INJECTOR

Injector
Sunfab Injector K-JET 2 is a basic technical solution for the recirculation of oil in closed hydraulic systems that is cost efficient and saves weight.

Three models K-JET 2, cover the flows 42.2, 66.0 and 92.5 gpm.

K-JET 2 recirculates the oil with an injector. This function replaces the previous standard of feed pressure pumps as compensation for leakage oil losses in the main circuit and any scavenging pumps for the cooling and filtering circuits.

K-JET 2 also slightly pressurises the feed pressure, which means a significantly higher pump speed than the self-priming speed can be used. This is reflected in a considerable increase in the capacity of the pump.

Hydraulic systems with pressure feed of the pump require the pump to be externally drained. The Sunfab pump SAP DIN Optimised with external drainage conforms to these demands and is recommended in applications with K-JET 2.

K-JET 2 has no moving parts, which makes it completely maintenance free. It can be directly mounted on the tank or mounted using pipes or hoses.

Advantages of K-JET 2 compared with open hydraulic circuits:

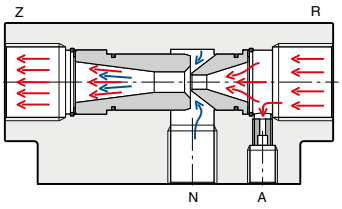
- Reduced tank size and oil volume.
  Only 15-20 % of the main pump flow
- Lower weight through smaller oil tanks
- Lower cost for oil
- Significantly higher pump speed

	gpm
K-JET 2/160	42.2
K-JET 2/250	66.0
K-JET 2/350	92.5

Sunfab Hydraulics AB, Box 1094, SE-824 12 Hudiksvall, Sweden. Tel: +46 650-367 00, E-mail: sunfab@sunfab.se Web: www.sunfab.com

Function

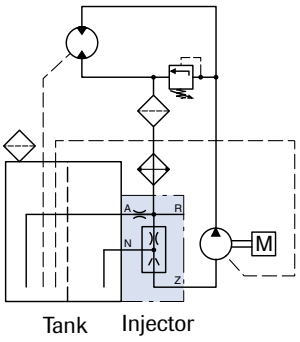
Sunfab K-JET 2 houses an injector. When the return flow is led in port R and meets the injector, approximately 10 % of the flow is deflected via port A. The flow and leakage flow from the pump and hydraulic motor are led to the oil tank.



New oil is drawn in from the tank via port N and is added with the injector's other through flow. Suitable counterbalancing with the deflected flow at A, means a specific positive pressure can be maintained on the outgoing flow, port Z. This pressurised flow is fed to the pump's suction line.

This working principle has several benefits in a closed system for hydraulic motor operations:

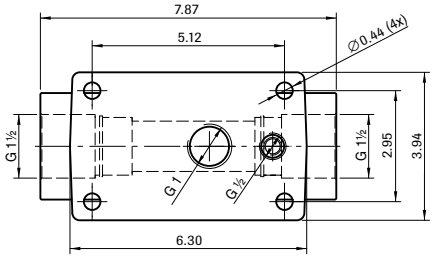
- The oil tank can be small.
- Deflection provides for oil turnover.
- New oil is also supplied to compensate for internal leakage.
- The pressurised outgoing flow (feed pressure) permits a significantly higher pump speed than the self-priming speed.



Selection of the injector

Sunfab K-JET 2 is available in three different sizes with a max. recommended flow of 42.2, 66.0 and 92.5 gpm.

The diagrams show the pressure after the K-JET 2 injector as a function of the oil flow. The pressure rises when the flow increases and is adapted to the pump's requirement.

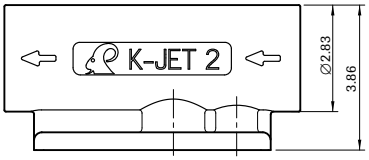


Tank size

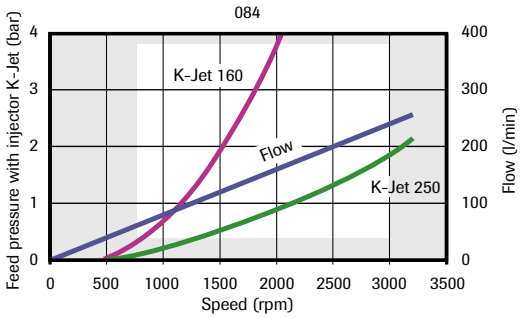
The size of tank is selected so that the whole oil volume is turned over in 1.5 to 2 minutes. When the oil is purged.

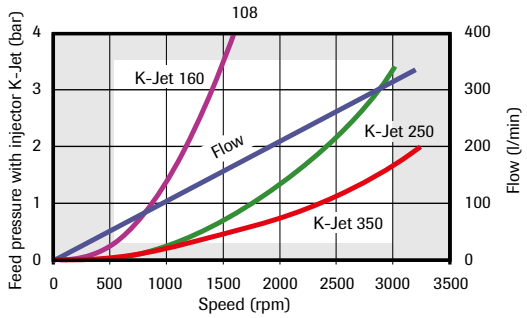
If 10 % of the injector's return flow is deflected to the tank and the leakage flow from the motor and pump is normal, the volume of the tank is calculated to be 15-20 % of pump's flow in gpm.

Most applications require an oil cooler.



SAP 084, 108 DIN Optimized + external drainage		084			108			
K-Jet 2		without	160	250	without	160	250	350
Oil flow at 97% vol. efficiency	rpm		GPM			GPM		
and 20 MPa	500	10.7	-	-	13.8	13.8	-	-
	1000	21.4	21.4	-	27.7	27.7	27.7	-
	1500	32.1	32.1	32.1	41.5	41.5	41.5	41.5
	2000		42.8	42.8			55.3	55.3
	2500			53.6			69.2	69.2
	3000			64.3				83.0
Displacement	cu in/rev	5.10			6.59			
Max pump speed								
min continuous	rpm	300	750	1200	300	550	1000	1200
max continuous		1800	2000	3000	1800	1500	2500	3000
max limited		2300			2300			
Max working pressure	psi	5800			5800			
Weight	lb	30.6			30.6			
Tare-weight torque (M)	lb-ft	13.6			13.6			
Direction of rotation	Left (L) or Right (R)							





Threaded suction connection with feed pressure above 4 bar.

Sunfab reserves the right to make changes in design and dimensions without notice. Printing and typesetting errors reserved.
© Copyright 2022 Sunfab Hydraulics AB. All Rights Reserved.

Sunfab Hydraulics AB, Box 1094, SE-824 12 Hudiksvall, Sweden. Tel: +46 650-367 00, E-mail: sunfab@sunfab.se Web: www.sunfab.com