

TYPE XY.../1

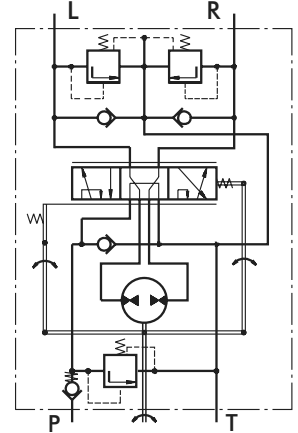
M+S Hidrolik Hidrostatik Direksiyon Valfleri ; İnşaat makinaları , forklif , hasat makinaları ve benzeri, 60 km/h'ı geçmeyen düşük hızlı araçlarda kullanılır. Bu hidrolik valf mekanik bağlantıya ihtiyaç olmadan tekerleklerdeki torku artırır.

The M+S Hydrostatic Steering units are used in low-speed vehicles which driving speed does not exceed 60 km/h – sch as : building machines, fork-lift trucs , harvesting machines , off-highwayequipment and others. These hydraulic units amplify the torque to the steering wheels , with no need of hard mechanical connection.

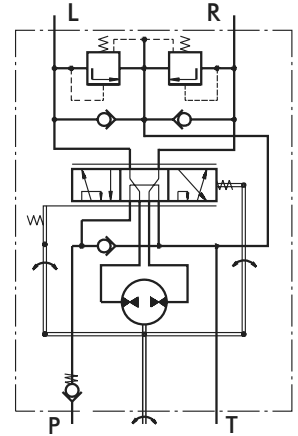
SPECIFICATION DATA / TEKNİK ÖZELLİKLERİ

Parameters Parametreler		Type			
		XY 85.../1	XY 120.../1	XY 145.../1	
Displacement İletilen hacim	cm ³ /rev	84	120	144	
Rated Flow* Çalışma Akışı	lpm	9	12	15	
Rated Pressure Çalışma Basıncı	bar	150			
Relief Valve PressureSettings** Kontrol Valfi Basınç Ayarları	bar	80	100	125	150
Shock Valves Pressure Settings*** Şok Valfi Basınç Ayarları	bar	200			
Max. Cont. Pressure inLineT Maks. Devam Eden Basınç Hattı	bar	20			
Max. Torque at Servoamplifying Servoamplifikatördeki maks. Tork	Nm	3,5			
Max. Torque w/o Servoamplifying Servoamplifikatördeki maks. Tork	Nm	120			
Weight / Ağırlık	kg	6,4	6,6	6,8	
Dimension A Ölçülendirme	mm	136,3	141.5	144.5	

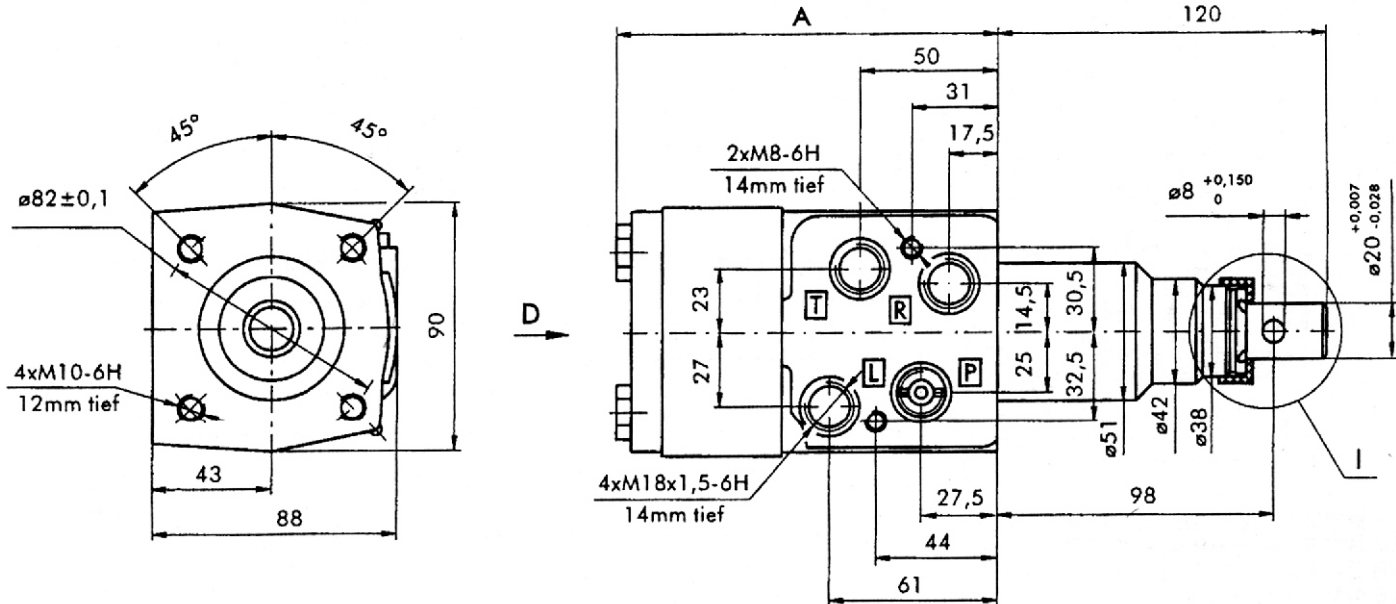
Açık Merkez – Yük reaksiyonsuz
Open Center – Non Reaction
Versiyon 2 – XY.../2
Version 2 – XY.../2



Açık Merkez – Yük reaksiyonsuz
Open Center – Load Reaction
Versiyon 1 – XY.../1
Version 1 – XY.../1



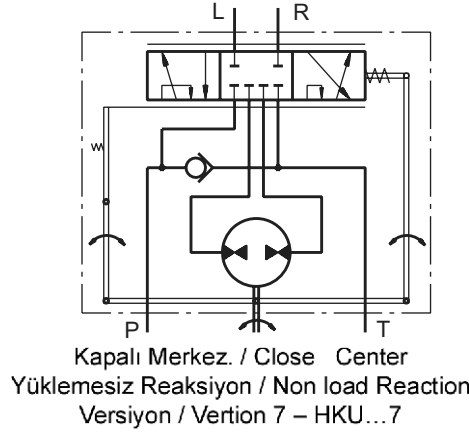
BOYUTLAR VE MONTAJ VERİLERİ / DIMENSIONS AND MOUNTING DATA



TYPE HKU.../7

HKU.../7 "kapalı merkez yüklemesiz" hidrostatik direksiyon ünitesidir. İçerisinde hidrolik t oplayıcılar içeren sistemlerin, entegre edilecek şekilde dizayn edilip enerji kayıplarını en aza indirir.

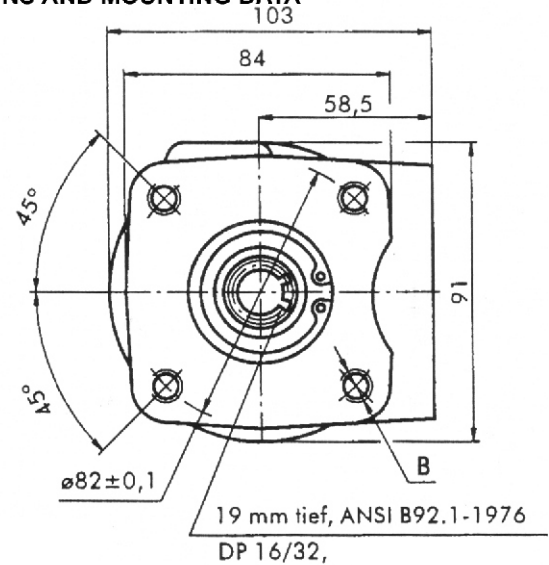
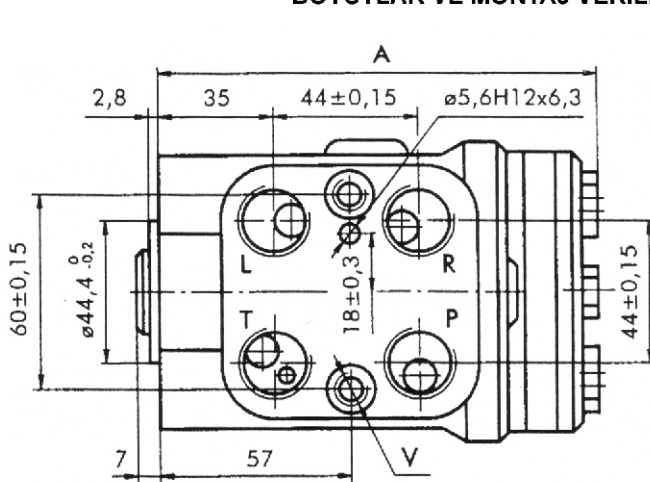
The HKU .../7 is a "closed-Non load rection" Hydrostatic steering unit, designed for integration into system unit, designed for integration, achieving minimal energi loses.



SPECIFICATION DATA / TEKNİK ÖZELLİKLER

Parameters/ Parametreler	Type / Tipi													
	HKU 40/7	HKU 50/7	HKU 63/7	HKU 80/7	HKU 100/7	HKU 125/7	HKU 160/7	HKU 200/7	HKU 250/7	HKU 320/7	HKU 400/7	HKU 500/7	HKU 630/7	HKU 800/7
Displacement c _m /rev İletilen Hacmi	39,6	49,5	65,6	79,2	99,0	123,8	158,4	198	247,5	316,8	396	495	623,6	793
Rated Flow* lpm Çalışma Akışı		5	6	8	10	13	16	20	25	32	40	50	63	80
Rated Pressure bar Çalışma Basıncı	1810	2030	2540											
Max. Cont.Pressure inLineT Mak. Devam Eden Basınç - standard bar - highpressure(Hoption)														
	25													
	40													
Max. Torque at Servoamplifing Servoamplifikatördeki mak. tork -with standard springs Nm -with soft springs(LT option)	3,0 26 1,8									3,0 -				
Max. Torque w/o Servoamplifing Servoamplifikatördeki mak. tork Nm	120													
Weight / Ağırlık kg	5,3	5,4	5,5	5,6	5,7	5,8	6,0	6,3	6,5	7,0	7,4	8,0	8,7	9,6
Dimension A mm Ölçülendirme	130,8	132,2	133,9	136,2	138,8	142,2	146,8	152,2	158,8	168,2	178,8	192	209,3	232,2

BOYUTLAR VE MONTAJ VERİLERİ / DIMENSIONS AND MOUNTING DATA



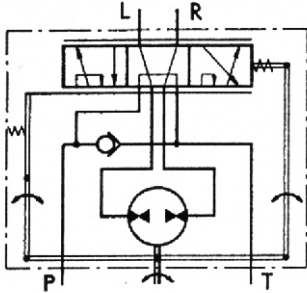
V:2xM10x1-6H,16mm derinlik veya 2x3/8-24 UNF-2B. 14.2 mm derinlik

V:2xM10x1-6H,16mm depth or 2x3/8-24 UNF-2B. 14.2 mm depth

P,T,R,L:G1/2-A (M22x1.5-6H), 17 mm depth or a/4-16 UNF-2B.17 mm depth (o-ring)

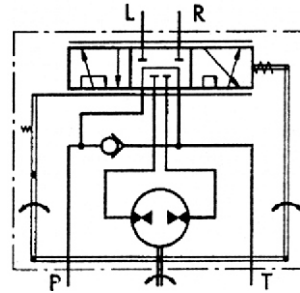
B:4XM10-6H,18 mm depth or 4x3/8-16UNC-2B,15,7 mm depth

Yeni dizayn edilmiş HKU direksiyon üniteleri, radyal dağıtımlıdır. İki adet dönmeli izleme valfi yardımıyla ölçüm verilir. The new designed HKU steering units, with radial distribution, incorporate two rotary tracing valves in the housing, which turn on the metering pump.



Açık Merkez – Yük reaksiyonsuz
Open Center – Load Reaction
Versiyon 3 – XY.../4
Version 3 – XY.../4

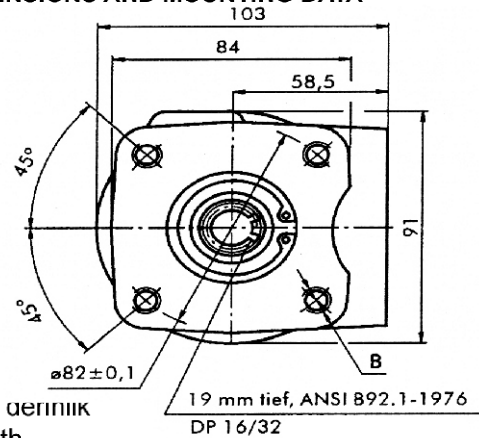
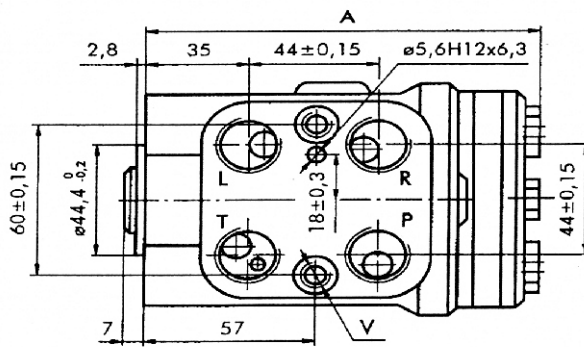
Açık Merkez – Yük reaksiyonsuz
Open Center – Load Reaction
Versiyon 3 – HKU.../3
Version 3 – HKU.../3



SPECIFICATION DATA / TEKNİK ÖZELLİKLER

Parameters Parametreler	Type / Tipi																
	HKU 40/3	HKU 50/3	HKU 63/3	HKU 80/3	HKU 100/3	HKU 125/3	HKU 160/3	HKU 200/3	HKU 250/3	HKU 320/3	HKU 400/3						
	HKU 40/4	HKU 50/4	HKU 63/4	HKU 80/4	HKU 100/4	HKU 125/4	HKU 160/4	HKU 200/4	HKU 250/4	HKU 320/4	HKU 400/4	HKU 500/4	HKU 630/4	HKU 800/4	HKU 1000/4		
Displacement İletilen Hacim	cm /rev	39,6	49,5	65,6	79,2	99,0	7.56	9.67	198	247,5	316,8	396	495	623,6	793	990	
Rated Flow* Çalışma Akışı	lpm	4	5	6	8	10	13	16	20	25	32	40	50	63	70		
Rated Pressure Çalışma Basıncı	bar	140		170										140		100	
Max. Cont.Pressure inLineT Mak. Devam Eden Basınç		25															
- standard	bar	40															
- highpressure(Hoption)																	
Max. Torque at Servoamplifing Servoamplifikatördeki mak. tork	Nm									3,0							
-with standardsprings		3,0								3,0							
-with softsprings(LT option)		1,8								-							
Max. Torque w/o Servoamplifing Servoamplifikatördeki mak. tork	Nm	120															
Weight / Ağırlık	kg	5,3	5,4	5,5	5,6	5,7	5,8	6,0	6,3	6,5	7,0	7,4	8,0	8,7	9,6	10,6	
Dimension A Ölçülendirme	mm	5.15	5.20	5.27	5.36	5.47	5.60	5.78	5.99	6.25	6.62	7.04	7.56	8.24	9.14	10.18	

BOYUTLAR VE MONTAJ VERİLERİ / DIMENSIONS AND MOUNTING DATA

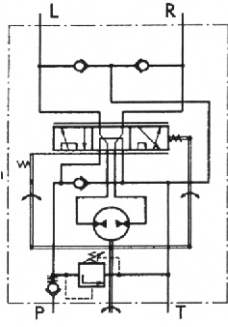


V: 2xM10x1-6H, 16mm derinlik veya 2x3/8-24 UNF-2B. 14.2 mm derinlik

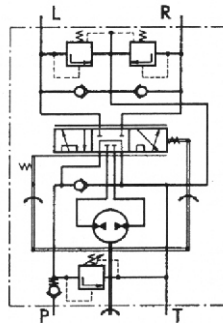
V: 2xM10x1-6H, 16mm depth or 2x3/8-24 UNF-2B. 14.2 mm depth

P, T, R, L: G1/2-A (M22x1.5-6H), 17 mm derinlik or a/4-16 UNF-2B. 17 mm depth (o-ring)

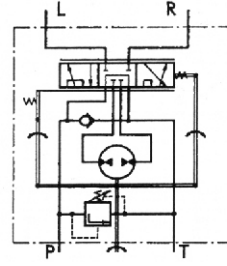
B: 4xM10-6H, 18 mm derinlik or 4x3/8-16UNC-2B, 15,7 mm depth



Açık Merkez –Open Center
Yük reaksiyonsuz – Load Reaction
Valf içerikli / With Built-in Valves
Versiyon/Version 3 – HKUS.../3



Açık Merkez –Open Center
Yük reaksiyonsuz – Load Reaction
Valf içerikli / With Built-in Valves
Versiyon/Version 4 – HKUS.../4



Açık Merkez –Open Center
Yük reaksiyonsuz – Load Reaction
Valf içerikli / With Built-in Valves
Versiyon/Version 8 – HKUS.../8



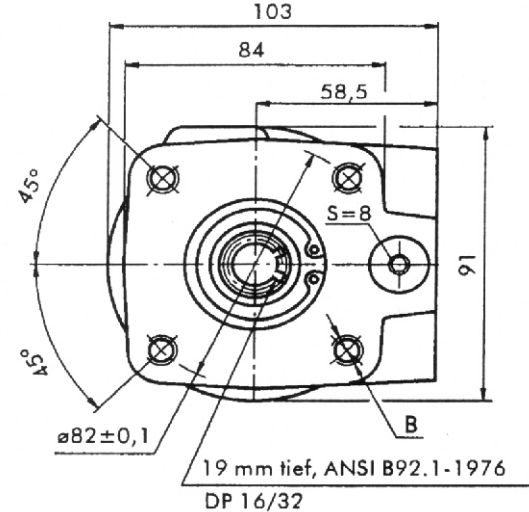
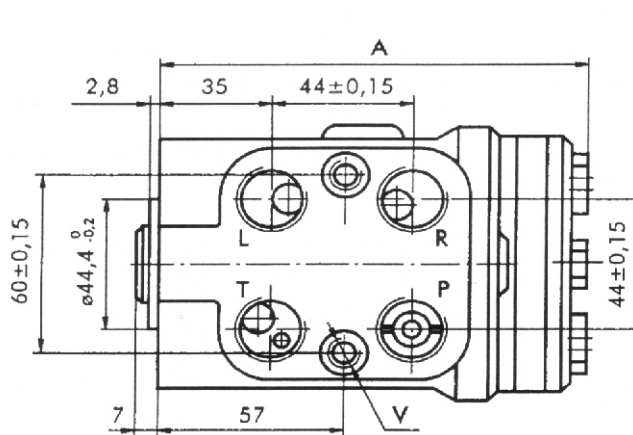
HKUS Hidrostatik direksiyon ünitesi Temel olarak HKU ünitesine dayanmasına rağmen içinde basınç kontrol ve Çek valfleri vardır. Böylece M+S Hidrolik sisteme ek bir hidrolik Valf ihtiyacını azaltan çok küçük bir direksiyon ünitesi olmasını sağlar.

The HKUS Hydrostatic steering unit is Based on the HKU unit but has built-in Relief and check valves. Thus M+S Hydraulic achieves on very compact Steering unit which components in the System.

SPECIFICATION DATA / TEKNİK ÖZELLİKLER

Parameters/ Parametre	Type / Tipi												
	HKUS 40/3,4,8	HKUS 50/3,4,8	HKUS 63/3,4,8	HKUS 80/3,4,8	HKUS 100/3,4,8	HKUS 125/3,4,8	HKUS 160/3,4,8	HKUS 200/3,4,8	HKUS 250/3,4,8	HKUS 320/3,4,8	HKUS 400/3,4,8	HKUS 500/3,4,8	
Displacement / İletilen Hacim	cm³/rev	39,6	49,5	65,6	79,2	99,0	123,8	158,4	198	247,5	316,8	396	495
Rated Flow*/ Çalışma Akışı	lpm	4	5	6	8	10	13	16	20	25	32	40	50
Rated Pressure / Çalışma Basıncı	bar	140						170					
Relief Valve Pressure Settings** Kontrol Valfi Basınç Ayarları	bar	80			100		125		150		170		
Shock Valves Pressure Settings*** Şok Valfi Basınç Ayarları	bar	140			160		180		200		220		
Max. Cont.Pressure in LineT Mak. Devam Eden Basınç Hattı	bar	25 40											
- standard													
- highpressure(Hoption)													
Max. Torque at Servoamplifing Servoamplifikatördeki Mak. Torku	Nm	3,0						3,0					
-with standard springs		1,8						-					
-with soft springs(LT option)													
Max. Torque w/o Servoamplifing Servoamplifikatördeki Mak. Torku	Nm	120											
Weight / Ağırlık	kg	5,3	5,4	5,5	5,6	5,7	5,8	6,0	6,3	6,5	7,0	7,4	8,0
Dimension A/ Ölçülendirme	mm	130,8	132,2	133,9	136,2	138,8	142,2	146,8	152,2	158,8	168,2	178,8	192

BOYUTLAR VE MONTAJ VERİLERİ / DIMENSION AND MOUNTING DATA



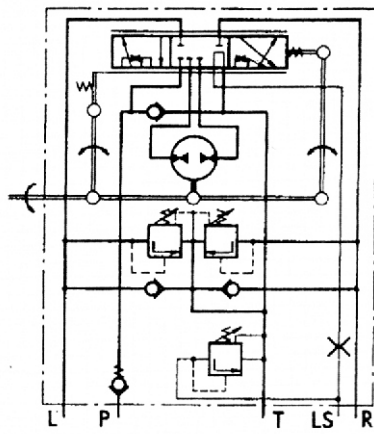
V:2xM10x1-6H, 16mm derinlik veya 2x3/8-24 UNF-2B. 14.2 mm derinlik
V:2xM10x1-6H, 16mm depth or 2x3/8-24 UNF-2B. 14.2 mm depth
P,T,R,L:G1/2-A (M22x1.5-6H), 17 mm depth or a/4-16 UNF-2B.17 mm depth (o-ring)
B:4XM10-6H, 18 mm depth or 4x3/8-16UNC-2B.15,7 mm depth

HKU(S).../5(T)(E)(TE) "Kapalı merkez,yük yüklemesiz ve load sensing" Yeni versiyon ile M+S hidrolik direksiyon üniteleri ailesi genişlemiştir. HKU(S).../5 prioty valf ve emniyet valfi bağlantılı dizayn edilmiştir ve 160 l/min'e kadar kullanılır. HKU(S).../5(T)(E)(TE), forklift,tarım ve inşaat makinaları gibi çeşitli hidrolik sistemlerde minimum enerji tüketimini sağlama almak için dizayn edilmiştir.

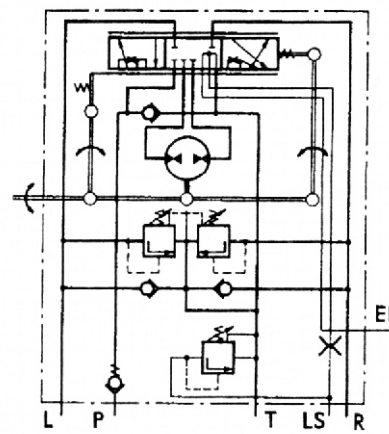


The HKU(S).../5(T)(E)(TE) range expands the steering units family M+S Hydraulic with the "Closed Center-Non Reaction and Load Sensing outlet" version. HKU(S).../5 is designed to be conected with prioty valves with built-in reilef valves for rated flow up to 160 l/min. The control Hydraulic Circuits Of the HKU(S).../5(T)(E)(TE) steering units were designed to ensures minimal energy Consumption (energy losse) in various hydraulic systems such as those of: fork-lift trucks,agricultural and construction Machines and others.

MODÜLER BAĞLANTI / MODULARY MOUNTING

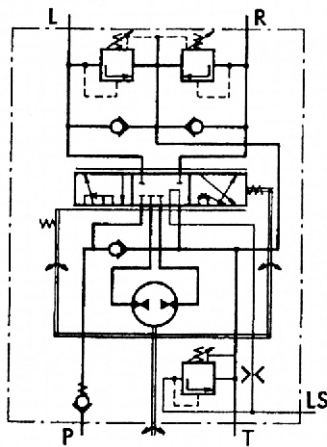


HKU.../5

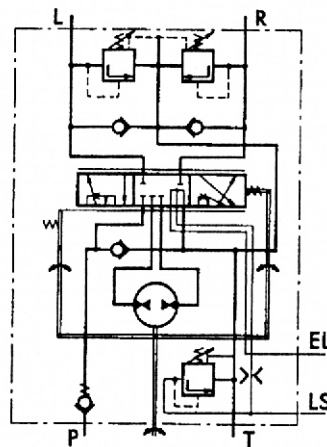


HKUS.../5E

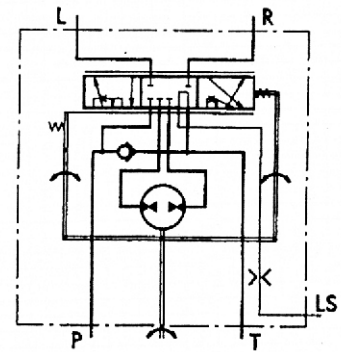
BORU BAĞLANTILI / PIPE MOUNTING



HKUS.../5T



HKUS.../5TE



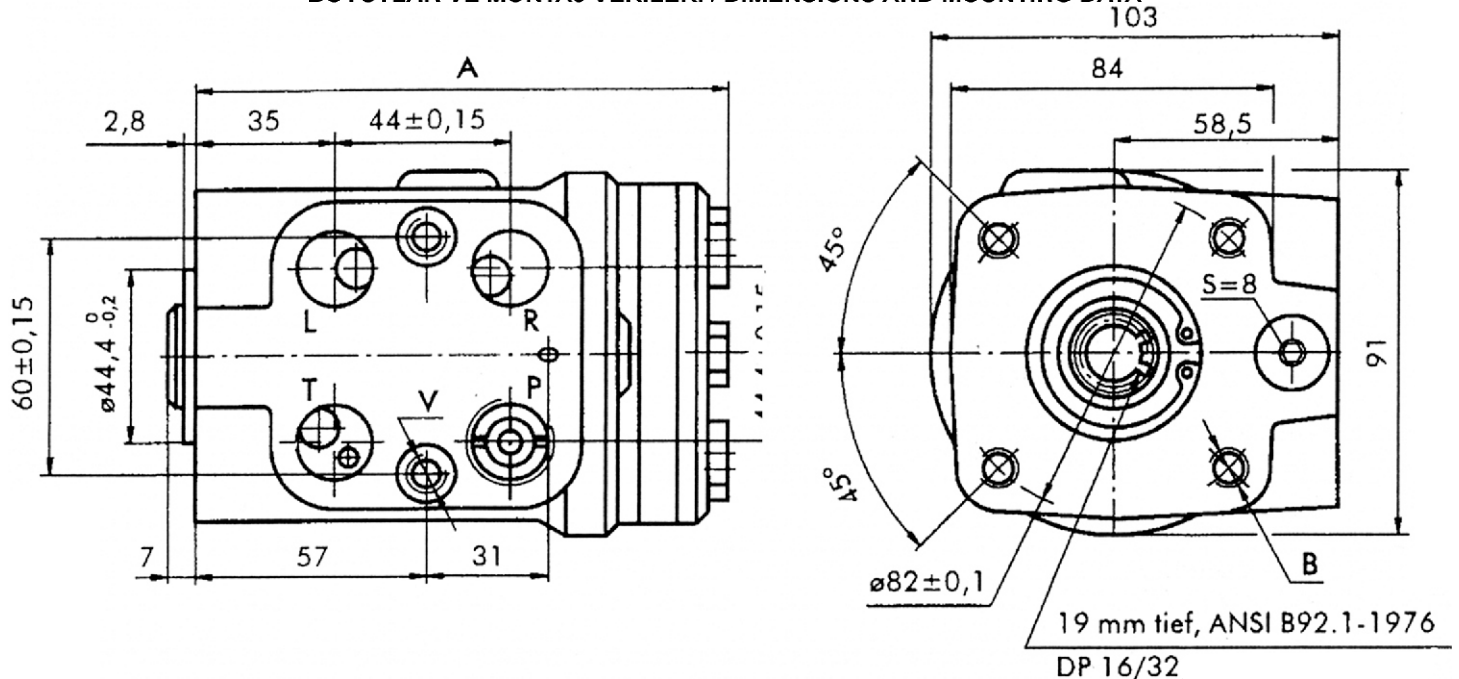
HKU.../5T

SPECIFICATION DATA / TEKNİK ÖZELLİKLER

Parameters Parametreler	Type / Tipi													
	HKU 40/5T HKUS 40/5...	HKU 50/5T HKUS 50/5...	HKU 63/5T HKUS 63/5...	HKU 80/5T HKUS 80/5...	HKU 100/5T HKUS 100/5...	HKU 125/5T HKUS 125/5...	HKU 160/5T HKUS 160/5...	HKU 200/5T HKUS 200/5...	HKU 250/5T HKUS 250/5...	HKU 320/5T HKUS 320/5...	HKU 400/5T HKUS 400/5...	HKU 500/5T	HKU 630/5T	
Displacement İletilen Hacim	cm ³ /rev	39,6	49,5	65,6	79,2	99,0	123,8	158,4	198	247,5	316,8	396	495	623,6
Rated Flow* Çalışma Akışı	lpm	4	5	6	8	10	13	16	20	25	32	40	50	63
Rated Pressure Çalışma Basıncı	bar	125	150	175										
LS-Valve Pressure Settings** LS-Valfindeki Basınç Ayarı	bar	80												

THREADED PORTS / DIŞLERİN ÖLÇÜLERİ			
CODE KOD	Ports - P,T,R,L Thread/ Portlar - P,T,R,L Diş	Column Mounting Thread - b/ Kolon Diş Montajı	Valve Mounting Thread/ Valfin Diş Montajı
-	G1 / 2 17 mm depth	4 x M10 18 mm depth	2 x M10 x1 16 mm depth
	G1 / 2 17 mm derinlik	4 x M10 18 mm derinlik	2 x M10 x1 16 mm derinlik
A	3 / 4 - 16 UNF O - ring 17 mm depth	4x 3 / 8 - 16 UNC 15,7 mm depth	2 x 3 / 8 - 24 UNC 14,2 mm depth
	3 / 4 - 16 UNF O - ring 17 mm derinlik	4x 3 / 8 - 16 UNC 15,7 mm derinlik	2 x 3 / 8 - 24 UNC 14,2 mm derinlik
M	M22x1,5 17 mm depth	4 x M10 18 mm depth	2 x M10 x1 16 mm depth
	M22x1,5 17 mm derinlik	4 x M10 18 mm derinlik	2 x M10 x1 16 mm derinlik

BOYUTLAR VE MONTAJ VERİLERİ / DIMENSIONS AND MOUNTING DATA



SPECIFICATION DATA / TEKNİK ÖZELLİKLER

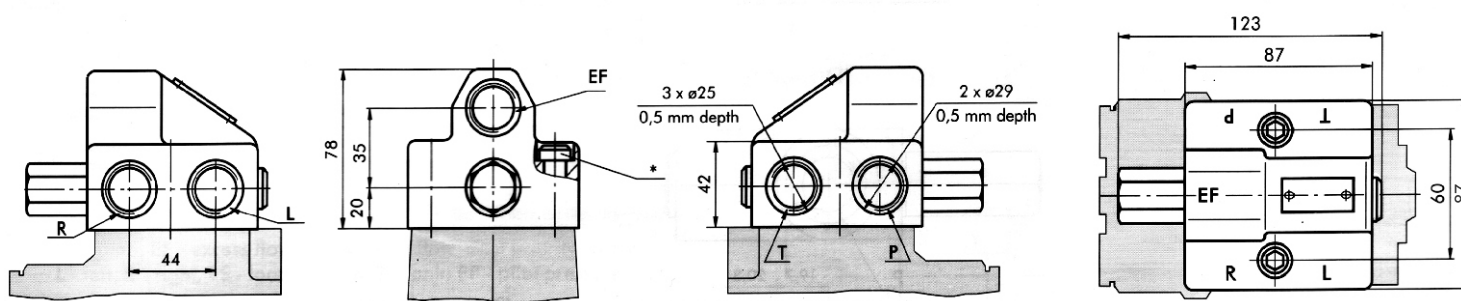
Parametreler / Parameters	Tipi / Type					
	PRD(D), PRT(D)			PRTA(D)		
Çalışma Debisi / Rated Flow (l/min)	40, 80					
Basınç Kontrol Aralığı / Control Spring Pressure (bar)	4	7	10	4	7	10
Yağ Hattındaki Maks. Basınç P _{E,F,R,L}	250					
Max. Pressures in Oil Ports	CF			175		
(bar)	T			15		
Ağırlık / Weight (kg.)	2.7			1.2		



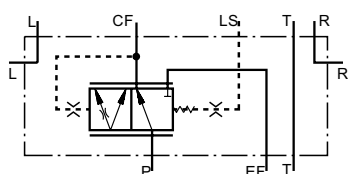
P -pompa, EF - izin verilen debi, CF- Akış Kontrol (Akış Önceliği), L-Sol, R-Sağ, LS- Algılanan yükleme, T-Tank

P – pump, EF - excess flow , CF – Control flow (first priority oil flow) , L-left , R-right , LS-load sensing , T-tank

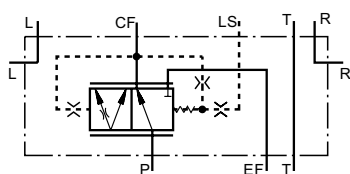
BOYUTLAR VE MONTAJ VERİLERİ / DIMENSIONS AND MOUNTING DATA – PRD(D) / 40,80



Modularity Mounting

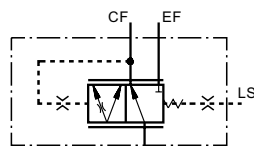


Static signal
PRD...40,80/...

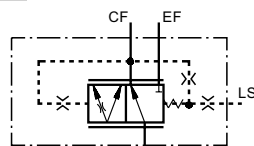


Dinamic signal
PRDD...40.80/...

Pipe Mounting



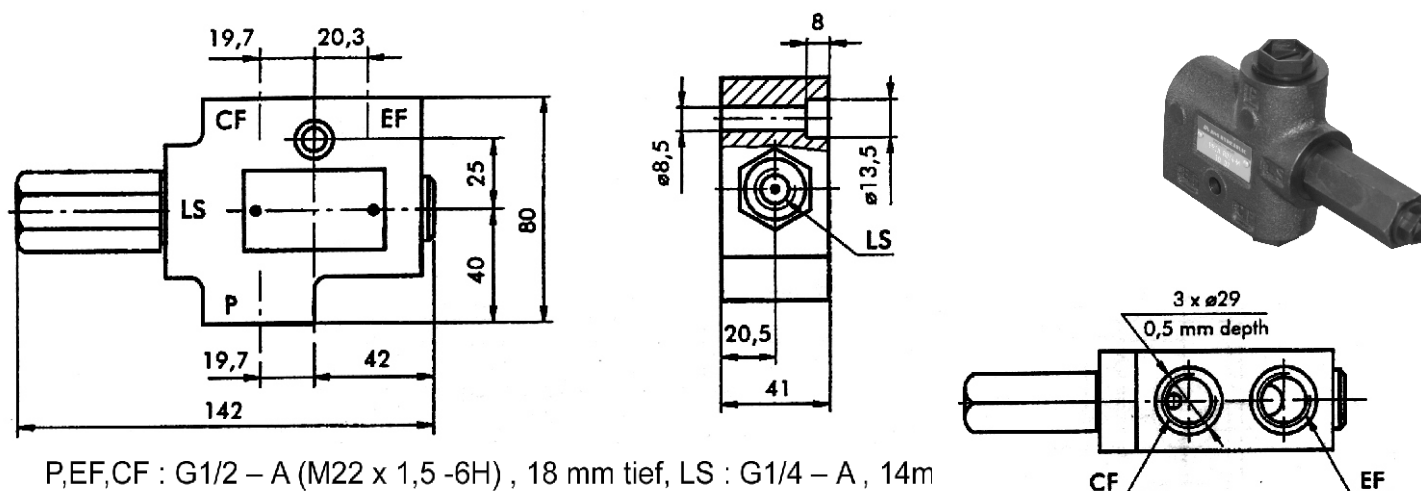
Static signal
PRT...40,80/...; PRTA... 40,80/...

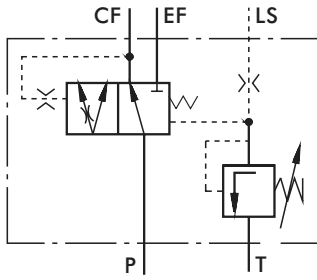


Dynamic signal
PRTD...40,80AD... PRT 40,80/...

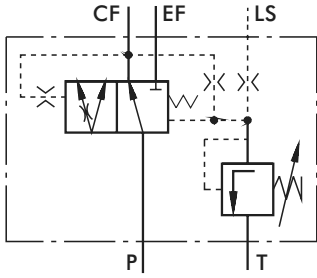
KOD CODE	P,E F P O R T Ö L Ç Ü S Ü P,E F P O R T T H R E A D	T, R, L P O R T Ö L Ç Ü S Ü T, R, L P O R T S T H R E A D
-	G1/2 18 mm depth	G3/8 18 mm depth
M	M22X1,5 18 mm depth	M18X1,5 18 mm depth
A	7/8 - 14 UNF O-ring 18 mm depth	3/4 - 16 UNF O-ring 18 mm depth

BOYUTLAR VE MONTAJ VERİLERİ / DIMENSIONS AND MOUNTING DATA – PRD(D) / 40,80

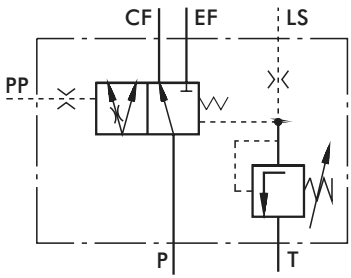




Static signal
PRT 160/...



Dynamic signal
PRD 160/...



Static signal with External Pilot
PRTE 160/...

The Priority Valves PRT...160 have built-in pilot pressure relief valve, who protects the steering unit against excess pressure. The pilot pressure relief valve operates with the Shuttle of the Priority valve to limit the maximum steering unit P-T measured across the steering unit ports.

Akış bölücü valf PRT...160 dreksiyon beynini aşırı basınç koruyan dahili basınç emniyet valfine sahiptir. Bu sayede direksiyon beynindeki P-T hattında maksimum basınç belirlenmiştir olur.

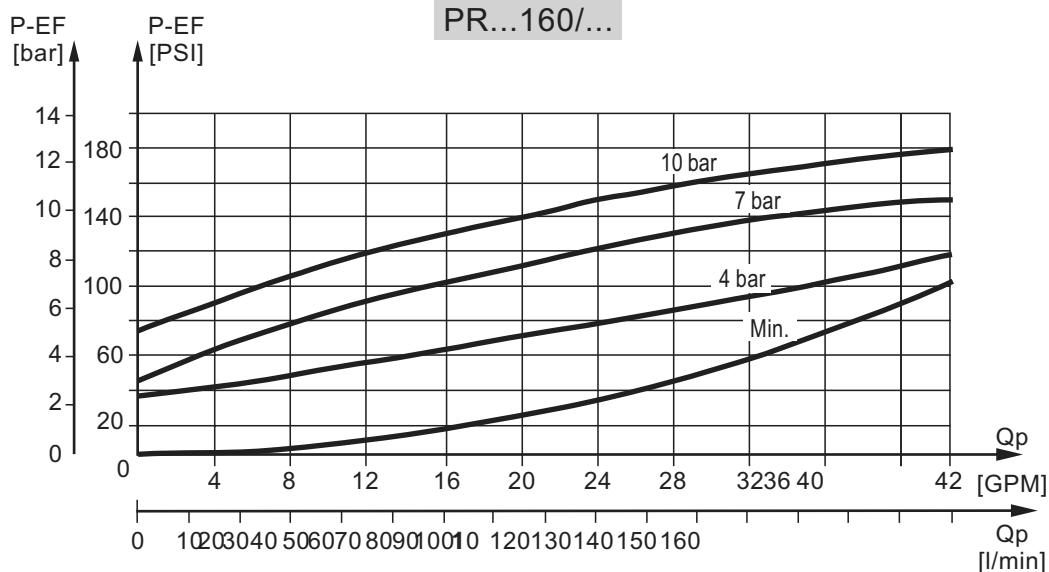


SPECIFICATION DATA / TEKNİK ÖZELLİKLER

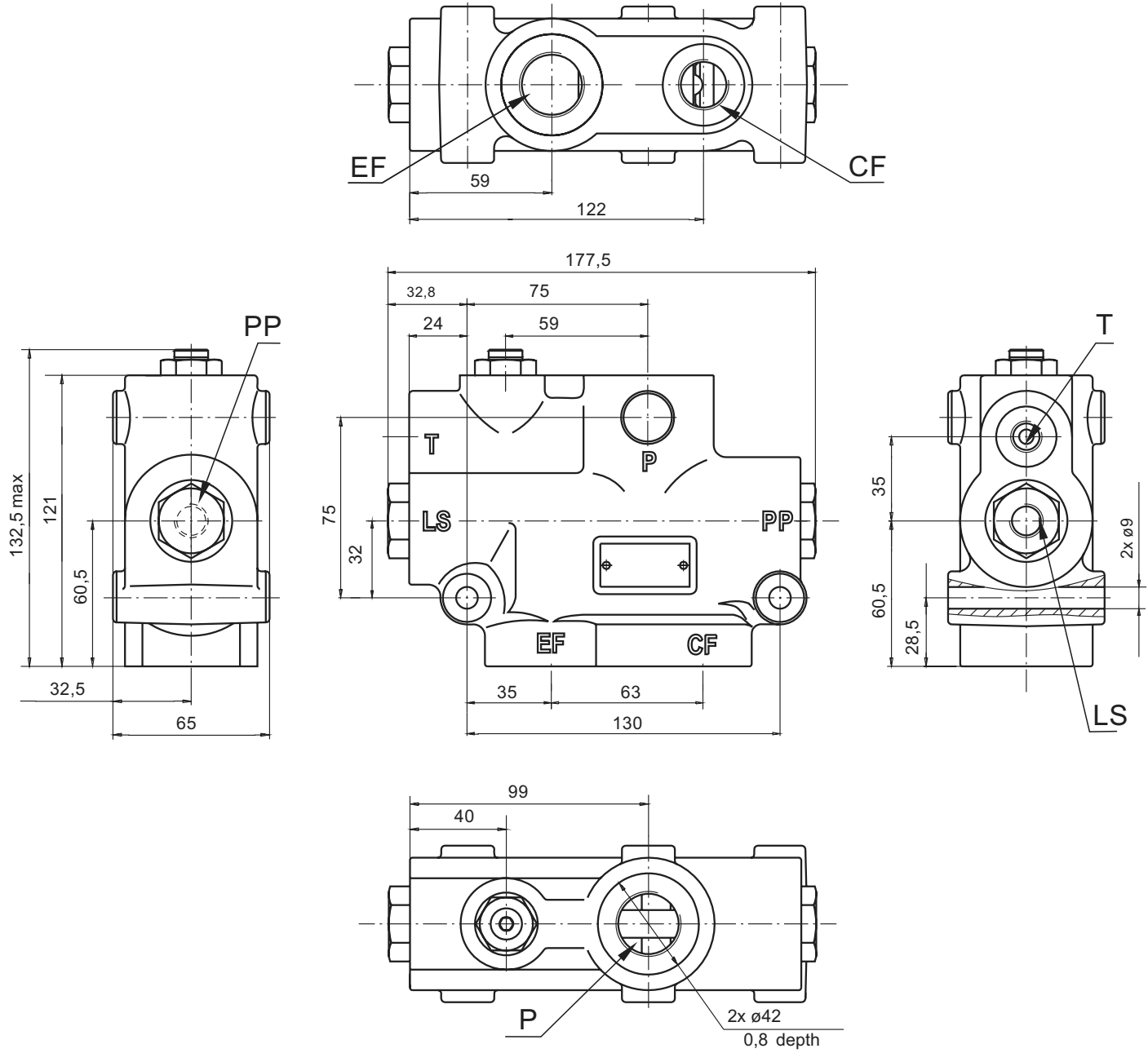
Parameters / Parametreler		Type		
		PRT(D), PRTE		
Rated Flow / Ortalama Basınç	lpm	160		
Control Spring Pressure	bar	4	7	10
Max. Pressures in Oil Ports: Yağ Hatlarındaki Maksimum Basınç	P, EF	350		
	CF	210		
	LS	210		
	PP	210		
	T	15		
Standart Relief Valve Pressure Settings Standart Emniyet Valf Basınç Kontrol	bar *	175		
Weight / Ağırlık	kg	4,4		

* -Adjusted valve pressure from 80 bar up to 210 bar upon customer request.

P - pump, EF excess flow, CF- control flow (first priority oil flow), /P-Pompa, EF- Aşırı Akış, CF- Akış Kontrol
LS - load sensing, T - tank, PP-pilot pressure / Yük kontrol, T-tank, PP- Pilot basınç



DIMENSIONS AND MOUNTING DATA -PRT(D)(E)160/...
BOUTLAR VE MONTAJ VERİLERİ -PRT(D)(E)160/...



code	Ports - P, EF Thread	Port - CF Thread	LS, PP, T - Ports
-	G3/4 20,5 depth	G1/2 18,5 depth	G1/4 12,5 depth
M	M27x2 20,5 depth	M18x1,5 18,5 depth	M12x1,5 12,5 depth
A	1 1/16 - 12 UN O-ring 20,5 depth	3/4 - 16 UNF O-ring 18,5 depth	7/16 - 20 UNF O-ring 12,5 depth