

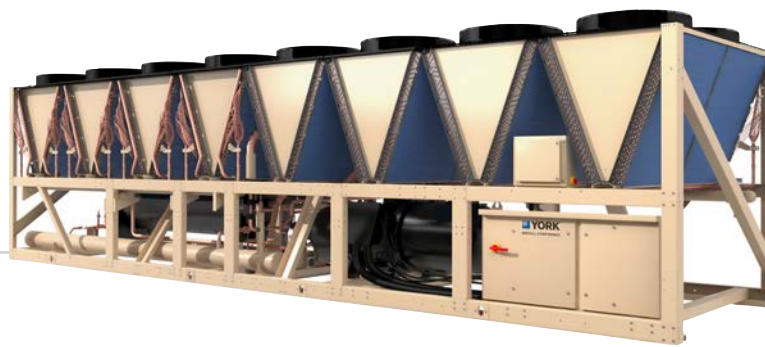


# YORK® YSPA AIR SOURCE SCREW HEAT PUMP

An Innovative Solution for Efficient Comfort



The YORK® YSPA Air Source Screw Heat Pump is designed for central air conditioning and provides both a chilled and hot water source for air-conditioning equipment. The YSPA heat pump operates in cooling mode during the summer and switches to heating mode in winter. It's well-suited for shopping malls, office buildings, hotels, hospitals and any other location where efficient, low-cost heating and cooling are essential.

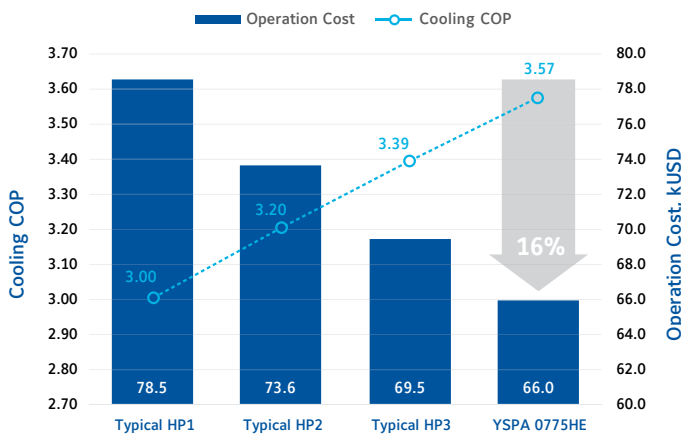


### COST OF OWNERSHIP

The YSPA Air Source Screw Heat Pump makes it easy to lower energy costs. A patented, medium-pressure tank replaces the suction accumulator and liquid receiver, increasing efficiency approximately 3%. A low pressure drop, piston-type 4-way reversing valve contributes another 5% unit energy improvement.

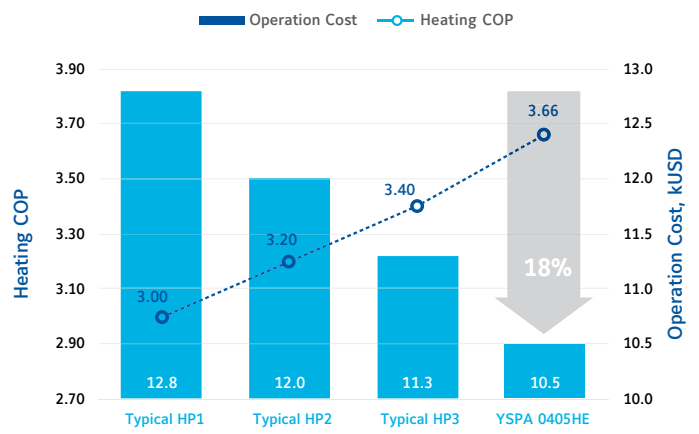
The YSPA has a cooling efficiency of up to 3.57 COP and a heating efficiency of up to 3.66 COP. Compared to traditional air source heat pump units, the YSPA heat pump delivers cost savings of up to 16% in cooling and 18% in heating – shortening the investment payback period significantly.

### COOLING COP AND OPERATING COST



Assumption: 785kW unit, 3000 cooling operating hours per year, 0.10USD/kwh energy rate

### HEATING COP AND OPERATING COST



Assumption: 384kW unit, 1000 heating operating hours per year, 0.10USD/kwh energy rate



## RELIABILITY

The robust design of the YSPA heat pump balances flexibility with dependability. The YSPA uses an industrial-grade, direct-drive screw compressor. The YSPA is designed to provide reliable operation throughout the year. Strict quality control and innovative design ensure minimal maintenance and easy access. The 4-way reversing valve is designed for over 100,000 continuous accelerated cooling/heating switches and defrost cycles – 300% of the typical design lifetime of the product.

The YSPA Air Source Screw Heat Pump features a patented oil flow switch with fewer moving parts than the typical oil-level switch. The patented oil flow switch helps protect the operation of the heat pump and ensures stable operation.

The medium pressure tank acts as a liquid receiver and prevents liquid from slugging the compressor during the start-up and defrost cycles. The medium pressure tank also allows for adjustment of the refrigerant quantity to match various working condition needs.

## PEACE OF MIND

With a wide operating range for heating and cooling operation, the YSPA heat pump operates effectively throughout the year. Hot water fluctuation is a common issue with air source heat pumps. The YSPA minimizes this problem thanks to the Frosting Index (FI). FI helps to identify the right timing, frequency and duration for defrost operation. This also means defrost only occurs when necessary, maintaining a more consistent leaving water temperature.

With a straightforward installation process and compact design, the YSPA is easy to install. And with a design focus on visibility and access to all key maintenance and service components, service time is reduced.

## SUSTAINABILITY

The biggest contributor to CO<sub>2</sub> emissions is energy production from fossil fuels. The efficient operation of the YSPA reduces the amount of energy necessary to power the heat pump, thereby reducing its carbon footprint over its operational lifespan.

| YSPA Model   |                                   | 0520YE | 0630YE | 0770YE | 1050YE | 1150YE |
|--------------|-----------------------------------|--------|--------|--------|--------|--------|
| Cooling Mode | Capacity kW <sup>(1)(3)</sup>     | 516    | 623    | 804    | 1032   | 1139   |
|              | Capacity (tons) <sup>(1)(3)</sup> | 147    | 177    | 229    | 294    | 324    |
|              | Power input kW <sup>(1)(3)</sup>  | 152    | 184    | 237    | 304    | 336    |
|              | COP <sup>(3)</sup>                | 3.39   | 3.39   | 3.39   | 3.39   | 3.39   |
| Heating Mode | Capacity kW <sup>(2)(3)</sup>     | 471    | 574    | 748    | 941    | 1045   |
|              | Power input kW <sup>(2)(3)</sup>  | 148    | 176    | 226    | 296    | 325    |
|              | COP <sup>(3)</sup>                | 3.18   | 3.26   | 3.31   | 3.18   | 3.22   |

| YSPA Model   |                                   | 1260YE | 1300YE | 1400YE | 1540YE |
|--------------|-----------------------------------|--------|--------|--------|--------|
| Cooling Mode | Capacity kW <sup>(1)(3)</sup>     | 1246   | 1320   | 1427   | 1608   |
|              | Capacity (tons) <sup>(1)(3)</sup> | 354    | 375    | 406    | 457    |
|              | Power input kW <sup>(1)(3)</sup>  | 368    | 389    | 421    | 474    |
|              | COP <sup>(3)</sup>                | 3.39   | 3.39   | 3.39   | 3.39   |
| Heating Mode | Capacity kW <sup>(2)(3)</sup>     | 1148   | 1219   | 1322   | 1496   |
|              | Power input kW <sup>(2)(3)</sup>  | 353    | 374    | 402    | 452    |
|              | COP <sup>(3)</sup>                | 3.25   | 3.26   | 3.29   | 3.31   |

| YSPA Model   |                                   | 0405HE | 0525HE | 0635HE | 0775HE | 0930HE | 1060HE |
|--------------|-----------------------------------|--------|--------|--------|--------|--------|--------|
| Cooling Mode | Capacity kW <sup>(1)(3)</sup>     | 400    | 516    | 623    | 785    | 915    | 1032   |
|              | Capacity (tons) <sup>(1)(3)</sup> | 114    | 147    | 177    | 223    | 260    | 294    |
|              | Power input kW <sup>(1)(3)</sup>  | 112    | 148    | 178    | 220    | 260    | 296    |
|              | COP <sup>(3)</sup>                | 3.57   | 3.49   | 3.50   | 3.57   | 3.52   | 3.49   |
| Heating Mode | Capacity kW <sup>(2)(3)</sup>     | 384    | 512    | 588    | 764    | 896    | 1025   |
|              | Power input kW <sup>(2)(3)</sup>  | 105    | 142    | 172    | 215    | 247    | 284    |
|              | COP <sup>(3)</sup>                | 3.66   | 3.61   | 3.42   | 3.55   | 3.63   | 3.61   |

| YSPA Model   |                                   | 1160HE | 1270HE | 1310HE | 1410HE | 1550HE |
|--------------|-----------------------------------|--------|--------|--------|--------|--------|
| Cooling Mode | Capacity kW <sup>(1)(3)</sup>     | 1139   | 1246   | 1301   | 1408   | 1570   |
|              | Capacity (tons) <sup>(1)(3)</sup> | 324    | 354    | 370    | 400    | 447    |
|              | Power input kW <sup>(1)(3)</sup>  | 326    | 356    | 368    | 398    | 440    |
|              | COP <sup>(3)</sup>                | 3.49   | 3.50   | 3.54   | 3.54   | 3.57   |
| Heating Mode | Capacity kW <sup>(2)(3)</sup>     | 1101   | 1177   | 1276   | 1352   | 1528   |
|              | Power input kW <sup>(2)(3)</sup>  | 314    | 345    | 357    | 387    | 431    |
|              | COP <sup>(3)</sup>                | 3.51   | 3.41   | 3.57   | 3.49   | 3.55   |

<sup>1</sup> At 12/7° leaving chilled water and 35°C ambient.

<sup>2</sup> At 40/45° leaving chilled water and 7°C ambient.

<sup>3</sup> The performance is based on GB/T 18430.1 conditions.

## Why install anything but YORK®?

**You want high performance. You expect efficiency. And you need a heat pump that gives you confidence and is backed by the Johnson Controls service team.**

When your reputation is at stake, it's smart to demand nothing less than YORK® technology and service. That's because we provide local service and parts to keep your equipment operating at peak performance year after year. Enjoy the peace of mind knowing that trained service experts and Original Equipment Manufacturer parts are available from Johnson Controls – the largest HVAC service and preventative maintenance organization in the world.



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