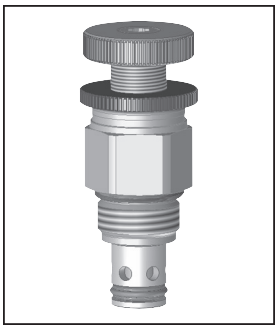
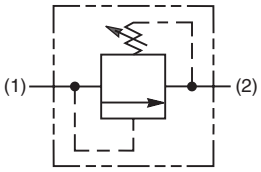
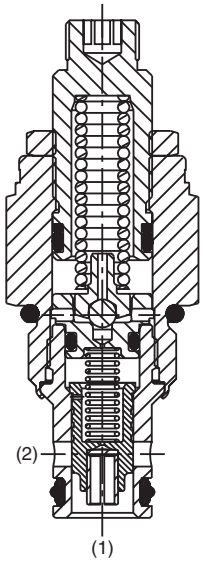
General Description

Pilot Operated Spool-Type Relief Valve
For additional information see
Technical Tips on pages PC1-PC6.







Features

- Hardened, precision ground parts for durability
- Low profile adapter for minimal space requirements
- Fully guided pilot for more consistent reseat
- Steel adapters are coated with yellow zinc dichromate for protection from salt spray
- Polyurethane “D”-Ring eliminates backup rings and prevents hydrolysis
- Internal screening protects pilot spring from debris

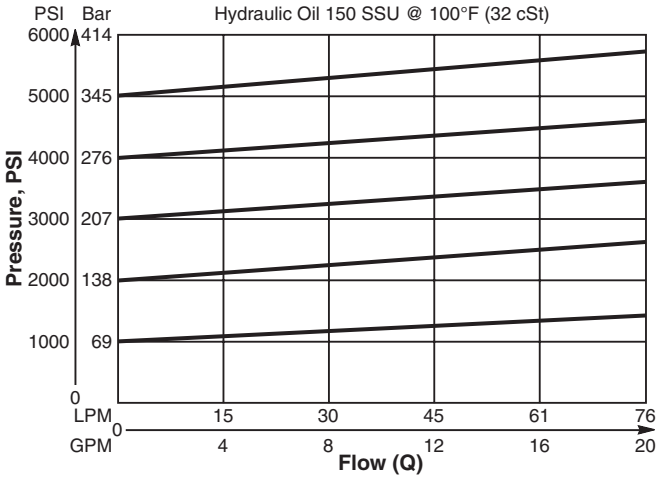
Specifications

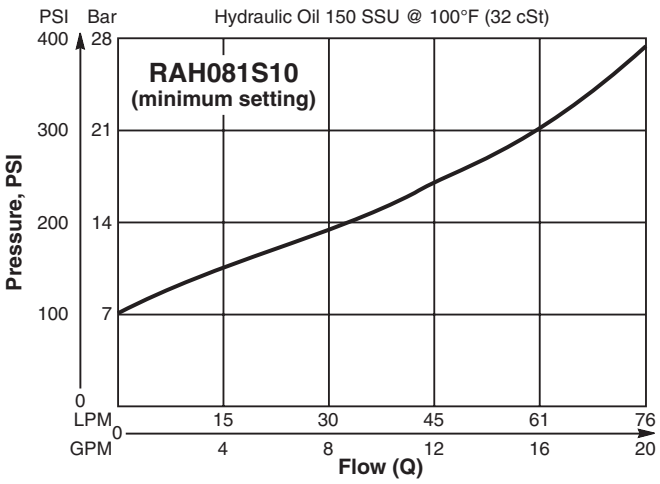
Rated Flow	75.8 LPM (20 GPM)
Maximum Inlet Pressure	380 Bar (5500 PSI)
Maximum Pressure Setting	350 Bar (5000 PSI)
Maximum Tank Pressure	350 Bar (5000 PSI)
Reseat Pressure	90% of crack pressure
Leakage at 150 SSU (32 cSt)	5 cc per 100 PSI (6.8 Bar) setting
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range/Seals	-45°C to +93.3°C (“D”-Ring) (-50°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
Fluid Compatibility/ Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Filtration	ISO Code 16/13, SAE Class 4 or better
Approx. Weight	.09 kg (.20 lbs.)
Cavity	C08-2 (See BC Section for more details)
Form Tool	Rougher None Finisher NFT08-2F

Performance Curves

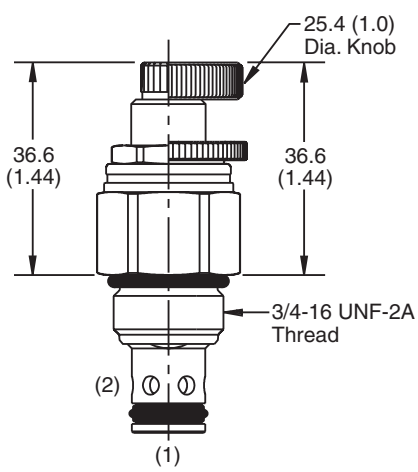
Flow vs. Inlet Pressure

(Pressure rise through cartridge only)

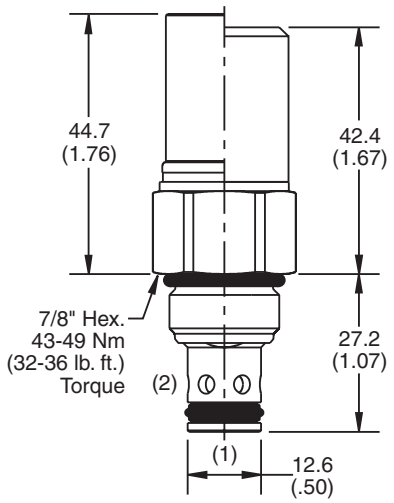




Dimensions Millimeters (Inches)



Screw/Knob Version



Fixed Cap/Tamper Resistant Version

THIRD-ANGLE PROJECTION

Ordering Information

RAH081							
08 Size Pilot Operated Relief Valve	Adjustment Style	Pressure Range	Seals	—	Optional Pressure Setting	Body Material	Port Size

Code	Adjustment Style / Kit No.
F	Fixed style, preset at factory.
K	Knob Adjust (717784-10)
S	Screw Adjust
T	Tamper Resistant Cap (717943)

Code	Pressure Range
10	6.9 - 69 Bar (100 - 1000 PSI) Standard Setting: 34.5 Bar (500 PSI) @ crack pressure, approximately .95 LPM (.25 GPM)
20	6.9 - 138 Bar (100 - 2000 PSI) Standard Setting: 69 Bar (1000 PSI) @ crack pressure, approximately .95 LPM (.25 GPM)
30	13.8 - 207 Bar (200 - 3000 PSI) Standard Setting: 103.5 Bar (1500 PSI) @ crack pressure, approximately .95 LPM (.25 GPM)
50	13.8 - 345 Bar (200 - 5000 PSI) Standard Setting: 172.4 Bar (2500 PSI) @ crack pressure, approximately .95 LPM (.25 GPM)

Code	Seals / Kit No.
Omit	"D"-Ring / (SK08-2)
N	Nitrile / (SK08-2N)
V	Fluorocarbon / (SK08-2V)

Optional Pressure Setting
Pressure ÷ 10 i.e. 235 = 2350 PSI (Omit if standard setting is used) Setting Range: 100 to 5000 PSI All settings at crack pressure, approximately .95 LPM (.25 GPM)

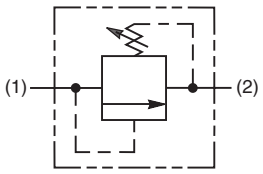
Code	Body Material
Omit	Steel
A	Aluminum

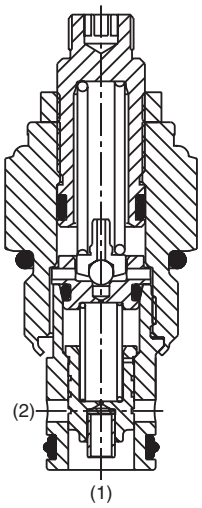
Code	Port Size	Body Part No.
Omit	Cartridge Only	
4P	1/4″ NPTF	(B08-2-*4P)
6P	3/8″ NPTF	(B08-2-*6P)
4T	SAE-4	(B08-2-*4T)
6T	SAE-6	(B08-2-*6T)
6B	3/8″ BSPG	(B08-2-*6B)

**** Add "A" for aluminum, omit for steel.***

General Description

Pilot Operated Spool-Type Relief Valve
For addition information see Technical Tips on pages PC1-PC6.





Features

- Hardened, precision ground parts for durability
- Low profile adapter for minimal space requirements
- Fully guided poppet for more consistent reseat
- Steel adapters are coated with yellow zinc dichromate for protection from salt spray
- Polyurethane “D”-Ring eliminates backup rings and prevents hydrolysis
- Internal screening protects pilot spring from debris

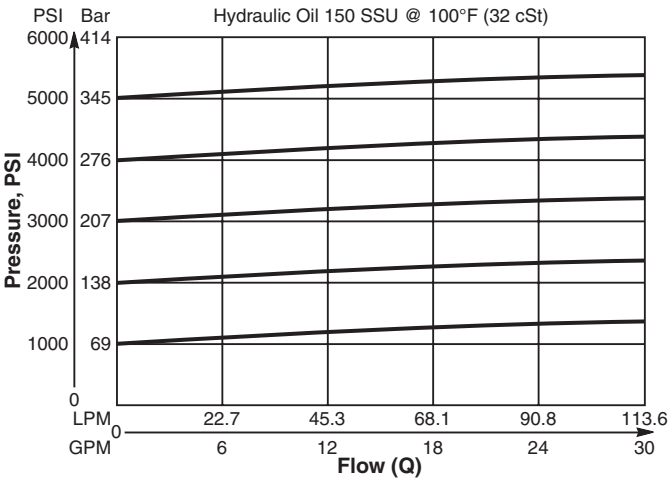
Specifications

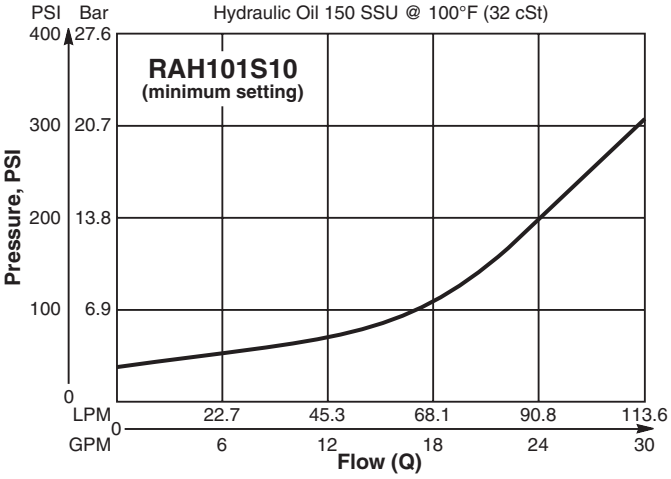
Rated Flow	113 LPM (30 GPM)
Maximum Inlet Pressure	380 Bar (5500 PSI)
Maximum Pressure Setting	350 Bar (5000 PSI)
Maximum Tank Pressure	350 Bar (5000 PSI)
Reseat Pressure	90% of crack pressure
Leakage at 150 SSU (32 cSt)	5 cc per 100 PSI (6.8 Bar) setting
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range/Seals	-45°C to +93.3°C (“D”-Ring) (-50°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
Fluid Compatibility/ Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Filtration	ISO Code 16/13, SAE Class 4 or better
Approx. Weight	.23 kg (.50 lbs.)
Cavity	C10-2 (See BC Section for more details)
Form Tool	Rougher None Finisher NFT10-2F

Performance Curves

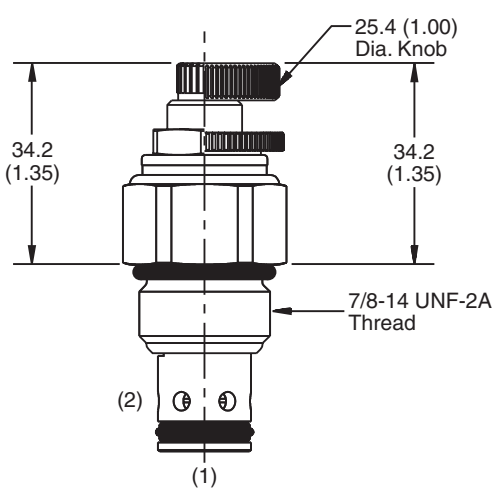
Flow vs. Inlet Pressure

(Pressure rise through cartridge only)

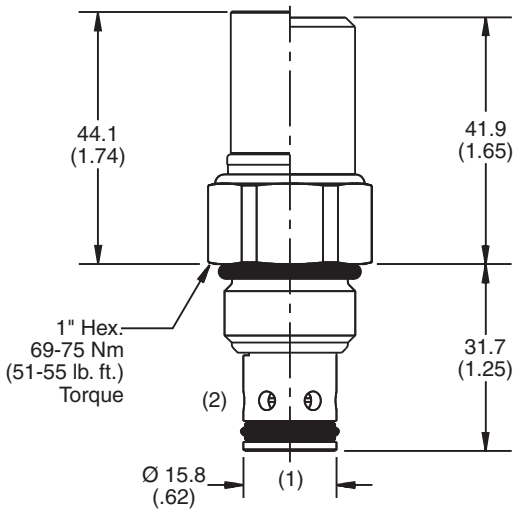




Dimensions Millimeters (Inches)



Screw/Knob Version



Fixed Cap/Tamper Resistant Version

THIRD-ANGLE PROJECTION

Ordering Information

RAH101				—		—		
10 Size Pilot Operated Relief Valve	Adjustment Style	Pressure Range	Seals		Optional Pressure Setting		Body Material	Port Size

Code	Adjustment Style / Kit No.
F	Fixed style, preset at factory.
K	Knob Adjust (717784-10)
S	Screw Adjust
T	Tamper Resistant Cap (718083)

Code	Pressure Range
10	6.9 - 69 Bar (100 - 1000 PSI) Standard Setting: 34.5 Bar (500 PSI) @ crack pressure, approximately .95 LPM (.25 GPM)
20	6.9 - 138 Bar (100 - 2000 PSI) Standard Setting: 69 Bar (1000 PSI) @ crack pressure, approximately .95 LPM (.25 GPM)
30	13.8 - 207 Bar (200 - 3000 PSI) Standard Setting: 103.5 Bar (1500 PSI) @ crack pressure, approximately .95 LPM (.25 GPM)
50	13.8 - 345 Bar (200 - 5000 PSI) Standard Setting: 172.4 Bar (2500 PSI) @ crack pressure, approximately .95 LPM (.25 GPM)

Code	Seals / Kit No.
Omit	"D"-Ring / (SK10-2)
N	Nitrile / (SK10-2N)
V	Fluorocarbon / (SK10-2V)

Optional Pressure Setting
Pressure ÷ 10 i.e. 235 = 2350 PSI (Omit if standard setting is used) Setting Range: 100 to 5000 PSI All settings at crack pressure, approximately .95 LPM (.25 GPM)

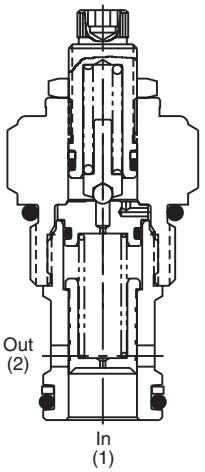
Code	Body Material
Omit	Steel
A	Aluminum

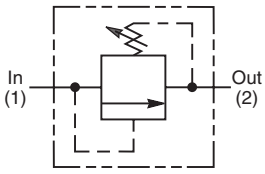
Code	Port Size	Body Part No.
Omit	Cartridge Only	
4P	1/4″ NPTF	(B10-2-*4P)
6P	3/8″ NPTF	(B10-2-*6P)
8P	1/2″ NPTF	(B10-2-*8P)
6T	SAE-6	(B10-2-*6T)
8T	SAE-8	(B10-2-*8T)
T8T	SAE-8	(B10-2-T8T)†
6B	3/8″ BSPG	(B10-2-6B)†

**** Add "A" for aluminum, omit for steel.***
† Steel body only.

General Description

Pilot Operated Spool-Type Relief Valve. For additional information see Technical Tips on pages PC1-PC6.





Features

- Low override curve
- Ball-type pilot for added stability
- High accuracy - pilot operated design
- Hardened, precision ground parts for durability
- Compact size for reduced space requirements
- All external parts have yellow zinc dichromate. This coating is ideal for salt spray applications.

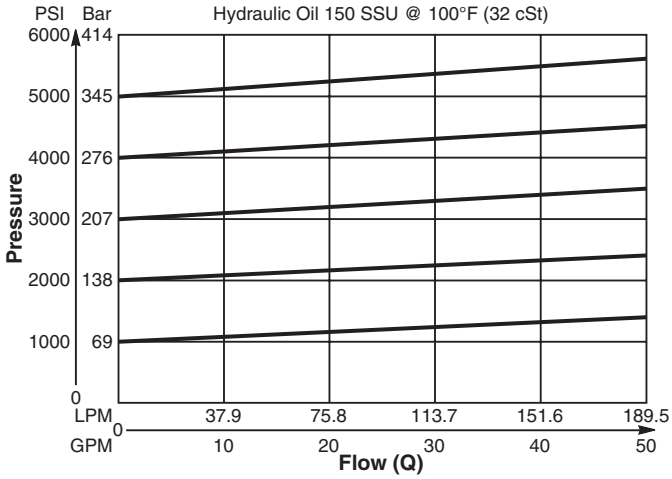
Specifications

Rated Flow	189.5 LPM (50 GPM)
Maximum Inlet Pressure	380 Bar (5500 PSI)
Maximum Pressure Setting	350 Bar (5000 PSI)
Reseat Pressure	80% of crack pressure
Leakage at 150 SSU (32 cSt)	82 cc/min. (5 cu. in./min.) @ 75% of crack pressure
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range/Seals	-40°C to +93.3°C (Nitrile) (-40°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
Fluid Compatibility/ Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Filtration	ISO Code 16/13, SAE Class 4 or better
Approx. Weight	.22 kg (.48 lbs.)
Cavity	C12-2
Form Tool	Rougher None Finisher NFT12-2F

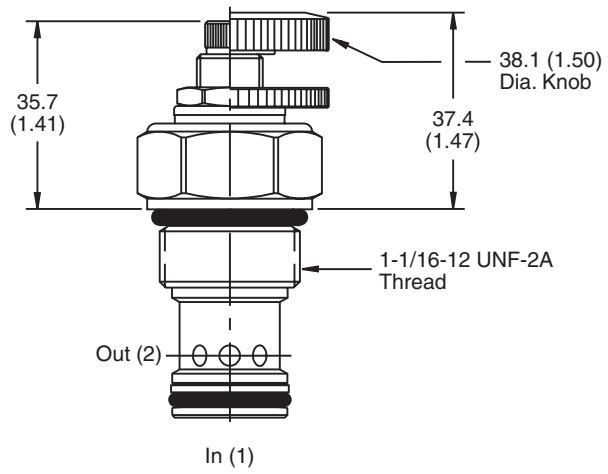
Performance Curve

Flow vs. Inlet Pressure

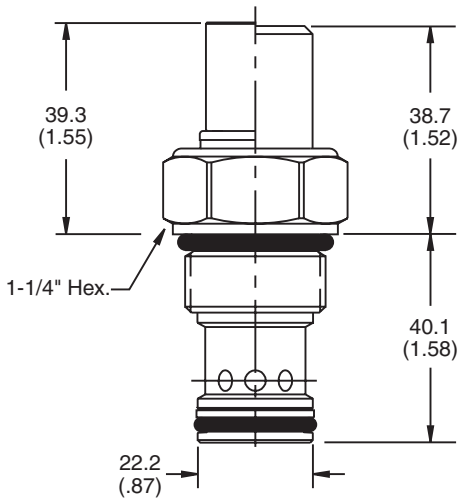
(Pressure rise through cartridge only)



Dimensions Millimeters (Inches)



Screw/Knob Version



Fixed Cap/Tamper Resistant Version

THIRD-ANGLE PROJECTION

Ordering Information

RAH121 — [ ] — [ ] — [ ] — [ ] — [ ] — [ ]

12 Size Pilot Operated Relief Valve	Adjustment Style	Pressure Range	Seals	Optional Pressure Setting	Body Material	Port Size

Code	Adjustment Style / Kit No.
F	Fixed style, preset at factory.
K	Knob Adjust (717784-15)
S	Screw Adjust
T	Tamper Resistant Cap (717785)

Code	Pressure Range
10	6.9 - 69 Bar (100 - 1000 PSI) Standard Setting: 34.5 Bar (500 PSI) @ 11.3 LPM (3 GPM)
20	13.8 - 138 Bar (200 - 2000 PSI) Standard Setting: 69 Bar (1000 PSI) @ 11.3 LPM (3 GPM)
30	20.7 - 207 Bar (300 - 3000 PSI) Standard Setting: 103.5 Bar (1500 PSI) @ 11.3 LPM (3 GPM)
50	34.5 - 345 Bar (500 - 5000 PSI) Standard Setting: 172.4 Bar (2500 PSI) @ 11.3 LPM (3 GPM)

Code	Seals / Kit No.
Omit	Nitrile / (SK12-2)
V	Fluorocarbon / (SK12-2V)

Optional Pressure Setting
Pressure ÷ 10 i.e. 235 = 2350 PSI (Omit if standard setting is used) Setting Range: 100 to 5000 PSI All settings at 11.3 LPM (3 GPM)

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size	Body Part No.
Omit	Cartridge Only	
12P	3/4″ NPTF	(B12-2-*12P)
8T	SAE-8	(B12-2-*8T)
12T	SAE-12	(B12-2-*12T)

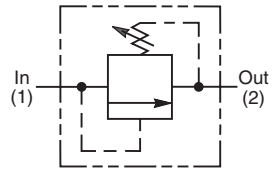
**** Add "A" for aluminum, omit for steel.***

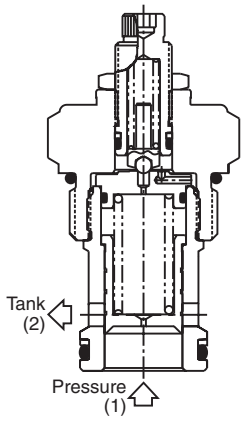
General Description

Pilot Operated Spool-Type Relief Valve. For additional information see Technical Tips on pages PC1-PC6.

Features

- Low override curve
- Ball-type pilot for added stability
- High accuracy - pilot operated design
- Hardened, precision ground parts for durability
- Compact size for reduced space requirements
- All external parts have yellow zinc dichromate. This coating is ideal for salt spray applications.





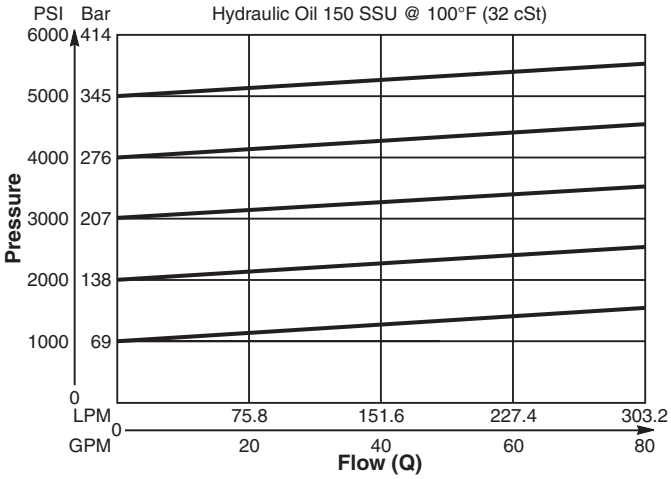
Specifications

Maximum Flow	302.8 LPM (80 GPM)
Maximum Inlet Pressure	380 Bar (5500 PSI)
Maximum Pressure Setting	350 Bar (5000 PSI)
Maximum Tank Pressure	350 Bar (5000 PSI)
Reseat Pressure	80% of crack pressure
Leakage at 150 SSU (32 cSt)	5 cc per 100 PSI (6.8 Bar) setting
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range (Ambient)	-40°C to +93.3°C (Nitrile) (-40°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
Fluid Compatibility/ Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Filtration	ISO Code 16/13, SAE Class 4 or better
Approx. Weight	0.9 kg (2.0 lbs.)
Cavity	C16-2 (See BC Section for more details)
Form Tool	Rougher None Finisher NFT16-2F

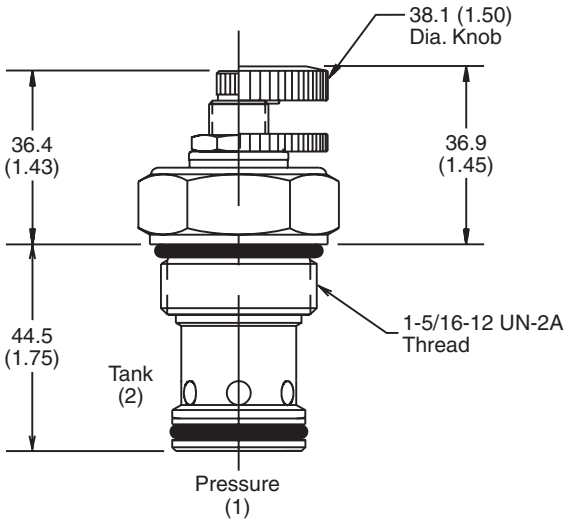
Performance Curve

Flow vs. Inlet Pressure

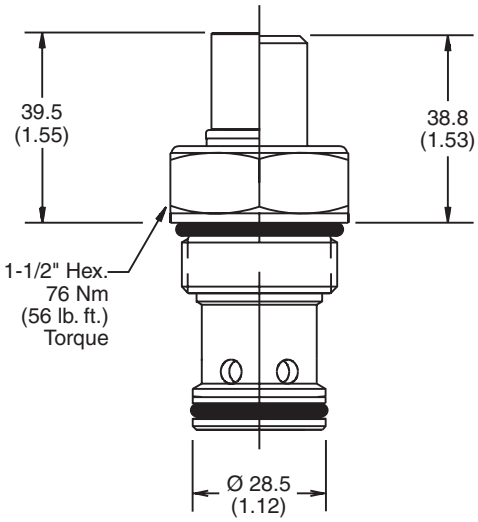
(Pressure rise through cartridge only)



Dimensions Millimeters (Inches)



Screw/Knob Version



Fixed Cap/Tamper Resistant Version

THIRD-ANGLE PROJECTION

Ordering Information

RAH161				—		—		
16 Size Pilot Operated Relief Valve	Adjustment Style	Pressure Range	Seals		Optional Pressure Setting		Body Material	Port Size

Code	Adjustment Style / Kit No.
F	Fixed style, preset at factory.
K	Knob Adjust (717784-15)
S	Screw Adjust
T	Tamper Resistant Cap (717785)

Code	Pressure Range
10	6.9 - 69 Bar (100 - 1000 PSI) Standard Setting: 34.5 Bar (500 PSI) @ 37.5 LPM (10 GPM)
20	13.8 - 138 Bar (200 - 2000 PSI) Standard Setting: 69 Bar (1000 PSI) @ 37.5 LPM (10 GPM)
30	20.7 - 207 Bar (300 - 3000 PSI) Standard Setting: 103.5 Bar (1500 PSI) @ 37.5 LPM (10 GPM)
50	34.5 - 345 Bar (500 - 5000 PSI) Standard Setting: 172.4 Bar (2500 PSI) @ 37.5 LPM (10 GPM)

Code	Seals / Kit No.
Omit	Nitrile / (SK16-2)
V	Fluorocarbon / (SK16-2V)

Optional Pressure Setting
Pressure ÷ 10 i.e. 235 = 2350 PSI (Omit if standard setting is used) Setting Range: 100 to 5000 PSI All settings at 37.5 LPM (10 GPM)

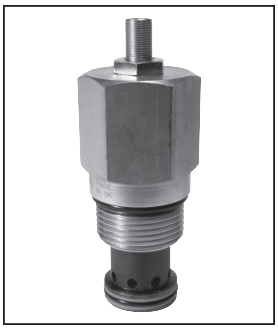
Code	Body Material
Omit	Steel
A	Aluminum

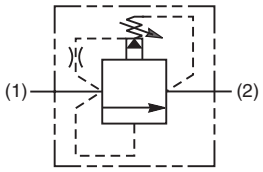
Code	Port Size	Body Part No.
Omit	Cartridge Only	
12P	3/4″ NPTF	(B16-2-*12P)
16P	1″ NPTF	(B16-2-*16P)
8T	SAE-8	(B16-2-*8T)
12T	SAE-12	(B16-2-*12T)
16T	SAE-16	(B16-2-*16T)
12B	3/4″ BSPG	(B16-2-12B)†
16B	1″ BSPG	(B16-2-*16B)

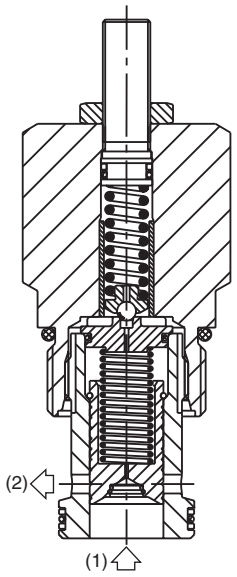
**** Add "A" for aluminum, omit for steel.***
† Steel body only.

General Description

Pilot Operated, Spool-Type Relief Valve. For additional information see Technical Tips on pages PC1-PC6.







Features

- Very high flow capacity
- Minimal pressure variation with flow change
- Full tank line back pressure capability, ideal for crossline relief applications
- Integral 250 micron pilot flow filter
- Hardened working parts for maximum durability
- Adjustable and tamperproof versions available
- All external parts zinc plated

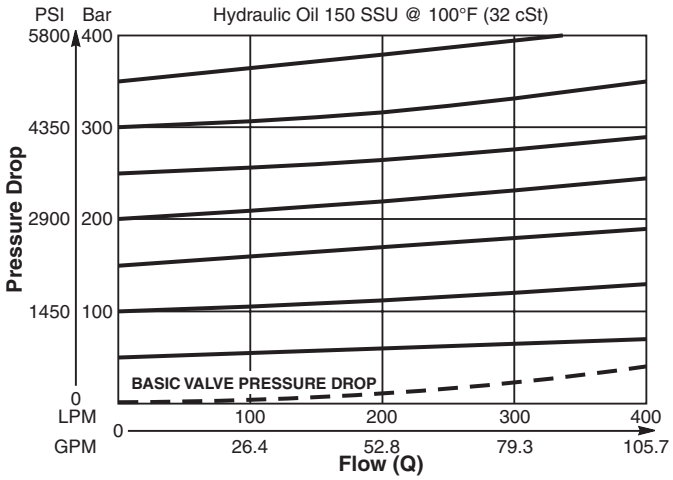
Specifications

Rated Flow	400 LPM (106 GPM)
Maximum Inlet Pressure	**H -** 10-210 Bar (145-3000 PSI) **P -** 10-420 Bar (145-6000 PSI)
Maximum Pressure Setting	420 Bar (6000 PSI)
Maximum Tank Pressure	420 Bar (6000 PSI)
Leakage at 150 SSU (32 cSt)	100 ml/min. @ 100 Bar (1450 PSI)
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range/Seals	-40°C to +93.3°C (Nitrile) (-40°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
Fluid Compatibility/ Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Filtration	ISO Code 16/13, SAE Class 4 or better
Approx. Weight	0.57 kg (1.26 lbs.)
Cavity	C16-2 (See BC Section for more details)
Form Tool	Rougher None Finisher NFT16-2F

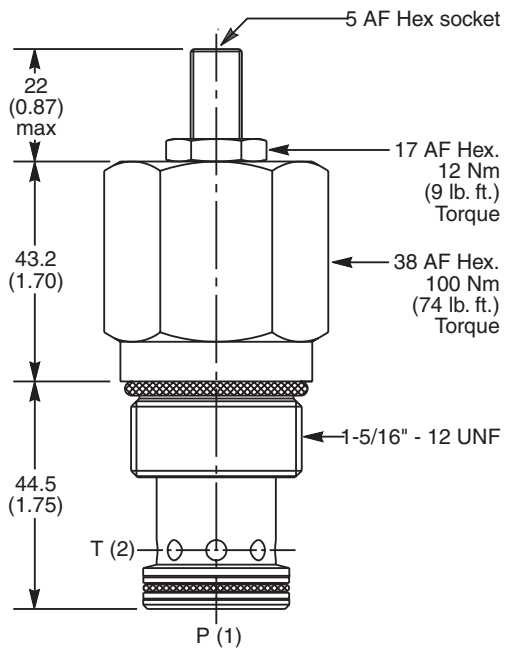
Performance Curve

(Pressure rise through cartridge only)

Flow vs. Inlet Pressure



Dimensions Millimeters (Inches)



Ordering Information

A06G2			—			—		
16 Size Pilot Operated Relief Valve	Pressure Adjustment Range	Adjustment Style		Optional Pressure Setting	Seals		Body Material	Port Size

Code	Pressure Adjustment Range
H	10 - 210 Bar (145 - 3000 PSI)
P	10 - 420 Bar (145 - 6000 PSI)

Code	Adjustment Style / Kit No.
Z	Screw Adjust (Std.)
W	Knob Adjust
T	Tamper Resistant Cap (TC1130)

Optional Pressure Setting
Specify setting if required (Bar)
A06G2H Standard Setting: 100 Bar (1450 PSI) @ 15 LPM (4.0 GPM)
A06G2P Standard Setting: 200 Bar (2900 PSI) @ 15 LPM (4.0 GPM)

Code	Seals / Kit No.
N	Nitrile, Buna-N (Std.) / (SK30507N-1)
V	Fluorocarbon / (SK30507V-1)

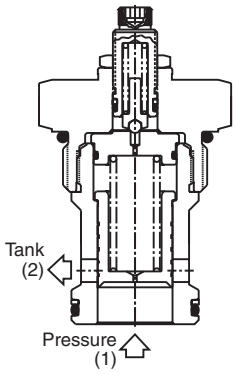
Code	Body Material
Omit	Steel
A	Aluminum

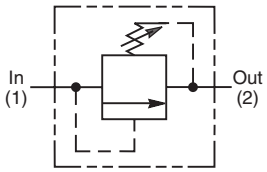
Code	Port Size	Body Part No.
Omit	Cartridge Only	
12P	3/4″ NPTF	(B16-2-*12P)
16P	1″ NPTF	(B16-2-*16P)
8T	SAE-8	(B16-2-*8T)
12T	SAE-12	(B16-2-*12T)
16T	SAE-16	(B16-2-*16T)
12B	3/4″ BSPG	(B16-2-12B)†
16B	1″ BSPG	(B16-2-*16B)

**** Add "A" for aluminum, omit for steel.***
† Steel body only.

General Description

Pilot Operated Spool-Type Relief Valve. For additional information see Technical Tips on pages PC1-PC6.





Features

- Low override curve
- Ball-type pilot for added stability
- High accuracy - pilot operated design
- Hardened, precision ground parts for durability
- Compact size for reduced space requirements
- All external parts have yellow zinc dichromate. This coating is ideal for salt spray applications.

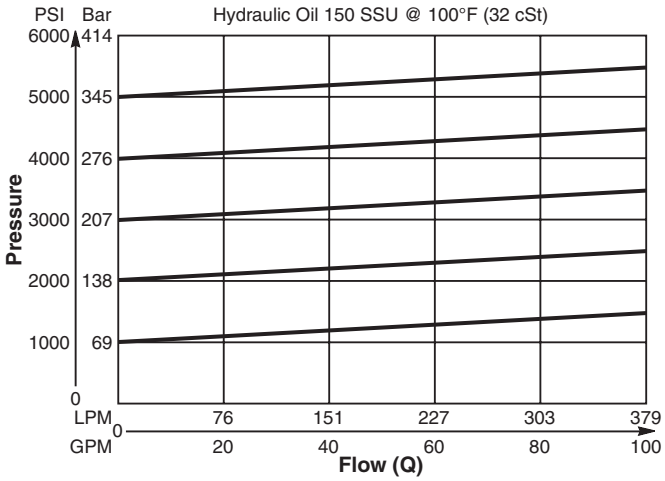
Specifications

Rated Flow	379 LPM (100 GPM)
Maximum Inlet Pressure	380 Bar (5500 PSI)
Maximum Pressure Setting	350 Bar (5000 PSI)
Maximum Tank Pressure	350 Bar (5000 PSI)
Reseat Pressure	80% of crack pressure
Leakage at 150 SSU (32 cSt)	5 cc per 100 PSI (6.8 Bar) setting
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range/Seals	-40°C to +93.3°C (Nitrile) (-40°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
Fluid Compatibility/ Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Filtration	ISO Code 16/13, SAE Class 4 or better
Approx. Weight	0.9 kg (2.0 lbs.)
Cavity	C20-2 (See BC Section for more details)
Form Tool	Rougher None Finisher NFT20-2F

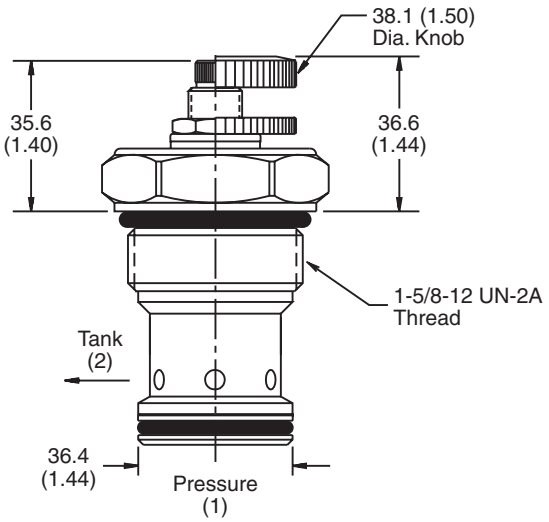
Performance Curve

Flow vs. Inlet Pressure

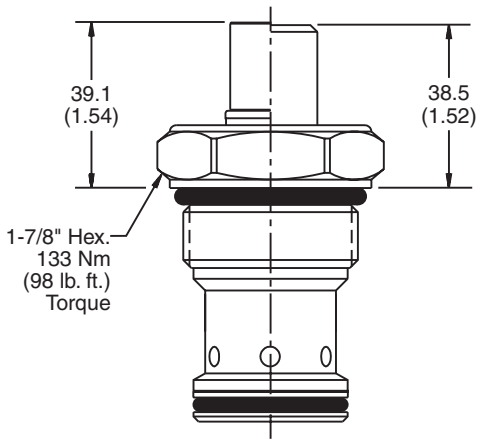
(Pressure rise through cartridge only)



Dimensions Millimeters (Inches)



Screw/Knob Version



Fixed Cap/Tamper Resistant Version

THIRD-ANGLE PROJECTION

Ordering Information

RAH201						
20 Size Pilot Operated Relief Valve	Adjustment Style	Pressure Range	Seals	Optional Pressure Setting	Body Material	Port Size

Code	Adjustment Style / Kit No.
F	Fixed style, preset at factory.
K	Knob Adjust (717784-15)
S	Screw Adjust
T	Tamper Resistant Cap (717785)

Code	Pressure Range
10	6.9 - 69 Bar (100 - 1000 PSI) Standard Setting: 34.5 Bar (500 PSI) @ 37.5 LPM (10 GPM)
20	13.8 - 138 Bar (200 - 2000 PSI) Standard Setting: 69 Bar (1000 PSI) @ 37.5 LPM (10 GPM)
30	20.7 - 207 Bar (300 - 3000 PSI) Standard Setting: 103.5 Bar (1500 PSI) @ 37.5 LPM (10 GPM)
50	34.5 - 345 Bar (500 - 5000 PSI) Standard Setting: 172.4 Bar (2500 PSI) @ 37.5 LPM (10 GPM)

Code	Seals / Kit No.
Omit	Nitrile / (SK20-2)
V	Fluorocarbon / (SK20-2V)

Optional Pressure Setting
Pressure ÷ 10 i.e. 235 = 2350 PSI (Omit if standard setting is used) Setting Range: 100 to 5000 PSI All settings at 37.5 LPM (10 GPM)

Code	Body Material
Omit	Steel

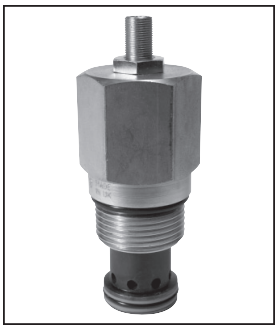
Code	Port Size	Body Part No.
Omit	Cartridge Only	
20T	SAE-20	(B20-2-20T)
20B	1-1/4″ BSPG	(B20-2-20B)

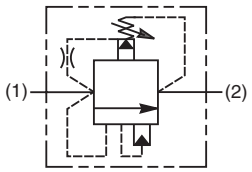
General Description

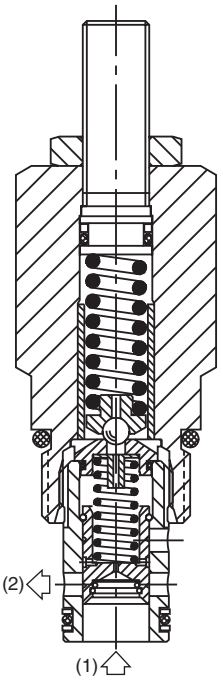
Kick-Down, Pilot Operated Relief Valve. For additional information see Technical Tips on pages PC1-PC6.

Features

- High flow capacity
- Integral 250 micron pilot flow filter
- Hardened working parts for maximum durability
- Adjustable and tamper resistant versions available
- All external parts zinc plated







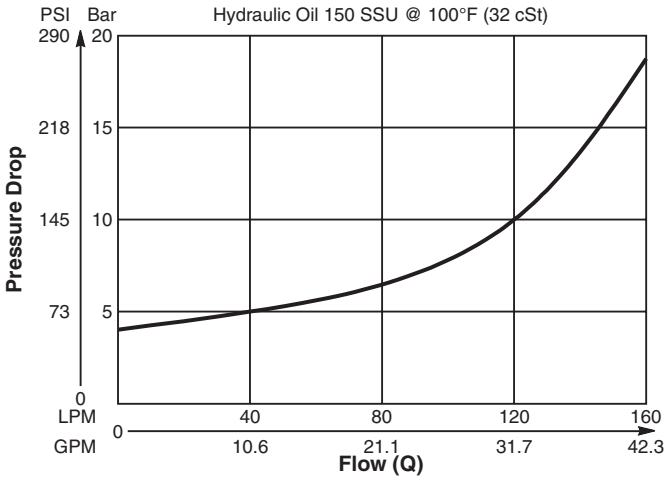
Specifications

Rated Flow	160 LPM (42 GPM)
Maximum Inlet Pressure	420 Bar (6000 PSI)
Maximum Pressure Setting	**H -** 10-210 Bar (145-3000 PSI) **P -** 10-420 Bar (144-6000 PSI)
Maximum Tank Pressure	420 Bar (6000 PSI)
Sensitivity: Pressure/Turn	**H -** 30 Bar (435 PSI) **P -** 55 Bar (800 PSI)
Leakage at 150 SSU (32 cSt)	25 ml/min. @ 50 Bar (725 PSI)
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range/Seals	-40°C to +93.3°C (Nitrile) (-40°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
Fluid Compatibility/ Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Filtration	ISO Code 16/13, SAE Class 4 or better
Approx. Weight	0.29 kg (0.64 lbs.)
Cavity	C10-2 (See BC Section for more details)
Form Tool	Rougher None Finisher

Performance Curve

(Pressure rise through cartridge only)

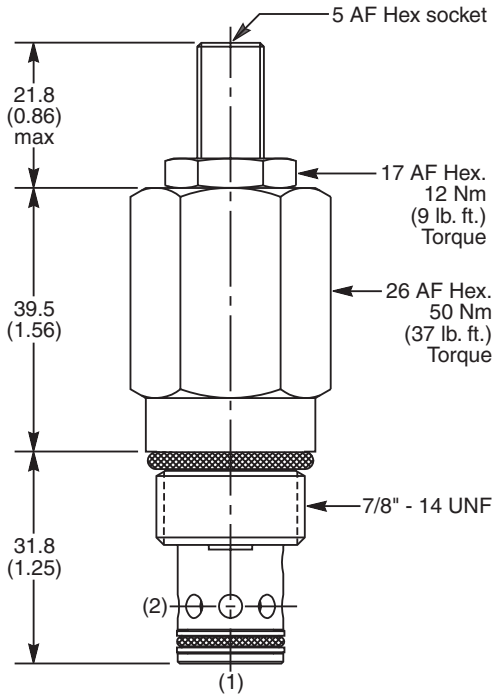
Pressure Drop vs. Flow



Application Note

Valve unloads completely when setting is reached and resets when fluid supply is removed.

Dimensions Millimeters (Inches)



Ordering Information

A04K2					—		
10 Size Kick-Down Relief Valve	Pressure Adjustment Range	Adjustment Style	Optional Pressure Setting	Seals		Body Material	Port Size

Code	Pressure Adjustment Range
H	10 - 210 Bar (145 - 3000 PSI)
P	10 - 420 Bar (145 - 6000 PSI)

Code	Adjustment Style / Kit No.
Z	Screw Adjust (Std.)
W	Knob Adjust
T	Tamper Resistant Cap (TC1130)

Optional Pressure Setting
Specify setting if required (Bar)
A04K2H Standard Setting: 100 Bar (1450 PSI)
A04K2P Standard Setting: 200 Bar (2900 PSI)

Code	Seals / Kit No.
N	Nitrile, Buna-N (Std.) / (SK30503N-1)
V	Fluorocarbon / (SK30503V-1)

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size	Body Part No.
Omit	Cartridge Only	
4P	1/4″ NPTF	(B10-2-*4P)
6P	3/8″ NPTF	(B10-2-*6P)
8P	1/2″ NPTF	(B10-2-*8P)
6T	SAE-6	(B10-2-*6T)
8T	SAE-8	(B10-2-*8T)
T8T	SAE-8	(B10-2-T8T)†
6B	3/8″ BSPG	(B10-2-6B)†

**** Add "A" for aluminum, omit for steel.***
† Steel body only.