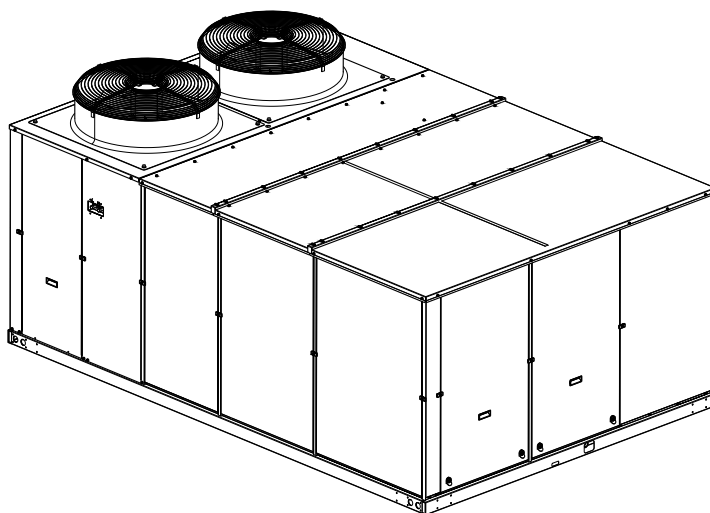




BY JOHNSON CONTROLS

High pressure drive for Roof Top ACTIVA 045-090



Options and Accessories, Installation manual

Ref.: N-40326_EN 0112



Index

| | | |
|-----|--|---|
| 1 | High pressure drive for Roof Top ACTIVA 045-090..... | 1 |
| 1.1 | Belt tightening..... | 2 |
| 1.2 | Pulley adjustment (models 045/060/075: 1 groove; models 090: 2 grooves)..... | 2 |
| 1.3 | Features table..... | 3 |
| 1.4 | Considerations when consulting the output tables..... | 3 |
| 1.5 | Output table for indoor fan, model ARC-045, optional HPD drive motor 4 kW..... | 3 |
| 1.6 | Output table for indoor fan, model ARC-060, optional HPD drive motor 5,5 kW..... | 4 |
| 1.7 | Output table for indoor fan, model ARC/ARH-075, optional HPD drive motor 7,5 kW..... | 4 |
| 1.8 | Output table for indoor fan, model ARC/ARH-090, optional HPD drive motor 11 kW..... | 4 |
| 1.9 | Pressure drop of options/accessories, gas heating and vertical ducts..... | 5 |

1

**High pressure drive for Roof Top ACTIVA
045-090**

1.1 Belt tightening

1.1 Belt tightening

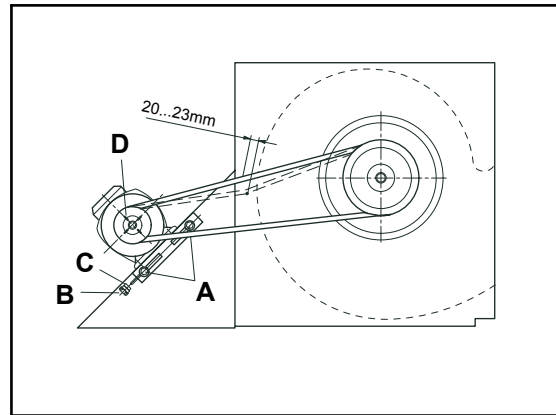
All units include single-speed motors with belt transmission for the indoor fan.

1. Loosen the nuts **-A-**. Never loosen the nuts **-C-**.
2. Tighten the belts by turning the screw **-B-** until the belt moves: 20...23 mm.
3. Tighten the nuts **-A-**.
4. Check the tension of the belts twice during the first 24 hours of unit operations.



NOTE

The fan motor variable diameter pulley can be adjusted in order to obtain the supply air flow desired.



1.2 Pulley adjustment (models 045/060/075: 1 groove; models 090: 2 grooves)

Consult the Installation Manual for the appropriate air flow adjustment values.

Loosen the nuts **-A-**. Never loosen the nuts **-C-**.

Loosen the belts by turning the screw **-B-**.

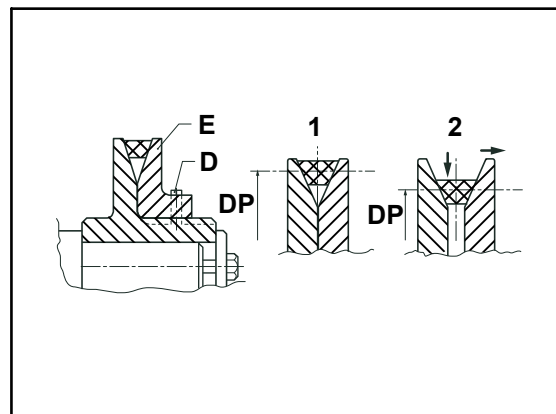
Loosen the set screws **-D-** to release the mobile rim **-E-**.

To increase or decrease the opening of the pulley, turn the mobile rim **-E-** on the thread of the fixed core of the pulley in the appropriate direction.

Apply sealant to the threads of the set screws **-D-** and fully tighten, checking that they match up to their housing in the fixed core of the pulley.

1. Pulley completely closed (maximum diameter). Maximum air flow.
2. Pulley completely open (minimum diameter). Minimum air flow.

DP Pulley diameter.

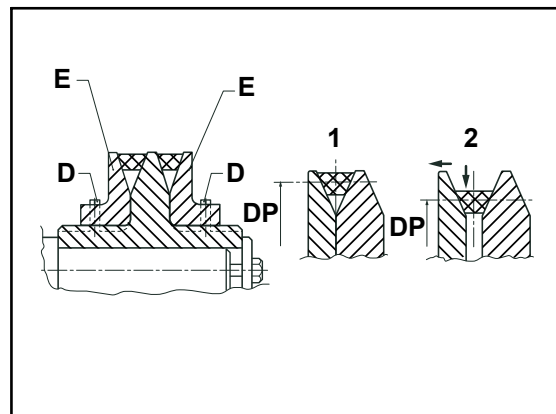


CAUTION

In the case of model 090, both of the pulley grooves should be at the same distance from the fixed core of the pulley (same number of open or close turns).

1. Pulley completely closed (maximum diameter). Maximum air flow.
2. Pulley completely open (minimum diameter). Minimum air flow.

DP Pulley diameter.



1.3 Features table

| Model | Fan kit | Motor (1) | | Motor pulley (adjustable) | | Fan pulley | | Belt | | | Rated current (A) | Motor trip switch range | Current setting (A) |
|-------|-------------------|-----------|----------------|---------------------------|--------------|-----------------------|--------------|-------------|------|------|-------------------|-------------------------|---------------------|
| | | kW | Type of casing | Ø pulley (mm) | Ø shaft (mm) | (fixed) Ø pulley (mm) | Ø shaft (mm) | Length (mm) | Ref. | Qty. | | | |
| 045 | Option HPD 4 kW | 4 | 112 MB | 109-135 | 28 | 190 | 25 | 1740 | BX67 | 1 | 8,6 | 6,3-10 | 9,5 |
| 060 | Option HPD 5,5 kW | 5,5 | 132 M | 147-178 | 38 | 236 | 25 | 2040 | BX79 | 1 | 11,4 | 9-14 | 12,5 |
| 075 | Option HPD 7,5 kW | 7,5 | 132 MA | 147-178 | 38 | 236 | 25 | 2123 | BX82 | 1 | 14,8 | 13-18 | 16 |
| 090 | Option HPD 9,2 kW | 9,2 | 132 MBA | 139-173 | 38 | 250 | 35 | 2040 | BX79 | 2 | 17,8 | 16-20 | 19,5 |
| | Option HPD 11 kW | 11 | 132 MB | 152-190 | 38 | 250 | 35 | 2040 | BX79 | 2 | 21 | 20-25 | 23 |

(1) All motors are totally closed, cooled by fans at 1450 r/min, with a solid base and a service factor of 1,15.
Inside fan output tables for determining the motor pulley adjustment and the type of drive needed for the installation.

1.4 Considerations when consulting the output tables

Indoor fan output tables

For units with 0% outdoor air and 100% return air, dry indoor coil, and standard G4 filters.



CAUTION

Before consulting the tables, add secure drops to the pressure required for the installation due to:

- *heat pump (models ARH/ARD-045 and 060)*
- *Gas heating (ARG/ARD Models)*
- *vertical supply and return and*
- *accessories included in the unit, when appropriate. **Pressure drop of options/accessories, gas heating and vertical ducts.**, see on page 5.*

The motor pulleys come adjusted to an opening of 4 turns. *Belt tightening*, see on page 2 and *Pulley adjustment (models 045/060/075: 1 groove; models 090: 2 grooves)*, see on page 2 for the belt adjustment and tightening procedure.



CAUTION

- *Before commissioning the installation, but after balancing the air distribution in the building, the supply air flow should be checked.*
- *With clean filters the indoor fan should not exceed a vacuum of -200 Pa in suction.*

1.5 Output table for indoor fan, model ARC-045, optional HPD drive motor 4 kW

| Motor pulley opening adjustment (no. of turns) | Air flow rate m³/h | | | | | | | | | |
|--|--------------------|-----|------|-----|------|-----|------|-----|-------|-----|
| | 7000 | | 8000 | | 8500 | | 9000 | | 10000 | |
| | SPA | kW | SPA | kW | SPA | kW | SPA | kW | SPA | kW |
| 0 | 425 | 2,8 | 392 | 3,2 | 368 | 3,3 | 346 | 3,5 | 298 | 3,9 |
| 1 | 380 | 2,8 | 342 | 3,1 | 320 | 3,3 | 297 | 3,5 | 244 | 3,8 |
| 2 | 338 | 2,7 | 294 | 3,0 | 268 | 3,2 | 247 | 3,4 | 187 | 3,7 |
| 3 | 310 | 2,6 | 270 | 2,9 | 246 | 3,0 | 225 | 3,2 | 168 | 3,5 |
| 4 | 280 | 2,4 | 248 | 2,7 | 224 | 2,8 | 202 | 3,0 | 147 | 3,3 |
| 5 | 245 | 2,3 | 212 | 2,6 | 188 | 2,7 | 165 | 2,9 | 110 | 3,2 |
| 6 | 212 | 2,2 | 175 | 2,5 | 150 | 2,6 | 126 | 2,7 | 70 | 3,0 |

SPA: Static pressure available (Pa).

1 High pressure drive for Roof Top ACTIVA 045-090

1.6 Output table for indoor fan, model ARC-060, optional HPD drive motor 5,5 kW

1.6 Output table for indoor fan, model ARC-060, optional HPD drive motor 5,5 kW

| Motor pulley opening adjustment (no. of turns) | Air flow rate m ³ /h | | | | | | | | | |
|--|---------------------------------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
| | 9500 | | 10500 | | 11500 | | 12500 | | 13500 | |
| | SPA | kW | SPA | kW | SPA | kW | SPA | kW | SPA | kW |
| 0 | 505 | 3,7 | 472 | 4,1 | 430 | 4,6 | 390 | 5,0 | 347 | 5,7 |
| 1 | 475 | 3,5 | 440 | 3,9 | 400 | 4,3 | 357 | 4,8 | 310 | 5,5 |
| 2 | 447 | 3,4 | 410 | 3,5 | 370 | 4,2 | 323 | 4,6 | 273 | 5,2 |
| 3 | 418 | 3,2 | 380 | 3,4 | 340 | 3,9 | 292 | 4,4 | 245 | 4,9 |
| 4 | 387 | 3,0 | 350 | 3,2 | 307 | 3,7 | 260 | 4,1 | 215 | 4,5 |
| 5 | 340 | 2,9 | 306 | 3,1 | 267 | 3,5 | 223 | 3,9 | 178 | 4,3 |
| 6 | 295 | 2,7 | 262 | 3,0 | 227 | 3,3 | 185 | 3,7 | 140 | 4,1 |

SPA: Static pressure available (Pa).

Zone outside of range

1.7 Output table for indoor fan, model ARC/ARH-075, optional HPD drive motor 7,5 kW

| Motor pulley opening adjustment (no. of turns) | Air flow rate m ³ /h | | | | | | | | | | | |
|--|---------------------------------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
| | 11500 | | 12500 | | 13500 | | 14500 | | 15000 | | 16000 | |
| | SPA | kW | SPA | kW | SPA | kW | SPA | kW | SPA | kW | SPA | kW |
| 0 | - | - | - | - | - | - | - | - | 625 | 8,2 | 540 | 8,8 |
| 1 | - | - | - | - | - | - | 595 | 7,4 | 564 | 8,0 | 508 | 8,6 |
| 2 | 660 | 5,1 | 630 | 5,9 | 588 | 6,5 | 540 | 7,2 | 512 | 7,7 | 460 | 8,4 |
| 3 | 610 | 4,9 | 565 | 5,5 | 524 | 6,1 | 478 | 6,8 | 450 | 7,3 | 400 | 7,9 |
| 4 | 550 | 4,7 | 510 | 5,2 | 465 | 5,8 | 420 | 6,5 | 394 | 6,9 | 338 | 7,5 |
| 5 | 495 | 4,5 | 450 | 5,0 | 408 | 5,5 | 362 | 6,1 | 330 | 6,5 | 277 | 7,0 |
| 6 | 440 | 4,3 | 400 | 4,8 | 352 | 5,3 | 305 | 5,8 | 273 | 6,1 | 220 | 6,6 |

Zone outside of range

1.8 Output table for indoor fan, model ARC/ARH-090, optional HPD drive motor 11 kW

| Motor pulley opening adjustment (no. of turns) | Air flow rate m ³ /h | | | | | | | | | | | |
|--|---------------------------------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|------|
| | 13000 | | 14000 | | 15000 | | 16000 | | 17000 | | 18000 | |
| | SPA | kW | SPA | kW | SPA | kW | SPA | kW | SPA | kW | SPA | kW |
| 0 | - | - | - | - | 535 | 8,4 | 465 | 9,0 | 398 | 9,7 | 330 | 10,5 |
| 1 | 610 | 7,5 | 550 | 7,9 | 472 | 8,3 | 408 | 8,9 | 343 | 9,6 | 275 | 10,4 |
| 2 | 540 | 7,3 | 474 | 7,7 | 412 | 8,1 | 352 | 8,7 | 288 | 9,4 | 220 | 10,2 |
| 3 | 494 | 6,9 | 434 | 7,4 | 375 | 7,9 | 315 | 8,4 | 254 | 9,1 | 185 | 9,9 |
| 4 | 447 | 6,5 | 395 | 7,0 | 338 | 7,6 | 278 | 8,1 | 220 | 8,8 | 150 | 9,6 |
| 5 | 396 | 6,2 | 344 | 6,7 | 285 | 7,2 | 227 | 7,8 | 168 | 8,4 | 98 | 9,2 |
| 6 | 345 | 5,9 | 292 | 6,3 | 236 | 6,8 | 176 | 7,4 | 115 | 8,0 | 45 | 8,7 |

SPA: Static pressure available (Pa).

Zone outside of range

1.9 Pressure drop of options/accessories, gas heating and vertical ducts.

| Model | m ³ /h (x 1000) | Pressure drop (Pa) | | | | | | | | | | | | |
|---------------------|-----------------------------|--------------------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | |
| Gas heating | ARG/ARD | 18 | 20 | 24 | 30 | 37 | 45 | 53 | 60 | 70 | 80 | 90 | 100 | |
| Heat pump | ARH/ARD 045 | 8 | 13 | 14 | 17 | | | | | | | | | |
| | ARH/ARD 060 | | | 18 | 22 | 26 | 30 | 34 | 36 | | | | | |
| Vertical supply | 045/060 | 28 | 32 | 38 | 45 | 56 | 70 | 82 | 93 | | | | | |
| | 075/090 | | | | | 28 | 30 | 35 | 45 | 57 | 85 | 125 | 165 | |
| Vertical return | | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | |
| Option or accessory | Economiser/Motorised damper | 7 | 9 | 11 | 13 | 16 | 19 | 22 | 25 | 29 | 33 | 37 | 43 | |
| | Electric resistor kW | 12-25 | 20 | 28 | 36 | 44 | 56 | 68 | 80 | 92 | 110 | 125 | 144 | 170 |
| | | 37 | 28 | 37 | 46 | 56 | 70 | 85 | 100 | 114 | 130 | 150 | 172 | 194 |
| | | 50 | 45 | 60 | 75 | 92 | 110 | 130 | 155 | 180 | 210 | 240 | 274 | 310 |
| | Water coil | | 35 | 43 | 52 | 63 | 76 | 90 | 104 | 119 | 133 | 147 | 163 | 190 |
| | Air filters F6 | 045/060 | 50 | 55 | 65 | 70 | 75 | 87 | 100 | 114 | | | | |
| | | 075 | | | | | | 55 | 65 | 68 | 70 | 82 | 87 | |
| | | 090 | | | | | | | | 78 | 80 | 92 | 97 | 110 |
| | Air filters F7 | 045/060 | 67 | 75 | 85 | 95 | 105 | 115 | 125 | 135 | | | | |
| | | 075 | | | | | | 75 | 85 | 90 | 95 | 107 | 115 | |
| 090 | | | | | | | | | 100 | 105 | 117 | 125 | 135 | 145 |