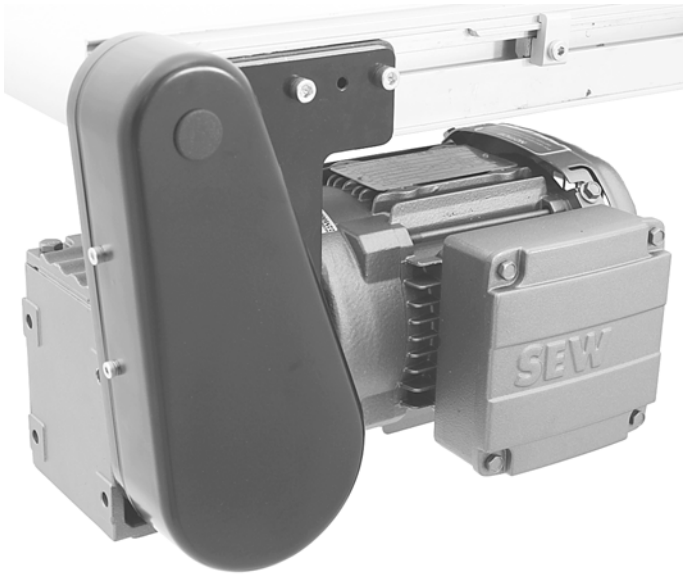
2200 and 2300 Series Bottom Mount Drive Package for SEW 60 Hz Gearmotors

Installation, Maintenance & Parts Manual



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851-716 Rev. A

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Introduction

IMPORTANT

Some illustrations may show guards removed. Do NOT operate equipment without guards.

Upon receipt of shipment:

- Compare shipment with packing slip. Contact factory regarding discrepancies.
- Inspect packages for shipping damage. Contact carrier regarding damage.
- Accessories may be shipped loose. See accessory instructions for installation.

Dorner 2200 Series conveyors are covered by patent number 5174435 and corresponding patents and patent applications in other countries.

Dorner's Limited Warranty applies.

Dorner reserves the right to make changes at any time without notice or obligation.

Dorner has convenient, pre–configured kits of Key Service Parts for all conveyor products. These time saving kits are easy to order, designed for fast installation, and guarantee you will have what you need when you need it. Key Parts and Kits are marked in the Service Parts section of this manual with the Performance Parts Kits logo .

⚠ WARNING

The safety alert symbol, black triangle with white exclamation, is used to alert you to potential personal injury hazards.

⚠ DANGER

Climbing, sitting, walking or riding on conveyor will cause severe injury. KEEP OFF CONVEYORS.

⚠ DANGER

Do NOT OPERATE CONVEYORS IN AN EXPLOSIVE ENVIRONMENT.

⚠ WARNING

Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

⚠ WARNING

Gearmotors may be HOT.

DO NOT TOUCH Gearmotors.

⚠ WARNING

Exposed moving parts can cause severe injury.

REPLACE ALL GUARDS BEFORE RUNNING CONVEYOR.

⚠ WARNING

Dorner cannot control the physical installation and application of conveyors. Taking protective measures is the responsibility of the user.

When conveyors are used in conjunction with other equipment or as part of a multiple conveyor system, CHECK FOR POTENTIAL PINCH POINTS and other mechanical hazards before system start-up.

⚠ WARNING

MPB Series Conveyors are not reversible. Reversing creates pinch points which can cause severe injury.

DO NOT REVERSE MPB SERIES CONVEYORS.

Product Description

Refer to **Figure 1** for typical components.

1	Conveyor
2	Mounting Bracket
3	Gearmotor
4	Timing Belt Tensioner
5	Cover
6	Timing Belt
7	Drive Pulley
8	Driven Pulley

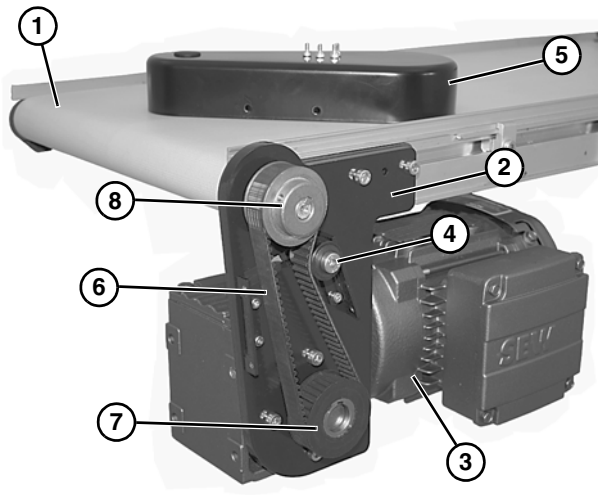


Figure 1

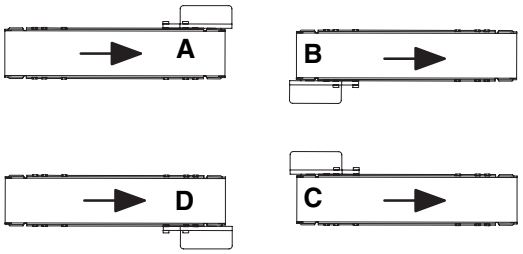
Specifications

Gearmotor Mounting Package Models:

Example:

22 M B W S WW A – 32 32

- **Driven Pulley (see Tables 2 & 3)**
- **Drive Pulley (see Tables 2 & 3)**
- **Belt Type (- = flat belt, C = cleated belt)**
- **Mount Position = A, B, C or D (see detail to the right)**
- **Conveyor Width Reference***
- **Gearmotor Type = Standard Load, Industrial**
- **Output Shaft Type = SEW**
- **Mount Style = Bottom Mount**
- **Language Code = U.S. English**
- **22 = 2200, 2300 Series Conveyors**



* See “Ordering and Specifications” Catalog for details.

Table 1: Gearmotor Specifications

	Three Phase			VFD Vari Speed		
Output Power	0.25 Hp (0.19 Kw)	0.33 hp (0.25 kW)	0.5 Hp(0.37 kW)	0.25 Hp (0.19 Kw)	0.33 hp (0.25 kW)	0.5 Hp(0.37 kW)
Input Voltage	230/460			230/460		
Input Frequency	60 Hz			10 to 60 Hz		
Input Current	0.89/0.44	1.24/0.62	1.84/0.92	0.89/0.44	1.24/0.62	1.84/0.92
RPM	46	109	219	8 to 46	18 to 109	37 to 219
Ratio	39:1	16.5:1	8.2:1	39:1	16.5:1	8.2:1
Motor Frame	IEC71			IEC71		
Motor Type	IP54 Totally Enclosed Fan Cooled			IP54 Totally Enclosed Fan Cooled		

Table 2: Belt Speeds for Fixed Speed SEW Gearmotors

Part Number	RPM	In-lb	N-m	Ft/min	M/min	Drive Pulley	Driven Pulley
22M039WS423EN	46	203	22.9	11.1	3.4	22	32
22M039WS423EN	46	203	22.9	14.2	4.3	28	32
22M039WS423EN	46	203	22.9	16.2	4.9	28	28
22M039WS423EN	46	203	22.9	18.5	5.6	32	28
22M039WS423EN	46	203	22.9	22.3	6.8	44	32
22M039WS423EN	46	203	22.9	23.6	7.2	32	22
22M039WS423EN	46	203	22.9	24.3	7.4	48	32
22M039WS423EN	46	203	22.9	25.5	7.8	44	28
22M017WS423EN	109	159	18.0	26.3	8.0	22	32
22M039WS423EN	46	203	22.9	27.8	8.5	48	28
22M039WS423EN	46	203	22.9	30.4	9.3	60	32
22M039WS423EN	46	203	22.9	32.4	9.9	44	22
22M017WS423EN	109	159	18.0	33.4	10.2	28	32
22M039WS423EN	46	203	22.9	34.7	10.6	60	28
22M039WS423EN	46	203	22.9	35.4	10.8	48	22
22M017WS423EN	109	159	18.0	38.2	11.6	28	28
22M017WS423EN	109	159	18.0	43.7	13.3	32	28
22M039WS423EN	46	203	22.9	44.2	13.5	60	22
22M017WS423EN	109	159	18.0	52.5	16.0	44	32
22M008WS423EN	219	132	14.9	52.8	16.1	22	32
22M017WS423EN	109	159	18.0	55.6	16.9	32	22
22M017WS423EN	109	159	18.0	57.3	17.5	48	32
22M017WS423EN	109	159	18.0	60.0	18.3	44	28
22M017WS423EN	109	159	18.0	65.5	20.0	48	28
22M008WS423EN	219	132	14.9	67.2	20.5	28	32
22M017WS423EN	109	159	18.0	71.6	21.8	60	32
22M017WS423EN	109	159	18.0	76.4	23.3	44	22
22M008WS423EN	219	132	14.9	76.8	23.4	28	28
22M017WS423EN	109	159	18.0	81.9	25.0	60	28
22M017WS423EN	109	159	18.0	83.4	25.4	48	22
22M008WS423EN	219	132	14.9	87.8	26.8	32	28
22M017WS423EN	109	159	18.0	104.2	31.8	60	22
22M008WS423EN	219	132	14.9	105.6	32.2	44	32
22M008WS423EN	219	132	14.9	111.7	34.1	32	22
22M008WS423EN	219	132	14.9	115.2	35.1	48	32
22M008WS423EN	219	132	14.9	120.7	36.8	44	28
22M008WS423EN	219	132	14.9	131.7	40.1	48	28
22M008WS423EN	219	132	14.9	144.0	43.9	60	32
22M008WS423EN	219	132	14.9	153.6	46.8	44	22
22M008WS423EN	219	132	14.9	164.6	50.2	60	28
22M008WS423EN	219	132	14.9	167.6	51.1	48	22
22M008WS423EN	219	132	14.9	209.5	63.8	60	22

Specifications

Table 3: Belt Speeds for Variable Speed SEW Gearmotors

Part Number	RPM	In-lb	N-m	Ft/min (max)	Ft/min (min)	M/min (max)	M/min (min)	Drive Pulley	Driven Pulley
22M039WS423EN	46	203	22.9	11.1	1.9	3.4	0.6	22	32
22M039WS423EN	46	203	22.9	14.2	2.4	4.3	0.7	28	32
22M039WS423EN	46	203	22.9	16.2	2.7	4.9	0.8	28	28
22M039WS423EN	46	203	22.9	18.5	3.1	5.6	0.9	32	28
22M039WS423EN	46	203	22.9	22.3	3.7	6.8	1.1	44	32
22M039WS423EN	46	203	22.9	23.6	3.9	7.2	1.2	32	22
22M039WS423EN	46	203	22.9	24.3	4.1	7.4	1.2	48	32
22M039WS423EN	46	203	22.9	25.5	4.3	7.8	1.3	44	28
22M017WS423EN	109	159	18.0	26.3	4.4	8.0	1.3	22	32
22M039WS423EN	46	203	22.9	27.8	4.6	8.5	1.4	48	28
22M039WS423EN	46	203	22.9	30.4	5.1	9.3	1.5	60	32
22M039WS423EN	46	203	22.9	32.4	5.4	9.9	1.6	44	22
22M017WS423EN	109	159	18.0	33.4	5.6	10.2	1.7	28	32
22M039WS423EN	46	203	22.9	34.7	5.8	10.6	1.8	60	28
22M039WS423EN	46	203	22.9	35.4	5.9	10.8	1.8	48	22
22M017WS423EN	109	159	18.0	38.2	6.4	11.6	1.9	28	28
22M017WS423EN	109	159	18.0	43.7	7.3	13.3	2.2	32	28
22M039WS423EN	46	203	22.9	44.2	7.4	13.5	2.2	60	22
22M017WS423EN	109	159	18.0	52.5	8.8	16.0	2.7	44	32
22M008WS423EN	219	132	14.9	52.8	8.8	16.1	2.7	22	32
22M017WS423EN	109	159	18.0	55.6	9.3	16.9	2.8	32	22
22M017WS423EN	109	159	18.0	57.3	9.6	17.5	2.9	48	32
22M017WS423EN	109	159	18.0	60.0	10.0	18.3	3.1	44	28
22M017WS423EN	109	159	18.0	65.5	10.9	20.0	3.3	48	28
22M008WS423EN	219	132	14.9	67.2	11.2	20.5	3.4	28	32
22M017WS423EN	109	159	18.0	71.6	12.0	21.8	3.6	60	32
22M017WS423EN	109	159	18.0	76.4	12.8	23.3	3.9	44	22
22M008WS423EN	219	132	14.9	76.8	12.8	23.4	3.9	28	28
22M017WS423EN	109	159	18.0	81.9	13.7	25.0	4.2	60	28
22M017WS423EN	109	159	18.0	83.4	13.9	25.4	4.2	48	22
22M008WS423EN	219	132	14.9	87.8	14.7	26.8	4.5	32	28
22M017WS423EN	109	159	18.0	104.2	17.4	31.8	5.3	60	22
22M008WS423EN	219	132	14.9	105.6	17.6	32.2	5.4	44	32
22M008WS423EN	219	132	14.9	111.7	18.7	34.1	5.7	32	22
22M008WS423EN	219	132	14.9	115.2	19.2	35.1	5.9	48	32
22M008WS423EN	219	132	14.9	120.7	20.2	36.8	6.1	44	28
22M008WS423EN	219	132	14.9	131.7	22.0	40.1	6.7	48	28
22M008WS423EN	219	132	14.9	144.0	24.0	43.9	7.3	60	32
22M008WS423EN	219	132	14.9	153.6	25.7	46.8	7.8	44	22
22M008WS423EN	219	132	14.9	164.6	27.5	50.2	8.4	60	28
22M008WS423EN	219	132	14.9	167.6	28.0	51.1	8.5	48	22
22M008WS423EN	219	132	14.9	209.5	35.0	63.8	10.7	60	22

NOTE

For belt speed other than those listed, contact factory for details.

Required Tools

- Hex key wrenches:
  3/32", 3 mm, 5 mm, 6 mm
- Socket wrenches:
  8 mm, 11 mm
- Torque wrench
- Straight edge

Mounting

⚠ WARNING

Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

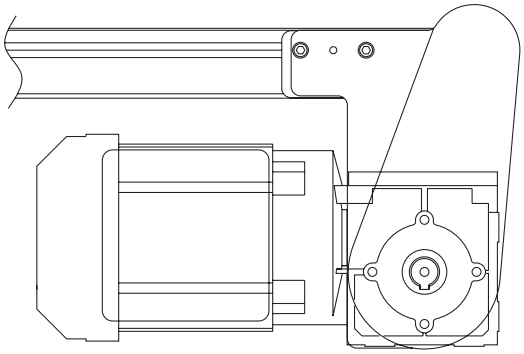
⚠ WARNING

For Cleated Belt Conveyors, Gearmotors must be mounted as shown in Figure 3.

Failure to do so creates pinch points which can cause severe injury.

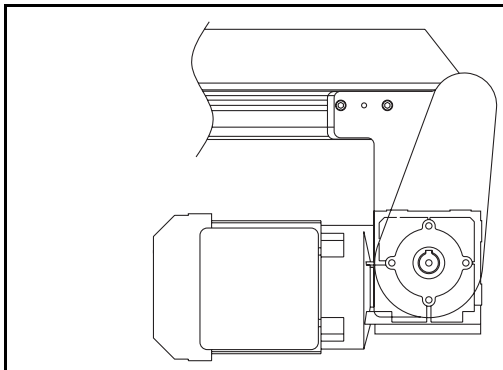
NOTE

*Gearmotor position on Flat Belt conveyors shown in **Figure 2**. Gearmotor position on Cleated Belt conveyors shown in **Figure 3**.*



Flat Belt Conveyor

Figure 2



Cleated Belt Conveyor

Figure 3

Installation Component List:

1	Bottom Mount Assembly
2	Drive Pulley
3	Cover
4	M4 Socket Head Screws (4x)
5	Driven Pulley
6	M6 Socket Head Screws (2x)
7	Timing Belt

1. Typical components **(Figure 4)**.

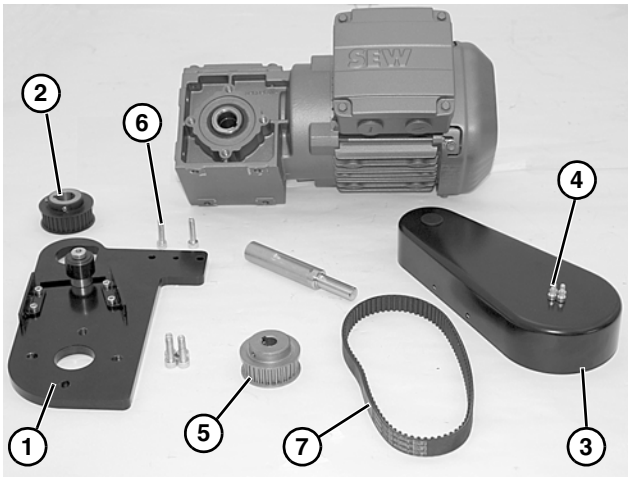


Figure 4

NOTE

*Flat belt mounting package shown above **(Figure 4)**, cleated belt mounting package similar.*

NOTE

*Gearmotor may be operated in positions 1, 3 or 4 (**Figure 5**). Dependent on conveyor belt speed and gearmotor type, position 4 may require a vibration dampening bracket.*

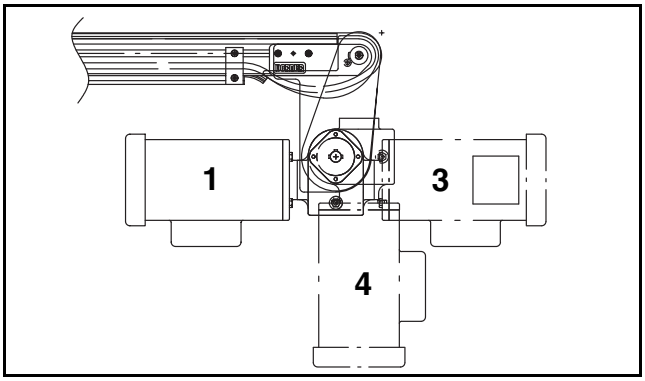


Figure 5

2. If required, change gearmotor position by removing four (4) screws **(Figure 6, item 1)**. Rotate gearmotor to other position and replace screws **(Figure 6, item 1)**. Tighten to 103 in-lb (12 N–m).

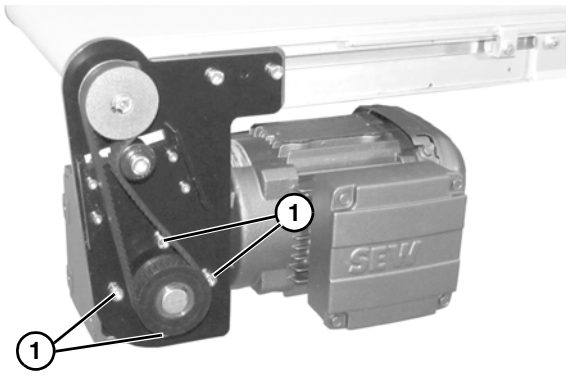


Figure 6

3. Locate drive output shaft **(Figure 7, item 1)** and remove two (2) screws **(Figure 7, item 2)**.

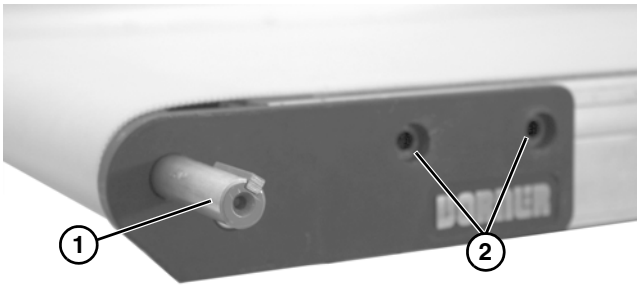


Figure 7

4. Attach mounting assembly **(Figure 8, item 1)** with screws **(Figure 8, item 2)**. Tighten to 80 in-lb (9 N–m).

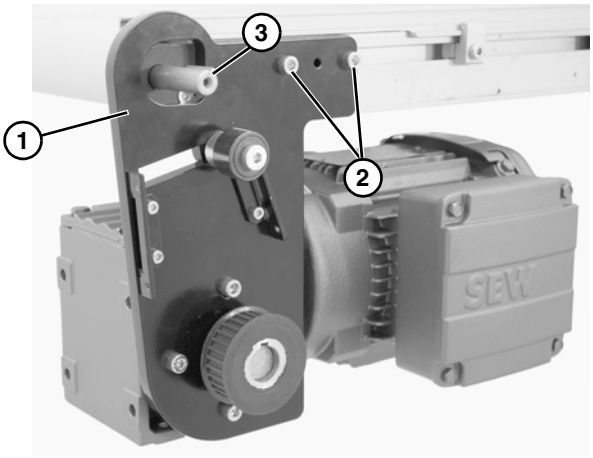


Figure 8

⚠ WARNING

Drive shaft keyway may be sharp.
HANDLE WITH CARE.

5. Install key **(Figure 8, item 3)**.
6. Wrap timing belt **(Figure 9, item 1)** around driven pulley **(Figure 9, item 2)** and drive pulley **(Figure 9, item 3)**. Install driven pulley **(Figure 9, item 2)** onto conveyor shaft.

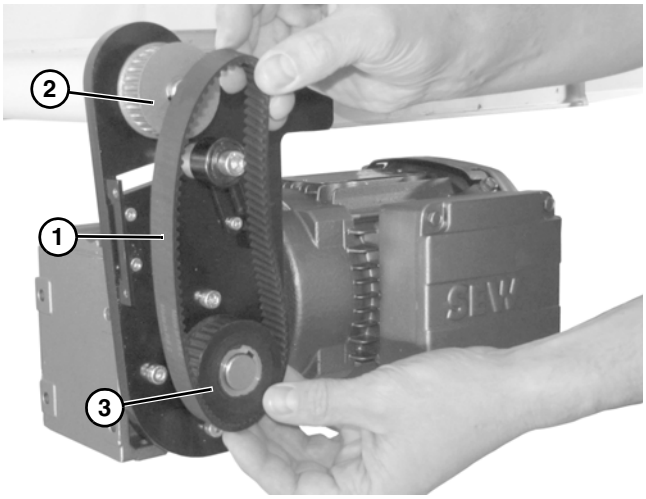


Figure 9

7. Remove cam bearing and spacer **(Figure 10, item 1)**.

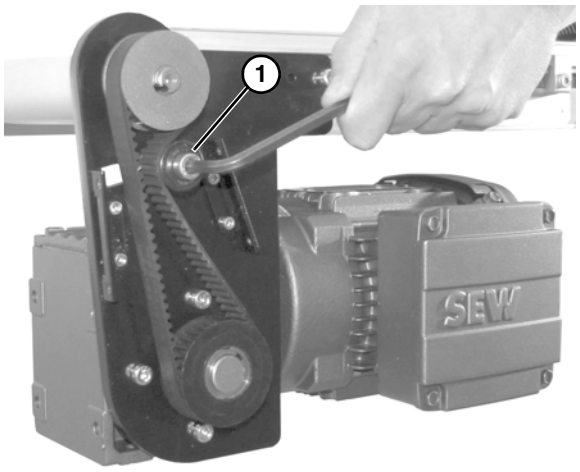


Figure 10

8. Place the cam bearing and spacer **(Figure 11, item 1)** next to the driven pulley **(Figure 11, item 2)**. Ensure the flanges of the driven pulley are aligned with the cam bearing. Tighten driven pulley set screws **(Figure 11, item 3)**. This will allow for proper belt alignment while conveyor is in use. Replace cam bearing and spacer.

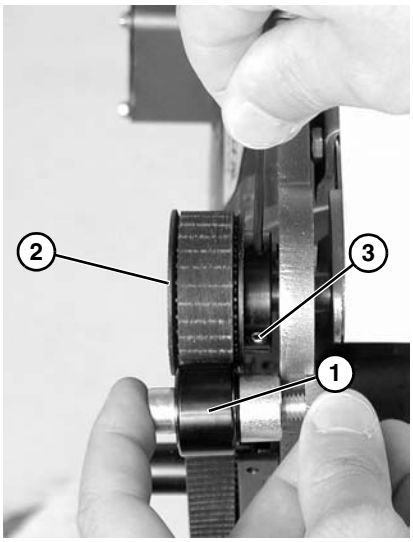


Figure 11

9. Depending on conveyor belt travel (direction 1 or 2), locate timing belt tensioner **(Figure 12, item 1)** as shown. Tension timing belt to obtain 0.125¨ (3 mm) deflection for 1.0 lb (456 grams) of force at timing belt mid-point **(Figure 12, item 2)**. Tighten tensioner screw to 103 in-lb (12 N–m).

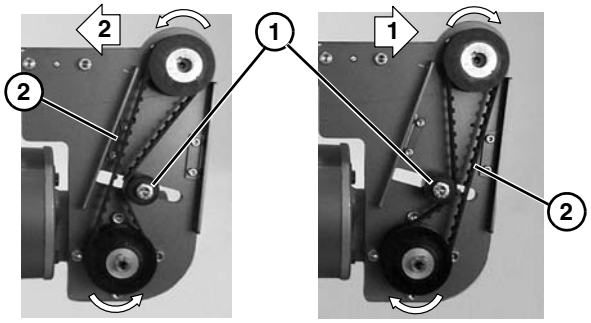


Figure 12

10. Install cover **(Figure 13, item 1)** with four (4) screws **(Figure 13, item 2)**. Tighten to 35 in-lb (4 N–m).

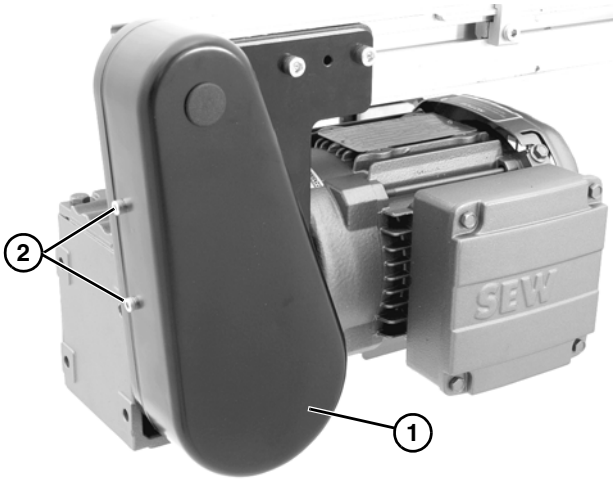


Figure 13

Motor Wiring

⚠ DANGER

Hazardous voltage will cause severe injury or death.

LOCK OUT POWER BEFORE WIRING.

NOTE

Lug terminals are recommended for wiring connections.

1. Remove cover **(Figure 14, item 1)**.

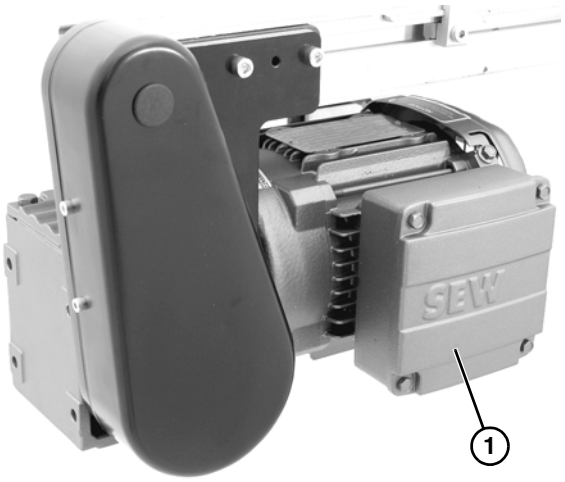


Figure 14

2. Determine wiring configuration **(Figure 15)**.

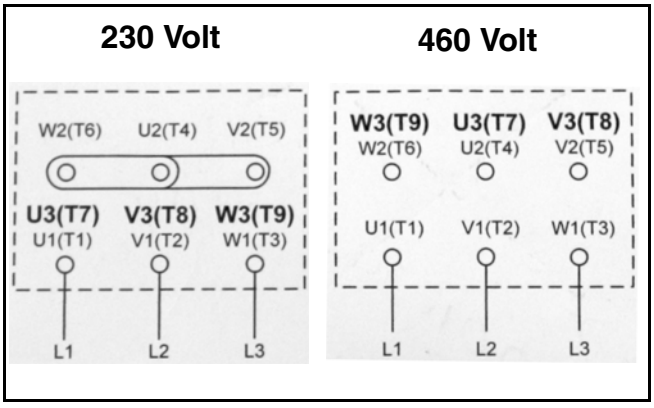


Figure 15

3. Install cord grip and power cord **(Figure 16, item 1)** mount to terminal box as required.

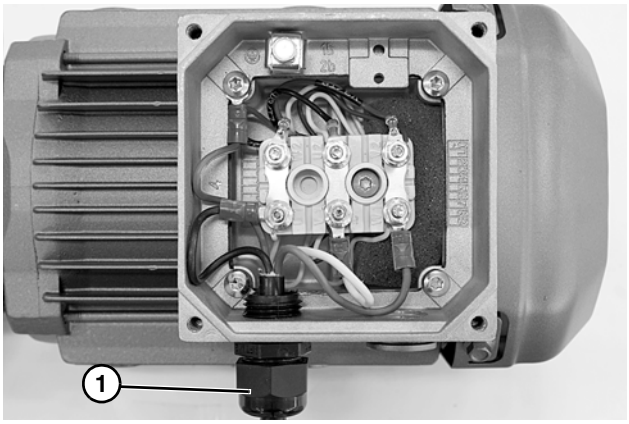


Figure 16

4. Connect wires.
5. Close cover.

Required Tools

- Hex key wrenches:
  3/32”, 3 mm, 5 mm, 6 mm
- Socket wrenches:
  8 mm, 11 mm
- Torque wrench
- Straight edge

Timing Belt Tensioning

⚠ WARNING

Exposed moving parts can cause severe injury.
LOCK OUT POWER before removing guards or performing maintenance.

1. Remove four (4) screws **(Figure 17, item 1)** and remove cover **(Figure 17, item 2)**.

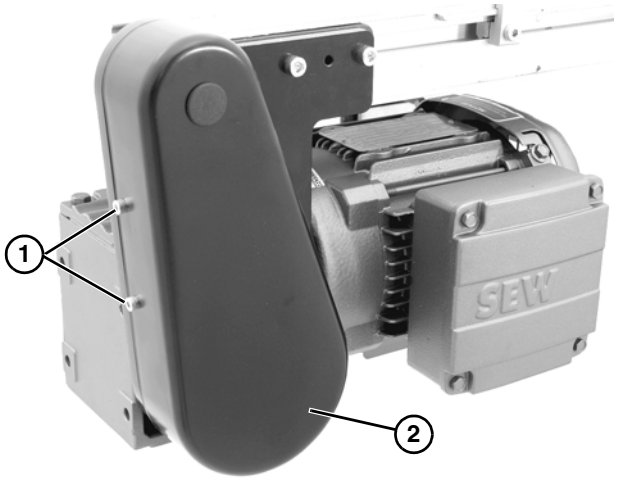


Figure 17

2. Loosen tensioner **(Figure 18, item 1)**.

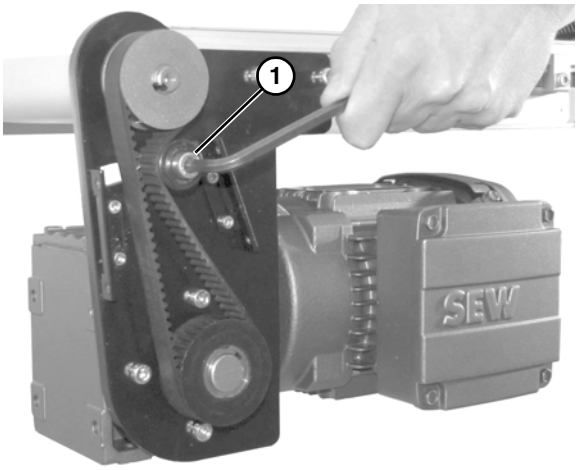


Figure 18

3. Depending on conveyor belt travel (direction 1 or 2), locate timing belt tensioner **(Figure 19, item 1)** as shown. Tension timing belt to obtain 0.125¨ (3 mm) deflection for 1.0 lb (456 grams) of force at timing belt mid-point **(Figure 19, item 2)**. Tighten tensioner screw to 103 in-lb (12 N–m).

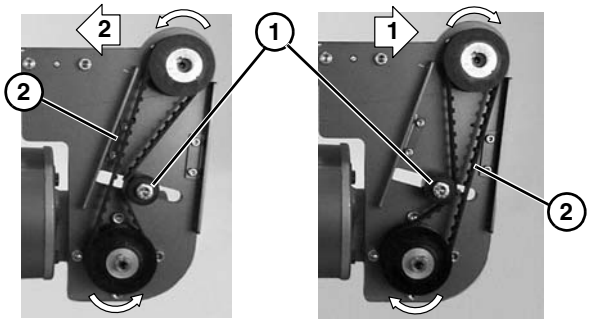


Figure 19

4. Install cover **(Figure 17, item 2)** with four (4) screws **(Figure 17, item 1)**.Tighten to 35 in-lb (4 N–m).

Timing Belt Replacement

⚠ WARNING

Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

1. Remove four (4) screws **(Figure 20, item 1)** and remove cover **(Figure 20, item 2)**.

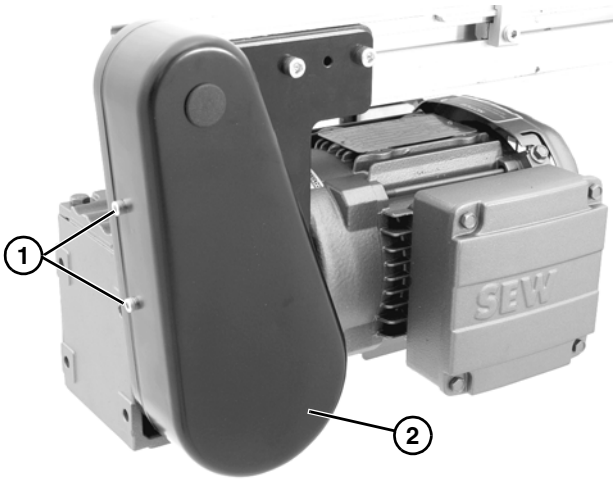


Figure 20

2. Loosen tensioner **(Figure 21, item 1)**.

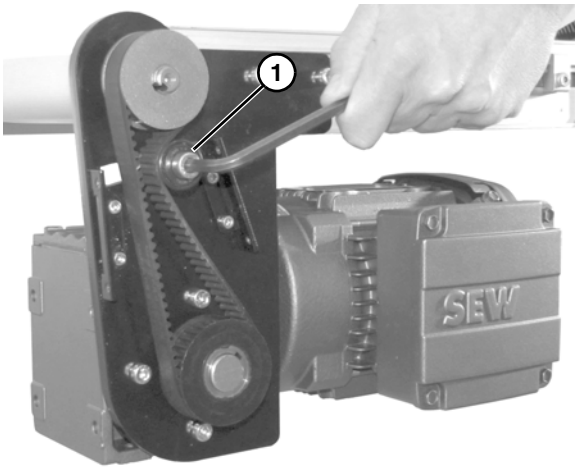


Figure 21

3. Remove timing belt **(Figure 22, item 1)**.

NOTE

*If timing belt does not slide over pulley flange, loosen driven pulley set screws **(Figure 22, item 2)** and remove pulley with belt. For re-installation, see steps 6,7 and 8 on page 8.*

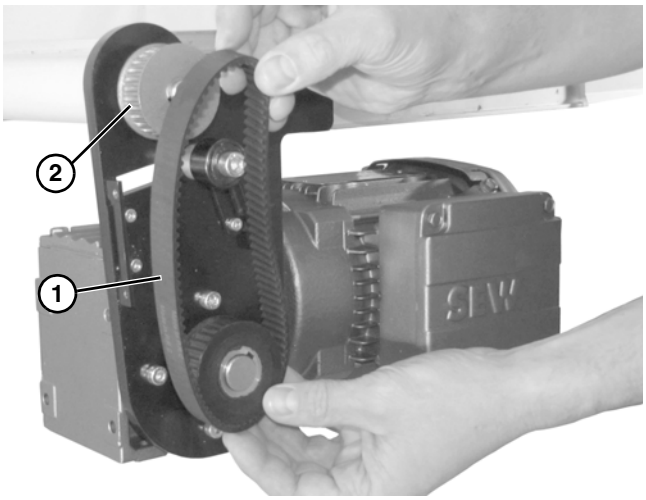


Figure 22

4. Install new timing belt.
5. Depending on conveyor belt travel (direction 1 or 2), locate timing belt tensioner **(Figure 23, item 1)** as shown. Tension timing belt to obtain 0.125¨ (3 mm) deflection for 1.0 lb (456 grams) of force at timing belt mid-point **(Figure 23, item 2)**. Tighten tensioner screw to 103 in-lb (12 N–m).

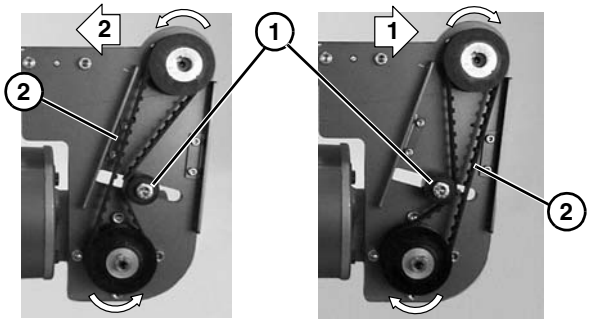


Figure 23

6. Install cover **(Figure 20, item 2)** with four (4) screws **(Figure 20, item 1)**. Tighten to 35 in-lb (4 N–m).

Drive or Driven Pulley Replacement

⚠ WARNING

Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

1. Complete steps 1 through 3 of “Timing Belt Replacement” section on page 12.
2. Loosen set screws and remove drive or driven pulley.

NOTE

*If drive pulley **(Figure 22, item 3)** is replaced, wrap timing belt around drive pulley and complete step 3.*

3. Complete steps 6 through 10 of “Installation” section on page 8.

Gearmotor Replacement

⚠ WARNING

Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

⚠ DANGER

Hazardous voltage will cause severe injury or death.

LOCK OUT POWER BEFORE WIRING.

1. Disconnect power. Remove terminal box cover and wires.
2. Remove four (4) screws **(Figure 24, item 1)** and remove cover **(Figure 24, item 2)**.

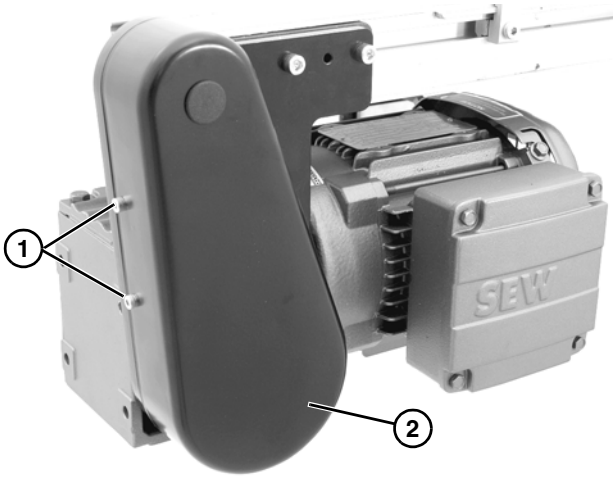


Figure 24

3. Loosen tensioner **(Figure 25, item 1)** and remove timing belt **(Figure 25, item 2)**.

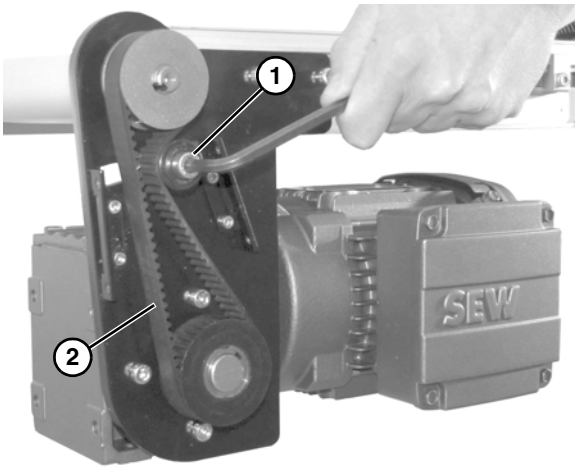


Figure 25

4. Loosen set screws and remove drive pulley **(Figure 26, item 1)**.

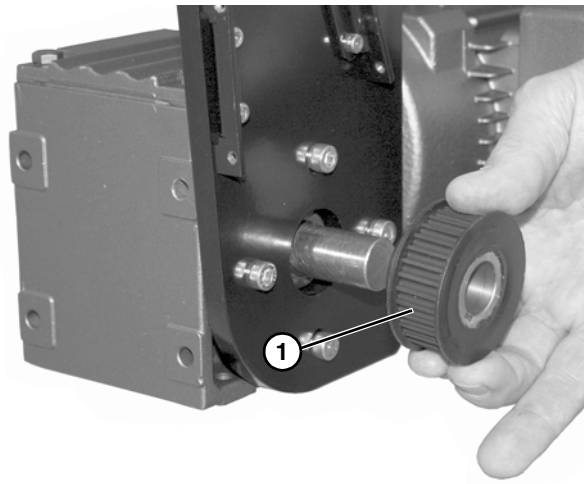


Figure 26

5. Remove four (4) mounting screws **(Figure 27, item 1)** and remove gearmotor.

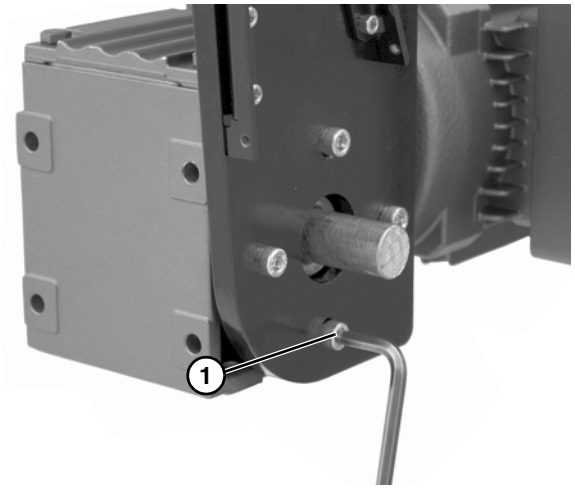


Figure 27

6. Remove shaft mounting bolt **(Figure 28, item 1)** and remove shaft.

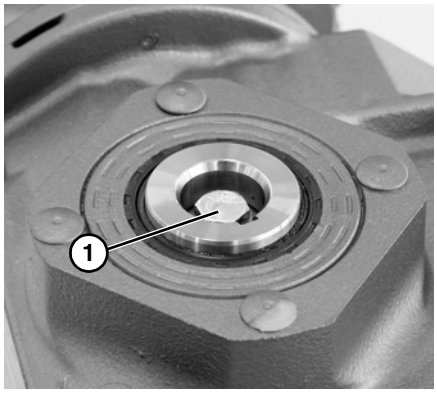


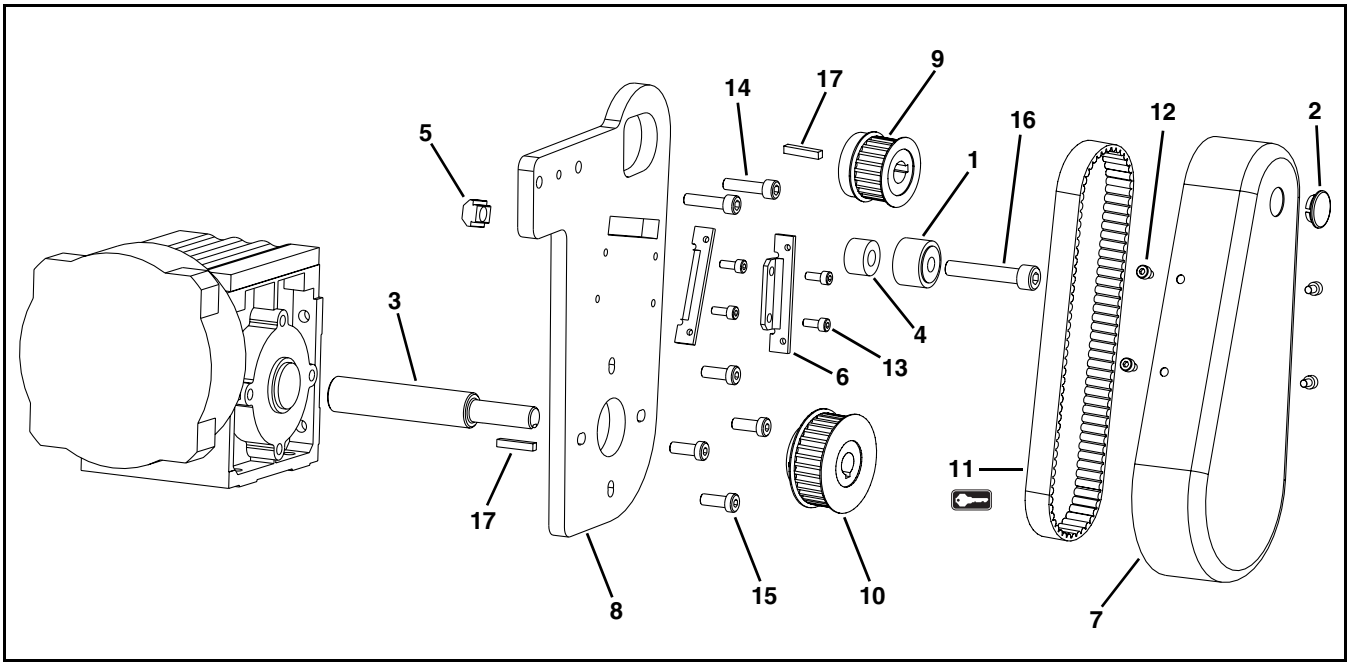
Figure 28

7. Repeat in reverse order to install new gearmotor.

NOTE

For replacement parts other than those shown in this section, contact an authorized Dorner Service Center or the factory. Key Service Parts and Kits are identified by the Performance Parts Kits logo. Dorner recommends keeping these parts on hand.

Bottom Mount Drive Package for SEW Gearmotors

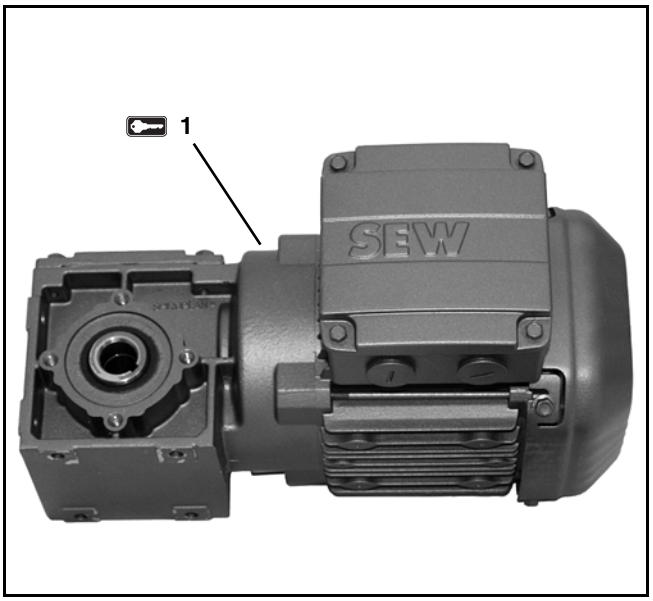


Item	Part Number	Description
1	802-046	Bearing
2	807-226	Snap–out Plastic Plug
3	201559	Output Shaft
4	450445	Spacer
5	202390M	Nut Follower
6	450375M	Cam Mounting Cover Bracket
7	450376M	Drive Guard
8	450443M	Mounting Plate
9	450365MP	Driven Pulley, 19 Tooth
	450366MP	Driven Pulley, 22 Tooth
	450367MP	Driven Pulley, 28 Tooth
	450368MP	Driven Pulley, 32 Tooth
10	450365MP	Drive Pulley, 19 Tooth
	450366MP	Drive Pulley, 22 Tooth
	450367MP	Drive Pulley, 28 Tooth
	450368MP	Drive Pulley, 32 Tooth
	450369MP	Drive Pulley, 44 Tooth
	450370MP	Drive Pulley, 48 Tooth
	450371MP	Drive Pulley, 60 Tooth

Item	Part Number	Description
11	814-104	Timing Belt, 15 mm W x 450 mm L
	814-105	Timing Belt, 15 mm W x 460 mm L
	814-065	Timing Belt, 15 mm W x 475 mm L
	814-112	Timing Belt, 15 mm W x 495 mm L
	814-101	Timing Belt, 15 mm W x 500 mm L
	814-108	Timing Belt, 15 mm W x 520 mm L
	814-064	Timing Belt, 15 mm W x 535 mm L
	814-099	Timing Belt, 15 mm W x 565 mm L
12	920406M	Socket Head Screw M4 x 6mm
13	920410M	Socket Head Screw M4 x 10mm
14	920625M	Socket Head Screw M6 - 1.00 x 25 mm
15	920693M	Low Head Cap Screw M6 - 1.00 x 16 mm
16	920845M	Socket Head Screw M8 - 1.25 x 45 mm
17	980422M	Square Key

Service Parts

Gearmotor



Item	Part No.	Part Description
1	22M039WS423EN	Gearmotor, 0.25 Hp (0.19 Kw), 230/460 Volts, 39:1
	22M017WS423EN	Gearmotor, 0.33 Hp (0.25 Kw), 230/460 Volts, 16.5:1
	22M008WS423EN	Gearmotor, 0.50 Hp (0.37 Kw), 230/460 Volts, 8.2:1

Notes

Return Policy

Returns must have prior written factory authorization or they will not be accepted. Items that are returned to Dorner without authorization will not be credited nor returned to the original sender. When calling for authorization, please have the following information ready for the Dorner factory representative or your local distributor:

1. Name and address of customer.
2. Dorner part number(s) of item(s) being returned.
3. Reason for return.
4. Customer's original order number used when ordering the item(s).
5. Dorner or distributor invoice number (if available, part serial number).

A representative will discuss action to be taken on the returned items and provide a Returned Goods Authorization (RMA) number for reference. RMA will automatically close 30 days after being issued. To get credit, items must be new and undamaged. There will be a return charge on all items returned for credit, where Dorner was not at fault. It is the customer's responsibility to prevent damage during return shipping. Damaged or modified items will not be accepted. The customer is responsible for return freight.

Conveyors and conveyor accessories

Standard catalog conveyors	30%
MPB, 7200, 7300 Series, cleated and specialty belt	50%
AquaGard & AquaPruf Series conveyors	non-returnable items
Engineered to order products	case by case
Drives and accessories	30%
Sanitary stand supports	non-returnable items

Parts

Standard stock parts	30%
Plastic chain, cleated and specialty belts	non-returnable items

Returns will not be accepted after 60 days from original invoice date. The return charge covers inspection, cleaning, disassembly, disposal and reissuing of components to inventory. If a replacement is needed prior to evaluation of returned item, a purchase order must be issued. Credit (if any) is issued only after return and evaluation is complete.

Dorner has representatives throughout the world. Contact Dorner for the name of your local representative. Our Customer Service Team will gladly help with your questions on Dorner products.

For a copy of Dorner's Warranty, contact factory, distributor, service center or visit our website at www.dorner.com.

For replacement parts, contact an authorized Dorner Service Center or the factory.

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