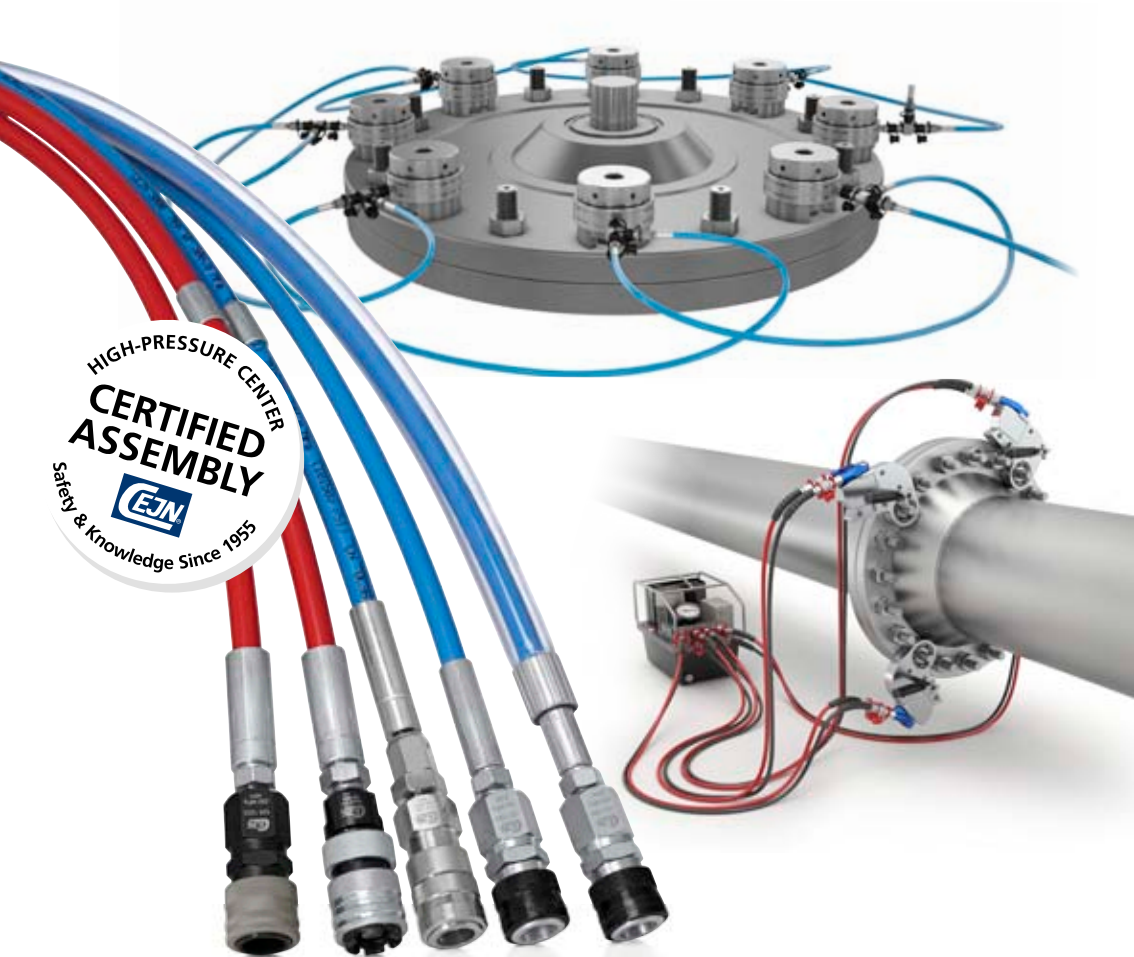




The Quick Connect
Solution Provider



Safety Guidelines

FOR ULTRA HIGH-PRESSURE HYDRAULIC APPLICATIONS

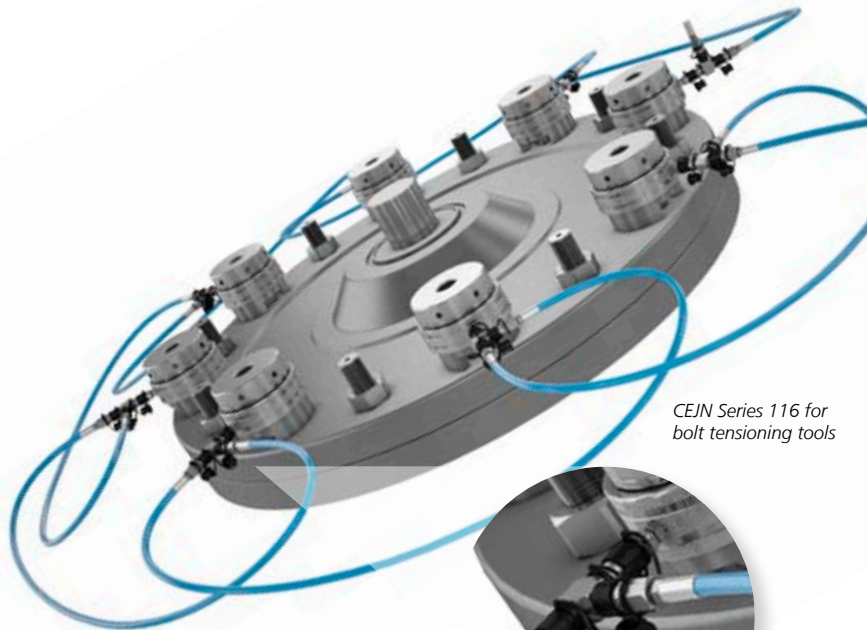
GUIDELINES...

...for Working with Ultra High-Pressure Hydraulic Tools

Working with ultra high-pressure hydraulics is a serious task. Sometimes work has to be done in extremely confined spaces and involves heavy machine parts that need to be dismantled for repair. Other times the environment might be a challenge due to remote areas as mountain tops or out at sea where conditions are tough, like in wind power turbine installations.

Over the years this has led to a demand for smaller and lighter tools in order to simplify the tasks. Smaller tools need higher pressure to generate the power required to perform the heavy task of loosening or tightening bolts. Extreme pressure demands a high level of safety as a leak or accidental disconnection could cause serious personal injury or damage to machinery. This is especially important at a time when copies of couplings and hoses are circulating on the market.

CEJN has more than **40 years of experience** in the ultra high-pressure hydraulics business and safety is one of our top priorities. This guide has been produced by CEJN to create awareness about this powerful media and to help people work as safely as possible.



*CEJN Series 116 for
bolt tensioning tools*

CONTENT

CEJN Area of Expertise	04
General Safety & Warnings	06
Don't Mix CEJN with copies!	08
Check for Wear & Damage!	10
Regular Inspection & Maintenance	12
How to Connect Safely	14
Identify CEJN for your Safety	16
CEJN High-Pressure Centers	18



Bolt tightening

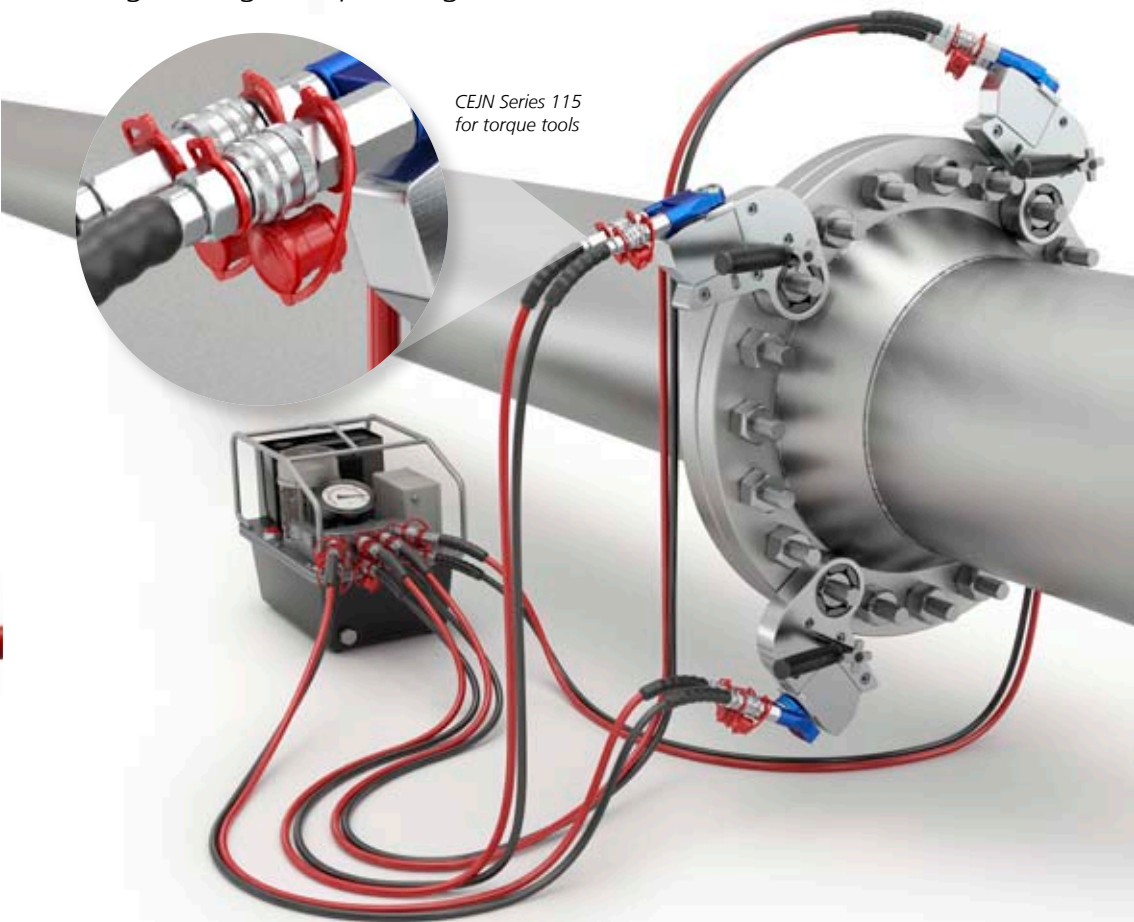
CEJN's Area of Expertise

You will find safe and durable CEJN products between the hydraulic pump and the tool. CEJN is familiar with the day-to-day routine of maintenance technicians and understands the process of bolting and other ultra high-pressure applications. Confined spaces and heavy lifting lead to requirements for smaller tools, which consequently lead to requirements for higher pressure. Our vision is to provide you with the safest products and the best performance on the market.





Lifting, cutting and spreading



*CEJN Series 115
for torque tools*

Whether the application is nuclear, subsea, windpower, oil, gas, or turbine, at CEJN we're committed to meeting the ever-changing requirements of tough environments. Our wide range of ultra high-pressure quick connect couplings and hoses includes just what you need for jacks, cable cutters, pipe bending and bolt tensioning tools, torque wrenches, rescue equipment, hydrostatic testing equipment, and more. For more information about our application areas, visit the CEJN web site www.cejn.com.

General Safety & Warnings

HAZARDS DUE TO HOSE FAILURE & OIL LEAKAGE

Hose assemblies may fail abruptly and unexpectedly due to a variety of reasons. Hydraulic oil shooting out at high pressure and/or at high speed can cause **serious personal injury** and severe damage to objects as well as pollution of the environment.

Examples of potential hazards:

- Bursting hose components
- Whipping hose ends
- Oil spray leakage
- Coupling blow-off

Make sure that:

- The design and operation of tools and machines complies with the existing safety regulations.
- Inspect hose assemblies for damage and wear at regular intervals; if possible, in advance of each usage.
- Inspect hose sets in unpressurised condition; use implements when necessary.
- Defective or damaged hose assemblies must be replaced immediately.



CEJN Series 116 for bolt tensioning tools





Never try to locate a leak with your hands!

IMPORTANT

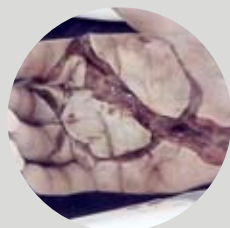
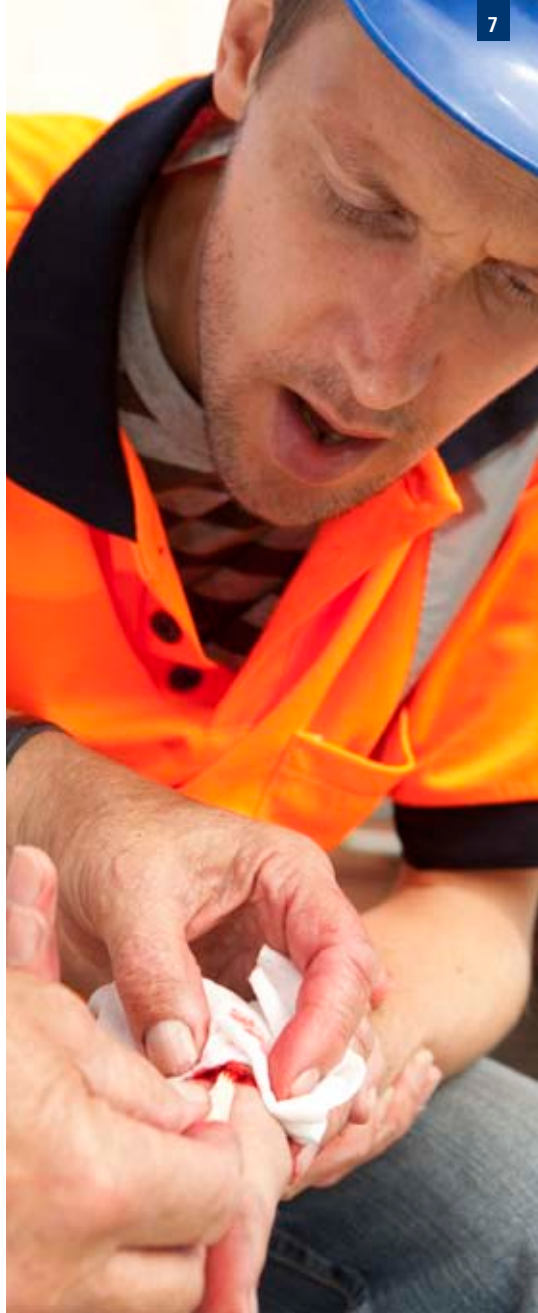
IF LEAKAGE OCCURS

If leakage occurs, shut down machinery immediately. **Never try to locate the leak with your hands** or any other part of the body when the hose set is pressurised. Use a suitable implement to inspect the hose for damage.



FLUID INJECTION INJURY

If a fluid injection injury occurs, it must always be treated as a **medical emergency** that requires prompt and accurate diagnosis and treatment.



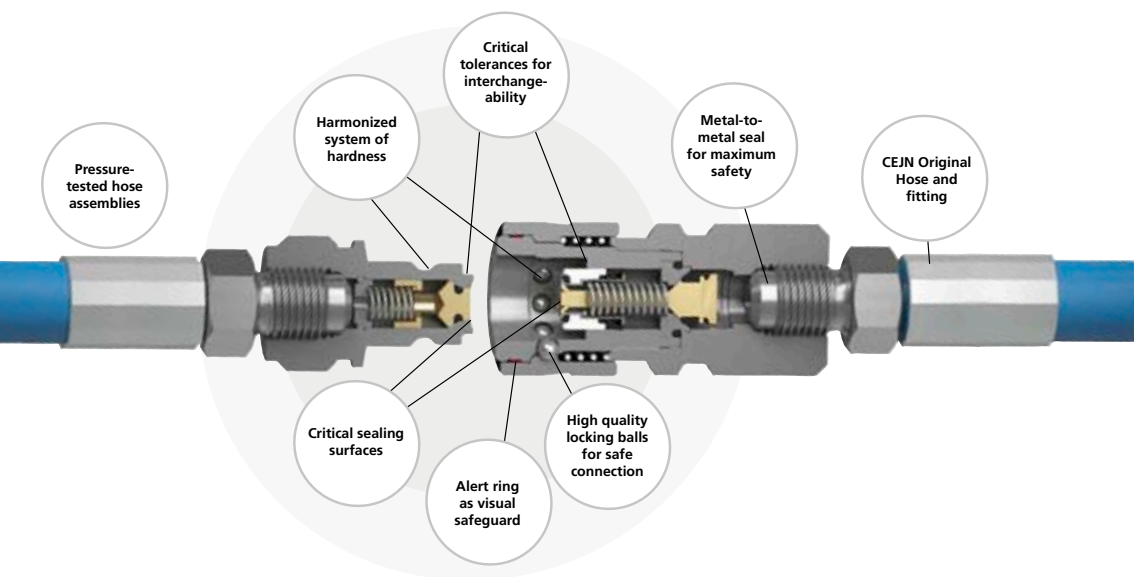
“It felt like a bee-sting. Two days later my right arm was amputated”

Victim of Oil leakage

1

Do not mix Genuine CEJN Products with Copies!

The interface between coupling and nipple is crucial! The unique tolerances and precision must not be compromised by mixing brands, and even if it seems to fit this does not mean that it is working optimally and safely. This can lead to improper connection and as a worse case scenario accidental disconnection with hydraulic oil shooting out at high pressure.





- I HAVE CONNECTED COUPLING AND NIPPLE OF ONE SPECIFIC MANUFACTURER ONLY TO ENSURE MINIMAL SAFETY RISK AND NO INVALIDATION OF WARRANTY
- I HAVE CHECKED THAT THE TECHNICAL DATA FOR THE QUICK CONNECT SYSTEMS COMPLIES WITH THE TECHNICAL DATA FOR THE PARTICULAR HOSE SET
- I HAVE CHECKED THAT COUPLING AND HOSES ARE FULLY COMPATIBLE WITH EACH OTHER. (THIS IS ALWAYS THE CASE WITH COMPLETE HOSE ASSEMBLIES FROM CEJN)

CEJN COUPLINGS & NIPPLES THAT ARE USED FOR INSTALLATION, MAINTENANCE AND REPAIR are recognized for their safety, high quality and long lasting durability. Similar couplings have recently appeared on the market, **claiming to have the same compatible mating parts**.

CEJN couplings, having been manufactured for **more than 40 years**, have become the **industry standard** when there is no international standard, like ISO or DIN. Consequently, **CEJN cannot accept responsibility for** any accident, personal injury or property damage that may result from mixing different brands of coupling (female part) and nipple (male part).

Although there are other couplings that may seem to be connectable with CEJN, our couplings **are not safely interchangeable with other couplings** that are **not under the same tolerances**. In order to guarantee safety we recommend that you do not mix CEJN products with other brands and always **check for the CEJN mark** inscribed on both the CEJN coupling and nipple.



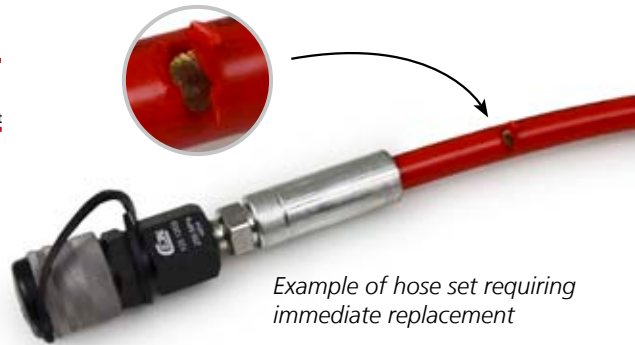
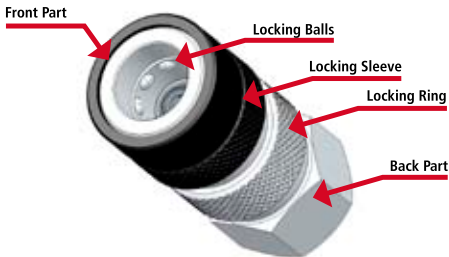
Connecting components from different manufacturers will:

- ***Cause severe safety hazards***
- ***Lead to invalidation of warranty***

2

Check for Wear and Damage!

Due to external and internal influences the hose set is subject to wear/aging. Aside from regular wear caused by time and usage, hoses can be squeezed in hatches or damaged when tools are carried in the hose. Regular inspection and maintenance ensure safe operation of ultra high-pressure hose sets throughout the lifetime of the hose. Inspection and maintenance must be carried out by a qualified person.



Wear to nipple caused by locking balls on the coupling

Degree of wear to CEJN ultra high-pressure nipples:

1. Always check the extent of the wear to the nipple
2. Is the nipple hard to connect/disconnect: Change the nipple before it damages the coupling



- I PERFORM A VISUAL CHECK FOR WEAR, AGING OR DAMAGE IN ADVANCE OF USAGE
- I AM A QUALIFIED PERSON
- I ALWAYS INSPECT COUPLING AND NIPPLE FOR CLEANNES IN ADVANCE OF USAGE
- LOCKING BALLS ARE COMPLETE AND UNDAMAGED
- LOCKING SLEEVE IS INTACT AND MOVES FREELY
- I COMPLY WITH ALL NECESSARY SAFETY PRECAUTIONS DURING INSPECTION
- I PERFORM A REGULAR CHECK FOR WEAR, AGING OR DAMAGE
- MY HOSE SET INSPECTION IS PERFORMED IN DEPRESSURIZED MODE
- I NEVER USE MY HANDS TO TRY TO DETECT A LEAK
- QUICK CONNECT COUPLINGS ARE FREE OF CORROSION
- THREADS AND SEALING SURFACES ARE UNDAMAGED, CLEAN AND FREE OF CORROSION
- THE PLASTIC OUTER LAYER OF HOSE MATERIAL IS FREE OF DAMAGE (ABRASION, CUTS, NO STEEL WIRES ARE VISIBLE, CRACKS AND BUBBLES)
- HOSE SETS ARE FREE OF DAMAGE (KINKING DAMAGE, SQUEEZING DAMAGE, DEFORMATION, LAYER-SEPARATION, ETC)



Hose sets showing wear or damage must be replaced immediately!

3

Regular Inspection & Maintenance

Regular inspection and maintenance of hose sets is important to ensure safe operation throughout their lifetime. This task must be performed by a qualified person. Maintenance must be performed in an unpressurised condition and defective hose sets or damaged components must be replaced immediately. Additional pressure testing has to be performed to verify the safe condition of the hose. Always perform a visual inspection in advance of each usage.

Observe all necessary safety precautions during pressure testing. Faulty, damaged or worn-out components may in extreme cases lead to fatal hose failure, ultimately resulting in personal injury, damage to objects and/or pollution of the environment.



Don't forget to connect dust caps to avoid system contamination





- I AM A QUALIFIED PERSON
- I PRESSURE-TEST MY HOSE ASSEMBLIES AT TWO-YEAR INTERVALS
- I REPLACE MY HOSE ASSEMBLIES EVERY 6 YEARS
- I ALWAYS REFER TO THE PRODUCTION DATE TO CHECK THE LIFETIME OF ANY HOSE ASSEMBLY
- I REPLACE HOSE ASSEMBLIES AND QUICK CONNECT SYSTEMS AT THE SAME TIME
- I PRESSURE-TEST HOSE SETS UP TO 1.5 TIMES MAXIMUM WP. AT LEAST EVERY TWO YEARS
- I INSPECT COUPLING AND NIPPLE FOR WEAR, DAMAGE AND CLEANNESS IN ADVANCE OF EACH USAGE
- WHEN COUPLING AND NIPPLE ARE CONNECTED I ALWAYS MAKE SURE TO CONNECT DUST CAPS AS WELL TO PREVENT DIRT FROM CONTAMINATING THE DUST CAPS



- *Pressure-test hose every 2 years*
- *Replace hose assemblies every 6 years*
- *Perform visual inspection before usage*
- *Use Dust Caps to avoid contamination of system*

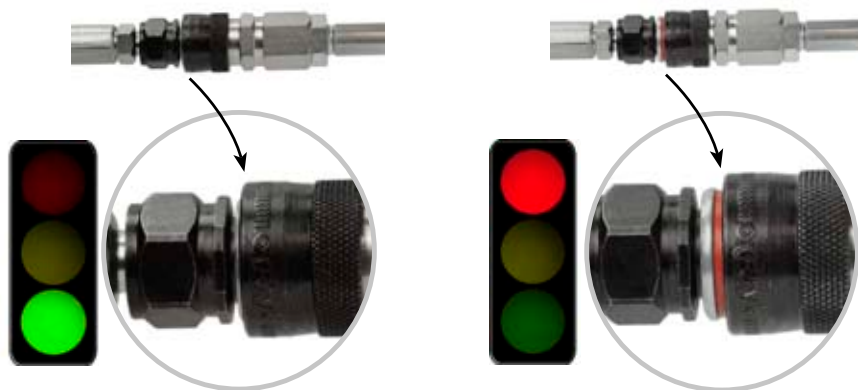
4

How to Connect Safely

In addition to avoiding mixed brands, damage control and regular inspections, it is all about making a safe connection. The parts need to be properly connected to avoid any accidental disconnection that may lead to serious injury.

Connect Safely with the CEJN Alert-Ring System

Since 2014 CEJN ultra high-pressure quick connect couplings have an "Alert-Ring" installed on the front part that clearly indicates if the connection is safe. The "Alert-Ring" is implemented on existing part numbers. If the red-colored ring is fully covered by the locking sleeve (it is not visible), the connection is safe. If the red ring is still visible, the connection is not complete and when pressurising the system the nipple may suddenly shoot out of the coupling at an undefined pressure level.





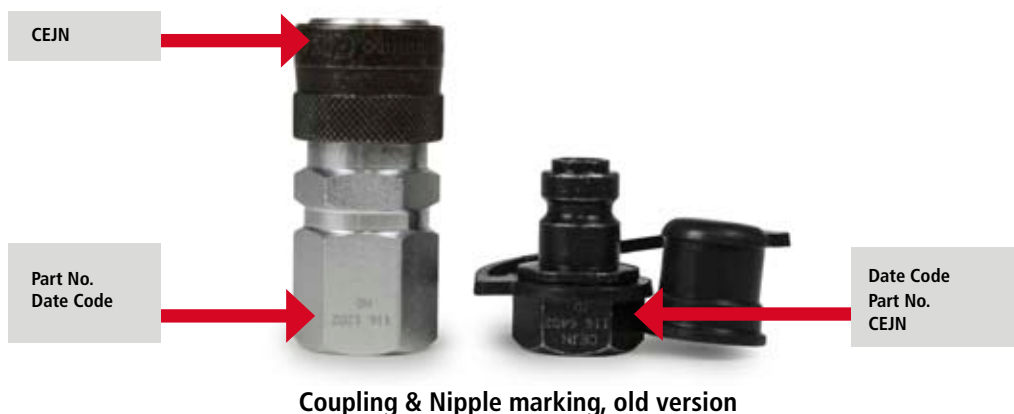
- I ALWAYS CHECK THAT THE NIPPLE IS COMPLETELY CONNECTED TO THE COUPLING
- I ALWAYS MAKE SURE THE ALERT-RING IS NOT VISIBLE (NEW 2014)
- I NEVER EXCEED THE PRESSURE VALUES SPECIFIED FOR MY HOSE ASSEMBLY
- I REFER TO THE PRESSURE RATE AS INDICATED ON THE FERRULES ON THE HOSE ASSEMBLIES
- I NEVER EXCEED THE MINIMUM BENDING RADIUS SPECIFIED FOR THE PARTICULAR HOSE TYPE
- I NEVER CONNECT OR DISCONNECT COUPLING AND NIPPLE UNDER PRESSURE
- DUE TO THE PRESSURE LOAD IT IS NOT POSSIBLE TO OPERATE THE LOCKING SLEEVE OF THE COUPLING
- I DO NOT USE ANY TOOLS TO RELEASE THE NIPPLE FROM THE COUPLING
- I ALWAYS COMPLY WITH WORKING CONDITIONS OF HOSE ASSEMBLIES, INCLUDING COUPLINGS/NIPPLES



Ultra high-pressure hydraulics is a powerful media and you need to take all necessary steps to avoid any risks to safety.

Identify CEJN for your Safety!

CEJN couplings have become the **industry standard** when there is no international standard. Although there are other couplings that may seem to be connectable with CEJN, our couplings are not safely interchangeable with other couplings that are not under the same tolerances. In order to guarantee safety we **recommend that you do not mix CEJN products with other brands** and **always check for the CEJN mark** inscribed on both the CEJN coupling and nipple.



Hose marking

- | | |
|---|------------------------------------|
| (1) CEJN 2500 | Producer & Hose Type |
| (2) MAX WP 250,0 MPa (36250 PSI) | Maximum Working Pressure MPa (PSI) |
| (3) MIN BP 625,0 MPa (90620 PSI) | Minimum Burst Pressure MPa (PSI) |
| (4) GL | Production Date Code |
| (5) QC36202642 | Batch Number |

Ferrule marking

- (1) **CEJN 08.13** Name of Producer and Production Date (MM.JJ)
- (2) **WP 1000 BAR** Maximum Working Pressure



Note:

In certain circumstances the actual working pressure of the hose assemblies may be different to the working pressure specified on the hose material. For example, this is the case when a quick connect coupling with a lower working pressure than indicated on the hose is attached to the hose assemblies. As a strict rule the lowest pressure value dictates the maximum working pressure of the hose assemblies. In any case the working pressure marked on the ferrule specifies the maximum working pressure (WP) of the hose assemblies.



CEJN Identification System

CIS is based on NFC (Near Field Communication) technology. Information about the hose kit is stored on an electronic chip which is placed between the two layers of the plastic tag attached to the hose. Data is transferred to- and from the chip with a reader that plugs into a USB port on the computer. CEJN provides the necessary software for Windows 7 or later. There is also an app available making it possible to read the chip by a mobile phone. Read more at cejn.com/cis.

CEJN High-Pressure Centers

Being one step ahead requires being one step closer to the market - a key reason why CEJN has a local presence across the globe. With almost six decades of experience we know that the more advanced our technological solutions are, the more user-friendly they need to be.

We offer on-location product support, and on-time deliveries to our customers in all major industrial markets. Close cooperation between the R&D department and our sales offices ensures that the market has access to all our competencies in terms of product range breadth, application support, and on-time delivery performance.



CEJN HIGH-PRESSURE CENTERS

Our CEJN High-Pressure Centers are located around the world for proximity to our markets and to provide our customers with high-quality products.



APPLICATION KNOW-HOW

CEJN High-Pressure Centers are application experts. They work with customers on a daily basis to create just the right solution for each application.



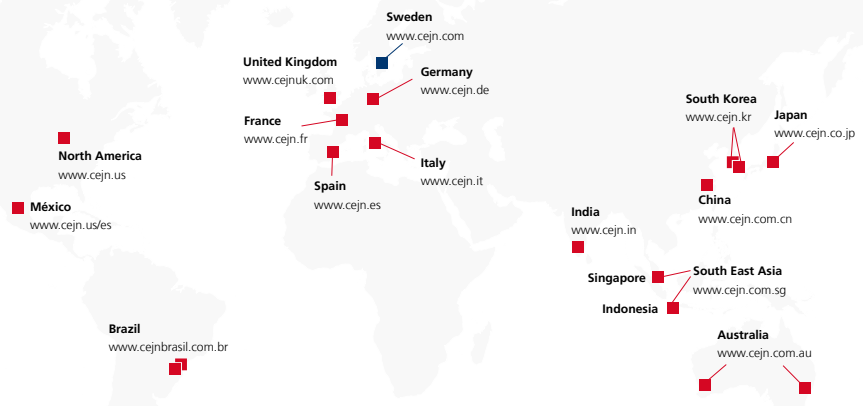
HOSE CRIMPING

Each High-Pressure Center features a hose crimping facility that assembles hose kits to customer specifications. All operators are trained and certified by CEJN.



This symbol means that the hose kit has been pressure-tested at a CEJN High-Pressure Center before delivery, to ensure safe operation and optimum performance.

■ HEAD OFFICE
■ HIGH-PRESSURE CENTER



For more information about CEJN and our markets visit www.cejn.com



HOSE TESTING

Before delivery, each hose kit is pressure-tested to ensure safe operation and optimum performance.



DELIVERIES

CEJN High-Pressure Centers are located near major markets, enabling fast and timely delivery as a major customer advantage.



RE-TESTING

It is important to pressure-test hose assemblies regularly to make sure they are not worn out or damaged.



The Quick Connect
Solution Provider

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