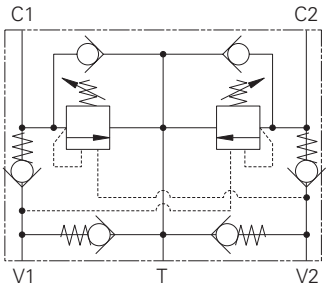
1CEEC35 - Motion Control and Lock Valve

Pilot assisted relief

30 L/min (8 USgpm) • 270 bar (4000 psi)



Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

The pressure required to open the valve and start actuator movement can be calculated as follows:

$$\text{Pilot Pressure} = \frac{\text{(Relief Setting) - (Load Pressure)}}{\text{Pilot Ratio}}$$

A system of check valves allows crossline relief for dynamic applications with the optional make up facility to compensate for any change in system volume.

Features

These valves provide complete circuit control and protection in a single valve body, reducing installation time and cost. Smooth, safe performance of dual direction actuators.

Pilot Ratio

2.5:1 Best suited for extremely unstable applications such as long booms or flexible frameworks.

5:1 (standard) Best suited for applications where the load varies and machine structure can induce instability.

10:1 Best suited for applications where the load remains relatively constant.

F

Description

Motion control and lock valves give static and dynamic control by regulating the flow into and out of hydraulic actuators. When installed close to an actuator, the valve can stop runaway in the event of hose burst. The valves also give dual thermal and overload relief protection.

A low pressure tank or charge line may be connected to the T port to provide a make-up flow to either actuator port.

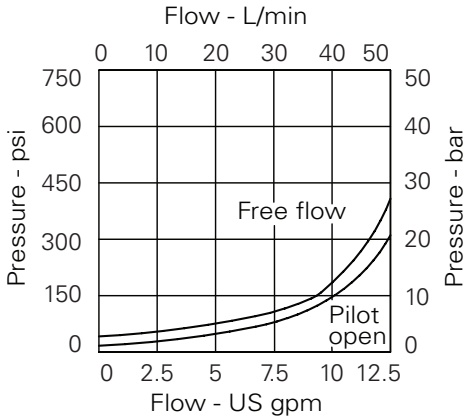
Performance Data

Ratings and Specifications

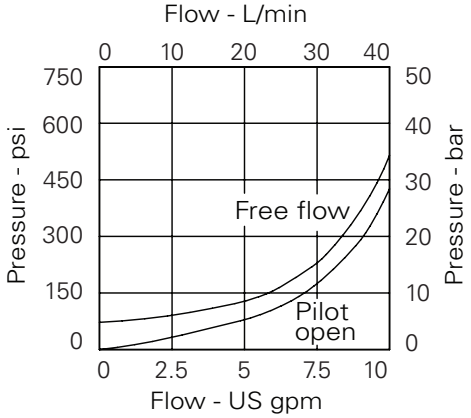
Figures based on: Oil Temp = 40˚C Viscosity = 32 cSt (150 SUS)	
Rated flow	30 L/min (8 USgpm)
Max relief pressure	350 bar (5000 psi) (35), 225 bar (3260 psi) (20)
Max load induced pressure	270 bar (4000 psi) (35), 160 bar (2300 psi) (20)
Cartridge material	Working parts hardened and ground steel. External surfaces electroless nickel plated.
Standard housing material	Steel
Mounting position	Line mounted
Weight	2.03 kg (4.50 lbs)
Seal kit	SK815 (Nitrile) SK815V (Viton®)
Filtration	BS5540/4 Class 18/13 (25 micron nominal)
Temperature range	-30° to +90°C (-22° to +194°F)
Internal leakage	0.3 milliliters/min nominal (5 dpm)
Nominal viscosity range 5 to 500 cSt	

Viton is a registered trademark of E.I. DuPont

Pressure Drop



2.5:1 and 5:1 version



10:1 version

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

EATON Powering Business Worldwide
Integrated Hydraulics An Eaton Brand

1CEEC35 - Motion Control and Lock Valve

Pilot assisted relief
30 L/min (8 USgpm) • 270 bar (4000 psi)

Model Code

1CEEC35	– F	3W	–	35	S	5	377
1	2	3		4	5	6	7

1 Basic Code

1CEEC35 - Cartridge and Body

2 Adjustment Means

F - Screw adjustment
N - Fixed - State pressure setting required

For fixed versions add setting in 10 bar increments to end of part number. Subject to a ±10% tolerance.

3 Port Size - Bodied Valves Only

Code	Port Size	Housing Number
		Steel
3W	3/8" BSP	BXP16247-3W-S-377

4 Pressure Range @ 4.8 L/min

Note: Code based on pressure in bar.

20	- (2.5:1 and 5:1)	70-210 bar	Std setting 100 bar
	(10:1)	100-210 bar	Std setting 100 bar
35	- (2.5:1 and 5:1)	100-350 bar	Std setting 210 bar
	(10:1)	120-350 bar	Std setting 210 bar

Std setting made at 4.8 L/min

5 Seals

S - Nitrile (For use with most industrial hydraulic oils.
SV - Viton (For high temperature and most special fluid applications

6 Pilot Ratio

2 - 2.5:1
5 - 5:1
10 - 10:1

Other ratios available upon request

7 Body Material

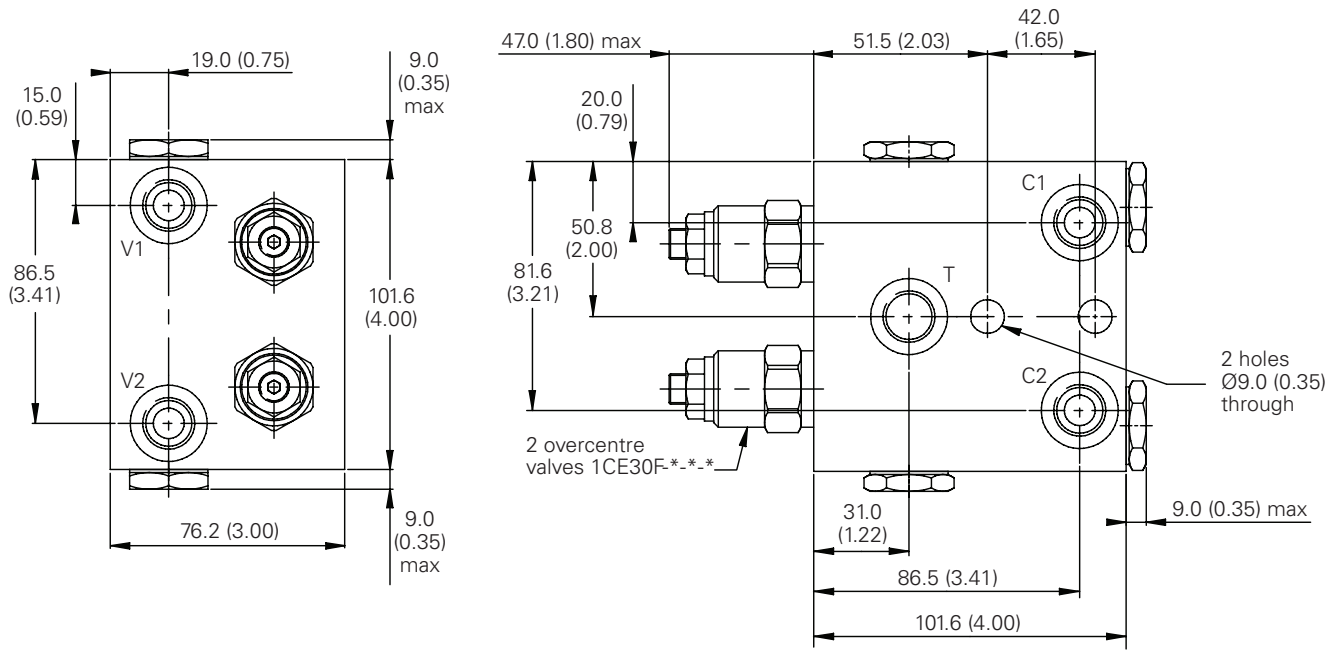
377 - Steel

F

Dimensions

mm (inch)

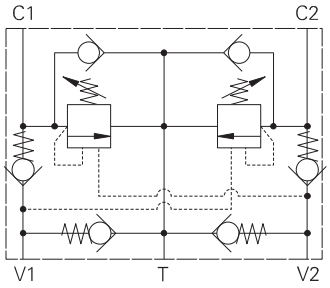
Complete Valve
3/8" Ports
Basic Code
1CEEC35



Note: Tightening torque of "F" adjuster locknut - 20 to 25 Nm

1CEEC95 - Motion control & lock valve

Pilot assisted relief
95 L/min (25 USgpm) • 270 bar (4000 psi)



Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

The pressure required to open the valve and start actuator movement can be calculated as follow

$$\text{Pilot Pressure} = \frac{\text{(Relief Setting) - (Load Pressure)}}{\text{Pilot Ratio}}$$

A system of check valves allows crossline relief for dynamic applications with the optional make up facility to compensate for any change in system volume.

Features

These valves provide complete circuit control and protection in a single valve body, reducing installation time and cost. Smooth, safe performance of dual direction actuators.

Pilot ratio

4:1 Best suited for applications where the load varies and machine structure can induce instability.

8:1 Best suited for applications where the load remains relatively constant.

Description

Motion control and lock valves give static and dynamic control by regulating the flow into and out of hydraulic actuators. When installed close to an actuator, the valve can stop runaway in the event of hose burst. The valves also give dual thermal and overload relief protection.

A low pressure tank or charge line may be connected to the T port to provide a make-up flow to either actuator port.

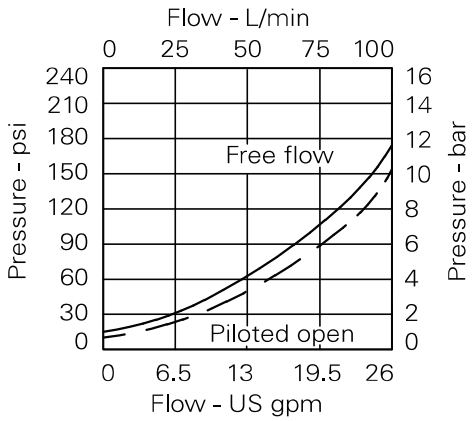
Performance data

Ratings and specifications

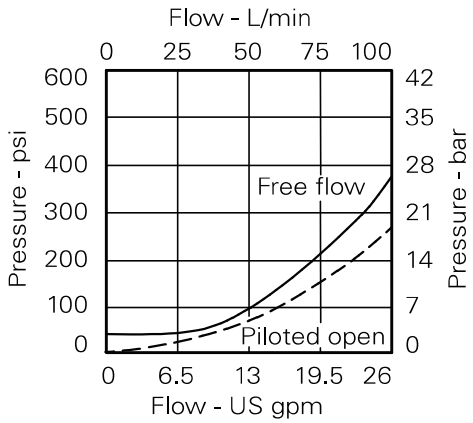
Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS)	
Rated flow	1CEEC95 95 L/min (25 USgpm)
Max relief pressure	350 bar (5000 psi) **(35)**, 225 bar (3260 psi) **(20)**
Max load induced pressure	270 bar (4000 psi) **(35)**, 160 bar (2300 psi) **(20)**
Cartridge material	Working parts hardened and ground steel. External surfaces electroless nickel plated.
Standard housing material	Steel
Mounting position	Line mounted
Weight	3.70 kg (8.20 lbs)
Seal kit	SK814 (Nitrile) SK814V (Viton®)
Filtration	BS5540/4 Class 18/13 (25 micron nominal)
Temperature range	-30° to +90°C (-22° to +194°F)
Internal leakage	0.3 milliliters/min nominal (5 dpm)
Nominal viscosity range	5 to 500 cSt

Viton is a registered trademark of E.I. DuPont.

Pressure drop



4:1 version



8:1 version

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CEEC95 - Motion control & lock valve

Pilot assisted relief
95 L/min (25 USgpm) • 270 bar (4000 psi)

Model code

1CEEC95 – F 3W – 35 S 5 377

1 2 3 4 5 6 7

1 Basic code

1CEEC95 - Cartridge and Body

2 Adjustment means

F - Screw adjustment
N - Fixed - State pressure setting required

For fixed versions add setting in 10 bar increments to end of part number. Subject to a ±10% tolerance.

3 Port size

Code	Port size	Housing number- body only
		Steel
6W	**3/4"** BSP	BXP16248-6W-S-377

4 Pressure range @ 4.8 L/min

Note: Code based on pressure in bar.

35 - (4:1 and 8:1)
200-350 bar
Std setting 210 bar

Std setting made at 4.8 L/min

5 Seals

S - Nitrile (For use with most industrial hydraulic oils.
SV - Viton (For high temperature and most special fluid applications made at 4.8 L/min

6 Pilot ratio

4 - 4:1
8 - 8:1

Other ratios available upon request

7 Body material

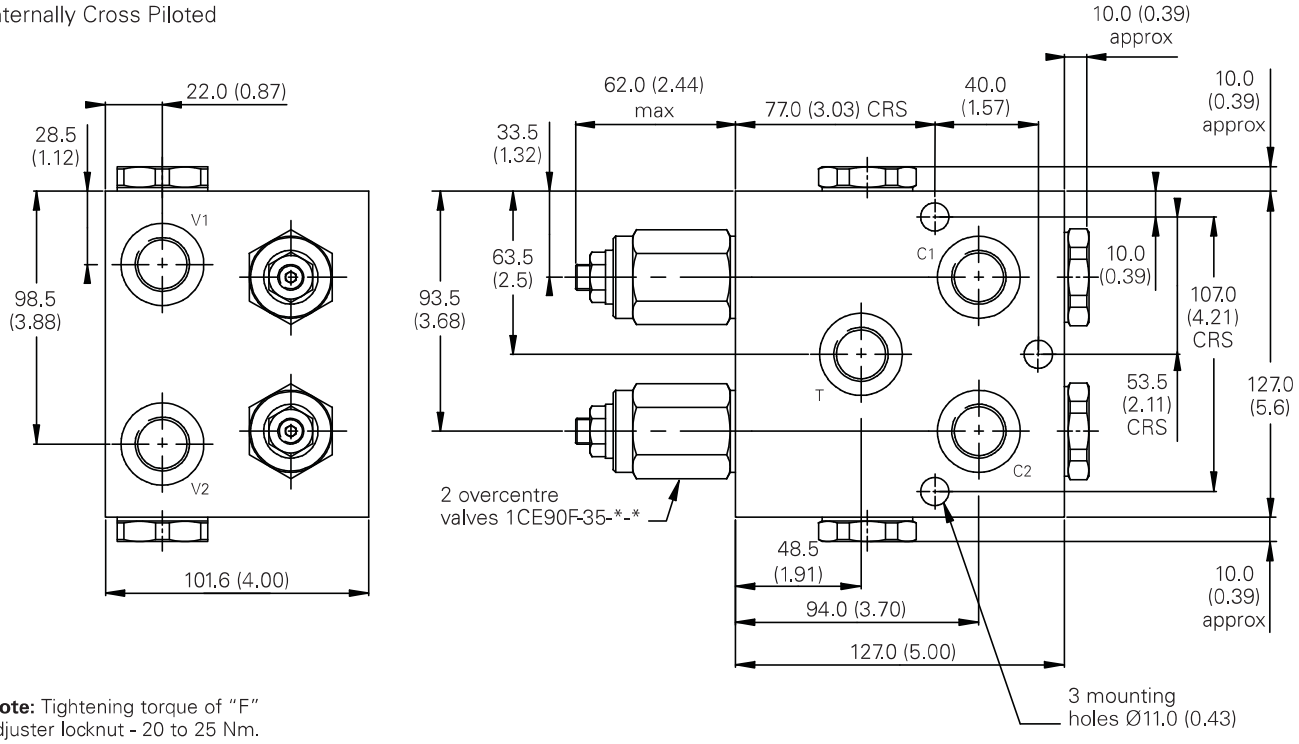
377 - Steel

F

Dimensions

mm (inch)

Complete valve
3/4" Ports
Basic Code
1CEEC95
Internally Cross Piloted



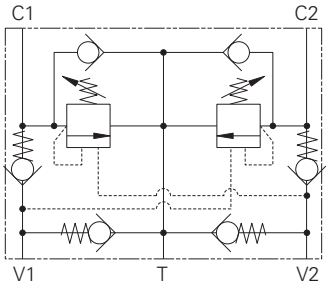
Note: Tightening torque of "F" adjuster locknut - 20 to 25 Nm.

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CEEC150 - Motion Control & Lock Valve

Pilot assisted relief

150 L/min (40 USgpm) • 270 bar (4000 psi)



Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

The pressure required to open the valve and start actuator movement can be calculated as follows:

Pilot Pressure =

$$\frac{\text{(Relief Setting) - (Load Pressure)}}{\text{Pilot Ratio}}$$

A system of check valves allows crossline relief for dynamic applications with the optional make up facility to compensate for any change in system volume.

Features

These valves provide complete circuit control and protection in a single valve body, reducing installation time and cost. Smooth, safe performance of dual direction actuators.

Pilot Ratio

3.5:1 Best suited for applications where the load varies and machine structure can induce instability.

Description

Motion control and lock valves give static and dynamic control by regulating the flow into and out of hydraulic actuators. When installed close to an actuator, the valve can stop runaway in the event of hose burst. The valves also give dual thermal and overload relief protection.

A low pressure tank or charge line may be connected to the T port to provide a make-up flow to either actuator port.

F

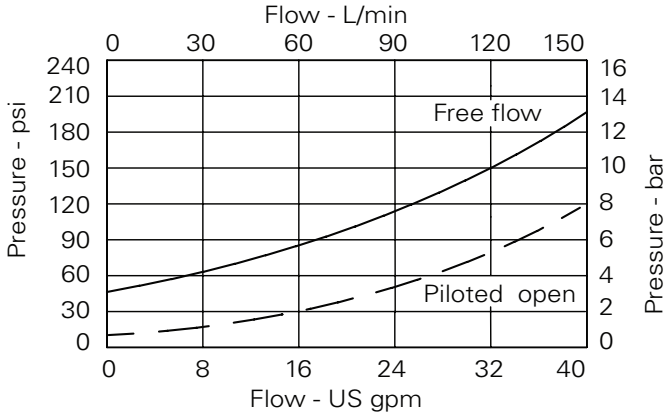
Performance Data

Ratings and Specifications

Figures based on: Oil Temp = 40˚C Viscosity = 32 cSt (150 SUS)	
Rated flow	150 L/min (40 USgpm)
Max relief pressure	350 bar (5000 psi)
Max load induced pressure	270 bar (4000 psi)
Cartridge material	Working parts hardened and ground steel. External surfaces zinc plated.
Standard housing materials	Steel
Mounting position	Line mounted
Weight	3.7 kg (8.2 lbs)
Seal kit	SK813 (Nitrile) SK813V (Viton®)
Filtration	BS5540/4 Class 18/13 (25 micron nominal)
Temperature range	-30° to +90°C (-22° to +194°F)
Internal leakage	0.3 ml/min (5 dpm)
Nominal viscosity range	5 to 500 cSt

Viton is a registered trademark of E.I. DuPont

Pressure Drop



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

EATON Powering Business Worldwide

Integrated Hydraulics An Eaton Brand

1CEEC150 - Motion Control & Lock Valve

Pilot assisted relief
150 L/min (40 USgpm) • 270 bar (4000 psi)

Model Code

1CEEC150 – F 8W – 35 S 3 377

1 | 2 | 3 | 4 | 5 | 6 | 7

1 Basic Code

1CEEC150 - Cartridges and body

2 Adjustment Means

F - Screw adjustment

For fixed versions add setting in 10 bar increments to end of part number. Subject to a ±10% tolerance.

3 Port Sizes

Code	Port Size	Housing Number - Body Only
		Steel
8W	1" BSP Valve & Cyl Port. 1/4" BSP Brake Port	BXP15687-8W-S-377

4 Pressure Range @ 4.8 L/min

Note: Code based on pressure in bar.
35 - 70-35 bar
Std setting 210 bar

Std setting made at 4.8 L/min

5 Seal Material

S - Nitrile (For use with most industrial hydraulic oils.
SV - Viton (For high temperature and most special fluid applications made at 4.8 L/min

6 Pilot Ratio

3 - 3.5:1

7 Body Material

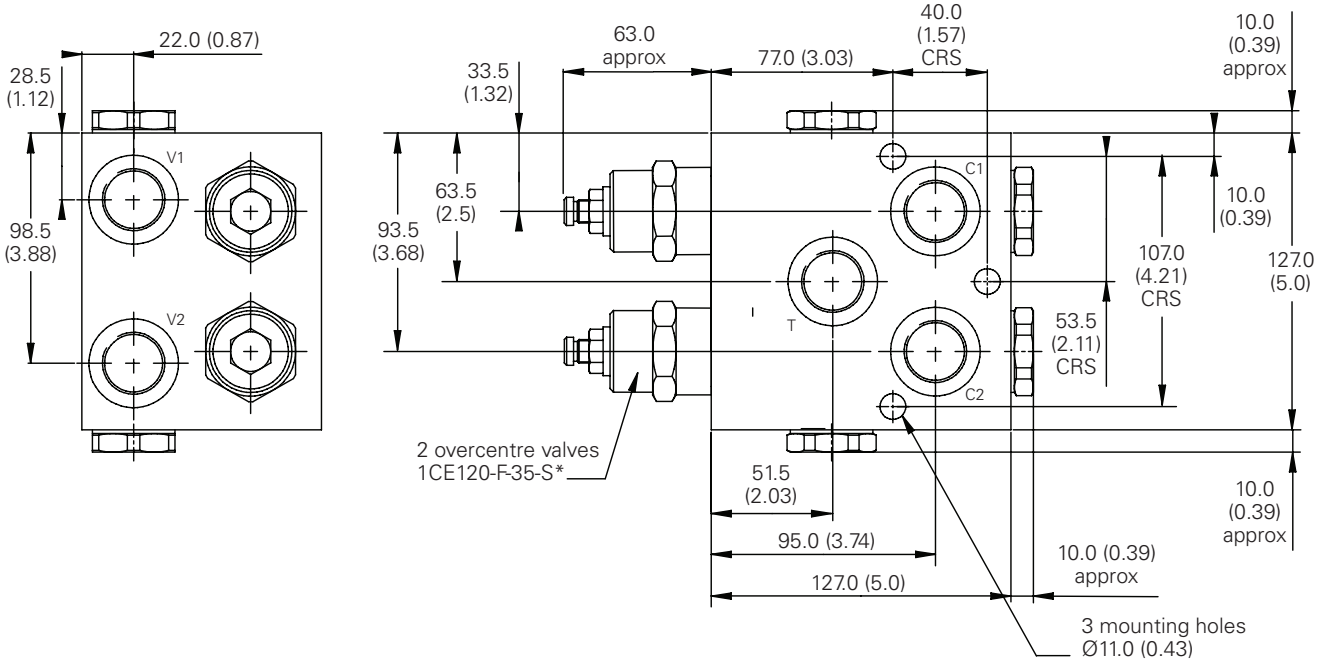
377 - Steel

F

Dimensions

mm (inch)

Complete Valve
1" Ports
Basic Code
1CEEC150

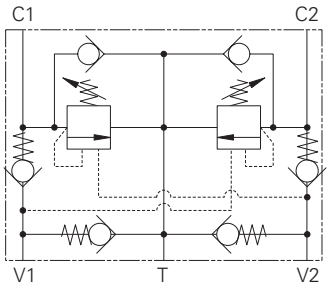


Note: Tightening torque of "F" adjuster locknut - 20 to 25 Nm.

1CEEC350 - Motion Control & Lock Valve

Pilot assisted relief

300 L/min (80 USgpm) • 270 bar (4000 psi)



Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

The pressure required to open the valve and start actuator movement can be calculated as follows:

Pilot Pressure =

$$\frac{\text{(Relief Setting) - (Load Pressure)}}{\text{Pilot Ratio}}$$

A system of check valves allows crossline relief for dynamic applications with the optional make up facility to compensate for any change in system volume.

Features

These valves provide complete circuit control and protection in a single valve body, reducing installation time and cost. Smooth, safe performance of dual direction actuators.

Pilot Ratio

3:1 Best suited for applications where the load varies and machine structure can induce instability.

8:1 Best suited for applications where the load remains relatively constant.

Description

Motion control and lock valves give static and dynamic control by regulating the flow into and out of hydraulic actuators. When installed close to an actuator, the valve can stop runaway in the event of hose burst. The valves also give dual thermal and overload relief protection.

A low pressure tank or charge line may be connected to the T port to provide a make-up flow to either actuator port.

F

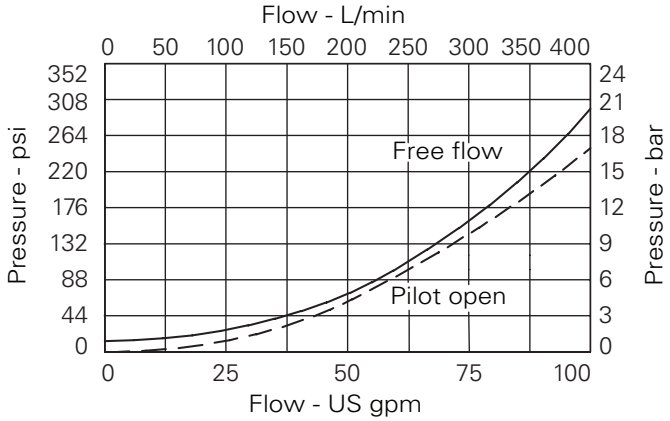
Performance Data

Ratings and Specifications

Figures based on: Oil Temp = 40˚C Viscosity = 32 cSt (150 SUS)	
Rated flow	300 L/min (80 USgpm)
Max relief pressure	350 bar (5000 psi)
Max load induced pressure	270 bar (4000 psi)
Cartridge material	Working parts hardened and ground steel. External surfaces zinc plated.
Standard housing materials	Steel
Mounting position	Line mounted
Weight	8.2 kg (18.0 lbs)
Seal kit	SK635 (Nitrile) SK635V (Viton®)
Filtration	BS5540/4 Class 18/13 (25 micron nominal)
Temperature range	-30° to +90°C (-22° to +194°F)
Internal leakage	4 ml/min (60 dpm)
Nominal viscosity range	5 to 500 cSt

Viton is a registered trademark of E.I. DuPont

Pressure Drop



1CEEC350 - Motion Control & Lock Valve

Pilot assisted relief
300 L/min (80 USgpm) • 270 bar (4000 psi)

Model Code

1CEEC350 – F 10W – 35 S 3 377

1 2 3 4 5 6 7

1 Basic Code

1CEEC350 - Cartridges and body

2 Adjustment Means

F - Screw adjustment

For fixed versions add setting in 10 bar increments to end of part number. Subject to a ±10% tolerance.

3 Port Sizes - Bodied Valves Only

Code	Port Size	Housing Number
		Steel Single
10W	1 1/4" BSP valve & cyl port. 1/4" BSP brake port	DXP16844-10W-S-377

4 Pressure Range @ 4.8 L/min

Note: Code based on pressure in bar.
35 - 70-35 bar
Std setting 210 bar

Std setting made at 4.8 L/min

5 Seals

S - Nitrile (For use with most industrial hydraulic oils.
SV - Viton (For high temperature and most special fluid applications made at 4.8 L/min

6 Pilot Ratio

3 - 3:1
8 - 8:1

7 Housing Material

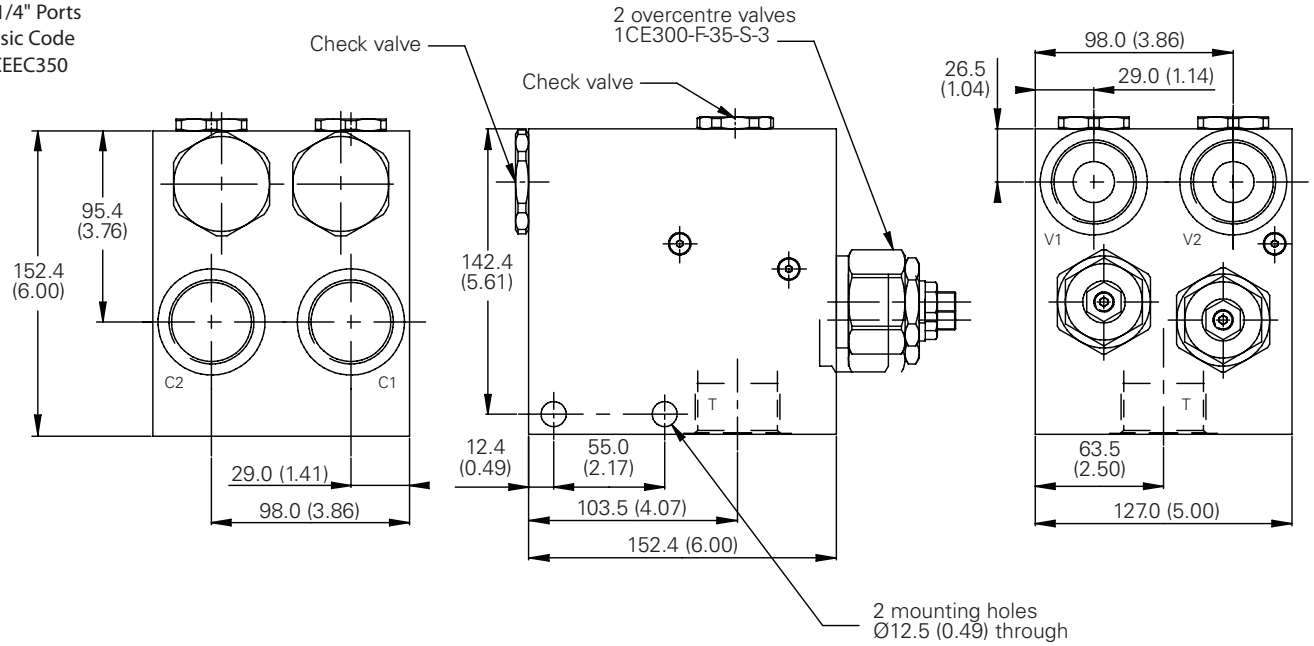
377 - Steel

F

Dimensions

mm (inch)

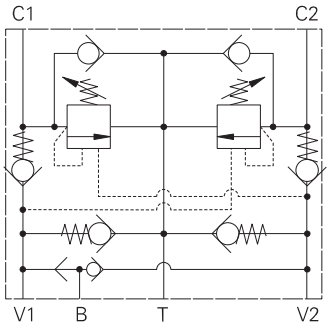
Complete Valve
1 1/4" Ports
Basic Code
1CEEC350



Note: Tightening torque of "F" adjuster locknut - 20 to 25 Nm.

1CEECSH35 - Motion control & lock valve

Pilot assisted relief with brake shuttle
30 L/min (8 USgpm) • 270 bar (4000 psi)



Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

The pressure required to open the valve and start actuator movement can be calculated as follows:

$$\text{Pilot Pressure} = \frac{\text{(Relief Setting) - (Load Pressure)}}{\text{Pilot Ratio}}$$

A system of check valves allows crossline relief for dynamic applications with the optional make up facility to compensate for any change in system volume.

Feature

This valve provides complete circuit control and protection as with the standard motion control valve but has the addition of a brake release shuttle and brake port contained in a single body.

Pilot ratio

2.5:1 Best suited for extremely unstable applications such as long booms or flexible frameworks.

5:1 (standard) Best suited for applications where load varies and machine structure can induce instability.

10:1 Best suited for applications where the load remains relatively constant.

Description

Motion control and lock valves give static and dynamic control by regulating the flow into and out of hydraulic actuators. When installed close to an actuator, the valve can stop runaway in the event of hose burst. The valves also give dual thermal and overload relief protection.

A low pressure tank or charge line may be connected to the T port to provide a make-up flow to either actuator port.

The shuttle valve provides a signal from the high pressure side of the actuator to release sprung applied brakes.

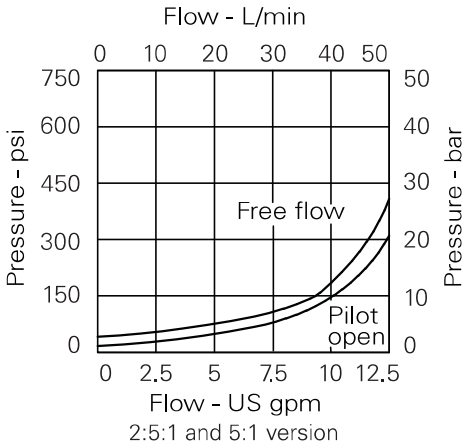
Performance data

Ratings and specifications

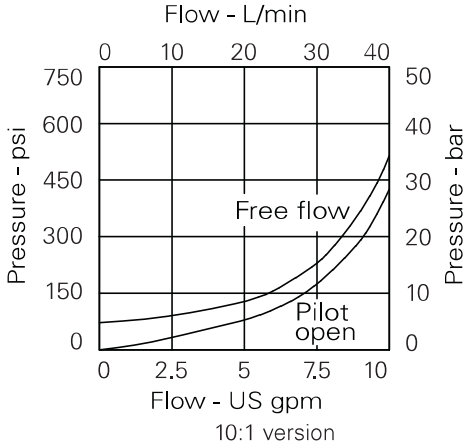
Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS)	
Rated flow	30 L/min (8 USgpm)
Max relief pressure	350 bar (5000 psi)
Max load induced pressure	270 bar (4000 psi)
Cartridge material	Working parts hardened and ground steel. External surfaces electroless nickel plated.
Standard housing materials	Steel
Mounting position	Line mounted
Weight	2.03 kg (4.5 lbs)
Seal kit	SK815 (Nitrile) SK815V (Viton®)
Filtration	BS5540/4 Class 18/13 (25 micron nominal)
Temperature range	-30° to +90°C (-22° to +194°F)
Internal leakage	0.3 ml/min (5 dpm)
Nominal viscosity range	5 to 500 cSt

Viton is a registered trademark of E.I. DuPont.

Pressure drop



2:5:1 and 5:1 version



10:1 version

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CEECSH35 - Motion control & lock valve

Pilot assisted relief with brake shuttle
30 L/min (8 USgpm) • 270 bar (4000 psi)

Model code

1CEECSH35 – F 3W – 35 S 5 377

1 2 3 4 5 6 7

1 Function

1CEECSH35 - Cartridges and body

2 Adjustment means

F - Screw adjustment
N - Fixed - State pressure setting required

For fixed versions add setting in 10 bar increments to end of part number. Subject to a ±10% tolerance.

3 Port sizes - bodied valves only

Code	Port size	Housing number - sub assembly
		Steel
3W	3/8" BSP Valve & Cyl Port. 1/4" BSP Brake Port	CXP15947-3W-S-377

4 Pressure range @ 4.8 L/min

Note: Code based on pressure in bar.
35 - (2.5:1 and 5:1) 100-350 bar Std setting 210 bar (10:1) 120-350 bar Std setting 210 bar

Std setting made at 4.8 L/min

5 Seals

S - Nitrile (For use with most industrial hydraulic oils.
SV - Viton (For high temperature and most special fluid applications made at 4.8 L/min

6 Pilot ratios

2 - 2.5:1
5 - 5:1 (Standard)
10 - 10:1

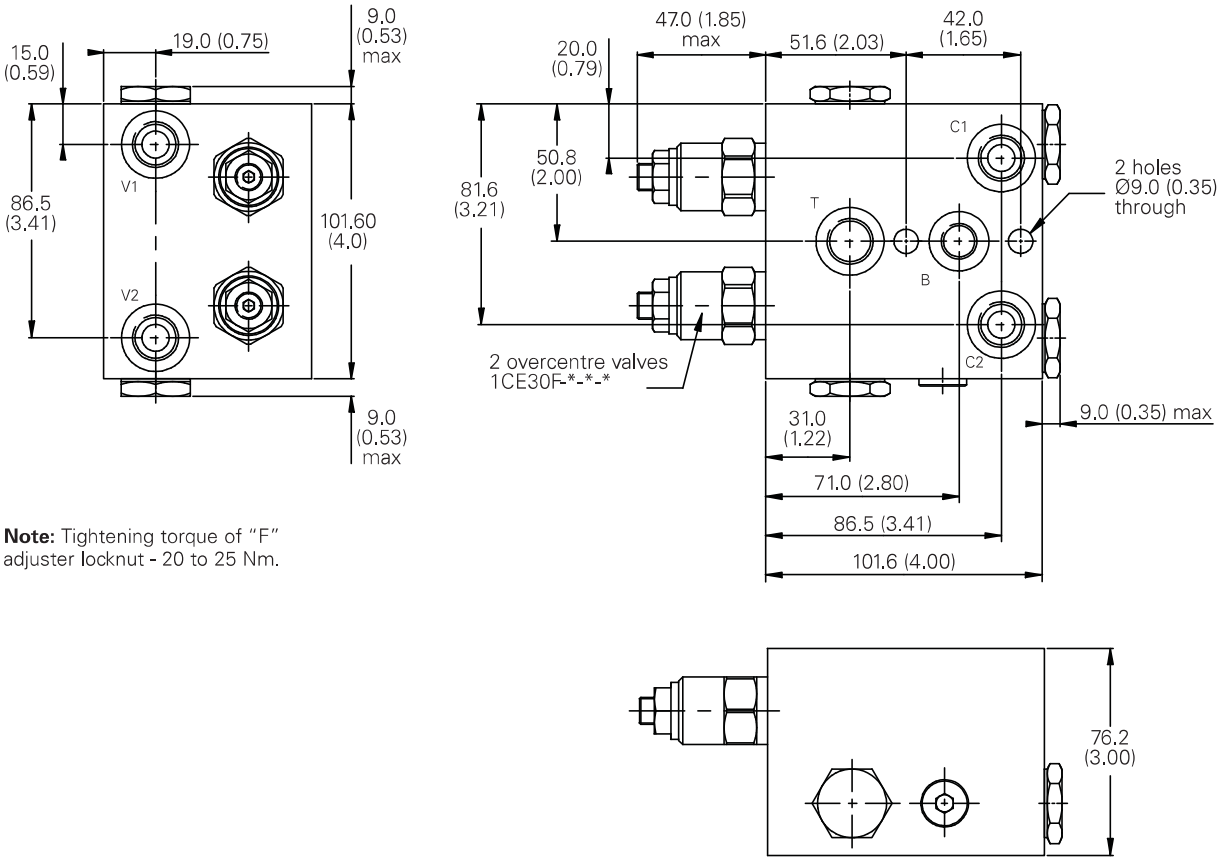
7 Body material

377 - Steel

Dimensions

mm (inch)

Complete valve
3/8" Ports
Basic Code
1CEECSH35
Internally Cross Piloted



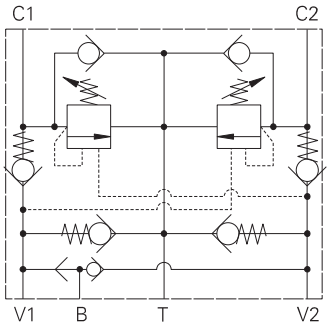
Note: Tightening torque of "F" adjuster locknut - 20 to 25 Nm.

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

F

1CEECSH95 - Motion control & lock valve

Pilot assisted relief with brake shuttle
95 L/min (25 USgpm) • 270 bar (4000 psi)



Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

The pressure required to open the valve and start actuator movement can be calculated as follows:

Pilot Pressure =

$$\frac{\text{(Relief Setting) - (Load Pressure)}}{\text{Pilot Ratio}}$$

A system of check valves allows crossline relief for dynamic applications with the optional make up facility to compensate for any change in system volume.

Features

This valve provides complete circuit control and protection as with the standard motion control valve but has the addition of a brake release shuttle and brake port contained in a single body.

Pilot ratio

4:1 Best suited for applications where load varies and machine structure can induce instability.

8:1 Best suited for applications where the load remains relatively constant.

Description

Motion control and lock valves give static and dynamic control by regulating the flow into and out of hydraulic actuators. When installed close to an actuator, the valve can stop runaway in the event of hose burst. The valves also give dual thermal and overload relief protection.

A low pressure tank or charge line may be connected to the T port to provide a make-up flow to either actuator port.

The shuttle valve provides a signal from the high pressure side of the actuator to release sprung applied brakes.

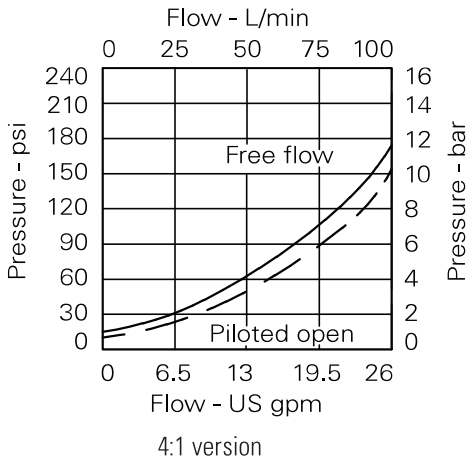
Performance data

Ratings and specifications

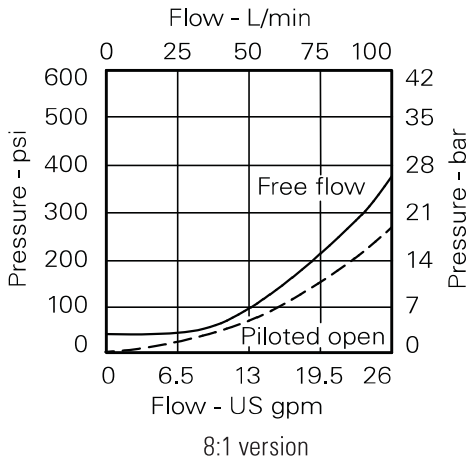
Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS)	
Rated flow	95 L/min (25 USgpm)
Max relief pressure	350 bar (5000 psi) **(35)**, 225 bar (3260 psi) **(20)**
Max load induced pressure	270 bar (4000 psi) **(35)**,160 bar (2300 psi) **(20)**
Cartridge material	Working parts hardened and ground steel. External surfaces electroless nickel plated.
Standard housing materials	Steel
Mounting position	Line mounted
Weight	3.70 kg (8.20 lbs)
Seal kit	SK814 (Nitrile) SK814V (Viton®)
Filtration	BS5540/4 Class 18/13 (25 micron nominal)
Temperature range	-30° to 90°C(-22° to +194°F)
Internal leakage	0.3 ml/min (5 dpm)
Nominal viscosity range	5 to 500 cSt

Viton is a registered trademark of E.I. DuPont.

Pressure drop



4:1 version



8:1 version

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CEECSH95 - Motion control & lock valve

Pilot assisted relief with brake shuttle
95 L/min (25 USgpm) • 270 bar (4000 psi)

Model code

1CEECSH95	–	F	6W	–	35	S	4	377
1		2	3		4	5	6	7

1 Basic code

1CEECSH95 - Cartridges and body

2 Adjustment means

F - Screw adjustment
N - Fixed - state pressure setting required.

For fixed versions add setting in 10 bar increments to end of part number. Subject to a ±10% tolerance.

3 Port size

Code	Port size	Housing number - body only
		Steel
6W	3/4" BSP Valve & Cyl Port. 1/4" BSP Brake Port	BXP15936-6W-S-377

4 Pressure range @ 4.8 L/min

Note: Code based on pressure in bar.
20 - 70-225 bar
Std setting 100 bar.
35 - 200-350 bar
Std setting 210 bar.

Std setting made at 4.8 L/min

5 Seals

S - Nitrile (For use with most industrial hydraulic oils.
SV - Viton (For high temperature and most special fluid applications made at 4.8 L/min

6 Pilot ratio

4 - 4:1 (Standard)
8 - 8:1

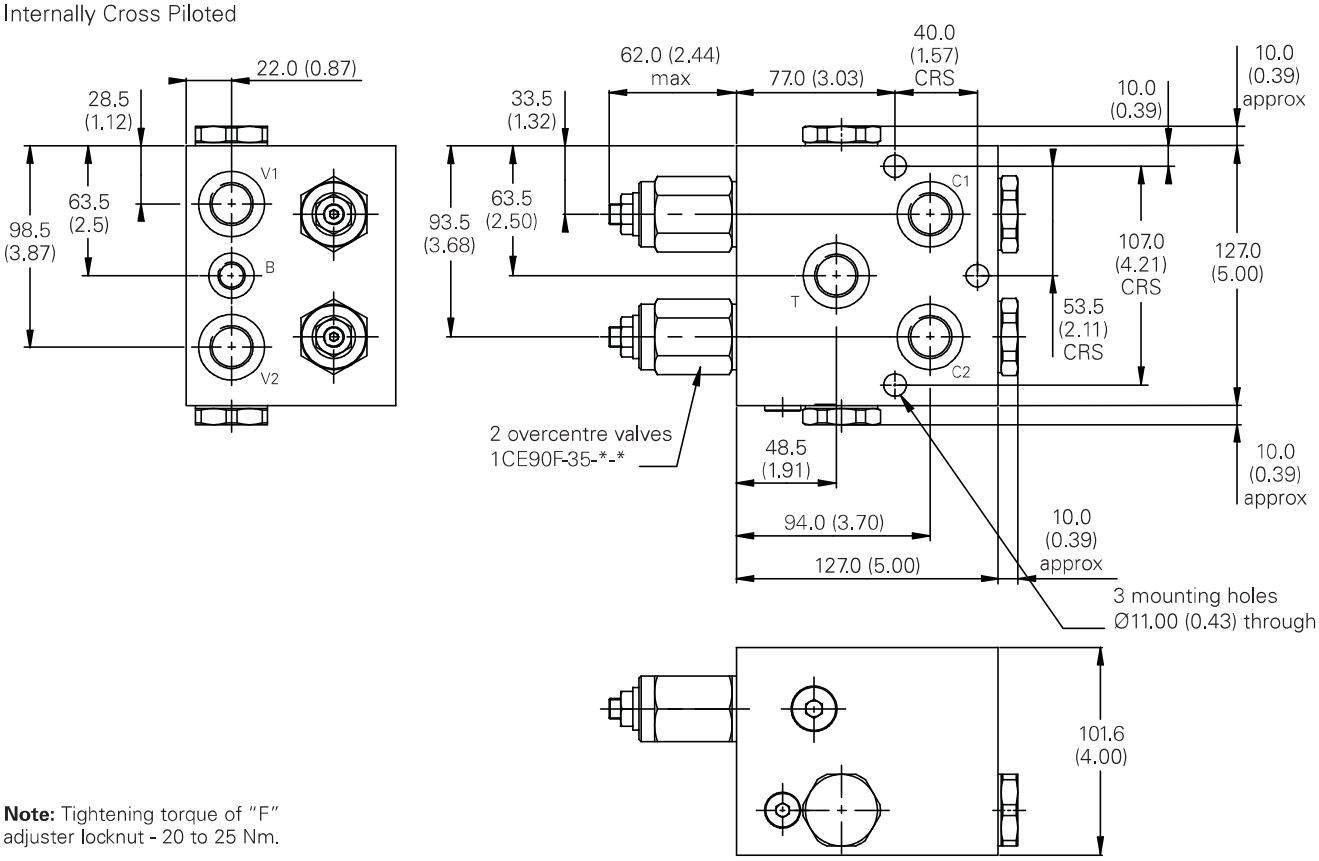
7 Body material

377 - Steel

Dimensions

mm (inch)

Complete valve
3/4" Ports
Basic Code
1CEECSH95
Internally Cross Piloted



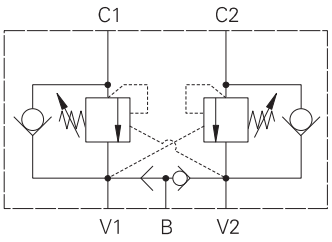
Note: Tightening torque of "F" adjuster locknut - 20 to 25 Nm.

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

F

1CEESH150 - Dual overcenter valve

Pilot assisted relief with brake shuttle
150 L/min (40 USgpm) • 270 bar (4000 psi)



Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

The pressure required to open the valve and start actuator movement can be calculated as follows:

$$\text{Pilot Pressure} = \frac{\text{(Relief Setting) - (Load Pressure)}}{\text{Pilot Ratio}}$$

Features

These valves have the excellent load control and safety features of the dual overcenter valve with the addition of a port for a brake release line. Smooth, safe performance.

Pilot ratio

3.5:1 Best suited for applications where load varies and machine structure can induce instability.

Description

Overcenter Valves give static and dynamic control of loads by regulating the flow into and out of hydraulic actuators. When installed close to or within an actuator, the overcenter valve will stop runaway in the event of hose burst and if open center directional control valves are used, will allow thermal expansion relief of the hydraulic fluid.

These dual overcenter valves also contain a brake release shuttle valve which ensures that pressure is applied to a brake release circuit regardless of whether pressure is applied to ports V1 or V2. These multifunction valves are normally used for the static and dynamic control of systems using motors or semi-rotary actuators.

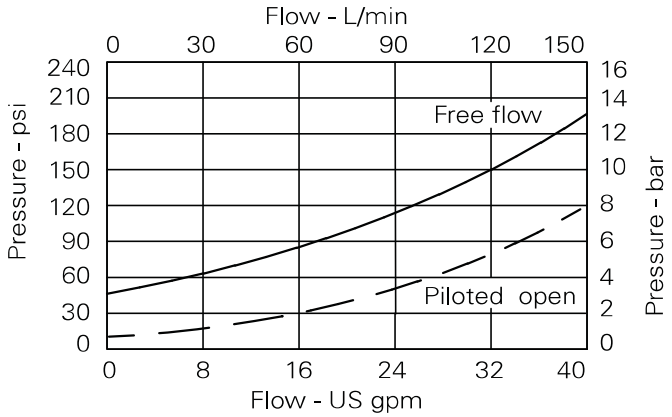
Performance data

Ratings and specifications

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS)	
Rated flow	150 L/min (40 USgpm)
Max relief pressure	350 bar (5000 psi)
Max load induced pressure	270 bar (4000 psi)
Cartridge material	Working parts hardened and ground steel. External surfaces electroless nickel plated.
Standard housing material	Steel
Mounting position	Line Mounted
Weight	3.50 kg (7.70 lbs)
Seal kit	SK818 (Nitrile) SK818V (Viton®)
Filtration	BS5540/4 Class 18/13 (25 micron nominal)
Temperature range	-30° to +90°C (-22° to +194°F)
Internal leakage	0.3 milliliters/min nominal (5 dpm)
Nominal viscosity range	5 to 500 cSt

Viton is a registered trademark of E.I. DuPont.

Pressure drop



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CEESH150 - Dual overcenter valve

Pilot assisted relief with brake shuttle
150 L/min (40 USgpm) • 270 bar (4000 psi)

Model code

1CEESH150 – F 8W – 35 S 3 377

1 2 3 4 5 6 7

1 Function

1CEESH150 - Cartridges and Body

2 Adjustment means

F - Screw adjustment

3 Port size

Code	Port size	Housing number - body only
		Steel
8W	1" BSP Valve & Cyl Port 1/4" BSP Pilot Port	CXP15933-8W-377

4 Pressure range @ 4.8 L/min

Note: Code based on pressure in bar.

35 - 70-350 bar.
Std setting 210 bar

Std setting made at 4.8 L/min

5 Seal material

S - Nitrile (For use with most industrial hydraulic oils.

SV - Viton (For high temperature and most special fluid applications

6 Pilot ratio

3 - 3.5:1

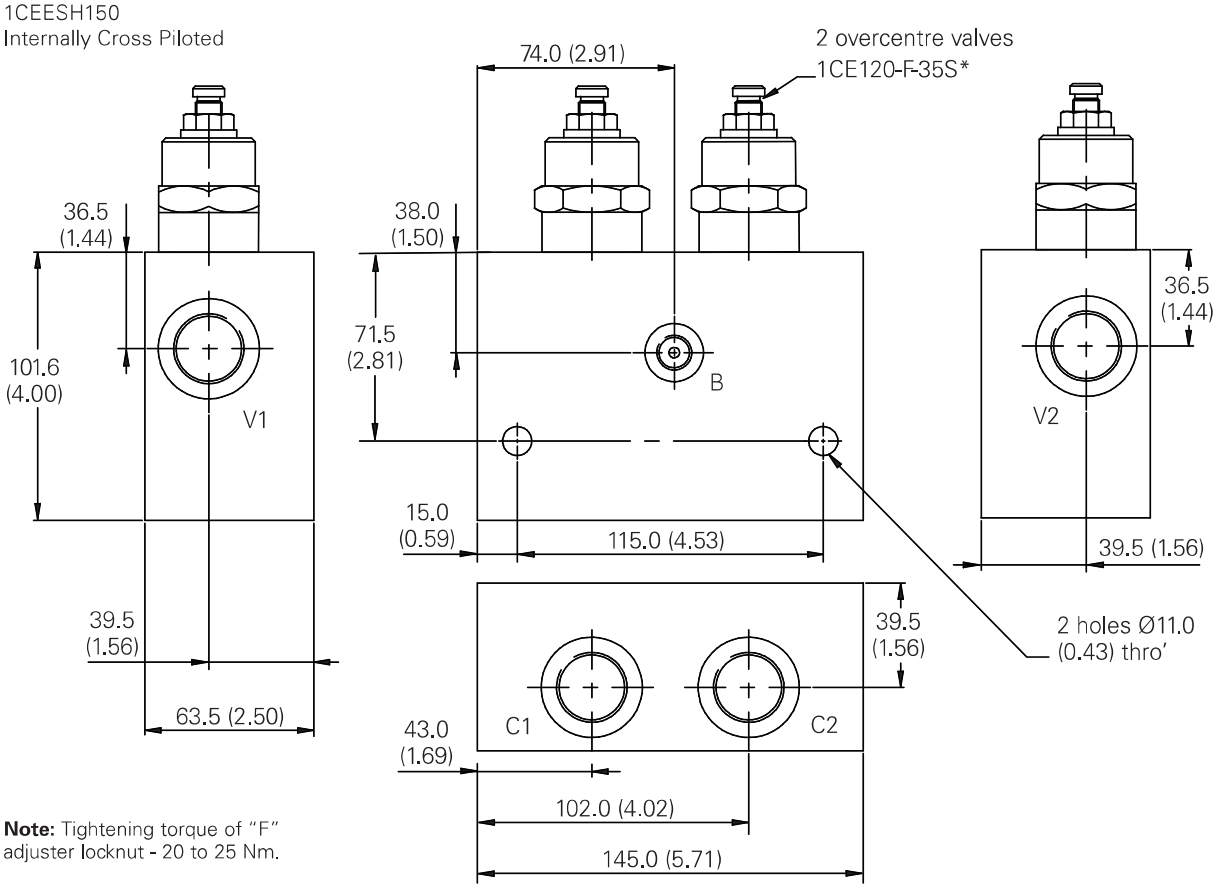
7 Body material

377 - Steel

Dimensions

mm (inch)

Complete valve
1" Ports
Basic Code
1CEESH150
Internally Cross Piloted



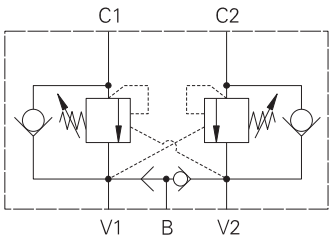
Note: Tightening torque of "F" adjuster locknut - 20 to 25 Nm.

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

F

1CEESH350 - Dual overcenter valve

Pilot assisted relief with brake shuttle
300 L/min (80 USgpm) • 270 bar (4000 psi)



Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

The pressure required to open the valve and start actuator movement can be calculated as follows:

$$\text{Pilot Pressure} = \frac{\text{(Relief Setting) - (Load Pressure)}}{\text{Pilot Ratio}}$$

Features

These valves have the excellent load control and safety features of the dual overcenter valve with the addition of a port for a brake release line. Smooth, safe performance.

Pilot ratio

3:1 Best suited for applications where load varies and machine structure can induce instability.

8:1 Best suited for applications where the load remains relatively constant.

Description

Overcenter Valves give static and dynamic control of loads by regulating the flow into and out of hydraulic actuators. When installed close to or within an actuator, the overcenter valve will stop runaway in the event of hose burst and if open center directional control valves are used, will allow thermal expansion relief of the hydraulic fluid.

These dual overcenter valves also contain a brake release shuttle valve which ensures that pressure is applied to a brake release circuit regardless of whether pressure is applied to ports V1 or V2. These multifunction valves are normally used for the static and dynamic control of systems using motors or semi-rotary actuators.

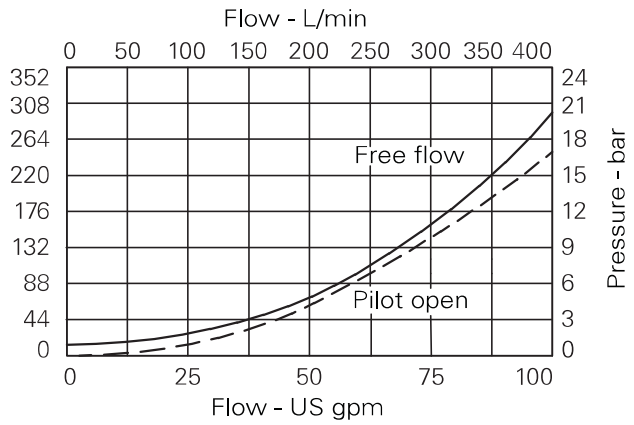
Performance data

Ratings and specifications

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS)	
Rated flow	300 L/min (80 USgpm)
Max relief pressure	350 bar (5000 psi)
Max load induced pressure	270 bar (4000 psi)
Cartridge material	Working parts hardened and ground steel. External surfaces electroless nickel plated.
Standard housing material	Steel
Mounting position	Line mounted
Weight	5.42 kg (11.94 lbs)
Seal kit	SK688 (Nitrile) SK688V (Viton®)
Filtration	BS5540/4 Class 18/13 (25 micron nominal)
Temperature range	-30°C to +90°C (-22° to +194°F)
Internal leakage	4 milliliters/min nominal (60 dpm)
Nominal viscosity range	5 to 500 cSt

Viton is a registered trademark of E.I. DuPont.

Pressure drop



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CEESH350 - Dual overcenter valve

Pilot assisted relief with brake shuttle
300 L/min (80 USgpm) • 270 bar (4000 psi)

Model code

1CEESH350 – F 10W – 35 S 3 377

1 2 3 4 5 6 7

1 Basic code

1CEESH350 - Cartridges and Body

2 Adjustment means

F - Screw adjustment

3 Port size

Code	Port size	Housing number - body only
		Steel
10W	1 1/4" BSP Valve & Cyl Port 1/4" BSP Pilot Port	CXP22297-10W-S-377

4 Pressure range @4.8 L/min

Note: Code based on pressure in bar.

35 - 70-350 bar.
Std setting 210 bar

Std setting made at 4.8 L/min

5 Seals

S - Nitrile (For use with most industrial hydraulic oils.

SV - Viton (For high temperature and most special fluid applications

6 Pilot ratio

3 - 3:1
8 - 8:1

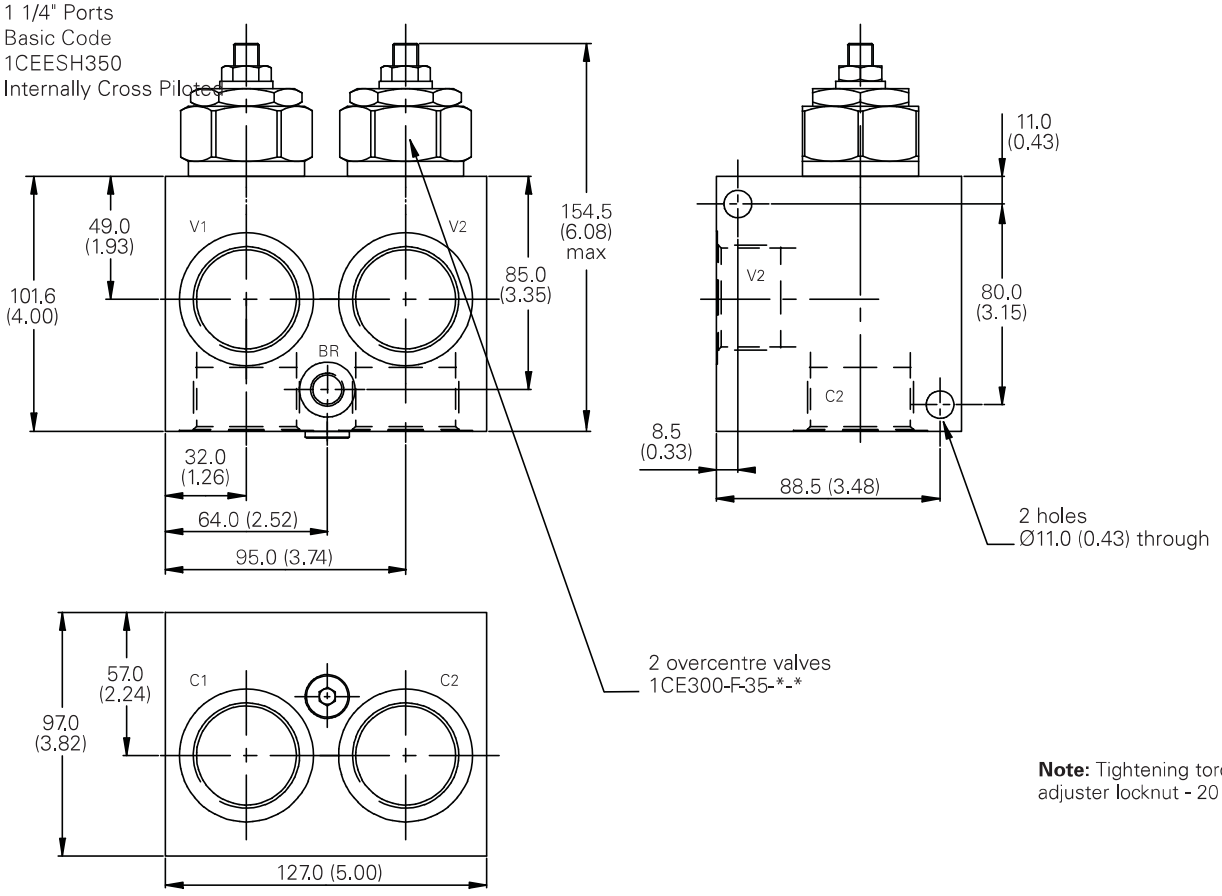
7 Body material

377 - Steel

Dimensions

mm (inch)

Complete valve
1 1/4" Ports
Basic Code
1CEESH350
Internally Cross Piloted



Note: Tightening torque of "F" adjuster locknut - 20 to 25 Nm.

F

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.