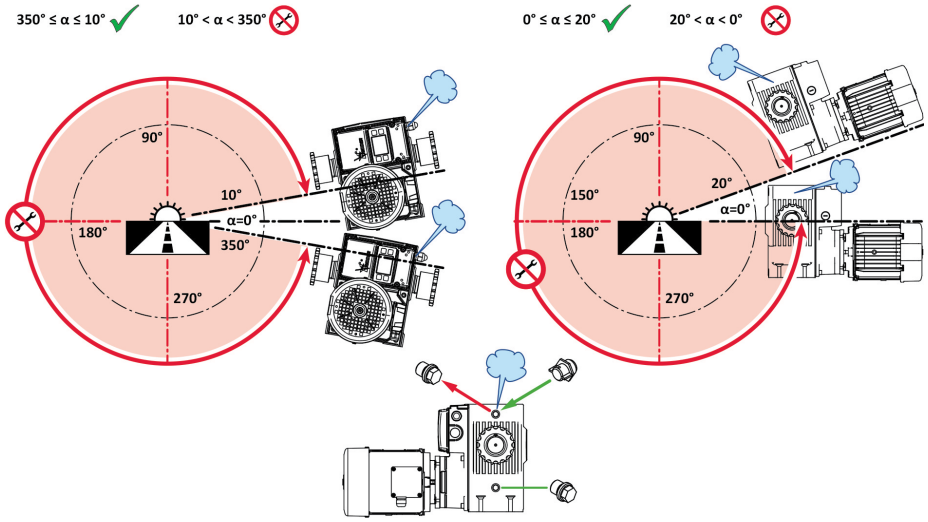
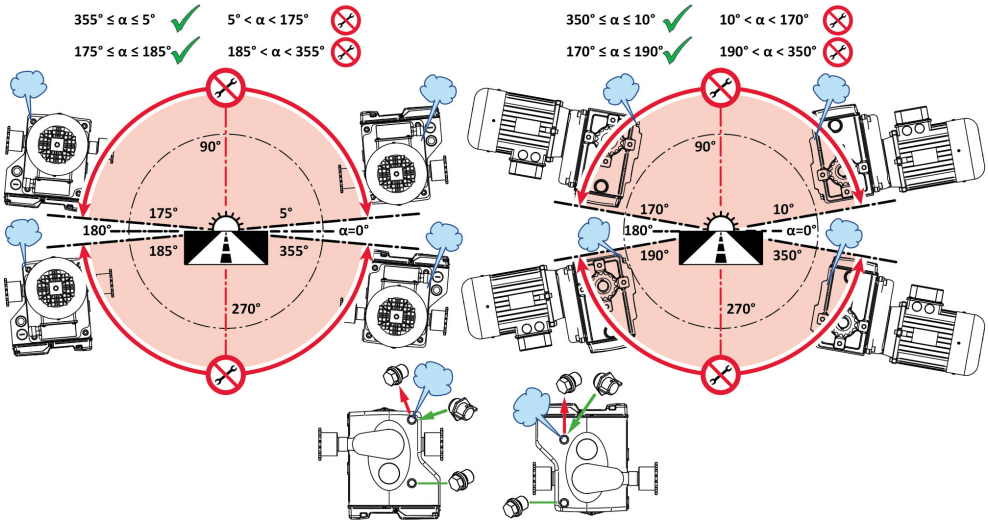
RW1000/1200/1400/1600/2000-SD [oil lubrication]:



RW70/100/140/200-34\68SD [oil lubrication]:



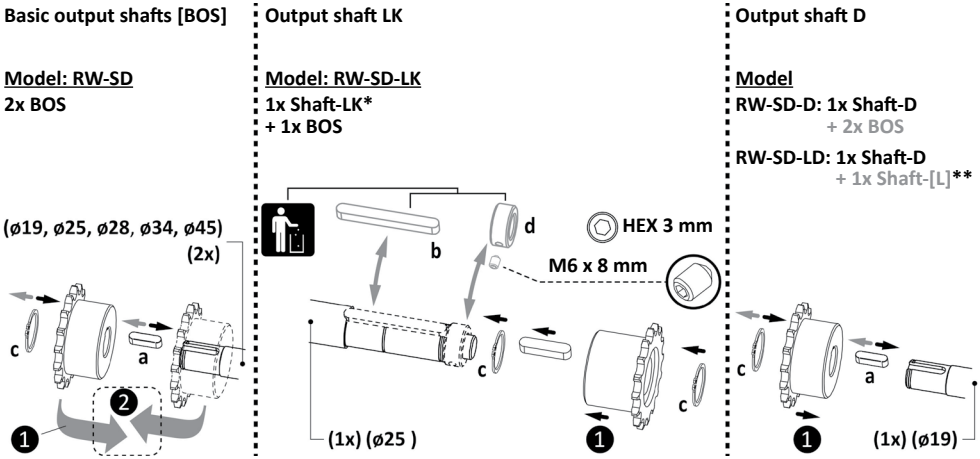
- **Usually** Ridder installs sprockets onto the **two basic output shafts (BOS)** of most models (general designation: RW-SD).
- Some models (such as RW-SD-LK, RW-SD-D, RW-SD-LD) have:
  - **One** special output-shaft (**LK**) plus **one** basic output shaft (**BOS**)
  - **One** special output-shaft (**D**) plus **two** basic output shafts (**BOS**)
  - **Two** special output-shafts (**L + D**). (The **L**-shaft is for installation of a drum.).
- Some models or shafts (BOS and/or special shafts) are supplied without sprockets.

Thus it is possibly necessary, if applicable for the configuration, to:

❶ Install necessary (optional) sprockets on output shafts **OR**
❷ Interchange sprockets with necessary (optional) sprockets on output shafts.

Refer to the illustration (step ❶ and ❷) that follows for the configuration of shaft keys (a, b), retaining rings (c) and ring (d).

For more information on item numbers and models refer to the Ridder catalog or website at **ridder.com**.



* Shaft **LK**-model: Installation of a drum is also possible. Refer to §4.6/4.7.
** Shaft **L**-model is for installation of a drum. Refer to §4.6/4.7.

The conditions and starting points that follow are applicable for installation. Make sure that the working conditions comply with the, local or national, laws and regulations.

- Do not remove the product from the packaging until a short time before the installation.
- Use the correct work equipment and accessories (belts, chains, pallets or such) if it is not permitted or possible to put the product manually in position.
- Only use a permitted mounting position when you install the RW-SD motor gearbox. Refer to §4.1.
- The mounting plates are available in different dimensions for different configurations. Refer to "Optional mounting plates ❶".

Install the RW-SD motor gearbox onto the mounting plate OR an alternative (refer to "Optional mounting plates ❷"):

- With the supplied spring washers and bolts M10x20 (2x) for an RW45-SD drive unit
- With the supplied spring washers and bolts M10x25 (3x) for RW240–600-SD and RW70–200-SD drive units
- With the supplied spring washers and bolts M12x25 (4x) for an RW800-SD drive unit
- With nuts, spring washers and bolts M12(4x) for RW1000–2000-SD drive units (supplied as accessories).

Refer to "**Minimum Screw-in depth/Free thread-length (SID/FTL)**" which also shows the **standard bolt-installation (SBI)**.

- The control screen (CS) on the SDU cover (A1) can give information "in operation" and/or during commissioning. Thus, easy access and a satisfactory view is recommended for the location of the RW-SD motor gearbox.
- In the factory the reductor is filled with the necessary quantity of grease (usually only RW45-SD) or oil. After installation interchange (of reductors filled with oil) the plug in the highest position with the vent plug! Refer to §4.1.

Optional mounting plates

❶ **A. Mounting plates:** Do bolt attachment or welded attachment to a structure. Use wedge bolts (or such) for wall mounting.

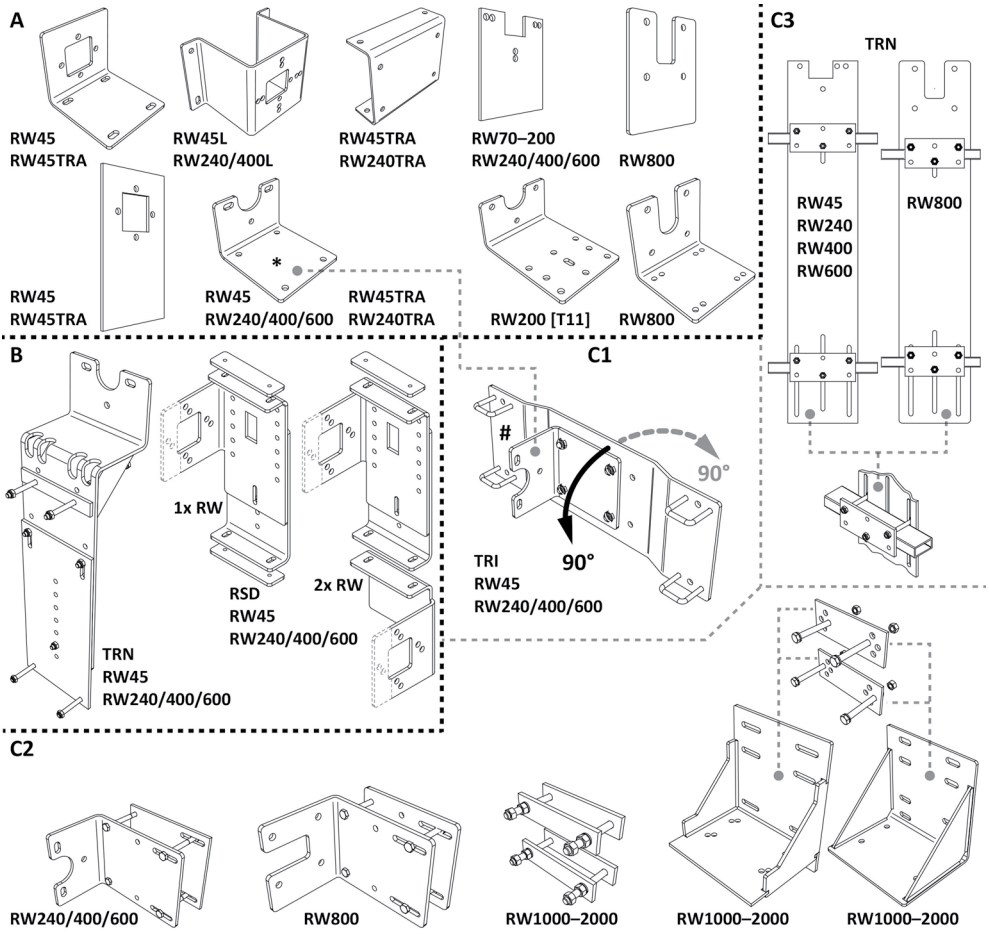
B. Mounting plates: Do bolt attachment to a structure (different lattice heights possible).

C. Clamp mounting plates:

C1. Use a base plate (#) and a type A mounting plate (*) on C-profiles.

C2. Do clamp mounting on posts.

C3. Do clamp mounting on lattices (different lattice widths and lattice heights possible).



In this product manual shown illustrations can be different than the components and/or systems. For more information on item numbers and models refer to the Ridder catalog or website at **ridder.com**.

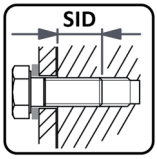
❷ Do the **standard bolt-installation (SBI)** of the motor gearbox on the applicable mounting plate OR an alternative.

CAUTION	**Make sure that the drive unit is installed in a stable condition. The structure must have sufficient strength for the applied forces.**
ATTENTION	**Make sure that easy access to the SDU cover [closing cover (A3) and display (CS)] of the RW-SD motor gearbox is possible for all work.**
ATTENTION	**Installation OUTDOORS of RW-SD motor gearboxes is only permitted with PROTECTION from RAIN (protection covers or such) at a minimum temperature of 0 °C. Problems with moisture and/or the IP protection rating (if applicable) must be prevented.**

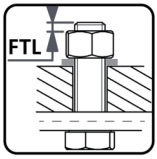
Minimum Screw-in depth/Free thread-length (SID/FTL)

- For the tightening torque of the used fixing bolts a **minimum** screw-in depth **(SID)** or a **minimum** free thread-length (**FTL**) is necessary. Refer to the illustrations (Standard Bolt-Installations [SBI]) that follow.
- Possibly fixing bolts with more length are necessary if a larger sheet thickness is used!
- Tighten the bolts crosswise and gradually with the correct tightening torque (**Nm**).

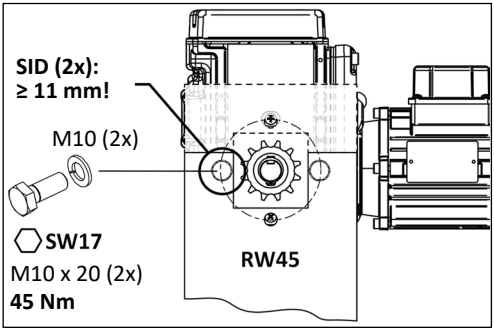
Standard Bolt-installations (SBI)

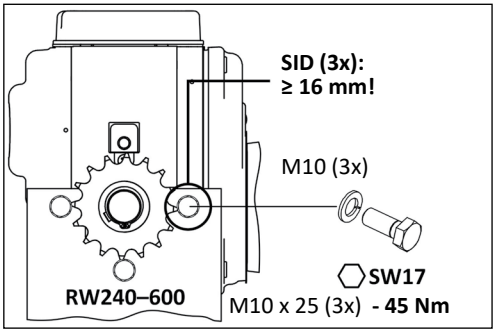


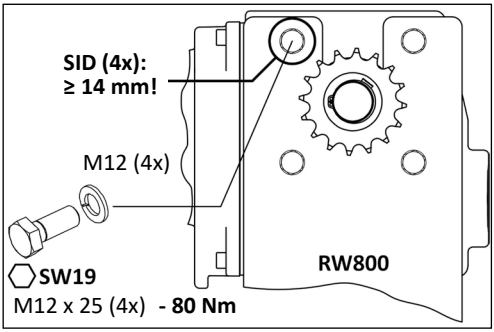
RW45–800-SD

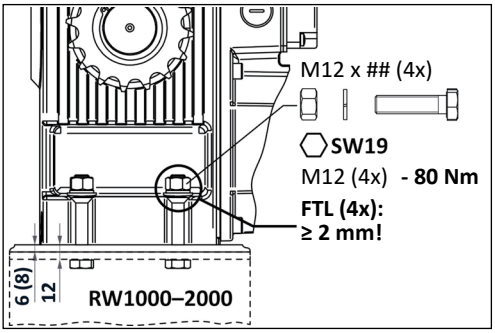


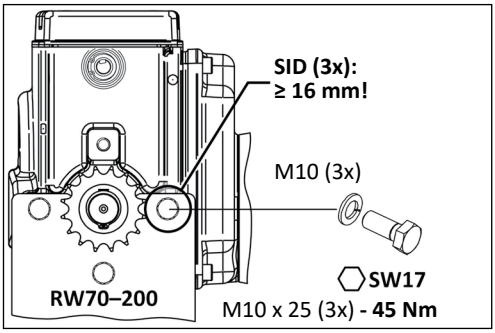
RW1000–2000-SD











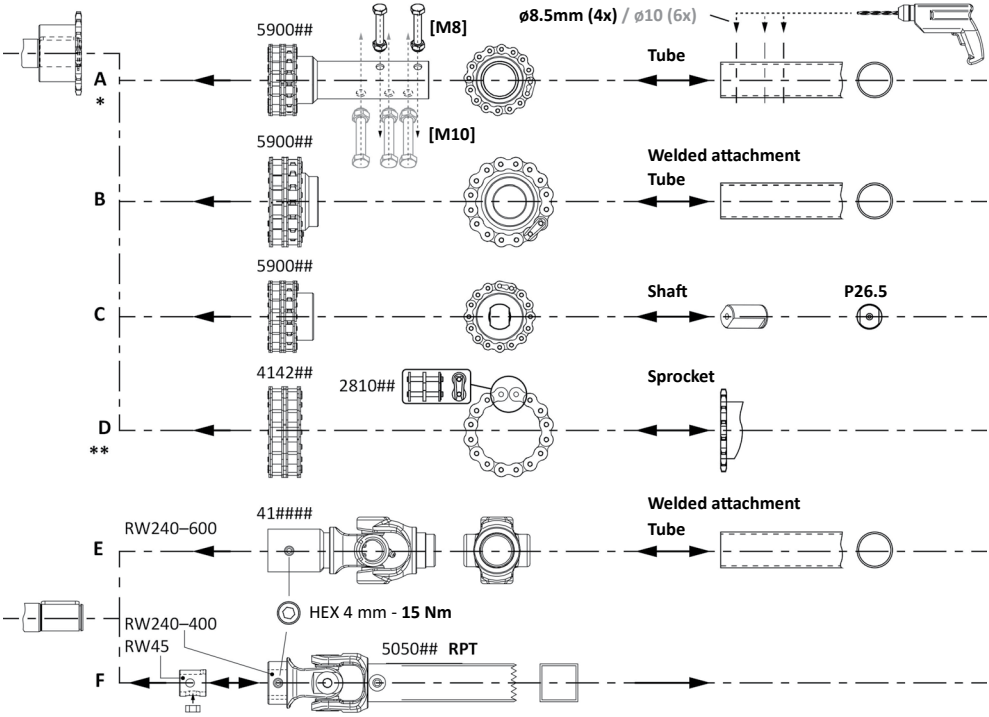
CAUTION

Do the check of the minimum screw-in depth/free thread-length (SID/FTL) of the configuration that follows: SHEET THICKNESS and fixing-bolt LENGTH. This prevents damage or injury (breakage risk).

4.4 Installation options A–F for output shafts

4.4.1 Basic output shafts (BOS)

Installation options A–F show the (most) used connections (chain couplings/universal joints) of **basic output shafts** (BOS) to operated systems.



* M8 and M10 bolts with lock nuts (and related tightening torque) are recommended for the applicable configuration.

** D is supplied as two parts (chain, chain connector).

In this product manual shown illustrations can be different than the components and/or systems. For more information on item numbers and models refer to the Ridder catalog or website at **ridder.com**.

4.4.2 Special output-shafts (D, LD, LK ....)

Installation options A–F are (possibly) also applicable, if necessary for the operated system, for models such as **D, LD** or **LK** (or other designations).

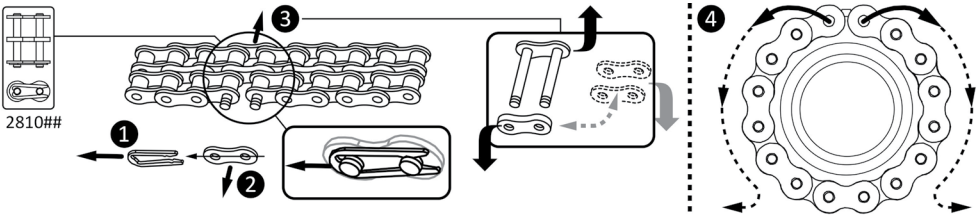
NOTE: Make sure that the configuration, together with the operated system, agrees with §1.3 “Warning about discouraged use” and §3.3 “Application” (intended use). Possibly approval from Ridder is necessary.

This section shows, for installation options A–D (if applicable), the installation of **chains** onto sprockets.

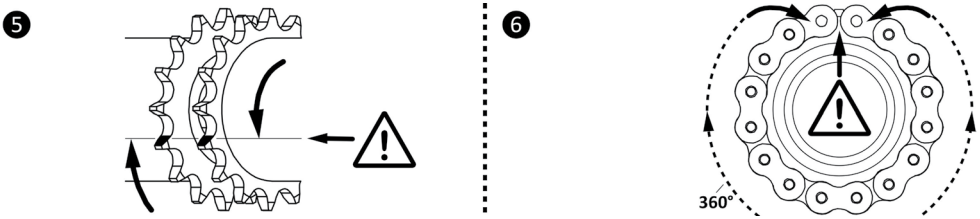
Preparing components

- Remove the chain connector (2810##) from the (installed) chain (❶–❸).
- If installed, remove the chain from the sprocket of the chain coupling (❹).

❶–❹ Remove the chain connector (and the chain from the sprocket).

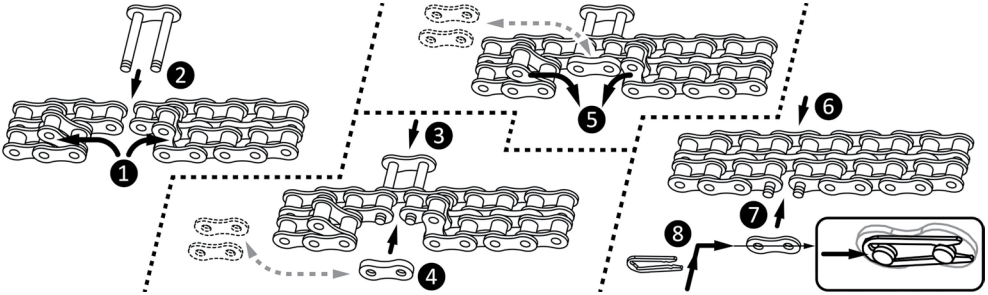


❺ Turn the sprockets and make sure that the teeth are aligned.
❻ Put the chain onto the sprockets with the chain ends at the top.



Install the chain

❶–❽ Install the chain connector and chain (on the sprockets).



Installation options G, H, I

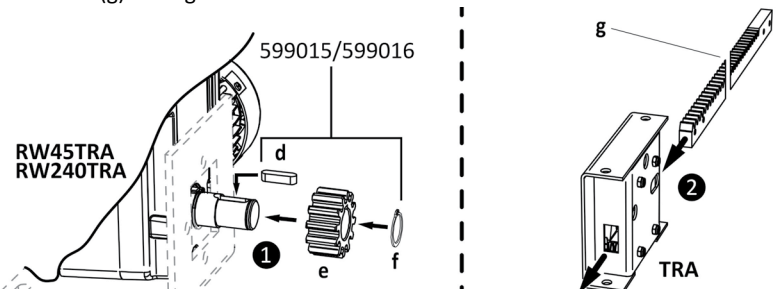
G: Type A mounting plate installed between the motor gearbox and the TRA drive-unit.
Refer to §4.3: "Optional mounting plates", step ❶A.
Do the **steps** ❶, ❷ + ❸, ❹, ❺ of the **two illustrations** that follow.

H: Foot mounting or top mounting of the on the motor gearbox installed TRA drive-unit.
Do the **steps** ❶, ❷ + ❹, ❺ + ❻ or ❼ of the **two illustrations** that follow.

I: Wall mounting with the special wall mounting plate (417910/417953) of the on the motor gearbox installed TRA drive-unit.
Do the **steps** ❶, ❷ + ❹, ❺, ❽, ❾ of the **two illustrations** that follow.

Preparing components (G, H and I)

❶ Install the shaft key (d), the pinion (e) and the retaining ring (f) onto the output shaft.
❷ Put the rack (g) through the TRA rack drive-unit.



Installation option G

Note: Possibly there is no mounting plate installed to the structure at this time. Install a (type A) mounting plate or an alternative to the structure first.
Refer to §4.3: "Optional mounting plates", step ❶A.

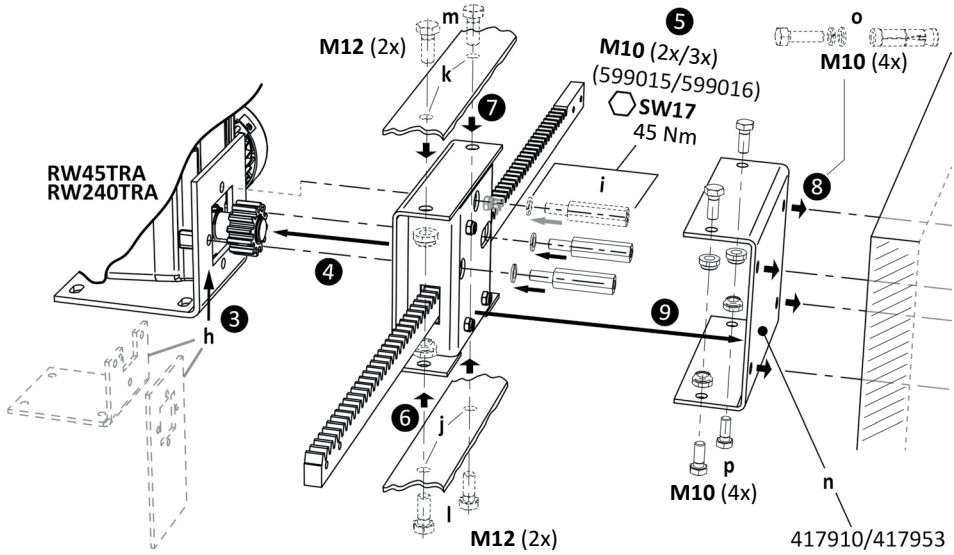
❸ Put the (type A) mounting plate (h) or an alternative between the gearbox and the TRA drive-unit.
❹ Install the TRA rack drive-unit onto the gearbox (and mounting plate or alternative [h]) with the special M10 bolts ([i] 599015/599016).
❺ Tighten the bolts (i) gradually with the correct tightening torque. Refer to **SID/SBI** information.

Installation option H

❹ Install the TRA rack drive-unit onto the gearbox with the special M10 bolts ([i] 599015/599016).
❺ Tighten the bolts (i) gradually with the correct tightening torque. Refer to **SID/SBI** information.
❻/❼ Drill two holes of Ø13mm for foot mounting (j) or top mounting (k) in the structure. Use M12 fasteners (l or m) to install the TRA system onto the structure. Obey the instructions for installation of M12 fasteners (l or m).

Installation option I

4. Install the TRA rack drive-unit onto the gearbox with the special M10 bolts ([i] 599015/599016).
5. Tighten the bolts (i) gradually with the correct tightening torque. Refer to **SID/SBI** information.
8. Install the wall mounting plate (n) onto the wall. Use four M10 fasteners ([o] wedge bolts or such) for the wall mounting. Obey the instructions for installation of M10 fasteners ([o] wedge bolts or such).
9. Install the TRA drive-unit to the wall mounting plate (n) with four M10 bolts (p) and lock nuts. Obey the instructions for installation of M10 fasteners (p).

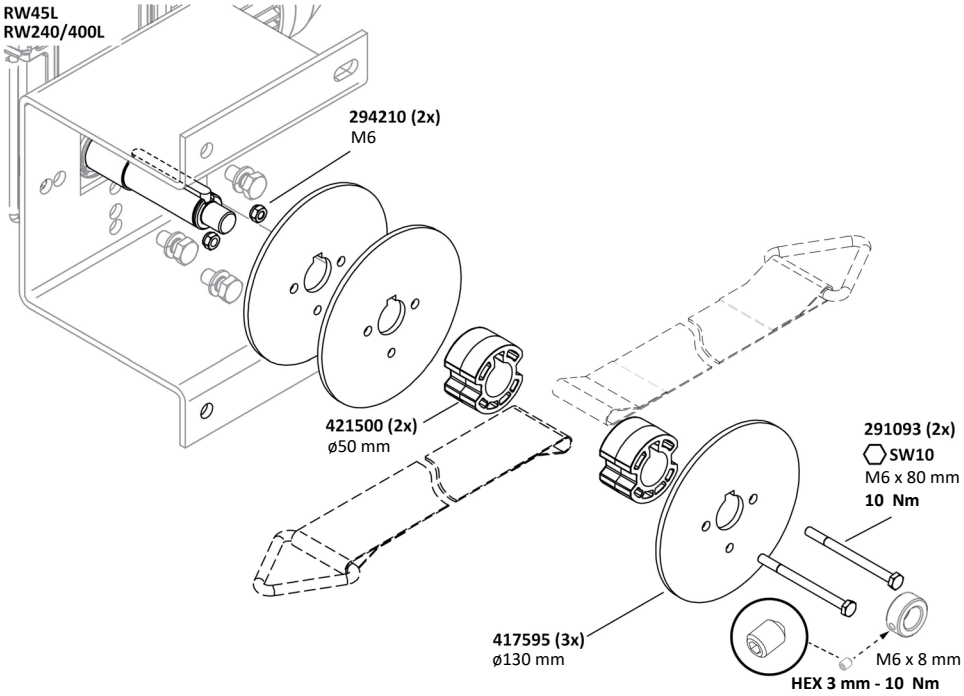


The TRA520 rack-drives have zinc-plated racks with different lengths. Attach the racks to coupling-plates, push-pull tubes, steel cables and/or such.

In this product manual shown illustrations can be different than the components and/or systems. For more information on item numbers and models refer to the Ridder catalog or website at **ridder.com**.

Installation option J

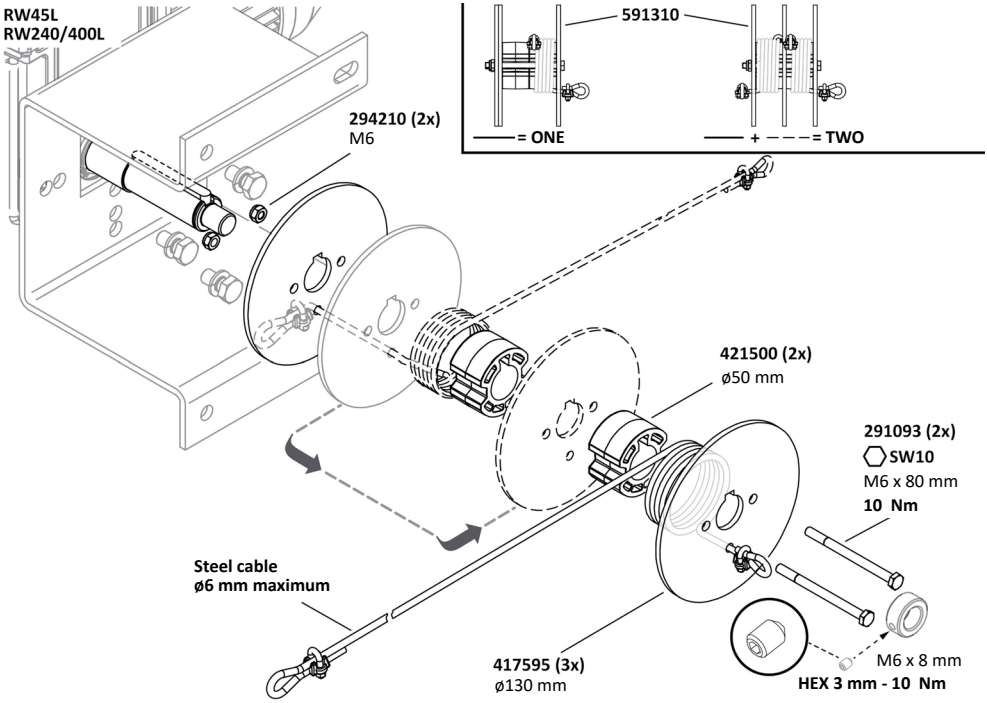
Install the drum and belt (one or two [with triangle for example]) onto the RW45-SD-L or RW240/400-SD-L drive unit. Refer to the illustration that follows.



In this manual shown illustrations can be different than the components and/or systems. For more information on item numbers and models refer to the Ridder catalog or website at **ridder.com**.

Installation option K

Install the drum and cable (one or two) onto the RW45-SD-L or RW240/400-SD-L drive-unit. Refer to the illustration that follows.



In this manual shown illustrations can be different than the components and/or systems. For more information on item numbers and models refer to the Ridder catalog or website at **ridder.com**.

Note: Ridder does not supply steel cables and steel cable clamps.

5. CONNECT INSTRUCTIONS

Only to approved personnel it is permitted to do the connect instructions.

This chapter tells about the connect instructions without connected SD panel unit (PU). Refer to the PU product manual if an SD panel unit is connected.

The RW-SD motor gearboxes are applicable for use in an industrial environment where electromagnetic interference can have an effect. Usually correct connection makes sure that functional operation is safely possible without problems. Make sure that the connections obey EMC-conformity.

- When you put the cables, make sure that **water flows away** from the motor gearbox (make loops if necessary). Refer to §5.2 “Cable glands”.

- Make sure that the **cable routing** to the circuit board (A2) keeps the sensor unit (**SU***) mechanically **tension-free**. Also make sure that cables **cannot** become **caught** when the closing cover (A3) is closed. Refer to §7.5 and §5.2 “Cable glands”.
  * Only RW45-SD and RW240–600-SD series.
- Make sure that during connection work all phases of all power connections (power supply) are **de-energized**.

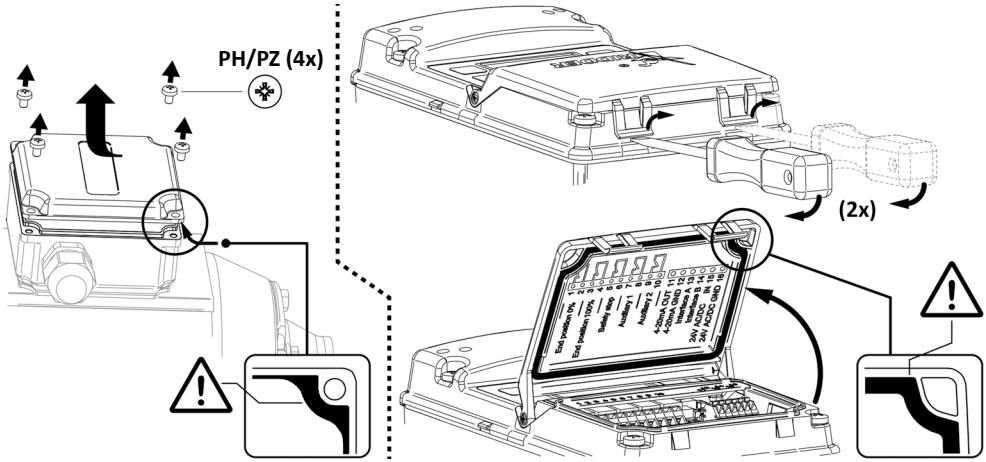
DANGER	**The power supply of the motor gearbox can directly or not directly put the drive unit into movement. This can also cause an electric shock which can kill you if electrical components are touched.**
CAUTION	**Do not use materials such as tin or solder on cables (where the insulation is removed) that can cause the cable strands to break.**

Mains-voltage loop-connection

If a mains-voltage loop-connection is used, make sure that connection terminals, plug connectors and cables are sufficient for the permitted current load. If you do not obey this instruction thermal damage to components or adjacent objects can occur.

5.1 Removal-Opening covers

- Remove the bolts (4x). Use a flat tool to unlock the closing cover. Remove and open the covers (2x) temporarily to do all necessary work. The gaskets (2x) usually stay in their position.
- Make sure that no damage is caused to the gaskets and that they do not become dirty.
- Install and close the covers (2x) again after the work! Refer to the end of chapter 7.



In this product manual shown illustrations can be different than the components and/or systems.

A minimum conductor cross-section of 1.5 mm² is applicable to the cables in the general wiring diagrams. The table that follows gives the necessary conductor cross-section and maximum cable length for the different cables and voltages.

Cable	Voltage	Minimum conductor cross-section	Maximum cable length at 24 V DC
Power cable	24 V DC	1.5 mm²	30 m
		2.5 mm²	50 m
Control cable	0-24 V DC	0.75 mm²	

Note: If **longer** cable lengths are necessary, **increase** the **supply voltage** of the SD Unit to prevent voltage drop.

- **Conductor cross-section 1.5 mm²:** Increase 1 V DC for each 10 m of cable length added to the maximum in the table.
- **Conductor cross-section 2.5 mm²:** Increase 1 V DC for each 15 m of cable length added to the maximum in the table.

For the used components, electrical material and cable lengths the necessary conductor cross-section can be different.

Use only applicable components and electrical material.
Always refer to the related information and manuals.

- Motor-current connection through the SD end position system is **not permitted**!

The end position system (circuit board A2) is applicable for the currents that follow:

- **50 mA–500 mA** at 24 V AC/DC
- A **maximum** of **100 mA** at 115–240 V.

The SD end position system is NOT applicable for motor-current connection through the switching contacts.