CITYMULTI®

Model: 14-TON PQHY-P168YSLMU-A

(Consists of One PQHY-P96YLMU-A and One PQHY-P72YLMU-A and One CMY-Y100CBK3 Twinning Kit)

MITSUBISHI ELECTRIC

Job Name:	
System Reference:	Date:



MODULAR WATER-SOURCE VRF HEAT PUMP SYSTEM

ACCESSORIES:

☑ Twinning Kit (required) CMY-Y100CBK3
Joint Kit ..... For details see Piping Accessories Submittal
Header Kit ..... For details see Piping Accessories Submittal

Specifications		System	Module 1	Module 2
Unit Type		PQHY-P168YSLMU-A-(-BS)	PQHY-P96YLMU-A-(-BS)	PQHY-P72YLMU-A-(-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	Cooling (Indoor)	Refer to Module Data	59~75° F (15~24° C) WB	
	Heating (Indoor)		59~81° F (15~27° C) DB	
Operating Water Temperature Range	Cooling		50~113° F (10~45° C)	
	Heating		50~113° F (10~45° C)	
External Dimensions (H x W x D)	In. (mm)	Refer to Module Data	43-5/16 x 34-11/16 x 21-11/16 (1100 x 880 x 550)	43-5/16 x 34-11/16 x 21-11/16 (1100 x 880 x 550)
Net Weight	Lbs. (kg)	816 (370)	408 (185)	408 (185)
External Finish		Refer to Module Data	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**	9	6
Maximum Overcurrent Protection (MOP)**	A	Refer to Module Data**	15	15
Circulating Water (quality must meet regulations)				
Flow Rate	GPM / L/s	Refer to Module Data	25.4 / 1.6	25.4 / 1.6
Pressure Drop	FT / psi		8.0 / 3.48	8.0 / 3.48
Operation Volume Range	GPM / L/m		13.2 - 31.7 / 50 - 120	13.2 - 31.7 / 50 - 120
Maximum Water Pressure	MPa / psi		2 / 290	2 / 290
Water-source Connection for Inlet and Outlet	In.		1-1/2 NPT	1-1/2 NPT
Piping Diameter (Brazed)				
From Twinning Kit to First Joint or Header (In. / mm)	Liquid (High Pressure)	5/8 / 15.88	Refer to System Data	Refer to System Data
	Gas (Low Pressure)	1-1/8 / 28.58	Refer to System Data	Refer to System Data
From Modules to Twinning Kit (In. / mm)	Liquid (High Pressure)	Refer to Module Data	3/8 / 9.52	3/8 / 9.52
	Gas (Low Pressure)	Refer to Module Data	7/8 / 22.20	3/4 / 19.05
Max. Total Refrigerant Line Length	Ft.	1,640	Refer to System Data	Refer to System Data
Max. Refrigerant Line Length (Bet.ODU & IDU)	Ft.	541		
Max. Control Wiring Length	Ft.	1,640		
Indoor Unit	Total Capacity	50~130	Refer to System Data	Refer to System Data
	Model / Quantity	P6~P96 / 1~36	Refer to System Data	Refer to System Data
Sound Pressure Level	dB(A)	50	48	46
Compressor Operating Range		10% - 100%	Refer to System Data	Refer to System Data
Compressor Type x Quantity		Refer to Module Data**	Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1
Refrigerant		Refer to Module Data	R410A x 11 lbs. + 1 oz. (5.0 kg)	R410A x 11 lbs. + 1 oz. (5.0 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		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
AHRI Ratings (Ducted/Non-Ducted)	EER	15 / 17.3	Refer to System Data	
	IEER	23.6 / 25.8	Refer to System Data	
	COP	5.61 / 5.72	Refer to System Data	

NOTES:

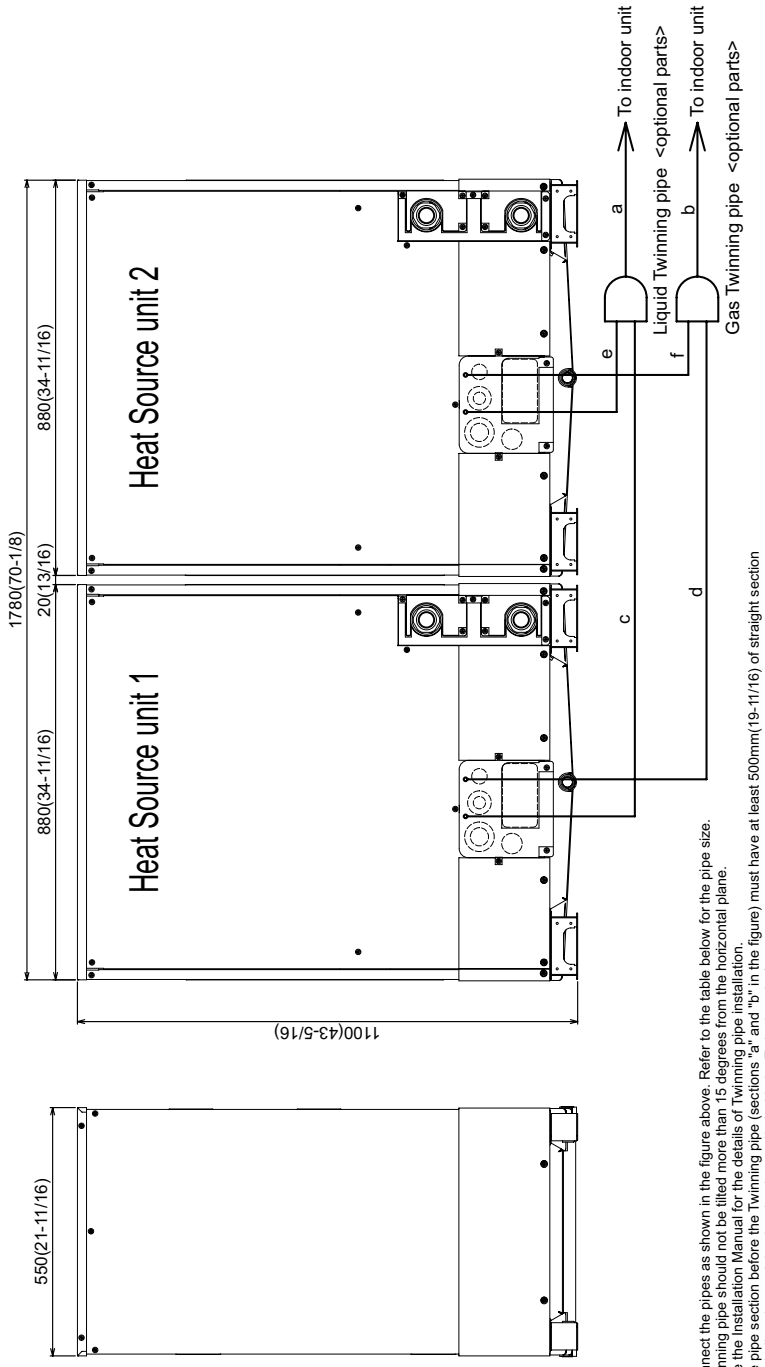
** Each individual module requires a separate electrical connection. Reference electrical data for each individual module.

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Model:PQHY-P168YSLMU-A- DIMENSIONS

Unit : mm(in)



Note 1.Connect the pipes as shown in the figure above. Refer to the table below for the pipe size.
2.Twinning pipe should not be tilted more than 15 degrees from the horizontal plane.
3.See the installation Manual for the details of Twinning pipe installation.
4.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).
5.Only use the Twinning pipe by Mitsubishi (optional parts).

Twinning pipe connection size

Package unit name			PQHY-P144TSLMU-A	PQHY-P168TSLMU-A	PQHY-P192TSLMU-A	PQHY-P216TSLMU-A	PQHY-P240TSLMU-A
Component unit name	Heat Source unit 1	PQHY-P72TLMU-A	PQHY-P96TLMU-A	PQHY-P96TLMU-A	PQHY-P96TLMU-A	PQHY-P120TLMU-A	PQHY-P120TLMU-A
	Heat Source unit 2	PQHY-P72TLMU-A	PQHY-P72TLMU-A	PQHY-P96TLMU-A	PQHY-P96TLMU-A	PQHY-P96TLMU-A	PQHY-P120TLMU-A
Twinning pipe Kit(optional parts)			CMY-Y100CBK3				
Indoor unit–Twinning pipe	Liquid	a	ø12.7(1/2)	ø15.88(5/8)			
	Gas	b	ø28.58(1-1/8)				
Twinning pipe–Heat Source unit 1	Liquid	c	ø9.52(3/8)	ø12.7(1/2)			
	Gas	d	ø19.05(3/4)	ø22.2(7/8)		ø12.7(1/2)	
Twinning pipe–Heat Source unit 2	Liquid	e	ø9.52(3/8)	ø12.7(1/2)			
	Gas	f	ø19.05(3/4)	ø22.2(7/8)			

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Model: PQHY-P96YLMU-A- DIMENSIONS

Note1. Seal around the water piping, the refrigerant piping, the power supply, and the control wiring and plug unused knockout holes with putty, etc., to prevent moisture or dirt from entering cabinet.
Note2. At the time of product shipment, the front side piping serves as the local drainage connection.
When connecting on the rear side, please remove the rear side plug sealing corks, and attach on the front side.
Ensure there is no leak in piping system once connected.
Note3. See Fig. A and Fig. B for service clearances.
Note4. If piping is installed in front of the unit, provide clearances as shown in Fig. A and Fig. B.
Note5. Environmental condition for installation; -20~40°C(DB) (-4~104°F) for indoor installation.
Note6. In case the temperature around the heat source unit has possibility to drop under 0°C(32°F), be careful for the following point to prevent the pipe burst by the water pipe freeze-up.
•Circulate the water all the time even if heat source unit is not in operation and provide glycol for freeze protection.
•Drain the water from inside of the heat source unit when the heat source unit will not operate for a long term.
Note7. Ensure that the drain piping is downward with a pitch of more than 1/100.
Note8. 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).

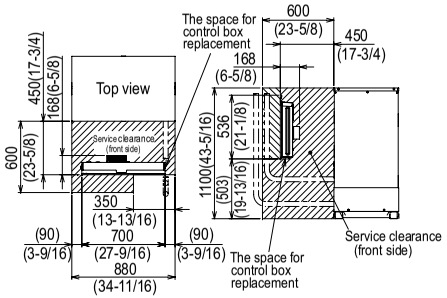


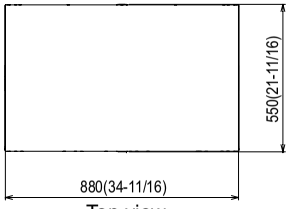
Fig.A

Fig.B

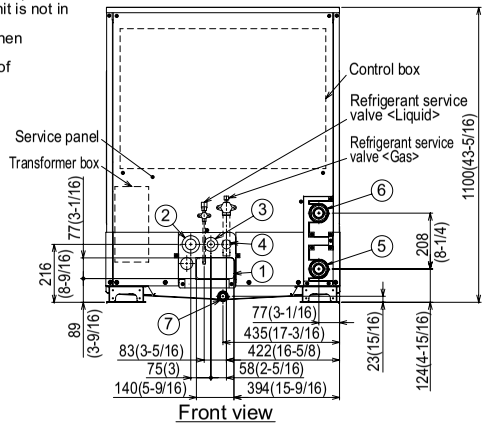
Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
PQHY-P72YLMU-A	ø9.52 Brazed (3/8) *1	ø19.05 Brazed (3/4) *1 *4	ø9.52 (3/8)	ø25.4 (1)
PQHY-P96YLMU-A	ø9.52 Brazed (3/8) *1 (ø12.7 Brazed) (1/2) *2 *4	ø22.2 Brazed (7/8) *1 *4		
PQHY-P120YLMU-A	ø9.52 Brazed (3/8) *1 (ø12.7 Brazed) (1/2) *3 *4			

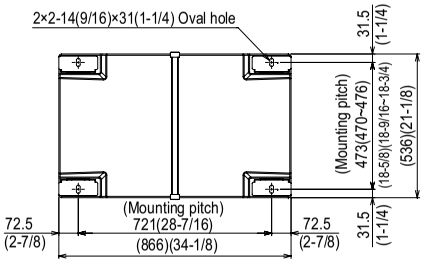
*1. Connect by using the connecting pipes and elbow that are supplied.
*2. Total length ≤ 90m(295ft)
*3. Total length ≤ 40m(131ft)
*4. Use the pipe joint(field supply) and connect to the refrigerant service valve piping.



Top view



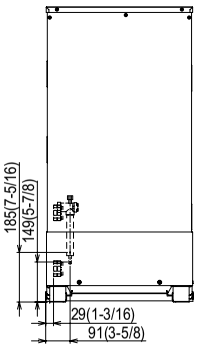
Front view



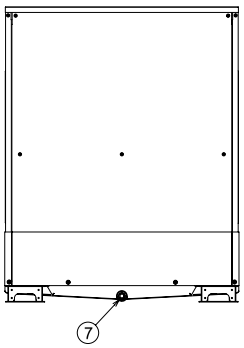
Bottom view

<Accessories>
- Refrigerant (Liquid) conn. pipe ····· 1pc.
  (P72/P96/P120 ; Packaged in the accessory kit)
- Refrigerant (Gas) conn. elbow ····· 1pc.
  (P72/P96/P120 ; Packaged in the accessory kit)
- Water stopper(Liquid,Gas) ····· 1pc. each
  (P72/P96/P120 ; Packaged in the accessory kit)
- Sealing material for water stopper (Liquid,Gas) ····· 1pc. each
  (P72/P96/P120 ; Packaged in the accessory kit)
- Sealing material for field piping (Liquid,Gas) ····· 1pc. each
  (P72/P96/P120 ; Packaged in the accessory kit)
- Sealing material for drain socket ····· 1pc.
  (P72/P96/P120 ; Packaged in the accessory kit)
- Pipe cover for gas ····· 1pc.
  (P72/P96/P120 ; Packaged in the accessory kit)

Top of unit casing not suitable for supporting system modules stacked above - field framing required for stacking modules of additional systems



Right side view



Back view

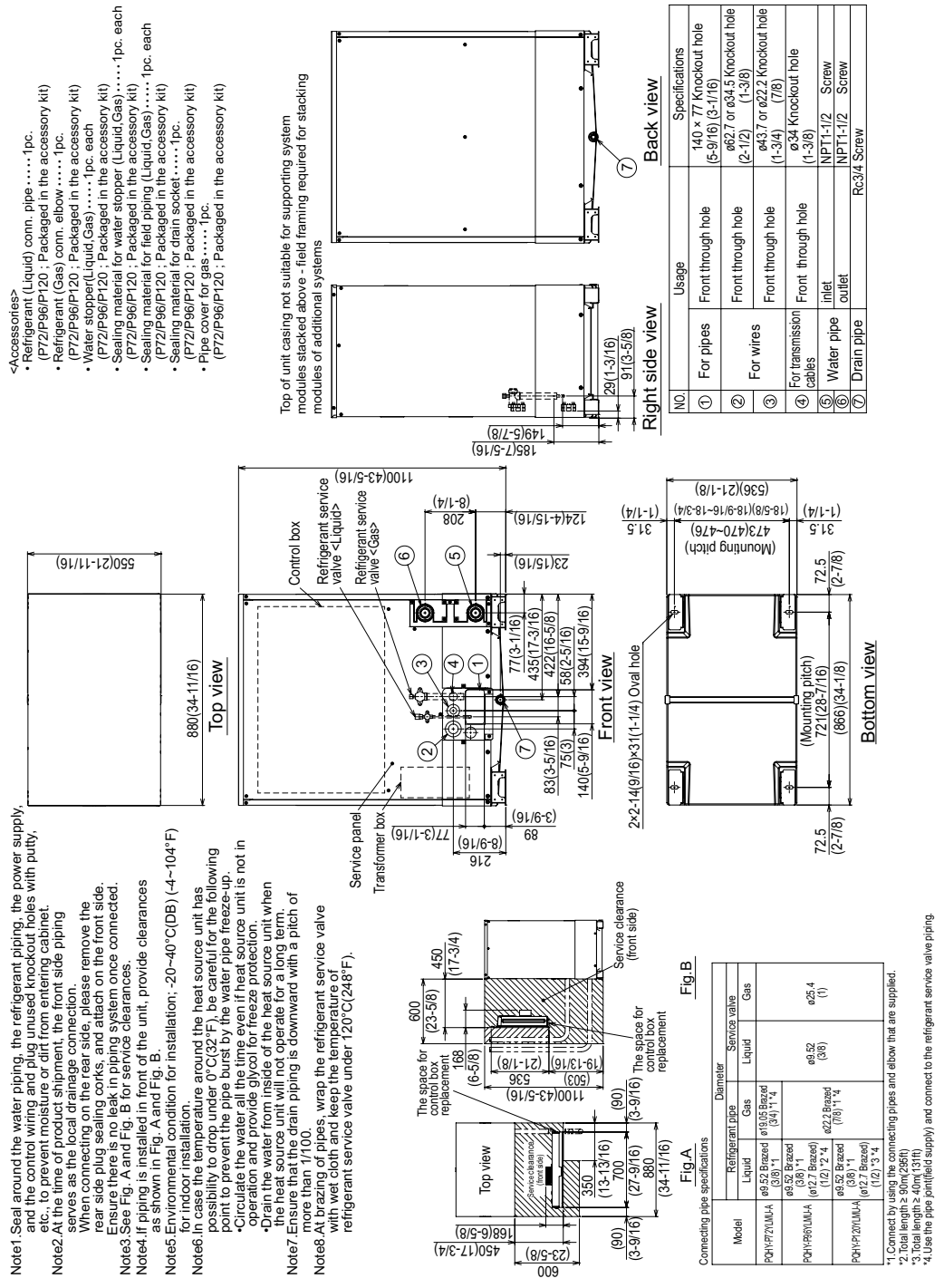
NO.	Usage		Specifications
①	For pipes	Front through hole	140 × 77 Knockout hole (5-9/16) (3-1/16)
②	For wires	Front through hole	ø62.7 or ø34.5 Knockout hole (2-1/2) (1-3/8)
③		Front through hole	ø43.7 or ø22.2 Knockout hole (1-3/4) (7/8)
④	For transmission cables	Front through hole	ø34 Knockout hole (1-3/8)
⑤	Water pipe	inlet	NPT1-1/2 Screw
⑥		outlet	NPT1-1/2 Screw
⑦	Drain pipe	Rc3/4 Screw	

Unit : mm(in)

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Model:PQHY-P72YLMU-A- DIMENSIONS

Unit : mm(in)



NO.	Usage	Specifications
①	For pipes	Front through hole: 140 × 77 Knockout hole (5-9/16) (3-1/16)
②	For wires	Front through hole: ø62.7 or ø34.5 Knockout hole (2-1/2) (1-3/8)
③	For wires	Front through hole: ø43.7 or ø22.2 Knockout hole (1-3/4) (7/8)
④	For transmission cables	Front through hole: ø34 Knockout hole (1-3/8)
⑤	Water pipe	inlet: NPT1-1/2 Screw
⑥	Water pipe	outlet: NPT1-1/2 Screw
⑦	Drain pipe	Rc3/4 Screw

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Note2. At the time of product shipment, the front side piping serves as the local drainage connection.
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Note3. See Fig. A and Fig. B for service clearances.

Note4. If piping is installed in front of the unit, provide clearances as shown in Fig. A and Fig. B.

Note5. Environmental condition for installation: -20~40°C(DB) (-4~104°F) for indoor installation.

Note6. In case the temperature around the heat source unit has possibility to drop under 0°C(32°F), be careful for the following point to prevent the pipe burst by the water pipe freeze-up.
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Note7. Ensure that the drain piping is downward with a pitch of more than 1/100.

Note8. 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).

Fig.A

Fig.B

Connecting pipe specifications

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	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
PQHY-P72YLMU-A	ø9.52 Brazed (3/8) *1	ø19.05 Brazed (3/4) *1 *4	ø9.52 (3/8)	ø25.4 (1)
PQHY-P96YLMU-A	ø9.52 Brazed (3/8) *1 (ø12.7 Brazed) (1/2) *2 *4	ø22.2 Brazed (7/8) *1 *4	ø9.52 (3/8)	ø25.4 (1)
PQHY-P120YLMU-A	ø9.52 Brazed (3/8) *1 (ø12.7 Brazed) (1/2) *3 *4	ø22.2 Brazed (7/8) *1 *4	ø9.52 (3/8)	ø25.4 (1)

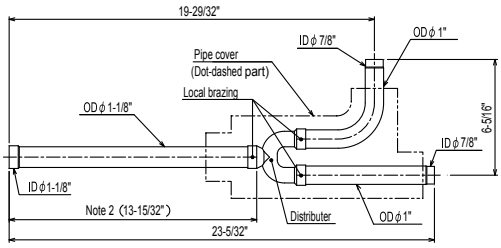
*1. Connect by using the connecting pipes and elbow that are supplied.
*2. Total length ≥ 90m(295ft)
*3. Total length ≥ 40m(131ft)
*4. Use the pipe joint(field supply) and connect to the refrigerant service valve piping.

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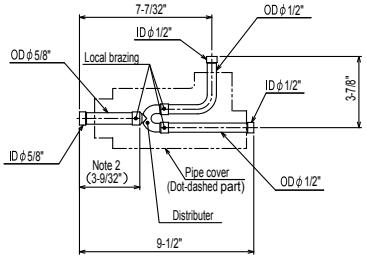
Twinning Kit:CMY-Y100CBK3- DIMENSIONS

Unit: in.

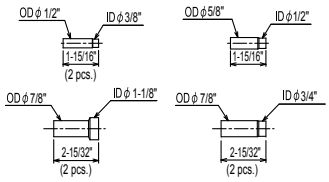
For Gas pipe:



For Liquid pipe:



<Reducer(Accessory)>



ID: Inner Diameter OD: Outer Diameter

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