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*AXIAL*

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*ACCESSORIES AND SPARE PARTS*

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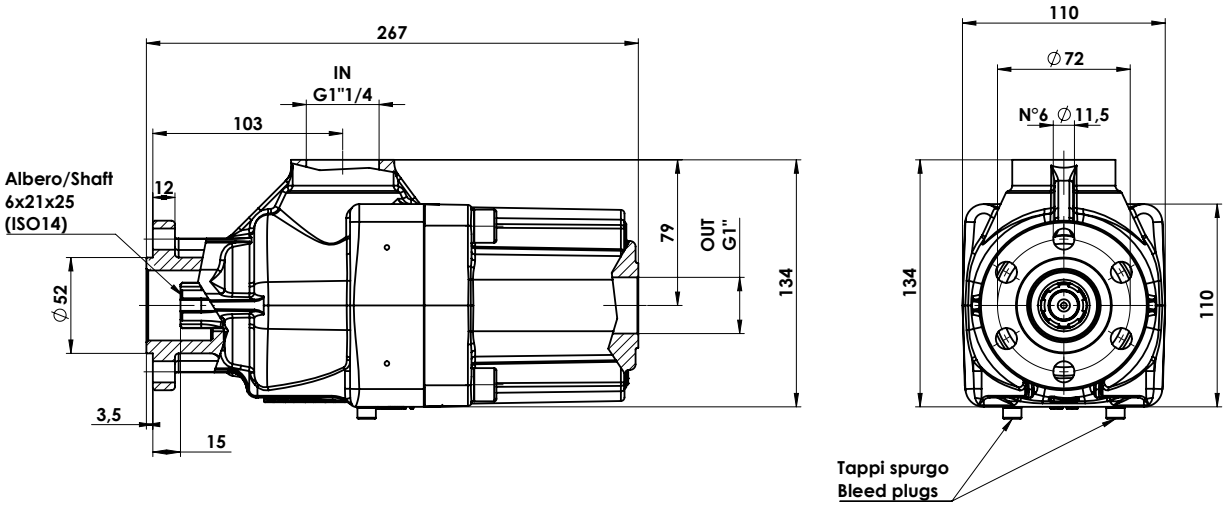
# Pompe a pistoni fissaggio 3 fori UNI
*3 Holes UNI hydraulic piston pump*
**DARK UNI**

**108005**



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico *Fluid* | Minerale o sintetico compatibile con guarnizioni: *Mineral or synthetic compatible with the following seals:* NBR, FKM, FPM, Nylon | | | | |
| Viscosità cinematica consigliata *Kinematic viscosity suggested* | T media ambiente (°C) *Average ambient temp. (°C)* | < -10 | -10÷10 | 10÷35 | > 35 |
| | VG (cSt = $mm^2/s$) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio *Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento *Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato *Viscosity index suggested* VI > 100 | | | Temperatura di esercizio *Working temperature* -15°C ÷ 100°C | | |
| Grado di filtrazione *Oil filtering* | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | |
| Pres. di aspirazione *Inlet pressure* | | | 0,85 ÷ 2 bar assoluti/absolut | | |
| Senso di rotazione *Pump rotation* | | | Bidirezionale *Bidirectional* | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria. *Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

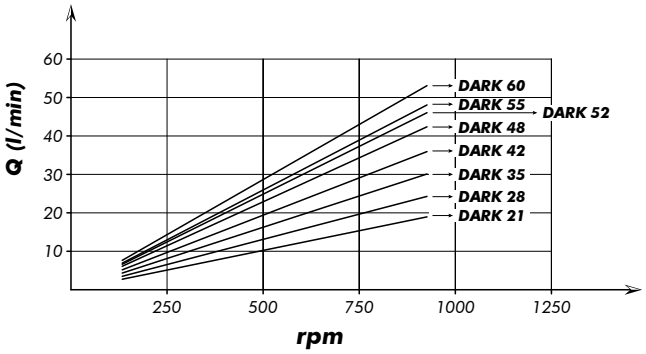
## Ingombro / *Dimensions*



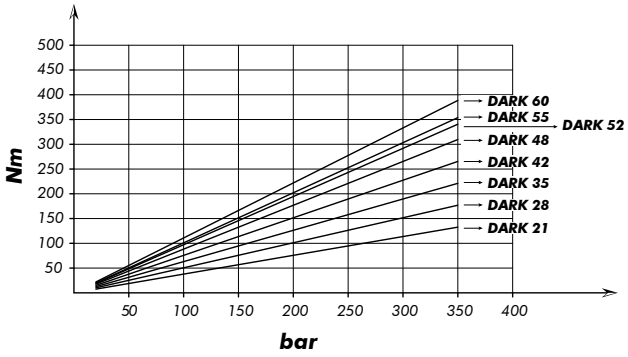

## Dati tecnici / *Technical data*

| **Tipo pompa** *Pump type* | **Codice** *Code* | **Cilindrata** *Displacement* cm³/rev | **Pressione** *Pressure* Massima *Max* bar | **Pressione** *Pressure* Picco *Peak* bar | **Velocità massima** *Max speed* rpm | **Peso** *Weight* kg |
|---|---|---|---|---|---|---|
| DARK-21 | **10800502111** | 20,25 | 350 | 400 | 1800 | 13,9 |
| DARK-28 | **10800502817** | 27 | | | | 13,8 |
| DARK-35 | **10800503512** | 33,75 | | | | 13,8 |
| DARK-42 | **10800504217** | 40,5 | | | | 13,7 |
| DARK-48 | **10800504815** | 47,25 | | | | 13,6 |
| DARK-52 | **10800505216** | 51,97 | | | | 13,5 |
| DARK-55 | **10800505510** | 54 | 300 | 350 | 1500 | 13,5 |
| DARK-60 | **10800505912** | 59,3 | | | | 13,5 |

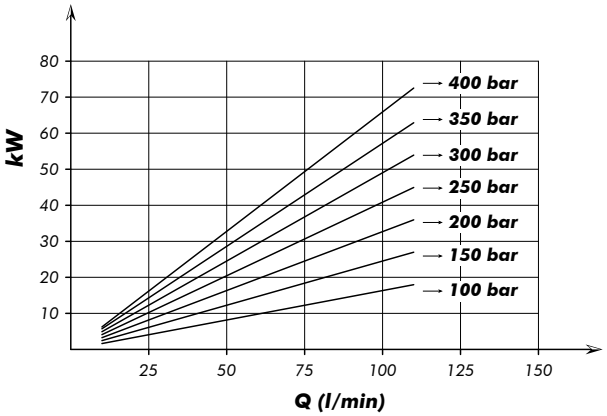
## Portata / *Flow*



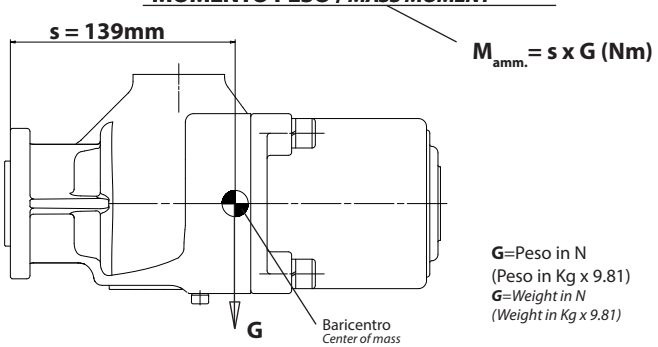

## Coppia assorbita / *Drive torque*




## Potenza assorbita / *Power input*

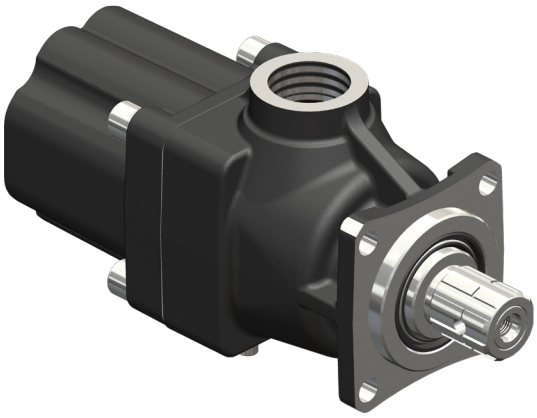



**MOMENTO PESO / *MASS MOMENT***



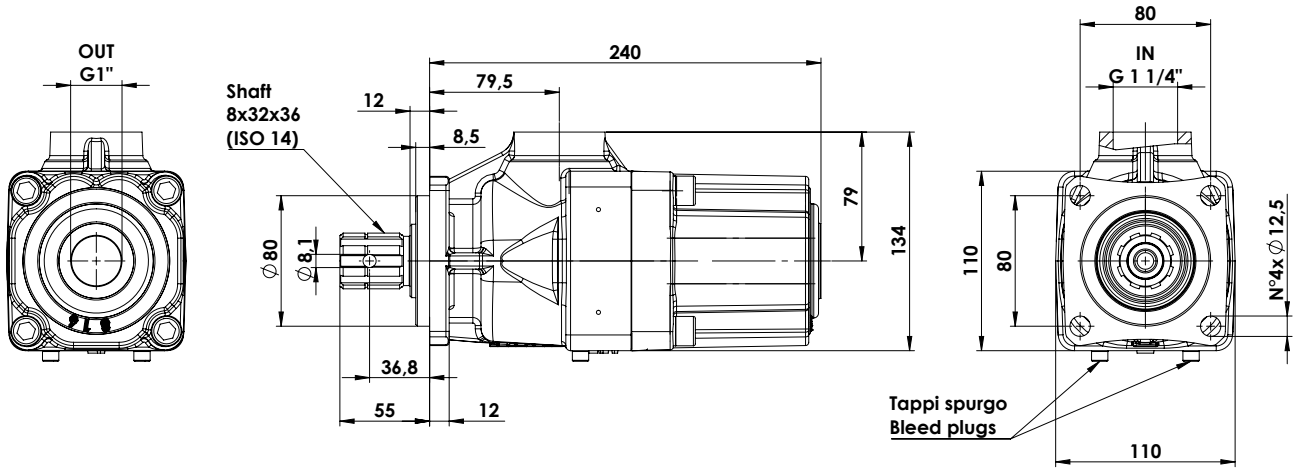

La quota "s" può essere considerata unica per tutte le cilindrate.
*"s" dimension can be considered valid for all pump displacement.*

**Link:**
Ricambi/*Spare parts*



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico *Fluid* | Minerale o sintetico compatibile con guarnizioni: *Mineral or synthetic compatible with the following seals:* NBR, FKM, FPM, Nylon | | | | |
| Viscosità cinematica consigliata *Kinematic viscosity suggested* | T media ambiente (°C) *Average ambient temp. (°C)* | < -10 | -10÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio *Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento *Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato *Viscosity index suggested* VI > 100 | | | Temperatura di esercizio *Working temperature* -15°C ÷ 100°C | | |
| Grado di filtrazione *Oil filtering* | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | |
| Pres. di aspirazione *Inlet pressure* | | | 0,85 ÷ 2 bar assoluti/absolut | | |
| Senso di rotazione *Pump rotation* | | | Bidirezionale *Bidirectional* | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria. *Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

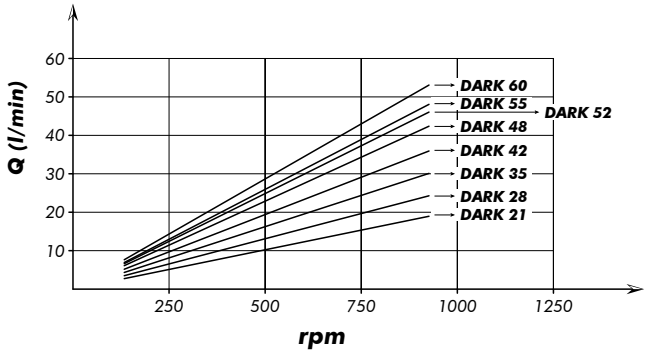
## Ingombro / *Dimensions*



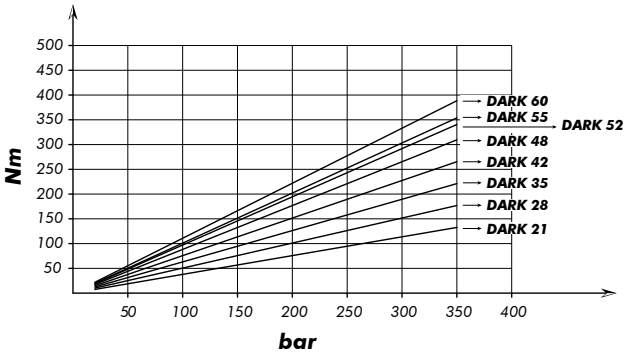

## Dati tecnici / *Technical data*

| **Tipo pompa** *Pump type* | **Codice** *Code* | **Cilindrata** *Displacement* cm³/rev | **Pressione** *Pressure* Massima *Max* bar | **Pressione** *Pressure* Picco *Peak* bar | **Velocità massima** *Max speed* rpm | **Peso** *Weight* kg |
|---|---|---|---|---|---|---|
| DARK-21 | **10800502120** | 20,25 | 350 | 400 | 1800 | 14,8 |
| DARK-28 | **10800502826** | 27 | | | | 14,5 |
| DARK-35 | **10800503521** | 33,75 | | | | 14,4 |
| DARK-42 | **10800504226** | 40,5 | | | | 14,4 |
| DARK-48 | **10800504824** | 47,25 | | | | 14,2 |
| DARK-52 | **10800505225** | 51,97 | | | | 14,2 |
| DARK-55 | **10800505529** | 54 | 300 | 350 | 1500 | 14,2 |
| DARK-60 | **10800505921** | 59,3 | | | | 14,2 |

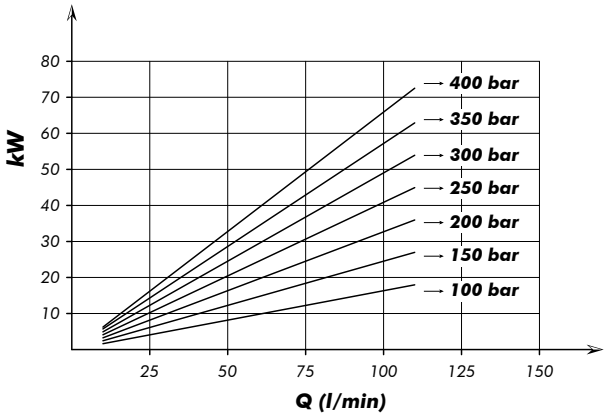
## Portata / *Flow*



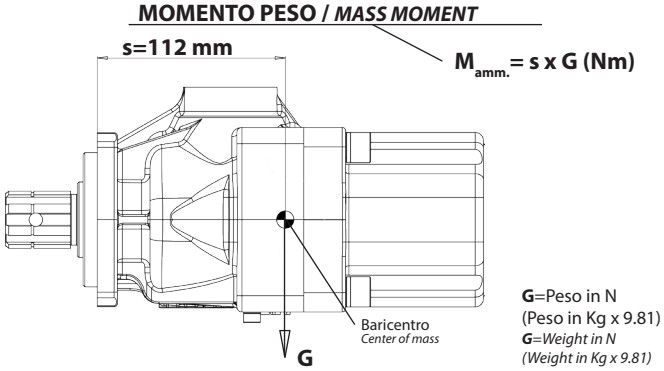

## Coppia assorbita / *Drive torque*




## Potenza assorbita / *Power input*




## MOMENTO PESO / *MASS MOMENT*



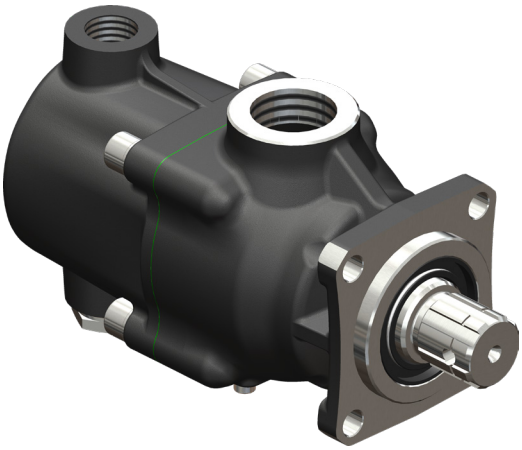

La quota "s" può essere considerata unica per tutte le cilindrate.
*"s" dimension can be considered valid for all pump displacement.*

**Link:**
Ricambi/*Spare parts*

# Pompe a pistoni fissaggio 4 fori ISO short alta efficienza
*High efficiency 4 holes ISO short hydraulic piston pumps*
**DARK ISO SHORT HE**

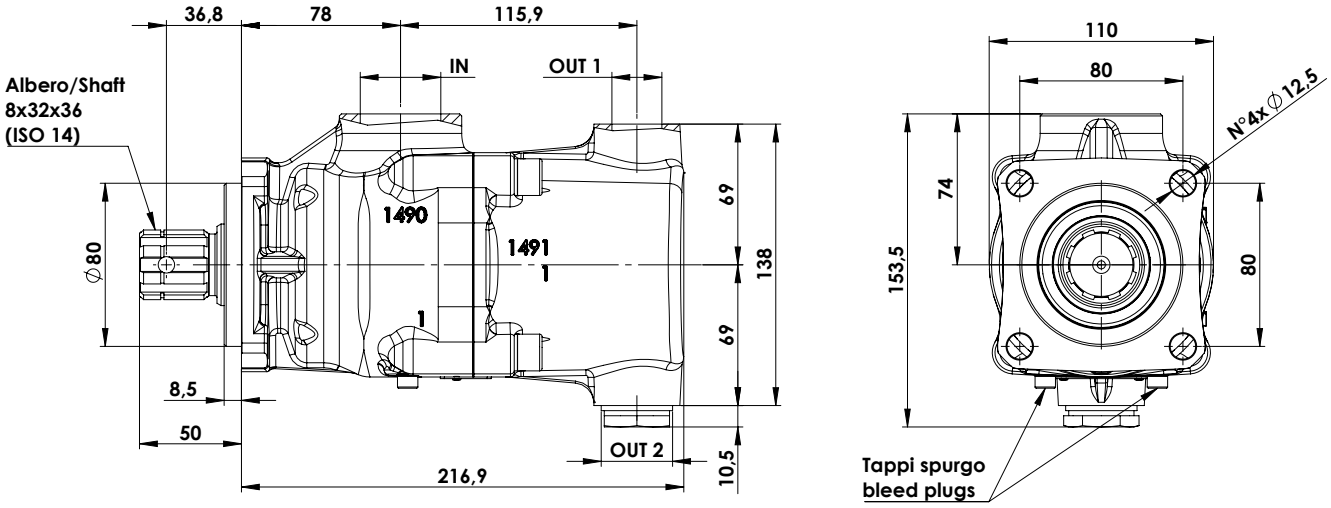
**108009**

Le pompe a pistoni della serie HE offrono una maggiore capacità di aspirazione ad un basso regime di giri. Si rendono pertanto particolarmente idonee per tutte quelle applicazioni idrauliche dove sono richieste alte prestazioni abbinate a velocià di rotazione ridotte.
*The piston pumps series HE offer enhanced suction ability at low RPM range. Thus, these pumps are particularly suitable for all those hydraulic applications requiring high performance at low rotation speed.*



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico *Fluid* | Minerale o sintetico compatibile con guarnizioni: *Mineral or synthetic compatible with the following seals:* NBR, FKM, FPM, Nylon | | | | |
| Viscosità cinematica consigliata *Kinematic viscosity suggested* | T media ambiente (°C) *Average ambient temp. (°C)* | < -10 | -10÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio *Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento *Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato *Viscosity index suggested* VI > 100 | | Temperatura di esercizio *Working temperature* -40°C ÷ 140°C | | | |
| Grado di filtrazione *Oil filtering* | | | > 200 bar: 10 µm < 200 bar: 25 µm | | |
| Pres. di aspirazione / *Inlet pressure* | | | 0,85 ÷ 2 bar assoluti/absolut | | |
| Senso di rotazione / *Pump rotation* | | | Bidirezionale / *Bidirectional* | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria. *Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

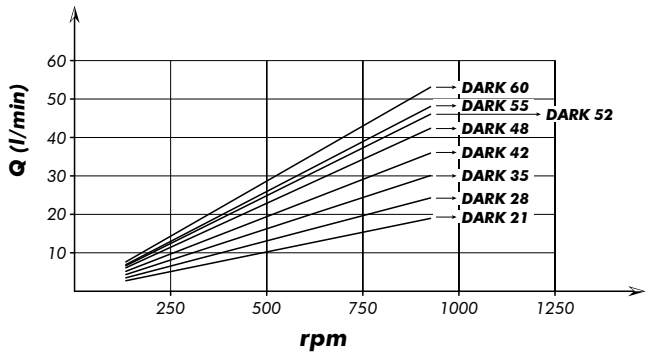
## Ingombro / *Dimensions*



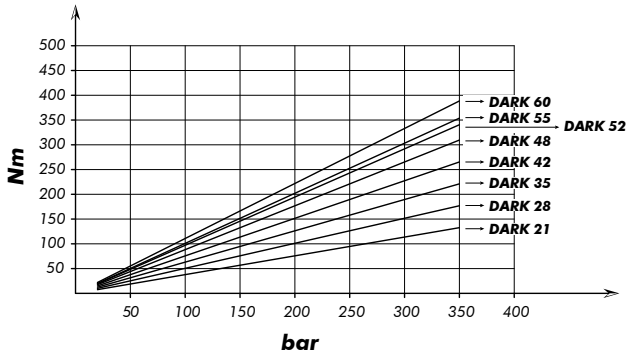

## Dati tecnici / *Technical data*

| Tipo pompa *Pump type* | Codice *Code* | Cilindrata *Displacement* cm³/rev | IN GAS | OUT GAS | IN METRICO | OUT METRICO | Pressione / *Pressure* Max. | Pressione / *Pressure* Picco/*Peak* | Velocità massima *Max speed* | Peso *Weight* kg |
|---|---|---|---|---|---|---|---|---|---|---|
| DARK SHORT-21 | **10800902126** | 20,25 | G 1-1/4 | G 3/4 | | | 350 bar | 400 bar | 1800 rpm | 13,2 |
| | **10800932120** | | | | M45x2 | M22x1,5 | | | | |
| DARK SHORT-28 | **10800902822** | 27 | G 1-1/4 | G 3/4 | | | | | | 13,2 |
| | **10800932826** | | | | M45x2 | M22x1,5 | | | | |
| DARK SHORT-35 | **10800903527** | 33,75 | G 1-1/4 | G 3/4 | | | | | | 13,1 |
| | **10800933521** | | | | M45x2 | M22x1,5 | | | | |
| DARK SHORT-42 | **10800904222** | 40,5 | G 1-1/4 | G 3/4 | | | | | | 13 |
| | **10800934226** | | | | M45x2 | M22x1,5 | | | | |
| DARK SHORT-48 | **10800904820** | 47,25 | G 1-1/4 | G 3/4 | | | | | | 12,9 |
| | **10800934824** | | | | M45x2 | M22x1,5 | | | | |
| DARK SHORT-52 | **10800905221** | 51,97 | G 1-1/4 | G 3/4 | | | | | | 13 |
| | **10800935225** | | | | M45x2 | M22x1,5 | | | | |
| DARK SHORT-55 | **10800905525** | 54 | G 1-1/4 | G 3/4 | | | 300 bar | 350 bar | 1500 rpm | 12,9 |
| | **10800935529** | | | | M45x2 | M22x1,5 | | | | |
| DARK SHORT-60 | **10800906024** | 59,3 | G 1-1/4 | G 3/4 | | | | | | 12,8 |
| | **10800936028** | | | | M45x2 | M22x1,5 | | | | |

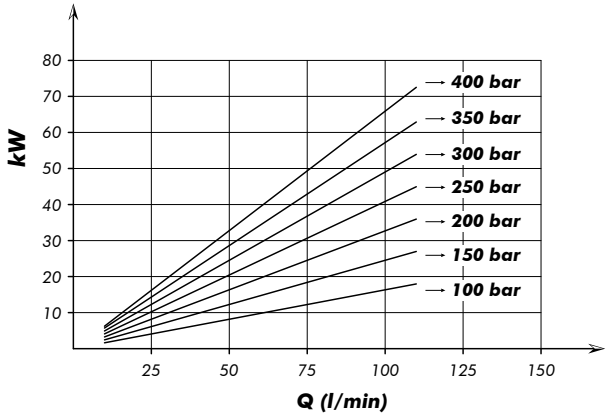
## Portata / *Flow*




## Coppia assorbita / *Drive torque*

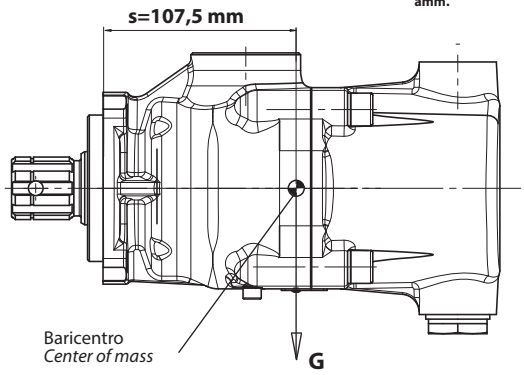



## Potenza assorbita / *Power input*



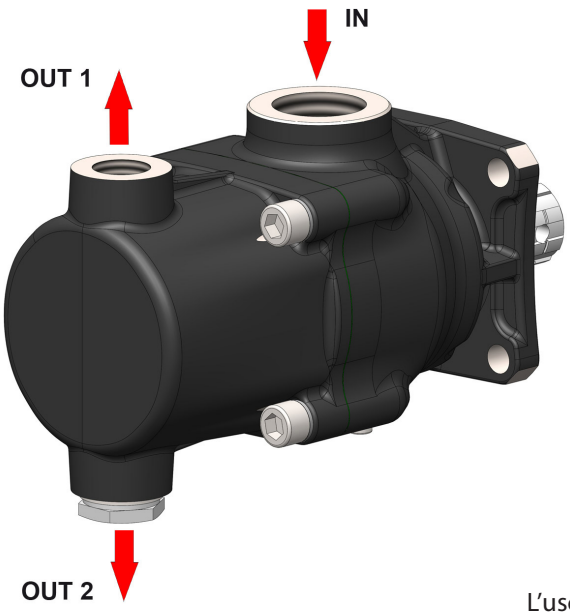

## MOMENTO PESO / MASS MOMENT

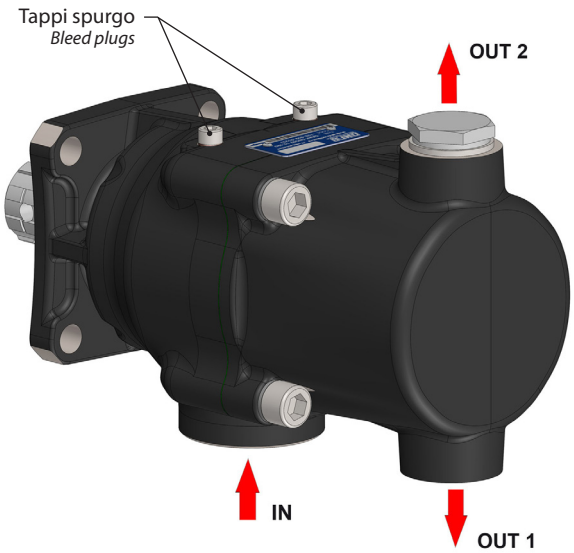
$M_{amm.} = s \times G$ (Nm)




**G** = Peso / Weight in N (Peso / Weight in Kg x 9.81)

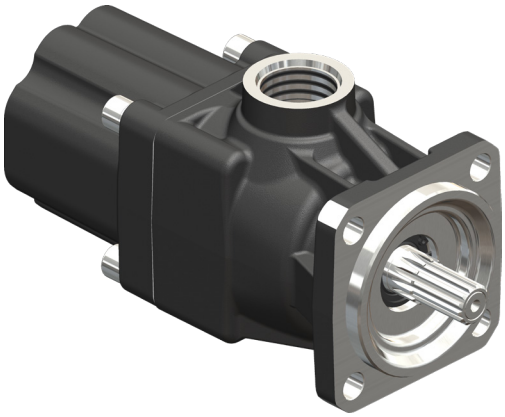
"**s**" la dimensione può essere considerata valida per tutte le pompe
dimension can be considered valid for all pump displacement



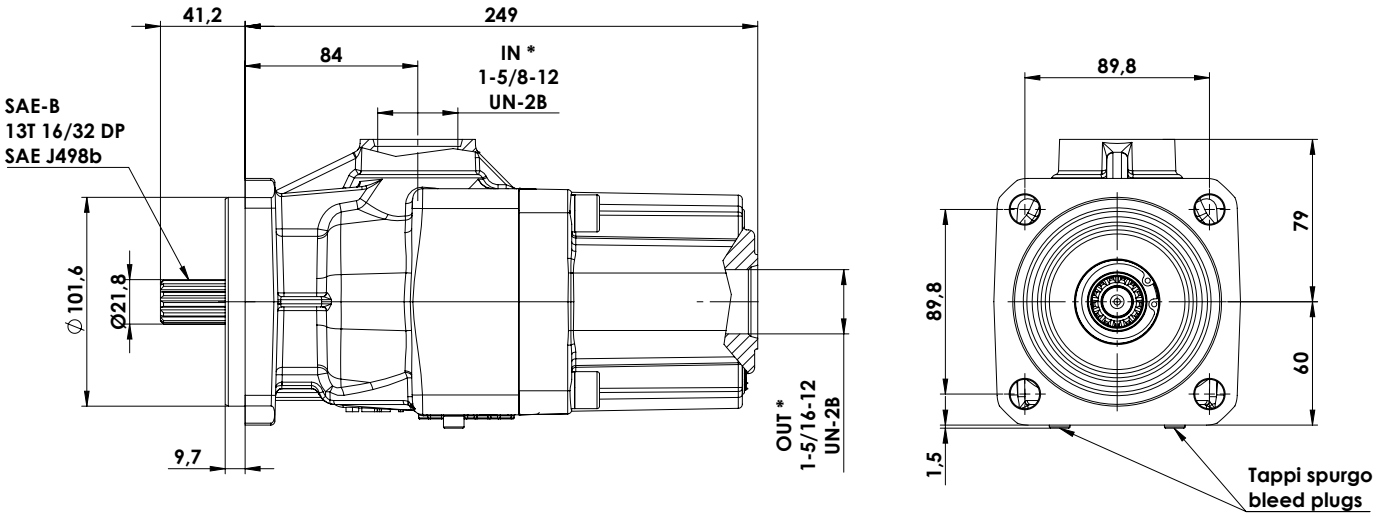

L'uscita ausiliaria (OUT 2) può essere utilizzata in alternativa o in contemporanea all'uscita principale (OUT 1).
*The auxiliary output (OUT 2) can be used either alternatively or simultaneously to the main output (OUT 1).*

**Link:**
Ricambi/*Spare parts*



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico<br>*Fluid* | Minerale o sintetico compatibile con guarnizioni:<br>*Mineral or synthetic compatible with the following seals:*<br>NBR, FKM, FPM, Nylon | | | | |
| Viscosità cinematica consigliata<br>*Kinematic viscosity suggested* | T media ambiente (°C)<br>*Average ambient temp. (°C)* | < -10 | -10÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio<br>*Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento<br>*Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato<br>*Viscosity index suggested* VI > 100 | | | Temperatura di esercizio<br>*Working temperature* -15°C ÷ 100°C | | |
| Grado di filtrazione<br>*Oil filtering* | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | |
| Pres. di aspirazione<br>*Inlet pressure* | | | 0,85 ÷ 2 bar<br>assoluti/absolut | | |
| Senso di rotazione<br>*Pump rotation* | | | Bidirezionale<br>*Bidirectional* | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria.<br>*Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

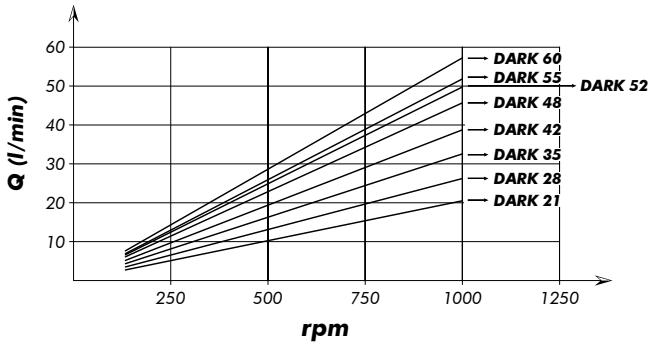
## Ingombro / *Dimensions*



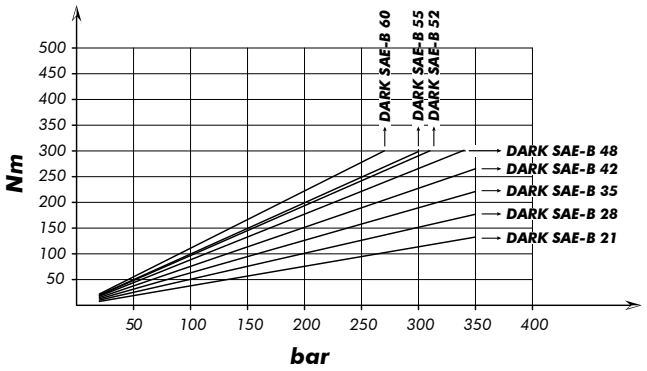

## Dati tecnici / *Technical data*

| **Tipo pompa** *Pump type* | **Codice** *Code* | **Cilindrata** *Displacement* cm³/rev | **Pressione** *Pressure* Massima *Max* bar | Picco *Peak* bar | **Velocità max** *Max speed* rpm | **Peso** *Weight* kg |
|---|---|---|---|---|---|---|
| DARK SAE-B 21 | **10800700219** | 20,25 | 350 | | 1800 | 15,4 |
| DARK SAE-B 28 | **10800700282** | 27 | | | | 15,2 |
| DARK SAE-B 35 | **10800700353** | 33,75 | | | | 15,2 |
| DARK SAE-B 42 | **10800700424** | 40,5 | | | | 15,2 |
| DARK SAE-B 48 | **10800700488** | 47,25 | 340 | | | 15 |
| DARK SAE-B 52 | **10800700522** | 51,97 | 310 | | | 15 |
| DARK SAE-B 55 | **10800700559** | 54 | 300 | | 1500 | 15,1 |
| DARK SAE-B 60 | **10800700602** | 59,3 | 270 | | | 14,9 |

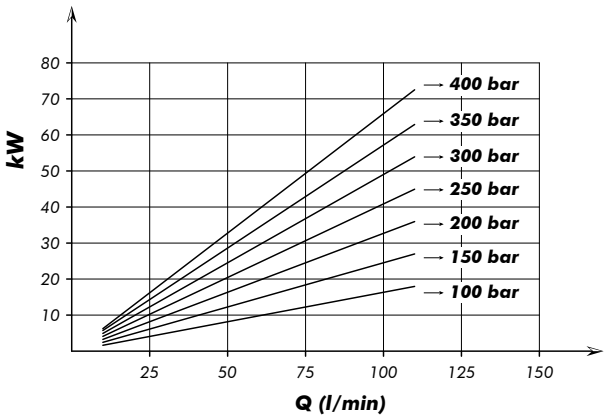
## Portata / *Flow*



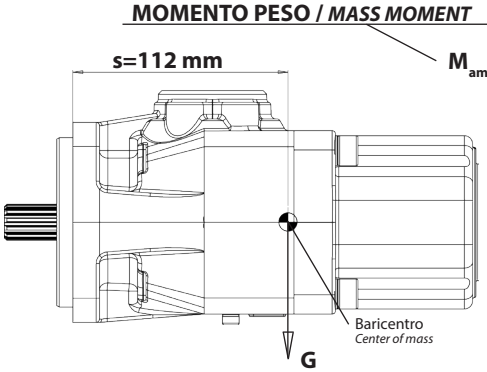

## Coppia assorbita / *Drive torque*




## Potenza assorbita / *Power input*




## MOMENTO PESO / *MASS MOMENT*



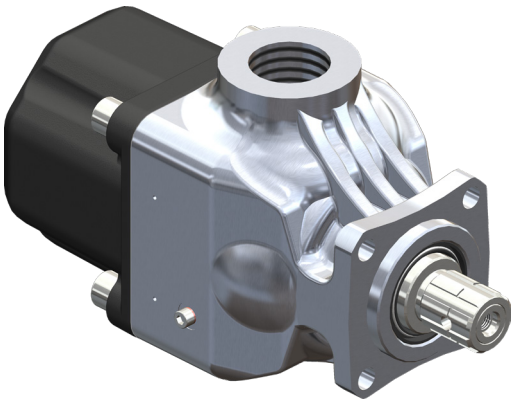

**G**=Peso in N
(Peso in Kg x 9.81)
***G***=*Weight in N*
*(Weight in Kg x 9.81)*

La quota "s" può essere considerata unica per tutte le cilindrate.
*"s" dimension can be considered valid for all pump displacement.*

**Link:**
Ricambi/*Spare parts*

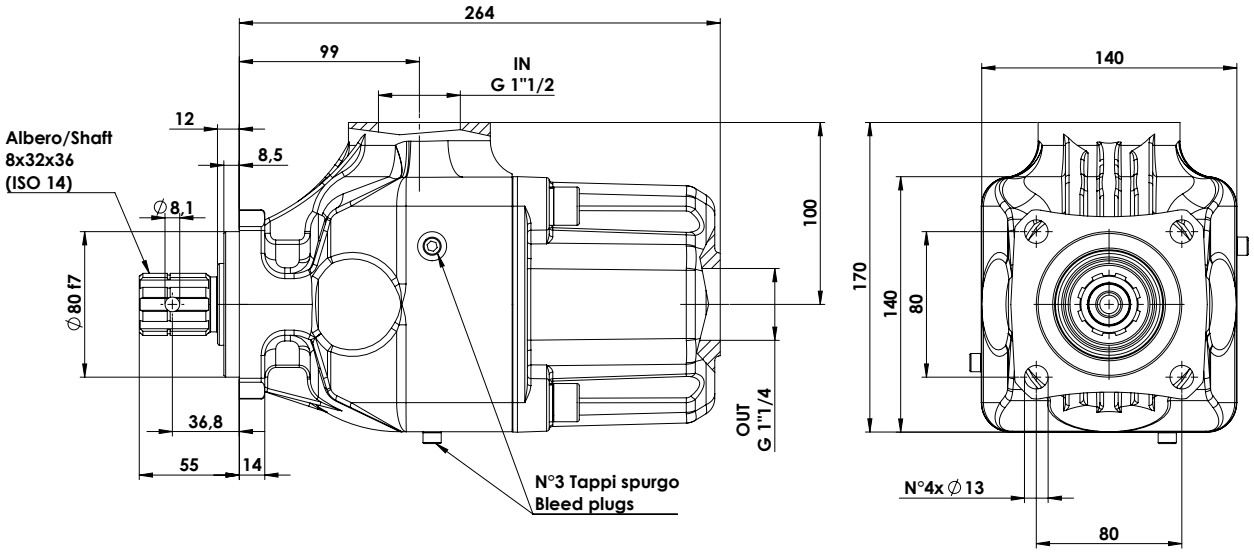
# Pompe a pistoni fissaggio 4 fori ISO
*4 holes ISO hydraulic piston pumps*
**2PAK**

**108005**



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico *Fluid* | Minerale o sintetico compatibile con guarnizioni: *Mineral or synthetic compatible with the following seals:* NBR, FKM, FPM, Nylon | | | | |
| Viscosità cinematica consigliata *Kinematic viscosity suggested* | T media ambiente (°C) *Average ambient temp. (°C)* | < -10 | -10÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio *Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento *Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato *Viscosity index suggested* VI > 100 | | | Temperatura di esercizio *Working temperature* -15°C ÷ 100°C | | |
| Grado di filtrazione *Oil filtering* | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | |
| Pres. di aspirazione *Inlet pressure* | | | 0,85 ÷ 2 bar assoluti/absolut | | |
| Senso di rotazione *Pump rotation* | | | Bidirezionale *Bidirectional* | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria. *Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

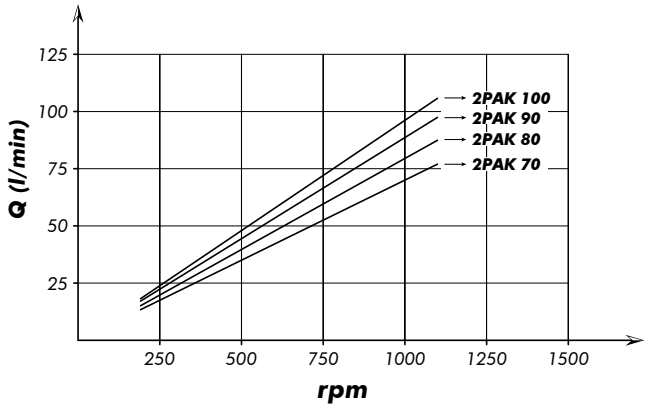
## Ingombro / *Dimensions*



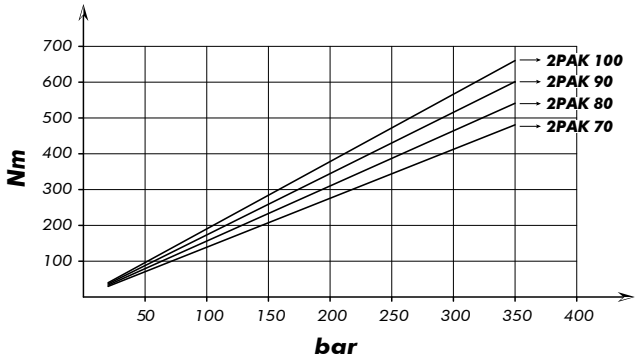

## Dati tecnici / *Technical data*

| **Tipo pompa** *Pump type* | **Codice** *Code* | **Cilindrata** *Displacement* cm³/rev | **Pressione** *Pressure* Massima *Max* bar | **Pressione** *Pressure* Picco *Peak* bar | **Velocità massima** *Max speed* rpm | **Peso** *Weight* kg |
|---|---|---|---|---|---|---|
| 2PAK-70 | **10800507027** | 73 | 300 | 350 | 1500 | 20.9 |
| 2PAK-80 | **10800508026** | 82,2 | | | | 20.8 |
| 2PAK-90 | **10800509025** | 91,4 | | | | 20,7 |
| 2PAK-100 | **10800510022** | 100,4 | | | | 20,7 |

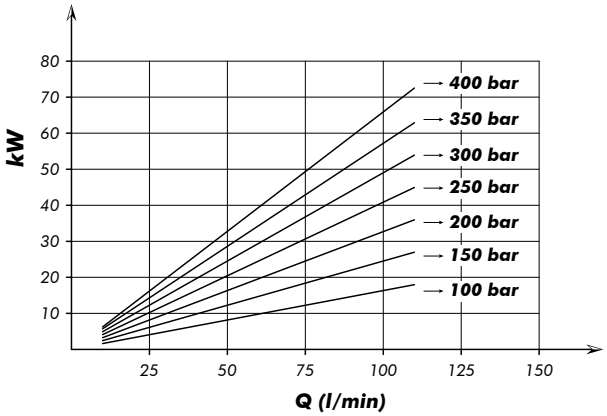
## **Portata** / *Flow*



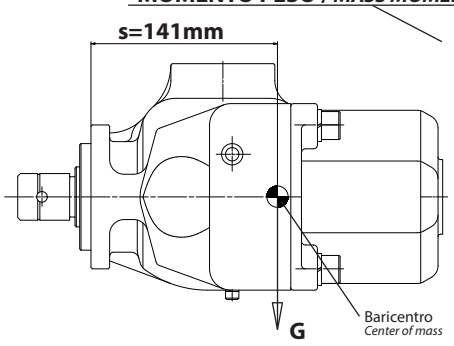

## **Coppia assorbita** / *Drive torque*




## **Potenza assorbita** / *Power input*




**MOMENTO PESO** / ***MASS MOMENT***



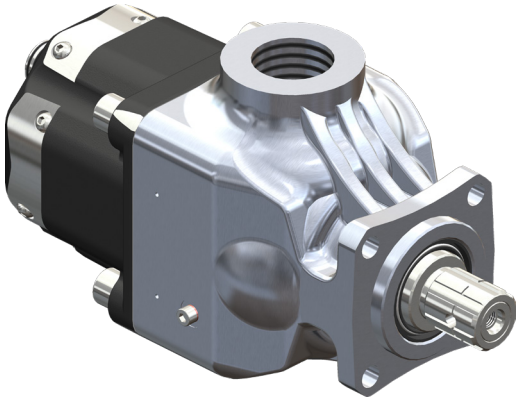

**G**=Peso in N
(Peso in Kg x 9.81)
***G***=*Weight in N*
*(Weight in Kg x 9.81)*

La quota "s" può essere considerata unica per tutte le cilindrate.
*"s" dimension can be considered valid for all pump displacement.*

**Link:**
Ricambi/*Spare parts*

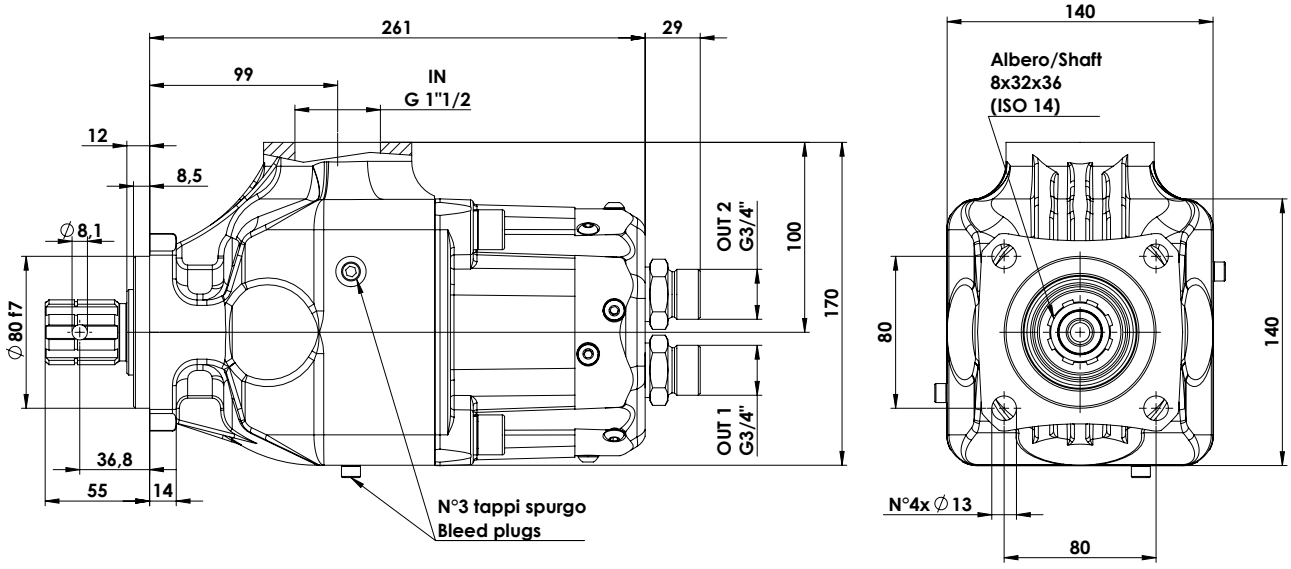
# Pompe a pistoni fissaggio 4 fori ISO doppia mandata
*Twin delivery 4 holes ISO hydaulic piston pumps*
**2PAK**

**108008**



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico *Fluid* | Minerale o sintetico compatibile con guarnizioni: *Mineral or synthetic compatible with the following seals:* NBR, FKM, FPM, Nylon | | | | |
| Viscosità cinematica consigliata *Kinematic viscosity suggested* | T media ambiente (°C) *Average ambient temp. (°C)* | < -10 | -10÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio *Optimale kinematic viscosity* | | | | | VG= 10 cSt ÷ 100 cSt |
| Viscosità cinematica max consentita all'avviamento *Max kinematic viscosity suggested at the start-up* | | | | | VG= 750 cSt |
| Indice di viscosità consigliato *Viscosity index suggested* VI > 100 | | | Temperatura di esercizio *Working temperature* -15°C ÷ 100°C | | |
| Grado di filtrazione *Oil filtering* | | | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm |
| Pres. di aspirazione *Inlet pressure* | | | | | 0,85 ÷ 2 bar assoluti/absolut |
| Senso di rotazione *Pump rotation* | | | | | Bidirezionale *Bidirectional* |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria. *Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

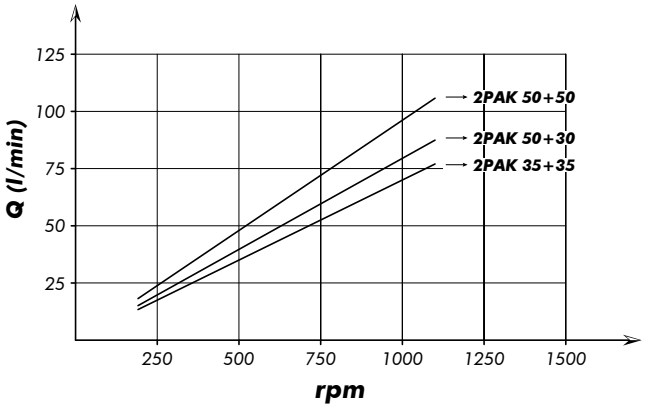
## Ingombro / *Dimensions*



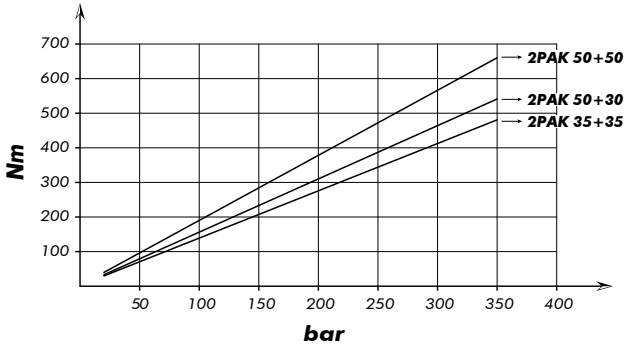

## Dati tecnici / *Technical data*

| **Tipo pompa** *Pump type* | **Codice** *Code* | **Cilindrata** *Displacement* cm³/rev | **OUT 1** cm³/rev | **OUT 2** cm³/rev | **Pressione** *Pressure* Massima *Max* bar | Picco *Peak* bar | **Velocità max** *Max speed* rpm | **Peso** *Weight* kg |
|---|---|---|---|---|---|---|---|---|
| 2PAK-35+35 | **10800835351** | 35+35 | 35 | 35 | 300 | 350 | 1500 | 21,5 |
| 2PAK-50+30 | **10800850307** | 50+30 | 30 | 50 | | | | 21,3 |
| 2PAK-50+50 | **10800850503** | 50+50 | 50 | 50 | | | | 21,2 |

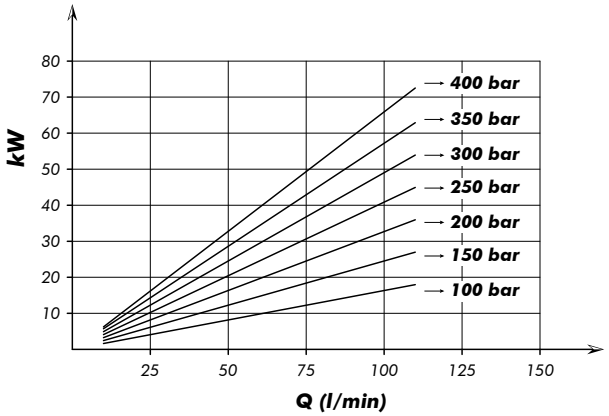
## **Portata** / *Flow*



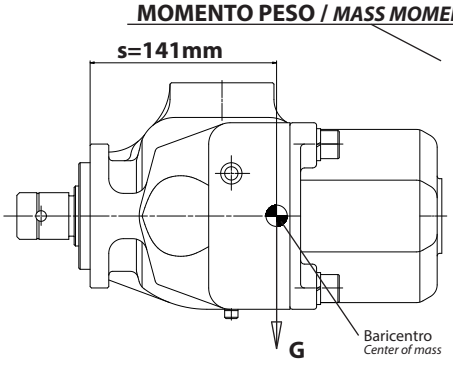

## **Coppia assorbita** / *Drive torque*




## **Potenza assorbita** / *Power input*




**MOMENTO PESO** / ***MASS MOMENT***

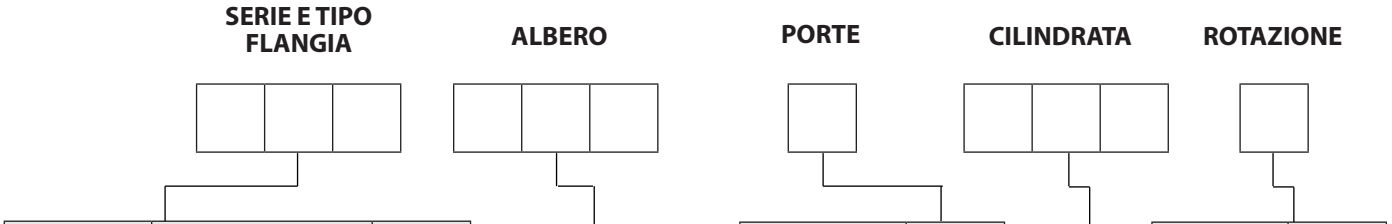



**G**=Peso in N
(Peso in Kg x 9.81)
***G***=*Weight in N*
*(Weight in Kg x 9.81)*

La quota "s" può essere considerata unica per tutte le cilindrate.
*"s" dimension can be considered valid for all pump displacement.*

**Link:**
Ricambi/*Spare parts*

# CODIFICA VERSIONI




| Serie | Tipo flangia | Codice OMFB |
|---|---|---|
| HDS | ISO 7653 4 fori Ø80 | **601** |
| HDT | | **602** |
| MDS | | **603** |
| TWIN-FLOW | | **604** |
| HDS | UNI 3 FORI | **606** |
| | SAE B 2 fori | **611** |
| | SAE B 4 fori | **612** |
| | SAE B 2 fori / 4 fori | **613** |
| | SAE C 4 fori | **614** |

| Tipo albero | Codice OMFB |
|---|---|
| DIN 5462 8x32x36 (ISO 14) | **001** |
| UNI 6x21x25 | **002** |
| 1 3/8" ASAE Z6 | **003** |
| SAE B - 13T 16/32 | **074** |
| SAE BB - 15T 16/32 | **077** |
| SAE C - 14T 12/24 | **080** |

| Connessioni | Codice OMFB |
|---|---|
| BSPP (GAS) | **1** |
| UNF | **5** |

| Cilindrata | Codice OMFB |
|---|---|
| 12 | **012** |
| 17 | **017** |
| 25 | **025** |
| 34 | **034** |
| 40 | **040** |
| 47 | **047** |
| 55 | **055** |
| 64 | **064** |
| 75 | **075** |
| 80 | **080** |
| 84 | **084** |
| 96 | **096** |
| 108 | **108** |
| 130 | **130** |
| 53+53 | **505** |
| 70+35 | **703** |
| 70+53 | **705** |
| 76+76 | **767** |

| Rotazione | Codice OMFB |
|---|---|
| DESTRA | **3** |
| SINISTRA | **9** |

## VERSIONS CODING

***SERIES AND FLANGE TYPE*** | ***SHAFT*** | ***PORTS*** | ***DISPLACEMENT*** | ***VARIANTS***

| Series | Flange type | OMFB code |
|---|---|---|
| HDS | ISO 7653 4 holes Ø80 | **601** |
| HDT | | **602** |
| MDS | | **603** |
| TWIN-FLOW | | **604** |
| HDS | UNI 3 holes | **606** |
| | SAE B 2 holes | **611** |
| | SAE B 4 holes | **612** |
| | SAE B 2 holes / 4 holes | **613** |
| | SAE C 4 holes | **614** |

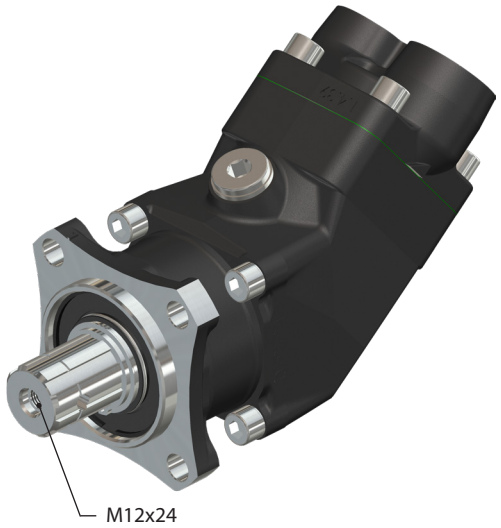
| Shaft type | OMFB code |
|---|---|
| DIN 5462 8x32x36 (ISO 14) | **001** |
| UNI 6x21x25 | **002** |
| 1 3/8" ASAE Z6 | **003** |
| SAE B - 13T 16/32 | **074** |
| SAE BB - 15T 16/32 | **077** |
| SAE C - 14T 12/24 | **080** |

| Ports | OMFB code |
|---|---|
| BSPP (GAS) | **1** |
| UNF | **5** |

| Displacement | OMFB code |
|---|---|
| 12 | **012** |
| 17 | **017** |
| 25 | **025** |
| 34 | **034** |
| 40 | **040** |
| 47 | **047** |
| 55 | **055** |
| 64 | **064** |
| 75 | **075** |
| 80 | **080** |
| 84 | **084** |
| 96 | **096** |
| 108 | **108** |
| 130 | **130** |
| 53+53 | **505** |
| 70+35 | **703** |
| 70+53 | **705** |
| 76+76 | **767** |

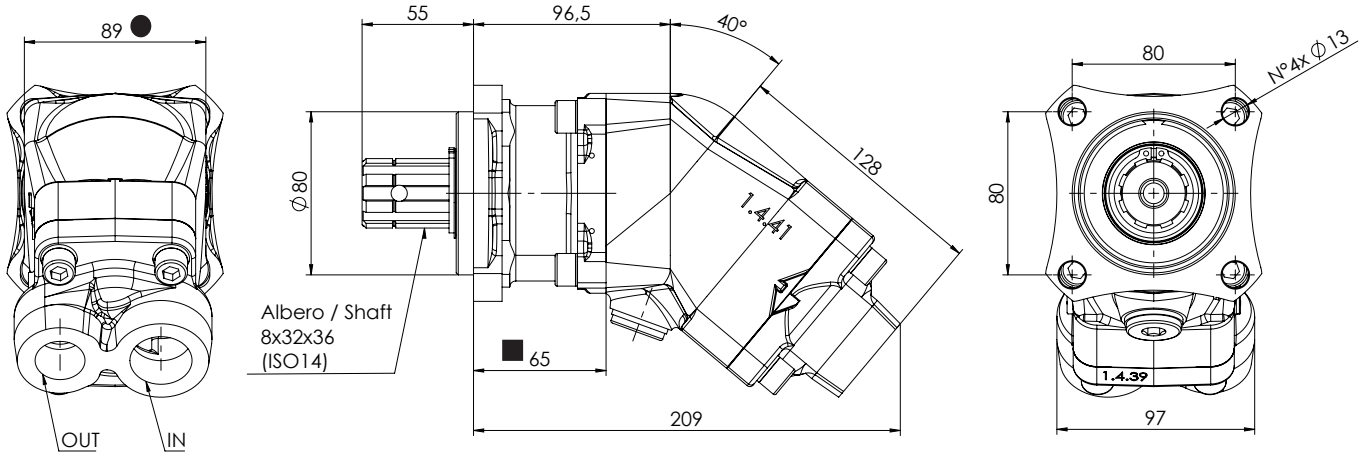
| Rotation | OMFB code |
|---|---|
| RIGHT | **3** |
| LEFT | **9** |

| | |
|---|---|
| Flangia / *Flange* | **ISO** |
| Albero / *Shaft* | **ISO14 8x32x36** |
| Cilin. / *Displ.* | **12-17-25-34** |




| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico *Fluid* | Minerale o sintetico compatibile con guarnizioni: *Mineral or synthetic compatible with the following seals:* FKM, FPM, HNBR | | | | |
| Viscosità cinematica consigliata *Kinematic viscosity suggested* | T media ambiente (°C) *Average ambient temp. (°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio *Optimale kinematic viscosity* | VG= 10 cSt ÷ 100 cSt | | | | |
| Viscosità cinematica max consentita all'avviamento *Max kinematic viscosity suggested at the start-up* | VG= 750 cSt | | | | |
| Indice di viscosità consigliato *Viscosity index suggested* VI > 100 | Temperatura di esercizio *Working temperature* -40°C ÷ 140°C | | | | |
| Grado di filtrazione *Oil filtering* | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | | | |
| Pres. di aspirazione *Inlet pressure* | 0,85 ÷ 2 bar assoluti/absolut | | | | |
| Senso di rotazione *Pump rotation* | Unidirezionale (Dx o Sx) *Unidirectional (Right or Left)* | | | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria. *Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

## **Ingombro** / *Dimensions*




● Larghezza minima corpo a quota indicata ■
*Minimum bodywidth at indicated measurement*

Dimensioni in mm
*Dimensions in mm*

## **Dati tecnici** / *Technical data*

| **Tipo pompa** *Pump type* | **Rotazione** / *Rotation* | | **IN** | **OUT** | **IN** | **OUT** |
|---|---|---|---|---|---|---|
| | Destra *Right* | Sinistra *Left* | ISO 228 | ISO 228 | SAE | SAE |
| HDS-12 | **60100110123** | **60100110129** | G 1 | G 3/4 | | |
| HDS-17 | **60100110173** | **60100110179** | G 1 | G 3/4 | | |
| HDS-25 | **60100110253** | **60100110259** | G 1 | G 3/4 | | |
| HDS-34 | **60100110343** | **60100110349** | G 1 | G 3/4 | | |

**Link:**
Ricambi/*Spare parts*

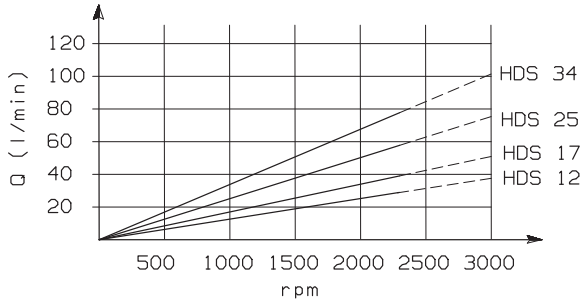
## Caratteristiche Tecniche di funzionamento / *Technical features*

| Tipo pompa *Pump type* | Cilindrata *Displacement* cm³/rev | Pressione *Pressure* P1 bar | Pressione *Pressure* P3 bar | Velocità / *Speed* V0 rpm | Velocità / *Speed* V1 rpm | Velocità / *Speed* V2 rpm | Velocità min. *Min. speed* rpm | Peso *Weight* kg |
|---|---|---|---|---|---|---|---|---|
| **HDS-12** | 12.62 | 350 | 400 | 3000 | 2300 | 3000 | 300 | 8.8 |
| **HDS-17** | 16.98 | | | | | | | 8.6 |
| **HDS-25** | 25.12 | | | | | | | 8,8 |
| **HDS-34** | 33.80 | | | | | | | 8,6 |

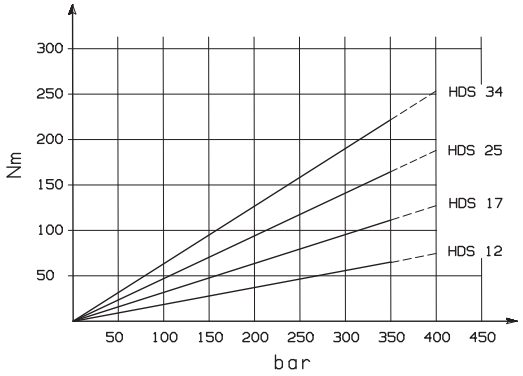
P1=Pressione massima continua *Max. continuous pressure* (100%)
P3=Pressione massima di punta *Max. peak pressure* (6 sec.max)

V0=Massima continua vuoto *Max. continuous speed without load*
V1=Massima continua *Max. continuous speed*
V2=Massima intermittente *Max. intermittent speed*

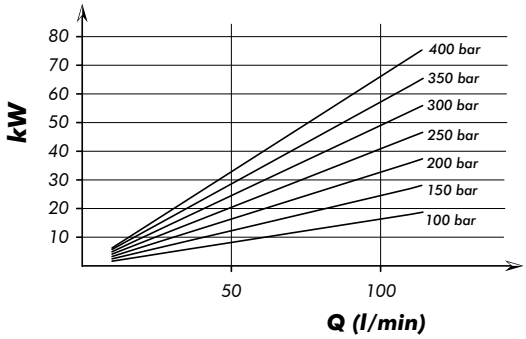
### Portata / *Flow*

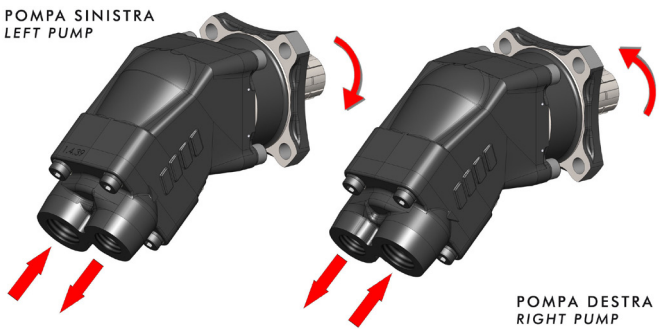



### Coppia assorbita / *Drive torque*

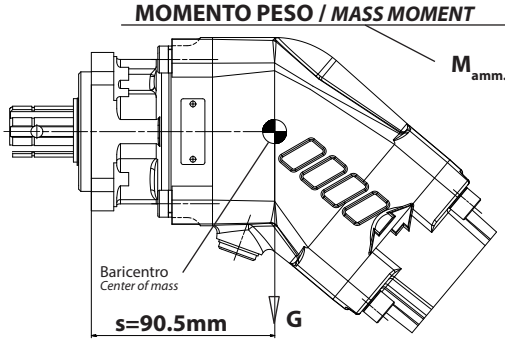



### Potenza assorbita / *Power input*




**MOMENTO PESO / *MASS MOMENT***



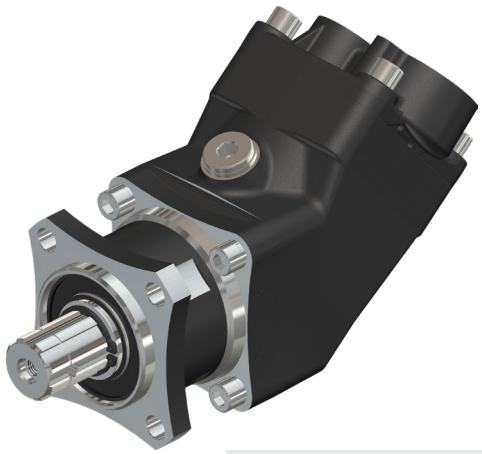

**G**=Peso in N
(Peso in Kg x 9.81)
***G***=*Weight in N*
*(Weight in Kg x 9.81)*

### Scelta del tubo di aspirazione
*How to choose the suction pipe size*

| Q Portata *Flow* l/min | Ø interno min. tubo *Min pipe diam.* mm | inch | Velocità flusso *Flow speed* (m/s) |
|---|---|---|---|
| 20 | 25 | 1" | 0,68 |
| 30 | 32 | 1" 1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1" 1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1" 9/16 | 0,93 |
| 80 | 45 | 1" 3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2" 3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 150 | 60 | | 0,88 |
| 160 | 63 | 2" 1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

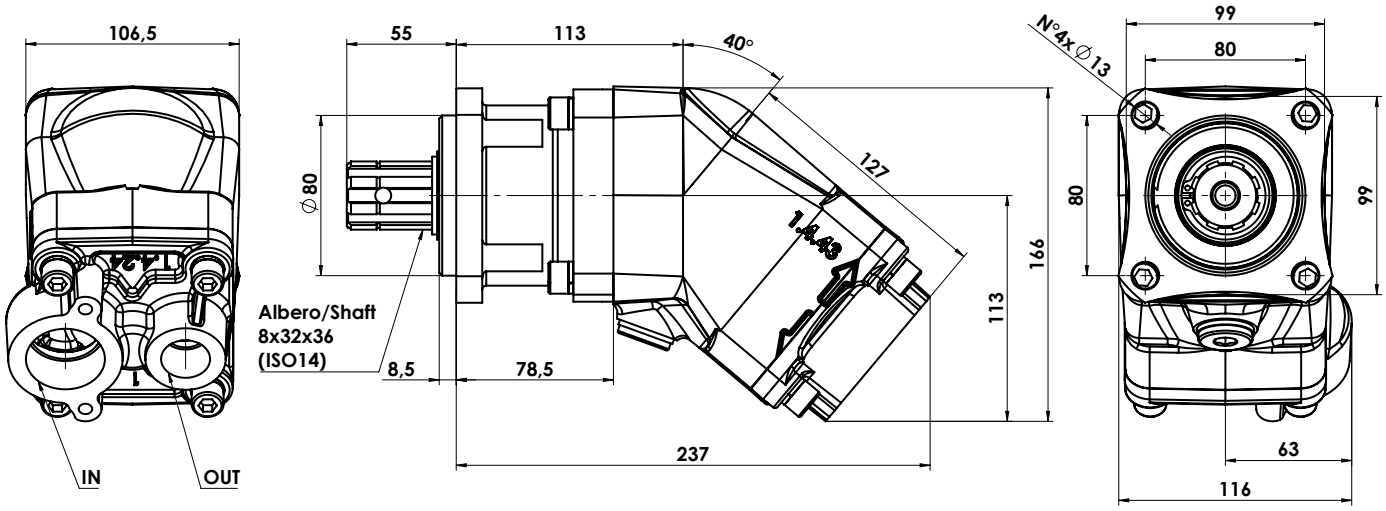
Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1 m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

| | |
|---|---|
| Flangia / *Flange* | **ISO** |
| Albero / *Shaft* | **ISO14 8x32x36** |
| Cilin. / *Displ.* | **40-47-55-64-80** |



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico *Fluid* | Minerale o sintetico compatibile con guarnizioni: *Mineral or synthetic compatible with the following seals:* FKM, FPM, HNBR | | | | |
| Viscosità cinematica consigliata *Kinematic viscosity suggested* | T media ambiente (°C) *Average ambient temp. (°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio *Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento *Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato *Viscosity index suggested* VI > 100 | | Temperatura di esercizio *Working temperature* -40°C ÷ 140°C | | | |
| Grado di filtrazione *Oil filtering* | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | |
| Pres. di aspirazione *Inlet pressure* | | | 0,85 ÷ 2 bar assoluti/absolut | | |
| Senso di rotazione *Pump rotation* | | | Unidirezionale (Dx o Sx) *Unidirectional (Right or Left)* | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria. *Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

## Ingombro / *Dimensions*




Dimensioni in mm
*Dimensions in mm*

## Dati tecnici / *Technical data*

| **Tipo pompa** *Pump type* | **Rotazione** *Rotation* Destra *Right* | Sinistra *Left* | **IN** ISO 228 | **OUT** ISO 228 |
|---|---|---|---|---|
| HDS-40 | **60100110403** | **60100110409** | G 1 1/4" | G 3/4" |
| HDS-47 | **60100110473** | **60100110479** | | |
| HDS-55 | **60100110553** | **60100110559** | | |
| HDS-64 | **60100110643** | **60100110649** | | |
| MDS-80 | **60300110803** | **60300110809** | | |
| | | | ISO 725 | ISO 725 |
| HDS-40 | **60100150403** | **60100150409** | 1 5/8-12 UN-2B *SAE 20* | 1 1/16-12 UN-2B *SAE 12* |
| HDS-47 | **60100150473** | **60100150479** | | |
| HDS-55 | **60100150553** | **60100150559** | | |
| HDS-64 | **60100150643** | **60100150649** | | |
| MDS-80 | **60300150803** | **60300150809** | | |

**Link:**
Ricambi/*Spare parts*

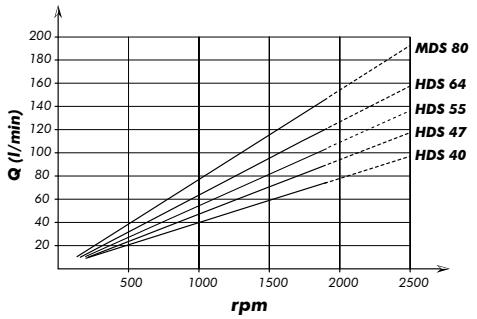
## Caratteristiche Tecniche di funzionamento / *Technical features*

| Tipo pompa *Pump type* | Cilindrata *Displacement* cm³/rev | Pressione *Pressure* P1 bar | Pressione *Pressure* P3 bar | Velocità / *Speed* V0 rpm | Velocità / *Speed* V1 rpm | Velocità / *Speed* V2 rpm | Velocità min. *Min. speed* rpm | Peso *Weight* kg |
|---|---|---|---|---|---|---|---|---|
| **HDS-40** | 41.25 | 350 | 400 | 2700 | 1900 | 2500 | 300 | 12,3 |
| **HDS-47** | 47.13 | | | | | | | |
| **HDS-55** | 56.70 | | | | | | | |
| **HDS-64** | 63.56 | | | | | | | 12,1 |
| **MDS-80** | 77.25 | 250 | 300 | 2300 | 1800 | 2100 | | 12 |

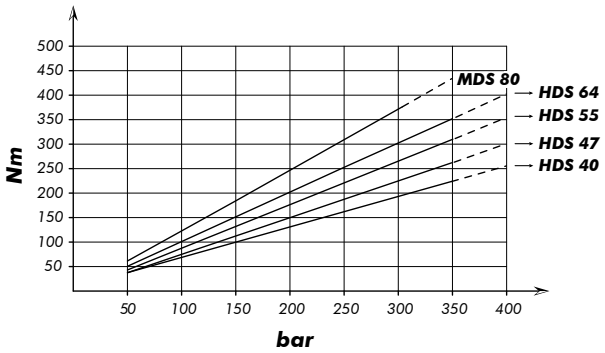
P1=Pressione max.continua — *Max. continuous pressure* (100%)
P3=Pressione max. di punta — *Max. peak pressure* (6 sec.max)

V0=Max. continua vuoto — *Max. continuous speed without load*
V1=Max. continua — *Max. continuous speed*
V2=Max. intermittente — *Max. intermittent speed*

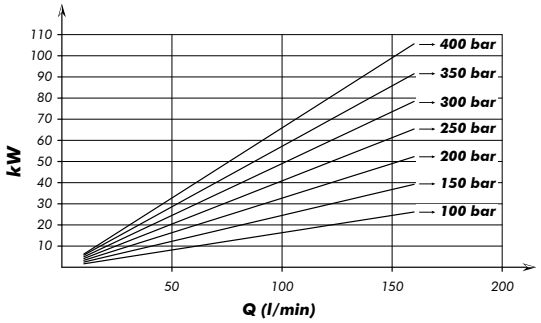
### Portata / *Flow*



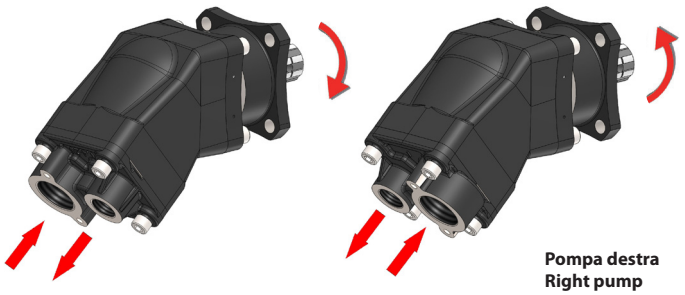

### Coppia assorbita / *Drive torque*




### Potenza assorbita / *Power input*

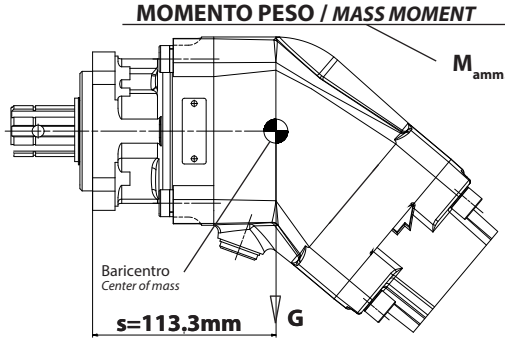



**Pompa sinistra**
**Left pump**



**Pompa destra**
**Right pump**

**MOMENTO PESO / *MASS MOMENT***




**G**=Peso in N
(Peso in Kg x 9.81)
***G***=*Weight in N*
*(Weight in Kg x 9.81)*

### Scelta del tubo di aspirazione
*How to choose the suction pipe size*

| Q Portata *Flow* l/min | Ø interno min. tubo *Min pipe diam.* mm | inch | Velocità flusso *Flow speed* (m/s) |
|---|---|---|---|
| 20 | 25 | 1" | 0,68 |
| 30 | 32 | 1" 1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1" 1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1" 9/16 | 0,93 |
| 80 | 45 | 1" 3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2" 3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 150 | 60 | | 0,88 |
| 160 | 63 | 2" 1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

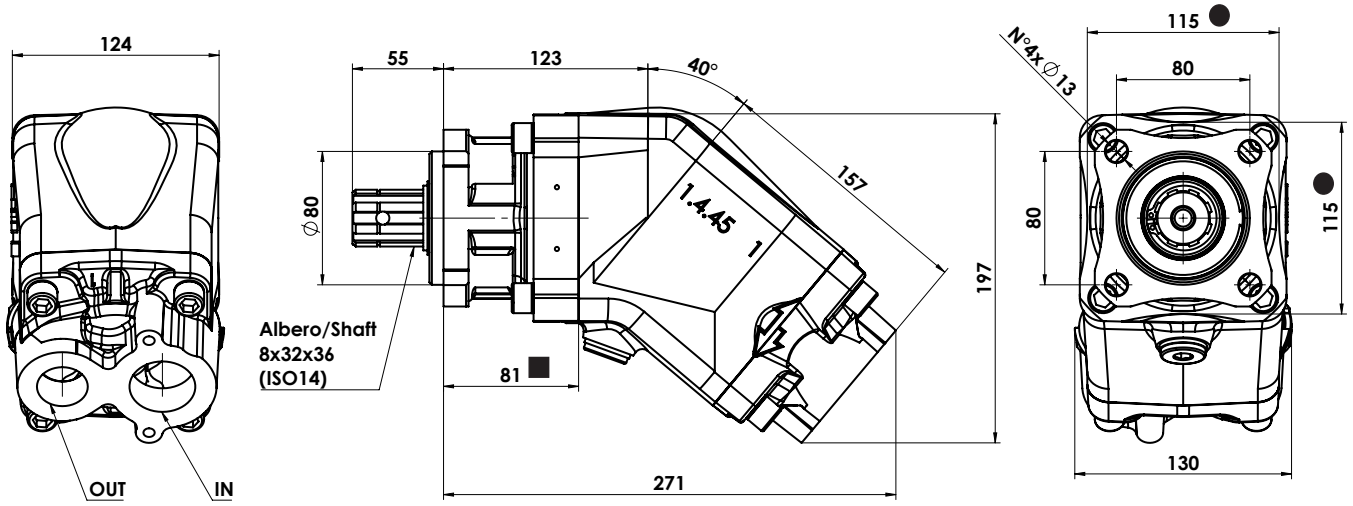
Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1 m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

| | |
|---|---|
| Flangia / *Flange* | **ISO** |
| Albero / *Shaft* | **ISO14 8x32x36** |
| Cilin. / *Displ.* | **84-96-108-120-130** |



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico *Fluid* | Minerale o sintetico compatibile con guarnizioni: *Mineral or synthetic compatible with the following seals:* FKM, FPM, HNBR | | | | |
| Viscosità cinematica consigliata *Kinematic viscosity suggested* | T media ambiente (°C) *Average ambient temp. (°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio *Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento *Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato *Viscosity index suggested* VI > 100 | | Temperatura di esercizio *Working temperature* -40°C +140°C | | | |
| Grado di filtrazione *Oil filtering* | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | |
| Pressione di aspirazione *Inlet pressure* | | | 0,85 ÷ 2 bar assoluti/*absolut* | | |
| Senso di rotazione *Pump rotation* | | | Unidirezionale (Dx o Sx)<br>Unidirectional (Right or Left) | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria.<br>*Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

## Ingombro / *Dimensions*




● Larghezza minima corpo a quota indicata ■
Minimum bodywidth at indicated measurement

Dimensioni in mm
*Dimensions in mm*

## Dati tecnici / *Technical data*

| **Tipo pompa** *Pump type* | **Rotazione** / *Rotation* | | **IN** | **OUT** | **Peso** *Weight* |
|---|---|---|---|---|---|
| | *Destra / Right* | *Sinistra / Left* | *ISO 228* | *ISO 228* | *Kg* |
| HDS-84 | **60100110843** | **60100110849** | G 1 1/4" | G 1" | 19.2 |
| HDS-96 | **60100110963** | **60100110969** | | | 19 |
| HDS-108 | **60100111083** | **60100111089** | G 1 1/2" | | 18.6 |
| HDS-130 | **60100111303** | **60100111309** | | | 18.3 |
| MDS-120 | **60300111203** | **60300111209** | | | 18.4 |
| MDS-130 | **60300111303** | **60300111309** | | | 18.7 |
| | | | *ISO 725* | *ISO 725* | |
| HDS-84 | **60100150843** | **60100150849** | 1 7/8-12 UN-2B SAE 24 | 1 5/16-12 UN-2B SAE 16 | 19.2 |
| HDS-96 | **60100150963** | **60100150969** | | | 19 |
| HDS-108 | **60100151083** | **60100151089** | | | 18.6 |
| HDS-130 | **60100151303** | **60100151309** | | | 18.3 |
| MDS-120 | **60300151203** | **60300151209** | | | 18.4 |
| MDS-130 | **60300151303** | **60300151309** | | | 18.7 |

**Link:**
Ricambi/*Spare parts*

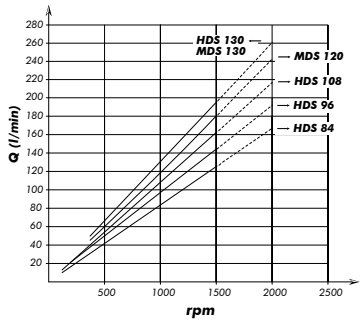
## Caratteristiche Tecniche di funzionamento / *Technical features*

| Tipo pompa *Pump type* | Cilindrata *Displacement* cm³/rev | Pressione *Pressure* P1 bar | P3 bar | Velocità / *Speed* V0 rpm | V1 rpm | V2 rpm | Velocità min. *Min. speed* rpm |
|---|---|---|---|---|---|---|---|
| HDS-84 | 84,33 | 350 | 400 | 2300 | 1500 | 2000 | 300 |
| HDS-96 | 95,5 | | | | 1500 | | |
| HDS-108 | 107 | | | | 1500 | | |
| HDS-130 | 131,62 | | | | 1750 | | |
| MDS-120 | 122,1 | 260 | 280 | | 1500 | | |
| MDS-130 | 131,62 | 250 | 270 | | 1500 | | |

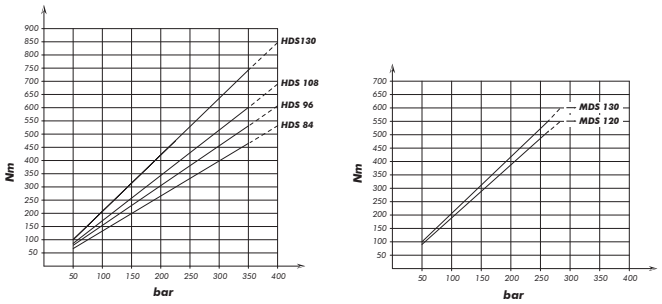
P1=Pressione massima continua *Max. continuous pressure* (100%)
P3=Pressione massima di punta *Max. peak pressure* (6 sec.max)

V0=Massima continua vuoto *Max. continuous speed without load*
V1=Massima continua *Max. continuous speed*
V2=Massima intermittente *Max. intermittent speed*

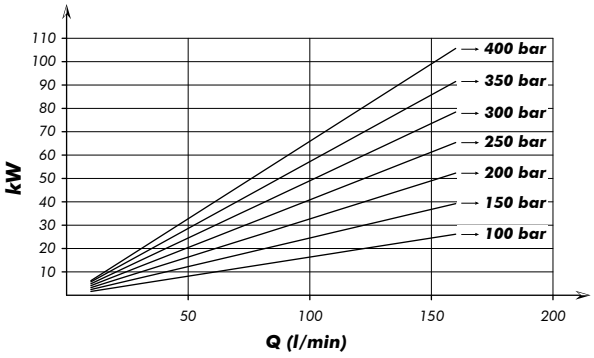
## Portata / *Flow*

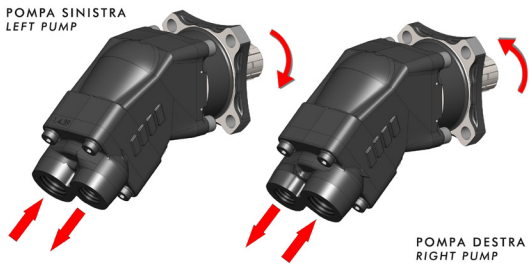



## Coppia assorbita / *Drive torque*

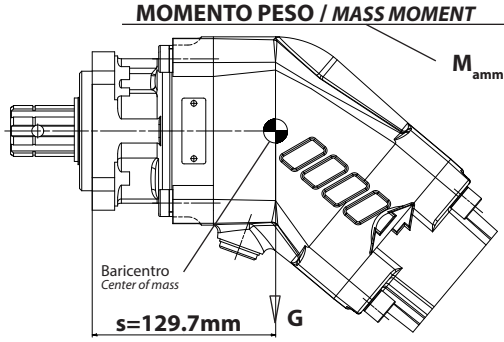



## Potenza assorbita / *Power input*




**MOMENTO PESO / *MASS MOMENT***




$M_{amm.} = s \times G$ (Nm)

**G**=Peso in N
(Peso in Kg x 9.81)
***G***=*Weight in N*
*(Weight in Kg x 9.81)*

## Scelta del tubo di aspirazione
*How to choose the suction pipe size*

| Q Portata *Flow* l/min | Ø interno min. tubo *Min pipe diam.* mm | inch | Velocità flusso *Flow speed* (m/s) |
|---|---|---|---|
| 20 | 25 | 1" | 0,68 |
| 30 | 32 | 1" 1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1" 1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1" 9/16 | 0,93 |
| 80 | 45 | 1" 3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2" 3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 150 | 60 | | 0,88 |
| 160 | 63 | 2" 1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

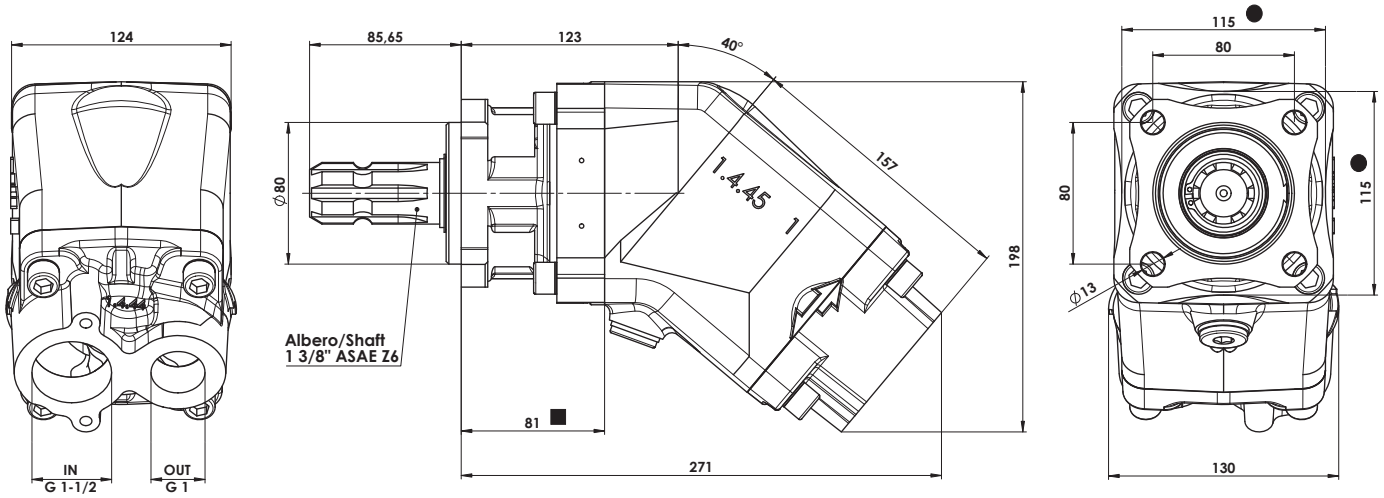
Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1 m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

| | |
|---|---|
| Flangia / *Flange* | **ISO** |
| Albero / *Shaft* | **ASAE 1"3/8** |
| Cilin. / *Displ.* | **130** |



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico<br>*Fluid* | Minerale o sintetico compatibile con guarnizioni:<br>*Mineral or synthetic compatible with the following seals:* HNBR | | | | |
| Temp. consentita<br>*Allowed temperature* | -40 +140 °C | | | | |
| Viscosità cinematica consigliata<br>*Kinematic viscosity suggested* | T media ambiente (°C)<br>*Average ambient temp.(°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio<br>*Optimale kinematic viscosity* | | | | VG= 10 cSt ÷ 100 cSt | |
| Viscosità cinematica max consentita all'avviamento<br>*Max kinematic viscosity suggested at the start-up* | | | | VG= 750 cSt | |
| Indice di viscosità consigliato<br>*Viscosity index suggested* | | | | VI > 100 | |
| Grado di filtrazione<br>*Oil filtering* | | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm | |
| Pres. di aspirazione<br>*Inlet pressure* | | | | 0,85 ÷ 2 bar<br>assoluti/absolut | |
| Senso di rotazione<br>*Pump rotation* | | | | Unidirezionale sinistra<br>*Unidirectional left* | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria.<br>*Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

## **Ingombro** / *Dimensions*




Dimensioni in mm
*Dimensions in mm*

● Larghezza minima corpo a quota indicata ■
*Minimum bodywidth at indicated measurement*

## **Dati tecnici** / *Technical data*

| **Tipo pompa**<br>*Pump type* | **Rotazione sinistra**<br>*Left rotation* | **IN**<br>ISO 228 | **OUT**<br>ISO 228 |
|---|---|---|---|
| HDS-130 | **60100311309F** | G 1-1/2 | G 1 |

**Nota: la pompa ha senso di rotazione fisso (suffisso F nel codice). Non è possibile invertire il senso di rotazione ruotando il corpo posteriore.**
***ATTENTION**: the pump has fixed sense of rotation (suffix F on part number). It is **NOT POSSIBLE** to change pump rotation by turning rear-body as in standard version!*

**Link:**
Ricambi/*Spare parts*

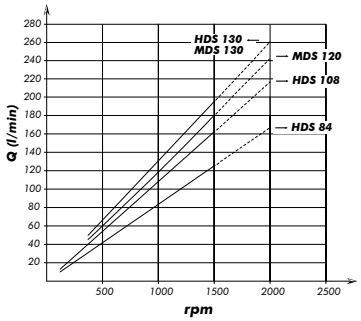
## Caratteristiche Tecniche di funzionamento / *Technical features*

| Tipo pompa *Pump type* | Cilindrata *Displacement* cm³/rev | Pressione *Pressure* P1 bar | P3 bar | Velocità / *Speed* V0 rpm | V1 rpm | V2 rpm | Velocità min. *Min. speed* rpm | Peso *Weight* kg |
|---|---|---|---|---|---|---|---|---|
| **HDS-130** | 131.62 | 350 | 400 | 2300 | 1750 | 2000 | 300 | 18,7 |

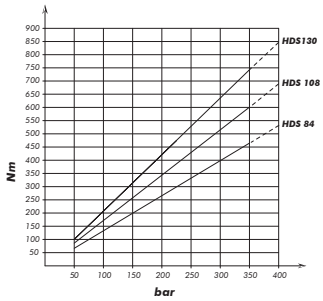
P1=Pressione massima continua *Max. continuous pressure* (100%)
P3=Pressione massima di punta *Max. peak pressure* (6 sec.max)

V0=Massima continua vuoto *Max. continuous speed without load*
V1=Massima continua *Max. continuous speed*
V2=Massima intermittente *Max. intermittent speed*

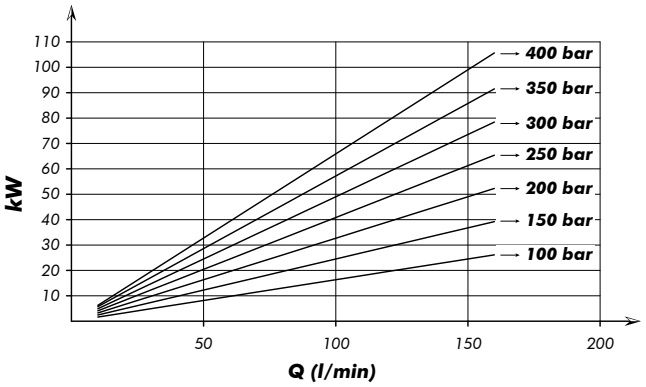
## Portata / *Flow*

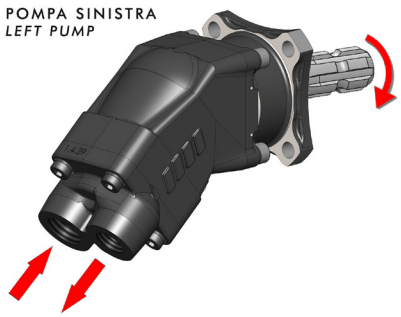



## Coppia assorbita / *Drive torque*




## Potenza assorbita / *Power input*



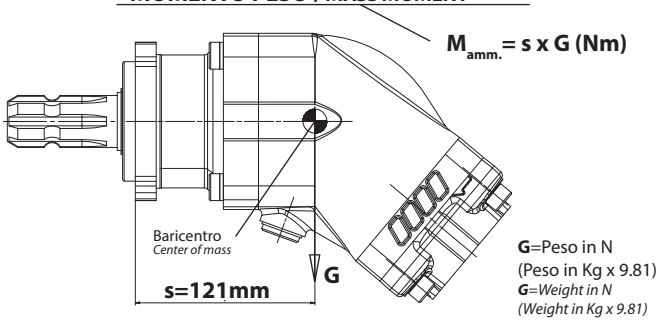




**Scelta del tubo di aspirazione**
*How to choose the suction pipe size*

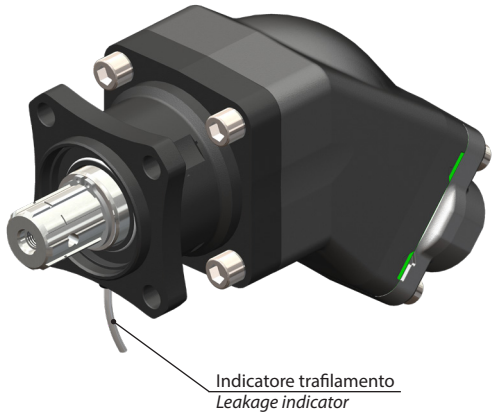
| Q Portata *Flow* l/min | interno min. tubo *Min pipe diam.* mm | inch | Velocità flusso *Flow speed* (m/s) |
|---|---|---|---|
| 20 | 25 | 1" | 0,68 |
| 30 | 32 | 1" 1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1" 1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1"9/16 | 0,93 |
| 80 | 45 | 1" 3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2" 3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 150 | 60 | | 0,88 |
| 160 | 63 | 2" 1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1 m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

**MOMENTO PESO / *MASS MOMENT***



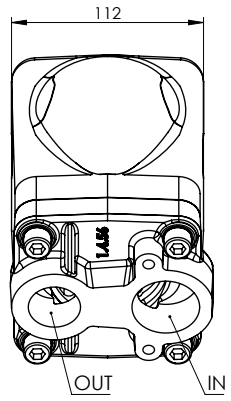
| | |
|---|---|
| Flangia / *Flange* | **ISO** |
| Albero / *Shaft* | **ISO14 8x32x36** |
| Cilin. / *Displ.* | **75-84-96-108** |



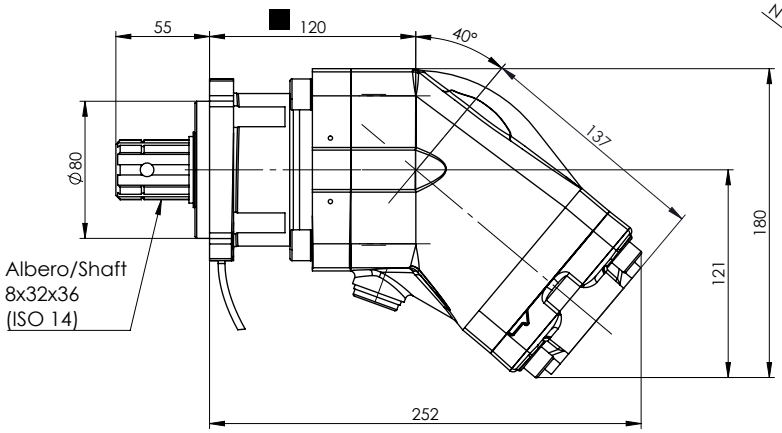

| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico *Fluid* | Minerale o sintetico compatibile con guarnizioni: *Mineral or synthetic compatible with the following seals:* HNBR | | | | |
| Temp. consentita *Allowed temperature* | -40 +140 °C | | | | |
| Viscosità cinematica consigliata *Kinematic viscosity suggested* | T media ambiente (°C) *Average ambient temp. (°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio *Optimale kinematic viscosity* | VG= 10 cSt ÷ 100 cSt | | | | |
| Viscosità cinematica max consentita all'avviamento *Max kinematic viscosity suggested at the start-up* | VG= 750 cSt | | | | |
| Indice di viscosità consigliato *Viscosity index suggested* | VI > 100 | | | | |
| Grado di filtrazione *Oil filtering* | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | | | |
| Pres. di aspirazione *Inlet pressure* | 0,85 ÷ 2 bar assoluti/absolut | | | | |
| Senso di rotazione *Pump rotation* | Unidirezionale (Dx o Sx) *Unidirectional (Right or Left)* | | | | |

Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria.*Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.*

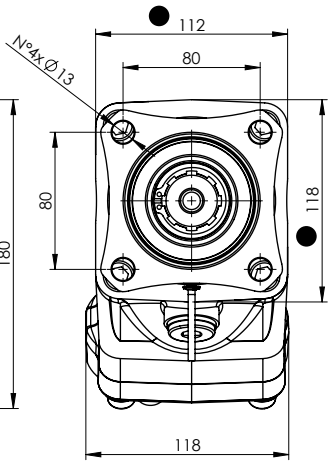
## **Ingombro** / *Dimensions*




*Vista: pompa destra
*View: Right pump*




Larghezza minima corpo a quota indicata
*Minimum bodywidth at indicated measurement*




Dimensioni in mm
*Dimensions in mm*

## **Dati tecnici** / *Technical data*

| **Tipo pompa** *Pump type* | **Rotazione** / *Rotation* Destra *Right* | Sinistra *Left* | **IN** ISO 228 | **OUT** ISO 228 |
|---|---|---|---|---|
| HDT-75 | **60200110753** | **60200110759** | G 1 1/4" | G 1" |
| HDT-84 | **60200110843** | **60200110849** | | |
| HDT-96 | **60200110963** | **60200110969** | | |
| HDT-108 | **60200111083** | **60200111089** | | |
| | | | ISO 725 | ISO 725 |
| HDT-75 | **60200150753** | **60200150759** | 1 5/8-12 UN-2B *SAE 20* | 1 5/16-12 UN-2B *SAE 16* |
| HDT-84 | **60200150843** | **60200150849** | | |
| HDT-96 | **60200150963** | **60200150969** | | |
| HDT-108 | **60200151083** | **60200151089** | | |

**Link:**
Ricambi/*Spare parts*

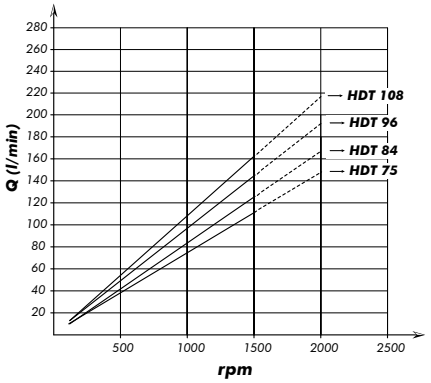
## Caratteristiche Tecniche di funzionamento / *Technical features*

| Tipo pompa *Pump type* | Cilindrata *Displacement* cm³/rev | Pressione *Pressure* P1 bar | P3 bar | Velocità / *Speed* V0 rpm | V1 rpm | V2 rpm | Velocità min. *Min. speed* rpm | Peso *Weight* kg |
|---|---|---|---|---|---|---|---|---|
| **HDT-75** | 75,5 | 350 | 370 | 2300 | 1500 | 2000 | 300 | 14,9 |
| **HDT-84** | 84,2 | | | | | | | 14,7 |
| **HDT-96** | 95.5 | | | | | | | 14,7 |
| **HDT-108** | 107 | | | | | | | 14,5 |

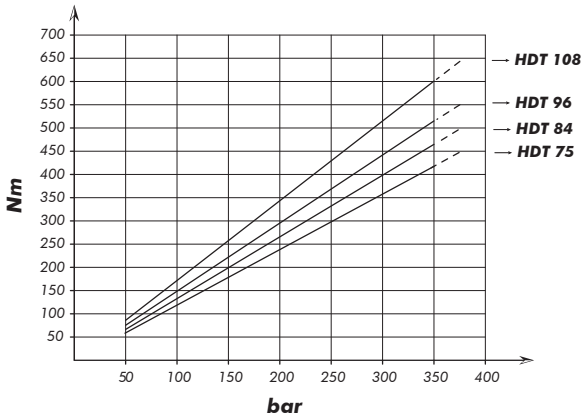
P1=Pressione massima continua *Max. continuous pressure* (100%)
P3=Pressione massima di punta *Max. peak pressure* (6 sec.max)

V0=Massima continua vuoto *Max. continuous speed without load*
V1=Massima continua *Max. continuous speed*
V2=Massima intermittente *Max. intermittent speed*

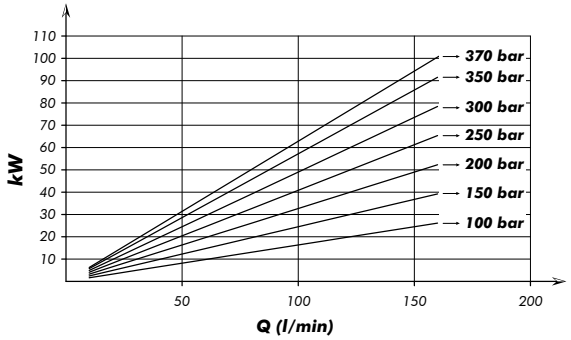
## Portata / *Flow*

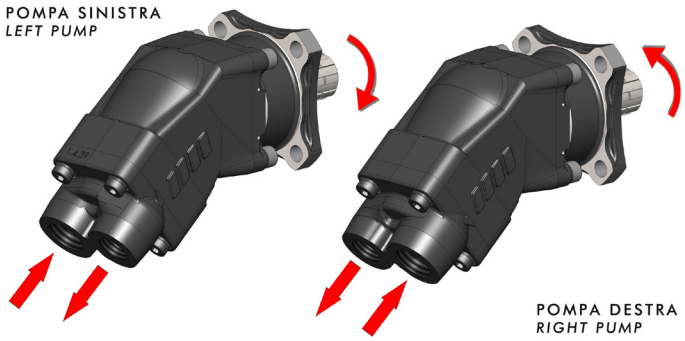



## Coppia assorbita / *Drive torque*

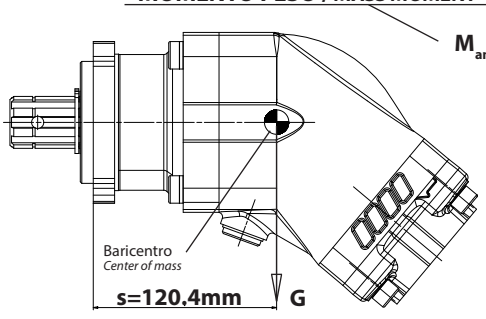



## Potenza assorbita / *Power input*




**MOMENTO PESO / *MASS MOMENT***



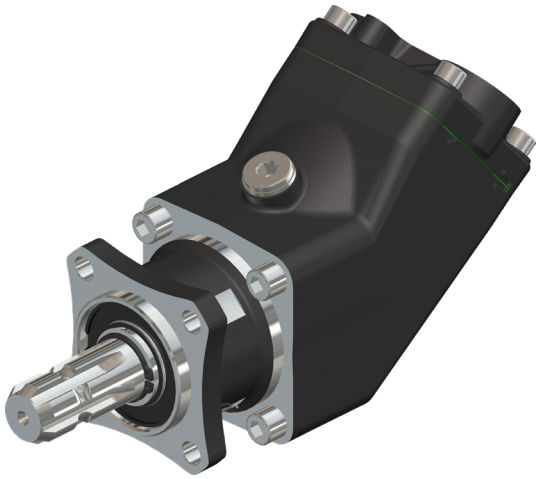

**G**=Peso in N
(Peso in Kg x 9.81)
***G***=*Weight in N*
*(Weight in Kg x 9.81)*

### Scelta del tubo di aspirazione
*How to choose the suction pipe size*

| Q Portata *Flow* l/min | Ø interno min. tubo *Min pipe diam.* mm | inch | Velocità flusso *Flow speed* (m/s) |
|---|---|---|---|
| 20 | 25 | 1" | 0,68 |
| 30 | 32 | 1" 1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1" 1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1" 9/16 | 0,93 |
| 80 | 45 | 1" 3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2" 3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 150 | 60 | | 0,88 |
| 160 | 63 | 2" 1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

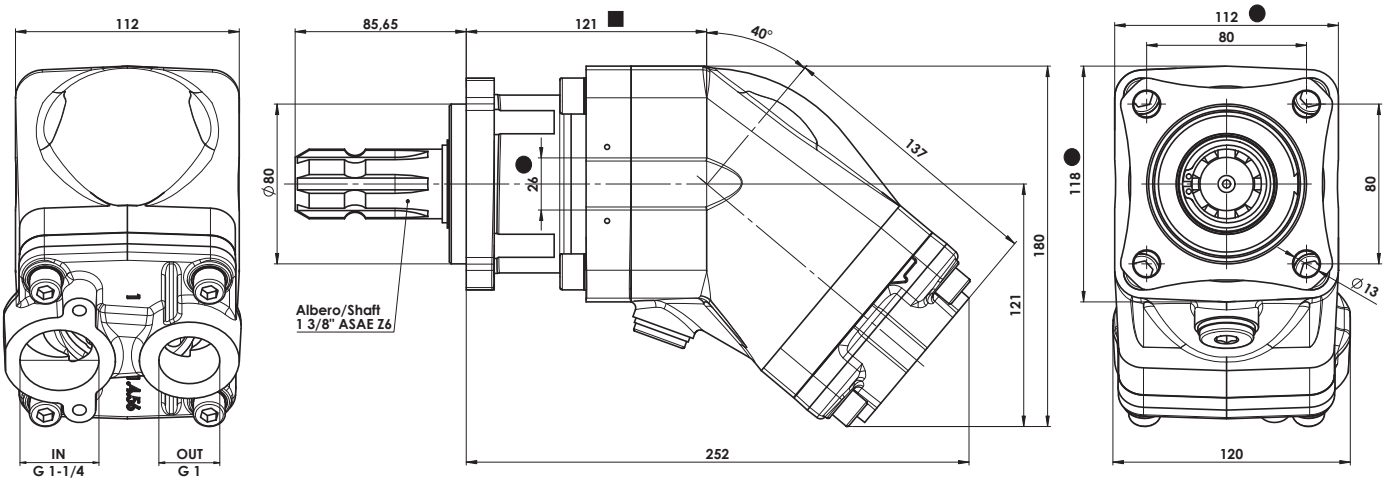
Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1 m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

| | |
|---|---|
| Flangia / *Flange* | **ISO** |
| Albero / *Shaft* | **ASAE 1"3/8** |
| Cilin. / *Displ.* | **84-108** |



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico<br>*Fluid* | Minerale o sintetico compatibile con guarnizioni:<br>*Mineral or synthetic compatible with the following seals:* HNBR | | | | |
| Temp. consentita<br>*Allowed temperature* | -40 +140 °C | | | | |
| Viscosità cinematica consigliata<br>*Kinematic viscosity suggested* | T media ambiente (°C)<br>*Average ambient temp. (°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio<br>*Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento<br>*Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato<br>*Viscosity index suggested* | | | VI > 100 | | |
| Grado di filtrazione<br>*Oil filtering* | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | |
| Pres. di aspirazione<br>*Inlet pressure* | | | 0,85 ÷ 2 bar<br>assoluti/absolut | | |
| Senso di rotazione<br>*Pump rotation* | | | Unidirezionale sinistra<br>*Unidirectional left* | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria.<br>*Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

## Ingombro / *Dimensions*




● Larghezza minima corpo a quota indicata ■
*Minimum bodywidth at indicated measurement*

Dimensioni in mm
*Dimensions in mm*

## Dati tecnici / *Technical data*

| Tipo pompa<br>*Pump type* | Rotazione sinistra<br>*Left rotation* | IN<br>ISO 228 | OUT<br>ISO 228 |
|---|---|---|---|
| HDT-84 | **60200310849F** | G 1-1/4 | G 1 |
| HDT-108 | **60200311089F** | | |

**Nota: la pompa ha senso di rotazione fisso (suffisso F nel codice). Non è possibile invertire il senso di rotazione ruotando il corpo posteriore.**
***ATTENTION**: the pump has fixed sense of rotation (suffix F on part number). It is **NOT POSSIBLE** to change pump rotation by turning rear-body as in standard version!*

**Link:**
Ricambi/*Spare parts*

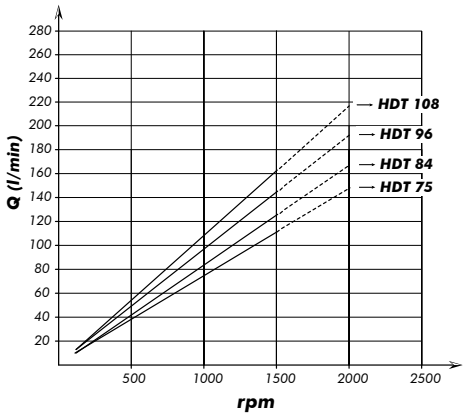
## Caratteristiche Tecniche di funzionamento / *Technical features*

| Tipo pompa *Pump type* | Cilindrata *Displacement* cm³/rev | Pressione *Pressure* P1 bar | P3 bar | Velocità / *Speed* V0 rpm | V1 rpm | V2 rpm | Velocità min. *Min. speed* rpm | Peso *Weight* kg |
|---|---|---|---|---|---|---|---|---|
| **HDT-84** | 84,2 | 350 | 370 | 2300 | 1500 | 2000 | 300 | 15 |
| **HDT-108** | 107 | | | | | | | |

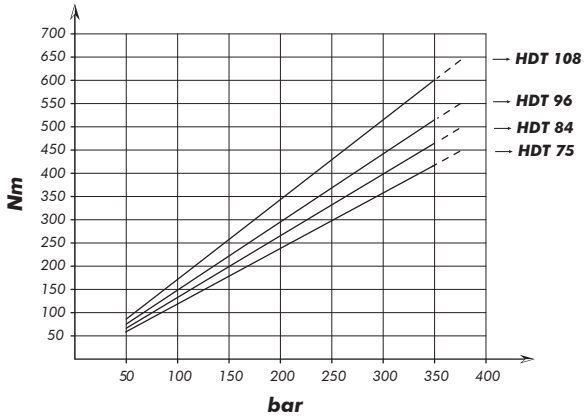
P1=Pressione massima continua *Max. continuous pressure* (100%)
P3=Pressione massima di punta *Max. peak pressure* (6 sec.max)

V0=Massima continua vuoto *Max. continuous speed without load*
V1=Massima continua *Max. continuous speed*
V2=Massima intermittente *Max. intermittent speed*

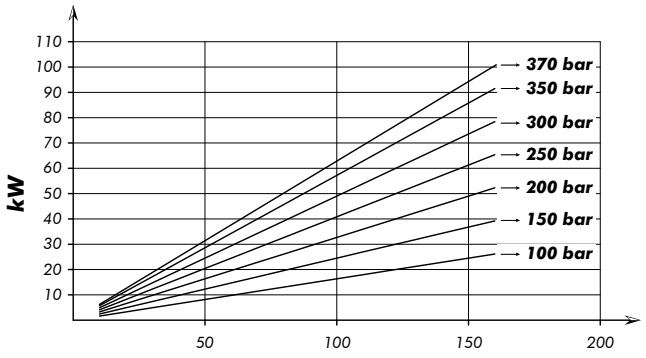
### Portata / *Flow*



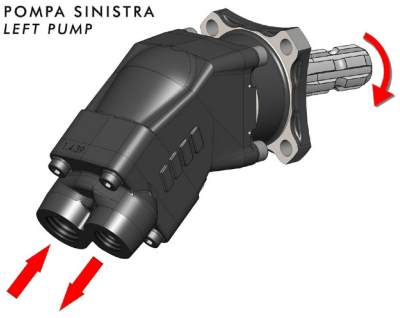

### Coppia assorbita / *Drive torque*



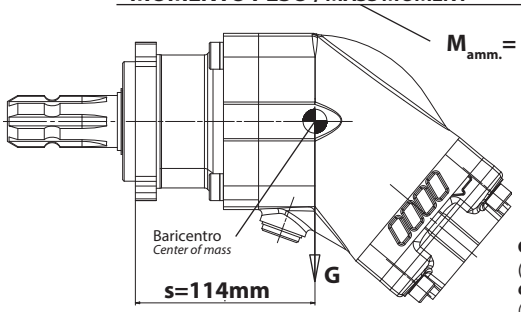

### Potenza assorbita / *Power input*




POMPA SINISTRA
*LEFT PUMP*



### MOMENTO PESO / *MASS MOMENT*




**G**=Peso in N
(Peso in Kg x 9.81)
***G***=*Weight in N*
*(Weight in Kg x 9.81)*

### Scelta del tubo di aspirazione
*How to choose the suction pipe size*

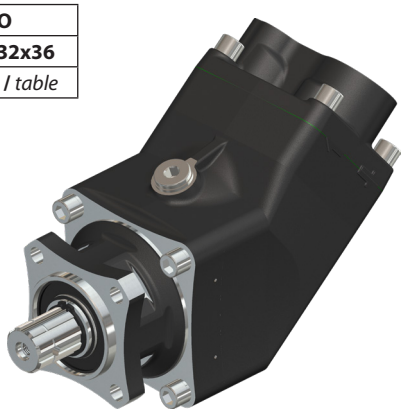
| Q Portata *Flow* l/min | Ø interno min. tubo *Min pipe diam.* mm | inch | Velocità flusso *Flow speed* (m/s) |
|---|---|---|---|
| 20 | 25 | 1" | 0,68 |
| 30 | 32 | 1" 1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1" 1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1" 9/16 | 0,93 |
| 80 | 45 | 1" 3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2" 3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 150 | 60 | | 0,88 |
| 160 | 63 | 2" 1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1 m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

# Pompe a pistoni ad asse inclinato doppia mandata
*Double delivery bent axis piston pumps*
**TWIN FLOW**

**604001**

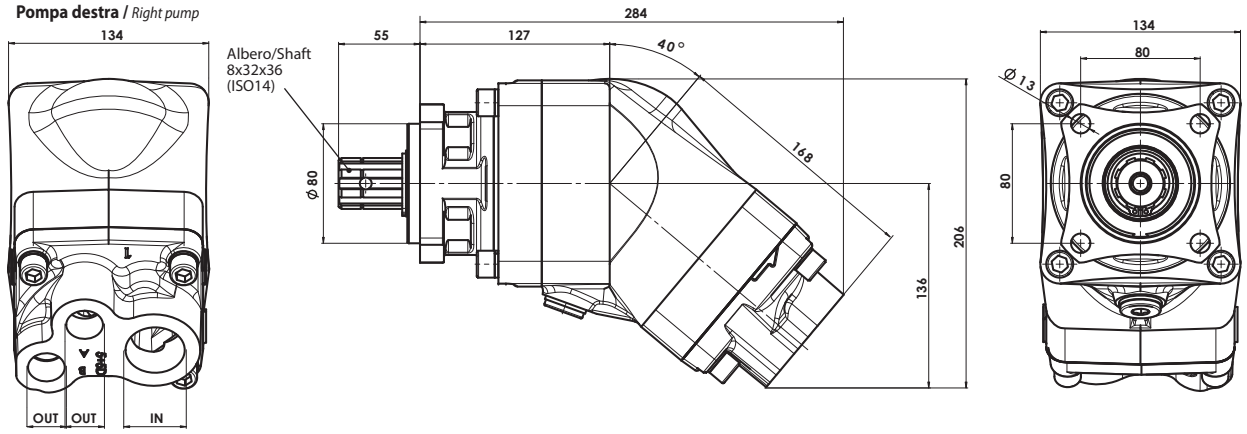
| | |
|---|---|
| Flangia / *Flange* | **ISO** |
| Albero / *Shaft* | **ISO 8x32x36** |
| Cilin. / *Displ.* | **tabella** / *table* |



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico / *Fluid* | Minerale o sintetico compatibile con guarnizioni: *Mineral or synthetic compatible with the following seals: FKM, FPM, HNBR* | | | | |
| Viscosità cinematica consigliata *Kinematic viscosity suggested* | T media ambiente (°C) *Average ambient temp. (°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio *Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento *Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato *Viscosity index suggested* VI > 100 | | Temperatura di esercizio *Working temperature* -40°C ÷ 140°C | | | |
| Grado di filtrazione / *Oil filtering* | | | > 200 bar: 10 µm / < 200 bar: 25 µm | | |
| Pres. di aspirazione / *Inlet pressure* | | | 0,85 ÷ 2 bar assoluti/*absolut* | | |
| Senso di rotazione / *Pump rotation* | | | Unidirezionale / *Unidirectional* | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria. *Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

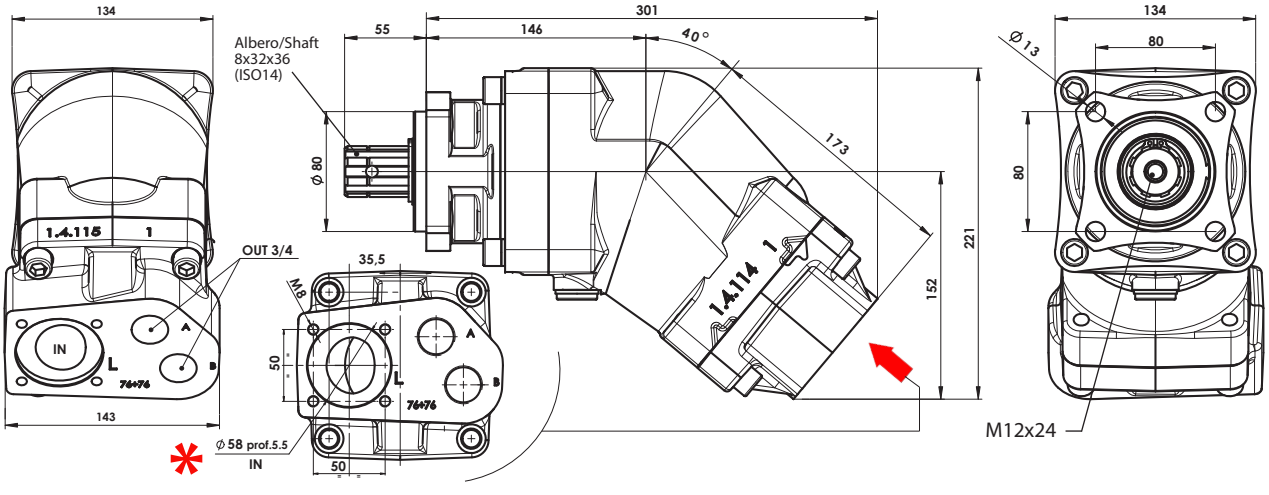
## Ingombro / *Dimension* 53+35 53+53 70+35 70+53

**Pompa destra** / *Right pump*




## Ingombro / *Dimension* 76+76

**Pompa sinistra** / *Left pump*

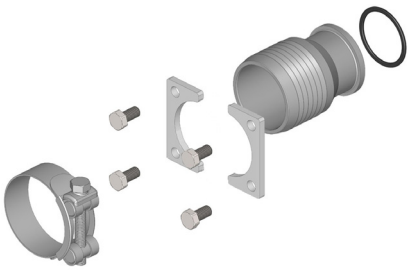


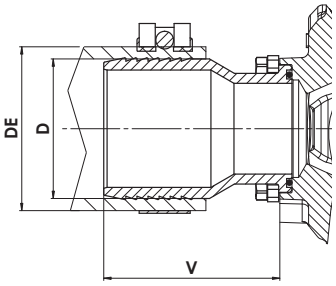

| Tipo pompa *Pump type* | Rotazione *Rotation* | Codice *Code* | Gruppo corpo posteriore* *Rear cover assembly** | IN *ISO 228* | OUT *ISO 228* | Peso *Weight* |
|---|---|---|---|---|---|---|
| TWIN FLOW 53+35 | Destra / *Right* | **60400115033** | 50002995101 | G 1 1/4" | G 3/4" | 19,5 kg |
| | Sinistra / *Left* | **60400115039** | 50002995209 | | | |
| TWIN FLOW 53+53 | Destra / *Right* | **60400115053** | 50002995307 | G 1 1/4" | | 20 kg |
| | Sinistra / *Left* | **60400115059** | 50002995405 | | | |
| TWIN FLOW 70+35 | Destra / *Right* | **60400117033** | 50002997001 | G 1 1/4" | | 20,5 kg |
| | Sinistra / *Left* | **60400117039** | 50002997109 | | | |
| TWIN FLOW 70+53 | Destra / *Right* | **60400117053** | 50002997403 | G 1 1/2" | | 21 kg |
| | Sinistra / *Left* | **60400117059** | 50002997501 | | | |
| TWIN FLOW 76+76 | Destra / *Right* | **60400117673** | 50002997618 | Ø58 * | | 24,5 kg |
| | Sinistra / *Left* | **60400117679** | 50002997609 | | | |

* Per modificare il senso di rotazione della pompa, da rotazione **DESTRA IN SINISTRA, O VICEVERSA**, è necessario sostituire il corpo posteriore.
** To change the pump rotation, the rear body must be replaced.*

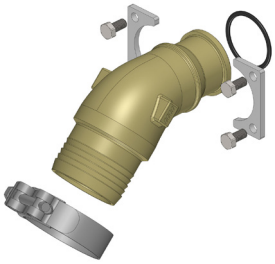
## Raccordi validi SOLO per Twinflow 76+76 / *Fittings suitable for Twinflow 76+76 ONLY*

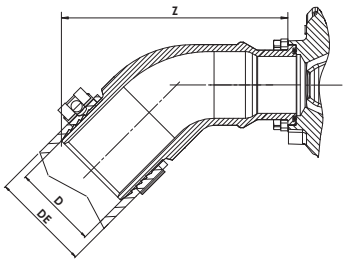
| Codice *Code* | D *mm* | DE *mm* | V *mm* | Peso *Weigth* *Kg* |
|---|---|---|---|---|
| 15511200507 | 50 | 60-63 | 59 | 0,59 |
| 15511200516 | 50 | 64-67 | 59 | 0,6 |
| 15511200605 | 60 | 68-73 | 79 | 0,77 |
| 15511200632 | 63 | 74-79 | 79 | 0,8 |
| 15511200767 | 76 | 86-91 | 94 | 1 |



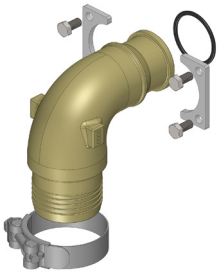


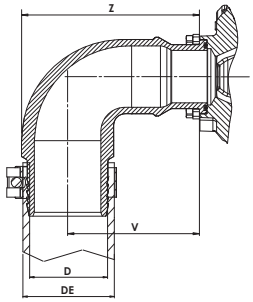

| Codice *Code* | D *mm* | DE *mm* | Z *mm* | Peso *Weigth* *Kg* |
|---|---|---|---|---|
| 15511245639 | 63 | 74-79 | 163 | 1,75 |
| 15511245764 | 76 | 86-91 | 167 | 2,1 |



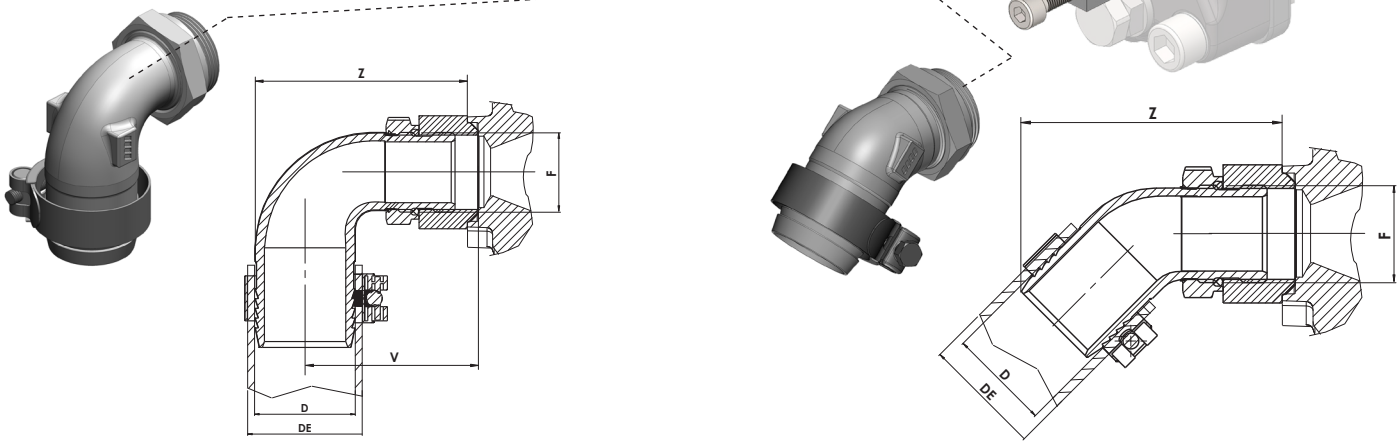



| Codice *Code* | D *mm* | DE *mm* | V *mm* | Z *mm* | Peso *Weigth* *Kg* |
|---|---|---|---|---|---|
| 15511290634 | 63 | 74-79 | 103 | 139 | 1,9 |
| 15511290769 | 76 | 86-91 | 103 | 140 | 2,3 |






**15511300408**
Kit flangia foro filettato G1-1/2, per montaggio raccordi GOLD.
*Flange kit G1-1/2 threaded hole, for mounting GOLD fittings.*




| Codice *Code* | F *ISO 228* | D *mm* | DE *mm* | V *mm* | Z *mm* | Peso *Weigth* *Kg* |
|---|---|---|---|---|---|---|
| 15510000592 | G1-1/2 | 50 | 60-63 | 85 | 114 | 0,99 |
| 15510000609 | | | 64-67 | | | 1 |
| 15510000654 | | 60 | 68-73 | 88 | 123 | 1,06 |

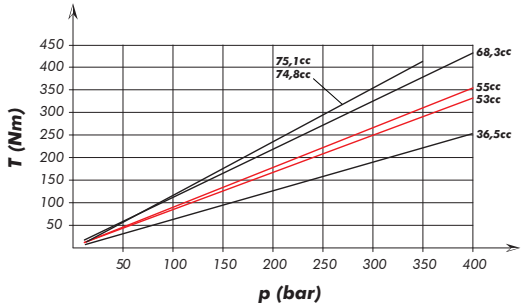
| Codice *Code* | F *ISO 228* | D *mm* | DE *mm* | Z *mm* | Peso *Weigth* *Kg* |
|---|---|---|---|---|---|
| 15509000540 | G1-1/2 | 50 | 60-63 | 133 | 0,79 |
| 15509000559 | | | 64-67 | | 0,82 |
| 15509000611 | | 60 | 68-73 | 153 | 1 |

| **Caratteristiche tecniche funzionamento** *Technical features* | | **53+35** | **53+53** | **70+35** | **70+53** | **76+76** |
|---|---|---|---|---|---|---|
| Cilindrata A / *Displacement* | *(cc/rev)* | 36,5 | 53 | 36,5 | 53 | 75,1 |
| Cilindrata B / *Displacement* | *(cc/rev)* | 55 | 55 | 68.3 | 66,2 | 74,8 |
| Pressione massima continua / *Max. continuous pressure* | *(bar)* | 350 | 350 | 350 | 300 | 300 |
| Pressione massima picco / *Max. peak pressure* | *(bar)* | 400 | 400 | 400 | 350 | 350 |
| Velocità massima a vuoto / *Max. speed without load* | *(rpm)* | 2550 | 2550 | 2550 | 2550 | 2550 |
| Velocità massima con uscita A e B in press. *Max. speed with load on A and B outputs* (*) | | 1800 | 1800 | 1800 | 1650 | 1500 |
| Velocità massima con 1 porta in press. *Max. speed with load on 1 output only* (*) | | 2100 | 2100 | 2100 | 2100 | 2100 |
| Potenza massima continua / *Max. continuous power* | *(kW)* | 94 | 111 | 108 | 98 | 110 |
| Potenza massima intermittente / *Max. intermittent power* | *(kW)* | 107 | 127 | 123 | 114 | 129 |

Pressione massima continua *Max. continuous pressure* (100%)
Pressione massima di punta *Max. peak pressure* (6 sec.max)

(*) Velocità con tubo diam. interno 63mm (2"1/2) minimo.
*Speed with pipe internal diameter 63mm (2"1/2) minimum.*

## Coppia teorica assorbita / *Theortical drive torque*



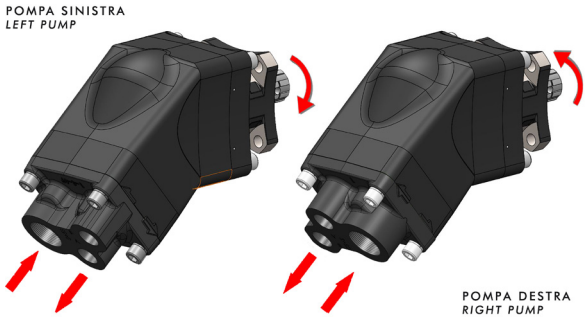

La coppia assorbita dalla pompa deve essere calcolata come somma delle coppie necessarie per mandare in pressione le 2 mandate.
*The total torque absorbed by the pump is given by the sum of the torques necessary to give pressure to the pressure ports.*

## Potenza teorica assorbita / *Theoretical power input*

La potenza totale è pari alla somma delle potenze richieste dai singoli utilizzi sulle 2 mandate.
*The total power absorbed by the pump is given by the sum of the power required by the two pressure ports.*

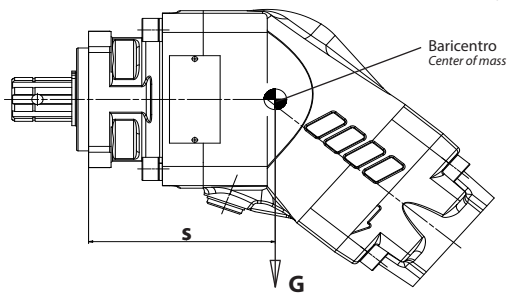
$$P_{TOT} = P_A + P_B = \frac{(p_A \cdot Q_A + p_B \cdot Q_B)}{612}$$

P [ kW ]
Q [ l/min ]
p [ bar ]




## Momento peso / *Mass moment*

$M_{amm.} = s \times G$ (Nm)



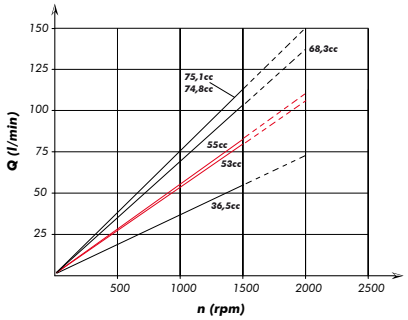

**G**=Peso in N
(Peso in Kg x 9.81)
***G***=*Weight in N*
*(Weight in Kg x 9.81)*

| | **s** |
|---|---|
| 53+35 | 126,2 |
| 53+53 | 125,9 |
| 70+35 | 126 |
| 70+53 | 127,1 |
| 76+76 | 143 |

Pompa 53+53 e 70+35: con tubo diam. interno 50mm (2") velocità max. 1200rpm.
*Pump 53+53 and 70+35: with pipe internal diameter 50mm (2") max. speed 1200rpm.*

Pompa 70+53: solo con tubo diam. interno 63mm (2"1/2).
*Pump 70+53: only with pipe internal diamater 63mm (2"1/2).*

## Portata teorica / *Theoretical flow*




La portata della pompa è pari alla somma delle portate delle 2 mandate.
*The total pump flow is given by the sum of the flow of each pressure port.*

**Scelta del tubo di aspirazione**
*How to choose the suction pipe size*

| Q Portata *Flow* *l/min* | Ø interno min. tubo *Minimum pipe diameter* *mm* | *inch* | Velocità flusso *Flow speed* *(m/s)* |
|---|---|---|---|
| 30 | 32 | 1"1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1"1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1"9/16 | 0,93 |
| 80 | 45 | 1"3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2"3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 160 | 63 | 2"1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

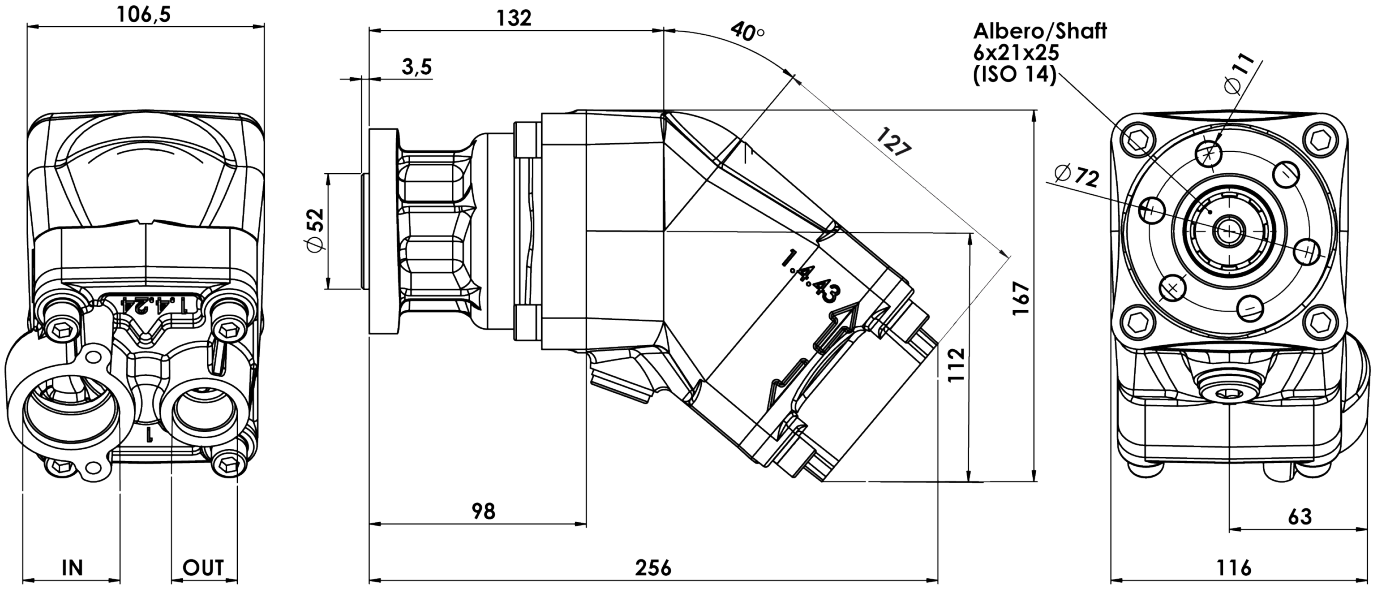
**Link:**
Ricambi/*Spare parts*

| | |
|---|---|
| Flangia / *Flange* | **UNI** |
| Albero / *Shaft* | **ISO 14 6x21x25** |
| Cilin. / *Displ.* | **40-47-55-64** |



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico<br>*Fluid* | Minerale o sintetico compatibile con guarnizioni:<br>*Mineral or synthetic compatible with the following seals:*<br>FKM, FPM, HNBR | | | | |
| Viscosità cinematica consigliata<br>*Kinematic viscosity suggested* | T media ambiente (°C)<br>*Average ambient temp. (°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio<br>*Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento<br>*Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato<br>*Viscosity index suggested* VI > 100 | | | Temperatura di esercizio<br>*Working temperature* -15°C ÷ 140°C | | |
| Grado di filtrazione<br>*Oil filtering* | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | |
| Pres. di aspirazione<br>*Inlet pressure* | | | 0,85 ÷ 2 bar<br>assoluti/absolut | | |
| Senso di rotazione<br>*Pump rotation* | | | Unidirezionale (Dx o Sx)<br>*Unidirectional (Right or Left)* | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria. *Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

## Ingombro / *Dimensions*




Dimensioni in mm
*Dimensions in mm*

## Dati tecnici / *Technical data*

| Tipo pompa<br>*Pump type* | Rotazione<br>*Rotation* | | IN | OUT | IN | OUT |
|---|---|---|---|---|---|---|
| | Destra<br>*Right* | Sinistra<br>*Left* | ISO 228 | ISO 228 | SAE | SAE |
| **HDS-40** | 60600210403 | 60600210409 | G 1 1/4" | G 3/4" | | |
| **HDS-47** | 60600210473 | 60600210479 | | | | |
| **HDS-55** | 60600210553 | 60600210559 | | | | |
| **HDS-64** | 60600210643 | 60600210649 | | | | |

**Link:**
Ricambi/*Spare parts*

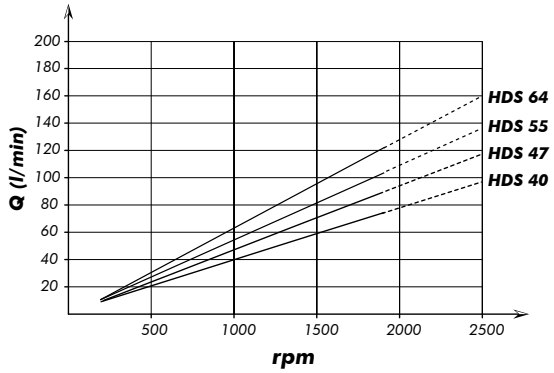
## Caratteristiche Tecniche di funzionamento / *Technical features*

| Tipo pompa *Pump type* | Cilindrata *Displacement* cm³/rev | Pressione *Pressure* P1 bar | Pressione *Pressure* P3 bar | Velocità / *Speed* V0 rpm | Velocità / *Speed* V1 rpm | Velocità / *Speed* V2 rpm | Velocità min. *Min. speed* rpm | Peso *Weight* kg |
|---|---|---|---|---|---|---|---|---|
| **HDS-40** | 41.25 | 350 | 400 | 2700 | 1900 | 2500 | 300 | 11,6 |
| **HDS-47** | 47.13 | | | | | | | 11,7 |
| **HDS-55** | 56.70 | 320 | 340 | | | | | 11,6 |
| **HDS-64** | 63.56 | 280 | 300 | | | | | 11,5 |

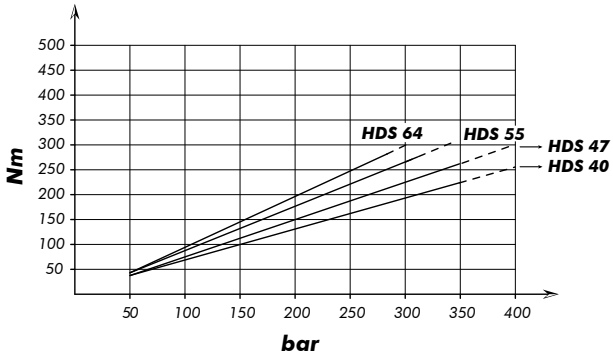
P1=Pressione max.continua — *Max. continuous pressure* (100%)
P3=Pressione max. di punta — *Max. peak pressure* (6 sec.max)

V0=Massima continua vuoto — *Max. continuous speed without load*
V1=Massima continua — *Max. continuous speed*
V2=Massima intermittente — *Max. intermittent speed*

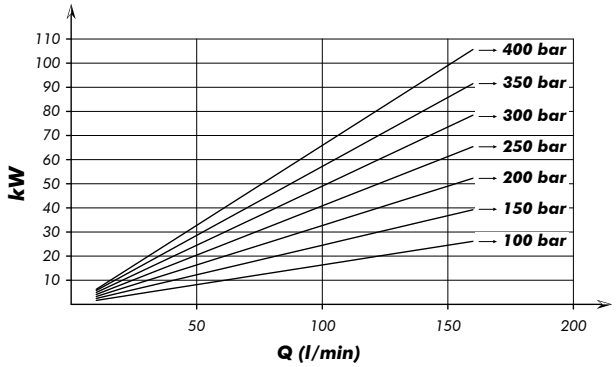
### Portata / *Flow*



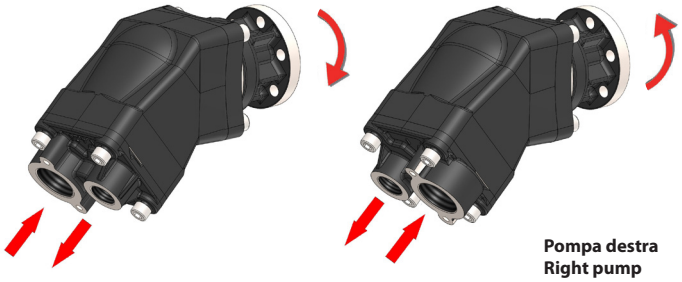

### Coppia assorbita / *Drive torque*




### Potenza assorbita / *Power input*

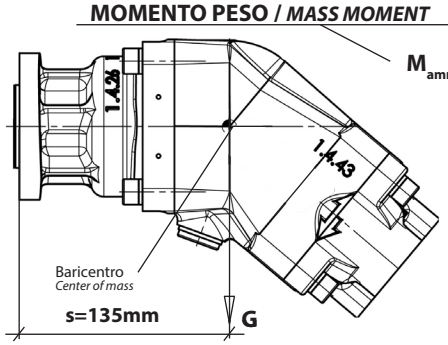



**Pompa sinistra**
**Left pump**



**Pompa destra**
**Right pump**

**MOMENTO PESO / *MASS MOMENT***




**G**=Peso in N
(Peso in Kg x 9.81)
***G***=*Weight in N*
*(Weight in Kg x 9.81)*

### Scelta del tubo di aspirazione
*How to choose the suction pipe size*

| Q Portata *Flow* l/min | Ø interno min. tubo *Min pipe diam.* mm | inch | Velocità flusso *Flow speed* (m/s) |
|---|---|---|---|
| 20 | 25 | 1" | 0,68 |
| 30 | 32 | 1" 1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1" 1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1" 9/16 | 0,93 |
| 80 | 45 | 1" 3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2" 3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 150 | 60 | | 0,88 |
| 160 | 63 | 2" 1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

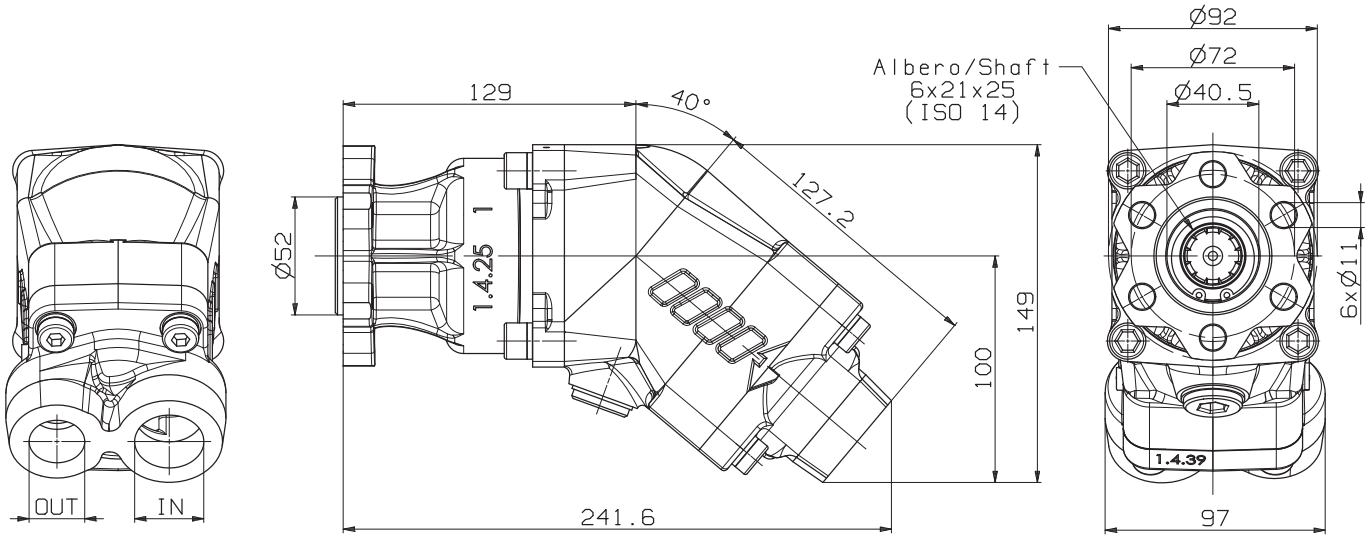
Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1 m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

| | |
|---|---|
| Flangia / *Flange* | **UNI** |
| Albero / *Shaft* | **ISO 14 6x21x25** |
| Cilin. / *Displ.* | **12-17-25-34** |



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico<br>*Fluid* | Minerale o sintetico compatibile con guarnizioni:<br>*Mineral or synthetic compatible with the following seals:*<br>FKM, FPM, HNBR | | | | |
| Viscosità cinematica consigliata<br>*Kinematic viscosity suggested* | T media ambiente (°C)<br>*Average ambient temp. (°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio<br>*Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento<br>*Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato<br>*Viscosity index suggested* VI > 100 | | Temperatura di esercizio<br>*Working temperature* -15°C ÷ 140°C | | | |
| Grado di filtrazione<br>*Oil filtering* | | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | | |
| Pres. di aspirazione<br>*Inlet pressure* | | 0,85 ÷ 2 bar<br>assoluti/absolut | | | |
| Senso di rotazione<br>*Pump rotation* | | Unidirezionale (Dx o Sx)<br>*Unidirectional (Right or Left)* | | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria.<br>*Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

## Ingombro / *Dimensions*




Dimensioni in mm
*Dimensions in mm*

## Dati tecnici / *Technical data*

| **Tipo pompa**<br>*Pump type* | **Rotazione**<br>*Rotation* | | **IN** | **OUT** | **IN** | **OUT** |
|---|---|---|---|---|---|---|
| | Destra<br>*Right* | Sinistra<br>*Left* | ISO 228 | ISO 228 | SAE | SAE |
| HDS-12 | **60600210123** | **60600210129** | G 1 | G 3/4 | | |
| HDS-17 | **60600210173** | **60600210179** | | | | |
| HDS-25 | **60600210253** | **60600210259** | | | | |
| HDS-34 | **60600210343** | **60600210349** | | | | |

**Link:**
Ricambi/*Spare parts*

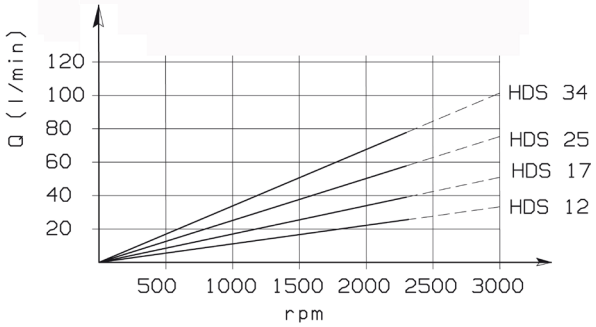
## Caratteristiche Tecniche di funzionamento / *Technical features*

| Tipo pompa *Pump type* | Cilindrata *Displacement* cm³/rev | Pressione *Pressure* P1 bar | P3 bar | Velocità / *Speed* V0 rpm | V1 rpm | V2 rpm | Velocità min. *Min. speed* rpm | Peso *Weight* kg |
|---|---|---|---|---|---|---|---|---|
| **HDS-12** | 12.62 | 350 | 400 | 3000 | 2300 | 3000 | 300 | 8,3 |
| **HDS-17** | 16.98 | | | | | | | 8,3 |
| **HDS-25** | 25.12 | | | | | | | 8,4 |
| **HDS-34** | 33.80 | | | | | | | 8,3 |

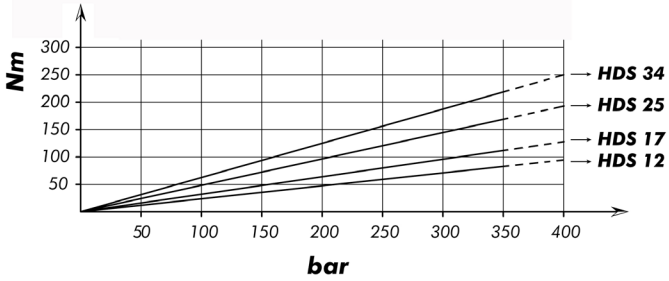
P1=Pressione massima continua *Max. continuous pressure* (100%)
P3=Pressione massima di punta *Max. peak pressure* (6 sec.max)

V0=Massima continua vuoto *Max. continuous speed without load*
V1=Massima continua *Max. continuous speed*
V2=Massima intermittente *Max. intermittent speed*

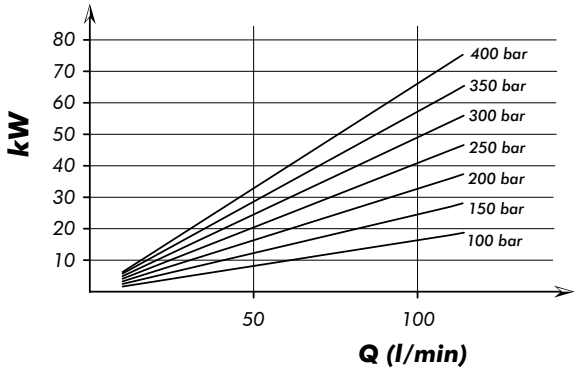
### Portata / *Flow*

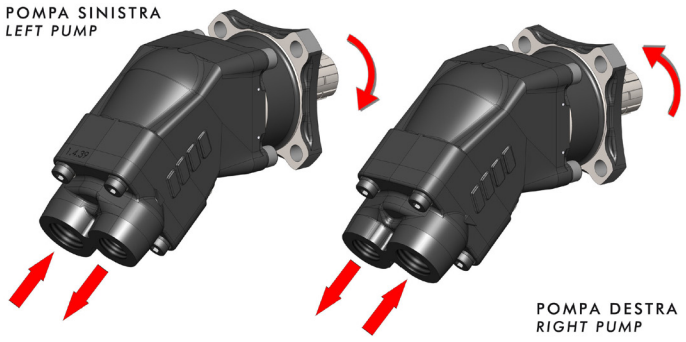



### Coppia assorbita / *Drive torque*




### Potenza assorbita / *Power input*



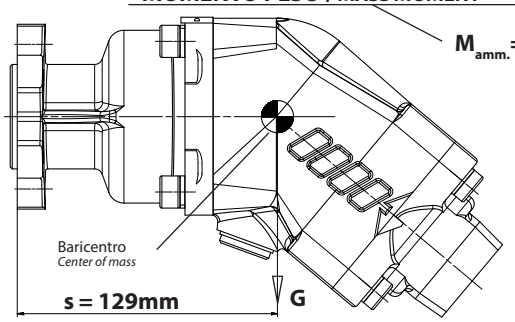




### Scelta del tubo di aspirazione
*How to choose the suction pipe size*

| Q Portata *Flow* l/min | Ø interno min. tubo *Min pipe diam.* mm | inch | Velocità flusso *Flow speed* (m/s) |
|---|---|---|---|
| 20 | 25 | 1" | 0,68 |
| 30 | 32 | 1" 1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1" 1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1" 9/16 | 0,93 |
| 80 | 45 | 1" 3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2" 3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 150 | 60 | | 0,88 |
| 160 | 63 | 2" 1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1 m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

### MOMENTO PESO / *MASS MOMENT*



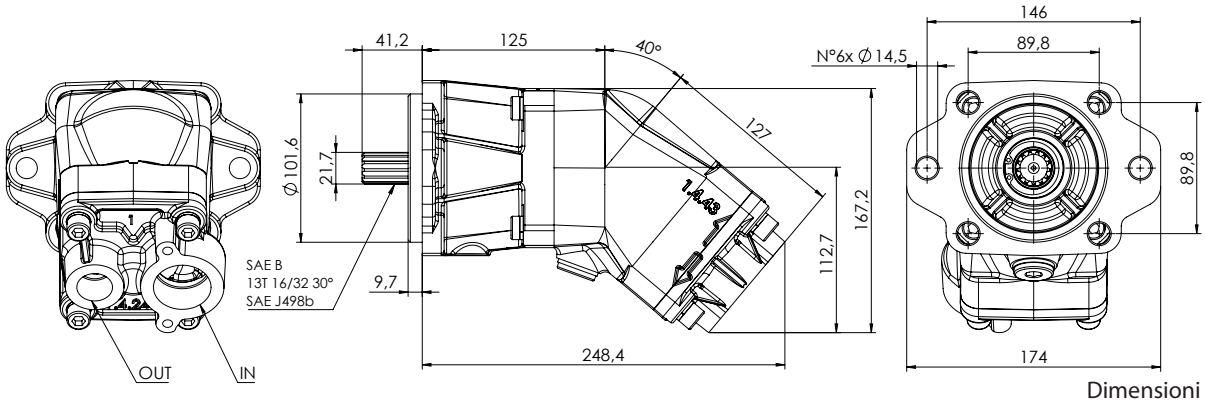

**G**=Peso in N
(Peso in Kg x 9.81)
***G***=*Weight in N*
*(Weight in Kg x 9.81)*

| | |
|---|---|
| Flangia / *Flange* | **SAE-B** |
| Albero / *Shaft* | **13T 16/32** |
| Cilin. / *Displ.* | **40-47-55-64-80** |



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico<br>*Fluid* | Minerale o sintetico compatibile con guarnizioni:<br>*Mineral or synthetic compatible with the following seals:*<br>FKM, FPM, HNBR | | | | |
| Viscosità cinematica consigliata<br>*Kinematic viscosity suggested* | T media ambiente (°C)<br>*Average ambient temp. (°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio<br>*Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento<br>*Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato<br>*Viscosity index suggested* VI > 100 | | | Temperatura di esercizio<br>*Working temperature* -15°C ÷ 140°C | | |
| Grado di filtrazione<br>*Oil filtering* | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | |
| Pres. di aspirazione<br>*Inlet pressure* | | | 0,85 ÷ 2 bar<br>assoluti/absolut | | |
| Senso di rotazione<br>*Pump rotation* | | | Unidirezionale (Dx o Sx)<br>*Unidirectional (Right or Left)* | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria.<br>*Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

## **Ingombro** / *Dimensions*




Dimensioni in mm
*Dimensions in mm*

## **Dati tecnici** / *Technical data*

| **Tipo pompa**<br>*Pump type* | **Rotazione**<br>*Rotation* Destra *Right* | Sinistra *Left* | **IN** | **OUT** |
|---|---|---|---|---|
| | | | ISO 725 | ISO 725 |
| HDS SAE-B 40 | **61307450403** | **61307450409** | 1 5/8-12 UN-2B<br>*SAE 20* | 1 5/16-12 UN-2B<br>*SAE 16* |
| HDS SAE-B 47 | **61307450473** | **61307450479** | | |
| HDS SAE-B 55 | **61307450553** | **61307450559** | | |
| HDS SAE-B 64 | **61307450643** | **61307450649** | | |
| MDS SAE-B 80 | **61307450803** | **61307450809** | | |
| | | | ISO 228 | ISO 228 |
| HDS SAE-B 40 | **61307410403** | **61307410409** | G 1 1/4" | G 3/4" |
| HDS SAE-B 47 | **61307410473** | **61307410479** | | |
| HDS SAE-B 55 | **61307410553** | **61307410559** | | |
| HDS SAE-B 64 | **61307410643** | **61307410649** | | |
| MDS SAE-B 80 | **61307410803** | **61307410809** | | |

LNK **Link:**
Ricambi/*Spare parts*

## Caratteristiche Tecniche di funzionamento / *Technical features*

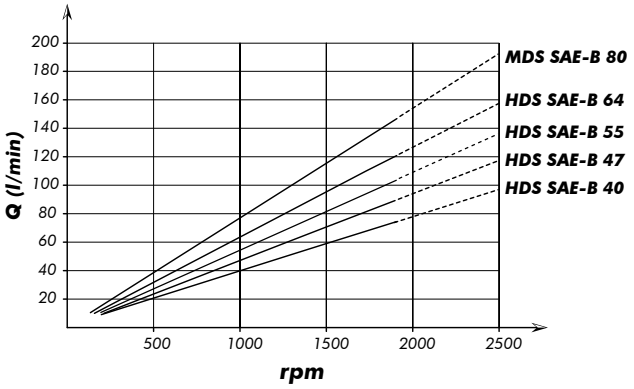
| Tipo pompa *Pump type* | Cilindrata *Displacement* cm³/rev | Pressione *Pressure* P1 * bar | Pressione *Pressure* P3 * bar | Velocità / *Speed* V0 rpm | Velocità / *Speed* V1 rpm | Velocità / *Speed* V2 rpm | Velocità min. *Min. speed* rpm | Peso *Weight* kg |
|---|---|---|---|---|---|---|---|---|
| **HDS-40** | 41.25 | 350 | 375 | 2700 | 1900 | 2500 | 300 | 14.2 |
| **HDS-47** | 47.13 | 340 | 340 | | | | | 14.8 |
| **HDS-55** | 56.70 | 280 | 280 | | | | | 13.9 |
| **HDS-64** | 63.56 | 250 | 250 | | | | | 14 |
| **MDS-80** | 77.25 | 210 | 210 | 2300 | 1800 | 2100 | | 14.8 |

P1=Pressione massima continua *Max. continuous pressure* (100%)
P3=Pressione massima di punta *Max. peak pressure* (6 sec.max)

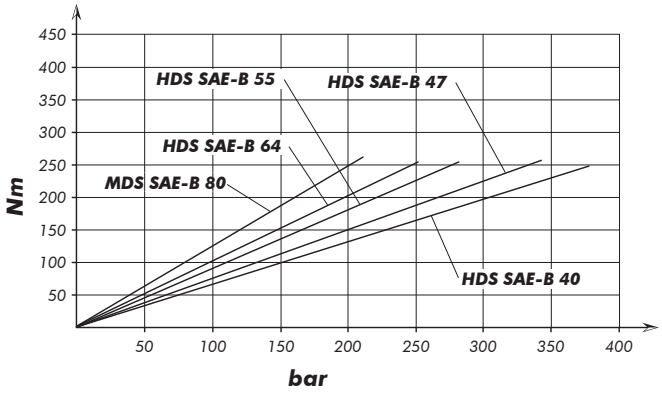
V0=Massima continua vuoto *Max. continuous speed without load*
V1=Massima continua *Max. continuous speed*
V2=Massima intermittente *Max. intermittent speed*

* I valori di pressione sono limitati a causa della coppia massima trasmissibile dall'albero SAE B (300 Nm).
Indicated pressure values are limited due to the max allowed torque on SAE B shaft (300 Nm).

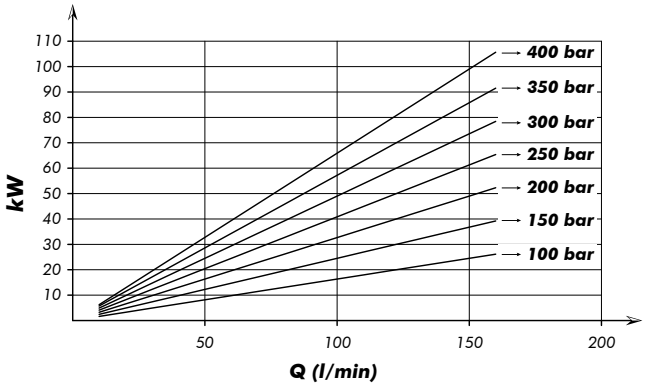
## Portata / *Flow*




## Coppia assorbita / *Drive torque*



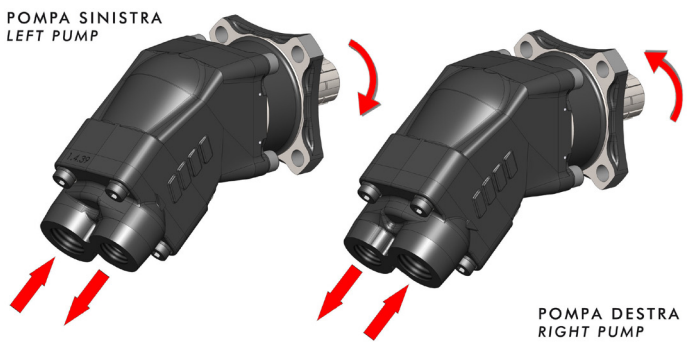

## Potenza assorbita / *Power input*




## Scelta del tubo di aspirazione
*How to choose the suction pipe size*

| Q Portata *Flow* l/min | Ø interno min. tubo *Min pipe diam.* mm | inch | Velocità flusso *Flow speed* (m/s) |
|---|---|---|---|
| 20 | 25 | 1" | 0,68 |
| 30 | 32 | 1" 1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1" 1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1" 9/16 | 0,93 |
| 80 | 45 | 1" 3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2" 3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 150 | 60 | | 0,88 |
| 160 | 63 | 2" 1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1 m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

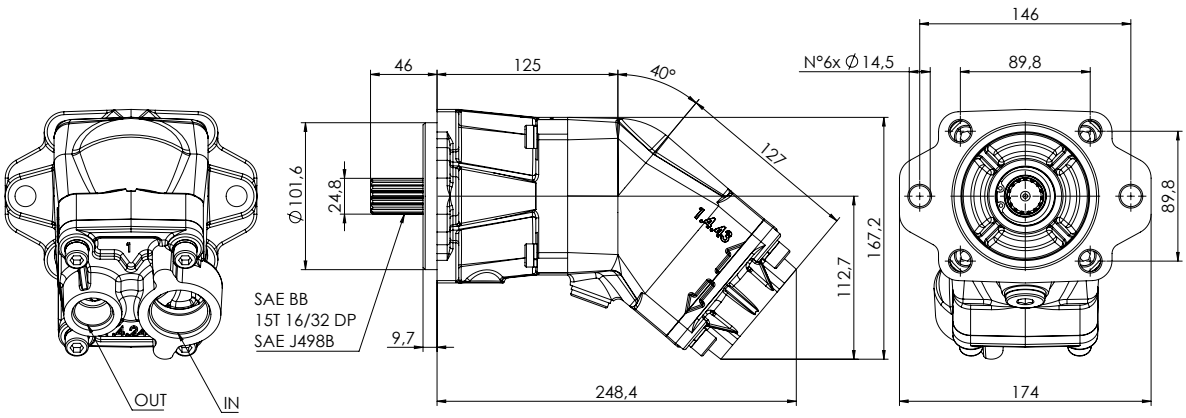


| | |
|---|---|
| Flangia / *Flange* | **SAE-BB** |
| Albero / *Shaft* | **15T 16/32** |
| Cilin. / *Displ.* | **47-55-64-80** |



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico<br>*Fluid* | Minerale o sintetico compatibile con guarnizioni:<br>*Mineral or synthetic compatible with the following seals:*<br>FKM, FPM, HNBR | | | | |
| Viscosità cinematica consigliata<br>*Kinematic viscosity suggested* | T media ambiente (°C)<br>*Average ambient temp. (°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio<br>*Optimale kinematic viscosity* | | | | | VG= 10 cSt ÷ 100 cSt |
| Viscosità cinematica max consentita all'avviamento<br>*Max kinematic viscosity suggested at the start-up* | | | | | VG= 750 cSt |
| Indice di viscosità consigliato<br>*Viscosity index suggested* VI > 100 | | | Temperatura di esercizio<br>*Working temperature* -15°C ÷ 140°C | | |
| Grado di filtrazione<br>*Oil filtering* | | | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm |
| Pres. di aspirazione<br>*Inlet pressure* | | | | | 0,85 ÷ 2 bar<br>assoluti/absolut |
| Senso di rotazione<br>*Pump rotation* | | | | | Unidirezionale (Dx o Sx)<br>*Unidirectional (Right or Left)* |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria.<br>*Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

## **Ingombro** / *Dimensions*




Dimensioni in mm
*Dimensions in mm*

## **Dati tecnici** / *Technical data*

| **Tipo pompa**<br>*Pump type* | **Rotazione**<br>*Rotation*<br>Destra<br>*Right* | Sinistra<br>*Left* | **IN**<br>ISO 725 | **OUT**<br>ISO 725 |
|---|---|---|---|---|
| HDS SAE-BB 47 | **61307750473** | **61307750479** | 1 5/8-12 UN-2B<br>*SAE 20* | 1 1/16-12 UN-2B<br>*SAE 12* |
| HDS SAE-BB 55 | **61307750553** | **61307750559** | | |
| HDS SAE-BB 64 | **61307750643** | **61307750649** | | |
| MDS SAE-BB 80 | **61307750803** | **61307750809** | | |
| | | | ISO 228 | ISO 228 |
| HDS SAE-BB 47 | **61307710473** | **61307710479** | G 1 1/4" | G 3/4" |
| HDS SAE-BB 55 | **61307710553** | **61307710559** | | |
| HDS SAE-BB 64 | **61307710643** | **61307710649** | | |
| MDS SAE-BB 80 | **61307710803** | **61307710809** | | |

**Link:**
Ricambi/*Spare parts*

## Caratteristiche Tecniche di funzionamento / *Technical features*

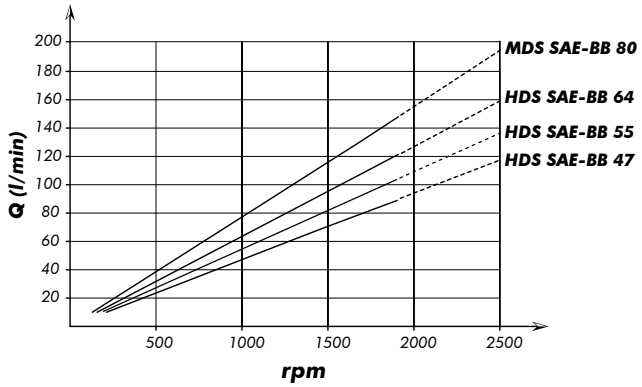
| Tipo pompa *Pump type* | Cilindrata *Displacement* cm³/rev | Pressione *Pressure* P1 * bar | P3 * bar | Velocità / *Speed* V0 rpm | V1 rpm | V2 rpm | Velocità min. *Min. speed* rpm | Peso *Weight* kg |
|---|---|---|---|---|---|---|---|---|
| **HDS-47** | 47.13 | 350 | 400 | 2700 | 1900 | 2500 | 300 | 13.9 |
| **HDS-55** | 56.70 | | | | | | | 14 |
| **HDS-64** | 63.56 | | 380 | | | | | 13.8 |
| **MDS-80** | 77.25 | 310 | 310 | 2300 | 1800 | 2100 | | 13.6 |

P1=Pressione massima continua *Max. continuous pressure* (100%)
P3=Pressione massima di punta *Max. peak pressure* (6 sec.max)

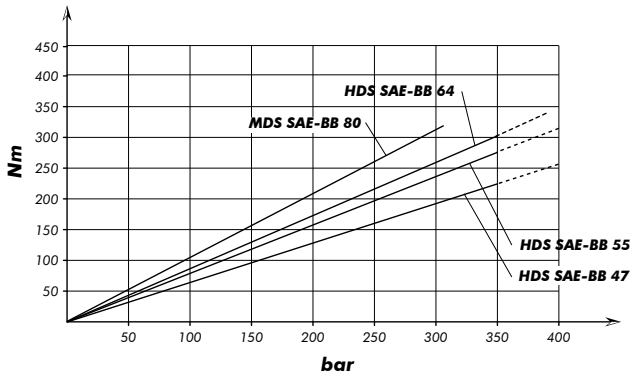
V0=Massima continua vuoto *Max. continuous speed without load*
V1=Massima continua *Max. continuous speed*
V2=Massima intermittente *Max. intermittent speed*

* I valori di pressione sono limitati a causa della coppia massima trasmissibile dall'albero SAE BB (450 Nm)
Indicated pressure values are limited due to the max allowed torque on SAE BB shaft (450 Nm).

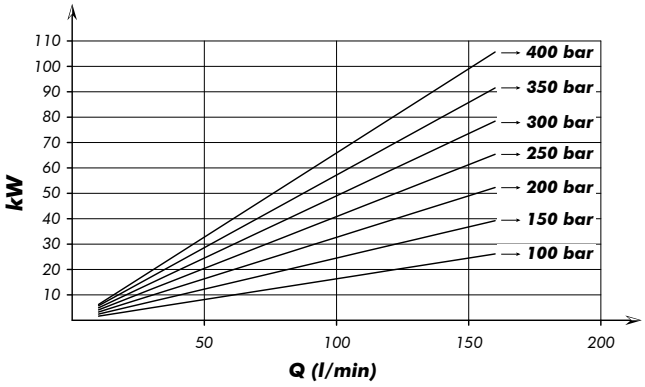
### Portata / *Flow*

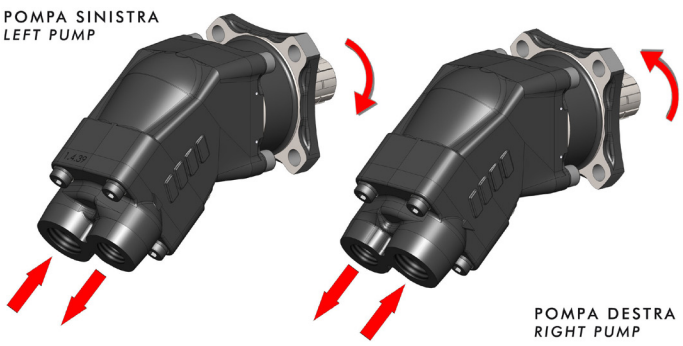



### Coppia assorbita / *Drive torque*




### Potenza assorbita / *Power input*



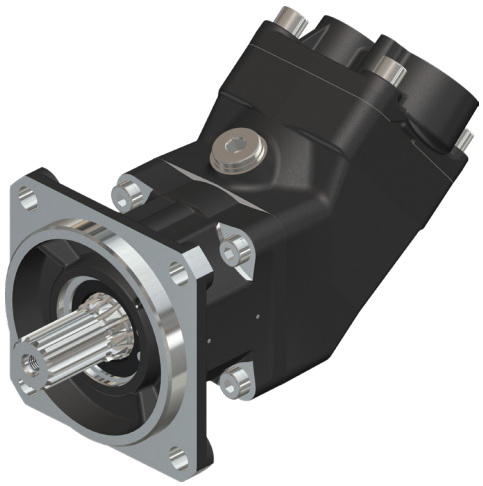




### Scelta del tubo di aspirazione
*How to choose the suction pipe size*

| Q Portata *Flow* l/min | Ø interno min. tubo *Min pipe diam.* mm | inch | Velocità flusso *Flow speed* (m/s) |
|---|---|---|---|
| 20 | 25 | 1" | 0,68 |
| 30 | 32 | 1" 1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1" 1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1" 9/16 | 0,93 |
| 80 | 45 | 1" 3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2" 3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 150 | 60 | | 0,88 |
| 160 | 63 | 2" 1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

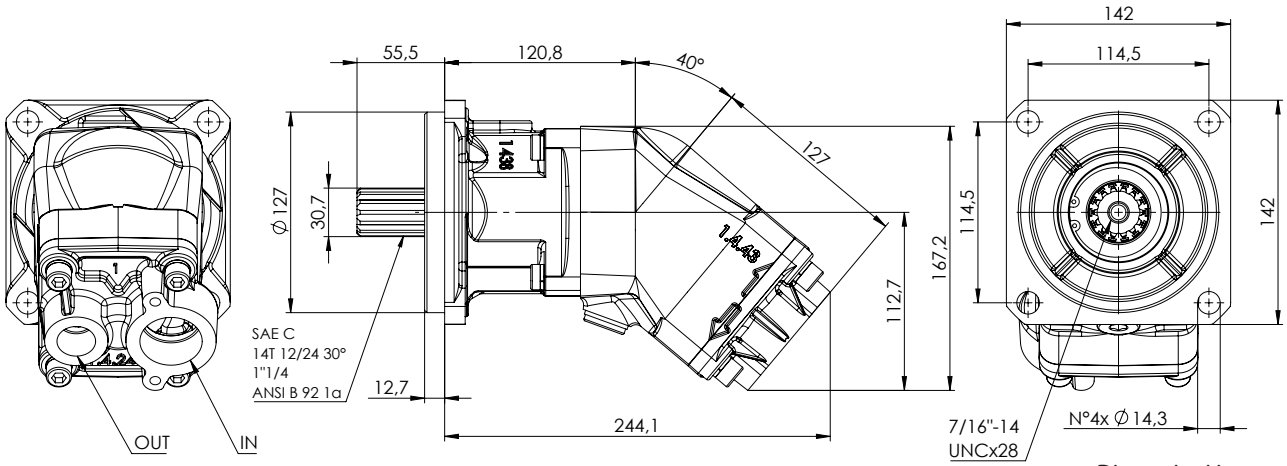
Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1 m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

| | |
|---|---|
| Flangia / *Flange* | **SAE-C** |
| Albero / *Shaft* | **14T 12/24** |
| Cilin. / *Displ.* | **47-55-64-80** |



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico<br>*Fluid* | Minerale o sintetico compatibile con guarnizioni:<br>*Mineral or synthetic compatible with the following seals:*<br>FKM, FPM, HNBR | | | | |
| Viscosità cinematica consigliata<br>*Kinematic viscosity suggested* | T media ambiente (°C)<br>*Average ambient temp. (°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio<br>*Optimale kinematic viscosity* | | | VG= 10 cSt ÷ 100 cSt | | |
| Viscosità cinematica max consentita all'avviamento<br>*Max kinematic viscosity suggested at the start-up* | | | VG= 750 cSt | | |
| Indice di viscosità consigliato<br>*Viscosity index suggested* VI > 100 | | Temperatura di esercizio<br>*Working temperature* -15°C ÷ 140°C | | | |
| Grado di filtrazione<br>*Oil filtering* | | | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | |
| Pres. di aspirazione<br>*Inlet pressure* | | | 0,85 ÷ 2 bar<br>assoluti/absolut | | |
| Senso di rotazione<br>*Pump rotation* | | | Unidirezionale (Dx o Sx)<br>*Unidirectional (Right or Left)* | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria.<br>*Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

## **Ingombro** / *Dimensions*




Dimensioni in mm
*Dimensions in mm*

## **Dati tecnici** / *Technical data*

| **Tipo pompa**<br>*Pump type* | **Rotazione**<br>*Rotation*<br>Destra<br>*Right* | <br><br>Sinistra<br>*Left* | **IN**<br>ISO 725 | **OUT**<br>ISO 725 |
|---|---|---|---|---|
| HDS SAE-C 47 | **61408050473** | **61408050479** | 1 5/8-12 UN-2B<br>*SAE 20* | 1 1/16-12 UN-2B<br>*SAE 12* |
| HDS SAE-C 55 | **61408050553** | **61408050559** | | |
| HDS SAE-C 64 | **61408050643** | **61408050649** | | |
| MDS SAE-C 80 | **61408050803** | **61408050809** | | |
| | | | ISO 228 | ISO 228 |
| HDS SAE-C 47 | **61408010473** | **61408010479** | G 1 1/4" | G 3/4" |
| HDS SAE-C 55 | **61408010553** | **61408010559** | | |
| HDS SAE-C 64 | **61408010643** | **61408010649** | | |
| MDS SAE-C 80 | **61408010803** | **61408010809** | | |

**Link:**
Ricambi/*Spare parts*

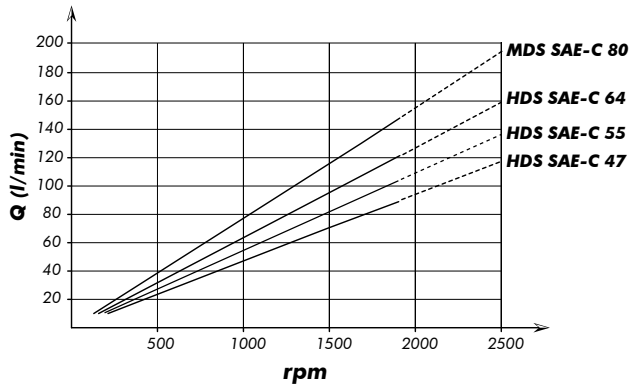
## Caratteristiche Tecniche di funzionamento / *Technical features*

| Tipo pompa *Pump type* | Cilindrata *Displacement* cm³/rev | Pressione *Pressure* P1 bar | Pressione *Pressure* P3 bar | Velocità / *Speed* V0 rpm | Velocità / *Speed* V1 rpm | Velocità / *Speed* V2 rpm | Velocità min. *Min. speed* rpm | Peso *Weight* kg |
|---|---|---|---|---|---|---|---|---|
| **HDS-47** | 47.13 | 350 | 400 | 2700 | 1900 | 2500 | 300 | 14.3 |
| **HDS-55** | 56.70 | | | | | | | |
| **HDS-64** | 63.56 | | | | | | | 14.2 |
| **MDS-80** | 77.25 | 250 | 300 | 2300 | 1800 | 2100 | | |

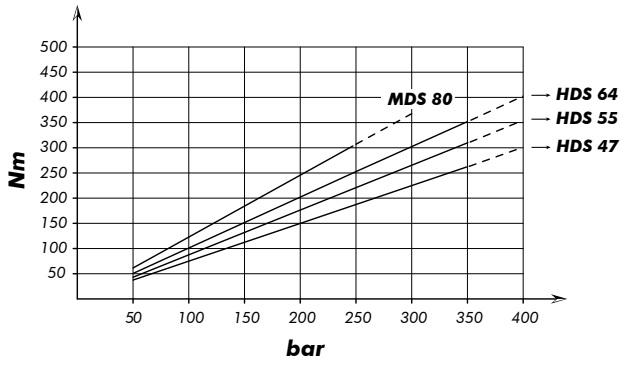
P1=Pressione massima continua *Max. continuous pressure* (100%)
P3=Pressione massima di punta *Max. peak pressure* (6 sec.max)

V0=Massima continua vuoto *Max. continuous speed without load*
V1=Massima continua *Max. continuous speed*
V2=Massima intermittente *Max. intermittent speed*

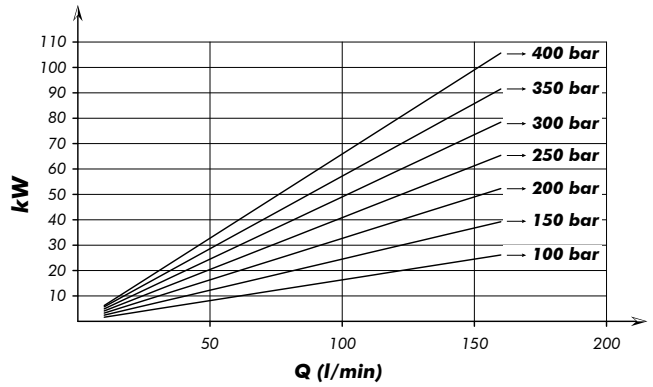
### Portata / *Flow*

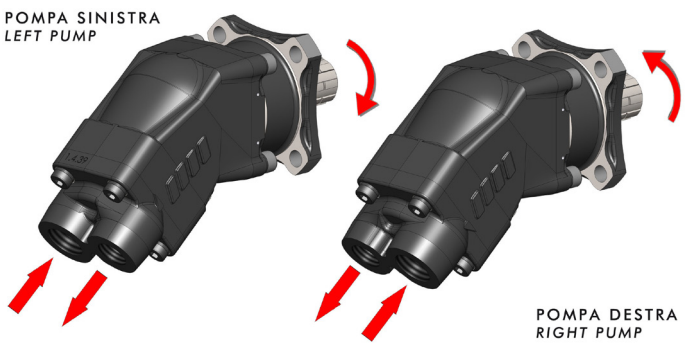



### Coppia assorbita / *Drive torque*




### Potenza assorbita / *Power input*



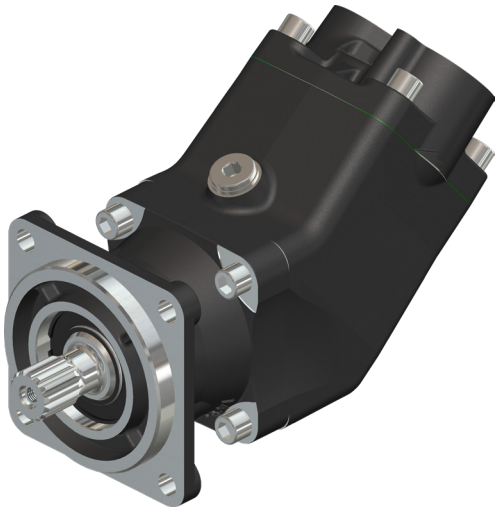




### Scelta del tubo di aspirazione
*How to choose the suction pipe size*

| Q Portata *Flow* l/min | Ø interno min. tubo *Min pipe diam.* mm | inch | Velocità flusso *Flow speed* (m/s) |
|---|---|---|---|
| 20 | 25 | 1" | 0,68 |
| 30 | 32 | 1" 1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1" 1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1" 9/16 | 0,93 |
| 80 | 45 | 1" 3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2" 3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 150 | 60 | | 0,88 |
| 160 | 63 | 2" 1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

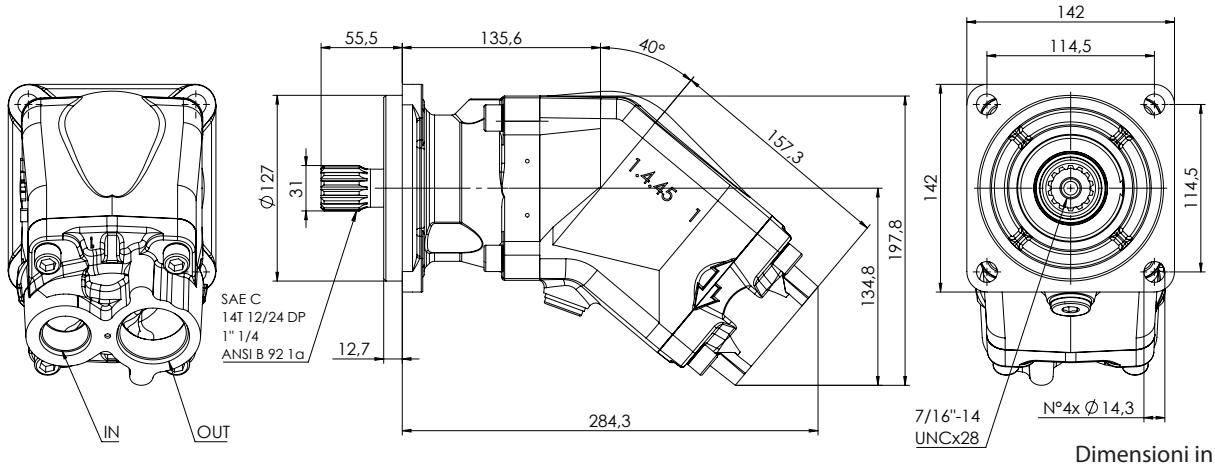
Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1 m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

| | |
|---|---|
| Flangia / *Flange* | **SAE-C** |
| Albero / *Shaft* | **14T 12/24** |
| Cilin. / *Displ.* | **84-108-130** |



| | | | | | |
|---|---|---|---|---|---|
| Fluido idraulico<br>*Fluid* | Minerale o sintetico compatibile con guarnizioni:<br>*Mineral or synthetic compatible with the following seals:*<br>FKM, FPM, HNBR | | | | |
| Viscosità cinematica consigliata<br>*Kinematic viscosity suggested* | T media ambiente (°C)<br>*Average ambient temp. (°C)* | < -40 | -40÷10 | 10÷35 | > 35 |
| | VG (cSt = mm²/s) | 16 | 22 | 32 | 46 |
| Viscosità cinematica ottimale di esercizio<br>*Optimale kinematic viscosity* | VG= 10 cSt ÷ 100 cSt | | | | |
| Viscosità cinematica max consentita all'avviamento<br>*Max kinematic viscosity suggested at the start-up* | VG= 750 cSt | | | | |
| Indice di viscosità consigliato<br>*Viscosity index suggested* VI > 100 | Temperatura di esercizio<br>*Working temperature* -15°C ÷ 140°C | | | | |
| Grado di filtrazione<br>*Oil filtering* | > 200 bar: 10 µm<br>< 200 bar: 25 µm | | | | |
| Pres. di aspirazione<br>*Inlet pressure* | 0,85 ÷ 2 bar<br>assoluti/absolut | | | | |
| Senso di rotazione<br>*Pump rotation* | Unidirezionale (Dx o Sx)<br>*Unidirectional (Right or Left)* | | | | |
| Verificare che la pompa sia posizionata almeno 100 mm sotto il livello minimo del serbatoio olio. Prima di avviare la pompa effettuare spurgo aria.<br>*Verify that pump is, at least, 100 mm under the minimum level of the tank. Before starting the pump bleed the air.* | | | | | |

## **Ingombro** / *Dimensions*




Dimensioni in mm
*Dimensions in mm*

## **Dati tecnici** / *Technical data*

| **Tipo pompa**<br>*Pump type* | **Rotazione**<br>*Rotation*<br>Destra<br>*Right* | <br><br>Sinistra<br>*Left* | **IN**<br>ISO 725 | **OUT**<br>ISO 725 |
|---|---|---|---|---|
| HDS SAE-C 84 | **61408050843** | **61408050849** | 1 7/8-12 UN-2B<br>*SAE 24* | 1 5/16-12 UN-2B<br>*SAE 16* |
| HDS SAE-C 108 | **61408051083** | **61408051089** | | |
| MDS SAE-C 130 | **61408051303** | **61408051309** | | |
| | | | ISO 228 | ISO 228 |
| HDS SAE-C 84 | **61408010843** | **61408010849** | G 1 1/4" | G 1" |
| HDS SAE-C 108 | **61408011083** | **61408011089** | G 1 1/2" | |
| MDS SAE-C 130 | **61408011303** | **61408011309** | | |

**Link:**
Ricambi/*Spare parts*

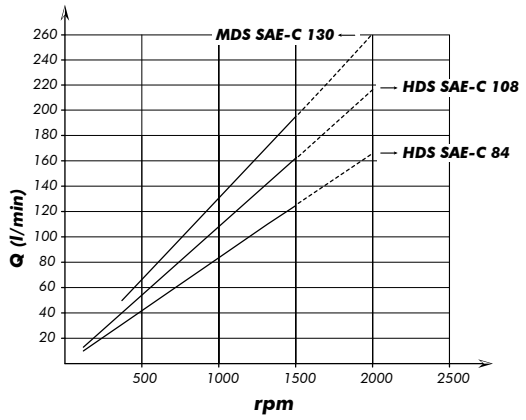
## Caratteristiche Tecniche di funzionamento / *Technical features*

| Tipo pompa *Pump type* | Cilindrata *Displacement* cm³/rev | Pressione *Pressure* P1 bar | P3 bar | Velocità / *Speed* V0 rpm | V1 rpm | V2 rpm | Velocità min. *Min. speed* rpm | Peso *Weight* kg |
|---|---|---|---|---|---|---|---|---|
| **HDS-84** | 84.33 | 350 | 400 | 2300 | 1500 | 2000 | 300 | 21.5 |
| **HDS-108** | 107 | | | | | | | 21 |
| **MDS-130** | 131.62 | 250 | 270 | | | | | |

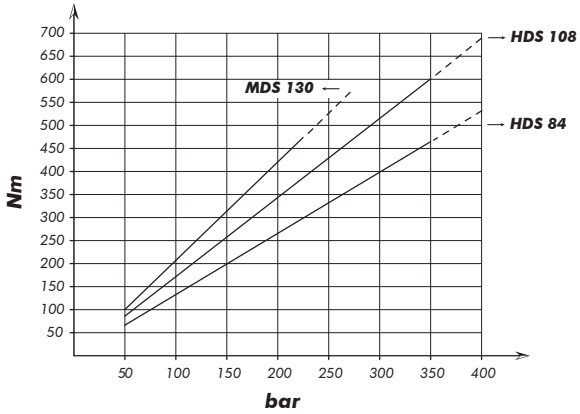
P1=Pressione massima continua *Max. continuous pressure* (100%)
P3=Pressione massima di punta *Max. peak pressure* (6 sec.max)

V0=Massima continua vuoto *Max. continuous speed without load*
V1=Massima continua *Max. continuous speed*
V2=Massima intermittente *Max. intermittent speed*

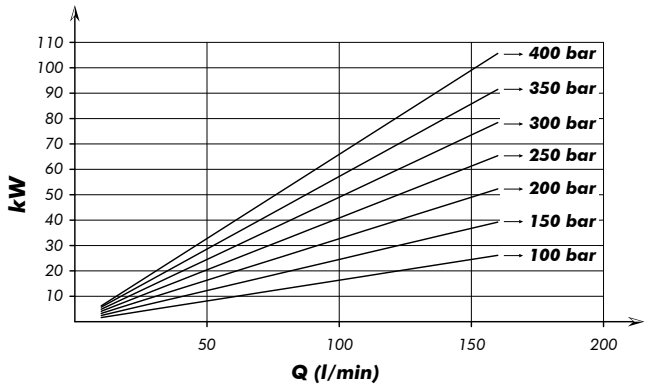
## Portata / *Flow*

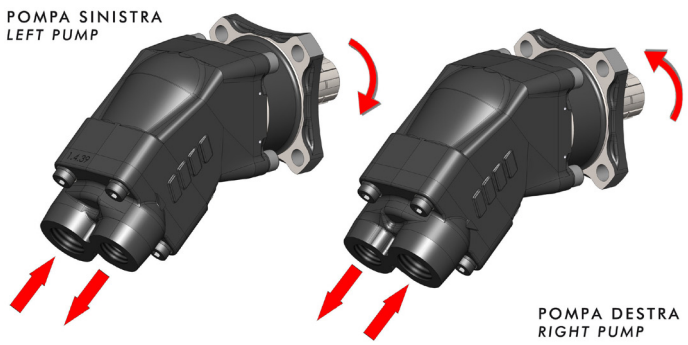



## Coppia assorbita / *Drive torque*




## Potenza assorbita / *Power input*



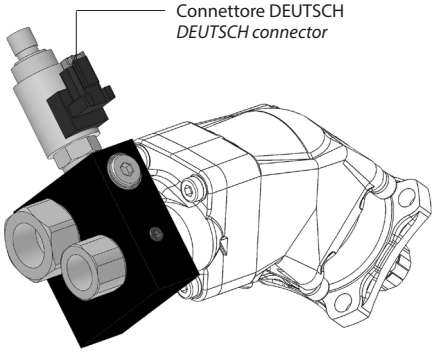

## Scelta del tubo di aspirazione
*How to choose the suction pipe size*

| Q Portata *Flow* l/min | Ø interno min. tubo *Min pipe diam.* mm | inch | Velocità flusso *Flow speed* (m/s) |
|---|---|---|---|
| 20 | 25 | 1" | 0,68 |
| 30 | 32 | 1" 1/4 | 0,62 |
| 40 | 32 | | 0,83 |
| 50 | 38 | 1" 1/2 | 0,74 |
| 60 | 38 | | 0,88 |
| 70 | 40 | 1" 9/16 | 0,93 |
| 80 | 45 | 1" 3/4 | 0,84 |
| 90 | 45 | | 0,94 |
| 100 | 50 | 2" | 0,85 |
| 110 | 50 | | 0,93 |
| 120 | 60 | 2" 3/8 | 0,71 |
| 130 | 60 | | 0,77 |
| 140 | 60 | | 0,83 |
| 150 | 60 | | 0,88 |
| 160 | 63 | 2" 1/2 | 0,86 |
| 170 | 63 | | 0,91 |
| 180 | 63 | | 0,96 |

Per garantire corrette condizioni di aspirazione la velocità del flusso non deve superare 1 m/sec.
*To ensure the proper suction pipe size the flow speed should not exceed 1mt/sec.*

# VALVOLA BY-PASS PER POMPE SERIE HDS 12-17-25-34
*BY-PASS VALVE FOR PUMPS 12-17-25-34 HDS series*

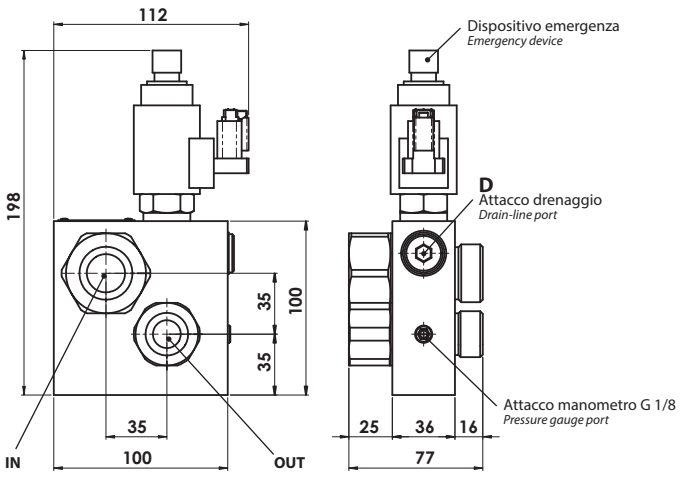
**108200**



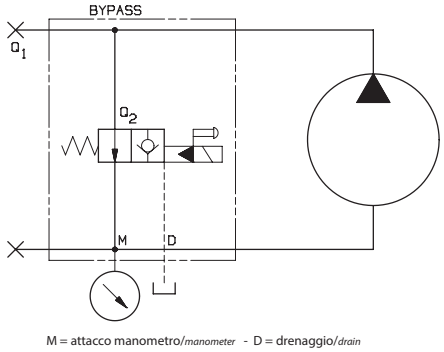

La valvola di by-pass viene utilizzata unitamente alle pompe a pistoni Bent axis HDS nel caso in cui la pompa sia sempre in rotazione quando il veicolo è acceso (montaggio con prese di forza senza innesto o direttamente sul motore). In questi casi tutto il flusso di olio erogato viene mandato in circolo alla massima portata della pompa, concessa dal numero di giri del motore, attraverso tubazioni che solitamente non sono dimensionate per portate superiori a quelle richieste durante il normale utilizzo della pompa, causando perciò perdite di energia inutili nonché surriscaldamenti dell'impianto. La valvola di by-pass svolge la funzione di ricircolare parzialmente il flusso di olio Q della pompa all'interno della pompa stessa in modo che, attraverso le tubazioni dell'impianto, circoli una portata Q1 pari alla differenza fra la portata Q e la portata di riciclo Q2. La ripartizione della portata nei flussi Q1 e Q2 dipende dalle perdite di carico dell'impianto e della valvola di by-pass. È comunque necessario garantire una portata di olio Q1 di almeno 5-10 l/min per assicurare un sufficiente raffreddamento della pompa.

*The bypass valve is used together with HDS bent axis piston pumps if the pump turns constantly when the vehicle is on (in installations with the power takeoff without a coupling or coupled directly to the motor). In such cases, all the oil flow delivered is circulated, at the maximum pump capacity permitted by the turning speed of the motor, through piping that is usually not sized for capacities greater than those required for the normal use of the pump, consequently giving rise to pointless energy losses and overheating in the system. The bypass valve serves the purpose of partially recirculating the pump's oil flow Q (see diagram 1) inside the pump so that a flow Q1 (corresponding to the difference between the total flow Q and the recycled flow Q2) circulates through the system's piping. The proportion of total capacity distributed to the flows Q1 and Q2 depends on the system load losses and the bypass valve. In any case, it is essential to guarantee an oil flow Q1 of at least 5-10 l/min to ensure adequate pump cooling.*

## Ingombro / *Dimensions*




## Schema idraulico / *Hydraulic layout*

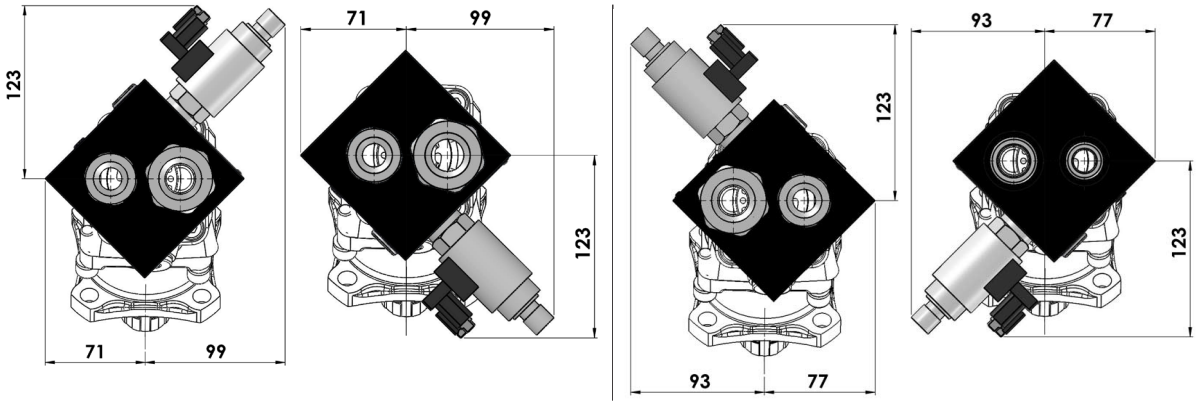



M = attacco manometro/*manometer* - D = drenaggio/*drain*

## Caratteristiche bobina / *Coil features*

| | |
|---|---|
| Assorbimento a 20°C: 20,5W | *Power at 20°C: 24W* |
| *Duty cicle: ED 100%* | |
| Grado di protezione: IP67 | *Protection class: IP67* |
| Classe di isolamento bobina: F | *Coil insulation class: F* |
| Classe di isolamento cavi: H (185°C) | *Wire insulation: H (185°C)* |
| Trattamento: Zinco-Nichel | *Treatment: Zinc-Nikel* |

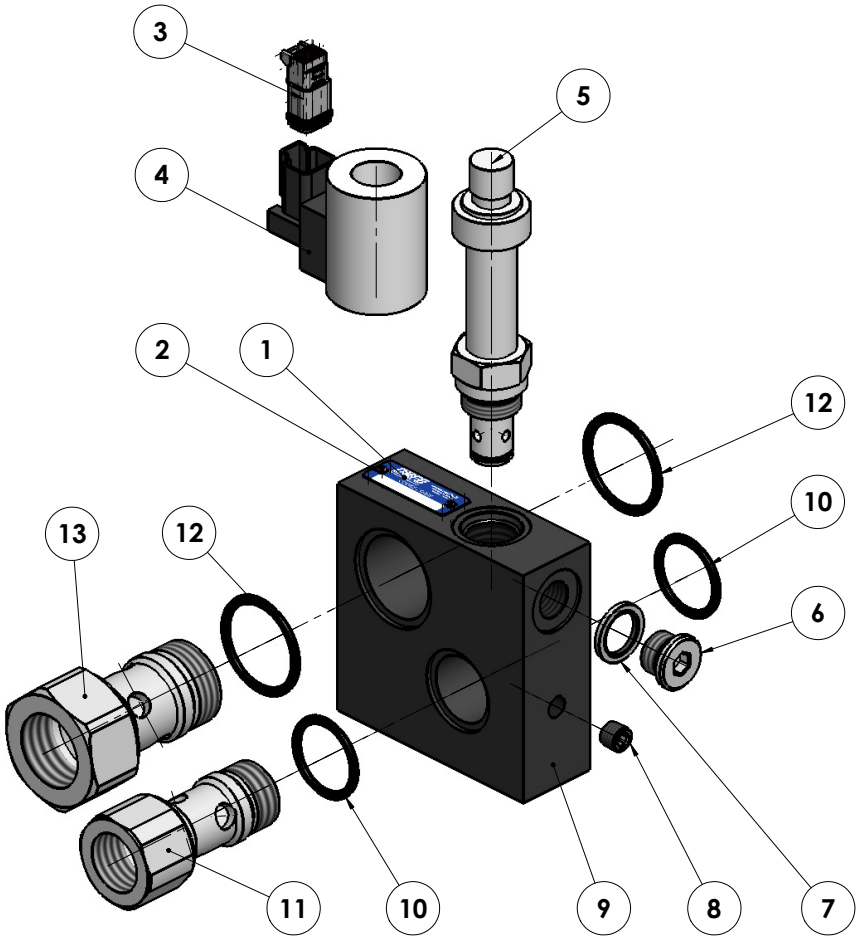
## Posizioni di montaggio / *Mounting positions*




## Dati tecnici / *Technical features*

| Tipo pompa *Pump type* | Codice ordinazione *Order code* | | Pressione max. *Max. pressure* | IN | OUT | D | Peso *Weight* |
|---|---|---|---|---|---|---|---|
| | 12V | 24V | bar | ISO 228 | ISO 228 | ISO 228 | Kg |
| HDS-12/17/25/34 | 10820012345 | 10820024341 | 400 | G1 | G3/4 | G3/8 | 3,2 |

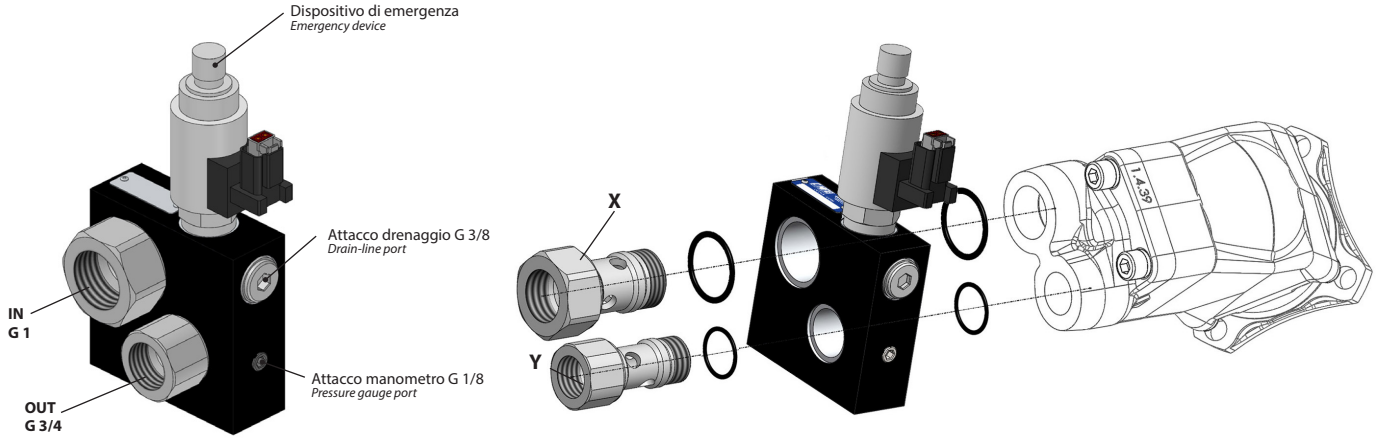
✱ Vedere catalogo pompe per le pressioni delle singole pompe / *See pumps catalogue for related pressure values.*




| N° | Codice *Code* | Descrizione *Description* | | Q. |
|---|---|---|---|---|
| 1 | **51300000011** | Chiodino fissaggio targhetta | *Plate nail* | 2 |
| 2 | **513.....** | Targhetta completa | *Plate* | 1 |
| 3 | **13104500045** | Connettore 2 poli DEUTSCH | *2-Pole connector DEUTSCH* | 1 |
| 4 | **14917532123** | Bobina DEUTSCH 12V | *Coil DEUTSCH 12V* | 1 |
| | **14917532249** | Bobina DEUTSCH 24V | *Coil DEUTSCH 24V* | 1 |
| 5 | **14990600224** | Cartuccia 7/8-14 | *Cartridge 7/8-14* | 1 |
| 6 | **11500600126** | Tappo cieco acciaio TCE 3/8" | *Blank plug TCE 3/8"* | 1 |
| 7 | **11600910085** | Rondella acciaio gomma | *Copper washer* | 1 |
| 8 | **50401000063** | Grano conico 1/8" | *Grub screw 1/8"* | 1 |
| 9 | **52000000614** | Corpo valvola bypass | *Bypass body* | 1 |
| 10 | **50600603112** | Guarnizione OR | *O-Ring* | 2 |
| 11 | **54000500359** | Tappo passante 3/4" | *Go-through cap 3/4"* | 1 |
| 12 | **50600603143** | Guarnizione OR | *O-Ring* | 2 |
| 13 | **54000500537** | Tappo passante 1" - 2^serie | *Go-through cap 1" - 2nd series* | 1 |

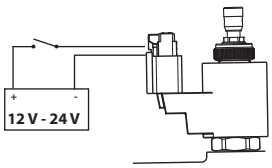
| **Tipo pompa** *Pump type* | **Kit ricambio guarnizioni** *Gaskets kit spare part* |
|---|---|
| HDS-12/17/25/34 | **10890300072** |

## **Istruzioni di montaggio** / *Mounting instructions*




1 - Pulire molto bene le superfici della pompa e della valvola che andranno a contatto.
2 - Interporre le guarnizioni (o-ring) fornite a corredo, usando grasso, come indicato in figura.
3 - Avvitare il particolare **X** ed il particolare **Y** (per coppie di serraggio vedi tabella).
4 - Collegare tubi aspiraz./mandata.
5 - Collegamento elettrico: la valvola di by-pass è normalmente aperta.
Per utilizzare la pompa in pressione eccitare l'elettrovalvola.

*1 - Clean the pump and by-pass valve surfaces.*
*2 - Place the o-ring included in the kit as shown in the picture, with grease.*
*3 - Screw in **X** part and **Y** part (see tightening torque in the table).*
*4 - Connect pressure/suction pipe.*
*5 - Electrical wiring-up: the by-pass valve is normally open. To deliver oil you have to energise the solenoid valve.*




| COPPIE DI SERRAGGIO *TIGHTENING TORQUE* | |
|---|---|
| G 1/2 | 80 Nm |
| G 3/4 | 140 Nm |
| G 1 | 170 Nm |
| G 1 1/4 | 200 Nm |
| G 1 1/2 | 250 Nm |

## ATTENZIONE

L'elettrovalvola viene azionata da un interruttore elettrico posto in cabina. La valvola di by-pass viene normalmente impiegata in impianti che prevedono il distributore principale a centro aperto.

**Nel caso in cui venga impiegata in impianti con distributore a centro chiuso o nel caso in cui non siano garantiti i 5-10 l/min di portata (Q1) attraverso le tubazioni, è necessario collegare un tubo fra il foro di drenaggio della valvola e il serbatoio.**

L'elettrovalvola è dotata di un dispositivo di emergenza in modo che si possa utilizzare la pompa anche in caso di avaria dell'elettrovalvola stessa. Azionamento emergenza di tipo " spingi e gira". La valvola può essere utilizzata indifferentemente per pompe con rotazione destra o sinistra e può essere montata in due diverse posizioni ruotate di 180° in modo da ottimizzarne gli ingombri. Al raccordo da G 1/8 è possibile collegare un manometro per la misura della pressione..

## *WARNING*

*The solenoid valve is operated by an electric switch situated in the cab. The bypass valve is normally used in systems with an open-center main distributor.*

***If it is used in systems with a closed-center distributor, or if it is impossible to guarantee the minimum flow rate of 5-10 l/min (Q1) through the piping, it becomes necessary to connect a pipe drain valve hole and the tank.***

*This emergency is "push and twist" type. The solenoid valve is complete with an emergency device so that the pump can be used even in the event of a solenoid valve malfunction. The valve can be used equally for pumps turning either to the right or to the left and it can be installed in two different positions, rotated through 180° so as to make best use of available space. A pressure gauge can be connected to the G 1/8 connection to enable pressure measurements.*

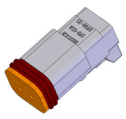
**OPTIONAL**

Kit elettrico / Electric kit
Codice / Code **30600102357**



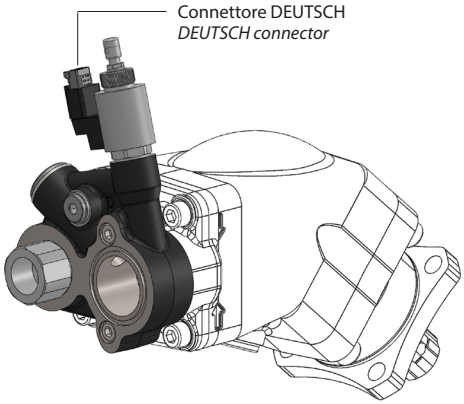

***OPTIONAL***

Connettore 2 Poli "DEUTSCH" femmina
2-Pole female connector DEUTSCH
Codice / Code ***13104500045***



# VALVOLA BY-PASS PER POMPE SERIE HDS MDS HDT
*BY-PASS VALVE FOR PUMPS HDS MDS HDT series*
GHISA - *CAST IRON*

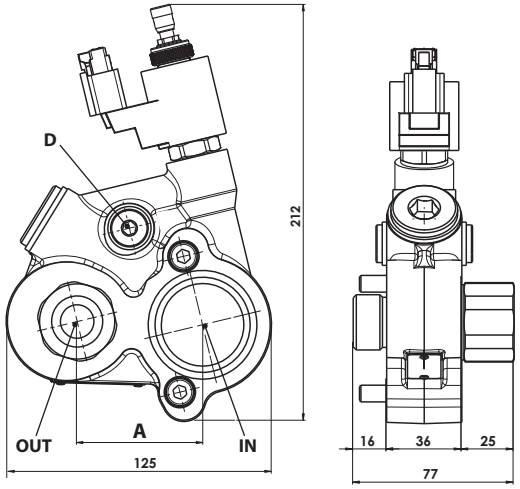
**108200**



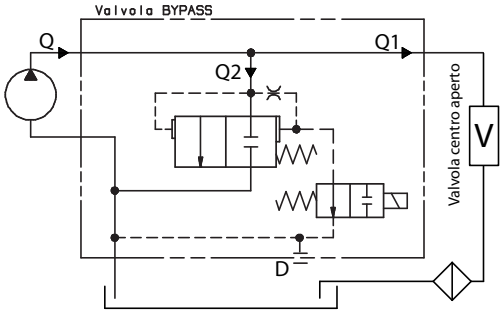

La valvola di by-pass viene utilizzata unitamente alle pompe a pistoni Bent axis HDS-HDT nel caso in cui la pompa sia sempre in rotazione quando il veicolo è acceso (montaggio con prese di forza senza innesto o direttamente sul motore). In questi casi tutto il flusso di olio erogato viene mandato in circolo alla massima portata della pompa, concessa dal numero di giri del motore, attraverso tubazioni che solitamente non sono dimensionate per portate superiori a quelle richieste durante il normale utilizzo della pompa, causando perciò perdite di energia inutili nonché surriscaldamenti dell'impianto. La valvola di by-pass svolge la funzione di ricircolare parzialmente il flusso di olio Q della pompa all'interno della pompa stessa in modo che, attraverso le tubazioni dell'impianto, circoli una portata Q1 pari alla differenza fra la portata Q e la portata di riciclo Q2. La ripartizione della portata nei flussi Q1 e Q2 dipende dalle perdite di carico dell'impianto e della valvola di by-pass. È comunque necessario garantire una portata di olio Q1 di almeno 5-10 l/min per assicurare un sufficiente raffreddamento della pompa.

*The bypass valve is used together with HDS-HDT bent axis piston pumps if the pump turns constantly when the vehicle is on (in installations with the power takeoff without a coupling or coupled directly to the motor). In such cases, all the oil flow delivered is circulated, at the maximum pump capacity permitted by the turning speed of the motor, through piping that is usually not sized for capacities greater than those required for the normal use of the pump, consequently giving rise to pointless energy losses and overheating in the system. The bypass valve serves the purpose of partially recirculating the pump's oil flow Q (see diagram 1) inside the pump so that a flow Q1 (corresponding to the difference between the total flow Q and the recycled flow Q2) circulates through the system's piping. The proportion of total capacity distributed to the flows Q1 and Q2 depends on the system load losses and the bypass valve. In any case, it is essential to guarantee an oil flow Q1 of at least 5-10 l/min to ensure adequate pump cooling.*

## Ingombro / *Dimensions*



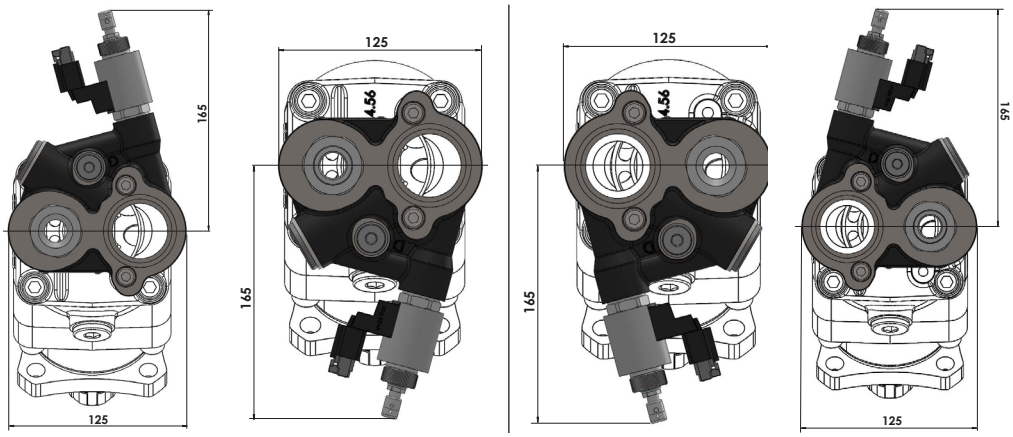

## Schema idraulico / *Hydraulic layout*




## Caratteristiche bobina / *Coil features*

| | |
|---|---|
| Assorbimento a 20°C: 20,5W | *Power at 20°C: 20,5W* |
| *Duty cicle: ED 100%* | |
| Grado di protezione: IP67 | *Protection class: IP67* |
| Classe di isolamento bobina: H (180°C) | *Coil insulation class: H (180°C)* |
| Classe di isolamento cavi rame: H (185°C) | *Copper wire insulation: H (185°C)* |
| Trattamento: Zinco-Nichel | *Treatment: Zinc-Nikel* |

## Posizioni di montaggio / *Mounting positions*



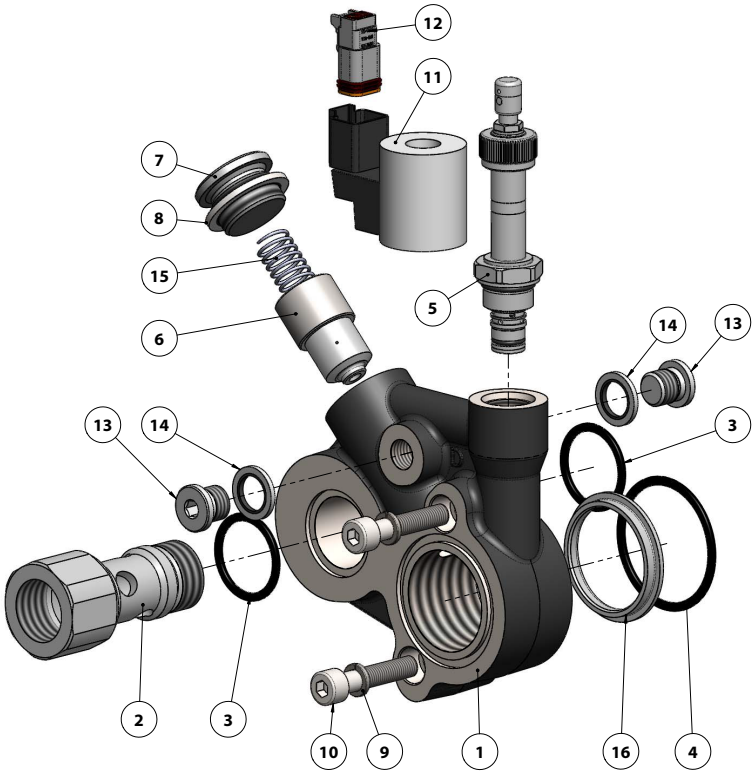

## Dati tecnici / *Technical features*

| Tipo pompa *Pump type* | Codice ordinazione *Order code* 12V | 24V | Pressione max. *Max. pressure* bar | IN ISO 228 | OUT ISO 228 | A | D ISO 228 | Peso *Weight* Kg |
|---|---|---|---|---|---|---|---|---|
| HDS 40/47/55/64 MDS 80 | 10820012498 | 10820024494 | 400 * | G1-1/4 | G3/4 | 60 | G1/4 | 2,6 |
| HDS 84/96/108/130 MDS 130 | 10820012872 | 10820024878 | | G1-1/2 | G1 | | | |
| HDT 75/84/96/108 | 10820012881 | 10820024887 | | G1-1/4 | | 65 | | |

* Vedere catalogo pompe per le pressioni delle singole pompe / *See pumps catalogue for related pressure values.*

# VALVOLA BY-PASS PER POMPE SERIE HDS MDS HDT
*BY-PASS VALVE FOR PUMPS HDS MDS HDT series*
GHISA - *CAST IRON*

**108200**



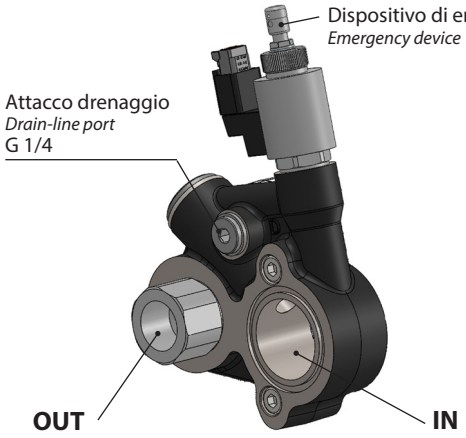

| **Tipo pompa** *Pump type* | **Kit ricambio guarnizioni** *Gaskets kit spare part* |
|---|---|
| HDS 40/47/55/64 MDS 80 | **10890300106** |
| HDS 84/96/108/130 MDS-130 | **10890300090** |
| HDT 75/84/96/108 | **10890300081** |

| **N°** | **HDS 40/47/55/64 MDS 80** | **HDS 84/96/108/130 MDS 130** | **HDT** | **Codice** *Code* | **Descrizione** *Description* | | **Q.** |
|---|---|---|---|---|---|---|---|
| 1 | • | | | **52000000525** | Corpo valvola bypass | *Bypass body* | 1 |
| | | • | | **52000000534** | | | |
| | | | • | **52000000543** | | | |
| 2 | • | | | **54000500359** | Tappo passante | *Go-through cap* | 1 |
| | | • | • | **54000500537** | | | 1 |
| 3 | • | | | **50600603112** | Guarnizione OR | *O-Ring* | 2 |
| | | • | • | **50600603143** | | | |
| 4 | • | | • | **50600603181** | Guarnizione OR | *O-Ring* | 1 |
| | | • | | **50600603200** | | | |
| 5 | • | • | • | **14901520344** | Cartuccia It21 3/4UNF + emergenza. Ricambio ghiera 14995190025 | *Cartridge It21 3/4 UNF + emergency. Ferrule spare part. 14995190025.* | 1 |
| 6 | • | • | • | **53600600642** | Cursore per valvola bypass | *Spool* | 1 |
| 7 | • | • | • | **11500600144** | Tappo cieco acciaio TCE 3/4" | *Blank plug TCE 3/4"* | 1 |
| 8 | • | • | • | **11600910343** | Rondella acciaio/gomma | *Copper washer* | 1 |
| 9 | • | • | • | **50100800045** | Rondella elastica | *Washer* | 2 |
| 10 | • | • | • | **50200300593** | Vite TCE M 8x40 | *Socket head capscrew* | 2 |
| 11 | • | • | • | **14917531127** | Bobina DEUTSCH 12V | *Coil DEUTSCH 12V* | 1 |
| | • | • | • | **14917531245** | Bobina DEUTSCH 24V | *Coil DEUTSCH 24V* | |
| 12 | • | • | • | **13104500045** | Connettore 2 poli DEUTSCH | *2-Pole connector DEUTSCH* | 1 |
| 13 | • | • | • | **11500600117** | Tappo cieco acciaio TCE 1/4" | *Blank plug TCE 1/4"* | 2 |
| 14 | • | • | • | **11600910049** | Rondella acciaio gomma | *Copper washer 1/2* | 2 |
| 15 | • | • | • | **51200502089** | Molla | *Spring* | 1 |
| 16 | | • | | **53400200677** | Anello guida OR | *O-R guide ring* | 1 |

# VALVOLA BY-PASS PER POMPE SERIE HDS MDS HDT
*BY-PASS VALVE FOR PUMPS HDS MDS HDT series*
GHISA - *CAST IRON*

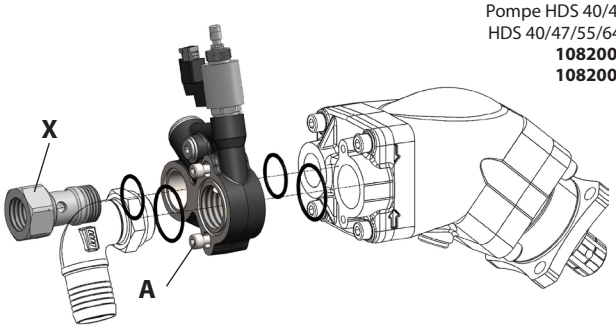
**108200**

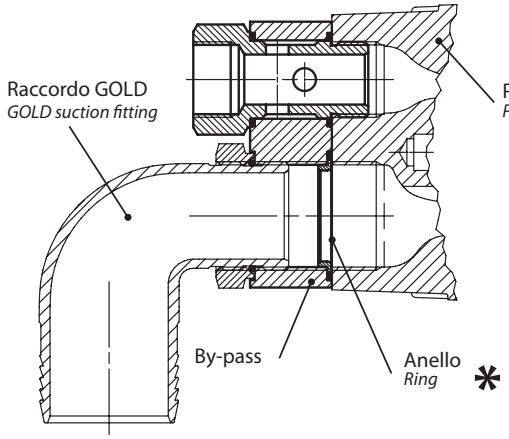
## **Istruzioni di montaggio** / *Mounting instructions*



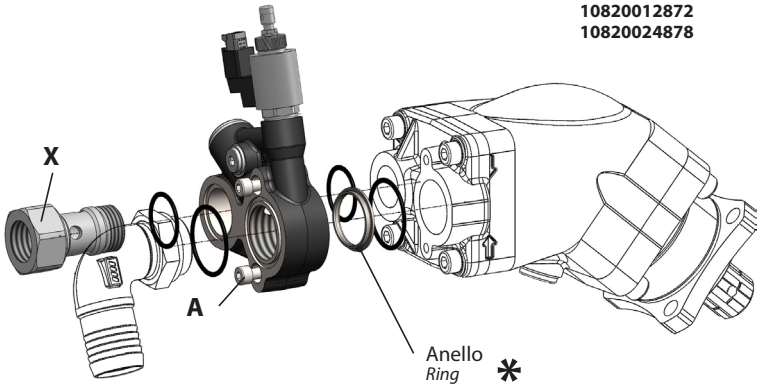

Pompe HDT / *HDT Pumps*
**10820012881**
**10820024887**

Pompe HDS 40/47/55/64 MDS80
HDS 40/47/55/64 MDS80 *Pumps*
**10820012498**
**10820024494**



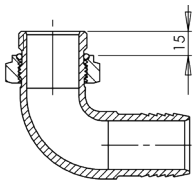




Pompe HDS 84/96/108 MDS130
HDS 84/96/108 MDS130 *Pumps*
**10820012872**
**10820024878**

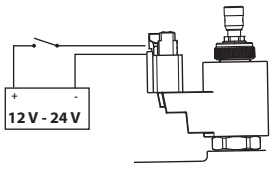



1 - Pulire molto bene le superfici della pompa e della valvola che andranno a contatto.
2 - Interporre le guarnizioni fornite a corredo (e l'anello * se presente), usando grasso, come indicato in figura.
3 - Avvitare la valvola by-pass alla pompa con le viti M8x40 **(A)** fornite senza serrarle completamente.
4 - Avvitare il particolare **X** (per coppie di serraggio vedi tabella), serrare le viti M8x40 con coppia di serraggio di 25Nm e verificare che la superficie della pompa e la superficie della valvola siano completamente a contatto tra loro.
5 - Collegare tubi aspiraz./mandata facendo attenzione ad usare raccordi con lunghezza MAX. filetto L=15mm.
6 - Collegamento elettrico: la valvola di by-pass è normalmente aperta. Per utilizzare la pompa in pressione eccitare l'elettrovalvola.

*1 - Clean the pump and by-pass valve surfaces.*
*2 - Place the o-ring (and the ring * if present) included in the kit as shown in the picture, with grease.*
*3 - Screw in the by-pass valve with included screws M8x40* ***(A)*** *but without tightening.*
*4 - Screw in* ***X*** *part (see tightening torque in near table), tighten the screws M8x40 with torque 25 Nm checking that valve and rear cover surfaces are completely in contact each other.*
*5 - Connect pressure/suction pipes, paying attention to use maximum lenght threaded fittinge = 15mm.*
*6 - Electrical wiring-up: the by-pass valve is normally open. To deliver oil you have to energise the solenoid valve.*




punto/*point* 5




punto/*point* 6

| COPPIE DI SERRAGGIO *TIGHTENING TORQUE* | |
|---|---|
| G 1/2 | 80 Nm |
| G 3/4 | 140 Nm |
| G 1 | 170 Nm |
| G 1 1/4 | 200 Nm |
| G 1 1/2 | 250 Nm |

## ATTENZIONE

L'elettrovalvola viene azionata da un interruttore elettrico posto in cabina. La valvola di by-pass viene normalmente impiegata in impianti che prevedono il distributore principale a centro aperto.

**Nel caso in cui venga impiegata in impianti con distributore a centro chiuso o nel caso in cui non siano garantiti i 5-10 l/min di portata (Q1) attraverso le tubazioni, è necessario collegare un tubo fra il foro di drenaggio della valvola e il serbatoio.**

L'elettrovalvola è dotata di un dispositivo di emergenza in modo che si possa utilizzare la pompa anche in caso di avaria dell'elettrovalvola stessa. Azionamento emergenza di tipo " spingi e gira". La valvola può essere utilizzata indifferentemente per pompe con rotazione destra o sinistra e può essere montata in due diverse posizioni ruotate di 180° in modo da ottimizzarne gli ingombri.

## *WARNING*

*The solenoid valve is operated by an electric switch situated in the cab. The bypass valve is normally used in systems with an open-center main distributor.*

***If it is used in systems with a closed-center distributor, or if it is impossible to guarantee the minimum flow rate of 5-10 l/min (Q1) through the piping, it becomes necessary to connect a pipe drain valve hole and the tank.***

*This emergency is "push and twist" type. The solenoid valve is complete with an emergency device so that the pump can be used even in the event of a solenoid valve malfunction. The valve can be used equally for pumps turning either to the right or to the left and it can be installed in two different positions, rotated through 180° so as to make best use of available space.*

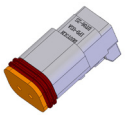
**OPTIONAL**

Kit elettrico / Electric kit
Codice / Code **30600102357**



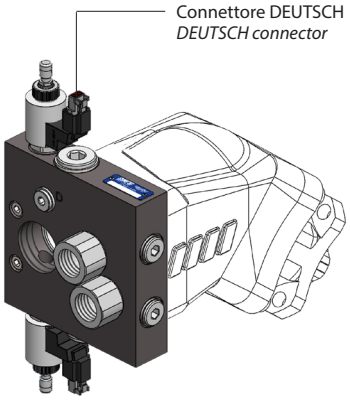

***OPTIONAL***

Connettore 2 Poli "DEUTSCH" femmina
2-Pole female connector DEUTSCH
Codice / Code ***13104500045***



# VALVOLA BY-PASS PER POMPE SERIE TWINFLOW
*BY-PASS VALVE FOR PUMPS TWINFLOW series*
GHISA - *CAST IRON*

**108200**



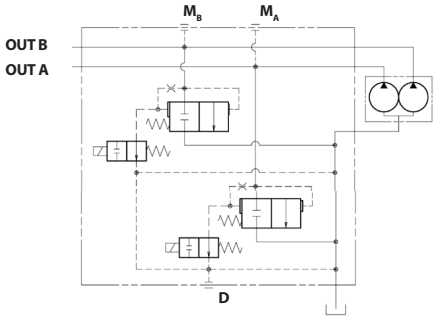

La valvola di by-pass viene utilizzata unitamente alle pompe a pistoni Bent axis "TWIN FLOW" nel caso in cui la pompa sia sempre in rotazione quando il veicolo è acceso (montaggio con prese di forza senza innesto o direttamente sul motore). In questi casi tutto il flusso di olio erogato viene mandato in circolo alla massima portata della pompa, concessa dal numero di giri del motore, attraverso tubazioni che solitamente non sono dimensionate per portate superiori a quelle richieste durante il normale utilizzo della pompa, causando perciò perdite di energia inutili nonché surriscaldamenti dell'impianto. La valvola di by-pass svolge la funzione di ricircolare, **per ogni mandata**, parzialmente il flusso di olio Q della pompa all'interno della pompa stessa in modo che, attraverso le tubazioni dell'impianto, circoli una portata Q1 pari alla differenza fra la portata Q e la portata di riciclo Q2. La ripartizione della portata nei flussi Q1 e Q2 dipende dalle perdite di carico dell'impianto e della valvola di by-pass. È comunque necessario garantire una portata di olio Q1 di almeno 5-10 l/min per assicurare un sufficiente raffreddamento della pompa.

*The bypass valve is used together with "TWIN FLOW" bent axis piston pumps if the pump turns constantly when the vehicle is on (in installations with the power takeoff without a coupling or coupled directly to the motor). In such cases, all the oil flow delivered is circulated, at the maximum pump capacity permitted by the turning speed of the motor, through piping that is usually not sized for capacities greater than those required for the normal use of the pump, consequently giving rise to pointless energy losses and overheating in the system. The bypass valve serves the purpose of partially recirculating, for each delivery, the pump's oil flow Q inside the pump so that a flow Q1 (corresponding to the difference between the total flow Q and the recycled flow Q2) circulates through the system's piping. The proportion of total capacity distributed to the flows Q1 and Q2 depends on the system load losses and the bypass valve. In any case, it is essential to guarantee an oil flow Q1 of at least 5-10 l/min to ensure adequate pump cooling.*

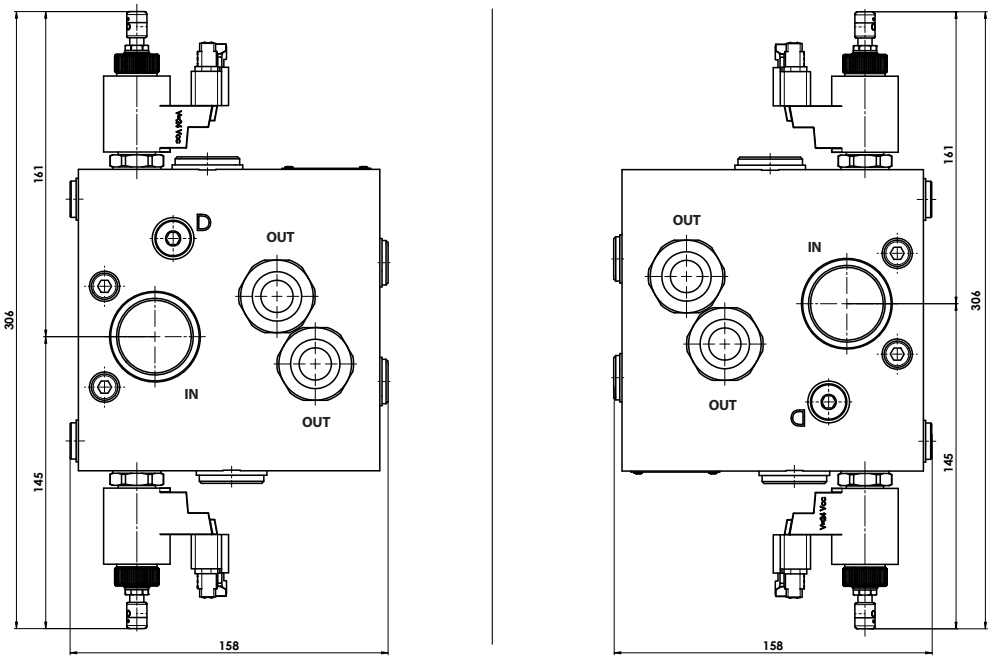
## Caratteristiche bobina / *Coil features*

| | |
|---|---|
| Assorbimento a 20°C: 20,5W | *Power at 20°C: 20,5W* |
| *Duty cicle: ED 100%* | |
| Grado di protezione: IP67 | *Protection class: IP67* |
| Classe di isolamento bobina: H (180°C) | *Coil insulation class: H (180°C)* |
| Classe di isolamento cavi rame: H (185°C) | *Copper wire insulation: H (185°C)* |
| Trattamento: Zinco-Nichel | *Treatment: Zinc-Nikel* |

## Schema idraulico / *Hydraulic layout*




## Posizioni di montaggio / *Mounting positions*




## Dati tecnici / *Technical features*

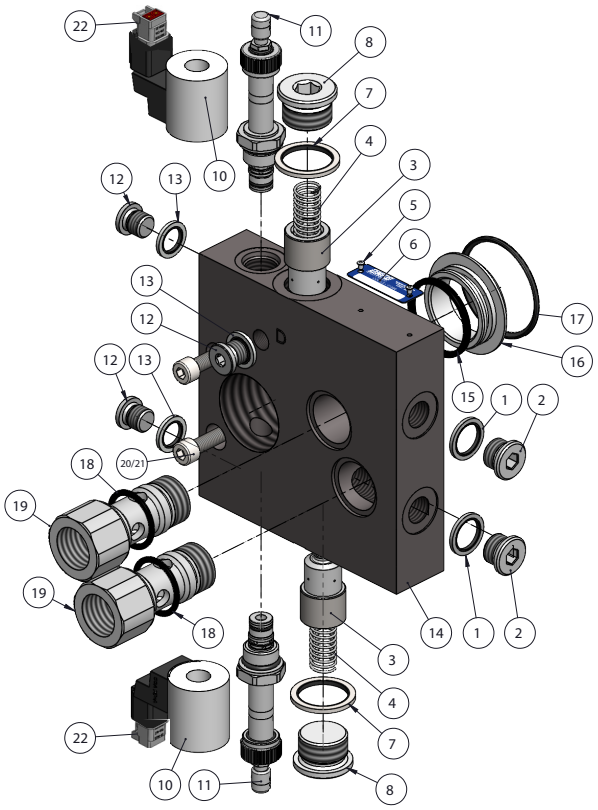
| **Tipo pompa** *Pump type* | **Codice ordinazione** *Order code* | | **Pressione max.** *Max. pressure* | **Peso** *Weight* |
|---|---|---|---|---|
| | 12V | 24V | bar | Kg |
| TWIN-FLOW 76+76 | **10820012765** | **10820024761** | 400 ✻ | 6,5 |

✻ Vedere catalogo pompe per le pressioni delle singole pompe
*See pumps catalogue for related pressure values.*

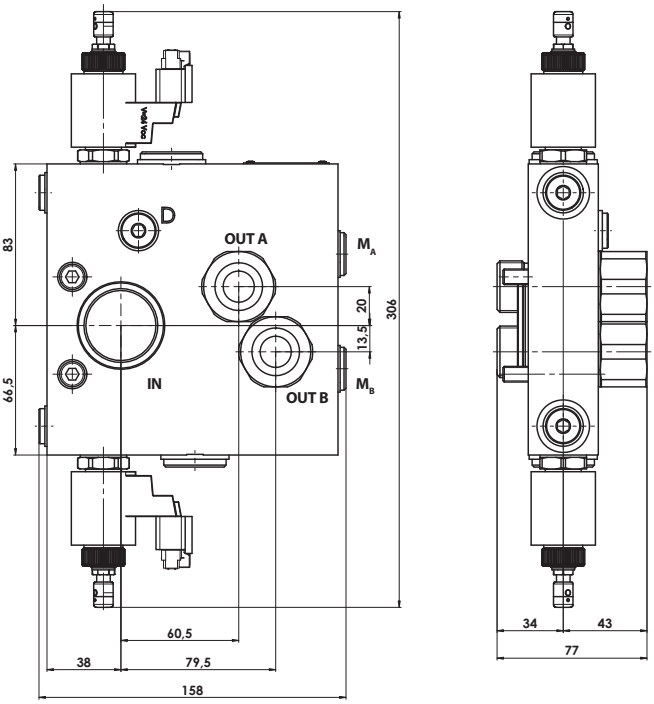
# VALVOLA BY-PASS PER POMPE SERIE TWINFLOW
*BY-PASS VALVE FOR PUMPS TWINFLOW series*
GHISA - *CAST IRON*

**108200**

| Codice *Code* | IN | OUT A OUT B | $M_A$ - $M_B$ | D |
|---|---|---|---|---|
| 10820012765<br>10820024761 | G 1-1/2 | G 3/4 | G 3/8 | G 1/4 |




## Ingombro / *Dimensions*

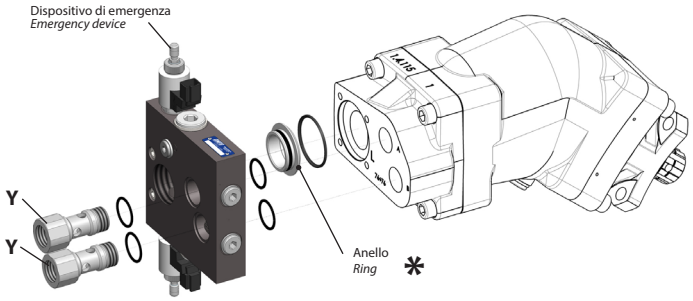



M = attacco manometro / *manometer*
D = drenaggio / *drain*

| N° | TWIN-FLOW 76+76 | Codice *Code* | Descrizione *Description* | | Q. |
|---|---|---|---|---|---|
| 1 | • | **11600910085** | Rondella acciaio gomma G3/8 | *Copper washer G3/8* | 2 |
| 2 | • | **11500600126** | Tappo cieco acciaio TCE 3/8" | *Blank plug TCE 3/8"* | 2 |
| 3 | • | **53600600642** | Cursore per valvola bypass | *Spool* | 2 |
| 4 | • | **51200502070** | Molla | *Spring* | 2 |
| 5 | • | **51300000011** | Chiodino fissaggio targhetta | *Plate nail* | 2 |
| 6 | • | **513** | Targhetta completa | *Plate* | 1 |
| 7 | • | **11600910352** | Rondella acciaio gomma | *Copper washer* | 2 |
| 8 | • | **11500600144** | Tappo cieco acciaio TCE 3/4" | *Blank plug TCE 3/4"* | 2 |
| 10 | • | **14917531127** | Bobina DEUTSCH 12V FERRO | *Coil DEUTSCH 12V* | 2 |
| | | **14917531245** | Bobina DEUTSCH 24V FERRO | *Coil DEUTSCH 24V* | |
| 11 | • | **14901520344** | Cartuccia lt21 3/4UNF<br>+ emergenza.<br>Ricambio ghiera 14995190025 | *Cartridge lt21 3/4 UNF*<br>*+ emergency.*<br>*Ferrule spare part 14995190025* | 2 |
| 12 | • | **11500600117** | Tappo cieco acciaio TCE 1/4" | *Blank plug TCE 1/4"* | 3 |
| 13 | • | **11600910049** | Rondella acciaio gomma | *Copper washer* | 3 |
| 14 | • | **52000000829** | Corpo valvola bypass | *Bypass body* | 1 |
| 15 | • | **50600600207** | Guarnizione OR 142 | *OR 142 gasket* | 1 |
| 16 | • | **53400200864** | Anello guida | *Centering ring* | 1 |
| 17 | • | **50600015230** | Guarnizione OMR 0520-30 HNBR | *OMR 0520-30 HNBR gasket* | 1 |
| 18 | • | **50600603112** | Guarnizione OR | *O-Ring* | 4 |
| 19 | • | **54000500359** | Tappo passante 3/4" | *Go-through cap 3/4"* | 2 |
| 20 | • | **50200300593** | Vite TCE UNI5931 M8 | *TCE UNI5931 M8 screw* | 2 |
| 21 | • | **50100800045** | Rondella elastica per M8 DIN7980 | *Washer fro M8 DIN7980* | 2 |
| 22 | • | **13104500045** | Connettore 2 poli DEUTSCH | *2-pole connector DEUTSCH* | 2 |

| Tipo pompa *Pump type* | Kit ricambio guarnizioni *Gaskets kit spare part* |
|---|---|
| TWIN-FLOW 76+76 | **10890300151** |

## **Istruzioni di montaggio** / *Mounting instructions* **TWIN-FLOW 76+76**

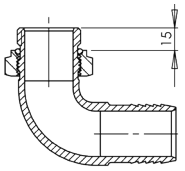



1 - Pulire molto bene le superfici della pompa e della valvola che andranno a contatto. / *Clean the pump and by-pass valve surfaces.*

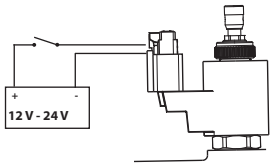
2 - Interporre le guarnizioni e l'anello * forniti a corredo come indicato in figura.
*Place the o-rings and the ring * included in the kit as shown in the picture.*

3 - Avvitare il corpo ed i particolari **Y** (Coppie di serraggio in tabella).
*Screw in the body and the **Y** parts (See tightening torque in table).*

4 - Collegare tubi aspiraz./mandata facendo attenzione ad usare raccordi con lunghezza MAX. filetto L=15mm.
*Connect pressure/suction pipes, paying attention to use MAXIMUM lenght threaded fittings = 15mm.*



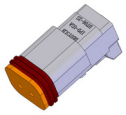

5 - Collegamento elettrico: la valvola di by-pass è normalmente aperta.
Per utilizzare la pompa in pressione eccitare l'elettrovalvola.
*Electrical wiring-up: the by-pass valve is normally open.*
*To deliver oil you have to energise the solenoid valve.*




**OPTIONAL**
**Kit elettrico / *Electric kit***
Codice / Code 30600102357




**OPTIONAL**
**Connettore 2 Poli *"DEUTSCH" femmina***
***2-Pole female connector DEUTSCH***
Codice / Code 13104500045



| COPPIE DI SERRAGGIO<br>COPPIE DI SERRAGGIO | |
|---|---|
| G 1/2 | 80Nm |
| G 3/4 | 140Nm |
| G 1 | 170Nm |
| G 1 1/4 | 200Nm |
| G 1 1/2 | 250Nm |

## **ATTENZIONE** / *WARNING*

L'elettrovalvole vengono azionate da interruttori elettrici posti in cabina. La valvola di by-pass viene normalmente impiegata in impianti che prevedono il distributore principale a centro aperto.

**Nel caso in cui venga impiegata in impianti con distributore a centro chiuso o nel caso in cui non siano garantiti i 5-10 l/min di portata (Q1) attraverso le tubazioni, è necessario collegare un tubo da 3/8" fra il raccordo ausiliario della valvola e il serbatoio (utilizzare raccordo G1/4 incluso nella confezione).**

L'elettrovalvole sono dotate di un dispositivo di emergenza in modo che si possa utilizzare la pompa anche in caso di avaria dell'elettrovalvole stesse. La valvola può essere utilizzata indifferentemente per pompe con rotazione destra o sinistra e può essere montata in due diverse posizioni ruotate di 180° in modo da ottimizzarne gli ingombri. Ai raccordi da 3/8" è possibile collegare dei manometri per la misura delle pressioni.

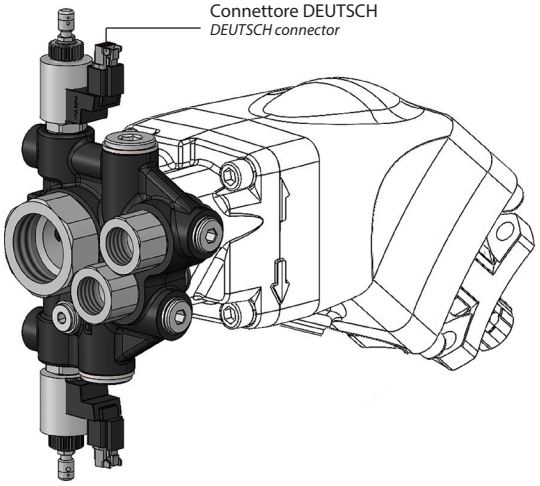
*The solenoid valves are operated by electric switches situated in the cab. The bypass valve is normally used in systems with an open-center main distributor.*

***If it is used in systems with a closed-center distributor, or if it is impossible to guarantee the minimum flow rate of 5-10 l/min (Q1) through the piping, it becomes necessary to connect a 3/8" pipe between the valve's auxiliary connection and the tank (use the fitting G1/4 included in the package).***

*The solenoid valves are completed with an emergency device so that the pump can be used even in the event of a solenoid valves malfunction. The valve can be used equally for pumps turning either to the right or to the left and it can be installed in two different positions, rotated through 180° so as to make best use of available space. A pressure gauge can be connected to the 3/8" connection to enable pressure measurements.*

# VALVOLA BY-PASS PER POMPE SERIE TWINFLOW
*BY-PASS VALVE FOR PUMPS TWINFLOW series*
GHISA - *CAST IRON*

**108200**



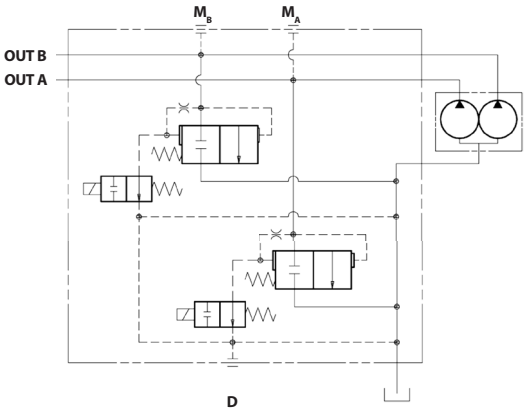

La valvola di by-pass viene utilizzata unitamente alle pompe a pistoni Bent axis "TWINFLOW" nel caso in cui la pompa sia sempre in rotazione quando il veicolo è acceso (montaggio con prese di forza senza innesto o direttamente sul motore). In questi casi tutto il flusso di olio erogato viene mandato in circolo alla massima portata della pompa, concessa dal numero di giri del motore, attraverso tubazioni che solitamente non sono dimensionate per portate superiori a quelle richieste durante il normale utilizzo della pompa, causando perciò perdite di energia inutili nonché surriscaldamenti dell'impianto. La valvola di by-pass svolge la funzione di ricircolare, **per ogni mandata**, parzialmente il flusso di olio Q della pompa all'interno della pompa stessa in modo che, attraverso le tubazioni dell'impianto, circoli una portata Q1 pari alla differenza fra la portata Q e la portata di riciclo Q2. La ripartizione della portata nei flussi Q1 e Q2 dipende dalle perdite di carico dell'impianto e della valvola di by-pass. È comunque necessario garantire una portata di olio Q1 di almeno 5-10 l/min per assicurare un sufficiente raffreddamento della pompa.

*The bypass valve is used together with "TWINFLOW" bent axis piston pumps if the pump turns constantly when the vehicle is on (in installations with the power takeoff without a coupling or coupled directly to the motor). In such cases, all the oil flow delivered is circulated, at the maximum pump capacity permitted by the turning speed of the motor, through piping that is usually not sized for capacities greater than those required for the normal use of the pump, consequently giving rise to pointless energy losses and overheating in the system. The bypass valve serves the purpose of partially recirculating, for each delivery, the pump's oil flow Q inside the pump so that a flow Q1 (corresponding to the difference between the total flow Q and the recycled flow Q2) circulates through the system's piping. The proportion of total capacity distributed to the flows Q1 and Q2 depends on the system load losses and the bypass valve. In any case, it is essential to guarantee an oil flow Q1 of at least 5-10 l/min to ensure adequate pump cooling.*

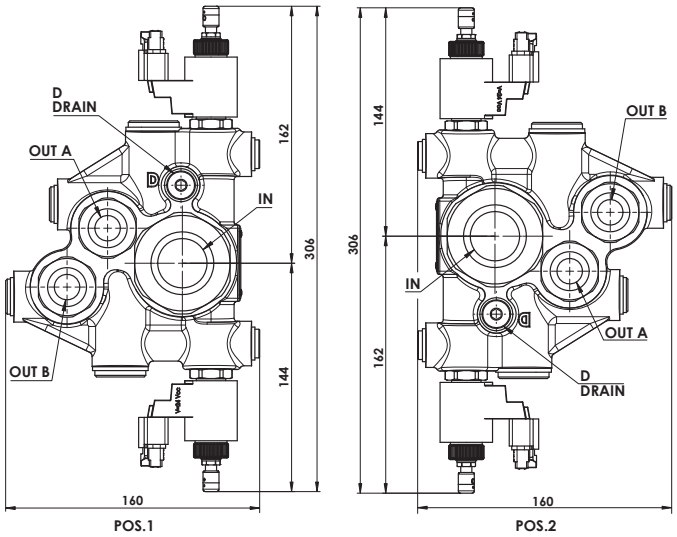
## Caratteristiche bobina / *Coil features*

| | |
|---|---|
| Assorbimento a 20°C: 20,5W | *Power at 20°C: 20,5W* |
| *Duty cicle: ED 100%* | |
| Grado di protezione: IP67 | *Protection class: IP67* |
| Classe di isolamento bobina: H (180°C) | *Coil insulation class: H (180°C)* |
| Classe di isolamento cavi rame: H (185°C) | *Copper wire insulation: H (185°C)* |
| Trattamento: Zinco-Nichel | *Treatment: Zinc-Nikel* |

## Schema idraulico / *Hydraulic layout*




## Posizioni di montaggio / *Mounting positions*



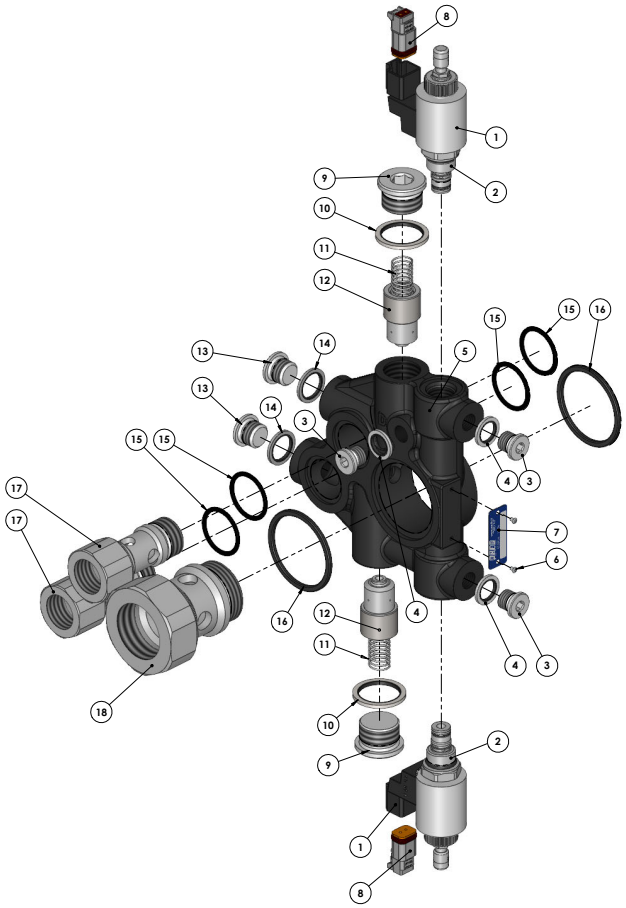

## Dati tecnici / *Technical data*

| Tipo pompa *Pump type* | Codice ordinazione *Order code* 12V | Codice ordinazione *Order code* 24V | Pressione massima *Max. pressure* bar | Grado di protezione *Enclosure* | Potenza bobina *Coil power* W | IN ISO 228 | OUT A OUT B ISO 228 | $M_A$-$M_B$ ISO 228 | D ISO 228 | Peso *Weight* Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| TWINFLOW 53+35 / 53+53 70+35 | **10820012550** | **10820024556** | 400 | IP 66 | 22 | G 1-1/4 | G 3/4 | G 3/8 | G 1/4 Tappato *Plugged* | 4,5 |
| TWINFLOW 70+53 | **10820012729** | **10820024725** | * | | | G 1-1/2 | | | | |

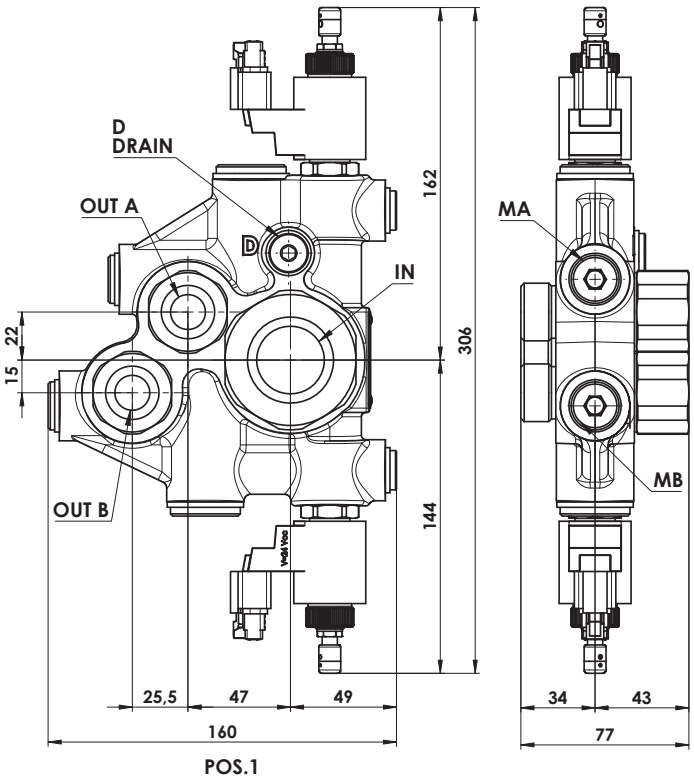
* Vedere catalogo pompe per le pressioni delle singole pompe / *See pumps catalogue for related pressure values.*

# VALVOLA BY-PASS PER POMPE SERIE TWINFLOW
*BY-PASS VALVE FOR PUMPS TWINFLOW series*
GHISA - *CAST IRON*

**108200**

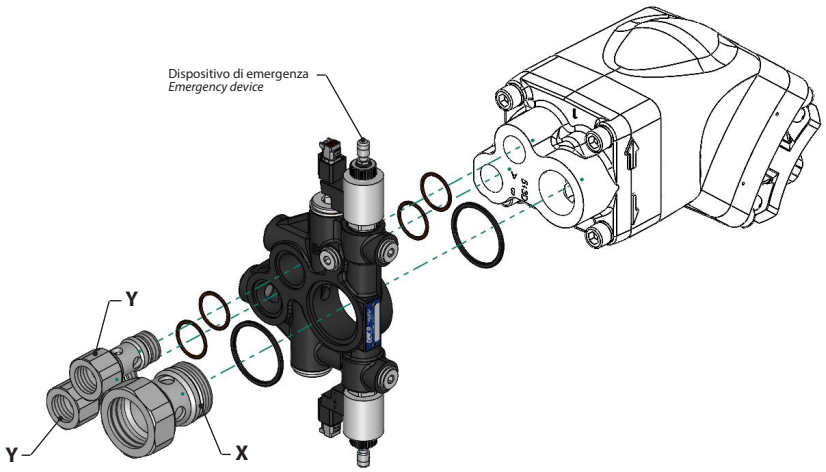


## Ingombro / *Dimensions*




| N° | 10820012550 TWIN-FLOW 53+35 / 53+53 70+35 12V | 10820012729 TWIN-FLOW 70+53 - 12V | 10820024556 TWIN-FLOW 53+35 / 53+53 70+35 24V | 10820024725 TWIN-FLOW 70+53 - 24V | **Codice** *Code* | **Descrizione** *Description* | | **Q.** |
|---|---|---|---|---|---|---|---|---|
| 1 | | | • | • | **14917531245** | Bobina DEUTSCH 24V | *Coil DEUTSCH 24V* | 2 |
| | • | • | | | **14917531127** | Bobina DEUTSCH 12V | *Coil DEUTSCH 12V* | |
| 2 | • | • | • | • | **14901520344** | Cartuccia lt21 3/4UNF + emergenza Ricambio ghiera 14995190025 | *Cartridge lt21 3/4 UNF + emergency Ferrule spare part 14995190025.* | 2 |
| 3 | • | • | • | • | **11500600117** | Tappo cieco acciaio TCE 1/4" | *Blank plug TCE 1/4"* | 3 |
| 4 | • | • | • | • | **11600910049** | Rondella acciaio gomma | *Copper washer* | 3 |
| 5 | • | • | • | • | **52000000936** | Corpo valvola bypass | *Bypass body* | 1 |
| 6 | • | • | • | • | **51300000011** | Chiodino fissaggio targhetta | *Plate nail* | 2 |
| 7 | • | • | • | • | **513** | Targhetta completa | *Plate* | 1 |
| 8 | • | • | • | • | **13104500045** | Connettore 2 poli DEUTSCH | *2-Pole connector DEUTSCH* | 2 |
| 9 | • | • | • | • | **11500600144** | Tappo cieco acciaio TCE 3/4" | *Blank plug TCE 3/4"* | 2 |
| 10 | • | • | • | • | **11600910352** | Rondella acciaio gomma | *Copper washer* | 2 |
| 11 | • | • | • | • | **51200502070** | Molla | *Spring* | 2 |
| 12 | • | • | • | • | **53600600642** | Cursore per valvola bypass | *Spool* | 2 |
| 13 | • | • | • | • | **11500600126** | Tappo cieco acciaio TCE 3/8" | *Blank plug TCE 3/8"* | 2 |
| 14 | • | • | • | • | **11600910085** | Rondella acciaio gomma G3/8 | *Copper washer G3/8* | 2 |
| 15 | • | • | • | • | **50600603112** | Guarnizione OR | *O-Ring* | 4 |
| 16 | • | • | • | • | **50600604200** | Guarnizione OR | *O-Ring* | 2 |
| 17 | • | • | • | • | **54000500359** | Tappo passante 3/4" | *Go-through cap 3/4"* | 2 |
| 18 | • | | • | | **54000500457** | Tappo passante 1 1/4" | *Go-through cap 1 1/4"* | 1 |
| | | • | | • | **54000500466** | | | |

| **Tipo pompa** *Pump type* | **Kit ricambio guarnizioni** *Gaskets kit spare part* | **N°** | |
|---|---|---|---|
| TWIN-FLOW 53+53 / 70+35<br>TWIN-FLOW 70+53 | **10890300115** | 15 | 16 |



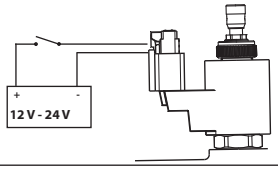

1 - Pulire molto bene le superfici della pompa e della valvola che andranno a contatto.
*Clean the pump and by-pass valve surfaces.*

2 - Interporre le guarnizioni fornite a corredo come indicato in figura.
*Place the o-ring included in the kit as shown in the picture.*

3 - Avvitare il particolare X ed i particolari Y (Coppie di serraggio in tabella).
*Screw in X part and Y parts (See tightening torque in table).*

4 - Collegare tubi aspiraz./mandata.
*Connect pressure/suction pipes.*

5 - Collegamento elettrico: la valvola di by-pass è normalmente aperta.
Per utilizzare la pompa in pressione eccitare l'elettrovalvola.
*Electrical wiring-up: the by-pass valve is normally open.*
*To deliver oil you have to energise the solenoid valve.*




| Coppie di serraggio *Tightening torques* | |
|---|---|
| G 1/2 | 80Nm |
| G 3/4 | 140Nm |
| G 1 | 170Nm |
| G 1 1/4 | 200Nm |
| G 1 1/2 | 250Nm |

Le elettrovalvole vengono azionate da interruttori elettrici posti in cabina. La valvola di by-pass viene normalmente impiegata in impianti che prevedono il distributore principale a centro aperto.

**Nel caso in cui venga impiegata in impianti con distributore a centro chiuso o nel caso in cui non siano garantiti i 5-10 l/min di portata (Q1) attraverso le tubazioni, è necessario collegare un tubo da 3/8" fra il raccordo ausiliario della valvola e il serbatoio (utilizzare raccordo G1/4 incluso nella confezione).**

Le elettrovalvole sono dotate di un dispositivo di emergenza in modo che si possa utilizzare la pompa anche in caso di avaria dell'elettrovalvole stesse. La valvola può essere utilizzata indifferentemente per pompe con rotazione destra o sinistra e può essere montata in due diverse posizioni ruotate di 180° in modo da ottimizzarne gli ingombri. Ai raccordi da 3/8" è possibile collegare dei manometri per la misura delle pressioni.

*The solenoid valves are operated by electric switches situated in the cab. The bypass valve is normally used in systems with an open-center main distributor.*

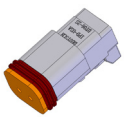
***If it is used in systems with a closed-center distributor, or if it is impossible to guarantee the minimum flow rate of 5-10 l/min (Q1) through the piping, it becomes necessary to connect a 3/8" pipe between the valve's auxiliary connection and the tank (use the fitting G1/4 included in the package).***

*The solenoid valves are completed with an emergency device so that the pump can be used even in the event of a solenoid valves malfunction. The valve can be used equally for pumps turning either to the right or to the left and it can be installed in two different positions, rotated through 180° so as to make best use of available space. A pressure gauge can be connected to the 3/8" connection to enable pressure measurements.*

**OPTIONAL**
**Kit elettrico / *Electric kit***
Codice / Code 30600102357

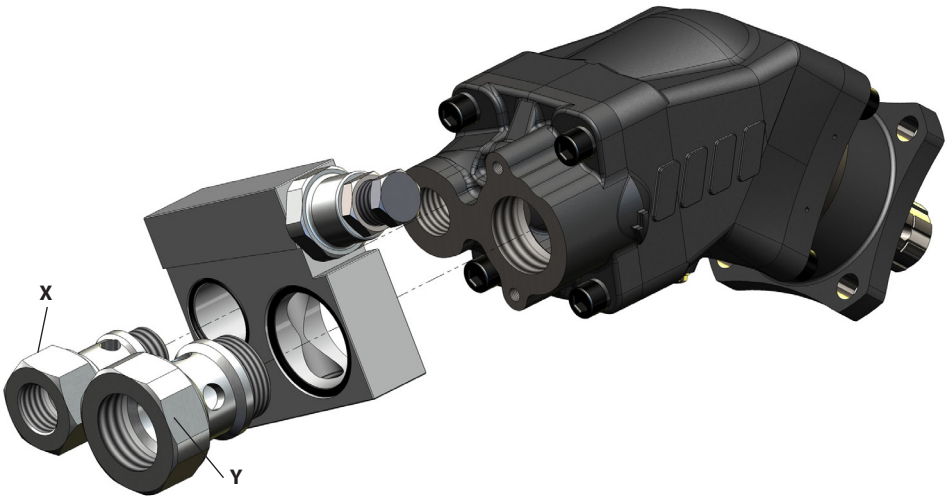



**OPTIONAL**
**Connettore 2 Poli *"DEUTSCH" femmina***
***2-Pole female connector DEUTSCH***
Codice / Code 13104500045

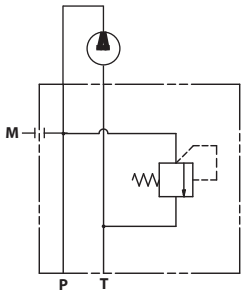


# Pannello con valvola di massima per pompe
*Relief valve assembly for bent axis piston pumps*
**HDS - MDS - HDT**

**108205**




## Schema idraulico
*Hydraulic scheme*

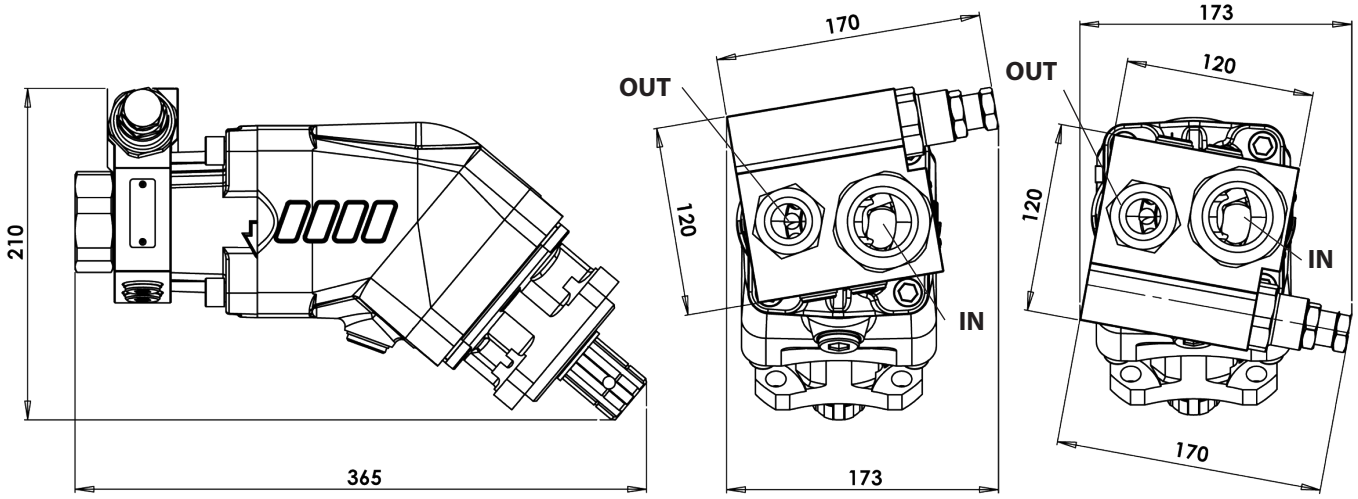



**La valvola si applica direttamente sul corpo posteriore della pompa in modo che scarichi direttamente in aspirazione alla stessa senza rendere necessario il tubo verso serbatoio. La valvola protegge la pompa da sovrappressioni dovute ad azionamenti errati o a impianti lasciati involontariamente con valvole chiuse o con tubi innesto rapidi non collegati. Il fissaggio della valvola sulla pompa è simmetrico, quindi è possibile ruotarla di 180° in modo da evitare possibili interferenze sul veicolo.**

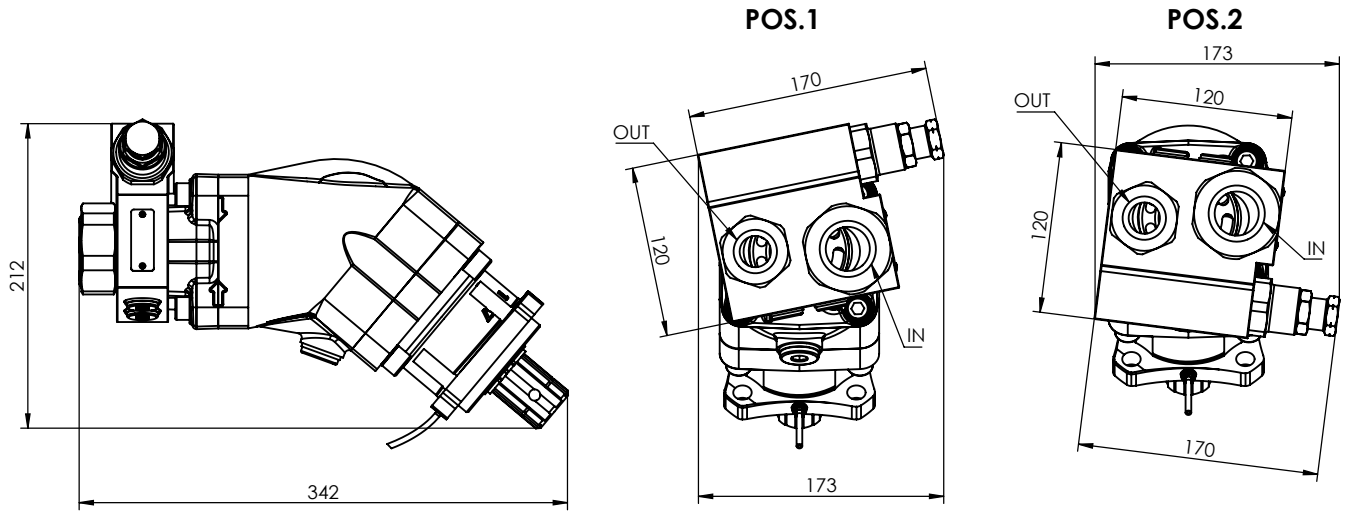
*This valve can be **directly** fitted on the rear cover of the pump in such a way that **the return flow goes back to tank through the pump itself saving one hose.** The valve protects the pump from peak pressure due to any wrong operations such as closed circuit or coupling not connected. The fitment of the relief valve assembly onto the pump is symmetric, thus it is possible to rotate it by 180° just to avoid any interferences.*

| **Tipo pompa** *Pump type* | **Codice** *Code* | **IN** | **OUT** | **Pressione di taratura** *Setting pressure* | |
|---|---|---|---|---|---|
| | | | | **minima / *min.*** | **massima / *max.*** |
| **HDS 40 - HDS 47 - HDS 55 HDS 64 - MDS 80** | 10820500479 | G 1 1/4″ | G 3/4″ | 45 $^{\pm 5}$ bar | 360 $^{\pm 5}$ bar |
| **HDS 84** | 10820500844 | G 1 1/4″ | G 1″ | | |
| **HDS 108 MDS 130** | 10820501085 | G 1 1/2″ | G 1″ | | |
| **HDT 75 - HDT 84 HDT 96 - HDT 108** | 10820550843 | G 1 1/4″ | G 1″ | | |

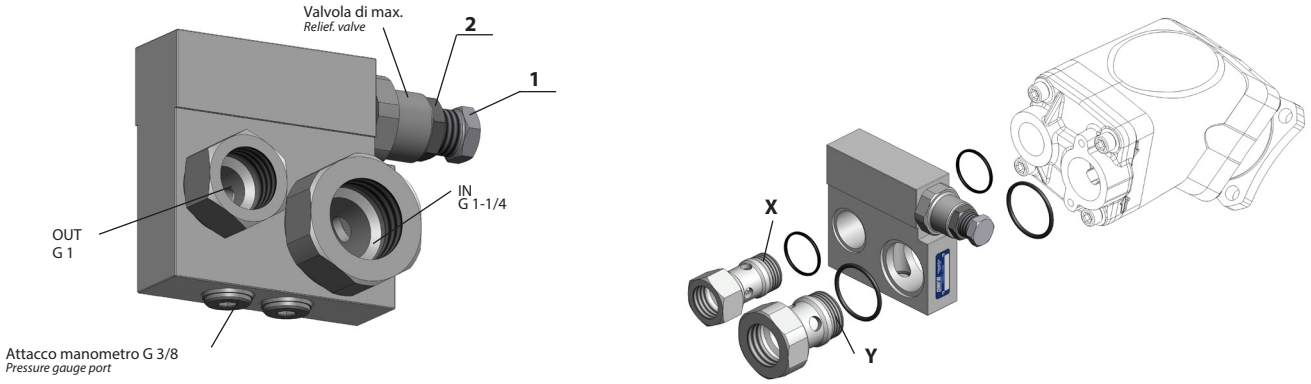
## Ingombro HDS - MDS / *HDS - MDS Dimension*



## Ingombro HDT / *HDT Dimension*




## Istruzioni di montaggio / *Mounting instructions*




1 - Pulire molto bene le superfici della pompa e della valvola che andranno a contatto.
*Clean the pump and by-pass valve surfaces.*
2 - Interporre le guarnizioni (o-ring) fornite a corredo come indicato in figura.
*Place the o-ring included in the kit as shown in the picture.*
3 - Avvitare il particolare X ed il particolare Y (Coppie di serraggio vedi tabella a fianco).
*Screw in X part and Y part (See tightening torque in near table).*
4 - Collegare tubi aspirazione/mandata.
*Connect pressure/suction pipe.*

| COPPIE DI SERRAGGIO *TIGHTTENING TORQUE* | |
|---|---|
| G 1/2 | 80Nm |
| G 3/4 | 140Nm |
| G 1 | 170Nm |
| G 1 1/4 | 200Nm |
| G 1 1/2" | 250Nm |

## Taratura valvola di massima / *Relief valve setting*

### ATTENZIONE / WARNING

La valvola è tarata a **250 bar** . Se necessari valori diversi, agire come segue:

*The relief valve is set at* **250 bar** . If necessary please set a new value as follows:

A ) Svitare il part. **2** avendo cura di mantenere in posizione il part. **1.**
*Unscrew the part.* **2** *carefully keeping the part.* **1** *tight.*

B ) **REGOLAZIONE / *SETTING:***
**Avvitando** il particolare **1** la pressione aumenta.
**Svitando** la pressione diminuisce.
*The pressure increases while* ***Screwing*** *the part.* **1**.
*The pressure decreases while* ***Unscrewing***.
Controllare la pressione con un manometro.
*Check the pressure setting with a pressure gauge.*

C ) Riavvitare il part. **2** mantenendo in posizione il part. **1.**
*Lock the part.* **2** *paying attention to keep into position the part* **1.**

## "GOLD" 45°
*45° "GOLD"*



| FILETTO THREAD ISO 228 | D (Internal pipe diameter) mm | D inch | DE (External pipe diameter) Min mm | DE Max mm | CH mm | V mm | CODICE CODE | PESO WEIGHT kg |
|---|---|---|---|---|---|---|---|---|
| G 1 | 38 | 1"1/2 | 48 | 51 | 41 | 111 | **15509000460** | 0,6270 |
| | 40 | | 48 | 51 | | 112,5 | **15509000488** | 0,6610 |
| | | | 52 | 55 | | | **15509000479** | 0,7100 |
| G 1 1/4 | 38 | 1"1\2 | 48 | 51 | 50 | 104 | **15509000490** | 0,6570 |
| | 40 | | 48 | 51 | | | **15509000493** | 0,7010 |
| | | | 52 | 55 | | | **15509000494** | 0,7370 |
| | 50 | 2" | 60 | 63 | | 114 | **15509000497** | 0,7960 |
| | | | 64 | 67 | | | **15509000504** | 0,8030 |
| | 60 | | 68 | 73 | | 128 | **15509000522** | 0,9750 |
| | 63 | 2"1/2 | 74 | 79 | | 130 | **15509000531** | 1,0600 |
| G 1 1/2 | 50 | 2" | 60 | 63 | 55 | 108 | **15509000540** | 0,7940 |
| | | | 64 | 67 | | | **15509000559** | 0,8260 |
| | 60 | | 68 | 73 | | 128 | **15509000611** | 1,0110 |
| | 63 | 2"1/2 | 74 | 79 | | 130 | **15509000620** | 1,0900 |

## "GOLD" 90°
*90° "GOLD"*



| FILETTO THREAD ISO 228 | D (Internal pipe diameter) mm | D inch | DE (External pipe diameter) Min mm | DE Max mm | CH mm | V mm | CODICE CODE | PESO WEIGHT kg |
|---|---|---|---|---|---|---|---|---|
| G 1/2 | 40 | | 48 | 51 | 28 | 48 | **15510000083** | 0,5750 |
| | | | 52 | 55 | | | **15510000092** | |
| | 25 | 1" | 32 | 35 | | 40 | **15510000118** | 0,2740 |
| | | | 36 | 39 | | | **15510000127** | 0,2660 |
| | 32 | 1"1/4 | 40 | 43 | | | **15510000145** | 0,3740 |
| | | | 44 | 47 | | | **15510000154** | 0,3790 |
| G 3/4 | 19 | 3/4" | 29 | 31 | 34 | 45 | **15510000172** | 0,3450 |
| | 25 | 1" | 32 | 35 | | | **15510000181** | 0,3550 |
| | | | 36 | 39 | | | **15510000190** | 0,3580 |
| | 32 | 1"1/4 | 40 | 43 | | | **15510000207** | 0,4490 |
| | | | 44 | 47 | | | **15510000216** | 0,4670 |
| | 38 | 1"1/2 | 48 | 51 | | 49 | **15510000252** | 0,5580 |
| | 40 | | | | | | **15510000270** | 0,6040 |
| | | | 52 | 55 | | | **15510000289** | 0,6300 |
| G 1 | 32 | 1"1/4 | 40 | 43 | 41 | 51 | **15510000323** | 0,6320 |
| | | | 44 | 47 | | | **15510000332** | 0,6370 |
| | 38 | 1"1/2 | 48 | 51 | | | **15510000350** | 0,6400 |
| | 40 | | | | | | **15510000378** | 0,6830 |
| | | | 52 | 55 | | 54 | **15510000387** | 0,7210 |
| | 45 | 1" 3/4 | | | | | **15510000396** | 0,8070 |
| | | | 56 | 59 | | | **15510000403** | 0,7960 |
| | 50 | 2" | 60 | 63 | | | **15510000412** | 0,9550 |
| | | | 64 | 67 | | | **15510000421** | 0,9770 |
| | 60 | | 68 | 73 | | 67 | **15510000430** | 1,2350 |
| G 1 1/4 | 38 | 1"1/2 | 48 | 51 | 50 | 54 | **15510000458** | 0,7350 |
| | 40 | | | | | | **15510000467** | 0,7750 |
| | | | 52 | 55 | | | **15510000476** | 0,8200 |
| | 45 | 1" 3/4 | | | | 60 | **15510000485** | 0,9390 |
| | | | 56 | 59 | | | **15510000494** | 0,9160 |
| | 50 | 2" | 60 | 63 | | | **15510000501** | 0,8710 |
| | | | 64 | 67 | | | **15510000510** | 0,8770 |
| | 60 | | 68 | 73 | | 63 | **15510000529** | 1,1640 |
| | 63 | 2"1/2 | 74 | 79 | | 65 | **15510000538** | 1,2300 |
| G 1 1/2 | 45 | 1" 3/4 | 52 | 55 | 55 | 60 | **15510000547** | 1,0690 |
| | | | 56 | 59 | | | **15510000556** | 1,0570 |
| | 50 | 2" | 60 | 63 | | | **15510000592** | 0,9900 |
| | | | 64 | 67 | | | **15510000609** | 0,9906 |
| | 60 | | 68 | 73 | | 63 | **15510000654** | 1,0680 |
| | 63 | 2"1/2 | 74 | 79 | | 65 | **15510000663** | 1,1820 |

| | | FILETTO *THREAD* ISO 228 | Diametro interno tubo *Internal pipe diameter* mm | Diametro esterno tubo *External pipe diameter* MIN | MAX | CH mm | CODICE *CODE* |
|---|---|---|---|---|---|---|---|
| ASPIRAZIONE / *SUCTION* | **"GOLD" 90° FILETTO FILETTO 90° "GOLD" ON BOYH SIDES**  | G 3/4 x G 3/4 | | | | 34 | **15511000107** |
| | | G 1 x G 1 | | | | 41 | **15511000125** |
| | | G 1 1/4 x G 1 1/4 | | | | 50 | **15511000143** |
| | | G 1 1/2 x G 1 1/2 | | | | 55 | **15511000161** |
| | | G 1 1/2 x G 1 1/4 | | | | 50<br>55 | **15511000303** |

| | | FILETTO *THREAD* ISO 228 | Diametro interno tubo *Internal pipe diameter* mm | CH mm | CODICE *CODE* |
|---|---|---|---|---|---|
| MANDATA *DELIVERY* | **RACCORDO AD ALTA PRESSIONE 90°** ***HIGH PRESSURE FITTING 90°***  | G 1/2 x 1/2 | | 27 | **15520000126** |
| | | G 3/4 x 3/4 | | 32 | **15520000340** |
| | | G 3/4 x 1 | | 32-38 | **15520034100** |
| | | G 1 x 1 | | 38 | **15520001009** |
| | | G 1 x 3/4 | | 38-32 | **15520010348** |
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