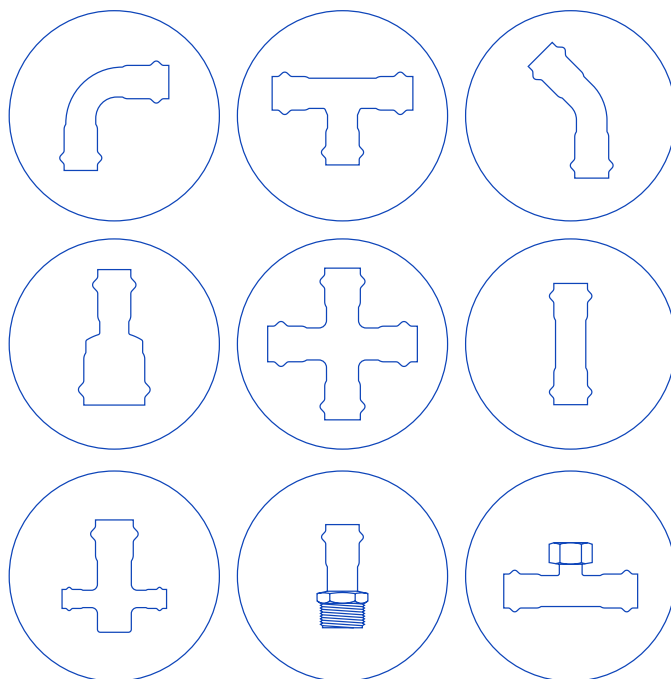
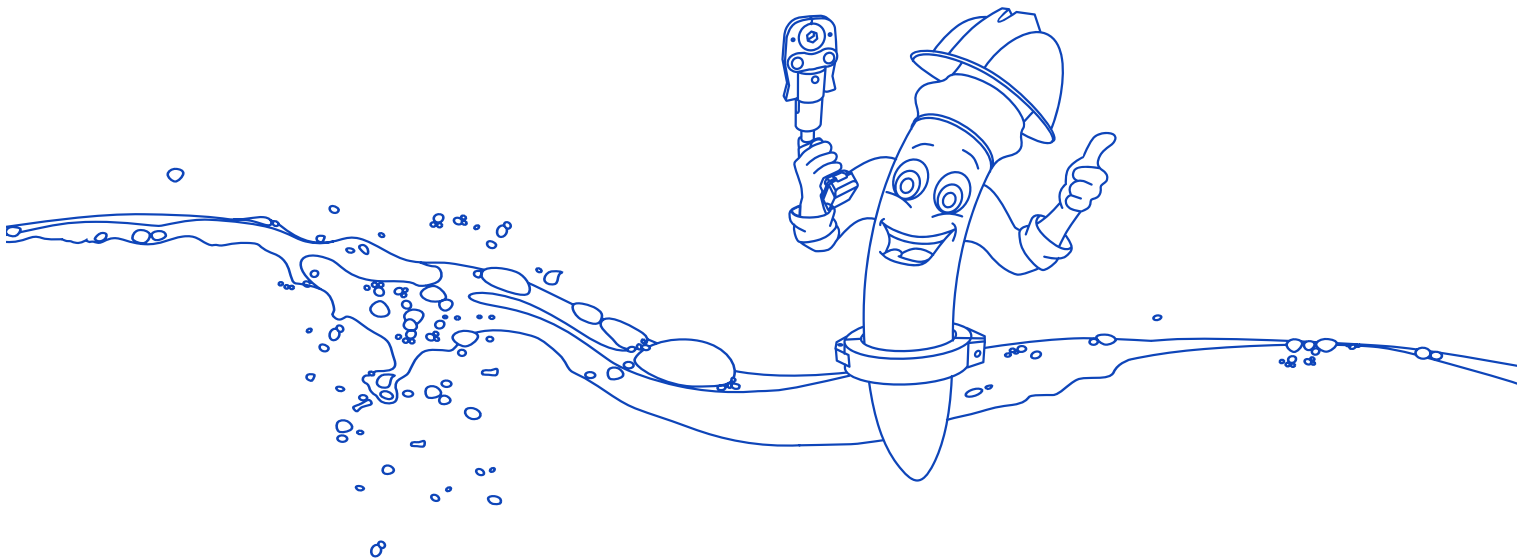




FOCUSING ON  
**STAINLESS STEEL PIPINGS**  
FOR **20** YEARS



**ML-BK**  
STAINLESS STEEL PIPE & FITTING

01

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**ML-BK**  
STAINLESS STEEL PIPE & FITTING



Aerial view of Jiangmen Industrial Base ▲



企業簡介

## INTRODUCTION / ○○

136000M<sup>2</sup>

Industrial base

140<sup>+</sup>

Technical patents

26<sup>+</sup>

National Standards

22<sup>+</sup>

QC process

150<sup>+</sup>

Cooperative partner

1000<sup>+</sup>

Regional agents

30000<sup>+</sup>

Project Cases



Shenzhen Minle Pipe Industry Co., Ltd. adhering to the business philosophy of "People-oriented, Happy world", adheres to the mission of "The ideal vision of Minle is for all people to live and work in peace and prosperity", and provides high-quality pipe and fittings for the country to improve the national drinking water pipeline network as appointed. It mainly produces/sells various types of stainless steel pipes (fittings) from DN10 to DN1000.

Shenzhen Minle Pipe Industry Co., Ltd. was established in 2006. The head office is located in Guangming District, Shenzhen. The production base is located in Xinhui, Jiangmen, covering an area of nearly 140,000 square meters. We are specialized in producing various types of stainless steel pipes (fittings) and provide technical installation instructions. There are more than 400 employees and more than 3,000 automated production equipment / sets, all of which have reached the domestic leading level. More than 40 pipe production lines and more than 80 pipe fittings production lines can be operated simultaneously. It can produce 45,000 tons of stainless steel pipes and 35 million pipe fittings annually, which can meet the market demand of 1.5 billion/year. The products are widely used in water supply, commercial complex real estate, star hotels, medical and health, residential, gas, industrial, education and other fields. The sales network covers all major cities in China and has established cooperative partnerships with many companies worldwide.

In 2008, it was awarded as a high-tech enterprise, and has always been well-known in the industry for its four core elements of quality, efficiency, technology and service. It has won many honors, such as "China's Famous Brand", "AAA-level member unit for quality, reputation and service", and more than 140 national utility and invention patents. It has passed the ISO9001 international quality system certification and ISO14001 international environmental system certification, and was the first in the industry to pass the CNAS laboratory certification. It has been continuously awarded the honors of "Outstanding Contribution Enterprise of the Water Supply and Drainage Equipment Branch" and "National Real Estate Chief Engineer Preferred Brand Product". It has edited and participated in the editing of more than 20 national standards and industry standards, and has been widely praised by the society.

"Good quality builds engineering, engineering is done by Minle!" In order to better meet customer needs, Minle has established the most professional and largest technical instructions service team in the industry, with 8 branches, more than 30 offices, more than 1,000 distribution outlets and more than 50 image stores at home and abroad. So far, there are more than 30,000 service cases, including Great Hall of the People in Beijing, the Forbidden City in Beijing, Beijing Sub-Center in Tongzhou District, Hong Kong-Zhuhai-Macao Bridge, Shanghai Disneyland, Shenzhen Kingkey 100, Guangzhou Chow Tai Fook Finance Center, Shangri-La, Hilton, Kempinski, St. Regis, Sheraton, Ramada, Howard Johnson, Sofitel, Wanda and many other domestic five-star hotels, as well as national key projects such as the Olympic Games, Asian Games, and Universiade, and has established strategic cooperation relationships and shortlisted brand libraries with famous real estate companies such as Wanda Real Estate, Greentown E-commerce, Poly Real Estate, Broad Sustainable Building and many water systems across the country. We are committed to delivering excellence in quality engineering, premium craftsmanship, and trust-assured solutions for our clients.

Thanks to history for giving us this opportunity, Shenzhen Minle Pipe Industry Co., Ltd. has laid a solid foundation for building a "global professional stainless steel pipe manufacturer" by relying on complete hardware support and advanced intelligent manufacturing management system. While being faithful to responsibility and integrity, and focusing on creation and harvest, Minle uses new technologies to continuously innovate and will continue to strive! I believe that in the near future, with the most creative resource integration marketing platform, Minle will be built into a famous brand that will benefit the present and future generations!



企業資質  
**QUALIFICATION CERTIFICATE** / ○ ○

统一社会信用代码  
91440300788304332Y

# 营业执照

(副本)

名称 深圳市民乐管业有限公司

类型 有限责任公司

法定代表人 麦稳球

成立日期 2006年04月17日

住所 深圳市光明新区马田街道马山头社区钟表基地格雅科技大厦1栋1005

登记机关

2024 年 03 月 13 日

**重要提示**

1. 商事主体的经营范围由章程确定。经营范围中属于法律、法规规定应当经批准的项目，取得许可审批文件后方可开展相关经营活动。
2. 商事主体经营范围和许可审批项目等有关企业信用事项及年报信息和其他信用信息，请登录左下角的国家企业信用信息公示系统或扫描右上方的二维码查询。
3. 各类商事主体每年须于成立周年之日起两个月内，向商事登记机关提交上一自然年度的年度报告。企业应当按照《企业信息公示暂行条例》第十条的规定向社会公示企业信息。

国家企业信用信息公示系统网址: <http://www.gsxt.gov.cn>

国家市场监督管理总局监制

Enterprise business license



Enterprise Credit Rating Certificate



High tech Enterprise Certification



企業資質

# QUALIFICATION CERTIFICATE / ○○



CNAS certification



Quality Management System



Special equipment license certification



Twelve star certification for after-sales service





企業資質

# QUALIFICATION CERTIFICATE

**水務署**  
**Water Supplies Department**  
香港灣仔軒士打道七號入境事務大樓  
Immigration Tower, 7 Clarendon Road, Hong Kong  
電子郵遞 e-mail: wsdinfo@wsd.gov.hk  
電話 Telephone: 2824 0578  
傳真 Facsimile: 2824 0578  
參考 Reference: (4) in WSD 3321/2025 T/J(1195/2025)

9 January 2026

Bun Kee (International) Limited  
Unit 1010-1016, Level 10,  
Tower II, Grand Century Place,  
193 Prince Edward Road West,  
Mongkok, Kowloon,  
Hong Kong  
(Attn.: Mr Barry KU)

Dear Sir,

**Approval of "ML-BK" Stainless Steel Pipes**  
(General Acceptance No. ZC20260030)

Your letters ref. BK2025-AC-MLBK-042 and BK2025-AC-MLBK-042 (V2) dated 27 November 2025 and 15 December 2025 respectively refer.

Having considered the test report ref. BC-SUMMARY-2025-471 issued on 16 October 2025 by Castco Testing Centre Limited, this Authority accepts that the pipes described below comply with, and their use when correctly installed does not contravene, the Waterworks Ordinance and Regulations.

**Name of Manufacturer:** Shenzhen Minle Pipe Industry Co Ltd  
**Country of Origin:** Chinese Mainland  
**Brand:** ML-BK  
**Details of Pipes:** Stainless steel pipes – Series 2 (304)  
**Model and Size:** ML BA - 15mm, 22mm, 28mm, 35mm, 42mm, 54mm, 76.1mm, 88.9mm, 108mm  
ML PEC - 15mm, 22mm, 28mm, 35mm, 42mm, 54mm

WSD Certification (S30408 Stainless Steel Pipes)

**水務署**  
**Water Supplies Department**  
香港灣仔軒士打道七號入境事務大樓  
Immigration Tower, 7 Clarendon Road, Hong Kong  
電子郵遞 e-mail: wsdinfo@wsd.gov.hk  
電話 Telephone: 2824 0578  
傳真 Facsimile: 2824 0578  
參考 Reference: (4) in WSD 3321/2025 T/J(1271/2025)

2 February 2026

Bun Kee (International) Limited  
Unit 1010-1016, Level 10, Tower II, Grand Century Place,  
193 Prince Edward Road West,  
Mong Kok, Kowloon  
Hong Kong  
(Attn.: Mr Barry KU)

Dear Sir,

**Approval of "ML-BK" Stainless Steel Fittings**  
(General Acceptance No. ZC20260088)

Your letters ref. BK2025-AC-MLBK-045 and BK2025-AC-MLBK-045(V2) dated 17 December 2025 and 5 January 2026 respectively refer.

Having considered the test report ref. BC-SUMMARY-2025-511 issued on 31 December 2025 by Castco Testing Centre Limited, this Authority accepts that the fittings described below comply with, and their use when correctly installed does not contravene, the Waterworks Ordinance and Regulations.

**Name of Manufacturer:** Shenzhen Minle Pipe Industry Co Ltd  
**Country of Origin:** Chinese Mainland  
**Brand:** ML-BK  
**Details of Fittings:** Stainless steel fittings with press-fit connection ends (304)

| Description      | Model   | Size                                         |
|------------------|---------|----------------------------------------------|
| 90° Elbow        | ML 90E  | 15, 22, 28, 35, 42, 54, 76.1, 88.9, 108 (mm) |
| 90° Street Elbow | ML 90ED | 15, 22, 28, 35, 42, 54, 76.1, 88.9, 108 (mm) |

WSD Certification (S30408 Stainless Steel Fittings)

**水務署**  
**Water Supplies Department**  
香港灣仔軒士打道七號入境事務大樓  
Immigration Tower, 7 Clarendon Road, Hong Kong  
電子郵遞 e-mail: wsdinfo@wsd.gov.hk  
電話 Telephone: 2824 0578  
傳真 Facsimile: 2824 0578  
參考 Reference: (2) in WSD 3321/2025 T/J(1194/2025)

29 December 2025

Bun Kee (International) Limited  
Unit 1010-1016, Level 10,  
Tower II, Grand Century Place,  
193 Prince Edward Road West,  
Mongkok, Kowloon,  
Hong Kong  
(Attn.: Mr Barry KU)

Dear Sir,

**Approval of "ML-BK" Stainless Steel Pipes**  
(General Acceptance No. ZC20250990)

Your letter ref. BK2025-AC-MLBK-043 dated 27 November 2025 refers.

Having considered the test report ref. BC-SUMMARY-2025-472 issued on 16 October 2025 by Castco Testing Centre Limited, this Authority accepts that the pipes described below comply with, and their use when correctly installed does not contravene, the Waterworks Ordinance and Regulations.

**Name of Manufacturer:** Shenzhen Minle Pipe Industry Co Ltd  
**Country of Origin:** Chinese Mainland  
**Brand:** ML-BK  
**Details of Pipes:** Stainless steel pipes – Series 2 (316L)  
**Model and Size:** ML BA - 15mm, 22mm, 28mm, 35mm, 42mm, 54mm, 76.1mm, 88.9mm, 108mm  
ML PEC - 15mm, 22mm, 28mm, 35mm, 42mm, 54mm

WSD Certification (S31603 Stainless Steel Pipes)

**水務署**  
**Water Supplies Department**  
香港灣仔軒士打道七號入境事務大樓  
Immigration Tower, 7 Clarendon Road, Hong Kong  
電子郵遞 e-mail: wsdinfo@wsd.gov.hk  
電話 Telephone: 2824 0578  
傳真 Facsimile: 2824 0578  
參考 Reference: (4) in WSD 3321/2025 T/J(1270/2025)

30 January 2026

Bun Kee (International) Limited  
Unit 1010-1016, Level 10, Tower II, Grand Century Place,  
193 Prince Edward Road West,  
Mong Kok, Kowloon  
Hong Kong  
(Attn.: Mr Barry KU)

Dear Sir,

**Approval of "ML-BK" Stainless Steel Fittings**  
(General Acceptance No. ZC20260084)

Your letters ref. BK2025-AC-MLBK-044 and BK2025-AC-MLBK-044(V2) dated 15 December 2025 and 5 January 2026 respectively refer.

Having considered the test report ref. BC-SUMMARY-2025-510 issued on 31 December 2025 by Castco Testing Centre Limited, this Authority accepts that the fittings described below comply with, and their use when correctly installed does not contravene, the Waterworks Ordinance and Regulations.

**Name of Manufacturer:** Shenzhen Minle Pipe Industry Co Ltd  
**Country of Origin:** Chinese Mainland  
**Brand:** ML-BK  
**Details of Fittings:** Stainless steel fittings with press-fit connection ends (316L)

| Description      | Model   | Size                                         |
|------------------|---------|----------------------------------------------|
| 90° Elbow        | ML 90E  | 15, 22, 28, 35, 42, 54, 76.1, 88.9, 108 (mm) |
| 90° Street Elbow | ML 90ED | 15, 22, 28, 35, 42, 54, 76.1, 88.9, 108 (mm) |

WSD Certification (S31603 Stainless Steel Fittings)

# STAINLESS STEEL WATER PIPE /

The ideal vision of Minle is for all people to live and work in peace and prosperity.

- | Sanitation and Public Health |
- | Durability |
- | High-temperature and High-pressure Resistant |
- | Environmental Care |
- | Economical and Practical |

.....



**ML-BK**  
STAINLESS STEEL PIPE & FITTING



# INSPECTION OF FINISHED PRODUCTS / ○○

## PIPES

Each pipeline has its own traceability code. After leaving the factory, the pipes can be traced back to each production process and the source of raw materials.

100% through intelligent eddy current t-esting

100% passed the 2.5Mpa water pressure test

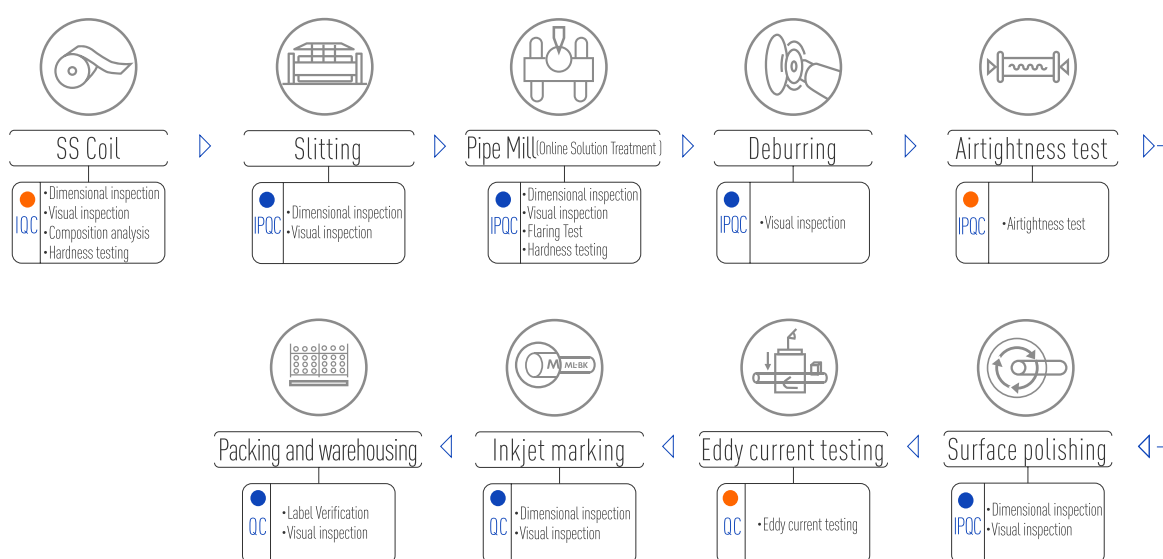
1.3D extension, flanging, and flattening test

Dimensional measurement (outer diameter, thickness, length),  
visual inspection

Other tests that can meet customer requirements



## PRODUCTION PROCESS FLOW



● 全檢 100% inspection    ● 首檢/巡檢/末檢 FAI / Patrol Inspection / Final Inspection





# INSPECTION OF FINISHED PRODUCTS / ○○

## FITTINGS

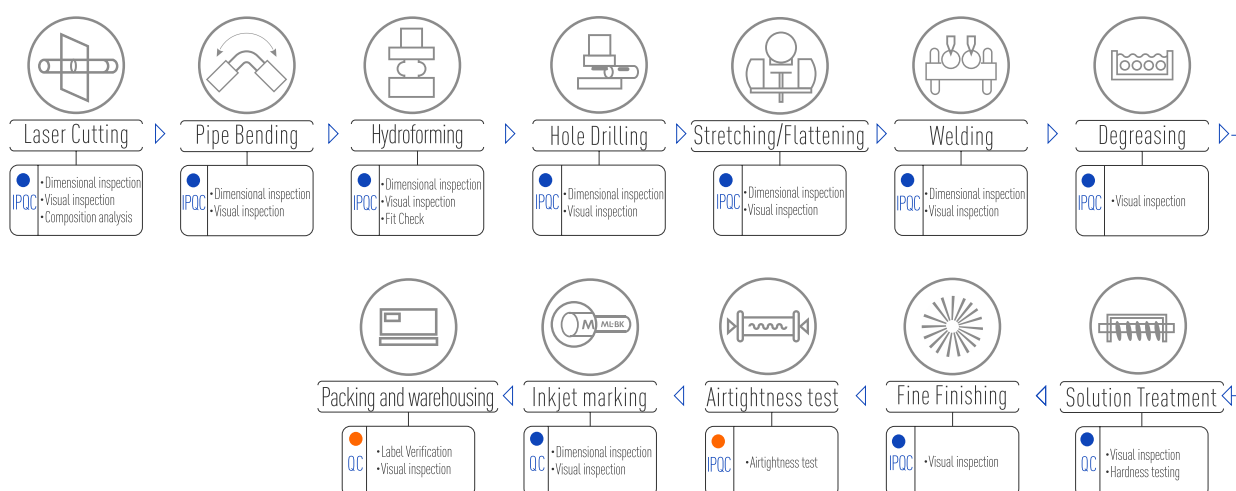


100% measurement through dimensions (outer diameter, thickness, length)

100% passed the airtightness test

100% of the accessories have undergone annealing treatment and passed relevant standard tests such as hardness test, hydrostatic test, salt spray test, intergranular corrosion test, etc. More tests can also be conducted according to customer requirements.

## PRODUCTION PROCESS FLOW



● 全檢 100% inspection    ● 首檢/巡檢/末檢 FAI / Patrol Inspection / Final Inspection



# PRODUCT LIST

Stainless steel pipe, stainless steel Fitting and Hydraulic Installation Tool

| material | standard       | designation     | number | C     | Si   | Mn   | P      | S      | Ni        | Cr        | Mo      | N    |
|----------|----------------|-----------------|--------|-------|------|------|--------|--------|-----------|-----------|---------|------|
| SS304    | EN10088-2:2014 | X5CrNi18-10     | 1.4301 | ≤0.07 | ≤1.0 | ≤2.0 | ≤0.045 | ≤0.015 | 8.0-10.5  | 17.5-19.5 |         | ≤0.1 |
| SS316L   | EN10088-2:2014 | X2CrNiMo17-12-2 | 1.4404 | ≤0.03 | ≤1.0 | ≤2.0 | ≤0.045 | ≤0.015 | 10.0-13.0 | 16.5-18.5 | 2.0-2.5 | ≤0.1 |

## Bare stainless steel pipe (EN standard) -ML-BA

| Outer Diameter | OD tolerance | Thickness | thickness tolerance |
|----------------|--------------|-----------|---------------------|
| 15             | ±0.10        | 1.0       | ±0.10               |
| 22             | ±0.11        | 1.2       | ±0.10               |
| 28             | ±0.14        | 1.2       | ±0.10               |
| 35             | ±0.18        | 1.5       | ±0.10               |
| 42             | ±0.21        | 1.5       | ±0.10               |
| 54             | ±0.27        | 1.5       | ±0.10               |
| 64             | ±0.32        | 2.0       | ±0.15               |
| 76.1           | ±0.38        | 2.0       | ±0.15               |
| 88.9           | ±0.44        | 2.0       | ±0.15               |
| 108.0          | ±0.54        | 2.0       | ±0.15               |

\*Standard: EN10312:2002

## Stainless steel pipe with PE sheath for cold water application --ML-PEC

| PE coated pipe | SS pipe OD | Wall thickness | Coating thickness |
|----------------|------------|----------------|-------------------|
| 15             | 15±0.1     | 1.0±0.1        | 1.1-1.3           |
| 22             | 22±0.11    | 1.2±0.1        | 1.1-1.3           |
| 28             | 28±0.14    | 1.2±0.1        | 1.1-1.3           |
| 35             | 35±0.18    | 1.5±0.1        | 1.1-1.3           |
| 42             | 42±0.21    | 1.5±0.1        | 1.1-1.3           |
| 54             | 54±0.27    | 1.5±0.1        | 1.1-1.3           |

## Stainless steel pipe with profiled PE sheath for hot water application

| PE coated hot pipe | SS pipe OD | Wall thickness | Coating thickness |
|--------------------|------------|----------------|-------------------|
| 15                 | 15±0.1     | 1.0±0.1        | 1.8               |
| 22                 | 22±0.11    | 1.2±0.1        | 1.8               |
| 28                 | 28±0.14    | 1.2±0.1        | 1.8               |
| 35                 | 35±0.18    | 1.5±0.1        | 2.5               |
| 42                 | 42±0.21    | 1.5±0.1        | 2.5               |
| 54                 | 54±0.27    | 1.5±0.1        | 3.0               |

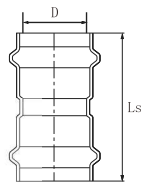
## Application

|                              |                                                                                                                                                          |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drinking water               | Pressure $\leq 20$ bar, temperature: $-30 \sim 110^{\circ}\text{C}$<br>(other temperatures need to replace the sealing ring) The regular o-ring is EPDM. |
| Compressed air               |                                                                                                                                                          |
| Inert gas                    |                                                                                                                                                          |
| Hot water                    |                                                                                                                                                          |
| Fire extinguishing system    |                                                                                                                                                          |
| Cooling water                |                                                                                                                                                          |
| Rainwater                    |                                                                                                                                                          |
| Sprinkler                    |                                                                                                                                                          |
| Flammable gas                | Pressure $\leq 0.5\text{Mpa}$ ; Temperature: $-20 \sim 100^{\circ}\text{C}$ , HNBR o-ring is recommended.                                                |
| Non-toxic, non-flammable gas | Pressure $\leq 1.6\text{Mpa}$ ; Temperature: $-20 \sim 100^{\circ}\text{C}$<br>HNBR o-ring is recommended.                                               |

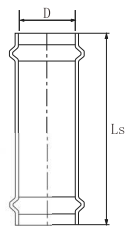


## Fittings Specifications

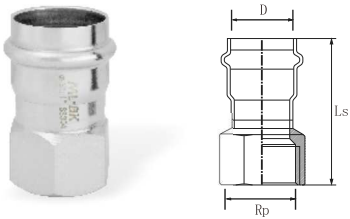
### Straight coupler (ML S)

|   | Product code                | D    | Ls          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------|-------------|
|                                                                                                                                                                         | 0A9199/OA9399-0301-01501506 | 15   | 54 $\pm$ 3  |
|                                                                                                                                                                         | 0A9199/OA9399-0301-02202206 | 22   | 56 $\pm$ 3  |
|                                                                                                                                                                         | 0A9199/OA9399-0301-02802806 | 28   | 60 $\pm$ 3  |
|                                                                                                                                                                         | 0A9199/OA9399-0301-03503506 | 35   | 69 $\pm$ 4  |
|                                                                                                                                                                         | 0A9199/OA9399-0301-04204206 | 42   | 80 $\pm$ 4  |
|                                                                                                                                                                         | 0A9199/OA9399-0301-05405406 | 54   | 100 $\pm$ 4 |
|                                                                                                                                                                         | 0A9126/OA9399-0301-06506506 | 76.1 | 158 $\pm$ 5 |
|                                                                                                                                                                         | 0A9126/OA9399-0301-08008006 | 88.9 | 165 $\pm$ 5 |
|                                                                                                                                                                         | 0A9199/OA9399-0301-10810806 | 108  | 190 $\pm$ 5 |

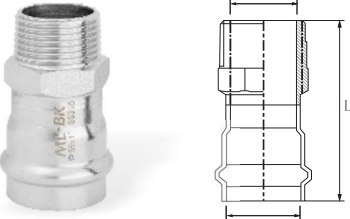
### Straight slip coupler (ML SK)

|   | Product code                | D    | Ls          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------|-------------|
|                                                                                                                                                                         | 0A9199/OA9399-0305-01501506 | 15   | 54 $\pm$ 3  |
|                                                                                                                                                                         | 0A9199/OA9399-0305-02202206 | 22   | 56 $\pm$ 3  |
|                                                                                                                                                                         | 0A9199/OA9399-0305-02802806 | 28   | 60 $\pm$ 3  |
|                                                                                                                                                                         | 0A9199/OA9399-0305-03503506 | 35   | 69 $\pm$ 4  |
|                                                                                                                                                                         | 0A9199/OA9399-0305-04204206 | 42   | 80 $\pm$ 4  |
|                                                                                                                                                                         | 0A9199/OA9399-0305-05405406 | 54   | 100 $\pm$ 4 |
|                                                                                                                                                                         | 0A9126/OA9399-0305-06506506 | 76.1 | 158 $\pm$ 5 |
|                                                                                                                                                                         | 0A9126/OA9399-0305-08008006 | 88.9 | 165 $\pm$ 5 |
|                                                                                                                                                                         | 0A9199/OA9399-0305-10810806 | 108  | 190 $\pm$ 5 |

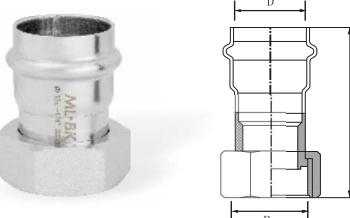
## Female Straight Coupler (Reducer) (ML SF)

|  | Product code                | DxRp        | Ls     |
|-----------------------------------------------------------------------------------|-----------------------------|-------------|--------|
|                                                                                   | OA9199/OA9399-0604-01501206 | 15×1/2"     | 50±3   |
|                                                                                   | OA9199/OA9399-0604-02203406 | 22×3/4"     | 53±3   |
|                                                                                   | OA9199/OA9399-0604-02810006 | 28×1"       | 64.5±3 |
|                                                                                   | OA9199/OA9399-0604-03511406 | 35×1-1/4"   | 72±3   |
|                                                                                   | OA9199/OA9399-0604-04211206 | 42×1-1/2"   | 75±3   |
|                                                                                   | OA9199/OA9399-0604-05420006 | 54×2"       | 91±3   |
|                                                                                   | OA9126/OA9399-0604-06521206 | 76.1×2-1/2" | 104±3  |
|                                                                                   | OA9126/OA9399-0604-08030006 | 88.9×3      | 112±3  |
|                                                                                   | OA9199/OA9399-0604-10840006 | 108×4"      | 159±4  |

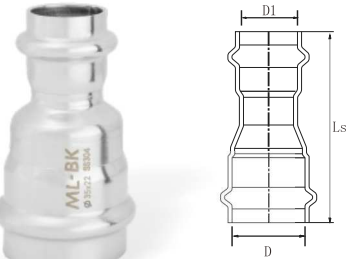
## Male Straight Coupler (Reducer) (ML SM)

|  | Product code                | DxR1      | Ls   |
|-----------------------------------------------------------------------------------|-----------------------------|-----------|------|
|                                                                                   | OA9199/OA9399-0605-01501206 | 15×1/2"   | 56±3 |
|                                                                                   | OA9199/OA9399-0605-02203406 | 22×3/4"   | 58±3 |
|                                                                                   | OA9199/OA9399-0605-02810006 | 28×1"     | 68±3 |
|                                                                                   | OA9199/OA9399-0605-03511406 | 35×1-1/4" | 75±3 |
|                                                                                   | OA9199/OA9399-0605-04211206 | 42×1-1/2" | 80±3 |
|                                                                                   | OA9199/OA9399-0605-05420006 | 54×2"     | 98±3 |

## Union Adapter (ML UN)

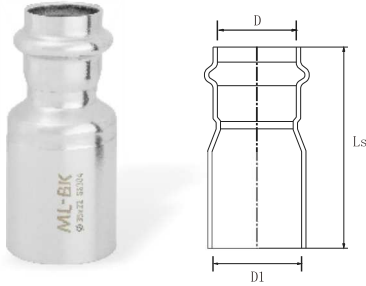
|  | Product code                | DxRp      | Ls     |
|-------------------------------------------------------------------------------------|-----------------------------|-----------|--------|
|                                                                                     | OA9199/OA9399-0612-01501206 | 15×1/2"   | 42±3   |
|                                                                                     | OA9199/OA9399-0612-02203406 | 22×3/4"   | 48.5±3 |
|                                                                                     | OA9199/OA9399-0612-02810006 | 28×1"     | 53.5±3 |
|                                                                                     | OA9199/OA9399-0612-03511406 | 35×1-1/4" | 62±3   |
|                                                                                     | OA9199/OA9399-0612-04211206 | 42×1-1/2" | 65±3   |
|                                                                                     | OA9199/OA9399-0612-05420006 | 54×2"     | 74±3   |

## Reducing Coupling (ML SR)

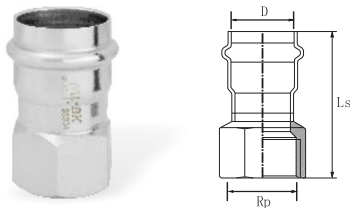
|  | Product code                | DxD1      | Ls     |
|-------------------------------------------------------------------------------------|-----------------------------|-----------|--------|
|                                                                                     | OA9199/OA9399-0302-02201506 | 22×15     | 69±5   |
|                                                                                     | OA9199/OA9399-0302-02801506 | 28×15     | 76.5±4 |
|                                                                                     | OA9199/OA9399-0302-02802206 | 28×22     | 65±4   |
|                                                                                     | OA9199/OA9399-0302-03501506 | 35×15     | 83.5±5 |
|                                                                                     | OA9199/OA9399-0302-03502206 | 35×22     | 81±5   |
|                                                                                     | OA9199/OA9399-0302-03502806 | 35×28     | 74±4   |
|                                                                                     | OA9199/OA9399-0302-04202806 | 42×28     | 90±5   |
|                                                                                     | OA9199/OA9399-0302-04203506 | 42×35     | 83±4   |
|                                                                                     | OA9199/OA9399-0302-05402806 | 54×28     | 101±5  |
|                                                                                     | OA9199/OA9399-0302-05403506 | 54×35     | 108±5  |
|                                                                                     | OA9199/OA9399-0302-05404206 | 54×42     | 142±4  |
|                                                                                     | OA9199/OA9399-0302-07604206 | 76.1×42   | 157±5  |
|                                                                                     | OA9199/OA9399-0302-07605406 | 76.1×54   | 166±5  |
|                                                                                     | OA9199/OA9399-0302-08804206 | 88.9×42   | 157±5  |
|                                                                                     | OA9199/OA9399-0302-08805406 | 88.9×54   | 160±5  |
|                                                                                     | OA9126/OA9399-0302-08806506 | 88.9×76.1 | 191±5  |
|                                                                                     | OA9199/OA9399-0302-10805406 | 108×54    | 178±5  |
|                                                                                     | OA9199/OA9399-0302-10807606 | 108×76.1  | 208±5  |
|                                                                                     | OA9199/OA9399-0302-10808806 | 108×88.9  | 196±5  |



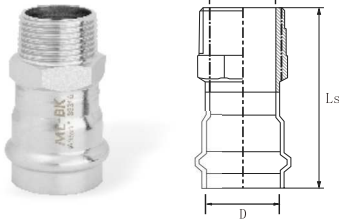
## Reducer with Plain End (ML SRP)

|  | Product code                | DxD1      | Ls    |
|-----------------------------------------------------------------------------------|-----------------------------|-----------|-------|
|                                                                                   | OC9128/OC9399-0302-02201506 | 22x15     | 70±4  |
|                                                                                   | OC9128/OC9399-0302-02801506 | 28x15     | 77±4  |
|                                                                                   | OC9128/OC9399-0302-02802206 | 28x22     | 66±4  |
|                                                                                   | OC9128/OC9399-0302-03501506 | 35x15     | 83±4  |
|                                                                                   | OC9128/OC9399-0302-03502206 | 35x22     | 81±4  |
|                                                                                   | OC9128/OC9399-0302-03502806 | 35x28     | 74±4  |
|                                                                                   | OC9128/OC9399-0302-04202206 | 42x22     | 87±4  |
|                                                                                   | OC9128/OC9399-0302-04202806 | 42x28     | 90±4  |
|                                                                                   | OC9128/OC9399-0302-04203506 | 42x35     | 83±4  |
|                                                                                   | OC9128/OC9399-0302-05402206 | 54x22     | 97±4  |
|                                                                                   | OC9128/OC9399-0302-05402806 | 54x28     | 101±4 |
|                                                                                   | OC9128/OC9399-0302-05403506 | 54x35     | 108±4 |
|                                                                                   | OC9128/OC9399-0302-05404206 | 54x42     | 142±4 |
|                                                                                   | OC9128/OC9399-0302-07905406 | 76.1x54   | 165±4 |
|                                                                                   | OC9128/OC9399-0302-08805406 | 88.9x54   | 159±4 |
|                                                                                   | OC9128/OC9399-0302-08806506 | 88.9x76.1 | 191±4 |
|                                                                                   | OC9128/OC9399-0302-10805406 | 108x54    | 178±4 |
|                                                                                   | OC9128/OC9399-0302-10806506 | 108x76.1  | 208±4 |
|                                                                                   | OC9128/OC9399-0302-10808006 | 108x88.9  | 203±4 |

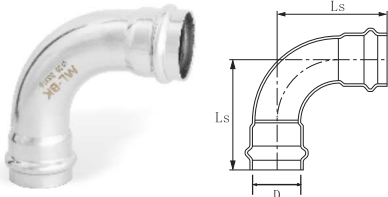
## Female Straight Coupler (ML SF)

|  | Product code                | DxRp      | Ls     |
|-------------------------------------------------------------------------------------|-----------------------------|-----------|--------|
|                                                                                     | OA9199/OA9399-0604-02201206 | 22×1/2"   | 52±3   |
|                                                                                     | OA9199/OA9399-0604-02803406 | 28×3/4"   | 59±3   |
|                                                                                     | OA9199/OA9399-0604-03510006 | 35×1"     | 69.5±3 |
|                                                                                     | OA9199/OA9399-0604-04211406 | 42×1-1/4" | 75±3   |
|                                                                                     | OA9199/OA9399-0604-05411206 | 54×1-1/2" | 89±3   |

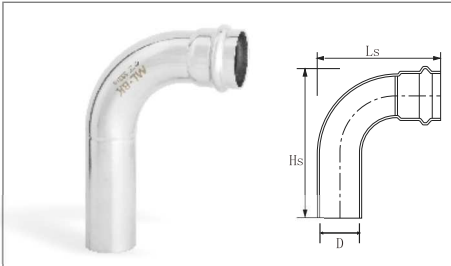
## Male Straight Coupler (ML SM)

|  | Product code                | DxR1      | Ls     |
|-------------------------------------------------------------------------------------|-----------------------------|-----------|--------|
|                                                                                     | OA9199/OA9399-0605-02201206 | 22×1/2"   | 56±3   |
|                                                                                     | OA9199/OA9399-0605-02801206 | 28×1/2"   | 71±3   |
|                                                                                     | OA9199/OA9399-0605-02803406 | 28×3/4"   | 63±3   |
|                                                                                     | OA9199/OA9399-0605-03501206 | 35×1/2"   | 78±3   |
|                                                                                     | OA9199/OA9399-0605-03503406 | 35×3/4"   | 79.5±3 |
|                                                                                     | OA9199/OA9399-0605-03510006 | 35×1"     | 72.5±3 |
|                                                                                     | OA9199/OA9399-0605-04201206 | 42×1/2"   | 84±3   |
|                                                                                     | OA9199/OA9399-0605-04210006 | 42×1"     | 87.5±3 |
|                                                                                     | OA9199/OA9399-0605-04211406 | 42×1-1/4" | 78±3   |
|                                                                                     | OA9199/OA9399-0605-05411206 | 54×1-1/2" | 92±3   |

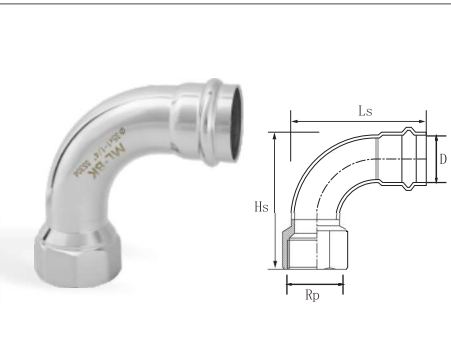
## 90° ELBOW (ML 90E)

|  | Product code                | D    | Ls      |
|-------------------------------------------------------------------------------------|-----------------------------|------|---------|
|                                                                                     | OA9199/OA9399-0201-01501506 | 15   | 60.4±3  |
|                                                                                     | OA9199/OA9399-0201-02202206 | 22   | 76.1±3  |
|                                                                                     | OA9199/OA9399-0201-02802806 | 28   | 90.1±3  |
|                                                                                     | OA9199/OA9399-0201-03503506 | 35   | 107.9±4 |
|                                                                                     | OA9199/OA9399-0201-04204206 | 42   | 130.4±4 |
|                                                                                     | OA9199/OA9399-0201-05405406 | 54   | 157.4±4 |
|                                                                                     | OA9126/OA9399-0201-06506506 | 76.1 | 202.9±5 |
|                                                                                     | OA9126/OA9399-0201-08008006 | 88.9 | 237.6±5 |
|                                                                                     | OA9199/OA9399-0201-10810806 | 108  | 316.2±5 |

## 90° Street ELBOW (ML 90ED) —

|  | Product code                | D    | LS    | HS    |
|-----------------------------------------------------------------------------------|-----------------------------|------|-------|-------|
|                                                                                   | OA9199/OA9399-0202-01501506 | 15   | 60±3  | 64±3  |
|                                                                                   | OA9199/OA9399-0202-02202206 | 22   | 75±3  | 79±3  |
|                                                                                   | OA9199/OA9399-0202-02802806 | 28   | 89±3  | 93±3  |
|                                                                                   | OA9199/OA9399-0202-03503506 | 35   | 107±4 | 149±4 |
|                                                                                   | OA9199/OA9399-0202-04204206 | 42   | 129±4 | 194±4 |
|                                                                                   | OA9199/OA9399-0202-05405406 | 54   | 156±4 | 231±4 |
|                                                                                   | OA9126/OA9399-0202-06506506 | 76.1 | 201±5 | 288±5 |
|                                                                                   | OA9126/OA9399-0202-08008006 | 88.9 | 235±5 | 332±5 |
|                                                                                   | OA9199/OA9399-0202-10810806 | 108  | 314±5 | 415±5 |

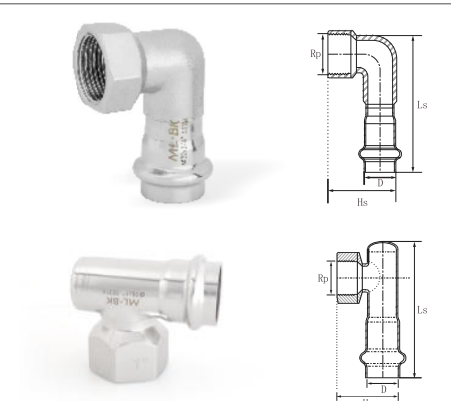
## 90° Bend with Female Thread (ML 90EF) —

|  | Product code                | DxRp      | Ls      | Hs     |
|------------------------------------------------------------------------------------|-----------------------------|-----------|---------|--------|
|                                                                                    | OA9199/OA9399-0602-01501206 | 15×1/2"   | 60±3    | 55±3   |
|                                                                                    | OA9199/OA9399-0602-02203406 | 22×3/4"   | 75±3    | 68±3   |
|                                                                                    | OA9199/OA9399-0602-02810006 | 28×1"     | 89±3    | 87±3   |
|                                                                                    | OA9199/OA9399-0602-03511406 | 35×1-1/4" | 106.5±4 | 104±4  |
|                                                                                    | OA9199/OA9399-0602-04211206 | 42×1-1/2" | 129±4   | 117±4  |
|                                                                                    | OA9199/OA9399-0602-05420006 | 54×2"     | 156±4   | 145±4  |
|                                                                                    | OA9199/OA9399-0602-02201206 | 22×1/2"   | 75±3    | 67.5±4 |
|                                                                                    | OA9199/OA9399-0602-02801206 | 28×1/2"   | 89±3    | 91.5±4 |
|                                                                                    | OA9199/OA9399-0602-02803406 | 28×3/4"   | 89±3    | 81.5±4 |
|                                                                                    | OA9199/OA9399-0602-03501206 | 35×1/2"   | 106.5±4 | 108±4  |
|                                                                                    | OA9199/OA9399-0602-03510006 | 35×1"     | 106.5±4 | 102±4  |
|                                                                                    | OA9199/OA9399-0602-04211406 | 42×1-1/4" | 129±4   | 117±4  |

## 90° Bend with Male Thread (ML 90EM) —

|  | Product code                | DxR1      | Ls      | Hs     |
|-------------------------------------------------------------------------------------|-----------------------------|-----------|---------|--------|
|                                                                                     | OA9199/OA9399-0603-01501206 | 15×1/2"   | 60±3    | 57±3   |
|                                                                                     | OA9199/OA9399-0603-02203406 | 22×3/4"   | 75±3    | 73±3   |
|                                                                                     | OA9199/OA9399-0603-02810006 | 28×1"     | 89±3    | 90±3   |
|                                                                                     | OA9199/OA9399-0603-03511406 | 35×1-1/4" | 106.5±4 | 107±4  |
|                                                                                     | OA9199/OA9399-0603-04211206 | 42×1-1/2" | 129±4   | 122±4  |
|                                                                                     | OA9199/OA9399-0603-05420006 | 54×2"     | 156±4   | 152±4  |
|                                                                                     | OA9199/OA9399-0603-02201206 | 22×1/2"   | 75±3    | 71±4   |
|                                                                                     | OA9199/OA9399-0603-02801206 | 28×1/2"   | 89±3    | 93.5±4 |
|                                                                                     | OA9199/OA9399-0603-02803406 | 28×3/4"   | 89±3    | 85±4   |
|                                                                                     | OA9199/OA9399-0603-03510006 | 35×1"     | 106.5±4 | 105±4  |
|                                                                                     | OA9199/OA9399-0603-04211406 | 42×1-1/4" | 129±4   | 123±4  |
|                                                                                     | OA9199/OA9399-0603-05411206 | 54×1-1/2" | 156±4   | 144±4  |

## 90° Elbow with Female Thread (ML 90EFZ) —

|  | Product code                | DxRp    | Ls   | Hs     |
|-------------------------------------------------------------------------------------|-----------------------------|---------|------|--------|
|                                                                                     | OA9199/OA9399-0601-01501206 | 15×1/2" | 71±3 | 42±2   |
|                                                                                     | OA9199/OA9399-0601-02203406 | 22×3/4" | 67±3 | 46±2   |
|                                                                                     | OA9199/OA9399-0601-02201206 | 22×1/2" | 67±3 | 46±2   |
|                                                                                     | OA9199/OA9399-0601-02810006 | 28×1"   | 71±4 | 31.5±3 |

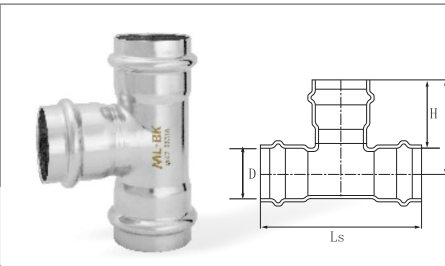
## 45° Obtuse Elbow (ML 45E) —

|  | Product code                | D    | Ls    | L      |
|-----------------------------------------------------------------------------------|-----------------------------|------|-------|--------|
|                                                                                   | 0A9199/OA9399-0203-01501506 | 15   | 39±3  | 60.5±3 |
|                                                                                   | 0A9199/OA9399-0203-02202206 | 22   | 45±3  | 68±3   |
|                                                                                   | 0A9199/OA9399-0203-02802806 | 28   | 51±3  | 76±3   |
|                                                                                   | 0A9199/OA9399-0203-03503506 | 35   | 58±4  | 85±4   |
|                                                                                   | 0A9199/OA9399-0203-04204206 | 42   | 71±4  | 105±4  |
|                                                                                   | 0A9199/OA9399-0203-05405406 | 54   | 84±4  | 123±4  |
|                                                                                   | 0A9126/OA9399-0203-06506506 | 76.1 | 113±5 | 167±5  |
|                                                                                   | 0A9126/OA9399-0203-08008006 | 88.9 | 122±5 | 192±8  |
|                                                                                   | 0A9199/OA9399-0203-10810806 | 108  | 166±5 | 244±8  |

## 45° Obtuse Street Elbow (ML 45ED) —

|  | Product code                | D    | Ls    | Ls1   | L     |
|-----------------------------------------------------------------------------------|-----------------------------|------|-------|-------|-------|
|                                                                                   | 0A9199/OA9399-0401-01501506 | 15   | 39±3  | 41±3  | 62±3  |
|                                                                                   | 0A9199/OA9399-0401-02202206 | 22   | 45±3  | 48±3  | 71±3  |
|                                                                                   | 0A9199/OA9399-0401-02802806 | 28   | 51±3  | 54±3  | 79±3  |
|                                                                                   | 0A9199/OA9399-0401-03503506 | 35   | 58±4  | 61±4  | 108±4 |
|                                                                                   | 0A9199/OA9399-0401-04204206 | 42   | 71±4  | 79±4  | 133±4 |
|                                                                                   | 0A9199/OA9399-0401-05405406 | 54   | 84±4  | 127±4 | 166±4 |
|                                                                                   | 0A9126/OA9399-0401-06506506 | 76.1 | 113±5 | 197±5 | 250±5 |
|                                                                                   | 0A9126/OA9399-0401-08008006 | 88.9 | 122±5 | 214±5 | 267±5 |
|                                                                                   | 0A9199/OA9399-0401-10810806 | 108  | 166±5 | 275±5 | 352±5 |

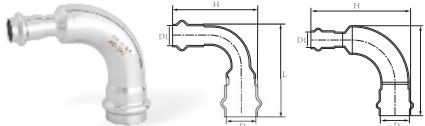
## Equal Tee (ML 3T) —

|  | Product code                | D    | Ls    | Hs      | H      |
|-------------------------------------------------------------------------------------|-----------------------------|------|-------|---------|--------|
|                                                                                     | 0A9199/OA9399-0401-01501506 | 15   | 74±2  | 45±2    | 37.5±2 |
|                                                                                     | 0A9199/OA9399-0401-02202206 | 22   | 80±2  | 47±2    | 36±2   |
|                                                                                     | 0A9199/OA9399-0401-02802806 | 28   | 90±2  | 56±2    | 42±2   |
|                                                                                     | 0A9199/OA9399-0401-03503506 | 35   | 107±3 | 59.5±3  | 42±3   |
|                                                                                     | 0A9199/OA9399-0401-04204206 | 42   | 124±3 | 66.5±3  | 45.5±3 |
|                                                                                     | 0A9199/OA9399-0401-05405406 | 54   | 164±3 | 84.5±3  | 57.5±3 |
|                                                                                     | 0A9126/OA9399-0401-06506506 | 76.1 | 237±5 | 120±5   | 78.5±5 |
|                                                                                     | 0A9126/OA9399-0401-08008006 | 88.9 | 263±5 | 132±5   | 85.5±5 |
|                                                                                     | 0A9199/OA9399-0401-10810806 | 108  | 310±5 | 151.5±5 | 97.5±5 |

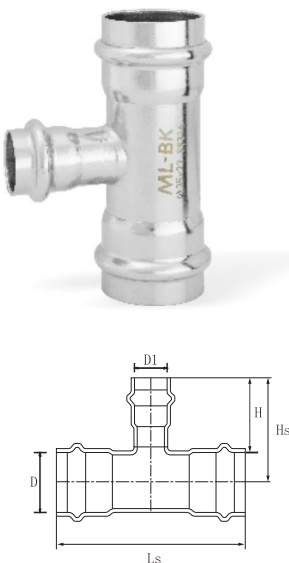
## Tee with Female Branch (ML 3TF) —

|  | Product code                | DxRp      | Ls    | Hs     |
|-------------------------------------------------------------------------------------|-----------------------------|-----------|-------|--------|
|                                                                                     | 0A9199/OA9399-0606-01501206 | 15×1/2"   | 74±2  | 25±2   |
|                                                                                     | 0A9199/OA9399-0606-02203406 | 22×3/4"   | 80±2  | 24±2   |
|                                                                                     | 0A9199/OA9399-0606-02810006 | 28×1"     | 90±2  | 31.5±2 |
|                                                                                     | 0A9199/OA9399-0606-03511406 | 35×1-1/4" | 107±3 | 34±3   |
|                                                                                     | 0A9199/OA9399-0606-04211206 | 42×1-1/2" | 124±3 | 34.5±3 |
|                                                                                     | 0A9199/OA9399-0606-05420006 | 54×2"     | 164±3 | 38.5±3 |
|                                                                                     | 0A9199/OA9399-0606-02201206 | 22×1/2"   | 80±2  | 24±2   |
|                                                                                     | 0A9199/OA9399-0606-02801206 | 28×1/2"   | 90±2  | 25±2   |
|                                                                                     | 0A9199/OA9399-0606-02803406 | 28×3/4"   | 90±2  | 24±2   |
|                                                                                     | 0A9199/OA9399-0606-03501206 | 35×1/2"   | 107±3 | 25±3   |
|                                                                                     | 0A9199/OA9399-0606-03503406 | 35×3/4"   | 107±3 | 24±3   |
|                                                                                     | 0A9199/OA9399-0606-03510006 | 35×1"     | 107±3 | 31.5±3 |
|                                                                                     | 0A9199/OA9399-0606-04201206 | 42×1/2"   | 124±3 | 25±3   |
|                                                                                     | 0A9199/OA9399-0606-04203406 | 42×3/4"   | 124±3 | 24±3   |
|                                                                                     | 0A9199/OA9399-0606-04210006 | 42×1"     | 124±3 | 31.5±3 |
|                                                                                     | 0A9199/OA9399-0606-04211406 | 42×1-1/4" | 124±3 | 34±3   |
|                                                                                     | 0A9199/OA9399-0606-05401206 | 54×1/2"   | 164±3 | 25±3   |
|                                                                                     | 0A9199/OA9399-0606-05403406 | 54×3/4"   | 164±3 | 24±3   |
|                                                                                     | 0A9199/OA9399-0606-05410006 | 54×1"     | 164±3 | 31.5±3 |
|                                                                                     | 0A9199/OA9399-0606-05411206 | 54×1-1/2" | 164±3 | 34.5±3 |
|                                                                                     | 0A9199/OA9399-0606-10820006 | 108×2"    | 310±5 | 38.5±4 |

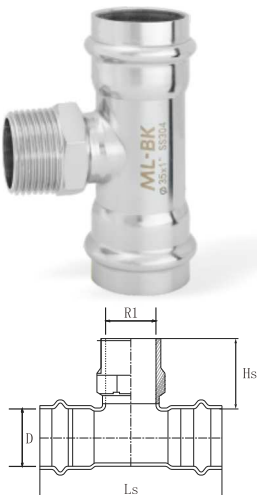
## Reducing 90° Bend (ML 90RE)

|  | Product code                | D1xD  | L    | H    |
|-----------------------------------------------------------------------------------|-----------------------------|-------|------|------|
|                                                                                   | OC9199/OC9399-0220-01502200 | 22x15 | 64±3 | 70±4 |
|                                                                                   | OC9199/OC9399-0220-02801500 | 28x15 | 89±3 | 98±4 |

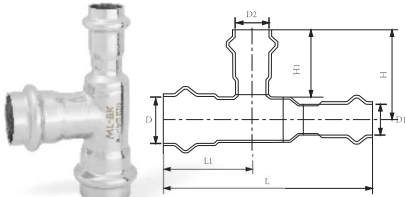
## Reducing Branch Tee (ML 3TR)

|  | Product code                | DxD1      | Ls    | Hs      | H      |
|------------------------------------------------------------------------------------|-----------------------------|-----------|-------|---------|--------|
|                                                                                    | OA9199/OA9399-0402-02201506 | 22×15     | 80±2  | 43±2    | 32±2   |
|                                                                                    | OA9199/OA9399-0402-02801506 | 28×15     | 90±2  | 44.5±2  | 32±2   |
|                                                                                    | OA9199/OA9399-0402-02802206 | 28×22     | 90±2  | 50±3    | 36±3   |
|                                                                                    | OA9199/OA9399-0402-03501506 | 35×15     | 107±2 | 49.5±2  | 32±2   |
|                                                                                    | OA9199/OA9399-0402-03502206 | 35×22     | 107±2 | 53.5±3  | 36±3   |
|                                                                                    | OA9199/OA9399-0402-03502806 | 35×28     | 107±2 | 54.5±3  | 37±3   |
|                                                                                    | OA9199/OA9399-0402-04201506 | 42×15     | 124±3 | 53±2    | 32±2   |
|                                                                                    | OA9199/OA9399-0402-04202206 | 42×22     | 124±3 | 57±3    | 36±3   |
|                                                                                    | OA9199/OA9399-0402-04202806 | 42×28     | 124±3 | 58±3    | 37±3   |
|                                                                                    | OA9199/OA9399-0402-04203506 | 42×35     | 124±3 | 63±3    | 42±3   |
|                                                                                    | OA9199/OA9399-0402-05401506 | 54×15     | 164±3 | 59±2    | 32±2   |
|                                                                                    | OA9199/OA9399-0402-05402206 | 54×22     | 164±3 | 63±3    | 36±3   |
|                                                                                    | OA9199/OA9399-0402-05402806 | 54×28     | 164±3 | 64±3    | 37±3   |
|                                                                                    | OA9199/OA9399-0402-05403506 | 54×35     | 164±3 | 69±4    | 42±4   |
|                                                                                    | OA9199/OA9399-0402-05404206 | 54×42     | 164±3 | 72.5±4  | 45.5±4 |
|                                                                                    | OA9199/OA9399-0402-07604206 | 76.1×42   | 237±5 | 83.6±4  | 45.5±4 |
|                                                                                    | OA9199/OA9399-0402-07605406 | 76.1×54   | 237±5 | 85.6±4  | 47.5±4 |
|                                                                                    | OA9199/OA9399-0402-08805406 | 88.9×54   | 263±5 | 96±4    | 51.5±4 |
|                                                                                    | OA9126/OA9399-0402-08006506 | 88.9×76.1 | 263±5 | 127±5   | 82.5±5 |
|                                                                                    | OA9199/OA9399-0402-10802206 | 108×22    | 310±5 | 90±3    | 36±3   |
|                                                                                    | OA9199/OA9399-0402-10802806 | 108×28    | 310±5 | 91±3    | 37±3   |
|                                                                                    | OA9199/OA9399-0402-10803506 | 108×35    | 310±5 | 96±4    | 42±4   |
|                                                                                    | OA9199/OA9399-0402-10804206 | 108×42    | 310±5 | 99.5±4  | 45.5±4 |
|                                                                                    | OA9199/OA9399-0402-10805406 | 108×54    | 310±5 | 101.5±4 | 47.5±4 |
|                                                                                    | OA9199/OA9399-0402-10807606 | 108×76.1  | 310±5 | 136.5±5 | 82.5±5 |
|                                                                                    | OA9199/OA9399-0402-10808806 | 108×88.9  | 310±5 | 141.5±5 | 87.5±5 |

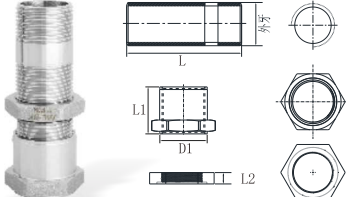
## Tee With Male Branch (ML 3TM)

|  | Product code                | DxR1      | Ls    | Hs     |
|-------------------------------------------------------------------------------------|-----------------------------|-----------|-------|--------|
|                                                                                     | OA9199/OA9399-0607-01501206 | 15×1/2"   | 74±2  | 27±2   |
|                                                                                     | OA9199/OA9399-0607-02203406 | 22×3/4"   | 80±2  | 29±2   |
|                                                                                     | OA9199/OA9399-0607-02810006 | 28×1"     | 90±2  | 35±2   |
|                                                                                     | OA9199/OA9399-0607-03511406 | 35×1-1/4" | 107±3 | 37±3   |
|                                                                                     | OA9199/OA9399-0607-04211206 | 42×1-1/2" | 124±3 | 39.5±3 |
|                                                                                     | OA9199/OA9399-0607-05420006 | 54×2"     | 164±3 | 45.5±3 |
|                                                                                     | OA9199/OA9399-0607-02201206 | 22×1/2"   | 80±2  | 27±2   |
|                                                                                     | OA9199/OA9399-0607-02803406 | 28×3/4"   | 90±2  | 29.5±2 |
|                                                                                     | OA9199/OA9399-0607-03501206 | 35×1/2"   | 107±3 | 27±3   |
|                                                                                     | OA9199/OA9399-0607-03503406 | 35×3/4"   | 107±3 | 29.5±3 |
|                                                                                     | OA9199/OA9399-0607-03510006 | 35×1"     | 107±3 | 35±3   |
|                                                                                     | OA9199/OA9399-0607-04201206 | 42×1/2"   | 124±3 | 27±3   |
|                                                                                     | OA9199/OA9399-0607-04203406 | 42×3/4"   | 124±3 | 29.5±3 |
|                                                                                     | OA9199/OA9399-0607-04210006 | 42×1"     | 124±3 | 35±3   |
|                                                                                     | OA9199/OA9399-0607-04211406 | 42×1-1/4" | 124±3 | 37±3   |
|                                                                                     | OA9199/OA9399-0607-05401206 | 54×1/2"   | 164±3 | 27±3   |
|                                                                                     | OA9199/OA9399-0607-05403406 | 54×3/4"   | 164±3 | 29.5±3 |
|                                                                                     | OA9199/OA9399-0607-05410006 | 54×1"     | 164±3 | 35±3   |
|                                                                                     | OA9199/OA9399-0607-05411406 | 54×1-1/4" | 164±3 | 37±3   |
|                                                                                     | OA9199/OA9399-0607-05411206 | 54×1-1/2" | 164±3 | 39.5±3 |

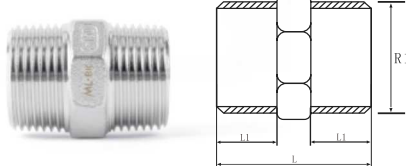
## P-Tee (ML PT)

|  | Product code                | DxD1xD2  | L    | L1   | H    | H1   |
|-----------------------------------------------------------------------------------|-----------------------------|----------|------|------|------|------|
|                                                                                   | OC9199/OC9399-0405-02201515 | 22x15x15 | 94±4 | 40±2 | 43±3 | 32±3 |
|                                                                                   | OC9199/OC9399-0405-02201522 | 22x15x22 | 95±4 | 40±2 | 47±3 | 36±3 |
|                                                                                   | OC9199/OC9399-0405-02802228 | 28x22x28 | 92±4 | 45±2 | 56±3 | 42±3 |

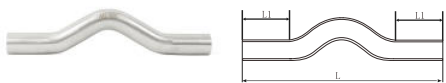
## Stainless Steel Long Screw Connector (ML SS Longscrew)

|  | Product code      | DN | L        | L1      | L2      | D1        | 絲牙     |
|-----------------------------------------------------------------------------------|-------------------|----|----------|---------|---------|-----------|--------|
|                                                                                   | 528-0102/0302-001 | 20 | 87 ±1    | 32.5 ±1 | 8.5 ±1  | 30.3 ±0.5 | 3/4"   |
|                                                                                   | 528-0103/0303-001 | 25 | 98.2 ±1  | 35 ±1   | 9.4 ±1  | 37.2 ±0.5 | 1"     |
|                                                                                   | 528-0104/0304-001 | 32 | 110.4 ±1 | 45.1 ±1 | 10.9 ±1 | 45.7 ±0.5 | 1-1/4" |
|                                                                                   | 528-0105/0305-001 | 40 | 112.6 ±1 | 50 ±1   | 12.4 ±1 | 54.5 ±0.5 | 1-1/2" |
|                                                                                   | 528-0106/0306-001 | 50 | 124.5 ±1 | 60 ±1   | 12 ±1   | 65 ±0.5   | 2"     |

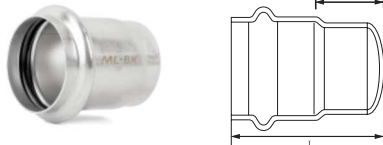
## Hex Nipple

|  | Product code       | R1     | L        | L1        |
|-------------------------------------------------------------------------------------|--------------------|--------|----------|-----------|
|                                                                                     | 0520-0101/0301-012 | 1/2"   | 15±0.1   | 38.5±0.1  |
|                                                                                     | 0520-0101/0301-034 | 3/4"   | 15±0.1   | 38.5±0.1  |
|                                                                                     | 0520-0101/0301-100 | 1"     | 17.5±0.1 | 43.5±0.1  |
|                                                                                     | 0520-0101/0301-114 | 1-1/4" | 20±0.1   | 51±0.1    |
|                                                                                     | 0520-0101/0301-112 | 1-1/2" | 22±0.1   | 55±0.1    |
|                                                                                     | 0520-0101/0301-200 | 2"     | 21±0.1   | 58±0.1    |
|                                                                                     | 0520-0101/0301-212 | 2-1/2" | 23.5±0.1 | 60±0.1    |
|                                                                                     | 0520-0101/0301-300 | 3"     | 27.5±0.1 | 73.5±0.1  |
|                                                                                     | 0520-0101/0301-400 | 4"     | 35±0.1   | 103.5±0.1 |

## Crossover

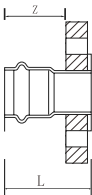
|  | Product code                | DN | L     | L1     |
|-------------------------------------------------------------------------------------|-----------------------------|----|-------|--------|
|                                                                                     | OA9199/OA9399-0205-01501500 | 15 | 190±5 | 30.8±2 |
|                                                                                     | OA9199/OA9399-0205-01801800 | 18 | 210±5 | 30.8±2 |
|                                                                                     | OA9199/OA9399-0205-02202200 | 22 | 210±5 | 30.8±2 |
|                                                                                     | OA9199/OA9399-0205-02802800 | 28 | 250±5 | 50.8±2 |

## Cap (ML V)

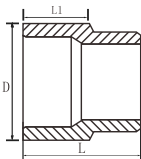
|  | Product code                | DN   | L      | z        |
|-------------------------------------------------------------------------------------|-----------------------------|------|--------|----------|
|                                                                                     | OA9199/OA9399-0306-01501506 | 15   | 40±3   | 17±0.5   |
|                                                                                     | OA9199/OA9399-0306-01801806 | 18   | 36.5±3 | 14.5±0.5 |
|                                                                                     | OA9199/OA9399-0306-02202206 | 22   | 40±3   | 17±0.5   |
|                                                                                     | OA9199/OA9399-0306-02802806 | 28   | 45±3   | 20±0.5   |
|                                                                                     | OA9199/OA9399-0306-03503506 | 35   | 51±3   | 22±0.5   |
|                                                                                     | OA9199/OA9399-0306-04204206 | 42   | 52±3   | 17±0.5   |
|                                                                                     | OA9199/OA9399-0306-05405406 | 54   | 59.5±3 | 14.5±0.5 |
|                                                                                     | OA9199/OA9326-0306-06506506 | 76.1 | 106±4  | 46±0.5   |
|                                                                                     | OA9199/OA9326-0306-08008006 | 88.9 | 120±4  | 50±0.5   |
|                                                                                     | OA9199/OA9399-0306-10810806 | 108  | 111±4  | 29±0.5   |



## Expoxy coat Flange

|   | Product code                | DN   | L     | Z     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------|-------|-------|
|                                                                                                                                                                     | OY9199/OY9399-0702-02802816 | 28   | 61±3  | 47±2  |
|                                                                                                                                                                     | OY9199/OY9399-0702-03503516 | 35   | 66±3  | 52±2  |
|                                                                                                                                                                     | OY9199/OY9399-0702-04204216 | 42   | 82±3  | 66±2  |
|                                                                                                                                                                     | OY9199/OY9399-0702-05405416 | 54   | 89±3  | 71±2  |
|                                                                                                                                                                     | OY9126/OY9399-0702-06506516 | 76.1 | 98±3  | 78±2  |
|                                                                                                                                                                     | OY9126/OY9399-0702-08008016 | 88.9 | 110±4 | 90±2  |
|                                                                                                                                                                     | OY9199/OY9399-0702-10810816 | 108  | 128±4 | 106±2 |

## Transition coupling (ML F/M)

|   | Product code       | DN     | D    | L    | L1     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------|------|------|--------|
|                                                                                                                                                                     | 0520-0103/0303-012 | 1/2"   | 33   | 36±3 | 21±2   |
|                                                                                                                                                                     | 0520-0103/0303-034 | 3/4"   | 35.2 | 35±3 | 20±2   |
|                                                                                                                                                                     | 0520-0103/0303-100 | 1"     | 39.4 | 38±3 | 20±2   |
|                                                                                                                                                                     | 0520-0103/0303-114 | 1-1/4" | 48.1 | 49±3 | 28.5±2 |
|                                                                                                                                                                     | 0520-0103/0303-112 | 1-1/2" | 54.6 | 51±3 | 30±2   |
|                                                                                                                                                                     | 0520-0103/0303-200 | 2"     | 66.2 | 59±3 | 32.4±2 |

## HexBushing

|   | Product code       | DN            | L      | L1   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------|--------|------|
|                                                                                                                                                                         | 0520-0113/0313-001 | 3/4"-1/2"     | 24.5±2 | 9±1  |
|                                                                                                                                                                         | 0520-0113/0313-002 | 1-1/2"        | 27±2   | 10±1 |
|                                                                                                                                                                         | 0520-0113/0313-003 | 1-3/4"        | 27±2   | 9±1  |
|                                                                                                                                                                         | 0520-0113/0313-004 | 1 1/4"-1/2"   | 25±2   | 8±1  |
|                                                                                                                                                                         | 0520-0113/0313-005 | 1 1/4"-3/4"   | 25±2   | 8±1  |
|                                                                                                                                                                         | 0520-00113/313-006 | 1 1/4"-1"     | 25±2   | 7±1  |
|                                                                                                                                                                         | 0520-0113/0313-007 | 1 1/2"-1/2"   | 25±2   | 10±1 |
|                                                                                                                                                                         | 0520-0113/0313-008 | 1 1/2"-3/4"   | 25±2   | 8±1  |
|                                                                                                                                                                         | 0520-0113/0313-009 | 1 1/2"-1"     | 27±2   | 9±1  |
|                                                                                                                                                                         | 0520-0113/0313-010 | 1 1/2"-1 1/4" | 27±2   | 9±1  |
|                                                                                                                                                                         | 0520-0113/0313-011 | 2"-1/2"       | 29±2   | 9±1  |
|                                                                                                                                                                         | 0520-0113/0313-012 | 2"-3/4"       | 30±2   | 9±1  |
|                                                                                                                                                                         | 0520-0113/0313-013 | 2"-1"         | 30±2   | 11±1 |
|                                                                                                                                                                         | 0520-0113/0313-014 | 2"-1 1/4"     | 29±2   | 10±1 |
|                                                                                                                                                                         | 0520-0113/0313-015 | 2-1 1/2"      | 29±2   | 10±1 |
|                                                                                                                                                                         | 0520-0113/0313-016 | 3"-2"         | 35±2   | 13±1 |
|                                                                                                                                                                         | 0520-0113/0313-017 | 4"-3"         | 50±2   | 20±1 |

## Type of Water Manifold

regular type



with both threads at  
each side of the main pipe



two rows of outlets  
with 180°



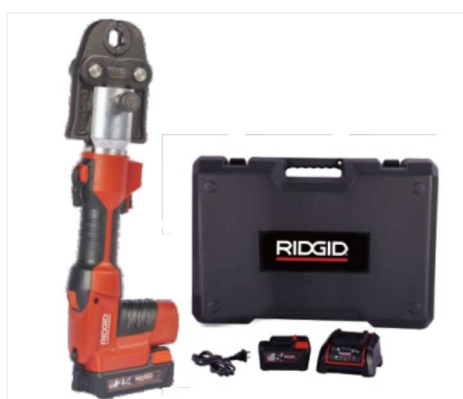
\* Water manifold can be customized



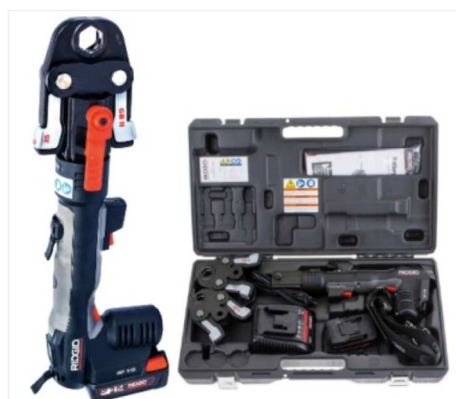
# INTRODUCTION OF PRESS TOOL / ○ ○

## RIDGID prees tool

- High Precision and efficiency , Stable and durable
- Light and labor-saving, Safe and long service life
- 270° rotary tong head to meet various kinds of working condition



RP306



RP318

| MODEL                        | RP306                                                                                             | RP318                                                       |
|------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Rated Pressure               | 32KN (single valve)                                                                               | 32KN (double valves)                                        |
| Weight                       | 2.6kg(excluding battery)<br>3kg (including 2.5Ah battery)                                         | 2.9kg(excluding battery)<br>3.3kg (including 2.5Ah battery) |
| Batery Specificacon          | 18v 2.5Ah Samsung battery cell, 45minute fast charging lithum battery (charging capacity display) |                                                             |
| Crimping Range               | Stainless Steel pipe: OD15~54mm                                                                   |                                                             |
| Crimping Times (Full batery) | 200~400times (according to different pipe diameters)                                              |                                                             |
| Crimping Cycle               | 7 seconds                                                                                         |                                                             |
| LED Light                    | YES                                                                                               |                                                             |
| LED Screen                   | NO                                                                                                | YES                                                         |

## RIDGID prees tool



| MODEL               | RP680                          |
|---------------------|--------------------------------|
| Rated Pressure      | 65KN                           |
| Weight              | 4.98kg(excluding battery)      |
| Batery Specificacon | 18v 2.5Ah Samsung battery cell |
| Crimping Range      | OD76.1~108mm                   |
| Crimping Cycle      | 10-25 seconds                  |

## ROMAX 4000



| The most important facts at a glance      |                        |
|-------------------------------------------|------------------------|
| Voltage                                   | 18 V                   |
| Working area diameter mm                  | 12 - 110 mm            |
| Working area Temperature                  | -10 – 60 °C            |
| Battery number                            | 1 Piece                |
| Battery system                            | Li-Ion / Li-Po battery |
| Battery type                              | Rechargeable           |
| Power plug type                           | Plug type C (CEE 7/16) |
| Press jaw system                          | Press jaw Standard     |
| System battery                            | CAS                    |
| Type battery                              | Li-Ion                 |
| Piston force                              | 32 - 34 kN             |
| Time press cycle with unit of measurement | 5 sek                  |
| Capacity battery with unit of measurement | 4 Ah                   |

- The ROMAX 4000 is an electro-hydraulic, battery powered press machine for system dependant pressing of fittings up to Ø 110 mm with 32-34 kN. CFT technology guarantees a constant thrust during each press cycle. The increased service interval of 40,000 pressings/ 2 years reduces down time and increases productivity.

## HILTI NPR32-22



### Technical Data

|                            |                                                            |
|----------------------------|------------------------------------------------------------|
| Weight                     | 2.4 kg (without battery)                                   |
| Voltage                    | 21.6 V                                                     |
| Working area diameter (mm) | Press range:-Steel: 12-66.7 mm                             |
| Working area Temperature   | -17 °C~60°                                                 |
| Battery system             | CNURON (22V)                                               |
| Power plug type            | Plug type G                                                |
| Crimping Cycle             | Service interval: 15,000 cycles /1 year                    |
| Battery capacity           | Depends on battery size, e.g. B 22-85 battery: around 4 Ah |

## Crimping Die - Jaw



DN10-25  
Integrated Jaw Arm



DN32-50  
Jaw Arm & Ring Die

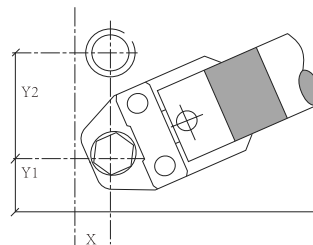
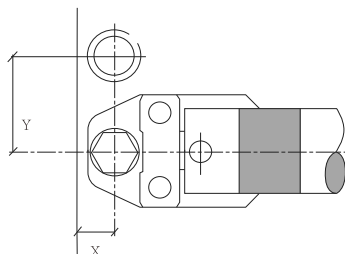


DN65-100  
Jaw Arm & Ring Die  
(For 65-108 pressing equipment)



## Space required for the pressing process

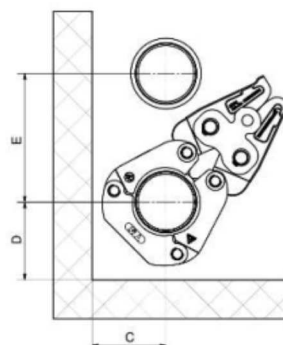
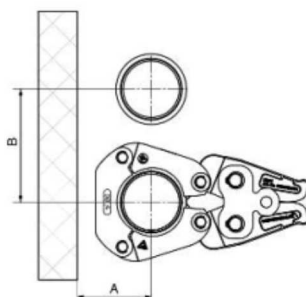
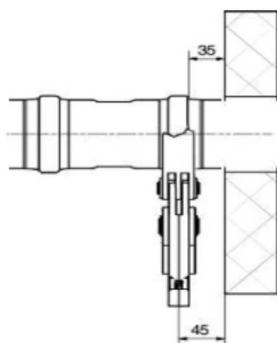
The following minimum clearances are required from structural components to allow operation of tool for press fitting



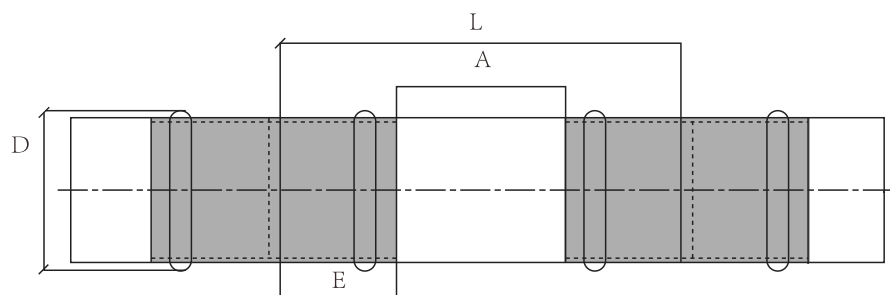
| Space required for the pressing process between fittings |    |     |
|----------------------------------------------------------|----|-----|
| External tube                                            | X  | Y   |
| Size mm                                                  | mm | mm  |
| 15                                                       | 26 | 53  |
| 22                                                       | 26 | 54  |
| 28                                                       | 33 | 69  |
| 35                                                       | 33 | 73  |
| 42                                                       | 75 | 115 |
| 54                                                       | 85 | 120 |

| Space required for the pressing process between fittings |    |    |     |
|----------------------------------------------------------|----|----|-----|
| External tube                                            | X  | Y1 | Y2  |
| Size mm                                                  | mm | mm | mm  |
| 15                                                       | 31 | 45 | 73  |
| 22                                                       | 31 | 45 | 76  |
| 28                                                       | 38 | 55 | 80  |
| 35                                                       | 38 | 55 | 85  |
| 42                                                       | 75 | 75 | 115 |
| 54                                                       | 85 | 85 | 140 |

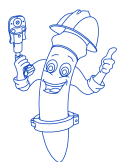
| Size (mm) | Minimum clearance required for the pressing process |     |     |     |     |
|-----------|-----------------------------------------------------|-----|-----|-----|-----|
|           | A                                                   | B   | C   | D   | E   |
| 76.1      | 100                                                 | 145 | 100 | 100 | 165 |
| 88.9      | 115                                                 | 165 | 115 | 120 | 185 |
| 108       | 125                                                 | 185 | 125 | 130 | 210 |



# Insertion depth and minimum distances between pressings



| Minimum distance between pressings |                           |
|------------------------------------|---------------------------|
| Size                               | A - Minimum distance (mm) |
| 15                                 | 30                        |
| 22                                 | 30                        |
| 28                                 | 30                        |
| 35                                 | 50                        |
| 42                                 | 50                        |
| 54                                 | 50                        |
| 76.1                               | 60                        |
| 88.9                               | 80                        |
| 108                                | 80                        |



# OPERATION GUIDE / ○ ○

**ML-BK**  
STAINLESS STEEL PIPE & FITTING

## INSTALLATION PROCEDURE



### 1. Cutting

Confirm the pipe length needed, and cold cut it with approved burr-free cutters. Oxy-acetylene torches and abrasive cut-off wheels are not suitable.



### 2. Deburring

Carefully deburr all pipe cuts inside and outside with a deburrer. Remove any cutting residue thoroughly.



### 3. Assess mark inserton depth

Mark the pipe with a fine-point felt pen where it meets the fitting for verification of full insertion.



### 4. Check the o-ring

Check the positioning of the o-ring. For o-ring inspection and preparation, first check the position and condition of the o-ring within the fitting, then confirm that both the pipe and fittings are free of oil, contaminants, and sundries. If necessary, make sure that the pipe and fittings are clean, no oil and sundries are covered on it.



### 5. Inserting the pipe in fitting

The pipe is inserted in the fitting with a slight rotating motion until it hits the stop. Check the pipe against the felt pen mark to ensure complete insertion. And the insertion should not be forced at an angle, which will easily cause damage to the o-ring.



### 6. Pressing

Position the jaw over the fitting, creating a perfect fit with the internal channel of the jaw around the toroidal seat of the fitting. Make sure that the jaws are perpendicular to the joint, and squeeze the trigger to initiate the press cycle, holding it down for the full duration of press cycle.



# OPERATION GUIDE / ○ ○

**ML-BK**  
STAINLESS STEEL PIPE & FITTING

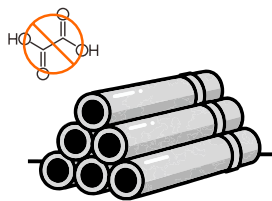
## Notes on Pipeline Installation

### I. Handling and Storage of Products

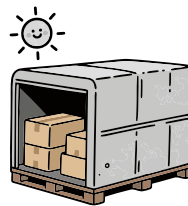
1. Handling: Handle with care; do not throw, drop, roll, or drag the products to avoid deformation and surface damage.
2. Storage: Do not store outdoors, and do not mix with materials like angle iron and steel bars. Avoid direct contact with acidic or alkaline chemicals or sand.



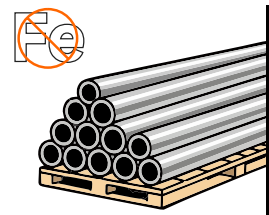
Handle with Care. Do Not Throw



No Chemical Contact.



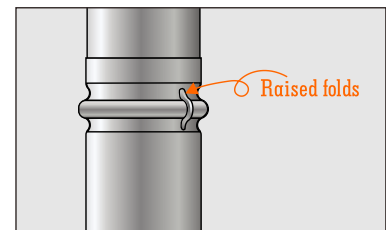
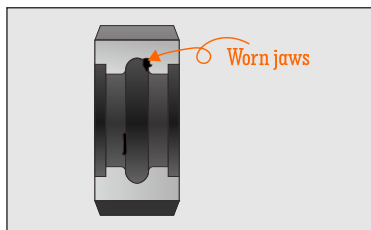
No Outdoor Storage.



Do Not Mix with Other Metals.

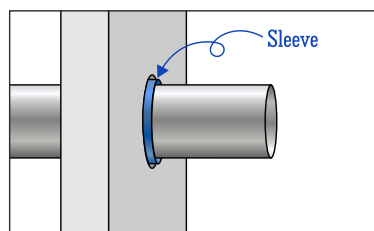
### II. Use of Tools

For double crimp installation, use the manufacturer's recommended jaws as much as possible and regularly lubricate them for maintenance. Construction should be halted and the manufacturer contacted if any issues arise.

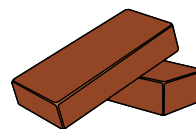


### III. Pipe Penetration through Walls, Concealment, and Insulation

1. When pipes penetrate walls, a sleeve must be installed. Do not use filling materials containing chloride ions.



Prohibit the use  
of chlorine containing fireproof mud



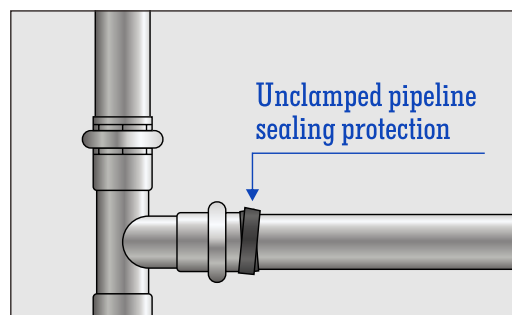
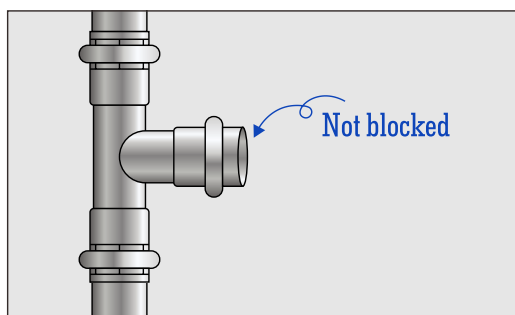
2. For concealed pipes, anti-corrosion treatment is necessary. It is recommended to use plastic-coated pipes or anti-corrosion pipes. At joints, heat shrink sleeves or PE anti-corrosion tape can be used.
3. For pipe insulation, do not use materials or adhesives containing chlorine. PE insulated pipes or polyurethane specialized insulation pipes are recommended.

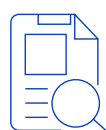
## V. Pipe Supports

1. The spacing of fixed supports for pipes should not exceed 15 meters. Fixed supports should be placed at points of diameter change, branches, connections, and both sides of load-bearing walls and floors that the pipes pass through.
2. When using metal clamps or hangers, a soft material such as plastic strips or rubber should be placed between the metal clamp or hanger and the pipe.

## VI. Pipe Protection

Incomplete pipe sections should be sealed to prevent sand and dust from entering, which could cause leaks.





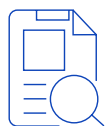
## ENTERPRISE CASE / ○ ○

# 30000<sup>+</sup> ENGINEERING PROJECT CASES

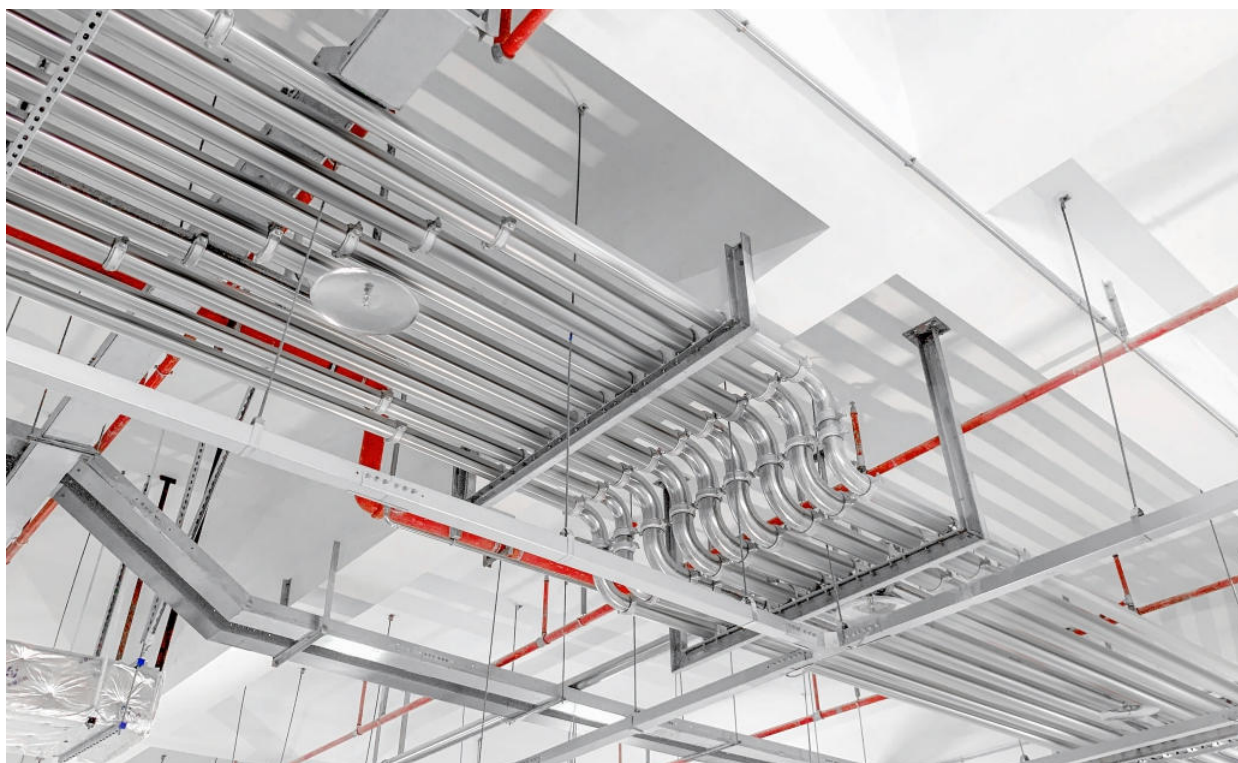


So far, we have provided over 30000 service cases, including the Great Hall of the People in Beijing, the Forbidden City in Beijing, the Tongzhou City Sub Center in Beijing, the Hong Kong Zhuhai Macao Bridge, Shanghai Disneyland, Shenzhen Jingji 100, Guangzhou Chow Tai Fook Financial Center, numerous five-star hotels in China such as Shangri La, Hilton, Kempinski, Wanda, as well as national key projects such as the Olympic Games, Asian Games, and Universiade. We have also established strategic partnerships and shortlisted brand libraries with well-known real estate companies such as Wanda Real Estate, Greentown E-commerce, Poly Real Estate, and Far East Construction, as well as over 100 water management groups/companies nationwide. We will wholeheartedly create quality engineering, boutique engineering, and trustworthy engineering for our customers.





## SOME PROJECTS IN RECENT YEARS / ○○







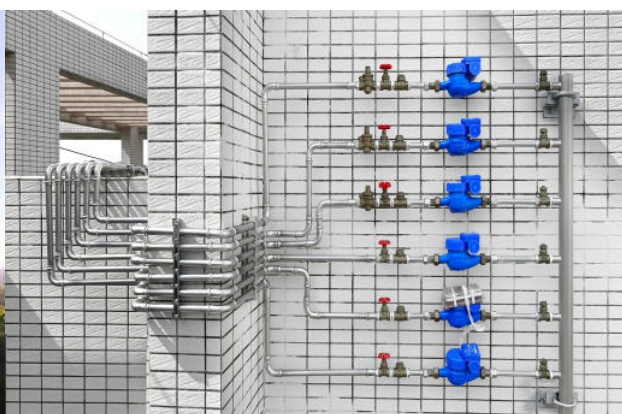




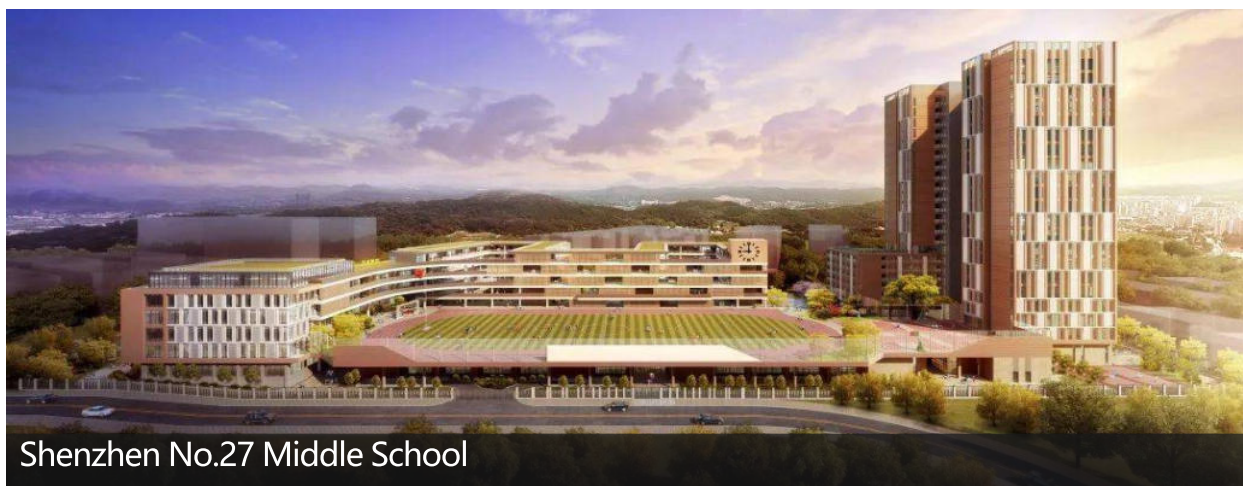
Shenzhen Anju Huayue Longyuan Project



Shenzhen Biwan Yayuan Old Town Renovation Project

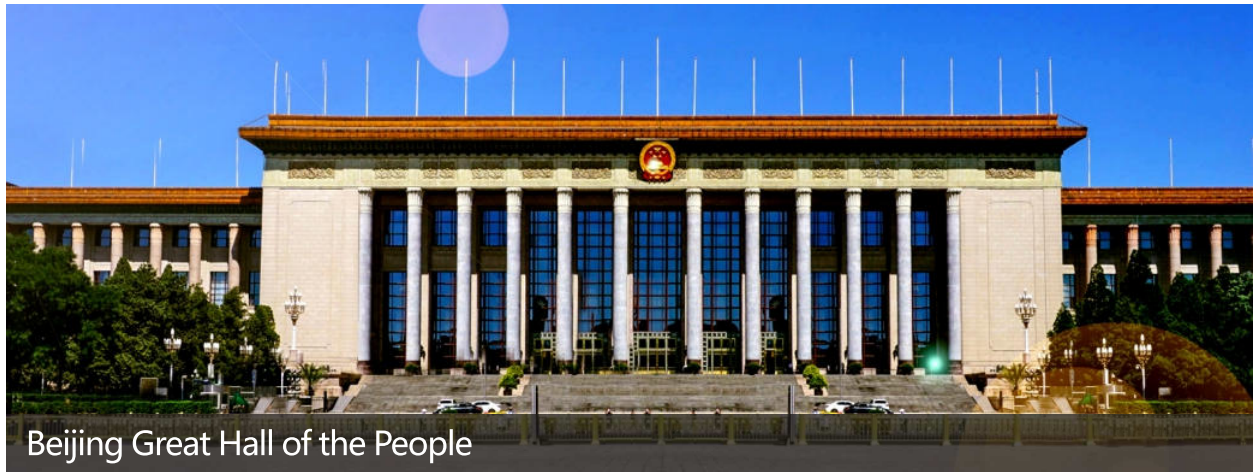


Zhuhai Huafa Four Seasons Yunshan Garden



Shenzhen No.27 Middle School





Beijing Great Hall of the People



Beijing Palace Museum



Taikang Home Beijing Taikang Building



Beijing Twin Center South Tower



Beijing Sub-Center



Beijing 301 Hospital





Northern Medical Center Construction



Beijing Xiaomi Smart Manufacturing Base



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