CITYMULTI®

# Outdoor Unit: 14-TON PUHY-P168YSKMU-U (-BS)

(Consists of One PUHY-P96YKMU-U (-BS), One PUHY-P72YKMU-U (-BS), and One CMY-Y100CBK3 Twinning Kit)

MITSUBISHI ELECTRIC

| Job Name: | |
|---|---|
| System Reference: | Date: |

## OUTDOOR VRF HEAT PUMP SYSTEM FEATURES

- Assembled in USA
- INVERTER-driven compressor
- Air-source, heat pump system
- Long line lengths - for details see Engineering Manual
- Connects to CITY MULTI indoor units
- Controlled via CITY MULTI Controls Network

## UNIT OPTION

□ Standard Model.....PUHY-P168YSKMU-U
□ Sea Coast (BS) Model.....PUHY-P168YSKMU-U-BS

## OPTIONAL PARTS

■ Twinning Kit (required)..... CMY-Y100CBK3
□ Joint Kit.....for details see Pipe Accesories Submittal
□ Header Kit.....for details see Pipe Accesories Submittal
□ Low Ambient Kit .....for details see Low Ambient Kit Submittal
□ Snow/Hail Guards Kit.....for details see Snow/Hail Guards Kit Submittal

| Specifications | | System | Module 1 | Module 2 |
|---|---|---|---|---|
| Unit Type | | PUHY-P168YSKMU-U (-BS) | PUHY-P96YKMU-U (-BS) | PUHY-P72YKMU-U (-BS) |
| Nominal Cooling Capacity (460V) | Btu/h | 168,000 | 96,000 | 72,000 |
| Nominal Heating Capacity (460V) | Btu/h | 188,000 | 108,000 | 80,000 |
| Operating Temperature Range *1 | Cooling (Outdoor) *2 | Refer to Module Data | 23~115° F (-5~46° C) DB | |
| | Heating (Outdoor) | | -13~60° F (-25~15.5° C) WB | |
| External Dimensions (H x W x D) | In.<br>mm | Refer to Module Data | 64-31/32 x 48-1/16 x 29-5/32<br>1,650 x 1,220 x 740 | 64-31/32 x 36-1/4 x 29-5/32<br>1,650 x 920 x 740 |
| Net Weight | Lbs. / kg | 1,021 (463) | 558 (253) | 463 (210) |
| External Finish | | Refer to Module Data | Pre-coated galvanized steel sheet | |
| Electrical Power Requirements | Voltage, Phase, Hertz | Refer to Module Data** | 460V, 3-Phase, 60Hz | |
| Minimum Circuit Ampacity (MCA) | A | Refer to Module Data** | 15 | 12 |
| Maximum Fuse Size | A | Refer to Module Data** | 20 | 15 |
| *Piping Diameter* | | | | |
| From Twinning Kit to First Joint or Header (Brazed) (In. / mm) | Liquid (High Pressure) | 5/8 (15.88) Brazed | Refer to System Data | |
| | Gas (Low Pressure) | 1-1/8 (28.58) Brazed | | |
| Max. Total Refrigerant Line Length | Ft. | 3,280 | Refer to System Data | |
| Max. Refrigerant Line Length (Between ODU & IDU) | Ft. | 541 | | |
| Max. Control Wiring Length | Ft. | 1,650 | | |
| Indoor Unit | Total Capacity | 50~130% of ODUs | Refer to System Data | |
| | Model / Quantity | P06~P96/1~36 | Refer to System Data | |
| Sound Pressure Level | dB(A) | 61 | Refer to System Data | |
| *Fan* | | | | |
| Type x Quantity | | Refer to Module Data | Propeller fan x 1 | Propeller fan x 1 |
| Airflow Rate | CFM | | 6,200 | 6,200 |
| External Static Pressure | In. WG (Pa) | Refer to Module Data | Selectable; 0, 0.12 or 0.24"WG; factory set to 0"W.G. | |
| Compressor Operating Range | | 6% to 100% | Refer to System Data | |
| Compressor Type x Quantity | | Refer to Module Data | Inverter-driven Scroll Hermetic x 1 | Inverter-driven Scroll Hermetic x 1 |
| Refrigerant | | Refer to Module Data | R410A; 25 lbs. + 6 oz. (11.5 kg) | R410A; 19 lbs. + 13 oz. (9.0 kg) |
| Protection Devices | High Pressure | Refer to Module Data | High pressure sensor, High pressure switch at 4.15 MPa (601 psi) | High pressure sensor, High pressure switch at 4.15 MPa (601 psi) |
| | Inverter Circuit (Comp. / Fan) | | Over-current protection | Over-current protection |
| | Fan Motor | | Thermal switch | Thermal switch |
| AHRI Ratings (Ducted/Non-Ducted) | EER | 12.6 / 12.9 | Refer to System Data | |
| | IEER | 19.6 / 19.7 | | |
| | COP | 3.78 / 3.83 | | |

**Blue Fin Anti-corrosion Protection:** Cellulose- and polyurethane-resin coating treatment applied to condenser coil that protects it from air contaminants
**Standard:** ≥1µm thick; Salt Spray Test Method - no unusual rust development to 480 hours.
**Sea Coast (BS):** ≥1µm thick; Salt Spray Test Method - no unusual rust development to 960 hours.

**NOTES:**

*1. When applying product below -4° F, consult your design engineer for cold climate application best practices, including the use of a backup source for heating.
*2. For details on extended cooling operation range down to -10° F DB, see Low Ambient Kit Submittal.

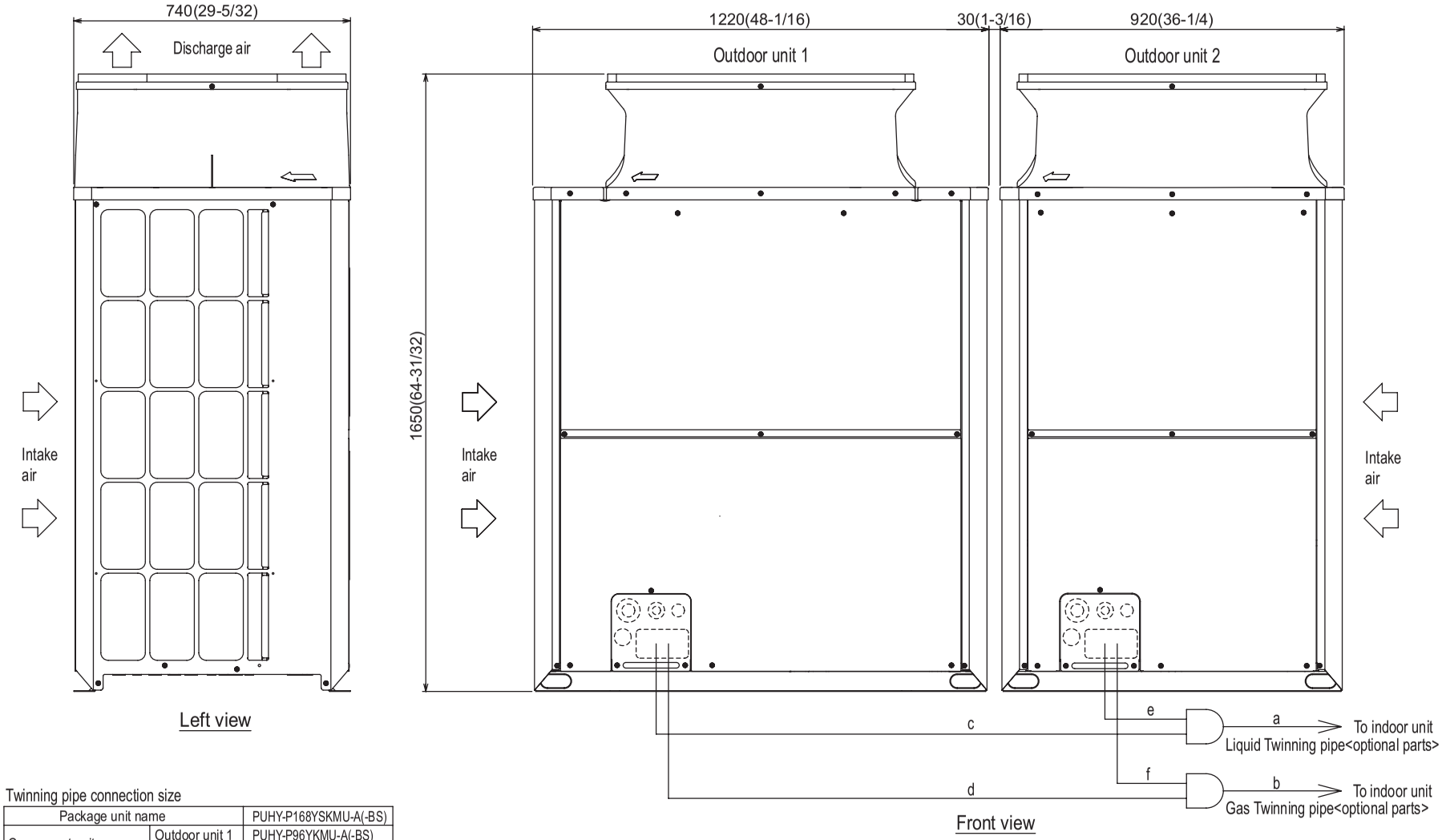
** Each individual module requires a separate electrical connection. Refer to electrical data for each individual module.

Specifications are subject to change without notice.

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# Outdoor Unit: PUHY-P168YSKMU-U (-BS) – DIMENSIONS




Unit : mm(in.)

Twinning pipe connection size

| Package unit name | | | PUHY-P168YSKMU-A(-BS) |
|---|---|---|---|
| Component unit name | Outdoor unit 1 | | PUHY-P96YKMU-A(-BS) |
| | Outdoor unit 2 | | PUHY-P72YKMU-A(-BS) |
| Outdoor Twinning Kit(optional parts) | | | CMY-Y100CBK3 |
| Indoor unit~Twinning pipe | Liquid | a | ø15.88(5/8) |
| | Gas | b | ø28.58(1-1/8) |

| | Unit model | Liquid | Gas |
|---|---|---|---|
| | | c or e | d or f |
| Twinning pipe~Outdoor unit | P72 | ø9.52(3/8) | ø22.2(7/8) |
| | P96 | ø9.52(3/8) | ø22.2(7/8) |

Note 1.Connect the pipes as shown in the figure above. Refer to the table above for the pipe size.
2.Twinning pipes should not be tilted more than 15 degrees from the horizontal plane.
Be sure to see the Installation Manual for details of Twinning pipe installation.
3.The pipe section before the Twinning pipe (sections "a" and "b" in the figure) must have at least 500mm(19-11/16) of straight section (*including the straight pipe that is supplied with the Twinning pipe).
4.Only use the Twinning pipe by Mitsubishi (optional parts).

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# Model: PUHY-P96YKMU-U (-BS) – DIMENSIONS

Unit : mm(in.)

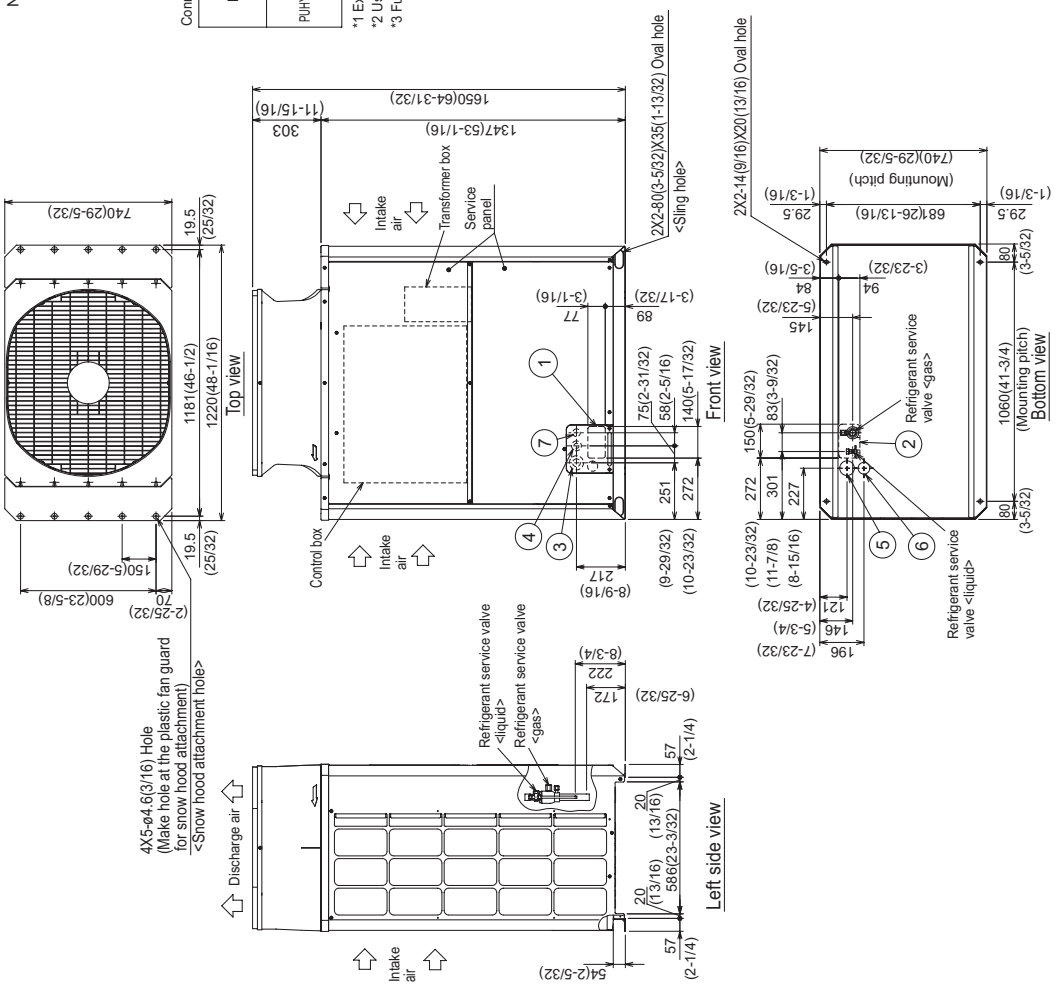
Note1.Please refer to the engineering manual for information regarding necessary spacing around the unit and foundation work. Outdoor unit must be mounted at least 12" off the ground or 12" above the highest average snow depth, whichever is greater.
2.At brazing of pipes,wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C(248°F).

Connecting pipe specifications

| Model | Diameter | | | |
|---|---|---|---|---|
| | Refrigerant pipe | | Service valve | |
| | Liquid | Gas | Liquid | Gas |
| PUHY-P96YKMU | ø9.52 Brazed (3/8) *1<br>(ø12.7 Brazed) (1/2) *2 *3 | ø22.2 Brazed (7/8) *2 | ø9.52 (3/8) | ø28.58 (1-1/8) |

*1 Expand the on-site piping and connect to the refrigerant service valve piping.
*2 Use the pipe joint(field supply) and connect to the refrigerant service valve piping.
*3 Furthest piping length (OU from IU)≦90m(295ft)

| NO. | Usage | | Specifications |
|---|---|---|---|
| ① | For pipes | Front through hole | 140 × 77 Knockout hole (5-17/32) (3-1/16) |
| ② | | Bottom through hole | 150 × 94 Knockout hole (5-29/32) (3-23/32) |
| ③ | For wires | Front through hole | ø62.7 or ø34.5 Knockout hole (2-15/32) (1-3/8) |
| ④ | | Front through hole | ø43.7 or ø22.2 Knockout hole (1-3/4) (7/8) |
| ⑤ | | Bottom through hole | ø65 Knockout hole (2-9/16) |
| ⑥ | | Bottom through hole | ø52 Knockout hole (2-1/16) |
| ⑦ | For transmission cables | Front through hole | ø34 Knockout hole (1-11/32) |



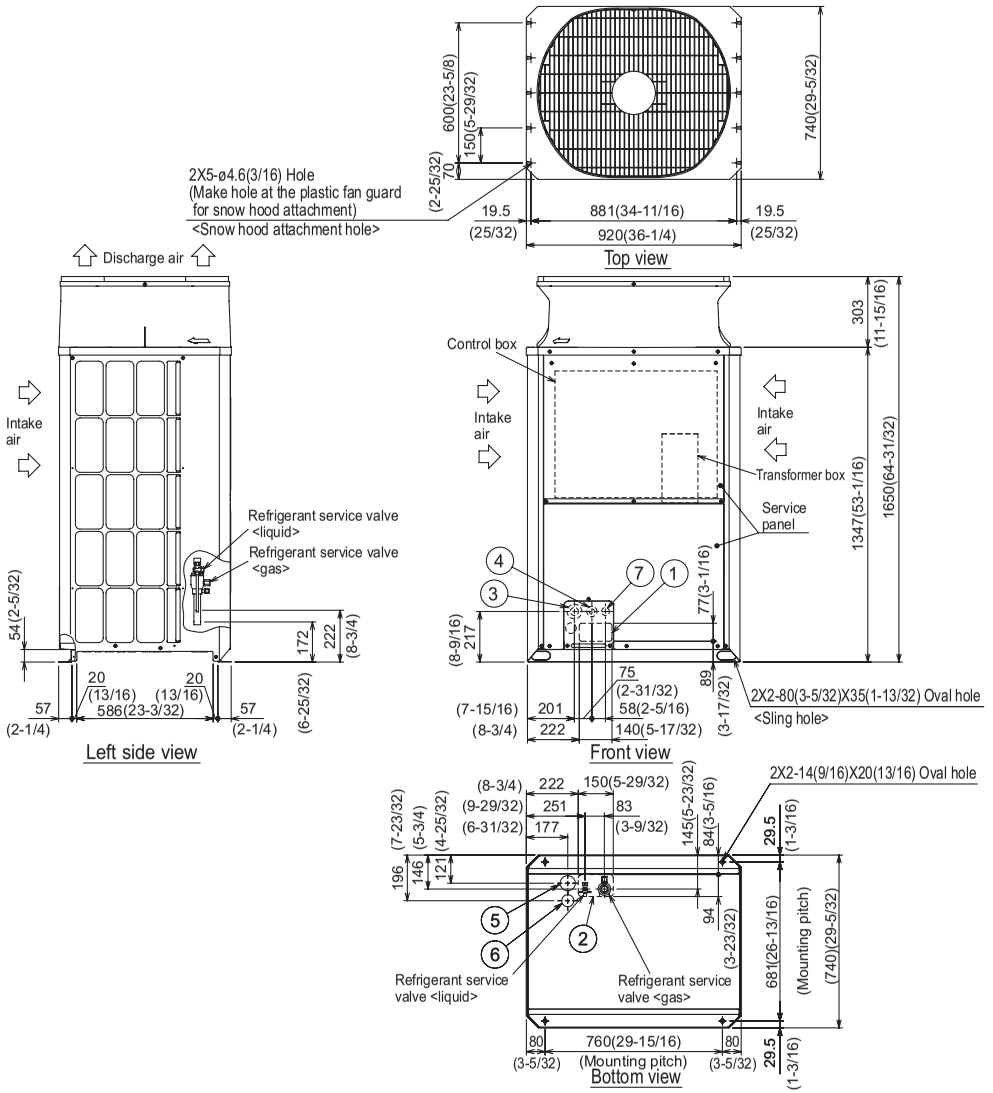

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# Model: PUHY-P72YKMU-U (-BS) – DIMENSIONS

Unit : mm(in.)




Note1. Please refer to the engineering manual for information regarding necessary spacing around the unit and foundation work. Outdoor unit must be mounted at least 12" off the ground or 12" above the highest average snow depth, whichever is greater.

2. At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C(248°F).

Connecting pipe specifications

| Model | Diameter | | | |
|---|---|---|---|---|
| | Refrigerant pipe | | Service valve | |
| | Liquid | Gas | Liquid | Gas |
| PUHY-P72YKMU | ø9.52 Brazed (3/8) *1 | ø22.2 Brazed (7/8) *2 | ø9.52 (3/8) | ø28.58 (1-1/8) |

*1 Expand the on-site piping and connect to the refrigerant service valve piping.
*2 Use the pipe joint(field supply) and connect to the refrigerant service valve piping.

| NO. | Usage | | Specifications |
|---|---|---|---|
| ① | For pipes | Front through hole | 140 × 77 Knockout hole (5-17/32)(3-1/16) |
| ② | | Bottom through hole | 150 × 94 Knockout hole (5-29/32)(3-23/32) |
| ③ | For wires | Front through hole | ø62.7 or ø34.5 Knockout hole (2-15/32) (1-3/8) |
| ④ | | Front through hole | ø43.7 or ø22.2 Knockout hole (1-3/4) (7/8) |
| ⑤ | | Bottom through hole | ø65 Knockout hole (2-9/16) |
| ⑥ | | Bottom through hole | ø52 Knockout hole (2-1/16) |
| ⑦ | For transmission cables | Front through hole | ø34 Knockout hole (1-11/32) |

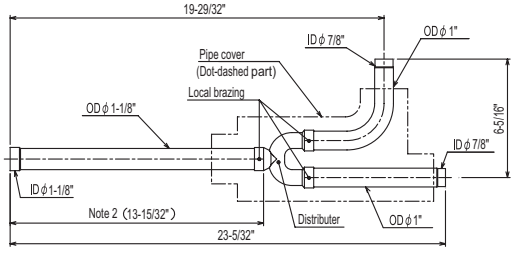
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# Twinning Kit: CMY-Y100CBK3

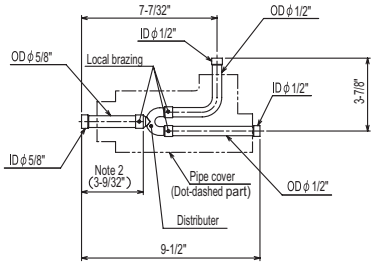
CMY-Y100CBK3

Ref.: CMY_Y100VBK2_EXD_EUDB_SI
in.

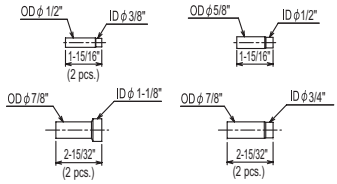
For Gas pipe:




For Liquid pipe:

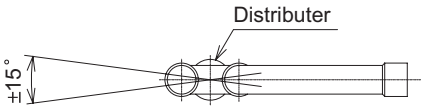



<Reducer(Accessory)>




ID: Inner Diameter OD: Outer Diameter

Note 1. Reference the attitude angle of the branch pipe below the fig.




The angle of the branch pipe for hign pressure is within ±15° against the horizontal plane.

2. Use the attached pipe to braze the port-opening of the distributer.
3. Pipe diameter is indicated by inside diameter.
4. Only use the Twinning pipe by Mitsubishi (optional parts) .


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FORM# PUHY-P168YSKMU-U (-BS) - 201605


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