

# Twin flow – the ultimate heavy duty money saver!

A vehicle with multiple power-craving hydraulic functions is a challenge for anyone designing hydraulic systems – a challenge that often ends in unnecessarily complicated solutions, resulting in excessive running costs.

## Complicated or simple – you choose!

A hydraulic system for demanding applications such as forestry cranes, refuse vehicles, municipal vehicles, salt spreaders, etc. – all needing separate flows of differing capacities – will automatically be complicated when built traditionally with a single pump, a flow divider and many other essential pieces of auxiliary equipment. To make things worse, it will also be inefficient. To achieve the capacity needed to run the vehicle's different functions, the system must be substantially oversized – resulting in heat losses, increased wear and higher fuel consumption.

But there is a solution to this dilemma without the need for expensive load sensing systems with a variable displacement pump.

## Profitable simplicity

The solution is simply using a twin flow pump, providing each function with just the amount of oil needed, even in an open center system.

Losses are radically reduced by avoiding unnecessary circulation, and there is no need for an oil cooler. Flow limiters are eliminated, and the simpler system layout means fewer hoses and fewer connectors. The end result is an extended service life from all system components – especially hoses, seals and the hydraulic oil itself.

Savings on a simpler system, easier installation and running costs quickly make up for the difference in initial cost. Fuel savings alone can amount to as much as 5 litres per hour!

The simple system layout also contributes to the savings, by minimising future maintenance needs.

## Four sizes to cover all needs

Parker's F2-series is based on the bent-axis-principle to achieve high efficiency and compact installation dimensions. Now we offer two new sizes in addition to our F2-53/53 and F2-70/35 pumps: The F2-42/42 and the F2-55/28. Let your application needs and your PTO gearing decide which one is best for you. Whichever you choose, you end up with a high-tech, profitable and ingeniously

simple solution – **twice as good** as the alternatives!

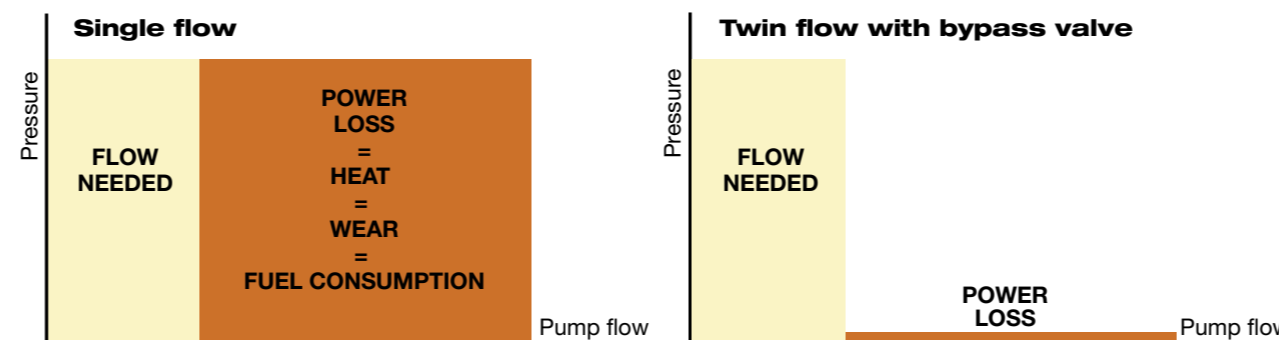


### SINGLE FLOW SOLUTION

- Standard 80 cc fixed displacement pump with flow divider
- 50 l/min to spreader
- 70 l/min at 200 bar diverted to the reservoir
- Losses: **23 kW**

### TWIN FLOW SOLUTION

- F2-70/35 with BPV
- 45–60 l/min to spreader
- 100 l/min circulated at 5 bar
- Losses: **1 kW**



With a twin flow pump, losses are drastically reduced, resulting in lower system temperatures, reduced wear and significant savings on fuel.

- + Optimised performance
- + Substantial fuel savings
- + Robust system design
- + Simple open center valves
- + Low maintenance
- + No flow divider needed
- + No oil cooler needed
- = Instantly profitable!

## Save up to 5 litres of diesel – every hour!

A salt spreader is a typical application where the twin flow solution excels. Let's make a comparison, with the following typical prerequisites: flow demand 50 l/min, engine PTO ratio 1:1.2, engine speed 1,500 rpm.

Using a single flow pump delivering 80 l/min at 1,000 rpm with a flow divider set at 50 l/min, 70 l/min is diverted to the oil reservoir at 200 bar, resulting in **losses of around 23 kW**.

With a twin flow F2-70/35 supplying 45–60 l/min on the 35 cc port, 100 l/min are circulated via the bypass valve at only 5 bar, resulting in **losses of only 1 kW**.

Since 1 kWh equals around 190 grams of diesel in a modern, efficient engine at maximum torque, the reduced losses equate to **5 litres of diesel fuel per hour** of operation. In a year, this easily adds up to 500 or maybe even 1000 litres saved, depending on the application.

NEW F2 42/42



Flow capacity:  
41+43 or 84 l/min  
at 1,000 rpm

NEW F2 55/28



Flow capacity:  
55+28 or 83 l/min  
at 1,000 rpm

F2 53/53



Flow capacity:  
52+54 or 106 l/min  
at 1,000 rpm

F2 70/35



Flow capacity:  
69+36 or 105 l/min  
at 1,000 rpm

TYPICAL APPLICATIONS: FORESTRY CRANES • REFUSE VEHICLES • TRUCK CRANES • SKIP LOADERS • SALT SPREADERS • FORESTRY CRANES • REFUSE VEHICLES • TRUCK CRANES • SKIP LOADERS • SALT SPREADERS





## Technical data

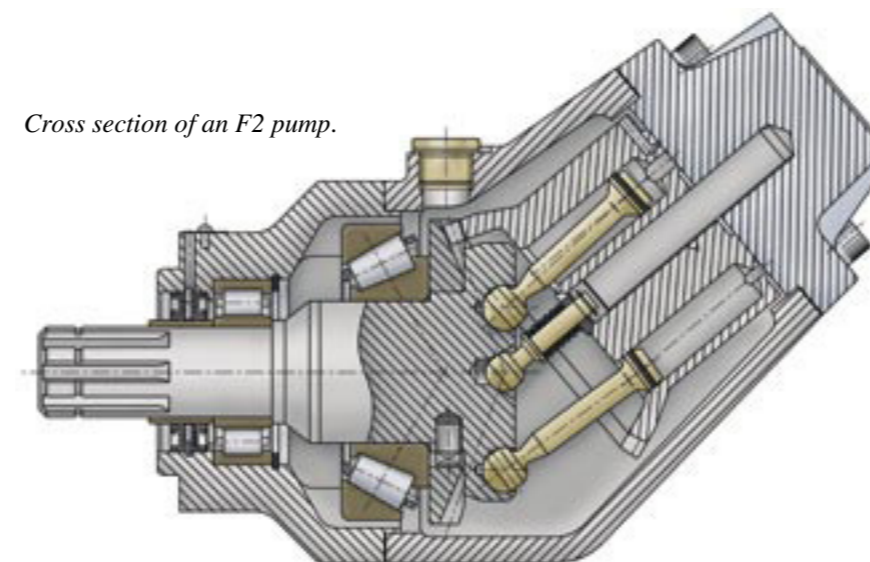
The twin flow F2 pump series has been developed to offer a cost efficient solution for demanding applications with multiple simultaneous functions. The F2 series is available in four sizes to suit any type of application and any engine PTO gearing.

Specifications	Frame size:	42/42	55/28	53/53	70/35
Displacement (cm <sup>3</sup> /rev)	Port A	43	55	54	69
	Port B	41	28	52	36
Max. operating pressure (bar)		350	350	350	350
Max. shaft speed (rpm) unloaded pump, low pressure		2550	2550	2550	2550
Max. self-priming speed (rpm) Ports A <sup>1)2)</sup> and B <sup>1)2)</sup> pressurised Port A <sup>2)</sup> unloaded, pressure in port B		1800	1800	1800	1800
		2100	2100	2100	2100
Input power (kW) Max. intermittent <sup>3)</sup> Max. continuous		88	88	110	110
		70	70	88	88
Weight (kg)		19	19	19	19

- 1) Valid with 2 1/2" inlet (suction) line, q = 120 l/min. With 2" inlet line: max. 1400 rpm.  
 2) Measured at 1.0 bar abs. inlet pressure.  
 3) Max. 6 seconds in any one minute.

NOTE: F2 pumps must be ordered with correct rotation – endcap can not be turned.

Cross section of an F2 pump.



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## Twice as good

**Profitable pumps for  
 multiple function trucks**

Twin Flow Hydraulic Pumps  
 Series F2, Fixed Displacement