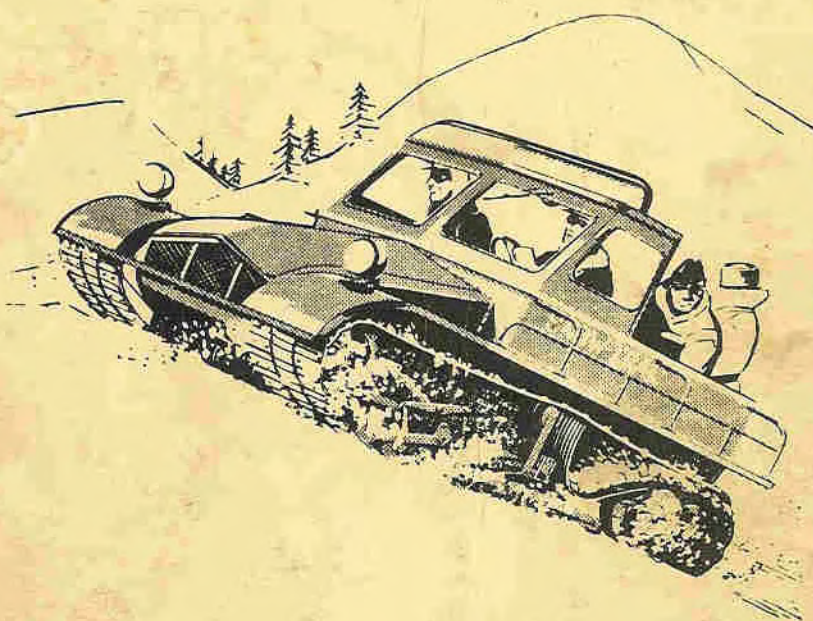


SNOW TRAC



TRADE MARK

AKTIEBOLAGET WESTERÅSMASKINER

**MORGONGÅVA
SWEDEN**

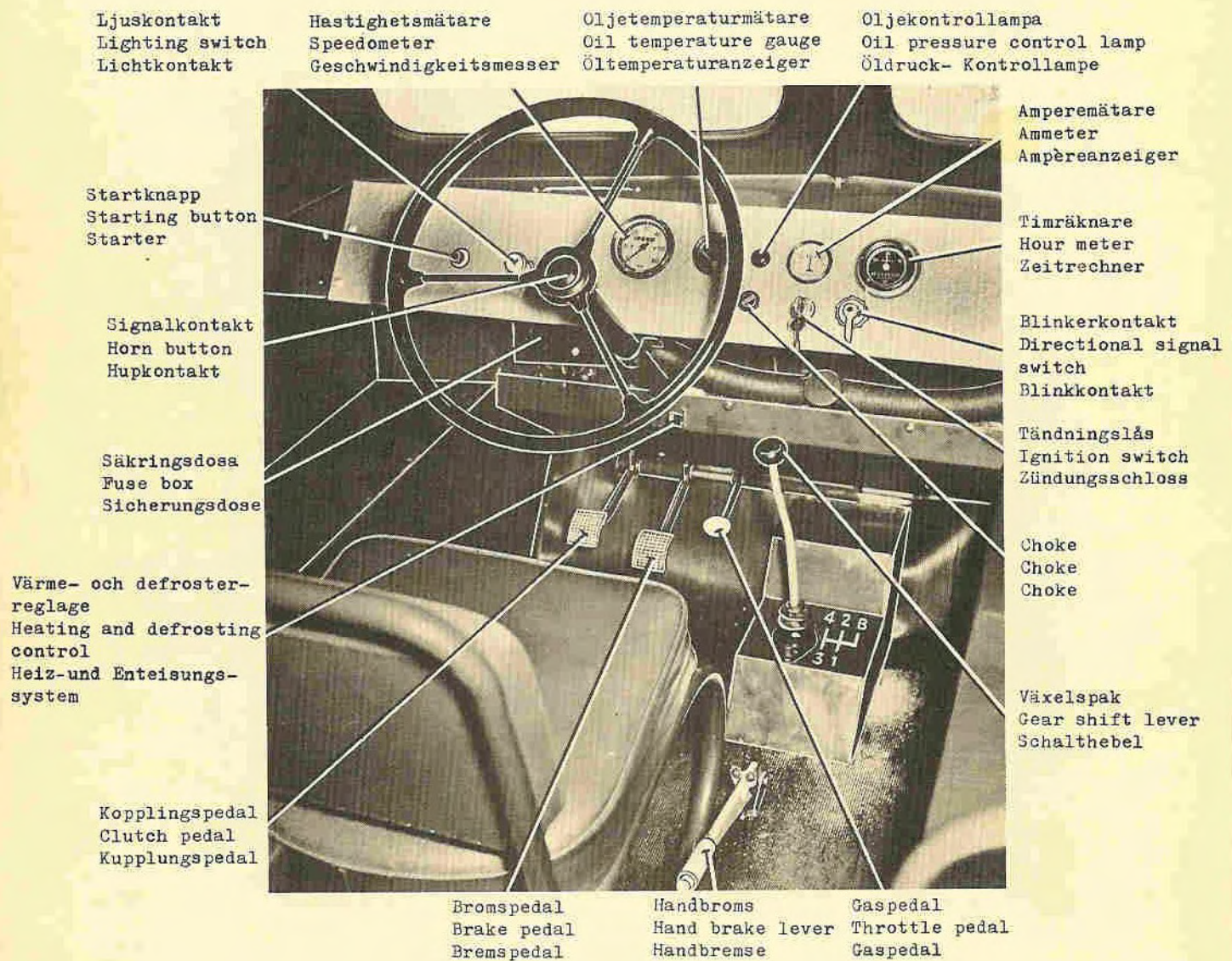
Courtesy of Paul Cooper

ST 4

MANÖVERORGAN

SWITCHES AND CONTROLS

STEUERORGANE



Courtesy of Paul Cooper

MAINTENANCE
SPARE PARTS

S N O W - T R A C S T 4

TRADE



MARK

W E S T E R Å S M A S K I N E R

MORGONGÅVA

SWEDEN

Courtesy of Paul Cooper

TECHNICAL SPECIFICATIONSENGINE, GEAR CHANGE, STEERING, BRAKES

Engine: 4 cylinder, 4 cycle, O.H.V. air-cooled Volkswagen gasoline engine with air cooling, automatically controlled by a thermostat

Power: 34 HP at 3.600 rpm (40 SAE HP at 3.900 rpm)

Fuel consumption: About 1,1 Imp. gal., 1 1/4 US gal. (5 litres) per hour

Piston displacement: 1192 c.c.

Bore: 3,031" (77 mm)

Stroke: 2,520" (64 mm)

Compression ratio: 7,0:1

Oil capacity: 4,4 Imp. pints, 5,3 US pints (2,5 litres) - oil cooler

Carburetor: Downdraught SOLEX with accelerating pump

Clutch: Single dry plate

Gear case (synchromesh): 4 speeds forward and 1 reverse

<u>Gear ratios</u>		<u>Speeds</u>	<u>Standard ratio</u>	<u>High ratio</u>
First	1:3,80	First	1 - 3 mph (1,5 - 5,5 km/h)	4 mph (6,5 km/h)
Second	1:2,06	Second	2 - 5,5 " (3 - 9 ")	6,5 " (11 ")
Third	1:1,32	Third	2,5 - 9,5 " (4 - 16 ")	12 " (20 ")
Fourth	1:0,89	Fourth	4 - 14,5 " (7 - 24 ")	18 " (30 ")
Reverse	1:3,88			

Differential case: Transmission over spiral cut pinion and ring gear with a variator controlled differential. Axle ratio: 1:4,125

Drive wheel gear: Reduction gear with precision roller chain, 1" x 0,67" (25,4 x 17 mm).

Gear ratio: 1:3,17 standard, 1:2,58 on demand

Steering: Steering wheel actuated V-belt variator parallel to differential transmission.

Steering wheel motion: From stop to stop about 3 turns. Turning radius: About 3 yards (2,5 m)

Brakes: Hydraulic foot brake and mechanical hand brake, both acting upon the front wheels

Equipment: Oil temperature gauge, oil pressure control lamp, ammeter, electrical wind-shield wiper, direction signal lights of flash type, two headlights, tail lights, tail reflections, speedometer with odometer, heating and defrosting from the engine cooling air

DIMENSIONS ETC.

Length: 12' (3640 mm) Width: 6' 3" (1900 mm) Ground clearance: 1' (300 mm)

Height: To top of back rest 3' 7" (1100 mm), to top of frontshield 6' (1800 mm)

Net weight: About 2.500 lbs (1150 kg) Supporting surface: 28 sq. ft. (2,6 sq. m)

Snow pressure: 3/4 lbs. /sq. in. (0,05 kg/sq. cm.) incl. driver

Loading capacity: 1100 lbs. (500 kg) Pulling capacity: 1100 lbs. (500 kg)

Gasoline tank capacity: 88 Imp. gal., 105 US gal. (40 litres) Battery: 6 V 85 Ah

ACCESSORIES

Engine speed limiter, hour meter, foam rubber cushions and back rests with plastic fabric upholstery

hard top cabin in sheet metal construction or canvas cabin on a tube framework

gasoline-fired heating unit

STARTING AND OPERATING THE SNOW-TRAC

Before starting, check the engine oil level, fan belt tension, brakes, and fuel quantity.

Engine: For maintenance and lubrication follow the instructions in the enclosed Volkswagen engine manual. To make it easy to carry out valve adjustments there are doors in the sides (see D, fig. 4), fastened by means of two screws.

IMPORTANT!

All claims regarding the engine and the gear case as well as repairs and adjustments needed during the period of guarantee and later shall be reported to and performed by your next Volkswagen service station. Claims are considered only when the engines are serviced in accordance with the guarantee stipulations given by the Volkswagenwerk GMBH, Wolfsburg.

How to start the engine

1. Put gear shift lever in neutral position.
2. Pull out choke. (The choke control linkage should be pushed in according as the engine is warming up and should normally not be used during driving.)
3. Turn ignition key.
4. Depress throttle pedal with your foot.
5. Press on starting button. (Do not run the starting motor too long, so that the battery becomes discharged.)
6. When the engine fires, see that the oil pressure control lamp goes out. (If the lamp lights up during the operation, the chances are that the oil circulation has been interrupted. Stop the engine at once and check the oil level in the crankcase before you consult a service station. An occasional flashing of the lamp with the engine warm and at low speed does not indicate trouble, if the light extinguishes as the speed increases.) The engine oil temperature must not exceed 248° F (120° C) during driving.
7. Check that the ammeter reads for charging. (If there is no reading, the fan belt may be broken; this belt drives the generator and the cooling fan. Stop the engine and see that the belt is unbroken before you consult a service station.)

How to stop the engine

1. Allow the engine to cool down by letting it run at idling speed for half a minute.
2. Turn ignition key anti-clockwise.

DRIVING THE SNOW-TRAC

WARNING! Never try to rock SNOW-TRAC to a start. A slow start is recommended because it leaves you ample time to notice if anything is wrong.

When driving in highlands always choose the best and easiest way. Do not unnecessarily attempt to force obstructions like stones, stumps etc. It will only strain the vehicle, make the drive uncomfortable, and increase the damage risk.

SNOW-TRAC is no tank. It is a transport vehicle for communication purpose only. To ensure a long life for SNOW-TRAC, always use it as a transport vehicle.

WARNING!

Do not under any circumstances turn the wheel, when SNOW-TRAC is standing still. To allow the V-belt of the variator to change to various diameters on the V-belt pulleys SNOW-TRAC has to be moving forwards or backwards. Any attempt to force the wheel to turn when SNOW-TRAC is standing still will only result in damaging the steering mechanism.

WHEN NOT IN USE

Clean tracks and wheels from snow and ice before SNOW-TRAC is left over-night, in order to prevent the wheels from being stuck by ice until the following day.

Battery. At a temperature below - 22°F it is advisable to keep the battery indoors over the night.

When parking it is always advisable to put the gear shift lever in the second gear position rather than applying the hand brake, because there is always a chance of freezing and sticking of the brake shoes.

JUSTERINGSORGAN

ADJUSTMENT DEVICES

NACHSTELLUNGSORGANE

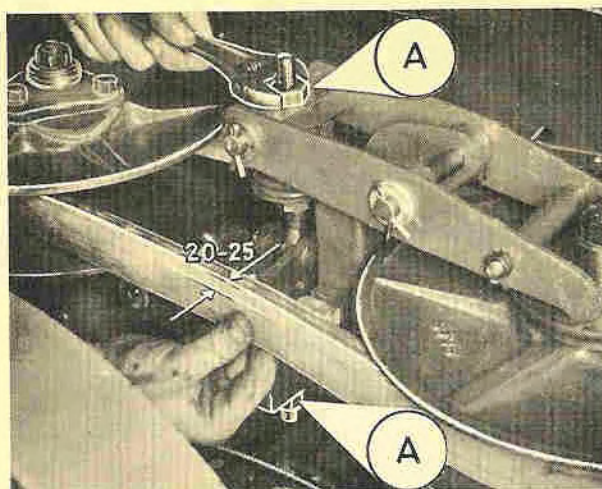


Fig.1

Variatorremmens justering
Variator belt adjustment
Nachstellung des Variatorriemens

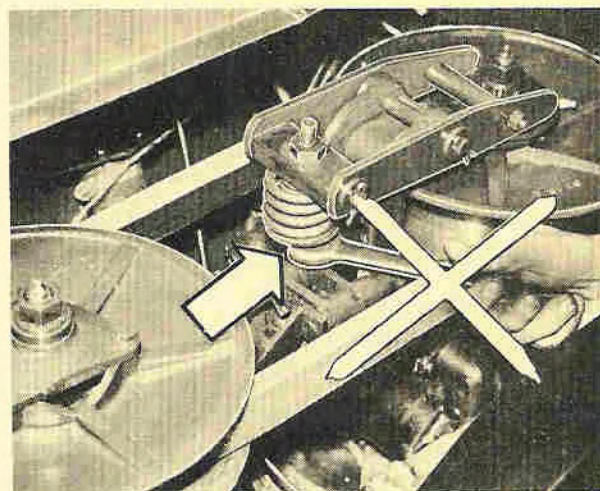


Fig.2

Här skall variatorremmen ej justeras
Do not adjust variator belt here
Variatorriemen nicht hier nachstellen

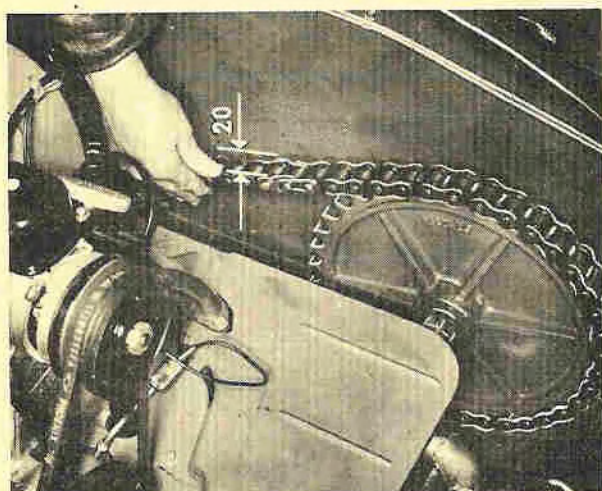


Fig.3

Drivkedjornas spänning
Tightening of drive chains
Spannung der Antriebsketten

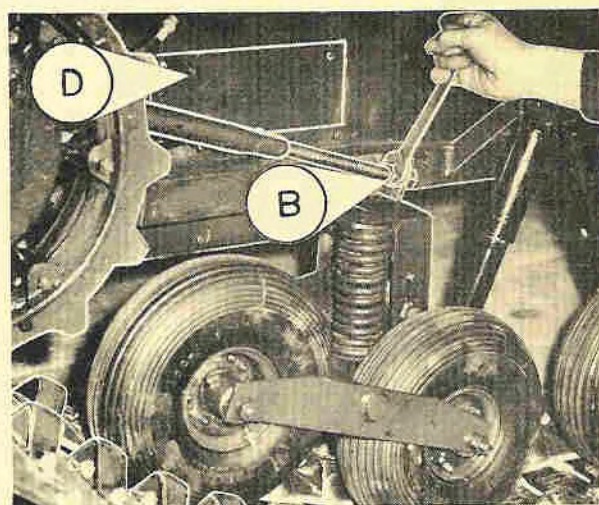


Fig.4

Drivkedjornas spänning
Tightening of drive chains
Spannung der Antriebsketten

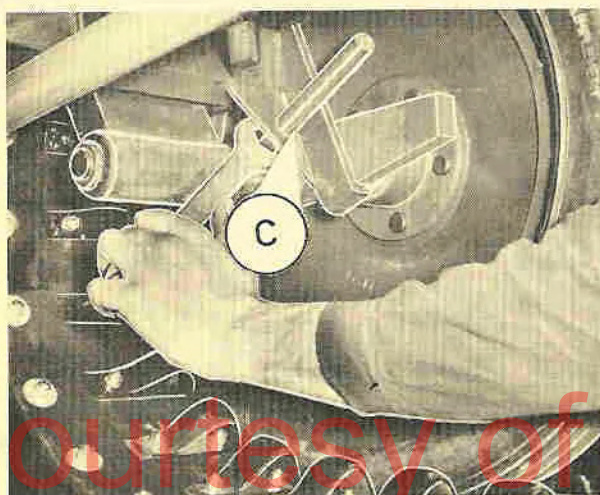


Fig.5

Drivbandens spänning
Tightening of driving tracks
Spannung der Gleisbänder

Courtesy of Paul Cooper

MAINTENANCE

The life expectancy of the vehicle depends to a large extent on how it is serviced. Therefore follow the lubrication and adjustment instructions carefully. To prevent rust damage touch up the paint where it has worn off.

Engine. For oil change and lubrication refer to the engine instruction manual.

Lubrication of the vehicle is carried out every 50 hours of operation as per the lubrication table and chart.

The variator pulleys are lubricated partly through fittings on the upper side, partly through lubricating hoses on the right and left hand sides.

The rear wheels are lubricated by tightening the cap filled with grease.

The steering gear is filled with oil SAE 80, put in through the nipple by means of a pressure gun.

Gear case. The oil shall reach the filler hole. Add clean oil, if necessary. - Change the oil after the first 50 hours, then once yearly. For filling and changing, use transmission oil SAE 80 (Shell Spirax 80 EP or corresponding oil from another company).

Oil quantity: 4,5 litres = 8 Imp. pints or 9,3 U.S. pints. To make it possible to reach the filler plug of the gear case a damper is provided in the floor (at the pedal shaft under the mat).

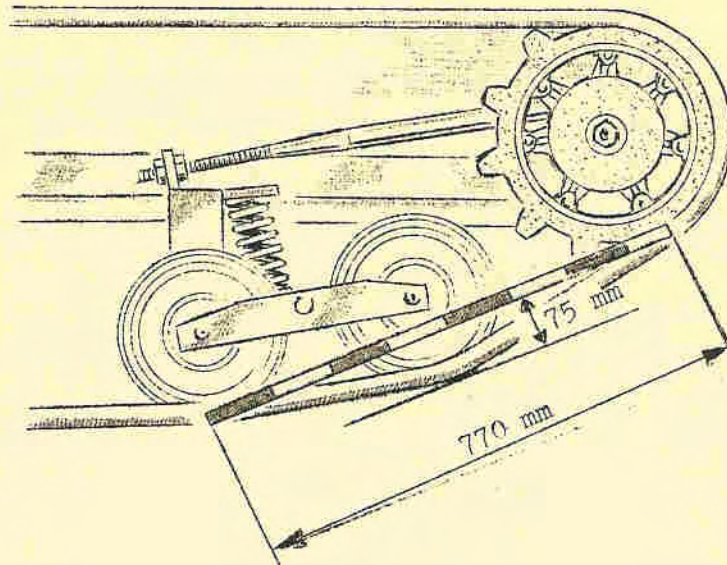
Variator. Check the variator belt for correct tension, so that it pulls without any slippage. The belt has the right tension when it can be deflected 1" with a strength of 33 lbs. (15 kgs.). - The V-belt is tightened by loosening each nut on the screws A, fig. 1, the same amount; the screws are by that turned counter-clockwise.

Caution: The tension is checked first when the belt has been run for a short time after the adjustment. The two nuts located at the springs, fig. 2, cannot be used for tightening the belt. They are set once for all and shall not be adjusted.

Drive chains. Check the tension of the chains regularly. The tension is adjusted by means of the screws B, located on the left and right sides between the frame and the front axle bearing housings (fig. 4). The chain has the proper tension when it can be deflected about 20 mm or 3/4" (fig. 3). CAUTION: The upper part of the chain on one side might be loose while it might be tight on the other side, depending on the direction SNOW-TRAC has turned to before it was brought to stop. The tension should always be checked on the loose side of the chain.

Driving tracks. The tension of the tracks is adjusted by moving the rear wheels by means of the nuts on the set screws C (fig. 5). Should the tightening device prove to be insufficient after some use, the tracks must be shortened. In this case the screws in the joints are removed, the ends of the tracks are placed one over the other one more pitch and screwed together again. Then the tracks are tightened in the usual manner with the tightening screws.

The tension of the tracks should be checked and measured once a week in the following manner:



SNOW-TRAC is driven straight forward about 25 meters or 25 yards on even ground to ensure an even pull on both tracks. Place a straight bar 770 mm or 30" long between the points where the track is a tangent to the large front wheel and the rear wheel in the front track carriage (see cut). The distance between the bar and the track, when measured at the front carrying wheel, shall be 75 mm or 3". Adjust the track tension if necessary. After the necessary adjustments of the track tensions SNOW-TRAC is driven another 10 meters or 10 yards forward, after which the tensions are checked again.

Courtesy of Paul Cooper

PREPARING THE VEHICLE FOR SUMMER STORAGE

1. Clean SNOW-TRAC thoroughly. Inspect the vehicle at the same time and note the number of broken or worn parts, so that they can be replaced in good time before next season.
2. Touch up paint where it has worn off.
3. Completely lubricate according to the lubrication instruction.
4. Loosen the variator belt.
5. Clean the engine and variator and take necessary steps to protect the engine from corrosion as described under Engine Storage, page 15-17, in the engine manual. Change the oil in the gear case to have it ready for the next season.
6. Block SNOW-TRAC up with some pieces of wood and loosen the tracks to reduce the tension.

Courtesy of Paul Cooper

LUBRICATION TABLE

Lubrication point	Number		Lubricant
	Right side	Left side	
<u>Lubricating with lubricating gun with revolving hydraulic clutch and tecalamit clutch every 50 hours of operation</u>			
Steering shaft upper bearing	1	1	Ball bearing grease
Thrust bearing bracket	1	1	"
Variator pulleys	1	1	"
Brake wire	1	1	"
Front axle bearing housing	1	1	"
Front track carriage	4	4	"
Intermediate track carriages and carrying wheels	7	7	"
Rear wheel hub (cap is filled and tightened)	1	1	" yearly
Rear wheel suspension	1	1	" every 50 hours
Steering gear		1	Transmission oil SAE 80
<u>Painting with oil every 50 hours of operation</u>			
Drive chains	1	1	Oil SAE 20
Bogie springs	1	1	"
<u>Lubricating with oil every 50 hours of operation</u>			
Variator, adjustment arms and links	13		Oil SAE 20
Pedal shaft	3		"
Control wires and levers for the engine	3		"
Hinge on engine hood and door	4		"
<u>Check the oil level and add new oil if necessary</u>			
Engine	4,4 Imp. pints or 5,3 U.S. pints (2,5 litres)	Oil change and lubrication as per the engine instruc- tion manual	HD oil SAE 20, below + 32° F (0° C) SAE 10
Gear case	8 Imp. pints or 9,3 U.S. pints (4,5 litres)	Is changed yearly	Transmission oil (Shell Spirax 80 EP or correspond- ing oil from another company)
Air cleaner	0,35 Imp. pints or 0,40 U.S. pints (0,2 litres)	The air cleaner is cleaned and the oil is changed every 100 hours	SAE 20
Brake fluid tank		The tank is filled	Hydraulic brake fluid

BATTERY CONTROL

Check the level in the cells and, if necessary, fill in distilled water until the acid reaches above the cell plates. Wipe the battery with warm water and lubricate the cable connections with acid-less vaseline.

AIR PRESSURE IN CARRYING WHEELS AND REAR WHEELS

shall be 35 - 42 lbs./sq. in (2,5 - 3 kg/cm²) respective 50 - 57 lbs./sq. in (3,5 - 4 kg/cm²).

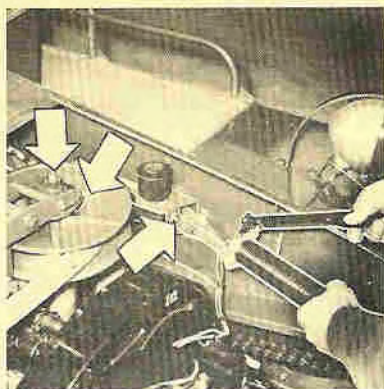
SMÖRJSHEMA

LUBRICATION CHART

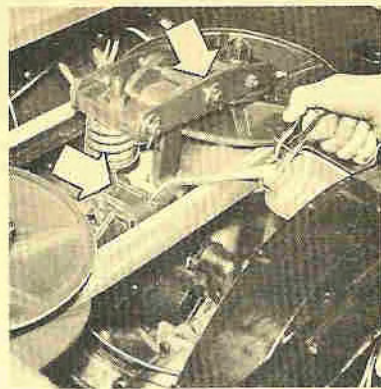
SCHMIERSHEMA



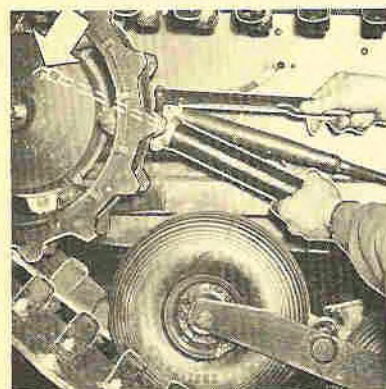
Variator, höger sida
Variator, right side
Variator, rechte Seite



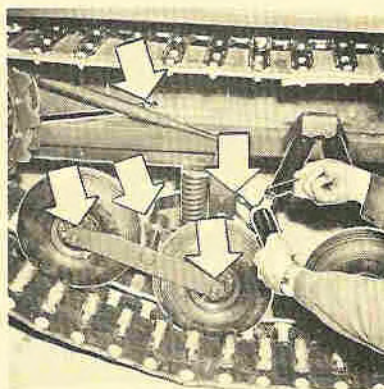
Variator, vänster sida
Variator, left side
Variator, linke Seite



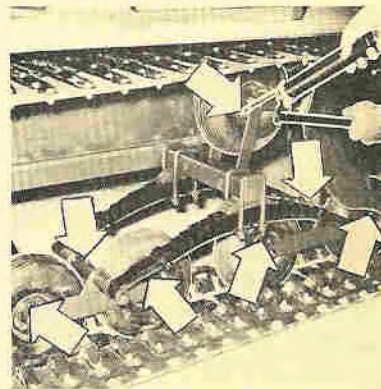
Variatorinställning
Variator setting
Variatoreinstellung



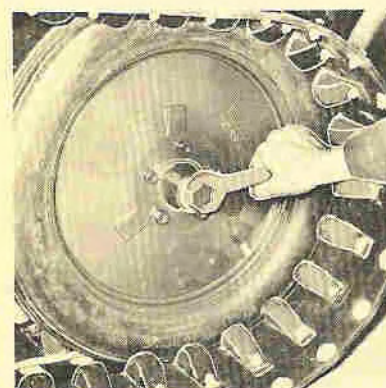
Framaxels lagerhus
Front axle bearing housing
Lagergehäuse der Vorderachse



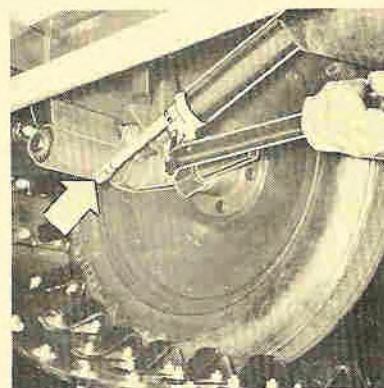
Främre bandvagn - Bromswire
Front track carriage - Brake wire
Vorderer Bandwagen - Bremsdraht



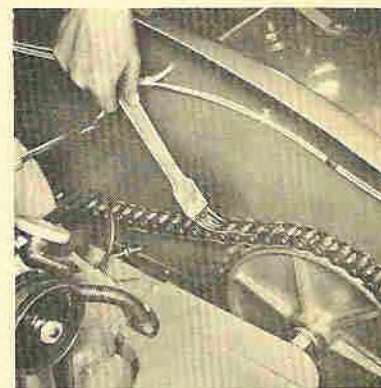
Mittre bandvagn och stödhjul
Intermediate track carriage and supporting wheel
Mittlerer Bandwagen und Tragrad



Bakhjulsnav
Rear hub
Hinterradachse



Svängarmslänk för bakhjul
Rear wheel swinging arm link
Schwingarmglied für Hinterrad

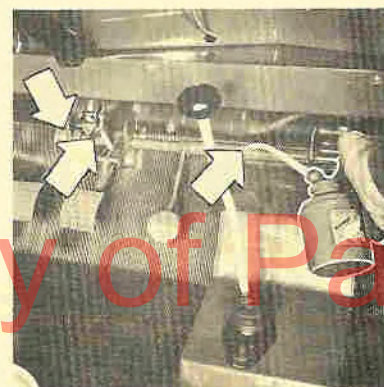


Drivkedja, vänster och höger
Drive chain, left and right
Antriebskette, links und rechts

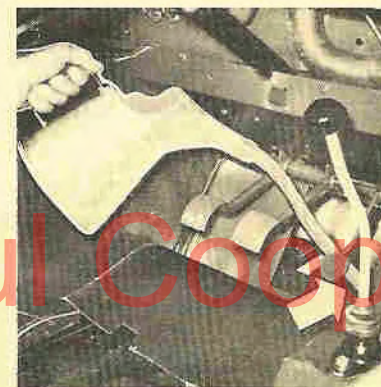


Bromsvätska
Bremsflüssigkeit
Brake fluid

Styrsnäcka
Steering gear
Steuerschncke



Pedalaxel
Pedal shaft
Pedalwelle



Växellåda
Gear case
Getriebegehäuse

Courtesy of Paul Cooper

S P A R E P A R T S L I S T

SNOW-TRAC ST 4

DRIVING TRACKS, TRACK CARRIAGES, BRAKE SYSTEM, PEDAL SHAFT - Fig. 6

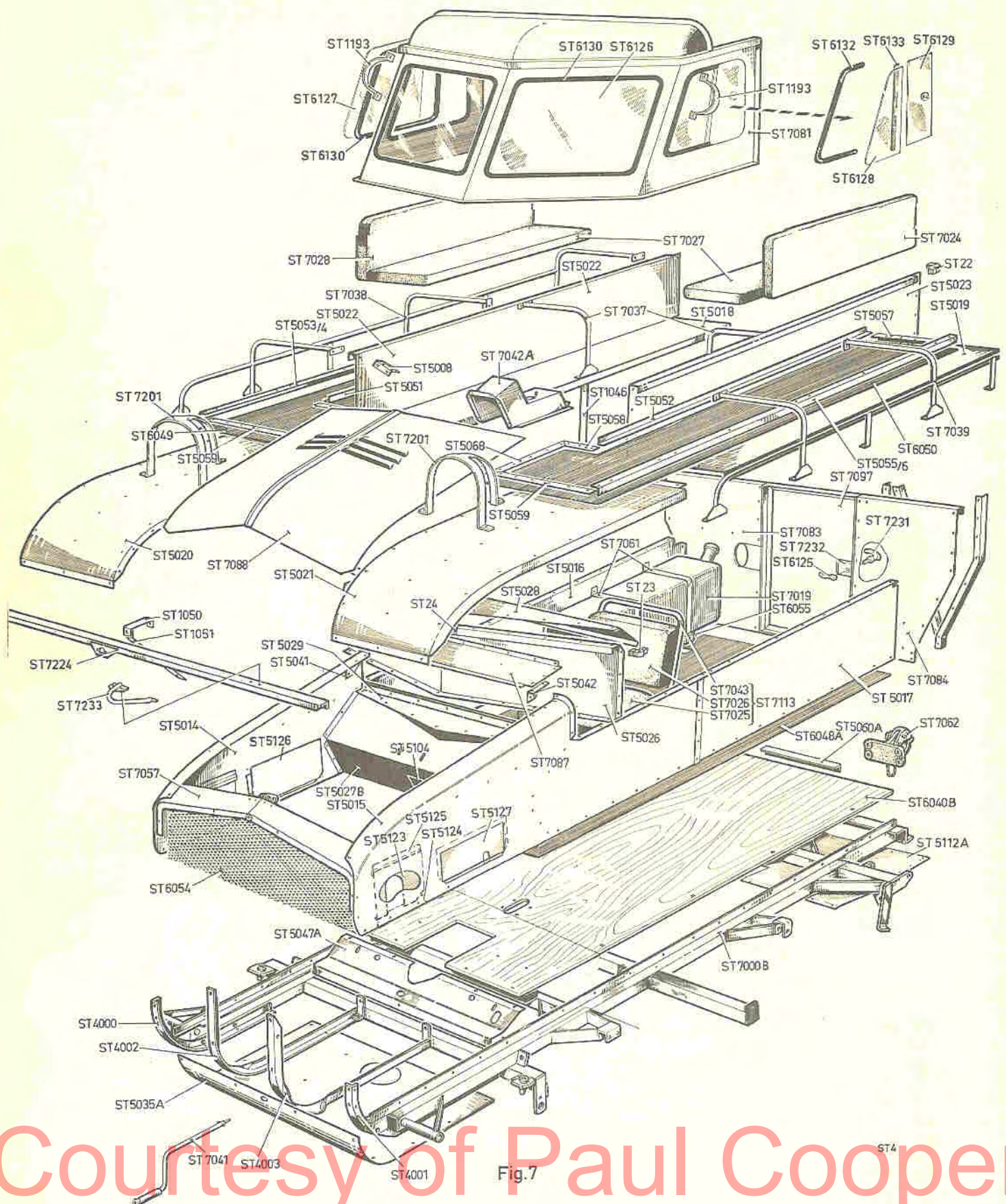
Part No.	Description	No. Pcs.	Remarks
ST 30 A	Driving pulley	4	
ST 31	Driving pulley centre	2	
ST 502 A	Clutch pedal	1	
ST 503 B	Brake pedal	1	
ST 1057	Clutch link, St 2021 A	1	
ST 1062	Pedal shaft bearing	2	
ST 1063	Clamp plate for bogie spring	8	
ST 1112	Snow guard lock rail	2	
ST 1113	Snow guard front lock rail	2	
ST 1137	Washer	4	
ST 1178	Snow guard bracket	2	
ST 1179	Snow guard washer	2	
ST 2020	Clamp for bogie spring	8	
ST 3019	Bushing	10	
ST 3024 A	Shaft for swinging arm link	2	
ST 3025	Spherical washer	2	
ST 5061	Washer for driving track	320	
ST 5089	Oil tank bracket	1	
ST 5096	Brake shield, right	1	
ST 5097	Brake shield, left	1	
ST 6012	Bushing	8	
ST 6014	Bearing bushing	8	
ST 6085	Screw for spring	4	
ST 6096	Bearing bushing	4	
ST 6104	Driving track	4	
ST 6109	Snow guard	2	
ST 6110	Tire, 4,00 x 4", 6-ply, ST 6111 Hose	14	
ST 7012 A	Bogie spring	4	
ST 7029 A	Clutch shaft	1	
ST 7032 A	Throttle pedal	1	
ST 7033	Bracket for brake cylinder	1	
ST 7063 A	Hand brake wire	2	
ST 7077	Throttle wire, complete	1	
ST 7082 B	Pedal shaft, assembled, with pedals	1	
ST 7104	Hand brake bracket	1	
ST 7105	Hand wire bracket	1	
ST 7127	Support on driving band	320	
ST 7132 A	Swinging arm link for rear wheel	2	
ST 7133	Tightening screw for rear wheel	2	
ST 7134	Swinging arm, right, for rear wheel	1	
ST 7135	Swinging arm, left, for rear wheel	1	
ST 7136	Yoke, front, right	1	
ST 7137	Yoke, front, left	1	
ST 7138	Yoke, middle, right	1	
ST 7139	Yoke, middle, left	1	
ST 7140	Yoke, rear, right	1	
ST 7141	Yoke, rear, left	1	
ST 7155	Swinging arm	2	
ST 7156	Supporting wheel bracket	2	
ST 7160	Carrying wheel, 4,00 x 4", 6-ply, complete	14	
ST 7163	Drive wheel, complete	2	
ST 7185	Driving track, complete	2	
ST 7190	Snow guard bracket	2	
ST 7191	De-icer, complete	2	

DRIVING TRACKS, TRACK CARRIAGES, BRAKE SYSTEM, PEDAL SHAFT (Cont'd) - Fig. 6

Part No.	Description	No. Pcs.	Remarks
ST 7194	Track gripper	160	
ST 7195 A	Insert	4	
ST 7197	Rear wheel, complete	2	
ST 7214	Rim with hub	2	
	Tire, 6-ply, 600 x 100 mm, not illustrated	2	
	Hose, 600 x 100 mm, not illustrated	2	
W 12019	Rivet for pedal shaft	1	
W 20121	Spring for front carriage	2	
W 20124	Spring for front carriage	2	
	Shock absorber, 115 - 603 VW Gabriel	6	
111 711 321	Hand brake pawl	1	
111 711 323	Hand brake pawl bolt	1	
111 711 325	Hand brake pawl rod	1	
111 711 329	Hand brake pawl rod spring	1	
111 711 335	Hand brake lever washer	1	
111 721 219	Bolt	1	
113 611 021	Brake cylinder	1	
113 611 301	Oil tank	1	
113 611 373	Cover	1	
113 611 399	Mount	1	
113 611 701	Brake piping	2	
113 611 801	Hose	1	
113 611 805 A	Brake piping between oil tank and main cylinder	1	
113 611 811	Washer	1	
113 611 817	Rubber bushing	1	
113 711 305	Hand brake lever	1	
113 711 333 A	Trigger	1	
113 711 341	Bearing bolt	1	
113 721 205 A	Link	1	
211 609 205 A	Adjusting nut	4	
211 609 209 A	Adjusting screw	4	
211 609 565 A	Brake lining	4	
211 609 301 A	Spring	2	
211 609 537 B	Brake block	4	
211 609 601 A	Bolt	2	
211 609 613 A	Brake arm, right	1	
211 609 614 A	Brake arm, left	1	
211 609 619	Lock ring	2	
211 609 631 B	Push rod, right	1	
211 609 632 B	Push rod, left	1	
211 609 637 A	Holder, right	1	
211 609 638 A	Holder, left	1	
211 609 641	Spring	2	
211 611 047	Brake cylinder	2	
211 611 723 A	Brake piping, left	1	
211 611 724 A	Brake piping, right	1	
211 711 339	Hand brake sector	1	
N 12	Lock ring	2	
MB 5	Lock washer	6	
KM 5	Lock nut	6	
3 - 12945	Hub with hub pulley	2	
4 - 2513	Hub bolt	10	
4 - 11531	Hub nut	10	
4 - 11767	Lock ring, inner	2	
4 - 11768	Lock ring, outer	2	
4 - 11775	Hub cap	2	
4 - 12401	Wearing washer	2	
21 - 15087	Hub, complete	2	
30205	Roller bearing	2	
30207	Roller bearing	2	
	Hub for carrying wheel, complete	14	
	THL-120 L Special		

SUB: SEAL STEFA D840X72x10

TIMKEN #
TIMKEN #ST4
61





Courtesy of Paul Cooper

FRAME AND BODY - Fig. 7

Part No.	Description	No. Pcs.	Remarks
ST 22	Rear corner angle for side	2	
ST 23	Front outer corner angle for side	2	
ST 24	Front middle reinforcement	1	
ST 1046	Seat stay	2	
ST 1050	Fender bracket	4	
ST 1051	Fender bracket stay	4	
ST 1193	Protection for flash light	2	
ST 4000	Outer frame bar, right	1	
ST 4001	Outer frame bar, left	1	
ST 4002	Inner frame bar, right	1	
ST 4003	Inner frame bar, left	1	
ST 5008	Instrument panel bracket	2	
ST 5014	Front side, right	1	
ST 5015	Front side, left	1	
ST 5016	Rear side, right	1	
ST 5017	Rear side, left	1	
ST 5018	Rear fender, right	1	
ST 5019	Rear fender, left	1	
ST 5020	Front fender, right	1	
ST 5021	Front fender, left	1	
ST 5022	Upper side, right	1	
ST 5023	Upper side, left	1	
ST 5026 A	Front gable	1	
ST 5027 B	Intermediate plate	1	
ST 5028	Instrument panel	1	
ST 5029	Connection plate	1	
ST 5035 A	Plate beneath engine	1	
ST 5041	Hinge, right	1	
ST 5042	Hinge, left	1	
ST 5047 A	Plate beneath gear case	1	
ST 5051	Rubber mat angle strip, right, inner, length 1970 mm	1	
ST 5052	Rubber mat angle strip, left, inner, length 1970 mm	1	
ST 5053	Rubber mat angle strip, right, outer, length 989 mm	1	
ST 5054	Rubber mat angle strip, right, outer, length 1446 mm	1	
ST 5055	Rubber mat angle strip, left, outer, length 989 mm	1	
ST 5056	Rubber mat angle strip, left, outer, length 1446 mm	1	
ST 5057	Rubber mat angle strip, rear, length 298 mm	2	
ST 5058	Rubber mat cover strip, length 192 mm	2	
ST 5059	Rubber mat front cover strip, length 449 mm	2	
ST 5060 A	Rubber mat angle strip beneath door, length 500 mm	1	
ST 5068	Rubber mat inner cover strip, front, length 395 mm	2	
ST 5104	Oil filling cover	1	
ST 5112 A	Turning-off plate beneath frame	1	
ST 5123	Sealing plate at front shaft	2	
ST 5124	Guide, lower, for sealing plate	2	
ST 5125	Guide, upper, for sealing plate	2	
ST 5126	Door for valve adjustment, right	1	
ST 5127	Door for valve adjustment, left	1	
ST 5131	Distance plate for lock	1	
ST 5133	Guide plate at heat intake	1	
ST 6040 B	Floor	1	
ST 6048 A	Floor mat	1	
ST 6049	Rubber mat, right	1	
ST 6050	Rubber mat, left	1	
ST 6054	Radiator grill	1	
ST 6055	Gasoline tank mount	2	
ST 6125	Inner handle	1	

Part No.	Description	No. Pcs.	Remarks
ST 6126	Front window	2	
ST 6127	Side window, right	1	
ST 6128	Side window, left	1	
ST 6129	Ventilating window	1	
ST 6130	Weatherstrip for front window	2	
ST 6131	Weatherstrip for right side window	1	
ST 6132	Weatherstrip for left side window	1	
ST 6133	Weatherstrip for ventilating window	1	
ST 7000 B	Frame	1	
ST 7019 B	Gasoline tank	1	
ST 7024	Back rest cushion, left (on demand)	1	
ST 7025	Cushion for driver's seat	1	
ST 7026	Back rest cushion for driver's seat	1	
ST 7027	Seat cushion (on demand)	2	
ST 7028	Back rest cushion, right (on demand)	3	
ST 7037	Inner stay for upper side	2	
ST 7038	Railing, right	1	
ST 7039	Railing, left	1	
ST 7041	Starting crank	1	
ST 7042 A	Gear case cover	1	
ST 7043	Framework for driver's seat	1	
ST 7057	Radiator grill frame	1	
ST 7061	Gasoline tank bracket	2	
ST 7062	Tow eyelet	1	
ST 7081	Frontshield, complete	1	
ST 7083	Rear gable, right	1	
ST 7084	Rear gable, left	1	
ST 7087	Piece of front	1	
ST 7088	Bonnet, complete	1	
ST 7097	Door, complete	1	
ST 7113	Driver's seat, complete	1	
ST 7201	Protection for headlamp	2	
ST 7224	Bumper	1	
ST 7231	Outer handle	1	
ST 7232	Lock, located outside	1	
ST 7233	Tow eyelet for bumper	2	

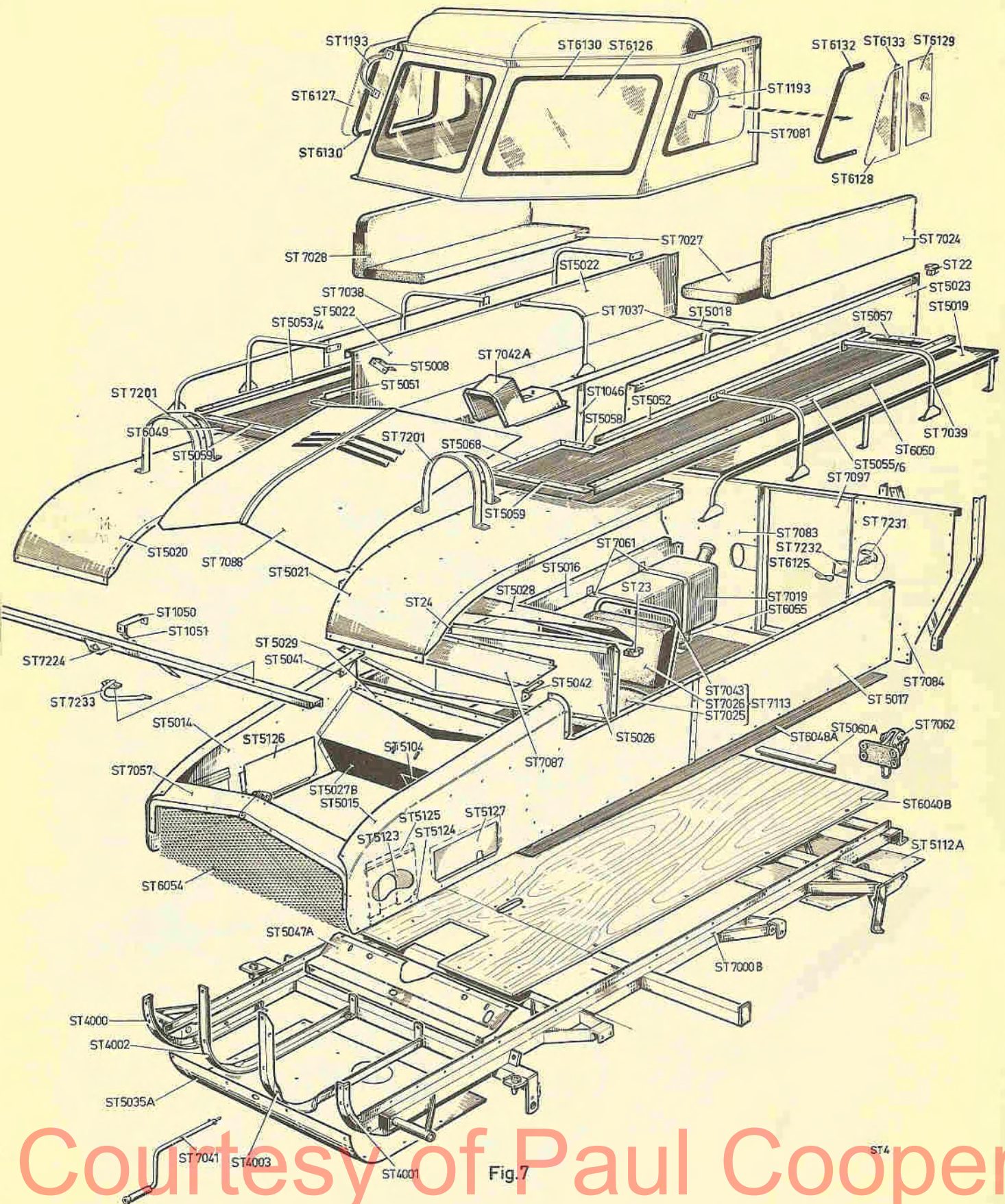


Fig.7

Courtesy of Paul Cooper



STEERING MECHANISM, VARIATOR, GEAR CASE, HEATING SYSTEM - Fig. 8

Part No.	Description	No. Pcs.	Remarks
MS 5190	Clamp for exhaust pipe	2	
ST 10	Drive shaft bearing cup, left	1	
ST 11 A	Steering shaft bearing cup	2	
ST 12	Cover for bearing cup ST 10 and ST 37	2	
ST 13 A	Cover for bearing cup ST 11 A	2	
ST 14 A	Bearing bracket	2	
ST 15 B	V-belt pulley half for variator	2	
ST 16 B	V-belt pulley half for variator	2	
ST 17 A	Front axle bearing cup	2	
ST 25	Support for variator device	1	
ST 26	Holder for steering gear	1	
ST 33	Sprocket (extra) 31 teeth	2	
ST 34	Sprocket (standard) 38 teeth	2	
ST 37	Drive shaft bearing cup, right	1	
ST 500 A	Gear shift bar	1	
ST 501	Steering device arm	1	
ST 1032	Pressure plate for upper adjustment arm	1	
ST 1033	Variator upper adjustment arm	2	
ST 1040	Washer for pressure spring	2	
ST 1045	Steering device lever link	2	
ST 1078	Steering device lever	1	
ST 1125	Washer for bevel gear ST 2001 A	2	
ST 1170	Heating control	1	
ST 1173	Stay for guide plate	1	
ST 1180	Washer	6	
ST 1203	Holder for lubricating hose, left	1	
ST 1204	Holder for lubricating hose, right	1	
ST 2000	Bevel gear on drive shaft	2	
ST 2001 A	Bevel gear on steering shaft	2	
ST 2002 A	Sprocket on drive shaft, 12 teeth	2	
ST 2003 A	Drive shaft, left	1	
ST 2004 A	Drive shaft, right	1	
ST 2007 A	Front axle	2	
ST 2014	Clamp for exhaust pipe	2	
ST 2016 A	Steering shaft	2	
ST 2022	Transmission to heating control	1	
ST 2025	Link for heating chamber control	2	
ST 3001	Cotter bolt	2	
ST 3002	Shaft for bearing cup	2	
ST 3005	Journal for eye bolt ST 7021	1	
ST 3006	Pressure spring adjustment sleeve (variator adjustment)	2	
ST 3007	Journal for variator adjustment arm	2	
ST 3008	Journal for steering mechanism arm	1	
ST 3009	Distance bolt for variator upper adjustment arm	1	
ST 3014	Variator adjustment arm bushing	12	
ST 3027	Intermediate shaft for speedometer	1	
ST 3031	Clutch	6	
ST 3032	Nut	3	
ST 5006	Washer, 49 x 3 mm	2	
ST 5092	Guide plate on engine	1	
ST 5106	Bracket for exhaust pipe extension	1	
ST 5114 A	Bottom half, lower, for heating chamber	2	
ST 6009	Front axle lock ring	2	
ST 6010	Front axle spacer	2	
ST 6022	Drive shaft distance tube, right, length = 5 43/64" (142 mm)	1	
ST 6023	Drive shaft distance tube, left, length = 2 1/2" (63 mm)	1	

Part No.	Description	No. Pcs.	Remarks
M 6747 ST 6042	Variator V-belt, 44x19x28° x1530 mm internal length	1	
ST 6106	Heating hose, right	1	
ST 6107	Heating hose, left	1	
ST 6108	Defrosting hose	2	
ST 6121	Lubricating hose, left, for variator	1	
ST 6122	Lubricating hose, right, for thrust bearing	1	
ST 6123	Lubricating hose, right for variator	1	
ST 7005 A	Exhaust pipe	1	
ST 7015	Drive chain truss rod	2	
ST 7016	Pressure plate with side pieces for lower adustment arm	1	
ST 7017	Variator lower front adjustment arm	1	
ST 7018	Variator lower rear adjustment arm	1	
ST 7020	Variator device frame	1	
ST 7021	Eye bolt for pressure plate	2	
ST 7078	Rod for drive shaft bearing cup, left	1	
ST 7078 A	Rod for drive shaft bearing cup, right	1	
ST 7080 B	Engine, complete, 34 HP	1	
ST 7095	Gear case, VW No. 211 300 039 synchromesh	1	
ST 7117	Bonnet stay	1	
ST 7123	Drive chain, 82 links, incl. straight clutch link, 25,4 mm pitch, 17 mm internal width, roll. diam. 15,88mm	2	
ST 7124	Jointing link, bent, 25,4 mm pitch	2	
ST 7125	Jointing link, straight, 25,4 mm pitch	2	
ST 7162	Radiator casing, complete	1	
ST 7166	Cover for heating chamber, right	1	
ST 7167	Cover for heating chamber, left	1	
ST 7180	Hot air distributor	1	
ST 7181	Hot air outlet	1	
ST 7186	Exhaust tube extension	1	
ST 7187	Bearing for wire for speedometer	1	
ST 7189	Wire for speedometer	1	
ST 7203 A	Heating chamber casing	2	
ST 7206	Heating chamber, right, complete	1	
ST 7207 A	Heating chamber, left, complete	1	
ST 7210	Distance tube with V-belt pulley bracket, left	1	
ST 7211	Distance tube with V-belt pulley bracket, right	1	
ST 7218	Bottom half for heating chamber, upper, right	1	
ST 7219	Bottom half for heating chamber, upper, left	1	
ST 7220	Silencer extension	1	
W 10001	Washer for ST 2022, 6,5x16x1,5 mm	1	
W 10037	Washer, 20,2x37x3 mm	2	
W 12509	Cylindric pin	1	
W 13006	Woodruff key, 6 x 28 mm	2	
W 15050	Lubrication fitting, 1/8" PTF, straight	2	
W 15051	Lubrication fitting, 1/8" PTF, 45°	2	
	Lubrication fitting, 1/4"SAE, straight	2	
W 20015	Spring for speedometer drive	1	
W 20112	Pressure spring for variator adjustment	2	
W 20113	Pressure spring for variator adjustment	2	
3305	Ball bearing, 25x62x25,4 mm	2	
6207	Ball bearing, 35x72x17 mm	4	
6305	Ball bearing, 25x62x17 mm	4	
2673	Hose clamp, Dole	4	
No. 4492	Defroster jet	2	
456212	Seal ring, 45x62x12 mm	2	
51110	Axial ball bearing, 50x70x14 mm	2	
02606	Locking washer with inner nose (Din 462, 36x20 mm)	2	

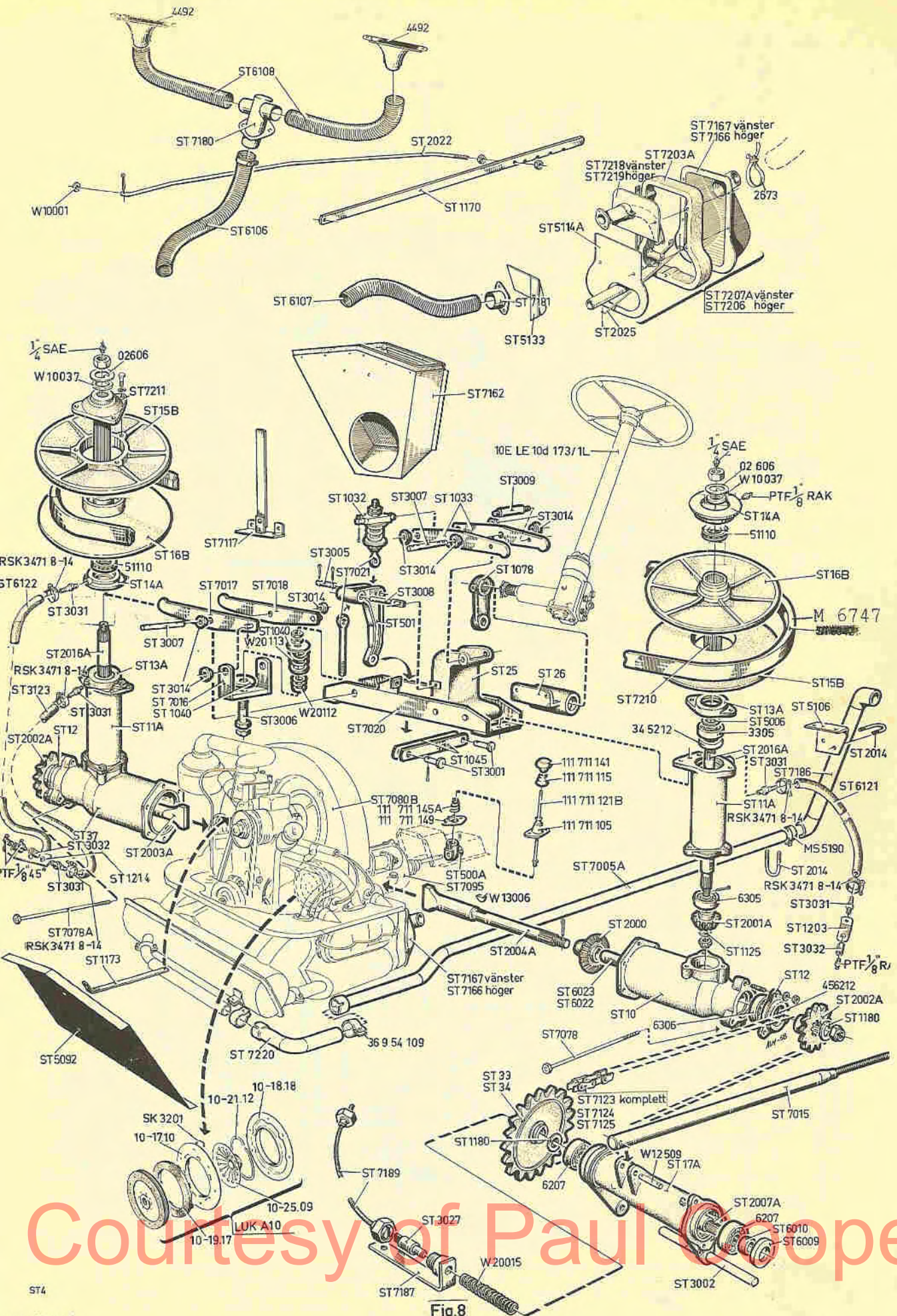


Fig.8



STEERING MECHANISM, VARIATOR, GEAR CASE, HEATING SYSTEM (Cont'd) - Fig. 8

Part No.	Description	No. Pcs.	Remarks
345212	Seal ring	2	
Luk A10/436	Clutch, complete	1	
10-18.18	Cover	1	
10-21.12	Retaining ring	1	
10-25.09	Cup spring with pressure piece	1	
Sk 3201	Tension spring	2	
10-17.10	Pressure plate	1	
RSK 3471 8-14	Hose clamp	6	
369.54.109	Clamp for exhaust tube	1	
	Disk	1	
111 711 105	Gear change ball housing	1	
111 711 115	Rubber boot	1	
111 711 121 B	Gear change lever	1	
111 711 141	Gear change lever knob	1	
111 711 145 A	Gear change lever spring	1	
111 711 149	Gear change lever stop	1	
	Steering mechanism, 10 E LE 10 d 173/1 L	1	

ELECTRICAL EQUIPMENT, WIRING DIAGRAM - Fig. 9

Part No.	Description	No. Pcs.	Remarks
MS 5283	Clip for cable for horn	2	
MS 7550	Starting button	1	
MS 7552	Earth cable	1	
ST 5028	Instrument panel	1	
ST 6060	Cable betw. ignition switch and oil pressure control lamp	1	
ST 6061	Cable betw. right head lamp and fuse box	1	
ST 6062	Cable betw. left head lamp and fuse box	1	
ST 6064	Cable to fuse box	3	
ST 6065	Cable betw. light switch and fuse box	1	
ST 6066	Cable betw. direction indicator relay and fuse box	1	
ST 6067	Cable betw. direction indicator relay and switch	1	
ST 6068	Cable betw. ignition switch and fuse box	1	
ST 6069	Cable betw. ignition switch and starting button	1	
ST 6070	Cable betw. starting motor and starting button	1	
ST 6071	Cable betw. horn and fuse box	1	
ST 6072	Cable betw. horn and horn button	1	
ST 6075	Cable betw. light switch and fuse box	1	
ST 6076	Cable betw. light switch and fuse box	1	
ST 6077	Cable betw. right tail lamp and fuse box	1	
ST 6078	Cable betw. left tail lamp and fuse box	1	
ST 6079	Cable betw. light switch and fuse box	1	
ST 6080	Cable betw. direction indicator switch and indicator	1	
ST 6081	Cable betw. fuse box and windshield wiper	1	
ST 6082	Cable to fuse box	1	
ST 6083	Cable betw. fuse box and brake switch	2	
ST 6089	Cable betw. oil temperature gauge lamp and light switch	1	
ST 6136	Cable for interior light	1	

ELECTRICAL EQUIPMENT, WIRING DIAGRAM (Cont'd) - Fig. 9

For personal use only, digitized by R.S., www.forumsforums.com/snowtrac.html

Part No.	Description	No. Pcs.	Remarks
ST 7069	Cable betw. ammeter and light switch	1	
ST 7069	Cable betw. oil temperature gauge and fuse box	1	
ST 7070	Cable betw. ammeter and ignition switch	1	
ST 7071	Cable betw. ammeter and starting motor	1	
ST 7072	Cable betw. ignition coil and fuse box	1	
ST 7073	Cable betw. battery and starting motor	1	
ST 7074	Cable betw. generator voltage regulator and ammeter	1	
ST 7075	Cable betw. oil pressure control lamp and engine	1	
ST 7094	Cable betw. oil temperature gauge and dipstick	1	
ST 7094	Cable betw. generator and hour meter	1	
ST 7098	Cable betw. hour meter and earth	1	
W 10000	Washer, 5,5x16x1 mm	4	
BL 13 - 2	Direction indicator	2	
EWV 35 - 6 V	Windshield wiper	1	Hella
M 20 - 6 V	Horn	1	"
SPK 100	Tail lamp with stop light	2	"
21/41	Light switch	1	"
31/46	Ignition switch	1	"
32/12	Fuse box	1	"
50/12	Oil pressure control lamp socket	1	"
51/14	Direction indicator switch	1	"
91 PIX-15 W-6V	Direction indicator relay	1	"
130/95 K	Head lamp	2	"
✓ B 625/25	Head lamp bulb	2	Socket BA20d
H 61,5	Oil pressure control lamp bulb	1	" BA9S
K 615	Stop light bulb	2	" S8
L 65	Tail lamp bulb	3	" S8
R 615	Direction indicator bulb	2	" BA15s
VDO No. 578	Ammeter	1	
VDO	Oil temperature gauge	1	
911801 A	Battery cover	1	
6 V 85 Ah	Battery	1	
6 V VDO	Hour meter	1	
i 235 S	Speed limiter	1	
VDO 0,8 W	Speedometer	1	
20/1	Interior light	1	Hella

The following listed American Manufactured parts will be substituted for Snow Trac Parts.

<u>Snow Trac No.</u>	<u>Noun</u>	<u>W/A Numbers</u>	<u>Sub Part No/US Manufacture</u>
130/95K	Seal Beam	01-12514	G E Number 4019
111903137	Belt, Generator	01-12493	Dayton Number 4L350
111-905-105C	Coil, Six Volt	01-12494	AMPCO Number RB800
M20-6V	Horn	01-12948	Chevrolet Number 9000309
SPK100	Tail Light	01-12949	K D Number 204
Nonlisted	W/S Wiper Arm	01-12950	Tuco Number AL60 (Adjustable from 8 inch to 11¼ inches)
Nonlisted	W/S Wiper Blade	01-12732	Tuco Number TAU (8¼ blade is 8¼ inches)
EWV35-6V	W/S Wiper Motor	01-12488	American Bosch
113945515B	Stop Light Switch	01-12951	Cole Hersee Number 8621 12 and 6 volt, Hydraulic switch
Nonlisted	Ignition Wiring	01-12952	IHC Number 57000 R94
Nonlisted	Fuel Line	01-12953	AC Number FM 2 (AC Flexible Hose make-up kit)
115603VW	Shocks (Rear)	01-12511	Columbus Number 445R <i>MONROE 1089</i>
115603VW	Shocks (Front)	01-12954	Columbus Number 445F
VDONR578	Amp Gauge	01-12955	Stewart Warner 357X
GV VDO	Hour Meter	01-12956	Stewart Warner MI961
Nonlisted	Choke Cable	01-12957	Chevrolet Number 1991689
ST7077	Throttle Cable	01-12457	Chevrolet Number 1992654
ST 7012	Springs Leaf (Special Make)	01-12440	Source: Alaska Spring Supply (They will use same mfg. no.)
ST7232	Door Locks (Right)	01-12958	Caterpillar Number 1H7485
ST7232	Door Locks (Left)	01-12959	Caterpillar Number 1H7486
ST7062	Tow Hook	01-12960	IHC Number 77850 R2

Courtesy of Paul Cooper

<u>Snow-Trac No.</u>	<u>Noun</u>	<u>W/A Numbers</u>	<u>Sub Part No/US Manufacture</u>
ST7186	Tail Pipe	01-12961	AP Number 1P1029
Nonlisted	Reflectors	01-12962	K D Number 337A
ST6109	Splash Guards	01-12963	Local Mfg.
130/95K	Light Head	01-12964	Do Ray Number 525
6V85AL	Battery	01-12423	Delco Number 413
MS7552 & ST7073	Battery Cables	01-12965	Whitaker Number 454
Nonlisted	Mirror	01-12966	K D Number B107
SP181	Points Set	01-12520	AMPCO RB10
113905295	Condenser	01-12502	AMPCO RB500
111905225B	Rotor	01-13025	AMPCO RB901
211905205C	Distributor Cap	01-12499	AMPCO RB900
Nonlisted	Tune-up Kit	01-12967	AMPCO TK415
111-903-801C	Volt Regulator	01-12498	AMPCO VR639
111-127-025A	Fuel Pump	01-12496	AC Number 5621723
211-251-051B ST7005	Muffler Exhaust	01-12968	AP Number 1012
ST6048	Floor Mat	01-12969	Dayton Number 2010 (Universal Mat)
6049	Mat Right Rubber	01-12970	Dayton 2010 (Universal)
6050	Mat left Rubber	01-12971	Dayton 2010 (Universal)
MS7550	Starter Switch Push Button	01-12490	No. 612 Source: Joseph Pollak Corp., Boston, Mass.
21/41	Light Switch, 3 Position Push & Pull, 5 screw Terminal (6 Volt)	01-12972	No. 1603 Source: Joseph Pollak Corp., Boston, Mass.
31/46	Ignition Switch, 3 Position (6 Volt)	01-12489	No. 2549 Source: Joseph Pollak Corp., Boston, Mass.
211-129-021 (SOLEX 28PC) 211129023	Carburetor	01-12710	Carter Number 2936S

Order the following items by description:

ST7081	All Glass	Have in stock by size (order by size)
Nonlisted	Upholstery	Local Mfg.

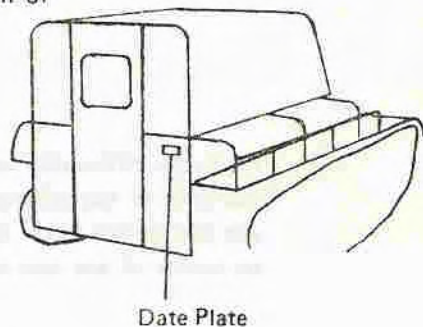
<u>Snow Trac No.</u>	<u>Noun</u>	<u>W/A Number</u>	<u>Sub Part No/US Man</u>
ST7024	Back Rest Left		Local Mfg.
ST7025	Cushion Driver Seat		Local Mfg.
ST7026	Back Rest Driver's Seat		Local Mfg.
ST7027	Seat Cushion		Local Mfg.
ST7028	Back Rest Right		Local Mfg.
111-105-245	REAR OIL SEAL		VW
3159-140-037	T/O BEARING		SACHS

Courtesy of Paul Cooper

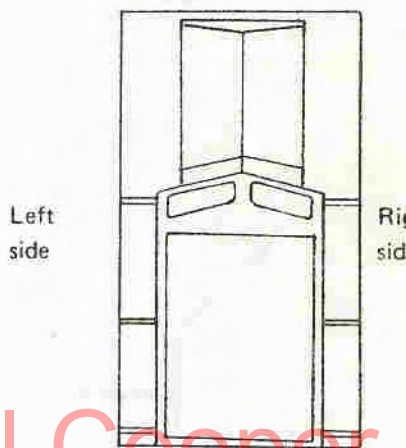
Ordering spare parts

When ordering spare parts always state number and description of the part as well as type and manufacturing number of the vehicle.

The vehicle date plate indicating the type and manufacturing number is located on the back of the vehicle to the right of the door.



The indications right and left are determined by facing in the direction of travel.



Courtesy of Paul Cooper

Dismantling and assembling the variator

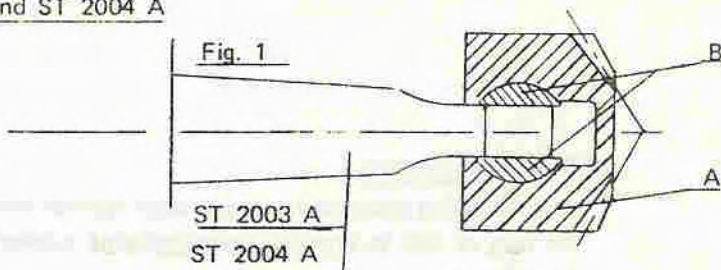
The following instructions only describe how to carry out assemblage and adjustments.

For repairs, the variator is dismantled in the reverse order to the assembling described and so much as is necessary for carrying out the repair work.

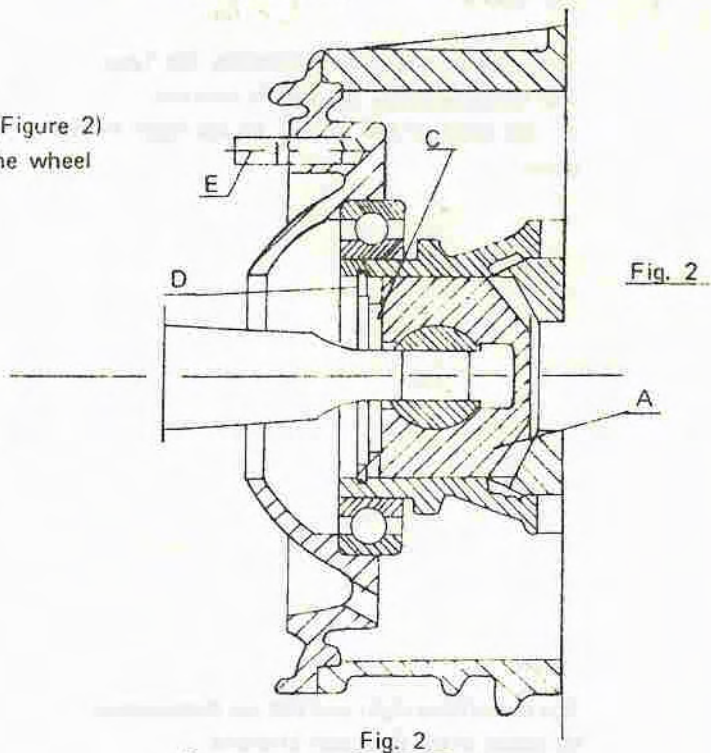
Snow-Trac Type ST 4
Repair instructions for the variator

Installing the drive shafts ST 2003 A and ST 2004 A

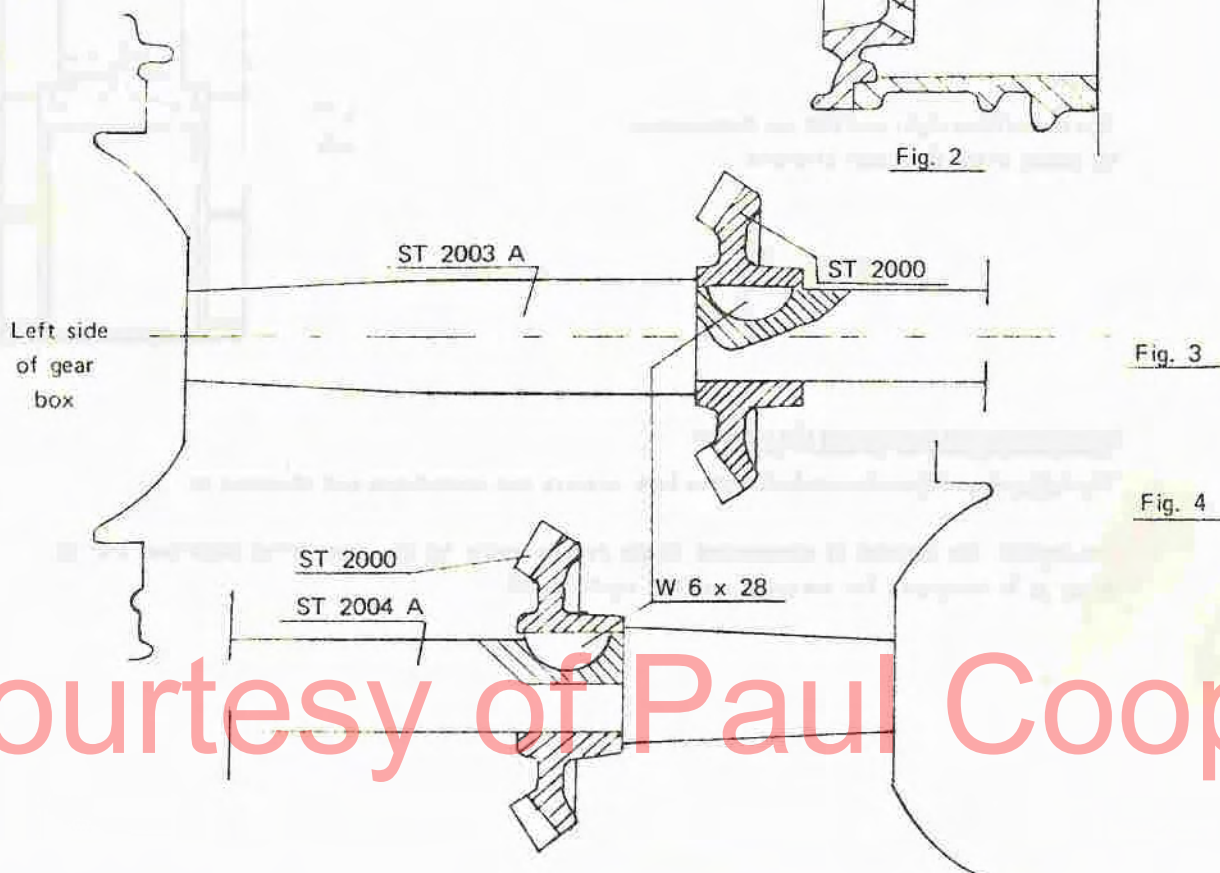
1. Put in the washers B into the differential wheel A and insert the shaft. (Figure 1.)



2. Place the differential wheel with the shaft in the differential case (Figure 2) and put in the spacer C. Lock the wheel by means of the lock ring D.

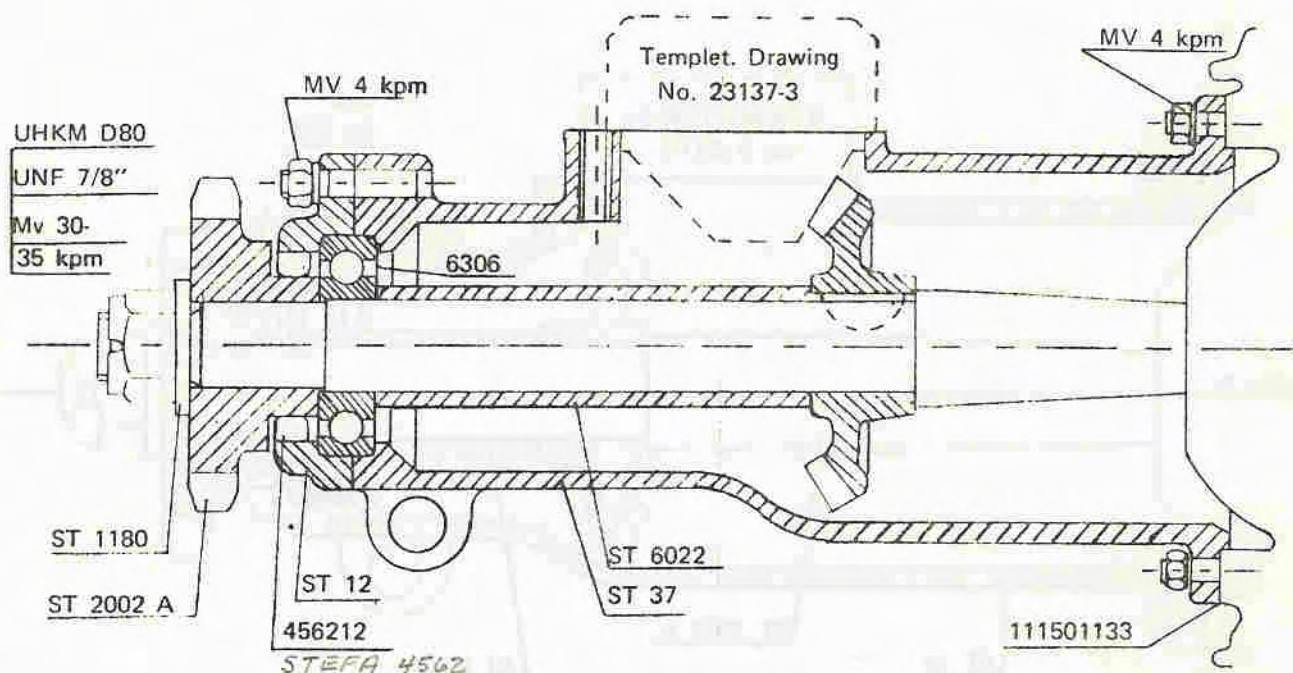


3. Mount the bevel gears ST 2000 to the shafts as shown in figures 3 and 4.



Courtesy of Paul Cooper

Fig. 5

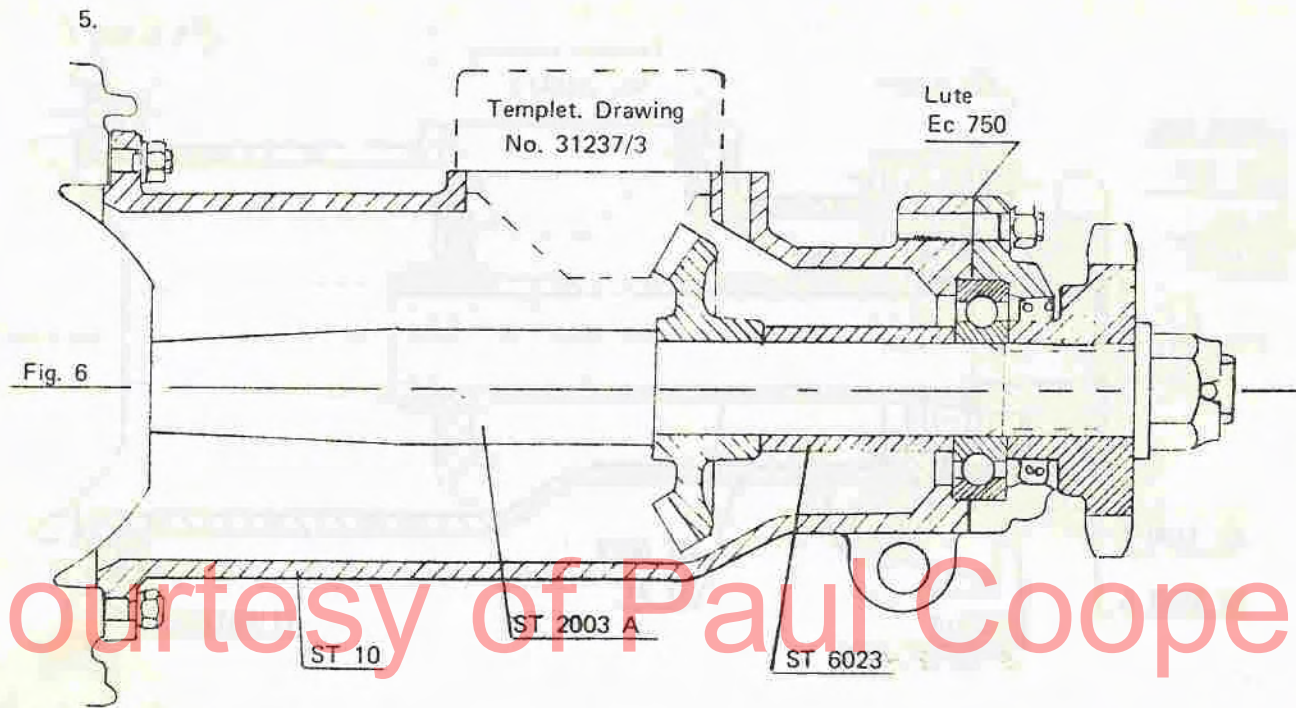


4. Place the gasket 111501133 against the gear box and screw on the drive shaft bearing cup ST 37. Tighten the nuts to a torque tightness of 4 kpm. Install the other parts as shown in figure 5 and tighten the shaft nut to a torque of 30-35 kpm. Tighten the nuts for the cover to 4 kpm. Check the position of the bevel gear by the aid of the templet. If it has been necessary to move the bevel gear inwards (towards the gear box) adjustment washers are to be put in between the distance tube ST 6022 and the ball bearing. (The washers have the numbers ML 15, 15 A, 16, and 16 A and are 0,12 - 0,38 mm thick.) If it has been necessary to move the bevel gear outwards, the distance tube is to be shortened. Between the cover ST12 and the bearing cup lute-EC 750 or the like- is to be used. When the bevel gear has been fitted in, the shaft nut is to be tightened to a torque of 30 - 35 kpm and the nut to be secured with the split pin SP 4x40.

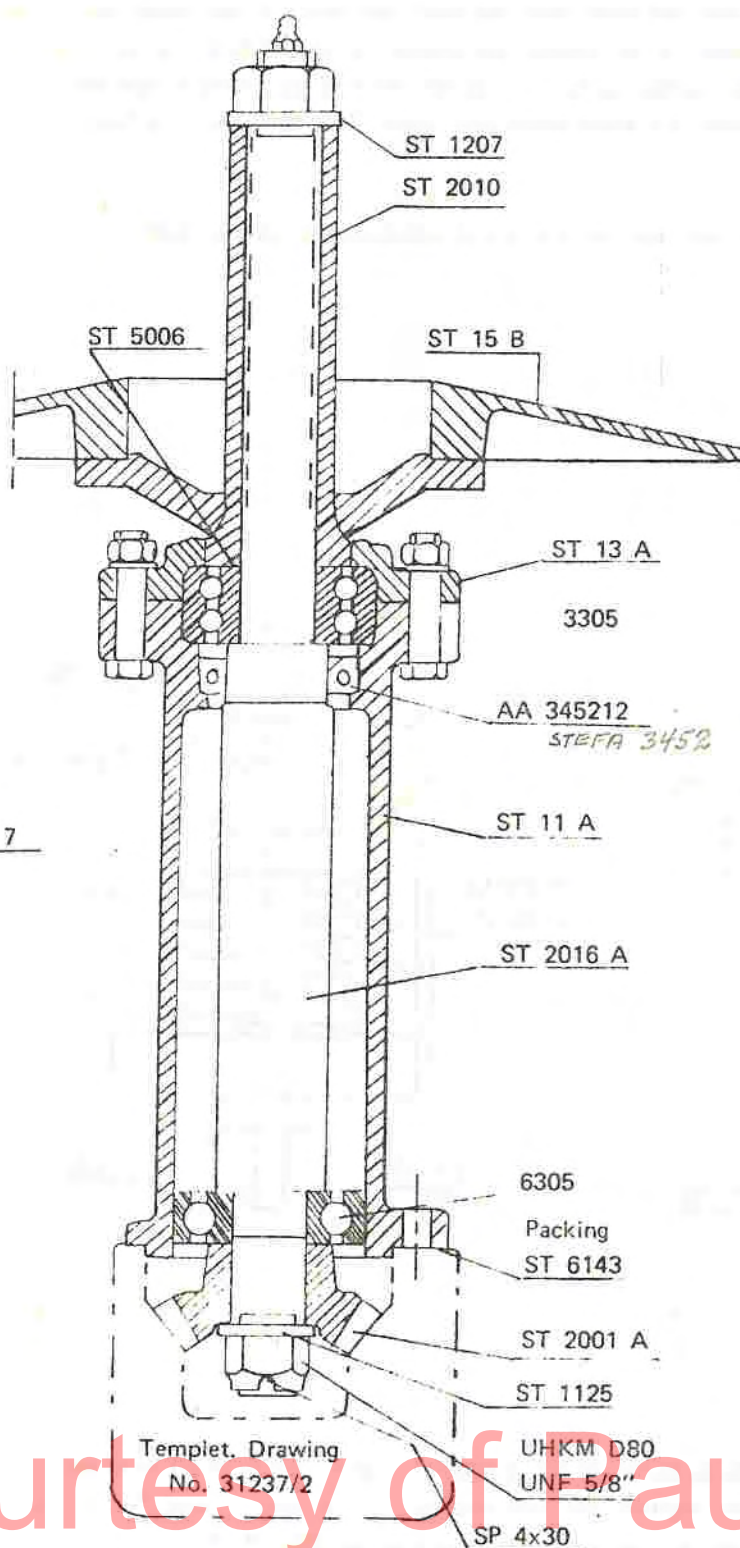
NOTE: When truing the distance tube ST 6022 in a lathe, care must be taken so that the ends will be parallel to each other.

4 KPM = 350 IN LBS
35 KPM = 255 FT LBS

Courtesy of Paul Cooper



The installation of the bearing cup ST 10 (Figure 6.) with shaft and the fitting of the bevel gear is done in the same manner as described under period 4.



6. Mount the ball bearing 6305 and the bevel gear ST 2001 A to the shaft ST 2016 A as shown in fig. 7 and tighten the nut to a torque tightness of 15 kpm and secure by means of a split pin. Place the seal ring AA 345212 under the upper ball bearing. It shall be turned so, that it prevents the grease in the ball bearing from running down.

Mount the shaft in the bearing cup as shown in fig. 7 and tighten the nut located in the upper end.

Check the position of the bevel gear ST 2001 with the templet, drawing No. 31237/2. If necessary, adjust with paper packing ST 6143 between ST 11 A and the templet, until it just runs clear of the addenda.

The two bearing cups for the steering shafts are installed in the same manner.

Courtesy of Paul Cooper

7. Screw the assembled steering shaft bearing cups ST 11 A to the drive shaft bearing cups ST 10 and ST 37, so that the plate with the three bolt holes at the upper end of the bearing cups will come inwards. If no gaskets are needed for obtaining the proper tooth play some lute is put on the contact surfaces. Tighten the nuts to a torque tightness of 4 kpm and check that there is a small tooth play when the wheels are in different positions.

Screw out the upper nut on the steering shafts and withdraw the variator pulleys.

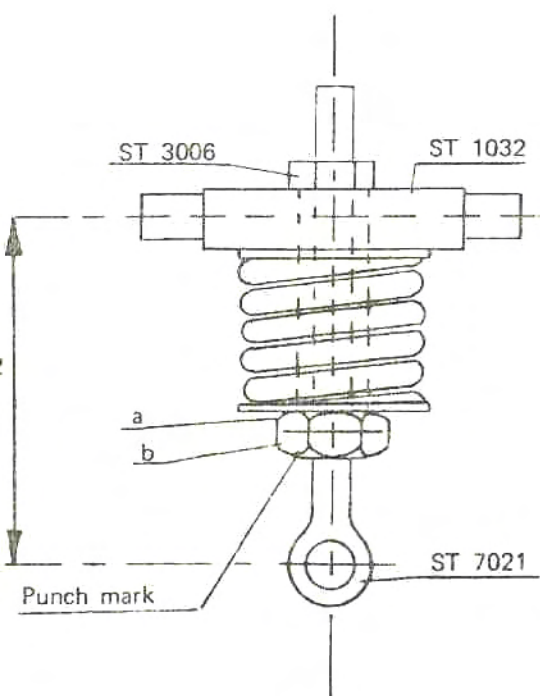


Fig. 8

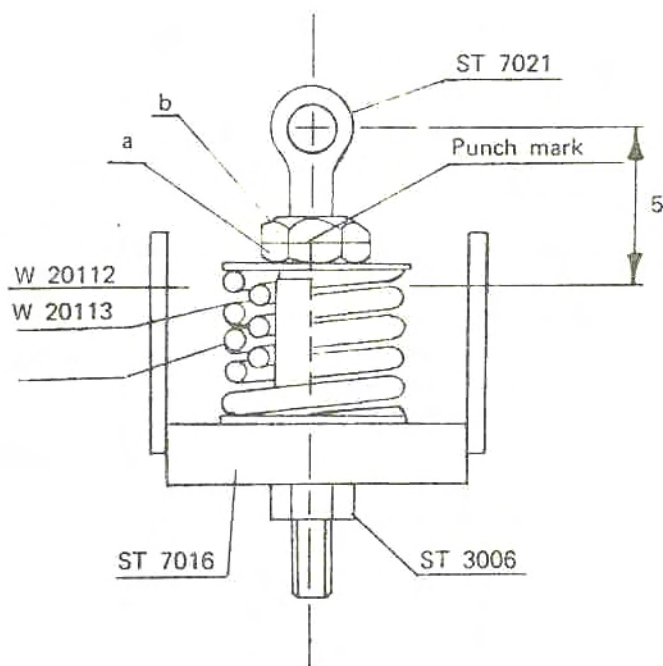


Fig. 9

8. Assemble the pressure springs as shown in fig. 8 and 9. Tighten the nuts (a) until the springs are completely pressed together and then ease off 1—1/2 turn. Hold the nut (a) with a wrench and tighten the locking nut (b) to a torque tightness of 15 kpm and lock it by means of three punch marks in the ST 3006. Screw in the eye bolts ST 7021 as much as indicated.

Courtesy of Paul Cooper

9. Screw the frame ST 7020 to the steering shaft bearing cups ST 11 A.

Install the lubricating hoses for the upper bearings of the steering shafts, the longest one, ST 7279, at the left side and the shorter one, ST 7281, at the right side.

Put in the left bolt through the support ST 25 and the steering gear holder ST 26 A, but do not tighten it.

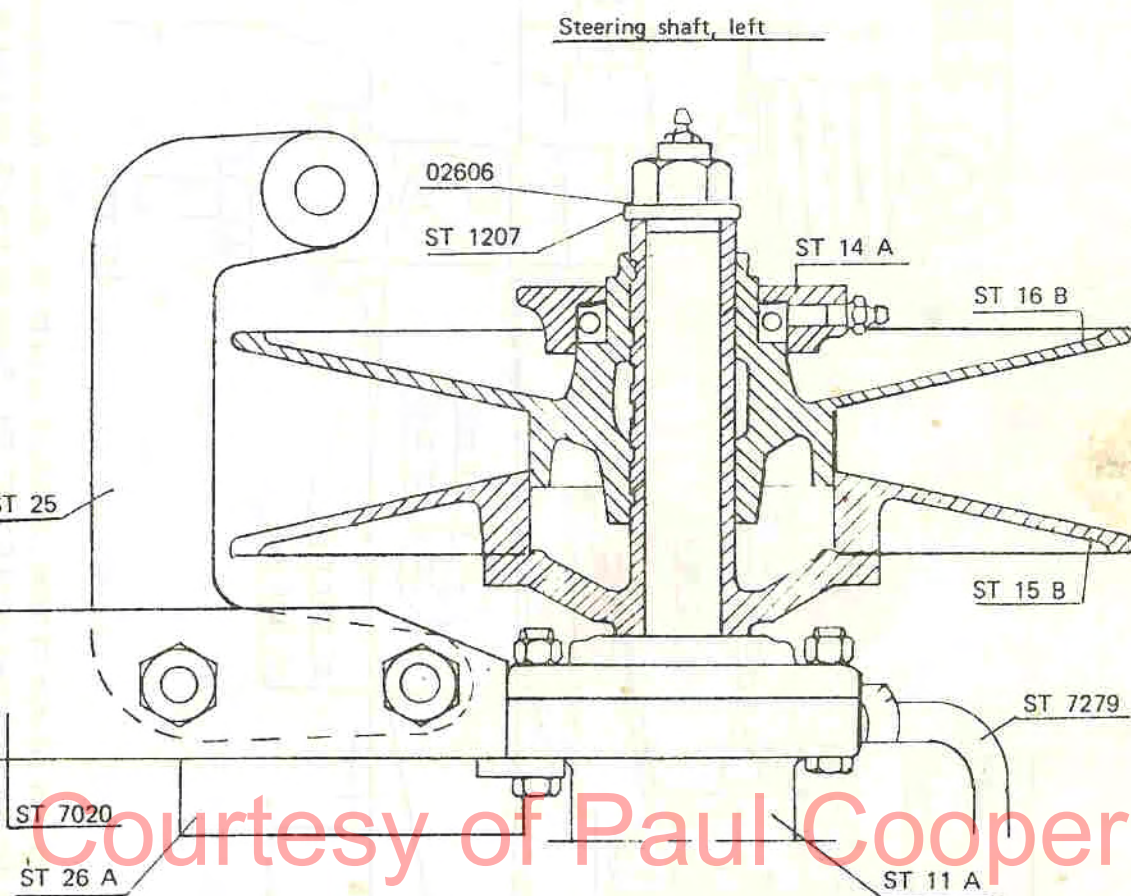
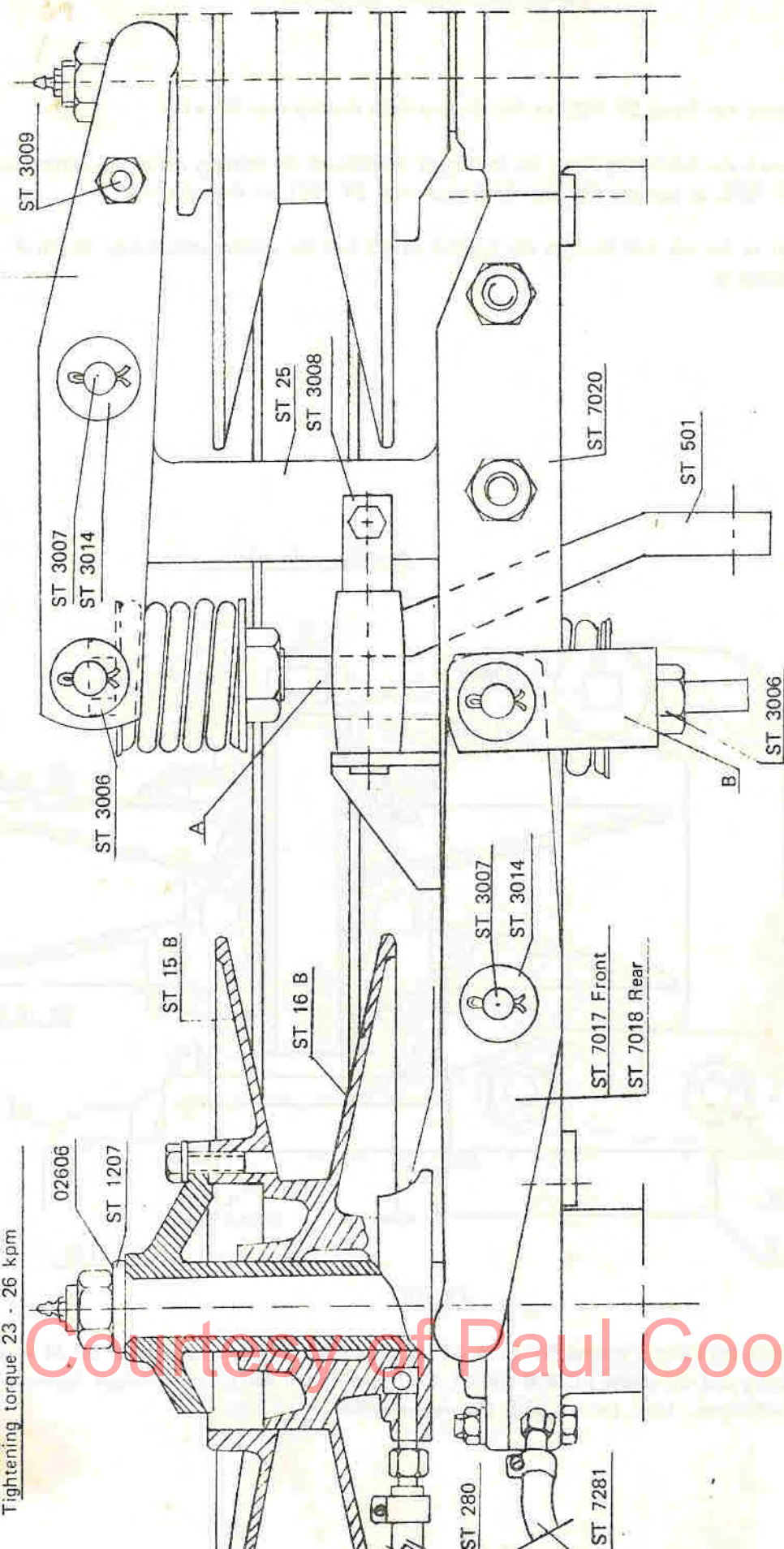


Fig. 10

Mount the variator pulleys ST 15 B, ST 16 B and the axial bearing bracket ST 14 A with bearing and the washers 02606 and ST 1207 and tighten the nut to a torque tightness of 23–26 km. Lock the nut with the washer 02606.

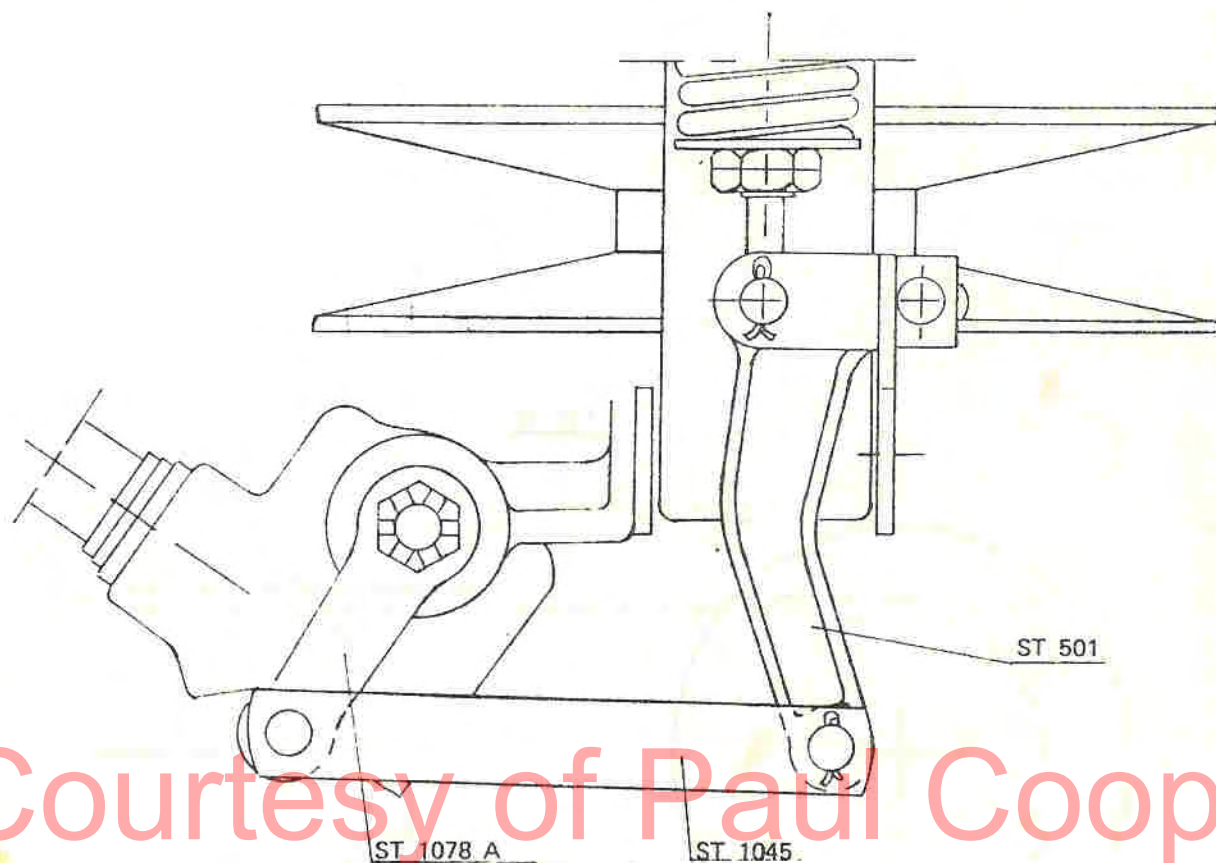
Tightening torque 23 - 26 kpm



10. Install ST 501 with the shaft ST 3008 and screw it on to ST 25. Mount the adjustment arms ST 7017 and 7018 to the clamp B (see fig. 11) and mount them A and B to ST 501. Fasten the arms ST 7017 and ST 7018 to the frame ST 7020 with the shaft ST 3007 and the bushings ST 3014. Install the upper adjustment arms ST 1033 as shown in the figure.

Snow-Trac Type ST 4
Repair instructions for the variator

Fig. 13



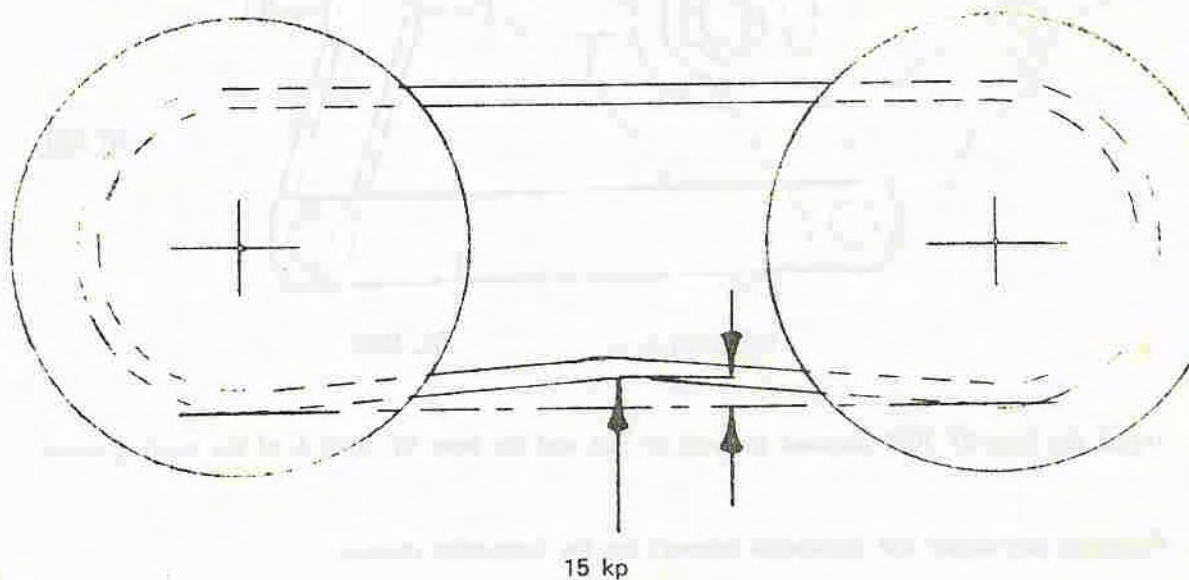
13. Install the links ST 1045 between the arm ST 501 and the lever ST 1078 A of the steering device.

14. Regarding lubrication and lubrication intervals see the instruction manual

11. Screw the lubricating hose ST 7280 (intermediate length) to the axial bearing bracket ST 14 A, put the bearing on the variator pulley ST 16 B and place it on the right steering shaft.

Put the variator belt in place and place the variator pulley ST 15 B on the right steering shaft. Install the washers 02606 and ST 1207 and screw on the nut. When tightening the nut the variator pulleys shall be turned round by hand. The tightening torque shall be 23 - 26 kpm. Lock the nut by means of the washer 02606. See figure 11.

Fig. 12



12. The variator belt has the proper tension if it is deflected 20 - 25 mm for a pressure of 15 kp. See fig. 12. The belt is tightened or slacked by turning the sleeve ST 3006. See fig. 3, 9, and 11.

Courtesy of Paul Cooper

SNOW TRAC
CARE AND MAINTENANCE

Chief, Transportation Division
5040th Air Base Wing (AAC)
Elmendorf AFB
Alaska

Courtesy of Paul Cooper

The Snow Trac is a tracked "weasel" type vehicle that is new to the Air Force inventory. It is manufactured in Sweden and imported into Alaska where procurement was effected to relieve the tracked vehicle shortage and replacement program at remote stations. Thus, authority has been granted by the 2709th Air Force Vehicle Control Group, Memphis, Tennessee, to procure this non-standard type vehicle. The Depot even went so far as to have both the Sweden and Anchorage representatives of the Snow Trac Company and the Alaskan Air Command travel to Memphis to discuss the vehicle and its application to this theater's particular operational requirements. Hence, it is evident that this procurement program has been the result of extensive thought and planning.

Due to this vehicle being non-standard to the Air Force vehicle inventory, there will be inevitable operational, supply and maintenance problems encountered. This pamphlet of instructions on Snow Trac utilization and support on your station is based upon findings by qualified mechanics in testing the vehicle at Northeast Cape AFS, Elmendorf AFB and surrounding territory, plus conferences with the local vendor. The information contained herein could alleviate most of these problems if properly implemented. It is realized these findings will differ from actual site use, however, essentially they will be the same; therefore, this pamphlet is directive in nature and the instructions herein are mandatory.

In the manufacturers instructions manual there will be sections underlined; these items are felt by the vendor to be the most important.

TRANSMISSION

The vehicle transmission is a synchronized type. It can be operated as any other gear box and has proven very trustworthy in the field. Reverse gear is engaged by pushing DOWN on the gear shift lever and then meshing the gears.

STEERING

It can readily be seen by observation of the steering mechanism drawing in the parts section why it should NOT be turned while the vehicle is standing still. Special emphasis was placed on this by the vendor. It was found the vehicle turns slower on soft surfaces, such as snow or tundra than on hard or semi-hard surfaces. When operating on snow or tundra turns should be made on a longer radius and planned further in advance.

CHASSIS

The metal bell pan extends only back under the engine compartment. The balance of the underside is marine type plywood. Under actual testing conditions by this headquarters, this floor was found to be unusually tough but extreme care will be exercised in frozen tundra, rock ground or other areas liable to have objects capable of puncturing the bottom.

There are several musts for the bogie wheels:

1. A periodic check for tightness of the bogie axle nuts will be made, this will increase in frequency under rough or unusual usage.

2. As you observe this vehicle in operation you will

notice the majority of shock is absorbed by the front set of bogie

wheels and related mechanism, therefore, this area will also be thoroughly inspected periodically.

3. The bogie carrying wheels are pneumatic, the air pressure will be maintained at 35 to 42 psi. Check this air pressure at least every four days. This will preclude tires running low or flat without detection and help you locate slow leaks.

LOAD CAPACITY

This vehicles load capacity is 1100 pounds and it will tow 1100 pounds. Any overloading resulting in a break down will void the vendors warranty on the damaged parts. Therefore, any damage caused by overloading of this vehicle, in other than emergency conditions, will result in the operator being charged with pecuniary liability for same.

ENGINE GOVERNOR

The Snow Trac engine has been purposely governed below its maximum RPM output. This arrangement allows the vehicle to be operated at a high RPM against the governor in conjunction with the proper gear sequence. Therefore, select the proper gear according to load aboard and terrain, combine this with high engine RPM, and maximum efficiency will result. Another reason behind high RPM is cooling of the engine.

Courtesy of Paul Cooper

The Logistical Support Unit is familiar with the necessity of ordering Snow Trac replacement parts by manufacturer's part number. The identification systems on these parts made by both the Snow Trac and Volkswagon concerns are very easy to comprehend. Adequate parts manuals are on hand in BASO for proper research and identification purposes. The vendor has on hand an ample back-up of parts with more arriving from Sweden. Surface pipeline time is ninety (90) days on routine orders to the manufacturer, which may cause delay in parts procurement. A program of stressing replacement of major assemblies off the vendors shelf will cut this delay.

If difficulties are encountered contact this headquarters with the problem, - but only if a bona fide emergency exists.

This vehicle has been assigned a Federal Stock Number, 2320-838-4491. This FSN will be used on all applicable documents.

Courtesy of Paul Cooper

This vehicle has been utilized extensively by construction and

For personal use only, digitized by R.S., www.forumsforums.com/snowtrac.html

oil exploration crews in Alaska. It has been used in Sweden, Finland

and Norway where climate and conditions are comparable with those

found in this theater of operations. Throughout all these operations

one prime factor has emerged; if the Snow Trac has reasonable pre-

ventative maintenance and proper operation it gives excellent service

with a minimum of downtime for repairs. Site support personnel at

Elmendorf AFB have been thoroughly indoctrinated in maintenance of the

Snow Trac by the vendor. If repairs are deemed beyond your capability

maintenance assistance will be requested in accordance with AAC

Regulation 66-2 through this headquarters, Attn: BM-TM.

The nuts and bolts on the Volkswagon assemblies are metrically

measured, this will necessitate metric tools, which will be issued.

These will be hand receipted from your supply section to the maintenance

activity and used only for the intended purpose - metric sized nuts and

bolts. The nuts and bolts on the Snow Trac itself are SAE standard.

Under normal use it is not necessary to be continuously adjust-

ing the tracks if one factor is checked every two to three days.

This is the air pressure in the idler wheel tire (50/57 psi), located at

the rear of the track assembly. The proper pressure in this tire in

turn exerts proper pressure against the track, keeping out slack.

Courtesy of Paul Cooper

Following is the vendor's recommendations on lubrication:

For personal use only, digitized by R.S., www.forumsforums.com/snowtrac.html

1. Proper lubrication is the most important preventive maint.

enance performed, provided it is by manufacturer's specifications and intervals.

a. Volkswagon engine: The vendor has found through experience the engine oil must be heavy enough to withstand the constant high rpm, resulting in a high heat output. The following viscosity oils will be utilized at the ambient temperatures indicated:

30 Weight - 32° and above.

20 Weight - 0° to 32°.

10 Weight - 0° and below.

2. Change transmission lubricant within the first 50 hours of operation and thereafter at specified intervals.

3. When operation involves extended use under heavy loads, tundra or wet clinging snow, the bogie suspension system should be thoroughly lubricated every eight hours. This item was very strongly stressed, based on past experience.

Spark plugs should be cleaned and gapped at manufacturer's intervals.

If replacement becomes necessary, stress to LSU ordinary plugs are not acceptable, the type needed is in the Instruction Manual by Volkswagon.

Courtesy of Paul Cooper

The information this pamphlet contains was collected
For personal use only, digitized by R.S., www.forumsforums.com/snowtrac.html
and compiled with one thought in mind, how to better utilize

the Snow Trac to the benefit of the Air Force. The testing program the vehicle went through at Elmendorf AFB, Northeast Cape AFS and the resulting information acquired is not all inclusive and will change in the field under actual operational conditions. We solicit your observations and opinions after three months of utilization of the Snow Trac in the form of an analysis on these three phases; operation, supply support and maintenance difficulties encountered. All reports will be addressed to Headquarters, 5040th Air Base Wing (BM-T).


CHESTER L. OTSTOT
Captain, USAF
Chief, Transportation Div.

Courtesy of Paul Cooper



White Alice Project

DATE

5/1/63

TECHNICAL BULLETIN

Subject: Maintenance and Operation of Snow Trac Vehicles

Problem: To avoid damage to vehicles due to improper maintenance or operation.

Discussion: Each site having possession of a snow trac vehicle has been mailed a copy of the Operation and Maintenance Manual which should be thoroughly read and followed.

and Action:

The additional instruction manual for the care and operation of the Volkswagen engine is included. An engine parts book will be forwarded to each site as soon as this item is available.

The Eberspocker gasoline personnel heater instruction and parts manual is printed entirely in German and is of little value except for the circuit diagrams.

In addition to the information contained in the operations manual is information gained from other users' experience.

- Item 1 Hold transmission shifting lever parallel with transmission. If the lever is twisted to either left or right while shifting, the tip of the lever will pass the slots in the sector shafts and lock the transmission in two gears.
- Be sure that all personnel operating this vehicle are aware of this operating hazard.
- Item 2 Under no circumstances attempt to operate this vehicle with a low or flat bogey wheel. The flat tire will allow the spreader bar locking the two bogey wheels to contact the track guides resulting in a broken track.
- Item 3 Do not operate this vehicle in reverse in loose ground. The rocks will be carried by the track through the front drive sprocket resulting in either a broken track or sprung sprocket assembly.
- Item 4 The undersection of the body is not fully protected and extreme care should be exercised in operating the vehicles in brush, rocks, stumps, and other hazards.
- Item 5 Be sure that this vehicle is parked with adequate space either to the front or rear so that the vehicle can be in motion before attempting to steer. Do not ignore the warning sign to this effect on the dash.
- Item 6 This vehicle is for emergency purposes only and not as a tracked supplement for wheeled vehicles or for recreational activities.
- Item 7 This vehicle will not be run over a highway or any hard-surfaced road.



RCA SERVICE COMPANY

A DIVISION OF RADIO CORPORATION OF AMERICA

White Alice Project

NUMBER

7-13

DATE

5/1/63

TECHNICAL BULLETIN

Subject: Snow Trac Tire Failures

Problem: The second bogey tire from the front on the Snow Trac vehicles have been failing due to impact.

Discussion: The lead bogey is raised off the ground by the incline of the track and is not subject to the initial shock from road hazards.

Action: It has been recommended that a heavy duty type of tire and hub be used when replacing the damaged second bogeys.

Remarks: The Material Control section has ordered solid tires, part number ST 6113, and hubs, part number TH 1206, for distribution to all sites having the Snow Trac vehicles.

Courtesy of Paul Cooper



RCA SERVICE COMPANY

A DIVISION OF RADIO CORPORATION OF AMERICA

White Alice Project

NUMBER

DATE

TECHNICAL BULLETIN

SUBJECT: Speed Limiter (Governor), Volkswagen Engine, Sno-Trac Vehicles

PROBLEM: Operation, inspection and adjustment of the speed limiter.

DISCUSSION: The Volkswagen engines used in the Sno-Trac vehicles have an electrical speed limiter incorporated with the distributor rotor. The limiter is factory set to allow a maximum operating range of 3800 to 3900 RPM. As the engine approaches maximum RPM, centrifugal force causes a spring loaded device within the limiter to extend, contact a vertical pin on a metal loop and ground the ignition. Maximum RPM can be increased by bending the vertical pin outward and decreased by bending it inward.

ACTION: Remove limiter rotor from distributor. Remove rotor top cover and inspect the coil spring and the action of the grounding unit. Inspect vertical pin of the metal loop. In event of damage to the limiter, requisition a new limiter (use part number ZV2/7710-D) and return the used one, regardless of condition to the Mobile Equipment Shop.

Under no circumstances will a vehicle be operated without a properly functioning speed limiter. Any suspicion that the engine is under or over running the recommended RPM shall be checked and/or adjusted using an electric impulse actuated Tachometer (available from Mobile Equipment Shop on a loan basis).

NOTE: Only persons authorized by the site supervisor will inspect or adjust the speed limiter.

Courtesy of Paul Cooper



TECHNICAL BULLETIN

SUBJECT: Personnel Heater, Gas Operated, Eberspacher, Mounted in Snow Trac Vehicles

PROBLEM: Burned impeller, combustion air blower.

DISCUSSION: The combustion air blower (impeller) is fabricated of pot metal or similiar material and is easily damaged from heat if the operating cycle of the personnel heater is incomplete or incorrect.

It has been suggested that a heat resistant impeller be fabricated and installed, but this modification would not solve the current problem of uncontrolled fire and possible explosion within the heater. When the operating cycle is correct and complete, the impeller is bathed in cold air at all times and only the heat resistant center hub of the impeller is subject to heat.

ACTION 1: Check the primary electrical circuit to the heater. If the heater circuit is attached to the engine ignition switch, it must be attached to the hot side of the switch to insure operation of the heater with the ignition switch in the off position. This is contrary to the usual hookup for hot water personnel heaters. If the circuit to the heater is cut before the flushing process is complete, the residue gas and heat in the combustion chamber will burn the impeller.

NOTE: The attempted use of the heater without the impeller could result in uncontrolled burning or explosion.

For replacement part order:

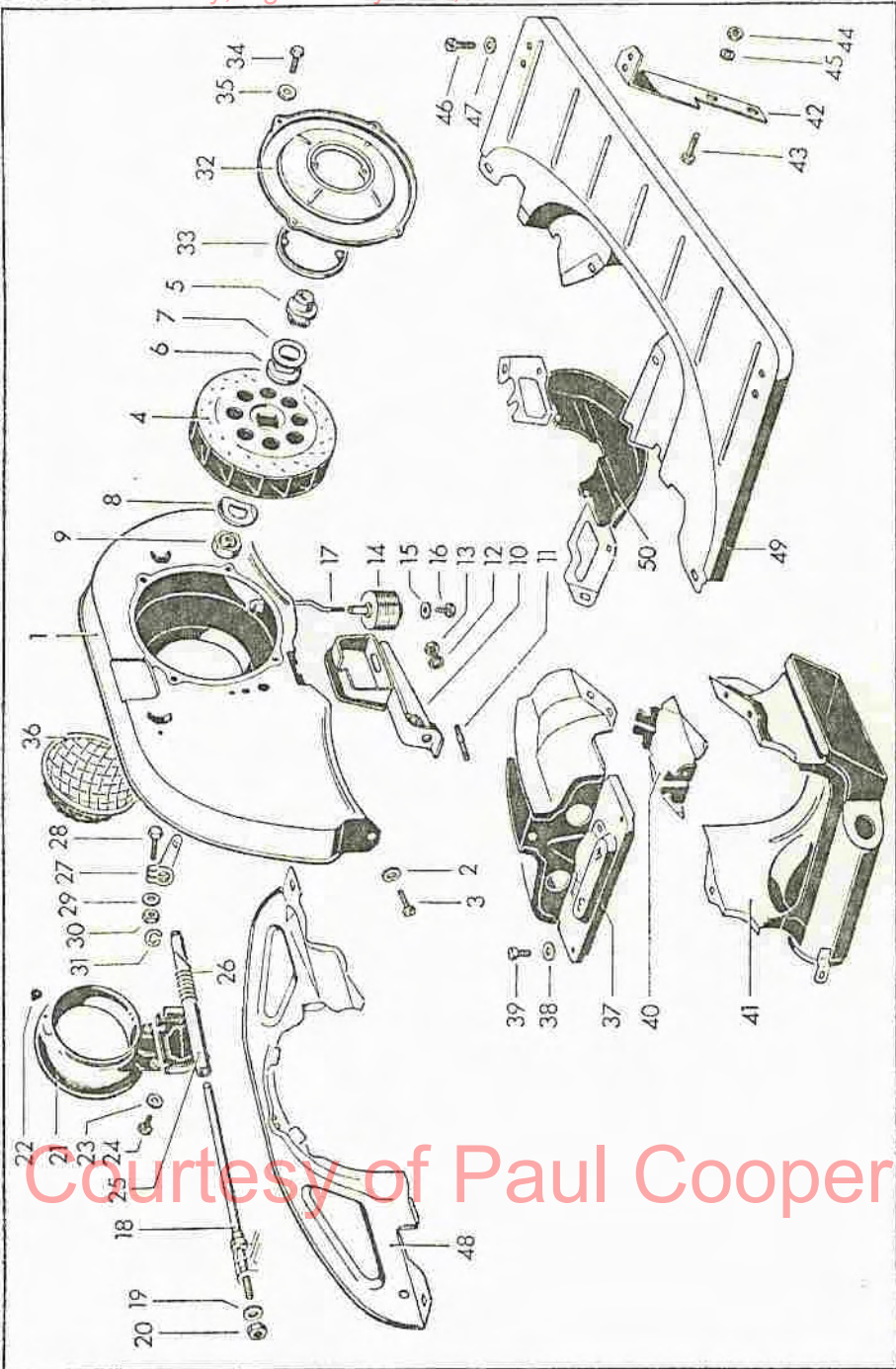
Impeller, combustion air, Eberspacher. White Alice number:
01-13449. Part number: 8542.03.U02

ACTION 2: Check for faulty thermo switch. If the thermo switch is faulty or not adjusted correctly, the result is the same as a faulty primary circuit. With the heater control switch in the off position, the thermo switch should allow the blower motor to continue to operate for three minutes before breaking the circuit.

For replacement thermo switch, order White Alice number: 01-12739
Part number: 8470.21

Each site will be furnished an English translation of the Eberspache gasoline heater instruction and operation manual for reference in further trouble shooting.

Courtesy of Paul Cooper



TYP B 2

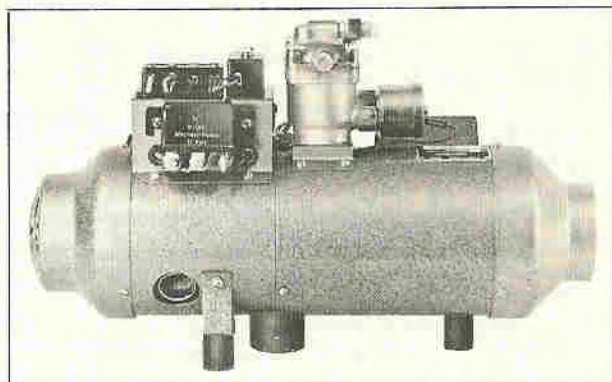
Geräte-Nr. 20 8515 00 00 00 (6 Volt)
 20 8516 00 00 00 (12 Volt)
 20 8517 00 00 00 (24 Volt)

J. EBERSPÄCHER
 7300 ESSLINGEN
 EBERSPÄCHERSTRASSE 24
 RUF ESSLINGEN SAMMEL-NR. 351 91
 TELEGRAMM:
 EBERSPACHGLAS ESSLINGENNECKAR
 FERNSCHREIBER 07-23 584

Allgemeines

Das Eberspächer Heiz- und Lüftungsgerät B 2 ist ein Heizaggregat mit eigener Heizquelle. Es arbeitet unabhängig vom Verbrennungsmotor des Kraftfahrzeuges und kann daher auch bei stehendem Fahrzeug in Betrieb gesetzt werden.

In der warmen Jahreszeit dient das Heiz- und Lüftungsgerät B 2 zur Belüftung des Fahrzeuges.

**Technische Daten**

Heizleistung	1750 kcal/h
Brennstoff	Benzin
Brennstoffverbrauch	0,27 l/h
Leistungsaufnahme	20 Watt
Spannung	6, 12 und 24 Volt
Heißlufttemperaturdifferenz ca.	90 ° C
Frischlufthförderung ca.	80 kg/h
Gewicht	5 kg
Mindestquerschnitt der Warmluftleitungen	36 cm ²

Technische Beschreibung

Das Heiz- und Lüftungsgerät besitzt einen Wärmeaustauscher, der aus einem zylindrischen Brennraum und einem konzentrisch angeordneten Ringraum besteht. Beide sind durch 3 Kanäle miteinander verbunden, so daß die Abgase den Wärmeaustauscher zum Teil im Gegenstrom durchströmen.

Ein Radial-Lüfterrad (5) zur Förderung der Verbrennungsluft und ein Axial-Lüfterrad (9) zur Förderung der Frischluft (Warmluft) sitzen auf den Wellenenden des Elektromotors (10), welcher in einem Blechgehäuse festgeklemmt ist. Ein Blechmantel umschließt die Heizung, auf ihn sind der Brennstoffregler, die Schalttafel und der Überhitzungsschalter montiert.

Der Brennstoffregler (1) hält mittels einer Schwimmereinrichtung und der Brennstoffdüse die Brennstoffzufuhr konstant. Das angeflanschte Brennstoff-Magnetventil (2) steuert den Zufluß des Brennstoffes in die Vorkammer.

Auf der Schalttafel (15) sind Sicherungsdose (16), Kabelverbindungsklemme (17) sowie ein Schaltschütz angebracht.

Bei Geräten mit 12 oder 24 Volt Betriebsspannung ist ein Vorschaltwiderstand für die Glühkerze eingebaut.

Arbeitsweise

Die Heizung arbeitet nach dem Verbrennungsgas-Frischluf-System: Der Brennstoff wird über den Brennstoffregler (1) mit Brennstoffdüse und Brennstoff-Magnetventil (2) durch die Vorkammer (3) zugeleitet. Dort erhält er über das Luftansaugrohr (4) durch das Verbrennungsluftgebläse (5) die zur Verbrennung notwendige Luft, entzündet sich und verbrennt anschließend in der Brennkammer (6). Die entstehenden heißen Verbrennungsgase durchströmen den ringförmigen Wärmeaustauscher (7), geben dabei ihre Wärme an die Wandungen desselben ab und werden durch das Abgasrohr ins Freie geführt. Das Frischluftgebläse (9) saugt Frischluft an und drückt sie an den heißen Wandungen des Wärmeaustauschers vorbei. Sie erwärmt sich an diesen und gelangt durch den Warmluftaustritt in den zu erwärmenden Raum.

Einschalten

Die Heizung wird mit einem Doppel-Schubschalter eingeschaltet. Durch Herausziehen des Knopfes in seine Endstellung werden folgende Vorgänge eingeleitet: Der Elektromotor (10) für das Verbrennungsluft- und Frischluftgebläse und, wenn vorhanden, die elektrische Brennstoffpumpe (11) erhält Strom. Das Brennstoff-Magnetventil öffnet sich, die Glühkerze (12) ist über den Thermoschalter (13) eingeschaltet und glüht. Die Förde-

Bedienung

Einschalten der Heizung

Knopf des Doppel-Schubschalters in die zweite Raststellung herausziehen. Nach ungefähr 45 Sekunden leuchtet die Kontroll-Lampe im Knopf des Schalters auf. Die Heizung hat gezündet und ist voll in Betrieb.

Ausschalten der Heizung

Knopf des Doppel-Schubschalters in seine Ausgangsstellung zurückschieben. Nach ca. 3 Minuten erlischt die Kontroll-Lampe.

Achtung

Während der Nachlaufperiode (ca. 3 Minuten) darf die Heizung nicht erneut gestartet werden, da sonst

Wartung

Alljährlich vor der Heizperiode:

Glühkerze auf Abbrand kontrollieren.

Gegebenenfalls erneuern.

Brennstoff-Regler mit Filtereinsatz und Brennstoffdüse reinigen.

Brennstoff-DurchgangsfILTER reinigen (evtl. angesammeltes Wasser aus Filterbecher entfernen).

ung und Zuleitung des Brennstoffes in die Vorkammer sowie dessen Mischung mit der Verbrennungsluft setzt ein, und das Brennstoff-Luft-Gemisch entzündet sich an der Glühkerze. Nach etwa 45 Sekunden ist die Heizflamme voll entfacht. Sie trifft den Wärmefühler des Thermoschalters, welcher sich ausdehnt und dadurch die Glühkerze abschaltet. Gleichzeitig leuchtet die Kontroll-Lampe im Knopf des Schubschalters auf und zeigt an, daß die Heizung voll in Betrieb ist. Die Entzündung des Brennstoff-Luft-Gemisches geschieht jetzt selbsttätig.

Ausschalten

Der Knopf des Schubschalters wird in seine Ausgangsstellung zurückgeschoben. Die Brennstoffpumpe wird abgeschaltet, das Brennstoff-Magnetventil schließt sich. Die Brennstoffzufuhr und damit der Verbrennungsvorgang ist abgebrochen. Der Elektromotor für das Verbrennungsluft- und Frischluftgebläse läuft weiter, bis der Wärmeaustauscher auf etwa 40° C abgekühlt ist und die Brennkammer sowie der Wärmeaustauscher von Restgasen freigeblasen sind. Der Wärmefühler des Thermoschalters schaltet dann den Elektromotor aus. Die Kontroll-Lampe im Knopf des Schubschalters erlischt. Die Heizung ist außer Betrieb und kann von neuem eingeschaltet werden.

Brennstoff gefördert aber nicht gezündet wird. Das Ende der Nachlaufperiode wird durch das Erlöschen der Kontroll-Lampe im Schubschalter angezeigt.

Einschalten der Lüftung

Knopf des Doppel-Schubschalters bis zur ersten Rastenstellung herausziehen. Kontroll-Lampe leuchtet sofort auf.

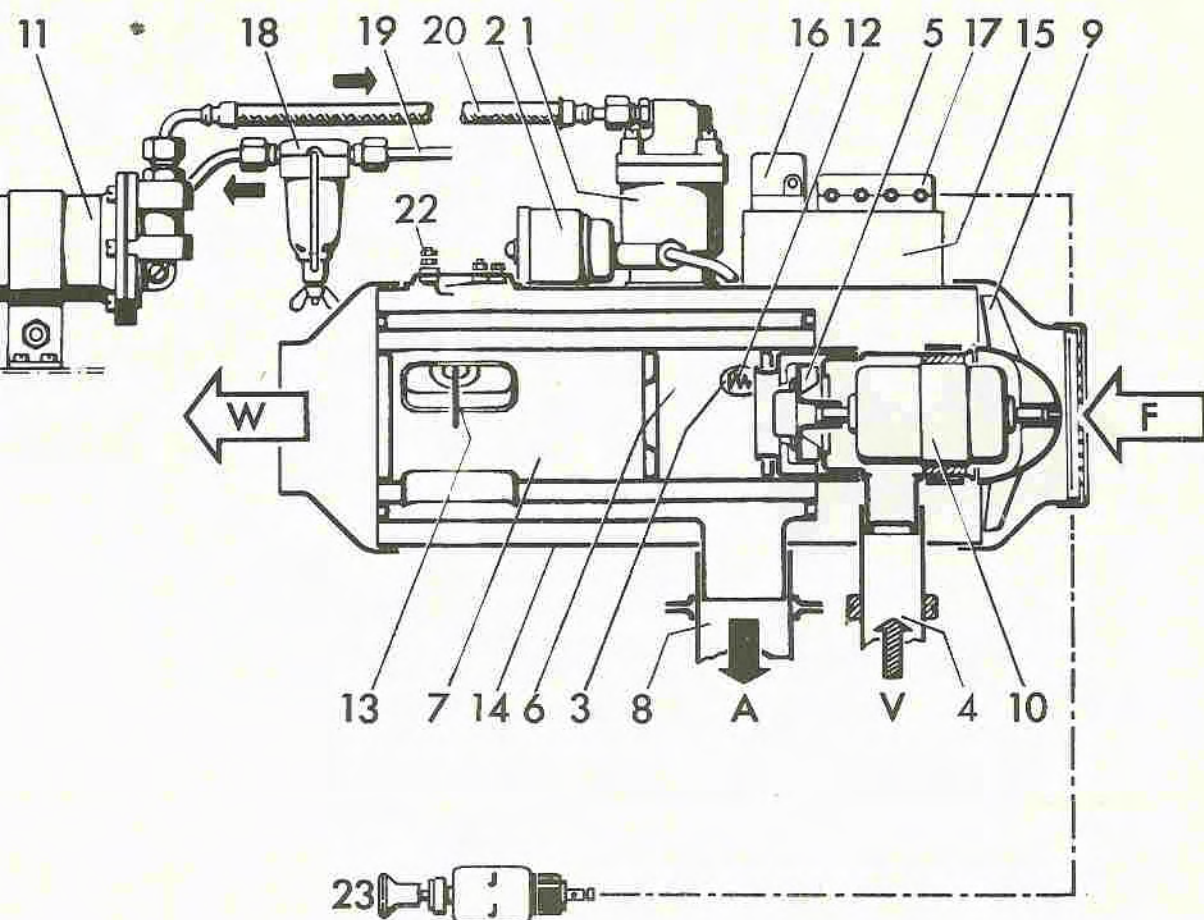
Ausschalten der Lüftung

Knopf des Doppel-Schubschalters in seine Ausgangsstellung zurückschieben. Kontroll-Lampe erlischt sofort.

Klemmen der elektrischen Anschlüsse auf festen Sitz prüfen.

Nach Bedarf:

Bei Schmutz und Schneebewurf gelegentlich Ansaug- und Abgasrohr auf sauberen Durchgang kontrollieren.



- | | |
|---------------------------|--------------------------------|
| W – Warmluft | 9 Frischluftgebläse |
| A – Abgase | 10 Elektromotor |
| V – Verbrennungsluft | 11 elektr. Brennstoffpumpe |
| F – Frischluft | 12 Glühkerze |
| 1 Brennstoffregler | 13 Thermoschalter |
| 2 Brennstoff-Magnetventil | 14 Mantel |
| 3 Vorkammer | 15 Schalttafel |
| 4 Luftansaugrohr | 16 Sicherungsdose |
| 5 Verbrennungsluftgebläse | 17 Kabelverbindungsklemme |
| 6 Brennkammer | 18 Brennstoff-Durchgangsfilter |
| 7 Wärmeaustauscher | 19 Brennstoff-Saugleitung |
| 8 Abgasrohr | 20 Brennstoff-Druckleitung |
| | 22 Überhitzungsschalter |
| | 23 Schubschalter |

TYP B 2

Geräte-Nr. 20 8515 00 00 00 (6 Volt)
20 8516 00 00 00 (12 Volt)
20 8517 00 00 00 (24 Volt)

J. EBERSPÄCHER
7300 ESSLINGEN
EBERSPÄCHERSTRASSE 24
RUF ESSLINGEN SAMMEL-NR. 3 51 91
TELEGRAMM:
EBERSPÄCHGLAS ESSLINGENNECKAR
FERNSCHREIBER 07-21 420

Allgemeines

Das Eberspächer Heiz- und Lüftungsgerät B 2 ist vorzugsweise in den Motorraum des Fahrzeuges einzubauen; es kann aber auch in jeden anderen Raum außerhalb des Fahrerhauses oder des Fahrgastraumes aufgestellt werden. Dieser Raum muß jedoch unbedingt mit der Außenluft Verbindung haben, damit die für den Betrieb der Heizung notwendige Frischluftmenge vorhanden ist. Der Frischlufteintritt des Einbauraumes muß so liegen, daß die Heizung keine Abgase ansaugt.

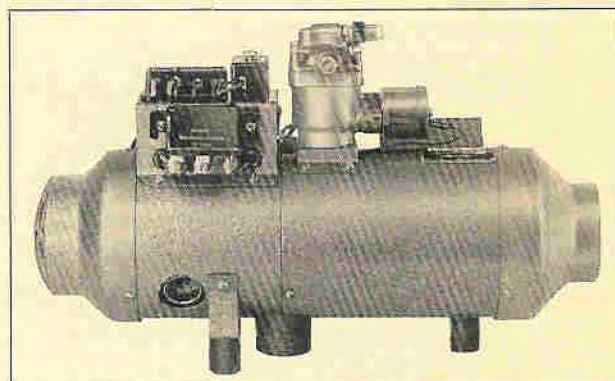
Das Gerät darf nur in waagrechtter Lage eingebaut werden.

Ausströmorgane zum Verteilen der Warmluft kann das Einbauwerk nach eigenem Ermessen anfertigen und an den Warmluftaustritt anschließen. Um den erforderlichen Luftdurchsatz zu gewährleisten, darf der Mindestquerschnitt von 36 cm² als Austrittsquerschnitt der Ausströmorgane nicht unterschritten werden.

Beim Einbau des Heizgerätes in einen von Personen benützten Raum ist die Verbrennungsluft-Zuleitung (Luftansaugrohr) und die Abgasleitung (Abgasrohr) absolut dicht durch die Trennwand nach außen zu führen. Dazu werden für das Abgasrohr 2 Abdichtscheiben mit Asbestschnurpackung oder ein Silikonring und für das Luftansaugrohr eine Gummitülle verwendet. Das Luftansaugrohr und das Abgasrohr müssen mit ihrer Ein- bzw. Austrittsöffnung in gleich großen Luftdruckgebieten liegen. Es darf sich an diesen Rohröffnungen kein unterschiedlicher Druck aufbauen, da sonst die Verbrennung im Innern der Heizung gestört würde.

Am Abgas- und Luftansaugrohr dürfen ohne Rücksprache mit dem Herstellerwerk keinerlei Veränderungen vorgenommen werden. Sonst wird für die einwandfreie Funktion des Heizgerätes keine Gewähr übernommen.

Für längeren Betrieb der Heizung bei stillstehendem Fahrzeug kann an das Abgasrohr die vom Herstellerwerk lieferbare 3 m lange Abgas-Abführung angeschlossen werden.



Die Bohrungen zum Befestigen der Heizung und zum Durchführen von Abgas-, Luftansaugrohr und Entlüftungsleitung sind nach Bohrplan anzuzeichnen und zu bohren. Zum Anschrauben der Heizung sind die Metallgummipuffer mit Sacklochgewinde (M 6–6,5 mm tief) versehen. Befestigungsschrauben auf genaue Länge abstimmen.

Brennstoffversorgung

Vor dem Einbau der Heizung ist zu klären, in welcher Weise die Brennstoffversorgung der Heizung möglich ist. Sie ist abhängig von der Lage des Fahrzeug-Brennstoffbehälters (Benzintank), von der Lage der Heizung und vom Betriebsstoff des Fahrzeuges.

Es ergeben sich vier Möglichkeiten zur Brennstoffversorgung:

- 1. Direkt aus dem Fahrzeugtank (Fallbenzin).**
Unterkannte des Fahrzeugtanks muß dabei höher liegen als das Zulaufrohr zum Brennstoffregler.
- 2. Aus dem Fahrzeugtank mittels elektrischer Brennstoffpumpe.**
Wenn kein natürliches Gefälle vom Fahrzeugtank zum Brennstoffregler der Heizung vorhanden ist.
- 3. Mittels Fallbenzin aus einem zusätzlichen Brennstoffbehälter.**
Dies wird erforderlich, wenn kein Benzin für den Fahrzeugmotor verwendet wird.
- 4. Mittels elektrischer Brennstoffpumpe aus einem zusätzlichen Brennstoffbehälter.**
Dies ist notwendig, wenn die Lage des zusätzlichen Brennstoffbehälters kein natürliches Gefälle zum Brennstoffregler aufweist.

Es ist unbedingt erforderlich, das Benzin vor Eintritt in den Brennstoffregler durch ein Filter zu führen.

Hat der Entnahmetank kein Auslaßventil, dann ist ein DurchgangsfILTER Bestell-Nr. 20 8478 07 07 00 zwischen die Brennstoffzuführungsleitung einzubauen.

Beim Verlegen der Brennstoffleitungen ist zu beachten, daß diese nicht über die Schalttafel der Heizung oder in deren unmittelbare Nähe zu liegen kommen.

Das Entlüftungsrohr des Brennstoffreglers (Überlaufleitung) ist aus dem Einbauraum der Heizung nach unten ins Freie herauszuführen und durch eine Gummitülle gegen diesen abzudichten.

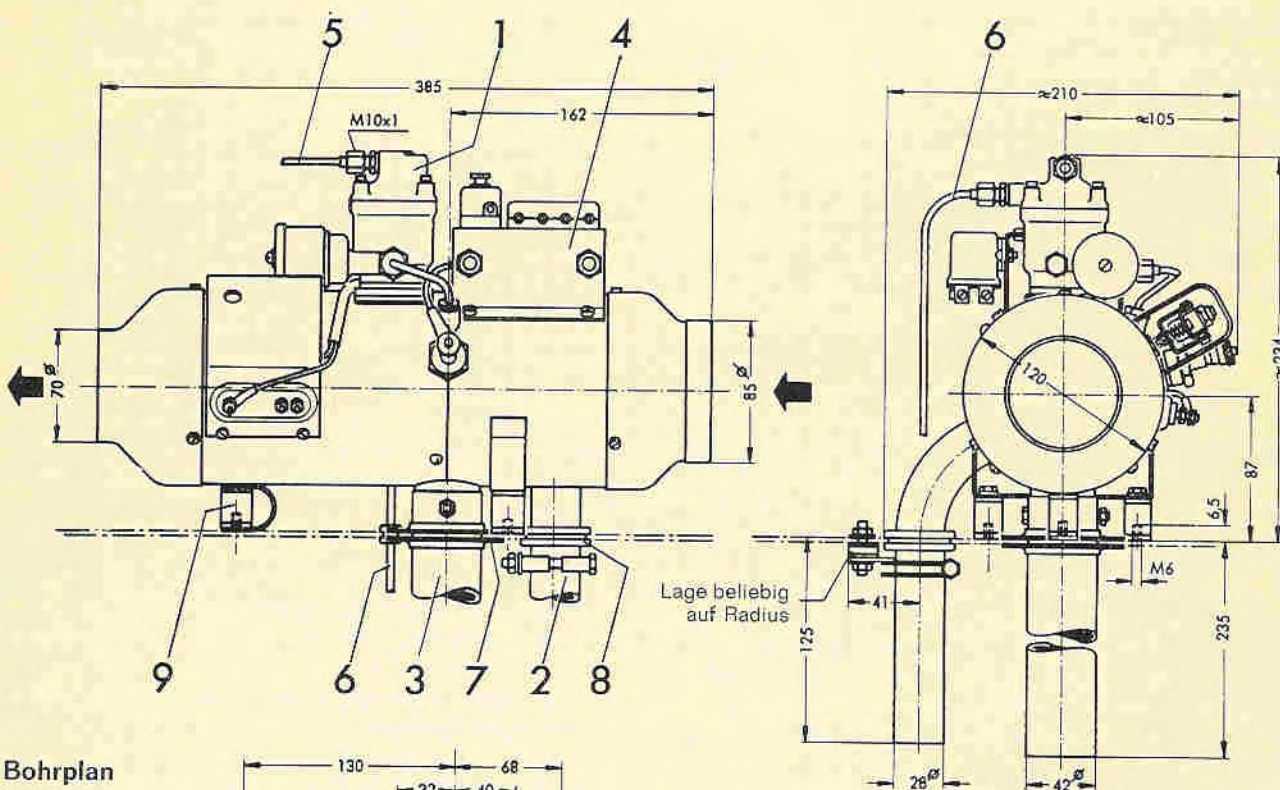
Garantie

Eine einwandfreie Funktion des Heizgerätes ist nur gewährleistet, wenn die Warmluftleitungen und Luftaustrittsöffnungen den festgelegten Vorschriften entsprechen, sowie das Verbrennungsluft-Ansaugrohr und das Abgasrohr unverändert eingebaut sind.

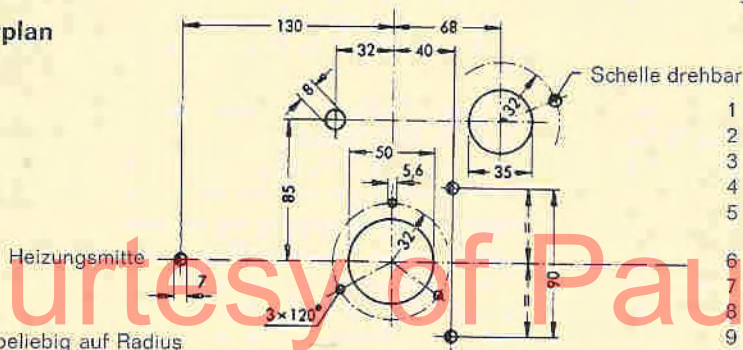
Wird beim Einbau in den oben angeführten Punkten abgewichen, muß eine Zustimmung und Freigabe durch die Herstellerfirma vorliegen.

Nur bei genauer Beachtung der Einbau- sowie Bedienungsvorschriften kann die in den Lieferbedingungen genannte Garantie gewährt werden.

Einbauzeichnung



Bohrplan



Lage beliebig auf Radius
Löcher 5,6 Ø entfallen bei Silikonring
Bohrung 54 Ø statt 50 Ø

- 1 Brennstoffregler
- 2 Luftansaugrohr
- 3 Abgasrohr
- 4 Schalttafel
- 5 Zulaufrohr zum Brennstoffregler (Druckleitung)
- 6 Entlüftungsleitung
- 7 wahlweise: Abdichtscheiben oder Silikonring
- 8 Gummitülle für Luftansaugrohr
- 9 Metall-Gummipuffer

Der Doppel-Schubschalter ist in Griff. Bei Durchführung der Kabel durch Wände

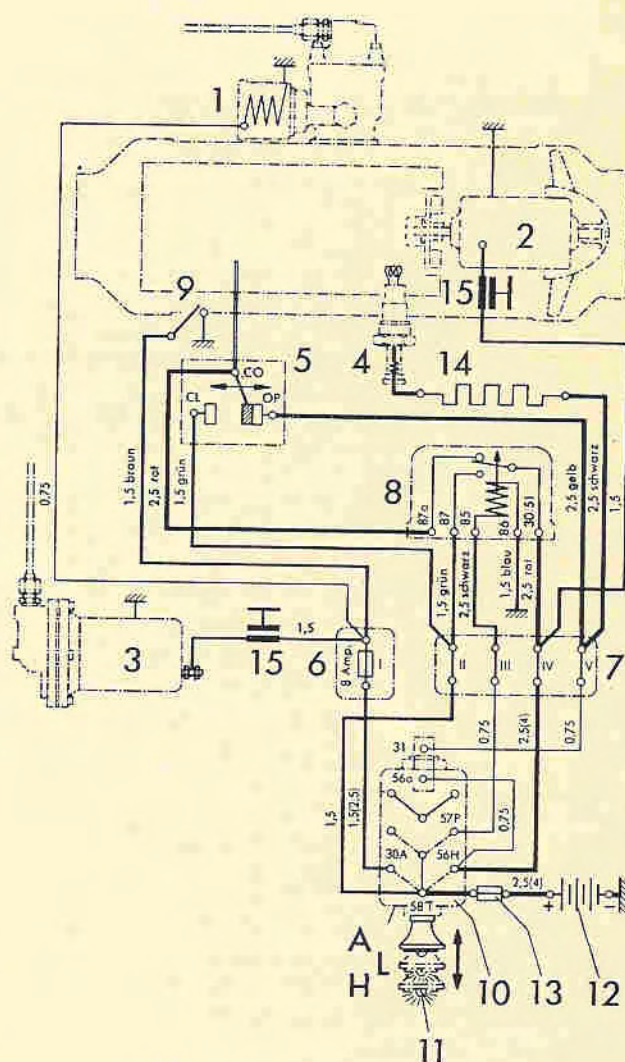
Bei Durchführung der Kabel durch Wände sind Gummithüllen gegen Durchscheuern der Kabel vorzusehen.

Das Masseband ist durch Blankmachen der Befestigungsstelle in direkte Verbindung mit der Masse des Fahrzeuges zu bringen.

- 1 Brennstoff-Magnetventil
- 2 Elektromotor
- 3 Elektrische Brennstoffpumpe
- 4 Glühkerze
- 5 Thermo­schalter
 kalt: CO — OP
 warm: CO — CL
- 6 Sicherungsdose mit Sicherung 8 Amp.
- 7 Kabelverbindungsklemme
- 8 Schaltschütz
- 9 Überhitzungsschalter
 kalt: offen
 zu warm: schließt
- 10 Doppel-Schub­schalter
- 11 Kontrolllampe 6, 12 oder 24 Volt
- 12 Batterie 6, 12 oder 24 Volt
- 13 Sicherung 25 Amp.
- 14 Vorschaltwiderstand
 (nur bei 12 oder 24 Volt)
- 15 Entstörkondensator
 (nur bei UKW-Betrieb)

A — Aus
L — Lüftung
H — Heizen

() Werte für Kabel über 2 m Länge



Courtesy of Paul Cooper

TYP B 2

Geräte-Nr. 20 8515 (6 Volt)
 20 8516 (12 Volt)
 20 8517 (24 Volt)

J. EBERSPÄCHER
 7300 ESSLINGEN
 EBERSPÄCHERSTRASSE 24
 RUF ESSLINGEN SAMMEL-NR. 351
 TELEGRAMM:
 EBERSPÄCHGLAS ESSLINGEN-NEC
 FERNSCHREIBER 07-23584

1 Heizgerät		
1 Ansaugrohr		20 8515 08 00 12
1 Abgasrohr		20 8460 02 00 16
1 Rohrleitung	für Überlaufleitung	20 8518 06 00 19
1 Flachbeutel,		
enthaltend:		10 2012 00 00 08
1 Schubschalter	6 Volt	20 8515 17 04 00
	12 Volt	20 8516 17 04 00
	24 Volt	20 8517 17 04 00
1 Schild für Schubschalter		20 8515 17 00 30
1 Dichtschnur		20 8515 09 00 08
2 Abdichtscheibe		20 8515 09 00 07
2 Überwurfmutter		2/3 M 10 x 1 DIN 7606
2 Dichtkegel		B 3 DIN 7608
1 Rohrschelle, vollst.		20 8515 08 01 00
1 Metallgummipuffer		20 8460 03 00 54
1 Tülle		20 8456 10 00 03
1 Flachbeutel,		
enthaltend:		10 2012 00 00 02
1 Überwurfmutter		Ermeto m 5 - LL
1 Schneidring	für Überlaufleitung	Ermeto d 5 - LL
1 Tülle		20 8515 12 00 33
2 Sechskantmutter		M 6 DIN 934
2 Federring	für Ansaugrohr	B 6 DIN 127
1 Sechskantschraube		M 5 x 50 DIN 931
1 Sechskantmutter	für Abgasrohr	M 5 DIN 934
1 Federring		B 5 DIN 127
1 Klarsichtbeutel,		
enthaltend:		
1 Betriebsanleitung	A 51	
1 Einbauanleitung	B 51	
1 Schablone		
1 Garantiekarte		
1 Auslieferungsliste		

Courtesy of Paul Cooper

HEATER NO. 8515/6 - 8516/12

Page 1 of 7

SPARE PARTS

ITEM	PIECE PER UNIT	DESIGNATION	NO.
	1	Envelope, compl. containing:	8515.01
1	1	Front envelope, compl.	8515.01-U01
2	1	Back envelope, compl.	8515.01-U02
3	3	Metal rubber puffer with threaded piece	8515.01-25
	1	Grommet	8456.01-26
4	1	Copper grounding strap, plaited	8460.01-24
	3	Oval-Head screw	AM 4x8 DIN 86
	3	Spring ring	B 4 DIN 127
	3	Hexagon screw	M 6x8 DIN 933
	3	Spring Ring	B 6 DIN 127
	1	Heat exchanger	8515.02
5	1	Inlet valve hood containing:	8515.03 (oZ)
	1	Fresh air nozzle	8456.01-11
	3	Cylinder self-tapping screw	BZ 3, 5x6,5 DIN 7971
6	1	Outlet hood containing:	8515.04 (oZ)
	3	Cylinder self-tapping screw	BZ 3, 5x6,5 DIN 7971
	1	Fuel regulator compl. containing:	8515.05
7	1	Fuel regulator case	8460.14-01
8	1	Float with lever	8515.05-14
9	1	Bearing Pin	8460.14-05
10	1	Locking screw	8460.14-06

Courtesy of Paul Cooper

HEATER NO. 8515/6 - 8516/12

Page 2 of 7

SPARE PARTS

ITEM	PIECE PER UNIT	DESIGNATION	NO.
11	1	Fuel nozzle	8515.05-08
	1	Screw connecting piece	8450.04-33
	1	Gasket ring	A 8x12 DIN 760
	2	Hexagon screw	M 5x7 DIN 933
	2	Toothed disk	A 5,3 DIN 6797
	1	Gasket ring 11,1 mm Ø-int.	15 mm Ø, 1 mm thickness
12	1	Cover for fuel regulator	8460.14-02
13	1	Float needle valve	8460.14-12
14	1	Screwing with filter	8515.05-U02
15	1	Screw connecting piece	8515.05-29
16	1	Filter insert	8542.04-03
17	1	Threaded piece	8542.04-02
	1	Gasket ring	A 8x12 DIN 7603
	1	Gasket ring	A 12 x 16 DIN
	1	Threaded pin	GE 5 -LLM
18	1	Gasket	8460.14-23
	1	Mounting base	8515.05-39
	4	Hexagon screw	M 5x22 Sz DIN
	4	Spring washer	A 5 DIN 137
	4	Cylinder self-tapping screw	BZ 3,5x6,5 DIN
	1	Cap nut	2/3 M 10x1 DIN
	1	Stuffing cone	B 3 DIN 7608

Courtesy of Paul Cooper

EBERSPACER - HEATERHEATER NO. 8515/6 - 8516/12

Page 3 of 7

SPARE PARTS

ITEM	PIECE PER UNIT	DESIGNATION	NO.
19	1	Connecting pipe to the burner	8515.06-U01
20	1	Overflow-Pipe	8518.06-U03
	1	Grommet	8515.12-33
	1	Cap nut	m 5 - LL
21	1	Thermo switch containing:	8470.21
22	1	Switch bearing, compl.	8470.20-U0X
23	1	Micro-Switch	BZ - 2R - A
24	1	Adjusting bearing	8470.20-07
25	1	Flat Spring	8470.20-08
26	1	Pressure spring	8470.16-12
27	1	Quartz bar 3, 4 mm Ø	8456.09-25
28	1	Stuffing cone	8450.09-10
29	1	Cap nut	8450.03-33
	1	Fillister head screw	CM 3,5x30 DIN 85
	1	Fillister head screw	CM 3,5x25 DIN 85
	2	Disk	3,7 DIN 433
	2	Toothed disk	J 3,7 DIN 6797
	2	Hexagon nut	M 3,5 DIN 934
	1	Fillister head screw	CM 4x22 DIN 85
	1	Disk	4,3 DIN 433
30	1	Suction pipe, compl. containing:	8515.08
	1	Pipe clamp, compl	8515.08-U01

Courtesy of Paul Cooper

HEATER NO. 8515/6 - 8516/12

Page 4 o

SPARE PARTS

ITEM	PIECE PER UNIT	DESIGNATION	NO.
	1	Hexagon screw	M 6x48 DIN
	1	Hexagon nut	M 6 DIN 934
	1	Disk	6,4 DIN 125
	1	Spring ring	B 6 DIN 127
	1	Metal rubber puffer	8460.03-54
	1	Grommet	8456.10-03
	2	Hexagon nut	M 6 DIN 934
	2	Spring ring	B 6 DIN 127
31	1	Exhaust gas tube, compl. containing:	8515.09 (oZ
	1	Exhaust gas tube	8460.02-16
32	2	Packing disk	8515.09-07
	1	Tightening string	8515.09-08
	1	Hexagon screw	M 5x50 DIN
	1	Hexagon nut	M 5 DIN 934
	1	Spring ring	B 5 DIN 127
	1	Combustion air fan 6 volt	8542.03
	1	Combustion air fan 12 volt	8516.13
33	1	Case for guide blades	8456.03-U01
34	1	Radial wheel, compl.	8542.03-U02
	1	Threaded pin	M 4x5 DIN 4
-36	1	Motor bearing cage, compl.	8542.03-U03
37	1	Electric motor 6 volt	8542.03-25
	1	Electric motor 12 volt	8516.13-130

Courtesy of Paul Cooper

SPARE PARTS

ITEM	PIECE PER UNIT	DESIGNATION	NO.
38	1	Clamping clip	8542.03-26
39	1	Rubber tape	8542.03-27 (o2
	2	Covering tongue	8542.03-28
40	1	Axial wheel	8542.03-29
	1	Grommet	8542.03-32
	1	Socket	8542.03-24
	3	Oval-Head screw	M 4x8 DIN 86
	1	Hexagon screw	M 5x18 DIN 933
	1	Hexagon nut	M 5 DIN 934
	1	Spring ring	B 5 DIN 127
	3	Spring ring	A 4 DIN 127
	1	Switchboard, compl. 6 volt	8515.14
	1	Switchboard, compl. 12 volt	8516.14
41	1	Intermediate resistance 12 volt	8516.14-U02
42	1	Relay 6 volt	8515.14-07
	1	Relay 12 volt	8516.14-07
	1	Chassis	8515.14-03
	6	Grommet	8362.02-34
43	1	Fuse box, unipolar	1 DIN 72 582
44	1	Connecting board	A 4 DIN 72 586
	2	Cylinder self-tapping screw	BZ 3,9x19 DIN
	2	Cylinder self-tapping screw	BZ 4,8x13 DIN
	2	Oval-Head screw	AM 4x8 DIN 86

Courtesy of Paul Cooper

HEATER NO. 8515/6 - 8516/12

Page 6 of 7

SPARE PARTS

ITEM	PIECE PER UNIT	DESIGNATION	NO.
	2	Hexagon nut	M 4 DIN 934
	2	Spring ring	B 4 DIN 127
	4	Cylinder self-tapping screw	BZ 3,5x6, 5 DI
45	1	Magnetic valve 6 volt	8515.16
	1	Magnetic valve 12 volt	8516.16
46	1	Valve	8450.04-U04
47	1	Valve guide	8515.16-U02
48	1	Coil, compl. 6 volt	8515.16-U03
	1	Coil, compl. 12 volt	8516.16-U03
	1	Cage	8515.16-25
49	1	Pressure spring	8440.04-29
	1	Cover	8515.16-27
	1	Gasket	8450.04-31
	4	Oval-Head screw	AM 3x6 k DIN 7
	1	Oval-Head screw	AM 4x6 DIN 86
	1	Toothed disk	J 4,3 DIN 6797
	1	Cable protecting case	HSK 723
	1	Safety switch containing:	8515.17-U03
50	1	Cage	8515.17-11
51	1	Elongation spring, compl.	8450.09-U06
52	1	Contact spring, compl.	8450.09-U07
53	1	Insulating washer	8450.09-51
54	1	Insulating washer	8450.09-52

Courtesy of Paul Cooper

HEATER NO. 8515/6 - 8516/12

Page 7 of 7

SPARE PARTS

ITEM	PIECE PER UNIT	DESIGNATION	NO.
	1	Threaded piece	8450.09-48
	1	Fillister head screw	AM 4x10 DIN 85
	1	Fillister head screw	CM 4x20 DIN 85
	2	Disk	4,3 DIN 125
	4	Toothed disk	J 4,3 DIN 6797
	4	Hexagon nut	M 4 DIN 934
	1	Threaded pin	M 4x10 DIN 551
	4	Cylinder self-tapping screw	BZ 3,5x6,5 DIN
55	1	Heater plug	HSK 624
56	1	Board switch 6 volt	8515.17-29
	1	Board switch 12 volt	8516.17-29
57	1	Through-Way filter	8478.07-32
	2	Cup nut	4 M 12x1,5 DIN
	1	Stuffing cone	B 4 DIN 7608
	1	Connecting stuffing cone	B 4/3 DIN 7609
58	1	Resistance for heater plug 6 volt (for 8515/6)	8478.12-06
	1	Resistance for heater plug 12 volt (for 8516/12)	8456.12-62
	1	Insulating hose, without tissue, 120 long	8515.15-34 (oZ)
59	1	Electric fuel pump (to indicate voltage)	8541.16-01
	2	Cap nut	2/3 M 10x1 DIN
	2	Stuffing cone	B 3 DIN 7608
60	1	Holder for pump	8546.07-27

Courtesy of Paul Cooper