AJRALMAYDIGAN BIRIKMA.

Payvand choklar.

Payvand choklari metallni eritib qo`yish natijasida yoki biriktiriladigan detallar metalini eritib hosil bo`shladi. Detallarni payvandlab ulashning har xil usullari bor. Elektr yoyi bilan payvandlash usuli eng ko`p tarqalgan usuldir.

Bosim bilan payvandlashda detallarni payvandlash uchun oldindan qizdirilgan yuzalarni avtomatik yo`l bilan yoki maxsus mashina yordamida yoxud qo`l bilan plastik deformatsiyalanguncha bosim ostida qisiladi.

Payvand birikmalar payvandlashning quyidagi turlari vositasida amalga oshiriladi:

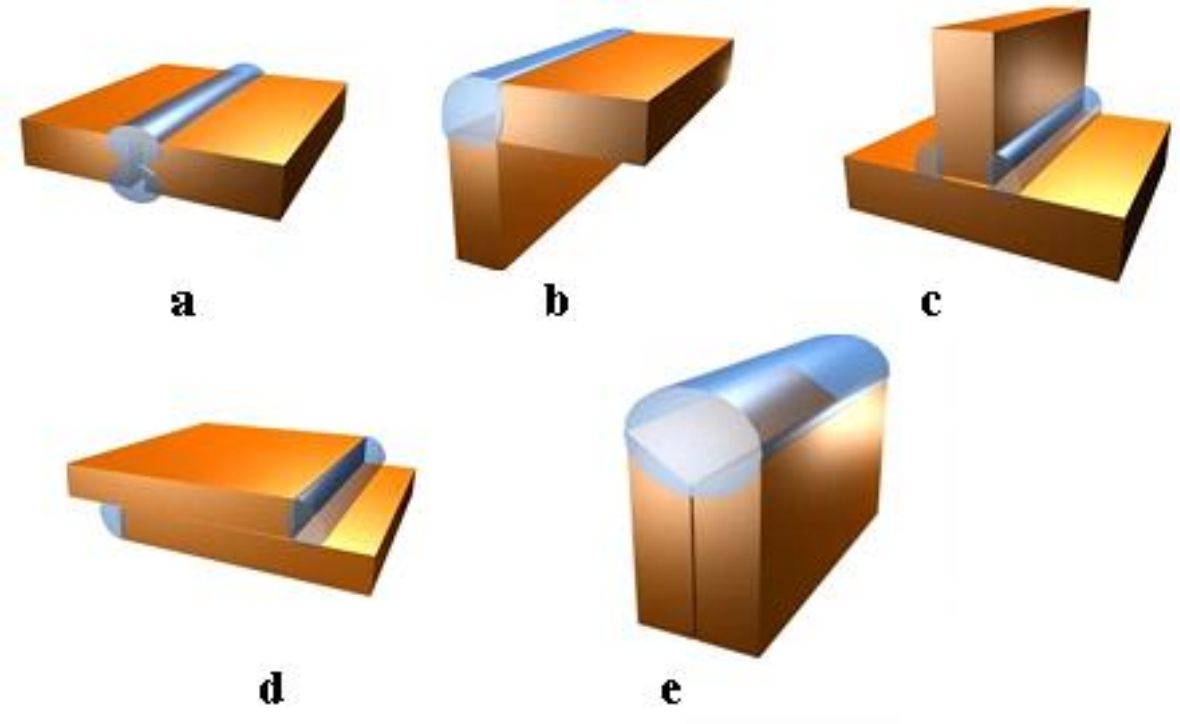
elektryoyi yordamida payvandlash—H;

gazyordamida payvandlash -G;

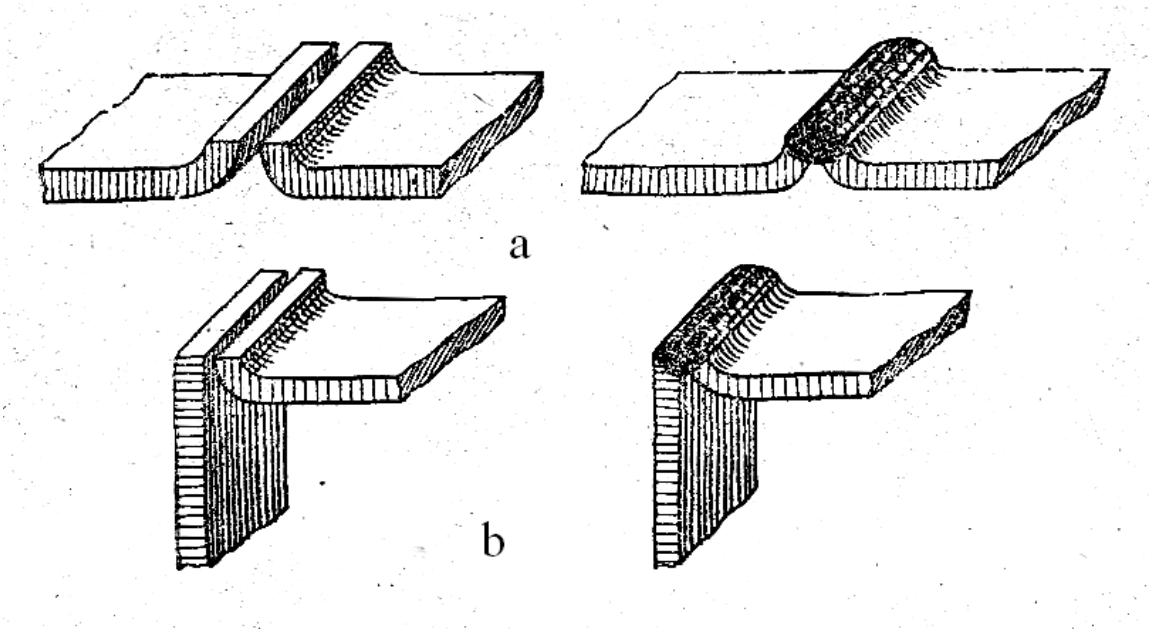
kontaktli payvandlash — K.

Suyultirib payvandlash elektr yoyi va gaz yordamida payvandlash bilan amalga oshiriladi. Bosim bilan payvandlash kontaktli payvandlash usuli bilan amalga oshiriladi.

Birikmalarning payvand choklari uchma-uch, ustma-ust burchakli va tavir shaklida bulishi mumkin (7.1-shakl, *a, b, c, d, e*). Bundan tanshari payvandlanadigan ulamalarning uchini yo`nib yoki qayirib chok solish mumkin (7.1-shakl, b, *c* va 7.2-shakl, *a, v).* Bu shakllarda payvandlangan yerlar shartli ravishda qoraga bo`yab ko`rsatilgan.

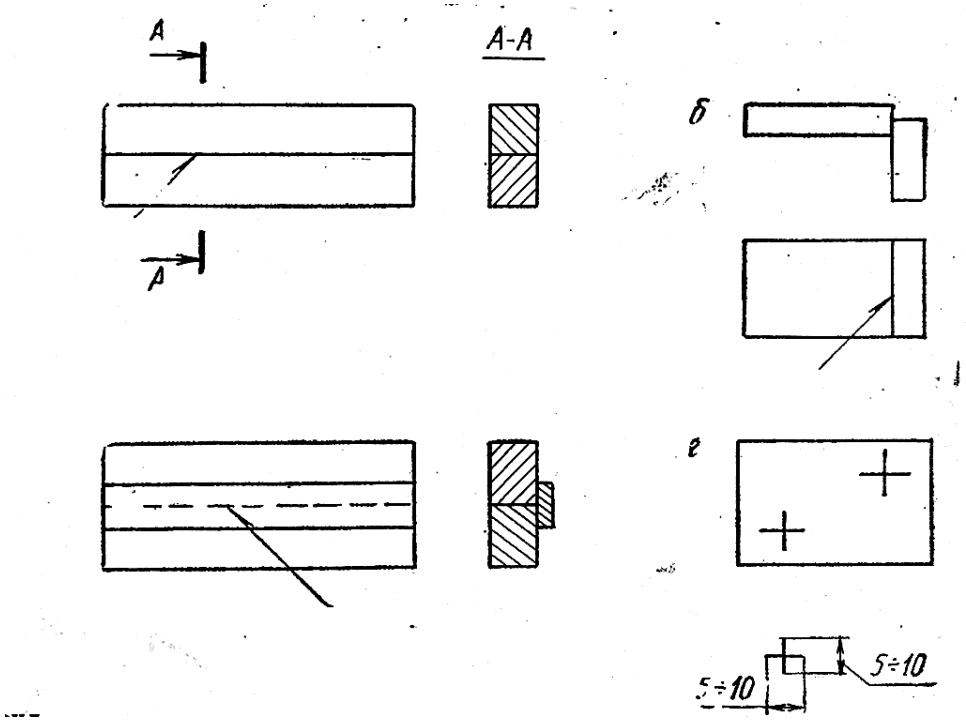


7.1-shakl



Ulamalarning uchlarini qiyalatib qirqib yoki V simon, K simon, X simon qilib yoxud qiyalatib qirqmasdan chok solish mumkin (7.1-shakl, a va 8-jadval). Agar ulamalarning qalinligi 10 mm dan kam bo`lsa, u holda ularning uchlarini qiyalatib qirqmasdan chok solinadi. Chizmada payvand choklarning shartli belgilari va ularni yasash qoidalari GOST 2.312-72 da belgilangan.

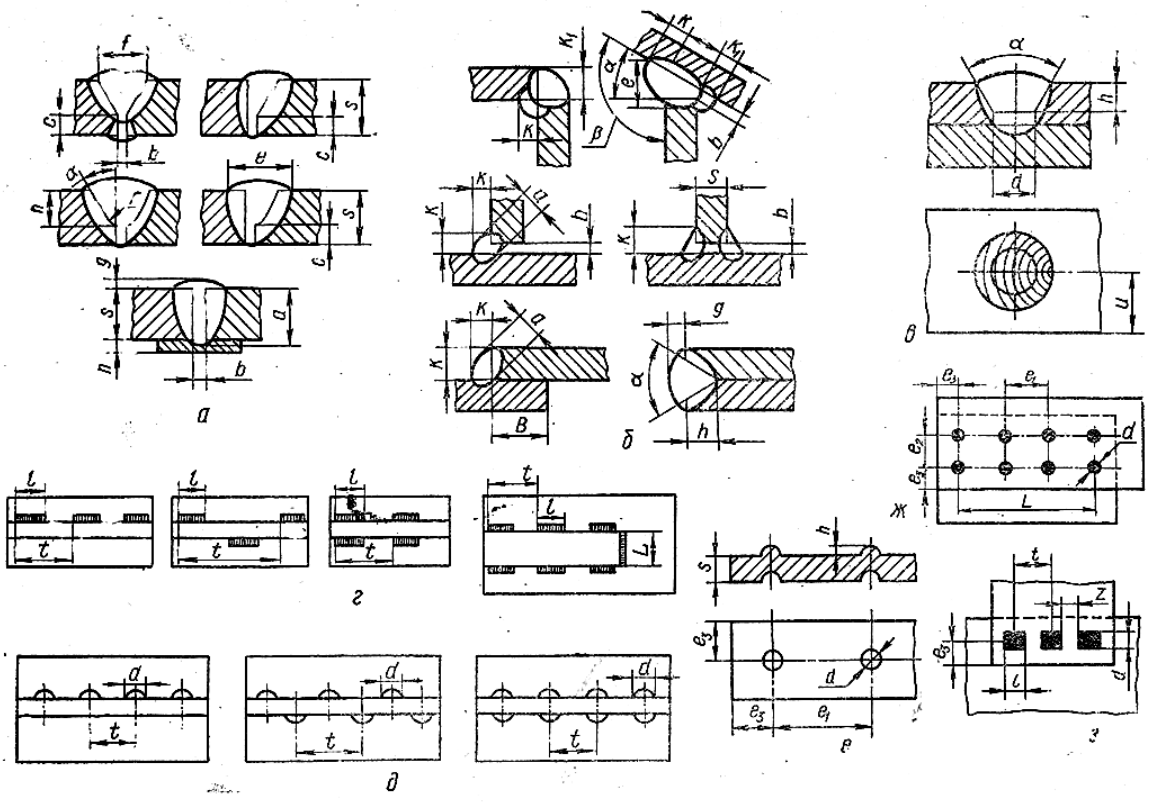
Ko`rinadigan payvand choklari chizmada asosiy tutash chiziq bilan (4-shakl, *a, b),* ko`rinmaydigan choklar esa shtrix chiziqlar bilan shartli belgilanadi (4-shakl, *v).*



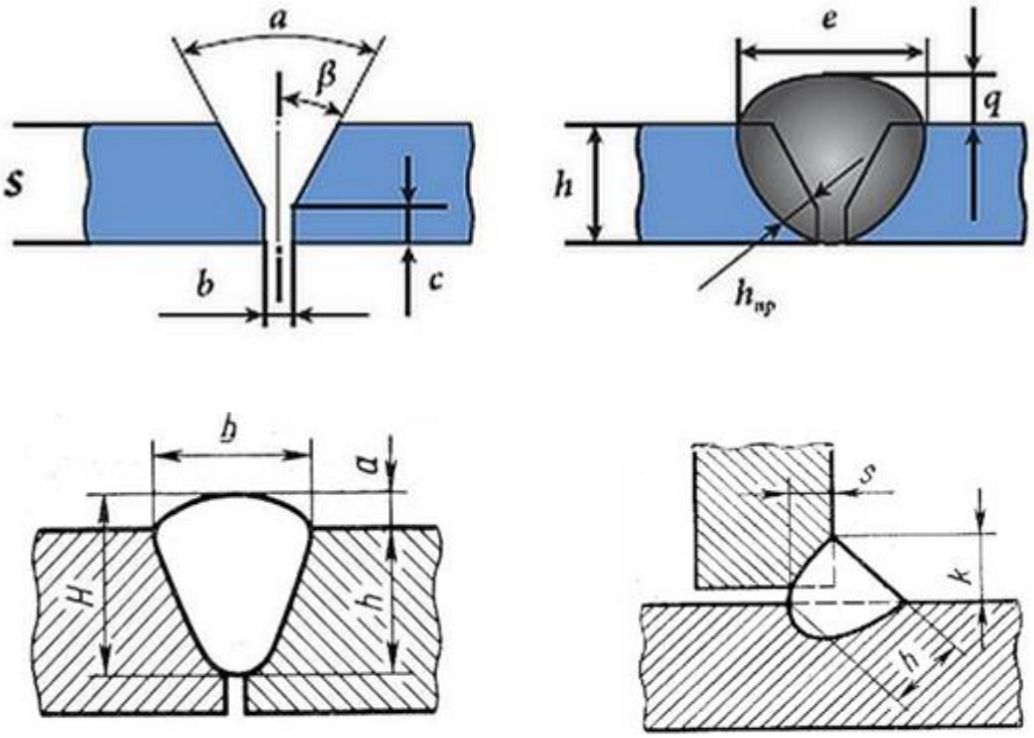
Qirralari tayyorlanmay, yeritib bajariladigan ustma-ust choklar, shuningdek, qayrilgan uchlari ustma-ust biriktirib bajariladigan nuqtaviy va rolikli choklar chizmada shtrix-punktir chiziqlar bilan shartli tasvirlanadi.

Ko`rinadigan yakka payvand nuqtasi «+» belgi bilan tasvirlanadi (4-shakl, *g)* , bu belgi asosiy tutash chiziq bilan bajariladi. Ko`rinmas yakka payvand nuqtalari chizmada ko`rsatilmaydi.

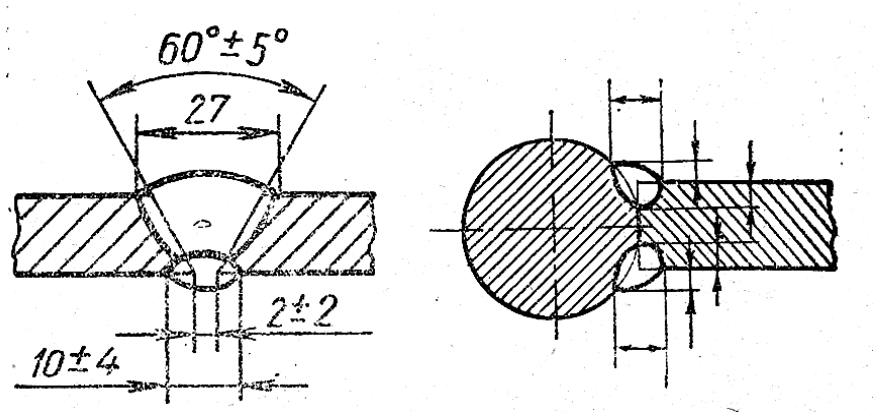
Eritish yo`li bilan bajariladigan payvand birikma choklarining shartli tasviri misollari 8- jadvalda, bosim bilan payvandlab bajarilgan (kontakt) va boshqalar choklarning shartli tasviri esa 6-shaklda ko`rsatilgan.



Payvandlanadigan detallar qirralarining konstruktiv elementlari, ularning o`lchamlari, bajariladigan payvand choklarining o`lchamlari tegishli standartlarda beriladi. Konstruktiv elementlarining o`lchamlari tegishli standartlarda ko`rsatilmagan chokni (standartsiz chok), uning chizmasi buyicha bajarish uchun kerak bo`ladigan hamma konstruktiv elementlarining o`lchamlari ko`rsatilgan holda tasvirlanadi (6-shakl).

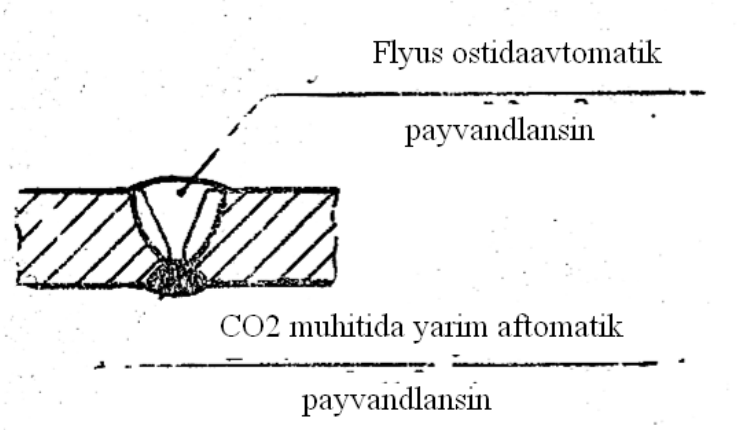


Chizmada payvand chokining hamma konstruktiv elementlari o`lchamlari ko`rsatilib, chok chegarasi tutash asosiy chiziq bilan, qirralarining chok chegarasidagi konstruktiv elementlari esa ingichka tutash chiziq bilan tasvirlanadi (5-shakl).



Payvand birikma choklarining, konstruktiv elementlarining harfiy belgilari 6- shakl, a-z larda keltirilgan.

Ikki yogiga chok solib payvandlashda, ulardan biri maxsus usulda payvandlansa yoki payvandlash matyeriali bilan fark kiladigan bulsa, bunday chok konturi shtrixlanadi yoki qoraga bo`yab qo`yiladi (7-shakl).



7-shakl

Payvand choklarini belgilash. Payvand chokning old va orqa tomoni bo`ladi. Bir yoqlama chokning old tomoni qilib, payvandlanadigan tomoni qabul qilinadi, bu tomonining orqasi esa chokning ko`rinmas yoki orqa tomoni deyiladi.

Qirralari simmetrik qilib tayyorlanmagan ikki yoqli chokning old tomoni qilib payvandlash bajariladigan tomoni qabul qilinadi. Qirralari simmetrik ravishda tayyorlanadigan ikki yoqlama chokning old tomoni qilib, xohlagan tomonini qabul qilish mumkin.

Chokning shartli belgisi chok tasvirining old tomonidan chizilgan chetga chiqarish chizig`ining tokchasiga qo`yiladi. Bunda beliglar ko`rinadigan choklar uchun tokchaning ustiga, kurinmas choklar uchun esa tokchaning ostiga qo`yiladi.

Chok belgisida quyidagi ma`lumotlar (bu ma`lumotlar shakldagi to`rt burchakliklar ichiga yoziladi) bulishi lozim:

1. Chokning yopik chizik buyicha joylashishini ifodalovchi belgi yoki montaj chokining belgisi (9- jadval).
2. Chokning turi (tipi) konstruktiv elementlarini ko`rsatuvchi standart belgisi.
3. Tegishli standart bo`yicha chokning harfiy-sonli belgisi (8- jadval). Chokning darfiy-sonli belgisidagi harflar: G — uchma-uch chokni; U — burchakli chokni; T —tavr shaklidagi chokni. N — ustma-ust chokni bildiradi. Sonlar esa shu turdagi chok detallarining qanday ulanishini bildiradi.
4. Payvandlash usulining shartli belgisi. Standart bo`yicha chokning payvandlash usullari harflar bilan qo`yidagicha belgilanadi: A — avtomatik. P — yarimavtomatik R — elektr yoyi bilan qo`lda; K — kontaktlab elektrik, payvandlash; SH —elektr-shlak usulida;. E—elektrik parchinlash (masalan: EFZ —flyus ostida); IN—inert gazi shtirokida vol’fram elektrod bilan payvandlash materiali ishlatmay payvandlash.

Payvandlash turi va metodining yana quyidagi sharfli belgilari mavjud: G — gazaviy; E — elektr yoyi bilan; F —flyus ostida elektr yoyi bilan; Z —himoya gazi muhitida elektr yoyi bilan; KT — kontaktlab; Uz —- ul’tra tovush bilan; Tr

—ishkalanish bilan; X — yurgizish bilan; Pz — plazmali yoy bilan; el — elektron nurli; Df — diffuzion; Lz—lazer bilan; Bz — portlatish bilan; I — indukqion; Gp— gazaviy presslab; Tm —termit bilan.

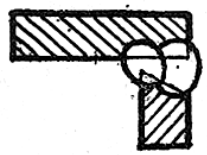
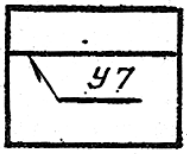
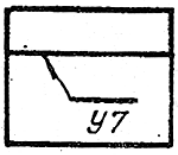
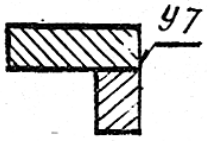
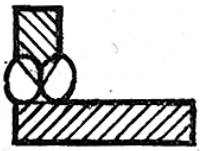
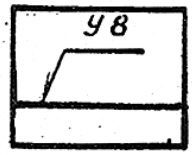
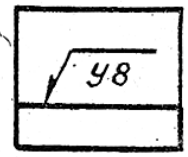
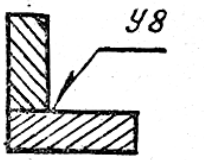
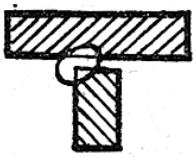
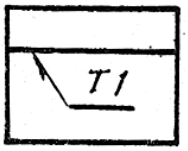
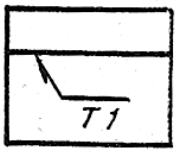
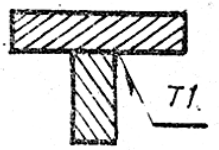
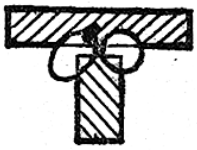
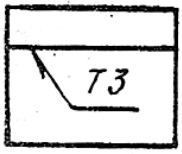
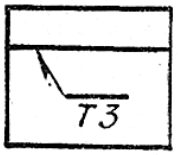
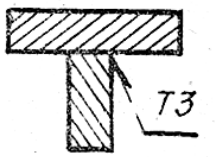
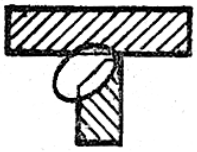
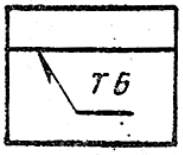
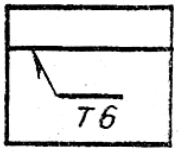
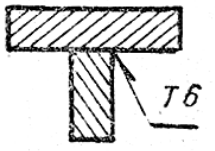
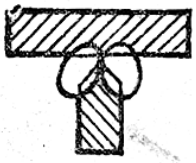
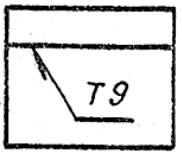
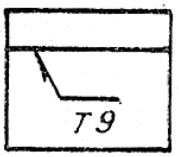
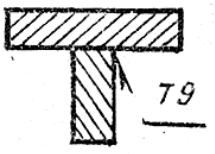
5. Chok kateti belgisi va katet o`lchamlari. Bu belgi ingichka chiziqlar bilan chizilib, balandligi chok belgisidagi sonlarning balandligiga teng bo`lishi lozim.

6. Quyidagi o`lchamlari: a) uzuq-uzuq chok uchun payvandlanadigan joyining umumiy uzunligi (/ yoki Z belgi) va chok qadamining o`lchami; b) yakka payvand nuqtalari uchun nuqtaning hisoblab olingan diametrining o`lchami; g) kontaktlab nuqtaviy elektrik payvand yoki elektrik parchinlash choki uchun nuqtaning yoki parchinning hisobiy o`lchami; / belgi va qadamining o`lchami; g) kontaktlab rolikaviy elektrik payvand chok uchun chok enining xisobiy o`lchami; d) uzuq-uzuq kontaktlab rolikaviy elektrik payvand chok uchun chok enining xisobiy o`lchami, ko`paytirish belgisi, payvandlanadigan qism uzunligining o`lchami. / belgi VA qadamining o`lchami.

8-jadval

Chok nomi	Bajarilgan chok ko`ndalang kesimi- ning shakli	Harfli sonli belgisi	Chizmada chokning shartli belgilanishi		
			ust tomoni	Bajarilgan chok ko`ndalang kesimi- ning shakli	Xarfli sonli belgisi

Uchma-uch

	У7			
	У8			
	Т1			
	Т3			
	Т6			
	Т9			

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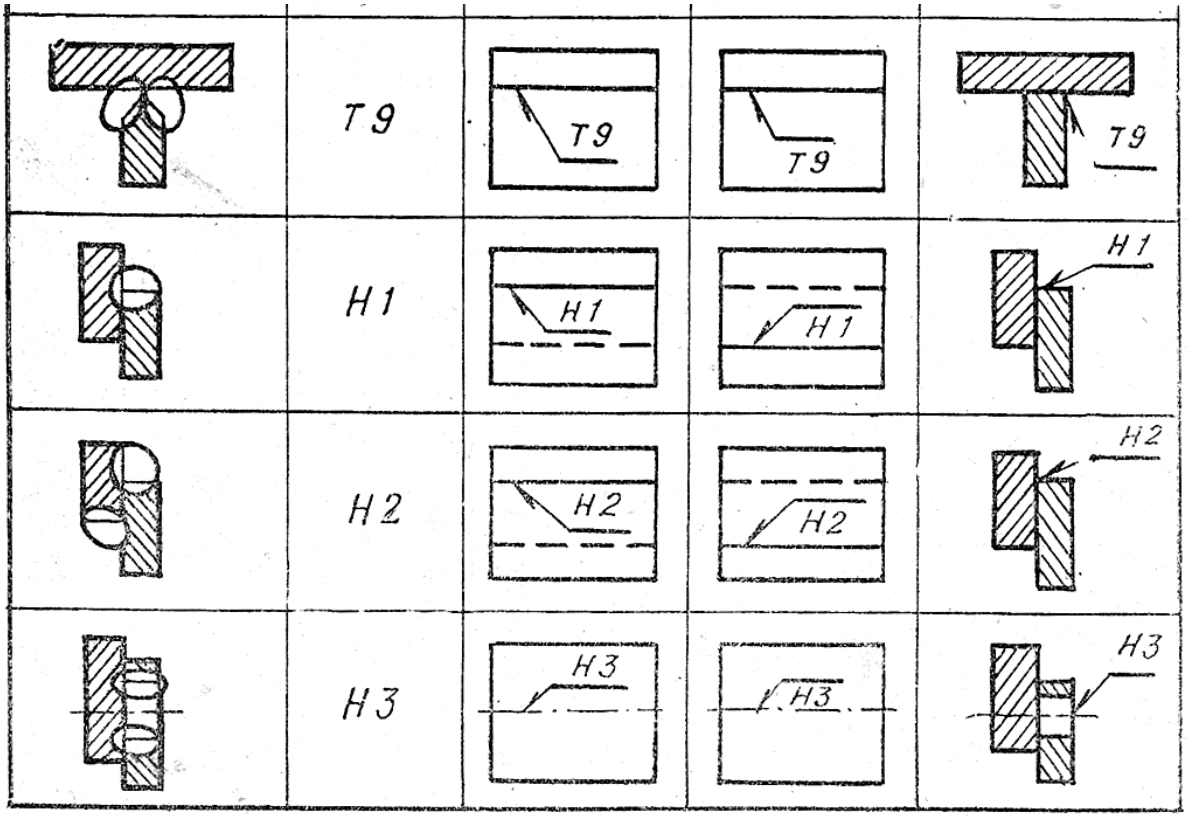

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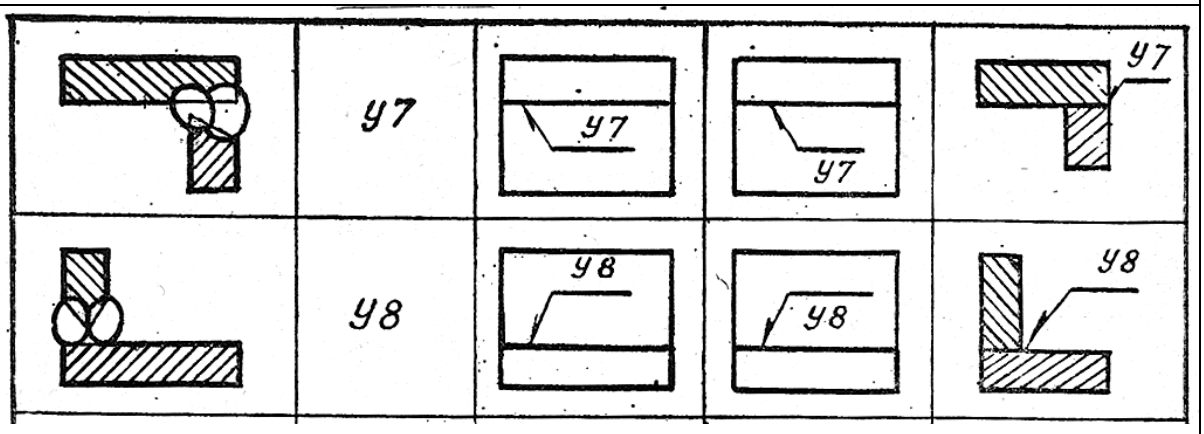
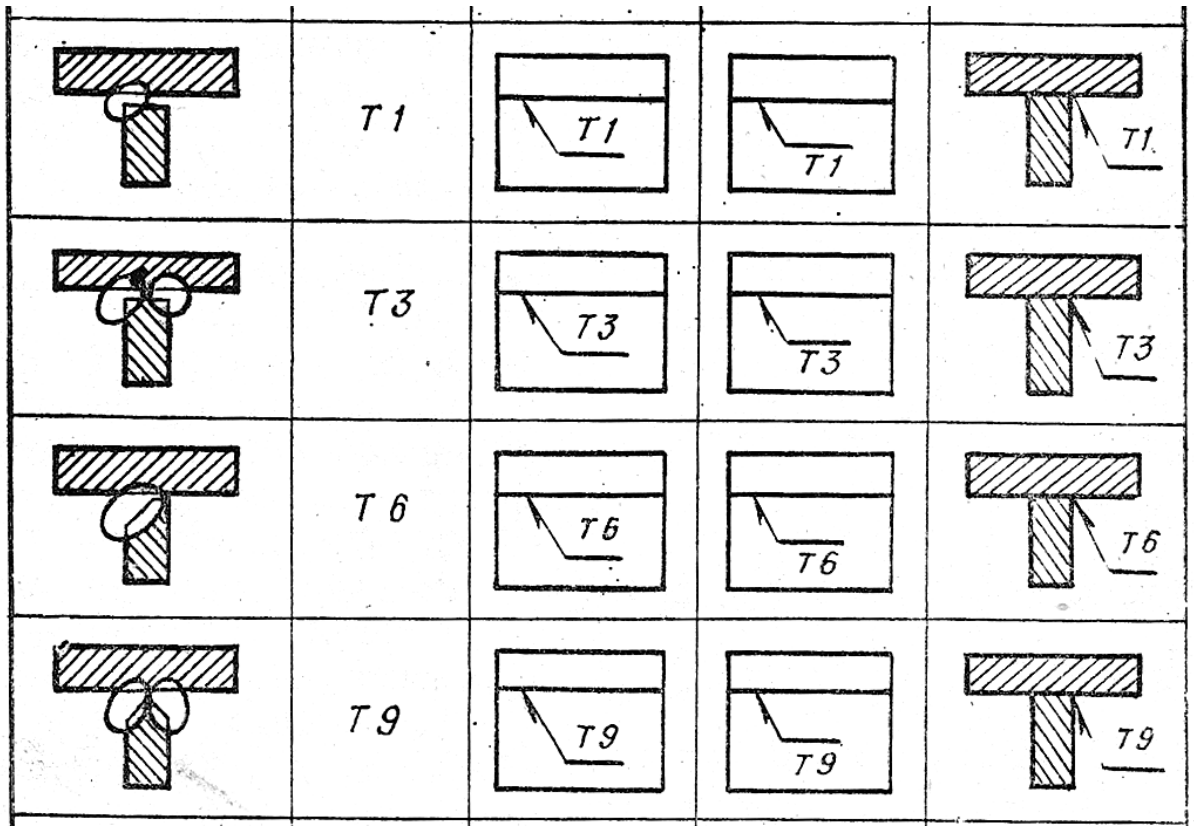
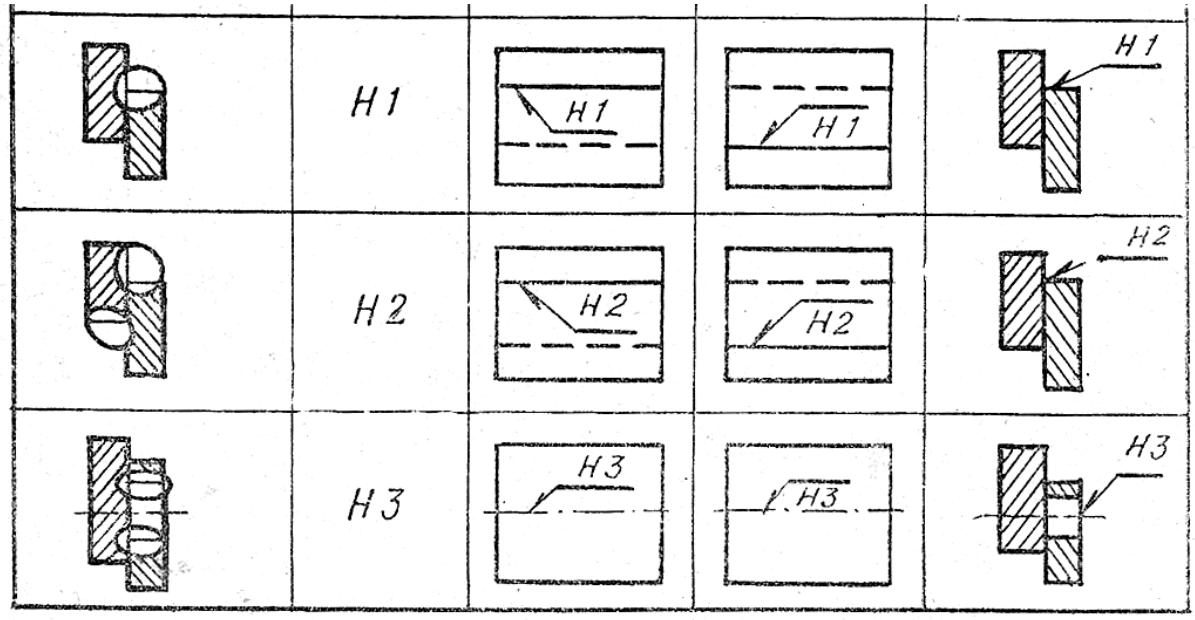
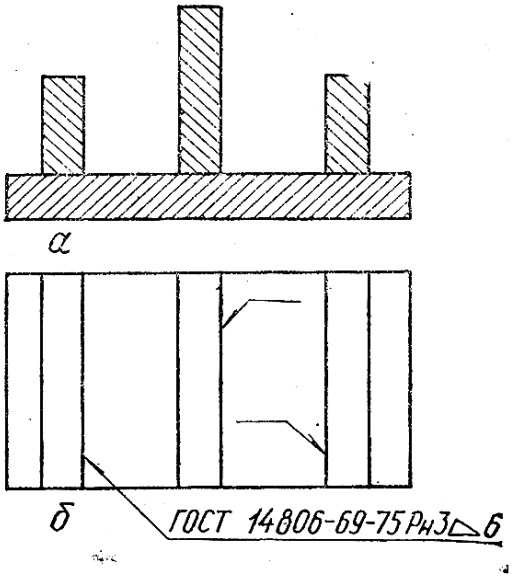


Tavrli	
Ustma-ust	

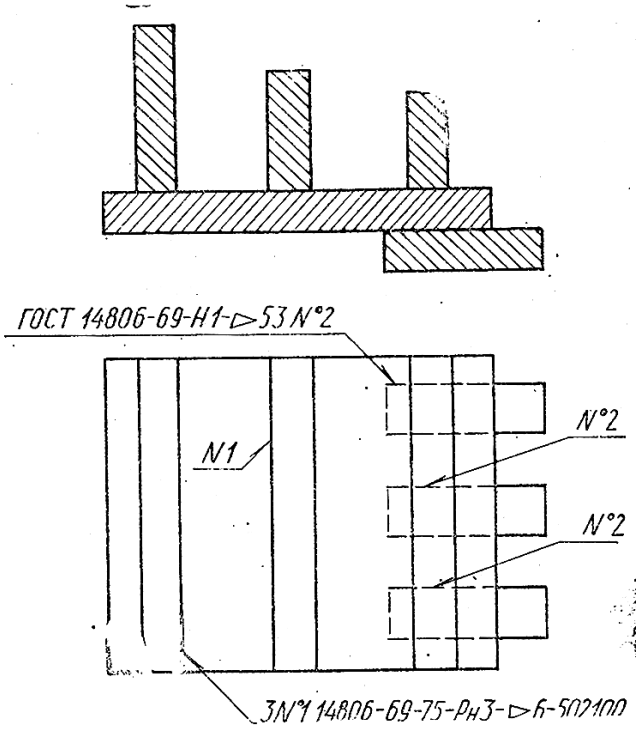
7. Qo`shimcha belgilar (9- jadvalga qarang). Belgilashda yuzaning gadir-budurlik darajasi eng oxirida qo`yiladi.

8- shakl, *a* da sim elektrod yordamida elektr-shlak usulida payvandlash yuli bilan bajarilgan, chetlari yunilgan burchakli birikmaning shartli belgi- lanishi, 8-

shakl, b da esa shu chokni o`quv chizmalarida tavsiya etiladigan belgilanishi ko`rsatilgan.



Agar chizmada bir necha xil choklar tasvirlangan bulsa, u holda shartli belgi fakat bitta chok tasviriga qo`yiladi, dolgan bir xildagi choklar tasviridan esa tokchali chetga chiqarish chiziqlari utkaziladi. Bunda bir xil hamma choklar uchun bitta tartib nomyeri belgilanadi va 9-shaklda ko`rsatilgandek qo`yiladi.

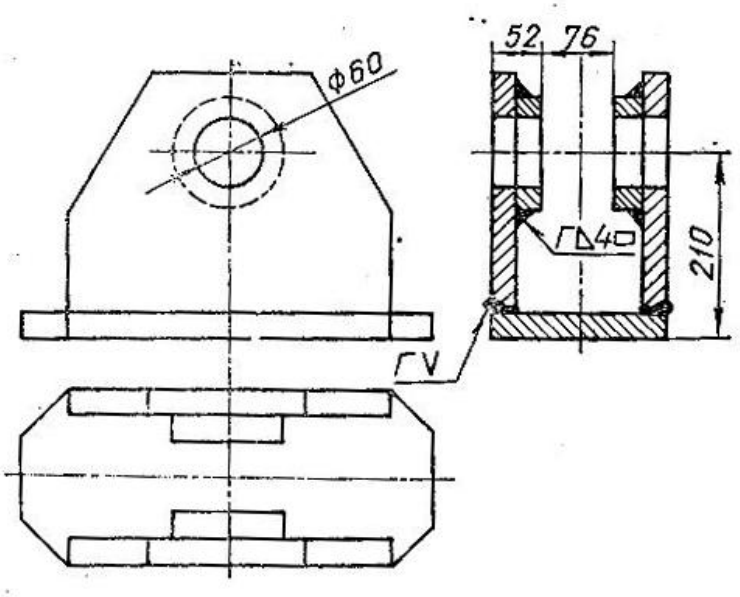


Agar chizmada hamma choklar bir xil va bir tomoni bilan tasvirlangan bulsa, bunday choklarga tartib nomerlari belgilanmaydi va bir chokning belgisi qo`yilib, qolganlaridan tokchasiz chetga chiqarish chiziqlari chiqariladi(8- shakl). Chizmada gramma choklar bir xil bo`lganda, payvand choklarga oid ko`rsatmalarni texnikaviy talablarda yozuv bilan ko`rsatish mumkin, bunda payvandlash joyi, payvandlash usuli, chokning turi va chok zexlarining

konstruktiv strelka bilan tugallanadigan chiqarish elementlarining o`lchamlari va choklarining joylashishi, to`g`risidagi ma`lumotlar beriladi.

Buyum yoki uzelning barcha choklari bir xil payvandlash turi vausuli bilan bajarilsa, ularning harfiy belgilari asosiy belgilashda har bir chokning belgisida ko`rsatilmasdan, balki bu turrida texnikaviy talablarda ko`rsatma beriladi. Payvand birikma chokining asosiy shakl). belgisi chokni ko`rsatuvchi bir tomonli strelka bilan tugallanadigan chiqarish chizig`iga tutashgan gorizontal chiziq (tokcha) ustiga yoki ostiga yoziladi (8-jadval),

Payvandlab ishlanadigan uzelning ish chizmasini bajarishda, odatda, shu uzelga kiruvchi hamma detallarning chizmalari alohida-alohida chiziladi va uzel chizmasida payvandlash .uchun hamda ularga ishlov byerish uchun zarur buladigan o`lchamlargina ko`rsatiladi (10-shakl).



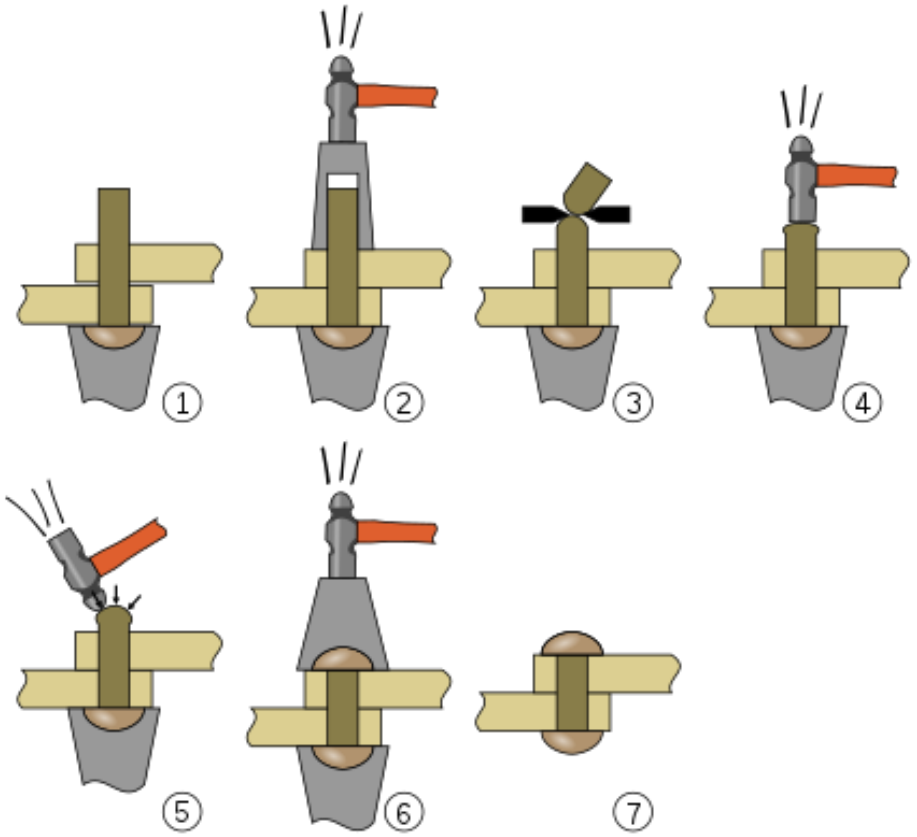
10-shakl

8-§. Parchin choklar.

Parchinlab biriktirish ajralmaydigan biriktirishning bir turi. Parchin choklar bir uchida kalpog`i bo`lgan tsilindrik sterjendan iborat parchin mixlar (zaklepkalar) vositasida hosil hilinadi.

Parchinlash protsessi quyidagilardan iborat: biriktiriladigan detallarda teshik uyiladi (8.1-shakl,*)*, oldindan qizdirilgan parchin mix (diametri 10 *mm* dan kichik bo`lgan parchin mixlar qizdirilmaydi) bu teshikka qo`yiladi (8.1-shakl,1). Maxsus mashinada (yoki pressda) parchinmixning uchi pachoqlanadi (parchinlanadi) (8.1-shakl, *6).*

8.1-shakl, 7 da parchinlash vositasida hosil bo`lgan chokning chizmasi ko`rsatilgan.



8.1-shakl

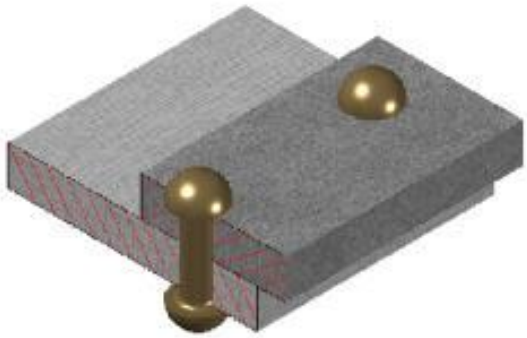
Parchin mixlar standartlashtirilgan bo`lib, shakli, qalpog`ining o`lchami va vazifasiga qarab quyidagi turlarga bolinadi (10- jadval).

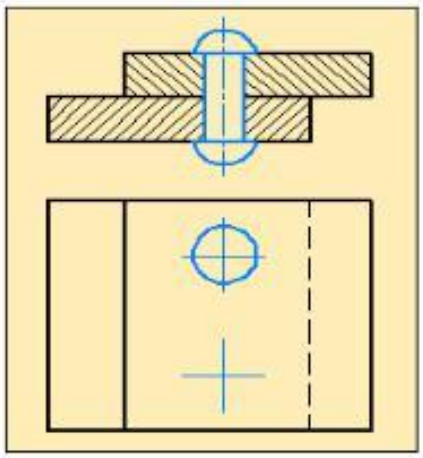
10-jadval

Parchin choklar nomi	Parchin mix nomi	Shartli belgisi
Zich- mustaqkam choklar uchun	Yarim yumalgaq kalpoqli Tekis konus kalpoqli Tekis kalpoqli (bondarli) Yarim yashirin qalpoqli (tunukalar uchun) Yarim yumalotq qalpoqli	*Zaklepka 19x90 GOST 10299—62 Zaklepka 3x8 GOST 1888—41 Zaklepka 6X12 GOST 103C3—62 Zaklepka 6x18 GOST 10301—62 Zaklepka 19X90 GOST 1191—41*
Mustaxkam choklar uchun	Yarim yashirin kalpoqli Konussimon qalpoqli Kalpoq osti qismi bo`lgan	*Zaklepka 19x90 GOST 1192—41 Zaklepka 19X90 GOST 1193—41 Zaklepka*

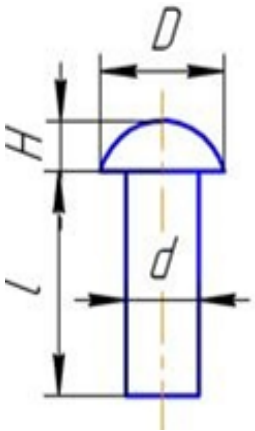
	konussimon qalpoqli	*19x90 GOST 1294—41*
Mustaxkam va zich mustahkam choklar uchun	Yashirin kalpoqli	*Zaklepka 19X90 GOST 10300—62*

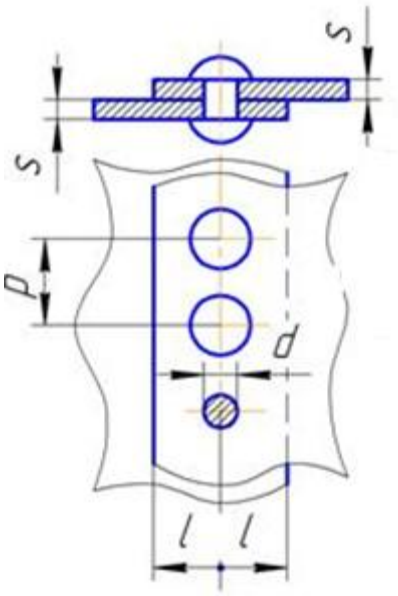
Parchin choklar mustahkam va zich mustahkam choklarga bo`linadi. Parchin mixlar chokda bir yoki bir necha (odatda, besh katorgacha) qator bo`lib joylashtirilgan bo`lishi mumkin. Parchin mixlarning o`zaro joylashishiga qarab, shaxmat tartibli va parallel choklar bo`ladi. Biriktiriluvchi listlar uchlarining joylashishiga qarab, ustma-ust va uchma-uch choklarga bo`linadi. Uchma-uch choklarga tagliklar qo`yiladi. Bunday parchin choklar bir tomonlama va ikki tomonlama tagliklar bilan bajarilishi mumkin.





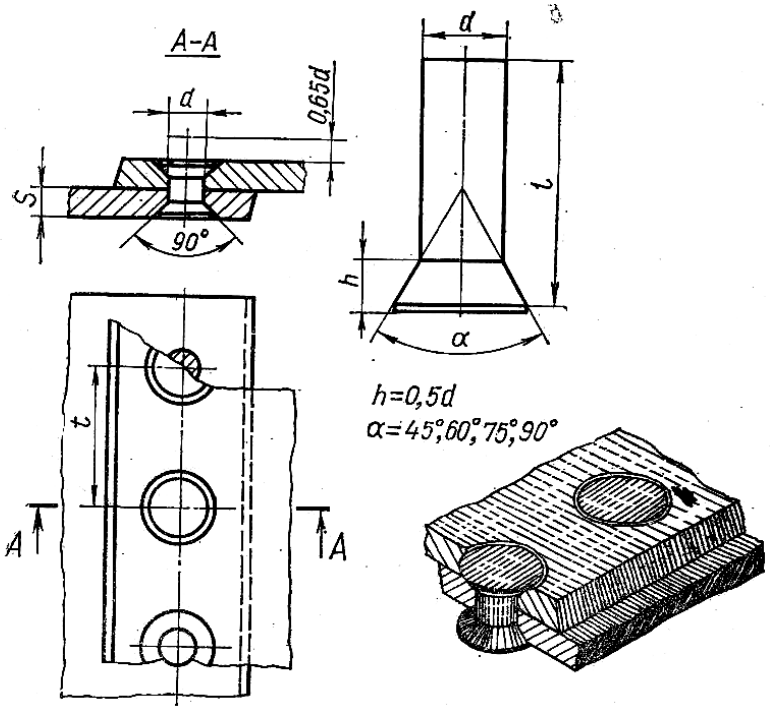
D=0,9d
H=0,65d



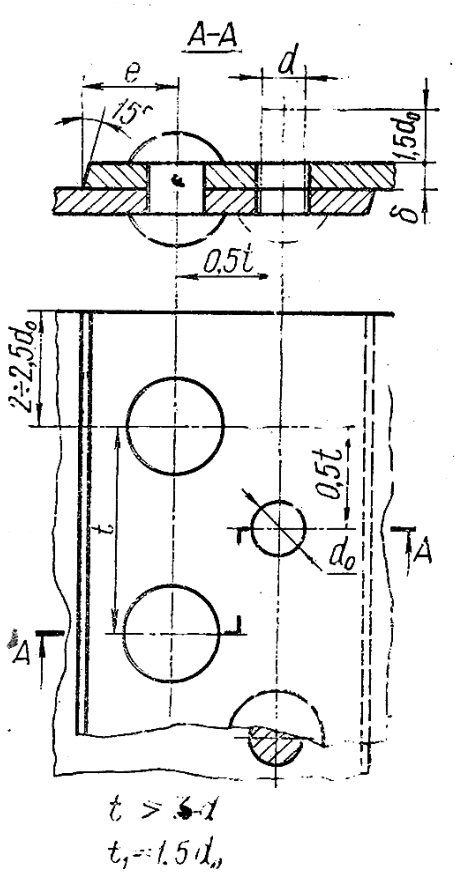


8.2-shakl

8.2-shaklda yarim yumaloq qalpoqli parchin mixlar bilan birishgirilgan bir qatorli parchin chok ko`rsatilgan. Shu erda parchin mixning GOST o`lchamlari buyicha chizilishi va bu o`lchamlarning chizmada qo`yilishi (harfiy belgilar GOST dan olingan sonli ulchamlar bilan almashtiriladi) ko`rsatilgan. Xuddi shunday chok yashirin qalpoqli parchin mix uchun shaklda ko`rsatilgan. 8.3-shaklda ikki qatorli, shaxmat tartibli chokning chizmasi ko`r 8.2-shaklda ko`rsatilgan. Chizmani bajarish uchun biriktiriluvchi detallarning qalinligi S berilgan bo`ladi.

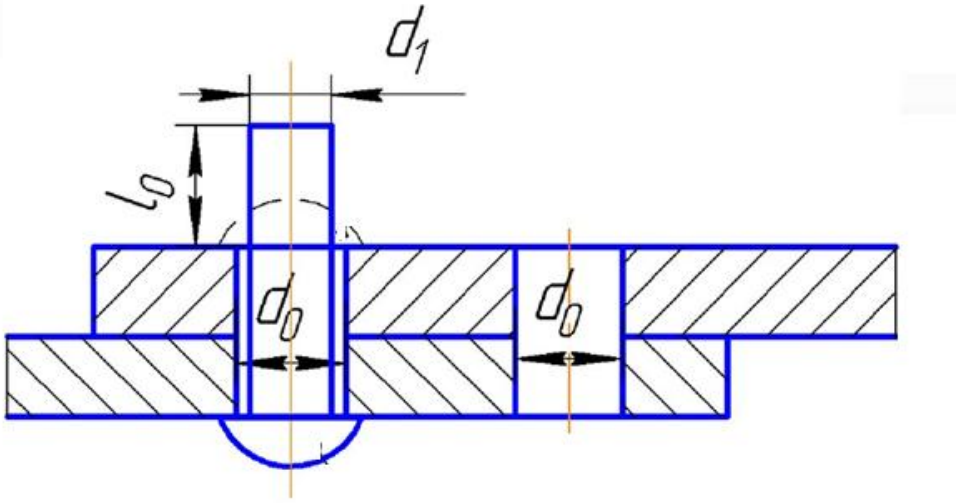


8.2-shakl



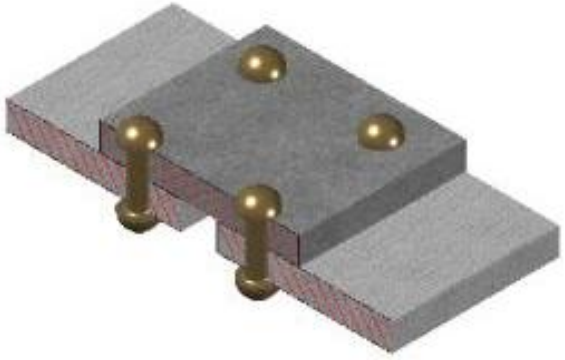
8.3-shakl

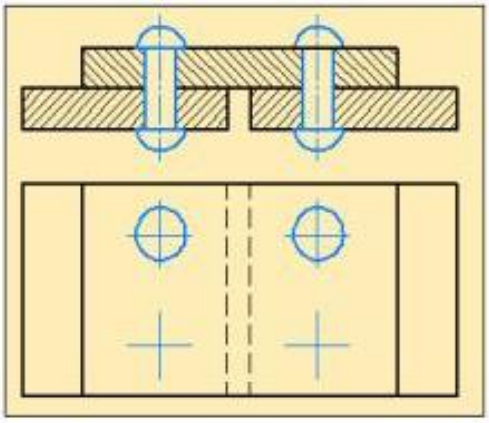
Parchin diametri esa d.— S+(6÷8)mm qilib, teshik diametri d_0 parchin sterjeni diametri d dan taxminan 1 mm katta qilib olinadi (8.4-shakl).



8.4-shakl

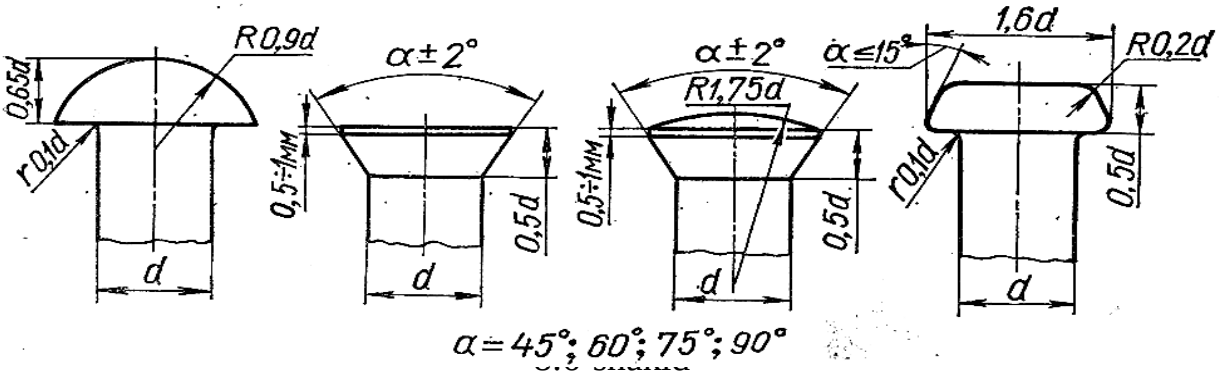
Qolgan o`lchamlar chizmada keltirilgan epirik formulalar bilan aniqlanadi. 8.5-shaklda ikki qatorli, ikki ust quymali parallel chokning chizmasi ko`rsatilgan.



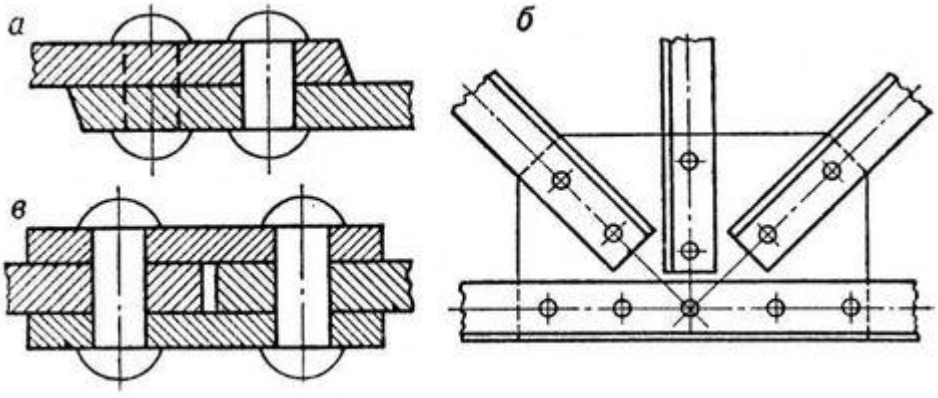


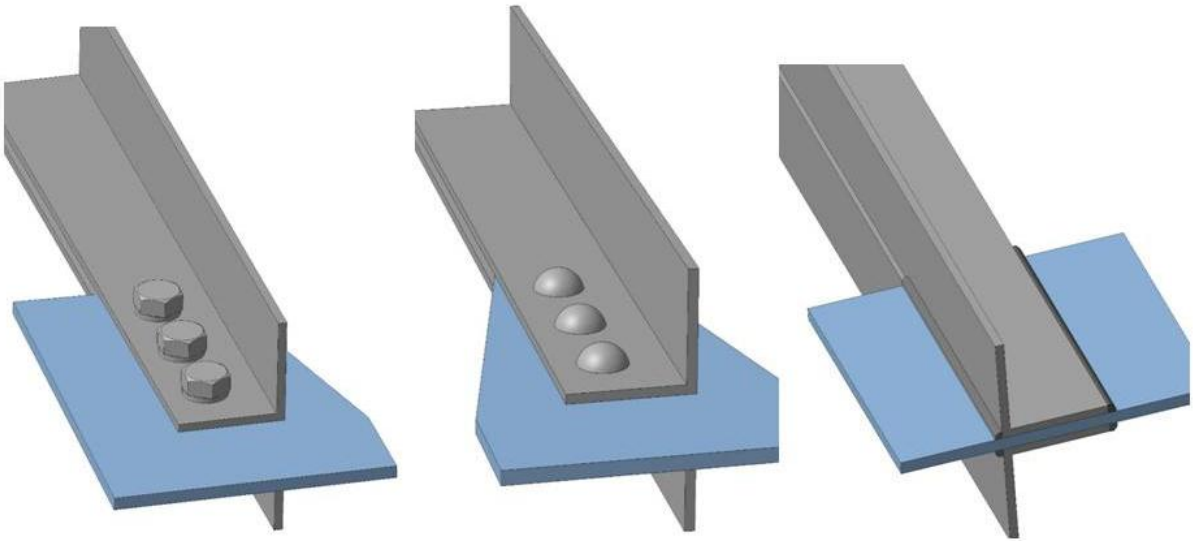
8.5-shakl

Parchin mixlarning ish chizmasini chizishda GOST ulchamlaridan foydalaniladi. Boshqa hollarda parchin mixlar qalpog`i parchin mix sterjenining diametriga nisbatan olingan taxminiy o`lchamlar bo`yicha chizilishi mumkin (8.6-shakl).



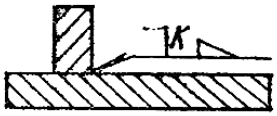
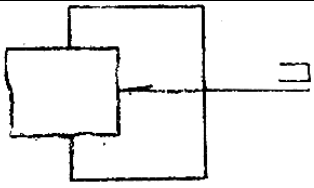
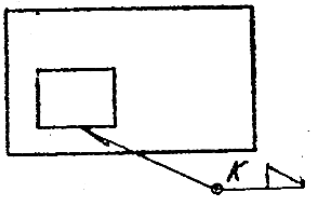
8.7-shaklda detallari parchin mixlar bilan biriktirilgan uzel chizmasi ko`rsatilgan. Bunday chizmalarda parchin mixlarning o`rni o`q chiziqlar bilan almashtirilishi mumkin.

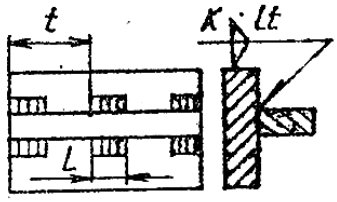
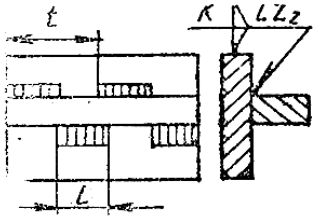
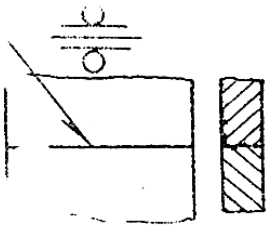
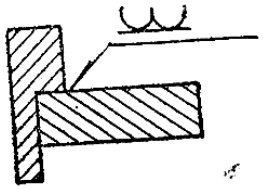




8.7-shakl

9-jadval

Qo`shimcha belgi		
Belgi	Ishlatilish joyi	Chizmalarda tasvirla nishi
	Chiqarish tokchasidagi belgi, buyumni tashkil qiluvchi jismlarni montaj qilishdz hosil qilinadigan chokni belgilaydi	
	Ochiq kontur buyicha bajarilgan chok. Bu belgi chokning joylashishi chizmada yaqqol kurinib tur ganda ishlatiladi	
	Pyerimetri buylab joylashgan choklarni ko`rsatish uchun	

	Zanjirsimon joylashgan uzuq- uzuq va nuqtaviy choklarni belgilash uchun	
	Shaxmat tartibida joylashgan uzuq- uzuq va nuqtaviy choklarni belgilash uchun	
	Chok kuchaytirgichi olib tashlansin	
	Chokning bo`rtma va notekis joylari asosiy metallga ravon o`tadigan qilib ishlansin	

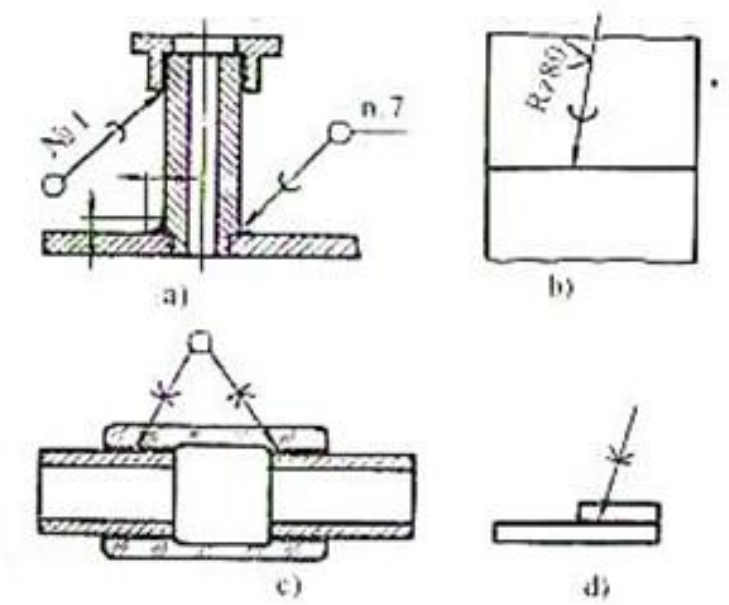
Kavsharli va yelimli birikma. Zamonaviy texnologiya asosida buyumlar tayyorlashda kavsharlash va yelimlaslidan keng foydalaniladi. Bu birikma choklarini shartli tasvirlash va belgilash GOST 2313-96 da belgilangan. 1.18-shaklda bunday birikma choklarini tasvirlash va belgilash ko`rsatilgan. Kavsharli va yelimli choklar ko`rinishda va qirqimda 2S qalinlikdagi chiziq bilan tasvirlanadi. Kavsharlash (1.18-shakl, a va b)yoki yelimlashni (1.18-shakl, c va d) belgilash uchun chok tasviriga tegdirib ingichka tulash chiziq bilan qiya chiqarish chizig`i chzilib uning bu I egib turgan uchiga strelka qo`yiladi; kavsharlash va yelimlash butun parametr bo`yicha bajarilgan bo`lsa, chiqarish chizig`ining ikkinchi uchi, diametri 3 + 4 mm ga teng bo`lgan aylana bilan tugaydi; tasvirlangan chok kavsharlangan chok bo`lsa, chiqarish chizig`iga 1.18-shakl, a va b da

ko`rsatilgandek belgi, yelimlangan bo`lsa, 1.18-shakl,c va d da ko`rsatilgandek K-belgi qo`yiladi.

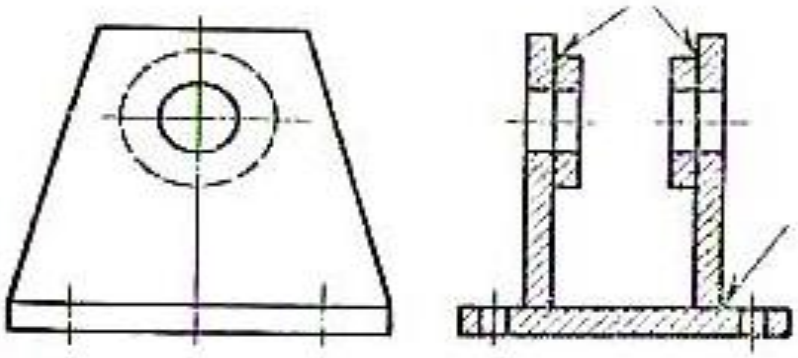
Kavsharli birikmada zaruriyat tug`ilsa 1.18-shakl, a da ko`rsutilgandek chok o`lchami. 1.18-shakl, b da ko`rsatilgandek sirtning g`adir-budurligi ko`rsatiladi.

Chizmada kavsharlash uchun ishlati lad igan metal In i yoki yelimlovchi moddani chizmani texnik talablar qismida tegishli standart bo`yicha Kav.40 GOST... yoki Yelim BF-2GOST... tartibida belgilanadi.

Yig`ma chizmada payvandlanadigan, kavsharlanadigan vayelimlanadi- gan detal lar bir xil materiakJan tayyodangan bo`lsa, qiiqimda yaxlit bir buyumdek bir tomonga qiya qilib shtrixovka qilinadi. Detallarning chegaralari asosiy tutash chiziq bilan tasvirlanadi (1.19-shakl).



1.18-shakl

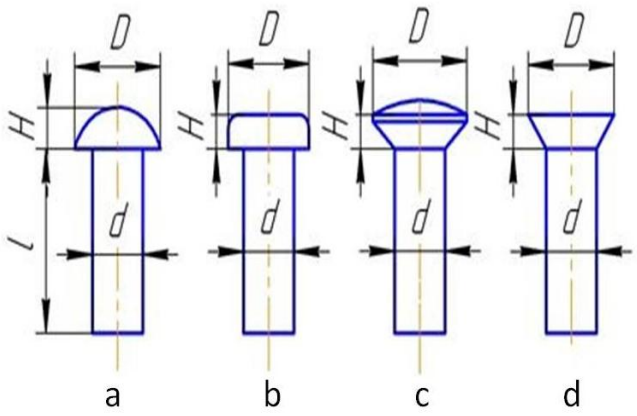


1.19-shakl

Parchin mixli birikma. Parchin mixli birikma yuqorida aytganimizdek ajralmaydigan birikma turiga kiradi. Parchin mix bir tomonini ichida kallagi bo`lgan silindrik sterjen (1.20- shak1).

Teshikka qo`yilmagan parchin mix uzunligi birikuvchi detallar qalinligi, teshikni to`lg`azish va parchaklab kallak hosil qilish uchun kerak bo`ladigan miqdorlar yig`indisi (L),biriktirish usuliga bog`liq holda 2$+(l,4-t-l,7)d yoki 6+25 ,+(1,4-r l,7)d ga teng bo`ladi.

Parchin mix bilan detallarni biriktirish uchun detallar teshiladi. Teshik diametri parchin mix diametridan I mm katta bo`lishi kerak. Chunki qizdirilgan parchin mix teshikka erkin kirishi kerak. Chokni parchinlash uchun diametri 12 mm dan ortiq bo`lgan parchin mixlar 900-1000°C temperaturagacha qizdiriladi. Chokni parchinlashda parchin mix sterjeni cho`ktiriladi va natijada birikuvchi detallar teshigi to`lishadi, ya`ni parchin mix diametri teshik diametriga teng bo`ladi.

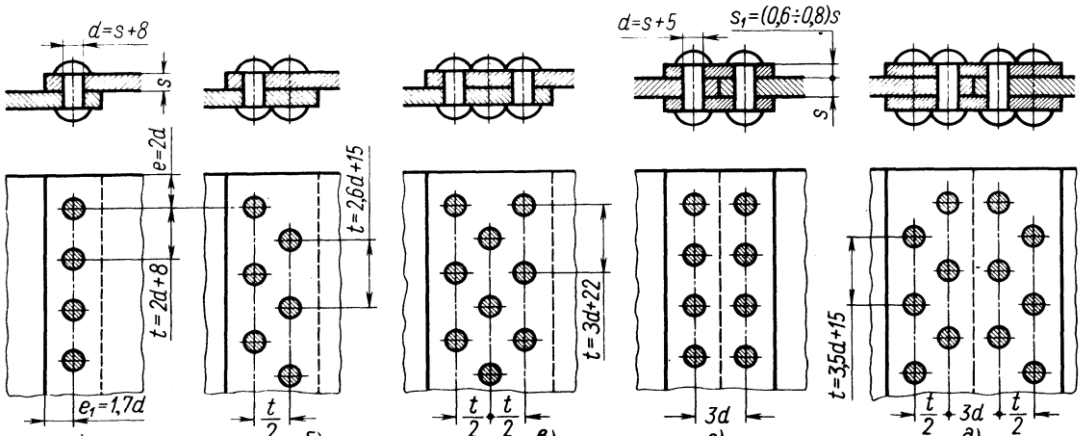


1.20-shakl

Parchin mix kallagi yarim dumaloq (GOST 10299-96) (1.20-shakl. a), yassi-konussimon (GOST 10303-96) (1.20-shakl). yashirin (GOST 10300- 96) (1.20-shakl, d), yarim yashirin (GOST 10301 -96) (1.20-shakl. c) shakllarda bo`ladi. Shulardan eng ko`p ishlatiladigani: yarim dumaloq; yashirin; yarim yashirin kallakli parchin mixlar bo`lib hisoblanadi.

Parchin mixlar chizmada quyidagicha shartli belgilanadi: «Parchin mix» so`zi; sterjen diametri mm da; sterjen uzunligi mm da; ashyosining guruhi; qoplanganlik guruhi; standart raqami ko`rsatiladi. Masalan. parchin mix di *d)* diametri 8 mm, uzunligi 20 mm, guruh ashyosi 00. qoplamasiz: Parchin mix 8x20 GOST 10299-96; xuddi shunday guruh maicriali 38. rusumi M3.03 qoplamali qalinligi 6 mm bo`lsa: Parchin mix 8x20. 38. M3. 036. GOST 10299-96. Parchin choklar mustahkam. zich va mustahkam zich choklarga bo` linadi.

Birikadigan detallarni ustma-ust joylashtirib yoki bitta yoki ikkita nakladka (detallarni yopib luradigan g, qalinlikdagi mctall) bilan uchma-uch joylashtirib parchinlash mumkin. Parchinlash birqatorli yoki ko`p qatorli bo`lishi mumkin. Ko`pqatorli parchinlashda parchin mixlarning bir-biriga nisbattan joylashishiga qarab parallel va shaxmat tartibli choklarga bolinadi(1.21 -shakl).



1.21-shakl

Bir qatorda yonma-yon joylashgan ikki parchin mix markazlari orasidagi t masofa parchinlash choki qadami deyiladi.