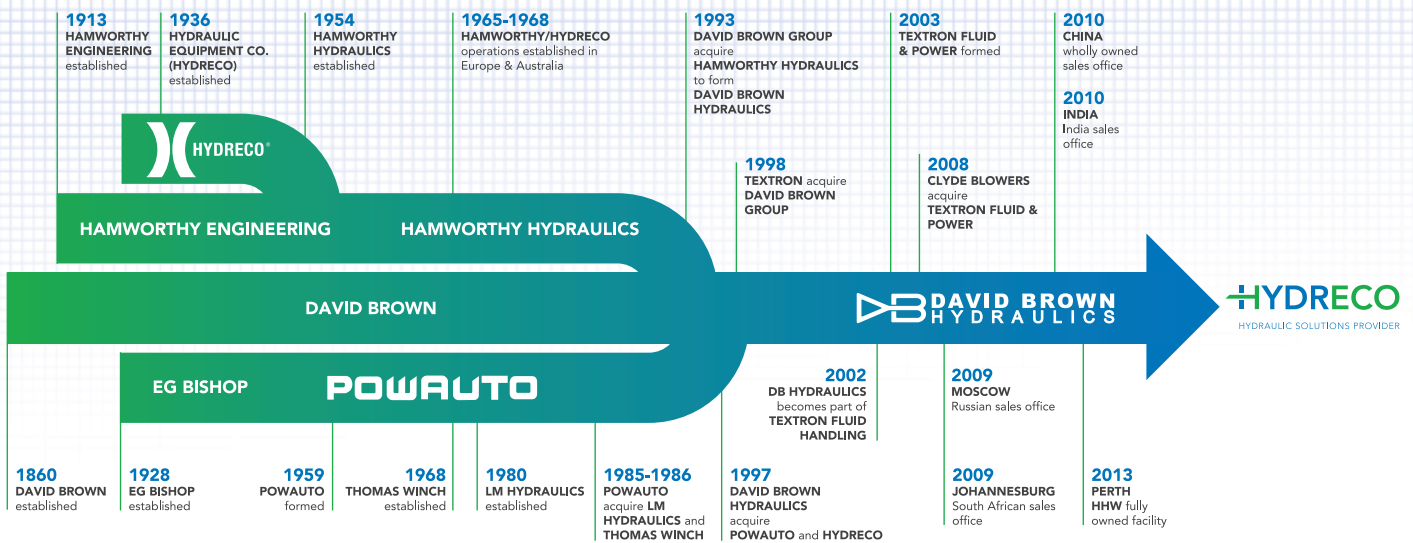


# HYDRECO

HYDRAULIC SOLUTIONS PROVIDER

## HY SERIES CONTROL VALVES, PUMPS AND MOTORS OVERVIEW BROCHURE





# 100 YEARS OF HYDRAULICS EXPERIENCE

Hydreco Hydraulics is the designer, manufacturer and distributor of products servicing the transport and mobile hydraulics sector. Hydreco has a combined history of 100 years in developing solutions through a rich heritage of legacy companies. The joining of David Brown Hydraulics, Powauto and Hydreco in 1997 brought together some of the most respected products, people and heritage brands in the business.

Engineering excellence is at the core of our organization, the product range is geared towards offering the best possible solution for many applications within Construction, Earth moving, Transport, Industrial, Materials handling, and many more. We pride ourselves on supporting customers through leading edge products, designed to provide optimum performance and extensive reliability in continual hard working applications. With innovative technology our products have evolved and developed, leading to a range of some of the highest quality products available in the market place. The business is positioned to respond to your hydraulic needs

through a worldwide network of manufacturing and sales facilities.

Hydreco has an extensive range of low noise helical gear, aluminium and cast iron gear pumps and standard spur gear models from its David Brown heritage. Its valve range covers multi-spool sectional and monoblock models with electro hydraulic, hydraulic and lever control. Dual axis, stackable and single axis hydraulic pilot valves, with an extensive range of handle options including ergonomic handles with many switches and button options. The valves are available with spring centred and electric detent options.

Under the name Hydreco Powauto, with heritage back to 1928, we sell our range of Transport hydraulics products. The product range covers power take-off units, pumps, valves, cylinders and accessories for on and off road vehicles. This World Class brand possesses a strong footprint in Asia Pacific building on its excellent reputation.



The manufacturing engineering office from the 1950's



The Tool Room from 1947

# Product Range Overview

The HY Range of product covers Directional Control Valves in both monoblock and sectional construction and a range of Gear Pumps and Motors, all with aluminium bodies and cast iron flanges and covers. The range has been developed over a number of years and is ideally suited to a wide range of industries, including construction and earth moving, materials handling, agriculture, and many more. Some of the valves in the range are designed with specific applications in mind. Many of the valves are ideally suited to be matched with our extensive range of remote hydraulic pilot control valves in order to provide the ideal control. Attention to detail ensures that our pumps are designed to give best volumetric efficiency. All normal care should be taken when selecting either

pumps, motors, or valves in order to ensure that they are used within safe parameters. With pumps, inlet port size is important to ensure that cavitation does not occur, shafts are not overloaded, particularly in multiple pump applications, and that fluid cleanliness is kept within prescribed limits. There are many more possibilities with these product ranges that are not covered in this range brochure. Our sales team and engineers are always available to help with product selection and give advice on applications and discuss anything not listed here.

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# Directional Control Valves - Monoblock Type

## CONSTRUCTION

- Cast Iron monoblock construction

## GENERAL FUNCTIONAL FEATURES

- Spools – double acting, single acting, motor, float, regenerative etc.
- Positioning Devices – spring centre, detents, manual operation, pilot hydraulic, electric on/off etc.
- Power beyond (HPCO) available
- Special features – built in overcentre valve, hydraulic kick out etc.
- All spools are interchangeable

## HY045M

- Rated Flow: 45 l/m
- Max Inlet Pressure: 315 bar
- Max Port Pressure: 350 bar
- 1 to 7 spools
- Parallel, tandem & series circuits available
- Electric on/off with manual override
- Emergency unloading valve



## HY046M

- Rated Flow: 45 l/m
- Max Inlet Pressure: 315 bar
- Max Port Pressure: 350 bar
- 1 to 7 spools
- Parallel circuit with load hold check on each section
- Auxiliary valves available on all ports
- Double acting/single acting convertors available on all ports



## HY075M

- Rated Flow: 75 l/m
- Max Inlet & Port Pressure: 280 bar
- 1 to 6 spools
- Parallel circuit with load hold check on pressure port



## HY076M

- Rated Flow: 75 l/m
- Max Inlet Pressure: 315 bar
- Max Port Pressure: 350 bar
- 1 to 5 spools
- Parallel circuit with load hold check on each section
- Auxiliary valves available on all ports
- Emergency unloading valve



# Directional Control Valves - Sectional Type

## CONSTRUCTION

- Cast Iron sectional construction

## GENERAL FUNCTIONAL FEATURES

- Spools – double acting, single acting, motor, float, regenerative etc.
- Positioning Devices – spring centre, detents, manual operation, pilot hydraulic, electro hydraulic, electro pneumatic, electric on/off etc.
- Power beyond (HPCO) available
- Special features – built in overcentre valve, hydraulic kick out etc.
- Parallel, tandem and series circuits available
- All spools are interchangeable

## HY045S

- Rated Flow: 45 l/m
- Max Inlet Pressure: 315 bar
- Max Port Pressure: 350 bar
- Up to 8 spools
- Auxiliary valves available on all ports
- Emergency unloading valve
- Available with mid inlets



## HY075S

- Rated Flow: 75 l/m
- Max Inlet Pressure: 315 bar
- Max Port Pressure: 350 bar
- Up to 8 spools
- Auxiliary valves available on all ports
- Available with mid inlets



## HY120S

- Rated Flow: 120 l/m
- Max Inlet & Port Pressure: 280 bar
- Max Inlet Pressure: 315 bar
- Up to 8 spools
- Auxiliary valves available on all ports



## HY180S

- Rated Flow: 180 l/m
- Max Inlet & Port Pressure: 280 bar
- Max Inlet Pressure: 315 bar
- Up to 8 spools
- Auxiliary valves available on all ports



# Directional Control Valves - Monoblock Type

TYPE	Nominal Flow l/min	Max. Flow l/min	Operating Pressure bar	Max. Operating Pressure			Nr of Sections	Circuit*
				P	A/B	T		
HY045M	45	60	315	315	350	25	1 ÷ 7	P / S <sup>(1)</sup> / T <sup>(2)</sup>
HY046M	45	60	315	315	350	25	1 ÷ 7	P
HY075M	75	90	280	280	280	25	1 ÷ 6	P
HY076M	75	90	315	315	350	25	1 ÷ 5	P

P = Parallel; S = Series; T = Tandem

Tandem or Series circuits are only available on first working section of a multi spool valve

MAIN RELIEF VALVE				
	HY045M	HY046M	HY075M	HY076M
Direct	•	•	•	•
Pilot				•
Unload	•	•		•

AUXILIARY VALVES				
	HY045M	HY046M	HY075M	HY076M
Overload		•	•	•
Overload and Anticavitation		•		•
Anticavitation		•		•
Conversion		•	•	•
Unidirectional Mechanical		•		
Unidirectional Piloted	•			

SPOOL CONTROLS				
	HY045M	HY046M	HY075M	HY076M
Mechanical	•	•	•	•
Hydraulic	•	•	•	•
Pneumatic	•	•	•	•
Direct Electric	•	•		•
Electro-Hydraulic				•
Electro-Pneumatic	•	•	•	•

SPOOL POSITIONINGS				
	HY045M	HY046M	HY075M	HY076M
Spring Return	•	•	•	•
Detent	•	•	•	•
Float	•	•	•	•
Microswitch/Potentiometer Device	•	•	•	•
Torque Limiting		•		•
Detent with Hydraulic Kick-Out	•		•	•

# Directional Control Valves - Sectional Type

TYPE	Nominal Flow l/min	Max. Flow l/min	Operating Pressure bar	Max. Operating Pressure			Nr of Sections	Circuit*
				P	A/B	T		
HY045S	45	60	315	315	350	25	1 ÷ 8 <sup>(1)</sup>	P / S / T
HY075S	75	90	315	315	350	25	1 ÷ 8 <sup>(1)</sup>	P / S / T
HY120S	120	140	280	280	315	25	1 ÷ 8 <sup>(1)</sup>	P / S / T
HY180S	180	240	280	280	315	25	1 ÷ 8 <sup>(1)</sup>	P / S / T

P = Parallel; S = Series; T = Tandem

MAIN RELIEF VALVE				
	HY045S	HY075S	HY120S	HY180S
Direct	•	•	•	•
Pilot		•	•	•
Unload	•	•	•	•

AUXILIARY VALVES				
	HY045S	HY075S	HY120S	HY180S
Overload	•	•	•	•
Overload and Anticavitation	•	•	•	•
Anticavitation	•	•	•	•
Conversion	•	•		
Unidirectional Mechanical	•			
Unidirectional Piloted				

SPOOL CONTROLS				
	HY045S	HY075S	HY120S	HY180S
Mechanical	•	•	•	•
Hydraulic	•	•	•	•
Pneumatic	•	•	•	•
Direct Electric	•	•		
Electro-Hydraulic	•	•	•	•
Electro-Pneumatic	•	•	•	•

SPOOL POSITIONINGS				
	HY045S	HY075S	HY120S	HY180S
Spring Return	•	•	•	•
Detent	•	•	•	•
Float	•	•	•	•
Microswitch/Potentiometer Device	•	•	•	•
Torque Limiting	•	•		
Detent with Hydraulic Kick-Out	•	•	•	•

Port Types Available as Standard		
BSP (UNI ISO 1179 - Threads UNI ISO 228/1)	METRIC (UNI EN ISO 9974-1 - Threads UNI ISO 262)	SAE UN-UNF (UNI ISO 11926 - Threads UNI ISO 725)
Other thread types may be available depending on quantity - ask your local Hydreco representative		

# Directional Control Valves – Adapted for Specific Applications

A number of valves have been adapted to suit specific user applications in the 50 to 75 litre/min flow range, for instance:

- Agricultural Applications
- Crane Stabiliser Applications
- Fork Lift Truck Application

Features include:

- All popular operating mechanisms and spool actions
- Inlet pressure to 280 bar
- Port pressures to 316 bar

Your local Hydreco representative will be happy to advise on any enquiry

# Directional Control Valves – Load Sensing Applications

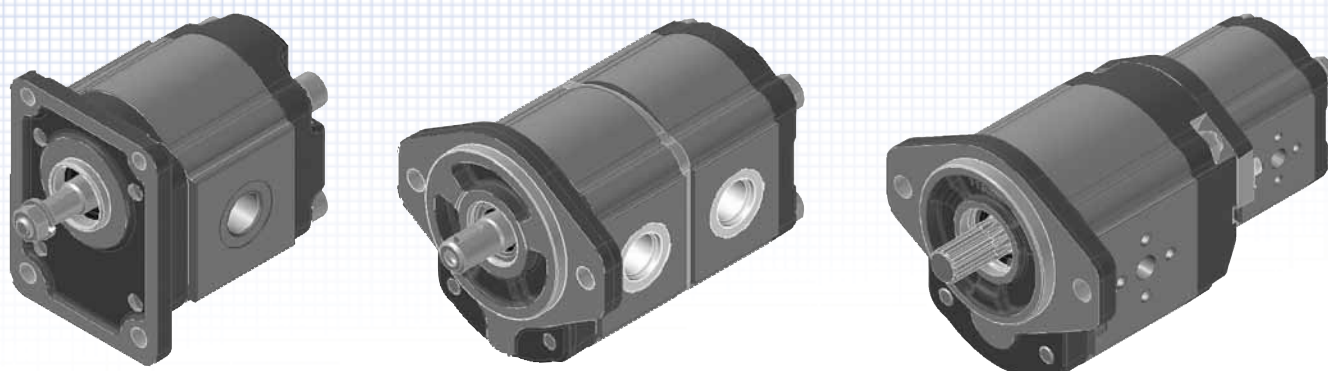
A number of valves exist with Load Sensing features to suit both variable displacement piston pumps and with an inlet compensator to suit fixed displacement pumps.

Valve available work within flow rates of 100 to 130 litre/min. Other features include:

- Built-in pressure compensator
- Auxiliary valves available on all ports
- Double acting, single acting, motor and float spools
- Manual, dual axis manual, hydraulic, electro hydraulic, or pneumatic control
- Spools to suit specific working flows
- CANBUS
- Spring centre or detent spool actions

Port Types Available as Standard		
BSP (UNI ISO 1179 – Threads UNI ISO 228/1)	METRIC (UNI EN ISO 9974-1 – Threads UNI ISO 262)	SAE UN-UNF (UNI ISO 11926 – Threads UNI ISO 725)
Other thread types may be available depending on quantity – ask your local Hydreco representative		

# Aluminium Bodied Gear Pumps



- From 1.4 cc/rev through to 99 cc/rev in 5 different frame sizes
- Multiple pump construction available
- All gear pumps have aluminium bodies and cast iron flanges and rear covers
- High volumetric efficiency due to floating bushings and axial compensation
- 12 tooth integral gear and shaft
- Single and double shaft seals
- Wide range of flanges, shafts and ports to suit European and American standards
- Outboard bearings available
- Modular construction
- Pumps available with valves in rear covers

## The Range of Gear Pumps

HY15P	GROUP 1.5	Displacement cm <sup>3</sup> /rev	Working pressure P1 bar	Intermittent pressure P2 bar	Peak pressure P3 bar	Max. speed min <sup>-1</sup>	Min. speed
	HY15P - 1.4	1.4	250	270	290	5000	700
	HY15P - 2.1	2.1	250	270	290	5000	700
	HY15P - 2.8	2.8	250	270	290	4500	700
	HY15P - 3.5	3.5	250	270	290	4500	700
	HY15P - 4.1	4.1	250	270	290	4000	700
	HY15P - 5.2	5.2	230	250	270	4000	700
	HY15P - 6.2	6.2	230	250	270	3600	600
	HY15P - 7.6	7.6	200	220	250	3300	600
	HY15P - 9.3	9.3	180	200	240	3000	600
HY15P - 11	11	170	190	220	3000	600	

HY20P	GROUP 2	Displacement cm <sup>3</sup> /rev	Working pressure P1 bar	Intermittent pressure P2 bar	Peak pressure P3 bar	Max. speed min <sup>-1</sup>	Min. speed
	HY20P - 4.5	4.6	250	280	300	4000	600
	HY20P - 6.5	6.5	250	280	300	4000	600
	HY20P - 8.3	8.2	250	280	300	3500	500
	HY20P - 10.5	10.6	250	280	300	3500	500
	HY20P - 11.3	11.5	250	280	300	3500	500
	HY20P - 12.5	12.7	250	280	300	3500	500
	HY20P - 13.8	13.8	250	280	300	3500	500
	HY20P - 16	16.6	250	280	300	3000	400
	HY20P - 19	19.4	220	240	260	3000	400
	HY20P - 22.5	22.9	200	220	240	2750	400
	HY20P - 26	25.8	180	200	220	2500	300



HY25P		Displacement	Working pressure P1	Intermittent pressure P2	Peak pressure P3	Max. speed	Min. speed
	<b>GROUP 2.5</b>	<b>cm<sup>3</sup>/rev</b>	<b>bar</b>	<b>bar</b>	<b>bar</b>	<b>min<sup>-1</sup></b>	
	HY25P - 11.5 *1	11.76	250	280	300	3000	600
	HY25P - 13.8 *2	14.07	250	280	300	3000	600
	HY25P - 16	16	250	280	300	3000	600
	HY25P - 19	19.3	250	280	300	3000	600
	HY25P - 22	22.2	250	280	300	3000	500
	HY25P - 25	25.2	250	280	300	3000	500
	HY25P - 28	27.6	250	280	300	3000	500
	HY25P - 32	32.4	230	250	260	3000	500
HY25P - 38	38.1	200	220	240	2750	400	
HY25P - 44	44.2	170	190	210	2500	400	

HY30P		Displacement	Working pressure P1	Intermittent pressure P2	Peak pressure P3	Max. speed	Min. speed
	<b>GROUP 3</b>	<b>cm<sup>3</sup>/rev</b>	<b>bar</b>	<b>bar</b>	<b>bar</b>	<b>min<sup>-1</sup></b>	
	HY30P - 21 *3	20.6	250	280	300	3000	600
	HY30P - 27	27	250	280	300	3000	600
	HY30P - 33	33.5	250	280	300	3000	600
	HY30P - 38	38.7	250	280	300	2750	500
	HY30P - 46	46.9	250	270	280	2750	500
	HY30P - 55	54.1	220	240	250	2500	400
	HY30P - 65	63.1	200	220	240	2500	400
	HY30P - 75	73.4	180	200	220	2500	400

HY35P		Displacement	Working pressure P1	Intermittent pressure P2	Peak pressure P3	Max. speed	Min. speed
	<b>GROUP 3.5</b>	<b>cm<sup>3</sup>/rev</b>	<b>bar</b>	<b>bar</b>	<b>bar</b>	<b>min<sup>-1</sup></b>	
	HY35P - 55	54.8	250	280	300	2750	400
	HY35P - 64	63.2	250	280	300	2750	350
	HY35P - 75	74.7	230	250	280	2500	300
	HY35P - 87	88	210	230	260	2250	300
	HY35P - 98	99	200	220	250	2000	300

\*1 Available as a rear pump only    \*2 High volume only    \*3 Application issues please contact customer service

## Multiple Pumps

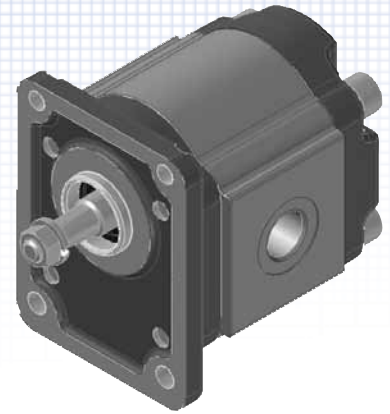
- Multiple pump builds are possible
- Multiple pumps can have either separate inlets or combined inlets
- The ability to connect pumps to each other is generally limited within the following table
- For special requirements contact Hydreco

Front Pump	Rear or Mid	Rear
HY35P	HY35P	
HY35P	HY20P	
HY35P	HY20P	HY20P
HY35P	HY20P	HY15P
HY30P	HY30P	
HY30P	HY30P	HY20P
HY30P	HY20P	HY20P
HY30P	HY20P	HY15P

Front Pump	Rear or Mid	Rear
HY25P	HY25P	
HY25P	HY20P	
HY25P	HY20P	HY20P
HY25P	HY20P	HY15P
HY20P	HY20P	
HY20P	HY15P	
HY20P	HY15P	HY15P

# Aluminium Bodied Gear Motors

- From 4.5 cc/rev through to 73.4 cc/rev in 3 different frame sizes
- Multiple motor construction for flow divider applications
- All gear motors have aluminium bodies and cast iron flanges and rear covers
- High volumetric efficiency due to floating bushings and axial compensation
- 12 tooth integral gear and shaft
- Double shaft seals
- Wide range of flanges, shafts and ports to suit European and American standards
- Outboard bearings available
- Modular construction
- Motors available with a wide range of valves in rear covers
- Motors available for fan drive application



HY20M		Displacement	Max. continuous pressure P1	Max. starting pressure P2	Max. speed	Min. speed
	GROUP 2	cm <sup>3</sup> /rev	bar	bar	min <sup>-1</sup>	
	HY20M - 4.5	4.6	250	280	4000	600
	HY20M - 6.5	6.5	250	280	4000	600
	HY20M - 8.3	8.2	250	280	3600	500
	HY20M - 10.5	10.6	250	280	3500	500
	HY20M - 11.3	11.5	250	280	3500	500
	HY20M - 12.5	12.7	250	280	3400	500
	HY20M - 13.8	13.8	250	280	3400	500
	HY20M - 16	16.6	250	280	3200	450
HY20M - 19	19.4	220	240	3200	450	
HY20M - 22.5	22.9	200	220	3000	450	
HY20M - 26	25.8	180	200	2850	450	

HY25M		Displacement	Max. continuous pressure P1	Max. starting pressure P2	Max. speed	Min. speed
	GROUP 2.5	cm <sup>3</sup> /rev	bar	bar	min <sup>-1</sup>	
	HY25M - 16	16	250	280	3000	600
	HY25M - 19	19.3	250	280	3000	600
	HY25M - 22	22.2	250	280	3000	500
	HY25M - 25	25.2	250	280	3000	500
	HY25M - 28	27.6	250	280	3000	500
	HY25M - 32	32.4	230	250	3000	500
	HY25M - 38	38.1	200	220	2750	400
	HY25M - 44	44.2	170	190	2500	400

HY30M		Displacement	Max. continuous pressure P1	Max. starting pressure P2	Max. speed	Min. speed
	GROUP 3	cm <sup>3</sup> /rev	bar	bar	min <sup>-1</sup>	
	HY30M - 27	27	250	300	3000	600
	HY30M - 33	33.5	250	300	3000	600
	HY30M - 38	38.7	250	300	2750	500
	HY30M - 46	46.9	250	280	2750	500
	HY30M - 55	54.1	220	250	2500	400
	HY30M - 65	63.1	200	240	2500	400
	HY30M - 75*	73.4	180	220	2500	400

\* Other displacements available upon request

# OUTSTANDING PERFORMANCE ON A GLOBAL SCALE

We can demonstrate a proven ability to meet the needs of our customers and to support world leaders in their individual fields. It's not just about delivering a product; it starts with assessing each customer's needs, runs through correctly selecting or configuring the product, and continues for its extended life cycle.

Superior performance, outstanding quality, excellent service and expert advice. Those are the cornerstones of the global hydraulics capability represented by David Brown Hydraulics, Hydreco and Powauto.

Our hydraulic gear pumps and motors, main control valves, pilot control valves and power take-offs provide the power and control behind the biggest names for equipment in construction forestry, agriculture and mining through to specialised plant for materials handling, marine and municipal use, along with a wide range of industrial applications.

Practical performance, allied to knowledge of the user's application and backed by superb technical skills and capabilities ensures we have the strength to satisfy hydraulic demand on a global level.





## CONTACT INFORMATION

### EMEA

<b>GERMANY</b>	Hydreco Hydraulics GmbH, Straelen (NRW)	Tel: +49 2834 94303-41	Fax: +49 2834 94303-64	info-de@hydreco.com
<b>ITALY</b>	Hydreco Hydraulics Italia Srl, Vignola (MO)	Tel: +39 059-7700411	Fax: +39 059-7700425	sales-it@hydreco.com
<b>NORWAY</b>	Hydreco Hydraulics Norway AS, Skjetten	Tel: +47 22 90 94 10		post-no@hydreco.com
<b>RUSSIA</b>	Hydreco Hydraulics Russia, Moscow	Tel: +7 965 223 90 85		sales-ru@hydreco.com
<b>UK</b>	Hydreco Hydraulics Ltd, Poole, Dorset	Tel: +44 (0) 1202 627500	Fax: +44 (0) 1202 627555	info-uk@hydreco.com

### AMERICAS

<b>USA</b>	Hydreco Inc, Charlotte (NC)	Tel: +1 704 295-7575	Fax: +1 704 295-7574	sales-us@hydreco.com
<b>LATIN AMERICA</b>		Tel: +1 704 572-6266		sales-es@hydreco.com

### APAC

<b>AUSTRALIA</b>	Hydreco Hydraulics Pty Ltd, Seven Hills (NSW)	Tel: +61 2 9838 6800	Fax: +61 2 9838 6899	sales-au@hydreco.com
<b>AUSTRALIA</b>	Hydreco Hydraulics Pty Ltd, Smeaton Grange (NSW)	Tel: +61 2 9838 6849		au-smeatongrange@hydreco.com
<b>AUSTRALIA</b>	Hydreco Hoist & Winch Sales (WA) Pty Ltd, Bassendean (WA)	Tel: +61 8 9377 2211	Fax: +61 8 9377 2223	au-hhw@hydreco.com
<b>CHINA</b>	Hydreco Hydraulics (Xiamen) Co. Ltd, Xiamen, (Fujian)	Tel: +86 0592 2237 901	Fax: +86 0592 2237 052	sales-cn@hydreco.com
<b>INDIA</b>	Hydreco Hydraulics India Private Ltd, Bangalore	Tel: +91 80 42713100	Fax: +91 80 42713111	sales-in@hydreco.com