

dTS Cal[®]



Complete Pressure Systems

dTS.
INSTRUMENTS

Crystal
pressure

JOFRA
calibration

M & G
calibration



AMETEK
SENSORS, TEST & CALIBRATION

Ready-to Use Calibration Solutions

Pump Systems Designed for Your Specific Requirements

A METEK offers a variety of solutions for pressure generation and measurement. Our line of products for pressure generation includes everything from small pneumatic hand pumps to a precision, hydraulic pressure comparator capable of generating up to 15 000 psi / 1000 bar / 100 MPa.

All of our pumps may be ordered as part of a Pump System, complete with a Crystal Reference Indicator and delivered in a sturdy carrying case with custom insert.

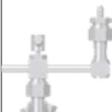
Key Features & Options

- ▶ Easy to use fine adjustments.
- ▶ CPF[♦] Fittings and Hoses.
- ▶ Oil or water compatible.
- ▶ Wide pressure ranges.

[♦]U.S. Patent No. 8,794,677



Pump Systems Overview

Pump System	Part Number	Pressure Range	Pneumatic	Hydraulic	Hand Pump	Bench Top	Included Pump	Case Options	
								Aluminum	Waterproof (Pelican Case)
System A	AXX	0 to 30psi /2 bar	■		■			■	■
	AHX	0 to 580 psi /40 bar	■		■			(or)	■
System B	BXX	-25 inHg to 30 psi /-0.85 to 2 bar	■		■			■	■
	BHX	-27 inHg to 580 psi /-0.91 to 40 bar	■		■			(or)	■
System C	CXX	0 to 3000 psi /200 bar		■ (Oil)	■			■	■
	CHX	0 to 5000 psi /350 bar		■ (Oil)	■			(or)	■
System D	DOX	0 to 5000 psi /350 bar		■ (Oil)		■		■	
	DWX	0 to 5000 psi /350 bar		■ (Water)		■		■	
System E	EOX	0 to 10 000 psi /700 bar		■ (Oil)		■		■	
System F	FOV	0 to 15 000 psi /1000 bar		■ (Oil)		■		■	
	FWV	0 to 15 000 psi /1000 bar		■ (Water)		■		■	
System G	GOX	0 to 15 000 psi /1000 bar		■ (Oil)		■			■
	GWX	0 to 15 000 psi /1000 bar		■ (Water)		■		GaugeCalHP	■
System H	HOX	-27 inHg to 580 psi /-0.91 to 40 bar	■		■				■
		0 to 5000 psi /350 bar		■ (Oil)	■			(and) T-620H-CPF	■

■ Systems A & B

Pump Overview

T-900 Series pneumatic pressure pumps feature an extended range fine adjust for precise control of pressure. A built-in relief valve and dual pressure output enable safe and simple operation. The T-965 and T-975 are available with a button valve, making them capable of switching easily from pressure to vacuum generation.

Key Features

- ▶ Lightweight, compact design.
- ▶ Two outlet ports.
- ▶ Adjustable stroke.
- ▶ Generates up to 580 psi / 40 bar and vacuum.

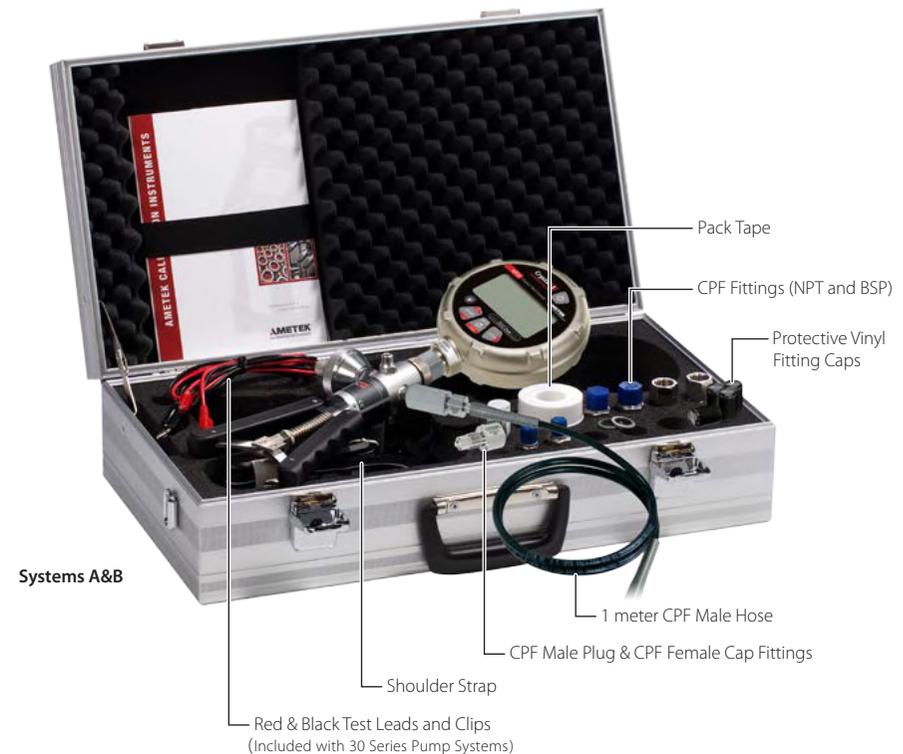
[Learn more here](#) ◀



T-975-CPF pneumatic pump

System Overview

Pump System	Pressure	Vacuum	Pressure Range	Pump
AXX	■		0 to 30psi / 2 bar	T-960-CPF
BXX	■	■	-25 inHg to 30 psi / -0.85 to 2 bar	T-965-CPF
AHX	■		0 to 580 psi / 40 bar	T-970-CPF
BHX	■	■	-27 inHg to 580 psi / -0.91 to 40 bar	T-975-CPF



Systems A&B

Parts Included with Pump Systems A and B

Part Number	Description	System A		System B	
		AXX	AHX	BXX	BHX
5238	3/8" BSP Male to CPF Male Fitting	■	■	■	■
5252	5/16-24 SAE Male to CPF Female Fitting	■	■	■	■
MPF-1/4FPT	CPF Female to 1/4" NPT Female Fitting	■	■	■	■
MPF-1/4BSPF	CPF Female to 1/4" BSP Female Fitting	■	■	■	■
MPF-1/8MPT	1/8" MPT Fitting (for 30 Series Calibrator)	■ (2)	■ (2)	■ (2)	■ (2)
MPH-1	1 meter CPF Male Hose	■	■	■	■
60R120	1/4" Bonded Seals	■ (5)	■ (5)	■ (5)	■ (5)
50-REP700	O-ring and Lock Clip	■ (5)	■ (5)	■ (5)	■ (5)
1351	Test Leads; Red & Black, including clips (for 30 Series)	■	■	■	■
5249	Protective Vinyl Cap	■ (4)	■ (4)	■ (4)	■ (4)
601104	Pack Tape (1 roll)	■	■	■	■
124004	Shoulder Strap	■	■	■	■
124110	Aluminum Carrying Case (for nVision, HPC40 Series, and 30 Series)	■	■	■	■
125254	Aluminum Carrying Case (for XP2i and m1)	■	■	■	■
2888 *	Waterproof Carrying Case (for all gauges)	□	□	□	□

Carrying Case Options

Pump Systems A and B are delivered with an Aluminum Carrying Case. * Alternately, they may be ordered with a Waterproof Carrying Case by entering -W in the pump system ordering code. The Shoulder Strap and the Aluminum Carrying Case will be replaced by the Waterproof Carrying Case.



Ordering a Pump System

Any T-900 Series Pump System may be ordered with or without a reference indicator. The table below provides an explanation of the Pump System ordering scheme when ordering a system without an indicator. For details on ordering the Pump Systems with an indicator, see the indicator datasheet.

Reference Indicator	Pump System	Carrying Case
nVision NV-NONE	System A (T-960-CPF) ...-AXX	Aluminum ... (omit)
30 Series IS30-NONE	System A (T-970-CPF) ...-AHX	Waterproof ...-W
HPC40 Series ... HPC40-NONE	System B (T-965-CPF) ...-BXX	
HPC50 Series ... HPC50-NONE	System B (T-975-CPF) ...-BHX	
XP2i XP2i-NONE		
m1 M1-NONE		

▶ SAMPLE PART NUMBERS

- NV-NONE-AXX..... System A pump system (for nVision) with an aluminum carrying case.
- M1-NONE-BXX-W.... System B pump system (for m1) with a waterproof carrying case.
- 1KPSIXP2i-AXX-W .. System A pump system in a waterproof carrying case, with an XP2i gauge (1000 psi).

System C

Pump Overview

T-600 Series is a lightweight and portable hydraulic hand pump, specially designed for high pressure applications. A fine adjust allows precise control of pressure, while a vent valve provides quick and positive shut-off and pressure release. The pump is compatible with petroleum-based oils or hydraulic fluids.

Key Features

- ▶ Two outlet ports.
- ▶ Large reservoir.
- ▶ Easy-to-use fine adjust.
- ▶ Generates up to 5000 psi/350 bar.

[Learn more here](#) ◀



T-620H-CPF hydraulic pump

System Overview

Pump System	Pressure Range	Pump
CXX	0 to 3000 psi / 200 bar	T-620-CPF
CHX	0 to 5000 psi / 350 bar	T-620H-CPF



Parts Included with Pump System C

Part Number	Description	System C	
		CXX	CHX
MPF-1/4FPT	CPF Female to 1/4" NPT Female Fitting	■	■
MPF-1/4BSPF	CPF Female to 1/4" BSP Female Fitting	■	■
MPF-1/8MPT *	CPF Female to 1/8" NPT Male Fitting	■	■
MPM-PLUG	CPF Male Plug Fitting	■	■
MPF-CAP	CPF Female Cap Fitting	■	■
MPH-1	1 meter CPF Male Hose	■	■
60R120	1/4" Bonded Seals	■ (5)	■ (5)
1351	Test Leads; Red & Black, including clips (for 30 Series)	■	■
5249	Protective Vinyl Cap	■ (4)	■ (4)
601104	Pack Tape (1 roll)	■	■
124004	Shoulder Strap	■	■
124299	Aluminum Carrying Case (for nVision and 30 Series)	■	■
125255	Aluminum Carrying Case (for XP2i and m1)	■	■
2888 **	Waterproof Carrying Case	□	□

* When a Pump System C is ordered for a 30 Series Calibrator, two (2) additional MPF-1/8MPT fittings are included

Carrying Case Options

Pump Systems C are delivered with an Aluminum Carrying Case. * Alternately, they may be ordered with a Waterproof Carrying Case by entering -W in the pump system ordering code. The Shoulder Strap and the Aluminum Carrying Case will be replaced by the Waterproof Carrying Case.



Ordering a Pump System

Any T-600 Series Pump System may be ordered with or without a reference indicator. The table below provides an explanation of the Pump System ordering scheme when ordering a system without an indicator. For details on ordering the Pump Systems with an indicator, see the indicator datasheet.

Reference Indicator	Pump System	Carrying Case
nVision NV-NONE	System C (T-620-CPF) . . . -CXX	Aluminum . . . (omit)
30 Series IS30-NONE	System C (T-620H-CPF) . . . -CHX	Waterproof . . . -W
HPC40 Series . . . HPC40-NONE		
HPC50 Series . . . HPC50-NONE		
XP2i XP2i-NONE		
m1 M1-NONE		

▶ SAMPLE PART NUMBERS

NV-NONE-CXX System C pump system (for nVision) with an aluminum carrying case.

M1-NONE-CHX-W System C pump system (for m1) with a waterproof carrying case.

3KPSIXP2i-CXX-W System C pump system in a waterproof carrying case, with an XP2i gauge (3000 psi).

System D

Pump Overview

P-018 hydraulic screw pumps produce pressure with superior control. The adjustable reference pressure port lets you set your reference gauge at the best viewing angle.

Key Features

- ▶ Generates 5000 psi/350 bar.
- ▶ Easy-to-use fine adjust.
- ▶ Adjustable reference port.
- ▶ Compatible with water or oil.

[Learn more here](#) ◀

System Overview

Pump System	Pressure Range	Test Media	Media Specifics	Pump
DOX	0 to 5000 psi /350 bar	Hydraulic Oil	Rando HDZ32	P-018-CPF
DWX	0 to 5000 psi /350 bar	Water	Distilled Water	P-018-CPF



P-018-CPF hydraulic screw pump

Parts Included with Pump System D

Part Number	Description	System D
		DOX and DWX
MPM-1/4BSPM	CPF Male to Screw Pump Adapter	■ (2)
5254	1/4" BSP Female to 1/4" BSP Female Fitting	■
MPF-1/4FPT	CPF Female to 1/4" NPT Female Fitting	■
MPF-1/4BSPF	CPF Female to 1/4" BSP Female Fitting	■
MPF-1/8MPT	1/8" MPT Fitting (for 30 Series Calibrator)	■ (2)
MPF-CAP	CPF Female Cap Fitting	■
SPK-HPC-004	1/4" BSP Male to 1/4" BSP Male Banjo Connector	■
60R955	1/4" Male BSP Plugs	■ (4)
60R120	1/4" Bonded Seals	■ (5)
60P013	1/4" BSP Male Fine Adjust	■
1351	Test Leads; Red & Black, including clips (for 30 Series)	■
5249	Protective Vinyl Cap	■ (4)
60I104	Pack Tape (1 roll)	■
60R159	Allen Key	■
124004	Shoulder Strap	■
124301	Aluminum Carrying Case	■

Carrying Case

Pump System D is delivered with an Aluminum Carrying Case.



Ordering a Pump System

Any P-Series Pump System may be ordered with or without a reference indicator. The table below provides an explanation of the Pump System ordering scheme when ordering a system without an indicator. For details on ordering the Pump Systems with an indicator, see the indicator datasheet.

Reference Indicator	Pump System
nVision NV-NONE	System D (P-018-CPF) . . . -DOX
30 Series IS30-NONE	System D (P-018-CPF) . . . -DWX
HPC40 Series . . . HPC40-NONE	
HPC50 Series . . . HPC50-NONE	
XP2i XP2i-NONE	
m1 M1-NONE	

▶ SAMPLE PART NUMBERS

- NV-NONE-DOX System D pump system (for nVision) for use with oil.
- IS30-NONE-DWX . . . System D pump system (for 30 Series) for use with water.
- 5KPSIXP2i-DWX . . . System D pump system for use with water, with an XP2i gauge (5000 psi).

System E

Pump Overview

P014 hydraulic jack pumps are designed for high pressure oil applications. Its small size and light weight makes it a sensible, rugged and portable pressure generating solution.

Key Features

- ▶ Generates 10 000 psi / 700 bar.
- ▶ Small, and light weight.
- ▶ Easy-to-use fine adjust.
- ▶ Four pressure output manifold.

[Learn more here](#) ◀

System Overview

Pump System	Pressure Range	Test Media	Media Specifics	Pump
EOX	0 to 10 000 psi / 700 bar	Hydraulic Oil	Rando HDZ32	P014-CPF



P014-CPF hydraulic jack pump

Parts Included with Pump System E

Part Number	Description	System E
		EOX
MPM-1/4BSPM	CPF Male to Screw Pump Adapter	■ (2)
5254	1/4" BSP Female to 1/4" BSP Female Fitting	■
MPF-1/4FPT	CPF Female to 1/4" NPT Female Fitting	■
MPF-1/4BSPF	CPF Female to 1/4" BSP Female Fitting	■
MPF-1/8MPT	1/8" MPT Fitting (for 30 Series Calibrator)	■ (2)
MPF-CAP	CPF Female Cap Fitting	■
SPK-HPC-004	1/4" BSP Male to 1/4" BSP Male Banjo Connector	■
60R955	1/4" Male BSP Plugs	■ (4)
60R120	1/4" Bonded Seals	■ (5)
60P013	1/4" BSP Male Fine Adjust	■
1351	Test Leads; Red & Black, including clips (for 30 Series)	■
5249	Protective Vinyl Cap	■ (4)
60I104	Pack Tape (1 roll)	■
60R159	Allen Key	■
124004	Shoulder Strap	■
124303	Aluminum Carrying Case	■

Carrying Case

Pump System E is delivered with an Aluminum Carrying Case.



Ordering a Pump System

Any P014 Pump System may be ordered with or without a reference indicator. The table below provides an explanation of the Pump System ordering scheme when ordering a system without an indicator. For details on ordering the Pump Systems with an indicator, see the indicator datasheet.

Reference Indicator	Pump System
nVision NV-NONE	System E (P014-CPF) ... -EOX
30 Series IS30-NONE	
HPC40 Series ... HPC40-NONE	
HPC50 Series ... HPC50-NONE	
XP2i XP2i-NONE	
m1 M1-NONE	

▶ SAMPLE PART NUMBERS

NV-NONE-EOX	System E pump system (for nVision) for use with oil.
IS30-NONE-EOX	System E pump system (for 30 Series) for use with oil.
5KPSIXP2i-EOX	System E pump system for use with oil, with an XP2i gauge (5000 psi).

System F

Pump Overview

T Series is a high volume hydraulic comparator capable of producing pressure up to 15 000 psi / 1000 bar. This unit is ideal for testing and calibrating pressure gauges, relief valves, and pressure switches.

Key Features

- ▶ High and Low Volume Settings.
- ▶ Two outlet ports.
- ▶ Large fluid capacity.
- ▶ Fine Adjustment up to 3500 psi / 240 bar.
- ▶ Compatible with water or oil.

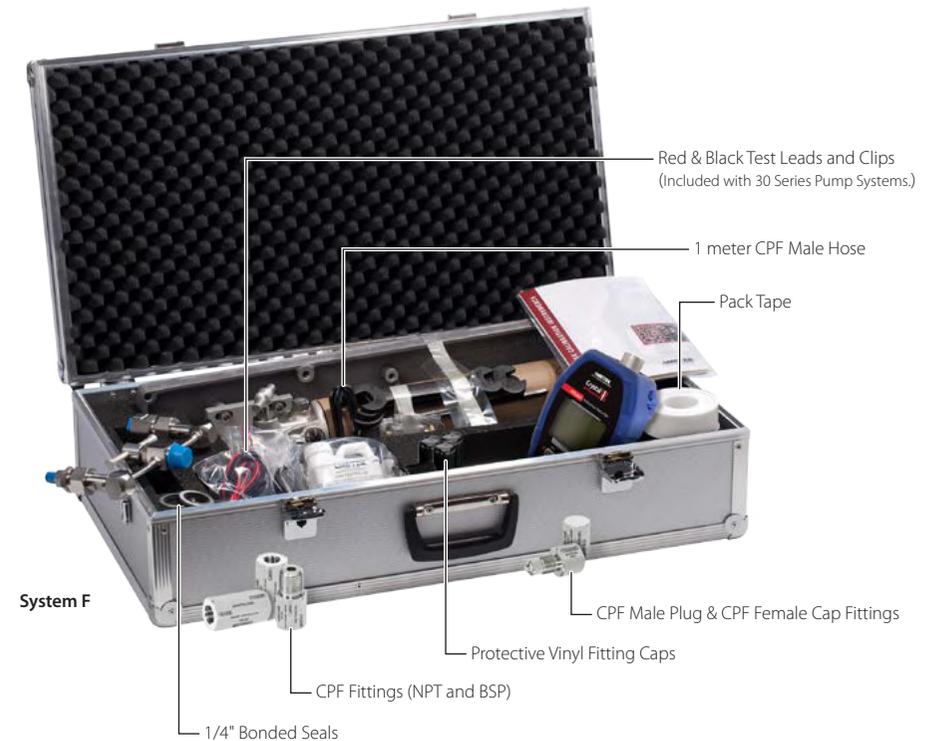
[Learn more here](#) ◀



T-1-CPF hydraulic comparator

System Overview

Pump System	Pressure Range	Test Media	Media Specifics	Pump
FOV	0 to 15 000 psi / 1000 bar	Hydraulic Oil	Rando HDZ32	T-1-CPF
FWV	0 to 15 000 psi / 1000 bar	Water	Distilled Water	T-1-CPF



System F

Parts Included with Pump System F

Part Number	Description	System F
		FOV and FWV
5255	CPF Male to 15/16-20 Male Adapter	■ (2)
MPF15K-1/4FPT	CPF Female to 1/4" NPT Female Fitting	■
MPF-1/4BSPF	CPF to 1/4" BSP Female Fitting	■
MPF-1/8MPT	1/8" MPT Fitting (for 30 Series Calibrator)	■ (2)
60R120	1/4" Bonded Seals	■ (5)
1351	Test Leads; Red & Black, including clips (for 30 Series)	■
5249	Protective Vinyl Cap	■ (4)
60I104	Pack Tape (1 roll)	■
124004	Shoulder Strap	■
124304	Aluminum Carrying Case	■

Carrying Case

Pump System F is delivered with an Aluminum Carrying Case.



Ordering a Pump System

Any Type T Series Pump System may be ordered with or without a reference indicator. The table below provides an explanation of the Pump System ordering scheme when ordering a system without an indicator. For details on ordering the Pump Systems with an indicator, see the indicator datasheet.

Reference Indicator	Pump System
nVision NV-NONE	System F (T-1-CPF) ... -FOV
30 Series IS30-NONE	System F (T-1-CPF) ... -FWV
HPC40 Series ... HPC40-NONE	
HPC50 Series ... HPC50-NONE	
XP2i XP2i-NONE	
m1 M1-NONE	

► SAMPLE PART NUMBERS

NV-NONE-FOV System F pump system (for nVision) for use with oil.

IS30-NONE-FWV System F pump system (for 30 Series) for use with water.

15KPSIXP2i-FWV System F pump system for use with water, with an XP2i gauge (15 000 psi).

System G

Pump Overview

GaugeCalHP is a self-contained, precision hydraulic pressure comparator intended for the calibration of pressure gauges, transmitters, sensors, and safety valves rated up to 15 000 psi / 1000 bar. You may fill the comparator with your choice of water or oil.

The GaugeCalHP is much faster than deadweight testers and most automated pressure controllers; and it's so quick and easy to use, it's ideal for calibrating those low cost gauges that are often overlooked for ISO9000 compliance.

[Learn more here](#) ◀

System Overview

Pump System	Pressure Range	Test Media	Media Specifics	Pump
GOX	0 to 15 000 psi / 1000 bar	Hydraulic Oil	Rando HDZ32	GaugeCalHP
GWX	0 to 15 000 psi / 1000 bar	Water	Distilled Water	GaugeCalHP



GaugeCalHP hydraulic comparator

Parts Included with Pump System G

Part Number	Description	System G
		GOX and GWX
MPF15K-1/4FPT	CPF Female to 1/4" NPT Female Fitting	■
MPF-1/4BSPF *	CPF Female to 1/4" BSP Female Fitting	■
MPF-1/8MPT *	1/8" MPT Fitting (for 30 Series Calibrator)	■ (2)
MPF-CAP *	CPF Female Cap Fitting	■ (2)
60R120	1/4" Bonded Seals	■ (5)
5102	Fine Adjust (installed)	■
1351	Test Leads; Red & Black, including clips (for 30 Series)	■
5249	Protective Vinyl Cap	■ (4)
60I104	Pack Tape (1 roll)	■
5101	Rolling Waterproof Carrying Case	■

* These fittings are rated to 10 000 psi/700 bar.

Carrying Case

Pump System G is delivered with a rolling, Waterproof Carrying Case.



Ordering a Pump System

Any GaugeCalHP Pump System may be ordered with or without a reference indicator. The table below provides an explanation of the Pump System ordering scheme when ordering a system without an indicator. For details on ordering the Pump Systems with an indicator, see the indicator datasheet.

Reference Indicator	Pump System	Carrying Case
nVision NV-NONE	System G (GaugeCalHP-oil) -GOX	Waterproof . . . -W
30 Series IS30-NONE	System G (GaugeCalHP-water) . . . -GWX	
HPC40 Series . . . HPC40-NONE		
HPC50 Series . . . HPC50-NONE		
XP2i XP2i-NONE		
m1 M1-NONE		

▶ SAMPLE PART NUMBERS

NV-NONE-GOX-W System G pump system for an nVision, for use with oil, in a waterproof carrying case.

IS30-NONE-GWX-W . . . System G pump system for an nVision, for use with water, in a waterproof carrying case..

15KPSIXP2i-GWX-W . . . System G pump system for use with water, with an XP2i gauge (15 000 psi), in a waterproof carrying case..

System H

Pumps Overview

T-900 Series pneumatic pressure pumps feature an extended range fine adjust for precise control of pressure and vacuum, while a vent valve provides quick and positive shut-off and pressure release. T-600 Series are lightweight, portable hydraulic handpumps, specially designed for high pressure applications.

Key Features

- ▶ Lightweight, compact design.
- ▶ Two outlet ports.
- ▶ Adjustable stroke.
- ▶ T-900 Series generates up to 580 psi / 40 bar and vacuum.
- ▶ T-600 Series generates up to 5000 psi / 350 bar.

[Learn more here](#) ◀

T-620-CPF hydraulic pump and T-975-CPF pneumatic pump



System Overview

Pump System	Pressure	Vacuum	Pressure Range	Pump
HOX	■	■	-27 inHg to 580 psi / -0.91 to 40 bar	T-975-CPF
	■		0 to 5000 psi / 350 bar	T-620H-CPF



Parts Included with Pump Systems H

Part Number	Description	System H HOX
5238	3/8" BSP Male to CPF Male Fitting	■
5252	5/16-24 SAE Male to CPF Female Fitting	■
MPF-1/4FPT	CPF Female to 1/4" NPT Female Fitting	■ (2)
MPF-1/4BSPF	CPF Female to 1/4" BSP Female Fitting	■ (2)
MPF-1/8MPT	1/8" MPT Fitting (for 30 Series Calibrator)	■ (2)
MPM-PLUG	CPF Male Plug Fitting	■
MPF-CAP	CPF Female Cap Fitting	■
MPH-1	1 meter CPF Male Hose	■ (2)
60R120	1/4" Bonded Seals	■ (5)
50-REP700	O-ring and Lock Clip	■ (5)
1351	Test Leads; Red & Black, including clips (for 30 Series)	■
5249	Protective Vinyl Cap	■ (4)
601104	Pack Tape (1 roll)	■
124004	Shoulder Strap	
124110	Aluminum Carrying Case (for nVision and 30 Series)	
2888	Waterproof Carrying Case	■

Carrying Case

Pump System H is delivered with a Waterproof Carrying Case.



Ordering a Pump System

Any Pump System H may be ordered with or without a reference indicator. The table below provides an explanation of the Pump System ordering scheme when ordering a system without an indicator. For details on ordering the Pump Systems with an indicator, see the indicator datasheet.

Reference Indicator	Pump System	Carrying Case
nVision NV-NONE	System H (T-975-CPF and T-620H-CPF) ... -HOX	Waterproof ... -W
30 Series IS30-NONE		
HPC40 Series ... HPC40-NONE		
HPC50 Series ... HPC50-NONE		
XP2i XP2i-NONE		
m1 M1-NONE		

▶ SAMPLE PART NUMBERS

NV-NONE-HOX-W System H pump system (for nVision) with a waterproof carrying case.

M1-NONE-HOX-W System H pump system (for m1) with a waterproof carrying case.

5KPSIXP2i-HOX-W ... System H pump system in a waterproof carrying case, with an XP2i gauge (5000 psi).

Dear Calibration Professional,

You're already familiar with the family of high quality AMETEK calibrators and pressure gauges. Perhaps you even own one.

The same relentless pursuit of perfection invested in our gauges; and that spurred the design of CPF—the industry's safest test fitting line—also drives us to create top-quality pressure generation systems.

We know, just as you do, that the best calibrators are only as good as their support equipment.

Our pumps and Pump Systems deliver exactly what you need for field and lab calibration: reference indicators, fittings, hoses, and accessories, all packed inside sturdy and portable cases.

From rugged and effective pumps, to the best fittings and hoses, to time-saving software—we've thought of everything.

These are your tools for pressure calibration; the ones you use over and over, every day. Doesn't it make sense to buy the best?

Working for you,
The AMETEK Team

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dts.
INSTRUMENTS

CrystalCalHP

Everything You Need for Ultra-Fast, Error-Free Calibrations

10-point up and down calibrations in under 3 minutes.

CrystalCalHP-PSI includes:

- ▶ **One** GaugeCalHP pressure comparator.
- ▶ **One** copy of FastCalXP calibration software, with footswitch.
- ▶ **Three** XP2i gauges with 0.1% of Reading accuracy.
- ▶ **One** Weatherproof carrying case.
- ▶ **All** the CPF fitting adapters you need.

Eliminates typing and guesswork—
automatically generates
calibration reports.

[Learn more here...](#) ◀



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