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Excellence, Innovation and
commitment since 1973



FERJOVI S.A. is an engineering company which since 1973 and based in Gijón, takes as its starting point the best practices in industrial design, hydraulic and pneumatic engineering. Our working method combined with the most advanced technology allows us to be adapted to the needs of our customers in an individual and personalized way. The result of a project is our guarantee of success and therefore we make the maximum effort every day to transform challenges into real and concrete plans.

- **CUSTOMIZED AND SPECIAL CYLINDERS**
Engineering, designing and manufacturing.
- **POWER PACKS**
- **REPAIR AND MAINTENANCE**
Cylinders and machinery repair.
On site hydraulic - mechanical installations
maintenance.
- **HYDRAULIC SOLUTIONS**
R & D & I, Prototypes, Manufacturing

What make us different from other engineering companies? We believe, in order to identify our product, is necessary to have it defined in a personal way.

VIAL, our own brand, is the result of all these years experience where research, quality of materials, with European origin and constant innovation and manufacturing improvements, convert Ferjovi into the essence of the past and the eternal inspiration for the future.



CUSTOMIZED AND SPECIALIZED HYDRAULICS

CIVIL ENGINEERING

Pushers, Stabilizers, Plunger...

- **Ferjovi Hydraulics** takes part in tunnel construction, contributing our expertise in hydraulics supplies for tunnel boring machines.

Our production includes a variety of designs for pushers, stabilizers, plunger, sliding and large diameter cylinders.

01



01 Special cylinders with guided slide plates.

02 Stabilizer cylinders with diameter 350 mm.

03 Plunger cylinders for tunnel boring machines assembling.

04 Pusher cylinders for micro tunnel boring machines.

02



03



04

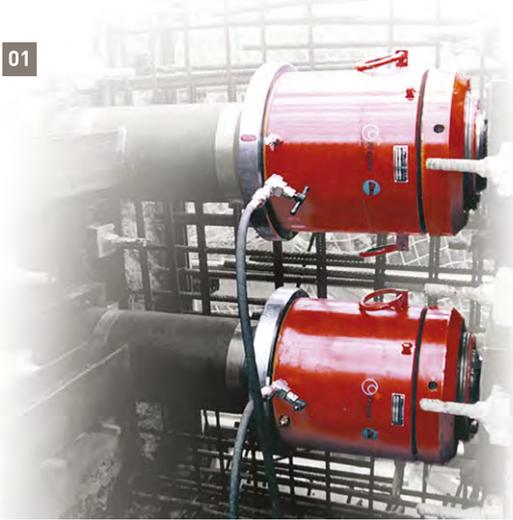


CUSTOMIZED AND SPECIALIZED HYDRAULICS

CIVIL ENGINEERING

Lifting, Positioning, Launching, Jacking, Prestressing...

01



- The maximum requirements in the hydraulic cylinders manufacturing demanded in bridge construction is attended and guaranteed by **Ferjovi Hydraulics**.

01 500 Ton lock nut cylinders for bridge pre-stressing.

02 Levelling systems for concrete bridge-decks. 4x1.000 Ton with 100 Ton lateral thrust cylinders. Stroke: 100mm.

03 7.000 Ton of reinforced concrete on four lock nut cylinders. 700 bar power pack.

02



03



03

CUSTOMIZED AND SPECIALIZED HYDRAULICS

CIVIL ENGINEERING

Lifting, Positioning, Launching, Jacking, Prestressing...



- Our systems for bridge-deck levelling, formwork and prestressing, attest to our skills in the hydraulics field.

01 Lock nut, single acting cylinders.
400 Ton, 150mm stroke.

02 Hydraulic set for scaffolding.

03 125/70x1035 longitudinal thrust cylinder.

04 500 Ton, lock nut cylinders for bridge prestressing.

05 Full hydraulic set for bridge formwork.

03



CUSTOMIZED AND SPECIALIZED HYDRAULICS

CIVIL ENGINEERING

Lifting, Positioning, Launching, Jacking, Prestressing...

1

- **Ferjovi Hydraulics** is specialized in the manufacturing of special and custom-made large tonnage cylinders for clients in different business (heavy lifting, positioning, levelling, launching, jacking, climbing ...) thanks to the great experience in this field and the broad human and material resources available.

This is proved by the trust we get from our clients in different sectors such as heavy industry, civil engineering, shipyards, metallurgy, steel, mining and tunneling, military, offshore...



CUSTOMIZED AND SPECIALIZED HYDRAULICS

HEAVY INDUSTRY

Stage lifting, dam gates, presses

01



- Within the multiple applications oriented to the heavy industry (boilermaking, hydroelectric, thermal power plants, armament ...)

Ferjovi Hydraulics designs and manufactures custom-made cylinders and special ones for different requirements and specifications.

02



03



01 Turbine servo control 500/180-1.050mm.

02 Shear baler.

03 190/130-200mm cylinder. Hydraulic generation sector.

04 500 Ton stage lifting cylinders with hydraulic power pack.

04



CUSTOMIZED AND SPECIALIZED HYDRAULICS INDUSTRY AND IRONWORKS

Medium and large series

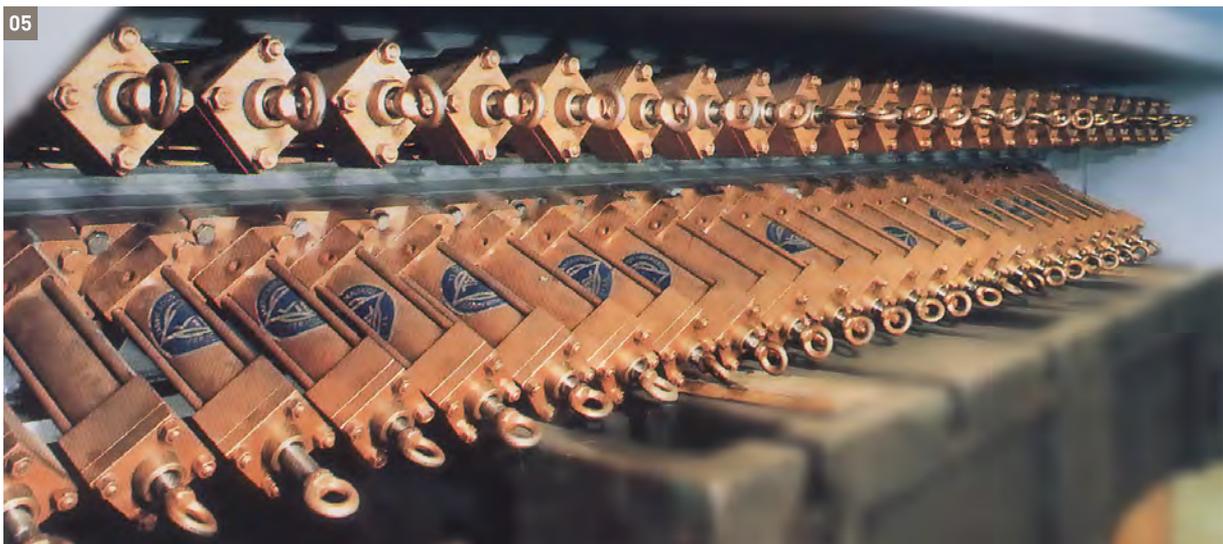
1

01 y 02 305/216-5.300mm cylinder. In the manufacturing process and delivery. Steel sector.

03 Lot of stainless steel cylinders for the steel industry.

04 300 Ton plunger type cylinder, stroke: 4.560mm, for press.

05 Reamer cylinders for the steel industry.



CUSTOMIZED AND SPECIALIZED HYDRAULICS OFFSHORE

- We manufacture high tonnage (500, 1.000, 2.000...ton) and high pressure cylinders, 700bar/10.000psi or more, for several offshore applications.

01 Research and Development of a Strand Jack System for Synthetic Ropes (SYNFIBRE).

02 400 Ton, double acting cylinder. Stroke: 400mm.

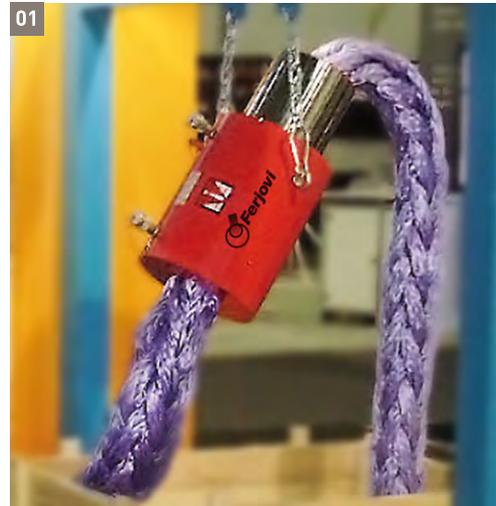
03 Cylinders 380 / 220-1.985mm. For a bulk loader.

04 Double-acting, equal area hydraulic rams, 450 Ton capacity for a testing installation.

05 600mm stroke, double acting hydraulic cylinders, 520 Ton



02



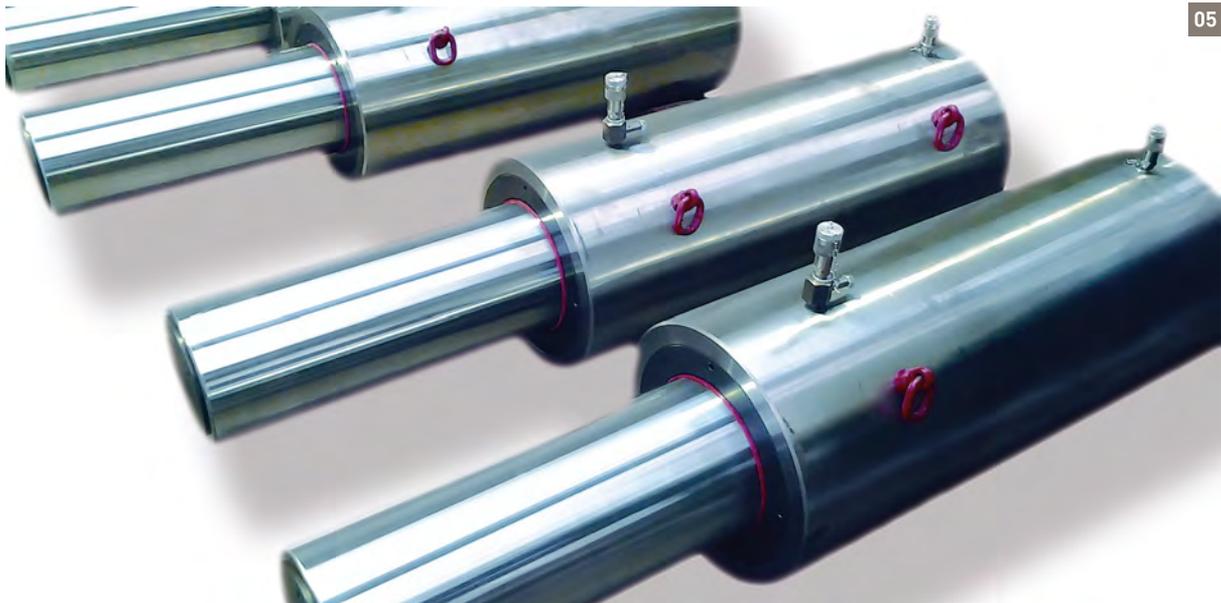
01



03



04



05

CUSTOMIZED AND SPECIALIZED HYDRAULICS SPECIALS

1

01 Hydraulic set with 2.000 Ton cylinders.
02 100 Ton servo cylinders. Testing equipment.

03 1.750 Ton cylinders powering the Biaxial Testing Installation at C-FER Technologies lab, Edmonton, Alberta, Canada.

04 1.800mm stroke double acting hydraulic cylinder, 1.000 Ton pull capacity.



2

HYDRAULIC SOLUTIONS AND PROTOTYPES

Machinery, Installations, Prototypes

- **Ferjovi** has a very experienced engineering department. Our design capability meets the hydraulic needs of our customers.
- Our R & D & I is dedicated to innovate and develop new or improved products.
- **Ferjovi Hydraulics** is always open and participates in our own different projects or in collaboration with our clients.

01 Waste compactor.



02 Hydraulic set for handling and lifting copper coils in a recycling plant.



03 Hydraulic system for solar tracking.



04 Set of lock nut cylinders to allow construction of tunnel under existing, operating track.



HYDRAULIC SOLUTIONS AND PROTOTYPES

Machinery, Installations, Prototypes

2



- Mobility and elevation are required in innumerable tasks and activities; so **Ferjovi Hydraulics** makes prototypes for different clients in a huge range of sectors and applications.

01 Automatic railway track balast tamping device.



02 Customized lifting machine for eolic blades. 3.5 Ton load.

03 Crane handling for Auger flights.

04 Formwork carrier trolley.

05 Container drum unloader (elevator/turner).



3

POWER PACKS

Low pressure

- The **Hydraulic Engineering Ferjovi Hydraulics** designs and manufactures in their own facilities complete hydraulic sets, with their hydraulic power packs, under the most varied requirements and specifications.

01/02 Low pressure portable power packs.

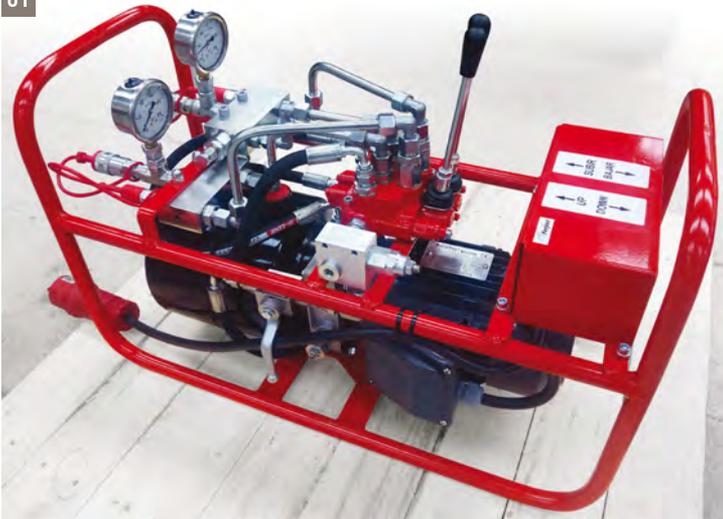
03 Public works sector.

04 Railway sector.

05 Hydraulic generation sector.

06 Power packs with accumulator

01



04



02



05



03



06



POWER PACKS

High pressure and mixed

3

01 Public works sector. 700/250 bar.

02 Testing equipment.

03 Elevation, longitudinal thrust and formwork power pack.

04 High pressure multiple outputs for public works.

05 High pressure power pack for heavy industry.

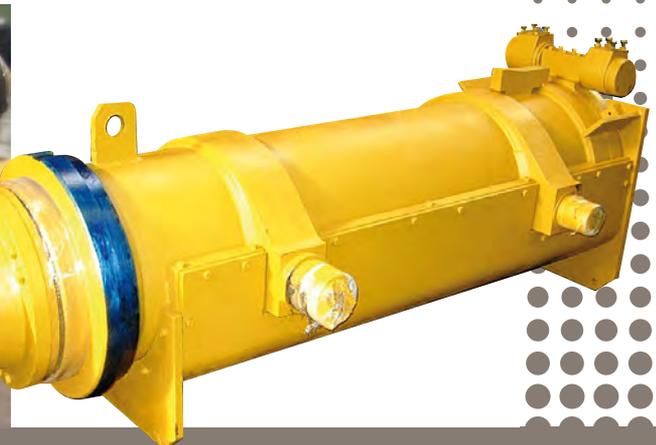
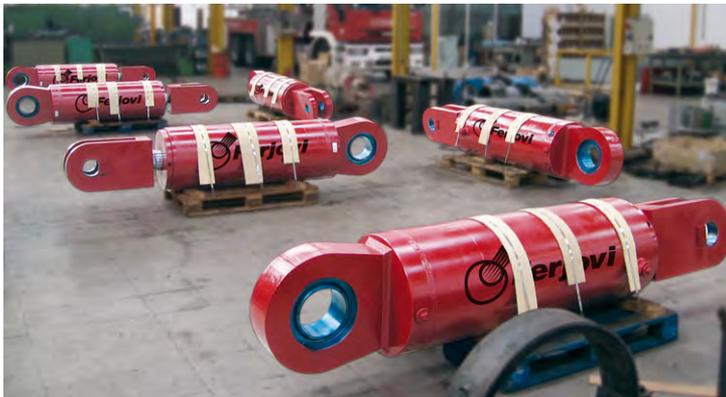
06 Public works sector.



4

REFURBISHING AND REPAIRING HYDRAULIC CYLINDERS AND UNITS. MAINTENANCE ON SITE

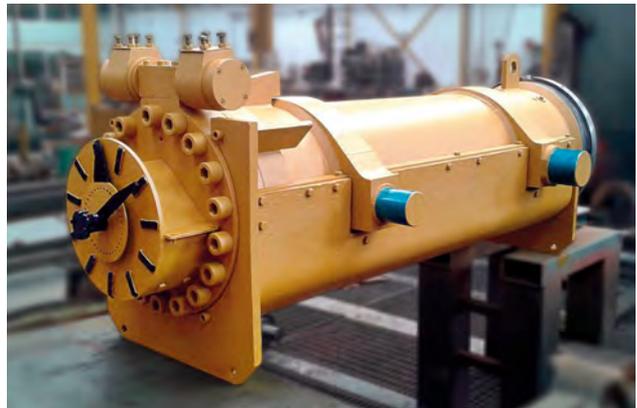
- **Ferjovi Hydraulics** is specialized in large cylinder repairs.
- Also repairs pitprops, reamers, small and medium sized cylinders... intended for all kind of applications.
- Machines and power washers.



REFURBISHING AND REPAIRING HYDRAULIC CYLINDERS AND UNITS. MAINTENANCE ON SITE

4

- We carry out maintenance at our customers facilities, both preventive as well as corrective of hydraulic and pneumatic installations.



SYNCHRONIZED LIFTING SYSTEMS

FERJOVI SL-4P/8P/12P/16P

• POWER PACK + ELECTRONIC CONTROL PANEL

- 4/8/12/16 double/single acting electronic operated outlets.
- Two speeds pump.
- PLC controller + digital programming with touch panel.
- Distribution panel.
- 4/8/12/16 pressure transmitters for each pressure controlling
- Electric motor speed drive to facilitate the adjustment maneuvers by regulating the pump flow.
- Manually operated check valve for each line.
- Maximum working pressure 700 bar.
- Remote control option.
- First quality components.
- 4/8/12/16 Cable extension sensors or cylinder integrated solutions.
- Flexible connection hoses.
- Frame mounted.



01 35 tonnes cylinders, 150/110x1400 with position transducer



HYDRAULIC ACCESSORIES

HOSES, TUBE FITTINGS, UNIONS, VALVES AND CONNECTING TUBES

6

- **Ferjovi's Distribution Line** has stock and supplies of all brands.

• HOSES

- Hydrocarbons
- Abrasive products
- Chemical products
- Food products
- Steel industry
- Water
- Hot water and steam
- Compressed air
- Gases and welding
- Various applications
- Flat against fire



- **TUBE FITTINGS:** BSP / NPT / JIC / Metrical / Orfs
- **UNIONS:** Kamlock / Barcelona / Storz / Guillemin / Express
- **VALVES:** Low pressure / High pressure
- **QUICK COUPLINGS**



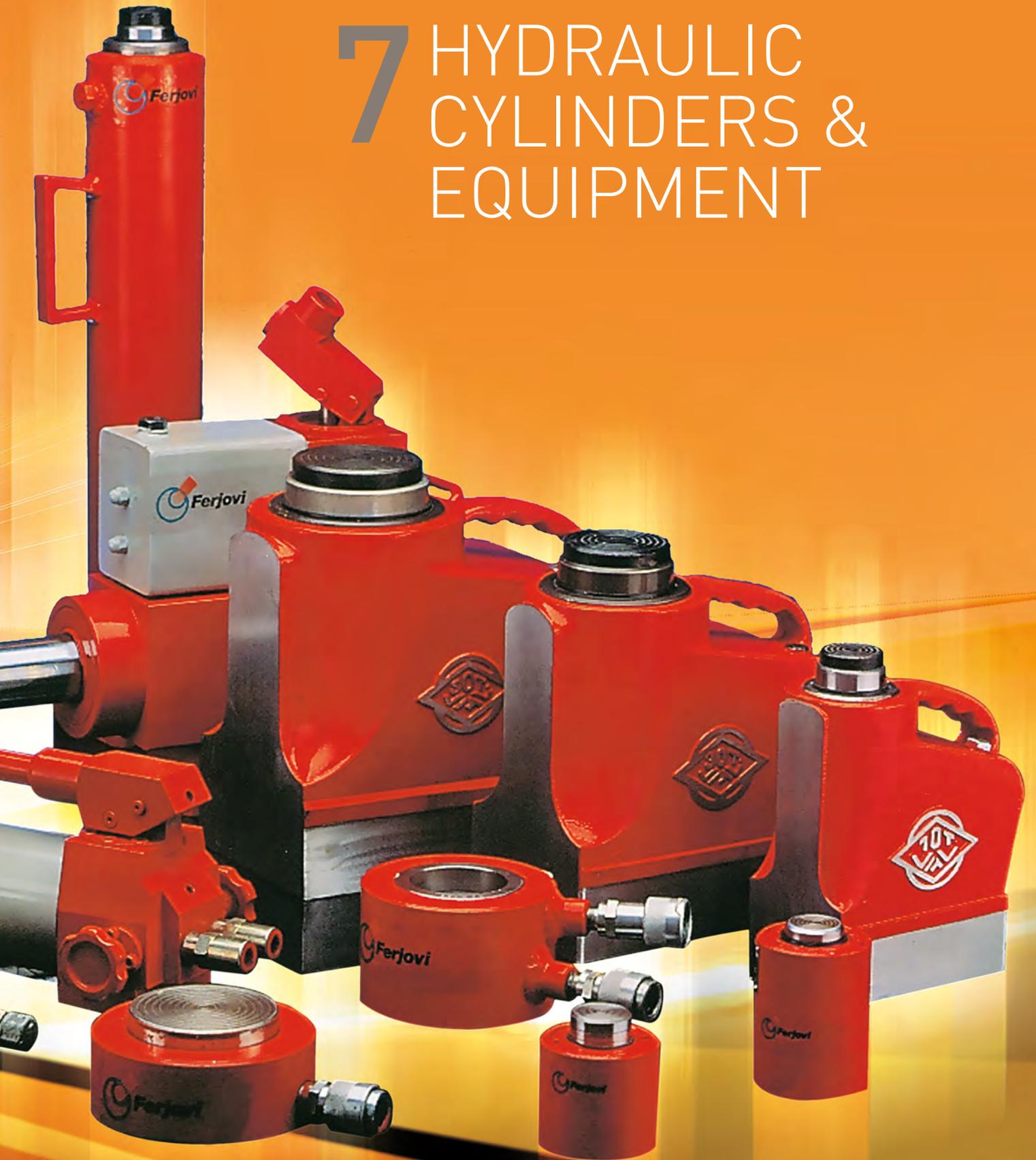
• CONNECTING TUBES AND PRESSURE HOSES ASSEMBLING

- Hydraulic presses
- Manual press for connecting tubes
- Hose cutter
- Hydraulic clutches





7 HYDRAULIC CYLINDERS & EQUIPMENT



7

HYDRAULIC CYLINDERS

Single acting

- High quality steel manufactured.
- Hard chromed piston, ground and polished; protection against rust and corrosion and greater resistance to eccentric loads.
- Scraper seals keep abrasive particles out of the cylinder.
- Treated and threaded top. It can be replaced with extension cylinders for additional initial height.



SELECTION CHART

MODEL	CAPACITY NOMINAL PRES=700bar			STROKE mm	PRESSURE NOMINAL bar	EFFECTIVE AREA cm ²	PISTON DIAMETER mm	OUTSIDE DIAMETER mm	HEIGHTS		WEIGHT Kg	OIL CAPACITY liters
	Tm	Tm	Kn						COLLAPSED mm	EXTENDED mm		
GHD 10-15	10	13,7	134	15	510	19,6	50	77	77	92	2,5	0,03
GHD 10-40	10	13,7	134	40	510	19,6	50	77	112	152	3	0,08
GHD 10-160	10	13,7	134	160	510	19,6	50	74	263	423	7,5	0,32
GHD 10-260	10	13,7	134	260	510	19,6	50	74	406	666	11,5	0,52
GHD 20-45	20	26,9	265	45	520	38,5	70	98	130	175	8	0,18
GHD 20-300	20	26,9	265	300	520	38,5	70	98	463	763	22,5	1,2
GHD 25-160	25	26,9	265	160	650	38,5	70	102	278	438	15	0,65
GHD 25-260	25	26,9	265	260	650	38,5	70	102	423	683	22	1
GHD 25-365	25	26,9	265	365	650	38,5	70	102	528	893	28	1,5
GHD 30-65	30	35,2	345	65	596	50,27	80	115	166	231	14	0,35
GHD 50-60	50	55	539	60	637	78,5	100	137	180	240	19	0,50
GHD 50-160	50	55	539	160	637	78,5	100	137	284	444	28	1,3
GHD 50-340	50	55	539	340	637	78,5	100	135	510	850	47	2,8
GHD 60-255	60	66,5	652	255	632	95	110	158	480	735	61	2,7
GHD 80-170	80	88,7	870	170	631	126,7	127	170	320	490	46	2,3
GHD 80-260	80	88,7	870	260	631	126,7	127	170	490	750	78	3,5
GHD 100-60	100	107,7	1.056	60	649	153,9	140	188	185	245	36	1

HYDRAULIC CYLINDERS

Single acting

7

S
400-1750 Tons
700 bar / 10,000 Psi

- Remotely powered by manual or automatic pumps.
- Designed in order to lift heavy loads with different strokes in difficult access areas.
- Particularly recommended for steel plants, shipyards, mines, etc, where a low volume, low weight and easy to handle material is required.
- Load return. They can be spring return manufactured on request.



BASIC SPECIFICATIONS. OPEN TO CUSTOMIZED DESIGN

Cylinder Capacity	Stroke		Model Number	Extended Height		Colapsed Height		Outside Diameter		Piston Diameter		Effective Area		Weight		Oil Capacity	
	Ton	mm		inch	mm	inch	mm	inch	mm	inch	mm	inch	cm ²	inch ²	kg	lb	cm ³
400	50	2,0	GHD - 400 - 50	285	11,2	235	9,3	405	15,9	300	11,8	706	109,4	217	482	3533	216
	150	5,9	GHD - 400 - 150	515	20,3	365	14,4	405	15,9	300	11,8	706	109,4	324	720	10598	647
	300	11,8	GHD - 400 - 300	850	33,5	550	21,7	405	15,9	300	11,8	706	109,4	475	1056	21195	1293
600	50	2,0	GHD - 600 - 50	460	18,1	410	16,1	475	18,7	350	25,6	961	149,0	706	1569	4808	293
	150	5,9	GHD - 600 - 150	660	26,0	510	20,1	475	18,7	350	25,6	961	149,0	888	1973	14424	880
	300	11,8	GHD - 600 - 300	960	37,8	660	26,0	475	18,7	350	25,6	961	149,0	1162	2582	28849	1760
800	50	2,0	GHD - 800 - 50	490	19,3	440	17,3	544	21,4	400	15,7	1256	194,7	761	1691	6880	420
	150	5,9	GHD - 800 - 150	720	28,3	570	22,4	544	21,4	400	15,7	1256	194,7	998	2218	18840	1150
	300	11,8	GHD - 800 - 300	1020	40,2	720	28,3	544	21,4	400	15,7	1256	194,7	1272	2827	37680	2299
1000	50	2,0	GHD - 1000 - 50	550	21,7	500	19,7	615	24,2	450	17,7	1589	246,3	1115	2478	7948	485
	150	5,9	GHD - 1000 - 150	750	29,5	600	23,6	615	24,2	450	17,7	1589	246,3	1299	2887	23845	1455
	300	11,8	GHD - 1000 - 300	1080	42,5	780	30,7	615	24,2	450	17,7	1589	246,3	1720	3822	47689	2910
1750	50	2,0	GHD - 1750 - 50	580	22,8	530	20,9	790	31,1	580	22,8	2640	409,2	1964	4364	13203	806
	150	5,9	GHD - 1750 - 150	780	30,7	630	24,8	790	31,1	580	22,8	2640	409,2	2281	5069	39611	2417
	300	11,8	GHD - 1750 - 300	1110	43,7	810	31,9	790	31,1	580	22,8	2640	409,2	2872	6382	79222	4834

7

HYDRAULIC CYLINDERS Single acting, spring return



- Equipped with a strong spring, with the maximum number of possible turns which allows them a quick return in any position to be mounted.
- They can be externally threaded on the top or with drill holes at the bottom to be fixed in presses or special tools.
- Hard chromed pistons and rods, ground and polished.
- Robust construction for eccentric loads absorption.
- Scraper seals keep abrasive particles out of the cylinder.
- Designed in order to lift heavy loads with different strokes in difficult access areas.
- Remotely powered by manual or automatic pumps.

SELECTION CHART

MODEL	CAPACITY NOMINAL PRES=700bar			STROKE mm	PRESSURE NOMINAL bar	EFFECTIVE AREA cm ²	PISTON DIAMETER mm	OUTSIDE DIAMETER mm	HEIGHTS		WEIGHT Kg	OIL CAPACITY liters
	Tm	Tm	Kn						COLLAPSED mm	EXTENDED mm		
GHD 30-150 M	30	31,8	311	150	660	45,4	76	100	285	435	15	0,7
GHD 30-300 M	30	31,8	331	300	660	45,4	76	114	435	735	29	1,5
GHD 50-60 M	50	55	539	60	637	78,5	100	137	200	260	20	0,5
GHD 50-150 M	50	55	539	150	637	78,5	100	138	285	435	26	1,2
GHD 50-300 M	50	55	539	300	637	78,5	100	138	435	735	35	2,4
GHD 100-60 M	100	107,7	1.056	60	649	153,9	140	188	185	245	36	1
GHD 100-150 M	100	107,7	1.056	150	649	153,9	140	188	290	440	50	2,3
GHD 100-300 M	100	107,7	1.056	300	649	153,9	140	188	440	740	75	4,5
GHD 170-150 M	170	198	1.943	150	600	283,5	190	260	310	460	105	4,2
GHD 170-300 M	170	198	1.943	300	600	283,5	190	260	460	760	160	8,5
GHD 200-150 M	200	242	2.378	150	577	346,3	210	285	340	490	125	5,2
GHD 200-300 M	200	242	2.378	300	577	346,3	210	285	490	790	190	10,5

HYDRAULIC CYLINDERS

Plunger type. Single acting. Spring return

7

- Equipped with a strong spring, with the maximum number of possible turns which allows them a quick return in any position to be mounted.
- Hard chromed rods, ground and polished.
- Robust construction for eccentric loads absorption.
- Scraper seals keep abrasive particles out of the cylinder.
- Designed in order to lift heavy loads with different strokes in difficult access areas.
- Remotely powered by manual or automatic pumps.
- Provided with overflow hole for stroke limitation.
- Usually in spring return version. Non spring version available on request.



SELECTION CHART

MODEL	CAPACITY NOMINAL PRES=700bar			STROKE mm	PRESSURE NOMINAL bar	EFFECTIVE AREA cm ²	PISTON DIAMETER mm	OUTSIDE DIAMETER mm	HEIGHTS		WEIGHT Kg	OIL CAPACITY liters
	Tm	Tm	Kn						COLLAPSED mm	EXTENDED mm		
GHD 30-80 MB	30	35,2	345	80	596	50,3	80	113	215	295	16	0,45
GHD 30-160 MB	30	35,2	345	160	596	50,3	80	113	295	455	20	0,9
GHD 50-80 MB	50	55	539	80	637	78,5	100	138	225	305	24	0,65
GHD 50-160 MB	50	55	539	160	637	78,5	100	138	305	465	32	1,3
GHD 80-160 MB	80	88,7	870	160	631	126,7	127	173	302	462	47	2,2
GHD 100-80 MB	100	107,7	1.056	80	649	153,9	140	187	250	330	44	1,3
GHD 100-160 MB	100	107,7	1.056	160	649	153,9	140	187	330	490	58	2,6
GHD 100-240 MB	100	107,7	1.056	240	649	153,9	140	187	410	650	75	3,8
GHD 150-160 MB	150	178,1	1.747	160	589	254,5	180	246	350	510	115	4,2
GHD 200-80 MB	200	242,4	2.378	80	577	346,3	210	286	285	365	115	2,8
GHD 200-160 MB	200	242,4	2.378	160	577	346,3	210	286	365	525	150	5,6
GHD 200-240 MB	200	242,4	2.378	240	577	346,3	210	286	445	685	185	8,4
GHD 300-80 MB	300	371,7	3.646	80	565	531	260	355	325	405	230	4,3
GHD 300-160 MB	300	371,7	3.646	160	565	531	260	355	405	565	280	8,5
GHD 300-240 MB	300	371,7	3.646	240	565	531	260	355	485	725	330	12,8
GHD 400-80 MB	400	495	4.854	80	566	706,9	300	405	350	430	305	5,7
GHD 400-160 MB	400	495	4.854	160	566	706,9	300	405	430	590	370	11,4
GHD 400-240 MB	400	495	4.854	240	566	706,9	300	405	510	750	435	17

7

HYDRAULIC CYLINDERS

Single acting. Lock nut.
Spring return

- A safety lock nut is threaded to the rod part out of the cylinder which allows the cylinder to be set under load in any position.
- Mechanical lock contributes redundant safety, allowing for a safe removal of the hydraulic power unit while the cylinder is loaded.
- Remotely powered by manual or automatic pumps.
- Safety lock nut cylinders are recommended when medium or high load capacity is needed and when they must be kept under load for a long time in maximum security conditions.



- They are shorter than the lock nut double acting ones and return is by means of the spring incorporated.
- Provided with overflow hole for stroke limitation.
- Non spring version available on request.

SELECTION CHART

MODEL	CAPACITY NOMINAL PRES=700bar			STROKE mm	PRESSURE NOMINAL bar	EFFECTIVE AREA cm ²	PISTON DIAMETER mm	OUTSIDE DIAMETER mm	HEIGHTS		WEIGHT Kg	OIL CAPACITY liters
	Tm	Tm	Kn						COLLAPSED mm	EXTENDED mm		
GHD 30-80 TM	30	35,2	345	80	596	50,3	80	113	245	325	18	0,45
GHD 30-160 TM	30	35,2	345	160	596	50,3	80	113	325	485	22	0,90
GHD 50-80 TM	50	55	539	80	637	78,5	100	138	265	345	28	0,70
GHD 50-160 TM	50	55	539	160	637	78,5	100	138	345	505	36	1,3
GHD 80-160 TM	80	88,7	870	160	631	126,7	127	173	350	510	55	2,2
GHD 100-80 TM	100	107,7	1.056	80	649	453,9	140	187	300	380	54	1,3
GHD 100-160 TM	100	107,7	1.056	160	649	153,9	140	187	380	540	68	2,6
GHD 100-240 TM	100	107,7	1.056	240	649	153,9	140	187	460	700	85	3,8
GHD 150-160 TM	150	178,1	1.747	160	589	254,5	180	246	410	570	130	4,2
GHD 200-80 TM	200	242,4	2.378	80	577	346,3	210	286	350	430	145	2,8
GHD 200-160 TM	200	242,4	2.378	160	577	346,3	210	286	430	590	180	5,6
GHD 200-240 TM	200	242,4	2.378	240	577	346,3	210	286	510	750	215	8,4
GHD 300-80 TM	300	371,7	3.646	80	565	531	260	355	400	480	280	4,3
GHD 300-160 TM	300	371,7	3.646	160	565	531	260	355	480	640	330	8,5
GHD 300-240 TM	300	371,7	3.646	240	565	531	260	355	560	800	380	12,8
GHD 400-80 TM	400	495	4.854	80	566	706,9	300	405	440	520	385	5,7
GHD 400-160 TM	400	495	4.854	160	566	706,9	300	405	520	680	450	11,4
GHD 400-240 TM	400	495	4.854	240	566	706,9	300	405	600	840	515	17
GHD 800-200 TM	800	879	8.169	200	636	1.256,6	400	540	650	850	1.080	25,1
GHD 1000-150 TM	1.000	1.100	10.914	150	628	1.590,4	450	615	680	830	1.600	24
GHD 1750-150 TM	1.750	1.849	18.135	150	662	2.642	580	790	860	1.010	3.200	41

MT
400-1750 Tons
700 bar / 10,000 Psi

HYDRAULIC CYLINDERS
 Single acting. Lock nut.
 Load or spring return

7



400 Ton



100 Ton, spring return.



4x 1.750 Ton bridge-deck levelling device with 175 Ton lateral thrust cylinders. Stroke: 150mm.

BASIC SPECIFICATIONS. OPEN TO CUSTOMIZED DESIGN

Cylinder Capacity	Stroke		Model Number	Extended Height		Collapsed Height		Outside Diameter		Piston Diameter		Effective Area		Weight		Oil Capacity	
	mm	inch		mm	inch	mm	inch	mm	inch	mm	inch	cm ²	inch ²	kg	lb	cm ³	inch ³
400	50	2,0	GHD - 400 - 50 MT	460	18,1	410	16,1	405	15,9	300	11,8	706	109,4	515	1144	7016	428
	150	5,9	GHD - 400 - 150 MT	660	26,0	510	20,1	405	15,9	300	11,8	706	109,4	628	1396	16218	990
	300	11,8	GHD - 400 - 300 MT	1010	39,8	710	28,0	405	15,9	300	11,8	706	109,4	877	1949	31090	1897
600	50	2,0	GHD - 600 - 50 MT	480	18,9	430	16,9	475	18,7	350	13,8	961	149,0	544	1209	8142	497
	150	5,9	GHD - 600 - 150 MT	814	32,0	664	26,1	475	18,7	350	13,8	961	149,0	664	1476	19896	1214
	300	11,8	GHD - 600 - 300 MT	1030	40,6	730	28,7	475	18,7	350	13,8	961	149,0	906	2013	38594	2355
800	50	2,0	GHD - 800 - 50 MT	520	20,5	470	18,5	540	21,3	400	15,7	125	19,4	783	1740	12199	744
	150	5,9	GHD - 800 - 150 MT	720	28,3	570	22,4	540	21,3	400	15,7	125	19,4	938	2084	30929	1887
	300	11,8	GHD - 800 - 300 MT	1070	42,1	770	30,3	540	21,3	400	15,7	125	19,4	1448	3218	60441	3688
1000	50	2,0	GHD - 1000 - 50 MT	470	18,5	420	16,5	615	24,2	450	17,7	1590	246,5	1070	2378	12057	736
	150	5,9	GHD - 1000 - 150 MT	770	30,3	620	24,4	615	24,2	450	17,7	1590	246,5	1341	2980	31638	1931
	300	11,8	GHD - 1000 - 300 MT	1290	50,8	920	36,2	615	24,2	450	17,7	1590	246,5	1895	4211	31716	1935
1750	50	2,0	GHD - 1750 - 50 MT	820	32,3	670	26,4	790	31,1	580	22,8	2640	409,2	2558	5684	19174	1170
	150	5,9	GHD - 1750 - 150 MT	970	38,2	820	32,3	790	31,1	580	22,8	2640	409,2	2997	6660	50059	3055
	300	11,8	GHD - 1750 - 300 MT	1320	52,0	1020	40,2	790	31,1	580	22,8	2640	409,2	3740	8311	95640	5836

7

HYDRAULIC CYLINDERS

Double acting



- High quality steel manufactured. Hydraulic return.
- Hard chromed piston, ground and polished; protection against rust and corrosion and greater resistance to eccentric loads.
- Scraper seals keep abrasive particles out of the cylinder.
- Treated and threaded top. It can be replaced with extension cylinders for additional initial height.
- Designed in order to lift heavy loads with different strokes in difficult access areas.
- Particularly recommended for steel plants, shipyards, mines, etc, where a low volume, low weight and easy to handle material is required.
- Remotely powered by manual or automatic pumps.

SELECTION CHART

MODEL	CAPACITY NOMINAL PRES.=700bar			STROKE mm	PRESSURE NOMINAL bar	EFFECTIVE AREA cm ²	PISTON DIAMETER mm	OUTSIDE DIAMETER mm	HEIGHTS		WEIGHT Kg	OIL CAPACITY liters
	Tm	Tm	Kn						COLLAPSED mm	EXTENDED mm		
GHD 10-250 D	10	13,7	134	250	510	19,6	50	80	400	650	14	0,5
GHD 14-155 D	14	16,6	163	155	590	23,75	55	81	280	435	11	0,4
GHD 14-255 D	14	16,6	163	255	590	23,75	55	81	435	675	16	0,7
GHD 20-205 D	20	26,9	265	205	520	38,5	70	98	404	609	19	0,8
GHD 20-370 D	20	26,9	265	370	520	38,5	70	98	549	919	28	1,5
GHD 30-155 D	30	35,2	345	155	596	50,27	80	112	288	443	20	0,8
GHD 30-255 D	30	35,2	345	255	596	50,27	80	112	422	677	28	1,4
GHD 50-120 D	50	55	539	120	637	78,5	100	146	251	371	29	1,0
GHD 50-330 D	50	55	539	330	637	78,5	100	135	531	861	45	2,8
GHD 90-170 D	90	92,9	911	170	678	132,7	130	178	340	510	59	2,3
GHD 90-335 D	90	92,9	911	335	678	132,7	130	178	573	908	97	4,4
GHD 100-200 D	100	107,7	1.056	200	649	153,9	140	188	370	570	67	3,1
GHD 150-50 D	150	178,1	1.747	50	589	254,5	180	238	195	245	60	1,3
GHD 185-170 D	185	198,4	1.946	170	652	283,5	190	266	377	547	145	5,0
GHD 250-50 D	200	242,4	2.378	50	577	346,3	210	278	195	245	80	1,8
GHD 200-200 D	200	242,4	2.378	200	577	346,3	210	280	410	610	170	7,0
GHD 300-100 D	300	371,7	3.646	100	565	531	260	356	308	408	213	5,5
GHD 400-50 D	400	495	4.854	50	566	706,9	300	408	235	285	220	3,5
GHD 400-150 D	400	495	4.854	150	566	706,9	300	408	365	515	318	11,0

D

400-1750 Tons

700 bar / 10,000 Psi

HYDRAULIC CYLINDERS

Double acting

7



BASIC SPECIFICATIONS. OPEN TO CUSTOMIZED DESIGN

Cylinder Capacity	Stroke		Model Number	Extended Height		Collapsed Height		Outside Diameter		Piston Diameter		Effective Area		Weight		Oil Capacity	
	Ton	mm		inch	mm	inch	mm	inch	mm	inch	mm	inch	cm ²	inch ²	kg	lb	cm ³
400	50	2,0	GHD - 400 - 50 D	285	11,2	235	9,3	405	15,9	300	11,8	706	109,4	217	482	3533	216
	150	5,9	GHD - 400 - 150 D	515	20,3	365	14,4	405	15,9	300	11,8	706	109,4	324	720	10598	647
	300	11,8	GHD - 400 - 300 D	850	33,5	550	21,7	405	15,9	300	11,8	706	109,4	475	1056	21195	1293
600	50	2,0	GHD - 600 - 50 D	460	18,1	410	16,1	475	18,7	350	25,6	961	149,0	706	1569	4808	293
	150	5,9	GHD - 600 - 150 D	660	26,0	510	20,1	475	18,7	350	25,6	961	149,0	888	1973	14424	880
	300	11,8	GHD - 600 - 300 D	960	37,8	660	26,0	475	18,7	350	25,6	961	149,0	1162	2582	28849	1760
800	50	2,0	GHD - 800 - 50 D	490	19,3	440	17,3	544	21,4	400	15,7	1256	194,7	761	1691	6880	420
	150	5,9	GHD - 800 - 150 D	720	28,3	570	22,4	544	21,4	400	15,7	1256	194,7	998	2218	18840	1150
	300	11,8	GHD - 800 - 300 D	1020	40,2	720	28,3	544	21,4	400	15,7	1256	194,7	1272	2827	37680	2299
1000	50	2,0	GHD - 1000 - 50 D	550	21,7	500	19,7	615	24,2	450	17,7	1589	246,3	1115	2478	7948	485
	150	5,9	GHD - 1000 - 150 D	750	29,5	600	23,6	615	24,2	450	17,7	1589	246,3	1299	2887	23845	1455
	300	11,8	GHD - 1000 - 300 D	1080	42,5	780	30,7	615	24,2	450	17,7	1589	246,3	1720	3822	47689	2910
1750	50	2,0	GHD - 1750 - 50 D	580	22,8	530	20,9	790	31,1	580	22,8	2640	409,2	1964	4364	13203	806
	150	5,9	GHD - 1750 - 150 D	780	30,7	630	24,8	790	31,1	580	22,8	2640	409,2	2281	5069	39611	2417
	300	11,8	GHD - 1750 - 300 D	1110	43,7	810	31,9	790	31,1	580	22,8	2640	409,2	2872	6382	79222	4834

7

HYDRAULIC CYLINDERS

Double acting. Lock nut.
Hydraulic return



GHD-250-290-DT

- Hydraulic cylinders with safety lock nut are a variant which might be carried in all FERJOVI's cylinders.
- A safety lock nut is threaded to the rod part out of the cylinder which allows the cylinder to be set under load in any position.
- Mechanical lock contributes redundant safety, allowing for a safe removal of the hydraulic power unit while the cylinder is loaded.
- Remotely powered by manual or automatic pumps.
- Safety lock nut cylinders are recommended when medium or high load capacity is needed and when they must be kept under load for a long time in maximum security conditions.
- The quality characteristics are the same already indicated in those cylinder types without safety nut.

SELECTION CHART

MODEL	CAPACITY NOMINAL PRES=700bar			STROKE mm	PRESSURE NOMINAL bar	EFFECTIVE AREA cm ²	PISTON DIAMETER mm	OUTSIDE DIAMETER mm	HEIGHTS		WEIGHT Kg	OIL CAPACITY liters
	Tm	Tm	Kn						COLLAPSED mm	EXTENDED mm		
GHD 25-160 DT	25	26,9	265	160	650	38,5	70	102	475	635	25	0,65
GHD 50-160 DT	50	55	539	160	637	78,5	100	135	484	644	46	1,3
GHD 100-100 DT	100	107,7	1.056	100	649	153,9	140	188	380	480	70	1,6
GHD 100-160 DT	100	107,7	1.056	160	649	153,9	140	188	510	670	90	2,70
GHD 100-200 DT	100	107,7	1.056	200	649	153,9	140	188	560	760	100	3,2
GHD 200-100 DT	200	242,4	2.378	100	577	346,3	210	280	464	564	195	3,5
GHD 200-160 DT	200	242,4	2.378	160	577	346,3	210	280	584	744	230	6
GHD 200-200 DT	200	242,4	2.378	200	577	346,3	210	280	664	864	260	7
GHD 300-90 DT	300	371,7	3.646	90	565	531	260	356	475	565	310	5
GHD 400-50 DT	400	495	4.854	50	566	706,9	300	408	415	465	360	3,8
GHD 400-100 DT	400	495	4.854	100	566	706,9	300	408	505	605	405	7,5
GHD 400-150 DT	400	495	4.854	150	566	706,9	300	408	605	755	490	11
GHD 400-200 DT	400	495	4.854	200	566	706,9	300	408	705	905	575	15
GHD 500-100 DT	500	563	5.522	100	621	804,2	320	445	620	720	625	8
GHD 400-160 DT	500	563	5.522	160	621	804,2	320	445	740	900	730	13
GHD 500-200 DT	500	563	5.522	200	621	804,2	320	445	820	1.020	800	16

DT/DTE

400-1750 Tons

700 bar / 10,000 Psi

HYDRAULIC CYLINDERS

Double acting. Lock nut.
Hydraulic return

7



Double acting 605 Ton cylinders with lock nut. Stroke: 1.300mm.

BASIC SPECIFICATIONS. OPEN TO CUSTOMIZED DESIGN

Cylinder Capacity	Stroke		Model Number	Extended Height		Colapsed Height		Outside Diameter		Piston Diameter		Effective Area		Weight		Oil Capacity	
	Ton	mm		inch	mm	inch	mm	inch	mm	inch	mm	inch	cm ²	inch ²	kg	lb	cm ³
400	50	2,0	GHD - 400 - 50 DT	465	18,3	415	16,3	408	16,1	300	11,8	706	109,4	358	796	3533	216
	150	5,9	GHD - 400 - 150 DT	755	29,7	605	23,8	408	16,1	300	11,8	706	109,4	496	1102	10598	647
600	50	2,0	GHD - 600 - 50 DT	580	22,8	530	20,9	475	18,7	350	13,8	961	149,0	631	1402	4808	293
	150	5,9	GHD - 600 - 150 DT	890	35,0	740	29,1	475	18,7	350	13,8	961	149,0	846	1880	14424	880
800	50	2,0	GHD - 800 - 50 DT	635	25,0	585	23,0	540	21,3	400	15,7	1256	194,7	896	1991	6280	383
	150	5,9	GHD - 800 - 150 DT	955	37,6	805	31,7	540	21,3	400	15,7	1256	194,7	1292	2871	18840	1150
1000	50	2,0	GHD - 1000 - 50 DT	655	25,8	605	23,8	615	24,2	450	17,7	1589	246,3	1118	2484	7948	485
	150	5,9	GHD - 1000 - 150 DT	975	38,4	825	32,5	615	24,2	450	17,7	1589	246,3	1554	3453	23834	1454

LOW RETRACTED HEIGHT

Cylinder Capacity	Stroke		Model Number	Extended Height		Colapsed Height		Outside Diameter		Piston Diameter		Effective Area		Weight		Oil Capacity	
	Ton	mm		inch	mm	inch	mm	inch	mm	inch	mm	inch	cm ²	inch ²	kg	lb	cm ³
500	150	5,9	GHD - 500 - 150 DTE	550	21,7	400	15,7	495	19,5	305	12,0	730	113,2	481	1069	10954	668
1000	150	5,9	GHD - 1000 - 150 DTE	550	21,7	400	15,7	670	26,4	427	16,8	1431	221,8	875	1944	21496	1312

7

HYDRAULIC CYLINDERS

Hollow piston

- Hollow piston cylinders have a central bore allowing a rod or spindle to pass through its entire length. When moving forward the piston, the passed rod is dragged at the same time so pushing or retracting actions are possible.



Double acting, 200 tonnes.

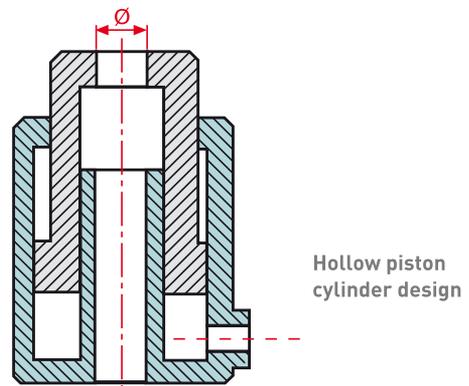
BASIC SPECIFICATIONS

- HOLLOW PISTON CYLINDER CODE

"H" at the end of the code: non spring return hollow piston cylinder.

"MH" at the end of the code: spring return hollow piston cylinder.

"DH" at the end of the code: double acting hollow piston cylinder.



MODEL	CAPACITY			STROKE	PRESSURE	EFFECTIVE	HOLLOW	OUTSIDE	HEIGHTS		WEIGHT	OIL
	NOMINAL PRES=700bar								NOMINAL	AREA		
	Tm	Tm	Kn	mm	bar	cm ²	mm	mm	mm	mm		liters
GHD 15-50 H	15	18,1	178	50	580	25,9	26	120	126	176	7	0,15
GHD 30-50 DH	30	29,5	290	50	710	42,2	29	117	127	177	9	0,2
GHD 30-70 MH	30	33,4	327	70	629	47,7	33	115	205	275	11	0,3
GHD 30-160 DH	30	31,8	311	160	661	45,4	45	138	290	450	28	0,7
GHD 50-13 DH	50	49,8	489	13	702	71,2	33	140	90	103	8	0,1
GHD 50-50 DH	50	54,7	537	50	640	78,2	51	173	150	200	22	0,4
GHD 50-200 DH	50	49,8	489	200	702	71,2	33	140	303	503	30	1,5
GHD 100-50 DH	100	109,6	1.075	50	638	156,6	51	218	157	207	35	0,7
GHD 100-150 DH	100	111,5	1.094	150	627	159,4	80	244	300	450	85	2,4

MH/DH
60-150 Tons
700 bar / 10,000 Psi

HYDRAULIC CYLINDERS
Hollow piston

7

- In addition to being able to be used as normal cylinders, they are ideal for assembling and disassembling pressure-tight machine parts such as pinions, pulleys, shafts, bolts...



Double acting aluminum cylinders, 175 US Tons with support chair



Single acting, 15 Ton.

BASIC SPECIFICATIONS. OPEN TO CUSTOMIZED DESIGN

Cylinder Capacity	Stroke		Model Number	Extended Height		Colapsed Height		Outside Diameter		Piston Diameter		Hollow Diameter		Effective Area		Weight		Oil Capacity	
	Ton	mm		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	cm ²	inch ²	kg	lb	cm ³
60	70	2,8	GHD - 60 - 70 MH	260	10,2	190	7,5	178	7,0	130	5,1	51	2,0	89	13,8	32	71	620	38
	150	5,9	GHD - 60 - 150 MH	430	16,9	275	10,8	178	7,0	130	5,1	51	2,0	89	13,8	45	100	1372	84
100	70	2,8	GHD - 100 - 70 MH	310	12,2	240	9,4	218	8,6	160	6,3	51	2,0	156	24,2	62	138	1098	67
	150	5,9	GHD - 100 - 150 MH	540	21,3	390	15,4	244	9,6	180	7,1	80	3,1	159	24,6	75	167	2390	146
150	70	2,8	GHD - 150 - 70 MH	335	13,2	265	10,4	272	10,7	200	7,9	65	2,6	219	33,9	111	247	1533	94
	150	5,9	GHD - 150 - 150 MH	565	22,2	415	16,3	272	10,7	200	7,9	65	2,6	219	33,9	175	389	3285	200

Cylinder Capacity	Stroke		Model Number	Extended Height		Colapsed Height		Outside Diameter		Piston Diameter		Hollow Diameter		Effective Area		Weight		Oil Capacity	
	Ton	mm		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	cm ²	inch ²	kg	lb	cm ³
	70	2,8	GHD - 100 - 70 DH	267	10,5	197	7,8	218	8,6	160	6,3	51	2,0	156	24,2	51	113	1098	67
100	150	5,9	GHD - 100 - 150 DH	450	17,7	300	11,8	244	9,6	180	7,1	80	3,1	159	24,6	91	202	2390	146
	300	11,8	GHD - 100 - 300 DH	750	29,5	450	17,7	244	9,6	180	7,1	65	2,6	159	24,6	140	311	4781	292
150	150	5,9	GHD - 150 - 150 DH	465	18,3	315	12,4	272	10,7	200	7,9	65	2,6	219	33,9	121	269	3285	200
	300	11,8	GHD - 150 - 300 DH	780	30,7	480	18,9	272	10,7	200	7,9	65	2,6	219	33,9	179	398	6571	401

7

SUPER SLIM HYDRAULIC CYLINDERS

Single acting. Short strokes.
Normal series



- Low height cylinders which allow working when the spaces are very limited.
- They work in all directions.
- They can be supplied with fixing drill holes to be placed on brackets.
- The quality and precision characteristics are the same as those indicated for single acting cylinders in page 20.
- They are especially suitable for positioning, levelling and extraction of heavy parts when low height.

SELECTION CHART

MODEL	CAPACITY NOMINAL PRES=700bar			STROKE mm	PRESSURE NOMINAL bar	EFFECTIVE AREA cm ²	PISTON DIAMETER mm	OUTSIDE DIAMETER mm	HEIGHTS		WEIGHT Kg	OIL CAPACITY liters
	Tm	Tm	Kn						COLLAPSED mm	EXTENDED mm		
GHDE 5-16	5	6,3	61	16	555	9	34	58x69	53	69	2	0,02
GHDE 10-16	10	13,7	134	16	510	19,6	50	76x90	56	72	3	0,04
GHDE 20-20	20	26,9	265	20	520	38,05	70	95x110	60	80	5	0,1
GHDE 50-20	50	55	539	20	637	78,5	100	148	72	92	9	0,2
GHDE 100-20	100	107,7	1.056	20	649	153,9	140	197	85	105	17	0,3

SUPER SLIM PLUNGER type

FLAT JACKS

- When available space is so extremely small and it does not allow the extra-slim cylinders of the normal series to be used, these plunger type flat jacks are used, which achieves minimum heights with maximum strokes without any limitation by mechanical stop.

SELECTION CHART

MODEL	CAPACITY NOMINAL PRES=700bar			STROKE mm	PRESSURE NOMINAL bar	EFFECTIVE AREA cm ²	PISTON DIAMETER mm	OUTSIDE DIAMETER mm	HEIGHTS		WEIGHT Kg	OIL CAPACITY liters
	Tm	Tm	Kn						COLLAPSED mm	EXTENDED mm		
GHDE 10-12B	10	13,7	134	12	510	19,6	50	76x90	36	48	2	0,02
GHDE 20-12B	20	26,9	265	12	520	38,5	70	95x110	40	52	2	0,04
GHDE 50-15B	50	55	539	15	637	78,5	100	148	60	75	8	0,15
GHDE 100-15B	100	107,7	1.056	15	649	153,9	140	197	70	85	16	0,25

HYDRAULIC EQUIPMENT PUSH/PULL TOOLS. TILTING SADDLES

Civil engineering Construction Machinery

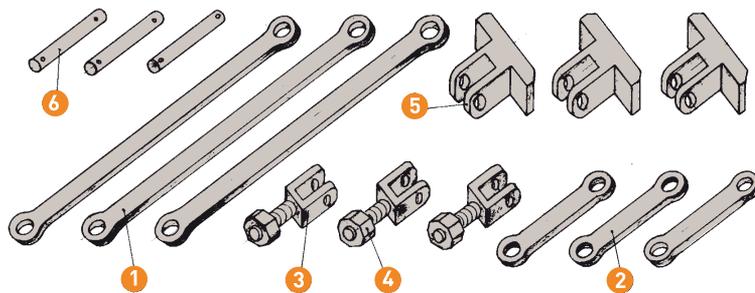
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PUSH/PULL TOOLS

- These tools are remotely powered by double acting pumps. In addition to general industry, their specific application is for heavy machinery involved in public works, for assembling and disassembling pressure-tight machine parts such as pinions, pulleys, shafts, bolts ...

ACCESSORIES (optional)



1. Long rod
2. Short rod
3. Support
4. Nut
5. Bracket
6. Bolt

PHD-95-160-D

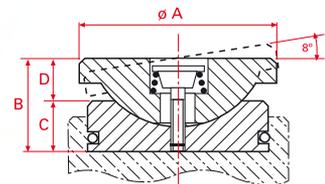
- Push Capacity 95 tm
- Traction Capacity 80 tm
- Stroke 170 mm
- Pressure 715 bar
- Oil volume 2,3 litros
- Total height 470 mm
- Weight 70 kg

PHD-65-170-D

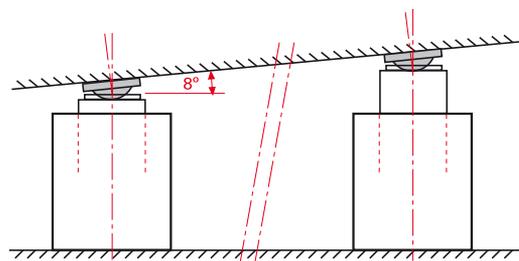
- Push Capacity 65 tm
- Traction Capacity 50 tm
- Stroke 170 mm
- Pressure 710 bar
- Oil volume 1,7 litros
- Total height 450 mm
- Weight 48 kg

TILTING SADDLES

- When the force to be replicated is not perpendicular to the cylinder, or the bearing surfaces are not parallel, lateral stresses appear which may cause premature damages.
- This problem is solved by using tilting saddles, as they get adjusted to the thrust surface up to an angle of 8° and transmit the force towards the axis, which eliminates the effects of the eccentric forces.



- They can be mounted on the top of the plunger in most types of cylinders and jacks replacing the flat saddle or they can be placed as a supplement between the load and the cylinder.



SELECTION CHART

MODEL	CAPACITY Tm	A	B	C	D
AIG 50	50	70	38	20	18
AIG 100	100	98	47	25	22
AIG 200	200	131	60	30	30
AIG 400	400	180	90	45	45
AIG 600	600	238	115	60	55
AIG 800	800	270	130	73	57
AIG 1000	1000	340	155	88	67
AIG 1500	1500	400	155	88	67

HYDRAULIC EQUIPMENT HAND PUMPS 700 - 1200 bar



SINGLE SPEED
BS1-1

Single Acting BS1-1

- One-speed, robust, economic pump for general use with single-acting cylinders but small and medium capacity up to 1 liter useful oil.



DOUBLE SPEED
BS3-1.3

Single Acting BS3-1.3

- Two-speeds automatic pump, recommended for general uses where high pressure is required. It is equipped with two pistons which operate simultaneously at high flow rate until the cylinder makes contact with the load. During the working cycle only the high pressure piston works. It comes with a safety valve, adjustable, factory calibrated at 700 Kg/cm², and an external discharge valve.



DOUBLE SPEED
BD3-1.3

Double Acting BD3-1.3

- Variant of the BS model, with an internal 4-way valve to be used with double-acting cylinders.

SINGLE SPEED
BS1-1200



Single Acting BS1-1200

- The BS1-1200 manual pump is suitable when very high pressures are required. Has a safety valve calibrated at 1200 bar. It is used for laboratory pressure tests and for calibrations at maximum load. In heavy industry it is frequently used to strain big studs and screws in order to give them the specified tightening torque. As an emergency pump is used by rescue teams. Another specific application is to inject oil at high pressure to facilitate the dismantling of bushings and bearings.

SELECTION CHART

MODEL	SPEED	VOLUME PER STROKE cm ³		MAXIMUM PRESSURE	TO BE USED WITH CYLINDERS
BS 3,1-*	TWO	33,5	3,1	700	Single acting
BD 3,1-*	TWO	33,5	3,1	700	Double acting
BS 1-1	ONE	3	3	700	Single acting
BS 1-1200	ONE	1,7	1,7	1.200	Single acting

HYDRAULIC EQUIPMENT

HYDRAULIC SETS

Pump and cylinder

From 20 to 400 Ton

7

- Each set allows the cylinder to be feeded from a distance. Cylinders work in all directions.
- All sets might be equipped with manometers for a direct reading of the load.



OTHER COMBINATIONS

- Different pump and cylinders combinations through independent couplings of 3 or more ways oil hydraulic blocks.

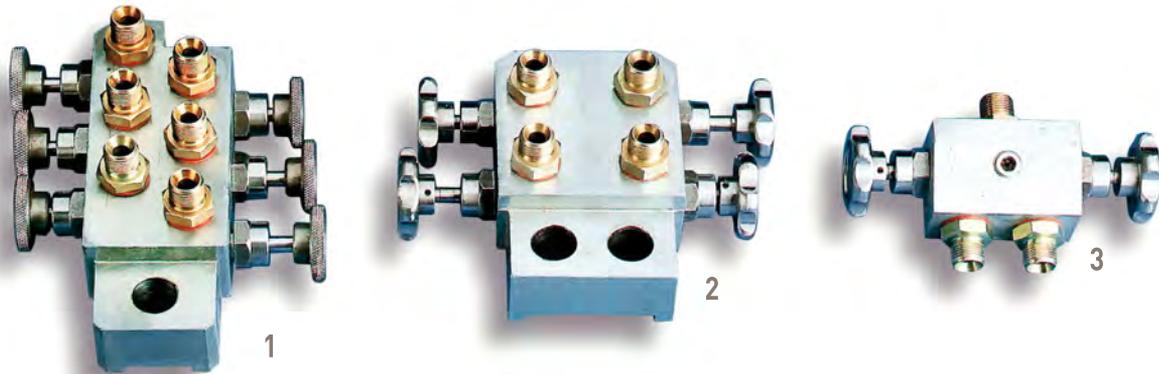


SELECTION CHART

MODEL	CAPACITY Tm	CYLINDER		HOSE LENGTH	
CH 20	20	GHDE 20	BS 1-1	2	SET
CH 80	80	GHD 80	BS 3,1-3	2	
CH 100	100	GHD 100	BD 3,1-3	2	
CH 150 D	150	GHD 150	BD 3,1-3	2	
CH 200 D	200	GHD 200	BD 3,1-3	2	
CH 400 D	400	GHD 400	BD 3,1-5	2	

HYDRAULIC EQUIPMENT

ADJUSTABLE HYDRAULIC BLOCKS 700 bar pressure. Synchronized supply for 2 to 8 cylinders



1. SINGLE ACTING

- For mounting directly on BS3-1.3 pumps.

2. DOUBLE ACTING

- For mounting directly on BD3-1.3 pumps.

3. SINGLE AND DOUBLE ACTING

- For mounting on hydraulic sets or on remote pumps.

- With these adjustable hydraulic blocks a flow can be divided in two or more ways but also each way can be independently annulled or regulated as desired.
- By opening or closing each knob the oil flow will be cancelled or more or less clogged.
- They are used to connect several cylinders to a single pump and at the same time acting on them simultaneously to synchronize the lifting and the drop of the loads.
- Depending on the type they can be mounted directly on the pump or in any other more suitable place.
- They can feed single or double acting cylinders and there are standard models to drive, in an independent way, groups of 2, 4, 6 and 8 cylinders.
- With the available range you can make any type of multiple connections to a single power source in order to have simultaneous movements.

HYDRAULIC EQUIPMENT

DIRECTIONAL AND AUXILIARY VALVES

700 bar pressure

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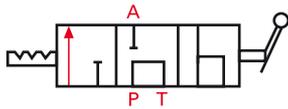
DIRECTIONAL VALVES. For single and double acting cylinders control, they can be mounted directly on the pump or remote and manually or electrically operated. They can also be open or closed centre and different ways and positions depending on cylinder type and the specific requirement.

FOR SINGLE ACTING CYLINDERS



**3 WAY/3 POSITION
MANUAL VALVE**
Ref. VD-3/3-A

Open center, for mounting on the tank of the motor pump packs. To operate all single acting cylinders models. With interlocking in the three positions: ADVANCE-HOLD-RETURN



**3 WAY/3 POSITION
MANUAL VALVE**
Ref. VD-3/3-B

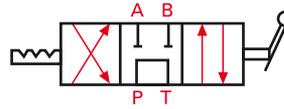
With the same characteristics as the previous one, but for remote mounting of the motor pump, in the most suitable place to control the hydraulic cylinders.

FOR DOUBLE ACTING CYLINDERS



**4 WAY/3 POSITION
MANUAL VALVE**
Ref. VD-4/3-A

Open center, for mounting on the tank of the motor pump packs. To operate all single acting cylinders models. With interlocking in the three positions: ADVANCE-HOLD-RETURN



**4 WAY/3 POSITION
MANUAL VALVE**
Ref. VD-4/3-B

With the same characteristics as the previous one, but for remote mounting of the motor pump, in the most suitable place to control the hydraulic cylinders.

AUXILIARY VALVES. To achieve an accurate regulation and control of the hydraulic installations, improving their efficiency and security.



PRESSURE REGULATOR VALVE.
Ref. VA-LP

For adjusting operating pressure in a hydraulic system or in part of it. For protection against overloads in the circuit.
Max. flow=25l/min.
Margin of regulation in between 50 and 700 bar.



PILOT OPERATED CHECK VALVE.
Ref. VA-RP

Keeps the load of the cylinder locked and opens by remote control.
Max. flow=20l/min
Min. opening pressure=90 bar



LOAD LOWERING VALVE.
Ref. VA-RD

To lock and hold the load of a cylinder in case of accidental failures or lowering of pressure and dropping the load in a controlled manner. In closed position, allows the flow in a single way, when open in both. It is usually mounted directly on the cylinder outlet. R-3/8 ports.



SHUT-OFF VALVE.
Ref. VA-P

Locks the loads and may adjust the oil flow.



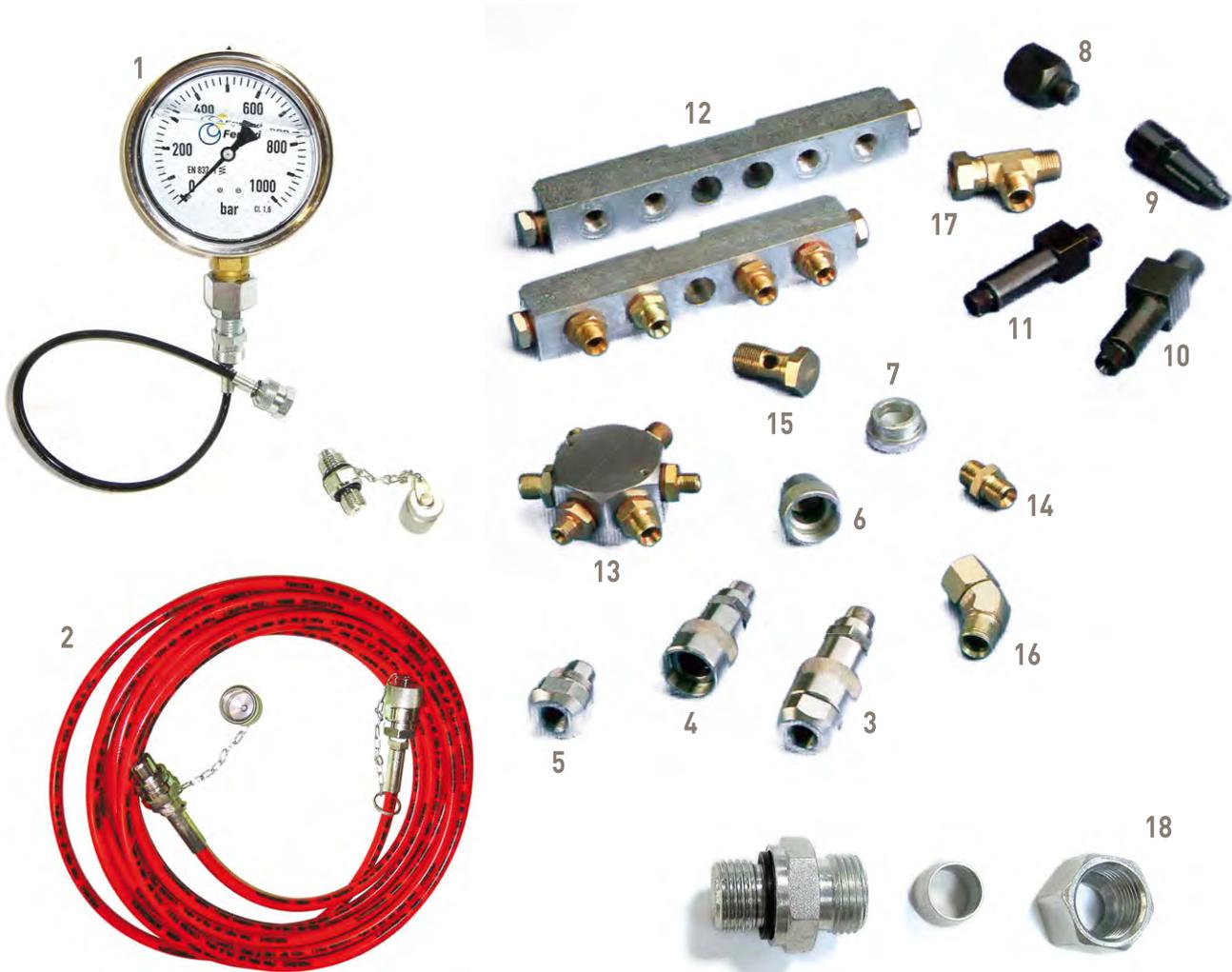
ONE-WAY CHECK VALVE.
Ref. VA-R

To be installed in line.

7

HYDRAULIC EQUIPMENT HYDRAULIC ACCESSORIES

- We have a wide range of accessories which are part of a hydraulic lifting system in order to adapt it to the most varied uses. Here are the main ones.



1. Manometers and control fittings
2. 700 bar connecting tubes
3. Complete quick coupling
4. Female quick coupling
5. Male quick coupling
6. Female protective cap
7. Male protective cap
8. Short gauge coupling
9. Long gauge coupling

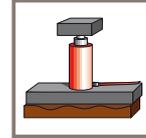
10. Extension gauge 3/8
11. Extension gauge 1/4
12. Prismatic blocks, several outputs
13. Hexagonal block
14. Union screw
15. Adjustable union screw
16. 45° male-female elbow with sliding nut
17. "T" connection with lateral sliding nut
18. DIN 2353 tube fittings

HYDRAULIC EQUIPMENT SAFETY INSTRUCTIONS

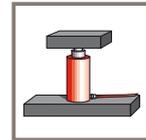
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- For a safe operation of the cylinders, please read carefully and abide follow all safety warnings in the user's handbook of the hydraulic equipment.

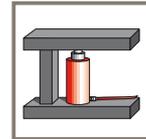
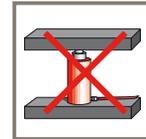
- Cylinders must work on flat, rigid and non-deformable surfaces, that can take the whole load. Side loads must be taken into account, load should be centred and distributed on the whole surface of the rod.



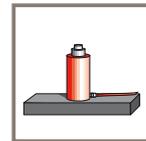
- When unfavourable conditions are expected, AIG spheric compression platens can be used on both the cylinder head and the cylinder bottom. Steel plates can also be used on the cylinder bottom.



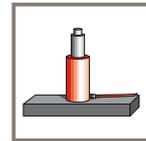
- For safety reasons, no person should work under loads supported by hydraulic cylinders. If it is completely necessary, the load should be properly secured in case the cylinder fails, safety lock nuts and retention valves must be used.



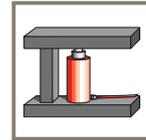
- Ensure the hydraulic quick couplings are clean and completely tight.



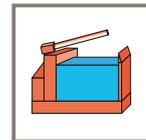
- Any working hose must be as straight and untwisted as possible, no heavy or sharp objects can be placed on top.



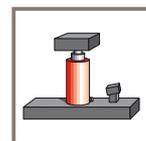
- Lift only static loads. Load must be properly fixed to avoid sliding or capsizing. Do not decouple a cylinder which is not completely retracted or has a safety lock nut in contact with the load. The inlet valve should be shut. It is necessary to support the load adequately before the removal of the cylinder.



- Do Not install extension pipes for the levers of pumps or jacks. They are not necessary and using them may increase risks.



- Operating levers for jacks must be removed when they are not in use.



SURFACE TREATMENT PAINTING, SANDBLASTING, EXTRACTION



PAINTING



- Machines for paint applications (airless) with pneumatic engine.

M-02-28
M-03-32,
M-05-47
M-07-36
M-12-60
M-13-70
M-15-60
M-18-48
M-04-14

SANDBLASTING



- Blasting machines with abrasive capacity up to 260 liters.

V-50
V-120
V-225

EXTRACTION



Extractor tank



125HP abrasive extractor



V-30 extractor with tank and frame

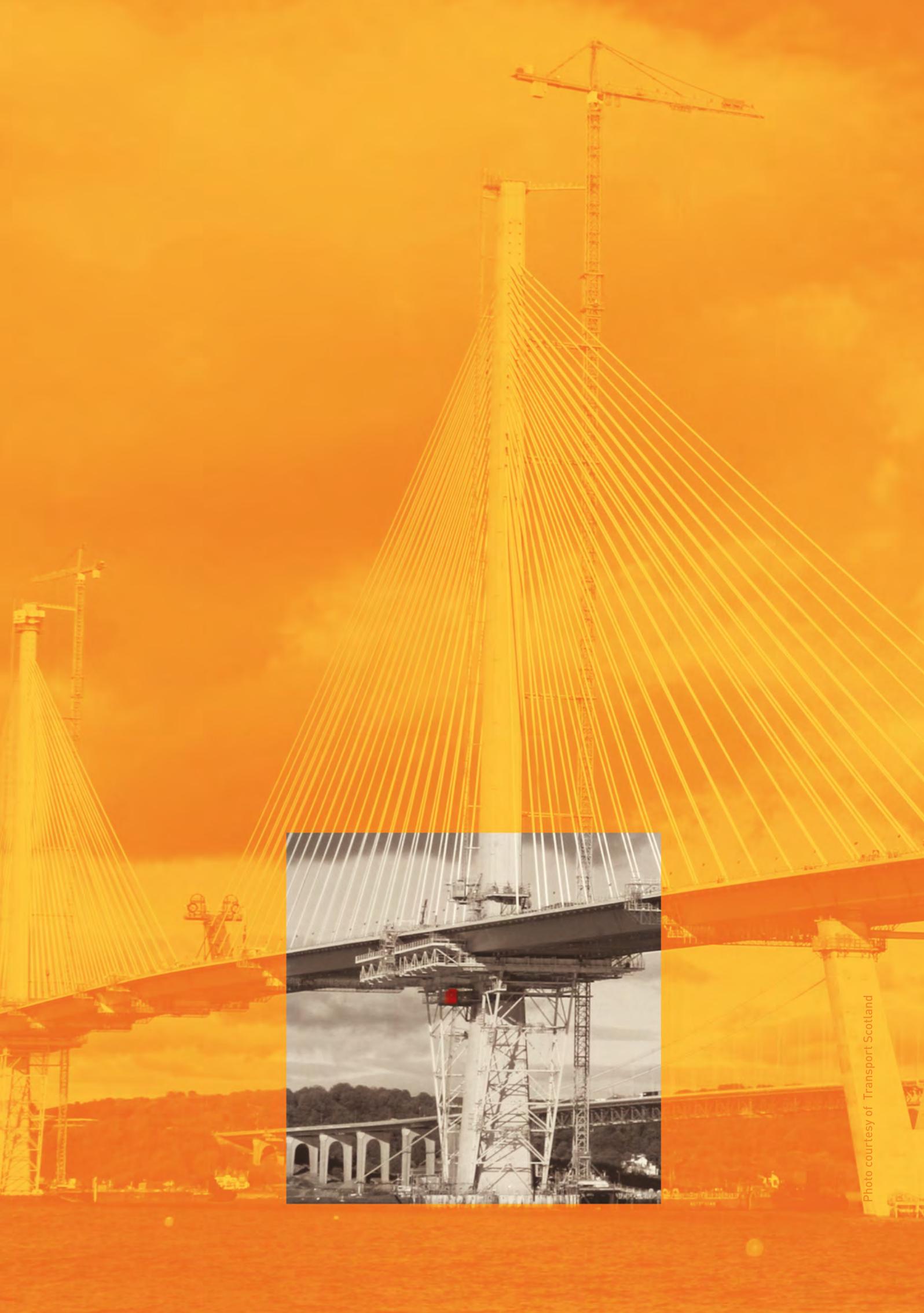
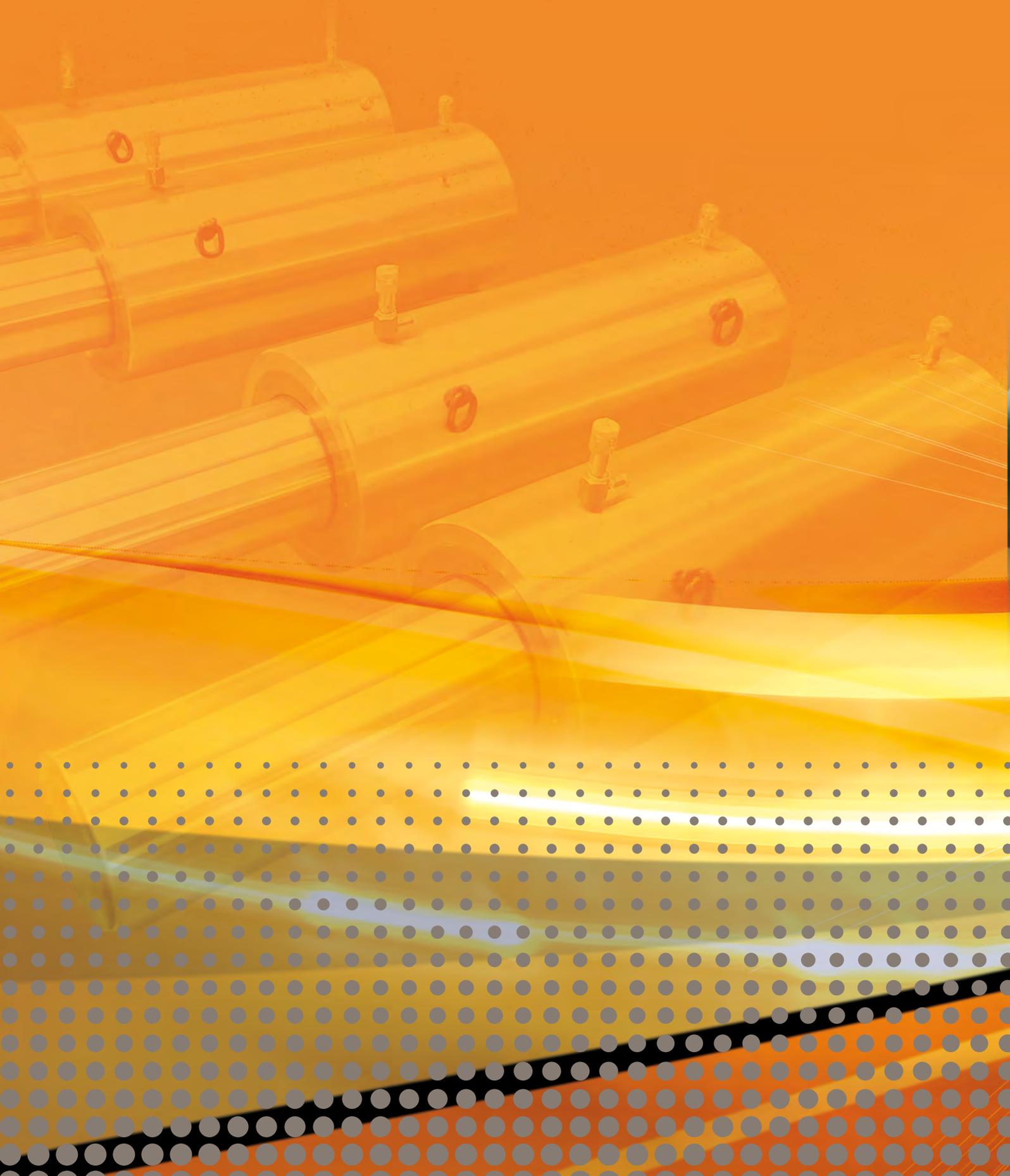


Photo courtesy of Transport Scotland



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