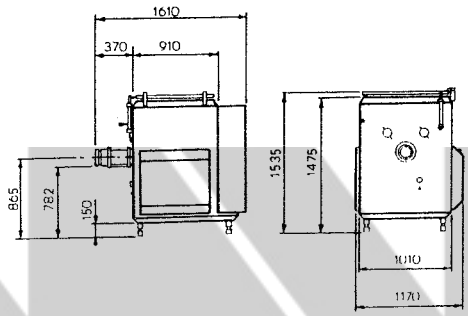
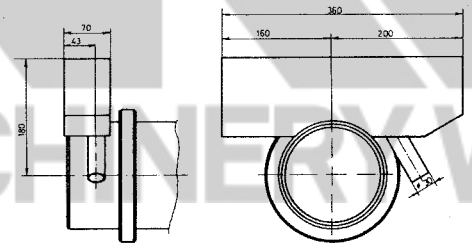
Valiant
VOLFKING

DIRECTIONS FOR USE

WALIANT
TSMG 400/140



BES



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IMPORTANT !

REMEMBER TO SWITCH OFF ALL ELECTRICAL AND AIRPRESSURE CONNECTIONS WHEN TAKING APART AND ASSEMBLING THE MACHINES.

Industrivej 2 . DK 4200 Slagelse . Denmark . Phone: *(03) 52 25 02 . Telex: 4 53 76 . Cable: Wolfking . Reg. No. 62.905

PREFACE

The present instruction manual is for the sake of clarity and easy perception made brief and concice. Should you nevertheless encounter any problems, we will always be at your service with any piece of advice or guidance you need.

If any defects on the machine are detected before starting up, notice should immediately be given to the dealer or to WOLFKING DANMARK A/S. By all applications the serial number of the machine should be stated.

Any possible claim should promptly and in writting be forwarded to WOLFKING DANMARK A/S stating the cause and nature of the claim.

GUARANTEE

WOLFKING DANMARK A/S guarantee against faulty material and manufacturing defects of the equipment supplied. This guarantee is to be counted from the date of dispatch and for a period as follows:

12 months when working in one shift
6 months when working in two shifts
4 months when working in three shifts

The guarantee for complete parts supplied by sub-supplier and mounted in the equipment is the same as granted WOLFKING DANMARK A/S by the sub-supplier.

The liability of WOLFKING DANMARK A/S only covers defects arising under operation conditions of which WOLFKING DANMARK A/S have been informed prior to the purchase and then only when the equipment is used in a proper way. WOLFKING DANMARK A/S` liability is automatically waived when non-original wearing parts (e.g. knives and holeplates) and spare parts are used.

The guarantee does not cover consequential damages due to lack of maintenance and wrongful repair caused by the customer. Furthermore, it does not cover general wear and tear.

The guarantee only applies when using ordinary and well-known chemical substances and cleaning materials in concentrations normally used.

QUALITY CONTROL

All products manufactured by WOLFKING DANMARK A/S are being carefully examined and standard test-runs are carried out at the factory before shipment. A control-certificate is enclosed in all shipments.

WOLFKING DANMARK A/S reserve the right to make any alteration of the constructions.

WOLFKING DANMARK A/S

INTRODUKTION/
INTRODUCTION
GARANTIBESTEMMELSER/
CONDITIONS OF WARRANTY

INSTALLATION
OPSTART/START-UP

VEDLIGEHOLDELSE/
MAINTENANCE

MASKINRESERVEDELE
OG -TEGNINGER/
MACHINE SPARE PARTS
AND DRAWINGS

ELEKTRISKE RESERVEDELE
OG DIAGRAMMER/
ELECTRICAL SPARE PARTS
AND DIAGRAMS

I N S T R U K T I O N S B O G / I N S T R U C T I O N M A N U A L

MASKINTYPE/MACHINE TYPE: Waliant TSMG 400/140 - BES

Tekniske data/Technical data:

Maskinnr./Machine No. 52499 Byggeår/Year: 87

Vægt/Weight: 850 kg Dimension LxBxH/LxWxH: 1600 x 1200 x 1550

Transmissioner/Transmissions: Grinder

Motor nr./Motor No. 860822/86

Fabrikat/Make: Leomotor kW 1430 o/min./r/min.

Y 380 Volt 17.5 Amp Δ 660 Volt 10 Amp

50 Hz/cycles 3 x CU□ mm + jord/earth 6 x CU□ mm + jord/earth

Gear type: _____ No: _____ Udveksling/Ratio 1: _____

Motorremskive/Motor pulley: 26 H 300

Gearremskive/Gear pulley: 96 H 300

Remme/belts: _____ pcs. Type: 540 H Længde/length: _____

Motor nr./Motor No. 270236/85 Mixer

Fabrikat/Make: Sever 1/1.9 kW 710/1410 o/min./r/min.

Y 380 Volt 4 Amp YY 380 Volt 3.7 Amp

50 Hz/cycles 3 x CU□ mm + jord/earth 6 x CU□ mm + jord/earth

Gear type: RAO 35/SC No: 85271841 Udveksling/Ratio 1: 21.6

Motorremskive/Motor pulley: 63/2

Gearremskive/Gear pulley: 160/2

Remme/belts: 2 pcs. Type: SPZ Længde/length: 825

Motor nr./Motor No. 334555/86

Fabrikat/Make: Sever 1/1.9 kW 710/1410 o/min./r/min.

Y 380 Volt 4 Amp YY 380 Volt 3,7 Amp

50 Hz/cycles 3 x CU□ mm + jord/earth 6 x CU□ mm + jord/earth

Gear type: RAO No: 85271841 Udveksling/Ratio 1: 21.6

Motorremskive/Motor pulley: 63/2

Gearremskive/Gear pulley: 160/2

Remme/belts: 2 pcs. Type: SPZ Længde/length: 825

Elspecifikationer/Electrical specifications:

Styrepanel nr./Control panel No. _____

Tilledning/Supply: 3 x _____ V _____ Hz/cycles + jord/earth

4 x CU□ _____ mm Forsikring/fuse: _____ Amp

Indbygget hovedafbryder/Built-in main switch: 3 x _____ Amp

Denne maskine, ordre nr./This machine, order No. 27375
er afprøvet og godkendt/has been tested and approved.

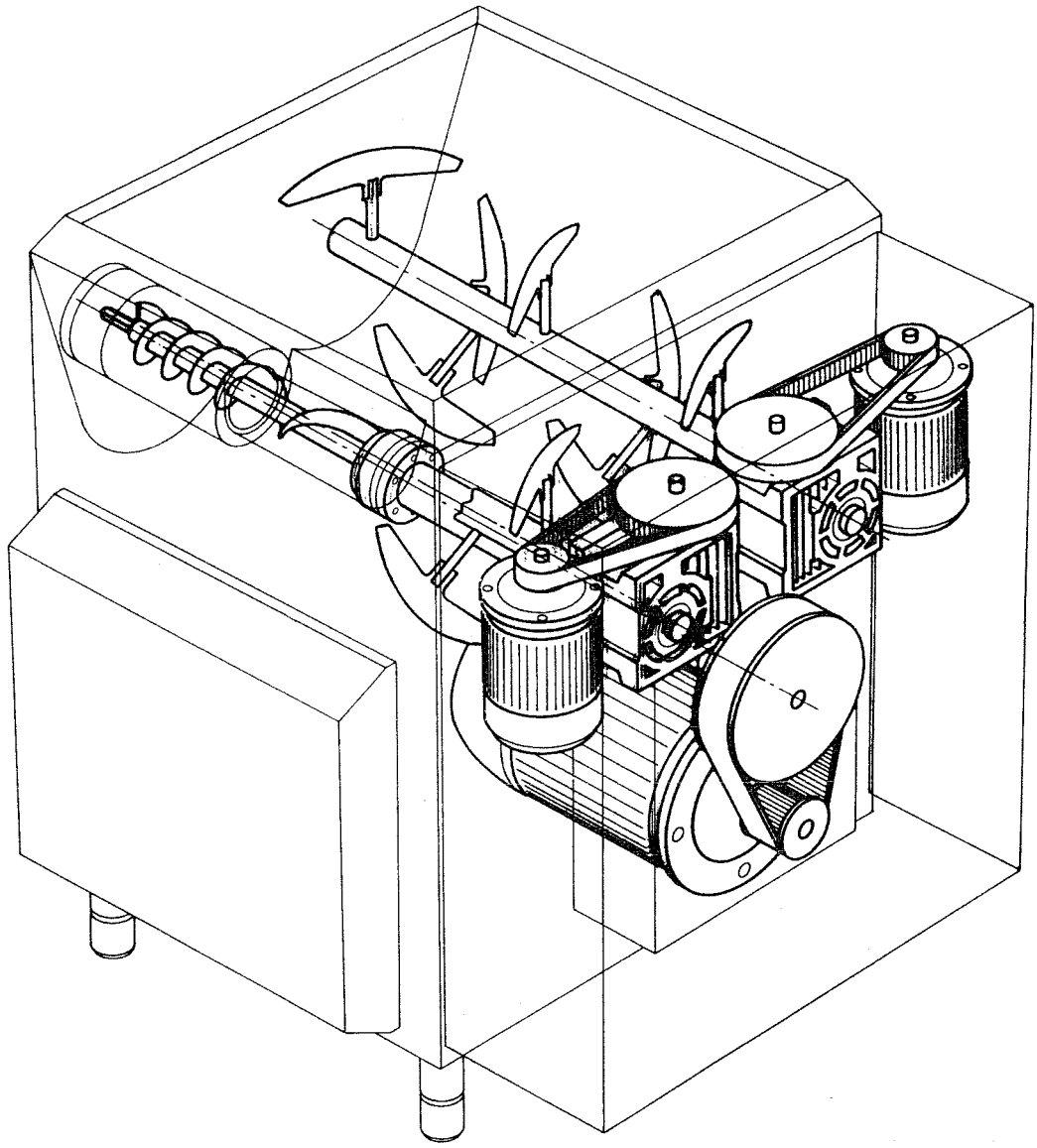
Prøvemester/Tested by

12/2-87
Dato/Date

WOLFKING
DANMARK A/S
DK 4200 Slagelse . Denmark

MIXER/GRINDER

WALIANT



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WOLFKING
DANMARK A/S
DK 4200 Slagelse . Denmark

DATA

MIXER/GRINDER

WALIANT

BASIC CONSTRUCTION

	Stainless steel 18/8 SIS 2333
	ASTM 304 Werkstoff 1.4301
Legs	Polyamide 6/6

MIXER UNIT

Mixer volume gross	400 litres
Mixer charge	max. 200 kgs
Mixing wing speed	26/13 rpm, reversible at 50 cycles
	30/15 rpm, reversible at 60 cycles

GRINDER UNIT

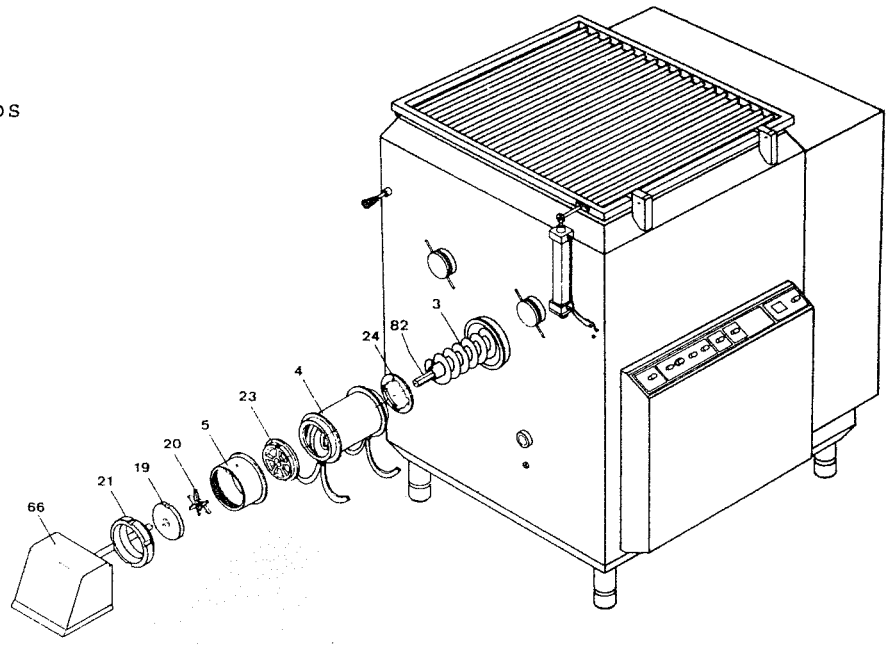
Knife and plade dia.	140mm, WOLFKING standard
Grinder worm speed (Waliant)	200 rpm, reversible at 50 cycles
	240 rpm, reversible at 60 cycles
Grinder worm speed (Waliant Varispeed)	47-284 rpm, reversible at 50 cycles
	57-341 rpm, reversible at 60 cycles
Grinder capacity	approx. 800 kgs/hour (with 4mm holeplate)

POWER CONSUMPTION

Grinder	7.5 kW
Mixer	2 x 1,6/1,1 kW
Motor norm	IEC
Protection class	IP 55
Stand-by consumption	20 Watts
Control voltage	24 volts AC
Power connection	25 Amp. earthed 3-phase power plug
Dimensions L x W x H	1600 x 1165 x 1540
Weight	Approx. 750 kgs

WOLFKING DANMARK A/S DK 4200 Slagelse . Denmark	KNIFE-SET MIXER/GRINDER	WALIANT

3 = worm
82 = worm pin
4 = lining with clamps
5 = knife-housing
19 = holeplate
20 = cutknife 6 bl.
21 = screw cap
23 = pre-cutter
24 = breaker plate
66 = Safety guard set



Both by storage and by mounting knives, holeplates and the screw cap threading should be clean and greased with an approved grease or oil.

Always let the same knife and holeplate go together in one set between two surface grindings. If you change between different knives and holeplates damage will occur.

Knives and holeplates should be turned so that the WOLFKING name can be seen from the outside. The arrow on the edge of the holeplate should point outwards.

Make sure that knifeedges and holeplate fit tightly together. If necessary, lift the worm pin in order to push the hub of the knife into place with a distinct snap.

The screw cap is tightened with a wrench.

The direction of rotation of the worm and knives should be counter clockwise when seen from the front of the machine.

The thickness of the knives may differ max. 0.03mm (0.001") after sharpening.

REASSEMBLY OF THE CLEANED MACHINE

1. The worm (3) is lead into place by the square shaft journal. It should be turned until it is placed correctly.
2. The breaker plate (24) is mounted on the lining (4) provided with a guide pin for same. This is then fastened to the cabinet by the clamp so that the breaker plate is fixed between lining and cabinet.
3. The fixed pre-cutter (23) is mounted in the innermost part of the knife-housing (5) whereupon this is mounted on the lining by the clamp.
4. Then follows knife (20) and holeplate (19). Finally the screw cap is mounted (21).
5. If the holeplate is larger than 13mm, the safety guard with limit switch (66) is required.

WOLFKING DANMARK A/S DK 4200 Slagelse . Denmark	MOUNTING INSTRUCTION MIXER/GRINDER	WALIANT

1. When a forklift truck is used for lifting the machine it must not be done from the sides, and it must be ensured that the forks bear against the bottom frame.

2. Do never lift the machine by the worm.

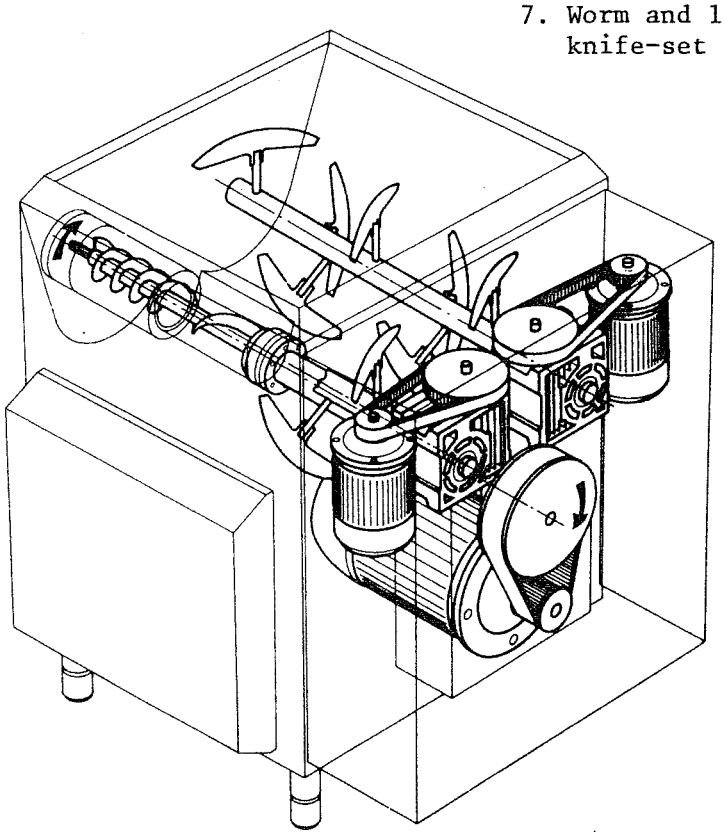
3. While the machine is lifted, the four adjustable legs are mounted with the enclosed M10x50 screws.

4. The machine should be mounted with a decline of approx. 1% towards the outlet end. Make sure that the weight is evenly distributed on the four legs.

5. Dismount knife-set and worm. The electrical connexion to the socket should be made so that the direction of rotation of the worm is clockwise seen from the gear end, that is counter clockwise when seen from the outlet end, when the switch for the grinder is turned in forward position.

6. Avoid running the machine without any material when worm and knife-set are mounted

7. Worm and lining are mounted followed by the knife-set as described.

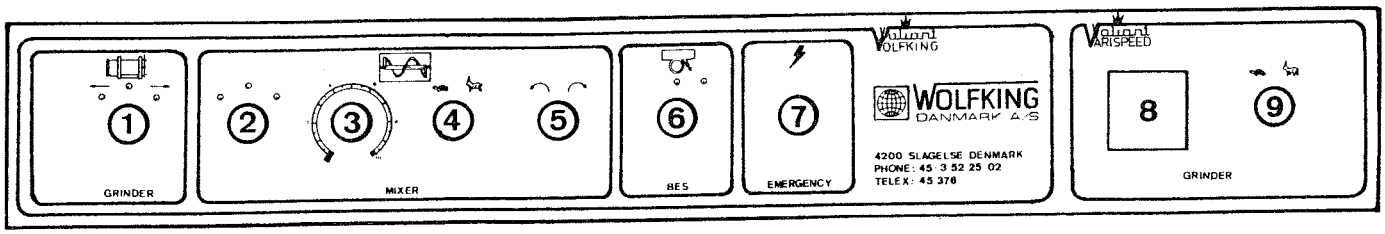


WOLFKING
DANMARK A/S
DK 4200 Slagelse . Denmark

OPERATION INSTRUCTION

MIXER/GRINDER

WALIANT



GRINDER

Grinder forward: Turn pos. 1 counter clockwise.
During the grinder operation it is possible to choose between either high or low mixing wing speed by activating pos. 4 and the direction of the right mixing wing can be chosen by activating pos. 5.

Grinder stop: Turn pos.1 back to red mark.

Grinder reverse: Turn pos.1 clockwise.
To prevent knives and holeplates being damaged the time of reversing is pre-set to 1 - 2 sec.

Grinder speed: If the grinder is equipped with varispeed motor, the grinder speed (worm speed) can be regulated by pos.9. The actual worm speed is shown on the display pos.8.

MIXER

Mixing programme start: Turn pos.2 clockwise.

Mixing programme stop: Turn pos.2 counter clockwise.

Mixing programme time: MANUAL: Pos.3 (turn knob switch) set in 0-pos. the mixing cycle will continue till it is stopped by turning pos.2.

AUTOMATIC: Mixing time can be pre-set from app. 1-10 min. by pos.3. When the pre-set time has passed, the mixing cycle will stop automatically.

Depending on the batch size it may be suitable to change direction of the right mixing wing. This is done by pos.5. Besides it is possible to choose between high or low speed on the mixing wings by activating pos.4.

All controls, incl. mixing programme is PLC-operated. The PLC-programme can be changed to fit a special product if necessary.

BES

BES start: Turn pos.6 clockwise to green mark.

BES stop: Turn pos.6 counter clockwise to red mark.

EMERGENCY STOP: The emergency stop is activated by pushing pos.7 (red mushroom button)

COMPRESSOR: For machines equipped with BES the compressor is turned on constantly. To turn off the compressor the main supply has to be switched off.

WOLFKING DANMARK A/S DK 4200 Slagelse . Denmark	MAINTENANCE OF MACHINE MIXER/GRINDER	WALIANT Drawing No: 32066

SAFETY The machine stops when lid is opened, and when the safety guard for knife-housing is removed.

1. It may be good practice to let the usual operator of the machine mount the knife-set.

2. When starting up: fill approx. 1 kg of meat into the hopper at the inlet to the lining and run the machine forward in short jolts until material reaches the final holeplate. Reverse the worm approx. 5 turns and retighten the screw cap.

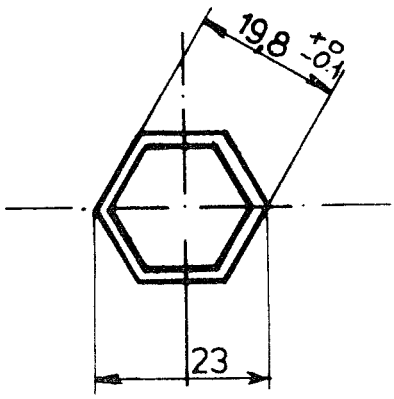
3. The best way to clean the machine is by using a handbrush and a detergent followed by rinsing with warm water. Do not hose directly against the electrical.

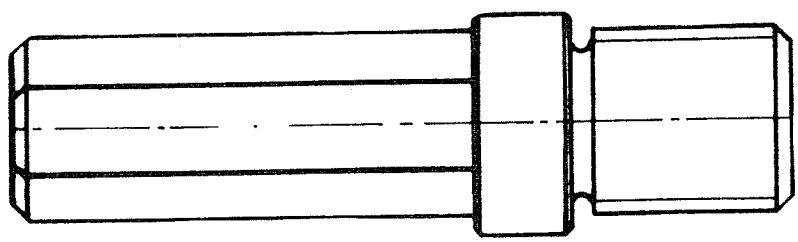
4. The machine should always be dismounted when cleaning. Do not run the machine with mounted worm and knife-set whilst cleaning.

5. When dismounted all parts should be protected against damage.

6. Detergents: the machine can stand all commonly known detergents. Strong alkaline products with a pH-value above 11.5 should be avoided as these may cause corrosion on f.ex. aluminium parts. After cleaning the machine should be coated with paraffin, wax or vegetable oil.

7. A worn worm pin may cause the knives and holeplates to burst. If there are heavy marks from wear or deformations on the worm pin it should be replaced.
The worm pin is threaded into the worm and is fastened with Locktite type 245.
By dismounting, the area around the thread should be heated to around 100 deg.C., whereupon the worm pin can be screwed out with a 20mm ring spanner or socket wrench. While the worm is still hot, a new layer of glue (Locktite 245) is applied and the new worm pin mounted.





WOLFKING DANMARK A/S
DK 4200 Slagelse . Denmark

MAINTENANCE OF MACHINE

MIXER/GRINDER

WALIANT

Drawing No.: 92091

	Pos. No.	Description	Spare-part No.	Qty.	Specification
	1	Cabinet in stainless steel	82099	1	
	2	Main bearing	32811	1	(see 32811)
	3	Worm	32033	1	
		Tüv-worm	32812	(1)	
	4	Lining in delrin	32034	1	
		Lining in stainless steel	30663	(1)	
	5	Knife-housing	32035	1	
	6	Clamp at knife-housing	31479	1	
	7	Legs, adjustable	32806	4	Polyamide, 6/6
	8	Clamp at cabinet	31481	1	
	9	Set screw	22096	2	M8x35 18/8
	10	Lid in stainless steel	32810	1	
	11	Side door	32808	1	
	12	Side door (for automatic)	32807	1	
	13	Control panel plate	31675	1	
	14	Motor guard	32802	1	
	15	Mixing wing (right)	33731	1	
x)	16	Bearing for mixing wing, front	32805	2	Delrin
	17	Flange for bearing	32048	2	
x)	18	Bearing for mixing wing, rear	32047	2	Delrin
x)	19	Holeplate ø140/2,5	32687		
x)		Holeplate ø140/3,2	32688		
x)		Holeplate ø140/4	32689		
x)		Holeplate ø140/5	32690		
x)		Holeplate ø140/6	32691		
x)		Holeplate ø140/8	32692		
x)		Holeplate ø140/10	32693		
x)		Holeplate ø140/13	32694		
x)		Holeplate ø140/16	32695		
x)		Holeplate ø140/7-holes	32754		
x)	20	Knife 140/6-bladed	32049	1	
	21	Screw cap	32050	1	
	22				
x)	23	Fixed pre-cutter	32052	1	
x)	24	Breaker plate for Delrin lining	32053	1	
x)	25	Toothed belt	24065	1	ZR-540 H300
x)	26	Belt	23933	4	SPZ 31.5
	27	Electric motor for mixer unit (2-speed)		2	B3
	28	Electric motor (varispeed) for grinder unit		1	B5.4-flange
		Electric motor for grinder unit		(1)	B5-flange
	29	Helical bevel gear 1:21.6	10367	2	RA0 35 S
	30	Toothed pulley with ø35 taper lock (varispeed)	23847	1	26 H300
		Toothed pulley with ø42 taper lock	23843	(1)	26 H300
	31	Toothed pulley with ø35 taper lock	23844	1	96 H300
	32	Pulley w. ø28 taper lock	23604	2	SPZ 63
	33	Pulley w. ø19 taper lock	23713	2	SPZ 160
	34	Locking ring, outside ø12	24860	2	18/8
	35	Set screw	22186	2	M6x16 18/8
	36	Set screw	22054	4	M16x40 cad.8.8
		Nut	22276	4	M16 cad.
		Washer	22726	4	M16 18/8

x) = recommended spare parts

WOLFKING DANMARK A/S
DK 4200 Slagelse . Denmark

MAINTENANCE OF MACHINE

MIXER/GRINDER

WALIANT

Drawing No.: 92091

Pos. No.	Description	Spare-part No.	Qty.	Specification
37				
38	Set screw	22223	8	M12x30 18/8
	Nut	22307	8	M12 18/8
39				
40	Set screw	22207	8	M10x16 18/8
	Nut	22306	8	M10 18/8
41	Set screw	22198	8	M8x25 18/8
42	Attack for clamp	32075	1	
43	Key for gear	24824	2	AB 10x8x
44	Set screw for legs	22235	4	M12x100 18/8
45	Support for motor	33642	1	
46	Set screw for support	22245	1	M16x70 18/8
	Nut for support	22308	1	M16 18/8
47	Bar for lock	32799	4	
	Sealing ring for lock	26833	4	
	O-ring for lock	26834	4	
	Lock-housing	26837	4	
	Fastener for lock	26836	4	
48	Automatic	50295	1	
49	Threaded pole for clamp	32076	1	
50	Bolt for clamp	22096	2	M8x35 18/8
51	Lock nut for clamp	22312	4	M6 18/8
52	Hook wrench	32080	1	
53	Eye for piston rod			(see 70034)
54	Lock gauge for clamp	32083	2	
55	Air cylinder			(see 70034)
56	Aluminum plate for control box	33011	1	
57	Nut	22305	8	M8 18/8
	Washer	22723	4	M8 18/8
58	Cover for automatic	33012	1	
59	BES-plug	32088	1	(see 32088)
	Dummy plug (without BES)	32100	(1)	
60	Set screw	22182	7	M5x10 18/8
61	Lock nut	22321	2	M8 18/8
62	Washer for worm shaft	32766	2	ø55/ø13x6 18/8
63	Set screw	22222	2	M12x25 18/8
64	Flange for safety guard	32462	1	(see 31185)
	Hole plug (without safety guard)	32755	(1)	
65	Ball fitting for air cylinder			(see 70034)
66	Safety guard (plastics)	32447	1	(see 31185)
	Safety guard (stainless steel)	31519	(1)	(see 31185)
67	Support for lid	33039	2	PVC
68	Mixing wing (left)		1	
69	Bar for frontbearing	33493	2	
70	Control lever for lid			(see 70034)
71	Seals for sidedoor	25602	2	1 = 2850 mm
72	Pin for hinge	33008	4	
73	Snap for air hose (for portioning device)			(see 70024)
74	Countersunk screw	22563	2	M4x20 18/8
	Nut	26301	2	M4 18/8
75	Snap for air hose (for external comp. air, lid)			(see 70034)
76				
77	Seals for motor guard	23528	1	1 = 1000 mm

WOLFKING DANMARK A/S
DK 4200 Slagelse . Denmark

MAINTENANCE OF MACHINE

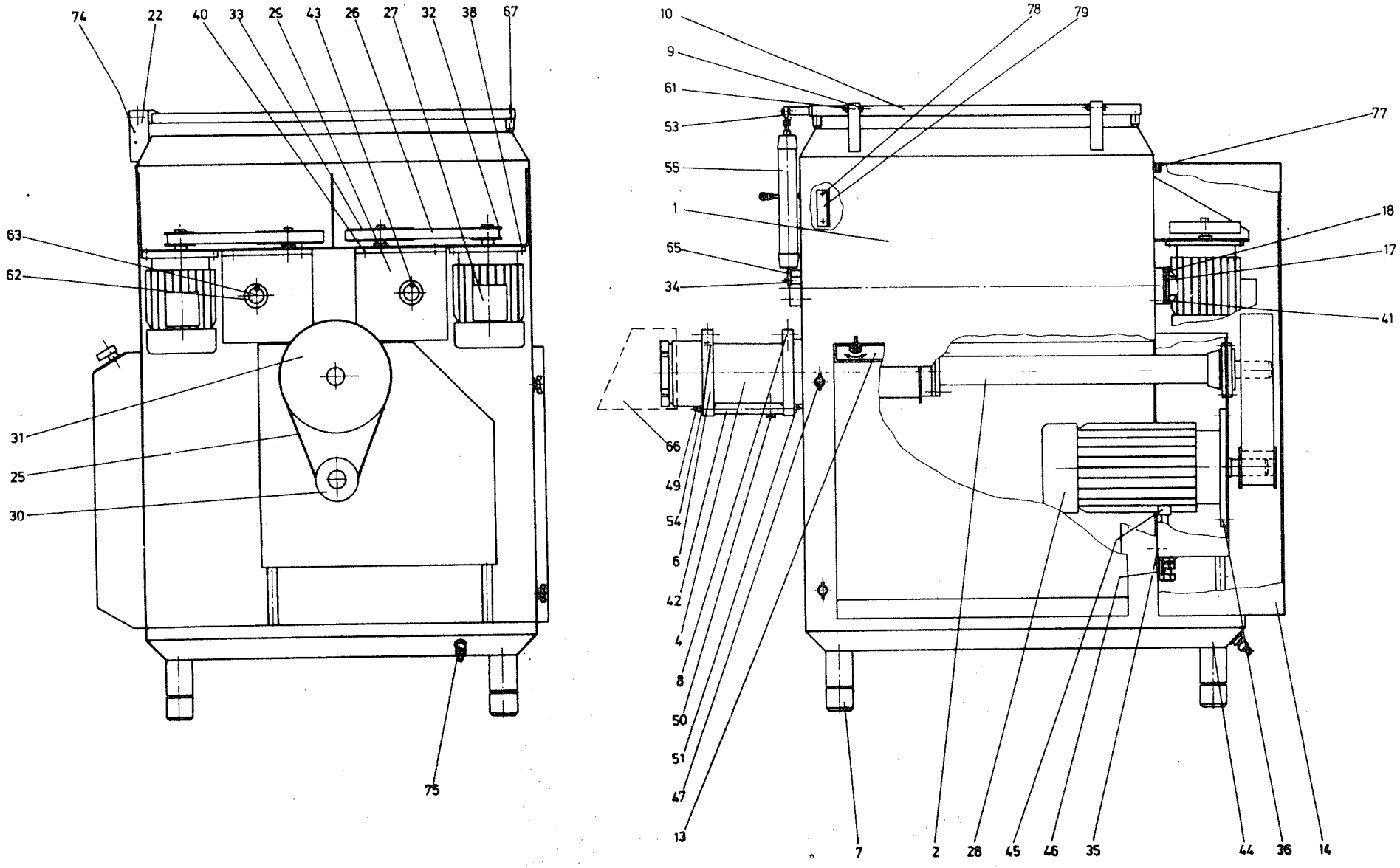
MIXER/GRINDER

WALIANT

Drawing No.: 92091

	Pos. No.	Description	Spare-part No.	Qty.	Specification
	78	Unbraco screw	22568	2	M6x12 MK 18/8
	79	Fittings for control lever	33644	1	
x)	80	Key for knife-housing	32051	1	AA 16x8x36
	81	Unbraco screw	22578	1	M8x16 MK 18/8
x)	82	Worm pin	32066	1	
		Worm pin (Tüv)	33073	(1)	
	83	Pneumatic for lid (with compressor)	70034	1	
		Pneumatic for lid (without compressor)	70035	(1)	
		Extra equipment:			
	90	Tüv-puller for worm	31516		
	91	BES	92001		
	92	Compressor with air receiver	31517		
		Compressor without air receiver	31518		
	93	Tool set (for machines with BES)	31877		
		Tool set (for machines without BES)	31876		
	94	Portioning device	92546		
	95	Paper reel for portioning device (1 pcs)	25729		
	96	Lifting device for 220 l trolleys			
	97	220 l WOLFKING meat trolley	32511		
	98	Belt conveyor	92547		
	99	Rotating paking table	92624		
	100	Sausage filling nozzle 16 mm	33077		
		Sausage filling nozzle 22 mm	33078		
		Sausage filling nozzle 30 mm	33079		
		Sausage filling nozzle 50 mm	33080		

x) = recommended spare parts



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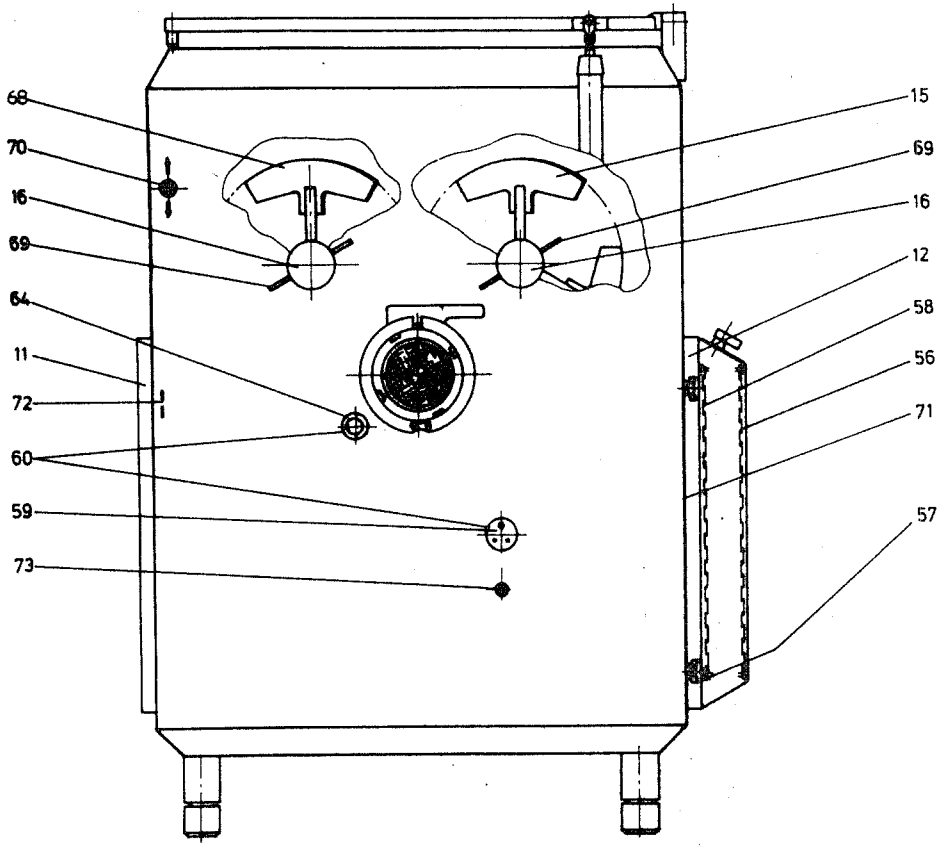

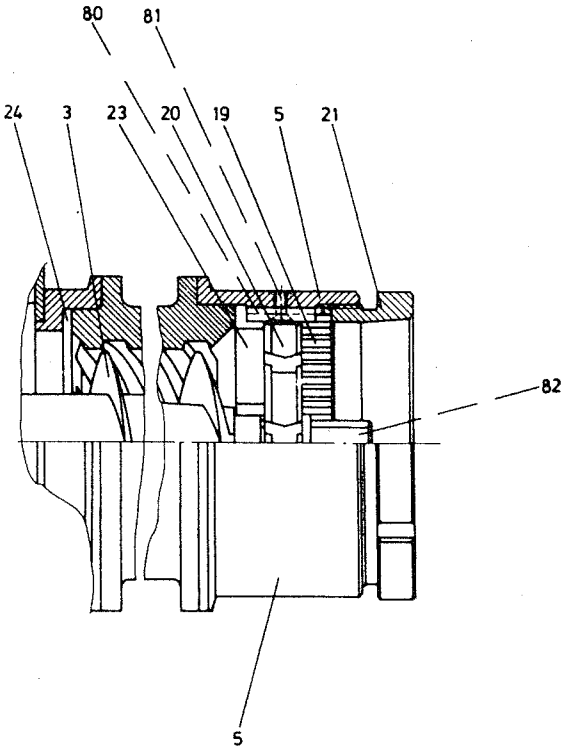

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		WALIANT TSMG 400 / 140		92090 - 2

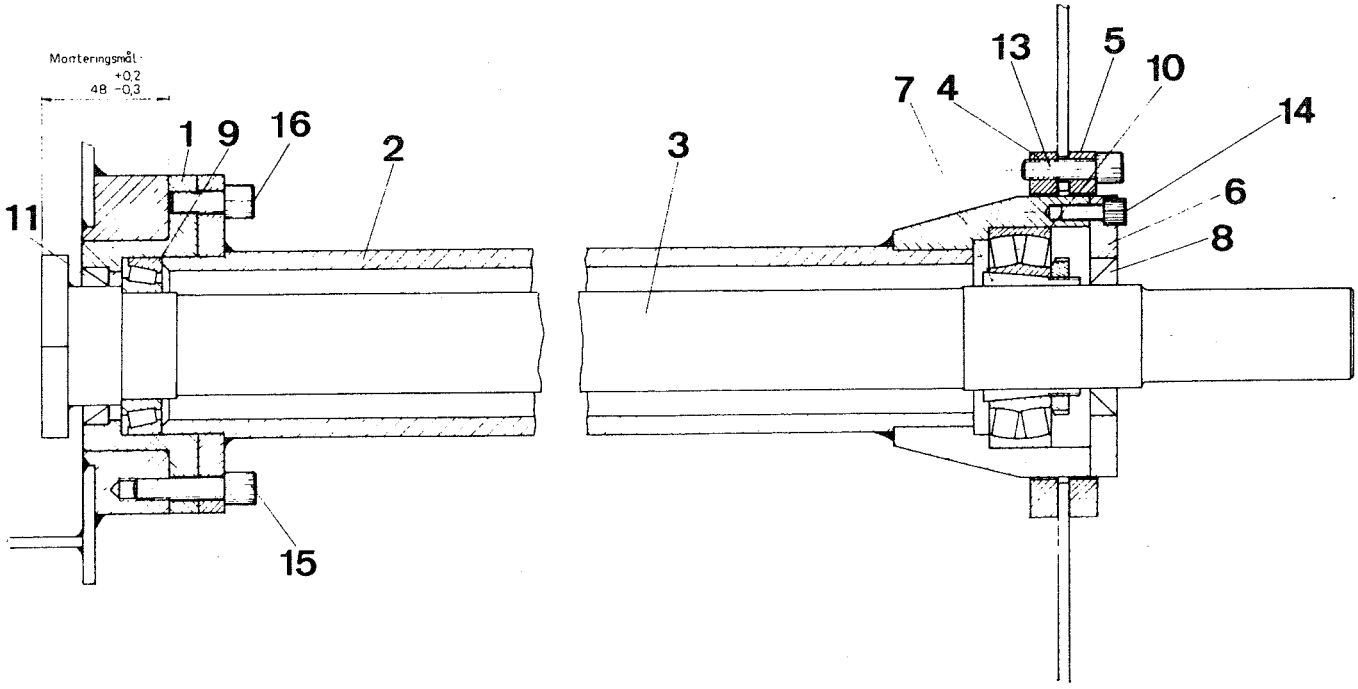
WOLFKING DANMARK A/S
DK 4200 Slagelse . Denmark

MAINTENANCE OF MACHINE
MIXER/GRINDER
MAINBEARING

WALIANT

Drawing No.: 32811

	POS. NO.	DESCRIPTION	SPARE-PART NO.	QTY.	SPECIFICATION
	01	Bushing	32059	1	
	02	Housing for main bearing	32804	1	
x)	03	Driver shaft	32803	1	
	04	Gland-flange	32062	1	
	05	Gland-flange	32063	1	
	06	Cap	32064	1	
	07	Split bushing H309	25209	1	
x)	08	Oil seal ring BA 902	23095	1	40x60x10
x)	09	Conical roller bearing	25478	1	32008 X
x)	10	Spherical roller bearing	25139	1	22209 K
x)	11	Oil seal ring B2 SL	23099	1	45x60x10
	13	Bolt in stainless steel	22004	7	M8x30
	14	Allen screw MC cad. DIN 912	22397	4	M6x16
	15	Allen screw MC cad. DIN 912	22425	3	M8x35
	16	Allen screw MC cad. DIN 912	22421	3	M8x20



Dato	Retsesse	WOLFKING DANMARK A/S DK 4200 Slagelse . Denmark	Målforhold 1:1	Tegn. TS, PHC
		Main bearing grinderunit f. Waliant TSMG	Erstatning for: 32811	Erstatning af:

x)= recommended spare parts

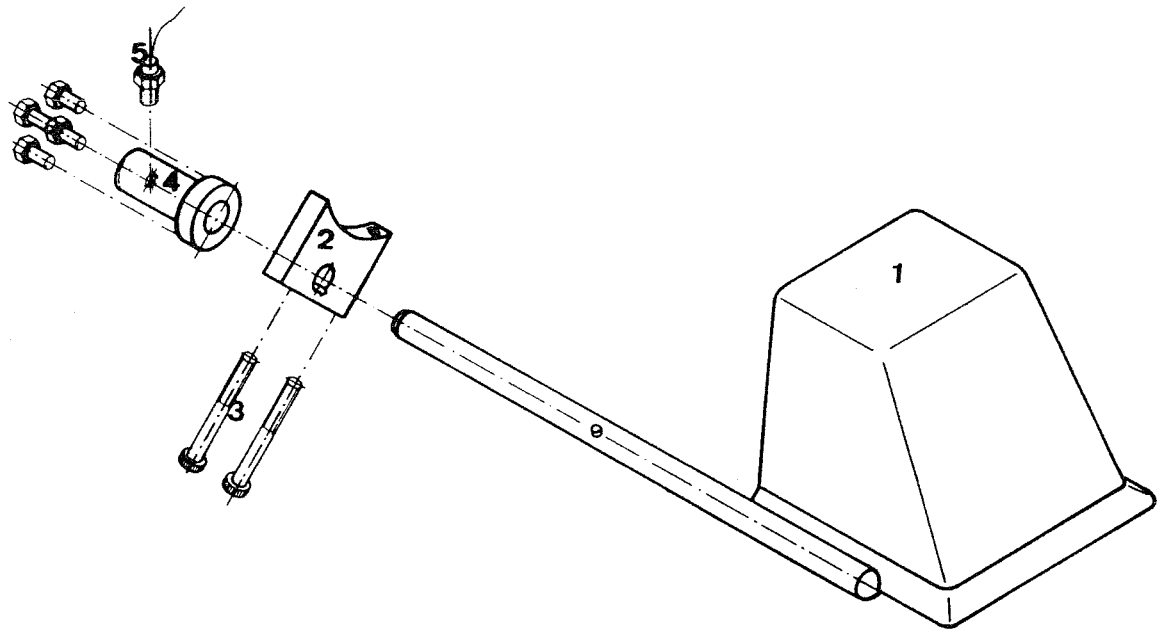
WOLFKING
DANMARK A/S
DK 4200 Slagelse . Denmark

SAFETY GUARD SET

WALIANT

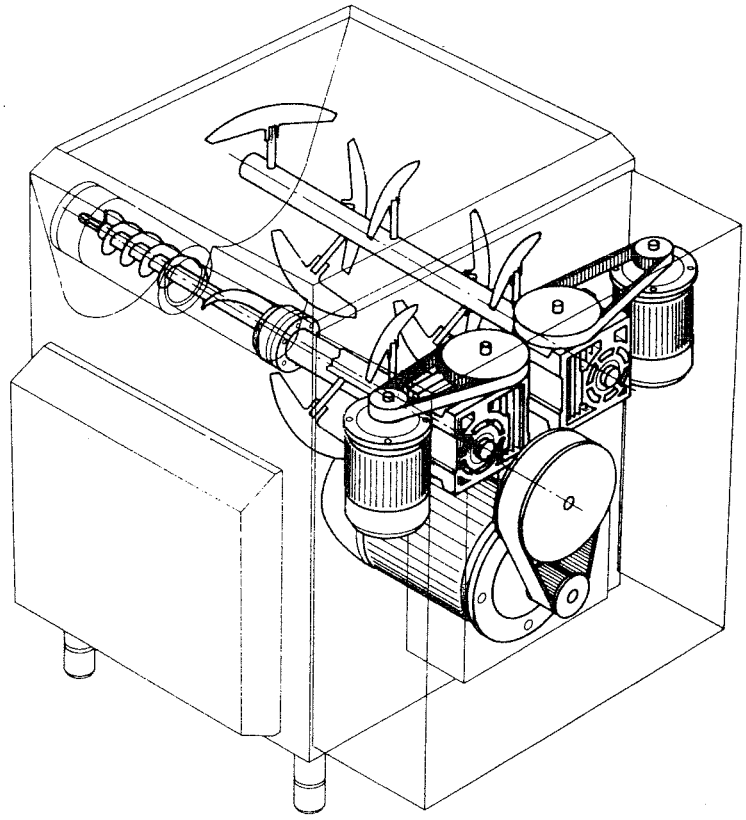
Drawing No.: 31185

POS. NO.	DESCRIPTION	SPARE-PART NO.	QTY.	SPECIFICATION
01	Safety guard	31519	1	
02	Pilot bushing for safety guard	32464	1	
03	Allen screw MC M6x80	26093	2	
04	Flange for safety guard	32462	1	
x) 05	Limit switch for safety guard	12037	1	



		WOLFKING DANMARK A/S	1:25	BDM.BLJ
		SIKKERHEDSSKÆRM WALIANT		31185

x)= recommended spare parts



MAIN BEARING

This bearing has been greased once for all and needs no additional attention in this respect.

By repair, if any, one of the following lubricants should be used:

CHEVRON	Poly FM Grease 1
CASTROL	Castrol FM 1
SHELL	Ondina 68 (oil)
ESSO	Carum 330

COMPRESSOR

See Bone Elimination System.

WORM REDUCTION GEAR

Maintenance is not necessary since the reduction gear is tight-sealed and contains the proper amount of a special long-life lubricant, sufficient to cover the entire working life of the reduction gear.
Do not add other types of lubricants; this would cause the immediate destruction of the lubricating properties of the grease, and cause serious damage to the reduction gear.

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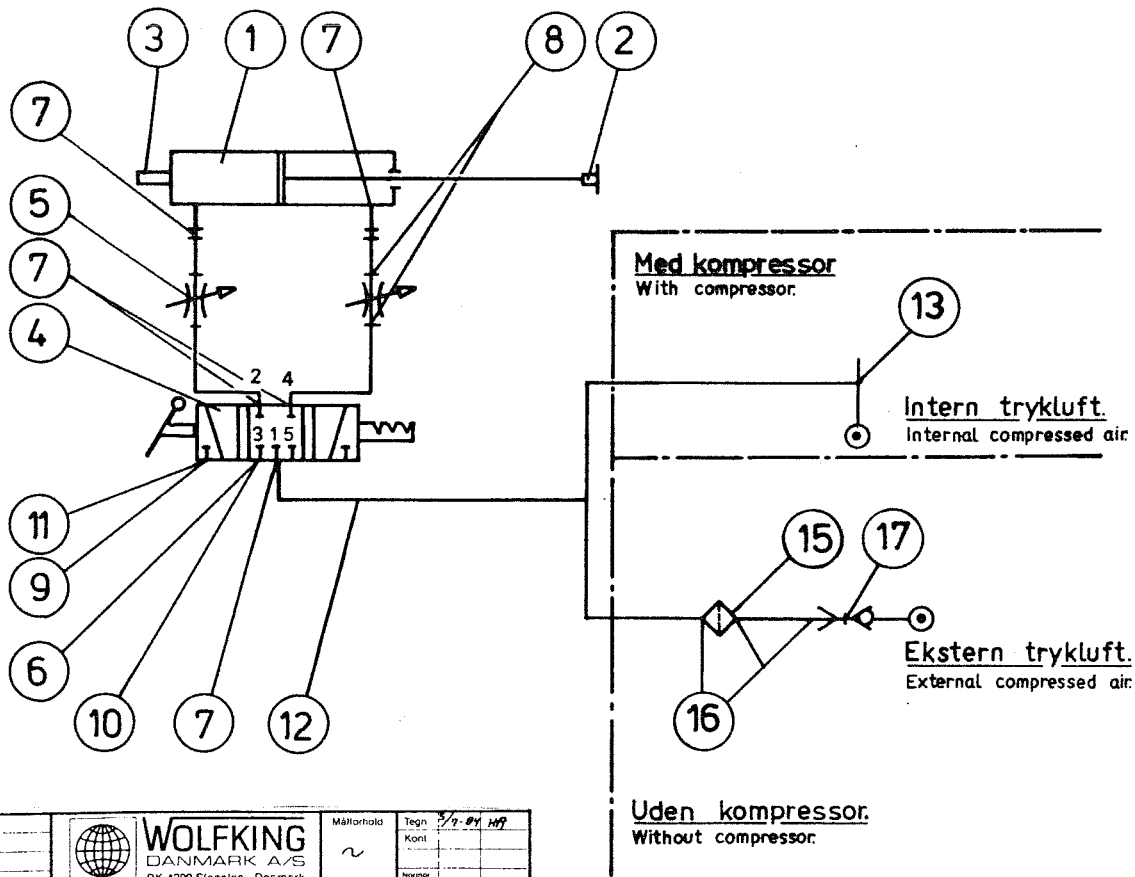
DANMARK A/S
DK 4200 Slagelse . Denmark

PNEUMATIC DIAGRAM FOR LID MIXER/GRINDER

WALIANT

Drawing No.: 70034

Pos. No.	Description	Spare-part No.	Qty.	Specification
1	Cylinder, AC	26603	1	C41-40-16-200
2	Ball fitting for air cylinder, AC	25657	1	91215686-02
3	Eye for piston rod, air cylinder, AC	24214	1	91216470-02
4	Manual control valve, AC	26763	1	VE25-HB3-2
5	Throttle valve 1/4"	24151	2	VQB 12-OTX4
6	Sound absorber 1/4"	25481	2	
7	Legris pivotable angle	24463	9	1/4" x 8
8	Legris union	24453	4	1/4" x 8
9	Plug	24242	2	1/8"
10	Fibre gasket	23472	2	1/4"
11	Gasket	24243	2	1/8"
12	Nylon hose	24952	4 m	ø8/ø6
13	Legris T	24481	1	8 mm
14	Legris dismounting ring	26547	18	8 mm
15	Mini filter	24150	1	08 A-B
	Mounting plate for mini filter	24259	1	
16	Legris union	24453	3	1/4" x 8
17	Snap for air hose	25489	1	
	Nipple for snap	25494	1	



Dato	Rettelse

WOLFKING DANMARK A/S
DK 4200 Slagelse Denmark

Målforhold ~

Tegn HH

Kont

Normpr

PNEUMATIK F GITTERLÅG
TSMG 400/140

(erstatning for:)

70034

(erstatning af)

WOLFKING DANMARK A/S
DK 4200 Slagelse . Denmark

ELECTRICAL DIAGRAMME

MIXER/GRINDER

WALIANT

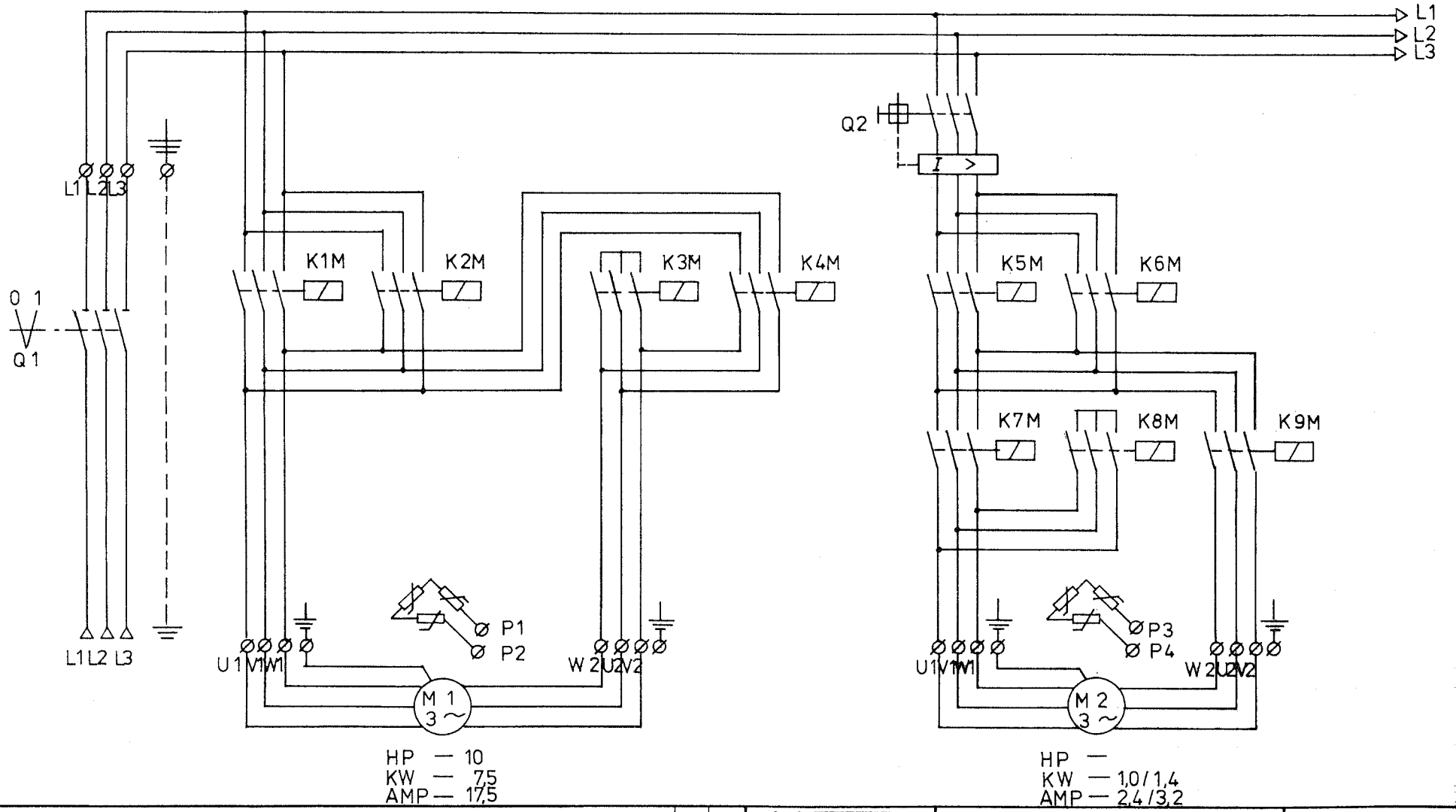
Parts List No.: 50293
Drawing No.: 50293

3/PE 50/60 Hz 440-415-380-230-220-200 V

Pos.No.	Description	Spare part No.	Qty.	Specification
Q2-Q3-Q4-Q5	Aut. fuse, 5SN3310-6A		4	Siemens
F1	Fuse, 5x20 mm 4A		5	Werner
T1	Transformer, DK-7793 580VA/100VA		1	Ulveco
K1M-K2M	Contactor, LC1-D253B7 } 220 V - 230 V		2	Telemekanik
K3M-K4M	Contactor, LC1-D163B7 } 220 V - 230 V		2	-
K1M-K2M	Contactor, LC1-D173B7 } 380 V - 415 V - 440 V		2	-
K3M-K4M	Contactor, LC1-D123B7 } 380 V - 415 V - 440 V		2	-
K5M-K6M	Contactor, LC2-EE03B		1	-
K7M-K8M	Contactor, LC2-EE03B		1	-
K10M-K11M	Contactor, LC2-EE03B		1	-
K12M-K13M	Contactor, LC2-EE03B		1	-
K15M-K16M	Contactor, LC2-EE03B		1	-
K9M-K14M	Contactor, LC1-EE03B		2	-
PLC	PLC D28A Mek.		1	Hitachi
F1F	Thermal stop relay LT2-SPOOB		1	Telemekanik
S1F	Emergency switch ZB2-BS547 + BZ104		1	-
S2	Limit switch - lid XCM.B 5022		1	-
S3	Wings low/high ZB2-BJ27 + BZ105		1	-
S4	Grinder (servomotor) low/high ZB2-BJ57 + BZ103		1	-
S5	Limit switch servomotor - down		1	
S6	Limit switch servomotor - up		1	
S7	Limit switch guard M225 S 3M		1	EMC
S8	Grinder forward/reverse ZB2-BJ87 + BZ103		1	Telemekanik
S9	Mixing start/stop ZB2-BJ57 + BZ105		1	-
S10	Programme selector XB2-DD2041		1	-
S11	Wing 2 forward/reverse ZB2-BJ27 + BZ101		1	-
S12	BES start/stop ZB2-BJ77 + BZ101		1	-
S13-H1	CO_2 start/stop lamp pressure		(1)	Swisstac
PV1	Temperature controller KROW-48/2 da, re4, h+1 ÷199° C 24VAC		(1)	JUMO
PT100	Temperature probe PT100 90.281F57 200 mm		(1)	-
PV2	RPM display DPM 2366A 1-20V		(1)	PR. Electric

18.4.1986.

	1	2	3	4	5	6	7	8	9
DK	HOVED AFBRYDER	FREM	BAK	HAKKER	Y	△	FREM LAV	BAK Y	HØJ VINGE 1
GB	MAIN SWITCH	FORWARD	REVERSE	GRINDER	Y	△	FORWARD LOW	REVERSE Y	HIGH WING 1
D									
F									



HP — 10
KW — 7,5
AMP — 17,5

HP —
KW — 1,0 / 1,4
AMP — 2,4 / 3,2

WALIANT TSMG 400 / 140
WITH VARISPEED AND CO_2

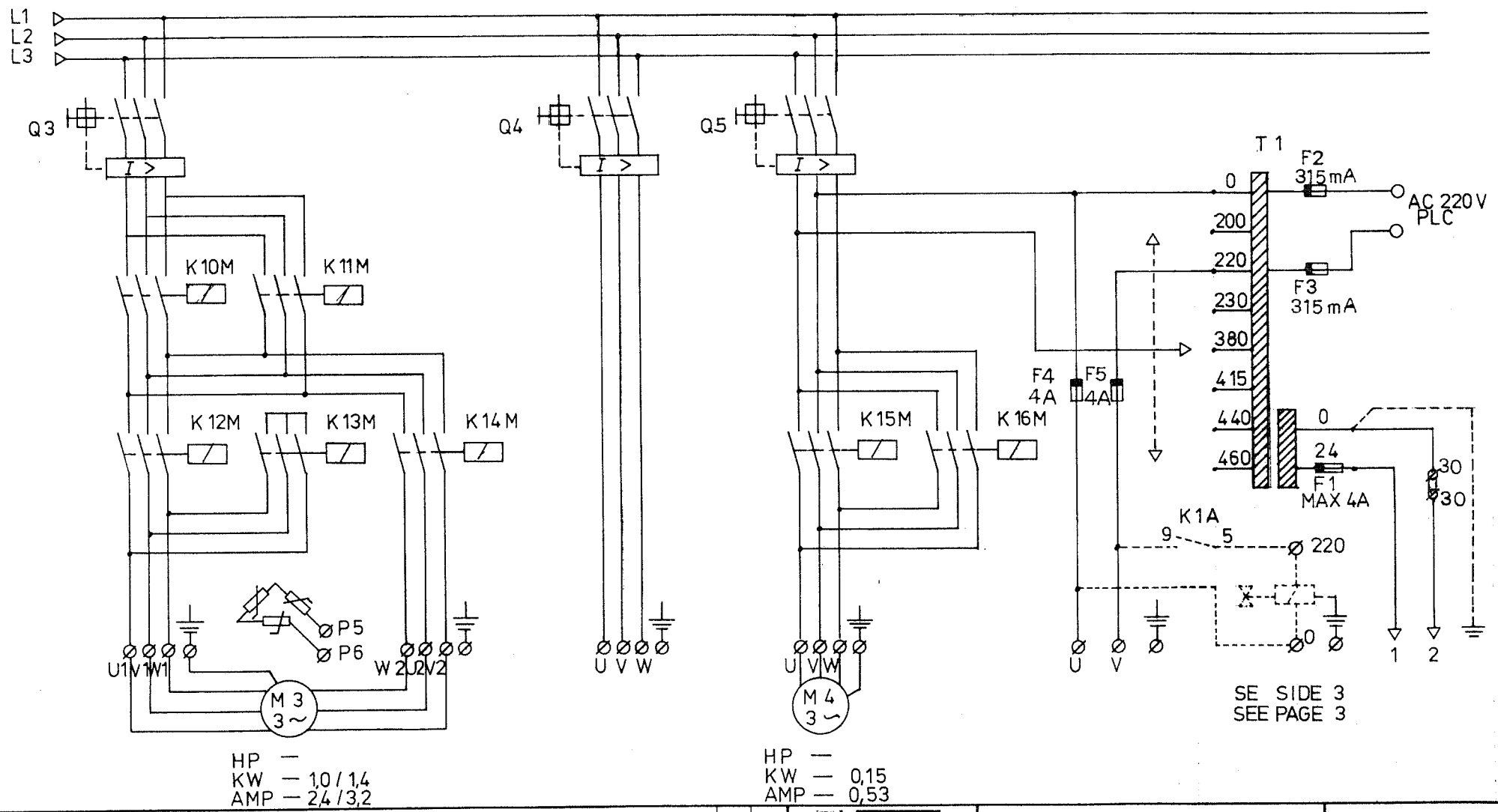
Firma: WOLFKING
SLAGELSE - DENMARK

tegningen udsendes til	tegn.	15/4-85 MH	målestok
	godk.		
	set		

50293

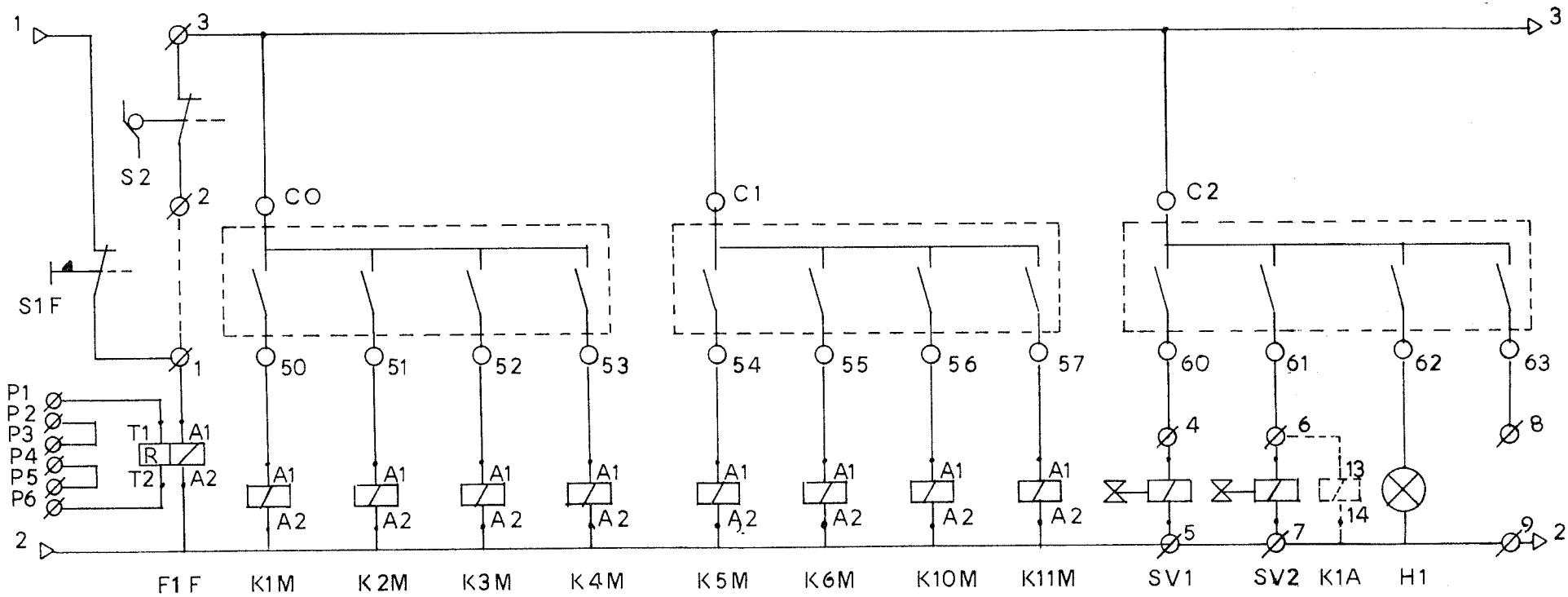
blad nr. 1 af ialt 7 blade

	1	2	3	4	5	6	7	8	9
DK	FREM LAV	BAK Y	VINGE 2 HØJ	LØFTER STIK	VARI SPEED NED	OP	KOMPRESSOR STIK	AUTOTRANSFORMER 580 VA	24 VAC 100 VA
GB	FORWARD LOW	REVERSE Y	WING 2 HIGH	LIFT PLUG	VARI SPEED DOWN	UP	COMPRESSOR PLUG	AUTOTRANSFORMER 580 VA	24 VAC 100 VA
D									
F									



	Firma: WOLFKING SLAGELSE - DENMARK		50293
	tegn. 18-9-85 HP	målestok	2 7
tegningen udsendes	godk.		

	1	2	3	4	5	6	7	8	9
DK	ENDESTOP LÅG NØDSTOP	HAKKER FREM	BAK	STJERNE TREKANT	VINGE 1 FREM	BAK	VINGE 2 FREM BAK	BES VENTIL	CO2 VENTIL KONTROL	
GB	LIMIT SWITCH LID EMERGENCYSTOP	GRINDER FORWARD	REVERSE	STAR DELTA	WING 6 1 FORWARD	REVERSE	WING 2 FORWARD REVERSE	BES VALVE	CO2 VALVE CONTROL	
D										
F										

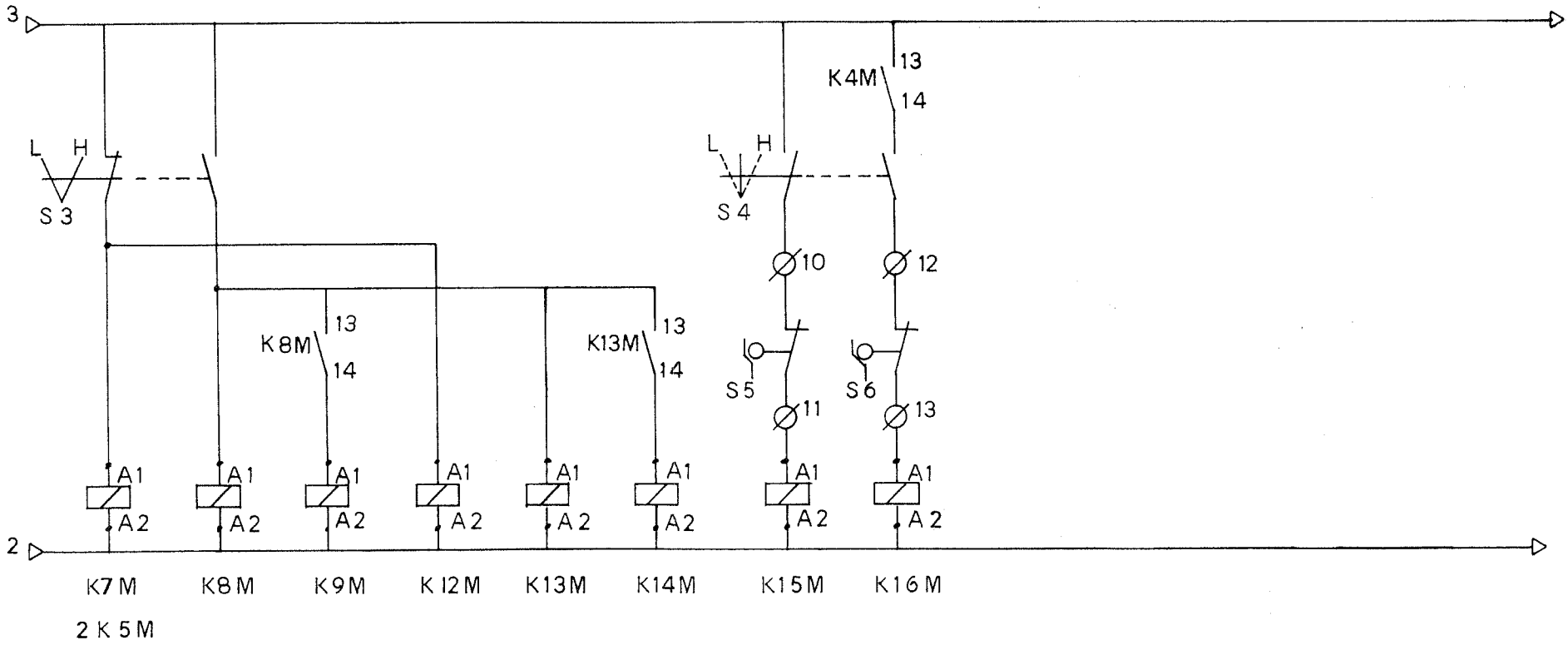


K1A USED ONLY WHEN CO2 VALVE IS WITH 220/240 COIL (SEE PAGE 2)

K1A BRUGES KUN NAR CO2 VENTIL ER MED 220/240 SPOLE (SE SIDE 2)

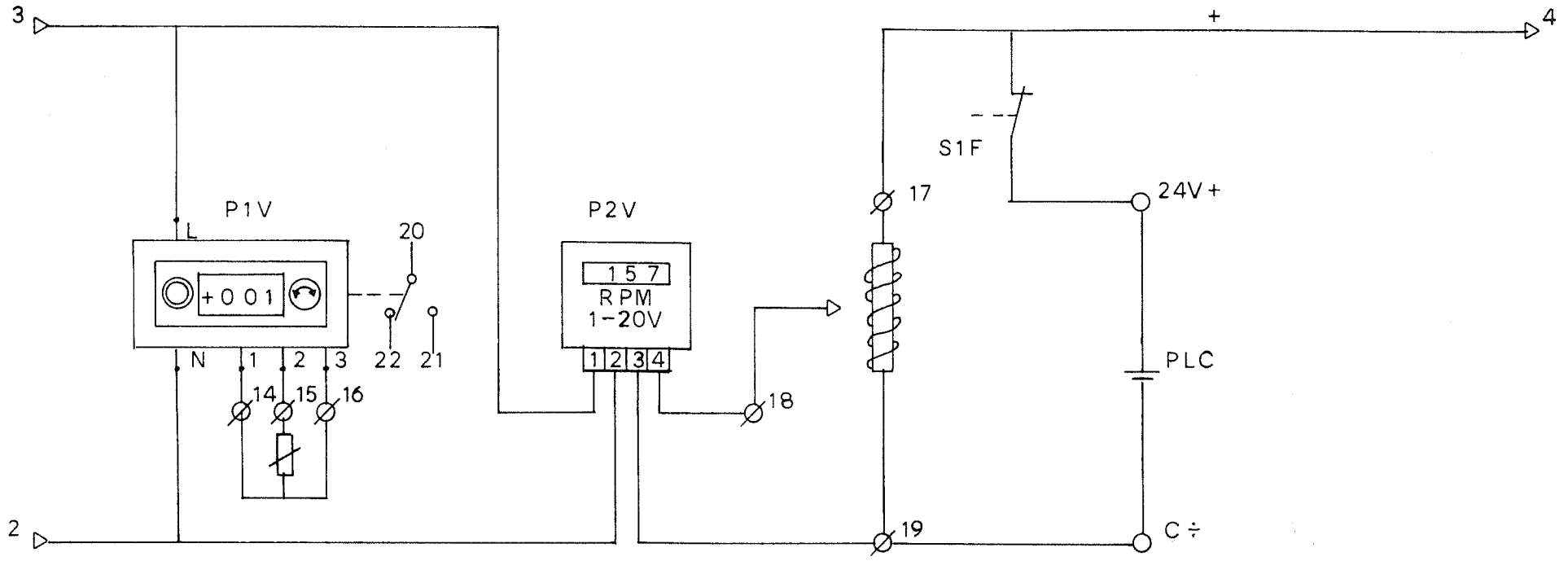
tegningen udsendes til	Firma: WOLFKING SLAGELSE - DENMARK		50293
	tegn.	målestok	
	godk.		blad nr. 3 af ialt 7 blade
	set		

	1	2	3	4	5	6	7	8
DK	VINGE 1 LAV STJERNE HØJ		VINGE 2 LAV STJERNE HØJ		VARI SPEED LAV HØJ		OMDR. DISPLAY MODSTAND	24VDC FRA PLC
GB	WING 1 LOW STAR HIGH		WING 2 LOW STAR HIGH		VARI SPEED LOW HIGH		RPM. DISPLAY RESISTOR	24VDC FROM PLC
D								
F								



tegningen udsendes til	Firma: WOLFKING SLAGELSE - DENMARK			50293
	tegn.		målestok	
	godk.			
	set			blad nr. 4 af ialt 7 blade

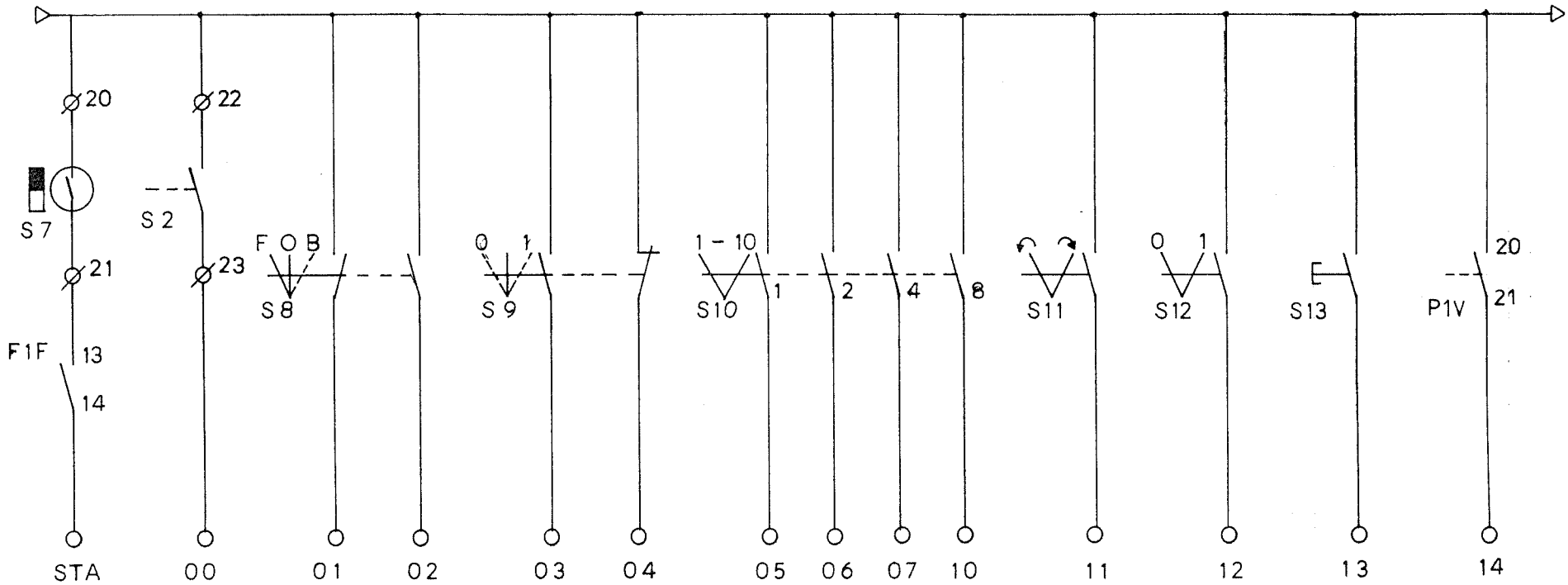
DK	TEMP. VISNING PT 100 RELÆ UDGANG	OMDR. VISNING 40-290 MODSTAND	NØD STOP	24VDC FRA PLC	
GB	TEMP. DISPLAY PT 100 RELAY OUTPUT	RPM. DISPLAY 40-290 RESISTOR	EMERGENCY STOP	24 VDC FROM PLC	
D					
F					



1: Gnd
2: 24 AC/DC
3: INDPUT ÷
4: INDPUT +

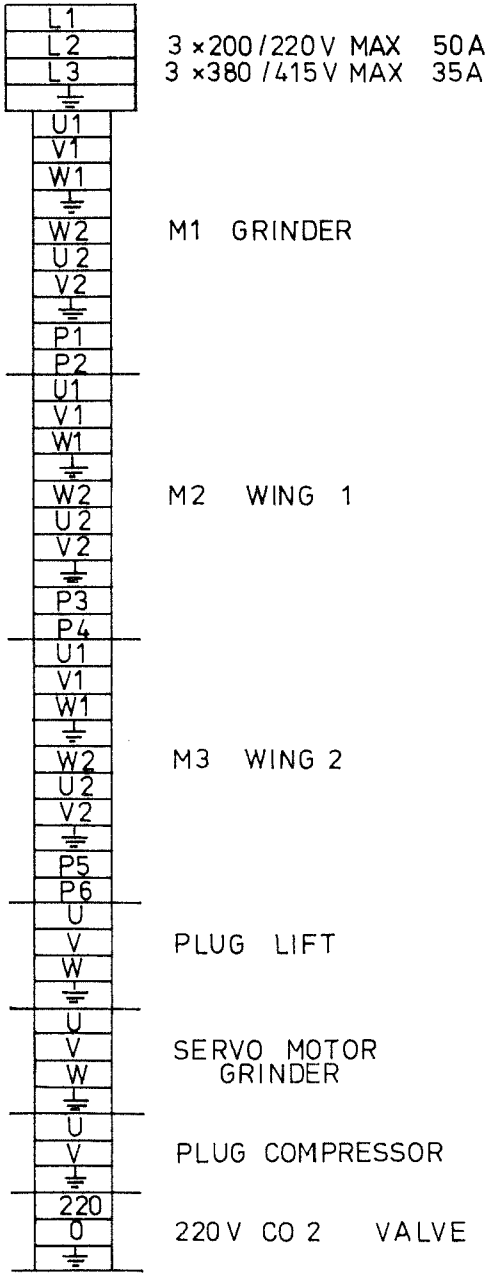
	Firma: WOLFKING SLAGELSE - DENMARK		
tegningen udsendes til	tegn.	målestok	50293
	godk.		
	set		blad nr. 5 af ialt 7 bladе

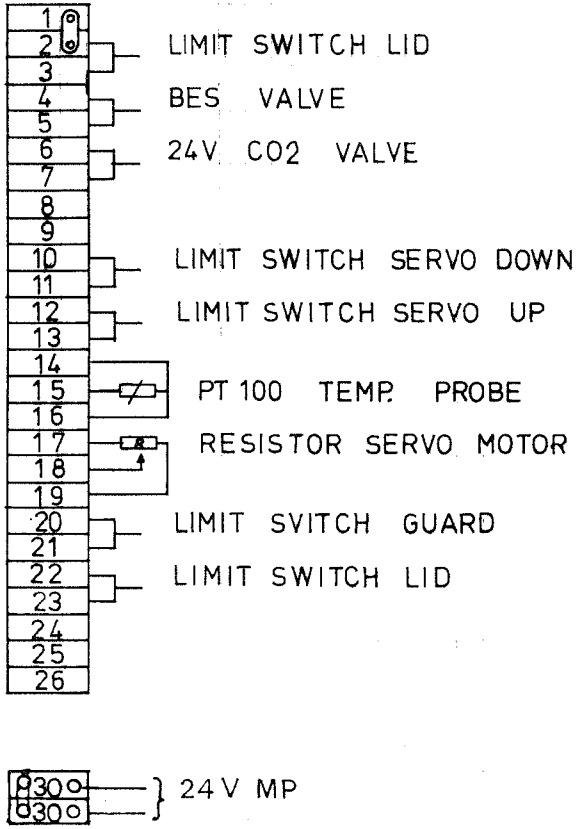
	1	2	3	4	5	6	7	8	9
DK	ENDESTOP SKÆRM	ENDESTOP LÅG	HAKKER FREM BAK	BLANDER START STOP	PROGRAM VÆLGER 1-10 BCD KODE		VINGE 2 FREM BAK	BES 0 1	CO2 START STOP	TEMP. SIGNAL
GB	LIMIT/SWITCH GUARD	LIMIT/SWITCH LID	GRINDER FORWARD/REVERSE	MIXER START STOP	PROGAM SELECTOR 1-10 BCD CODE		WING 2 FORW/REV.	BES 0 - 1	CO2 START STOP	TEMP. SIGNAL
D										
F										



tegningen udsendes til	Firma: WOLFKING SLAGELSE - DENMARK		50293
	tegn.	målestok	
	godk.		
	set		blad nr. 6 af ialt 7 blade

	1	2	3
DK			
GB			
D			
F			





	Firma: WOLFKING SLAGELSE – DENMARK		
	tegn. 15/4-85 HH		målestok
tegningen udsendes	godk.		

50293

blad nr. 7 af ialt 7 blade

WOLFKING
DANMARK A/S
DK 4200 Slagelse . Denmark

Instruction for use of Waliant TSMG 400/140

S1F. Emergency Stop

Interrupts control voltage

S2: Endstop lid

1. When the lid is opened, 24VAC control voltage is interrupted.
2. If the lid is opened during mixing, the mixer will stop and the total mixing time will go to pause.
3. When the lid is closed, the mixer will start and continue until total mixing time has expired.

S3: Speed-change selector for wing 1 and 2

S4: Speed control for grinding worm

S5: End stop for low speed

S6: End stop for high speed

S7: Endstop safety guard

S8: Grinder forward/reverse

1. When grinder is started forward (worm to the left) mixing wings will start after 1 sec.
   a. Wing 1 forward (to the left)
   b. After 0,5 sec wing 2 forward (to the left)
2. Grinder can only reverse for 0,3 sec.

S8: Grinder start during mixing (forward)

1. Mixing programme will go to pause
2. When grinder stops, the mixing programme will continue until total time has expired.

../2

WOLFKING
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DK 4200 Slagelse . Denmark

S9: Mixer Start/stop

Mixing start: Wings will start rotating
Mixing cycle:
1. Wing 1 forward, after 0,5 sec wing 2 forward (wings to the left)
2. After 20 sec, wings will stop (forward time)
3. Pause for 0,7 sec (interval forward/ reverse)
4. Wing 1 reverse, after 0,5 sec wing 2 reverse (wings to the right)
5. After 15 secs, wings will stop (reverse time)
6. Pause for 0,7 sec (interval reverse/ forward)
7. Starter at item 1 again etc until total time has expired for instance 2 mins (Prg 2)
8 Every time wing 1 starts forward, after 10 secs grinder worm will reverse for 0,3 secs

S10: Programme Selector (total time)

Programme		
	0	-
	1	- 1 min
	2	- 2 -
	3	- 3 -
	4	- 4 -
	5	- 5 -
	6	- 6 -
	7	- 7 -
	8	- 8 -
	9	- 9 -
	10	-10 -

S11: Rotation Selector wing 2 forward/reverse (left/right)

S12: BES Start/Stop

P2V: Showing speed on grinder worm

WOLFKING
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The following must only be used if the machine is equipped with CO2 lid

C13-H1: Start/stop CO2

P1V: Showing temperature

Start CO2:

1: Wings rotating against each other.
   a. wing 1 to the right
   b. wing 2 to the left
2: CO2 is added for 10 secs
3: Pause for 10 secs,(control lamp flashing)
4: CO2 added for 10 secs
5: Pause for 10 secs (control lamp flashing)
6: Until the preset temperature has been reached
   a: The temperature signal is delayed for 5 secs to ensure that the right temperature has been reached before stop.

S10: Programme Selector

Can be used as total time in connection with addition of CO2 when the mixing programme is not functioning.

Start CO2 during mixing:

CO2 will only be added when the wings are rotating against each other.

PROGRAMMABLE CONTROLLER

PROGRAM

SUBJECT : Waliant TSMG 400/140

DRW NO. 50293 VERSION

DATE 18.04.85 PROGRAMMER KM

TMR(T) 00	= 0.3	CNT(C) 00	= 06
TMR(T) 01	= 0.5	CNT(C) 01	= 12
TMR(T) 02	= 0.1	CNT(C) 02	= 18
TMR(T) 03	= 10	CNT(C) 03	= 24
TMR(T) 04	= 20	CNT(C) 04	= 30
TMR(T) 05	= 0.7	CNT(C) 05	= 36
TMR(T) 06	= 15	CNT(C) 06	= 42
TMR(T) 07	= 0.7	CNT(C) 07	= 48
TMR(T) 10	= 10	CNT(C) 10	= 54
TMR(T) 11	= 0.5	CNT(C) 11	= 60
TMR(T) 12	= 5.0	CNT(C) 12	= 01
TMR(T) 13	= 10	CNT(C) 13	= 10
TMR(T) 14	= 10	CNT(C) 14	= 10
TMR(T) 15	= 0.3	CNT(C) 15	= 10
TMR(T) 16	= 0.3	CNT(C) 16	= 10
TMR(T) 17	= 00	CNT(C) 17	= 00

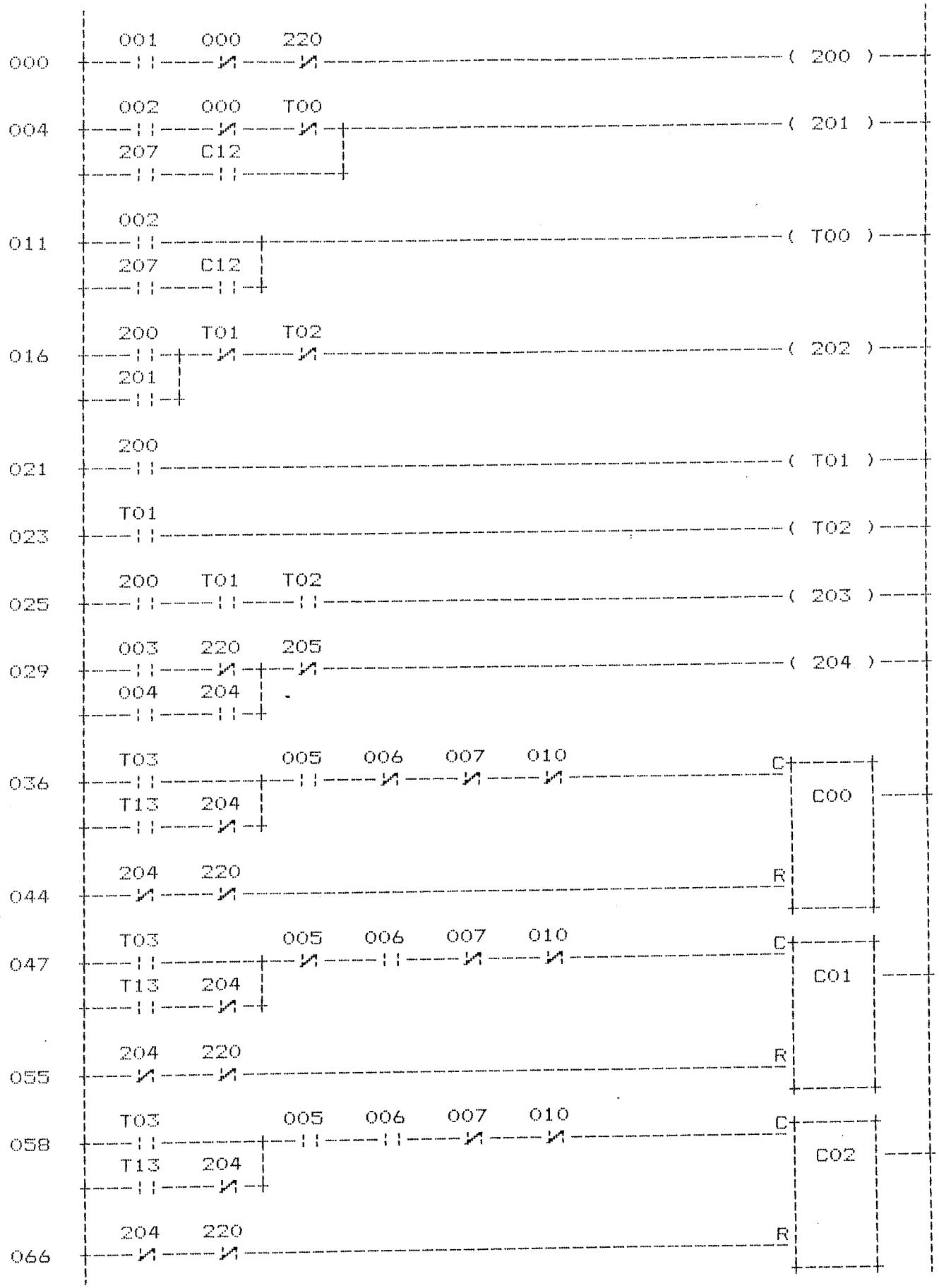
CODING LIST

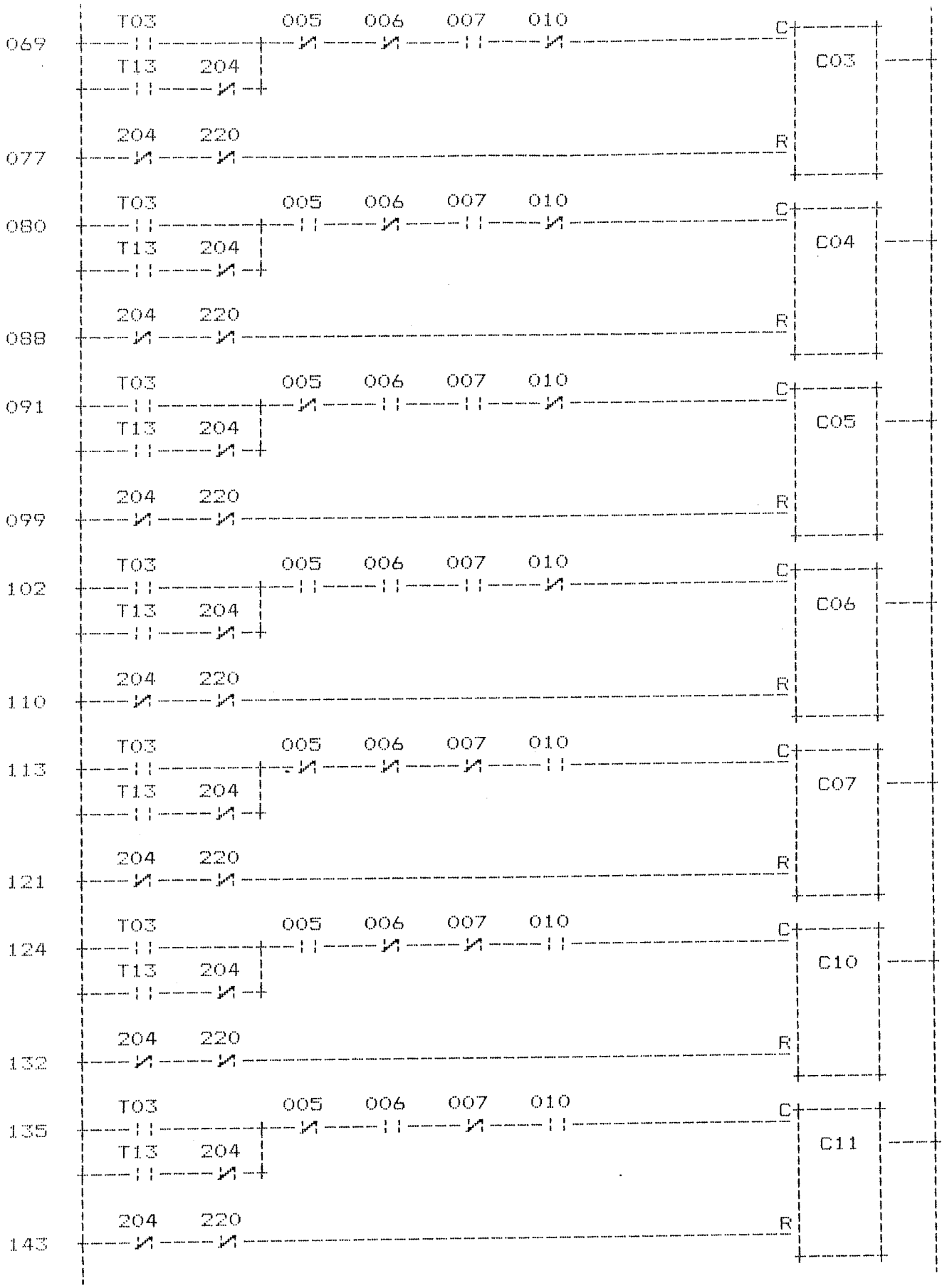
STEP	CODE	DATA		STEP	CODE	DATA		STEP	CODE	DATA
000	STR	001	*	055	STR NOT	204	*	110	STR NOT	204
001	AND NOT	000	*	056	AND NOT	220	*	111	AND NOT	220
002	AND NOT	220	*	057	OUT CNT	01	*	112	OUT CNT	06
003	OUT	200	*	058	STR TMR	03	*	113	STR TMR	03
004	STR	002	*	059	STR TMR	13	*	114	STR TMR	13
005	AND NOT	000	*	060	AND NOT	204	*	115	AND NOT	204
006	AND NOT TMR	00	*	061	OR STR		*	116	OR STR	
007	STR	207	*	062	AND	005	*	117	AND NOT	005
008	AND CNT	12	*	063	AND	006	*	118	AND NOT	006
009	OR STR		*	064	AND NOT	007	*	119	AND NOT	007
010	OUT	201	*	065	AND NOT	010	*	120	AND	010
011	STR	002	*	066	STR NOT	204	*	121	STR NOT	204
012	STR	207	*	067	AND NOT	220	*	122	AND NOT	220
013	AND CNT	12	*	068	OUT CNT	02	*	123	OUT CNT	07
014	OR STR		*	069	STR TMR	03	*	124	STR TMR	03
015	OUT TMR	00	*	070	STR TMR	13	*	125	STR TMR	13
016	STR	200	*	071	AND NOT	204	*	126	AND NOT	204
017	OR	201	*	072	OR STR		*	127	OR STR	
018	AND NOT TMR	01	*	073	AND NOT	005	*	128	AND	005
019	AND NOT TMR	02	*	074	AND NOT	006	*	129	AND NOT	006
020	OUT	202	*	075	AND	007	*	130	AND NOT	007
021	STR	200	*	076	AND NOT	010	*	131	AND	010
022	OUT TMR	01	*	077	STR NOT	204	*	132	STR NOT	204
023	STR TMR	01	*	078	AND NOT	220	*	133	AND NOT	220
024	OUT TMR	02	*	079	OUT CNT	03	*	134	OUT CNT	10
025	STR	200	*	080	STR TMR	03	*	135	STR TMR	03
026	AND TMR	01	*	081	STR TMR	13	*	136	STR TMR	13
027	AND TMR	02	*	082	AND NOT	204	*	137	AND NOT	204
028	OUT	203	*	083	OR STR		*	138	OR STR	
029	STR	003	*	084	AND	005	*	139	AND NOT	005
030	AND NOT	220	*	085	AND NOT	006	*	140	AND	006
031	STR	004	*	086	AND	007	*	141	AND NOT	007
032	AND	204	*	087	AND NOT	010	*	142	AND	010
033	OR STR		*	088	STR NOT	204	*	143	STR NOT	204
034	AND NOT	205	*	089	AND NOT	220	*	144	AND NOT	220
035	OUT	204	*	090	OUT CNT	04	*	145	OUT CNT	11
036	STR TMR	03	*	091	STR TMR	03	*	146	STR CNT	00
037	STR TMR	13	*	092	STR TMR	13	*	147	OR CNT	01
038	AND NOT	204	*	093	AND NOT	204	*	148	OR CNT	02
039	OR STR		*	094	OR STR		*	149	OR CNT	03
040	AND	005	*	095	AND NOT	005	*	150	OR CNT	04
041	AND NOT	006	*	096	AND	006	*	151	OR CNT	05
042	AND NOT	007	*	097	AND	007	*	152	OR CNT	06
043	AND NOT	010	*	098	AND NOT	010	*	153	OR CNT	07
044	STR NOT	204	*	099	STR NOT	204	*	154	OR CNT	10
045	AND NOT	220	*	100	AND NOT	220	*	155	OR CNT	11
046	OUT CNT	00	*	101	OUT CNT	05	*	156	OUT	205
047	STR TMR	03	*	102	STR TMR	03	*	157	STR	204
048	STR TMR	13	*	103	STR TMR	13	*	158	AND NOT	000
049	AND NOT	204	*	104	AND NOT	204	*	159	AND NOT	200
050	OR STR		*	105	OR STR		*	160	AND NOT	206
051	AND NOT	005	*	106	AND	005	*	161	OUT TMR	03
052	AND	006	*	107	AND	006	*	162	STR TMR	03
053	AND NOT	007	*	108	AND	007	*	163	OUT	206
054	AND NOT	010	*	109	AND NOT	010	*	164	STR	204

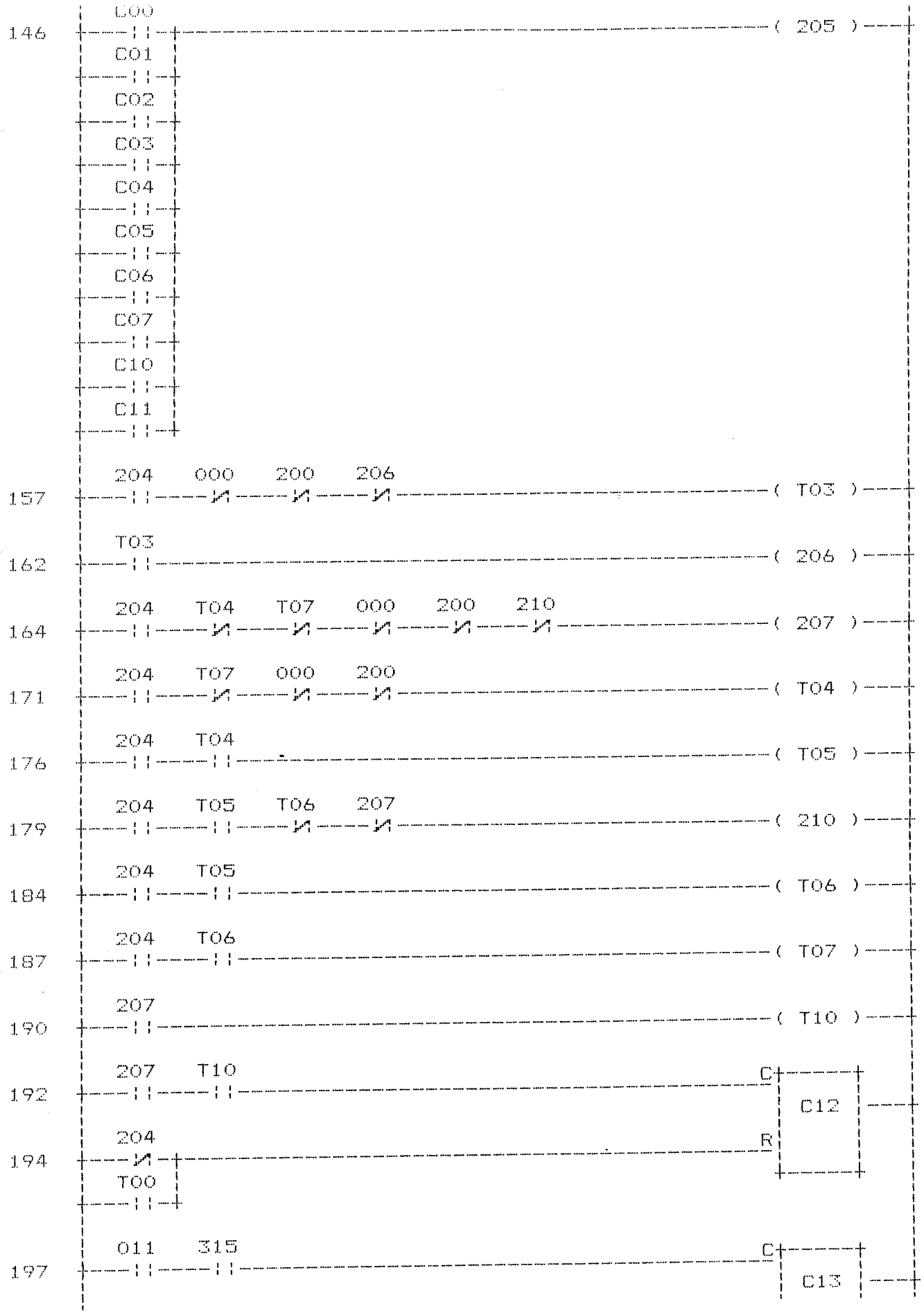
STEP	CODE	DATA		STEP	CODE	DATA		STEP	CODE	DATA
165	AND NOT TMR	04	*	220	STR	204	*	275	AND NOT TMR	12
166	AND NOT TMR	07	*	221	AND	207	*	276	AND NOT	205
167	AND NOT	000	*	222	OR STR		*	277	AND	004
168	AND NOT	200	*	223	AND	212	*	278	AND NOT	000
169	AND NOT	210	*	224	OUT	213	*	279	OUT	220
170	OUT	207	*	225	STR	204	*	280	STR	220
171	STR	204	*	226	AND	210	*	281	AND NOT	013
172	AND NOT TMR	07	*	227	AND	212	*	282	OR	221
173	AND NOT	000	*	228	STR NOT	204	*	283	AND NOT	222
174	AND NOT	200	*	229	AND NOT	200	*	284	AND NOT TMR	12
175	OUT TMR	04	*	230	AND	220	*	285	AND NOT	205
176	STR	204	*	231	OR STR		*	286	AND	004
177	AND TMR	04	*	232	OUT	214	*	287	AND NOT	000
178	OUT TMR	05	*	233	STR	213	*	288	OUT	221
179	STR	204	*	234	OR	214	*	289	STR	221
180	AND TMR	05	*	235	OUT TMR	11	*	290	OR	222
181	AND NOT TMR	06	*	236	STR	200	*	291	AND	013
182	AND NOT	207	*	237	AND NOT	011	*	292	AND NOT TMR	12
183	OUT	210	*	238	STR	204	*	293	AND NOT	205
184	STR	204	*	239	AND	207	*	294	AND	004
185	AND TMR	05	*	240	AND NOT	011	*	295	AND NOT	000
186	OUT TMR	06	*	241	OR STR		*	296	OUT	222
187	STR	204	*	242	STR	204	*	297	STR	014
188	AND TMR	06	*	243	AND	210	*	298	OUT TMR	12
189	OUT TMR	07	*	244	AND	011	*	299	STR	220
190	STR	207	*	245	OR STR		*	300	AND NOT TMR	13
191	OUT TMR	10	*	246	STR	211	*	301	AND	214
192	STR	207	*	247	AND	212	*	302	AND	215
193	AND TMR	10	*	248	AND STR		*	303	AND NOT	000
194	STR NOT	204	*	249	STR NOT	204	*	304	OUT	223
195	OR TMR	00	*	250	AND NOT	200	*	305	STR	220
196	OUT CNT	12	*	251	AND	220	*	306	AND NOT TMR	14
197	STR	011	*	252	OR STR		*	307	OUT TMR	13
198	AND	315	*	253	AND TMR	11	*	308	STR TMR	13
199	STR NOT	011	*	254	OUT	215	*	309	OUT TMR	14
200	OUT CNT	13	*	255	STR	200	*	310	STR	220
201	STR NOT	011	*	256	AND	011	*	311	AND NOT TMR	16
202	AND	315	*	257	STR	204	*	312	OUT TMR	15
203	STR	011	*	258	AND	207	*	313	STR	220
204	OUT CNT	14	*	259	AND	011	*	314	AND TMR	15
205	STR CNT	13	*	260	OR STR		*	315	OUT TMR	16
206	OR CNT	14	*	261	STR	204	*	316	STR NOT	223
207	OUT	211	*	262	AND	210	*	317	AND TMR	15
208	STR	200	*	263	AND NOT	011	*	318	OR	223
209	AND	315	*	264	OR STR		*	319	OUT	224
210	STR NOT	200	*	265	AND	211	*	320	STR	200
211	OUT CNT	15	*	266	AND	212	*	321	AND NOT	051
212	STR NOT	200	*	267	AND TMR	11	*	322	OUT	050
213	AND	315	*	268	OUT	216	*	323	STR	201
214	STR	200	*	269	STR	012	*	324	AND NOT	050
215	OUT CNT	16	*	270	AND NOT	000	*	325	OUT	051
216	STR CNT	15	*	271	OUT	217	*	326	STR	202
217	OR CNT	16	*	272	STR	013	*	327	AND NOT	053
218	OUT	212	*	273	OR	220	*	328	OUT	052
219	STR	200	*	274	AND NOT	222	*	329	STR	203

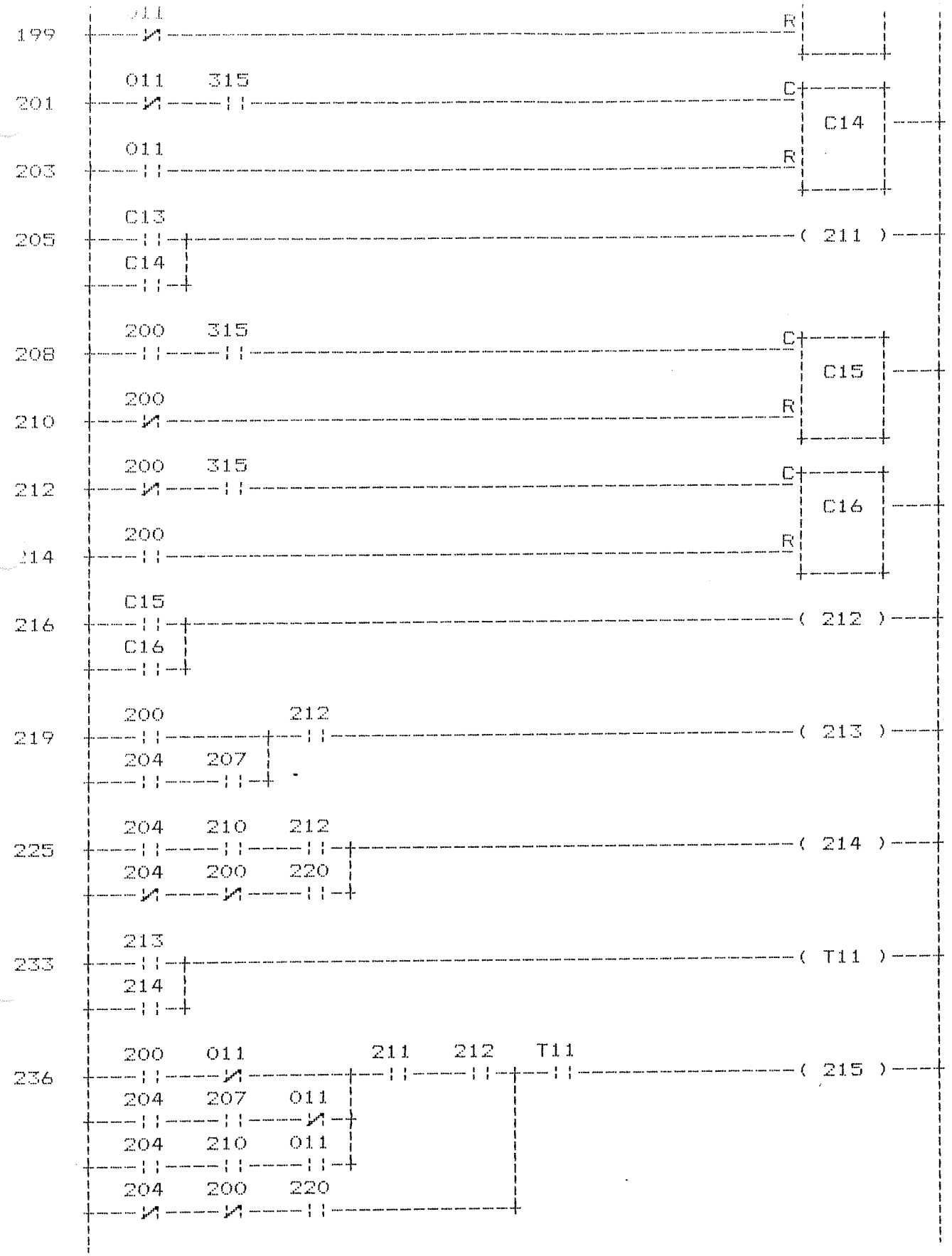
STEP	CODE	DATA		STEP	CODE	DATA		STEP	CODE	DATA
330	AND NOT	052	*	340	OUT	056	*			
331	OUT	053	*	341	STR	216	*			
332	STR	213	*	342	AND NOT	056	*			
333	AND NOT	055	*	343	OUT	057	*			
334	OUT	054	*	344	STR	217	*			
335	STR	214	*	345	OUT	060	*			
336	AND NOT	054	*	346	STR	223	*			
337	OUT	055	*	347	OUT	061	*			
338	STR	215	*	348	STR	224	*			
339	AND NOT	057	*	349	OUT	062	*			

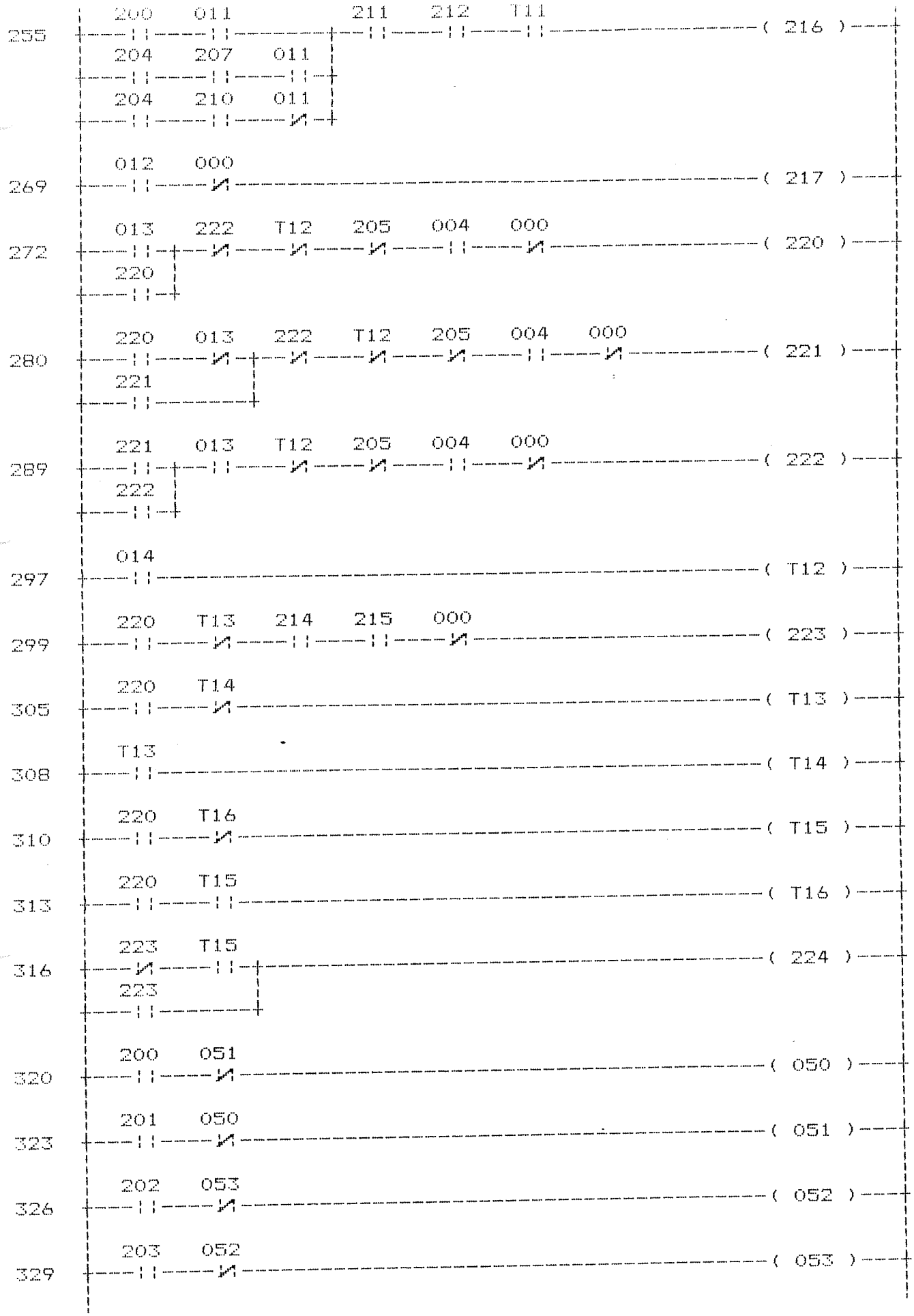
STEP LADDER DIAGRAM

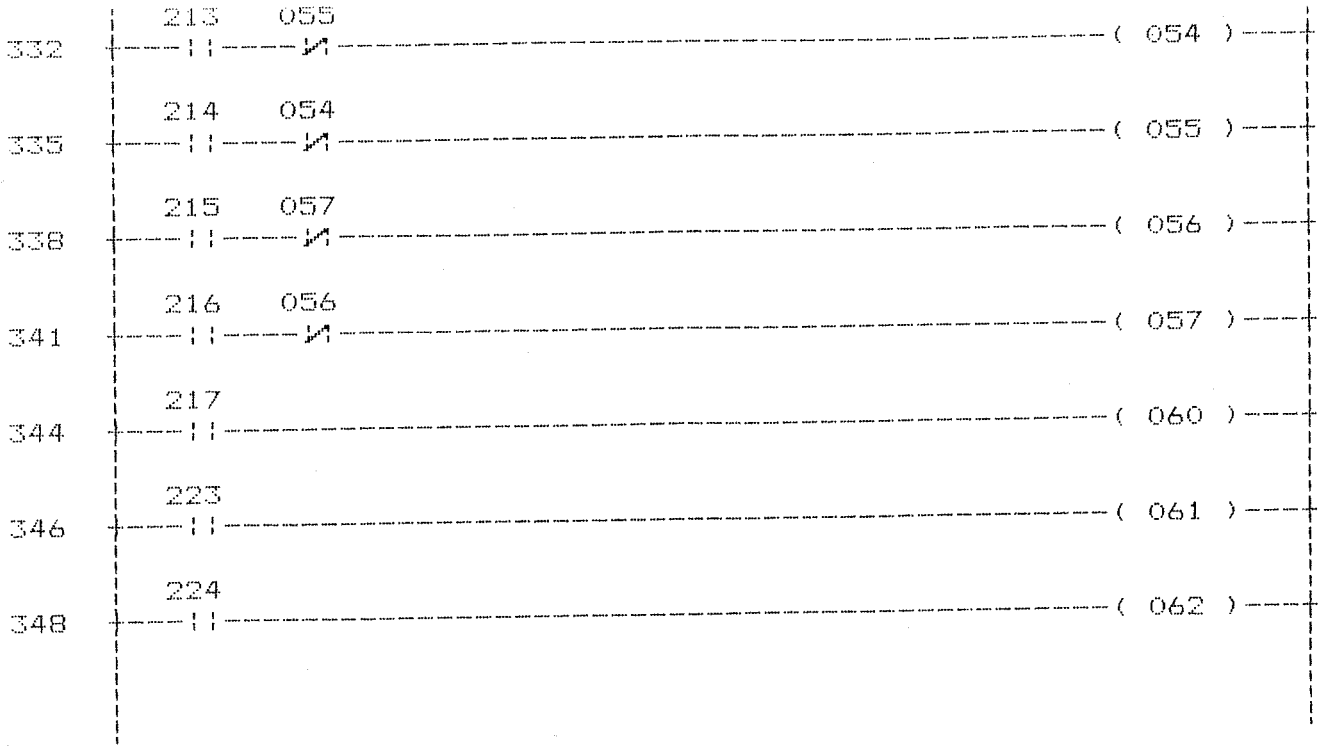



069
T03
005
006
007
010
C
C03
T13
204
077
204
220
R
080
T03
005
006
007
010
C
C04
T13
204
088
204
220
R
091
T03
005
006
007
010
C
C05
T13
204
099
204
220
R
102
T03
005
006
007
010
C
C06
T13
204
110
204
220
R
113
T03
005
006
007
010
C
C07
T13
204
121
204
220
R
124
T03
005
006
007
010
C
C10
T13
204
132
204
220
R
135
T03
005
006
007
010
C
C11
T13
204
143
204
220
R


146
C00
C01
C02
C03
C04
C05
C06
C07
C10
C11
(205)
157
204
000
200
206
(T03)
162
T03
(206)
164
204
T04
T07
000
200
210
(207)
171
204
T07
000
200
(T04)
176
204
T04
(T05)
179
204
T05
T06
207
(210)
184
204
T05
(T06)
187
204
T06
(T07)
190
207
(T10)
192
207
T10
C
C12
194
204
R
T00
197
011
315
C
C13


199
011
R
201
011
315
C
C14
203
011
R
205
C13
C14
(211)
208
200
315
C
C15
210
200
R
212
200
315
C
C16
214
200
R
216
C15
C16
(212)
219
200
212
204
207
(213)
225
204
210
212
204
200
220
(214)
233
213
214
(T11)
236
200
011
211
212
T11
204
207
011
204
210
011
204
200
220
(215)


255
200 011 211 212 T11 (216)
204 207 011
204 210 011
269
012 000 (217)
272
013 222 T12 205 004 000 (220)
220
280
220 013 222 T12 205 004 000 (221)
221
289
221 013 T12 205 004 000 (222)
222
297
014 (T12)
299
220 T13 214 215 000 (223)
305
220 T14 (T13)
308
T13 (T14)
310
220 T16 (T15)
313
220 T15 (T16)
316
223 T15 (224)
223
320
200 051 (050)
323
201 050 (051)
326
202 053 (052)
329
203 052 (053)


213
055
332
(054)
214
054
335
(055)
215
057
338
(056)
216
056
341
(057)
217
344
(060)
223
346
(061)
224
348
(062)

Input	00	Limit switch lid (pause total time)
	01	Grinder forward
	02	Grinder reverse
	03	Mixer start
	04	Mixer stop
	05	Program selector 1-10 BCD code 1
	06	- - - - - 2
	07	- - - - - 4
	10	- - - - - 8
	11	Wing 2 forward/reverse
	12	BES start/stop
D 20	13	Start/stop CO_2
	14	Temp. signal
	15	Disp.
	16	-
D 28	17	-
	20	
	21	
	22	
	23	
	24	
	25	
	26	
D 40	27	
	30	
	31	
	32	
	33	
	34	
	35	
	36	
	37	
	40	
	41	
	42	
	43	
	44	
	45	
	46	
D 64	47	

Output	50	Grinder forward	K1M
	51	- reverse	K2M
	52	- star	K3M
	53	- delta	K4M
	54	Wing 1 forward	K5M
	55	- 1 reverse	K6M
	56	Wing 2 forward	K10M
D 20	57	- 2 reverse	K11M
	60	BES valve	SV1
	61	CO_2 valve	SV2
	62	Controllamp CO_2	H1
D 28	63	Disp.	
	64		
	65		
	66		
D 40	67		
	70		
	71		
	72		
	73		
	74		
	75		
	76		
D 64	77		

Timers	TMR00	Grinder reverse
	TMR01	Star-Delta time
	TMR02	Intermediate time Star-Delta
	TMR03	Timebase for total time counters
	TMR04	Time forward
	TMR05	Intermediate time forward/reverse
	TMR06	Time reverse
	TMR07	Intermediate time reverse/forward
	TMR10	Grinder reverse during mixing after 10 sec.
	TMR11	Delayed start wing 2
	TMR12	Temp. signal delayed
	TMR13	CO_2 feed on
	TMR14	CO_2 - pause
	TMR15	Flash control lamp CO_2
	TMR16	- - - CO_2
	TMR17	
Counters	CNT00	Total time program 1
	CNT01	- - - 2
	CNT02	- - - 3
	CNT03	- - - 4
	CNT04	- - - 5
	CNT05	- - - 6
	CNT06	- - - 7
	CNT07	- - - 8
	CNT10	- - - 9
	CNT11	- - - 10
	CNT12	Grinder reverse during mixing
	CNT13	Intermediate time forward-reverse wing 2
	CNT14	- - - - 2
	CNT15	Delayed start wings (grinder start/stop)
	CNT16	
	CNT17	

shift registers

SFR00	
SFR01	
SFR02	
SFR03	
SFR04	
SFR05	
SFR06	
SFR07	
SFR10	
SFR11	
SFR12	
SFR13	
SFR14	
SFR15	
SFR16	
SFR17	

Internal output

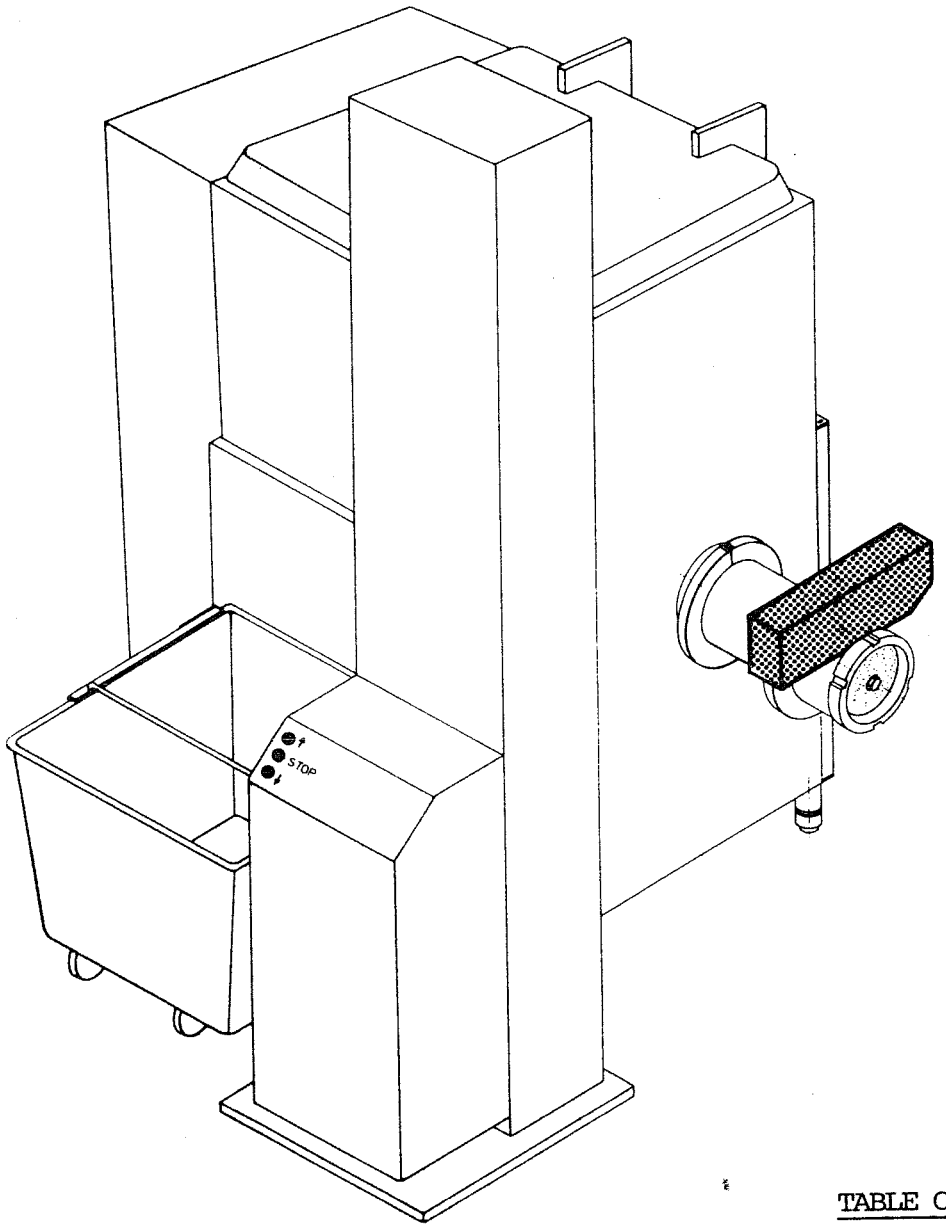
200	Grinder forward
201	- reverse
202	- Star
203	- Delta
204	Mixer start/stop
205	Total time ended
206	Reser TMR 03
207	Wings forward
210	- reverse
211	Auxiliary function CNT13-14
212	- - CNT15-16
213	Wing 1 forward
214	- 1 reverse
215	Wing 2 forward
216	- 2 reverse
217	BES on/off
220	Start/stop CO_2
221	-
222	-
223	CO_2 on/off
224	Control lamp CO_2 on/off flash
225	
226	
227	
230	
231	
232	
233	
234	
235	
236	
237	
240	
241	
242	
243	
244	
245	
246	
247	

internal output	250	
	251	
	252	
	253	
	254	
	255	
	256	
	257	
	260	
	261	
	262	
	263	
	264	
	265	
	266	
	267	
	270	
	271	
	272	
	273	
	274	
	275	
	276	
	277	
internal output protected at power defects	300	
	301	
	302	
	303	
	304	
	305	
	306	
	307	
	310	
	311	
	312	
	313	
	314	
internal output special functions	315	CNT13-14-15-16
	316	
	317	

WOLFKING
DANMARK A/S
DK 4200 Slagelse . Denmark

BES

WALIANT



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DANMARK A/S
DK 4200 Slagelse . Denmark

DATA
BES
(BONE ELIMINATION SYSTEM)

WALIANT

BASIC CONSTRUCTION

	Stainless steel 18/8 SIS 2333
	ASTM 304, Werkstoff 1.4301
Pneumatical equipment	Eloxated aluminium

BES UNIT

Stroke frequency	adjustable, 6 - 240 seconds/stroke
Eliminating capacity	3.7 grams/stroke
Compressor	0.34 kW, 1x220 volts, 50 cycles/60 cycles
	50 litres/min., 6 - 8 bars Fitting inside basic unit
Pneumatical connection	3-pole plug (built-in)
Power connection	1 x 220 V, plug built in, supplied by the Waliant transformer

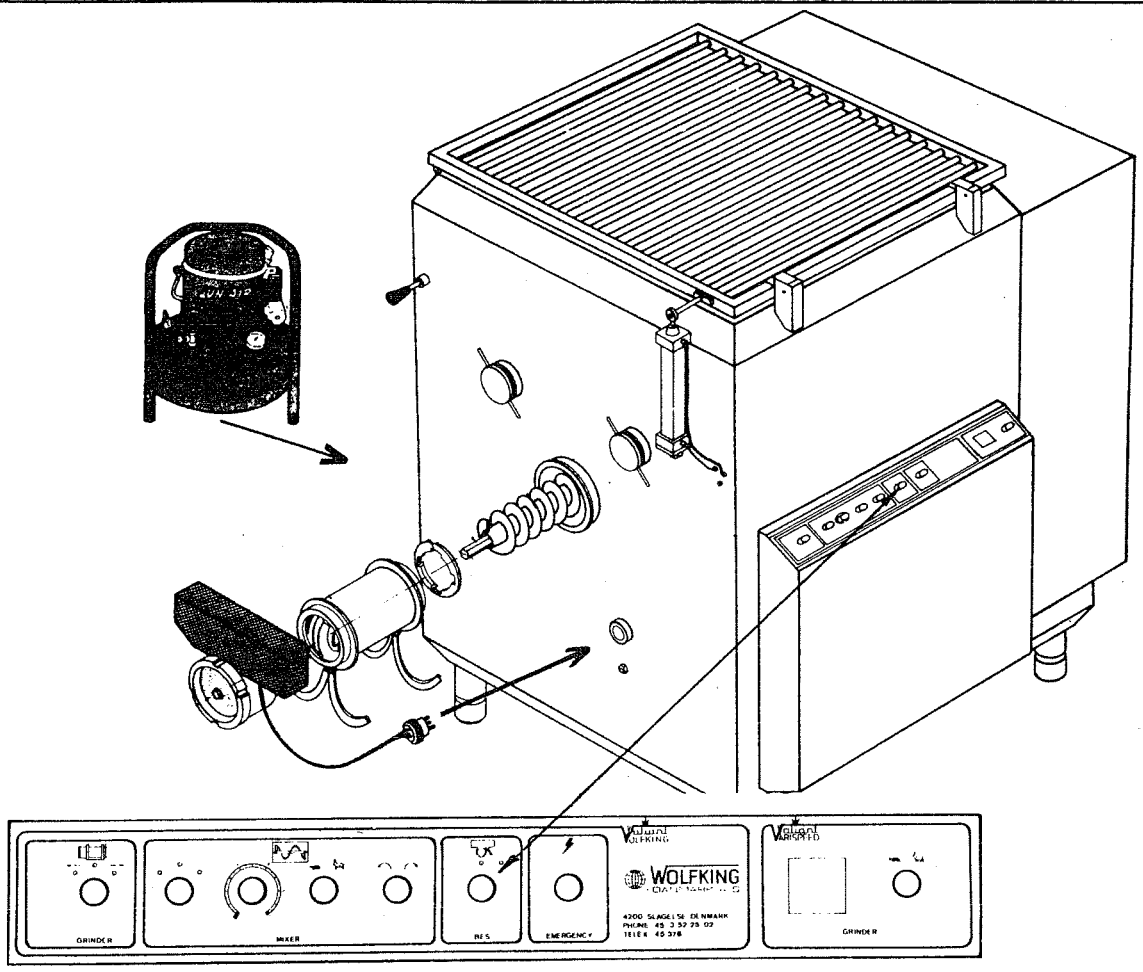
DIMENSIONS L x W x H:

-BES (w/knife-housing)	360 x 150 x 300mm
-Compressor	700 x 250 x 380mm

WEIGHT:

-BES	15 kgs
-Compressor	30 kgs

WOLFKING DANMARK A/S DK 4200 Slagelse . Denmark	MOUNTING INSTRUCTION BES	WALIANT



The Bone Elimination System is consisting of:

BES-unit/knife-housing (welded together), compressor and control-unit.

1. When the BES/knife-housing unit has been mounted, the triple-poled pneumatic plug is fitted in the socket as illustrated.
2. Check the compressor (please be referred to compressor pages).
3.
4. When pressure has been built up (approx. 8 bars), the BES-unit can be activated on the control panel OK , pos. green.
5. Elimination time may be adjusted on the throttle valve (pos. 3 in pneumatic diagram). The timer can be set from approx. 6 to 240 seconds. Please note that the setting should be done with much sensitivity. An interval of approx. 10 sec. is considered appropriate when handling raw material with a low content of gristle and bonechips.
   Please note that stroke frequency must correspond to gristle and bone content in the product. If timer setting is too high, BES unit get choked and stop functioning. If this occurs, clean the BES and choose a lower timer setting.
6. For cleaning the piston (pos.11) is dismounted by means of the thumb screw (pos. 12). Before reassembly the piston should be lubricated with vegetable oil.

WOLFKING
DANMARK A/S
DK 4200 Slagelse . Denmark

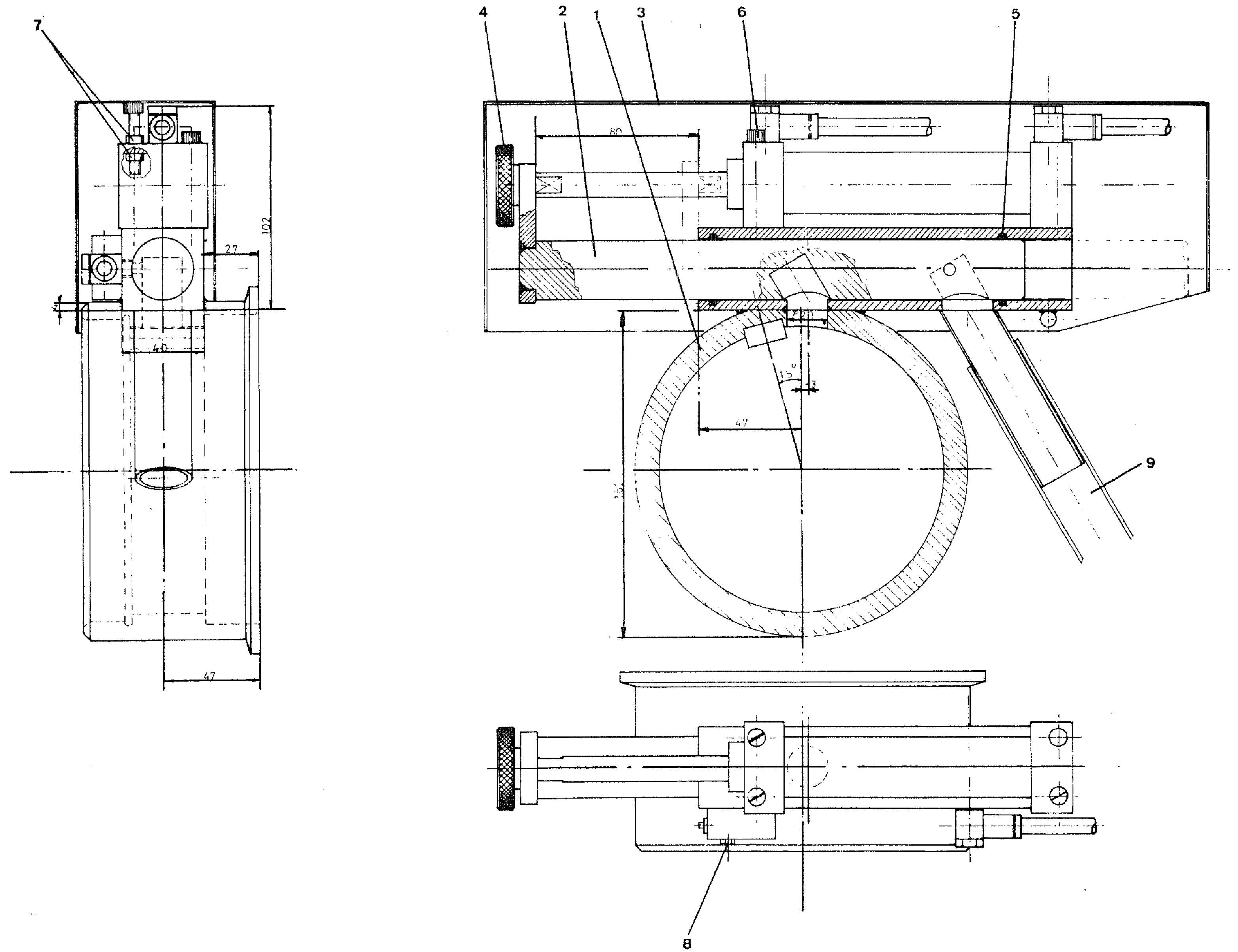
BES

WALIANT

Drawing No.: 92001

	Pos. No.	DESCRIPTION	SPARE PART NO.	QTY.	SPECIFICATION
	1	Knife-housing with cylinder spec. for BES	32026	1	
x)		Key for knife-housing	32051	(1)	
		Screw for key f. knife-housing	22577	(1)	
x)	2	Piston for BES	32930	1	
	3	Guard for BES	32031	1	
	4	Thumb screw	32929	1	
x)	5	O-ring, synthetic	23229	2	30,0 x 3,0
	6	Stainless unbrako screw	26092	3	M5x60
	7	- nut	26099	2	M5
	8	- set screw	22197	2	M8x20
	8	- toothed lock washer	22733	2	8 mm
	9	PVC hose	24975	1	1 1/4" x 500 mm
	10	Compressor	24157	1	Standard 6-S
	11	Pneumatics/automatics for BES	70015	1	
	12	Bracket for compressor	32078	1	
	13	BES plug, complete	32088	1	
	14	Flex-hose for nylon pipe	12022	1	ø20 x 520 mm
	15	1/4" sleeve for compressor	24550	1	
	16	Stainless set screw for solenoid valve	22181	2	M5x8
	17	- screw for flow control valve	22823	2	M4x20
	18	- screw for logical block	22811	4	M4x12
	19	- nut	26301	6	M4
	20	- screw for water separator	22820	2	M4x16
	21	Container w. mounting plate	32087	1	

x) recommended spare parts



WOLFKING
SLAGELSE - DENMARK

VALIANT
BONE ELIMINATOR

1:1

92001

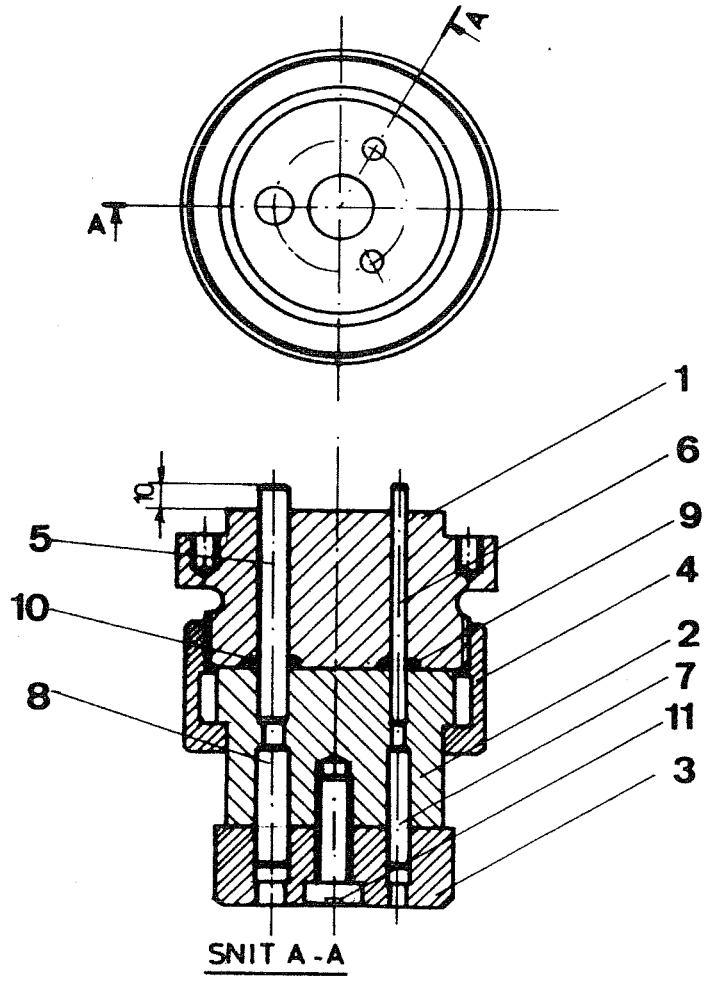
WOLFKING
DANMARK A/S
DK 4200 Slagelse . Denmark

BES plug

WALIANT

Drawing No.: 32088

Pos. No.	DESCRIPTION	SPARE PART NO.	QTY.	SPECIFICATION
1	Fixed part	32089	1	
2	Loose part	32090	1	
3	Lock plate	32095	1	
4	screw cap	32096	1	
5	Connection pipe	32092	1	
6	- -	32093	2	
7	- -	32094	1	
8	- -	32091	2	
9	O-ring, synthetic	23255	2	3,3 x 2,4
10	O-ring, synthetic	23256	1	6,3 x 2,4
11	Stainless screw	22828	1	M6x20



WOLFKING
DANMARK A/S
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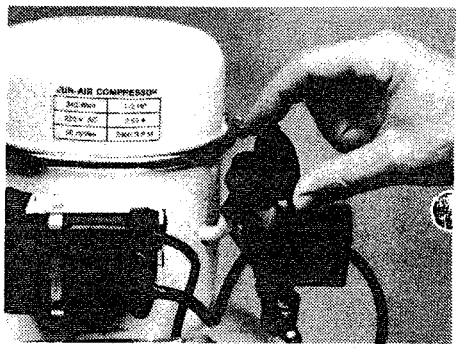
MAINTENANCE OF MACHINE

COMPRESSOR

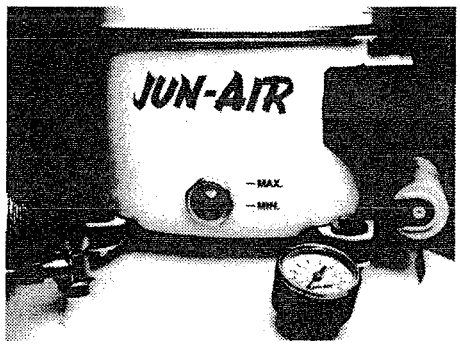
WALIANT

Your compressor is very easy to operate. Observe the following, simple instructions, and you will get many hours service from your compressor.



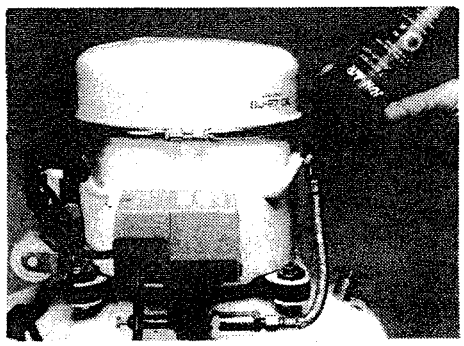
READY FOR USE

Open the lid on the intake filter.



OIL LEVEL

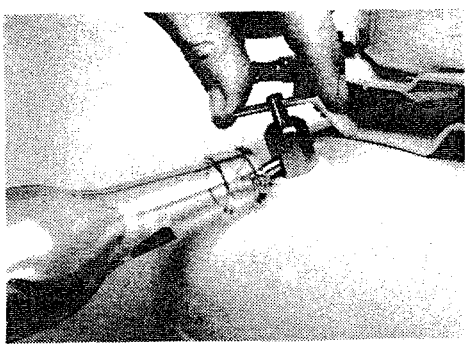
Check the oil level once a week. The oil level must be visible in the glass.



FILLING OF OIL

If required add more oil.

Use only Jun-Air oil!



REMOVING MOISTURE

Blow down receiver at least once every month. Close cock tightly afterwards.

WOLFKING
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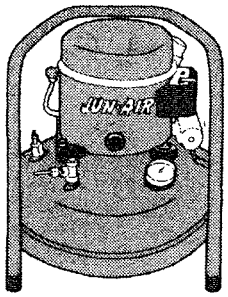
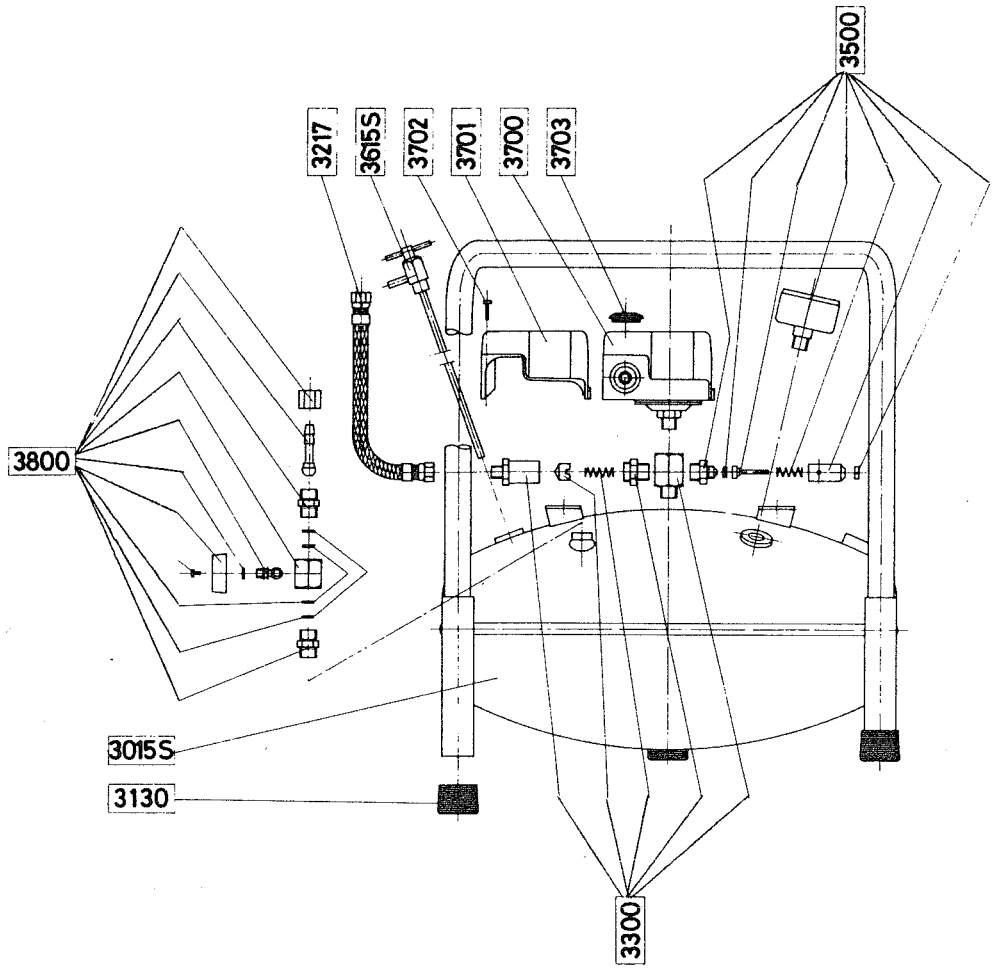
MAINTENANCE OF MACHINE

COMPRESSOR

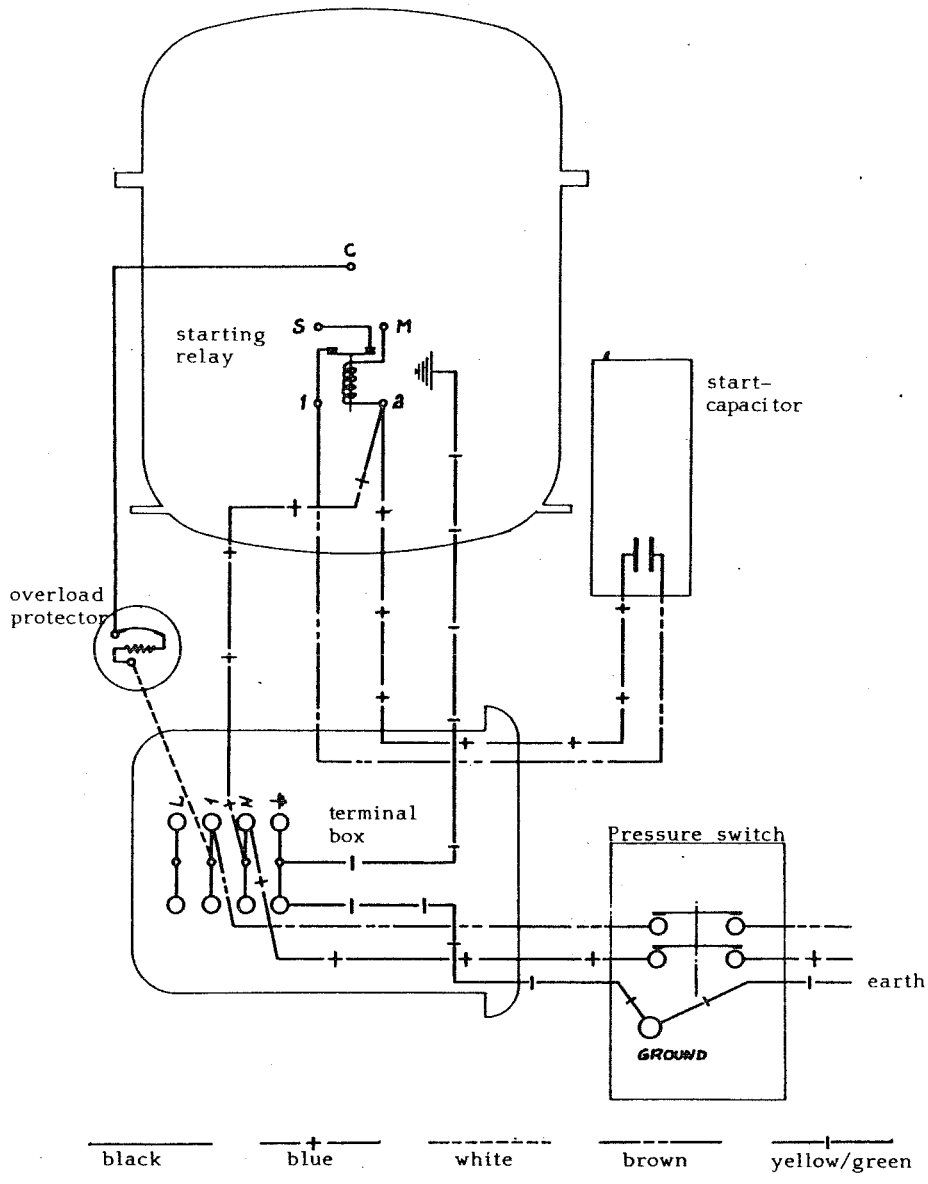
WALIANT

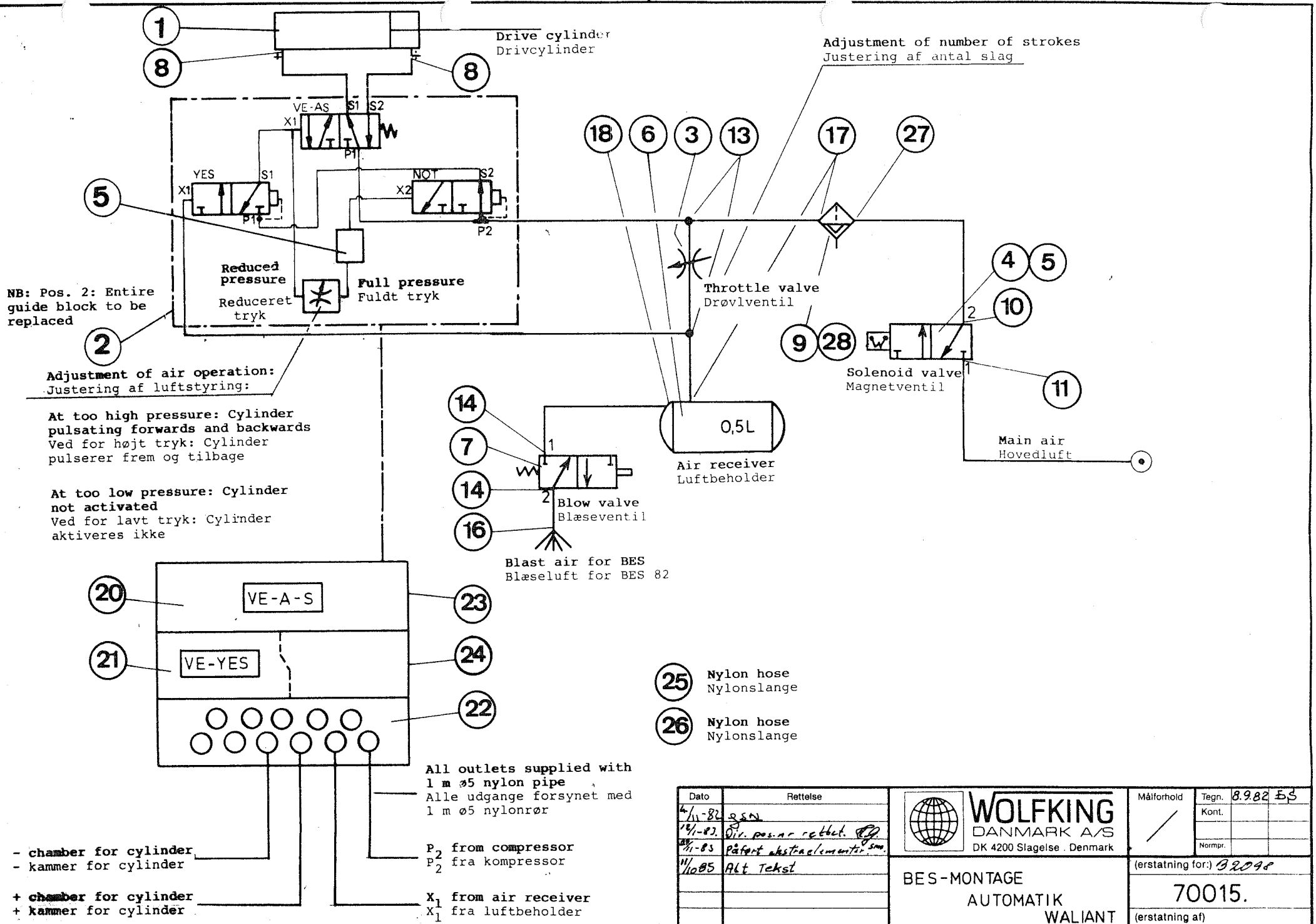




SPARE PART No.	DESCRIPTION
3015 S	Tank
3130	Ferrule
3217	Flex. pressure pipe
3300	Check valve, complete
3500	Safety valve, complete
3615 S	Drain cock
3700	Pressostate
3701	Cover for pressostate
3702	Screw
3703	cap
3800	Discharge valve, complete

WIRING DIAGRAM





Dato	Rettelse
4/11-82	BSN
18/1-83	Div. pos.nr rettet.
24/11-83	Påført ekstraelementer. SMO.
11/10 85	Alt Tekst

WOLFKING DANMARK A/S
DK 4200 Slagelse . Denmark

Målforhold	Tegn. 8.9.82 ES
/	Kont.
	Normpr.

BES-MONTAGE
AUTOMATIK
WALIANT

(erstatning for:) B2098

70015.

(erstatning af)

WOLFKING
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DK 4200 Slagelse . Denmark

PNEUMATIC DIAGRAMME

WALIANT

Drawing No.: 70015

Pos. No.	DESCRIPTION	SPARE PART NO.	QTY.	SPECIFICATION
1	Cylinder	24072	1	AC.C3-40-16-80
2				
3	Flow control valve	24151	1	VBQ-12-OTX-4
4	Solenoid valve 24 V	24253	1	VE-13-E-S-6
5	Plate	24234	1	9124-8081
6				
7	Directional valve	24141	1	FV-13-I-S-5
8	Legris single-banjo	24509	2	1/8" x 5 mm
9	Water separator, semi-automatic	24150	1	Mini-fill 08-A-B
10	Legris single-union	24450	1	1/8" x 5 mm
11	Legris pivotable angle	24460	1	1/8" x 5 mm
11	Brass nip. sleeve	25456	1	3/8" x 1/2" 9715-9313
12				
13	Legris pivotable T-piece	24470	2	1/8" x 5 mm
14	- single-union	24451	2	1/8" x 8 mm
15				
16	Legris single-banjo	24499	1	1/8" x 8 mm
17	- - -union	24452	2	1/4" x 5 mm
18				
19				
20	Effect valve	24146	1	VE-A-S nr. 9723-0034-82
21	Pressure sensor	24147	2	VE-YES nr. 9723-0034-81
22	Stay	24231	2	9128-6299-00
23	Bracket	24232	2	9124-9669-00
24	Plate	24233	5	9128-6296-00
25	Nylon hose - white	24950	1	5/3 mm
26	Nylon hose - white	24952	2	8/6 mm
27	Legris pivotable angle	24462	1	1/4" x 5 mm
28	Mini-mounting hardware	24259	1	9090-1756-00
29				
30				
	Atlas Copco pneumatic automatic	24155	1	