

Technical Information

STIHL®

T. 35.84
(T. 28.84)

New STIHL 034 Chain Saws (Series 1125):

1. General:

The STIHL 034 is an addition to STIHL's line of new generation chain saws. It continues the line of development adopted for the other "new generation" models. This means that it incorporates the experience gained with its sister models, including the use of high grade lightweight materials and modern manufacturing processes. The result is a "cutter" designed, all-round chain saw, with a power output of 3.0 kW and a weight of only 6.4 kg (14.1 lbs.) (034 AVEQZ) complete with 37 cm (14.6 in.) bar and chain. This exceptionally low weight has never been achieved before in this power class and is equivalent to 2.13 kg/kW (4.7 lbs./kW).



In terms of engine power, the model 034 chain saw can be used as a professional logging saw. In terms of its weight and unique "cutter" design, it is also very appropriate for "all day" limbing and thinning.

All model 034 chain saws are equipped with the now typical STIHL safety features, such as an AV handle system, inertia Quickstop chain brake, front and rear hand guards, safety throttle lock and chain catcher "bolt".



The 034 is also equipped with the following additional features:

Fully automatic chain oiling, no oil feed at idle speed. Efficient silencing; the muffler is mounted at the front of the machine, the exhaust gases direction does not bother the operator. An outboard chain sprocket, which simplifies mounting of the saw chain and eases sprocket replacement.

Something that is completely new, on all chain saws, is the 034's chain tensioner. It is accessible through the side of the chain sprocket cover and makes chain tensioning much easier.

A single control lever greatly simplifies ignition, half throttle and choke settings. One lever, i.e. the Master Control lever, is used to select the starting throttle position, operate the choke shutter and engage the short-circuit contact to stop the machine.

2. Versions available:

034 AVEQ with electronic (breakerless) magneto ignition system and inertia Quickstop chain brake.

3. Technical description:

3.1 Power unit:

The engine of the 034 is the combination of all the experience gained in the design and research during development of all previous Stihl models, especially models 024, 028, 038 and 048.

As on all other STIHL chain saws, the crankcase is a two-piece magnesium die casting. Two oil seals with additional dust lips effectively seal the crankcase.

The crankshaft consists of two drop forgings which are pressed together to form a torsionally rigid assembly before final machining. For this reason, the connecting rod and its big-end journal bearing are not replaceable.

The piston is made of a special aluminum alloy and has two 1.5 mm (0.06 in.) high compression rings. The piston pin supports the con rod needle cage and is held in place by two hookless wire snap rings.

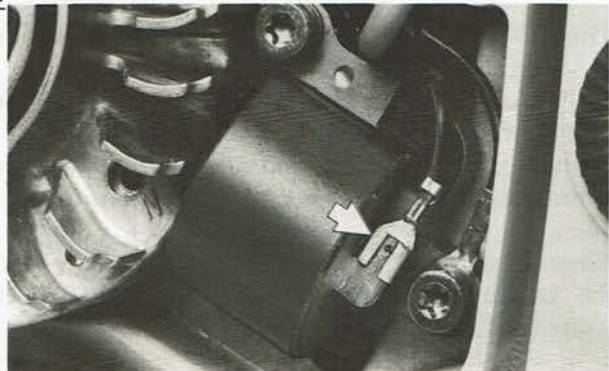
The cylinder is also made of a special aluminum alloy and its bore is composed of an extremely wear resistant special alloy.

The diaphragm carburetor is connected to the cylinder by means of a "manifold" made of a heat-resistant elastomer. This provides carburetor insulation from vibrational and thermal loads.

Air intake is via a wire mesh prefilter at the top of the carburetor box cover. This prefilter prevents coarse particles of dirt from reaching the air filter chamber and thus extends the intervals at which the main filter has to be cleaned. The main filter is a double-sided, large area box-type filter installed in an upright position. A flocked main filter is available as an optional extra for special operating conditions.

As on all other STIHL chain saws, the ignition system operates on the principle of magnetic induction.

All versions are equipped with an electronic (breakerless) ignition system. It has an integrated trigger unit and is combined with the ignition coil to form an ignition module which is mounted outboard of the flywheel. Therefore, the flywheel does not have to be disassembled to remove the module. The ground lead has a plug-and-socket connector and is, therefore, easy to dismount.



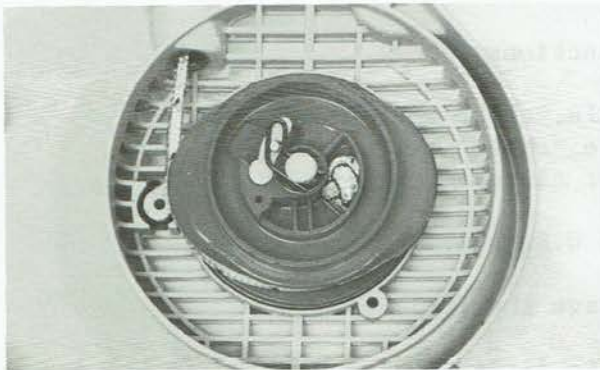
New: For the first time a very special STIHL "lifetime warranty" will be offered on the 034's ignition module. "Lifetime" means for the life of the complete chain saw!

The "intake air preheating" kit is recommended for cold weather operation. It includes a carburetor box cover with leaterette seal and a special shroud which causes only preheated air, from around the cylinder, to be drawn in and thus prevents possible air filter and carburetor icing.

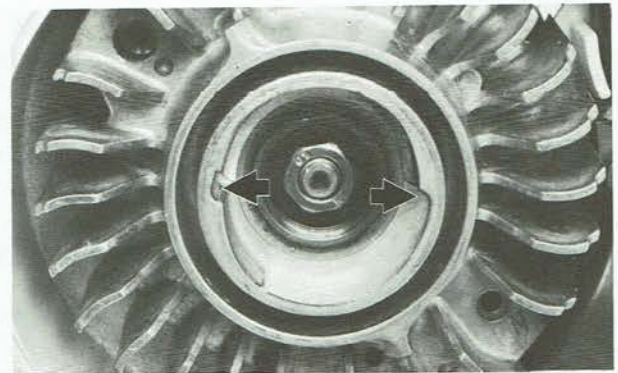
The kit also contains a cover plate to prevent snow from being sucked in when the saw is held at a certain angle. It is fitted so that the cooling air intake slots in the lower half of the fan housing are blocked off.

In order to avoid the risk of engine damage, as a result of overheating, the intake air preheating kit must not be used at outside temperatures above approx. 10 °C (50°F), i.e. the standard carburetor box cover and shroud must be refitted under such conditions.

The 034 is equipped with a single pawl starter mechanism. A nylon pawl fitted in the rope rotor positively transmits the cranking action to the flywheel. The nylon pawl is simple to replace in the case of wear. The rope rotor is now oval to ease starting. The effect achieved is reduced cranking effort during the compression phase and increased rotational speed during the downward stroke.



Fan housing with oval rope rotor

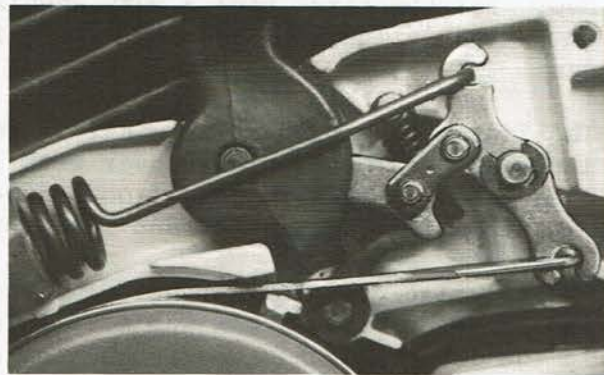


Pawl detents in flywheel

There are only two pawl detents in the flywheel ring, offset 180° to one another, in order to exactly "program" the position of the rope rotor relative to the piston's travel.

The chain drive and chain brake are housed in the crankcase, the same as on model 024 saws. Only the clutch drum with chain sprocket, thrust washer and E-clip can be seen from the outside. This means that the clutch and brake mechanisms are well protected against dust, wood chips, snow, etc.

The chain brake can be engaged either manually, by operating the front hand guard, or by the inertia of the front hand guard in the event of a severe kickback. The chain brake's inertia tripping action is made possible by a new and highly sensitive mechanism which was originally introduced on the 024 and since installed in models 028 and 038 as well.



Important note: The activating force and hence the acceleration necessary to trip the brake, are set at the factory and cannot be altered without interfering with the system.

The braking element is a brake band, without a lining, which fully encircles the clutch drum. This means that the radial stresses on the crankshaft and bearings, during the braking process, are considerably lower than those produced by, for example, a single shoe-type brake.

Only 0.325" and 3/8" rim sprockets are available for the 034. The clutch drum is secured axially on the crankshaft by a single E-clip and makes replacement of the chain sprocket very much easier. Only a screwdriver is required to remove the E-clip.

The Master Control lever has the following functions:

- 1) Cold start, i.e. "CHOKE" (starting throttle, choke shutter closed).
- 2) Hot start, i.e. "START" (starting throttle, choke shutter open).
- 3) Engine shutdown, i.e. "STOP" (closes short circuit contact).

The fuel tank has a capacity of 0.625 L (1.32 U.S. pt.).

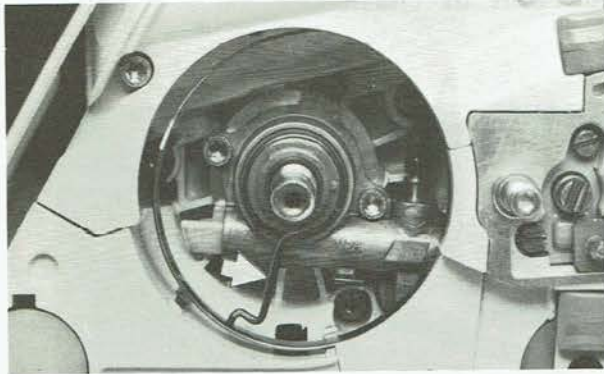
The fuel tank vent allows air to enter and leave the fuel tank.

A plastic element developed for this purpose is fitted on the opening in the top of the tank and projects into the intake chamber. The cross section of the bore, inside this element, is reduced by a grub screw and self-tapping screw. Pressure equalization can, therefore, only take place through this element bore. A valve is available as an option which only permits air to enter the tank.

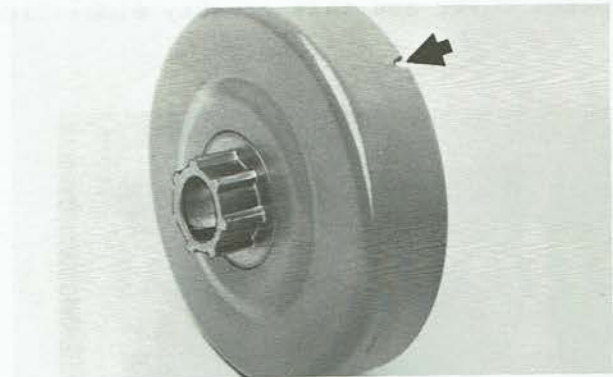
The chain oil tank has a capacity of 0.36 L (0.76 U.S. pt.).

The oil pump is a new development which was first used on model 024 saws. It encircles the crankshaft in a housing recessed behind the chain sprocket. The complete oil pump system is thus ideally protected against dust and dirt.

Oil pump drive is effected by a worm on the crankshaft which acts directly on the pump plunger. Unlike the arrangement in the model 024, the worm is pivot-mounted on a bearing ring and not rigidly connected to the crankshaft. The worm itself is driven by a spring clip whose free end engages a notch in the clutch drum. This means that oil feed stops at idle speed (when the clutch drum is not turning). The pump is otherwise speed-controlled and operates fully automatically.



Oil pump with drive spring



Drive slot in clutch drum

For ease of operation, the front handle (handlebar) is arranged at an angle of 10° to the saw body's side to side middle line. This layout produces a natural position for the left hand so that the saw can be swung quickly and with less effort during limbing.

The front hand guard also serves as the activating element for the chain brake. An integrated weight precisely defines the mass of the hand guard for inertia tripping of the chain brake. Improved operation is achieved by pivot mounting at both sides.

With the exception of the engine, all assemblies of the saw are connected to the AV system. The machine runs very smoothly because the vibrations act on only a relatively low mass. In this way, vibration is primarily restricted to the parts which generate vibration.

The muffler is a large volume type and ensures effective silencing. Exhaust gases are directed forward and to the right and leave the machine above the chain sprocket cover.

3.2 Cutting attachment

3.2.1 Chain sprocket

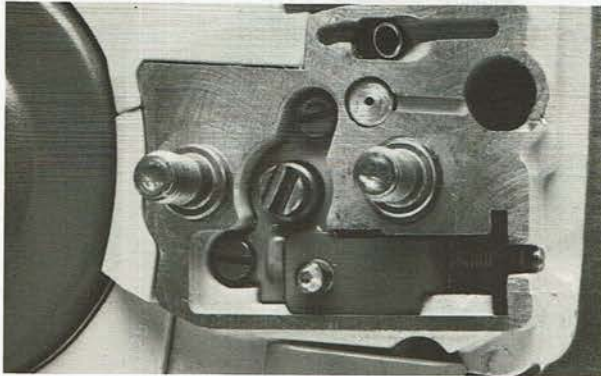
Model 034 chain saws come standard with a 7-tooth, 3/8" rim sprocket. An 8-tooth, 0.325" rim sprocket is fitted on a special version available in some markets.

Chain sprocket

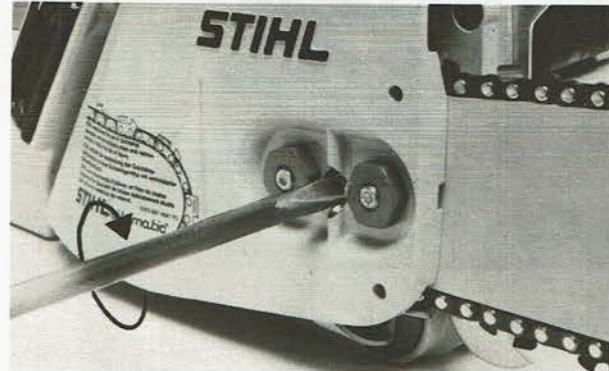
Type	Pitch mm (inch)	No. of teeth	Kit Part No.	Separate item Part No.	Remarks
Rim	9.32 (3/8)	7	1125 007 1002	0000 642 1231	Standard
Rim	8.25 (0.325)	8	1125 007 1000	0000 642 1234	Special version
Rim	8.25 (0.325)	7	1125 007 1001	0000 642 1236	Optional extra

Two nylon friction pads on either side protect the crankcase and chain sprocket cover from being damaged by the rotating chain. The friction pads can be quickly removed and replaced, with a screwdriver, in the case of wear.

New: The chain tensioner is a new development and is installed for the first time ever on this chain saw. Access to the tensioner is through the side of the chain sprocket cover and this greatly simplifies adjustment of chain tension.



New chain tensioner



Tensioning saw chain

Both Rollomatic guide bars, with sprocket nose, and Duromatic guide bars, with stellite tipped nose, are available.

The saw chains which can be run on the 034 are shown in the table below:

Guide bars and Oilomatic- Chain	Pitch mm (inch)	37cm/14.6 in. Part No.	40cm/16 in. Part No.	45cm/18 in. Part No.	50cm/20 in. Part No.
Rollomatic	9,32 (3/8)	3003 000 6111	3003 000 6113	3003 000 6117	3003 000 6121
Rollomatic	8,25 (0.325)	3003 000 6811	3003 000 6813	3003 000 6817	3003 000 6821
Duromatic		---	3003 0009213	3003 000 9217	3003 000 9221
Rapid-Micro	9,32 (3/8)	3859 000 0056	3859 000 0060	3859 000 0066	3859 000 0072
Rapid-Micro 1	9,32 (3/8)	3854 000 0056	3854 000 0060	3854 000 0066	3854 000 0072
Rapid-Super	9,32 (3/8)	3868 000 0056	3868 000 0060	3868 000 0066	3868 000 0072
Rapid-Super 1	9,32 (3/8)	3869 000 0056	3869 000 0060	3869 000 0066	3869 000 0072
Topic-Micro	9,32 (3/8)	3890 000 0056	3890 000 0060	3890 000 0066	3890 000 0072
Topic-Super	9,32 (3/8)	3882 000 0056	3882 000 0060	3882 000 0066	3882 000 0072
Rapid-Micro	8,25 (0.325)	3864 000 0063	3864 000 0067	3864 000 0074	3864 000 0081
Rapid-Micro 1	8,25 (0.325)	3867 000 0063	3867 000 0067	3867 000 0074	3867 000 0081
Rapid-Super	8,25 (0.325)	3872 000 0063	3872 000 0067	3872 000 0074	3872 000 0081
Rapid-Super 1	8,25 (0.325)	3884 000 0063	3884 000 0067	3884 000 0074	3884 000 0081
Topic-Micro	8,25 (0.325)	3907 000 0063	3907 000 0067	3907 000 0074	3907 000 0081
Topic-Super	8,25 (0.325)	3896 000 0063	3896 000 0067	3896 000 0074	3896 000 0081

4. Specifications

4.1 Engine

STIHL single-cylinder two-stroke engine

Displacement: 56.4 cm³ (3.44 cu. in.)
 Bore: 46 mm (1.80 in.)
 Stroke: 34 mm (1.34 in.)

Max-Power output:	3.0 kW at 9500 R.P.M.
Cylinder:	Wear resistant - Mahle design
Max. allowable engine speed with chain and Rollomatic guide bar:	13,000 R.P.M.
Mean idle speed:	2,400 R.P.M.
Crankshaft:	Two-part, drop forged
Crankshaft bearings:	2 deep groove ball bearings
Crankpin:	14.4 mm (0.57 in.) dia.
Big-end bearing:	Needle cage
Piston pin:	10 mm (0.394 in.) dia.
Small-end bearing:	Needle cage
Length of connecting rod:	58 mm (2.28 in.)
Rewind starter:	Pawl engagement with automatic starter rope rewind mechanism.
Starter rope:	3.5 mm (0.14 in.) dia. x 960 mm (37.8 in.)
Clutch:	Centrifugal clutch without linings, 76 mm (3.0 in.) dia.
Clutch engages at:	3,300 R.P.M.
Crankcase leakage test at gauge pressure:	0.5 bar (7.1 lbf/in. ²)
with vacuum:	0.5 bar (7.1 lbf/in. ²)

4.2 Fuel System:

Carburetor:	All position diaphragm carburetor with integral fuel pump.
Adjustment:	
High-speed adjusting screw H:	back off approx. 1 turn
Low-speed adjustment screw L:	back off approx. 1 turn (Basic setting with screws initially tight against their seats)
Carburetor leakage test at gauge pressure:	0.4 bar (5.7 lbf/in. ²)
Fuel tank capacity:	0.625 (1.32 U.S. pt.)
Fuel mixture:	Regular grade gasoline and branded two-stroke engine oil. Mix ratio 1:40 with <u>STIHL two-stroke engine oil</u> ;
Air filter:	Large area, two-part wire mesh box-type filter

4.3 Ignition system:

Type:	Transistorized (breakerless) magneto ignition
Air gap:	0.2.....0.3 mm (0.008-0.012 in.)
Ignition timing:	2.3.....2.8 mm (0.09...0.11 in.) B.T.D.C. at 8,000 R.P.M.
Advance angle:	26.5...29.5° B.T.D.C. at 8,000 R.P.M.
Ignition coil:	Coil winding resistances Primary: Secondary: 0.7...1.0 Ω 7.7...10.3 k Ω
Spark plug (suppressed):	Bosch WSR 6 F (Champion RCJ 6 Y) Electrode gap 0.5 mm (0.020 in.)
Spark plug thread:	M 14 x 1.25; 9.5 mm (0.37 in.) long

4.4 Cutting attachment:

Guide bars: STIHL Rollomatic bars with sprocket nose;
STIHL Duromatic bars with stellite tipped nose.
Both types of bars, with corrosion resistant
finish and induction hardened rails.

Bar lengths: Rollomatic 37, 40, 45 and 50 cm
(14.6, 16, 18 and 20 in.)
Duromatic 40, 45 and 50 cm (16, 18 and 20 in.)

Oilomatic chain: 0.325" (8.25 mm) and 3/8" (9.32 mm) Rapid and
Topic

Chain sprocket: 8-tooth, 0.325" rim sprocket and
7-tooth, 3/8" rim sprocket

Chain speed: 20.8 m/s (68.2 ft/sec) at 9,500 R.P.M.

Chain lubrication: Fully automatic speed-controlled plunger type
oil pump; no oil feed at idle speed

Oil delivery rate: 11.5 cm³/min. (0.7 cu. in./min.) at 10,000 R.P.M.

Oil tank capacity: 0.36 L (0.76 U.S. pt.)

4.5 Tightening torques:

Fastener	Thread	For component	Torque		Remarks
			Nm	(ft/lbs)	
Spline screw	IS (M5x20)	Crankcase	8.5	(6.25)	
Spline screw	IS (M5x20)	Cylinder	8.5	(6.25)	
Spline screw	IS (M5x12)	Muffler to cylinder	9.5	(7.0)	1) 2)
Spline screw	IS (M5x12)	Muffler to crankcase	5	(3.7)	1) 2)
Spline screw	IS (M5x20)	Ignition module	8.5	(6.25)	2)
Nut	(M8x1)	Crankshaft (ignition end)	33	(24.5)	
Nut	(M5)	Carburetor	3	(2.2)	
Slotted nut	(M5)	Shroud	3.5	(2.5)	
	(M12x1)	Clutch carrier	48	(35.5)	
	(M14x1.25)	Spark plug	28	(20.5)	
Screw (for plastic)	(M5.8x19)	Rubber buffer	5.5	(4.0)	
Screw (for plastic)	(M5.8x19)	Handlebar	6.5	(4.8)	
Self-tap screw	(M3.9x19)	Handle cover	2.5	(1.9)	
Self-tap screw	(M5.5x19)	Chain catcher	2	(1.5)	
Screw (slotted)	(M3x8)	Guard in sprocket cover	2	(1.5)	
Screw (slotted)	(M3.5x12)	Heating generator	2	(1.5)	1)
Screw (slotted)	(M4x8)	Cover (chain tensioner)	3.5	(2.5)	
Spline screw	IS (M4x12)	Oil pump	3.5	(2.5)	
Spline screw	IS (M4x12)	Cover (clutch side)	2	(1.5)	
Spline screw	IS (M4x16)	Fan housing	3.5	(2.5)	
Spline screw	IS (M5x12)	Spiked bumper	7.5	(5.5)	
Collar screw	(M8x16.5)	Bar mounting	15	(11)	

Remarks:

- 1) Screw must be secured with an adhesive such as LOCTITE 242 (0786 111 1101).
2. Washer must be fitted under screw head.

4.6 Dimensions (without cutting attachment):

Overall length:	435 mm (17.12 in.)
Overall width:	260 mm (10.24 in.)
Overall height:	300 mm (11.8 in.)
Handlebar diameter:	26 mm (1.02 in.)

4.7 Weights:

	Version
	AVEQ
Powerhead, dry less bar and chain	5.25 kg (11.6 lbs.)
Powerhead, dry with 37 cm/14.6 in. bar and chain	6.4 kg (14.1 lbs.)

4.8 Accessories:

Tool kit
Bar scabbard

4.9 Special accessories:

4.9.1 For owners:

STIHL repair kit 034	1125 900 5000
Flocked box filter (half)	1125 120 1615
Flocked box filter (half)	1125 120 1620
7-tooth rim sprocket kit, 0.325"	1125 007 1001
Intake air preheating kit	1125 007 1004
Valve (fuel tank vent)	1110 353 1600
Grease gun	1108 890 2500

4.9.2 For service:

Carburetor parts kit	1125 007 1060
Gasket set 034	1125 007 1050

5. Special hardware:

Screws of the type already used on models 024, 028 and 038, i.e. with a recessed spline head and locking serrations on the underside of the head, are also used on the 034. The size designations of the screws are prefixed by the letters "IS", e.g. IS (M5x18).

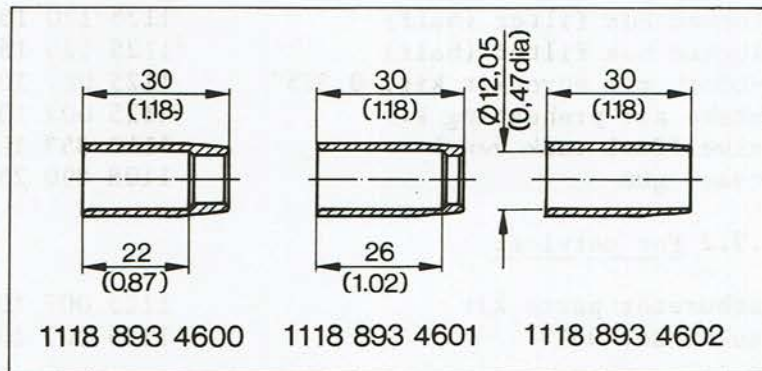
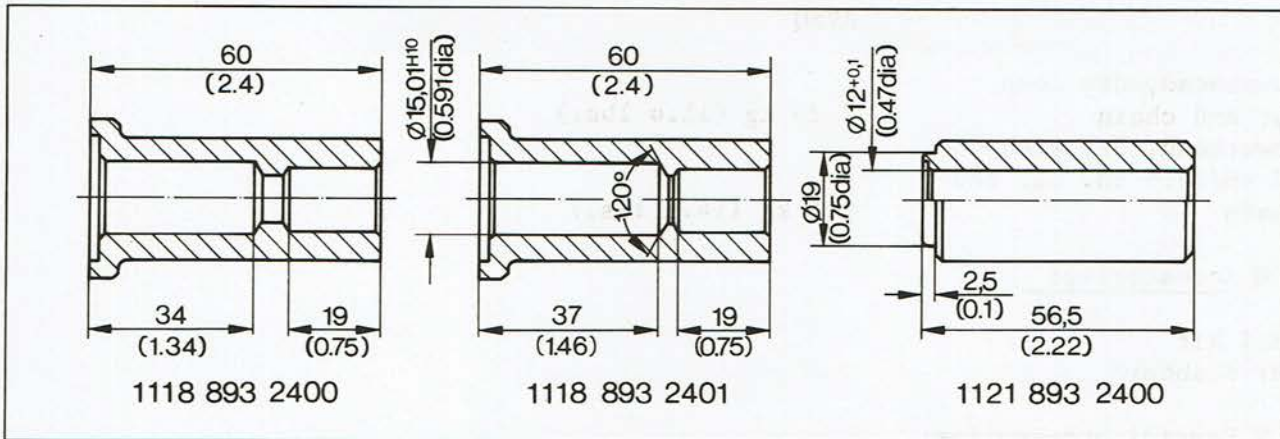
6. Special tools and materials:

6.1 Special tools which have been newly developed or already available and needed for ease of servicing 034 saws:

Part Name	Part No.	Application	Remarks
Assembly sleeve	1118 893 4602	Oil seal (output side)	1)
Installing sleeve	1118 893 2401	Oil seal (Output side)	1)
Installing sleeve	1121 893 2400	Oil seal (ignition side)	2)

Remarks:

- 1) The existing Assembly Sleeves, 1118 893 4600 and 1118 893 4601 and the Installing Sleeve, 1118 893 2400 can be used if they are reworked as shown. The reworked sleeves can still be used for their original purpose.
- 2) This installing sleeve is also required for model 024.



Note: All dimensions in mm (in.)

6.2 Existing special tools:

The following existing special tools are required in addition to the general-purpose servicing tools and equipment (see Part 1 of special tools manual). Some of these are contained in the Special Tool Kit, 0000 890 1705 and Testing Tool Kit, 0000 890 1710.

When removing the oil seal, at the ignition side, with Universal Oil Seal Puller, 0000 890 4400, it is necessary to check the length of the screw spindle first. If the total length is 100 mm (3.94 in.), the spindle must be extended by about 6 mm (0.24 in.) e.g. by means of an M 6 nut. The latest version of this puller has been supplied for some time with a 106 mm (4.18 in.) long screw spindle and does not need to be extended.

Part Name	Part No.	Application	Remarks
Universal oil seal puller with jaw 3.1/4	0000 890 4400 0000 893 3706	Oil seals	
Assembly tool	0000 890 2201	Bush in fan housing	
Sealing plate	0000 855 8105	Leakage test	
Clamping strap	0000 893 2600	Assembly of cylinder	
Locking strip	0000 893 5900	Blocking crankshaft	
Screwdriver socket for torque wrench (5x10x6.3)	0812 542 2104	"IS" screws	
Puller	1110 890 4500	Flywheel	
Assembly drift	1110 893 4700	Piston pin	
Assembly pliers	5910 890 8200	Hookless snap rings (piston pin)	
Setting gauge	1111 890 6400	Air gap (ignition module/flywheel)	
Assembly tube	1117 890 0900	Brake spring	
Testing flange	1118 850 4200	Leakage test	
Assembly sleeve	1118 893 4601	Oil seal	*
Installing sleeve	1118 893 2400	Oil seal	*
Press arbor	1118 893 7200	Crankshaft bearings	
Screwdriver (with T-handle) (5x150)	5910 890 2400	"IS" screws	
Stud wrench (M8)	5910 893 0501	Bar mounting	
Socket (13 mm)	5910 893 5608	Crankshaft nut, ign. side	
Socket (19 mm)	5910 893 5612	Clutch carrier	

Remarks: *see 6.1

6.3 Materials :

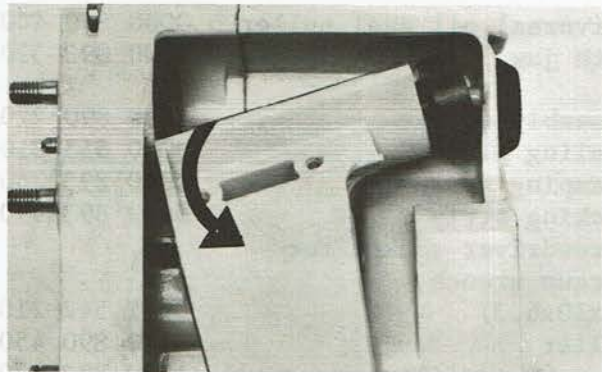
Part Name	Part No.	Application
Grease	0781 120 1111	Oil seals, oil pump drive, chain sprocket bearing
Low temperature lubricant	0781 417 1315	Rewind starter
Sealing paste	0783 810 1101	Manifold, crankcase gasket
Medium-strength thread- locking liquid (LOCTITE 242)	0786 111 1101	Securing screws (see 4.5)
HT lead 10 m (32.8 ft.)	0000 930 2202	Replacement
HT lead 100 m (328 ft.)	0000 930 2201	Replacement
Starter rope 30.5 (100 ft.)	0000 930 2203	Replacement

7. Notes on servicing:

The basic design concept of model 034 saws is the same as that of model 024. For this reason, the 024 service manual can be used as a reference for repair work on the 034 until a separate service manual is available. The installed positions of the individual component parts are shown in the illustrations of parts list 0452 128 1323 which is also available on microfilm. The following notes on servicing and repairs only cover points which differ from model 024 saws.

7.1 Removing tank housing:

Unlike the 024, the arm of the tank housing (front) is supported in two rubber buffers. The right-hand buffer is screwed to the tank housing and expanded in the crankcase. The left-hand buffer is only a push fit: in a seat in the tank housing and on a stud pin on the crankcase. To remove the tank housing, it is necessary to unscrew the right-hand rubber buffer and swing the arm out of the way.



A plastic bushing is fitted as a depth stop for the left-hand buffer in the arm of the tank housing, but this will be replaced at a later date by a cast shoulder.

7.2 Oil seal:

The oil seal at the ignition side must be installed so that its front edge is approx. 2.5 mm (0.1 in.) behind the edge of the bore in the crankcase. This is necessary to ensure that the flywheel hub does not make contact with the oil seal. The new Installing Sleeve, 1121 893 2400, has a shoulder to ensure correct positioning of the oil seal.

7.3 Important notes on pre-production machines from number X 13 073 555 up to X 13 074 554:

Several improvements over the pre-production machines were introduced at the start of series production.

7.3.1 Fan housing:

The top right mounting boss, which was located on a slope in the upper area on pre-production machines, was moved down about 30 mm (1.2 in.). This change was also taken into account on the crankcase.

Spare parts availability:

Replacement crankcases will generally be supplied only in the version with a lower tapped hole. Fan Housings, 1125 080 1800 (as in parts list and list of suggested parts for stock), should be used for these crankcases. They also have a lower mounting boss.



Left: Fan housing with mounting hole at top.

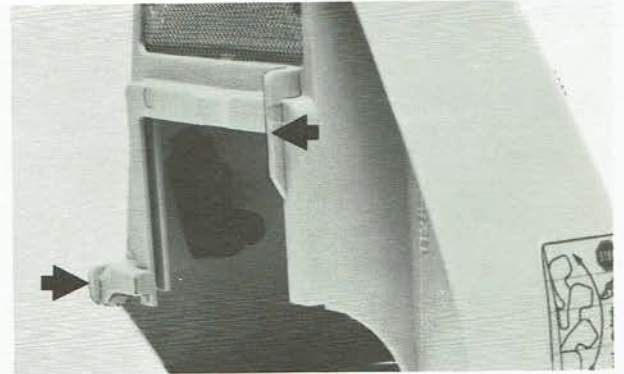
Right: Fan housing with lower mounting hole.

Fan housings with a mounting boss at the very top should be used as replacements on pre-production machines with the original-type crankcase. A limited number of these fan housings is being kept available under part number, 1125 080 1890. They should not be stocked and ordered only in the case of a real requirement. The new-type fan housing may also be used as a temporary solution and secured in position with only 3 screws.

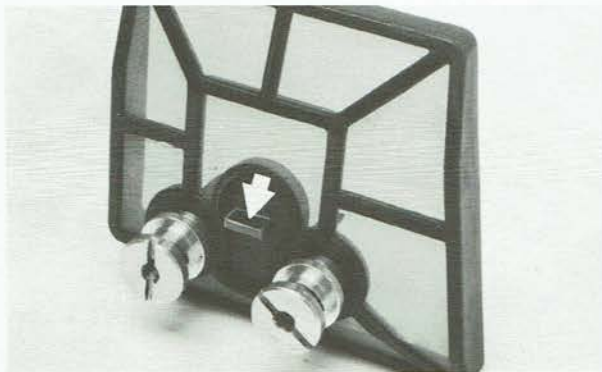
7.3.2 Carburetor box cover/air filter:

The fit of the carburetor box cover on the tank housing was improved along with the action of the twist lock. Integrally cast locating ribs were provided to ensure that the guides engage exactly when the carburetor box cover is fitted against the shroud.

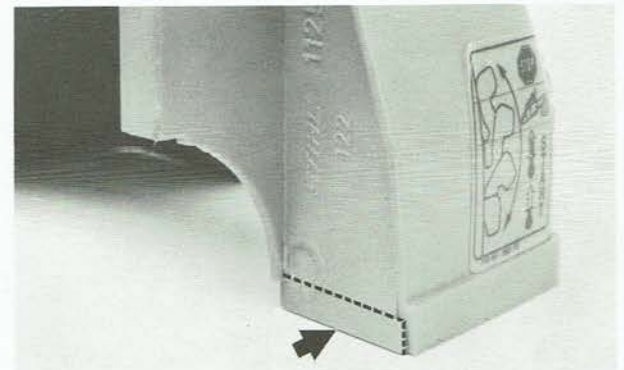
The air filter was altered to suit the modified twist lock. The improved twist lock is effective only if it is used with the modified outer half of the air filter, (1125 120 1605).



Locating ribs on carburetor box cover.



New catch on air filter



Contour which has to be reworked.

Only the improved versions of carburetor box covers and air filters will be supplied as replacement parts.

The latest version of the carburetor box cover can also be used for pre-production machines if the contour is reworked as shown in the illustration.

U/TSM:tc

(11164)

034

Technical Information



T.30.85
(T.31.85)

Engineering Changes on Model 034 Chain Saws (Series 1125)

1. Winter operation
2. Annular buffer and fastener
3. Impulse hose
4. Carburetor

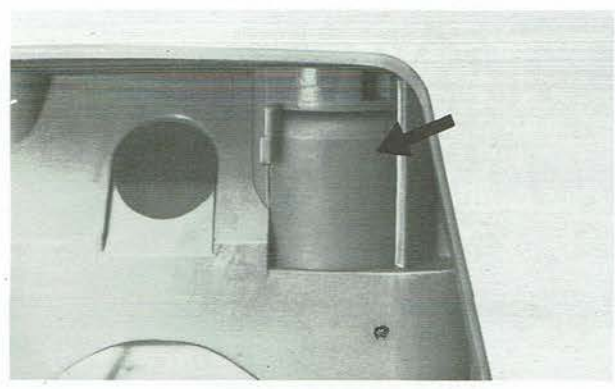
1. Winter operations:

The gasoline engines in Stihl chain saws are designed to operate in a wide range of conditions (e.g. in air temperatures of +45 °C to - 40 °C / 115 °F to -40 °F). However, as on all other carburetor engines (e.g. even those in motor vehicles), running problems can be experienced in winter operation. The cause of these problems is usually carburetor and air filter icing. This can occur at temperatures above freezing (from about +10 °C/50 °F, depending on humidity). The reason for this is the high flow speed of the intake air which extracts heat from the components it flows through (air filter and carburetor). The devices, components and measures described below create the prerequisites for trouble-free winter operation of model 034 chain saws.

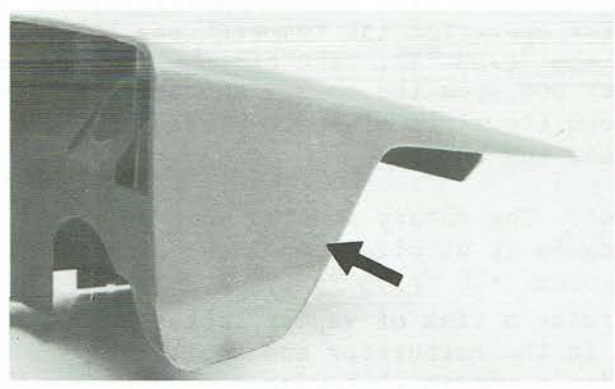
1.1 Carburetor preheating:

A carburetor preheating system has been developed for the 034 to optimize running behavior and help prevent carburetor icing. It will be installed as standard equipment from machine number X 14 939 514.

It features a rotary shutter in the shroud which can be opened to change the air flow to the carburetor so that heated air is drawn in from around the cylinder.



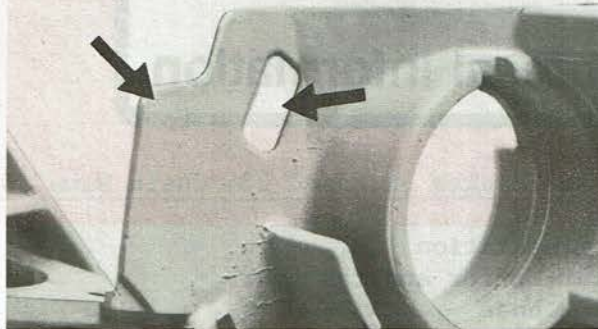
Rotary shutter in Shroud, 1125 080 1601



Side wall of new shroud

The Shroud, 1125 080 1600, will be deleted and replaced by the new version, 1125 080 1601 (with rotary shutter). The right side wall of the new shroud has been extended downward to improve air flow.

There is now a rib on the crankcase, at the fan side (next to the annular buffer seat). The purpose of this rib is to divert the cold intake air over the outside surface of the cylinder so that it is heated. The modified crankcases have been given a new part number (also in connection with a further change at the sprocket side).



Crankcase, 1125 020 2106 with rib and opening for cable.

Summary:

	Original version	New version	Remarks
Shroud including:	1125 080 1600	1125 080 1601	1)
Nameplate	1125 967 1500	1125 967 1500	2)
Round head rivet (3x6)	0000 974 1000	0000 974 1000	2)
Insulator	1121 084 6900	1121 084 6900	2)
Slotted nut	1121 084 7000	1121 084 7000	2)
Reflector foil	1119 084 8300	1119 084 8300	
Rotary shutter	---	1125 084 4100	
Self-tapping screw (B 4.8x9.5)	---	9099 021 3730	
Crankcase with bearings	1125 020 2105	1125 020 2106	1)

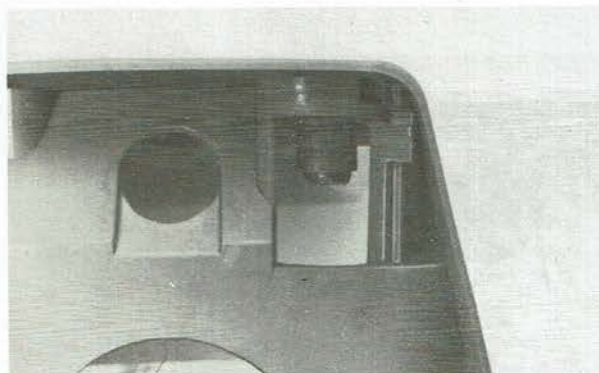
Remarks:

- 1) Only the new, fully interchangeable version will be supplied as a replacement.
- 2) Part not previously included with shroud.

Note for users:

To change the air flow to the carburetor for winter operation (at temperatures below approx. +10 °C/50 °F), take off the carburetor box cover and open the rotary shutter in the shroud (to right of spark plug). Refit carburetor box cover.

Important: The rotary shutter must be closed again at outside temperatures above approx. +20 °C/70 °F since there is otherwise a risk of vapour locks forming in the carburetor and spoiling the engine's running behavior.



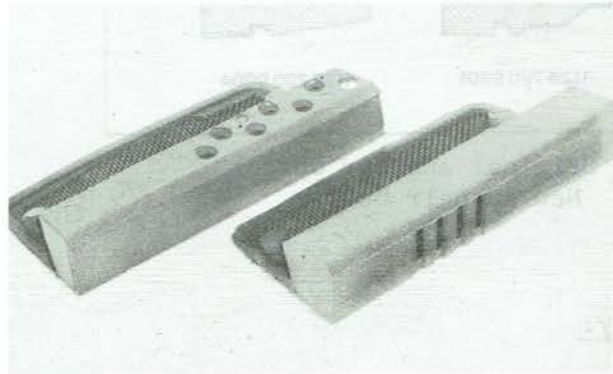
Rotary shutter open

1.2 Intake air preheating kit:

In view of the introduction of Shroud, 1125 080 1601 (with rotary shutter and air guide rib), as standard equipment, the Shroud, 1125 080 1605 (with air guide), has been deleted from the kit. The new kit now consists of the carburetor box cover with seal, the cover plate for the fan housing and the necessary fastening screws.

Notes:

The effectiveness of the intake air preheating kit can be improved on machines fitted with Shroud, 1125 080 1600, if it is exchanged for the new Shroud, 1125 080 1601 (with rotary shutter and air guide rib). Moreover, it is important to ensure that only the latest type of pre-filter is used (see illustration). The rotary shutter in the shroud (carburetor preheating) must be fully open when the intake air preheating kit is fitted.



Prefilter, 1125 120 1500
 Left: Original version
 Right: New version

Summary:

	Original version	New version
Intake air preheating kit including:	1125 007 1004	1125 007 1004
Shroud with air guide	1125 080 1605	---

All other parts are as before.

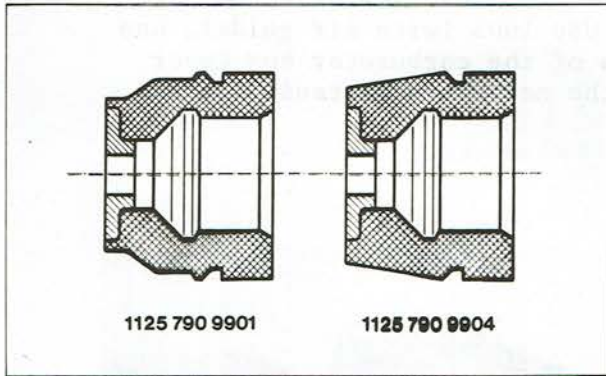
2. Annular buffer and fastener:

In order to improve damping characteristics, the original Annular Buffers, 1125 790 9901, will be replaced by Annular Buffers, 1125 790 9904 (with progressive spring rate), from machine number X 14 983 290.

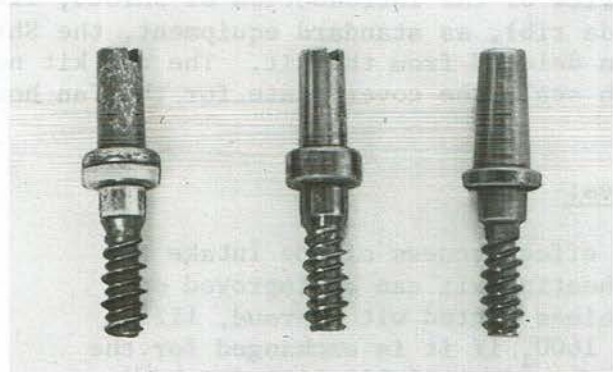
Furthermore, the Pan Head Screw, 1125 790 7500 (with press-fitted washer), used up to now, will be deleted in the foreseeable future and replaced by Pan Head Screw, 1125 791 6200 (without washer, but with a 2mm/0.08 in. wide collar).

For production reasons, the screw will initially be supplied with a 4mm/0.16 in. wide collar.

However, only the new, fully interchangeable parts will be supplied as spare parts.



Left: Original annular buffer
 Right: New annualr buffer



Left: Pan Head Screw, 1125 790 7500
 Center and right:
 Pan Head Screw, 1125 791 6200

Summary:

	Original version	New version
Annular buffer	1125 790 9901	1125 790 9904
Pan head screw	1125 790 7500	1125 791 6200

3. Impulse hose:

Because of the somewhat awkward position of the Impulse Hose, 1119 141 8600, on model 034 chain saws, malfunctions might occur under certain circumstances if the hose is not installed properly, i.e. twisted.

For this reason, the impulse hose will be deleted on the 034 in the near future and replaced by a molded Impulse Hose, 1125 141 8600. Only this new impulse hose should be used for repairs.

Impulse Hose, 1119 141 8600, remains available as a spare part for models 020 and 038.

Summary:

	Original version	New version
Impulse hose	1119 141 8600	1125 141 8600

4. Carburetor:

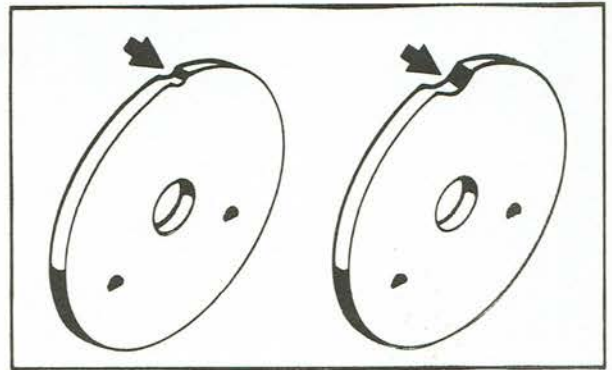
4.1 Throttle valve:

A new Throttle Valve, 1125 121 3300 (with enlarged notch), is now installed in order to further improve engine idling behavior. It replaces the original Throttle Valve, 1119 121 3300 (with small notch). The designation of the carburetor has been changed from HK 43 A to HK 43 B as a result of this modification.

Service note:

Only install the new Throttle Valve, 1125 121 3300, in Carburetor, 1125 120 0600 (HK 43).

The original Throttle Valve, 1119 121 3300, remains available as a spare for Carburetor, 1119 120 0600 (HK 29) and 1119 120 0601 (HK 42) for model 038 saws.



Left: Throttle Valve, 1119 121 3300
Right: Throttle Valve, 1125 121 3300

4.2 Valve jet:

Compared with Carburetor, 1119 120 0601 (HK 42), the smaller choke tube diameter of Carburetor, 1125 120 0600 (HK 43), necessitates the use of a slightly longer valve jet. This Valve Jet, 1125 121 5400 (approx. 5.5mm/0.2 in. long), should also be fitted as a replacement instead of the original Valve Jet, 1119 121 5401 (approx. 4mm/0.16 in. long).

Valve Jet, 1119 121 5401, remains available for the HK 42 carburetor (model 038 saws).

4.3 Summary:

	Original version	New version
Carburetor HK 43 A	1125 120 0600	---
Carburetor HK 43 B	---	1125 120 0600
including:		
Throttle valve	1119 121 3300	1125 121 3300
Valve jet	1119 121 5401	1125 121 5400

All other parts are as before.

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STIHL®

Technical Information

T.17.85
(T.11.85)

Engineering Change on Stihl's Model 034 Chain Saws (Series 1115)

- 1) Carburetor
- 2) Engine idle speed
- 3) Ignition system
- 4) Choke lever (correction of part number)

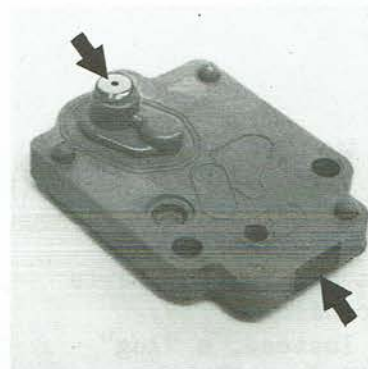
1. Carburetor:

It has been found in practice that the improved Module Plate, 1125 121 7400, introduced in T.4.85, has not always resulted in satisfactory idling behavior. The long term influence of some types of fuels and their additives has had a detrimental effect on the function of the inlet needle valve on some of these module plates. For this reason, Module Plate, 1125 121 7400, will be replaced by the new Module Plate, 1125 120 7400. The new module plate is equipped with a brass needle valve seat which is resistant to all fuel additives and will improve the seal.

This change will be introduced on the production line from machine number X 14 225 964. Factory stocks of machines before this number will be back-fitted with carburetors with the new module plate, i.e. only machines with an updated carburetor will be supplied by STIHL from now on.

The new Module Plate, 1125 120 7400 can be identified as follows:

- a) All black or orange with black mark on narrow side.
- b) Brass needle seat.



Spare parts availability:

Module Plate, 1125 121 7400, is no longer available. Only the new Module Plate, 1125 120 7400, will be supplied as a replacement part.

Carburetor, 1125 120 0600, will be supplied only with this new Module Plate, 1125 120 7400, in the future.

Summary:

	Original version	New version
Carburetor HK 43 A	1125 120 0600	1125 120 0600
including:		
Module plate	1125 121 7400	1125 120 7400

(other parts are as before).

2. Engine idle speed:

It has been found, at low outside temperatures in particular, that the engine running behavior is better at a higher R.P.M. The factory idle speed recommendation has therefore been raised to 2,700 R.P.M. However, it is necessary to install stiffer clutch springs in order to increase the clutch engagement speed accordingly. The Clutch Springs, 0000 997 0907, were replaced from machine number X 14 226 164, by stiffer ones (0000 997 0909). All factory stocks of finished machines have been modified. This means that machines before the above mentioned number may be fitted with the new springs. The springs are coded "white" for ease of identification.

The type of spring should always be checked during repair work and replaced where necessary by the stiffer springs (marked white). The engine idle speed should then be set to 2,700 R.P.M.

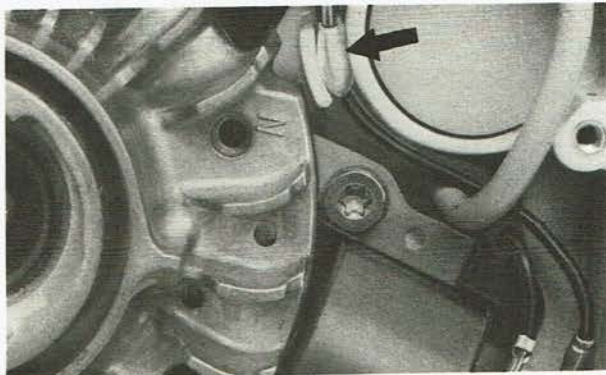
Summary:

	Original version	New version
Clutch	1125 160 2000	1125 160 2000
including:		
Clutch spring	0000 997 0907	0000 997 0909

(other parts are as before).

3. Ignition system:

It was planned to fit Washer, 9326 021 0120, to prevent the ground wire and short circuit wire from coming out of the cable channel. Although this change has already been included in the latest printed 034 parts list (1985-03) and microfiche 4/84, it will not be used. Instead, a "lug" will be integrally molded on Plug, 1125 791 7306. The lug extends over the cable channel and covers the wires (see illus. right).



A non-hardening selant will be used to secure the wires in the cable channel in the interim period prior to introduction of this change in production. The same procedure should be used in case of repairs.

Summary:

Washer 9326 021 0120 (will not be installed)

4. Choke lever (correction of part number):

According to STIHL's part number nomenclature, parts with a certain shape and/or function are allocated to certain part number groups. This has the advantage that a part can be roughly identified on the basis of its part number.

The choke lever was mistakenly allocated to the wrong part number group at the time of its introduction. For this reason, its previous number, 1125 182 0800, has been changed to, 1125 185 2000. The part itself remains unchanged. Thank you.

Summary:

	Original Part No.	New Part No.
Choke lever	1125 182 0800	1125 185 2000

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Technical Information

STIHL®

T.4.85
(T.39.84)

Engineering Change on Stihl's Model 034 Chain Saws (Series 1125)

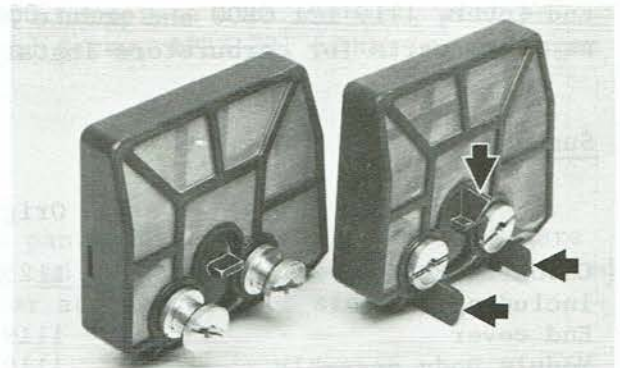
- 1) Mounting of carburetor box cover
- 2) Carburetor
- 3) New stop buffer, annular buffer mounting
- 4) Muffler mounting
- 5) Intake air preheating kit

1. Mounting of carburetor box cover:

The present Catch, 1125 141 2100, for the carburetor box cover, will be replaced by a new Catch, 1125 141 2101, starting with machine number X 13 391 514. Also, the outer air Filter Elements, 1125 120 1605 and 1125 120 1620 (flocked), now have ribs to support and position the carburetor box cover. This change has required the use of Slotted Nuts, 1113 141 8305, in place of the previous Slotted Nuts, 1121 141 8300.



Left: Catch, 1125 141 2100
Right: Catch 1125 141 2101



Left: Original air filter
Right: New air filter

In the future, only the new Catch, 1125 141 2101 and the new air filter elements (part number as before), will be available as spare parts.

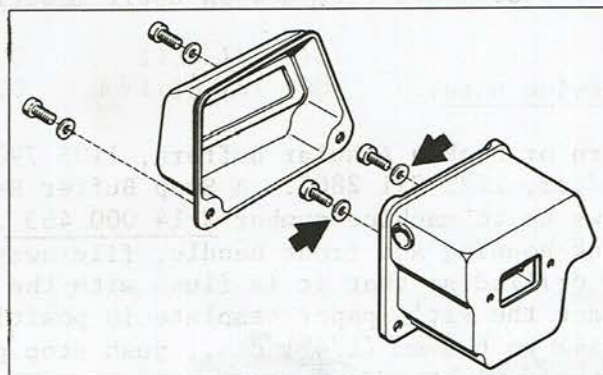
Service note:

When replacing an original-type air filter, also fit the new Catch, 1125 141 2101. Air filters without an anchor lug, fitted on pre production machines only, can be used only together with the original Catch, 1125 141 2100.

4. Muffler mounting:

In the future, the muffler inlet casing will be mounted to the cylinder with 5 x 12 socket head screws and Washer, 9291 021 0120, i.e. as is already the case on the exhaust casing.

When performing servicing or repair work, make sure that the Washer, 9291 021 0120, are used for mounting the inlet casing.



5. Intake air preheating kit:

If engine running characteristics, idling behavior in particular, are poor at low outside temperatures (below about +10° C/50° F), we recommend the use of the intake Air Preheating Kit, 1125 007 1004. The kit causes heated air to be drawn in from around the cylinder instead of cold outside air. The kit includes a cover plate which should be fitted when the saw is operated in powder or heavy snow at temperatures below about -10° C/+4° F. This cover plate seals off a portion of the intakes in the fan housing.

Each kit comes complete with detailed fitting instructions.

Summary:

Intake Air Preheating Kit	1125 007 1004
consisting of:	
Shroud with air deflector	1125 080 1605
Carburetor box cover with seal	1125 140 1905
Cover plate	1125 084 8200
Self-tapping screw (2x)	9099 021 2360

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(3155)



T.45.86

Technical Information

Engineering Changes on Model 034 Chain Saws (Series 1125)

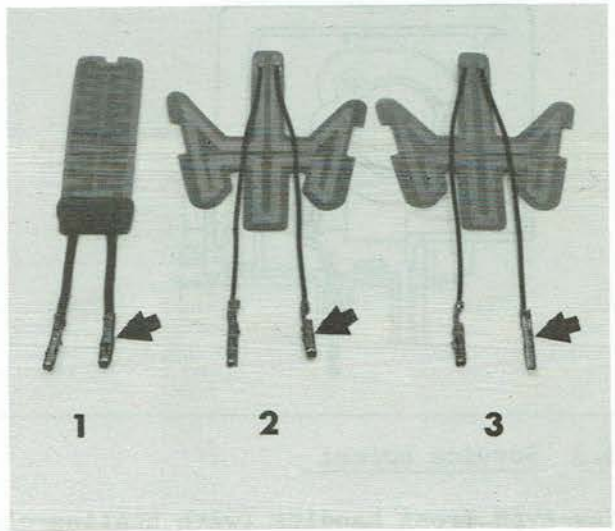
- 1. Handle heating system
- 2. Chain sprocket security
- 3. Impulse hose

1. Handle heating system:

1.1 New heating elements (front and rear handles):

The present heating elements, in the front and rear handles, will be replaced by new ones from machine number X 16 154 159. This change is designed to improve heating capacity and reliability. The two heating elements now have different resistances and connectors. The shape of the rear handle heating element has also been changed. This was necessary because the tank housing has been modified in the area of the handle to take account of a future engineering change.

The new front handle (with new heating element) can be identified by the fact that the insulating tube, over the two connecting wires, is now 150 mm (5.9 in.) long as opposed to the original 100 mm (3.9 in.).



- 1 = Heating Element, 1121 434 5000 (original version)
- 2 = Heating Element, 1121 434 5000 (new version)
- 3 = New Heating Element, 1125 434 5000

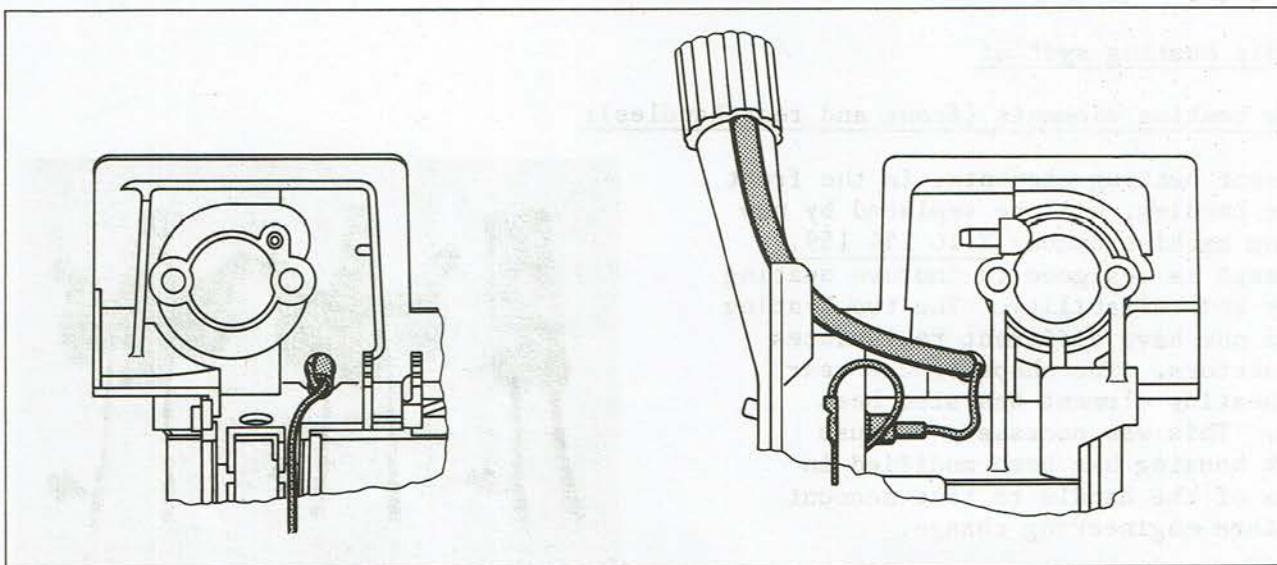
1.1.1 Specifications of heating elements:

- Rear handle Heating Element, 1121 434 5000 (original version): rectangular, resistance 0.3 Ohm, with 2 round sockets (1).
- Rear handle Heating Element, 1121 434 5000 (new version): butterfly shape, resistance 0.25 Ohm, with 2 round sockets (2).

- New rear Handle Heating, 1125 434 5000: butterfly shape, resistance 0.25 Ohm, with 1 round socket and 1 round pin (3).
- Front handle with Heating Element (original version): resistance 2.2 Ohm, with 1 contact sleeve (for switch) and 1 round pin.
- Front handle with Heating Element (new version): resistance 1.6 Ohm, with 1 contact sleeve (for switch) and 1 round pin.

1.2 Wiring:

The length of the insulating tube, over the connecting wires to the front handle heating element, has been increased to 150 mm (5.9 in.). The insulating tube now extends about 10 mm (0.39 in.) through the hole and thus protects the wires. This means that the present Grommet, 0000 989 0808, is no longer necessary. It has been deleted. The wires should be routed as shown in the illustration.



1.3 Service notes:

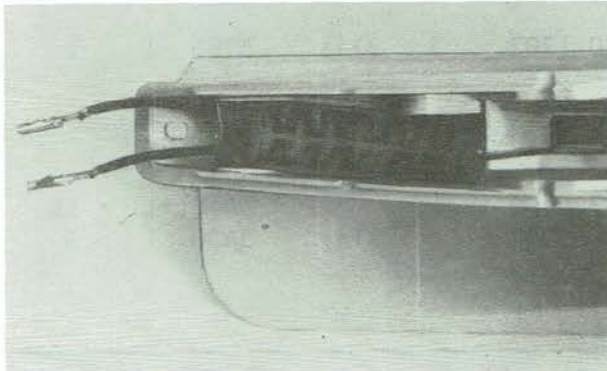
New-type front handles (with heating element $R = 1.6$ Ohm) may only be used together with butterfly-shaped rear handle heating elements (new Heating Element, 1125 434 5000, or new version of Heating Element, 1121 434 5000). The two plug and socket connectors match each other on Heating Element, 1125 434 5000, whereas it is necessary to fit a round terminal pin in place of one round socket on the new version of Heating Element, 1121 434 5000.

The original-type front handle (with heating element $R = 2.2$ Ohm) may be combined with all three versions of the rear handle heating element. The plug and socket connectors on Heating Elements, 1121 434 5000 (original and new versions), fit this front handle; however, it is necessary to fit a round socket in place of the round terminal pin on Heating Element, 1125 434 5000.

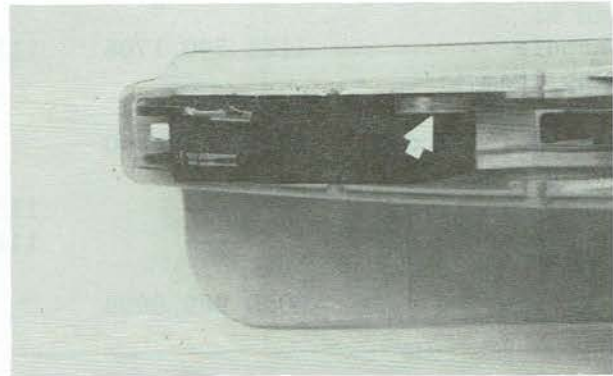
Both versions of the rear handle Heating Element, 1121 434 5000, have exactly the same plug and socket connectors, but different resistance.

The new version of the rear handle Heating Element, 1121 434 5000, is intended for use on machines with the original-type front handle. This version of the heating element is not necessary for a repair if the round terminal pin of the new Heating Element, 1125 434 5000, is simply replaced by a round socket. The parts needed, i.e. round terminal sockets, are included in Electrician's Kit, 0000 007 1013. Crimping Tool, 5910 890 8210, is required to attach the terminals.

Original-type rear handle Heating Element, 1121 434 5000 (rectangular), can still be used in conjunction with the original front handles (heating element $R = 2.2 \text{ Ohm}$), even on modified tank housings, if they are bonded in position at an angle as shown in the illustration.



Rectangular heating element bonded at an angle.



Thrust pad with cut out fitted in position.

The expanded rubber Thrust Pad, 1121 791 9000, must be cut as shown to ensure that it can be fitted without being obstructed by the new lug on the rear handle.

The Grommet, 0000 980 0808, is not necessary on older machines if the new front handle is fitted (with 150 mm/5.9 in. long insulating tube).

Important note: When bonding the rear handle heating element in position, make sure that the surface in the tank housing is completely free of grease. The whole area of the heating element must lie perfectly flat and crease-free.

1.4 Parts availability:

Only the new version of the rear handle Heating Elements, 1121 434 5000 (butterfly shape, resistance 0.25 Ohm) will be supplied in the future.

The Thrust Pad, 1121 791 9000, will only be supplied in the modified version (with cut out).

Up to and including 1991, a front Handle Kit, 1125 007 1014 (with new heating element $R = 1.6 \text{ Ohm}$), will be supplied in place of the individual front Handle, 1125 790 1706, with heating element. This kit includes a new rear handle Heating Element, 1125 434 5000.

1.5 Summary:

Part Name	Original version	New version	Key	Rem.	WG	MAM H	MAM V
Heating element - HG -	1121 434 5000	1125 434 5000	1	1)2)4)	5430	1	5
Thrust pad	1121 791 9000	1121 791 9000	2	3)			
Front handle kit - W - including items 1, 3 and 4:	---	1125 007 1014		4)	5790	1	1
Front handle including item 4:	1125 790 1706	1125 790 1707	3	2)4)	5790	1	1
Insulating tube (100 mm/3.9 in. long)	1118 442 0400	---					
Insulating tube (150 mm/5.9 in. long)	---	1124 442 0400	4		5440	1	10
Heating element - HG -	---	1125 434 5000	1	2)4)	5430	1	5
Rubber grommet	0000 989 0808	---					

Modification to be introduced: from machine No. X 16 154 159

Remarks:

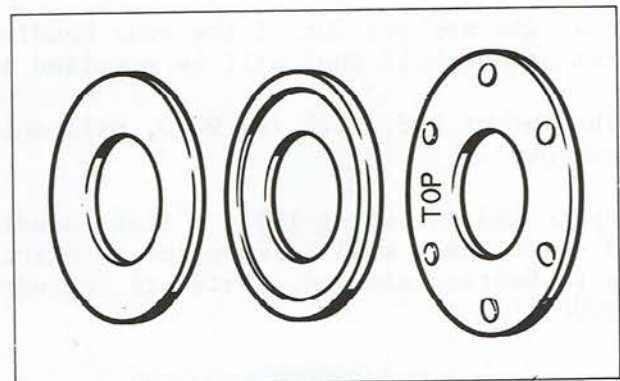
- 1) Original part will continue to be supplied in modified form for older machines.
- 2) New part can also be used for older machines.
- 3) Only modified version of part will be supplied.
- 4) See "Service Notes" and "Parts Availability".

2. Chain sprocket security:

A new thrust washer will be fitted in place of the present one between the chain sprocket and E-clip. For an interim period, the new washer will have a lip on its circumference, but this will be replaced in the foreseeable future by 6 warts.

The change will be introduced as follows:
From machine number X 16 147 359 on machines with a rim sprocket.

In the foreseeable future on machines with a spur sprocket.



Left: Original washer (flat)
Center: New washer (interim version with lip).
Right: New washer (future version with warts).

Service note:

This retaining action is naturally effective when the E-clip has to be removed in service. If the E-clip butts against the warts of the thrust washer during removal, insert a thin screwdriver between the E-clip and washer and slip the E-clip over the warts.

The new Washers, 0000 958 1016 (for rim sprocket) and 0000 958 1021 (for spur sprocket) should also be installed on older machines during repair work.

Summary:

Part Name	Original version	New version	Key	Rem.	WG	MAM H	MAM V
Washer (flat for rim sprocket)	0000 958 1009	---		1			
Washer (with warts, for rim sprocket)	---	0000 958 1016			5950	1	10
Washer (flat for spur sprocket)	0000 958 0506	---		2			
Washer (with warts, for spur sprocket)	---	0000 958 1021			5950	1	10

Modification to be introduced: For rim sprocket - from machine No. X 16 147 359 .
 For spur sprocket - in progress.

Remarks:

- 1) Parts will be supplied only as long as existing factory stocks last.
- 2) Part remains available for other models.

3. Impulse hose:

In the interests of parts standardization, the present molded Impulse Hose (with beads), 1125 141 8600, will be replaced from machine number X 16 390 699 by a smooth Hose, 1110 111 8600.



Left: Original impulse hose
 Right: New impulse hose

Summary:

Part Name	Original version	New version	Key	Rem.	WG	MAM H	MAM V
Impulse hose	1125 141 8600	1119 141 8600		1)	5140	1	10

Modification to be introduced from machine No. X 16 390 699 .

Remarks:

- 1) Original part no longer available from factory.

U/TSM:tc
(11146)

