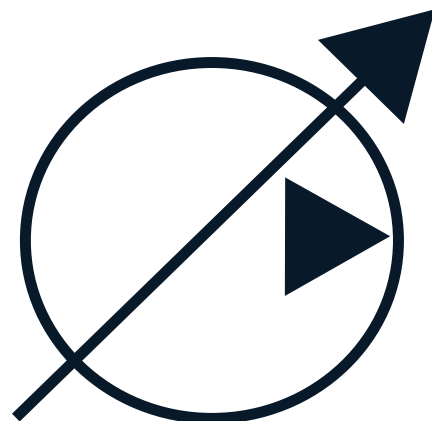# GOLD HYDRAULICS®

A12V Series
Variable Displacement Piston Pumps

2020

Displacement:

40 cc, 60 cc, 75 cc, 92 cc, 120 cc, 130 cc, 150 cc

The pumps are variable displacement with pressure-flow control –called Load Sensing.

Specifially designed for the needs of the truck hydraulics market, The pumps are particularly well adapted for applications in
- loader cranes,
- forestry cranes,
- refuse vehicles,
- salt spreaders, snow and ice equipment,
- construction equipment vehicles.

Extremely compact in size to allow direct flange-mounting on vehicle engine or gearbox PTOs.

The pumps are available in the models with maximum displacement from 40 to 150 cc/rev.C Maximum pressure is up to 420 bar depending on the model.

Pump reference		Direction of rotation	Maximum displac.[1]	Max. opera-ting pressure	Max. peak pressure (intermittent: 5%)	Torque at 300 bar[2]	Max.speed at full displa-cement[3]	Max.speed in stand-by	Weight	Overhang torque[4]
			(cc/rev)	(bar)	(bar)	(N.m)	rpm	rpm	(kg)	(N.m)
40 cc	A12V40R A12V40L	CW CCW	40	400	420	225	3000	3000	26	34
60 cc	A12V60R A12V60L	CW CCW	60	400	420	335	2600	3000	26	34
75 cc	A12V75R A12V75L	CW CCW	75	400	420	420	2000	3000	26	34
92 cc	A12V92R A12V92L	CW CCW	92	400	420	515	1900	3000	26	34
120 cc	A12V120R A12V120L	CW CCW	120	380	400	675	2100	3000	26	34
130 cc	A12V130R A12V130L	CW CCW	130	365	380	730	2100	3000	28,2	38,6
150 cc	A12V150R A12V150R	CW CCW	150	310	330	840	2000	3000	28,2	38,6

► Calculation of power to be supplied to the shaft as a function of flow and pressure

$$P = \frac{\Delta P \times Q}{600 \times \eta_{global}}$$

Calculation of torque to determine PTO, as a function of the displacement and the pressure

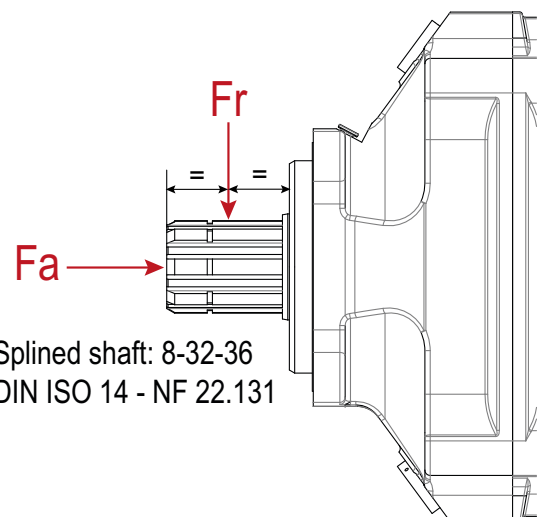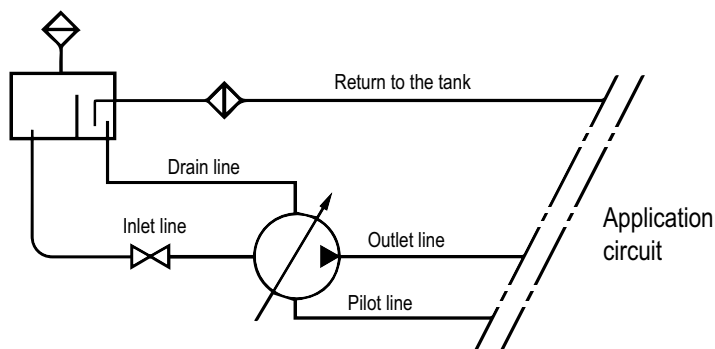$$C = \frac{Cyl \times \Delta P}{62.8 \times \eta_{méca}}$$

Avec :

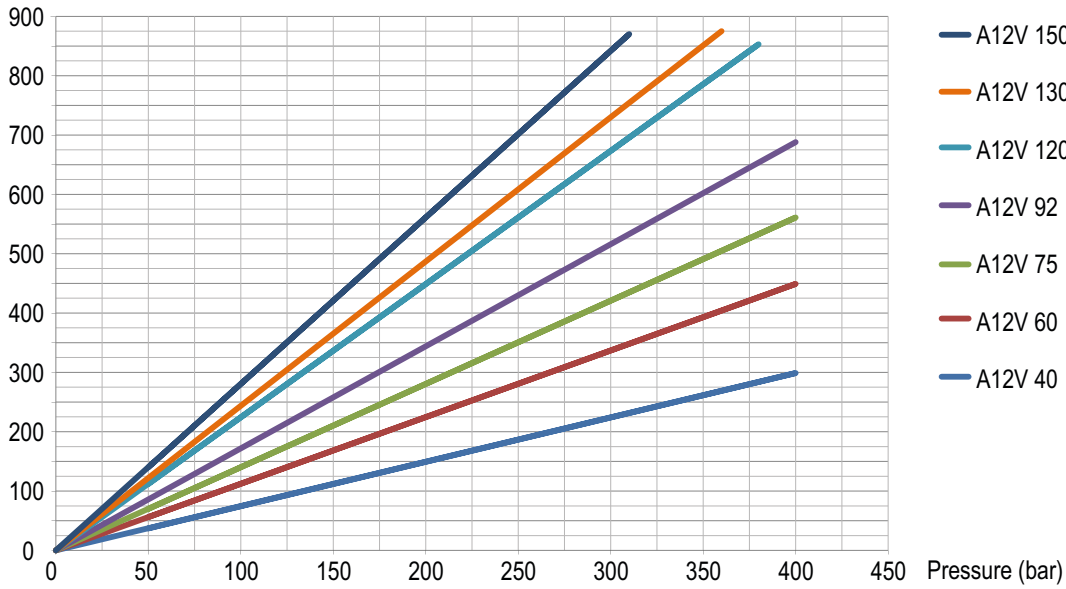|		
P	=	Hydraulic power in kW
ΔP	=	Differential pressure in bar
Q	=	Flow in l/min
C	=	Torque in N.m
Cyl	=	Displacement in cc/rev
$\eta_{méca}$	=	Mechanical efficiency
η_{global}	=	Mechanical efficiency + volumetric efficiency

► Force on pump shaft

Fr : Acceptable max. radial force = 3000 N
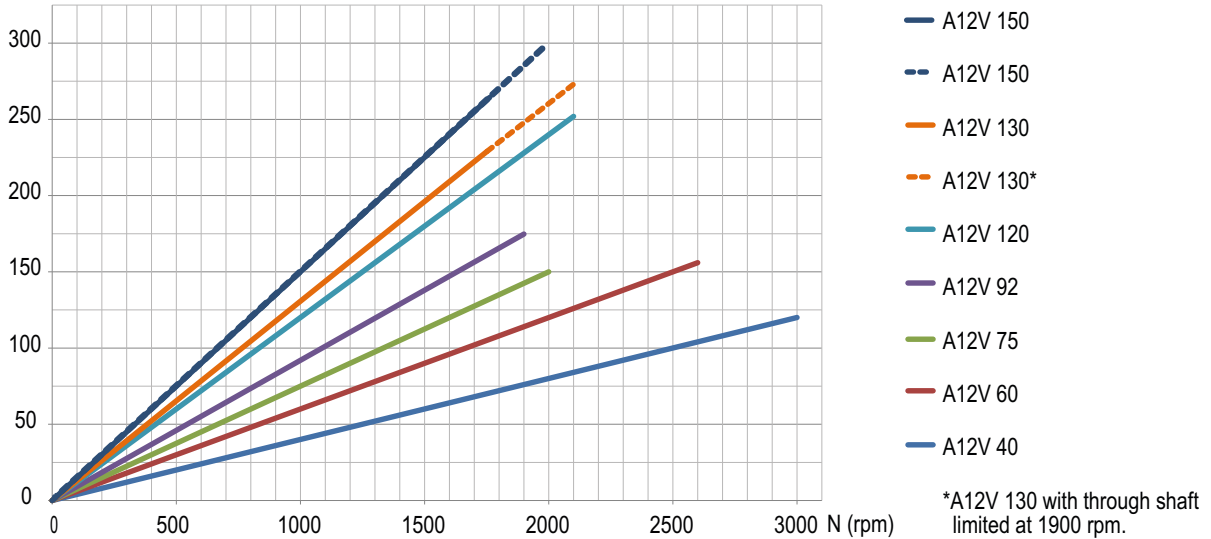
Fa : Acceptable axial force = 1600 N.

► Ideal installation

Splined shaft: 8-32-36
DIN ISO 14 - NF 22.131

Torque (N.m)

- A12V 150
- A12V 130
- A12V 120
- A12V 92
- A12V 75
- A12V 60
- A12V 40

Q (l/min)

- A12V 150
- A12V 150
- A12V 130
- A12V 130*
- A12V 120
- A12V 92
- A12V 75
- A12V 60
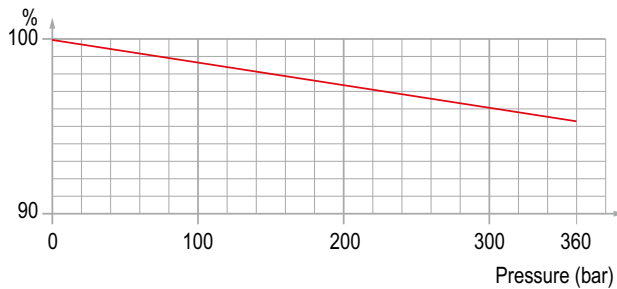- A12V 40

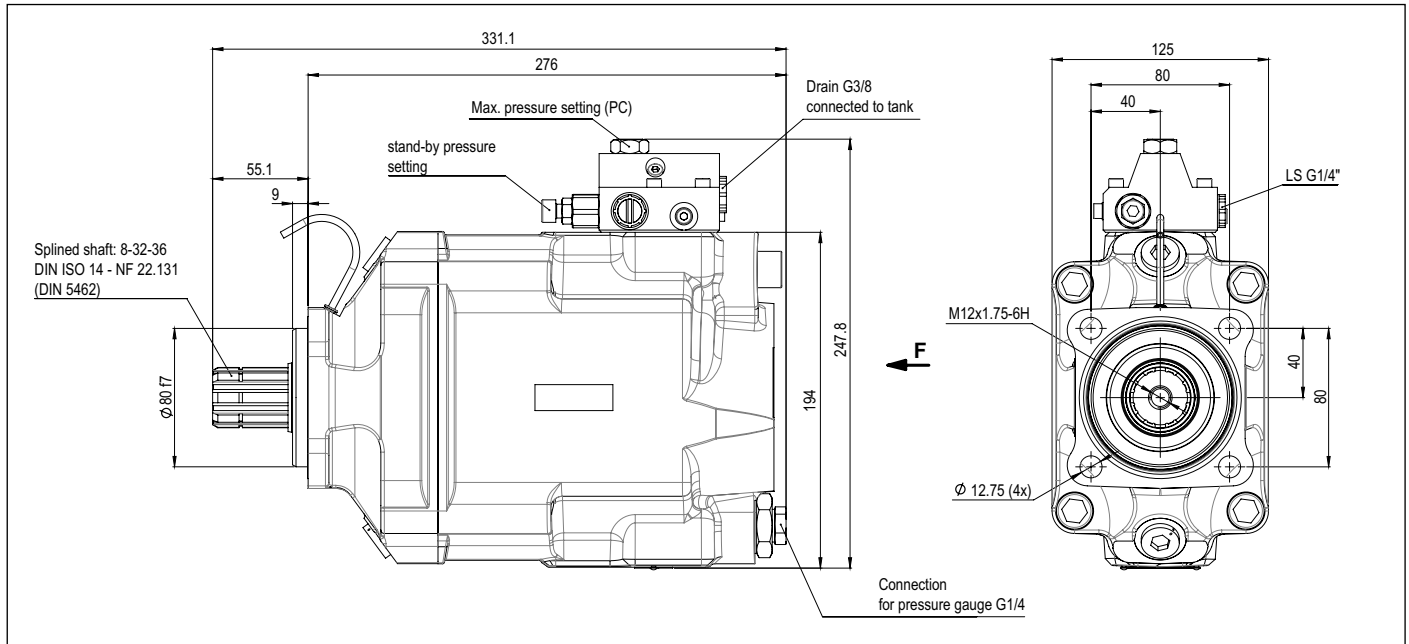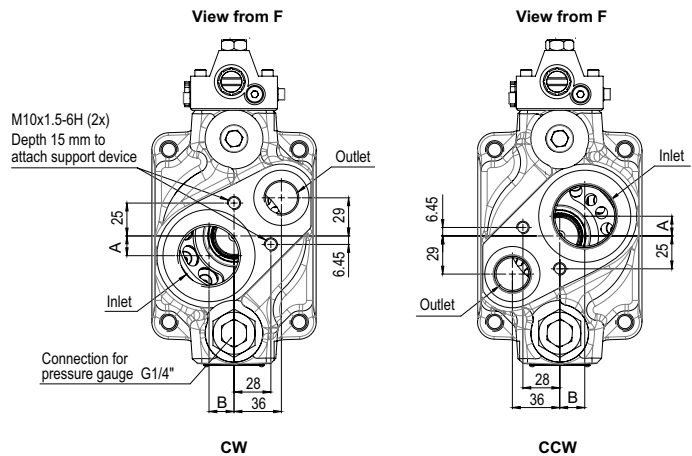*A12V 130 with through shaft limited at 1900 rpm.

Efficiency at 1500 rpm

A12V 40cc to 120cc

Dimensions in mm.

A12V connections

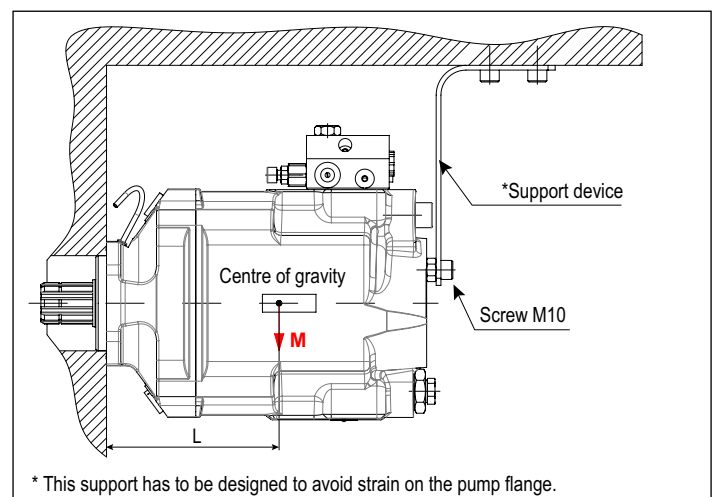| Pump reference	Outlet (Ø)	Inlet (Ø)	A (mm)	B (mm)
A12V 40 to 92	G 3/4"	G 1"1/2	15	19
A12V 120	G 1"	G 1"1/2	6	23.57

Support device

In cases where it is necessary to use a support device (overhang torque) for the pump, this must be fixed to the same part which the pump is mounted on.

Mass and position of centre of gravity

Pump type	L (mm)	Weight (kg)	Overhang torque (N.m)
A12V 40 - 92	130	26	34
A12V 120	130	26	34
A12V 130 - A12V 150	128	28.2	38.6
A12V 130 - A12V 150	128	29.3	42
A12V 130 with through shaft	152.6	31.1	47.4
A12V 130 constant torque	143	28.3	40

* This support has to be designed to avoid strain on the pump flange.

A12V 150cc

321.1
266
55.1
9

Maximum pressure setting
Standby pressure setting

Drain G3/8"
to be connected to tank

Splined shaft: 8-32-36
DIN ISO 14 - NF 22.131
(DIN 5462)

Ø 80 f7

277
219
F

Connection for
pressure gauge G1/4"

127
80
40

LS G1/4"

M12x1,75-6H

40
80

Ø 12,75 (4x)

Dimensions in mm.

View from F

M10x1.5-6H (2x)
Depth 15mm to
attach support device

Outlet G1"

50
50

Inlet G1 1/2"

Connection for
pressure gauge G1/4"

29.4   37
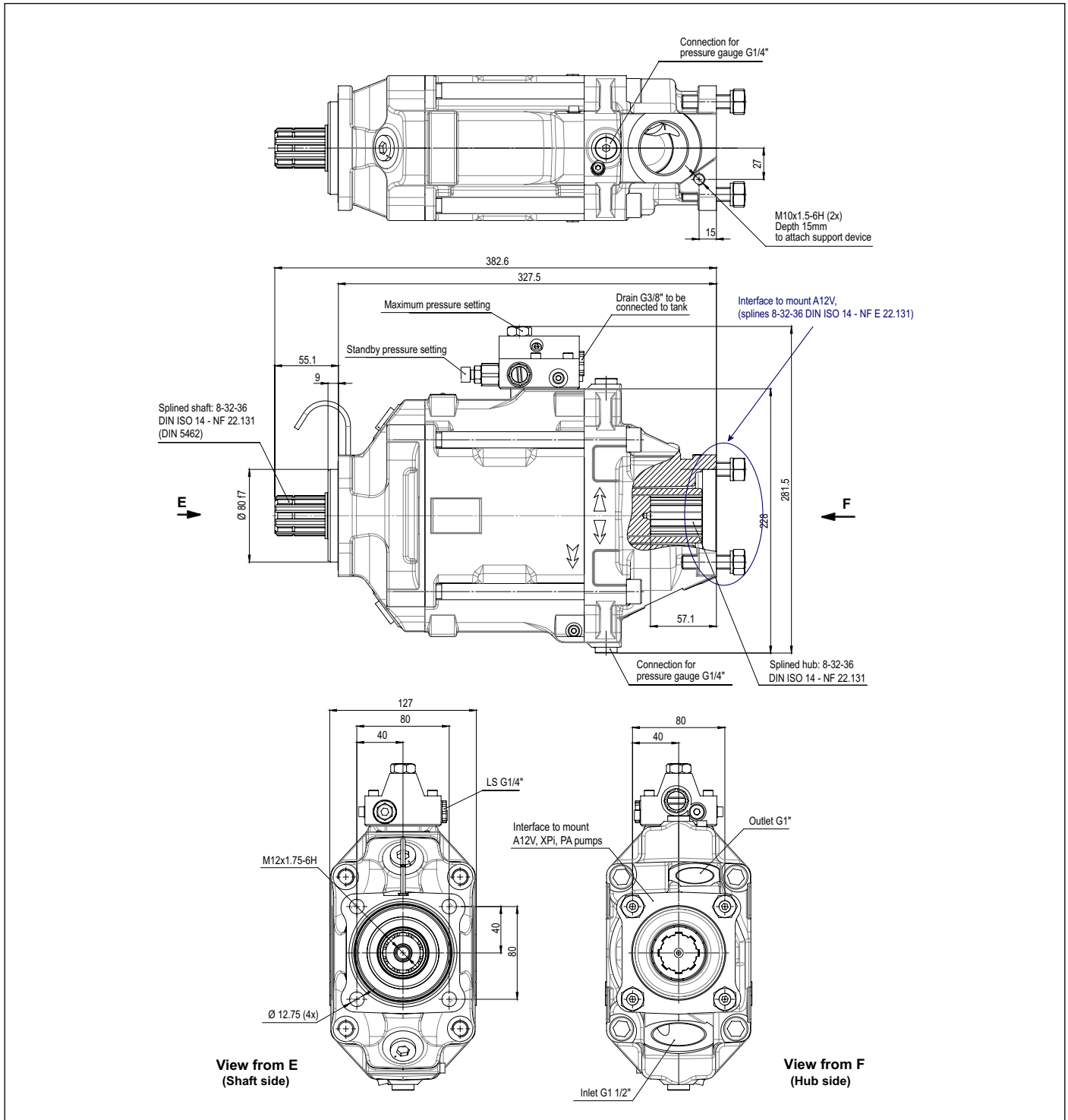32

CW

View from F

CCW

A12V 130 THROUGH SHAFT PUMP

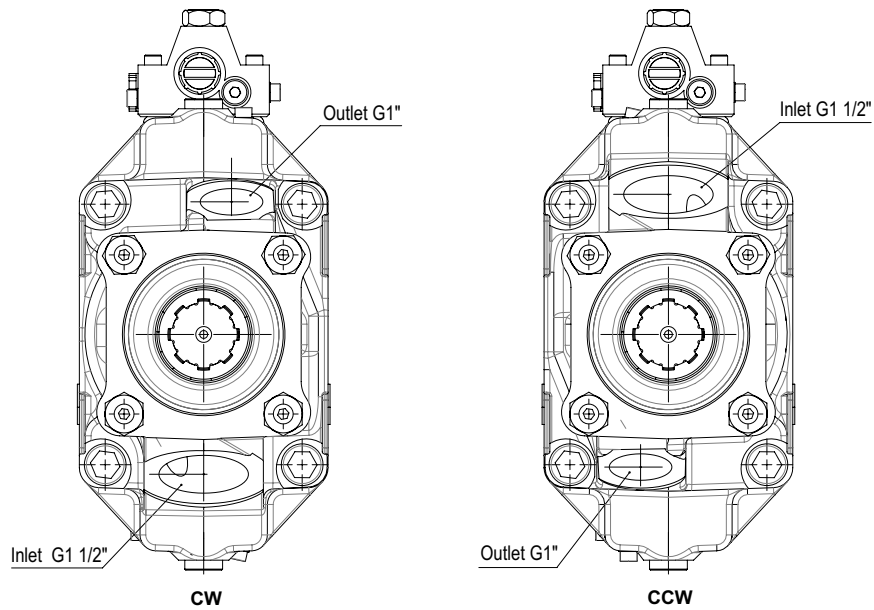The A12V 130 pump exists in a "through shaft" version.

With side porting for inlet and output, this "through shaft" A12V 130 configuration means any A12V pump, or fixed displacement pumps or axial piston pump pump, can be mounted on the back.
The maximum displacement of the "through shaft" A12V 130 can be factory set, on request, between 60 and 130 cc/rev.
It is important to check that maximum torque to be transmitted by the shaft of the "through shaft" A12V 130 does not exceed 900 N.m.
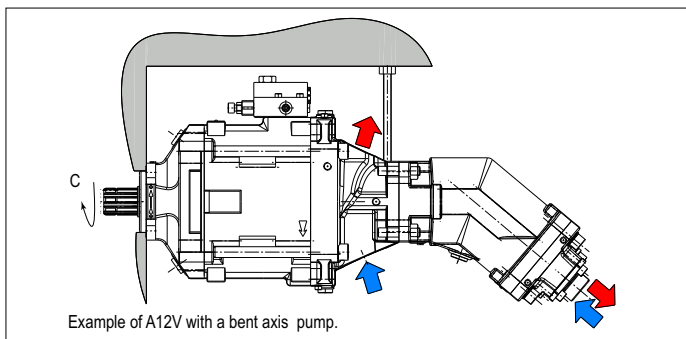
Connection for pressure gauge G1/4"

27

M10x1.5-6H (2x)
Depth 15mm
to attach support device

15

382.6

327.5

Maximum pressure setting

Drain G3/8" to be connected to tank

Interface to mount A12V,
(splines 8-32-36 DIN ISO 14 - NF E 22.131)

55.1

Standby pressure setting

9

Splined shaft: 8-32-36
DIN ISO 14 - NF 22.131
(DIN 5462)

Ø 80 f7

E

281.5

228

F

57.1

Connection for pressure gauge G1/4"

Splined hub: 8-32-36
DIN ISO 14 - NF 22.131

127

80

40

LS G1/4"

M12x1.75-6H

Interface to mount A12V, XPi, PA pumps

80

40

Outlet G1"

40

80

Ø 12.75 (4x)

View from E
(Shaft side)

Inlet G1 1/2"

View from F
(Hub side)

View from F

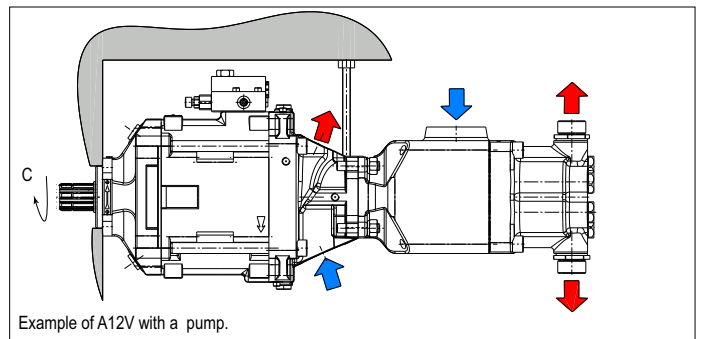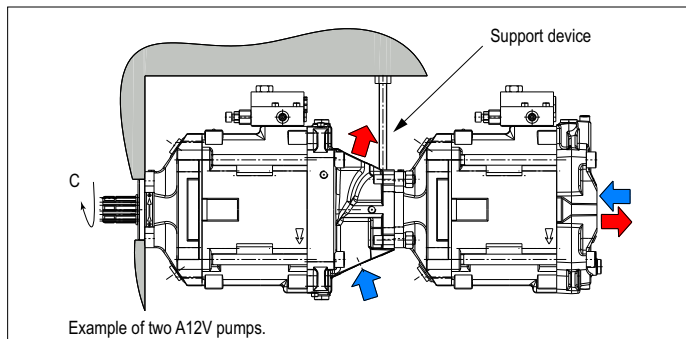Outlet G1"

Inlet G1 1/2"

Inlet G1 1/2"

Outlet G1"

CW

CCW

Support device

The support device for the pump must be fixed to the same part which the pump is mounted on (see diagram below) and has to be designed to avoid strain on the pump flange.

Support device

C

Example of two A12V pumps.

C

Example of A12V with a pump.

C

Example of A12V with a bent axis pump.

Maximum torque transferable by the shaft of the pump driven by the PTO:

C = 900 N.m

That is, the sum of torque for both pumps must be < 900 N.m.

Complete Product Range

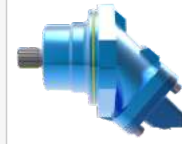|		Piston **Pumps**	Piston **Motors**
DIN	DIN 5462 / ISO 14 8x32x35 8x32x36 DIN 6885	**A8PD**	**A9MD**
ISO	ISO 3019-2 (4 BOLTS) DIN 5480 -W25,30,35,40,45 DIN 6885 -Ø20,25,30,35,40,45	**A8PO**	**A9MO**
SAE	SAE B2 C4 - SAE D SAE J498b SAE J 744	**A8PS**	**A9MS**
M2 Fixed Plug-in	DIN 5480 / ISO 3019-2 W30 - W35 - W40 M21 - M22 - M23	**A8PL - Dual Flow**	**A9MF - Semi integrated**
A4	DIN ISO 14 8x32x36	**A4PP Single Flow**	**A4PL Dual Flow**
A6	P2 Connection M8x125 Woodruff key 3x6,5 NF E 27-653 NF R 124-04 (2 BOLTS)	**A6HP - High Pressure**	**A7GP - Gear Pump** **A7GM - Gear Motor**

Gold Hydraulics, Ltd.

2019® Catalogue
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