



# BLACK BRUIN HYDRAULIC ROTATORS

Superior Piston Technology

**Black  
Bruin**  
No power like it.





# ABOUT OUR ROTATORS

Black Bruin rotators are commonly seen in such lift & turn job sites where others just don't get the job done. Many demanding applications in forestry, agriculture, material handling, construction and road building are powered by Black Bruin. With Black Bruin rotators, these professionals know that they will get their job done in productive and profitable manner.

## RELIABILITY INCORPORATED

Black Bruin rotator design is based on the radial piston mo-

tor, thus giving the same highly efficient power seen in the motors. The power does not run out and a harvester head or a grapple can be precisely turned to wanted position.

## OVER 50 YEARS OF EXPERIENCE

For over 50 years, our aim has been high quality in all areas. From design to manufacturing, we strive to meet our customers' high demands and give them powerful, reliable and high quality hydraulic rotators. Customer satisfaction and consistent quality of Black Bruin rotators are further

ensured by our own R&D testing laboratory, in which we continuously work to develop even better solutions for all conditions and needs.

We listen to the customer and develop innovative rotator solutions to fit their needs.

# CONTENTS

INTRODUCTION 3 | PISTON TECHNOLOGY 5 | HARVESTER ROTATORS 7 | GRAPPLE ROTATORS 9 | LINKS 11 | BRAKES 13 | SWING DAMPERS 15 | ORDERING CODE 17



All information given in this brochure is current and valid according to the information available at the time of publication. Sampo Hydraulics Ltd. reserves the rights to implement changes without prior notice. Please visit [www.blackbruin.com](http://www.blackbruin.com) for technical specifications and the most recent version of this brochure.





## BLACK BRUIN PISTON TECHNOLOGY

### OPTIMUM PERFORMANCE

#### HIGHLIGHTS:

- wear-free piston design – no harmful particles into system
- constant high torque throughout the turning range
- precise control
- durable construction
- long service life with torque that lasts

## SUPERIOR, LONG LASTING TORQUE

A good rotator is one that is easy to use, rugged, and above all, dependable in extreme conditions. Black Bruin rotators meet all of this criteria – and many others into the bargain. Their superior technical performance has gained the unreserved regard of professionals all over the world.

#### DURABILITY GUARANTEED

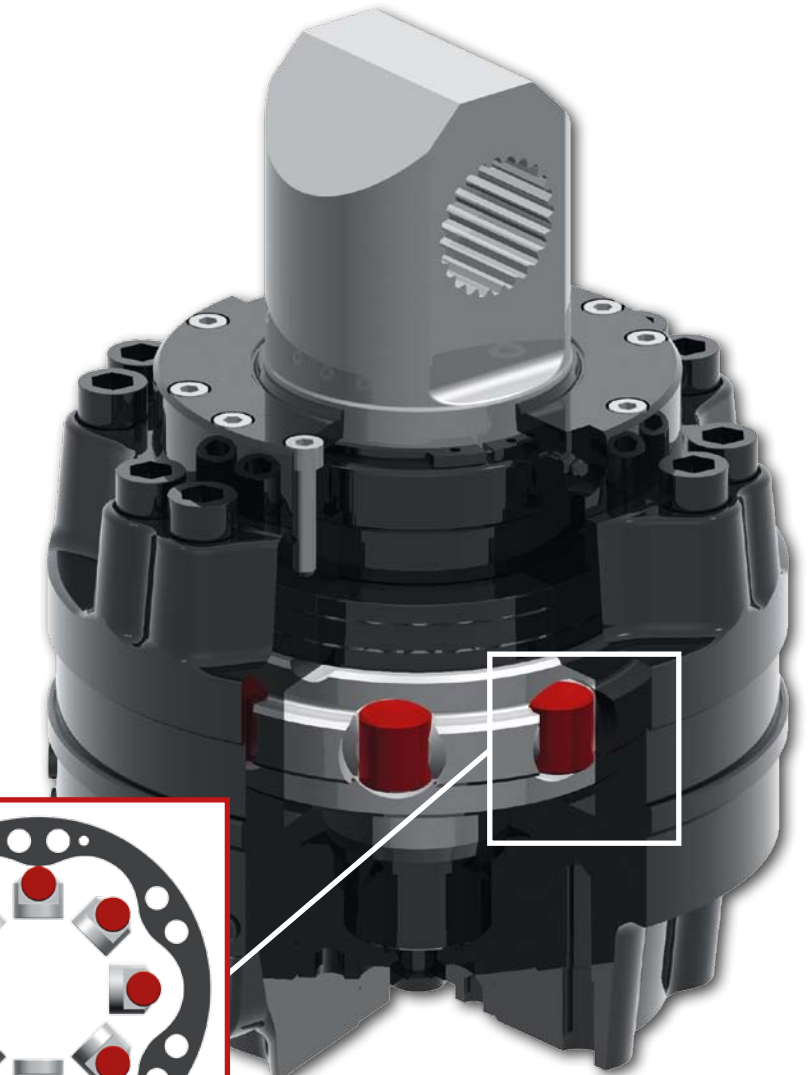
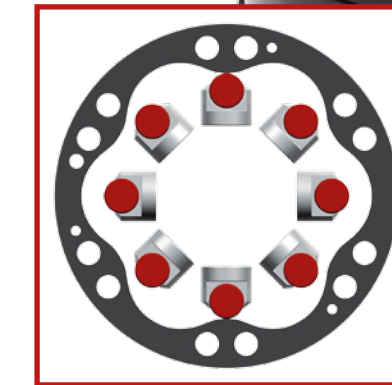
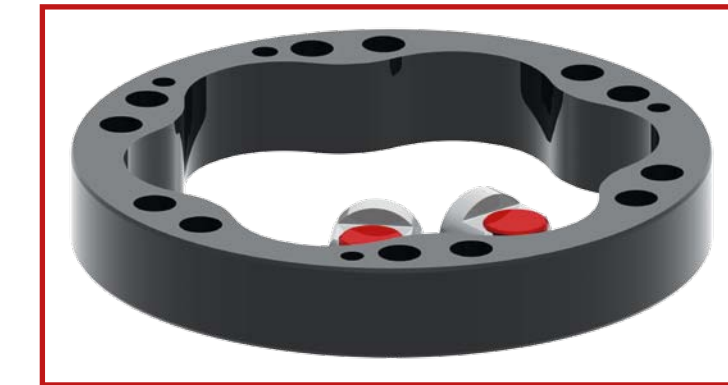
The key to the popularity of rotators is Black Bruin piston technology. Due to durable piston design, the Black Bruin rotator is very accurate in its operation. The radial piston-cam

curve design is precisely balanced, providing a constant ripple-free output torque. High torque is achieved with small oil flow and it remains constant throughout the turning range.

Accurate Black Bruin rotator maintains torque characteristics throughout its long service life. This means productive and efficient contracting!

“ Accuracy, strength and endurance are the key features a rotator must have. We developed the radial piston structure of our Black Bruin rotators precisely for this. With our special design, Black Bruin rotators provide superior efficiency, and maintain their characteristics in the long run.

Henri Kuirinlahti, R&D Engineer







# BLACK BRUIN HARVESTER ROTATORS

MR / BBR H / RH

HIGHLIGHTS:

- case drain line for maximal performance
- excellent load capacity in radial and axial direction
- constant high torque throughout the turning range
- built-in relief valves protect the hydraulic system
- all-season sealing for demanding work environments



## MR ROTATORS

The axial piston MR rotator for harvester heads is easy to operate. Well-balanced rotator produces an even torque in all positions, making the load control fast and accurate.

SAVINGS THROUGH SERVICE COSTS

Fixed shaft flange in MR rotators requires no adjustment. If needed, MR structure is easily serviceable to extend rotator's lifetime.

## BBR H ROTATORS

BBR H rotator for harvester heads makes forest harvesting efficient. You can trust its durability and usability, thanks to its excellent load capacity and constant high torque throughout the turning range.

The highly recommended case drain line guarantees maximal power. Low case pressure ensures long bearing and seal service life.

BBR H stands for power, reliability and productivity for all harvester head applications.

## RH ROTATORS

RH3016 is the most powerful Black Bruin rotator to date. With high torque, it is the top choice for heavy-duty harvesting, when productivity, strength and endurance are required. The durable bearing design, added with the benefits of case drain line handles the most demanding loads.

The robust RH3016 maintains its performance in the long run. Operating is precise and reliable. The sealing solution is easy to service for higher productivity.



ROTATOR TYPE	MR 10MD JK	BBR 08H	BBR 15H	BBR 16H	RH3016
Design	Axial piston	Radial piston	Radial piston	Radial piston	Radial piston
Class	mid-size harvesters	mid-size harvesters	large harvesters	large harvesters	large harvesters
Max. torque [Nm]	2000	1600	3000	3000	3480
Axial load capacity [kN]	100	80	150	160	160
Weight [kg]	63	47	57	65	66
Compatible link type	I-100	H-074	H-080	H-085	





MR ROTATORS

The axial piston MR rotator eases professional loading work. Thanks to its straightforward structure, the rotator can easily be fitted into different applications from forest machines to truck cranes.

MR has been designed to endure the high external loads it is exposed to, and its piston construction gives precise control and durability.

MR is reliable and powerful choice for loading.

BBR F ROTATORS

The radial piston BBR F rotator makes loading efficient in heavy-duty applications. You can trust its capability to do heavy lifting, thanks to its unlimited rotation, excellent load capacity and high torque.

RUGGED CONSTRUCTION

Each and every part in BBR F has been designed for heavy-duty purposes and rotator maintains its power throughout its long service life.

BBR F is the top choice for fast and productive loading, when precision and strength are required.

BLACK BRUIN GRAPPLE ROTATORS

MR / BBR F

HIGHLIGHTS:

- unlimited rotation
- designed to endure the high external loads
- constant high torque throughout the turning range
- built-in relief valves protect the hydraulic system
- all-season sealing for demanding work environments



ROTATOR TYPE	MR 08A	MR 08F	MR 10A	MR 10FD JK	BBR 15F JK
Design	Axial piston	Axial piston	Axial piston	Axial piston	Radial piston
Class	universal loading				heavy-duty universal loading
Max. torque [Nm]	2000	2000	2000	2000	3000
Axial load capacity [kN]	80	80	100	100	150
Weight [kg]	57	60	60	62	73
Compatible link type	—	—	I-100		



ADVANCED LINK OPTIONS

Black Bruin offers a variety of links, suitable for all types of booms and cranes. Links can be equipped with single or dual multi-disc brakes but specific types are also available without brakes.

APPLICATION REQUIREMENTS

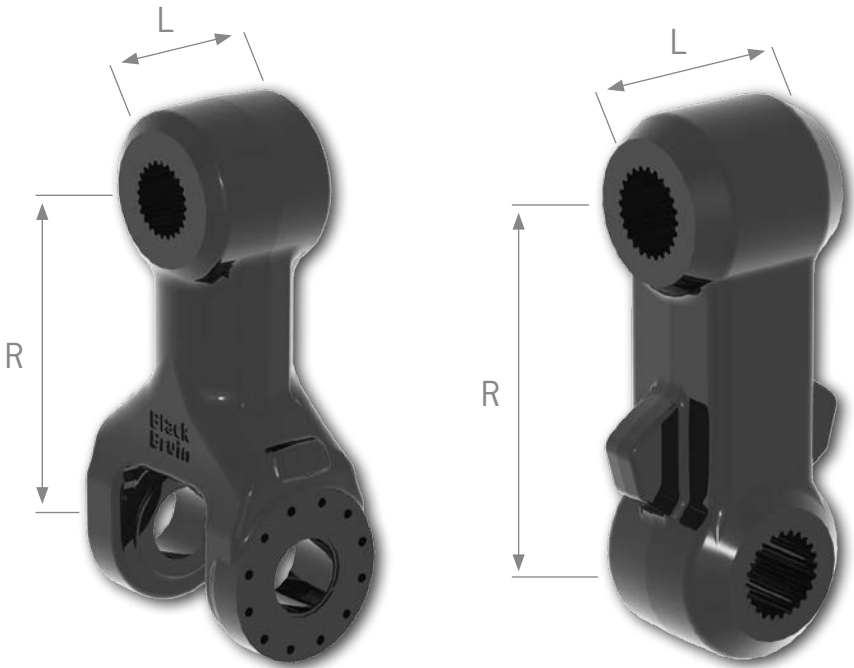
Standard links are suitable for applications where swing damping is not required. Dual brake link offers damping in both directions, e.g. in harvesters. Single brake link can be used in multitude of applications, e.g. in different type of

cranes. You can select single or dual brake link to best fit your application requirements.

BLACK BRUIN LINKS  
I-TYPE / H-TYPE

HIGHLIGHTS:

- light and compact construction
- various types for grapple and harvester use
- single or dual brake



LINK TYPE	I-100						H-074				H-080						H-085			
Dimensions	R200.L080			R200.L100			R240.L080		R240.L100		R155.L100		R240.L100		iR240.L100 <sup>a)</sup>		R310.L100		R240.L100	
Brakes <sup>b)</sup>	0J	1J	2J	0J	1J	2J	1J	2J	1J	2J	1J	2J	1J	2J	1J	2J	1J	2J	1J	2J
Weight	13			13,7			14,5		15,2		13,5		17,5		18,5		20,7		18,5	

a) i = 15 % stronger      b) 0J = without brake, 1J = single brake (lower), 2J = dual brake (upper and lower)

Order code example: H080 R240.L100 2J





MULTI-DISC BRAKE DAMPING

Black Bruin rotators can be equipped with one or two multi-disc brakes. Black Bruin brakes increase the rotator’s value to the user. Brake guarantees smooth working by damping the harvester head or grapple swinging efficiently.

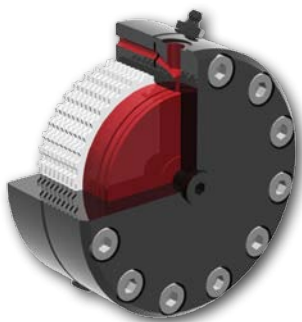
Unique multi-disc design is wear-proof and easy to service, thus giving the long operational life with constant braking force.

Wide range of Black Bruin damping solutions offer an alternative for any working conditions. Brake torque is either pre-adjusted mechanically or continuously controlled by hydraulics.

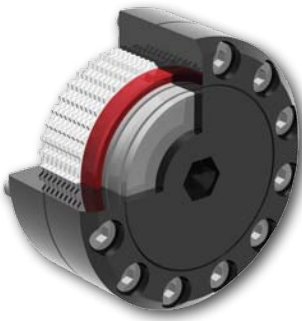
BLACK BRUIN BRAKES  
L / S / X / LC / SC / XC / LH / SH / XH

HIGHLIGHTS:

- unique multi-disc design
- durable brake discs – constant braking force
- well-protected and service friendly structure
- long maintenance interval
- spring loaded or hydraulically controlled models



Hydraulically controlled



Spring loaded



BRAKE TYPE	BRAKE COVER, V	BRAKE L	BRAKE S	BRAKE X	BRAKE LC	BRAKE SC	BRAKE XC	BRAKE LH	BRAKE SH	BRAKE XH
Design	–	spring loaded, adjustable multi-disc			spring loaded, adjustable multi-disc (with protective plate)			hydraulically controlled multi-disc		
Brake torque [Nm]	–	400...550	800...1100	1300...1750	400...550	800...1100	1300...1750	0...550	0...1100	0...1750
Weight [kg]	0,27	3,2	3,2	4,4	3,2	3,2	4,4	3,2	3,2	4,4





## ENHANCED PRECISION

The hydraulically controlled swing damper is the newest addition of the Black Bruin rotator family. It makes the control of the harvester head extremely accurate and boosts work efficiency.

A harvester head can be locked to any position, allowing tree to be grapped precisely and efficiently. This is a valuable feature in forest thinnings, where harvester head needs to be maneuvered between trees.

The operating pressure is internally delivered to brakes. No

additional damage prone hoses are required. The braking force can be easily controlled by the user.

The braking force remains constant throughout the rotator’s operating life. This also reduces the brake wear, and there is no need for adjustment.

Compact Black Bruin swing damper with powerful radial piston rotator is an unbeatable combination!

“ We constantly monitor our rotators at work in real-world conditions. We see and hear what our clients and end-users need, and how our rotators can be developed to meet those needs. This is why Black Bruin rotators truly help people perform their every day work better.

Jari Hämäläinen, Technical Manager

# BLACK BRUIN HYDRAULICALLY CONTROLLED SWING DAMPER

FOR BBR 15H / BBR 16H / RH3016

### HIGHLIGHTS:

- compact construction with precice control = efficiency and productivity
- less strain on boom
- no additional hoses are required
- braking force applied as needed – precise control and manoeuvrability
- low brake disc wear – no need for adjustment
- holds braking force throughout the service life



COMPATIBLE ROTATORS			
ROTATOR TYPE	BBR 15H *	BBR 16H *	RH3016 *

\* Retrofitting is possible



BLACK BRUIN ORDERING CODE

ROTATOR / LINKS / BRAKES

HOW TO ORDER:

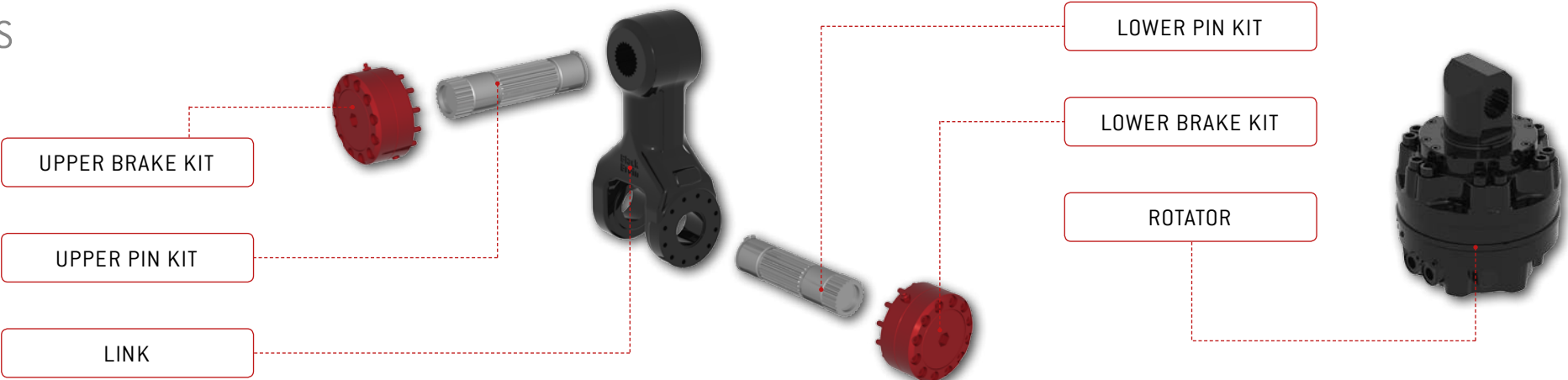
- Choose rotator type: BBR 15H
- Choose link type: H-080 R240.L100 2J
- Choose brake type: S
- When ordering rotator, link or brake separately, the correct pin kit is always required for assembly.

ROTATOR TYPE	LINK TYPE																			BRAKE TYPE										
	I-100						H-074				H-080								H-085											
	R200.L080			R200.L100			R240.L080		R240.L100		R155.L100		R240.L100		iR240.L100		R310.L100		R240.L100		V <sup>a)</sup>	L	S	X	LC	SC	XC	LH	SH	XH
	0J	1J	2J	0J	1J	2J	1J	2J	1J	2J	1J	2J	1J	2J	1J	2J	1J	2J	1J	2J										
MR 10M	•			•																										
MR 10MD JK	•	•	•	•	•	•															•	•	•	•	•	•	•	•	•	•
BBR 08H							•	•	•	•												•	•	•	•	•	•	•	•	•
BBR 15 H											•	•	•	•	•	•	•	•				•	•	•	•	•	•	•	•	•
BBR 16H																			•	•		•	•	•	•	•	•	•	•	•
RH3016																			•	•		•	•	•	•	•	•	•	•	•
MR 08A																														
MR 08F																														
MR 10A	•			•																										
MR 10F	•			•																										
MR 10FD JK	•	•	•	•	•	•															•	•	•	•	•	•	•	•	•	•
BBR 15F	•			•																										
BBR 15F JK	•	•	•	•	•	•															•	•	•	•	•	•	•	•	•	•

a) only available for link type 0J      Ordering code example: BBR 15 H + H-080 R240.L100 2J + S

BLACK BRUIN ORDERING CODE

PIN KITS



COMPATIBLE PIN KITS		DIMENSIONS	BRAKE TYPE	BRAKE COVER, V	L / LC / LH		S / SC / SH		X / XC / XH	
				Lower pin kit	Upper pin kit	Lower pin kit	Upper pin kit	Lower pin kit	Upper pin kit	Lower pin kit
LINK TYPE	I-100	R200.L080	0J	D45.L085.W166 JV						
			1J			D45.L100.W171.J25		D45.L100.W171.J25		D45.L100.W171.J40
			2J		D45.L080.W161.J25	D45.L100.W171.J25	D45.L080.W161.J25	D45.L100.W171.J25	D45.L100.W161.J40	D45.L100.W171.J40
		R200.L100	0J	D45.L100.W171 JV						
			1J			D45.L100.W171.J25		D45.L100.W171.J25		D45.L100.W171.J40
			2J		D45.L100.W181.J25	D45.L100.W171.J25	D45.L100.W181.J25	D45.L100.W171.J25	D45.L100.W181.J40	D45.L100.W171.J40
	H-074	R240.L080	1J			D35.L074.W155.J25		D35.L074.W155.J25		D35.L074.W155.J40
			2J		D45.L080.W161.J25	D35.L074.W155.J25	D45.L080.W161.J25	D35.L074.W155.J25	D45.L100.W161.J40	D35.L074.W155.J40
		R240.L100	1J			D35.L074.W155.J25		D35.L074.W155.J25		D35.L074.W155.J40
			2J		D45.L100.W181.J25	D35.L074.W155.J25	D45.L100.W181.J25	D35.L074.W155.J25	D45.L100.W181.J40	D35.L074.W155.J40
	H-080	All	1J			D45.L080.W161.J25		D45.L080.W161.J25	D45.L100.W181.J40	
			2J		D45.L100.W181.J25	D45.L080.W161.J25	D45.L100.W181.J25	D45.L080.W161.J25	D45.L100.W181.J40	D45.L080.W161.J40
	H-085	All	1J			D45.L085.W166.J25		D45.L085.W166.J25		D45.L085.W166.J40
			2J		D45.L100.W181.J25	D45.L085.W166.J25	D45.L100.W181.J25	D45.L085.W166.J25	D45.L100.W181.J40	D45.L085.W166.J40

Please note! The correct pin kit is always required for a complete rotator assembly.





**No power like it.**

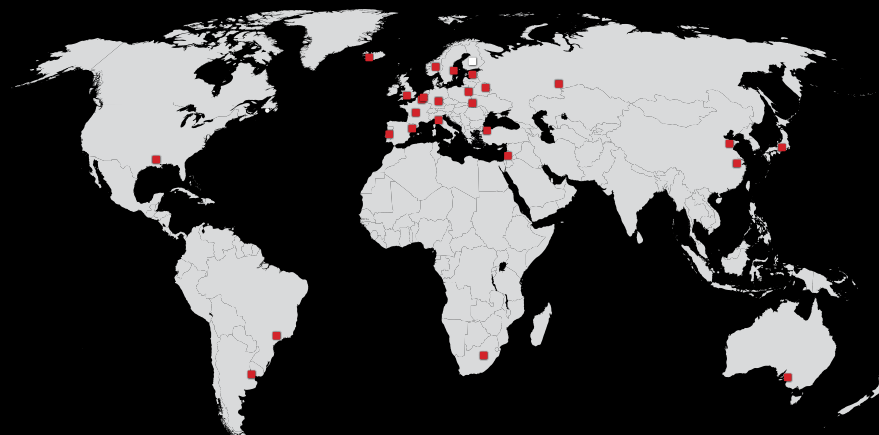


## INNOVATIVE HYDROSTATIC TRANSMISSION AND ROTATION SOLUTIONS

Sampo Hydraulics Ltd. is one of the world's leading suppliers of radial piston hydraulic motors and rotators. Our trade mark Black Bruin offers a high quality solution for agriculture, construction and mining, road building and forestry equipment applications. As an international operator located in Jyväskylä, Central Finland, we employ 105 fully trained professionals and have a distribution network of 26 countries.

Sampo Hydraulics Ltd. is part of the Sampo Rosenlew Group.

■ Manufacturing ■ Distributor



Black Bruin by Sampo Hydraulics | [www.blackbruin.com](http://www.blackbruin.com) | [sales@blackbruin.com](mailto:sales@blackbruin.com)

**Black  
Bruin**

No power like it.