N.X.Gulomova, N.X.Vahabova

CHIZMACHILIK

(AJRALMAS BIRIKMALAR)

CH0000033445

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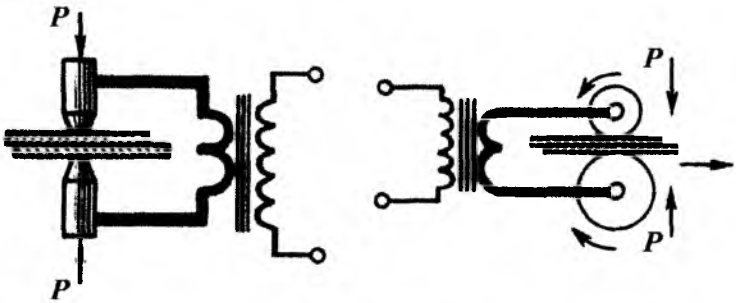

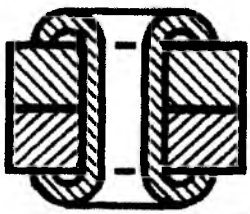

Nizomiy nomli
T D P U
kutubxonasi

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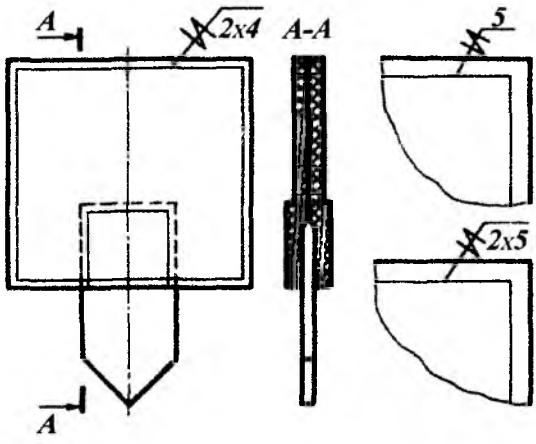
O'ZBEKISTON RESPUBLIKASI
OLIY VA O'RTA MAXSUS TA'LIM VAZIRLIGI

NIZOMIY NOMIDAGI TOSHKENT DAVLAT
PEDAGOGIKA UNIVERSITETI

CHIZMACHILK
(AJRALMAS BIRIKMALAR)



TOSHKENT - 2016

Annotatsiya

"Ajralmas birikmalar" nomli mazkur qo'llanma chizmachilik fani o'qitiladigan barcha oliy o'quv yurtlari talabalari va o'rta maxsus ta'lim o'quv yurtlari hamda umumta'lim maktablari o'qutuvchilari uchun mo'ljallangan.

Unda payvand chokli, parchin chokli, kavsharlangan, yelimlangan hamda metall changakli birikmalar to'g'risida atroflicha ma'lumotlar keltirilgan. Olingan bilimlarni mustahkamlash uchun grafik ishlar bajarishga na'munalar hamda topshiriqlar variantlari berilgan.

Qo'llanma fanni mustaqil ravishda shug'ullanib o'zlashtirishga qaratilgan.

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Taqrizchilar: S.S.Saydaliyev, TDPU katta o'qituvchisi, p.f.n.
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Uslubiy qo'llanma Nizomiy nomidagi TDPU ilmiy kengashining 2015 yil, 15yanvardagi №6/3.1.4. - raqami qarori bilan nashrga tavsiya etilgan.

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KIRISH

Axborot va bilimlar doirasi tez sur'atlar bilan kengayib borayotgan xozirgi sharoitda chuqur nazariy va amaliy bilimlar bilan bir qatorda tanlangan sohasi bo'yicha mustaqil faoliyat ko'rsata oladigan, o'z bilimi va malakasini mustaqil ravishda oshirib boradigan, masalaga ijodiy yondashgan holda muammoli vaziyatlarni to'g'ri aniqlab, tahlil qilib, sharoitga tez moslasha oladigan mutaxassislarni tayyorlash asosiy vazifalardan biri sifatida belgilangan

Tajribalar shuni ko'rsatadiki, talaba mustaqil ravishda shug'ullansa va o'z ustida tinimsiz ishlasagina bilimlarni chuqur o'zlashtirisbi mumkin. Talabalarning asosiy bilim, ko'nikma va malakalari mustaqil ta'lim jarayonidagina shakllanadi, mustaqil faoliyat ko'rsatish qobiliyati rivojlanadi va ularda ijodiy ishlashga qiziqish paydo bo'ladi.

Shuning uchun talabalarning mustaqil ta'lim olishlarini rejalashtirish, tashkil qilish va barcha zaruriy shart-sharoitlarni yaratish, dars mashg'ulotlarida talabalarni o'qitish bilan bir qatorda ularni ko'proq o'qishga o'rgatish, bilim olish yo'llarini ko'rsatish, mustaqil ta'lim olish uchun yo'llanma berish oliy ta'lim muassasasining asosiy vazifalaridan biri hisoblanadi.

Mazkur qo'llanma, unda yoritib berilgan mavzularni mustaxkamlash, to'ldirish hamda chuqurlashtirishga qaratilgan.

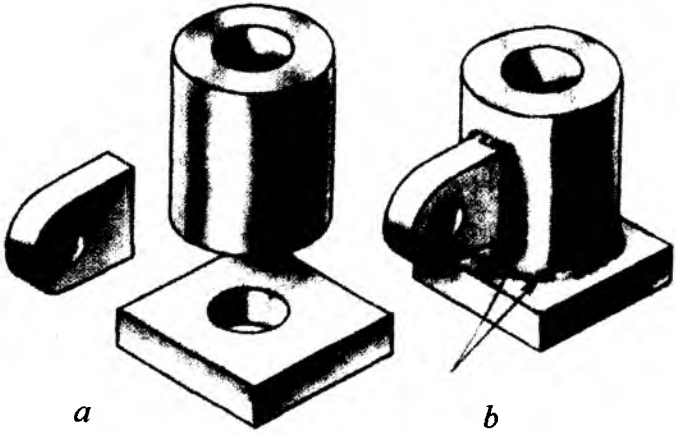
Ajralmas birikmalar

Ajralmaydigan birikmalar payvandlash, parchinlash, kavsharlash, yelimlash, presslash va tikish yo'llari bilan hosil qilinadi.

Payvand chokli birikmalar

Detallarni payvandlab biriktirish texnikada keng qo'llaniladi. Payvandlash yordamida mashinalar, mexanizmlar, metall konstruksiyalar, ko'priklar, fuqaro hamda sanoat binolari va x. k. larning detallari biriktiriladi.

1-chizma, *a* da payvandlashga tayyorlangan detallar, 1-chizma, *b* da esa shu detallarni biriktirilgani ko'rsatilgan.



1-chizma

Payvandlab biriktirish asosan ikki xil yo'l bilan amalga oshiriladi: eritib payvandlash va bosim ostida payvandlash.

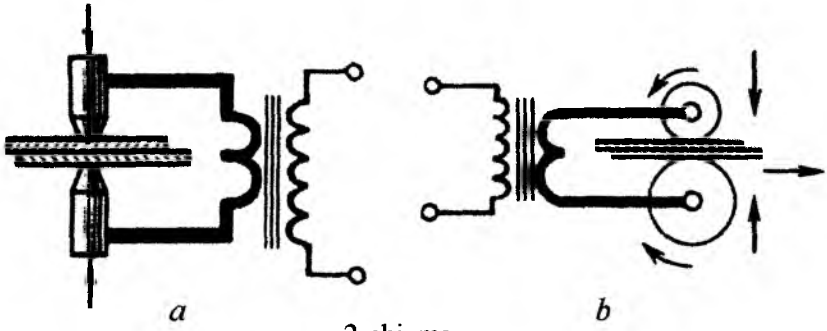
Eritib payvandlashda payvandlanadigan detallarning qirralari eritiladi va ular sovugandan so'ng mustahkam payvand choki hosil bo'ladi. Eritib payvandlash gaz yoki elektr yoyi yordamida amalga oshiriladi.

Gaz yordamida payvandlashda yonuvchi gaz (masalan, atsetilen) kislorod atmosferasida yonib metallarni eritadigan alanga hosil qiladi. Detallarning erigan zonasiga metall sim kiritiladi va u erib payvand choki hosi qiladi. Gaz yordamida metallardan tashqari plastmassa (polimer) lar ham payvandlanadi.

Elektr yoyi yordamida payvandlashda payvandlanadigan detallarning qirralari ("asosiy metall") va elektrod orasida hosil bo'ladigan elektr yoyi issiqlik manbai bo'ladi.

Elektr yoyi bilan payvandlash erimaydigan yoki eriydigan elektrod yordamida amalga oshiriladi. Bunda elektr yoyi hosil bo'ladigan zonaga metall sim kiritiladi va u erib payvand chokini hosil qiladi. Eriydigan elektrod qo'llanilganda, elektrodni o'zi erib payvand chokini hosi qiladi. Elektr yoyidan faqat metallar va ularning qtishmalarini payvandlashda foydalaniladi.

Bosim ostida payvandlash payvandlanadigan detallar sirtlarini avvaldan qizdirish va ularni birgalikda plastic deformatsiyalash natijasida amalga oshiriladi. Bu deformatsiya tashqi ta'sir qiluvchi kuch orqali hosil qilinadi. Bosim ostida payvandlash kontaktli elektr payvandlashning turlaridan bo'lgan nuqtaviy (2-chizma,*a*), chokli rolikli (2-chizma, *b*) bo'lishi mumkin.



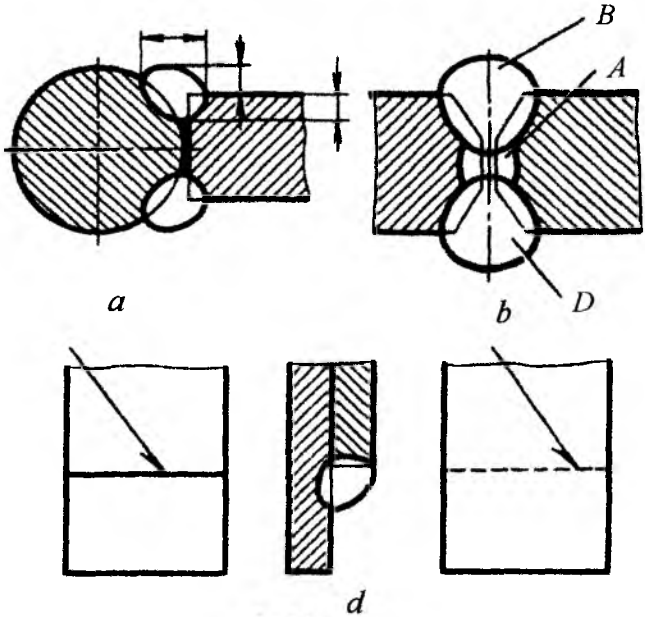
2-chizma

Zamonaviy texnikada yuqorida aytib o'tilgan usullardan tashqari payvandlashning boshqa qator usul (elektr shlakli, himoya gazlari muhitida, ultra tovushli, lazer yordamida, induksion va x.k.) lari ham qo'llaniladi.

Texnologik jarayonni mexanizatsiyalashni amalga oshirish usuliga qarab payvandlash qo'lda, yarim avtomatik va avtomatik ravishda bajarilishi mumkin. Tegishli standartlarda (masalan, GOST 2.312-72, ESKD) payvandlash usullarining shartli belgilari berilgan. Masalan: П-flyus ostidagi avtomatik payvandlash; П-3-himoya gazi muhitida, eriydigan elektrod yordamida yarim avtomatik payvandlash; А-Н-3-himoya gazi muhitida, erimaydigan elektrod yordamida avtomatik payvandlash; А-3- himoya gazi muhitida, eriydigan elektrod yordamida avtomatik payvandlash va b.

GOST 2.312-72 va ST SEV 138-76 larda payvand chokli birikmalarni chizmalarda tasvirlash va belgilash tasdiqlab qo'yilgan. Payvandlanadigan detal kesimlari har xil yo'nalishda shtrixlanadi. Zarurat bo'lganda, chizmada chok elementlarining konstruktiv o'lchamlari ko'rsatiladi (3-chisma, *a*).

Payvand choklari payvand yoyining necha marta o'tganligiga qarab bir yo'lli yoki ko'p yo'lli bo'ladi. Ko'p yo'lli choklar kesimining tasvirida (3-chizma, *b*) har bir yo'lning konturi alohida ko'rsatilib va ularni rus alfavitining bosh harflari bilan belgilashga ruxsat etiladi.



3-chizma

Payvandlash usulidan mustasno ko'rinadigan chok shartli ravishda asosiy tutash chiziq bilan, ko'rinmaydigan chok esa shtrix chiziq bilan tasvirlanadi (3-chizma,*d*). Payvand tasviridan ko'rsatkich (strelka) ning yarmi qo'yilgan chiqarish chizig'i (tokchali yoki tokchasiz) chiziladi.
Ishlab chiqarishda qoidaga binoan parametrlari tegishii standartlarda belgilangan standart payvand choklaridan foydalaniladi.

"Chizmachilik" kursida odatda uglerodli po'latdan tayyorlangan detallarni qo'lda elektr yoyi bilan payvandlash ko'rib chiqiladi. Chok turlarini GOST 5264-69 aniqlaydi. Alyuminiy va alyuminiy qotishmalarining birikma choklari GOST 14806- 69 orqali aniqlanadi. GOST 16310- 70 da viniplast va polietilen choklarining turlari keltirilgan. Bundan tashqari payvand birikma choklarining turlari va konstruktiv

elementlari hamda payvandlash usullarini aniqlab beradigan qator standartlar (GOST 11533- 75; GOST 15164-78; GOST 14776-69; GOST 15878-70 va x. k.) mavjud.

Standart choklar quyidagi harfiy belgilarga ega:

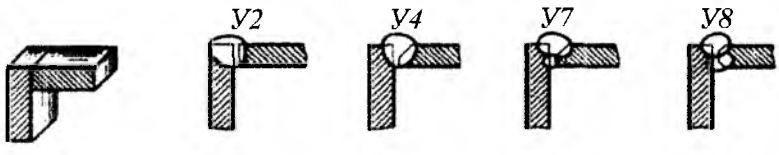
1. C - uchma-uch chok. Payvand qilinadigan detallar o'zlarining torets qirralari (sirtlari) bo'yicha biriktiriladi (4-chizma).

2. У - burchakli chok. Payvand qilinadigan detallar o'zaro burchak ostida joylashadi (5-chizma).

3. T - tavr shaklidagi chok. Bitta detalning torets sirti ikkinchi detalning yon sirti bilan biriktiriladi (6-chizma).

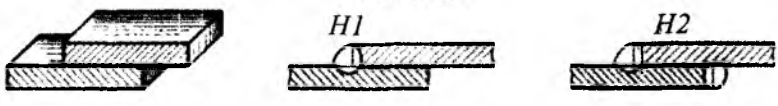
4. H - ustma-ust chok. Payvandlanadigan detallar qisman ustma-ust qo'yiladi (7-chizma).

4-chizma



5-chizma

6-chizma

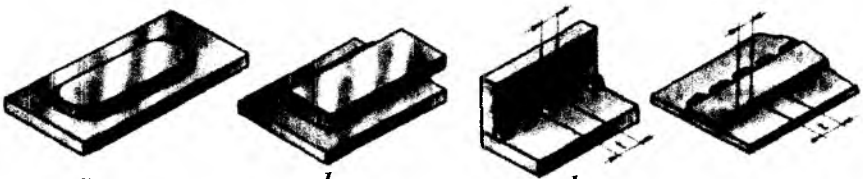


7-chizma

C, У, T-shaklidagi payvandlashlarda detallarning orasida 0...5 mm gacha tirqish qoldiriladi. Payvand birikmalarda, talablarga ko'ra, detallarning payvandlanadigan qirralari turlicha kesib tayyorlanadi.

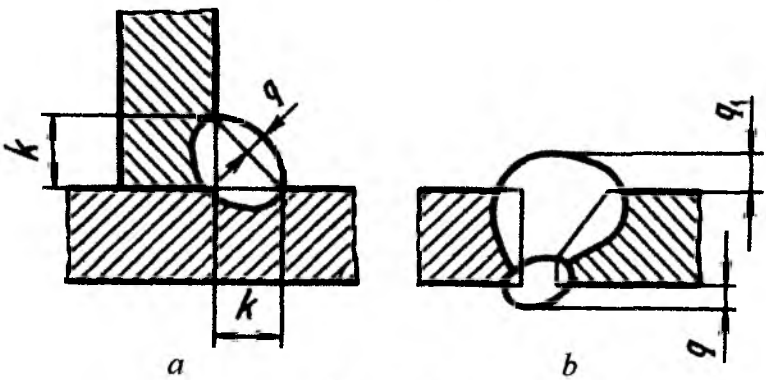
To'rttala (4, 5, 6, 7-chizmalar) holatda ham detal qirralarini kesib tashlamasdan yoki bitta yoxud ikkita qirrasini kesib tashlab payvandlash mumkin. Kesib tashlanadigan qirralar simmetrik yoki nosimmetrik, to'g'ri chiziqli yoki egri chiziqli bo'lishi mumkin.

Payvand choklar joylashishiga qarab bir yoqlama yoki ikki yoqlama choklarga bo'linadi. Choklar uzluksiz (8-chizma, *a* va *b*) yoki ma'lum qadam *t* hamda payvandlanadigan uchastka uzunligi *l* bilan xarakterlanadigan uzuq-uzuq (8-chizma, d va e) qilib bajariladi. Ikki yoqlama uzuq-uzuq choklarning payvandlanadigan uchastkalari zanjir yoki shaxmat ko'rinishida joylashadi.



8-chizma

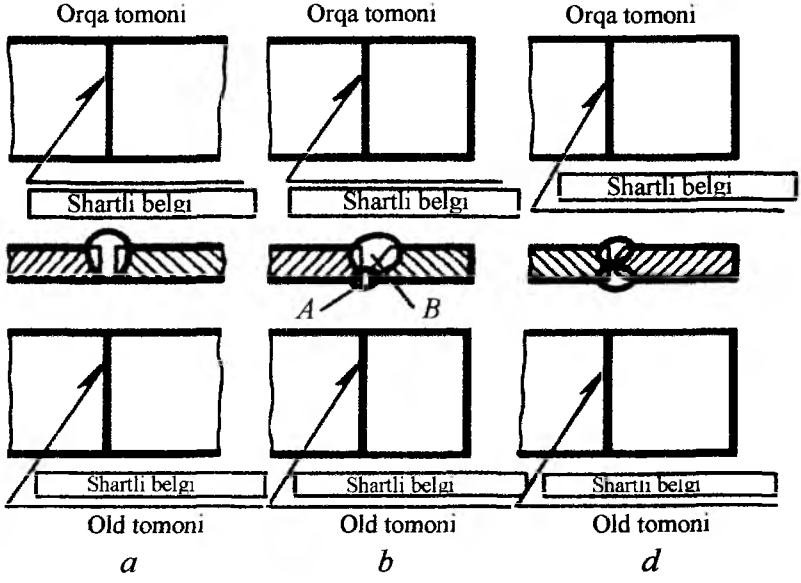
Payvand birikmalarning choklari kuchaytirib bajarilishi mumkin (9-chizma). Chokning kuchaytirgichi (bo'rtma si) *q* qiymat bilan aniqlanadi. Ayrim turdagi choklar (tavrli, ustma-ust va burchakli) chok kateti deb ataladigan *K* qiymat bilan xarakterlanadi (9-chizma, *a*).



9-chizma

Standart choklarning barcha konstruktiv xususiyatlarining majmuasi son bilan belgilanadi. Son-payvand birikma turini aniqlaydigan harfiy belgi bilan birga tegishli standart bo'yicha harfiy-sonli belgini tashkil qiladi, masalan: C1, C2, C3, ..., У1, У2, У3, ..., T1, T2, T3, ..., H1, H2, H3, ... va x. k.

Tasvirda payvand chokning old va orqa tomoni bo'ladi. Bir yoqlama chokning old tomoni qilib payvandlanadigan tomoni qabul qilinadi (10-chizma, *a*). Qirralariga nosimmetrik ishlov berilgan ikki yoqlama choklarning old tomoni bo'lib asosiy chok bajarilgan tomoni hisoblanadi (10-chizma, *b*). Qirralariga simmetrik ishlov berilgan ikki yoqlama choklarning istalgan tomonini old tomoni deb qabul qilish mumkin (10-chizma, *d*). By yerda chokning ko'rinmas tasviri, uning orqa tomoni bo'lib hisoblanadi (3-chizma, *d*).



10-chizma

Har bir payvand birikmaning choki ma'lum shartli belgiga ega bo'lib, ular tasvirga 10-chizmadagidek yoziladi, ya'ni:

a) chok tasvirining old tomonidan chizilgan chiqarish chizig'ining tokchasi ustiga;

Payvand choklarni xarakterlaydigan yordamchi belgilar

GOST 2.312-72

1-jadval

	Shartli belgilarning tasvirlanishi	Shartli belgilarning chiqarish chizig'ining tokchasiga nisbatan joylashishi	
		Old tomonda	Orqa tomonda
1. Katet o'lchami oldiga qo'yiladigan belgi			
2. Zanjir tartibida joylashgan uzuq-uzuq chok. Chiziqning qiyaligi = 60°			
3. Shaxmat tartibida joylashgan uzuq- uzuq chok			
4. Ochiq kontur bo'yicha bajarilgan chok. Bu belgi chokning joylashishichi chizmada yaqqol ko'rinib turganda ishlatiladi			
5.Yopiq kontur bo'yicha bajarilgan chok. Aylana diametri 3 ... 5 mm			
6. Buyumni tashkil qiluvchi qismlarini montaj qilish paytida bajariladigan chok			

b) chok tasvirining orqa tomonidan chizilgan chiqarish chizig'i tokchasi ostiga.

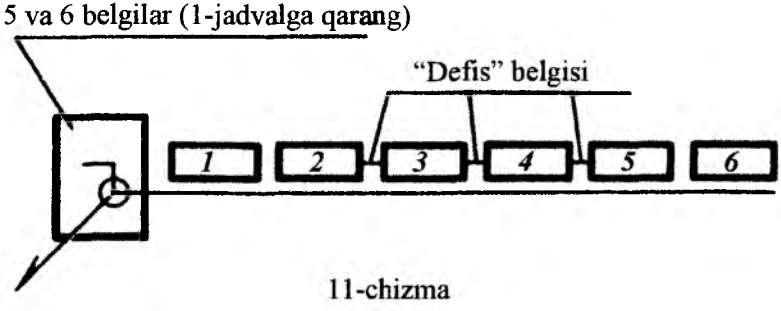
GOST 2.312-72 da choklarning belgisiga kiruvchi va ularni xarakterlaydigan qo'shimcha belgilar ham qabul qilingan (1-jadval).

Belgilar ingichka tutash chiziqda bajariladi.

Barcha belgilarning (5 belgidan tashqari) balandligi bir hilda bo'lishi kerak.

Standart chokni shartli belgilash tarkibi 11-chizmadagi sxemada keltirilgan.

1. Payvand chokli birikmalarning turi va konstruktiv elementlarini aniqlaydigan standart.
2. Tegishli standart bo'yicha chokning harfiy-sonli belgisi.
3. Shu standart bo'yicha payvandlash usulining shartli belgisi (bu belgini qo'yish shart emas).
4. Kateti bilan xarakterlanadigan chok turi (9-chizma, *a*) uchun quyidagi belgilar qo'yiladi:
   a) belgisi (1-jadval);
   b) katetning o'lchamlari mm da.
5. Uzuq- uzuq chok uchun quyidagi belgilar qo'yiladi:
   a) payvandlanadigan uchastka elementi uzunligining o'lchami mm da;
   b) 2 yoki 3 belgi (1-jadval);
   d) qadamining o'chami mm da.
6. 4, 5 va 6 belgilar (1-jadval).



11-chizma

Agar chokka payvanddan so'ng mexanik ishlov beriladigan bo'lsa (masalan, 1-jadvaldagi 4 va 5 belgilar bo'yicha aniqlanadigan hollarda), u holda chokning shartli belgisidan so'ng chok sirti tozalagini aniqlaydigan zaruriy g'adir-budurlik belgisi qo'yiladi.

5 va 6 belgilar chiqarish chizig'i bilan tokcha chizig'ining kesishgan joyiga qo'yiladi.

Chokni belgilashda faqat uni xarakterlaydigan parametrlar va belgilar qo'yiladi. Standart chokning shartli belgilari, u to'g'risida to'liq ma'lumot berishini hisobga olib payvand choklarning ko'ndalang kesimida qirralarini payvandga tayyorlashda qiyalatib kesilgan joylar, ular orasidagi tirqish va chok konturi tasvirlanmaydi. Payvand qilinadigan detallarning kesimlari qarama-qarshi yo'nalishda shtrixlanadi (12-chizma, *a*).

12-14-chizmalarda payvand choklarining o'qilishini ochib beradigan shartli belgilarda GOST 2. 312-72 ga muvofiq payvandlash usuli ko'rsatilmaydi. Bu chizmalarda misol tariqasida old va orqa tomondagi choklarning shartli belgilanishlari berilgan. Ish chizmalarida choklarning shartli belgilari faqat bir tomonga (iloji boricha old tomonga) qo'yiladi.

12-chizma, *a* dagi chokning shartli belgisi quyidagicha o'qiladi:

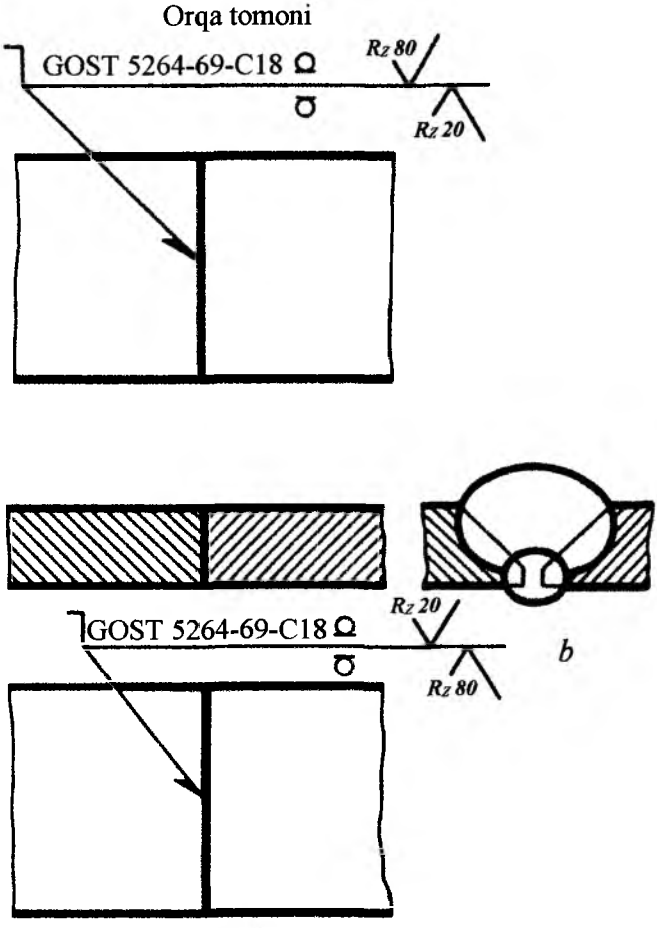
1) ⌉ - chok montaj paytida bajariladi;

2) GOST 5264-69-chok uglerodli po'latdan tayyorlangan detallarni biriktirishda qo'lda elektr yoyi yordamida bajariladi (shartli belgida payvandlash usuli ko'rsatilmagan);

3) C18-payvandlanadigan ikkala qirrasi qiyalatib kesilgan va ikki tomonlama bajarilgan uchma-uch chok. Qirralarining kesiladigan o'lchamlari va kesilgan qirralarning shakli GOST 5264-69 da keltirilgan;

4) 4-belgilar ikki tomondan payvand kuchaytirgichlari olib tashlanganligini bildiradi;

5) Chok sirtining g'adir-budurligi: old tomoni – R_z20, orqa tomoni – R_z80.



12-chizma

13-chizma, *a* da quyidagi parametrlar bilan xarakterlangan payvand choki tasvirlangan:

1) ○ – chok yopiq kontur bo'yicha bajarilgan;

2) GOST 14806-69-alyuminiyni payvand qilingandagi chok;

3) T5-payvandlanadigan qirralar kesilmagan, ikki tomonlama shaxmat tartibida bajarilgan tavrli chok (bu chokning istalgan tomonini old tomon deb qabul qilish mumkin);

4) PH3-himoya gazi muhitida erimaydigan elektrod bilan qo'lda bajarilgan chok (bu belgini ko'rsatmaslik ham mumkin);

5) ◺6-chok kateti 6 mm gat eng;

6) payvand qilingan uchastka uzunligi 50 mm;

7) qadami 100 mm.

13-chizma, *b* da quyidagi xarakteristkali chok tasvirlangan va belgilangan;

1) GOST 14806-69-alyuminiyni payvand qilingandagi chok;

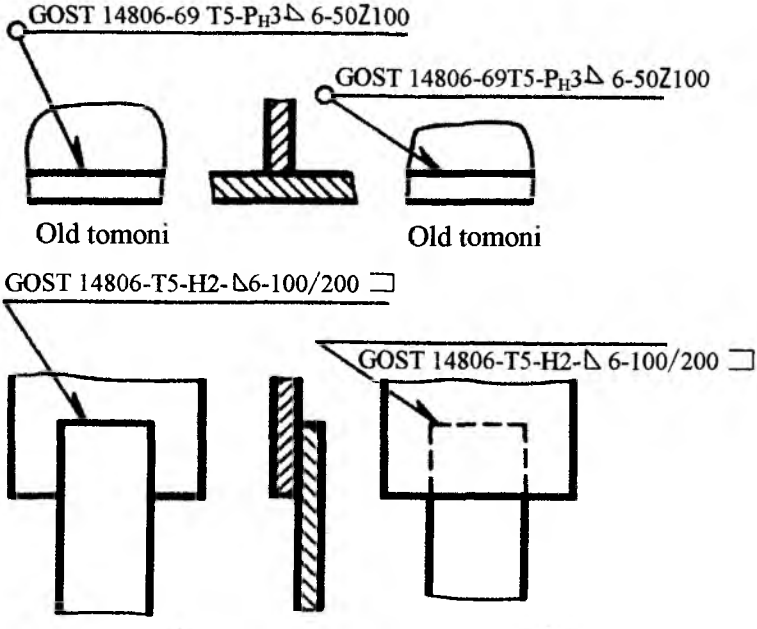
2) H2-payvandlanadigan kesib tayyorlanmagan bir tomonlama uzuq-uzuq bajarilgan ustma-ust chok. Chok himoya gazi muhitida eriydigan elektrod yordamida yarim avtomatik bajarilgan (payvand chokining belgisiga payvandlash usuli kiritilmagan);

3) ◺ 6-chok kateti 6 mm ga teng;

4) payvandlangan uchastka uzunligi 100 mm;

5) qadami 100 mm;

6) ⊐ - chok ochiq kontur bo'yicha bajarilgan.



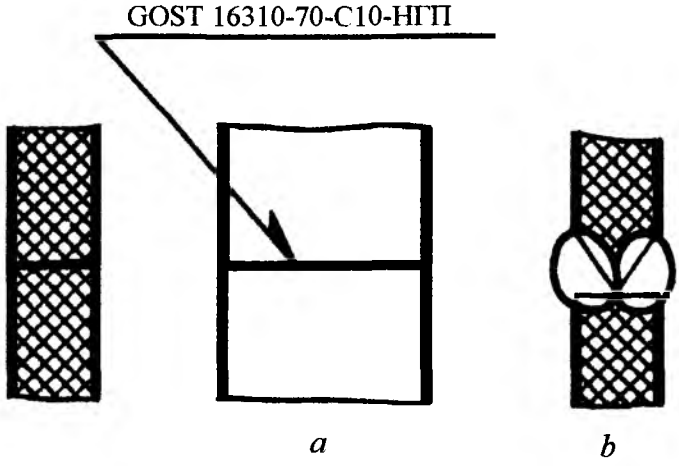
13-chizma

14-chizma, *a* da polimer (plastmassalar) ni payvand chokini tasvirlash va belgilash ko'rsatilgan. Chokning parametrlari:

1) GOST 16310-70-viniplast va polietilenlar birikmalarini hosil qiluvchi payvand chok;

2) C10-bitta detal qirrasi ikki tomondan simmetrik kesilgan ikki tomonlama bajarilgan uchma-uch chok; GOST 16310-qirralari shaklini belgilab beradi (14-chizma, *b*); old tomoni sifatida chokning istalgan tomonini qabul qilish mumkin;

3) HГП-qizdirilgan gazda quymali bajarilgan chok (bu belgini ko'rsatmaslik ham mumkin).



14-chizma

Agar payvand birikma bir hil choklarga ega bo'lsa, u holda payvand choklarini soddalashtirib belgilash mumkin.

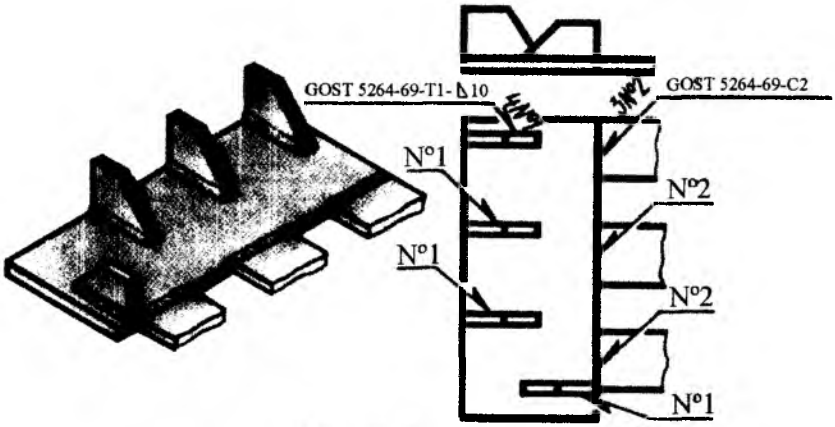
Choklar quyidagi hollarda bir hil hisoblanadi, agar:

1) ko'ndalang kesimidagi konstruktiv elementlarining turi va o'lchamlari bir hil bo'lsa;

2) ularga bir hil texnik talablar qo'yilgan bo'lsa;

3) bir hil shartli belgilarga ega bo'lsa.

Agar chizmada bir nechta bir xil choklar tasvirlangan bo'lsa, bu holda chokning shartli belgisi bittasiga qo'yilib, qolganlaridan tokchali chiqarish chiziqlari chiziladi xolos (15-chizma).



15-chizma

Barcha bir xil choklarga bitta tartib raqamini quyidagi joylarga qo'yish mumkin:

a) chokning shartli belgisi qo'yilgan tokchaning chiqrish chizig'iga (tartib raqamining oldiga bir xil choklarning sonini ko'rsatishga ruxsat etiladi);

b) chok tasvirining old tomonidan chizilgan chiqarish chizig'ining tokchasiga;

c) chok tasvirining orqa tomonidan chizilgan chiqarish chizig'ining ostiga (15-chizmada bu hol ko'rsatilmagan).

Agar chizmadagi barcha choklar bir xil bo'lib, ularning bir tomoni tasvirlangan bo'lsa (old yoki orqa tomoni), u holda tartib raqamlarini qo'ymaslikka ruxsat etiladi. Bunda belgilarga ega bo'lmagan choklar faqat tokchasiz chiqarish chizig'i bilan ko'rsatiladi xolos (16-chizma).

Simmetriya o'qiga ega bo'lmagan buyumlarning tasvirida choklarning chiqarish chizigqlari va belgilarini faqat bitta simmetrik qismida ko'rsatishga ruxsat etiladi.

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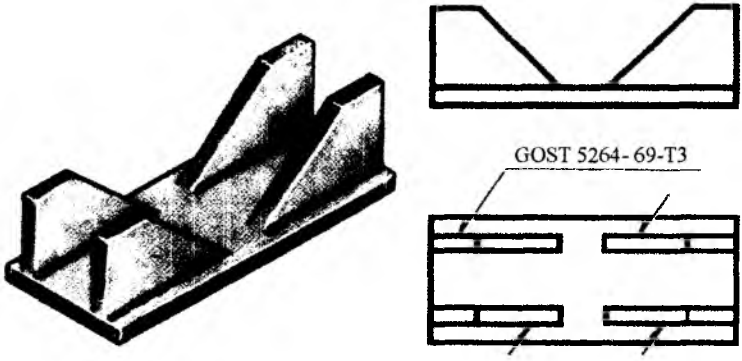


16-chizma

Chizmalarda payvand chokli birikmalarni chiqarish chizig'i bilan belgilamay, balki ularning ko'rsatmalarini chizmalarning texnik talablarida ham keltirish mumkin. Bunday ko'rsatmalar payvandlash joyini, payvandlash usulini, payvand chokli birikmalarning turini, ularning konstruktiv elementlari va joylashishini aniqlab berishi kerak.

Ayrim hollarda standart orqali konstruktiv o'lchamlari berilmagan nostandart choklar ham bajariladi. Buday paytlarda chokning o'lchamlari, uning ko'ndalang kesimida ko'rsatiladi.

Nostandart oddiy (masalan, eritib payvandlangan) uzuq-uzuq choklar uchun shartli belgilarga quyidagilar yoziladi:

a) payvandlanadigan uchastka o'lchami;
b) 1-jadvalning 2 yoki 3 belgisi;
c) qadamining o'lchami
d) 1-jadvaldagi 6 belgi.

Nostandart chokning (unga mexanik ishlov beriladigan bo'lsa) chiqarish chizig'i tokchasidagi shartli belgilarining joylashishi standart choklarga o'xshash amalga oshiriladi.

Texnik talablarda nostandart chok hosil qiladigan payvandlash usuli berilishi zarur. O'quv chizmalarida standart va nostandart choklarni belgilashni, ularning turini harfiy-sonli belgilar (masalan, T1, H2 va x. k.) hamda standarti va katetining qiymati (masalan, ⊾7) ni ko'rsatish orqali soddalashtirish mumkin.

Kavsharlangan va elimlangan birikmalar

Kavsharlab biriktirish paytida payvandlashdan farqli o'laroq kavsharlash joyi biriktiriladigan detallarning erish temperaturasidan pastroq bo'lgan darajada, ya'ni qalay (chok hosil qiladigan metall) eriydigan temperaturagacha qizdiriladi. Detallarning birikishi, ular orasidagi tirqishni qalay bilan to'lishi orqali yuzaga keladi.

Kavsharlab va elimlab hosil qilingan ajralmas birikma choklari O'zDST 2.313-82 bo'yicha belgilanadi.

Qalay yoki yelim kesimlarda (17-chizma, *a*, *b*, *e*, *j* va *z*) hamda ko'rinishlarda (17-chizma, *d*) asosiy tutash chiziqlarga nisbatan 2 barobar qalin bo'lgan asosiy tutash chiziqlar bilan tasvirlanadi. Kavsharlashni (17-chizma *a*, *b*, *d*) va yelimlashni (17-chizma *e*) belgilashda asosiy tutash chiziqdan chizilgan chiqarish chiziqlariga qo'yiladigan belgilardan foydalaniladi. Perimetri bo'ylab kavsharlangan va yelimlangan choklar 3-4 mm li aylana bilan tugaydigan chiqarish chizig'i bilan belgilanadi (17-chizma, *b* va *j*).

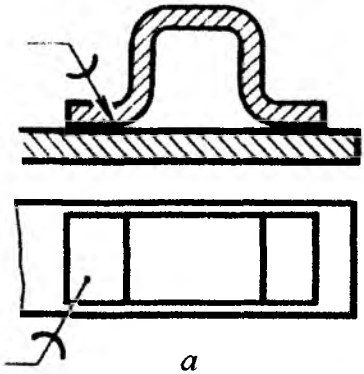
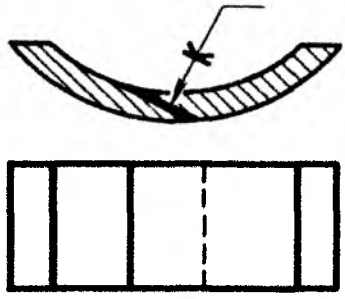
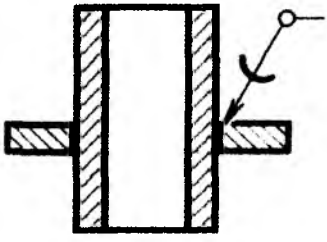
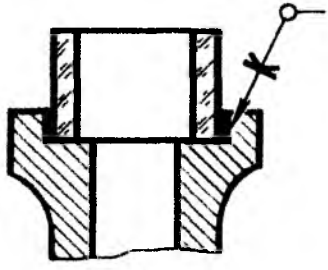
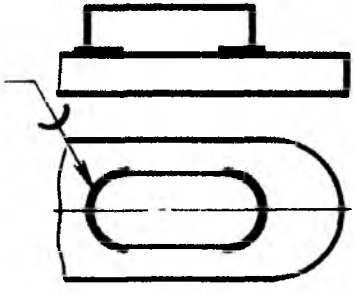
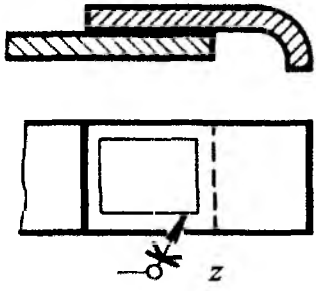
Kavsharlangan birikma tasvirida chokning o'lchami va yuzasining g'adir-budurligini ko'rsatish zarur.

1. Kavsharlangan va yelimlangan birikmalarda birikma joyidagi elementlar qirqimda va ko'rinishlarda 2 marta qalinlashtirilgan asosiy tutash kontur chizig'i bilan ko'rsatiladi.

2. Kavsharlab va yelimlab hosil qilingan birikmalarni bevosita chokni ko'rsatuvchi ko'rsatkich (strelka) li chqarish chizig'iga qo'yilgan ramz va belgilar bilan belgilanadi.

3. Kavsharlashga ◡ ramzi; yelimlashga esa - ⌵ ramzi qo'llaniladi (17-chizma).

4. Chiqarish chizig'ining tokchasiga qalay yoki yelimning markasi ko'rsatilgan texnik talabning punkt raqami qo'yiladi.

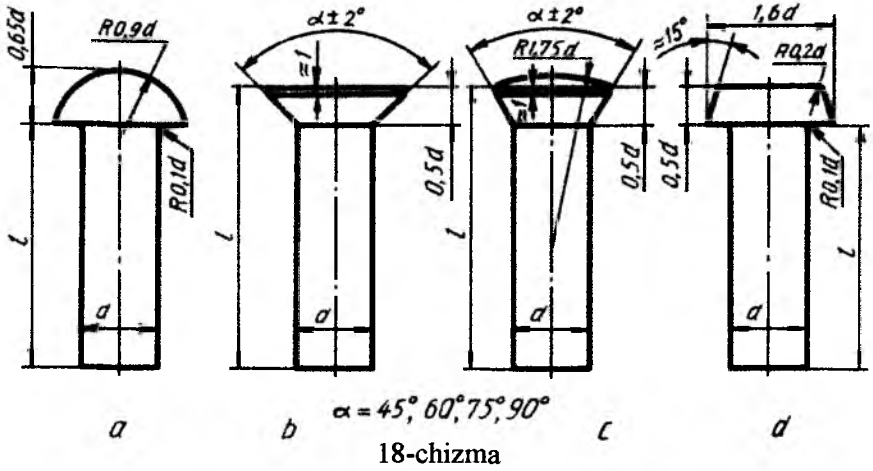
Choklarning shartli tasvirlari va belgilari	
Kavsharlangan choklar	Yelimlangan choklar
 a	 e
 b	 j
 d	 z

17-chizma

Parchin choklar (O‘zDST 2.313-97)

Parchin choklar bir uchida qalpog‘i bol‘gan silindrik sterjendan iborat parchin mix (zaklyopka) lar vositasida hosil qilinadi. Parchin mixlar standartlashtirilgan bo‘lib, qalpog‘ining shakli, o‘lchami va vazifasiga qarab, ular: zich-mustahkam choklar uchun, mustahkam choklar uchun, mustahkam zich- mustahkam choklar uchun tayyorlanadi. Parchin mixlarning o‘zaro joylashishiga qarab, shaxmat tartibli va parallel choklar bo‘ladi. Biriktiriluvchi listlar uchlarining joylashishiga qarab choklar ustma-ust va uchma-uch choklarga bo‘linadi. Uchma-uch choklarga bir yoki ikki tomonlama tagliklar qo‘yiladi.

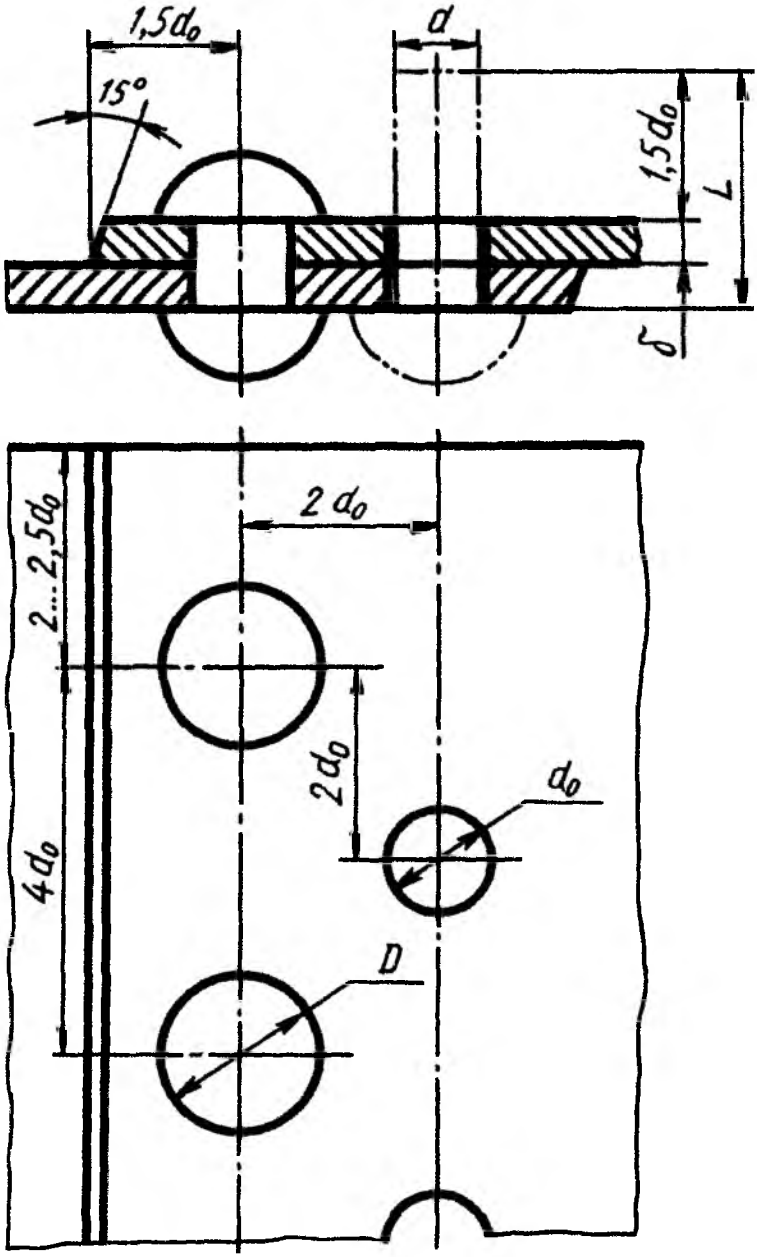
Parchin mixlarning ish chizmasini O‘zDSt 10299-80 da ko‘rsatilgan o‘lchamlarda, ba’zi hollarda sterjenning diametriga nisbatan olingan taxminiy o‘lchamlarda chizish mumkin (18-chizma, *a*, *b*, *d*, *e*).



18-chizma

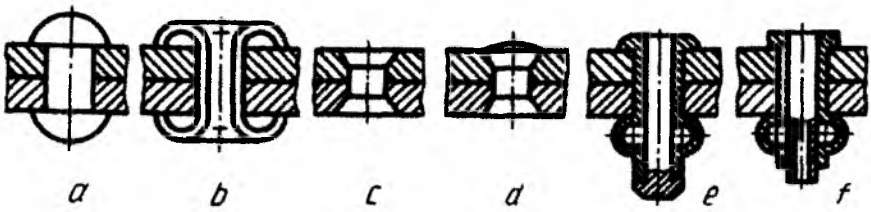
Parchin mix diametri parchinlanadigan list qalinligiga muvofiq tanlanadi - d - b + (6 ...8 *mm.),* δ - list qalinligi, parchin mixning uzunligi - L=25+1,5 d_o olinadi.

Ikki qatorli, shaxmat tartibli chokning chizmasida (19-chizma) parchin mixga mo‘ljallangan teshik diametri d_o=1,1d bo‘lib, parchinlashdan keyin mix diametri d_o ga tenglashib qoladi. Bu chizmadagi barcha parametrlar d_o ga nisbatan taxminiy o‘lchamlarda ko‘rsatilgan.



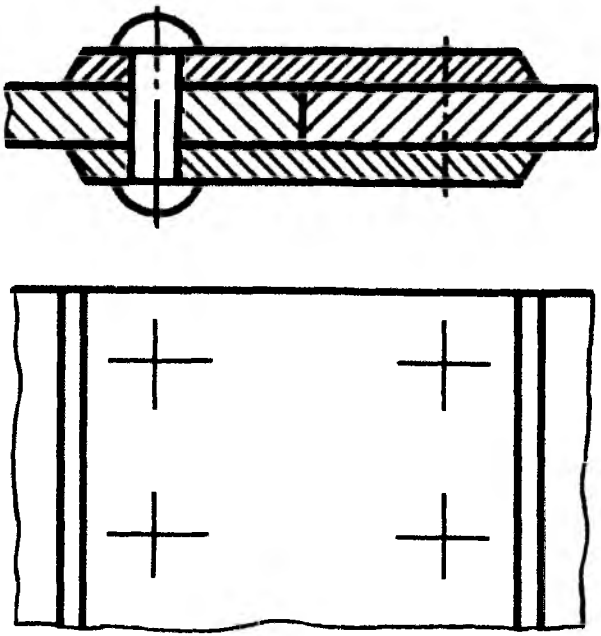
19-chizma

Parchin mixli choklarning shartli tasvirlanishiga misollar: yarim yumaloq qalpoqli parchin mix bilan hosil qilingan chok (20-chizma, *a*), ichi kovak silindrik parchin mix (piston) bilan hosil qilingan chok (20-chizma, *b)*, yashirin qalpoqli parchin mix bilan hosil qilingan chok (20-chizma, *c*), bir tomoni yarim yashirin, ikkinchi tomoni yashirin qalpoqli parchin mix bilan hosil qilingan chok (20-chizma, *d)*, maxsus parchin mix bilan hosil qilingan choklar (20-chizma, *e*, *f)*.



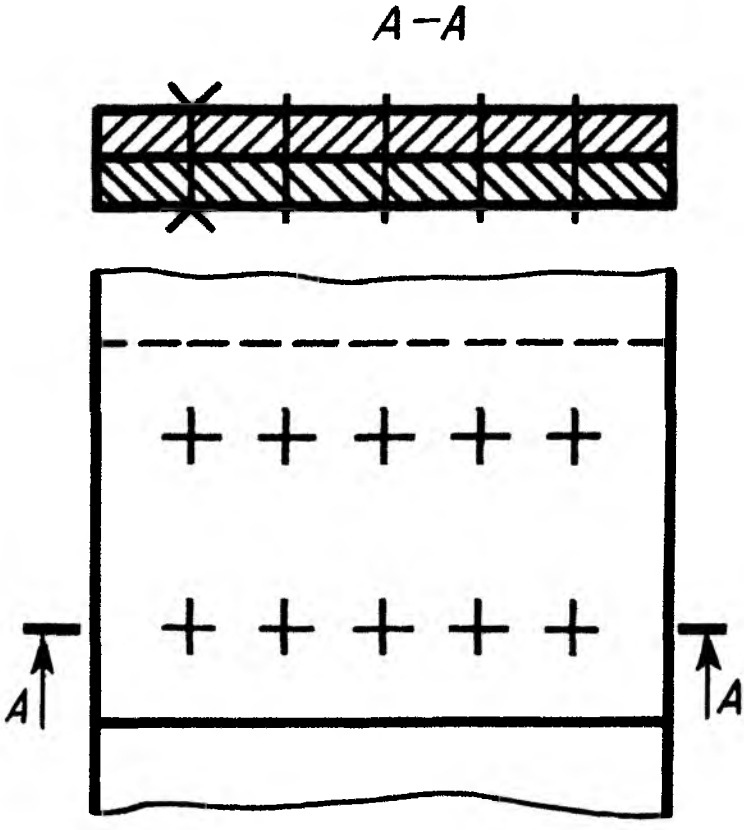
20-chizma

Parchm mixlarning faqat joylashishini ko'rsatish zarur bo'lsa, u holda parchin mixlar qalpog'I o'rnida kalta qilib o'zaro kesishuvchi o'q chiziqlari chiziladi (21-chizma).



21-chizma

Parchin mix belgisida, uning diametri, uzunligi va o'lchamini aniqlovchi standart ko'rsatiladi. Masalan, parchin mix 8x2038 M3.036 - bu yerda diametri *d*=8 *mm.*, uzunligil *l*= 20 *mm.*, 38 guruhdagi *D*18 markali materialdan qalinligi 6 *mkm.*li 03 qoplamada bajarilgan. Yig'ish chizmasida bir xildagi parchin mixli birikma mavjud bo'lsa, u shartli tasvirlanadi (22-chizma).



22-chizma

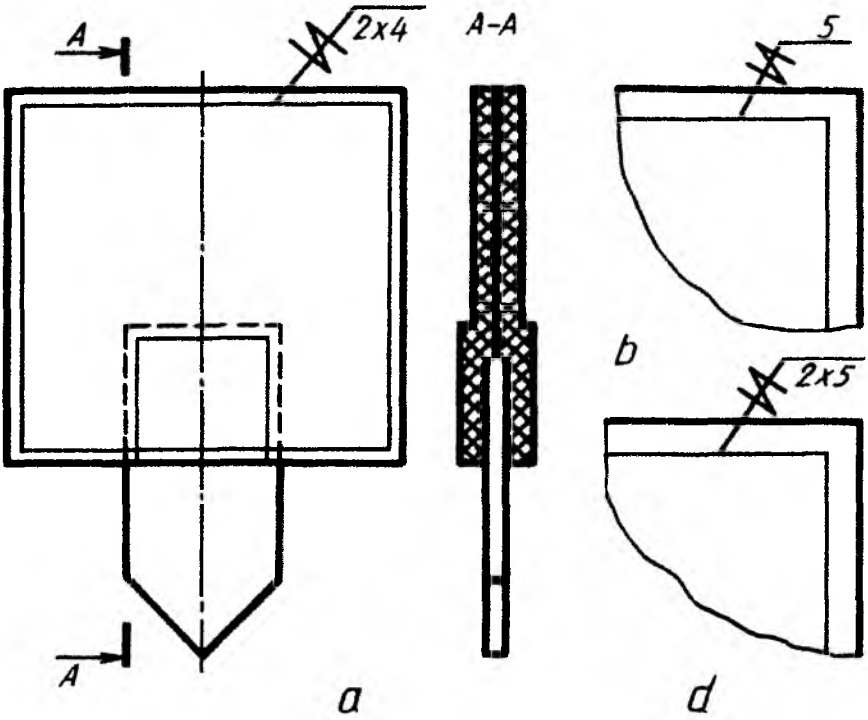
23- chizmada parchin choklarning shartli tasvirlari berilgan
ST SEV 138-76

Parchin mixlar	Tasvirlanishi	Shartli tasvirlanishi	
		Kesimda	Ko'rinishda
Yarim yumaloq (sferik) qalpoqli parchin mix			
Ichi kovak silindrik parchin mix (piston)			
Bir tomoni yashirin, ikkinchi tomoni yarim yumaloq qalpoqli parchin mix			

23-chizma

Tikilgan birikmalar (O'zDSt 2.313:97)

Tikish yo'li bilan hosil qilinadigan birikmalar chizmada ingichka tutash chiziq bilan tasvirlanadi va chiqarish chizig'ida uning shartli belgisi hamda tokchasida o'lchami qo'yiladi (23-chizma, *a)*. Tikish materiali (ip va boshqalar) standart bo'yicha tanlanadi yoki texnik talablarda ko'rsatiladi. Shaxobchaning raqami chiqarish chizig'ining tokchasiga qo'yiladi (23-chizma, *b*). Chok qatorlari va ular orasidagi masofa chiqarish chizig'i tokchasining ostiga qo'yiladi (23-chizma, *d*).

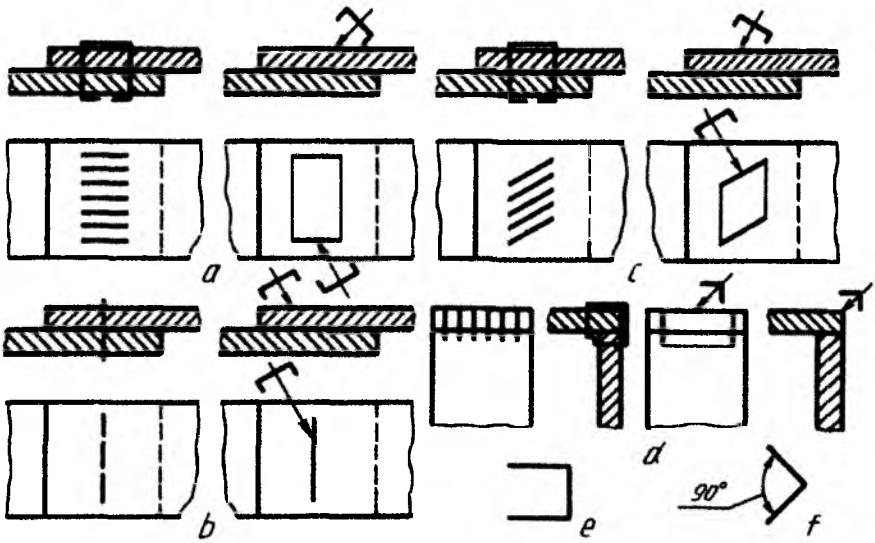


24-chizma

Metall changak (skobka) li birikma (O'zDSt 2.313:97)

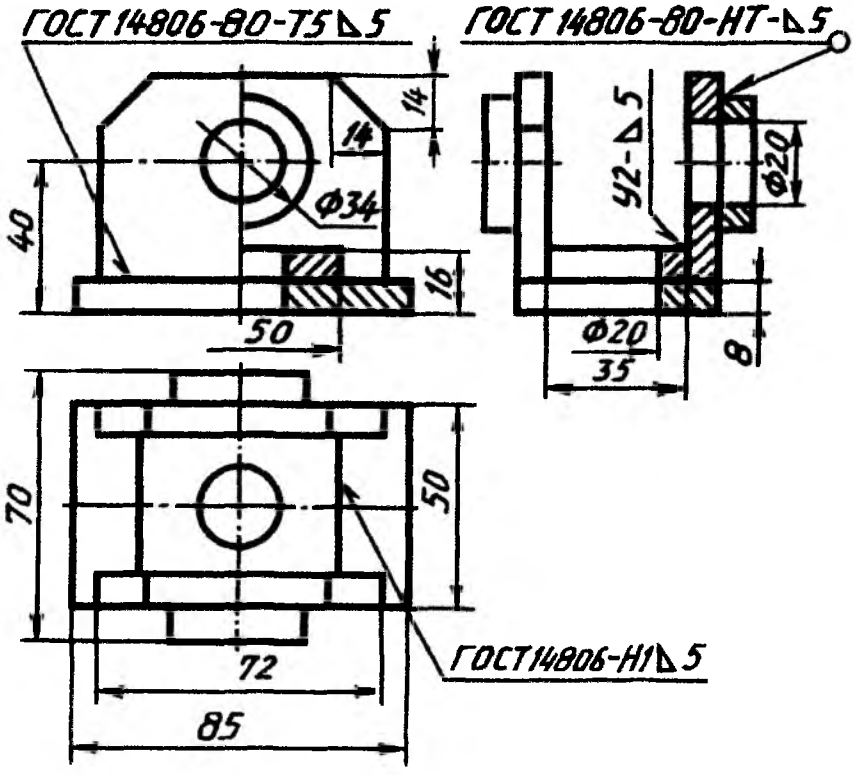
Metall changaklar vositasida hosil qilinadigan birikmalar shartli belgilarda belgilanadi va chiqarish chiziqlarida ko'rsatiladi (24-chizma, *a*, *b*, *c*, *d*).

Ustma-ust choklashda va burchaklarni choklashdagi shartli misollar: changaklarni o'zaro parallel qilib joylashtirish (24-chizma, *a*), changaklar ketma-ket bitta chiziqda joylashtirilgan chok (24-chizma, *b*), changaklar qiyalatib parallel joylashtirilgan chok (24-chizma, *c*), changaklar burchakka parallel tikib hosil qilingan chok (24-chizma, *d*). Ustma-ust tikishda changak yordamida hosil qilingan chokni shartli belgilash belgisi (24-chizma, *a*, *e*), burchakli birikma hosil qilingan chokni shartli belgilash belgisi 24-chizma, *f* larda ko'rsatilgan.



25-chizma

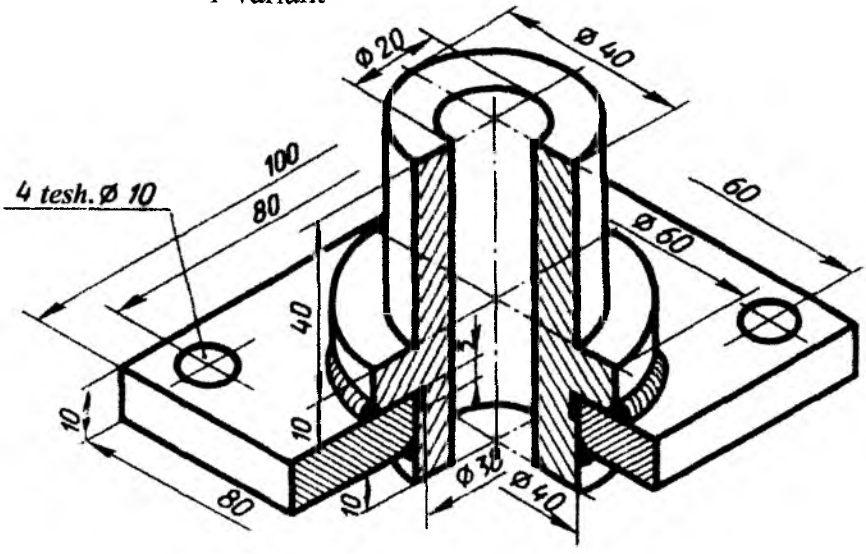
Payvand chokli birikmalar bo'yicha grafik ish bajarish uchun namuna



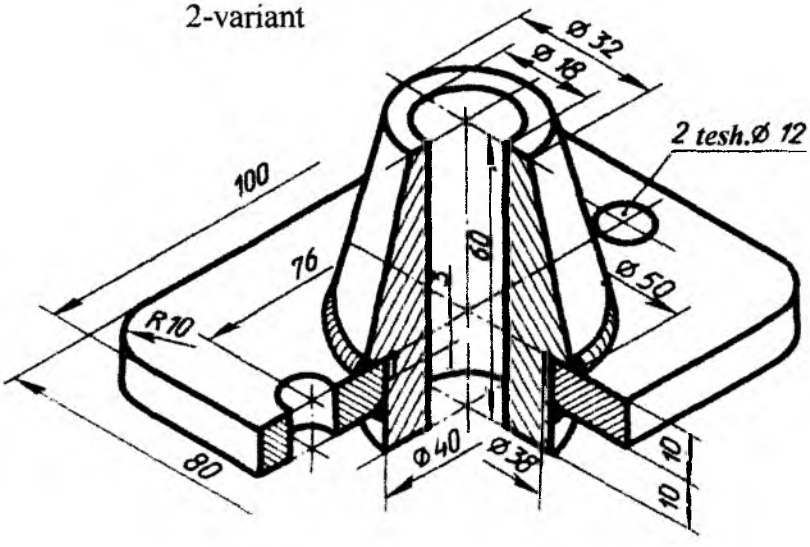
26-chizma

Payvand chokli (choklari bo'yab ko'rsatilgan) birikmalar bo'yicha grafik ish bajarish uchun tarqatma material variantlari

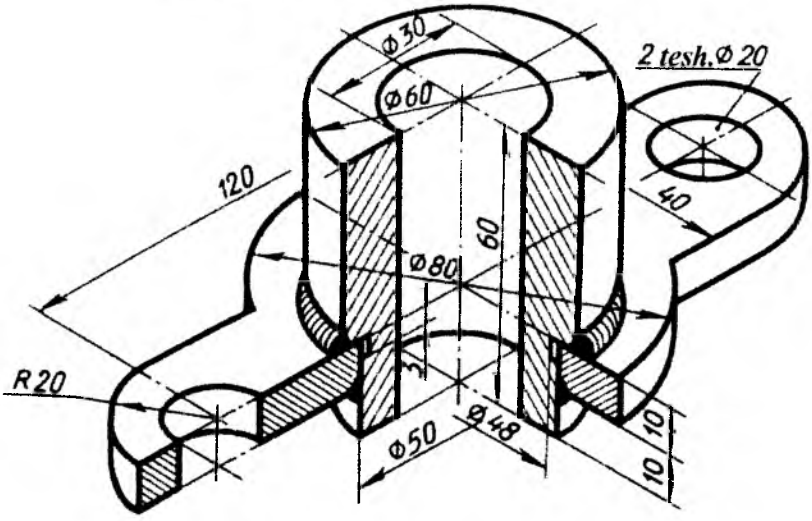
1-variant



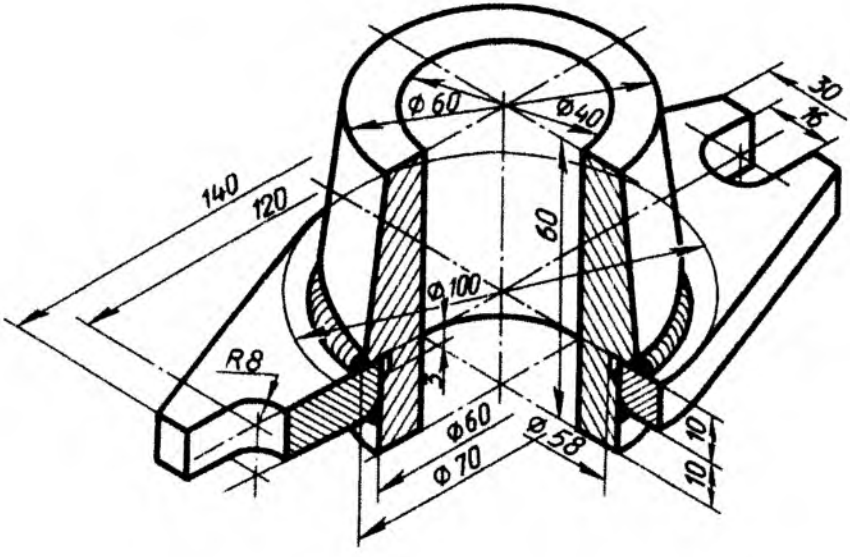
2-variant



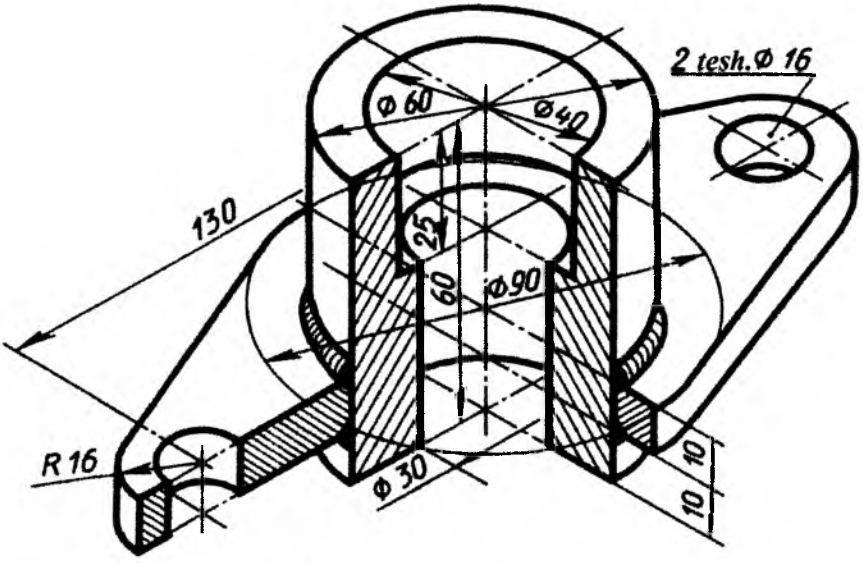
3-variant



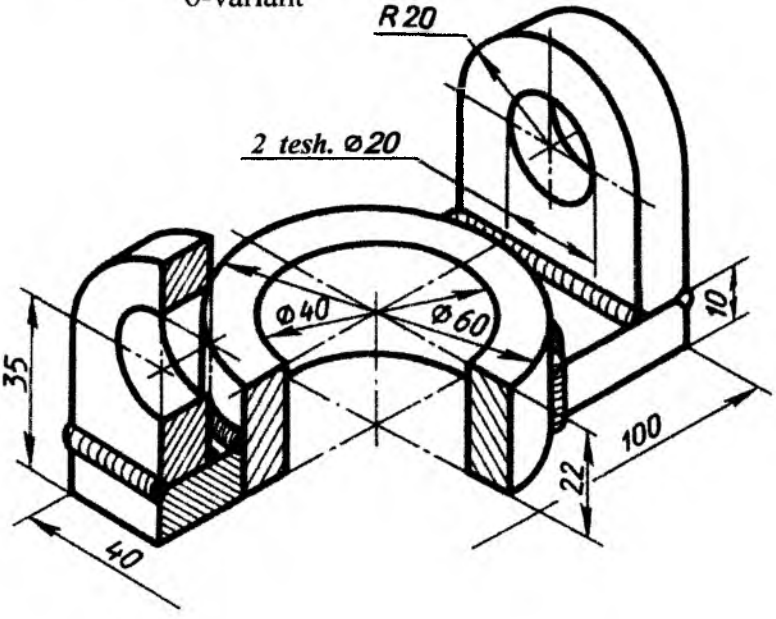
4-variant



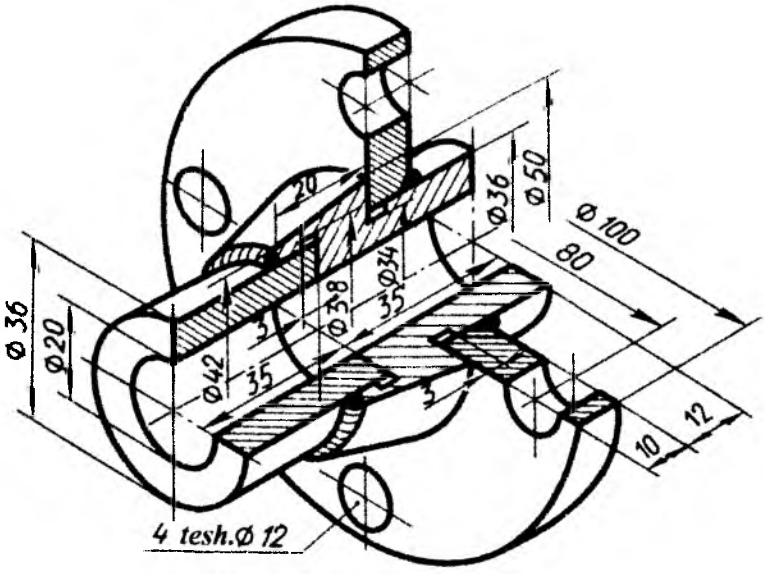
5-variant



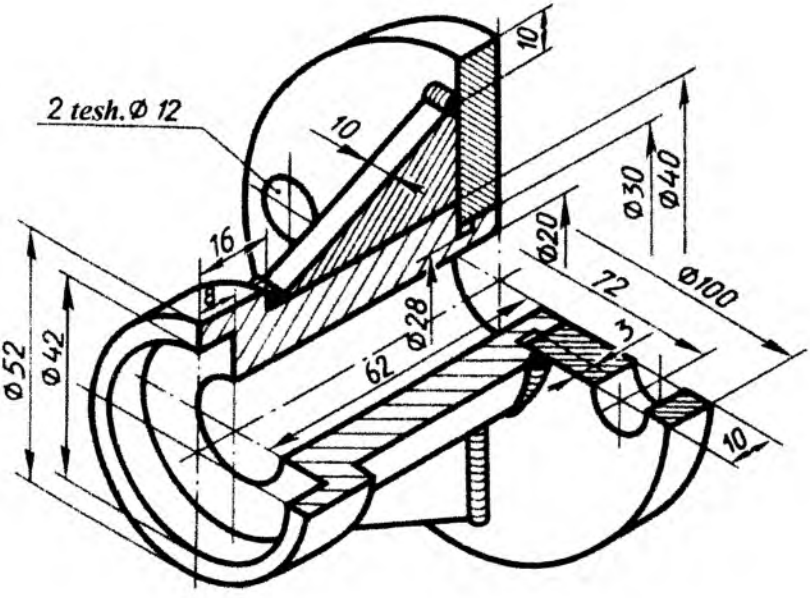
6-variant



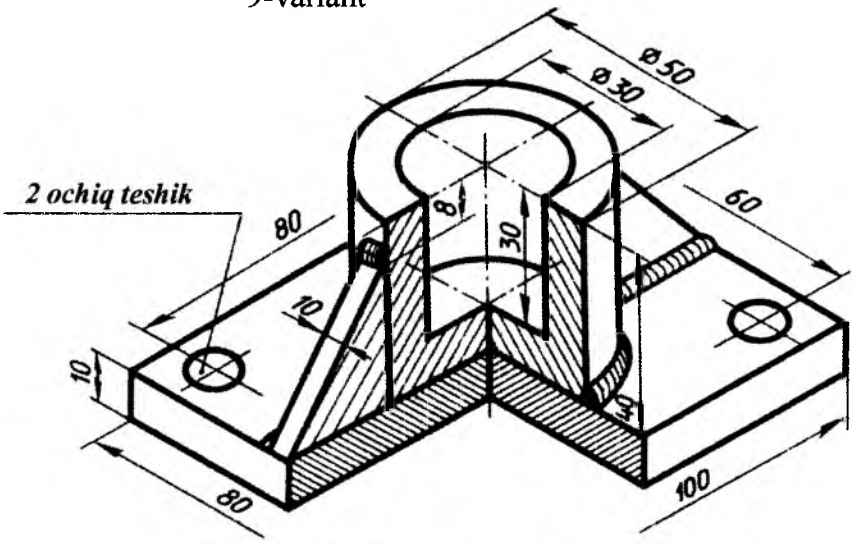
7-variant



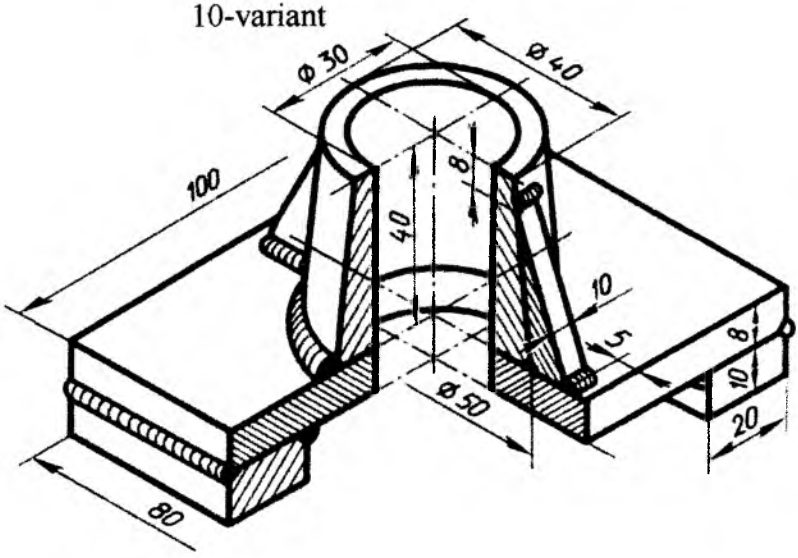
8-variant



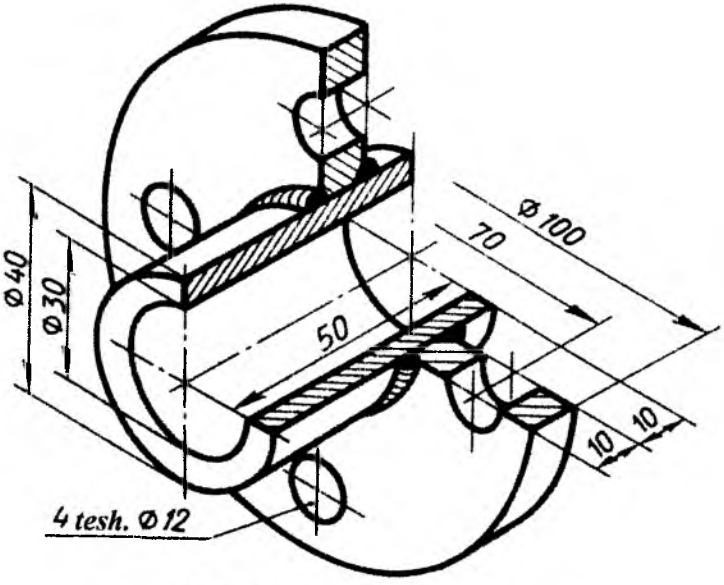
9-variant



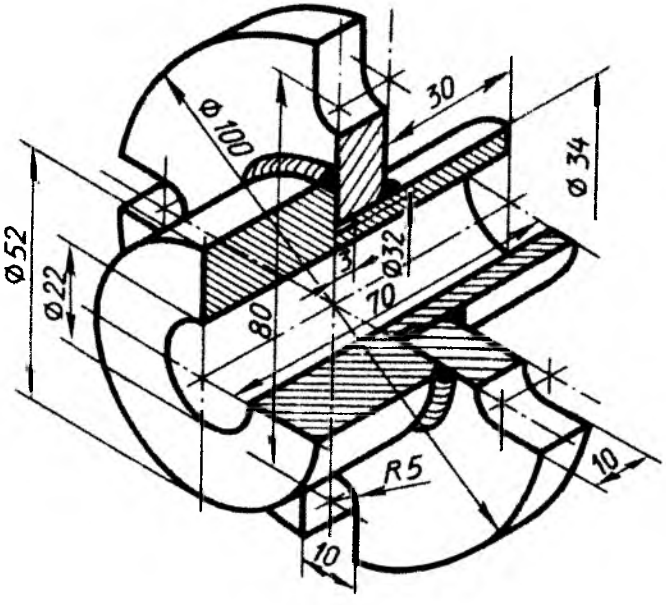
10-variant



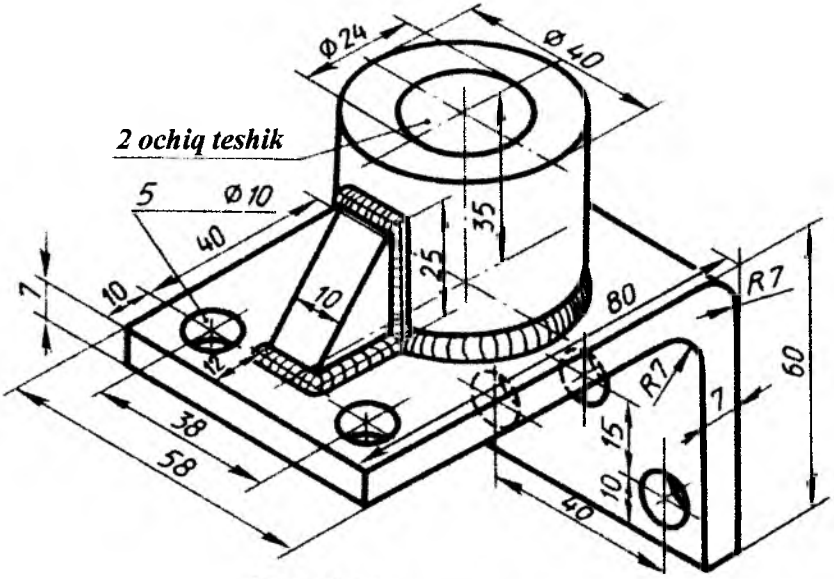
11-variant



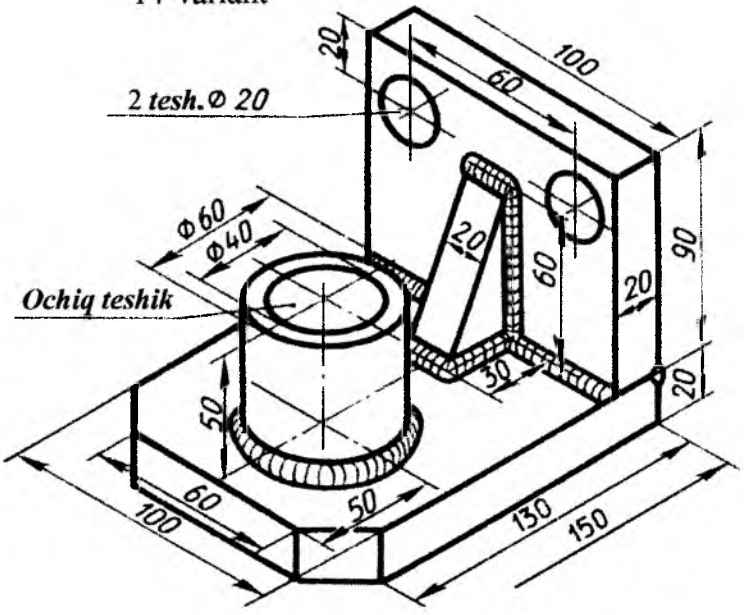
12-variant



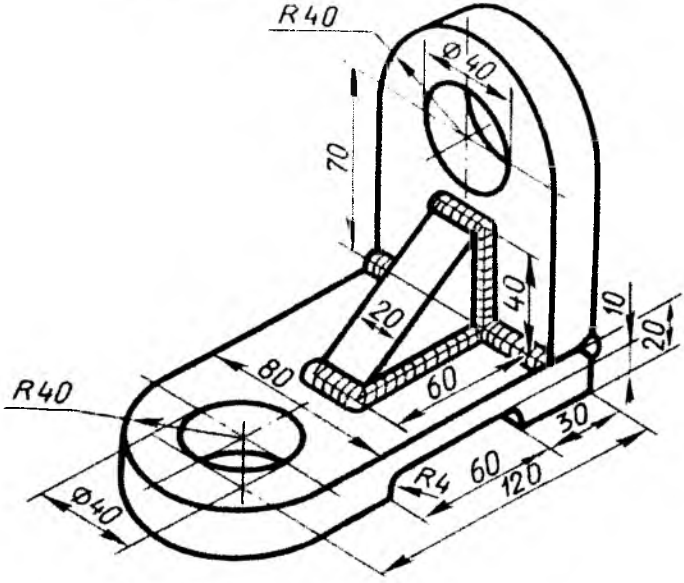
13-variant



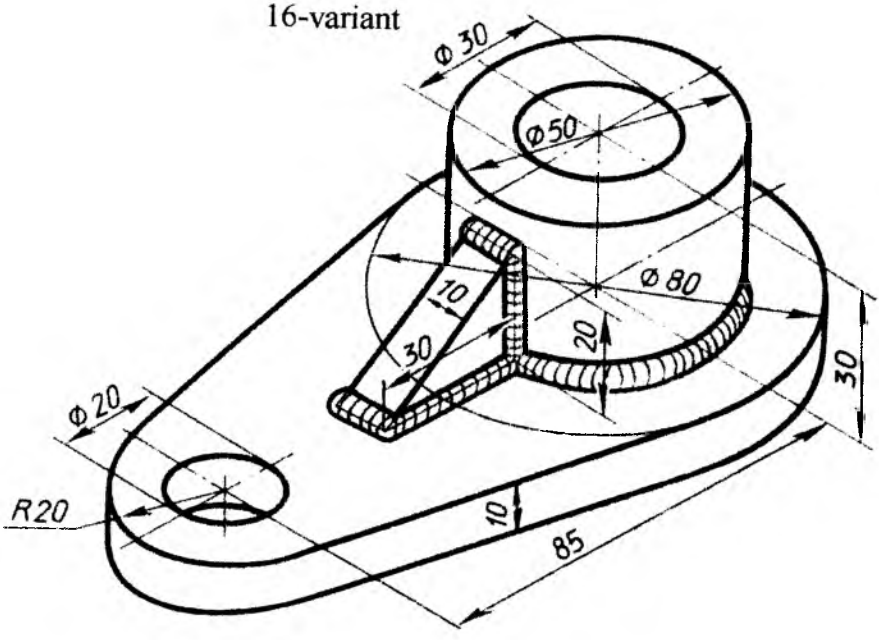
14-variant



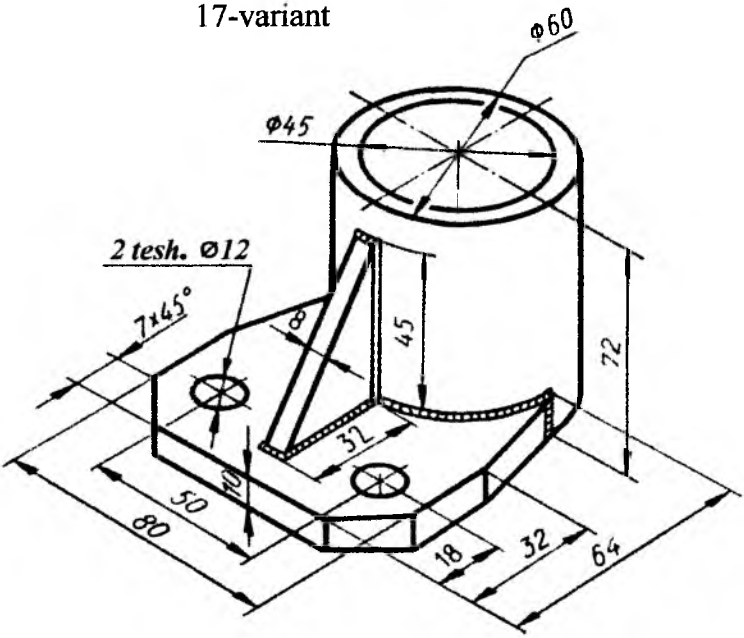
15-variant



16-variant



17-variant



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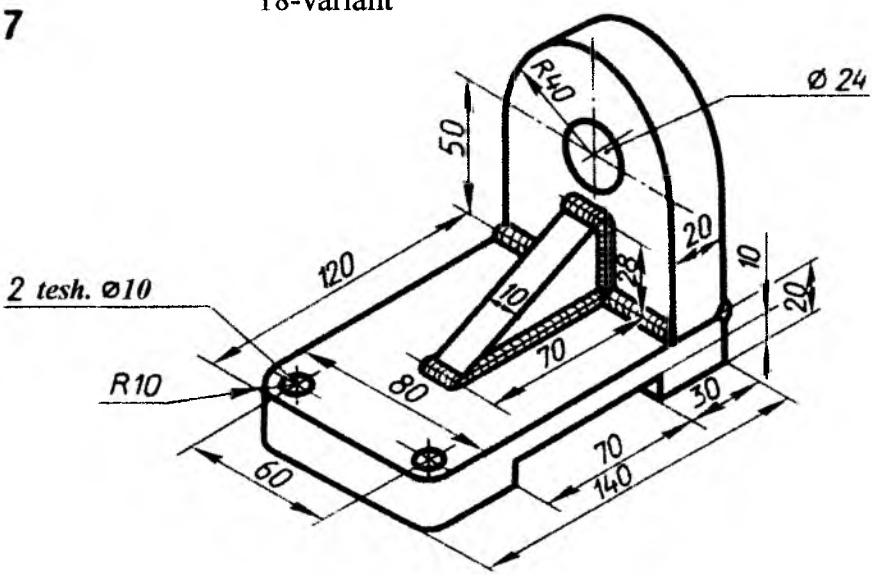
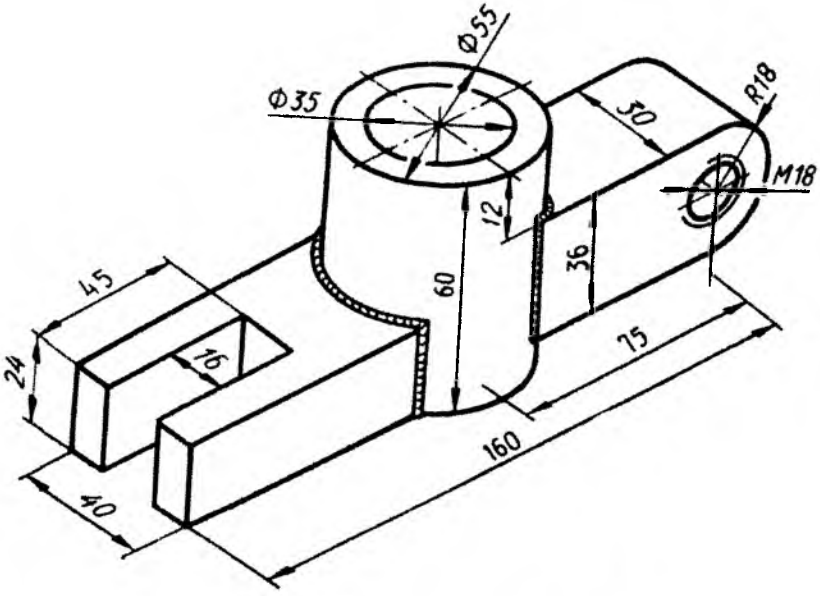
18-variant



19-variant



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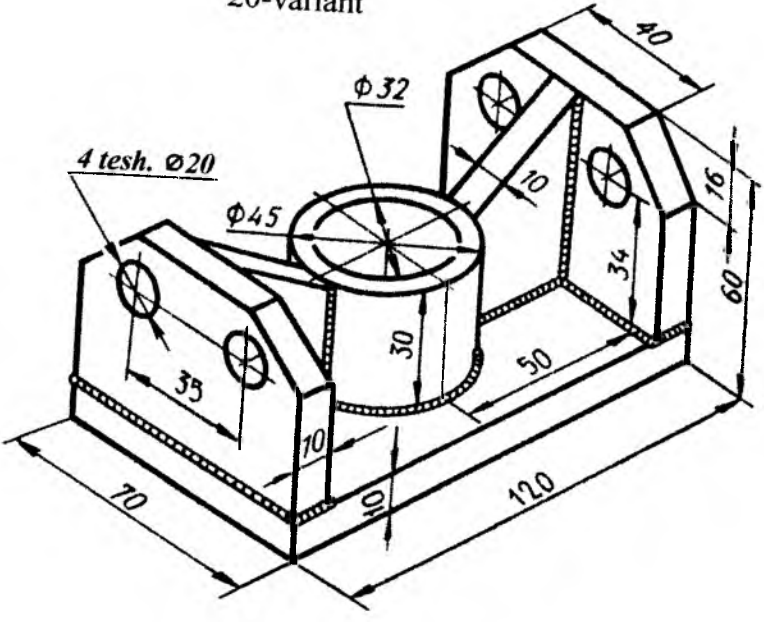
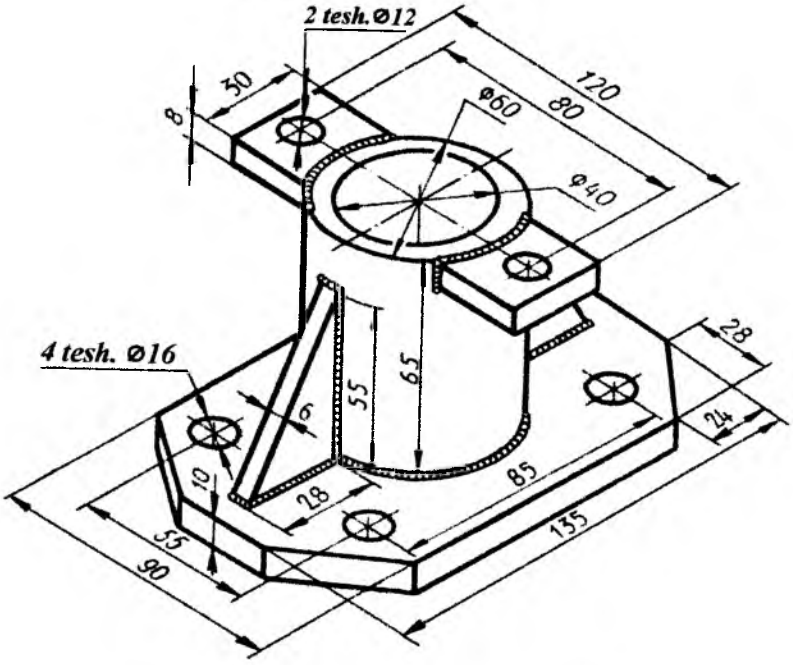
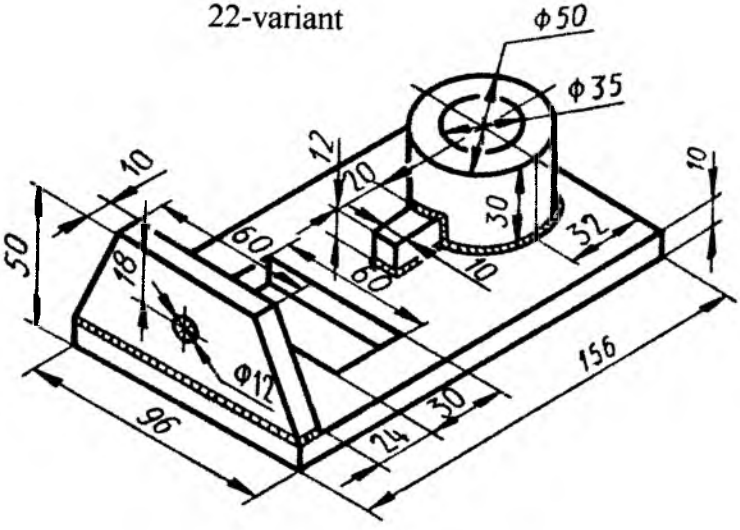


21-variant



22-variant



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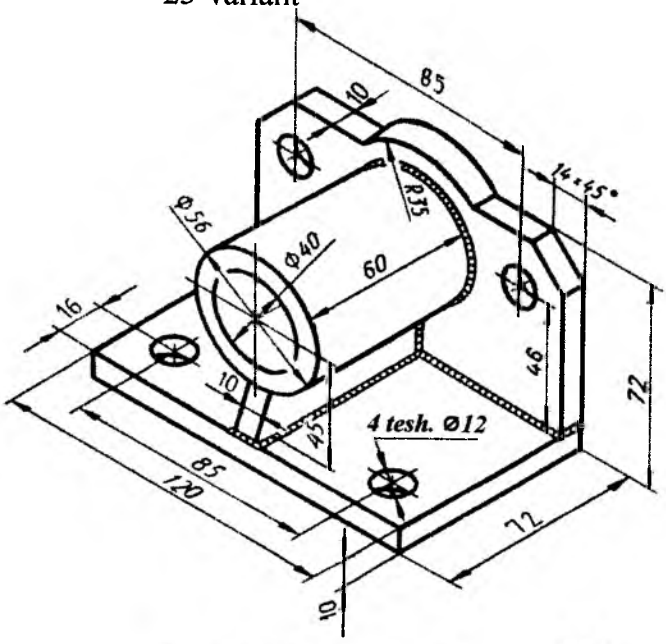
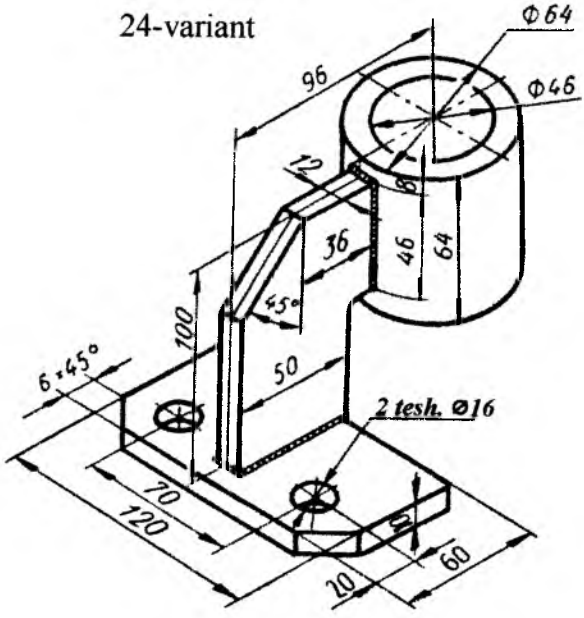


24-variant



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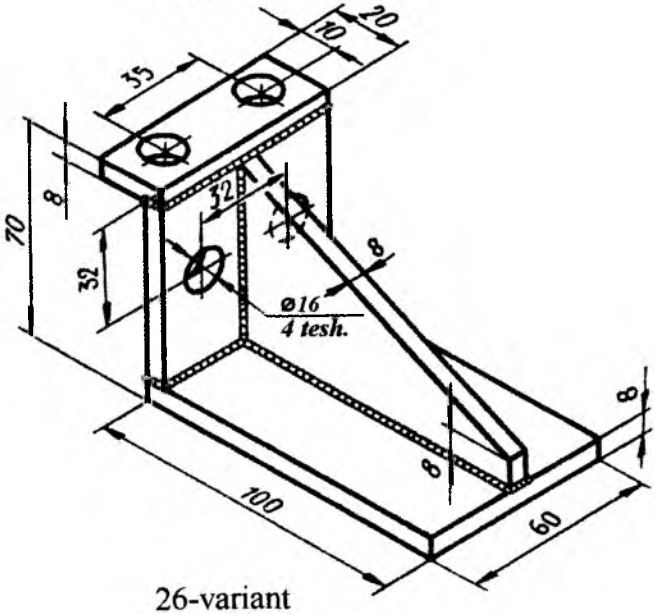
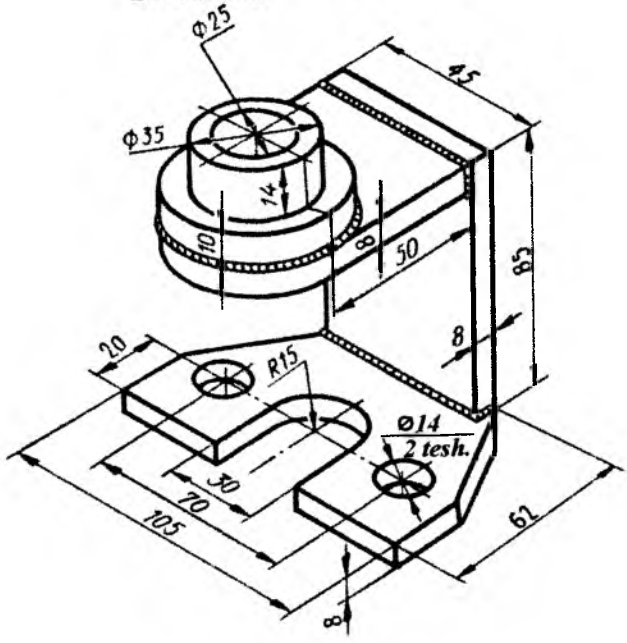
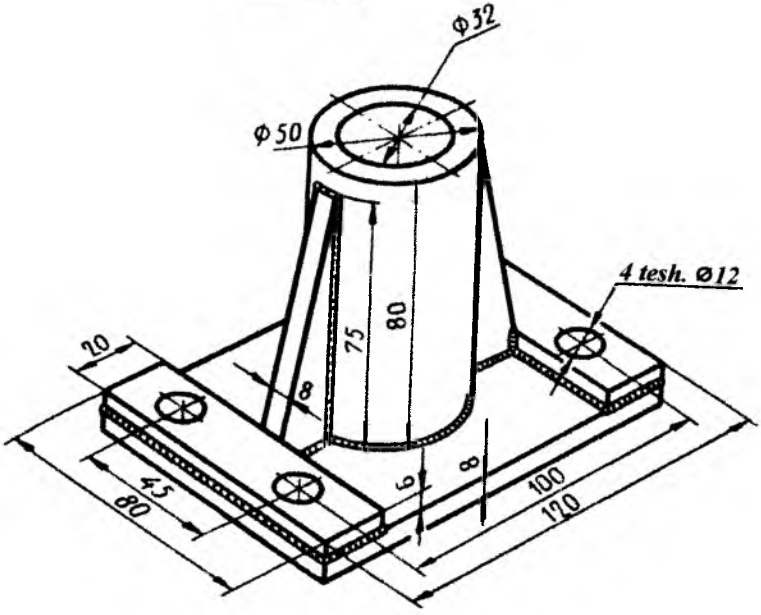


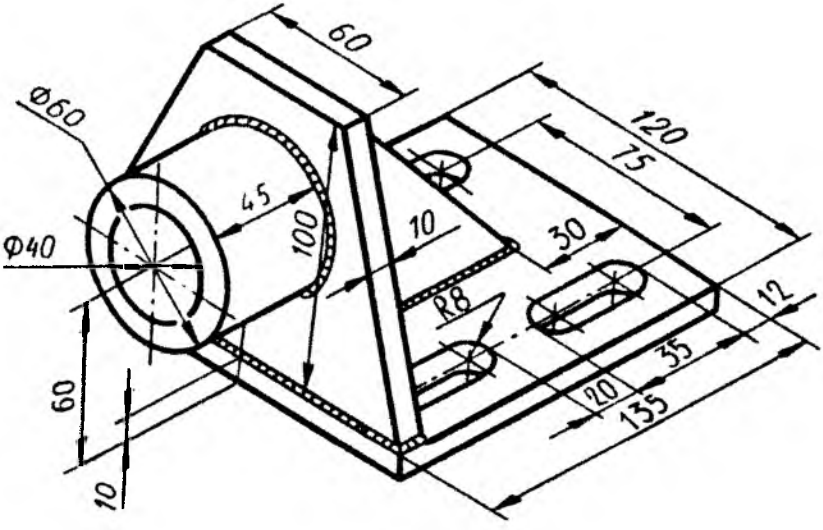
26-variant



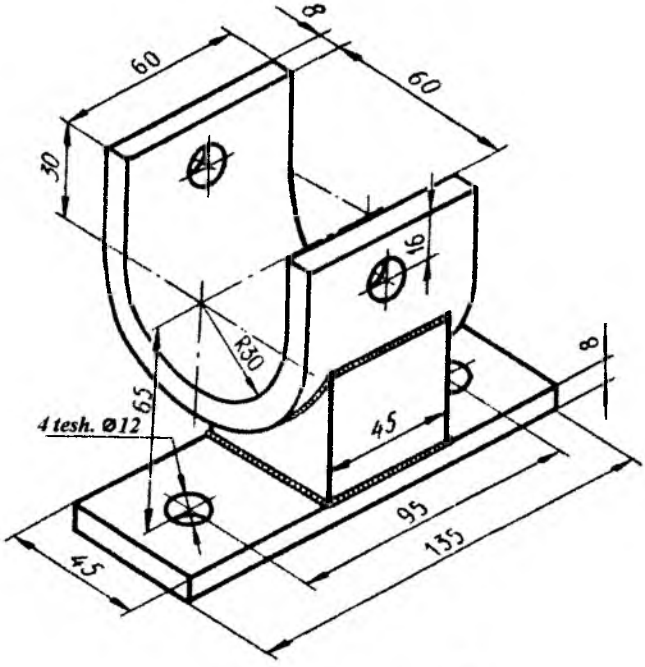
27-variant



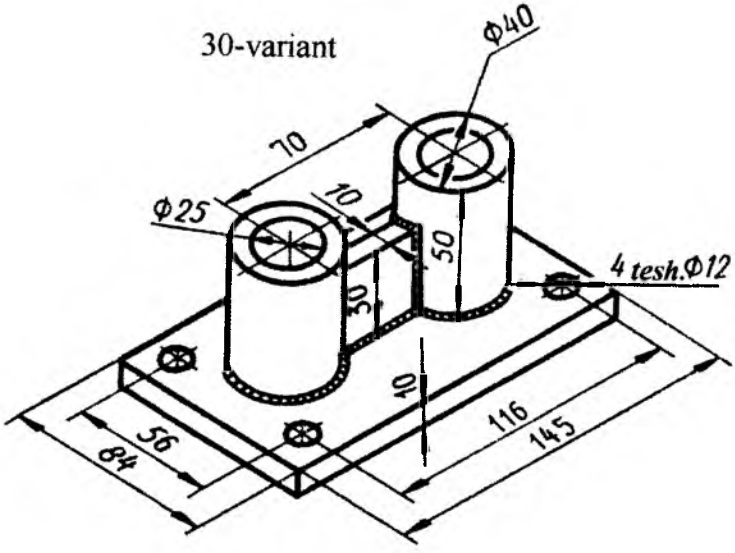
28-variant



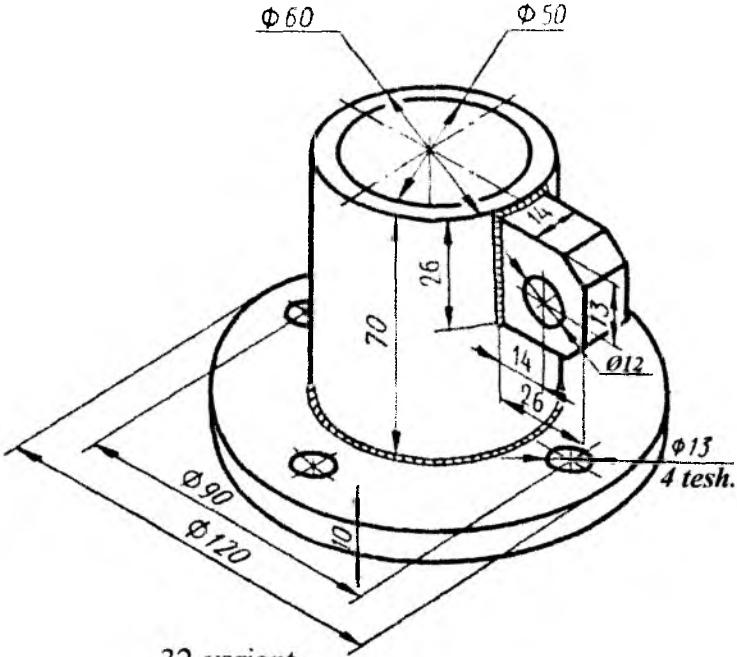
29-variant



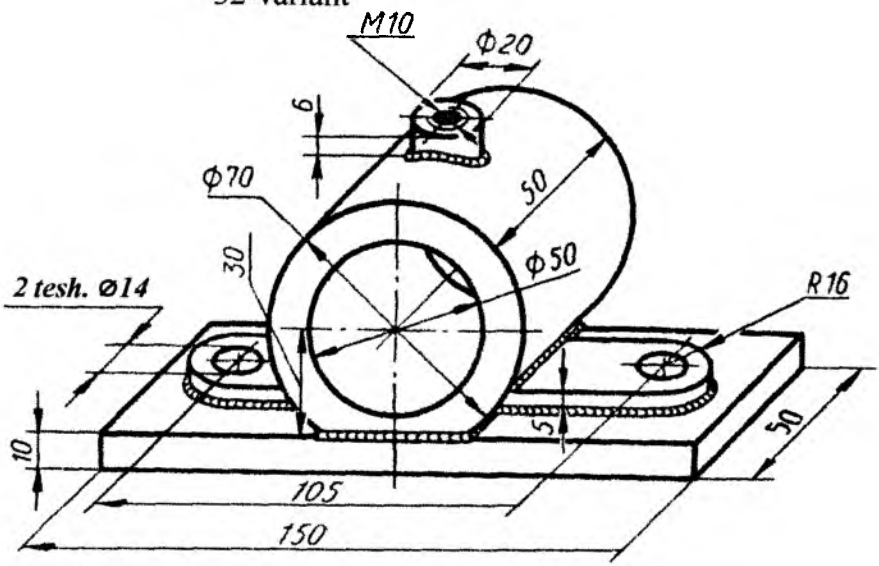
30-variant



31-variant



32-variant



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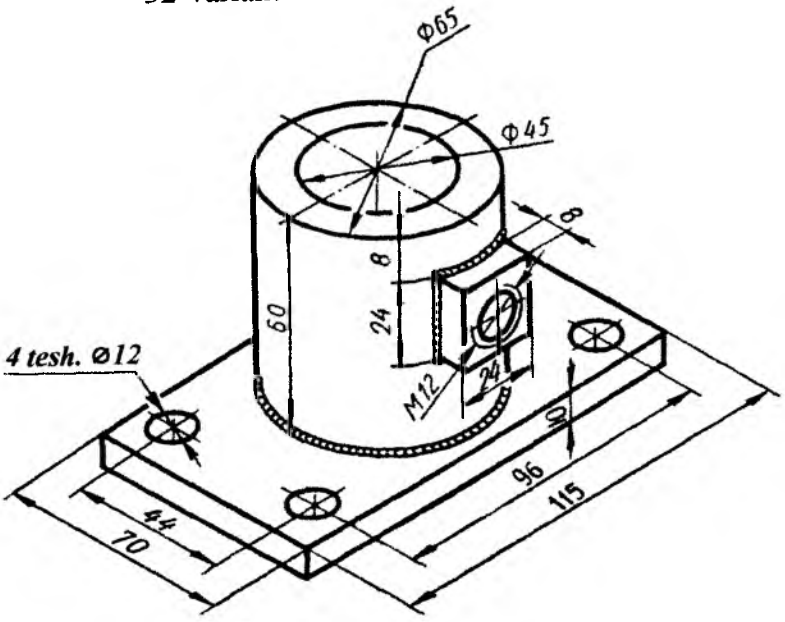

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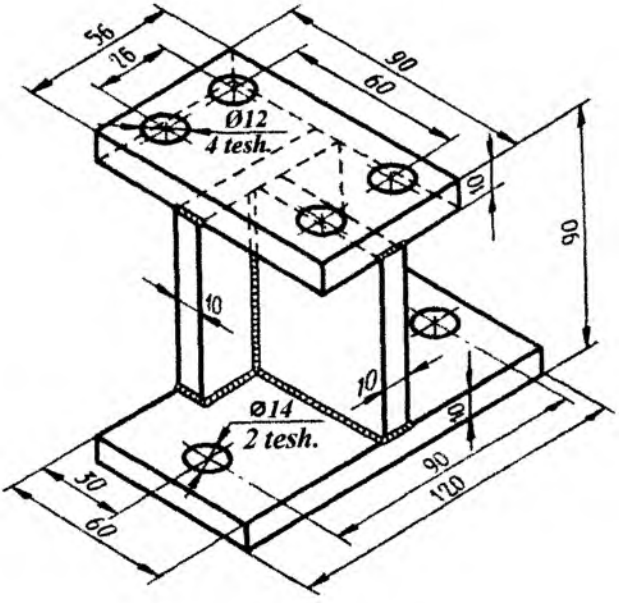
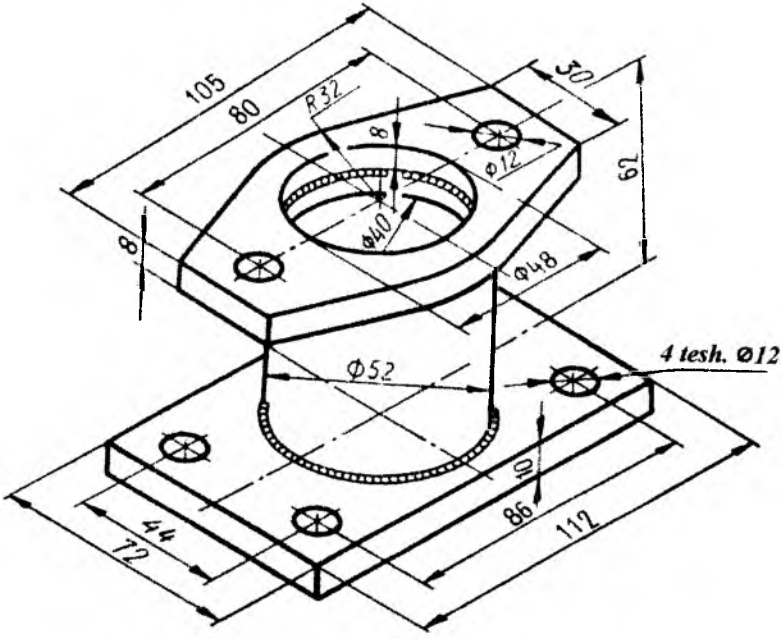
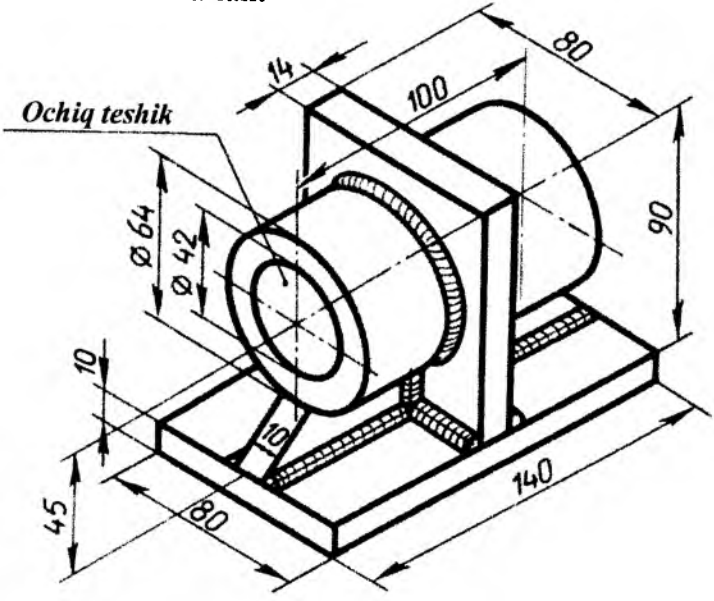


34-variant

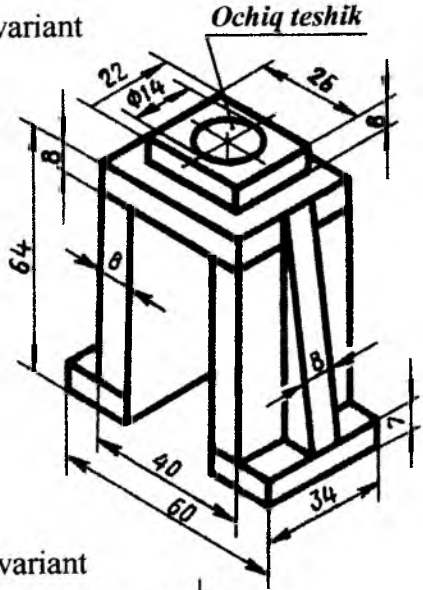


35-variant

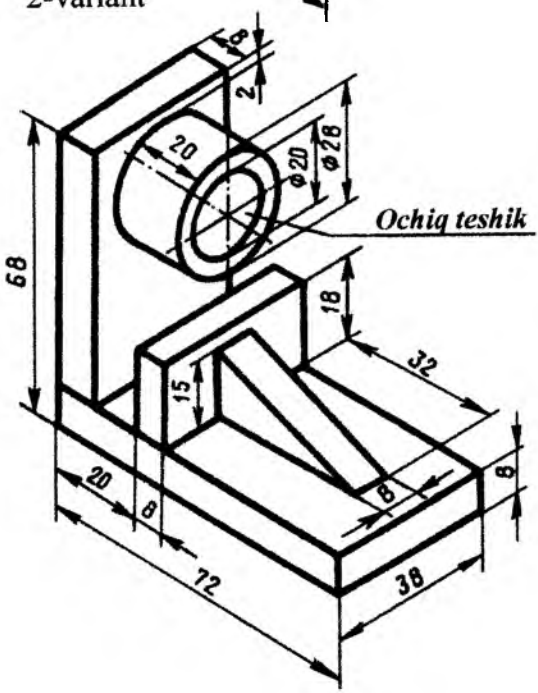


Payvand choklari ko'rsatilmagan variantlar

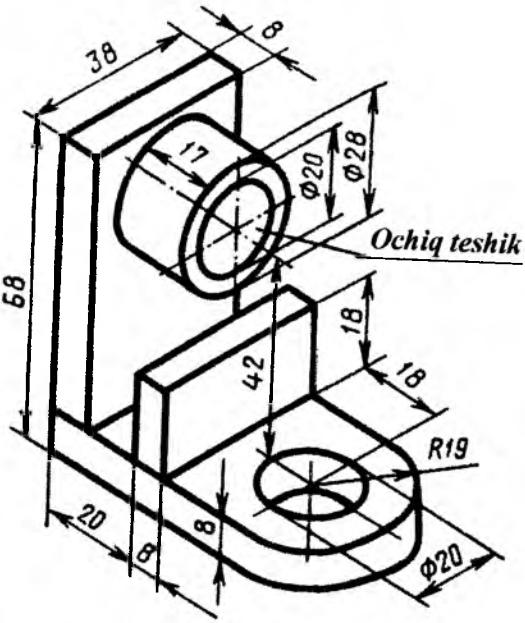
1-variant



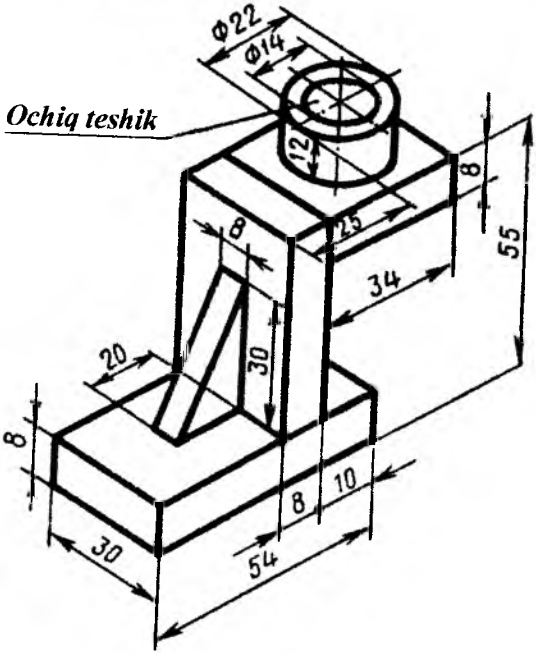
2-variant



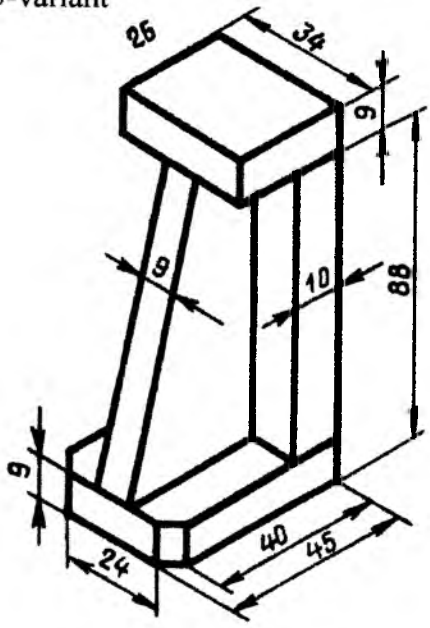
3-variant



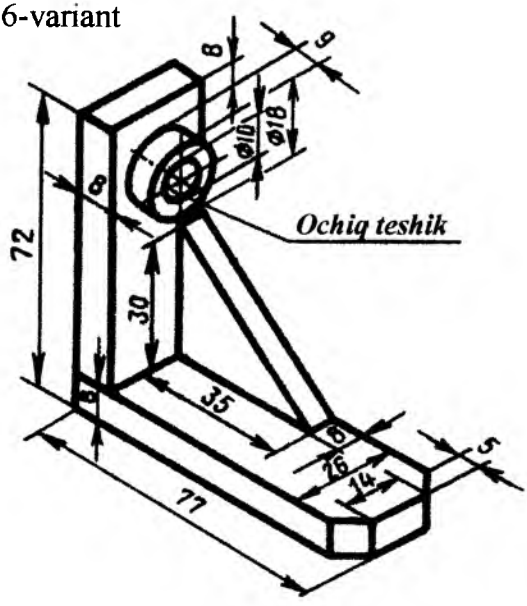
4-variant



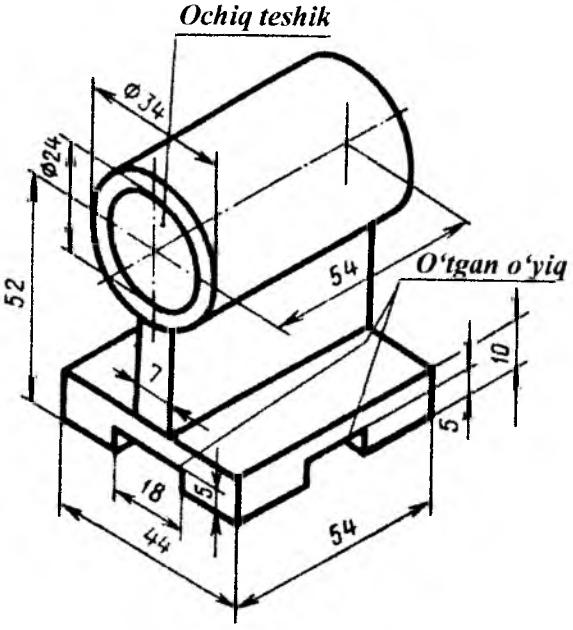
5-variant



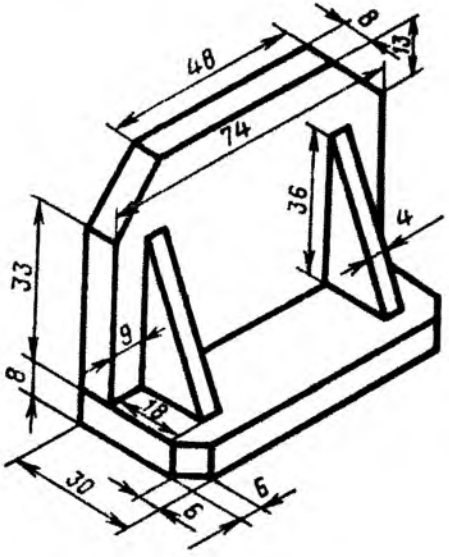
6-variant



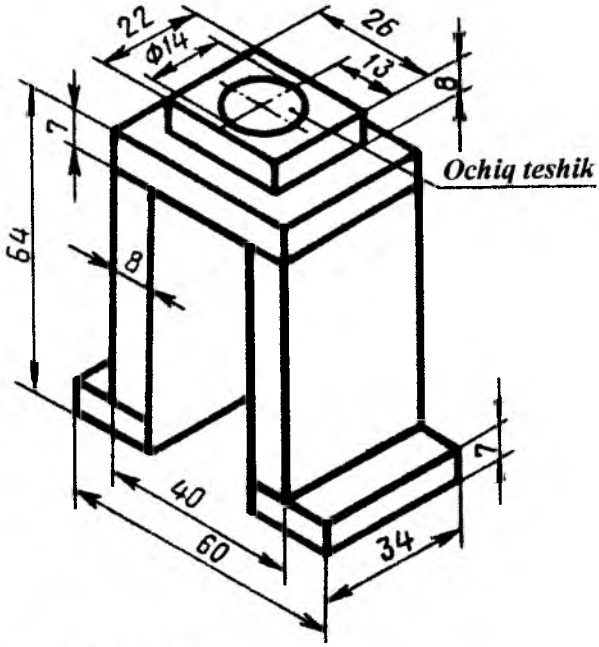
7-variant



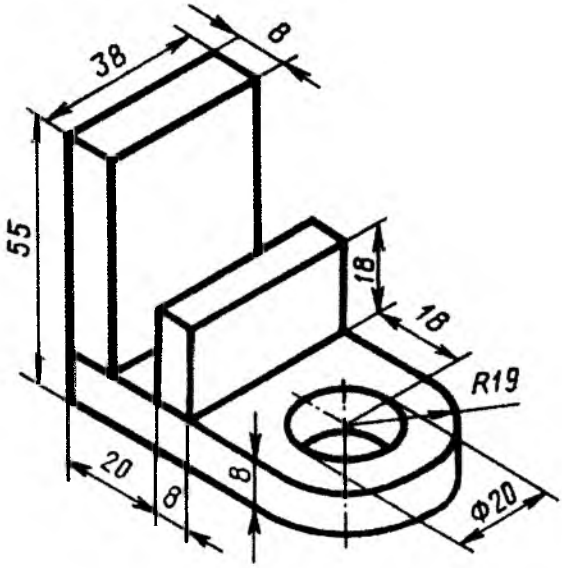
8-variant



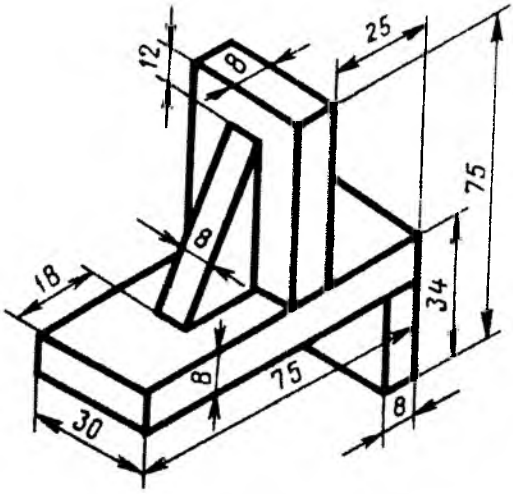
9-variant



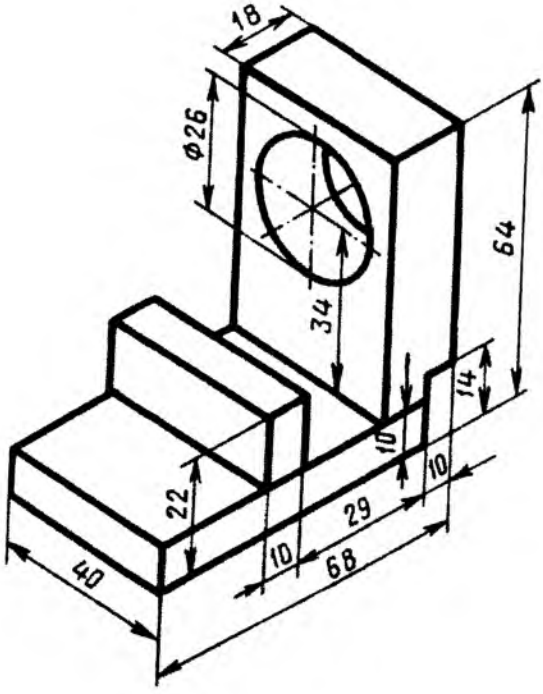
10-variant



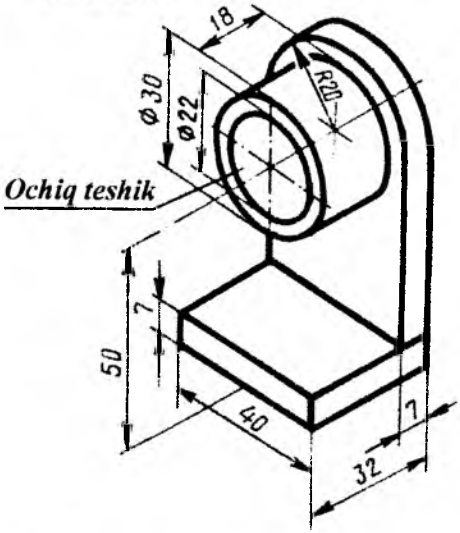
11-variant



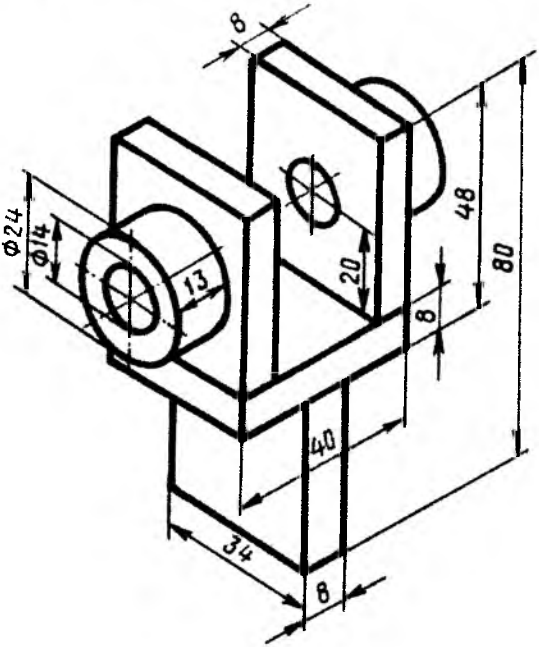
12-variant



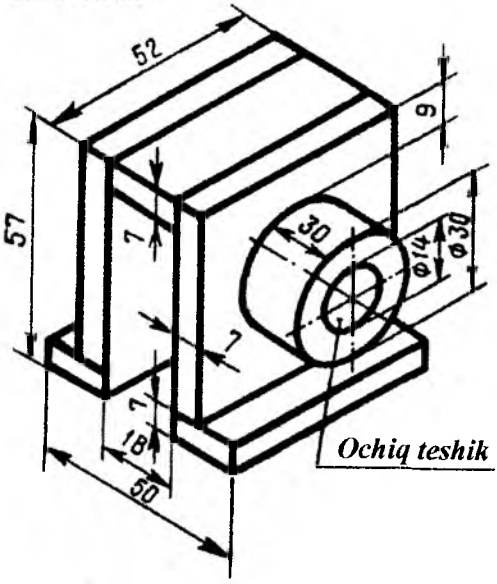
13-variant



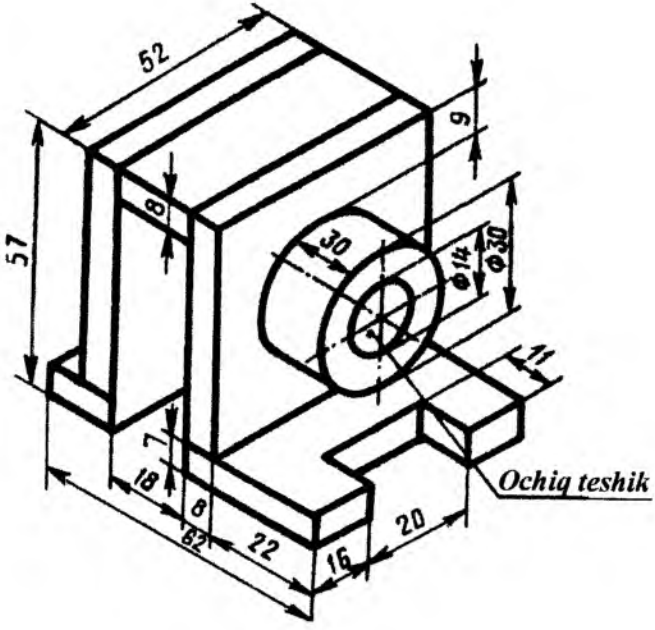
14-variant



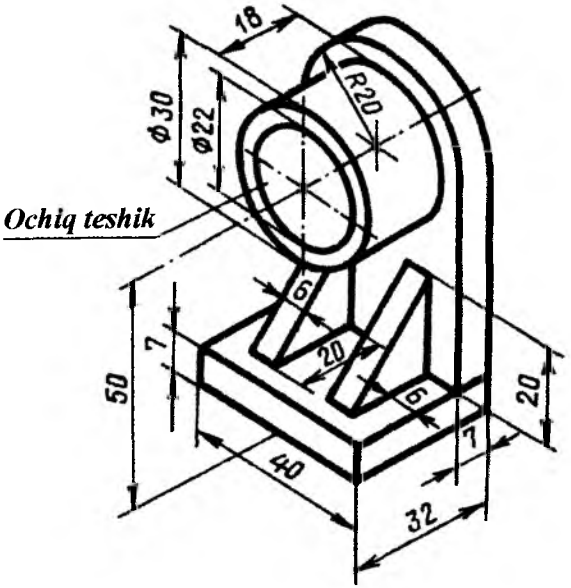
15-variant



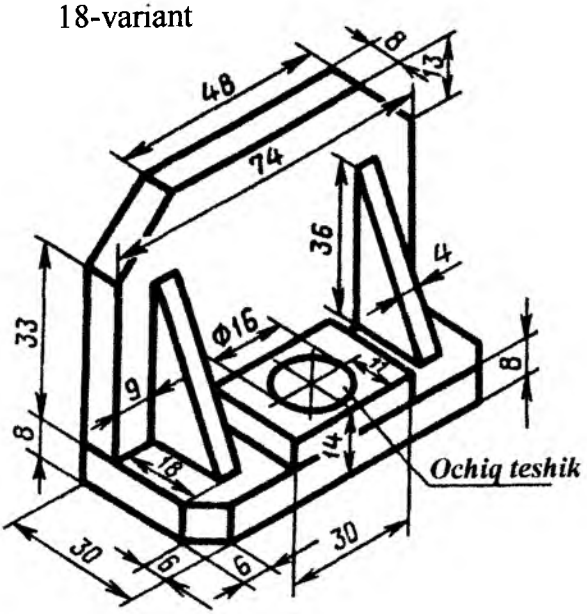
16-variant



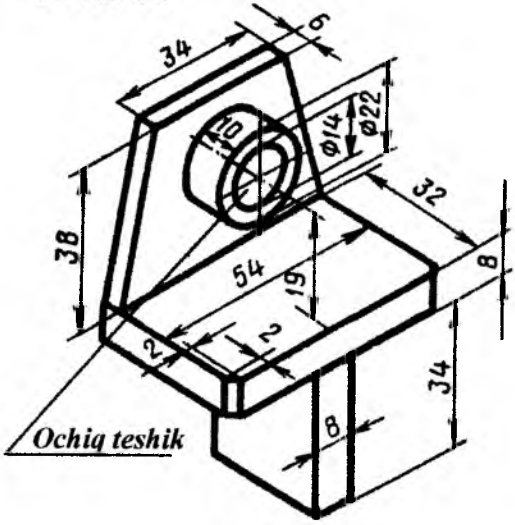
17-variant



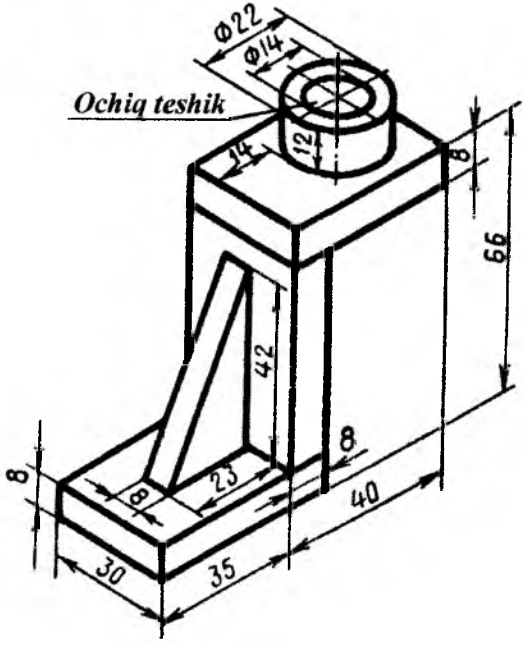
18-variant



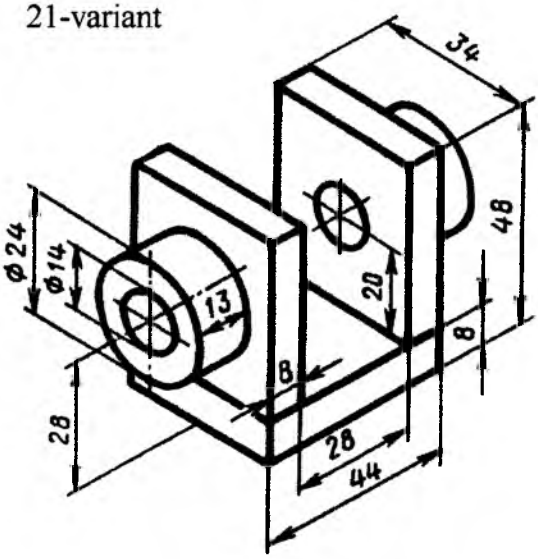
19-variant



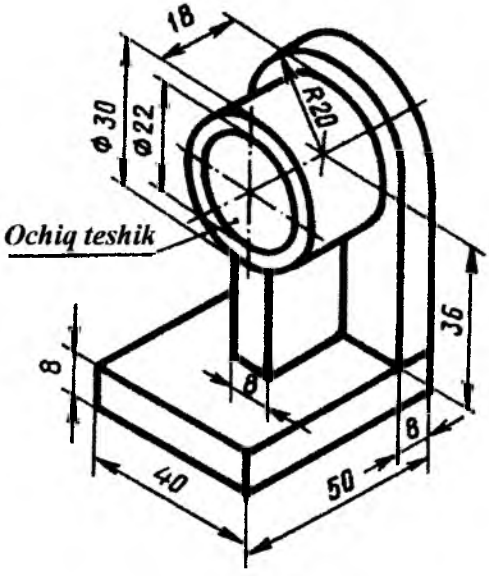
20-variant



21-variant

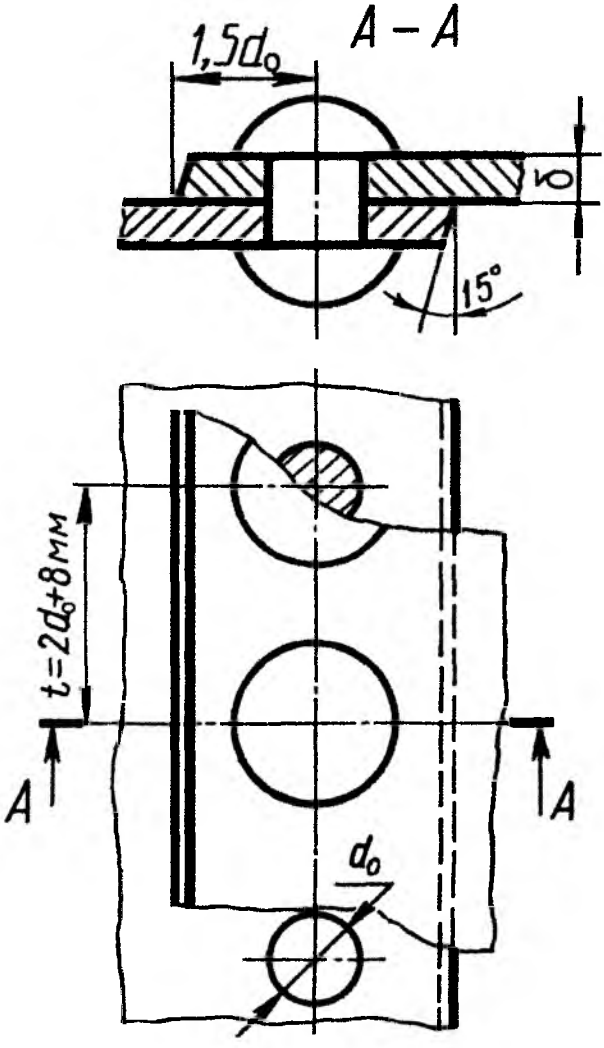


22-variant

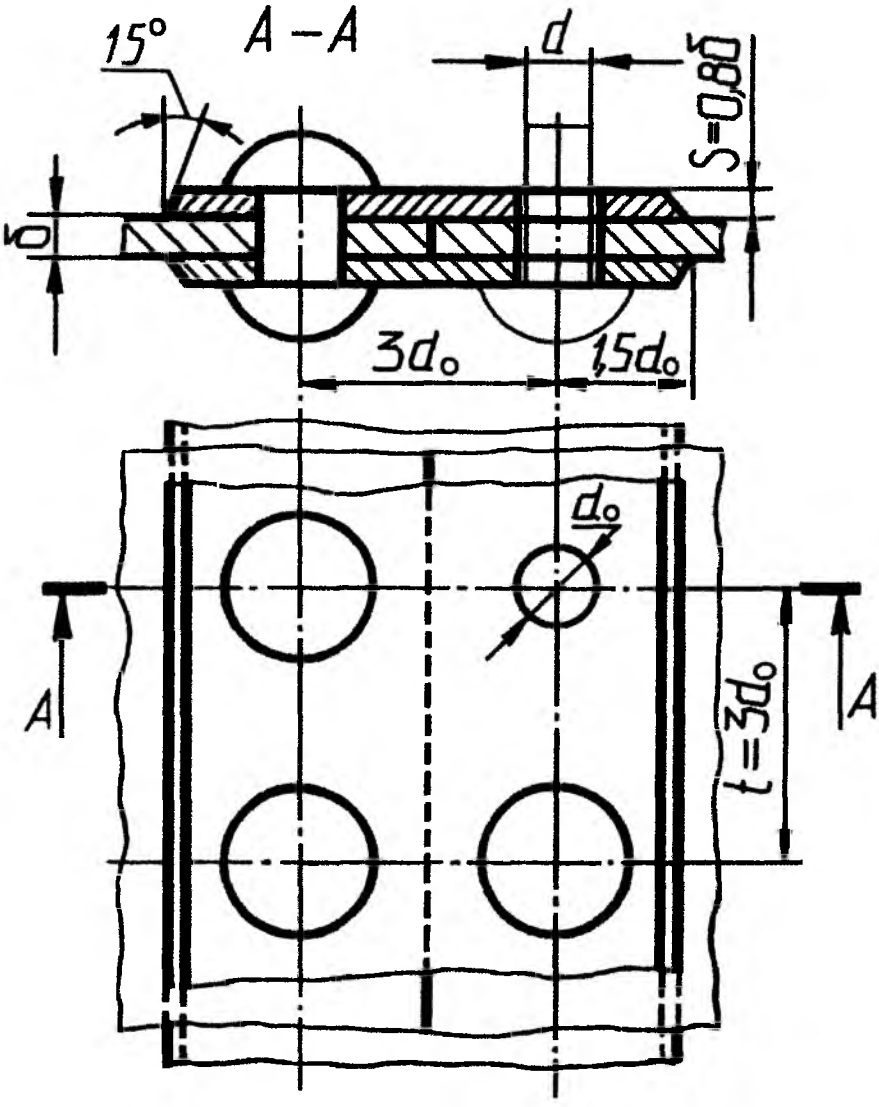


Parchin chokli birikmalar bo'yicha grafik ish bajarish uchun namunalar

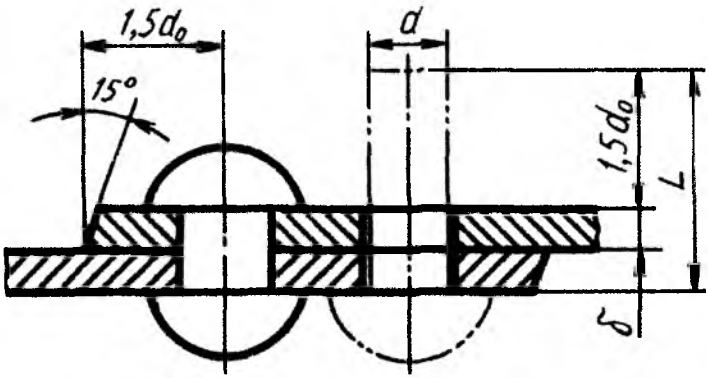
Bir qatorli parchin chok

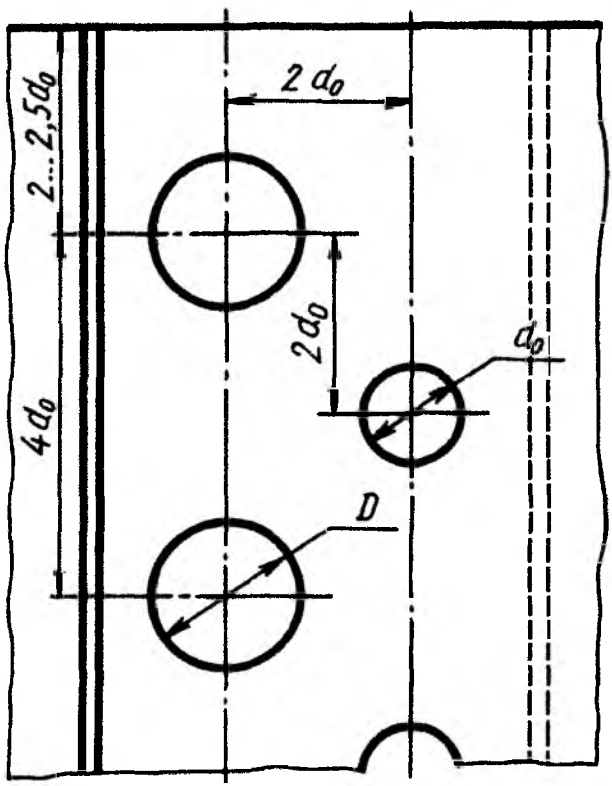


Ikki qatorli, ikki ust-qo'ymali parallel parchin chok



Ikki qatorli, shaxmat tartibli parchin chok





Parchin chokli hirikma bo'yicha grafik ish bajarish uchun tarqatma material variantlari

Qanday parchin mix va chok turi (mustahkam yoki zich mustahkam) ni tanlashni hamda necha qatorli chok bajarishni o'qituvchi belgilab beradi

№	Yarim yumaloq (sferik) kallakli parchin mix	Yashirin kallakli parchin mix	Yarim yashirin kallakli parchin mix	Konussimon kallakli parchin mix
Variantlar	List qalinligi δ	List qalinligi δ	List qalinligi δ	List qalinligi δ
1	6			
2		7		
3			8	
4				9
5	10			
6		11		
7			12	
8				13
9	7			
10		8		
11			9	
12				10
13	11			
14		12		
15			13	
16				12
17	8			
18		9		

19			10	
20				11
21	12			
22		13		
23			11	
24				7
25	9			
26		6		
27			7	
28				8
29	13			
30		10		

Foydalanilgan adabiyotlar

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Mundarija

1. Kirish.....4
2. Ajralmas birikmalar.....4
3. Payvand chokli birikmalar.....4
4. Kavsharlangan va elimlangan birikmalar.....19
5. Parchin choklar (O'zDST 2.313-97).....21
6. Tikilgan birikmalar (O'zDSt 2.313:97).....26
7. Metall changak (skobka) li birikma (O'zDSt 2.313:97).....27
8. Payvand chokli birikmalar bo'yicha grafik ishlar bajarish uchun namuna 28
9. Payvand chokli birikmalar bo'yicha grafik ishlar bajarish uchun tarqatma material variantlari.....29
10. Parchin chokli birikmalar bo'yicha grafik ish bajarish uchun namunalar.....58
11. Parchin chokli birikma bo'yicha grafik ish bajarish uchun tarqatma material variantlari.....61
12. Foydalanilgan adabiyotlar.....62