

# Consolidated™ 3900 MPV Series

## Pilot-Operated Safety Relief Valve

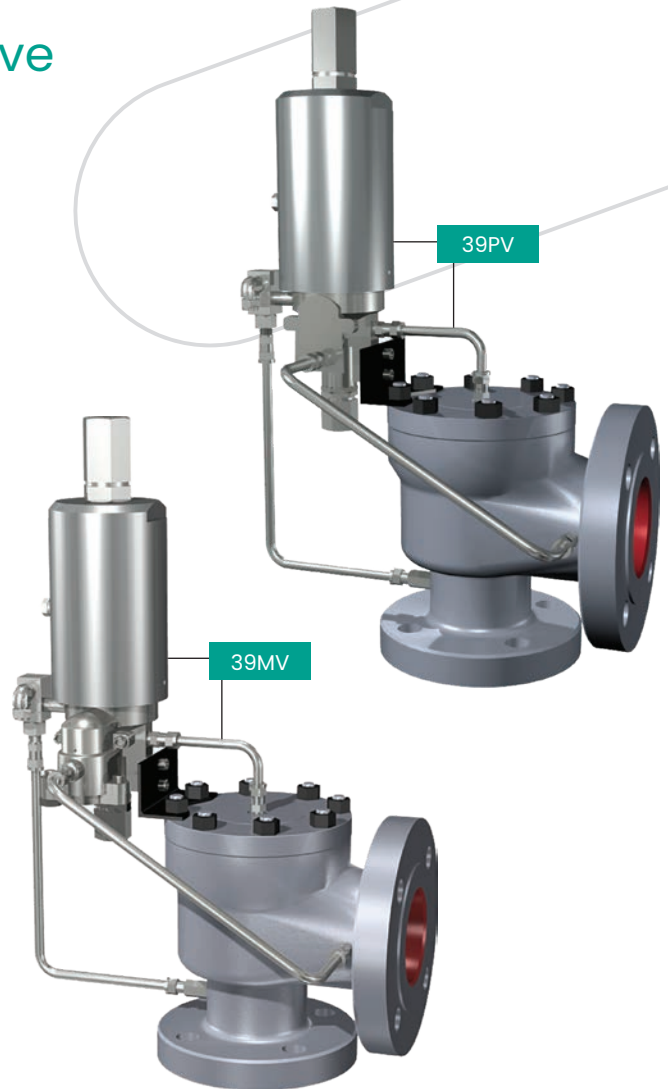
The Baker Hughes' 3900 Series Pilot-Operated Safety Relief Valve design provides an optimized safety system that offers application versatility while providing cost-effective standardization. The unique pilot valve design combines enhanced performance, capabilities and features within an economical, modular assembly.

### Specifications

Inlet Sizes:	1" (25 mm) through 12" (305 mm)
Outlet Sizes:	2" (51 mm) through 16" (406 mm)
Inlet Ratings:	ASME Class 150 through 2500
Outlet Ratings:	ASME Class 150 through 300
Orifice Sizes:	Eleven inlet sizes: D through T and Full bore options
Pressure Range:	15 psig to 6250 psig (1.03 barg to 431 barg)
Temperature Range:	-320°F to 650°F (-196°C to 343°C)
Materials:	
Main Valve (Std.)	Carbon steel base and 316 stainless steel internal components
Pilot Valve (Std.)	316 stainless steel base and internal components

### Features and Benefits

- Closed bonnet for spring protection.
- Pilot gag prevents the POSRV from opening while equipment is undergoing operational hydrostatic testing.
- Pop action and modulating pilot allows for application versatility.
- Unique pilot seat design allows for self cleaning operation and is tolerant to icing and dirty conditions.
- Adjustable blowdown - the first and only non-flowing modulating pilot with main safety valve blowdown control.
- Remote actuation and sensing.
- Operation closer to set point improves process efficiency versus direct spring operated safety valves.
- The metal seat option incorporates proven technology from the 1900 Series safety relief valve seat design.
- The addition of a heat exchanger increases the metal seat option temperature range to -320°F to 650°F (-196°C to 343°C).



# Consolidated

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## 3900 Flanged Series Overview

As a world leader in providing safety and safety relief valve solutions, Baker Hughes offers the 3900 Series PV and 3900 Series MV pilot valve designs for enhanced performance, capabilities and features within an economical, modular assembly. Proven concepts and principles refined from more than 100 years of successful design and application experience are integrated into our line of Consolidated MPVs, resulting in a new and highly reliable pilot-operated safety relief valve that provides ease of operation and maintenance.

With global environmental concerns continuing to rise, improving the operational efficiency of all types of process plants can be critical to success. The demand for relief valves that provide bubble-tight operation and precise opening and closing pressures is also increasing. Our line of Consolidated pilot-operated safety relief valves offers high quality products, performance characteristics and features that help our customers meet today's industry demands.

Combining pilots into one unique design provides significant benefits. The 3900 Series Pilot Valve is well-suited for incompressible and compressible applications, including steam. Our safety valves are easily adaptable for various applications, requiring only the appropriate soft goods and options to meet service conditions.

## Versatility

Consolidated MPV is the first entirely modular pilot-operated safety relief valve design that combines pop and modulating functions within a single assembly that is suitable for incompressible and compressible fluids, including steam.

Consolidated MPV pilot-operated safety relief valves meet API 526 requirements. For higher capacity requirements, full bore sizes are available up to 69.94 in<sup>2</sup> (451.225 cm<sup>2</sup>), some with dual outlets. Available full bore pressure class ratings are ASME Class 150 to Class 1500.

## Standard Features

Standard Features	39PV Pop Action Pilot	39MV Modulating Action Pilot
Full Lift	at Set Pressure	110% of Set Pressure
Adjustable blowdown	2% to 7%	2% to 7%
Leak tight seats at % of set pressure	95% to 98%	96% to 99%
Main valve seat tight to set point	Yes	Yes
Field test connection	Yes	Yes
Gas, liquid and steam service (ASME B&PVC, Section VIII)	Yes	Yes
Non-Flowing pilot	Yes	Yes
Pilot construction entirely stainless steel	Yes	Yes
Set point repeatability to within +/-2%	Yes	Yes
50 micron filter protects pilot	Yes	Yes
Designed for ease of maintenance	Yes	Yes

Note: The 3900 Series Pilot Valve is convertible to either pop action or modulating action.

## Total Service

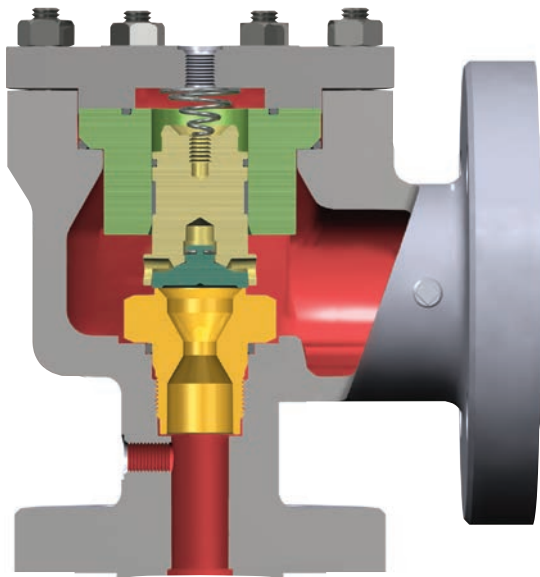
Baker Hughes is a total solutions provider of pressure relief products, offering customers unmatched application expertise combined with worldwide sales support.

## Reliable Protection

Consolidated 39MPV Series Pilot-Operated Safety Relief Valves are designed to provide reliable protection for a broad range of pressurized systems applications. The operating characteristics and design of pilot-actuated relief valves differ significantly from spring loaded pressure relief valves. Users should recognize the distinct merits of each design, and select the safety valves that best meet their particular needs. Consolidated's pressure relief valve designs meet most application requirements for the industries we serve.

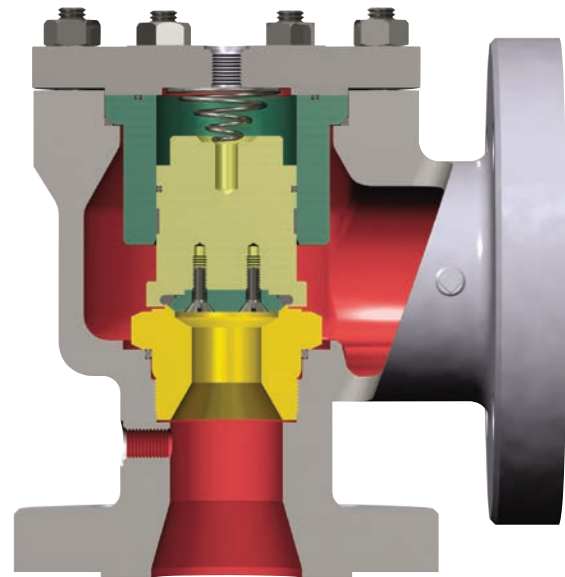
Baker Hughes works to provide you with the best available information, data and assistance in the selection and application of our products. Our sales and service consultants are available to help you select the safety valve that best fits your specific application.

## Metal Seat



The Consolidated 3900 Series pilot-operated safety relief valve is supplied with a non-flowing pilot valve. This single pilot design is well-suited for both incompressible and compressible applications and performs equally well on liquid, vapor or two-phase flow services. The set pressure will not require adjustment if service conditions change.

## Soft Seat: Liquid, Gas & Steam Service



Because of its modular design, the 39PV (pop action pilot) can be converted to a 39MV (modulating action pilot), making Consolidated 39PV/39MV pilot valve one of the most versatile pilot valves available today.

## Standards and Regulation Compliance

Standard/Regulation	Authority	Applicability
ISO 9001	International Organization for Standardization (ISO)	Standard
ISO 14001	International Organization for Standardization (ISO)	Standard
ASME B&PVC, Section VIII (Gas, Liquid & Steam Service)	American Society of Mechanical Engineers	Standard
ASME B16.34	American Society of Mechanical Engineers	Standard
ASME B16.5	American Society of Mechanical Engineers	Standard
API 520, 521, 526, 527	American Petroleum Institute	Standard
CRN	Canada	As Required
NACE MR0175	Nace International Institute	As Required
NACE MR0103	Nace International Institute	As Required
PED 2014/68/EU	European Union	As Required
ISO 4126-4	International Organization for Standardization (ISO)	As Required
Customs Union Technical Regulation (CU TR)	Customs Union	As Required
AQSIQ - China Manufacturing License	Peoples Republic of China	As Required
Australian Standards	Council of Standards Australia	As Required
NORSOK	Norwegian Petroleum Industry	As Required
ATEX 2014/34/EU Zone 2 Group 2 Category 3	European Union	As Required
49 CFR 192.199	U.S. Department of Transportation (D.O.T.)	Standard
Korean High Pressure Gas Safety Control Act	Korea	Standard

