

MÖSCHA swivelling spreaders

frequently asked questions (FAQ):

Technical Aspects

(published: 22.01.2017)

Can MOESCHA spreaders be used at every slurry tanker?

Yes – and even at piping/umbilical systems.

Furthermore, it works for a variety of media (slurry, urine, water, sludge etc.).

The type of the MOESCHA spreader depends on the working width you want to achieve:

- Single spreader for up to 18m
- DUO spreader for up to 21m (vacuum tankers) / 24m (excenter pump tankers)
- TRIO spreader for up to 24m (vacuum tankers) / 27m (excenter pump tankers)

To determine the right configuration of the chosen spreader type, the following criteria are important:

1. Size of the spreader, depending on pressure / pump output
(valid effective pressure of the slurry at the nozzle of the spreader: 0.5 ... 1.5 bar)
2. Coupling
3. Holding unit

This is explained in detail in the following sections.

Selecting the type of the spreader: working width of 15m, 18m, or more?

Single swiveling spreader (Overview and prices: see [LINK](#)[LINK](#))

- For working widths between 9m and 15m, our cheapest spreader is sufficient: **type N**.
- For working widths of up to 18m, **type W** is necessary.
It achieves optimal operation for working widths between 12m and 18m.
- If you need a very high spreading quality at small working widths (below 9m / 12m), you can make use of the accessories “Wellblech” (rippled sheet). It reduces the working width by 2.5m.
- Here is an explanation on how to adjust the working width of the spreaders:
http://www.moescha.de/Download/Moescha-Downloads-Manual-Seite-all-20170114_EN.pdf
- In the next two chapters, there is an explanation on how to choose the size of the spreader, depending on the configuration of vacuum/pump system. Some general remarks:
 - o The size (of the nozzle of the spreader) can be chosen from around 40mm to 85mm.
 - o The bigger it is, the more quickly the tanker will be empty. However, the effective pressure will be reduced, too. And due to the limited driving speed, there might be just too much slurry coming out of the spreader. This is why we check some facts like
 - tanker: make (helps e.g. validating if right coupling has been chosen), size (how many liters/gallons?), engine type (vacuum pump, ...), engine power (how many liters/minute)
 - desired spreading width
 - spreading amount/area

just as you can see it from our online forms

<http://www.moescha.de/tinc?key=SCNkaHzy&formname=englishSchwenkverteiler>

<http://www.moescha.de/tinc?key=SCNkaHzy&formname=englishDuo>

- The following table might be helpful to decide what is best for a specific situation:
<http://www.moescha.de/Download/Moescha-Downloads-Ausbringtabelle-EN.xlsx>
- With a so-called reduction ring, each size can be reduced once by around 8mm. Thus, if you buy a spreader with nozzle size 77mm, you can turn it temporarily to a 68mm spreader by inserting the reduction ring.
- For most farmers, one of the following configurations is the best solution:
S-77W with reduction ring
S-68W with reduction ring

DUO spreader or folding boom system with two swiveling spreaders

- Swiveling spreaders enable many advantages. So if one is not sufficient due to a working width of more than 18m, you should use two of them.
- The DUO spreader is the simplest, lightest and cheapest solution for using two swiveling spreaders in parallel. With vacuum pumps, 21m are achieved, with other pumps up to 24m. Besides the higher working width, an interesting advantage when compared to the single spreader is the higher maximum driving speed: Due to its special construction, you can drive up to 11 km/h.
Overview and prices: see LINK.
- You can also buy two single spreaders and attach it to a boom system, e.g. a folding one. Farmers and contractors do this to achieve an optimal spreading quality for working widths of up to 30m.
An example can be seen in this VIDEO.

TRIO spreader (see LINK)

- If even the working width of DUO spreader is not sufficient, and a boom system is no option, then the TRIO spreader can be very interesting for you:
It combines one central swiveling spreader with two static side-ward nozzles. This way, working widths of 27m and more can be achieved.
- Hint: The side-ward nozzles provide a spreading quality comparable to conventional splash plates. Thus, the area covered by them will not be as evenly spread as the central area. However, for some applications this still is the best option.

Tankers/systems with vacuum pump

Typically, vacuum tankers provide a pressure of 1 bar. This enables an optimal usage of the swiveling spreaders and a working width of up to 15m (type N) / 18m (type W).

If your vacuum system provides a lower pressure, the working width will be reduced. The pressure should be at least 0,5 bar, resulting in a working width of up to 12,5m (type N) / 14m (type W).

Recommendation for the selection of the size of the spreader (= diameter of the nozzle/outlet):

- Please measure the nozzle diameter of your current spreader.
- In most cases, the best configuration is to choose a nozzle size which is a little bit larger.
You can choose between 55, 62, 68, 77, and 85mm.

You can cross-check your selected size by having a look at the following table:

Is the maximum driving range that you can achieve by driving 7 km/h sufficient for your application?

→ If not, choose a smaller diameter and/or an additional reduction ring

For your most important working width: Can you achieve the desired range of amount of slurry per acre with a speed between 3 and 7 km/h? And are you satisfied with the speed you will have to use for achieving your most typical amount of slurry per acre?

→ If not, choose a different diameter and/or an additional reduction ring

Tankers/systems with other types of pumps (excenter pumps etc.)

The effective pressure at the nozzle of the spreader depends on the flow-rate of the slurry.

Recommendation for the selection of the size of the spreader (= diameter of the nozzle/outlet):

- Please measure the effective flowrate of your tanker/system and your current spreader: How long does it take to get it empty? $\text{flow-rate} = \text{volume} / \text{time}$ [liters/minute].
- In most cases, the best configuration is to choose the spreader as follows (= 1 bar pressure):
 - o ca. 1.750 l/min: 55mm
 - o ca. 2.200 l/min: 62mm
 - o ca. 2.600 l/min: 68mm
 - o ca. 3.200 l/min: 77mm
 - o ca. 4.400 l/min: 85mm
- If the flow-rate...
 - o ...is higher, the pressure will be higher. This won't affect the working width significantly.
 - o ...is lower, the pressure will be lower, resulting in a reduced working width.

Hint: Some pumps (Exzenter-Schnecken) and Schleudern create a swirl of the slurry. This has to be neutralized by a special coupling insert (anti-swirl), to ensure an optimal operation of the spreader.

Coupling / bow (connecting unit)

The final part of the pipe/hose/tube or tanker is called coupling. In the following link (as well as on the next pages), you see the most common types of couplings: <http://moescha.de/ENGLISH/englishPreiseZubehoer.html>

Most couplings are of one of the three dimensions 4", 5" or 6".

You always have to be very clear about whether the male or the female type is required.

(male/female type of connector: if clamps are not at tanker -> female type needed at spreader)

Holding unit and rubber

A holding unit stabilizes the single spreader and makes mounting/demounting comfortable; best option often is "fork with pipe brackets" (the fork works as a hinge)

<http://www.moescha.de/Bilder/ZubehoerRohrschelleMitHaltegabel.jpg>

A rubber tightening is used for mounting the spreader to the coupling. It comes with 4 screws.

<http://www.moescha.de/Bilder/ZubehoerFlanschdichtung.jpg>

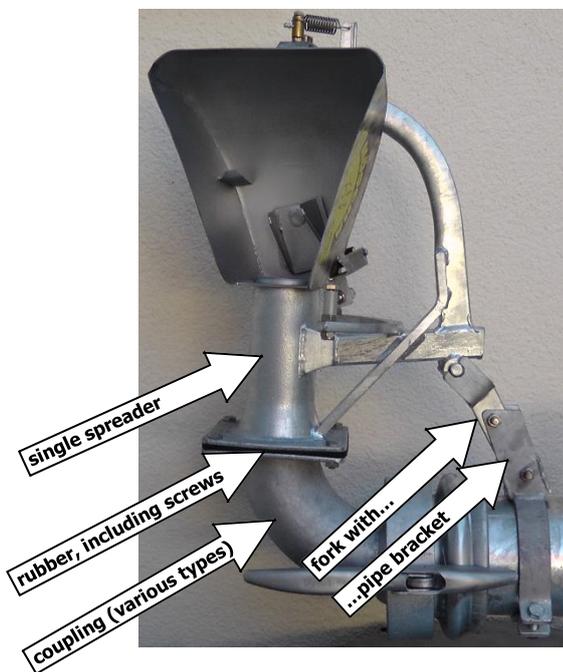
Manual for the spreaders, including mounting to the tanker

You can find all the manuals online: <http://moescha.de/ENGLISH/englishDownloads.html>

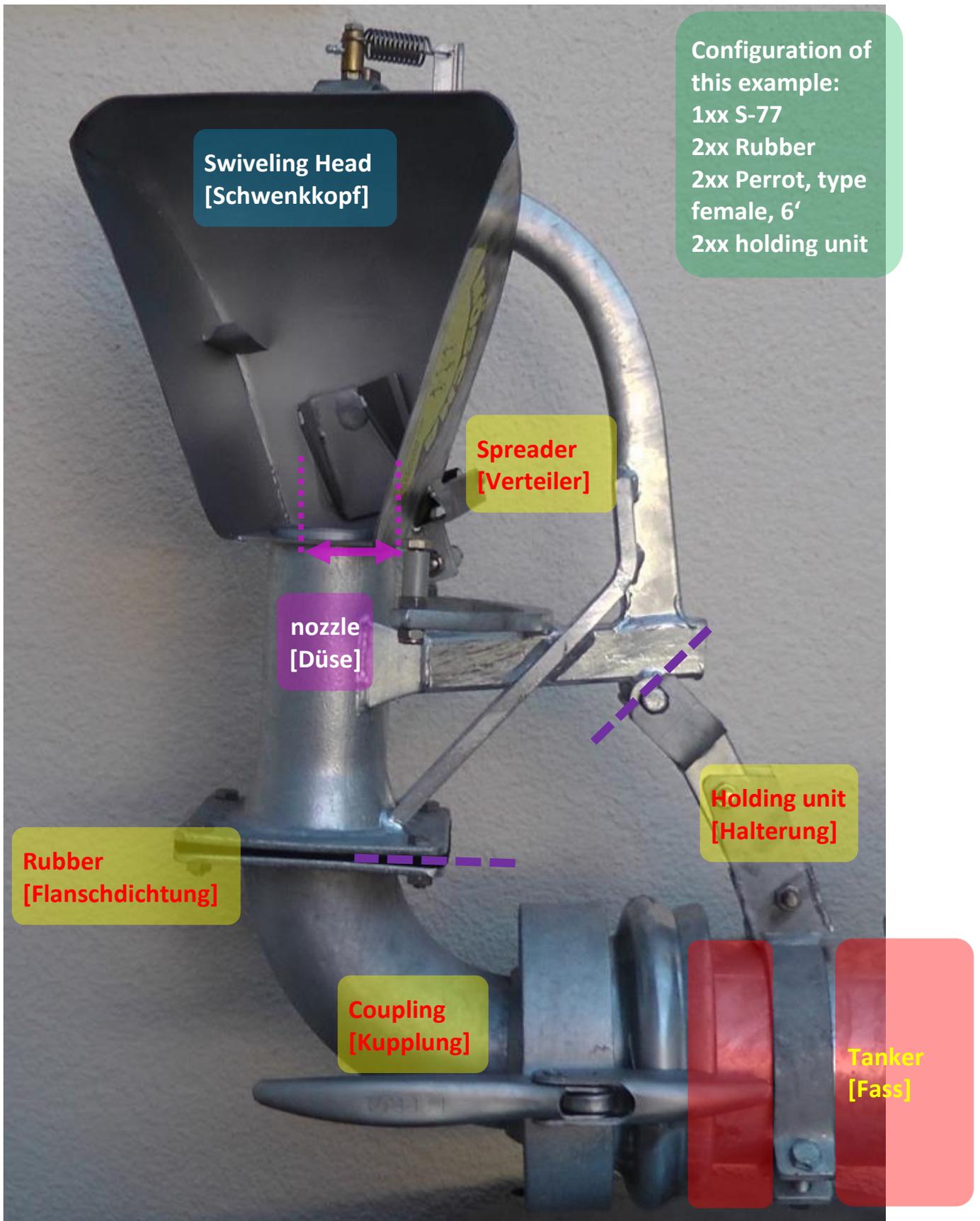
Some additional remarks:

- Height of the spreader(s):
 - o Ideally, the height of the rubber (equal to square flange plate of spreader) is approximately 0.6m to 1.1m (or 2-3 feet) above the ground.
 - o You won't increase the spreading with significantly if you put it higher. However, the higher the spreader, the bigger the influence of wind (decreasing spreading quality).
 - o Thus, for 95% of all farmers the best solution is to use one of our standard couplings to connect the single spreader to the tanker.
- Distance of the center of the spreader...
 - o ...to the backside of the tanker:
at least 0.5m (1.5-2 feet), in order to minimize staining of the tanker
 - o ...to the suck-in-nozzle of the tanker (if it is at the backside of the tanker):
at least 0.2m (0.6 feet), in order to minimize staining of the suck-in-nozzle

Visualization A: necessary parts for the application of a single spreader



Visualization B: technical terms in English [and German]



Synonyms for nozzle: outlet, orifice of spreader (= where slurry comes out to the air)

Synonyms for coupling: interface, counterpart for orifice of tanker (= interface of your current spreader)