

# Through Drive

The HA10VSO pump can be supplied with through drive in accordance with the type code on page 78. The through drive version is designated by the code numbers (KB3-KB6).

If on other pumps are fitted by the manufacturer, the simple type designation is sufficient. In this case, the delivery package comprises: Hub fixing screws, seal and, if necessary, an adaptor flange.

## ● Combination Pump

By building on further pumps it is possible to obtain independent circuits:

1. If the combination pump consists of 2 HA10VSO and if these are to be supplied assembled then the two order codes should be linked by means of a "+" sign.

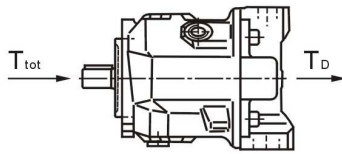
Ordering example:

HA10VSO 71 DR/31 L -PPA12KB3+

HA10VSO 28 DR/31 L -PSA12N00

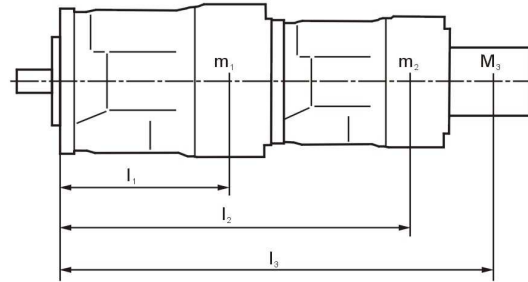
2. If a gear or radial piston pump is to be built on at the factory, please consult us.

## ● Maximum permissible input and through drive torque



The split in torque between pump 1 and 2 is optional. The max. permissible input torque  $T_{tot}$  as well as the max. permissible through drive torque  $T_D$  may not be exceeded.

## Permissible moment of inertia



$m_1, m_2, m_3$  [kg] Pump mass

$l_1, l_2, l_3$  [mm] distance to center of gravity

$$T_m = (m_1 \cdot l_1 + m_2 \cdot l_2 + m_3 \cdot l_3) \cdot \frac{1}{102} \text{ [Nm]}$$

Size			28	45	71	100	140
Permissible moment of inertia	$T_m$	Nm	880	1370	2160	3000	4500
	Permissible moment of inertia at dynamic mass acceleration $10g \hat{=} 98.1 \text{ m/s}^2$	$T_m$	Nm	88	137	216	300
Mass	$m_1$	kg	15	21	33	45	60
To center of gravity	$l_1$	mm	110	130	150	160	160

Size		28	45	71	100	140	
Max. permissible input torque at pump 1 with shaft "P"							
	$T_{tot}$	Nm	137	200	439	857	1206
Max. permissible through-drive torque	$T_D$	Nm	137	200	439	778	1206
	$T_{D \text{ keyed shaft}}$	Nm	112	179	283	398	557

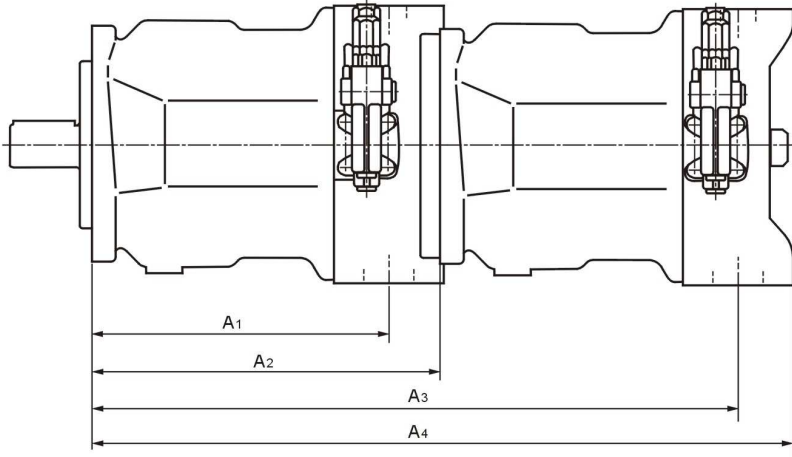
Size		28	45	71	100	140	
Max. permissible input torque at pump 1 with shaft "S"							
	$T_{tot}$	Nm	137	319	626	1104	1620
Max. permissible through-drive torque	$T_D$	Nm	160	319	492	778	1266
	$T_{D \text{ keyed shaft}}$	Nm	112	179	283	398	557

Size		28	45	71	100	140	
Max. Permissible input torque at pump 1 with shaft "R"							
	$T_{tot}$	Nm	225	400	644	-	-
Max. permissible through-drive torque	$T_D$	Nm	176	365	548	-	-
	$T_{D \text{ keyed shaft}}$	Nm	112	179	283	-	-

$T_{tot}$  = Max. permissible input torque at pump 1  
 $T_D$  = Max. permissible through-drive torque at through-drive to splined shaft  
 $T_{D \text{ keyed shaft}}$  = Max. permissible through-drive torque at through-drive to keyed shaft

## Installation Dimensions

HA10VSO+HA10VSO



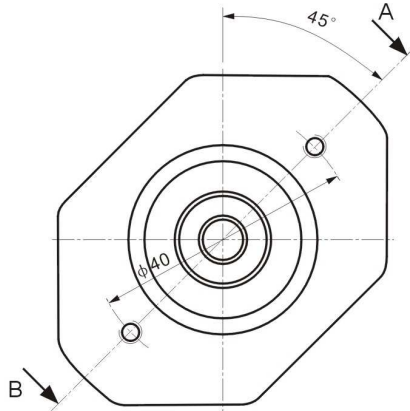
main p. built-on p.	HA10VSO 28				HA10VSO 45				HA10VSO 71				HA10VSO 100				HA10VSO 140			
	A1	A2	A3	A4	A1	A2	A3	A4	A1	A2	A3	A4	A1	A2	A3	A4	A1	A2	A3	A4
HA10VSO28	164	204	368.5	410	-	-	-	-	217	267	431.5	473	275	338	502.5	544	275	350	514	556
HA10VSO45	-	-	-	-	184	229	413	453	217	267	451	491	275	338	522	562	275	350	534	574
HA10VSO71	-	-	-	-	-	-	-	-	217	267	484	524	275	338	555	595	275	350	567	609
HA10VSO100	-	-	-	-	-	-	-	-	-	-	-	-	275	337	613	664	275	350	625	679

HA10VSO...

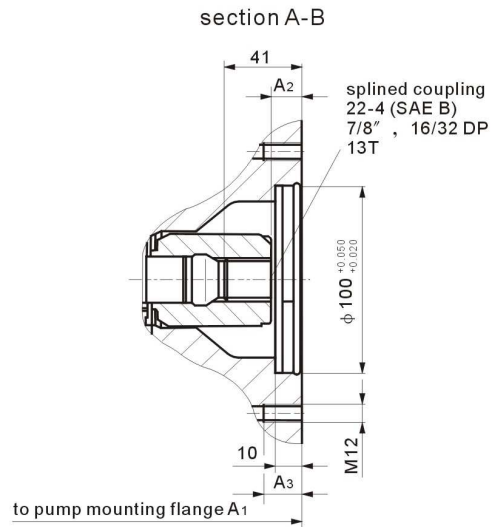
## Installation Dimensions Through Drives KB3 And KB4

Flange ISO 100, 2-hole for built-on HA10VSO 28 (splined shaft S or R)

Order code KB3

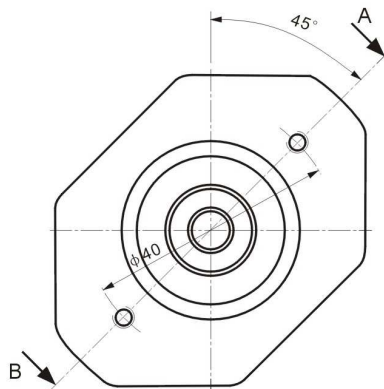


Size main pump	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>
28	204	19.2	14
71	267	16.5	18
100	338	17.6	18
140	350	18.2	24

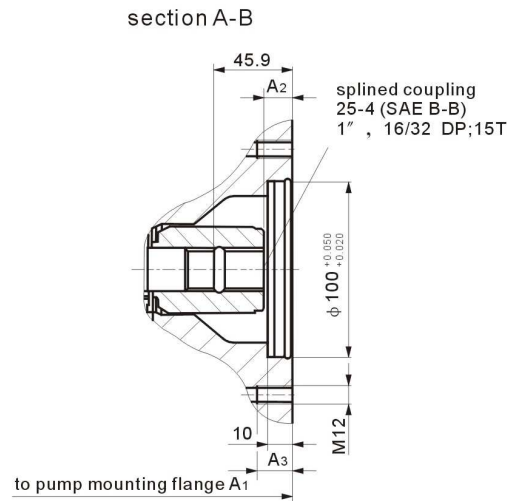


Flange ISO 100, 2-hole for built-on HA10VSO 45 (splined S or R)

Order code KB4

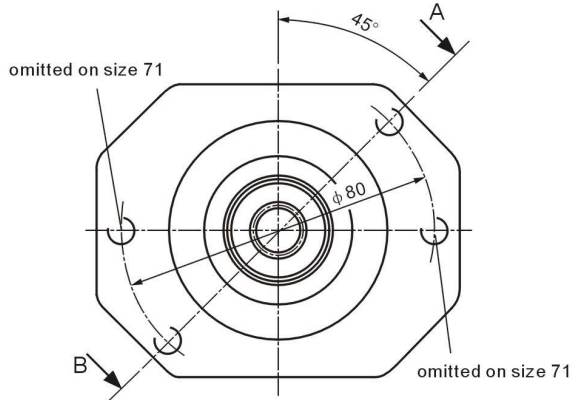


Size main pump	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>
45	229	17.2	14
71	267	17.2	18
100	338	18.2	20
140	350	18.2	24

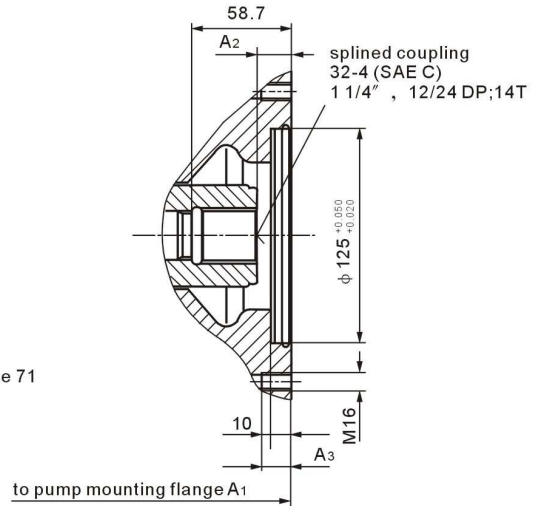


## Installation Dimensions Through Drives KB5 And KB6

Flange ISO 125, 2-hole for built-on HAVSO 71 (splined S or R)  
Order code KB5

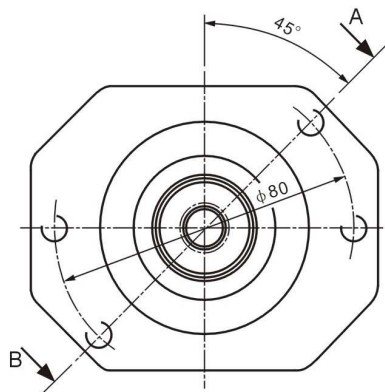


section A-B

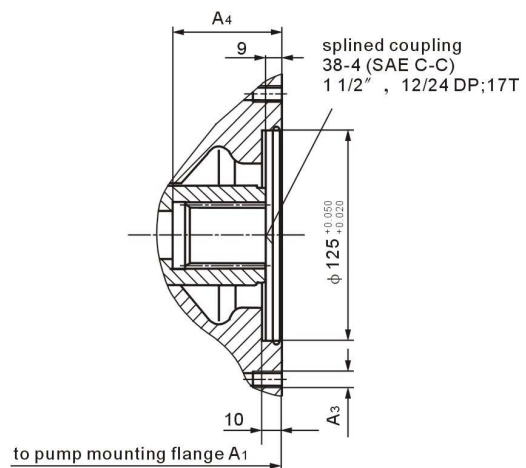


Size main pump	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>
71	267	20	18.5
100	338	20	25
140	350	21	32

Flange ISO 125, 2-hole for built-on HA10VSO 100 (splined shaft S)  
Order code KB6



section A-B



Size main pump	A <sub>1</sub>	A <sub>3</sub>	A <sub>4</sub>
100	338	M16; 25 deep	65
140	350	M16; 32 deep	77.3

HA10VSO...