



GENERAL CATALOGUE		Page
Introduction		2

CYLINDERS	Model	Page
General Features		
Single Acting Spring Return Cylinders	SM	6
Attachments for SM and D Cylinders	SM and D	10
Aluminium Single Acting Cylinders, Spring Return	SAM	12
Single Acting Hollow Piston Cylinders, Spring Return	SH	16
Aluminium Single Acting Cylinders, Hollow Piston, Spring Return	SAH	18
Single Acting Low Height Cylinders, Load or Spring Return	SP - SMP	22
Single Acting Low Height Cylinders, High Tonnage, Load Return	SPR	24
Single Acting Low Profile Cylinders, Load or Spring Return	SX - SMX	28
Single Acting Low Height Telescopic Cylinders	SLX	30
Single Acting Lock Nut Cylinders, Load Return	STR	32
Aluminium Single Acting Cylinders, Lock Nut, Load Return	SAT	38
Aluminium Single Acting Cylinders, Lock Nut, Stop Ring, Spring Return	SATM	42
Single Acting Pancake Cylinders, Lock Nut/Tilting Saddle, Load Return	STX	46
Single Acting Telescopic Cylinders	SL	48
Single Acting High Tonnage Cylinders, Load Return	SSR	50
Pull Cylinders		
Double Acting Cylinders	D	56
Double Acting High Tonnage Cylinders	DDR	60
Aluminium Double Acting Cylinders	DDA	64
Double Acting Hollow Piston Cylinders	DH	68
Aluminium Double Acting Cylinders, Hollow Piston	DAH	70
Double Acting Production Cylinders	DM - DI	72
Cylinder - Pump Sets	J	76

PUMPS	Model	Page
General Features		
Hydraulic Single Acting Hand Pumps	W	80
Hydraulic Double Acting Hand Pumps	X	80
Hydraulic Aluminium Hand Pumps	WA	82
Hydraulic Aluminium Hand Pump 2.800 bar	WA	84
Air Hydraulic Pumps 700 bar	Z - ZR	86
Air Hydraulic Pumps 1.000 bar	Z	86
Hydraulic Powerpacks Manual valve	HBM	88
Hydraulic Powerpacks Solenoid valve	HBE	90
HBM and HBE Powerpacks Selection Tables	HBM - HBE	92
Air Driven Hydraulic Pumps	HAZ	94
Petrol Hydraulic Pumps	HAG	95
Accessories for Powerpacks	B - C - D - H - P - R	96
Split-Flow Powerpacks	HFM - HFE	98
Modular Hand Pumps	WI	100
Battery Powered Portable Hydraulic Pump	HAB	101
Air Driven Hydrotest Pumps	HAP	102
Hydrotest Hand Pumps	WAP - WIP	104
Electric Hydrotest Pumps	HEP	106
Torque Wrench Pumps	HAT	108



Performance under Pressure

INDEX

ACCESSORIES	Model	Page
General Features		110
Hydraulic Hoses	AP - AR	112
Hydraulic Oil	AZ89	113
Hydraulic Couplers	AZ3	114
Flow Control Valves	AZ5	116
Saddles	AZ04 - AZ05	118
Fittings and Manifolds	AZ1	120
Directional Control Valves	AZ8 - AZ9	122
Pressure Gauges	AV - AVD - AT - AY	123
























TOOLS	Model	Page
General Features		124
Hydraulic Chain Cutters	CK	126
Hydraulic Cable Cutters	CC	128
Hydraulic Nut Splitters	CN	130
Hydraulic Pullers	FU - FV - FZ	132
Self-Centering Pullers	FA	135
Spread Cylinders	CY	136
Dynamometers & Load Cells	CT - C	138
Lifting Cushions	AA	140
Hydraulic Toe Jacks	AU	141
Flange Spreaders	BS	142
Square Drive Hydraulic Torque Wrenches	LS	144
Low Profile Hydraulic Hexagon Torque Wrenches	LX	148
Portable Hydraulic Punching Heads	PH	152
Hydraulic Crimping Tools	CB - CH - CM	153

AUTOMOTIVE	Model	Page
General Features		156
Bottle Jacks	A - AB	158
High Lift Transmission Jacks	AF	160
Trolley Jacks	B	161
Portable Cranes	DLR	162
Lifting Tables	F	163
Air Service Jacks	HN	164
High Tonnage Air Service Jacks	HL	166
Pipe Benders	VA - VB	168
Presses	EC-EE-EM-EZ	169
Maintenance Set	CA	172








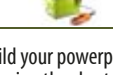










GREEN PAGES	Page
Applications and Special Products	174
Safety Information	180
Cylinder Selection	182
Pump Selection	183
System Assemblies	184
Technical Information	186
Basic Hydraulics	188
Unit Converter	189

MODEL	Page	MODEL	Page
A	158	FU	132
AA	140	FV	132
AB	158	FZ	132
AF	160	HAB	101
AP	112	HAG	95
AR	112	HAP	102
AT	123	HAT	108
AU	141	HAZ	94
AV	123	HBE	90
AVD	123	HBM	88
AY	123	HEP	106
AZ04	118	HFE	98
AZ05	118	HFM	98
AZ1	120	HL	166
AZ3	114	HN	164
AZ5	116	J	76
AZ8	122	LS	144
AZ89	113	LX	148
AZ9	122	PH	152
B	161	SAH	18
BS	142	SAM	12
C	138	SAT	38
CA	172	SATM	42
CB	153	SH	16
CC	128	SL	48
CH	153	SLX	30
CK	126	SM	6
CM	153	SMP	22
CN	130	SMX	28
CT	138	SP	22
CY	136	SPR	24
D	56	SSR	50
DAH	70	STR	32
DDA	64	STX	46
DDR	60	SX	28
DH	68	T	54
DI	72	TD	54
DLR	162	TE	54
DM	72	VA	168
EC	169	VB	168
EE	169	W	80
EM	169	WA	82
EZ	169	WAP	104
F	163	WI	100
FA	135	WIP	104
FI	132	X	80
FR	132	Z	86
FT	132	ZR	86

CYLINDERS





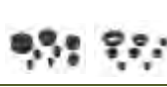



Models	Cylinder Type	Capacity Tn (kN)	Stroke mm		Page
SM	Single Acting Spring Return Cylinders Attachments for SM and D cylinders (P.10)	5 - 220 (45 - 2.156)	25 - 362		6
SAM	Aluminium Single Acting Cylinders, Spring Return	23 - 200 (228 - 1.947)	50 - 300		12
SH	Single Acting Hollow Piston Cylinders, Spring Return	12 - 100 (121 - 1.018)	40 - 150		16
SAH	Aluminium Single Acting Cylinders, Hollow Piston, Spring Return	22 - 100 (217 - 1.019)	50 - 250		18
SP - SMP	Single Acting Low Height Cylinders, Load or Spring Return	10 - 100 (109 - 911)	40 - 150		22
SPR	Single Acting Low Height Cylinders, High Tonnage, Load Return	140 - 1.100 (1.379 - 10.910)	50 - 300		24
SX - SMX	Single Acting Low Profile Cylinders, Load or Spring Return	4 - 150 (44 - 1.450)	6 - 16		28
SLX	Single Acting Low Height Telescopic Cylinders	4 - 75 (43 - 727)	17 - 40		30
STR	Single Acting Lock Nut Cylinders, Load Return	30 - 1.100 (303 - 10.905)	50 - 300		32
SAT	Aluminium Single Acting Cylinders, Lock Nut, Load Return	30 - 200 (303 - 1.946)	50 - 300		38
SATM	Aluminium Single Acting Cylinders, Lock Nut, Stop Ring, Spring Return	30 - 200 (303 - 1.946)	50 - 300		42
STX	Single Acting Pancake Cylinders, Lock Nut Tilting Saddle, Load Return	50 - 1.100 (486 - 10.905)	45 - 50		46
SL	Single Acting Telescopic Cylinders	15 - 30 (137 - 309)	270 - 600		48
SSR	Single Acting High Tonnage Cylinders, Load Return	140 - 1.100 (1.380 - 10.916)	50 - 300		50
T - TE - TD	Pull Cylinders	5 - 50 (54 - 483)	140 - 150		54
D	Double Acting Cylinders	10 - 550 (109 - 5.519)	50 - 320		56
DDR	Double Acting High Tonnage Cylinders	50 - 1.100 (486 - 10.921)	50 - 300		60
DDA	Aluminium Double Acting Cylinders	50 - 200 (487 - 1.946)	50 - 300		64
DH	Double Acting Hollow Piston Cylinders	30 - 150 (302 - 1.407)	38 - 250		68
DAH	Aluminium Double Acting Cylinders, Hollow Piston	30 - 150 (302 - 1.407)	50 - 250		70
DM - DI	Double Acting Production Cylinders	4 - 23 (34 - 228)	28 - 260		72
J	Cylinder-Pump Sets	5 - 100 (49 - 1.018)	40 - 362		76

PUMPS

Models	Pump type	Max. Oil Capacity litre	Max. Flow Rate l/min		Page
W	Hydraulic Single Acting Hand Pumps	7,5	4,6 cm ³ /stroke		80
X	Hydraulic Double Acting Hand Pumps	7,5	4,6 cm ³ /stroke		80
WA	Hydraulic Aluminium Hand Pumps	1,1	3,1 cm ³ /stroke		82
WA	Hydraulic Aluminium Hand Pump 2.800 bar	1,0	0,65 cm ³ /stroke		84
Z - ZR	Air Hydraulic Pumps 700 bar	20	0,14		86
Z	Air Hydraulic Pumps 1.000 bar	4	0,08		86
HBM	Hydraulic Powerpacks Manual valve	100	3,28		88
HBE	Hydraulic Powerpacks Solenoid valve	100	3,28		90
HBM - HBE	HBM and HBE Powerpacks Selection Tables			Build your powerpack using the charts	92
HAZ	Air Driven Hydraulic Pumps	100	2,2		94
HAG	Petrol Hydraulic Pumps	50	0,36		95
B - C - D - H P - R	Accessories for Powerpacks				96
HFM - HFE	Split-Flow Powerpacks	150	2,0		98
WI	Modular Hand Pumps		36 cm ³ /stroke		100
HAB	Battery Powered Portable Hydraulic Pump	2,3	0,16		101
HAP	Air Driven Hydrotest Pumps	7	3,5		102
WAP - WIP	Hydrotest Hand Pumps	100	20		104
HEP	Electric Hydrotest Pumps	100	15 cm ³ /stroke		106
HAT	Torque Wrench Pumps	14	0,36		108

ACCESSORIES



Models	Accessories type		Page
AP - AR	Hydraulic Hoses		112
AZ89	Hydraulic Oil		113
AZ3	Hydraulic Couplers		114
AZ5	Flow Control Valves		116
AZ04 - AZ05	Saddles		118
AZ1	Fittings and Manifolds		120
AZ8 - AZ9	Directional Control Valves		122
AV-AVD AT-AY	Pressure Gauges		123

TOOLS

- ✓ Torque wrenches are designed to tighten and loosen nuts requiring accurate high torque during bolt tightening and maximum torque during bolt loosening.
- ✓ Lightweight, easy transportable punching heads are designed for round, square or oblong puncher holes in mild steel sheets.
- ✓ Compression crimping tools for low, medium and high voltage terminals and sleeves.

Models	Tool type	Capacity		Page
		Tn (kN)		
CK	Hydraulic Chain Cutters	13-112 (135-1.120)		126
CC	Hydraulic Cable Cutters	5-43 (50-437)		128
CN	Hydraulic Nut Splitters	13-113 (135-1.134)		130
FU - FV - FZ	Hydraulic Pullers	5-50		132
FA	Self-Centering Pullers	10-50		135
CY	Spread Cylinders	0.8-15 (8-150)		136
CT - C	Dynamometers & Load Cells	5-150 (44-1.449)		138
AA	Lifting Cushions	6-65		140
AU	Hydraulic Toe Jacks	20-60		141
BS	Flange Spreaders	5-10		142
LS	Square Drive Hydraulic Torque Wrenches	1.898-34.079 Nm		144
LX	Low Profile Hydraulic Hexagon Torque Wrenches	2.712-47.450 Nm		148
PH	Portable Hydraulic Punching Heads	15-45		152
CB - CH - CM	Hydraulic Crimping Tools	5-100		153

AUTOMOTIVE



Models	Tool type	Capacity Tn		Page
A - AB	Bottle Jacks	2-50		158
AF	High Lift Transmission Jacks	0,3-1,5		160
B	Trolley Jacks	2-20		161
DLR	Portable Cranes	0,65-2,0		162
F	Lifting Tables	0,65-2,5		163
HN	Air Service Jacks	30-80		164
HL	High Tonnage Air Service Jacks	60-150		166
VA- VB	Pipe Benders	1/2-3 inch		168
EC-EE-EM-EZ	Presses	10-250		169
CA	Maintenance Set	10		172