



## Products for Composite Industry

- ✓ filament winding machines
- ✓ GRP machining tools
- ✓ grinding machines
- ✓ special machines & engineering services



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- tanks	
- elbows	
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for	
- pipes	
- tanks	
- elbows & Tees	
- various shapes	

# Filament Winding Machines

## PIPES

We supply high efficient filament winding machines for pipe production as turnkey projects. Typical size range is DN50...DN600 / L=6m. Whether your need is for the winding machine or the whole production line, we're ready to serve you.

## TANKS

Don't let the size to dictate your possibilities. The biggest realized project by us is a machine for size D=12,4m tank with the vertical axis mandrel.

## ELBOWS & TEES

For more complex products we supply automatically controlled production lines. Robot technology gives you flexibility and efficiency at the same time.



### Turnkey projects

- ✓ engineering services
- ✓ production line design & deliveries
- ✓ modern high efficient filament winding machines
- ✓ low-cost on site filament winding machines
- ✓ filament winding machines for complex products

### Flexible modules

*Solutions for increasing the productivity, improving quality and reducing costs:*

- ✓ tension measurement units
- ✓ string and fabric tape brakes
- ✓ impregnation sinks
- ✓ curing units
- ✓ mandrel handling systems
- ✓ etc.

## KL SERIES

KL peeling machines are designed for several purposes of machining FRP materials. Especially they are designed for the **Glass Reinforced Plastics**.

## PREPARATIONS

Tool for preparation of laminated joints. Suitable method for roughening flat, cylindrical or varying surfaces

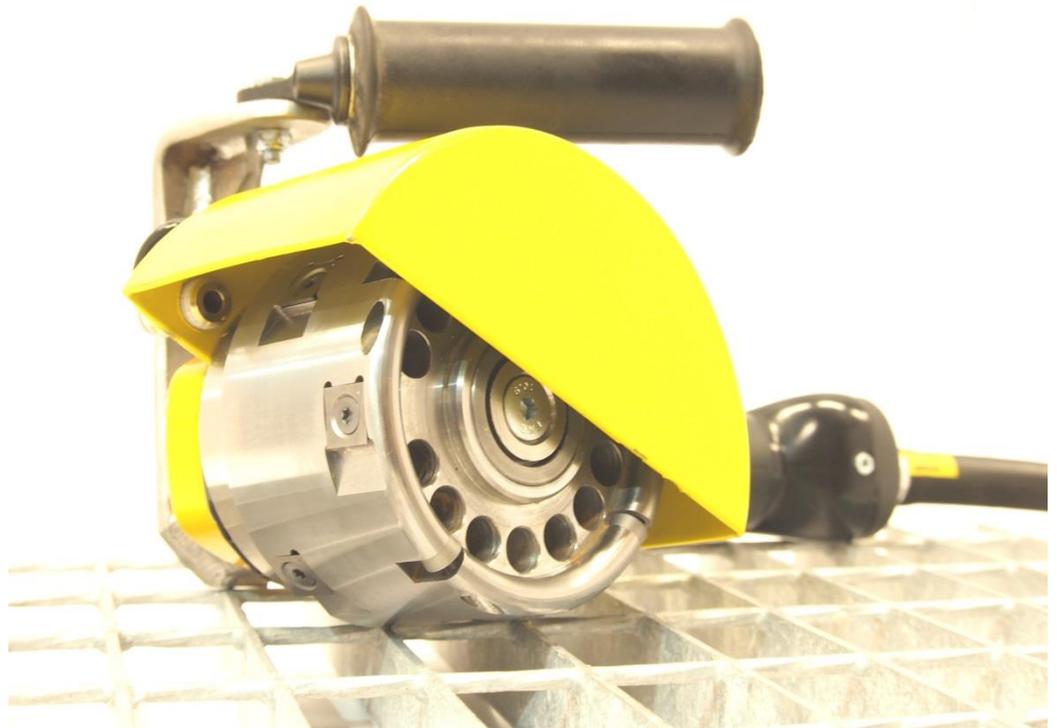
## REBUILDS

KL peeling machines are the best tools for reconditioning of composite tanks. This is the purpose the machines have originally been designed. The most significant benefit of the peeling method is maintenance / the mill's downtime reduction.

## CUSTOMER NOTE

"Thanks to KL peeling machines we have managed to reach overwhelming competitiveness advantage and grow our service business"

# KL2 Peeling Machine



## Technical Information

- ✓ nominal power 2,1 kW
- ✓ the number of inserts 8+4 pcs
- ✓ nominal speed 12000 RPM
- ✓ total weight 5,65 kg
- ✓ air consumption 30 l/s
- ✓ max pressure 6,3 bar

## Benefits

- ✓ much more solid dust comparing to typical diamond grinding
- ✓ replaceable hard alloy inserts
- ✓ compressed air turbine actuator
- ✓ shutdown time reduction
- ✓ enhanced working conditions with no fine grinding dust

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# KL1 Peeling Machine



## Technical Information

- ✓ nominal power 2,1 kW
- ✓ the number of inserts 4 pcs
- ✓ nominal speed 12000 RPM
- ✓ total weight 7,4 kg
- ✓ air consumption 30 l/min
- ✓ max pressure 6,3 bar

## Benefits

- ✓ much more solid dust comparing to typical diamond grinding
- ✓ replaceable hard alloy inserts
- ✓ compressed air turbine actuator
- ✓ shutdown time reduction
- ✓ enhanced working conditions with no fine grinding dust

## GRP

Masse cutting tool is a simple, rigid and robust tool for machining all kind of FRP materials. It can be used for preparation of lamination as well as removing material for other purposes.

## THERMOPLASTICS

Tool can be applied as well for the machining thermoplastics

## WOOD

Masse can also be used as carver for wood. Timber builders and wood sculptors have find Masse a useful tool

# Masse



### Technical Information

- ✓ a tool for angle grinder
- ✓ the number of inserts 4 pcs
- ✓ nominal speed 1800 RPM
- ✓ total weight 0,2 kg

### Benefits

- ✓ much more solid dust comparing to typical diamond grinding
- ✓ replaceable hard alloy inserts
- ✓ can cut wide range of materials
- ✓ enables free shaping

## KH SERIES

KH grinding machines are designed for preparation of the sleeve joint. The standard size range of KH1 is DN50...DN350 and with additional parts up to DN500.

## MK SERIES

MK series grinding machines are designed for sleeve joint preparations especially for service, erection and construction works on site. The size range covers pipes DN25...DN40 (MK2) and DN50...DN250 (MK1). MK series enables you to make sleeve joints also at constricted places.

## SPECIAL MACHINES

We have a great experience of grinding GRP materials by using the diamond tools. In addition to catalogue machines we design machines according to your needs for example to:

- ✓ flat grinding of the sealing surfaces (tanks etc.)
- ✓ roughening
- ✓ shaving
- ✓ etc.

# KH1 Grinding Machine



## Technical Information

- ✓ operation range DN50...DN350 (+DN400...DN500)
- ✓ nominal power (grinding) 1,5 kW
- ✓ voltage 16A / 240V
- ✓ nominal speed (grinding) 3000 RPM
- ✓ total weight 109 kg

## Benefits

- ✓ much more solid dust comparing to typical diamond grinding
- ✓ replaceable hard alloy inserts
- ✓ compressed air turbine actuator
- ✓ erection time reduction
- ✓ enhanced working conditions with no fine grinding dust

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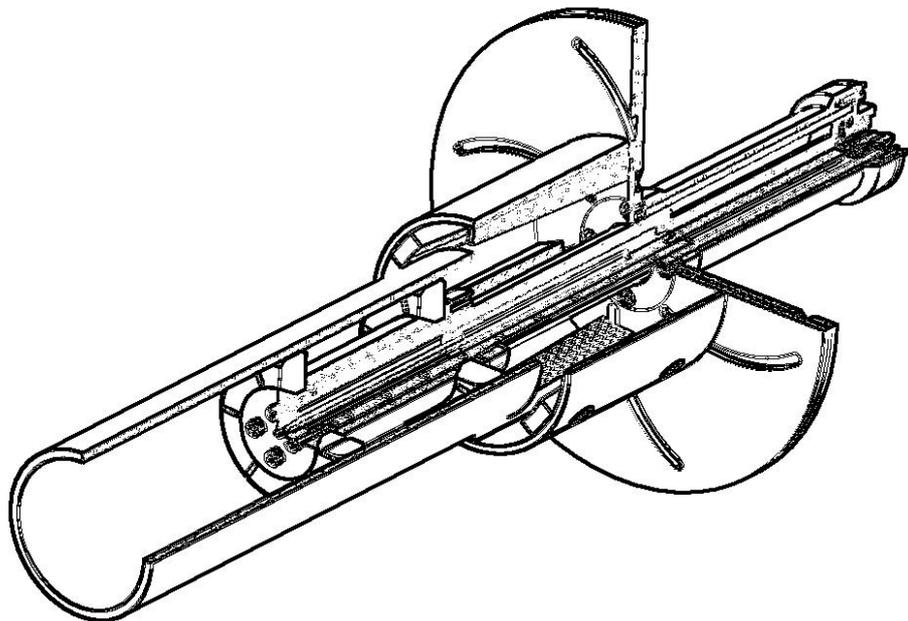
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## SPECIAL MACHINES

KL peeling machines are at best for reconditioning composite tanks. This is the purpose the machines have originally been designed. The most significant benefit of the peeling method is the time reduction of the mill's erection time.

# MK1 Grinding Machine



## Technical Information

- ✓ operation range DN50...DN200
- ✓ the number of diamond grinding bits  
4 pcs
- ✓ recommended drive power 1,2 kW
- ✓ total weight (with transp. box) 32 kg
- ✓ transport box size 750x415x350
- ✓ grinding angle 3,7° (or custom)
- ✓ grinding length 120 mm (or custom)

## Benefits

- ✓ use in constricted places
- ✓ replaceable grinding bits  
enables various applications  
with by still using the same body
- ✓ operated by typical hand drilling  
machine
- ✓ method replaces time  
consuming hand laminating

## PIPES

We supply a wide range of pipe mandrels for filament winding machines. With high finished surface, rigid body structure and accurate cone angle our mandrels enable winding and extraction without additional foil layer.

## TANKS

Our standard tank mandrel model is based on hinged segment which decreases the diameter enabling the extraction. Hinges are driven pneumatically or manually.

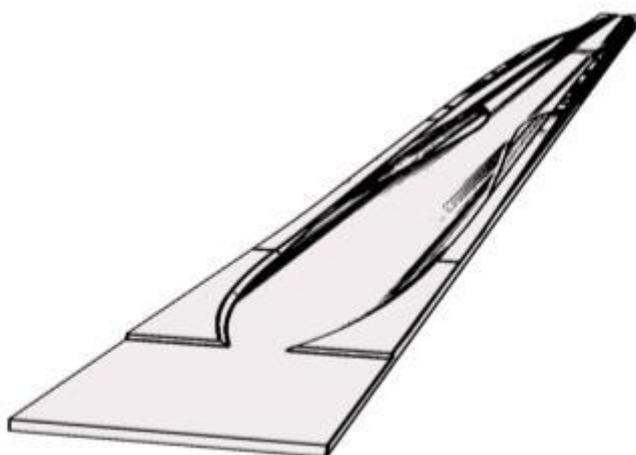
## ELBOWS & TEES

We supply multipart mandrels for shaped parts with a fast locking hinge system.

## VARYING SHAPES

We supply moulds for example Sport Gear manufacturing.

# Mandrels and Moulds



## Products for Composite Industry

Engineering Services

System Deliveries

Mertala Innovations Oy is a market leader in Finland in the field of FRP production machines and equipment. Strong investing into product development has led to creation of whole new products and methods.

In addition to the catalog machines, our field of operation includes high quality engineering services. We provide 3D models, technical drawings, stress analysis (FEM), technical calculation, dynamic simulation and animations.

In co-operation with the machine workshop Rautaseiska Oy we provide System deliveries to various industry areas. The best know-how we have infields of chemical- , pulp & paper-, mining- and composite industry with providing new production lines, modernizations and subsystems.



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