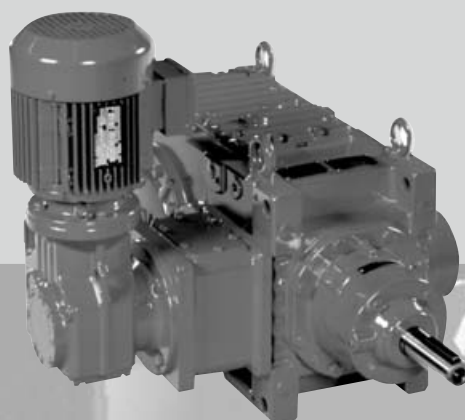




Bucket Elevator Gear Units

Edition

03/2002



Operating Instructions

1054 4216 / EN



SEW-EURODRIVE





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1 Important Notes

Safety and warning instructions

Always follow the safety and warning instructions contained in this publication!



Electrical hazard

Possible consequences: Severe or fatal injuries.



Hazard

Possible consequences: Severe or fatal injuries.



Hazardous situation

Possible consequences: Slight or minor injuries.



Harmful situation

Possible consequences: Damage to the unit and the environment.



Tips and useful information.



A requirement of fault-free operation and fulfillment of any rights to claim under guarantee is that you adhere to the information in the following operating instructions:

- Gear Unit Series MC and Modular Accessories Operating Instructions
- Gear Unit Series R..7, F..7, K..7, S..7, Spiroplan® W Operating Instructions
- AC Motors, Asynchronous Servomotors Operating Instructions

Consequently, read the operating instructions before you start operating the gear unit!

The operating instructions contain important information about servicing and should be kept in the vicinity of the gear unit.

Waste disposal



This product consists of:

- Iron
- Aluminum
- Copper
- Plastic
- Electronics components

Please dispose of the parts in accordance with the applicable regulations.



2 Safety Notes



The following safety instructions refer to the use of bucket elevator gear units. Also observe the safety instructions listed in section 1 of the operating instructions.

General information

During and after operation, gear units and geared motors have live and moving parts and their surfaces may be hot.

All work related to transportation, putting into storage, setting up/mounting, connection, startup, maintenance and repair may only be performed by trained personnel observing

- the corresponding detailed operating instructions and wiring diagrams,
- the warning and safety signs on the bucket elevator gear unit/geared motor,
- the specific regulations and requirements for the system
- national/regional regulations governing safety and the prevention of accidents.

Severe injuries and damage to property may result from

- incorrect use,
- incorrect installation or operation,
- removal of required protective covers or the housing when this is not permitted.

Designated use

These bucket elevator gear units are intended for industrial systems. They correspond to the applicable standards and regulations.

The technical data and the information on permitted operating conditions can be found on the nameplate and in the operating instructions listed in section 1.

It is essential to observe all specified information!

Transportation / storage

Inspect the delivery for any shipping damages as soon as you receive the delivery. Inform the carrier immediately. It may be necessary to preclude startup.

Please observe the notes in the operating instructions listed in section 1.

Installation / assembly

Please observe the notes in the operating instructions listed in section 1.

Startup / operation

Please observe the notes in the section "Startup" as well as the notes in the operating instructions listed in section 1.

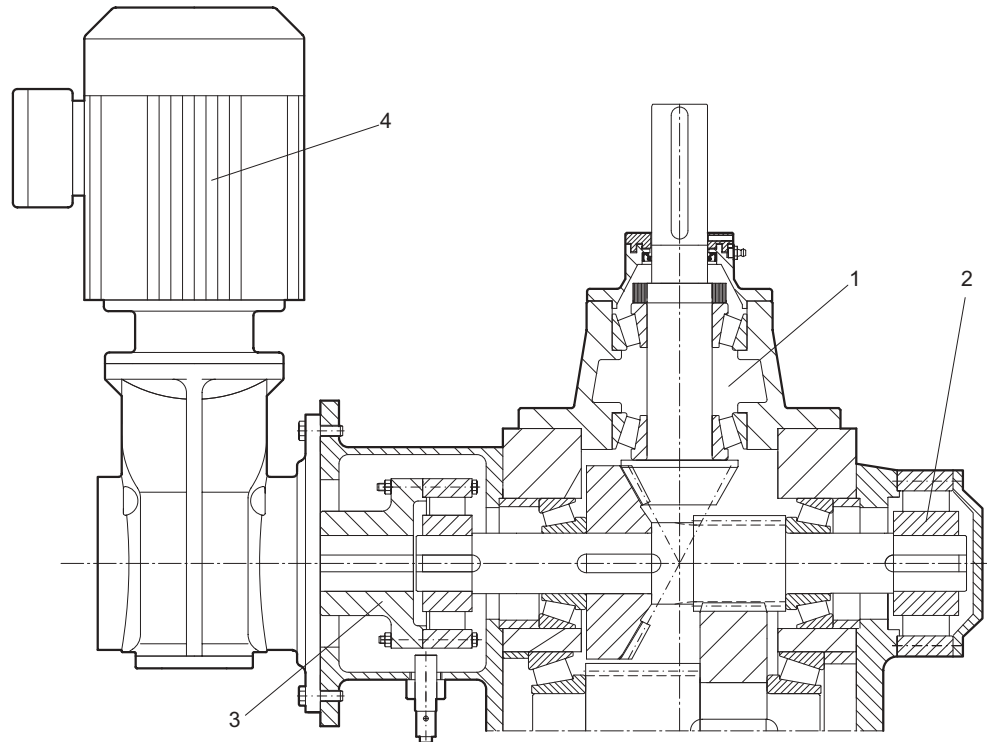
Inspection / maintenance

Please observe the notes in the section "Inspection and Maintenance" as well as the notes in the operating instructions listed in section 1.



3 Structure of the Unit

3.1 Structure of bucket elevator gear unit



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- (1) Bucket elevator gear unit
- (2) Backstop
- (3) Overrunning clutch
- (4) Auxiliary drive

The bucket elevator gear unit (1) consists of a three-stage helical-bevel gear unit (1) of the MC series with mechanical backstop (2) and an auxiliary drive (4) mounted via overrunning clutch (3). Bucket elevator gear units (1) are delivered without lubricant filling. The auxiliary drive (4) is already filled with lubricant.

Backstop

During operation, the mechanical backstop (2) allows only the specified direction of rotation. The direction of rotation is indicated on the bucket elevator gear unit (1) by means of a corresponding direction arrow.



If the direction of rotation must be changed, please consult with SEW-EURODRIVE.

Overrunning clutch

In case of maintenance, the overrunning clutch (3) permits a torque transmission in one direction of rotation using the auxiliary drive. With a main driving motor, the overrunning clutch operates in free-wheeling state. With auxiliary driving motor, it operates in slave mode whereby the drive shaft of the main gear unit slowly turns in parallel.



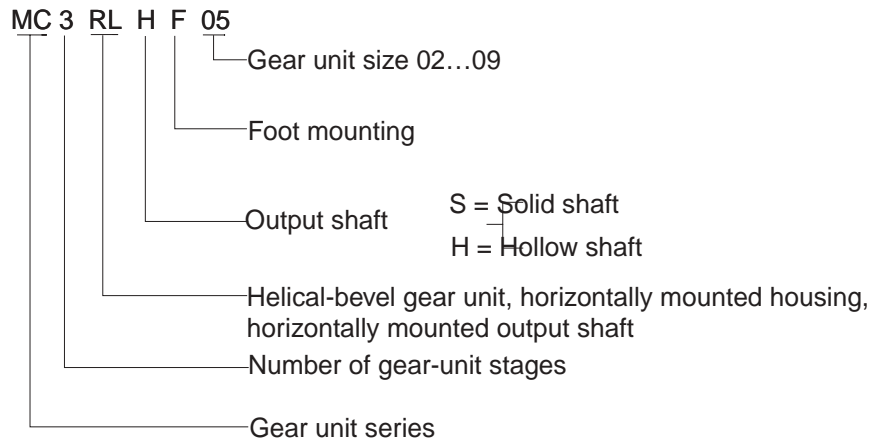
Auxiliary drive

The mounted auxiliary drive (4) is available in two designs: "Partial load" (exclusively for maintenance purposes) or "Full load." It consists of a geared motor with output flange and solid shaft and is mounted to the main gear unit via an overrunning clutch (3) placed in the intermediate flange. The exact output torques of the main gear unit during operation via auxiliary drive can be found in the "Bucket Elevator Gear Unit" catalog.



For safety reasons, the auxiliary drive in "full load" version must be equipped with a brake motor. If the main motor is switched on, it must be ensured that the auxiliary drive is at standstill and the brake was applied.

3.2 Bucket elevator gear unit type designation



05303AEN



Additional information about the structure of the gear unit or the motor can be found in the operating instructions listed in section 1.



4 Mechanical Installation

4.1 *Installation of the bucket elevator gear unit*

The bucket elevator gear unit is intended for horizontal mounting positions.



If the mounting position deviates, please consult with SEW-EURODRIVE!

4.2 *Lubricant filling*

The main gear unit MC.. must be filled with the specified lubricant type and amount (→ nameplate, section "Lubricant Filling").



Additional information on mechanical installation can be found in the operating instructions listed in section 1.



5 Electrical Installation

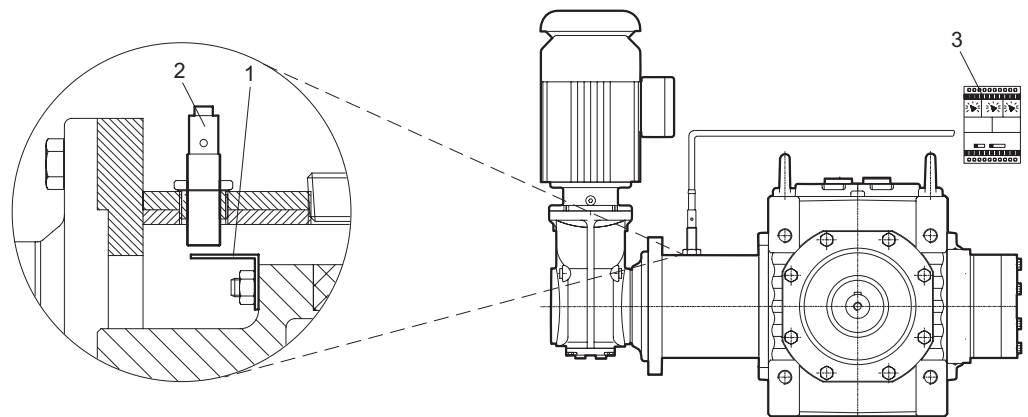
5.1 Speed monitoring



For safety reasons, the bucket elevator drive must be equipped with speed monitoring since a malfunction of the overrunning clutch can damage the auxiliary drive through overspeeds!



If other components than those listed here must be used for speed monitoring, please contact SEW-EURODRIVE.



50546AXX

- (1) Trip cam
- (2) Inductive encoder
- (3) Speed monitor

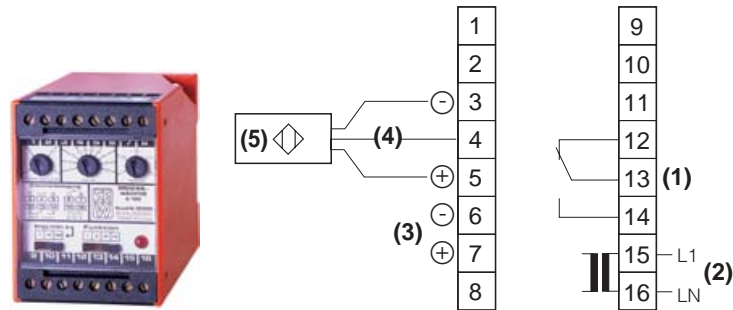
The speed of the overrunning clutch is acquired contactless via trip cam (1) and an inductive encoder (2). The pulses are compared by the speed monitor (3) with a preset reference speed (→ following table). If the reference speed is exceeded (e.g. due to a malfunction of the overrunning clutch), the output relay switches the bucket elevator drive off (optionally NC contact or NO contact). This mechanism prevents overspeeds at the auxiliary drive.

Series Bucket Elevator Gear Units	Reference speed at 50 Hz [1/min]	Reference speed at 60 Hz [1/min]
MC..	60	75
M..		



5.2 Speed monitor W

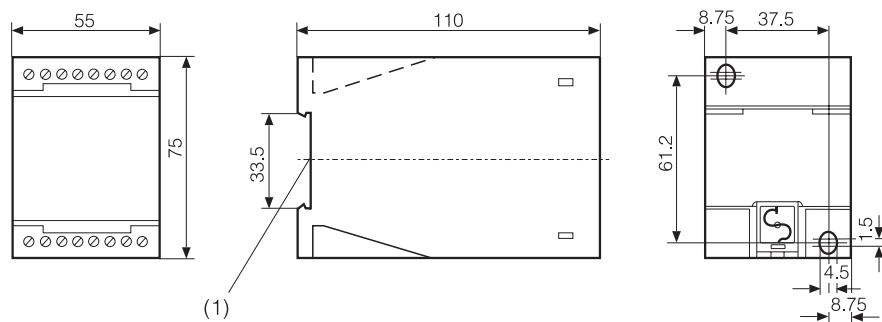
Electrical connection



05586AXX

- (1) Relay output
- (2) Supply voltage 110 V_{AC}, 230 V_{AC} (47...63 Hz)
- (3) Connection voltage 24 V_{DC}
- (4) Signal
- (5) Encoder

Dimensions

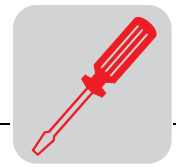


02539BXX

- (1) Mounting on DIN rail

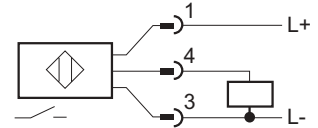
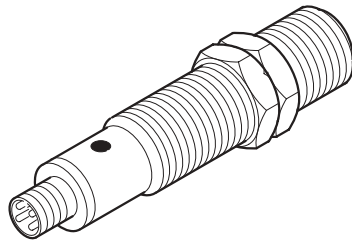
Technical data

- Operating voltage: 220 V_{AC} or 24 V_{DC} (part number 106 710 9)
- Operating voltage: 110 V_{AC} (part number 106 781 8)
- Maximum switching capability of the output relay: 1250 VA (max. 8 A_{AC})
- Reference speed, starting bypass and switching hysteresis can be set at the speed monitor (→ section "Speed Monitor Startup")
- Enclosure: IP 40 (IP 20 terminals)



5.3 Inductive encoder

Electrical connection



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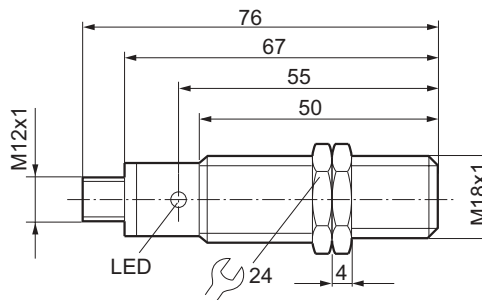
Connect the UL-registered inductive encoder at the speed monitor as follows:

- With a three-core line at a maximum line length of 500 m
- With a line cross section of 1.5 mm².
- Install the signal lines separately (do not use multi-core cables) and shield, if necessary.



The line between encoder and speed monitor as well as the M12 connecting socket of the encoder are not part of the scope of delivery of the speed monitoring.

Dimensions



50535AXX

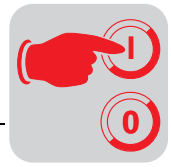


Technical data

Electrical design		DC PNP
Output function		NO contact
Operating voltage	[V _{DC}]	10...36
Current carrying capacity	[mA]	250
Short-circuit protection, clocked		
Polarity reversal protected / overload-proof		
Voltage drop	[V]	< 2.5
Current consumption	[mA]	< 15 (24 V)
Operating distance	[mm]	5 ± 10 %
Working distance	[mm]	0...4.05
Tripping point drift	[%/Sr]	-10...+10
Hysteresis	[%/Sr]	1...15
Switching frequency	[Hz]	500
LED circuit state function indicator		yellow
Ambient temperature	[°C]	-25...+80
Enclosure, protection class		IP 67
EMC		EN 60947-5-2; EN 55011 Class B
Connection		M12 plug-in connection



Additional information about the electrical installation can be found in the operating instructions listed in section 1.



6 Startup

6.1 Startup of bucket elevator gear units



For startup, please observe the safety notes in section 2 and the safety notes in the operating instructions listed in section 1!

Before startup, make sure that

- the gear unit was filled with the lubricant type and lubricant amount (→ section "Lubricant Filling") listed on the nameplate of the bucket elevator gear unit. The lubricant amount listed represents approximate values.
- the **correct oil level** is checked using the dipstick or the oil sight glass (→ section "Inspection and Maintenance"). **The oil level must never drop below the lower mark on the dipstick; if necessary, fill with oil to the top mark on the dipstick with the oil type listed on the nameplate.**



- the **backstop** and the overrunning clutch can be rotated in free-wheeling direction without increased expenditure of force. **Observe the direction arrows on the bucket elevator gear unit.** The backstop is in free-wheeling mode if the drive shaft of the bucket elevator gear unit is turned in operating direction. Turning it in the other direction is prevented by the blocking effect. The **overrunning clutch** is in free-wheeling mode if the motor shaft of the auxiliary drive is turned in the opposite direction of the operating direction. While turning in operating direction, the blocking effect of the overrunning clutch (transfer operation) becomes effective and the output shaft of the bucket elevator gear unit turns in operating direction.
- the rotating field of the three-phase system has been determined using a phase-rotation indicator before connecting the main and auxiliary geared motor and both motors are connected corresponding to the rotating field.
- the main motor cannot turn against the blocking direction of the main gear unit. **Please observe the note attached to the bucket elevator gear unit.**
- main and auxiliary geared motor are electrically locked with each other so that only one of the motors can be switched on at any given time.
- the brake in auxiliary drive operation is switched so that it prevents an overspeed of the auxiliary drive if the conveyor system is not filled properly.
- the switch-off function of the speed monitoring was checked.

During startup, make sure that

- the **auxiliary drive is not overloaded.** The auxiliary drive may only be operated with the output torques listed in the "Bucket Elevator Gear Units" catalog.
- the rotation of the drive shaft of the main drive is not hampered with driving power from auxiliary drive (e.g. maintenance). A brake located at the drive end of the main drive must be opened for driving power from auxiliary drive.

After startup, make sure that

- the brake of the auxiliary drive remains open when main and auxiliary motor are switched off (protection of overrunning clutch during overload opposite to the prescribed direction of rotation).

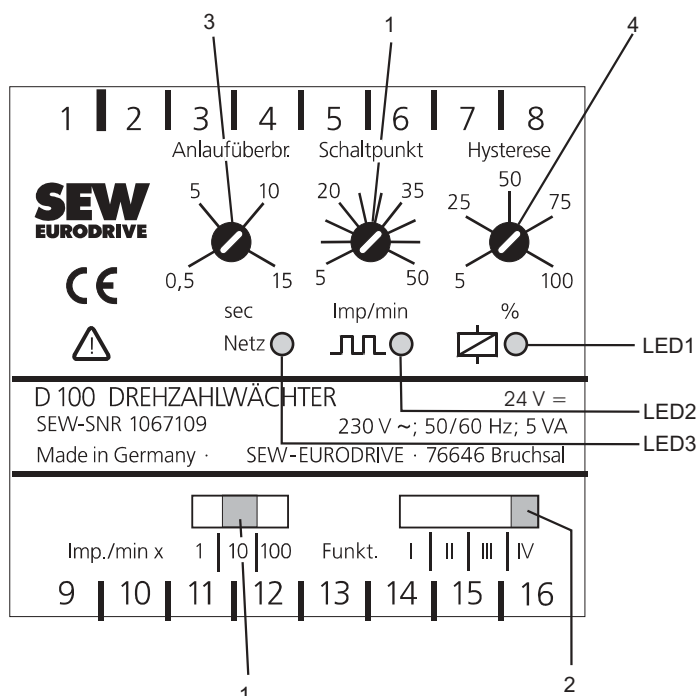


6.2 Startup of speed monitor W















1. Set the speed monitor in accordance with the following table
2. **Functional check for driving power from auxiliary drive**
adjust the switching speed using "tripping point" (1) potentiometer of speed monitor:
 - Value < reference speed (→ section "Speed Monitoring")
 - **Correct:** Relay in speed monitor picks up
3. **After the functional check:**
 - Set switching speed at "tripping point" (1) potentiometer approx. 5 - 10 % higher than reference speed (→ section "Speed Monitoring")
4. Messages:
 - LED1 lights up when the relay has picked up
 - LED2 signals input pulses
 - LED3 displays that the operating voltage is correct

Settings	Description	Setting measures / values
Switching speed (1)	Permits accurate setting of desired value Note: If the drive stalls, you can achieve the shortest possible slip times by setting the switching speed slightly above the reference speed.	Rough setting with step switch (1, 10, 100) Fine tuning with potentiometer (scale 5–50) Example: Step switch "100," potentiometer setting "6:" Switching speed = 10 x 6 = 60 pulses/min
Switching function IV (2)	Defines the properties of monitoring function IV = speed above set speed (LED 1 lights up when relay has picked up)	According to wiring diagram 08 776 002 Setting to function IV
Starting lag (3)	Fault messages can be prevented when the motor is starting by means of an adjustable delay time.	Setting to smallest value (= 0.5 s)
Hysteresis (4)	Difference between the switch-on and switch-off point of the relay Monitoring for violation of upper speed limit: Potentiometer setting "5 %"	Setting to smallest value (= 5 %)



05594ADE



Function	Relay position		
	At speed		In normal mode with startup bypass
	Upper limit violation	Lower limit violation	
I		 	
II		 	
III	 		
IV	 		



Additional information about the startup can be found in the operating instructions listed in section 1.



7 Malfunctions

7.1 Troubleshooting

Problem	Possible cause	Solution
Increased temperature at backstop Failure of blocking function	Damage to backstop	<ul style="list-style-type: none"> Check backstop and replace, if necessary. Contact customer support.
	Incorrect oil level	Check oil level.
Main driving motor does not start up	Motor of main drive defective	Send motor to specialist workshop for repair
	Motor connected incorrectly, incorrect direction of rotation of motor	Swap over two phases.
	Back-up ring with wedge elements of backstop inserted incorrectly or defective	<ul style="list-style-type: none"> Contact customer support. Install back-up ring of backstop 180° reversed or replace it.
	Overrunning clutch is blocked	<ul style="list-style-type: none"> Contact customer support. Installation of a new overrunning clutch.
	Cage with wedge elements of overrunning clutch installed incorrectly or defective	Contact customer support. Install cage of overrunning clutch 180° reversed or replace it.
Auxiliary driving motor does not start up	Overload at output	Reduce load.
	Motor of auxiliary drive defective	Send motor to specialist workshop for repair
	Brake does not release	Check electrical connection of the brake, replace if necessary.
Auxiliary driving motor starts up, but the output shaft of the main gear unit does not turn	Incorrect direction of rotation of the motor	Connect motor correctly.
	Back-up ring with wedge elements of overrunning clutch inserted incorrectly	<ul style="list-style-type: none"> Install back-up ring of overrunning clutch 180° reversed or replace it. Contact customer support.
Main driving motor starts up even though auxiliary drive with speed monitor is in operation	Electrical closure between main and auxiliary motor defective	Check connections, replace defective units if necessary.
	Speed monitoring defective	

If you require assistance from our customer service staff, please state the following:

- Data on the nameplate
- Type and extent of the fault
- State when and under what operating conditions the fault occurred
- Presumed cause



8 Inspection and Maintenance

8.1 Maintenance of bucket elevator gear units

Checking the oil level

1. De-energize and secure the motor to prevent it from being switched on inadvertently!

Wait until the gear unit cools down – Danger of burns!



2. Check for correct oil level:
 - Remove dipstick
 - Check fill height (correct = upper mark of dipstick, slightly above if oil is hot)
3. In no event may the oil level drop below the lower mark on the dipstick; if necessary, fill with oil to the top mark on the dipstick with the oil type listed on the nameplate.

Changing the oil



Information can be found in the operating instructions listed in section 1.

The backstop as well as the overrunning clutch mounted in the adapter flange are integrated into the oil quantity of the main gear unit. Oil change or maintenance are performed together with the main gear unit.



To accelerate the oil filling of the bucket elevator gear unit, the adapter flange can be filled with the lubricant quantities listed in the paragraph "Adapter flange" in the section "Lubricant Fillings." In this case, the main gear unit receives only the oil quantity listed on the nameplate minus the lubricant quantity added to the adapter flange (→ section "Lubricant Fillings").



Additional information about inspection and maintenance can be found in the operating instructions listed in section 1.



9 Lubricant Fill Quantities

The indicated fill quantities are recommended values. The exact values vary depending on the gear ratio.

Main gear unit

Gear unit type	Fill quantity in liters ¹⁾
MC3RL..02	14
MC3RL..03	18
MC3RL..04	24
MC3RL..05	31
MC3RL..06	39
MC3RL..07	45
MC3RL..08	69
MC3RL..09	93

1) The lubricant fill quantity of the adapter flange has been included in the listed lubricant fill quantities.

Adapter flange

Gear unit type	Fill quantity in liters
MC3RL..02	2.0
MC3RL..03	
MC3RL..04	
MC3RL..05	3.0
MC3RL..06	
MC3RL..07	6.0
MC3RL..08	
MC3RL..09	



Additional information about lubricant types and quantities can be found in the operating instructions listed in section 1.



Address List

Germany			
Headquarters Production Sales Service	Bruchsal	SEW-EURODRIVE GmbH & Co Ernst-Blickle-Straße 42 D-76646 Bruchsal P.O. Box Postfach 3023 · D-76642 Bruchsal	Tel. (0 72 51) 75-0 Fax (0 72 51) 75-19 70 http://www.sew-eurodrive.de sew@sew-eurodrive.de
Production	Graben	SEW-EURODRIVE GmbH & Co Ernst-Blickle-Straße 1 D-76676 Graben-Neudorf P.O. Box Postfach 1220 · D-76671 Graben-Neudorf	Tel. (0 72 51) 75-0 Fax (0 72 51) 75-29 70 Telex 7 822 276
Assembly Service	Garbsen (near Hannover)	SEW-EURODRIVE GmbH & Co Alte Ricklinger Straße 40-42 D-30823 Garbsen P.O. Box Postfach 110453 · D-30804 Garbsen	Tel. (0 51 37) 87 98-30 Fax (0 51 37) 87 98-55 scm-garbsen@sew-eurodrive.de
	Kirchheim (near München)	SEW-EURODRIVE GmbH & Co Domagkstraße 5 D-85551 Kirchheim	Tel. (0 89) 90 95 52-10 Fax (0 89) 90 95 52-50 scm-kirchheim@sew-eurodrive.de
	Langenfeld (near Düsseldorf)	SEW-EURODRIVE GmbH & Co Siemensstraße 1 D-40764 Langenfeld	Tel. (0 21 73) 85 07-30 Fax (0 21 73) 85 07-55 scm-langenfeld@sew-eurodrive.de
	Meerane (near Zwickau)	SEW-EURODRIVE GmbH & Co Dänkritzer Weg 1 D-08393 Meerane	Tel. (0 37 64) 76 06-0 Fax (0 37 64) 76 06-30 scm-meerane@sew-eurodrive.de
Additional addresses for service in Germany provided on request!			
France			
Production Sales Service	Hagenau	SEW-USOCOME 48-54, route de Soufflenheim B. P. 185 F-67506 Hagenau Cedex	Tel. 03 88 73 67 00 Fax 03 88 73 66 00 http://www.usocome.com sew@usocome.com
Assembly Sales Service	Bordeaux	SEW-USOCOME Parc d'activités de Magellan 62, avenue de Magellan - B. P. 182 F-33607 Pessac Cedex	Tel. 05 57 26 39 00 Fax 05 57 26 39 09
	Lyon	SEW-USOCOME Parc d'Affaires Roosevelt Rue Jacques Tati F-69120 Vaulx en Velin	Tel. 04 72 15 37 00 Fax 04 72 15 37 15
	Paris	SEW-USOCOME Zone industrielle 2, rue Denis Papin F-77390 Verneuil l'Étang	Tel. 01 64 42 40 80 Fax 01 64 42 40 88
Additional addresses for service in France provided on request!			
Argentina			
Assembly Sales Service	Buenos Aires	SEW EURODRIVE ARGENTINA S.A. Centro Industrial Garin, Lote 35 Ruta Panamericana Km 37,5 1619 Garin	Tel. (3327) 45 72 84 Fax (3327) 45 72 21 sewar@sew-eurodrive.com.ar
Australia			
Assembly Sales Service	Melbourne	SEW-EURODRIVE PTY. LTD. 27 Beverage Drive Tullamarine, Victoria 3043	Tel. (03) 99 33 10 00 Fax (03) 99 33 10 03 http://www.sew-eurodrive.com.au enquires@sew-eurodrive.com.au
	Sydney	SEW-EURODRIVE PTY. LTD. 9, Sleigh Place, Wetherill Park New South Wales, 2164	Tel. (02) 97 25 99 00 Fax (02) 97 25 99 05 enquires@sew-eurodrive.com.au
Austria			
Assembly Sales Service	Wien	SEW-EURODRIVE Ges.m.b.H. Richard-Strauss-Strasse 24 A-1230 Wien	Tel. (01) 6 17 55 00-0 Fax (01) 6 17 55 00-30 http://sew-eurodrive.at sew@sew-eurodrive.at



Address List

Belgium			
Assembly Sales Service	Brüssel	CARON-VECTOR S.A. Avenue Eiffel 5 B-1300 Wavre	Tel. 0032 (010) 23 13 11 Fax 0032 (010) 2313 36 http://www.caron-vector.be info@caron-vector.be
Brazil			
Production Sales Service	Sao Paulo	SEW-EURODRIVE Brasil Ltda. Avenida Amancio Gaiolli, 50 Caixa Postal: 201-07111-970 Guarulhos - Cep.: 07251-250	Tel. (011) 64 89-91 33 Fax (011) 64 80 33 28 http://www.sew.com.br sew@sew.com.br
Additional addresses for service in Brazil provided on request!			
Bulgaria			
Sales	Sofia	BEVER-DRIVE GMBH Bogdanovetz Str.1 BG-1606 Sofia	Tel. (92) 9 53 25 65 Fax (92) 9 54 93 45 bever@mbox.infotel.bg
Canada			
Assembly Sales Service	Toronto	SEW-EURODRIVE CO. OF CANADA LTD. 210 Walker Drive Bramalea, Ontario L6T3W1	Tel. (905) 7 91-15 53 Fax (905) 7 91-29 99 http://www.sew-eurodrive.ca l.reynolds@sew-eurodrive.ca
	Vancouver	SEW-EURODRIVE CO. OF CANADA LTD. 7188 Honeyman Street Delta. B.C. V4G 1 E2	Tel. (604) 9 46-55 35 Fax (604) 946-2513 b.wake@sew-eurodrive.ca
	Montreal	SEW-EURODRIVE CO. OF CANADA LTD. 2555 Rue Leger Street LaSalle, Quebec H8N 2V9	Tel. (514) 3 67-11 24 Fax (514) 3 67-36 77 a.peluso@sew-eurodrive.ca
Additional addresses for service in Canada provided on request!			
Chile			
Assembly Sales Service	Santiago de Chile	SEW-EURODRIVE CHILE Motores-Reductores LTDA. Panamericana Norte No 9261 Casilla 23 - Correo Quilicura RCH-Santiago de Chile	Tel. (02) 6 23 82 03+6 23 81 63 Fax (02) 6 23 81 79 sewsales@entelchile.net
China			
Production Assembly Sales Service	Tianjin	SEW-EURODRIVE (Tianjin) Co., Ltd. No. 46, 7th Avenue, TEDA Tianjin 300457	Tel. (022) 25 32 26 12 Fax (022) 25 32 26 11 http://www.sew.com.cn
Colombia			
Assembly Sales Service	Bogotá	SEW-EURODRIVE COLOMBIA LTDA. Calle 22 No. 132-60 Bodega 6, Manzana B Santafé de Bogotá	Tel. (0571) 5 47 50 50 Fax (0571) 5 47 50 44 sewcol@andinet.com
Croatia			
Sales Service	Zagreb	KOMPEKS d. o. o. PIT Erdödy 4 II HR 10 000 Zagreb	Tel. +385 14 61 31 58 Fax +385 14 61 31 58 kompeks@net.hr
Czech Republic			
Sales	Praha	SEW-EURODRIVE CZ S.R.O. Business Centrum Praha Luná 591 CZ-16000 Praha 6 - Vokovice	Tel. 02/20 12 12 34 + 20 12 12 36 Fax 02/20 12 12 37 http://www.sew-eurodrive.cz sew@sew-eurodrive.cz
Denmark			
Assembly Sales Service	Kopenhagen	SEW-EURODRIVEA/S Geminivej 28-30, P.O. Box 100 DK-2670 Greve	Tel. 0045 (043) 95 8500 Fax 0045 (043) 95 8509 http://www.sew-eurodrive.dk sew@sew-eurodrive.dk
Estonia			
Sales	Tallin	ALAS-KUUL AS Paldiski mnt.125 EE 0006 Tallin	Tel. 6 59 32 30 Fax 6 59 32 31



Finland			
Assembly Sales Service	Lahti	SEW-EURODRIVE OY Vesimäentie 4 FIN-15860 Hollola 2	Tel. (3) 589 300 Fax (3) 780 6211 http://www.sew-eurodrive.fi sew@sew-eurodrive.fi
Great Britain			
Assembly Sales Service	Normanton	SEW-EURODRIVE Ltd. Beckbridge Industrial Estate P.O. Box No.1 GB-Normanton, West- Yorkshire WF6 1QR	Tel. 19 24 89 38 55 Fax 19 24 89 37 02 http://www.sew-eurodrive.co.uk info@sew-eurodrive.co.uk
Greece			
Sales Service	Athen	Christ. Boznos & Son S.A. 12, Mavromichali Street P.O. Box 80136, GR-18545 Piraeus	Tel. 0030 1 04 22 51 34 Fax 0030 1 04 22 51 59 http://www.boznos.gr Boznos@otenet.gr
Hong Kong			
Assembly Sales Service	Hong Kong	SEW-EURODRIVE LTD. Unit No. 801-806, 8th Floor Hong Leong Industrial Complex No. 4, Wang Kwong Road Kowloon, Hong Kong	Tel. 2-7 96 04 77 + 79 60 46 54 Fax 2-7 95-91 29 sew@sewhk.com
Hungary			
Sales Service	Budapest	SEW-EURODRIVE Kft. H-1037 Budapest Kunigunda u. 18	Tel. +36 1 437 06 58 Fax +36 1 437 06 50 sew-eurodrive.voros@matarnet.hu
India			
Assembly Sales Service	Baroda	SEW-EURODRIVE India Pvt. Ltd. Plot No. 4, Gidc Por Ramangamdi · Baroda - 391 243 Gujarat	Tel. 0 265-83 10 86 Fax 0 265-83 10 87 sew.baroda@gecsl.com
Ireland			
Sales Service	Dublin	Alperton Engineering Ltd. 48 Moyle Road Dublin Industrial Estate Glasnevin, Dublin 11	Tel. (01) 8 30 62 77 Fax (01) 8 30 64 58
Italy			
Assembly Sales Service	Milano	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Via Bernini,14 I-20020 Solaro (Milano)	Tel. (02) 96 98 01 Fax (02) 96 79 97 81 sewit@sew-eurodrive.it
Japan			
Assembly Sales Service	Toyoda-cho	SEW-EURODRIVE JAPAN CO., LTD 250-1, Shimoman-no, Toyoda-cho, Iwata gun Shizuoka prefecture, 438-0818	Tel. (0 53 83) 7 3811-13 Fax (0 53 83) 7 3814 sewjapan@lilac.ocn.ne.jp
Korea			
Assembly Sales Service	Ansan-City	SEW-EURODRIVE KOREA CO., LTD. B 601-4, Banweol Industrial Estate Unit 1048-4, Shingil-Dong Ansan 425-120	Tel. (031) 4 92-80 51 Fax (031) 4 92-80 56 master@sew-korea.co.kr
Luxembourg			
Assembly Sales Service	Brüssel	CARON-VECTOR S.A. Avenue Eiffel 5 B-1300 Wavre	Tel. 0032 (010) 23 13 11 Fax 0032 (010) 2313 36 http://www.caron-vector.be info@caron-vector.be
Macedonia			
Sales	Skopje	SGS-Skopje / Macedonia "Teodosij Sinactaski" 66 91000 Skopje / Macedonia	Tel. (0991) 38 43 90 Fax (0991) 38 43 90 sgs@mol.com.mk



Address List

Malaysia			
Assembly Sales Service	Johore	SEW-EURODRIVE SDN BHD No. 95, Jalan Seroja 39, Taman Johor Jaya 81000 Johor Bahru, Johor West Malaysia	Tel. (07) 3 54 57 07 + 3 54 94 09 Fax (07) 3 5414 04 kchtan@pd.jaring.my
Netherlands			
Assembly Sales Service	Rotterdam	VECTOR Aandrijftechniek B.V. Industrieweg 175 NL-3044 AS Rotterdam Postbus 10085 NL-3004 AB Rotterdam	Tel. +31 10 44 63 700 Fax +31 10 41 55 552 http://www.vector-aandrijftechniek.nl info@vector.nu
New Zealand			
Assembly Sales Service	Auckland	SEW-EURODRIVE NEW ZEALAND LTD. P.O. Box 58-428 82 Greenmount drive East Tamaki Auckland	Tel. 0064-9-2 74 56 27 Fax 0064-9-2 74 01 65 sales@sew-eurodrive.co.nz
	Christchurch	SEW-EURODRIVE NEW ZEALAND LTD. 10 Settlers Crescent, Ferrymead Christchurch	Tel. 0064-3-3 84 62 51 Fax 0064-3-3 85 64 55 sales@sew-eurodrive.co.nz
Norway			
Assembly Sales Service	Moss	SEW-EURODRIVE A/S Solgaard skog 71 N-1599 Moss	Tel. 0047 (69) 2410 20 Fax 0047 (69) 2410 40 sew@sew-eurodrive.no
Peru			
Assembly Sales Service	Lima	SEW DEL PERU MOTORES REDUCTORES S.A.C. Los Calderos # 120-124 Urbanizacion Industrial Vulcano, ATE, Lima	Tel. (511) 349-52 80 Fax (511) 349-30 02 sewperu@terra.com.pe
Poland			
Sales	Lodz	SEW-EURODRIVE Polska Sp.z.o.o. ul. Techniczna 3/5 PL-92-519 Lodz	Tel. (042) 6 77 10 90 Fax (042) 6 77 10 99 http://www.sew-eurodrive.pl sew@sew-eurodrive.pl
Portugal			
Assembly Sales Service	Coimbra	SEW-EURODRIVE, LDA. Apartado 15 P-3050-901 Mealhada	Tel. (0231) 20 96 70 Fax (0231) 20 36 85 http://www.sew-eurodrive.pt infosew@sew-eurodrive.pt
Romania			
Sales Service	Bucuresti	Sialco Trading SRL str. Madrid nr.4 71222 Bucuresti	Tel. (01) 2 30 13 28 Fax (01) 2 30 71 70 sialco@mediasat.ro
Russia			
Sales	St. Petersburg	ZAO SEW-EURODRIVE P.O. Box 193 RUS-193015 St. Petersburg	Tel. (812) 5 35 71 42 + 5 35 04 30 Fax (812) 5 35 22 87 sew@sew-eurodrive.ru
Singapore			
Assembly Sales Service		SEW-EURODRIVE PTE. LTD. No 9, Tuas Drive 2 Jurong Industrial Estate Singapore 638644	Tel. 00 65 - 68 62 17 01 ... 17 05 Fax 00 65 - 68 61 28 27 Telex 38 659 sales@sew-eurodrive.com.sg
Slovenia			
Sales Service	Celje	Pakman - Pogonska Tehnika d.o.o. Ul. XIV. divizije 14 SLO - 3000 Celje	Tel. 00386 3 490 83 20 Fax 00386 3 490 83 21 pakman@siol.net

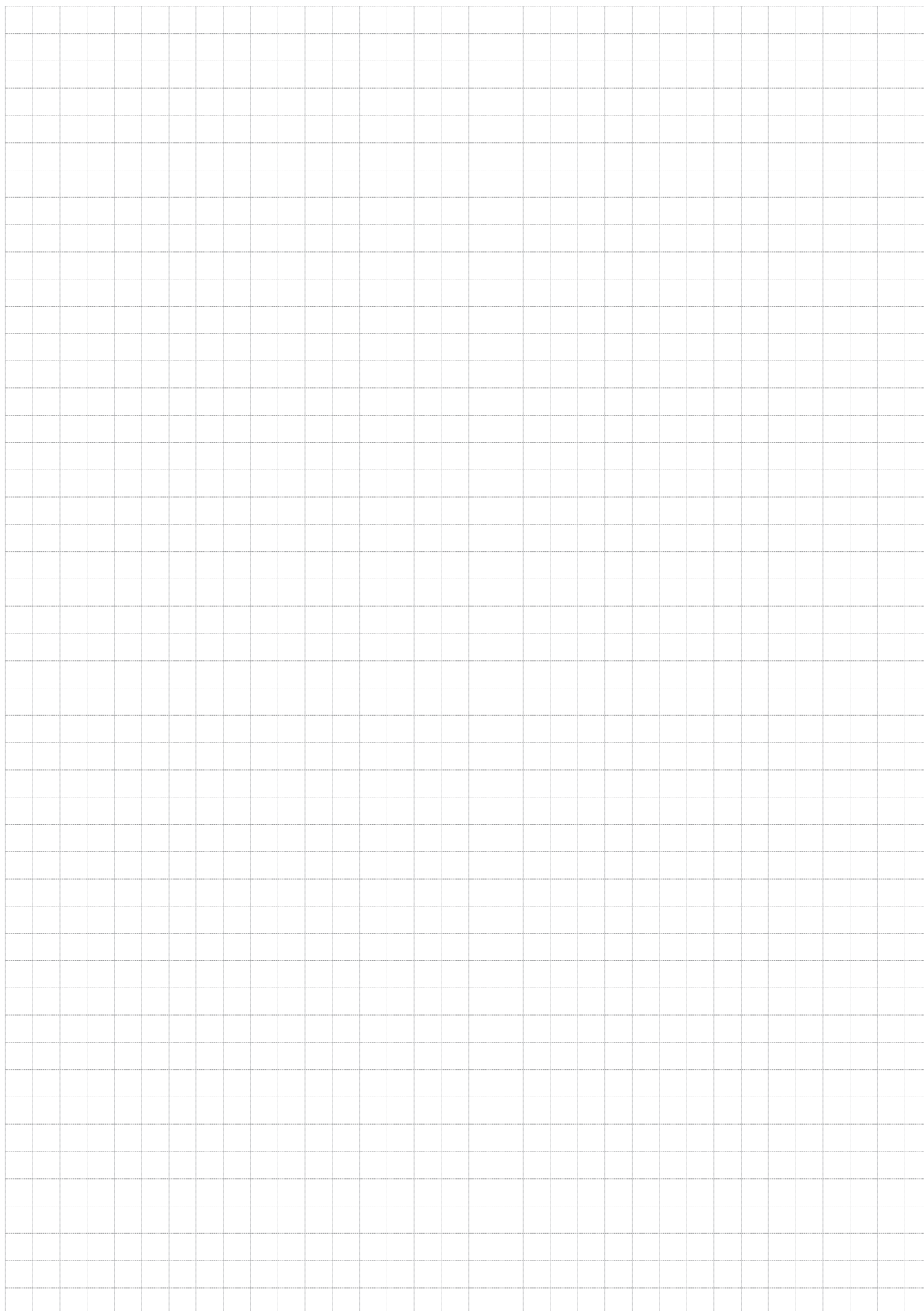


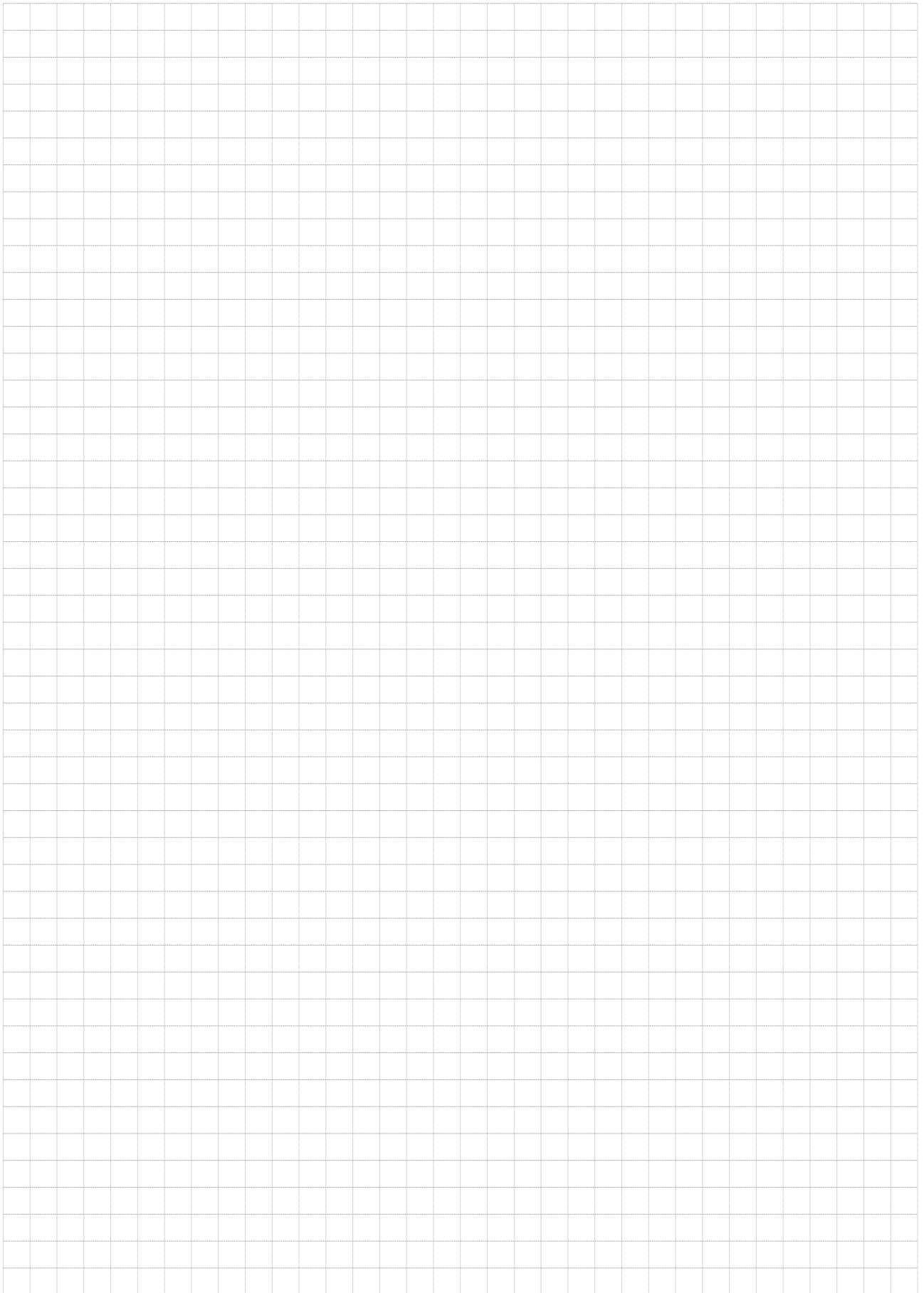
South Africa			
Assembly Sales Service	Johannesburg	SEW-EURODRIVE (PROPRIETARY) LIMITED Eurodrive House Cnr. Adcock Ingram and Aerodrome Roads Aeroton Ext. 2 Johannesburg 2013 P.O.Box 90004 Bertsham 2013	Tel. + 27 11 248 70 00 Fax +27 11 494 23 11 ljansen@sew.co.za
	Capetown	SEW-EURODRIVE (PROPRIETARY) LIMITED Rainbow Park Cnr. Racecourse & Omuramba Road Montague Gardens Cape Town P.O.Box 36556 Chempet 7442 Cape Town	Tel. +27 21 552 98 20 Fax +27 21 552 98 30 Telex 576 062 dswanepoel@sew.co.za
	Durban	SEW-EURODRIVE (PROPRIETARY) LIMITED 2 Monaceo Place Pinetown Durban P.O. Box 10433, Ashwood 3605	Tel. +27 31 700 34 51 Fax +27 31 700 38 47 dtait@sew.co.za
Spain			
Assembly Sales Service	Bilbao	SEW-EURODRIVE ESPAÑA, S.L. Parque Tecnológico, Edificio, 302 E-48170 Zamudio (Vizcaya)	Tel. 9 44 31 84 70 Fax 9 44 31 84 71 sew.spain@sew-eurodrive.es
Sweden			
Assembly Sales Service	Jönköping	SEW-EURODRIVE AB Gnejsvägen 6-8 S-55303 Jönköping Box 3100 S-55003 Jönköping	Tel. 0046 (036) 34 42 00 Fax 0046 (036) 34 42 80 http://www.sew-eurodrive.se info@sew-eurodrive.se
Switzerland			
Assembly Sales Service	Basel	Alfred Imhof A.G. Jurastrasse 10 CH-4142 Münchenstein bei Basel	Tel. 0041 (061) 4 17 17 17 Fax 0041 (061) 4 17 17 00 http://www.imhof-sew.ch info@imhof-sew.ch
Thailand			
Assembly Sales Service	Chon Buri	SEW-EURODRIVE (Thailand) Ltd. Bangpakong Industrial Park 2 700/456, Moo.7, Tambol Donhuaroh Muang District Chon Buri 20000	Tel. 0066-38 21 40 22 Fax 0066-38 21 45 31 sewthailand@sew-eurodrive.co.th
Turkey			
Assembly Sales Service	Istanbul	SEW-EURODRIVE Hareket Sistemleri Sirketi Bagdat Cad. Koruma Cikmazi No. 3 TR-81540 Maltepe ISTANBUL	Tel. (0216) 4 41 91 63 + 4 41 91 64 + 3 83 80 14 + 3 83 80 15 Fax (0216) 3 05 58 67 seweurodrive@superonline.com.tr
USA			
Production Assembly Sales Service	Greenville	SEW-EURODRIVE INC. 1295 Old Spartanburg Highway P.O. Box 518 Lyman, S.C. 29365	Tel. (864) 4 39 75 37 Fax Sales (864) 439-78 30 Fax Manuf. (864) 4 39-99 48 Fax Ass. (864) 4 39-05 66 Telex 805 550 http://www.seweurodrive.com cslyman@seweurodrive.com

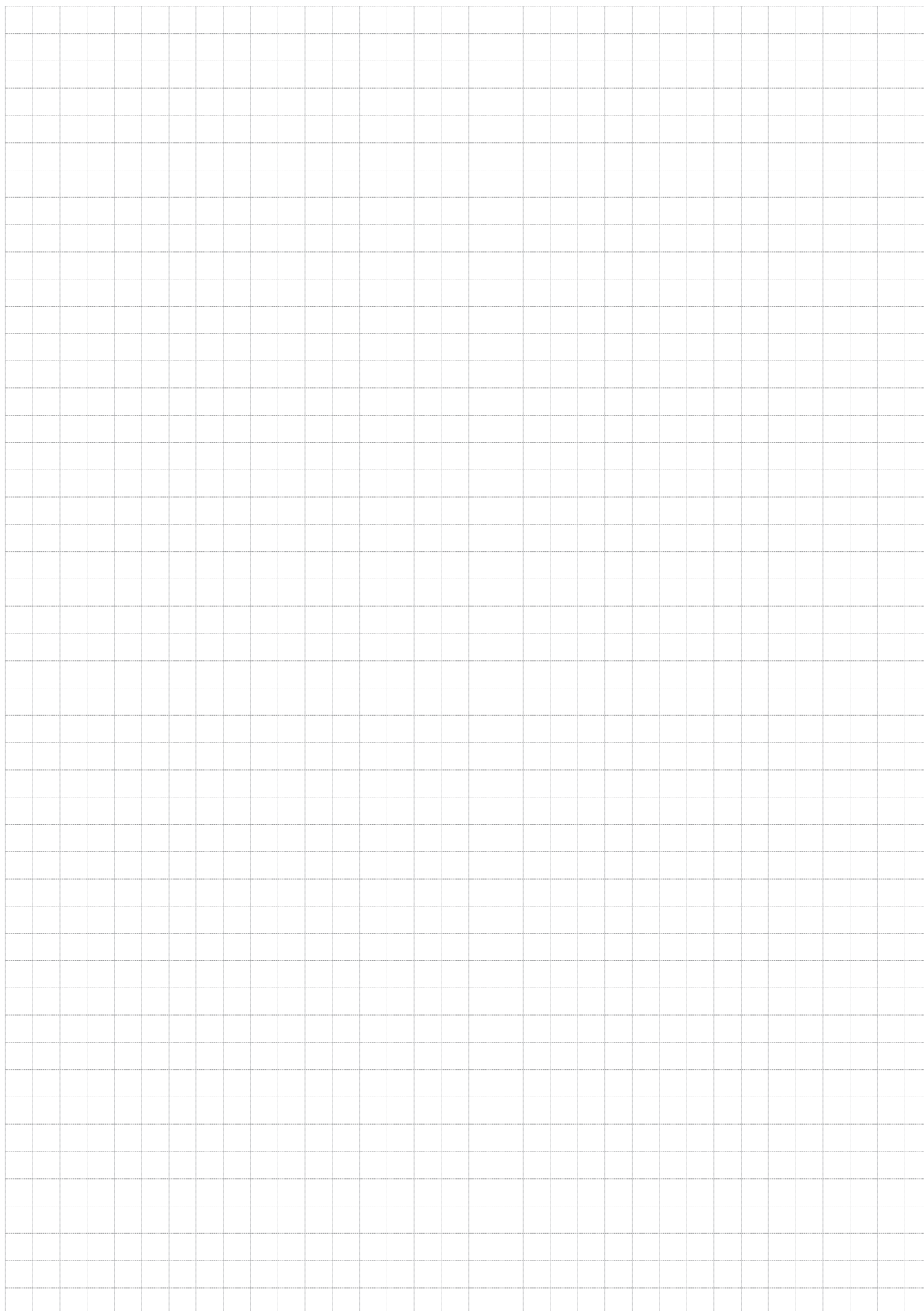


Address List

USA			
Assembly Sales Service	San Francisco	SEW-EURODRIVE INC. 30599 San Antonio St. Hayward, California 94544-7101	Tel. (510) 4 87-35 60 Fax (510) 4 87-63 81 cshayward@seweurodrive.com
	Philadelphia/PA	SEW-EURODRIVE INC. Pureland Ind. Complex 200 High Hill Road, P.O. Box 481 Bridgeport, New Jersey 08014	Tel. (856) 4 67-22 77 Fax (856) 8 45-31 79 csbridgeport@seweurodrive.com
	Dayton	SEW-EURODRIVE INC. 2001 West Main Street Troy, Ohio 45373	Tel. (9 37) 3 35-00 36 Fax (9 37) 4 40-37 99 cstroy@seweurodrive.com
	Dallas	SEW-EURODRIVE INC. 3950 Platinum Way Dallas, Texas 75237	Tel. (214) 3 30-48 24 Fax (214) 3 30-47 24 csdallas@seweurodrive.com
Additional addresses for service in the USA provided on request!			
Venezuela			
Assembly Sales Service	Valencia	SEW-EURODRIVE Venezuela S.A. Av. Norte Sur No. 3, Galpon 84-319 Zona Industrial Municipal Norte Valencia, Estado Carabobo	Tel. +58 (241) 8 32 98 04 Fax +58 (241) 8 38 62 75 sewventas@cantv.net sewfinanzas@cantv.net







SEW-EURODRIVE GmbH & Co · P.O. Box 3023 · D-76642 Bruchsal/Germany · Phone +49-7251-75-0
Fax +49-7251-75-1970 · <http://www.sew-eurodrive.com> · sew@sew-eurodrive.com

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