

Taicin PVT Characteristics

Characteristics

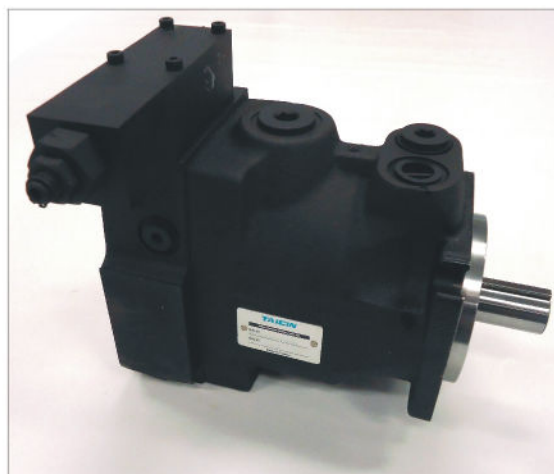
Axial piston pump Series PVT

Technical data

Displacement	[cm ³ /rev]	from 16 to 270
Operating pressures		
Outlet	[bar]	nominal pressure p_N 350
	[bar]	max. pressure p_{max} 420 ¹⁾
	[bar]	drain port 2 ²⁾
	[bar]	Inlet min. 0.8 (absolute)
	[bar]	max. 16
Minimum speed	[min ⁻¹]	300 min ⁻¹
Mounting interface		4-hole flange ISO 3019/2 optional ISO 3019/1, SAE
Installation		drain port as high as possible

¹⁾ peak pressure only

²⁾ peak pressure only, special version up to 20bar available



Selection table

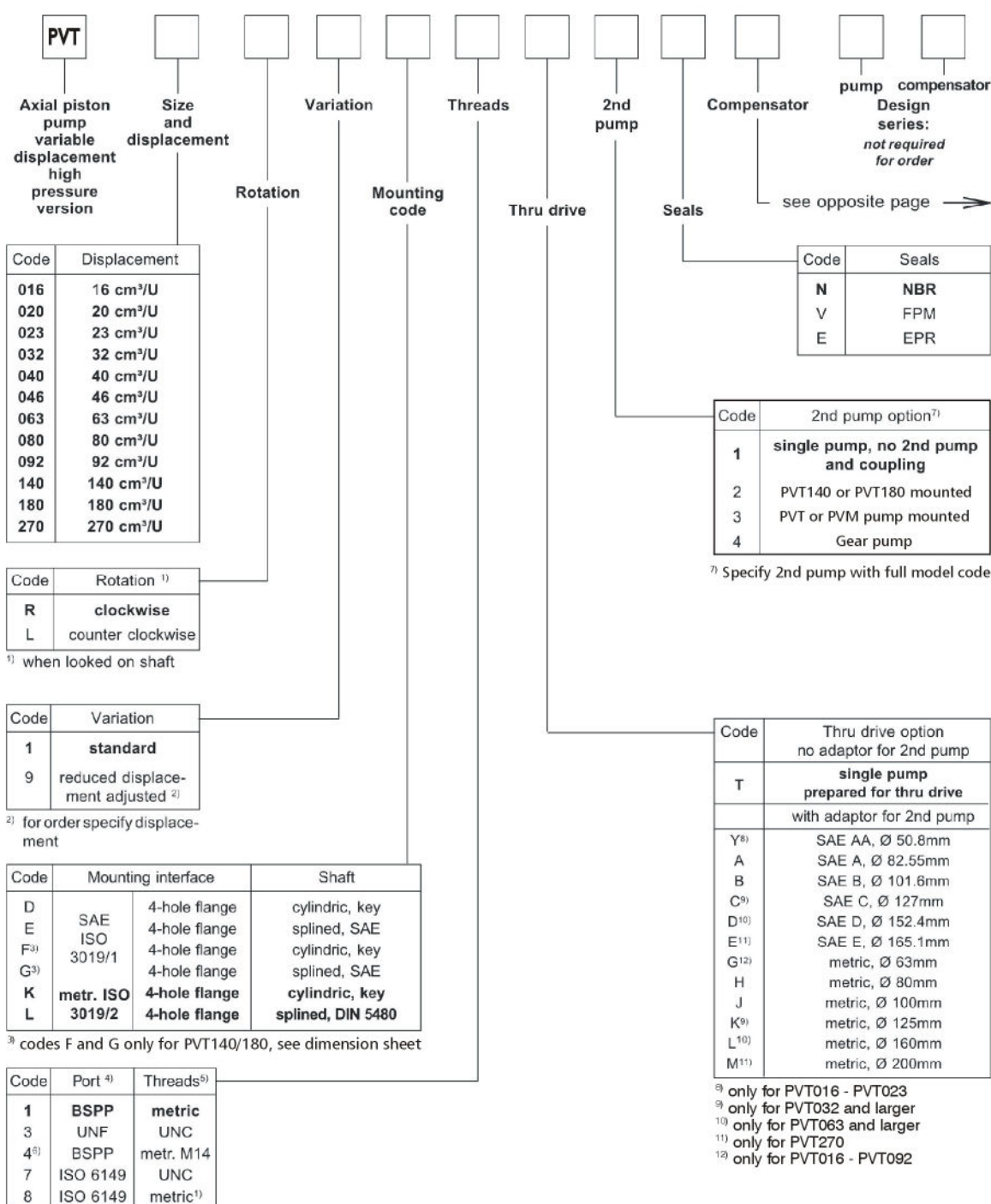
Model	Max. displacement in cm ³ /rev	Output flow in l/min at 1500 min ⁻¹	Input horse power in kW at 1500 min ⁻¹ and 350 bar	Max speed ¹⁾ in min ⁻¹	Weight in kg
PVT016	16	24	15.5	3000	19
PVT020	20	30	19.5		
PVT023	23	34.5	22.5		
PVT032	32	48	31	2800	30
PVT040	40	60	39		
PVT046	46	69	45		
PVT063	63	94.5	61.5	2800	60
PVT080	80	120	78	2500	
PVT092	92	138	89.5	2300	
PVT140	140	210	136	2400	90
PVT180	180	270	175	2200	90
PVT270	270	405	263	1800	172

¹⁾ The maximum speed ratings are shown for an inlet pressure of 1 bar (absolute) and for a fluid viscosity of $\nu = 30 \text{ mm}^2/\text{s}$.

Taicin Ordering Code

Ordering Code

Axial piston pump Series PVT



Taicin Ordering Code Continued

Ordering Code

Axial piston pump
Series PVT

[illegible]

Standard pressure compensator		
Code	Compensator option	
0 0 1	No compensator	
F D S	10 - 140 bar, spindle + lock nut	
F H S	40 - 210 bar, spindle + lock nut	
F W S	70 - 350 bar, spindle + lock nut	
Remote compensator options		
F R	Remote pressure compensator	
F S	Variation R, for quick unload valve	
F F	Load-Sensing compensator	
F T	Two valve load-sensing compensator	
Variations for remote compensator		
	C	external pressure pilot ¹³⁾
	1	NG6/D03 interface top side
	P	Pilot valve PVAC1P*M* mounted
	D	Proportional pilot valve type
	L	Pilot valve with DIN lock mounted
	Z	Accessory mounted ¹⁴⁾

Horse power compensator									
Code		Displacement						Compensator option	
		016 023	032 046	063 092	140	180	270	Nom. HP [kW] at 1500 min ⁻¹	Nom. torque [Nm]
B		x						3	19.5
C		x						4	26
D		x	x					5.5	36
E		x	x					7.5	49
G		x	x	x				11	71
H		x	x	x				15	97
K			x	x	x			18.5	120
M			x	x	x	x		22	142
S				x	x	x		30	195
T				x	x	x	x	37	240
U				x	x	x	x	45	290
W					x	x	x	55	355
Y						x	x	75	485
Z						x	x	90	585
2							x	110	715
3							x	132	850
Function									
	L		x	x	x	x	x	Horse power compensator	
	C		x	x	x	x	x	Horse power compensator and load-sensing	
Variation									
		A	x	x	x	x	x	NG6 interface top side	
		B	x	x	x	x	x	no pressure compensation	
		C	x	x	x	x	x	adjustable pressure compensation	
		D	x	x	x	x	x	Proportional pilot valve	
		Z	x	x	x	x	x	Accessories mounted ²⁾	

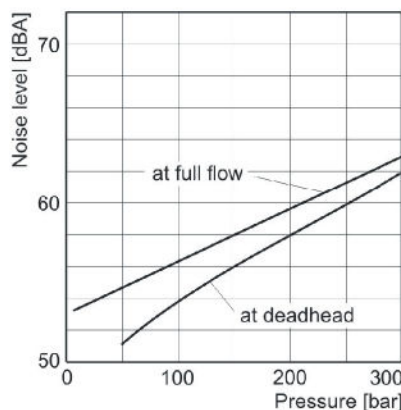
Electrohydraulic compensator		
Code	Compensator option	
Pilot pressure supply		
F		Standard (internal), no shuttle valve
W		With shuttle valve, comp. horizontal
Function		
P		Proportional displacement control
Variation		
V		Standard, no pressure compensation
D		Proportional pilot valve
Z		DSAE100P70KLAF mounted
R		Variation R, accessories mounted ¹⁴⁾
G		Remote pressure comp. NG6 interface
		Variation R, Pressure sensor and proportional pilot valve mounted for pressure resp. horse power control
S		Remote pressure comp., NG6 interface top side, for quick unload valve
T		Variation S, pressure sensor and proportional pilot valve mounted for pressure resp. horse power control
P		Remote pressure comp., NG6 interface top side, for preload and quick unload manifold
E		Variation P, pressure sensor and proportional pilot valve mounted for pressure resp. horse power control

Taicin PVT Noise Levels

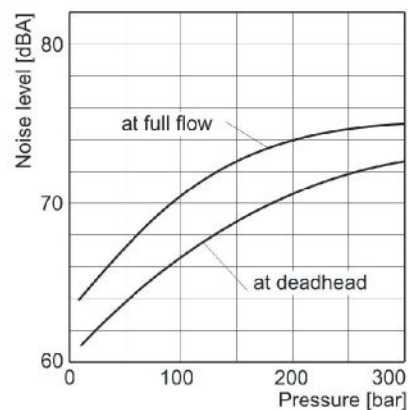
Noise levels

Axial piston pump Series PVT

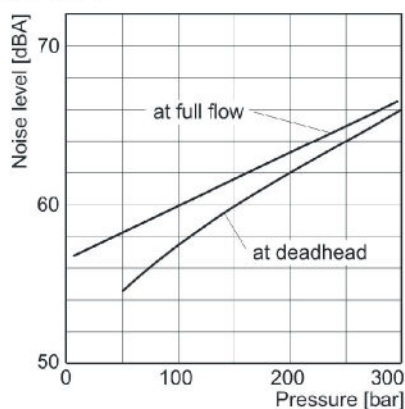
PVT016-PVT023



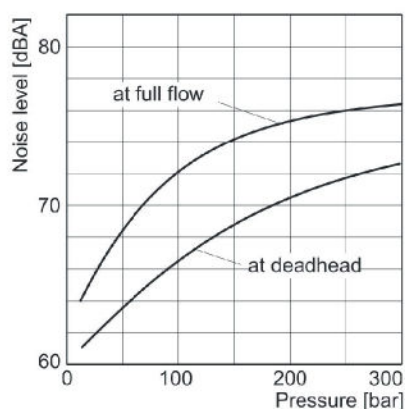
PVT140



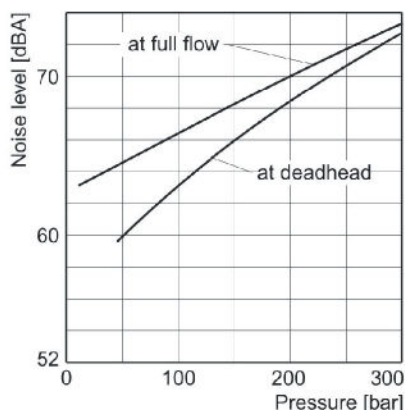
PVT032-PVT046



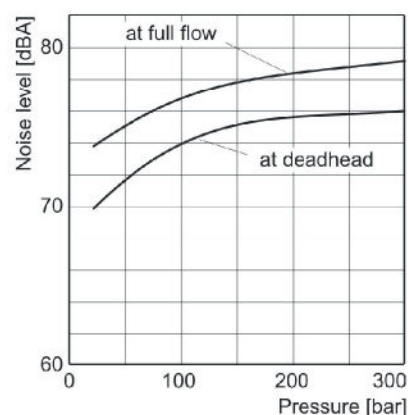
PVT180



PVT063-PVT092



PVT270



Typical sound level for single pumps, measured in anechoic chamber according to DIN 45 635, part 1 and 26. Microphone distance 1m; speed: $n = 1500 \text{ min}^{-1}$.

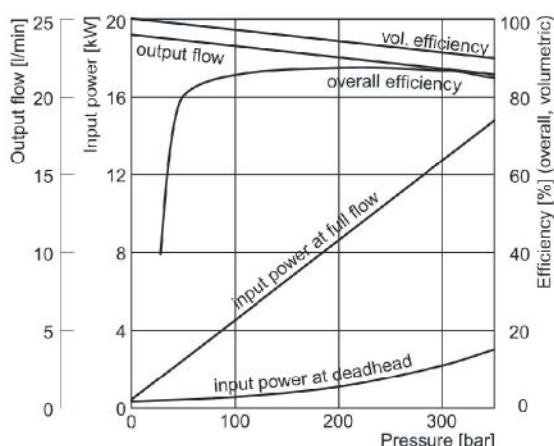
All data measured with mineral oil viscosity $30 \text{ mm}^2/\text{s}$ (cSt) at 50°C .

Efficiency and case drain flows PVT016 – PVT023

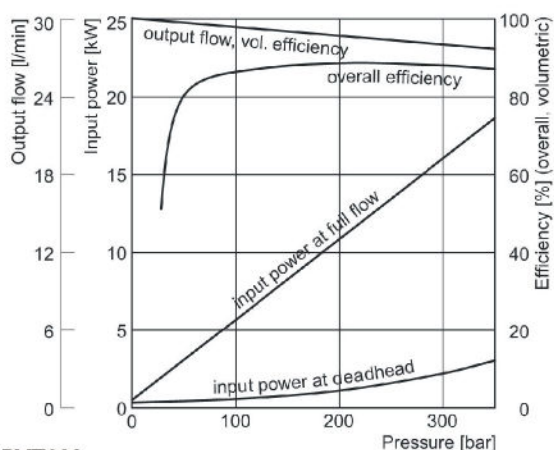
Efficiency and case drain flows

Axial piston pump Series PVT

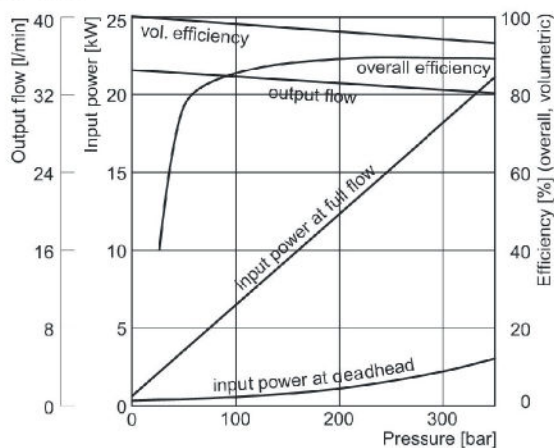
Efficiency, power consumption PVT016



PVT020



PVT023



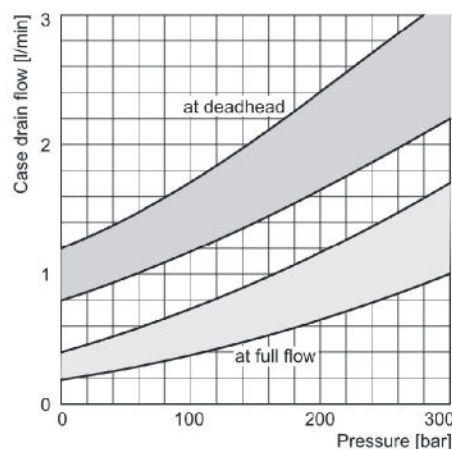
Efficiency and case drain flows PVT016,PVT020,PVT023

The efficiency and power graphs are measured at an input speed of $n = 1500 \text{ min}^{-1}$, a temperature of 50°C and a fluid viscosity of $30 \text{ mm}^2/\text{s}$.

Case drain flow and compensator control flow leave via the drain port of the pump. To the values shown are to be added 1 to 1.2 l/min, if at pilot operated compensators (codes FR*, FF*, FT*, horse power compensator and p/Q-control) the control flow of the pressure pilot valve also goes through the pump.

Please note: The values shown below are only valid for static operation. Under dynamic conditions and at rapid compensation of the pump the volume displaced by the servo piston also leaves the case drain port. This dynamic control flow can reach up to 40 l/min! Therefore the case drain line is to lead to the reservoir at full size and without restrictions as short and direct as possible.

Case drain flows PVT016-023

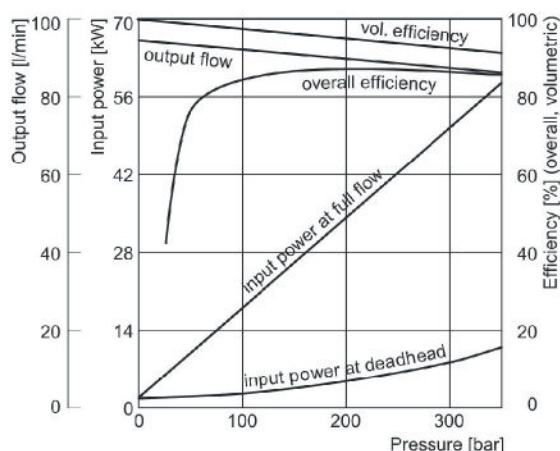


Efficiency and case drain flows PVT063 – PVT092

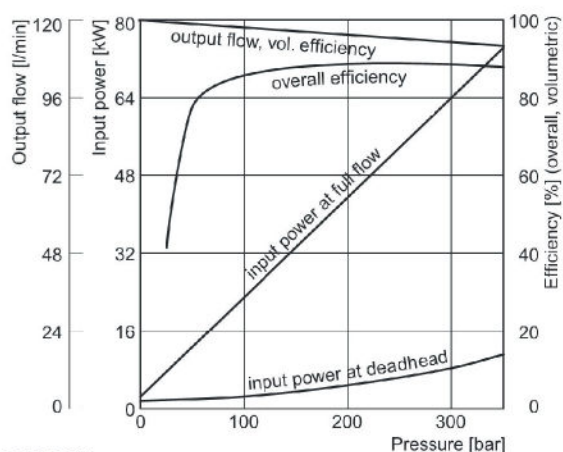
Efficiency and case drain flows

Axial piston pump Series PVT

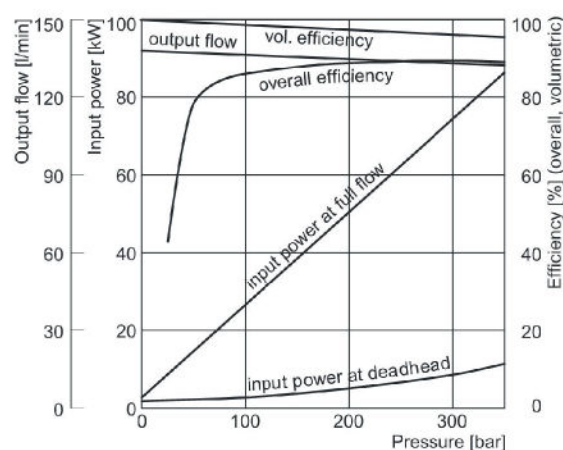
Efficiency, power consumption PVT063



PVT080



PVT092



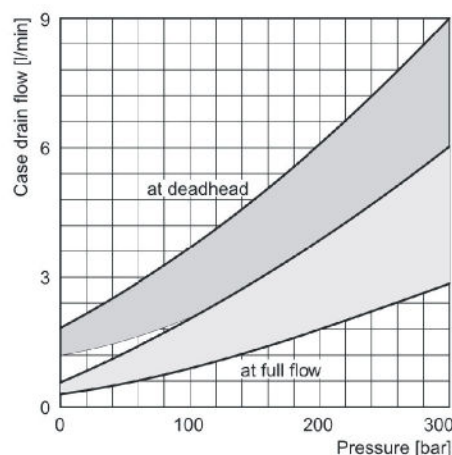
Efficiency and case drain flows PVT063,PVT080,PVT092

The efficiency and power graphs are measured at an input speed of $n = 1500 \text{ min}^{-1}$, a temperature of 50°C and a fluid viscosity of $30 \text{ mm}^2/\text{s}$.

Case drain flow and compensator control flow leave via the drain port of the pump. To the values shown are to be added 1 to 1.2 l/min, if at pilot operated compensators (codes FR*, FF*, FT*, horse power compensator and p-Q-control) the control flow of the pressure pilot valve also goes through the pump.

Please note: The values shown below are only valid for static operation. Under dynamic conditions and at rapid compensation of the pump the volume displaced by the servo piston also leaves the case drain port. This dynamic control flow can reach up to 80 l/min! Therefore the case drain line is to lead to the reservoir at full size and without restrictions as short and direct as possible.

Case drain flows PVT063-092

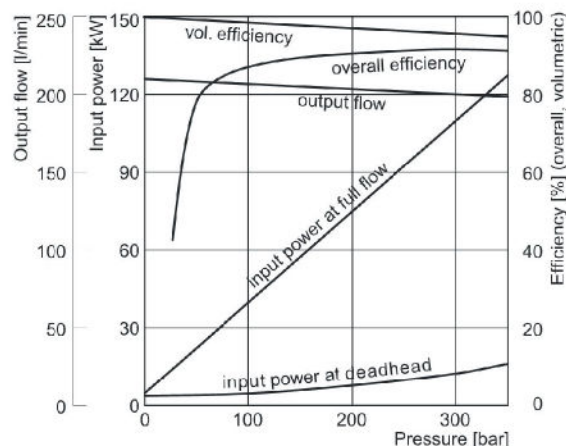


Efficiency and case drain flows PVT140 – PVT270

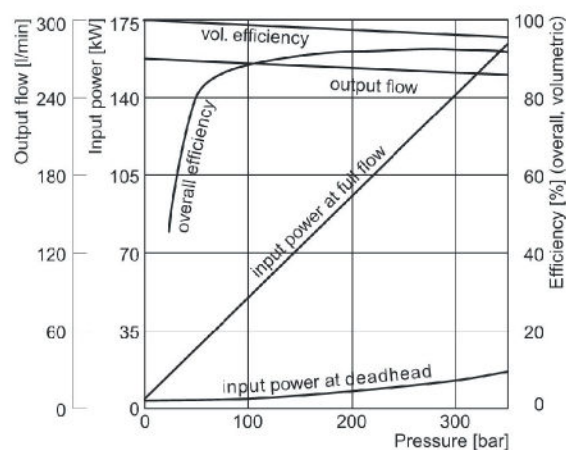
Efficiency and case drain flows

Axial piston pump Series PVT

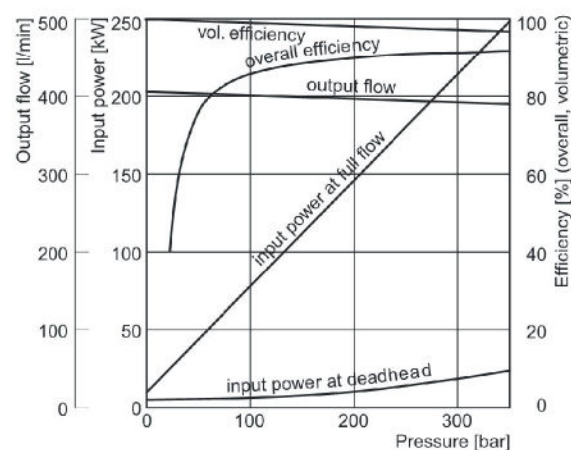
Efficiency, power consumption PVT140



PVT180



PVT270



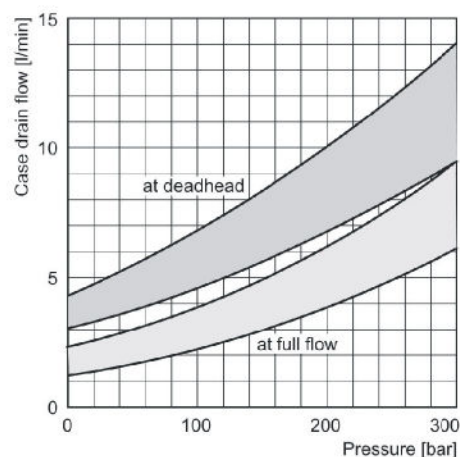
Efficiency and case drain flows PVT140,PVT180,PVT270

The efficiency and power graphs are measured at an input speed of $n = 1500 \text{ min}^{-1}$, a temperature of 50°C and a fluid viscosity of $30 \text{ mm}^2/\text{s}$.

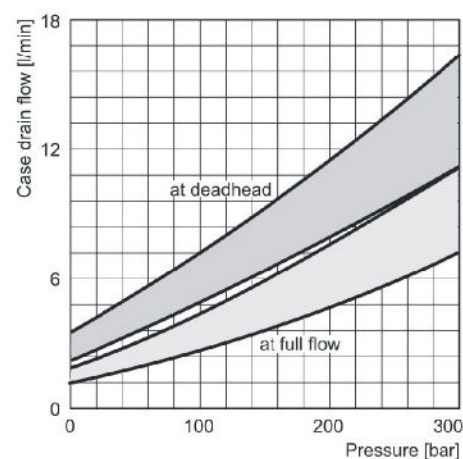
Case drain flow and compensator control flow leave via the drain port of the pump. To the values shown are to be added 1 to 1.2 l/min, if at pilot operated compensators (codes FR*, FF*, FT*, horse power compensator and p-Q-control) the control flow of the pressure pilot valve also goes through the pump.

Please note: The values shown below are only valid for static operation. Under dynamic conditions and at rapid compensation of the pump the volume displaced by the servo piston also leaves the case drain port. This dynamic control flow can reach up to 120 l/min! Therefore the case drain line is to lead to the reservoir at full size and without restrictions as short and direct as possible.

Case drain flows PVT140-180



Case drain flows PVT270

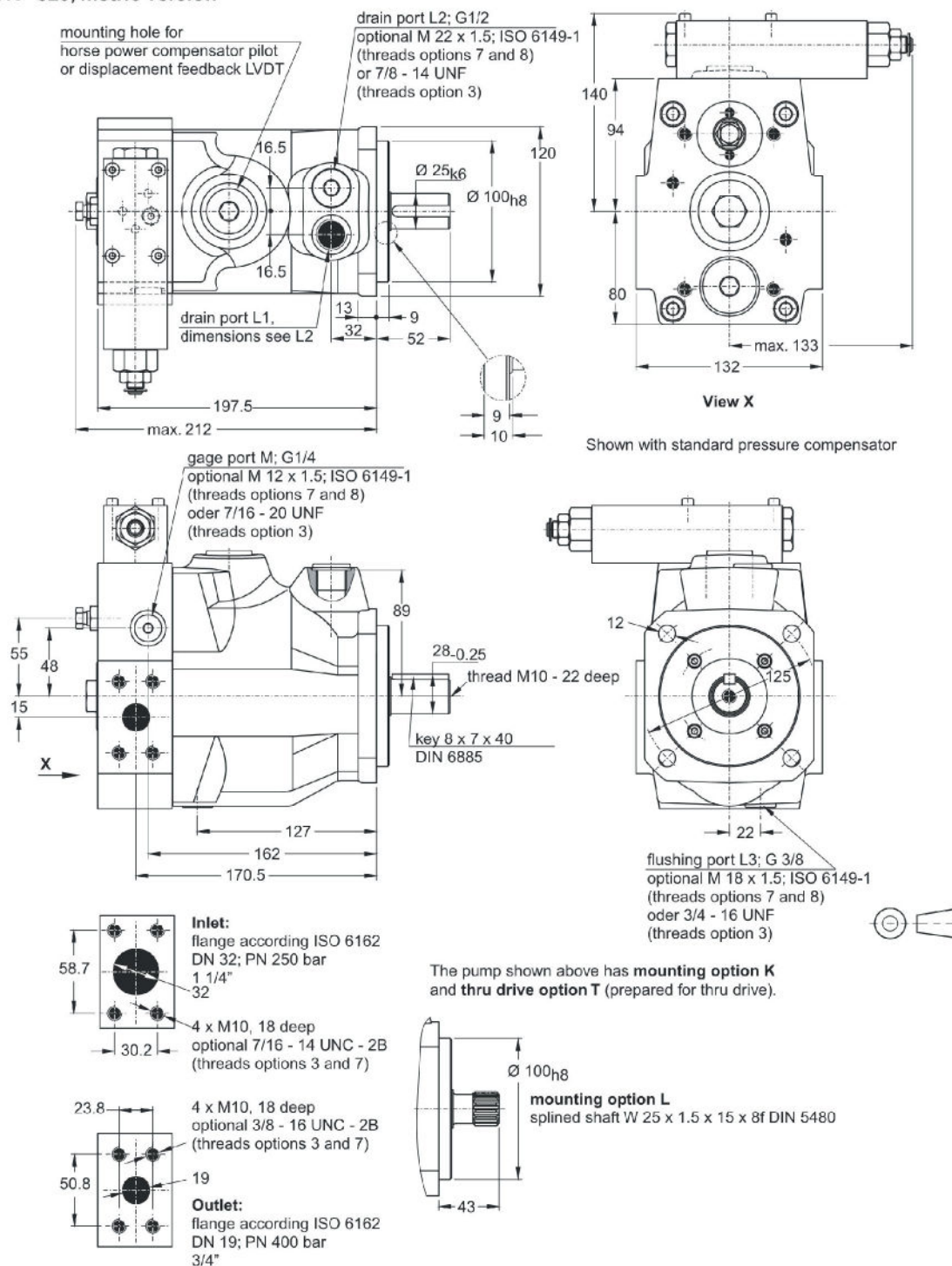


Taicin Data Sheet PVT016 - 023 Metric Version

Dimensions

Axial piston pump Series PVT

PVT016 - 023, metric version

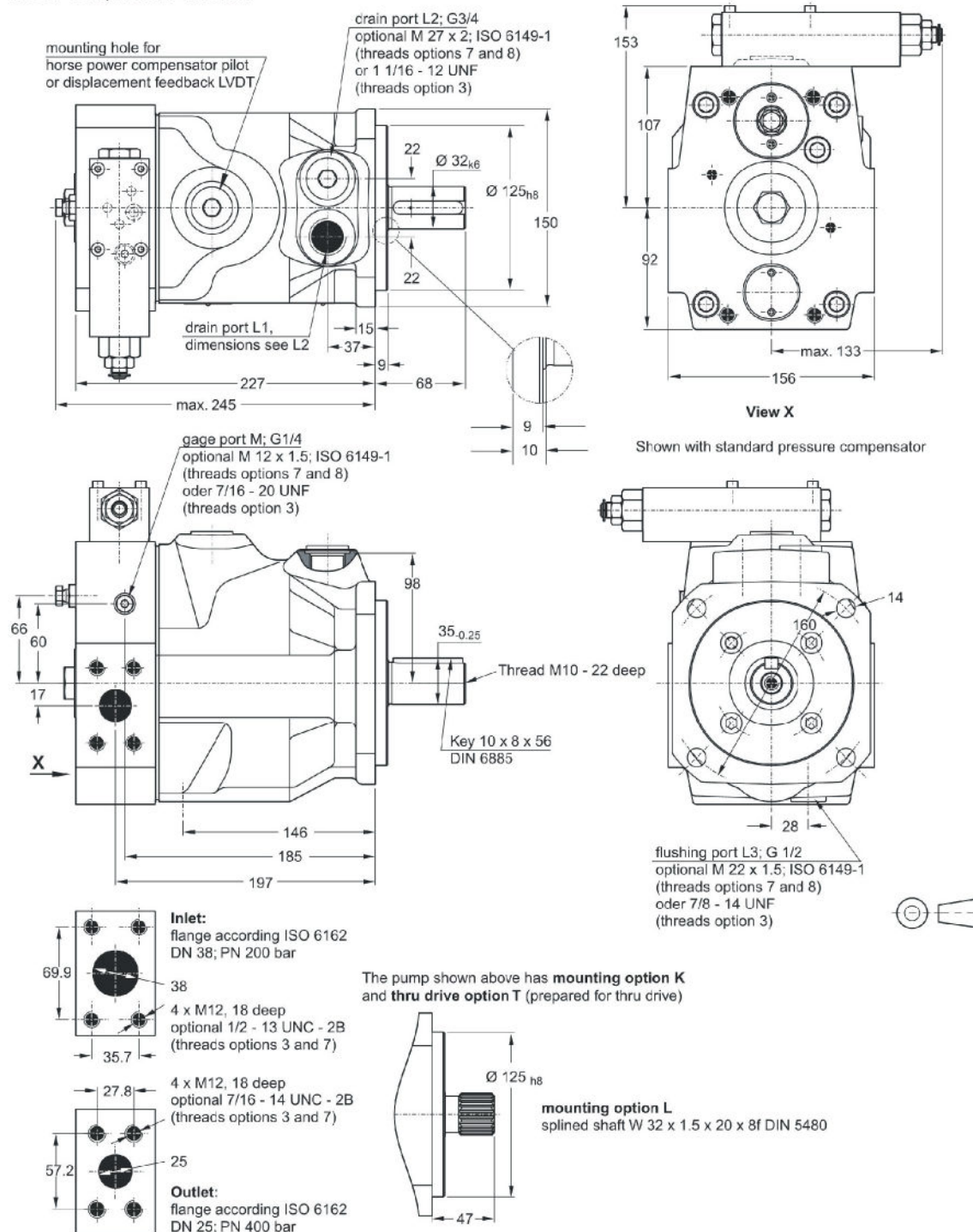


Taicin Data Sheet PVT032 - 046 Metric Version

Dimensions

Axial piston pump Series PVT

PVT032 - 046, metric version



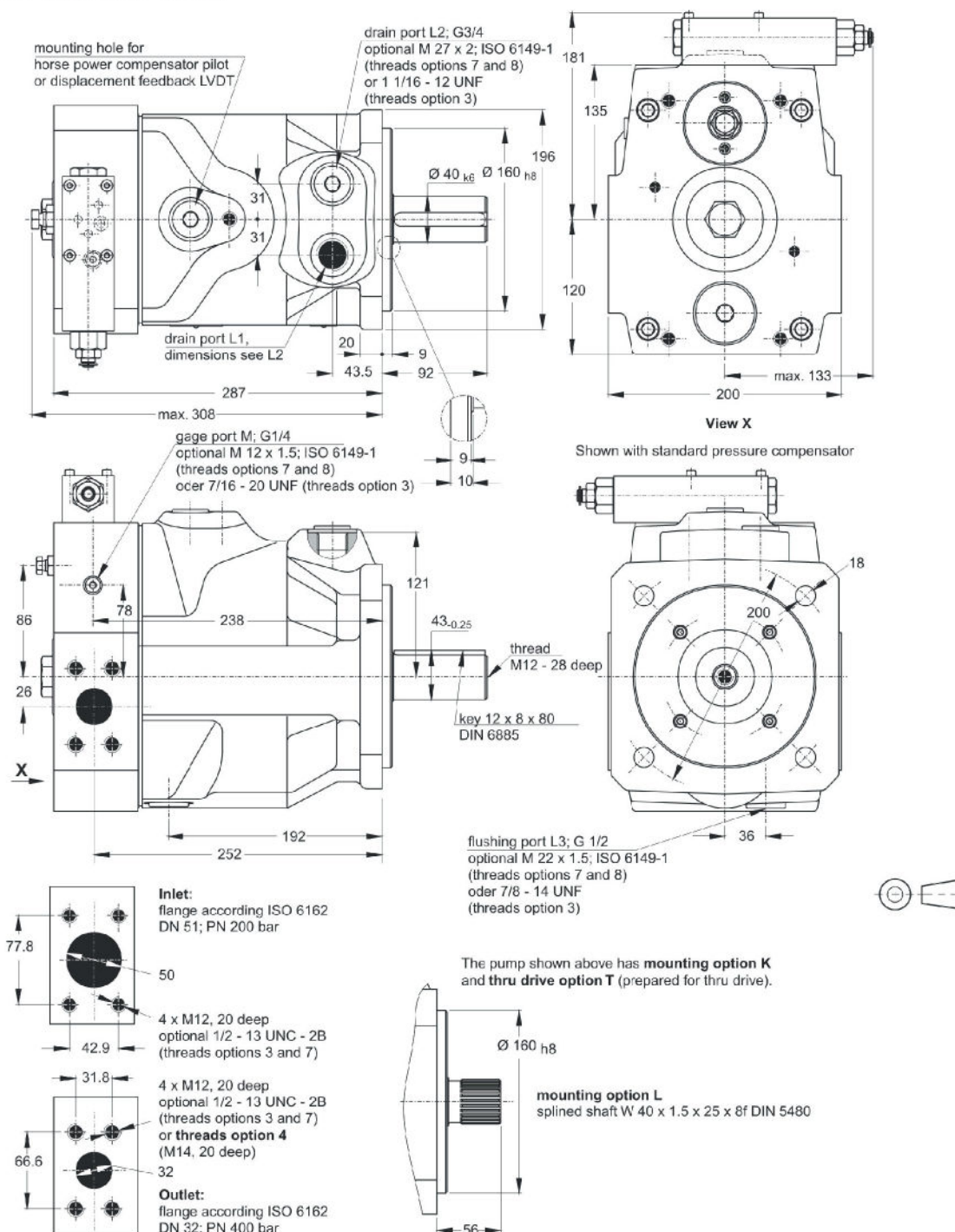
Shown is a clockwise rotating pump. Counter clockwise rotating pumps have inlet, outlet and gauge ports reversed.

Taicin Data Sheet PVT063 - 092 Metric Version

Dimensions

Axial piston pump Series PVT

PVT063 - 092, metric version



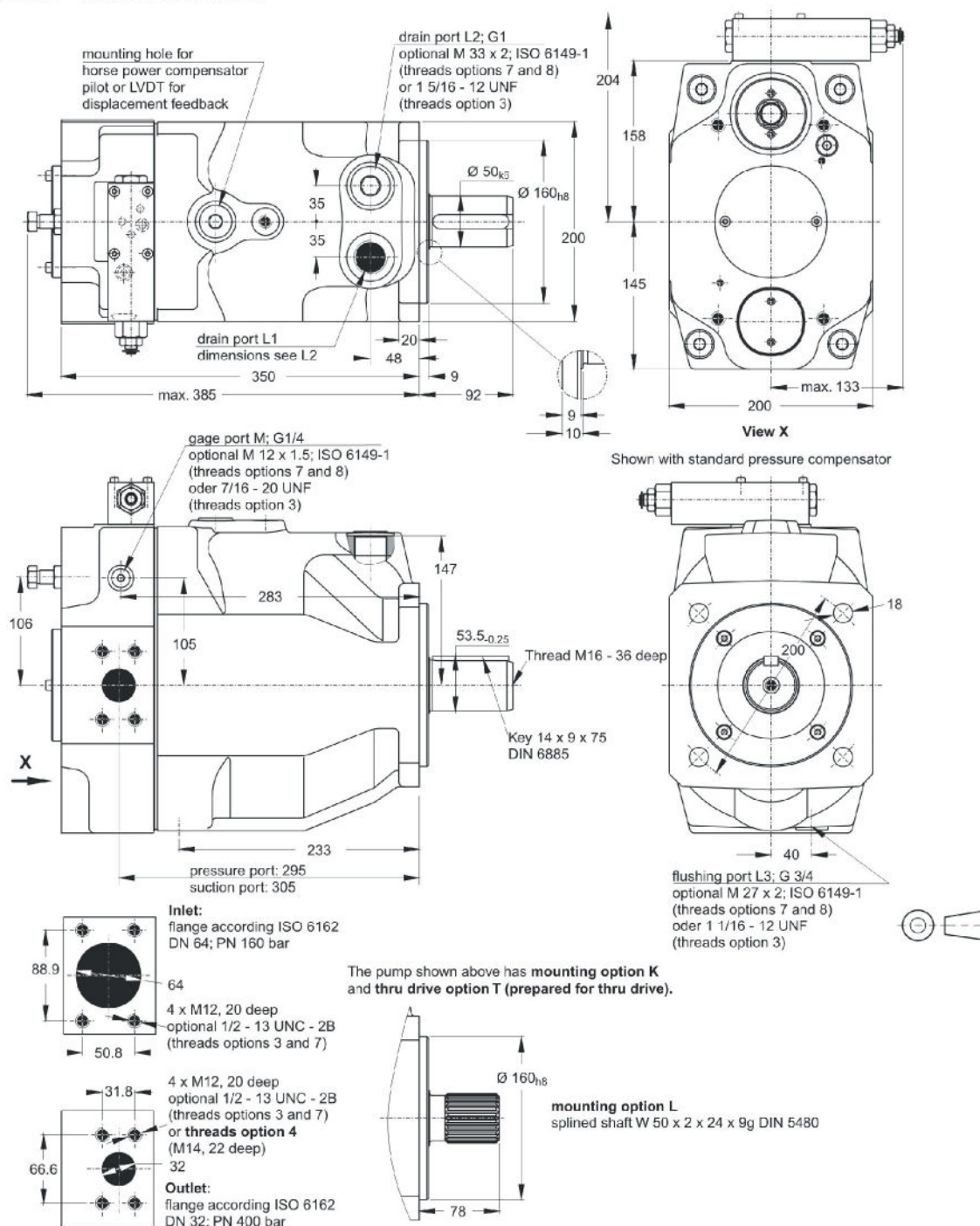
Shown is a clockwise rotating pump. Counter clockwise rotating pumps have inlet, outlet and gauge ports reversed.

Taicin Data Sheet PVT0140 - 150 Metric Version

Dimensions

Axial piston pump Series PVT

PVT0140 - 180, metric version



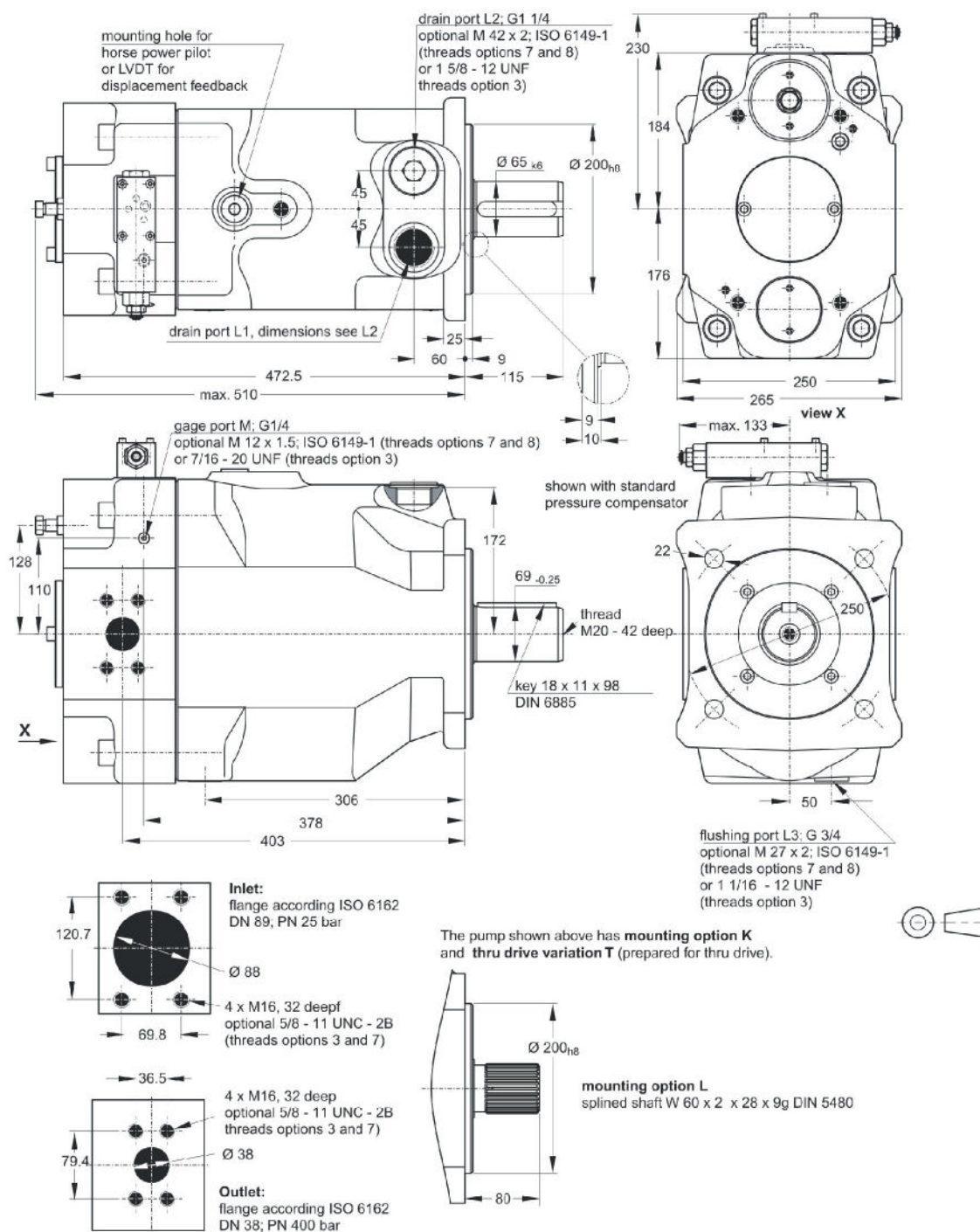
Shown is a clockwise rotating pump. Counter clockwise rotating pumps have inlet, outlet and gauge ports reversed.

Taicin Data Sheet PVT270 Metric Version

Dimensions

Axial piston pump
Series PVT

PVT270, metric version



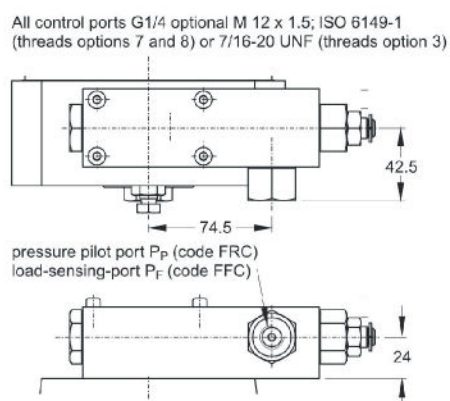
Shown is a clockwise rotating pump. Counter clockwise rotating pumps have inlet, outlet and gauge ports reversed.

Compensator Dimensions

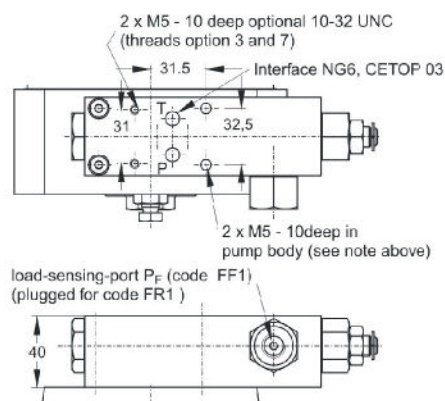
Compensators dimensions

Axial piston pump Series PVT

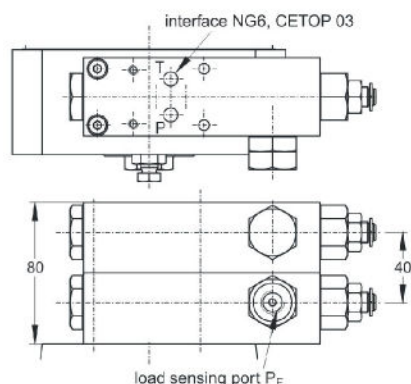
Remote pressure compensator, code FRC
Load sensing compensator, code FFC



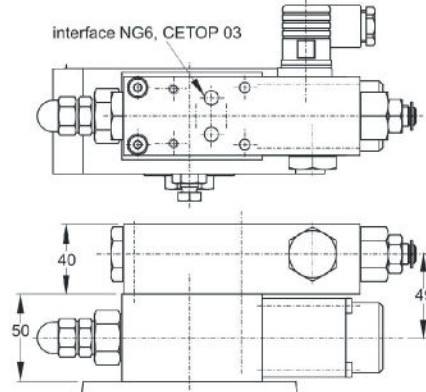
Remote pressure comp. with interface NG6, code FR1
Load sensing comp. with interface NG6, code FF1



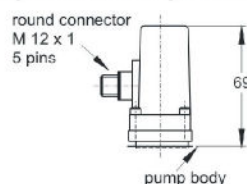
2-valve compensator, code FT1



Proportional p-Q-compensator, code FPR (for code
FPV lower valve only without interface)



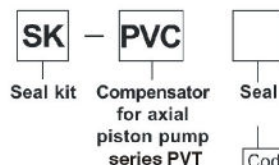
LVDT for proportional compensator



Pilot valve for horse power compensator



Seal kit, compensator



Code	Seal
N	NBR
V	FPM
E	EPR

Seal kit includes all seals for all single compensator options and the seals for LVDT and horse power pilot valve. For 2-valve-compensators two seal kits are to be ordered.

Pressure Compensator

Pressure compensators

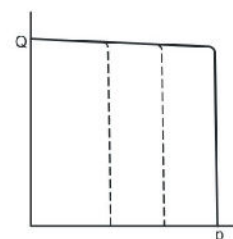
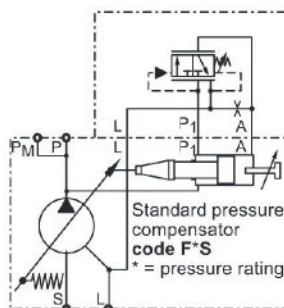
Axial piston pump Series PVT

Standard pressure compensator code F*S

The standard pressure compensator adjusts the pump displacement according to the actual need of the system in order to keep the pressure constant.

As long as the system pressure at outlet port P is lower than the set pressure (set as spring preload of the compensator spring) the working port A of the compensator valve is connected to the case drain and the piston area is unloaded. Bias spring and system pressure on the annulus area keep the pump at full displacement.

When the system pressure reaches the set pressure the compensator valve spool connects port P1 to A and builds up a pressure at the servo piston resulting in a downstroking of the pump. The displacement of the pump is controlled in order to match the flow requirement of the system.



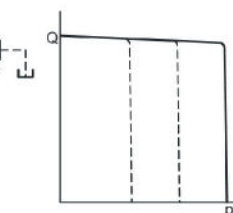
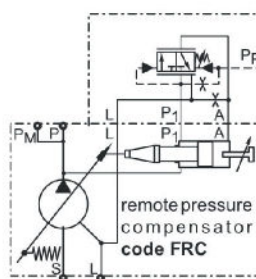
[] = included

Remote pressure compensator code FRC

While at the standard pressure compensator the pressure is set directly at the compensator spring, the setting of the remote pressure compensator can be achieved by any suitable pilot pressure valve connected to pilot port P_p. The pilot flow supply is internal through the valve spool.

The pilot flow is 1 - 1.5 l/min. The pilot valve can be installed remote from the pump in some distance. That allows pressure setting e. g. from the control panel of the machine. The remote pressure compensator typically responds faster and more precisely than the standard pressure compensator and is able to solve instability problems that may occur with a standard pressure compensator in critical applications.

The pressure pilot valve can also be electronically controlled (proportional pressure valve) or combined with a directional control valve for low pressure standby operation.



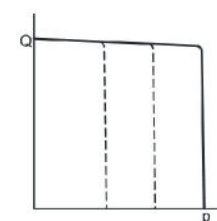
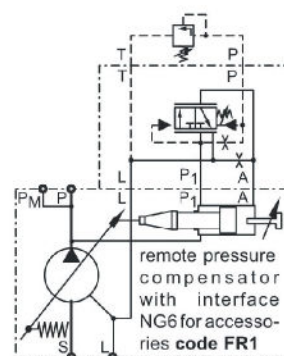
[] = included

Remote pressure compensator code FR1

Version FR1 of the remote pressure compensator provides on its top side an interface NG6, DIN 24340 (CETOP 03 at RP35H, NFPA D03).

This interface allows a direct mounting of a pilot valve. Beside manual or electrohydraulic operated valves it is also possible to mount complete multiple pressure circuits directly on the compensator body. Parker offers a variety of these compensator accessories ready to install. See pages 38 and 39 of this catalogue.

All remote pressure compensators have a factory setting of 15 bar differential pressure. With this setting, the controlled pressure at the pump outlet is higher than the pressure controlled by the pilot valve.



[] = included

Load Sensing Compensators

Load-sensing compensators

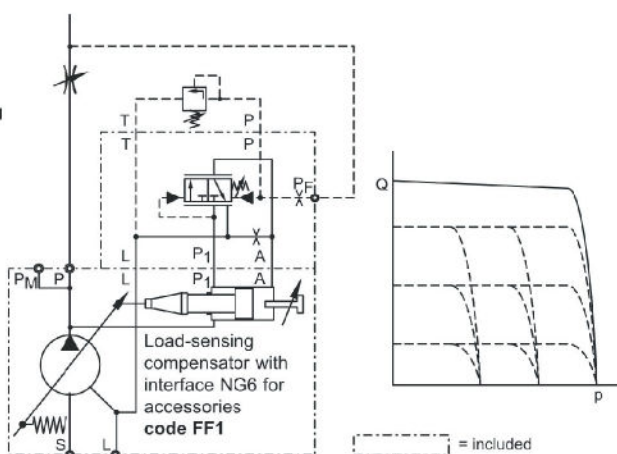
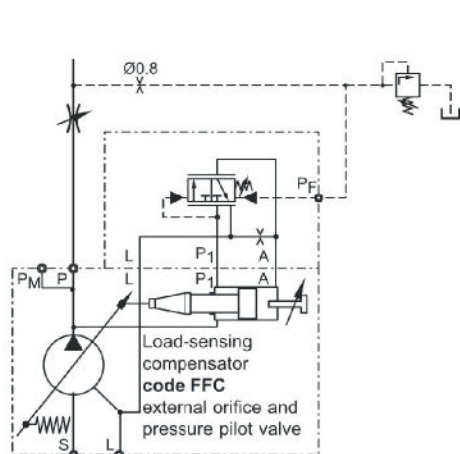
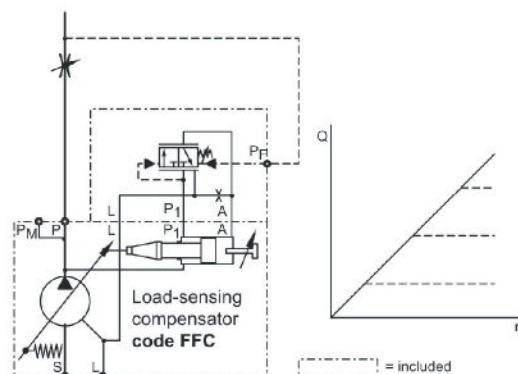
Axial piston pump Series PVT

Load-sensing compensator code FFC

The load-sensing compensator has an external pilot pressure supply. Factory setting for the differential pressure is 10 bar. The input signal to the compensator is the differential pressure at a main stream resistor. A load-sensing compensator represents mainly a flow control for the pump output flow, because the compensator keeps the pressure drop at the main stream resistor constant.

A variable input speed or a varying load(-pressure) has consequently no influence on the output flow of the pump and the speed of the actuator.

By adding a pilot orifice ($\varnothing 0.8\text{mm}$) and a pressure pilot valve pressure compensation can be added to the flow control function. See the circuit diagram below, left.



Shown above is **load sensing compensator code FF1** with an NG6 interface on top of the control valve. That allows direct mounting of a pilot valve for pressure compensation. This version includes the pilot orifice.

Due to the interaction of flow and pressure compensation this package has not the "ideal" control characteristic. The deviation is caused by the pilot valves characteristic.

If a more accurate pressure compensation is required, the **2-valve load-sensing compensator code FT1** can be used. The circuit diagram of this version is shown left.

Here the interaction of the two control functions is avoided by using two separate control valves for flow and pressure compensation.

The 2-valve compensator is equipped with an interface NG6 on the compensators top side.

