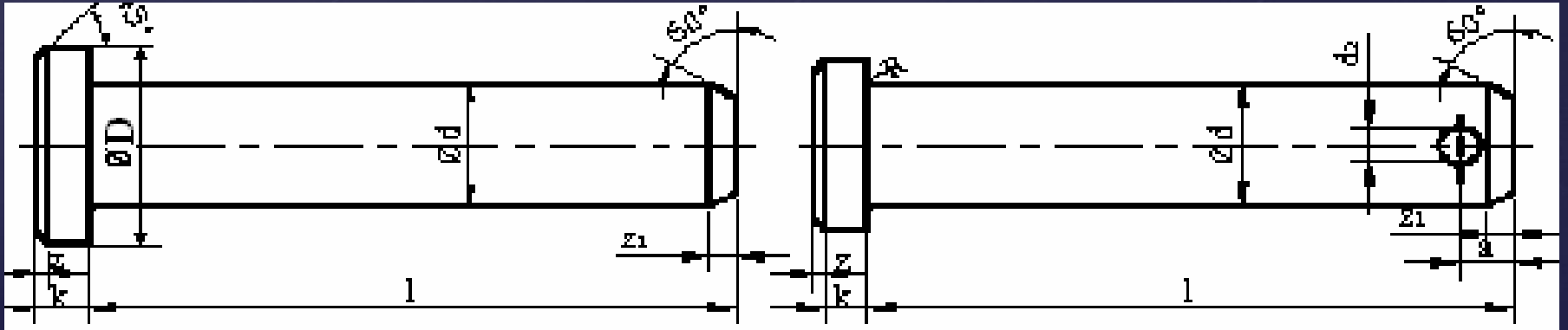




Pernolu Birleřtirmeler

Perno: Makine, aparat ve mekanizmalarda, parçaların genellikle hareketli birleştirme yapmaya ve çözülebilir şekilde birbirine bağlanmasına yarayan, silindir gövdeli ve çeşitli şekillerde yapılan makine elemanlarıdır. Şekil bakımından silindirik pimlere benzerler.



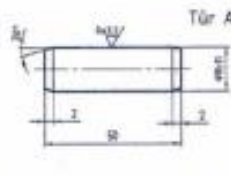
# Perno eřitleri

## Kaba İřler İin Kullanılan Pernolar

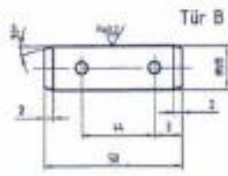
- Bařsız pernolar,
- Kk bařlı pernolar,
- Orta bařlı pernolar,
- Byk bařlı pernolar,
- Bombe bařlı ve delikli pernolar,
- Bombe bařlı, faturalı ve vidalı pernolar,
- Havřa bařlı pernolar,
- Yassı bařlı pernolar,
- Yassı bařlı ve vidalı pernolar,
- Konik bařlı ve vidalı pernolar,

## İnce İřler İin Kullanılan Pernolar

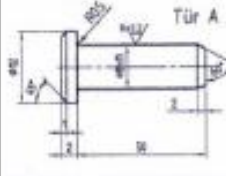
- Dz pernolar,
- Faturalı pernolar,
- Kanallı pernolar,
- Faturalı ve kanallı pernolar,
- Pahlı bařlı pernolar,
- Altıkře faturalı ve vidalı pernolar,
- Altıkře faturalı, vidalı ve kanallı pernolar,
- Pahlı bařlı ve vidalı pernolar,
- Bařsız ve vidalı pernolar,



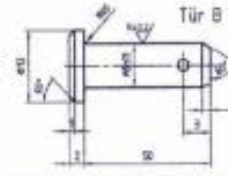
Beyaz perno TS 99-1 A -10x50 - Fe50



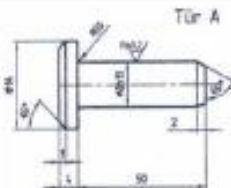
Beyaz perno TS 99-1 B -10x50 - Fe50



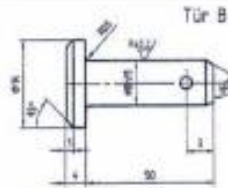
Küçük başlı perno TS 99-2 A -5x50 - Fe50



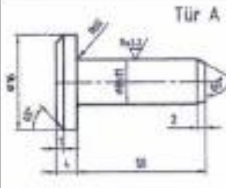
Küçük başlı perno TS 99-2 B -5x50 - Fe50



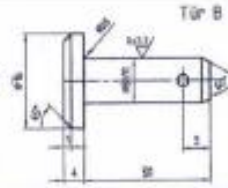
Orta başlı perno TS 99-3 A -4x50 - Fe50



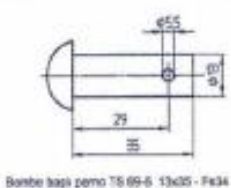
Orta başlı perno TS 99-3 B -4x50 - Fe50



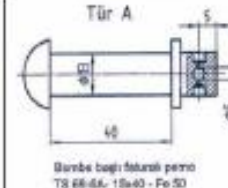
Büyük başlı perno TS 99-4 A -6x50 - Fe50



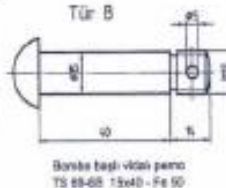
Büyük başlı perno TS 99-4 B -6x50 - Fe50



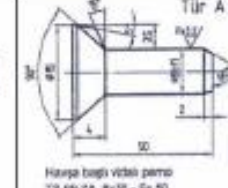
Bomba başı perno TS 99-5 13x35 - Fe34



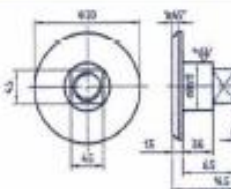
Bomba başı fetüslü perno  
TS 99-6A-15x40 - Fe 50



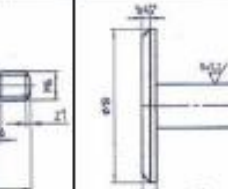
Bomba başı videli perno  
TS 99-6B 15x40 - Fe 50



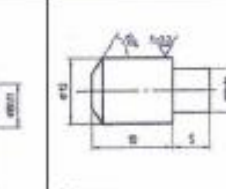
Hex başlı videli perno  
TS 99-7A 5x50 - Fe 50



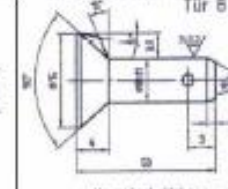
Hex başlı videli perno TS 99-8 23x53.8 - Fe50



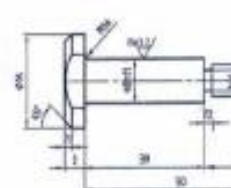
Yassı başlı perno TS 99-9 9x10 - Fe50



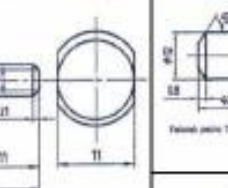
Düz perno  
TS 99-11 12x10x5 - Çinközlü çelik



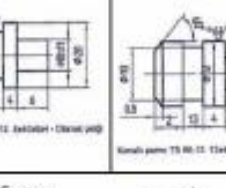
Hex başlı videli perno  
TS 99-7B 5x50 - Fe 50



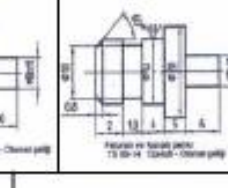
Kare başlı videli perno TS 99-10 8x 29x55 - Çinközlü çelik



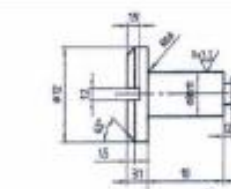
Faydalı perno TS 99-12 5x40x8 - Çinközlü çelik



Kare başlı perno TS 99-11 11x40 - Çinközlü çelik



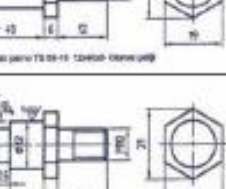
Faydalı ve faydalı perno  
TS 99-14 12x40 - Çinközlü çelik



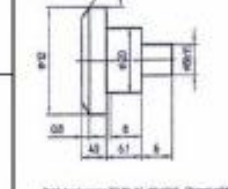
Faydalı başlı videli perno TS 99-13 8x 10 - Çinközlü çelik



Küçük başlı perno TS 99-15 12x40x5 - Çinközlü çelik



Yassı başlı perno TS 99-17 12x50 - Çinközlü çelik

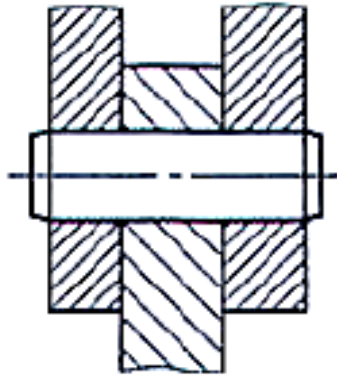


Faydalı başlı perno TS 99-11 22x50 - Çinközlü çelik

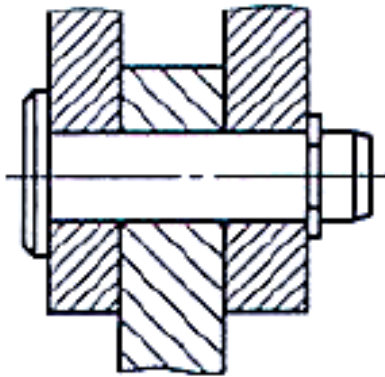
## 1.3. Perno Gereçleri

Pernolar standartlara göre 9S20K (otomat çeliği ve Fe50) çeliğinden, akma çelikleri ve yay çeliğinden yapılır. Ayrıca C35-C15-C15Cr3-16MnCr5 vb. sementasyon çeliğinden yapılabilir ve setleştirilebilir. Isıl işlem uygulanmış pernelarda sertlik değeri 55-60 Rc olmalıdır. Özel durumlara göre bakır, nikel, krom veya kadmiyum kaplama veya fosfatlama yapılır. Kaplama TS 149'a uygun olmalıdır.

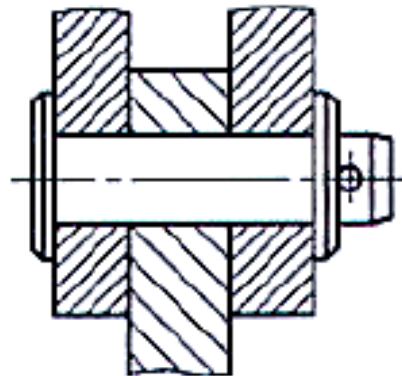
Başsız perno ile birleştirme



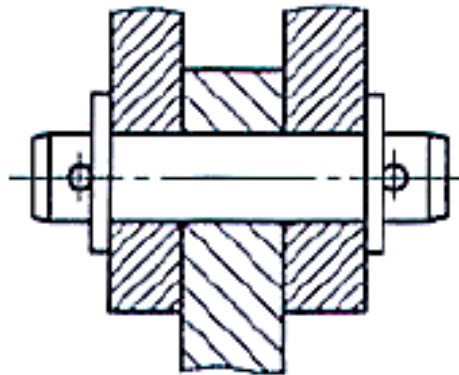
aşlı -emniyet segmanlı perno ile birleştirme



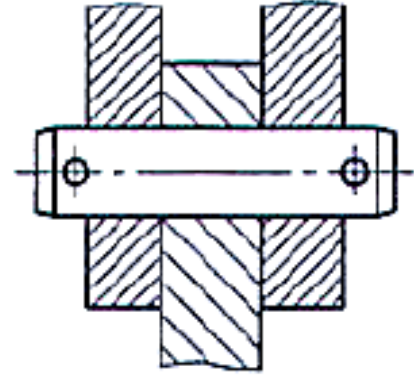
Başlı delikli kopilyalı rondelalı perno ile birleştirme



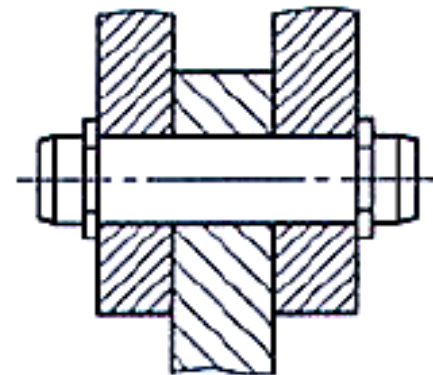
Başsız delikli kopilyalı rondelalı perno ile birleştirme



Başsız delikli kopilyalı perno ile birleştirme



Başsız -emniyet segmanlı perno ile birleştirme



Başlı-vidalı-emniyet rondelalı ve somunlu perno ile birleştirme