TRUPRESS™
STAINLESS STEEL

INSTALLATION, TECHNICAL DATA, AND MAINTENANCE GUIDELINES

VOLUME 1

APPLIED SYSTEM TECHNOLOGIES™

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INTENDED USE

TruPress Piping Systems are engineered and designed for the distribution of

- ✓ DRINKING WATER
- ✓ HEATING
- ✓ EXTINGUISHING WATER
- ✓ SPRINKLER SYSTEMS
- ✓ COOLING
- ✓ SOLAR
- ✓ COMPRESSED AIR
- ✓ NITROGEN
- ✓ ARGON
- ✓ INERT GAS
- ✓ SATURATED STEAM
- ✓ VACUUM

TRUPRESS FITTING SYSTEMS

TruPress fittings are manufactured using high-alloyed austenitic 316L stainless steel. The formed ends of the press fittings are fitted with a black EPDM seal ring for standard application.
“Press fittings” are pipe-joining components where, instead of soldering, welding, or threading, the fitting is mechanically pressed (crimped) onto the pipe to make a permanent connection.
The press connection is made by inserting the pipe into the press fitting to the marked insertion depth. The connection is created by pressing using an approved pressing tool. Press fittings in 15-28mm (Fig. 1) must be pressed with jaws, and 42 –168mm (Fig. 2) must be pressed with pressing collars/chains.

Fig. 1

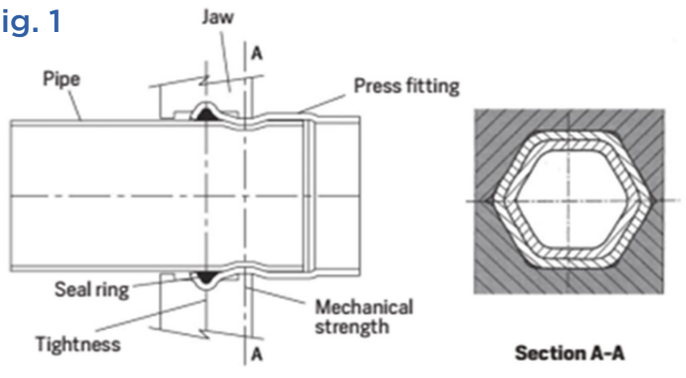
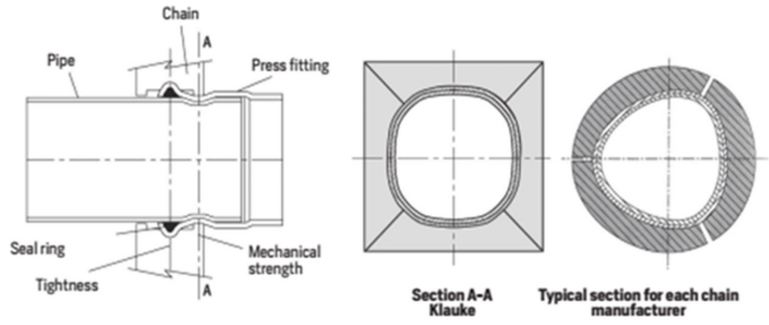


Fig. 2



TUBING & Fittings

MATERIAL: **STAINLESS STEEL 316**

AISI 316L (EN 1.4404) is an austenitic stainless steel with low carbon content, offering excellent corrosion resistance, particularly against chlorides and other industrial chemicals

Pressure: 232 psi (15.8 bar)

Temperature: 428°F (220 °C)

Length: 19’-6” (6 meters)

Chemical Composition (% by mass)

- Carbon (C) ≤ 0.03%
- Silicon (Si) ≤ 1.0%
- Manganese (Mn) ≤ 2.0%
- Phosphorus (P) ≤ 0.045%
- Sulfur (S) ≤ 0.03%
- Chromium (Cr) 16.0-18.0%
- Nickel (Ni) 10.0-14.0%
- Molybdenum (Mo) 2.0-3.0%
- Nitrogen (N) ≤ 0.10%
- Iron (Fe) Balance

Mechanical Properties

- Tensile Strength (Ultimate) ~485 MPa
- Yield Strength (0.2% proof) ~170 MPa
- Elongation at break ≥ 30-40%
- Modulus of Elasticity ~ GPa
- Brinell Hardness (HB) ≤ 217

Physical & Thermal Properties

- Density ~8.0 g/cm^3
- Melting / Solidus Range 1375-1400 °C
- Thermal Conductivity 14-15 W/m K
- Coefficient of Thermal Expansion 16 x 10-^{6} /K (20-100 °C)
- Modulus of Elasticity ~ 200 GPa

TUBING

MATERIAL: **AISI 304L STAINLESS STEEL**

AISI 304L is a low-carbon austenitic stainless steel that offers good general corrosion and oxidation resistance, strong formability, and a cost-effective solution for sanitary and general process applications where chloride exposure is limited.

Pressure: 232 psi (15.8 bar)

Temperature: 432°F (222 °C)

Length: 19’-6” (6 meters)

Chemical Composition (% by mass)

- Carbon (C): ≤0.035
- Chromium (Cr): 18.0 - 20.0
- Nickel (Ni): 8.0 – 13.0
- Manganese (Mn): ≤ 2.0
- Silicon (Si): ≤1.0
- Phosphorus (P): ≤0.045
- Sulfur (S): ≤.030
- Nitrogen (N): ≤0.10
- Iron (Fe): Balance

Mechanical Properties

- Tensile Strength: ≥70 ksi (485 MPa)
- Yield Strength (0.2%): ≥ 25ksi (170 MPa)
- Elongation: ≥40%
- Hardness: ≤ 92 HRB
- Modulus of Elasticity: 28 x 106 psi (193 GPa)

Physical & Thermal Properties

- Density: 0.289 lb/in3 (8.0 g/cm3)
- Melting Range: 2550-2650 °F (1400-1450 °C)
- Thermal Conductivity (100 °C): 9.4 Btu/hr·ft· °F(16.2 W/m·K)
- Coefficient of Thermal Expansion 9.6 x 10-6 in/in·°F

PRESSING TOOLS

The pressing tool consists of the pressing machine (= drive machine) and pressing jaws or collars/chains. The TruPress fitting system has a pressing profile on the press fittings, which matches the profile of the pressing jaws/collars.

Figure 17 – Novopress AC0203 BT

Figure 18 – Novopress AC0403 BT

Press fitting installation temperature with **battery pressing tools:** 14°F up to 104°F

INSTALLATION PROCEDURE

Pre-Installation Checks

1. Verify that the press tool (machine + jaws/chain) is approved by the manufacturer for TruPress fittings. Using non-approved tools can void the warranty/performance.
1. Check that the working pressure/temperature of the system does not exceed the ratings for the specific fitting size/media.
1. Inspect components for damage: pipes should be free of dents, scratches, rust; fittings should have intact sealing rings.

Preparation of Pipe & Fitting

1. Cut the stainless-steel pipe square at the desired length using appropriate tools for stainless steel.
2. Deburr inside and outside of the pipe end to remove sharp edges or slag; this ensures proper insertion and sealing.
3. Clean the pipe end and fitting interior of dust, oil, or debris.
4. On the pipe end, mark the correct insertion depth (as per the TruPress Depth Insertion Table) so you can verify full insertion.
5. Check that the sealing ring inside the fitting is present, clean and undamaged.

Assembly & Pressing Procedure

1. Insert the pipe fully into the fitting until it reaches the insertion mark. Ensure it is fully seated.
2. Ensure alignment: the pipe/fitting should be straight (not twisted) and the sealing ring properly seated.
3. Position the pressing tool's jaws or chain around the fitting's press profile (TruPress uses a "M-shaped" profile toroidal chamber) and verify the correct tool profile for that diameter.
4. Activate the press cycle until completion — do not release early. The tool should complete the full pressing cycle.
5. After pressing, visually inspect the joint to confirm the press profile (often a visible deformation or mark) and that there is uniform compression all around. (Download Novapress app and link the tool using Bluetooth. The app will compile data for each crimp)

Post-Installation: Testing & Commissioning

1. Before covering, insulating, or operating the line, perform a pressure test in accordance with local regulations and the manufacturer's recommendations (e.g., hydrostatic or pneumatic). The rated maximum working pressure is 232 psi for water/air systems.
2. Check all joints for visible leaks or deformation after the pressure test.

Support, Fixing & Expansion Considerations

1. Ensure pipe supports, clamps, and hangers are correctly installed — per TruPress installation instructions.
2. Avoid galvanic corrosion: if the stainless steel piping is in contact with dissimilar metals.
3. Proper spacing for tubing supports should be every 8' or less. Additional supports may be required where multiple fittings are installed in close proximity to prevent sagging. Additional support for valves and accessories are recommended.

Installation Notes:

- Always mark the insertion depth on the pipe before pressing.
- After pressing, the marking must remain visible next to the fitting.
- The insertion depth deviation must not exceed ±10%.

Cutting, Deburring, Bending:

- The pipe(s) should be cut to length using pipe cutters that are suitable for the material in use. Alternatively, fine-tooth hacksaws or suitable electric saws may be used. The cut must be square to avoid a negative impact on the mechanical resistance between the fitting and pipe. After cutting and deburring, the pipe ends must be cleaned or freed from chips or debris.

Not permitted: Tools that cause tarnishing during the cutting process

- Oil-cooled saws
- Flame cutting
- Grinders/Abrasive blades

To avoid damaging the sealing ring when inserting the pipe into the press fitting, the pipe must be carefully deburred, both inside and outside.

– Cutting the pipe to length

– Deburring the pipe

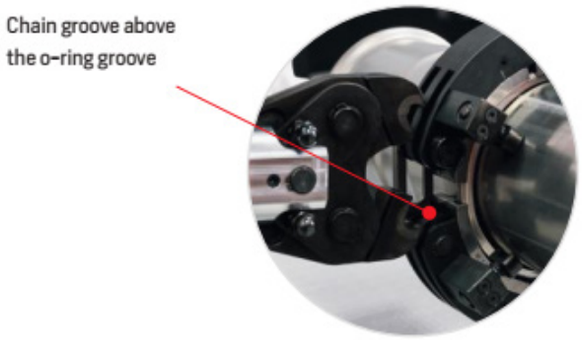
15mm & 22mm tube size can be bent up to 90° using a radial bender

Pressing 168mm

1st Pressing Phase

1. Open the chain and place it around the fitting: the groove of the chain must be positioned exactly above the toroidal chamber of the fitting.
2. Close the chain and press the lock button.
3. Rotate the latch inwards and engage the lock.
4. Carry out pressing operation
5. Unhook and rotate the latch, open the chain, and remove it from the fitting

- Press assembly phase 1



2nd Pressing Phase

1. Position the chain around the pipe socket, aligning it with the appropriate guides above the containment groove of the o-ring.
2. Close the chain and press the lock button.
3. Rotate the latch inwards and engage the lock.
4. Carry out pressing operation.
5. Unhook and rotate the latch, open the chain, and remove it from the fitting

- Press assembly phase 2

After pressing, it is essential to check the connection to ensure that the work has been completed correctly and that the insertion depth is accurate.

The fitter must also ensure that all connections have been adequately pressed.

Once pressing has been completed, the connections must not be subjected to further mechanical loads.

- Visual inspection of oversize pressing

MINIMUM DISTANCE & SPACE REQUIREMENTS

12MM - 35MM

PIPE Ø	F41 A	D	F42 A	D	D1	F43 A	C	D	D1	F44 D	E
15mm	2-3/16	1-3/16	3	1-3/16	1-3/8	3-3/8	6-1/8	1-3/16	1-3/8	1-9/16	2-3/8
22mm	3	1-9/16	3-1/8	1-9/16	1-9/16	3-3/8	6-1/2	1-9/16	1-9/16	1-9/16	2-3/8
28mm	3-1/4	1-9/16	3-9/16	1-9/16	1-3/4	3-9/16	7-1/8	1-9/16	1-3/4	1-9/16	2-1/2

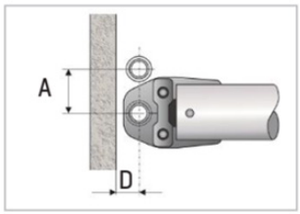


Figure 41 - Minimum distances and space requirements

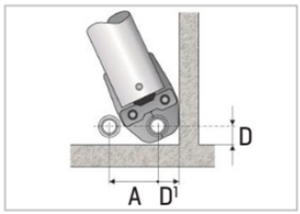


Figure 42 - Minimum distances and space requirements

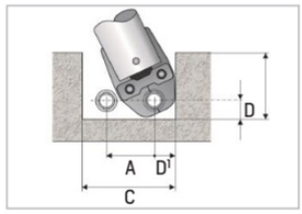


Figure 43 - Minimum distances and space requirements

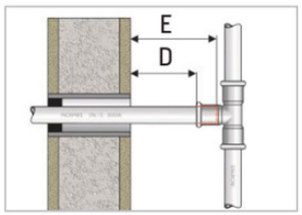


Figure 44 - Minimum distances and space requirements

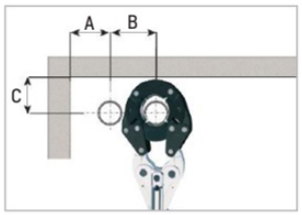


Figure 45 - Minimum distances for chains / collars

42MM-168MM

PIPE Ø	F44 D	E	F45 A	B	C
42mm	1-15/16	3-1/8	5-15/16	5-15/16	4-5/16
54mm	1-15/16	3-3/8	5-15/16	5-15/16	4-5/16
76.1mm	2-3/8	4-1/2	6-11/16	8-1/4	6-11/16
88.9mm	2-3/8	4-3/4	7-1/2	10-1/4	7-1/2
108mm	2-3/8	5-5/16	7-7/8	12-5/8	11

INSERTION DEPTH TABLE

PIPE OD (MM)	INSERTION DEPTH A (IN.)
15	13/16
22	13/16
28	7/8
42	1-3/16
54	1-3/8
76.1	2-3/16
88.9	2-3/8
108	2-15/16
168	4-7/16

TOOL MAINTENANCE

Jaw and chain pressing units are to be serviced for correct joint production.). An officially authorized repairer must check the pressing tools according to the manufacturer's specifications (normally once a year or after 10,000 pressing cycles for the standard pressing machine, after 1,500 pressing cycles for the King size pressing machine.

Any moving part (drive rolls) and pressing jaws and chain surfaces (internal profiles) are to be daily serviced, cleaned, and lubricated.

Any possible oxidation, paint, or dirt in general affects the tool's reliability, leading to equipment sliding problems on joints during pressing.

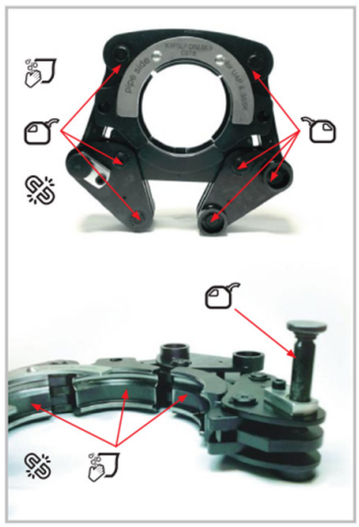


Figure 19 - Klauke equipment

Figure 20 - Novopress equipment

Keep the chain clean

Keep the pins lubricated with oil

Attention it can be broken

STORAGE AND HANDLING

TruPress components must be protected against dirt and damage during storage. Stainless steel components must be kept separate from carbon steel items to prevent rust contamination

- Carbon steel chips
- Iron dust
- Cutting debris
- Weld spatter
- Chloride-containing substances (bleach, saltwater, industrial cleaners)

SAFETY NOTES

Always wear eye protection and gloves during installation. Verify tool compatibility before pressing.

WARRANTY INFORMATION

This Limited 50 Year Warranty is effective as of January 1, 2026 (the "Effective Date"). The warrantied products include all Applied System Technologies ("AST") TruPressTM fittings and tubing sold by AST after the Effective Date (and excluding accessories such as, but not limited to, valves, hose reels, and flow controllers),(all such warrantied products being referenced hereafter as the "Products"). Subject to the terms and conditions of this Limited 50 Year Warranty, the Products are warranted to be free from material defects in materials and workmanship and to conform to published industry standards in effect at the time of sale and expressly referenced by AST in its written documentation for the relevant Product (the "Published Standards"), in each case for 50 years from the date of delivery to the original purchaser (the "Limited 50 Year Warranty"). This Warranty applies only to defects that manifest during the warranty period and are reported to AST in writing in accordance with the claim procedures set forth herein within thirty (30) days of discovery of the defect.

AST's sole obligation, and purchaser's sole and exclusive remedy, under this Limited 50 Year Warranty is, at AST's sole discretion, the repair or replacement of a defective Product that is returned to AST at AST's designated facility, freight prepaid by the purchaser, by the original purchaser of the Product from AST or any authorized AST reseller or distributor. With respect to Products purchased through an authorized AST distributor, the party making the warranty claim must also deliver to AST reasonable evidence of the date of purchase. If the original Product is no longer manufactured by AST with equivalent specifications, a replacement product substitutable for such Product may be selected by AST in its reasonable discretion. If AST discontinues the Product and no substitutable replacement product is available, AST may, at its sole discretion, either: (i) reimburse the purchaser for an amount equal to the original purchase price paid for the Product (as evidenced by proof of purchase), or (ii) provide a credit toward the purchase of other AST products in an amount equal to the original purchase price paid for the Product. All costs for the removal and installation of defective Products shall be at the purchaser's expense, and in no event will AST be liable for any indirect, incidental, consequential, or similar damages, including, but not limited to, lost profits or business interruption losses. As a further condition to AST's obligations under this Limited 50 Year Warranty, the purchaser or claimant shall offer its reasonable cooperation and assistance with AST's review of any warranty claim.

THIS LIMITED 50 YEAR WARRANTY IS AST'S SOLE AND EXCLUSIVE WARRANTY WITH RESPECT TO THE PRODUCTS. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, AST DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, OR NON-INFRINGEMENT, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE.

In no event will AST be liable for breach of warranty or other claim under this Limited 50 Year Warranty if the Products:

1. are not properly installed in good and workmanlike manner (including excessive tightening or over-torquing of fittings and inadequate support) in conformance with the installation instructions and operating guidelines published by AST, including those in its Operations & Maintenance Manual (the "AST Documentation") located online and/or provided to the original purchaser, as well as applicable industry standards and plumbing, fire and building codes ("Applicable Standards and Codes");

2. are used for any purpose other than their intended purpose as limited by the AST Documentation and Applicable Standards and Codes;

3. are used in systems or with products that are: (a) defective or not adequately designed, manufactured, engineered, or installed; (b) do not meet Applicable Standards and, or (c) not compatible with the Products;

4. have been the subject of modification, misuse, refurbishment, misapplication, improper maintenance or repair, neglect, extreme conditions, or damage caused by the acts, fault or negligence of anyone other than AST.

WARRANTY INFORMATION (Continued)

Purchasers must initiate all claims under this Limited 50 Year Warranty by sending an email to customerservice@appliedsystemtech.com, including contact name, phone number, proof of purchase from AST or an authorized AST distributor, and a brief description of the issue with the Product. All warranty claims should be submitted promptly and are subject to review and approval by AST. Failure to follow this warranty claim procedure will result in denial of claims, including denial of claimed costs for repairs or replacements performed prior to AST's authorization.

Any replacement products will be replaced F.O.B. point of original delivery. No employee, agent or distributor of AST is authorized to make any warranty other than that which is specifically set forth herein. This Limited Warranty may only be modified in writing signed by an officer of AST.

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