

# AUTOMATIC COUPLING MECHANISMS

AKM Systems, single-/double-acting, pmax. 350 bar

## Description:

If there is no coupling stroke required or possible, this coupling system can be coupled separately by a control pressure.

The gap between the coupling mechanism and coupling nipple can be 0.2 - 1.4 mm.

The control pressure should correspond to the media pressure of port P.

Various media can be coupled. But the pilot control should be done hydraulically.

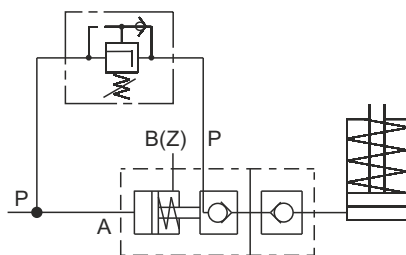
## Operating:

Both coupling surfaces of the AKM system are flat at the front end. So the user can put it in any axial and/or radial position for coupling and controlling.

The coupling stroke is initiated by an integrated control piston. Thus enables also a precise control of individual ports.

When the control port is not pressurized, the AKM is set into the basic position. The maximum operating pressure is 350 bar.

The AKM can be operated single-acting or double-acting. If the AKM should operate single-acting, the port B (Z) must be used for housing ventilation.

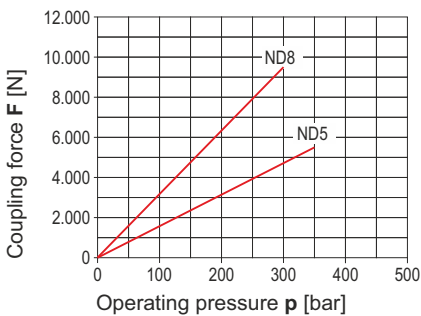


Application: hydraulically, single-acting

## Application note:

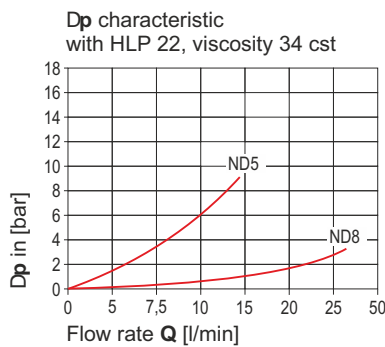
If the AKM is operated with a sequence valve, it can be guaranteed, that the media-side flow is only initiate after a successful coupling process (see drawing at left).

## Coupling force:

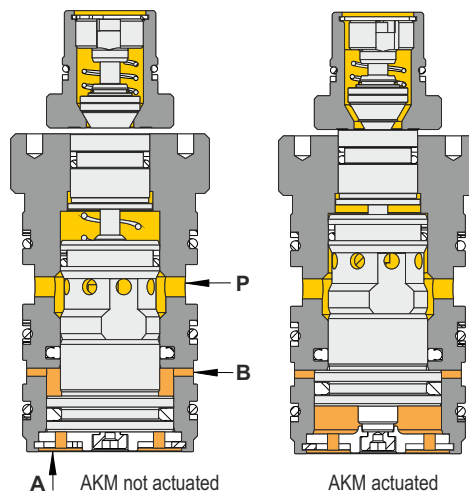


ND 5 =  $F [N] = 15,4 \times p [bar]$   
 ND 8 =  $F [N] = 31,4 \times p [bar]$

## Flow resistance:

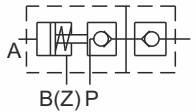


1. Operating pressure at port P
2. Control port A: the connection to the coupling nipple side is initiated.
3. After connecting the coupling mechanism and the coupling nipple, the plunger of the nipple will be actuated as part of the active motion sequence and the flow in the coupling nipple will be set free.



Webcode: 010006

We also design and manufacture special designs



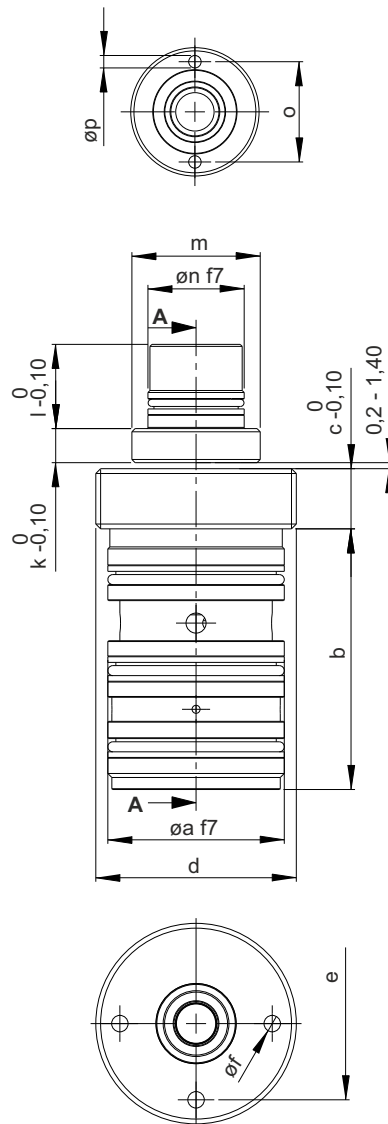
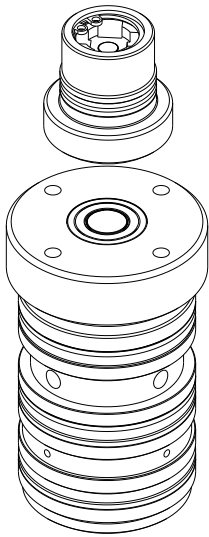
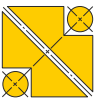
## Advantages:

- ⊗ Coupling elements made of stainless materials
- ⊗ Can be coupled with various media
- ⊗ No additional stroke required for coupling
- ⊗ Selective control of individual ports is possible
- ⊗ Single-acting or double-acting operation

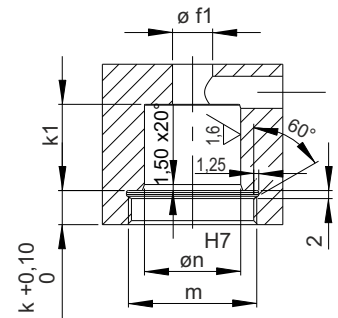


**HYDROKOMP®**  
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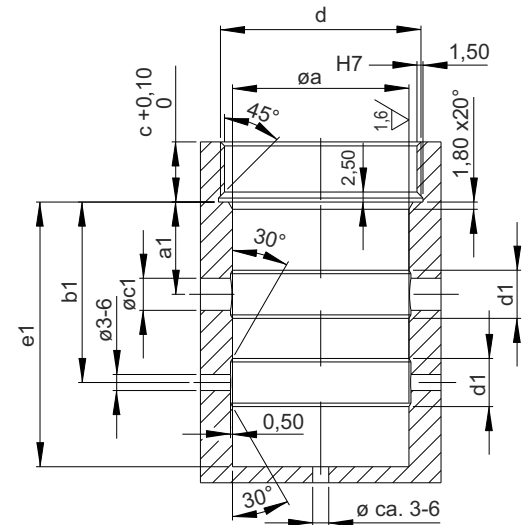
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 Phone: +49 6401 225999-0  
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Installation contour for coupling nipple



Installation contour for AKM



## Dimensions:

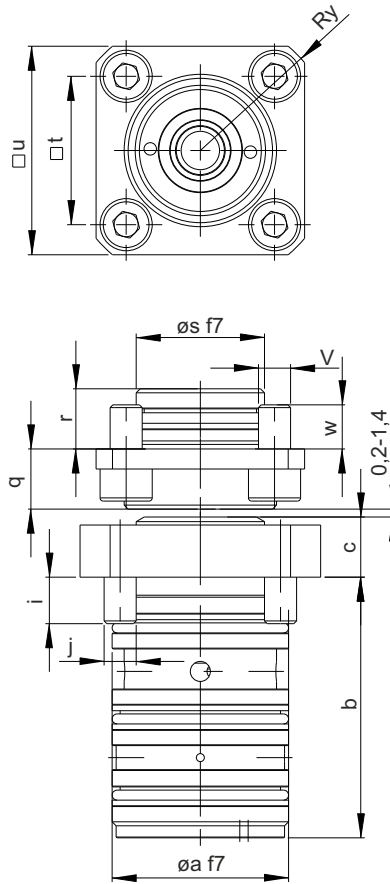
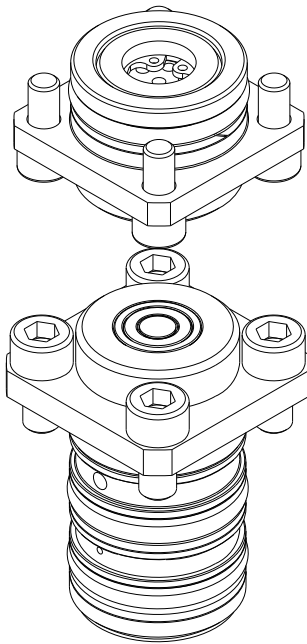
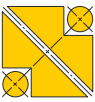
ND <sup>(1)</sup>	5	8
a [mm]	28	44
a1 [mm]	11,5	23,0
b [mm]	40	65
b1 [mm]	25,5	45,0
c [mm]	12	15
c1 [mm]	5	8
d	M36x1,5	M50x2
d1 [mm]	6	12
e [mm]	24	38
e1	> 41	> 66
f [mm]	3,1	4,1
f1	M6;12/16 depth	M8;16/20 depth
k [mm]	10,5	8,5
k1 [mm]	15	22
l [mm]	14	21
m	M24x1,5	M32x1,5
n [mm]	20	24
o [mm]	19	25
p [mm]	2,1	3,1

The coupling force between coupling nipple and coupling mechanism has to be compensated positively from the outside.

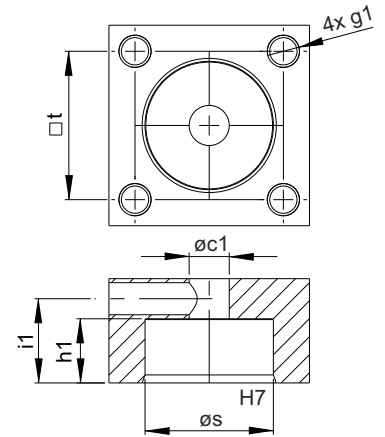
The axially acting front seal surfaces must be protected from contamination.

## Technical data:

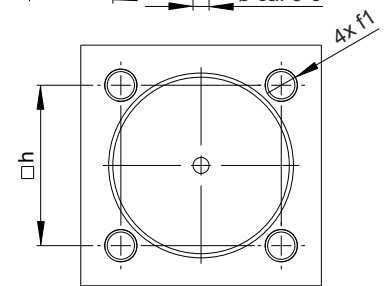
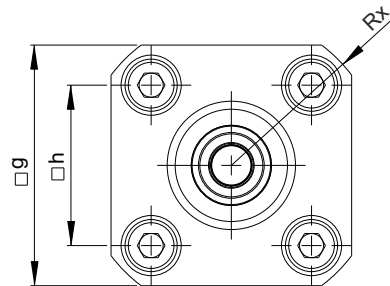
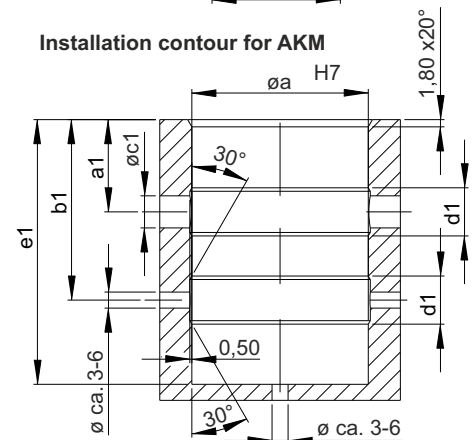
		5	8
<sup>(1)</sup> Nominal diameter			
Operating pressure max.	[bar]	350	350
Flow max./minute	[l/min]	12	25
Gap nipple/mechanism min.	[mm]	0,2	0,2
Gap nipple/mechanism max.	[mm]	1,4	1,4
Axial coupling force pressurized	[N]	F(N)=15,4 x p [bar]	F(N)=31,4x p [bar]
Radial positioning tolerance	[mm]	± 0,3	± 0,3
<b>Order number</b>			
Coupling nipple		KN-5-EG024	KN-8-EG009
Coupling mechanism		AKM-5-01-DW-001	AKM-8-01-DW-001



Installation contour for coupling nipple



Installation contour for AKM



## Dimensions:

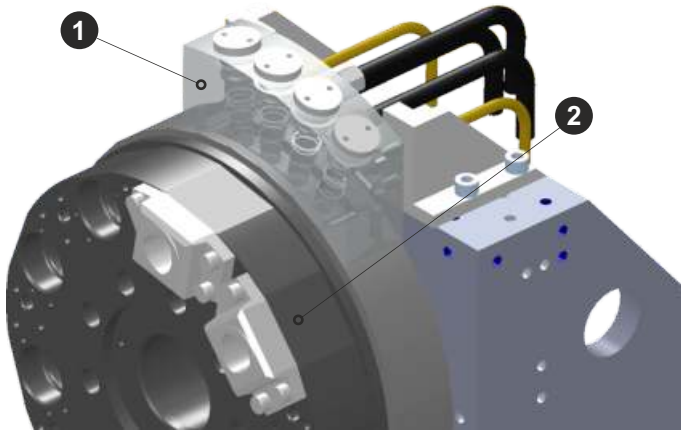
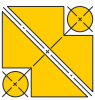
ND <sup>(1)</sup>	5	8
a [mm]	28	44
a1 [mm]	11,5	23,0
b [mm]	40	65
b1 [mm]	25,5	45,0
c [mm]	12	15
c1 [mm]	5	8
d1 [mm]	6	12
e1	> 41	> 66
f1	M6;12/16 depth	M8;16/20 depth
g [mm]	37	60
g1 [mm]	M5;10/14 depth	M8; 16/20 depth
h [mm]	26	40
h1 [mm]	12	16
i [mm]	7,0	11,6
i1 [mm]	16	21
j	M6	M8
q [mm]	13,5	15,0
r [mm]	11,5	15,0
s [mm]	28	32
t [mm]	26	37
u [mm]	35	52
v	M5	M8
w [mm]	7,5	11,0
x [mm]	24,0	37,5
y [mm]	23	34

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The axially acting front seal surfaces must be protected from contamination.

## Technical Data:

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<sup>(1)</sup> Nominal diameter		
Operating pressure max. [bar]	350	350
Flow max./minute [l/min]	12	25
Gap nipple/mechanism min. [mm]	0,2	0,2
Gap nipple/mechanism max. [mm]	1,4	1,4
Axial coupling force pressurized [N]	$F(N)=15,4 \times p$	$F(N)=31,4 \times p[\text{bar}]$
Radial positioning tolerance [mm]	$\pm 0,3$	$\pm 0,3$
<b>Order number</b>		
Coupling nipple plate	KNP-5-01-009	KNP-8-08-001
Coupling mechanism	AKM-5-01-DW-002	AKM-8-01-DW-002



(1) Receiving block with AKM

## Tool changer:

Revolver fixture for nine tools each with 4 automatic coupling mechanism systems (AKM)

**Operation:**  
- by a common control port

**Operating method:**  
single-acting

- (1) Receiving block with AKM
- (2) Coupling nipples in the revolver fixture



(2) Coupling nipples in the revolver fixture (total 36 coupling nipples)



## 4 passage multi-coupling:

with manifold connection and central blowing nozzle



## AKM system:

with blower function to clean the front coupling surface