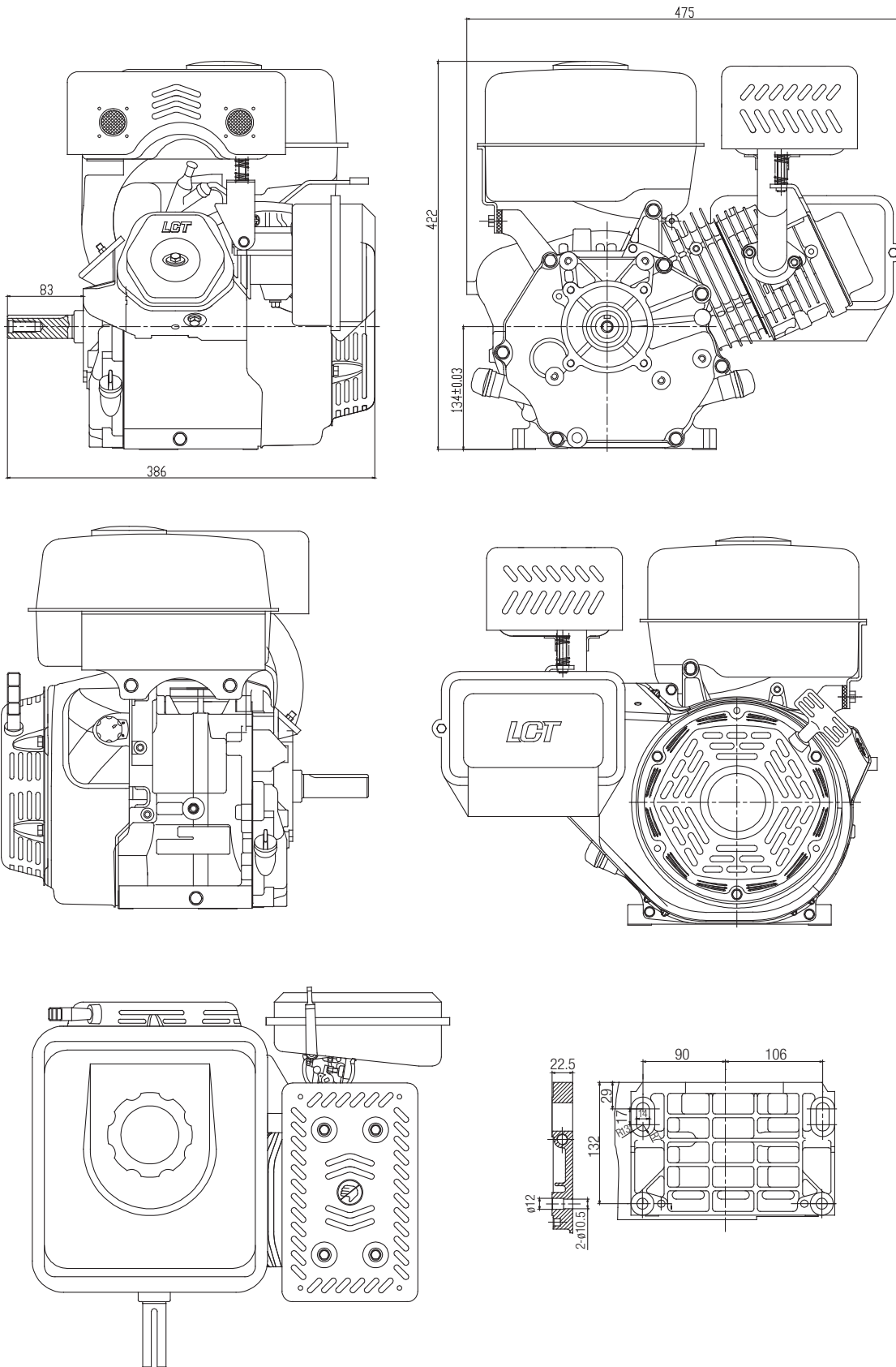
208cc Summer Engine Dimensions

*Drawings do not accurately represent actual engine appearance.



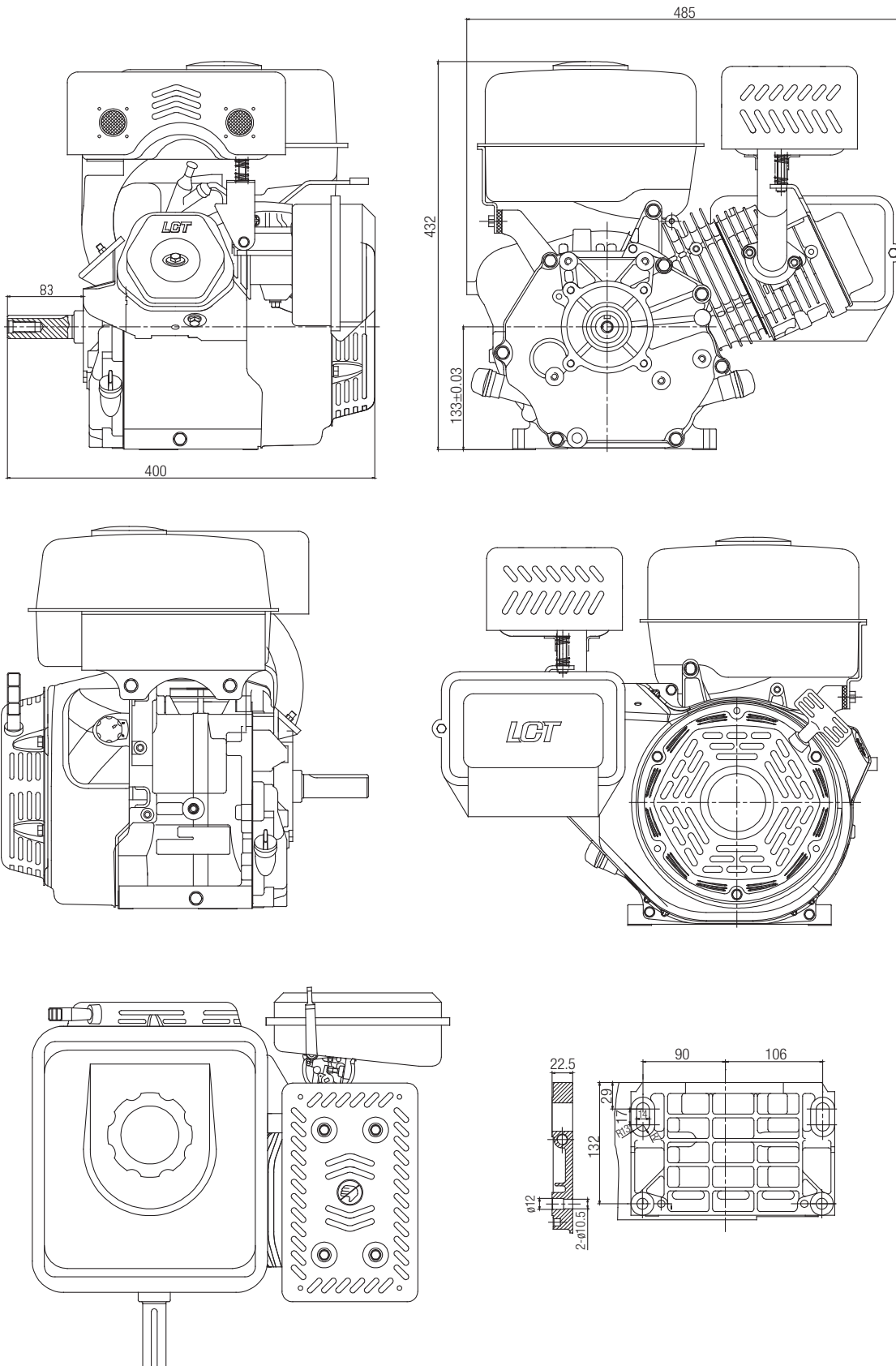
291cc Summer Engine Dimensions

*Drawings do not accurately represent actual engine appearance.



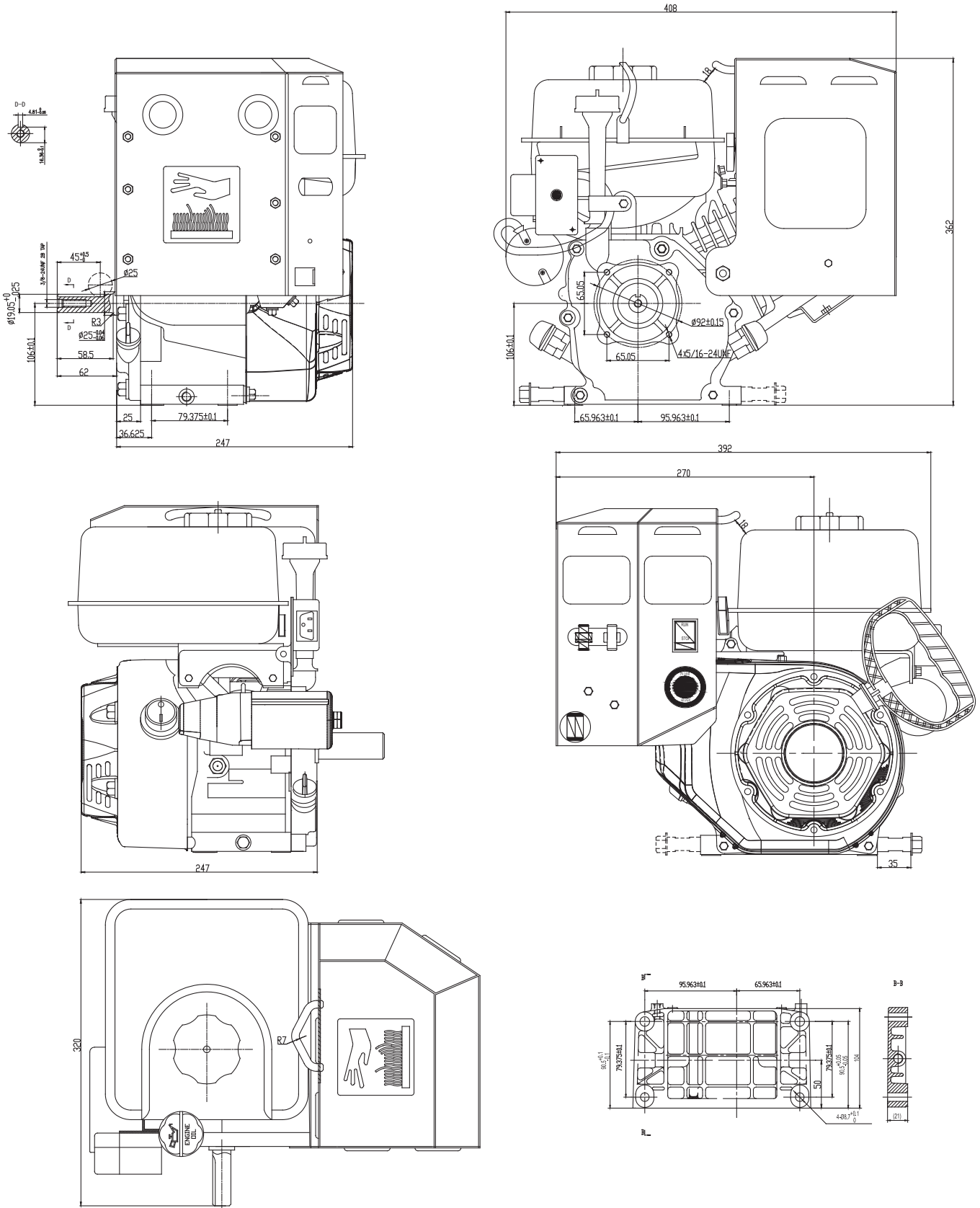
414cc Summer Engine Dimensions

*Drawings do not accurately represent actual engine appearance.



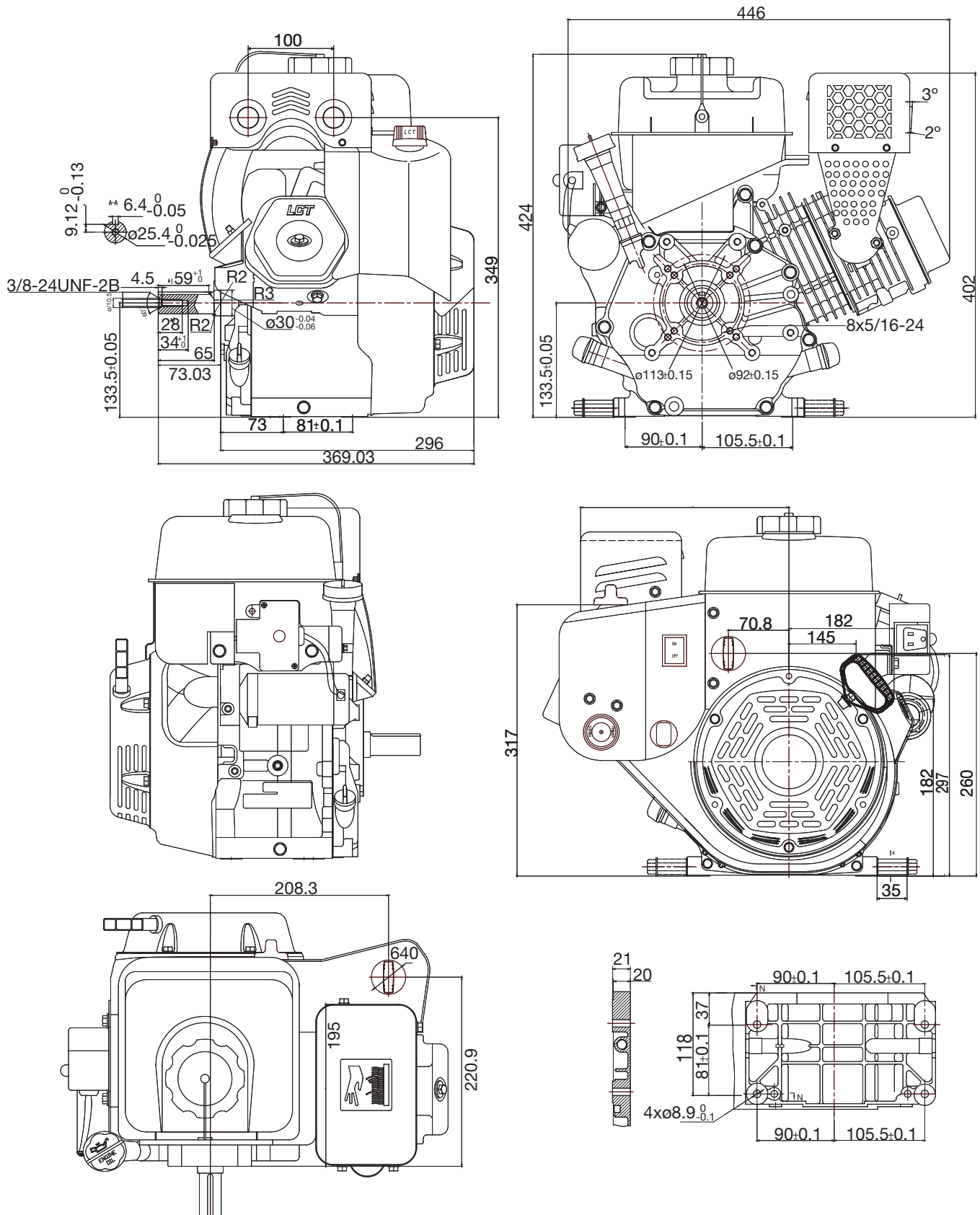
208cc Snow Engine Dimensions

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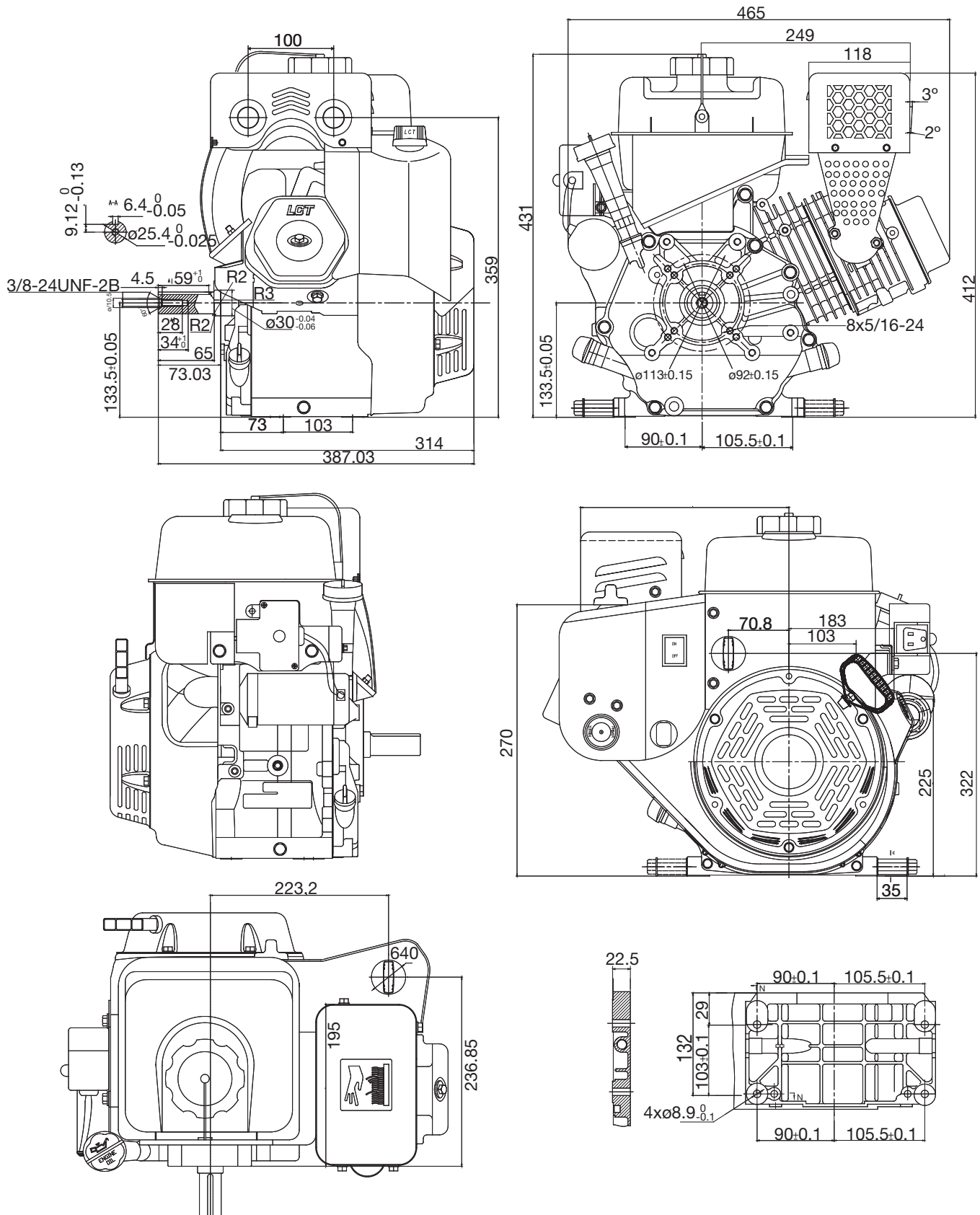
291cc Snow Engine Dimensions

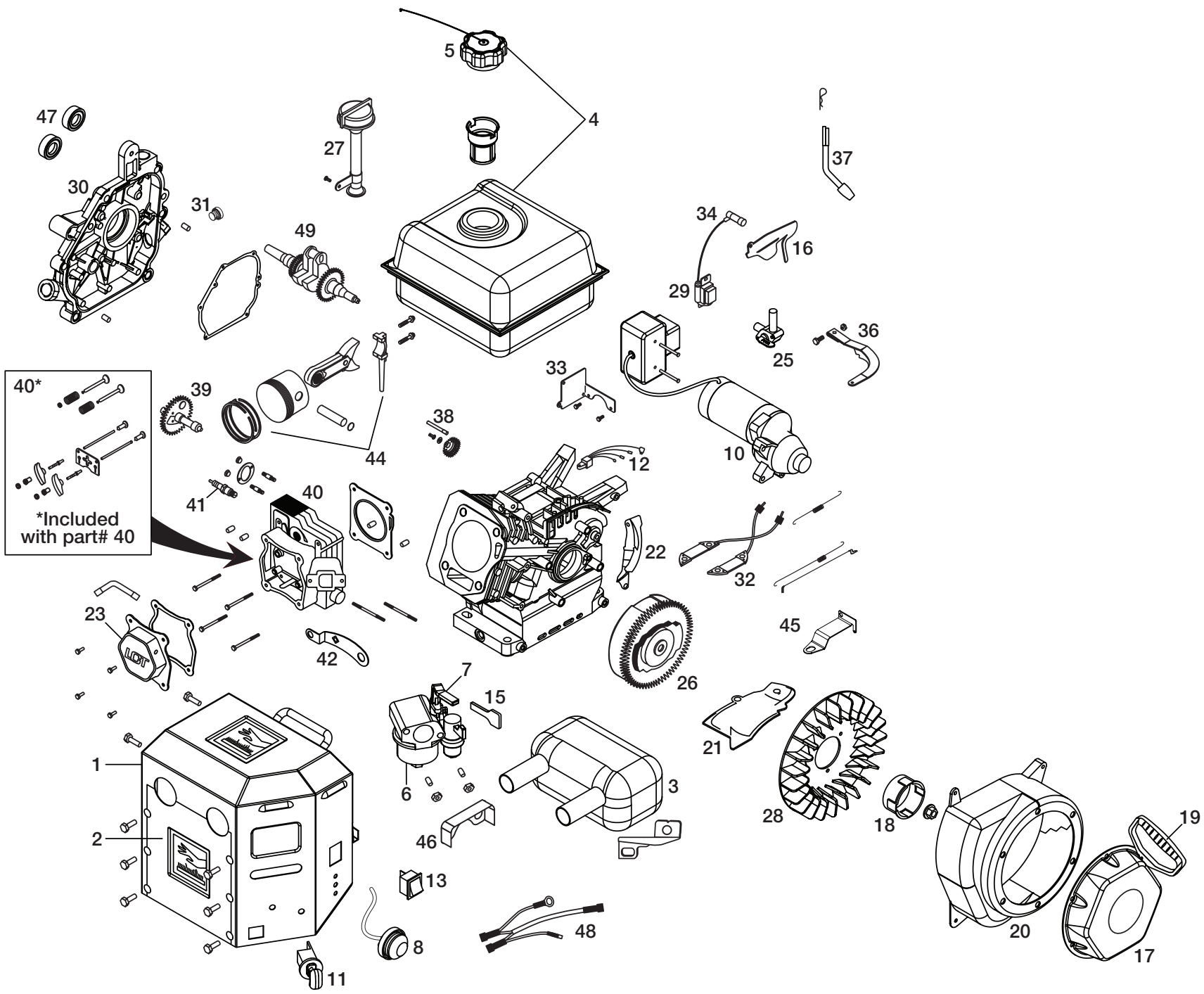
*Drawings do not accurately represent actual engine appearance.



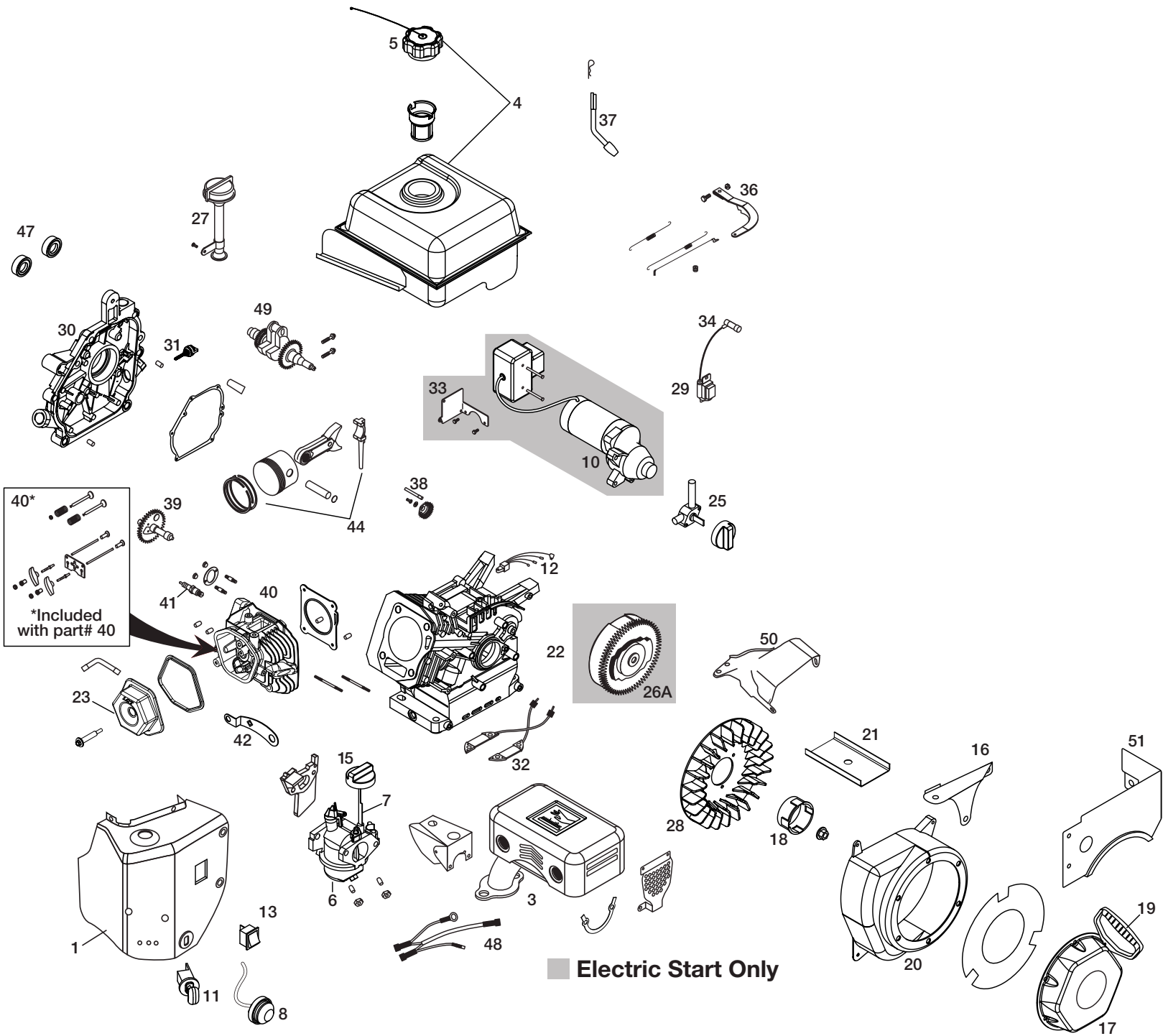
414cc Snow Engine Dimensions

*Drawings do not accurately represent actual engine appearance.





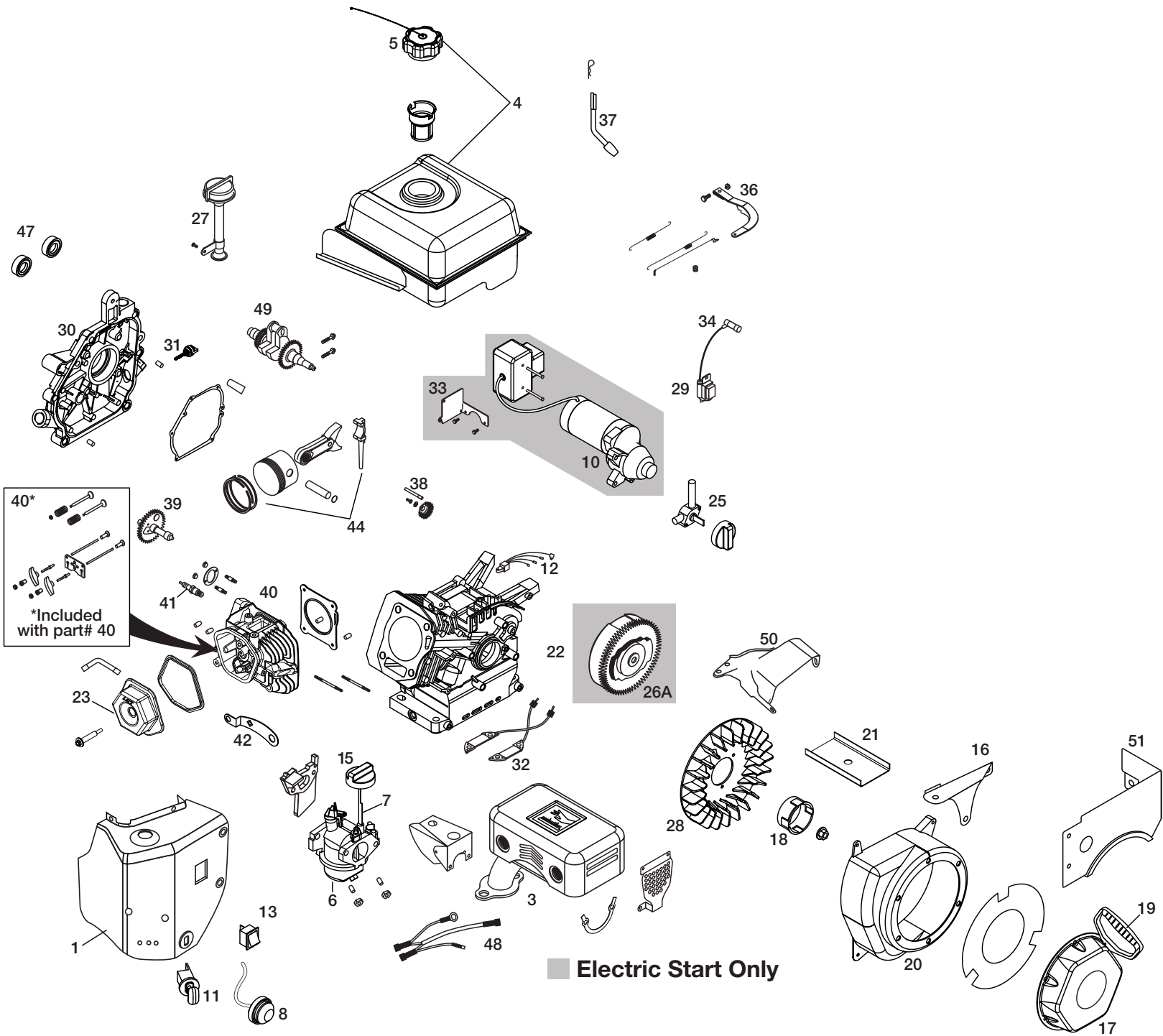
208cc SERVICE KIT BREAKDOWN		
208cc ELECTRIC START SNOW LCT ENGINE - PLMHK18650781DE-ABGJOQUVYE1M1S		
REFERENCE #	PART DESCRIPTION	PART #
1	HEATER BOX ASSY	532424932
2	SHIELD, HEATER BOX	532424934
3	SNOW MUFFLER ASSY	532424937
4	SNOW FUEL TANK ASSY	532424938
5	OVERSIZED FUEL TANK CAP(CLICK STYLE)	532424942
6	SNOW CARBURETOR ASSY	532424944
7	SNOW CHOKE LEVER,CARBURETOR	532424947
8	FUEL PRIMER BULB WITH HOSE	532424949
10	ELECTRIC STARTER ASSY	532424953
11	KEY SWITCH ASSY	532424954
12	CDI BOX	532424955
13	ON/OFF SWITCH	532424957
15	PLASTIC THROTTLE/CHOKE HANDLE (RED)	532424958
16	GOVERNOR LINKAGE SHIELD PLATE	532424960
17	SNOW RECOIL STARTER ASSY (HEX STYLE - BLACK)	532424962
18	STARTER CUP SMALL	532424966
19	SNOW STARTER GRIP	532424968
20	BLOWER HOUSING ASSEMBLY ELECTRIC START - SNOW (BLACK)	532424971
20A	BLOWER HOUSING ASSEMBLY ELECTRIC START - SNOW (BLACK)	532429230
21	SHIELD, CYLINDER	532424973
22	SHIELD, FLYWHEEL	532424975
23	VALVE COVER	532420580
25	FUEL PETCOCK	532420592
26	ELECTRIC START FLYWHEEL ASSY	532424970
26A	MANUAL START FLYWHEEL ASSY	532429236
27	HIGH OIL FILL TUBE ASSY	532424969
28	FLYWHEEL FAN	532420586
29	IGNITION COIL ASSY	532420595
30	CRANKCASE COVER ASSY	532420606
31	NON REMOVABLE PLUG	532420961
32	CHARGING COIL DC	532424959
33	ELECTRIC STARTER BRACKET	532429244
34	SPARK PLUG BOOT	532429246
36	GOVERNOR ARM ASSY	532420601
37	GOVERNOR SHAFT	532420602
38	GOVERNOR GEAR ASSY	532429251
39	CAMSHAFT	532420584
40	CYLINDER HEAD ASSY	532420578
41	SPARK PLUG	532424939
42	CDI BOX BRACKET	532424936
44	PISTON AND ROD ASSY	532420582
45	SPEED CONTROL BRACKET	532429259
46	VAPOR SHIELD	532429260
47	SEAL KIT	532429261
48	WIRE HARNESS	532429262
49	CRANKSHAFT	532429263



40*
 *Included with part# 40

■ Electric Start Only

291CC SERVICE KIT BREAKDOWN 291cc ENGINE - PLMHK19850781DE-ABGIJOQUVE1M/S		
REFERENCE #	PART DESCRIPTION	PART #
1	HEATER BOX ASSEMBLY-SNOW	532429206
3	MUFFLER ASSEMBLY-SNOW	532429208
4	FUEL TANK ASSEMBLY-SNOW	532429209
5	FUEL TANK CAP-OVERSIZED (CLICK STYLE)-SNOW	532429211
6	CARBURETOR ASSEMBLY-SNOW	532429215
7	CHOKE LEVER,CARBURETOR-SNOW	532429216
8	PRIMER BULB ASSEMBLY W/HOSE-SNOW	532429218
10	ELECTRIC STARTER ASSEMBLY-SNOW	532429220
11	KEY SWITCH ASSEMBLY-SNOW	532429221
12	CDI BOX ASSEMBLY-SNOW	532429222
13	ON/OFF SWITCH-SNOW	532429223
15	CHOKE KNOB-SNOW	532429224
16	GOVERNOR LINKAGE SHIELD PLATE-SNOW	532429225
17	RECOIL STARTER ASSEMBLY-SNOW	532429226
18	STARTER CUP SMALL-SNOW	532429227
19	STARTER GRIP-SNOW	532429228
20	BLOWER HOUSING ASSEMBLY, ELECTRIC START-SNOW	532429229
21	SHIELD, CYLINDER	532429231
22	SHIELD, UNDER FLYWHEEL CHARGING SYSTEM-SNOW	532429232
23	VALVE COVER	532429233
25	FUEL PETCOCK, SNOW	532429234
26	FLYWHEEL ASSEMBLY, ELECTRIC START-SNOW	532429288
26A	FLYWHEEL ASSEMBLY, MANUAL START-SNOW	532429289
27	HIGHOIL FILL ASSY KIT, SOW	532429237
28	FLYWHEEL FAN	532429238
29	IGNITION COIL ASSY	532429240
30	CRANKCASE COVER ASSY	532429241
31	NON-REMOVABLE OIL PLUG	532429242
32	CHARGING COIL AC/DC	532429243
33	ELECTRIC STARTER BRACKET	532429290
34	SPARK PLUG BOOT	532429291
36	GOVERNOR ARM ASSY	532429248
37	GOVERNOR SHAFT	532429250
38	GOVERNOR GEAR ASSEMBLY	532429292
39	CAMSHAFT	532429253
40	CYLINDER HEAD ASSY	532429254
41	SPARK PLUG	532429255
42	CDI BOX BRACKET-SNOW	532429257
44	PISTON AND ROD ASSY	532429258
46	VAPOR SHIELD	532429213
47	SEAL KIT	532429283
48	WIRE HARNESS	532429284
49	CRANKSHAFT	532429285
50	TOP SHIELD	532429286
51	FUEL TANK SKIRT	532429287



**414CC SERVICE KIT BREAKDOWN
414cc SNOW ENGINE - PLMHK191150781DE-ABGIJOQUVE1MK**

REFERENCE #	PART DESCRIPTION	PART #
1	HEATER BOX ASSEMBLY-SNOW	532429294
3	MUFFLER ASSEMBLY-SNOW	532429208
4	FUEL TANK ASSEMBLY-SNOW	532429209
5	FUEL TANK CAP-OVERSIZED (CLICK STYLE)-SNOW	532429211
6	CARBURETOR ASSEMBLY-SNOW	532429295
7	CHOKE LEVER,CARBURETOR-SNOW	532429296
8	PRIMER BULB ASSEMBLY W/HOSE-SNOW	532429218
10	ELECTRIC STARTER ASSEMBLY-SNOW	532429297
11	KEY SWITCH ASSEMBLY-SNOW	532429221
12	CDI BOX ASSEMBLY-SNOW	532429222
13	ON/OFF SWITCH-SNOW	532429223
15	CHOKE KNOB-SNOW	532429224
16	GOVERNOR LINKAGE SHIELD PLATE-SNOW	532429798
17	RECOIL STARTER ASSEMBLY-SNOW	532429299
18	STARTER CUP SMALL-SNOW	532429300
19	STARTER GRIP-SNOW	532429301
20	BLOWER HOUSING ASSEMBLY, ELECTRIC START-SNOW	532429302
21	SHIELD, CYLINDER	532429231
22	SHIELD, UNDER FLYWHEEL CHARGING SYSTEM-SNOW	532429232
23	VALVE COVER	532429303
25	FUEL PETCOCK, SNOW	532429234
26	FLYWHEEL ASSEMBLY, ELECTRIC START-SNOW	532429304
26A	FLYWHEEL ASSEMBLY, MANUAL START-SNOW	532429305
27	HIGHOIL FILL ASSY KIT, SNOW	532429237
28	FLYWHEEL FAN	532429306
29	IGNITION COIL ASSY	532429307
30	CRANKCASE COVER ASSY	532429308
31	NON-REMOVABLE OIL PLUG	532429242
32	CHARGING COIL AC/DC	532429243
33	ELECTRIC STARTER BRACKET	532429290
34	SPARK PLUG BOOT	532429309
36	GOVERNOR ARM ASSY	532429310
37	GOVERNOR SHAFT	532429311
38	GOVERNOR GEAR ASSEMBLY	532429312
39	CAMSHAFT	532429313
40	CYLINDER HEAD ASSY	532429314
41	SPARK PLUG	532429255
42	CDI BOX BRACKET-SNOW	532429257
44	PISTON AND ROD ASSY	532429315
46	VAPOR SHIELD	532429213
47	SEAL KIT	532429316
48	WIRE HARNESS	532429284
49	CRANKSHAFT	532429317
50	TOP SHIELD	532429286
51	FUEL TANK SKIRT	532429318