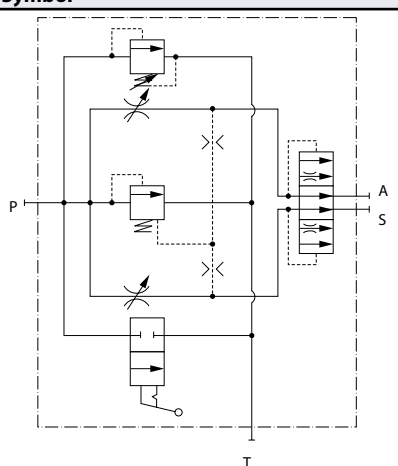
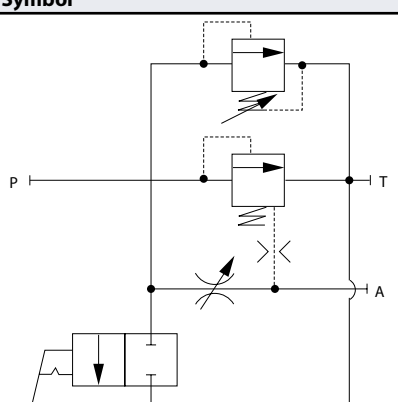
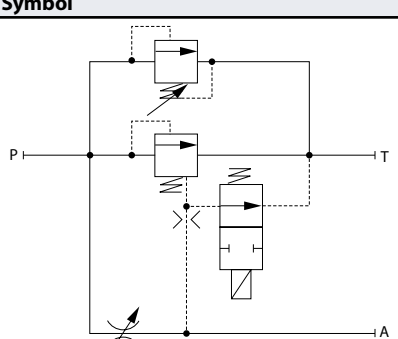


Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	2FFL12	none	Spreader valve package	114 l/min [30 US gal/min]	138 bar [2000 psi]	15.5

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	2FL12	none	Spreader valve package	114 l/min [30 US gal/min]	138 bar [2000 psi]	15.6

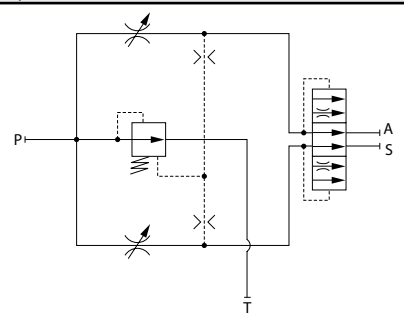
Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	2FLW86	none	Spreader valve package	114 l/min [30 US gal/min]	138 bar [2000 psi]	15.7

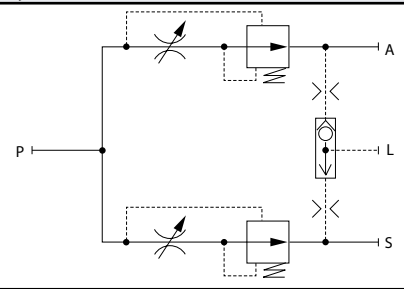
* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

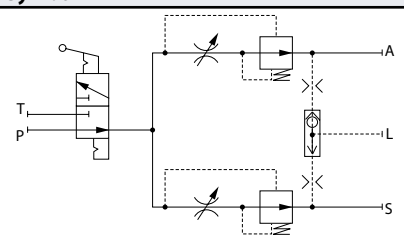
Cartridge Valves Technical Information

Spreader valves

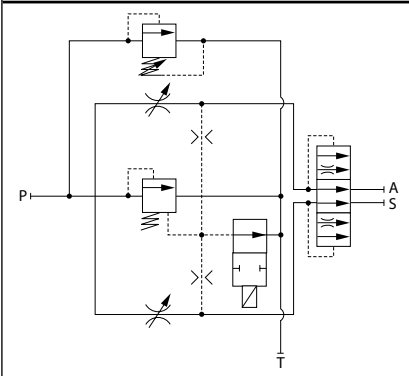
Quick reference

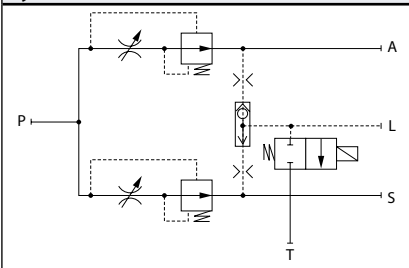
Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	2FF12	none	Spreader valve package	114 l/min [30 US gal/min]	138 bar [2000 psi]	15.8

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	2FFC12	none	Spreader valve package	57 l/min [15 US gal/min]	207 bar [3000 psi]	15.9

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	2FFLC12	none	Spreader valve package	114 l/min [30 US gal/min]	207 bar [3000 psi]	15.10

* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	2FFLW86	none	Spreader valve package	114 l/min [30 US gal/min]	138 bar [2000 psi]	15.11

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	2FFCW12	none	Spreader valve package	114 l/min [30 US gal/min]	138 bar [2000 psi]	15.12

* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.



Cartridge Valves Technical Information

Spreader valves

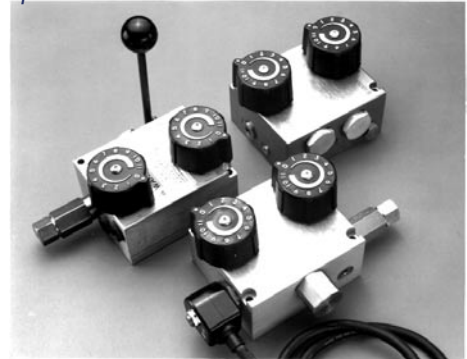
Application notes

FEATURES

Sauer-Danfoss has provided the spreader valve market with a wide variety of options. The primary uses are ice and snow control for many city, county, township, and state, sand/salt spreader vehicles. Valves have also been applied on many agricultural fertilizer spreader systems, as well as construction paving equipment. Sauer-Danfoss spreader valves offer the following features:

- Manual or remote electrical control
- Load sensing capability
- Single or dual control
- Pressure compensation
- Gasket-mounted configurations
- Adjustable and detented hand knob with minimum and maximum stops and 11 positive, easy-to-adjust positions

Spreader valves



F102 015



Cartridge Valves Technical Information

Spreader valves 2FFL12

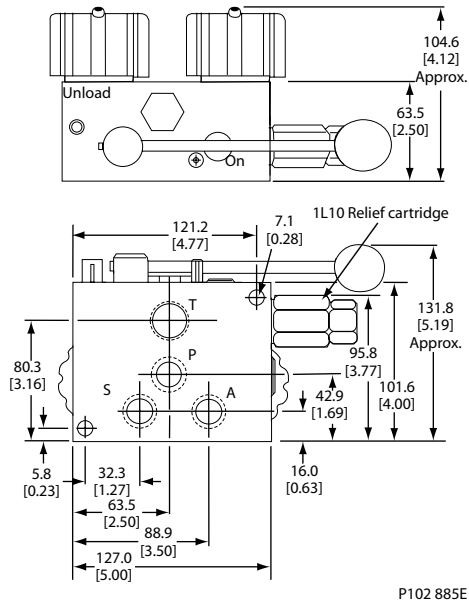
OPERATION

The valve maintains constant regulated flow to two actuators even with changes in load pressure or input flow. The pressure-compensated regulating section bypasses excess pump flow to tank. The pump operates at the highest load pressure plus control section pressure drop. The tank or bypass port must be referenced directly to tank and not to a working line. The direct-acting relief valve senses system pressure and protects the pump from shock or overload pressure surges. The built-in lever-operated two-way valve unloads system flow to tank. In the unload condition, a 8.6 bar [125 psi] check valve may be required in either the A port, the S port or both ports to reduce motor movement potential, allowing on/unload control of both regulated flows without changing either flow setting.

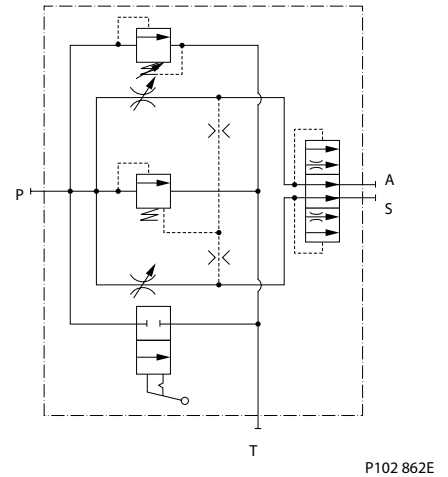
SPECIFICATIONS

Dimensions

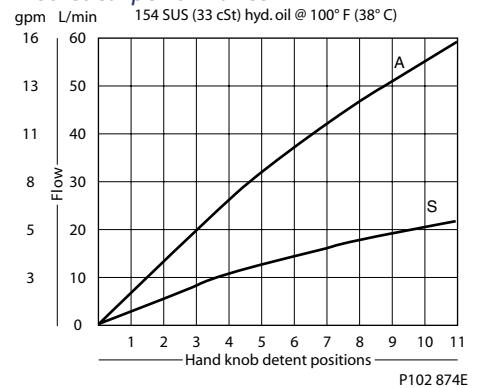
mm [in]



Schematic



Theoretical performance



Specifications

Rated pressure	138 bar [2000 psi]
Rated flow at 7 bar [100 psi]	114 l/min [30 US gal/min]
Weight	3.08 kg [6.79 lb]

ORDERING INFORMATION

2FFL12 - D 6 - 5/15 SV

Service parts

Knob kit = 158B8962
 Seal kit (knob) = 158B8858
 Seal kit (1L10) = 158G1144
 Lever kit = 158B8972

Port size

6 = 3/4 in NPTF (APT), 1/2 in NPTF (S)
 G = Gasket, consult factory
 12T = #12 SAE

Adjustment options

D = Detented hand knob

Seals

SV = Viton

Regulated flow range

S (spinner)
 5 = 0-19 L/min [0-5 gpm]
 7 = 0-26 L/min [0-7 gpm]
 10 = 0-38 L/min [0-10 gpm]
 A (auger)
 15 = 0-57 L/min [0-15 gpm]
 30 = 0-114 L/min [0-30 gpm]

P102 880E



Cartridge Valves Technical Information

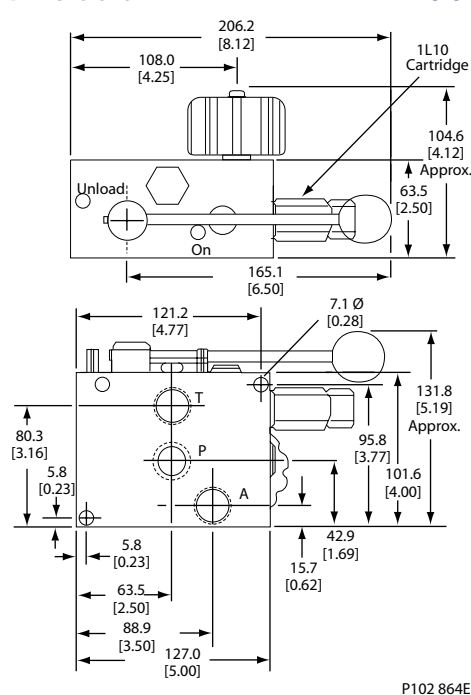
Spreader valves 2FL12

OPERATION

The valve maintains constant regulated flow even with changes in load pressure or input flow. The pressure-compensated regulating section bypasses excess pump flow to tank. The tank or bypass port must be referenced directly to tank and not to a working line. The direct acting relief valve senses system pressure and protects the pump from shock or overload pressure surges. The built-in, lever-operated, two-way valve unloads system flow to tank. This allows on-unload control of regulated flow without changing the flow setting. In the unload condition a 4.5 bar [65 psi] check valve may be required in the regulated port to reduce the potential of motor movement.

SPECIFICATIONS

Dimensions

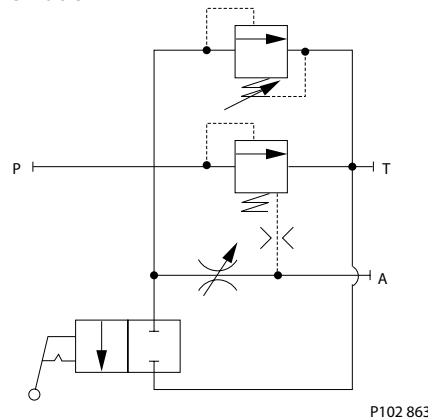


P102 864E

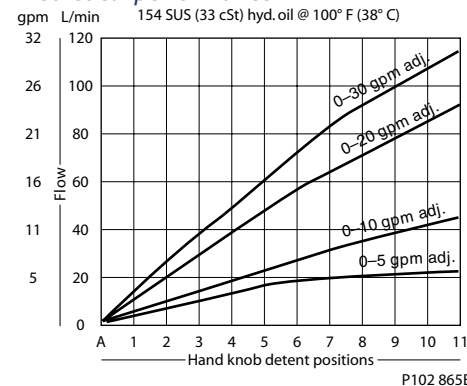
Specifications

Rated pressure	138 bar [2000 psi]
Rated flow at 7 bar [100 psi]	114 l/min [30 US gal/min]
Weight	2.90 kg [6.39 lb]

Schematic



Theoretical performance



ORDERING INFORMATION

2FL12 - D 6 - 20 SV

Service parts

Knob kit = 158B8962
Seal kit (knob) = 158B8858
Seal kit (1L10) = 158G1144
Lever kit = 158B8972

Port size

6 = 3/4 in NPTF

Adjustment options

D = Detented hand knob

Regulated flow range

10 = 0-38 L/min [0-10 gpm]
15 = 0-57 L/min [0-15 gpm]
20 = 0-76 L/min [0-20 gpm]
30 = 0-114 L/min [0-30 gpm]

Seals

SV = Viton

P102 866E



Cartridge Valves Technical Information

Spreader valves 2FLW86

OPERATION

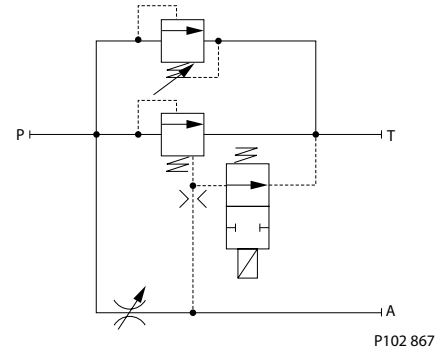
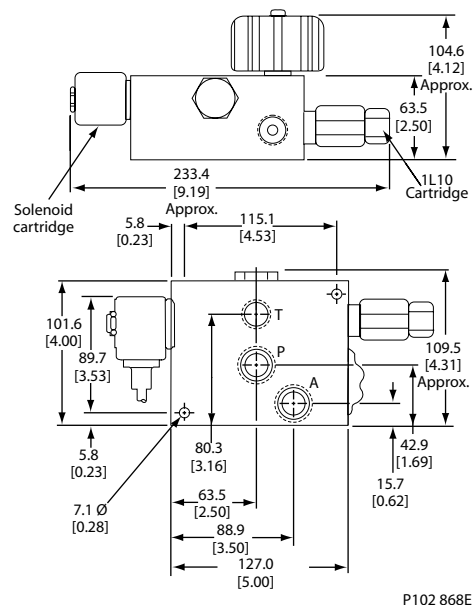
The valve maintains constant regulated flow even with changes in load pressure or input flow. The pressure-compensated regulating section bypasses excess pump flow to tank. The pump operates at load pressure plus control section pressure drop. The tank or bypass port must be referenced directly to tank and not to a working line. The direct acting relief valve senses system pressure and protects the pump from shock or overload pressure surges. The built-in, solenoid-operated, two-way valve unloads system flow to tank. In the unload condition, a 8.6 bar [125 psi] check valve may be required in the regulated port, T port or both to reduce the potential of motor movement. This allows on-unload control of regulated flow without changing the flow setting.

SPECIFICATIONS

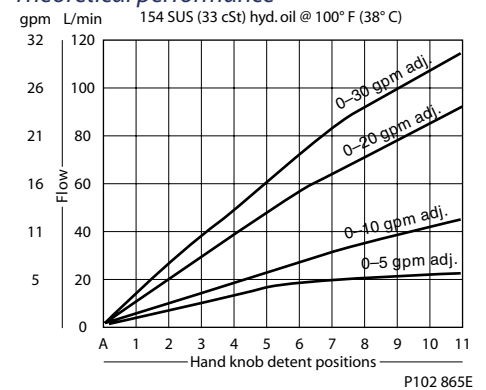
Dimensions

mm [in]

Schematic



Theoretical performance



Specifications

Rated pressure	138 bar [2000 psi]
Rated flow at 7 bar [100 psi]	114 l/min [30 US gal/min]
Weight	2.90 kg [6.39 lb]

ORDERING INFORMATION

2FLW86 - D 6 - 20 SV

Service parts

- Knob kit = 158B8962
- Seal kit (knob) = 158B8858
- Seal kit (1L10) = 158G1144
- Solenoid:
- P12VDC (12volt)
- P24VDC (24volt)

Port size

- 6 = 3/4 in NPTF
- 12T = #12 SAE

Adjustment options

- D = Detented hand knob

Regulated flow range

- 10 = 0-38 L/min [0-10 gpm]
- 15 = 0-57 L/min [0-15 gpm]
- 20 = 0-76 L/min [0-20 gpm]
- 30 = 0-114 L/min [0-30 gpm]

Seals

- SV = Viton

P102 869E

Spreader valves
2FLW86



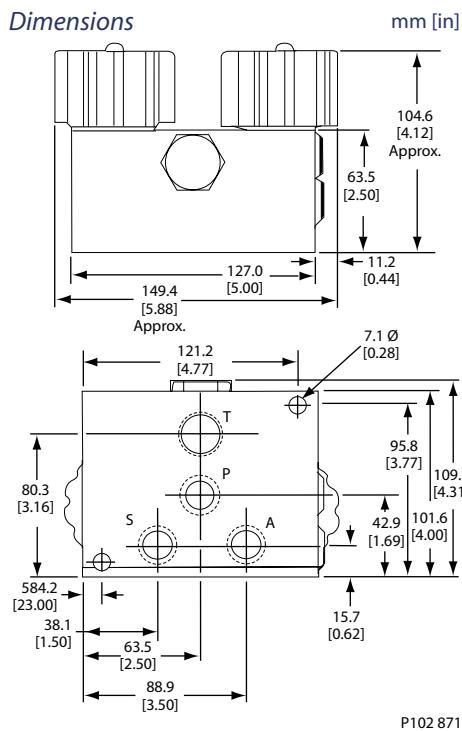
Cartridge Valves Technical Information

Spreader valves 2FF12

OPERATION

The valve maintains constant regulated flow to two actuators even with changes in load pressure or input flow. The pressure-compensated regulating section bypasses excess pump flow to tank. The tank or bypass port must be referenced directly to tank and not to a working line. A 8.6 bar [125 psi] check valve may be required in either the A port, the S port or both ports to reduce the potential of motor movement.

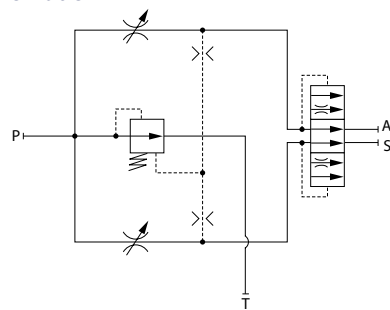
SPECIFICATIONS



Specifications

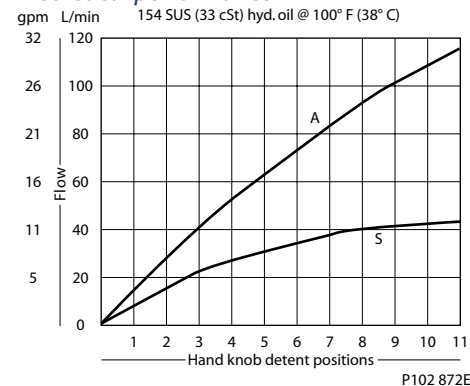
Rated pressure	138 bar [2000 psi]
Rated flow at 7 bar [100 psi]	114 l/min [30 US gal/min]
Weight	2.86 kg [6.31 lb]

Schematic



P102 870

Theoretical performance



ORDERING INFORMATION

2FF12 - D 6 - 5/15 SV

Service parts
Knob kit = 158B8962
Seal kit = 158B8858

Port size
6 = 3/4 in NPTF
12T = #12 SAE

Adjustment options
D = Detented hand knob

Regulated flow range

S (spinner)
5 = 0-19 L/min [0-5 gpm]
10 = 0-38 L/min [0-10 gpm]
A (auger)
15 = 0-57 L/min [0-15 gpm]
30 = 0-114 L/min [0-30 gpm]

Seals
SV = Viton

P102 873E



Cartridge Valves Technical Information

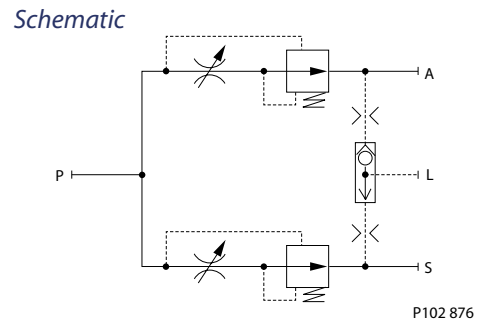
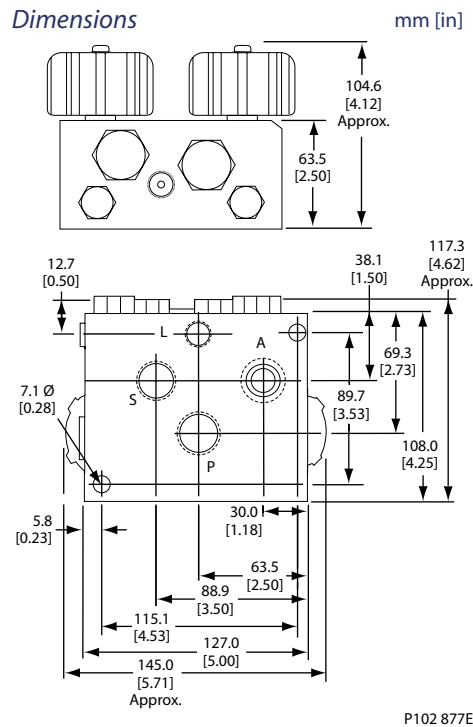
Spreader valves

2FFC12

OPERATION

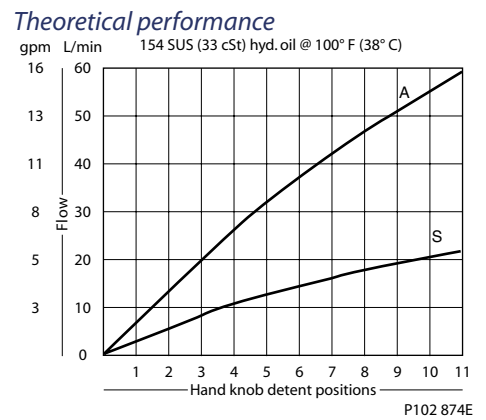
This valve maintains constant regulated flow to two actuators even with changes in load pressure. The L port senses the load pressure on both actuators and signals the pump to increase or decrease the supply flow.

SPECIFICATIONS



Specifications

Rated pressure	207 bar [3000 psi]
Rated flow at 7 bar [100 psi]	57 l/min [15 US gal/min]
Weight	2.86 kg [6.31 lb]



ORDERING INFORMATION

2FFC12 - D 6 - 5/15 SV

Service parts
 Knob kit = 158B8962
 Seal kit = 158B8858

Port size
 6 = 3/4 in NPTF (P & A)
 7 = 1/2 in NPTF (S)
 10 = 1/4 in NPTF (T)
 12T = #12 SAE

Adjustment options
 D = Detented hand knob

Regulated flow range
 S (spinner)
 5 = 0-19 L/min [0-5 gpm]
 7 = 0-26 L/min [0-7 gpm]
 10 = 0-38 L/min [0-10 gpm]
 A (auger)
 15 = 0-57 L/min [0-15 gpm]

Seals
 SV = Viton

P102 878E

Spreader valves 2FFC12



Cartridge Valves Technical Information

Spreader valves 2FFLC12

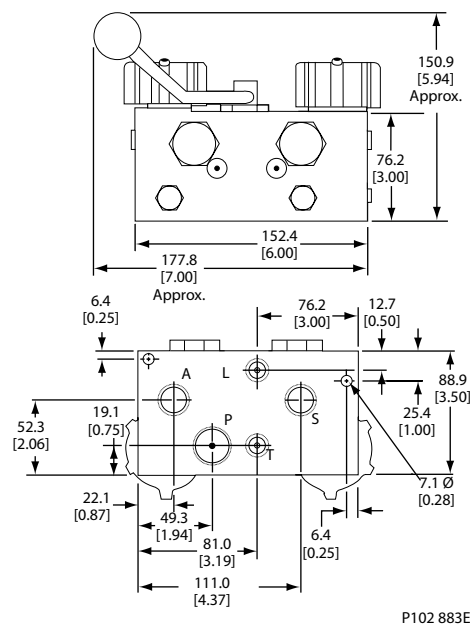
OPERATION

This valve maintains constant regulated flow to two actuators even with changes in load pressure. The L port senses the load pressure on both actuators to signal the pump to increase or decrease the supply flow. With the lever in the unload position, no load is sensed and the pump de-strokes.

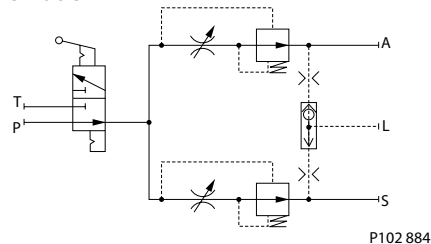
SPECIFICATIONS

Dimensions

mm [in]



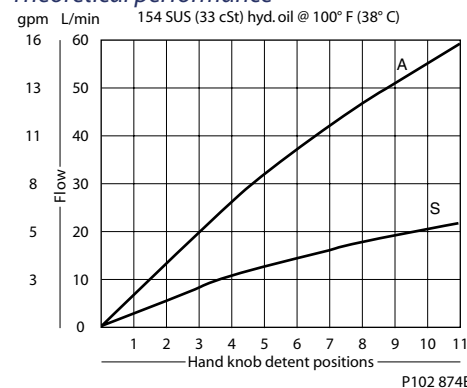
Schematic



Specifications

Rated pressure	207 bar [3000 psi]
Rated flow at 7 bar [100 psi]	114 l/min [30 US gal/min]
Weight	3.08 kg [6.79 lb]

Theoretical performance



ORDERING INFORMATION

2FFLC12 - D 6 - 5/15 SV

Service parts

Knob kit = 158B8962
Seal kit = 158B8858
Lever kit =
Consult factory

Port size

6 = 3/4 in NPTF = inlet and auger (P & A)
1/2 in NPTF = spinner (A)
1/4 in NPTF = tank load sense (T & L)
12T = #12 SAE

Adjustment options

D = Detented hand knob

Seals
SV = Viton

Regulated flow range

S (spinner)
5 = 0-19 L/min [0-5 gpm]
7 = 0-26 L/min [0-7 gpm]
10 = 0-38 L/min [0-10 gpm]
A (auger)
15 = 0-57 L/min [0-15 gpm]
30 = 0-114 L/min [0-30 gpm]

P102 879E

Spreader valves
2FFLC12



Cartridge Valves Technical Information

Spreader valves 2FFLW86

OPERATION

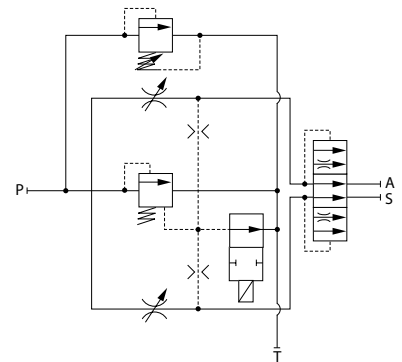
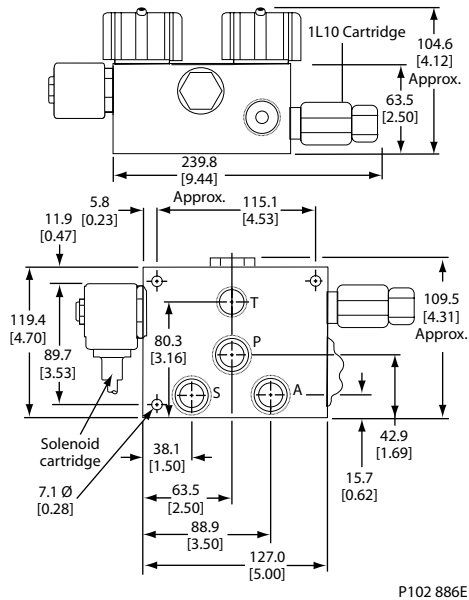
The valve maintains constant regulated flow to two actuators even with changes in load pressure or input flow. The pressure-compensated regulating section bypasses excess pump flow to tank. The pump operates at the highest load pressure plus control section pressure drop. The tank or bypass port must be referenced directly to tank and not to a working line. The direct acting relief valve senses system pressure and protects the pump from shock or overload pressure surges. The built-in, solenoid-operated, two-way valve unloads system flow to tank. In the unload condition a 8.6 bar [125 psi] check valve may be required in either the A port, the S port or both ports to reduce the potential of motor movement. This allows on-unload control of both regulated flows without changing either flow setting.

SPECIFICATIONS

Dimensions

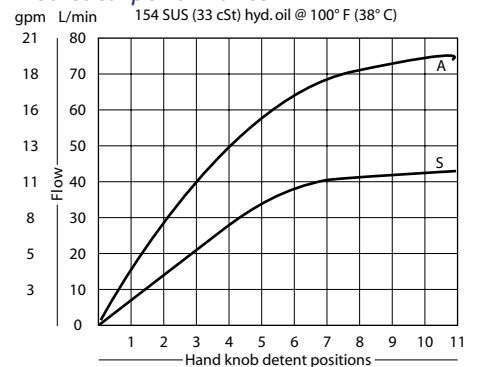
mm [in]

Schematic



P102 887

Theoretical performance



P102 875E

Specifications

Rated pressure	138 bar [2000 psi]
Rated flow at 7 bar [100 psi]	114 l/min [30 US gal/min]
Weight	3.08 kg [6.79 lb]

ORDERING INFORMATION

2FFLW86 - D 6 - 5/15 SV

Service parts

Knob kit = 158B8962
 Seal kit (knob) = 158B8858
 Seal kit (1L10) = 158G1144
 Solenoid:
 P12VDC (12volt)
 P24VDC (24volt)

Port size

6 = 3/4 in NPTF inlet, tank and auger (P, T, and A)
 1/2 in NPTF-spinner (S)
 12T = #12 SAE

Adjustment options

D = Detented hand knob

Seals

SV = Viton

Regulated flow range

S (spinner)

5 = 0-19 L/min [0-5 gpm]
 7 = 0-26 L/min [0-7 gpm]
 10 = 0-38 L/min [0-10 gpm]

A (auger)

15 = 0-57 L/min [0-15 gpm]
 30 = 0-114 L/min [0-30 gpm]

P102 881E



Cartridge Valves Technical Information

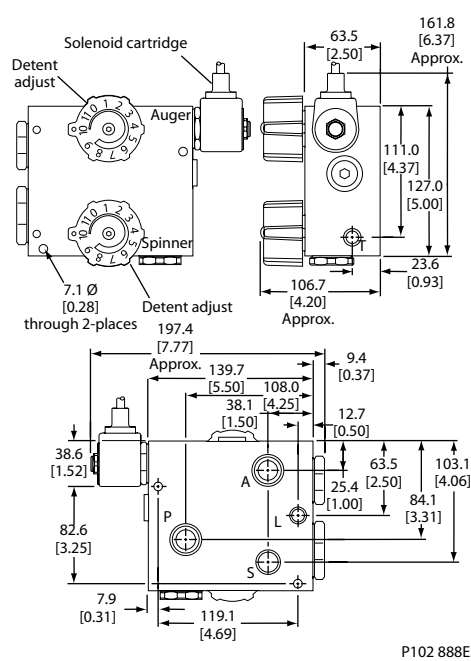
Spreader valves 2FFCW12

OPERATION

This valve maintains constant regulated flow to two actuators even with changes in load pressure. The L port senses the load pressure on both actuators to signal the pump to increase or reduce the supply flow. With the solenoid in the unload position, no load is sensed and the pump de-strokes. In the unload condition a 4.5 bar [65 psi] check valve may be required in either the A port, the S port or both ports to reduce the potential of motor movement.

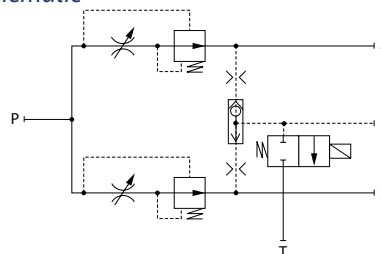
SPECIFICATIONS

Dimensions



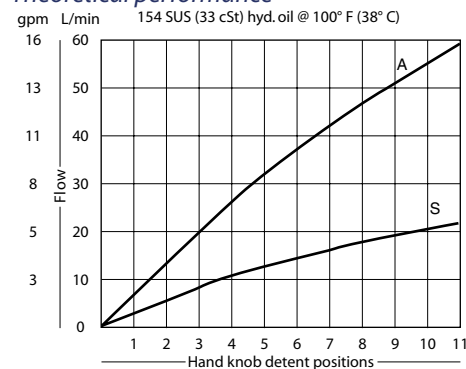
P102 888E

Schematic



P102 889

Theoretical performance



P102 874E

Specifications

Rated pressure	138 bar [2000 psi]
Rated flow at 7 bar [100 psi]	114 l/min [30 US gal/min]
Weight	3.08 kg [6.79 lb]

ORDERING INFORMATION

2FFCW12 - D 6 - 5/15 SV

Service parts

Knob kit = 158B8962
Seal kit = 158B8858
Solenoid:
P12VDC (12volt)
P24VDC (24volt)

Port size

6 = 3/4 in NPTF = inlet and auger (P & A)
1/2 in NPTF = spinner (A)
1/4 in NPTF = tank load sense (T & L)
12T = #12 SAE

Adjustment options

D = Detented hand knob

Seals

SV = Viton

Regulated flow range

S (spinner)
5 = 0-19 L/min [0-5 gpm]
7 = 0-26 L/min [0-7 gpm]
10 = 0-38 L/min [0-10 gpm]
A (auger)
15 = 0-57 L/min [0-15 gpm]
30 = 0-114 L/min [0-30 gpm]

P102 882E