

# Assembly instructions for installing tension rod systems

## 1. Application area

The installation instructions as below apply to PFEIFER tension rod systems made from non-alloy steel.

## 2. Handling at the construction site

For systems with a length of 6 meters or more, the tension rod system should be lifted using a spreader with at least two slings to avoid the risk of bending the system.

## 3. Inspection before assembly

Before installation, all tension rod systems should be thoroughly inspected for potential damages during transportation.

**In particular, the following areas must be carefully checked:**

- Damage to the anticorrosion coating
- Damage to all threads, including screws
- Damage to components

If damage is found in the anticorrosion coating, it must be rectified as soon as possible. Damage to the zinc coating must first be treated with zinc rich paint. The use of sprays containing zinc is not recommended. This is because the zinc content of a spray is much lower than in systems applied using a brush, and sprayed coating has insufficient thickness. Any additional re-coating can then be applied in several steps.

Depending on the process used, there may be flaking or irregularities in the anticorrosion coating. As a rule, these do not affect the level of corrosion protection and durability of the system, and are not considered defects.

## 4. Assembly preparation

Any screw threads must be cleaned and lubricated before assembly.

Damaged or dirty threads cannot be assembled, since this can cause the thread to jam and may render the tension rod system unusable.

## 5. Adjusting the tension rod systems

In order to make assembly easier, the PFEIFER tension rod system is delivered pre-assembled. The tension rod system can be adjusted to the necessary system length by twisting the rod. This is made possible by right-hand and left-hand threads in the end fittings and other system components. When making any length adjustment, make sure that the pin of an end fitting can be inserted without any force. Especially for rods with larger diameters and longer systems, it may be necessary to lift the tension rod system slightly in order to allow for force-free length adjustment and pinning. Hitting the pin with a hammer can damage the fork and the pin itself, so it is not recommended.

Standard tension rods come without wrench flats for twisting the rods. The components are fabricated with wrench flats. As a rule, all smaller rod systems can be twisted by hand. For larger systems, a strap wrench or chain pipe wrench can be used for twisting. Pre-tensioning of a rod system is generally not necessary. If a rod system is ordered with a wrench flat, an open-ended wrench can be used for twisting and length adjustment. Crescent wrenches (monkey wrenches) are also appropriate when used correctly.

Any chips or other damages around the wrench flats must also be treated with zinc powder paint after a final assembly.

Counter nuts secure components such as fork heads or bushings and should be tightened firmly. A strap wrench can also be used to tighten the counter nuts in larger systems.

## 6. Minimum screw-in depth

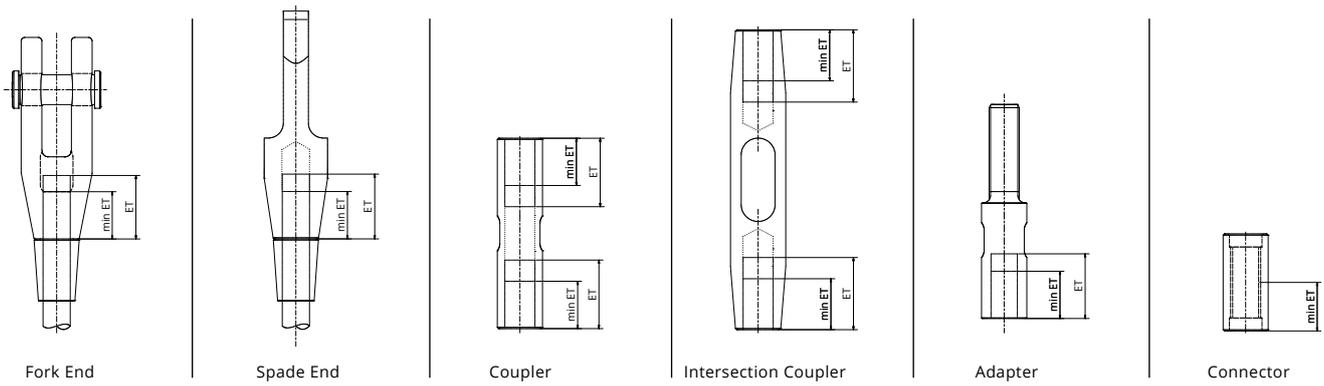
As part of the construction supervision, the minimum screw-in depth for all components must be checked using suitable measures. This check must be documented and reported by the supervisor responsible for installation. The minimum screw-in depth is easy to check on site – if the thread for the rod is completely covered by the counter nut, the minimum screw-in depth is guaranteed. The exact screw-in depth can be found on PFEIFER shop drawings. Also a convenient reference can be found in Attachment A. In individual cases, where the connections not secured by a counter nut or threads are produced in special lengths, suitable measures must be taken to ensure the minimum screw-in depth on a rod.

## 7. Screw locking

Make sure that all safety screws on the covers are tightened and then glued. Suitable Loctite or similar adhesive products can be used for bonding. It is essential to observe the application instructions (i.e., pre-treatment of the surfaces to be bonded) of the respective products

## 8. Corrosion protection

If the galvanized surface of the system is damaged during installation, the affected areas must be properly repaired and made good in order to guarantee the necessary level of corrosion protection. Periodic inspections of a rod system, including proper documentation, is recommended to take place on site.



size Größe	screw-in depth mm Einschraubtiefe mm		
	Fork End, Spade End, Intersection Coupler, Coupler, Connector, Adapter Gabelkopf, Ösenkopf, Kreuzmuffe, Muffe, Verbinder, Adapter		Connector Verbinder
M mm	ET	min ET	ET = min ET
008	17,5	13,0	14,0
010	22,0	16,5	17,5
012	26,0	19,5	20,5
014	32,0	23,0	23,5
016	34,0	25,0	26,0
020	43,5	32,0	33,0
024	52,0	38,0	39,0
027	58,0	42,0	42,5
030	64,5	47,0	48,5
036	77,0	56,0	57,0
042	90,0	65,0	66,0
048	102,5	74,0	75,0
052	100,0	69,0	79,5
056	107,5	74,0	86,5
060	115,5	80,0	91,5
064	123,5	86,0	97,5
070	135,0	94,0	105,0
080	153,5	106,0	117,0
090	175,0	120,0	129,0
100	193,0	133,0	141,0
110	211,0	146,0	153,0
120	230,0	160,0	165,0

ET = middle position/Mittelstellung  
mit ET = minimum screw-in length/Mindeseinschraubtiefe