



# HANSA-TMP

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THE PRODUCTION LINE OF HANSA-TMP

## Fixed Displacement Bent Axis Axial Piston Pumps

### TPB 70 - TAP 70





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## TPB 70 012-130 ISO



**TPB 70 012-130 ISO is a series of piston pumps with a fixed displacement for mobile and stationary hydraulics.**

TPB 70 012-130 ISO covers the entire displacement range 12-130 cm<sup>3</sup>/rev. at a maximum pressure of 400 bar. The pump's well dimensioned, double tapered roller bearings permit high shaft loads and lead to excellent speed characteristics. The pump is drained externally. It is speed-optimised and therefore supplied for either left (L) or right (R) rotation direction.

### Other advantages:

- High maximum speed while maintaining low noise levels
- Smooth operation over the entire speed range
- Long life due to high demands on material selection, such as bearings, seals, etc.

Pump • • • • • 012-130 ISO		012	017	025	034	040	047	056	064	084	090	108	130	
Nominal oil flow at pump speed	rpm	500	6.3	8.5	12.7	17.1	20.6	23.5	28.0	31.8	41.5	45.4	54.0	65.0
		1000	12.6	17.0	25.4	34.2	41.2	47.1	56.0	63.6	83.6	90.7	108.0	130.0
		1500	18.9	25.5	38.1	51.3	61.8	70.6	84.0	95.4	125.4	136.1	162.0	195.0
Displacement	cm <sup>3</sup> /rev	12.6	17.0	25.4	34.2	41.2	47.1	56.0	63.6	83.6	90.7	108.0	130.0	
Max working pressure	bar	400	400	400	400	400	400	400	400	400	400	400	350	
Max pump speed	n <sub>max</sub> (1)	rpm	3300	3200	2550	2250	2200	2100	2050	1700	1700	1700	1600	
	n <sub>max limit</sub> (2)		6000	5700	4700	4550	4300	4300	3750	3700	3350	3000	2900	
Max power	kW	25	35	40	50	55	65	75	85	90	95	120	120	
Weight	kg	7.5	7.5	8.5	8.5	15.5	15.5	15.5	15.5	27.0	27.0	29.5	29.5	
Mass moment of inertia (x 10 <sup>3</sup> )	kg m <sup>2</sup>	0.9	0.9	1.1	1.1	2.6	2.6	2.6	2.6	7.4	7.4	7.4	7.4	
Direction of rotation	Left (L) or Right (R)													

(1) The values shown are valid for an absolute pressure of 1 bar at the suction inlet.

(2) By increase of the input pressure the rotational speeds can be increased to the max. admissible speed, n max limit.

## Ordering code

Example

TPB 70	012	L	N	I41	W25	Z1	G	3	00
1	2	3	4	5	6	7	8	9	10

### 1. Type

TPB 70	Compact, bent-axis design pump
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### 2. Displacement

012	017	025	034	040	047	056	064	084	090	108	130
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

### 3. Direction of rotation

L	Left
R	Right

### 4. Sealing

N	Nitrile
H	High pressure, nitrile
V	Viton

### 5. Mounting flange

ISO 3019-2	012	017	025	034	040	047	056	064	084	090	108	130
I41 ISO 4-h Ø80	X	X	-	-	-	-	-	-	-	-	-	-
I42 ISO 4-h Ø100	O	O	X	X	-	-	-	-	-	-	-	-
I43 ISO 4-h Ø125	-	-	-	-	X	X	X	X	-	-	-	-
I44 ISO 4-h Ø140	-	-	-	-	-	-	-	-	X	X	O	O
I45 ISO 4-h Ø160	-	-	-	-	-	-	-	-	O	O	X	X

### 6. Shaft

	012	017	025	034	040	047	056	064	084	090	108	130
Spline DIN 5480												
W20	W20x1.25x14x9g	X	X	-	-	-	-	-	-	-	-	-
W25	W25x1.25x18x9g	X	X	X	O	-	-	-	-	-	-	-
W30	W30x2x14x9g	-	-	X	X	X	X	X	O	-	-	-
W32	W32x2x14x9g	-	-	-	-	X	X	X	O	-	-	-
W35	W35x2x16x9g	-	-	-	-	X	X	X	X	X	-	-
W40	W40x2x18x9g	-	-	-	-	-	-	-	-	X	X	X
W45	W45x2x21x9g	-	-	-	-	-	-	-	-	O	O	X
Key DIN 6885												
K20	Ø 20 k6	X	X	-	-	-	-	-	-	-	-	-
K25	Ø 25 k6	X	X	X	O	-	-	-	-	-	-	-
K30	Ø 30 k6	O	O	X	X	X	X	X	O	-	-	-
K35	Ø 35 k6	-	-	-	-	X	X	X	X	-	-	-
K40	Ø 40 k6	-	-	-	-	-	-	-	-	X	X	O
K45	Ø 45 k6	-	-	-	-	-	-	-	-	O	O	X

X = Standard, preferred  
O = Contact our Tech. Dept.

### 7. Connection cover

		012	017	025	034	040	047	056	064	084	090	108	130
Z1	Suction rear, pressure at side	X	X	X	X	X	X	X	X	X	X	X	X

### 8. Connections

		012	017	025	034	040	047	056	064	084	090	108	130
G	ISO G*	X	X	-	-	-	-	-	-	-	-	-	-
M	Metric **	-	-	X	X	X	X	X	X	X	X	X	X

\* Only threaded connections  
\*\* Only flanged connections

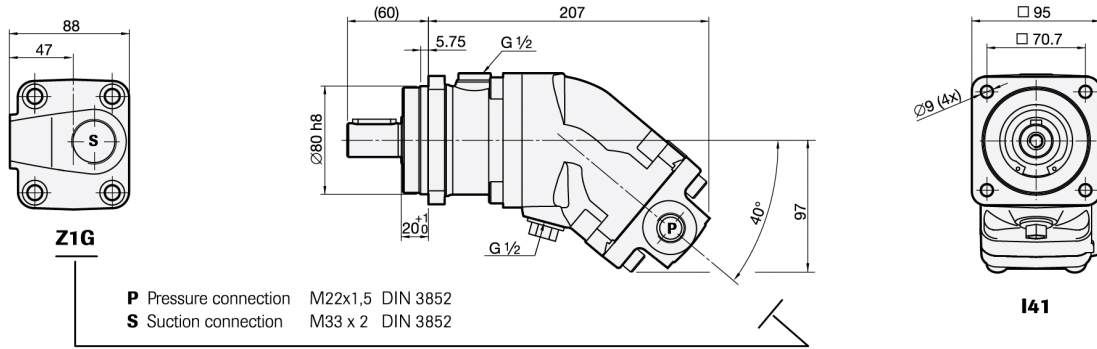
### 9. Additional

3	External drainage + optimized
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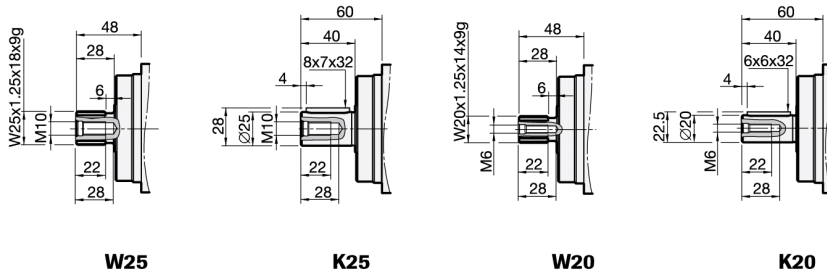
### 10. Accessories

00	No accessories available
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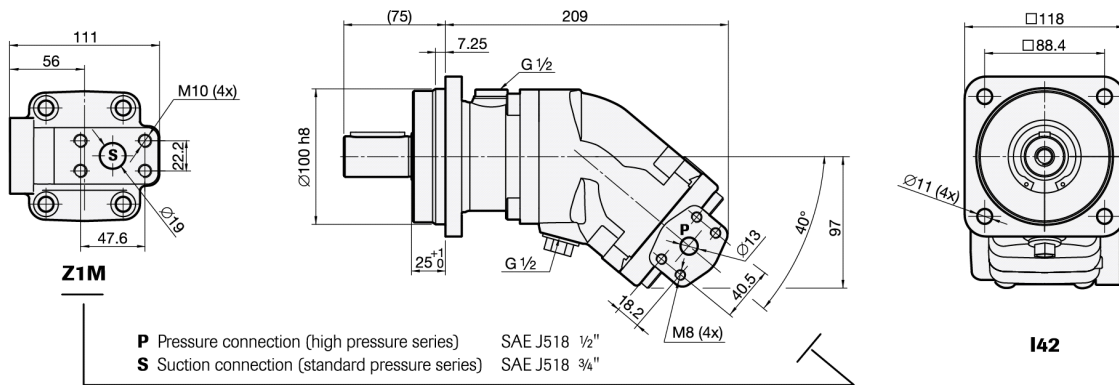
**Dimensions TPB 70 (012 - 017) ISO**



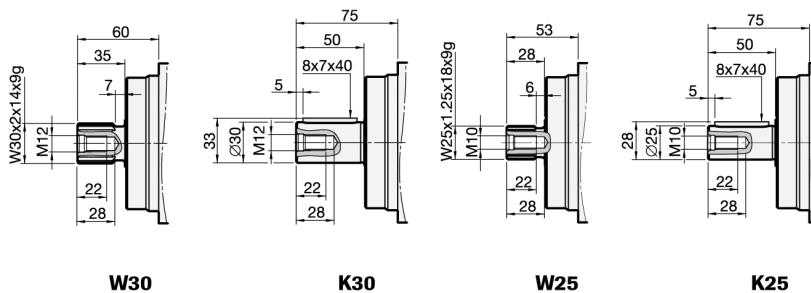
Right-hand design **R**. Left-hand design **L** has pressure outlets on the opposite side



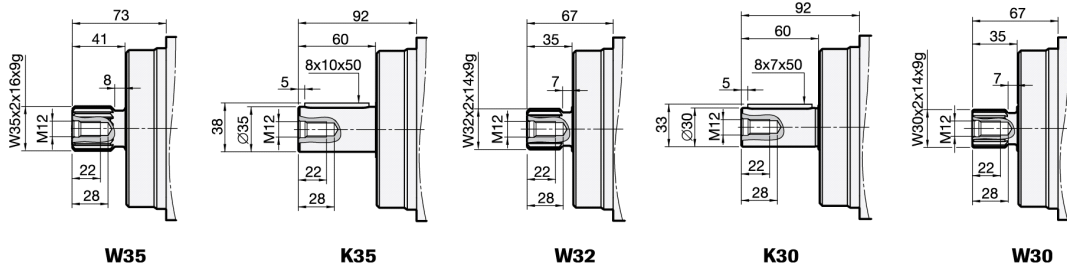
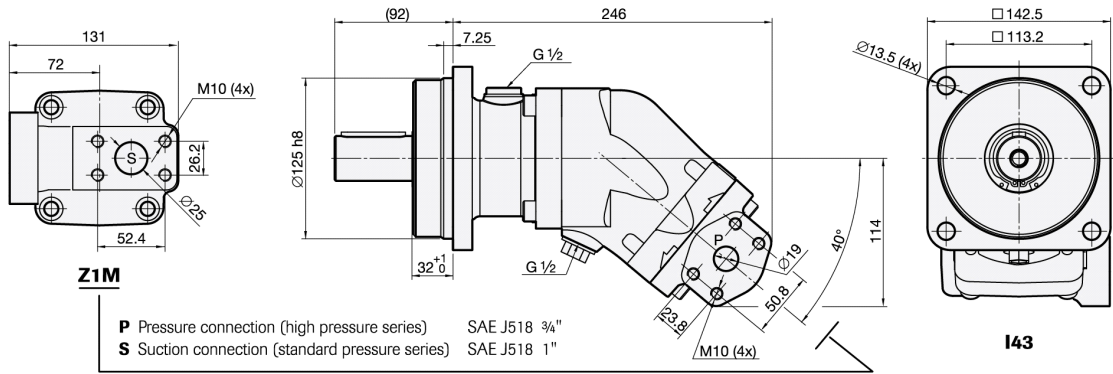
**Dimensions TPB 70 (025 - 034) ISO**



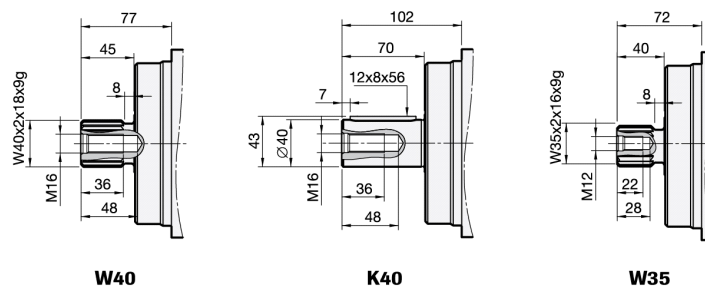
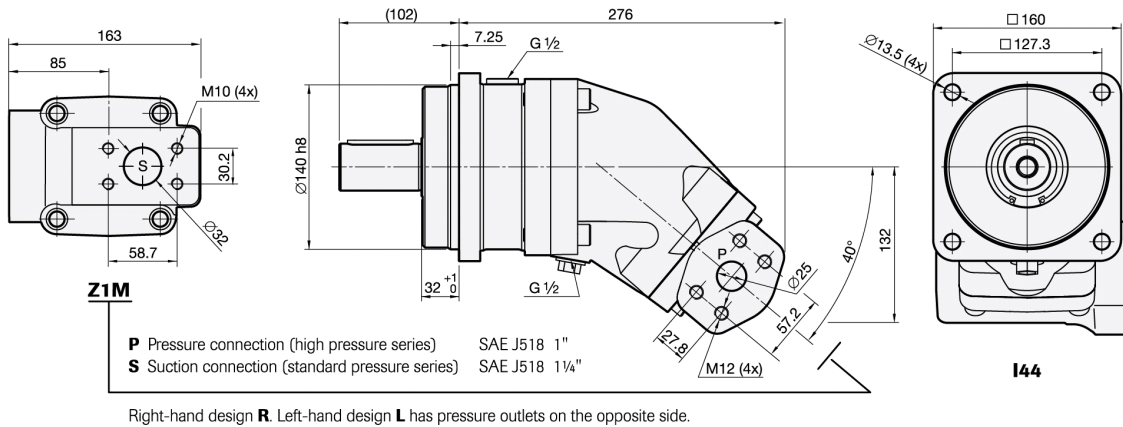
Right-hand design **R**. Left-hand design **L** has pressure outlets on the opposite side.



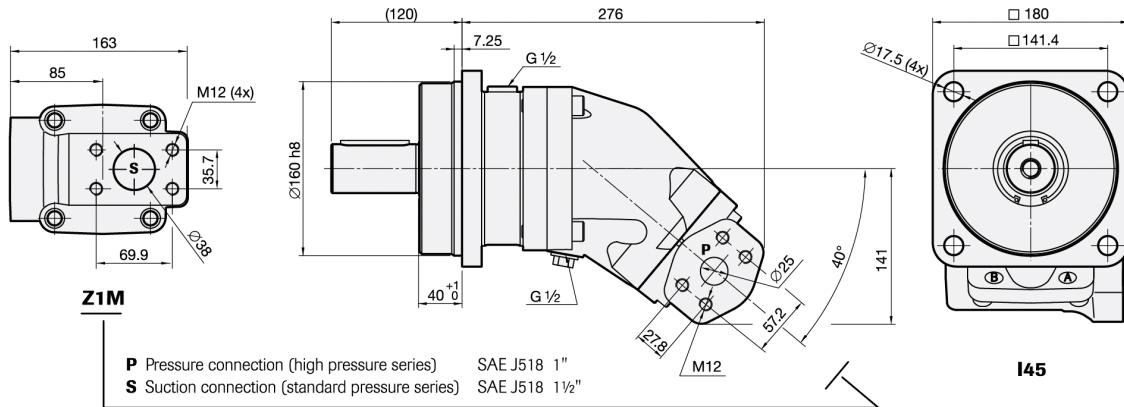
**Dimensions TBB 70 (040 - 064) ISO**



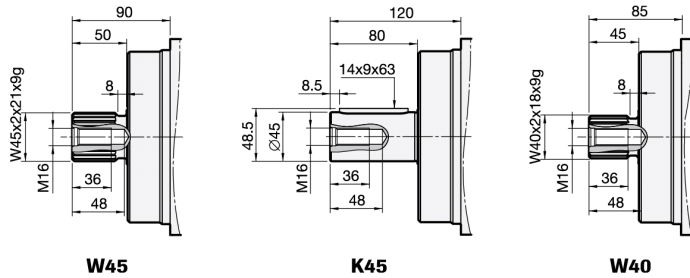
**Dimensions TPB 70 (084 - 090) ISO**



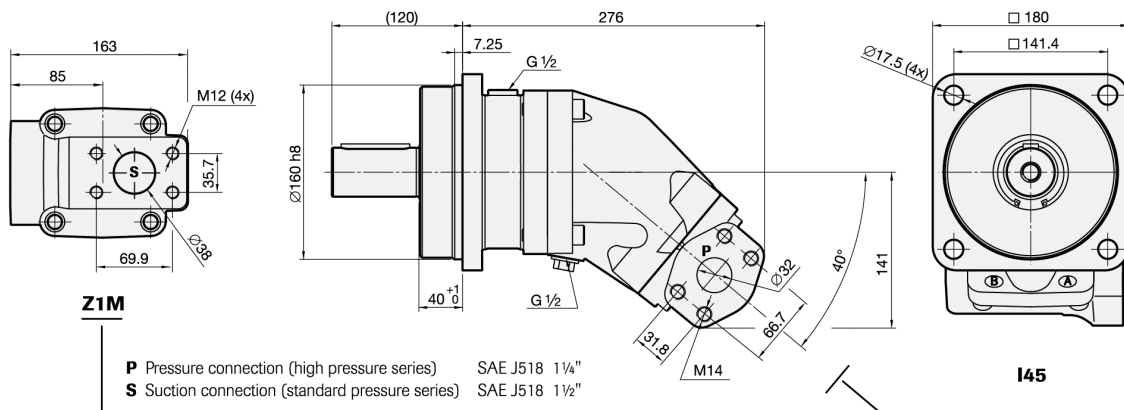
**Dimensions TPB 70 (108) ISO**



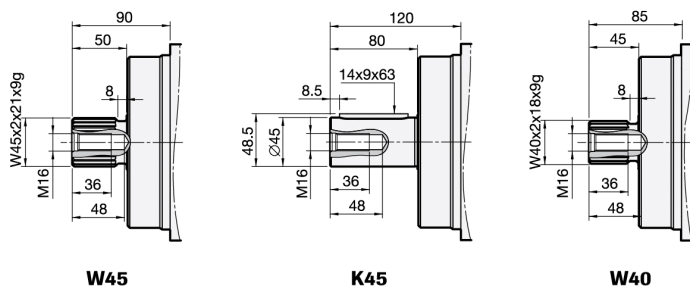
Right-hand design **R**. Left-hand design **L** has pressure outlets on the opposite side.



**Dimensions TPB 70 (130) ISO**



Right-hand design **R**. Left-hand design **L** has pressure outlets on the opposite side.





## General instructions

### Choice of shaft seal

Pump TPB 70 ISO	Code	Temp. °C	Max. housing pressure MPa at rpm					
			500	1000	1500	2000	2500	3000
012-034	N	75	1.09	0.55	0.36	0.27	0.22	0.18
	H	75	4.91	2.46	1.64	1.23	0.98	0.82
	V	90	1.09	0.55	0.36	0.27	0.22	0.18
040-064	N	75	1.09	0.55	0.36	0.27	0.22	0.18
	H	75	4.91	2.46	1.64	1.23	0.98	0.82
	V	90	1.09	0.55	0.36	0.27	0.22	0.18
084-130	N	75	0.76	0.38	0.25	0.19	0.15	0.13
	H	75	3.44	1.72	1.15	0.86	0.69	0.57
	V	90	0.76	0.38	0.25	0.19	0.15	0.13

Code according to page 5, ordering code.

Factors affecting the choice of shaft seal include the hydraulic pump housing pressure and the drainage oil temperature.

The drainage oil should have a maximum temperature of 75 °C with a Nitrile shaft seal and 90 °C with a Viton shaft seal.

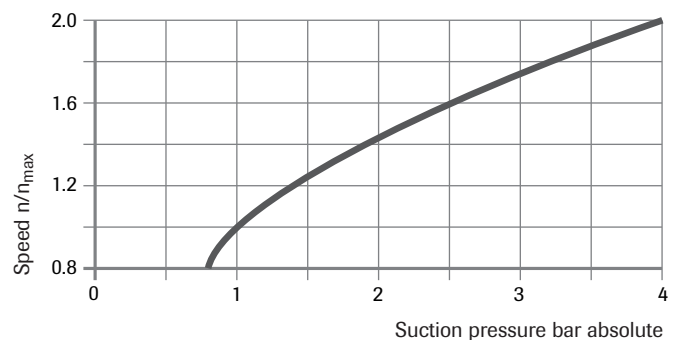
These temperatures must not be exceeded.

The housing pressure must be equal to or greater than the external pressure on the shaft seal.

### Minimum inlet pressure at suction port with increased speed

Operating above the max. pump speed  $n_{max}$  requires increased inlet pressure.

Note that the max. permissible speed  $n_{max}$  limit must not be exceeded.



### Filtering

Cleanliness according to ISO norm 4406, code 16/13.

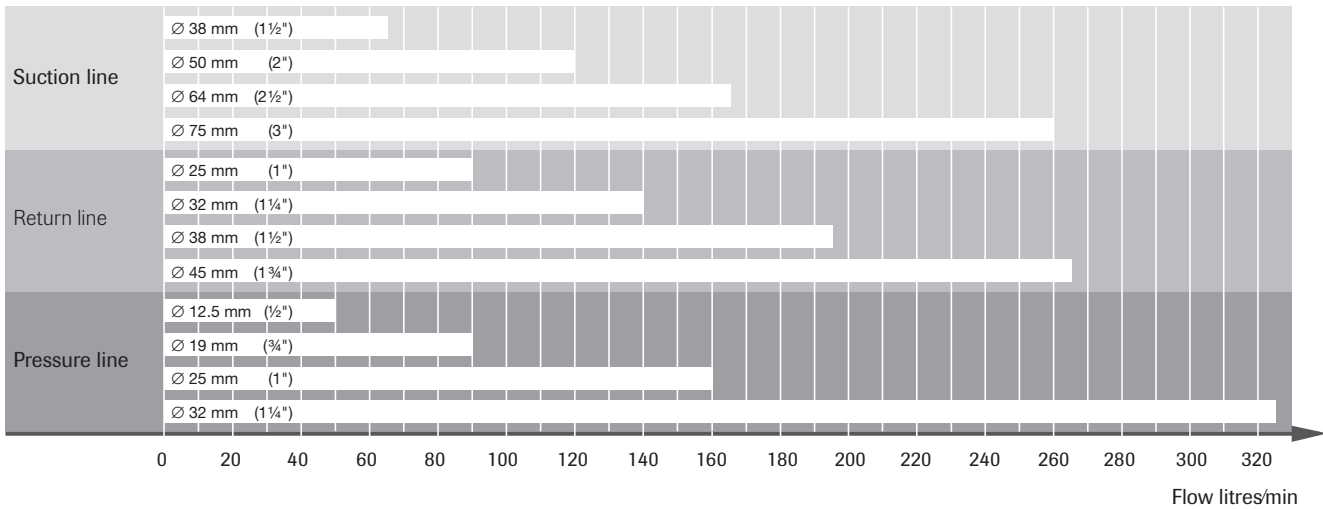
### Hydraulic fluids

High performance oils meeting ISO specifications – such as HM, DIN 51524-2 HLP, or better – must be used.

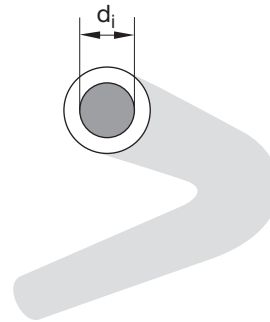
A min. viscosity of 10 cSt is required to keep the lubrication at a safe level.

The ideal viscosity is 20 - 40 cSt.

## Recommended line size ( $d_i$ )

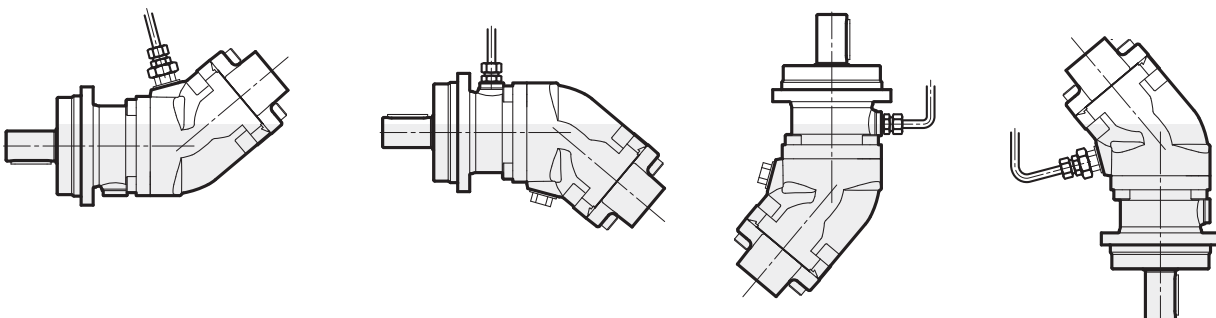


If the suction line is more than 2 m long the internal diameter must be increased by 10 mm for each meter extension.



## Installation

- The pump housing should be filled with oil to at least 50% before starting.
- The drainage line must be at least 1/2" (13 mm) internal diameter and should be connected to topmost drainage outlet.
- The other end of the line should be connected to the oil tank at a point below the oil level.



## TPB 70 012-108 SAE



**TPB 70 012-108 SAE is a series of piston pumps with a fixed displacement for demanding mobile hydraulics.**

Sunfab TPB 70 012-108 SAE pumps are equipped with shafts and flanges according to the SAE-B and SAE-C standard. They are available in the range from 12-108 cm<sup>3</sup>. It is a modern, compact pump which meets the market's high demands on flow performance, pressure, efficiency and small installation dimensions.

The pump is either mounted directly on the power take-off or on a frame bracket via an intermediate shaft. The stop shoulder on the angular housing allows the pump's direction of rotation to be changed without the risk of altering the gear meshing.

### **Other advantages:**

- High maximum speed while maintaining low noise levels
- Smooth operation over the entire speed range
- Long life due to high demands on material selection, such as bearings, seals, etc
- O-rings on all contact surfaces as well as double shaft seals eliminate oil leakage from the pump and power take-off

## Ordering code

Example

TPB 70	-	084	L	-	N	-	SC4	-	C14	-	S0	S	-	0	00
1		2	3		4		5		6		7	8		9	10

1. Type	
TPB 70	Compact pump

2. Displacement										
012	017	025	034	040	047	056	064	084	090	108

3. Direction of rotation	
R	Right
L	Left

4. Sealing	
N	Nitrile

5. Mounting flange		012	017	025	034	040	047	056	064	084	090	108
SB4	SAE B4	X	X	X	X	X	X	X	X	-	-	-
SC4	SAE C4	-	-	-	-	X	X	X	X	X	-	X

6. Shaft		012	017	025	034	040	047	056	064	084	090	108
B13	SAE B 13t	-	-	X	X	X	X	X	X	-	-	-
H13	SAE B 13t	X	X	X	X	X	X	X	X	-	-	-
C14	SAE C 14t	-	-	-	-	X	X	X	X	X	-	X

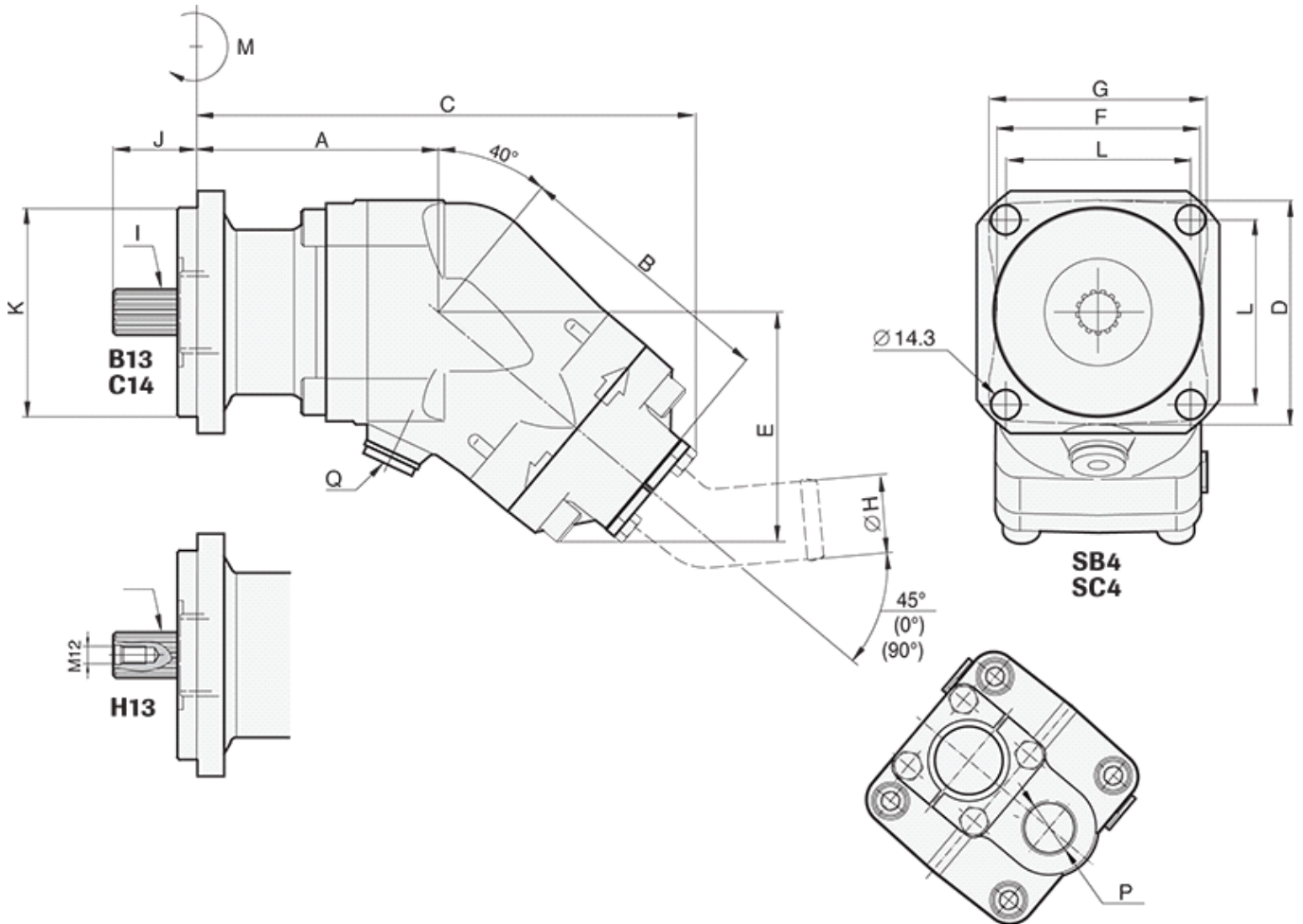
7. Connection cover	
S0	40° Sunfab standard

8. Connections	
S	Sunfab standard

9. Additional	
0	-

10. Accessories	
00	No accessories available

Pump TPB 70 012-108 SAE		012	017	025	034	040	047	056	064	040	047	056	064	084	108		
Theoretical oil flow at pump speed	rpm	500	6.3	8.5	12.7	17.1	20.6	23.5	28.0	31.8	20.6	23.5	28.0	31.8	41.8	54.0	
		1000	12.6	17.0	25.4	34.2	41.2	47.1	56.0	63.6	41.2	47.1	56.0	63.6	83.6	108.0	
		1500	18.9	25.5	38.1	51.3	61.8	70.6	84.0	95.4	61.8	70.6	84.0	95.4	125.4	162.0	
Displacement	cm <sup>3</sup> /rev	12.6	17.0	25.4	34.2	41.2	47.1	56.0	63.6	41.2	47.1	56.0	63.6	83.6	108.0		
Max pump speed continuous limited	rpm	2300	2300	2300	2300	1900	1900	1900	1900	1900	1900	1900	1900	1500	1500		
		3000	3000	3000	3000	2500	2500	2500	2500	2500	2500	2500	2500	2000	2000		
Max working pressure	bar	400	400	400	400	400	400	400	350	400	400	400	400	400	400		
Weight	kg	8.7	8.6	8.9	8.8	12.3	12.3	12.3	12.2	14.3	14.3	14.3	14.1	19.0	19.0		
Dimensions	mm	A	101	101	101	101	117	117	117	117	119	119	119	119	128	128	
		B	117	117	117	117	130	130	130	130	130	130	130	130	147	147	
		C	209	209	209	209	235	235	235	235	237	237	237	237	262	262	
		D	99	99	99	99	109	109	109	109	109	109	109	109	126	126	
		E	97	97	97	97	112	112	112	112	112	112	112	112	126	126	
		F	89	89	89	89	99	99	99	99	99	99	99	99	115	115	
		G	97	97	97	97	106	106	106	106	106	106	106	106	123	123	
		H	38	38	38	38	38	38	38	38	38	38	38	38	50	50	
		I	50	50	50	50	50	50	50	50	50	50	50	50	64	64	
SAE standard	I	SAE B 13T-16/32DP								SAE C 14T-12/24DP							
		J	41	41	41	41	41	41	41	41	56	56	56	56	56	56	
		K	101.6	101.6	101.6	101.6	101.6	101.6	101.6	101.6	101.6	127.0	127.0	127.0	127.0	127.0	127.0
		L	89.8	89.8	89.8	89.8	89.8	89.8	89.8	89.8	89.8	114.5	114.5	114.5	114.5	114.5	114.5
		ISO G	P	34	34	34	34	34	34	34	34	34	34	34	34	1	1
		ISO G	Q	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
		Tare-weight torque (M)	Nm	6.9	6.9	7.4	7.4	13	13	13	13	13	13	13	13	21	21
Direction of rotation	Left (L) or Right (R)																



## TAP 70 012-108 DIN



**TAP 70 012-108 DIN is a series of light weight casing piston pumps with a fixed displacement for demanding mobile hydraulics.**

TAP 70 012-108 DIN covers the displacement range 12-108 cm<sup>3</sup>/rev. at a maximum pressure of 400 bar. It is a modern, compact pump which meets the market's high demands on flow performance, pressure, efficiency and small installation dimensions. The pump is either mounted directly on the power take-off or on a frame bracket via an intermediate shaft.

### **Other advantages:**

- Light weight metal casing design
- Smooth operation over the entire speed range
- Long life due to high demands on material selection, such as bearings, seals, etc
- Corrosion free light metal-housing
- Less heat generation due to better ability to dissipate heat through housing

## Ordering code

Example

TAP 70	-	084	L	-	N	-	DL4	-	L35	-	S0	S	-	0	00
1		2	3		4		5		6		7	8		9	10

Line

TAP 70	Aluminium pump
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7. Connection cover

S0	40° standard
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2. Displacement

012	017	025	034	040	047	056	064	084	108
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

8. Connections

S	Standard
---	----------

3. Direction of rotation

R	Right
L	Left

9. Additional

0	-
---	---

4. Sealing

N	Nitrile
V	HNBR *

10. Accessories

00	No accessories available
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\* Only available for 040-108

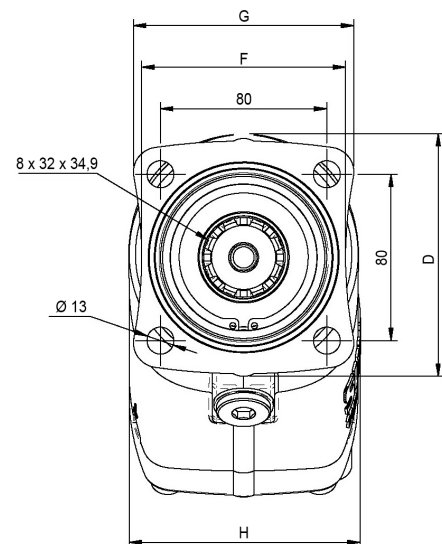
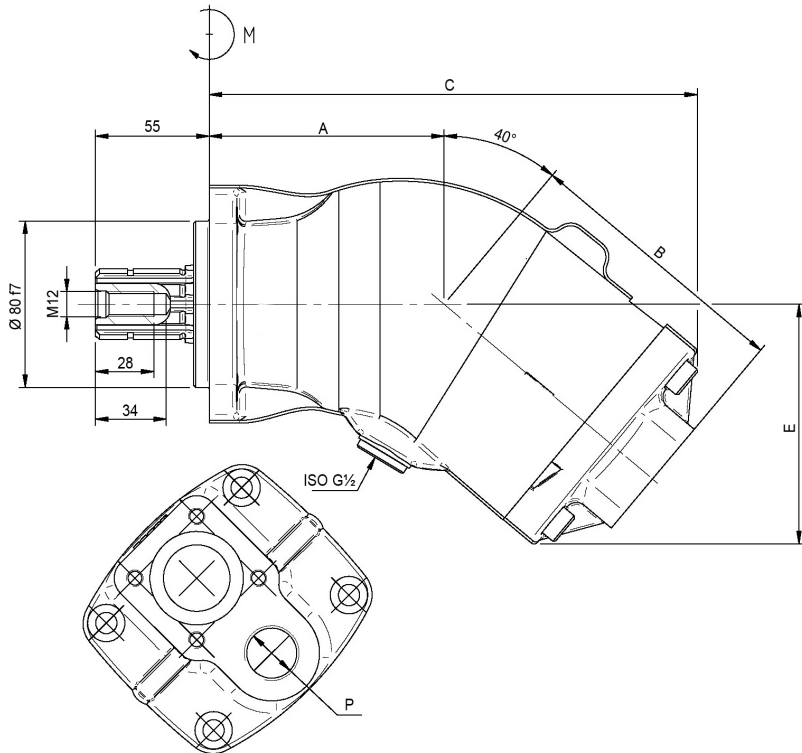
5. Mounting flange

DL4	DIN 4-h (ISO 7653D)
-----	---------------------

6. Shaft

L35	DIN 5462 / ISO 14
-----	-------------------

Pump TAP 70 012-108 DIN			012	017	025	034	040	047	056	064	084	108	
Theoretical oil flow $l/min$ at pump speed	rpm	500	6.3	8.5	12.7	17.1	20.6	23.5	28.0	31.8	41.5	54.0	
		1000	12.6	17.0	25.4	34.2	41.2	47.1	56.0	63.6	83.6	108.0	
		1500	18.9	25.5	38.1	51.3	61.8	70.6	84.0	95.4	125.4	162.0	
Displacement	$cm^3/rev$		12.6	17.0	25.4	34.2	41.2	47.1	56.0	63.6	83.6	108.0	
Max pump speed continuous limited	rpm	2300	2300	2300	2300	1900	1900	1900	1900	1900	1600	1600	
		3000	3000	3000	3000	2500	2500	2500	2500	2500	2100	2100	
Max working pressure	bar		400	400	400	400	400	400	400	400	400	400	
Weight	kg		6.9	6.9	7.1	7.1	9.8	9.8	9.8	9.8	13.9	13.9	
Dimensions	mm	A	97	97	97	97	113	113	113	113	122	122	
		B	116	116	116	116	131	131	131	131	147	147	
		C	206	206	206	206	235	235	235	235	264	264	
		D	115	115	115	115	118	118	118	118	127	127	
		E	102	102	102	102	115	115	115	115	133	133	
		F	98	98	98	98	98	98	98	98	98	98	
		G	106	106	106	106	106	106	106	106	106	106	
		H	97	97	97	97	111	111	111	111	111	118	118
		ISO G	P	34	34	34	34	34	34	34	34	1	1
Tare-weight torque (M)	Nm		6.0	6.0	6.5	6.5	11.5	11.5	11.5	11.5	18.0	18.0	
Direction of rotation			Left (L) or Right (R)										



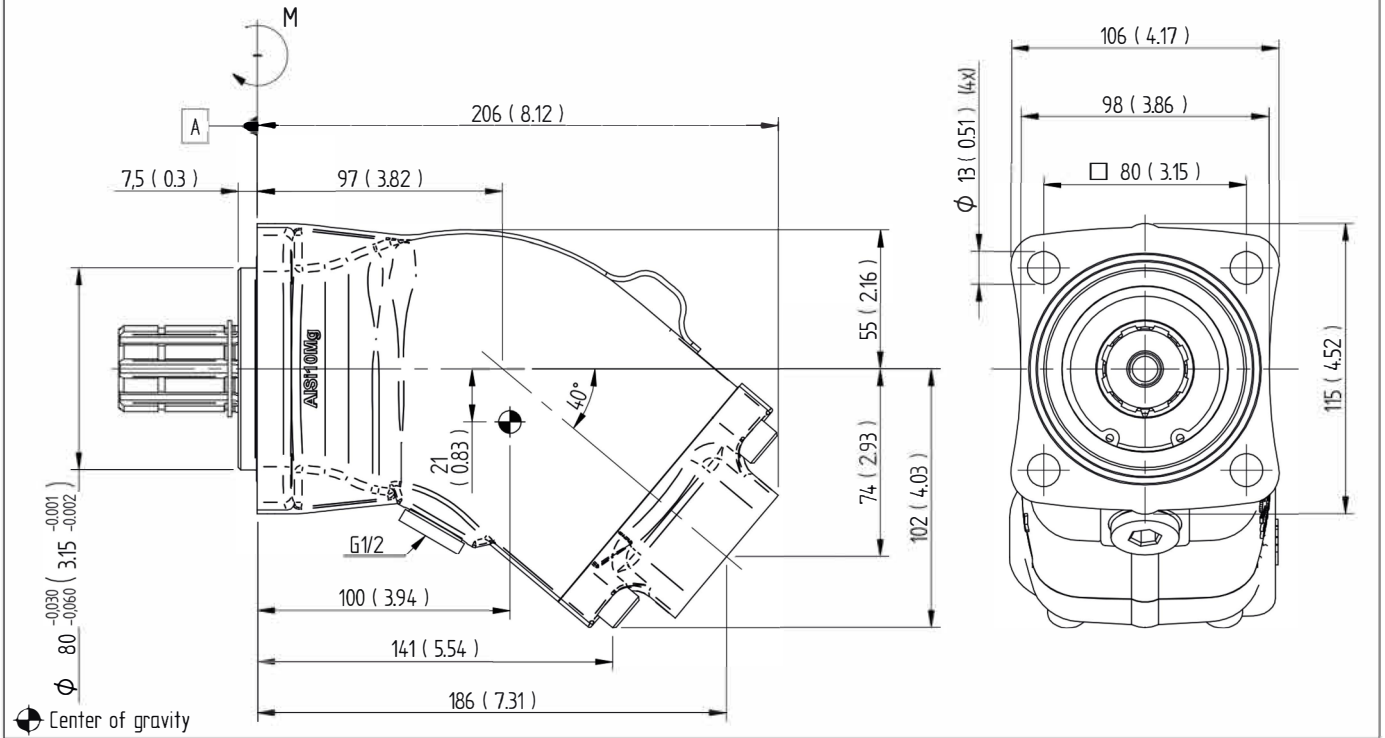
Spline shaft:  
DIN 5462 / ISO 14  
Mounting flange:  
ISO 7653-D



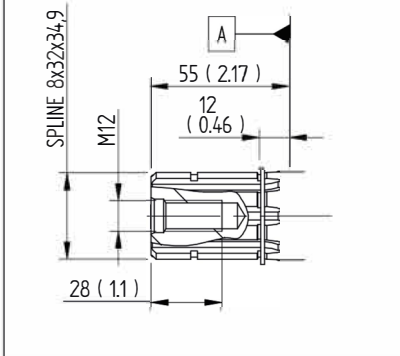
**Dimensions TAP 70 012-034**

Millimeter (inch)

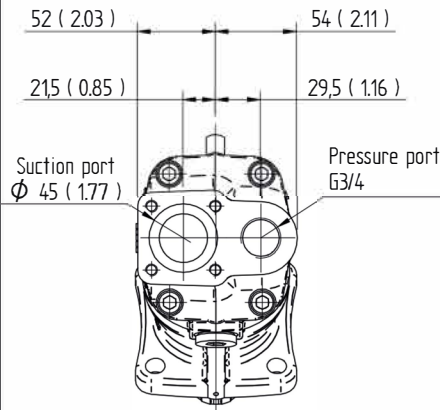
**DL4 ISO 7653-D**



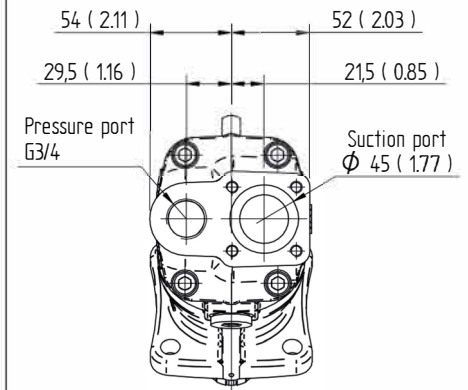
**L35 DIN 5462 / ISO 14**



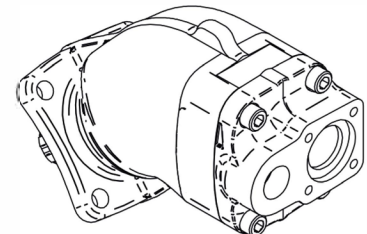
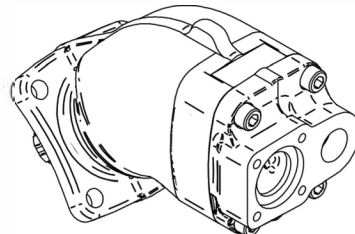
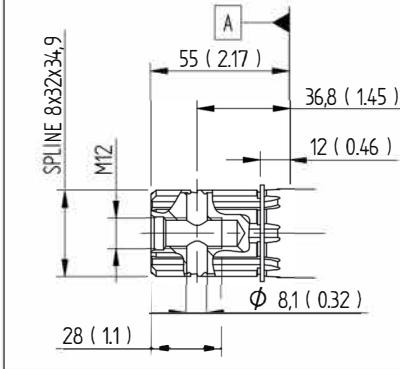
**S0S Left rotation (L)**



**S0S Right rotation (R)**

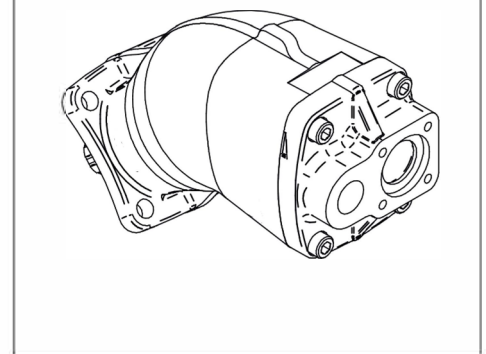
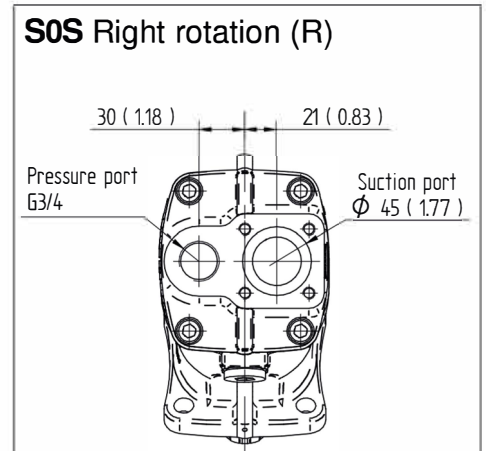
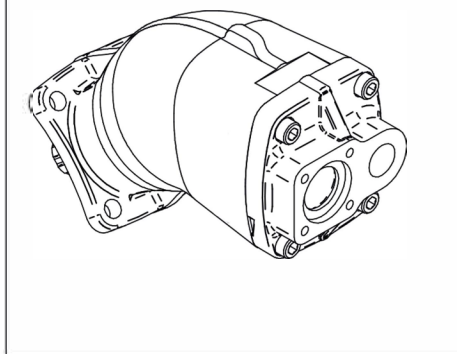
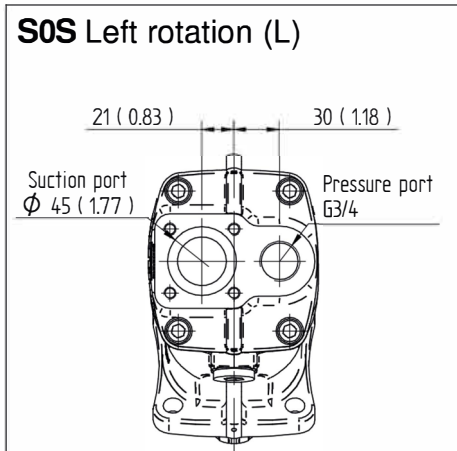
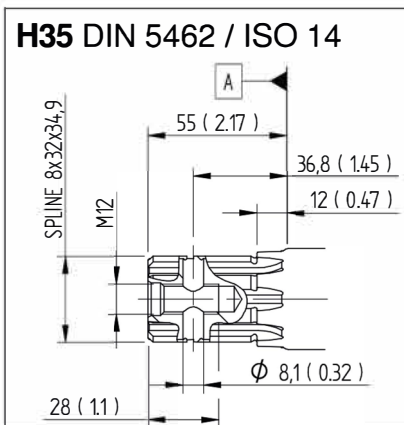
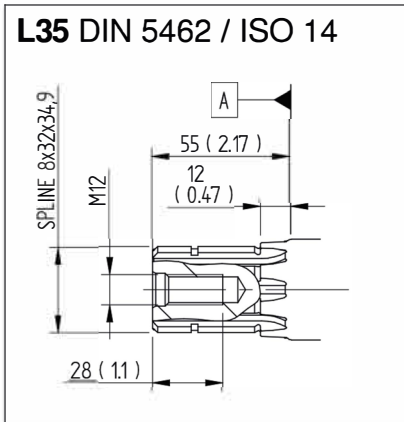
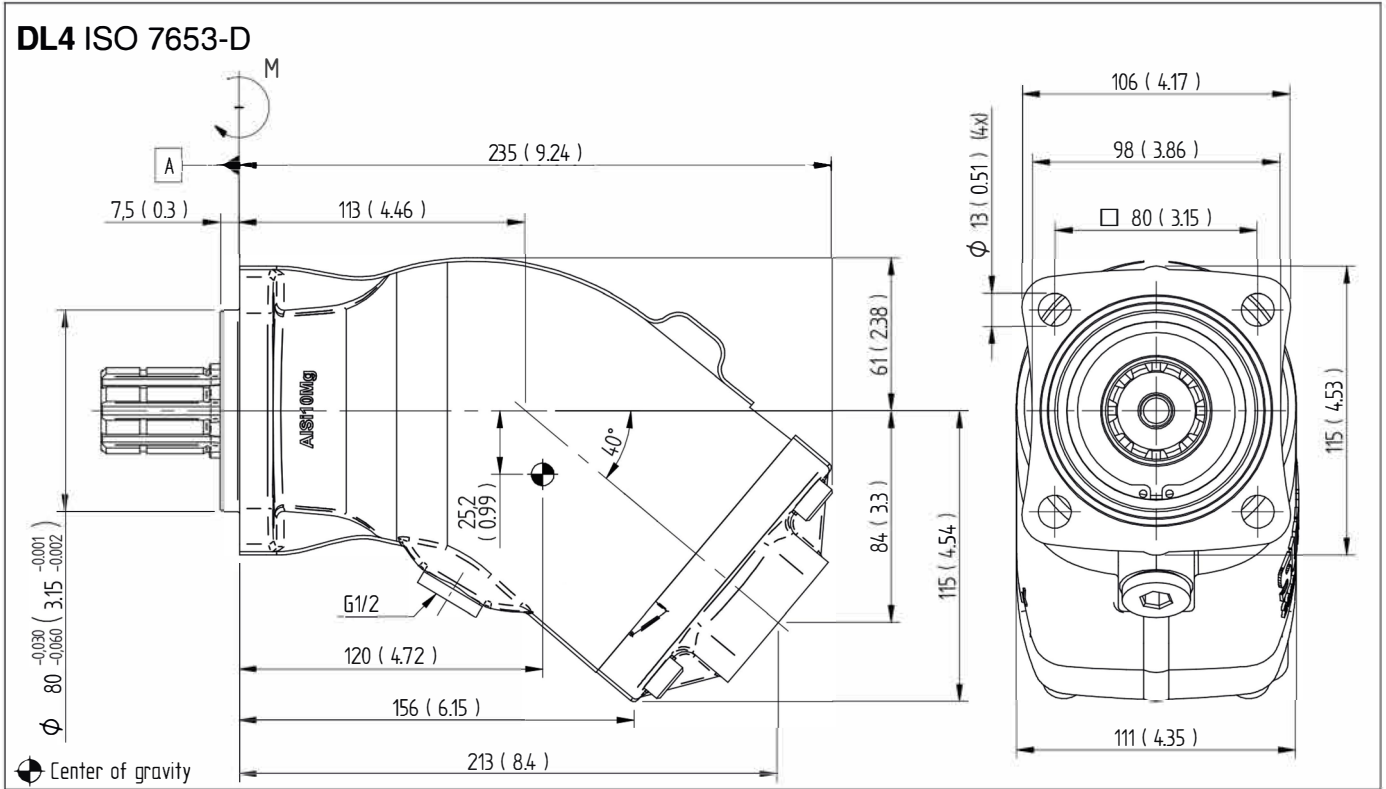


**H35 DIN 5462 / ISO 14**



**Dimensions SAP 084-108**

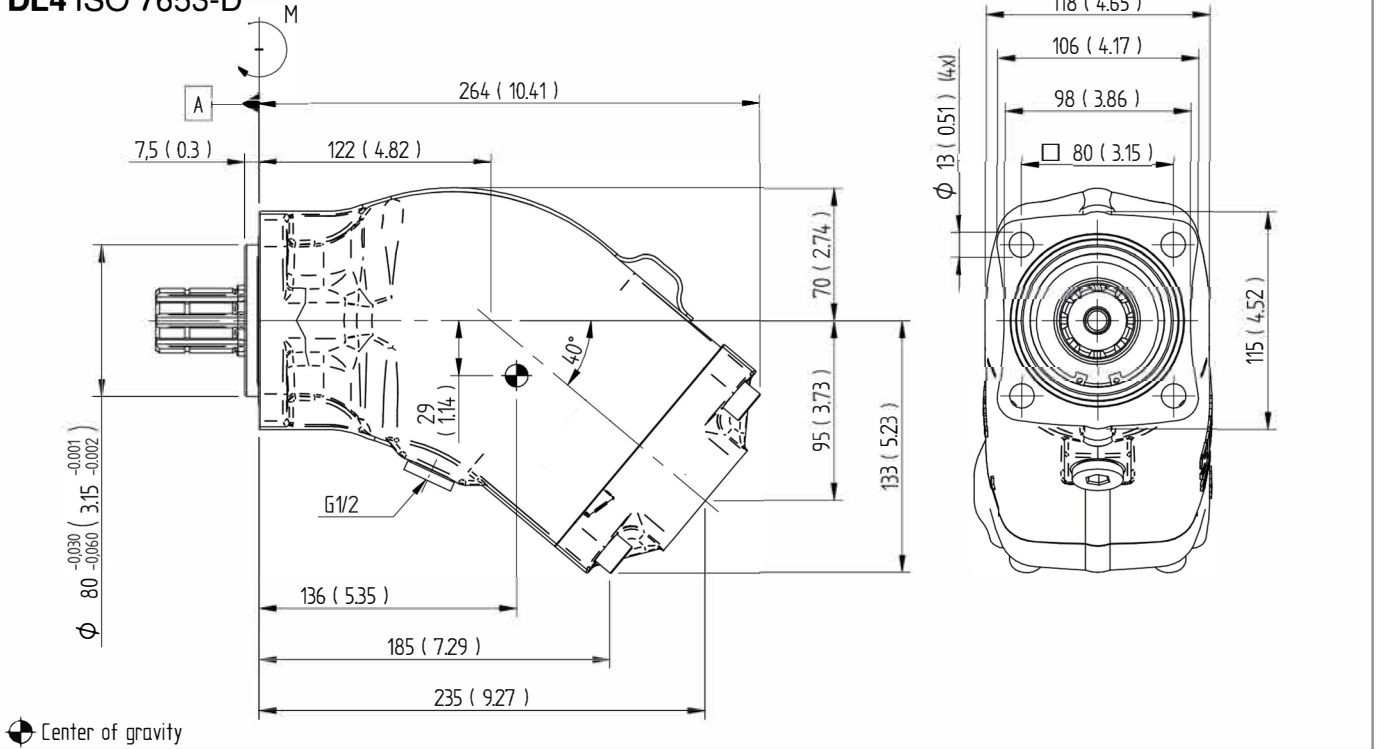
Millimeter (inch)



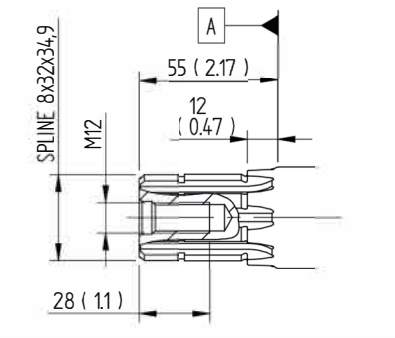
**Dimensions TAP 70 084-108**

Millimeter (inch)

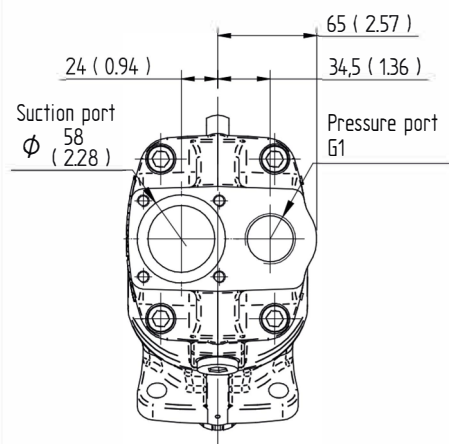
**DL4 ISO 7653-D**



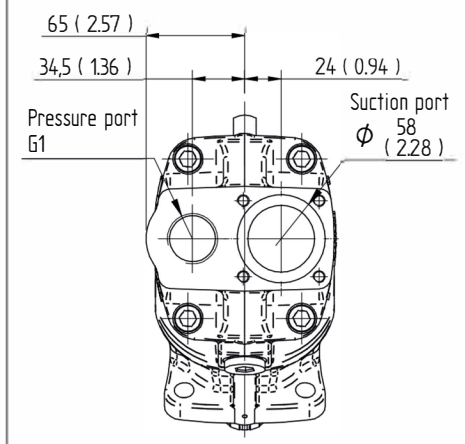
**L35 DIN 5462 / ISO 14**



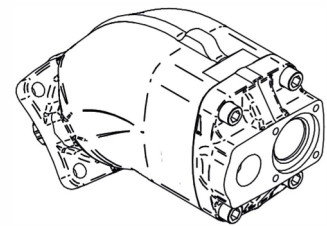
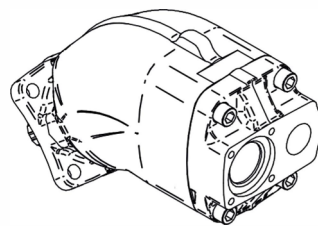
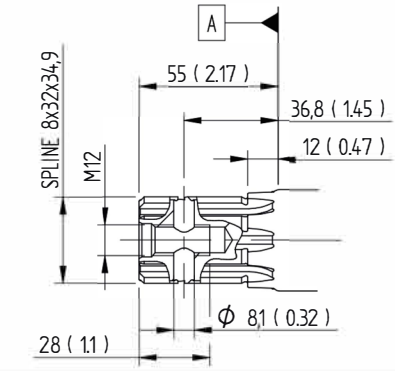
**S0S Left rotation (L)**



**S0S Right rotation (R)**



**H35 DIN 5462 / ISO 14**



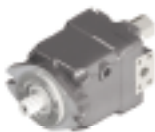


## PUMPS



### Closed Loop Axial Piston Pumps (Variable Displacement) - 6-110 cc

Model	Displacement cm <sup>3</sup> /n.	Rated Pressure MPa	Peak Pressure MPa	Maximum speed n/min.	Weight kg (single pump)
TPV 1000 TPV 1300	6, 8, 9, 11, 12, 13	30	35	3.600	8,8
	15, 17		30		
	18		30		
	19, 21	22	28	3.200	
TPV-TPVTC 1500	17, 18, 19, 21	35	40	3.600	14
TPV 3200	21, 28	25	35		22
TPV-TPVT 3600	26, 28, 30, 31, 32, 34, 36, 38	40	45		28
TPV 4300	32, 38, 45, 50	28	35		23
TPV 5800	46, 50, 64	30	40		29
TPV 9000	55	40	45		4.000
	72			4.100	68
	90			4.000	
	110			3.800	



### Open Loop Axial Piston Pumps (Fixed Displacement) - 32-50 cc

Model	Displacement cm <sup>3</sup> /n.	Rated Pressure MPa	Peak Pressure MPa	Maximum speed n/min.	Weight kg (single pump)
TPF 60	35, 40, 46	35	42	2.800	20,5
	50		41	2.500	



### Bent Axis Pumps - 12-130 cc

Model	Displacement cm <sup>3</sup> /n.	Rated Pressure MPa	Peak Pressure MPa	Maximum speed n/min.	Weight kg
TPB - TAP 70	12.6	35	40	3.300	7,5
	17.0			3.200	
	25.4			2.550	
	34.2			2.250	8,5
	41.2, 47.1			2.200	
	56.0			2.300	
	63.6			2.050	15,5
	83.6, 90.7, 108.0			1.700	
	130.0			1.600	

The table values can change in function of the configuration.

As HANSA-TMP has a very extensive range of products and some products have a variety of applications, the information supplied may often only apply to specific situations.

If the catalogue does not supply all the information required, please contact HANSA-TMP.

In order to provide a comprehensive reply to queries we may require specific data regarding the proposed application.

Whilst every reasonable endeavour has been made to ensure accuracy, this publication cannot be considered to represent part of any contract, whether expressed or implied.

The data in this catalogue refer to the standard product. The policy of HANSA-TMP consists of a continuous improvement of its products. It reserves the right to change the specifications of the different products whenever necessary and without giving prior information.



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Certified Company

ISO 9001:2015 – ISO 14001:2015



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