

# RAPTOR I RACING ENGINES

## Illustrated Parts List Motorsports Model Series



# 133230

TYPE NUMBER  
8004.



### WARNING:



- MODEL 133230-8004-01 IS A RACING ENGINE
- SPECIAL SKILLS AND KNOWLEDGE ARE REQUIRED TO PREPARE THE ENGINES FOR COMPETITIVE USE. IF YOU ARE NOT FAMILIAR WITH THE PROPER TECHNIQUES AND PROCEDURES, HAVE QUALIFIED INDIVIDUALS DO THE WORK FOR YOU
- THE ENGINES DO NOT HAVE GOVERNORS. ANY THROTTLE MECHANISM MUST HAVE A RETURN-TO-IDLE SPRING SO THE ENGINE WILL RETURN TO IDLE SPEED WHEN THE THROTTLE PEDAL IS RELEASED

**FAILURE TO FOLLOW THESE WARNINGS COULD  
RESULT IN SERIOUS PERSONAL INJURY OR DEATH**

### TO FIND THE CORRECT NUMBER OF THE PART YOU NEED: FOLLOW THE INSTRUCTIONS ON THE REVERSE SIDE

- Refer to Engine Model, Type and Code Number that is stamped on the blower housing of engine. Engine type numbers such as 0123 01 are listed only as 0123 in most instances. The two digits (01 or 02, etc.) to the right of the space may be required for more accurate parts identification in some instances. Select the Illustrated Parts List covering the correct Model Series and Type Number.
- Refer to the Illustrations and compare the original part with Illustration. The number next to the illustration is the Reference Number. Assemblies include all parts shown in frames. All parts shown in assembly frames having individual reference numbers can be purchased separately.
- After the Reference Number has been identified, refer to the Numerical text, where Reference and Primary Part Number are listed. THE PRIMARY PART IS USED ON ALL TYPE NUMBERS EXCEPT THOSE TYPE NUMBERS UNDER "NOTE."
- If a "Note" appears below the Primary Part Number, it means that this part differs from the Primary Part for certain types. If your Type number is listed under "Note," order the part referred to at the "Note."
- If your Engine Type Number does not appear after any part number listed under "Note," use the Primary Part Number.
- For Engine Type Numbers not covered by this book, check other Parts Lists having the same engine model or contact your source of supply.

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## In the Interest of Safety

 This safety alert symbol indicates that this message involves personal safety. Words danger, warning and caution indicate degree of hazard. Death, personal injury and/or property damage may occur unless instructions are followed carefully.

The Briggs & Stratton engine you bought is made of the finest material in a state-of-the-art manufacturing facility. Please understand that Briggs & Stratton sells engines to original equipment manufacturers. It also sells to others in the distribution chain who may sell to the ultimate consumer, an equipment manufacturer, another distributor or a dealer. As a result, Briggs & Stratton does not necessarily know the application on which the engine will be placed. For that reason, you should carefully read and understand the operating instructions of the equipment on which your engine is placed before you operate it.

You should also understand that there are equipment applications for which Briggs & Stratton does not approve the use of its engines. Briggs & Stratton engines are not to be used on vehicles with less than 4 wheels. They include motor bikes, aircraft products and All Terrain Vehicles. **FOR THAT REASON, BRIGGS & STRATTON ENGINES ARE NOT AUTHORIZED FOR ANY OF THESE APPLICATIONS.** Failure to follow this warning could result in death, serious injury (including paralysis) or property damage.



You are not ready to operate this engine if you have not read and understood the following safety items.



### WARNING

DO NOT run engine in an enclosed area. (Exhaust gases contain carbon monoxide, an odorless and deadly poison.)

DO NOT place hands or feet near moving or rotating parts.  
DO NOT store, spill, or use gasoline near an open flame, nor near an appliance like a stove, furnace, or water heater that uses a pilot light or can create a spark.  
DO NOT refuel indoors or in an unventilated area.  
DO NOT remove fuel tank cap nor fill fuel tank while engine is hot or running. (Allow engine to cool 2 minutes before refueling.)  
DO NOT operate or tip engine/equipment at such a severe angle that causes gasoline spillage.  
DO NOT operate engine if gasoline is spilled or when smell of gasoline is present or other explosive conditions exist. (Move equipment away from spill and avoid any ignition until gasoline has evaporated.)  
DO NOT transport engine with fuel in tank or with fuel shut-off valve open.  
DO NOT choke carburetor to stop engine, especially in an enclosed vehicle. (Whenever possible, gradually reduce engine speed before stopping.)

DO NOT check for spark with spark plug removed. (Use an approved tester.)  
DO NOT crank engine with spark plug removed. (If engine is flooded, place throttle in FAST and crank until engine starts.)  
DO NOT strike flywheel with a hammer or hard object as this may cause flywheel to shatter in operation. (Use correct tools to service engine.)  
DO NOT operate engine without a muffler. (Inspect periodically and replace if worn or leaking. If engine is equipped with muffler deflector, inspect periodically and, if necessary, replace with correct deflector.)  
DO NOT operate engine with an accumulation of grass, leaves or other combustible material in muffler area.  
DO NOT use this engine on any forest covered, brush covered, or grass covered unimproved land unless a spark arrester is installed on muffler. Spark arrester must be maintained in effective working order by owner and/or operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands.  
DO NOT touch hot muffler, cylinder, or fins which can cause burns.  
DO NOT start engine with air cleaner or air cleaner cover removed (or cover over carburetor air intake, if Sno/Gard engine).



### WARNING

PREVENT ACCIDENTAL STARTING by removing spark plug wire when servicing engine or equipment. Disconnect negative wire from battery terminal if equipped with electric starting system.

KEEP cylinder fins and governor parts free of dirt, grass and other debris which can affect engine speed.  
PULL starter cord slowly until resistance is felt. Then pull cord rapidly to avoid kickback and prevent hand or arm injury.  
USE fresh gasoline. Stale fuel can gum carburetor and cause leakage.

CHECK fuel lines and fittings frequently for cracks or leaks. Replace if required.  
4 Use only Genuine Briggs & Stratton Parts or their equivalent. The use of replacement parts which are not of equivalent quality may damage the engine.



## WARNING:



The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

International Symbols



Safety Alert



Read Owner's Manual

| ○ On Off



Stop



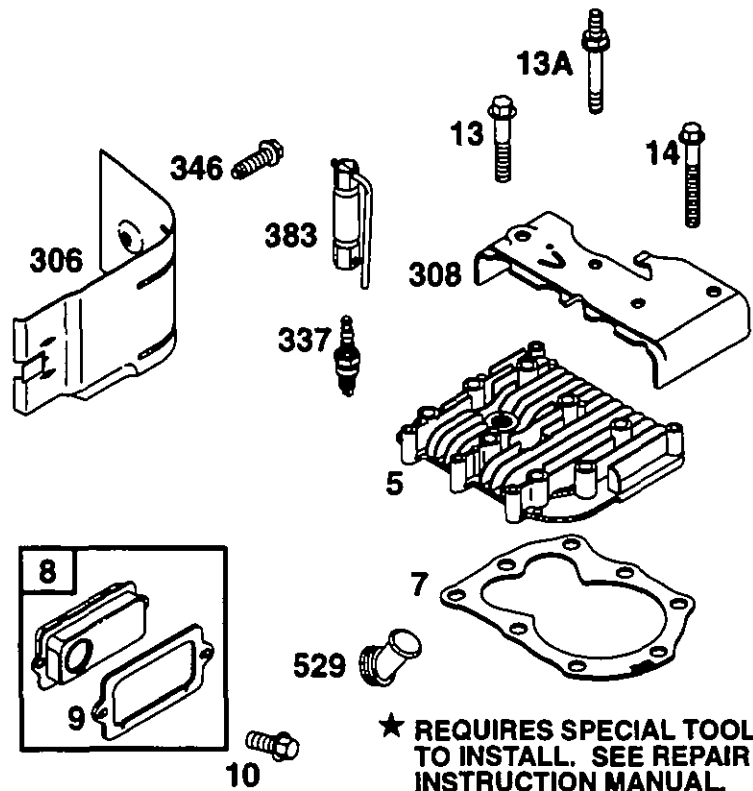
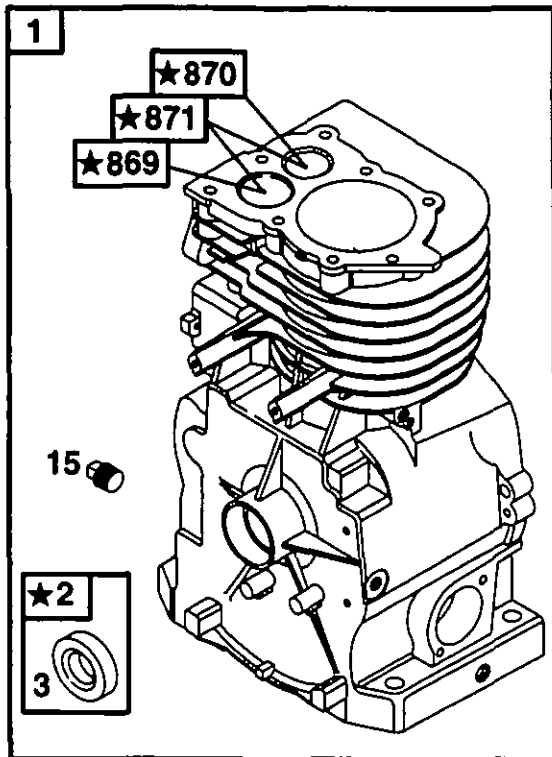
Fuel Shutoff



Fuel



Choke

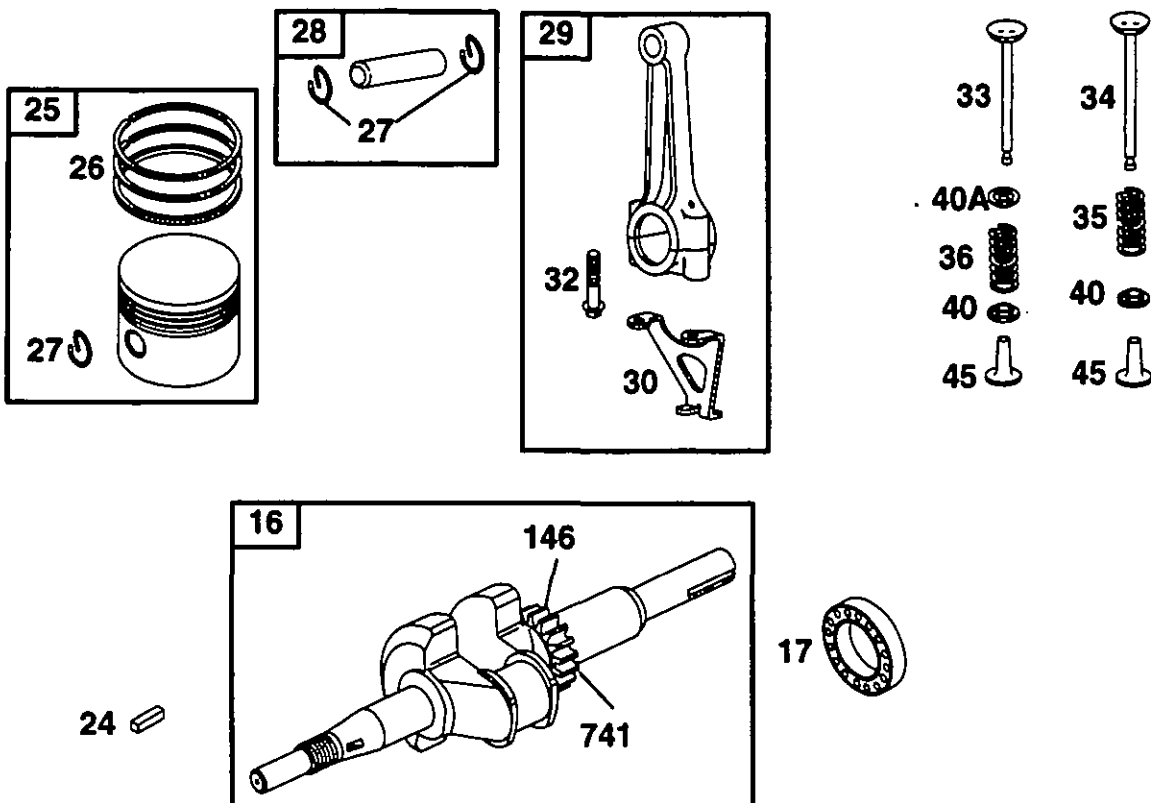


★ REQUIRES SPECIAL TOOLS TO INSTALL. SEE REPAIR INSTRUCTION MANUAL.

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	555206	Cylinder Assembly	14	555045	Screw—Cylinder Head (2 1/2" Long)	870	555137	Seat—Exhaust Valve
2	555140	Bushing	15	555079	Plug—Oil Drain	871	555214	Bushing—Guide (Exhaust Valve)
3	★555071	Seal—Oil	306	555057	Shield—Cylinder	Note 555139 Bushing—Guide (Intake Valve)		
5	555199	Head—Cylinder	308	555056	Cover—Cylinder			
7	★555187	Gasket—Cylinder Head	337	555132	Plug—Spark			
8	555073	Breather Assembly	346	555046	Screw—Hex.			
9	★555036	Gasket—Breather	383	89838	Wrench—Spark Plug			
10	555043	Screw—Hex.	529	555074	Grommet (Tempered)			
13	555041	Screw—Hex. (2 1/8" Long)	869	555136	Seat—Intake Valve			
13A	555082	Stud—Cylinder Head						

★ Included in Gasket Set—Part No. 555210.

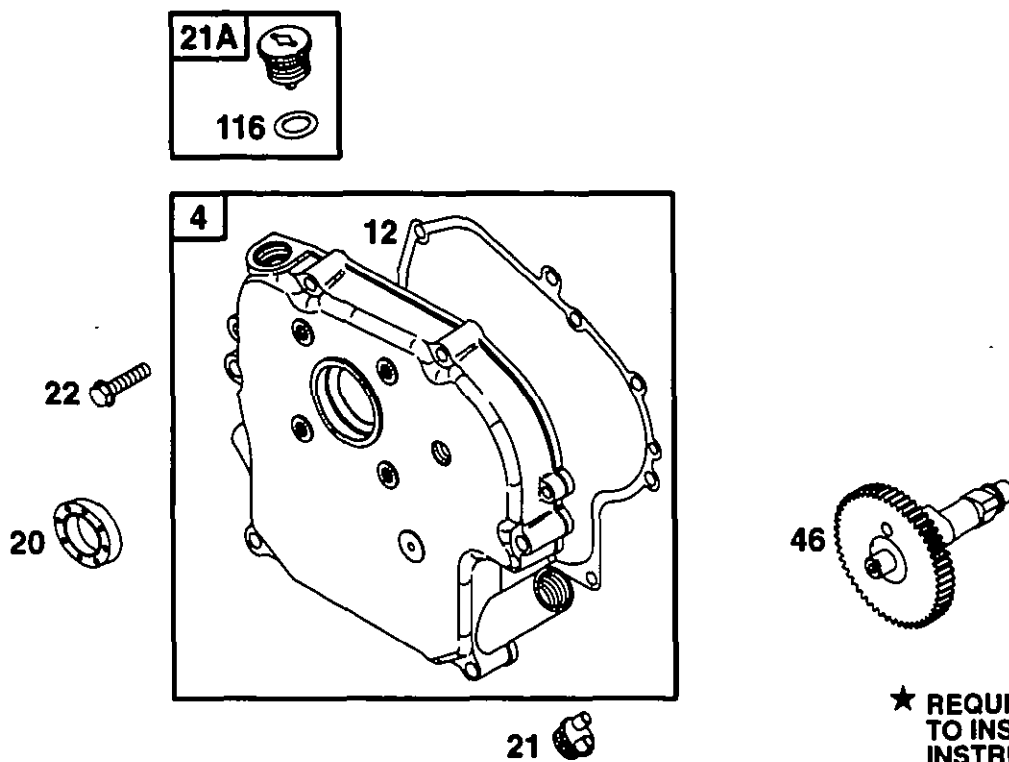
● Included in Carburetor Kit—Part No. 555130.



REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
16	555204	Crankshaft	27	555035	Lock-Piston Pin	36	555076	Spring-Valve (Exhaust)
17	555050	Bearing-Ball	28	555058	Pin-Piston (Standard)	40	555039	Retainer-Valve
24	555054	Key-Flywheel		555059	Pin-Piston (.005" O.S.)	40A	555147	Retainer-Valve
25	555092	Piston Assembly (Standard)	29	555179	Rod-Connecting (Standard)	45	555061	Tappet-Valve
		<b>Note</b> _____		555208	Rod-Connecting (.020" Undersize)	146	555049	Key-Woodruff
		555093 Piston Assy. (.010" O.S.)	30	555144	Dipper-Connecting Rod (Cryogenically Treated)	741	555019	Gear-Timing
		555094 Piston Assy. (.020" O.S.)						
		555095 Piston Assy. (.030" O.S.)						
26	555088	Ring Set (Standard)	32	555070	Screw-Connecting Rod			
		<b>Note</b> _____	33	555077	Valve-Exhaust			
		555089 Ring Set (.010" O.S.)	34	555062	Valve-Intake			
		555090 Ring Set (.020" O.S.)	35	555060	Spring-Valve (Intake)			
		555091 Ring Set (.030" O.S.)						

★ Included in Gasket Set-Part No. 555210.

● Included in Carburetor Kit-Part No. 555130.

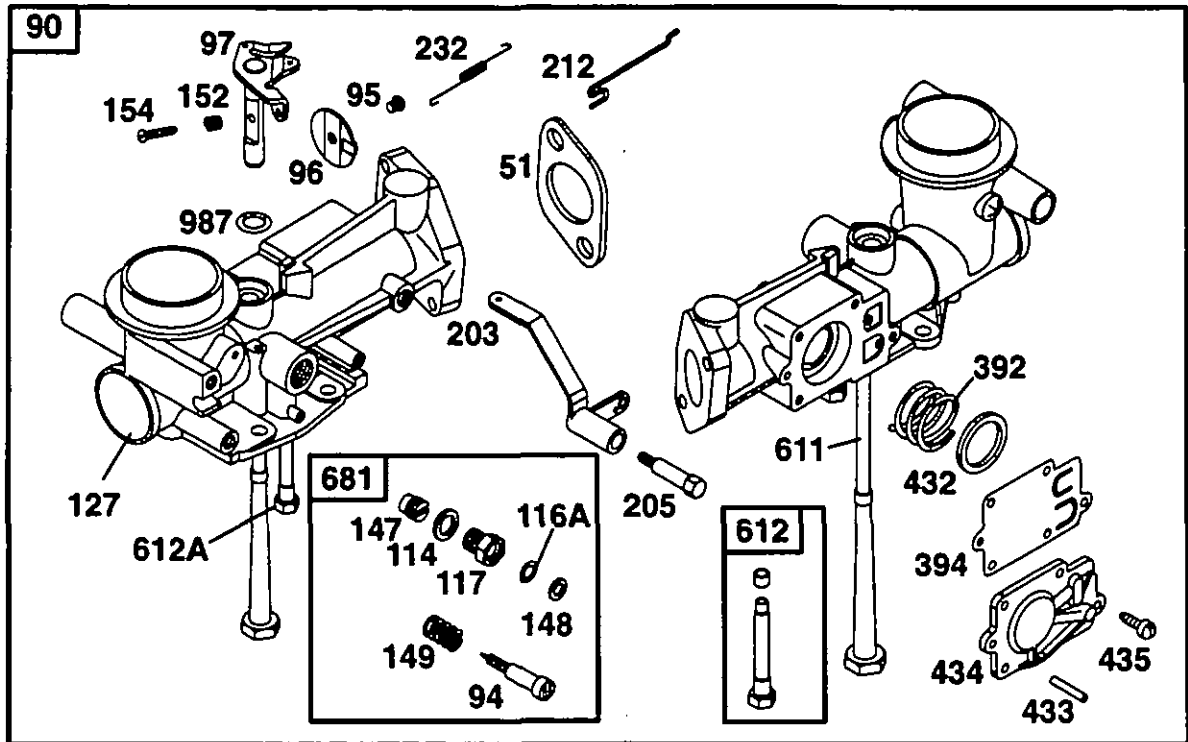


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REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
4	555209	Cover-Crankcase	20	★555087	Seal-Oil	46	555052	Gear-Cam (Machined Lobes)
12	★555191	Gasket-Crankcase (.015" Thick, Std.)	21	555037	Cap-Oil Fill			————— Note ————— 555000 Gear-Cam (Unmachined Lobes)
	★555064	Gasket-Crkcase (.005" Thick)	21A	555138	Cap-Oil Fill	116	★555135	Ring-Oil Retainer
	★555065	Gasket-Crkcase (.009" Thick)	22	555047	Screw-Hex.			

★ Included in Gasket Set-Part No. 555210.

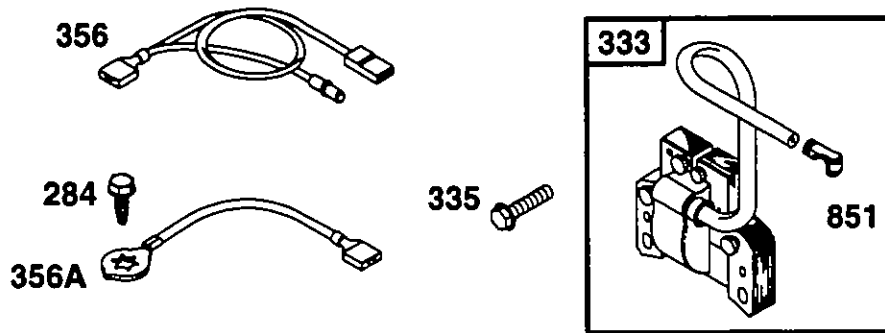
● Included in Carburetor Kit-Part No. 555130.



REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
51	★555078	Gasket-Intake Elbow	127	555105	Plug-Weich	394	●555119	Diaphragm-Carburetor
53	555042	Screw-Carburetor Mounting	147	●555114	Seat-Needle Valve	432	555113	Cap-Spring
90	555129	Carburetor	148	●555125	Washer-Needle Valve	433	555108	Pin-Roll
94	●555124	Valve-Idle Adjustment	149	●555123	Spring-Needle Valve	434	555112	Cover-Diaphragm
95	555232	Screw-Hex.	152	555101	Spring-Adjustment	435	555107	Screw-Hex.
96	555111	Valve-Throttle	154	555102	Screw-Round Head	611	555103	Tube-Pick-up
97	555100	Shaft-Throttle	203	555104	Crank-Bell	612	555128	Tube-Pick-up
114	●555106	Gasket-Valve	205	555110	Screw-Shoulder	612A	555120	Tube-Pick-up
116A	●555122	Packing-Valve	212	555116	Link-Throttle	681	●555127	Valve-Needle Kit
117	●555126	Nut-Needle Valve	232	555117	Spring-Link	987	555118	Washer-Shaft
			392	555115	Spring-Diaphragm			

★ Included in Gasket Set-Part No. 555210.

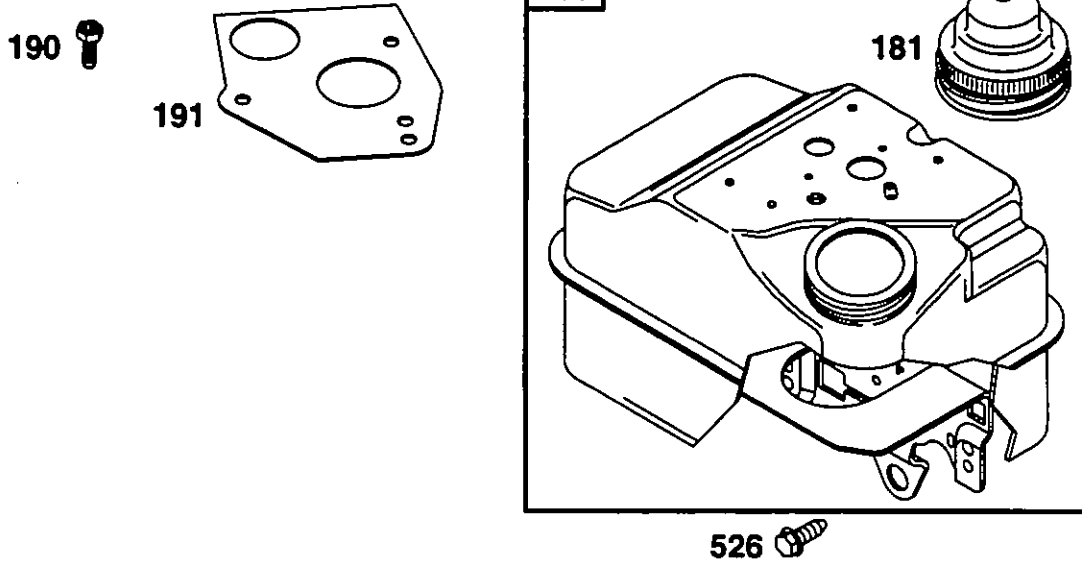
●Included in Carburetor Kit-Part No. 555130.



REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
284	555080	Screw—Self Tap	356	555086	Wire—Stop (Armature to Switch)	356A	555099	Wire—Stop (Stop Switch to Ground)
333	555075	Armature—Magneto				851	555072	Terminal—Cable
335	555040	Screw—Hex.						

\* Included in Gasket Set—Part No. 555210.

•Included in Carburetor Kit—Part No. 555130.

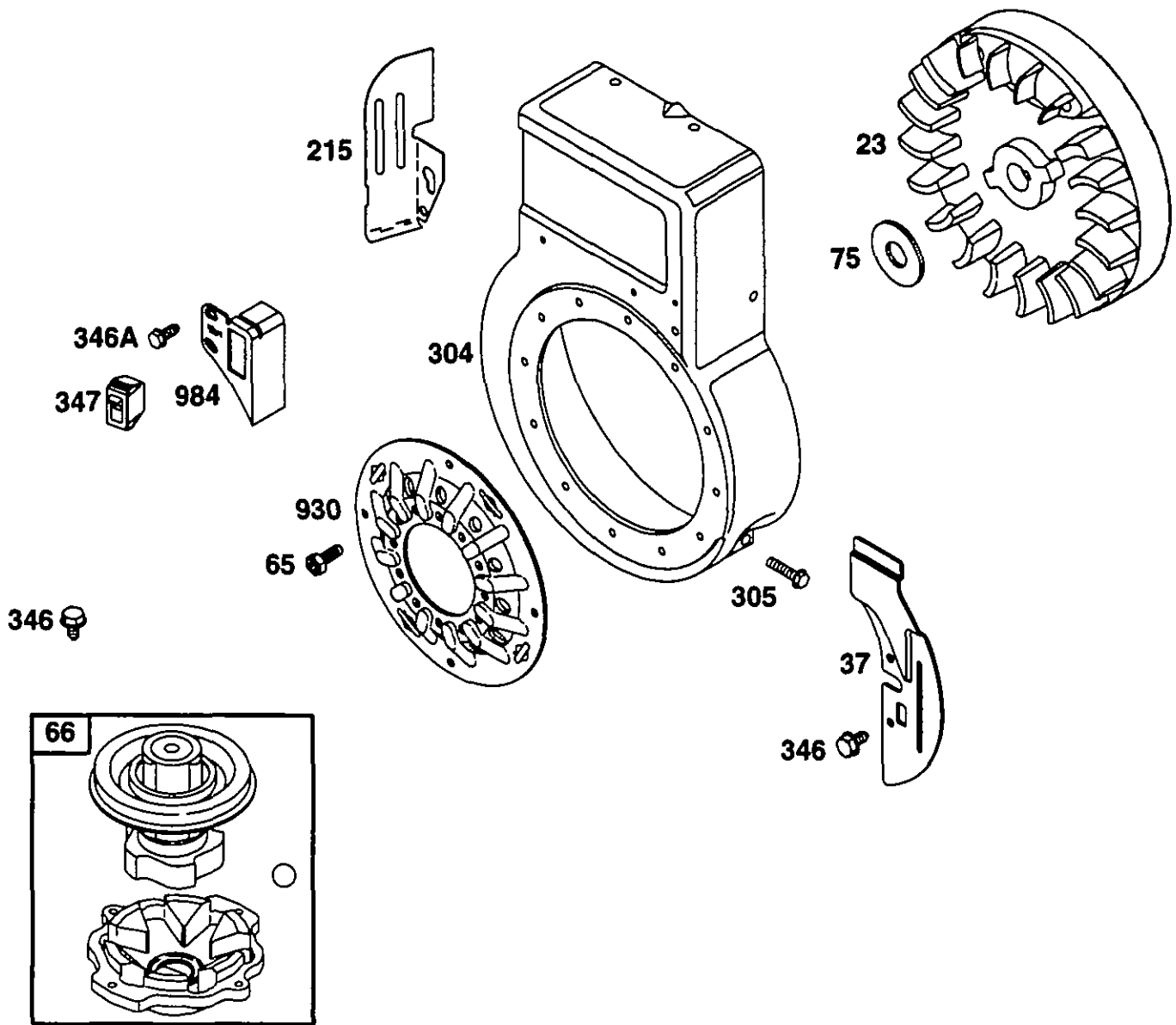


REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
180	555192	Tank-Fuel	190	555048	Screw-Torx®	526	555044	Screw-Hex.
181	555085	Cap-Fuel Tank	191	★555084	Gasket-Tank Mtg.			

★ Included in Gasket Set-Part No. 555210.

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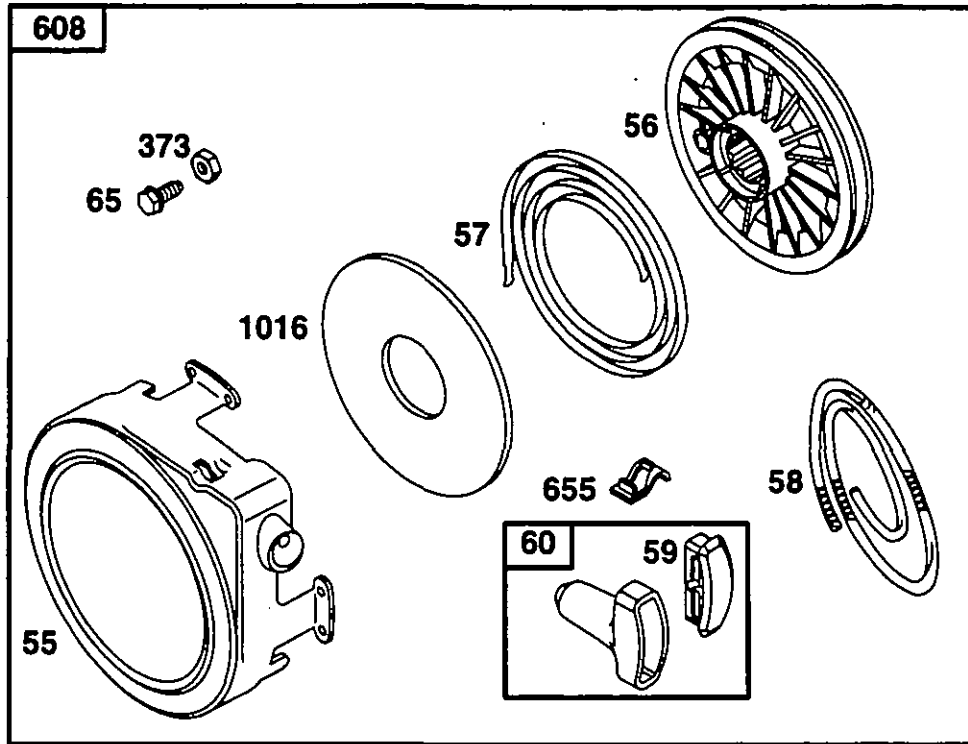




REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
23	555067	Flywheel	215	555055	Guide-Air	347	555098	Switch-Stop
37	555053	Guard-Flywheel	304	555190	Housing-Blower	930	555032	Guard-Finger
65	555211	Screw-Torx®	305	555051	Screw-Hex.	984	555097	Bracket-Indicator Light
66	555171	Clutch-Starter	346	555046	Screw-Hex.			
75	555083	Washer-Flywheel	346A	555081	Screw-Hex.			

\* Included in Gasket Set-Part No. 555210.

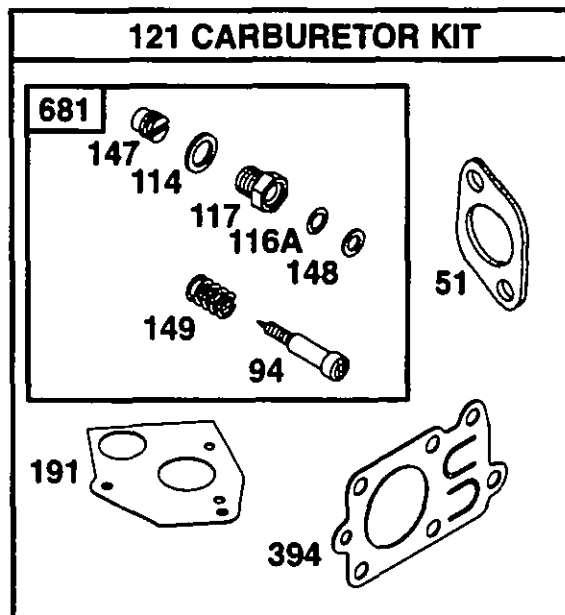
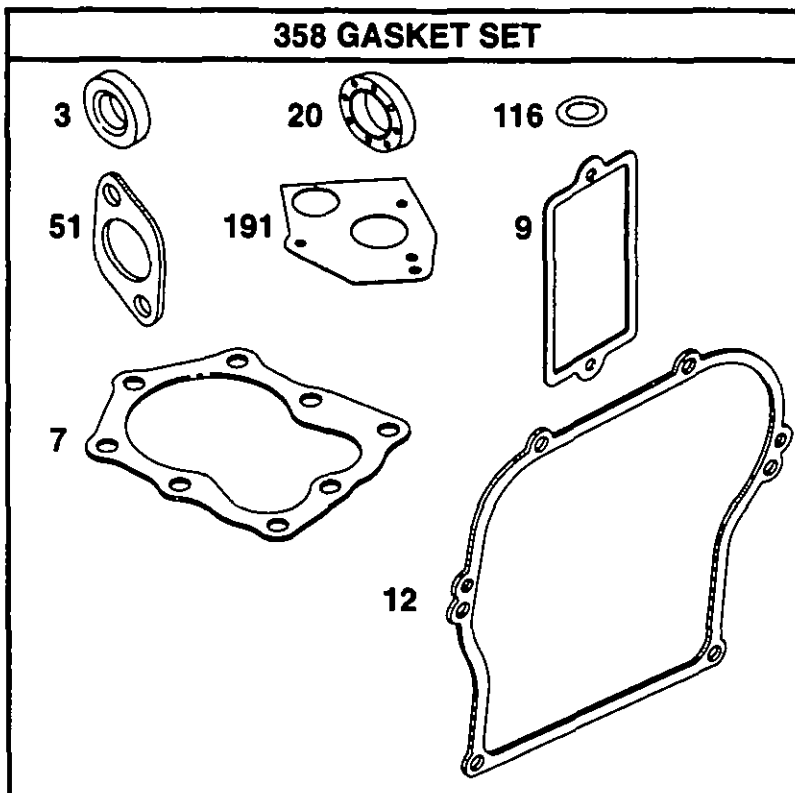
● Included in Carburetor Kit-Part No. 555130.



REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
55	555222	Housing-Rewind Starter	59	555227	Insert-Grip	608	555165	Starter-Rewind
56	555224	Pulley-Starter	60	555228	Grip-Starter Rope	655	555223	Anchor-Rewind Spring
57	555226	Spring-Rewind Starter	65	555229	Screw-Hex.	1016	555225	Spacer-Rewind
58	555221	Rope-Starter (Cut to Required Length)	373	555230	Nut-Hex.			

★ Included in Gasket Set-Part No. 555210.

● Included in Carburetor Kit-Part No. 555130.



REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
3	*555071	Seal—Oil	20	*555087	Seal—Oil	149	●555123	Spring—Needle Valve
7	*555187	Gasket—Cylinder Head	51	*555078	Gasket—Intake Elbow	191	*●555084	Gasket—Tank Mtg.
9	*555036	Gasket—Breather	94	●555124	Valve—Idle Adjustment	358	555131	Gasket Set
12	*555191	Gasket—Crankcase (.015" Thick, Std.)	114	●555106	Gasket—Valve	394	●555119	Diaphragm— Carburetor
	*555064	Gasket— Crankcase (.005" Thick)	116	*555135	Ring—Oil Retainer	681	●555127	Valve—Needle Kit
	*555065	Gasket— Crankcase (.009" Thick)	116A	●555122	Packing Valve			
			117	●555126	Nut—Needle Valve			
			121	555130	Carburetor Kit			
			147	●555114	Seat—Needle Valve			
			148	●555125	Washer—Needle Valve			

\* Included in Gasket Set—Part No. 555210.

●Included in Carburetor Kit—Part No. 555130.



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