Volume Flow Measurement

Depending on the measurement job to be done, various measuring instruments are available to the hydraulic technician:

1 Turbine flow meter type SCFT

- Very low flow resistance
- Built-in measurement points for pressure and temperature
- Very simple installation into a hydraulic system
- 6 different measuring ranges up to 750 l/min.
- Recording of a p/Q characteristic curve with a load valve to determine hydraulic performance

2 Hydraulik tester type SCLV

- High-pressure resistance up to 480 bar
- 2 Measuring ranges up to 750 l/min
- Integrated overload protection
- Reverse-mode operations

3 Flow meter type SCQ

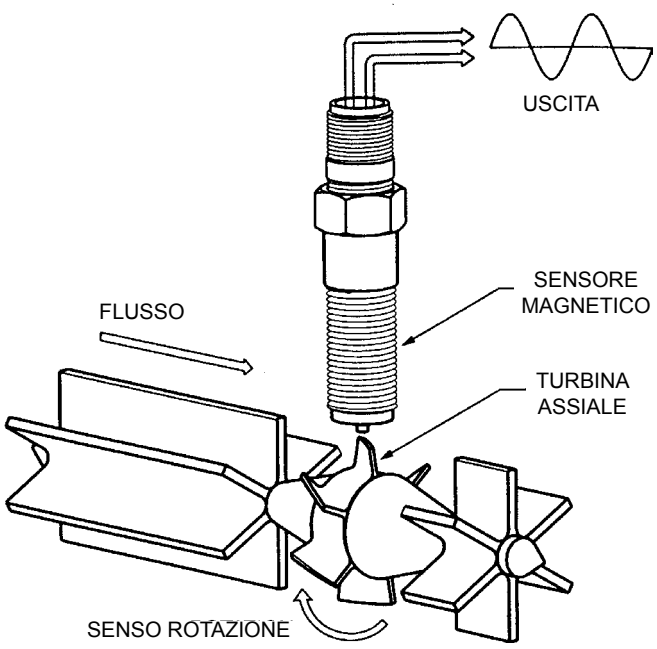
- Flow measurement with direction indication
- Very fast reaction time < 2 ms
- Wide viscosity range
- Screw-in cartridge in connector block SCAQ

In addition to pressure measurement, the precise determination of flow volume in hydraulic equipment gives important evidence of the condition of the hydraulics. The efficiency of hydraulic drives such as hydrostatic units or variable pumps depends on the amount of flow. Hydraulic performance is determined by pressure and flow. The degree of wear in a hydraulic drive can be ascertained by comparing nominal and actual values. The resulting measurements can be used, for example, in preventive maintenance for systematic servicing and cost reductions. In mobile hydraulics, the efficiency of the machine is continually checked and documented. The diagnosis of pressure and flow thereby gives a total analysis.

	SCFT Turbine Flow Meter	SCFT-CAN Turbine Flow Meter	SCLV Hydraulic Tester	SCQ Flow Meter
Intended use				
	✓ Low-loss flow measurement	✓ Low-loss flow measurement	✓ Hydraulic tester	✓ For quick flow changes ✓ Measures in both directions
	✓ Response time ≤ 50 ms ✓ Various measurement ranges ✓ Low flow resistance ✓ Up to 750 l/min ✓ Up to 420 bar ✓ Reverse-mode operations	✓ Response time ≤ 50 ms ✓ Various measurement ranges ✓ Low flow resistance ✓ Up to 750 l/min ✓ Up to 420 bar ✓ Reverse-mode operations ✓ CAN bus connection	✓ Response time ≤ 50 ms ✓ Various measurement ranges ✓ Low flow resistance ✓ Up to 750 l/min ✓ Up to 420 bar ✓ With integrated PQ measurement ✓ Load valve ✓ Overload protection	✓ Response time ≤ 2 ms ✓ Reverse-mode operations ✓ Wide range of viscosities ✓ Compact size ✓ Up to 420 bar
Measuring range	1,0...15/3...60/5...150/ 8...300/15...600/ 20…750 l/min		10...300/20…750 l/min	-60 …+60 l/min -150…+150 l/min
Ports	1/2"…1 1/4" BSPP		1/2"…1" BSPP	M24/M42 Cartridge Block SCAQ-XXX
Measuring process	Turbine		Turbine	Spring/piston principle
Accuracy	< ±1 % FS Response time ≤ 50 ms		< ±1 % FS Response time ≤ 50 ms	< ±2 % FS Response time ≤ 2 ms
Applications	Test bench, general machinery construction and hydraulic installation construction 			
Order code	SCFT-xxx-02-02	SCFT-xxx-C2-05	SCLV-PTQ-xxx	SCQ-xxx-0-02
Refer to page	52-55	56-59	60-63	64-68

- **Measurement principle: flow turbine**

- **6 flow ranges up to 750 l/min**
- **Simple installation**
- **Resistant to high pressure up to 480 bar**
- **Low flow resistance**
- **Built-in pressure and temperature measurement points**
- **Suitable for reverse operation**



Flow measurement with low flow resistance combined p/T/Q measurement

Function

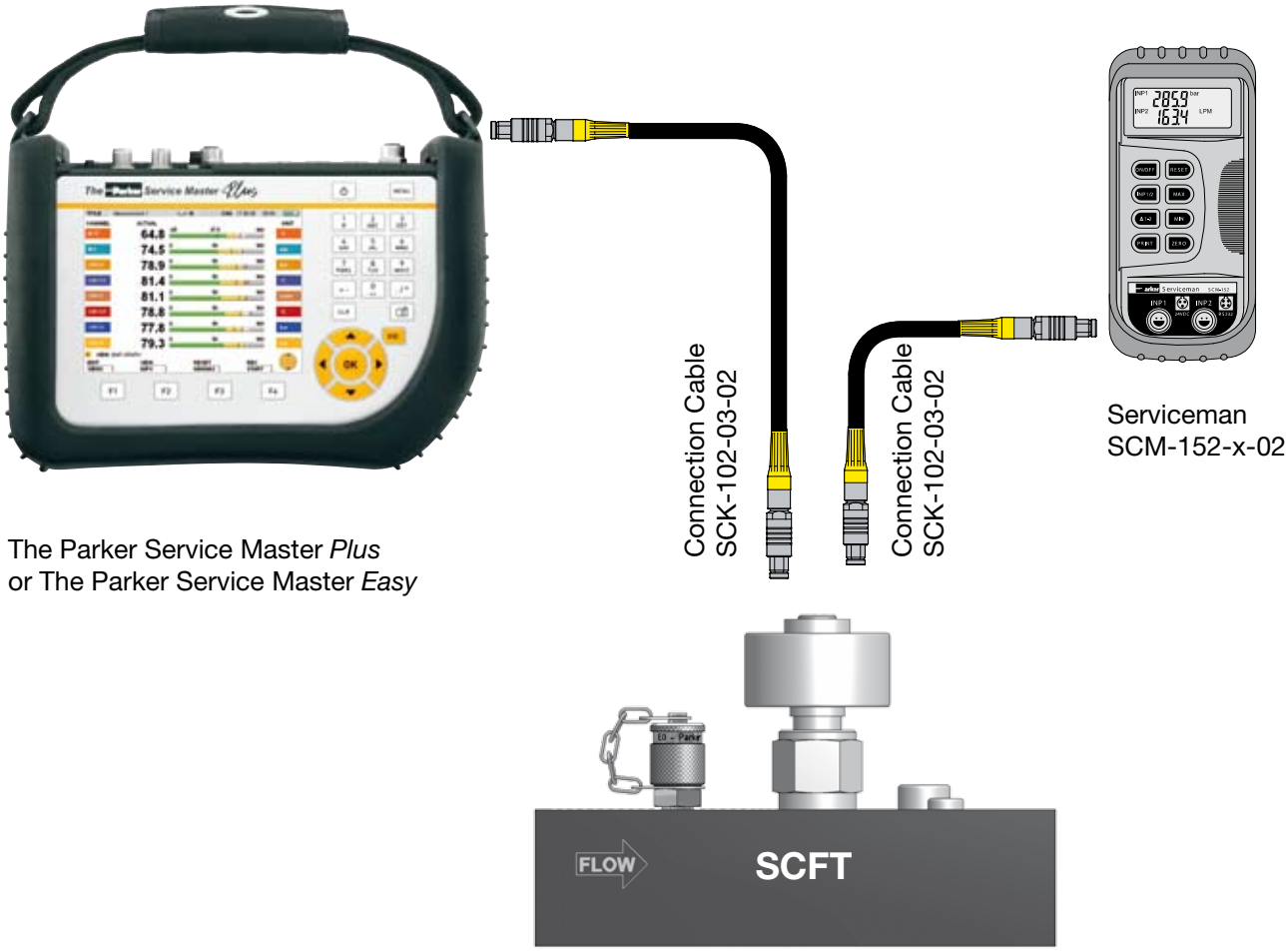
A turbine wheel is driven by the oil flow. The frequencies thus produced are processed by digital electronics. The influence of turbulent flow effects is compensated for. Because of the low flow resistance Q_R the hydraulic circuit operates with very low losses.

For pressure measurement the turbine is equipped with an EMA-3 test point.

Oil temperatures are measured direct in the oil flow. Consequently all the important measurement parameters are available at one measuring location.

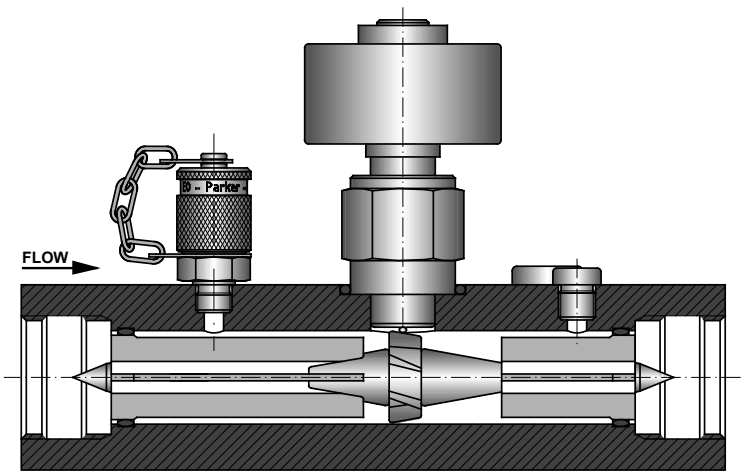
Applications

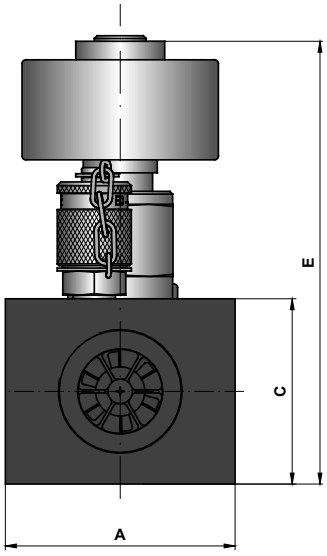
- mobile diagnosis
  p-Q measurement in construction and agricultural machines
  hydraulic tests with load valves
  automatic scaling

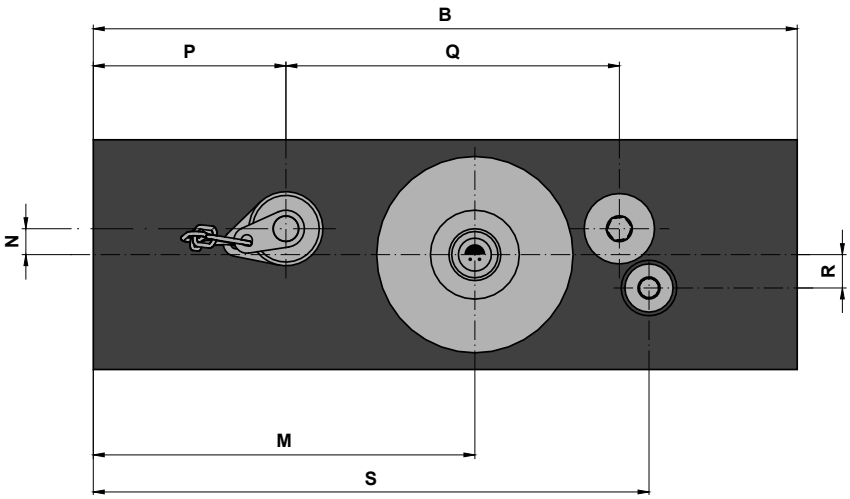


The Parker Service Master *Plus*
or The Parker Service Master *Easy*

Turbine Flow Meter SCFT-xxx-02-02







#	SCFT-015	SCFT-060	SCFT-150	SCFT-300	SCFT-600	SCFT-750
A	37	62	62	62	62	100
B	136	190	190	190	212	212
C	37	50	50	50	75	75
E	117	130	130	134	150	154
M	70	103	103	103	127	126
N	0	5	5	7	9	10
P	25	50	50	52	62	60
Q	N/A	92	92	90	106	104
R	0	5	5	9	11	10
S	115	157	157	150	168	181

#	SCFT-015	SCFT-060	SCFT-150	SCFT-300	SCFT-600	SCFT-750
Flow Range QN (l/min)	1…015	3…060	5...150	8...300	15...600	20...750
Accuracy (± %) FS/IR @ 21cSt.	1,0 FS	1,0 IR*	1,0 IR*	1,0 IR*	1,0 IR*	1,0 IR*
Operating Pressure PN (bar)	350	350	350	350	290	400
Ports (A - B)	1/2“ BSPP	3/4“ BSPP	3/4“ BSPP	1“ BSPP	1-1/4“ BSPP	1-7/8“ UNF
Pressure Drop ΔP_{max} (bar) @ FS, 21cSt	1,5	1,5	1,5	4	5	5
Weight (g)	650	750	750	1200	1800	2100

FS = FullScale
IR = Indicated Reading
* = for measurements ≥ 15 % FS, for measurements < 15 % FS accuracy 0.15 % FS

Response Time (ms)	50
Q_{max} (l/min)	QN x 1,1
Overload Pressure P_{max} (bar)	PN x 1,2
Ports: Temperature Port (SCT-150) Pressure Port (EMA3 Fitting) Pressure Port (VSTI)	M10x1 OR M16x2 1/4“ BSPP
Housing	Aluminium
Sealing	FKM
Parts in Contact with Media	Aluminium, Steel, FKM

Ambient Temperature (°C)	-10...+50
Storage Temperature (°C)	-20...+80
T Fluid (°C)	-20...+90
Filtration (µm)	25 (10 µm for SCFT-015)
Viscosity Range (cSt.)*	10...100

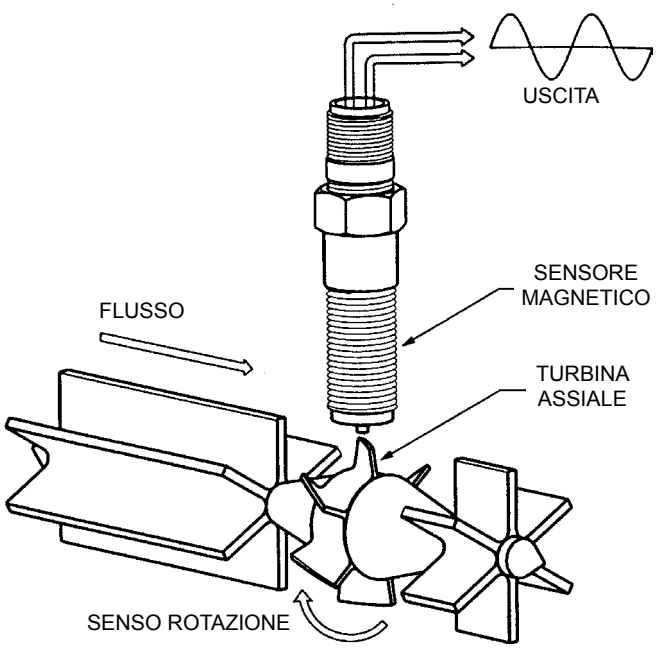
* (calibrated at 21 cSt, other viscosities on request)

SCFT Turbine Flow Meter	**#**
1,0...15/3...60/5...150/8...300/15...600/20…750 l/min	SCFT-xxx-02-02

SCK Connection Cables Serviceman/The Parker Service Master *Family*	**#**
3 m (male 5 pin - male 5 pin)	SCK-102-03-02
5 m (male 5 pin - male 5 pin)	SCK-102-05-02
5 m Extension cable (male 5 pin - female 5 pin)	SCK-102-05-12

- **Flow turbine with CAN bus technology**

- **6 flow ranges up to 750 l/min**
- **Simple installation**
- **Resistant to high pressure up to 480 bar**
- **Low flow resistance**
- **Built-in pressure and temperature measurement points**
- **Suitable for reverse operation**
- **Simple wiring with SPEEDCON®**
- **Long cable lengths up to 100 m**



Flow measurement with low flow resistance combined p/T/Q measurement

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Applications

- mobile diagnosis with
  The Parker Service Master *Plus*
  p-Q measurement in construction and agricultural machines
  hydraulic tests with load valves
  automatic scaling

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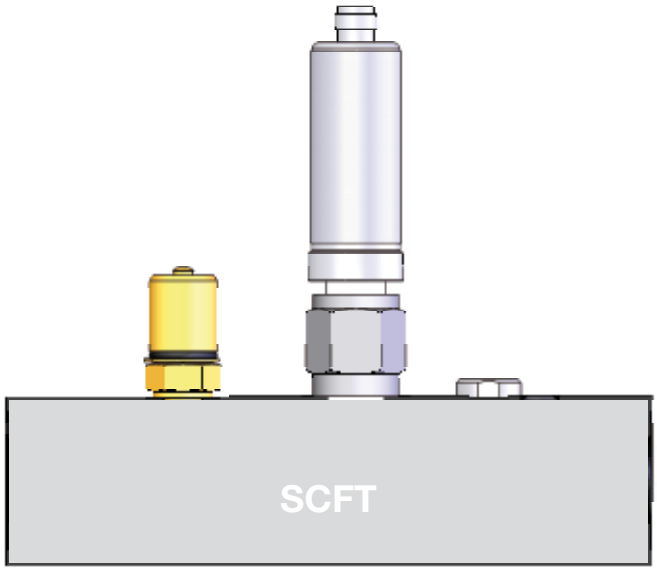
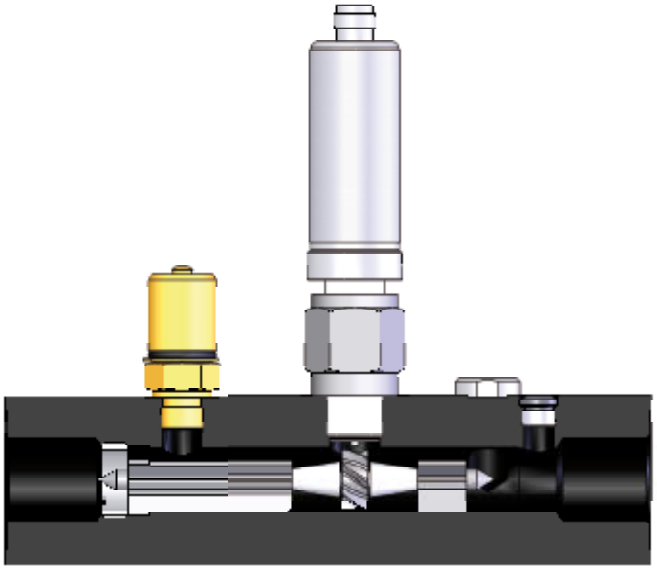
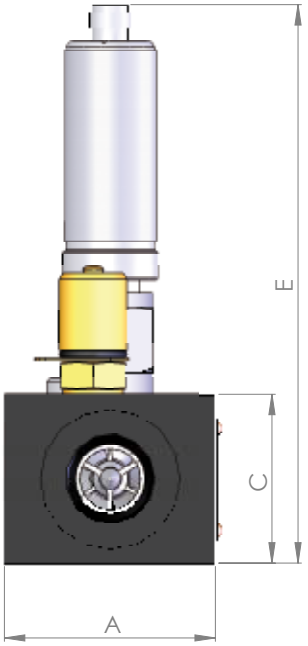
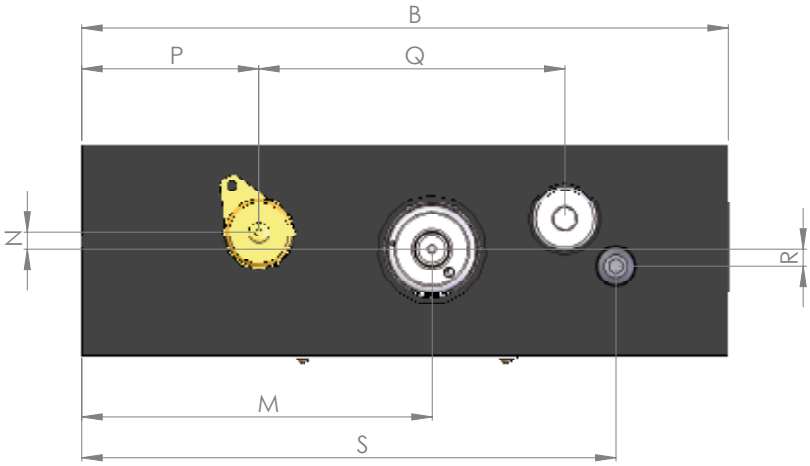


Turbine SCFT-xxx-C2-05







SCFT-CAN –#	015	060	150	300	600	750
A	36,9	62	62	62	62	100
B	136	190	190	190	212	212
C	36,9	49,6	49,6	49,6	75	75
E	150	164	164	168	183	186
M	69,5	103	103	103	127	125,8
N	0	5	5	7	9	12
P	25	52	52	52	62	60
Q	/	90	90	90	106	104
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Ambient Temperature (°C)	-10...+50
Storage Temperature (°C)	-20...+80
T Fluid (°C)	-20...+90
Filtration (µm)	25 (10 µm for SCFT-CAN-015)
Viscosity Range (cSt.)*	10..100

* (calibrated at 21 cSt, other viscosities on request)

SCFT-CAN Turbine Flow Meter	**#**
1,0...15/3...60/5...150/8...300/15...600 l/min	SCFT-xxx-C2-05
20…750 l/min; P_{max} = 480 bar	SCFT-750-C2-05

SCK Connection Cables CAN The Parker Service Master *Plus*	**#**
2 m	SCK-401-02-4F-4M
5 m	SCK-401-05-4F-4M
10 m	SCK-401-10-4F-4M