

# HVAC-R Robot

## Technical Catalog

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HVAC-R Robot is Proff Installasjon's remotely operated system for visual inspection and task-specific cleaning inside ventilation ducts, exhaust systems and industrial piping. Integrated cameras allow the operator to assess internal conditions and navigate to inaccessible sections. Two robot models combine interchangeable equipment with a broad duct-diameter range.

### MODELS

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HVAC-R Robot C

Ø200–540 mm

HVAC-R Robot X

Ø350–1,350 mm

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# HVAC-R Robot C

## ROUND DUCTS OPERATING RANGE

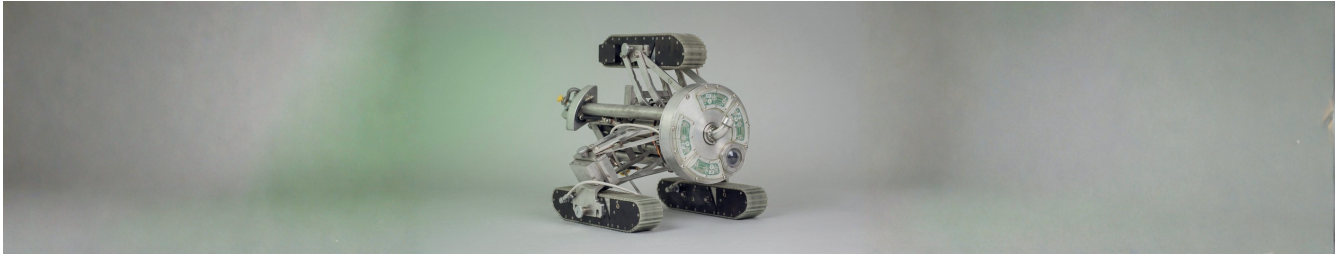
Ø200–540 mm

## MAX. TRACTION

1,200 N

## VERTICAL REACH

30 m



|                                 |                                                                                 |
|---------------------------------|---------------------------------------------------------------------------------|
| Round ducts / basic setup Round | 200–330 mm internal diameter                                                    |
| ducts / extended setup          | 200–540 mm internal diameter                                                    |
| Rectangular ducts / option 1    | Short setup: height 250–340 mm (up to 390 mm with Ext55); min. width 220 mm     |
| Rectangular ducts / option 2    | Long setup: height 340–440 mm (Ext55), up to 490 mm (Ext103); min. width 320 mm |
| Rectangular ducts / option 3    | Low-profile: from 220 mm duct height                                            |
| 1D bend / minimum duct Ø        | 300 mm; suitability depends on tool and bend geometry                           |

## MOBILITY & OPERATION

|                        |         |
|------------------------|---------|
| Maximum travel speed   | 70 mm/s |
| Maximum traction       | 1,200 N |
| force Vertical working | 30 m    |
| reach Robot mass       | 15 kg   |

## CONTROL, CAMERAS & EQUIPMENT

|                      |                                          |
|----------------------|------------------------------------------|
| Camera system        | Front camera + detachable rear HD camera |
| Control cable length | 50 m                                     |
| Electrical input     | 100–240 V AC / 50–60 Hz                  |
| Dry-ice equipment    | Dry-ice nozzle with matching extensions  |

# HVAC-R Robot X

## ROUND DUCTS OPERATING RANGE

Ø350–1,350 mm

## MAX. TRACTION

2,400 N

## VERTICAL REACH

50 m



|                                 |                                                                         |
|---------------------------------|-------------------------------------------------------------------------|
| Round ducts / basic setup Round | 350–710 mm internal diameter                                            |
| ducts / extended setup          | 350–1,350 mm internal diameter                                          |
| Rectangular ducts / option 1    | Standard setup: height 440–760 mm; minimum width 350 mm (extension set) |
| Rectangular ducts / option 2    | Ext160: nominal range 740–1,100 mm; tool clearance depends on geometry  |
| Rectangular ducts / option 3    | Ext320: nominal range 1,080–1,400 mm                                    |
| 1D bend / minimum duct Ø        | 400 mm; suitability depends on tool and bend geometry                   |

## MOBILITY & OPERATION

|                        |         |
|------------------------|---------|
| Maximum travel speed   | 70 mm/s |
| Maximum traction       | 2,400 N |
| force Vertical working | 50 m    |
| reach Robot mass       | 35 kg   |

## CONTROL, CAMERAS & EQUIPMENT

|                      |                                               |
|----------------------|-----------------------------------------------|
| Camera system        | Front camera + integrated rear HD camera      |
| Control cable length | 50 m                                          |
| Electrical input     | 100–240 V AC / 50–60 Hz                       |
| Dry-ice equipment    | 76 mm dry-ice nozzle with quick-change module |

# Attachments & extensions

| ATTACHMENT / MODULE      | HVAC-R ROBOT C                                                   | HVAC-R ROBOT X                                          |
|--------------------------|------------------------------------------------------------------|---------------------------------------------------------|
| Round-duct extensions    | Ext55: Ø300–440 mm<br>Ext103: Ø400–540 mm                        | Ext160: Ø670–1,030 mm<br>Ext320: Ø990–1,350 mm          |
| Rectangular extensions   | Short/long & low-profile kits;<br>from 220 mm duct height        | 440–760 mm height; larger rectangular kits to 1,400 mm  |
| Inspection & measurement | Full HD PTZ camera;<br>10× zoom and laser ovality                | Full HD PTZ / 10× zoom;<br>EMAT wall thickness: 2–25 mm |
| Dry-ice system           | Nozzle with extension fittings;<br>dry-ice blast hoses and reels | 76 mm nozzle, quick-change module; hoses and reels      |
| Rotary brush module      | Round brushes, 100–600 rpm; 6–10 bar operating air               | Round brushes, 100–600 rpm; 6–10 bar operating air      |
| Air / abrasive blasting  | Directed air up to 15 bar; abrasive nozzle equipment             | Directed air up to 15 bar; abrasive nozzle equipment    |
| Rotary vacuum / recovery | Air and brush cleaning for compact duct systems                  | Rotary vacuum head; up to 100 m working range           |
| Protective coating       | Spray tools for one- or two-component coatings                   | Spray tools for one- or two-component coatings          |

# Applications

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## 1. INSPECTION

Camera-guided inspection documents deposits, defects and surface condition. PTZ cameras with 10× optical zoom and laser measurement support detailed assessment.

## 2. VACUUMING

Remove dust, loose deposits and installation debris from duct and pipe interiors. Model X offers a rotary vacuum head with up to 100 m working range.

## 3. PAINTING

Apply protective paint and internal coatings with robotic spray equipment for one- or two-component materials. Application methods are matched to the surface and coating.

## 4. DRY-ICE BLASTING

Dry-ice blasting removes oils, resins and other deposits. CO<sub>2</sub> pellets sublime after impact, leaving no additional abrasive blasting media behind.

## 5. AIR BLASTING

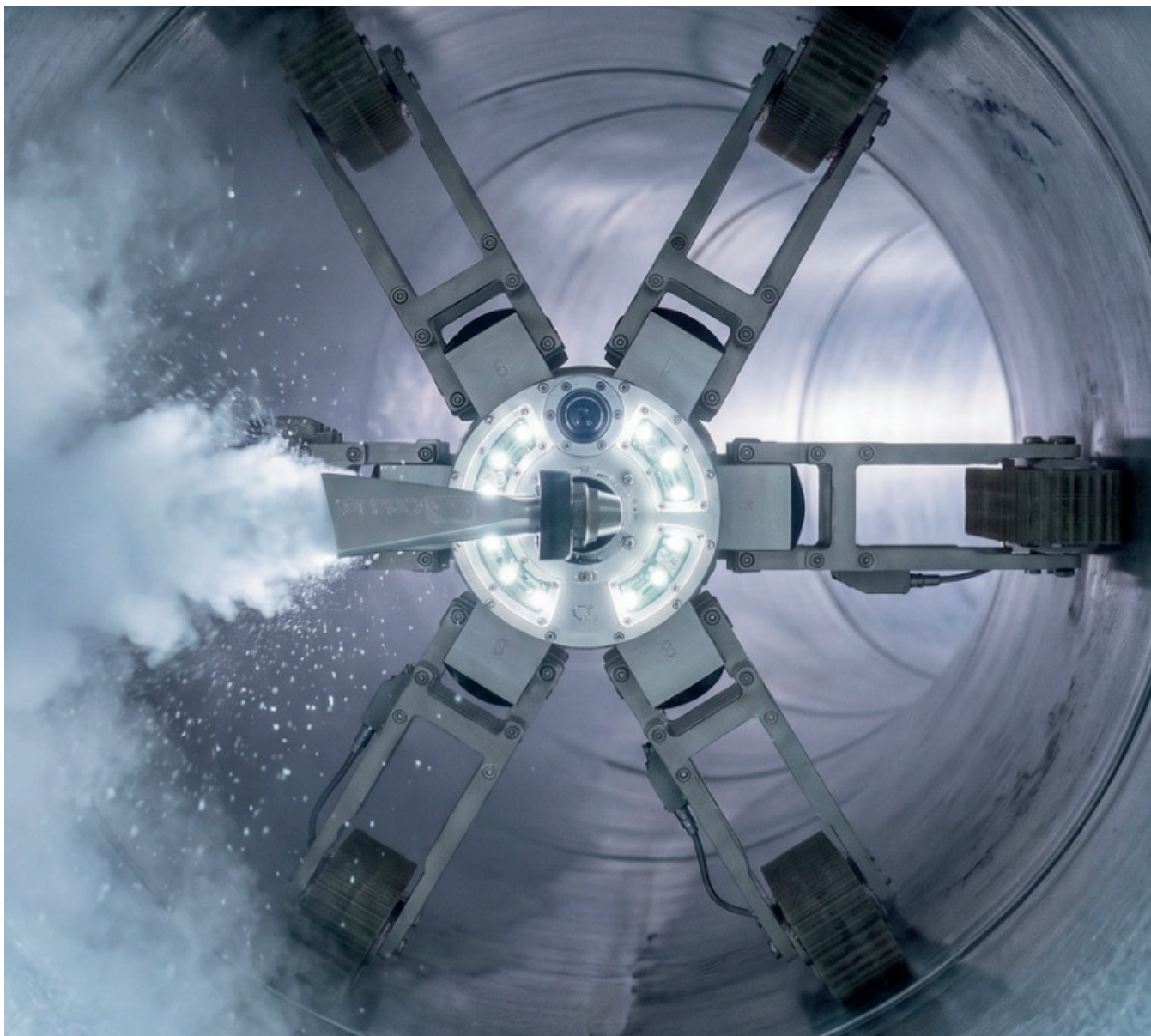
Directed compressed air clears loose particles and dust without direct contact. Operating pressure up to 15 bar, with nozzle and hose selection matched to the task.

## 6. BRUSHING

Rotary brush modules mechanically loosen deposits in ducts. Adjustable rotation of 100–600 rpm and application-specific brushes support controlled cleaning.

# Contact

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