

Inlet Elements

with by-pass compensator, LS relief for open center control block and solenoid operated unloading

TE-13-__-

RE 18300-13

Edition: 05.2020

Replaces: 02.2016



Description

The inlet elements TE-13-__ are employed to connect the external P, T lines to the P, T channels inside the ED elements of the Directional Valve Assembly and to connect the LS line for inlet flow control. An LS controlled 3-way compensator provides pressure compensated flow to the ED elements of the Directional Valve Assembly, any excess flow is bypassed to tank at LS pressure plus compensator spring bias. When the ED elements are in neutral position, the compensator bypasses the entire flow to tank at a bypass pressure equal to the compensator spring bias. In case the LS pressure reaches the relief pressure setting, the compensator unloads to tank the entire flow at relief pressure plus compensator spring bias. The TE-13 can be equipped with a NO or NC Solenoid Unloading VEI Cartridge, which can be employed to unload to tank the LS signal and bypasses the entire flow to tank at a bypass pressure equal to the compensator spring bias. The TE-13 is provided with non compensated bleed down orifice. The TE-13-.... is made of zinc plated cast iron. The coil S8-356 must be ordered separately (refer to RE18325-90).

Technical data

General		
TE13	kg (lbs)	3.6 (7.9)
Ambient Temperature	°C (°F)	-20....+50 (-4....+122) (NBR seals)
Hydraulic		
Maximum pressure	bar (psi)	310 (4500)
Maximum inlet flow for TE-13-__-3 version	l/min (gpm)	33 (8.7)
Maximum inlet flow for TE-13-__-5 version	l/min (gpm)	50 (13.2)
Maximum inlet flow for TE-13-__-8 version	l/min (gpm)	80 (21.1)
Maximum inlet flow for TE-13-__-0 version	l/min (gpm)	120 (31.7)
Rated flow at P1	l/min (gpm)	Variable ¹⁾
Hydraulic fluid General properties: it must have physical lubricating and chemical properties suitable for use in hydraulic systems such as, for example:		Mineral oil based hydraulic fluids HL (DIN 51524 part 1). Mineral oil based hydraulic fluids HLP (DIN 51524 part 2). For use of environmentally acceptable fluids (vegetable or polyglycol base) please consult us.
Fluid Temperature	°C (°F)	-20....+80 (-4....+176) (NBR)
Permissible degree of fluid contamination		ISO 4572: $\beta_{x \geq 75} X = 10 \dots 12$ ISO 4406: class 19/17/14 NAS 1638: class 8
Viscosity range	mm ² /s	5....420

¹⁾ The maximum regulated flow on P1 line is related both to the pressure drop of the ED valve assembled on the group and their spools size.

Note

For applications with different specifications consult us

Ordering details

01	02	03	04	05	06	07	08	09	10
TE	-	13	-		-		-		CI

Family

01	Inlet Elements	TE
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Configuration

02	Function with fixed displacement pump (open centre)	13
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Ports

03	G 1/2 DIN 3852	03
	G 3/4 DIN 3852	04
	7/8-14 UNF-2B (SAE10)	57

Spool dimension

04	Maximum inlet flow 33 l/min (8.7 gpm)	3
	Maximum inlet flow 50 l/min (13.2 gpm)	5
	Maximum inlet flow 80 l/min (21.1 gpm)	8
	Maximum inlet flow 120 l/min (31.7 gpm)	0

Pressure Relief range

05	25-120bar (350-1750 psi)	1
	40-200bar (580-2900 psi)	2
	200-310bar (2900-4500 psi)	3

Compensator Cracking Pressure

06	14 bar (203 psi) ¹⁾	14
	18 bar (261 psi)	18
	Adjustable 8-18 bar (116-261 psi)	R8
	Standard setting 10 bar (145psi)	
	Adjustable 10-18 bar (116-261 psi) with locking option	BR
	Standard setting 12 bar (174 psi) ²⁾	

LS bleed down orifice

07	Diam. 0.3 (Ø0.5+wire0.4) ¹⁾	C
	Diameter 0.4	E
	Diameter 0.5	G

Unloading Valve

08	Without valve (ordered separately)	0
	Standard VEI normally open	A
	Standard VEI normally closed	C
	Plugged	P

Pilot Restrictor

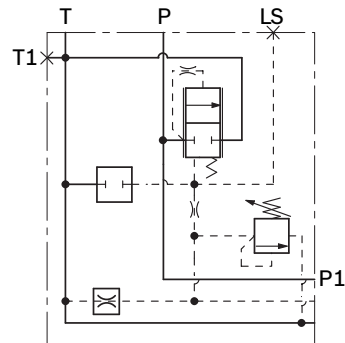
09	Standard	0I
	STR14CI ³⁾	CI

Material

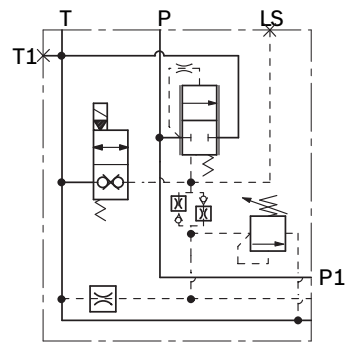
10	Cast Iron	CI
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Symbol

Without unloading valve and fixed pilot restrictor



With unloading valve and STR pilot restrictor



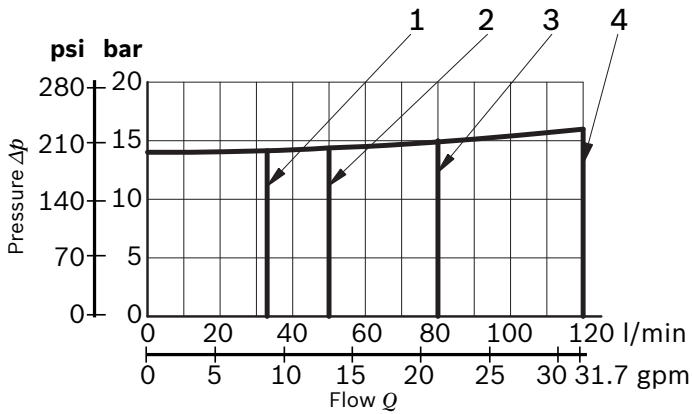
¹⁾ Recommended version.

²⁾ Suggested for open/closed center configuration.

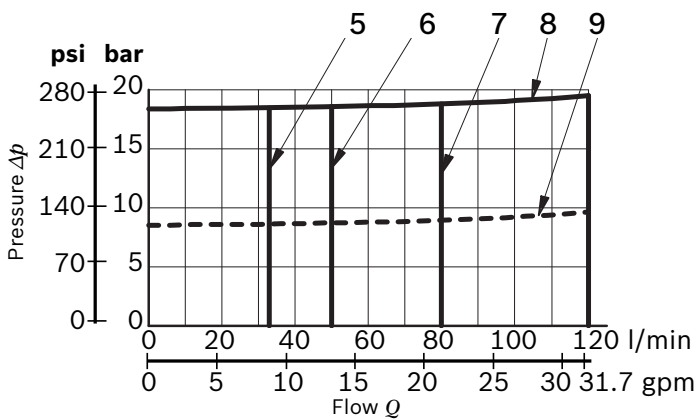
³⁾ STR14CI not available for TE-13 with SAE 10 ports.

Characteristic curves

Pressure drop trough compensator



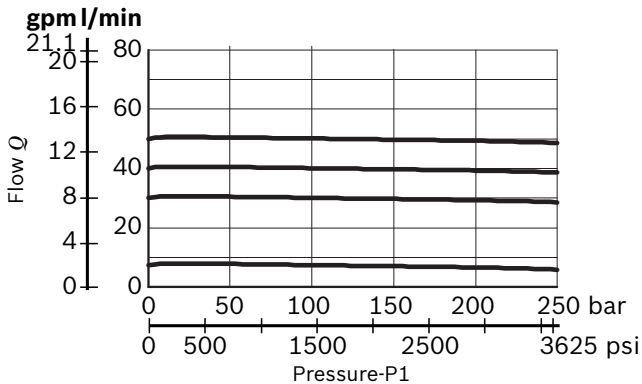
Model	Curve no.
TE-13-_-3- 14 Version	1
TE-13-_-5- 14 Version	2
TE-13-_-8- 14 Version	3
TE-13-_-0- 14 Version	4



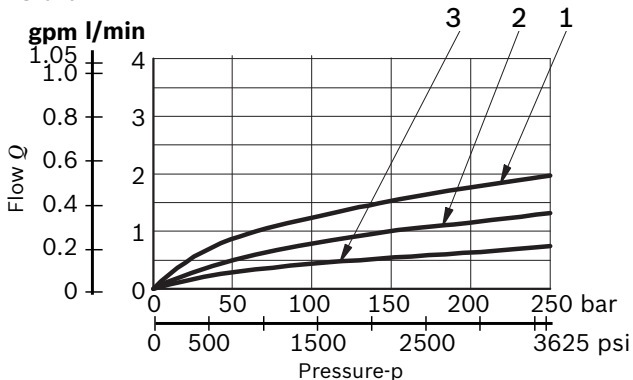
Model	Curve no.
TE-13-_-3- 18/R8 Version	5
TE-13-_-5- 18/R8 Version	6
TE-13-_-8- 18/R8 Version	7
TE-13-_-0- 18/R8 Version	8
TE-13-_-0- R8 lowest adjustable setting	9

Measured with hydraulic fluid ISO-VG32 at 45° ±5 °C (113° ±9 °F); ambient temperature 20 °C (68 °F).

Flow rate compensation (P1)



LS drain



Fixed orifice	Curve no.
Ø0.5mm	1
Ø0.4mm	2
Ø0.3mm	3

Technical drawings of the 3000 Series Hydraulic Valve, showing various views and dimensions in both metric and imperial units.

Top View Dimensions:

- Overall width: 80 (3.15)
- Distance from left edge to center of port 9: 65 (2.56)
- Distance from center of port 9 to center of port 8: 45.5 (1.79)
- Distance from top edge to center of port 9: 22.8 (0.90)
- Distance from top edge to center of port 8: 52.8 (2.08)
- Distance from top edge to center of port 10: 17.5 (0.69)
- Distance from center of port 10 to center of port 11: 13.3 (0.52)
- Distance from center of port 10 to center of port 12: 101 (3.98)
- Distance from center of port 10 to center of port 13: 29.8 (1.17)

Side View Dimensions:

- Overall height: 46 (1.81)
- Distance from left edge to center of port 10: 37.8 (1.49)
- Distance from left edge to center of port 11: 65.5 (2.58)
- Distance from left edge to center of port 12: 65 (2.56)
- Distance from left edge to center of port 13: 15 (0.59)
- Distance from left edge to center of port 14: 12 (0.47)
- Distance from left edge to center of port 15: 49 (1.93)
- Distance from left edge to center of port 16: 39 (1.54)
- Distance from left edge to center of port 17: 13 (0.51)
- Distance from left edge to center of port 18: 30.5 (1.20)
- Distance from left edge to center of port 19: 1.5 (0.06)
- Distance from left edge to center of port 20: 1.5 (0.06)

Bottom View Dimensions:

- Overall width: 182.8 (7.2)
- Distance from left edge to center of port 10: 29 (1.14)
- Distance from left edge to center of port 11: 58.9 (2.32)
- Distance from left edge to center of port 12: 58.9 (2.32)
- Distance from left edge to center of port 13: 182.8 (7.2)
- Distance from left edge to center of port 14: 13 (0.51)
- Distance from left edge to center of port 15: 1.5 (0.06)
- Distance from left edge to center of port 16: 6 (1.4)
- Distance from left edge to center of port 17: 2.6 (0.10)
- Distance from left edge to center of port 18: 1.5 (0.06)
- Distance from left edge to center of port 19: 1.5 (0.06)

Port Dimensions:

- Port 1: $\varnothing 14$ (0.55)
- Port 2: $\varnothing 8$ (0.35)
- Port 3: $\varnothing 4$ (0.16)
- Port 4: $\varnothing 7$ (0.34)
- Port 5: $\varnothing 23.9$ (0.94)
- Port 6: $\varnothing 35$ (1.38)
- Port 7: $\varnothing 15.6$ (0.61)
- Port 8: $\varnothing 1.5$ (0.06)
- Port 9: $\varnothing 1.5$ (0.06)
- Port 10: $\varnothing 1.5$ (0.06)
- Port 11: $\varnothing 1.5$ (0.06)
- Port 12: $\varnothing 1.5$ (0.06)
- Port 13: $\varnothing 1.5$ (0.06)
- Port 14: $\varnothing 1.5$ (0.06)
- Port 15: $\varnothing 1.5$ (0.06)
- Port 16: $\varnothing 1.5$ (0.06)
- Port 17: $\varnothing 1.5$ (0.06)
- Port 18: $\varnothing 1.5$ (0.06)
- Port 19: $\varnothing 1.5$ (0.06)
- Port 20: $\varnothing 1.5$ (0.06)

Thread Specifications:

- Port 1: 7/8-14 UNF (SAE10)
- Port 2: 9/16-18 UNF (SAE6)
- Port 3: 1/8-18 UNF (SAE10)
- Port 4: 1/8-18 UNF (SAE10)
- Port 5: 1/8-18 UNF (SAE10)
- Port 6: 1/8-18 UNF (SAE10)
- Port 7: 1/8-18 UNF (SAE10)
- Port 8: 1/8-18 UNF (SAE10)
- Port 9: 1/8-18 UNF (SAE10)
- Port 10: 1/8-18 UNF (SAE10)
- Port 11: 1/8-18 UNF (SAE10)
- Port 12: 1/8-18 UNF (SAE10)
- Port 13: 1/8-18 UNF (SAE10)
- Port 14: 1/8-18 UNF (SAE10)
- Port 15: 1/8-18 UNF (SAE10)
- Port 16: 1/8-18 UNF (SAE10)
- Port 17: 1/8-18 UNF (SAE10)
- Port 18: 1/8-18 UNF (SAE10)
- Port 19: 1/8-18 UNF (SAE10)
- Port 20: 1/8-18 UNF (SAE10)

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|--|---|
| 1 Flange specifications for coupling to the ED Directional Valve Elements. | 7 Test point LS port SAE6, inlet element TE-13-57-... |
| 2 For tie rod and tightening torque information see data sheet RE 18301-90. | 8 Pressure relief cartridge VMD1020, with screw type adjuster. |
| 3 Hydraulic ports P and T G1/2, inlet elements TE-13-03-... | 9 Unloading valve CA-08A-2N cavity plug TE-13-...-...-P-. |
| 4 Hydraulic ports P and T G3/4, inlet elements TE-13-04-... | 10 Solenoid Unloading cartridge VEI-8A-2T-06... type. |
| 5 Test point LS port G1/4, inlet elements TE-13-03-...and TE-13-04. | 11 VEI Coil S8-356 ordered separately. |
| 6 Hydraulic ports P and T SAE10, inlet element TE-13-57-... | 12 Both adjustable cracking pressure version (R8) and locking option (BR). |
| | 13 Maximum torque of the nut 5-6 Nm (R8 and BR). |
| | 14 Maximum torque of the locking screw (BR) 9-10 Nm. |

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Subject to change.