



STORM HALVORSEN

KOMPONENTER TIL INDUSTRIEN





Tank cleaners

Three-dimensional rotating spray heads:

The most efficient, effective and economical interior cleaning of all types.



The interior tank cleaners from MOOG Cleaning Systems utilize a three-dimensional rotating spray head powered either by a water-hydraulic, electric or pneumatic drive.

They function with all types of professional high-pressure washers or stationary high-pressure systems with sufficient water pressure and adequate flow rate.

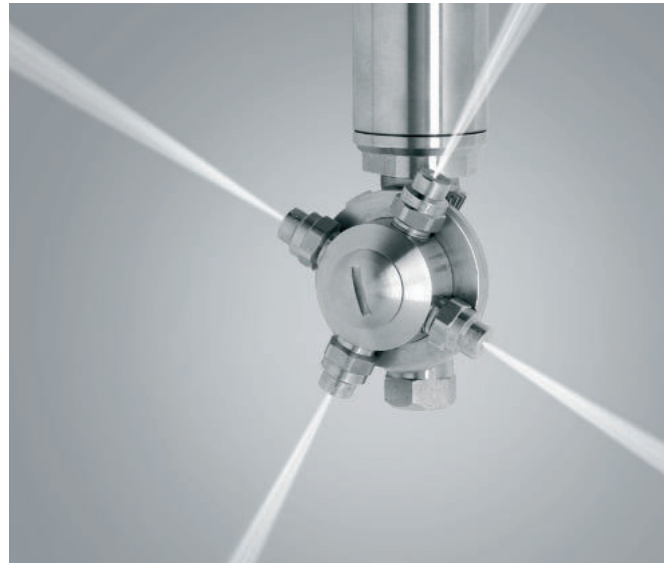
The mechanical beam guidance produces a defined 360° spray pattern guaranteeing coverage of the entire tank interior within a fixed number of rotations while avoiding redundancies.

This saves time, water and energy.



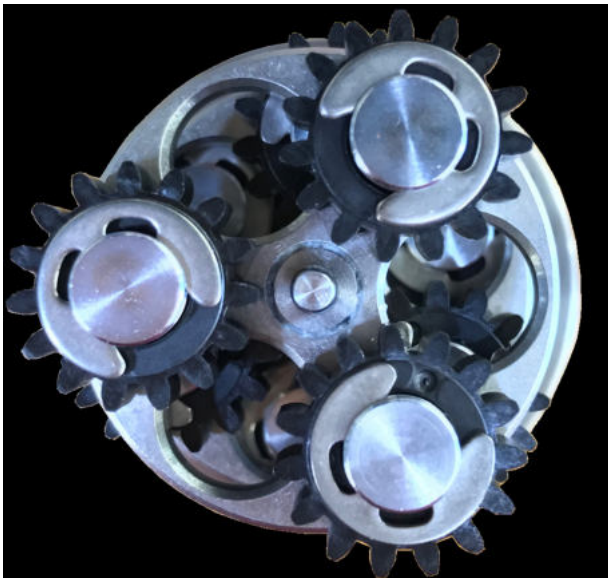
For effective high-pressure cleaning, both the impact force and rinsing effect of the water stream are deciding factors.

The special construction and precise assembly of MOOG cleaning heads guarantee zero leakage. Despite high-pressure conditions, water only exits the cleaning head through the intended nozzles, which ensures that the full cleaning power of the jet stream hits the intended surface.



In good Swiss tradition, MOOG values a compact design that doesn't compromise on efficacy or reliability.

Benefits to this include cleaning heads optimized for use in tanks with compact openings and easier handling of the product due to its lightweight design.



Benefits at a glance:

- Low water consumption and high cleaning performance simultaneously
- Reliable and durable product due to robust construction, mechanic precision and superior materials
- Low service costs due to low-maintenance design and fair pricing of replacement parts
- Lightweight cleaning heads for easy handling and smaller dimensions
- Wide product offering and corresponding parts for a variety of applications





Applications

The demands for tank interior cleaners vary greatly depending on the industry in question, tank characteristics and the substance contained in the tank.

Yet cleaning heads do share one commonality: They should clean quickly, effectively and affordably.

In numerous cases, a rotating cleaner head operating

with high water pressure yields measurable benefits:

MOOG customers typically enjoy 50-75% savings on cleaning time and 70-80% on water usage.

Listed below are the various industries, substances, and containers for which MOOG-high-pressure tank cleaners are ideal for cleaning interior surfaces

Tanks

Whether a production container or reactor with mixing mechanism, steel or plastic transport container, storage tanks made of steel, concrete, wood etc. MOOG cleaners have been trusted to clean tanks like these and more for many years.

The cleaners are either fixed to the tank interior in a one-time installation or manually / automatically installed for the cleaning procedure when needed. Depending on tank size and dimensions as well as possible spray shadows, the cleaning procedure is carried out either once from a central location within the tank, or from different positions via a number of parallel or successive cleaning run-throughs.

- Production container (mixer / reactor), transport container, storage tank
- Made of steel, plastic, concrete, wood, enamel
- Clean in Place (CIP) fixed installation, manual mounting in container or automatic retraction



Substance

High-pressure cleaning displays its physical advantages best when applied to remove highly viscous substances (adhesive quality, dry, poorly water-soluble). High-pressure is especially sought when the washing performance of the water alone isn't enough.

- Concrete, granulate, etc.
- Paints / lacquers, creams, alcoholic or fat-containing liquids, etc.
- Dough, chocolate, juice, biomass, etc.
- Tartar, etc.



Industry

Many MOOG customers come from enterprises with procedural production facilities and / or have transportation or storage tanks for liquids and bulk goods.

Food-stuff production



Chemical, pharmaceutical or cosmetic

Beverages



Biogas producers

Transportation firms



Tank reconditioning



Cleaning Head R40



The R40 has a 3D rotating spray head with 360° spray coverage. Its compact 40mm head enable a breadth of applications. The high-pressure nozzles are built into the head unit.

Applications

For complete cleaning of production, transportation as well as storage tank interiors.

Highlights

- Compact build ideal for small openings
- Superior cleaning performance
- 3 drive options
- 5 / 8 standard lengths, specialty lengths up to 4000 mm

Technical Specifications

R40

Drive		Water-hydraulic, electric or compressed air
Shaft length	mm	140 / 170 / 300 (water-hydraulic only) 500 / 700 / 1000 / 1500 / 2000 individual specialty lengths = 500 to 4000
Working pressure	bar	Up to 250
Flow rate	l/min	Up to 50
Temperature	°C	-30 to +120
Nozzle		Number of 2 / 3 / 4, angle 0° / 5° / 15°, thread M6
Water point		3/8" / 1/2" / M22x1,5
Opening size for installation	mm	Ø > 50 (for automatic retraction Ø > 64)
Material		Cleaning head and shaft entirely 316L
Sealant		FPM Viton / FFKM Perfluor / EPDM



Cleaning Head R55



The R55 has a 3D rotating spray head with 360° spray coverage. It is ideal for a wide variety of applications and can be augmented by 2, 3 or 4 high-pressure nozzles.

Applications

For complete cleaning of production, transportation as well as storage tank interiors.

Highlights

- Universal application
- Superior cleaning performance
- 3 drive options
- 5 / 8 standard lengths, specialty lengths up to 4000 mm

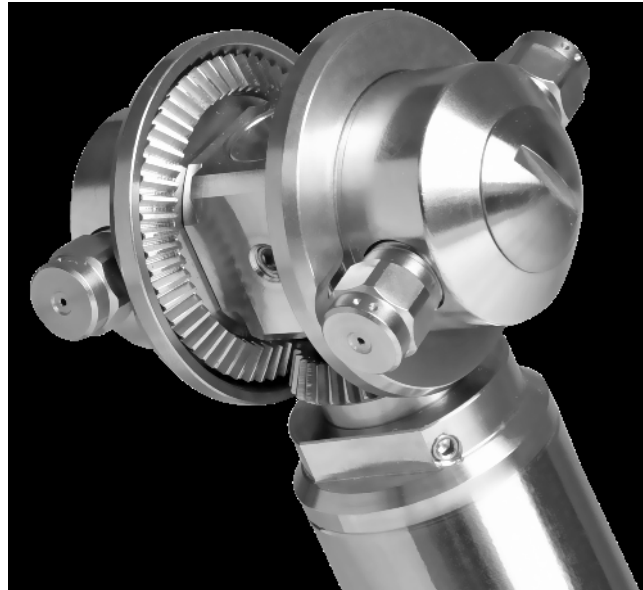
Technical Specifications

R55

Drive		Water-hydraulic, electric or compressed air
Shaft length	mm	1140 / 170 / 300 (water-hydraulic only) 500 / 700 / 1000 / 1500 / 2000 individual specialty lengths = 500 to 4000
Working pressure	bar	Up to 250
Flow rate	l/min	Up to 50
Temperature	°C	-30 to +120
Nozzle		Number of 2 / 3 / 4, angle 0° / 5° / 15°, thread 1/8"
Water point		3/8" / 1/2" / M22x1,5
Opening size for installation	mm	Ø > 54 (for automatic retraction Ø > 75)
Material		Cleaning head and shaft entirely 316L
Sealant		FPM Viton / FFKM Perfluor / EPDM



Cleaning Head RD



The RD consists of two identical inversely-rotating 55mm heads boasting a 360° spray coverage.

Applications

For complete cleaning of production, transportation as well as storage tank interiors.

Highlights

- Double spray head reduces cleaning time
- Superior cleaning performance
- 3 drive options
- 5 / 8 standard lengths, specialty lengths up to 4000 mm

Technical Specifications

RD

Drive		Water-hydraulic, electric or compressed air
Shaft length	mm	140 / 170 / 300 (water-hydraulic only) 500 / 700 / 1000 / 1500 / 2000 individual specialty lengths = 500 to 4000
Working pressure	bar	Up to 200
Flow rate	l/min	Up to 80
Temperature	°C	-30 to +120
Nozzle		Number of 4, angle 0° / 5° / 15°, thread 1/8"
Water point		3/8" / 1/2" / M22x1,5
Opening size for installation	mm	Ø > 78
Material		Cleaning head and shaft entirely 316L
Sealant		FPM Viton / FFKM Perfluor / EPDM



Cleaning Head RH



The RH is designed according to EHEDG hygiene guidelines for the food industry. Other features include defined, orbital stream guidance and a 360° spray pattern.

Applications

For complete cleaning of food-industry production, transportation and storage tank interiors. Either mounted inside the container (CIP), automatic retraction (optional) or manually installed for cleaning purpose.

Highlights

- Follows hygiene-guidelines
- Superior cleaning performance
- Reduced cleaning time
- Low water and energy usage
- 2 drive options
- 5 / 8 standard lengths, specialty lengths up to 4000 mm

Technical Specifications

RH

Drive		Water-hydraulic or electric
Shaft length	mm	140 / 170 / 300 (water-hydraulic only) 500 / 700 / 1000 / 1500 / 2000 individual specialty lengths = 500 to 4000
Working pressure	bar	Up to 250
Flow rate	l/min	Up to 50
Temperature	°C	-30 to +120
Nozzle		Number of 2, angle 0° / 5° / 15°, thread 1/8"
Water point		3/8" / 1/2" / M22x1,5
Opening size for installation	mm	Ø > 56 (for automatic retraction Ø > 77)
Material		Cleaning head and shaft entirely 316L
Sealant		FPM Viton



Cleaning Head RK



The RK has a 3D rotating spray head with 360° spray coverage. With its sleek profile, rounded edges and covered gearwheels, this cleaning head is designed for easy insertion into tanks with narrow openings.

Applications

For complete cleaning of production, transportation as well as storage tank interiors.

Highlights

- Specialty head for narrow tank openings
- High cleaning performance
- 2 drive options
- 5 / 8 standard lengths, specialty lengths up to 4000 mm

Technical Specifications

RK

Drive		Water-hydraulic or electric
Shaft length	mm	140 / 170 / 300 (water-hydraulic only) 500 / 700 / 1000 / 1500 / 2000 individual specialty lengths = 500 to 4000
Working pressure	bar	Up to 180
Flow rate	l/min	Up to 30
Temperature	°C	-30 to +120
Nozzle		Number of 2, angle 0° / 5° / 15°, thread M4
Water point		3/8" / 1/2" / M22x1,5
Opening size for installation	mm	Ø > 38
Material		Cleaning head and shaft entirely 316L
Sealant		FPM Viton / FFKM Perfluor / EPDM



Cleaning Head RW



The RW has a 3D rotating angled spray head with 270° spray coverage. The gearwheels are fully mechanically encapsulated to protect from dirt and damage.

Applications

For partial cleaning of production, transportation as well as storage tank interiors.

Highlights

- Specialty head for 270° coverage
- Cleaning head mechanically encapsulated
- Superior cleaning-performance
- 2 drive options
- 5 / 8 standard lengths, specialty lengths up to 4000 mm

Technical Specifications

RW

Drive		Water-hydraulic or electric
Shaft length	mm	140 / 170 / 300 (water-hydraulic only) 500 / 700 / 1000 / 1500 / 2000 individual specialty lengths = 500 to 4000
Working pressure	bar	Up to 250
Flow rate	l/min	Up to 50
Temperature	°C	-30 to +120
Nozzle		Number of 2, angle 0° / 5° / 15°, thread 1/8"
Water point		3/8" / 1/2" / M22x1,5
Opening size for installation	mm	Ø > 68 (for automatic retraction Ø > 84)
Material		Cleaning head and shaft entirely 316L
Sealant		FPM Viton / FFKM Perfluor / EPDM



Mixer Washer



The Mixer Washer is a tank cleaner designed to address the unique challenges of cleaning the interior of concrete mixers.

The Mixer Washer lives up to its name with 270° spray coverage, a protective seal to block the intrusion of concrete dust into the gearwheels, strong torque drive, and a mounting flange with a spray-head adjustment mechanism.

Applications

For automatic cleaning of concrete mixers.

- Safer work environment
- Shorter cleaning time
- Cleaning cost savings

Highlights

- Superior cleaning performance
- 270° downward spray coverage
- Dust protected rotation points
- Strong torque drive
- Mounting flange for vertical adjustments

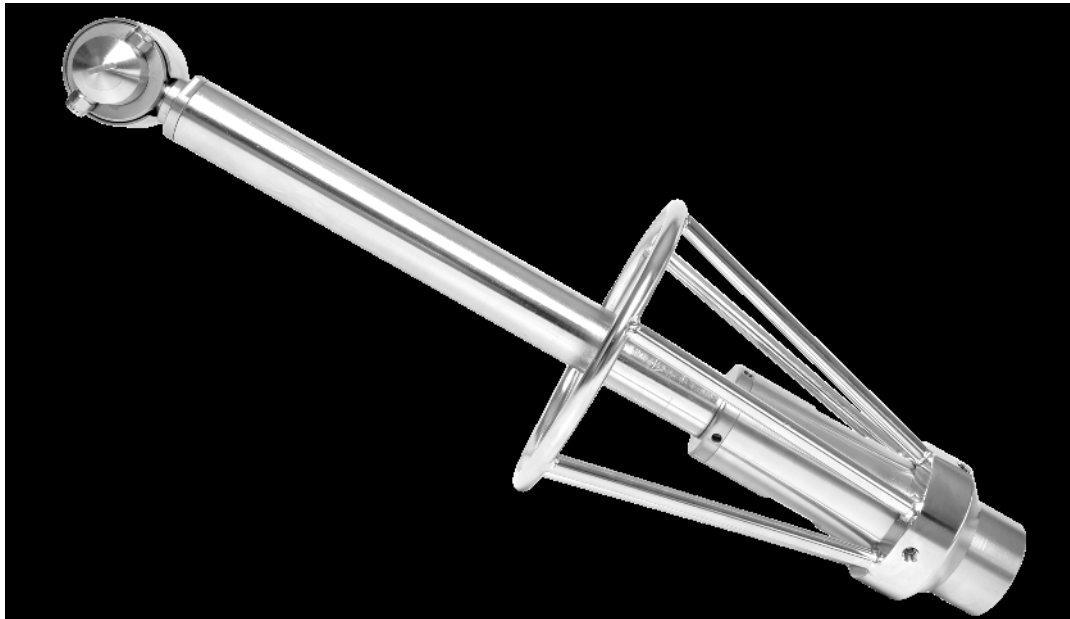
Technical Specifications

Mixer Washer

Drive		Electric 230VAC, 11 rotations / minute
Shaft length	mm	180 vertically adjustable, addl. lengths possible upon request
Working pressure	bar	Up to 250
Flow rate	l/min	Up to 50
Temperature	°C	-30 to +120
Nozzle		Number of 2, angle 0°, 1/8"
Water point		Parker EO 24° M20x1,5, 1/2", M22x1,5
Opening size for installation	mm	Flange Ø 152 with clamp ring
Material		Cleaning head, shaft and drive case – Stainless steel
Sealant		FPM Viton



HR-55 Tanker Trucks



The HR-55 is designed especially for the interior cleaning of truck tanks. Its superior 360° cleaning performance, an integrated water-hydraulic drive and special protective basket to guard against damage make this cleaning head ideal for the challenges of cleaning truck tanks.

Applications

For automatic cleaning of truck tank interiors:

- Safer work environment
- Shorter cleaning time
- Cleaning cost savings
- Low maintenance costs

Highlights

- Excellent cleaning performance
- High-pressure connection suffices
- Can be used in hazardous/ explosive areas
- Cleaning head protected against damage
- Easy handling due to low weight and ergonomic dimensions

Technical Specifications

HR-55

Drive		Water-hydraulic, 10–30 rotations / minute
Shaft length	mm	300
Working pressure	bar	Up to 200
Flow rate	l/min	Up to 50
Temperature	°C	Up to 90
Nozzle		Number of 2, 0°, 1/8"
Water point		1"
Opening size for installation		Robust protective cage, additional head covering
Material		Cleaning head, shaft, motor, protective basket , AISI 316L
Sealant		FPM Viton, alternatives available upon request



Drives

Depending on the product's intended application and surroundings, a selection of various drives are available for the MOOG cleaning heads.

Water-Hydraulic

This drive, designed and produced by MOOG, combines top-notch occupational safety and reliability with the simplest installation possible.

By means of a compact water turbine, the water's energy is simultaneously utilized for cleaning purposes and propelling the cleaning head.

- No electric or compressed-air supply required
- Rotation speed adjustable through a combination of water volume and size of nozzles
- Head unit splash proof according to IP67, drive can also be retracted into the tank
- Tank cleaner fits various containers thanks to hose extensions
- Can be used in hazardous / explosive areas
- Designed for durability and easy maintenance
- Very low operating noise





Electric

An electric motor is the classic type of drive for tank cleaners operating under high-pressure.

- Drive entirely separate from water supply – no constraints with regard to working pressure, temperature or flow rate
- Gears for four rotational speeds available
- Lowest device costs
- Designed for durability, built for easy maintenance
- Variations for five different operating voltages
- Alternative casing materials for spray protection, switch, cable duct, etc.
- Very low operating noise

Pneumatic

The compressed-air motor is traditionally used in hazardous and explosive areas or where a compressed-air supply is already available.

- Drive entirely separate from water supply – no constraints with regard to working pressure, temperature or flow rate
- Rotation speed steplessly variable through changes in air volume
- Compressed-air motor designed and assembled by a specialist manufacturer
- ATEX-certified, approved for use in hazardous areas



Technical Specifications

		Water-Hydraulic	Electric	Pneumatic
Working Pressure	bar	200		Up to 250
Flow rate	l/min		See cleaning head	
Operating temperature	°C	90		150
Spray protection		IPxx	No optional IP65	Nein
Hazardous/explosive areas		Yes	No	Yes
Rotation speed	U/min	variable 10-30	fixed 11 / 17 / 24 / 33	variable 10-20
Operating noise	dba	not measurable	not measurable	77
Power supply	V	-	230 / 115 / 48 / 24AC / 24 DC	-
Compressed-air supply	bar	-	-	3.6
Casing material		Stainless Steel	Plastic optional Stainless Steel	Stainless Steel
Dimensions (Ø / L)	mm	77 / 666	99 / 888	41.5 / 192.7
Weight	kg	x	x	x



Automatic retractable units



MOOG's high pressure cleaning heads can be permanently installed inside the tank (CIP) or manually mounted to the container for cleaning procedures only. Whichever method is required, a broad selection of accessories is available.

Another alternative is a fully automated retractable cleaning head. Cleaning can either take place at fixed, designated stopping-points or while lowering the cleaning head into the tank.

Handling off the complete cleaning process including

- Retraction of cleaning head into / out of the tank
- Cleaning head's rotation
- Start / stop of high-pressure supply

May either be managed programm-controlled through an integrated control system or initiated and monitored via a high level process-control system.

At MOOG, automatic retractable units are customized on the basis of standard components for each customer's individual needs. This flexibility allows to reflect various structural constraints and realize a retraction distance of up to 4-meters. All mechanical components are made from stainless steel.

The retractable units usually work with electric drives. For use in explosive environments, however, units with compressed-air drives are available as well.



Accessories



Screw-in mount



Rupper Protection



Adapter



Angular gear



Bunghole mount



Universal suport



Tankmount



Double handle



Suspension bow



Sprayhead protection



Extension tube

