

HIRTH ENGINE SETTING VALUES

| 55 HP Engine | Fan cooled engine |
|-------------------------------|---------------------------|
| Engine | 55HP FC |
| Ign. Timing @ 2000 Carbureted | 14 ° BTC |
| Spark Plug Heat VI * | 280 |
| Spark Plug Gap | .020-.024 |
| No. of Carburetors | Two |
| Carburetor ID # | Bing 54 Carburetor (38mm) |
| Main Jet | 160 |
| Idle Jet | 45 |
| Jet Needle | 6P2 Position 1 |
| Needle Jet | 2.72 |
| Needle Position | 1 |
| Do not exceed RPM | 5800 |
| Peak HP RPM | 5500 |
| HP (4i Peak RPM | 55 |
| Peak Torque RPM | 5000 |
| Peak Torque Ft. Lb. | 53.2 |
| Maximum CHT | 535 ° F |
| Maximum EGT @ full power | 1256 ° F |
| Maximum EGT @ cruise RPM | 1330 ° F |
| Spark Plug * | |
| Compression Pressure | 120 PSI |

* Optional Plugs : NGK BR 8 HS

: Champion RL86C or #830, L78C

: Nippon Denso W24 FSR-u

: Bosch W3AC

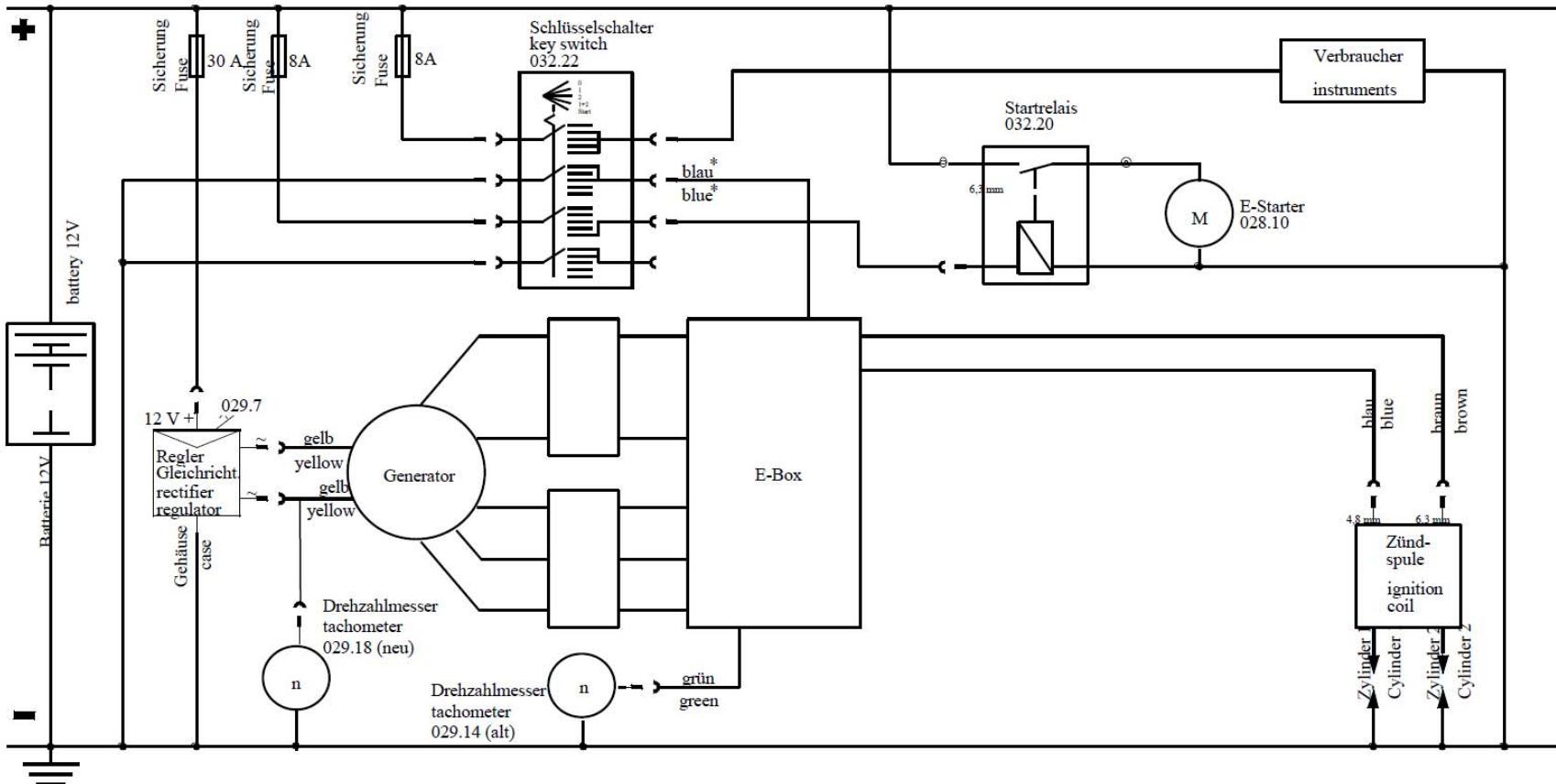
Useful Links:

Official Bing Manual: www.bingcarburetor.com/manual.html

Online Rebuild Manual: www.800-airwolf.com/pdffiles/ARTICLES/part%2052.PDF

Online Tuning Manual: www.ultralightnews.com/enginetroubleshooting/techtips/techtips2.htm

Online Cleaning Guide: <http://www.light-sport-aircraft.org/bing-54-carburetor-1.htm>



This wiring diagram is to be considered as a proposal for wiring

General size of line wire: 1,5 mm²

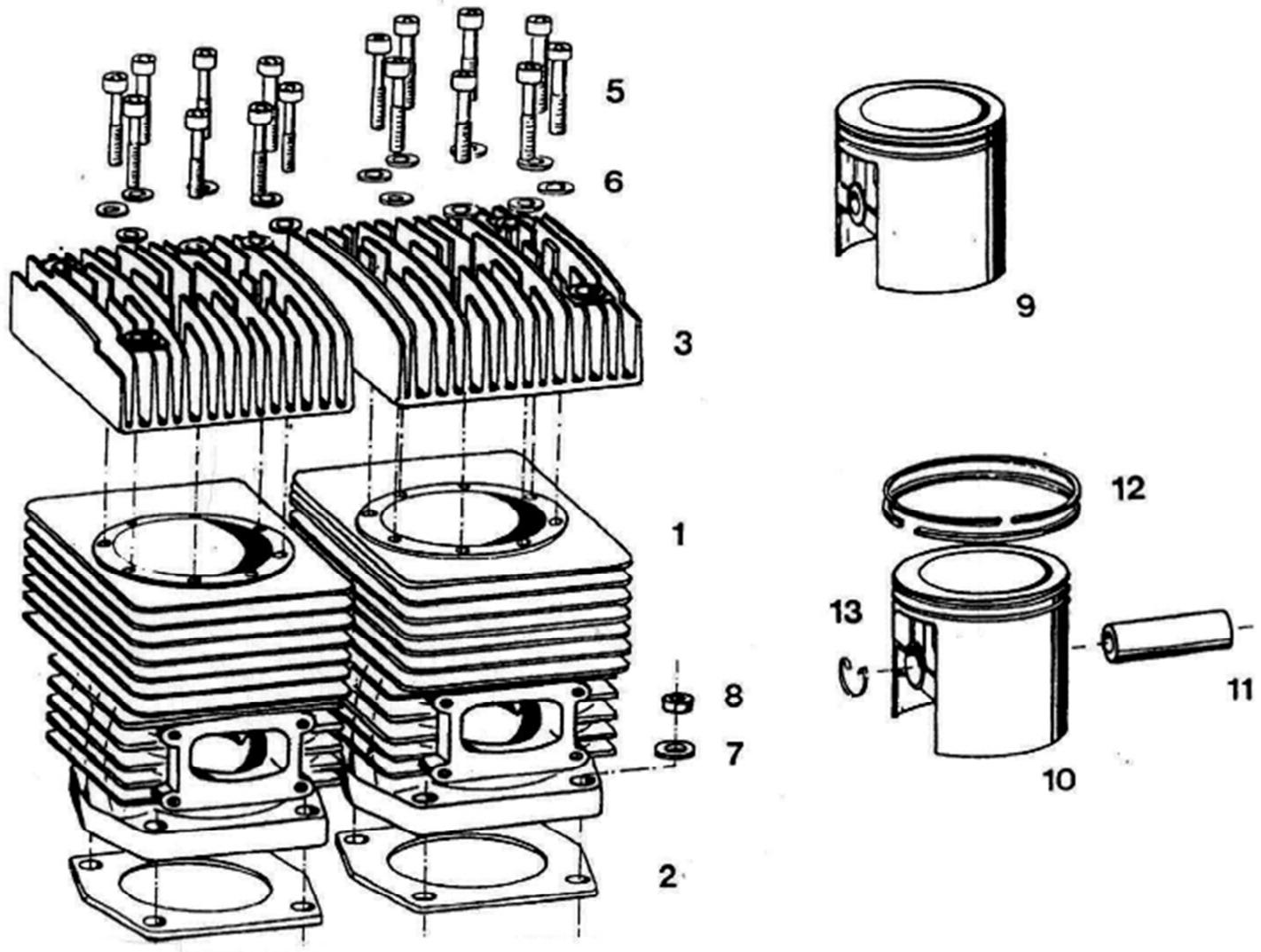
Size of line from/to E-Starter: 16 mm²

Rectifier-regulator mount on cooling body (ca. 250x200x5mm)

* Minimum distance to other current wires: 100 mm (4 in.)

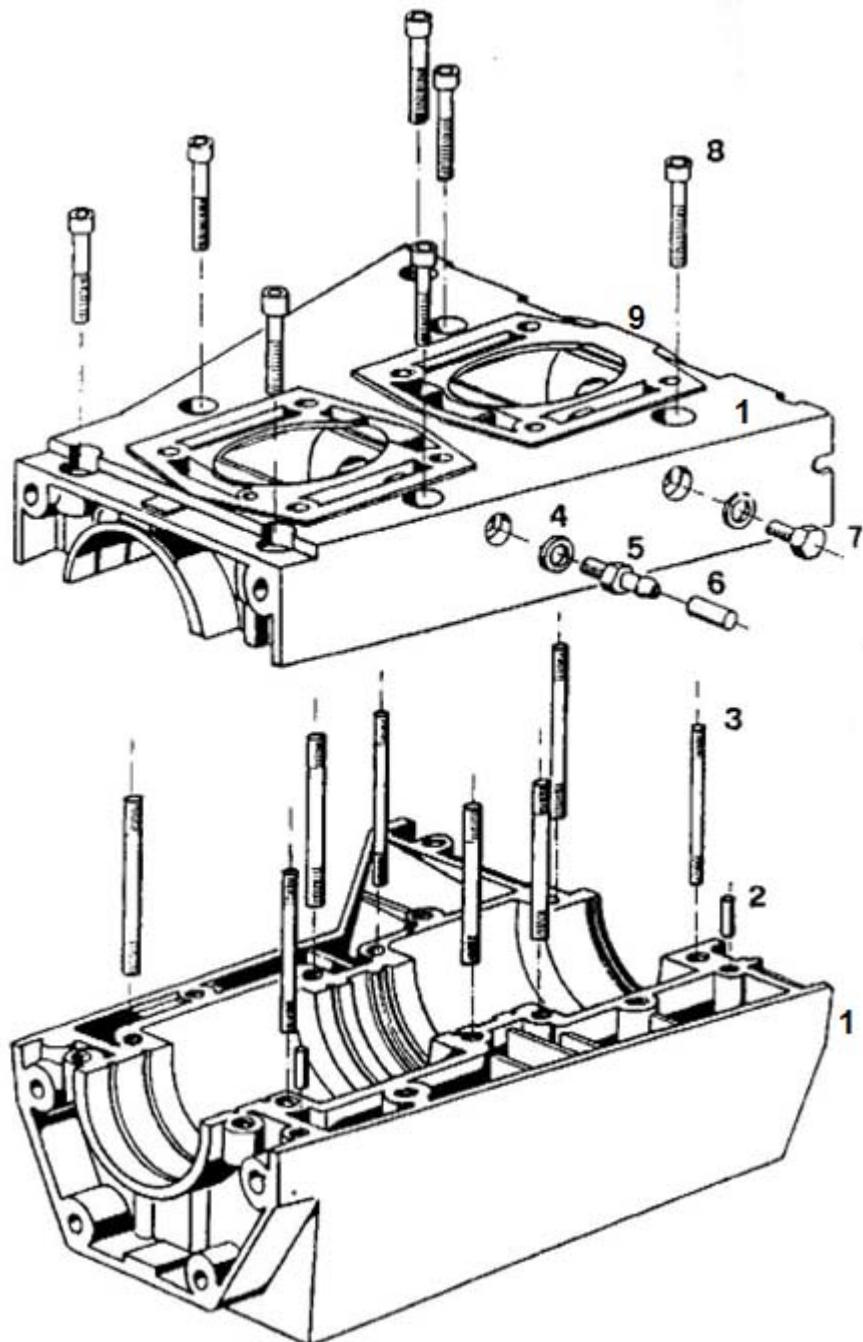
| f | | | | | Tag | Name |
|---|-----------|--------|-----------|-----|--------------------------------------|---|
| e | | | | | Gezeichnet: | 04.07.00 |
| d | | | | | Geprüft: | 04.07.00 |
| c | | | | | Schaltplan CDI – Einfachzündung PVL | |
| b | | | | | Wiring diagram – single ignition PVL | |
| a | | | | | F23 | |
| | Buchstabe | Anzahl | Aenderung | Tag | Name | 2702./03, /04, /05, /06, 3202/03, 3502/03 |
|  | | | | | Rohteil-Nr. | Zeichnungs-Nr. |
| | | | | | Maßstab | |
| | | | | | | 14 AA 104 |

**55HP Cylinders
(2703)**



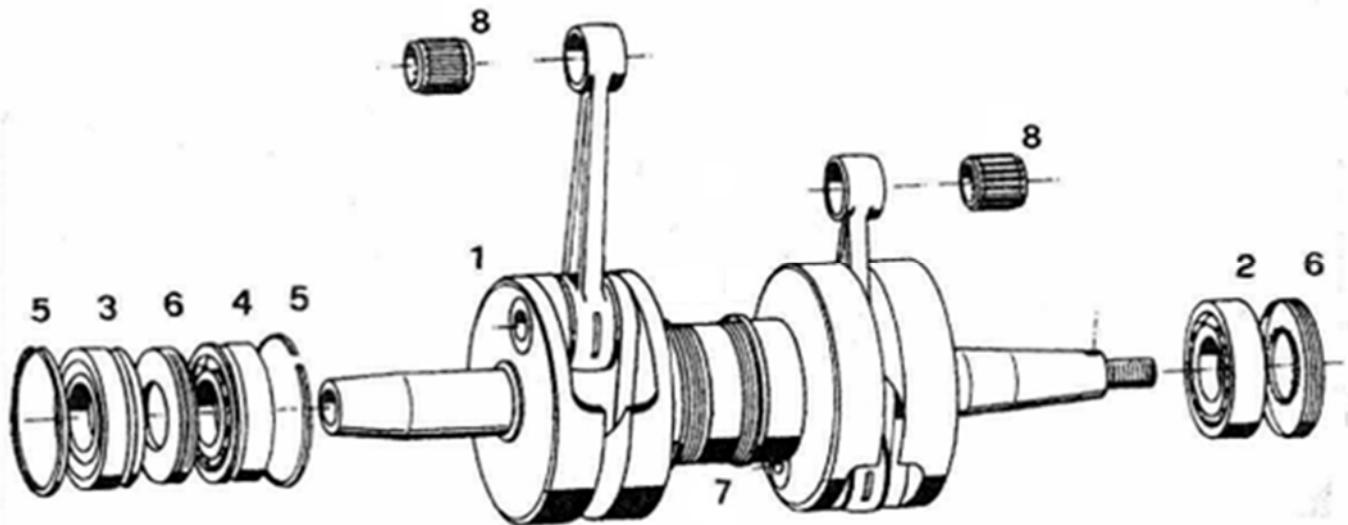
| Fig. No. | Qty. | Description | Neoteric Part # | Remark / Notes |
|---------------------|-------------|----------------------|----------------------------|---------------------------------------|
| 1 | 2 | Cylinder | 5860 | |
| 2 | 2 | Cylinder base gasket | 3433 | |
| 3 | 1 | Cylinder head | 6181 | Single Ignition |
| 5 | 16 | Cylinder screw | 6911 | Torque = 11 Nm (8.1 ft-lb) |
| 6 | 16 | Washer | 5994 | |
| 7 | 8 | Washer | 6162 | |
| 8 | 8 | Hexagon head nut | 6233 | Torque = 23 - 26 Nm (17 - 19.2 ft-lb) |
| 9 | 2 | Piston set | 5849 | Includes Fig. 10, 11, 12, 13 |
| 10 | 2 | Piston | 7986 | |
| 11 | 2 | Piston pin | 7987 | |
| 12 | 4 | Piston ring | 6302 | |
| 13 | 4 | Retaining ring | 6301 | |

**Spare part list - 55 HP Single Ignition
Crankcase 2703**



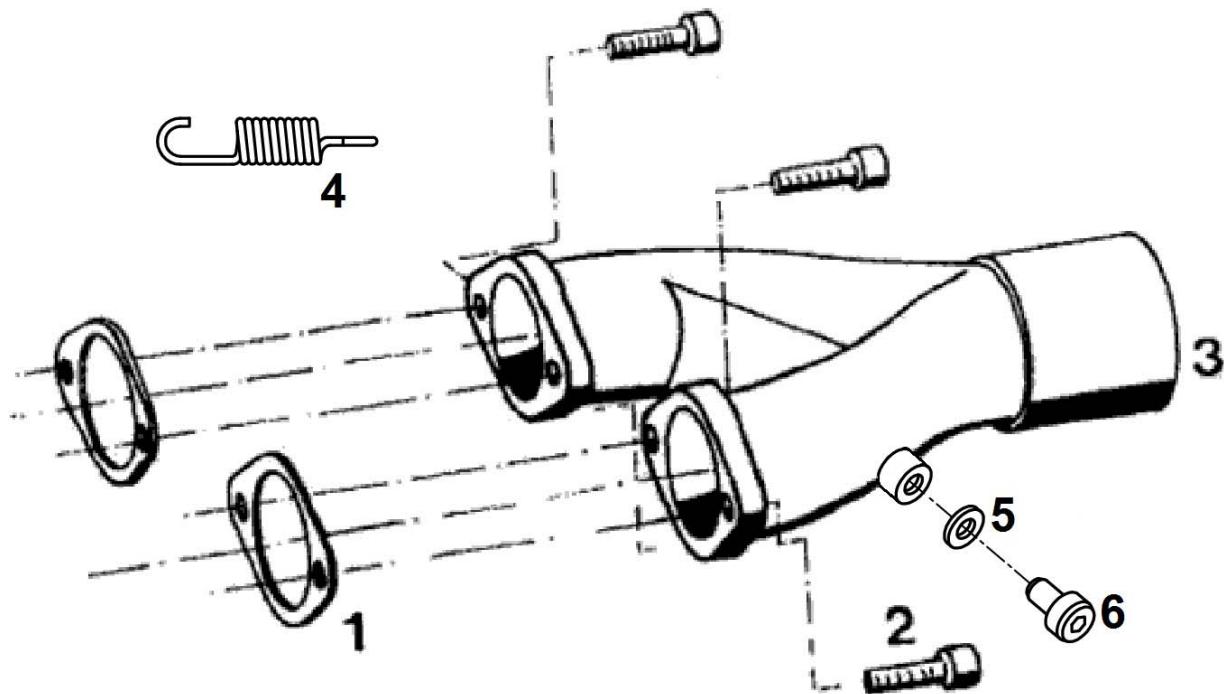
| Fig No. | Qty. | Description | Neoteric Part # | Remark / Notes |
|----------------|-------------|-----------------------|------------------------|---|
| 1 | 1 | Crankcase, complete | 7935 | Incl. Pos. 2. 3 |
| 2 | 2 | Alignment pin | 7936 | |
| 3 | 8 | Stud screw | 7163 | Loctite 586 |
| 4 | 2 | Sealing ring | 5629 | |
| 5 | 1 | Hose nipple | 5630 | |
| 6 | 1 | Rubber cap | 7208 | |
| 7 | 1 | Hexagon head screw | 6927 | |
| 8 | 7 | Cylinder screw | 7937 | Torque = 23 Nm (16.9 ft-lb) & Loctite 242 |
| 9 | 2 | Cylinder Base Gasket | 5455 | See form 17749 for gasket set |
| | | Rubber Gasket Sealant | 7842 | Use as crankcase gasket |

Crankshaft 2703



| Fig. No. | Qty. | Description | Neoteric Part # | Remark / Notes |
|----------|------|---------------------------------|-----------------|---|
| 1 | 1 | Crankshaft, complete | 7911 | Includes items 2 - 7 |
| 2 | 1 | Deep groove ball bearing | 5460 | |
| 3 | 1 | Deep groove ball bearing | 5461 | |
| 4 | 1 | Deep groove ball bearing | 5462 | |
| 5 | 2 | Circlip | 7912 | |
| 6 | 2 | Shaft sealing ring | 5453 | |
| 7 | 1 | Space ring | 7913 | |
| 8 | 2 | Needle Bearing, Blue dot (#1) | 7909 | * Connecting Rods are Color-Coded with a Paint Dot on the Piston end. |
| | | Needle Bearing, Yellow dot (#2) | 6082 | Engines built from 2010 onward also include a Number Code next to the Paint Dot. The coding corresponds to the correct Needle bearing size. (Approx 0.0003" [0.008mm] graduation between each size) |
| | | Needle Bearing, Red dot (#3) | 6083 | |
| | | Needle Bearing, White dot (#4) | 5464 | Blue (#1) is the smallest and Green (#5) is the largest. Connecting rods with a Red (#3) dot are most common. |
| | | Needle Bearing, Green dot (#5) | 7910 | If the paint dot is missing and no number code can be found, all bearings must be tried for the best fit. |

**55HP Exhaust Header Pipe
(Y-Pipe)**



| Fig. No. | Qty. | Description | Neoteric Part # | Remark / Notes |
|---------------------|-------------|--------------------|----------------------------|--|
| 1 | 2 | Exhaust gasket | 5245 | |
| 2 | 4 | Cylinder screw | 6932 | Torque = 23 - 26 Nm (16.9 - 19.2 ft-lb) |
| 3 | 1 | Exhaust manifold | 5547 | Prepared for temperature meas. |
| 4 | 4 | Exhaust Spring | 5421 | |
| 5 | 2 | Copper Washer | 7077 | EGT Plugs; used when no EGT is installed |
| 6 | 2 | M8x1x10 SHCS | 6934 | EGT Plugs; used when no EGT is installed |

Fan cooling system 2703



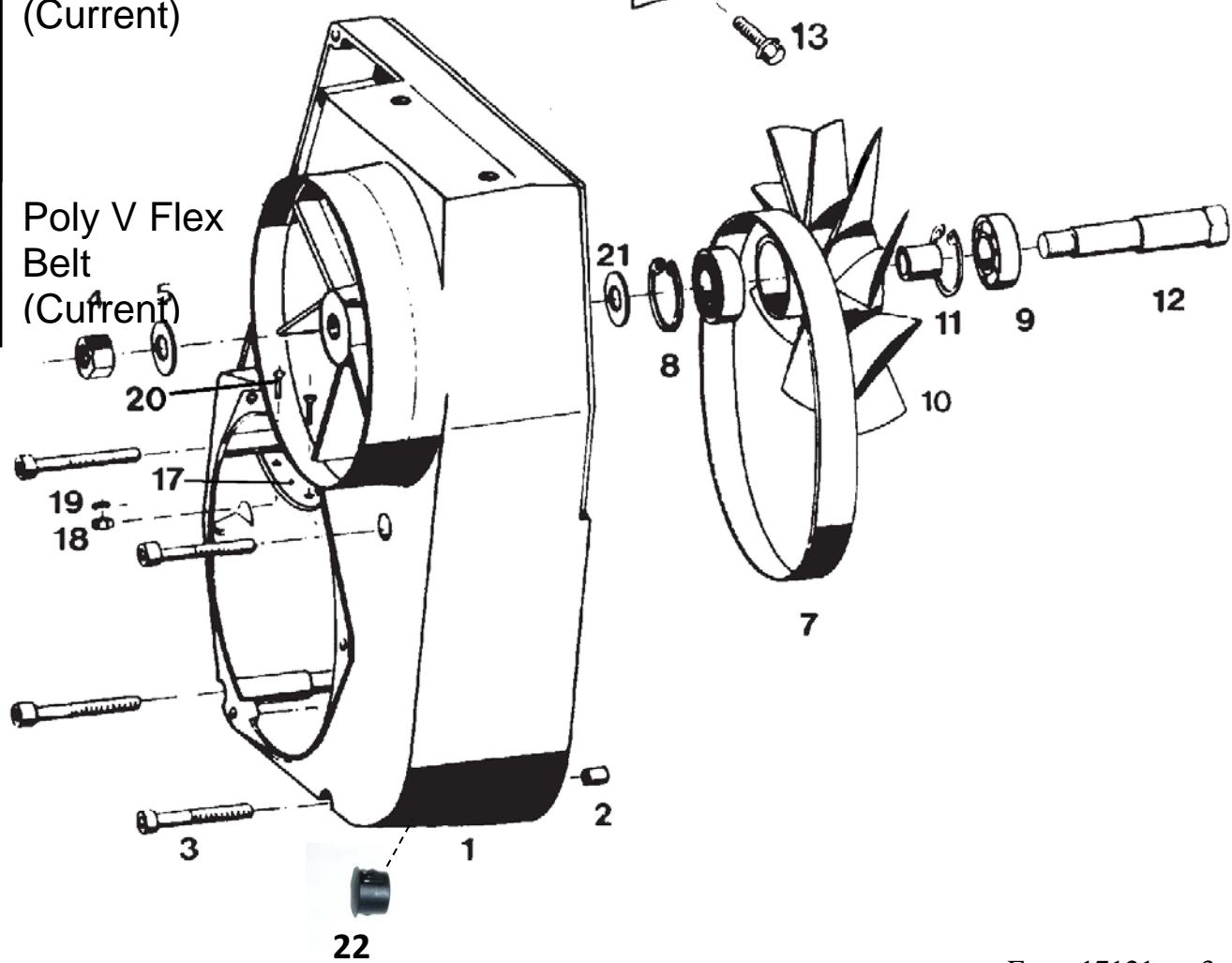
Flat Belt
Cooling Fan
(Old Style)

Flat Belt
(Old Style)



Poly V Belt
Cooling Fan
(Current)

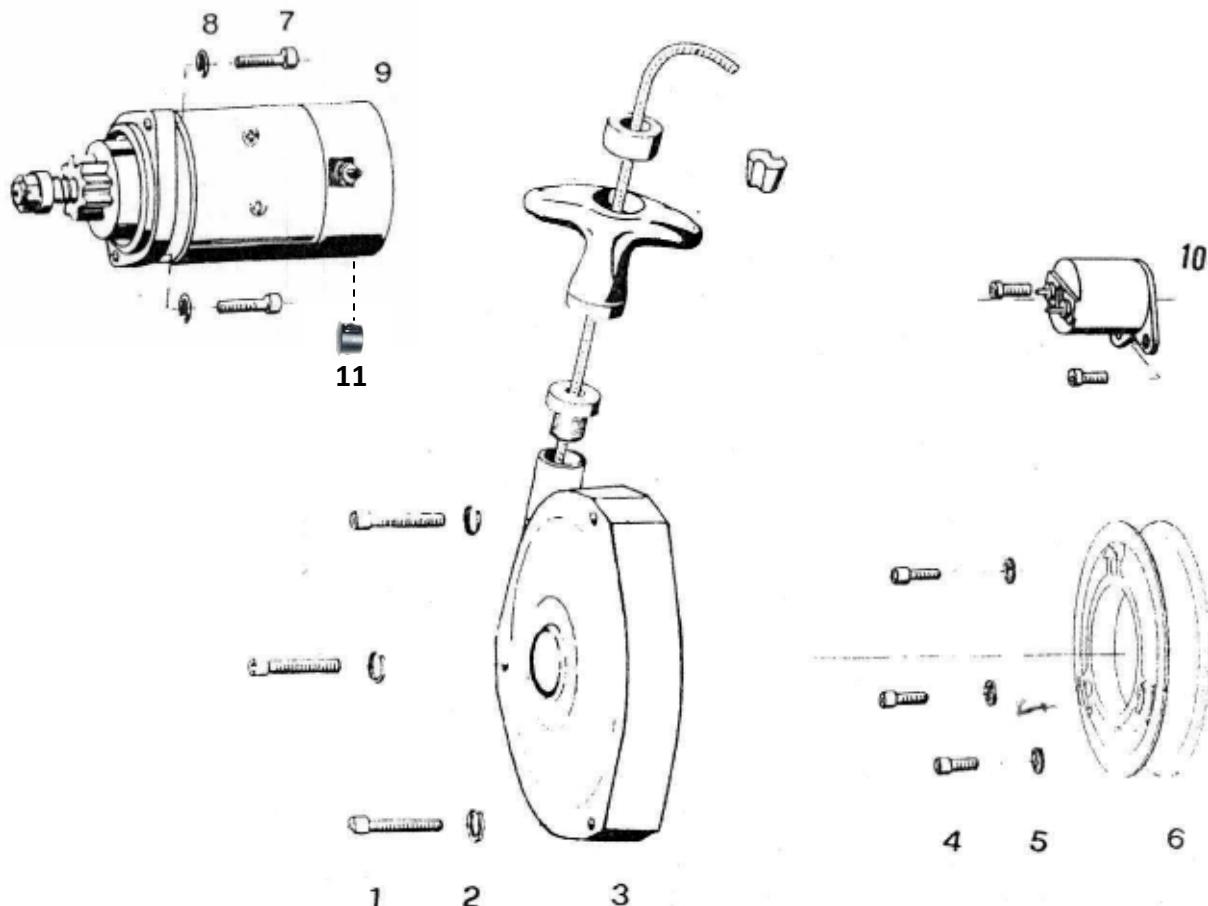
Poly V Flex
Belt
(Current)



55HP Cooling Fan System
(2703)

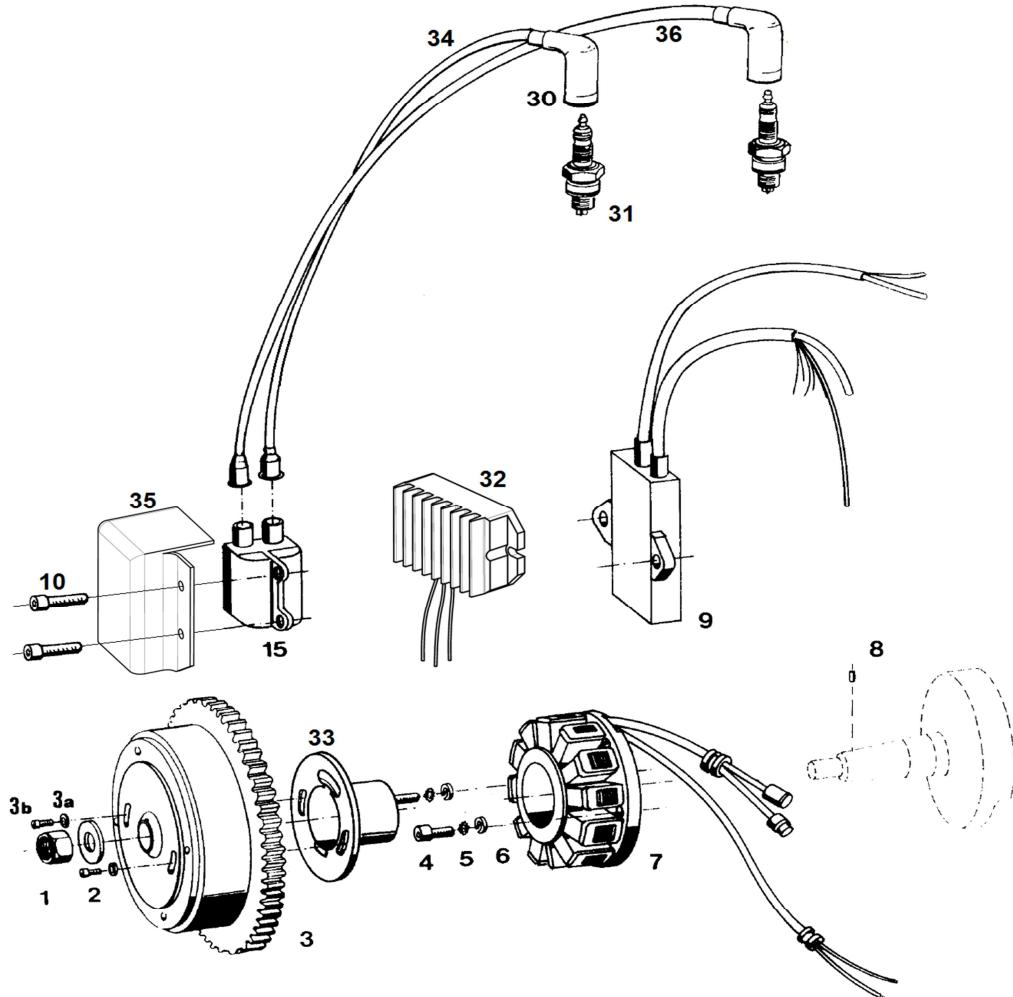
| Fig. No. | Qty. | Description | Neoteric Part # | Remark / Notes |
|-----------------|-------------|--------------------------------------|--|--|
| 1 | 1 | Fan housing, complete | 7938 | Includes Fig No. 4, 5, 7, 8, 9, 10, 11, 12 |
| 2 | 3 | Alignment sleeve | 7939 | |
| 3 | 4 | Cylinder screw | 3258 | Torque = 9.6 - 11 Nm (7.1 - 8.1 ft-lb) |
| 4 | 1 | Hexagon head nut | 6855 | Torque = 27 - 30 Nm (19.9 - 22.1 ft-lb) |
| 5 | 1 | Washer | 6856 | |
| 7* | 1 | Flat belt | 3409 | *Used up to model year 2008 (Engine #901105 & Lower) |
| 7 | 1 | Poly V Flex belt | 6390 | Currently used, from 2008 onward (Engine #901106 & Higher) |
| 8 | 2 | Locking ring | 7940 | |
| 9 | 2 | Deep groove ball bearing | 6887 | |
| 10* | 1 | Fan wheel Assy, Flat belt | 3408 (5879 - rebuilt) | Incl. Pos. 8, 9, 10, 11 *Used up to model year 2008 (Engine #901105 & Lower) |
| 10 | 1 | Fan wheel Assy, Poly V | 6391 | Incl. Pos. 8, 9, 10, 11 Currently used, from 2008 onward (Engine #901106 & Higher) |
| - | - | Poly V Cooling System Conversion Kit | 7457 | Contains all parts required to convert engine from "Flat Belt" cooling system to "Poly V Belt" cooling system. |
| 11 | 1 | Bushing | 7941 | |
| 12 | 1 | Eccentric shaft | 6857 | |
| 13 | 2 | Thread screw | 5987 | |
| 14 | 4 | Washer | 5996 | |
| 15 | 4 | Thread screw | 5997 | |
| 16 | 1 | Air guide cowl | 5346 | |
| 17 | 1 | Metal plate | 6183 | |
| 18 | 2 | Hexagon head nut | 2694 | |
| 19 | 2 | Washer | 7942 | |
| 20 | 2 | Screw | 2693 | |
| 21 | 1 | Washer | 7943 | |
| 22 | 1 | Hole Plug | 2449 | Covers Hole In Housing |

**55HP Starting Device
(2703)**



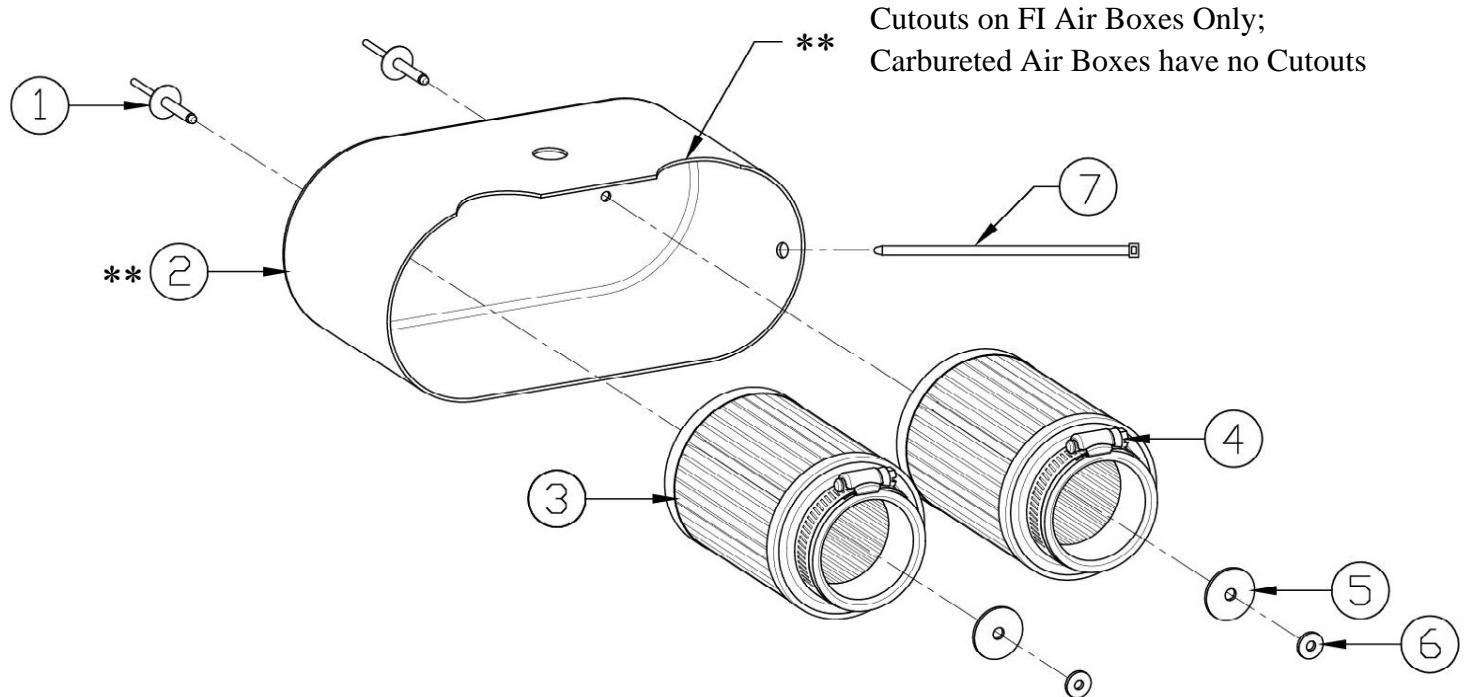
| Fig. No. | Qty | Description | Neoteric Part # | Remark / Notes |
|---------------------|------------|----------------------------------|----------------------------|---|
| 1 | 3 | Cylinder screw | 6911 | Torque = 9.6 - 11 Nm (7.1 - 8.1 ft-lb) |
| 2 | 3 | Spring ring | 6940 | |
| 3 | 1 | Starter, mounted | 5267 | |
| 4 | 3 | Cylinder screw | 7944 | Torque = 23 - 28 Nm (17 - 20.7 ft-lb) |
| 5 | 3 | Tab washer | 5995 | |
| 6* | 1 | Driving dog with starter, Flat | 6203 | *Used up to model year 2008 (Engine #901105 & Lower) |
| 6 | 1 | Driving dog with starter, Poly-V | 6389 | Currently used, from 2008 onward (Engine #901106 & Higher) |
| 7 | 2 | Cylinder screw | 2348 | Torque = 23 - 28 Nm (17 - 20.7 ft-lb) |
| 8 | 2 | Tab washer | 5995 | |
| 9 | 1 | Electric Starter, Hirth | 5545 | |
| - | 1 | Electric Starter, Alternative | 6498 | |
| 10 | 1 | Starter Solenoid | 5417 | |
| 11 | 1 | Hole Plug | 9172 | Plugs Drain Hole In Starter |

55/65HP Ignition System



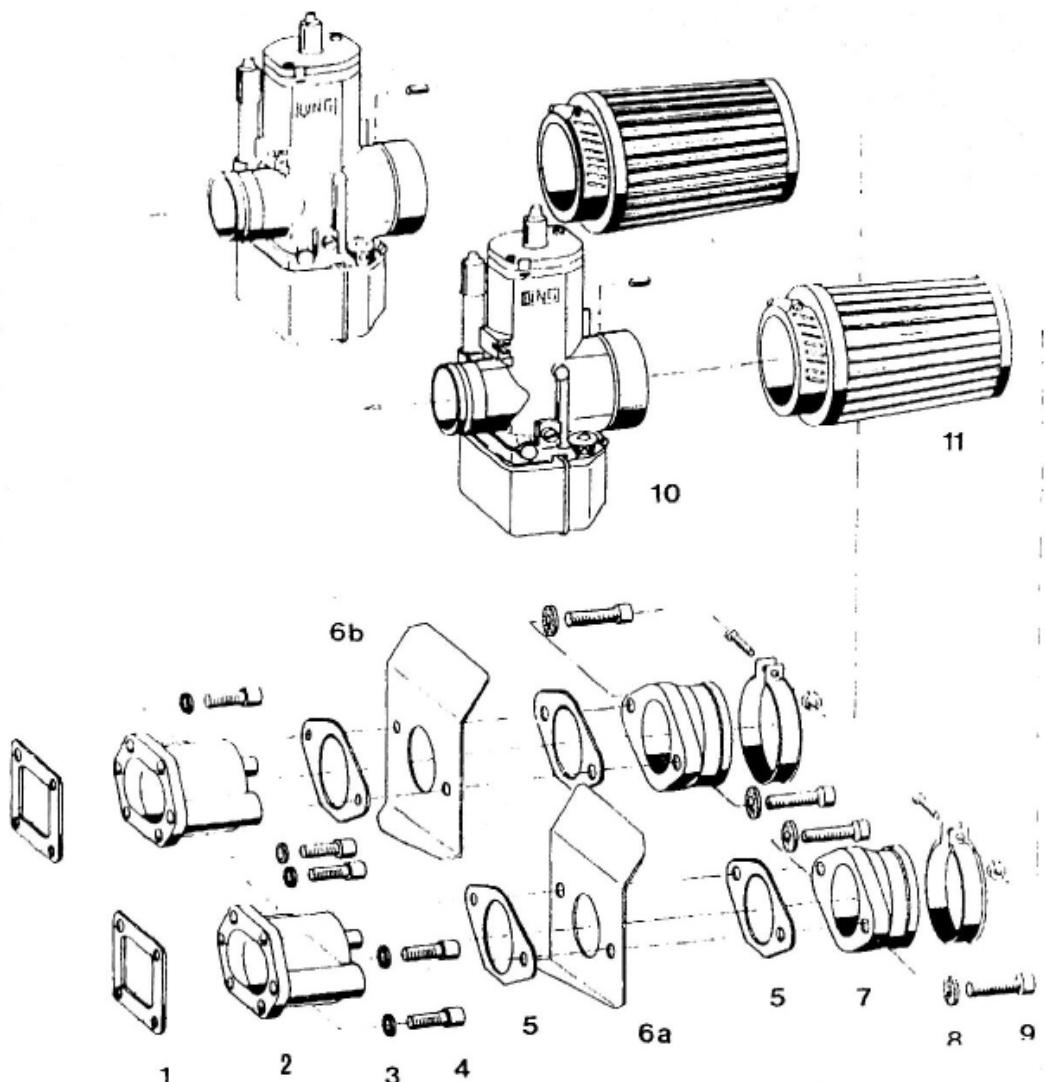
| Fig. No. | Qty. | Description | Neoteric Part # | Remark/Notes |
|-----------------|-------------|-------------------------|------------------------|---|
| 1 | 1 | Hexagon head nut | 6939 | Torque = 140 - 150 Nm (103.3 - 110.6 ft-lb) |
| 2 | 1 | Washer | 7196 | |
| 3 | 1 | Flywheel with gear ring | 7984 | Includes fig. 3a, 3b, 33 |
| 4 | 2 | Cylinder screw | 7182 | Neoteric does not stock |
| 5 | 2 | Washer | 5994 | |
| 6 | 2 | Washer | 6936 | Torque = 4 - 4.5 Nm (3 - 3.3 ft-lb) |
| 7 | 1 | Stator plate complete | 5591 | |
| 8 | 1 | Flywheel alignment pin | 7985 | |
| 9 | 1 | CDI - Box | 5664 | Mounted with silicone |
| 10 | 2 | Coil Mounting Screw | 2469 | |
| 15 | 1 | Ignition coil | 5682 | Includes fig. 15 |
| 30 | 2 | Spark plug cap | 5826 | |
| 31 | 2 | Spark plug | 5668 | Do not mix spark plug types |
| 32 | 1 | Voltage Regulator | 5338 | |
| 33 | 1 | Magnet Support | 5724 | |
| 34 | 1 | Spark plug lead, short | 5666 | Wire only; does not include fig. 30 |
| 35 | 1 | Coil spray guard | 6683 | |
| 36 | 1 | Spark plug lead, long | 5665 | Wire only; does not include fig. 30 |
| - | - | Spark Plug lead set | 5661 | Includes fig. 30, 34, 36 |

Hirth HT4 Air Box Assembly



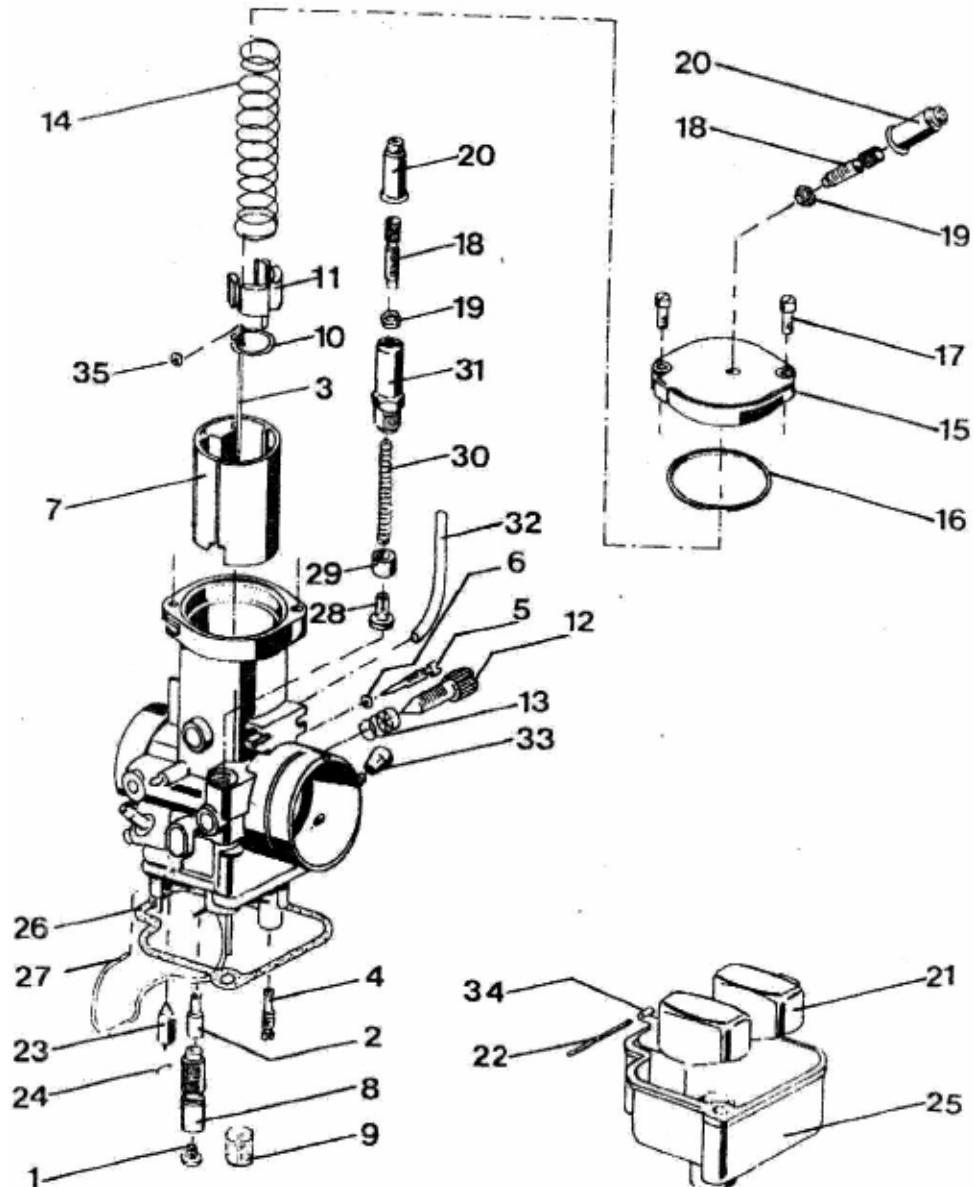
| Fig. No. | Qty | Designation | Neoteric Part # | Remark |
|----------|-----|--------------------------------|-----------------|------------------------------------|
| 1 | 2 | Rivet | 2156 | |
| 2 | 1 | Fiberglass Air Box, Carbureted | 5584 | |
| 2 | 1 | Fiberglass Air Box, FI | 7764 | |
| 3 | 2 | Air Filter | 6622 | Includes item 4 |
| 4 | 2 | Hose Clamp | - | |
| 5 | 2 | Large Washer | 2516 | |
| 6 | 2 | Small Washer | 2352 | |
| 7 | 2 | Wire Tie | 2371 | Safety tie |
| - | - | Air Box Assembly, Carbureted | 5583 | Includes item 1 - 7 as shown above |
| - | - | Air Box Assembly, FI | 7765 | Includes item 1 - 7 as shown above |

**55HP Fuel Mixture, 2-Carb Sys
(2703)**



| Fig. No. | Qty | Description | Neoteric Part # | Remark / Notes |
|---------------------|------------|--------------------------|----------------------------|--|
| 1 | 2 | Gasket | 7949 | |
| 2 | 2 | Intake manifold | 7948 | |
| 3 | 8 | Serrated lock washer | 6902 | |
| 4 | 8 | Cylinder screw | 2292 | Torque = 9.6 - 11 Nm (7.1 - 8.1 ft-lb) |
| 5 | 4 | Gasket | 5454 | |
| 6a | 1 | Heat shield plate, right | 7950 | |
| 6b | 1 | Heat shield plate, left | 7951 | |
| 7 | 2 | Intake Boot | 6567 | |
| 8 | 4 | Tab washer | 7952 | |
| 9 | 4 | Cylinder screw | 7953 | Torque = 23 - 28 Nm (17 - 20.1 ft-lb) |
| 10 | 2 | BING carburetor | 5333 | Main Jet:160, Idle Jet:45, Needle Jet: 2.72 Jet Needle 6P2 Pos:1, Air screw: 0.5-1 |
| 11 | 2 | Air filter | 6622 | * See Form 16619 for Air filter system details |

Carburetor 2703



55HP Hirth Bing Carburetor Parts
(2703)

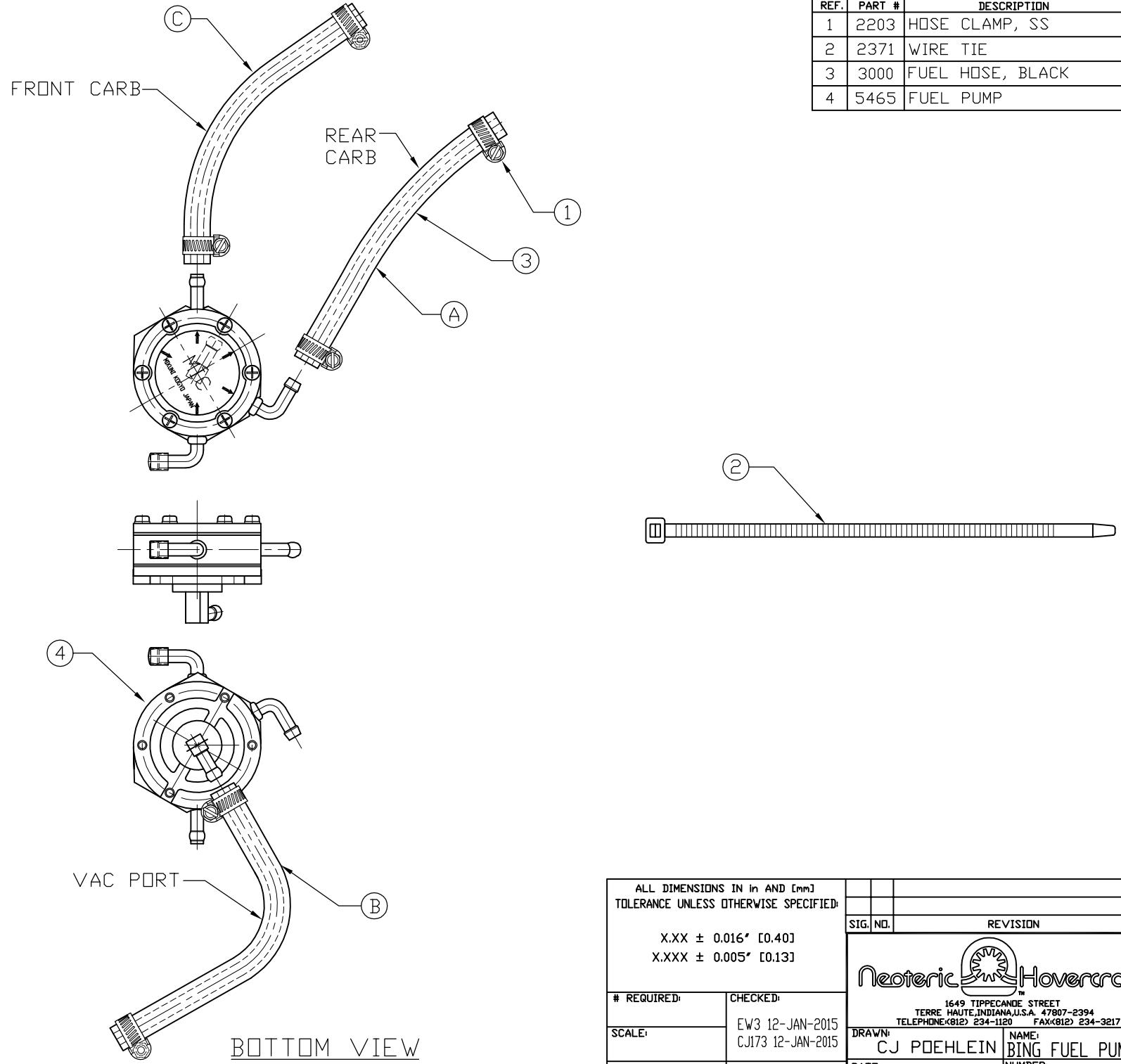
| Fig. No. | Qty | Description | Neoteric Part # | Remark / Notes |
|---------------------|------------|----------------------------------|----------------------------|--|
| 1 | 1 | Main jet | - | See form 16642 for all Bing Jets |
| 2 | 1 | Needle jet | - | |
| 3 | 1 | Jet needle | - | |
| 4 | 1 | Idle jet | - | |
| 5 | 1 | Idle Screw | 7954 | |
| 6 | 1 | Idle Screw O-Ring | 7955 | |
| 7 | 1 | Throttle slide | 7956 | |
| 8 | 1 | Mixture tube | 7957 | |
| 9 | 1 | Sieve Sleeve | 7958 | |
| 10 | 1 | Bracket plate | 6974 | |
| 11 | 1 | Spring Cup | 7959 | |
| 12 | 1 | Adjusting screw | 7960 | |
| 13 | 1 | Adjustment Screw Spring | 7961 | |
| 14 | 1 | Slide Spring | 7962 | |
| 15 | 1 | Cover plate | 7963 | |
| 16 | 1 | Cover Plate O-Ring | 7964 | |
| 17 | 2 | Cover Plate Screw | 7965 | |
| 18 | 1 | Adjusting screw | 6105 | |
| 19 | 1 | Nut | 6106 | |
| 20 | 2 | Socket | 6113 | |
| 21 | 2 | Float | 7966 | |
| 22 | 1 | Float Pivot Pin | 7967 | |
| 23 | 1 | Float Needle | 7968 | |
| 24 | 1 | Float Needle Clip | 7969 | |
| 25 | 1 | Float chamber | 7973 | |
| 26 | 1 | Bowl Gasket | 7974 | |
| 27 | 1 | Bowl Clip | 7975 | |
| 28 | 1 | Choke Piston | 7976 | |
| 29 | 1 | Choke Sleeve | 7977 | |
| 30 | 1 | Choke Spring | 7978 | |
| 31 | 1 | Choke housing | 7979 | |
| 32 | 2 | Vent Tube | 7980 | |
| 33 | 1 | Rubber cap for primer connection | 7981 | |
| 34 | 1 | Float chamber | 7982 | |
| 35 | 1 | Jet Needle O-ring | 7983 | |
| - | - | Rebuild Kit | 6286 | Includes fig. 6, 9, 16, 20, 22, 23, 26 |

55HP Hirth Bing Carburetor Jets
(2703)

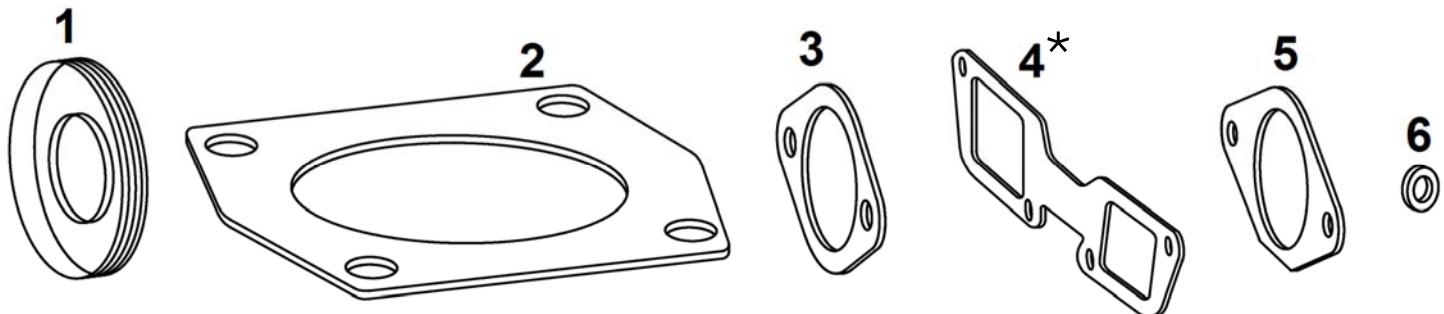


| Fig. No. | Qty | Description | Neoteric Part # | Remark / Notes |
|---------------------|------------|--------------------|----------------------------|-----------------------|
| 1 | 1 | Main Jet, 148 | 5759 | |
| | | Main Jet, 155 | 5474 | |
| | | Main Jet, 158 | 5473 | |
| | | Main Jet, 160 | 5876 | |
| | | Main Jet, 162 | 5890 | |
| | | Main Jet, 165 | 5891 | |
| | | Main Jet, 170 | 6196 | |
| | | Main Jet, 180 | 6195 | |
| 2 | 1 | Needle Jet, 2.62 | 5757 | |
| | | Needle Jet, 2.68 | 5758 | |
| | | Needle Jet, 2.7 | 5725 | |
| | | Needle Jet, 2.72 | 6177 | |
| 3 | 1 | Jet Needle, 6P2 | 6976 | |
| 4 | 1 | Idler Jet, 45 | 6519 | |
| | | Idler Jet, 50 | 6521 | |

| BILL OF MATERIAL | | |
|------------------|--------|------------------|
| REF. | PART # | DESCRIPTION |
| 1 | 2203 | HOSE CLAMP, SS |
| 2 | 2371 | WIRE TIE |
| 3 | 3000 | FUEL HOSE, BLACK |
| 4 | 5465 | FUEL PUMP |

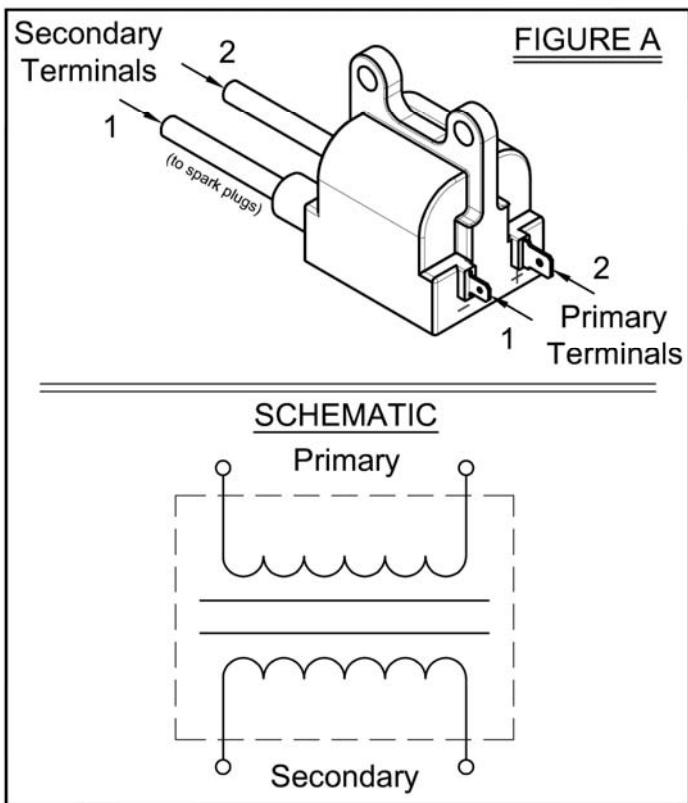
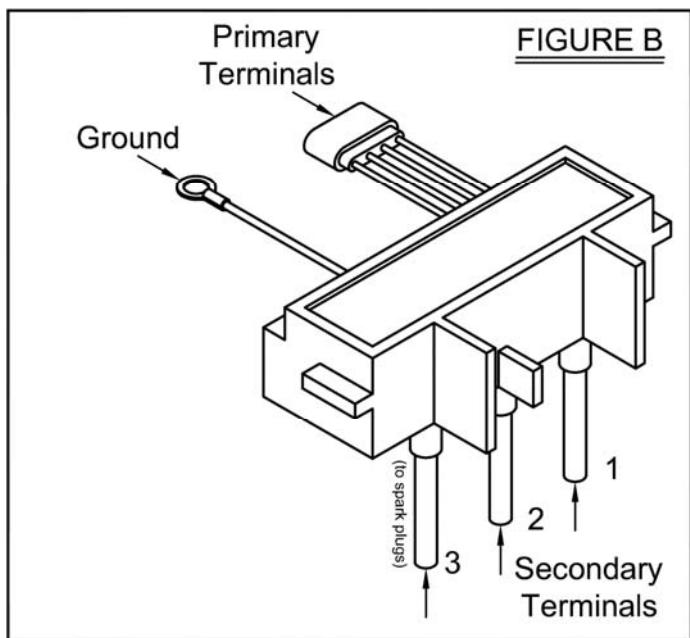


**55HP Gasket Set
(2703)**

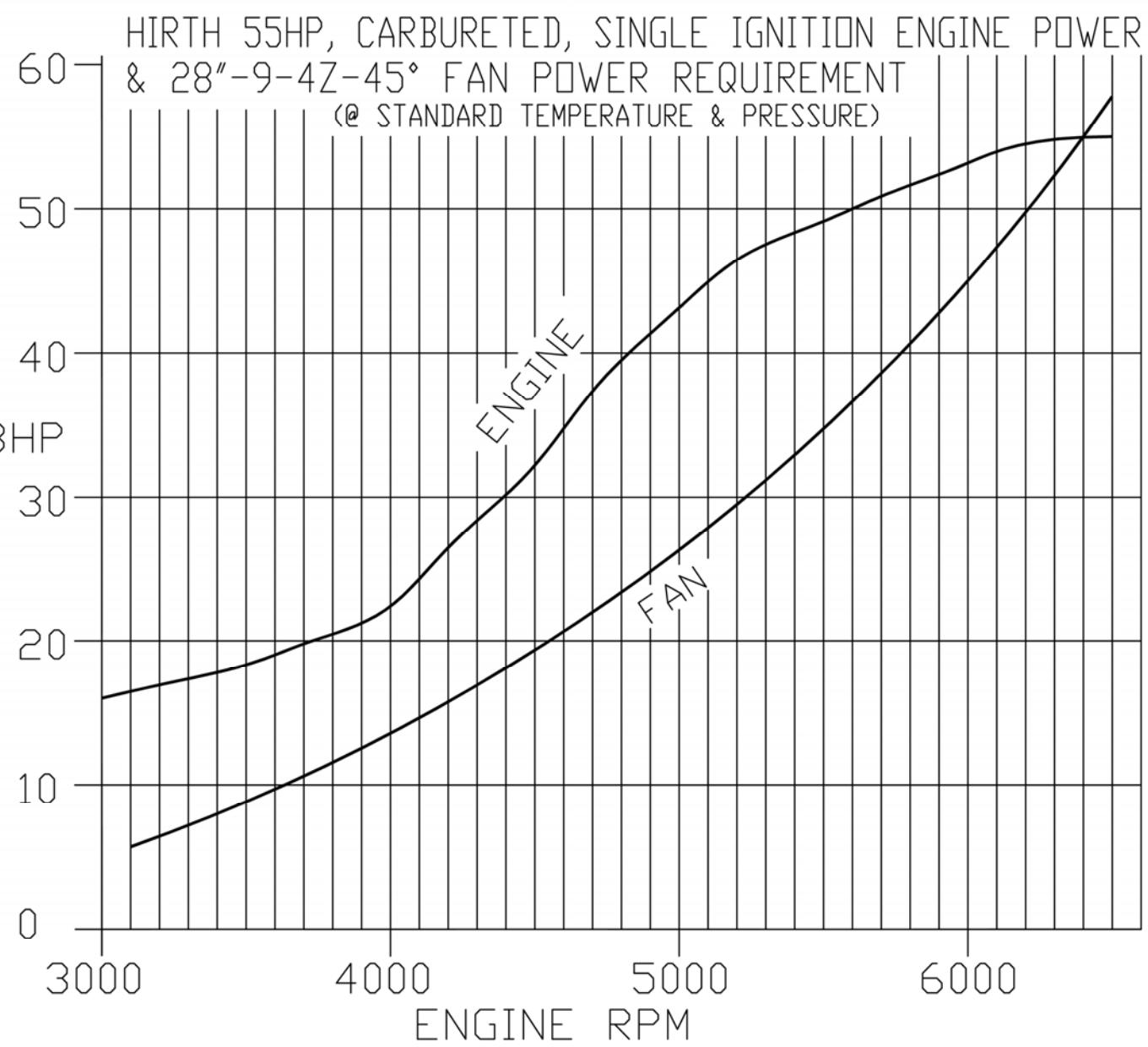


| Fig. No. | Qty. | Description | Neoteric Part # | Remark / Notes |
|---------------------|-------------|----------------------------------|----------------------------|-------------------------------|
| - | 1 | 55HP Gasket Set | 5861 | Includes Fig 1, 2, 3, 4, 5, 6 |
| 1 | 2 | Crankshaft Seal | 5453 | |
| 2 | 2 | Cylinder Base Gasket | 3433 | |
| 3 | 2 | Exhaust Outlet Gasket | 5245 | |
| 4* | 1 | <i>Single Carb Intake Gasket</i> | - | * Not Used |
| 5 | 2 | Intake Boot Gasket, Oval | 5454 | |
| 6 | 2 | Vacuum Nipple Gasket Washer | 5629 | Not Used |

| HIRTH ELECTRICAL COMPONENT RESISTANCE VALUES | | | | | |
|--|---------------------------------------|-----------------------|------------|---|---|
| Volt Meter Terminal 1 (Red Lead) | Volt Meter Terminal 2 (Black Lead) | Value | Unit | Part | Notes |
| Yellow Wire | Yellow Wire | 0.080 | Ohm | 5591 - 55/65Hp Stator Coil (Magneto) | |
| Yellow Wire | Mount Plate | 450000000 - 550000000 | Ohm | | |
| Primary 1 | Primary 2 | 0.351 - 0.429 | Ohm | 5682 - 55/65Hp Ignition Coil | See Figure "A" |
| Primary | Secondary | 450000000 - 550000000 | Ohm | | |
| Secondary 1 | Secondary 2 | 2699.1 - 3298.9 | Ohm | | |
| Black & Green Wire | Black & White Wire | 0.396 - 0.484 | Ohm | 6097 - 100Hp Ignition Coil | See Figure "B" |
| Yellow & Brown Wire | Black & White Wire | 0.405 - 0.495 | Ohm | | |
| Black & Blue Wire | Black & White Wire | 0.387 - 0.473 | Ohm | | |
| Ground | Black & White Wire | 450000000 - 550000000 | Ohm | | |
| Secondary 1 | Ground | 1385.1 - 1747.9 | Ohm | | |
| Secondary 2 | Ground | 1386 - 1694 | Ohm | | |
| Secondary 3 | Ground | 1386 - 1694 | Ohm | | |
| Yellow Wire | Yellow Wire | 0.100 | Ohm | 6564 - 100Hp Stator Coil (Magneto) | |
| Black | Red | 2.950 | Volts (DC) | 5338 - Hirth Voltage Regulator | * Must have a multi-meter with a diode test to diagnose voltage regulator |
| Red | Black | > 5.000 | Volts (DC) | | |
| Yellow | Yellow | 2.300 | Volts (DC) | | |



55HP Hirth Engine/Fan Power Requirement Graph



55HP Fan Altitude Performance Graph

