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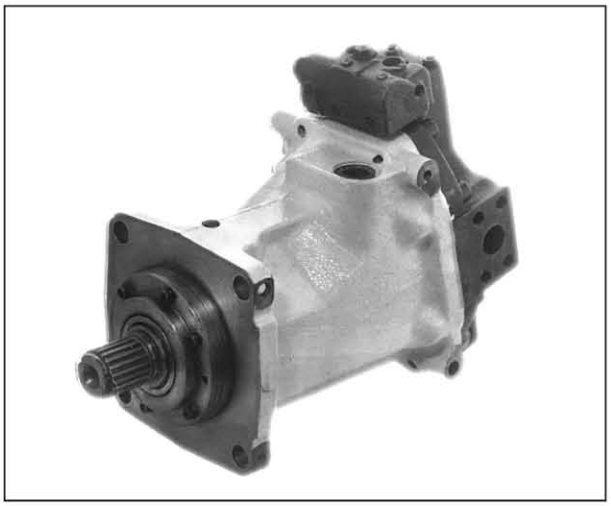
Aksijalno - klipni motori BMV/BMR
Axial - piston motors BMV/BMR

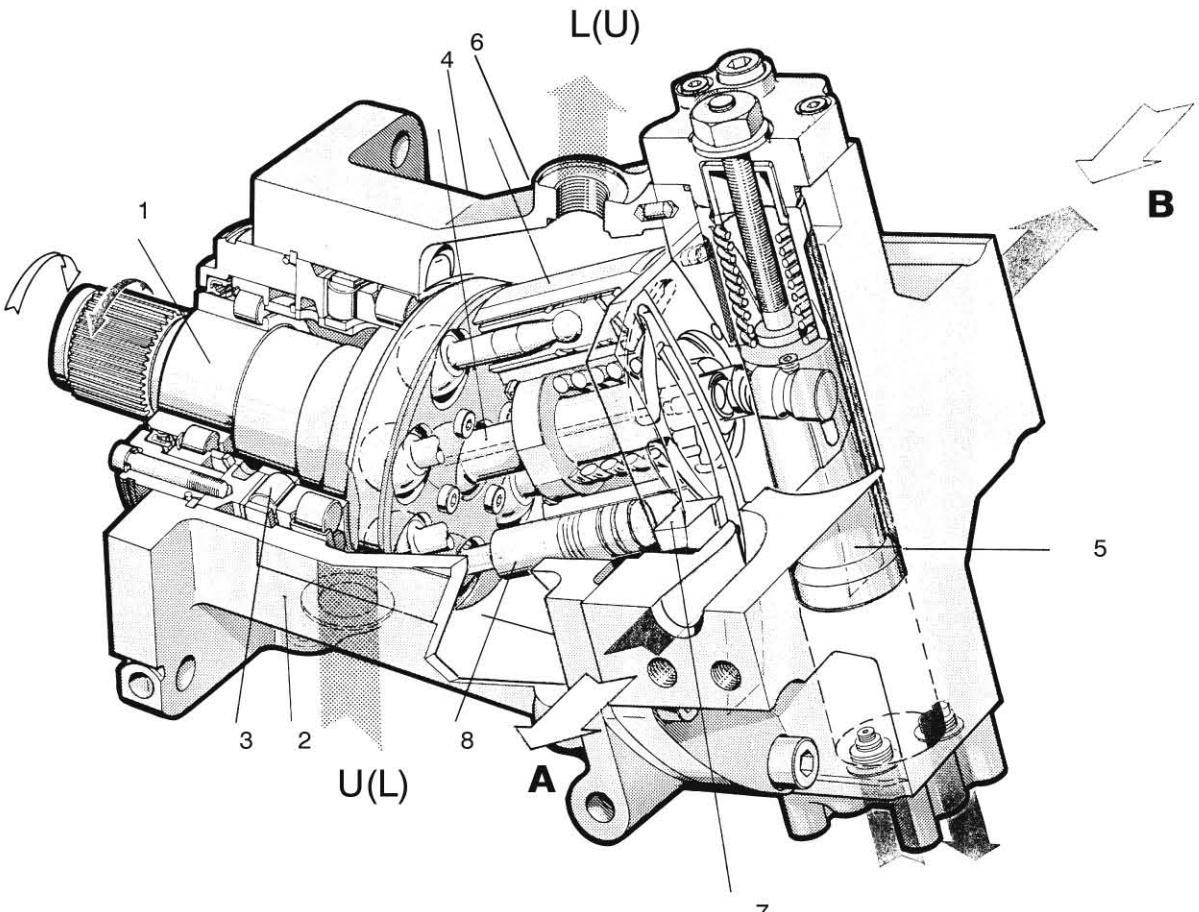
VISOKOG PRITISKA; PROMENLJIVE RADNE ZAPREMINE
HIGH PRESSURE; VARIABLE DISPLACEMENT

- Motori za primenu u otvorenim i zatvorenim hidrauličkim sistemima
- Izuzetno mali gabariti
- Po zahtevu sa i bez ventila za ispiranje kućišta odnosno sistema. Zbog toga je veoma lako prilagođavanje u slučaju temperaturnih promena. Ugradnjom ventila ne menjaju se spoljašnje dimenzije motora.
- Bolji koeficijent korisnog dejstva
- Izvanrednmo snažan i neosetljiv pogonski mehanizam sa vratilom koje se može opteretiti radijalnim silama
- Bešuman rad



- Hydraulic motors for both open-loop and closed-loop hydraulic systems
- Exceptionally small overall dimensions
- At request, it can be supplied with or without valve for flushing of housing, i.e. system. The overall dimensions are not altered if the valve is installed.
- Improved efficiency
- Very robust and rugged rotary group, with a shaft that may be loaded with radial forces.
- Noiseless operation

PRESEK - PRINCIP RADA (STANDARD MOTOR, DVOPOZICIONI)
SECTION - MODE OF OPERATION (STANDARD MOTOR, FLIP - FLOP)



1. Pogonsko vratilo
2. Kućište
3. Ležaj
4. Centralna osovina
5. Upravljački klip
6. Cilindarski blok
7. Razvodna ploča
8. Radni klip (7 kom.)

1. Drive shaft
2. Housing
3. Bearing
4. Middle shaft
5. Control piston
6. Cylinder block
7. Division plate
8. Piston (7 pcs)

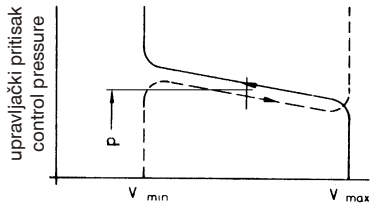
PODEŠAVANJE
CONTROLS

Radna zapremina motora može da se menja podešavanjem ugla zakretanja cilindarskog bloka između maksimalne i minimalne vrednosti. Pri istom protoku i pritisku: MAKSIMALNA radna zapremina omogućava veliki obrtni moment pri malom broju obrtaja, MINIMALNA radna zapremina omogućava mali obrtni moment pri velikom broju obrtaja.

Displacement of the hydraulic motor can be varied by changing of the cylinder block tilt angle between the maximum and minimum value. For equal pressure and input flow: MAXIMUM displacement provides high

DVOPOZICIONI MOTOR BMV (FLIP-FLOP)
Prelazak pod opterećenjem sa maksimalnog na minimalni specifični protok i obrnuto je bez trzaja.
- upravljački pritisak: p_u = 15 bar
- upravljanje razvodnim ventilom 4/2

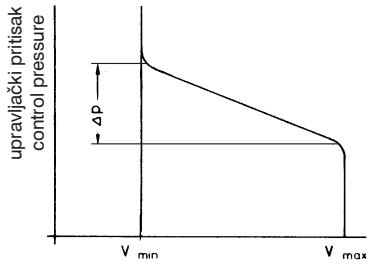
TWO STEP MOTOR BMV (FLIP-FLOP)
Smooth change under load from maximum displacement and vice versa.



specifični protok/ displacement

KONTINUALNO PODEŠLJIV MOTOR BMV2 (daljinski podešavan)
Kontinualno podešljiv ugao zakretanja između maksimalne i minimalne vrednosti specifičnog protoka, zavistan je od upravljačkog pritiska.
- upravljački pritisak: p_u = 8 - 15 bar
- upravljanje ventilom pritiska

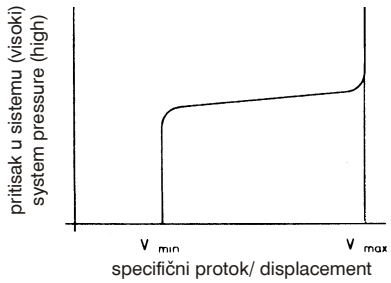
STEPLESS MOTOR BMV2 (remotelly controlled)
Head tilt angle progressively changed between maximum and minimum displacement by means of pilot pressure.
- control pressure range: p_u = 8 - 15 bar



specifični protok/ displacement

MOTOR BMR PODEŠAVAN VISOKIM PRITISKOM
Prelazak sa minimalnog na maksimalni specifični protok i obrnuto, odvija se automatski bez trzaja, pri određenom pritisku u sistemu (u porudžbini se mora naznačiti).
- moguć početak regulacije: 140 - 250 bar

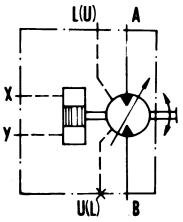
HIGH PRESSURE REGULATED MOTOR BMR
Automatic smooth change, from minimum to maximum displacement and vice versa, at a given pressure in the system (to be indicated in order).



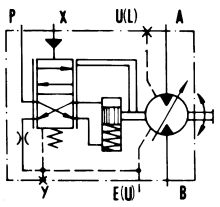
specifični protok/ displacement

SIMBOLI
SYMBOLS

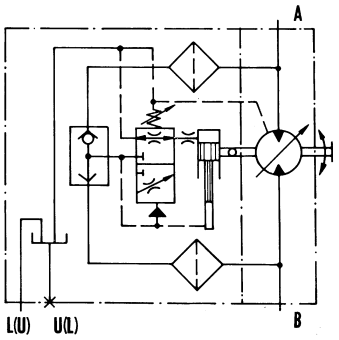
MOTOR STANDARD V



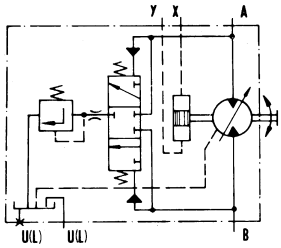
MOTOR STANDARD V2



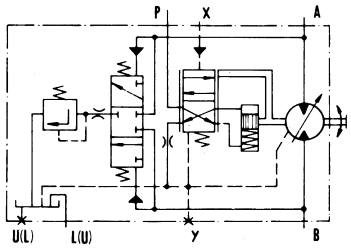
MOTOR STANDARD R



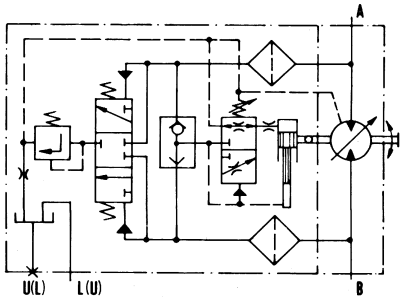
MOTOR SA VENT. ZA ISPIRANJE V
MOTOR WITH FLUSHING VALVE V



MOTOR SA VENT. ZA ISPIRANJE V2
MOTOR WITH FLUSHING VALVE V2



MOTOR SA VENT. ZA ISPIRANJE R
MOTOR WITH FLUSHING VALVE R



TEHNIČKE KARAKTERISTIKE

TEHNICAL DATA

OPŠTE / GENERAL

ND	50	75	105
Smer obrtanja Rotation direction	desni i levi (dvosmerni) clockwise and anticlockwise (both - direction)		
Položaj ugradnje Mounting position	proizvoljan, oduška na najvišem nivou optional, drain hole up		
Mass (kg)	24	37	47

HIDRAULIČKE / HYDRAULIC

Pritisak (bar) Pressure			
- max (kratkotrajno)* - peek (short time)*	500		
- max radni - max working	420		
- trajni** - continuous**	250		
- u kućištu dozvoljeni nadpritisak - in housing (back pressure permitted)	1,5		
Radna zapremina (cm^3/o) Displacement			
- pri max uglu zakretanja 28° - at max tilt angle 28°	50,2	74,9	104,9
- pri min uglu zakretanja 8° - at min tilt angle 8°	15	22	31
Broj obrtaja (min-1) Speed (r.p.m.)			
- trajni - pri max uglu za kretanje - continuous - at max tilt angle	3600	3300	3000
- trajni - pri min uglu za kretanje - continuous - at min tilt angle	4600	4200	3800
- kratkotrajni - pri max uglu za kretanje - peak speed - at max tilt angle	4000	3700	3400
- kratkotrajni - pri min uglu za kretanje - peak speed - at min tilt angle	5500	5000	4500

Napomena: navedeni brojevi obrtaja mogu se u nekim slučajevima (npr. kod kočenja i vožnje u krivini) kratkotrajno prekoračiti pri čemu dolazi do povećanja buke i smanjenja koeficijenta korisnog dejstva.
Note: the speed indicated may be exceeded in some cases for short periods of time (e.g. at braking or running through curves), eith increased noise and reduced efficienty.

Vreme podešavanja (s) Response time	1 od krajnjeg do krajnjeg položaja pri trajnom pritisku i max br.oju obrtaja over full stroke - typical (at continuous pressure and max speed)

Radna tečnost - mineralno hidrauličko ulje
Working fluid - mineral hydraulic oil

PREPORUKA
RECOMMENDATION

viskozitet (mm^2/s) viscosity	10...80
optimalni viskozitet (mm^2/s) optimal viscosity range	15...20
max viskozitet - kratko pri startu (mm^2/s) max viscosity - intermittent for starting	1000
temperatura (°C) temperature	-20...+90

Radna temperatura ulja Oil working temperature	Viskozitet Viscosity
30...40°C	22 mm^2/s - 40°C
60...70°C	68 mm^2/s - 40°C
80...90°C	100 mm^2/s - 40°C

FILTRIRANJE: Preporučuje se finoća filtriranja 10 μm. Može se primeniti i grublje 25 - 40 μm, ali se povećava istrošenje delova
FILTRATION: The fineness of filtering of10 μm is recommended. Filtering of 25 to 40 μm can be also applied. But wearing of the unit parts will be increased.

*Kratkotrajni pritisak iznad max radnog (=nazivni pritisak) pri kome je motor funkcionalno sposoban
Translent pressure over the max working pressure at which the unit will still function.

**Pritisak pri kome su svi delovi motora izdržljivi.
Continuous pressure at which all parts of the unit are able to endure.

B

OZNAČAVANJE
DESIGNATION

BM * * / * TF * * / *

1 2 3 4 5 6

1 Način podešavanja:
Adjustment mode:

V= upravljačkim pritiskom (dvopozicioni)
pilot pressure operated (flip-flop)

V2= upravljačkim pritiskom (kontinualna)
pilot pressure operated (remotelly contolled)

R= visokim pritiskom
high pressure

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2 Nazivna veličina ND:
Nominal size ND:
50
75
105

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3 Min radna zapremina:
Min displacement:

po zahtevu (vidi tehničke karakteristike)
at request (see technical data)

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4 Dodatni uređaji:
Supplementing:

- = standard

C = sa ventilom za ispiranjem
with flushing valve

E12 = sa elektromagnetskim razvodnim ventilom 12V DC
with directional control valve 12V DC

E24 = sa elektromagnetskim razvodnim ventilom 24V DC
with directional control valve 24V DC

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5 Dopunski podaci:
Supplementing:

za motor BMR pritisak početka podešavanja (140 ... 250 bar)
to motor BMR - starting point of the regulation (140 ... 250 bar)

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6 Pogonsko vratilo:
Drive shaft:

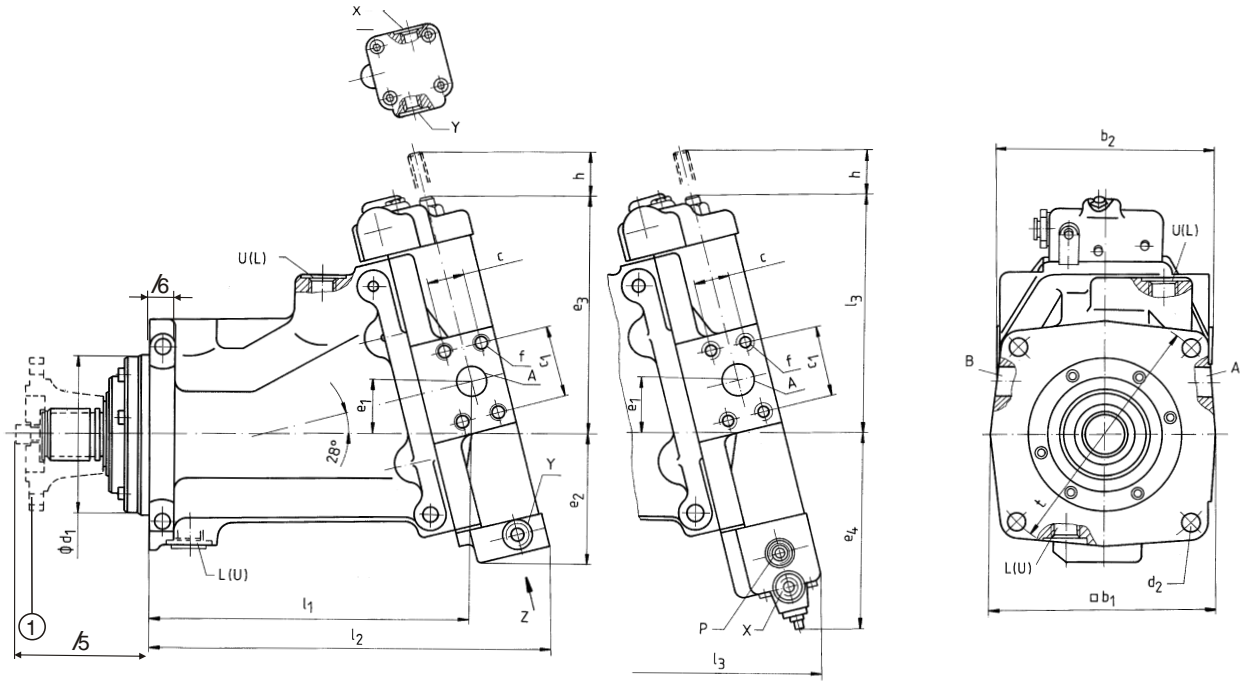
- = DIN 5482
1 = DIN 5480
2 = SAE standard

Napomena: Spojnica se isporučuje na zahtev (vidi str. ⑥)
Note: Coupling - on the request only (see page ⑥)

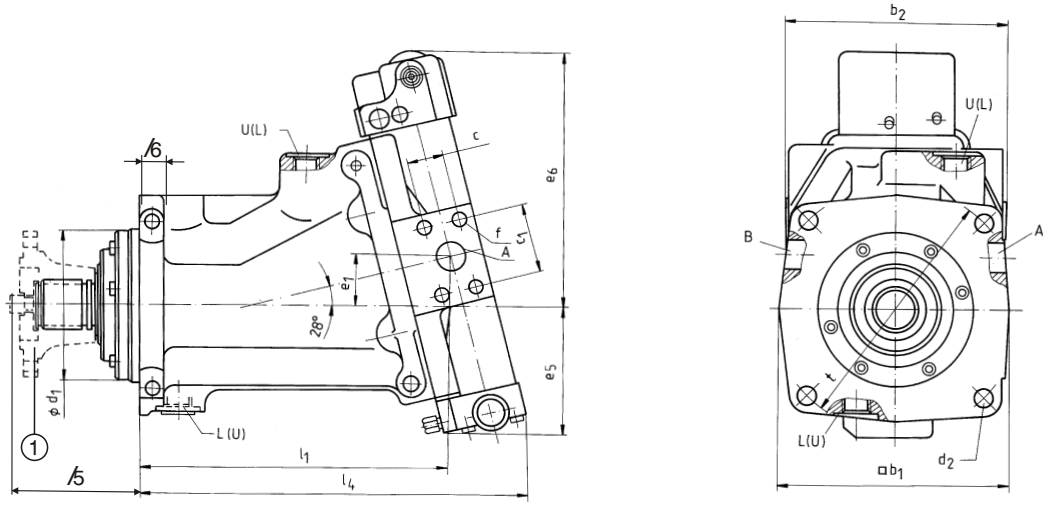
UGRADNI CRTEŽ (mere u mm)
MOUNTING DRAWING (dimensions in mm)

V, V2 - STANDARD

V, V2 - SA VENTILOM
V, V2 - WITH VALVE



R - STANDARD I SA VENTILOM
R - STANDARD AND WITH VALVE



A, B = priključci / ports - Ò 19 za prirubnicu/ to flange SAE 3/4" (NV 50)
Ò 25 za prirubnicu/ to flange SAE 1" (NV 75, 105)

L = drenažni otvor / drain port M22x1,5

U = otvor za ispiranje/ flushing port M22x1,5

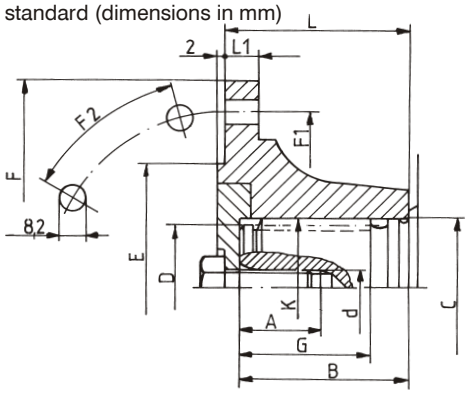
X, Y= upravljački vodovi/ control lines M14x1,5

P = upravljački vod (visoki pritisak)/ control line (high pressure) M14x1,5

① = spojnica/ coupling

NV	b1	b2	/1	/2	/3	/4	/5	/6	d1	d2	c	c1	f	t	e1	e2	max e3	e4	e5	e6	max h
50	150	147	203	255	265	–	85,5	18	100	12	23,8	50,8	M10/16	160	33	93	165	160	–	–	23
75	170	172	243	305	315	315	92,5	18	115	14	27,8	57,2	M12/16	180	38,7	107	220	170	125	201	28
105	184	175	261,5	324	335	331	103,5	20	125	18	27,8	57,2		200	41,6	108	227	172	124	208	31

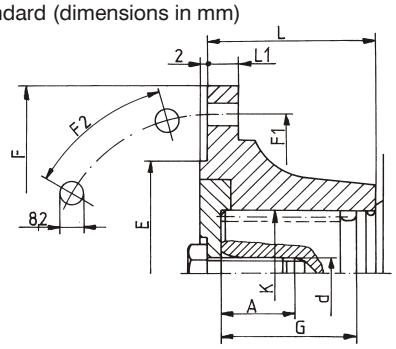
POGONSKO VRATILO SA SPOJNICOM - DIN standard (mere u mm)
DRIVE SHAFT WITH COUPLING - DIN standard (dimensions in mm)



ND	K		A	B	C	D	d	E	F	F1	F2	G	L	L1
	DIN 5480g9	DIN 5482e9												
50	W30x2	B30x27	21	42,5	30,5g6	25g6	M8	57h8	99,5	84	6x60°	33	50	10
75	W35x2	B35x31	23	45,5	35,5g6	30g6	M10	75h8	114,5	101,5	8x45°	36	55,5	12
105	W40x2	B40x36	26,5	50	40,5g6	35g6	M12	75h8	114,5	101,5	8x45°	40	59	12

B

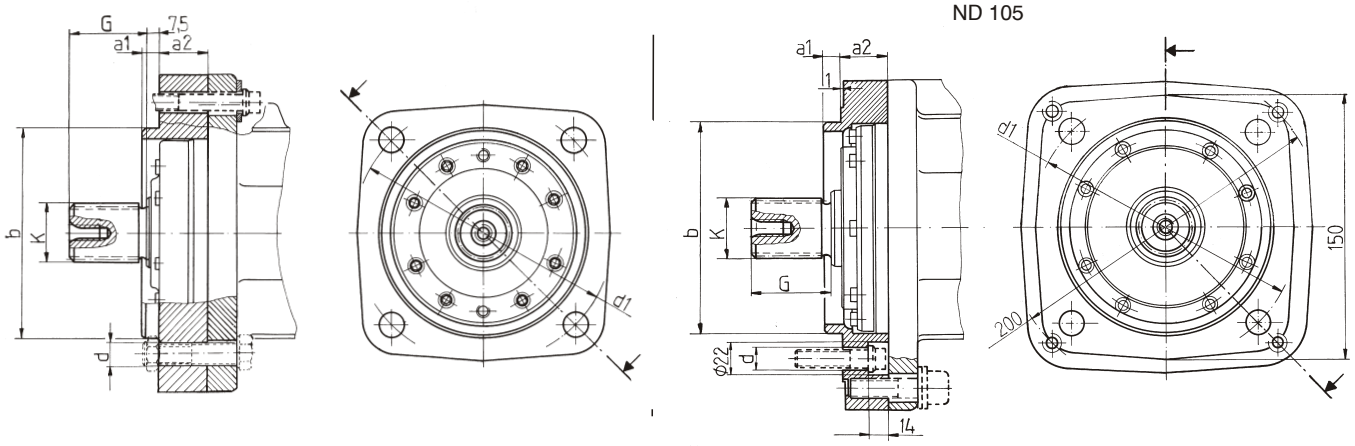
POGONSKO VRATILO SA SPOJNICOM - SAE standard (mere u mm)
DRIVE SHAFT WITH COUPLING - SAE standard (dimensions in mm)



ND	K	A	G	d	E	F	F1	F2	L	L1
	SAE J498									
50	12/24; z=14	23	48	M10	57h8	99,5	84	6x60°	50	10
75		23	48	M10	75h8	114,5	101,5	8x45°	55,5	12
105	16/32; z=23	26,5	48	M12	75h8	120	101,5	8x45°	59	12

MEĐUPRIRUBNICA - SAE standard (mere u mm)
MEDFLANGE - SAE standard (dimensions in mm)

ND 105



ND	K	G	a1	a2	d	d1	b
	SAE J498						
50	12/24; z=14	48	12,5	24	14	162	127h8
75		48	12,5	24,5	14	162	127h8
105	16/32; z=23	48	10	29	15	162	127h8