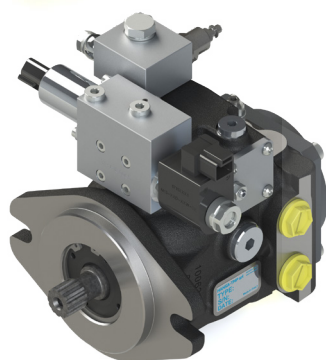
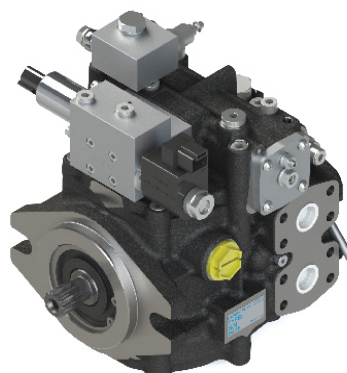


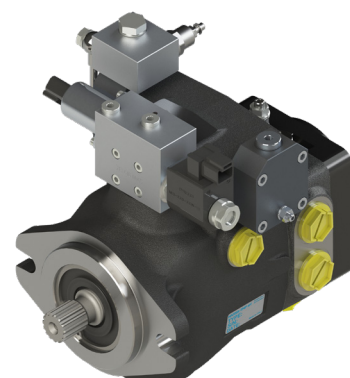
TPV 1100



TPV 1500



TPV 3600



TPV 4300

## HYDROSTATIC FAN DRIVE SYSTEM SISTEMA FAN DRIVE IN CIRCUITO CHIUSO



**HANSA-TMP**  
MANUFACTURING YOUR SUCCESS



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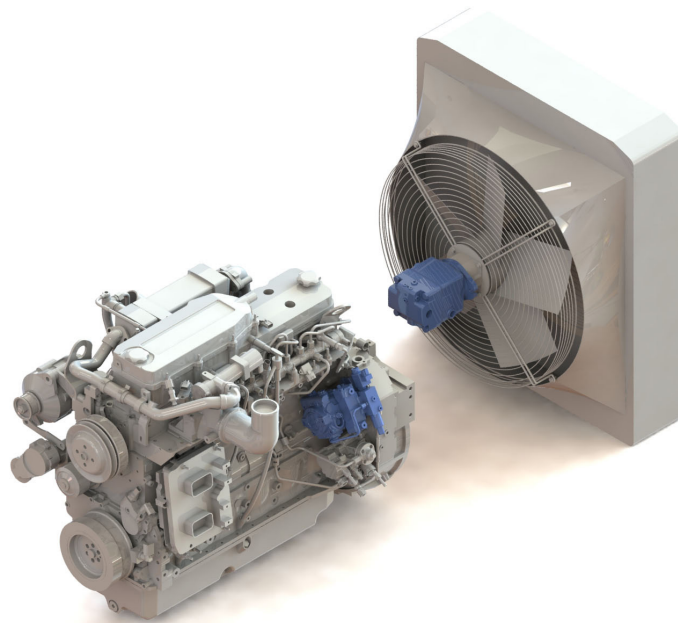
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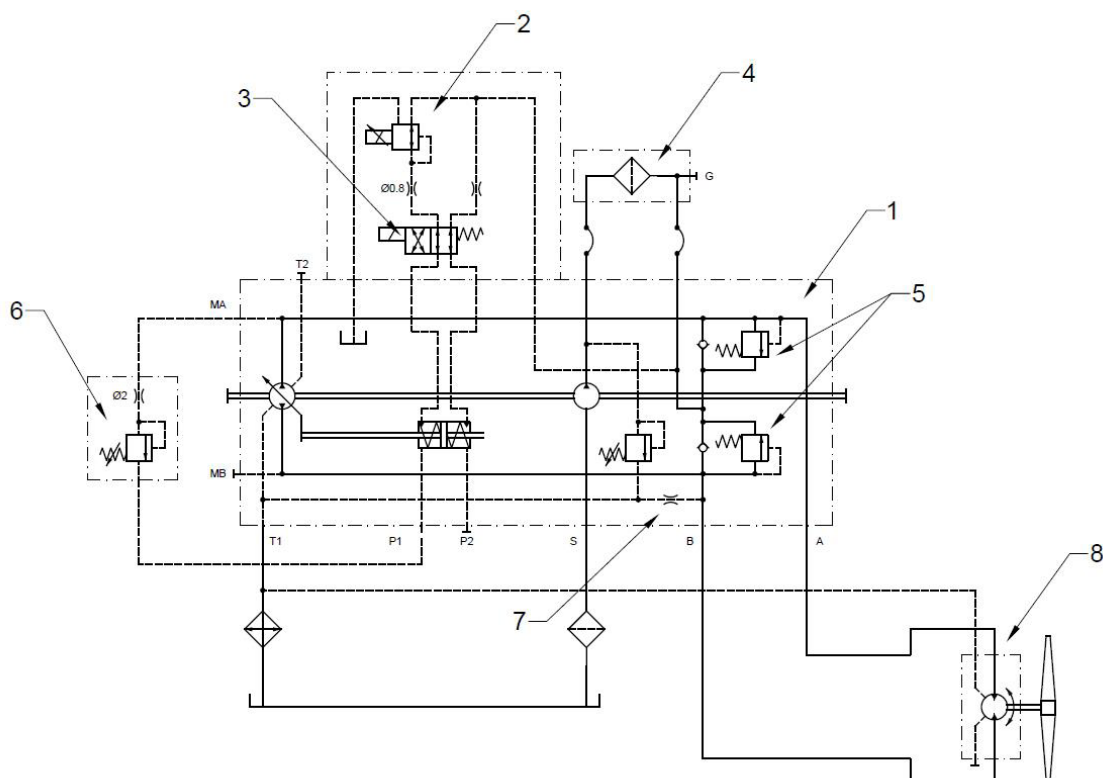
## Hydrostatic Fan Drive System Sistema Fan Drive in circuito chiuso

HANSA-TMP presents a new integrated solution for the Fan Drive system: a closed circuit pump with a specific control designed for the operation of cooling fans combined with a piston motor for the rotation of the fan.

HANSA-TMP presenta una nuova soluzione integrata per il sistema Fan Drive: una pompa a circuito chiuso con controllo specifico, progettata per l'azionamento del motore idraulico accoppiato alla ventola, ad uso dell'impianto di raffreddamento per scambiatori di calore.



### Hydraulic circuit for all Fan Drive versions / Circuito idraulico per tutte le versioni del Fan Drive



# Hydrostatic Fan Drive System Sistema Fan Drive in circuito chiuso

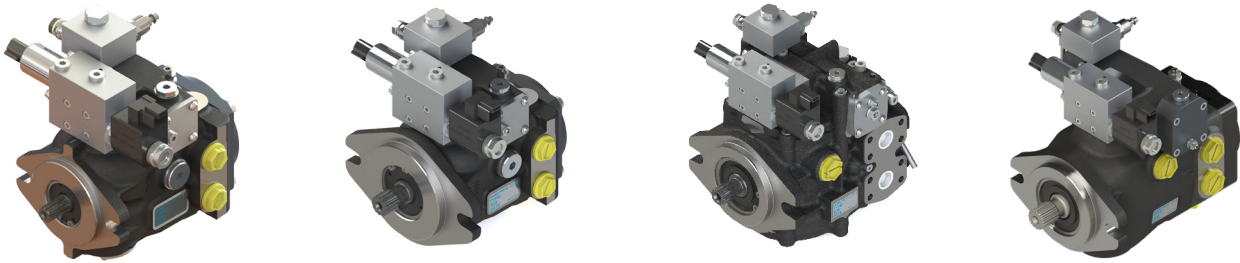
**A complete kit of components for an integration solution /  
Un kit completo di componenti per una soluzione integrata**

**1. Closed circuit axial pistons pump:** the Fan Drive regulator is available for closed loop variable displacement axial piston pumps with displacements ranging from 6 to 50 cm<sup>3</sup>/n. The pumps are available with shafts and mounting flange SAE-A, SAE-B and SAE B-B.

**TPV Series:** available models 1000, 1500, 3600 and 4300

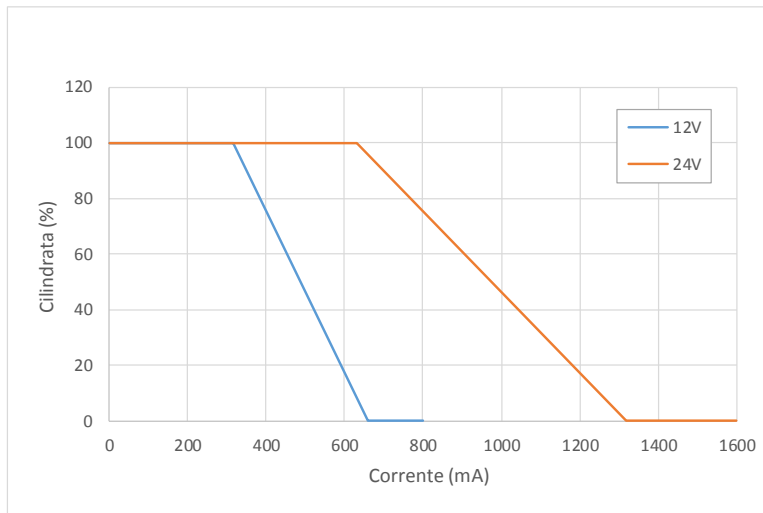
**1. Pompa a pistoni assiali in circuito chiuso:** il regolatore Fan Drive è disponibile per pompe a pistoni assiali a cilindrata variabile per circuito chiuso, con una cilindrata che varia dai 6 ai 50 cm<sup>3</sup>/n. Le pompe sono disponibili con alberi e flange di montaggio SAE-A, SAE-B e SAE B-B.

**Serie TPV:** modelli disponibili 1100, 1500, 3600 e 4300



**2. Pressure reducing valve for displacement control:** the cooling fan speed is controlled by a proportional negative solenoid valve available for 12 or 24 V systems. In event of control current absence the pump displacement is maximum and this decreases to zero flow until the control current increases.

**2. Valvola riduttrice di pressione per il controllo della cilindrata:** la velocità della ventola di raffreddamento è controllata da un'elettrovalvola proporzionale negativa disponibile per sistemi a 12 o 24 V. In caso di assenza di corrente al regolatore, la cilindrata della pompa si mantiene massima e diminuisce solamente in seguito all'aumentare dell'intensità della corrente di eccitazione della valvola.



**3. Reversing valve (optional).** The hydraulic motor rotation can easily be reversed for cleaning the radiator.

**3. Valvola di inversione (opzionale).** Permette di invertire il senso di rotazione del motore idraulico e quindi della ventola, potendo così pulire il radiatore da eventuale materiale estraneo accumulatosi durante il funzionamento.

**4. Filtro di alimentazione (opzionale) / 4. Pilot pressure filter (optional).**

**5. Valvole anti shock e anti cavitazione / 5. Anti-shock and anti-cavitation valves**

## Hydrostatic Fan Drive System Sistema Fan Drive in circuito chiuso

**6. Speed-Limiter valve** (optional): the maximum working pressure can also be limited by a pressure compensator that ensures high efficiency in all operating conditions, limiting the fan speed. /

**6. Valvola limitatrice di velocità** (opzionale): la pressione massima di lavoro può essere anche limitata da un compensatore di pressione che assicura l'elevata efficienza in tutte le condizioni operative, limitando la velocità della ventola.

**7. Flushing valve:** ensures the cooling of the oil within the system. /

**7. Valvola di lavaggio:** assicura il ricambio d'olio all'interno del sistema, garantendone il raffreddamento.

**8. Fan Drive fixed displacement hydraulic motor:** the kit is completed with a axial or bent axis piston motor, in alternative a gear motor is available. /

**8. Motore idraulico Fan Drive a cilindrata fissa:** il kit è completo di motore a pistoni assiali o ad asse inclinato. In alternativa, è disponibile anche un motore ad ingranaggi.

**TMF Series:** axial piston motors displacements ranging from 21 to 110 cm<sup>3</sup>/n

**Serie TMF:** motori a pistoni assiali con cilindrata che varia dai 21 ai 110 cm<sup>3</sup>/n



**TMB Series:** bent axis piston motors displacements ranging from 12 to 130 cm<sup>3</sup>/n

**Serie TMB:** motori ad asse inclinato con cilindrata che varia dai 12 ai 130 cm<sup>3</sup>/n



**Gear Motors:** displacement up to 77 cm<sup>3</sup>/n

**Motori ad ingranaggi:** cilindrata fino a 77 cm<sup>3</sup>/n



### Advantages of Fan Drive system in closed loop circuit / Vantaggi del sistema Fan Drive in circuito chiuso

The hydrostatic drive of the cooling fans has numerous benefits compared to the mechanical pulley system, because it simplifies the placement of components.

• **Increased power density:** the high power density characteristic of hydraulic systems then makes the hydrostatic solution prefer to the electric one whenever the power required by the fan becomes important.

La trasmissione idrostatica delle ventole di raffreddamento ha numerosi vantaggi rispetto ad un sistema meccanico a puleggia, perchè semplifica la collocazione dei componenti.

• **Densità di potenza incrementata:** l'elevata densità di potenza, caratteristica dei sistemi idraulici, rende preferibile la soluzione idrostatica a quella elettrica ogni qual volta la potenza richiesta dalla ventola diventa importante.



## Hydrostatic Fan Drive System Sistema Fan Drive in circuito chiuso

- **High Efficiency:** the fan speed is independent from that of the engine, guaranteeing greater efficiency of the temperature control system and optimal running of energy resources.
- **Elevata efficienza:** la velocità della ventola è indipendente da quella del motore termico, garantendo una maggior efficienza del sistema di controllo della temperatura e un'ottimale gestione delle risorse energetiche.
- **Functional safety and easy maintenance:** the system is designed to ensure the cooling of the engine even in the event of a electric power failure. The compact design allows a simplification of the cooling system and easier maintenance of the system. /
- **Sicurezza funzionale e facilità della manutenzione:** il sistema è progettato in modo da assicurare il raffreddamento del motore termico anche in caso di avaria dell'impianto elettrico della macchina. Il design compatto permette inoltre una semplificazione del sistema di raffreddamento e una facile manutenzione.
- **Low noise and energy savings:** the use of a variable displacement pump guarantees greater system efficiency by generating power only when necessary and in the right quantity. /
- **Ridotta rumorosità e risparmi energetici:** l'utilizzo di una pompa a cilindrata variabile garantisce una maggiore efficienza del sistema, fornendo potenza solo se necessario e nella giusta quantità.
- **Greater flexibility in machine design and compact dimension:** the radiator can be mounted off axis with the engine allowing greater freedom in machine design and space optimization. /
- **Dimensioni compatte e maggiore flessibilità nella progettazione della macchina:** il radiatore può essere montato, non in asse, rispetto al motore termico permettendo una maggiore libertà nella progettazione della macchina e un'ottimizzazione degli spazi.
- **Controls integrated on the pump:** all the components necessary for the control of the fan are incorporated into the pump. /
- **Controlli integrati sulla pompa:** tutti i componenti necessari per il controllo della ventola sono incorporati nella pompa.

### Applications / Applicazioni

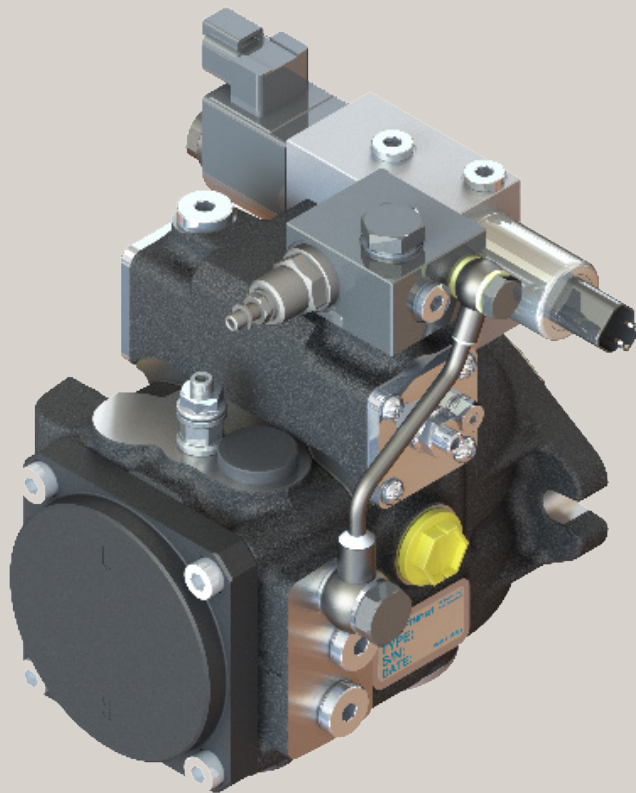
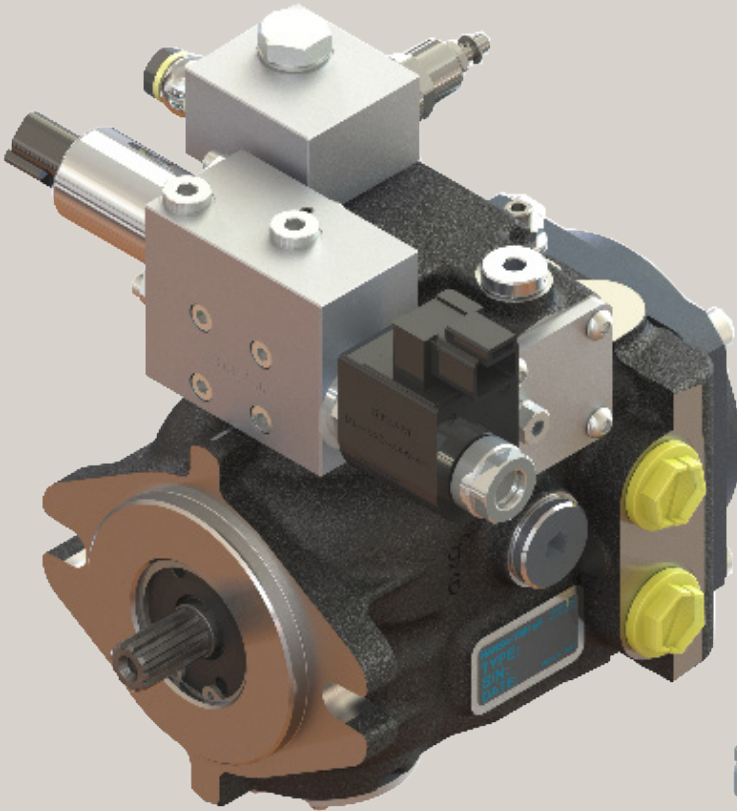
- Construction Machines
- Material Handling Machines
- Mining Machines
- Agriculture & Forestry Machinery
- Macchine da costruzione
- Macchine per la movimentazione dei materiali
- Macchine da miniera
- Macchine agricole e forestali







**TPV 1100 for FAN DRIVE**



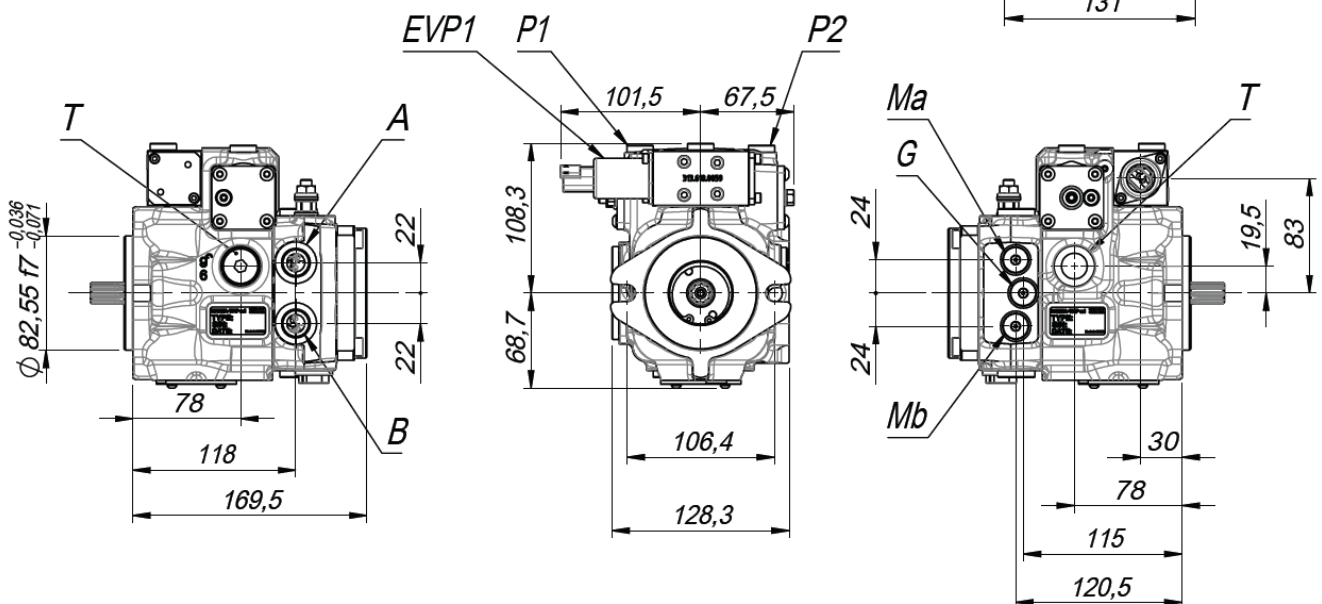
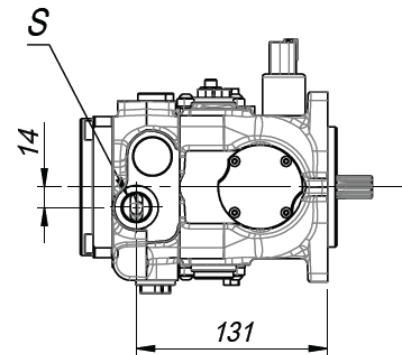
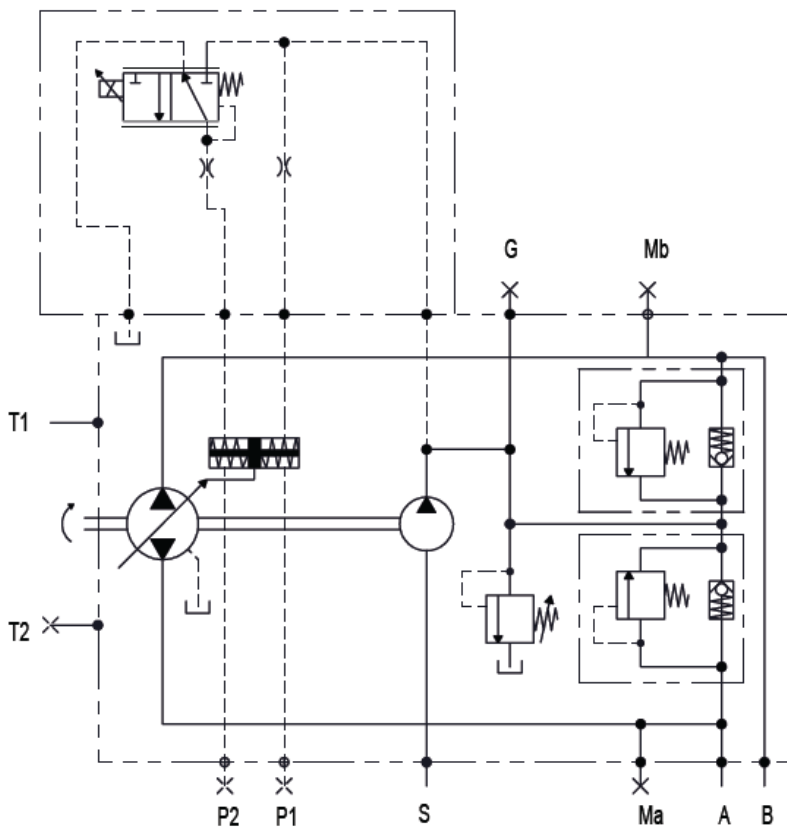
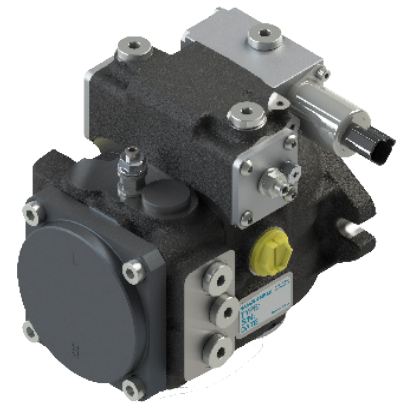
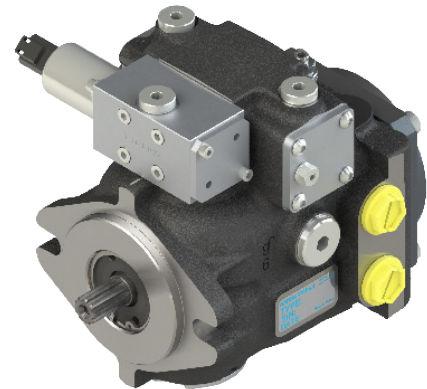
## TPV 1100 Pump / Pompa TPV 1100

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### STANDARD

The cooling fan speed is controlled by proportional negative solenoid valve available for 12 or 24 V systems.

La velocità della ventola di raffreddamento è controllata da un'elettrovalvola proporzionale negativa disponibile per sistemi da 12 e 24 V.



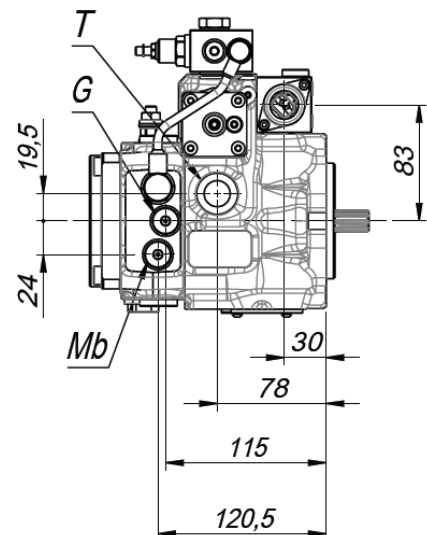
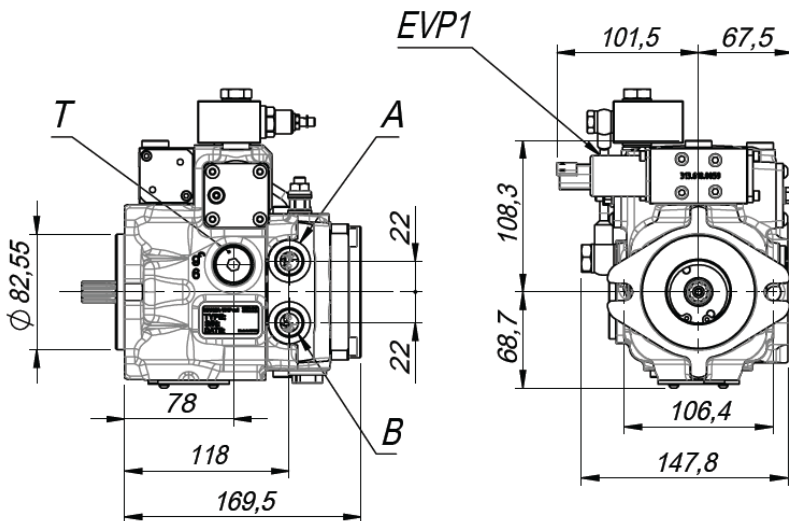
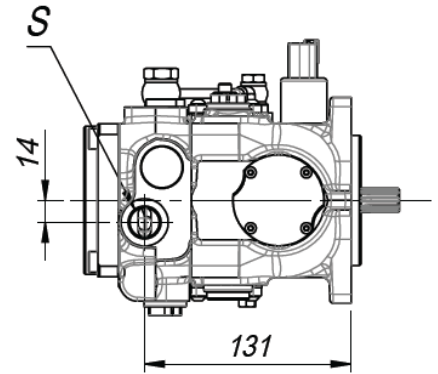
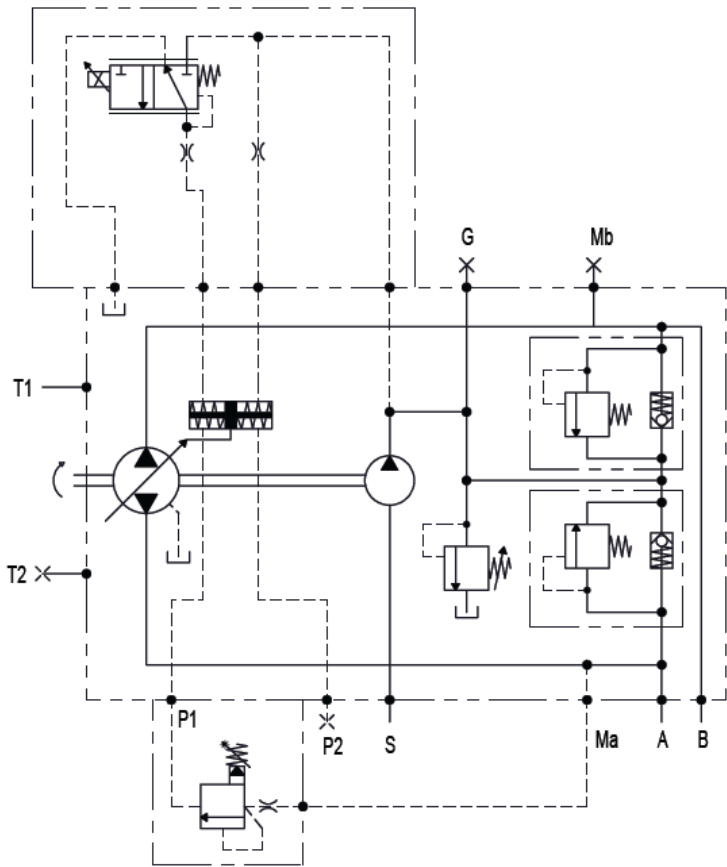
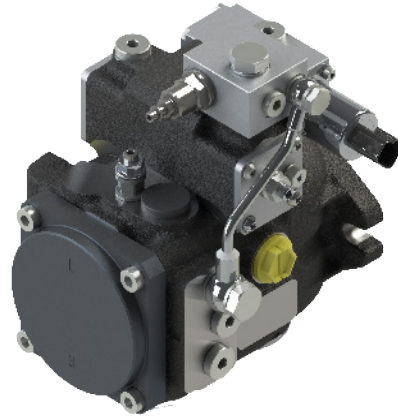
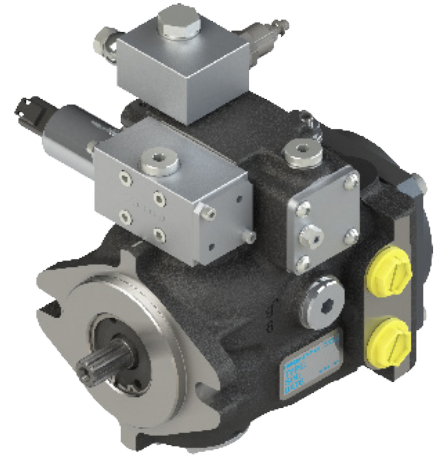
# TPV 1100 Pump / Pompa TPV 1100

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

## SPEED LIMITER / LIMITATORE DI VELOCITA'

The maximum working pressure can also be limited by a pressure compensator that ensures high efficiency in all operating condition, limiting the fan speed.

La pressione di lavoro massima può essere anche limitata da un compensatore di pressione che assicura un'elevata efficienza in tutte le condizioni operative, limitando la velocità della ventola.



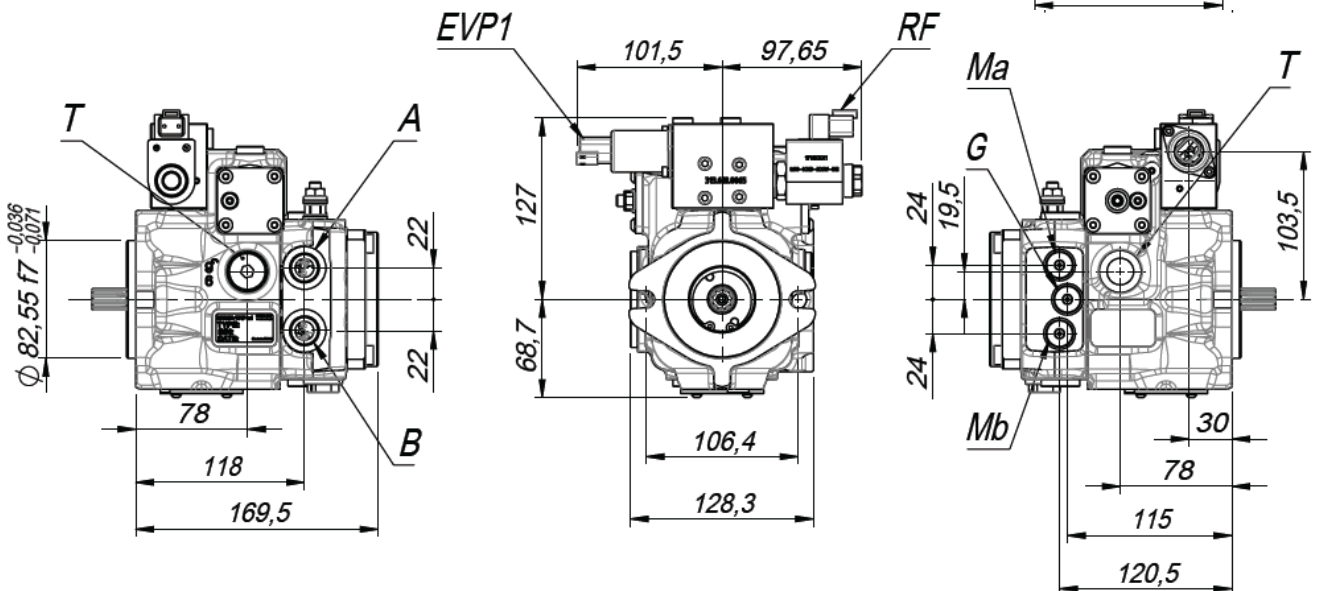
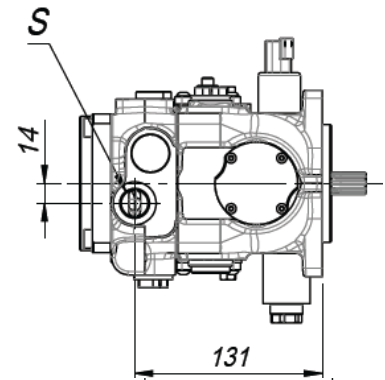
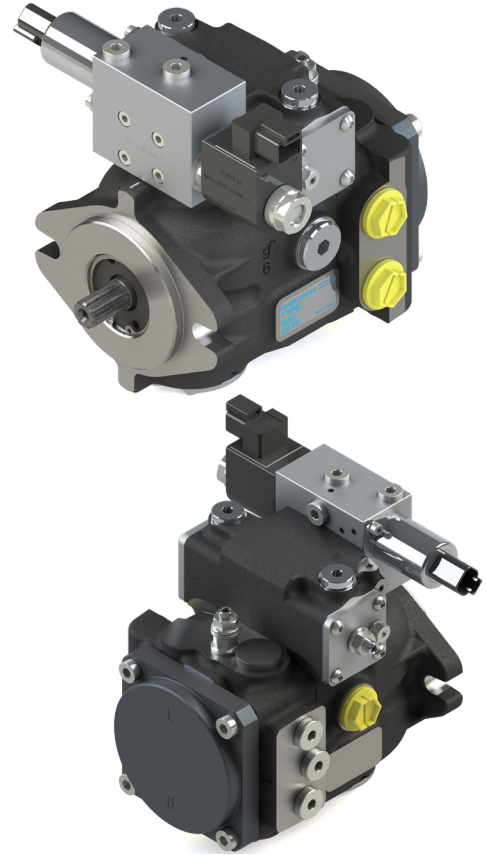
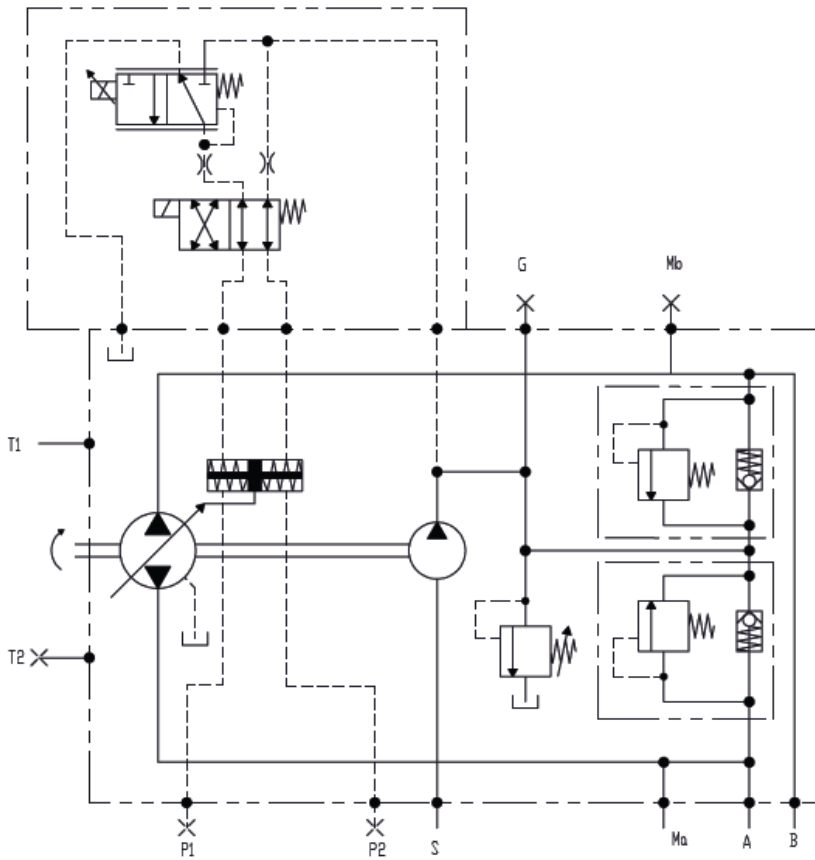
## TPV 1100 Pump / Pompa TPV 1100

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### REVERSE FLOW / FLUSSO INVERSO

With this configuration the hydraulic motor rotation can easily be reversed for cleaning the radiator.

Con questa configurazione la rotazione del motore idraulico può facilmente essere invertita per la pulizia del radiatore.





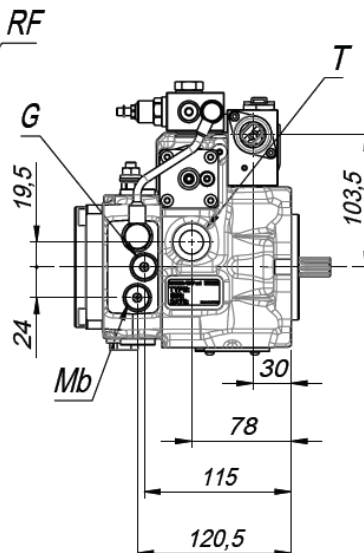
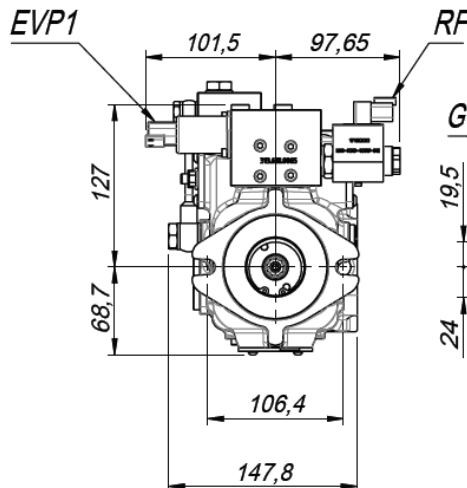
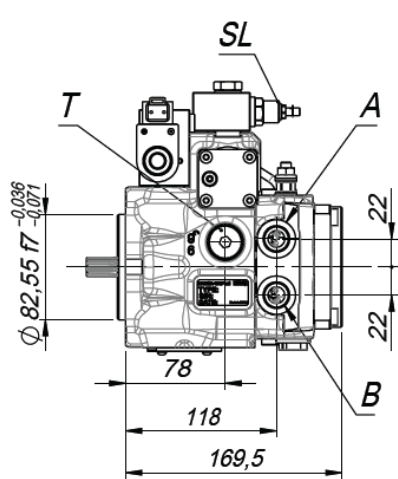
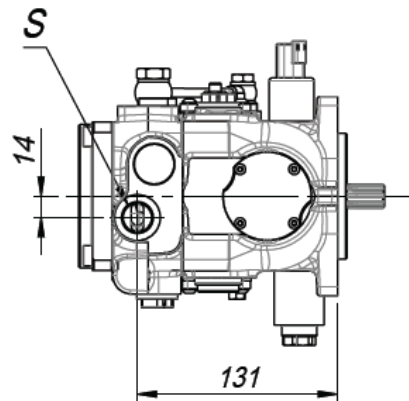
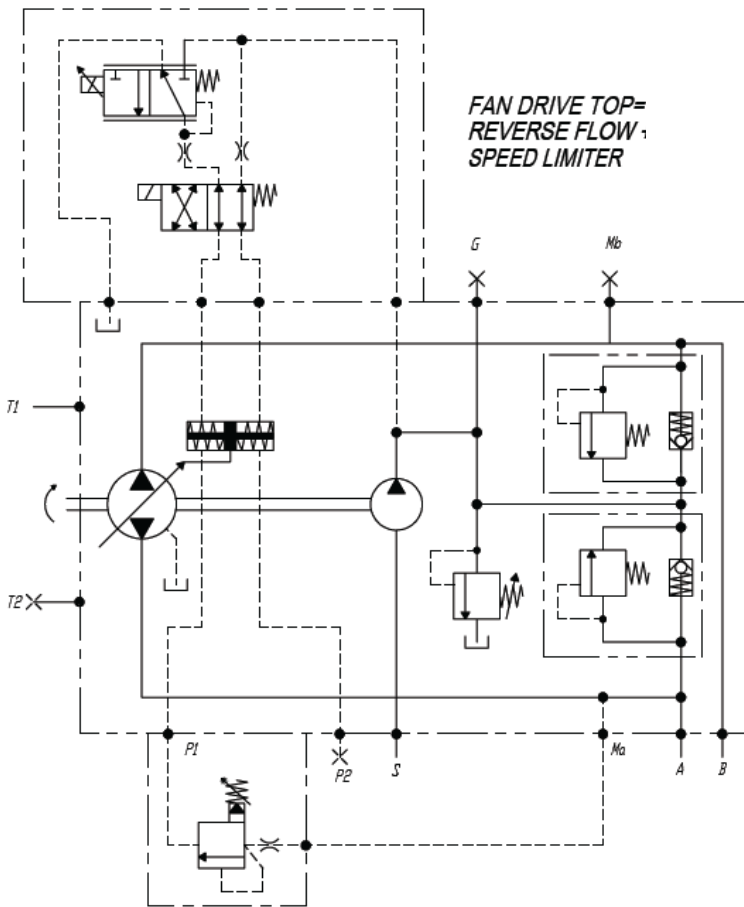
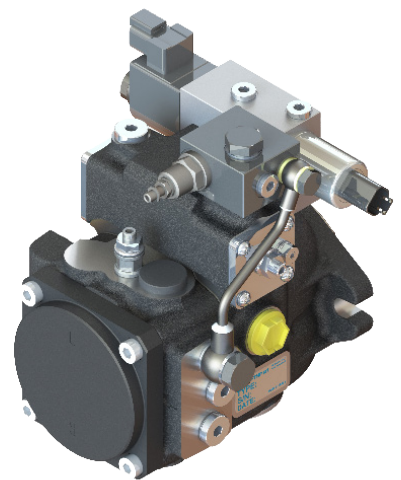
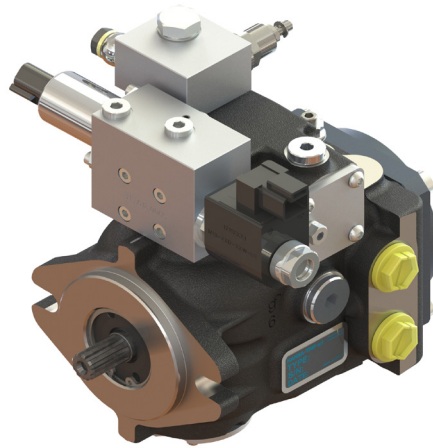
# TPV 1100 Pump / Pompa TPV 1100

## Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### TOP

Full version containing speed limiter and reverse flow.

Versione completa contenente il limitatore di velocità e l'inversione di flusso.



**TPV 1100 Pump / Pompa TPV 1100**
**Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso**
**ORDER CODE / CODICE DI ORDINAZIONE**

FD	1100	TPV	STD	1	6-7	CR	SS2	F1	OA	10	00	C-SA	350
0	1	2	3	4	5	6	7	8	9	10	11	12	13

**0 - System / Sistema**
**FD** = Fan Drive

**1 - Pump series / Serie pompa**
**1100** = TPV 1100 pump / Pompa TPV 1100

**2 - Pump model / Modello pompa**
**TPV** = Closed loop circuit single pump / Pompa singola per circuito chiuso

**3 - Version / Versione**
**STD** = Standard

**SL** = Speed Limiter / Limitatore di velocità

**RF** = Reverse Flow / Flusso inverso

**TOP** = Top (SL + RF)

**4 - Power supply / Tensione di alimentazione**
**1** = 12V DC (deutsch connctor / connettore deutsch)

**2** = 24V DC (deutsch connector / connettore deutsch)

**5 - Pump displacement / Cilindrata pompa**
**6-7** = 7,4 cm<sup>3</sup>/n      **8-7** = 8,9 cm<sup>3</sup>/n      **9-7** = 9,6 cm<sup>3</sup>/n      **11-7** = 11,2 cm<sup>3</sup>/n

**12-7** = 12,8 cm<sup>3</sup>/n      **13-7** = 13,6 cm<sup>3</sup>/n      **15-9** = 15 cm<sup>3</sup>/n      **17-9** = 17,1 cm<sup>3</sup>/n

**18-9** = 18,2 cm<sup>3</sup>/n      **19-9** = 19,4 cm<sup>3</sup>/n      **21-9** = 21,15 cm<sup>3</sup>/n

**6 - Rotation / Senso di rotazione**
**CR** = Clockwise rotation (right) / Rotazione oraria (destra)

**CC** = Counter-clockwise rotation (left) / Rotazione antioraria (sinistra)

**7 - Shaft / Albero**
**SS2** = Splined shaft Z9 - 16/32" D.P. / Albero scanalato Z9 - 16/32" D.P.

**SS3** = Splined shaft Z13 - 16/32" D.P. / Albero scanalato Z13 - 16/32" D.P.

**SS4** = Splined shaft Z11 - 16/32" D.P. / Albero scanalato Z11 - 16/32" D.P.

**PS1** = Parallel keyed shaft ø15.875 with key / Cilindrico diam. 15,875 mm. con chiavetta

**PS3** = Parallel keyed shaft ø18 with increased bearing for external radial load / Cilindrico diam. 18 mm. diam. con chiavetta e cuscinetto maggiorato per carico radiale

**8 - Mounting flange / Flangia di montaggio**
**F1** = SAE-A 2 holes - pilot diam. 82,5 mm / SAE-A 2 fori - centraggio diam. 82,5 mm.

**F2** = SAE-B 2 holes - pilot diam. 101,6 mm (available only with servo-control SHI, SEI and shaft SS3) / SAE-B 2 fori - centraggio diam. 101,6 mm. (disponibile solo con servocomando SHI, SEI e albero SS3)

**9 - Control devices position / Posizione del meccanismo di comando**
**OA** = Position A / Posizione A

## TPV 1100 Pump / Pompa TPV 1100

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### ORDER CODE / CODICE DI ORDINAZIONE

FD	1100	TPV	STD	1	6-7	CR	SS2	F1	OA	10	00	C-SA	350
0	1	2	3	4	5	6	7	8	9	10	11	12	13

#### 10 - Relief valve pressure setting\* / Taratura valvola di sicurezza\*

**10** = 10 MPa                      **15** = 15 MPa                      **18** = 18 MPa                      **20** = 20 MPa  
**25** = 25 MPa                      **30** = 30 MPa                      **35** = 35 MPa

\*The rated pressure values change according to speed /

\* Il valore della pressione di apertura della valvola di massima varia con il variare della velocità.

#### 11 - Boost pump / Pompa di carico

**00** = Without boost pump\*\* / Senza pompa di carico \*\*

**06** = Standard boost pump (5,8 cm<sup>3</sup>/n) - standard setting: 2 MPa at 1.000 n/min. /  
 Pompa di carico standard (5,8 cm<sup>3</sup>/n) - Taratura standard: 2 MPa a 1.000 n/min.

**06(xx)** = Other pressure settings on request (between 0,8 and 3 MPa, please contact our technical department)  
 Tarature diverse a richiesta (fra 0,8 e 3 MPa, consultare il nostro ufficio tecnico)

\*\* Upon order, please provide information on maximum external charge flow

\*\* Al momento dell'ordine, specificare la portata massima di sovralimentazione.

#### 12 - Cover/rear mounting flange / Flangia di attacco per pompa posteriore

**C** = Closed cover / Coperchio chiuso

**SA** = Version SAE A 2+2 holes Z.9 16/32" D.P. / Predisposizione SAE A 2 fori Z.9 16/32 D87Dp

**SA-C** = Version SAE A 2+2 holes Z.9 16/32" D.P. + Closed cover /  
 Predisposizione SAE A 2 fori Z.9 16/32 D87Dp + COPERCHIO CHIUSURA

#### 13 - Speed limiter pressure setting / Pressione taratura limitatore di velocità

**000** = No speed limiter / No limitatore di velocità

**350** = Pn 10 ÷ 350

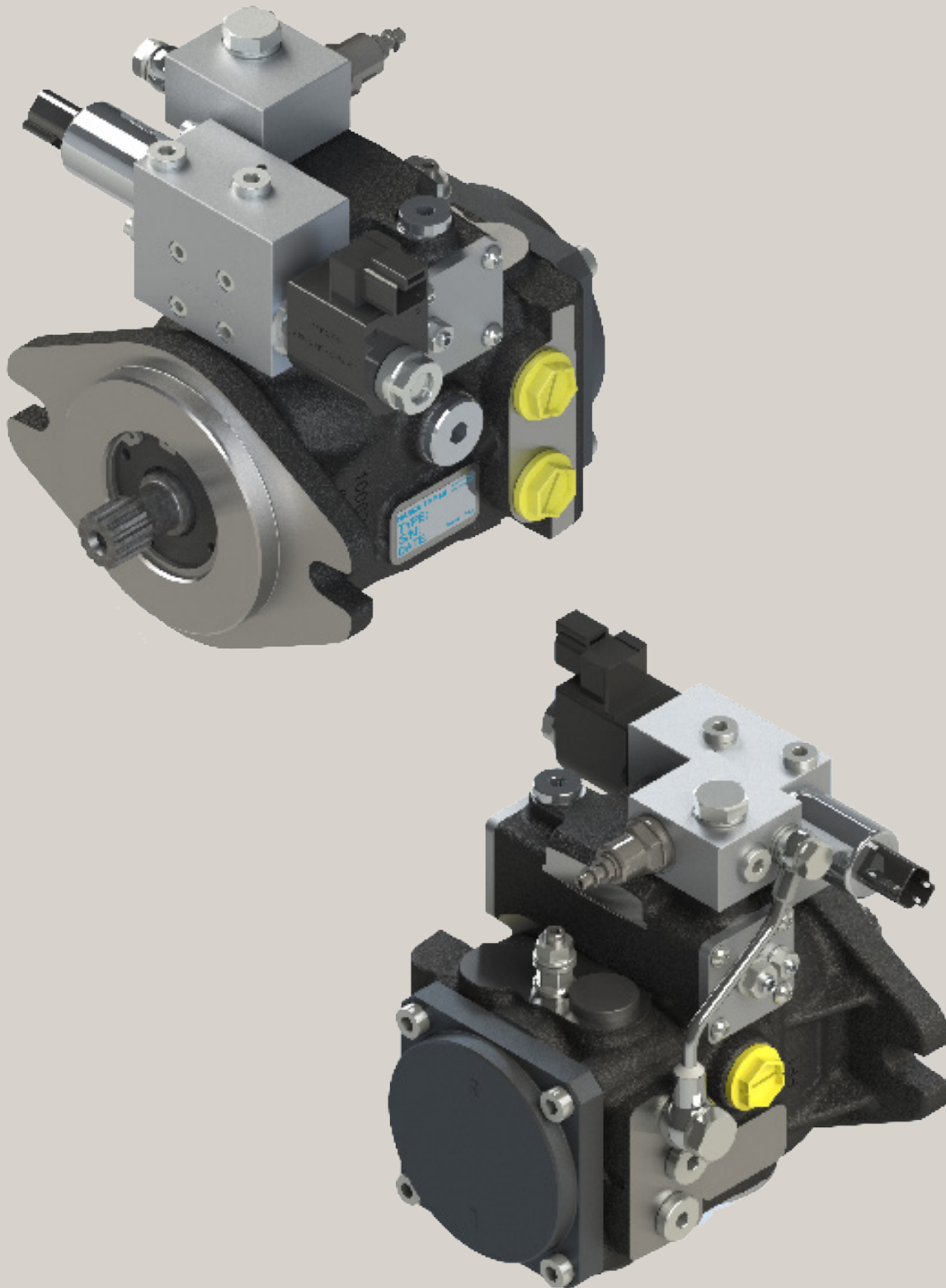
Select the pressure setting of the speed limiter between 10 350 bar

Selezionare pressione di taratura del limitatore di velocità tra 10 ÷ 350 bar





**TPV 1500 for FAN DRIVE**



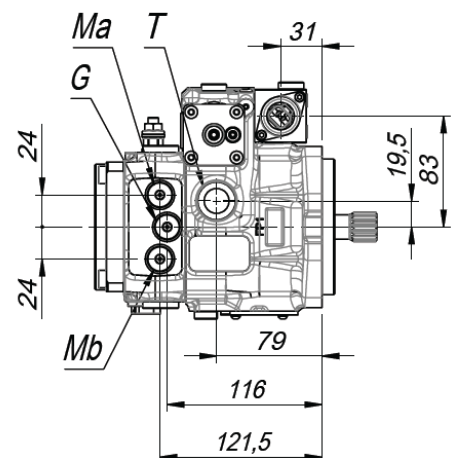
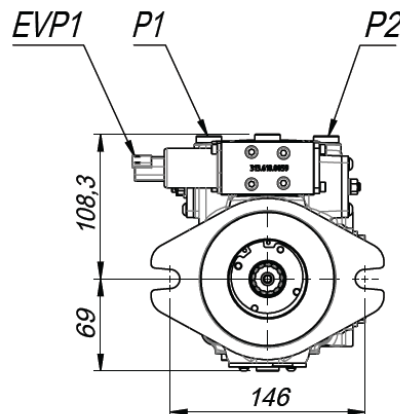
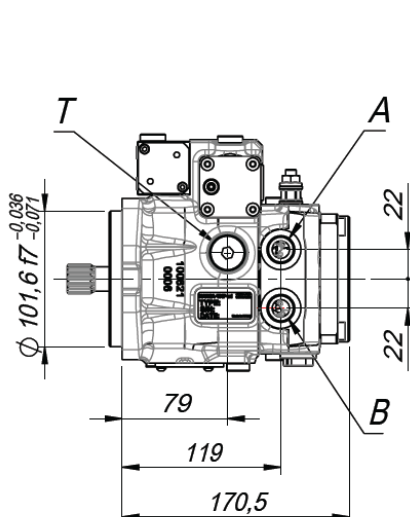
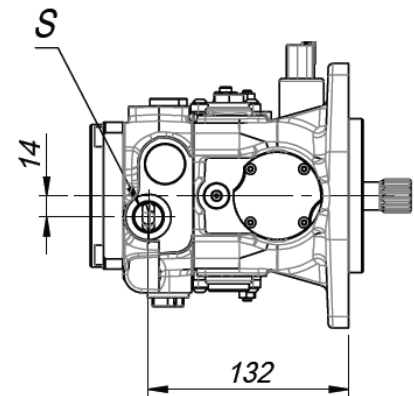
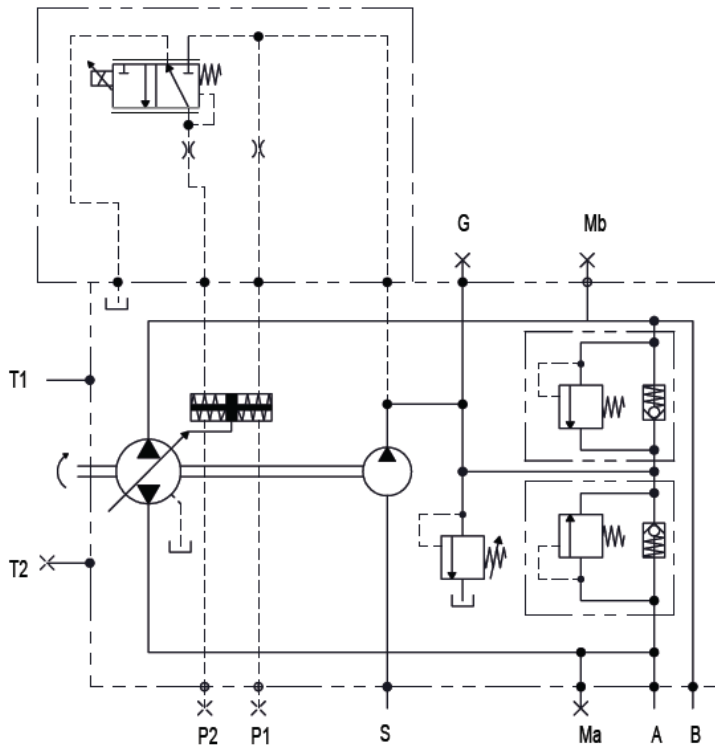
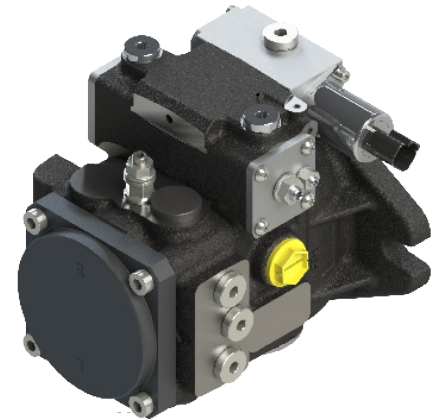
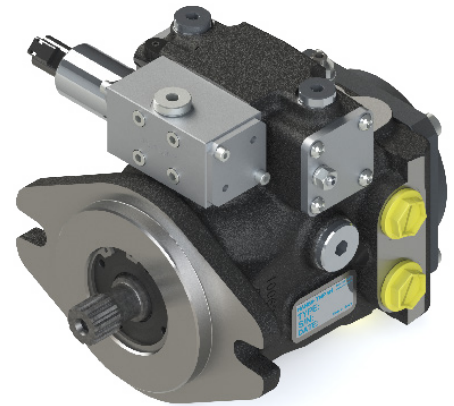
## TPV 1500 Pump / Pompa TPV 1500

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### STANDARD

The cooling fan speed is controlled by proportional negative solenoid valve available for 12 or 24 V systems.

La velocità della ventola di raffreddamento è controllata da un'elettrovalvola proporzionale negativa disponibile per sistemi da 12 e 24 V.



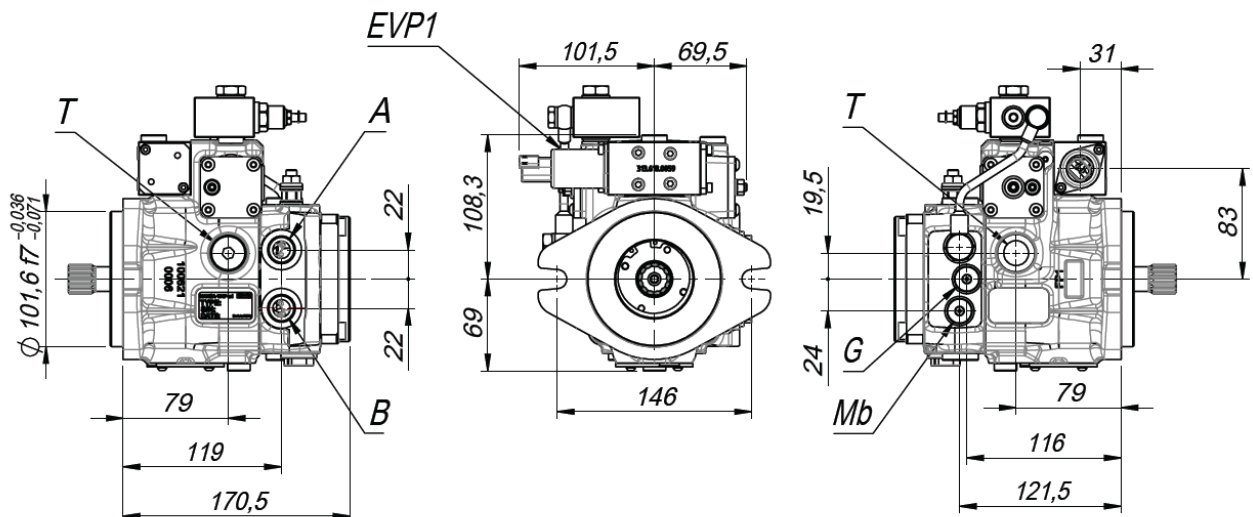
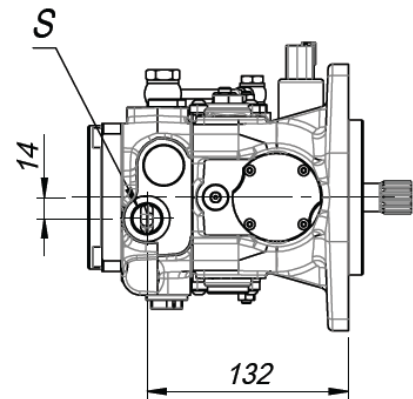
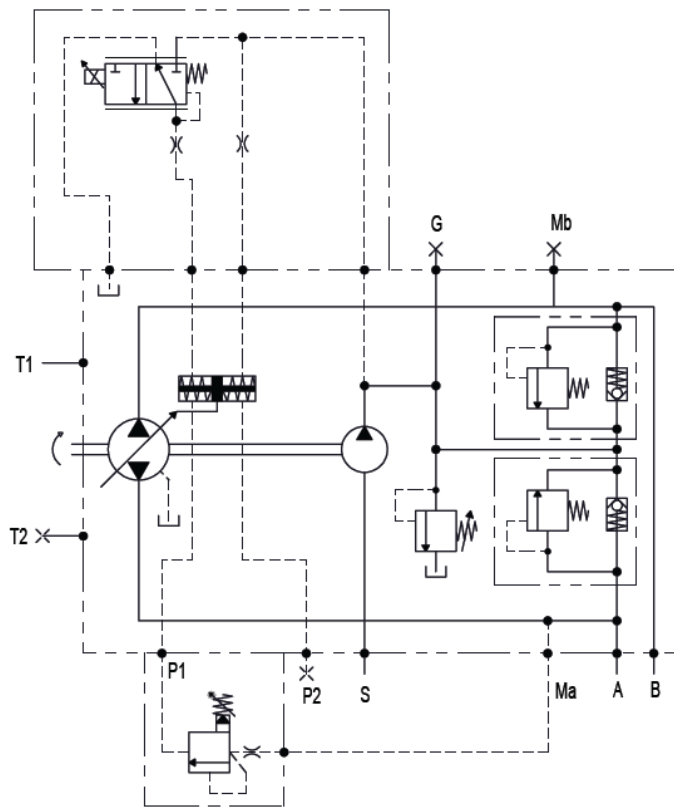
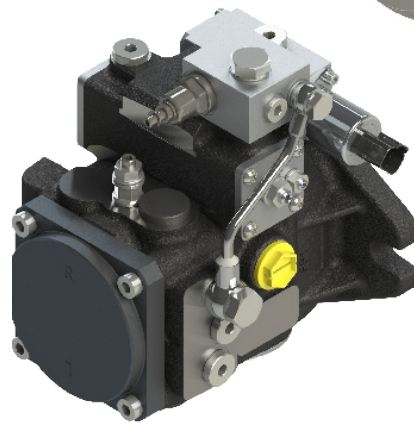
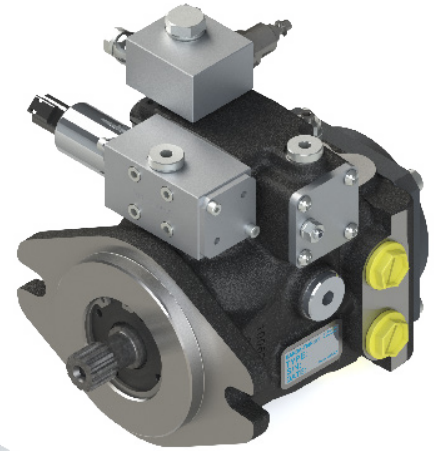
# TPV 1500 Pump / Pompa TPV 1500

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

## SPEED LIMITER / LIMITATORE DI VELOCITA'

The maximum working pressure can also be limited by a pressure compensator that ensures high efficiency in all operating condition, limiting the fan speed.

La pressione di lavoro massima può essere anche limitata da un compensatore di pressione che assicura un'elevata efficienza in tutte le condizioni operative, limitando la velocità della ventola.



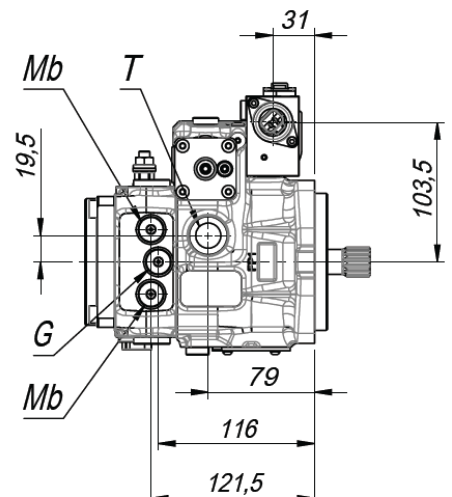
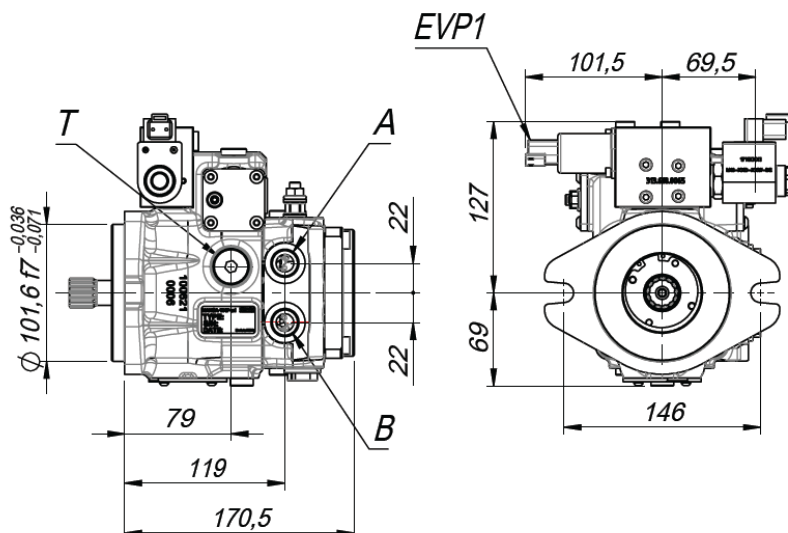
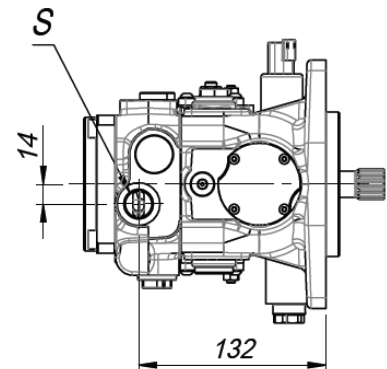
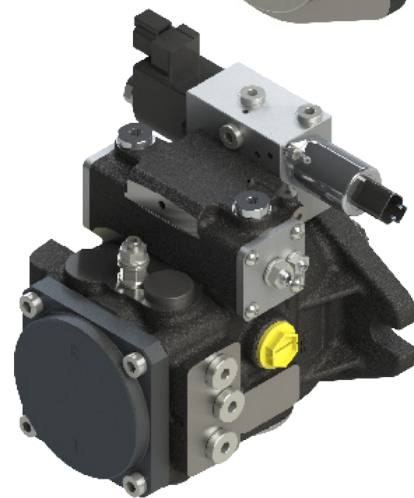
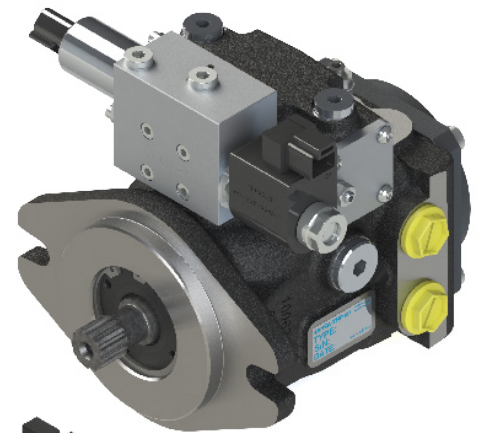
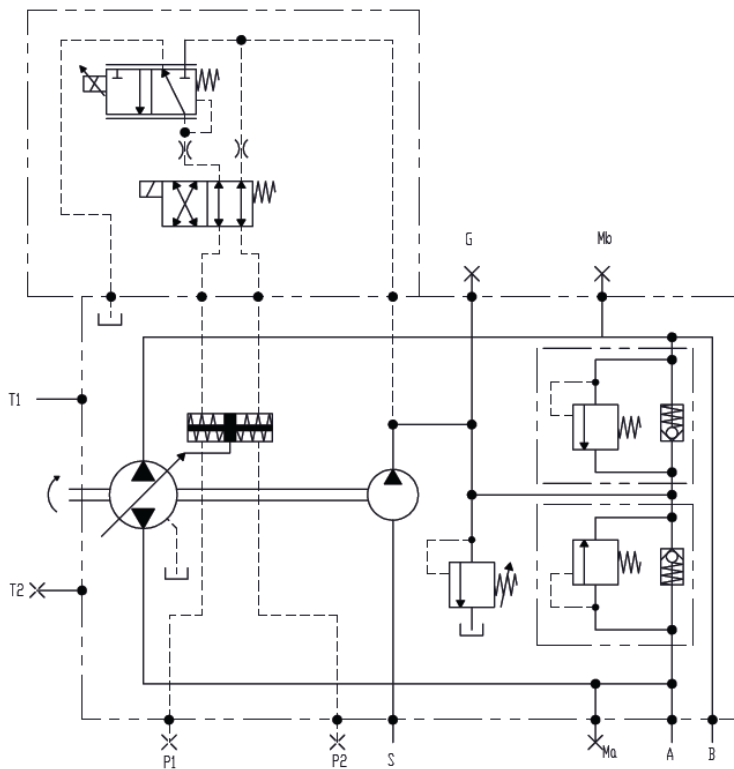
## TPV 1500 Pump / Pompa TPV 1500

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### REVERSE FLOW / FLUSSO INVERSO

With this configuration the hydraulic motor rotation can easily be reversed for cleaning the radiator.

Con questa configurazione la rotazione del motore idraulico può facilmente essere invertita per la pulizia del radiatore.





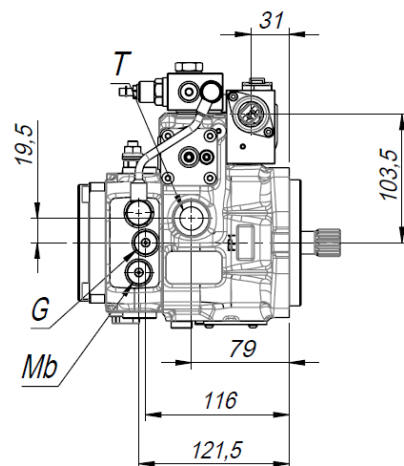
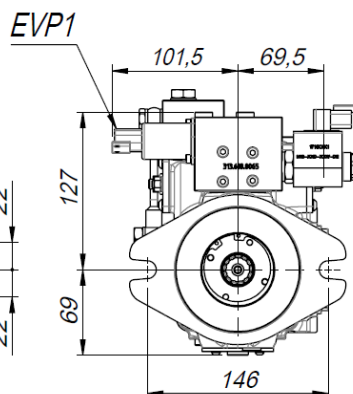
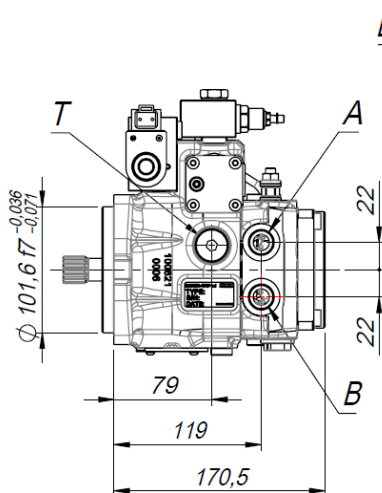
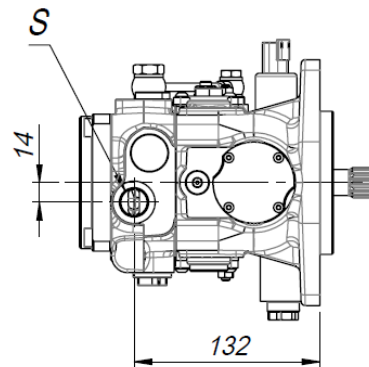
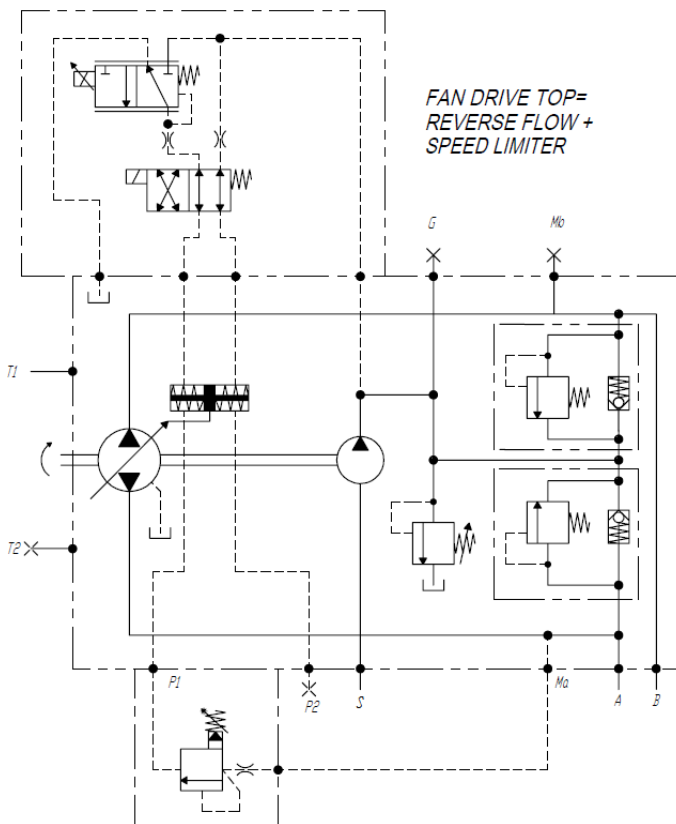
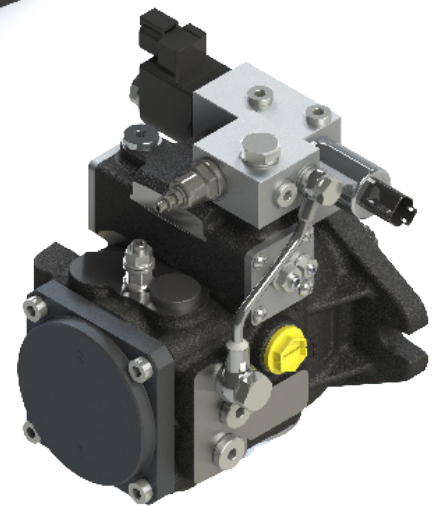
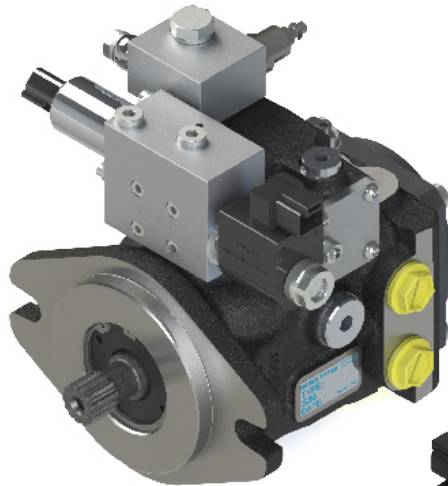
# TPV 1500 Pump / Pompa TPV 1500

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

## TOP

Full version containing speed limiter and reverse flow.

Versione completa contenente il limitatore di velocità e l'inversione di flusso.



## TPV 1500 Pump / Pompa TPV 1500

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### ORDER CODE / CODICE DI ORDINAZIONE

FD	1500	TPV	STD	1	6-7	CR	SS2	F1	OA	10	00	C-SA	350
0	1	2	3	4	5	6	7	8	9	10	11	12	13

#### 0 - System / Sistema

**FD** = Fan Drive

#### 1 - Pump series / Serie pompa

**1500** = TPV 1500 pump / Pompa TPV 1500

#### 2 - Pump model / Modello pompa

**TPV** = Closed loop circuit single pump / Pompa singola per circuito chiuso

#### 3 - Version / Versione

**STD** = Standard

**SL** = Speed Limiter / Limitatore di velocità

**RF** = Reverse Flow / Flusso inverso

**TOP** = Top (SL + RF)

#### 4 - Power supply / Tensione di alimentazione

**1** = 12V DC (deutsch connector / connettore deutsch)

**2** = 24V DC (deutsch connector / connettore deutsch)

#### 5 - Pump displacement / Cilindrata pompa

**17-9** = 17,6 cm<sup>3</sup>/n    **18-9** = 18,9 cm<sup>3</sup>/n    **19-9** = 19,9 cm<sup>3</sup>/n    **21-9** = 21,1 cm<sup>3</sup>/n

#### 6 - Rotation / Senso di rotazione

**CR** = Clockwise rotation (right) / Rotazione oraria (destra)

**CC** = Counter-clockwise rotation (left) / Rotazione antioraria (sinistra)

#### 7 - Drive shaft / Albero (lato montaggio)

**SS3** = Splined shaft SAE-B (ANSI B92.1A - 13T - 16/32 D.P.)

Scanalato SAE-B (ANSI B92.1A - 13T - 16/32 D.P.)

#### 8 - Mounting flange / Flangia di montaggio

**F2.1** = SAE-B 2 holes - pilot diam. 101,6 mm. / SAE-B 2 fori - centraggio diam. 101,6 mm.

#### 9 - Control devices position / Posizione del meccanismo di comando

**OA** = Position A / Posizione A

#### 10 - Relief valve pressure setting\* / Taratura valvola di sicurezza\*

**10** = 10 MPa    **15** = 15 MPa    **18** = 18 MPa    **20** = 20 MPa

**25** = 25 MPa    **30** = 30 MPa    **35** = 35 MPa    **40** = 40 MPa

\*The rated pressure values change according to speed /

\* Il valore della pressione di apertura della valvola di massima varia con il variare della velocità.



## TPV 1500 Pump / Pompa TPV 1500

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### ORDER CODE / CODICE DI ORDINAZIONE

FD	1500	TPV	STD	1	6-7	CR	SS2	F1	OA	10	00	C-SA	350
0	1	2	3	4	5	6	7	8	9	10	11	12	13

#### 11 - Boost pump / Pompa di carico

**00** = Without boost pump\*\* / Senza pompa di carico \*\*

**06** = Standard boost pump (5,8 cm<sup>3</sup>/n) - standard setting: 2 MPa at 1.000 n/min. /  
Pompa di carico standard (5,8 cm<sup>3</sup>/n) - Taratura standard: 2 MPa a 1.000 n/min

**06(xx)** = Other pressure settings on request (between 2 and 3 MPa, please contact our technical department)  
Tarature diverse a richiesta (fra 2 e 3 MPa, consultare il nostro ufficio tecnico)

\*\* Upon order, please provide information on maximum external charge flow

\*\* Al momento dell'ordine, specificare la portata massima di sovralimentazione.

#### 12 - Throught drive connection for rear pump / Flangia di attacco per pompa posteriore

**C-SA** = Closed cover (without rear fitting) / Coperchio chiuso (senza attacchi posteriori)

**SA-R** = SAE-A 2 holes female standard (ANSI B92.1A - 9T - 16/32 D.P.) /  
SAE-A 2 fori - albero femmina standard (ANSI B92.1A - 9T - 16/32 D.P.)

#### 13 - Speed limiter pressure setting / Pressione taratura limitatore di velocità

**000** = No speed limiter / No limitatore di velocità

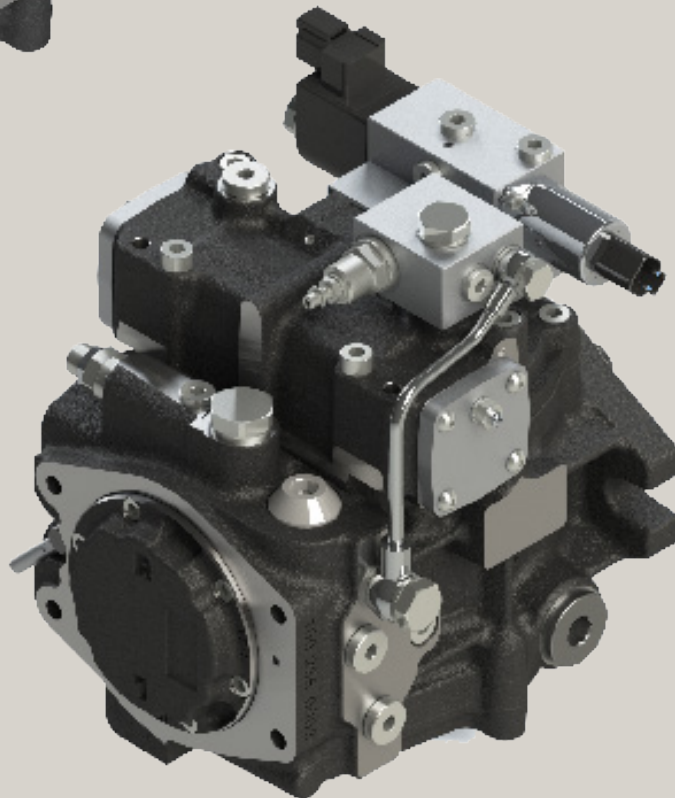
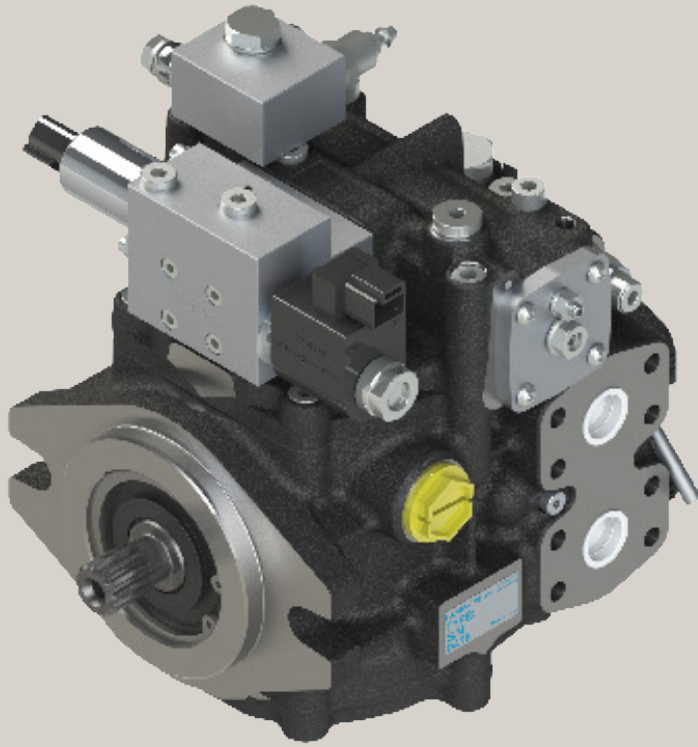
**350** = Pn 10 ÷ 350

Select the pressure setting of the speed limiter between 10 350 bar

Selezionare pressione di taratura del limitatore di velocità tra 10 ÷ 350 bar



**TPV 3600 for FAN DRIVE**



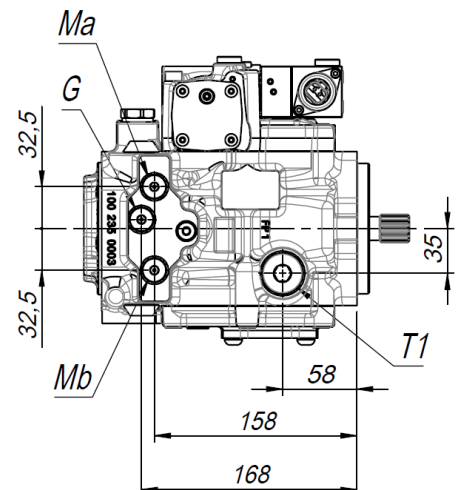
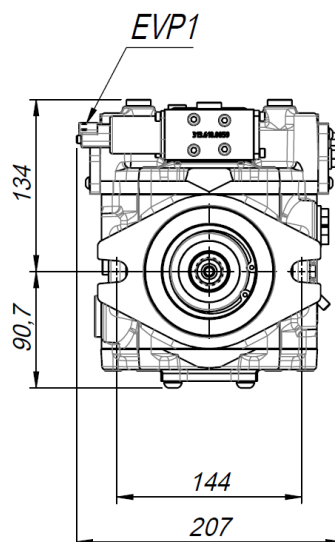
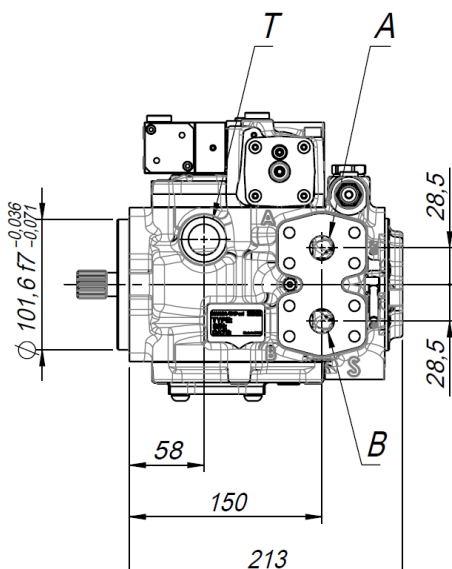
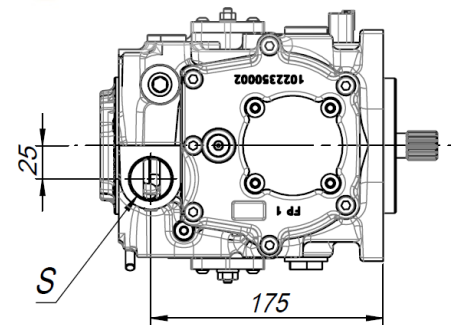
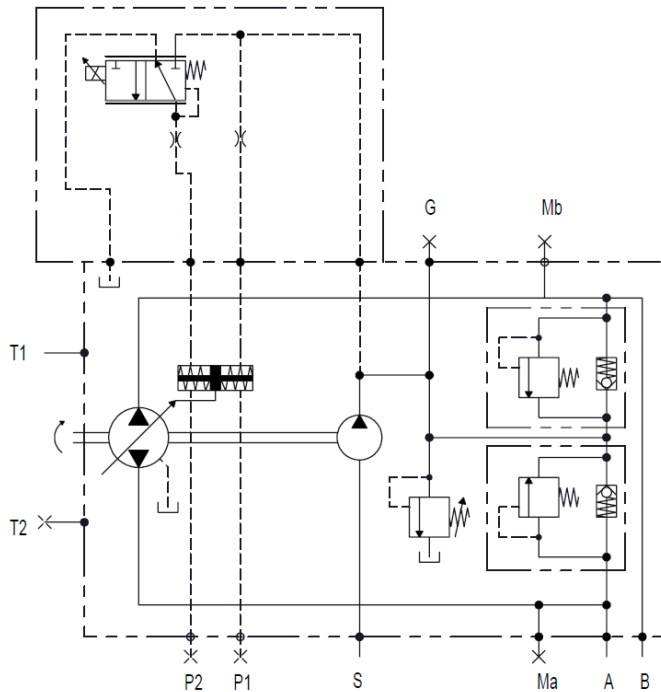
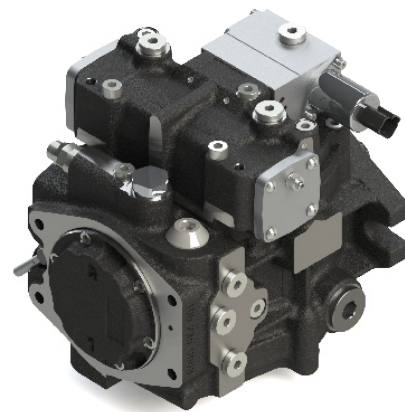
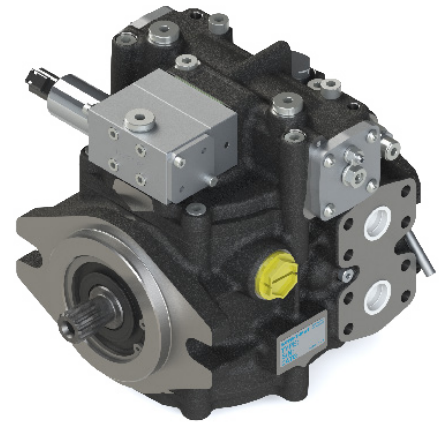
## TPV 3600 Pump / Pompa TPV 3600

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### STANDARD

The cooling fan speed is controlled by proportional negative solenoid valve available for 12 or 24 V systems.

La velocità della ventola di raffreddamento è controllata da un'elettrovalvola proporzionale negativa disponibile per sistemi da 12 e 24 V.



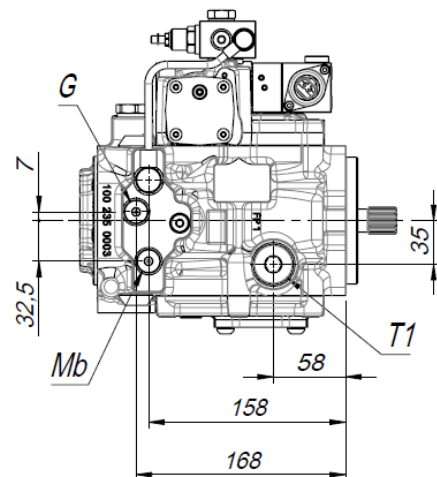
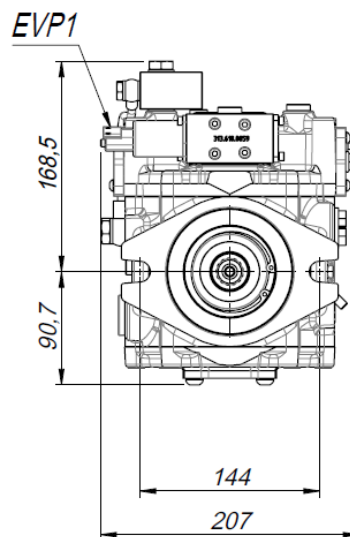
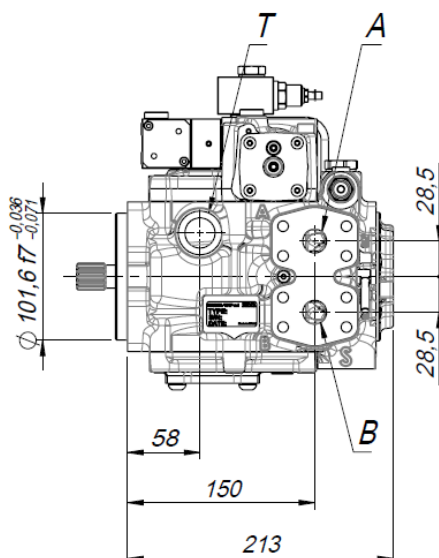
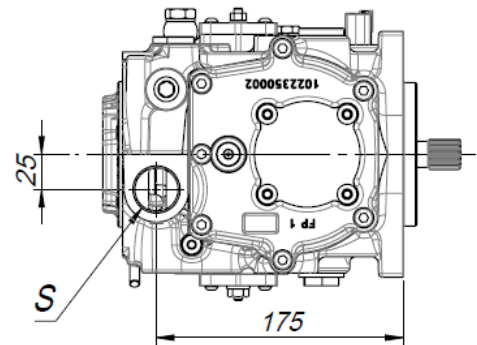
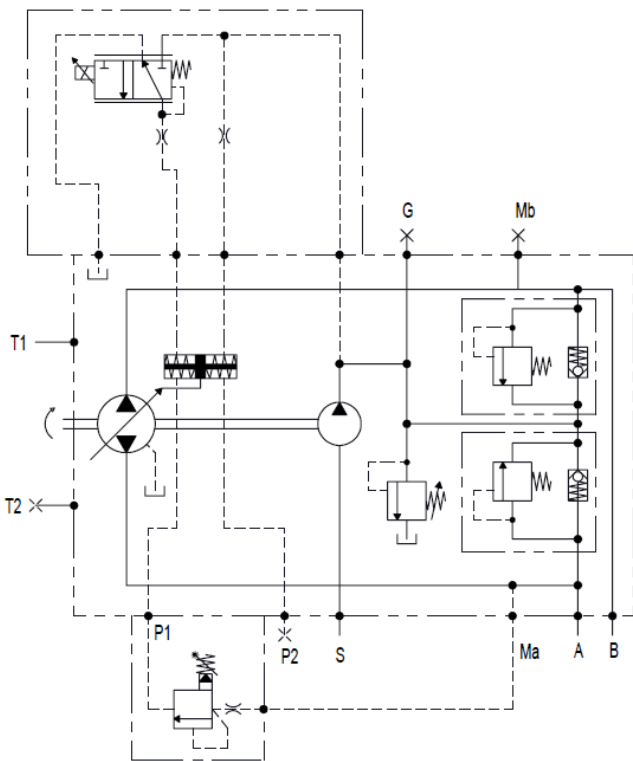
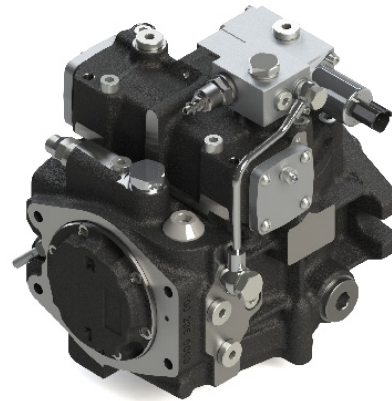
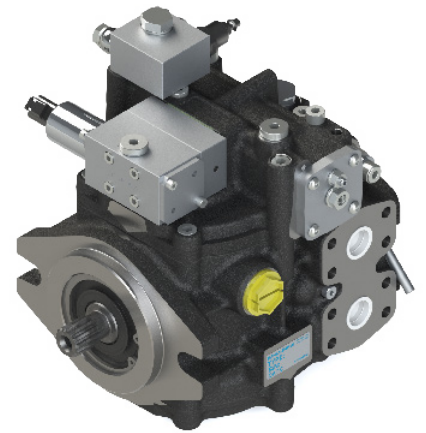
# TPV 3600 Pump / Pompa TPV 3600

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

## SPEED LIMITER / LIMITATORE DI VELOCITA'

The maximum working pressure can also be limited by a pressure compensator that ensures high efficiency in all operating condition, limiting the fan speed.

La pressione di lavoro massima può essere anche limitata da un compensatore di pressione che assicura un'elevata efficienza in tutte le condizioni operative, limitando la velocità della ventola.



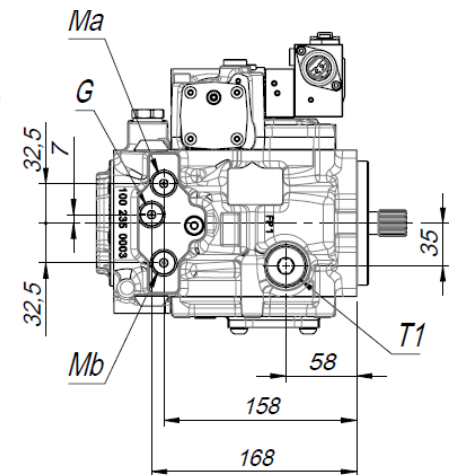
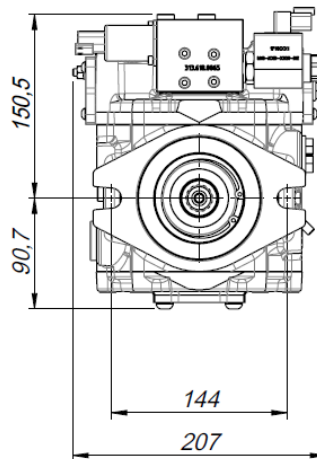
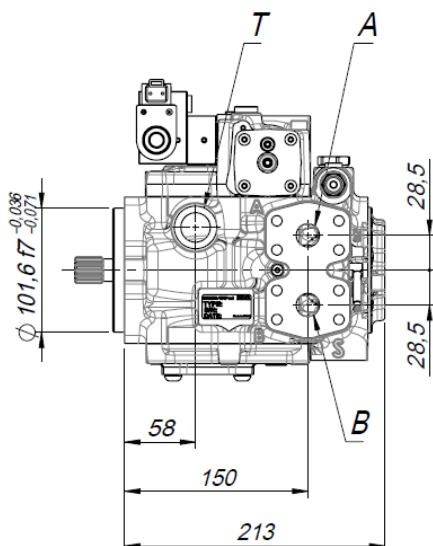
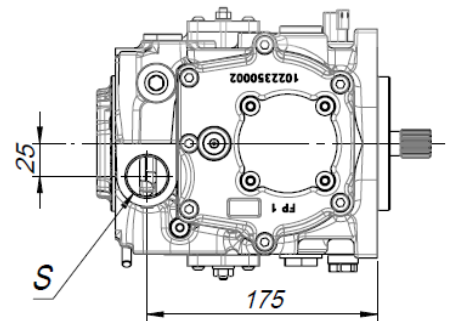
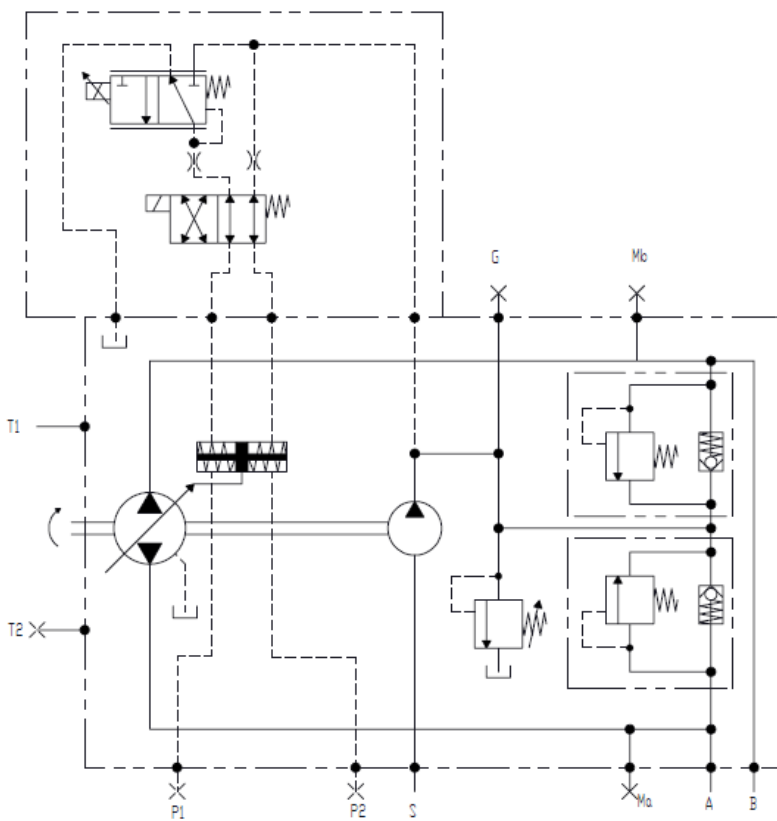
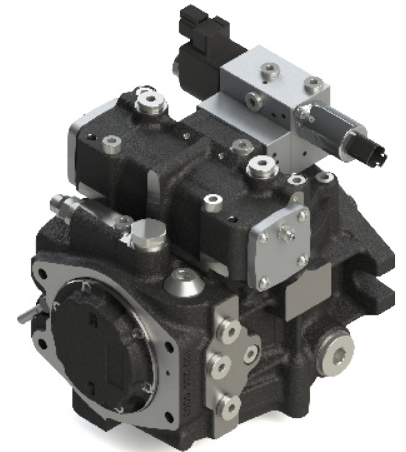
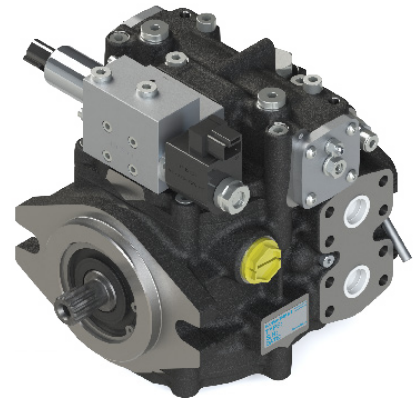
## TPV 3600 Pump / Pompa TPV 3600

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### REVERSE FLOW / FLUSSO INVERSO

With this configuration the hydraulic motor rotation can easily be reversed for cleaning the radiator.

Con questa configurazione la rotazione del motore idraulico può facilmente essere invertita per la pulizia del radiatore.





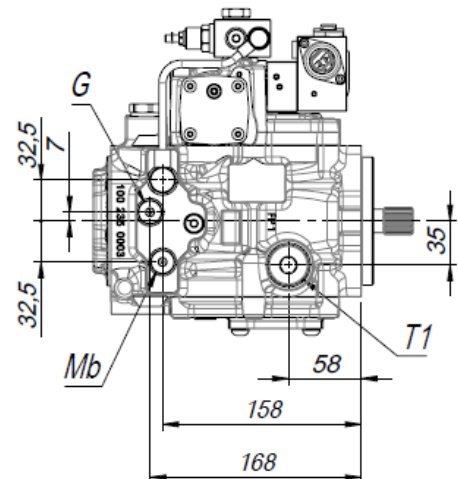
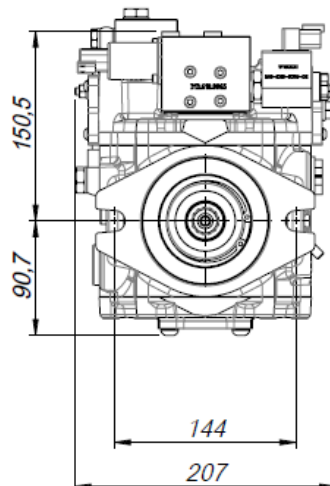
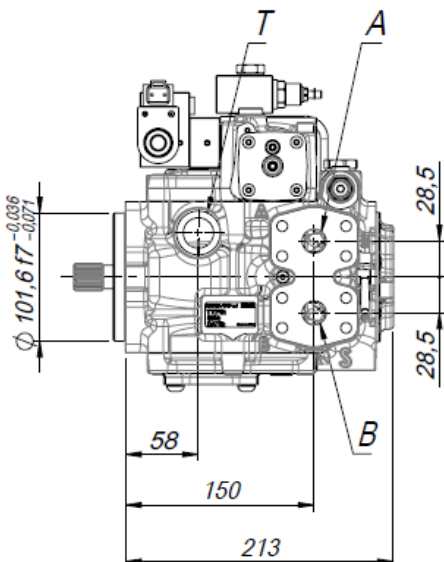
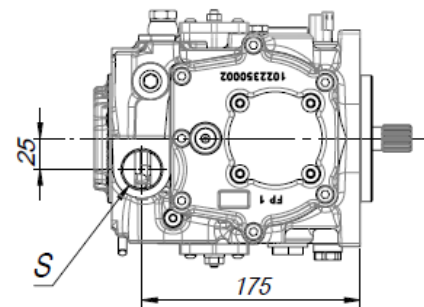
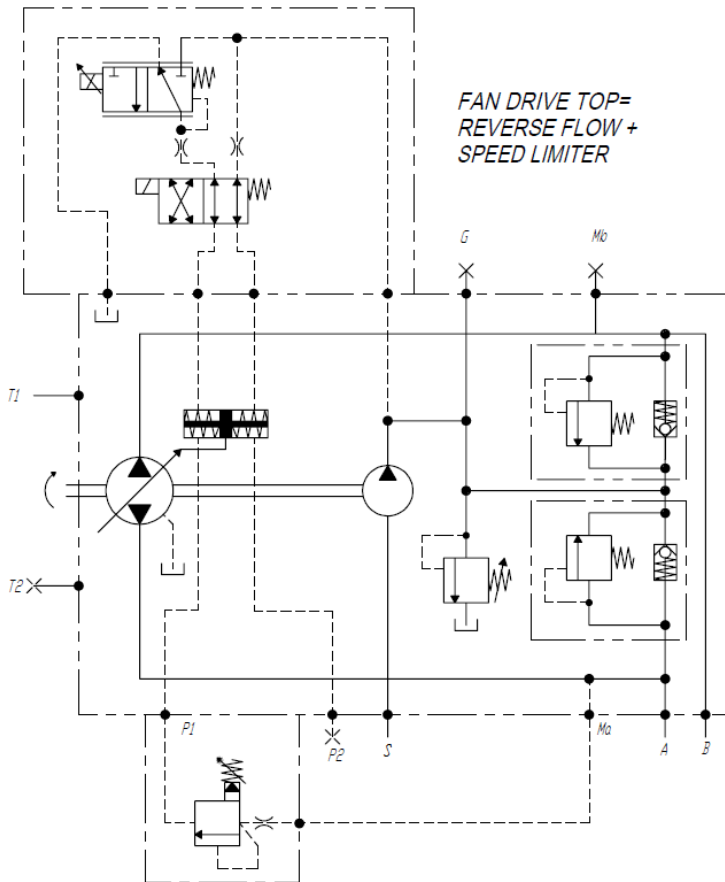
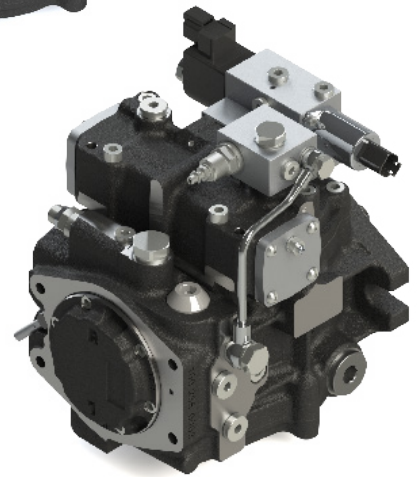
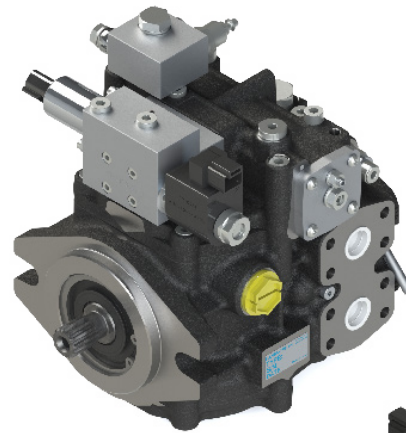
# TPV 3600 Pump / Pompa TPV 3600

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

## TOP

Full version containing speed limiter and reverse flow.

Versione completa contenente il limitatore di velocità e l'inversione di flusso.





## TPV 3600 Pump / Pompa TPV 3600

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### ORDER CODE / CODICE DI ORDINAZIONE

FD	3600	TPV	STD	1	26	CR	SS3	F2	OA	20	10	C	N	350
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14

**0 - System / Sistema**  
= Fan Drive

**1 - Pump series / Serie pompa**  
= TPV 3600 pump / Pompa TPV 3600

**2 - Pump model / Modello pompa**  
= Closed loop circuit single pump / Pompa singola per circuito chiuso

**3 - Version / Versione**  
= Standard  
**SL** = Speed Limiter / Limitatore di velocità  
**RF** = Reverse Flow / Flusso inverso  
**TOP** = Top (SL + RF)

**4 - Power supply / Tensione di alimentazione**  
**1** = 12V DC (connettore deutsch)  
**2** = 24V DC (connettore deutsch)

**5 - Pump displacement / Cilindrata pompa**  
**26** = 26 cm<sup>3</sup>/n      **28** = 28 cm<sup>3</sup>/n      **30** = 30 cm<sup>3</sup>/n      **32** = 32 cm<sup>3</sup>/n  
**34** = 34 cm<sup>3</sup>/n      **36** = 36 cm<sup>3</sup>/n      **38** = 38 cm<sup>3</sup>/n

**6 - Rotation / Senso di rotazione**  
**CR** = Clockwise rotation (right) / Rotazione oraria (destra)  
**CC** = Counter-clockwise rotation (left) / Rotazione antioraria (sinistra)

**7 - Drive shaft / Albero (lato montaggio)**  
**SS3** = Splined shaft SAE-B (ANSI B92.1A - 13T - 16/32 D.P.) / Scanalato SAE-B (ANSI B92.1A - 13T - 16/32 D.P.)  
**SS5** = Splined shaft SAE-B (ANSI B92.1A - 15T - 16/32 D.P.) / Scanalato SAE-B (ANSI B92.1A - 15T - 16/32 D.P.)

**8 - Mounting flange / Flangia di montaggio**  
**F2** = SAE-B 2 holes - pilot diam. 101,6 mm. / SAE-B 2 fori - centraggio diam. 101,6 mm.

**9 - Control devices position / Posizione del meccanismo di comando**  
**OA** = Position A / Posizione A  
**OB** = Position B (only on request, minimum 50 pcs per order) / Posizione B (a richiesta, quantità minima 50 pezzi per ordine)

**10 - Relief valve pressure setting\* / Taratura valvola di sicurezza\***  
**10** = 10 MPa    **15** = 15 MPa      **18** = 18 MPa      **20** = 20 MPa  
**25** = 25 MPa    **30** = 30 MPa      **35** = 35 MPa      **40** = 40 MPa  
**45** = 45 MPa

\*The rated pressure values change according to speed /

\* Il valore della pressione di apertura della valvola di massima varia con il variare della velocità.

# TPV 3600 Pump / Pompa TPV 3600

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

## ORDER CODE / CODICE DI ORDINAZIONE

<b>FD</b>	<b>3600</b>	<b>TPV</b>	<b>STD</b>	<b>1</b>	<b>26</b>	<b>CR</b>	<b>SS3</b>	<b>F2</b>	<b>0A</b>	<b>20</b>	<b>10</b>	<b>C</b>	<b>N</b>	<b>350</b>
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14

### 11 - Boost pump / Pompa di carico

**00** = Without boost pump\*\* / Senza pompa di carico \*\*

**10** = Standard boost pump (10,3 cm<sup>3</sup>/n) - standard setting: 2 MPa at 1.000 n/min. / Pompa di carico standard (10,3 cm<sup>3</sup>/n) - Taratura standard: 2 MPa a 1.000 n/min

**10(xx)** = Other pressure settings on request (between 2 and 3 MPa, please contact our technical department) / Tarature diverse a richiesta (fra 2 e 3 MPa, consultare il nostro ufficio tecnico)

\*\* Upon order, please provide information on maximum external charge flow

\*\* Al momento dell'ordine, specificare la portata massima di sovralimentazione.

### 12 - Throught drive connection for rear pump / Flangia di attacco per pompa posteriore

**C** = Closed cover / Coperchio chiuso

**B1** = German standard pump group 1 mounting / Assemblaggio pompa standard tedesca gruppo 1

**SA** = SAE-A 2 holes mounting flange (9T 16/32 D.P. female shaft) / SAE-A 2 fori (9T 16/32 D.P. albero femmina)

**SB** = SAE-B 2 holes mounting flange (13T 16/32 D.P. female shaft) / SAE-B 2 fori (13T 16/32 D.P. albero femmina)

### 13 - Port combinations (please contact our technical department) / Combinazioni attacchi (consultare il nostro ufficio tecnico)

**NGUM** = Port threads (N for standard version) / Filettature attacchi (N per la versione standard)

### 14 - Speed limiter pressure setting / Pressione taratura limitatore di velocità

**000** = No speed limiter / No limitatore di velocità

**350** = Pn 10 ÷ 350

Select the pressure setting of the speed limiter between 10 350 bar

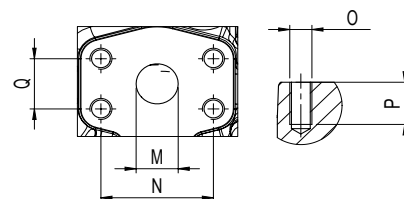
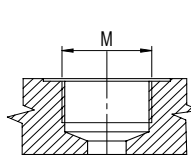
Selezionare pressione di taratura del limitatore di velocità tra 10 ÷ 350 bar

Combination Tipo di combinazione	S	A-B	T-T1	Ma-Mb	IN-OUT	G
	Suction port Attacco di aspirazione	Main ports Attacchi principali	Drain ports Attacchi di drenaggio	Pressure gauge ports Prese manometriche utilizzi	External filter ports Prese filtro remoto	Boost gauge ports Presse pressione utilizzi
<b>N</b> (Attacchi standard)	G6	N6	G5	G2 <sup>2</sup>	G4	G2
<b>G<sup>1</sup></b> (Attacchi BSPP-Gas)	G6	G5	G5	G2 <sup>2</sup>	G4	G2
<b>U<sup>1</sup></b> (Attacchi UNF-UN)	U6	U5	U5	U2 <sup>2</sup>	U4	U2
<b>M<sup>1</sup></b> (Attacchi UNF+flange)	U6	N7	U5	U2 <sup>2</sup>	U4	U2

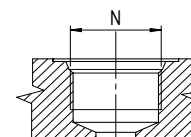
Note: on request only, minimum 50 pcs per order / solo su richiesta, quantità minima ordinabile 50 pezzi

SAE Flange ports 3/4" SAE 6000 / Attacchi flangiati SAE 3/4" SAE 6000	Type Tipo	M		N		O		P		Q	
		mm	in	mm	in	mm	in	mm	in	mm	in
		N6	19	0,75	50,8	2,0	M10	50	20	0,79	23,8

	M		
	Type Tipo	Dim.	Assembly torque Coppia di assemblaggio Nm
ISO 1179-1 ports for BSPP thread / Attacchi ISO 1179-1 per filettatura BSPP	G1	1/8"-28	25
	G2	1/4"-19	40
	G4	1/2"-14	100
	G5	3/4"-14	190
	G6	1"-11	320

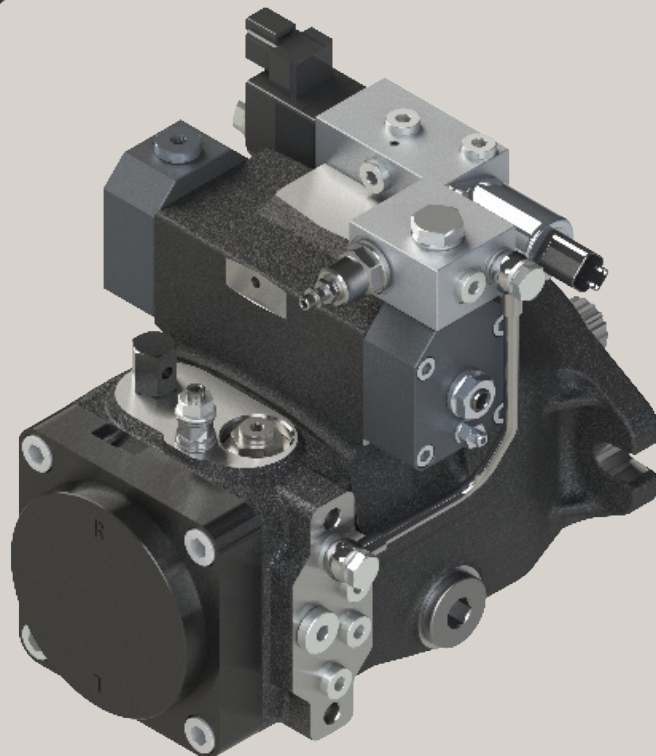
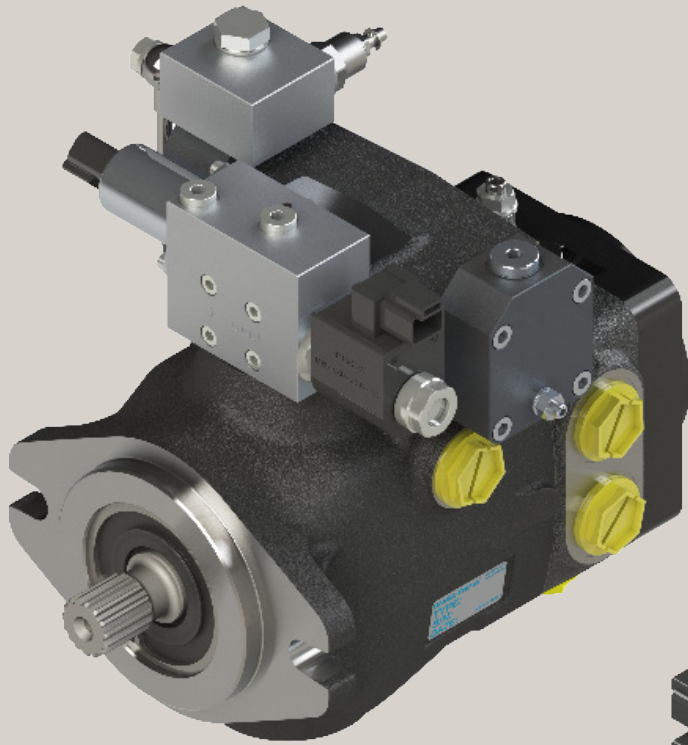


	N		
	Tipo	Dim.	Assembly torque Coppia di assemblaggio Nm
ISO 11926-1 ports for UNF-UN thread / Attacchi ISO 11926-1 per filettatura UNF-UN	U1	7/16-20	21
	U2	9/16-18	40
	U4	7/8-14	100
	U5	1"1/16-12	180
	U6	1"5/16-12	285





**TPV 4300 for FAN DRIVE**



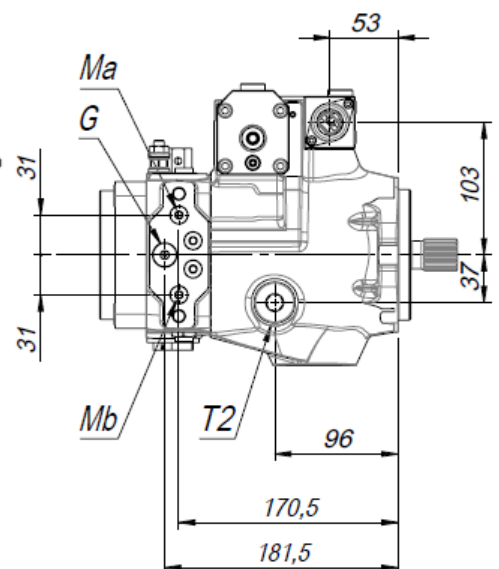
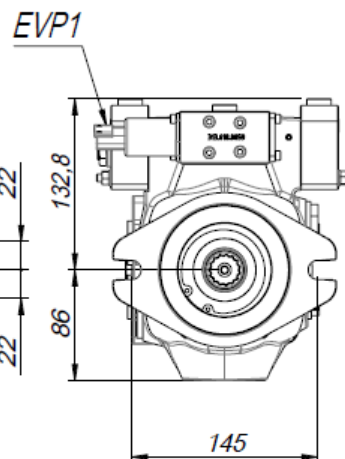
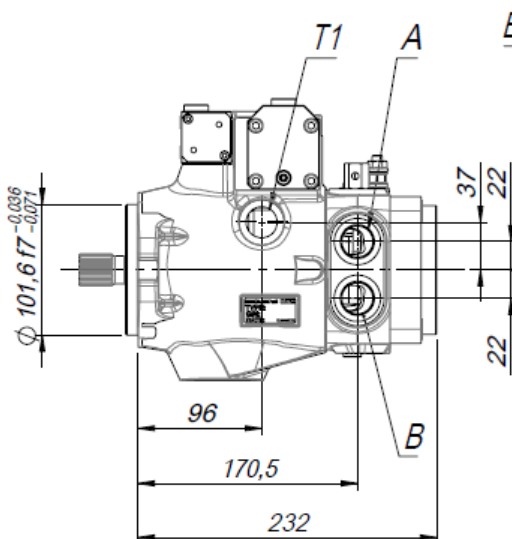
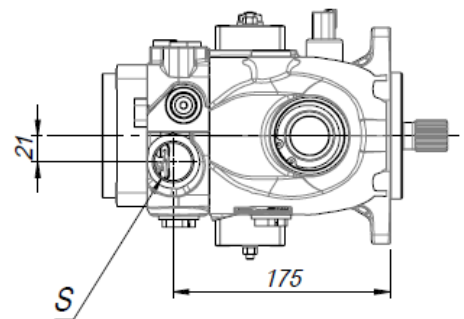
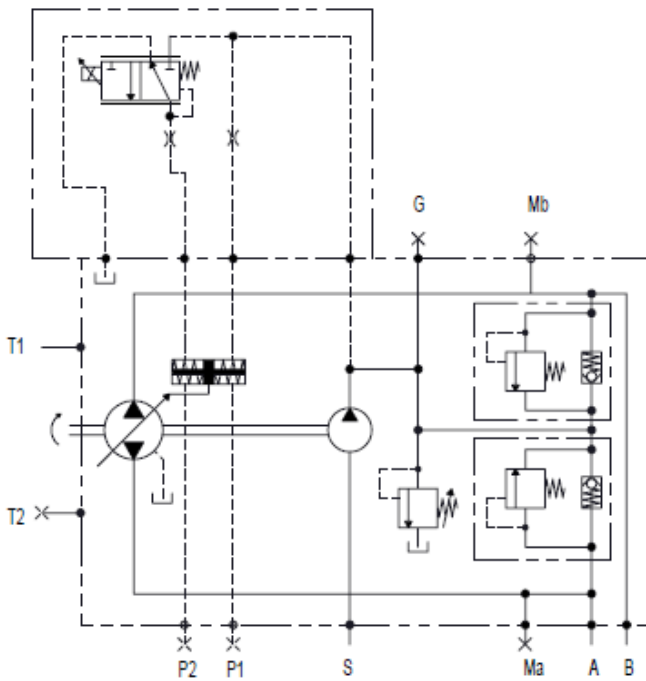
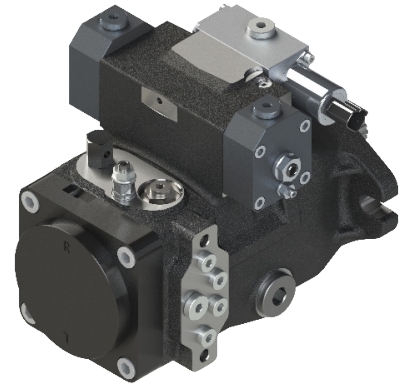
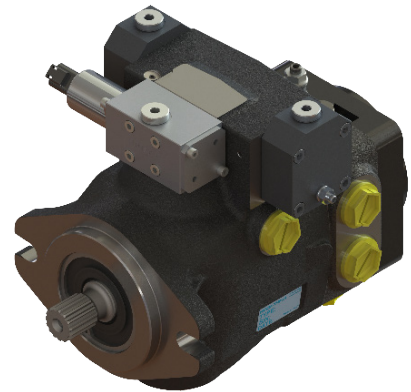
## TPV 4300 Pump / Pompa TPV 4300

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### STANDARD

The cooling fan speed is controlled by proportional negative solenoid valve available for 12 or 24 V systems.

La velocità della ventola di raffreddamento è controllata da un'elettrovalvola proporzionale negativa disponibile per sistemi da 12 e 24 V.



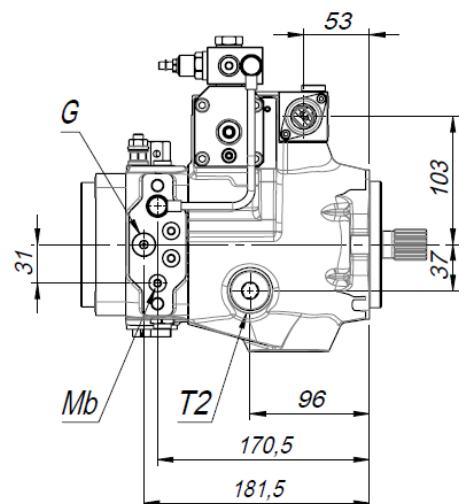
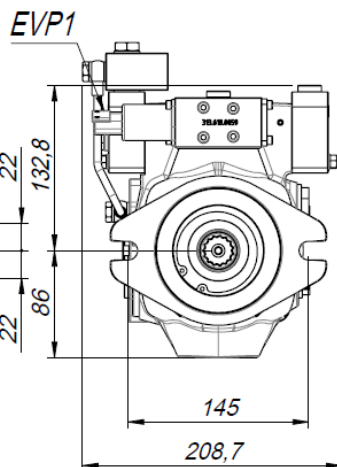
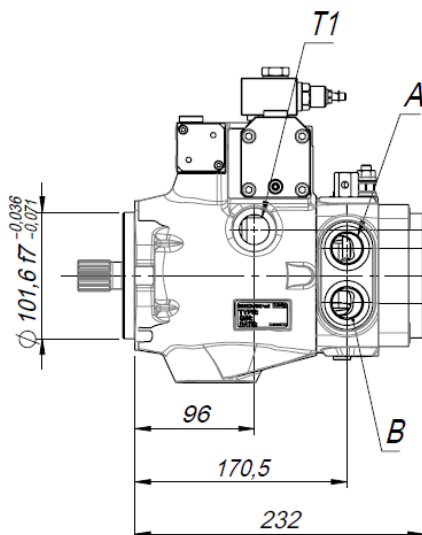
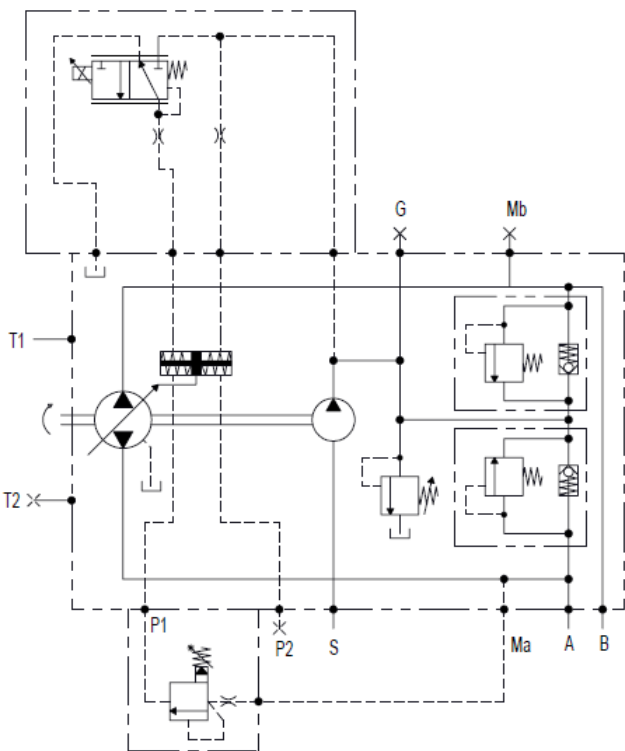
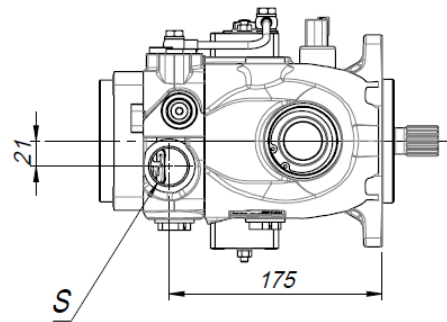
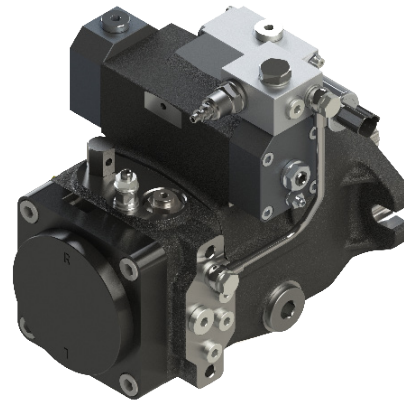
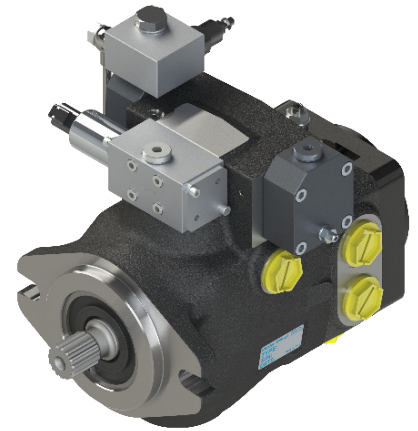
# TPV 4300 Pump / Pompa TPV 4300

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

## SPEED LIMITER / LIMITATORE DI VELOCITA'

The maximum working pressure can also be limited by a pressure compensator that ensures high efficiency in all operating condition, limiting the fan speed.

La pressione di lavoro massima può essere anche limitata da un compensatore di pressione che assicura un'elevata efficienza in tutte le condizioni operative, limitando la velocità della ventola.





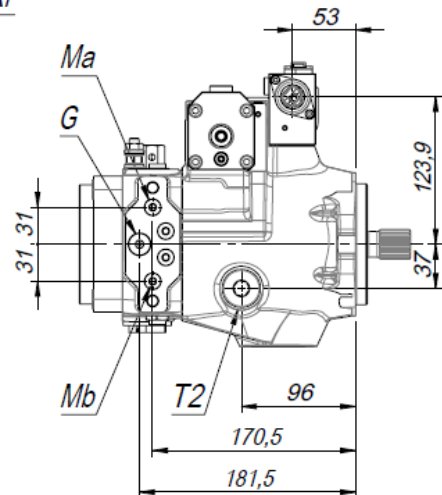
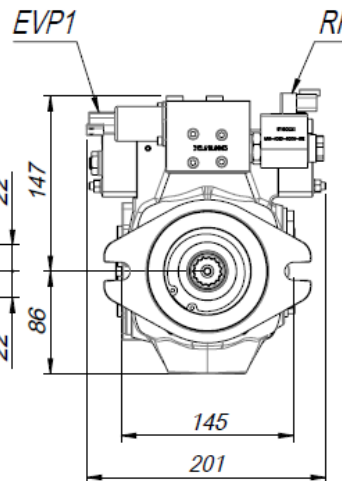
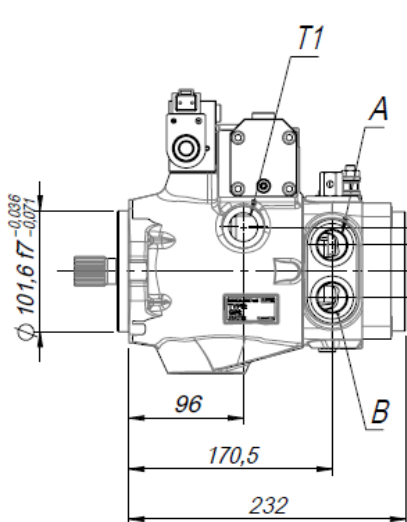
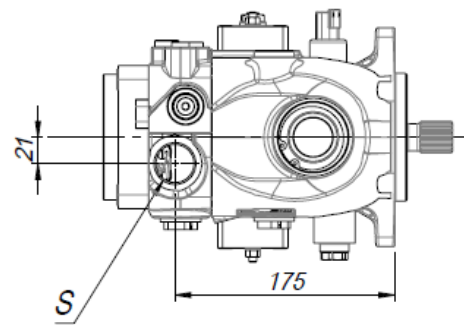
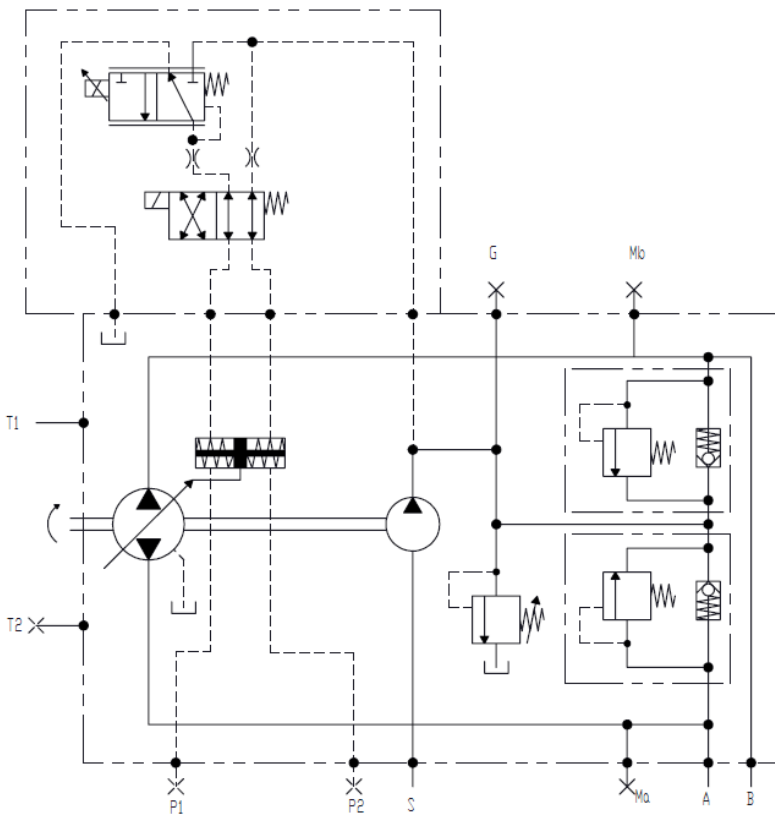
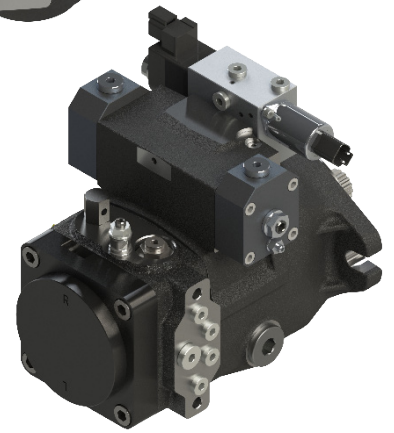
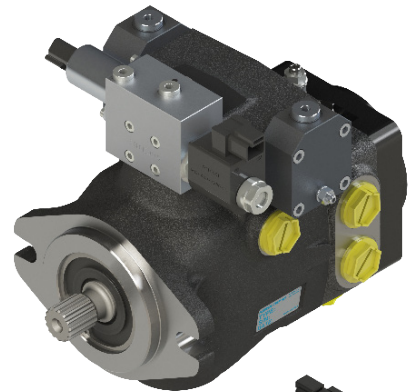
## TPV 4300 Pump / Pompa TPV 4300

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### REVERSE FLOW / FLUSSO INVERSO

With this configuration the hydraulic motor rotation can easily be reversed for cleaning the radiator.

Con questa configurazione la rotazione del motore idraulico può facilmente essere invertita per la pulizia del radiatore.





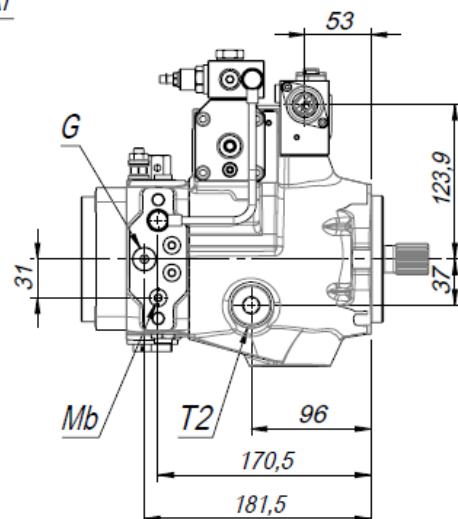
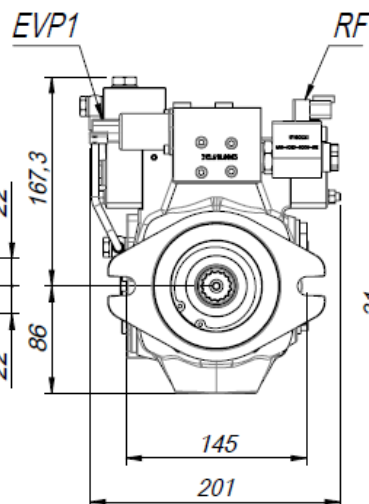
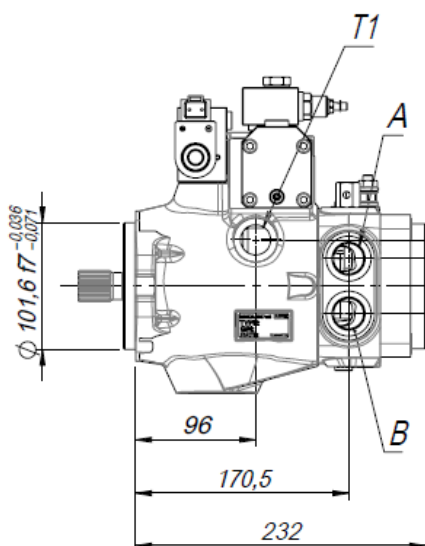
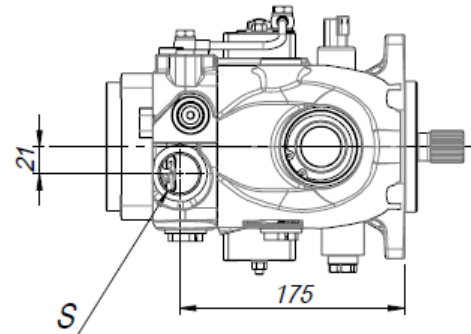
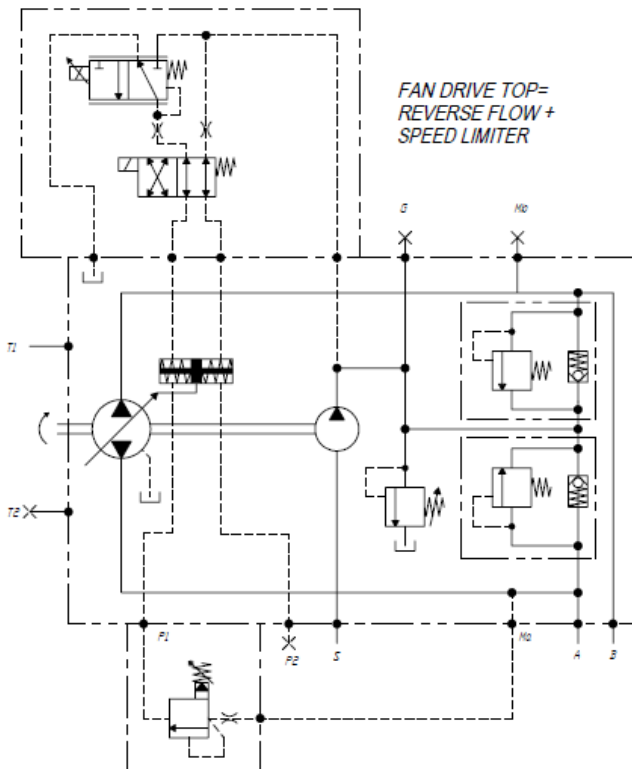
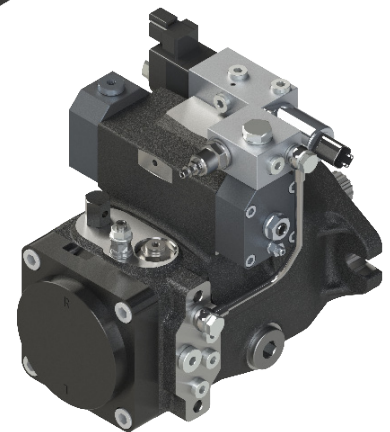
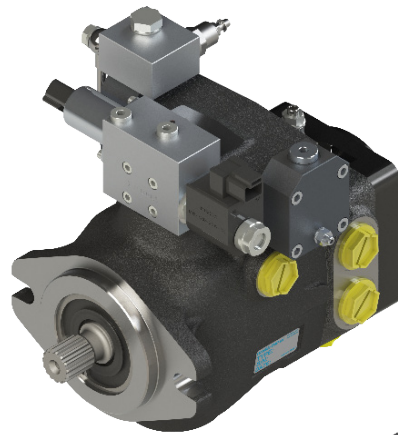
# TPV 4300 Pump / Pompa TPV 4300

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

## TOP

Full version containing speed limiter and reverse flow.

Versione completa contenente il limitatore di velocità e l'inversione di flusso.



## TPV 4300 Pump / Pompa TPV 4300

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### ORDER CODE / CODICE DI ORDINAZIONE

FD	4300	TPV	STD	1	6-7	CR	SS2	F1	OA	10	00	C-SA	350
0	1	2	3	4	5	6	7	8	9	10	11	12	13

#### 0 - System / Sistema

**FD** = Fan Drive

#### 1 - Pump series / Serie pompa

**4300** = TPV pump 4300 / Pompa TPV 4300

#### 2 - Pump model / Modello pompa

**TPV** = Closed loop circuit single pump / Pompa singola per circuito chiuso

#### 3 - Versione

**STD** = Standard

**SL** = Speed Limiter / Limitatore di velocità

**RF** = Reverse flow / Flusso inverso

**TOP** = Top (SL + RF)

#### 4 - Voltage / Tensione di alimentazione

**1** = 12V DC (deutsch connector / connettore deutsch)

**2** = 24V DC (deutsch connector / connettore deutsch)

#### 5 - Pump displacement / Cilindrata pompa

**32** = 32 cm<sup>3</sup>/n    **38** = 38 cm<sup>3</sup>/n    **45** = 45 cm<sup>3</sup>/n

**50** = 50 cm<sup>3</sup>/n

#### 6 - Rotation / Senso di rotazione

**CR** = Clockwise Rotation (right) / Rotazione oraria (destra)

**CC** = Counter-clockwise Rotation (left) / Rotazione antioraria (sinistra)

#### 7 - Drive shaft / Albero (lato montaggio)

**SS3** = Splined shaft Z13 - 16/32 D.P. / Scanalato Z13 - 16/32 D.P.

**SS5** = Splined shaft Z15 - 16/32 D.P. / Scanalato Z15 - 16/32 D.P.

#### 8 - Mounting flange / Flangia di montaggio

**F2.2** = SAE-B 2 holes - pilot diam. 101,6 mm. / SAE-B 2 fori - centraggio diam. 101,6 mm.

#### 9 - Control devices position / Posizione del meccanismo di comando

**OA** = Position A / Posizione A

#### 10 - Relief valve pressure setting \* / Taratura valvola di sicurezza \*

**15** = 15 MPa    **18** = 18 MPa    **20** = 20 MPa

**25** = 25 MPa    **30** = 30 MPa    **35** = 35 MPa

\*The rated pressure values change according to speed

\*Il valore della pressione di apertura della valvola di massima varia con il variare della velocità.

## TPV 4300 Pump / Pompa TPV 4300

Hydrostatic Fan Drive System / Sistema Fan Drive in circuito chiuso

### ORDER CODE / CODICE DI ORDINAZIONE

FD	4300	TPV	STD	1	6-7	CR	SS2	F1	OA	10	00	C-SA	350
0	1	2	3	4	5	6	7	8	9	10	11	12	13

#### 11 - Boost pump / Pompa di carico

- 00** = Without boost pump \*\* / Senza pompa di carico \*\*  
**14** = Standard boost pump (14 cm<sup>3</sup>/n) - standard setting: 2 MPa at 1.000 n/min.  
 / Pompa di carico standard (14 cm<sup>3</sup>/n) - Taratura standard: 2 MPa a 1.000 n/min.  
**14(xx)** = Other pressure settings on request (between 2 and 3 MPa, please contact our technical department) / Tarature diverse a richiesta (fra 2 e 3 MPa, consultare il nostro ufficio tecnico)

\*\* Upon order, please provide information on maximum external charge flow

\*\* Al momento dell'ordine, specificare la portata massima di sovralimentazione.

#### 12 - Throught drive connection for rear pump / Flangia di attacco per pompa posteriore

- C-SA** = Closed cover (without rear fitting) / Coperchio chiuso (senza attacchi posteriori)  
**SA** = SAE-A 4 holes mounting flange (female shaft) / SAE-A 4 fori (albero femmina standard)  
**SB** = SAE-B 2 holes mounting flange (female shaft) / SAE-B 4 fori (albero femmina standard)

#### 13 - Speed limiter pressure setting / Pressione taratura limitatore di velocità

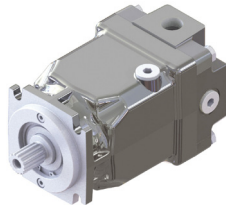
- 000** = No speed limiter / No limitatore di velocità  
**350** = Pn 10 ÷ 350

Select the pressure setting of the speed limiter between 10 350 bar

Selezionare pressione di taratura del limitatore di velocità tra 10 ÷ 350 bar

## TMF 600

Fixed Displacement Axial Piston Motors / Motori a pistoni assiali a cilindrata fissa



### Features:

- High starting torque
- Smooth operation
- Long service life
- High power density
- Built-in valves available

### Caratteristiche:

- Elevata coppia di spunto
- Elevata regolarità a bassa portata
- Lunga durata
- Elevata densità di potenza
- Valvole integrate opzionali

Displacement Cilindrata cm <sup>3</sup> /n.	Rated pressure Pressione continua MPa	Peak pressure Pressione di punta MPa	Max. Speed Velocità massima n/min.	Weight Peso kg
22, 28	35	42	4.200	11,3
35, 40, 46			4.000	17,8
50		41	3.600	32,5
63, 71, 75, 92		42	3.500	
100		41	3.240	

## TMF 900

Fixed Displacement Axial Piston Motors / Motori a pistoni assiali a cilindrata fissa



### Features:

- High pressure
- High rotation speed
- Excellent volumetric and mechanical efficiency
- Compact design

### Caratteristiche:

- Alta pressione
- Elevata velocità di rotazione
- Elevato rendimento meccanico e volumetrico
- Disegno compatto

Displacement Cilindrata cm <sup>3</sup> /n.	Rated pressure Pressione continua MPa	Peak pressure Pressione di punta MPa	Max. Speed Velocità massima n/min.	Weight Peso kg
72	40	45	4.100	28
90			4.000	34
110			3.800	34

## TMB 700

Fixed Displacement Bent Axis Axial Piston Motors / Motori a pistoni assiali ad asse inclinato a cilindrata fissa



### Features:

- Available with ISO, SAE and DIN standard mounting
- High speed and efficiency motors
- Smooth operation over the entire speed range
- Long life with high performances

### Caratteristiche:

- Disponibili con flangiate in standard ISO, SAE e DIN
- Motori ad altissima velocità ed efficienza
- Rotazione regolare in tutto il campo di velocità
- Motori con elevata affidabilità e prestazioni

Displacement Cilindrata cm <sup>3</sup> /n.	Rated pressure Pressione continua MPa	Peak pressure Pressione di punta MPa	Max. Speed Velocità massima n/min.	Weight Peso kg
9,6, 12,6, 17,0	35	40	8.000	9
25,4, 34,2			6.300	
41,2, 47,1, 56,7, 63,5			5.700	15
83,6, 90,7			4.700	18
108,0, 130,0				35

The table values can change in function of the configuration I valori in tabella possono cambiare in funzione della configurazione.

## 1 - 2 - 3 Group Hydraulic Gear Motors

## Gruppo 1 - 2 - 3 Motori ad ingranaggi oleodinamici



### Features:

- High efficiency
- European standard, German standard, SAE flange, etc.
- Aluminium and cast iron flanges
- Long life

### Caratteristiche:

- Alta efficienza
- Standard europeo, Standard tedesco, flange SAE, ecc.
- Flange in alluminio e in ghisa
- Lunga durata

Group Gruppo	Motor Model Modello motore	Displacement Cilindrata cm <sup>3</sup> /n.	Rated pressure Pressione continua MPa	Max. Speed Velocità max. n/min.	Min. Speed Velocità minima n/min.	
1	1SM 009	0,89	24	6.000	600	
	1SM 012	1,18				
	1SM 016	1,60				
	1SM 020	2,00	22	5.500	400	
	1SM 025	2,50		5.000		
	1SM 032	3,20	21	4.500		
	1SM 037	3,70		4.000		
	1SM 042	4,20	19	3.500		
	1SM 050	5,00	18	3.000		
	1SM 063	6,30	17	2.700		
	1SM 078	7,76		2.500		
1SM 098	9,78	15	2.000			
2	2SM 040	4,00	25	4.000		500
	2SM 060	6,00				
	2SM 080	8,50				
	2SM 110	11,00				
	2SM 140	14,00	23	3.500		
	2SM 160	16,50				
	2SM 190	19,50	21	3.300		
	2SM 220	22,50	19	2.800		
	2SM 260	26,00	17	2.500		
	2SM 310	31,50	15	2.200		
3	3GM 190	19,30	25	3.500	700	
	3GM 230	23,00	24			
	3GM 300	30,20	22	3.300		
	3GM 340	33,80				
	3GM 370	37,50				
	3GM 440	44,60	20	3.000		
	3GM 530	53,00				
	3GM 620	62,70	18	2.500		
	3GM 700	70,50				
	3GM 770	77,20				2.200

## CED400W electronic control units Centraline elettroniche CED400W

- Programmable according to IEC 61131-3 standard through PHC Studio
- 12/24 VDC applications
- 3 Hardware configurations with "ready-to-use" application software
- Designed for PHC electronic systems
- Programmabile secondo lo standard IEC 61131 con PHC Studio
- Per applicazioni a 12/24 VDC
- 3 configurazioni hardware con applicazioni software standard "pronte per l'uso"
- Progettata per i sistemi elettronici PHC



The CED400W is a microprocessor-based PWM driver designed to control 8 proportional solenoid valves (4+4).

In the controllers is always loaded the standard application software that is "ready-to-use" (e.g. for analog joysticks, CAN bus joysticks of fan drive) and the control parameters can be easily adjusted through the WST STUDIO software.

It is possible to develop and download a custom application software with the PHC Studio tool. In this case access to IEC61131-3 programming language is built-in.

Also available is the PHC STUDIO Starter Kit (p/n 182400021), that contains an ECU, sample actuators, a wire harness, tutorial programs and the complete documentation.

Other features:

- Solenoid currents measurement (to compensate changes in coil resistance, temperature and supply voltage)
- Programmable Dither frequency (to reduce spool sticking)
- Protected power supply (against reversed polarity and load dump)
- Protected inputs (against short circuits to GND and to power supply)
- Protected outputs (against short circuits, reversed polarity, over-current and over-temperature).

La CED400W è stata progettata per il controllo di 8 valvole proporzionali a solenoide (4+4).

Le centraline con software applicativo standard sono "pronte per l'uso" (es. per joystick analogici, joystick CAN bus, fan drive, sensori di posizione cursore).

I principali parametri di controllo possono essere regolati facilmente tramite il software WST STUDIO.

Nel caso in cui sia necessario accedere al linguaggio di programmazione IEC61131, è sufficiente richiedere il software PHC Studio. Le centraline Open Software possono essere direttamente programmate dall'utente per sviluppare applicazioni personalizzate.

In questo caso l'accesso al linguaggio di programmazione IEC61131 è già incluso. Come supporto, nelle fasi iniziali di sviluppo, è disponibile lo Starter Kit di PHC STUDIO (codice 182400021), che comprende: una centralina, sensori, attuatori, un cablaggio di esempio, demo di programmazione e tutta la documentazione.

Altre caratteristiche:

- Misurazione della corrente bobine (per compensare i cambiamenti della resistenza della bobina, temperatura e alimentazione)
- Frequenza di Dither programmabile (per ridurre lo spool sticking)
- Protezione dell'alimentazione contro l'inversione di polarità e load dump
- Ingressi protetti contro i cortocircuiti a GND ed alimentazione
- Uscite protette contro i cortocircuiti, l'inversione di polarità, sovracorrente e sovratemperatura.

Technical data	
<b>General</b>	
Supply voltage VK	da 8 a 32 V
Current consumption	<100 mA
Max. current output	6 A - 12 VDC
Interface	RS232, 19200, 8, n, 1
EMC compatibility	ISO13766, ISO14982
Environmental compatibility	IEC60068-2-6/27/29
Working temperature	from -40°C to +85°C
Protection degree	IP67 with mating connector attached
Weight	0.3 Kg (0.66 lb)
<b>Analog inputs</b>	
Number	up to 4
Signal type	0/VK or from 0 to 5 V
<b>Digital inputs</b>	
Number	up to 6
Signal type	0/VK, from 0 to 50 KHz
<b>Proportional outputs</b>	
Number	12
Type	8HSD* + 4LSD*
Max. load	2 A

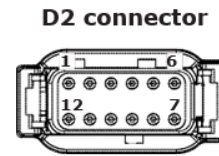
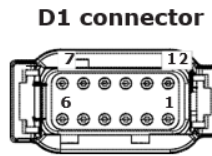
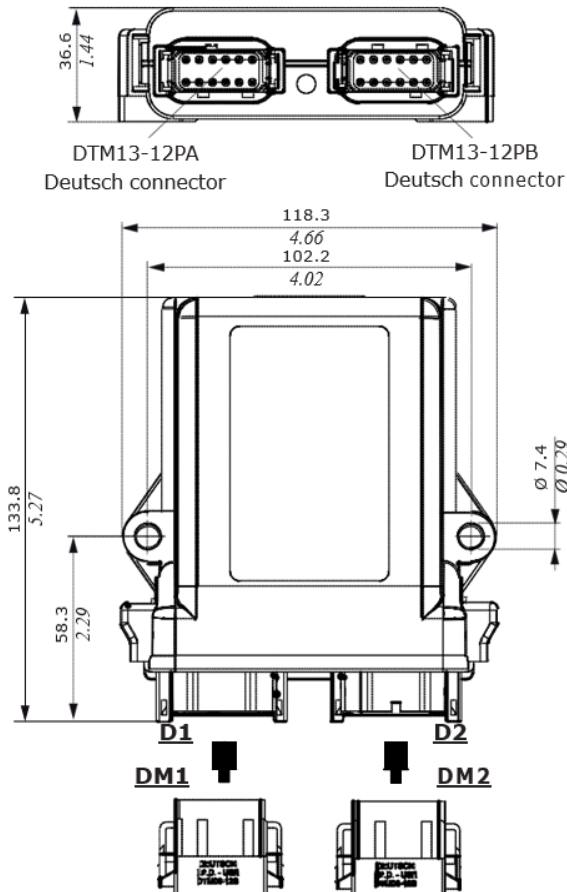
NOTE (\*): HSD - High Side Driver  
LSD - Low Side Driver



# CED400W electronic control units

## Centraline elettroniche CED400W

### DIMENSIONS AND PIN-OUT / DIMENSIONI E CARATTERISTICHE



#### Mating connectors

Name	Type
DM1	DTM06-12SA Deutsch
DM2	DTM06-12SB Deutsch

CED Control unit			CAN		Analog input			Digital input	Frequency input	Digital output		Sensor output
Application type	CED pn	WST pn	Port	120R (0.5-4.5V)	0-VK (ratio)	Temp.	0/VK	0/VK	HSD	LSD	5V	
ANALOG	183337025	DCDSW0230005	0	0	4*	4*	0	4**	2**	8	4	0
CANBUS FANDRIVE	183337033	DCDSW0230012	1	0	0	0	4	6**	2**	4	2	1
CANBUS	183337037	DCDSW0230013	1	0	4*	4*	0	2**	2**	8	4	0

NOTE (\*): 0-VK analog inputs are multiplexed with the 0.5-4.5V

(\*\*): The frequency inputs are multiplexed with the digital inputs DI\_1 and DI\_2

CED400W part numbers Description	
	Code
Programming cable	VCAV600018
PHC studio starter kit	182400021
USB/RS232 adapter USB 2.0 EADA70156	W0420001
USB/CANBUS adapter USB-CAN PEAK - IPEH-002021	W0420003
PHC400F standard harness	183480118
PHC400C standard harness	183480168
Connection cable	YCON140041
	YCON140067
PHC400 load harness	183480203
PHC400 load extension cable (2 m)	183490049
Battery supply cable (4 m Fuse 15A)	W0410005

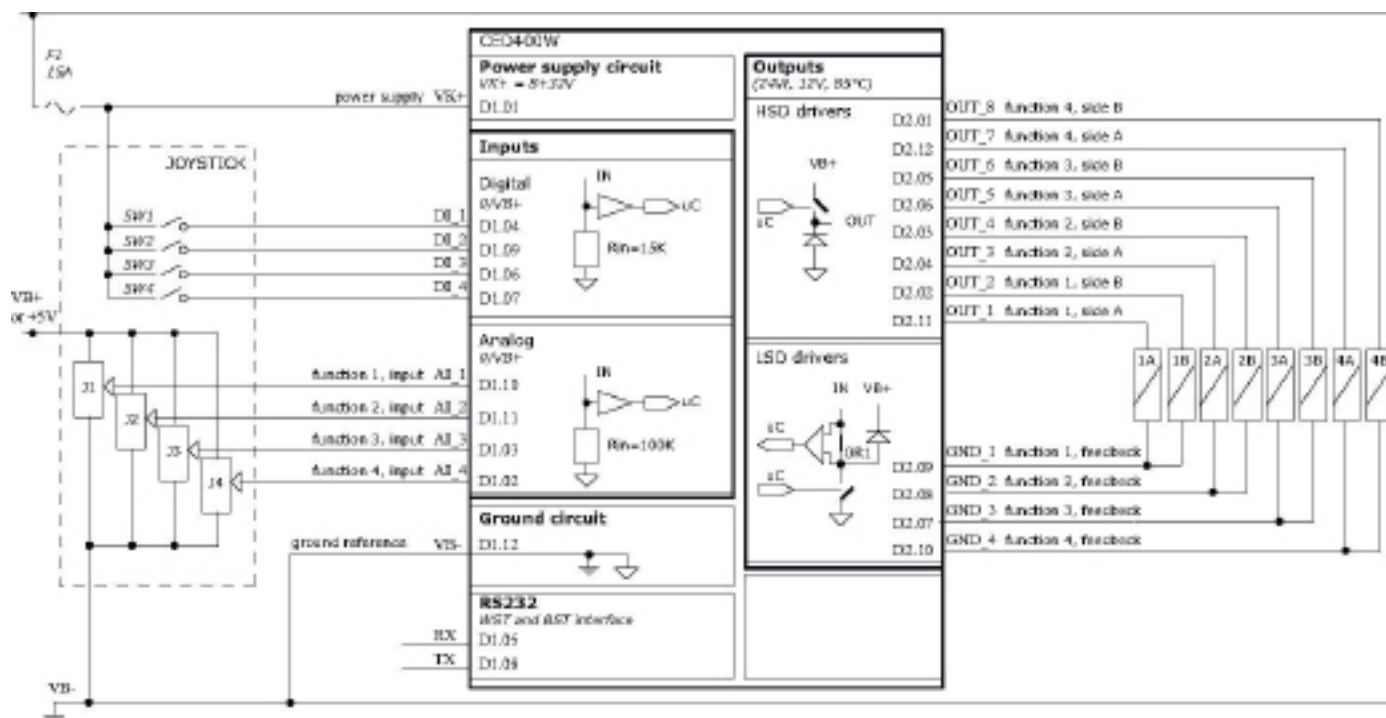
NOTE: See details in the dedicated chapters

# CED400W electronic control units

## Centraline elettroniche CED400W

### SYSTEM DIAGRAM / DIAGRAMMA DI SISTEMA

Analog circuit configuration for 183337025  
 Configurazione sistema analogico per 183337025



#### Connector PIN-OUT

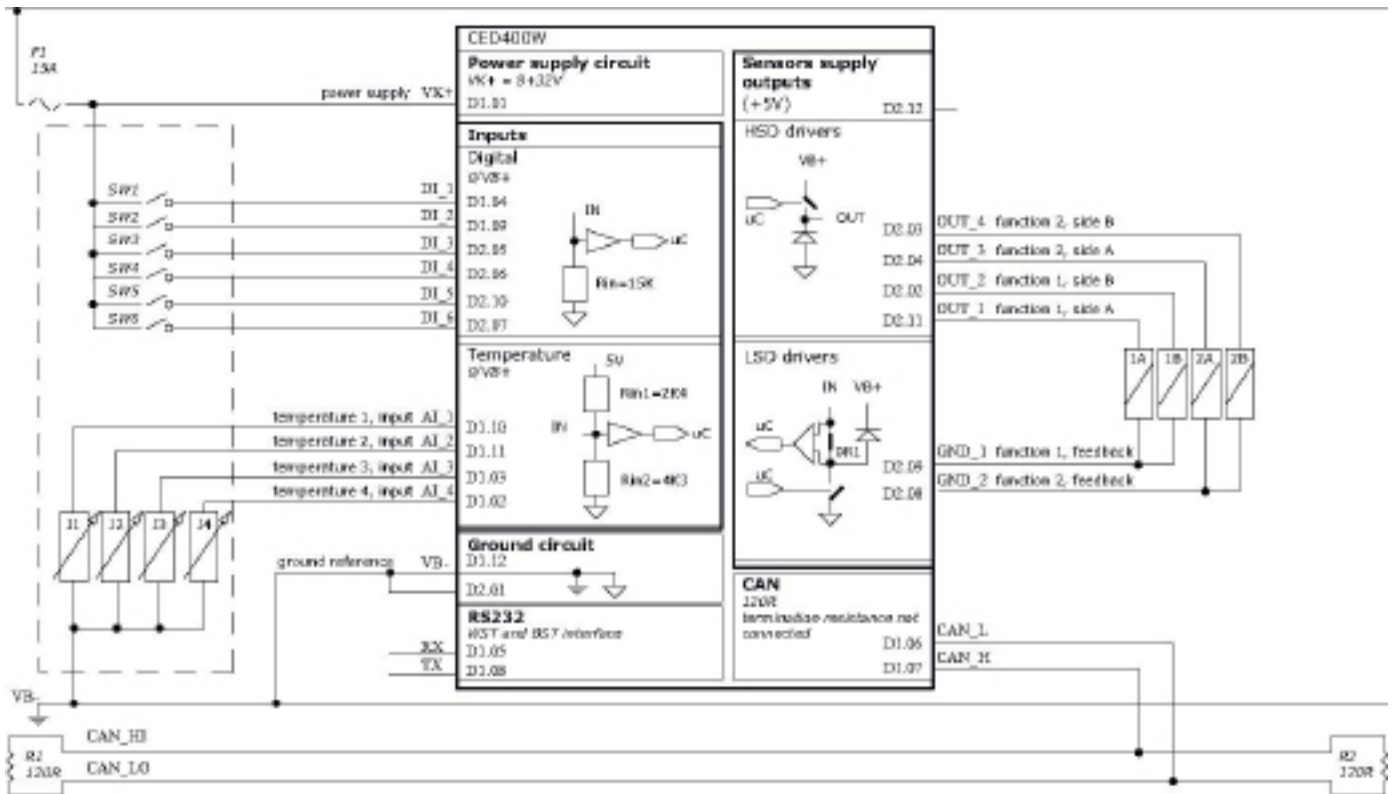
Pin	Function	
	D1 connector	D2 connector
1	VK+	OUT_8
2	AI_4	OUT_2
3	AI_3	OUT_4
4	DI_1	OUT_3
5	RX	OUT_6
6	DI_3	OUT_5
7	DI_4	GND_3
8	TX	GND_2
9	DI_2	GND_1
10	AI_1	GND_4
11	AI_2	OUT_1
12	VB-	OUT_7

# CED400W electronic control units

## Centrale elettroniche CED400W

### SYSTEM DIAGRAM / DIAGRAMMA DI SISTEMA

CANbus / Fan Drive circuit configuration for 183337033  
 Configurazione sistema CANbus / Fan Drive per 183337033



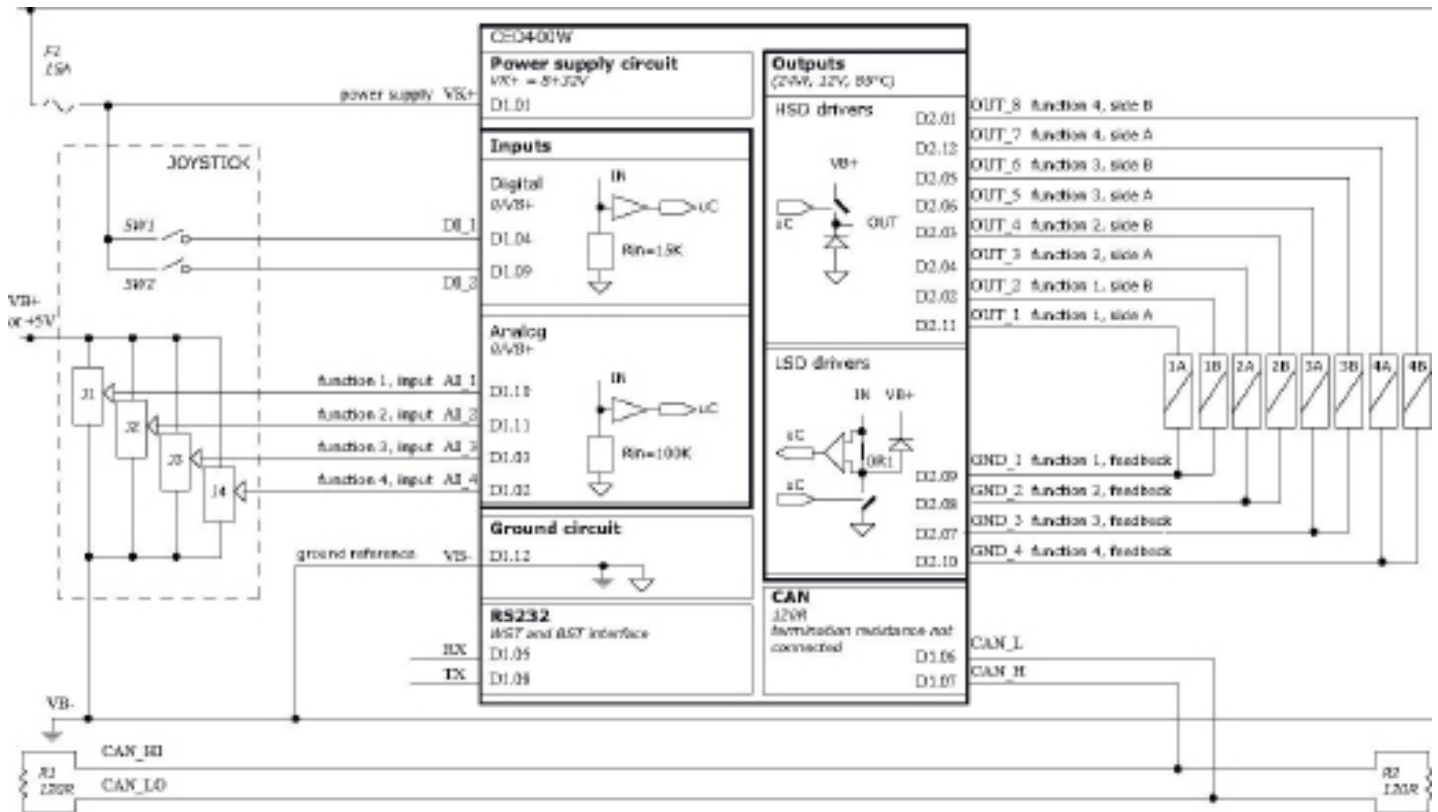
Connector PIN-OUT		
Pin	Function	
	D1 connector	D2 connector
1	VK+	VB-
2	AI_4	OUT_2
3	AI_3	OUT_4
4	DI_1	OUT_3
5	RX	DI_3
6	CAN_L	DI_4
7	CAN_H	DI_6
8	TX	GND_2
9	DI_2	GND_1
10	AI_1	DI_5
11	AI_2	OUT_1
12	VB-	VJ+

# CED400W electronic control units

## Centrale elettroniche CED400W

### SYSTEM DIAGRAM / DIAGRAMMA DI SISTEMA

CANbus circuit configuration for 183337037  
 Configurazione sistema CANbus per 183337037



Connector PIN-OUT		
Pin	Function	
	D1 connector	D2 connector
1	VK+	OUT_8
2	AI_4	OUT_2
3	AI_3	OUT_4
4	DI_1	OUT_3
5	RX	OUT_6
6	CAN_L	OUT_5
7	CAN_H	GND_3
8	TX	GND_2
9	DI_2	GND_1
10	AI_1	GND_4
11	AI_2	OUT_1
12	VB-	OUT_7



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