

ENGINEERING
TOMORROW

Danfoss

Danfoss Hansen® FF Coupling Brochure

Danfoss Hansen® Flat Face Quick Disconnect Couplings

60%

higher working pressures up to 400 bar

Featuring our **Flat Face couplings**

The FF series at a glance

- Exceeds ISO 16028 standards:
 - 60% higher working pressures up to 400 bar
 - Up to 74% higher flow rates, reducing energy loss
- Exceptional corrosion resistance
- Enables design versatility
- Can connect under residual pressure
- Multi-plate system supports two to six couplings

Today, we expect our hydraulic systems to do more than ever: move faster, steer more precisely, and lift heavier loads. With growing demand for more powerful and compact machines; system pressure is rising while engine compartments shrink.

To help manufacturers answer the call for high pressure and high impulse pressure solutions, we've designed our Flat Face (FF) series, quick disconnect coupling, to offer even more.

Suitable for mobile applications in a myriad of industries; including agriculture, construction, and commercial vehicles, our FF couplings enable outstanding connections for top-performing hydraulic lines. They aren't just safe and leak-free, they also maximize machine efficiency, performance, and uptime.

Supporting pressure and flow rates well beyond ISO 16028 standards, our FF couplings enable powerful machines with lower energy loss and optimized fuel consumption. Meanwhile, improved corrosion protection and simplified connectivity also mean users benefit from greater machine productivity and reliability in even the toughest environments.

The Danfoss Hansen Multi-plate System (Multi-FF) further extends all these benefits. Supporting up to six FF couplings simultaneously, our innovative solution makes hose connectivity faster and easier, while offering machine designers greater freedom and a broad range of customization options to meet any application needs.



Connect to the benefits of **FF series couplings**



Our Flat Face couplings offer many **competitive advantages** including

Higher working pressures bar

Exceeds ISO 16028 standards with 60% higher working pressures up to 400 bar

High pressure couplings typically suffer when it comes to flow rates -- but ours have a top-performing pressure rating of up to 400 bar for static, steady, or non-pulsed applications and 350 bar for dynamic applications with moderate hydraulic shocks. Combining a high safety factor, this is a unique solution in today's market.

Higher flow rates

Up to a 74% greater flow rate than ISO 16028 standards

Thanks to stronger materials and an optimized flow path, our new FF couplings offer top-performing flow rates, up to 74% higher than previous versions. As a result, our couplings can significantly reduce machine fuel and energy consumption. Higher flow rates also enable greater design flexibility, since smaller hose sizes can be used.

Next-level corrosion resistance

Up to 1000 hours protection with our environmentally-friendly Dura-Kote® coating

With up to 3x better protection compared to previous generations of zinc plating, our coating is proven to protect against red corrosion up to 1000 hours. It's also safer and better for the environment thanks to being nickel and solvent-free, as well as meeting global RoSH, ELV, and REACH requirements.

Connect under pressure up to 350 bars

Connect under pressure up to 350 bar without leaks or taking in contaminants

Our alternative FF connect-under-pressure plug design works up to 350 bar, avoiding the need to de-pressurize the system with specialized tools since our patented relief valve releases residual pressure. With low residual pressure applications, you can also connect-under-pressure up to 50 bar with standard FF couplings.

The Danfoss **design difference**



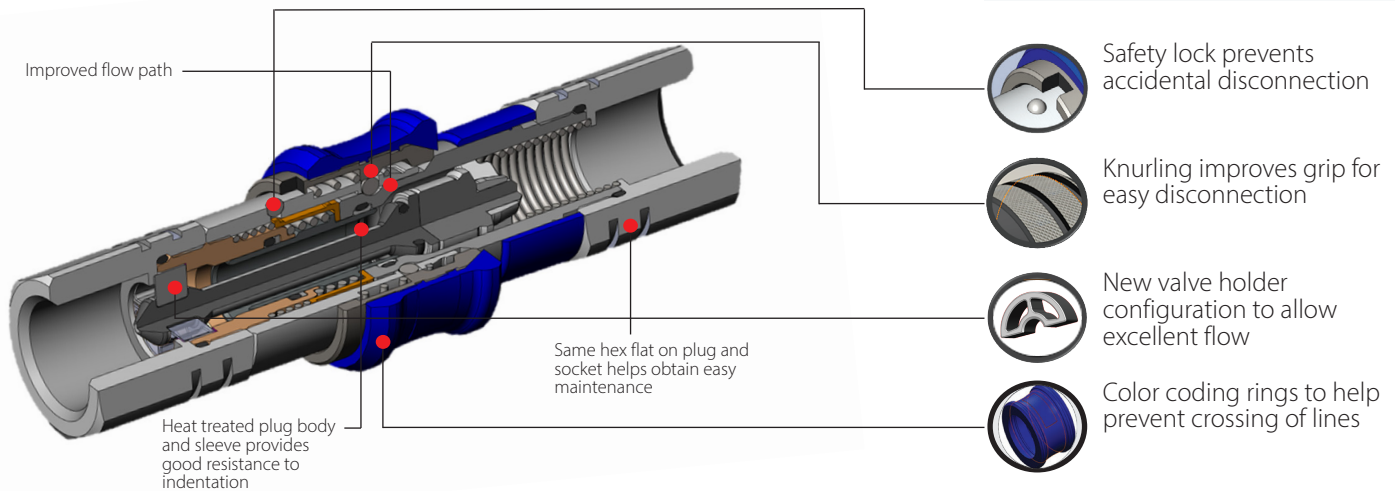
FF series design benefits

- Valve holder configuration allows excellent flow rates, further supported by an improved flow path
- Designed to meet tough application demands for strength, pressure resistance, and reliability, our couplings are heat treated to ensure good resistance to indentation
- Our FF couplings are designed with a simple and highly effective color coding system to avoid line crossing. Optional color rings are very robust and easy to install with dedicated insert tools
- For fast and easy identification, our FF couplings are marked with a part number, date code, and the Danfoss logo. Additional labels can be added to your requirements via laser marking

As an innovator in fluid conveyance, our FF series couplings offer superior design that enables enhanced performance and leak-free operations in a wide variety of applications.

Our comprehensive range of solutions enables limitless possibilities, offering body sizes from 1/4 inch to 2 inches, varied materials, seals, end connections, and connect-under-pressure options. All this means is we can tailor the ideal solutions for your requirements.

All our FF couplings also offer a three-year warranty.



| FF Family Part Number | ISO Size (mm) | Body Size (in) | Nominal Flow Diameter (mm) | Max operating pressure (Connected) | | Rated Flow for 1 bar pressure drop (lpm) |
|--------------------------|------------------|-------------------|-------------------------------|------------------------------------|--------------------|--|
| | | | | *Static (bar) | **Dynamic (bar) | |
| 6FF | 6.3 | 1/4" | 7.5 | 400 | 350 | 18 |
| 10FF | 10 | 3/8" | 10.4 | 400 | 350 | 40 |
| 12FF | 12.5 | 1/2" | 12.3 | 400 | 350 | 77 |
| 16FF | 16 | 5/8" | 12.6 | 400 | 350 | 82 |
| 19FF | 19 | 3/4" | 15.1 | 400 | 350 | 114 |
| 25FF | 25 | 1" | 19.4 | 400 | 350 | 184 |
| 32FF | --- | 1 1/4" | 22.1 | 300 | 300 | 260 |
| 40FF | --- | 1 1/2" | 30.1 | 300 | 300 | 450 |
| 50FF | --- | 2" | 39.2 | 300 | 300 | 700 |

*steady or non-pulsed applications

**ISO pressure rating / dynamic application with moderate hydraulic shocks

About

Danfoss Power Solutions

Danfoss Power Solutions is a global manufacturer and supplier of high-quality hydraulic and electric components. We specialize in providing state-of-the-art technology and solutions that excel in the harsh operating conditions of the mobile off-highway market as well as the marine sector. Building on our extensive applications expertise, we work closely with you to ensure exceptional performance for a broad range of applications. We help you and other customers around the world speed up system development, reduce costs and bring vehicles and vessels to market faster.

We offer you expert worldwide support for ensuring the best possible solutions for outstanding performance. And with an extensive network of Global Service Partners, we also provide you with comprehensive global service for all of our components.

Danfoss Power Solutions – your strongest partner in mobile hydraulics and mobile electrification.

Products we offer:

- Aeroquip by Danfoss
- Boston by Danfoss
- Danfoss Hansen
- Danfoss Waltech
- DCV directional control valves
- Electric converters
- Electric machines
- Electric motors
- Hydrostatic motors
- Hydrostatic pumps
- Orbital motors
- PLUS+1® controllers
- PLUS+1® displays and sensors
- PLUS+1® joysticks and pedals
- PLUS+1® operator interfaces
- PLUS+1® software services, support and training
- PLUS+1® software
- Position controls and sensors
- PVG proportional valves
- SEL by Danfoss
- Steering components and systems
- Synflex by Danfoss
- Telematics
- Weatherhead by Danfoss
- Winner by Danfoss