



# High-Temperature Products

Pumps and Accessories for Applications to 240° F/115° C



Product Quality, Reliability and Support You Expect

[www.catpumps.com](http://www.catpumps.com)

# High Temperature and Run-Dry Capabilities

## Handles Liquids up to 240° F (115° C)

High temperature liquids place extraordinary demands on system components, especially the pump. Premature pump failure can lead to production downtime, added maintenance costs, damaged final product and increased personnel hazards. Cat Pumps high temperature seals can handle liquids up to 240° F (115° C) and perform in intermittent run dry conditions. Pumps are available in a wide variety of flows and pressures handling a variety of applications.

## Features and Benefits

- Performs with liquid temperatures up to 240° F (115° C).
- 3400 and 44101 Series suitable in intermittent run dry conditions.
- Pumps are field proven and designed for continuous duty applications.
- Brass and stainless steel construction to meet application requirements.
- Pump family ranges from 0.5 – 25 gpm (1.9 – 95.0 lpm) at 100 – 5000 psi (7 – 340 bar) meeting a wide range of applications.
- Wide range of drive options include belt, direct, clutch and gearbox drives.

## Applications

- Carpet cleaning
- In-plant cleaning and sanitizing
- Vehicle cleaning
- Conveyor belt cleaning
- Oil rig wash down
- Restaurant cleaning
- Contractor cleaning
- Hood vent cleaning

Cat Pumps offers special high temperature seals and elastomers in addition to stainless steel valves and seats for compatibility with many liquids and temperatures. Cat Pumps uses the following suffix for its high temperature pumps: “.3000” for 190° F/88° C, “.3400” for 200° F/93° C, and “.44101” for 240° F/115° C.



# Designed for Long Life and Dependable Service

Cat Pumps product designers have engineered every detail of pump and system design for long life and reliable performances. When service is necessary, repairs can be made fast without special tools. Cat Pumps stocks service kits and parts for off-the-shelf shipping. A qualified worldwide distribution network offers service and sales support.



## Manifold Design

- Precision-machined high-strength forged manifolds provide a superior sealing surface for consistently longer seal life when compared to competitive designs.
- Proprietary seal materials and designs offer unmatched performance, often providing two to three times longer seal life than competitors' pumps.
- A variety of optional seals/elastomers are available to handle special applications.
- Manifolds are available in different materials, meeting the requirements needed for various liquids.
- Stainless steel valves, seats and springs provide corrosive-resistant performance and extended service life.



## Drive Design

- Drive components are designed to meet continuous-duty industrial applications, consistently outperforming competitor's designs.
- Proprietary ceramic plungers provide maximum resistance to corrosion and abrasion, maximizing seal life and outperforming the competition.
- Heavy-duty ball and roller bearings provide long service life.
- Hardened crankshafts and connecting rods are sized to minimize surface speed at the journal, contributing to lower temperature operation and longer drive life.

# .3000 Series

## 190° F / 88° C, High-Temperature

The “.3000” series has the high pressure seal/V-Packing modified to handle temperatures up to 190° F / 88° C. These seals are a two part construction of PTFE blend with a stainless steel backing for added strength and support at high temperatures. Ordering this configuration requires adding “.3000” to the base model on plunger pumps, or “3” at end of model number for 2SF series pumps.

### Brass Manifold

Hollow Shaft, Electric Motor, 56C Face, 1725 and 3450 RPM

Pump Model	Max. Flow		Max Pressure		rpm	Shaft	Power	
	gpm	lpm	psi	bar			hp	kW
2SF10ES3	1	3.8	2000	138	3450	5/8"	1.4	1.0
2SF20ES3	2	7.6	2000	138	3450	5/8"	2.7	2.1
2SF22ES3	2.2	8.3	2000	138	3450	5/8"	3.0	2.3
2SF22ELS3	2.2	8.3	2000	138	1725	5/8"	3.0	2.3
2SF29ELS3	2.96	10.8	2000	138	1725	5/8"	4.1	3.0
2SF30ES3	3	11.4	2000	138	3450	5/8"	4.1	3.1
2SF35ES3	3.5	13.2	1500	103	3450	5/8"	3.6	2.7

### 316 Stainless Steel Manifold

Hollow Shaft, Electric Motor, 56C Face, 1725 RPM

Pump Model	Max. Flow		Max Pressure		rpm	Shaft	Power	
	gpm	lpm	psi	bar			hp	kW
2SF05SEEL3	0.5	1.9	1200	83	1725	5/8"	0.4	0.3
2SF10SEEL3	1	3.8	1200	83	1725	5/8"	0.8	0.6
2SF15SEEL3	1.5	5.7	1200	83	1725	5/8"	1.2	0.9
2SF22SEEL3	2.2	8.3	1200	83	1725	5/8"	1.8	1.4
2SF25SEEL3	2.5	9.5	1200	83	1725	5/8"	2.1	1.5
2SF29SEEL3	2.9	11.0	1200	83	1725	5/8"	2.4	1.8
2SF35SEEL3	3.5	13.2	1200	83	1725	5/8"	2.9	2.2



2SF10ES3 Hollow Shaft Pump



5CP3120 Solid Shaft Pump

## Brass Manifold

### Solid Shaft

Pump Model	Max. Flow		Max Pressure		rpm	Shaft	Power	
	gpm	lpm	psi	bar			hp	kW
3CP1130.3000	2.4	9.1	2200	152	1725	16.5 mm	3.6	2.7
3CP1140.3000	3.6	13.7	2200	152	1725	16.5 mm	5.4	4.1
5CP2140WCS.3000	4	15.1	2500	172	1725	20 mm	6.8	5.1
5CP2120W.3000	4	15.1	2500	172	1188	20 mm	6.8	5.1
3CP1120.3000	4.2	16.0	2200	152	1725	16.5 mm	6.3	4.7
5CP3120.3000	4.5	17.0	3500	241	1645	20 mm	10.8	8.1
550.3000	5	19.0	3000	207	1725	24 mm	10.3	7.7
5CP2150WCS.3000	5	19.0	2000	138	1725	20 mm	6.8	5.1
5CP5120.3000	5	19.0	3000	207	1415	20 mm	10.3	7.7
56.3000	5.5	20.9	3500	241	1210	24 mm	13.2	9.9
5CP5120.3000 alt	6	22.7	2500	172	1725	20 mm	10.3	7.7
5CP6120.3000	7.4	28.0	1200	83	1725	20 mm	6.1	4.6
56.3000 alt	8	30.4	2500	172	1725	24 mm	13.7	10.3

## 316 Stainless Steel Manifold

### Solid Shaft

Pump Model	Max. Flow		Max Pressure		rpm	Shaft	Power	
	gpm	lpm	psi	bar			hp	kW
3CP1231.3000	2.3	8.7	2000	138	1725	16.5 mm	3.2	2.4
3CP1241.3000	3.6	13.6	2000	138	1725	16.5 mm	4.9	3.7
311.3000	4	15.1	2200	152	950	20 mm	6.0	4.5
341.3000	4	15.1	1800	124	1725	20 mm	4.9	3.7
3CP1221.3000	4.2	16.0	2000	138	1725	16.5 mm	5.8	4.3
351.3000	5	19.0	1500	103	1725	20 mm	5.1	3.9

# .3400 Series

## 200°F / 93°C, High-Temperature and Intermittent Run-Dry Plunger Pumps

The “.3400” series plunger pumps starts with the same high pressure seal/V-Packing modification as the “.3000” series” and changes the low pressure seal to a special PTFE high temperature material. Ordering this configuration requires adding “.3400” to the base model. The special blend seal materials allow the pump to run dry intermittently without damaging the seals.

### Brass Manifold

#### Solid Shaft

Pump Model	Max. Flow		Max Pressure			Shaft	Power	
	gpm	lpm	psi	bar	rpm		hp	kW
3CP1130.3400	2.4	9.1	2200	152	1725	16.5 mm	3.6	2.7
3CP1140CS.3400	3.6	13.7	2200	152	1725	16.5 mm	5.4	4.1
5CP2120W.3400	4	15.1	2500	172	950	20 mm	6.8	5.1
5CP2140WCS.3400	4	15.1	2500	172	1725	20 mm	6.8	5.1
3CP1120.3400	4.2	16.0	2200	152	1725	16.5 mm	6.3	4.7
700.3400	4.5	17.0	5000	345	1700	24 mm	15.4	11.6
5CP3120CSS.3400	4.5	17.0	3500	241	1645	20 mm	10.8	8.1
5CP2150W.3400	5	19.0	2000	138	1725	20 mm	6.8	5.1
5CP5120.3400	5	19.0	3000	207	1450	20 mm	10.3	7.7
5CP5140CSS.3400	5.5	20.8	3500	241	1500	20 mm	13.2	9.9
5CP5120.3400	6	22.7	2500	172	1725	20 mm	10.3	7.7
5CP6120.3400	7.4	28.0	1400	97	1725	20 mm	7.1	5.3
1560.3400	8	30.3	4000	276	1140	30 mm	21.9	16.4
660.3400	10	38.0	3000	207	1429	30 mm	20.5	15.4
1050.3400	10	38.0	2200	152	958	30 mm	15.1	11.3
7CP6110.3400	10.5	39.7	2000	138	1725	24 mm	14.4	10.8
7CP6170.3400	11	41.6	2000	138	1450	24 mm	15.1	11.3
3560.3400	18	68.1	4000	276	1160	35 mm	49.3	37.0
2510.3400	20	76.0	2000	138	1450	30 mm	27.4	20.5
3560.3400	25	95.0	3000	207	1450	35 mm	51.4	38.5

### 316 Stainless Steel Manifold

#### Solid Shaft

Pump Model	Max. Flow		Max Pressure			Shaft	Power	
	gpm	lpm	psi	bar	rpm		hp	kW
3CP1231.3400	2.4	9.1	2000	138	1725	16.5 mm	3.3	2.5
3CP1241.3400	3.6	13.7	2000	138	725	16.5 mm	4.9	3.7
311.3400	4	15.1	2200	152	950	20 mm	6.0	4.5
3CP1221.3400	4.2	16.0	2000	138	1725	16.5 mm	5.8	4.3
781.3400	4.5	17.0	5000	345	1700	24 mm	15.4	11.6
1051.3400	10	38.0	2200	152	958	30 mm	15.1	11.3
661D.3400	10	38.0	3000	207	1429	30 mm	20.5	15.4
7CP6111.3400	10.5	39.7	2000	138	1725	24 mm	14.4	10.8
7CP6171.3400	11	41.6	2000	138	1450	24 mm	15.1	11.3
2511.3400	20	76.0	1500	103	1450	30 mm	20.5	15.4

# .44101 Series

## 240°F / 115°C, High-Temperature and Intermittent Run-Dry Plunger Pumps

The “.44101” series plunger pump modifies the high pressure seal/V-Packing and low pressure seal to special blend PTFE high temperature material. FPM O-rings capable of the increased temperature rating are installed throughout the pump. Proprietary modifications are made to the drive-end to withstand the added temperature and provide proper heat displacement. Ordering this configuration requires adding “.44101” to the base model.

### Brass Manifold

#### Solid Shaft

Pump Model	Max. Flow		Max Pressure		rpm	Shaft	Power	
	gpm	lpm	psi	bar			hp	kW
3CP1130.44101	2.4	9.1	2200	152	1725	16.5 mm	3.6	2.7
5CP3105CSS.44101	3.5	13.2	3500	241	1725	20 mm	8.4	6.3
3CP1140.44101	3.6	13.6	2200	152	1725	16.5 mm	5.4	4.1
5CP2120W.44101	4	15.1	2500	172	950	20 mm	6.8	5.1
5CP2140WCS.44101	4	15.1	2500	172	1725	20 mm	6.8	5.1
3CP1120.44101	4.2	16.0	2200	152	1725	16.5 mm	6.3	4.7
5CP6120.44101	6	22.7	1600	110	1400	20 mm	6.6	4.9
5CP6120.44101	7.4	28.0	1200	83	1725	20 mm	6.1	4.6
1050.44101	10	38.0	2200	152	958	30 mm	15.1	11.3
1050.44101	12	45.4	1800	124	1150	30 mm	14.8	11.1
1540E.44101	18	68.1	1200	83	1100	30 mm	14.8	11.1
2530.44101	21	79.5	1200	83	860	30 mm	17.3	12.9
2530.44101	25	94.6	1000	69	1025	30 mm	17.1	12.8

### Stainless Steel Manifold

#### Solid Shaft

Pump Model	Max. Flow		Max Pressure		rpm	Shaft	Power	
	gpm	lpm	psi	bar			hp	kW
3CP1231.44101	2.3	8.7	2200	152	1725	16.5 mm	3.5	2.6
3CP1241.44101	3.6	13.7	2200	152	1725	16.5 mm	5.4	4.1
5CP6241CS.44101	4	15.2	2000	138	1725	20 mm	5.5	4.1
5CP6251.44101	5	19.0	2000	138	1725	20 mm	6.8	5.1
3CP1221.44101	4.2	16.0	2000	138	1725	16.5	5.8	4.3
5CP6221.44101	6	22.8	2000	138	1725	20 mm	8.2	6.2
1051.44101	10	38.0	2200	152	958	30 mm	15.1	11.3
1051.44101	12	45.6	1800	124	1150	30 mm	14.8	11.1
1531.44101	15.6	59.3	1500	103	1450	30 mm	16.0	12.0
1541.44101	18	68.4	1200	83	1100	30 mm	14.8	11.1
2531.44101	21	79.8	1200	83	860	30 mm	17.3	12.9
3521.44101	23	87.4	2000	138	800	35 mm	31.5	23.6
2531.44101	25	95.0	1000	69	1025	30 mm	17.1	12.8

# High Temperature Accessories

## Pressure Regulator, Brass

Flow		Pressure		Max. Temperature		Part #
gpm	lpm	psi	bar	° F	° C	
0.5 - 5	1.9 - 19	100 - 1000	7 - 70	240	115	7001
0.5 - 5	1.9 - 19	500 - 2000	35 - 140	240	115	7002
0.5 - 5	1.9 - 19	1500 - 3000	105 - 210	240	115	7003
1 - 10	3.8 - 38	100 - 1000	7 - 70	240	115	7011
1 - 10	3.8 - 38	500 - 2000	35 - 140	240	115	7012
1 - 10	3.8 - 38	1500 - 3000	105 - 210	240	115	7013
1 - 10	3.8 - 38	2000 - 4000	140 - 275	240	115	7014
2.5 - 25	9.5 - 95	100 - 1000	7 - 70	240	115	7021
2.5 - 25	9.5 - 95	500 - 2000	35 - 140	240	115	7022
2.5 - 25	9.5 - 95	1500 - 3000	105 - 210	240	115	7023
2.5 - 25	9.5 - 95	2000 - 4000	140 - 275	240	115	7024

## Pressure Regulator, 316 Stainless Steel

Flow		Pressure		Max. Temperature		Part #
gpm	lpm	psi	bar	° F	° C	
0.5 - 5	1.9 - 19	100 - 1000	7 - 70	240	115	7001.100
0.5 - 5	1.9 - 19	500 - 2000	35 - 140	240	115	7002.100
0.5 - 5	1.9 - 19	1500 - 3000	105 - 210	240	115	7003.100
1 - 10	3.8 - 38	100 - 1000	7 - 70	240	115	7011.100
1 - 10	3.8 - 38	500 - 2000	35 - 140	240	115	7012.100
1 - 10	3.8 - 38	1500 - 3000	105 - 210	240	115	7013.100
1 - 10	3.8 - 38	2000 - 4000	140 - 275	240	115	7014.100
2.5 - 25	9.5 - 95	100 - 1000	7 - 70	240	115	7021.100
2.5 - 25	9.5 - 95	500 - 2000	35 - 140	240	115	7022.100
2.5 - 25	9.5 - 95	1500 - 3000	105 - 210	240	115	7023.100
2.5 - 25	9.5 - 95	2000 - 4000	140 - 275	240	115	7024.100

## Pressure Gauges, 316 Stainless Steel

Max. Pressure		Max. Temperature		Part #
psi	bar	° F	° C	
1500	105	300	149	6071
3000	210	300	149	6073
6000	415	300	149	6076

## Pulsation Dampener

Max. Flow		Max. Pressure		Max. Temperature		Part #
gpm	lpm	psi	bar	° F	° C	
15	57	3000	210	300	149	6030
15	57	4300	296	122	50	701521
25	95	3800	265	122	50	701522
40	151	2000	140	300	149	6013



## Safety Relief Valve/Pop-off, Brass

Max. Flow		Max. Pressure		Max. Temperature		Part #
gpm	lpm	psi	bar	° F	° C	
6	23	1650	114	240	115	33960S
6	23	4400	303	240	115	33962S
10.5	40	2300	160	240	115	7693.1110
10.5	40	4050	280	240	115	7694.1110
10.5	40	5100	350	240	115	7630.1110
21	80	2600	16 - 180	240	115	7537.1110
21	80	4000	55 - 275	240	115	7542.1110
53	201	2300	158	240	115	7595

## Safety Relief Valve/Pop-off, Stainless Steel

Max. Flow		Max. Relief		Max. Temperature		Part #
gpm	lpm	psi	bar	° F	° C	
6	23	1650	114	240	115	9960S **
6	23	3300	228	240	115	9961S **
6	23	4400	303	240	115	9962S **
1 - 21	3.8 - 80	230 - 2600	16 - 180	240	115	7531.0110 *
1 - 21	3.8 - 80	800 - 4000	55 - 275	240	115	7533.0110 *
1 - 21	3.8 - 80	3000 - 5700	210 - 400	240	115	7536.0110 *

\* 304 Stainless Steel

\*\* 316 Stainless Steel

## Pressure Regulating Unloader, Brass

Max. Flow		Max. Pressure		Max. Temperature		Part #
gpm	lpm	psi	bar	° F	° C	
0.5 - 6	1.9 - 23	100 - 2000	7 - 140	240	115	7500S.0110
2 - 10.5	7.6 - 40	230 - 2300	16 - 160	240	115	7693.0110
2 - 10.5	7.6 - 40	400 - 4050	28 - 280	240	115	7694.0110
2 - 10.5	7.6 - 40	400 - 5100	31 - 350	240	115	7630.0110
1 - 21	3.8 - 80	230 - 2600	16 - 180	240	115	7537.0110
1 - 21	3.8 - 80	800 - 4000	55 - 275	240	115	7542.0110

## Pressure Regulating Unloader, Stainless Steel

Max. Flow		Max. Pressure		Max. Temperature		Part #
gpm	lpm	psi	bar	° F	° C	
0.5 - 6	1.9 - 23	100 - 2000	7 - 140	240	115	7501.0110 **
1 - 21	3.8 - 80	230 - 2600	16 - 180	240	115	7531.0110 *
1 - 21	3.8 - 80	800 - 4000	55 - 275	240	115	7533.0110 *
1 - 21	3.8 - 80	3000 - 5700	210 - 400	240	115	7536.0110 *

\* 304 Stainless Steel

\*\* 316 Stainless Steel

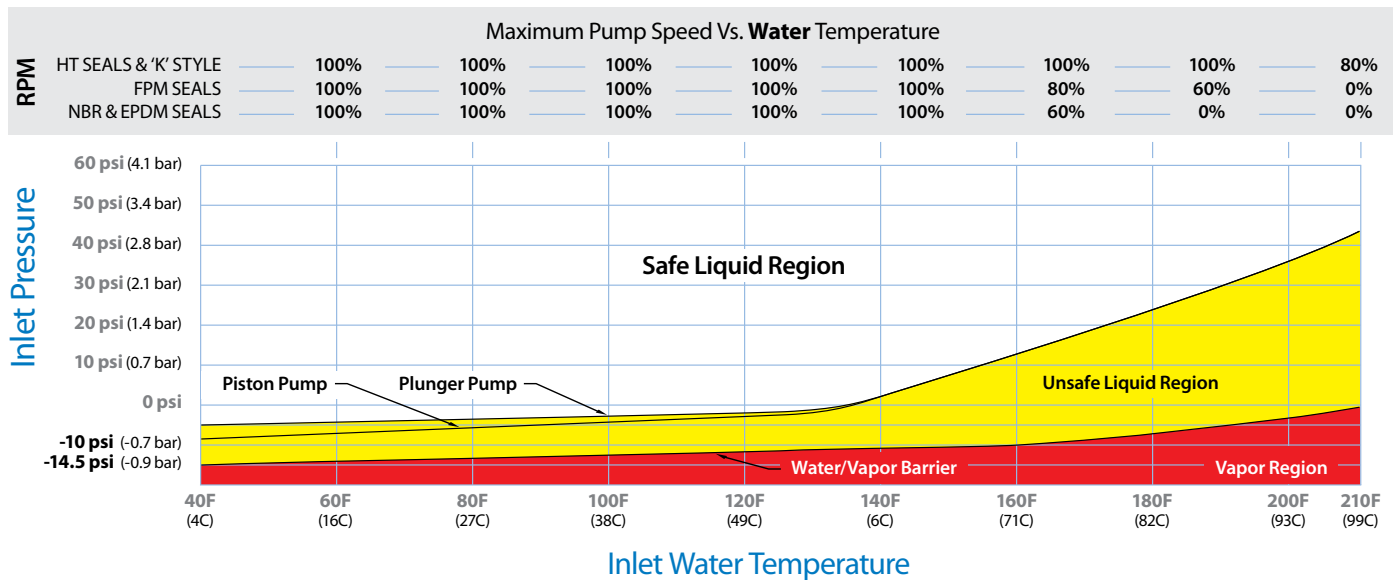
# Inlet Design

## Temperature

Standard pumps are rated to operate with a maximum fluid temperature between 140° F – 180° F / 60° C – 82° C depending on the model. For some fluids special elastomers are available to allow temperatures to 240° F / 115° C.

As the temperature of water increases, the vapor pressure (pressure required to remain liquid) also increases. By increasing the inlet pressure to the pump, you can minimize the increased risk of cavitation. Several aspects of the system should be considered with elevated temperatures to achieve optimum performance.

- Pressurize inlet above 130° F / 54° C
- Pump seal configuration above operating temperature
- Reduce pump RPM
- Increase inlet line size to the pump



It is important to operate the pump and system within the “Safe Liquid Region” as shown in graph. As liquid temperatures increase, higher inlet pressures are required to maintain the fluid in its liquid stage. The graph above shows the liquid stage for water. If pumping water with additives or liquids other than water, the liquid phase will be different. Contact Cat Pumps for assistance in determining liquid properties and temperature effects.

# Custom Pumping Systems

For over 25 years, Cat Pumps has been the industry leader in providing custom-engineered pumping systems to meet a wider range of application needs. By selecting Cat Pumps for your next pumping system, customers eliminate the hassle and expense of designing, multiple source buying, fabrication and testing. The technical sales team assists with proper component selection, as well as installation, operation and maintenance support.

All systems are designed, built and pressure tested in the Cat Pumps Minneapolis location. To begin the quoting process, call the main office at (763) 780-5440 or submit the custom system quote form at [catpumps.com](http://catpumps.com).

With thousands of installations running around the world, Cat Pumps is the supplier of choice for custom pumping systems.



## System Configuration

With extensive experience building thousands of systems, Cat Pumps can help determine the best configuration for any application.

### Base

System design starts with choosing the base that best fits the application. Numerous base configurations are available to meet space, portability, sound and material demands.

- Standard • Vertically Stacked • Enclosed • Multiple Pump

### Power Source

A qualified technical staff with extensive experience can assist in recommending the correct product for any power source available.

- Electric • Gas • Diesel • Hydraulic • Pneumatic

### Drive Package

A wide variety of drive packages are available to complement any power source of choice.

- Belt • Direct Drive • Gearbox • Clutch

### Accessories

Choose from hundreds of high-quality genuine Cat Pumps accessories for optimum system performance and life.

- Regulator • Relief / Pop-off Valve • Pressure Gauge
- Pulsation Dampener • Inlet Filter / Strainer • Oil

## Advanced Control Options



Ask about advanced control options designed to provide maximum system performance as well as system protection. Options include:

- Variable Frequency Drives (VFD)
- PID Loop (varies speed of pump to maintain system pressure)
- Multiple Pump Systems
- Low-Pressure Seal Monitors
- Auto Shutdowns (Temperature and Low Inlet Pressure)

Other control options are available upon request.

## ABOUT CAT PUMPS

## Proven Quality, Customer Focused

Founded in 1968, Cat Pumps is a world leader in the design, manufacture and marketing of the most dependable high-pressure positive displacement reciprocating triplex pumps and systems in the market.

With an emphasis on immediate product availability and outstanding customer service, the family-owned and operated business prides itself on a commitment to quality and product reliability as the foundation of its ongoing success. It is the mission to exceed customer expectations for quality, reliability, availability, delivery, technical expertise and aftermarket support to assure the best value in all the industries served.

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#### Territories Served

Austria, Commonwealth of Independent States (CIS), Germany and Eastern Europe

## SALES, DISTRIBUTION, SERVICE

Call today for product and application assistance.  
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