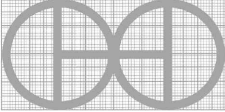


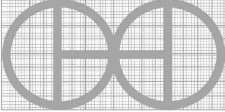
Parts list

POS	QTY	PART NAME	FILE NAME	PART TYPE	SPECIFICATIONS	SHEET
A1		3d views	Hydraulic_Ram.dwg			1
A1		3d views	Hydraulic_Ram.dwg			2
A2		Exploded 3d view	Hydraulic_Ram.dwg			3
B1		Parts list	ET_DW_A1_P1_Hydraulic Ram.xlsx			4
B2		Parts list	ET_DW_A1_P1_Hydraulic Ram.xlsx			5
C1		Technical notes	pac_hrw_hydraulic-ram-for-pumping.dwg			6
1.0		Impulse valve assembly	pac_hrw_hydraulic-ram-for-pumping.dwg			7
1.1	1	Spring	pac_hrw_hydraulic-ram-for-pumping.dwg	Production	Steel A36 30 x 3mm Flat Bar	8
1.2	1	Spring tension bolt		Standard	M6 DIN 933	
1.3	1	Stroke adjustment bolt		Standard	M6 DIN 933	
1.4	5	Spring nuts		Standard	M6 DIN 934	
1.5	1	Valve plate	pac_hrw_hydraulic-ram-for-pumping.dwg	Production	Steel A36, thickness 3mm	9
1.6	2	Valve plate bolt		Standard	M6 DIN 933	
1.7	2	Valve plate nut		Standard	M6 DIN 934	
1.8	2	Pipe connection 1		Buy	Steel A53 Threaded 50mm	
1.9	1	Reducing connection 1		Buy	Steel A53 Threaded 50mm – 25 mm	
1.10	1	T junction 1		Buy	Steel A53 Threaded 50mm	
1.11	1	Bend 90°		Buy	Steel A53 Threaded 50mm	
1.12	4	Legs straps	pac_hrw_hydraulic-ram-for-pumping.dwg	Production	Steel A36 Flat Bar 30 x 3mm	10
1.13	6	Leg bolt		Standard	M6 DIN 933	
1.14	2	Leg nut		Standard	M6 DIN 934	
1.15	1	Impulse valve stem		Standard	M6 DIN 931	
1.16	2	Stem nut		Standard	M6 DIN 934	
1.17	1	Stem washer – metal 1		Standard	DIN 125	
1.18	2	Stem washer – metal 2		Standard	DIN 125	
1.19	2	Stem washer - rubber	pac_hrw_hydraulic-ram-for-pumping.dwg	Production	M6 x 28, thickness 2mm	11
1.20	1	Stem washer - rubber	pac_hrw_hydraulic-ram-for-pumping.dwg	Production	M6 x 40, thickness 2mm	12
1.21	1	Stem washer – metal 3		Standard	DIN 125	
1.22	1	Thin walled metal tube		Standard	Steel A53 90mm Bore	

PROJECT	CREATED BY	APPROVED BY	DATE	VERSION
Hydraulic Ram for Pumping W.	E. Araujo	A. Morillo	13/07/2021	1.0
PART NAME	FILE NAME	POS		
Parts list	ET_DW_A1_P1_Hydraulic_Ram.xlsx	B1		
DEVELOPED BY	REDESIGNED BY	DOC. TYPE	MATERIAL	QUANTITY
		Parts list		
Practical Action	OHO e.V.	LICENCE	SCALE	SHEET
		CC-BY-SA 4.0		4/16

Parts list

POS	QTY	PART NAME	FILE NAME	PART TYPE	SPECIFICATIONS	SHEET
1.23	1	Pipe connection 1		Buy	Steel A53, Threaded 50mm	
1.24	2	Clamps	pac_hrw_hydraulic-ram-for-pumping.dwg	Production	Steel A36 Flat Bar 60mm	13
2.0	1	Delivery valve assembly	pac_hrw_hydraulic-ram-for-pumping.dwg			14
2.1	1	Pipe connection 2		Buy	Thin copper wire, less than 1 mm	
2.2	1	T junction 2		Buy	Steel A53 Threaded 50mm	
2.3	1	Reducing connection 2		Buy	Steel A53 Threaded 50mm – 25 mm	
2.4	1	Tap valve		Buy	Steel A53 25mm	
2.5	1	Air chamber pipe		Standard	Steel A53 Threaded 50mm	
2.6	1	Air chamber cap		Buy	Steel A53 Threaded 50mm	
2.7	1	Delivery valve plate	pac_hrw_hydraulic-ram-for-pumping.dwg	Production	Steel A36, thickness 3mm	15
2.8	1	Delivery valve bolt		Standard	DIN 931	
2.9	2	Delivery valve nuts		Standard	DIN 125	
2.10	1	Ruber Washer	pac_hrw_hydraulic-ram-for-pumping.dwg	Production	Rubber 4.5 mm	16
2.11	1	Bent Metal Washer		Standard	Bent washer 6mm	
2.12	1	Stem washer – metal 1		Standard	M6 DIN 934	
2.13	1	Wire pin		Buy	Copper wire D=0.8 mm	

PROJECT		CREATED BY		APPROVED BY		DATE		VERSION	
Hydraulic Ram for Pumping W.		E. Araujo		A. Morillo		13/07/2021		1.0	
PART NAME			FILE NAME					POS	
Parts list			ET_DW_A1_P1_Hydraulic_Ram.xlsx					B2	
DEVELOPED BY			REDESIGNED BY		DOC. TYPE		MATERIAL		QUANTITY
Practical Action			 OHO e.V.		Parts list				
					LICENCE		SCALE		SHEET
					CC-BY-SA 4.0				5/16