



**NITROGEN-PAC™ M SERIES  
MODEL CTA COMPRESSOR / TANK ASSEMBLIES**

**Description**

The **UNITED Fire Systems NITROGEN-PAC™ Model CTA Compressor / Tank Assemblies** are a family of assemblies that are used to generate compressed air for a **NITROGEN-PAC™ M Series** nitrogen-based corrosion inhibiting system. Each assembly consists of:

- A two-stage multiple cylinder air compressor.
- An electric motor to drive the compressor.
- An electric contactor assembly to control the operation of the motor.
- A pressure-operated switch to operate the contactor.
- A steel air reservoir (tank) that receives the compressed air.
- A manually operated outlet ball valve to permit shutoff of the compressed air supply.
- A combination filter / regulator to filter the compressed air and regulate the pressure at the device outlet.

The assemblies are packaged and shipped with:

- A length of flexible hose to connect the filter / regulator outlet to the piping carrying the compressed air to the refrigerated dryer. The hose minimizes the transmission of vibration to the piping.
- Qty. (4) vibration pads that can be used to minimize transmission of vibration to the mounting surface.

The Model CTA assembly can provide air for 30-minute fill of dry-pipe and preaction sprinkler piping per NFPA 13, and can supply air to the inlet of a **NITROGEN-PAC™ M Series** Nitrogen Generator Module for production of nitrogen. See Table 1 for compressor capacities. Refer to **UNITED Fire Systems** manual P/N 30-NPMICM-001 for detailed information on choosing the proper assembly.



**FIGURE 1  
NITROGEN-PAC™ Model CTA  
Compressor Tank Assembly  
(Vertical Configuration Shown)**

**TABLE 1 – NITROGEN-PAC™ Model CTA Compressor / Tank Assemblies  
Mechanical Specifications**

| Model Number         | Motor HP | Air Reservoir Capacity (Gallons) | Max Outlet Pressure (PSIG) | Capacity (CFM @ Max Pressure) | Bypass Capacity (Gallons) |          |
|----------------------|----------|----------------------------------|----------------------------|-------------------------------|---------------------------|----------|
|                      |          |                                  |                            |                               | @ 20 PSI                  | @ 40 PSI |
| CTA-30 (all models)  | 3        | 80                               | 175                        | 11.1                          | 2700                      | 1350     |
| CTA-50 (all models)  | 5        | 80                               | 175                        | 17.3                          | 4000                      | 2000     |
| CTA-75 (all models)  | 7-1/2    | 120                              | 175                        | 26.9                          | 7700                      | 3350     |
| CTA-100 (all models) | 10       | 120                              | 175                        | 34.4                          | 10,700                    | 5350     |

**TABLE 2 – NITROGEN-PAC™ Model CTA Compressor / Tank Assemblies  
Weights and Dimensions**

| Model Number                    | Approx. Shipping Weight (lbs.) | Length (L) inches | Width (W) inches | Height (H) inches | Base Bolt Square or Rectangle (in x in) | Outlet Size (NPT) |
|---------------------------------|--------------------------------|-------------------|------------------|-------------------|---|-------------------|
| CTA-30 (all models)             | 600                            | 34                | 29               | 74                | 25-1/2 x 25-1/2                         | 1/2"              |
| CTA-50 (all models)             | 670                            | 34                | 29               | 74                | 25-1/2 x 25-1/2                         | 1/2"              |
| CTA-75 Vertical (all models)    | 930                            | 44                | 30               | 75                | 25-1/2 x 25-1/2                         | 1/2"              |
| CTA-75 Horizontal (all models)  | 930                            | 63                | 21               | 47                | 40 x 19                                 | 1/2"              |
| CTA-100 Vertical (all models)   | 960                            | 44                | 30               | 75                | 26-1/2 x 26-1/2                         | 3/4"              |
| CTA-100 Horizontal (all models) | 960                            | 63                | 21               | 47                | 40 x 19                                 | 3/4"              |

For downloadable architect's specifications and drawing details, go to:  
[unitedfiresystems.com/product/nitrogen-pac-m-series](http://unitedfiresystems.com/product/nitrogen-pac-m-series)

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## Data Sheet UFS-352

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## NITROGEN-PAC™ M SERIES MODEL CTA COMPRESSOR / TANK ASSEMBLIES

### Technical Specifications

#### Compressor

- Type: Piston, Cast Iron, Splash-Lubricated
- Stages: Two
- Drive: Belt
- Maximum Outlet Pressure: 175 PSIG
- Capacity: Refer to Table 1

#### Reservoir (Tank)

- Type: ASME Coded
- Capacity: Refer to Table 1
- Outlet Size: Refer to Table 2
- Drain: Auto-Drain

#### Motor

- Ratings: Refer to Table 3
- IMPORTANT NOTES FOR CHOICE OF MOTOR
  - To minimize current draw, choose the highest available voltage.
  - Three-phase motors are preferred over single-phase motors.
  - Power source **must** supply rated voltage with minimum possible sag under load.
  - Choose power conductor sizes with due consideration to required ampacity, distance of motor from voltage source, and required starting current.
  - Refer to motor nameplate for further information. Provide power only in accordance with motor nameplate and applicable codes.
  - Contact **UNITED Fire Systems** for additional guidance as necessary.

#### Factory-Assembled

- Compressor / Tank Assembly
- Contactor / Motor Starter
- Compressor Control Pressure Switch
- Outlet Ball Valve
- Filter / Regulator

#### Included Loose With Assembly

- Qty. (4) Vibration Pads (Place under base feet at installation)
- Outlet Hose (Connect to outlet of filter / regulator to dampen vibration transmission to pipe)

#### Instructions

- Refer to **UNITED Fire Systems** manual P/N 30-NPMICM-001 for detailed installation, operation, and maintenance instructions, with checklists for carrying out procedures.

#### Maintenance Kits

- For CTA-30 and CTA-50 (all models), use Maintenance Kit P/N 30-500500-001, which includes:
  - Qty. (1) Compressor Intake Filter Element
  - Qty. (2) Quarts of Compressor Oil
- For CTA-75 and CTA-100 (all models), use Maintenance Kit P/N 30-500500-002, which includes:
  - Qty. (2) Compressor Intake Filter Elements
  - Qty. (2) Quarts of Compressor Oil

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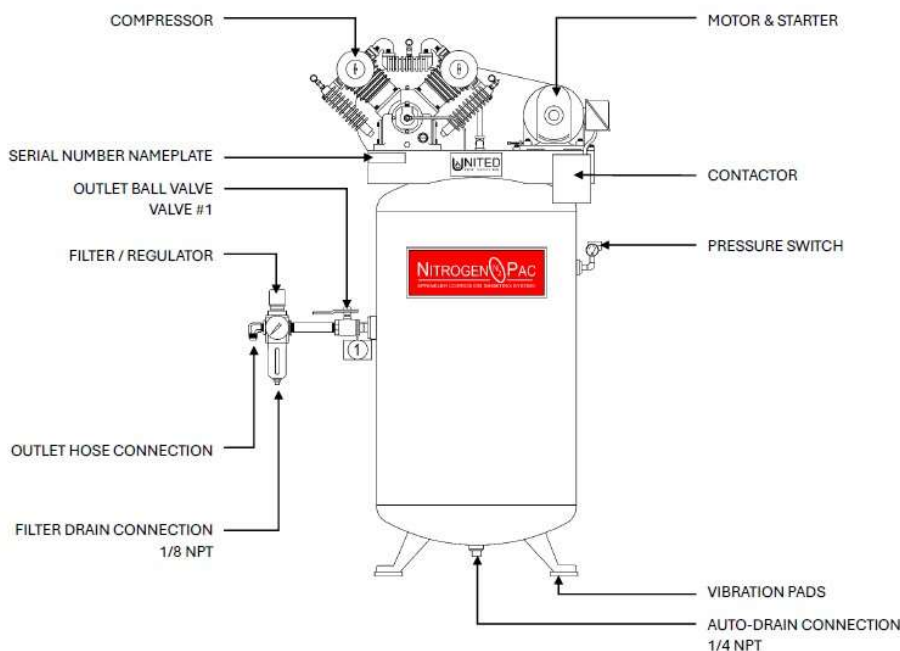
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| TABLE 3 – NITROGEN-PAC™ Model CTA Compressor / Tank Assemblies |          |                      |        |                  |
|--|----------|----------------------|--------|------------------|
| Electrical Specifications                                      |          |                      |        |                  |
| Model Number   | Motor HP | Motor AC Voltage (V) | Phases | Current Draw (A) |
| CTA-30-2083-80V  | 3        | 208                  | 3      | 8.5              |
| CTA-30-2301-80V  | 3        | 230                  | 1      | 16.0             |
| CTA-30-2303-80V  | 3        | 230                  | 3      | 8.4              |
| CTA-30-4603-80V  | 3        | 460                  | 3      | 4.2              |
| CTA-50-2083-80V  | 5        | 208                  | 3      | 14.0             |
| CTA-50-2301-80V  | 5        | 230                  | 1      | 20.6             |
| CTA-50-2303-80V  | 5        | 230                  | 3      | 13.2             |
| CTA-50-4603-80V  | 5        | 460                  | 3      | 6.6              |
| CTA-75-2303-120V (Vertical)<br>CTA-75-2303-120H (Horizontal)   | 7-1/2    | 230                  | 3      | 19.4             |
| CTA-75-4603-120V (Vertical)<br>CTA-75-4603-120H (Horizontal)   | 7-1/2    | 460                  | 3      | 9.7              |
| CTA-100-2303-120V (Vertical)<br>CTA-100-2303-120H (Horizontal) | 10       | 230                  | 3      | 25.0             |
| CTA-100-4603-120V (Vertical)<br>CTA-100-4603-120H (Horizontal) | 10       | 460                  | 3      | 12.5             |



**FIGURE 2**  
**NITROGEN-PAC™ MODEL CTA Compressor / Tank Assembly**  
**Component Identification**  
**(Vertical Configuration Shown)**

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