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# Filament Winding Machine

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## Summary

Filament winding product is applied in various field such as Sports–Leisure, Aircraft and space, Civil Engineering works, Construction, Plant, FA, Energy, Environment, etc. That secure lots of reliance. also usage is expanded.

With accumulated experience and technology for long time, DASAN Engineering has been manufactured and has been supplying to filament winding Machine to many customers.

And has obtained reputation from domestic and oversea customers.

DASAN Engineering has manufactured Various style of filament winding machines and correspond to customer's requirements for production to products of special usage. has manufactured and supplied special filament winding machine by customer's requirement specification.

Filament winding consists of winding resin–impregnated fibers tow and roving or fabric tape on a rotating mandrel in predetermined patterns; providing the greatest control over fiber placement and uniformity of structure. During winding these fibers are either run through a viscosity resin, or the resin matrix is pre–impregnated into the fiber. After the composite layers are wound, the component is cured and removed from the mandrel. While filament winding is traditionally used to produce pressure vessels, pipe and fitting, tanks, rocket motor casing. fuel shells and nozzles, duct, shafts and rods, it has also expanded into non–cylindrical and asymmetrical geometry's.

## Filament windings Advantages

- Increased Strength (fiber processed under tension)
- High Fiber Content
- Highly Automated
- Consistent Quality
- Low Labor Required
- High Strength

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Filament winding products are often stronger than a similar product manufactured by hand-lay up, vacuum bag infusion, and other composite processing methods.

Standard filament windings can have fiber content of 60%~80 by volume and weight, creating an extremely strong FRP composite.

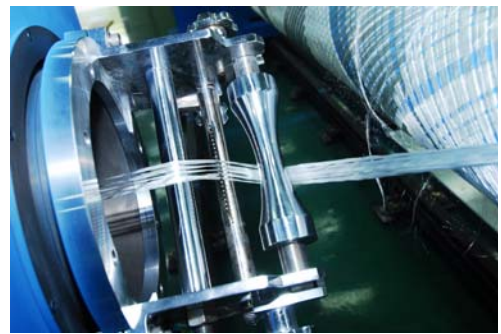
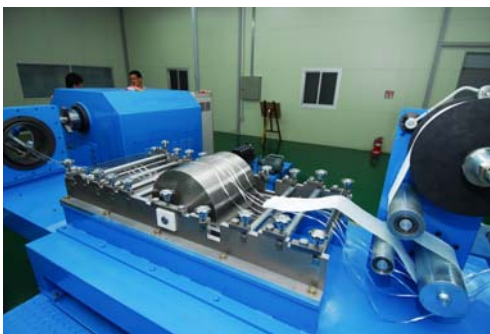
### Applications

- High Pressure Air Tank used paint ball, emergency care, fire fighting
- Fuel tank used hydrogen, CNG & LPG
- High Pressure GRP Pipe
- Pressure and storage Vessel
- Coupling and joint fitting
- Air craft and space
- Industrial parts
- Military parts



## Description of Filament Winding Machine

- Fiber Creel – With or Without electric tension control system
- Spindle unit – Single or Multi
- Carrier unit with Resin impregnating bath
- Cross Feeder
- Rotation Eye
- Elevator
- Tilter
- Tail Stocks and rail
- Control consol
- Operating handle
- Mandrel



Series	D-FWE Series	D-FWC Series
Winding capacity Diameter (cm) Length (M)	10 ~ 500 0.5 ~ 18	10 ~ 400 0.3 ~ 15
Winding Angle capacity	0 ~ 75	0 ~ 90
Number of Winding spindle	single or multi spindle	single or multi spindle
Number of control axis	2 ~ 3	2 ~ 5
Spindle - Clamping - Mandrel Capacity (Kg) - Mandrel Speed (rpm))	gear transfer ~ 15,000 5 ~ 200	3 Jaw chuck ~ 8,000 20 ~ 200
Carriage - Traveling stroke (M) - Speed (mm/sec)	1 ~ 18 1,000	0.5 ~ 15 1,000
Other Movement - Speed (mm/sec)	Manual	1,000
Application	Used for General parts - Industrial parts - Pipe and tube - Vessel - Scrubber	Used for Precision parts - Pressure Vessel - Pipe and fittings - Joint sleeve - "T" and "L" piece - Industrial parts - Air craft and space parts - Fuel shells and nozzles - Military parts - Non-cylindrical and asymmetrical geometry's

\* Other custom machines can be manufacturing to specific application