

# MULTICELL and MULTICOR-K

## For pulverized coal feed system

- Pulsation-free, gravimetric feeding
- High short-time feeding accuracy
- Insensibility to external influences, highly accurate principle of measuring
- High tool life through high quality materials of the product contact parts
- Explosion shock-pressure resistant construction
- Direct feed into the pneumatic conveying



### Application

The pulverized coal feed system comprises the horizontal rotary valve feeder MULTICELL as a silo dispensing system and the mass flow meter MULTICOR K. It is ideal for the continuous feeding of pulverized fuels (hard coal, lignite, petroleum coke, alternative fuels, fly ash and any mixtures of these substances), as are primarily used to fire rotary kilns for the production of cement.

Applications with smaller feedrates can also be used, for example for hot gas generation, in the steel industry and for power plant firing.

Typically, feeding takes place from a depressurized supply bin directly into a pneumatic conveyor line.

### Equipment

The horizontal rotary valve feeder MULTICELL has a large inlet cross-section and two independent drives for the speed-controlled starwheel and the dispersing agitator. This ensures that the bulk solids in the inlet area are fully activated and guarantees high feed constancy. The discharged quantity of fuel is precisely measured by the downstream mass flow meter MULTICOR K according to the Coriolis principle.

The DISOCONT Tersus control unit evaluates the measuring signal and regulates the rotary valve feeder at the prescribed setpoint. All feed operation parameters can be called through the on-site control loop.

The feed operation takes place directly into a pneumatic conveyor line, the pressure differential that normally occurs between the pressureless silo and the conveyor line can therefore be resolved without problem. Material movement, low gap dimensions and long sealing lengths from the material infeed to the material outlet minimize flows of leaking gas.

Numerous variations are possible:

- Single feeding
- Multiple feedings onto a common conveyor line (also in order to mix fuels)
- Multiple feeding beneath a silo with the discharge system MULTIFLOW with up to four feedings

### Function

In MULTICOR H measuring devices, the principle of Coriolis force measurement is used to determine the mass flow rate. The bulk solids flow being measured hits a measuring wheel in the device that is rotating at a constant speed. The bulk solids are caught by the blades of the measuring wheel and accelerated to the circumferen-

tial speed of the measuring wheel. A torque is required for the acceleration, which directly corresponds to the feedrate.

The force underlying the torque is measured by a conventional load cell and is converted into an electronic signal. The measurement is independent of mechanical

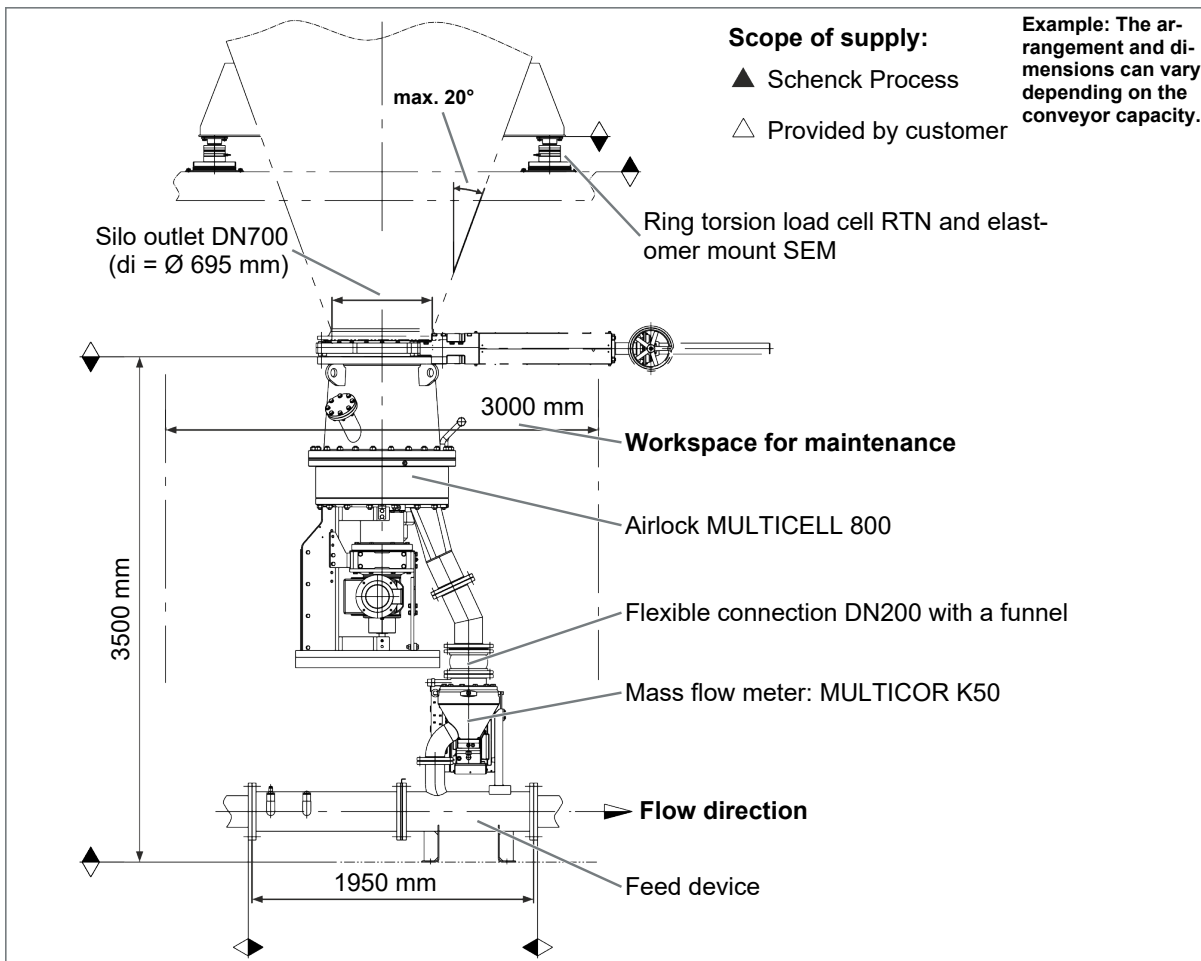
properties of the bulk solids, such as grain spectrum, flow characteristics, humidity and temperature.

The force of the bulk solids on the measuring wheel and changes in the flow speed in the measuring device do not affect the measuring signal.

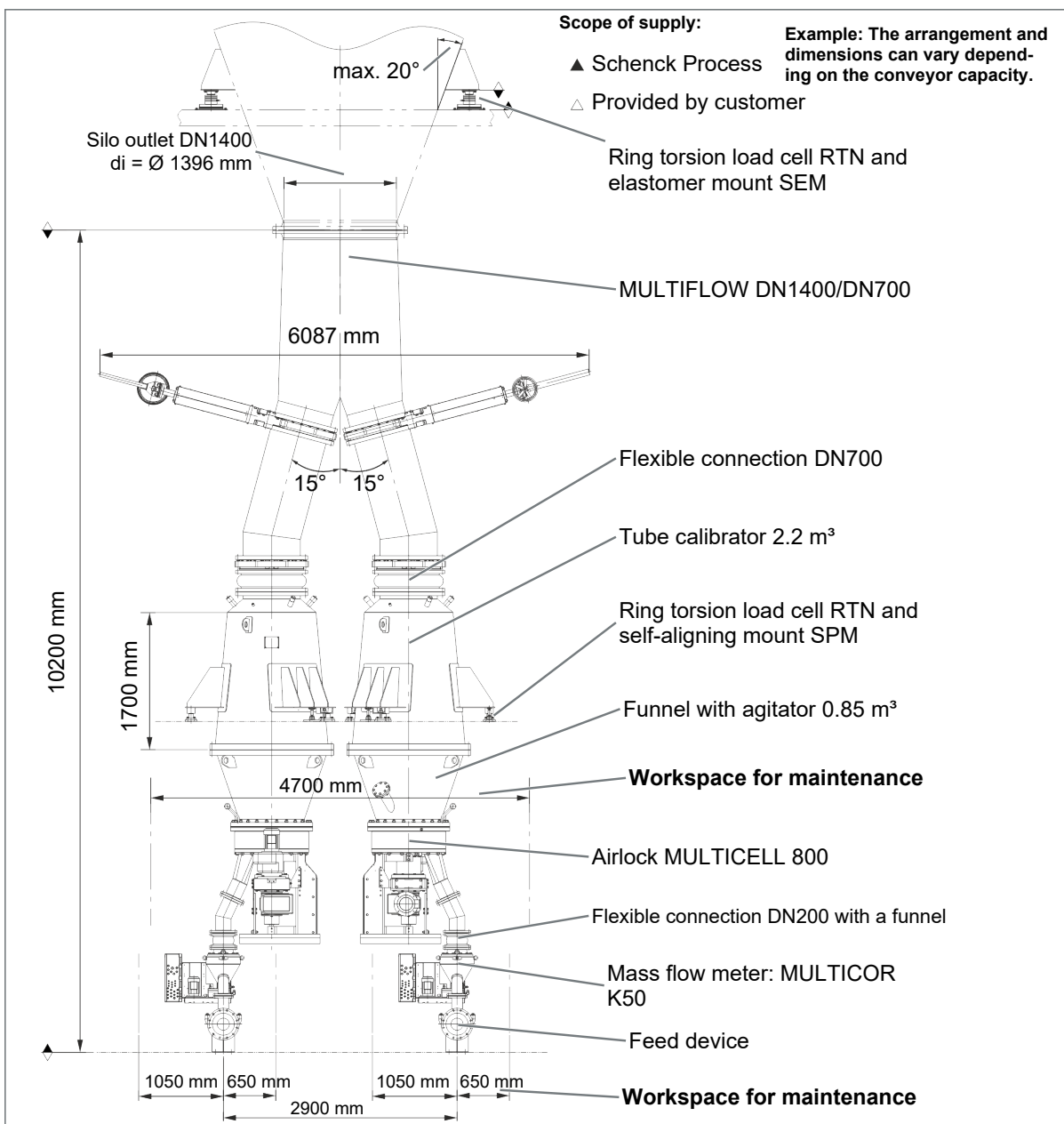
**Online calibration**

Online calibration can be performed via the weighing of the pulverized coal silo – with the Loss-In-Weight principle. Alternatively, the arrangements specified above can be supplemented with the compact tube calibrator. The calibration process is performed during running production and at any feedrate. The continuous feeding into the pneumatic conveyor line is not interrupted - the coal mill and refilling into the storage bin can continue to be operated. The tube calibrator is a component of the silo during normal operation and is operated without rotary valve feeder and without a filter.

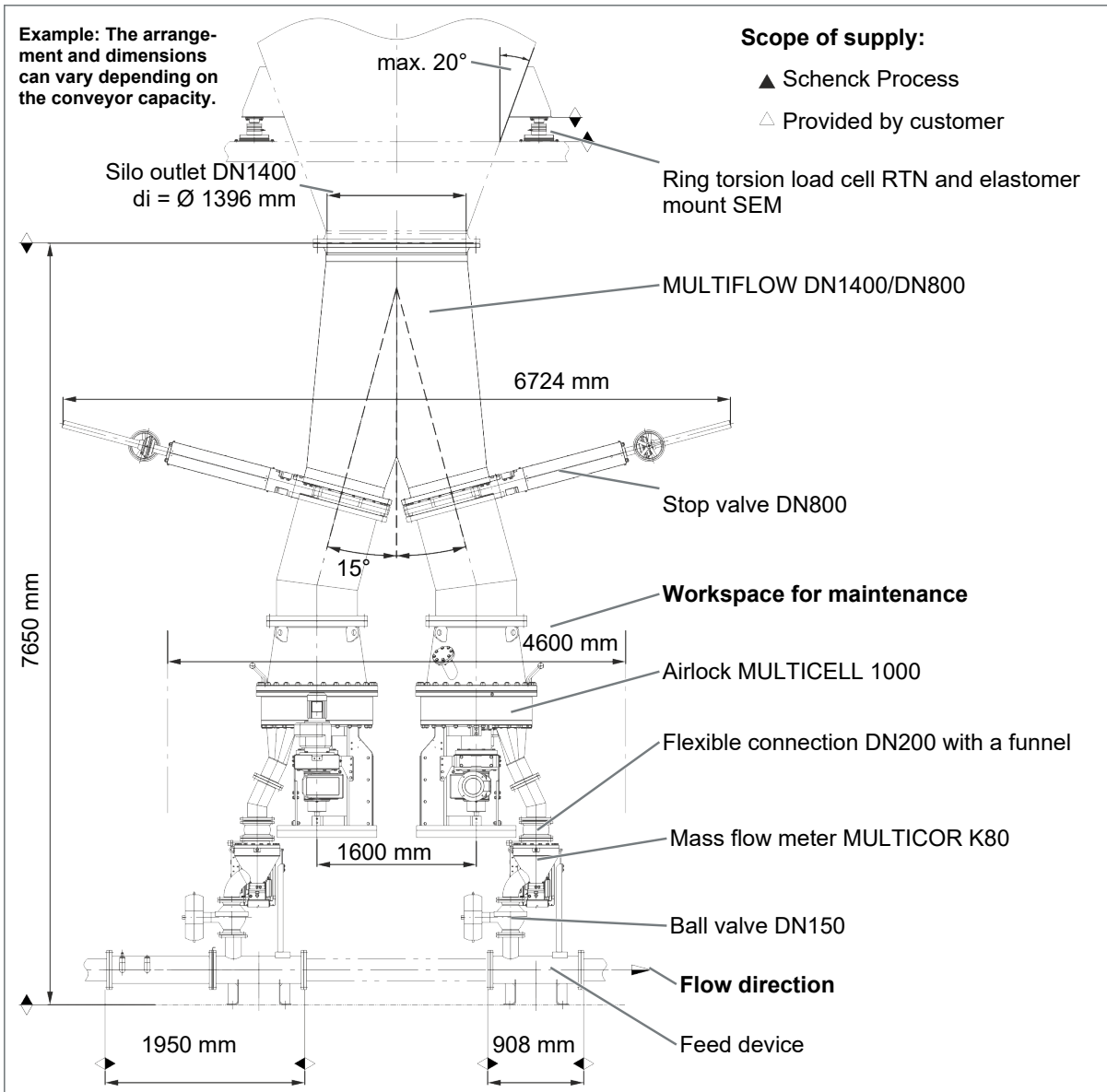
## Single feeding with direct installation on the silo



# Multiple feeding with MULTIFLOW, tube calibrator 2.2 m<sup>3</sup>, MULTICELL 800 with MULTICOR K50



# Multiple feeding with MULTIFLOW and MULTICELL 1000 with MULTICOR K80



The standard design of the MULTICELL has a starwheel, which has been developed for high flow rates and small device dimensions.

MULTICELL MIN has a starwheel, which is optimized for high feed constancy in a broad range of adjustments and is therefore ideal both for permanently low feedrates and high feed constancy, as well as for a large range of adjustments, such as for high pulverized coal substitution rates through the additional use of alternative fuels necessary for a stable furnace operation.

MULTICELL MIN XR 1000 has a starwheel, which is optimized for high feed constancy in a very broad range of adjustments and is therefore ideal both for permanently low feedrates and high feed constancy, as well as for a very large range of adjustments from 1:60 with three-phase motor drive and 1:100 with servo drive, such as for very high pulverized coal substitution rates through the additional use of alternative fuels necessary for a stable furnace operation.

The feeding quality is determined by the feeding accuracy and feed constancy.

The feeding accuracy is critical for the balance of the process and describes the behavior over a longer period. The feed constancy, on the other hand, defines the consistency of the feed in short periods and therefore is important, for example, for the flame pattern.

## Technical Data

### MULTICELL Standard and MULTICOR K

Combinations MULTICELL Standard and MULTICOR K								
MULTICELL	640/20	640/34	800/50	800/70	1000/100	1000/165	1200/190	1200/225
MULTICOR	K50	K50	K50	K50	K80	K120	K120	K180
<b>Technology:</b>								
max. flow rate [t/h]	5.5	9	14	20	31	45	52	65
<b>Features:</b>								
Range of adjustment based on max. flow rate	1:10	1:10	1:10	1:10	1:10	1:10	1:10	1:10
Range of adjustment based on max. flow rate	1:5	1:5	1:5	1:5	1:5	1:5	1:5	1:5
For feed constancy $\pm 1$ % (Definition acc. to BVD2082)								
Feed precision $\pm 0.5$ % *) (Definition acc. to BVD2082)	x	x	x	x	x	x	x	x
*) The respective MULTICOR K measuring ranges must be observed!								
<b>Application:</b>								
Single feeding	x	x	x	x	x	x	x	x
Multiple feeding	x	x	x	x	x	x	x	x
Multiple filling	x	x	x	x	x	x	x	x
Interim hopper or tube calibrator with KME slide gate	x	x	x	x	x	x	x	x
<b>Options:</b>								
Stop valve	x	x	x	x	x	x	x	x
Check measurement system	x	x	x	x	x	x	x	x
Silo technology, blower, pneumatic conveying	x	x	x	x	x	x	x	x

## MULTICELL MIN, MIN XR and MULTICOR K

Combinations MULTICELL MIN, XR and MULTICOR K										
MULTICELL	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN XR	MIN XR	MIN XR
	640/ 08	640/ 15	640/ 20	640/ 34	800/ 50	800/ 70	1000/ 100	1000/ 26	1000/ 52	1000/ 75
MULTICOR	K50	K50	K50	K50	K50	K50	K80	K50	K50	K50
<b>Technology:</b>										
max. flow rate [t/h]	2.2	3	3.8	6	10	15	26	8	16	23
<b>Features:</b>										
Range of adjustment based on max. flow rate with three-phase motor drive / (servo drive)	1:30	1:20	1:20	1:20	1:20	1:20	1:20	1:60 (1:100)	1:60 (1:100)	1:60 (1:100)
Range of adjustment based on max. flow rate for feed constancy $\pm 1\%$ (Definition acc. to BVD2082)	1:15	1:10	1:10	1:10	1:10	1:10	1:10	1:30	1:30	1:30
Feed precision $\pm 0.5\%$ *) (Definition acc. to BVD2082)	x	x	x	x	x	x	x	x	x	x
*) The respective MULTICOR K measuring ranges must be observed!										
<b>Application:</b>										
Single feeding	x	x	x	x	x	x	x	x	x	x
Multiple feeding	x	x	x	x	x	x	x	x	x	x
Multiple filling	x	x	x	x	x	x	x	x	x	x
Interim hopper or tube calibrator with KME slide gate	x	x	x	x	x	x	x	x	x	x
<b>Options:</b>										
Stop valve	x	x	x	x	x	x	x	x	x	x
Check measurement system	x	x	x	x	x	x	x	x	x	x
Silo technology, blower, pneumatic conveying	x	x	x	x	x	x	x	x	x	x

