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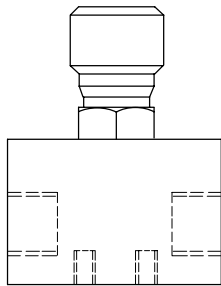
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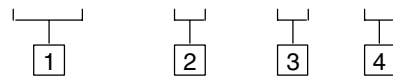
<https://vickers.nt-rt.ru> || [vsh@nt-rt.ru](mailto:vsh@nt-rt.ru)

# Flow Controls, Non-Compensated FN-4, 20 Series



## Model Code

**(F3-) FN (1) -4 (K) - 20**



**1** Seals for phosphate ester fluids  
 Omit when not required

**2** Valve needle type  
 1 = For flows up to 2 L/min (0.53 USgpm)  
 Omit for high flows

**3** Method of adjustment  
 K = Knurled screw  
 Omit for set screw and locknut

**4** Design number, 20 series  
 Subject to change.  
 Installation dimensions remain as shown for designs 20-29 inclusive.

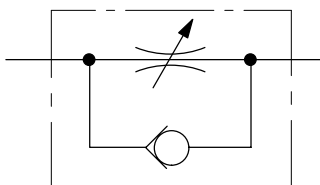
## Basic Characteristics

Connection ..... Pipe mounted  
 Max. operating pressure ..... 140 bar (2000 psi)  
 Nominal flow .... 9 L/min (2.38 USgpm)

## General Description

The FN-4 valve is an adjustable restrictor valve fitted with an integral check. It allows restricted flow in one direction and free flow in the opposite direction.

## Functional Symbol



## Operating Data

Max. Pressure ..... 140 bar (2000 psi)

**Flow/Pressure Data**  
 Typical with petroleum oil at 21 cSt (102 SUS).

Restrictor flow  
 FN models ..... up to 9 L/min (2.38 USgpm)  
 FN 1 models ..... 16 ml/min to 2 L/min (0.04 to 0.53 USgpm)

Return flow  
 Check valve cracking pressure ..... 0,7 bar (10 psi)  
 Pressure drop at 9 L/min (2.38 USgpm) .. 3,5 bar (50 psi)

**Hydraulic Fluids**  
 All valves can be used with antiwear hydraulic oils, water-in-oil emulsions and water glycols. Add prefix "F3" to model designation when phosphate ester (not alkyl-based) or chlorinated hydrocarbons are to be used.

"F3" models can also operate on the same fluids as the other valves.

The extreme operating viscosity range is from 860 to 13 cSt (4000 to 70 SUS) but the recommended running range is from 54 to 13 cSt (250 to 70 SUS).

For further information about fluids see catalog 920.

**Temperature Limits**  
 Ambient  
 Min. .... -20°C (-4°F)  
 Max. .... +70°C (158°F)

Fluid temperatures

	Petroleum oil	Water-containing
Min.	-20°C (-4°F)	+10°C (50°F)
Max.*	+80°C (176°F)	+54°C (130°F)

\* To obtain optimum service life from both fluid and hydraulic system, 65°C (150°F) normally is the maximum temperature except for water-containing fluids.

For synthetic fluids consult manufacturer or Vickers where limits are outside those for petroleum oil.

Whatever the actual temperature range, ensure that viscosities stay within the limits specified in the "Hydraulic Fluids" section.

### Contamination Control Requirements

Recommendations on contamination control methods and the selection of

products to control fluid condition are included in Vickers publication 9132 or 561, "Vickers Guide to Systemic Contamination Control". The book also includes information on the Vickers concept of "ProActive Maintenance". The following recommendations are

based on ISO cleanliness levels at 2 µm, 5 µm and 15 µm. For products in this catalog the recommended levels are:

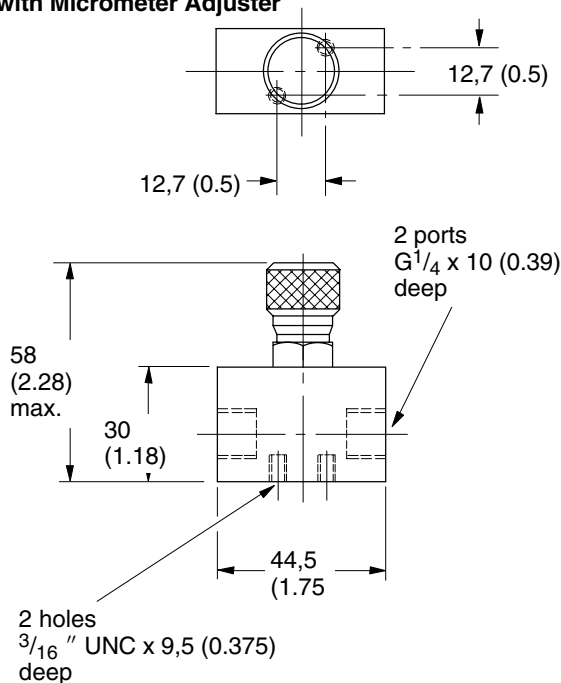
Up to 210 bar (3050 psi) . . . . . 19/17/14  
Above 210 bar (3050 psi) . . . . . 19/17/14

## Installation Dimensions

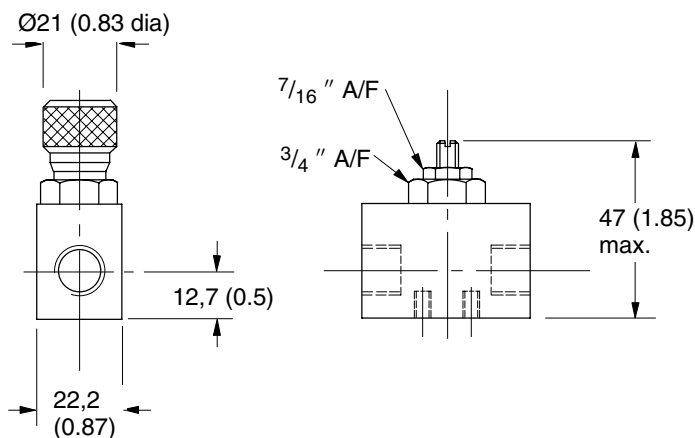
mm(inches)



### Model (F3-)FN\*-4K-20 with Micrometer Adjuster



### Model (F3-)FN\*-4-20 with Screw and Locknut Adjuster



## Mass

All models . . . . . 0,2 kg (0.1 lb)

## Mounting Attitude

Optional.

## Ordering Procedure

Before ordering, check availability with the Vickers representative. Specify complete model designation when ordering:

e.g. 2 off FN1-4K-20 valve.

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