

# Reactor® 3 Hydraulic Proportioning Systems

Hydraulic, heated, plural component proportioner for spraying polyurethane foam and polyurea coatings.

Only use with Reactor 3 Heated Hoses. For indoor use only. For professional use only. Not approved for use in explosive atmospheres or hazardous (classified) locations.

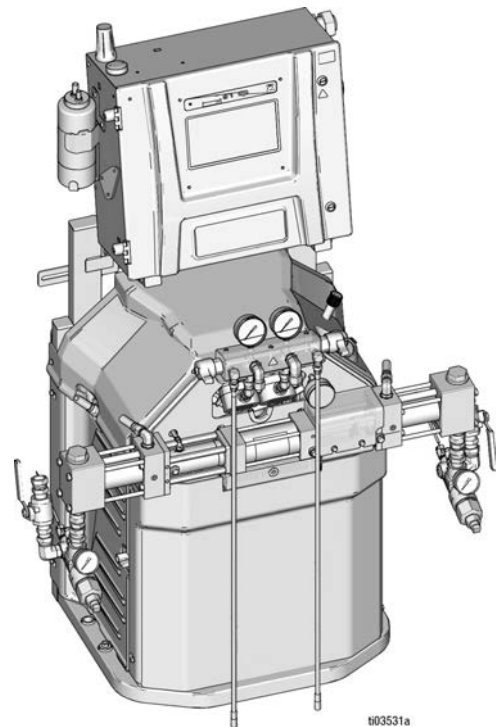


## Important Safety Instructions

Read all warnings and instructions in this manual and in related manuals before using the equipment. Be familiar with the proper control and usage of the equipment. Save these instructions.



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*Images are for illustrative purposes only*

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## RELATED MANUALS

Find English manuals and any available translations at [www.graco.com](http://www.graco.com).

| ENGLISH MANUAL NUMBER             | DESCRIPTION                                         |
|-----------------------------------|-----------------------------------------------------|
| X021141EN                         | Reactor® 3 Proportioner, Operation                  |
| <b>Feed System Manuals</b>        |                                                     |
| 309852                            | Circulation and Return Tube Kit, Instructions-Parts |
| 3A8502                            | T4 3:1 Pneumatic Transfer Pump, Operation and Parts |
| 3A8503                            | CORE® Transfer Pump, Operation and Parts            |
| <b>Proportioning Pumps Manual</b> |                                                     |
| 3A3085                            | Proportioning Pumps, Repair-Parts                   |
| <b>Spray Gun Manuals</b>          |                                                     |
| 309550                            | Fusion® AP Spray Gun, Instructions                  |
| 3A7314                            | Fusion PC Spray Gun, Instructions                   |
| 312666                            | Fusion CS Spray Gun, Instructions                   |
| 309586                            | Fusion MP Spray Gun, Instructions-Parts             |
| 3A9329                            | Fusion FX Gun, Instructions                         |
| 313213                            | Probler® P2 Gun, Instructions                       |
| <b>Reactor Connect Manual</b>     |                                                     |
| 3A8504                            | Reactor Connect, Instructions                       |
| <b>Heated Hose Manual</b>         |                                                     |
| 3A7683                            | Reactor Heated Hose (Reactor 3), Instructions       |

## SUPPLIED MANUALS

The following manuals and quick guides are shipped with the Reactor® 3 Hydraulic Proportioning Systems. Refer to these manuals and quick guides for detailed equipment information.

Manuals are also available at [www.graco.com](http://www.graco.com).

| ENGLISH MANUAL NUMBER | DESCRIPTION                       |
|-----------------------|-----------------------------------|
| X021141EN             | Reactor 3 Proportioner, Operation |
| 3B0421                | Reactor 3 Startup Quick Guide     |
| 3B0422                | Reactor 3 Shutdown Quick Guide    |

## MODELS

The part numbers reflect the distinct features and characteristics of the Reactor® 3 Hydraulic Proportioning Systems.

### REACTOR H - 30

|                       | MODEL                                                              |                     | H-30 PRO 15 KW<br>(27R355) | H-30 ELITE 15 KW<br>(27R357) | H-30 ELITE 15 KW<br>(27R393) NO PUMPS |
|-----------------------|--------------------------------------------------------------------|---------------------|----------------------------|------------------------------|---------------------------------------|
| Technical Information | Maximum Working Pressure                                           |                     | 2000 psi (14 MPa, 140 bar) | 2000 psi (14 MPa, 140 bar)   | 2000 psi (14 MPa, 140 bar)            |
|                       | Approximate Output / Cycle A + B                                   |                     | 0.074 gal (0.28 l)         | 0.074 gal (0.28 l)           | 0.0148-0.074 gal (0.056-0.282 l)      |
|                       | Maximum Flow (60 Hz)                                               |                     | 31 lb/min (14.1 kg/min)    | 31 lb/min (14.1 kg/min)      | 6.2-31 lb/min (2.82-14.1 kg/min)      |
|                       | Max Heated Hose Length Supported                                   |                     | 320 ft (97 m)              | 320 ft (97 m)                | 320 ft (97 m)                         |
|                       | Total System Load                                                  |                     | 23,260 W                   | 23,260 W                     | 23,260 W                              |
|                       | Primary Heater Load                                                |                     | 14.4 kW                    | 14.4 kW                      | 14.4 kW                               |
|                       | Full Load Peak Current<br>50/60 Hz                                 | 200-240 VAC<br>1Ø   | 100 A                      | 100 A                        | 100 A                                 |
|                       |                                                                    | 200-240 VAC<br>3Ø Δ | 59 A                       | 59 A                         | 59 A                                  |
|                       |                                                                    | 350-415 VAC<br>3Ø Y | 35 A                       | 35 A                         | 35 A                                  |
| System Features       | Ratio Monitoring                                                   |                     | ---                        | ✓                            | ✓                                     |
|                       | Reactor Connect App                                                |                     | ✓                          | ✓                            | ✓                                     |
|                       | Software includes auto pressure balancing and power equipment      |                     | ✓                          | ✓                            | ✓                                     |
|                       | Large Inlet Strainer with Gauge, Pressure, and Temperature Sensors |                     | ---                        | ✓                            | ✓                                     |
|                       | Electronic Pressure Control                                        |                     | ---                        | ✓                            | ✓                                     |
| Packages              | Externally Heated Hose Package, 1 x 50 ft (15.24 m)                |                     | ESR355                     | ESR357                       | ---                                   |
|                       | Externally Heated Hose Package, 4 x 50 ft (15.24 m)                |                     | EHR355                     | EHR357                       | ---                                   |
|                       | Internally Heated Hose Package, 1 x 50 ft (15.24 m)                |                     | ISR355                     | ISR357                       | ---                                   |
|                       | Internally Heated Hose Package, 2 x 100 ft (30.48 m)               |                     | IHR355                     | IHR357                       | ---                                   |

## MODELS

|  | MODEL                                                                           | H-30 PRO 15 KW<br>(27R355) | H-30 ELITE 15 KW<br>(27R357) | H-30 ELITE 15 KW<br>(27R393) NO PUMPS |
|--|---------------------------------------------------------------------------------|----------------------------|------------------------------|---------------------------------------|
|  | CORE E1 Transfer Pump with Internally Heated Hose Package, 1 x 50 ft (15.24 m)  | ---                        | CSR357                       | ---                                   |
|  | CORE E1 Transfer Pump with Internally Heated Hose Package, 2 x 100 ft (30.48 m) | ---                        | CHR357                       | ---                                   |

## MODELS

### REACTOR H - 30 ( 50 H Z )

|                          | MODEL                                                                                |                     | H-30 PRO 15 KW,<br>50 HZ (27R389) | H-30 ELITE 15 KW,<br>50 HZ (27R390) | H-30 ELITE 15 KW, 50<br>HZ (27R394) NO PUMPS |
|--------------------------|--------------------------------------------------------------------------------------|---------------------|-----------------------------------|-------------------------------------|----------------------------------------------|
| Technical<br>Information | Maximum Working Pressure                                                             |                     | 2000 psi (14 MPa,<br>140 bar)     | 2000 psi (14 MPa,<br>140 bar)       | 2000 psi (14 MPa, 140<br>bar)                |
|                          | Approximate Output / Cycle A<br>+ B                                                  |                     | 0.074 gal (0.28 l)                | 0.074 gal (0.28 l)                  | 0.0148-0.074 gal<br>(0.056-0.282 l)          |
|                          | Maximum Flow (50 Hz)                                                                 |                     | 31 lb/min (14.1<br>kg/min)        | 31 lb/min (14.1 kg/<br>min)         | 6.2-31 lb/min (2.82-14.1<br>kg/min)          |
|                          | Max Heated Hose Length<br>Supported                                                  |                     | 320 ft (97 m)                     | 320 ft (97 m)                       | 320 ft (97 m)                                |
|                          | Total System Load                                                                    |                     | 23,260 W                          | 23,260 W                            | 23,260 W                                     |
|                          | Primary Heater Load                                                                  |                     | 14.4 kW                           | 14.4 kW                             | 14.4 kW                                      |
|                          | Full Load<br>Peak Current<br>50 Hz                                                   | 350-415 VAC<br>3Ø Y | 35 A                              | 35 A                                | 35 A                                         |
| System<br>Features       | Ratio Monitoring                                                                     |                     | ---                               | ✓                                   | ✓                                            |
|                          | Reactor Connect App                                                                  |                     | ✓                                 | ✓                                   | ✓                                            |
|                          | Software includes auto<br>pressure balancing and power<br>equipment                  |                     | ✓                                 | ✓                                   | ✓                                            |
|                          | Large Inlet Strainer with<br>Gauge, Pressure, and<br>Temperature Sensors             |                     | ---                               | ✓                                   | ✓                                            |
|                          | Electronic Pressure Control                                                          |                     | ---                               | ✓                                   | ✓                                            |
| Packages                 | Externally Heated Hose<br>Package, 1 x 50 ft (15.24 m)                               |                     | ESR389                            | ESR390                              | ---                                          |
|                          | Externally Heated Hose<br>Package, 4 x 50 ft (15.24 m)                               |                     | EHR389                            | EHR390                              | ---                                          |
|                          | Internally Heated Hose<br>Package, 1 x 50 ft (15.24 m)                               |                     | ISR389                            | ISR390                              | ---                                          |
|                          | Internally Heated Hose<br>Package, 2 x 100 ft (30.48 m)                              |                     | IHR389                            | IHR390                              | ---                                          |
|                          | CORE E1 Transfer Pump with<br>Internally Heated Hose<br>Package, 1 x 50 ft (15.24 m) |                     | ---                               | CSR390                              | ---                                          |

## MODELS

|  | MODEL                                                                                 | H-30 PRO 15 KW,<br>50 HZ (27R389) | H-30 ELITE 15 KW,<br>50 HZ (27R390) | H-30 ELITE 15 KW, 50<br>HZ (27R394) NO PUMPS |
|--|---------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------|----------------------------------------------|
|  | CORE E1 Transfer Pump with<br>Internally Heated Hose<br>Package, 2 x 100 ft (30.48 m) | - - -                             | CHR390                              | - - -                                        |

## MODELS

### REACTOR H - 50

|                          | MODEL                                                                                |                     | H-50 PRO 20 KW,<br>230 V (27R375) | H-50 ELITE 20 KW,<br>230 V (27R377) | H-50 ELITE 20 KW, 230<br>V (27R395) NO PUMPS |
|--------------------------|--------------------------------------------------------------------------------------|---------------------|-----------------------------------|-------------------------------------|----------------------------------------------|
| Technical<br>Information | Maximum Working Pressure                                                             |                     | 2000 psi (14 MPa,<br>140 bar)     | 2000 psi (14 MPa,<br>140 bar)       | 2000 psi (14 MPa, 140<br>bar)                |
|                          | Approximate Output / Cycle A<br>+ B                                                  |                     | 0.074 gal (0.28 l)                | 0.074 gal (0.28 l)                  | 0.0148-0.074 gal<br>(0.056-0.282 l)          |
|                          | Maximum Flow                                                                         |                     | 53 lb/min (24 kg/<br>min)         | 53 lb/min (24 kg/<br>min)           | 10.6-53 lb/min (4.8-24<br>kg/min)            |
|                          | Max Heated Hose Length<br>Supported                                                  |                     | 420 ft (128 m)                    | 420 ft (128 m)                      | 420 ft (128 m)                               |
|                          | Total System Load                                                                    |                     | 31,700 W                          | 31,700 W                            | 31,700 W                                     |
|                          | Primary Heater Load                                                                  |                     | 20.4 kW                           | 20.4 kW                             | 20.4 kW                                      |
|                          | Full Load<br>Peak Current<br>50/60 Hz                                                | 200-240 VAC<br>3Ø Δ | 95 A                              | 95 A                                | 95 A                                         |
| System<br>Features       | Ratio Monitoring                                                                     |                     | ---                               | ✓                                   | ✓                                            |
|                          | Reactor Connect App                                                                  |                     | ✓                                 | ✓                                   | ✓                                            |
|                          | Software includes auto<br>pressure balancing and power<br>equipment                  |                     | ✓                                 | ✓                                   | ✓                                            |
|                          | Large Inlet Strainer with<br>Gauge, Pressure, and<br>Temperature Sensors             |                     | ---                               | ✓                                   | ✓                                            |
|                          | Electronic Pressure Control                                                          |                     | ---                               | ✓                                   | ✓                                            |
| Packages                 | Externally Heated Hose<br>Package, 1 x 50 ft (15.24 m)                               |                     | ESR375                            | ESR377                              | ---                                          |
|                          | Externally Heated Hose<br>Package, 6 x 50 ft (15.24 m)                               |                     | EHR375                            | EHR377                              | ---                                          |
|                          | Internally Heated Hose<br>Package, 1 x 50 ft (15.24 m)                               |                     | ISR375                            | ISR377                              | ---                                          |
|                          | Internally Heated Hose<br>Package, 3 x 100 ft (30.48 m)                              |                     | IHR375                            | IHR377                              | ---                                          |
|                          | CORE E1 Transfer Pump with<br>Internally Heated Hose<br>Package, 1 x 50 ft (15.24 m) |                     | ---                               | CSR377                              | ---                                          |



## MODELS

|  | MODEL                                                                                 | H-50 PRO 20 KW,<br>230 V (27R375) | H-50 ELITE 20 KW,<br>230 V (27R377) | H-50 ELITE 20 KW, 230<br>V (27R395) NO PUMPS |
|--|---------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------|----------------------------------------------|
|  | CORE E1 Transfer Pump with<br>Internally Heated Hose<br>Package, 3 x 100 ft (30.48 m) | - - -                             | CHR377                              | - - -                                        |

## MODELS

### REACTOR H - 50

|                          | MODEL                                                                                |                     | H-50 PRO 20 KW,<br>400 V (27R376) | H-50 ELITE 20 KW,<br>400 V (27R378) | H-50 ELITE 20 KW, 400<br>V (27R396) NO PUMPS |
|--------------------------|--------------------------------------------------------------------------------------|---------------------|-----------------------------------|-------------------------------------|----------------------------------------------|
| Technical<br>Information | Maximum Working Pressure                                                             |                     | 2000 psi (14 MPa,<br>140 bar)     | 2000 psi (14 MPa,<br>140 bar)       | 2000 psi (14 MPa, 140<br>bar)                |
|                          | Approximate Output / Cycle A<br>+ B                                                  |                     | 0.074 gal (0.28 l)                | 0.074 gal (0.28 l)                  | 0.0148-0.074 gal<br>(0.056-0.282 l)          |
|                          | Maximum Flow                                                                         |                     | 53 lb/min (24 kg/<br>min)         | 53 lb/min (24 kg/<br>min)           | 10.6-53 lb/min (4.8-24<br>kg/min)            |
|                          | Max Heated Hose Length<br>Supported                                                  |                     | 420 ft (128 m)                    | 420 ft (128 m)                      | 420 ft (128 m)                               |
|                          | Total System Load                                                                    |                     | 31,700 W                          | 31,700 W                            | 31,700 W                                     |
|                          | Primary Heater Load                                                                  |                     | 20.4 kW                           | 20.4 kW                             | 20.4 kW                                      |
|                          | Full Load<br>Peak Current<br>50/60 Hz                                                | 350-415 VAC<br>3Ø Y | 52 A                              | 52 A                                | 52 A                                         |
| System<br>Features       | Ratio Monitoring                                                                     |                     | ---                               | ✓                                   | ✓                                            |
|                          | Reactor Connect App                                                                  |                     | ✓                                 | ✓                                   | ✓                                            |
|                          | Software includes auto<br>pressure balancing and power<br>equipment                  |                     | ✓                                 | ✓                                   | ✓                                            |
|                          | Large Inlet Strainer with<br>Gauge, Pressure, and<br>Temperature Sensors             |                     | ---                               | ✓                                   | ✓                                            |
|                          | Electronic Pressure Control                                                          |                     | ---                               | ✓                                   | ✓                                            |
| Packages                 | Externally Heated Hose<br>Package, 1 x 50 ft (15.24 m)                               |                     | ESR376                            | ESR378                              | ---                                          |
|                          | Externally Heated Hose<br>Package, 6 x 50 ft (15.24 m)                               |                     | EHR376                            | EHR378                              | ---                                          |
|                          | Internally Heated Hose<br>Package, 1 x 50 ft (15.24 m)                               |                     | ISR376                            | ISR378                              | ---                                          |
|                          | Internally Heated Hose<br>Package, 3 x 100 ft (30.48 m)                              |                     | IHR376                            | IHR378                              | ---                                          |
|                          | CORE E1 Transfer Pump with<br>Internally Heated Hose<br>Package, 1 x 50 ft (15.24 m) |                     | ---                               | CSR378                              | ---                                          |

## MODELS

|  | MODEL                                                                                 | H-50 PRO 20 KW,<br>400 V (27R376) | H-50 ELITE 20 KW,<br>400 V (27R378) | H-50 ELITE 20 KW, 400<br>V (27R396) NO PUMPS |
|--|---------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------|----------------------------------------------|
|  | CORE E1 Transfer Pump with<br>Internally Heated Hose<br>Package, 3 x 100 ft (30.48 m) | - - -                             | CHR378                              | - - -                                        |

## MODELS

### REACTOR H - X P 2

|                       | MODEL                                                              |                     | H-XP2 PRO 15 KW<br>(27R365)  | H-XP2 ELITE 15 KW<br>(27R367) | H-XP2 ELITE 15 KW<br>(27R399) NO PUMPS |
|-----------------------|--------------------------------------------------------------------|---------------------|------------------------------|-------------------------------|----------------------------------------|
| Technical Information | Maximum Working Pressure                                           |                     | 3500 psi (24.1 MPa, 241 bar) | 3500 psi (24.1 MPa, 241 bar)  | 3500 psi (24.1 MPa, 241 bar)           |
|                       | Approximate Output / Cycle A + B                                   |                     | 0.042 gal (0.16 l)           | 0.042 gal (0.16 l)            | 0.0147-0.042 gal (0.056-0.16 l)        |
|                       | Maximum Flow (60 Hz)                                               |                     | 1.8 gpm (6.8 lpm)            | 1.8 gpm (6.8 lpm)             | 0.63-1.8 gpm (2.38-6.8 lpm)            |
|                       | Max Heated Hose Length Supported                                   |                     | 320 ft (97 m)                | 320 ft (97 m)                 | 320 ft (97 m)                          |
|                       | Total System Load                                                  |                     | 23,260 W                     | 23,260 W                      | 23,260 W                               |
|                       | Primary Heater Load                                                |                     | 14.4 kW                      | 14.4 kW                       | 14.4 kW                                |
|                       | Full Load Peak Current<br>50/60 Hz                                 | 200-240 VAC<br>1Ø   | 100 A                        | 100 A                         | 100 A                                  |
|                       |                                                                    | 200-240 VAC<br>3Ø Δ | 59 A                         | 59 A                          | 59 A                                   |
|                       |                                                                    | 350-415 VAC<br>3Ø Y | 35 A                         | 35 A                          | 35 A                                   |
| System Features       | Ratio Monitoring                                                   |                     | ---                          | ✓                             | ✓                                      |
|                       | Reactor Connect                                                    |                     | ✓                            | ✓                             | ✓                                      |
|                       | Software includes auto pressure balancing and power equipment      |                     | ✓                            | ✓                             | ✓                                      |
|                       | Large Inlet Strainer with Gauge, Pressure, and Temperature Sensors |                     | ---                          | ✓                             | ✓                                      |
|                       | Electronic Pressure Control                                        |                     | ---                          | ✓                             | ✓                                      |
| Packages              | Externally Heated Hose Package, 1 x 50 ft (15.24 m)                |                     | ESR365                       | ESR367                        | ---                                    |
|                       | Externally Heated Hose Package, 4 x 50 ft (15.24 m)                |                     | EHR365                       | EHR367                        | ---                                    |
|                       | Internally Heated Hose Package, 1 x 50 ft (15.24 m)                |                     | ISR365                       | ISR367                        | ---                                    |
|                       | Internally Heated Hose Package, 2 x 100 ft (30.48 m)               |                     | IHR365                       | IHR367                        | ---                                    |

## MODELS

|  | MODEL                                                                                 | H-XP2 PRO 15 KW<br>(27R365) | H-XP2 ELITE 15<br>KW (27R367) | H-XP2 ELITE 15 KW<br>(27R399) NO PUMPS |
|--|---------------------------------------------------------------------------------------|-----------------------------|-------------------------------|----------------------------------------|
|  | CORE E1 Transfer Pump with<br>Internally Heated Hose<br>Package, 1 x 50 ft (15.24 m)  | ---                         | CSR367                        | ---                                    |
|  | CORE E1 Transfer Pump with<br>Internally Heated Hose<br>Package, 2 x 100 ft (30.48 m) | ---                         | CHR367                        | ---                                    |

## MODELS

### REACTOR H - XP2 ( 50 HZ )

|                       | MODEL                                                                          |                  | H-XP2 PRO 15 KW, 50 HZ (27R391) | H-XP2 ELITE 15 KW, 50 HZ (27R392) | H-XP2 ELITE 15 KW, 50 HZ (27R400) NO PUMPS |
|-----------------------|--------------------------------------------------------------------------------|------------------|---------------------------------|-----------------------------------|--------------------------------------------|
| Technical Information | Maximum Working Pressure                                                       |                  | 3500 psi (24.1 MPa, 241 bar)    | 3500 psi (24.1 MPa, 241 bar)      | 3500 psi (24.1 MPa, 241 bar)               |
|                       | Approximate Output / Cycle A + B                                               |                  | 0.042 gal (0.16 l)              | 0.042 gal (0.16 l)                | 0.0147-0.042 gal (0.056-0.16 l)            |
|                       | Maximum Flow (50 Hz)                                                           |                  | 1.8 gpm (6.8 lpm)               | 1.8 gpm (6.8 lpm)                 | 0.63-1.8 gpm (2.38-6.8 lpm)                |
|                       | Max Heated Hose Length Supported                                               |                  | 320 ft (97 m)                   | 320 ft (97 m)                     | 320 ft (97 m)                              |
|                       | Total System Load                                                              |                  | 23,260 W                        | 23,260 W                          | 23,260 W                                   |
|                       | Primary Heater Load                                                            |                  | 14.4 kW                         | 14.4 kW                           | 14.4 kW                                    |
|                       | Full Load Peak Current 50 Hz                                                   | 350-415 VAC 3Ø Y | 35 A                            | 35 A                              | 35 A                                       |
| System Features       | Ratio Monitoring                                                               |                  | ---                             | ✓                                 | ✓                                          |
|                       | Reactor Connect                                                                |                  | ✓                               | ✓                                 | ✓                                          |
|                       | Software includes auto pressure balancing and power equipment                  |                  | ✓                               | ✓                                 | ✓                                          |
|                       | Large Inlet Strainer with Gauge, Pressure, and Temperature Sensors             |                  | ---                             | ✓                                 | ✓                                          |
|                       | Electronic Pressure Control                                                    |                  | ---                             | ✓                                 | ✓                                          |
| Packages              | Externally Heated Hose Package, 1 x 50 ft (15.24 m)                            |                  | ESR391                          | ESR392                            | ---                                        |
|                       | Externally Heated Hose Package, 4 x 50 ft (15.24 m)                            |                  | EHR391                          | EHR392                            | ---                                        |
|                       | Internally Heated Hose Package, 1 x 50 ft (15.24 m)                            |                  | ISR391                          | ISR392                            | ---                                        |
|                       | Internally Heated Hose Package, 2 x 100 ft (30.48 m)                           |                  | IHR391                          | IHR392                            | ---                                        |
|                       | CORE E1 Transfer Pump with Internally Heated Hose Package, 1 x 50 ft (15.24 m) |                  | ---                             | CSR392                            | ---                                        |

## MODELS

|  | MODEL                                                                                 | H-XP2 PRO 15<br>KW, 50 HZ<br>(27R391) | H-XP2 ELITE 15<br>KW, 50 HZ<br>(27R392) | H-XP2 ELITE 15 KW, 50<br>HZ (27R400) NO PUMPS |
|--|---------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------|-----------------------------------------------|
|  | CORE E1 Transfer Pump with<br>Internally Heated Hose<br>Package, 2 x 100 ft (30.48 m) | - - -                                 | CHR392                                  | - - -                                         |

## MODELS

### REACTOR H - X P 3

|                       | MODEL                                                                          |                     | H-XP3 PRO 20 KW, 230 V (27R385) | H-XP3 ELITE 20 KW, 230 V (27R387) | H-XP3 ELITE 20 KW, 230 V (27R401) NO PUMPS |
|-----------------------|--------------------------------------------------------------------------------|---------------------|---------------------------------|-----------------------------------|--------------------------------------------|
| Technical Information | Maximum Working Pressure                                                       |                     | 3500 psi (24.1 MPa, 241 bar)    | 3500 psi (24.1 MPa, 241 bar)      | 3500 psi (24.1 MPa, 241 bar)               |
|                       | Approximate Output / Cycle A + B                                               |                     | 0.042 gal (0.16 l)              | 0.042 gal (0.16 l)                | 0.0147-0.042 gal (0.056-0.16 l)            |
|                       | Maximum Flow                                                                   |                     | 3.0 gpm (11.4 lpm)              | 3.0 gpm (11.4 lpm)                | 1.05-3.0 gpm (3.99-11.4 lpm)               |
|                       | Max Heated Hose Length Supported                                               |                     | 420 ft (128 m)                  | 420 ft (128 m)                    | 420 ft (128 m)                             |
|                       | Total System Load                                                              |                     | 31,700 W                        | 31,700 W                          | 31,700 W                                   |
|                       | Primary Heater Load                                                            |                     | 20.4 kW                         | 20.4 kW                           | 20.4 kW                                    |
|                       | Full Load Peak Current<br>50/60 Hz                                             | 200-240 VAC<br>3Ø Δ | 95 A                            | 95 A                              | 95 A                                       |
| System Features       | Ratio Monitoring                                                               |                     | ---                             | ✓                                 | ✓                                          |
|                       | Reactor Connect                                                                |                     | ✓                               | ✓                                 | ✓                                          |
|                       | Software includes auto pressure balancing and power equipment                  |                     | ✓                               | ✓                                 | ✓                                          |
|                       | Large Inlet Strainer with Gauge, Pressure, and Temperature Sensors             |                     | ---                             | ✓                                 | ✓                                          |
|                       | Electronic Pressure Control                                                    |                     | ---                             | ✓                                 | ✓                                          |
| Packages              | Externally Heated Hose Package, 1 x 50 ft (15.24 m)                            |                     | ESR385                          | ESR387                            | ---                                        |
|                       | Externally Heated Hose Package, 6 x 50 ft (15.24 m)                            |                     | EHR385                          | EHR387                            | ---                                        |
|                       | Internally Heated Hose Package, 1 x 50 ft (15.24 m)                            |                     | ISR385                          | ISR387                            | ---                                        |
|                       | Internally Heated Hose Package, 3 x 100 ft (30.48 m)                           |                     | IHR385                          | IHR387                            | ---                                        |
|                       | CORE E1 Transfer Pump with Internally Heated Hose Package, 1 x 50 ft (15.24 m) |                     | ---                             | CSR387                            | ---                                        |



## MODELS

|  | MODEL                                                                                 | H-XP3 PRO 20<br>KW, 230 V<br>(27R385) | H-XP3 ELITE 20<br>KW, 230 V<br>(27R387) | H-XP3 ELITE 20 KW, 230<br>V (27R401) NO PUMPS |
|--|---------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------|-----------------------------------------------|
|  | CORE E1 Transfer Pump with<br>Internally Heated Hose<br>Package, 3 x 100 ft (30.48 m) | - - -                                 | CHR387                                  | - - -                                         |

## MODELS

### REACTOR H - X P 3

|                          | MODEL                                                                          |                     | H-XP3 PRO 20<br>KW, 400 V<br>(27R386) | H-XP3 ELITE 20<br>KW, 400 V<br>(27R388) | H-XP3 ELITE 20 KW, 400<br>V (27R402) NO PUMPS |
|--------------------------|--------------------------------------------------------------------------------|---------------------|---------------------------------------|-----------------------------------------|-----------------------------------------------|
| Technical<br>Information | Maximum Working Pressure                                                       |                     | 3500 psi (24.1 MPa, 241 bar)          | 3500 psi (24.1 MPa, 241 bar)            | 3500 psi (24.1 MPa, 241 bar)                  |
|                          | Approximate Output / Cycle A + B                                               |                     | 0.042 gal (0.16 l)                    | 0.042 gal (0.16 l)                      | 0.0147-0.042 gal (0.056-0.16 l)               |
|                          | Maximum Flow                                                                   |                     | 3.0 gpm (11.4 lpm)                    | 3.0 gpm (11.4 lpm)                      | 1.05-3.0 gpm (3.99-11.4 lpm)                  |
|                          | Max Heated Hose Length Supported                                               |                     | 420 ft (128 m)                        | 420 ft (128 m)                          | 420 ft (128 m)                                |
|                          | Total System Load                                                              |                     | 31,700 W                              | 31,700 W                                | 31,700 W                                      |
|                          | Primary Heater Load                                                            |                     | 20.4 kW                               | 20.4 kW                                 | 20.4 kW                                       |
|                          | Full Load<br>Peak Current<br>50/60 Hz                                          | 350-415 VAC<br>3Ø Y | 52 A                                  | 52 A                                    | 52 A                                          |
| System<br>Features       | Ratio Monitoring                                                               |                     | ---                                   | ✓                                       | ✓                                             |
|                          | Reactor Connect                                                                |                     | ✓                                     | ✓                                       | ✓                                             |
|                          | Software includes auto pressure balancing and power equipment                  |                     | ✓                                     | ✓                                       | ✓                                             |
|                          | Large Inlet Strainer with Gauge, Pressure, and Temperature Sensors             |                     | ---                                   | ✓                                       | ✓                                             |
|                          | Electronic Pressure Control                                                    |                     | ---                                   | ✓                                       | ✓                                             |
| Packages                 | Externally Heated Hose Package, 1 x 50 ft (15.24 m)                            |                     | ESR386                                | ESR388                                  | ---                                           |
|                          | Externally Heated Hose Package, 6 x 50 ft (15.24 m)                            |                     | EHR386                                | EHR388                                  | ---                                           |
|                          | Internally Heated Hose Package, 1 x 50 ft (15.24 m)                            |                     | ISR386                                | ISR388                                  | ---                                           |
|                          | Internally Heated Hose Package, 3 x 100 ft (30.48 m)                           |                     | IHR386                                | IHR388                                  | ---                                           |
|                          | CORE E1 Transfer Pump with Internally Heated Hose Package, 1 x 50 ft (15.24 m) |                     | ---                                   | CSR388                                  | ---                                           |

## MODELS

|  | MODEL                                                                                 | H-XP3 PRO 20<br>KW, 400 V<br>(27R386) | H-XP3 ELITE 20<br>KW, 400 V<br>(27R388) | H-XP3 ELITE 20 KW, 400<br>V (27R402) NO PUMPS |
|--|---------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------|-----------------------------------------------|
|  | CORE E1 Transfer Pump with<br>Internally Heated Hose<br>Package, 3 x 100 ft (30.48 m) | - - -                                 | CHR388                                  | - - -                                         |

## APPROVALS

Intertek approvals apply to proportioners without hoses.

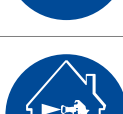
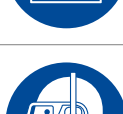
| PART NUMBER | MODEL         | SERIES | APPROVALS                                                                                                                                                                                         |  |
|-------------|---------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 27R355      | H-30 (60 Hz)  | Pro    |                                                                                                                                                                                                   |  |
| 27R357      |               | Elite  |                                                                                                                                                                                                   |  |
| 27R393      |               |        |                                                                                                                                                                                                   |  |
| 27R375      | H-50 (230 V)  | Pro    |                                                                                                                                                                                                   |  |
| 27R377      |               | Elite  |                                                                                                                                                                                                   |  |
| 27R395      |               |        |                                                                                                                                                                                                   |  |
| 27R365      | H-XP2 (60 Hz) | Pro    |                                                                                                                                                                                                   |  |
| 27R367      |               | Elite  |                                                                                                                                                                                                   |  |
| 27R399      |               |        |                                                                                                                                                                                                   |  |
| 27R385      | H-XP3 (230 V) | Pro    | <br><b>Intertek</b><br><b>5024314</b><br>Conforms to ANS/UL Std. 499<br>Certified to CAN/CSA Std. C22.2 No. 88 |  |
| 27R387      |               | Elite  |                                                                                                                                                                                                   |  |
| 27R401      |               |        |                                                                                                                                                                                                   |  |
| 27R389      | H-30 (50 Hz)  | Pro    |                                                                                                                                                                                                   |  |
| 27R390      |               | Elite  |                                                                                                                                                                                                   |  |
| 27R394      |               |        |                                                                                                                                                                                                   |  |
| 27R376      | H-50 (400 V)  | Pro    |                                                                                                                                                                                                   |  |
| 27R378      |               | Elite  |                                                                                                                                                                                                   |  |
| 27R396      |               |        |                                                                                                                                                                                                   |  |
| 27R391      | H-XP2 (50 Hz) | Pro    |                                                                                                                                                                                                   |  |
| 27R392      |               | Elite  |                                                                                                                                                                                                   |  |
| 27R400      |               |        |                                                                                                                                                                                                   |  |
| 27R386      | H-XP3 (400 V) | Pro    |                                                                                                                                                                                                   |  |
| 27R388      |               | Elite  |                                                                                                                                                                                                   |  |
| 27R402      |               |        |                                                                                                                                                                                                   |  |



## SAFETY SYMBOLS

The following safety symbols appear throughout this manual and on warning labels. Read the table below to understand what each symbol means.

| SYMBOL                                                                              | MEANING                     |
|-------------------------------------------------------------------------------------|-----------------------------|
|    | Burn Hazard                 |
|    | Crush Hazard                |
|    | Electric Shock Hazard       |
|    | Equipment Misuse Hazard     |
|   | Fire and Explosion Hazard   |
|  | Moving Parts Hazard         |
|  | Skin Injection Hazard       |
|  | Skin Injection Hazard       |
|  | Splash Hazard               |
|  | Toxic Fluid or Fumes Hazard |

| SYMBOL                                                                              | MEANING                                                  |
|-------------------------------------------------------------------------------------|----------------------------------------------------------|
|    | Eliminate Ignition Sources                               |
|    | Do Not Stop Leaks with Hand, Body, Glove or Rag          |
|    | Do Not Place Hands or Other Body Parts Near Fluid Outlet |
|    | Ground Equipment                                         |
|   | Read Manual                                              |
|  | Follow Pressure Relief Procedure                         |
|  | Ventilate Work Area                                      |
|  | Wear Personal Protective Equipment                       |



### Safety Alert Symbol

This symbol indicates: Attention! Become Alert! Look for this symbol throughout the manual to indicate important safety messages.

# GENERAL WARNINGS

The following warnings apply throughout this manual. Read, understand, and follow the warnings before using this equipment. Failure to follow these warnings can result in serious injury.

**DANGER**



**SEVERE ELECTRIC SHOCK HAZARD**

This equipment is powered by more than 240 V. Contact with this voltage will cause death or serious injury.

- Turn off and disconnect all power before disconnecting any cables and before servicing equipment.
- This equipment must be grounded. Connect only to grounded power source.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

|  <b>WARNING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p><b>TOXIC FLUID OR FUMES HAZARD</b></p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled or swallowed.</p> <ul style="list-style-type: none"> <li>• Read Safety Data Sheets (SDSs) for handling instructions and to know the specific hazards of the fluids you are using, including the effects of long-term exposure.</li> <li>• When spraying, servicing equipment, or when in the work area, always keep work area well-ventilated and always wear appropriate personal protective equipment. See <b>Personal Protective Equipment</b> warnings in this manual.</li> <li>• Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> </ul>                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>Always wear appropriate personal protective equipment and cover all skin when spraying, servicing equipment, or when in the work area. Protective equipment helps prevent serious injury, including long-term exposure; inhalation of toxic fumes, mists or vapors; allergic reaction; burns; eye injury; and hearing loss. This protective equipment includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• A properly fitting respirator, which may include a supplied-air respirator, chemically impermeable gloves, protective clothing, and foot coverings as recommended by the fluid manufacturer and local regulatory authority.</li> <li>• Protective eyewear and hearing protection.</li> </ul>                                                                                                                                                            |
| <br><br><br><br><br> | <p><b>SKIN INJECTION HAZARD</b></p> <p>High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. <b>Get immediate surgical treatment.</b></p> <ul style="list-style-type: none"> <li>• Do not spray without tip guard and trigger guard installed.</li> <li>• Engage trigger lock when not spraying.</li> <li>• Do not point gun at anyone or at any part of the body.</li> <li>• Do not put your hand over the spray tip.</li> <li>• Do not stop or deflect leaks with your hand, body, glove, or rag.</li> <li>• Follow the <b>Pressure Relief Procedure</b> when you stop spraying and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check hoses and couplings daily. Replace worn or damaged parts immediately.</li> </ul> |



## WARNING



### FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, **in work area** can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:



- Use equipment only in well-ventilated area.



- Eliminate all ignition sources, such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).



- Ground all equipment in the work area. See **Grounding** instructions.
- Never spray or flush solvent at high pressure.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive.
- **Stop operation immediately** if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.



### THERMAL EXPANSION HAZARD

Fluids subjected to heat in confined spaces, including hoses, can create a rapid rise in pressure due to the thermal expansion. Over-pressurization can result in equipment rupture and serious injury.



- Open a valve to relieve the fluid expansion during heating.
- Replace hoses proactively at regular intervals based on your operating conditions.



### PRESSURIZED ALUMINUM PARTS HAZARD

Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.

- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
- Do not use chlorine bleach.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.



|  <b>WARNING</b>                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br>     | <p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Specifications</b> in all equipment manuals.</li> <li>• Use fluids and solvents that are compatible with equipment wetted parts. See <b>Technical Specifications</b> in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.</li> <li>• Do not leave the work area while equipment is energized or under pressure.</li> <li>• Turn off all equipment and follow the <b>Pressure Relief Procedure</b> when equipment is not in use.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>• Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.</li> <li>• Make sure all equipment is rated and approved for the environment in which you are using it.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or overbend hoses or use hoses to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul> |
| <br> | <p><b>MOVING PARTS HAZARD</b></p> <p>Moving parts can pinch, cut, or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> and disconnect all power sources.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                         | <p><b>BURN HAZARD</b></p> <p>Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:</p> <ul style="list-style-type: none"> <li>• Do not touch hot fluid or equipment.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

# IMPORTANT ISOCYANATE (ISO) INFORMATION

Isocyanates (ISO) are catalysts used in two component materials.

## ISOCYANATE CONDITIONS

|  <b>WARNING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                   |                                                                                   |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|--|--|--|--|--|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |  |  |  |  |  |  |  |  |
| <p>Spraying or dispensing fluids that contain isocyanates creates potentially harmful mists, vapors, and atomized particulates.</p> <ul style="list-style-type: none"> <li>• Read and understand the fluid manufacturer's warnings and Safety Data Sheets (SDSs) to know specific hazards and precautions related to isocyanates.</li> <li>• Use of isocyanates involves potentially hazardous procedures. Do not spray with this equipment unless you are trained, qualified, and have read and understood the information in this manual and in the fluid manufacturer's application instructions and SDSs.</li> <li>• Use of incorrectly maintained or mis-adjusted equipment may result in improperly cured material, which could cause off gassing and offensive odors. Equipment must be carefully maintained and adjusted according to instructions in the manual.</li> <li>• To prevent inhalation of isocyanate mists, vapors and atomized particulates, everyone in the work area must wear appropriate respiratory protection. Always wear a properly fitting respirator, which may include a supplied-air respirator. Ventilate the work area according to instructions in the fluid manufacturer's SDSs.</li> <li>• Avoid all skin contact with isocyanates. Everyone in the work area must wear chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority. Follow all fluid manufacturer recommendations, including those regarding handling of contaminated clothing. After spraying, wash hands and face before eating or drinking.</li> <li>• Hazard from exposure to isocyanates continues after spraying. Anyone without appropriate personal protective equipment must stay out of the work area during application and after application for the time period specified by the fluid manufacturer. Generally this time period is at least 24 hours.</li> <li>• Warn others who may enter work area of hazard from exposure to isocyanates. Follow the recommendations of the fluid manufacturer and local regulatory authority. Posting a placard such as the following outside the work area is recommended:</li> </ul> |                                                                                   |                                                                                   |  |  |  |  |  |  |  |
| <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <div style="background-color: orange; color: black; padding: 2px; text-align: center;">  <b>WARNING</b> </div> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  </div> <div> <b>TOXIC FUMES<br/>HAZARD</b> </div> </div> <div style="text-align: center; font-size: small;">             DO NOT ENTER DURING<br/>             SPRAY FOAM APPLICATION<br/>             OR FOR ____ HOURS AFTER<br/>             APPLICATION IS COMPLETE           </div> <div style="background-color: orange; color: black; padding: 2px; text-align: center;"> <b>DO NOT ENTER UNTIL:</b> </div> <div style="text-align: center;">             DATE: _____<br/>             TIME: _____           </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                   |                                                                                   |  |  |  |  |  |  |  |

## IMPORTANT ISOCYANATE (ISO) INFORMATION

### KEEP COMPONENTS A AND B SEPARATE

| ⚠ WARNING                                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|--|--|
|                                                                                                                                                                                                                                                                                              |  |  |  |  |
| <p>Cross-contamination can result in cured material in fluid lines which could cause serious injury or damage equipment. To prevent cross-contamination:</p> <ul style="list-style-type: none"> <li>• <b>Never</b> interchange component A and component B wetted parts.</li> <li>• Never use solvent on one side if it has been contaminated from the other side.</li> </ul> |                                                                                   |  |  |  |

### MOISTURE SENSITIVITY OF ISOCYANATES

Exposure to moisture (such as humidity) will cause ISO to partially cure, forming small, hard, abrasive crystal that become suspended in the fluid. Eventually a film will form on the surface and the ISO will begin to gel, increasing in viscosity.

| NOTICE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| <p>Partially cured ISO will reduce performance and the life of all wetted parts.</p> <ul style="list-style-type: none"> <li>• Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. <b>Never</b> store ISO in an open container.</li> <li>• Keep the ISO pump wet cup or reservoir (if installed) filled with appropriate lubricant. The lubricant creates a barrier between the ISO and the atmosphere.</li> <li>• Use only moisture-proof hoses compatible with ISO.</li> <li>• Never use reclaimed solvents, which may contain moisture. Always keep solvent containers closed when not in use.</li> <li>• Always lubricate threaded parts with an appropriate lubricant when reassembling.</li> </ul> |  |  |  |  |

#### NOTE:

The amount of film formation and rate of crystallization varies depending on the blend of ISO, the humidity, and the temperature.

### CHANGING MATERIALS

| NOTICE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| <p>Changing the material types used in your equipment requires special attention to avoid equipment damage and downtime.</p> <ul style="list-style-type: none"> <li>• When changing materials, flush the equipment multiple times to ensure it is thoroughly clean.</li> <li>• Always clean the fluid inlet strainers after flushing.</li> <li>• Check with your material manufacturer for chemical compatibility.</li> <li>• When changing between epoxies and urethanes or polyureas, disassemble and clean all fluid components and change hoses. Epoxies often have amines on the B (hardener) side. Polyureas often have amines on the B (resin) side.</li> </ul> |  |  |  |  |

### FOAM RESINS WITH 245 FA BLOWING AGENTS

Some foam blowing agents will froth at temperatures above 90°F (33°C) when not under pressure, especially if agitated. To reduce frothing, minimize preheating in a circulation system.

### MATERIAL SELF-IGNITION

| ⚠ WARNING                                                                                                                                 |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|                                                        |  |  |  |  |
| <p>Some materials may become self-igniting if applied too thick. Read material manufacturer's warnings and Safety Data Sheets (SDSs).</p> |  |  |  |  |

## MOISTURE SENSITIVITY OF ISOCYANATES: REACTOR 3 PROCEDURES

---

For Reactor 3 Hydraulic Proportioning Systems, performing the correct procedures before storage can prevent ISO from partially curing in the equipment.

### **NOTICE**

- To prevent damage, cycle material through the Reactor at least once per week when wetted and sitting idle. Use the A-side transfer pump to flush material through the A-side outlet manifold recirculation fitting. See **Flush the Equipment**.
- The Reactor should not be stored after ingesting air or running out of material. Prior to storage, follow the Purge Air procedure in your operation manual.

## TECHNICAL SPECIFICATIONS

The table provides important information related to the Reactor® 3 Hydraulic Proportioning Systems, including product attributes, measurements, and performance characteristics that support the use of the equipment.

Table 8-1: Technical Specifications for Reactor® 3 Hydraulic Proportioning Systems, H-30

| H-30                                                                                | US                                               | METRIC             |
|-------------------------------------------------------------------------------------|--------------------------------------------------|--------------------|
| Maximum Fluid Working Pressure                                                      | 2000 psi                                         | 1.4 MPa, 14 bar    |
| Maximum Fluid Temperature                                                           | 180°F                                            | 82.2°C             |
| Maximum Flow Rate                                                                   | 31 lb/min                                        | 14.1 kg/min        |
| Bare Models                                                                         | 6.2-31 lb/min                                    | 2.82-14.1 kg/min   |
| Maximum Heated Hose Length                                                          | 320 ft                                           | 97 m               |
| Approximate Output per cycle (A + B)                                                | 0.074 gal.                                       | 0.28 l             |
| Bare Models                                                                         | 0.0148-0.074 gal.                                | 0.056-0.28 l       |
| Operating Ambient Temperature Range                                                 | 20°F to 120°F                                    | -7°C to 49°C       |
| Fluid Inlets                                                                        | 3/4 npt(f)                                       |                    |
| Fluid Outlet - A                                                                    | #8 (1/2 in.) JIC, with #5 (5/16 in.) JIC adapter |                    |
| Fluid Outlet - B                                                                    | #10 (5/8 in.) JIC, with #6 (3/8 in.) JIC adapter |                    |
| Fluid Circulation Port Size                                                         | 1/4 nps(m)                                       |                    |
| Fluid Circulation Port Maximum Pressure                                             | 250 psi                                          | 1.7 MPa, 17 bar    |
| Maximum Fluid Inlet Pressure                                                        | 600 psi                                          | 4.14 MPa, 41.4 bar |
| Sound Pressure (Measured per ISO 3744)                                              |                                                  |                    |
| Measured from 3.1 ft (1 m) @ 1050 psi (7.2 MPa, 72.3 bar), 31 lbs/min (13.6 kg/min) | 81.4 dBA                                         |                    |
| Sound Power                                                                         |                                                  |                    |
| Measured from 3.1 ft (1 m) @ 1050 psi (7.2 MPa, 72.3 bra), 31 lbs/min (13.6 kg/min) | 96.9 dBA                                         |                    |
| Dimensions                                                                          |                                                  |                    |
| Width                                                                               | 36.5 in.                                         | 93 cm              |
| Depth                                                                               | 24.6 in.                                         | 62 cm              |
| Height                                                                              | 60.2 in.                                         | 153 cm             |
| Weight                                                                              | 612 lb                                           | 278 kg             |
| Bare Models                                                                         | 516-540 lb                                       | 234-245 kg         |

## TECHNICAL SPECIFICATIONS

Table 8-2: Technical Specifications for Reactor® 3 Proportioning Systems, H-50

| H-50                                                                                | US                                               | METRIC             |
|-------------------------------------------------------------------------------------|--------------------------------------------------|--------------------|
| Maximum Fluid Working Pressure                                                      | 2000 psi                                         | 1.4 MPa, 14 bar    |
| Maximum Fluid Temperature                                                           | 180°F                                            | 82.2°C             |
| Maximum Flow Rate                                                                   | 53 lb/min                                        | 24 kg/min          |
| Bare Models                                                                         | 10.6-53 lb/min                                   | 4.8-24 kg/min      |
| Maximum Heated Hose Length                                                          | 420 ft                                           | 128 m              |
| Approximate Output per cycle (A + B)                                                | 0.074 gal.                                       | 0.28 l             |
| Bare Models                                                                         | 0.0148-0.074 gal.                                | 0.056-0.28 l       |
| Operating Ambient Temperature Range                                                 | 20°F to 120°F                                    | -7°C to 49°C       |
| Fluid Inlets                                                                        | 3/4 npt(f)                                       |                    |
| Fluid Outlet - A                                                                    | #8 (1/2 in.) JIC, with #5 (5/16 in.) JIC adapter |                    |
| Fluid Outlet - B                                                                    | #10 (5/8 in.) JIC, with #6 (3/8 in.) JIC adapter |                    |
| Fluid Circulation Port Size                                                         | 1/4 nps(m)                                       |                    |
| Fluid Circulation Port Maximum Pressure                                             | 250 psi                                          | 1.7 MPa, 17 bar    |
| Maximum Fluid Inlet Pressure                                                        | 600 psi                                          | 4.14 MPa, 41.4 bar |
| Sound Pressure (Measured per ISO 3744)                                              |                                                  |                    |
| Measured from 3.1 ft (1 m) @ 1050 psi (7.2 MPa, 72.3 bar), 31 lbs/min (13.6 kg/min) | 81.4 dBA                                         |                    |
| Sound Power                                                                         |                                                  |                    |
| Measured from 3.1 ft (1 m) @ 1050 psi (7.2 MPa, 72.3 bra), 31 lbs/min (13.6 kg/min) | 96.9 dBA                                         |                    |
| Dimensions                                                                          |                                                  |                    |
| Width                                                                               | 36.5 in.                                         | 93 cm              |
| Depth                                                                               | 24.6 in.                                         | 62 cm              |
| Height                                                                              | 60.2 in.                                         | 153 cm             |
| Weight                                                                              | 612 lb                                           | 278 kg             |
| Bare Models                                                                         | 569 lb                                           | 258 kg             |

## TECHNICAL SPECIFICATIONS

Table 8-3: Technical Specifications for Reactor® 3 Proportioning Systems, H-XP2

| H-XP2                                                                               | US                                               | METRIC             |
|-------------------------------------------------------------------------------------|--------------------------------------------------|--------------------|
| Maximum Fluid Working Pressure                                                      | 3500 psi                                         | 24.1 MPa, 241 bar  |
| Maximum Fluid Temperature                                                           | 180°F                                            | 82.2°C             |
| Maximum Flow Rate                                                                   | 1.8 gpm                                          | 6.8 lpm            |
| Bare Models                                                                         | 0.63-1.8 gpm                                     | 2.38-6.8 lpm       |
| Maximum Heated Hose Length                                                          | 320 ft                                           | 97 m               |
| Approximate Output per cycle (A + B)                                                | 0.042 gal.                                       | 0.16 l             |
| Bare Models                                                                         | 0.0147-0.042 gal.                                | 0.056-0.16 l       |
| Operating Ambient Temperature Range                                                 | 20°F to 120°F                                    | -7°C to 49°C       |
| Fluid Inlets                                                                        | 3/4 npt(f)                                       |                    |
| Fluid Outlet - A                                                                    | #8 (1/2 in.) JIC, with #5 (5/16 in.) JIC adapter |                    |
| Fluid Outlet - B                                                                    | #10 (5/8 in.) JIC, with #6 (3/8 in.) JIC adapter |                    |
| Fluid Circulation Port Size                                                         | 1/4 nps(m)                                       |                    |
| Fluid Circulation Port Maximum Pressure                                             | 250 psi                                          | 1.7 MPa, 17 bar    |
| Maximum Fluid Inlet Pressure                                                        | 600 psi                                          | 4.14 MPa, 41.4 bar |
| Sound Pressure (Measured per ISO 3744)                                              |                                                  |                    |
| Measured from 3.1 ft (1 m) @ 1050 psi (7.2 MPa, 72.3 bar), 31 lbs/min (13.6 kg/min) | 81.4 dBA                                         |                    |
| Sound Power                                                                         |                                                  |                    |
| Measured from 3.1 ft (1 m) @ 1050 psi (7.2 MPa, 72.3 bra), 31 lbs/min (13.6 kg/min) | 96.9 dBA                                         |                    |
| Dimensions                                                                          |                                                  |                    |
| Width                                                                               | 36.5 in.                                         | 93 cm              |
| Depth                                                                               | 24.6 in.                                         | 62 cm              |
| Height                                                                              | 60.2 in.                                         | 153 cm             |
| Weight                                                                              | 612 lb                                           | 278 kg             |
| Bare Models                                                                         | 516-540 lb                                       | 234-245 kg         |

## TECHNICAL SPECIFICATIONS

Table 8-4: Technical Specifications for Reactor® 3 Proportioning Systems, H-XP3

| H-XP3                                                                               | US                                               | METRIC             |
|-------------------------------------------------------------------------------------|--------------------------------------------------|--------------------|
| Maximum Fluid Working Pressure                                                      | 3500 psi                                         | 24.1 MPa, 241 bar  |
| Maximum Fluid Temperature                                                           | 180°F                                            | 82.2°C             |
| Maximum Flow Rate                                                                   | 3.0 gpm                                          | 11.4 lpm           |
| Bare Models                                                                         | 1.05-3.0 gpm                                     | 3.99-11.4 lpm      |
| Maximum Heated Hose Length                                                          | 420 ft                                           | 128 m              |
| Approximate Output per cycle (A + B)                                                | 0.042 gal.                                       | 0.16 l             |
| Bare Models                                                                         | 0.0147-0.042 gal.                                | 0.056-0.16 l       |
| Operating Ambient Temperature Range                                                 | 20°F to 120°F                                    | -7°C to 49°C       |
| Fluid Inlets                                                                        | 3/4 npt(f)                                       |                    |
| Fluid Outlet - A                                                                    | #8 (1/2 in.) JIC, with #5 (5/16 in.) JIC adapter |                    |
| Fluid Outlet - B                                                                    | #10 (5/8 in.) JIC, with #6 (3/8 in.) JIC adapter |                    |
| Fluid Circulation Port Size                                                         | 1/4 nps(m)                                       |                    |
| Fluid Circulation Port Maximum Pressure                                             | 250 psi                                          | 1.7 MPa, 17 bar    |
| Maximum Fluid Inlet Pressure                                                        | 600 psi                                          | 4.14 MPa, 41.4 bar |
| Sound Pressure (Measured per ISO 3744)                                              |                                                  |                    |
| Measured from 3.1 ft (1 m) @ 1050 psi (7.2 MPa, 72.3 bar), 31 lbs/min (13.6 kg/min) | 81.4 dBA                                         |                    |
| Sound Power                                                                         |                                                  |                    |
| Measured from 3.1 ft (1 m) @ 1050 psi (7.2 MPa, 72.3 bra), 31 lbs/min (13.6 kg/min) | 96.9 dBA                                         |                    |
| Dimensions                                                                          |                                                  |                    |
| Width                                                                               | 36.5 in.                                         | 93 cm              |
| Depth                                                                               | 24.6 in.                                         | 62 cm              |
| Height                                                                              | 60.2 in.                                         | 153 cm             |
| Weight                                                                              | 612 lb                                           | 278 kg             |
| Bare Models                                                                         | 569 lb                                           | 258 kg             |

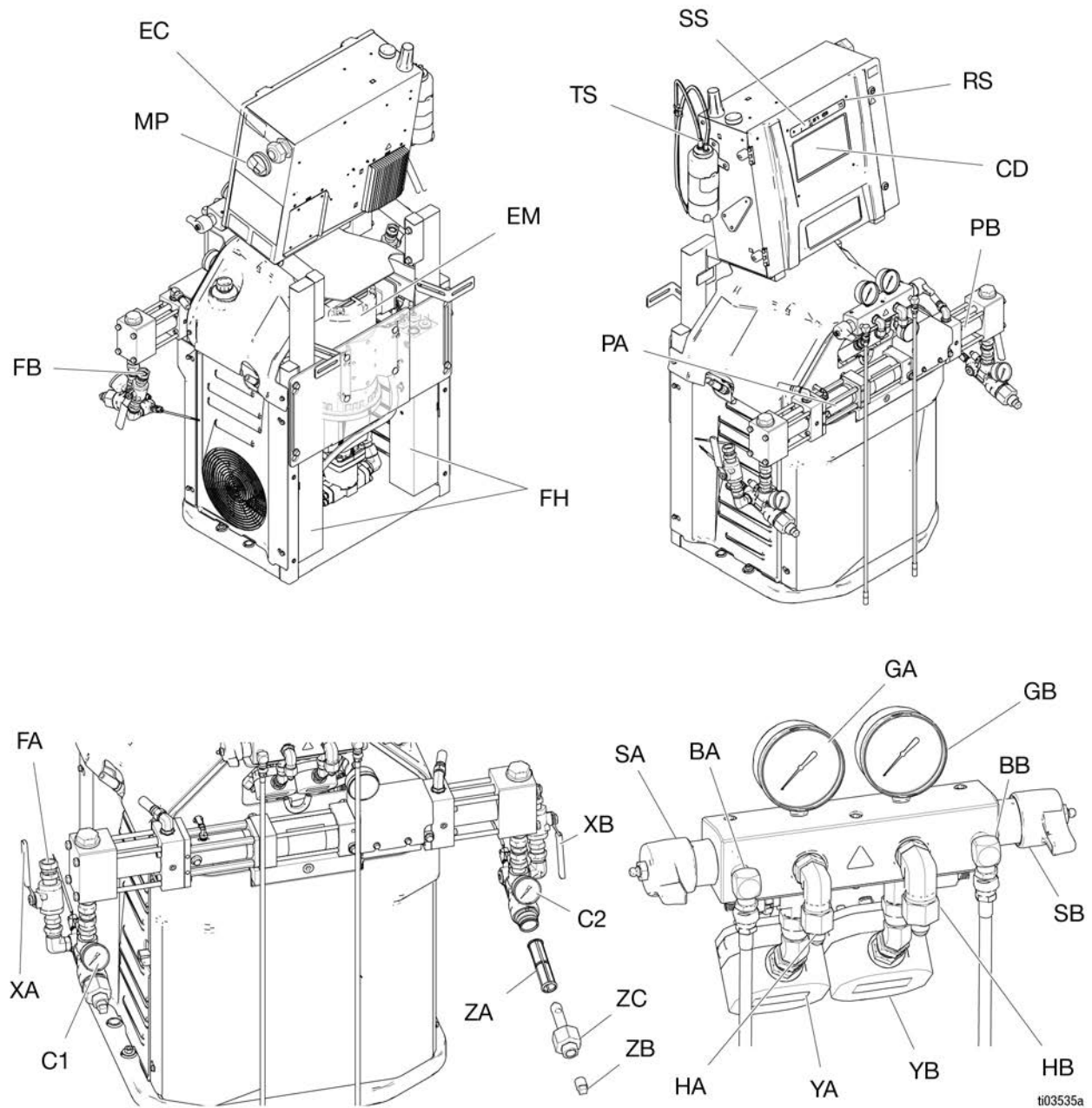
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## COMPONENT IDENTIFICATION

The diagrams highlight the controls and features on the Reactor® 3 Hydraulic Proportioning System.

### PROPORTIONER



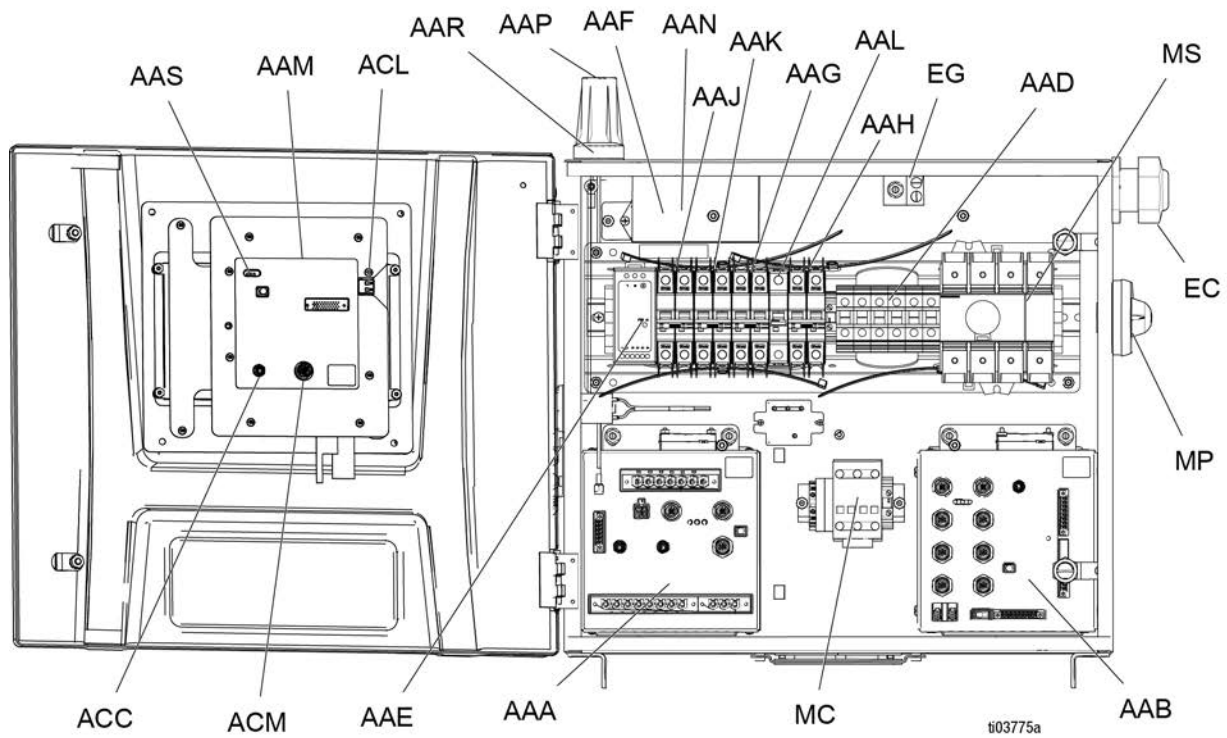
## COMPONENT IDENTIFICATION

### KEY

|    |                                          |
|----|------------------------------------------|
| BA | ISO Side Pressure Relief Outlet          |
| BB | RES Side Pressure Relief Outlet          |
| C1 | ISO Side Inlet Pressure Gauge            |
| C2 | RES Side Inlet Pressure Gauge            |
| CD | Advanced Display Module (ADM)            |
| EC | Electrical Cord Strain Relief            |
| EM | Electric Motor                           |
| FA | ISO Side Inlet Fitting                   |
| FB | RES Side Inlet Fitting                   |
| FH | Fluid Heaters                            |
| GA | ISO Side Pressure Gauge                  |
| GB | RES Side Pressure Gauge                  |
| HA | ISO Side Hose Connection                 |
| HB | RES Side Hose Connection                 |
| MP | Main Power Switch                        |
| PA | ISO Side Pump                            |
| PB | RES Side Pump                            |
| RS | Red Stop Button                          |
| SA | ISO Side Pressure Relief/Spray Valve     |
| SB | RES Side Pressure Relief/Spray Valve     |
| SS | System LED Status Light                  |
| TS | ISO Lubrication Reservoir                |
| XA | ISO Side Fluid Inlet Valve               |
| XB | RES Side Fluid Inlet Valve               |
| YA | Flow Meter (ISO side, Elite models only) |
| YB | Flow Meter (RES side, Elite models only) |
| ZA | Inlet Strainer Screen                    |
| ZB | Inlet Strainer Drain Plug                |
| ZC | Inlet Strainer Cap                       |

## COMPONENT IDENTIFICATION

### ELECTRICAL ENCLOSURE (REACTOR H-30/H-XP2)



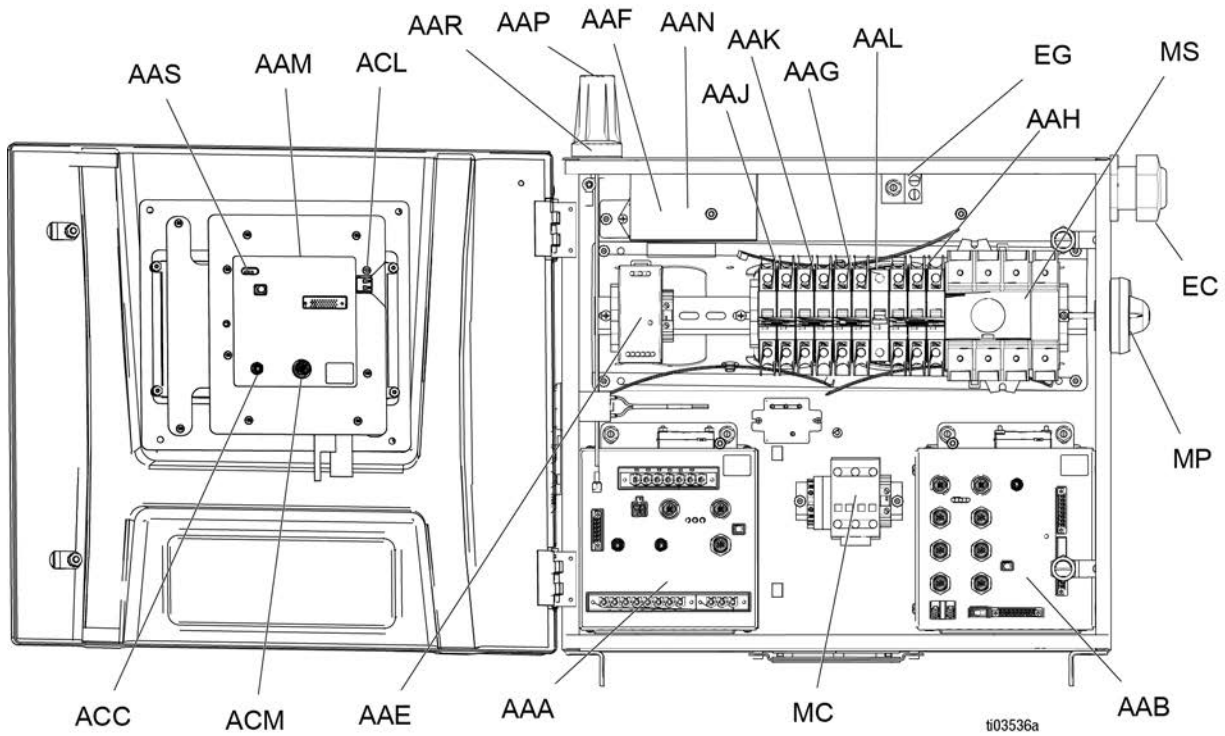
## COMPONENT IDENTIFICATION

### KEY

|     |                                         |
|-----|-----------------------------------------|
| AAA | Temperature Control Module (TCM)        |
| AAB | Hydraulic Control Module (HCM)          |
| AAD | Wiring Terminal Blocks                  |
| AAE | 24 V Power Supply                       |
| AAF | Surge Protector                         |
| AAG | Transformer Breaker                     |
| AAH | Motor Breaker                           |
| AAJ | A-Side Heat Breaker                     |
| AAK | B-Side Heat Breaker                     |
| AAL | Hose Breaker                            |
| AAM | Advanced Display Module (ADM)           |
| AAN | Reactor Connect App Module              |
| AAP | Cellular Antenna                        |
| AAR | GPS Antenna                             |
| AAS | ADM LED Status Lights                   |
| ACC | Reactor Connect Module Cable Connection |
| ACL | ADM USB Port                            |
| ACM | ADM CAN Cable Connection                |
| EC  | Incoming Power Cord Strain Relief       |
| EG  | Incoming Power Ground Terminal          |
| MC  | Motor Contactor                         |
| MP  | Main Power Disconnect Knob              |
| MS  | Main Power Disconnect Switch            |

## COMPONENT IDENTIFICATION

### ELECTRICAL ENCLOSURE (REACTOR H-50/H-XP3)



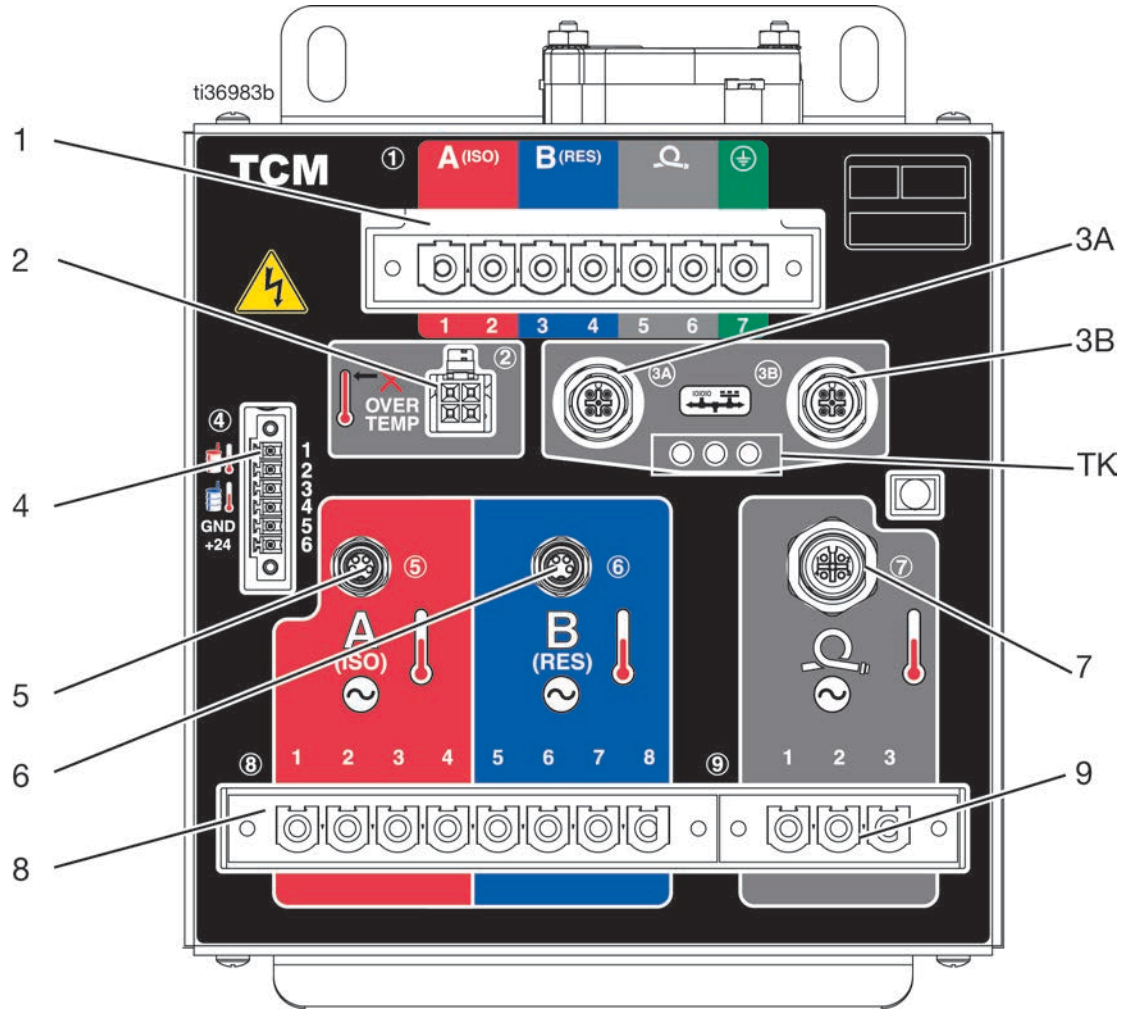
## COMPONENT IDENTIFICATION

### KEY

|     |                                         |
|-----|-----------------------------------------|
| AAA | Temperature Control Module (TCM)        |
| AAB | Hydraulic Control Module (HCM)          |
| AAE | 24 V Power Supply                       |
| AAF | Surge Protector                         |
| AAG | Transformer Breaker                     |
| AAH | Motor Breaker                           |
| AAJ | A-Side Heat Breaker                     |
| AAK | B-Side Heat Breaker                     |
| AAL | Hose Breaker                            |
| AAM | Advanced Display Module (ADM)           |
| AAN | Reactor Connect App Module              |
| AAP | Cellular Antenna                        |
| AAR | GPS Antenna                             |
| AAS | ADM LED Status Light                    |
| ACC | Reactor Connect Module Cable Connection |
| ACL | ADM USB Port                            |
| ACM | ADM CAN Cable Connection                |
| EC  | Incoming Power Cord Strain Relief       |
| EG  | Incoming Power Ground Terminal          |
| MC  | Motor Contactor                         |
| MP  | Main Power Disconnect Knob              |
| MS  | Main Power Disconnect Switch            |

## COMPONENT IDENTIFICATION

### TEMPERATURE CONTROL MODULE (TCM)



## COMPONENT IDENTIFICATION

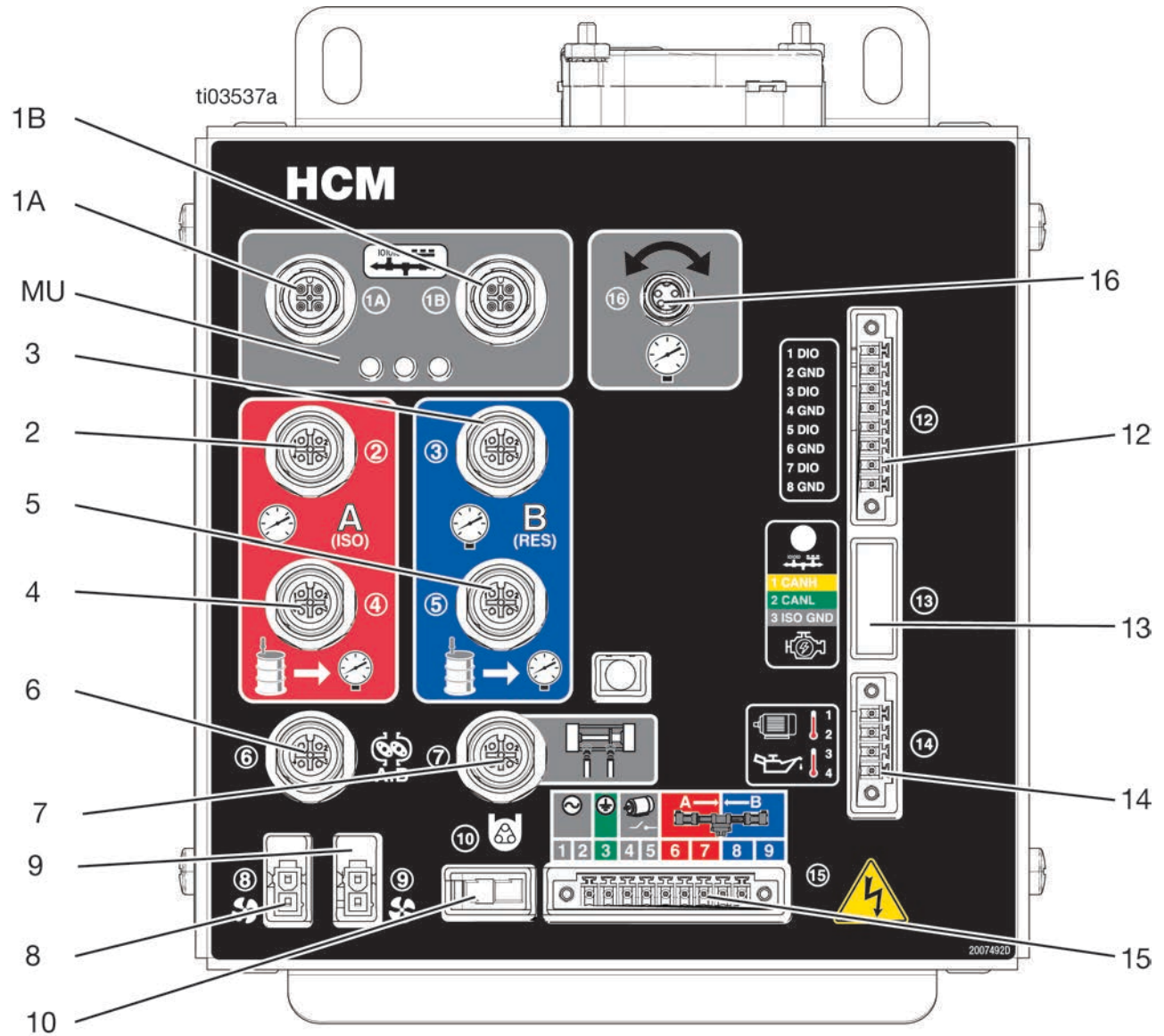
### KEY

|    |                                                      |
|----|------------------------------------------------------|
| 1  | Main Power Input                                     |
| 2  | Heater Over-Temperature Inputs                       |
| 3A | CAN Communications Connections                       |
| 3B |                                                      |
| 4  | A/B Inlet Temperatures and 24 VDC Power Supply Input |
| 5  | A Heater Temperature Input                           |
| 6  | B Heater Temperature Input                           |
| 7  | A/B Hose Temperature Inputs                          |
| 8  | A/B Heater Power Outputs                             |
| 9  | A/B Hose Power Outputs                               |
| TK | TCM LED Status Lights                                |



# COMPONENT IDENTIFICATION

## HYDRAULIC CONTROL MODULE (HCM)



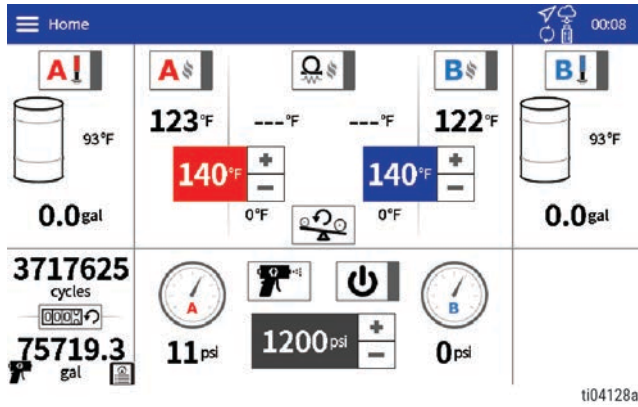
## COMPONENT IDENTIFICATION

### KEY

|    |                                                 |
|----|-------------------------------------------------|
| 1A | CAN Communication Connections                   |
| 1B |                                                 |
| 2  | A-Side Pump Outlet Pressure                     |
| 3  | B-Side Pump Outlet Pressure                     |
| 4  | A-Side Pump Inlet Pressure                      |
| 5  | B-Side Pump Inlet Pressure                      |
| 6  | Flow Meter Inputs                               |
| 7  | Pump Position Switches                          |
| 8  | Transformer Fan                                 |
| 9  | Motor Fan                                       |
| 10 | ISO Lube Pump Output                            |
| 12 | Digital Inputs/Outputs                          |
| 13 | Engine J1939 CAN Connection                     |
| 14 | Motor Temperature and Hydraulic Oil Temperature |
| 15 | Motor Contactor and Solenoids                   |
| 16 | Electronic Pressure Control Output              |
| MU | HCM LED Status Lights                           |

## ADVANCED DISPLAY MODULE (ADM)

The ADM display shows graphical and text information related to setup and spray operations.



### ADM KEYS AND INDICATORS



Press Red Stop Button (RS) to stop all proportioner processes. This is not a safety or emergency stop.

#### NOTE:

For complete description of the ADM icons and screens, refer to your Reactor 3 operation manual.

## PRESSURE RELIEF PROCEDURE

Relieve pressure on the Reactor® 3 Hydraulic Proportioning System when operation is stopped, and before cleaning, checking, or servicing the equipment.



Follow the Pressure Relief Procedure whenever you see this symbol.

| ! WARNING                                                                                                                                                                                                                                                                                                            |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|                                                                                                                                                                                                                                                                                                                      |  |  |  |  |
| <p>This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.</p> |  |  |  |  |

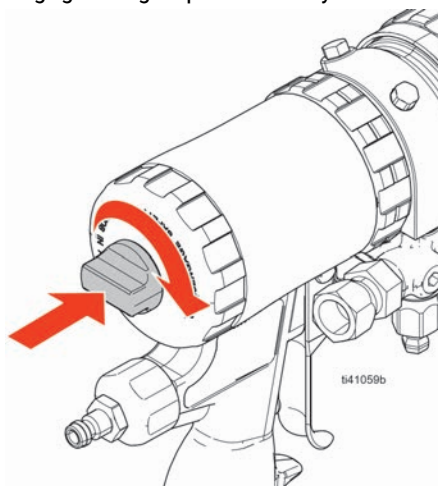
1. Tap to turn the motor **OFF**.

### NOTE:

Electric transfer pumps will automatically turn off with the motor.

2. Tap , , and to turn **OFF** all heat zones.
3. Follow the **Pressure Relief Procedure** in your gun manual.

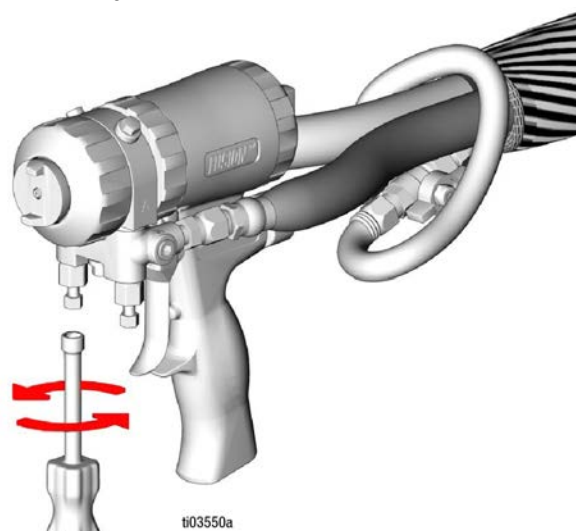
4. Engage the gun piston safety lock.



### NOTE:

The Fusion AP gun is shown.

5. Close the gun fluid inlet valves A and B.



### NOTE:

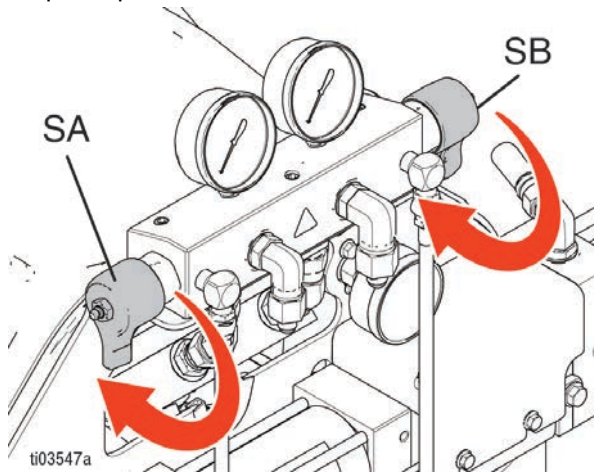
The Fusion AP gun is shown.

6. Shut off the transfer pumps and agitator, if used. For pneumatic transfer pumps and agitators, refer to your component manuals. For electric transfer pumps (if necessary), tap to turn **OFF** the A-side transfer pump power, and to turn **OFF** the B-side transfer pump power.

## PRESSURE RELIEF PROCEDURE

7. Make sure the bleed or circulation lines are connected and routed to waste containers or supply tanks. Turn the pressure relief/spray valves (SA, SB)

to pressure relief/circulation . Ensure gauges drop to 0 psi.



# SHUT DOWN

## NOTICE

Proper system setup, startup, and shutdown procedures are critical to electrical equipment reliability. The following procedures ensure steady voltage. Failure to follow these procedures will cause voltage fluctuations that can damage electrical equipment and void the warranty.

1. If using pneumatic transfer pumps, turn air pressure to the transfer pumps **OFF**. Refer to your pump manual; see **Related Manuals**.

2. Tap  to turn the motor **OFF**.

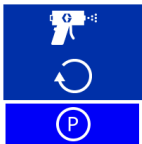
### NOTE:

Electric transfer pumps will automatically turn off with the motor.

3. Tap , , and  to turn **OFF** all heat zones.
4. Follow the **Pressure Relief Procedure**.

5. Tap the **Pump Mode** button .

6. Select the **Park Mode** icon from the drop down menu.



The **Park Mode** icon will flash red while the park operation is in progress. The park operation is complete when the motor and transfer pumps are off, and a green check appears next to the **Park**

**Mode** icon . Verify the park operation is complete before moving to the next step.

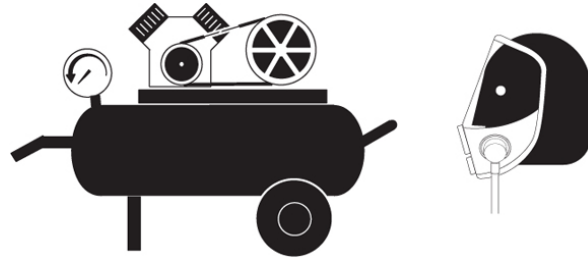
### NOTE:

Pressure relief valves must be set to pressure/circulation to complete park operation.

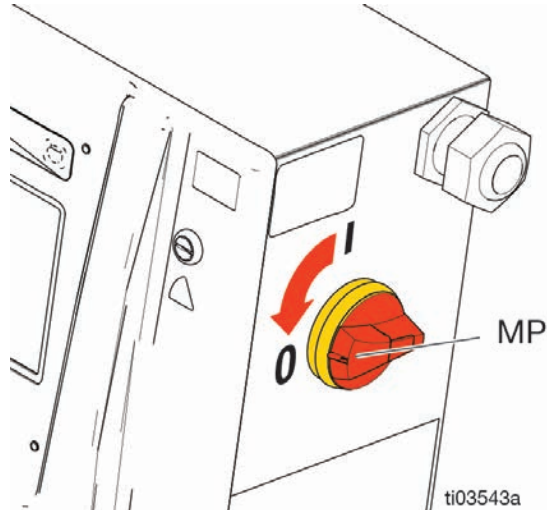
### NOTE:

Electric transfer pumps will automatically park at the bottom of their stroke when the system is in **Park Mode**.

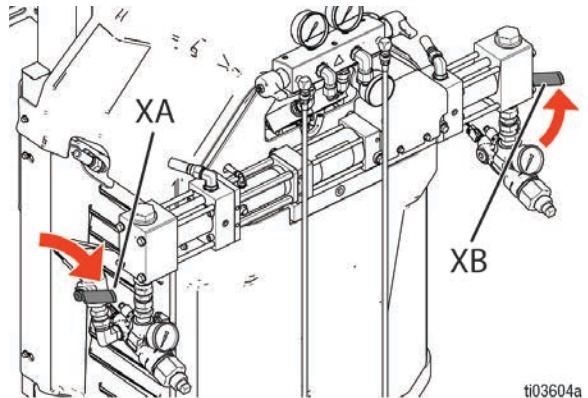
7. Turn **OFF** the air compressor, air dryer, and breathing air.



8. Turn the main power switch (MP) **OFF**.

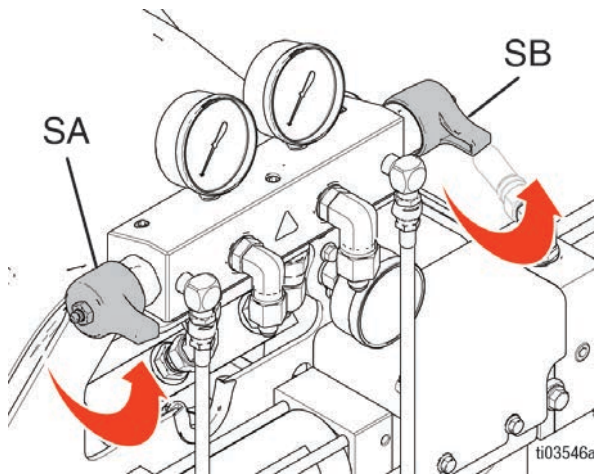


9. Close all fluid supply valves (XA, XB).

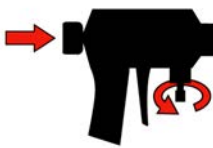


## SHUTDOWN

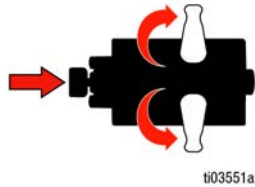
10. Set the pressure relief/spray valves (SA, SB) to spray  to seal out moisture from the drain line.



11. Engage the gun safety lock then close fluid manifold valves A and B.



**Fusion**



ti03551a

**Probler**



## FLUSH THE EQUIPMENT

Flush the Reactor® 3 Hydraulic Proportioning System regularly to help prevent damage to the equipment.

**⚠ WARNING**



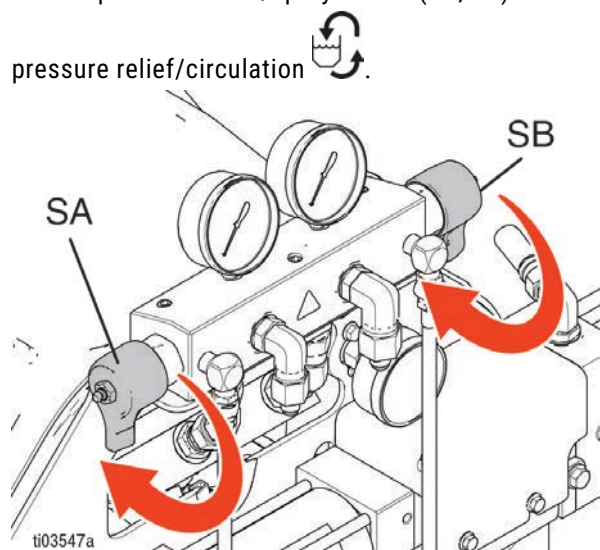



To prevent fire and explosion:

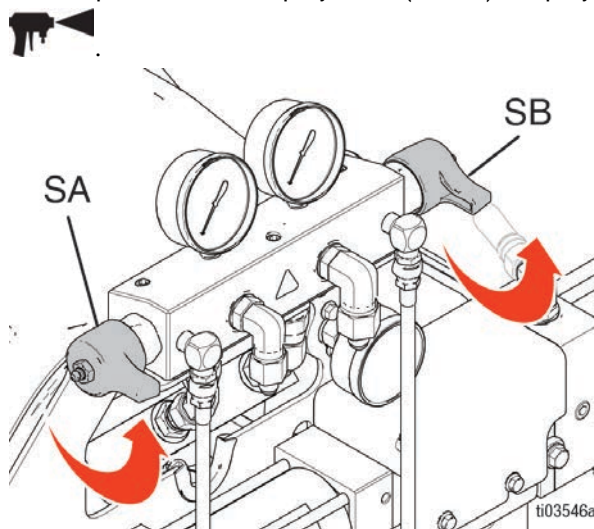
- Flush the equipment only in a well-ventilated area.
- Do not spray flammable fluids.
- Do not turn on heaters while flushing with flammable solvents.
- Always ground equipment and waste container.
- Flush out old fluid with new fluid, or flush out old fluid with a compatible solvent before introducing new fluid.
- Use the lowest possible pressure when flushing.
- All wetted parts are compatible with common solvents. Use only moisture-free solvents.

### To flush the fluid supply lines, pumps, heaters, hose, and the gun manifold:

1. Install bleed lines between the outlet manifold recirculation fitting and a grounded metal waste container.
2. Route the circulation lines back to respective A or B supply, or grounded metal waste containers.
3. Set the pressure relief/spray valves (SA, SB) to spray



4. Use jog mode to circulate fluid. Reactor systems allow the entire system to be in jog mode, or A and B-side transfer pumps to be put into jog mode separately. See **Jog Mode**. Circulate fluid until only solvent comes from the bleed lines. The Reactor feed hoses, pumps, and heaters are now flushed.
5. Set the pressure relief/spray valve (SA, SB) to spray



6. Hold the gun fluid manifold over two grounded waste containers. Open fluid valves until only solvent comes from the valves. Close the valves. The Reactor hose and gun manifold are now flushed.
7. **Optional:** Use accessory circulation kit to circulate fluid through the gun manifold.

| CIRCULATION KIT | GUN               | MANUAL IN ENGLISH |
|-----------------|-------------------|-------------------|
| 246362          | Fusion AP, PC, MP | 309818            |
| 256566          | Fusion CS         | 313058            |
| 2002324         | Fusion FX         | 3B0000            |

### NOTICE

To prevent moisture from reacting with isocyanate, always leave the system filled with a moisture-free plasticizer or oil. Do not use water. Never leave the system dry. See **Important Isocyanate Information**.



## REPAIR

When replacing parts, follow the instructions to restore the components on the Reactor® 3 Hydraulic Proportioning System.

| ⚠ WARNING                                                                                                                                                            |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|                                                                                     |  |  |  |  |
| Repairing this equipment requires access to parts that may cause electric shock if work is not performed properly. Shut off all power to equipment before repairing. |  |  |  |  |

| NOTICE                                                                                                                                                                                                                                                                                 |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| Proper system setup, startup, and shutdown procedures are critical to electrical equipment reliability. The following procedures ensure steady voltage. Failure to follow these procedures will cause voltage fluctuations that can damage electrical equipment and void the warranty. |  |  |  |  |

### FLUSH INLET STRAINER SCREEN

| ⚠ WARNING                                                                           |                                                                                     |  |  |  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|--|--|
|  |  |  |  |  |

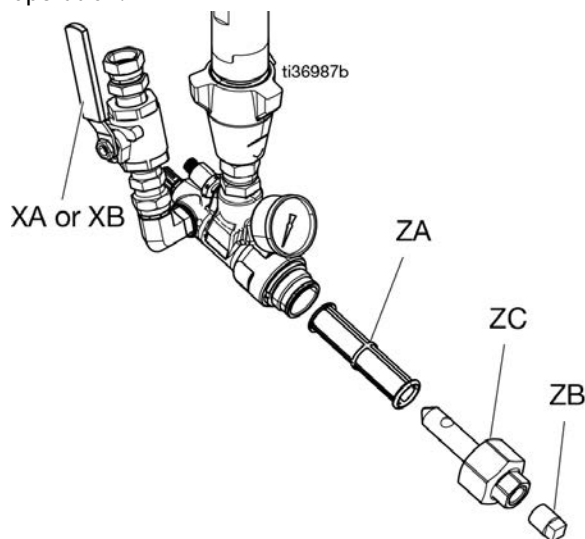
The inlet strainers filter out particles that can plug the pump inlet check valves. Inspect the screens daily as part of the startup routine and clean as required.

Isocyanate can crystallize from moisture contamination or from freezing. If the chemicals used are clean and proper storage, transfer, and operating procedures are followed, there should be minimal contamination of the A-side screen.

Clean the A-side screen only during daily startup. This minimizes moisture contamination by immediately flushing out any isocyanate residue at the start of dispensing operations.

1. Follow the **Pressure Relief Procedure**.
2. Close the fluid inlet valve (XA) at the pump inlet. This prevents material from being pumped while cleaning the screen.
3. Place a container under the strainer base to catch fluid when removing the strainer drain plug (ZB).

4. After the fluid has drained, remove inlet cap (ZC) and inlet strainer screen (ZA) from the strainer manifold. Thoroughly flush the screen with compatible solvent and shake it dry. Inspect the screen. No more than 25 percent of the mesh should be restricted. If more than 25 percent of the mesh is blocked, replace the screen. Inspect the gasket and replace as required.
5. Install the strainer plug (ZB) with the screen (ZA).
6. Open the fluid inlet valve (XA), ensure there are no leaks, then wipe the equipment clean. Proceed with operation.



## CHANGE ISO PUMP THROAT SEAL LUBRICANT (TSL™) FLUID

Check the condition of the TSL fluid daily. Change the TSL fluid if it becomes a gel, its color darkens, or it becomes diluted with isocyanate.

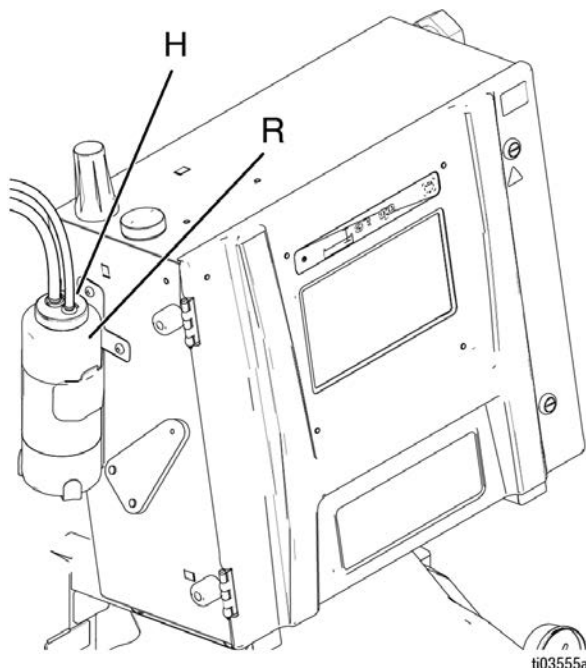
Gel formation is due to moisture absorption by the TSL fluid. The interval between changes depends on the environment in which the equipment is operating. The TSL fluid system minimizes exposure to moisture, but some contamination is still possible.

TSL fluid discoloration is due to continual seepage of small amounts of isocyanate past the pump packings during operation. If the packings are operating properly, it should not be necessary to replace TSL fluid more often than every 3 or 4 weeks.

### TO CHANGE TSL FLUID:

1. Follow the **Pressure Relief Procedure**.
2. Lift the TSL fluid reservoir out of the bracket and remove the reservoir from the cap. Hold the cap over a suitable waste container and flush contaminated fluid out of the lines by placing the strainer in the new fluid and dispense contaminated fluid through the return line into waste container.
3. Drain the reservoir and flush it with clean TSL fluid or replace it with a new reservoir.
4. When the TSL fluid system is flushed clean, fill it with fresh TSL fluid.

5. Thread the reservoir (R) onto the cap (H) assembly and place it in the bracket.



6. Verify the TSL fluid pump is operating correctly by feeling the pulsation in the return hose during normal proportioner pump operation.

## CHANGE HYDRAULIC FLUID AND FILTER



### NOTE:

Change break-in oil in a new system after the first 250 hours of operation or within 3 months, whichever comes first.

Table 13-1: Frequency of Oil Change

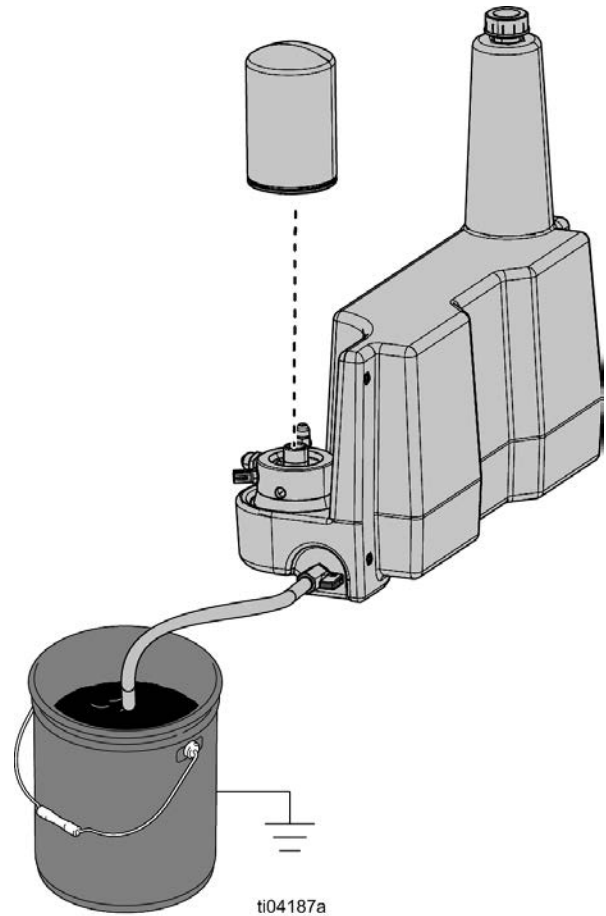
| AMBIENT TEMPERATURE             | RECOMMENDED FREQUENCY                          |
|---------------------------------|------------------------------------------------|
| 0 to 90°F (-17 to 32°C)         | 1000 hours or 12 months, whichever comes first |
| 90°F and above (32°C and above) | 500 hours or 6 months, whichever comes first   |

1. Follow **Pressure Relief Procedure**.
2. Turn the main power switch (MP) **OFF**.
3. Allow hydraulic fluid to cool.

4. Place a bucket or pan under the reservoir drain plug to catch oil.

### NOTE:

Recommend using a 3/8 in. barbed NPT fitting with a 3/8 in. inner diameter (ID) x 1/2 in. outer diameter (OD) hose when draining the oil.



5. Open ball valve.
6. Place a rag around base of oil filter to prevent oil from spilling. Unscrew filter 1/4-3/4 turn to break air lock in filter. Wait five minutes to allow oil in filter to drain back into reservoir. Unscrew filter and remove.
7. Close ball valve.
8. Replace filter:
  - a. Coat filter seal with fresh oil.
  - b. Screw filter on snug, then an additional 1/4 turn.
  - c. Refill reservoir with approved hydraulic fluid. See table for approved oils.

## REPAIR

- d. Proceed with normal operation.

### NOTE:

Upon starting motor, hydraulic pump may make a screeching noise until primed. If this noise continues for more than 30 seconds, switch off motor control.

Table 13-2: Approved Anti-Wear (AW) Hydraulic Oils

| SUPPLIER             | NAME                              |
|----------------------|-----------------------------------|
| Citgo                | A/W ISO Grade 46                  |
| Amsoil               | AWI ISO Grade 46 (synthetic*)     |
| BP Oil International | Energol® HLP-HM, ISO Grade 46     |
| Carl Bechem GmbH     | Staroil HVI 46                    |
| Castrol              | Hyspin AWS 46                     |
| Chevron              | Rykon® AW, ISO 46                 |
| Exxon                | Humble Hydraulic H, ISO Grade 46  |
| Mobil                | Mobil DTE 25, ISO Grade 46        |
| Shell                | Shell Tellus, ISO Grade 46        |
| Texaco               | Texaco AW Hydraulic, ISO Grade 46 |

\*Do not mix mineral-based and synthetic hydraulic oils. Completely drain oil from reservoir and pump prior to converting between oils.

If the approved oils are not available in your area, use an alternative hydraulic oil meeting the following requirements:

**Oil Type:** Anti-Wear (AW) Hydraulic

**ISO Grade:** 46

**Viscosity, cSt at 40°C:** 43.0-47.0

**Viscosity, cSt at 100°C:** 6.5-9.0

**Pour Point, ASTM D 97:** -15°F (-26°C) or lower

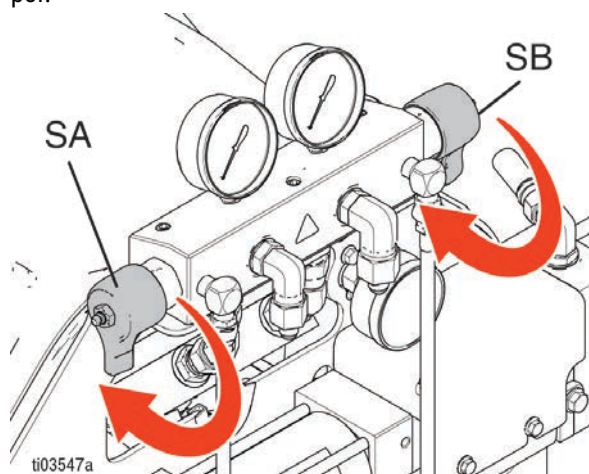
**Other essential properties:** Formulated for anti-wear, anti-foaming, oxidation stability, corrosion protection, and water separation.

## REPAIR PROPORTIONING PUMPS

### WARNING



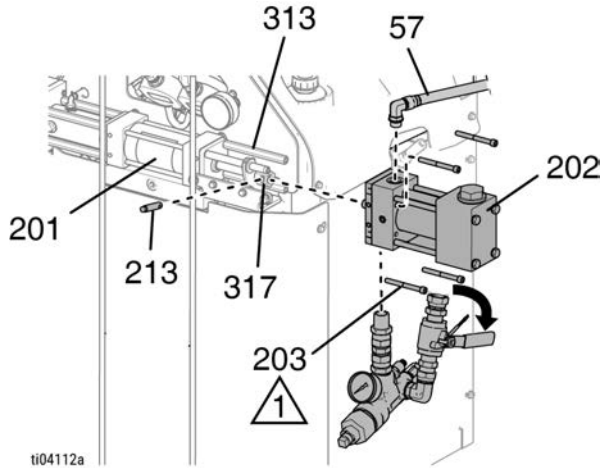
1. Follow the **Flush the Equipment** procedure.
2. Follow the **Shutdown** procedure.
3. Turn both pressure relief/spray valves (SA, SB) to pressure relief/circulation. Route fluid to waste containers or supply tanks. Ensure gauges drop to 0 psi.



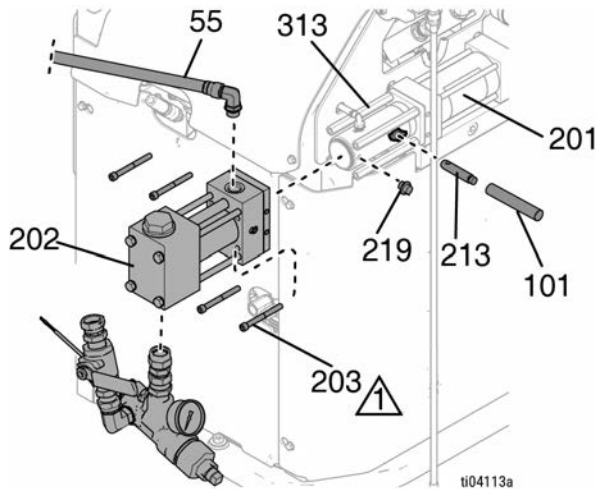
### NOTE:

Use drop cloth or rags to protect the Reactor and surrounding area from spills.

4. Disconnect the B (Resin) side pump inlet line, the inlet y-strainer, and braided steel (57). Remove the pin (213) from the clevis (317) to disconnect the pump from the hydraulic cylinder (201). Remove the four screws (203) holding the pump to the spacers (313) of the cylinder. Take the pump assembly to a workbench.



5. Disconnect the A (ISO) side pump inlet line, the inlet y-strainer, and braided steel (55). Use the pin extractor tool (101) to remove the pin (213), which disconnects the pump from the hydraulic cylinder (201). Remove the four screws (203) holding the pump to the spacers (313) of the cylinder. Take the pump assembly to a workbench.

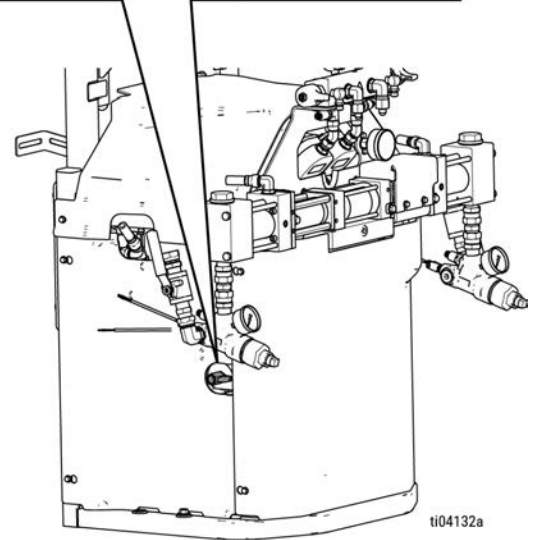
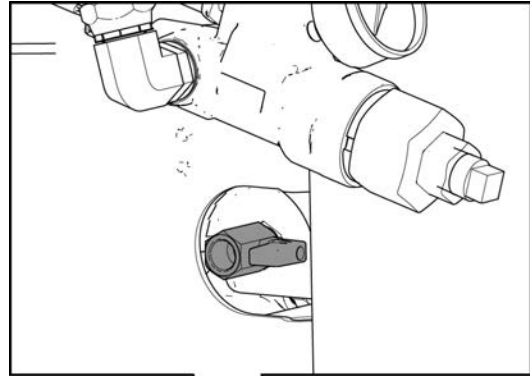


6. See the Proportioning Pumps manual for repair instructions.
7. Reconnect the pump in reverse order.

 Torque to 200 in-lb (22.6 N·m)

## REPLACE HYDRAULIC PUMP

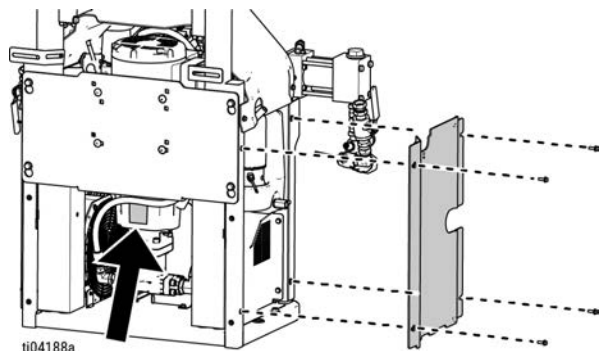
1. Follow the **Shutdown** procedure.
2. Drain hydraulic tank.



3. Remove right-side shroud for better visibility.

### NOTE:

Access to the back of the machine is needed. Make sure the back of the machine is clear of obstructions. The orange cover on the coupler should be visible.



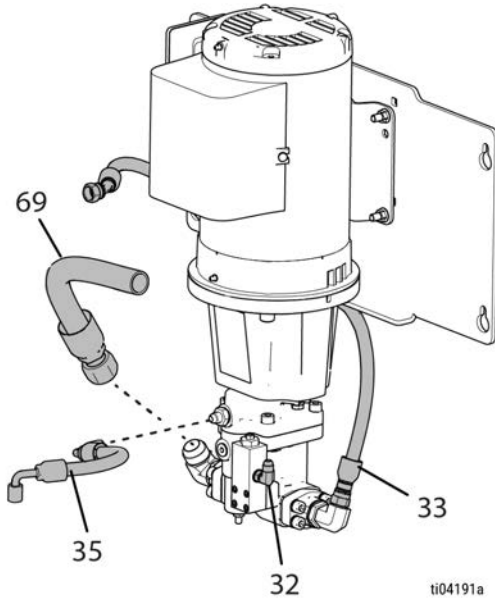
## REPAIR

- Using a 7/8 in. wrench, remove hose (33) from fitting on the hydraulic pump fitting.

### NOTE:

Removing any hose will still cause some residual hydraulic fluid to leak. Place a shallow catch pan or absorbent material under the hydraulic pump to catch leaks.

- Using a 1-1/2 in. wrench, remove hose (69) from hydraulic pump fitting.

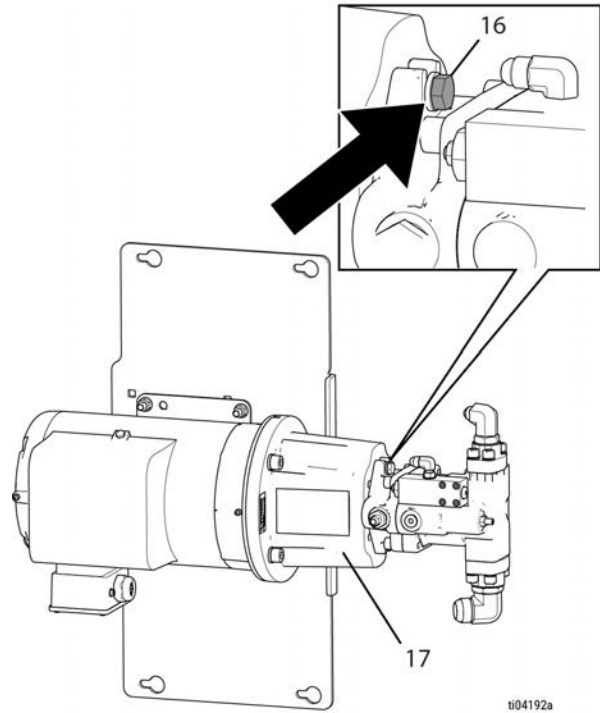


- For Elite models only:** Use a 3/4 in. wrench to remove hose (32) from the hydraulic pump fitting.
- Using a 11/16 in. wrench, remove hose (35) from the hydraulic pump fitting.

- Using a 9/16 in. wrench, remove the two bolts (16) on the hydraulic pump end of the pump/motor coupler (17).

### NOTE:

When the last bolt is removed the hydraulic pump may drop quickly.



- Note the position of the coupler on the hydraulic pump shaft. Using a 5/32 in. hex wrench, loosen the set screws and remove the coupler (1) from the hydraulic pump.
- On the new hydraulic pump, replace the coupler approximately at the same location as it was on the old hydraulic pump shaft.
- Using a 5/32 in. hex wrench, tighten the set screws down on the hydraulic pump shaft.
- Remove fittings, inlet flange, and outlet flange from old hydraulic pump and replace them in the same location on the new one. Replace the o-rings on the inlet and outlet flange before reinstalling on the new pump.
- Place the pump on a flat surface so that the drain is facing up, pour hydraulic oil into the pump case through either of the drain holes until the oil becomes visible inside the pump.

14. Making sure that the spider coupler (18) is in place between the motor and hydraulic pump coupler, line up the two couplers and seat them together.

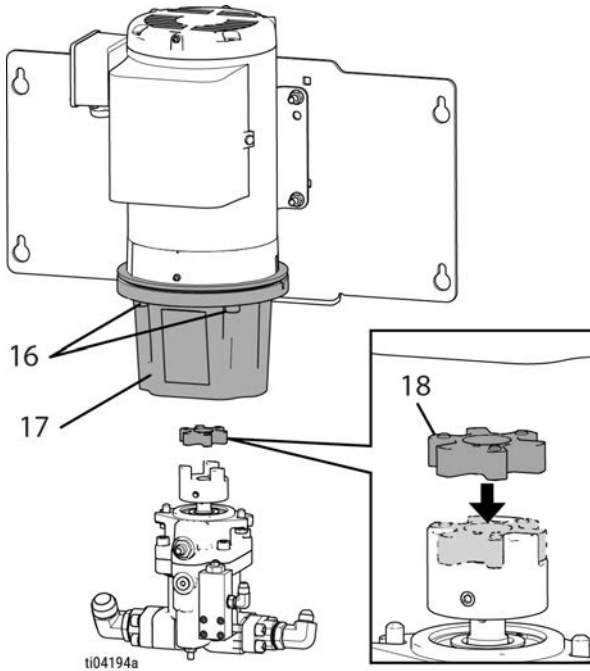
**NOTE:**

The motor shaft will move freely for easy alignment between couplers.

**NOTE:**

A wedge is helpful but not necessary to hold the hydraulic pump in place for the next step.

15. Replace bolts (16) in the pump/motor coupler (17) to secure the hydraulic pump. Use the center holes of the bolt pattern so that the pump's drain plug is facing toward the front of the machine.



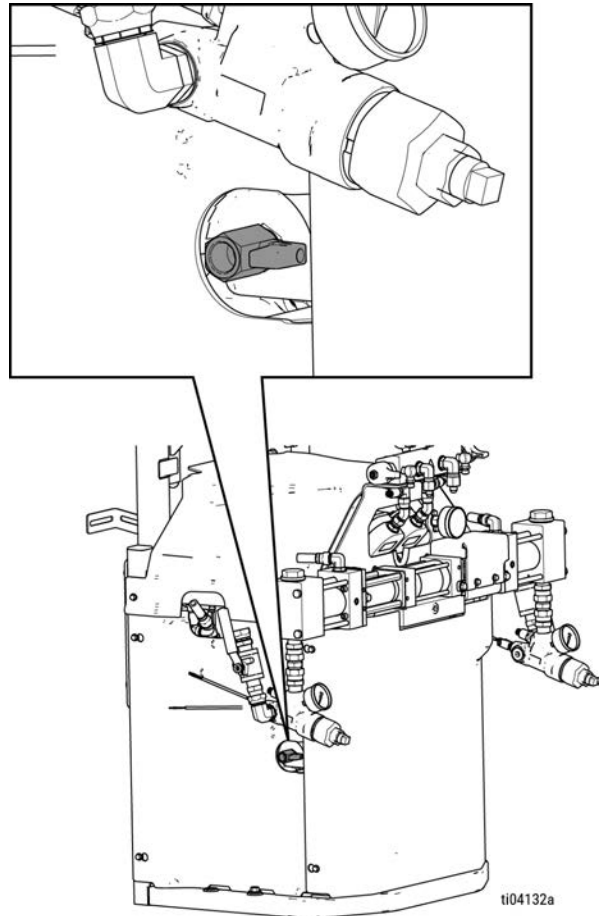
16. Reconnect hoses to pump fittings.
17. Refill the reservoir with hydraulic oil before starting machine again.
18. Start the machine and run in recirculation mode for 5 minutes. Check the oil level again and add oil as needed. Continue this step until the oil level remains the same after two consecutive checks.

**NOTE:**

Noise coming from the hydraulic pump on first-time startup is normal.

## REPLACE MOTOR

1. Perform **Pressure Relief Procedure**.
2. Turn the main power switch (MP) **OFF**.
3. Using a screwdriver, remove the motor wires from contactor (2T1, 4T2 and 6T3 [3 Phase motors only]).
4. Remove motor over-temperature sensor wires from connector 14 on HCM using a thin flat head screwdriver.
5. Cut all zip ties holding the motor harness.
6. Drain hydraulic tank.



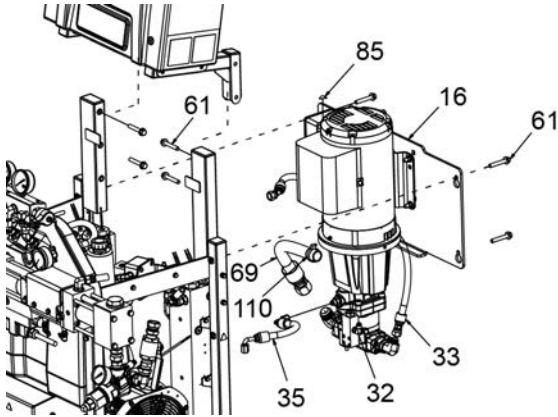
7. Using a 7/8" wrench, remove hose (33) from fitting on the hydraulic pump.

**NOTE:**

Removing any hose will still cause some residual hydraulic fluid to leak. Place a flat plate or absorbent under the hydraulic pump to catch leaks.

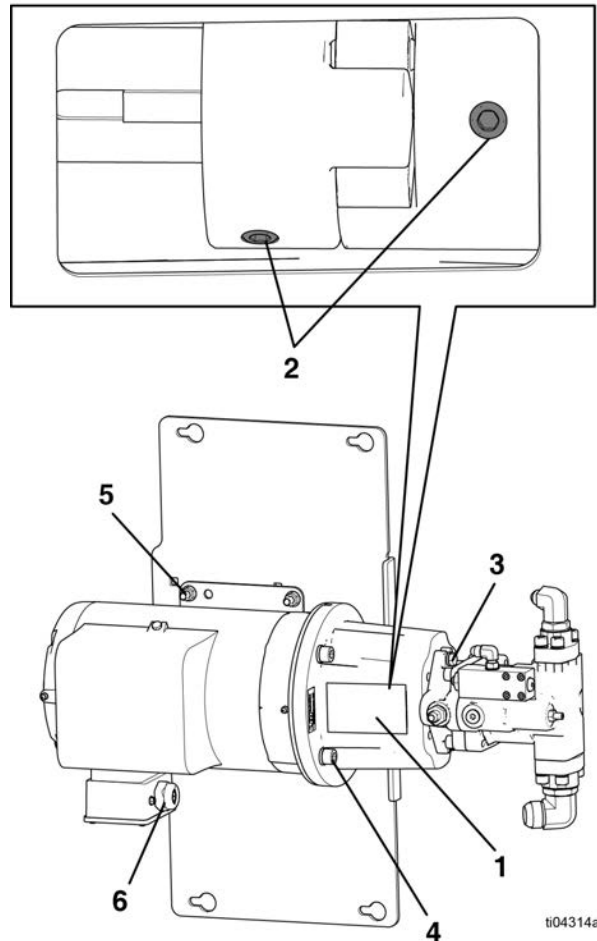
## REPAIR

8. Using 1-1/2" wrench, remove hose (69) from hydraulic pump.
9. **For Elite models only:** Use a 3/4" wrench to remove hose (32) from the hydraulic fitting.
10. Using a 11/16" wrench, remove hose (35) from the hydraulic pump fitting.
11. Using proper lifting equipment, like a sling, place straps around the motor between the motor and the motor bracket. Hook up the sling to a crane and apply lifting force.
12. Using a 9/16" socket, back off the bolts (61) holding the motor bracket (16). Do not loosen completely.



13. Lift the motor/hydraulic pump assembly and place it on a work bench.
14. Remove plastic cover (1) on the motor/hydraulic pump adapter.
15. Using a 5/32" hex wrench, loosen the set screws (2) on the motor shaft coupler and the hydraulic shaft coupler.
16. Using a 9/16" wrench, loosen the screw (3) holding the hydraulic pump to the motor/hydraulic pump adapter then remove the hydraulic pump.
17. Using a 3/8" hex wrench, remove four screws (4) on the motor/hydraulic pump adapter then remove the adapter.
18. Using a 9/16" wrench, remove the four nuts (5) holding the motor to the motor bracket.

19. Remove the wire harness (6) from the motor.



20. Install the new motor in reverse order.



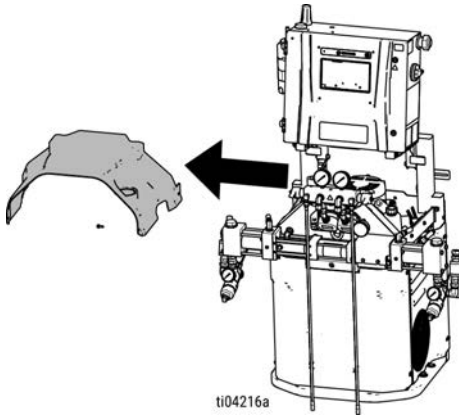
## REPLACE THE ELECTRONIC PRESSURE REGULATOR CONTROLLER (EDX)

The EDX electronically controls the hydraulic pressure of the unit.

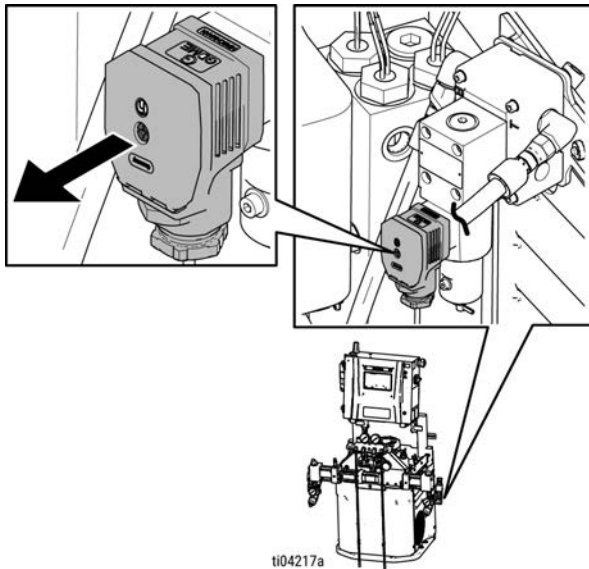
### NOTE:

EDX is on Elite models only.

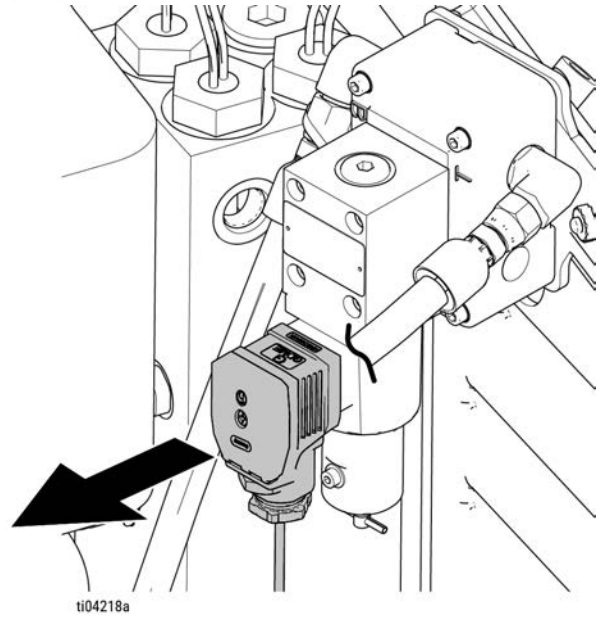
1. Follow the **Shutdown** procedure.
2. Remove top cover.



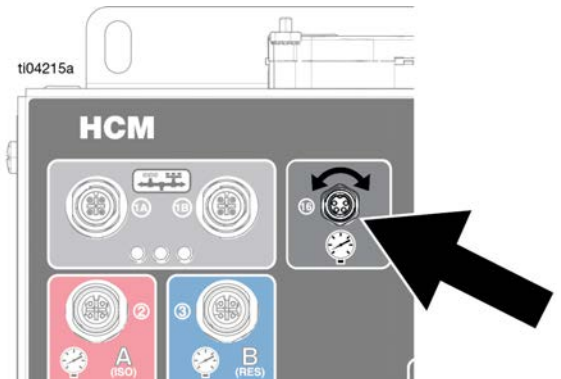
3. Remove screw from middle of EDX using a Phillips head screwdriver.



4. Detach EDX from the Electronic Pressure Regulator (EPR).



5. Disconnect EDX from connector 16 on HCM.



6. Install new EDX in reverse order.

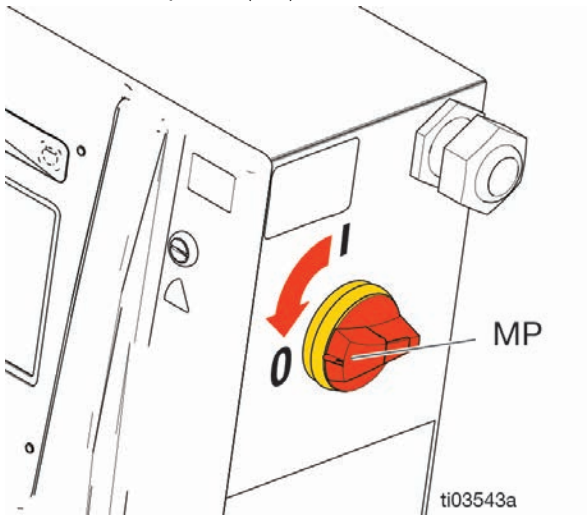
REPLACE CIRCUIT BREAKER





WARNING

- 1. Follow the **Flush the Equipment** procedure.
- 2. Follow the **Shutdown** procedure.
- 3. Turn the main power (MP) switch **OFF**.

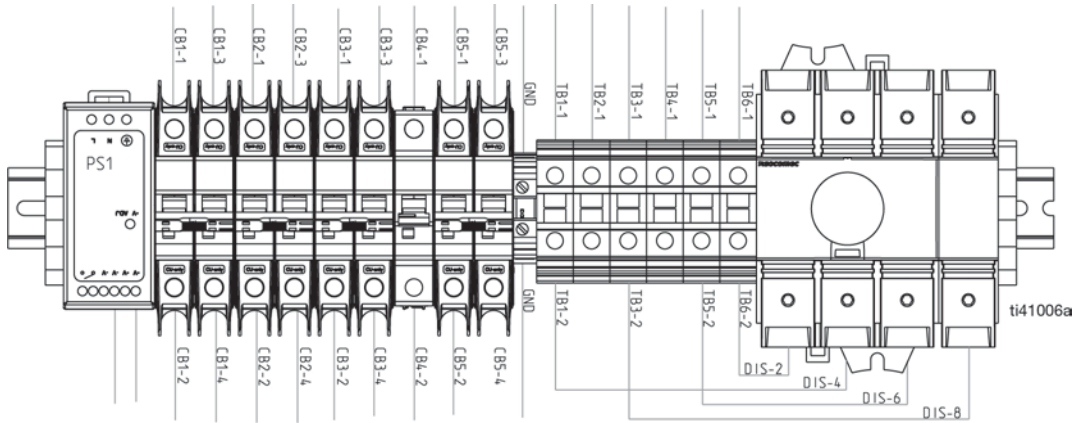


- 4. Use an ohmmeter to check continuity across the circuit breaker (top to bottom). If there is no continuity, switch off the breaker, then reset and retest it. If there is still no continuity, replace the breaker:
  - a. Refer to the circuit breaker table in **Electrical Schematics**.
  - b. Loosen the two screws connecting the wires and bus bar to the circuit breaker that will be replaced, then disconnect the wires.
  - c. Pull the locking tab out 1/4 in. (6 mm) and pull the circuit breaker away from the din rail. Install the new circuit breaker. Insert the wires and tighten down all screws.

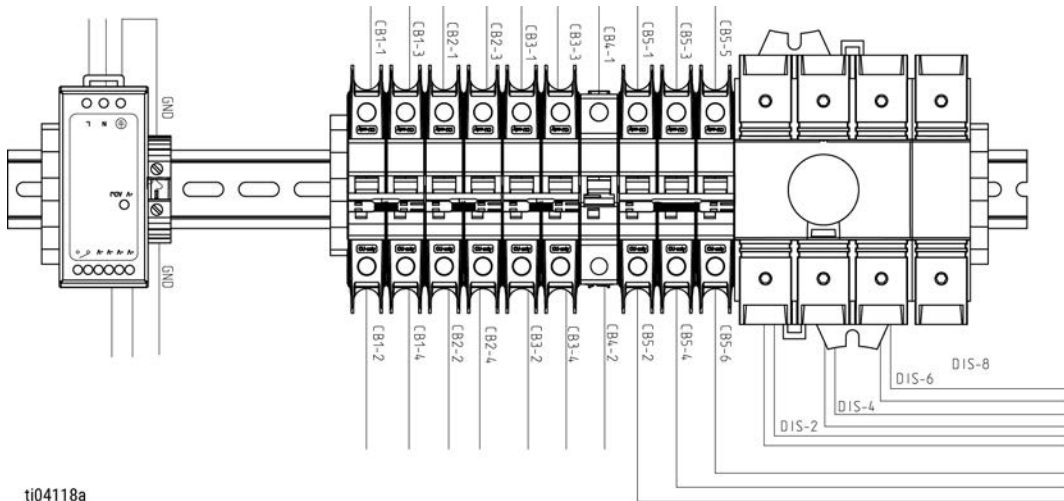
| CIRCUIT BREAKERS |      |                          |
|------------------|------|--------------------------|
| REF.             | SIZE | COMPONENT                |
| CB1              | 40A  | A (ISO) Heat             |
| CB2              | 40A  | B (RES) Heat             |
| CB3              | 40A  | Hose Transformer Primary |
| CB4              | 50A  | Hose Heat                |
| CB5              | 20A  | Motor                    |

## REPAIR

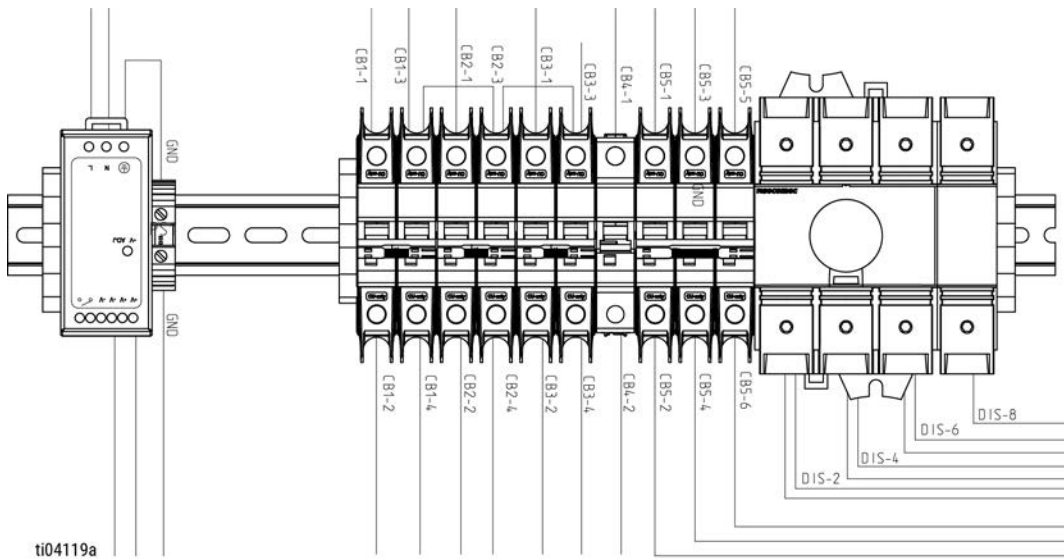
### H-30 AND H-XP2 (60 HZ / 230 V)



### H-50 AND H-XP3 (60 HZ / 230 V)



### H-30, H-50, H-XP2 AND H-XP3 (50 HZ / 400 V)



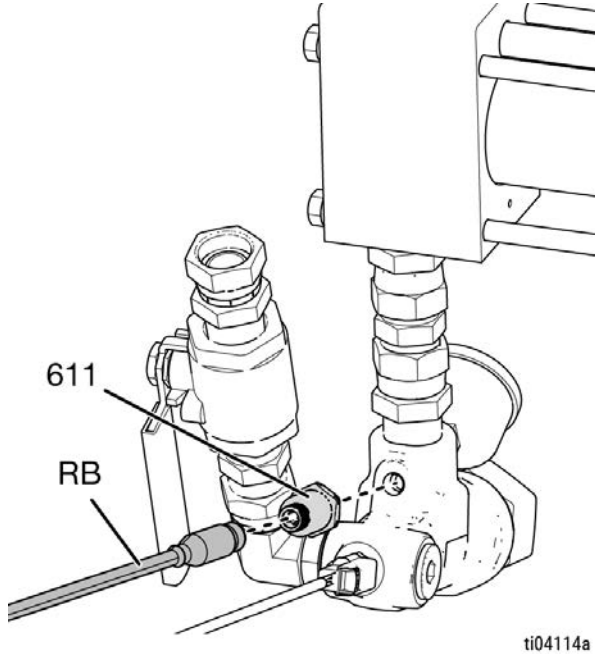
## REPLACE INLET PRESSURE TRANSDUCER

| ⚠ WARNING                                                                         |                                                                                   |  |  |  |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|--|--|
|  |  |  |  |  |

### NOTE:

For Elite models only.

1. Follow the **Shutdown** procedure.
2. Disconnect the inlet pressure transducer cable (RB) from the fluid inlet assembly. Inspect the cable for damage and replace if necessary. See **Electrical Schematics**.
5. Connect the A-side inlet pressure transducer cable to HCM port #4. Connect the B-side inlet pressure transducer cable to HCM port #5.



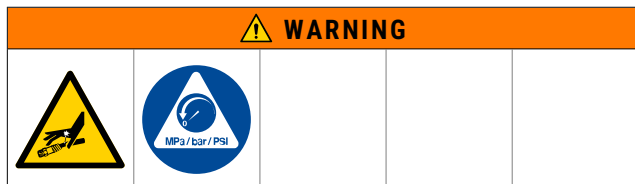
3. Replace the inlet pressure transducer cable:
  - a. Open the wire bundle and remove the inlet pressure transducer cable.
  - b. Cut any wire ties and disconnect from the HCM. See **Electrical Schematics**.

### NOTICE

To prevent cable damage, route and secure cable in the wire bundle with wire ties.

4. Replace inlet pressure transducer (611).

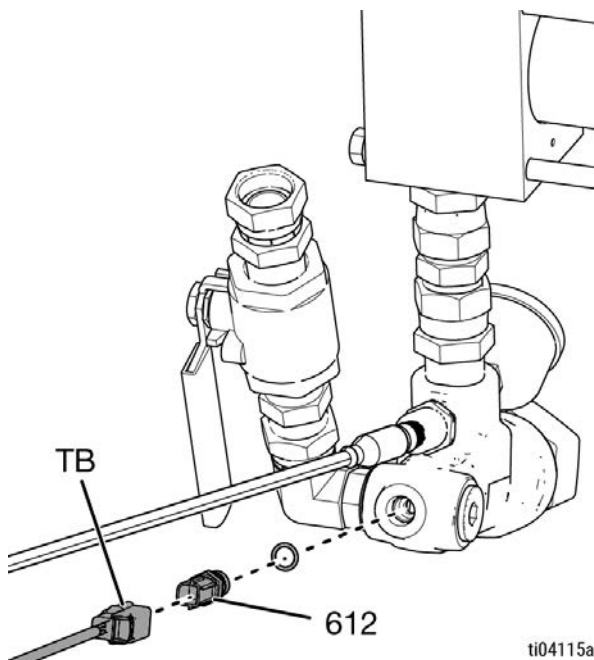
## REPLACE INLET TEMPERATURE SENSOR



### NOTE:

For Elite models only.

1. Follow the **Shutdown** procedure.
2. Disconnect the inlet temperature sensor cable (TB) from the fluid inlet assembly. Pull the tab to release the lock prior to removing the cable. Inspect cable for damage and replace if necessary. See **Electrical Schematics**.



3. Replace the inlet temperature sensor cable:
  - a. Open the wire bundle and remove the inlet temperature sensor cable.
  - b. Cut any wire ties and disconnect from the TCM. See **Electrical Schematics**.

### NOTICE

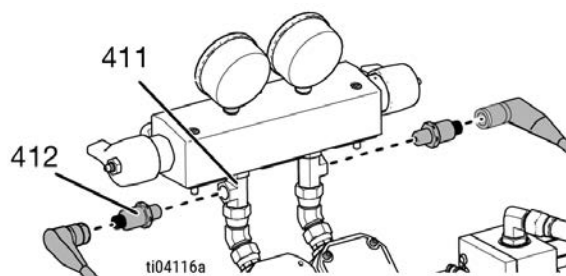
To prevent cable damage, route and secure cable in the wire bundle with wire ties.

4. Replace inlet temperature sensor (612).
5. Connect the A-side inlet temperature sensor cable to TCM port #4, pins #1 and #2. Connect the B-side inlet temperature sensor cable to TCM port #4, pins #3 and #4.

## REPLACE OUTLET PRESSURE TRANSDUCERS



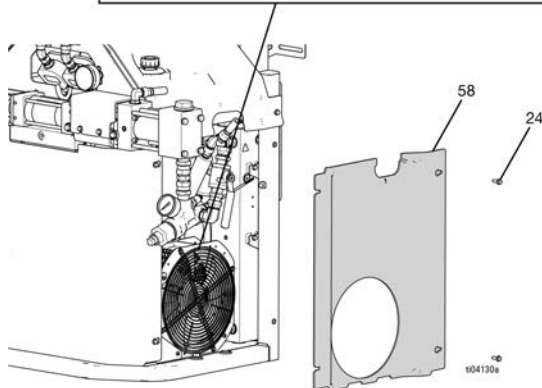
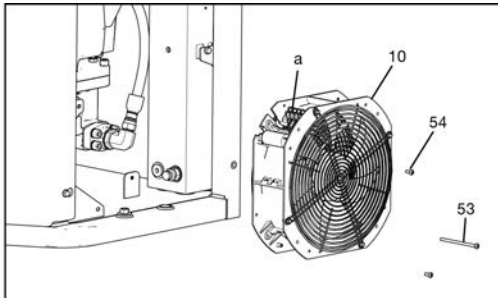
1. Follow the **Shutdown** procedure.
2. Disconnect outlet pressure transducer cables from #2 and #3 connectors on the HCM.
3. Remove wire ties constraining the outlet pressure transducer cables and remove the cables from the cabinet.
4. Apply thread sealant and install the new outlet pressure transducer (412).
5. Install the outlet pressure transducers into the manifold. Mark the end of the cable with tape (red = transducer A, blue = transducer B).
6. Route the new outlet pressure cables into the cabinet and rethread and cable into the bundle. Reattach the cable ties to the bundle.
7. Connect the A-side outlet pressure transducer cable to HCM port #2. Connect the B-side outlet pressure transducer cable to HCM port #3.



# REPLACE COOLING FAN

| ⚠ WARNING                                                                                                                                                                |                                                                                   |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|--|--|
|                                                                                         |  |  |  |  |
| <p>Shut down the system to avoid injury from electric shock. To avoid burns, do not perform maintenance on the fan until the system has reached ambient temperature.</p> |                                                                                   |  |  |  |

1. Follow the **Shutdown** procedure.
2. Remove bolts (24) and cover (58).
3. Disconnect the transformer fan cable (a) and remove the wire tie.
4. Remove two screws (54) and screw (53) to remove the fan (10).
5. Install the new fan in reverse order, then secure the fan and replace the covers.



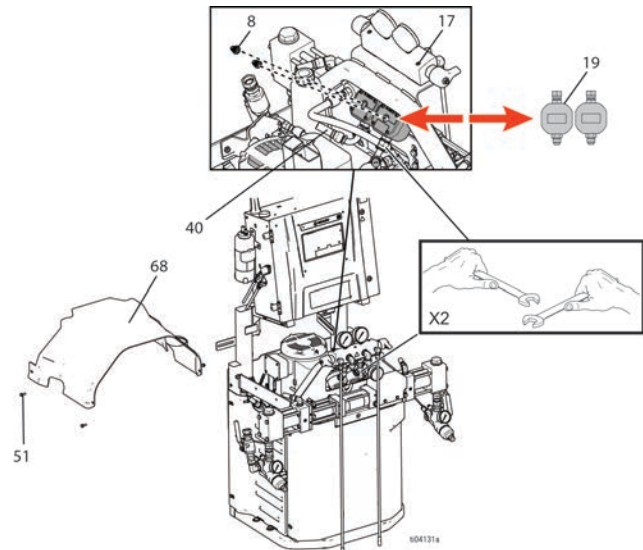
# REPLACE FLOW METER

| ⚠ WARNING                                                                         |                                                                                    |  |  |  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--|--|--|
|  |  |  |  |  |
| <p><b>NOTE:</b><br/>For Elite models only.</p>                                    |                                                                                    |  |  |  |

1. Follow the **Shutdown** procedure.
2. Using a 3/8" socket, remove four bolts to remove the top cover (57).
3. Disconnect the flow meter cables.
4. Use two wrenches to disconnect hoses (40), then remove the flow meter (19) from the manifold (17).
5. Install the new flow meter and reconnect the hose.
6. Reconnect the flow meter cable.
7. Enter the K-factor on the pressure/flow setup screen in the ADM. Refer to **Setup Screen** in your Reactor 3 operation manual.

## NOTE:

The K-factor is printed on the flow meter label.





## REPAIR PRIMARY HEATER



## REPLACE HEATER ELEMENT



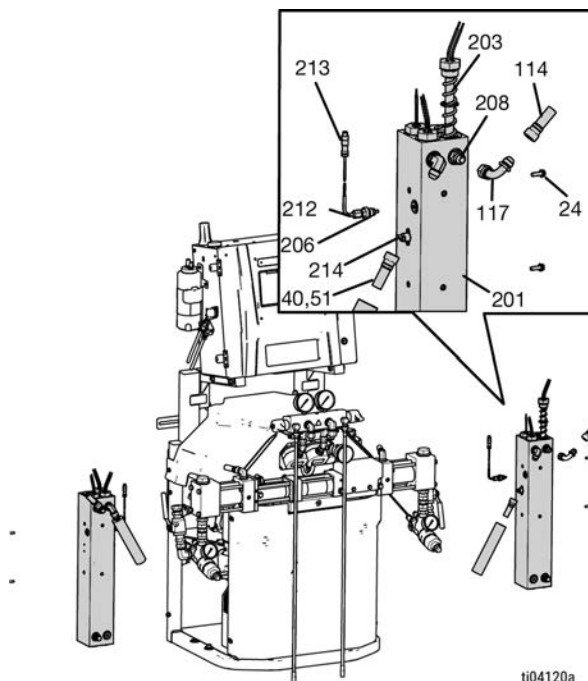
1. Follow **Flush the Equipment** procedure.
2. Follow the **Shutdown** procedure.
3. Wait for the heater to cool.
4. Remove the heater and RTC wires as needed from the TCM inside the enclosure and pull the wires through. See **Electrical Schematics**.

### NOTE:

The RTD should be replaced whenever replacing the outbound heater rod.

5. Use an ohmmeter to test the heater wires. See **Electrical Schematics**.
6. Disconnect over-temperature switch (214) from the cable.
7. Loosen ferrule nut (N).
8. Remove RTD (212) from the heater housing. Do not remove adapter (206) unless necessary. If the adapter must be removed, make sure the mixer (210†) does not interfere when replacing the adapter.
9. Disconnect the inlet and outlet hoses from the heater and from the outlet manifold.
10. Remove two bolts (24) and lift the heater over the transformer.
11. Place the heater block (201) in a vise. Use a wrench to remove the heater element (203).
12. Inspect the heater element. It should be relatively smooth and shiny. Replace the element if there is a crusted, burnt, ash-like material adhered to the element, or if the sheath shows pitting marks.

13. Install the new heater element (203) while holding the mixer (210†) so it does not interfere with the RTD port.
14. Secure the heater to the frame with bolts (24).
15. Reinstall the RTD (212) in the heater block. See **Replace RTD** procedure.
16. Reconnect cable to the over-temperature switches (214).
17. Reconnect wires in electrical enclosure. See **Electrical Schematics**.



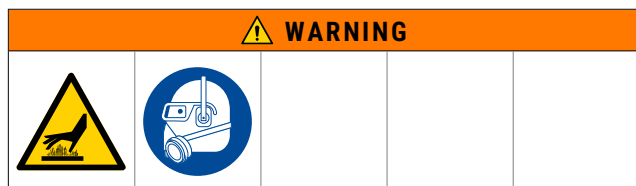
ti04120a

† See **Replace RTS** to view the mixer (210).

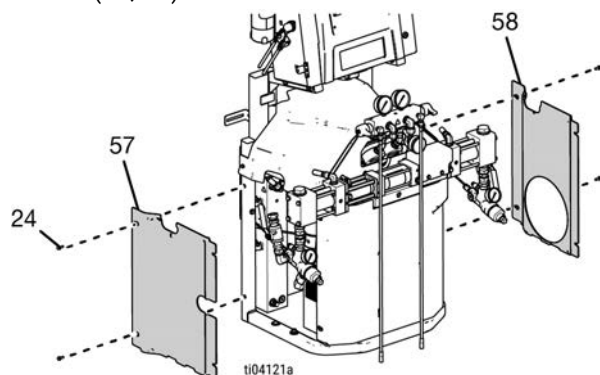
### NOTE:

The heater outputs its rated wattage at 240 VAC. Low line voltage will reduce the power available. When this occurs, the heater will not perform at full capacity.

## REPLACE OVER-TEMPERATURE SWITCH

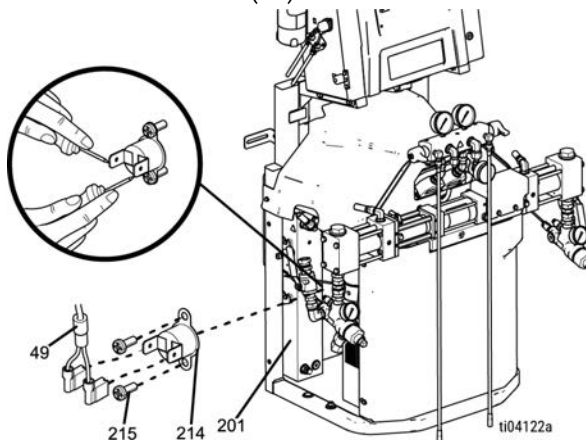


1. Follow the **Shutdown** procedure.
2. Wait for the heaters to cool.
3. Remove four bolts (24) then remove the lower covers (57, 58).



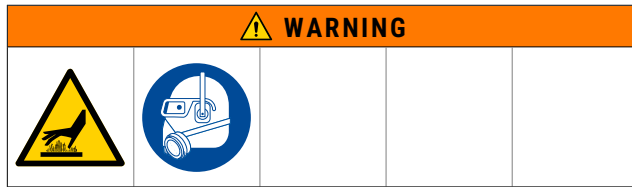
4. Disconnect over-temperature switches (214) from cable. Test across the spade terminals with an ohmmeter.
  - a. If the resistance is not approximately 0 ohms, the over-temperature switch needs to be replaced. Proceed to step 5.
  - b. If the resistance is approximately 0 ohms, inspect cable (49) to make sure it is not cut or open. Reconnect the over-temperature switch (214) and cable (49). Disconnect the cable from the TCM. Test from pin 1 to pin 2 and pin 3 to pin 4. See **Electrical Schematics**. If resistance is not approximately 0 and switches are 0, replace the original cable with a new cable.

5. If the over-temperature switch fails the test, remove screws (215) and discard the failed switch (214). Apply a thin layer of thermal compound 110009, then install a new switch in the same location on housing (201). Secure with screws (215) and reconnect the cables (49).

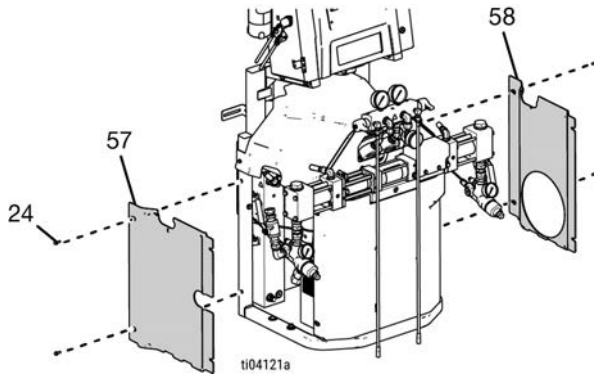




## REPLACE RTD

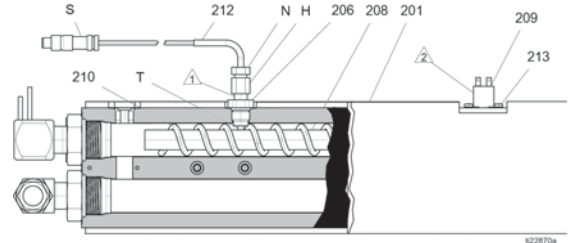


1. Follow the **Shutdown** procedure.
2. Wait for heaters to cool.
3. Remove four bolts (24) then remove the lower covers (57, 58).



4. Cut the cable ties from around the woven wrap with the RTD cable (212).
5. Disconnect RTD cable (212) from TCM (453).
6. Loosen ferrule nut (N). Remove RTD (212) from RTD housing (H), then remove RTD housing (H). Do not remove the adapter (206) unless necessary. If the adapter must be removed, make sure the mixer (210) does not interfere when replacing the adapter.
7. Remove the RTD cable (212) from the woven wrap.
8. Replace RTD (212):
  - a. Apply PTFE tape and thread sealant to the male pipe threads and tighten RTD housing (H) into the adapter (206).
  - b. Push in RTD (212) so the tip contacts the heater element (208).
  - c. Holding RTD (212) against the heater element, tighten the ferrule nut (N) 3/4 of a turn past finger-tight.
9. Route the wires as before through the woven wrap and reconnect the RTD cable (212) to the TCM.
10. Replace lower covers (57, 58) with four bolts (24).

11. Follow the Startup instructions in the operation manual. Turn on A-side and B-side heat simultaneously to test. Temperatures should rise at the same rate. If one is low, loosen ferrule nut (N) and lightly tighten RTD housing (H) to make sure the RTD tip contacts the element (212) when ferrule nut (N) is retightened.



## TROUBLESHOOT HEATED HOSE



Refer to your heated hose manual for replacement hose parts.

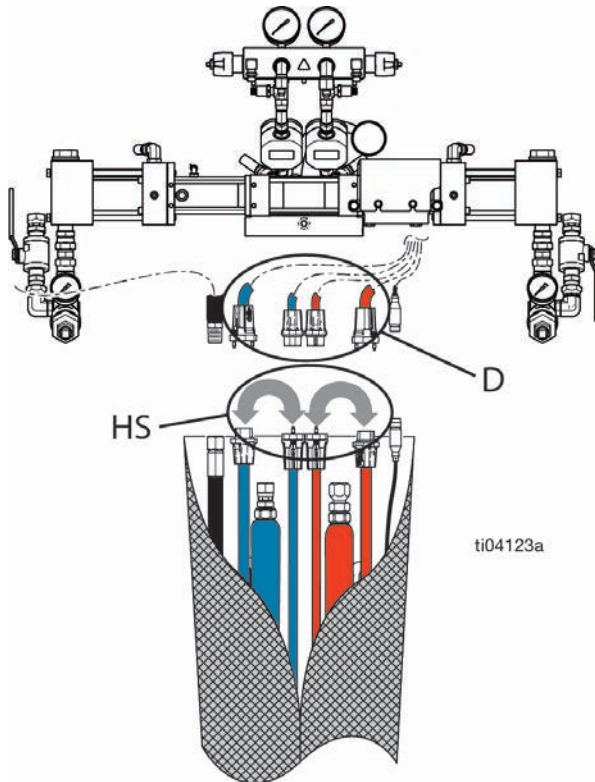
## CHECK HOSE WIRES FOR CONTINUITY

1. Follow the **Shutdown** procedure.

### NOTE:

The whip hoses must be connected, otherwise the hose connectors at the end of the hose must be connected to each other.

2. Disconnect hose electrical connectors (D) at the Reactor.



3. Test continuity between both sets (HS).
4. Use an ohmmeter to check between the hose wires. There should be continuity between both A (red) connectors and continuity between both B (blue) connectors.
5. If the hose fails the test, retest at each length of hose from the system out of the gun, including whip hose, until the failure is isolated.
6. Replace the broken section of hose.

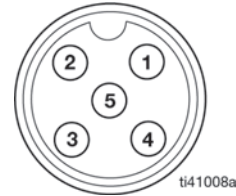
## CHECK HOSE RTD CABLES AND FTS

1. Follow the **Shutdown** procedure.
2. Disconnect RTD cable (212) at the Reactor.

3. Test with an ohmmeter between the pins of cable connector.

### NOTE:

Do not touch the outer ring with the test probe.

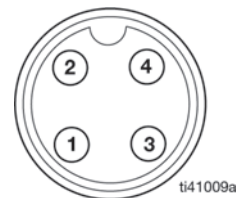


| PINS              | RESULTS                                                     |
|-------------------|-------------------------------------------------------------|
| 1 to 3 and 4 to 3 | See <b>RTD Resistance vs. Temperature</b> table. A-side.    |
| 1 to 5 and 4 to 5 | See <b>RTD vs. Temperature</b> table. B-side.               |
| 1 to 4            | 0.2 - 0.4 ohms at the FTS (each 50 ft cable adds 0.75 ohms) |
| 2 to any          | Infinity (open)                                             |

4. Retest each length of hose, including whip hose, until the failure is located.
5. If the FTS is not reading properly at the end of the hose, connect the FTS with the splitter directly to the RTD cable (212) connected to the Reactor.

### NOTE:

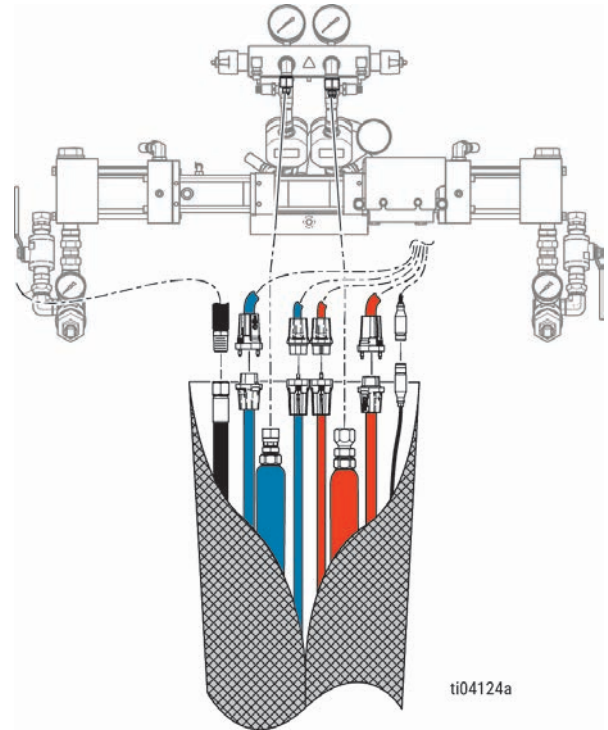
You can also check each FTS independently with an ohmmeter between pins as shown.



## REPAIR

| PINS     | RESULTS                                                  |
|----------|----------------------------------------------------------|
| 1 to 3   | See <b>RTD Resistance vs. Temperature</b> table. A-side. |
| 4 to 3   | See <b>RTD Resistance vs. Temperature</b> table. B-side. |
| 1 to 4   | 0.2 - 0.4 ohms at the FTS                                |
| 2 to any | Infinity (open)                                          |

6. If the FTS reads properly at the Reactor but not at the end of the hose, check cable connections. Verify the connections are tight.



### NOTE:

To assist in taking readings, order RTD Test Kit 18E258. The kit includes two cables: one cable with a compatible female connector and another cable with a male connector. Both cables have stripped wire at the other end for easy test probe access. See the **RTD Test Kit Wire Reference** table.

### RTD TEST KIT WIRE REFERENCE

| PINS | WIRE COLOR | PINS | WIRE COLOR |
|------|------------|------|------------|
| 1    | Brown      | 4    | Black      |
| 2    | Bare       | 5    | White      |
| 3    | Blue       |      |            |

## REPAIR

### RTD RESISTANCE VS. TEMPERATURE

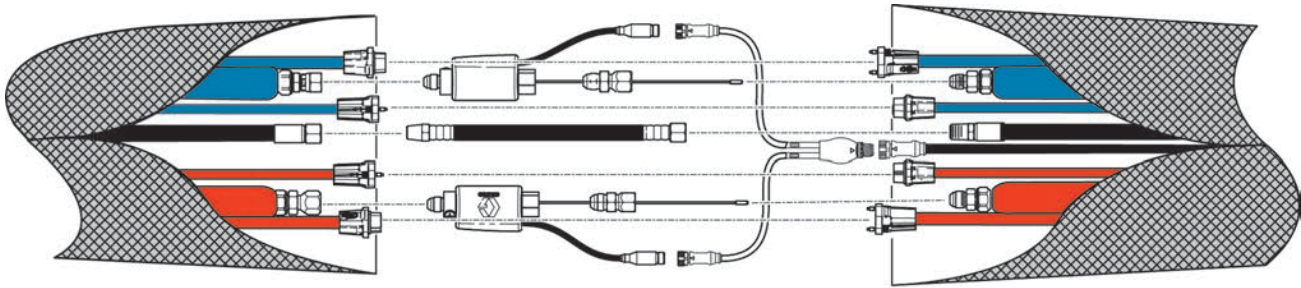
| RTD OR FTS<br>RESISTANCE OHMS | RTD OR FTS TEMPERATURE<br>°C (°F) |
|-------------------------------|-----------------------------------|
| 843                           | -40 (-40)                         |
| 882                           | -30 (-22)                         |
| 922                           | -20 (-4)                          |
| 961                           | -10 (14)                          |
| 1000                          | 0 (32)                            |
| 1039                          | 10 (50)                           |
| 1078                          | 20 (68)                           |
| 1117                          | 30 (86)                           |

| RTD OR FTS<br>RESISTANCE OHMS | RTD OR FTS TEMPERATURE<br>°C (°F) |
|-------------------------------|-----------------------------------|
| 1155                          | 40 (104)                          |
| 1194                          | 50 (122)                          |
| 1232                          | 60 (140)                          |
| 1271                          | 70 (158)                          |
| 1309                          | 80 (176)                          |
| 1347                          | 90 (194)                          |
| 1385                          | 100 (212)                         |

### REPAIR FLUID TEMPERATURE SENSOR (FTS)

#### INSTALLATION

The fluid temperature sensor (FTS) is an optional accessory. Install the FTS between two sections of hose, ideally at the furthest point between the last hose and the whip hose. See your heated hose manual for details.



#### TEST/REMOVAL

| ⚠ WARNING |  |  |  |  |
|-----------|--|--|--|--|
|           |  |  |  |  |

- Follow the **Shutdown** procedure.
- Remove tape and protective covering from the FTS. Disconnect hose cable (F).
- If the FTS is not reading properly at the end of the hose, see **Check Hose RTD Cables and FTS**.

- If the FTS fails, replace the FTS or run it in resistance mode:
  - Disconnect air hoses (C, L) and electrical connection (D).
  - Disconnect A-side FTS fluid fittings from whip hose (W) and main hose (M).
  - Remove FTS probe (H) from the hose.
  - Repeat for B-side (RES).

## CALIBRATION PROCEDURE

**NOTICE**

To prevent damage to the heated hose, a hose calibration is required if any of the following conditions are true.

- The hose has never been calibrated before
- A section of hose has been replaced
- A section of hose has been added
- A section of hose has been removed

**NOTE:**

The Reactor and heated hose must be at the same ambient temperature to get the most accurate calibration. Perform calibration at the beginning of the day before any material has been heated.

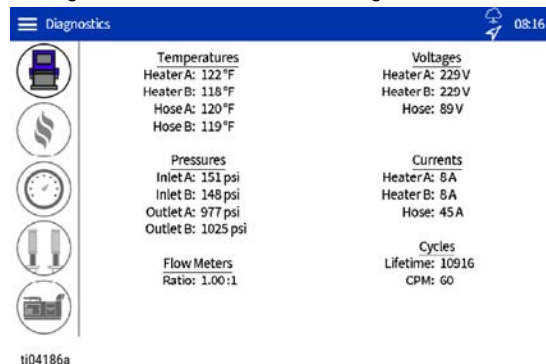
See your Reactor 3 operation manual for instructions on how to perform the calibration procedure.

## TRANSFORMER CHECK

See **Electrical Schematics** for reference.

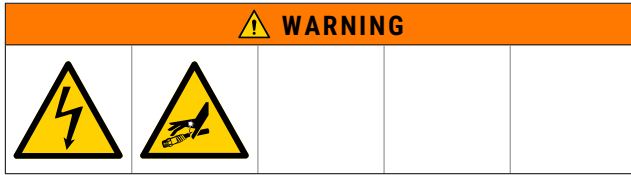
1. Follow the **Shutdown** procedure.
2. Check the transformer primary wires:
  - a. Open circuit breaker CB3 to turn the color indicator on the circuit breaker green.
  - b. Use an ohmmeter to test for continuity between the primary transformer wires in CB3-2 and CB3-4 (there should be continuity).
  - c. Close circuit breaker CB3 after the test.
3. Check the transformer secondary wires:
  - a. Disconnect the 7-pin green connector (P1-TCM) from the TCM.
  - b. Use an ohmmeter to test for continuity between terminals 5 and 6 on the TCM 7-pin green connector. There should be continuity. If there is no continuity, check the transformer.
  - c. Reconnect the 7-pin green connector to the TCM.
4. Check the transformer:
  - a. Apply incoming power to the system.

- b. To verify voltage on the secondary leads of the transformer, measure between terminals 5 and 6 on the TCM 7-pin green connector. Verify voltage is approximately 90 VAC (H-30 and H-XP2) or 120 VAC (H-50/H-XP3) for 240 VAC input.
- c. See the diagnostics Run Screen on the ADM. The diagnostic run screen displays the incoming voltage to the TCM under "Voltages".

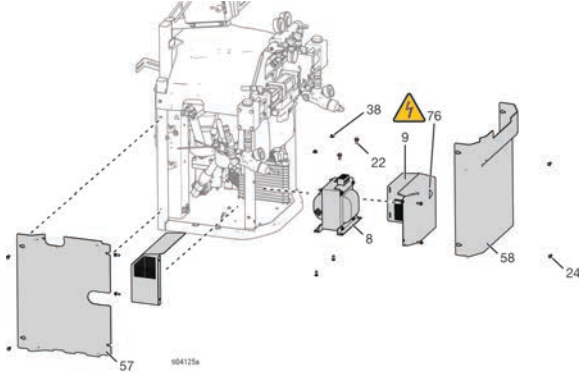


- d. If the hose current is zero (0) when heating the hose (see "Currents" and "Hose" on the diagnostic screen). Make sure breaker CB4 is not tripped.

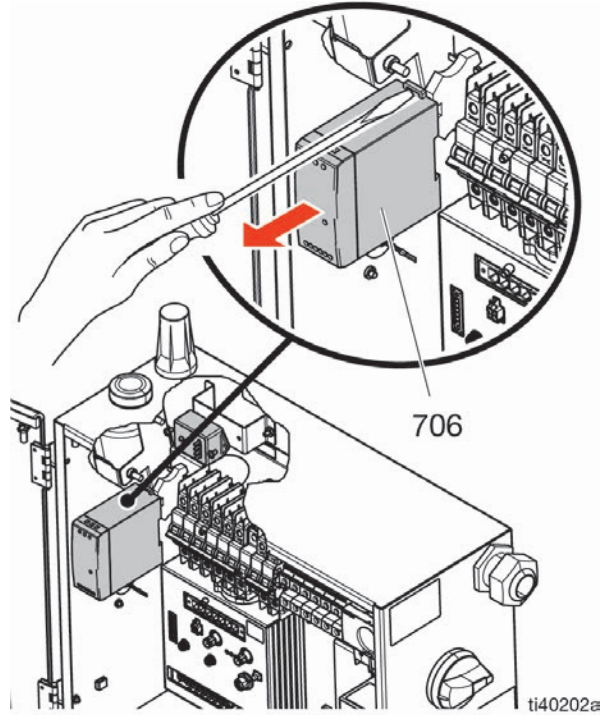
## REPLACE TRANSFORMER



1. Follow the **Shutdown** procedure.
2. Remove bolts (24) and covers (57, 58).
3. Remove transformer cover (9).
4. Disconnect transformer connections from terminal blocks. Connections are labeled: 1, 2, 3, and 4.
5. Remove transformer (8).
6. Install transformer (8) in reverse order.



4. Install new power supply (706) in reverse order.



## REPLACE POWER SUPPLY



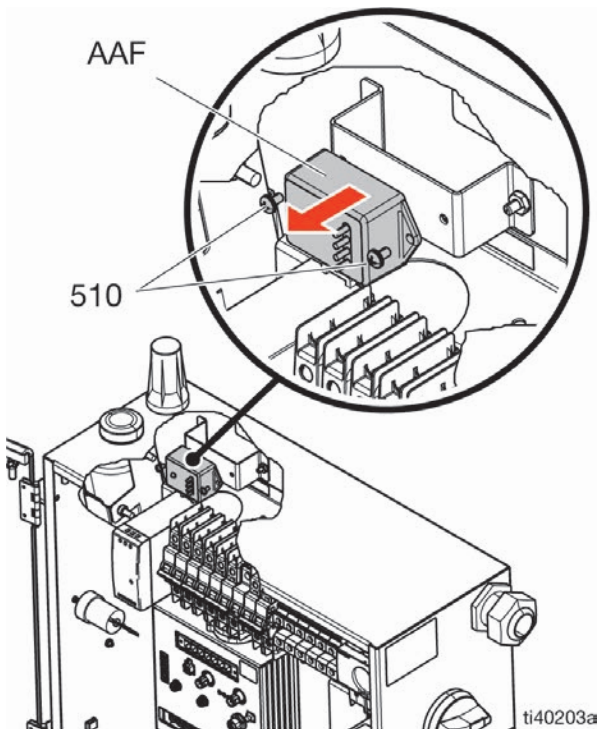
1. Follow the **Shutdown** procedure.
2. Disconnect input and output cables from both sides of the power supply. See **Electrical Schematics**.
3. Insert a flathead screwdriver in the mounting tab on the power supply to remove from the din rail.



# REPLACE SURGE PROTECTOR



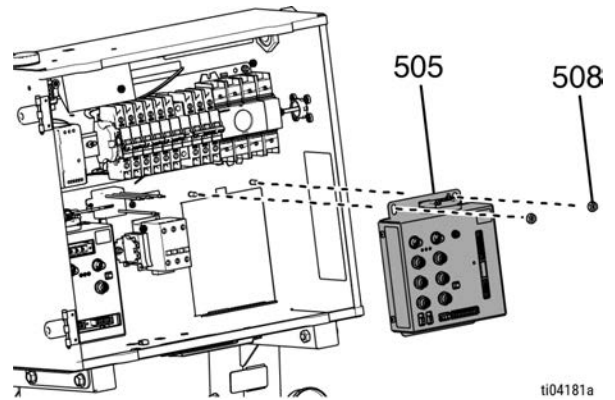
1. Follow the **Shutdown** procedure.
2. Loosen connections on terminals 1 and 3 on CB3 if using 230 V single phase. If using 230 V three phase or 380 V three phase, loosen connections on terminals 1 and 3 on CB1. See **Electrical Schematics**.
3. Loosen connections on input to power supply (706) on N and L connectoins. See **Electrical Schematics**.
4. Remove two screws (510) and the surge protector (AAF) from the enclosure.
5. Install the new surge protector (AAF) in reverse order.



# REPLACE HYDRAULIC CONTROL MODULE (HCM)



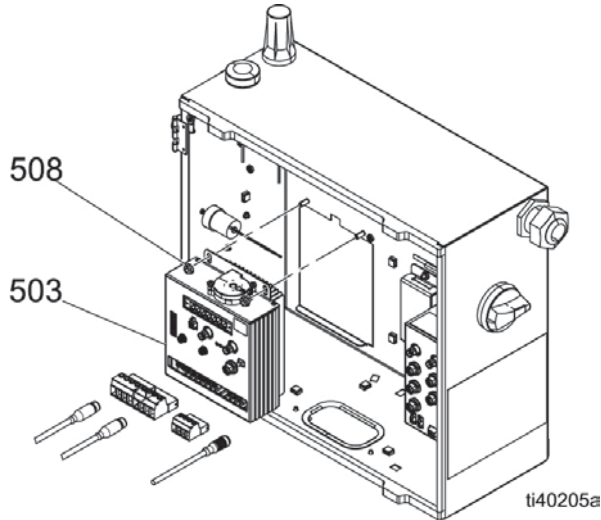
1. Follow the **Shutdown** procedure.
2. Disconnect connectors from HCM (505). Disconnect two power cables. See **Electrical Schematics**.
3. Remove nuts (508) and HCM (505).
4. Replace HCM in the enclosure.
5. Connect the cables to the HCM. See **Electrical Schematics**.



## REPLACE TEMPERATURE CONTROL MODULE (TCM)



1. Follow the **Shutdown** procedure.
2. Disconnect all connections from the TCM (503). See **Electrical Schematics**.
3. Remove two nuts (508) and TCM (503).



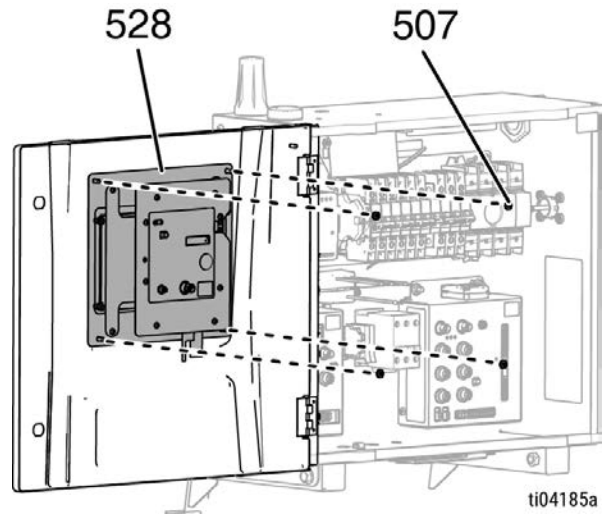
4. Replace the TCM in the enclosure.
5. Connect cables to the TCM. See **Electrical Schematics**.

## REPLACE ADVANCED DISPLAY MODULE (ADM)



1. Follow the **Shutdown** procedure.
2. Disconnect the CAN cable and cellular cable. See **Electrical Schematics**.
3. Loosen four screws (507) on the inside of the electrical enclosure door. Remove ADM (528).

4. Replace the ADM in the enclosure door.



5. Connect the CAN cable and cellular cable. See **Electrical Schematics**.
6. If necessary, update the software by installing a USB drive with the latest software into the ADM. Follow the **Software Update Procedure USB**.

## SOFTWARE UPDATE PROCEDURE

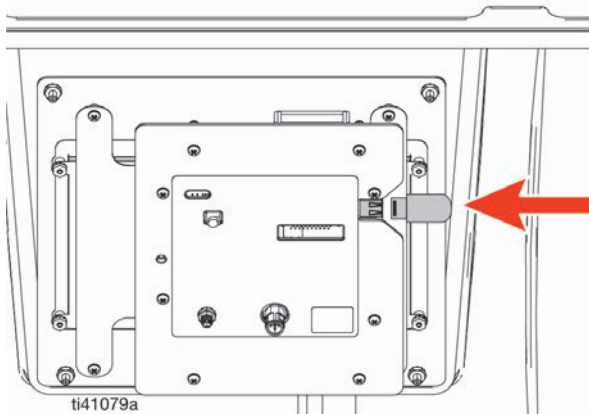
ADM repair kit modules are shipped pre-programmed and with updated USB drive. If the software version upgrade is necessary, follow the **Software Update Procedure USB**.



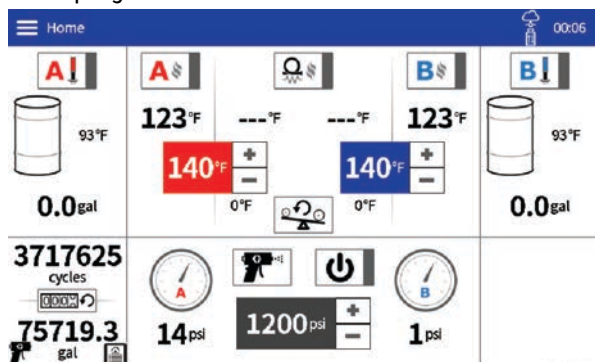
# SOFTWARE UPDATE PROCEDURE USB



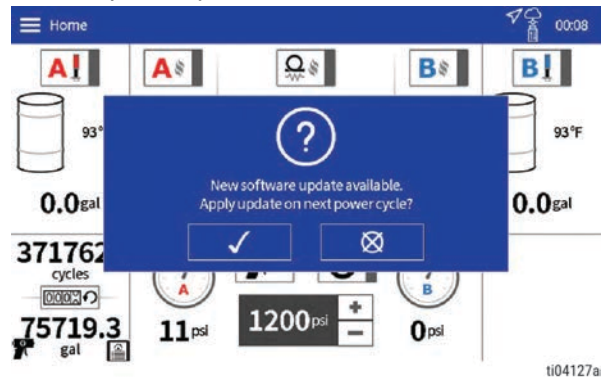
1. Download the latest software into the top directory of a USB drive. The software can be downloaded from [help.graco.com](http://help.graco.com).
2. Follow the **Shutdown** procedure, or turn off main disconnect switch. Insert the USB, then close the enclosure door. Turn on main disconnect switch.



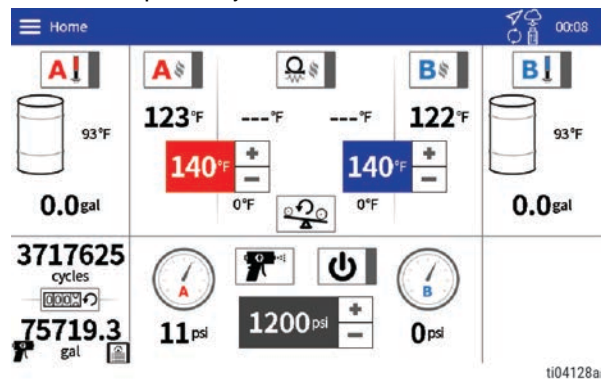
3. The home screen will load and show the USB icon in the top right corner.



4. After the .GTI file has downloaded to the Reactor, a prompt will appear asking to apply the update on the next power cycle.



5. Press the check mark and wait for the on-screen prompt to prepare the Reactor for the update on the next power cycle.
6. After step 5 is complete, the home screen will show a circle with arrows in the right corner of the menu bar. This indicates that the software will be updated on the next power cycle.



7. Cycle the power by turning the disconnect switch off then back on. Wait for the update to complete. Confirm the software update is complete by pressing the check mark.

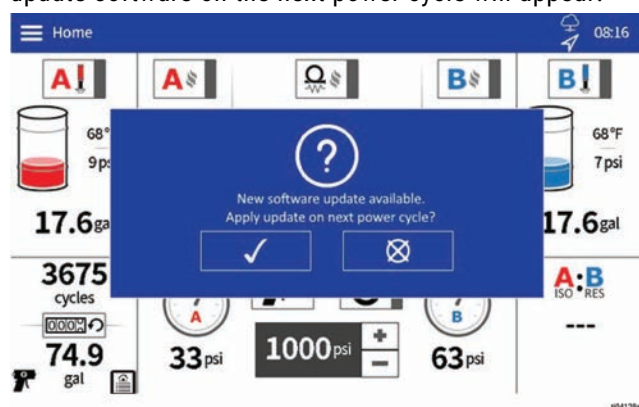
8. The Software Update Complete screen will appear. Use the QR code displayed on the screen to access the software release notes. Otherwise, press the check mark to return to the home screen. Follow the **Shutdown** procedure, or turn off main disconnect switch, remove USB, then close the enclosure door. Turn on the main disconnect switch to continue operation.



## OVER-THE-AIR SOFTWARE UPDATES

Models with cellular modules installed have the ability to perform software updates wirelessly. If this feature is desired, the Enable Cellular Software Update setting on the ADM must be selected. This setting is available on the Advanced > Software screen. See your Reactor 3 operation manual for a description of ADM settings.

New software will download in the background when available. Once the download is complete, a prompt to update software on the next power cycle will appear.



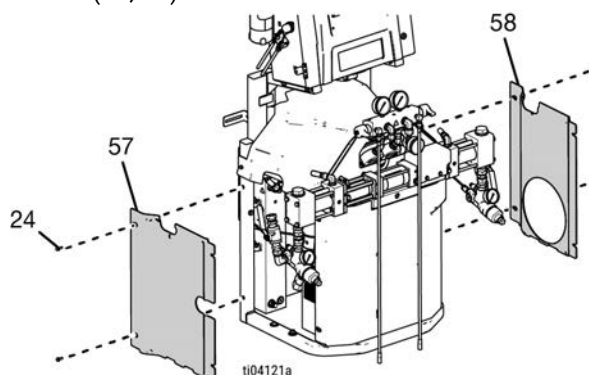
Press the check mark and the update will be applied on the next power cycle.

## REPLACE FLUID OUTLET MANIFOLD



The fluid outlet manifold is the assembly where the heated hoses connect to the unit. The assembly contains pressure gauges as well as pressure transducers and dump valves on either side in order to circulate material back to the drums.

1. Follow the **Shutdown** procedure.
2. Remove four bolts (24) then remove the lower covers (57, 58).

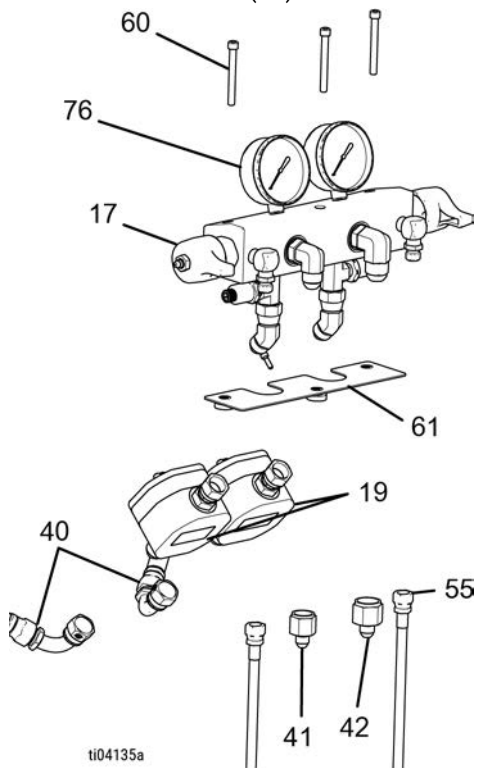


### NOTICE

To prevent a short circuit or lowering the transformer life, do not splash fluid on the transformer. Cover the transformer with a plastic sheet or piece of cardboard.

3. Disconnect fluid lines (40) (or flow meters on Elite models), heated hoses, and recirculation lines (55) from the outlet manifold (17).
4. Disconnect the outlet pressure transducer cables from transducers.

5. Use a 3/16 in. hex key to remove screws (60), then remove the manifold (17).



6. When installing the new manifold, place the gasket (61) in approximately the same location on the motor frame. Use the mounting holes to align, then place the new manifold on top and re-install the screws (60).
7. Reconnect fluid lines (40) and recirculation lines (55) to corresponding fittings and outlet pressure transducer cables to the transducers.
8. Replace lower covers (57, 58) with four bolts (24).

# REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS

The parts illustrations and lists show the components of the Reactor® 3 Hydraulic Proportioning Systems and their connections that are required for assembly, repair, and maintenance.

## TOP LEVEL PARTS

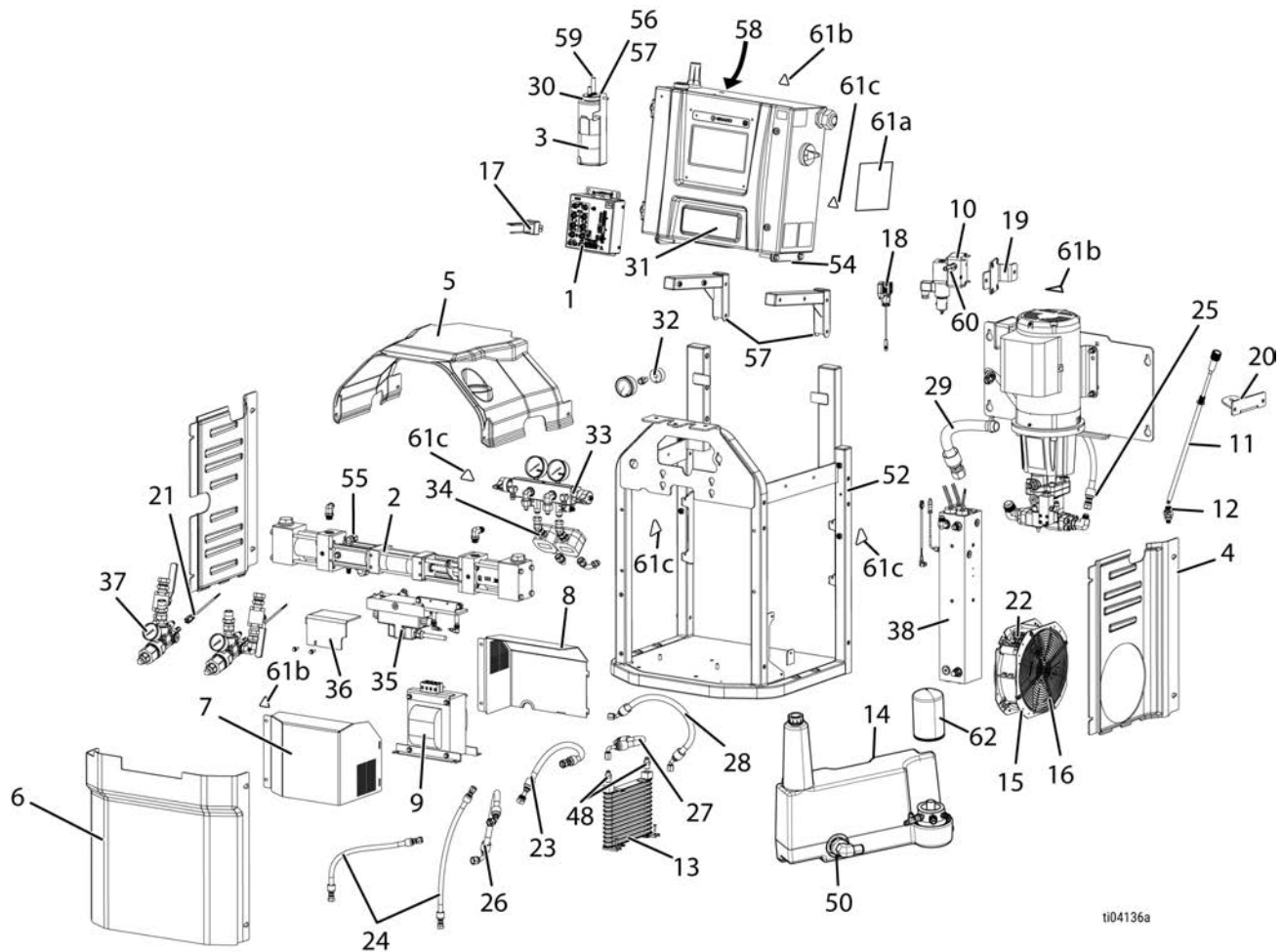


Figure 14-1: Reactor® 3 Hydraulic Proportioning Systems Top Level Parts Diagram

# REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS

## PARTS LIST

| REF.           | PART    | DESCRIPTION                                     | QTY. |
|----------------|---------|-------------------------------------------------|------|
| 1              | 2010146 | Kit, module, HCM2                               | 1    |
| 2              | 2010490 | Kit, pump, hydraulic with ISO and Resin 80      | 1    |
|                | 2010491 | Kit, pump, hydraulic with ISO and Resin 120     | 1    |
|                | 2010492 | Kit, pump, hydraulic with ISO and Resin 140     | 1    |
|                | 2010493 | Kit, pump, hydraulic with ISO and Resin 120/88  | 1    |
| 3              | 2010494 | Kit, TSL, system                                | 1    |
| 4              | 2010495 | Kit, covers, bottom, left and right             | 1    |
|                | 113796  | Screw, flanged, hex hd, 1/4"-20 x 0.75"         | 8    |
| 5              | 2010496 | Kit, cover, top, elite                          | 1    |
|                | 113796  | Screw, flanged, hex hd, 1/4"-20 x 0.75"         | 4    |
|                | 2010497 | Kit, cover, top, pro                            | 1    |
|                | 113796  | Screw, flanged, hex hd, 1/4"-20 x 0.75"         | 4    |
| 6              | 2010498 | Kit, cover, bottom, front                       | 1    |
|                | 113796  | Screw, flanged, hex hd, 1/4"-20 x 0.75"         | 4    |
| 7              | 2010499 | Kit, cover, transformer, front                  | 1    |
| 8              | 2010500 | Kit, cover, transformer, rear                   | 1    |
| 9              | 2010501 | Kit, transformer, 5400 VA, 230/120              | 1    |
| 10❖<br>★△<br>* | 2010502 | Kit, valve, Electronic Pressure Regulator (EPR) | 1    |
| 10a            | 2010681 | Fitting, elbow, 90, -6 JIC x -6 BSPT            | 2    |
| 11             | 2010503 | Kit, upper, MPR                                 | 1    |
| 12‡            | 2010504 | Kit, lower, MPR                                 | 1    |

| REF.           | PART    | DESCRIPTION                                         | QTY. |
|----------------|---------|-----------------------------------------------------|------|
| 13             | 2010513 | Kit, radiator                                       | 1    |
| 13a            | 2010681 | Fitting, elbow, 90, -6 JIC x -6 BSPT                | 2    |
| 13b            | 112598  | Screw, machine truss HD, 8-32 x 0.75"               | 2    |
| 14             | 2010514 | Kit, reservoir                                      | 1    |
| 14a            | 110982  | Screw, cap, hex hd, 1/4-20 x 2"                     | 4    |
| 14b            | 100016  | Washer, lock, 1/4"                                  | 4    |
| 14c            | 100086  | Washer, plain, 3/16"                                | 4    |
| 15             | 2010515 | Kit, fan                                            | 1    |
| 15a            | 110037  | Screw, mach, pan head, 10-24 x 0.5"                 | 4    |
| 15b            | 112381  | Screw, mach, pan head, 10-24 x 3.5"                 | 1    |
| 16             | 2010516 | Kit, guard, fan                                     | 1    |
|                | 114000  | Screw, mach, hex wash hd, 10-14 x 0.5"              | 4    |
| 17             | 2010528 | Kit, module, EMI filter                             | 1    |
| 18             | 2010529 | Kit, Electronic Pressure Regulator Controller (EDX) | 1    |
| 19△            | 2010530 | Kit, bracket, EPR                                   | 1    |
| 20             | 2010531 | Kit, bracket, MPR                                   | 1    |
| 21             | 2010534 | Kit, cable, thermistor                              | 1    |
| 22             | 2010535 | Kit, harness, fan                                   | 1    |
| 23             | 2010560 | Kit, hose, gauge, pressure                          | 1    |
| 24❖<br>★△<br>* | 2010561 | Kit, hose, hydraulic, supply, EPR                   | 2    |
| 25             | 2010562 | Kit, hose, hydraulic, supply, pump outlet           | 1    |
| 26             | 2010563 | Kit, hose, hydraulic supply, tank inlet             | 1    |

REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS

| REF. | PART    | DESCRIPTION                                           | QTY. |
|------|---------|-------------------------------------------------------|------|
| 27   | 2010564 | Kit, hose, hydraulic, cooler, inlet                   | 1    |
| 28   | 2010565 | Kit, hose, hydraulic, cooler, outlet                  | 1    |
| 29   | 2010566 | Kit, hose, coupled, pump inlet                        | 1    |
| 30*  | 2010566 | Kit, cap, bottle, TSL                                 | 1    |
| 30a  | 2010678 | Grommet, 1/2 ID                                       | 1    |
| 30b  | 2010677 | Grommet, 3/8 ID                                       | 1    |
| 31   | 2008926 | Label, branding, H-30 Elite                           | 1    |
|      | 2008925 | Label, branding, H-30 Pro                             | 1    |
|      | 2008930 | Label, branding, H-50 Elite                           | 1    |
|      | 2008929 | Label, branding, H-50 Pro                             | 1    |
|      | 2008932 | Label, branding, H-XP2 Elite                          | 1    |
|      | 2008931 | Label, branding, H-XP2 Pro                            | 1    |
|      | 2008934 | Label, branding, H-XP3 Elite                          | 1    |
|      | 2008933 | Label, branding, H-XP3 Pro                            | 1    |
| 32   | 17V497  | Kit, adapter, hydro gauge                             | 1    |
| 33   | 18E207  | Kit, repair, outlet manifold                          | 1    |
|      | C19817  | Screw, cap, socket head, 1/4-20 x 2.25"               | 3    |
| 34   | 18E136  | Kit, meter, flow                                      | 2    |
| 35   | 17G531  | Kit, manifold, hydraulic                              | 1    |
| 36   | 17V459  | Kit, cover, hydro pump, clear                         | 1    |
| 37   | 18E247  | Kit, strainer, pair, elite                            | 2    |
| 38   | 18E143  | Kit, heater, 1-zone, A, 9.6 KW (Models H50 and H-XP3) | 1    |
|      | 18E144  | Kit, heater, 1-zone, B, 9.6 KW (Models H50 and H-XP3) | 1    |
|      | 18E145  | Kit, heater, 1-zone, A, 7.2 KW (Models H30 and H-XP2) | 1    |

| REF.     | PART    | DESCRIPTION                                           | QTY. |
|----------|---------|-------------------------------------------------------|------|
|          | 18E146  | Kit, heater, 1-zone, B, 7.2 KW (Models H30 and H-XP2) | 1    |
| 48       | 2010669 | Kit, fitting, straight, -6 JIC x -6 BSPT              | 2    |
| 50       | 2010671 | Kit, strainer, suction, 1-1/2 NPT x 3/4 NPT           | 1    |
| 51       | 2010672 | Kit, bracket, pivot, left and right                   | 1    |
| 52       | 2010673 | Kit, frame, painted                                   | 1    |
| 53       | 2010674 | Kit, cap, breather, filler                            | 1    |
| 54       | 2010675 | Kit, shim, enclosure                                  | 2    |
| 55       | 2010676 | Kit, valve, check                                     | 2    |
| 56       | 2010677 | Kit, grommet, 3/8 ID                                  | 1    |
| 57       | 2010678 | Kit, grommet, 1/2 ID                                  | 1    |
| 58       | 2010679 | Kit, clip, snap in                                    | 1    |
| 59       | 2010680 | Kit, tube, 3/8 OD, TSL                                | 1    |
| 60†<br>◆ | 2010681 | Kit, fitting, elbow, -6 JIC x -6 BSPT                 | 1    |
| 61▲      | 25T998  | Label, safety, <i>includes 61a, 61b, 61c and 61d</i>  | 1    |
| 61a<br>▲ |         | Label, danger, warning                                | 1    |
| 61b<br>▲ |         | Label, shock, warning                                 | 3    |
| 61c<br>▲ |         | Label, hot surface, warning                           | 7    |
| 61d<br>▲ |         | See <b>Electrical Enclosure Parts</b>                 | 1    |
| 62       | 247792  | Kit, filter, oil                                      | 1    |

## REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS

❖ *Included in MPR to EPR Conversion Kit 2010517 (H-30/H-XP2 60 Hz).*

★ *Included in MPR to EPR Conversion Kit 2010518 (H-30/H-XP2 50 Hz).*

△ *Included in MPR to EPR Conversion Kit 2010519 (H-50/H-XP3 230V).*

\* *Included in MPR to EPR Conversion Kit 2010520 (H-50/H-XP3 400V).*

‡ *Included in Pro Pump Kit 2010509 (H-30/H-XP2 50 Hz).*

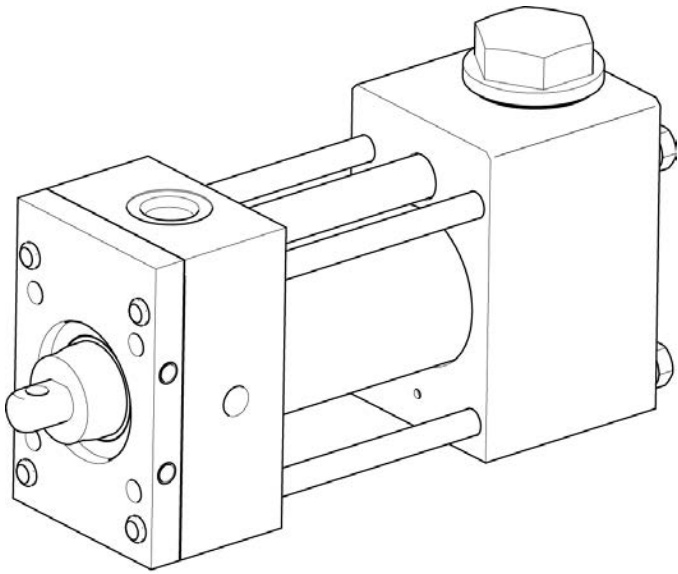
✿ *Included in TSL System Kit 2010494.*

† *Included in EPR Valve Kit 2010502.*

◆ *Included in Radiator Kit 2010513.*

▲ *Replacement safety labels, tags, and cards are available at no cost.*

**PROPORTIONER PUMPS**



ti04423a

Figure 14-2: Reactor® 3 Hydraulic Proportioner Pumps Parts Diagram

**PARTS LIST**

| PART   | DESCRIPTION               |
|--------|---------------------------|
| 24F291 | KIT, proportioner, 28 cc  |
| 247371 | KIT, proportioner, 30 cc  |
| 247372 | KIT, proportioner, 40 cc  |
| 247373 | KIT, proportioner, 48 cc  |
| 247374 | KIT, proportioner, 60 cc  |
| 247375 | KIT, proportioner, 80 cc  |
| 247577 | KIT, proportioner, 88 cc  |
| 247376 | KIT, proportioner, 96 cc  |
| 247377 | KIT, proportioner, 120 cc |
| 247576 | KIT, proportioner, 140 cc |



HYDRAULIC CYLINDER

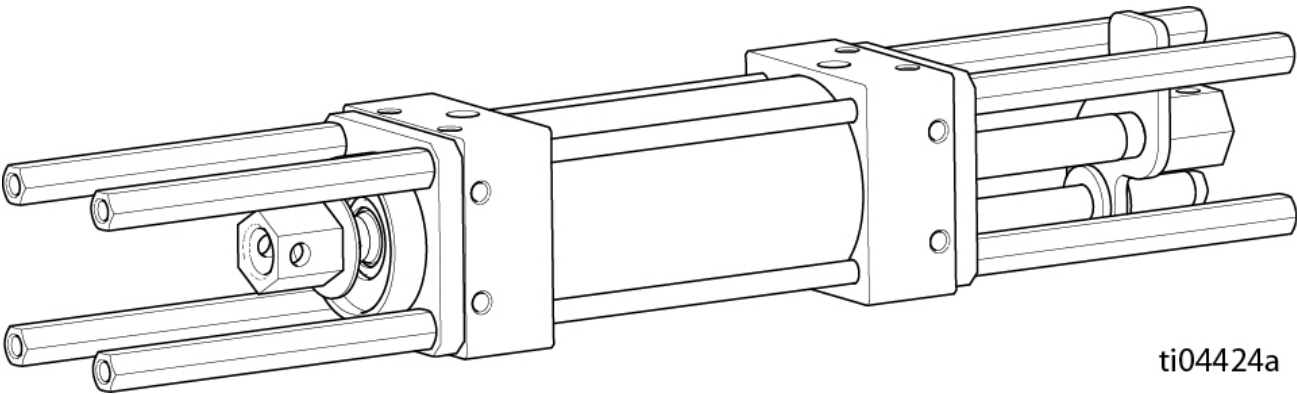
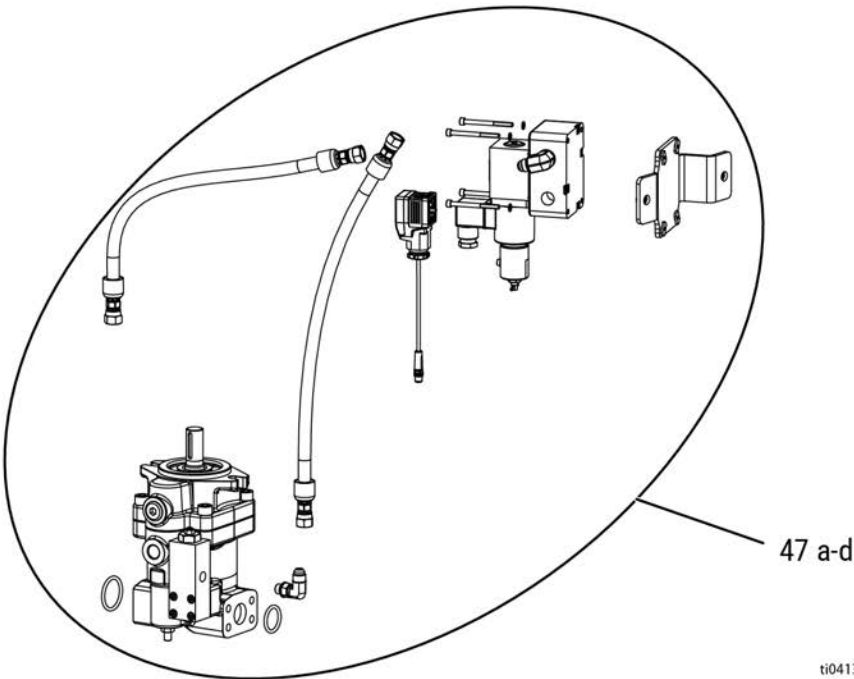
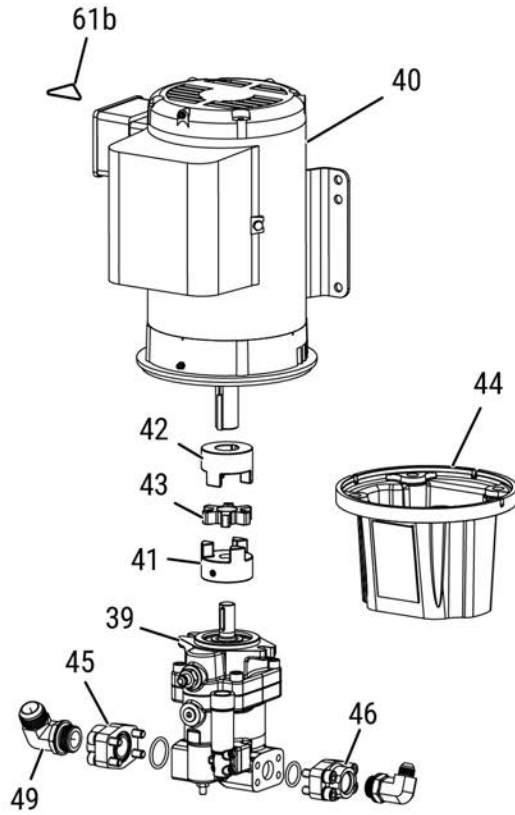


Figure 14-3: Reactor® 3 Hydraulic Proportioning Systems Cylinder Parts Diagram

PARTS LIST

| PART   | DESCRIPTION                           |
|--------|---------------------------------------|
| 17G499 | KIT, cylinder, hydraulic with spacers |

DRIVER PARTS / MPR TO EPR PARTS



ti04137a

Figure 14-4: Reactor® 3 Hydraulic Proportioning Systems Driver Parts / MPR to EPR Parts Diagram

# REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS

## PARTS LIST

| REF.             | PART    | DESCRIPTION                            | QTY. |
|------------------|---------|----------------------------------------|------|
| 39 ❖<br>★ △<br>* | 2010505 | Kit, pump, elite, H-30/H-XP2 60 Hz     | 1    |
|                  | 2010506 | Kit, pump, elite, H-30/H-XP2 50 Hz     | 1    |
|                  | 2010507 | Kit, pump, elite, H-50/H-XP3 230V      | 1    |
|                  | 2010508 | Kit, pump, elite, H-50/H-XP3 400V      | 1    |
|                  | 2010509 | Kit, pump, pro, H-30/H-XP2 60 Hz       | 1    |
|                  | 2010510 | Kit, pump, pro, H-30/H-XP2 50 Hz       | 1    |
|                  | 2010511 | Kit, pump, pro, H-50/H-XP3 230V        | 1    |
|                  | 2010512 | Kit, pump, pro, H-50/H-XP3 400V        | 1    |
| 40†              | 2010521 | Kit, motor, 4HP, 60 Hz                 | 1    |
|                  | 2010522 | Kit, motor, 4HP, 50 Hz                 | 1    |
|                  | 2010523 | Kit, motor, 7.5HP                      | 1    |
| 41               | 2010524 | Kit, coupler, 3/4", keyed              | 1    |
| 42               | 2010525 | Kit, couplet, 1-1/8", keyed            | 1    |
| 43               | 2010526 | Kit, spider                            | 1    |
| 44               | 2010527 | Kit, coupler, motor/pump adapter       | 1    |
|                  | 100018  | Lockwasher, 0.5"                       | 4    |
| 45               | 2010532 | Kit, flange, pump inlet                | 1    |
| 46               | 2010533 | Kit, flange, pump outlet               | 1    |
| 47a              | 2010517 | Kit, MPR to EPR conversion, H-30/H-XP2 | 1    |
|                  | 2010505 | Kit, pump, elite, H-30/H-XP2, 60Hz     | 1    |
|                  | 2010530 | Kit, bracket, EPR                      | 1    |
|                  | 2010502 | Kit, valve, EPR                        | 1    |

| REF.  | PART    | DESCRIPTION                                    | QTY. |
|-------|---------|------------------------------------------------|------|
|       | C19988  | Screw, cap, socket hd, 10-24 x 2.25"           | 4    |
| 47b   | 2010518 | Kit, MPR to EPR conversion, H-130/H-XP2, 50 Hz | 1    |
|       | 2010506 | Kit, pump, elite, H-30/H-XP2, 50Hz             | 1    |
|       | 2010530 | Kit, bracket, EPR                              | 1    |
|       | 2010502 | Kit, valve, EPR                                | 1    |
|       | C19988  | Screw, cap, socket hd, 10-24 x 2.25"           | 4    |
| 47c   | 2010519 | Kit, MPR to EPR conversion, H-50/H-XP3, 230V   | 1    |
|       | 2010507 | Kit, pump, elite, H-50/H-XP3, 230V             | 1    |
|       | 2010530 | Kit, bracket, EPR                              | 1    |
|       | 2010502 | Kit, valve, EPR                                | 1    |
|       | C19988  | Screw, cap, socket hd, 10-24 x 2.25"           | 4    |
| 47d   | 2010520 | Kit, MPR to EPR conversion, H-50/H-XP3, 400V   | 1    |
|       | 2010508 | Kit, pump, elite, H-50/H-XP3, 400V             | 1    |
|       | 2010530 | Kit, bracket, EPR                              | 1    |
|       | 2010502 | Kit, valve, EPR                                | 1    |
|       | C19988  | Screw, cap, socket hd, 10-24 x 2.25"           | 4    |
| 49    | 2010670 | Kit, fitting, elbow, -16 JIC x -16 ORB         | 1    |
| 61b ▲ | 25T998  | Label, shock, warning                          | 1    |

## REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS

❖ *Included in MPR to EPR Conversion Kit 2010517 (H-30/H-XP2 60Hz).*

★ *Included in MPR to EPR Conversion Kit 2010518 (H-30/H-XP2 50 Hz).*

△ *Included in MPR to EPR Conversion Kit 2010519 (H-50/H-XP3 230V).*

\* *Included in MPR to EPR Conversion Kit 2010520 (H-50/H-XP3 400V).*

† *Kits include necessary hardware:*

- *Bolt, carriage, 3/8-16 x 1.25" (404533)*

- *Nut, hex head flange with serrated face flange base, 3/8-16 UNC-2B (112958)*

▲ *Replacement safety labels, tags, and cards are available at no cost.*

# HEATER PARTS

18E143, 18E144 (H30/HXP2) AND 18E145, 18E146 (H50/HXP3) PARTS

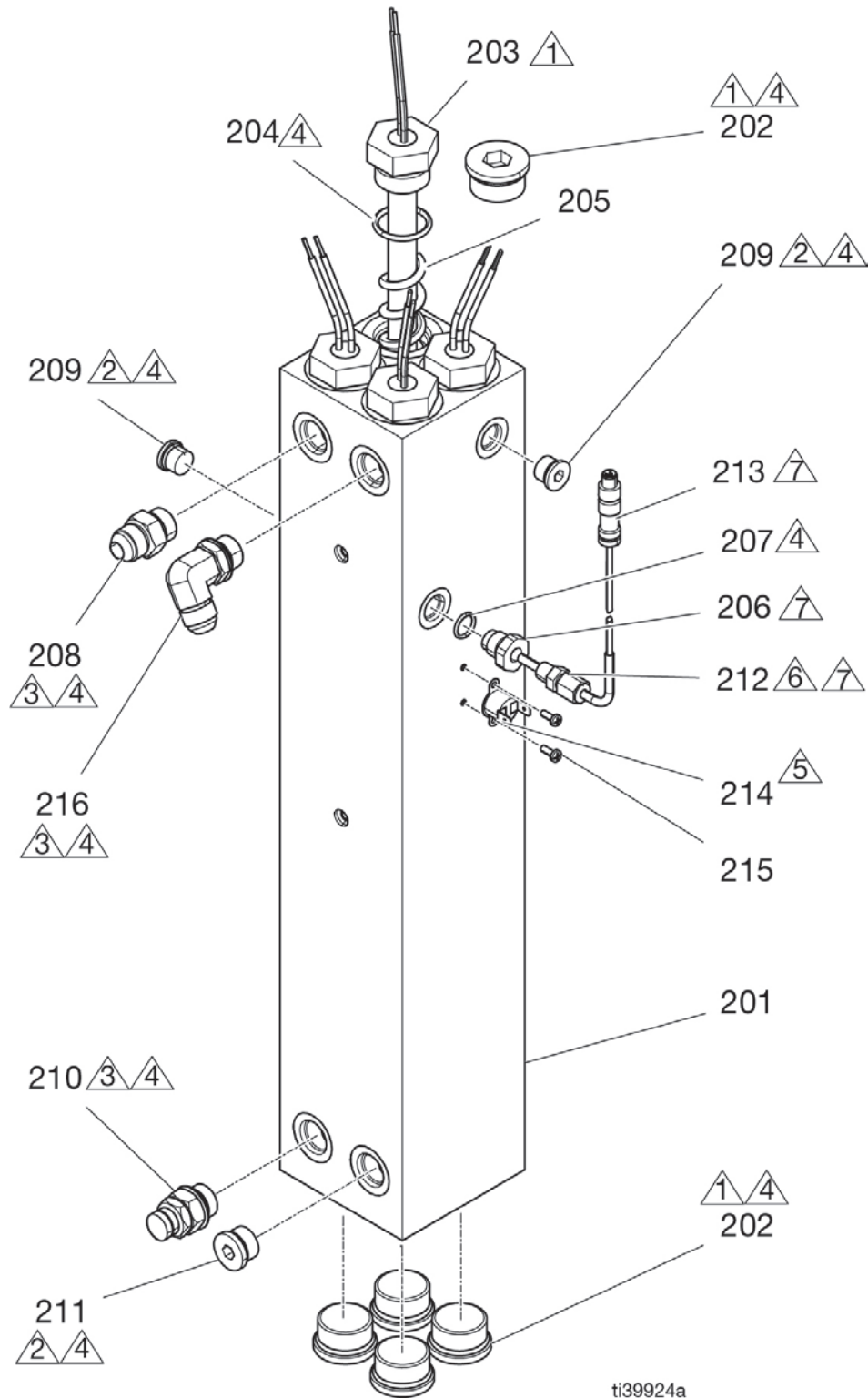


Figure 14-5: Reactor® 3 Hydraulic Proportioning Systems Heater Parts Diagram

 1 Torque to 120 ft-lb (162.3 N·m).

 2 Torque to 23 ft-lb (31.2 N·m).

 3 Torque to 40 ft-lb (54.2 N·m).

 4 Apply lubricant to o-rings before assembling.

 5 Apply thermal paste to base of switch.

 6 Apply sealant and tape to all non-swiveling and non-drying threads.

Assemble compression fitting into adapter and tighten to 17 ft-lb (23 N·m). Insert sensor into compression fitting, then tighten compression nut to  $21 \pm 2$  ft-lb ( $28 \pm 2.7$  N·m). While holding the sensor against the heater rod, hold the npt portion of the compression fitting while tightening to prevent rotation of the fitting body.

 7

# REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS

## PARTS LIST

| REF. | PART    | DESCRIPTION                         | QTY.                          |                               |                               |                               |
|------|---------|-------------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
|      |         |                                     | 18E143<br>(ZONE A,<br>9.6 KW) | 18E144<br>(ZONE B,<br>9.6 KW) | 18E145<br>(ZONE A,<br>7.2 KW) | 18E146<br>(ZONE B,<br>7.2 KW) |
| 201  | ----    | Block, heater, machined, dual       | 1                             | 1                             | 1                             | 1                             |
| 202  | 15H305  | Fitting, plug hollow hex 1-3/16 sae | 4                             | 4                             | 5                             | 5                             |
| 203  | 18C668  | Heater, immersion, 2400W, 230V      | 4                             | 4                             | 3                             | 3                             |
| 204  | 124132  | O-ring                              | 4                             | 4                             | 3                             | 3                             |
| 205  | 18B279  | Spring, mixer, heater               | 4                             | 4                             | 3                             | 3                             |
| 206  | 15H306  | Adapter, thermosouple, 9/16 x 1/8   | 1                             | 1                             | 1                             | 1                             |
| 207  | 120336  | O-ring, packing                     | 1                             | 1                             | 1                             | 1                             |
| 208  | 121309  | Fitting, adapter, sae-prb x jic     | 1                             | 1                             | 1                             | 1                             |
| 209  | 15H304  | Fitting, plug 9/16 sae              | 2                             | 2                             | 2                             | 2                             |
| 210  | 247520  | Housing, rupture disc               | 1                             | 1                             | 1                             | 1                             |
| 211  | 295607  | Plug, hex                           | 1                             | 1                             | 1                             | 1                             |
| 212  | 123325  | Fitting, compression, 1/8 NPT       | 1                             | 1                             | 1                             | 1                             |
| 213  | 24L973  | Kit, heater RTD                     | 1                             | 1                             | 1                             | 1                             |
| 214  | 2007109 | Kit, switch, over-temperature       | 1                             | 1                             | 1                             | 1                             |
| 215  | 124131  | Screw, mach, pnh                    | 1                             | 1                             | 1                             | 1                             |
| 216  | 121312  | Fitting, elbow, sae x jic           | 2                             | 2                             | 2                             | 2                             |
| 218  | ----    | Lubricant, temporary assembly       | 1                             | 1                             | 1                             | 1                             |
| 219  | ----    | Sealant, pipe, sst                  | 1                             | 1                             | 1                             | 1                             |
| 220  | ----    | Lubricant, thermal                  | 1                             | 1                             | 1                             | 1                             |

## MANIFOLD PARTS

18E207

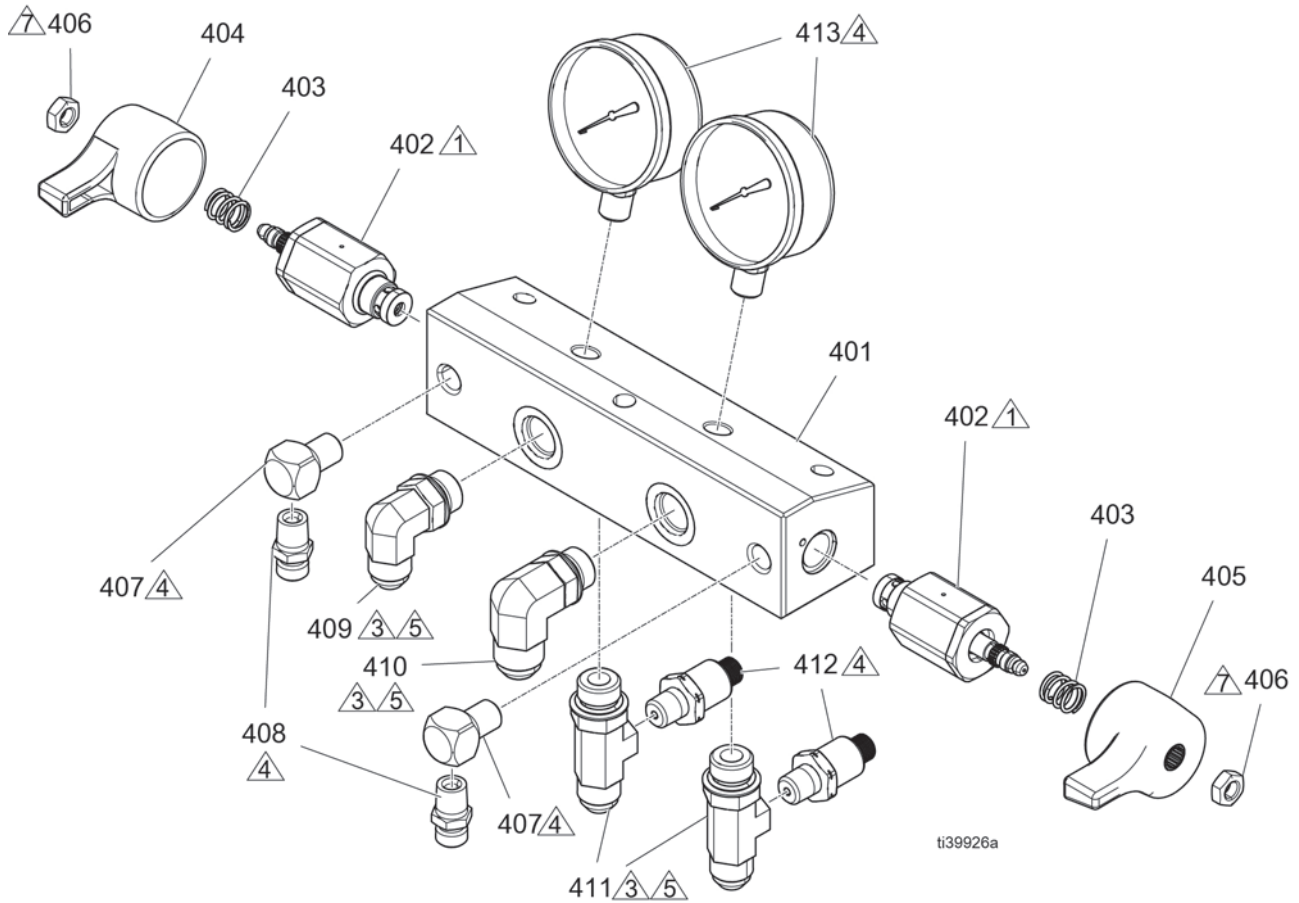


Figure 14-6: Reactor® 3 Hydraulic Proportioning Systems Manifold Parts Diagram

- |                                                                                                                     |                                                                              |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <p><b>1</b> Apply sealant to threads and torque to <math>372 \pm 24</math> in-lb (<math>42 \pm 2.7</math> N·m).</p> | <p><b>5</b> Verify installation of o-ring before installing the fitting.</p> |
| <p><b>3</b> Apply lubricant to o-rings before assembly.</p>                                                         | <p><b>7</b> Apply sealant to threads.</p>                                    |
| <p><b>4</b> Apply tape and sealant to all non-swiveling pipe threads.</p>                                           |                                                                              |



# REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS

## PARTS LIST

| REF.       | PART      | DESCRIPTION                          | QTY. |
|------------|-----------|--------------------------------------|------|
| 401        | ----      | Housing, outlet                      | 1    |
| 402†<br>‡★ | 247824    | Valve, drain                         | 2    |
| 403†<br>‡★ | 150829    | Spring, compression                  | 2    |
| 404†<br>‡  | 15J915    | Handle, red                          | 1    |
| 405†<br>★  | 15J916    | Handle, blue                         | 1    |
| 406†<br>‡★ | 112309    | Nut, hex, jam                        | 2    |
| 407        | 100840    | Fitting, elbow, street               | 2    |
| 408        | 162453    | Fitting, 1/4 npsm x 1/4 npt          | 2    |
| 409        | 132443    | Fitting, elbow, jic-8 x orb-8        | 1    |
| 410        | 132513    | Fitting, elbow, jic-10 x orb-8       | 1    |
| 411        | 132173    | Fitting, tee, orb-8, jic-8, ¼ NPT    | 2    |
| 412        | 18B074PKG | Transducer, pressure, 5000 psi       | 2    |
| 413        | 102814    | Gauge, press, fluid                  | 2    |
| 414        | ----      | Lubricant, grease (not shown)        | 1    |
| 415        | ----      | Tape, tfe, sealant (not shown)       | 1    |
| 416        | ----      | Sealant, pipe, sst (not shown)       | 1    |
| 417        | ----      | Sealant, anaerobic, blue (not shown) | 1    |

† Included in Drain Valve Set Kit 255148.

‡ Included in ISO Drain Valve Kit 255149.

★ Included in RESIN Drain Valve Kit 255150.

ELECTRICAL ENCLOSURE PARTS

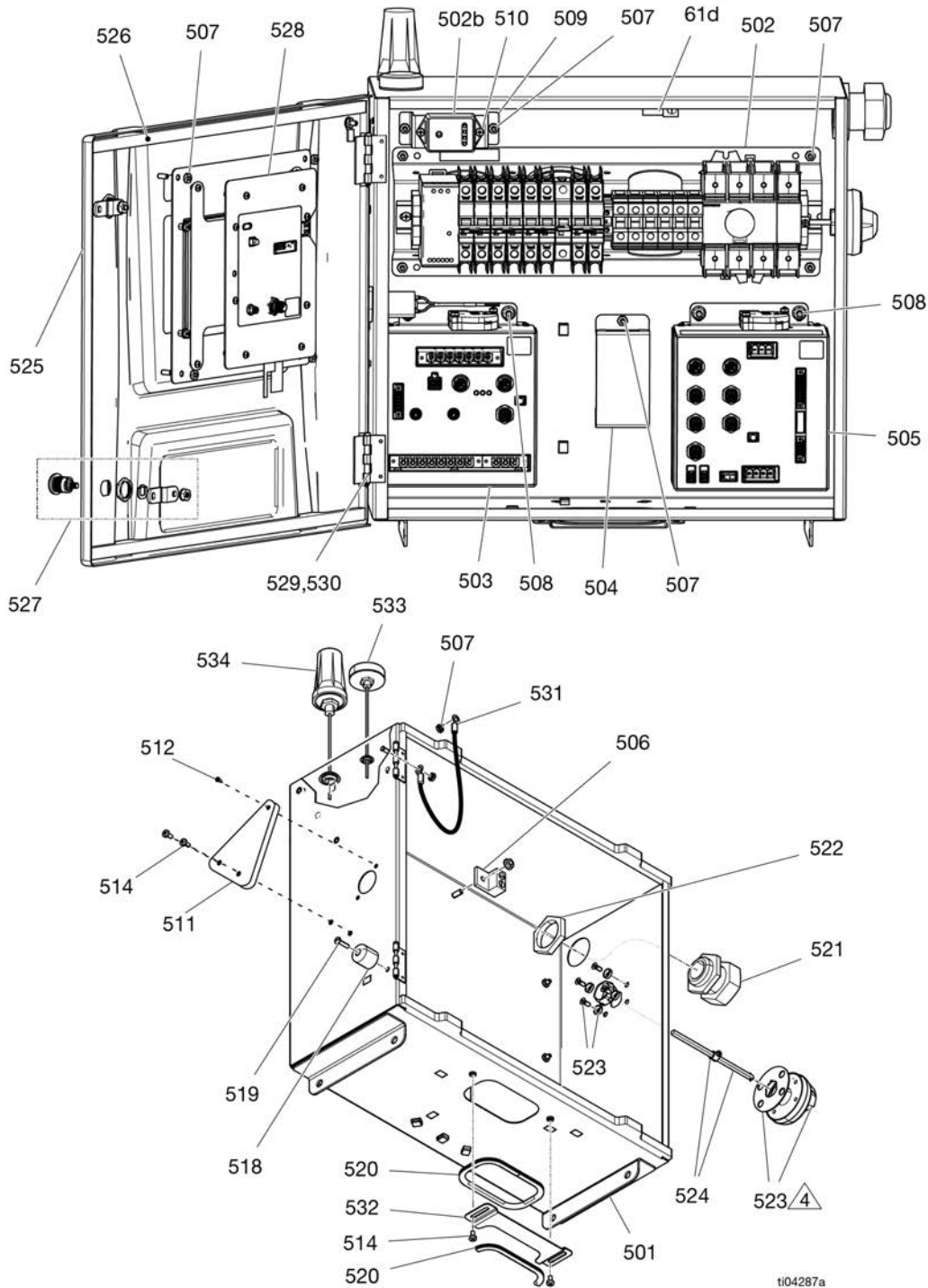


Figure 14-7: Reactor® 3 Hydraulic Proportioning Systems Electrical Enclosure Parts Diagram

4 Orient shaft with shaft pin in the vertical position. Assemble and orient knob with the off position to the front of the enclosure.

# REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS

## PARTS LIST

| REF.     | PART    | DESCRIPTION                          | QTY. |
|----------|---------|--------------------------------------|------|
| 61d<br>▲ | 25T998  | Label, ground, warning               | 1    |
| 501      | ----    | Enclosure, weldment, painted         | 1    |
| 502      | ----    | Module, din rail                     | 1    |
| 503      | 25P036  | Module, GCA, TCM                     | 1    |
| 504      | ----    | Label, installation                  | 1    |
| 505      | 2010146 | Kit, module, HCM2                    | 1    |
| 506      | 117666  | Terminal, ground                     | 1    |
| 507      | 113505  | Nut, keps, hex hd, 10-24             | 14   |
| 508      | 115942  | Nut, hex, flange head                | 5    |
| 509      | ----    | Bracket, MOV                         | 1    |
| 510      | 114331  | Screw, mach, pan head, #6-32 x 3/8"  | 2    |
| 511      | ----    | Plate, cover, painted                | 1    |
| 512      | 107388  | Screw, mach, pan head, #4-40 x 3/8"  | 3    |
| 514      | 110637  | Screw, mach, pan head, #10-24 x 3/8" | 4    |
| 518      | 18C189  | Bumper, enclosure door               | 1    |
| 519      | 102790  | Screw, mach, pan, #10-24 x 3/4"      | 2    |
| 520      | 114225  | Trim, edge protection (1.6 ft)       | 1    |
| 521      | 255047  | Bushing, strain relief, M40 thread   | 1    |
| 522      | 120859  | Nut, strain relief, M40 thread       | 1    |
| 523      | 18B671  | Knob, door interlocked               | 1    |
| 524      | 18B672  | Shaft, door interlocked              | 1    |

| REF. | PART      | DESCRIPTION                                                        | QTY. |
|------|-----------|--------------------------------------------------------------------|------|
| 525  | ----      | Door, stamped, painted                                             | 1    |
| 526  | ----      | Foam, enclosure                                                    | 2    |
| 527  | 16W596    | Latch, door                                                        | 2    |
| 528  | 18E139    | Kit, module, GCA, ADM, 9 inch                                      | 1    |
| 529  | ----      | Pin, weld hinge                                                    | 2    |
| 530  | ----      | Ring, retaining, e-ring, 9/64"                                     | 2    |
| 531  | 194337    | Wire, grounding, door                                              | 1    |
| 532  | ----      | Plate, enclosure guard                                             | 1    |
| 533  | 132949PKG | Antenna, GPS                                                       | 1    |
| 534  | 132948PKG | Antenna, cellular                                                  | 1    |
| 535  | 18D084    | Cable, can, female/ female 0.9m (not shown)                        | 1    |
| 536  | ----      | Cable, can, female/ female 0.6m (not shown)                        | 1    |
| 537  | 18E184    | Electrical connectors (not shown)                                  | 1    |
| 538  |           |                                                                    | 1    |
| 539  |           |                                                                    | 1    |
| 540  |           |                                                                    | 1    |
| 544  | 18D295    | Cable, 4 pin, male/90 degree female 1.0m (not shown)               | 1    |
| MC   | ----      | Motor contactor (see <b>Component Identification</b> for location) | 1    |

▲ Replacement safety labels, tags, and cards are available at no cost.

# INLET STRAINERS PARTS

## 18E247 AND 18E246 PARTS

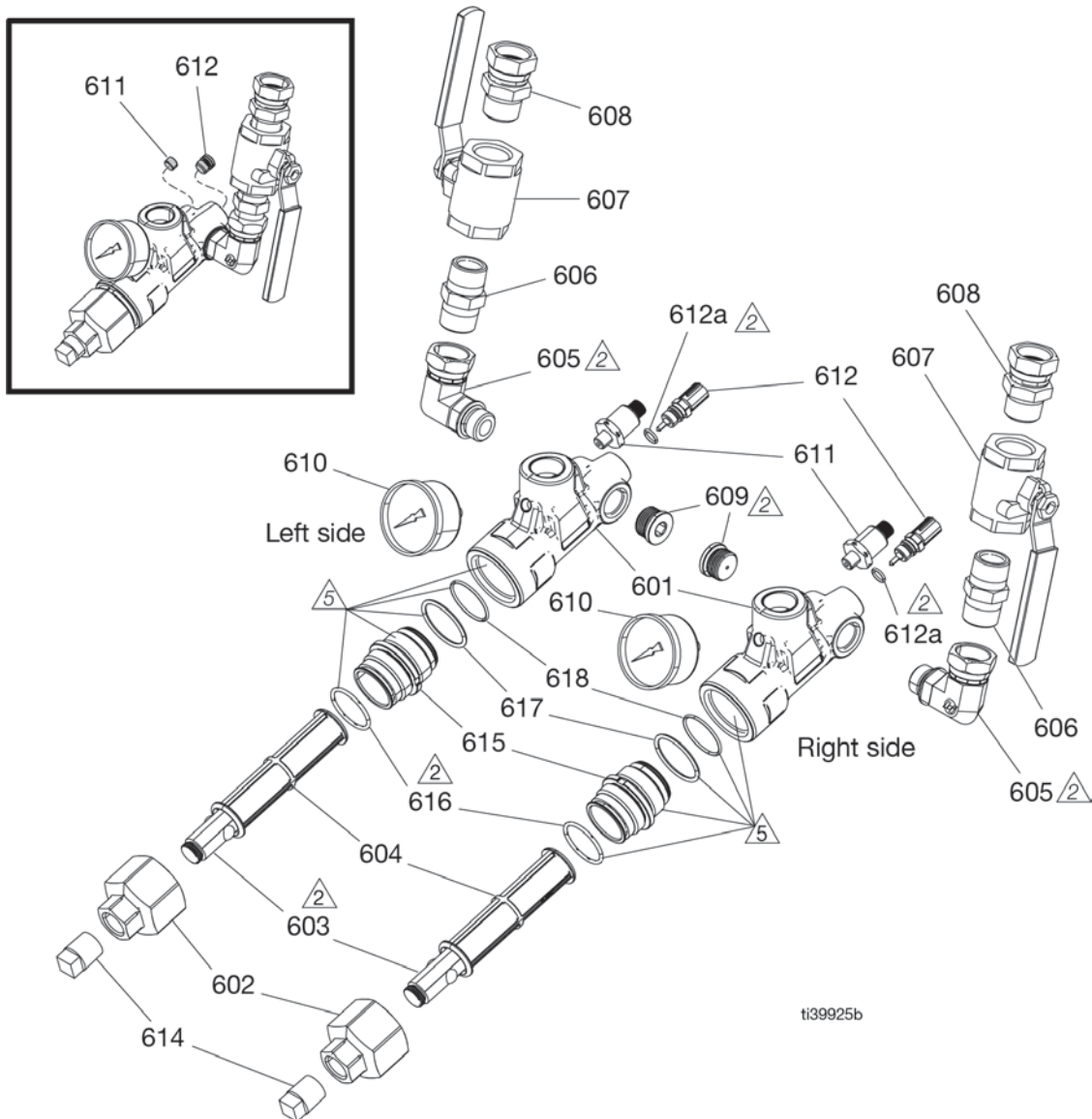


Figure 14-8: Reactor® 3 Hydraulic Proportioning Systems Inlet Strainers Parts Diagram

1 Apply sealant to all non-swivel pipe threads.

5 Apply adhesive to mating surfaces. Do not apply adhesive to inside bores of insert (615) or housing (601).

2 Apply lubricant to o-rings.

# REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS

## PARTS LIST

| REF.  | PART      | DESCRIPTION                          | QTY.   |        |
|-------|-----------|--------------------------------------|--------|--------|
|       |           |                                      | 18E247 | 18E246 |
| 601   | 18D179    | Strainer, housing, machined          | 2      | 2      |
| 602   | 18E271    | Cap, strainer                        | 2      | 2      |
| 603   | 15E288    | Insert, manifold                     | 2      | 2      |
| 604*‡ | 132675    | Filter, fluid, 30 mesh               | 2      | 2      |
| 605   | 132437    | Fitting, elbow, orb-10 x 3/4 npsm    | 2      | 2      |
| 606   | 119992    | Fitting, pipe, nipple, 3/4 x 3/4 npt | 2      | 2      |
| 607   | 109077    | Valve, ball 3/4 npt                  | 2      | 2      |
| 608   | 118459    | Fitting, union, swivel, 3/4 in.      | 2      | 2      |
| 609   | 556424    | Plug, pipe stl rd 7/8-14 saw mg      | 2      | 2      |
| 610   | 18E272    | Gauge, pressure, 500 psi             | 2      | 2      |
| 611   | 18B075PKG | Transducer, pressure, 1000 psi       | 2      | ----   |
|       | 104765    | Plug, temp sensor                    | ----   | 2      |
| 612   | 20B457    | Sensor, temperature                  | 2      | ----   |
|       | 18D158    | Plug, pipe                           | ----   | 2      |
| 612a  | 106555    | Packing, o-ring                      | 2      | 2      |
| 614   | 100737    | Plug, pipe                           | 2      | 2      |
| 615   | 133171    | Insert, thread, cap, strainer        | 2      | 2      |
| 616◆‡ | 132444    | O-ring, 125, fx75                    | 2      | 2      |
| 617   | 107067    | Packing, o-ring                      | 2      | 2      |
| 618   | C24035    | Packing, o-ring                      | 2      | 2      |
| 619   | ----      | Sealant, pipe, sst (not shown)       | 1      | 1      |
| 620   | ----      | Lubricant, grease (not shown)        | 1      | 1      |
| 621   | ----      | Adhesive, epoxy, gray (not shown)    | 1      | 1      |

\* Included in 18E252 Inlet Strainer Filter Kit (2-pack) and 18E253 Inlet Strainer Filter Kit (10-pack).

◆ Included in 18E251 Filter Cap O-ring Kit (10-pack).

‡ Included in 18E254 O-ring and Filter Kit (single).

## RAIL MODULE PARTS

### H-30 AND H-XP2

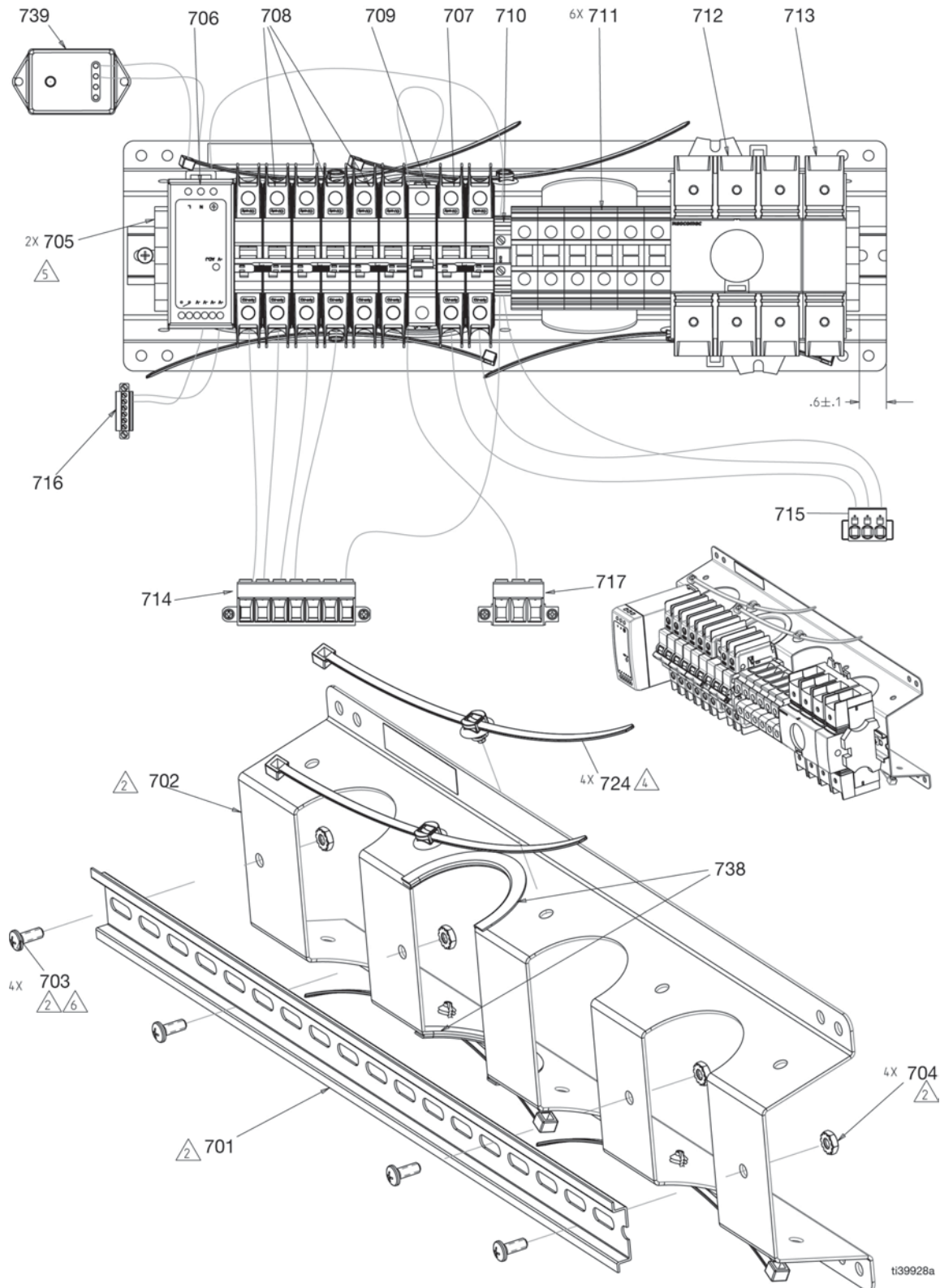


Figure 14-9: Reactor® 3 Hydraulic Proportioning Systems Rail Module Parts (H-30 and H-XP2)

# REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS

2 Install din rail (701) to mounting bracket (702) before installing components.

4 Install cable ties (724) into mounting bracket (702).

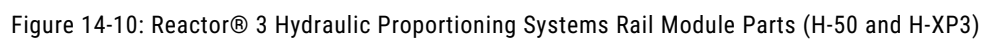
5 Torque to 14 in-lb (1.5 N·m).

6 Torque to 45 in-lb (5.2 N·m).

## PARTS LIST

| REF. | PART   | DESCRIPTION                           | QTY. |
|------|--------|---------------------------------------|------|
| 701  | ----   | Rail, mount, 18mm slot                | 1    |
| 702  | ----   | Bracket, din rail                     | 1    |
| 703  | 116610 | Screw, mach, phil, pan, #10           | 4    |
| 704  | 113505 | Nut, keps, hex hd                     | 4    |
| 705  | 120838 | Block, clamp end                      | 2    |
| 706  | 126453 | Power supply, 24V                     | 1    |
| 707  | 17A314 | Circuit, breaker, 2p, 20a, ul489, ab  | 1    |
| 708  | 17A317 | Circuit, breaker, 2p, 40a, ul489, ab  | 3    |
| 709  | 255026 | Circuit, breaker, 1p, 50a, ul1077, ab | 1    |
| 710  | 132931 | Block, ground, terminal               | 1    |
| 711  | 24R724 | Block, terminal, ut35                 | 6    |
| 712  | 132801 | Switch, rotary disconnect, 3p, 100a   | 1    |
| 713  | 132802 | Switch, fourth pole, 100a, ul98       | 1    |

| REF. | PART      | DESCRIPTION                                    | QTY. |
|------|-----------|------------------------------------------------|------|
| 714  | 133472PKG | 7-PIN connector, TCM                           | 1    |
| 715  | 133471PKG | 3-PIN connector, HCM                           | 1    |
| 716  | 133470PKG | 6-PIN connector, TCM                           | 1    |
| 717  | 133469PKG | 3-PIN connector, TCM                           | 1    |
| 724  | 125625    | Tie, cable, fir tree                           | 4    |
| 725  | ----      | Sleeve, split, wire, 1.00 id (not shown)       | 1    |
| 729  | 128036    | Sleeve, split, wire, 0.63 id (not shown)       | 1    |
| 736  | ----      | Contact, connector, pin, size 8 (not shown)    | 2    |
| 737  | ----      | Contact, connector, socket, size 8 (not shown) | 2    |
| 738  | 114225    | Trim, edge protection                          | 1    |
| 739  | 16U530    | Module, sys srg prot                           | 1    |





## REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS

 Install din rail (1) to mounting bracket (2) before installing components.

 Torque to 14 in-lb (1.5 N·m).

 Install cable ties (34) into mounting bracket (2).

 Torque to 45 in-lb (5.2 N·m).

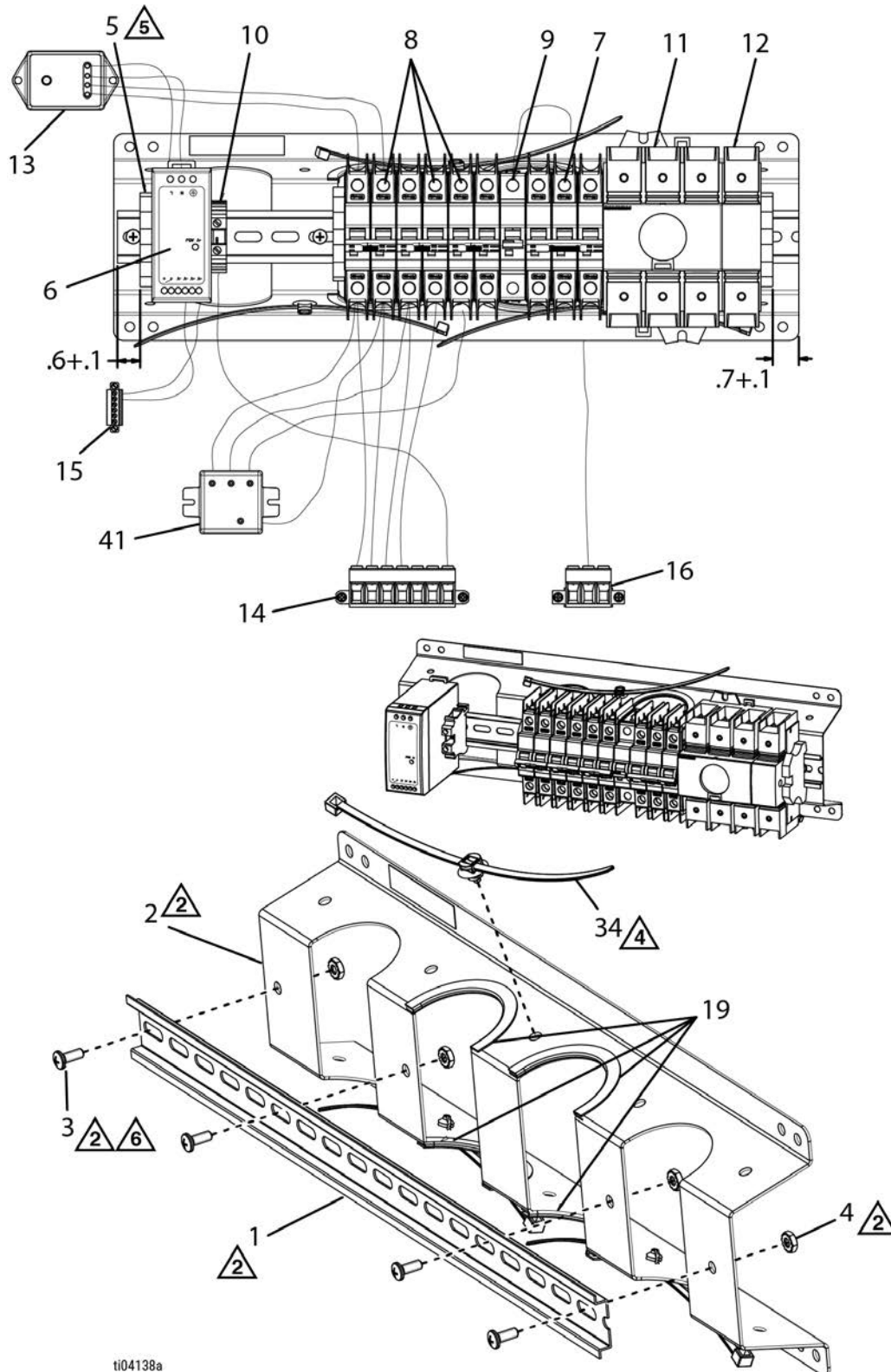
### PARTS LIST

| REF. | PART   | DESCRIPTION                           | QTY. |
|------|--------|---------------------------------------|------|
| 1    | ----   | Rail, mount                           | 1    |
| 2    | ----   | Bracket, din rail                     | 1    |
| 3    | 116610 | Screw, mach, phil, pan, #10           | 4    |
| 4    | 113505 | Nut, keps, hex hd                     | 4    |
| 5    | 120838 | Block, clamp end                      | 3    |
| 6    | 126453 | Power supply, 24 V, 2.5A, 60W         | 1    |
| 7    | 17G724 | Circuit, breaker, 3p, 20a, ul489, ab  | 1    |
| 8    | 17A317 | Circuit, breaker, 2p, 40a, ul489, ab  | 3    |
| 9    | 255026 | Circuit, breaker, 1p, 50a, ul1077, ab | 1    |

| REF. | PART      | DESCRIPTION               | QTY. |
|------|-----------|---------------------------|------|
| 10   | 132931    | Block, terminal, ground   | 1    |
| 11   | 132801    | Switch, rotary disconnect | 1    |
| 12   | 132802    | Switch, fourth-pole       | 1    |
| 13   | 16U530    | Module, sys srg prot      | 1    |
| 14   | 133472PKG | 7-PIN connector, TCM      | 1    |
| 15   | 133470PKG | 6-PIN connector, TCM      | 1    |
| 16   | 133469PKG | 3-PIN connector, TCM      | 1    |
| 19   | 114225    | Trim, edge protection     | 1    |
| 34   | 125625    | Tie, cable, fir tree      | 3    |

H-30, H-XP2, H-50 AND H-XP3 (50 HZ)

Figure 14-11: Reactor® 3 Hydraulic Proportioning Systems Rail Module Parts (H-30, H-XP2, H-50 and H-XP3 [50 Hz])



## REACTOR® 3 HYDRAULIC PROPORTIONING SYSTEMS PARTS



Install din rail (1) to mounting bracket (2) before installing components.



Torque to 14 in-lb (1.5 N·m).



Install cable ties (34) into mounting bracket (2).



Torque to 45 in-lb (5.2 N·m).

### PARTS LIST

| REF. | PART   | DESCRIPTION                           | QTY. |
|------|--------|---------------------------------------|------|
| 1    | ----   | Rail, mount                           | 1    |
| 2    | ----   | Bracket, din rail                     | 1    |
| 3    | 116610 | Screw, mach, phil, pan, #10           | 4    |
| 4    | 113505 | Nut, keps, hex hd                     | 4    |
| 5    | 120838 | Block, clamp end                      | 3    |
| 6    | 126453 | Power supply, 24 V, 2.5A, 60W         | 1    |
| 7    | 17G724 | Circuit, breaker, 3p, 20a, ul489, ab  | 1    |
| 8    | 17A317 | Circuit, breaker, 2p, 40a, ul489, ab  | 3    |
| 9    | 255026 | Circuit, breaker, 1p, 50a, ul1077, ab | 1    |

| REF. | PART      | DESCRIPTION                            | QTY. |
|------|-----------|----------------------------------------|------|
| 10   | 132931    | Block, terminal, ground                | 1    |
| 11   | 132801    | Switch, rotary disconnect              | 1    |
| 12   | 132802    | Switch, fourth-pole                    | 1    |
| 13   | 16U530    | Module, sys srg prot                   | 1    |
| 14   | 133472PKG | 7-PIN connector, TCM                   | 1    |
| 15   | 133470PKG | 6-PIN connector, TCM                   | 1    |
| 16   | 133469PKG | 3-PIN connector, TCM                   | 1    |
| 19   | 114225    | Trim, edge protection                  | 1    |
| 34   | 125625    | Tie, cable, fir tree                   | 3    |
| 41   | 2010528   | Module, EMI filter 3p wye with neutral | 1    |

SHIP LOOSE PARTS

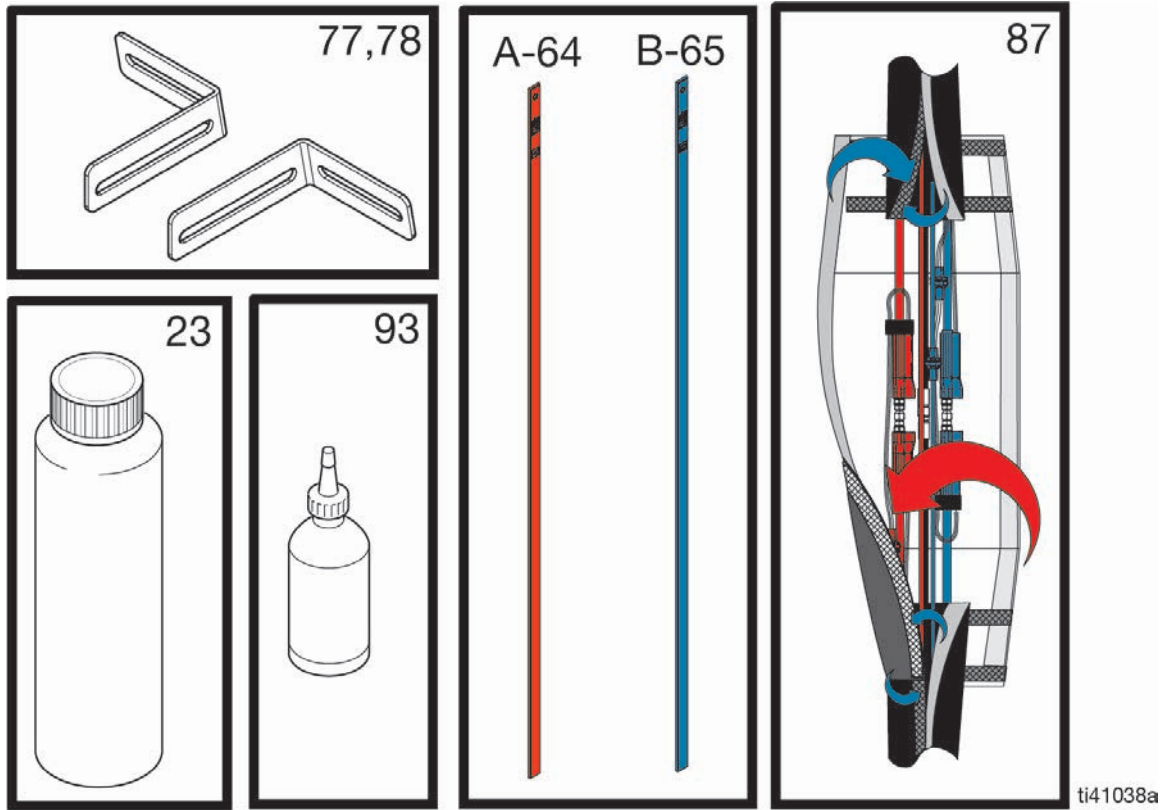


Figure 14-12: Reactor® 3 Hydraulic Proportioning Systems Loose Parts Diagram

PARTS LIST

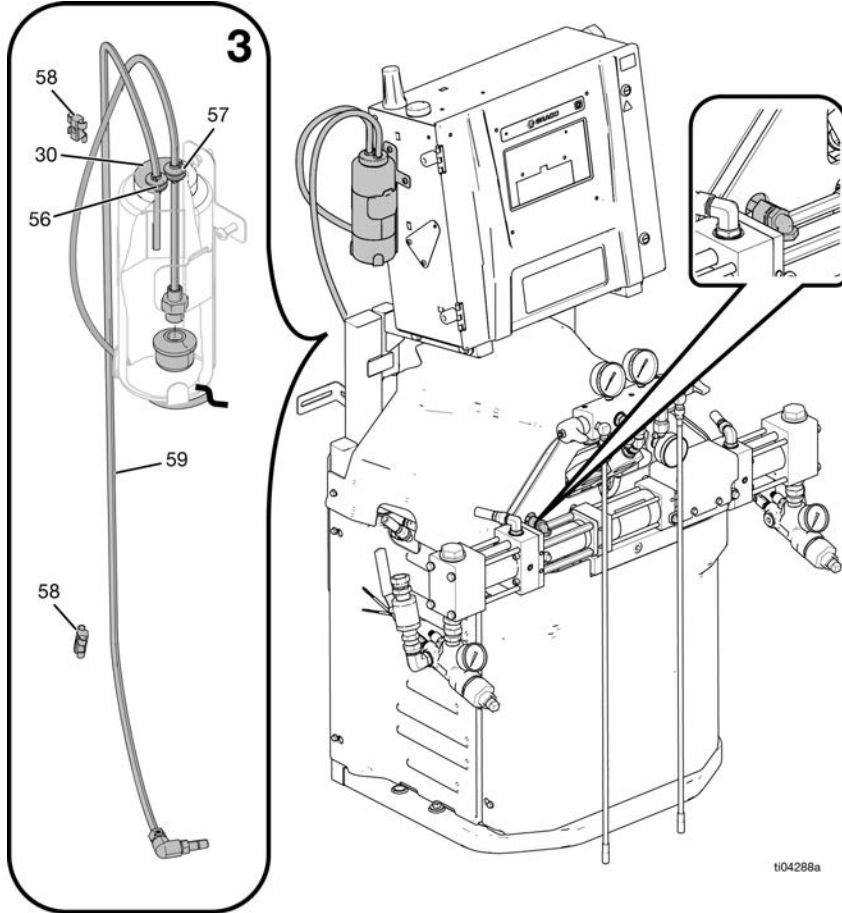
| REF. | PART      | DESCRIPTION                             | QTY. |
|------|-----------|-----------------------------------------|------|
| 23   | 25T859    | Fluid, TSL, 32 oz bottle                | 2    |
| 64†  | 24M174    | Bar, 55 gallon chemical measure, A side | 1    |
| 65†  |           | Bar, 55 gallon chemical measure, B side | 1    |
| 77   | 18E266    | Bracket, wall mount, left               | 1    |
| 78   |           | Bracket, wall mount, right              | 1    |
| 87   | 18D240PKG | Jacket, scuff, machine joint            | 1    |
| 93   | 206994    | Fluid, TSL, 8 oz bottle                 | 1    |

† Pro and Elite systems only.

## REPAIR KITS

### TSL SYSTEM KIT

Figure 14-13: Reactor® 3 Hydraulic Proportioning Systems Repair Kits Diagram



ti04268a

### PARTS LIST

| REF. | PART    | DESCRIPTION            | QTY. |
|------|---------|------------------------|------|
| 3    | 2010494 | Kit, TSL, system       | 1    |
| 30*  | 2010568 | Kit, cap, bottle, TSL  | 1    |
| 56*† | 2010677 | Kit, grommet, 3/8 ID   | 1    |
| 57*† | 2010678 | Kit, grommet, 1/2 ID   | 1    |
| 58   | 2010679 | Kit, clip, snap in     | 1    |
| 59   | 2010680 | Kit, tube, 3/8 OD, TSL | 1    |

\* Included in TSL System Kit 2010494.

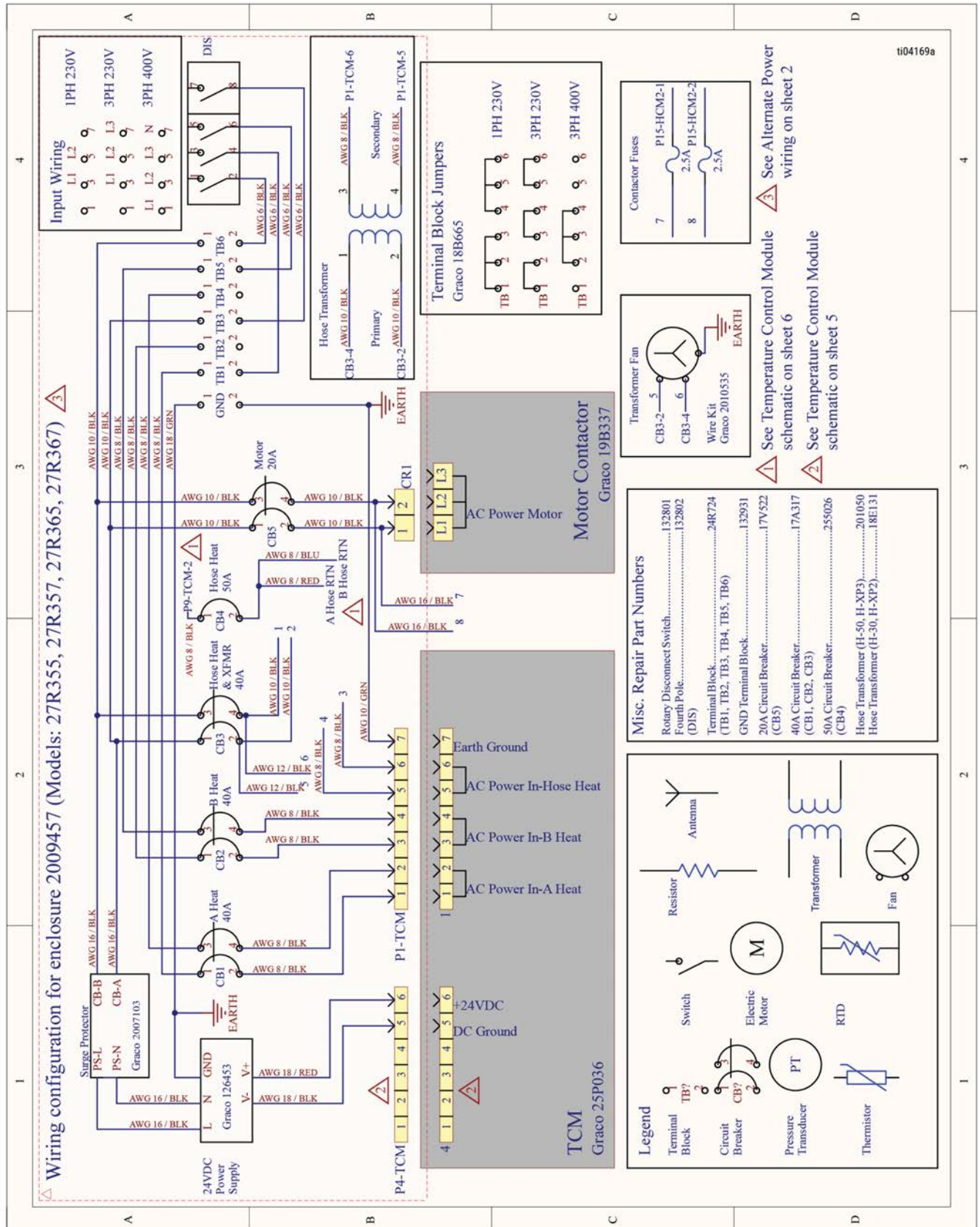
† Included in TSL Bottle Cap Kit 2010568.

## KITS AND ACCESSORIES

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Kits and accessories are items that are offered by Graco and available to purchase separately. Kits and accessories use a Graco part number.

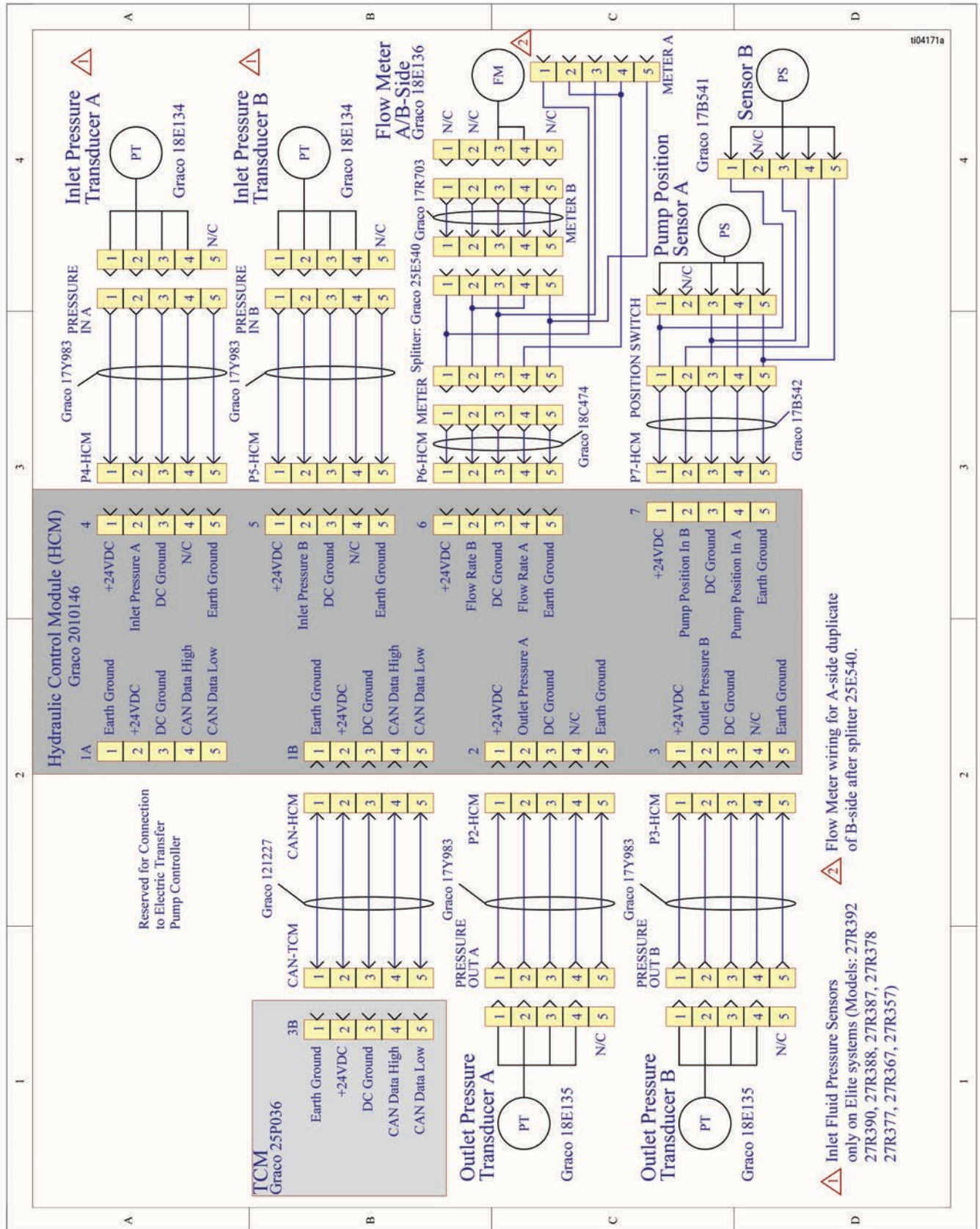
| KIT NUMBER | DESCRIPTION                              |
|------------|------------------------------------------|
| 20A677     | Engine CAN Kits                          |
| 24M174     | Drum Level Sticks                        |
| 20A676     | Light Tower Kit                          |
| 18E154     | Air Manifold Kit                         |
| 18E211     | Cellular Mobile Remote Mounting Kit      |
| 2010517    | MPR to EPR Conversion H-30/H-XP2 (60 Hz) |
| 2010519    | MPR to EPR Conversion H-50/H-XP3 (60 Hz) |
| 2010518    | MPR to EPR Conversion H-30/H-XP2 (50 Hz) |
| 2010520    | MPR to EPR Conversion H-50/H-XP3 (50 Hz) |

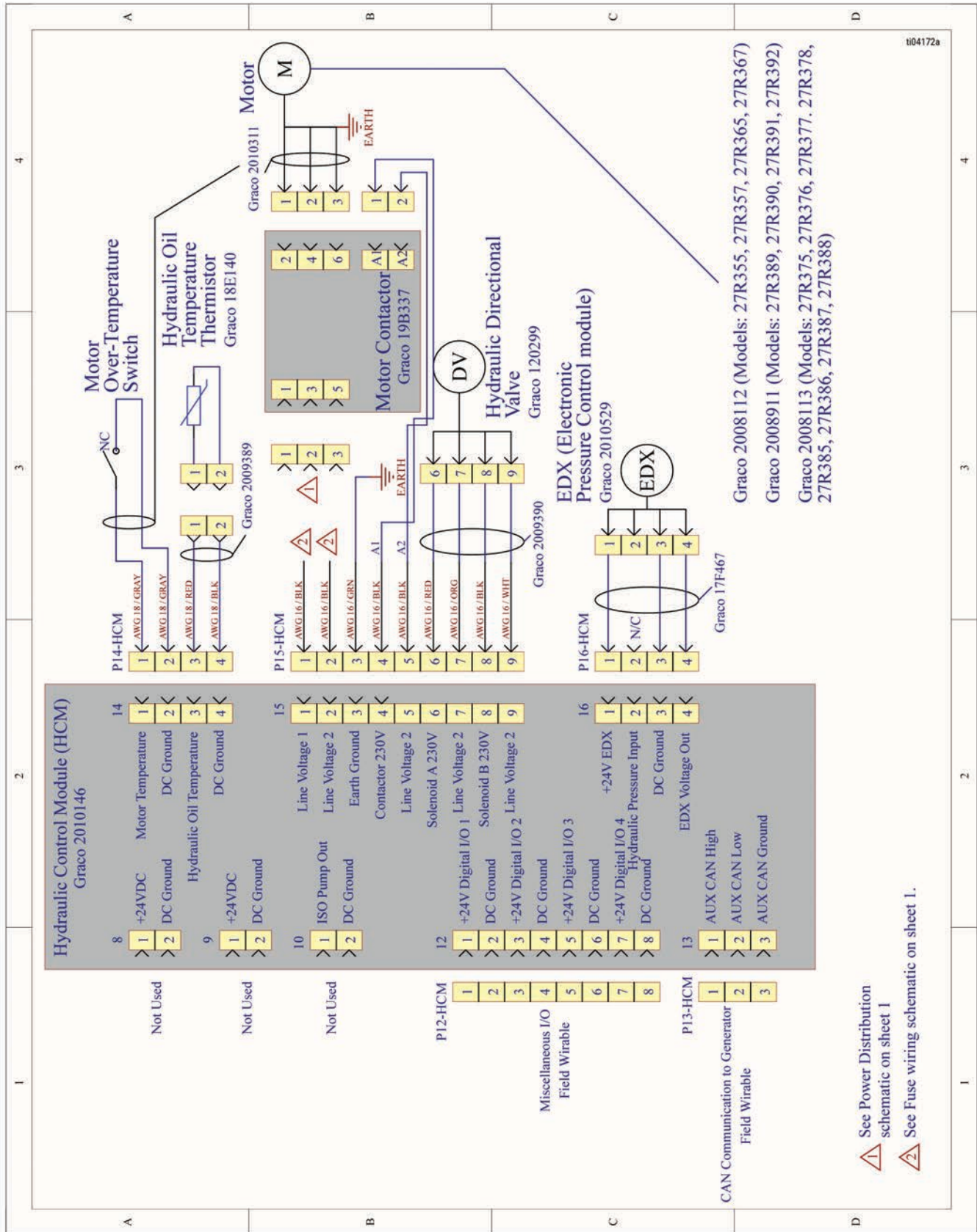


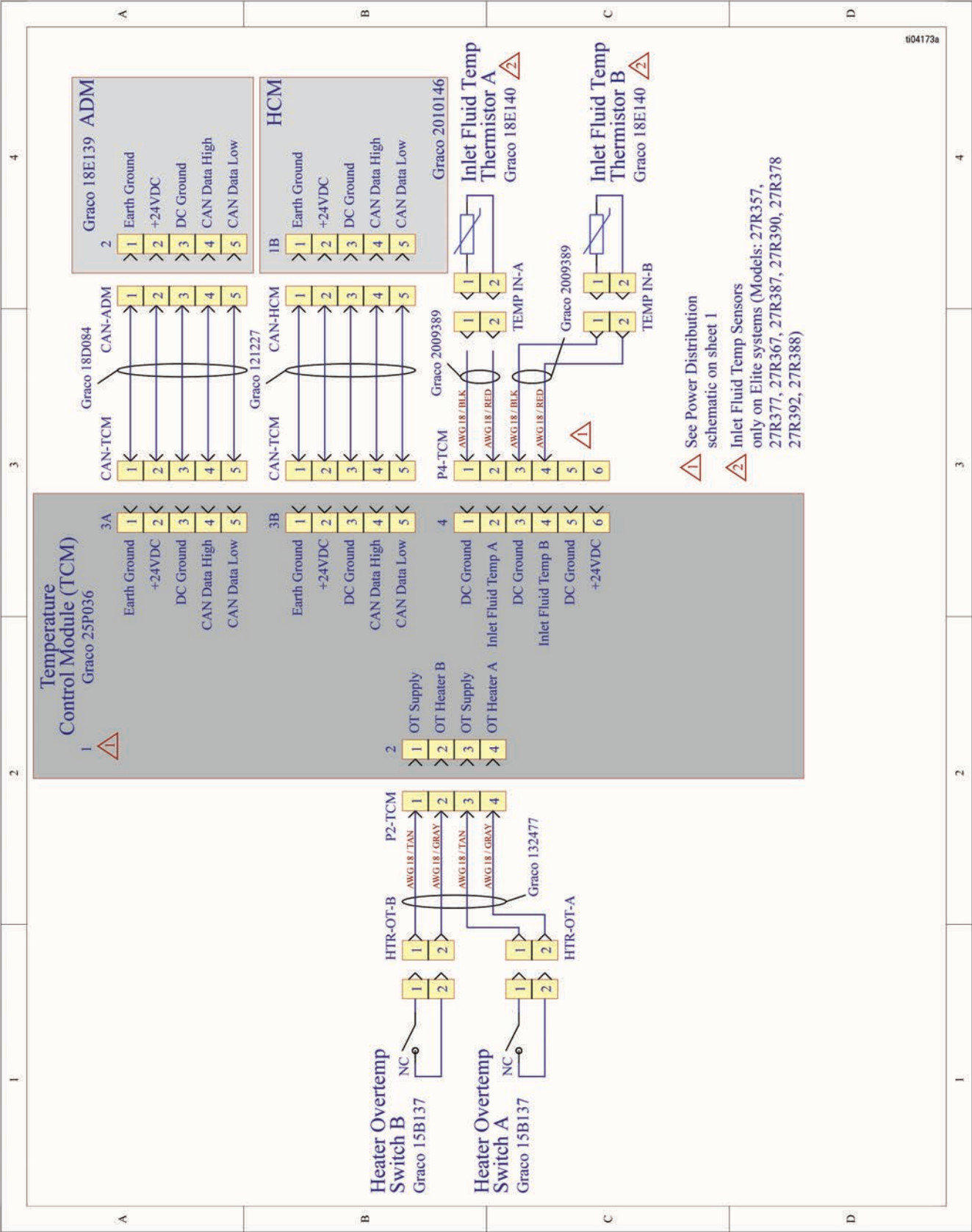




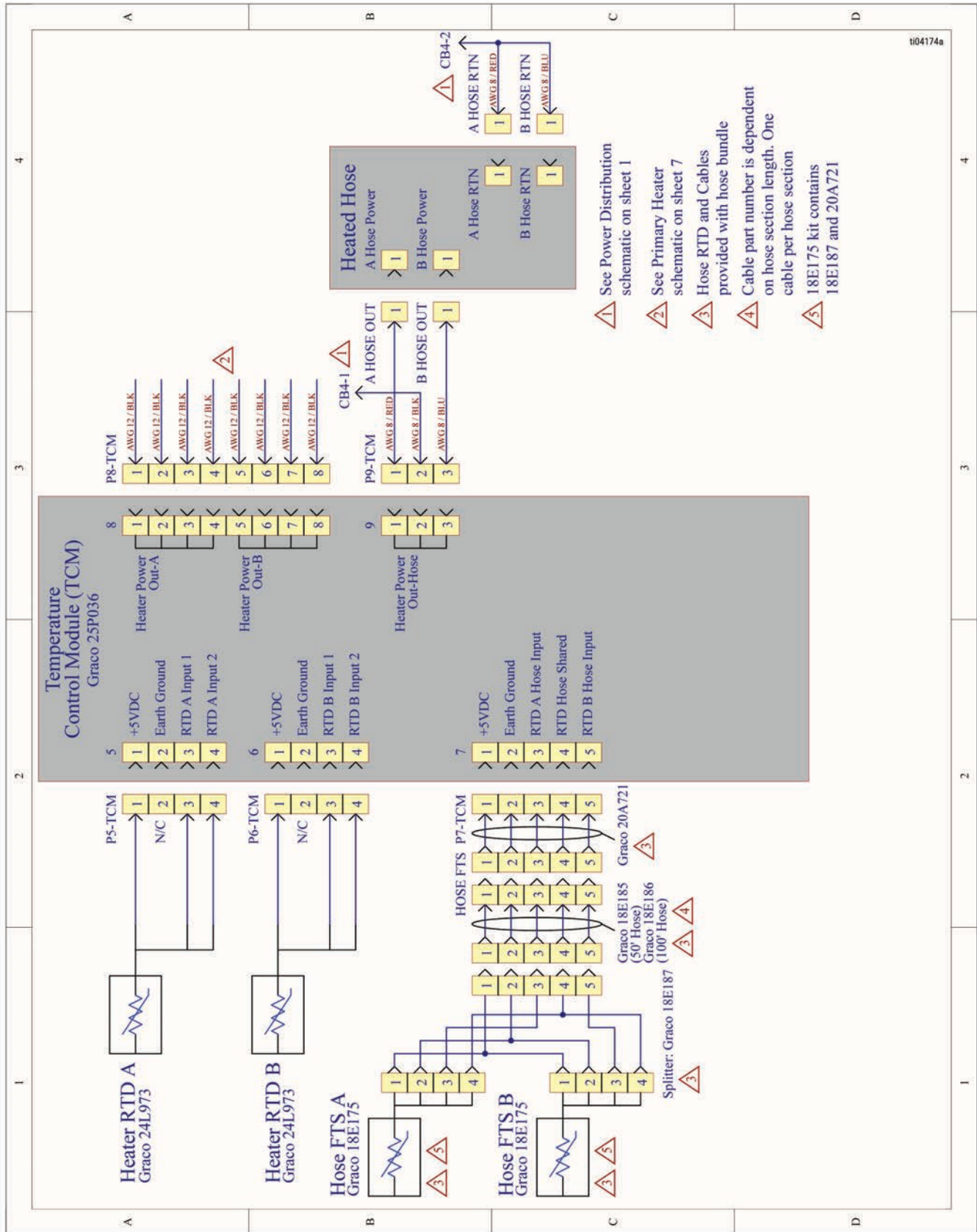












## 7

3

7

20 kW



Graco 18E144

