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**A STRONG TEAM: KRAMP AND UNIPARTS KAVEE**

## Rapid delivery for every application

In the world of after sales, time is an important factor, and the same is true when it comes to the supply of hydraulic cylinders. Kramp and its cylinder manufacturing company, Uniparts Kavee provide a rapid and appropriate response to almost every cylinder requirement. Uniparts Kavee explains how we achieve this.

Uniparts Kavee situated at Varsseveld in the Netherlands specialises in the engineering and production of hydraulic cylinders. It produces thousands of cylinders each year, in many different sizes and designs. "We offer custom solutions as well as a large number of standard configurations", explains sales manager Hans Freriks. "For each product, we follow our patented modular concept as far as possible. This ensures rapid delivery times, reliability and a high level of quality."

**No more gluing**

In the aftermarket in particular, customers often want to get their hands on a hydraulic cylinder as quickly as possible, as Kramp and Uniparts Kavee know all too well. A significant number of current Saturn cylinders in the C and ST ranges are therefore kept permanently in stock. The same applies to popular top link cylinders. "In addition, with our Quick Fix programme, we offer a large range of custom-made cylinders within a few working days", adds Hans Freriks. "Customers can configure these cylinders quickly and easily themselves using the free configuration software."

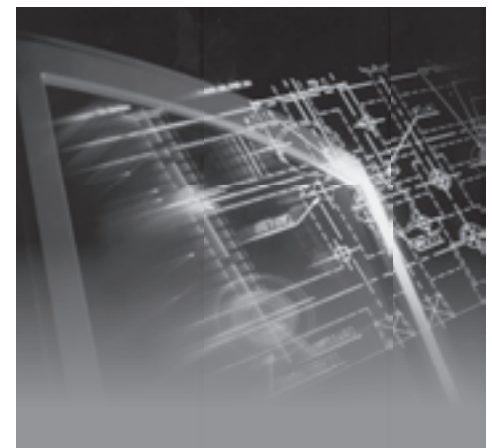
The modular construction concept means that Saturn self-assembly packages are also available almost immediately and repairs are particularly quick and simple to perform. It makes no difference whether this is done in the workshop or in the field — all fixtures are based on threads and smart washers, with hardly any gluing necessary.

**Easily interchangeable**

All cylinders in the current Saturn range are interchangeable with previous models, meaning rapid replacements could not be simpler. "And for those who have additional requirements, we also provide custom built cylinders with our unique built-in measurement system and cylinder rod coating of varying qualities", concludes Freriks. "No matter what the environmental factors are, the correct protection will ensure you get the maximum life from a cylinder. The experts at Kramp will be happy to provide you with professional advice."



Hans Freriks: "Our cylinders are modular in construction, which means that we can supply them quickly and guarantee the highest quality"

**WEBSHOP:  
MORE THAN JUST A SHOP**

## Internet brings knowledge in-house

Everything you need to know about cylinders and hydraulics can be found on one site: [www.kramp.com](http://www.kramp.com). Not only is our webshop full of articles and products, you will also find information, tips, diagrams, overviews, statutory provisions, technical calculations and much more.

At [www.kramp.com](http://www.kramp.com), you can search simply by brand name and keyword. We have over 300,000 articles in our range, so you have a very good chance of finding what you are looking for. All products and services are clearly arranged and easily recognisable. We are of course expanding our online range all the time so it is definitely worth paying regular visits to our webshop.

Find out more at [www.kramp.com](http://www.kramp.com)

## KEEPING PISTON RODS CLEAN

# Protection: the facts

**Cylinders are used in the most diverse conditions. No matter how severe the environmental influences are, nobody wants an oxidised or damaged piston rod. As you will see below, there are various protective materials to keep the rods clean and in optimum condition.**

When constructing customer specific cylinders, Kramp offers a variety of materials to protect the piston rod. We have set out the facts and the options available to you.

### Hard chrome plated bar steel

- Chrome thickness  $25\mu\text{m} \pm 5\mu\text{m}$

This is the standard rod material and is also used to make the standard cylinders (such as the C-series, self-assembly etc.).

### Double chrome plated bar steel

- Chrome thickness  $50\mu\text{m} \pm 10\mu\text{m}$

The thicker layer of chrome means considerably higher corrosion resistance. From a price point of view, the double chrome piston rod is more attractive than the superior nickel-chrome version.

### Nickel-chrome plated bar steel

- Nickel thickness  $30\mu\text{m}$

- Chrome thickness  $20\mu\text{m}$

Using nickel provides greater protection against external influences, including not only salt water but also ammonia from fertilisers. This protection

is a particularly good idea for cylinders when the piston rod is never or rarely retracted and no protective oil film enters the pores of the piston rod.

### Hard chrome plated stainless steel bar

- AISI431 or AISI329

- Chrome thickness  $>20\mu\text{m}$

For protection against corrosion caused by salt water and also some sprays. Important if the piston rod is never or rarely retracted and no protective oil film enters the pores.

### Lunac 2+

- Coating thickness 50-350  $\mu\text{m}$ , 55  $\mu\text{m}$  is standard

- Extremely durable thanks to its trans-ceramic nature Hv 2200

Compared with hard chrome plated bar steel, Lunac 2+ scores excellently in the standard salt spray test, with the score increasing from 72 hours to no less than 2500 hours. The material is also highly resistant to scratches and stone chips, has a completely sealed and crack-free structure, and does not cause any extra wear to seals or 'tracks' up to a pressure of 1000 bar.



## MEASUREMENT SYSTEM MAKES CYLINDERS SMART

# Power & Brains

**The advance of electronics is clearly visible even when it comes to cylinder technology. To this end, we supply smart Saturn cylinders with a built-in measurement system. This intelligent system means that the cylinders are accurately auto-adjustable and offer unprecedented possibilities for precision work and repeatable tasks.**



Using electromagnetic position determination, a cylinder equipped with a measurement system can indicate its exact length setting

How about steered axles that respond proportionately, to speed? Or top link cylinders that always return to the same position at the touch of a button for example, when the tractor turns at the headland and commences on a new track? The Saturn cylinders with built-in measurement system make this possible. The maintenance-free, built-in system is unaffected by pollution and other external factors. It indicates the exact length setting of the cylinder by means of an electrical signal, and the machine's or tractor's electronics work smartly together.

Interested in finding out more? Call your product specialist or visit [www.kramp.com](http://www.kramp.com).



The Saturn configuration program is extremely intuitive and simple to use

**USER-FRIENDLY PROGRAMME MAKES IT EASY**

# Configure your cylinder yourself

**The free Saturn cylinder software makes it very simple to design the cylinders you require yourself. Provided your selections are included in the Quick Fix concept, your cylinder will be delivered within a few working days.**

Saturn, our cylinder configuration programme, is available via the webshop for you to download and use for free. The software is available in German, English, French and Dutch and is extremely simple and intuitive to use. You define the cylinder dimensions from the available selection fields and indicate the required type of connection to the cylinder rod and head. It is also possible to define the protection quality of the cylinder rod. At all times during the compilation process, you can see whether the selections made and sizes entered are included in the Quick Fix concept. Configurations featuring the QF symbol are guaranteed to be produced and delivered quickly. Finally, the programme also shows you the corresponding strength calculations for the cylinder in the chosen configuration. **Kramp. It's that easy.**

find out more at [www.kramp.com](http://www.kramp.com)

CYLINDER SELECTION MAKES IT EASY

# Meijer never misses

For the Meijer engineering works located in Ten Post in the Netherlands, Kramp is the first supplier when it comes to hydraulic cylinders. Both the standard and self-assembly cylinders provide Meijer with all the options for smart series production as well as for custom solutions.

Meijer specialises in the manufacture of sophisticated machines for collecting grass and straw. The product range features dozens of clamps and collectors in almost all conceivable designs and capacities. "We always start out from our four basic characteristics of ease of use, durability, robustness and reliability", explains interim manager Albert Waarsing. "Where possible, we produce in series, but we are also happy to construct individual pieces for our customers." The success of Meijer's mission is proven by the fact that sales are not limited to the Dutch market. Over 60% of production is destined for export and this figure is expected to rise significantly in the years to come. Meijer is focusing strategically on markets in which the seasons are the opposite way round to Western Europe.

**A range of sizes**

No matter which machine Meijer is producing, every unit uses hydraulic cylinders to operate the various folding, hooking and grabbing systems. "Some clamps feature six cylinders, each of which has a vital function", explains designer Willard Bos, speaking about one of the solid looking products in the showroom. "It's the combination of power and functionality that does it. In fact, we can hardly do anything without hydraulics."

The cylinders that Meijer fits are as diverse in their dimensions as the machines that it constructs. Standard cylinders fall within the range with a stroke of 150 to 800 mm and a certain number are kept in stock so that they can be used in series production. Meijer generally



Albert Waarsing (right) and Willard Bos: "It is not only the cylinders themselves but also the hydraulics expertise and the supply of all related components that make Kramp a first-choice supplier"

orders them without attachments so that it can simply fit the correct coupling depending on the application.

For the larger and more unusual sizes, the manufacturer prefers to use the self-assembly cylinder from Kramp. They opt for the 2000mm size and then customises the cylinder itself. "It's very easy to do", says Albert Waarsing. "We now have quite a lot of experience but the DIY package shouldn't present any problems even for a first time user, as the instructions are nice and clear."

**More than just products**

As well as purchasing cylinders from Kramp, Meijer also makes full use of the additional expertise and products within the Kramp hydraulics range. "I like to submit any new plans that I have developed to check whether the intended design is actually feasible and meets all requirements", says Willard Bos. "The Product Specialists at Kramp make ideal sparring partners. I can always approach them with questions. The wide range of components, such as hoses and fittings, are also a godsend for us."

## TIPS & TRICKS

### Damage-free (dis)assembly

Anyone who builds or repairs their own cylinders would be well advised to use the new Cronus II series from Saturn. With the correct tools, you can assemble and disassemble your cylinders quickly and without any damage.

Adhesive is no longer used to secure the piston of the Cronus II series. Instead, a special washer is pressed on the shaft to seal the piston and keep it at the required initial torque.

When it comes to removing the washer again, there is a handy tool that simply splits the ring. When securing the revised piston, another ring can be pressed using a centring press. If this is not available, the piston can also be secured with a tying clip. Used together with Loctite 603 on the thread, this tying clip ensures rapid assembly.

Other highly recommended tools include:

- For the cylinder head nut: hook spanner DSMTG040 that fits on the torque wrench
- For the piston: the DSMT P040, which fits a range of piston sizes and is suitable for the torque wrench.

We also supply the standard products from stock:

- Torque Wrench 1/2" Drive BTLEVT3000A
- Torque Wrench 3/4" Drive BTLHVT7200

**Tip:**

When repairing cylinders, use grease instead of oil where possible. This facilitates assembly and prevents damage.

# Hydraulic Pneumatic Actuator Cylinder



The double acting wheel brake cylinder is a combination of a standard pneumatic actuator cylinder and a single acting hydraulic cylinder, both fitted with an integrated spring return.

This combination is suitable for both hydraulic and pneumatic control of the brake shafts. The actuator is supplied complete with yoke and is available in three sizes of cylinder, featuring zinc-plated and powder-coated surfaces.



Nut splitter in action

**NEW**

## Top Link Cylinder Range

The Kramp range of complete top link cylinder sets has recently been expanded to include some interesting models:

New additions to the range include small hydraulic top link sets for tractors and tools with Cat. 1 coupling (including narrow-track and agricultural tractors).

**Models with a 19.4 mm fixing eyelet on both sides:**

- TEVHN305015011 piston diameter 50 mm, rod diameter 30 mm, stroke length 150 mm
- TEVHN305020011 piston diameter 50 mm, rod diameter 30 mm, stroke length 200 mm

**Model with a 19.4 mm fixing eyelet on one side and a Cat.1 hook on the other side:**

- TCVHN305015011 piston diameter 50 mm, rod diameter 30 mm, stroke length 150 mm

Other new additions to the range include the heavy hydraulic top link cylinders for tractors and tools with Cat. 3 coupling (the higher power classes, up to 220 kW/300 hp):

**Model with a 32.2 mm attachment for a fork head on one side and a Cat. 3 eyelet on the other side:**

- TEVNA6012522333 piston diameter 125 mm, rod diameter 60 mm, stroke length 223 mm

All sets include a hydraulic top link + built-in blocking valve (double pilot-operated check valve) + hoses with quick release coupling

## Spare parts for cylinders

In addition to complete cylinders, custom cylinders, self-assembly cylinders and thousands of gaskets, Kramp also stocks an extensive range of single repair parts and fixings. The webshop contains an unrivalled selection of spare parts for cylinders, meaning you are guaranteed to find what you are looking for.



## Hydraulic Stand Jack



The complete SP85250CSKIT stand jack kit can be used to make a stable and safe platform that is entirely hydraulically operated.

The kit consists of an SP85250CS stand jack with locking system and built-in spring for the return stroke and fixing/weld-on plate. The cylinder has a stroke length of 250 mm and a lifting capacity of 10 tonnes at 180 bar. The kit also contains: 1x HPS1804 hand pump with a 4-litre tank, including a lever and a pump capacity of 18 cc per stroke, 1x 1200 mm hydraulic hose with couplings.

## Unparalleled selection of gasket kits

Kramp stocks complete gasket kits for all modular cylinders. These offer an excellent fit and are fully compliant with the manufacturer's high quality requirements.

Kramp is also the place to come for individual gaskets for almost all conceivable cylinder makes and sizes. We have over 10,000 single gaskets in our range, which is split into the following categories:



Kramp stocks complete sets as well as over 10,000 individual seals

- Rod seals
- Piston gaskets
- 'U' seals
- Guide rings
- Back-up rings

The extensive range can be found at: [www.kramp.com](http://www.kramp.com).

**DO IT YOURSELF:**

## It's in your hands

The Saturn cylinder self-assembly packages put you in control. With relatively little effort, you can quickly build a suitable cylinder for practically any conceivable application. The step-by-step assembly instructions guide you through the process.

The do-it-yourself kits from Kramp are available in a range of standard lengths and designs. You choose the version that best meets your requirements and the kit will be delivered to you in record time. The assembly instructions provided use text and diagrams to show you how to construct the cylinder. We like to make things easy for you.

**Kramp, it's that easy.**



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